

*THE*  
*TELEGRAPH AND TELEPHONE*  
*JOURNAL.*

---

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## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CI.

MR. C. E. REEVE.

THE subject of our photograph is Mr. C. E. Reeve, Chief Superintendent, Telegraphs, Liverpool.

Commencing his Post Office career at Liverpool as a Sorting Clerk and Telegraphist in 1893, Mr. Reeve, by reason of his knowledge of French and his ability as a Hughes telegraphist, soon became a valued member of the Foreign Section. His interest in technical matters was utilised in many ways and in 1915 he was promoted to the Overseers' class. His further advancement was retarded by a redundancy in the Assistant Superintendents' class, which, however, gave him the opportunity of extending his experience of the clerical and administrative side of the telegraph and telephone services, in the Surveyor's Office.



His considerable technical knowledge enabled him to maintain for many years classes in telegraphy which were of the utmost value in assisting many of his colleagues towards technical success.

He became an Assistant Superintendent in 1928, since when his further promotion has been rapid, his appointment to the Chief Superintendentship taking place in June this year in the midst of the revolutionary changes in the layout of the Liverpool telegraph room which are still in progress.

Endowed with natural administrative qualities of a high degree, Mr. Reeve possesses a dauntless spirit happily allied with an excellent turn of humour. His activities are many-sided, for he has travelled extensively in Europe, especially in the Alpine regions; he is a keen horticulturist; a golfer of merit (at present occupying the captaincy of the Liverpool Post Office Golf Club) and last, but by no means least, he is a versatile and most entertaining "raconteur."

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## NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

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## TELEX SERVICE.

As most of our readers know, telephone exchange service was first offered to the public in London in August 1879. The service began modestly with 7 or 8 subscribers. Exactly 53 years later, in August 1932, came the opening in London of "Telex" service, otherwise "teleprinter exchange service."

Telex began, only little less modestly than Telephones, with 10 subscribers in London—not counting the Post Office itself, which had already installed the new service for its own use in several departments, the Telex numbers of which, of course, appeared from the outset in the Telex Directory. The analogy may be pursued further, for as the opening of small exchanges in the provinces succeeded almost immediately to the opening of the London Telephone Service, so Telex was quickly opened in several provincial centres and is being extended in rapid stages throughout the country.

The service thus unobtrusively introduced to the business world is nevertheless, in our opinion, of an epoch-marking character, and we feel that it may not be out of place to take the opportunity to explain to the reader at large, and in a few words, the fundamental aspect—i.e., from the customer's point of view—of Telex service.

Just as any telephone subscriber can speak to any other, so any Telex subscriber can teleprint—i.e., type (at a distance)—to any other. Telex calls are connected "on demand," like most telephone calls, and are similarly charged for. Just as any telephone subscriber can hand over and receive his telegrams by telephone (phonogram service), so any telex subscriber can hand over and receive his telegrams by teleprinter (printergram service). Printergrams are

charged for at the same rate as phonograms (i.e., the local call fee), though the "appointed" telegraph office to which the subscriber is connected may not always be the same for printergrams as for phonograms. Just as any telephone subscriber can speak from a P.B.X. extension telephone over any private circuit which may be connected to his office on the P.B.X. board, as well as over the public telephone exchange system, so any telex subscriber can teleprint over a private (telephone) circuit, as well as make telex calls over the public telephone system.

In other words, telex service is essentially, from the subscriber's point of view, the combination of a typewriter with his telephone installation.

From the point of view of the Administration, the story is not so simple. We hope in later issues to publish a description in some detail of the arrangements which have been found to be necessary to adapt the teleprinter and the telephone exchange system to each other.

The advantages which the telex subscriber obtains are obvious. His telex teleprinter will record simultaneously at both ends the details of complicated messages—e.g., technical or coded matter—and will confirm arrangements made by telephone; the latter can be done, without making a second call, merely by holding the connexion and switching over at each end from telephone to teleprinter. Moreover, his telex teleprinter will dispose of his telegrams, outgoing and incoming, more quickly than can be done by telephone, and will *simultaneously* provide a confirmatory copy. Indeed, it is probably not too much to claim that the printergram service, as now working in this country, is, as a method of handing-over telegrams, superior to any alternative so far available anywhere.

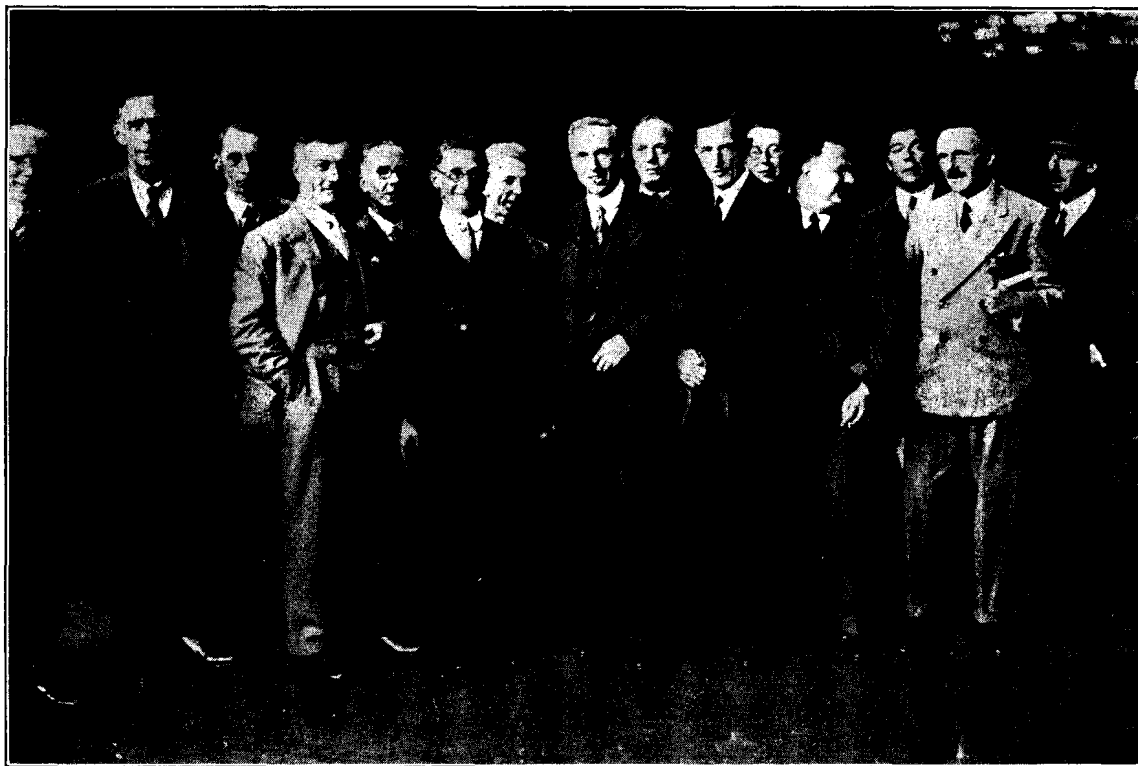
What is the future of this novelty? The answer, in our view, is that the rate of development of telex will depend on what the advantages set out above prove to be worth, in hard cash, to the business community. Time and experience alone will determine this. Indeed, it would be nearly as rash to prophesy in 1932 about the future of Telex as it would have been to try in 1879 to forecast what was in store for Telephony.

But two things may be said with confidence. A really new form of rapid "written" communication has been made available to the business world; and its pioneer development in Great Britain by the Post Office will be watched with interest by other countries.

## HIC ET UBIQUE.

WE omitted to mention in our article on the conversion of the Johannesburg telephone system to automatic working on the Strowger system, that the Automatic Electric Company Ltd. of Liverpool were the contractors for the scheme and the manufacturers of the equipment.

Sixteen exchanges in the Paris telephone system are now automatically equipped, serving 91,000 subscribers out of 189,000 in the area. By the end of 1935 the Paris area will be completely



MADRID INTERNATIONAL TELEGRAPHY AND RADIO-TELEGRAPHY CONFERENCE. MR. L. SIMON, DIRECTOR OF TELEGRAPHS AND TELEPHONES, BIDDING FAREWELL TO THE P.O. DELEGATION AT VICTORIA STATION, AUG. 31, 1932.

[By the courtesy of the Universal Pictorial Press.]

transformed to automatic with a capacity of 290,000 lines and a reserve for extension of about 60,000 lines. Paris is two years in advance of its original programme.

The transformation of the "banlieu suburbaine" will be completed in 1937 with 20 group centres, having a total capacity of 83,000 lines.

The *Bulletin Official* states that the Paris area and the suburban area are now grouped in a single area denominated the Paris area. The Paris telephone area has hitherto been confined to the city limits.

In the *Fortnightly Review* of September, John C. Moore writes:—

"As for the Telephone System (in Spain), after the brutalities of the English Post Office I found it a joy. No Heath Robinson contrivances of Button A and Button B, a low flat rate of subscription with no fee for individual calls, dial system everywhere, no wrong numbers, no irritating delays. Even little children ring up their friends for a talk in the evening, and señoritas are courted by telephone for a couple of hours on end: for there is no eavesdropper employed to butt in, with a maddening "Three minutes please." Spain is a Telephone Paradise, and I am merely confirmed in my opinion that English telephones are installed in Hell, and rank there among the chief instruments of torture."

If we may take this writer at his word, Spain must indeed be the telephoner's paradise, when the caller finds his correspondent's line "engaged" for two hours at a stretch, because the señorita is being "courted by telephone" and time is being abolished for the happy lovers during that brief period. It must be equally comforting to fail to get connexion on several occasions because the children are ringing up their little friends. This, of course, involves no extra cost for papa and is one of the beauties of the flat rate system of charging, which has long since been weighed and found wanting by Gt. Britain, Germany, France, by the Telephone Companies of New York, Chicago, Philadelphia, &c., and by other administrations which have to handle the telephone traffic of large cities.

We have received the following from an anonymous correspondent. It is, as far as we know, the first attempt to celebrate in verse the Post Office Staff Salesmanship Scheme. We confess that the treatment is unworthy of the theme, and the author's pseudonym strikes a note of flippancy, which is entirely out of place. We have decided, however, after much hesitation, to print the contribution for the sake of the excellent sentiments that it contains:—

Our telephone development's not good:  
That is a fact quite clearly understood.  
But do we all as clearly realise  
That to improve things in our power it lies?

Each member of the Telephone Department  
Lives too much in a water-tight compartment.  
He thinks he adequately does his bit  
If he his own job does and sticks to it.

I venture to assert this is not so.  
If you would like our telephones to grow,  
Don't be content to do your job alone,  
But GET MORE PEOPLE ON THE TELEPHONE!

D. RIVELLER.

## THE G.P.O. PLAYERS.

WITH its autumn production this Society enters on its 10th season, and special efforts have been made to present an entertainment worthy of the occasion. The Society will break entirely new ground with a dramatic fantasy, "The World's End," by Reginald Berkeley, preceded by a fascinating trifle in one act, "The Man who Wouldn't go to Heaven." It was with the latter play (by F. Sladen-Smith) that the Hampstead Play and Pageant Union, two years ago, won the British Drama League Competition and the Howard de Walden Cup.

The G.P.O. Players will have a strong team out on this occasion, under the direction of Gerald Storr and Laurence Gartland. The company knows no "stars," but as befits a sound Post Office institution its motto is "*Primus inter pares*."

The plays will be presented at King George's Hall, Caroline Street, W.C.1, on Oct. 20, 21 and 22, 1932, at 7.30 p.m.

Tickets 5s. 9d., 3s. 6d. and 2s. 4d., may be obtained from Capt. W. L. Gartland, G.P.O. North, E.C.1 (Tel. NAT 6321, Ex. 871).

The profits of the production will be given to the Rowland Hill Benevolent Fund.

## DEVELOPMENT FORECASTS AND THE INITIATION OF EXCHANGE RELIEF SCHEMES.

ONE of the most important problems encountered in Telephone Traffic work is that of ensuring that sufficient spare exchange equipment shall always be available to cater for new business as it is secured. Delay in the provision of service once an agreement has been secured has two bad effects, a loss in revenue in respect of both rental and call fees, and the creation of a bad impression as to the efficiency of the Service in the mind of the prospective subscriber. On the other hand, it is not economical to have large amounts of equipment lying idle for long periods, as this means that capital expenditure has been anticipated, interest lost and annual charges incurred on equipment which is not revenue producing.

This position is bound to arise to a certain extent after an extension has been completed and brought into service, as there is a clearly defined economic period for the provision of telephone plant. It is economical to instal blocks of equipment sufficient to cater for future growth over a certain period and to incur the annual charges on the unused portions until they are brought into service, rather than to provide much smaller amounts of equipment with a corresponding multiplication of installation charges, &c.

This article is concerned, however, not with the question of the economic period for which equipment should be installed, i.e. with the amount of equipment required for an extension—but with the considerations which govern the initiation of extension schemes for existing exchanges. The term extension is used in its fullest sense as covering all cases from simple additions of equipment to existing exchanges to the provision of new exchanges and other more complicated relief schemes. The ideal position as regards the provision of additional equipment is, of course, that the work should be completed and the equipment ready for use just as the maximum capacity of the existing equipment is reached. In this case, there is neither delay in the provision of service to new subscribers nor is new and expensive equipment lying idle and non-revenue-producing for appreciable periods before any part of it is brought into use. It is, in practice, impossible to reach this ideal position in many cases—how closely, then, can this state of affairs be approached?

Let us consider the factors involved in an extension case, excluding for the moment the question as to the amount of equipment which will be installed; there appear to be two:—

- (1) The period which must elapse from the inception of the relief scheme to the date at which the additional equipment will be ready for use, i.e. the period required to design and instal the extension.
- (2) The date at which the maximum capacity (either for load or equipment reasons) of the existing equipment will be reached, i.e. the "life" of the present exchange.

As far as (1) is concerned, this varies according to the complexity of the extension scheme involved, but once the nature of the extension is determined, this period is known. (Reference will be made later to the periods necessary to complete different classes of work.)

The "life" mentioned in condition (2) is, however, not quite so easy to determine. If it were possible to state exactly the date at which the capacity of an existing exchange would be reached, then it would only be necessary to subtract from this the length of time required to carry out the extension, and the date at which the extension scheme should be commenced would be accurately fixed. The determination of the "life" of an existing exchange, however, depends primarily on what is known to every Traffic Officer as the "Approved Development Forecast." In many cases,

particularly when the forecast is not of recent date, these development figures are not borne out in fact, and the "life" of an exchange calculated on this basis is often greatly different from that which will be realised in actual practice.

Before the actual amount of equipment to be installed in any particular case is determined, it is desirable to make a fresh development study of the area, but the question which has first to be answered is—"When will it be necessary to initiate proposals for a relief scheme?"

The purpose of this article is to suggest a simple method of relating approved development forecasts to actual conditions, *not* for the purpose of calculating the "life" of the existing exchange, but in order to *determine the date when consideration of a relief scheme should be commenced*. The preparation of a new detailed development study which may only result in a decision to postpone the case, and which may not then be required for design purposes for several years (by which time it may again require revision) will be avoided by the method to be suggested.

As we have already mentioned, schemes for the extension of equipment to serve a given area may vary greatly in complexity, ranging from the division of an exchange area and the provision of a new exchange in a new building to a simple addition of positions or equipment to an existing exchange. It is clear that the periods required to prepare the traffic design and to complete these different classes of work will also differ considerably, in fact, the periods which have been suggested as desirable for this purpose range from six years to one year as shown in the following table:—

TABLE I.

<i>Class of Work.</i>	<i>Period Required for Traffic Design and Completion of Installation.</i>
1. New building—no previous consideration has been given to scheme ...	6 years.
2. Scheme for new building, or reconstruction, already evolved and agreed—	
(a) Where the existing building will accommodate 5,000 lines ...	5.5 years.
(b) Where the existing building will accommodate 1,000-5,000 lines	5.0 ,,
(c) Where the existing building will accommodate 1,000 or less lines	4.0 ,,
3. Contractor's extension of equipment—minor building alterations—	
(a) Director automatic exchange ...	3.0 ,,
(b) Manual or non-director automatic exchange ...	2.5 ,,
4. Non-Contract extension of equipment—	
(a) Multiple exchanges ...	1.5 ,,
(b) Non-multiple exchanges ...	1.0 ,,

It follows, under such a scheme, therefore, that from one to six years before the existing exchange is exhausted, the Traffic Officer must consider his plans for the future. The first step is to determine in what category the relief scheme will fall. Fortunately, this is, in general, a comparatively easy matter. We can, therefore, determine the design period which would be appropriate to any given case. In other words, when the "life" of the existing exchange becomes equal to the design period, the appropriate extension scheme must be commenced in order that the relief scheme may be completed by the exhaustion date.

It would seem, therefore, that the question as to when a relief scheme should be put in hand resolves itself into a determination of the "life" of the existing exchange. This, in turn, is dependent on the future growth of subscribers' lines, i.e. on the anticipated

development figures. In this connexion, we have seen that the approved development forecast may give a false impression as to the life of the existing equipment—for instance, in a large number of cases, particularly in industrial areas at present, the “life” of the exchange as shown by the approved development figures is generally far shorter than is likely to be attained in practice, i.e. in many cases the anticipated growth in subscribers’ lines is not being realised. If then, the life of the exchange is calculated on the basis of the approved development figures and the scheme is put in hand on these grounds, the new equipment will probably be standing idle for a considerable period before it is necessary to bring it into use. This is plainly undesirable.

Now let us approach the problem from another angle. The Department’s machinery (i.e. the Traffic Capacity Schedule) provides for all exchanges with more than 50 working lines to be brought under review for extension purposes every six months. Suppose that the life of the exchange, as shown by the approved development figures is such that a relief scheme should be put in hand. The question that has to be answered in practice is not so much “At what date will this exchange be exhausted?” as “Is it possible, owing to a lag in development, to defer consideration of a relief scheme in this case for another six months, when the case will again be reviewed?”

The Traffic Capacity Schedule mentioned above is based on the Approved Development Figures. The answer to the last question of the previous paragraph depends on the relation of development figures to actual conditions. The remaining paragraphs of this article suggest a simple method by which development forecasts may be weighted for the purpose of ascertaining when relief schemes should be put in hand.

When considering the relationship between approved development figures and the number of lines existing at any date, we have two factors to consider :—

- (a) The “lag” in lines at the date under consideration.
- (b) The “lag” in growth per annum.

The second of these is the more important for the present purpose and may be expressed in the form :—

$$\frac{\text{Actual growth per annum} \times 100.}{\text{Approved growth per annum.}}$$

This will be referred to as “Percentage annual growth obtained.”

The “life” of the exchange will be defined in the following manner :—

$$\frac{\text{* Number of spare equipments at time of consideration.}}{\text{Approved growth per annum.}}$$

This expression gives the life in years of the existing equipment if the approved annual growth is reached and maintained, and will be referred to as the “Approved life” of the Exchange. It will be seen that this expression incorporates factor (a) mentioned above.

Now suppose that the “Approved life” of the Exchange has diminished so that it equals the design period required for the next extension to be undertaken, say six years. If the percentage annual growth obtained is less than 100, a lag will exist at the end of this six years, which will be made up of six times the annual lag, assuming that the percentage annual growth remains unchanged.

The conditions under which consideration of the case may be deferred for six months (i.e. until the exchange is again due for review on the Traffic Capacity Schedule) are therefore :—

1. If the lag produced at the end of the “Approved life” is equal to six months’ actual growth (i.e. in six month’s

\* If the life is restricted by load considerations the expression “Additional No. of subscribers’ lines which can be served” will replace “No. of spare equipments.”

time, the “life” would still be six years in the above example).

2. If the lag produced at the end of the “Approved life” is greater than six months’ actual growth (i.e. in six months time, the “life” remaining would be more than six years in the case quoted).

(The basis assumption underlying this analysis is, of course, that the percentage annual growth obtained at the time of consideration will not alter during the life of the exchange. This assumption will be dealt with later, but it should be borne in mind that the purpose of this assumption is only to determine whether or not the case may be deferred six months, and that violent changes in the rate of actual growth are exceptional.)

It is self-evident that there is a definite relationship between the percentage annual growth obtained, the approved life of the exchange, and the lag which will be produced at the end of this period. A curve can therefore be drawn showing the maximum percentage annual growth obtained which can be tolerated if a lag of six months is to be produced at the end of the approved life. Such a curve is drawn in Fig. 1.

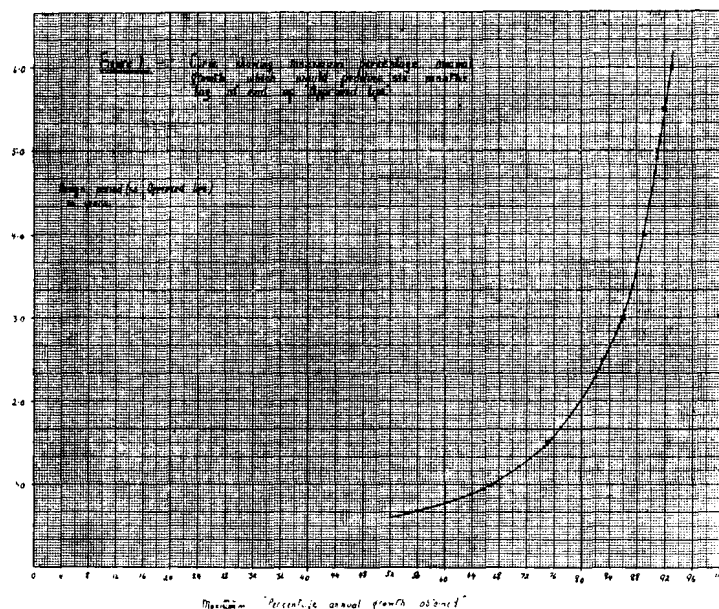


FIG. 1.

Curve showing maximum percentage annual growth which would produce 6 months’ lag at end of “Approved Life.”

This curve can be used to draw up a table of maximum percentages (Table 2), one for each design period. These percentages (of annual growth obtained) must not be exceeded if the case is to be deferred six months and the “life” after this deferment is to be at least equal to the design period.

TABLE 2.

Design Period for next Extension.	Case may be deferred Six Months if percentage Annual Growth obtained does not exceed		
1.0 years	...	...	67
1.5 "	...	...	75
2.5 "	...	...	83
3.0 "	...	...	86
4.0 "	...	...	89
5.0 "	...	...	91
5.5 "	...	...	92
6.0 "	...	...	93

Let us consider an example. Suppose that we have an exchange where the relief scheme will involve the erection of a new building and that six years are therefore required for the design period. If the existing number of spares is 300 and the approved annual



growth is 50, the "approved life" of the exchange is six years, and it is, therefore, necessary on an approved development basis to put the scheme in hand. The growth actually being obtained at the present date is, however, only 30 lines per annum. The percentage annual growth obtained (60%) is, therefore, less than the maximum (93%) quoted in Table 2, and consideration of the case may be deferred for at least six months.

The next question that arises is the validity of the fundamental assumption, viz., that the maximum percentage growth obtained (93% in the case mentioned) will not be exceeded during the approved life of the exchange.

In practice the question that arises, taking the example mentioned above, may be stated in this way: "The approved life is six years, the percentage growth obtained is sixty, but this is based on say the past year's growth. Now suppose that the percentage growth increases in future, what effect will this have on the scheme?"

In Fig. 2 curves have been drawn for each design period which answer this question. For instance, in our specimen case, it can be seen that after six months the percentage growth may receive an increase of just over 35 without shortening the approved life of the exchange. This means that after a deferment of six months the actual growth must rise to (and remain at) more than 95% of the approved growth before the life of the exchange is reduced to less than six years.

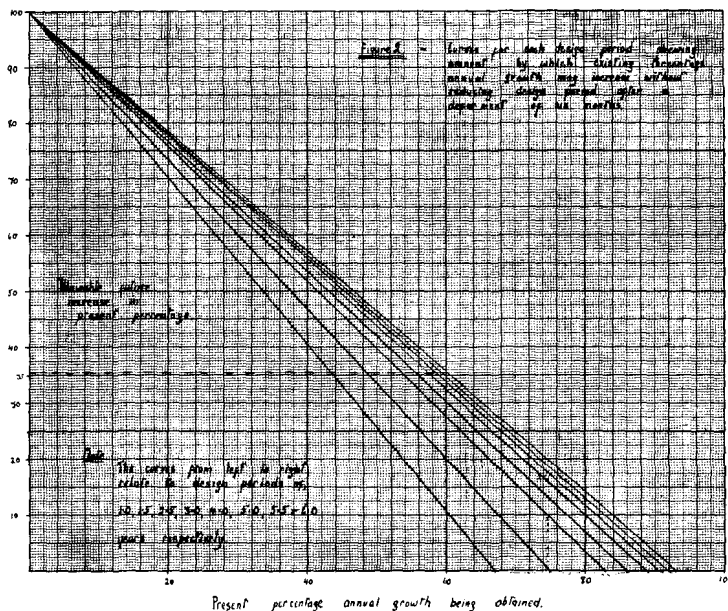


FIG. 2.

Curves for each design period showing amount by which existing percentage annual growth may increase without reducing design period after a deferment of six months.

It will be seen, therefore, that this method of determining when consideration of an extension may be deferred is perfectly elastic in that it may be adjusted to prevailing conditions by a regulation of the percentages quoted in Table 1 to allow for a future increase. Let us put this statement in another form. The percentage growth obtained is based on the growth experienced during the past year and conditions may be such that it is reasonable to assume that this percentage growth will increase by say ten, before the end of the design period is reached. The greatest percentage growth which can be allowed if the case is to be deferred six months (Table 1) must, therefore, be adjusted so that it may increase by ten.

The following table has been calculated assuming that it is considered desirable to allow for a future increase in the present percentage growth. Each vertical column shows the maximum percentages for the various design periods as in Table 2. The

allowable future increase in these percentages is that shown at the head of each column:—

TABLE 3.—MAXIMUM PRESENT PERCENTAGES SHOWING REDUCTION FOR FUTURE GROWTH.

Length of Design Period.	Future increase in percentage allowed.				
	Nil.	10	20	30	50
1.0 years ... ..	67	60	53	47	33
1.5 " ... ..	75	68	60	53	38
2.5 " ... ..	83	75	67	58	42
3.0 " ... ..	86	77	68	60	43
4.0 " ... ..	89	80	71	62	44
5.0 " ... ..	91	82	73	64	45
5.5 " ... ..	92	83	73	64	46
6.0 " ... ..	93	83	74	65	46

N.B.—The figure at the head of a vertical column added to any figure in that column gives the future percentage which can be attained.

It may be remarked that all these figures are maximum percentages and have been calculated on the basis that if an increased percentage is expected, it will be reached after six months and will continue throughout the life of the exchange. In actual practice it is more probable that if an increased rate of growth is to be obtained in future, it will not be reached so quickly as this. In other words, the worst possible conditions from the point of view of a breakdown of the scheme have been visualised, and it is submitted that these figures would be a safe guide in practice.

If the allowance for future growth has not been decided upon, it will be seen that Table 3 may be used to determine the greatest future percentage corresponding to any given present percentage which can be allowed if the case is to be deferred for six months. For instance, if the design period for the next extension is 2.5 years, suppose that the present percentage (of approved growth obtained) has been calculated. If this percentage is 83, no increase in this figure must be anticipated for the next 3 years (i.e. 2.5 years plus 6 months) if the case is to be deferred 6 months. If the percentage is 75 then an increase to 85 (75 plus 10) at the end of six months and a continuance of this figure for 2.5 years may be allowed, and the design period will not be curtailed. If the percentage is 42 it will be seen that an increase to 92 may be tolerated. This point is clearly brought out in the curves in Fig. 2.

The method of deciding whether or not it is necessary to put relief proposals forward would then be:—

1. Consideration of the nature of the relief scheme required, i.e. determination of the design period.
2. Determination of the "Approved life" of the existing exchange.

If it appears *prima facie* from these two items, having due regard to date of the next review, that proposals should be put in hand, then—

3. Calculation of percentage approved growth actually obtained, say on the basis of the past two year's growth.

If this figure is equal to or less than that making the required allowance for future increase shown in Table 3 for the design period in question, or if the maximum future percentage allowable, determined from Fig. 2 is not likely to be exceeded continuously during the design period, the initiation of a relief scheme may be deferred for six months. In all other circumstances the case should be commenced, the first step being, of course, a review of the standing development forecast for the purpose of deciding the amount of equipment required.

This method is clearly extensible to the cases where development forecasts are being exceeded in actual growth. Certain difficulties may be encountered in its application—for example, a wrong opinion may have been formed as to the nature of the next extension

required. These difficulties would, however, arise under any procedure, and are not inherent to the method described. It is thought, however, that the use of a table of percentages on the lines of Table 3, or of the curves of Fig. 2, for the purpose of deciding when a case should be put in hand is a simple and straightforward method of settling an otherwise vexatious question, and in particular avoids the necessity for a special review of development for this purpose.

C. R. S.

APPENDIX.

This appendix gives the argument which was used to obtain the results quoted in the preceding article.

Let  $a$  be the number of existing spare equipments,  
 $b$  be the approved growth per annum,  
 $c$  be the percentage approved growth obtained,

then

" Approved life " of exchange	...	...	...	$\frac{a}{b}$ years
" Lag " produced per year	...	...	...	$\frac{b(100 - c)}{100}$
" Lag " produced at end of " Approved life "	...	...	...	$\frac{a(100 - c)}{100}$
Six months' actual growth	...	...	...	$\frac{bc}{2 \times 100}$

the condition for six months' deferment is

$$2a(100 - c) = bc$$

$$\frac{a}{b} = \frac{c}{2(100 - c)} \dots \dots \dots (i)$$

but  $\frac{a}{b}$  is the " approved life " of the exchange, and as an extension is under consideration will equal the design period for the next extension, i.e., 1.0, 1.5, 2.5 . . . 6.0—say  $y$  years. For any of these values of  $y$ , expression (i) gives the maximum value of  $c$  which will fulfil the conditions laid down, i.e., produce a lag of six months at the end of  $\frac{a}{b}$  years. Table 2 and Fig. 1 have been constructed on this basis.

Examination of Conditions after a Deferment of Six Months.

Number of spares now available	...	...	...	$a - \frac{bc}{200}$
Maximum growth per annum if the period $y$ years is not to be curtailed is	...	...	...	$\frac{bc}{200y}$

writing this as ( $c'$ ) a new percentage approved growth obtained

$$c' = 100 \left( \frac{a - \frac{bc}{200}}{yb} \right) \dots \dots \dots \text{but } yb = a$$

$$c' = 100 - \frac{bc}{2a} \dots \dots \dots (ii)$$

If  $c$  is less than the maximum value obtained from equation (i),  $c' - c$  gives the allowable future increase in percentage growth obtained which will not curtail the design period of  $y$  years.

[Note.]—If  $c$  equals the max. value obtained from equation (i)  $c' - c = 0$ , which may be verified by substituting this value of  $c$  in equation (ii).

Calculation of allowable future increase in  $c$ .

When the percentage approved growth obtained ( $c$ ) does not reach the maximum (equation (i)), Table 2, future growth during the design period,  $y$ , may increase without curtailing this period. The increase allowable is

$$c' - c = 100 - \frac{bc}{2a} - c \dots \dots \dots \text{but } a = yb$$

$$= 100 - c \left( \frac{1 + 2y}{2y} \right) \dots \dots \dots (iii)$$

where  $y$  is the design period in years.

Writing (iii) in the form

$$z = 100 - kc$$

$z$  allowable future increase in present percentage  $c$ .  $k = \frac{2y + 1}{2y}$  and has a series of values, one for each design period  $y$ .

$$\text{Also } c = \frac{100 - z}{k} \dots \dots \dots (iv)$$

[If  $z = 0$ ,  $c = \frac{100}{k}$  and gives the results of Table 2.]

Equation (iv) is used for the construction of Table 3 and Fig. 2.

PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at Aug. 31, 1932, was 2,091,223, representing a net increase of 3,192 on the total at the end of the previous month.

The growth for the month of August is summarised below:—

Telephone Stations—	London.	Provinces.
Total at Aug. 31, 1932	780,031	1,311,192
Net increase	381	2,811
Residence Rate Stations—		
Total	248,132	325,794
Net increase	28	1,111
Call Office Stations (including Kiosks) -		
Total	8,522	29,695
Net increase	62	114
Kiosks—		
Total	3,288	10,497
Net increase	39	148

The total number of inland trunk calls for the month of June, 1932 (the latest statistics available) was 10,911,708, representing an increase of 37,981, or 0.35% over the total for the corresponding month of the previous year. International calls in June numbered 94,868, as compared with 107,896 in June last year.

Further progress was made during the month of August with the development of the local exchange system. New exchanges opened included the following:—

- PROVINCES—Ashfield (Birmingham) (automatic conversion); and the following rural automatic exchanges: Brockton (Much Wenlock), Brandsby (Easingwold), Burnt Fen (Ely), Blaina (Abertillery), Boxford (Colchester), Braishfield (Romsey), Castlereagh (Belfast), Coulport (Kilcreggan), Cardington (Bedford), Caunton (Newark), Cardinham (Bodmin), Cemmaes Road (Machynlleth), Culverthorpe (Sleaford), Eardiston (Tenbury Wells), East End (Lymington), Exbourne (Okehampton), Egerton (Ashford, Kent), Edingworth (Weston-super-Mare), Fountainhall (Galashiels), Fovant (Salisbury), Hatherleigh (Okehampton), Horns Cross (Bideford), Ipplepen (Newton Abbot), Knipton (Grantham), Linstead (Halesworth), Manaccan (Helston), Orsett (Stanford-le-Hope), Overton (Morecambe), Occold (Diss), Pymoor (Ely), Pinwherry (Girvan), Priddy (Wells), Sidbury (Sidmouth), Shottisham (Woodbridge), Stock (Ingatestone), Scone (Perth), Swinford (Rugley), Whiston (Rotherham), Yardley Hastings (Northampton);

and among the more important provincial exchanges extended were:—

- Cheltenham (automatic); Doncaster, Pontefract, Yeovil (manual).

During the month 72 new overhead trunk circuits were completed, and 86 additional circuits were provided by means of spare wires in underground cables.

DEATH OF MISS FIELD, LONDON WALL.

It is now six months since the staff at London Wall lost a very dear colleague and the department a faithful servant in the person of Miss Alice Field, an Assistant Supervisor, Class II, at that Exchange.

Always keen and interested in the development of the service, she has been brought to our minds several times recently when discussing the various new services.

Miss Field was ever ready with practical suggestions and help, and the introduction of the Telex service which is now working in her old section would have been a further outlet for her activities.

We miss her in many ways, and her loss will always be deeply felt.

J. E. M.

## WOLVERHAMPTON AUTOMATIC SCHEME.

By W. A. STRIPP (*Birmingham Traffic Section*).

THE long deferred conversion of Wolverhampton and its associated exchanges to automatic working on a Non-Director basis took place on Sept. 24.

It was originally planned to effect the conversion some years ago, but various difficulties necessitated several postponements, and meanwhile the old Wolverhampton magneto exchange, serving as it does a busy industrial area in the heart of the Black Country, was continually growing and considerable extensions had to be effected. A relief switchroom was added but this, too, has become heavily loaded and the transfer could no longer be postponed. One result of the frequent extensions was that almost every possible type of magneto equipment was in use at the old exchange—and it all worked. Incidentally it may interest readers to hear that the relief switchroom referred to was contained in an old Army Hut of the war-time type, and it certainly served its unusual purpose very successfully.

The exchanges to be converted at the outset are Wolverhampton, Bilston, Penn, Tettenhall, Fallings Park, and Finchfield, the last two named being entirely new exchange areas made up of part of the Wolverhampton and Tettenhall areas respectively.

Wolverhampton is the main exchange, the others being satellites, each with discriminating selectors. A photograph of the main exchange building is shown in Fig. 1.

About 4,200 subscribers are concerned, of which over half are connected to the main exchange; this figure includes a number of large PBX installations, and about 150 Call Offices.

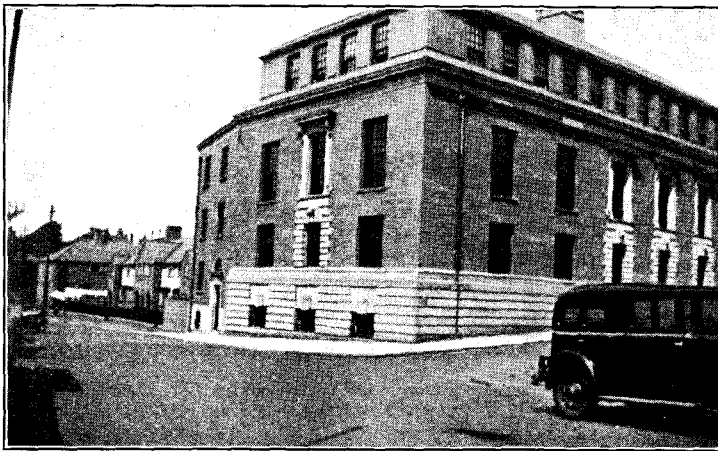


FIG. 1.

Certain of the Call Offices at the Head Post Office have been reserved for Trunk service only and are fitted with Hand-Micro Telephones.

The remaining six exchanges in the Wolverhampton auto area are all small and will probably not become Automatic for some considerable time. In the meantime they will be worked on a dialling-out basis from the automatic exchanges. The dialled-out exchanges and codes are:—

Codsall ...	60	Sedgley ...	69
Darlaston ...	80	Willenhall ...	69
Fordhouses ...	65	Wombourne ...	67

Darlaston will be available to Wolverhampton and Bilston subscriber and dialling-in exchanges only, as it is in the second

fee area to the other automatic exchanges. Darlaston incidentally is also dialled out from the Walsall area automatic exchanges.

A five-figure numbering scheme has been adopted throughout and is shown below, together with the number of lines to be transferred:—

Exchange.	Numbering Scheme.	Approximate number of lines to be transferred.
Wolverhampton ...	20000—23099	2,392
Bilston ...	41000—41699	450
Penn ...	36000—36899	573
Tettenhall ...	51000—51699	447
Fallings Park ...	31000—31399	197
Finchfield ...	61000—61199	109
Total ...	...	4,168

It has, of course, been necessary to change the numbers of all subscribers and a supplementary Directory is being issued.

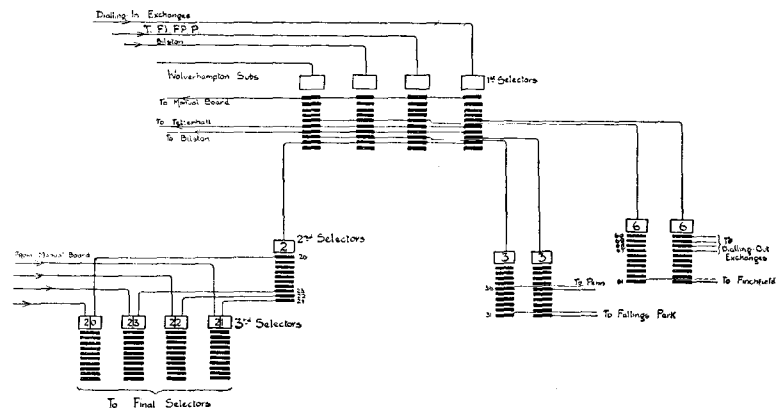


FIG. 2.

Fallings Park, Finchfield, and Penn are served from second selectors at Wolverhampton, so that each junction group could serve 1,000 subscribers, while the routing for Tettenhall and Bilston is via first selectors at the main exchange.

The diagram shown in Fig. 2 will explain, in a simple form, the trunking scheme adopted.

The automatic switching apparatus and manual board is of standard type, 200-line selectors being used at Wolverhampton and 100-line selectors at the other exchanges. The equipment has been installed by the Standard Telephone Co.

The manual switchroom, which occupies most of the top floor of the Wolverhampton exchange building, must be one of the most splendid switchrooms in the country. A light and spacious room with a fine domed roof, it presents a pleasurable contrast to the old exchange. Two views of the switchroom are shown in Figs. 3 and 4.

The auto-manual switchboard consists of 16 A and JEB positions, the estimated ultimate capacity being 40 positions. Those who may think this number small for such a large area must remember that no trunk positions are required as in the case of some of the large multi-office areas, the trunk service being obtained from Birmingham.

The enquiry suite consists of eight positions, one of which is unequipped.

There is also a one position supervisors desk. A new feature of a minor character is the arrangement for the daily transmission test on operators' instruments.

In place of the usual "Speaking Test" key on the monitor's table, a circuit is multiplied from the "A" suite to the first enquiry

position, terminating on a calling lamp and jack. The artificial cable is permanently connected in this circuit and considerably simplifies the testing procedure.

Chargeable time indicators are to be fitted on the "A" suite at a later date.

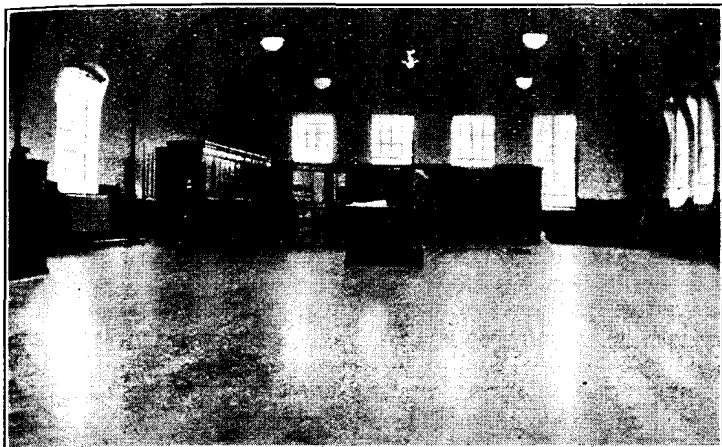


FIG. 3.

As Wolverhampton is its own appointed office for telegrams, "90" level calls will normally be answered in the Wolverhampton phonogram room but switching keys have been provided on the phonogram suite, so arranged that after normal hours the "90" calls will appear on the Wolverhampton enquiry suite, and from there will be extended to the Birmingham phonogram room, which is always open. This is an unusual scheme but its advantages are obvious.

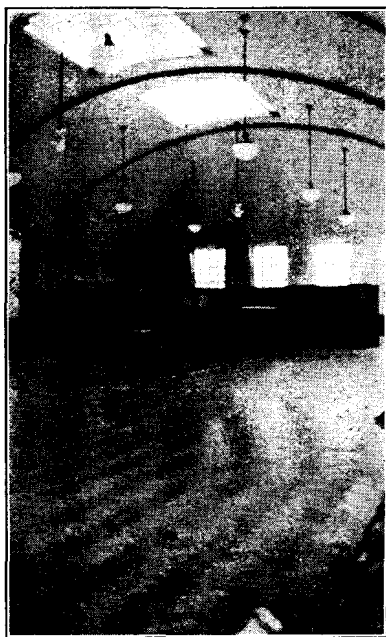


FIG. 4.

No unusual difficulties are expected at the transfer although the programme for the cutting-over of junctions has required very careful planning as a large number of the new circuits are to be made up from existing working junctions.

For a fortnight before the transfer, Traffic Officers will be engaged in testing these made-up junctions.\* A number of circuits will be cut-over for test during the quieter part of each day, and

\* This article was written before the cut-over actually took place.

this, together with the tests performed by the Engineering Department, will ensure that the junctions are in a satisfactory condition to meet their new requirements.

Those concerned in the transfer, however, are confident that the change-over will be perfectly successful.

In a later article it is hoped to give an account of the transfer and the opening ceremony.

## REVIEWS.

*"The Great Age of Discovery."* Edited by A. P. Newton, M.A., D.Lit., F.S.A. Published by the University of London Press. xi. + 230 pp. Price 15s. net.

During the fifteenth and sixteenth centuries the bounds of the world known to the inhabitants of Western Europe were suddenly widened both to the east and to the west, till the explorers' tracks met and the world was circumnavigated by the expedition led by Ferdinand Magellan. The knowledge of new lands and peoples thus acquired had an important effect in stimulating the remarkable outburst in all forms of intellectual activity which occurred at this period. Most persons to-day, however, have probably only a rather vague and superficial knowledge of the history of these discoveries and in view of the importance and interest of the period with which it deals, the book under review will be welcomed, not only by professed students of history, but also by all those who can appreciate the spirit of daring and adventure which urged the early explorers towards the unknown.

The book is based on a series of lectures delivered to the public at King's College, London, in 1931. The Introduction, by Dr. Newton, deals with the transition from the medieval to the modern age, and provides the background necessary for appreciating the political and social influences with which the explorers of the time were surrounded. In the next chapter an account is given of the contemporary state of civilisation in Spain. This is contributed by Senor Antonio Pastor, Cervantes Professor of Spanish in the University of London. The next two chapters deal respectively with the voyages of Vasco da Gama and the other Portuguese explorers to the East, written by Edgar Prestage, Camoens Professor of Portuguese in the University of London, and with the early history and the first voyage of Christopher Columbus, by Dr. Newton.

The following chapter, also by Dr. Newton, describes the further voyages of Christopher Columbus and the voyages of Amerigo Vespucci, which finally demonstrated that the lands discovered to the westward did not belong to Asia but were, in fact, portions of a new world to which the name of America was given.

The next chapter, by Dr. Biggar, Chief Archivist for Canada in Europe, deals with the first explorers of the North American Coast, and in the following one, Mr. H. J. Wood, Geographical Lecturer at King's College, describes the voyages of Cabot and the other explorers who searched along the eastern coast of America for a passage through to the Pacific.

This passage was finally discovered by Magellan, and by it the expedition under his command entered the Pacific and, after a voyage marked by great hardships and disasters, a remnant of the original expedition succeeded in completing the voyage round the world. The story of this first circumnavigation is told by Dr. Williamson in the eighth chapter. The final chapter deals with the efforts to find a passage to the east coasts of Asia round the north either of America or of the Eurasian continent.

The book is well produced and is profusely illustrated with contemporary charts and pictures. We can recommend it to all who wish to escape for a time from the deadening atmosphere of our modern mechanical civilisation into that of mystery and romance in which these early explorers lived.

## TELEGRAPHIC MEMORABILIA.

It is not an actual habit of the writer's to read many novels, but the following excerpt from the work of a latter-day writer may interest our friends of the Telephone Department, and may even assist them in putting their fingers on certain alleged failures of the Service.

*Scene: Interior of a Mansion.*

"The telephone bell rang. Edith went to it quickly.  
'It's Betty. Shall I come along?'  
Edith spoke into the receiver again!"

It must be gratifying to Britishers to note the steady, if slow, progress towards success of the Baird system of Television. There was a dimness and somewhat of flicker, by all accounts, in August this year, on the occasion of the first television transmission from Broadcasting House, when Miss Louise Freear was both heard and seen by a group of guests at the house of Mr. Baird, but the listeners-in and lookers-in, on the evening of the 10th ult, according to a reliable report of the *Daily Telegraph*, were treated to what was regarded as a completely successful combined broadcast by Mr. J. A. Mollison, the airman, and his wife Mrs. Mollison, *nee* Amy Johnson. Strangely enough, a very few days after this report appeared and in the same daily paper the announcement was made of the death of Mr. J. L. Baird's father, the Rev. John Baird, at his residence at Helensburg, Scotland, at the ripe old age of 95 years.

At the same time one hears of developments in television with a special view towards the potentialities of television as an ally of, if not a substitute for long-distance submarine cables. It is even said that type-printed tape has been passed through a television transmitter at G5SW and has been received on a screen in Sydney, Australia, 11,000 miles away.

*Personal.*—On the 1st of this month, "Brother" Furby, who retired from the C.T.O. several years ago—to the great surprise of all his friends, having apparently been seized by a great wanderlust, left these shores on a trip to Australia and New Zealand via the Suez Canal, &c. He should find two or three of his former C.T.O. colleagues in Sydney, Auckland, &c. Bon voyage!

The writer, fortunately, was not alone in stating that the appointment of Mrs. W. W. Padfield (*nee* Le Croisette) was the first occasion upon which a C.T.O. lady had received the honour of a Woman's Magistracy. Precedence must be given, therefore, to Mrs. George Mitchell, who received her appointment to the County of Bucks as long ago as 1926. Due apologies are tendered, and it is safe to say—all is forgiven!

*Obituaries.*—It is with deep regret that the sudden death of Mr. E. J. Wilde, formerly Asst. Superintendent of the C.T.O., has to be announced. This took place at his residence, North Finchley, on the last day of August. Mr. Wilde passed away in his 74th year. "Johnnie" was at one time attached to the Parliamentary Staff, but had previously served under the late Mr. E. Trenam, during the latter's superintendentship at Leeds, where our colleague commenced his career in 1874. Thereafter he was appointed to Doncaster and from there came to the C.T.O. London in 1882 and retired from the service in 1919 with the rank of Asst. Superintendent on reaching the age-limit. Messrs. C. S. Keen and F. G. Muller attended the obsequies on behalf of deceased's old ex-colleagues.

*Friend after friend departs! Who has not lost a friend?*—Truly in the passing over of an old colleague, in the person of Mr. F. W. Fryatt, many outside the comparatively smaller circle of the Telegraph Service are likely to feel that the death of Mr. Fryatt in St. John's Hospital, Lewisham, on the 8th ult. has left a definite gap, despite the four-score years which his life covered. From the year 1870, when he commenced as Telegraphist in TS to the day in 1913, when after eight years as Asst. Superintendent (1st Class) he retired on reaching the age-limit, Mr. Fryatt was of that type of a likeable, lovable nature. Meticulous and painstaking in all

that he did, yet a kindly old friend. His new activity on leaving the service was to take over the Secretarial duties of St. John's Hospital, Lewisham, in an honorary capacity.

In this he was most successful, occupying a post which was certainly no sinecure from throughout the war until 1929. The funeral service was conducted at St. Stephen's Church, Lewisham, by the Vicar, the Rev. C. E. Tomkinson, in the presence of a large assembly of relatives, friends and members of the Medical Staff, the Matron, and the Sisters and Nurses of the hospital. The C.T.O. was represented by Messrs. Goldsack, C. S. Keen, Kemp, Seager, and W. A. Webster. To his devoted daughter and family sincere and tender condolences are respectfully proffered.

In the death of Mr. Henry Walter Jenvey, who recently died in Melbourne at the age of 81, and who was at one time Chief Electrical Engineer of the Victorian Postal Department, there has departed a real veteran of the Telegraph Service. One who commenced his career in 1870 and retired 1910. He carried out many telegraphic improvements as regards duplex and quadruplex transmission, apparatus and cable fault location. He was a pioneer of radio in Victoria, and as far back as 1901 established wireless communication between Point Ormond and the ship on which our present King, when Duke of York, visited Melbourne, at a distance of 15 miles. There is a Jenvey text-book on telegraphy which is still a standard work.

The death is also reported of Mr. George W. Lorimer, inventor of the Automatic Telephone dialling system, which occurred at his home in Tray, Ohio.

*Retirement.*—By an unforgiveable oversight of the writer's the retirement of Mr. J. Rist, of the Cable Room, C.T.O., was omitted from last month's issue. Mr. Rist was one of the Submarine Telegraph Company's Staff transferred to the Post Office service when the Company was transferred to State control. There were men more clever, more brilliant than "Jack," but it would be difficult to find one who had carried out his humble duties more faithfully than he. Certainly there cannot be a supervising officer of any rank throughout all these forty odd years, but who at some time or other has been unobtrusively aided by Mr. Rist. A long and happy retirement "Jack," is the united wish of all your many old friends and colleagues of all ranks.

*Countries.*—AUSTRALIA.—Captain P. P. Eckersley, before a meeting at the Institution of Radio Engineers, Sydney, recently stated that 90% of the rural population of Australia could be adequately served with broadcasting by employing wavelengths between one and two thousand metres. This, said the lecturer, could be done for a sum not exceeding £65,000 per annum including technical equipment and maintenance. The scheme as adumbrated included the continuance of the present medium-wave stations, and the erection of eight new stations.

According to the *Electrical Review* in its issue of the 9th ult, Mr. H. P. Brown, Director of Postal Services, commenting on the Eckersley proposals for new broadcasting stations on longer wavelengths, said that there was no intention of altering the existing wavelengths. It is further understood that a substantial amount has been allocated in the Commonwealth estimates for the current year for the development of broadcasting services. It may be recalled that the plan of 1929 estimated a sum of no less than £750,000 to give a satisfactory service to 95% of the population.

The Captain seem to have replied somewhat tartly to Mr. Brown's comments, for he is reported to have said that it was evident that it was not proposed to do anything to improve the Australian broadcasting system—a system which was obsolescent and badly planned. He (the Captain) was, however, not surprised at the attitude taken up, since it agreed with his views that Government Departments were quite unfitted to run the broadcasting services. Only one inference could be drawn from Mr. Brown's attitude, added the gallant officer, namely, that he

(Mr. Brown) did not agree that a long-wave technique would be beneficial to the Australian country listener. In effect this meant that Mr. Brown and his advisors disagreed with the views firmly held by the thirty odd technicians responsible for all European broadcasting with its millions and millions of people. "There, dear readers," as the novelists say when they have brought the hero and heroine together on the last page, and do not know what to do with them, "we must leave them!" *Wireless Licences.*—There was an increase of 37,967 licences in the Commonwealth at the end of June last as compared with June 30 last year. There were increases in all the States.

FRANCE.—*Interference.*—The mayor of Montereau must surely be a wireless enthusiast, one will not say "fan." This dignitary has issued extremely strict orders, the disobedience of which is to be followed with severe penalties. This with a view to the non-disturbance of the ether during broadcasting periods. All owners of electrical machines, commercial or domestic, are required to have certain apparatus suitably attached to the same, which apparatus must ensure complete quietude for the listeners-in! No housewife, for instance, may use an electrically-driven vacuum cleaner, or floor-polishing machine after mid-day, unless fitted with an approved anti-interference shield!

GREAT BRITAIN.—The Institute of Wireless Technology was registered here in London on Aug. 8 last, as a company limited by guarantee without share capital and with not more than 1,000 members. Its management will be vested in a council and its object is the promotion of the general advancement of wireless technology.

HOLLAND.—An official statement, says *World Radio*, shows that at the end of June last there were 291,926 registered receiving sets in Holland. Receiving installations on the communal principle were shared by 256,464 people. The proportion of listeners to the population is 6.9 for 1,000. No licence is necessary for a receiving set in Holland, and registration cannot be enforced.

INDIA.—There was an exchange of congratulatory messages on July 1 last between the chairman of the Imperial and International Communications Ltd. and the Indian Radio and Cable Communications Ltd. (the latter is the title by which the new merger will be known in future). This was the date previously arranged by agreement for the merger of the Eastern Telegraph Co. with the Indian Radio Telegraph Co. Both gentlemen expressed the hope that now that the two systems had been brought together under one management and control, the future of the Company would justify the most sanguine expectations. *Wireless Progress in India.*—The following is an epitomised report of progress made in India during a period of twelve months or a little more:—The direction-finding stations at Gaya, New Delhi, and Allahabad were completed and those at Tollygunge, a suburb of Calcutta, and at Bonington in the Andaman Islands, were nearly so. Short-wave communication established experimentally Calcutta and Bangkok. Short-wave working established between Madras and Colombo, which now gives valuable assistance when normal service interrupted. Eleven stations completely modernised with good results. Three entirely new stations completed—two for civil aviation. Five more in progress of construction for same purpose, thus making possible international air-route across India and Burma.

ITALY.—A new submarine telephone cable is at the moment of writing in process of being laid between Terranova (Sardinia) and Fuimicino on the Italian mainland. The cable is about 150 miles long and in some places is laid at a depth of more than 3,000 feet. The Italian end will be connected direct to the Rome Central Exchange, and at the Sardinian end with the Sassari Exchange. A new 20-kw. broadcasting station was also put into service, during the second week of last month, at Bari. This station will later be linked with other Italian stations and is intended to serve chiefly the region of Apulia, Calabria, and Southern Italy.

JAPAN.—The erection of a number of new broadcasting stations is in contemplation by the Japanese authorities.

PORTUGUESE EAST AFRICA.—A proposed law issued in Lourenço Marques provides that no wireless set may be operated without a licence. Receiving sets will receive licences free of charge, but transmitters will pay a fee. A clause states that immediately the Government installs broadcasting services, owners of wireless sets will be obliged to pay charges and observe the conditions which will then be laid down.

SCOTLAND.—Probably before these lines reach the eyes of our readers, the new B.B.C. Scottish National transmitter, working on a wavelength of 288.5 metres will be in complete operation, and a full service available for this current month.

SOUTH AFRICA.—*The South African Post and Telegraphs Herald* informs us that, "A Railway, Postal, Telegraph, and Telephone Commission has been set up and is now considering the overlapping in the telegraph and telephone services of the Railway Administration and the Post Office." The Commission is composed of two M.P.'s, Messrs. P. V. Pocock and J. T. F. Naude, with Mr. J. R. Leisk—chairman of one of the branches of Barclay's Bank—as chairman of the Commission. The Post Office Receipts for the three months ended June 30 last were £973,755, and Issues £713,000. The figures for the corresponding period last year were £1,090,777 and Issues £780,000.

SPAIN.—Over 600 delegates who represented 125 independent and self-governing countries met in Madrid at the beginning of last month, when, actually the conference was divided into two simultaneous gatherings. The Spanish Prime Minister inaugurated the proceedings by welcoming the hundreds of representatives, including twelve Russian delegates who represented Soviet Russia. This is the first occasion since the Great War that Russia has been so amply represented at an International Conference of this kind. The Telegraph Section is to deal with the revision of the Saint Petersburg agreement of 1875—itself considerably modified since that date and as recently as 1926 in Berlin. The radio-telegraph section will make an attempt to bring the Washington Agreement of 1927 more into line with the swiftly advancing needs of radio developments.

A most worthy effort is to be made to co-ordinate telephone and telegraph communication by land and by the ether. In brief, it is an international attempt to harmonise international communications. With some small personal experience of international Conferences covering very much smaller agenda than that now before the several hundreds of delegates, and with the comparatively ample time to examine the pros and cons in fourteen days, one may perhaps be permitted to express the opinion that with as reported by a reliable Madrid correspondent, "Over 4,000 questions for discussion, and every technical, economic, and social aspect of the operation of radio, telegraph, or telephone to be examined," and one may add, several hundred potential speakers, the two months allotted for discussion is likely to prove all too short! In any case, *bonne chance!* Since writing the above, news comes through the "Exchange" Agency that, "A deadlock has occurred at the Radio Conference in Madrid on the question of allocating wavelengths."

TURKEY.—*Present-day Communications.*—A report recently issued by the British Department of Overseas Trade on the economic conditions in Turkey, gives the following information, among other matters regarding telegraphic, telephonic and radio activities. Wireless telephony is non-existent in Turkey. Ordinary telephone services are in operation between official administrations in all towns. Public services are available in Aukara, Istanbul, and Izmir, and between Istanbul—Yalova, Yalova—Eskisehir, and Edirne—Istanbul. Communication has been established between Istanbul and Sofia, Budapest, Bucharest, and Salonica. Tests have been made with London, Paris, and Geneva. Cable telegraph services are administered by the State except those of the State railways and concessionary companies and the Eastern Telegraph Co.'s submarine services between Istanbul and Odessa, Syra, Izmir, Tenedos, Chios, and Lemnos. Commercial radio-telegraph stations administered by the State operate at Ankara and Istanbul at both

of which towns there are also broadcasting stations for entertainment purposes.

**U.S.A.—New Radio Rule.**—The Federal Radio Commission has made a new and rigid rule that no broadcasting station in the country is to deviate more than fifty cycles from the frequencies assigned to it. Formerly no less than 500 cycles were permissible! **Broadcasting.**—The *Electrical Review* informs us that according to the latest figures there are 607 licensed radio broadcasting stations in use in the U.S.A. "which are so situated that in 46% of the country there is good reception at night and 56.2% in the daytime. On a population basis good reception is possible to 89.6% at night, and to 94% in daylight. The investments in the industry totalled \$48,000,000 in 1931, in which year the receipts were nearly \$78,000,000 gross.

It is computed that the number of broadcast radio receiving sets in use in America totals seventeen millions. The International Broadcasting Union at Geneva computes that there are 26 million radio receivers in the entire world. The American figures of 17 million can scarcely be correct if the Geneva figures are accurate, for there are nearly ten million receiving licences held in Great Britain and Germany alone. The Swiss authorities further declare that listeners to the extent of 10,000,000 are being added annually! **New Stations.**—Several new transmitters are being built with greater power, the trend being towards the maximum of 50-kw. allowed by the Federal Radio Commission. Tests are being made with even greater power. The new stations in course of erection are at Washington, New York, Minneapolis, St. Paul, and Nashville (Tennessee).

**The Magic Box.**—I don't know any product of engineering more efficient than that magic box . . . always ready for service, and when you tire of it you have only to switch it off! Do you ever reflect, when you pick and choose among the multitude of airs and voices, or shut out all of them, that they are still there, physically present, individual, distinct, crowding yet not interfering, besetting you though you do not perceive them, silent until *you* determine that one or the other shall catch your ear? Go where you will, to the ocean, the wilderness, or the Pole, you cannot escape that vast company of attendants; they come to you unheard, unseen, from every quarter of the globe with a swiftness no other messengers approach. Is any fairy tale so strange as that reality?—"Broadcasting."—Sir Alfred Ewing, President, British Association. J. J. T.

## RETIREMENT OF BENJAMIN WAITE, O.B.E.

BENJAMIN WAITE was born at Huddersfield and educated at the Grammar School, Fartown, near that place.

He entered the service of the National Telephone Co., Ltd., as an Inspector at Huddersfield on Aug. 26, 1887, at a time when telephones were little known, but which were destined to become one of the most important factors in commercial life. At that time an Inspector's duty consisted of doing instrument work by day and office work by night. His capacity for administrative work was very soon recognised. In 1891 he was appointed as Local Manager at Blackburn, and two years later became District Manager in the same district. A year later he was appointed as District Manager in the Eastern Counties which, at that time, covered an area of the greater part of five Counties, and comprised a territory reaching from the Wash to the Thames.

In May, 1903, Mr. Waite was transferred as District Manager to the Cardiff District. From the latter part of 1910 until the early part of 1912 he was detailed for special duty in connexion with the inventory and valuation of plant to be taken over by the State. With the amalgamation of the Swansea District with Cardiff in the early part of 1925, he has since had the control of the whole of the South Wales District.

During his long career Mr. Waite has seen many changes and rapid development and, at the end of his official career, has the



MR. BENJAMIN WAITE, O.B.E.

satisfaction of seeing the results of the foundations laid during the time he was a pioneer.

Mr. Waite has always been enthusiastic in the welfare of the staff under his control, both educationally and socially.

For many years Mr. Waite has interested himself in the District Managers' Committee, performing the duties of Secretary to that body.

He has just those qualities of helping and guiding those under him which make for true progress. Always cheerful and optimistic, even under trying circumstances, he has won the esteem and confidence, not only of his own staff, but that of the public generally.

On Aug. 26 this year he concluded a long service of 45 years and has richly earned the relaxation which comes to him on his retirement.

## SCOTLAND (WESTERN DISTRICT) NOTES.

On Aug. 19, 1932, Miss J. N. W. McGill, Writing Assistant, resigned from the service on the occasion of her approaching marriage. Miss McGill, who was very popular with all members of the staff, was presented with a music cabinet as a token of appreciation from the staff. In the absence of the District Manager (on annual leave), Mr. Dunn, Staff Officer, made the presentation in a short but racy speech. Miss Paterson, Fees Supervisor, also spoke in glowing terms of Miss McGill's work.

On Aug. 31, 1932, Miss M. C. Macdonald, Clerical Officer, resigned from the service for private reasons. Before leaving, however, she was presented by the staff with a few tokens of appreciation to mark her retiral from the service.

As a staff we congratulate Miss M. G. Murray on her promotion from the class of Writing Assistant to that of Clerical Officer.

We also welcome to our midst Miss McLay, Clerical Officer, Preston, who has been transferred to a similar post in this office.

## THE POST OFFICE TELEPHONE SERVICE FROM DIFFERENT POINTS OF VIEW.

I.—A BRIEF SURVEY OF PRE-TRANSFER DAYS. BY ONE OF THE ORIGINAL TRAFFIC OFFICERS.

THE telephone service now plays so important a part in the business of the Post Office that it may not be without interest to recall its modest beginnings. After Graham Bell's invention, the Post Office was not slow in entering the telephone field. In the early "80's," it opened a number of exchanges mainly in the colliery districts of the North East of England and South Wales, and if it had been given a free hand at this early stage of telephone development the history of the telephone service of this country would probably have been happier than it is. Political considerations, however, which it is needless to enter upon here, made the effort short-lived, and for a period of 15 years or so, until the embargo on its activities was relaxed, the Department did no more than hold on, rather grimly and none too successfully, to its exchanges, which were fairly numerous but were, with one or two exceptions, small. Some of the exchanges were isolated but, generally speaking, the exchanges, so far as they were grouped, were inter-connected by trunk lines. There was no public call office service for some years and the use of the trunk lines was obtainable only on the payment of an annual subscription. The exchange business in those days was, in fact, so small and unimportant that the administration of it was not regarded as worthy of special mention in the organisation of the Secretary's Office. The work was carried on as part of the duties of the Private Wire Section of the Telegraph Branch and it can be correctly inferred from this arrangement that private wires at that time were officially regarded as more important than the telephone exchanges. Many extensive private wires existed throughout the country, such as those of the United Alkali Company in Northumberland and Durham and the Salt Union in Cheshire, the instrument generally used being the Wheatstone A B C, but it is probable that, with the general extension of the public service, the private wire systems have either disappeared or been much reduced in size, and, of a certainty, the A B C's have vanished. A detailed record of all contracts for private wires and exchange lines was kept in the Private Wire Section and this record was regarded with the veneration and given the care accorded to the book-keeping of a commercial company. The Treasury at that time had no love for the private wire and exchange business of the Post Office and any new contract which involved an expenditure of £100 or more had to receive its precedent approval, an arrangement which usually involved much delay and at times resulted in the loss of a contract. Canvassing for new business was explicitly forbidden and it is little wonder that, in the face of the competition of the National Telephone Company, the exchanges drooped and some became extinct.

In these early days the Engineering Branch had a much wider responsibility in respect to the telephone service than it has now. Sorting clerks and telegraphists operated the exchanges, but the engineers were responsible for all other practical aspects of the service. The design of the switchboards was left entirely to them, they prepared the operating instructions and saw to the training of the staff, and later, after the transfer of the trunk lines in 1896, were provided with and scrutinised the traffic returns, prepared the annual programmes of new construction and generally acted as Traffic Managers.

The exchange service, small and inoffensive though it was, was not without its critics, not so much as regards its quality, but as regards its very existence, for there was a school of thought in those days, just as in later times, which objected to the Post

Office having anything to do with the industry. The most persistent of these critics was a Member of Parliament who formed a disagreeable habit of calling for returns of various kinds, which the Post Office could not refuse to provide. The returns were rather disconcerting because they unveiled the anaemic state of the service, but the seeker after information seemed to be satisfied with causing some trouble, because he made little use of the returns.

The transfer of the trunk lines of the National Telephone Company to the Post Office in 1896 brought new life to the Department's telephone activities and a further impetus was given two years later by the report of a House of Commons Committee, which favoured active competition with the National Telephone Company on the part of the Post Office and of municipalities. As the result of that report, a Post Office exchange service was launched in London, the first exchange (Central) being opened in March, 1902. This reversal of political opinion came too late for the rescue of the original Post Office exchanges, which continued to lead an enfeebled existence until they were merged in the unified system when the Post Office took over the Company's undertaking in 1912; but in the intervening years until the transfer, the Post Office did much to extend the telephone service to many parts of the country which the National Telephone Company had not served, whilst the Department's new London system progressed by leaps and bounds.

## THE POST OFFICE TELEPHONE AND TELEGRAPH SOCIETY OF LONDON.

SESSION 1932-1933.

AN interesting and varied programme has been arranged by this Society for the forthcoming session. The opening meeting will be held on Monday, Oct. 17, at 5.30 p.m. at the Institute of Electrical Engineers, Victoria Embankment, W.C.2, when Mr. A. J. Waldegrave (Deputy Comptroller and Accountant-General, General Post Office) will read a paper entitled "British and American Telephone Accounts 1931." Mr. F. H. S. Grant (Secretary's Office, General Post Office), the Chairman for the Session, will preside. Prior to the meeting, from 5 p.m. to 5.30 p.m., tea and light refreshments will be provided for members and visitors in a room adjoining the Lecture Hall.

Particulars of the other meetings during the Session are as under:—  
1932.

Nov. 21, Monday.—"Power and Lighting in Post Office Departments," by Mr. H. C. Gunton (Engineer-in-Chief's Office, General Post Office).

Dec. 19, Monday.—"The Inland Telegraph Service—Maintenance of Instrument Room by the Traffic Staff," by Mr. R. P. Smith (Engineer-in-Chief's Office, General Post Office).

1933.

Jan. 16, Monday.—"A Comparison of Methods used by the Post Office with those used by Business Houses," by Mrs. W. Raphael, B.Sc. (National Institute of Industrial Psychology).

Feb. 20, Monday.—"Sidelights of the Madrid Conference," by Mr. F. W. Phillips (Secretary's Office, General Post Office).

Mar. 20, Monday.—"Interference with Broadcasting," by Col. A. S. Angwin, D.S.O., M.C., T.D. (Engineer-in-Chief's Office, General Post Office).

April 24, Monday.—"Developments in Engineering Construction," by Mr. P. J. Ridd (Engineer-in-Chief's Office, General Post Office).

By permission of the governing bodies, members of this Society may attend meetings of the Post Office Institution of Electrical Engineers, and of the London Telephonists' Society.

All members of the staff of the Post Office are eligible for membership on approval by the Committee. The annual subscription, payable in advance, is 1s. 6d. for women and 2s. 6d. for men. Application for membership should be made to the local agent, or to the Hon. Secretary, Mr. A. J. Wadely, Secretary's Office, General Post Office (North), E.C.1 (National 6321. Extn. 768).



## LIVERPOOL NOTES.

*Telephone and Telegraph Exhibition.*—By the time these notes are in the hands of the printers, a very successful telephone and telegraph exhibition will have closed. This was the Telephone and Telegraph Demonstration set up by the Liverpool engineering staff at the Bon Marché, one of the leading stores of the city.

The Post Office despatched 15,000 invitations and the Bon Marché 30,000, and the show was still further advertised by the telephone, telegraph and engineering staffs, who told their friends and business acquaintances all about it. The exhibition took the imagination of the Press, and both national and local newspapers gave it wide publicity. During the three weeks the demonstration was visited by representatives of most of the papers and their photographers, resulting in photographs and news paragraphs being sent to all parts of the country. About 50,000 people responded to this publicity.

The Exhibition was opened by Mr. Graham White, Assistant Postmaster-General, on Aug. 29, when a talk to the captain of the *Empress of Britain* was arranged. The liner was then 700 miles out at sea on her way to Quebec. This talk was broadcast by means of a loud-speaker to those present—approximately 500.

Talks to ships at sea was one of the "star turns" and gave much pleasure to a large number of people—old and young. For instance, an elderly lady had a talk with her daughter who was on her way to Canada. Another time a little boy spoke to his dad. Other interesting talks also took place.

There were plenty of interesting engineering exhibits. Amongst those that attracted most attention were 7-digit auto racks and equipment, 2-motion selector with dial fitted for use of public and demonstration, radio interferences and how to get rid of them, voice frequency indicator, 1,000-mile talk, submarine and other cables and model of a manhole. It was surprising the interest taken in the latter. The exhibition had its own telephone service.

A  $\frac{10+30}{65}$  C.B. P.B.X. switchboard was fitted with three junctions to a public exchange and 22 extensions to various parts of the exhibition, and a tie line to a  $\frac{2+4}{6}$  cordless P.B.X. To the cordless board there were four extensions working—one extension with a Plan 7A working off and another with a Plan 1A.

In addition to the above, two No. 3 kiosks were erected and connected to an exchange. Free local calls were allowed. These proved very popular and were another way of advertising the "show." A very busy demonstrator was the lady who showed the public when and how to press button A or B.

"Star turn No. 2" was the souvenir telegram. Two 3A teleprinters were on view and hundreds of souvenir telegrams were sent daily. This modern way of sending telegrams was not only instructive but amusing to all. Close by were the older types of telegraph instruments, Baudot, Morse, keys and sounders, and Wheatstone transmitter and receiver. The latter caused considerable interest amongst the younger generation.

"Star Turn No. 3"—Telex. Two 7A teleprinters were joined up to the Exhibition switchboard and practical demonstrations of the "Telex" service were given. This side of the exhibition created great interest among the representatives of business firms and no doubt orders for this latest service will result. Last but not least—"Handy." Contract Officers were employed at this stall and the results have been good. Several agreements were taken for exchange lines and extensions, whilst over 50 orders for hand micro telephones were obtained. In addition to those actually "signed up," plenty of names and addresses were obtained from visitors who were interested. These will be followed up in due course. It is thought that everyone went away with the impression that they have seen a good show and that the Post Office servants are really "civil" servants.

A few days before the Exhibition closed the staff attended a dinner and dance at the Bear's Paw Restaurant. Mr. J. E. Brennan (Assistant Superintendent, Telegraphs) occupied the chair. Mr. H. M. Turner, who was responsible for the installing of the exhibits, was the guest of the evening. It was unanimously agreed that the evening was a great success. Arrangements for the social evening were carried out by Lieutenant R. Jackson (Engineering Branch), and to him we extend our hearty thanks.

*Presentation to Mr. S. J. Swinnerton.*—On Saturday, Sept. 3, a presentation was made to Mr. Swinnerton, Traffic Superintendent, Class I, on the occasion of his transfer to Newcastle-on-Tyne. In the absence of the District Manager on leave, Mr. Davidson, Traffic Superintendent, Class II, took the chair and ably performed the duty of "Master of Ceremonies." After introducing Mr. Swinnerton's successor (Mr. Gregory), welcoming him to the District and assuring him of the loyal support of the Traffic staff, Mr. Davidson spoke of Mr. Swinnerton as he had known him in the business sense, always finding him very just and fair in his dealings with his staff, but stating that, really to know Mr. Swinnerton, one must meet him socially. On behalf of the staff he presented Mr. Swinnerton with a beautiful solid silver cigarette box, suitably inscribed, a leather case, and fountain pen and pencil. Mr. Carroll then spoke endorsing all that had been said. Mr. Green and Major Wilson, on behalf of the A.T.S.'s, testified to the general regard in which Mr. Swinnerton was held, while Mr. McBride and Mr. Tomlinson spoke for the male clerical staff, and Miss Camidge for the female staff. Each speech was very fitting

and expressed genuine regret at losing Mr. Swinnerton as our "Head." Mr. Gregory said that in his short acquaintance with Mr. Swinnerton he had been able to realise what a difficult task lay before him in filling his place, but felt assured that the staff would continue to give of their best to him, as he would certainly do all in his power for them.

Mr. Swinnerton, to whom this event signified the termination of 41 years' service in Liverpool, including 18 years in the Liverpool Traffic Office, was deeply moved and at first found it difficult to reply. He expressed regret at leaving but would treasure the gifts very much and remember always the happy times spent in the Liverpool District. He thanked all the staff for their loyal support, and in conclusion invited them to be his guests at a dinner which is to take place in November. We understand that Mr. Swinnerton was also the recipient of a smoker's cabinet from the staffs of the Wirral exchanges.

The Liverpool telephone staffs wish Mr. Swinnerton good luck and good health and hope that he will be very comfortable in his new District.

*Appointment of Mr. J. A. W. Gregory to Liverpool.*—We desire to extend a hearty welcome to Mr. J. A. W. Gregory on his appointment to the post of Traffic Superintendent, Class I, at Liverpool. Mr. Gregory returns to the North after four years in the Brighton District, and although, in deference to our Brighton colleagues, we dare hardly express the hope that he will find the change of town and countryside congenial, we feel sure that he will find ample compensation in his new and extended sphere and wider responsibilities. We hope that he will be very happy in Liverpool.

*Amateur T.T. Races.*—The ever popular Grand Prix Motor Cycle races were held in the Isle of Man on Sept. 6 and 8.

There were record entries for both the junior and senior events and although the weather on the occasion of the latter race was such as to convert the dry cells to those of the wet variety and to damp the woolliest vests, hearts beat strongly and great enthusiasm prevailed throughout both of these thrilling races.

The telephone again played a very important part in maintaining contact with strategic points of the course. In addition, reports and results were passed from telephones fitted on the grand stand to the mainland.

Such messages were voiced to the accompaniment of the roar of motor cycles hurtling along at 100 miles per hour, the blare of loud-speakers and the excited yells of some hundreds of spectators—yet the reports "got there" and appeared in the newspapers in an incredibly short space of time.

The staff at the Douglas Exchange took the strain in its usual efficient manner and recorded yet another successful handling of race traffic.

We are pleased to have received a note of thanks from the Press Steward, who is responsible for the welfare of the Press representatives.

*Telex Service.*—There has been much activity here in connexion with the Telex service. Three official circuits have been working for the past two months and the first subscriber was joined up on Sept. 15, within 24 hours of signing the agreement.

A Telex demonstration room equipped with Telex instruments and P.B.X. switchboards has now been opened at the Head Post Office, and it is anticipated that the demonstrations which will be given there will induce many firms to subscribe to the Telex service.

*Demand Trunk System.*—Arrangements have been made for a lantern lecture on the demand trunk service to be given on Oct. 4, in the Hall in the India Building, which at present houses the District Manager's offices. The lecturer will be Mr. J. F. Darby of the Headquarters Traffic Section whose papers on the demand system appeared in the July and August numbers of the *Journal*, and the event is being awaited with keen interest by all sections of the staff.

## NEWCASTLE-ON-TYNE NOTES.

*Retirement of Mr. J. T. Bramwell.*—When Mr. J. T. Bramwell, Asst. Supt. Engineer, Northern District, retired on Aug. 31, after 46 years' service, he left with the general and genuine regret of the staff.

At a gathering of the staff on Aug. 31, 1932, Mr. F. G. C. Baldwin, Superintending Engineer, on behalf of the members, presented Mr. Bramwell with a first-grade camera as a token of their affection and esteem and wished him happiness in his retirement.

Mr. Bramwell was a man of great charm and lofty ideals. He was deeply religious, conscientious and capable.

One never heard him condemn an officer who erred or strayed and one never appealed to him for advice or assistance in vain. He reached great heights in the organisation and work in connexion with the Newcastle Automatic Transfer and spared absolutely no efforts to make the scheme a success. Its smooth working to-day is all the reward he would desire.

The Engineering Department has lost the services of a Christian gentleman whose name and conduct will be remembered and respected in the Northern District in days to come.

J. L.

## UP-TO-DATE PUBLIC TELEPHONE FACILITIES.

So far as the Newcastle-on-Tyne district is concerned, a new departure in providing the public with telephone facilities has recently been introduced.

The café manager in one of the large local stores was desirous of an arrangement whereby exchange service could be afforded at each of the tables in the café at the minimum cost.

The requirements were met by fitting an ordinary table set extension line from the Private Branch Exchange to the cash desk. From this extension 24 sockets were connected in parallel in different parts of the café. A portable H.M.T. with a plug-ended 15 ft. cord was rented in addition.

By this means it is possible for the H.M.T. to be placed on any of the 110 tables in the café for the use of patrons as required, and, although only one conversation can be had at a time, no difficulty has been experienced in this respect.

Before the socket arrangement was introduced, café users made their telephone calls from an extension to a cabinet in the café. It is interesting to note that the new arrangement has so far found favour with the café patrons as to increase the exchange calling rate on this extension by approximately 500%.

Another point of interest is that, although the cabinet (in which a socket is now fitted) still remains in the café, the public seem to prefer using the H.M.T. from their own particular table. This may, of course, be somewhat due to the novelty of the new idea, but there is reason to believe that the innovation is appreciated by business men who are regular patrons of the café, and the stores in question are now considering a similar extension in their café in Sunderland.

A local hairdresser has since adopted a similar arrangement on a smaller scale to enable the telephone to be extended to each chair in his saloon for the use of customers.

In neither case is a coin box fitted, the subscribers being responsible for collection of the appropriate call office charges.

R. G. R.

## BIRMINGHAM NOTES.

*Promotion.*—We heartily congratulate Mr. A. K. Murray, late Contract Manager at Birmingham, on his promotion to Headquarters as Acting Assistant Controller of Sales and Publicity.

In connexion with his departure from Birmingham, a representative gathering assembled in the District Office on Sept. 9 to say "good-bye" to Mr. Murray and to present him with a token of their high esteem in the form of a handsome gold wristlet watch.

The District Manager, Mr. J. L. Parry, opening the proceedings, congratulated Mr. Murray on his well-earned promotion, but deplored the loss that it entailed to Birmingham. Mr. Murray entered the Post Office service in Glasgow in 1896, and then in 1907 he became Contract Manager at Hull, where he had to meet the competition of the Hull Corporation Telephones. In 1914 he was appointed to Birmingham as Contract Manager and has remained here since that date. An instance of Mr. Murray's high value to the Contract Department is that on his arrival at Birmingham he forecasted the 20 years' development of Birmingham as 50,000, a figure that was, in certain quarters, considered impossibly high. How keen his judgment was, however, is proved by the fact that in 1914 the number of stations in Birmingham was 20,000—it is now 73,000. A fitting tribute indeed.

Mr. Parry spoke of the deep regret that was felt at Mr. Murray's departure by all who had been associated with him. He had, he said, been not only an officer of more than usual ability but had also been a true friend to many. Our late Contract Manager was leaving his mark in Birmingham in the splendid manner in which he had trained and advised his staff. He has endowed them with his "native wit," said Mr. Parry.

After Mr. Caine, Mr. Davis and Mr. Piggott had spoken, Mr. Parry asked the Postmaster-Surveyor, Mr. Baines, to present the wristlet watch. Mr. Baines spoke to some length of Mr. Murray's high qualities and expressed the hope that every success would attend him in his new sphere of activity.

In a somewhat humorous and well-spoken reply, Mr. Murray thanked everybody for the gift and for their good wishes. He can be assured that he carries with him the best wishes of the whole of the Birmingham staff.

Later in the evening a smoking concert was held at the White Horse Hotel by the Birmingham Contract Department Staff to celebrate Mr. Murray's promotion. Mr. J. L. Parry took the chair, and an excellent programme was provided by members of the contract staff. The concert, in fact, was such a huge success that it is proposed to hold further concerts during the winter months.

*Our New Contract Manager.*—Mr. F. C. Taylor, late Contract Manager, Guildford, took up his duties as Contract Manager here on Aug. 6. We extend him a hearty welcome and hope that he will be very happy with us.

*Birmingham Automatic Scheme.*—On Aug. 20 the Ashfield Exchange was converted to automatic working as an extension of the Birmingham automatic area. Ashfield was previously working hypothetically on Erdington magneto exchange but it was enlarged at the transfer by the addition of components from Sutton Coldfield and Castle Bromwich for area correction purposes. The transfer was effected without any unusual difficulties and a service inspection undertaken shortly afterwards proved that the new plant was giving excellent service and that subscribers were well satisfied with the new conditions.

There are now 13 automatic exchanges in the Birmingham automatic area out of a total of 38 that comprise the automatic scheme. These 13 exchanges serve a total of about 10,200 lines, or about 28% of the total lines in the director area. During the last three months of this year, several more transfers are to be effected and by the end of the year the percentage of automatic lines in the director area will have risen to nearly 40, an achievement of which Birmingham will be justly proud.

*Appreciation.*—The following is an extract from a Birmingham subscriber's letter.

" . . . also I should like to say that during the three years I have been at —, not once have I been given a wrong number or been kept waiting by the local exchange."

We have many more unsolicited testimonials that prove the high value of our products, but we are too modest to publish them. After all we get paid for it—or don't we?

*Cricket.*—The District Manager's Office Cricket Club finished their season a few weeks ago. The season has been very enjoyable and many good games have been played. They are looking forward to meeting some of their recent opponents again next year. I believe they won a match once but owing to the absence of reliable information concerning their recent movements I am unable to give further details.

*Swimming.*—We again have to congratulate Miss Norah Wall, of Central Exchange, on her magnificent swimming achievements. On Aug. 2 she won the 440 yds. 3 Star, Midland Counties Championship and on Sept. 5 she won the 220 yds. Staffordshire Breast-stroke championship. She seems to be able to beat anybody with any sort of stroke. We firmly believe that even higher honours in the swimming world are coming her way.

The 16th annual sports of the Birmingham Post Office Swimming Club were held at Woodcock Street Baths on Sept. 10. There was a large and representative attendance. The 100 yds. Civil Service Championship for the Creedy Challenge Cup was won by Miss J. H. McDowall, of the Ministry of Transport, Edinburgh. The holder, Miss N. Wall, of Birmingham Post Office, was second. The winner's time of 66½ seconds constituted a record, the previous best being 74½ seconds. Miss Wall was also well inside the record.

The Birmingham Area, Civil Service Sports Association Championship Shield Team Race was won by the P.O. Engineering Department.

## GLASGOW DISTRICT NOTES.

OUR photograph is of Mr. Frank Lucas, Sales Manager of the Glasgow Telephone District.

Mr. Lucas has an optimistic philosophy which he has expressed as follows:—

“To-day is the to-morrow that you worried about yesterday, and all is well.”



MR. FRANK LUCAS.

*Resignations on Account of Marriage.*—Miss M. R. N. Letham, Trunk Exchange; Miss M. E. Colquhoun, Scotstoun Exchange; Miss D. M. Morley, Baillieston Exchange.

*On Women.*—A daughter of Eve, for such was widow Wadman, and 'tis all the character I intend to give of her.—(Tristram Shandy.)

There is an exceedingly able body of women among my staff, and if the standard of the average woman is below that of the average man it would be foolish to expect more from what so far can only be regarded as in the nature of an experiment. And the fact that the women are working with the men somewhat redresses the balance, and economically speaking, much better work is obtained from them than would otherwise have been the case. I am not conceited, but I think it is an advantage to women to come into contact with men's standards of work. Women clerks have the defects of their qualities, and while they are unrivalled in their conscientious devotion to duty and to the rigid carrying out of rules and regulations, they are frequently wanting in the inspiration which should tell them when the application of the rule or regulation defeats the end for which it was made. There are men also like this but in fewer numbers.—(St. Martin's-le-Grand Magazine.)

Comparing the relative efficiency of the sexes in Civil Service work, Sir Warren Fisher said that the average man was better than the average woman. In the future, however, the position might be reversed. Sir Warren contended that he could see no objection, for instance, to the appointment of women diplomats in countries where women were treated with courtesy and civility.—(Press report.)

It is probable that a larger percentage of women than of men might lose something that is a valuable element in their personality by the corrupting or hardening effect that business life has on some natures.—(Bligh.)

It is somewhere officially recorded, “There is only one man who knew with accurate certainty what a maiden's next attitude would be, and he died young of surprise.”—(Kong Ho.)

The dispositions of women run, regular, to diversions. She wants more of a thing when it's scarce. She likes to have souvenirs of things that never happened. She likes to be reminded of things she never heard of. A one-sided

view of objects is disjuncting to the female composition. . . . Women are the natural enemies of clocks and, therefore, the allies of those who would seek liberation from those monsters that limit our pleasures.—(O. Henry.)

Women are not, indeed, suffered to dispute with us the proud prizes of arts and sciences, of learning and eloquence, in which I have much suspicion they would often prove our superiors; but we turn them over to the study of beauty and dress, and the whole world conspires to make them think of nothing else. Fathers and mothers, friends and relations, seem to have no other wish towards the little girl, but that she may have a fair skin, a fine shape, dress well and dance to admiration.—(“The Serious Call.”)

There's rummer things than women in this world, though, mind you.—(The Man with the Black Eye.—Pickwick.)

## LEEDS DISTRICT NOTES.

THE District Manager, accompanied by Mrs. Murray, represented the Department at a very interesting function on Sept. 17; the occasion being the opening of Lewis's Yorkshire Store by the Lord Mayor of Leeds. The building of this super store, which is stated to occupy a greater ground area than any store outside London, has been a source of great interest to the people of Leeds during the past year, but even more vital has been the interest of the various contractors, including the Post Office telephones, in co-ordinating their various activities while working against time to produce the finished article by the scheduled date. Much credit is due to the Engineering Department for the way in which they tackled the job of wiring the huge building and installing the 4-position private branch switchboard under conditions of apparent chaos, and Lewis's were not slow to express their appreciation of the way in which the work had been carried out. The initial installation consists of 140 stations, a tidy windfall in these days when intensive effort is still required to keep the new lines ahead of the cessations.

The Traffic Section has again been to the fore in providing candidates for the matrimonial stakes, and a double presentation was staged to convey the tangible tokens of the staff's good wishes to Mr. R. F. Bradburn, Asst. Traffic Supt., and Miss E. Turner, Writing Assistant, who were about to set out on the great adventure with their prospective partners. Mr. Bradburn, who has concentrated for some months on the opening of automatic exchanges, apparently also intends that his domestic establishment will have the latest type of equipment, a decision which his colleagues endorsed by presenting him with an electric stove and an electric iron, as well as a suit-case. Miss Turner, whose training in staffing matters and call values will, we hope, prove a useful background for the study of domestic economy and food values, was the recipient of a dinner service and other smaller presents. Mr. Lawrence, Traffic Supt., who made the presentation, eloquently expressed the felicitations of the staff, and Miss Turner and Mr. Bradburn briefly but suitably responded.

Another member of the staff from whom we parted regretfully was Miss A. E. Toulson, Clerical Officer, who left us on Sept. 15 to be married. The best wishes of the District Office staff for her future happiness and prosperity were associated with the presentation of a clock, slipper box and a coffee percolator, as well as a number of other presents from individual colleagues.

During the season which has just closed the Leeds Post Office Cricket Club has played 10 matches, winning 3, losing 5, and drawing the remaining 2 matches. From a playing standpoint the club cannot be said to have had a very successful season, but there was plenty of evidence that several of the younger players are developing, and next season will be approached with the confident hope that it will see Leeds re-established as one of the best Post Office teams in Yorkshire. In the first round of the Yorkshire Postal Cup, Leeds were drawn to meet Sheffield Post Office (the ultimate winners of the competition) at Sheffield. The weather was ideal and Sheffield, winning the toss, ran up a score of 236, to which we could only reply with 96. Still, it was an enjoyable game and Sheffield can be congratulated on putting up a fine all-round performance.

The following extract from a Scale Payment Sub-Postmaster's report was, needless to say, accepted as showing just cause why his “service test” did not reach the approved standard:—

“Re your blue test paper. I can only say that on Wednesday the switchboard was partly undressed most of the day owing to your man appointed being at work to fix up the tackle.”

A call-office caller at Ikley and a part-time telephonist of one year's service contributed to the following dialogue:—

Telephonist: “Your time is up. Will you have another call?”

C.O. Caller: “No, thank you, I haven't finished with this one yet.”

## WESTERN DISTRICT NOTES.

On the afternoon of Thursday, Sept. 8, a lecture was given at the Exeter Head Post Office by Capt. Arnold, of the Engineer-in-Chief's Office, on the new "sub-audio" telegraph circuit between London and the Channel Isles. This circuit is repeated at Exeter and the lecture, which was of an informal nature, was given for the assistance of local telegraph officers, being also attended by the Head Postmaster and Telephone Traffic Officers.

The telephone service recently opened between England and the Channel Isles was made possible by utilising an existing single wire submarine cable between St. Helier (Jersey), Saints Bay (Guernsey) and Dartmouth, on the mainland. By an ingenious arrangement of filters a duplex telegraph circuit has now been superimposed on the same single wire circuit, using the "sub-audio" band of frequencies. The telegraph circuit, when repeated at Exeter, may be "monitored" there by "listening-in" with a teleprinter in either direction.

Capt. Arnold, who carried out the research which made this telegraph circuit possible, reviewed the work carried out from all angles and gave a very interesting and instructive talk.



The above photograph is of the Veryan Exchange and Post Office, the cross-like effect of the shadow of the exchange pole on the roof is curious.

Mr. F. Bate, Assistant Traffic Supt., has been promoted to the rank of Traffic Supt. 11, at Manchester. He will take up his new duties towards the end of October. The Western District has no fears as to what Manchester's opinion will be on one of its products.

The development of rural automatic exchanges is beginning to make the farmers "telephone minded" and telephone topics usually come up on market days. The following conversation was overheard in a small market town in Cornwall recently:—

1st Farmer (non-subscriber): I 'eer you'm on tha' telephone?

2nd Farmer (subscriber): 'Ees, I'm on tha haddeemadick—I gets on purty well wid 'un, but sometimes he makes me sweat.

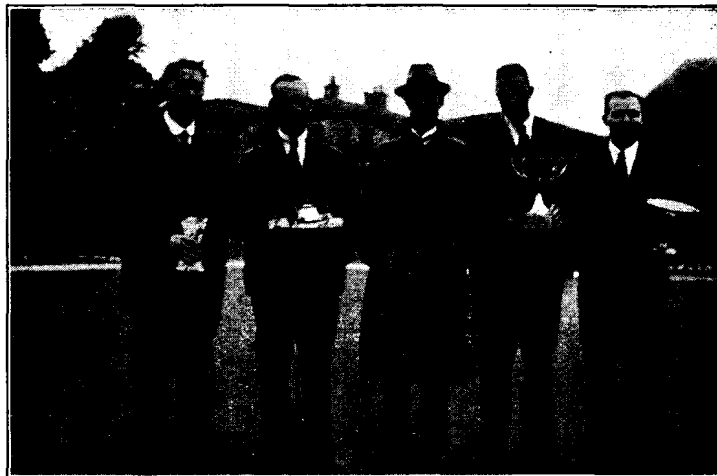
F. J. F.

## NORTH WESTERN DISTRICT NOTES.

*The Cotton Strike.*—The devastating effect of industrial strife upon the telephone service can be plainly seen from the traffic figures now forthcoming from the towns situated in the storm centres. Taking a specific example (Burnley—which is an automatic exchange), it is estimated that, taking into account wages paid for staff not fully employed, and reduced trunk traffic alone, the Department is suffering at that one exchange at the rate of £60 a week. This is a very serious state of affairs when it is realised that for over 12 months unsettled conditions have been slowly strangling trade in all directions. From a traffic point of view, Lancashire conditions are at the present time almost impossible to forecast. On the one hand, we have the pessimists who say that the cotton trade will never recover its lost grandeur and on the other, we have the optimists looking forward to the next golden dawn. We telephone folk are inclined to take the middle path which should wind upward with a varying gradient. The trouble, however, is the steep bits which keep occurring whenever our nery trade magnates feel there is something doing. Full effects of this are felt in the exchange, which can be seen when you have a busy hour calling rate of .10 one day and .16 the next. Economic staffing under these conditions is almost

impossible, and until such time as a measure of stability is forthcoming, we can only hope that the "powers-that-be" at Headquarters will be constrained to refrain from shooting the pianist—he's doing his best.

*Sport.*—The annual bowling tournament for a trophy presented by Alderman Matthew (of Preston) for competition amongst Post Office players, concluded on Thursday, Aug. 18, on the Police Green, Preston. The winner



Mr. Pratt. Mr. Hewitt. Mr. Sunley. Mr. Hodgson. Mr. Hazlewood.  
4th 2nd (Head Postmaster) 1st 3rd

was Mr. F. Hodgson (Telephones), with Mr. J. Hewitt, Mr. J. Hazlewood and Mr. W. J. Pratt runners up. Prizes were presented by the Head Postmaster of Preston (Mr. G. S. Sunley).

*Promotion.*—His late colleagues in the N.W. District desire to offer Mr. J. A. W. Gregory—recently promoted to take charge of the Traffic staff at Liverpool—their hearty congratulations.

## SOUTH WALES NOTES.

In connexion with the retirement of B. Mr. Waite, O.B.E., District Manager, on completion of 45 years' service, a very enjoyable function was held at the Royal Hotel, Cardiff, on Aug. 26, 1932. The date chosen coincided with the completion of Mr. Waite's long period of service.

Mr. C. A. Jackson, Surveyor, presided. Various branches and grades of staff were fully represented amongst the 150 present. No less than 5 presentations were made during the course of the evening, as follows:—Major H. Griffiths (Newport Telephone and Telegraph Advisory Committee), travelling clock; Mr. R. McLarty (District Managers' Committee), table silver; Col. S. H. G. Dainton, O.B.E., and Mr. W. D. Jones (Head Postmasters, Newport and Cardiff), table glass; Mr. H. C. A. White (Surveyor's staff), Queen Anne hot-water jug and sugar sifter; Mr. J. Mills (on behalf of the District Manager's staff and operating staff), supported by Messrs. A. E. Ball, R. S. Grosvenor, A. F. Gammon and Miss Spearing, portable four-valve wireless set and eliminator.

Mr. J. S. Terras, Superintending Engineer, in a supporting speech, referred to the long friendship and happy relations of both himself and the Engineering Department with Mr. Waite.

Notwithstanding the length of the programme the various speeches and musical items were completed without undue haste.

Mr. Waite, in a comprehensive reply, emphasised that his long period of service in Cardiff had been altogether very happy and with much feeling expressed his gratitude at the excellent spirit which prevailed and for the gifts presented to him.

Further expression of the high esteem in which Mr. Waite is held took tangible form on Aug. 28, 1932, when the night telephonists of Cardiff, Swansea, Newport and Barry presented him with a silver cigarette box. This presentation was made at Cardiff Head Post Office, Mr. R. S. Grosvenor, Traffic Superintendent, presiding.

Mr. A. E. Ryland, our new District Manager, took up his duties on Aug. 29, and we take this opportunity of extending to him a warm welcome.

## GUILDFORD DISTRICT NOTES.

*New Post Office and Telephone Exchange for Midhurst.*—Wednesday, Sept. 7, was a great day in the history of Midhurst, that beautiful country town nestling amongst the Sussex hills amidst the most charming surroundings, when the new £11,000 post office and telephone exchange was opened officially.

The parish council, headed by the mace bearer, marched from the Market Square to the new post office, where they were met by Mr. Gayes, Surveyor of the South Western District. Mr. Stedman, the Chairman of the parish council, on being handed the keys of the post office, unlocked the building prior to giving the opening speech. A number of the residents were invited to the ceremony, and after inspecting the building and telephone exchange they were entertained to tea. Mr. Stedman, in his speech, congratulated all the officers responsible for the bringing of the work to its final state of perfection, and pointed out that it added greatly to the amenities already enjoyed by Midhurst. He made special reference to the efficiency and courtesy of the postal and telegraph staffs. Mr. Stedman then sent the first telegram, one of congratulations to the Postmaster-General, originated the first telephone call, and posted the first letter. Other members of the council opened the first savings bank account, purchased the first postal order and Savings Certificate. Mr. Gayes, in his reply, thanked Mr. Stedman for his kind remarks and stated that he was pleased to note the kindly feeling that existed between the Post Office staff and the public.

Subsequently the public were admitted to view the building, and some 350 of the local residents availed themselves of the opportunity.

*Postmasters' (S.W.D.) Cricket Shield Competition, 1932.*—The final match between Guildford Post Office Engineers and District Manager's Staffs and Salisbury P.O. was played at Winchester, on the College Ground, on Tuesday, Aug. 30, and resulted in the Guildford team winning the trophy for the third occasion since they first entered the competition in 1929.

Salisbury won the toss and "went in" first, eventually putting up a score of 82, of which Alford contributed 40. Guildford then batted and replied with 87 for 5—Stewart 29 and Amery 20 not out—stumps then being drawn.

Read (of Salisbury) took 3 wickets at a cost of 17 runs.

The function was brought to a close at 7.30 p.m., when Mr. Dewar, the Head Postmaster of Salisbury, presented the shield to the winners and Mrs. Dewar performed a further kindly action in presenting the medals. Several appreciative speeches were made during the course of the presentation and special reference was made to the untiring work of Mr. Bristow, Head Postmaster of Winchester, who organises the competition so successfully year by year.

*Wedding Bells.*—Miss Gunner, Clerical Officer in the Traffic Branch, left us on Sept. 14 to be married. She was the recipient of a beautiful electric clock, and a case of silver fish knives and forks. After the presentation, she entertained several of her colleagues to tea at the Abbots Kitchen.

We understand that the wedding is to take place shortly and we all wish her the best of luck in her new sphere.

*Transfer.*—Mr. Smith, Acting Contract Officer, has left us for a similar post at Exeter. We trust that his sojourn in the West will be a happy and fruitful one.

*Telephone Staff Meetings.*—Arrangements have been made for a series of telephone staff meetings to be held at several of the larger centres during the coming winter.

## NORWICH DISTRICT NOTES.

THE recently formed Post Office Sports and Social Club at Norwich has aroused considerable enthusiasm in the District Manager's Office, the number of applications for membership to the various branches of sport embraced by the Club being particularly gratifying.

By far the most popular Section, up to the present, has been the Ladies' Cricket Club which, after three evening practices, turned out an eleven against Woodton and Bedingham—a local village team of three years' standing. Ten members of the Team—including the Captain, Miss W. M. Pooley, were from the District Manager's Staff. The Post Office team, although beaten by an innings and 42 runs, did not disgrace themselves and some two or three hundred spectators who watched the match, maintained a keen interest until the fall of the last wicket. The local Press, which was well represented, gave a glowing account of the match the following day, favourably comparing "the stylish over-arm bowling of the Norwich team" with "the under-arm action of their opponents, who bowled in a manner suggestive of another game." The return match played at Woodton on Aug. 17, resulted in another defeat by 25 runs to 12. The Misses Pooley, Kent, and Perowne distinguished

themselves by their bowling, taking 6 for 11, 2 for 11, and 2 for 0 respectively. There was only one wide! There are three outstanding fixtures for this season, to which the ladies are keenly looking forward.



NORWICH P.O.S.C. LADIES' CRICKET XI.

We wish the Sports Club as much success in all their ventures, which up to the present include provision for swimming, cricket, bowls, football, hockey for the ladies, badminton, and tennis. It is also hoped to hold a number of dances during the winter.

## CRICKET.

SECRETARY'S OFFICE, G.P.O. v. ALEXANDRA PARK.

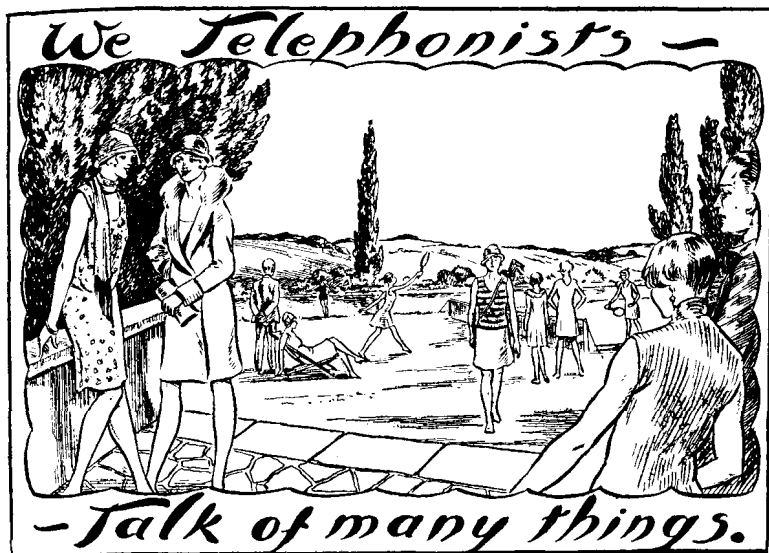
THIS match was played at the Alexandra Palace, London, N., on Thursday, Sept. 1, 1932, on a ground which is probably unique, at least so far as the South of England is concerned. It is set in the middle of a racecourse—"Ally Pally," as it is known to all cockneys with a fondness for "a bob on a horse." The pavilion is also unique, because as the players and spectators approach the ground by means of a footbridge, thrown across the race track as though the latter were a river, they see that the back of the pavilion is decorated (?) in very large letters with the legend "POLICE STATION AND LOCK-UP." Needless to say, on race days there is no cricket and the occupants of the pavilion, or rather that part of it to which the legend relates, are "run in," instead of being "run out."

When the visitors arrived it was raining hard, but their hearts were gladdened by another spectacle not often to be witnessed. That was the sight of half a dozen racecourse employees in mackintoshes and sou'-westers hard at work spraying water on the course from hosepipes. It is apparent that more care and attention can be lavished on the turf of a racecourse than on that of a cricket field. The rain soon ceased and it was possible to commence the match immediately. The home side won the toss and by steady batting compiled 53 before the first wicket fell. The bowling was never really collared and wickets fell at regular intervals. Ultimately the Park declared at 144 for 9, leaving the visitors an hour and a half to get the runs. After the first wicket fell at 13 they never looked like doing it, and when the seventh wicket fell at 18, following a hat trick, an ignominious defeat appeared in store. The light, which had been poor, was getting worse but this did not daunt the "tail end" who carried the score to 70 before the last man was dismissed with the last ball of what would have been the penultimate over, a few minutes before the time for drawing stumps.

Scores:—

Alexandra Park.		Secretary's Office, G.P.O.	
F. G. Cleaver, b. Asplin	... 19	D. Lester, b. Bruce	... 4
C. Mellish, b. Asplin	... 37	F. J. Pearce, b. Warner	... 9
A. H. Warner, b. Pearce	... 19	S. D. Sargent, b. Bruce	... 0
H. Nelson, b. Asplin	... 5	J. W. Powis, b. Bruce	... 4
F. R. Smith, b. Asplin	... 14	N. Ashton, b. Warner	... 0
J. N. Smith, b. Link	... 9	W. Sellars, c. Nelson, b. Warner	... 0
A. Robinson, b. Asplin	... 1	S. G. Asplin, lbw., b. Warner	... 3
C. Howard, lbw., b. Pearce	... 22	D. Nopes, b. Warner	... 1
R. Bruce, b. Pearce	... 7	P. Brearley, st. Mellish, b. Bruce	... 9
E. M. Warner, not out	... 0	J. E. Link, c. Warner, b. North	... 10
C. North, did not bat	... —	W. G. Baldwin, not out	... 19
Extras	... 11	Extras	... 11
Total (for 9 wickets)	... 144	Total	... 70
Innings declared closed.	—		—

For the Secretary's Office Asplin took 5 wickets for 40 runs, Pearce 3 for 30 runs, Link 1 for 26, Ashton none for 16, Sargent none for 15 and Baldwin none for 6.



"London," by H. G. Corner. (The English Heritage Series.—Longmans, 3s. 6d.).—Most of us knew Mr. Corner before his retirement as Superintendent of Traffic (E.S. & S.) and some of us knew of his antiquarian interests. Mr. Corner has produced a book on London. It was said of Mr. Weller that his knowledge of London was extensive and peculiar. The same may be said of Mr. Corner, and it is perhaps because of this that he has written the story of London rather than a history. The facts of history are there but the interest lies in the way they are presented. Mr. Corner can show you a remnant and recreate for you a period. Read Mr. Corner's book and you will appreciate more fully that London is a heritage of which you may justly be proud. May we suggest that there should at least be one copy of the book in each exchange library.

#### The Copper Kettle.

It is a smug, self-righteous looking thing, very superior and very perfect in its placid rotundity. It is uniformly bright and even its bottom fails to reveal any evidence of sordid contact with flame. Its handle is rigid and of a pure curvature and its spout juts out from its portly body in severe rectitude. It is a sullen, unwilling looking beast and would only condescend to give you a grudging service even if you were bold enough to make such an outrageous request. It has an inward brooding appearance as if it were pondering some deep philosophy known only to the most superior of superior copper kettles and quite incapable of being mentioned to, let alone discussed with you. It stands there hour after hour for days and months, silent, aloof, secretive—one of the untouchables. It never sends back a joyous gleam in answer to the cheerful flicker of the fire but only an unemotional reflection. If by chance it forsakes its habitual self-absorption and shows, momentarily, any sort of feeling, its expression is one of contempt for its surroundings and an utter loathing of the common kettle. Occasionally it submits to a process of cleaning and we feel that it regards the process as a devotional service—an act of homage to its greatness. If, in the course of cleaning, it is filled with water and placed over the flame to boil, its singing is more like the hiss of fury, and when it does boil, water and steam are ejected venomously. It is a spoiled pet, a prig and a detestable beast. If I were so far to forget myself it would create an inferiority complex within me. It never gives me a purring cheer of welcome: in fact, it barely gives me even a cold stare. It is not a bit grateful for the shelter I give it, for the place of honour it occupies, or for the care taken of its lifeless, soulless, unresponsive, too-perfect body. It is not a bit "matey" like the tatterdemalion urchin of a picnic kettle. He is a pert, dented, sooted little rascal who sings merrily at an precarious angle and sings equally well for "meta" or for sticks and twigs. His one or two bright spots gleam with a mischievous twinkle and he gurgles when you fill him at the brook. Nor is it like "Old Sukey," who is in the nature of a family retainer—brought out of honoured retirement at times of special occasion: knowing her job well, doing it efficiently without fuss and adding her solid welcome to all who may come. Nor like "Young Sukey," who still exhibits the brightness of youth—she being aluminium. Her cheery bubble and bump and the impatient rattle of her lid are warm and comforting and they make you forget the fog, wet and cold of the outside world.

I should like to kick that copper kettle, but it would be difficult to explain away the resultant dent. Don't squat there staring into the void, you vacuous nunny. You annoy me, you ornamental stupidity. I turn my back upon you. Bah—copper kettle indeed!

PERCY FLAGE.

#### Cruiseuses—An Interview.

Well, I mean, really, it's all nonsense about the absence and so on of the spirit of adventure amongst the youth of to-day—I mean, don't you

think? Of course, I mean, I do hate you know to refer to myself, I mean really, but interviewing people requires simply lots of it, and I mean about youth—well, I'm only 21. Oh yes, and when I said 21 to that man Flage he said I ought to be in the Stationary Office. I mean he is a beast, don't you think, really? Anyhow, it's all nonsense about adventure, and so on. Well, I mean, just as an example, I've just interviewed four telephonists who went cruising on the Broads. And, I mean, it seems that their cruise was just knee-deep in handfuls of adventure, if you know what I mean.

You see, I thought you just went up to Norfolk, where they keep quite a lot of Broads of all widths, and there you just got a boat and well, I mean, there you are really, wouldn't you be? But it's not nearly so simple really as all that. Oh no, or so they told me. First of all you must get in a stock of food because you're out of sight of land, oh, simply for hours, especially at night, when, of course, I mean, it's most dreadfully dark and so on. Then you want water—well, I mean, of course, you can't drink The Broads or there'd very quickly be no water to sail on, which is rather the object of having a boat, if you see what I mean. And then you want tin openers to open the food and a spanner for the engine, and of course frying-pans and oil cans and billy cans and so forth. And of course a pair of scales to weigh the anchor. Then about the boat: I understand it's best not to know too much about it and how it works, because I mean, really, these things appear to go better if you let them alone. Then it seems you have to elect a captain and a cook. Those not elected are the crew who do all the work.

Well, then, you cast off and make for the raging main, as you may say. People at sea appear to be awfully touchy. I mean they didn't seem to take collisions and so forth in the holiday spirit, if you follow me. And apparently there's sandbanks to get stuck on and then everybody has to jump overboard to lighten ship. But you may be grounded for days, which is rather dreadful, don't you think? Anyway, these people said they were awfully good at steering. Someone has to steer and keep a look out all the time, and the cook has to cook all the time, and the crew have a terrible time under a really stern captain—or so the crew said. But they seemed to enjoy themselves.

You know really, I mean, I think it's all so marvellous how they found their way and didn't starve or get their feet wet and catch cold and how their boat didn't get wrecked or blown up. Anyway, it's all nonsense, I mean, really, about the spirit of adventure being dead and all that rot, don't you?

BIRDIE TWILFIT.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), London, E.C.1.

## BRIGHTON NOTES.

RECENTLY a pleasant and informal meeting took place in the Traffic Superintendent's room, when various members of the District Office staff gathered to congratulate Mr. J. W. Collard, Assistant Traffic Superintendent, upon his marriage, which was to take place on the following day.

In opening the proceedings, Mr. Williamson, the Traffic Superintendent apologised for the unavoidable absence of the District Manager, and then in a racy and humorous speech, in which he touched on some of the terrors of bachelorhood, he asked Mr. Collard to accept a gift of cutlery and plate subscribed for by the District Office staff and many of his friends amongst the local engineers.

A supporting speech was made by Mr. Calcutt, Assistant Traffic Superintendent, who, in introducing the humorous element, did *not* dwell on the terrors of the bachelor state, in fact, on behalf of his married colleagues present he reminded the hero of the meeting that it was not too late even then to follow the advice given by the famous Mr. Punch.

In replying, Mr. Collard thanked the staff for the very serviceable and acceptable gift, and then in a few well-chosen words dealt with the "points raised" in the preceding speeches.

Both the bride and Mr. Collard have scored successes in amateur dramatic circles in Brighton, and have thereby increased the amount of goodwill and pleasure in the areas where their talent has been displayed.

Exactly a week after the meeting mentioned above, another meeting, or rather a series of meetings, was taking place in the District Office, when Mr. Gregory, Traffic Superintendent, Class II, was bidding farewell on his approaching departure to Liverpool to take up an appointment as Traffic Superintendent, Class I, in that important city.

Brighton to Liverpool is a far cry, but Mr. Gregory seems to make a hobby of "jumps" in the geographical sense—during his association with the Engineering and Traffic branches of the Post Office he has seen service at Bradford, Portsmouth, Leeds, Preston, Blackburn, Southampton, Brighton and now Liverpool.

We hope he will be able to take a trip south again in a short time when, rumour has it, he will return to Liverpool with something more tangible than handshakes, however sincere the latter may be.

C. O. P.

LONDON TELEPHONE SERVICE NOTES.

Contract Branch Notes.

DURING the month of August there was a net increase of 1,037 stations in the number of orders obtained compared with 891 for the previous month.

The annual Radio Exhibition was held at Olympia from Aug. 10 to 27. The number of telephones provided was 164 in respect of 214 exhibitors, as compared with 144 and 200 respectively in 1931.

The display of telephone apparatus at Messrs Selfridge's, Oxford Street, is being continued, and it is interesting to observe that the business obtained from this source is improving and the number of enquiries increases. Over 20,000 pamphlets have been handed to members of the public.

THIS TELEPHONE IS PROVIDED FOR YOUR CONVENIENCE.

The Management ventures to suggest that you should use it to make or modify appointments, to ring up your friends, generally to conduct your business and social activities, and

TO COMMUNICATE WITH THE HOTEL STAFF

in all matters which may be conducive to your COMFORT AND WELL-BEING.

It is hoped that they will be the means of increasing the use of the telephone. So far 4,701 notices have been accepted in 79 hotels.



PHOTOGRAPH OF TELEPHONE EXCHANGE FITTED UP FOR THE FILM "THE LODGER."

[Photograph by courtesy of Cyril Stanborough.]

A window display was held at 61, Westbourne Grove, W.2, during July, in conjunction with the opening of the Bayswater Automatic Exchange. The exhibit proved to be of considerable local interest and the business secured was quite good.

The Twickenham Film Studios, Ltd., recently made a request for the loan of a 12-position switchboard to be used in connexion with the "shooting" of a film, "The Lodger," by Mrs. Belloc Lowndes, which is set in Zagreb (Yugo Slavia). Arrangements were made for the necessary switchboard and equipment, also to staff 9 positions. For this 12 telephonists (women) and 1 Supervisor and 6 male telephonists and 1 Supervisor (English, German and Russian speaking) took part. The other 2 positions were staffed by Miss Elizabeth Alan and another film actress. The firm was highly appreciative of the Post Office arrangements and a copy of the photograph shown here has been sent to each of the telephonists taking part as a memento of the occasion. It will be left to our readers to pick out for themselves which are the telephonists and which the actresses.

Large hotels in London where a comprehensive P.B.X. is installed have been canvassed to accept for display in each bedroom small notices drawing the attention of guests to the telephones provided for their convenience. The notices are neat and are washable and read as follows:—

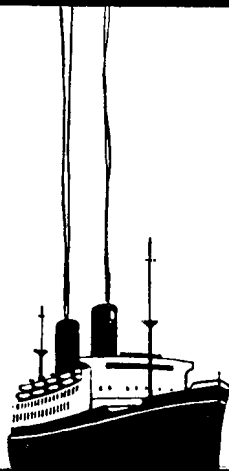
Staff Salesmanship Notes, L.T.S.—The results of the efforts of the staff in connexion with the salesmanship scheme since September, 1931, just a year ago, when the scheme started, has been as follows:—

	Total Number Ordered.	Orders Obtained during Month ended Sept. 14, 1932.
Exchange lines ... ..	1,067	112
Extensions ... ..	989	107
Private lines ... ..	11	—
Plugs and sockets ... ..	155	11
Hand-microphone instruments	4,753	503
Extension bells ... ..	395	47
Miscellaneous ... ..	510	46

Recently a member of the staff was approached by an insurance official on a matter of insurance business. On completion of the business the staff salesman seized the opportunity to canvass the insurance man and succeeded in obtaining an order for a hand-microphone. Smart work this, and worth copying.

A member of the staff experienced considerable difficulty in communicating by telephone with a prominent official of a City firm owing

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### DRESSES MADE TO MEASURE IN LATEST FASHIONS. MANTLES

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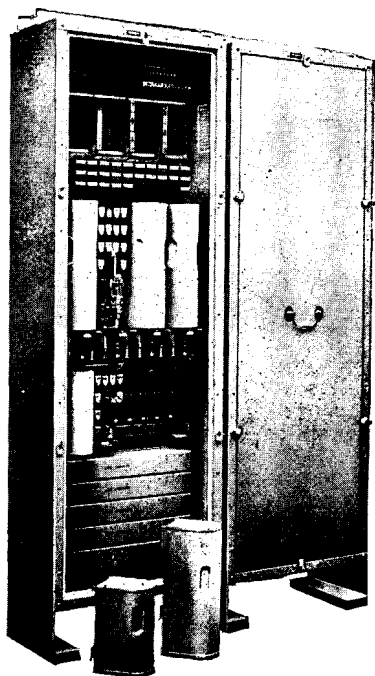
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LONDON OFFICE: MAGNET HOUSE, KINGSWAY, W.C.2

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20	4/3d.	4d.	3/7d.	4d.
25	5/1d.	5d.	4/3d.	4d.
30	6/4d.	6d.	5/1d.	5d.
35	8/0d.	8d.	6/3d.	6d.
40	10/8d.	10d.	8/1d.	8d.
45	15/1d.	1/2d.	11/0d.	11d.
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Premiums for higher Sums Assured proportionate.

Rates for other ages and for other classes of Assurance quoted on application.

The foregoing rates provide that should the Assured be compulsorily retired under the Superannuation Acts through ill health the sum Assured under these Policies will immediately become payable, and, should he be placed on reduced pay through prolonged ill health payment of premiums would be temporarily waived.

Still lower rates are charged if the Disability Benefits are not included.

Attention is drawn to the fact that Assurances of £50 payable only at death, may be effected through the **Civil Service Provident Society, either with or without profits**, and that proceeds of Assurances issued through this particular Society are payable to a Nominee immediately on proof of death without production of Probate of Will.

Further particulars of all Assurances may be obtained from:

Your Office Representatives of the Society.

The Secretary,  
Civil Service Insurance Society,  
34, Victoria Street, S.W.1.

or from the:—

North British and Mercantile  
Insurance Company Limited,  
White Lion Court,  
Cornhill, London, E.C.3.

to the telephones being constantly engaged. At a suitable opportunity it was explained to the firm's official that their traffic seemed to warrant additional facilities. The outcome of an investigation by the firm into their traffic satisfied them that their existing lines were insufficient and a written request followed for two additional exchange lines.

When we read Mr. W. Keith's article in the *Star* on the telephone we detected yet another attempt to amuse a public which, on telephone matters is steadily changing in outlook. We must, however, extend our thanks to the same paper for printing the retort of Mr. William H. O'Brien, Director of the Telephone-Telegraph Utilities Department of Massachusetts, U.S.A. Extracts from Mr. O'Brien's letter in the *Star* of Aug. 30 are worth repeating here :—

"Mr. Keith does the negative side of the 'phone very cleverly, with a fine humour, and with some of his "cracks" we all agree."

"But the 'phone marked the greatest step of progress the world has ever taken."

"The telephone has made states out of villages and nations out of cities — put the grocer and the butcher within arm's reach of the housewife and doubled the life of every pair of shoes."

"The telephone enables a man to go 100 or 1,000 miles and return while his feet are on his desk."

"International 'phone services will be the greatest leveller of hatred and suspicion."

"But like all great blessings it is not appreciated."

**L.T.S. Sports Association.**

*Annual Distribution of Prizes.*—The little group of the members of the staff who are organising this popular gathering has received much encouragement owing to the number of eager enquiries as to the time and nature of the entertainment to be provided. Perhaps by this time the contents of the posters recently issued have been absorbed by everyone. For those who can reach Cornwall House soon enough, festivities will commence at 4.30 p.m. with a *Thé Dansant*. The distribution of prizes by Mrs. Horace Dive takes place at 6.30 p.m. Then follows a short, cheerful entertainment by a few of our talented colleagues and again more dancing interspersed with competitions and games. Splendid dance and other music will be provided throughout the long evening and the Refreshment Club management is going all out to make everyone comfortable.

Early application for programmes of admission should be made to the Hon. Sec., A. M. Harris, at Cornwall House, in order to avoid disappointment.

*Tennis Section.*—It is disappointing to have to report that the finals for the "Agnes Cox" Cup (Ladies' Doubles) and the "Pink" Cup (Ladies' Singles) could not be played on Saturday, Sept. 17, as previously arranged, owing to leave difficulties.

The finalists in the former, A.R.1 and A.R.6 and Miss Parker (Maryland) and Miss Woolmer (A.R.6) in the latter competition have agreed to finish the tournament by playing the games out instead of scratching the matches, and the result will be announced in next month's issue of this journal. The trophies will be presented at the social referred to in another paragraph.

*Cricket Section.*—The league champions this season are the Accounts Branch, who were not beaten in any of the matches. The points were as follows :—

Accounts	...	...	12
Traffic	...	...	9
Messengers	...	...	5
Contracts	...	...	4

The Shield will be presented at the Sports Social on Wednesday, Nov. 2.

*Cricket: Ladies.*—Are there any cricket enthusiasts among the female staff? The association would like to be able to organise this game for the ladies if sufficient support is forthcoming. Will all those who are seriously interested and would attend a meeting at Cornwall House for the purpose of discussing the matter let the Hon. Secretary have their names and location.

**Post Office Ambulance Centre.**

*Winter Session.*—Lectures and classes in connexion with the above are being arranged as follows :—

- Clerkenwell Exchange.—First Aid, starting in October. Thursdays, 6 p.m. Lecturer: Dr. Good.
- Holborn Exchange (including G.P.O. South).—First Aid, starting last week in September. Thursdays, 6 p.m. Lecturer: Dr. Barnes.
- Battersea Exchange.—First Aid, starting October. Wednesdays, 6 p.m. Lecturer: Dr. Wright.
- L.T.S. Controller's Office.—First Aid, starting Oct. 11. Tuesdays, 4.30 p.m. Lecturer: Dr. McLaren.

Money Order Dept.—First Aid, starting Sept. 20. Tuesdays, 5 p.m. Lecturer: Dr. Barnes.

Savings Bank Dept.—Home Nursing, starting Nov. 1. Tuesdays. Lecturer: Dr. Hellier.

*Annual Competitions.*—The annual competitions will take place at the King George Hall (Y.M.C.A.), at 7.30 p.m., on Nov. 22, 1932.

We are anxious to secure new members, and also entrants for the annual competitions.

Enquiries should be addressed to: Miss E. K. M. Meeser, Gen. Sec. Women's Sec. P.O.A.C. London Telephone Service, Cornwall House, S.E.1. (Telephone City 2000, Extension 557.)

**Stamford Dramatic Society.**

The forthcoming production of "Lord Richard in the Pantry," on Tuesday, Oct. 18, by the Stamford Dramatic Society, at the Cripplegate Theatre, will have the advantage of being presented in a hall which has recently been enlarged and redecorated.

Tickets can be obtained from: Miss Dorothy Coleman, Telephone School, Clerkenwell. Telephone Clerkenwell 0101, or from any member of the cast.

**Battersea Exchange.**

At the Civil Service Sports Ground at Chiswick, on Aug. 18, an interesting cricket match was played between the Battersea Exchange Ladies and a team of nine Traffic Officers under the captaincy of Mr. Hickmott.

Although scoring only 75 against 88 for 7 wickets (the males very ungalantly beating their fair opponents by this margin), the losers were certainly not disgraced. Their top scorers were Misses Dean (24), Hunt (15) and Webb (12), while Miss Dovey was the best of their bowlers.

The Traffic Officers, who bowled "over the stumps" and batted left-handed, did not manage to score very freely from the ladies' "daisy-cutters," which often puzzled them considerably. The principal scorers on their side were Messrs. Pulker (38), Cooper (12 not out) and Shepherd (11), the first-named, although not a Traffic Officer, rendering valuable assistance to the male team, without which the victory might easily have been a defeat.

The Battersea team, with all due modesty, are willing to try conclusions with any other exchange team in the London area. Unfortunately, it is now too late to arrange further fixtures for the present season, but if local captains will bear the fact in mind and will communicate with the Service Superintendent at Battersea, that officer will be glad to place the applicant in touch with the ensuing year's captain.

L. D. S.

**Personalia.**

*Resignations on Account of Marriage.*

*Telephonists.*

Miss D. E. Jenkins, of Flaxman.	Miss M. I. Filmer, of Reliance.
" S. E. Clarke, of Grosvenor.	" K. Mayhew, of Central.
" J. F. McLennan, of Sideup.	" K. E. Young, of Central.
" M. B. Grice, of Paddington.	" S. L. Eaglen, of Central.
" R. Dorrington, of Woolwich.	" A. F. S. Boulton, of Tottenham.
" E. I. Johnson, of Langham.	" A. J. West, of Purley.
" E. B. M. Newman, of Park.	" E. H. Costigan, of Holborn.
" C. R. Bright, of Gerrard.	" A. L. Oakley, of Holborn.
" D. I. Humphreys, of Gerrard.	" W. E. Spears, of Holborn.
" I. E. Ensoll, of Gerrard.	" V. Blake, of Clissold.
" E. M. Wilkinson, of Clerkenwell.	" T. Smythe, of Clissold.
" I. A. Jarvis, of City.	" H. Smith, of Clissold.
" W. A. Gray, of City.	" D. Flight, of Maryland.
" A. Bostock, of City.	" A. L. Cant, of Tandem.
" L. I. Jones, of Royal.	" D. Allington, of Victoria.
" I. Spicer, of Royal.	" R. F. Younker, of Victoria.
" V. A. Malster, of Mayfair.	" E. C. Clifford, of Battersea.
" G. F. V. Matthews, of Mayfair.	" C. H. Packham, of Trunk.
" M. A. Howell, of Putney.	" M. Eager, of Terminus.
" E. A. Underwood, of Seven Kings.	" A. Heather, of Terminus.
" M. Millis, of Temple Bar.	" V. K. Henrickson, of Tilbury.
" G. M. Cleaver, of Barnet.	" A. E. S. Herbert, of Chiswick.
" E. F. Veale, of London Wall.	" Fyffe, of Mountview.
" E. R. Smith, of Wimbledon.	" M. P. Heard, of Mountview.
" W. L. Stephenson, of Wimbledon.	" E. A. King, of Romford.
" D. M. Halladay, of North.	" M. H. York, of Maida Vale.
" E. M. Aldridge, of Whitehall.	" M. F. Martin, of Kensington.
" K. T. Randall, of Fairfield.	" O. M. Short, of Museum.
	" A. E. Hill, of Museum.

## GLOUCESTER DISTRICT NOTES.

*Ladies' Doubles Tennis Tournament.*—The finals of the tournament were played on Aug. 9. The winners were Miss M. G. Fletcher and Miss K. F. Boulter, to whom we offer our congratulations. Prizes were presented by the District Manager at the outing reported below.

*Swimming.*—At the Gloucester City Swimming Club's Gala on Sept. 15, the Post Office Telephone team won the shield given for the winners of the relay race open to teams of three ladies from the local business houses. The team this year comprised Misses Nightingale & Tomlins, of the Telephone Exchange and Miss Chivers, of the District Manager's Office. This shield was given in 1931 and has been won on both occasions by the telephone team. Each member of the team receives a medal, and, in addition, a special prize valued at one guinea, given by Messrs. S. J. Moreland & Sons, the manufacturers of the well-known England's Glory matches. Our heartiest congratulations to the ladies.

*Outing.*—Saturday, Sept. 3, was the day appointed for the outing of the District Manager's staff, and on that day a party of 58 left Gloucester in two motor coaches and journeyed through the Vale of Stroud to Nailsworth where the road climbs out of the valley on to the Cotswolds. A run through typical agricultural country brought us to Bath, where, as had previously been arranged, we were joined by some of our colleagues from the Bristol District Manager's Office. Thence through undulating Mendip country to Radstock, a little mining village, which seems quite out of place in the pastoral scenery of Somerset. At a local hostelry we partook of lunch, during which time we were entertained by local musicians. Once again on our road we regretfully passed through Wells, where, had time permitted, we should have liked to have inspected the beautiful cathedral; but to complete our programme it was necessary to pass through the city and on to Wookey Hole, a village which nestles, amid glorious scenery, at the foot of the Mendips. Here the whole party paid a most interesting visit to the now famous caves through which the River Axe finds its way until it emerges at the foot of a precipice in the delightful tea gardens owned by Wookey Hole Caves, Ltd. The caves, which are said to have been inhabited for an unbroken period of 700 years from 250 B.C., contain some wonderful examples of stalactite and stalagmite formation. The colourings on the rock face caused by the deposits of lead and iron, together with the almost unbelievable shapes of the formations made by the constant percolation of water, leave one spell-bound at the wonders of nature. But the announcement of tea enabled us to regain our breath and full justice was done to the excellent tea, including Zummerzet cream and cakes. After tea the District Manager, Mr. R. M. McLarty, on behalf of all the Gloucester staff, expressed our pleasure in having with us Mr. J. C. Witherby, the Sectional Engineer at Hereford, our colleagues from the Bristol District and our own Contract Officers, some of whom came from distant parts of the Gloucester Telephone District in order to be with us on this occasion. Mr. McLarty also expressed the thanks of the company to the Social Committee for the excellent arrangements made for the outing. Mr. W. E. Dance replied on behalf of the Committee and paid special tribute to the Committee's Secretary, Mr. S. H. Simmons, who, he said, had shouldered all the burdens of the arrangements. A special vote of thanks to Mr. Simmons was carried with acclamation. Mr. Simmons, in reply, made light of his share of the work, but we know that it was due to his untiring energy and his special aptitude for driving a bargain that the outing was so successful and so inexpensive. Mr. Simmons thanked Mr. Hill, the Manager of the caves and restaurant, for the splendid entertainment he had provided at Wookey Hole; Mr. Hill made a suitable reply. The prizes for the Ladies' Doubles Tennis Tournament were then presented, amid applause, to the winners mentioned earlier in our notes.

*Telephone and Telegraph Exhibition.*—A demonstration of the latest developments in the telephone and telegraph services and the newest apparatus is to be held in the store of The Bon Marché, Gloucester, from Sept. 26 to Oct. 8. At the time of writing the work in connexion with the special invitations is in hand. We hope to report the result of the Exhibition in an early issue of the *Journal*.

## MANCHESTER NOTES.

*Institution of P.O. Electrical Engineers.*—On Sept. 6 a visit was made by some 24 members of the Manchester Junior Section of the Institution to the Trunk Exchange and Telegraph Instrument Room in the Manchester Head Post Office. The party was conducted by Engineering and Traffic Officers.

On Sept. 20 a party of members was conducted over the Blackfriars Automatic and Toll Auto-manual Exchanges.

*Telex Service.*—The service was inaugurated in Manchester on Sept. 19.

*Sports Club.*—The opening ceremony of the Manchester Civil Service Sports Club, on Aug. 24, was held in splendid weather. The Postmaster-Surveyor and many heads of departments were present. This day, and also Aug. 27, were gala days. Cricket matches, a bowls tournament, tennis, clock golf and sports events attracted a large and enthusiastic crowd. The membership has increased very substantially during the last few weeks and there is no doubt that the sports club has a very healthy future.

## C.T.O. NOTES.

*Promotions.*—Messrs. A. Mee, Asst. Supt. to Supt. (L.G.); E. Spencer, Overseer to Asst. Supt. Misses A. B. Nottidge, Supervisor to Supervisor (H.G.); M. Sinclair, Asst. Supervisor to Supervisor; F. A. Roe, Asst. Supervisor to Supervisor; P. S. Payne, Asst. Supervisor to Supervisor; E. Westover, Asst. Supervisor to Supervisor; H. R. Roseberry, Asst. Supervisor to Supervisor; A. F. Allden, Telegraphist to Asst. Supervisor; A. E. Atterbury, Telegraphist to Asst. Supervisor; J. L. Canfor, Telegraphist to Asst. Supervisor; M. Murdoch, Telegraphist to Asst. Supervisor.

*Retirements.*—Messrs. F. S. J. O'Shaughnessy, Supt. (L.G.); W. H. Butt, Telegraphist; Miss M. J. Ross, Supervisor.

The Central Telegraph Office is gradually losing direct touch with many provincial towns, and messages of farewell are exchanged on such occasions. In this connexion the reply from Worcester is worth recording:—

"The skeleton staff which remains at WR thanks you for your affectionate message of farewell, which is sincerely reciprocated. You are bidding farewell to what was once the third city in the Kingdom. That was when Worcester had walls surrounding it. In the time of the Romans it was known as Vigornia. How are the mighty fallen! Anyhow, Worcester was before Birmingham was whatever. The City of Elgar, Brock, Hastings, Latimer, and of world-famed porcelain, gloves and sauce, bids you good-bye with much regret, and we thank you for the amicable way in which you have always worked with us. Best of luck to you all.—VIGORNIA."

It is pleasing to know that TS will be affectionately remembered at many towns when the morse code call — . . . has become a thing of the past.

*Night Telegram Letters.*—This service is growing in popularity. One of the big London newspapers has made extensive use of the facility, and complimented the Post Office on the excellence of the service!

Perhaps the following story, which is stated to be true, may be recounted:—

11.55 p.m. Sunday.—Scottish voice through to Phonogram Room: "I want to send a night telegraph letter to Aberdeen, thirty-six words for one shilling."

Operator: "Sorry, Sir, Sunday rate is one and sixpence."

Scottish voice: "Very well, I'll call later."

Ten minutes interval.

12.5 a.m. Monday.—Scottish voice: "I want to send a night telegraph letter to Aberdeen —"

Operator: "Sorry, Sir, this service is not available after midnight."

Scottish voice incoherent.

*Sport.—Cricket: C.T.O. Cup.*—The Cable Room team beat the holders, Metropolitan Gallery, at Chiswick by 12 runs. Mr. Archibald presented the cup to the winners and said everyone appreciated the interest and keenness shown by both teams.

The Women's Cricket Week at Colwall Malvern gave an opportunity to one of "ours," namely, Miss G. High, who played for Miss V. Straker's side, to perform very creditably.

*C.O.D.O.C. Operatic Announcement.*—The operatic section of the above club will give two performances of "The Rebel Maid" at the Cripplegate Theatre on Oct. 11 and 12, commencing at 8 p.m.

All C.T.O. friends will be very welcome and assured of an entertaining evening. Tickets may be obtained (1s. 10d. to 3s. 6d.) from The Secretary, Room 77, C.T.O., E.C.1.

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# THE Telegraph and Telephone Journal.

VOL. XIX.

NOVEMBER, 1932.

No. 212.

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*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CH.

MR. W. G. GILBERT.

MR. W. G. GILBERT entered the Accountant - General's Department as a Boy Clerk in 1894, and, after brief interludes in the Secretary's Office and Savings Bank Department, was permanently attached to it as a Second Division Clerk in 1897.

While he has left his mark on the Department in several directions, perhaps his best-known work is that associated with the international side of Postal work. In this sphere he won his promotion to the rank of Examiner in 1919. In 1920 he attended his first Congress of the Universal Postal Union at Madrid as attaché to the British delegation. At the Congresses of Stockholm in 1924 and London in 1929, he was a delegate, charged with the task of watching the financial interests of the British Post Office.



Meanwhile, further promotions came. In 1921 he became an Assistant Accountant, in 1922 an Accountant, and in 1926 an Assistant Accountant-General.

During the last year or two he has come into close contact with Telephone work as viewed from an A.G.D. standpoint, and brings to bear on it the clear vision and thoroughness which marks all his work.

In his dealings with his colleagues of all ranks, Mr. Gilbert displays a geniality, a human touch, and a quick sense of humour which sweeten official life. These graces are accompanied by a breadth of outlook and a firm balance which give weight to his views and inspire confidence in his judgments.

In private he is something of a gardener, a lover of nature, an advocate of all he conceives to make for human welfare, and an interested observer of the varied achievements of the human mind.

## The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

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### NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

VOL. XIX.

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No. 212.

### POST OFFICE PIRATE HUNT.

WE hope that the article in another column will not give rise to the impression that the Post Office is endeavouring by hook or by crook to increase the number of its police court cases, or is attacking the poorer classes of the community, as the easier prey, with that object. Such a conclusion would be far from the facts.

Wireless prosecutions are costly and are avoided wherever possible. Every case where proceedings are possible is subjected to close scrutiny with the object of settling it by a warning letter and avoiding prosecution. The key-note of Post Office policy is peaceful persuasion, not police prosecutions. So when the detector vans are used, no questions are asked of any person voluntarily taking out a licence! It has, of course, been stated that no van has ever detected a single pirate. That is most emphatically not true. But we do not claim that every pirate is promptly detected. The success of detector van campaigns is greatly increased by press publicity, coupled with uneasiness in the public mind. The conscience of the guilty ones is prone to ask "Shall I be the next to be detected? Is it worth while to take the risk in order to save 10s.?"

There are now some ten million inhabited houses in Great Britain and Northern Ireland, and only about five million wireless licences. Only every other inhabited house is therefore licensed. Can any town dweller urge that that proportion is sufficient? We think not. If it were, why was it that during the first fortnight of the present campaign 1,466 new licences were issued in three provincial towns as against 266 during the whole month of

September? Twelve hundred pirates, and the Post Office will only prosecute the unlucky ones who were caught *before* they got their licences!

There must surely come a time when any listener will be ashamed to listen to the excellent broadcast programmes of the British Broadcasting Corporation without having paid his mite towards their cost. "Combs" will then be unnecessary and the detector vans will pursue their proper function of defending the listener from interference instead of being used as a weapon of offence against pirates. But that time is not yet.

### HIC ET UBIQUE.

SIR ERNEST BENNETT, M.P., has been appointed Assistant Postmaster-General.

Last month an additional telephone cable, containing 30 quads, was laid between St. Margarets Bay, near Dover, and La Panne, Belgium. It is now being tested out and will be brought into use shortly.

Telephone service was opened between Great Britain and Salonika (Greece) on Friday the 28th ult. The charge for a 3-minute day call between London and Salonika is 20s.

The Department of Overseas Trade's report on Economic Conditions in Sweden, states that there are 3 times as many telephones per inhabitant in that country as in the United Kingdom. We are well aware of the higher per capita development of Sweden, but think it right to point out that the Swedish percentage is twice not 3 times as high as ours, viz., 9 per 100 inhabitants compared with 4.4 here.

Last month we recorded the opinion of an enthusiast who lauded countries where "unlimited" or "flat" rates are in vogue, and young ladies are courted by long and loving telephonic conversations, and children "lisp in (telephone) numbers." We are now confronted by an article in the *Star* on "The Hated Phone," wherein the writer does not bless the ceaseless telephone conversations of his women friends, the telephonic ramblings of his golfing associates, and complains bitterly that even children are always "monkeying with the dial." This is in America. *Quot homines tot sententiae.*

In view of the frequent references in the Press to exceptionally low rates in force in Canada, a return of the Canadian Ministry of Trade on Telephone Rates is of interest. This shows that the average monthly business rate for 74 localities is 6.17 dollars = about £15 16s. 0d. a year. (It is 6.47 in Quebec, and 6.69 in Manitoba.) The average residence rate in these 74 localities is 2.59 dollars a month = about £6 9s. a year. It is not known, however, what these 74 localities comprise, as the "range of rates" is given as 1.85 to 2.75 dollars for Quebec, and 1.60 to 3.10 for Ontario; and we know from recent information that an individual residence line (table set) costs 3.45 dollars a month in Toronto and Montreal. It looks, therefore, as though those important cities were excluded from the table.

The journal *Saut-al-Hejaz* for Sept. 12 last records that "His Majesty the King of Hejaz has issued his gracious command for an exchange and fifty telephone machines to be sent to Riyadh (the capital). . . . May Allah bless his glorious reign."

Our Swiss contemporary *Technische Mitteilungen* quotes some amusing verses from a German paper *Puck* entitled: "Poor Goethe." They are to the effect that only in this centenary year do we realise what blessings the great poet had to do without which we favoured moderns enjoy. We append a very free translation of some of the verses:

For never through the telephone  
With Schiller he conferred.  
He never heard a gramophone,  
Or teletyped one word.  
No limousine or landaulet  
He drove—or even saw.  
He never strove with bitter sweat  
To fathom Bernard Shaw.

No psychoanalysts affirmed  
The trend of his libido.  
He never had his tresses "permed"  
Or sunbathed on the Lido.  
He never went by "Underground,"  
Or in an airplane flew,  
Or solace in a cocktail found,  
Or Greta Garbo knew.

He wrote the whole of *Faust* by hand  
And never "typed" a line  
Cheered by no saxophone he planned  
His complex life's design.  
It seems quite fabulous to me  
That one from whom was hid  
These blessings of modernity  
Did all that this man did!

W. H. G.

## THE POST OFFICE TELEPHONE SERVICE FROM DIFFERENT POINTS OF VIEW.

### II.—FROM A POSTMASTER-SURVEYOR'S POINT OF VIEW.

A QUESTION as to his views on any branch of the Post Office Service would make any Postmaster-Surveyor seriously to think.

The writer of these notes can throw his mind back to pre-historic days (in a telephone sense) when the Post Office connexion with telephones was in its early stages.

When one of the first Call Offices was about to be established in a certain Head Office, I remember receiving abstruse instructions as to the method of working the telephone, and the effect upon me at the time was one of extraordinary nervousness. Indeed, such bold members of the public as did essay a telephone call at that time, usually came out of the cabinet in a very bothered and perspiring condition. My most frightful experience was when I first put through a trunk call to London. The distant operator was a Scots lassie (whom I afterwards knew as a Supervisor) who "told me off" severely and volubly for not using the correct expressions. However, familiarity and study have combined to make me telephonically mingled in the most modern meaning of that expression.

I think it would be fair to say that the average postal administrator had something of a surprise when he was first confronted with Telephone management. That is to say, after some years of Postal and Telegraph administrative problems, he must have been amazed at the telephone traffic statistics, curves, and all those telephonic expressions which are so illuminating when one gets to know them.

The Telegraphs he had always before his notice, because as soon as the Telephone began to be used to any extent the Telegraph traffic showed a decline, and the problem of dealing with a declining branch of the Service is always more troublesome than with a branch which is developing, and so willy nilly a Postmaster Surveyor became more or less a Telegraph expert.

The Telephone, therefore, was presented to him as one of those "bright young things" with plenty of sparkle and some allure for an age-old Postal service and a middle-aged Telegraph service. Its modern methods and engaging ways of going on were very attractive, with the result that the Telephone Branch has for some years now occupied a very prominent position in the Postmaster-Surveyor's mind.

The connexion between a District Manager and a Postmaster-Surveyor was at one time a doubtful matter in the minds of the Public, but the passage of years has made this quite clear. There is no doubt at all in my mind that the administrative knowledge and experience of the Postmaster-Surveyor is of the greatest possible value to the District Manager and his staff, while the efficiency and specialised knowledge of the Telephone Branch are a source of gratification to the Postmaster-Surveyor. Indeed, where there is mutual confidence and a spirit of enthusiasm in the largest measure, there will the greatest advance be found.

One characteristic of the Telephone staff has always impressed me and that is the great numbers of the staff willing to attend meetings in their own time to listen to lectures and discourses dealing with Telephone science in its different phases. I find this in all grades from the District Manager downwards. Indeed one wonders if the enthusiasm for their profession goes so far as practising speaking and hearing tests in their tea-cups, as used to be the wont, I believe, of Telegraphists in sending dots and dashes on knives or forks at the dinner table. The seriousness of the District Manager and his immediate assistants in tackling, one might almost say revelling in, telephone statistics, and their statistical gymnastics, in order to show in a few short words how every conceivable operation of the staff, the Public and the apparatus, can be measured in time (seconds) and money, is little short of amazing. If the slightest doubt or shrinking is expressed or noticeable, terrifying graphs are forthcoming on pink, white, or blue paper, and the evidence produced is usually most convincing.

In such happy circumstances it is not surprising that the Postmaster-Surveyor and his officers throw their utmost energies into the necessary Publicity and Salesmanship for the Telephones. The influence of the Chief overcomes all obstacles, because his executive and administrative power can co-ordinate all Services, making them move as desired either towards one common objective or combine one or more Services, with all their ramifications, towards solving particular problems of the remainder. Here it should be noted that it is not only the Telephone Service that benefits from this collaboration. On these occasions of close contact the reactions of the Telegraph and Postal Branches cannot but be beneficial. They are brought in touch with an organisation which is designed to serve a public which is unseen but very vocal, and which plays an actual part in the quality of the service with which it is provided.

In the two older branches the public in general buys its stamps and its Savings Certificates, posts its correspondence, or hands in its telegrams, and its share in the transaction is in the meantime over, the further treatment being entirely in the hands of the Post Office. Not so with the telephone service. There the customer passes his call to a telephonist, awaits the various stages of the connexion, is vitally interested in the transmission quality of the call itself, and expects and gets the help of the telephone organisation during the whole period until he hangs up the receiver. This essential difference in the point of contact with the public has, in my view, greatly influenced the technique of the Telephone Service. The 15-minute delay service to London becomes, to-morrow, a no-delay service; and the Rural Automatic Exchange flourishes in the land. Enthusiasm exists in its highest degree at the District Headquarters, and it is the special duty of the Postmaster-Surveyor to see that that enthusiasm permeates the whole of his District. His influence can cause the local responsibilities of Head Postmasters for the telephone service in their areas to take on a new aspect, and the "brighter post offices" become still brighter with the posters of beautiful ladies who have found life made easier by using the telephone.

## POST OFFICE TELEPRINTER SERVICES.

### TELEX.

BY A. P. OGILVIE (*Headquarters Traffic Section*).

AMONG the several Teleprinter services now being offered to the public, undoubtedly the most interesting, the most notable achievement, is the Teleprinter Exchange service, referred to, for convenience, as "Telex." It is proposed to outline the working arrangements now in operation in connexion with this service, but before doing so an introductory reference to the evolution of the system may be acceptable, in the hope that it will assist in forming a balanced conception of the place Telex may occupy in the world of communications.

In a paper read by Mr. Donald Murray before the Institute of Electrical Engineers some eight years ago, attention was focussed on the possibility of developing a new service, a combination of teleprinter working over an exchange switching system similar to, or associated with, the normal telephone system. Mr. Murray, with characteristic prophetic vision, foreshadowed a closer union of telegraphs and telephones by this means, and, while admitting that a mass of detail awaited expert investigation before such a scheme could be considered a practical proposition, expressed the opinion that the engineering and traffic difficulties in the way of its realisation were not insuperable. Most of the telegraph and telephone authorities who listened to Mr. Murray's inspiring lecture were in agreement that early success could not be expected.

Telegraphic intercommunication over an Exchange system does not, in itself, present any problem. Such systems are in operation in several countries, and the British Post Office has had cognate experience with the London Intercommunication Switch at the Central Telegraph Office, which at one time interconnected offices in the Metropolitan area for the direct transmission of telegrams. Indeed, before the inception of telephone switching, an Exchange devised by the late Mr. A. W. Heaviside, served a group of subscribers in the Tyneside district who intercommunicated successfully, if not rapidly, by means of A.B.C. telegraph instruments. In the face of telephone expansion, however, telegraph exchange systems have had only a limited appeal. The apparatus available has worked slowly or was expensive to staff and to maintain.

Then came the start-stop telegraph, with its typewriter keyboard, printed record and higher speed of operation; and the idea of commercial exploitation was resuscitated. There still awaited the evolution of signalling arrangements which would permit of use being made of telephone exchange equipment and lines for establishing teleprinter connexions, and, as progress in this and other directions was problematic, the British Post Office contemplated originally the establishment of a direct current signalling Telegraph Exchange system involving:—

- (1) a separate Telegraph Exchange in London with direct lines to subscribers, the connexions being set up on a semi-automatic system not involving or permitting speech either between subscriber and subscriber or between subscriber and switching operator; and
- (2) other separate Exchanges to be opened later in provincial centres, connected with London and with each other by means of the superposed or double-superposed or sub-audio channels which are available as a by-product of modern main underground telephone cables.

Work on this scheme advanced to the stage of constructing an experimental switchboard which, from a technical point of view, satisfied all requirements and is now in operation as a private installation. For public service, however, the serious disadvantage of setting up separate lines and Exchanges and a distinctive

organisation was at once apparent. By reason of its cost and lack of flexibility such a scheme would have been restricted to a small group of users, as outside the Exchange local area line charges would necessarily be heavy.

On the other hand, the telephone system offered facilities for reaching towns and the remotest parts of the country at minimum cost provided a simple, reliable transmission system could be devised and traffic procedure for handling the calls were suitably modified. It is true that much of the ground to be explored was uncharted and the possibility of only partial success had to be considered. Already, it had been learned that difficulties foreseen had diverted the development work of other Administrations to the simpler scheme of direct-current signalling and a separate Exchange network, but the British Post Office decided—strange as it may seem to our critics—on the bolder course. The Engineer-in-Chief undertook to design the necessary technical equipment and attention was at once concentrated on the production of a workable scheme.

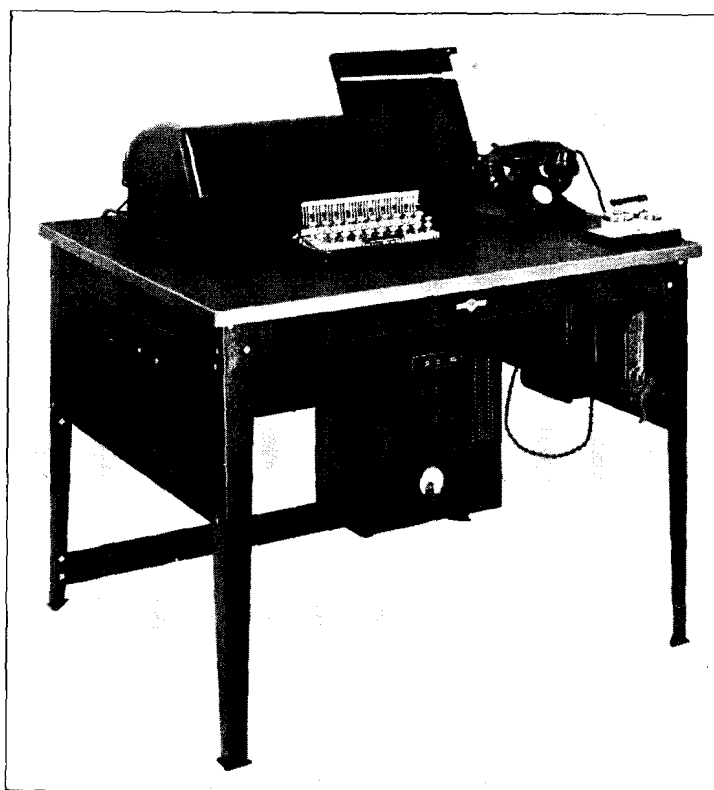


FIG. 1.

A new model of Teleprinter—No. 7A—was constructed by Messrs. Creed & Co. on the lines of their No. 3A model, now in general use in the telegraph service, embodying many improvements and designed normally for page printing, or alternatively for tape printing, when required. The keyboard of this machine is arranged to resemble as closely as possible the keyboard of the ordinary commercial typewriter with one space-bar and separate "letter" and "figure" shift keys. In accordance with conclusions reached by an International Committee, the Murray alphabet with minor modifications has been adopted, and secondary characters are arranged on an agreed plan. Certain unique operating features are also incorporated which will be referred to later.

The signalling arrangements subsequently evolved by the Engineer-in-Chief consist of valve equipment for producing a one-tone frequency current of 300 cycles, which is interrupted by the Teleprinter armature in the transmission of the required signal combinations. At the receiving terminal this equipment also provides for the amplification of signal strength necessary to actuate

the Teleprinter relay. The current for the operation of the valves is supplied by a power panel which forms the second portion of the Voice Frequency Converter.\* The whole of a subscriber's equipment is mounted on a neat metal table as shown at Fig. 1.

Exhaustive trials over telephone lines, initially within the London local fee area, were undertaken, the connexions being set up at one, two and three Exchange switchboard positions and also through terminal Private Branch Exchanges. Subsequently, tests were extended to circuits over greater distances until successful results were obtained on trunk lines between London, Birmingham, Leeds and Edinburgh. The data obtained during these trials, indicating the margin of stability, the sensitiveness of the apparatus to extraneous noises which may leak on to the line should an Exchange operator enter the circuit irregularly, and many other details, were carefully studied by a small Committee of experts, who formulated proposals for incorporating a scheme of Teleprinter Exchange working within the telephone system with the least possible disturbance to existing procedure and organisation. Before the service was offered to the public, a network of Telex communications based on this scheme was set up between various Post Office Departments in London and provincial centres to subject the operating and traffic procedure to a thorough test. The weaknesses disclosed, mainly human, were of advantage in emphasising the importance of careful training of staff: in other respects the experience gave confidence in embarking on the final stage, and public service was opened in London on Aug. 15 last. Since then, Telex centres have been established at Birmingham, Liverpool, Manchester, Leeds, and Bristol. Such, in brief, is the history of an achievement which has given this country a lead in establishing a new public service in its most complete and flexible form.

Any telephone subscriber renting two or more exchange lines may obtain Telex service on payment of £65 a year, i.e., £50 for the rent of a Teleprinter, including maintenance, replacements, &c., plus £15 for the provision and maintenance of voice frequency and auxiliary apparatus. The rental also covers the supply of the metal table on which the subscriber's set is accommodated; this latter concession is made possible by the fact that the wiring of the set can be completed before the apparatus is taken to the subscriber's office.

The stipulation that at least two exchange lines should be rented before Telex service is normally provided is made to ensure access to the subscriber by telephone in the event of difficulty or prolonged holding time on a Telex connexion. So far, the restriction has not limited development as firms interested in the new service are, as a rule, large telephone users.

Each new Telex subscriber is given a distinctive number, apart from the telephone number already allotted to the line or lines over which it is proposed to set up Telex calls, and this number, together with the ordinary telephone number, is published in a Telex Directory containing particulars of all Telex subscribers in the country. A page of the second issue is reproduced in Fig. 2. A separate Telex number is desirable for service reasons. It is an advantage to have Telex calls confined as far as possible to one line, preferably the last line in a group, as by this means some risk of interruption is avoided, and in the event of Absent Subscriber's facilities being provided, a distinctive line, not likely to be used in attempts to complete telephone calls, is available for the purpose. By arranging for the Telex number to be pegged in the multiple with an appropriate cross reference, in the case of a Manual Exchange, or by suitable cross-connexions on the switches in the case of an Automatic Exchange, it is possible to obtain the desired concentration of Telex calls, and at the same time avoid changes in the Telex number in the event of alteration in the size or constitution of the subscriber's group.

\* An excellent description of the technical details of Telex apparatus is contained in an article by R. G. DeWardt, A.M.I.E.E., M.I.R.E. (Engineer-in-Chief's Office) which appeared in the October issue of the *P.O. E. E. Journal*.

Subscribers connected with Manual Exchanges are instructed to make a Telex call by passing the particulars of the number thus:—"Central Telex 2498." Circuits used for originating Telex calls are segregated at the Exchanges on a limited number of positions to permit of a measure of specialisation in staffing as momentary disconnexions or interruptions such as the throwing of speaking keys are liable to cause short faults in teleprinting. To ensure that a Telex call shall remain undisturbed until clearing signals are received, a small white reminder ring is placed by the operator over the relative speaking key when the connexion is set up. These rings are provided at "A" positions at which Telex calls may be controlled. A green plate is also fitted behind the calling lamp cap on the subscriber's line earmarked for Telex service. The number of interruptions or premature disconnexions which can be ascribed to faulty operating have been surprisingly small; the precautions described appear therefore to be quite effective in practice. Normal procedure is followed in setting up a call except that when particulars have to be passed forward the word "Telex"

SPECIMEN PAGE OF TELEX DIRECTORY.

<i>Name and Address of Telex Subscriber.</i>	<i>Town.</i>	<i>Telex Number.</i>	<i>Ordinary Telephone Number.</i>
Spillers, Ltd., 40, St. Mary Axe, E.C.3.	LONDON	AVenue Telex 7600	*AVenue 7510
Standard Telephones & Cables, Ltd., Connaught House, Aldwych, W.C.2.	LONDON	HOLborn Telex 9034	*HOLborn 8765
Sugar Industries Auxiliaries, Ltd., 117A, Fenchurch Street, E.C.3.	LONDON	MONument Telex 4188	*MONument 3731
Thames House Estate Ltd., Imperial Chemical House, Millbank, S.W.1.	LONDON	VICToria Telex 3241	VICToria 4444
Vernon, W. & Sons, Millennium Mills, Victoria Dock, E.16.	LONDON	ALBERT Dock Telex 1226	*ALBERT Dock 1321
Vivian & Sons, Ltd., Imperial Chemical House, Millbank, S.W.1.	LONDON	VICToria Telex 3241	VICToria 4444
West India & Panama Telegraph Co., Ltd., Electra House, Moorgate, E.C.2.	LONDON	+LONdon Wall Telex 2621	*LONdon Wall 3240

FIG. 2.

is always associated with the number. A subscriber connected with an automatic exchange, makes a call in the usual manner by dialling the telex number disregarding the word "Telex."

In the event of the called Telex number on a short distance call testing "engaged," the originating subscriber, if on a Manual Exchange, is so informed. He can then make a Telex call to the ordinary telephone number of the required subscriber (which is shown in the alternative Directory column) and pass the particulars thus:—"Telex call for Central 2490." When this call matures at the distant P.B.X. it can be transferred to the Telex extension if then available. In making such calls, the subscriber is warned that failure to use the term "Telex call" may lead to momentary interference.

A subscriber on the automatic system receives the normal busy tone in such circumstances and may endeavour to complete the call by dialling the ordinary telephone number.

Once connexion is established, both subscribers exchange preliminaries by telephone and then each switches to teleprinter simply by pulling forward the Telephone-Teleprinter switch,



conveniently placed at the front edge of the table, and replacing the telephone on the cradle rest. This action commences the Teleprinter motor at each terminal and joins both machines to the line connexion set up; thus affording teleprinting in either direction alternately, but not in both directions simultaneously. A key on the Teleprinter keyboard marked "Who are you" on the upper case of letter "D" is then depressed by the originating subscriber. This releases a stored signal combination in the distant machine which automatically signals the called subscriber's Telex number which is printed on the copy at both stations. The called subscriber proceeds similarly to obtain the calling subscriber's number, after which teleprinter messages are exchanged. This ingenious "Who are you" and automatic "answer back" arrangement is valuable not only in ascertaining the accuracy of the connexion but in cases where it is desired to confirm that the distant teleprinter is still in circuit if the operator should be absent. A bell signal is also provided on the upper case of letter "J," which causes a bell to ring at the distant terminal until released by the depression of any key on the key-board.

On completion of the transaction the Teleprinter motor is stopped, and a clearing signal sent, by turning the table switch to "Telephone," thus restoring the telephone, with receiver on rest.

AVE 7000

NAT 3122

ENQUIRY FROM STUART AND JONES, SINGAPORE, 35890

PACKAGES 14=3/4 TO 15=5/8, (SIZE 60 X 9) VARIATION 2%

MARK 9A. CAN DELIVERY DATE BE QUOTED?

BROWN LTD++

CAN GIVE FIRM DELIVERY @ £14 BY S S 'MALAY' SAILING 30TH  
INSTANT

SMITH AND CO++

OK THANKS++

FIG. 3.

across the line. If, however, it is desired to revert to speech after teleprinting, care must be taken first to remove the receiver, otherwise switching to Telephone will signal a clear to the Exchange. The alternative of leaving the receiver off the rest, while teleprinting, is liable to lead to the connexion being held unnecessarily, should the position of the receiver be overlooked. It is considered, therefore, that the risk of overcharge in the case of trunk calls, or of abnormal holding time on local connexions, is more serious than possible inconvenience of premature disconnexion, and the attention of the subscriber is specially directed in the Telex Directory to the correct positioning of the telephone receiver when switching to and from Teleprinter.

The appearance of a Telex message, showing size and form of type, and the range of characters available, may be of interest to readers unacquainted with the Teleprinter No. 7A, and a typical specimen is reproduced at Fig. 3.

Manifolded copies can be obtained by using specially prepared rolls of carbon-backed paper, which will give up to 6 clear copies without any abnormal adjustment of the printer. Experiments with waxless stencils and modern hectograph processes, such as the "Ormig," show that direct preparation of the master copy is possible on the Teleprinter No. 7A. This facility will no doubt be of advantage to Press Agencies.

In a later article the arrangements for handling long-distance Telex calls and Printergrams will be dealt with.

(To be continued.)

## "PIRATE HUNTING."

A "PIRATE" naturally puts the reader in mind of the old-fashioned buccaneer, but the "pirates" who are being dealt with in this article are not of the old romantic type. They do not sail the sea in ships or rove the "Spanish main," plundering defenceless merchant ships; our present-day pirates aim at much higher game, but with far less sacrifice. They are of the bloodless type, and reside in villas in residential districts, good working-class districts, and the slums of our large cities. Their spoil is that of robbing the British Broadcasting Corporation and the Exchequer of the sum of 10s. per year, which, as all our readers know, is the cost of a wireless receiving licence.

Many ways of tracing and punishing these culprits have been tried, and one method which has proved very successful is the "Comb," which we will try to describe.

As the word "comb" is more or less self-explanatory, it will perhaps be of interest to our readers to know how this work is carried out. Two officers are required, the Enquiry Officer, who is responsible for the general conduct of all enquiries, and the Engineering Officer, who advises the Enquiry Officer on all technical matters arising during an enquiry and also examines and tests the apparatus to ascertain whether it is capable of receiving signals. This officer also acts as a second witness, should a prosecution be decided upon as a result of the enquiry.

We have been associated with several "combs" and our experiences have been many and varied. We have been out searching in hail, rain and snow. In fact, one of our most successful "cops"—the unofficial term used when a pirate is detected—was made in a blinding snowstorm. After what seemed hours of walking, and beginning to feel rather tired battling with the blizzard, we arrived at our objective, a small wooden cabin situated in the wilds, some miles outside the city boundary. When questioned, the occupier at first denied being in possession of wireless receiving apparatus; when it was suggested that a "portable wireless set" was also receiving apparatus, he gave in and we carried on with the good work. He was subsequently fined at a country police court.

Searches for unlicensed stations are usually carried out during the summer months, when the pressure of routine work is somewhat reduced, but occasionally "special combs" are ordered from Headquarters, and then assistance is authorised for dealing with routine work. Small combs are also made during the winter months in districts where enquiry seems to be necessary.

The writers will try to describe one of their "hunting days" on the look-out for "pirates."

The Enquiry officer, armed with fountain pen, pencils, the confidential instructions issued by the Postmaster-General and the necessary stationery for recording notes of the visits made and also for the prepared statement which the "pirate" is invited to sign after he has been caught, meets the Engineering Officer, himself complete with note book and the necessary instruments for testing. Thus they set forth on their day's venture.

On the whole the majority of the defaulters have been found in the working-class districts of the city, though occasionally we do find them in a residential suburb. It is really surprising to find that the poorer class of people, many of whom are unemployed or are on "short time," are working expensive wireless sets, obtained on the hire purchase system, without the necessary licence. Sometimes these people would appear to have hardly enough money to purchase the bare necessities of life, yet they can purchase and maintain such costly sets.

We also trace many home-made sets which have been built during the periods of enforced idleness. One case which was found recently is a typical example of this kind. In a small court off a dirty street was a little house, the occupier nearly in rags

and the home in a filthy condition. He admitted working a three-valve battery set for about three weeks with good results. He told us that he had been unemployed for some considerable period, that his two elder sons were out of work and he had two boys attending school, also that his wife had deserted him. All appearances testified to the truth of his statements, but we had to "carry on," and do our duty, leaving Headquarters to decide whether legal proceedings should be taken.

While engaged on work of this kind, we must appear to have "hearts of stone," but it would not do to show any signs of sentiment, or no improvement would result. In any case things are not always what they seem, and as one magistrate remarked when a person who was being tried for "illicit working" pleaded the usual excuse of poverty, "If you want your pleasures, you must pay for them."

Enquiries are usually made at most houses in the district, unless, of course, it is definitely known that a wireless set is not installed, or that a current licence is held. When the householder or a member of the family answers the door, he is told "We are Wireless Enquiry Officers from the General Post Office"; and if there is good reason to suspect that wireless is installed, he is requested to produce his licence, or if there is no outward, visible sign of wireless, he is asked whether wireless receiving apparatus is installed, and, if so, to produce the licence.

We are each in possession of a card authorising us to make official enquiries as regards wireless licences and suspected illicit receiving stations. The card is shown as the necessary authority for the inspection of the licence. If the occupier of a house is suspected of not having a licence, invitation to enter and examine the premises is sought. Very often people do not trouble to read the card, as in suspicious cases the culprits are too concerned with the outcome of the visit to doubt our authority.

Among the many difficulties the writers have encountered during a "comb," is that the licence-holder frequently does not know where his licence is kept. Excuses are offered such as "My husband," or "son," as the case may be, "has it in his wallet." For instance, during a comb of some corporation flats, an old lady answered the door, and said she was sure her son had the licence in his wallet. A request was then made for his name and, if possible, an approximate date of expiry. The Head Office was communicated with by telephone and a search instituted, without result. Next morning's mail brought in the counterpart of a new licence in the son's name. An enquiry at the local post office revealed that this licence was taken out about half an hour after our visit. The matter was reported to Headquarters and a prosecution resulted.

When a person expresses annoyance after being requested to produce the licence, a safeguard for the enquiry officer is Condition No. 6, which is printed on the back of the licence. This condition reads, "The station, the portable set and this licence shall be open to inspection at all reasonable times by duly authorised officers of the Post Office, who will produce their cards of identity on request."

The number of persons who regard a wireless receiving licence merely as a receipt, and not as an authority to establish a wireless receiving station on their premises is really surprising. They tell us that they have never looked at the licence since purchasing it and do not intend to do so. If people examined their licences more carefully many mistakes would be obviated, such as wrong expiry dates and wrong names and addresses. Another little matter that licensees will not attend to is the advising of a change of address. This request is printed prominently on the face of the licence. It is not uncommon when combing a new district to have a dozen or more addresses to amend. When it is explained that "removals" should be notified, the licensee says "We have no time for that. The Post Office can find us if they want to."

Of course, if no licence is produced we endeavour to secure sufficient evidence to justify a prosecution.

One evening, when we were combing a working-class district, a request was made to inspect a licence, and the "lady" of the house said "What the — do you come bothering me for at this time?" It was explained that it was a reasonable time. However, after a further "broadside" of bad language, the licence was duly produced and found to be quite in order. In another district, this time a residential one, a dear old lady said, "Come in. I have a licence, but we have only just removed, so sit down whilst I find it, and if necessary you must stay to supper, rather than go without seeing it." After turning out numerous drawers and boxes, she eventually found the licence, and the address was amended; but we lost our supper.

If an illicit station is discovered, particulars are taken and a full report is forwarded as soon as possible to the proper quarters. We have reported a considerable number of illicit stations during our "combs," and many prosecutions have resulted, and we hope to find a good many more before the present comb finishes.

Time and space do not permit of our giving any more incidents of our "comb," though many more interesting adventures could be related.

As will be seen, during the course of a "comb" we experience a good insight into the lives of our fellow men, far more than the average officer of the Department does in the whole period of his service. We get peeps into the homes of the wealthy and rub shoulders with poverty almost every day whilst we are engaged in the work.

It is hoped that in this short account the reader will be able to form some idea of the work performed whilst "pirate hunting," or in the tracing of illicit wireless receiving stations.

J. A. T. and C. V. S.

## C.T.O. NOTES.

*Retirements.*—Messrs. W. H. Hebron, Supt. (Lower Grade), A. E. Clarke and W. G. Treloar, Overseers, and W. A. Fisk, Telegraphist.

*C.O.D.O.C.* The Operatic Section of the "Centels" Operatic, Dramatic and Orchestral Club gave their performance of "The Rebel Maid" to two well-attended and appreciative houses. In fact, the whole show went with a swing.

Miss A. Paterson and Mr. J. Blundell, as Lady Mary Trefusis (The Rebel Maid) and Derek Lanscome, filled their parts adequately. We think, however, the best performance was that of H. J. Walters as Septimus Bunkle (innkeeper), whose Yorkshire dialect ran true to type. Misses Stock and Gascome as Lady Elizabeth Weston and Abigail respectively entered into the spirit of their parts. The Lord Milverton of Charles Phillips deserves mention. As was expected, the chorus was excellent and the C.T.O. should be proud of these hard-working and painstaking members who, after all, go a long way to the making of an opera.

The seating arrangements at the Cripplegate Theatre have been altered and the new layout has met with some criticism by our members. It is probable that expert advice is behind the re-arrangement and our members will no doubt loyally support our ventures. The next performance of the C.O.D.O.C. is "Nine to Six," to be given at the Cripplegate Theatre on Dec. 1 and 2, and it is hoped that the play will be given to capacity on each night.

*Chess.*—The C.T.O. Chess Club start their season with high hopes of bettering their performances of last season.

*Swimming Gala.*—The Centels and Fortels Swimming Club presented its annual programme of much interest and excitement to a fair audience. The exhibition of fancy diving by the Amateur Diving Association was a notable feature. The K.E.B. team won the Team Swimming Championship of the Civil Service, beating the holders, Buckingham, by four seconds. In the exciting polo match the Centels beat the Imperial and International Communication Company's team by two goals to one.

H. Mogenis won the 100 yds. and 67 yds. Championships and Miss Chetwood the 33 yds. Ladies' Handicap.

*C.T.O. Arts Club.*—The annual exhibition of the Arts Club will be held during the period Nov. 21 to 25 inclusive, and it is hoped that all friends past and present will help to make the show a success. The venue will be Roman Bath Street Buildings, First Floor, and the pictures may be viewed throughout the day. Mr. Harold Speed has kindly consented to act as the art judge.

## BRITISH AND AMERICAN TELEPHONE ACCOUNTS, 1931.\*

By A. J. WALDEGRAVE, I.S.O. (*Deputy Comptroller and Accountant-General*).

It is necessary to begin by explaining exactly what is meant by British and American Accounts, 1931—since the expressions “British” and “American” can each be used with a wider or a narrower significance. For the purposes of this paper, British Telephone Accounts means the accounts of the British Post Office in Great Britain and Northern Ireland, the accounts of the Telephone systems of Hull, Jersey and Guernsey, which do not belong to the Post Office, being excluded. The expression “American Telephone Accounts” needs explaining a little more fully. It is used this evening to indicate the accounts of the Telephone Companies in the United States grouped together in what is known as the “Bell System.” At the head of this system is the American Telephone and Telegraph Company with its headquarters at New York. This company operates the long-distance lines in the United States (lines which we call “trunk” but which in America are most often called “toll”), and in addition it more or less directs and supervises some twenty associated companies which own and operate exchange systems covering the greater part of the territory of the United States. Altogether there are in the United States about 19½ million telephone stations, and the companies associated in the Bell System own about 15½ million of these stations, the remaining 4 million being operated by nearly 7,000 relatively small independent companies whose only connexion with the Bell System is connexion, on a fee-paying basis, with the trunk lines. In a few cases even this connexion does not exist. My paper will not deal with the accounts of the independent companies but only with those of the large companies of the Bell System, which, as I have indicated, are responsible for the whole of the long-distance traffic and four-fifths of the local traffic.

It is necessary further to explain that the year 1931 is to be taken literally in the case of the American accounts, but that for the British Post Office accounts it signifies the year ended Mar. 31, 1932, our accounts being prepared, in accordance with historic practice, to cover the Government financial year, which runs from April to the following March.

The British Telephone accounts for the year 1931-32 have not yet been published, and the figures which I shall present to you are still liable to adjustment and subject to audit; they must therefore be regarded as provisional; but I think you may take it that there is not likely to be any substantial alteration made in them before publication. You may wonder that we are unable to present final figures when already six months have elapsed since the financial year ended, but we are dependent for some of our figures on the accounts of other Government Departments, and we cannot, for the convenience of our own Commercial Accounts, compel those departments to abandon the statutory procedure under which, for perfectly good reasons, Government accounts are kept open until Nov. 30.

With so much by way of definition of the ground to be surveyed, let me proceed to place before you a statement of the income and expenditure of the British Post Office system for the year 1931-1932.

### STATEMENT I. BRITISH POST OFFICE SYSTEM. INCOME AND EXPENDITURE (£'000 OMITTED).

1930-31. £	1931-32 (Provisional). £	1930-31. £	1931-32 (Provisional). £
5,223	Salaries Wages, and Allowances (Administrative and Traffic) ... .. .	4,956	
435	Miscellaneous Expenses (Administrative and Traffic) ... .. .	471	
3,070	Maintenance ... .. .	2,948	
1,367	Rent, &c. ... .. .	1,497	
972	Pension Liability ... .. .	939	
6,371	Depreciation of Plant ... .. .	6,859	
5,244	Operating profit ... .. .	5,708	
<u>22,682</u>		<u>23,378</u>	
5,062	Interest on Plant Capital ... .. .	5,314	
343	Surplus ... .. .	557	
<u>5,405</u>		<u>5,871</u>	
		Rentals, Call Fees, &c.:	
		Exchange Lines and other	
		Rentals ... .. .	£10,989
		Local Call Fees ... .. .	5,949
		22,375	Trunk Call Fees ... .. .
			6,160
			23,098
		307	Miscellaneous ... .. .
			280
		<u>22,682</u>	<u>23,378</u>
		5,244	Operating Profit brought down ... .. .
		161	Non-operating Income ... .. .
		<u>5,405</u>	<u>5,871</u>

The account as shown on the screen has been reduced to bare outlines; and while it is before your eyes I will try to explain it a little and make it, I hope, more intelligible and more interesting. In looking at an Income and

Expenditure Account, it is natural that one's eyes should turn first to the bottom of the account in order to see what has been the net result of the year's working. If your scrutiny has followed this course, you will have seen that the last entry on the left-hand side is an entry of £557,000 against the word “surplus”; and if the sigh of relief or grunt of satisfaction with which you have contemplated this entry has not been audible, I am sure that it has been none the less genuine. It is certainly much pleasanter to see the word “surplus” than the word “deficit,” and a surplus of over half a million pounds will perhaps strike you as not only satisfactory but handsome. Before, however, you sink too deeply into the pleasure of self-congratulation, let me tell you that the glory of the entry “surplus,” instead of the ignominy of the entry “deficit,” has been achieved only because of the reduction in the bonus payment to the staff, a reduction which amounts to £625,000 for the year which we are considering. But for this reduction there would have been a slight deficit instead of the fairly substantial surplus of £557,000. If you will turn your attention for a moment from the bottom of the statement to the top you will see that Administration and Traffic Salaries and Wages fell from £5,223,000 in 1930-31 to £4,956,000 in 1931-32; and in addition there was a decline in the salaries and wages charged under Maintenance (which appears as the third heading). You will realise, therefore, that the struggle to establish a surplus and not a deficit in the Post Office Telephone Accounts in 1931-32 was a close thing.

In order to get the half-million surplus in its right perspective, it is necessary to relate it to the amount of the capital involved in the undertaking. The outstanding capital represented by the telephone plant of the Post Office at the end of 1931-32, was £114,000,000, and the surplus of £557,000 represents less than one-half per cent. on that capital. Looked at in this way it will be agreed that the surplus can scarcely be regarded as prodigious. Before, however, passing from elation to dejection, it will be well to consider further this point of the nature of the return on the capital invested in the telephone undertaking. The capital has been furnished in the main by government borrowings through the National Debt Commissioners, subject to repayment by annuities over a term of years, but in the Post Office Commercial Accounts, the actual repayments (which have been related to periods of a somewhat arbitrary character) are ignored, and in their place the amount in the Depreciation Account is regarded as available for repayment and is deducted from the amount of the original capital expenditure. This leaves the £114,000,000 which I have already mentioned as the outstanding capital liability. Interest on this amount is calculated at rates which reflect the conditions of government borrowing at the time when the capital outlay was incurred (the average in the 1931-32 account was 4.74%), and the figure resulting from this calculation appears in the account as you will see (second entry from the bottom) as Interest on Plant Capital—£5,314,000. In order to obtain a view of the return in the ordinary commercial sense on the capital invested, it is necessary to combine this figure of interest with the amount of the surplus. Together they come to £5,871,000, and this shows a return of 5.15% on the capital outstanding at the end of the year. On the mean of the year it would be slightly higher. It will be seen from the bottom entry on the right-hand side that a certain amount of non-operating income, namely £163,000, enters into this calculation. The non-operating income consists mainly of the royalties received from Hull, Jersey, and Guernsey, and the proceeds from advertisements. If this be ignored and attention directed to operating profit only, the return on the capital will be calculated from the figure of £5,708,000 shown on the left-hand side as operating profit, and will

be slightly less. In any case it may be taken that the telephone undertaking in 1931-32 gave a return on the capital invested of slightly over 5%.

Turning from the contemplation of results to the transactions leading up to them, let us look for a moment at the respective entries of income and expenditure. The income, as you will see (ignoring the non-operating

\* Paper read before the London Telephone and Telegraph Society.

income of which I have just spoken) amounted to £23,378,000 as compared with £22,682,000 in the previous year, an increase of approximately £700,000. The increase of £700,000 may appear at first sight satisfactory, but as a matter of fact it was far from being satisfactory, having regard to the rate of development of preceding years and the rate of development necessary to give an adequate return on the capital expenditure of the undertaking. It was indeed insufficient to cover the increase in plant costs, i.e., interest and depreciation, in the year. For several years the telephone revenue had been growing at the rate of about 1½ millions a year, and a drop to £700,000 is an indication that the industrial depression has had a serious effect on the telephone service. When in a few minutes we come to examine the American accounts we shall find that the American service was even more severely hit and that there was an actual decrease of nearly 28 million dollars in the operating income. This decrease reflected a decrease of 292,000 in the number of stations and of 393,000 in the average daily number of calls. In the British service there was an increase of 73,000 in the number of stations and of

expected effective life is estimated, as well as the residual or scrap value of the plant at the end of that life. After making allowance for this residual value, the cost of the plant is divided by the number of years during which it may be expected to render service, and this gives the annual amount to be charged as Depreciation. This is the method known as the "straight line" system. The amounts so charged are carried to the Depreciation Account, and the expenditure year by year on renewals of plant is charged against the balance of the Depreciation Account. It is possible, of course, that the estimate of the effective life of the plant may turn out to be inaccurate, either too optimistic or too pessimistic a view having been taken, and in the present stage of telephone development it must be difficult, for some classes of plant, to estimate with confidence the period of duration. But I will give presently some figures which indicate that there is no great difference of view between the American and the British engineers in their estimates of the probable life of the plant. For the moment let us take a closer view of the Depreciation Account of the British service for the year 1931-32.

STATEMENT II.

BRITISH POST OFFICE SYSTEM.

DEPRECIATION ACCOUNT (PROVISIONAL) FOR THE YEAR ENDED MAR. 31, 1932 (£'000 OMITTED).

	£	£		£
Renewals, &c. :-			Opening Balance ... ..	24,377
Salaries, Wages and Allowances ...	1,900		Provision for Depreciation, transferred from Income and Expenditure Account ... ..	6,859
Materials ... ..	500			
Renewals by Railway Companies	12			
Freight, Travelling and Miscellaneous Expenses ... ..	682			
		3,094		
Plant Permanently Displaced, &c. ... ..		2		
Closing Balance ... ..		28,140		
		<u>31,236</u>		<u>31,236</u>

207,000 in the average daily number of calls, but to achieve a net increase of 73,000 stations, 183,000 cessations had to be made good. To what extent the difference between American and British experience in connexion with the slump reflects the difference in the stage of telephone development arrived at in the respective countries and to what extent it represents a difference of degree in the general depression, I cannot, of course, say. The British figures can, perhaps, be regarded in an attitude of chastened satisfaction and with a hope that our experience in the year 1932-33 may not prove to be that of the American system a little deferred.

Turning back to the expenditure side, I have already commented on the figure for Salaries and Wages. The Miscellaneous expenses consist of travelling, stationery, printing, &c.; and the growth of £36,000 under this heading in a developing service need not detain our attention. The item of Maintenance, £2,948,000, shows a reduction of £122,000 on the previous year, and even taking in view the fact that there has been a saving on cost-of-living bonus, this reduction is a satisfactory feature of the account, for it follows similar savings over several recent years. There is an increase in the item of Rent, &c. of £130,000. This is a fairly serious increase, but it no doubt reflects the tendency for higher charges to be incurred as buildings, which were occupied under favourable pre-war conditions, become obsolete or inadequate or require renewals of lease. I should, perhaps, explain here that the figure for Rent, &c. includes the rental value of the premises owned by the Government and not actually rented. In many cases these premises are used for postal and telegraph, as well as telephone services, and the cost for the respective services can only be arrived at by a process of apportionment. In order to make this apportionment the capital value of the land and buildings belonging to the Post Office is kept outside the main telephone account and the whole cost of accommodation, made up of interest on the capital expenditure, depreciation on buildings, and cost of repairs, light, heat, rates, &c., is summarised in a separate account, the postal, telegraph, and telephone services respectively being charged with a share of this total expense according to the space which they occupy in the buildings.

The figure for Pension Liability has fallen in harmony with the decrease in the figure for salaries and wages.

The only other item of expenditure to be referred to is Depreciation of Plant, amounting to £6,859,000 as compared with £6,371,000 in 1930-31. This, of course, is a large figure, indeed the largest individual figure of expenditure shown in the account. It indicates to what an enormous extent the telephone service is a service in which plant and machinery are the chief item of cost. If all the plant costs shown in the account, namely, those in respect of maintenance, depreciation, and interest, be brought together, they amount to not less than £15,121,000 out of a total of £22,984,000; that is, 66%. Stated in terms of the cost per station this amounts to £5 19s. 6d. out of a total cost per station for the year of £11 6s. The other costs, stated in the same form, were Administration and Traffic expenses, with pension liability, £3 2s. 6d.; Maintenance, £1 9s.; and Accommodation, 15s.

The provision for depreciation on so large a scale is sometimes criticised as unduly large, but it is carried out on a system which the critics would find it difficult to assail on any serious ground. For each class of plant the

The figure of £6,859,000 at which we have just been looking in the Income and Expenditure Account will be seen on the right-hand side of the statement now on the screen under the description "Provision for Depreciation, transferred from Income and Expenditure Account." At the beginning of the year there was already a balance of £24,377,000 in the account shown as "Opening Balance." Turning to the other side we see that on renewals of plant, that is, of plant in respect of which depreciation had previously been provided, there was an expenditure of £3,094,000. A small quantity of plant, to the value of £2,000, was scrapped without being replaced, and the year closed with a balance of £28,140,000 assigned to depreciation. In calculating the interest on the capital value of the plant, this closing balance of £28,140,000 is, as I have already explained, deducted from the original capital expenditure; and this is tantamount to crediting the enterprise with interest on the balance in the Depreciation Account.

It will be convenient at this point to look at a statement in which certain figures of capital, plant costs, depreciation and interest in the British system are compared with the corresponding figures in the American system.

STATEMENT III.

COMPARISON OF CAPITAL, PLANT COSTS, &c.

(THE BRITISH FIGURES DO NOT INCLUDE LAND AND BUILDINGS.)

	American Bell System : Year to Dec. 31, 1931. \$	British Post Office System : Year to Mar. 31, 1932. £
Outstanding Capital ... ..	3,500,000,000	114,000,000
Mean Prime Cost of Plant ... ..		135,535,000
Mean Excess Renewal Costs of Plant		18,585,000
		<u>154,120,000</u>
Mean Prime Cost including excess Renewals ... ..	4,119,243,000	
Provision for Depreciation during the year ... ..	192,307,000	6,859,000
Provision for Depreciation expressed as a percentage of mean prime cost (including excess cost of renewals)	4.67	4.45
Interest, Dividends and Balance ... ..	258,099,000	5,871,000
Interest, Dividends and Balance expressed as a percentage of Outstanding Capital ... ..	7.37	5.15

In exhibiting the first slide containing such comparisons it is necessary to issue a warning. Although such comparisons are of interest and significance it will rarely be found that we are comparing like with like with such exactitude that no qualifications need be made. The conditions of the American Telephone System differ in a number of respects from our own, and moreover, there are certain differences in the methods of accounting which have to be allowed for in considering the respective figures. I will try to indicate as we proceed where reservations and allowances are necessary, but I wish to emphasize this general warning, as it is all too easy to take figures from the accounts and reports of different telephone administrations and to put them in juxtaposition in such a way as to suggest misleading conclusions.

This said, let us look at the figures on the screen. We have in the American column a statement of the outstanding capital as 3,500,000,000 dollars, and in the British column £114,000,000. As regards the American figure it should be noted that the amount includes about 300,000,000 dollars invested in the Western Electric Company and other Companies, and not employed in the Bell Telephone System itself. This, however, does not vitiate to any serious extent the calculation of the return on the capital which appears at the bottom of the statement, for the earnings on the 300,000,000 dollars invested outside appear to approximate pretty closely to the earnings on the telephone capital proper, and in any case the amount is relatively small.

We next have the prime cost of the plant employed by the two undertakings, taking the mean between the beginning and the end of the year. In the case of the British plant, where the total figure is £154,120,000, there is a separate figure for the "Excess Costs of Renewal." Similar costs are included in the Bell figure of 4,119,243,000 dollars, but the accounts do not show them separately. A word should be said as to the nature of these excess costs. As everybody knows, prices since the war have been very much higher than they were before the war: and in the case of pre-war plant the amount standing in the Depreciation Account for the purposes of renewal has been inadequate when the time has arrived for renewing such of that plant as has required renewal. It has been necessary, therefore, to incur additional expenditure and to take this expenditure into account when calculating the ensuing depreciation. This process has had certain effects on the accounts into the intricacies of which I do not propose now to enter, as they do not affect the comparison made in this statement. With the recent fall in prices, it will become necessary to give fresh consideration to this element of difference between the prices ruling when plant was installed and the prices ruling when it comes to be renewed. In the case of the British Post Office this matter is bound up with the revaluation of the plant which is at present in hand, and we need not, I think, give further attention to it this evening. It will be sufficient to say that both in the American System and the British System provision for depreciation is being made by taking into account the estimated life of the plant, in the manner which I described just now, and the prime cost of the plant in being, including the cost of the excess renewals which have been carried out. For the American System the provision during the year was 192,307,000 dollars and for the British System £6,859,000. This provision for depreciation expressed as a percentage of the mean prime cost (including excess cost of renewals) was, as shown in the statement, American 4.67%, British 4.45%. The point which I wish to illustrate in making this comparison is that there is no great divergence between American practice and British practice in providing for depreciation, and that our own practice has at any rate the support of those responsible for the administration of the American Telephone Companies. They, equally with our own authorities, consider that systematic provision based on the estimated life of the plant and resulting in a charge of something like 4½% of the prime cost is the proper system.

In comparing these two figures of 4.67% and 4.45%, however, it has to be borne in mind that, although in a general way they support one another, we are not comparing exact like with like. The American figure covers provision for the depreciation of buildings which, under the arrangement regarding rental values which I have already described, the British figure does not. On the other hand, the British Telephone System contains a considerably larger proportion of underground plant than does the American System and the life of this plant being longer than the life of overhead plant the provision for depreciation is relatively smaller. Whether the difference between the two figures exactly reflects the differing elements in the two services one cannot say. It is possible that either of the figures fails to correspond with the conditions of the life of the plant as it is going actually to materialise or even that both of them do. The estimates of life of plant are a matter for constant attention and when necessary for rectification; and at the present moment representatives of the Engineering Department and the Accountant-General's Department are specially investigating our estimates of the life of the British plant. The figures on the screen are, however, I think, of interest as illustrating the general concurrence of American and British opinion and practice in this matter of depreciation.

The last two figures in the statement give a comparison of the results of the year's working of the two systems expressed as a percentage of the outstanding capital—what may be called, using the common expression, the profit of the undertaking. For the American Bell System it is 7.37% and for the British Post Office System 5.15%. A good deal could be said on the question of the adequacy or otherwise of these respective rates of profit. In America a return of from 7 to 8% on the capital invested in public-utility undertakings is not usually regarded as excessive, although there is constant dispute on the matter between the companies and the Public Service Commissions which have the responsibility of controlling the rates charged to the public. Questions arise of what is an adequate return on the pioneering capital of the undertakings and also of the extent of the risk to which the

capital of the companies is exposed through supersession of the plant owing to the progress of science. In the case of a government-owned undertaking like the British Telephone Service, these questions do not arise in the same form. The only conflict of interest is between the subscriber as such and the tax-payer as such, and in seeking a due reconciliation between their respective claims it will be generally agreed that if the undertaking can pay interest on its capital, provide adequately for depreciation, and contribute a small surplus to the Exchequer, no one will have serious ground for complaint. That in fact is what the British Telephone System has done according to the accounts now before us in the year 1931-32. Before leaving this subject, however, it will be worth while noting that the profit of the American companies is increased by the earnings on the accumulated surpluses of past years which have been left in the business. The policy which provides for the accumulation and retention of such surpluses will no doubt be justified during the period of depression which has now been encountered, when they will act as a shock absorber. In the case of the British Post Office there is no accumulation of such surpluses and if the shock comes it will have to be passed on to the Exchequer which takes any surpluses.

(To be continued.)

## BRIGHTON NOTES.

A REPRESENTATIVE gathering assembled last month to say farewell to Mr. Gregory, Traffic Superintendent, Class II, on his departure to take up an appointment at Liverpool as Traffic Superintendent, Class I.

Mr. Williamson, Traffic Superintendent, Class I, as Chairman, commenced with a speech which, besides the introductory and complimentary remarks usual on such occasions, contained humorous personal allusions which effectively pushed into the background any tendency there might have been for the subsequent proceedings to be stiff and formal.

Supporting speeches were made by Mr. Turner, Assistant Traffic Superintendent, Mr. Bending representing the Traffic Office Clerical Staff, Mr. Brown, Sales Manager, and Mr. Cumming, of the Accounts Section.

The District Manager (Mr. G. Edward) spoke in a similar strain of congratulation and regret, and then requested Mr. Gregory to accept an oak bureau and leather attache case as a parting gift from the District Manager and his staff and the Assistant Supervisors of the District.

Mr. Gregory very feelingly thanked all concerned for the handsome present and for the kind expressions of friendship and esteem with which it was accompanied. It was obvious that he felt the severing of his connexion with Brighton somewhat keenly, but had found his new sphere of service congenial and interesting.

Before the meeting broke up, opportunity was taken by the District Manager and Mr. Williamson to extend an official welcome to Mr. Gregory's successor, Mr. E. Siddall. The latter, who took up the position of Traffic Superintendent, Class II, at Brighton from the Telegraph and Telephone Traffic Section of the Secretary's Office, replied by expressing his appreciation of the warmth of his welcome and associated himself with the congratulations which had been tendered to Mr. Gregory.

C. O. PARKER,  
Assistant Traffic Supt.

## LIVERPOOL NOTES.

*Demand Trunk System.—Lecture.*—We have been privileged at Liverpool to hear a lecture on the trunk demand scheme delivered by no less an authority than Mr. J. F. Darby, of the Headquarters' Traffic Section. The lecture was given on Oct. 4, in the India Hall, under chairmanship of Lieut.-Col. Kempe, Postmaster-Surveyor, and was attended by a bumper audience of between 450 and 500, which fully taxed the capacity of the hall. Not only was practically every exchange in the Liverpool district represented, but there were present several Head Postmasters and numerous visitors from surrounding districts.

The lecturer gave a most lucid exposition of demand trunk working from the standpoints of both American and British systems and was followed throughout with keen interest. The excellent selection of lantern slides with which the lecture was illustrated, enabled the non-manipulative and non-technical members of the audience readily to understand the principles of the new method of working.

From the discussion which followed it was clear that the lecture was much appreciated and the fact that a general outline of the system has been so clearly explained to so many people will be found of great value when the task of complete instruction is undertaken by the local officers.

At the conclusion a very hearty vote of thanks to Mr. Darby was proposed by Mr. Gauntlett, the District Manager, and seconded by Miss Jones, the Supervisor of the Central Exchange. This was carried with acclamation, and a vote of thanks to the Chairman terminated a very pleasant and interesting evening.

## TELEGRAPHIC MEMORABILIA.

THE programmes of both the 1932-3 sessions of the Institution of Electrical Engineers and that of the Post Office Telephone and Telegraph Society of London show special interest in the development of Telegraphy. Nov. 17, Mr. R. P. Smith is to lecture before the Institution Members on "The Inland Telegraph Service: The Introduction of Modern Machinery and Methods." On Dec. 19 the same speaker will more specifically deal with the question of "The Maintenance of Instrument Room by the Traffic Staff" before the members of the P.O.T. and T. Society of London. By the way, on Feb. 20 next, Mr. F. W. Phillips (Secretary's Office) has promised the T. and T. Society some "Sidelights on the Madrid Conference," a paper which on no account should be missed.

*Obituaries.*—The death of Mr. Chittenden at Deal removes a very lovable and heroic character of the Cable Room C.T.O. staff. Talented and wonderfully cheerful despite his distressing years of suffering, his decease was due to heart failure, preceded by asthma, the result of War Service abroad. Our sincerest sympathy goes out to his bereaved ones.

The sudden demise of Mr. Ernest Chesham, a humble member of the Engineering Staff of the G.P.O. at the age of 59 years, revealed the unusual history and useful life of one whose unselfish efforts for his fellow-men could never be called into question. Mr. Chesham belonged to a Salvation Army Band in his spare time, in which and during 40 years he managed to travel some thousands of miles on the Continent. The Post Office Factory was represented by Mr. J. Willmott, Mr. R. O. King, Mr. A. Miller, Mr. W. H. Clark, and thirty of his former colleagues, at the interment.

*Personal.*—The British Post Office had the honour of one of its representatives, Col. A. S. Angwin, D.S.O., M.I.E.E. of the E.-in-C.'s Office, being appointed chairman of the sub-committee studying the question of wavelengths at the International Telegraph Conference in Madrid.

Major John Cameron, O.B.E., Asst. Superintending Engineer, Post Office, Glasgow, is shortly to retire. Entered P.O. service 1886, Engineering branch 1899, steadily passing through all grades. War service in Royal Corps of Signals in France where he was awarded O.B.E. (Military Division).

Mr. Harold P. Williams has been appointed General Manager of Australian Broadcasting Commission. He was chosen from 211 applicants and had been connected with the work since its inception.

Mr. W. N. Sinclair, an old C.T.O. official and well-known athlete of the long past; also an old warrior of the Egyptian and South African Military engagements is spending this winter in East Africa. Mr. Furby is now well on his way to Australia and hopes to exchange signals with Mr. F. P. Cooper, formerly of the C.T.O. Telegraph School, when he himself reaches N. South Wales.

AUSTRALIA.—The Federal Government's proposals for broadcasting are to construct eight additional broadcasting stations each to cost about £20,000, of which two will probably be in Tasmania. Approximately 95% of the population it is expected will then be within reach of a first class service.

CANADA.—Two of the three men appointed to the Dominion Radio Broadcasting Commission charged with the inauguration of nationally controlled broadcasting are journalists, Mr. Hector Charlesworth, managing editor of the *Toronto Saturday Night*, and Mr. Thos. Maher, a French-speaking journalist of Quebec. Reuter's Ottawa agency says that the other member of the Commission is Lt.-Col. W. A. Steel, Director of Radio Research, Ottawa.

CHINA.—The International Wireless Station recently opened in Shanghai by the Chinese Ministry of Communications, is principally for use for short-wave communication with Europe and America. The station comprises three principle divisions:—Central office in Sassoon House, Shanghai, transmitting station near to latter, and receiving station in Liu-hong. These three points are interconnected. Provision is made in case of breakdowns.

FRANCE.—The London *Times* informs us that a Bill providing for the better protection of private wireless messages from being picked up by private stations and communicated to persons other than their addresses has been laid before the French Chamber. *Radio Legislation.*—The Government has issued an order to all the French mayors to refrain from issuing any more orders regarding the use of electrical apparatus interfering with broadcasting as a ministerial commission is dealing with the matter in order to standardise legislation.

GERMANY.—A picture telegraphy service was established a few weeks ago between Germany and the Dutch East Indies. *Radio.*—The new Breslau transmitter in Rothsurben, which has probably by now completed its trial transmissions, has been equipped with a new type of aerial, the shape of which differs considerably from that of the usual aerial. Its field intensities are greater and the nearest zone of fading occurs at a greater distance than before, which means that a larger area is served by the surface wave and is therefore free from fading.

GREAT BRITAIN.—*Leeds.*—A trial is being made in Leeds where a bus has been fitted experimentally with a loudspeaker, to announce the approach of stopping-places on dark nights. Such loudspeaker is operated from a microphone by the conductor on the platform. *Lerwick.*—Permanent aerials have now been erected at *Lerwick* Post Office, and a radio installation will be used during emergencies when the cables to the mainland are out of action. *Liverpool.*—The Asst. Postmaster-General, Mr. H. Graham White, M.P., recently opened an exhibition at a stores in this city. Prominence was given to the latest developments in telegraphy and telephony and demonstrations of methods of eliminating radio interference was also a feature.

HOLLAND.—It is hoped that the new transmitter recently completed at Hilversum, many complaints of which have been made during the last two years will have no further justification. *World-Radio* informs us that the new steel aerial mast is 465 feet high. The most up-to-date crystal control system is in use.

IRAQ.—A chain of new radio Marconi stations is to be built through Iraq, Syria, and Palestine to maintain communication along the projected British oil pipelines connecting the Iraq Petroleum Co. at Kirkuk with the Mediterranean ports of Tripoli (Syria) and Haifa, a total distance of over 1,200 miles. The stations are to be suitable for both Telegraph and Telephone services. Normally Morse will be used but in urgent cases the engineers will be able at salient points to speak personally with their co-operating colleagues.

IRISH FREE STATE.—It is expected that the high-power broadcasting station at Moydrum, Athlone, will be completed early next month. This was the station which was first used, temporarily, to broadcast the Pope's message to the Eucharistic Congress, Dublin. NORTHERN IRELAND.—The B.B.C. has decided, says the *Electrical Review*, to build a high-power transmitting station within a few miles from Belfast.

PALESTINE.—A new broadcasting station operating on a wavelength of 456 metres has recently been completed at Tel-Avir. A short-wave transmitter is to be added shortly.

POLAND.—A *New Submarine Cable.*—The Polish authorities are surveying the possibilities of a submarine cable with the northern European countries in order to have direct communication. So far the proposal is for a cable Gydnia to Bornholm, thus joining up with the cables between Bornholm and Denmark and Sweden.

SPAIN.—The latest piece of interesting news as these lines go to press, regarding the International Telephone, Telegraph and Radio Communications Congress in Madrid, is that "The head of the British delegation made a vigorous appeal to the Committee which is considering the matter of the abolition of the ten-letter code, pointing out that though the decision in favour of such abolition had been reached by 28 votes to 10, the minority represented a much larger traffic than the majority. The delegates from the United States, Canada, and Australia supported the

British appeal, and the matter was finally referred to the next meeting of the Assembly.

U.S.A.—The *Telegraph and Telephone Age* of New York reports that "The Federal Radio Commission is not giving legal advice to broadcasting stations in connexion with their rights in broadcasting speeches of political candidates in the present campaign. The Commission takes the view that it has no right to enter into matters of this kind unless it has a specific case before it. In answering inquiries which it is receiving on this subject the Commission is calling the broadcasters' attention to that section of the radio law which provides that, if they permit a candidate for political office to make a speech from their stations, they are required to allow his opponent to answer the speech under the same terms."

*Potted Lectures.*—As a side line to Telegraphy the Western Union has inaugurated "Illustrated Voice" lectures in 23 American cities. There are no charges for the apparatus, but a service fee is made. The apparatus is the property of the Western Union Company and is delivered, operated, and returned to headquarters by a qualified Telegraph Messenger, who unpacks and re-packs the entire outfit which is carried in two special hand valises.

A library of programmes on special subjects is maintained in each of the key cities. The relative pictures, charts, diagrams, &c. of the lecture are co-ordinated with the electrical transcription of the voice or sound. All you have to do, or will be able to do in the very near future, is to phone the nearest office of the company that you require a "band with music and cheers," or a lecture by an authority on how to play contract bridge, &c., and the messenger will hurry round with the Vixaphone, the inventor of which says *The Age* was "Mr. W. Wadsworth Wood, but was actually the solution of a major sales problem in the building industry." It is further stated that the General Electric and Westinghouse companies have already contracted for the service.

*Teletype and Wireless Circuits.*—It is claimed by the engineers of the Radio Corporation of America that after extensive tests "radio-teletype" has proved not only a possible but an actual success. Mr. Winterbottom, General Manager of R.C.A. Communications Inc., recently announced that his company has actually established teletype circuits and is now successfully handling all the corporation's traffic between San Francisco and Hawaii in both directions. The success has been due mainly, it is understood, to the use and development of a system of vacuum tube impulse relays. According to the *Telegraph and Telephone Age*, the claim made by the corporation's engineers is "a means of transmission that is no less than 300%, as rapid as the mechanical speed limit of the teletype." Further research activities are now being directed towards the goal of triplex operation, i.e. working three telegraph services, on a single radio channel!

*The Narrow View.*—To philosophise from a restricted point of view is interesting enough, but it is not conclusive.—SIR OLIVER LODGE. J. J. T.

#### FOR OUR ADVERTISERS.

ALL enquiries should be addressed to the Department of Overseas Trade, 35, Old Queen Street, London, S.W., except where otherwise stated, quoting reference number in all cases. Supplies, &c., required by:

*Australia.*—Melbourne. Nov. 22. Posts and Telegraphs Dept. Accumulator cells and batteries (A.X. 11491). Dec. 6. Posts and Telegraphs Dept. Submarine telephone cable (A. 11511). Dec. 20. Multiple-twin wire telephone cable (A.X. 11537).

*India.*—Nov. 7. Electric capstans for Vizagapatam Harbour. Apply Director-General India Stores Dept., London, S.E.1 (deposit 10s.). Simla. Same date. India Stores Dept. Electric bulbs for signalling lamps and torches. Apply as above (deposit 5s.). Nov. 14. Inert cells and dry batteries. Apply as above (deposit 5s.).

*South Africa.*—Durban. Nov. 4. Pilot and telephone cable (11514). Capetown. Nov. 9. H.p., l.p. and telephone cables (A.X. 11521). Nov. 16. Electricity Dept. Transformers (A. 11512).

Mr. L. A. Paish, H.M. Trade Commissioner in New Zealand, now in England on an official visit. Firms desirous of interviews should communicate with Comptroller-General of the D.O.T., 35, Old Queen Street, S.W. (reference 13592/32). J. J. T.

## WRONG NUMBERS AND ALL THOSE.

(With apologies to the Authors of "One-oh-double-six and all that.")

BY P. W. BATH.

THE average man finds difficulty in remembering more than one or two telephone numbers—generally wrong ones. Usually a number is easily remembered if there is something a little odd about it: but even numbers which are odd, are, oddly enough, even under favourable circumstances, liable to be forgotten—which explains with, I think, admirable lucidity, the fascination which the act of telephoning has for most of us.

One can imagine that in the early days of the telephone a user might often ponder upon the marvels of such a means of obtaining conversation with a person he didn't know from Adam, when he actually wished to speak to some one he did know from Aberdeen: but nowadays we rarely think of the men who gave us (at a rental) this wonderful blessing.

Actually, of course, the telephone was not the invention of any single man. Only a married man could have realised the social value of his being able to explain, from a safe distance, his failure to arrive home at the proper hour. Much patient research has revealed that one of the men we have to thank for our present (telephone) troubles is a Mr. Faraway (E. M. F., as he was known to his intimates), whose itinerary was calibrated last year. Being Faraway, his thoughts naturally turned to his home, so he invented the now famous Units of Residence: which, realising their future connexion with the Post Office, he called "ohms." Having invented the ohm, Mr. Faraway was at once struck by the significance of the advertisement, "Every ohm should have a telephone," so as there were no telephones at that time, he invented one, and induced an American gentleman named Bell to invent a bell so that he could ring a wrong number when he thought of one.

There are many systems of telephony in use now, such as the annual and the automatic systems, so called because under the former system if a subscriber waited a year for a call it didn't matter: but under the latter system it automatter. Automatic telephony is sometimes known as the "little-by-little" system because it was invented by Ericsson. Then there is the form of telephony with which most people are familiar—radio (from the Spanish word "adios," meaning "Good night, everybody, good night!") The radio-telephony with which the Post Office is mainly concerned differs in one important respect from the popular broadcast, for whereas the broadcast depends upon millions of listeners, the other form of radio has been developed, at great cost of time and trouble, to prevent overhearing by persons not concerned in the conversation. This is achieved by mangling the speech in an ingenious instrument at Rugby known as the "scrum."

All forms of telephony are dependent, for their successful operation, upon the telephone exchange. Exchange is a word derived from the algebraic root "ex," meaning an unknown quantity, and "change," meaning change. The word, therefore, implies that an unknown quantity (or wrong number) may be changed. When an exchange is called, a light glows in front of the operator. This light is called an "opal." There is a deep psychological reason underlying the choice of the word "opal," it having been realised that no girl could fail to respond when she sees a precious stone. In automatic telephony it is the subscriber who *hears* the precious tone—if he is lucky. The operator should answer a call by saying, politely, "Number, please," like a sergeant-major preparing a squad of recruits for forming fours. She writes the subscriber's answer on a ticket, tells him to "Hang up" (or words to that effect) and puts his light out. At the London Trunk Exchange, situated, of course, at the Elephant, there are a lot of girls with lights to which they respond continually by

putting plugs into "jacks." These jacks are holes in a switchback, and are so called after their inventor, a famous Scotsman.

Sometimes an operator may be rather a long time in answering a call. This is generally due to her *unit of attenuation*, which is called her *deshabille* (*Anglice—decibel*) and means she is not ready to answer callers.

When an operator wishes to pass a call to another exchange, she actuates the lights of a girl at that exchange. This second operator gives the name of her exchange, and the first operator (who is known, ungrammatically, as A operator, to distinguish her from the other, who is quite grammatic and known as AN operator) asks for the number she first thinks of. This number is then put into the "multiple," a very ingenious apparatus capable of supplying the right number if it is left. Both operators then call their respective subscribers, but not what the subscribers call them—sometimes. If a subscriber has a bad complaint it is the operator's duty to warn him by saying "your time is up."

Scores of completely new exchanges have been called into being throughout the country, to meet the expansion of the service. One London exchange is peculiarly indicative of the growth of the London area. This exchange is "Tandem," so called because it is so far away that the operators have to cycle to work. Another important London exchange is called "Toll," in honour of Mr. Bell, the inventor of ringing.

The most recent and important improvement in the British Telephone Service is the introduction of the demand system. This means that you get through on a junction. We experts agree that this is practicable for calls to Clapham, Willesden, Waterloo, &c., where there are junctions, while partial success, at any rate, is anticipated with calls for the Law Courts, where in-junctions are often available.

In brief, the demand system (also known as the "gangster system," because you get your victim on the spot) is a method of multiplying circuits without increasing their number. Special suites of operating positions, called "tout de suites," are necessary. On these, when the scheme is more advanced, circuits will be provided on a "bothway" basis. It is a refreshing sign of the times to observe an important Government service adopting a "bothway" system of reducing the odds against backing a loser when asking for a number. There is, however, no foundation for the rumour that recording operators will be called "bookies." A feature of demand working is that one operator only is concerned in recording and controlling a call. This necessitates the provision on the positions of much more information than is required on delay positions. Certain difficulties in this direction have been smoothed over by a file known as the Visible Index (or Kardex) File. This file gives, within quite a small compass, much priceless pricing, and routine routing information.

As is pretty generally known, a demand service has been provided to Birmingham, from London, for some months past. The success which has attended this initial effort is such as to encourage high hopes of the new system when it is extended. So implicit is the belief of the Post Office authorities in its ultimate success, that a Publicity Section has been formed solely to provide the newspapers with copy with which to fill up the vacant spaces left by the disappearance from public life of "Subscriber," "Disgusted," "Button B" and such contributors to the "Letters to the Editor" column.

## SCOTLAND (WESTERN DISTRICT) NOTES.

The congratulations of the staff are extended to Miss C. Graham on her promotion to the post of Female Clerical Officer.

Following on receipt of a telegram sent by the Postmaster-General to selected citizens in the Scotland Western District, the following conversation took place between the Sales Representative and the prospective subscriber:—

"Mr. —, Give the Postmaster-General my regards. Between you, my wife and his telegram, kindly arrange to instal the telephone, and give me peace for evermore."

## REVIEWS.

"*Thermionic Vacuum Tubes.*" By E. V. Appleton, M.A., D.Sc., F.R.S. Published by Methuen & Co. 117 + vii pp. Price 3s. net.

This small book, which forms one of the series of monographs on Physical Subjects issued by Messrs. Methuen, is intended mainly for the student of general physics who has not made a special study of radio-frequency phenomena.

The whole subject of the theory and construction of two-, three-, four- and five-electrode tubes, and their applications in high-frequency engineering and other electrical fields, is covered.

The limited size of the book, of course, prevents the treatment from being exhaustive, but it is by no means merely elementary, and is as full as the space available will permit, while at the end of each chapter a bibliography is given, which enables the reader who so wishes to pursue the subject further.

The book should be very useful not only to students of general physics, but also to power electrical engineers who wish to obtain some knowledge of the action of the thermionic valve, and to those who, without being professional wireless engineers, are more or less concerned with wireless matters.

"*Electrons and Waves—an Introduction to Atomic Physics.*" By H. Stanley Allen, F.R.S. Published by Macmillan & Co., Ltd. 336 + xi pp. Price 8s. 6d. net.

During the last quarter of a century the fundamental conceptions of physics have been entirely revolutionised.

The change in outlook has been so tremendous and the rapidity with which the various theories have followed one another has been so great that the non-specialist is left with a sense of bewilderment.

The book under review is intended to give the non-specialist reader a general view of the present position.

The first two chapters deal with the development of the conception of atomicity, first with regard to matter, and then with the subsequent developments of the idea as embodied in the theories of the electron and the quantum. The next two chapters treat the theory of relativity. The problem of radiation and the quantum theory to which it gave rise are dealt with in the following two chapters. The next chapter deals with the structure of the atom. Then follow two chapters on X-rays and their use in crystal analysis.

The tenth chapter is devoted to an account of radio-activity and the investigations which have been made into the structure of the nucleus of the atom, and the next deals with the origin of spectra.

The following two chapters deal with the wave mechanics theories of de Broglie and Schrodinger, and the next with some applications of the quantum theory.

In the last chapter a general summary is given of the ground covered by the preceding portion of the book.

In an appendix a very useful bibliography is given, for the benefit of those readers who may wish to pursue the subject further.

The treatment throughout is very clear, and although the use of mathematical symbols has not been entirely avoided, the non-mathematical reader need have no fear that he will on that account be unable to follow the argument.

The illustrations, both line drawings and photographs, are good and well reproduced, and the whole get-up of the book is excellent.

We can strongly recommend it to anyone who wishes to obtain an idea of the present position of the subjects of which it treats.



## GLOUCESTER TELEPHONE AND TELEGRAPH EXHIBITION.

"EVERY HOME SHOULD HAVE A 'PHONE."

THE Bon Marché, Gloucester, is one of the largest stores in the West of England, and it is essentially up to date. It was, therefore, appropriate that, by courtesy of the Management, an exhibition of the latest developments in the telephone and telegraph services, and the newest apparatus in use, was held at this modern store during the fortnight Sept. 26 to Oct. 8. The slogan at the head of these notes was displayed prominently over one of the exhibits.

The opening ceremony was performed on the morning of Sept. 26 by the Mayor of Gloucester (Alderman S. J. Gillett) who was supported by Mr. George Pope (Managing Director of Bon Marché Ltd.), Dr. H. J. Larcombe (Director of Education for the City) and the following representatives of the Department:—Mr. R. M. McLarty (District Manager), Mr. W. Day (Sectional Engineer), Mr. A. E. Craven (Head Postmaster) and Mr. W. Brodie (Sales Manager).

Mr. McLarty explained the object of the Exhibition and, on behalf of the Postmaster-General, thanked the Mayor for performing the opening ceremony, and the Management of The Bon Marché Ltd. for the offer of the necessary accommodation. He also made reference to the rapid development of the Telephone Service and drew attention to the graph illustrating the growth in the Gloucester district during the past ten years (Fig. 1). Mr. Day, Sectional Engineer, briefly explained the exhibits and referred to the unceasing efforts of the Post Office to provide the public with the very latest apparatus and an efficient service.

The Mayor congratulated Mr. Pope and his firm for their enterprise in placing the accommodation at the disposal of the Post Office. He also made some complimentary remarks about the exhibition and expressed his intention to write the Postmaster-General and offer his personal congratulations. The local municipal authorities, he said, considered that the exhibition had a great educational value and they had therefore arranged, through Dr. Larcombe, their Director of Education, for many pupils from the secondary and senior elementary schools to visit the demonstration.

In opening the exhibition, the Mayor added, they had decided to send a message to some person connected with Gloucester, and they had chosen Mr. "Wally" Hammond, the Gloucestershire Test Team cricketer, who was then on his way to Australia. The message would be sent by wireless and those present would be able to see how it was started on its journey. The radiogram read as follows:—

"Wally Hammond, c/o Royal Mail Steamship *Orontes*.  
"Greetings. Pleasant voyage; successful cricket;  
safe return.

Mayor of Gloucester. Sent from Telephone  
Exhibition, Bon Marché, Gloucester."

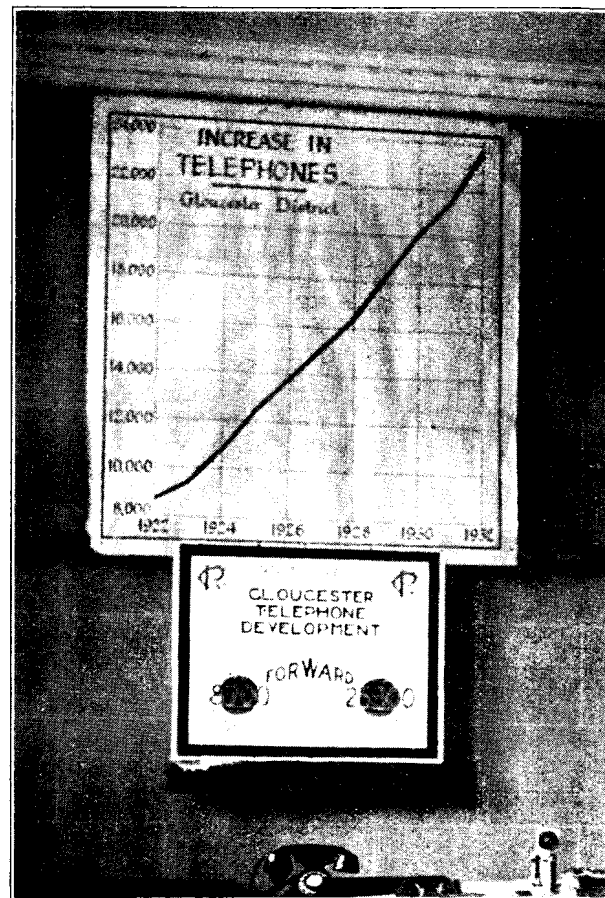
In due course, a suitable reply was received from Mr. Hammond, and both message and reply were prominently displayed.

The success of the exhibition was enhanced by the excellence of the accommodation provided and the exceptionally good lighting arrangements assisted both the demonstrators and the public, whose close interest in the intricacies of the apparatus encouraged the Engineering staff to give very detailed explanations.

The exhibits included a Kiosk from which local calls were obtainable free of cost, a 4-digit auto demonstration set, a Rural Automatic Exchange Unit, Cord and Cordless P.B.X. switchboards,

various Plan No. extensions, groups of Hand Micro Telephones in colours, Multi Coin Box with glass front, a selection of old telephones, a model of a manhole, inland and submarine cables, exhibit of outside overhead construction work, model of cable ship *H.M.S. Alert* and its flag. Two telephones were connected over a 1,000-mile circuit to demonstrate the excellent quality of present-day trunk transmission. Teleprinters were also exhibited and demonstrated, the sending of souvenir telegrams proving one of the attractions for adults and school children alike. One stall was devoted to the demonstration of the elimination of radio interference.

All these items were explained exhaustively and yet simply by the Engineering Staff present, and we cannot refrain from



GRAPH ILLUSTRATING GROWTH OF GLOUCESTER TELEPHONE DEVELOPMENT IN TEN YEARS.

expressing our admiration of their unflagging energy and unflinching good humour under conditions which, at times, must have been very exacting.

Approximately 11,000 people, including 2,000 school-children, visited the exhibition, and we confidently anticipate that the good telephone seed sown during that fortnight will in due time germinate and bear fruit.

When comparing these figures and the orders detailed below with the results in other districts, it should be borne in mind that the population of the city of Gloucester and the surrounding district over a radius of 40 miles is very small—probably 150,000 at most.

Orders were booked for 4 Exchange Lines, 2 Extensions and 8 Hand Micro Telephones. In addition some 30 enquiries were made for service within the district, and these will be followed up by the respective district Sales Representatives. Orders for 2 Hand Micro Telephones in another district were also taken and

these, together with enquiries for service in two other districts, were duly forwarded to the proper quarters.

At the conclusion of the exhibition, a letter was received from The Bon Marché Ltd., expressing appreciation of the manner in which the exhibition had been conducted and congratulating the Department on the excellence of its staff and the thoroughness of the organisation. A suitable reply, returning thanks, was sent by the District Manager.

GLOUCESTER NOTES.

*Resignation for Marriage.*—Miss D. Sutton, Writing Assistant in the District Manager's Office, resigned her appointment on Sept. 24 in order to take up a more responsible post on the board of directors of a new domestic establishment.

Her colleagues presented her with an eiderdown, bed-linen, and a glass water jug, and wished her every happiness and success in her new appointment to which she and her co-director had elected themselves. Miss Sutton returned thanks for the presents and good wishes.

*Social Activities.*—Arrangements are in hand for hockey matches with other districts and for the first whist drive, social and dance of the winter season.

PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at Sept. 30, 1932, was 2,096,976, representing a net increase of 5,753 on the total at the end of the previous month.

The growth for the month of September is summarised below :—

Telephone Stations—	London	Provinces.
Total at Sept. 30, 1932 ... ..	781,881	1,315,095
Net increase ... ..	1,850	3,903
Residence Rate Stations—		
Total ... ..	248,912	327,260
Net increase ... ..	780	1,466
Call Office Stations (including Kiosks)—		
Total ... ..	8,594	29,811
Net increase ... ..	72	116
Kiosks—		
Total ... ..	3,334	10,636
Net increase ... ..	47	139

The total number of inland trunk calls for the month of July, 1932 (the latest statistics available) was 11,114,221, and the total number of international calls was 94,200.

Further progress was made during the month of September with the development of the local exchange system. New exchanges opened included the following :—

LONDON—Liberty (Merton) (automatic) :

PROVINCES—Bayford (Hertford), Blagdon (Bristol), Bucklers Hard (Lymington), Chapel St. Leonards (Skegness), Clifton Campville (Tamworth), Cruden Bay (Peterhead), East Rudham (King's Lynn), Freethorpe (Norwich), Glenboig (Coatbridge), Hathern (Loughborough), Kinoulton (Nottingham), Millisle (Donaghadee), Morden (Wareham), Red Row (Newcastle-on-Tyne), Rudheath (Northwich), Sully (Cardiff), Three Waters (Truro) (all rural automatic exchanges) ; Amersham, Bury St. Edmunds (manual) ; Acomb, Bilston, Penn, Tettenhall, Wolverhampton, (conversions to automatic) ; Churston, Fallings Park, Finchfield, Pinhoe, Preston (Torquay) (all automatic) ;

and among the more important provincial exchanges extended were :—

Farnham, Sidmouth (manual) ; Newcastle (Staffs.), Park (Dundee) (automatic).

During the month 74 new overhead trunk circuits were completed, and 84 additional circuits were provided by means of spare wires in underground cables.

EASTERN DISTRICT NOTES.

On Sept. 1 the magneto exchange at Bury St. Edmunds, accommodating some 550 lines, was replaced by CB 10 equipment, the transfer taking place satisfactorily.

After the transfer, the exchange was visited by the Mayor and Corporation of Bury St. Edmunds, and by representatives of the local Chamber of Commerce, who were received by the District Manager, Norwich (Mr. C. F. Ashby) and the Sectional Engineer (Mr. W. M. Osborne) and later conducted over the exchange by members of the Traffic and Engineering staffs.

All expressed their appreciation of the arrangements made by the Department for an enjoyable and instructive visit.

On Oct. 8 the staff assembled in the Norwich District Office to bid farewell to Mr. F. K. Gent, Asst. Traffic Supt., who is moving to Manchester after nearly six year's service in the District Manager's Office. Mr. Ashby expressed his deep regret at Mr. Gent's departure and spoke highly of his work and the great respect with which he has been held in the office, in the exchanges and in the Sectional Engineer's Office.

Mr. Ashby then presented the parting gift of the staff to Mr. Gent, an oak bureau. Mr. David, Traffic Supt., and Mr. Gate, Traffic Supt., Class II, also expressed their regrets at Mr. Gent's departure. Mr. Gent responded suitably in a few well-chosen words.

To Mr. Trowbridge, who joins the Traffic Staff, we extend a hearty welcome.

We take this opportunity of congratulating the Colchester District Manager's Office on winning the District Manager's Tennis Shield. The final of the competition, which is a ladies' doubles event—open to Head



FINALISTS IN DISTRICT MANAGER'S SHIELD.

D. Sumner O. Wilshire D. Johnson H. Cook  
(Colchester). (Colchester). (Norwich). (Norwich.)

Postmasters' Staffs and District Managers' Staffs, in the Eastern Surveyor's District—was played at Ipswich on Sept. 21, between Miss H. Cook and Miss D. Johnson, of the Norwich District Manager's Office, and Miss D. Sumner and Miss O. Wilshire, of the Colchester District Manager's Office. The Colchester pair won 6-1, 6-2.

After the match the District Managers (Mr. C. F. Ashby and Mr. A. G. Mackie) entertained the teams and some 50 visitors from the two offices to tea at the Picture House Café, where the former presented medals and the shield to the winners, and medals to the losers.

Subscribers are generally rather backward in giving the telephone service a pat on the back, but the following extract from a subscriber's letter gives us what we believe to be a true reflection of the opinion of the majority :—

" I may say that, apart from the above matter, the telephone service, as I know it in Norfolk, is to be congratulated on its speed and efficiency."

The following extract from a stage will, published recently in a London theatre programme, proves the old saying that " many a true word is spoken in jest " :—

" I bequeath my telephone to—no one, I find it too useful."

## ADMINISTRATION AND THE ART OF MANAGEMENT.

EXTRACT FROM THE SPEECH DELIVERED BY SIR HENRY N. BUNBURY, K.B.E.,  
AT ANDERTON'S HOTEL, ON OCT. 4.

THERE is a problem, or group of problems, which has been attracting in recent years a good deal of thought and attention in various quarters. It comes up in various forms. Is there a maximum size for industrial combinations beyond which they must fail because they are too large for a single unified direction? What are the true principles of management organisation for very large concerns? Must there be an inevitable shortage of managerial ability as the demand for it grows? Has the war, which took so heavy a toll of the best and most enterprising and most courageous of the generation which would now be in its prime, left an unfillable gap? What are the best ways of educating and training men for management in industry?

I am speaking here not of Management in its more technical sense—what is commonly known as Scientific Management—but in a wider sense—I mean the art of building up and maintaining in efficient performance a large organisation of human beings. Now this is a job at which governmental institutions such as armies and Government Departments have been busy for a pretty long time: and although the conditions, the purposes and objectives, differ materially from those of large industrial organisations, the fundamental problems are much the same.

What I shall try, therefore, to do this evening is to bring out some of the lessons of that experience, so far as they seem to bear any application to industrial administration and to management in industry. I shall confine myself to the problems of personnel and shall not deal with those of structure or organisation.

In the world of government we are accustomed to classify those problems under the three heads of recruitment, training and promotion. In what I have to say this evening I will follow this order.

One of the clearest lessons of our experience is that if you want good results you must use good raw material: and the first problem is to have a definite plan which will secure that you get it—that is to say a sufficient quantity of it to provide in due course for the future needs of your higher directing and managing organisation. That plan should be related on the one hand to the requirements of the particular business, on the other to our national educational system. The recruitment system should be centralised—if only because a single central recruiting system ensures a much wider field of choice and it should have definite standards of educational attainment and personality. Haphazard recruiting cannot give satisfactory results, and generally resolves itself into the use of the pressure-gauge as the final test: the selection of the man who has most influence behind him. These principles, rigidly followed, rule out quite a number of recruiting methods which are still common enough.

Having secured the raw material it has to be trained: and training offers some very difficult practical problems. The easiest course—and the worst—is to assign a man from the street to a particular branch or department of the business and to keep him there until he has grown thoroughly specialised, has sunk deep into his groove, and—especially if he is of the keen and ambitious kind—has become stale and disappointed. To a quite important extent the job makes the man. The ideal is that during the vital first 10 years or so of his service, in which his capacities are being made—or marred—he should constantly be confronted with a variety of tasks which he can manage to do—but only by an effort—by doing his very best. Never give the beginner a “soft time.” To secure this is, however, not easy, and that is where the importance of recruiting good raw material in the first instance comes in. The better the man the more risks you can take with him. A systematic routine of training is advisable in which the man moves fairly rapidly from one class of work to another.

It is a good plan to impose a definite period of probation in the first instance during which the probationer's aptitudes and weaknesses can be observed, and at the end of which it can be decided with some confidence for what particular line of activity he is best suited and his future training planned accordingly.

I would put in a plea for allowing some opportunity, wherever it is possible, for a certain amount of theoretical study during the training period. There are, I am sure, many spheres in which this combination of theoretical study with practical work is of the greatest value in training men for managerial positions later on.

But if, judging by our experience, recruitment calls for high standards sternly maintained, and training is by no means easy to organise, promotion—the third division of our subject—is the most troublesome job of all. Yet, upon the soundness of your promotion system the whole success of your enterprise will depend. This is particularly true in relation to the junior promotions—the advancement of the youngsters who carry the proverbial field-marshal's baton in their knapsacks. I often think that it is the first promotion that is the important one: the later ones should follow almost inevitably.

Let me try to sum up in the form of a few principles what seem to me to be the conclusions to be drawn from our experience in this matter. A sound promotion system—

- (1) Must rigidly exclude all favouritism, influence and patronage.
- (2) It must appeal to those affected as giving them all fair-play: rewards must be proportionate to merits and to nothing else.
- (3) Since it depends on human judgment it must eliminate as far as is possible the idiosyncrasies of individual judgment.
- (4) It must hold the balance fairly between the claims of long experience and faithful performance of duty on the one hand, and the recognition of exceptional ability and the promise of higher achievement on the other.
- (5) It must be clear about the standards to which it has to work, and rigid in maintaining them.

## RETIREMENT OF MAJOR JOHN CAMERON, O.B.E., M.I.E.E.

A NOTABLE retirement took place on Sept. 30 last, when Major John Cameron, O.B.E., Assistant Superintending Engineer, Scotland West District, ceased his official connexion with the Post Office after 46 years' service. The same evening he was honoured at a function held in the Grand Hotel, Glasgow, when colleagues of all grades, and friends from other departments, from all parts of Scotland, met to speed the parting guest. As evidence of the Major's popularity, judged both by numbers and representative character the meeting was unique in the local annals of the service. Mr. T. R. Shankland, Secretary of the Post Office Engineering Union, occupied the chair and was supported by Mr. C. Whillis, M.I.E.E., Superintending Engineer, Mr. D. S. Currie, Assistant Postmaster, Major W. R. Roberts, Assistant Surveyor (Scotland West), Messrs. A. E. Coombs and W. Thyne, District Managers, Mr. D. W. Weir, Chief Superintendent (Telegraphs), Lt.-Col. F. L. Robertson, M.C., Royal Corps of Signals, and others.

In handing over a writing bureau and two easy chairs from the engineering staff, Mr. Whillis referred to his happy association officially and unofficially with Major Cameron and paid high tribute to him as an able administrator, a highly skilled technician and the possessor of those human qualities which made him a friend to all.

Mr. D. S. Currie, deputising for Col. F. N. Westbury, who was unable to be present through indisposition, dwelt on the cordial relations existing between the commercial and engineering branches, due in no small measure to Major Cameron, whom he was proud to claim as a fellow highlander.

Lieut. Colonel Robertson praised the work of Major Cameron in connexion with the Corps of Signals during the war, when he was awarded the O.B.E. (Military) for services in France and since the war in organising the Supplementary Reserve of Signal Officers in Scotland.

Major Roberts and Mr. Weir also contributed warm appreciations. Mr. Weir referred particularly to Major Cameron's early career in the telegraphs and his active participation in the work of the telegraph ex-service men's association. Mr. Weir, on behalf of his branch, handed over a set of steel-shafted golf clubs and expressed the wish that Major and Mrs. Cameron, who had also been associated with the telegraphs, should enjoy a long and happy journey down the “fairway” of life.

Speaking for the rank and file, Mr. Duncan MacDougall, Chairman of the local P.O.E.U., said that never at any previous similar function had he spoken with greater truthfulness than that night in expressing the men's admiration for their chief. In his army career, said Mr. MacDougall, Major Cameron got the salute to which his rank entitled him, but it was of vastly greater significance that, in the moment of official farewell, his relationship with the staff had earned for him in all sincerity the salute: “Pass, Friend, all's well.”

Mr. W. Lang, captain of the Engineering Department Golf Club, on behalf of the members of the Edinburgh and Glasgow Clubs, asked Major Cameron to accept a set of books, and, at his request, the Major presented the “Cameron Cup” to this year's winner, Mr. George Nimmo, of the Glasgow Office Staff.

Major Cameron was obviously moved by the warmth of the demonstration and replying, thanked one and all for their kindness. He had always endeavoured to do the best for the men under him, and notwithstanding these days of change and uncertainty he was firmly of the opinion that if the work were properly organised there would be no need for any discharges of men in the engineering department. Adverting to his early days in the telegraphs, he said it was a striking fact that almost without exception every holder of the post of Engineer-in-Chief had been recruited from the telegraphs and if ever any had been a failure it certainly was not one of those who had come from the telegraphist ranks. He disapproved strongly of the modern policy which barred the door on promotion from the telegraph branch to the engineering department.

## BRISTOL DISTRICT NOTES.

*Telephone Advertising.*—The following is an extract from a letter received from an enterprising manager of a large picture house in this district:—

"Being very familiar with your partiality to advertising the telephone, I would like to offer a suggestion to you that would be, I think, to our mutual advantage.

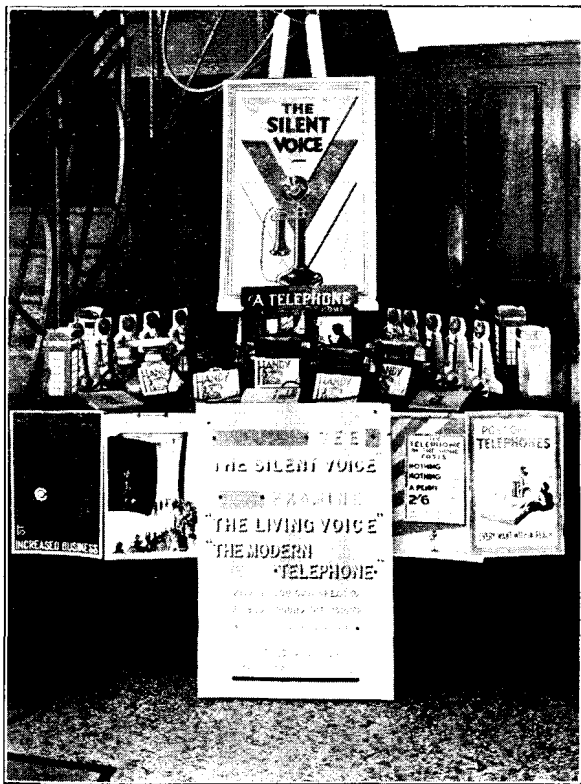
"Briefly this: I am shortly playing the film 'the Silent Voice,' which features, as you may know, George Arliss, and it struck me that perhaps you would care to tie-up with me in a means of advertising both my picture and your telephones.

"As you may have observed, the title of the film has a very apt relation to your own instruments, UNTIL they are connected up with a subscriber, and I thought that if you could let me have either an ordinary 'phone, or else a large model of one, I would make a display with it in my vestibule, together with any literature or posters that you would care to let me have, and I suggest the following wording as being somewhat suitable:—

"ARE YOU ON THE TELEPHONE? THE SILENT VOICE OF SERVICE FOR ALL YOUR WANTS. WHY NOT BE A SUBSCRIBER AND MAKE THE SILENT VOICE A LIVING VOICE? FULL PARTICULARS MAY BE OBTAINED AT ANY POST OFFICE.

"These are, of course, just suggested words, but I trust that you will see my idea, and personally, I think it would certainly be the means of making people talk, with a possibility of increased subscribers."

In consequence of the above a showcard was obtained from the Secretary, hand microphones in various colours and advertising literature were provided by our Sales Manager. In addition, marked postcards were supplied in order that the result of the advertisement might be ascertained.



The accompanying photograph shows the display in the vestibule of the cinema.

The first three lines of the poster as prepared read "You have seen 'The Silent Voice,' now examine 'The Living Voice,' but in view of the fact that the display took place some days prior to the showing of the film it was necessary to amend suitably the existing wording by means of strips of paper and drawing pins, which were removed for the week during which the picture was being shown.

*Appreciation.*—The following are two extracts from letters received during September:—

(1) "My new telephone has been installed to-day. I should like to take this opportunity of thanking you for the promptness with which my request was attended to and for the trouble and civility shown by your staff."

(2) "Members of your staff carried out the installation of the telephone facilities with promptitude and dispatch to-day.

The service was in order and working satisfactorily by mid-afternoon, and I take this opportunity of thanking you for the smart way in which the whole job has been carried out."

*Telex Service.*—Teleprinters have now been installed in the offices of the Postmaster-Surveyor, Superintending Engineer and the District Manager, and we are hoping for good results from demonstrations on these wonderful machines in the near future.

*Outing.*—A party from the District Manager's Office joined their colleagues from the Gloucester District Office on Sept. 3 on the occasion of the outing so ably described in the Gloucester District Notes last month. We all thoroughly enjoyed ourselves, and thank the Gloucester staff for their kind invitation and hearty welcome.

## LEEDS DISTRICT NOTES.

As a preliminary to the opening of the public Telex service in the Leeds area on Oct. 3, a very successful demonstration of Telex working was given on Sept. 22 to representatives of the local Press. The *Yorkshire Post*, the *Yorkshire Evening News*, the *Yorkshire Evening Post* and the *Leeds Mercury* were represented, and the interest displayed was made all the keener by the knowledge that a private Teleprinter service is already used daily in the simultaneous production of one newspaper in Leeds and Doncaster. A valve failed in the voice frequency apparatus of one teleprinter, but only for a few minutes was the demonstration held up, and the incident served to indicate how quickly a fault could be located and remedied by, as one Press report stated, "the omniscient Engineer." Excellent publicity has resulted, and Messrs. Montague Burton, Ltd., the well-known clothiers, have the honour of being the first Telex subscribers in Leeds; they are expected to make great use of the "Printergram" service.

The first meeting of the 1932-3 session of the North Eastern centre of the I.P.O.E.E. was held at Leeds on Tuesday, Oct. 11, when 80 members attended to hear an opening address by the Chairman, Mr. J. W. Atkinson, M.I.E.E., and a paper by Mr. W. D. Scutt, A.M.I.E.E., entitled "The Leeds H.P.O. Telephone Re-arrangement (Trunk Demand)."

The Chairman, after offering a cordial welcome to the District Manager and a number of his staff, gave a brief account of the salient features of the Engineer-in-Chief's report for the year 1931-2. Particular reference was made to the Rugby Wireless Station, the Teleprinter service, the London-Brighton aerial cable and to a number of mechanical devices designed to improve the efficiency of line plant operations.

The provision of facilities at the Leeds Trunk Exchange to enable trunk connections to be established on demand is a matter which, at the moment, is giving cause for much serious concentration on the part of many engineering officers—both internal and external. The Demand System brings with it problems relating to transmission (with its reaction on automatic switch outlets), manual exchange equipment and junctions, timing devices and the maximum availability of circuits consistent with economy. Due to the limited time available it was impossible for Mr. Scutt to deal wholly with any of these problems and his remarks were confined to the outstanding features of the internal engineering aspect of the Demand System. The paper was illustrated by a series of lantern slides depicting the equipment and the circuit arrangements of C.B. junctions, generator trunks and time indicators. In the discussion which followed there were many expressions of appreciation of Mr. Scutt's efficient, simple and interesting account of an exceedingly complicated rearrangement.

The Civil Service Golfing Society held their autumn competition on Sept. 23 at the Moor Allerton Course, Leeds. In addition to the various Post Office Departments, entries were also received from the Ministries of Health, Labour and Transport and the Inland Revenue and Customs and Excise. The competition was an 18-hole bogey competition under handicap, the winner to hold a cup which had been presented by the President, Mr. H. A. Johns. Playing conditions were of the best and some very fine scoring resulted in a tie at 3 up between Mr. A. L. Cross (Ministry of Transport), Mr. S. Kershaw (Post Office Engineering Dept.) and Mr. S. G. Watson (Leeds Post Office). A play-off over the first 4 holes resulted in a win for Mr. Cross.

A hearty welcome is extended to Mr. P. C. Martin, Assistant Engineer (Birmingham Internal Section), who has been appointed Sectional Engineer (Leeds External Section), vice Captain J. E. Fletcher, A.M.I.E.E. recently transferred to Newcastle-on-Tyne as Assistant Superintending Engineer.

The first meeting of the West Yorkshire Discussion and Social Circle was held on Sept. 23 to arrange the programme for the ensuing winter. The social season opens with a whist drive and dance, to be held at the Metropole Hotel, Leeds, on Saturday, Nov. 26, and the usual extensive demand for tickets is anticipated.

## THE G.P.O. PLAYERS

IN "THE WORLD'S END" AND "THE MAN WHO  
WOULDN'T GO TO HEAVEN."

FROM the romantic drama of "The Cardinal" to the phantasy of "The World's End" and "The Man who wouldn't go to Heaven" is a far cry, but the G.P.O. Players take these transitions in their stride, and the performances of Oct. 20, 21, and 22 last completely fulfilled the expectations of their supporters. The main theme of "The World's End," the action of which takes place in an inn of that name on Dartmoor, is to test whether we should be really happier if we were indulged in what we imagine to be our hearts' desires. A visitor at the inn, Shwang-Ho-Tsin-Fang (of the Lamasery of the Lotus Rocks) who is in communion with the "elemental forces" allows Imogen (another visitor) to express an unselfish wish. She does so, and it is to the effect that the other visitors may be what they wish to be. An explosion of the elements occurs, and in the next scene (a year later) we find Spencer Bodmin, M.P. (convincingly played by Mr. Pilkington) has become Prime Minister; Dr. Elizabeth Danby (a woman-doctor) has acquired a large and successful practice; Professor Rigby has become editor-in-chief to a historical society; the landlord, having inherited wealth, is able to indulge his taste for archaeology; the barmaid has become a film star; an idealist out-of-work ex-service man has become a Clydeside M.P.; and so forth. Yet they are not all happy. The barmaid (excellently played by Miss Gwladys Foote) finds that star-dom is not without its cares. Mr. Spencer Bodmin wonders whether he would not do well to exchange premiership for pig-keeping, the innkeeper finds his cherished archaeological discoveries bitterly attacked as modern sticks and stones, and in an atmosphere of general discouragement Imogen wishes she had not wished. Another elemental explosion occurs, and the whole company find themselves in their former condition amidst the darkness of early dawn, all much puzzled at the vividness and close correspondence of their dreams to those of the others. The romance which had begun between Imogen and Professor Rigby (sympathetically played by Miss Aileen Myers and Mr. Jack Scott) ripens as the curtain falls.

In a cast of almost Shakesperian extent, parts were found for all the principal members of the Society (with two or three notable exceptions) and the general excellence of all the performers and their good team work, makes it invidious to single out any individuals. We must, however, specially compliment Mr. Cyril Leigh on his impersonation of the oriental mystic, and Mr. Sellars (who has a great gift for "character" parts) on his idealist Scot. Mr. Gartland was a great success as the writer, Bernard Ravenscroft; Mr. Cahill, as the archaeologist-innkeeper; and Miss Dorothy Smith as the lady doctor. The play was produced in the competent style we have come to expect from Mr. Gerald Storr.

"The Man who Wouldn't go to Heaven" is less easy to unriddle. Certainly it emphasises the lesson "In my father's house are many mansions," and perhaps inculcates that a fool may have his uses at times in guiding people thither—a possible derivative of the "Parsifal" motif. Mr. Storr sustained the role of the angel with quiet dignity, and Mr. Scott was vigorous as a protesting atheist who finds himself entrapped into heaven by the fool. Mr. Gartland was responsible for the successful production of a play which must have presented considerable difficulties.

Mr. Will Harrison's orchestra once again provided acceptable interludes.

## GLASGOW DISTRICT NOTES.

*Glasgow Post Office War Hospitals Entertainments Committee.*—The support which the above committee have received during the past year has been very gratifying. Increases are recorded from the Telephone and Indoor Postal Sections and we are glad to welcome Scotstoun and South Exchanges to the list of subscribers.

The need for entertainments at the hospitals remains as pressing as ever and the committee have continued to provide entertainments on similar lines to previous years, namely: concerts, whist drives, bowling matches, an afternoon at the pantomime and the *outing to Dunure*. The last named went with a swing from the moment we left George Square, and the time passed all too quickly.

The entertainments are much appreciated at Ralston and Erskine Hospitals and the committee desire to convey to the subscribers the oft-expressed thanks of the men still in need of hospital treatment.

*Extract from Letter written by Secretary, Glasgow Eye Infirmary.*—In a letter to Miss Mortimer, Supervisor of the Douglas Exchange, Mrs. Marion Fullerton, Convener of Lady Collectors for the Glasgow Eye Infirmary writes:—

"For the most valuable service rendered by you in helping to achieve so wonderful a success I am asked by the Infirmary Directors and the Honorary Treasurer to send you their very sincere gratitude. They would be glad if you would convey to each and all of your splendid collectors an expression of their self sacrifice in giving so much of their time for the benefit of the Glasgow Eye Infirmary. £1,004 14s. 7d. was collected; truly an amazingly good result in these critical times."

*Appointment.*—A most hearty welcome is extended to Mr. A. T. Gray, who has recently arrived here from Cardiff to join our Training Reserve.

*Resignation on Account of Marriage.*—Miss J. D. S. Woods, Douglas Exchange.

*Kiosk as Reptile House.*—Our Service Inspector inserted two tokens in a multi-coin box, pressed button "B": result, two tokens, two pennies and one frog. He placed the frog in an adjacent field, but is still wondering what to do with the two pennies.

The frog who would a-wooing go  
Was quite a modern frog, you know.  
He followed all the modern rules,  
Believed in art of modern schools.  
So off he set one sunny day  
To tell his love. And on his way  
Just by the roadside he espied  
A new kiosk, "Aha!" he cried  
"A modern frog like me, of course,  
Should through this instrument discourse."  
The door stood open so he leapt  
With mighty leap. Lo! near him stepped  
The feet of some great human brute  
So froggie leapt right up the chute  
To hide there till his chance should come  
Of leaping out and going home.  
Alas! this monster stood so long  
He swore that something must be wrong,  
That though he had pressed button "B."  
"No pennies have returned to me"  
But froggie, saving up to wed,  
Found wealth was now showered on his head!  
He jumped with joy, but, sad to say,  
He simply could not jump away.  
For he was stuck, and once more felt  
New riches on his poor head pelt.  
Thrust in by some new enemy—  
Then, gathering courage for the fray,  
Sprang with one leap upon the floor;  
His foeman opened wide the door  
And he was free in open field,  
No more to modern ways he'll yield!

M. L. T.

## NEWCASTLE-ON-TYNE NOTES.

At a pleasing function held in the Conference Room at Telephone House, Mr. A. E. Ryland, late Traffic Supt., Class I., was met by a large gathering from all sections of the Post Office Telephones and Engineering staff to congratulate him and say farewell on the eve on his departure to Cardiff to take up the duties of District Manager of the South Wales Telephone District. Opportunity was taken of the occasion to present Mr. Ryland with a handsome canteen of cutlery as a token of esteem from the staff.

The District Manager, Mr. J. D. W. Stewart, made the presentation. The Chief Clerk, Mr. F. Robson; the Contract Manager, Mr. R. P. Lowe and Messrs. Mc. Lauchlan and Wright joined with Mr. Stewart in congratulating Mr. Ryland and conveying to him the best wishes of all the staff at Newcastle.

To Mr. S. J. Swinnerton, who replaces Mr. Ryland as Traffic Supt., Class I., we extend a hearty welcome.

## BIRMINGHAM NOTES.

*Wolverhampton Automatic Scheme.*—At 2 p.m. on Saturday, Sept. 24, the Wolverhampton Automatic Scheme was inaugurated with the opening of the following six automatic exchanges, together with the auto-manual exchange at Wolverhampton:—

Wolverhampton 2,273 subscribers.	Tettenhall ... 413 subscribers.
Bilston ... 438 ..	Fallings Park 176 ..
Penn ... 522 ..	Finchfield ... 89 ..

making a total of 3,911 subscribers' lines. The opening passed off without undue incident and there is every indication that the subscribers are well satisfied with the new conditions.

The first four mentioned replaced existing magneto exchanges while the latter two are entirely new exchanges. The new exchanges are on a non-director basis with Wolverhampton as the main exchange.

The new exchange was officially opened on Thursday, Sept. 29, by the Mayor of Wolverhampton in the presence of about 300 public and business men and women of the town.

*Enterprise.*—Shortly before the transfer an enterprising business firm in Wolverhampton (The Staffordshire Motor Tyre Co.) produced an attractive type of index for recording telephone numbers and distributed copies among their customers. The index was accompanied by a letter from which the following is an extract:

"May be the change over to Automatic Telephones will cause a considerable amount of trouble and irritating delay to those subscribers who have committed to memory or wall-pad a note of those numbers which they are constantly using.

Probably there will be numerous postcards and literature interchanged between these business and private customers and friends reminding each other of the NEW NUMBER TO BE DIALLED.

"Certainly it will be useful to have tabulated these names and numbers INSTANTLY AVAILABLE.

"With this object in view we have arranged, at considerable expense, to have posted to every telephone subscriber in the Wolverhampton Telephone Area an attractive patented Index that will hang either on or near your Telephone."

*Birmingham Automatic Scheme.*—On Wednesday, Oct. 12, the Birmingham Automatic Scheme was enlarged by the transfer of Castle Bromwich Exchange to automatic working, while on Saturday, Oct. 15, further extensions were made by the transfers of Tipton, Broadwell, Blackheath and Stone Cross to the director system.

On the latter date also a Toll Exchange was opened at Tipton, subsidiary to the main Birmingham Toll Exchange. The new Toll Exchange will provide the manual and enquiry services for the Tipton, Broadwell, Blackheath and Stone Cross automatic exchanges and will also serve Halesowen Exchange which is shortly to be transferred to automatic working.

The number of lines on each of the above exchanges at the time of the transfer was as follows:—

Castle Bromwich ... 115	Blackheath ... .. 278
Tipton ... .. 477	Stone Cross ... .. 87
Broadwell ... .. 430	

Nearly 700 junctions were also transferred with the Tipton Toll scheme.

There are now 18 automatic exchanges in the Birmingham Director Scheme, together with two Toll exchanges, serving a total of about 11,600 subscribers. Before the end of this year there will be further transfers concerning nearly 1,400 subscribers which will bring the total number of subscribers on the Birmingham Director Automatic exchanges to about 13,000—and it is less than two years since the inauguration of the Birmingham Automatic Scheme.

*Swimming.*—Once more we have great pleasure in announcing that Miss Norah Wall of Central Exchange, has again distinguished herself by her prowess at swimming. On Oct. 5 she won the Civil Service Breast-stroke Championship in London. Her time was 1 minute 19 seconds, which is 16 seconds below the previous record for the race. A most remarkable achievement.

Then, on Oct. 18, also in London, Miss Wall won the 100 yds. Civil Service Backstroke Championship in 1 minute 24 seconds, thus lowering the previous record by  $\frac{4}{5}$  seconds.

*Telephone Lecture Society.*—The Birmingham Telephone Lecture Society is re-commencing its meetings on Thursday, Oct. 20, when a lecture on "Telex and Teleprinter Working" will be given by Mr. F. E. Ferneyhough, of the Traffic Department.

The Society has arranged a very interesting series of lectures for this winter and is looking forward to a very successful season.

## MANCHESTER NOTES.

*Post Office Telephones Social Club.*—The first social of the season was held at Telephone House on Oct. 13, and consisted of a hot-pot supper, followed by a concert and dance. It was enjoyed thoroughly by all who were present and the manner in which the big crowd entered into the spirit of the occasion made everything go with a swing. Mr. J. G. Maddan, the Postmaster-Surveyor, Mr. J. T. Whitelaw, the District Manager, Mr. A. W. Field, Sectional Engineer, Mr. J. Magnall, Traffic Superintendent, and Mr. J. C. Macdonald, Staff Officer, were present.

The concert was given by some of the performers who appeared in the Social Club's pantomime "Aladdin" last winter, and most of the items were from the pantomime.

A whist drive will take place at Telephone House on Nov. 10, and a dance will be held there on Nov. 26.

*Civil Service Sports Club.*—The membership of the club is still increasing and those who have not yet joined should ask their local representative for full particulars. A very successful whist drive was held on Oct. 26. A bonfire and firework display have been arranged for the Fifth of November on the club's ground at Newton Heath. Everyone should come along and join in the fun.

A dance will be held on Thursday, Nov. 17, at the Plaza, Oxford Street. We hope that members will bring their friends with them. The inclusive charge will be 3s.

*Staff Changes.*—We are glad to welcome Mr. F. K. Gent, Assistant Traffic Superintendent, who has come from Norwich to take up duty in Manchester.

On Oct. 14 the Traffic Superintendent, Mr. Magnall, on behalf of the District Manager's staff, presented a canteen of cutlery to Mrs. G. Taylor, Writing Assistant, on her retirement for marriage.

*Lecture to the Wigan Education Society.*—On Sept. 23 the Traffic Superintendent, Mr. J. Magnall, assisted by Mr. N. W. Battersby, gave a lantern lecture on "The Automatic Telephone" to the Wigan Education Society at the Wigan Grammar School. Mr. Magnall outlined the history and evolution of the telephone and gave details of the discoveries that had led to its development. He then proceeded to explain the necessity for the automatic telephone in densely populated areas, and described in detail the Manchester Director Automatic System. The lecture was much appreciated by the members of the Society, and a hearty vote of thanks was accorded to the lecturer and his colleague.

On the following day some thirty members of the Society paid a very interesting visit to the Manchester Blackfriars Automatic and Toll Automatic Exchanges in Telephone House. The visitors were again under the guidance of Mr. Magnall and two members of the Engineering Department. The lecture of the previous evening enabled them to appreciate the explanations afforded to them during the tour of the building which occupied two and a half hours.

The lecture and visit to the exchange formed a happy combination of considerable value to public education in telephone matters.

*Visit to Liverpool.*—The invitation of the District Manager of Liverpool to attend a lecture on long distance telephony by Mr. J. F. Darby, of Headquarter's Traffic Section, was accepted, and thoroughly appreciated by the officers who attended.

*Distribution of Irish Sweepstake Draw results.*—The *Daily Mail* rented 20 temporary additional exchange lines terminating on single telephone instruments in the *Daily Mail* (Manchester) offices for the sole purpose of distributing the results of the Irish Sweepstake Draw. The order was placed at 4 p.m. on Oct. 5 and the 20 lines were ready for service at 4.30 p.m. on Oct. 6. Together with some of the existing lines the 20 temporary ones were used for making 26 fixed time trunk calls on the nights of Oct. 7 and 8. On the receipt of the results in Manchester they were immediately distributed over the waiting connexions to the *Daily Mail* agents in the Midlands, North of England and Scotland.

In a letter the local manager of the newspaper expressed his appreciation of the expedition and courtesy with which the Department, and particularly the engineers, had handled the matter.

## RETIRED C.T.O. (AND OTHER) OFFICIALS IN SOUTH DEVON.

THE 11th Annual Reunion of Retired Postal and Telegraph Officials residing in Torquay and thereabouts took place on Friday evening, Oct. 7, at Callard's Café, Torquay, when a goodly number presented themselves. The C.T.O. was represented by Messrs. C. H. Honeysett (formerly postmaster, Henley-on-Thames), W. James and E. Slade. Several from the L.P.S. and Inland Section also favoured the gathering. The chair was taken by the genial Mr. F. Wadley, late Asst. Controller, Cable Room, who, in a few well-chosen remarks, gave a very hearty welcome to all.

Greetings and apologies were read expressing regret at the inabilities of the writers, through illness and other causes, for not being present. Mr. Simmonds, late of the Torquay P.O., had charge of the arrangements and was awarded a most hearty vote of thanks for the excellent repast and general arrangements. It was unanimously agreed that this pleasurable function should be repeated in October, 1933. The singing of Auld Lang Syne concluded an exceptionally happy evening.

J. J. T.

## GUILDFORD DISTRICT NOTES.

*Telephone Staff Meeting.*—The first of a series of staff meetings to be held throughout the Guildford Telephone District during the present session, took place at Woking, on Sept. 27. The meetings are held after the normal hours of attendance and the fact that 39 attended the Woking meeting indicates the keen interest taken by the staff in telephone matters. A pleasing feature was the attendance of Major Black (Head Postmaster of Woking), Mr. R. Surplice (Head Postmaster of Guildford) and Mr. Payne (Superintendent, Guildford) and Mr. Colebrooke representing the Union of Post Office Workers.

The District Manager presided, and was supported by Mr. H. C. France, Traffic Superintendent. Interesting papers were read by Mr. H. Marchant (Asst. Traffic Superintendent) entitled "Provision of Junction and Trunk Circuits," and by Mr. A. E. Higgins (Asst. Traffic Superintendent) headed "Accuracy in Recording of Calls and Disputed Accounts."

The following items were discussed:—

(1) Call office working with particular reference to the need for promptitude, courtesy and sympathetic handling of these calls, so as to create a good feeling between the Department and the public generally.

(2) Distribution of Advertising Literature to exchanges, and the necessity for taking every opportunity to advertise the following services. Personal Call, Fixed Time Call, Contract Call, Deferred Call, Express Letter, Night Telegraph Letter, Phonograms and Telegraph Letters. A brief description of each service was given.

(3) New accounting procedure at exchanges.

(4) New Ticket T.T. No. 3.

(5) Slow answering by subscribers, particularly P.B.X. operators.

(6) Procedure during absence of subscribers.

The next group meeting takes place at Haslemere Post Office, on Thursday, Oct. 20.

*Social.*—A social evening has been arranged at Guildford for the evening of Nov. 23, and it is hoped that as many of the staff as possible will be present. Please, therefore, book this date.

## WESTERN DISTRICT NOTES.

THE working power on a telephone circuit cannot be increased by any known means. The design of a telephone relay has hitherto proved impracticable—thus Mr. T. E. Herbert, in his book, "The Telephone System in the British Post Office," 1898.

Many attempts have been made to introduce apparatus into a long line which should by some means reinforce the speech waves at that point and send them forward to a distance. None of these attempts, however, have so far proved successful, as even if the loudness of the sound is increased the quality of the transmitted speech is so much affected, being so much

distorted that it may not be understood at the receiving end—thus Mr. J. Poole, in the "Practical Telephone Handbook," 1906.

There is no doubt that when the above lines were written and even up to still more recent years, the telephonic repeater was thought to be beyond the realms of possibility. As indicative of the march of progress, we are, of course, all now acquainted with the valve repeater and how it has revolutionised long distance telephony. It is also interesting to note that what at one period may be looked upon, perhaps, as a fantastic theory, is accepted by the next generation as a commonplace matter of fact. Telephone engineers in the past have thought over the wonders they would perform if any such a piece of apparatus were possible, and young officers in the Engineering and Traffic Sections, entering the Service to-day, take the repeater stations as much a matter of course as we do our daily newspaper.

Miss M. Drew, Writing Assistant in the Accounts Section of the District Office, resigned on Sept. 27 to be married. She was presented by the staff with a canteen of cutlery.

There has been a little flutter in the transport arrangements of the Western District during the past month. The writer was recently on his way to a distant exchange, but had to cancel the visit owing to a bullock taking it into his head to climb over the car, smashing a lamp and a wing with his front legs, while he endeavoured to extricate one of his hind legs from the bumpers.

Another officer had spent about half an hour and nearly exhausted himself in turning the handle to start up his car, when someone else arrived on the scene and suggested that it would not be a bad idea to turn on the petrol, when, perhaps, the car would go. It did.

A third officer who was travelling, and with whom efforts to communicate had failed, called up later from a remote spot and instead of hearing his usual jovial tones very plaintively remarked "my back axle is broken."

Finally, an officer of the coastguards, having completed a visit to the District Office, when starting up the engine of his car it burst into flames under the bonnet. It was promptly extinguished by members of the staff.

F. J. F.

## "SEEING RED."

THE following is the comment of PHIPPS, of the *Daily Mail*, on what he terms a "New 'Phone Peril":—

Mr. W. G. de Glehn, R.A., is seeing red.

Mr. de Glehn is, of course, a well-known artist, and he lives in Cheyne Walk, on the Chelsea Embankment.

Now the G.P.O. recently cast its eyes on the Chelsea Embankment and noticed with horror that, for all its undoubted charm, this picturesque stretch of river-front lacked a public telephone. The result, as Mr. de Glehn noticed with equal horror, was several.

Roused into seething prose, Mr. de Glehn entered the correspondence column. "Does the public realise," he asks, "that the Post Office is putting up *bright red* telephone booths on the Embankment, and that instead of hiding them on the other side of the street it has actually erected them on the pavement against the parapet, and that the beautiful curve of our Chelsea Embankment is being ruined by these erections, spoiling the view of the river, the shipping, and the opposite bank?"

Yesterday I went to Chelsea to investigate, and let me say at once that I can sympathise with this protest—up to a point. That point is that the G.P.O. has installed one of its bits of local colour about a hundred yards S.S.E. of Mr. de Glehn's front door, which is green.

This booth, which is almost exactly opposite the Church of All Saints (Chelsea Old Church), certainly reduces the tones of the river view to an extreme neutrality by comparison. The funnels of tugs receded into pallid insignificance, and even the normally Turner-esque noses of barges seemed strangely achromatic. But just as I began to feel thoroughly in accord with Mr. de Glehn two Chelsea Pensioners ambled round a corner, and I knew that there was a case for the G.P.O.

These veterans were upholstered in almost identically the same shade of red as the telephone booths, and they have been installed for years without starting any riots. They are, admittedly, portable, but as far as I know they have never been accused of ruining any Beautiful Curves.

But the question now arises—shouldn't the G.P.O. have painted its booths green or blue to eliminate confusion? A Pensioner could hardly be expected to appreciate a sudden onslaught in the twilight by a stranger who insisted on trying to dial one of his medals.

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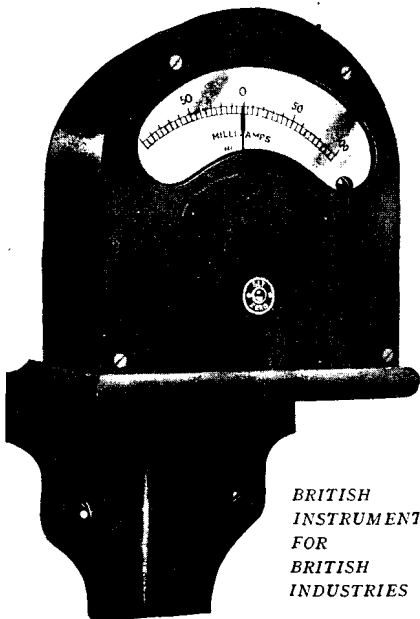


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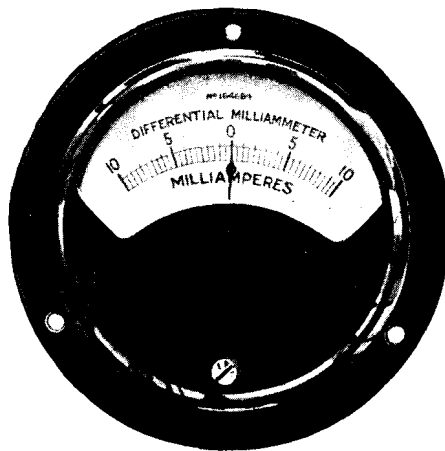
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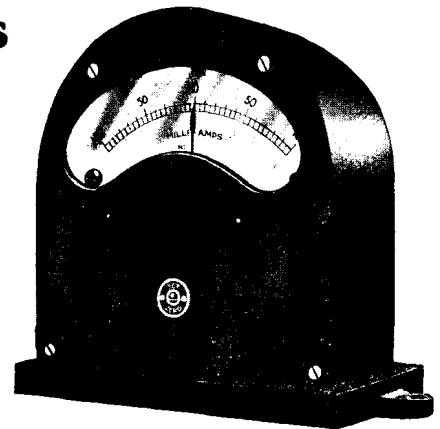


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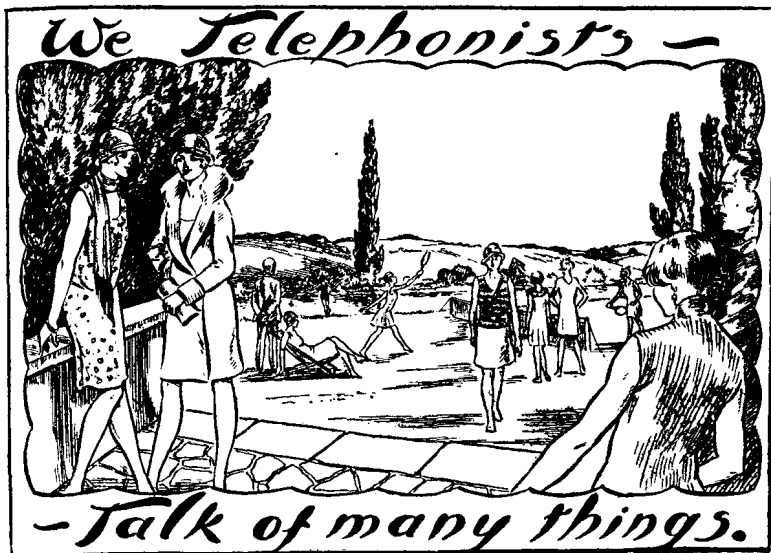
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**Noise.**

THERE was once an Irishman, so it is said, who had a large family and a piano. The family divided its wakeful hours between fighting and squalling and pounding the piano. When asked how he could tolerate so much noise, he explained that the row made by the children drowned the noise of the piano, and the sound of the piano drowned the noise made by the children. The result, therefore, was dead silence. In these days we have not yet reached that paradoxical state of bliss. So far we have only succeeded in multiplying noise. It needs a two-minute silence to make us realise how noisy is the world in which we live, but it is surely a striking commentary upon our ways that it is necessary to interrupt our normal habits before we can appreciate what those habits were. Our position is like that of the lunatic—he was perhaps saner than appears—who repeatedly knocked his head on the wall because it was such a pleasant sensation when he left off. We are, in effect, standing still in order to observe how fast we are running. The Red Queen could hardly better this.

The discovery, application and extension of the power of steam, electricity and oil have been responsible to an enormous extent for the increasing noisiness of the world and as noise has been steadily increasing we have been developing a frenzy. And it is becoming a matter of difficulty to find quietude anywhere.

The week-end, when we leave the concentrated roar of the city for suburbia, the coast or the nearer country, is made unquiet by the rattling stream of traffic, the blare of neighbouring wireless sets or gramophones and the cacophony of church bells. Pass down the street of a remote country village and from each cottage there issues the sound of the loudspeaker. Stop by the roadside to listen to the song of a bird, or the rustle of leaves in the trees or the whisper of the wind through the grass or the tinkle of a brook and sooner or later your ears will be filled with the stuttering roar of a blasting motor-cycle or the cough of a klaxon or the thud of a flapping-tyred lorry. Drop into a placid valley and throw yourself down on the grass and even if you cannot hear the dull hum of a distant highway, you will probably be assaulted from above by the roar of an aeroplane. If you seek out a restaurant in town solely for the simple and all-sufficient purpose of eating, you are compelled to listen to an orchestra. It is doubtless quite a good orchestra playing good music, but for my own part I must either eat or listen, and since I am compelled to do both I enjoy neither. In any case, why should I masticate to music and in the process contract mental and physical indigestion? I cannot bite to Bach.

And as noise increases we have to shout louder to make ourselves heard. It is impossible to sustain a conversation by shouting so we relapse into silence. But although silent we cannot think because there is too much distracting noise going on around us. In desperation we go to dances and bridge parties that we may enjoy being social without the strain of having to talk and think sensibly.

Noise, too, is not limited to sound. Our reading matter shouts at us. Newspaper placards and headlines blare at us. Advertisements bludgeon us and compel us against our judgment. The very books we read are unquiet, restless and raging. Street lights glare on polished roads, sky signs dazzle with their monotonous and hypnotic reiterations and headlights blinds us and deepen the darkness.

Speech was once silver and silence golden, but we went off the gold standard long ago. Noise, noise, nothing but noise—there is much to be said in favour of Gandhi's day of silence, but why say it and add to the row? Unfortunately, the noises of sound and sight which we have created go on and there seems to be no way of stopping them. We shall hear them in increasing volume until the crack of doom unless nature steps in and cracks our ear-drums.

Doubtless you will disagree with all this, and feel inclined to laugh. Very well, then, laugh—but for goodness' sake laugh quietly, there's too much noise in the world already.

PERCY FLAGE.

**Answers to Correspondents.**

*Beryl.*—Yes, dear, the purpose of the Column is to print articles received from Telephonists, but I agree that one would scarcely think so, would one? Why not send an article yourself?

*Mabel.*—So sorry to learn that you have writer's cramp. So many of "We Telephonists" appear to have it. Perhaps when you're better you will send in some more matter for the column. Yes, I think verses would be excellent.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. North, E.C.1.

**LONDON TELEPHONE SERVICE NOTES.**

**Contract Branch Notes.**

DURING the month of September there was a net increase of 1,935 stations compared with a net loss of 632 stations in the corresponding month last year. In August this year, the net increase was 1,037 stations.

The Motor Show was held at Olympia from Oct. 13 to 22. The number of exhibitors totalled 452 and 408 telephones were provided. This compares with 536 exhibitors and 386 telephones last year. Messrs. Ford's exhibit was housed separately in the White City, 25 exchange lines and 9 extensions being provided.

At the Confectioners' Exhibition held at Olympia from Aug. 31 to Sept. 9 there were 102 exhibitors and 64 telephones. Last year 137 exhibitors produced 70 lines.

The Telex service for subscribers was inaugurated on Aug. 13 last, and many orders for Teleprinters have been received.

In connexion with the opening of Liberty Automatic Exchange an advertising display was held at Messrs. Kennard's Store in Wimbledon between Aug. 24 and Sept. 17, 1932. The display attracted considerable local attention and upwards of 10,000 advertising circulars were distributed to residents in the district.

A striking contrast illustrating the growth of the service was depicted by the London Telephone Directories of 1880 and 1932. The former directory dated July, 1880, contained 725 subscribers, and in a preface explained that exchanges were open from 9 a.m. to 7 p.m. on weekdays and closed at 5 p.m. on Saturdays.

**L.T.S. Area Staff Salesmanship Progress and Incidents.**

The results to date of the efforts of the staff since September, 1931, when the scheme started has been as follows:—

	Total Number Ordered.	Orders Obtained during the Month ended Oct. 15, 1932.
Exchange lines ... ..	1,247	180
Extensions ... ..	1,138	149
Private lines ... ..	13	2
Plugs and sockets ... ..	182	27
Hand-microphone instruments ...	5,538	785
Extension bells ... ..	457	62
Other apparatus ... ..	588	78

Orders are sometimes obtained in the most unexpected and casual manner. A nurseryman was interviewed regarding the tenure of land occupied by him, and by degrees the discussion was directed into channels concerning telephone facilities. The outcome of the talk was an order being obtained for 3 internal and 2 external extensions.

A builder mentioned in conversation that a client of his seemed interested in the telephone—the client was seen and an order secured.

A correspondent writes:—

"At intervals over a period of 15 months I have preached the virtues of the telephone to a friend, sometimes seriously, but latterly it became a joke between us. However, the seed did not fall on barren ground. He recently moved into a new house where the telephone was already installed—'That's settled it,' he remarked to his wife, 'I can dodge it no longer,' and a few days later he had signed an agreement."

Noticing a little girl in distress in a kiosk, a canvasser found she could not reach the handle of the door. On being released, and whilst being interrogated by the canvasser, the little girl's mother appeared on the scene and wrathfully demanded of her rescuer: "Why did you let her out, I have not yet finished my shopping."

#### London Telephonists' Society.

The first meeting of the 1932-3 session was held in the dining room of the Cornwall House Refreshment Club on Friday, Oct. 7, when Mr. R. P. Crum, the new President, read his paper on "The Popularity of Standards."

The meeting was well attended, and all present felt that the pleasure with which Mr. Crum's address was received augured well for the success of the coming session.

If any of us had thought that popularity was hardly an attribute which we should have associated with standards, we were soon convinced of our mistake, for Mr. Crum quickly brought home to us how inseparably standards were bound up with our every-day lives, and how, from our earliest sentient moments, we made use of standards for almost everything, until their employment became such a matter of habit that we ceased to realise how much we depended upon them.

The interest aroused by the paper was evidenced by the number who took part in the discussion following, which elicited many good stories relevant to the subject, and when Mr. Crum rose to make suitable replies to his critics—if such appreciative commentators can so be called!—we all regretted the swift passage of time, despite the fact that we were keenly anticipating the pleasures of the musical programme which the staff of G.P.O. South had prepared for our enjoyment.

The entertainment provided fully justified our expectations, and our cordial thanks are due to Miss Clement, of Central, who arranged so meritorious a programme.

The artistes who contributed, the Misses Eade and Sycamore, of Central, Ward and Hawkins, of Toll A, Butler and Treadaway, of Trunks, and Miss Durieu, of City, and Miss Barrett, from Cornwall House, each received well merited and enthusiastic applause, and the thanks of the Society are specially due to these ladies for having inaugurated this new feature in the Society's programme with such notable success. Miss Ward and Miss Butler should also receive special mention for their capable and willing service in providing music for the dancing with which the meeting closed.

Altogether, we have cause to feel very pleased with the success attending our first experimental application of the new arrangements decided upon for the current session.

On all hands the more pleasing and cheerful surroundings of the meeting place received favourable comment, and although some minor details, particularly in regard to the best seating arrangement for comfortable hearing will require attention, it seems evident that the innovations this year will prove attractive to our members, and we look forward with every reason for confidence to an increasingly prosperous session.

#### Post Office Ambulance Centre: Annual Competition.

The finals of the annual "First Aid" competitions for the London Postal Ambulance Challenge Shield and the Women's Trophy will be held on Nov. 22, 1932, at 7.30 p.m., in the King George Hall (nr. Tottenham Court Road Station), Caroline Street, W.C.1. Admission by programme—3d.—and a limited number of reserved seats at 1s. each.

Please come and enjoy an entertaining as well as instructive evening.

Controller's Office, L.T.S.,  
Cornwall House, Waterloo Road, S.E.1.

E. R. M. MEESER,  
Competition Secretary  
(Women's Section).

#### Battersea.

ON Sept. 21 the Battersea Exchange staff held their first dance of the season at the local town hall. Over 140 persons were present, including numerous visitors and friends from other exchanges. Mr. A. D. Rollings (Service Superintendent) officiated as M.C., while Mr. E. A. Durrant (District Superintendent) and Traffic Officers from Headquarters, Putney, Prospect, Liberty and Greenwich were among those attending.

Several old (but ever-young) friends were in evidence, Brixton, Hop, Maraulay, Paddington and Wimbledon being a few of the exchanges, besides the engineering staff, which were represented. Miss Hatherley was in charge of the catering arrangements and, as on former occasions, the Refreshment Club Committee worked with a will to ensure an enjoyable evening.

The present intention is to hold the next dance on Nov. 30, when it is hoped that there will be another large attendance. The profits from these functions are devoted to an annual "treat" to some of the poorest of Battersea's children and, having regard to the object of their endeavours, the organisers are the more heartily to be congratulated upon the success which attends them. Here's to you, Battersea!

#### Liberty.

(With apologies to Birdie Twiffl.)

So you see, dear, they decided to call us "Liberty" after all. So nice, don't you think? Sort of Telephonists' Heaven and all that. What I mean to say—you picture a switchroom with the staff doing just what they jolly well like and no Supervisors or Traffic Officers to worry you. Though, of course, they *don't* worry us *really*, do they? I think they are rather sweet—the Traffic Officers, I mean, not the Supervisors—but, of course, they are up above the telephonists (sort of holy men, aren't they?) when they are on duty, though they do come down to earth and condescend to be human when we have our dances and socials.

But, as I was saying, darling, "Liberty" sounds heavenly but, just before the opening, I heard one poor male mutter, "If this is 'Liberty,' give me bondage." However, you know Shakespeare (or was it Tennyson?) said "A rose by any other name? That is the question!" For quite a long time they were going to call us "Merton Abbey," and we thought of jovial monks and cloisters and things (you know, sort of hassocks—or cassocks, is it?—with girdles and sandals for the engineers and nuns' veiling for the girls). Then somebody said "Merton Abbey" was not a very select neighbourhood, so they tried other names, though, I mean to say, I never thought *Bernondsey* was a really *classy* place, but they called it "Bernondsey" and not "Swan & Edgar" or "Dickins & Jones."

Do you know? I rather like "Liberty"—the name, I mean—sounds sort of soothing with lovely velvets and silks. Of course, some people *will* have their little jokes which are so foolish, don't you think what I mean to say—when you're ravingly busy—what can you do when you get a man in a call office saying, "Oo are you?" and you reply "Liberty Enquiry," and he says, "Gimme the underclothing department, I want some pants." I mean, really, you want to yell!

However, where was I? Oh! I know—about Merton Abbey—they (the Heads, of course) thought about "Mercury" and "Neptune" and lots of things beginning with the same dial 3-letter combination (that sounds clever, doesn't it, but you know what I mean, "MER" is the same as "NEP," not *really*, except on the dial) and being automatic they had to think of that, I suppose. Anyhow, we are *Liberty*, though some people (so silly, don't you think?) say it sounds like "Battersea" and then they want to spell it "L one B," instead of "LIB"—well, I mean to say! And then, of course, they think we are the fools! *Really*.

The building is quite nice and we have a perfectly priceless level-crossing close by. Absolutely *quaint*, my dear, with the signalman person ringing a bell when a train is coming and the policeman holding up the traffic while the signal Johnny turns a wheel and closes the gates and there one has to stand till a train goes by and, of course, it always happens when you've got to fly to be on duty, though you'd have absolute oodles of time if the gates were open. You know what I mean, perfectly antediluvian, my dear. *Really*.

LENA LITTLE.

#### Personalia.

##### Resignations on Account of Marriage.

##### Assistant Supervisors, Class II.

Miss E. E. Crick, of City.

##### Telephonists.

Miss S. M. Holden, of Clerkenwell.	Miss D. F. Vincent, of Seven Kings.
.. V. P. Offord, of Clerkenwell.	.. A. E. E. Bell, of Mountview.
.. V. M. Gooch, of Clerkenwell.	.. M. E. Weller, of Mayfair.
.. H. V. Savage, of Addiscombe.	.. E. M. McDonald, of Mayfair.
.. A. L. Sharpe, of Rodney.	.. P. P. Poll, of Mayfair.
.. L. D. Sanders, of Gerrard.	.. D. H. Warren, of Chiswick.
.. I. F. Carpenter, of Gerrard.	.. F. E. Conway, of Bishopsgate.
.. A. E. Onwin, of Leytonstone.	.. V. M. Badminton, of Central.
.. E. M. Margot, of Palmers Green.	.. M. B. Leonard, of Central.
.. K. M. Ray, of Tudor.	.. M. Wilkinson, of Royal.
.. E. M. Bennett, of Bexley Heath.	.. O. J. Johnson, of Monument.
.. V. G. Sandford, of Wembley.	.. R. A. Carter, of Welbeck.
.. K. M. Hayes, of Clissold.	.. D. E. Fryer, of Paddington.
.. K. L. Dunne, of Clissold.	.. F. M. Gadbury, of Paddington.
.. G. W. M. Fisher, of Clissold.	.. A. M. Howard, of Metropolitan.
.. R. M. Lessiter, of Harrow.	.. M. E. Honey, of Metropolitan.
.. W. M. Smith, of Streatham.	.. E. A. Whitehead, of National.
.. M. S. Chanley, of Regent.	.. E. E. Minton, of National.
.. I. N. S. Reis, of Grosvenor.	.. M. B. Taylor, of Elstree.
.. E. F. Thomas, of Croydon.	.. I. Blackwell, of Terminus.
.. D. I. Noyce, of Croydon.	.. D. I. Boothby, of Toll "A."
.. Mellish, of Willesden.	.. H. G. I. Morris, of Toll "A."
.. D. C. Young, of Walthamstow.	.. I. Hayball, of Toll "A."
.. C. H. Backman, of Trunk.	.. M. E. Clements, of Museum.
.. I. M. Richardson, of Trunk.	.. J. Benson, of Museum.
.. E. M. S. Dillon, of Trunk.	.. G. M. Allar, of Museum.
.. E. C. Hammonds, of Trunk.	.. M. Ridgers, of Victoria.
.. D. F. Isaacs, of Trunk.	.. W. B. M. Tidd, of Victoria.
.. M. Redding, of Trunk.	.. V. E. Pledger, of Victoria.
.. I. L. Sumner, of Trunk.	.. G. F. Simmance, of Victoria.
.. J. Mercer, of Sutton.	.. M. G. Hall, of Victoria.
.. C. R. Harris, of Shepherd's Bush.	.. J. G. Taylor, of Tandem.
.. E. F. Hartman, of Shepherd's Bush.	.. L. A. Thornton, of Tandem.
.. A. J. Wragg, of Seven Kings.	.. E. M. M. Pressenger, of Tandem.

# THE Telegraph and Telephone Journal.

VOL. XIX.

DECEMBER, 1932.

No. 213.

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*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

### CIII.

#### MR. W. F. TAYLOR.

The photograph this month is that of Mr. W. F. Taylor, Assistant Controller of the Sales Branch of the London Telephone Service, who is well known to many readers of this *Journal*, by reason of his long connexion with telephone work both in Scotland and in London.

He entered the service of the National Telephone Co., Ltd., in 1896 as an Inspector at Glasgow. Early in his career he became a District Manager, at Stirling. Shortly afterwards—in 1903—he commenced his close association with the Contract Branch—now generally known as the Sales Branch—as Contract Agent, Glasgow.

In 1906 he was promoted to London as Contract Manager. Shortly before taking up his new duties in London he paid a visit to the United States of America for the express purpose of studying American methods of handling Sales work and Publicity. Mr. Taylor has been intimately associated



with the Sales Side of the telephone service in London for the past 26 years, during which period the system has developed enormously.

Mr. Taylor has been in the forefront of the developments which have taken place in the Sales aspects of telephone work, particularly as regards publicity and staff training, and he has contributed in no small measure to the change of viewpoint which has brought the Sales work into its present prominent position in the activities of the Post Office.

W. F. Taylor is a real enthusiast in his work. He has the facility of making up his mind quickly, and of getting things done, and allied to a strong vein of practical common sense has an extensive knowledge of business conditions.

He is universally popular with his colleagues and his staff, has a very kindly disposition and a real sense of humour: he is always ready to give a helping hand to others.

In private life he cultivates the quieter graces of domestic existence, taking a keen interest in gardening, wireless and photography.

## The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

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### NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

VOL. XIX.

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### THE NEW BRITISH OVERSEAS EXCHANGE.

ON the 5th of November the Anglo-Continental telephone circuits were cut over from the third floor to the first floor of the London trunk exchange, and the boards at which they terminate are now housed in a switchroom, equipped with all the latest improvements and appliances which inventiveness and foresight can devise, and in every way more worthy of the centre of the telephonic universe—which London with justice lays claim to be. A few months will elapse before the radio circuits to North and South America, Africa, and Australia—on which London's title aforesaid is chiefly based—will be transferred to the new switchroom, but the present moment seems opportune for a look round at the progress which has been made in Overseas telephony. A series of articles, which begin in this issue of the *Journal*, will describe in more detail than is possible in this column the salient features of the new exchange. We shall therefore confine ourselves to a general review of the position. In these days the multiplicity of new inventions brought to fruition, and above all the tendency to acclaim as *faits accomplis* still more wonderful inventions which are as yet only in the theoretical or at least semi-practical stage, tends to dull our appreciation of those wonders which have become almost a commonplace. So fast do events move in the world of science that the marvellous of yesterday soon becomes part of the staple of ordinary life to-day. Yet when brought in actual contact with the working of such an exchange as this, it must be a jaded imagination which is not stirred by sights and scenes the wonder of which age has not yet entirely withered or custom staled. To

see a technical operator who may spend his entire working day in communion with an operator in Montreal, to see girls whose daily correspondence over the radio-channels with their sisters in New York, has ripened into what we venture to term an "etheric" friendship which leads to a regular interchange of letters, to hear girls constantly conversing in a babel of languages with colleagues in Vienna, Stockholm, Madrid, and Rome, all this vividly brings before even the most casual observer a sense of that conquest of space and distance which the Overseas exchange stands for.

And, indeed, but few years have seen the development of the overseas service from tentative beginnings to a world-embracing network.

It is well known to most of our readers that the first circuit between London and Paris was opened in 1891. It is, perhaps, not so well known that the operating of the few Anglo-French and Belgian lines formerly existing was first handled by telegraphists at a switchboard in the Central Telegraph Office. This switchboard was transferred to the telephone exchange in the G.P.O. South in 1904, but up to and even after the Great War, the Anglo-Continental service was mainly confined to communication with Paris and Brussels. A great step forward was the laying of the first Anglo-Dutch cable in 1922 and the extension of the service to Germany and other central European countries which began in 1926 and has continuously increased until at present practically the whole of Europe is in communication with London. A still greater step was the opening of the Transatlantic Service in 1927, soon followed by the participation in this service of European countries via London (which thus became the great centre of inter-Continental telephony) and by the opening of the Australian and African channels, which in turn were placed in communication not only with Europe but with America via London. The ten years progress thus briefly chronicled is truly remarkable. But there are still new worlds to conquer and vast schemes of extension under consideration. For the British Post Office does not rest on its oars; the pursuit of technical perfection and the expansion of the service in all directions are its constant care. When these schemes mature they will all claim their place in the economy of the new overseas exchange, share in its improved facilities and enhance its already great importance.

### HIC ET UBIQUE.

FOR those interested in forecasts and what ultimately becomes of them, the following extract from the *Moscow Weekly News* is quoted. The present number of telephones in Moscow is 90,561:—

Moscow will have 714,000 telephones by the end of 1937. About 214,000 will be in factories and offices, and the remainder in apartment houses. This will be nearly six times the number of telephones in use in Moscow to-day, which has now only about 120,000, an average of three per hundred inhabitants. Four automatic exchanges have been built during the past year and a fifth is practically completed.

Soon every Paris exchange will be equipped with the automatic system, says Reuter's Press agency, Paris, and the telephone authorities have decided against dismissing the operators no longer required. A "compulsory holiday" of several days a month for each operator will serve as a temporary measure

to obviate unemployment, and meanwhile Civil Service examinations are to be held in which the girls may qualify for other branches of the Post Office.

As a matter of fact, as we recently informed our readers, about half the Paris telephone system is now converted to automatic working.

The following letter from a rural exchange subscriber in the Gloucester District is in pleasing contrast to the customary complaint of high rental:—

“Enclosed please find cheque in payment of Telephone calls, &c. I would not like to be without the Telephone even if it cost me £10-£20 a quarter.”

A complaint in the *Birmingham Evening Dispatch* says:—

At the other end of the road in which a suburban correspondent lives, is a neat new telephone kiosk.

“As I passed the other night,” he told me, “a man was using the telephone and, though the door was shut, for a matter of 10 yards before and 10 yards beyond I was able to hear every word he said. Telephone boxes are supposed to be private, but this one is not private in any way.”

This reminds us of an ancient story of a former colleague whose habit it was, when using the telephone, to bellow into it. A friend, hearing him perform, was heard to say “I don’t know why people like X use the telephone. All they need to do is to go up on the roof and shout, they can be heard in the next parish.”

As Englishmen, we (especially the writer of this column) admire humorists. Humour is the great corrective of British spleen, and we should hate to appear to spring with elephantine pounce on the light phantasies of the ingenious humorist. But we feel we must reply to a gentleman in *Punch* who complains, that despite the universal development of the hire purchase system, he goes on paying year after year for his telephone, and is still no nearer the day when it will be his very own. We, like most citizens, have been paying year after year (at a very much higher rate, too, than the average domestic subscriber pays for his telephone) for a railway season ticket, but we are no nearer the possession of a railway carriage of our own, nor of a locomotive,—not even a piston-rod, a whistle, or one of those voluptuously rounded steam domes which ornament such engines. We are not sure that these objects would benefit us much; but, then, what use would a telephone without “service” be to our humorist? Perhaps he, stretched on the wings of fancy, forgot all about “service.” So many of our critics, humorous and otherwise, do this.

We occasionally meet (in the Press) with the residential subscriber who makes small use of the service and complains that his calls (taking into account a proportionate share of the quarterly rental) cost him 3d., 4d., or 5d. each, while he can ring up from a public call office for 2d. As if any comparisons were possible between a call office, served by a line and apparatus for general use, to which one has to make a special journey when one wants to telephone, and a telephone of one’s own served by an independent line, where one can not only ring up friends at will, but also be rung up! :—

#### REASONING WITH DE COURCY.

My neighbour, De Courcy, a choleric man,  
Overtook me last Tuesday, and thus he began:  
“That terrible telephone ramp!  
A would-be subscriber in me you behold,  
But while I believe there’s a ‘pup’ to be sold  
They won’t rope me in to the telephone fold!  
A De Courcy is not of that stamp!

A brand-new kiosk of the ruddiest hue  
Stands distant from home but a minute or two,  
And there for a couple of pence  
I can call whom I will. But if I became  
A subscriber like Smith, I should pay for the same,  
Some threepence or fourpence—so what is the game?  
And where is his adjectived-sense?”

I soothed him, I smoothed him, “De Courcy,” I said.  
“You’re a person of Heart, be a person of Head  
And apply to this question your *nous*!  
You can call at your will X and Y, it is true,  
From that handy Kiosk of vermilionest hue,  
But, tell me, De Courcy, can *they* call up *you*  
Unless you’ve a ‘phone in the house?”

A phone of your own and a couple of wires,  
Devoted alone to De Courcy’s desires,  
Watched over by night and by day  
By bevy of maidens, soft-voiced and alert,  
And kept in repair by technicians expert,  
Why, two-and-a-tanner a week will not hurt  
Your purse for such service to pay.

When you go with your wife to a show or a dance,  
Or with niece or she-cousin—(don’t eye me askance,  
Such incidents happen to many!)  
You order some garage to send round a car,  
A rapid, well-cushioned and smooth-going car,  
When you know, the Rolls-roysterer dog that you are,  
You could get there by ‘bus for a penny.

The call-box, De Courcy, is much like the ‘bus.  
You share it with Gilbert and Gertie and Gus—  
Convenient and cheap, I’ll agree.  
But you do not expect that a ‘bus-fare will pay  
For a taxi or car. Then, O why do you say  
That calls from your own telephone, night or day,  
Should cost but a call office fee?”

W. H. G.

#### THE CATS.

ONCE upon a time there was a plague of rats in the Central Telegraph Office, and the Controller petitioned the Secretary that two cats should be taken on to the establishment. The cost, he stated, would be one shilling a week for subsistence (milk and cat’s meat were cheaper in those days)—one penny per cat per working-day. The proposal seemed cheap and unobjectionable; a Minute was submitted to the Postmaster-General: authority was given; and in due course the cats commenced duty.

But then the Controller discovered a mistake in the calculations, and had to suffer the intense humiliation of confessing it to the Secretary. The calculations, it is true, were on sound official lines; the Civil Servant works a six-day week, and for the seventh day he has no official existence. But the cats, however sabbatarian their working-habits may have been, had to be fed on the seventh day; and authority was sought, therefore, to increase the subsistence allowance to 1s. 2d.

But in the Civil Service proposals for increased expenditure cannot be allowed to rest on mere theory; and the Controller was instructed to compile an actual statement of the expenditure on the cats for a period of three months. The facts did not bear out the theory: indeed, the expenditure averaged out at less than a shilling a week. But the discrepancy was explained by the fact that for three weeks of the period one of the cats had been absent without leave. This opened up interesting possibilities of a discipline case; but the official mind is always reluctant to rake up scandal, and the enquiry was not pursued. After a further Minute to the Postmaster-General, the subsistence allowance was increased.

This was a very long time ago. Nothing more was heard of the cats until fairly recently, when it was reported that not only the cats but their descendants had died, that the human rat-catchers appointed by the Office of Works kept down the rats efficiently, and that there was no longer any need for cats. Authority was sought to “discontinue the arrangement”; and a humble official, without a Minute to the Postmaster-General, discontinued it.

Is this a true story? Substantially. But in case anyone should feel disposed to verify it, I must confess to at least the possibility of a little corroborative detail, intended to give artistic verisimilitude to a bald and unconvincing narrative.

W. D. S.

## LONG DISTANCE TELEPHONY.

### NEW BRITISH OVERSEAS EXCHANGE.

By J. F. DARBY (*Headquarters Traffic Section*).

CONTEMPORANEOUSLY with the re-organisation of the British inland long-distance telephone system, attention has been directed to the development of a new *Overseas* telephone exchange for handling (a) Continental traffic—Calls between Great Britain and the Continent of Europe; and (b) Extra-European traffic—Calls between Europe on one hand and other continents and Ships at

years, and the 2nd Floor (main and annex wings) with further accommodation for 200 positions, has been earmarked for expansion of the services. It is probable, therefore, that at least a 20 years' life can be expected of the new installation, and it has been the endeavour, in the design of the equipment to provide facilities and accommodation to meet developments for that period both as regards growth and technical improvements as far as can be foreseen at the moment.

The reconstruction is being carried out in two stages. The first concerns the Continental Section—that which deals with traffic indicated under category (a) above—and the second, the Radio Section, which will deal with traffic in item (b). It is proposed in this and subsequent articles to deal separately with each section, giving particulars of the equipment arrangements and the facilities provided.



GENERAL VIEW OF THE NEW BRITISH OVERSEAS EXCHANGE.

Sea on the other. Included under (a) are calls between European centres switched via London as a *voie de secours*; with (b) should be grouped calls between continents other than Europe connected via Great Britain.

As is well known, the overseas exchange is situated in London and has, up to the present, been formed from portions of the switchboards of the London Trunk (Inland) Exchange. It is now, however, being divorced therefrom, and when completed will form a self-contained exchange, except for certain junction and trunk circuits which will be in common use for both inland and overseas services.

The reconstruction is being carried out on the 1st floor (main wing) of the Carter Lane Building, the position for Extra-European (radio) switchboards being adjacent to the Radio Terminal room in which are accommodated the Radio technical operators. The capacity of the new switchroom (approximately 120 operating positions) is expected to meet requirements for the next 5 or 6

#### CONTINENTAL SECTION.

This organisation may be regarded as the senior of the Overseas sections in view of the date of its inauguration—April, 1891—when Great Britain first gained telephonic access to the mainland of Europe. From then it has grown from two points of view, firstly as regards volume of traffic, and secondly, in relation to the number of countries and the size of the area served. Although the former to some extent is dependent on the latter, the volume has increased mainly with a limited number of countries with which Great Britain has a strong community of interest. Until the war growth was slow, but with the invention of the thermionic valve and general development in technique in connexion with transmission and carrier wave telephony, great strides have been made subsequently.

Up to 1922 only France, Belgium, and Switzerland\* were served, but the subsequent development has been very rapid, as will be seen from the following statement:—

\* The Anglo-Swiss service was not really effective until 1927, when direct circuits between Great Britain and Switzerland were provided.

Date of Service with Gt. Britain.	Country, &c.	Date of Service with Gt. Britain.	Country, &c.
1891—April	France.	1928—June	Gibraltar.
1903—June	Belgium.	June	Portugal.
1914—Jan.	Switzerland.	June	Saar Territory.
1922—Aug.	Holland.	Aug.	Italy.
1926—Mar.	Germany.	1929—Feb.	Poland.
1927—June	Sweden.	Mar.	Finland.
June	Danzig.	1930—Mar.	Lithuania.
July	Denmark.	June	Estonia.
Oct.	Norway.	June	Latvia.
Dec.	Austria.	1931—May	Rumania.
1928—Jan.	Czecho Slovakia.	Nov.	Yugo Slavia.
Jan.	Hungary.	1932—Mar.	Bulgaria.
Mar.	Luxemburg.	May	Russia.
May	Spain.	Oct.	Greece.

In many instances service to a country was first given via another country, i.e. an indirect service, a direct circuit being provided at a later date. It has been the practice to arrange, as far as possible, to provide indirect services between a continental country and Great Britain with switching at one intermediate country only. The question of the provision of new direct circuits has produced very interesting problems. The course commonly followed has been to provide an indirect service at the outset such as Norway (Oslo) served via Sweden (Malmo); Austria (Vienna) via Germany (Frankfurt). This has normally resulted in the building-up of traffic to the distant country, and, when

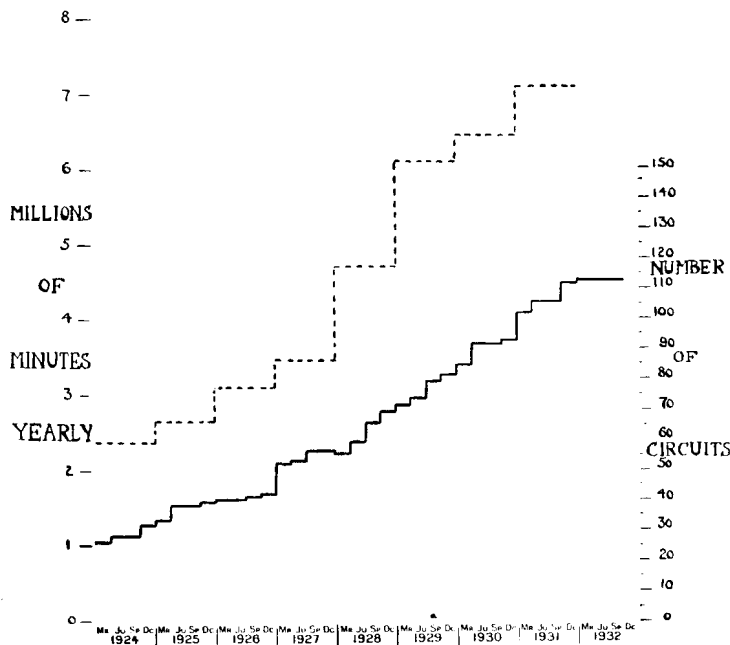


DIAGRAM 1.

a fair volume of traffic has developed—not enough perhaps to load fully a circuit at the outset—and prospects of further growth in the near future are reasonably good, a direct circuit has been provided. Benefits accrue from two points of view. In the first place, owing to the increased efficiency in operating by eliminating the difficulties in switching via a third country (a country which, perhaps, has a priority rate service of its own and possibly a language different from either of the two terminal countries) a marked increase of traffic with the country in question results. In the second place the direct circuit can be exploited for providing indirect service to one or more countries (previously without service to Great Britain) beyond the new *tête de ligne*. A further increase in traffic results and the process mentioned above, in the course of time, is repeated.

It is not possible, owing to the space required, to give details of the growth of individual services, and it will perhaps suffice

to indicate the development, in recent years, of the circuits and volume of traffic between the Continent and Great Britain. From diagram 1 it will be seen that a figure of 2.4 millions paid minutes for 1924, by the dual process of development outlined above has grown to 7.3 millions in 1931 (the circuits were increased from 32 to 113)—a development of which any commercial undertaking in the world might well be proud.

(To be continued.)

### PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at Oct. 31, 1932, was 2,104,021, representing a net increase of 7,045 on the total at the end of the previous month.

The growth for the month of October is summarised below:—

Telephone Stations	London.	Provinces.
Total at Oct. 31, 1932	785,186	1,318,835
Net increase	3,305	3,740
Residence Rate Stations—		
Total	250,540	328,992
Net increase	1,628	1,732
Call Office Stations (including Kiosks) —		
Total	8,659	29,937
Net increase	65	126
Kiosks—		
Total	3,370	10,768
Net increase	36	132

The total number of inland trunk calls for the month of August, 1932 (the latest statistics available) was 10,839,281, representing an increase of 799,563, or 7.96% over the total for the corresponding month of the previous year.

The total number of international calls in August was 93,200, as compared with 84,900 in August, 1931.

Further progress was made during the month of October with the development of the local exchange system. New Exchanges opened included the following:—

LONDON—Colindale, Hither Green, Tulse Hill (automatic); Uxbridge (reconstructed manual);

PROVINCES—Haverton Hill (Middlesborough), Stone Cross (Birmingham) (automatic); Blackheath (Birmingham), Broadwell (Birmingham), Castle Bromwich (Birmingham), Tipton (Birmingham) (automatic conversions); and the following rural automatic exchanges: Aghadowey (Coleraine), Ashdon (Saffron Walden), Blewbury (Oxford), Dane End (Ware), Eye (Ipswich), Friskney (Boston), Flitwick (Bedford), Garsington (Oxford), Kirkby Stephen (Penrith), Kirkwhelpington (Newcastle-on-Tyne), Niton (Ventnor), Pluckley (Ashford), Polperro (Loe), Ramsey (Hunts.) (Peterborough), Randalstown (Belfast), Rowlands Gill (Newcastle-on-Tyne), Stithians (Redruth), Stoke Goldington (Newport Pagnell);

and among the more important exchanges extended were:—

LONDON—Barnet (manual);

PROVINCES—Farnham, Letchworth, Norwich (manual).

During the month the following addition to the main underground system was completed and brought into use:—

Oxford—Witney;

while 73 new overhead trunk circuits were completed, and 83 additional circuits were provided by means of spare wires in underground cables.



## BRITISH AND AMERICAN TELEPHONE ACCOUNTS, 1931.

BY A. J. WALDEGRAVE, I.S.O. (*Deputy Comptroller and Accountant-General*).

(Continued from page 32.)

It will now be of interest, perhaps, to see the complete Income and Expenditure Account of the American Bell System, corresponding with the first statement given in connexion with the British System.

Again looking first at the bottom of the account, we see the interest and dividends of 245.62 million dollars and the balance of 12.48 million which together make 258.10 million dollars of profit for the year. This is the amount which we have just been considering in the shape of a profit of 7.37% on the capital. The descriptions of expenditure do not in all respects coincide with the British classification and we cannot see from the account how much of the expenditure goes in salaries and wages. It is interesting, however, and not a little saddening, to learn from the report published with the accounts that the decline in operating revenue from 1,094.88 to 1,066.90 million dollars has resulted in a substantial displacement of labour. The report states that "In order to spread available work so that the maximum number can be kept employed, more than half of the employees of the Bell Telephone Companies at the end of the year were working less than full time. . . . The Bell System, including the Western Electric Company and the Bell Telephone Laboratories, employed 344,800 persons at the end of the year compared with 394,400 at the end of the previous year."

There is one item in the statement of expenditure which calls for comment because there is no similar item in the British expenditure. This is the figure of 90.63 million dollars for Taxes. In America, public-utility companies are subject to the form of taxation which for a few years was in operation in this country under the name of the Corporation Tax, and, as will be seen, this tax is a substantial item in the expenditure of the Bell Companies. I believe, however, that Income Tax levied on individuals in respect of their dividends from investments is much smaller than in this country.

Before leaving the account there is one other item to which I should like to direct your attention, namely that of uncollectable revenue—the 8.86 million dollars shown half way down on the right-hand side. In this matter of bad debts the British service compares very favourably with the American service. Our percentage of bad debts in the year under review was .19% of the gross revenue, whereas the American figure was .82% of the gross revenue—over four times as great—and this disparity is not a feature of the recent depression but has existed year after year. I will leave you to develop such reflections on the psychology of these figures as you may care to indulge in—with a warning that it is all too easy to attribute differences of national temperament and custom to the possession by other people of a greater degree of moral obliquity.

Although there is an entry of "Taxes" in the American account for which there is no counterpart in the British account, there is *vice versa* no entry in the American account corresponding to the entry of pension liability in the British account. In the case of our own undertaking the provision for the eventual pension payments to the staff is considered of sufficient importance to demand a separate entry in the account. The figure, you will remember, was £939,000. Under American conditions there is no comparable provision, although there is included in the "traffic, commercial and other expenses" a certain amount which is described in the following manner in the report accompanying the accounts—"The plan of providing for

employees' pensions, disability benefits and death benefits completed its twentieth year of operation. Under this plan in 1931 the Bell System paid 9,000,000 dollars for pensions, benefit payments in cases of sickness, and death and compensation in cases of accident." Allowing for the difference in size of the two telephone systems and the respective numbers of employees, the magnitude of this payment would not be more than one-fourth of that of the amount provided by the British service for pensions alone.

Our next statement (Statement V) shows the several classes of expenditure of the two undertakings expressed first as a percentage of the total expenses (excluding interest, dividends and surplus) and secondly as a percentage of the revenue. This statement illustrates further some of the differences rather than the resemblances between the financial features of the two systems and I will call attention to one or two of these differences. The most striking is in the case of depreciation, where it will be seen that 38.8% of the total expenses of the Post Office system came under this heading as compared with 22.8% of the American expenses, and that 29.1% of the British revenue is absorbed by depreciation against only 18% of the American revenue. Another notable difference—one which has some relation to the difference which we have just observed—is that in the American system 20.9% of the total expenses and 16.6% of the revenue go to cover maintenance while in the British system the corresponding figures are 16.7% and 12.5%. Again, the American expenses, apart from plant and accommodation costs, amount to 43.8% of the total and absorb 34.7% of the revenue, as compared with the British figures of 36.0% and 27.0%, notwithstanding that the British expenses include the large provision for pension liability upon which I have commented. The different treatment of land and buildings in Britain has already been referred to and explains the disparity in the Rent figures shown in the statement.

Before making any comments on these differences, it will be useful to see on the screen certain other comparisons between the two systems.

Statement VI, which is the last with which I propose to trouble you, gives, as you will see, a few statistics which are not to be found in the accounts themselves but which may be obtained from the covering Report; namely, the mileage of wire at the end of the year, the number of stations (taking the mean of the year), and the average number of calls daily. On the extreme right-hand side throughout the statement is given the relation of the British figures to the American figures expressed as a percentage. Although a measurement by number of stations is a somewhat rough basis of comparison, it may be gathered from the percentage figure which appears against the number of stations that the American Bell System is about eight times the size of the British Post Office System. Keeping this ratio in mind, it will be seen that none of the other comparisons falls into line except that of the total miles of wire, where there is a fairly close approximation to this ratio of eight to one. In this connexion I should like to call attention to a point on which some of our technical friends may be able to throw light, namely, that both here and in America there are, on an average, about five miles of wire to a station. This looks a lot. Moreover, in recent years this average mileage per station has been growing, in spite of the coming of those interesting phantom circuits of which we hear so much.

When we look at the division of the wire mileage into overhead and underground, we see that there is a substantial difference between the two systems and that, whereas in the British System 89% of the wires were underground, in America the figure was only 66%. This, of course, as I have already mentioned, has a bearing on the differences which we have already noted in looking at the previous statement, in regard to the relative expenses of depreciation and maintenance.

Another striking difference is to be observed in the comparison of the number of calls daily—two differences, indeed. The American exchange calls instead of being eight times as numerous as the British are about thirteen times as many. Expressed in terms of "per station," the average number of exchange calls daily in America is 4.00 compared with 2.38 in Great Britain,

### STATEMENT IV.

#### AMERICAN BELL SYSTEM.

INCOME AND EXPENDITURE (IN MILLIONS \$)

1930.		1931.		1930.		1931.	
\$		\$		\$		\$	
331.64	Traffic and Commercial Expenses	...	...	303.45	Exchange Revenue	...	...
67.65	Executive and Miscellaneous Expenses	...	...	66.38	Toll Revenue	...	...
191.06	Maintenance	...	...	177.02	Miscellaneous Revenue	...	...
15.59	Rent, &c.	...	...	15.58			
86.29	Taxes	...	...	90.63			
182.40	Depreciation	...	...	192.31			
220.25	Operating Profit	...	...	221.53			
					1,103.94		1,075.76
					9.06	Less—Uncollectable Revenue	8.86
1,094.88				1,066.90			
					1,094.88		1,066.90
222.85	Interest and Dividends	...	...	245.62	220.25	Operating Profit brought down	221.53
45.02	Balance	...	...	12.48	47.62	Non-operating Revenue	36.57
267.87				258.10	267.87		258.10

STATEMENT V.

AMERICAN BELL SYSTEM AND BRITISH POST OFFICE TELEPHONE SYSTEM—COMPARISON OF RESULTS OF WORKING.

AMERICAN BELL SYSTEM—YEAR ENDED 31ST DECEMBER, 1931.			
	\$ '000 omitted.	Per cent. of Total Expenses excluding Int. Divds. & Surplus.	Per cent. of Revenue.
Revenue (excluding non-operating revenue) ... ..	1,066,895		
Expenses—			
Traffic, Commercial and General (including Employees' Sick and Pension Funds) ... ..	369,829	43.8	34.7
Maintenance ... ..	177,022	20.9	16.6
Rent ... ..	15,575	1.8	1.4
Taxes ... ..	90,631	10.7	8.5
Depreciation ... ..	192,307	22.8	18.0
	845,364	100.0	79.2
Available for Interest, Dividends, &c.	220,531	—	20.8
	1,066,895	—	100.0

BRITISH POST OFFICE SYSTEM—YEAR ENDED 31ST MARCH, 1932.			
	£ '000 omitted.	Per cent. of Total Expenses.	Per cent. of Revenue.
Revenue ... ..	23,541		
Expenses—			
Administrative and Traffic including Pension Liability and Miscellaneous ... ..	6,366	36.0	27.0
Maintenance ... ..	2,948	16.7	12.5
Rent (including Rental Value of Crown Premises), Rates, Light, Heat, &c. ... ..	1,497	8.5	6.4
Depreciation ... ..	6,859	38.8	29.1
	17,670	100.0	75.0
Available for Interest, &c. ...	5,871	—	25.0
	23,541	—	100.0

but the number of toll, that is, trunk calls per station, is distinctly lower than in this country, viz., .174 as compared with .209; and it would be lower still if account were taken of the stations of the independent companies which discharge their trunk traffic into the Bell System. These figures must indicate substantial differences in the character of the business. The much higher calling rate in the exchange traffic in America is no doubt partly due to the fact that a large number of subscribers are on flat rates, but over and above this, there is no doubt that the telephone habit has become much more highly developed among the Americans than among the British people. If the British calling rate could be raised from 2.38 to 4.00 the surplus shown in the Accounts would doubtless assume really large dimensions.

STATEMENT VI.

CERTAIN COMPARISONS BETWEEN THE AMERICAN BELL SYSTEM AND THE BRITISH POST OFFICE SYSTEM.

	American Bell System: Year to Dec. 31, 1931.	British Post Office System: Year to Mar. 31, 1932.	Per cent. of Bell.
Miles of Wire at end of year: (Exchange and Toll)—			
Aerial ... ..	27,025,000	1,065,000	3.94
Underground ... ..	52,214,000	8,762,000	16.78
Total ... ..	79,239,000	9,827,000	12.40
Per cent. of Underground ...	66	89	
Number of Stations (Mean of Year)	15,536,000	2,032,000	13.08
Number of Calls Daily:			
Exchange ... ..	62,205,000	4,767,000	7.66
Do. (per station) ... ..	4.00	2.38	
Toll ... ..	2,700,000	419,000	15.52
Do. (per station) ... ..	.174	.209	
Annual Expenditure, converted at parity ... ..	£173,861,000	£17,670,000	10.16
Annual Expenditure per Station, converted at parity:			
Plant Costs (i.e. Maintenance and Depreciation) ... ..	£4.89	£4.83	
Other Costs ... ..	£6.30	£3.87	
	£11.19	£8.70	
Annual Income, converted at parity	£219,422,000	£23,541,000	10.73
Annual Income per Station, converted at parity ... ..	£14.12	£11.59	

The adverse showing from the American point of view of the toll calling rate has never, so far as I know, attracted the attention which it appears to deserve. Unless the comparison is entirely vitiated by differences of

method in the classification of calls, they seem to indicate, taken in conjunction with the high rate of calling in exchange traffic, that, considered as a part of the whole telephone system of the country, the American trunk service is of distinctly smaller dimensions and importance than the British trunk service; and the disparity sets one speculating as to what is likely to be the ratio of trunk business to exchange business in different communities and at different stages of telephone development. In spite of its big cities America is still more rural in character and less highly industrialised than Great Britain, and its great distances separate one township from another more effectively than is the case in this country. Again, the lower down we go in the income scale in attracting subscribers, the more unlikely it seems that trunk traffic will be attracted in the same proportions as the amount of such traffic obtained from the larger subscribers; for, in general, residence subscribers are not likely to originate so much trunk traffic as business subscribers. The figures on the screen, taken at their face value, indicate at any rate that, in point of fact, in the highly developed American Telephone system, trunk traffic is relatively smaller than in the less highly developed British System. Possibly the excellent American long-distance telegraph service is a factor in the situation; but however that may be, the relationship between exchange traffic and trunk traffic has a bearing on the figures of plant costs when those figures are quoted, as they sometimes are, in terms of "per station." There is a considerable disparity between the capital costs per station in America and Great Britain respectively, the cost in Great Britain being higher, but direct and unqualified comparison of prime cost per station is dangerous and misleading. I do not propose this evening to enter in detail into a consideration of all the factors which account for the difference, but it seemed worth while to suggest that one of the factors to be taken into account is that to which I have just been directing your attention, namely, the probability of the relatively larger amount of trunk plant in this country.

Passing from the figures of mileage, stations, and calls, we come to figures of expenditure and income, some of which we have already seen in the previous statements. In this statement the American figures are converted from dollars to pounds in order to facilitate comparison with the British figures. In 1931, as we all remember, the financial crisis occurred and Great Britain went off the gold standard. Fortunately, however, for the comparison we are now making, this event has so far had little effect on the ratio of internal prices in the respective countries, and it is possible, therefore, to make the present comparison by converting dollars into pounds at parity. It will be seen that on this basis the expenditure for the year of the American Bell Company was £173,861,000 compared with the British expenditure of £17,670,000—nearly ten times as much. The American expenditure per station was £11.19 and the British expenditure £8.70. A division of this expenditure per station between plant costs (that is, maintenance and depreciation) and other costs is shown, and it will be seen that the American plant costs per station correspond very closely with the British—£4.89 American and £4.83 British—but that the other costs in America were considerably higher than in Great Britain, namely, £6.30 as compared with £3.87. These two sets of figures illustrate two points, first that lower maintenance costs in this country to a considerable extent offset the higher depreciation costs and secondly that the higher calling rate in America is accompanied by higher traffic costs. It must be remembered, too, that the American expenditure is swollen by the payment of taxes.

The income for the year of the Bell System was £219,422,000 as compared with the Post Office income of £23,541,000, and per station this works out to £14.12 American and £11.59 British. If a deduction be made it will be

seen that the income per station of the two systems exceeds the costs by approximately the same amount—£2.89 per station in the case of Great Britain and £2.93 per station in the case of America.

It is necessary again to bear in mind that in making this comparison of income per station we are not comparing exact like with like. In the American system flat rates, as I have already mentioned, exist to a great extent, but on the other hand there is large use made of the party-line type of service: indeed, only 35% of the residence subscribers in America have individual lines. Again, allowance must be made for the general higher standard of living in the States. The comparison of income per station which we are making does not do more than lead to the general reflection that the charges for the telephone in Great Britain, compared with those in America, are certainly not outrageously excessive, as is sometimes alleged; and to the further reflection that if the British calling rate could be increased to the American rate the charge per call could no doubt be substantially reduced without financial disaster.

We have now arrived at the end of the figures to which I purposed to call your attention. I expect they will have raised many more questions in your minds than they will have answered, but if so they have performed one of the main functions of the accounts. It is necessary to prepare accounts for the original simple object of ensuring that all revenue is properly collected and brought into the coffers and that all expenditure is duly authorised and properly vouched. In pursuing this main purpose the accounts necessarily accumulate a considerable amount of statistical information—accounts are, indeed, really a specialised form of statistics—and it is desirable that they should present this information in as illuminating a manner as possible, consistently with their original purpose. When, however, this has been done, innumerable questions begin to arise, or should do, in the intelligent administrative mind; and to answer those questions it is necessary to enter upon financial and statistical studies directed to the elucidation of particular problems. The accounts cannot do more than point the way to some of these lines of profitable study. If the accounts as presented this evening, and the comparisons between the figures of the two Systems have provoked questions which may lead to further investigation, with advantage to the Telephone Service in which in our respective ways we are taking part, the strain on your attention in following this paper and in looking at the figures thrown on the screen, will have some compensation.

## BRIGHTER HOMES EXHIBITION.

NEWCASTLE-ON-TYNE.

Tuesday afternoon, Oct. 4, 1932.

"That you, Hight"?

"Lowe, Newcastle, this end. We have just received an offer of a free site, 16 ft. by 10 ft. at the Brighter Homes Exhibition in Newcastle, to be opened on Tuesday, Oct. 18; the exhibition will remain open until Saturday, Oct. 29. What about it?"

After a short talk it was agreed to "go ahead."

From that minute everyone concerned put shoulder to the wheel to ensure the venture being a success.

The Office of Works constructed an attractive stand in red and black, and the local Engineering Dept. got together the necessary items for exhibit.

The Chief Superintendent Telegraphs arranged for the attendance of expert Teleprinter operators and for the Telegraph and Telephone Representative to be in attendance.

The Sales Manager produced an idea for a centre piece for the background, and this was executed by Mr. John Nicholson of the Accounts Section, who has a flair for such work.

The Traffic Superintendent undertook to provide a suitable telephonist, and everything went along like clockwork.

The result—well, this exceeded our most sanguine expectations, the number of orders taken being 65. This included 8 exchange lines, 16 extensions, 37 Hand Micro Telephones, 2 Valve Amplifiers, and 2 Removals.

The Lord Mayor of Newcastle performed the opening ceremony, and addressed a congratulatory telegram to the Editor of the *Evening Chronicle*, which sponsored the Exhibition, from the Teleprinters at the Post Office stand.

A press photograph of the civic party which was received at the stand by Mr. Ferguson, Postmaster Surveyor, is printed with this article.



[By courtesy of "Newcastle Chronicle."]

THE LORD MAYOR OF NEWCASTLE PERFORMING THE OPENING CEREMONY.

The display included an Automatic demonstration unit, which was explained to the public by an engineering representative, two Teleprinters, Valve Amplifier, Multi Coin Box, Coloured Hand Micro Telephones, Plan No. Extensions, Floor and Table Switchboards, &c., and altogether the stand looked very businesslike.

R. P. L.

## FOR OUR ADVERTISERS.

ALL enquiries should be addressed to the Department of Overseas Trade, 35, Old Queen Street, London, S.W., except where otherwise stated, quoting reference number in all cases. Supplies, &c., required by:—

*Australia.*—Melbourne. Dec. 13. Posts and Telegraphs Dept. Lead-covered switchboard cable (A.X. 11545). Dec. 19. City Council. Totally enclosed metal-clad 6,600-volt switchgear (A.X. 11544). Grafton. Dec. 19. Clarence River County Council. 1,000-kVA turbo-alternator set for Nymboida power station (A.X. 11561). Melbourne. Jan. 10, 1933. Posts and Telegraphs Dept. Telephone jacks and number plates (A.X. 11580) and loading coil pots (A.X. 11578). Jan. 17. Switchboard keys and parts (A.X. 11582) and telephone bells and parts (A.X. 11583).

*Egypt.*—Cairo. Dec. 10. Ministry of Interior. Diesel engines, alternators, switchgear, &c. (A. 11530). Dec. 17. Overhead and underground distribution network for town of Fikria (A.X. 11552). Dec. 14. Ministry of Public Works. 32-kw. oil engine driven generator set for the Marouf power station (A.X. 11551). Dec. 20. Power station and overhead distribution network for the town Fagus (A.X. 11550).

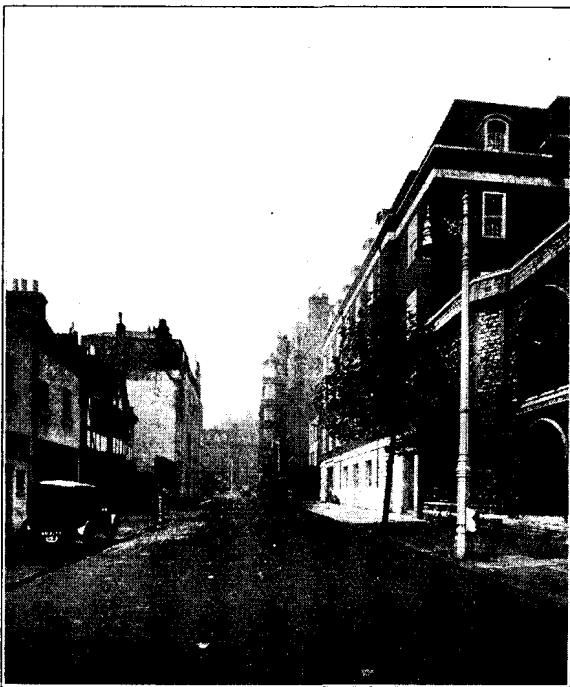
*New Zealand.*—Wellington. Jan. 10. Posts and Telegraphs Dept. Ten thousand telephone transmitters (A.X. 11587).

*South Africa.*—Johannesburg. Dec. 19. S. African Railways and Harbours. Manual telephone exchange for Durban (A.X. 11558).

J. J. T.

## OPENING OF THE MAYFAIR TELEPHONE BUILDING.

MAYFAIR, the district immediately north of Piccadilly, is one of the wealthiest residential districts of London, and takes its name from a fair formerly held annually in that area during the month of May. It was during the reign of Charles I that the first great exodus of the wealthy and fashionable to the West End of London took place, although at that time the migration did not extend so far afield as the present Mayfair district. With the Restoration the separation of fashionable from city life became complete, and the West End continued to recede farther until it reached the district presently known as Mayfair. The new "Mayfair" group of exchanges is the largest and most modern installation so far completed for the telephone service of Greater London and incorporates the latest developments and improvements in automatic telephone switching.



FARM STREET, MAYFAIR. NEW EXCHANGE ON RIGHT.

Although named "Mayfair Building" for convenience, the new British Post Office telephone premises in Farm Street accommodate for the nonce the combined automatic equipment of no fewer than four exchanges—Mayfair, Regent, Grosvenor, and Langham—the manufacturers and contractors for the installation of the equipment being Automatic Electric Company, Limited, formerly Automatic Telephone Manufacturing Company, Limited, Strowger Works, Liverpool.

This combination of four automatic exchanges under one roof is only a temporary measure, marking the first stage of the conversion programme from manual to automatic in the district. The old Regent Exchange was manually operated and occupied a separate building, and a new automatic exchange, to be known as Langham, will take the place of the superseded manual equipment. When this change is effected at a later date the equipment at present allocated to Langham in the Farm Street building will be merged into that destined to serve Grosvenor subscribers. The ultimate capacity of the three-fold exchange will thus be three 10,000-line automatic exchanges—Mayfair, Regent, and Grosvenor, a total of 30,000 lines of equipment under one roof.

Subdivision of the equipment in the Mayfair Building into four distinct exchanges, applies only to the apparatus directly associated with subscribers' lines, together with the numerical and 1st code selectors. The remainder, including the directors.



[By courtesy of Central News Ltd.]

SIR KINGSLEY WOOD DECLARING THE EXCHANGE OPEN.

auto-manual equipment, and power plant is common to all these exchanges, a grouping principle which makes for greater efficiency and economy of plant and floor space.

An interesting and largely attended ceremony took place here on Nov. 8, when the Postmaster General, Sir Kingsley Wood, opened the new building. After the guests, most of whom must



[By courtesy of "Special Press."]

THE POSTMASTER-GENERAL INSPECTING THE TELEPHONISTS AT WORK.

have received the liveliest impressions of the magnitude and intricacy of the parts and potentialities of a modern telephone exchange, had been received by Sir Kingsley Wood, a few speeches were made and then the Postmaster-General, assisted by one of the engineering workmen, performed the opening ceremony of cutting the wire of the last subscriber on the Regent manual

exchange. This was done by means of a pair of gold pliers presented to him by Sir Alexander Roger, the chairman of the Automatic Electric Co., contractors for the equipment of the exchange.

Mr. W. H. U. NAPIER, Controller of the London Telephone Service, who presided, outlined in his opening remarks the growth of the automatic system in London, and stated that the new building would contain the 50th automatic exchange in the London Telephone Area, and that nearly 40% of the subscribers' lines within the London 10-mile circle were now working on the automatic system. He referred specially to the rapid development of the telephone service during the last 30 years or so, and to the important part the service played in every-day life.

Sir KINGSLEY WOOD said the exchange marked another step forward in British telephone development. It was the product and work of British Post Office engineers and a well-known British telephone equipment firm. In the development of telephone technique the Post Office now played a leading part, and in invention and initiative Post Office Engineers had always occupied a foremost place. The British telephone equipment manufacturers had also developed to a high state of efficiency and progress. While a large proportion of telephone equipment used to be purchased from Belgium, Sweden, and the United States, he was glad to say that the Post Office, some time ago, had been able to dispense with foreign manufacture, and their system to-day was wholly maintained by British products. It was the steadfast policy of the Post Office to give every possible support to British industry, and the amount of foreign material purchased was only a fraction of 1% of the whole.

He drew attention to the fact that despite the financial depression existing in 1931, when the world's telephone development for the first time showed an actual decrease, Great Britain had an actual net increase of 84,000 telephones.

Mr. E. GOMERSALL, Superintending Engineer of the London Engineering District, explained the chief features of the new exchange, after which the Mayor of Westminster, the Rev. E. ST. G. SCHOMBERG, proposed a vote of thanks to Sir Kingsley Wood, Mr. GORDON SELFRIDGE seconding the vote.

The guests, who numbered about 230, were subsequently entertained at tea, and conducted in parties over the new building. The guests present included:—Lady Wood, Lady Bennett, E. T. Campbell, Esq., M.P., and Mrs. Campbell, Lord and Lady Illingworth, Earl Poulett, Major Gen. Sir Alfred Knox, K.C.B., C.M.G., M.P.,



GENERAL VIEW OF AUTO-MANUAL SWITCHROOM.

Capt. A. S. Cunningham Reid, D.F.C., M.P., Sir W. H. Davison, K.B.E., M.P., Major Sir M. McKenzie Wood, O.B.E., M.P., Lt.-Col. Sir Assheton Pownall, M.P., Sir Henry Jackson, M.P., and a number of other Members of Parliament. Sir Stephen Killik, Sir William Crawford, K.B.E., Sir Stephen Tallents, K.C.M.G., C.B., C.B.E., The Mayor of Westminster (Rev. E. St. G. Schomberg, J.P.), The Mayor of Marylebone (F. White, Esq., J.P.), H. Gordon Selfridge, Esq., Sir Richard Allison, C.B.E., F.R.I.B.A., P. K. Hanton, Esq., C.B.E., A.R.I.B.A. (the Architect of the Building).

The new Post Office building in Farm Street comprises five floors and a basement, the latter accommodating the four main batteries, each of 25 cells, for operating the equipment and furnishing current to subscribers' telephones.



GENERAL VIEW OF SWITCHROOM, WITH TEST DESK IN FOREGROUND.

On the ground floor are located the three charging motor-generators, ringing machines, and power switchboard for controlling this plant. The power requirements of a combined automatic exchange equipment which will ultimately serve some 30,000 subscribers, including the current which flows out over the line wires of those engaged in conversation for the purpose of energising their respective microphones, are necessarily considerable, and the plant has to be designed to cope with the maximum load likely to be experienced during "busy hour" traffic.

There are four ringing dynamotors for supplying the exchange ringing currents, tones, &c., two being wound for direct mains operation, and the remaining pair as stand-by for battery operation in the event of a supply service failure. Each machine has an output of 4 amperes at 75 volts.

The first, second, and third floors of the new building comprise switchrooms for the accommodation of the automatic equipment for all four exchanges, the associated main and intermediate distribution frames being installed on the first, and the meter racks on the third floor respectively.

The whole of the automatic equipment for the Mayfair group of exchanges is mounted through the medium of channel-steel shelves, on single-sided racks, the "jack-in" principle of connecting individual components and switches facilitating permanent wiring, and obviating any disturbance thereof whenever adjustments or re-arrangements of apparatus become necessary.

To facilitate inter-working between existing manual and the newly converted automatic subscribers, considerable auto-manual switchboard accommodation is still necessary and will be required throughout the transition period. The fourth floor of the new building is equipped as an auto-manual switchroom and accommodates nearly 100 "A" switchboard sections, 12 "B" sections, and 26 sections for associated Toll services, an interesting reflection for those who contend that automatic telephony is displacing the telephonist, since most of these sections will require staffing during the busy hours.

Like the previous automatic exchanges in the London area, the system at Mayfair and its associated exchanges is 7-digit Director, the first three digits being dialled as initial letters of the required exchange name, e.g., MAYfair, followed



MAIN DISTRIBUTION FRAME.

by the four numerical digits representing the subscriber's number in that exchange. The design of the Director units constitutes a marked improvement by comparison with the earlier arrangement at Holborn and elsewhere.

## REVIEWS.

"*Induction Motor Practice.*" By R. E. Hopkins, B.Sc., A.M.I.E.E., D.I.C., A.C.G.I. Published by Sir Isaac Pitman & Sons, Ltd. 374 pp. Price 15s.

This book should prove to be of particular interest to students pursuing a course in Electrical Machine Design. It describes fully the types of induction motor employed for different industrial purposes. The chapters dealing with the design of the induction motor are concise: there is no over-elaboration of theory and the buyer's requirements are not overlooked. Practical details are given in abundance and the large number of completed design sheets for various types of motor enable the student or designer to work examples and at the same time to become familiar with the standard range of machines. Chapters on control gear, mechanical transmission, and the works organisation involved in ordering, designing and testing machines complete a valuable book for student, designer, and salesman.

"*Telephony.*" By T. E. Herbert and W. S. Proctor. Vol. I, 2nd Edition. Pitman & Sons Ltd. 20s. nett.

This is an exhaustive and up-to-date treatise on the telephone system of the Post Office and to Post Office men it has an added advantage in the fact that official nomenclature, plans and data have been used freely in its composition.

It covers the whole of the courses for the Preliminary and Intermediate Examinations of the City and Guilds of London

Institute and much of the course for the Final Grade. Automatic telephony is not, however, included, as that development forms the subject of a separate volume. The practical man who has found it impossible to keep up to date in all aspects of telephony will appreciate the value of this book for reference purposes, as he can seek in it with success for such details as are necessary for any work which he may be called upon to perform. A good index and a carefully compiled Table of Contents makes reference easy.

## LEEDS DISTRICT NOTES.

THE advent of "Telex" brought with it the immediate need to "Tell the world," or at any rate, so far as we are concerned, that part of the world represented by the West Yorkshire District, that a service was now available which had established a new record in the rapidity with which a message typed in a telephone subscriber's office in Leeds could be delivered at another subscriber's office nearly 200 miles distant. A start having been made with newspaper publicity, the next stage took the form of an address on "Telex and other Post Office developments," by Col. Jayne (Postmaster-Surveyor), to the Leeds Luncheon Club, at the Metropole Hotel, on Oct. 24. More than 220 of the most prominent members of the commercial community of Leeds were present, and were given a practical demonstration of Telex working by means of two Telex sets which had been installed, one at each end of the dining room. Telex calls were also set up from the demonstration sets to London and messages were exchanged between the President of the Leeds Chamber of Commerce and the Postmaster-General and between the Chairman of the Luncheon Club and Mr. Simon, Director of Telegraphs and Telephones. The demonstration aroused very great interest and was well reported in the Press.

A survey of the field of potential users of Telex service had placed the "Police" very prominently on the list, a prominence influenced no doubt by an intensive study of Edgar Wallace thrillers during the summer holidays and the knowledge thereby gained that "writing down" was an essential feature of police procedure. Steps were therefore taken to interest all the Chief Constables in the District and an invitation to attend a Telex demonstration for their special benefit was accepted by the Chief Constables of the West Riding, Leeds, Bradford, Huddersfield and Halifax. A suggestion to the Manchester District that the Chief Constable, Manchester, should be invited to join in the demonstration brought enthusiastic co-operation, and as a result the Chief Constables of Manchester, Salford, Oldham, Stockport, Hyde and Stalybridge were present at the Manchester end when the demonstration was held on Oct. 16. Birmingham also joined in, and included their Chief Constable in the demonstration. Telex calls were passed between Leeds, Manchester and Birmingham and the police representatives were impressed with the satisfactory character of the transmission of the typewritten messages. One message stated that it was "a very fine day in Manchester," and there was no doubt that it was, as we understand they booked three agreements for Telex service before the demonstration was over.

The widespread interest which has been aroused by the development of the Telex service by the British Post Office was evidenced by the visit to Leeds on Nov. 2, of three officials of The Hague, viz.: A. D. J. Urbanus, Ingenieur des Télégraphes et des Téléphones, T. Perry, Referendaire-adjoint des Postes, Télégraphes et des Téléphones, M. J. de Vries, Fonctionnaire-électrotechnicien des Télégraphes et Téléphones.

The visit provided an opportunity of an interesting exchange of views on many aspects of the Telephone and Telegraph services.

Sir Henry N. Bunbury, K.C.B. (Controller and Accountant-General) paid a visit to Leeds on Oct. 20 to give a lecture to the members of the Institute of Public Administration on "Economics and the Post Office." Col. A. A. Jayne, D.S.O., O.B.E., M.C. (Postmaster-Surveyor), was in the chair, and there was a large attendance of members and their friends. Sir Henry's address was followed by an interesting discussion in which members of the "fair" sex took their fair share and Mr. Murray (District Manager) was afforded an opportunity to deal with certain points of local application which had been raised in connexion with the telephone service.

An indication of the high standard of "Service after installation" provided by the Post Office, we have pleasure in including in these notes the following appreciative letter received on Oct. 25 from the Dewsbury Chamber of Trade:—

"Dear Sir,—After the conclusion of a week of carnival, in aid of the local infirmary, which was very largely organised from this office last June, I felt compelled to render my thanks through you to the local telephone operators for their helpfulness.

"We have recently organised and carried through the largest Trades Exhibition ever held in the town, and again tribute must be paid to the operators for their alertness in responding to the calls made upon them. They saved incalculable time and rendered valuable service, and we much appreciated their co-operation.—Yours faithfully,

(Sgd.) G. W. ALLEN, Secretary."

## TELEGRAPHIC MEMORABILIA.

THERE has been something of—well, one will not say a clamour—but certainly some grumbling on account of the hesitancy on the part of authorities in this country in making use of the ether as an advertising medium, with references to the supposed “slowness in the up-take of this country of new suggestions.” The hesitancy, if such it was, appears to have been justified according to Mr. Dyer, the managing director of Philco Radio. This gentleman reports that “the American public though at first attracted by the ‘shouting advertisements from the skies,’ is becoming rather tired of it and is returning to the newspapers for its information regarding what to buy and where to buy it. Boiled down,” says my informant, “the printed word is better than the spoken word.”

*The Shortest Wavelength.*—Great Britain will soon have the shortest wavelength of any wireless service in the world, according to the Aviation correspondent of the *London Daily Telegraph*. The apparatus is to be set up at Lympne near Hythe and St. Inglevert (France). This “micro-ray” is on a scale of a minute fraction of a metre, and has been developed for the British Air Ministry. It is expected to ensure the quickest possible ordering of life-saving operations in the event of an aeroplane being compelled to descend to the sea. It is further claimed for the system that it has the advantage of complete freedom from interference by any other wireless operations, no matter how busy the ether may be at the time.

*Obituaries.*—The demise of Mr. Robert Donaldson, formerly an Asst. Controller of the C.T.O. London, in his 81st year at his Catford residence, on Oct. 26, reminds one of the telegraphic changes which this much respected officer must have seen during his career. Mr. Donaldson commenced duty in the old South Eastern Railway Co., at Redhill, under Mr. O. Bathurst, later transferring to London Bridge Station. At the transfer of the Telegraphs to the State in 1870 he entered the original T.S. (Telegraph Street) office. Subsequently appointed to the Fleet Street Special Staff in connexion with the Provincial newspapers, he was attached to the *Newcastle Tyne Daily Chronicle* until about 1890, at which period he was promoted to Asst. Superintendent. 1895 saw his further promotion and 1906 his rise to Superintendent, while 1910 crowned his career as Asst. Controller “Met. Gallery.” His longevity was in no small part due to his various activities, political, religious, social—such services being always freely given and always competently performed.

Also with deep regret we have to record the death of Mr. Christian Hamilton Gray, a joint managing director, and from 1922 to 1928 Chairman of the India Rubber, Gutta Percha, and Telegraph Works Co., Ltd. His passing occurred on Oct. 30 at Hurst House, Abbey Wood, and was due to pneumonia. Mr. C. H. Gray was the fourth of the five sons of Mr. Matthew Gray, who with the late Mr. S. W. Silver, were practically responsible for the foundation of the Silvertown Company in 1864 and its subsequent developments.

*Countries.*—AFRICA.—A new transmitting station for the African Broadcasting Company is to be erected by the Marconi Company near Capetown. It is expected to be in operation by the summer of next year, says the *Electrical Review*. AUSTRIA.—Due to the initiative of the Verein fuer Radiotechnik, experiments are in progress with the equipment of freight-carrying vessels on the River Danube with radio-telephone apparatus for the transmission to and the reception of messages from, the goods, warehouses, and despatching offices in the various towns on the river. Telegraph facilities on the Danube are not very extensive. *Verb. sap.*

BELGIUM.—A relay wireless service, it is understood, is in process of establishment in Gand under the control of the city authorities. The service is planned on a large scale, for, the installation itself is to have a capacity of no less than 20,000 subscribers.

The immediate applications are expected to number well over three thousand. Subscribers are to purchase their own loudspeakers and will have available at all times a choice of four programmes.

CANADA.—I. and International Communications Ltd. announce that owing to the installation of improved apparatus on their two Imperial cables, an exceptionally rapid telegraph service is now available. As a sequel to this the company has now inaugurated a special “Preferred” class of telegrams to Canada.

DENMARK.—*B.B.C. Television Success!*—The *London Daily Telegraph* informs us that a very successful television transmission was recently received from the B.B.C. in England to Copenhagen. In the presence of a number of wireless experts the television broadcast from England was picked up by the Vestfronten wireless station. It was retransmitted thence by landlines to Copenhagen, where it was projected on to a screen about 3 feet by 7 feet. The pictures and voices were transmitted separately, and were then perfectly synchronised before projection. Both the voices and the pictures, adds the report, were remarkably clear, even the details of the faces being easily seen.

EGYPT.—Reuter's Agency reports that arrangements have been made in Egypt, to amalgamate the operation of the Wireless and Cable services, and the Marconi Company of Egypt is in future to be responsible for the working of the Eastern Telegraph Company's cables as well as of its own wireless communication.

GERMANY.—From official sources it is gathered that on Oct. 1 the number of broadcasting receiving licences in force was 4,077,347, of which 481,627 were exempt from payment (i.e. concessions made to blind, out-of-works, &c.) while the corresponding figures on July 1 were 4,119,531 and 412,177 respectively.

GREAT BRITAIN.—On Oct. 29 the five-millionth wireless broadcasting receiving licence was sold at the General Post Office, London.

*Cardiff.*—A very satisfactory piece of real economy has been accomplished in the establishment of an experimental radio link across the Bristol Channel to connect the land telephone circuits at Lavernoch, near Cardiff, on the one side and Hutton, near Weston-super-Mare on the other. The route consists of twelve miles of radio and seven miles of land circuits. The alternatives were the use of an expensive submarine cable, or circuitous land lines of no less than 45 miles, via the Severn Tunnel and 69 miles via the Severn Bridge. Very short waves are used. *Manchester.*—The Marconi Company has the contract to erect, on behalf of the Air Ministry, a wireless station at the Manchester Corporation aerodrome at Barton Moss, for the use of civil aviation services. The range will extend to Dublin, Belfast, the Midlands, and over a wide area of north-west England and Wales. It will provide ground-to-air communication by telephone or telegraph, meteorological broadcasts, wireless direction finding, and inter-aerodrome services. The station will be staffed and controlled by the Air Ministry, and, according to the *Electrical Review*, a complete meteorological office is to be established at the same time.

*Daventry.*—The Empire broadcasting service from the B.B.C.'s new Daventry station, will commence from the latter station on the 19th inst. The programmes, of two hours' duration, it is understood, are intended for the following five zones: Australia, New Zealand, and the Pacific Islands (9.30 to 11.30 a.m.); E. Africa, Mauritius, Egypt, Malta, and Palestine (6 to 8 p.m.); W. Africa, Falkland Islands, and may be South America (8.30 to 10.30 p.m.); and Canada, Honduras, West Indies, &c. (1 to 3 a.m.). *Television.*—The B.B.C. has made some interesting experiments in Television broadcasting of late, which have included not only still life, such as the transmutation of marble busts, Waterford glass, Louis XVI clock, Dresden china, &c., but the vivacious figures of mannequin parades.

INDIA.—Imperial and International Communications notify the public that they have arranged with the Indian Government

to connect Calcutta by direct line to the offices of the Indian Radio & Cable Communications Co. in Bombay. We also understand that the Teleprinter is to be worked on this lengthy section.

ITALY.—The Rome correspondent of the *Daily Telegraph* announces that a permanent ultra-short wave radio receiving and transmitting equipment for use between the Vatican wireless station and the Papal summer residence at Castelgandolfo, twelve miles from Rome. It is also stated that the wavelength actually used is half a metre. The British Air Ministry's Lympne station mentioned above will use a much shorter wavelength.

NEW ZEALAND.—The *Wireless World* informs us that the Technical Committee appointed by the State Broadcasting Board in its report on the improvement of the four stations of Wellington, Auckland, Christchurch, and Dunedin recommends that these stations should be re-equipped and their power doubled. Further relay stations may be provided by the State taking over some of the privately-owned "B" stations.

SPAIN.—It was announced during one of the sittings of the Radio and Telegraphy Congress, recently held in Madrid, that it is computed that there are no less than 140,000,000 people in the world who listen-in on the wireless, that the value of all the individual wireless sets in the world is no less than £200,000,000, about £30,000,000 are spent every year throughout the world in actual broadcasting, that in Germany alone there are no less than 65 different wireless journals to which 2,500,000 people subscribe every week, and that the annual consumption of electric current due to broadcasting is said to be 1,573,200,000 kilowatt hours!

*The Post-War Sciences.*—How much nearer Truth and Reality and final value are Jeans and Eddington than Flammarion and Ball? A little—but only a little. . . . What of it? A bigger universe with more stars in its far-curved garment and that garment spread wider—what improvement, what greater verity, what use? Size, quantity, number, do these contain value in themselves? . . . In what sense does 'more' spell 'better'?—GEOFFREY DENNIS in the *English Review*.

J. J. T.

MANCHESTER NOTES.

*Staff Changes.*—*Transfer of Mr. G. Madelly.*—Mr. Madelly has been transferred from the Head Postmastership of Knutsford to that of Retford in the North-Eastern District. On Nov. 7 Mr. H. W. Jackson presided over an assembly of the Knutsford Post Office combined staff, including many sub-Postmasters, and on their behalf presented to Mr. Madelly a mahogany clock and nest of tables as a mark of the esteem in which they held him. Mr. Madelly took up his new duties at Retford on Nov. 11.

*Retirement of Mr. F. C. Kemp.*—On Oct. 28 Mr. F. C. Kemp, Traffic Superintendent, Class II, retired, after 46 years' Post Office service at Manchester.

A presentation was made to Mr. Kemp in the dining room at Telephone House on Oct. 27. In the absence on leave of Mr. J. T. Whitelaw, the District Manager, Mr. J. C. Macdonald, the Staff Officer, presided. On behalf of the staff of the District Manager's Office and the City, Central and Toll Exchanges, he presented to Mr. Kemp a gold watch, which was suitably inscribed. The Trunk Exchange staff, with whom Mr. Kemp has been closely associated for many years, made a separate present of a clock and a set of pipes.

A further function was held at Telephone House on Nov. 15, when Mr. Magnall (Traffic Superintendent) presided over an assembly of representatives of the District Manager's, Superintending Engineer's, Telegraph, Postal and Headquarters Traffic Sections, which met to wish Mr. Kemp "Adieu" and, incidentally, to partake of "Hot Pot" and join in a sing-song and smoker. A very enjoyable evening was concluded at 10 p.m. by the singing of "Auld Lang Syne."

Mr. Kemp is celebrating his release from the cares of official life by a trip to Australia. He sails on Dec. 10 and hopes to be present at the last of the Test Matches. We hope that Messrs. Kemp, Duckworth and Paynter will each play his part in bringing back the "Ashes."

*Promotion of Mr. H. C. Froom.*—We congratulate Mr. Froom, Traffic Superintendent, Class II, on his promotion to Traffic Superintendent, Class I, but deeply regret that it entails his leaving us. It is understood that he will take charge of the Traffic Office at Belfast on Dec. 5.

*Promotion of Mr. F. Bate.*—We are glad to welcome Mr. F. Bate, who has been promoted to Traffic Superintendent, Class II, at Manchester. He previously was attached to the Western Telephone District.

*Civil Service Sports Club.*—On Nov. 1 Sir Noel and Lady Curtis-Bennett visited Manchester and were conducted over the new Sports Ground at Newton Heath by Mr. Maddan, the Postmaster-Surveyor and Chairman of the Club. Unfortunately, it was one of those days which are alleged to be typical of Manchester, but even under such conditions our distinguished visitors were much impressed by the ground.

About 500 people were present at the huge bonfire and the firework display which was held on the ground on Nov. 5. An excellent entertainment was provided, and the only complaints heard were that the bar ran dry about 9 o'clock.

The club held their first dance at the "Plaza" on Nov. 17. All the tickets were sold well in advance. The dance was a splendid success and was declared by most to be the best they had attended for a long time. As a result it was announced that arrangements had been made for the second dance to be held at the "Plaza" on Jan. 19. Tickets will be at a premium, and so we advise obtaining them well in advance to avoid disappointment.

A whist drive has been organised for Thursday, Dec. 8. The last one was very successful, and we are assured of another enjoyable evening on the 8th. The tickets are 1s. 6d., and may be obtained from any representative.

*Post Office Telephones Social Club.* The committee is actively engaged in arranging social events for this winter and the popularity of those which have been held already gives promise of another successful year.

On Nov. 10 a whist drive was held at Telephone House, and was very well attended. It was pleasing that so many of the supervising officers were present, and it is hoped that even more of their colleagues will follow their example. A most enjoyable evening was spent, and it was gratifying to see the spirit of conviviality which everyone displayed.

A dance was held on Nov. 26 at Telephone House. The dances are very popular and are a source of pleasure to all those who take part.

The Social Club's "Event of the Season" has just been launched, and Sir Kingsley Wood's "Young Ladies" have their charming heads buried in the script for the pantomime, "Dick Whittington and His Cat." The Panto will be given for seven nights during next February. The club are aiming at giving even a better show than last year, and so they have set themselves a hard task.

The programme already arranged for this Winter at Telephone House is as follows:—

Dec. 10, 1932	...	...	Dance.	Feb. 28, 1933	...	...	Dance.
Jan. 14, 1933	...	...	Dance.	Mar. 18, 1933	...	...	Dance.
Feb. 4, 1933	...	...	Dance.	April 8, 1933	...	...	Dance.
Feb. 11-18, 1933	...	...	Pantomime.				

*Altrincham.*—A concert has been arranged by the staff of the Head Postmaster of Altrincham to commence at 7.30 p.m. on Dec. 8, at the Garrick Playhouse, Altrincham. The concert is in aid of the Rowland Hill Memorial and Benevolent Fund. The artists will be drawn mainly from the North Cheshire Operatic Society and so will be representative of the highest quality of amateur art. All seats are reserved at 2s. 6d. and 1s. 6d., and may be booked at any Post Office in the Altrincham district.

*Stockport.*—The Stockport Post Office Sports Club will hold a social and dance at the Rechabites' Hall, Stockport, on Dec. 3.

*Extension of Manchester No-delay Area.*—During the last month the area has been extended to cover calls to exchanges in the Bradford area and the Chester, Hanley and Sheffield groups of exchanges. A further improvement to the service will be effected in the near future by the inclusion of the Leeds group.



## POST OFFICE TELEPRINTER SERVICES.

TELEX—(Continued from page 28).

By A. P. OGILVIE (*Headquarters Traffic Section*).

FOR routing and control purposes, Telex calls are classified as untimed and timed, instead of short-distance or long-distance. Calls in the latter category are passed to a Telex Service position provided in the Trunk Exchange at appropriate Telex centres. The equipment at these positions consists of suitable answering terminations of lines from local exchanges, bothway Telex trunks, and/or access to the outgoing trunk multiple where a "demand" suite is available, with a multiple of the Trunk Exchange outgoing junctions. Normal cord circuits and supervisory signals are employed. It is essential, however, to provide high impedance monitoring so that the controlling operator may enter a connexion during the progress of a call and listen to teleprinter signals, which have a distinctive note, without upsetting the stability of the circuit. Announcements of elapsed time are not made, the call being timed from the moment the distant P.B.X. operator accepts it until normal clearing signals are received.

Certain minor differences in operating practice, which need not be detailed here, make the concentration of "Telex Service" calls at one position and specialised staffing desirable, especially in the early stages of development. A high standard of operating is not only helpful but essential to subscribers unfamiliar with the new system, and at the same time does much to secure immunity from interruptions which inexperienced operators might cause.

Subscribers connected with the automatic system are instructed to make calls for Exchanges other than those obtained direct automatically by dialling the code "TLX" in Director areas, and "98" in non-Director areas. Such calls appear at the Telex Service position, and are answered by the announcement "Telex Service." In automatic areas where the 94 level is not in use for "Trunks," subscribers dial "O" for similar calls which are then routed to the Telex Service position. Particulars of the call are recorded, and the connexion set up, while the subscriber is held should a demand or no-delay service be available. In cases where the local circuits on the "94" and "98" levels serving satellite exchanges have not been upgraded, the call is reversed to the originating subscriber.

Normally, Telex Service calls will be dealt with on a recording and completion basis when demand working is extended to the principal centres: exceptionally, however, reversal will be adopted when such procedure is necessary to obtain a sufficiently high grade circuit for teleprinter transmission.

Subscribers connected with Manual Exchanges are instructed to ask their local operator for Telex Service when calls are required to Exchanges at present obtained via "Trunks." For other calls, the particulars are given to the local operator, who passes forward any timed calls so received to the Telex Service position. As soon as particulars have been recorded by the Telex Service operator, the call is reversed by means of the overplug method, using a cord of another pair, and connected with an appropriate outgoing circuit while the calling subscriber is held. In passing forward the demand, the word "Telex" is associated with the number at each stage. The "overplug" procedure is essential to obtain switchhook supervision.

All attempts to complete ineffective timed calls are made at the Telex Service position. In this connexion the treatment of "Telex number engaged" reports is interesting. The "engaged" report in the case of timed calls is not passed to the originating

subscriber but is dealt with by the controlling Telex Service operator, who should consult her reference list for the alternative telephone number of the called subscriber and pass a demand for this number, using the phrase "Telex call for . . ." since the second number does not indicate a Telex connexion. If this latter number is also engaged, or if the report "Subscriber engaged on Telex" is received, the calling subscriber is so informed, unless a circuit of a radial distance of 75 miles or more is used in the chain of connexions. In the latter event, the distant operator is asked to interrupt the alternative telephone number (not the Telex number).

Normal clearing arrangements are provided. Abnormal connexions on which no clearing signals are given have been the subject of investigation, as the handling on Telex calls in such circumstances presents some difficulty. A voice-frequency signalling arrangement has now been devised which will operate a clearing lamp thirty seconds after teleprinter transmission in either direction has ceased, and tests of the device are in progress.

Premature disconnexions at "A" or "B" positions, giving a single clear, are dealt with by recalling one or other of the subscribers in circuit, either by speech or ringing for five seconds. A five-seconds' ringing signal produces on the Teleprinter a characteristic interruption which may be taken as an indication to the subscriber's operator to switch to telephone.

Initially, Telex trunk communication has been established over a network of physical trunk circuits affording either speech or teleprinting on the same connexion. It is the intention, however, to provide, wherever available, phantom circuits or voice-frequency channels over which Telex trunk calls will be completed between the terminal Telex Service positions. On these connexions teleprinting only will be possible, and, as the line costs involved are less than those of a physical telephone circuit, it will be possible to offer purely teleprinter trunk communication at a tariff (Tariff Y) lower than the present telephone charges. Procedure for handling these calls at a Telex Service position presents some new features as the connexions between each Telex subscriber and the local Telex Service position will be set up by means of normal telephone circuits on which speech is possible, but the trunk link will be established on phantom or voice frequency channels. Teleprinter signals will therefore be transmitted by single-tone frequency up to the connexion with the Tariff Y circuit and converted there to direct-current or voice frequency working. At the distant Telex Service position, the trunk line signals will again be converted to single-tone frequency for transmission over the local telephone network. Details of this development are not at present available as trials are still proceeding.

In addition to intercommunication between subscribers, Telex Service affords facilities for the transmission and reception of telegrams by teleprinter to and from the Post Office. Telegrams so handled are referred to as "Printergrams." Equipment is installed for this purpose at suitable centres and connexion to an appropriate Printergram Office is available to every Telex subscriber at the cost of a unit local fee (one penny), irrespective of the distance between the subscriber's office and the Appointed Printergram Centre. To obtain such connexions subscribers in a Director Area or working into a Director Area, are instructed to dial "PRM," or to ask for "Printergrams"; in other cases an Exchange name and Telex number are allotted. All junctions outgoing to "Printergrams" are grouped at one Exchange and terminated at the Post Office on individual printergram positions. Under automatic conditions these circuits are connected with a suitable auto unit, and in manual working they appear in the junction or subscriber's multiple. Incoming circuits from the printergram positions are led to auto line switches in the same, or another, Automatic Exchange, or to an "A" position, as the case may be.

A description of the working of the London Printergram arrangements may, however, best illustrate the principles upon which the service is based. A Printergram Section has been formed at the Central Telegraph Office in which seventeen positions are

THE  
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ESTABLISHED OVER 17 YEARS.

*Written by and for Telegraph and Telephone Men.*

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# STROWGER 'AT M

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"Mayfair" Automatic Telephone Exchange, London—the latest and greatest achievement of the British Post Office, was brought into service under the ægis of the Postmaster-General during November last. It constitutes the largest single order for Automatic Telephone Exchange equipment ever placed with a British manufacturer.

The inauguration of these 30,000 lines—the 48th automatic exchange so far installed in the Greater London area—is yet another stage in the conversion of the entire network to Strowger working, initiated with the installation of the Holborn Director and Mechanical Tandem Exchanges by Automatic Telephone Manufacturing Co. Ltd. just five years ago.



"Mayfair" brings the total of Strowger Automatic Telephones installed or on order in the London Area alone to more than a quarter of a million!



**AUTOMATIC ELECTRIC COMPANY LIMITED**

Formerly:—AUTOMATIC TELEPHONE MANUFACTURING COMPANY LTD.

**STROWGER WORKS, LIVERPOOL.**

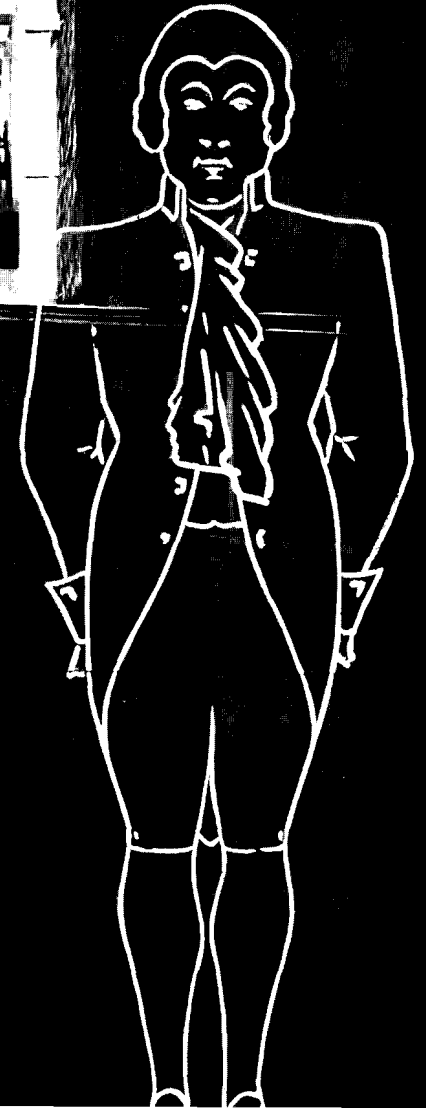
Telephone: Old Swan 830.

London Office:

**MELBOURNE HOUSE, ALDWYCH, W.C.2.**

Telephone: Temple Bar 4506.

# COME IN MAYFAIR



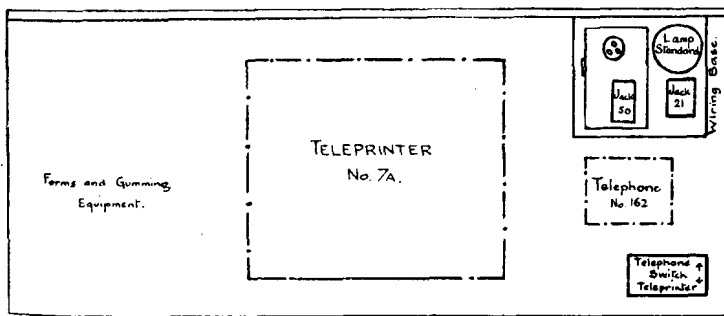
provided, each capable of receiving or transmitting messages. The equipment at a position consists of:—

- Teleprinter No. 7a (fitted with tape unit and lettercounter).
- Lamp standard fitted with three signal lamps, one white, one red and one green, together with a pilot lamp.
- Hand microtelephone set and jack.
- Baseboard fitted with power socket, teleprinter and lamp signal jacks.
- A night bell extension, where required.

A plan of the lay-out is shown at Fig. 4.

Tape-printing is more convenient than page-printing for telegraph purposes, and a suitable tape unit has been designed which can be fitted to the Teleprinter No. 7A in place of the normal page-printing unit. The change can be made in a few seconds by releasing a retaining latch and lifting the unit to be removed from a supporting spindle: the new unit can then be placed in position. On each printergram connexion the Post Office tape-printer must be capable of working satisfactorily with the subscriber's page-printer, and to permit of this being done the tape-printer is fitted with a letter-counter which indicates, by the lighting of a small lamp when the "carriage return" and "line feed" keys are to be depressed: also the "carriage return" and "line feed" signals from the subscriber's machine are made inoperative except for causing one letter space on the tape. Fig. 5 shows a Teleprinter No. 7A with tape unit in position.

When a London subscriber dials "PRM" the call is routed to an auto unit at Tandem Exchange, where it picks up the first idle junction to the C.T.O. Printergram Section. On the Printergram position to which the call is thus automatically connected the glowing of a white lamp signal indicates the receipt of a call to the operator, who promptly turns the switch from "Telephone" to "Teleprinter." This operation transfers the line to the position machine and starts the motor, at the same time tripping the ringing signals and extinguishing the calling lamp. The subscriber, who is instructed to listen for the cessation of the ringing tone, should then also switch to "Teleprinter" and, after a momentary pause to allow the valve current to rise, confirm the connexion by depressing the "Who are you" key. If the call has been correctly completed, the Printergram position teleprinter will automatically



PRINTERGRAM POSITION.

FIG. 4.

respond with the answer "CTO LDN." Forthwith, the signalling of the printergram is commenced, the subscriber first signalling his Exchange name and Telex number followed by the address, text, &c. of the message. The reason for obtaining Exchange particulars at the commencement of each printergram is to secure identification of the originating subscriber in the event of premature disconnection, as, apart from the turning of the Telephone-Teleprinter switch on receipt of a call (an operation which will ultimately be done automatically) attendance at the Printergram position is unnecessary until the position red lamp glows, an indication that the subscriber has transmitted a Bell signal on completion of a

printergram. The printergram operator then responds by depressing the "Who are you" key, to obtain automatic confirmation of the subscriber's Exchange particulars, and scrutinises the received message. If no repetitions are required, "OK" followed by the addressee's name is signalled as acknowledgment of correct receipt and the connexion severed by switching to "Telephone," unless the transmission of further printergrams is proceeded with. Subscribers wishing to send more than one printergram on a single connexion are instructed to announce at the commencement of signalling the number in the batch.

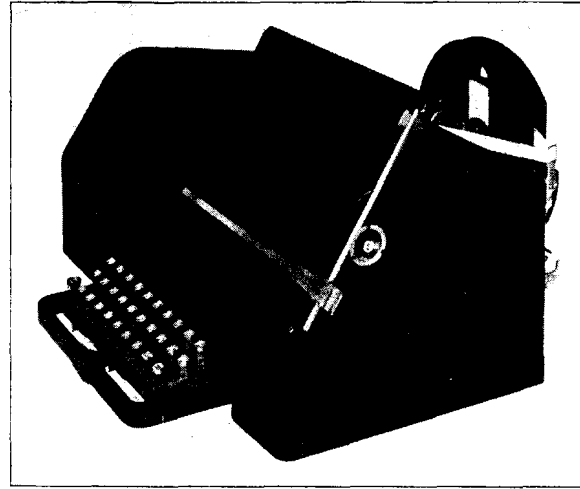


FIG. 5.—TELEPRINTER NO. 7A WITH TAPE UNIT IN POSITION.

The tape containing the message is gummed to an ordinary Phonogram form and counterfoil. The "answer back" confirmation of Exchange particulars is affixed to the back of the counterfoil as it constitutes a valuable aid in securing the elimination of disputed charges.

Should the Post Office operator fail to clear the connexion on completion of a printergram transaction it has been arranged that the position green lamp will glow when the teleprinter motor stops as a result of the operation of the auto start-stop switch. On the other hand, should the subscriber be tardy in clearing, the position white signal lamp glows when the Post Office operator switches back to "Telephone" and continues to glow as long as the subscriber holds the line. Any irregularity of this nature can be brought to the notice of the subscriber concerned at once by calling him on his telephone number from another position and asking for the Printergram connexion to be released. These precautionary measures have contributed towards the attainment of a remarkably low average holding time (see below).

The name of the Appointed Printergram Office followed by the word "Telex" is normally shown as the office of origin in printergrams, e.g. "London Telex." Where, however, subscriber's premises are situated in an area served by another telegraph office and a strong desire is expressed to retain the local telegraph designation, the requirement can be met by instructing the subscriber to signal at the commencement of each printergram not only his Exchange name and Telex number but also the name of the stipulated office of origin, thus "RAINHAM 1234 DAGENHAM +." In this case "Dagenham Telex" would appear as the name of the office of origin.

Arrangements have been made for the delivery of telegrams to Telex subscribers who are registered abbreviated address holders, or telegrams bearing a "Telex" address, by diverting the traffic to the appropriate Printergram Section. The use of the indicator "Telex," which is not charged for, as part of the address, facilitates this procedure and all Telex subscribers are advised to adopt it. Telegrams may be addressed to a Telex number, thus:—"Jones Western Telex 0399 London" the charge being as for three words.

Outgoing calls from the Printergram positions are made by dialling the required subscriber's Telex number from an idle position over a junction connected, in the case of the C.T.O., with the automatic plant at Holborn Exchange; the incoming junction from the Tandem Exchange to the same position meantime being made "busy" to prevent a double connexion. When telephone communication is established, the subscriber is asked to switch to "Teleprinter." Both machines are then switched into circuit, and, after the Post Office operator has confirmed the connexion by depressing the "Who are you" key, the printergram is transmitted. Confirmation copies are not supplied.

Records indicate that the majority of Telex calls originated at present are made for the purpose of handling printergrams or for the transmission of cablegrams to or from cable companies. Despite the lag on working speeds imposed by a steady accession of new subscribers having operators unfamiliar with Telex machinery and procedure, the service results obtained are surprisingly good.

Within three months the number of printergrams dealt with at the C.T.O. alone has grown from 60 to 2,500 weekly, while the holding time on each connexion, calculated from the time the Teleprinter is switched into circuit until a clearing signal is given, has been reduced to an average of 79 seconds. As an average of 1.27 printergrams are dealt with on each connexion the average holding time per message is 62 seconds.

A still further improvement in the quality of service may confidently be expected when contemplated technical improvements are effected, and a knowledge of printergram procedure and operating becomes more general. The results obtained, however, are sufficiently good to justify the claim that the British Post Office printergram service is the most efficient that has so far been developed for dealing with this class of traffic.

(To be concluded.)

## NORTH MIDLAND DISTRICT NOTES.

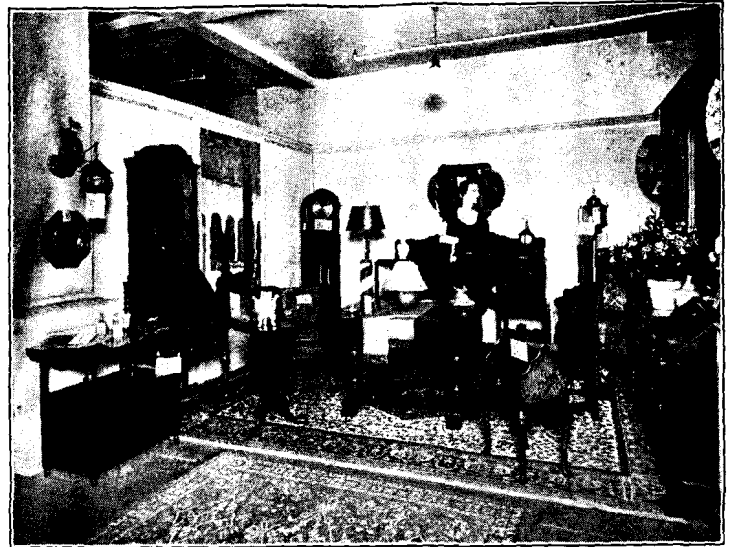
"NOTTINGHAM, ancient and historic, has many links with the past; it is also linked by means of the telephone service with most of the habitable globe—Use the Overseas Service." "Use the telephone morning, noon and night." These were typical of the poster appeal at the attractive and



1. THE SALES STAFF.

interesting Telephone and Telegraph Exhibition held recently at Messrs. Griffin & Spalding's fine premises, Long Row, Nottingham. Everyone cheerfully co-operated in their various spheres in making the show a success and the firm afforded every possible help. By means of a working teleprinter

in the window, visitors were attracted to the Exhibition while the tasteful invitations issued by the Department and Messrs. Griffin & Spalding, some by post and others distributed by smart Telegraph Messengers at the entrance, helped to ensure a constant flow of spectators. An effective "Sales" stall was placed in a strategic position.



2. THE LADY WITH THE TELEPHONE.

The types of apparatus shown were representative and included a working switchboard, the teleprinter, director, non-director and rural automatic switching plant, jointing of cables, &c. All were demonstrated, and evidently evoked interest.

Messrs. Ericsson, whose works near Nottingham it has been our privilege to visit, were represented by a complete set of director automatic plant, street fire alarms with switchboard and specimen of telephone apparatus in the making.



3. GENERAL VIEW.

Youth was conspicuous among the visitors and it was a pleasure to see the delight of these telephone users of the future at seeing the marvels of modern communication.

Two young people at the Nottingham School for the Blind wrote in Braille to express thanks for being shown round, and said it was the first time they and their colleagues had used a telephone.

We must not conclude without referring to the series of beautifully furnished rooms prepared by Messrs. Griffin & Spalding in which the telephones were shown in colour to correspond with the general decorative scheme.

This, the first exhibition of its kind in Nottingham, will, we have reason to believe, result in furthering the progress of our communication services.

W. L. E.

## TELEPHONE EXHIBITIONS

AT SOUTHAMPTON, PORTSMOUTH AND BOURNEMOUTH.

"ORDER YOUR TELEPHONE HERE AND NOW."

THREE very successful telephone exhibitions have been held in the Southampton Telephone District recently—at Southampton, Portsmouth and Bournemouth. If any readers are sceptical as to the usefulness of such exhibitions as a means of stimulating public interest in the Telephone Service, a visit to any one of the displays mentioned above would have cleared away all possible doubt.

The exhibition at Southampton lasted for seven days, and those at Portsmouth and Bournemouth were open for 10 and 12 days respectively. Interest in the Post Office exhibits and demonstrations continued unabated throughout the periods of exhibition, and the staff in attendance had few idle moments. The Post Office stalls were centres of attraction for old and young. As a rule adult visitors needed little encouragement to ask questions, but there was some hesitation among the younger folk. Accordingly, the staff attendants paid particular attention to the youngsters and invited them to make free use of the apparatus being demonstrated. The initial shyness overcome, many questions were asked which called for an explanation of the intricacies of a telephone system, and the perspicacity of some of the children was surprising.



A VIEW OF THE SOUTHAMPTON EXHIBITION.

Special visits of school children were arranged, and everything possible done to familiarise them with the telephone and to make the younger generation as "telephone minded" as possible.

The teleprinters installed at each exhibition aroused great interest. It was obvious from the wonderment expressed in their faces, that this was the first acquaintance of many of the visitors with the teleprinter. The idea of sending a telegram appealed to many, and "souvenir traffic" was heavy.

The business aspect of the exhibitions was never out of sight. The Post Office staff took as its slogan one of the prominently displayed notices "Order your Telephone Here and Now," and at every appropriate opportunity the merits of this advice were emphasised to visitors.

At Southampton and Portsmouth the Post Office occupied a stall at the Local Industries and Trades Fairs held in the Coliseum and Connaught Drill Hall respectively.

In each case accommodation was of necessity somewhat restricted, but from the accompanying photographs it will be seen that every available space was occupied to the best advantage.

At Bournemouth the exhibition was limited to telephone and wireless apparatus. More room was available, part of one floor of the great store of Messrs. Beales, Ltd., being shared with a number of wireless apparatus exhibitors. The extra space enabled the Department to include in the exhibition one or two special features, particulars of which are mentioned below.

The apparatus on show at each of the exhibitions included teleprinters, a small key switchboard, hall multi-coin boxes, working extensions on various plan numbers and an amplifier. Colour and brightness were added to each of the displays by the tasteful arrangement of "HANDY" telephones (T.E. 162) in their various hues, and by appropriate posters. Care was taken



A CORNER OF THE PORTSMOUTH EXHIBITION. A SOUNDER INSTRUMENT AND TELEPRINTER WERE CONTRASTED.

to ensure that ample advertising literature was available on the stalls at all times. An additional attraction at Portsmouth was the four-digit automatic set.

At Bournemouth the improved accommodation enabled the Post Office engineers to erect a full-sized, fully equipped kiosk from which free local calls were permitted. A 65-line C.B. private branch exchange was also on view, and a call register, which those who were already subscribers found exceedingly interesting. Other attractions were a radio interference elimination demonstration and a display of cable jointing.



BOURNEMOUTH EXHIBITION.

The cable jointing appeared to be very intriguing to many visitors, and the task of deciding "which was which" in this multiplicity of wires seemed colossal.

While the business transacted at these exhibitions was quite substantial, this figure does not represent the limit of their success. The psychological effect much be taken into account. The enterprise of the Post Office in taking part in such exhibitions and, as it were, coming out into the open where it could be questioned and, if one so desired, criticised, was apparently much

appreciated. Interest in the many activities of the Post Office was stimulated and where an order could not be booked on the spot hundreds of prospects were recorded to be followed up later.

It has been gratifying to receive letters from the authorities responsible for, or interest in, the exhibitions and to note the warm appreciation of the efforts of the Post Office. There seems little doubt that our exhibits greatly enhanced the general attractiveness of the Exhibitions.

Success could not have been achieved without the zealous co-operation of those in charge of the various stalls. As evidence of this, it is perhaps appropriate to reproduce the following extract from an official report:—

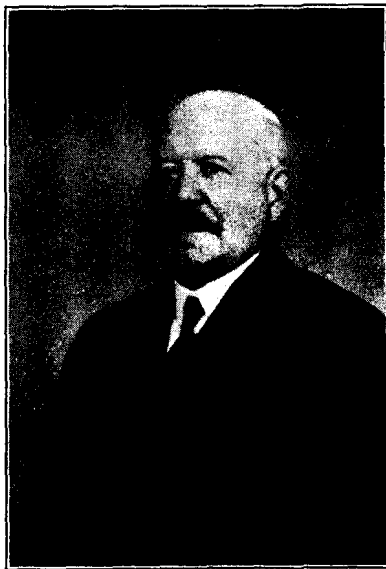
"A very pleasant feature of the exhibitions was the readiness with which all sections of the staff representing telephones, telegraphs, engineers and postal, threw themselves into the work of interesting the public in the various exhibits, and the enthusiasm and co-operation displayed by everyone."

## GLASGOW DISTRICT NOTES.

We congratulate Miss A. E. Donnelly, telephonist, Bell Exchange, on gaining an award of £1 for a suggestion she made at one of our local staff meetings. The suggestion was a colour modification to Marker No. 14 (green reminder ring).

*Service Observation.*—Telephonist, entering the line: "Three minutes." Lady Caller: "Three minutes cannot possibly be up. I ought to know because I checked you when I put the scones in the oven."

Mr. James Sidey, Sales Representative, was the central figure in a very homely little presentation ceremony held in the Athenaeum, Glasgow, on Friday, Nov. 4, the gathering having been arranged to mark the occasion of his retirement from the Telephone Department, after some 26 years' service. The function has presided over by Mr. A. E. Coombs, District Manager, and the presentation of a handsome radio set to Mr. Sidey and an umbrella



MR. JAMES SIDEY.

to Mrs. Sidey, made by Mr. F. Lucas, our genial Chief of the Sales Department. Fitting tribute was paid by the numerous speakers to our old friend James, to the charm of manner and spontaneity of goodwill which are the dominant features of his character; traits which have so endeared him, not only to his many colleagues and friends but also to his public.

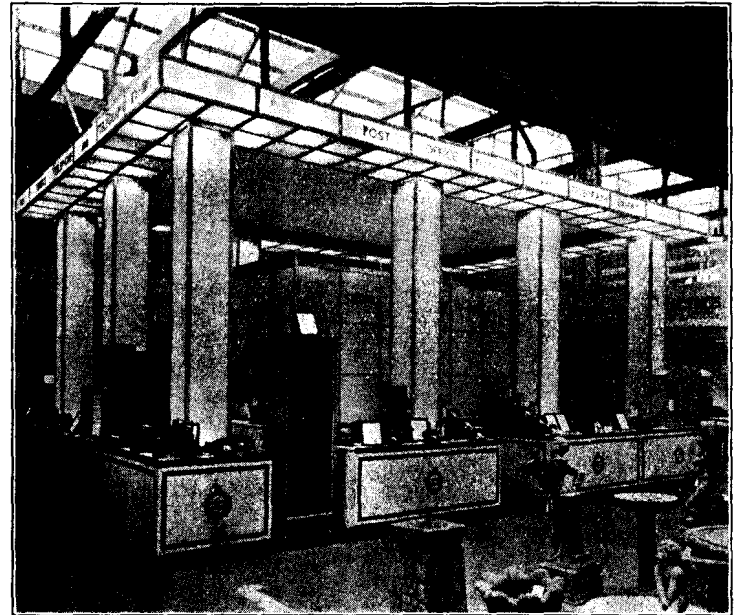
Occasions of this kind must at all times be fraught with conflicting emotions, and whilst the majority of the remarks were couched in lighter vein, expressive of happiness and pleasure in speeding the "parting guest," the undercurrent of sadness and reluctance to sever the old associations was apparent. And so passes from the sphere of active service operations, James Sidey, one with whom it has been our privilege and honour to be so long and happily associated. We wish him well.

## THE GOSPEL OF TELEPHONE SERVICE ACCORDING TO ST MUNGO.

A CHAPTER OF SUCCESSSES.—CIVIC WEEK, 1931.—IDEAL HOME EXHIBITION, 1931.—IDEAL HOME EXHIBITION, 1932.

In spite of adverse trade conditions, increased cost of admission and unobtrusive location of stand in a side avenue, all of which were factors which might be regarded as tending to militate against a successful *dénouement*, the *Daily Mail* Ideal Home Exhibition, held in the Kelvin Hall, Glasgow, has terminated in a further triumph for the sponsors of the Post Office telephone and telegraph exhibits.

The stand itself, which, from an architectural viewpoint, was at once one of the most imposing and outstanding features of the hall, was the subject of approving comment by many, while the exhibits themselves, ranging from the distribution of the underground cabling in the street manhole to the ten-line switchboard, stimulated a degree of intelligent interest and enquiry from the visiting public, subscriber and non-subscriber alike, seldom encountered elsewhere.



[Photo by John Doig, Glasgow.]

TELEGRAPH AND TELEPHONE EXHIBIT. IDEAL HOME EXHIBITION.

Ample demonstrating facilities were available, every instrument on view, some 28 in all, including the coloured hand-microphones, being "live" and connected to the switchboard, the operation and demonstration of which, by skilled operators, was in itself a source of considerable interest.

In accordance with the belief, popular south of the Border, that anything savouring of the principle of "something for nothing," finds favour in Scotland, the free souvenir telegram service, through the medium of the teleprinters, was an unqualified success. An enquiry into the nature of the majority of telegrams so despatched, however, might tend to render the geographical application of the principle a little less obvious. Telegraph messengers were, at any rate, kept constantly on the alert handing out the familiar buff-coloured harbingers of sudden news, and when not thus occupied assisted the sales staff in the distribution of appropriate literature, much of which, in the form of enquiries, is now finding its way back to the Sales Department.

Ingenuous visitors, anxious to offer us willing advice on the proper control of our radio exhibit, were gently transformed into interested and appreciative listeners to demonstrations of "voice frequency" apparatus.

Many notabilities visited the stand during the course of the exhibition, all of whom expressed their interest in the service and good wishes for the complete success of our propaganda work.

Advantage was taken of a visit paid by Mr. Seymour Hicks, to demonstrate the efficacy of the "personal Call Service," and he admitted his agreeable surprise at the efficient promptitude with which he found himself, quite unexpectedly, speaking to Miss Ellaline Terriss, in Buckinghamshire. Much valuable information in this connexion has been disseminated from the stand, many visitors confessing themselves ignorant of the existence of such a service.

So is enlightenment spread "by the preaching of the word."

Only on one occasion was the Telephone Service the subject of censure, but whether this was prompted by a spirit of genuine and justifiable antagonism or by a spirit the manufacture of which is a staple industry in the Highlands, it would be difficult to say. The mellowing influence, however, of a few minutes' sympathetic discussion, left the disgruntled one much less aggressive in his attitude towards the service.

Expressions in appreciation of the enthusiastic and helpful efficiency with which the attendant personnel established the "personal touch," were frequent, and serve to indicate that the new service policy of displaying its wares in the open and "telling the world," is one which is assured of success.



In terms of business actually transacted on the stand, the exhibition just closed has maintained that high standard of success, so typical of previous ventures of the kind in this district, and so further endorses the gratifying results achieved by this method of advertising.

Glasgow has frequently been referred to as the second city of the Empire, but in matters affecting Telephone Service propaganda, the motto of a famous Scots cavalry regiment might well be adopted, to wit: *Nulli Secundus.*

C. H. McCORKINDALE,  
Sales Representative.

## BIRMINGHAM NOTES.

*Retirement of Miss Eades.*—It is with very real and deep regret that we have to announce the retirement of Miss Eades, Supervisor, Central Exchange, who retired under age limit on Oct. 31. Miss Phyllis Eades entered the telephone service in August, 1887, and commenced her duties in Central Exchange. At that time the exchange was situated in Bennetts Hill and consisted of about 190 lines served by four operators.

During May, 1888, Miss Eades saw the change over to the first multiple switchboard in Birmingham, consisting of three 200-line sections. At this period the only apparatus to deal with trunk working was two wall instruments fitted on rough boards with separate jacks in a box below the instruments. Later a small board was erected, and afterwards a room was set apart for trunk working. About the end of 1890 headgear receivers were introduced. Miss Eades was appointed Supervisor-in-Charge at Central in July, 1894, and held that position until her retirement. In June, 1907, a common battery switchboard was installed at one end at the Central Exchange switchroom and Miss Eades assisted in the opening of the first C.B. exchange in Birmingham.

During her long period of service at Central Exchange, Miss Eades has always shown herself to be kindly and courteous to the staff, who all hold for her a deep and sincere affection. She confesses to no particular hobbies but is known to be fond of reading.

We are very sorry to say that the condition of Miss Eades' health necessitated a severe operation a short time ago, and for this reason the staff were unable to entertain her at a farewell gathering. The high esteem in which she is held, however, is evidenced by the farewell presents that were made to her—an all-electric radio set from the Central Exchange staff, an eiderdown and bedspread from the Traffic Department, District Office and sub-exchanges, and a screen from the Midland Exchange staff.

Miss Eades carries with her the affection and best wishes of her former friends and colleagues, with the hope that with her retirement her health will improve and that the future will bring her many happy years.

*Telephone Lecture Society.*—The Birmingham Telephone Lecture Society held its first meeting of this season on Thursday, Oct. 20, at 7.30 p.m. at Midland Exchange. The meeting was very well attended and the audience listened with great interest to a lecture on "Telex and Printergram Working," delivered by Mr. J. E. Ferneyhough, of the Traffic Dept. Mr. Ferneyhough outlined the growth of the teleprinter and described the recently introduced Telex and Printergram services. This was followed by a demonstration of Telex working between the lecture room and the Telex demonstration room at the Head Post Office. The deep interest aroused by the lecture was evidenced by the numerous and varied questions put forward when the meeting was thrown open. The lecture was one of the most interesting heard by the Society since its inception.

The lecture was followed by a very enjoyable concert organised by the Contract Department, and this was followed by a short dance.

The second meeting of the Society was held on Tuesday, Nov. 15, when a lecture on "Telegrams" was given by Mr. J. W. Davies, of the Telegraphs. This meeting was of special interest in that it was the first time that a lecture has been given to the Society by a member of a Department outside the Telephones. Mr. Davies described some of the early telegraph instruments and explained the methods in use at the present time. He gave an outline of the method of despatch and delivery of telegrams and concluded with a reference to the photo-telegraph service. The lecture was illustrated with some very interesting lantern slides, and we are grateful to Mr. Davies for the trouble he must have taken in preparing his talk.

The lecture was followed by a concert arranged by Miss Pope, of Toll Exchange, and Miss Dyson, of Midland. This proved very enjoyable and was then followed as usual with dancing.

## GLOUCESTER NOTES.

*Hockey.*—On Saturday, Nov. 12, a team of ladies from the District Manager's Office played the Bristol District Manager's Office ladies at Bristol. The result—Gloucester 5, Bristol 1—does not, perhaps, correctly indicate the strenuous nature of the play, for the Bristol ladies gave us an extremely good game, which all the players and spectators thoroughly enjoyed. A party

of about 36 journeyed from Gloucester, and after the match—during which many of us renewed old friendships and made new ones—we all repaired to the Civil Service Sports Club, where, together, we took tea.

Mr. A. G. Bristow, District Manager, Bristol, welcomed the Gloucester team and colleagues and spoke of the pleasure he and the Bristol staff felt in being able to meet their colleagues from Gloucester. Mr. R. M. McLarty, District Manager, Gloucester, expressed the admiration of the Gloucester team and staff for the sporting spirit of their Bristol friends and the thanks of himself and all the Gloucester people for the generous way in which the Bristol staff had entertained them. The Gloucester staff, he continued, would be pleased to arrange a return match at Gloucester during the winter and he extended a very pressing invitation to any of their Bristol colleagues who cared to accompany the team. There would also be a hearty welcome for any who could attend the Gloucester whist drive and dance on Nov. 25.

The interval between tea and dancing was spent in community singing and chatting (has anyone ever heard of telephone folks being at a loss for words?) and when the dancing commenced at about 7.30 p.m. it took the place of the community singing only.

We at Gloucester would like to express again our very warm thanks for a most enjoyable afternoon and evening.

A very hearty welcome to Mr. F. C. Blackman, Assistant Traffic Superintendent, who has come from Manchester to spend a little while with us, and to Mr. A. R. Bull, from the L.P.S., London, who is going to try his persuasive powers as a Sales Representative in the Gloucester District. We trust that both will find us good companions and colleagues.

(NOTE.—In last month's Gloucester Notes the estimated population of 150,000 should be read as applying to a radius of 10 and not 40 miles round the city of Gloucester.)

## NORWICH DISTRICT NOTES.

NEWCOMERS to the District Manager's staff have always been agreeably surprised by the rural surroundings of the office and now it seems that this attraction has lured industrious creatures of another species. A swarm of bees, attracted by the neighbouring hive of industry, built their nest in one of the trees which border the drive up to the front entrance of the building. Considerable interest was aroused locally owing to the peculiar shape of the comb and the following is an extract from the *Eastern Daily Press* :—

"Last week, while some of the trees in the grounds of the Albemarle Road Telephone Office, Norwich, were being trimmed of superfluous branches, the woodmen discovered a comb of the honey bee in the heart of a yew. A swarm must have settled there early this summer and considered the situation dark and sheltered enough for founding a hive. The conditions were all right till colder and damper weather came, when the natural protection of the evergreen became insufficient and the insects perished.

"The comb has been placed on view in the Norwich Castle Museum."

Oct. 15 saw a Royal Visitor to Norwich open a £30,000 extension to the local hospital. A copious display of bunting made the City look brighter than usual. It was reported that the official mail vans were suitably adorned, but it is thought that this unfounded rumour may have originated from posters bearing the inscription "Warning—Is Your Wireless Set Licensed?" displayed on all vans.

*Sport.*—It is pleasing to note that this year, for the first time, our hockey enthusiasts of the fair sex are making a united effort to maintain the prestige of the Department in the field of sport. Like most clubs in their infancy, the Post Office team are finding it difficult to win matches, but they remain undaunted, despite the fact that their opponents are making the most of an opportunity to improve their goal average—well, good luck to them!

*Social Activities.*—The Social Section of the Post Office Sports Club lost no time in getting the winter programme started. Oct. 12 was made the occasion of a whist drive and dance at the Regent Ballroom. One and all voted the evening a success and it is gratifying to the organisers to see members of the staff, who turned up to the whist drive and who thought to have seen the inside of a dance hall for the last time, in some cases ten years ago, whirling to the strains of a first-class band. The success of the evening may be judged from the fact that tickets for the next event on Nov. 10 were nearly all booked well in advance.

*This Month's Bright Thought.*—An applicant for the position of telephonist states that her father has been a Post Office Messenger boy for over 30 years. We should like to know if the Department is considering designs for a special long service chevron for this officer.

J. T. B.

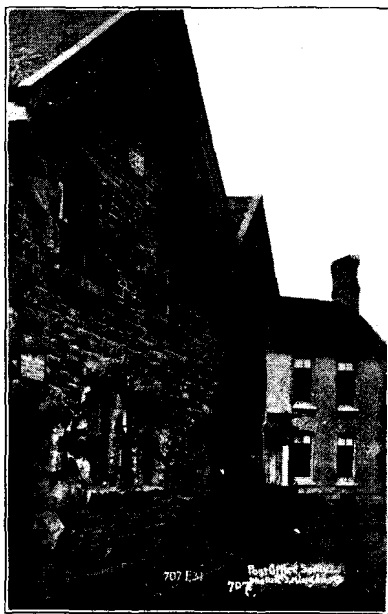
## WESTERN DISTRICT NOTES.

MR. F. BATE, Senior Assistant Traffic Superintendent, left the Western District on Oct. 28 to take up his new appointment as Traffic Superintendent, II, at Manchester. He was presented by the staff with two etchings chosen by himself and Mrs. Bate. The chair was taken by Mr. G. D. Bateman, Traffic Superintendent, II, and the presentation was made by Mr. F. J. Frost, Traffic Superintendent, in the absence of the District Manager on official business.

Points from the speeches were that Mr. Bate had been a willing and helpful worker and will be greatly missed by his colleagues. The joint exports of Plymouth are fish and Assistant Traffic Superintendents, the former being a brain food fosters the growth of the latter.

Mr. Bate is not the first product of the Western District to find his way to Manchester, and to paraphrase a well-known Lancashire saying, "What the Western District trains to-day, Manchester uses to-morrow." We wish Mr. Bate every success in his new position. We know that he will come out on top.

The vacancy created in the Western District by Mr. Bate's promotion has been filled by the transfer of Mr. F. Veal, from Newcastle, to whom we extend a hearty welcome.



ST. MARY'S POST OFFICE AND CALL OFFICE.  
ISLES OF SCILLY.

The above photograph is of one of the farthest call offices in the Far West, viz., that on the Island of St. Mary, in the Scilly Isles. The four largest islands, St. Mary, St. Martin, Treco and St. Agnes, are connected together by an omnibus call office line, and if John Brown, on, say, Treco, wishes to speak to Bill Smith, on St. Mary's, he arranges a "fixed time" call for himself by sending a post-card to Bill Smith a day or two before or by signalling to him with a flag or other means.

On one or two occasions the question of an exchange system connected with the mainland has been considered, but so far has not matured.

The islands, which lie 28 miles west of Land's End, send large quantities of flowers to London and other markets from Christmas onwards.

The Surveyor's and District Manager's staffs held their first whist drive and dance of the season at Deller's Cafe, Exeter, on Wednesday, Nov. 9, when a company numbering 270 spent a very enjoyable evening. The whist prizes were presented by Mr. T. A. Beck, District Manager.

The committee arranged that the call to the staff to advertise telephones should be answered and their 6-ft. model candlestick telephone was much in evidence.

During the evening a "slogan waltz" was arranged, the slogans had to be thought out during the waltz and announced to the company when the music ceased. It was announced that the Sales Department, following the

lead of Kensitas, were giving a saloon car for a slogan or a few lines advertising telephones. The car (Marks & Spencers), fitted with two volt headlights, was won by Miss H. B. Mathewson.

Following the example set by the Parisians, dances were arranged with vocal accompaniment. One of the ladies gave a pleasant rendering of "The Voice in the Old Village Choir," followed by "Come to the Fair." After this community singing was indulged in for dance accompaniment.

Nov. 9 being Mayor's Day, it was necessary that we should choose a "Telephone Mayor." The collar of office was placed on a gentleman who, at a given signal, was standing under the giant telephone hanging from the ballroom ceiling. The collar consisted of a handsome (brass) chain with a gold telephone to represent the civic arms.

Among those present were Mr. T. A. Beck (District Manager), Mr. F. J. Frost (Traffic Superintendent) and Mrs. Frost, Mr. Stanbury (Staff Officer, Surveyor's Office) and Mrs. Stanbury.

### Plymouth Phonogram Room.—

Operator: "Will you spell it by analogy?"

Subscriber (a lady): "I have not got 'an alogy,' and I do not intend to buy 'an alogy.'"

The Western District sends Christmas Greetings to all its former members in various parts of the country and to all readers of the *Journal*.

F. J. F.

## BRISTOL DISTRICT NOTES.

**Demand Working.**—On Oct. 1 demand working was introduced at Bristol on the London and Birmingham routes. At present the exchanges embraced by the scheme are those in the Bristol five-mile circle on the one hand and those within the London Telephone Area and the Birmingham seven-mile circle on the other. During the week preceding the opening of demand working the trunk record circuits were transferred from the normal record position to the demand suite, thereby simplifying the final transfer arrangements and affording the staff some practical experience of manipulating the new switchboard.

The results obtained to date have been very satisfactory and many appreciative comments have been received from subscribers regarding the speeding up effected on the London and Birmingham traffic which represents approximately 20% of the total "delay" traffic handled at Bristol.

**Telex Service.**—The last position of the demand suite has been equipped as a Telex position and Telex Service to London for the official telex subscribers was inaugurated on Oct. 3, public telex service being available a fortnight later.

**Rotary Club Lecture.**—An address on the Telephone and Telex Services, given by the District Manager (Mr. A. G. Bristow), at the monthly luncheon of the Frome Rotary Club, on Oct. 21, excited considerable interest and secured good Press notice. Numerous questions were dealt with. The Rotarians subsequently visited the Frome Exchange and witnessed the method of handling local and trunk calls. A Telex set was installed in the exchange and the visitors were keenly interested in the transmission of a message of greeting from their President to the President of the Bristol Rotary Club and the speed at which the latter's reply was received.

**Post Office Exhibits.**—A bazaar was held at the St. George Secondary School, Bristol, on Nov. 3, 4 and 5, and the Department was invited to exhibit past and present instruments of communication; a space of approximately 1,200 square feet being allotted for the purpose.

The visiting public—over 3,000 persons attended during the three days—appeared to be keenly interested in the Post Office exhibits, which included a model manhole with a jointer working therein, and telex and teleprinter sets. Over 90 demonstrations were given on these sets and 458 souvenir messages were dealt with.

The opportunity was taken to distribute departmental advertising matter—approximately 2,500 copies of such pamphlets being disposed of during the three days—and, as a result, the Sales Manager is expecting big business, especially as during the exhibition he was able to interest a number of influential subscribers in the telex and analogous services.

### NORTH WESTERN DISTRICT NOTES.

*Armistice Day.*—We came across a particularly good example of the rebuke courteous as administered to erring subscribers in connexion with the two minutes' silence. It was immediately after the silence and the Supervisor proceeded to deal with those erring individuals who had persisted in calling during the period of suspension. She did it this wise: "Have you been calling? I am sorry we could not attend to you immediately, but we have been observing the two minutes' silence." The slight emphasis on the "we" got home in no uncertain manner, and, judging from the apologies received, did more towards bringing home realisation of enormity of their breach of good manners than many a sermon has accomplished.

*Preston Head Post Office.*—By the time these notes appear in print, we shall have said farewell officially to Mr. W. H. Leeming, the Chief Superintendent at Preston. Mr. Leeming retires on Nov. 28, and in his honour (together with Mrs. Leeming) a dance is being arranged at the Royal Victoria Hotel, Preston. On his retirement Mr. Leeming will carry with him the good wishes of the whole of the staff from the Head Postmaster downwards. During his official career, which has been spent throughout in Preston, Mr. Leeming has always taken an active interest in sport. In his younger days he was a keen footballer, and now retains his interest in golf and bowls. Possessed of a charming disposition, with a particularly liberal mind, it is not to be wondered at that Mr. Leeming's departure will be regretted by all, and it is the hope of everyone that he will retain the best of health and strength and so enjoy many years of leisure. The vacancy caused by Mr. Leeming's retirement has been filled by the promotion of Mr. J. E. Robinson, to whom we offer our heartiest congratulations.

*Publicity.*—The firm of R. H. O. Hills (proprietors of a large stores in Blackpool), in connexion with the opening of a new food department, made a request for the loan of a couple of instruments, the idea being that people should telephone home for their requirements.



DISPLAY AT MESSRS. HILLS, BLACKPOOL.

As they were desirous of making a good display, the opportunity was taken of asking them if they would further increase the telephone aspect. It was therefore arranged to supply them with 8 instruments, including the coloured type, for exhibition in the window.

The photograph gives an idea of the display.

From a publicity point of view the display was effective.

### TRUNK AND JUNCTION CIRCUITS.

NEW PROCEDURE UNDER DISTRICT MANAGER'S DEVOLVED AUTHORITY.

BY W. A. FRAME, *Traffic Section, S.M. District.*

"WHAT is organisation?" "Sacred music," was the response of a bright little fellow whose experience of life was not so extensive as the wisdom his reply suggested—nevertheless he did indicate an ideal to which we all strive in our various spheres, with a view to the provision of an efficient, world-wide telephone service.

Efficiency and Economy are closely allied—public service cannot be truly efficient without economy and economy cannot be practised without organisation—by this we may perhaps consider them as the "Harmonious Trinity" in which organisation provides both the keynote and harmony of an efficient service.

By no means the least important duty of a Traffic Superintendent is the economic provision of Trunk and Junction circuits, and without attempting to belittle the work and importance of Engineering, Accounting and other branches of the Telephone Service it cannot be denied that the utility of the Telephone Service is almost entirely dependent upon the Trunk and Junction Service—the better those services, the more universally popular will they become.

There is, however, a great deal more in the work of circuit provision than the compilation of card records and preparation of T.217 W., as all Traffic Officers are aware, but it is not the writers' intention at this stage to enter into such detail as would require considerably more space in the *Journal* than would be permitted by the Editor.

The principal object of this article is to describe the system now in force in the South Midland District to meet the conditions introduced as a result of the recently increased District Manager's authority as contained in Traffic Serial No. 3 of 1932.

The following brief description may, therefore, prove of some general interest to readers of the *T. and T. Journal*.

When, as the result of a study of the relative records, the Traffic Officer decides that the stage has been reached when an existing Trunk or Junction group requires strengthening, the Clerical Officer is instructed to prepare form T.217 W. on precisely similar lines as when the forms were submitted to the Secretary, the only difference being that the proposal is addressed to the District Manager and signed by the Traffic Superintendent (Equipment Division) after approval of the proposal.

A mimeographed form "A," suitably endorsed, is signed by the Traffic Superintendent (for District Manager) and forwarded, together with form T.217 W., to the Superintending Engineer.

FORM (A).

#### POST OFFICE TELEPHONES. NEW TRUNK AND JUNCTION CIRCUITS.

The Superintending Engineer,

.....District,  
..... is ..... between  
..... additional circuit ..... proposed .....  
..... are ..... from  
and ..... Exchange.  
to .....  
circuit  
The ..... will be worked as follows:—  
route

The augmented group should consist of ..... 'Z,' ..... 'G'  
and ..... 'D' type circuits.

The class of traffic to be circulated over the 'G' type circuits will be as shown on the attached form T.217 W.

Will you kindly state if the total cost of the work will or will not exceed £1,000 exclusive of the value of any spare wires used and/or that no new underground work is involved apart from very short sections of local cable.

is  
As the circuit ..... needed now, perhaps every effort will be made to  
are  
avoid delay in the treatment of the case at each stage.

South Midland.

*District Manager.*

Upon return of the papers from the Superintending Engineer, and assuming the reply comes within scope of the District Manager's devolved authority, the Chief Clerk is instructed, by means of mimeographed form 'B,' to issue the necessary Advice Note.

FORM (B).

The Chief Clerk,  
 Please arrange for the issue of an Advice Note to provide  
 additional Trunk circuit(s) to be worked bothway between  
 initial Junction and unidirectional from  
 to grade  
 District Manager's authority is given in papers.  
 Secretary's  
 District Manager.  
 Traffic Superintendent.  
 South Midland. 193

The Chief Clerk then advises the Traffic Superintendent by means of mimeographed form 'C' that the Advice Note has been issued.

FORM (C).

The Traffic Superintendent,  
 Advice Note No. has been issued to provide  
 additional Trunk circuit(s) to be worked bothway between  
 initial Junction and unidirectional from  
 to grade  
 South Midland. Chief Clerk.

NOTE.—Where another District is concerned request relative District Manager to issue the equivalent Advice Note.

The Superintending Engineer is then advised by means of mimeographed form 'D' that the case is complete.

FORM (D).

The Superintending Engineer,  
 District.  
 To see the foregoing and return the papers to this office, please.  
 South Midland. District Manager.  
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The advices 'B,' 'C' and 'D' are contained on one mimeographed form and set out in such manner as will permit of the top portion (B) being detached from (C) and (D), for retention by the Chief Clerk as his covering authority.

Similar procedure is adopted in the case of a circuit to be surrendered, the only difference being the substitution of mimeographed form (E) for (A).

FORM (E).

The Superintending Engineer,  
 District.  
 In connexion with the proposed surrender of circuit, will you kindly say if it is overhead or in a cable and, if the former is the case, say if it is estimated that the circuit will not be required in its present capacity for at least years.  
 South Midland. District Manager.  
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Particulars as to position and switchboard labelling are then furnished to the relative Sectional Engineer on mimeographed form 'F.'

FORM (F).

Exchange.  
 additional circuit(s) authorised.  
 new  
 To Exchange. To be worked  
 A.N. No. refers.  
 additional  
 Traffic No(s). circuit(s) when completed  
 new  
 Radial mileage  
 Existing Circuit(s).  
 Bothway. In. Out  
 The Sectional Engineer.

In connexion with the above, will you kindly arrange as follows:—

	At Exchange.	At Exchange.
Pos. No. for circuit(s)	.....	.....
Panel No. ..	.....	.....
Jack No. ..	.....	.....
Engraved Label(s) for		
(a) Incoming end(s).		
Colour ...	.....	.....
Code ...	.....	.....
Numeral(s) ...	.....	.....
(b) Outgoing end(s)		
Colour ...	.....	.....
Code ...	.....	.....
Numeral(s) ...	.....	.....
South Midland.		District Manager. 193

Local records are amended in pencil pending completion and the papers are filed.

In the case of inter-district routes the papers circulate in the first instance to the District Manager for concurrence and thereafter treated as an ordinary proposal except that in such cases an Advice Note should also be issued by the distant District Manager.

The scheme, which has been given a fair trial in the South Midland District, has so far proved entirely satisfactory.

**C.T.O. NOTES.**

*Promotions.*—Miss M. F. Glassborow, Telegraphist to Assistant Supervisor (Provisional).

*Retirements.*—Messrs. H. J. Jordan, Assistant Superintendent, and A. H. Pond, Telegraphist.

*Reorganisation of the C.T.O.*—A further stage in the equipping of the C.T.O. with Teleprinter and Conveyor Bands was reached on Nov. 14, when the Centre and Third Floor Galleries was filled with the most important offices such as Manchester, Liverpool, Glasgow, Edinburgh, Hull, Bradford, Newcastle-on-Tyne, Leeds, Sheffield, &c. Memory recalls the time when the Centre Gallery looked a hive of industry, as it did on Monday, and in addition the West Gallery was occupied from end to end. Alas, the West Gallery on Monday, except for a few circuits, was a desert waste. Gone is the "News" Division, with its pneumatic punchers and the raucous cry of "Wheels" which used to resound during busy Parliamentary nights. No more do we hear the punchers tapping out their 4, 5 and 6 perforated slips. No more do we have the YQ news circuits with the festoons of white punched Wheatstone slip. The fine art of stiffening the slip over to the First LV has vanished. On the east side, where the Special Section resides

under the name of "C" Division—but what a skeleton it is—is no longer coloured with loops of blue slip Asquith PA verb, or Lloyd George PA Col, or Balfour PA ½ Col. Those were days when the steady rhythmic dots and dashes resounded all over the office. To-day Morse is dead. Silent typewriters touch out the messages of commerce, laughter and death. Writing is becoming a lost art; it's all done with gummed slip nicely printed and there is not that need to worry with two or three messages on the tape to be pasted on the B or C form. Clock stamps that tell the truth to a split synchronised second save cricks in the neck and the wall clocks are hardly needed. The Morse operator who delighted to be a word or two behind a good sender is no more. Still, we in the C.T.O. face our life gaily and can snatch *humour from pathos* as may be witnessed by the following epitaph which was found on an instrument table occupied until recently by an "Up" News wire:—

IN MEMORIAM.

Beneath this stone if you should delve  
 You'll find the corpse of LV 12,  
 Of Wheatstone wires once a Colossus  
 But now laid low by those who boss us.  
 No more will youth with admiration  
 Watch "Old Sweats" without palpitation  
 Reel off item after item  
 And hang 'em up for blokes to write 'em.  
 No more the half-baked novice digs  
 'Midst countless sheets for "BM Pigs"  
 Or looks around all wobegone  
 'Cause he can't find that "LV corn,"  
 For our old friend ('tis sad indeed)  
 Is offered to the god of speed  
 And must, though it seems strange to say,  
 From sheer inertia pass away.  
 So, passing Stranger, pipe your eye  
 In memory of the days gone by  
 And hope you'll never quaff the cup  
 Of "Usedterwas" like "LV Up."

Some day we hope someone will pen a history of the C.T.O., say for the period 1914 to 1933. It would be worth while to narrate the changes in TS during that period.

*Chess.*—The C.T.O. first team has opened its season well. In the Minor Cup they won their match against the Customs II, and in League II of the Civil Service they beat the Office of Works II.

LONDON TELEPHONE SERVICE NOTES.

Sales Branch Notes.

DURING the month of October there was a net increase of 3,711 stations as compared with an increase of 3,344 stations in the corresponding month last year. In September this year the net increase was 1,935 stations.

The results obtained from recent trade exhibitions held include the following: Grocers' Exhibition, Sept. 17 to 23, 1932, exhibitors 144, telephones 63, as compared with 177 and 56 respectively last year. At the Building Trades Exhibition, Sept. 14 to 28, there were 317 exhibitors and 144 telephones. Last year's returns show 321 exhibitors and 150 telephones.

In connexion with the Brewers' Exhibition, held between Oct. 29 and Nov. 4, the number of exhibitors was 180 and 74 telephones were secured. Last year the respective figures were 220 and 69.

At the Dairy Show, which was held between Oct. 18 and 21, there were 259 exhibitors and 25 telephones. Last year the figures were 228 and 22 respectively.

In connexion with the opening of Hither Green automatic exchange, a telephone display was held at 77, Rushey Green, S.E.6, from Sept. 22 to Oct. 15. Considerable local interest was taken in the demonstration and some good business resulted.

The occasion of the conferring of a Charter of Incorporation on Brentford and Chiswick was used to arrange a display of telephone apparatus at Messrs. Goodbans, 326, Chiswick High Road, W.4, from Oct. 17 to Oct. 22. The display attracted considerable attention.

The Teleprinter was shown at the Eighth Exhibition of International Inventions, held at the Central Hall, Westminster, between Oct. 5 and 15, and communication made with Birmingham, Liverpool and Manchester.

London Staff Salesmanship Progress and Incidents.

The results to date of the efforts of the staff since the inception of the scheme in September last year have been as follows:—

	Total No. Ordered.	Orders obtained during the month ending Nov. 15 1932.
Exchange lines ... ..	1,366	119
Extensions ... ..	1,301	163
Private lines ... ..	13	...
Plugs and sockets ... ..	204	22
Hand-microphone instruments	6,374	836
Extension bells ... ..	514	57
Other apparatus ... ..	665	77

Lady Prospect (to Sales Representative): "What do you call your occupation—a trade or profession?"  
 Sales Representative: "A 'calling,' Madam."

Few people would be unable to correctly interpret the meaning of the letters O.H.M.S. In the service, however, the anagram has long since replaced the alphabet. Occasionally members of the public are attacked with the same disease. Here is a copy of an addressed envelope delivered without delay:—

O.H.M.S.  
 D.C.M.  
 K.N.W.  
 L.T.S.

Lady: "Excuse me, but are you a solicitor?"  
 Sales Representative: "Yes, Madam, I am soliciting subscribers to the best service in the world—the telephone service."

An exchange operator recently had the following experience and showed considerable resource in dealing with the situation. On plugging in to a call, she heard a cry of distress on the line. She immediately rang up the police and told them from whence the cry came. Policemen went to the house and found a lady had fallen downstairs and injured herself. In falling she had knocked over the telephone, so releasing the switch-hook.

The phraseology of legal forms and documents have at one time or another presented difficulties to most of us. Even our own simplified telephone agreement is evidently not without difficulty to many people. Immediately below the line for signature is a line for description.

An agreement recently received read as follows:—

Signature: Eileen ———.  
 Description: Medium height, Fair.

Telephone Service.

*News and Views from Here and There.*—Occasionally some section or body of people reveal interesting information regarding the usefulness of the telephone. In a publication called *The Racing Pigeon* a correspondence entitled "Federations and the Telephone" has attracted our notice. Extracts from letters to the Editor dealing with a subject described as "Can smashes in inland races be avoided by the use of the telephone" are given below:—

"I have no hesitation in saying that, by the use of the telephone, serious smashes can be eliminated to a greater extent than by all the systems of chart reading and Meteorological Office reports. It is 10 years since the telephone was installed in my house and reports of weather conditions are obtained in the early morning by phone along the route of flight ———. I have yet to see any new arrangement that will beat the telephone."

Another correspondent points out that in three years' experience of gathering weather reports by phone, he has been able on many occasions to save his federation loss, whilst others not so up-to-date have suffered through the absence of the telephone.

We notice that the correspondence deals only with inland telephone arrangements and would suggest that the use of the Continental service for the same purpose would be invaluable, where the risks of loss of valuable birds are greater, and the prizes to be won higher.

"Calling the World by Telephone" was the title of an interesting article by Capt. B. S. Cohen in the *Daily Telegraph* of Sept. 30 last. In drawing

attention to Faraday Building, in course of construction in Queen Victoria Street, he mentions that London will soon possess the most up-to-date long-distance trunk exchange building in the world. London has become the telephone centre of the world.

A South-West London weekly paper announced at the head of "Important Local Happenings":—

"A telephone kiosk has been placed on Kingston Bridge."

#### Retirement of Mr. F. Wiggins and Mr. J. Villiers, Contract Officers, L.T.S.

Both these officers were attached to the South East District Sales Department.

Mr. Wiggins entered the service of the ex N.T. Co. in 1896 as a Wayleave Officer, and in February, 1905, joined the canvassing staff. He was an extremely active man and right up to the time of his retirement he displayed the keenness and energy of an alert business man. At a gathering of the staff to wish him good health and good luck Mr. Hinshelwood, the Sales Manager, presented him with a grand-daughter chiming clock and cheque subscribed to by his colleagues. Mr. Hinshelwood referred to the many fine qualities possessed by Mr. Wiggins and Mr. Marshall also paid tribute to a fine officer and colleague.

Jack Villiers joined the staff of the ex N.T. Co. at Bromley. In July, 1905 he was transferred to the South Contract Office at Sydenham, and completed his service in the South East District Office. He served in the 30th Training Reserve Battalion during the war, attaining the rank of quartermaster-sergeant. He is a prominent Freemason and a past Arch Druid, and has now added to his varied activities the post of Honorary Secretary to a branch of the British Legion. On behalf of his colleagues Mr. Hinshelwood presented him with a gold mounted umbrella and cheque and wished him good health and happiness in his retirement.

#### L.T.S. Sports Association.

The fifth annual prize distribution of the London Telephone Service Sports Association, which took place on Nov. 2, 1932, will live in our memory for a long time. Taken as a whole, it was "a hit."

The organisers felt that something had to be done to secure the attendance of Headquarters staff at the distribution, timed for 6.30 p.m., and something was done. A long evening had to be provided for. The first part must not be a failure and interest had to be sustained for six long hours—from 4.30 to 10.30. To the committee's agreeable surprise six hours were not long enough for the 600 people, who so kindly turned up.

The proceedings began with a tea dance and no less than 325 people took tea. The majority of the people danced, others watching the scene and enjoying the music, which was simply splendid. Even at this early stage, controlling and supervising staff were thawing visibly. Two hours flew by and sharp on time the prize distribution commenced. The Controller and Mr. Pink, together with Miss Mahlendorff and Miss Cox, supported Mrs. Dive, who presented the trophies, and, to the pleasant surprise of everybody, the late Controller, Mr. W. A. Valentine, C.B.E., appeared on the platform by Mr. Napier's side. Happy speeches were made by the three gentlemen referred to and it was their evident intention to put the staff at ease. Great credit (and our thanks) must be given to Mrs. Horace Dive for the excellent way she fulfilled her task. Her speech was entertainment in itself, and she registered a bull.

The third part of the evening was a concert by a few of our colleagues who regularly entertain us. Here the organisers went wrong. They had allowed only half an hour, but the crowd, numbering about 600, would not let our friends go. Hearty thanks and congratulations are due to the artists, the Misses E. Cook and Madge Harwood, and Messrs. Brough and Hughes, for their successful help.

Then followed "Divertissement," and here Mr. Horace Dive, M.B.E., took control. He was great. He kept us all happy and smiling. We could not grumble at the lack of space under the lash of his cheerful (and vociferous) orders. He worked very hard for our enjoyment.

It was a social success. There was no official atmosphere. Everyone, from the girl probationer up to the Controller, did really unbend. Who could be formal dressed in a paper Glengarry. No one can remember a staff affair marked by such spontaneous friendliness. The Refreshment Club stood the test well and a word of praise for its staff should be given.

The organising committee was richly rewarded with congratulations from all ranks and the following are typical. The first is from a member of the clerical staff and the second was sent from the Trunk Exchange.

"Everybody has nothing but praise for the very enjoyable evening spent last Wednesday. For my own personal feelings, I can express them by saying my only hope is that Wednesday's function will prove only the first of many such enjoyable evenings; my only regret, that we have no larger room in which to house it; and my only apprehension that our energetic committee has not set itself too high a standard to maintain for any subsequent social functions."

"It is usually said 'To-night's the night,' but the words should certainly be altered to 'Wednesday was the night.'"

Anyone who had anything at all to do with the organising must be feeling more than satisfied, for, to judge from the laughter throughout the evening, it was obvious there were no dull moments. Very gratifying, indeed, it was to see so many "Powers that Be." It is a long time since we have seen so many together at a social function and we hope it will not be the last. Our thanks are due to our humorous M.C. and to the members of the committee who must have worked so hard.

"Roll on the next."

#### Stamford Dramatic Society.

##### "LORD RICHARD IN THE PANTRY."

Under the direction of Mr. David Noble, the Stamford Dramatic Society gave a sparkling performance of this delightful three-act Comedy by Sidney Blow and Douglas Hoare at the Cripplegate Theatre on Tuesday, Oct. 18, before an appreciative assembly of friends, past and present.

A very convincing and likeable Lord Richard, was found in Mr. Frederick Crossley, who acted throughout with commendable self assurance and restraint—a combination of qualities rare to find. The somewhat heavy and difficult part of the Cook was admirably filled by Miss Helen Robertson who imparted the requisite amount of humour to her lines, holding the audience throughout.



[Photo. by kind permission of the Sport & General Press Agency.]

"In the Kitchen—the cook telling Lord Richard (the butler)—  
"I have got a letter from Archie."

Trix Wiles		
(Bryan, the Parlour Maid).		
Frederick Crossley.	Helen Robertson.	Ethel Wilks
(Lord Richard).	(Cook).	(Kitchen Maid).

Miss Dorothy Coleman, the Society's business manager, as Sylvia Gayford (in love with Lord Richard) acted with debonair charm and composure, and the Lady Violet of Miss Eva Clarke was equally effective. Miss Elsa Wilson, as Evelyn Lovejoy, handled the part of that loquacious spinster with elocutionary skill. A laudable Carter (Lord Richard's manservant) was provided by Mr. Edgar Mann.

Mr. Harold Cooper, Honorary Secretary of the Stamford Dramatic Society, gave a sound performance as Captain "Tubby" Bannister and the part of Arthur Thompson (Lord Richard's Secretary) was capably filled by Mr. Laurence Davies.

The remaining roles, all of which were acted with imagination and confidence were taken as follows:—Detective Inspector Brown, Mr. Reginald Barrett; Rose, Miss Norah Bennett; Bryan, Miss Trix Wiles and Gladys, Miss Ethel Wilks.

Altogether a pleasing evening, congratulations—S. D.!

#### London Telephonists' Society.

The second meeting of the session of the London Telephonists' Society was held on Nov. 4, and there was again a very large attendance. It is evident that the new procedure adopted this year, of holding the meetings in the Dining Room at Cornwall House and combining them with a social programme, is going to prove very popular.

The subject of discussion for the second meeting was "The Travels of a Ticket," the ticket in question being a trunk ticket. Miss Fielder, telephonist at the Trunk Exchange, opened the subject with a very interesting paper on the life and adventures of a ticket from the time it commences duty at a switchboard till the time it is despatched to Headquarters for accounting purposes. Mr. J. L. Brooker, Traffic Officer, then took up the tale of what could happen to it from the technical point of view, and gave an entertaining account of the various mechanical devices employed in the transport of tickets from point to point in the Trunk Exchange and their timing and stamping. Mr. Catling, of the Accounts Branch, then continued the story of the preparation of Trunk accounts from the completed tickets and the various types of correspondence that might later ensue, including, in cases of query, the travels of the ticket to far away District Managers, Postmasters and exchanges.

An interesting discussion followed, in which many people took part.

The musical programme which followed was contributed by members of the West and West Central Districts. The Misses Watts and Jeffs of Kensington, Miss Blitz of Museum, Miss Paveley of Tandem, Misses Chapman and Linlay of Victoria and Miss Hill of Whitehall, all contributed items which were received enthusiastically, whilst Miss Chapman and her friend Mr. Petchey, deserve special thanks for their capable efforts in supplying music for the dances which were arranged between the items.

The next event is the Annual Dance at Holborn Hall on Dec. 9, when a large gathering of members past and present is anticipated.

#### Gerrard and Regent.

A farewell party in which Regent Exchange Staff bade adieu to their own Exchange and many friends of both Exchanges, took place in the Dining Room on Friday, Nov. 4. It was also a reunion of Gerrard and Regent Staffs, past, present and future. Mr. Boucher, the District Superintendent, acted as M.C., assisted by Mr. Vincent and Mr. Pritchard. We were very pleased to have with us Mr. Dive, the Assistant Controller, Miss Cox, the Female Superintendent, Mr. and Mrs. Pounds, Mr. Durrant, Mr. Jenkins, and a number of other friends from the Traffic and Engineering Branches.

Apparently one re-union after so many years association is insufficient for the purpose. Consequently, before the evening was over, the Gerrard Caterer was urged by the staffs to hold a similar party for a re-union as soon as convenient. No doubt the prospect of a further leave taking soothed the pain of present partings.

We are all sorry to lose Regent and we wish them, Supervisors and Staff, all the happiness and good luck the future can bring them. In the meanwhile, sad things are happening in what was once the Regent switchroom. Furniture is being knocked, kicked, and punched to pieces by the ungentle male workman. He has no reverence for pegs whatever their colour and history and lockers are shaken to their very foundations. They must needs be ruthless in order to work such havoc. Those who have worked and grown up in Regent and by the side of Regent tremble with indignation at the laws which in the name of progress cause such desecration.

#### Palmers Green.

On Nov. 2 an enjoyable informal gathering was held at this Exchange, on the occasion of according goodwill to our Traffic Officer, Mr. R. C. Atkins, on his transfer to Cornwall House. Mr. Angood, one of the present superintendents, in a few well-chosen words, asked Mr. Atkins' acceptance of a token of our good wishes in the form of an oak book-case. Mr. Atkins thanked all for their co-operation whilst he was in the District, and said the present would always remind him of his old friends.

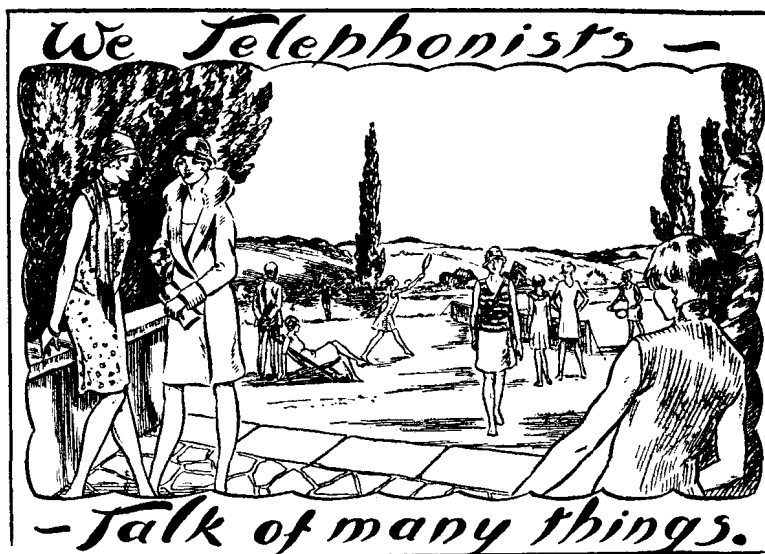
After the presentation, refreshments were served to those present, who included representatives from all the Exchanges in the Section.

#### Personalia.

##### Resignations on Account of Marriage.

##### Telephonists.

Miss D. W. Blunden, of Metropolitan.	Miss G. I. Elliott, of Holborn.
.. L. A. Sharp, of Regent.	.. L. L. Ambrose, of Eltham.
.. T. I. Page, of Regent.	.. M. N. Daw, of Croydon.
.. W. M. Sanders, of Paddington.	.. I. E. Grimes, of Victoria.
.. C. E. McCartney, of Paddington.	.. E. A. Wellings, of Tandem.
.. D. Uglow, of Putney.	.. A. G. Drain, of Trunk.
.. T. D. B. Major, of Monument.	.. E. E. Rudland, of Trunk.
.. O. E. Durston, of Clerkenwell.	.. L. M. Blowers, of Trunk.
.. E. M. Hall, of Clerkenwell.	.. I. B. Woodin, of Trunk.
.. E. I. Williams, of City.	.. M. I. Jones, of Central.
.. E. A. Elliott, of City.	.. J. E. Alabaster, of Mayfair.
.. E. L. Hadwick, of London Wall.	.. G. M. Peglar, of Mayfair.
.. F. A. Wilson, of Toll "A."	.. E. P. Giles, of Gladstone.
.. G. E. Smith, of Streatham.	.. M. E. Hicks, of Gerrard.
.. E. M. Fishlock, of Western.	.. M. V. Bird, of Gerrard.
.. A. C. Hamer, of Maryland.	.. W. E. Collins, of Sutton.
.. F. E. Leonard, of North.	.. E. A. Ball, of Sutton.



Dear Editress, - You are always so interested in everything that takes place in the exchanges that I am sure you will forgive this long letter, about the most exciting thing that has ever happened in the London Telephone Service. I do hope you have been invited, and are coming, on Saturday, Nov. 19, to the first real marriage of two exchanges—Reggie Regent and May Mayfair. It takes place at Farm Street (you have often heard of Farm Street Church, I expect) at 2.30 p.m., and the ceremony is to be performed by Bishop Ego of Mersall, assisted by Father Maycock, uncle of the bride—both so thoroughly ecclesiastical looking, and have the bishopsgait properly. A special peal of Hope Bells are to be rung afterwards. Lots of exchanges are calling after the ceremony. Addy Addiscombe is coming with Albert Dock, Archie Archway and Beryl Bermondsey, Bridget Brixton, Harry Harrow and Byron Byron, Edgar Edgware and Faith Fairfield, Gerald Gerrard and Gladys Gladstone, Grannie Grangewood with Greta Greenwich, Kenneth Kensington, Harmony Hampstead, Mac Macaulay, Nathaniel National, Methusalem Metropolitan (commonly called Nat and Munkie), Milly Hill, Montague Monument, Norrie North, Paddy Paddington, Percy Perivale, Polly Pollards, Popsie Popesgrove, Roy Royal, Sheila Shepherds, Syd Sydenham, Truby Trunks, Valentine Ifford and Victoria Franklin. Cables and wires for them galore have been arriving at their new home for months past, and it has been no light task to sort and label them properly.

The happy couple have named their house "Mayfair Building," and my word, you ought to see it—everything automatic. Reggie moved in a fortnight before the wedding in order to get everything in working order before May came. I think they'll get on ever so well together—they are to share the use of everything, but can receive callers separately—I think that's a good idea, don't you? They won't exactly see eye to eye together, but they will "C.C.I." together, and they use the same Trunks, but, of course, May will take up more than Reg. I do hope it won't cause trouble when Lancelot Langham and that Grosvenor girl come to live there as well, but I daresay they'll manage. I'm told they've got hosts of servants with so many directors they can't tell which switch is switch. If anyone get angry they just dial ANG and an angel, disguised as an engineer, supplies the necessary oil—saying "Oil see to that," and then everything goes "oilright."

The lady who looks after everything for them has a *good way* with her, but they do say she keeps *observation* on them—that's rather too bad, I think.

Reg gets very busy in the evening, so I'm told, and May has a habit of making calls quite late at night. Their *impulses* are rather for the gay life, I fear. He's given her any number of *rings*—some rather *loud*, to my way of thinking.

May has been living in a *service* flat over the Parcel Office in Bird Street, and says she's ever so pleased to be able to keep up the country atmosphere in Farm Street. There's a garden to Mayfair Building which will be tilled automatically by "a *dig-it* switches," quite a cute idea always delving—don't you know, and *earthing* up the *power plant*, such delicious scents everywhere. The whole place is extraordinarily *toney*, if you know what I mean, but they say all these automatic exchanges are.

Well, good-bye. I do hope you'll be able to come, as everything is sure to go off *faultlessly*.—Automatically yours,

ARNOLD WORDSWORTH.

#### A Week's Holiday in London.

BY "RENROT."

Thursday, Sept. 22.—I walked to Buckingham Palace at 10.30 a.m. to see and hear the Changing of the Guard. I saw the band march to the gates, the soldiers entering the Palace courtyard, and the band smartly playing

and marching to St. James's Palace. The big white horses of the police were here to keep in order the crowd of spectators. Oh! what a stirring sight it was to see the Drum Major and the soldiers almost dancing along and playing their music at the same time. How it stirs and cheers the onlooker. Truly one of the many, varied and free shows that this London of ours can give.

I then entered St. James's Park, sitting down on a free seat near the bridge, towards the right, and thought what a beautiful spot this is. The seagulls were whirring, whirring, whirring, with their outstretched wings—off in such graceful curves, first they dip down towards the water, then they rise with a graceful poise, looking so very beautiful. Surely our airmen, in their bird-like aeroplanes, could try and imitate the natural beauty of movement these birds possess when flying in the air. After sitting fascinated at this beautiful scene, I walked over the bridge and came across the school children at play on the swings, on the see-saw, and digging in the sand-pit, all so animated and busy, happy children's voices and laughter floating on the air.

After lunch it had started to rain, so I walked to the Victoria Picture Theatre, paid 1s. 6d., and saw the film starring Maurice Chevalier in "One Hour with you."

When I came out it was simply pouring with rain, so I took the bus home, had some tea, and went to bed early, having for my first day's holiday nothing to grumble about, but only happy memories.

*Friday, Sept. 23.*—I got up late, and then thought of a friend who would perhaps like to come out with me, so I rang her up asking her to come with me to the mannequin display at the Galeries Lafayette, in Regent Street. We met at 3 o'clock, and went to see this wonderful parade of all the latest frocks and coats, on such charming, bewitching ladies, tall, short, medium, each in turn were wonderful. There certainly is a pleasure, as the 100 or so ladies and gentlemen in the audience must have thought, in seeing these beautifully gowned mannequins.

We stayed there until nearly 5 o'clock and then went up another floor to the tea room. After that we went into Woolworth's, in Oxford Street, staying there until 7 o'clock.

*Saturday, Sept. 24.*—I got up late, had dinner, and then went to Piccadilly on the bus, alighting at the Capitol Picture Theatre to see Jack Hulbert in "Love on Wheels," a very, very, amusing and laughable film, depicting as it does the well-known store of Selfridge's, under, as one could easily see, the name of "Gallop." One learns how there is an official scapegoat, in the person of Jack Hulbert, who, if anything is unsatisfactory to the customer, is always instantly dismissed—about 30 times a day; as the slogan "The Customer is always right" rules this business emporium. A film of real fun, but not quite so good, to my mind, as "Jack's the Boy."

Afterward I walked all through Hyde Park, enjoying very much the first gleam of sunshine I had had since starting my week's holiday in London. I saw the great crowd of Methodists in the centre, and then went by the Cockpit near the Powder Magazine, to the cafeteria in Kensington Gardens. I took my tray, and sliding it along collected my tea as I went. I found a table in the gardens where the sun was shining, enjoying my tea by the help of its brightness and warmth, enjoying also the sight of the sparrows and pigeons being chased by a very small child and a large black dog with big ears.

The tables were nearly all occupied. I have several times visited the cafeteria this summer. I do so enjoy the pleasant holiday feeling one has of the "self-help" and freedom of this system, and the view from the tables is very beautiful, with its peep of the Serpentine waters, the swishing sound of the pleasure boats, the grand view of the massive trees, with the background of blue sky and white clouds, the green grass and the deck chairs.

After tea I strolled in the sunshine along the flower walk near the Prince Albert Statue, admiring very much the late roses and scarlet flowers, the autumn daisies, also the giant arum lilies, some of them over 6 ft. in height.

And yet another bright day to look back upon.

*Sunday, Sept. 25.*—I got up late and had breakfast and then went with my sister to Hyde Park. Joining the crowd of sightseers along the Row, we watched the horses and riders in the Row. We then sat upon a seat, the sun was shining and we had a sun-bath for an hour, noting the new coats and hats worn by the ladies, also admiring the children and dogs. We then went for a walk in the Park and thence to Kensington Gardens. The flowers in the Borad Walk we very much enjoyed.

*Monday, Sept. 26.*—I awoke, and found the sun shining gloriously. I felt I could not stay in bed an instant longer, so I dressed, had my breakfast, and was in Baker Street about 10.30. I then walked to the Marble Arch and strolled through Hyde Park until I came to Rotten Row.

I sat down on a sunny and sheltered seat, where I could not feel the wind, which was somewhat keen, the weather being cold apart from the sun. I sat there for an hour, admiring the horses and riders galloping by, also rather amused at an elderly Chelsea Pensioner in his scarlet uniform, who was feeding the pigeons from his mouth. The pigeons were quite fearless of him, perching themselves on his hat, on his shoulders and arms, and as he walked you can guess what a comical sight it looked, with the pigeons' wings flop, flop, flopping all the time.

I stayed there admiring the lovely children, who, with their nursemaids, were spending a delightful morning in the Row. It isn't very often I can

get to the Park on a week-day, except after 6.30 or so, and the difference I found in the morning crowd. It seemed just as if I was in a strange Park. It certainly is nice to associate, even as an outsider, with the leasured people sometimes.

I then went to the Green Park and walked through both the Green Park and Hyde Park to Selfridges, where I did a little shopping.

A delightful evening with a friend, her family and charming children completed another delightful day.

(To be continued.)

### Memories.

My heart is in the countryside;  
Each old-world homestead door  
Enhances Devon's beauty, and  
The wildness of the moor.  
There, giant elms, majestic, green  
Their branches clad in leaves of green.  
Where the wind and the waves in tuneful glee  
Sing, sing to me.

I was born for the mighty hills  
And the snow-capped mountains nigh.  
Where chamois climb, swift, sure of foot,  
Straight up on the ridges high.  
Where the blue ice glacier, mournful, lone,  
Sheds glistening tears—the source of the Rhone.  
From the distance, the cow-bells, merrily,  
Ring, ring out to me.

Sweet Spirit of the holy Mount,  
Thou pride of Northern France!  
An humble monk conceived thine art  
'Neath Michael's hallow'd glance.  
Thy three-fold architecture  
Is many aeons old,  
While high upon thy summit,  
Stands the effigy of gold.  
Casting o'er thy cloister a shadow faint,  
Oh, Mont St. Michel; thine all-conqu'ring Saint,  
Calls, calls to me!

Away to an Eastern city,  
Where ancient customs last,  
And Arabs in a mosque attend  
Mohammed's sacred fast.  
Clad in white, the women, veiled  
Their native beauty hide,  
And handsome dark-eyed children  
'Neath tropic skies abide.  
To these quaint bazaars I will go once more,  
Where the steep, white road leads down to the shore,  
For a ship is sailing across the sea,  
Call, calling to me.

G. M. T.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), London, E.C.1.

## A BRIEF CHRONOLOGY FOR STUDENTS OF TELEGRAPHS, TELEPHONES AND POSTS.

BY HARRY G. SELLARS.

(Continued from page 270, Vol. XVIII.)

- |               |  |
|---------------|--|
| 1928, Dec. 24 | Penny Postage rate restored between Canada and all parts of the British Empire.  |
| 1928, Dec. 25 | Wireless telephonic messages from Pittsburgh heard simultaneously at North Magnetic Pole and by Antarctic Expedition near Great Ice Barrier. |
| 1928, Dec. 27 | Wireless telephonic conversation took place between Stockholm and Java, via Amsterdam.   |



- 1928, Dec. 31... Cash on delivery items dealt with during year—1,800,000. 43,800,000 registered and 141,009,000 unregistered packets posted in United Kingdom.  
£2,077,491 paid by Post Office to British railways for parcel conveyance.  
12,130,000 two-shilling and 12,140,000 three-shilling books of stamps sold.  
Post Office ceased to accept proposals for insurance.  
2,300 motor vehicles in use.  
Automatic postage stamp machines installed at 1,500 Post Offices.  
2,200 private postal franking machines in use in the United Kingdom.  
£288,619 deposited in P.O. Savings Bank.  
107,592,369 trunk telephone calls and 421,914 outgoing international calls made during the year.  
Total number of staff employed by the Post Office, 229,000.  
Over 2,500,000 wireless licences in force in United Kingdom.  
Total number of telephones in use in the world, expressed in thousands:—Europe, 9,185; Asia, 1,205; Africa, 205; North America, 20,885; South America, 491; Australasia and Oceania, 672. Total 32,644. Total in Great Britain, 1,759,686.
- 1929, Jan. 1 ... Brazil and Peru signed a treaty for establishment of a radio-telegraphic service between the two countries.  
Chinese numerical method of transmitting telegrams replaced by a phonetic system.  
Telephone subscribers in France granted right to be informed of exact time.
- 1929, Jan. 4 ... Radio Corporation of America and Victor Talking Machine Company amalgamated.  
Direct duplex telegraphic transmission introduced between London and Singapore.
- 1929, Jan. 7 ... Wireless telephonic service between Holland and Dutch East Indies officially opened.
- 1929, Jan. 9 ... Sir Basil Phillott Blackett appointed Chairman of Imperial and International Communications Limited at a salary of £8,000 per annum.  
Conference on short wireless waves held at Ottawa. Canada, United States, Newfoundland, Mexico, and Cuba were represented.
- 1929, Jan. 13... Wireless telegraphic service inaugurated between New York and Shanghai via Philippine Islands.
- 1929, Jan. 18... Rates for Night Letter Telegrams between United Kingdom and United States and Canada reduced.  
Direct cable operation established between Berlin and New York.
- 1929, Jan. 26... Automatic telephone working commenced at Bath.
- 1929, Jan. 30... Franco-Argentina wireless telephone service inaugurated.  
Wireless communication established between Paris and Saigon.  
London—Berlin photo-telegraphic service extended to Frankfurt-am-Main.
- 1929, Feb. 4 ... First Rural Automatic telephone exchange opened at Haynes, near Bedford.  
New York—Shanghai wireless telegraph service opened.
- 1929, Feb. 15... Anglo-Polish telephone service opened. Charge to Warsaw 15s. 3d.
- 1929, Mar. 1 ... Transatlantic telephone service extended to Luxembourg.  
Baird system of television demonstrated to Postmaster-General.
- 1929, Mar. 4 ... Local gazetteer introduced and displayed at Portsmouth Post Office as an experiment.  
Simultaneous telephone and telegraph communication carried on between England and Canada by means of Beam wireless.
- 1929, Mar. 14... London E.C. Postal District extended.
- 1929, Mar. 23... Anglo-Indian Air Mail service opened.
- 1929, Mar. 31... Post Office surplus for previous year £9,012,764. Paid in salaries £38,989,000 (including bonus). £13,218,853 spent on telephone and telegraph construction.
- 1929, April 1... Cables & Wireless, Limited, and Imperial & International Communications Limited registered. Directorates:—Lord Inverforth (President, C.W.L.), Sir Basil Blackett (Chairman, I.I.C.), J. C. Denison Pender (Governor and Managing Director of C.W.L. and Joint Managing Director of I.I.C.), F. G. Kellaway (Deputy Governor and Managing Director of C.W.L. and Joint Managing Director of I.I.C.). Other members of the Boards, Sir Charles S. Addis, F. R. S. Balfour, Sir Charles C. Barrie, Sir F. G. Barthorpe, Earl of Bessborough, Col. Hon. A. G. Brodrick, Earl of Clarendon, Admiral H. W. Grant, H. C. Hambro, Viscount Inchcape, F. A. Johnston, Maj. H. Lefroy, Senatore G. Marconi, J. F. O'Malley, Hon. George Peel, L. G. Sherlock and Admiral Lord Wester Wemyss, Manager and Secretary of both companies—Edward Wilshaw.
- Sale of Imperial Atlantic Cables to Imperial and International Communications, Limited, for £450,000.  
London Toll Telephone area extended to places as far as Henley - on - Thames, Ipswich, Eastbourne and Chichester.
- 1929, April 2... Telephone service opened between Hungary and Roumania.
- 1929, April 4... International Radio Conference opened at Prague. Forty administrations and telegraph organisations represented. New wavelengths allotted.
- 1929, April 14 Explorers in North and South Polar regions exchanged conversation by wireless.
- 1929, April 15 Dano-Spanish telephone service opened (via London).
- 1929, April 17 Anglo-Finnish telephone service opened.  
Transatlantic telephone service extended to Gibraltar and Ceuta, North Africa.
- 1929, April 20 Dano-Portuguese telephone service opened (via London and Madrid).
- 1929, April 26 Wireless telephone service opened between Germany and Siam, Germany and Argentine, and Holland and Dutch East Indies.
- 1929, April 30 National Telewriter Co. granted new licence for fourteen years for use of Telewriters on Post Office private wires.
- 1929, May 1 ... Charges for Inland Trunk calls calculated minute by minute after first three minutes.  
Successful wireless telephonic conversation held between a train on the Canadian National Railway travelling at 50 miles an hour and Toronto.
- 1929, May 15... Canadian House of Commons ratified sale of the Pacific Cable and associated undertakings as agreed upon by British, Australian and New Zealand Governments.
- 1929, May 17... Pictures transmitted by radio from San Francisco to London.
- 1929, May 29 ... Anglo-Bulgarian wireless-telegraph service opened.
- 1929, May 31 ... London-Milan "through" trunk telephone circuit opened.
- 1929, June 1 ... Second short-wave circuit put into use on transatlantic telephone service.  
Anglo-Siamese wireless telegraph service opened.  
International office of the Telegraph Union at Berne issued a revised list of radio-telegraph stations.
- 1929, June 4 ... Vladimir Zworykin demonstrated a system of telephotographic transmission in New York.  
George V. Dowding produced a wireless synchroniser enabling broadcast plays to be seen and heard simultaneously.  
Radio-telephonic conversation held between Berlin and Sydney, N.S.W.
- 1929, June 5 ... Edison stamp issued commemorating golden jubilee of the introduction of electric light.  
American Senate inquired into radio-telephone and telegraph monopolies.  
Marconi made a Marquis of Italy.
- 1929, June 18 ... Experimental wireless transmission of weather maps via Daventry by the "Fultograph" process began.  
Conference of Comité Consultatif International des Communications Telegraphiques held in Berlin.  
Pictures of the "Derby" transmitted by television from the racecourse to the London-Scotland express train passing through Yorkshire.
- 1929, June 28 ... Telephone service opened between Isle of Man and mainland.
- 1929, July 1 ... Minimum installation rental applied to rural telephone subscribers' lines running within two miles of the exchange (instead of 1½ miles).  
Telegraph facilities afforded at Head Post Offices up to 9 p.m.

(To be continued.)

## GUILDFORD DISTRICT NOTES.

*Telephone Staff Meeting.*—The second of a series of staff meetings, which have been arranged in the Guildford Telephone District, took place at Haslemere at 6.30 p.m. on Oct. 20.

The District Manager, who presided over an attendance of 40, paid tribute to the interest displayed by the staff in attending the meeting in their own time, with the object of discussing telephone matters. He was supported by Mr. H. C. France, Traffic Superintendent, Mr. Hickman-Clarke, Sales Manager, Mr. Ingram, Head Postmaster, Haslemere, and Messrs. Davis and Seeley, of the Head Postmaster's staff.

Interesting papers were read by Mr. H. Marchant (Assistant Traffic Superintendent), entitled "Provision of Junction and Trunk Circuits," and by Miss Plowman (Assistant Supervisor, Cl. II, Farnham Exchange) entitled "Supervision in Telephone Exchanges from a Supervisor's point of view."

The following items were also discussed:—

Trunk calls, late announcement of "three minutes," &c.

Circulation matters.

Ineffective local calls over junctions to exchanges in the first fee area.—How recorded on ticket when calling subscriber asks for calls to be completed.

Timing of calls to half-minutes where special timing devices are not in use.

Mr. Ingram, Head Postmaster, Haslemere, at the conclusion of the discussion, stated that he had been very much impressed with the interest that had been taken in the various points raised, and expressed the view that the meetings were valuable.

The Haslemere staff provided excellent refreshments after the meeting, which were very much appreciated by all.

*Guildford Post Office and District Social and Athletic Club.*—The above club held a very enjoyable whist drive at Ayers Hall, Guildford, on Tuesday, Nov. 1. The Head Postmaster, Mr. Surplice, was present, also the District Manager and Mrs. Crombie. Mr. H. C. France, Traffic Superintendent, was unfortunately indisposed, and unable to be with us. Mrs. Surplice presented the prizes.

The ladies' first prize was won by Miss C. L. Wheeler, of the Guildford Telephone Exchange.

Mr. G. T. Edwards acted as M.C. About 100 were present.

The next drive is being held on Dec. 6, at the same rendezvous.

### What's in a Name?

(By the Sales Manager.)

"What's in a name? the S.M. said,  
As the Whitehead report he slowly read.  
If merit now too little known,  
More fully by this change is shown.  
If the Pioneers who never fail,  
To clear the road and blaze the trail,  
Who mid winter's gloom and summer's shine,  
Persuade the non-subscriber to sign.  
Who, whether the going be smooth or rough,  
Provide our Engineers with the stuff  
Who can cajole a Duchess at half-past ten,  
Take a line from a Sweep at twelve, and, then  
Detained by "removals" and "ceasings" till late,  
Sit down to complete his C.M.S.  
Then home returning, proudly say,  
"I've kept my average up to-day."  
If you show more surely this service Star,  
By changing his title to S.R.  
Well may the conquering corps exclaim,  
"It's results that count. 'What's in a name?'"

*Conference of Exchange Supervising Officers.*—An all-day conference of Exchange Supervising Officers was held at Guildford on Nov. 14. The District Manager, supported by Mr. France, Traffic Superintendent, presided over an attendance of 33. The following exchanges were represented: Aldershot, Alton, Basingstoke, Brookwood, Camberley, Farnham, Fleet, Frensham, Godalming, Guildford, Haslemere, Hindhead and Woking. Amongst those present were Mr. Surplice, Head Postmaster, Guildford; Mr. Sheen, Head

Postmaster, Basingstoke; Mr. Hickman Clarke, Sales Manager; and representatives from the Sectional Engineer's Office; Accounts and Sales Sections.

The District Manager, in opening the proceedings, extended a hearty welcome to the members attending the conference. He made special mention of the attendance of the two Head Postmasters at the conference and stated that their views on certain points to be discussed would be of considerable value.

The agenda included 30 items, and covered a wide range of subjects. The meeting was a very interesting and useful one.

## PARLIAMENTARY ITEMS.

ON Oct. 26 Sir E. Bennett, the Assistant Postmaster-General, in reply to a question by Mr. Denman, said that many steps had been taken to improve the financial position of the Telegraph Service, by the introduction and standardisation of teleprinter apparatus, by readjustment in the apportionment to telegraphs, of certain common service staff costs, and by a closer adjustment of staff to traffic. The loss had been reduced from £1,380,000 in 1927-28 to about £828,000 in 1932-33. Further economies were anticipated as soon as present schemes had been completed, and the recommendations suggested by Lord Bridgeman's Committee, which were on the lines that had already been adopted, would also be carefully examined, but the Postmaster-General could not hold out any prospect of making the service remunerative until there was a material increase in the traffic and revenue.

ON Nov. 3 Captain Ian Fraser asked the Postmaster-General if, in view of the recent demonstration by the Post Office at the National Radio Exhibition that practically all kinds of electrical interference with wireless reception could now be inexpensively prevented, he would take the first opportunity of securing power to enforce the reasonable use of interference-preventing apparatus.

Sir E. Bennett, Assistant Postmaster-General, said that the desirability of introducing such legislation would be considered in connexion with any amendment of the law which might be necessary as the result of the deliberations of the International Radio-telegraph Conference now in session at Madrid.

ON Nov. 14 Mr. Doran asked the Postmaster-General whether, in view of the necessity for economy in national expenditure, he was prepared to take steps to adopt the proposal made in the May Report, 1931, and reduce the present amount paid to the B.B.C. out of receipts from wireless licences.

Sir Kingsley Wood said that the position as between the Exchequer and the B.B.C. was duly reviewed at the time in the light of the recommendations of the Committee on National Expenditure. As shown in the Post Office Estimates, the B.B.C., in view of the national emergency, agreed to forgo by way of contribution to the Exchequer, in the present financial year, the sum of £150,000.

Mr. Doran, on the same date, also asked the Postmaster-General if he would state the estimated cost of a year's upkeep of the new Empire broadcasting station at Daventry; how many hours in the day it was likely to transmit; and what proportion of the upkeep was to come out of the present sums paid to the British Broadcasting Corporation.

Sir Kingsley Wood said he was not in a position to give an estimate of the cost of upkeep, the whole of which would, for the time being, be borne by the B.B.C. He understood from the Corporation that the new Empire service would begin with transmissions for about 70 hours a week.

J. J. T.

## C.T.O. EX-LADY SUPERINTENDENTS.

A VERY happy gathering was that which took place on Nov. 15 last, at the Sunday School Union offices, when the present Lady Supervisors of the C.T.O. entertained their retired colleagues to refreshments, for body and mind. Upon this the 11th annual meeting, Miss B. Luffman made her debut as chief entertainer in her capacity of Chief Supervisor, C.T.O., and a very happy and successful effort indeed was the welcome she gave to her old Chiefs of former years. Miss Blance, who retired in 1908, was not able to be present, but Miss S. S. Dowley, with 21 years of retired "service," proved to be the doyenne of those present, hale and hearty at that! The absence through indisposition of Miss Alma Hale, and Miss Jenny Watts with many other old colleagues was regretfully noticed. The musical and dramatic programme which followed, the latter provided by Misses Atterbury and Dawe, was much appreciated, while the community singing of Auld Lang Syne brought to a finish a "very delightful evening."

J. J. T.

# THE Telegraph and Telephone Journal.

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*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

### CIV.

#### MR. A. C. BELGRAVE.

MR. A. C. BELGRAVE entered the Post Office in October, 1908, as a second class clerk, Higher Division, after being educated at Cambridge. He became a first class clerk in July, 1919, and a Principal in April, 1920. Mr. Belgrave has had a varied experience of the manifold activities of the Post Office having been attached in turn to the Staff Branch, the Mails, the Telephones, the Inland Telegraphs, and the Telephones again. He is thorough, untiring and indefatigable in the performance of his duties, and at the same time is logical, clear-headed, consistent, independent in his judgment and has little liking for opportunism or short-range



expediency. He carries a big load without complaint or appeal for help. Mr. Belgrave is a keen cricketer, and is better known still in the lawn-tennis world, where for many consecutive years he took part in the Championships at Wimbledon, on one famous occasion putting up a very good fight against Borotra. He has won the Isle of Wight and other South Coast championships. He is a sportsman in the best sense of that term, for he not only plays with enthusiasm and skill himself, but feels, with a rare degree of sincerity, the sporting wish that the best man should win.

He has a keen sense of humour, takes the rough and the smooth things of life with equal cheerfulness and serenity, and indeed has a truly philosophic outlook upon the world.

# The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

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## NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

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## A RETROSPECT OF 1932.

DURING the calendar year 1932 the number of Post Office telephones showed a net increase of 66,300, which in the prevailing economic conditions is a sound testimonial to untiring effort and progressive method. Complete returns for December are not available at the time of writing, but it may be safely computed that the total number of telephones on the British Post Office system at the end of that month was 2,120,000. Deducting some 27,000 private lines and adding 40,000 non-Post Office telephones (Hull, Channel Islands, &c.) we obtain a total for the country of 2,133,000 exchange telephones at the end of the year 1932. During the year the number of exchanges working increased by 206 to 5,270, and the number of call offices by 2,200 to about 38,950.

The development of the automatic system proceeded apace. Sixty-seven automatic exchanges (serving about 63,300 lines) were opened during the year, and of these 15 were in London, serving 31,800 lines. These figures do not include 318 rural automatic exchanges opened during the same period. The principal provincial centres in which automatic conversions took place were Manchester (12 exchanges), Birmingham (15), Wolverhampton (5), Leeds (3), Edinburgh (3), and Sunderland (3).

The principal events in the inland trunk telephone service were the extensions of the system of Demand Working. The London area now enjoys demand working to Glasgow, Edinburgh, Aberdeen, Liverpool, Manchester, and Bristol, in addition to Birmingham. Leeds works on the demand system to London, Manchester, Birmingham, Liverpool, and Hull; Bristol to London

and Birmingham; Birmingham to London, Bristol, Manchester, Leeds, Liverpool, and Sheffield; and Sheffield to London and six provincial centres.

Turning to the overseas telephone service, we find many notable extensions, chief of which perhaps is the opening of a direct radio service with Canada (communication with which was formerly obtained indirectly via New York) and with Egypt and South Africa, also by direct radio link. Service was established during the past year with the Belgian Congo (via Brussels), with Bermuda and the Sandwich Islands (via New York) and with Venezuela (via Berlin). It is hoped to open a radio-telephone service to India early in the New Year.

Service to Greece, Bulgaria, and Russia was opened during the year, with the result that Turkey and Albania are now the only European countries not in telephonic communication with Great Britain. Subscribers in this country are now, in fact, able to speak to nearly 95% of the telephonic subscribers in the world.

The increase in the number of wireless receiving licenses in 1932 was 910,000, the total number now exceeding five and one-eighth millions.

A notable achievement of the past year has been the introduction of the public facility known as the "Telex" service. By this harnessing of telephones and teleprinters, exchange subscribers may communicate with each other by typescript or by the spoken word, as may suit particular occasions, and may confirm immediately in print what may have been agreed upon verbally. The potentialities of this service, as an aid to commerce, are manifest.

As regards the telegraph service, much progress has been made in extending the use of teleprinters, and in the reorganisation and re-equipment of the larger instrument rooms throughout the country, but traffic remains at a low level and only a revival of trade and industry can bring improvement in this respect.

## 1932 AND AFTER.

TELEPHONE statistics for 1931, as may be seen from an article which we publish in another column, are now sufficiently complete to enable us to ascertain the approximate total number of telephones in the world. For the first time on record this total shows a decrease—as near as we can estimate of 174,000. The only satisfactory feature of these disappointing returns is the increase shown by Europe of nearly 400,000 telephones—despite the unfortunate loss by Germany of 90,000—and the increase by Great Britain of 84,000, the largest actual net increase of any country for the year 1931.

Present indications are that 1932 will show a still more unfavourable picture. We know from published information that the United States had lost a further million and a half telephones up to September last, and this is a figure which no reasonably possible increase in Europe can counterbalance. Indeed, notwithstanding the gratifying increase in Great Britain of 66,000 to which we refer in the preceding article, a further heavy decrease in Germany

will render it unlikely that Europe as a whole will show any considerable balance on the right side, so that with a probable decline in the totals of Canada and Australia, it seems not unlikely that a decrease for the whole world of something in the neighbourhood of two million may be found to exist when the total figures for 1932 are available.

As regards 1933 the position is at present too obscure to justify any forecasts. Whilst we may look for continued steady expansion in this country, the hope of an improvement in economic conditions, which is ever present in all minds, will need to be supplemented by evidences of actual improvement before any predictions of increased world-telephone development can be hazarded. In the meantime every Administration is putting forth its utmost efforts to stimulate and consolidate the growth of its system.

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### HIC ET UBIQUE.

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WE wish all our readers a Happy and Prosperous New Year.

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We have to express our regrets to many of our contributors that their articles are still unpublished. We added four extra pages last month to provide space for some of the articles already in type, but there is still a considerable number of contributions on hand, the more interesting of which we shall publish in due course.

---

Public telephone communication between Southern and Northern Rhodesia (says the *Electrical Review*) has been established. The new extension enables calls to be made between Bulawayo and Livingstone and between Salisbury and Livingstone. It is preliminary to the extension of the telephone system to practically all parts of Northern Rhodesia, so that it may ultimately be in communication with the Union of South Africa. At present the line is being constructed to Beit Bridge, whence it will link up with the Union lines.

---

The French Administration has recently raised the telephone call fee in Paris from 37½ centimes to 50, at the same time abolishing the installation charge formerly levied.

*Le Relais* (organ of the literary society of the P.T.T.) remarks that to accord to new subscribers the advantage of installing the telephone gratuitously is inopportune in view of the budgetary crisis, the reduction of staff and the talk of reducing salaries. The staff who might have wished to introduce the telephone in their homes in order to "democratise" it, will have to dispense with it, even with the advantages of free installation. It complains of "lack of synchronisation" in the introduction of the new advantage. A movement to increase the popularity of the telephone ought to coincide with an increase of staff. Owing to reduced staff the new subscriber, instead of waiting 2 or 3 weeks for connexion, will have to wait 3 months.

---

The following is one of those useful stories which can be used to "improve the occasion" by either "wet" or "dry." The

former can argue that if decent drink were legally procurable, no occasion for the use of hateful "home-brew" would arise. The latter as usual could point to the universally demoralising effect of all "liquor."

A group of telephones in the city of Ellsworth, Kans., went out of service very suddenly, according to a story related in a recent issue of *The Voice* (quoted by *Telephony* of Chicago). Upon investigation, the trouble was traced to the underground cable which runs back of the county jail. Upon digging up the cable it was found that at least half a dozen holes had been eaten into a short length of cable.

The trouble was repaired and the telephones put back into service. An investigation was then started to ascertain the cause of the trouble. It was discovered that the mutilated cable was in the spot where the county officials dumped their confiscated booze and it was learned that several hundred gallons of "home brew" had been dumped there shortly before the telephones were reported out of service.

In view of the effect of the beverage upon the cable, it is said that Ellsworth citizens are wondering concerning the internal construction (or destruction) of some of their fellow townspeople.

---

The *Sunday Express* asks: Have you ever seen?

A public telephone outside the War Office with the receiver torn off its wire!

We have not, as we do not haunt Whitehall overmuch. We presume the question has some point. Is there an underlying suggestion of ferocious militancy on the part of the War Office people which renders them apt to tear off the receiver from the wire? And does the writer imply that this proclivity is laudable or blameworthy?

---

The following letter has been received from a Northumberland subscriber:

I should like to draw your attention and also congratulate you upon the promptness of fixing a telephone in my new business premises.

On the night of Wednesday, Nov. 16, at 5.45, I applied at the Hexham Post Office for a telephone. Imagine my surprise at 8.30 a.m. on Thursday, Nov. 17, to find the workmen already there fixing it up. Imagine still more my surprise when I was taking and giving orders at 1.30 p.m. on Thursday the 17th. Praise for such promptness deserves to be bestowed on all the staff that was responsible for installation. Wishing you all the success you deserve.

---

We cull the following from the *Daily Express* :—

Give the devil his due . . .

I have often expressed my belief that the telephone service is controlled by a whole host of malignant devils.

Now a colleague of mine, on the reporting staff, tells me of an experience which suggests that the service is sometimes on the side of the angels—and the Established angels at that!

Stories had appeared in the London evening papers describing an attack on bad preaching made by "Dr. Talbot, Dean of Rochester."

My colleague was instructed to get in touch with the dean, to discover when he was preaching next—for obvious journalistic reasons.

Crockford's supplied the telephone number, "Chatham 2421." It was given over the telephone as a toll call. There was a short pause. The voice of the operator came through.

"Do you want Dr. Talbot or the Dean of Rochester?" she asked.

"Aren't they the same person?"

"Oh, no," said the operator, in tones of outraged ecclesiastical propriety. "Dr. Talbot has retired. Dr. Underhill is now the Dean of Rochester."

"Dr. Underhill's number is 'Chatham 2445,' and Dr. Talbot is living in Bath. His number is 'Bath 2890.'"

A quick check showed that the operator was correct. It was the London evening newspapers that were wrong. Furthermore, it was found out later that it was Dr. Underhill, not Dr. Talbot, who had delivered the attack on sermons.

Newspaper men generally agree that this is one up to the Post Office.

## POWER AND LIGHTING IN POST OFFICE DEPARTMENTS.\*

BY H. C. GUNTON, M.I.E.E., M.INST.T., *Principal Power Engineer.*

### Introduction.

In this paper it is proposed to deal with the character and extent of the work which has been carried out during the last 20-25 years by the Power Section of the Engineer-in-Chief's Office and which has been of a general service character designed to meet the requirements of every Department of the Post Office. This work has been performed by a group of engineers whose education and training have fitted them for its execution, and, as will probably be realised, the name of the Section is insufficient to indicate the wide field of its operations, which includes electric and pneumatic power, transportation, mechanical aids, heating, ventilation, lighting and other miscellaneous services. During the period named developments, both outside and inside the Department, have been extensive and some indication will be given of the co-operation which has been effected with outside organisations and the degree of conformity with their general policy.

The general character of the work of the Power Section at Headquarters corresponds closely with that done in a consulting engineer's office in that the engineers prepare the specifications, superintend the preparation of the drawings, take a large part in the adjudication of tenders, deal with contractors' drawings and proposals, in many cases witness tests at contractors' works, and, in addition, maintain touch with the work during its installation and maintenance, although these last stages are, of course, under the direct supervision of the Superintending Engineers. In short, their work is that of the business engineer as distinct from the purely technical expert. There is one important aspect of their work which differentiates it from most of the other engineering work of the Department, and that is that considerations of safety of human beings are involved in the design of the installations and the rules and instructions got out for their maintenance. If a telegraph or telephone service fails inconvenience is usually the worst direct result; if power plant or services are improperly installed or maintained someone may be killed.

Before proceeding to describe the methods employed it will be well to mention some general considerations which have to be taken into account and which include economic, technical, physiological and psychological factors which are not always easy to reconcile.

For instance, the principles underlying satisfactory illumination are gradually becoming understood, thanks very largely to the work which is being done by such bodies as the National Physical Laboratory, the British Standards Institution, the National Illumination Committee of Great Britain, the Illuminating Engineering Society and the Lighting Service Bureau of the Electric Lamp Manufacturers' Association. By satisfactory illumination is meant the provision of a well-diffused light of sufficient intensity on the working plane and arranged to give a general sense of cheerfulness with absence of harsh shadows or of glare either from the sources of light or the work illuminated. These results have to be obtained with an eye to the cost involved, which in the past has too often meant at the cost of the eye. But when all this has been done it is not easy to obtain evidence and form conclusions as regards presence or absence of eyestrain, for industrial staffs only make use of artificial light for a limited number of hours and in their leisure time the harm done by reading small print in bad light or by staring at "pictures" and their "captions" may be determining factors.

In cases of heating, the optimum condition is to a much greater extent a matter of universal agreement, but in planning the heating of sorting offices, the fact that large numbers of sorters come on duty together and work at close quarters, and, in the case of postmen, after active duty outside, has to be taken into account as the heat of their bodies is an appreciable contribution to the total heat required during the spell of work inside.

Ventilation, on the other hand, remains in a considerable state of flux, for not only has recent research resulted in a modification of view as to the requirements, movement of air being considered to be as important as the actual purity, but the nature of the Department's plant installed calls for special treatment to obtain the best conditions for the maintenance of the plant and the welfare of those who operate it. Opinions have always differed as to the opening and shutting of windows according to the individuals concerned and their state of health, and there is no doubt that a mechanical system of ventilation can not only be made to give optimum conditions from the medical standpoint but also a general sense of confidence to the staff. One occasion is recalled when an expression of appreciation of the improved conditions was received before the cased-in fan which formed an integral part of the mechanical installation had made a single revolution!

A mechanical aid, in order to be adopted, has to run the gauntlet in several respects. It has to be fitted in buildings which, in most cases, were not designed to assimilate it, and its arrangement and performance must interfere as little as possible with the general amenities, i.e., interference with light and introduction of draughts must be avoided and noise must be reduced to a minimum, especially if it is a "new" noise. For instance, the subdued hum of a conveyor band is apt to be criticised in the telegraph

instrument room, in which the click of the telegraph instruments is normal and predominant; while the clatter of a stamp-cancelling machine in a sorting office is considered objectionable in comparison with the sound of a conveyor. In this connexion a report recently issued by the Industrial Health Research Board—"Two Studies in the Psychological Effects of Noise"—is of interest and, on the whole, reassuring. The mechanical aid, as a rule, is only authorised if it can be shown that after taking into account capital charges, maintenance and running costs, it will effect a saving either by a reduction of staff or by avoiding the necessity for an increase in staff or an extended or new building. On the other hand, the device must be reasonably congenial to the staff or it is looked upon as a hindrance rather than an aid. Finally, when it is considered that mail matter, whether in the form of individual items or bags, is by no means homogeneous, it will be realised that the engineers' task in designing devices suitable for use in sorting offices is by no means an easy one.

### Electricity Supply.

In 1909 the Department possessed its own independent generating stations in London at G.P.O. East, G.P.O. South, Mount Pleasant, and Savings Bank, and in the Provinces at Birmingham, Cardiff, Glasgow, Leeds, Liverpool, Manchester and Nottingham, while an extra high tension generating station, with the design of which the late Mr. Martin Roberts and Mr. J. M. G. Trezise were associated, was approaching completion at Blackfriars.

In 1910, when King Edward Building was opened, the E.H.T. supply was inaugurated three sub-stations having been provided at King Edward Building, G.P.O. West and G.P.O. South, a fourth sub-station being added at Mount Pleasant in 1922.

Attention was next turned to the shutting down of the independent generating stations at the other centres enumerated above and which, although necessary up to that time, were anything but ideal as regards the effect on the amenities of the postal buildings which they served.

The peculiarly favourable character of the Post Office load and its incidence have enabled the Department to obtain very favourable terms which in certain cases have been facilitated by the use of storage batteries to cut off the peaks of the load.

Finally, the Blackfriars extra high tension power station was closed down in 1926, but this was only after it had had a useful life of some 16 years and after the fall in price per unit offered by the supply companies had fully justified it and enabled the Department to conform with the general policy of the Electricity Commissioners.

Although the steam generating plant has been dispensed with, considerable installations in connexion with the supply of power remain for machinery has still to be provided in order to convert the power taken from outside to the forms suitable for the Department's use. In all cases switchgear on a considerable scale is still required for the various services.

It may be of interest to explain the arrangements which have been made in the case of London and in connexion with which most careful attention had, of course, to be given to reliability.

The supply is obtained alternatively from the City of London Electric Lighting and Charing Cross Supply Companies. In a sub-station adjoining the post office sub-station in King Edward Buildings an 11,000-volt three-phase 50-period supply is brought in by each company and transformed down to 6,600 volts, at which pressure the duplicate busbars of the post office sub-stations are energised. The supply companies' sub-station is equipped with two sets of three-phase transformers, each of 3,000 K.V.A. capacity, and arrangements were made for changing over from one company to the other and also for taking the supply from each during alternate months in order to equalise the consumption.

The Departmental sub-stations, which form part of the original power supply system and are, of course, retained, contain in the case of the G.P.O. South and K.E.B. static transformer equipment and, in the case of G.P.O. West and Mount Pleasant, motor converter and rotary converter equipments in combination with storage batteries. Arrangements were also retained to enable the more important services, such as lighting and conveyors, to be maintained during short periods of interruption of supply, either direct from the batteries or by employing the converting plant electrically reversed and driven from the batteries so as to maintain E.H.T. pressure on the busbars of all four sub-stations. Synchronisation is effected when the main supply is again available. This automatic provision has on many occasions maintained the more important supplies when the extra high tension power has been interrupted. Owing, however, to the increase in the demand and with a view to cutting down the time required to change over the supply from one company to the other when a failure occurs a modification is being introduced under which the whole load will be equally divided continuously between the two companies, and switching over from one company to the other will be done automatically or by remote control from the G.P.O. West sub-station; the batteries will still be used, but the necessity for reversing the motor converters and again effecting synchronisation will cease.

The loads supplied from the sub-station include electrically driven pumps for the London Pneumatic Tube Service, large installations of conveying plant in connexion with the sorting offices, the power supply for the trunk and other telephone exchanges and also for the Central Telegraph Office, the lighting of the main post office buildings and minor services. In addition extra high tension power at 6,600 volts is transmitted along the tunnels of the Post Office (London) Railway to three rotary converter railway

\* Paper read before the Telephone and Telegraph Society of London.

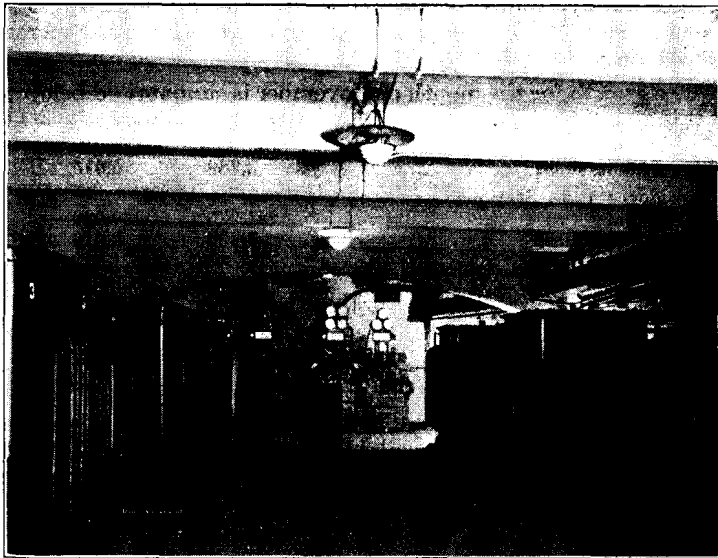
sub-stations and to a sub-station which supplies the power and lighting services at the West Central District Office. When the additional buildings at present being completed at Mount Pleasant are served it is anticipated that the full load taken from the supply authorities will reach 3,000 kw. and that the annual consumption will amount to 14,000,000 units. This does not include the Carter Lane and Faraday Buildings, at which a further 1,000 kw. load will be absorbed.

The cost of the bulk supply at present, after conversion (which allows for capital, operating and maintenance charges and losses in conversion) is about 1d. per unit both for power and lighting. The price per E.H.T. unit paid to the supply companies is about 0.532d. In several large provincial centres comparable prices are paid. At Leeds we only pay between 0.5d. and 0.6d. per L.T. unit.

Quite extensive power sub-stations have also been provided in connexion with the supply to the large automatic telephone exchanges which have recently and are at present being built in various parts of London and in the provinces.

Owing to the spread of alternating current supply rectifiers are used where it is desired to maintain a direct current service. Precautions are embodied to guard against interference with telephone or wireless transmission.

We have now reached a stage where our power supplies are taken through the medium of the most up-to-date switchgear, and transforming and converting plant, from extensive power undertakings in a way which leaves very little to be desired from the point of view of reliability.



BULK ELECTRICITY SUPPLY. KING EDWARD BUILDING SUB-STATION.

*Illumination and Seeing.*

In order to indicate progress under this heading it will be well to go back as far as 1910, at about which time authority was received to adopt new standards of illumination involving measurements by lumeter in candle feet on the working plane in place of standards involving a number of candles per square foot. The adoption of this method combined with the setting up of suitable standards corresponding to the different classes of work gradually led to a large measure of satisfaction and freedom from complaint whilst cases of unreasonable complaint could be promptly and effectively dealt with.

The different stages in the development of more satisfactory illumination during the last 20 years are matters of common knowledge. The gas-filled lamp has largely replaced the vacuum lamp and the tungsten filament the carbon filament, and there is now a long range of efficient incandescent lamps from which to select in order to design installations ranging from, say, individual 25-watt lamps up to units which originally took the form of arc lamps.

Distinct steps in the evolution of satisfactory fittings are represented by the semi-opaque bell-shaped reflectors for single units and by semi-indirect bowls, and finally by enclosed diffusing fittings in the case of larger units, and there is now no difficulty in providing uniform, practically shadowless, illumination combined with absence of glare.

The present practice of the Department as regards the amount of illumination which it is usual to provide has been based on many investigations, both inside the Department and in collaboration with representative bodies such as the Committees of the Department of Industrial Research and the National Physical Laboratory.

For clerical work (including sorting and telegraph rooms) an average illumination of 3 foot candles for ordinary and 4 foot candles for fine work has been provided. An increase in the figure to 4 foot candles for ordinary work and to 5 foot candles for fine work is under consideration and, in connexion with the Brighter Post Office Scheme, an average illumination of 6 foot candles

has been employed experimentally. It is coming to be recognised that much remains to be done apart from providing sufficient illumination, in presenting the object which is illuminated in such a way as to facilitate what we may call its comfortable visibility, and this opens up a very big field, including not only size and clearness of type but also suitable colour contrasts between an object and its background.

The following is an extract from a resolution adopted at the recent International Illumination Congress at Cambridge:—

- (a) It is suggested that efforts should continue to be made to determine the illumination required not only to ensure efficient performance of the work, but to ensure that the workers, including those of sub-normal vision, should be protected against eyestrain, nervous strain and other ill effects.
- (b) Inasmuch as physiology and psychology enter so largely into the attainment of satisfactory working conditions, every effort should be made to obtain the aid and collaboration of the medical profession, including Public Health Departments.
- (c) Having regard to the fact that the degree of illumination required depends so largely on the characteristics of the work, no opportunity should be lost to impress upon education and commercial authorities the importance of presenting the work to the worker under the most favourable conditions for visibility.
- (d) The importance of ensuring satisfactory illumination in all places where the eye is employed, in factory, office, school and home, and places of worship or entertainment, and in transport vehicles, should be emphasised in all propaganda, since there is a large measure of interdependence between these conditions.

The *Times* newspaper has recently revised its type with a view to "easy reading" and the following extracts from an article which deals with this matter are very informative:—

"It does not follow that the very highest perceptibility is, of itself, enough to determine the choice of fount, for there is required, in addition, a correctness of space distribution between the letters constituting groups called words. It is in this grouping that the riddle of legibility lies, for words seem to have a nature of their own distinct from the nature of the letters. Hence it would be possible to employ a fount of type in which the high perceptibility of the constituent letters would be lost in an illegibility of the words they constitute; the words would not 'look right.' The choice of a type face should, therefore, depend upon the letters possessing high perceptibility in themselves, together with a high legibility in the word-groups. Nothing can be more important than legibility, yet, notwithstanding all the work which has been done towards its investigation, vagueness and hesitation mark the reports of medical, physiological and typographical authorities. In recent years the Treasury, at the instance of His Majesty's Stationery Office, appointed a committee to select the best faces of type for Government printing, and a committee of the Medical Research Council was later appointed at the same instance to organise and direct research into the subject of legibility. The Medical Research Council committee's 'Report on the Legibility of Print, 1926' indicated that the ideal type should be simple, fairly broad, with fair thick and some, but not too much, contrast between the thick and thins.

Every endeavour has been made to render 'The Times New Roman' obedient to the canons of the Medical Research Council and to the recommendations of the distinguished ophthalmic authority to whom interim proofs were submitted for testing."

Added importance is attached to perceptibility having regard to the reduction of eye-strain during hours of daylight.

The foregoing remarks and quotations are intended to draw attention to the importance of this new attitude involving the combined consideration of illumination with vision, a subject which calls for collaboration between the illuminating engineer, physiologist, psychologist and, in any matters connected with the actual installations with the architect. The whole subject is dealt with very fully in a book entitled "Seeing, a Partnership of Lighting and Vision," by Luckiesh & Moss.

In this connexion the author is happy to be able to refer to the recent addition of the C.M.O. to the membership of the National Illumination Committee of Great Britain.

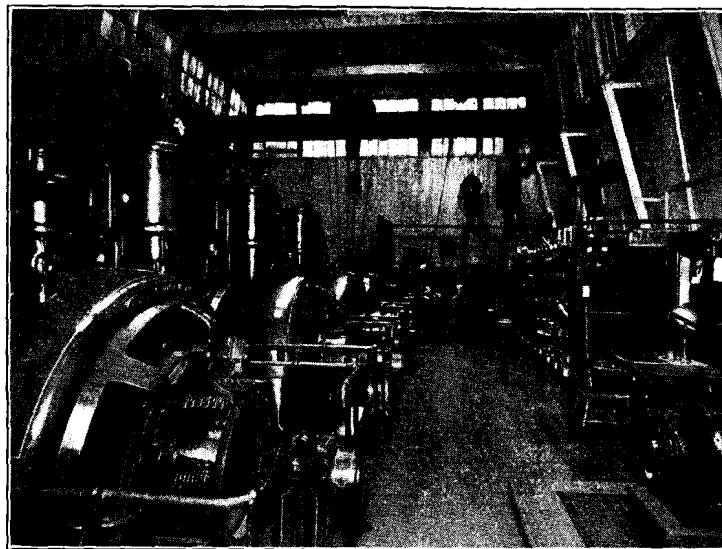
It may be of interest to record the developments that have occurred in connexion with control of the electric lights in telephone kiosks.

When these kiosks were first introduced the lighting was controlled by time switches which had to be re-wound and set by hand every 14 days. A year or so later (1925) electrically wound time switches fitted with automatic adjustment on a solar basis became available. Occasional regulation is all that is required: some 6,000 are in use.

A further development occurred when synchronous self-starting motor-driven time switches were introduced; these have now been adopted in all cases where the electric supply is A.C. 50 periods and is controlled for timekeeping at the power station. These switches possess great advantages from a maintenance point of view as, except in the event of a failure of supply, when they require re-setting, no attention whatever is necessary. The solar basis is retained.

A new development, involving remote control of the lighting from the exchange by means of two-frequency impulses sent over the telephone lines

with selective relays fitted in the kiosks, is now about to be tried on a practical scale. Under this scheme an automatic signal will be given to the exchange showing whether the lamp in the kiosk has lighted up, thus avoiding the delay that at present occurs in reporting failures of lamps.



G.P.O. WEST PNEUMATIC ENGINE ROOM (1932).

#### *Pneumatic Power.*

It will not be necessary to deal at any length with the original features of the pneumatic system which has been in existence for about 60 years and with which Mr. H. R. Kempe was so closely associated.

It will be recollected that from 1871 to 1910 there was an installation consisting of beam engine pumps which provided the pressure and vacuum for the pneumatic service, which included street tubes up to 3 in. internal diameter for connecting the Central Telegraph Office with branch offices, or with newspaper offices and telegraph companies, and through house tubes up to 2½ in. internal diameter for distribution purposes within the buildings. It was really a species of vandalism to remove these engines, which had by no means reached the limits of their useful life but which had to give way to modern electrically driven pumping sets which were installed in order to accommodate more power in the same space and to work at greater efficiency.

An important development of the London pneumatic tube system has been effected by means of a sub-centre in Whitehall. The principal new features and advantages incorporated in this scheme are as follows:—

- (1) The connexion of several outlying offices by short street tubes worked in conjunction with trunk tubes between the sub-centre and C.T.O. at an accelerated rate by means of pumping plant at the sub-centre.
- (2) The replacement of hand-operated terminal rotary valves by flap valves in the case of those tubes which deliver into the Instrument Room.
- (3) The use of electrically operated rotary switches grouped in a switch room independent of the Instrument room and by means of which the carriers are automatically transferred from the street tube power plant represented by three motor compressors of the horizontal reciprocating type to a house tube power plant represented by four electrically-driven centrifugal blowers. For sending from the Whitehall centre the process is reversed, the carrier being drawn by vacuum from the flap terminal to the switch, which rotates and delivers the carrier to the street tube, whence it is discharged at the distant office through a flap terminal.
- (4) The substitution of space interval for time interval signalling by means of differential indicators placed at definite distances from the despatching points and which depend for their operation on the slight difference in pressure on the two sides of the carrier in transit.

A full description of this installation is given in an article by Mr. J. E. McGregor in the *Post Office Electrical Engineers' Journal*—April, 1926.

The most useful features of this installation are being incorporated in the rearrangement of the pneumatic services at the Central Telegraph Office while corresponding provision is also being made in the rearrangement of the larger Provincial Telegraph Instrument Rooms.

The capacity of the 3-in. main tubes will be brought up to 55 telegram forms per carrier at an interval of about 10 seconds which will give a capacity of approximately 20,000 messages per hour.

As regards the house tubes, economy amounting to about £3,000 per annum has been effected by working these from rotary blowers.

In the trunk telephone exchange at G.P.O. South, improvements in the pneumatic ticket distributing system have recently been effected.

The ticket tube system hitherto in use by the department at the G.P.O. South is a foreign system. Owing to the introduction of demand working these tubes are being installed at a large number of offices and several improvements have recently been made both to the shape of the ticket used and the method of air supply, which have resulted in a great increase of reliability. In this foreign system valves embodying air locks are necessary while the ejection of the ticket requires motor or manual operation. A new system in which the ejection of the tickets is entirely automatic is being developed which it is hoped will make the Department entirely independent of the foreign patents at present involved. This system makes use of a terminal having a door balanced both as regards air pressure and gravity and which opens under the simple impact of the ticket. Mr. J. E. McGregor has been responsible for this improvement, and a full description is given in his article in the *Post Office Electrical Engineers' Journal*—July, 1932.

(To be continued.)

## PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at Nov. 30, 1932, was 2,112,865, representing a net increase of 8,844 on the total at the end of the previous month.

The growth for the month of November is summarised below:—

Telephone Stations—	London.	Provinces.
Total at Nov. 30, 1932	788,955	1,323,910
Net increase	3,769	5,075
Residence Rate Stations—		
Total	251,975	330,980
Net increase	1,435	2,019
Call Office Stations (including Kiosks)		
Total	8,692	30,065
Net increase	33	141
Kiosks—		
Total	3,394	10,913
Net increase	24	145

The total number of inland trunk calls dealt with in September, 1932 (the latest statistics available) was 10,918,948, representing an increase of 323,191, or 3.05% over the total for the corresponding month of the previous year.

International calls in September numbered 98,592 as compared with 112,427 in September, 1931.

Further progress was made during the month of November with the development of the local exchange system. New Exchanges opened included the following:—

LONDON—Regent, Mayfair (automatic conversions);  
Wordsworth (Kenton) (automatic);

PROVINCES—Burnham (manual); Halesowen (Birmingham) (automatic conversion); Springfield (Birmingham) (automatic); and the following rural automatic exchanges: Abbots Ripton (Huntingdon), Axbridge (Cheddar), Headley (Leatherhead), Hampole (South Elmsall), Herongate (Brentwood), Heath Hayes (Cannock), High Green (Sheffield), Ervie (Stranraer), Letham (Ladybank), Lapford (Crediton), Llanboidy (Carmarthen), North Petherwin (Launceston), Peldon (Colchester), Pickmere (Northwich), Ramsey (Essex) (Colchester), Stoneyford (Lisburn), West Wittering (Chichester).

Among the more important manual exchanges extended were:—

LONDON—Hoddesdon.  
PROVINCES—Chesham, Falkirk.

During the month the following addition to the main underground system were completed and brought into use:—

Wareham—Weymouth—Dorchester:

while 74 new overhead trunk circuits were completed, and 86 additional circuits were provided by means of spare wires in underground cables.



## THE TELEPHONE DEVELOPMENT OF THE WORLD IN 1931.

By W. H. GUNSTON.

The year 1931 was the first in which the telephone development received a set-back, the total number of stations receding from 35,343,000 in 1930 to approximately 35,169,000, a loss of about 174,000 stations. The earliest returns received showing a loss of half a million telephones in the United States and 90,000 in Germany, foreshadowed a much heavier total decline, but the fairly steady progress made in most European countries has reduced the loss to the figure above mentioned. Statistics have not yet been received from Japan, and in the present economic position of the world no allowance has been made in the estimated total for an increase in that Empire.

The total is distributed as follows:—

	1930. Telephones in thousands.	1931. Telephones in thousands.
Europe ... ..	10,532	10,926
Asia ... ..	1,413	1,408
Africa ... ..	238	244.5
North America ... ..	21,836	21,281
South America ... ..	620	633
Australasia, &c. ... ..	704	676.5
	<u>35,343</u>	<u>35,169</u>

It will be seen that despite unfavourable economic conditions, Europe added about 394,000 telephones to its total in 1931. North America, on the other hand, lost 555,000 stations. The development of South America has been gauged by allowing for a conservative estimate of increase on last year's figures.

The following table shows the number of telephones per hundred inhabitants in all countries with upwards of 100,000 inhabitants in 1931 and a density of at least 2:—

U.S.A. ... ..	15.8	Germany ... ..	4.9
Canada ... ..	13.2	Great Britain ... ..	4.4
New Zealand ... ..	10.5	Netherlands ... ..	4.0
Denmark ... ..	10.0	Belgium ... ..	3.6
Sweden ... ..	9.2	Finland ... ..	3.6
Switzerland ... ..	8.0	Austria ... ..	3.5
Australia ... ..	7.5	France ... ..	2.9
Norway ... ..	6.8	Argentina ... ..	2.7

The latest available figures for those countries possessing upwards of a million telephones are:—

	Telephones.	Per 100 Inhabitants.
United States (Sept. 1932)—		
Bell Co. ... ..	14,020,000	
All others (est.) ... ..	4,100,000	14.6
Germany (Sept. 1932) ... ..	3,027,759	4.8
Great Britain (Sept. 1932) ... ..	2,109,500	4.6
France (March 1932) ... ..	1,234,078	3.0
Canada (1931) ... ..	1,364,200	13.2
Japanese Empire (1930) ... ..	1,073,690	—

### EUROPE.

The total number of telephones in Europe was 10,926,000, or, with an allowance for the number in Russia and Turkey in Asia (not precisely ascertainable), about 10,900,000. This gives an average of 2 per 100 inhabitants. The increase of 394,000 over last year is largely due to the increase in Great Britain of 84,098 stations (4.2%), in France of 75,319 (6.6%), in Russia of about 70,000 (18%) in Italy of about 60,000 (13%) in Spain of 29,889 (13%), in Poland of 27,178 (13%), in Switzerland of 26,158 (8%) and in Sweden of 24,213 (4%). Russia had an increase in the 14 months October 1930 to December 1931 of 84,931: Italy showed an increase of 31,538 stations for the six months to June 30; 60,000

has been estimated as the increase for the year. The figure for Norway also applies to June 30. Perhaps 194,000 would better represent the total in that country at Dec. 31.

The total for Great Britain comprises:—

	Telephones.
Post Office system ... ..	2,012,113
Hull Corporation ... ..	17,347
Guernsey ... ..	4,551
Jersey ... ..	3,793
Railway and other telephones having communication with the exchange system ... ..	14,828
	<u>2,052,632</u>

### I.—EUROPE.

	Population (thousands).	Dec. 31, 1930.	Dec. 31, 1931.	Telephones per 100 inhabitants.
Albania ... ..	1,003	?	1,109	1.1
Austria ... ..	6,750	233,912	239,178	3.5
Belgium ... ..	8,129	289,720	295,517	3.6
Bulgaria ... ..	6,067	17,532	18,966	0.3
Czecho Slovakia ... ..	14,276	162,477	165,709	1.1
Danzig ... ..	407	19,987	19,921	4.9
Denmark ... ..	3,571	348,513	356,932	10.0
Estonia ... ..	1,120	17,068	17,583	1.6
Finland ... ..	3,658	127,000	132,671	3.6
France ... ..	41,834	1,153,560	1,228,879	2.9
Germany ... ..	64,776	3,248,854	3,157,657	4.9
Gt. Britain ... ..	46,189	1,968,534	2,052,632	4.4
Greece ... ..	6,205	13,000	13,000*	2.0
Hungary ... ..	8,734	120,280	122,178	1.4
Iceland ... ..	94	5,145	5,200*	5.4
Irish Free State ... ..	2,975	29,864	30,342	1.0
Italy ... ..	41,400	408,854	470,000*	1.1
Latvia ... ..	1,900	49,532	52,509	2.7
Lithuania ... ..	2,393	14,480	15,499	0.7
Luxemburg ... ..	300	12,364	13,033	4.3
Netherlands ... ..	8,061	303,694	322,843	4.0
Norway ... ..	2,800	191,000	192,309	6.8
Poland ... ..	32,120	199,379	226,557	0.7
Portugal ... ..	6,655	37,000	42,699	0.7
Roumania ... ..	18,000	59,279	50,050	0.3
Russia ... ..	162,143†	378,000(Oct.)	462,931	0.28
Serbs, Croats, & Slovenes	13,931	39,492	40,000*	0.3
Spain ... ..	23,907	222,241	252,130	1.05
Sweden ... ..	6,162	536,392	560,605	9.2
Switzerland ... ..	4,067	297,930	324,088	8.0
Saar-Territory ... ..	805	23,506	24,352	3.0
Turkey ... ..	13,660†	?	18,342	—
Approximate Total ... ..		<u>10,532,000</u>	<u>10,926,000</u>	<u>2</u>

† Apply to Russia and Turkey both in Europe and Asia.

\* Estimated.

### II.—ASIA.

	Telephones.
Ceylon ... ..	8,454
China ... ..	153,000
French Indo China ... ..	7,865*
Federated Malay States ... ..	7,111
India ... ..	54,500
Iraq ... ..	1,657
Johore and Kedah ... ..	891
Japan ... ..	991,407*
Chosen ... ..	42,241*
Taiwan ... ..	15,407*
Quantung ... ..	19,584*
Saghalien ... ..	5,051*
Netherlands Indies ... ..	50,354
Palestine ... ..	4,615
Persia ... ..	6,000
Phillippine Islands ... ..	26,017
Siam ... ..	3,469
Straits Settlements—	
Penang ... ..	2,654
Malacca ... ..	—
Singapore ... ..	7,232
	<u>1,408,000</u>

\* These figures refer to 1930.

No statistics for 1931 have yet been received from Japan, and no increase is allowed for. It is obvious that a moderate increase from Japan would raise the total for Asia above that of last year (1,413,000 telephones).

## III.—AFRICA.

	Telephones.
Angola ... ..	1,000*
Algeria ... ..	42,000*
Belgian Congo ... ..	1,410
Egypt ... ..	43,229
Gold Coast ... ..	1,162
Kenya and Uganda ... ..	3,457
Mauritius ... ..	819
Madagascar ... ..	2,180
Morocco ... ..	12,563
Nigeria ... ..	2,399
S. Rhodesia ... ..	4,337
South Africa, Union of ... ..	108,814
S.W. Africa ... ..	1,685
Soudan ... ..	1,500*
Tunis ... ..	13,099
Tanganyika ... ..	962
Tripoli and Cyrenaica ... ..	700
Estimated for Erythrea, Ethiopia, Dahomey, Dar-es-Salaam, Nyasaland, Camerun, &c.	3,000
	<u>244,500</u>

\* Estimated on last year's figures.

The total for Africa shows an increase of 6,500 over 1930.

## IV.—NORTH AMERICA.

	Population (thousands).	Telephones.	Telephones per 100 inhabitants.
United States (20,201,000) ...	124,200	19,690,000	15.8
Canada (1,402,860) ... ..	10,468	1,364,200	13.2
Mexico (92,059) ... ..	16,300	92,000	0.55
West Indies—			
Cuba (68,476) ... ..	3,700	68,500	2.0
Porto Rica (12,378) ... ..	1,300	12,000	0.9
Haiti ... ..	—	2,300	—
Dominican Republic ... ..	—	2,000	—
Jamaica (2,209) ... ..	—	2,499	—
Trinidad (3,748) ... ..	—	3,840	—
Bahamas ... ..	—	1,229	—
Barbados ... ..	—	1,968	—
Grenada ... ..	—	790	—
Bermuda ... ..	—	2,110	—
Dutch and French West Indies ... ..	—	2,000	—
Central America ... ..	—	25,000	—
Newfoundland ... ..	—	8,500	—
Other places ... ..	—	2,500	—
Total ... ..	<u>21,281,000</u>	<u>12.6</u>	

The figures in brackets refer to last year (1930). The number of telephones in North America declined by over half a million in 1931. The statistics for Mexico, Cuba, &c., and Central America are based on last year's figures. No increase has been allowed for in view of present economic conditions.

United States of America.—The total is made up as follows:—

	Telephones.
"Bell" Company (A. T. & T. Co.) ...	15,390,000
Independent Co.'s connecting with the "Bell" system ... ..	4,206,000
Independent ... ..	94,000
	<u>19,690,000</u>

This represents a decrease of 511,000 on 1930.

Canada.—The total is comprised of:—

Ontario ... ..	621,528
Quebec ... ..	300,502
British Columbia ... ..	128,646
Albert ... ..	70,427
Manitoba ... ..	73,399
Saskatchewan ... ..	82,875
Nova Scotia ... ..	46,932
New Brunswick... ..	33,950
Prince Edward I. ... ..	5,806

A decrease of 38,660.

## V.—SOUTH AMERICA.

	Telephones.
Argentina (303,000) ... ..	310,000
Bolivia (2,333) ... ..	2,000
Brazil (162,674) ... ..	170,000
Chile (46,687) ... ..	47,500
Colombia (29,388) ... ..	30,000
Equador (4,200) ... ..	4,000
Peru (13,745) ... ..	14,000
Uruguay (29,356) ... ..	30,000
Venezuela (21,522) ... ..	22,500
Other places ... ..	3,000
	<u>633,000</u>

The figures in brackets are those for 1931. A moderate increase has been estimated for in the more progressive states.

## VI.—AUSTRALASIA.

	Population.	Telephones.
Australia (512,238) ... ..	6,525	487,850
New Zealand (161,739) ... ..	1,524	160,779
New Caledonia ... ..	—	820
Fiji ... ..	—	954
Hawaii ... ..	—	26,000
Total (including other places) ... ..		<u>676,500</u>

There was a decrease during 1931 in Australia of 24,588 stations and in New Zealand of 1,040. The total for Australia is made up of:—

	Telephones.
New South Wales ... ..	182,734
Victoria ... ..	152,211
Queensland ... ..	62,177
South Australia ... ..	49,276
Western Australia ... ..	27,348
Tasmania ... ..	14,104

In view of the references to estimates and allowances occurring in the foregoing paragraphs, it may be well to add that of the grand total number of telephones in the world in 1931, given as 35,185,000, roughly 31,920,000 were obtained from official or other reliable returns for that year, and as the remaining 3,265,000 are estimates mainly based on official figures for 1930, no great margin of error can arise.

## NORWICH DISTRICT NOTES.

To everyone a somewhat belated Happy and Prosperous New Year!

*Staff Change.*—This month we have to congratulate Miss E. C. Chappel, Clerical Officer, on her appointment to an allowance post at Guildford. Miss Chappel, who takes up her duties on Jan. 1, came to Norwich from Glasgow, and during her stay with us has become a very popular member of the staff.

*Social.*—The whist drive and dance held at the Regent Ballroom on Dec. 7 provided a most enjoyable evening for those who attended. We were again honoured by the presence of the Head Postmaster of Norwich (Mr. A. T. Redfern) and Mrs. Redfern, both of whom thoroughly entered into the spirit of the evening.

The Committee feel that more support might be forthcoming at these jolly monthly diversions, and hope that many members of the staff who have not turned up to past events will have made a New Year's Resolution to do so in 1933.

*Don't Tell a Soul!*—The ladies' hockey team have won a match. Playing an away match against the Norwich Y.W.C.A. on Dec. 3, on a pitch which is regarded as the moles' happy hunting ground, the Post Office team won by the only goal; this was scored by Miss R. B. Frost.

*Overhead in the Street.*—Cars are like telephones. Once you get used to them they are indispensable.

J. T. B.

POST OFFICE TELEPRINTER SERVICES.

TARIFF CIRCUITS—(Continued from page 60).

BY A. P. OGILVIE (Headquarters Traffic Section).

WHILE Telex Service is, perhaps, more spectacular, the collateral development of Teleprinter private point-to-point services and networks is not less remarkable. Less than a year ago a representative Committee under the chairmanship of Mr. Simon, Director of Telegraphs and Telephones, reported, after exhaustive enquiry, on the conditions governing the renting of private telegraph and telephone circuits. The report aptly commences with the following comment: "The present scheme of tariffs, with its distinctions between 'telegraph' and 'telephone' and between 'overhead' and 'underground' is out of harmony with present-day conditions. . . . Electrical communications of whatever kind will in the not distant future be provided by means of main and local telephone cables of one or more standard types extended where necessary by local overhead spare wires. The present tariffs also fail to provide for the most recently developed forms of communication. . . ." With these considerations in mind, the technical possibilities of the vast network of line-plant were examined, and, as a result, a truly modern conception of tariffs has been evolved and is now in force. The basis of these tariffs is explained in the statement that "the extent to which the revenue-earning capacity of line plant is used in providing any particular form of communication is best measured in terms of frequency-ranges." Telephone line-plant, primarily provided for the transmission of speech, is also capable of transmitting frequencies beyond and below the audible range as well as direct-current signals. Channels so obtained—referred to as bye-products of the telephone circuits for which they were designed—while not suitable for telephony, are capable generally of being used for low-speed telegraphy such as teleprinter working. It is, moreover, practicable to equip a main-cable telephone circuit with voice-frequency terminal apparatus and so obtain, at the expense of one telephone channel, up to 18 efficient channels of communication suitable for teleprinter working. The exploration of these and other facilities in providing point-to-point private teleprinter service is now being pursued with success.

A brief description of some of the new tariffs may indicate the scope of the services available.

Tariff "A" is essentially a long-distance point-to-point service. It covers the provision of private teleprinter communication between two renters for 24 hours daily, including the installation and maintenance of teleprinters and all relative apparatus and line plant. Direct teleprinter communication in each direction, alternately, is afforded, but not in both directions, simultaneously. Telephone speech is not possible. Such circuits are not terminated on Private Branch Exchange switchboards. "Through" communications cannot, therefore, be set up by linking two Tariff "A" circuits together or by connecting a Tariff "A" circuit with another private circuit of different type.

Fundamentally, a Tariff "A" circuit is made up of a bye-product circuit between two terminal post offices, or by means of a channel on a multi-voice-frequency installation, from each of which extensions are made to the renter's premises by means of a local line. At the terminal post offices, apparatus panels are installed, on which are positioned the equipment associated with the bye-product circuits and the arrangements necessary for providing the renter with signalling current on the central battery principle. (Fig. 6.) Arrangements for monitoring incoming and outgoing signals are also available at these points.

The apparatus supplied to the renter is thus practically confined to a teleprinter and standard table, with a power connexion for the motor; a simplification which reduces maintenance costs to a minimum. Tariff "A" circuits are not connected with the telephone network, either on the renter's P.B.X. or at the public exchange switchboard, and Telex calls cannot under any circumstances be passed over them; but if it is desired to have Telex facilities alternatively with point-to-point teleprinter service, a switch can be fitted which will transfer the teleprinter from the Tariff "A" circuit to an extension from the P.B.X. and so obtain access to the exchange system, when the Tariff "A" circuit is not in use. This involves the provision of tone-frequency equipment, which is also switched into circuit for Telex working in place of

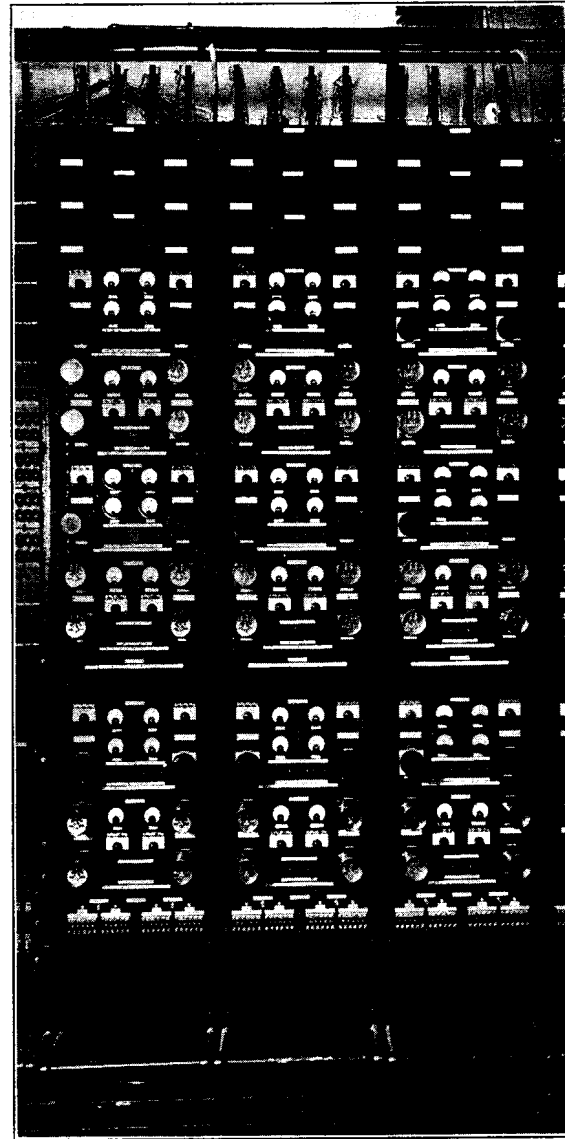


FIG. 6. APPARATUS PANELS.

the normal Tariff "A" conditions. An additional charge of £20 per annum to the normal Tariff "A" rates is made for this facility at either of the two Tariff "A" circuit ends.

On the principal main-line routes a large number of bye-product channels are now being made available, and the demand for Tariff "A" service, so far, has been most encouraging. Up to 300 miles, phantom circuits, repeated when necessary at a suitable point, will be used for initial development, but for circuits longer than 300 miles, and to meet demands when the supply of phantom circuits is exhausted, the use of multi-channel voice-frequency

apparatus (providing up to 18 Tariff "A" circuits on one telephone channel) is contemplated. At present the routes on which the greatest activity has been evident are London—Liverpool (250 radial miles), London—Manchester (250 radial miles) and London—Birmingham (100 radial miles). There are also two circuits each approximately 400 miles in length, operating on channels of multi-frequency installations. Development, however, has been general in other directions and the various commercial, financial and industrial undertakings which are already making use of this service, with satisfactory results, give promise of a potential widespread expansion.

Typical Tariff "A" rentals are as follows:—

Radial Mileage.	Inclusive Annual Rental
Over 75 up to 100 miles	... £350
" 200 " 250 "	... 450
" 350 " 375 "	... 550
and so on by steps of 25 miles.	and so on by steps of £25.

Tariffs "B" and "C" are specially designed to meet the special requirements of newspapers and cable companies and are accordingly of limited application.

Tariff "D" covers the provision of a telephone circuit, together with telephone instruments or switchboard terminals, but in addition teleprinter facilities can normally be provided so that the circuit may be used *alternatively* for speech or teleprinting. It is thus possible with a Tariff "D" circuit terminated on a Private Branch Exchange to connect it with any telephone extension on the switchboard for the transmission of speech or, when not so used, to a teleprinter extension for teleprinting, on which alternative telephone facilities may also be available.

Teleprinter facilities in such cases are subject to an additional annual charge of £65 per end-installation (£50 for the teleprinter, plus £15 for tone-frequency equipment). Tariff "D" renters may, however, become Telex subscribers without additional charge, communication over the public telephone exchange system being obtained by connecting the teleprinter extension on the P.B.X. with the exchange line allotted to Telex.

Typical Tariff "D" rentals are:—

Radial Mileage.	Annual Rental (excluding Teleprinter Facilities).
0-2 furlongs ... ..	£ 5
Over 3 to 4 furlongs ... ..	7
and so on by 1-furlong steps.	and so on by £1 steps.
Over 4 $\frac{1}{4}$ miles up to 5 miles ... ..	43
" 5 $\frac{1}{2}$ " " 5 $\frac{3}{4}$ " " ... ..	49
and so on by $\frac{1}{4}$ -mile steps.	and so on by £2 steps.
Over 9 $\frac{3}{4}$ miles up to 10 miles ... ..	83
" 11 $\frac{1}{2}$ " " 12 " " ... ..	99
and so on by $\frac{1}{2}$ -mile steps.	and so on by £4 steps.
Over 23 $\frac{1}{2}$ miles up to 24 miles ... ..	195
" 24 " " 25 " " ... ..	200
and so on by 1-mile steps.	and so on by £8 steps.
Over 29 miles up to 30 miles ... ..	240
" 30 " " 32 " " ... ..	255
and so on by 2-mile steps.	and so on by £15 steps.
Over 48 miles up to 50 miles ... ..	390
" 50 " " 53 " " ... ..	415
and so on by 3-mile steps.	and so on by £25 steps.
Over 77 miles up to 80 miles ... ..	640
" 95 " " 100 " " ... ..	800
and so on by 5-mile steps.	and so on by £40 steps.

Tariff "D" circuits, and networks of such circuits, with through switchboard connexions between a renter's Private Branch

Exchange and his different premises, are being rented to an increasing extent by large firms; the association with this service of teleprinters, providing alternative "written" communication, opens up a new field of development.

Tariff "E" is designed to meet the special requirements of high-grade facsimile or music-transmission service and details are not appropriate to this article, though it may be remarked that these services are extensively used for Press work and by the British Broadcasting Corporation respectively.

Tariff "F" covers the provision of a part-time telephone, telegraph or facsimile service at cheap rates outside the busy hours of the day. Telephone instruments or switchboard terminals are included but not telegraph or facsimile apparatus.

This tariff meets the requirements of certain special classes of business, but it is not of wide application as service is restricted to fixed hours contracted for outside the trunk busy periods, and the service can only be offered if the traffic on the public telephone circuits over the routes in question is materially less during the required hours of lease than in the morning busy hour. The period contracted for must not be less than two consecutive hours daily.

The additional charge for teleprinter facilities similar in character to those provided under Tariff "D" is also £65 per annum for each end-installation. Alternative Telex facilities would, of course, be available to such renters throughout the day without additional charge if desired.

Tariff "F" rates for the minimum two hours daily are: 1/4th of the appropriate private service 24-hour tariff.

For the third and fourth consecutive hours or part thereof: 1/16th of the private service tariff per hour.

Subsequent consecutive hours: 1/48th of the private service tariff per hour.

A minimum charge as for a distance of 50 miles for any daily period is made.

*Teleprinter "Broadcasting" or "Multiprinting."*—The distribution of information by teleprinter from one transmission centre to a number of subordinate points, simultaneously, is an important feature which is already attracting the active attention of police authorities, and to meet the requirements of the Metropolitan Police (Scotland Yard) and other police forces\* special equipment has been designed providing for simultaneous distribution facilities. A photograph of a 30-line switchboard is shown at Fig. 7. This unit is positioned at the main centre or headquarters, and the lines terminated on the white signal lamps radiate to subordinate offices where each is connected with a teleprinter. At headquarters, from one to four teleprinters may be installed; these are connected with the keys in the upper and lower sections of the switchboard. When an out-station calls (by depressing one of the keys on the local teleprinter keyboard) the relative line lamp glows. Operating one or other of the two keys positioned below the line lamp, upwards or downwards, connects the outstation with an idle teleprinter, as follows:—

Top key	... Upwards	... No. 1 teleprinter.
	Downwards	... No. 2 "
Bottom key	... Upwards	... No. 3 "
	Downwards	... No. 4 "

For calls outgoing from Headquarters, an idle teleprinter is connected with the outstation line by throwing one or other of the keys associated with the appropriate line into the required position. As both teleprinters are then in circuit signalling of the message can be commenced without further delay.

For a simultaneous transmission, a key associated with each of the lines to be connected is operated, and transmission proceeded

\* It is of interest that several Police Authorities, including Scotland Yard, are using the Telex service.

with, e.g., should it be desired to broadcast to the first, third and thirtieth outstations from No. 2 teleprinter the top keys associated with the first, third and thirtieth lines respectively would each be thrown downwards. At the same time, "broadcast" key No. 2 on the bottom section of the switchboard would also be operated. Teleprinter "engaged" signals are afforded by means of the four lamps positioned along the top of the switchboard.

It will be apparent that a variety of conditions can be met by the arrangements briefly described. One complete or partial broadcast is possible from one teleprinter, and if four teleprinters are available at Headquarters, up to four partial "broadcasts" may be transmitted concurrently.

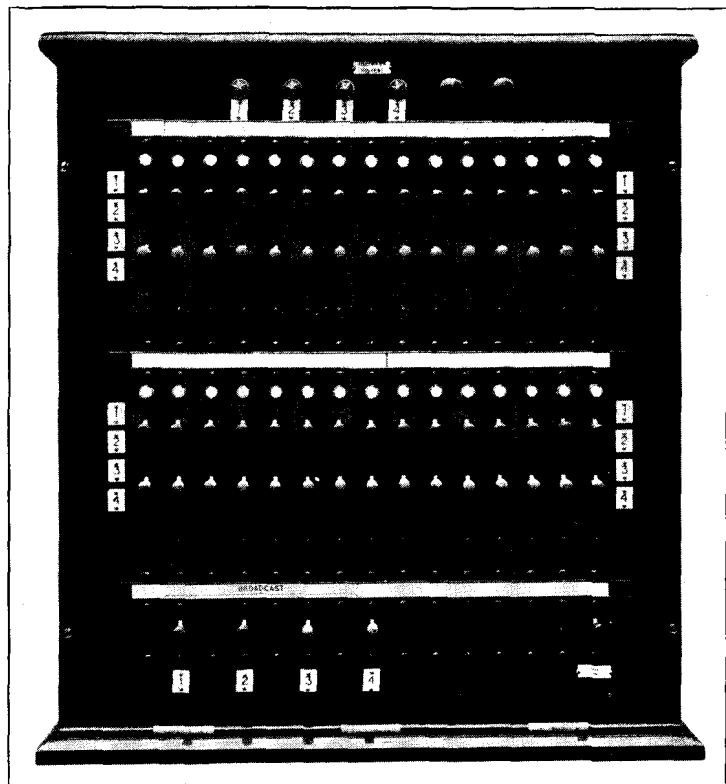


FIG. 7. 30-LINE SWITCHBOARD.

Since the switchboard illustrated was designed an improvement has been effected by fitting a coloured lamp below each vertical pair of keys for indicating "broadcast" acknowledgments. At the finish of a "broadcast," outstations signal the correct receipt of the message by depressing a push button, thereby operating the appropriate coloured lamps at Headquarters.

Simultaneous transmissions direct from one outstation to others through the Headquarters switchboard are not arranged for, nor can two outstations be switched through for direct communication at present.

Telephone facilities corresponding to the above can be provided if required for use alternatively, but not simultaneously, with teleprinting.

In establishing Telex and Teleprinter Tariff communications, considerable attention has been given to the provision of after-sales service. As soon as a contract is signed, arrangements are made for the attendance of the renter's typists and telephone P.B.X. operators at a Post Office Telex School, where instruction is given, free of charge, in Telex procedure and in operating the teleprinter. Usually about six or eight hours' tuition is sufficient. This is followed by a visit to the renter's premises by an expert operator when the engineers have completed the installation work. Operating

tests are then made and the equipment is not handed over until it is confirmed that satisfactory service is available. The visiting operator remains in attendance with the renter's operators until initial "stage-fright" has been overcome, and generally assists in smoothing out difficulties which arise from inexperience. Later visits are arranged between gradually extending intervals. This feature has been of considerable value in reducing unnecessary engineering attendance, as much of the trouble complained of when service is first provided can be attributed directly to faulty operating. Regular inspection and adjustment of the apparatus are undertaken by engineering personnel in the course of maintenance routine. In addition, special visits are made when necessary.

As regards stationery supplies, the Post Office Stores Department undertakes the supply of rolls of single paper direct, as it is necessary to ensure that the quality and size of the paper used are suitable. Paper which is too thin or too heavy, or not of standard width, is liable to cause difficulties in the paper-feed arrangements. Multi-copy rolls to meet individual requirements are not supplied direct but each firm is placed in communication with contractors whose supplies have been tested and approved by the Post Office. A carriage attachment for obtaining fan-fold multi-copies on printed forms has also been approved and may be obtained by renters as a special item by applying to the Post Office Stores Department for the name of the manufacturer. Ordinary typewriter ribbons are used. These are purchased by the renter but must be fitted by the Post Office maintenance officer.

A special silencing cover has been designed by Messrs. Creed from whom it can be purchased if required in special cases where the working of the teleprinter in a small room is found to be disturbing.

It will have been gathered from these articles that the various Post Office Teleprinter Services are being developed along parallel lines, merging into and reacting one upon the other where combined services are rented. They may be divided into main categories as:—

- (1) Telex Service affording teleprinter communication on demand over the local and trunk public telephone system for subscribers whose requirements are met by intermittent connexion with one or more Telex subscribers.
- (2) Tariff circuits affording permanent communication between two points for renters requiring continuous use of a private channel. These circuits may provide (a) teleprinting only (Tariff A), or (b) alternative teleprinting or speech (Tariff D).
- (3) Broadcast arrangements over private circuits affording, at will, simultaneous communication between a Headquarters centre and one or more subordinate outstations.

In spite of widespread commercial and financial depression, a steady growth has been registered in all these services since their inauguration, and there can be little doubt that, as the facilities become better known from results obtained in day-to-day business transactions, the rate of increase will become greater.

The effect on existing Post Office communication services is not easy to compute. On the one hand, a certain amount of traffic will be diverted from the older telephone and telegraph services, if the new service is capable of handling it better. On the other hand, experience is showing that, in the main, the need for rapid "written" communications has not been completely satisfied in the past and that teleprinter services are now meeting that requirement with advantage to the firms concerned. Thus in the process of rationalising commerce and industry generally, it may well be claimed that there is an important part for the new service to undertake in the development of national and international electrical communications.

## RETIREMENT OF SIR THOMAS PURVES.

COLONEL SIR THOMAS FORTUNE PURVES, Engineer-in-Chief of the British Post Office, retired from the service at the end of November after slightly more than 43 years' service. He is a native of the Scottish borders; born at Blackadder Mount, Berwickshire, on 31st December, 1871. He entered the Civil Service by open competition in 1889 and was transferred to the Engineering Department of the Post Office in 1892. He became a Technical Officer on the headquarters staff in 1900, Assistant Superintending Engineer in 1905, Staff Engineer in 1907, Assistant Engineer-in-Chief in 1919, and Engineer-in-Chief on 1st June, 1922.

He served during the war as Major in the Royal Engineers and was entrusted with the special duty of studying continuously the adaptation of electrical communication systems to the developing and novel conditions of modern warfare, designing special apparatus and technical equipment for the use of the Signal Units of the armies, and organising the producing resources of the Post Office and of telegraph and telephone contractors for the supply of such equipment in vast quantities.

He paid numerous visits to the armies in the field and had a unique opportunity of becoming familiar with all sections of the fighting lines.

At the conclusion of the War he was awarded the Military O.B.E. and was appointed Hon. Colonel of the 44th (London Home Counties) Division of the Royal Corps of Signals, a position from which he retired in 1928.

He was awarded a Knighthood in 1929, and in the same year was elected President of the Institution of Electrical Engineers. He has been President of the Institution of Post Office Electrical Engineers since 1922. On retiring from the presidency of the Institution of Electrical Engineers he was appointed Chairman of the Engineering Joint Council, a body which was set up in 1922 by the four principal Engineering Institutions of Great Britain—the Institution of Civil Engineers, the Institution of Mechanical Engineers, the Institution of Electrical Engineers, and the Institution of Naval Architects, in order to govern and co-ordinate the joint action and interests of the British Engineering profession at home and abroad.

No account, however brief, of the professional and official activities of Col. Purves, would be complete without a reference to the important part he played in the development of telephony in its international aspects. It is well-known that this development, since the conclusion of the war, has been phenomenal. It forms, indeed, an interesting chapter in the history of telephony.

The intensive development of the thermionic valve and other devices resulted in the possibility, on the conclusion of the war, of a European telephone network of dimensions which had never been contemplated in pre-war days.

All the elements were favourable for the establishment of an Extensive European System, provided that national boundaries could be disregarded. The problem had therefore become a political rather than a technical one. It was at this juncture that the peculiar gifts of Sir Thomas, not only as a telephone engineer of the first rank (as shown by his subsequent election as President of the Institution of Electrical Engineers), but as a singularly capable diplomatist, possessing a disarming charm of manner, a wit and geniality which broke down all barriers, a masterly command of the French idiom, and an unusual purity of pronunciation for a foreigner, proved invaluable. Ludendorff has stated that the main function of Lloyd George during the war was to hold Europe's hand when she was very nervous. Sir Thomas held Europe's telephone hand immediately after the war, when her nerves were badly jangled, and guided her telephone engineers in the paths of sanity and ordered progress.

Monsieur Paul Laffont, Under-Secretary of State of the Posts and Telegraphs of the French Post Office, issued at the beginning

of 1923, invitations to Gt. Britain, Italy, Spain, Belgium, and Switzerland to send delegates to a "preliminary" international conference to discuss unification of methods of construction, and maintenance and operation of international telephone circuits and to increase the speed and security of such communications by the establishment of new telephone lines "judiciously constructed and maintained." This was the genesis of the international committee for long-distance telephone communication which subsequently filled such an important role in the development of European and, subsequently, world-wide telephone communications.

It will be observed that this invitation did not include countries which had been at war with the "Allies." In one of these countries, at least, viz., Germany, the attention of its technicians had been devoted, with great success, to the development of devices for the improvement of long-distance telephony. It was evident that, without the collaboration of Germany, the development of a truly international European telephone network would be very incomplete. The proceedings of this "preliminary" conference were, therefore, more or less of a formal nature.

It was at this point that the diplomatic gifts of Sir Thomas Purves proved invaluable. On the occasion of conversations with the Germans, for the purpose of establishing telephone communications between England and Germany, he met, for the first time after the war, representatives of the German Administration on neutral territory at the Hague, in March, 1924, and succeeded in persuading the German Administration to send delegates to the first real international telephone conference, which took place in April of that year. To this conference, the Administrations of 18 European countries sent delegates. Since then, conferences of the "C.C.I." (a well-known contraction for the "Comité Consultatif International des Communications Téléphoniques à Grande Distance"), have been held every year. At these conferences problems have been discussed which have arisen in connexion with the unifications of telephone lines and plant throughout Europe. While attending all of them as Chief British Delegate, Sir Thomas has purposely abstained from accepting the role of General President, but has been content with fulfilling the functions of vice-president in charge of the main purpose of the Committee, the resolution of purely technical problems. These conferences gave rise on many occasions to thorny questions in connexion with which there was a tendency for the international prestige of the chief countries to dominate purely technical considerations. It was here that the personal qualities of Sir Thomas—his geniality and good-humour calming the nerves of opposing factions—played such an important part. He adopted the well-known diplomatic principle "pecher les gros poissons" so far as his Administration was concerned, leaving the small fish to the other fellows, while conveying the impression that the dimensions of the small fry were much larger than they really were! On the other hand, while upholding the interests of his administration, he always had at heart the interests of international telephony as a whole and these have no national boundaries.

Sir Thomas held the position of Engineer-in-Chief to the British Post Office for a longer period than any of his predecessors during the past 50 years, and has been in control of the Engineering Department throughout a time of unparalleled technical progress. At the time of his appointment in 1922 he prophesied that the coming 10 years would see many remarkable developments which at that time appeared fantastic,—including full intercommunication between the telephone systems of Great Britain and the United States—but all of them have been duly accomplished.

During his period of office he was called upon to make a decision which determined the future of automatic telephony in this country. He decided that the Strowger step-by-step system should be adopted, and carrying our minds back to the times in which this decision had to be taken, it will be appreciated how momentous the issue was. It was, in fact, one of the most important and far-reaching decisions that any Electrical Engineer has ever been called upon to make. That he decided rightly there is now no possible shadow of doubt.

## LONG DISTANCE TELEPHONY.

### NEW BRITISH OVERSEAS EXCHANGE—(contd.).

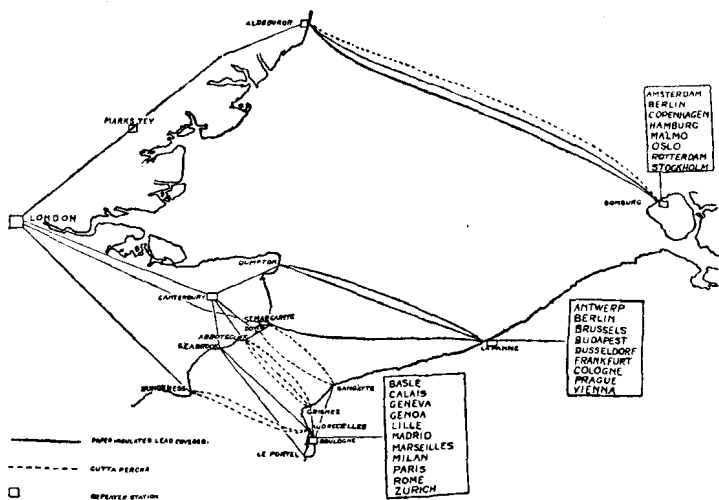
By J. F. DARBY (*Headquarters Traffic Section*).

ATTENTION was drawn in the previous article to the remarkable growth in recent years of the Anglo-Continental telephone traffic. In addition to the reasons already given, considerable credit for the growth can well be attributed to the improvement in the quality of the service rendered during the period under review.

In the early stages, circuits were few in number and multi-switched calls were a common feature. Further, with the extensive use of overhead lines, with their liability to interruption, and matters relating to transmission still in a partly developed state, delays on traffic were heavy and speech over long lines was frequently difficult. At the present time the average delay on calls to the Continent during the busy periods of the day is between 10 and 15 minutes—a big advance on the figure for, say 1926, when the average delay was in the neighbourhood of 55 minutes. Upgrading of the quality of speech has been very marked; the attenuation (decrease in magnitude of transmitted power) of the majority of Anglo-Continental circuits is now approximately 8 decibels, a figure which was applicable to very few circuits before 1926, when, in fact, the attenuation of the Paris, Brussels and Amsterdam circuits, was in the order of 16, 24 and 30 decibels respectively.

One further factor which has played a part in the growth of the Continental services has been the reduction in fees made from time to time. There have been no drastic revisions of tariffs, but, as opportunities have presented themselves, when re-routings have been carried out, switchings eliminated, &c., concessions have been made to the public.

It is mentioned that the night rate in force on the Continental traffic is three-fifths of the day rate, and it applies to most services from 7 p.m. to 8 a.m.



SKETCH MAP OF CABLES CARRYING WORKING ANGLO-CONTINENTAL TELEPHONE CIRCUITS.

With the reduction of the delay on circuits and the consequent lessening of pressure of traffic, the output of circuits has tended to fall; nevertheless, it is found possible on many Anglo-Continental routes to obtain, during the busiest hour, such loading as to give 40 minutes of "paid time" per circuit. In some cases a figure of 45 or more is reached. These figures are perhaps interesting when it is realised that on all Anglo-Continental connexions the chargeable duration of each individual call is checked immediately the call

finishes—the controlling *tête-de-ligne* having the deciding voice in the matter. These chargeable durations are verified in bulk (and in detail if discrepancies are found) on the morning following the day on which the calls are made.

At the end of each month a statement is prepared by each European Administration of the *incoming* calls received with the fees due thereon, and this account is rendered to the Administration concerned with the control (outgoing end) of the calls in question.

The fee for a telephone call between any two points involving international connexions is calculated for a unit (3 minutes) day call and is based upon certain "elementary" charges in respect of routing and handling of the call by the various administrations concerned in the transaction. The "elementary" charges fall into two categories—*terminal* and *transit*; the former vary according to the number of separate fee zones in the terminal countries and the latter are assessed on the distance transversed (and switching involved, if any) in the transit or intermediate countries. For example, the fee for a call from London to Oslo is equivalent to 22.9 "gold francs"; it is based upon the following charges:—

British terminal charge	... ..	5.0 gold francs.
Dutch transit	" .. "	5.3 " "
German "	" .. "	6.4 " "
Swedish "	" .. "	4.2 " "
Norwegian terminal "	" .. "	2.0 " "
		22.9 " "

In the British Isles there are three *Continental* fee zones. Zone 1 embraces the area south-east of the line joining the Bristol channel and the mouth of the Humber; zone 2 is the area north of zone 1 up to the Scottish border, together with Devon, Cornwall, and Wales; and zone 3 covers the Isle of Man, Scotland and Ireland. On the Continent the number of fee zones in each telephone administration varies from one (Hungary, Holland, &c.) to twelve in the case of Germany, and the intricacy of an accounting system which involves the assessment and apportionment of fees on the lines indicated can well be imagined.

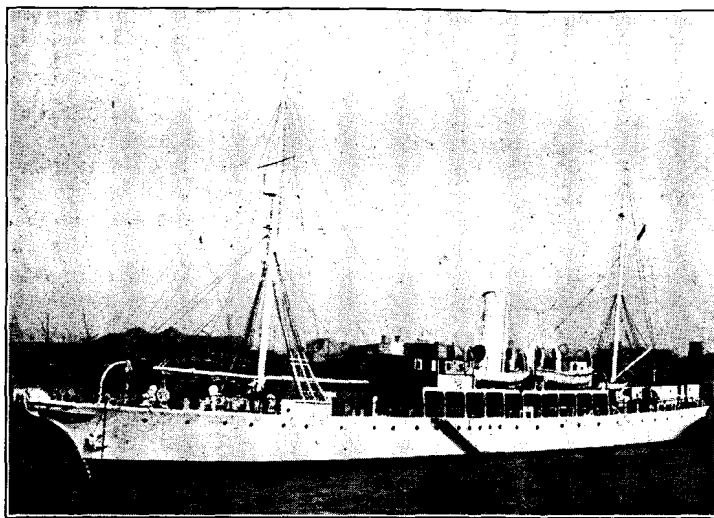
The division of fees as indicated above produces a special problem when the use of a *voie de secours* (alternative routing *via* countries other than those involved in the primary routing) is concerned. It is necessary to arrange for the controlling operator specially to mark the charge ticket, and an apportionment of fees different from the normal is then made. The same basic fee to the public is, however, maintained.

The "gold franc" is used as the common basis for calculations, and each terminal country concerned works out a suitable equivalent of the total "gold francs" charge in its own currency, and it is the latter sum, i.e. the *overall* fee, which is charged to the public. It is not, perhaps, always realised that for a very modest sum of money a continental call can be obtained. The fee for a 3 minutes' conversation after 7 p.m. between London and Paris is only 3s. 7d.—less than the charge (night rate) for an inland call from London to Wick and only a few pence in excess of the fee (night rate) from London to the Isle of Man.

It is perhaps of some interest to consider the main items of expenditure to be met by these telephone fees. On one hand there is the cost of provision and maintenance of line plant—land lines and sea cables—with associated repeater stations; on the other hand, the outgoings in respect of British and Continental telephone exchanges with switch-boards and operating staffs for connecting these circuits with each other or with inland circuits, have to be provided for. While the switchrooms from many points of view, present considerable interest and the efficiency of switching arrangements is of fundamental importance, the outside plant—representing millions of pounds of telephone capital, must be regarded as playing the major rôle in international telephony. The layman is apt to overlook sometimes, perhaps because the plant lies at the bottom of the sea or beneath the ground, the

research and construction work that has been undertaken and the maintenance operations which go on, day and night, to provide this service.

If we consider for a moment a single circuit connected with the British Overseas exchange, say, the London—Oslo circuit, in



H.M.T.S. "MONARCH."

the switchroom this circuit is represented by a lamp calling equipment and outgoing multiple appearances on a two-wire basis. Before leaving London it is converted to a four-wire circuit and then proceeds as follows:—

#### LONDON—OSLO CIRCUIT.

Great Britain ... ..	103 miles underground 4-wire circuit with repeater stations at London, Marks Tey and Aldeburgh ;
North Sea ... ..	95 miles submarine 2-wire circuit ;
Holland ... ..	184 miles underground 4-wire circuit with repeater stations at Domburg, Rotterdam and Arnhem ;
Germany ... ..	471 miles underground 4-wire circuit with repeater stations at Wesel, Münster, Bohmte, Bassum, Rotenburgh, Hamburg, Lübeck, Wismar, Rostock and Stralsund ;
Baltic Sea ... ..	74 miles submarine 4-wire circuit ;
Sweden ... ..	15 miles underground 4-wire (physical) circuit ; 242 miles underground 4-wire (phantom) circuit, 118 miles aerial 2-wire circuit with repeater stations at Malmö, Sösdala, Almhult, Lamhult, Nässjö and Gudhem ;
Norway ... ..	72 miles aerial 2 wire circuit, 20 miles underground 2-wire circuit with a repeater station at Oslo.
Total ... ..	1,394 miles of circuit with 23 repeater stations.

The cost of the provision and maintenance of all international telephone plant within any country or independent state, falls, of course, on the administration concerned. With submarine cables special arrangements have to be made. In the case of the Anglo-Continental cables, the costs in question are shared equally between the administrations on whose territory the cables are terminated. In practice it has been found convenient for the maintenance work on these cables to be actually carried out by the British Post Office, half the costs being apportioned to the other administration concerned.

This maintenance is arduous, costly, and highly technical, and two cable ships—H.M.T.S. *Monarch* (1,150 tons) and H.M.T.S. *Alert* (940 tons)—are provided to carry out the work. From the following statement of the cables at present in use for telephonic communications, it will be seen that the oldest of these cables was laid over 40 years ago. The cable laid this year has not yet been

brought into use. The statement also gives the capacity in physical circuits and the type of loading ; some comment on these points will be made later.

#### ANGLO-CONTINENTAL TELEPHONE CABLES.

Date laid.	Between	and	No. of Wires.	Length (Nautical Miles).	Type of Loading.
1891	St. Margarets	Sangatte	4	21.2	Unloaded.
1897	Abbots Cliff	Grisnez	4	21.4	"
1910	Abbots Cliff	Grisnez	4	20.4	Coil.
1912	Abbots Cliff	Grisnez	4	22.4	Continuous.
1918	Dover	Sangatte	4	20.5	Coil.
1918	Dungeness	Audrecelles	4	27.6	"
1918	Dungeness	Audrecelles	4	26.5	"
1922	Aldeburgh	Domburg	4	82.9	"
1924	Aldeburgh	Domburg	16	82.3	Continuous.
1926	Aldeburgh	Domburg	(16 & 1 c.c.)	86.1	"
1926	Canterbury (Dumpton)	La Panne	28	25.3	"
1927	Seabrook	Audrecelles	28	25.3	"
1930	Canterbury (Dumpton)	La Panne	28	50.3	"
1930	Seabrook	Le Portel	28	32.1	"
1932	St. Margarets	La Panne	120	50.0	Semi-continuous.

(To be continued.)

#### NORTH WESTERN DISTRICT NOTES.

*Call Office Discrepancies.*—The fraternity who look upon the Post Office as a complacent milch cow received a nasty blow at Acerington Police Court last month, when two men were fined £10 and £3 respectively for stealing electricity. The offence was the usual one of obtaining calls at a kiosk and not depressing button "A."

This type of fraud was described by the presiding magistrate as of a particularly contemptible character, which he was determined to stop. He pointed out that the boxes were a public convenience of great value and it was intolerable to find such facilities abused. With these sentiments, needless to say, we are in hearty accord, and, as the case received a good "press," it is hoped that this much-needed lesson will be taken to heart by others who are prone to act likewise.

*Promotions, &c.*—To the North Midland District, as Traffic Superintendent, Class II. Mr. J. Leith, A.T.S., took up his new duties on Dec. 12, and before departure was the recipient of a silver tea service presented on behalf of the combined District Office staff by the District Manager (Mr. Tucker). The gathering was attended by all the heads of the Telephone Departments and the Head Postmaster of Preston (Mr. G. S. Sunley).

We feel sure the North Midland District will be pleased with this District's contribution to their staff.

To Mr. Morgan (Traffic Supt.), who has recently undergone an operation and resumed duty on Dec. 5, we offer our congratulations on his recovery together with the hope that his health will be permanently improved.

To Mr. G. Major, A.T.S., who has been loaned to this District to assist with automatic transfer work, we offer a sincere welcome and hope that his stay with us will be congenial and profitable.

*Obituary.*—It is with deep regret we record the death, on Dec. 1, of Mr. J. E. Greaves, Sales Manager of this District. Unfortunately his state of health for some considerable time past has given cause for alarm, but as he kept to his post until almost the last day, few were prepared for sudden news of such tragic import.

Mr. Greaves, who was within a few months of retirement, was one of the old school, joining the old National Telephone Company in Birmingham as office boy in 1887. Later he was appointed chief clerk to the Provincial Superintendent and after serving in various capacities at Burton-on-Trent, Peterborough, Belfast and Blackburn, finally became Contract Manager at Preston on the formation of the North West District. Mr. Greaves was of a particularly retiring disposition, but, to all who penetrated below the surface was revealed a charming nature, full of kindly wisdom and helpfulness. He was interred at Birmingham, his native city, on Dec. 5.



## THE EARLY DAYS OF LONG-DISTANCE TELEGRAPHY.

By J. J. T.

As these lines are penned there lies open an excellent map of Telegraphic Europe in the year 1856, published by the then Electric and International Telegraph Company (itself incorporated in 1846) showing just over three hundred telegraph offices in Great Britain and Ireland, and about double that number on the continent of Europe. To declare how the latter figure compares with the present number of continental telegraph offices or with those of the entire world to-day would hardly be possible but to a few experts. Probably only the International Telegraphic Bureau at Berne could give the adequate answer right away.

It is worthy of note as regards the British Isles that while England at this time was fairly well supplied with telegraph communication as a whole—the quality of which the writer is unable to assess—Scotland, except for a small portion of the south, was quite without communication in the North, almost without on the west and poorly on the east coast. Ireland was similarly situated, but there were two submarine telegraph cables connecting Ireland with England.

In the early sixties this company made the very specific announcement that, "Messages to or from the continent *must* be addressed 'Via Amsterdam,'" although there were at that time two other submarine telegraph cables—the E. and I. company worked the Orfordness—Hague route—there were at this time most certainly two more submarine telegraph cables working to the continent, one between Dover and Calais, and the other between Dover and Ostend.

These two last-mentioned cables actually belonged to the European and Submarine Printing Telegraph Company, Cornhill, London, and certainly, *vide* the *Illustrated London News* of Nov. 13, 1852, there was *direct telegraphic communication, not only between the two seaports of Dover and Ostend, and Dover and Calais respectively, but direct telegraphic communication between the two capitals of London and Paris, and as early as the latter year. Actually this particular cable was laid in 1851, but some time was spent in constructing the necessary new land-lines between London and Dover in order to complete the Anglo-French link.*

The success of this short submarine cable of twenty odd miles was the forerunner of the entire world's cables, while the accomplished fact gave Great Britain the key to rapid communication with the whole world, especially her far-flung colonies. Progress was however slow. It was fourteen years—back in 1837—that the first electric telegraph patent had been taken out by Cook and Wheatstone. Direct communication over long distances on the Continent had meanwhile become a fact. There were land-lines in the middle 'fifties from Odessa to Moscow and St. Petersburg. Paris, Berlin, Rome, and most of the Continental capitals were linked in telegraphic connexion. It was now for our island to seek a similar goal, but under the ocean!

The various English telegraph companies at this period were functioning in a somewhat haphazard manner. They were competing, not co-operating. There was little attempt, so it would appear, of consolidating forces. Thus, either the Paris or the Amsterdam route would accept traffic for Eastern or Western Europe—Calais or St. Petersburg. Such means as a European or an International Telegraph Conference for the purpose of discussing the management of International Telegraph routes, rates, &c., &c., had not been thought of, let alone considered. It was left until nearly five years after the British government had taken over the whole of the United Kingdom Telegraph companies—except one—and that one a partially-owned foreign organisation, before such a gathering was authorised. This was in the year 1875 when an International Telegraph Conference was held in St. Petersburg, at which Great Britain was represented by Mr. H. C. Fischer (afterwards Sir Henry Fischer), Controller of the Central Telegraph Office, London, and Mr. Alan E. Chambre (? a nominee of the "Submarine" Telegraph Co.). Although this country had not figured at the protocol, "y ayant adhéré ultérieurement," says the official report.

In the 'sixties the following telegraph companies were working in Great Britain:—(1) The Electric and International Telegraph Co.—Inland and Foreign traffic—Company used Cook and Wheatstone patents—apparatus, Morse Inker & Bains.

(2) The United Kingdom Telegraph Co.—Inland Traffic—Morse and Hughes printing apparatus.

(3) The British and Irish Magneto Co.—Inland traffic—Henley's Needle, succeeded by Bright's Bell. Some kind of agreement for the handing over of foreign traffic to the submarine company existed.

(4) The Submarine Printing Telegraph Co.—Foreign traffic—used Morse and Hughes printer.

Largely due to an inefficient service, Nos. 1, 2 and 3, were taken over by the British Post Office with handsome compensation.

That the "Submarine" company was permitted to carry on with its Anglo-Continental services was not exactly due to its superiority but rather to the fact that Sir James Carmichael, who had sponsored the enterprise, had been compelled to raise a heavy portion of the necessary cash in France,

for the manufacture and laying of the first cable between Dover and Calais. There is as a result no known record of any keenness on the part of the British authorities, at that time, to take over the working of these the first international sea-cables. On the other hand there was considerable reluctance, and some opposition on the French side when, in 1889, on the expiration of the Company's lease, the British Government registered their inability to renew it. The two governments eventually agreed to work the Dover—Calais and all other French cables between them which then included the cables laid between Boulogne, Havre, and Dieppe and the French coast.

On the same date, April 1, 1889, the British Post Office took over the Anglo-Belgian and Anglo-Dutch cables, while direct communication with Berlin was subsequently obtained by the laying of new cables between this country and Germany. The previous provision with the latter had proved quite inadequate for the growing trade.

There is no intention to claim the first two cables, even when one was extended to Paris, as long-distance communications. Viewed in the light of to-day, their length is insignificant. They were, however, sub-aqueous links which made long-distance circuits between this country and the Continent a working proposition. Such telegraph circuits as London—Paris—Marseilles, London—Rome, Milan, to mention no others are striking examples of what those English Channel cables have meant to this country. To quote the most recent and wonderful addition to international communications, the latest fifty odd miles telephone cable just laid between St. Margaret's Bay and Lapanne, is but one of the fruits of that first experiment of twenty miles between Dover and Calais.

It may be interesting to turn back the leaves of long-distance telegraphic history as experienced by the one or two veterans now living and who had a hand in the pioneer work of lengthy electrical communication. Such an one is Mr. W. F. Jackson, late Asst. Superintendent, who retired from the British Government Foreign Cables Service C.T.O. early in August, 1914. Mr. Jackson, whose father at the time was financially interested in a scheme for obtaining direct telegraphic communication between Great Britain and India, through the medium of Sir James Anderson, obtained a post in one of the several telegraph companies connected with that ambitious and ultimately successful enterprise. The public was inclined to be shy of, as some of them called it, "putting one's money under the sea," and as far back as 1857 there was an announcement in the *London Daily Telegraph* on Aug. 22 of that year as follows:—"In order to ensure telegraphic communication with India, the Honorable East India Company have determined to grant assistance to the Red Sea Telegraph." This latter reference was no doubt specially concerned with the section, or sections, Suez to Bombay, but in any case it is evident that the E.I.C., at least, could foresee the immense service which a direct line between Great Britain and her Eastern dependency could render. The Eastern Telegraph Company eventually became responsible for the communication throughout from London to Bombay, *circa* 1870. In the early stages there were no less than six sections, but let Mr. Jackson himself relate:—"The English coast-station and cable head was at Porthcurnow Bay, Cornwall, and as the British public were unfamiliar with the then admittedly outlandish 'Porthcurnow' No. 1 Company, was known as the Falmouth, Gibraltar, and Malta Telegraph Co., and dealt with the London—Porthcurnow to Lisbon (Careavellas) Section, No. 2. The Anglo-Mediterranean Telegraph Co., provided two cables (a) Lisbon to Gibraltar; (b) Gibraltar to Malta. No. 3 was known as the Anglo-Mediterranean Extension Co., which laid the Malta to Alexandria length in sections in 1862. The overhead land-line from Alexandria to Suez was provided by the Egyptian authorities. No. 5 company was known as The British Indian Telegraph Co. and maintained the section from Suez through the Red Sea to Aden, while No. 6, the British Indian Telegraph Extension Co. was responsible for the final section Aden to Bombay."

Mr. Jackson took up his duties when telegraphic communication between London and Bombay was in its early infancy. Entering as a complete novice, it is enlivening to hear the account of those early experiences. He recalls how "There was no particular system of teaching telegraphic manipulation, and we had to learn what we could from those who, already by some means or other, already possessed the knowledge. My instructions when sent down to the cable station at Porthcurnow were to assist with and learn all about the new instrument. The new instrument was the Siphon Recorder of Sir William Thompson (subsequently Lord Kelvin) who invented this type of receiver in place of his own Mirror Galvanometer."

It should be added here that the latter had proved of inestimable value in making the Atlantic cable a success, and its supersession on the Anglo-Indian route was undoubtedly due to the very frequent disputes regarding the responsibility for errors. It has also to be borne in mind that the total distance covered on the latter route was double that of the Atlantic venture. On the other hand, in the case of the Anglo-American cable there was only one transmission from cable-terminal to cable-terminal, i.e., the breadth of the Atlantic. In that of the Anglo-Indian communication, in those days, every word had to be transmitted and re-transmitted several times. This, quite naturally, could not but have increased the possibility of errors by that number. It is obvious, also, that with non-recording apparatus the difficulties of definitely fixing responsibility were at times insurmountable, bearing in mind also the possibility of electrical variations, not at that time fully understood.

Once more permit our veteran friend to describe what happened, when, for example, the result of the University boat-race was flashed through from London to Bombay, even when only one word had to be signalled, and then, ye 20th century telegraphists, imagine the wearisome process by

which an ordinary plain language telegram was signalled from the City of London to Bombay!

"There were no repeaters in those days, except the human repeaters, who actually stood at the UP and DOWN sides of the respective cable sections. Each message had to be written out at the end of the first section, in the ordinary way, and then repeated forward through the next section, and so on. There was, of course, no duplexing at that period.

via Lowestoft, Emden, Berlin, thence through Poland, Russia, Persia, to the head of the Gulf at Fao to Bushire, Jask and Karachi. At one time the most remarkable telegraph circuit in the world, with its 6,000 miles of mixed overhead land lines, submarine cables for deep and shallow waters as also for mudbanks, it stood even up to the time of its abandonment, on Feb. 28, 1931,\* for unexcelled efficiency to which London, Manchester, and Liverpool merchants would testify to-day. It was considered at one time that this overland route would act as a stand-by in the event of breakdowns on the cable route, whereas it proved itself to be the easiest to interrupt at periods of political tumult. Those who had pressed for the submarine cable route to India were more than justified when in 1914 communication with India via European land lines was interrupted hours, nay days, before war was declared.

As regards the "Submarine" Company there was no one to mourn the transfer from company to State control of this organisation, except maybe those few clients who were daily afforded absolute priority over the general public for certain urgent telegrams, but for which no extra charge was ever made! The lease of the company having expired the "compensation" paid was the value of certain buildings and an allowance for depreciated cables—"scrap-iron value" remarked one shareholder, who had been receiving dividends of 20% on the average for some years! This particular company had shown very little enterprise, and very little consideration for the general public, while the staff arrangements were of the most primitive type. No time was allowed for meals, food being consumed at the apparatus, while the public traffic was dealt with: meanwhile an odd cockroach or two would crawl out from the tongued-and-grooved wood-lined walls up against which most of the circuits were fixed! Needless to say, whatever may have been the sins of the much criticised British Post Office, this state of affairs was made to cease very soon after the transfer. Preferential treatment of traffic became taboo at once, meal reliefs were supplied, more staff was added, new cables were laid. No longer was it considered part of a superintendent's duty when overtime became necessary to question a telegraphist as to his overtime rate, and then to choose the fivepence per hour man instead of the sixpenny one!

There has fallen into the hands of the writer an old record of the wages of about thirty telegraph clerks who apparently formed the manipulative staff of one of the four companies aforementioned in the year 1863. The maximum weekly rate appears to have been £1 15s. 0d. for Senior clerks of which there were two, Messrs. Casabianca and Kaarsberg.

There are two reproductions of considerable interest. Exhibit No. 1 reduced in size, of a telegraph form used in the early 'sixties. It contains certain information including the announcement that at this date, 1863, the public were served with "Direct wires to Berlin, Vienna, St. Petersburg, Paris, Brussels, Hamburg, Copenhagen, &c., via Calais, Boulogne, Dieppe, Ostend, Emden and Toning," a statement which the uninitiated, one fears, would be inclined to interpret as meaning direct wires throughout from the London

PREAMBLE Government or (Embassy) Dispatch Form.

**SUBMARINE TELEGRAPH COMPANY,**  
IN CONNECTION WITH THE  
**BRITISH AND IRISH MAGNETIC TELEGRAPH COMPANY.**

**CENTRAL STATION:**  
**58, THREADNEEDLE STREET, LONDON, E.C.**  
(REMOVED FROM 39, CORNHILL).

At \_\_\_\_\_ m on \_\_\_\_\_ day the \_\_\_\_\_ day of \_\_\_\_\_ 18 \_\_\_\_\_

RECEIVED THE FOLLOWING TELEGRAM IN LONDON.  
Sent from \_\_\_\_\_ on \_\_\_\_\_ at \_\_\_\_\_ m  
To \_\_\_\_\_ Address \_\_\_\_\_


Direct Wires to Berlin, Vienna, St. Petersburg, Paris, Brussels, Hamburg, Copenhagen, &c., via Calais, Boulogne, Dieppe, Ostend, Emden and Toning.

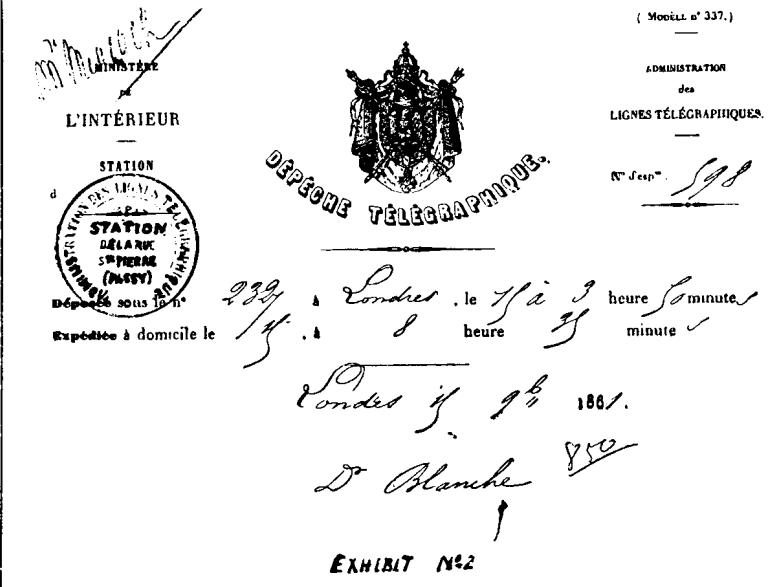
- LONDON OFFICES**
- FOR THE RECEIPT OF TELEGRAMS AND REPLIES.  
CENTRAL STATION: 58, THREADNEEDLE STREET. (always open.)
- BALDWIN COFFEY HOUSE, THREE AND FIFTEEN STREET
  - CHANCERY LANE, No. 22
  - CHANCERY CROSS, No. 7. (opposite Statue)
  - ST. JOHN'S CHURCH, Beetham Lane, Entrance
  - de.
  - de.
  - de.
  - de.
  - HOUSE OF COMMONS (during Session)
  - LIWAYS
  - MARK LANE, No. 52. (Fench St end)
  - MIRING LANE, No 21 (Tower St end)
  - de.
  - de.
  - de.
  - de.
  - SETTLING LOWE, CORN EX CHAMBERS
  - STOCK EXCHANGE, 43, ROYAL TRINITY CHURCH
  - ST. PIERRE CIRCUS, Piccadilly
  - (Open until Mid. night on Sundays)
  - de.
  - de.

EXHIBIT No. 1.

"The arrangement for the speedy telegraphing of the result of the Boat Race was as follows:—London would continuously repeat the warning signal - - - in quick succession until the result came to hand when, the word 'Oxford,' or 'Cambridge' would be signalled to Porthcurnow, who would repeat to Lisbon, Lisbon to Gibraltar, Gibraltar to Malta, Malta to Alexandria, Alexandria to Suez, Suez to Aden, Aden to Bombay. No less than 16 operators were needed for this and every other message transmitted in those pioneer days!"

In 1871 Mr. Leitch, one of Sir William Thompson's assistants, was sent to Egypt. Mr. Jackson followed him to Alexandria soon after where they installed the Recorder, going on to Suez later, which same station they similarly equipped. In 1873 Mr. Leitch died in Alexandria, his colleague being left alone to look after the technical side of things at that particular station, under the guidance of Mr. Saunders, the Chief Engineer at Malta. The next year saw Mr. Jackson back in England where he transferred to the service of the Submarine Telegraph Company. In 1889, upon the transfer of this company to the British Government (Foreign Cables) he was again brought into close technical touch with submarine cable telegraphy of quite another type, under the aegis, in turn of Messrs. Brooker, Mansbridge, and W. Lamb, but under what different conditions!

Sign has not been lost of the work done by the Indo-European Telegraph Company and the Indo-European Telegraph Department (India Office) which in 1864-65 established a direct telegraph circuit between London and India.



office. This, of course, was not the case in all the examples quoted above. Exhibit No. 2 is a replica of an official notification of the delivery of a telegram handed in at London on Sept. 15, 1861, at 3.50 p.m., which was delivered to a Dr. Blanche in Rue St. Pierre, Passy, a suburb of Paris at 8.35 p.m. One can only hope that the Anglo-French telegraph service of to-day is an improvement upon these figures!

Though not exactly in the "early" days of Telegraphy, it is now close upon a score of years ago that one of the most dramatic feats in the history of long-distance telegraphy was accomplished, in procuring a ready-made deep-sea telegraph cable at short notice and with this cable establishing direct communication between the London C.T.O. Cable Room via Peterhead repeater station to Murmansk. Literally, it may be now stated that millions

\* See T. and T. Journal, The Passing of the "Indo." p. iv., April, 1931.

of words and figure-groups of the highest importance passed through this lengthy composite circuit of land-line and sea-cable at one transmission. Day after day, night after night, through the years of strife that cable worked without ceasing until ———! Then, due to no lack of the electrical efficiency of cable or apparatus, or of the staff at either end, there came no answer from the far-off land of icy winters and healthful summers. Murmansk anyway had evidently received the order to "Cease fire"!

Looking backward on the seventy or eighty years of telegraphic history, and even prior to that period when the idea of placing even a single copper strand across the Straits of Dover seemed an incredible and useless feat, it is strange to realise that in one's own memory how great has been the revolution in communication, by overhead, underground, sub-aqueous wires and by the ether as media! Not only has it come about that Man has placed one single girdle round this globe of ours, but he has so criss-crossed it with girdles until it would appear at times as though the girdles themselves had been engirdled and entangled in a chaotic maze!

## TELEGRAPHIC MEMORABILIA.

WHEN one reads of the celebrations which have taken place on the other side of the Atlantic to commemorate the centenary of the invention of the telegraph by Morse, it is a sobering fact to realise how, at times, posterity endeavours to redeem the past by posthumous praise and jollifications. History relates how, "In 1839 Professor Samuel B. Morse offered to sell his invention to the Government of the U.S.A. for \$100,000." To which the then American P.M.G. replied:—"The operation of the telegraph between Washington and Baltimore has not satisfied me that under any rate of postage that could be adopted would its revenues be equal to expenditure," and bowed the professor out!

In one of its recent issues the *Electrical Review* remarked concerning the question often heard, "does not the telephone waste more time than it saves?" that, "the true answer is, of course, that the telephone is an unequalled time saver, but the exasperation of busy men engaged on important and urgent work at inconvenient interruption on relatively trivial points is understandable, and much more use might have been made of the telegraph for rapid communication when conversation was not essential."

It augurs well for the success of the "Telex" system when so long established and so naturally critical a publication declares that, "the system will give the advantage of both the telephone and the telegraph at the office desk." All that one would wish to add would be the proviso that at *both* ends of the circuit there should be competent operators. "A child can use it," is *not* true either of the telegraph or the telephone.

The Madrid International Conference on Radio, Telephone, and Telegraph matters terminated its labours last month, after fourteen weeks of consultation and debate. Surely this assembly must be the most lengthy of its kind, and the results of its debates a voluminous record. What a contrast to the official record of the results of the first International Telegraph Conference at St. Petersburg in 1875! An original copy of the signed convention, "Fait à Saint Petersburg le 7/19 Juillet 1875," bound in red Morocco leather, its title, "Convention Télégraphique Internationale de St. Petersburg 1875," and the name of its owner, Mr. H. C. Fischer, printed in gold letters on the cover, is before the writer of these lines as he now writes. The book only contains 102 pages, and measures but 8 by 5 inches!

*Obituaries.*—The death of Mr. T. W. Sowman, formerly Superintendent, C.T.O., took place on Nov. 25 last at Hillhead, near Fareham, Hants, in his 78th year, after, it is regrettable to learn—a very long illness. Deceased was an old Railway T.C. of the almost forgotten L.C. and D. Railway, but joined the Government service in 1874. He was an athlete of no mean capacity in his early days especially on the cinder path. He followed Mr. Donaldson on the Special Fleet Street staff, and was made Assistant Superintendent 1896, retiring in 1915 with the rank as above.

Also sympathetically recorded is the demise of Mr. Joseph Rippon, O.B.E., formerly well known in the submarine telegraph cable world both at home and abroad. He passed away on Nov. 19 at the age of 80 years at Renfrew, Ontario, the funeral ceremony taking place at Okehampton Parish Church on the 5th ult.

The *Electrical Review* also informs us of the death at Johannesburg of Mr. J. A. Hoffe, for many years Superintendent of Telegraphs and Telephones of the S. African Government Railways.

*Retirements.*—The retirement of Mr. J. R. Van der Ent, Superintendent Foreign Cables, C.T.O., took place on Dec. 3 last upon reaching the age-limit. Mr. Van der Ent was actually the last recruit to enter the service of the Submarine Telegraph Company, as he took service on Jan. 1, 1888, with that company and was transferred to the Government Telegraphs fifteen months later, i.e. on April 1, 1889. As was the case with quite a number of the Post Office Foreign Cables staff, Mr. Van der Ent rendered very valuable assistance to certain other Government departments, throughout the whole of the war period. The best wishes of his colleagues follow him into his retirement.

*Promotions.*—Sincerest congratulations follow the promotion of Mr. C. A. Peters, *vice* Mr. Van der Ent, as above.

*Personal.*—News reaches the editor that Mr. D. M. Ford, late Assistant Controller of the C.T.O., London, has left England on a voyage to Australia. It is hoped that he will return much benefited by his visit 'Down Under.'

*Countries.*—AUSTRALIA.—The Australian Postmaster-General states that it is proposed to erect new regional broadcasting stations in all states except South Australia. Engineers are now actually choosing sites after which "tenders will be called for immediately," says the *Electrical Review*. During the year ended Sept. 30, 1932, the number of wireless licences in Australia increased by 63,000, the total number in force at that date having reached the figure of 390,552.

CEYLON.—It is proposed to float a company in Ceylon with a six-figure capital in order to provide radio communication between Ceylon and Bombay. This would in all probability be telephonic communication, as undoubtedly such communication could be readily obtained between London and Colombo via the great port on the western coast of India.

FRANCE.—*Interference!*—The Amiens authorities have recently made a drastic by-law requiring all electrical machinery to be so installed as to ensure that broadcasting in that town will be perfectly immune from interference. Six months is the period during which those responsible for installations, such as tramways, luminous signs, electro medical and hair dressing apparatus, lifts, cinematograph projectors, sewing machines, wood-sawing, pumping, &c., &c., will be given to put their respective houses in order. According to the electrical press, experimental transmissions on 60 kw. are actually being made by Radio Toulouse. The *Electrical Review* adds that "the higher power will be used regularly as soon as official permission is obtained."

GERMANY.—The *Wireless World* announces the opening shortly of two new 60 kw. broadcasting stations. Munich (533 metres) should have begun regular transmission before these notes reach the printer's hands, while the opening of the new Berlin transmitter is expected to take place at latest during this present month.

GREAT BRITAIN.—Monday, Dec. 18, 1932, should be historic in the records of wireless achievements. On that date Daventry became actually the centre of the British Empire, from that date forthwith this station will broadcast to Canada, Australia, India, South Africa, the Fiji Islands. Literally to any point on the globe where a Britisher has the facilities for tuning-in.

The new year would appear to be commencing with a small flood of new broadcasting transmitters, judging from the above French and German notes, and now comes the information from

Plymouth that there also, during this present month of January, it is fully expected that the new plant the B.B.C. is installing to enable Plymouth's local broadcasting station to transmit on a wavelength of 200 metres instead of 288. The power also will be raised to 500 w. and the service area of the station extended from five to about eight miles. *Teleprinters for the City of London Police.*—The *Electrical Review* assures us that the City Corporation Police Committee is about to install a Teleprinter service for the City of London Police in conjunction with the Metropolitan Police Force. "Telex" facilities for telephonic communications between the City and the Provincial police forces are also to be provided.

INDIA.—The Indian Radio and Cable Communications Co. is making good progress with the erection of the beam station Anglo-Indian radio-telegraph-telephone service. The directional transmitter is at Kirkee and the receiver at Dhond. It is mentioned by the *Electrical Review* that, in connexion with the above item, the trunk telephone network is being extended, chiefly to South India and possibly Ceylon. (See also notes under CEYLON.)

Broadcasting.—The question of broadcasting which has been raised for some time past by the Madras Corporation has widened out to broadcasting for the whole of the Presidency of Madras. The latter scheme suggests a short-wave transmitting station, probably at Bangalore.

Manufacturers of wireless apparatus in England are sometimes at a loss to discover why Indian broadcasting is not taken up more rapidly by the natives in that country. The cause is simple enough to explain. Only a very small percentage of the natives of India as a whole could possibly afford the simplest type of wireless receiver.

JAPAN.—According to the *Electrical Review* the Indian Radio and Cable Communications Co. are now completing a radio-telegraph link between India and Japan. The multi-channel system ordered from the "Ericsson" Company is to be used giving both telephone and telegraph carrier channels on the same pair.

NEW ZEALAND.—It is understood that, due to the newly-created Broadcasting Board and the renewed interest in the Empire Broadcasting scheme, the licence returns for August last gave the unusually high total of 3,552 new licences.

RUSSIA.—It is reported that the Soviet authorities are arranging for the installation of radio receiving equipment in 2,335 schools in the country during the current year.

SOUTH AFRICA.—The *South African Postal and Telegraph Herald* gives us a condensed account of the Postmaster-General's Report for the official year 1931-32 which, with considerable regret in our turn, must be even further condensed. The total cash revenue for postal, telegraph, and telephone services amounted to £4,359,991, an increase of £330,818 over the previous year, notwithstanding reduced traffic. The increased income was largely due to the increased inland postage rates. Expenditure was also reduced, with scrupulous care, to below the Parliamentary grant, which was £3,267,000, and only totalled £3,089,141. It is considered by the authorities, "The most profitable year in the history of the South African Post Office."

SWITZERLAND.—The *Times* states that a radio-telephone service between Geneva and Tokio is to be opened as the result of experiments made between the League of Nations short-wave station at Prangins and the Japanese short-wave station at Kamikawa, near Tokio. The service for the present is not open to the general public.

TUNIS.—The laying of a new submarine telegraph cable between Marseilles and Oran, Tunis, is now completed and is the second cable connecting the two cities. The first was laid in 1892. France is now connected with North Africa by eleven cables, all concentrating upon Marseilles. The laying of the 1932 cable was successfully carried out by the French Government's new cable steamer *l'Amphère*.

U.S.A.—November-end saw the settlement of a lawsuit which was commenced in 1930. One writes of the action brought by the American Government against the Radio Corporation of America and its thirteen associated companies for violation of the Anti-Trust Laws. "It means," says the New York correspondent of the *Daily Telegraph*, "the break-up of the vast merger which had a virtual monopoly of the electric and radio industries in the U.S.A." The Federal Judge signed a decree ordering the American General Electric Co. and the Westinghouse Electric Co., which jointly control the Radio Corporation to "dispose of their holdings," and "the corporation to change or modify its international agreements." It is said to have formed the largest wireless trust in the world, including interests in the H.M.V. and Columbia companies.

*Scientific Outlook.*—"When it takes out of life the moments to which life owes its value, science will not deserve our admiration, however cleverly and however elaborately it may lead men along the road to despair."—BERTRAND RUSSELL.

J. J. T.

## THE NEW ENGINEER-IN-CHIEF.

LT.-COL. A. G. LEE, O.B.E., M.C., has been appointed Engineer-in-Chief of the Post Office in succession to Sir Thomas Purves.

During the War Col. Lee served with the Royal Engineers in France, finishing up as Officer in Command, G.H.Q. Signal Area. After the War he took up wireless work and played a prominent part in the development of the giant wireless station at Rugby. After this he proceeded to the development of International Wireless Telephony, which commenced with the New York-London Telephone Service and has since grown to vast dimensions as a world-wide telephone network with our Dominions. For the last few years he has been responsible for the technical direction of the Telephone and Telegraph Services in addition to wireless work.

He has been leader of the British Delegations at several International Radio Conferences. In 1928 he was appointed Chairman of the Radio Research Board, a post to which he brings considerable knowledge of the practical requirements of wireless as well as intimate contact with research methods. In 1929 his activities in the technical field of wireless were recognised by the Americans, who elected him Vice-President of the Institute of Radio Engineers of America, an honour which he was the first Englishman to hold.

He was elected Chairman of the Wireless Section of the Institution of Electrical Engineers in 1927 and has been a member of Council of that Institution since 1931.

(A portrait and biographical sketch of Col. Lee appeared in the *Journal* of May 1928.)

## FOR OUR ADVERTISERS.

*Australia.*—Melbourne. Jan. 10. Post and Telegraph Department. Telephone jacks and number plates (A.X. 11580) and loading coil pots (A.X. 11578). Jan. 17. Switchboard keys and parts (A.X. 11582) and telephone bells and parts (A.X. 11583). Also automatic telephone relay sets (A. 11618). Jan. 24. Resistances and reactances (A. 11596). Jan. 31. Telephone registers and induction coils (A. 11619).

*New Zealand.*—Wellington. Jan. 10. Post and Telegraph Department 10,000 telephone transmitters (A.X. 11587). Jan. 23. Twenty miles v.i.r. wire (A.X. 11609). Feb. 7. 800 bell receivers and 5,000 mouthpieces. (A.X. 11627). Same date 600 keys and 200 lamp caps (A. 11626).

J. J. T.

## REVIEWS.

*"Induction Coil Theory and Applications."* By E. Taylor Jones, D.Sc. Published by Sir Isaac Pitman & Sons Ltd. Price 12s. 6d. net. viii + 244 pp.

With the exception of the previous book on the Induction Coil which was published by the author of the present work eleven years ago, we do not know of any book specifically dealing with this apparatus. The subject is, however, of importance, as induction coils are not only used to-day as sources of high potential for laboratory purposes, but also are widely employed for producing ignition in petrol engines and for exciting X-Ray tubes for medical and surgical purposes.

The theory of the coil is very fully dealt with, the actions which take place in the various circuits being not only investigated mathematically, but also illustrated by well-reproduced oscillograph photographs.

The use of the discharge from the coil for the production of Röntgen rays, and also for the production of electron beams for use in experiments in diffraction by thin films, is fully described.

A chapter is devoted to the theory of the ignition of explosive mixtures by the spark from the coil, and another to use of induction coils in connexion with thermionic valves for the purpose of producing oscillations.

The book is well got up and the diagrams and photographs are clearly reproduced. It should prove useful for all who make use of induction coils in the course of their work.

*"Outline Notes on Telephone Transmission Theory."* By W. T. Palmer, B.Sc. Published by the "Electrical Review." 167 pp. Price 5s. net.

A series of papers dealing with the elementary theory of telephone transmission was recently published in the *Post Office Electrical Engineers' Journal*, as an aid to students preparing for the City and Guilds examination in Telephony. These papers were so successful that it has now been decided, for greater convenience in use to republish them in book form.

The first paper deals with the mathematical theorems which occur in transmission theory, after which, in sixteen further papers, the whole subject is covered. The treatment is, naturally, not very profound, as the book is intended, as stated in the preface, for "those students who merely desire to memorise enough in order to find their way about." At the end of each section, however, references are given to sources from which the student can obtain any further information he may need. The book should prove a useful guide and aide memoire for the class of reader for which it has been prepared.

*"Electronics."* By R. G. Hudson, Professor of Electrical Engineering, Massachusetts Institute of Technology. Published by Messrs. Chapman & Hall. v + 135 pp. Price 12s. 6d. net.

This book is a brief review of the present-day position in the field of atomic physics and radiation, written for those who, having already some knowledge of physics and chemistry, wish to know more of the recent developments in this most important field of scientific research. For a reader with the preliminary knowledge which is assumed the book is very helpful and suggestive. The whole subject is dealt with from the early development of the atomic theory, including the work done in the investigation of the electron and proton, the various models which have been suggested to represent the structure of the atom, photo-electric effects, radiation, and the quantum theory.

The book concludes with a survey of the various devices which have been invented in recent years, in which use is made of electronic action to bring about results of practical importance.

The book would be improved if an index were provided, and also if references were given to books and other sources where the reader could find further information on the points discussed.

The expressions "billion" and "trillion" are used with their American and not their English meaning, and it would avoid possible misconception if a note calling attention to this point were inserted in copies published in this country.

*"Modern Radio Communication."* By J. H. Reyner, B.Sc. Fourth Edition. Published by Sir Isaac Pitman & Sons Ltd. xviii + 318 pp. Price 5s. net.

This small book by an ex-Post Office Engineer forms a very good introduction to the present-day theory and practice of wireless telegraphy and telephony, suitable for readers who have some small knowledge of electricity and magnetism, and who wish to study the subject seriously. The whole ground is covered, and the student who has conscientiously worked through the book should find himself able easily to pass tests of the standard of the City and Guilds Examination in Radio Telegraphy and Telephony, while if he is concerned with wireless matters in his everyday work, it should enable him to tackle intelligently any problems with which he may meet.

The fact that four editions have been called for during the last nine years shows that the book meets a real need.

*"The Mechanism of Nature."* By Professor E. N. da C. Andrade, D.Sc., Ph.D. Published by G. Bell & Sons Ltd. Fourth Edition. xvi + 175 pp. Price 4s. 6d. net.

This little book has been written to meet the needs of those who are anxious to obtain some idea of the wonderful advances which have been made in recent years in our knowledge of the fundamental facts of the physical universe, but who have not had the training necessary to enable them to obtain the information from the usual sources. The seven chapters into which the book is divided deal respectively with the general nature of physics, heat and energy, sound and vibrations, light and radiation, electricity and magnetism, the quantum theory and the atom. The latest discoveries are mentioned, while at the same time the treatment is on the very attractive and readable lines to which those who are familiar with Professor Andrade's previous popular writings will be accustomed. To those who have not yet made the acquaintance of the author, the following short extract from the preface will give a good idea of the atmosphere of his work: "My purpose would perhaps have been best expressed in such a title as 'A Brief Introduction to Natural Philosophy,' which I originally intended to give to this little volume: I love the old term Natural Philosophy, and the view of physical science which it implies."

The book is illustrated with eight beautifully reproduced photographs. It can be confidently recommended to all who wish to know something of the recent advances in the field of knowledge with which it deals.

*"Short-Wave Radio Reception."* By W. Oliver. Foulsham & Co., London.

This little book, which can easily be disposed of in one's pocket, can be recommended to the amateur who already possesses a fair knowledge of wireless reception, let us say of a simple two-valve set of the detector and L.F. type. The diagrams are exceedingly clear, while the notes on learning the Morse code—for the enthusiastic amateur, will be found helpful. Special note should be taken of the author's warning in paragraph three, page 19, regarding the special care necessary in building up a set of this description. A very good shillingsworth.

## TELEPHONES AND TELEGRAPHS CON- STRUCTED BY SCHOOLBOYS.

THE accompanying photographs show what can be done in educating the younger generation in the correct use of the telephone at primary schools.

At the London County Council, Ivydale Road School, Nunhead, battery telephones of surprising efficiency have been constructed by the boys under the supervision of the Science Master. These



IVYDALE ROAD SCHOOL. TAKING DOWN A MESSAGE.

are used for purposes of internal communication and they can also be associated with a group of receivers on which messages are taken down by boys and girls who are thus able to cultivate a "telephone ear." This practice is also accompanied by general instruction in the correct method of making and answering calls. In addition, the boys have made some morse sounders, on which they practice sending and receiving messages. The success that has attended these efforts is so encouraging that it is now proposed to give instruction in the working of call offices and the simpler types of switchboards. It is stated that this training has already been the means of placing boys and girls in situations which they might not have obtained without this knowledge, and it is to be hoped that the example of Ivydale Road will be widely copied.

P. J. M.



IVYDALE ROAD SCHOOL. A TELEPHONE CLASS.

## THE RETIREMENT OF TWO WELL-KNOWN FRENCH ENGINEERS.

THANKS to the courtesy of the editor of our French contemporary *Le Relais*, it has been made possible to give a brief account of the meeting in the canteen of the C.T.O., Paris, some few weeks ago, to say farewell to Messieurs Montoriol and Mercy, telegraphic technicians of a high order and world-wide experience. It is more than 30 years ago that M. Montoriol and M. Mercy, his cadet, came to London, and installed the Baudot multiplex telegraph system between the English and French capitals. Not only did these worthy officers teach the art of Baudot manipulation to certain telegraphists of the Foreign Cables staff in this country, but they insisted that these same operators should be initiated into all the technicalities of the system and its apparatus.

As a consequence, and due entirely to the unique methods and patience of M. Montoriol at that time, the subsequent success of Anglo-Continental Baudot working was due, and in later years the successful installation of the same system in India by three of these same English pupils. The gathering was graced by the presence of many of their old French colleagues, themselves long since retired, including MM. Lesaffre, Chattelun and Delvart. M. Dumoulin, Controller, M. Carrat, M. Jacob and M. Lesaffre each paid high and well-deserved tribute to their technical capacity, and their faithfulness alike as friends and colleagues, as loyal officers of the French Telegraph Service. To these encomiums are now added, in all sincerity, the very best wishes for long and happy lives *à la retraite*, from their old colleagues of the C.T.O., London. In these good wishes certain English telegraph engineers of old times would also join, and that most heartily.

J. J. T.

**BIRMINGHAM NOTES.**

*Miss Eade's Retirement.*—We regret that owing to a clerical error an omission was made in the account of Miss E. P. Eade's retirement in last month's *Journal*. The eiderdown and bedspread mentioned were presented by the Traffic Department, District Office, Trunk Exchange and town and sub-exchanges.

*Promotion.*—We offer our congratulations and best wishes to Miss F. Lambert on her promotion from Assistant Supervisor, Class I, to Supervisor at Midland Exchange.

*Obituary.*—It is with sincere regret that we have to record the death of Mr. J. A. Hopkins, Clerical Officer. The sad news came as a great shock, as Mr. Hopkins was on duty the previous day.

Mr. Hopkins entered the service of the late National Telephone Co. in 1903 and was due for retirement in the early part of next year. Many of his colleagues, including Mr. J. L. Parry, District Manager, and Mr. C. W. Piggott, Traffic Superintendent, stood at the graveside at Olton Monastery to pay the final respects to one who was held in the highest esteem by all with whom he came in contact.

*Birmingham Automatic Scheme.*—The Birmingham Director Automatic scheme was further extended on Nov. 19 by the transfer of Springfield and Halesowen Exchanges. Springfield was enlarged by the addition of components from South, Acocks Green and Warstock Exchanges, and opened with a total of 1,040 lines, whilst Halesowen opened with 232 lines. Springfield works to the Birmingham Toll Exchange while the manual services for Halesowen are provided from the Subsidiary Toll Exchange, which was recently opened at Tipton.

Although the Birmingham automatic scheme was inaugurated only a little over 18 months ago there are already 20 director automatic exchanges, serving a total of about 13,000 subscribers. There are also 10 call display exchanges so that altogether there are about 30,000 subscribers in the district to which calls may be dialled from the director exchanges.

A further eight exchanges are to be transferred to automatic working during 1933.

*Demand Scheme.*—The Birmingham demand trunk scheme has been further extended to the Liverpool, Leeds and Sheffield routes. The present position of the scheme in Birmingham is that demand facilities are available from subscribers in the Birmingham 7-mile circle (director area) to the following towns:—

- London Telephone Service.
- Manchester no-delay area.
- Bristol no-delay area.
- Liverpool 7-mile circle.
- Leeds 5-mile circle and exchanges in Bradford area.
- Sheffield 5-mile circle.

It is interesting to note that demand working on a bothway group of circuits has been carried out for the first time on the Birmingham-Leeds route.

Further extensions of the scheme will be made during the first few months of 1933.

*Telephone Lecture Society.*—A very enjoyable dance was held on Dec. 3 in aid of the Rowland Hill Benevolent Fund. Nearly 200 people attended, including Mr. W. P. Baines, Postmaster-Surveyor, Mr. J. L. Parry, District Manager, and many members of the telephone, telegraph and postal branches, together with their friends. Dancing continued until about 11.30 p.m. and the occasion proved a great success in every respect.

A meeting of the Lecture Society was held on Thursday, Dec. 8, under the chairmanship of Mr. J. L. Parry, District Manager. Mr. W. P. Baines, Postmaster Surveyor, was also present.

This meeting was of unusual and special interest in that the lecture was delivered by Mr. C. W. Piggott, Traffic Superintendent, who retires on Dec. 31. This, therefore, was Mr. Piggott's last appearance in an official capacity at the Society's meetings, and the high esteem in which he is held was evidenced by the unusually large attendance.

Mr. Piggott's lecture was entitled "Here and There" and was largely a story of the development of the telephone from its earliest days. Few can be more qualified to speak on this subject than Mr. Piggott, for as Mr. Parry said at the conclusion of the lecture, he is one of the earliest pioneers of the telephone service. Mr. Piggott told us stories of the "Good old days" and presented some amazing contrasts with modern telephone practice. Some of his experiences must be unique and we are grateful to him for adding to our knowledge of the telephone service as it used to be.

The lecture was illustrated with a large number of slides of old and new telephone instruments, switchboards and exchanges, some of which are of great historical interest. The lecture was easily the most interesting that

the Society has had the privilege of hearing and we thank Mr. Piggott very much indeed for the time and trouble he took to provide us with such an enjoyable evening.

Although this was Mr. Piggott's last official appearance before the Society, we are hoping that he will continue to attend our meetings after his retirement.

The lecture was followed by a concert arranged by Miss Vitty, of the Trunk Exchange, and this was followed, as usual, by a short dance.

*Young People's Telephone Exhibition.*—A Young People's Telephone Exhibition is to be held in Birmingham from Jan. 4 to 25 on similar lines to that held in London. At the time of writing the preparations are not complete but it is hoped to give a full account of the proceedings in a later issue of the *Journal*.

**C.T.O. NOTES.**

*Promotions.*—Misses M. F. Glassborow, C. S. Gourlay, E. M. Wagstaff and G. E. Mathieson, telegraphists, to be Assistant Supervisors.

*Retirements.*—Misses E. J. Connor and H. Somerville, telegraphists.

*C.O.D.O.C.*—It is regret that, owing to the loss sustained by each production of the Operatic Section, it has been found necessary to cancel the projected production of "San Toy" in February next. In place of "San Toy" the Dramatic Section will give two performances of "The Middle Watch." It is sincerely to be hoped that all friends of the C.T.O., past and present, will continue to support the C.O.D.O.C. to their utmost ability in order to ensure that the social life of the office shall be brightened.

*Chess Club.*—The Centels won their second round match in the Minor Cup, beating the War Office by 6 to 4.

In the leagues neither the first nor second team is doing well, the results being as follows:—

<i>First Team.</i>	
Centels, 4½	Air Ministry, 5½.
" 4	Paymaster-General's Office, 6.
" 5½	Travaux, 4½.
<i>Second Team.</i>	
Centels II, 4½	War Office III, 5½.
" 4½	Met. Water Board, 5½.
" 4	Pensions III, 6.
" 1½	Ministry of Transport, 8½.

*Obituary.*—We regret to have to record the death of Mr. Robert Donaldson, late Assistant Controller, at the age of 81 years. He entered the old T.S. Office in 1870 after having served with the South-Eastern Railway Company. He was promoted Assistant Superintendent, Class II, in 1890, Assistant Superintendent, Class I, in 1895, Superintendent in 1906, Assistant Controller in 1910, and retired in 1913. To his widow (formerly Miss L. Chapman, at one time a Supervisor of the C.T.O.) and his sons and daughter we extend our deepest sympathy.

*Athletics.* The winter cross-country season seems likely to become very popular considering the enthusiasm displayed each Tuesday and the number of recruits.

At the annual Civil Service 5 miles cross-country team championship, run on Saturday, Dec. 10, the C.T.O. A and B teams obtained the 8th and 17th positions respectively. The first C.T.O. man home took 7th place.

*Bowls.*—In the matter of bowls the C.T.O. had a disappointing season, losing 4 out of 7 games in the major matches. The C.T.O. team finished 6th in the league.

The Club Championship resulted as follows: Singles (Cooper's Cup)—W. Fraser. Pairs—Messrs. G. T. Archibald and H. W. Piper. Club Handicap—W. Fraser.

Several of the members obtained their C.S.B.A. colours during the season.

*Art and Crafts.*—The Seventh Annual Exhibition of the C.T.O. Art Society was held in November.

Messrs. Ginger and Davey once more were the most prominent exhibitors. This year these two members toured Suffolk and North Essex and the result therefrom was very pleasing. The Justins Award for Water Colours went to Mr. F. Osborne, a cartoonist of no small reputation, with his humorous portrayal of the official sentence "Your telegram is receiving attention." Mr. Ginger took the second award and 6 certificates and Mr. Davey obtained

two certificates. In Black and White Mr. Ginger took first prize. The Bigmore Award for Photography was taken by Mr. T. A. Adams with a beautiful picture of a dog, and Mr. Christopher took a certificate with "Mud and dust." In the Crafts section Mr. C. Gray took first prize for his inland jewel casket.

*Cable Room Smoker.*—A very successful concert was held at the "Ship," Ivy Lane, E.C., on the evening of Nov. 11, 1932, under the auspices of the Fortels Sports and Social Club. Mr. J. G. King, in the chair, was surrounded by many old colleagues, serving and retired, of the supervising ranks, and we were pleased to see sitting with him Mr. H. W. Dunne, who had thus taken the opportunity of meeting the staff so soon after taking over the Controliership of the Cable Room. Artistes from the "Room" and elsewhere came forward in force and provided an excellent programme of fun and song. Thanks are due to the following artistes for contributing to the evening's entertainment: Messrs. Chris Oberst, Chas. Phillips, Walter Norley, Sydney Moore, Philip Edsall, Walter Steeple, Thomas Raymond and Lewis Dinsmore.

Opportunity was taken of presenting gifts, which had been subscribed to by all ranks of the Cable Room, to Messrs. F. S. J. O'Shaughnessy, Jack Rist and Jack Pleydell, who had retired from the service recently. Mr. B. Skegg, introducing his subject in a speech, congratulated the "Fortels S.C." on providing such an enjoyable evening which had attracted such a large gathering. Continuing, he related some almost forgotten anecdotes concerning each of the guests of the evening, causing roars of laughter.

Mr. J. G. King, after a brief reference to the official careers of the recipients, then presented the gifts amid substantial applause. Suitable expressions of thanks were made and the concert continued until its close brought a memorable evening to an end.

## LEEDS DISTRICT NOTES.

"Post Office officials seem to be turning psychologists. They have found that a man waiting at the end of a silent telephone line even for a short time becomes impatient, and so they let him hear the various steps in the putting through of his call on the new switchboard."

Thus did one newspaper comment on an interesting feature of the new demand trunk service from Leeds and Bradford to London, Liverpool, Manchester, Birmingham and Hull, which was successfully inaugurated on Nov. 26.

The change in the trunk operating methods involved by the new system and the elimination of delay which has resulted have given the supervising and operating staff a keener sense than probably any other type of transfer could have given, of the important part they play in providing a service which, with their help, is gaining not only the approval but also the goodwill of the subscribers.

The Social and Discussion Circle held the first staff whist drive and dance of the season at the Metropole Hotel, Leeds, on Saturday, Nov. 26. A company of over 330 members of the staff and their friends included Col. Jayne (Postmaster-Surveyor) and Mrs. Jayne, Mr. Murray (District Manager) and Mrs. Murray, and Mr. Hensley, of the Headquarters Traffic Section, who had earlier in the day set the seal on the transfer to demand trunk working.

The whist drive prizes, which were presented by Mrs. Murray, were won by the following: Mrs. Johnson, Misses Farrer and Priest, Messrs. McQuade, Hinchcliffe and Mills.

The function, though, perhaps, a little crowded, was one of the most successful which has been held in the District.

The following is extracted from an appreciative article on the Bradford Exchange service, which appeared in the *Sunday Dispatch* and presents wrong number trouble from a novel angle:—

If ever you feel lonely and talkative pick up a Bradford telephone directory, choose a number, and just talk. For Bradford telephone subscribers are the best-tempered in the world. Their banner has been hoisted by someone who went to the trouble of advertising in a newspaper.

Mr. ——— apologises to the three leading Bradford spinners of the same name whom he, in error, telephoned wanting to speak to the fourth, and appreciates the courtesy of Yorkshire."

The telegraph and telephone staffs jointly bowed their acknowledgment of the sentiments expressed in the following letter received by the Postmaster-Surveyor:—

"Dear Sir,—I had been expecting a wire from Lord ——— addressed to me here at the office during the afternoon of yesterday and just before leaving about 7 o'clock I telephoned to "Telegrams" asking them whether they could under the special circumstances communicate the contents to me at my home, "Fairlea," Headingley 51291 in about an hour's time and I am writing first of all to say how much I appreciate the pains taken by

the young lady to whom I spoke at that time and who came through to me at the house explaining that before she was able to get in touch with the actual telegram it was in the hands of the boy for delivery.

She did everything she could to try to help me and eventually put me in touch with the officer in charge at that time who went to considerable trouble not only in explaining the position to me but endeavouring to get particulars of the wire for me, eventually as I understand (in conjunction with his colleagues in London from which City the wire had been despatched) tracing it and conveying its contents to me at my home. I cannot speak too highly of the manner in which the matter has been dealt with and not only do I wish to compliment the service but I would like you to take the opportunity on my behalf if you can see your way to do it, of thanking both of the parties for all the trouble they have taken.—Yours faithfully,

B. B. ———."

## GLOUCESTER NOTES.

*Whist Drive, Social and Dance.*—Encouraged by the success of the social events of the past summer, the Social Committee of the District Manager's Office decided to hold an invitation Whist drive, social and dance on the evening of Nov. 25. Everybody was anxious that the event should be successful and as the date drew near a considerable amount of enthusiasm was displayed.

The programme had been carefully arranged and timed with the view of providing entertainment for all. At 8 p.m. whist and dancing commenced in separate rooms; 60 played whist and the remainder—some 60 to 70—occupied the dance room. At 9.30 p.m. the whist concluded and the whole of the party gathered in the dance room to hear Miss Olive Shaw—the 10-year-old daughter of a member of the staff—give an amusing and clever recitation. This was followed by a one-act play presented by members of the staff. Both items were well received.

Supper then claimed our attention for half an hour or so and a very jolly supper it was. Immediately afterwards the District Manager, Mr. R. M. McLarty, spoke a few words of welcome to all our visitors and made especial mention of the pleasure it gave the Gloucester staff to have with them once more a party from the Bristol District Manager's Office and members of our own staff from outstations. Mrs. McLarty then presented the prizes to the successful whist players.

During the dancing which followed prizes were offered and presented on the spot to the successful couples in spot dances and the winner of two guessing competitions also received prizes. The dancing went with a swing and at 10 p.m., when it was originally intended to apply the closure, there was a unanimous desire to continue. It seemed a pity to break up such a jolly party and so on we went until 2 a.m., when the band played "God Save the King."

We all feel that, apart from the mutual pleasure experienced by the closer acquaintance with our colleagues, this function has given a good oiling to the works of the official machine of which each one of us is a part. All good machines require oiling at intervals and the social committee feel that another lubrication before the end of the season will ensure smooth running until the summer outings begin. (In case there should be any misunderstanding of the metaphorical reference we hasten to add that the good sense of all present avoided any danger of over-lubrication.)

*Telephone Staff Meeting.*—In connexion with a series of conferences with exchange staffs in the Gloucester Telephone District, a meeting was held at Hereford on Dec. 13. The District Manager presided and in addition to the speakers, the meeting was attended by telephonists from Hereford and four other exchanges in the area.

Mr. A. Barker, Traffic Superintendent II, addressed the meeting on the subject of "Single Channel" working, which is about to be introduced in the Gloucester, Hereford and Cheltenham automatic exchange centres under the "Demand" scheme.

Mr. A. Scarborough, Assistant Traffic Superintendent, then spoke on (1) Timing of Trunk Calls, (2) Treatment of Complaints and (3) Establishment of Directory Centres; and was followed by the Travelling Supervisor for the area, Miss L. J. Dalley, who gave a very able exposition of the New Accounting Procedure.

The discussion which followed demonstrated how very keen had been the interest taken by the telephonists, who, by asking questions, contributed in no small measure to the better understanding of the subject matters. There is no doubt that, when the time arrives to introduce the demand system in this district, the operating staff will be thoroughly conversant with the principles underlying "Single Channel" working.

*Sales Department Meeting.*—The series of monthly group meetings was inaugurated on Nov. 28. Mutual benefit was derived from the discussion.

In the afternoon of the same day another meeting was held for open discussion on matters of general interest. The District Manager, Sales Manager and Sales Supervisor were present in addition to the Sales Representatives and several questions relating to routine procedure were dealt with.



## GUILDFORD DISTRICT NOTES.

*Telephone Staff Meeting.*—The third of a series of staff meetings which has been arranged in the Guildford Telephone District took place at Guildford on Nov. 23. There was an attendance of 85, including representatives from the Traffic Section, Sales Section and Accounts Branch. We were pleased to have Mr. Surplice, Head Postmaster, Guildford; Mr. Payne, Superintendent, P.O. Guildford, and Mr. Barnes, Postmaster, Cranleigh, at the meeting. A paper was read by the District Manager entitled "Selling the Service," with special reference to promptness, courtesy and helpfulness. A further paper was read by Miss Plowman, Assistant Supervisor, Farnham, on "Supervision in Exchanges from a Supervisor's Point of View"; and a third paper was read by Miss Steddy, telephonist, Guildford, on "Conference Facilities." A number of items were also discussed, and altogether the meeting was very interesting and instructive.

*Dance.*—A most enjoyable evening was spent at Trinity Hall, Guildford, on Nov. 23, when a dance was held under the auspices of the Telephone Social Club. There were approximately 150 present, and included the District Manager and Mrs. Crombie, the Head Postmaster, Guildford, and Mrs. Surplice, Mr. Lock, Sectional Engineer, the Traffic Superintendent and Mrs. France.

Mr. T. Martin, of the Sectional Engineer's Office acted efficiently as M.C.

At the end of the evening prizes were presented by Mrs. Crombie to the winners of the spot dance and other dances.

*Social at Farnham.*—On Dec. 3 an enjoyable dance was held at Church House, Farnham, by Post Office Staff, when approximately 100 of the P.O. Staff and their friends were present. A mixture of old and new dances were enjoyed, and the arrangements were in the hands of Mr. L. Davies, who acted as M.C.

## MANCHESTER NOTES.

*Staff Changes.—Promotion of Mr. H. C. Froom.*—On Nov. 31 a gathering representative of the District Manager's and Superintending Engineer's staffs met at Telephone House for a hot-pot and sing-song and to say farewell to Mr. Froom on his promotion from Traffic Superintendent, Class II, to Class I, at Belfast. The District Manager, Traffic Superintendent, Sales Manager and others spoke of Mr. Froom's kindly nature and value to the Department, and wished him happiness in his new sphere. The guest of the evening made a very fitting reply and expressed the hope that he would find the Belfast staff as friendly as that at Manchester.

On Dec. 3 many of the District Manager's staff gathered in the Traffic Office to say good-bye to Mr. Froom. On their behalf Mr. Whitelaw presented him with a suit case, razor and fountain pen, and also a hand-bag for Mrs. Froom, as a token of their esteem.

*Mr. A. Kemp.*—Mr. Kemp, Assistant Traffic Superintendent from Liverpool, took up duty at Manchester as Acting Traffic Superintendent, Class II, on Dec. 19. We are very glad to welcome him back to his spiritual home and congratulate him on his rapid promotion.

*Civil Service Sports Club.*—A successful whist drive was held at Telephone House on Dec. 8. As we mentioned in the last issue, the Sports Club will commence its second dance at "The Plaza," Oxford Street, at 7 p.m. on Jan. 19. The price will be 3s. 6d.

*Post Office Telephones Social Club.*—A very pleasant dance was held at Telephone House on Dec. 10.

A carnival dance will be held on Jan. 7, and not on Jan. 14, as was stated in our last number.

*The Telephone House Refreshment Club's* second annual Christmas dinner was held on Dec. 15. Some 250 were present, including Mr. Herbert, Mr. Whitelaw and the heads of various sections. After a very good dinner the Christmas draw was followed by dancing, and Miss Eadsforth sang for us. Everyone seemed to be intent on making whoopee and the evening was a splendid success.

*Sales Department.*—The Sales staff held their annual dinner on Dec. 8 at the Grand Hotel.

A short review of the progress made during the past 12 months was made by Captain Cooper, the Sales Manager, who also welcomed the guests.

Mr. Lynskey, in proposing the toast to the guests referred to the big efforts that were being made by the Sales staff to reach the 100,000 mark and spoke in appreciative terms of the arrangements made by the District Manager in providing lectures to supplement the Telephone Salesmanship Course. Mr. Fish supported him.

Mr. Whitelaw, the District Manager, in responding, outlined the many changes and progress that had been made over a long period and pointed out the many advantages to be gained from such a comprehensive scheme of training as that which now is being applied to the Sales staff. He exhorted them to maintain their efforts which had been so successful in the past.

*Staff Lectures.*—A series of weekly lectures by various members of the District Managers and Superintending Engineer's staffs has now been running for some weeks at Telephone House. On Dec. 2 Mr. J. Wilson, Higher Clerical Officer, lectured about the accounting side of the District Manager's Office. On the 9th Mr. M. W. Killeen, Sales Supervisor, spoke about "Development" and on the 16th Mr. G. Kenyon, Chief Inspector, gave a talk on engineering work. Each lecture was followed by a discussion. Lectures by the Sales Manager, Captain Cooper, and the Traffic Superintendent, Mr. Magnall, also have been arranged.

*Attrincham.*—The concert which was held at the Garrick Playhouse on Dec. 8 in aid of the Rowland Hill Benevolent Fund was very successful and resulted in the splendid sum of £50 being sent to the Secretary of the fund. This satisfactory result was due largely to an enthusiastic committee drawn from the postal and telephone staffs.

*Manchester Automatic Scheme.*—On Dec. 3 the Urnston and Walkden Exchanges were converted to automatic working, and on Dec. 10 the Main (Oldham), Failsworth and Middleton Exchanges also were converted. In all approximately 5,000 lines were transferred.

With the exception of Main, which has a separate auto-manual board, the converted exchanges are served by the Manchester Toll Exchange. A unique feature was the transfer of the call offices in advance of the general transfers. They were connected to the automatic exchange during the few days preceding the transfers. There are now 18 automatic exchanges serving approximately 26,000 subscribers working in the Manchester Director Area and each is able to dial directly to about 47,000 subscribers.

To familiarise the public with the new system a demonstration set was on view in the Oldham Town Hall for some weeks prior to the conversion, and a very lively interest was taken in it.

The inevitable march of progress unfortunately leaves a back-wash of redundancy amongst the operating staff, and some have been transferred to other offices, whilst others have entered for the Matrimonial Stakes.

## WESTERN DISTRICT NOTES.

With reference to the ferret's bell "story" in the Western District Notes of the August, 1932, issue, it appears the old farmer concerned made frequent complaints of inattention and was consequently invited to see the exchange. He accepted the invitation but on seeing the switchboard said "Oh my God, I didn't know it was like that, no wonder we have got to wait." He as not complained of inattention since.

The provision of modern telephone facilities in rural areas often has effects which are as unexpected as they are interesting. Not long ago a rural automatic exchange was opened at Cockwells, in the backwoods near Penzance. Next to the field where the exchange is situated are two old granite cottages, and presumably the tenant of one of these was, about the time of the opening of the exchange, seeking a suitable name by which his house could be identified. At any rate, suffice it to say that his gate now bears a neat little board with the name "ARE-AYE-ÈXE" thereon. Whatever may be said for or against such a name it is surely unique.

Perhaps in the course of a century or so it will be pointed out as a Cornish name of great antiquity of dubious origin. Who knows?

The Western District has been selected for an experiment with a new type of small exchange known as a "County Satellite Exchange." This is an experiment to provide telephone service in the sparsely populated country districts where the support would be too small to provide a rural automatic exchange. This system provides for the subscribers' lines to be lead to a series of relays located at some central point. A junction line runs from these relays to the parent exchange just as in the case of a rural automatic exchange, but all calls will pass over the junction, whereas in the case of a rural automatic exchange inter R.A.X. subscribers' calls are completed without the use of the junction line. Normally about 85% of R.A.X. calls pass over the junction.

There are now 72 rural automatic exchanges working in the district and 25 are in course of construction.

Extract from a subscriber's letter:—

" . . . I also think the following is worthy of your notice, as it has given my wife endless trouble. As you are probably aware, we have three instruments in this house, one is upstairs and the only two times its use has been required it has failed to operate. It appears that this house has the reputation of being haunted and that the room in which the telephone is, is in some idiotic way supposed to be the worst in this respect. One of your

workmen at the time of installation got to hear about this and having tried for a day or two to make the thing work was advised to 'apologise to the Ghost'. Incredible as it seems, the fool did this and to make matters worse broadcasted it in the village. It seems that no sooner had he done so than the wretched thing functioned satisfactorily, and as news of this sort travels rapidly in country villages, owing to his success what was formerly a fable is now a fact, with the ultimate result that we have the greatest possible difficulty in getting local servants which we prefer to employ in preference to bringing a London staff here, and when they are eventually here they will only go about in twos.

For all this and more I have the telephone to thank. *I would willingly put up with the threatened inconvenience of being without it, in the country as we are, if by removing it you could also take the phantasmal stigma it brought with it to the place.*

It is understood that the subscriber's caretaker related stories of an apparition to the Engineering Officer who attended but he declines to accept responsibility for any increase or decrease of the phantasmal scare. He also states that he did not apologise to the ghost and did not broadcast the story in the village.

Extract from another subscriber's letter:—

"I have before me my telephone account and would like to take this opportunity of congratulating your Dept. on the up-to-date and businesslike way in which it is conducted.

Like the Chinese I have the greatest possible respect for age and it is a solemn thought that in this house there is one telephone apparatus more than 5 years old and another even more venerable. These have the further advantage that I am usually quite unable to hear what my friends say when they attempt to ring me up which has enabled me to escape many tiresome engagements, in fact H.M. Post Office would seem to deserve, equally with the Royal Navy, the name of 'The Silent Service.'

One wonders what the telephone rentals would become if, according to this subscriber's view, all the apparatus had to be renewed periodically in less than 5 years.

Badminton is an indoor winter sport which is growing rapidly in popularity, according to the statistics furnished by The Badminton Association. In Exeter it is particularly popular and several members of the Surveyor's and District Manager's staffs are Badminton enthusiasts. During the past month a mixed doubles match was arranged between the Inland Revenue Club and a team representing the Surveyor's and District Manager's staffs. A fine strenuous match resulted in a narrow win for the Inland Revenue by 5 games to 4. There was ample evidence that with more play together as a team our representatives would constitute a strong combination.

It is hoped that this match is a forerunner of several more inter-office sporting events and we look forward to the return match with the Inland Revenue in the New Year.

During the winter months telephone staff meetings are held at various centres throughout the District at which many useful points are brought up by the exchange staffs, who show much interest in the proceedings. So far as the Traffic Officers are concerned, there is much repetition work and in some cases the meetings have to be held on two consecutive days, and, owing to the geographical size of the District it is not practicable to concentrate the staff to any extent.

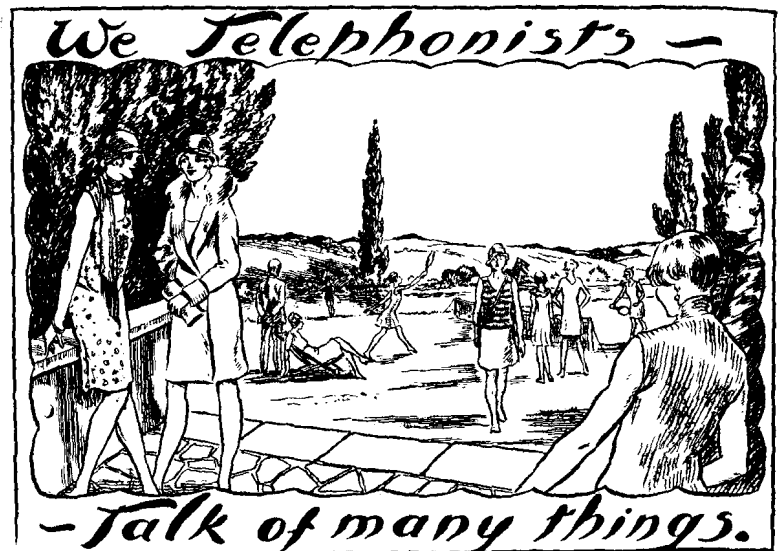
F. J. F.

## PARLIAMENTARY ITEMS.

On Dec. 5 Sir Kingsley Wood, in the House of Commons, in reply to Mr. Doran, who asked the P.M.G. to state "under what clause of the charter dated 1927 the B.B.C. was establishing the Empire broadcasting station at Daventry, and whether, in view of the fact that listeners in this country would derive little benefit from the Empire short-wave station at Daventry, he could arrange with the various Dominions and Colonies that they should defray the cost amongst themselves," said: "The stations of the B.B.C. were constructed and maintained under clauses 2 and 5 to 7 of their Post Office licence of January, 1927, and the drafts of the licence and charter were laid before Parliament in Command Paper No. 2,756 of 1926. The B.B.C. had decided to bear the cost of the Empire broadcasting station until the service had been established, and it considered itself free to re-open the question of contributions from the Dominions and Colonies later." Sir Kingsley added that any other course would have led to delay in the establishment of a service which was generally approved.

The Postmaster-General, on the same date, in replying to questions by Mr. Lovat Fraser regarding "the takings of telephone kiosks, the dialling system and staff matters," said that since 1927, when the automatic system was introduced in London the annual takings at public call offices had increased by about £100,000 in London and about £250,000 in the country as a whole. As regards the staff it was anticipated that it would be possible to absorb in other exchanges the staff rendered redundant as a result of the conversion of manual to automatic working. There had been an appreciable improvement in respect of "wrong numbers" since the installation of automatic telephone exchanges.

J. J. T.



### The Blank Page.

A NEW sheet of writing paper is very pleasant to behold. Its unsullied surface, its clean-cut edges, the perfection and simplicity of its shape convey a sense of completeness. It is a horizon behind which there is infinite possibility. It will take its mood from you. It may appear sympathetic and understanding and eager to serve and thus tempt you to commit to its charge the intimate thoughts which are ever present in mind but absent from speech. Or it may seem to wink and gleam and lead you to chaff and banter in the most absurd and persiflaginous manner. Take another sheet in another mood and its perfection is merely that of cold beauty. It does not attract you. You feel that if it has any emotion at all it is rather grim and contemptuous. You hardly dare pen its surface and, having dared, you are seized with a dark and pessimistic foreboding. Earnestly but ineffectually you desire to blot out your transgressions. Again, other sheets are of uncertain temper. You never quite know how they will finish, once you have written on them. They are most disconcerting—they are the sheets in which vivid colour fades into the purple patch, wit turns caustic and the noble descends to the base. It is well if they end as a crumpled ball in the fire or in the waste-paper basket, although it is a pity that innocence should suffer for the unwise of the scribe.

You can easily weave a romance about the blank page if you will. Some pages are used as scent in the paper-chase and others—quite as ordinary—are preserved in glass cases in museums or amongst the archives of crime. There are sheets, the writing on which is faded: some are tied with ribbon: some enfold a lock of hair: others, written in a silent pencil and perhaps stained with that which is not ink, lie folded beside a medal. The royal favour, the secret plot, the brief jotting of fame or notoriety, the draft poem, the eternal question and the inevitable answer, the first letter home from school, the last letter home from France—they were all blank pages once. Of themselves they were and are nothing, but fame and fortune, life and love, laughter and tears, have made them immortal.

I have a blank page before me now. It is pleasant to behold, but whilst I am glad to see it I am somewhat apprehensive about it. It is waiting to be used but it must be used carefully and to the best advantage for I shall not be able to alter what is written. It is a sort of examination answer paper. I hope I shall not want to crumple it into a ball and throw it into the fire. It is headed 1933.

PERCY FLAGE.

### Brixton Telephone Exchange.

The Brixton Telephone Exchange staff held their first dance of the season on Nov. 18 at the Clarence Rooms, Brixton. A gathering of over 150, including the Service Superintendents, Messrs. Saunders and Hickmott, Traffic Officers, and many old and new friends from other exchanges, had a most enjoyable evening, thanks to the good work of the committee. The Misses Moodie, Pillow, Ford, Hester and Valentiny, have set a very high standard in organisation and all who attended were fully appreciative. It is certain that further dances organised by this excellent team will be exceedingly popular.

Mr. Arnston performed the duties of M.C. in competent fashion.

A. C. V.

### A Week's Holiday in London—(concluded).

Tuesday, Sept. 27.—I got up fairly late, and found I had received a letter containing two complimentary tickets to view a display by the London Fire Brigade for Wednesday afternoon at 3 o'clock, so I rang up my friend to ask her if she would care to come with me.

My friend said she would be delighted to do so, and then invited me to spend the afternoon with her, saying that she had tickets to see the Exhibition of Health, Poise and Beauty between face, figure and fashion presented by Harrods in collaboration with Elizabeth Arden, the beauty expert.

So we met at 3 o'clock, and both of us thoroughly enjoyed the exhibition. I was highly amused when the expert showed the large audience of ladies how to make up the face to suit the colour of any garment. I couldn't help giggling when I thought of how very hot I got sometimes, that if I made up my face, surely it would become streaks of colours, and also how very boring to always be thinking of oneself, morning, noon and night. How very narrow one's thoughts must necessarily become; certainly the expert's face looked absolutely bewitching, but listening to her lecture, one asked oneself the question "Good gracious; is it possible for anyone in the world to be able to live without making up?" I think this sort of thing is too prevalent, the effect having such a self-centred effect on the individual.

After the exhibition, we started from the top floor of Harrods, gradually working our way down to the ground floor, but first of all going to Harrod's Georgian Restaurant for tea.

We inspected twin beds, price only 65 guineas, and also gloated over the many antiques, as we both happened to be very keen on seeing this section of unusual furniture.

We came away from Harrod's about 6 o'clock and then went to Marks & Spencers in Oxford Street.

Before entering Marks & Spencer we had visited the fun fair, where we viewed ourselves in the distorting mirrors. I laughed until the tears came, one looked so funny—at one time a very thick, short dwarf, and then a long, scraggy creature; each new mirror seemingly more funny than the last.

At 7 o'clock we came away and went to the City Temple Social Circle Club to a dance which was being held in the Lecture Hall. We greeted all our friends, admiring their very pretty frocks. The band was very inspiring with its jolly tunes. I tried a fox-trot with a pal, but, not being able to dance, I felt very self-conscious; but the other members of the club seemed to be thoroughly enjoying themselves.

Wednesday, Sept 28.—My final day of "A Week's Holiday in London."

I got up late, had breakfast, did a little ironing, and then went out and did some local shopping. The time now was about 11.20 a.m.

After a walk in the Green Park in the morning, I went by train in the afternoon to the headquarters of the London Fire Brigade.

The band of the London Fire Brigade (conductor Mr. Frank Burnell, R.M.S.M.) was playing the "Old Comrades" march. My friend and I were shown into the courtyard, where quite 100 guests of the London Fire Brigade were assembled, among them being Princess Helena of Roumania and the boy Prince Michael.

The programme was intensely dramatic and thrilling, and we saw the firemen picking up insensible persons, showing the Fireman's Lift, also drill with scaling ladders and demonstrations of the extinction of a petrol fire; display by emergency tender, equipped with smoke helmets, search lights and clusters, oxy-acetylene cutting plant; restoring persons overcome by smoke, and then the use of the jumping sheet; drill and rescue with turntable ladders; rescue of persons by a hook ladder crew working from a roof, and then we had an actual fire and a rescue by escape from second floor, rescue from tower by lines, and pump at work from hydrant to extinguish fire and a drill by an obsolete manual pump built in 1890; also a district call and a general turn-out of appliances from headquarters (as in the case of a call to a fire) and a drive past. We were then taken in the carpenters' shop and all the different rooms. We were shown the canteen lorries, for use when the firemen have to stay at the place of a fire for any length of time. We were also told how to break the glass of a fire alarm with the elbow if one hadn't a stick or stone handy.

We came away about 5 o'clock having spent a most instructive two hours.

In the evening I went to the City of London College, in White Street, to attend my elocution class, where we all met at 7 o'clock. We had a delightful class, having two selections from Shakespeare, a selection from The Rivals, and a cockney study, given by the different pupils, and then half an hour's reading of Shakespeare's "Tempest" and then I said good-night to my fellow students, went home, had some supper, and so to bed.

And thus ended my most unexpected holiday in London.

"RENROT."

Greeting.

I wish you all a bright New Year with friends sincere, devoted; may no one prove redundant, and many be promoted; and may it be my happy lot—most wonderful and strange—to see some prose, blank verse, or rhymes, come in from each exchange. I thank all my contributors (though few the title will fit), dear Percy Flage and G.M.T., Renrut and Birdie Twilfit, and oh, whate'er the year may bring, whatever may portend, I am hoping that you'll all contract *cacethes scribendi*.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," Telegraph and Telephone Journal, Secretary's Office, G.P.O. (North), E.C.1.

LONDON TELEPHONE SERVICE NOTES.

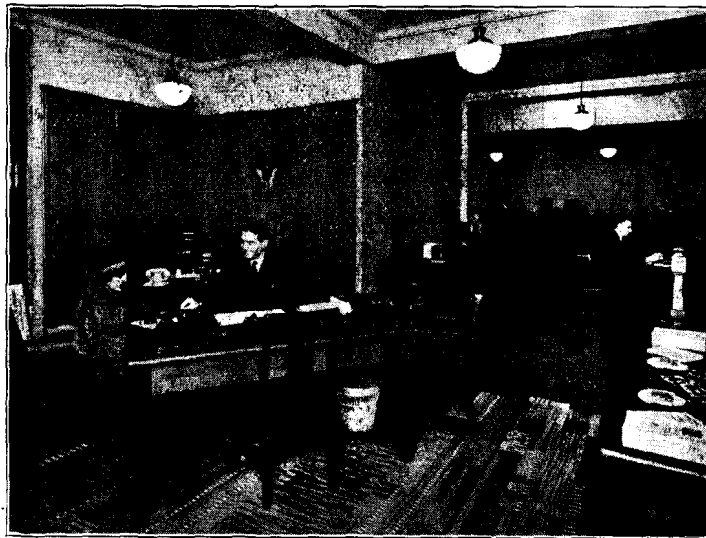
Sales Branch Notes.

DURING the month of November there was a net increase of 2,799 stations as compared with an increase of 2,875 in the corresponding month of last year.

At the Public Health Exhibition held at the Royal Agricultural Hall from Nov. 14 to 19, there were 82 Exhibitors and 27 telephones were provided.

The number of Kiosks working at the end of November was 3,394 and there were Advice Notes issued for 75 more. Since the beginning of the year the number of kiosks in the area has been increased by 407.

The demand for the Hand Microphone continues. The total number ordered up to the end of December was 146,050. Orders are now being received at the rate of 1,400 per week, and since January the number ordered has exceeded 62,000.



An automatic demonstration and display of telephone apparatus was held at 73, New Bond Street in conjunction with the opening of Mayfair Building for a month commencing Oct. 19, 1932. Upwards of 2,000 people were given demonstrations in the use of the Automatic telephone. They consisted largely of representatives of influential business firms and prominent local residents. The window exhibit attracted considerable notice and a large number of enquiries were made regarding the various telephone services. Advertising pamphlets were freely distributed to visitors.

Staff Salesmanship Notes.

The progress in the London Area is given below:—

	Total No. ordered.	No. ordered Month ended 14th Dec., 1932.
Exchange Lines ... ..	1,478	112
Extensions ... ..	1,438	137
Private Lines ... ..	18	5
Plugs and Sockets ... ..	226	22
Hand-Microphones ... ..	7,137	763
Extension Bells ... ..	588	74
Other Apparatus ... ..	725	60

The opening of new exchanges in London has an interesting side to those members of the Public who speculate on the origin of many of the new exchange names.

"Who was Flaxman?" was a question asked of a Sales Representative recently. Being a wise man he had previously acquainted himself with the history of the great English sculptor, to the surprise and chagrin of the subscriber who clearly anticipated the discomforture of the Salesman. This experience, however, should be a warning to others.

A young person timidly entered a Telephone Cabinet at a Post Office to make a call, asked for a number and waited. After a time the Postmistress fearing something was wrong opened the cabinet door and asked if anything was the matter.

"Well," said the caller, "I asked for the number and was told to "Hold the line," which she proceeded to do by replacing the receiver and holding tightly in both hands the cord attached to the instrument.

The Evening Standard, in a leading article, expressed delight at the efforts of the staff to extend the use of the telephone in what it describes as a new spirit at work in this important Public Service, and congratulated us



ANNUAL DANCE OF LONDON TELEPHONISTS' SOCIETY.

[Photo. by Eugene West &amp; Co.]

on our wakefulness. But tradition was too strong in the end, and the congratulations had to be tempered with a note of criticism.

The complaint is against the charge of 2s. per quarter for the Hand-Microphone instrument. It is not unusual in any business to have various charges for different commodities and services, and even the *Evening Standard* will, no doubt, admit that its rates to advertisers are related to matter rather than to space. There has been a lengthy list of reductions in telephone charges since the price of daily newspapers was increased by 100%, and one never hears of any proposal to reduce this.

A 50% reduction in the rental of the Hand-Microphone has already been made, and the fact that upwards of 62,000 of these instruments have been ordered this year is the best reply to our critic.

#### London Telephonists' Society.

The Annual Dance of the London Telephonists' Society was held at Holborn Hall on Dec. 9, when just on 200 members and friends assembled to the gay strains of Mr. Skinner's orchestra. Dancing began soon after 7.30 p.m. and the last dance at 11.30 p.m. came all too soon.

The Dance was a great success from every point of view, and in the opinion of many there, was one of the most enjoyable held by the Society for years past. The Hall decorations were gay and festive, the floor excellent, Mr. Skinner and his merry men in first class form and the company, representative of Headquarters and all parts of the London area, had every ingredient for enjoyment. Old dances and tunes mingled with the new, and when veterans set the example with Polka, Barn Dance and Valeta, juveniles could only follow suit. All but the laziest were enticed into the circles of the two "Paul Jones," mysteriously entitled "One Hello" and "Two Hello," and Mr. Skinner's Waltz Cotillon was so alluring that several fresh sets formed themselves after the dance had started. Limelight added to the gaiety and decided the winners of two spot dances. Everything went with a swing from start to finish, and those who came late regretted that they had not been more punctual, while those who stayed away were even more regretful next day.

Mr. Oldham was a busy M.C. and the thanks of all present are due to the Dance Committee under the chairmanship of Mr. Buckeridge, who was largely responsible for the efficient and successful arrangements, for an event which was not only a very enjoyable evening but has resulted in a small profit for the Society's funds.

#### The L.T.S. Horticultural Society.

The annual general meeting of the above Society was held at Cornwall House on Tuesday, Dec. 13, when a representative body of members attended

to hear a report on its activities and, in the light of the year's experience, to review its position. It is interesting to note the way in which the membership has grown in such a short time, from a handful of enthusiasts at Cornwall House to a total of 901, and embraces over forty exchanges in the London Telephone Area, apart from District Sales and Traffic Offices. The trading facilities offered were so popular that over £200 has been expended by the membership in the purchase of garden tools, plants, bulbs, &c. It is thought that there still may be scope for increasing the membership, and the Hon. Secretary, Mr. H. G. T. Adams (ref. T ED(E) Cornwall House), will be pleased to furnish information to anyone interested.

#### Battersea.

Another highly successful dance was held at the Town Hall on Nov. 30, when over 150 members of the staff and their friends shared the enjoyment of waltz, fox-trot, "Paul Jones" and tango to the music of the Arcadians Dance Band.

Visitors were welcomed from far and near; including the District Superintendent (Mr. E. A. Durrant), Mr. A. D. Rollings (until recently the Service Superintendent) and Traffic Officers from numerous Headquarters and District Sections. Ladies from Brixton, Putney, Wimbledon, Hop, Macaulay and other Exchanges mingled with their Battersea colleagues and symbolised the happy relationship which exists between the various staffs.

The organisation—including the more than generous catering arrangements—was the work of Miss I. T. Hatherley and her energetic Entertainments Committee, to whom all possible praise is due for their hard work and enthusiasm which resulted in a very enjoyable evening.

Owing to the increasing popularity of these functions—the profits from which are, as stated in a previous report, devoted to providing entertainment for some of the most deserving of the many poor children in the district—it has become necessary to limit very strictly the number of tickets issued. It was with keen regret that a number of applications for admission had to be refused and, in order to avoid further disappointment, it has been decided that, in future, the principle of "First come, first served" will be applied. The available accommodation is for 120 only, if dancing is to be enjoyed, and it is for the benefit of those attending that this decision has been made.

The next dance will be held on Mar. 1 next.

#### Obituary.

*E. S. Abbott.*—We regret to have to record the passing of our colleague, Stanley Abbott, which occurred on Dec. 10, after a somewhat lengthy illness.

The London Telephone Service is the poorer for the loss, for there was no aspect of our official or semi-official activities in which he failed to take a

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personal interest and part. He had served with the engineering side of the National Telephone Company at Norwich and Stockport, and on coming to London in 1908, graduated through the ranks of Assistant and Exchange Manager, and through those of Assistant Superintendent of Traffic. During the Great War he was one of the earliest volunteers, serving for a period "in the line" with the Middlesex Regiment and later attaining commissioned rank with the Royal Corps of Signals.

Stanley Abbott brought to bear on all questions, a wide experience in telephone matters, coupled with a common sense which made it a real pleasure to be associated with him. His hobby was the Telephone Service but this did not deter him from deep reading and a study of mankind. He was greatly interested in the work and welfare of the staff of the Telephone Service, and expended no small effort on their behalf on committees of the London Telephonists' Society, as Staff Side Chairman of the L.T.S. Whitley Committee and Chairman of the London Traffic Officers' Association.

*F. A. Waters.*—It is with deep regret that we have to announce that, after a short illness of 6 days, Mr. F. A. Waters passed away on the morning of Dec. 12, 1932, at the age of 54 years.

He had spent over 34 years in the Telephone Service, 27 of which were served in the Cashiers' Branch. He joined the National Telephone Company on Oct. 13, 1899. He was a capable and zealous officer who gave of his best and he was very popular with his colleagues.

We extend to Mrs. Waters our deep sympathy in the great loss she has sustained.

**Personalia.**

*Resignations on Account of Marriage.*

*Assistant Supervisor, Class II.*

Miss N. B. Kenward, of Redhill.

*Telephonists.*

- |                                  |                                 |
|----------------------------------|---------------------------------|
| Miss R. B. Browne, of Gerrard.   | Miss E. S. Stephens, of Tandem. |
| " D. E. Missen, of East.         | " I. C. Walker, of Tandem.      |
| " M. A. H. Jerman, of Battersea. | " D. F. White, of Toll "A."     |
| " I. E. Gillis, of Grangewood.   | " E. A. Chapman, of Victoria.   |
| " A. E. H. White, of Paddington. | " A. M. Jones, of Terminus.     |
| " E. M. Manning, of Ilford.      | " L. M. Page, of Mayfair.       |
| " N. L. Edwards, of Abercorn.    | " E. Holland, of Speedwell.     |
| " V. M. Hains, of Tandem.        |                                 |

A BRIEF CHRONOLOGY FOR STUDENTS OF  
 TELEGRAPHS, TELEPHONES AND POSTS.

BY HARRY G. SELLARS.

*(Continued from page 71.)*

- 1929, July 1 ... Registration fee of 1s. on Savings Bank Home Safes abolished.  
 International Conference on Lighthouses, Lightships and Wireless Beacons held in London. Over 20 administrations represented.
- 1929, July 10 ... Imperial Communications Advisory Committee appointed. Members: Sir Courtauld Thomson (U.K.), Sir Campbell Stuart (Canada), Clive L. Baillieu (Australia), Sir James Parr (New Zealand), Lt.-Col. E. A. Sturman (South Africa), T. J. Kiernan (Irish Free State), Sir Atul Chatterjee (India), and Sir Edward Davson (Colonies and Protectorates).
- 1929, July 22 ... Anglo-Argentine wireless-telephone service opened (via Paris or Berlin). Charge to Buenos Aires £6 9s.  
 Vatican postage stamps issued.  
 Belgian Government granted £60,000 for an Anglo-Belgian cable to provide direct communication between England and Germany.  
 Full test of Reparations Committee's Report containing 29,000 words telegraphed from Paris to New York by cable.
- 1929, Aug. 1 ... "Personal call" system introduced throughout British inland trunk and toll telephone service.
- 1929, Aug. 16 ... Good wireless telephone conversation exchanged between London and Sydney, New South Wales.
- 1929, Aug. 26 ... Transatlantic telephone service extended to Isle of Man, Belfast and Dublin.
- 1929, Aug. 28 ... Transatlantic telephone service extended to Italy.

- 1929, Aug. 31 ... "Metropolitan," "National" and "Empire" automatic telephone exchanges opened in Wood Street, Cheapside, London.
- 1929, Sept. 1 ... Most northerly wireless and meteorological station in the world established at Tranquil Bay, Franz Josef Land.
- 1929, Sept. 9 ... Photo-telegraphic service opened between Sydney and Melbourne.
- 1929, Sept. 10 ... Transatlantic wireless telephone service in operation for 24 hours daily.
- 1929, Sept. 25 ... America spoke with Australia by means of radio short-wave channels via London.
- 1929, Sept. 29 ... Working of Imperial Cables (London and Halifax, Nova Scotia) and Beam wireless communications (London to Montreal, Melbourne, Bombay and Cape Town) transferred from the Post Office to Imperial and International Communications, Limited.
- 1929, Oct. 1 ... "Personal call" system introduced in all Anglo-Continental services, except Swiss.  
New telegraphic code regulations came into force. Ten-letter code words should contain three vowels. Code words of five letters to be charged special reduced rates.
- 1929, Oct. 10 ... Stille system of recording speech electrically on steel tape demonstrated at Elstree, Herts.
- 1929, Oct. 12 ... Wireless telephone service inaugurated between Spain and the Argentine and Uruguay.
- 1929, Oct. 13 ... German actor spoke from Berlin to Los Angeles by wireless telephone for the purpose of recording his voice in a "talking film" picture.  
Comité Consultatif International Technique des Communications Radioelectriques met at The Hague.  
Broadcast wireless receiving apparatus installed on Paris-Havre trains.
- 1929, Oct. 23 ... A "conference communication" system composed of transmitters and loudspeakers used to connect audiences at Manchester, Liverpool, Birmingham, Glasgow, Leeds, Newcastle, Cardiff, Southampton and Portsmouth with the Institution of Electrical Engineers, London, where Colonel Sir Thomas Purves delivered his inaugural address as President. Speech at any point in the system was reproduced at all other points.
- 1929, Nov. 1 ... Instructions for official redirection of fully-addressed telegrams recorded free of charge for a period not exceeding three months.
- 1929, Nov. 7 ... Tablet in honour of J. L. Baird unveiled at Hastings to commemorate beginning of experiments in television, 1923.
- 1929, Nov. 19 ... Vladimir Zworykin introduced in Washington a "crystal globe" which receives moving pictures by radio and projects them on a screen.  
Submarine earthquake severed eleven transatlantic cables. Experiments in wireless telephony carried out between England and South Africa.
- 1929, Nov. 21 ... Maximum amount withdrawable on demand from P.O. Savings Bank increased from £2 to £3.  
John Dominic Doyle, of Dublin, introduced an electrical storage battery combining short charging with reduced size and increased capacity.
- 1929, Nov. 25 ... Vatican telegraph office opened.  
James Robinson (late Royal Air Force) introduced a wireless device called the "stenode radiostat" system which would (a) enable 10,000 words a minute to be telegraphed, (b) facilitate picture telegraphy and (c) eliminate interference.
- 1929, Dec. 2 ... Fourth transatlantic telephone circuit (third short-wave) put into service.  
System of police telephone boxes opened at Richmond, Surrey.
- 1929, Dec. 8 ... First commercial wireless telephone service between land and ships at sea inaugurated by a conversation between S.S. *Leviathan* and America.  
Wireless photo-telegraphy used for the first time in connexion with detection of crime. Portrait telegraphed from New York to London resulted in arrest of a bank clerk.
- 1929, Dec. 21 ... Wireless brake control for preventing train collisions, invented by Matias Balsera, tried successfully in Spain.
- 1929, Dec. 31 ... 6,400,000,000 letters delivered during the year.  
44,068,000 registered and 147,077,000 unregistered packets posted in United Kingdom.
- 2,290,000 parcels posted under cash-on-delivery regulations.  
30 tons of air letter mails dispatched abroad and 58 tons of air parcel mails—total 88 tons.  
£2,085,908 paid by Post Office to British railways for parcel conveyance.  
13,360,000 2s. and 12,159,000 3s. books of stamps sold.  
About 1,800 stamp-vending machines in use in British post offices.  
Total amount in Post Office Savings Bank, £284,946,000.  
34,401,000 telephones in use throughout the world, 1,886,726 in Great Britain.  
Telephone calls dealt with by British Post Office during the year—1,210,000,000 local; 118,000,000 inland trunk and 1,120,000 Continental.  
260 automatic and 4,329 manual telephone exchanges in operation.  
Total number of call offices, including kiosks, 26,000.  
137 telephone exchanges in London area.  
Total number of staff employed by the Post Office 230,000.  
20,096,854 telephones in use in U.S.A.  
Number of telephones per 1,000 of population: U.K. 42, U.S.A. 169, Canada 144, Denmark 94, Sweden, 83, Switzerland 65, Germany 50.
- 1930, Jan. 1 ... Telegraphic addresses for telegrams from overseas registered by Post Offices free of charge.  
Two-way wire wireless telephone system installed on Montreal-Toronto-Chicago railroad. Inventor, J. C. Burkholder.
- 1930, Jan. 7 ... Anglo-German picture telegraphy service opened. (Siemens-Karolus system.)  
George Squier described his most recent invention, the "Monophone," to the United States Senate Commerce Committee. The apparatus links radio with the telephone service for broadcasting.
- 1930, Jan. 21 ... King's speech at the opening in London of the Naval Conference of Great Powers broadcast and re-broadcast from 275 wireless stations throughout the world.
- 1930, Jan. 26 ... Anglo-Japanese wireless two-way telegraph service opened.
- 1930, Jan. 28 ... All-electric totalisator racecourse betting apparatus introduced at Thirsk.  
M. Luckeish described to the American Institute of Electrical Engineers an electric "Sunlight lamp" which would replace incandescent lamps and produce synthetic sunshine.
- 1930, Feb. 1 ... Transatlantic wireless telephone service extended to Poland.
- 1930, Feb. 4 ... Wireless telephone conversation held between London and S.S. *Olympic* in mid-Atlantic.
- 1930, Feb. 8 ... First railway wireless service on French trains inaugurated.
- 1930, Feb. 10 ... Inauguration of public wireless service on French trains took place on Paris-Havre route.
- 1930, Feb. 12 ... Parliamentary debate on a motion to appoint a committee of inquiry into the postal, telegraph and telephone services. Motion defeated. An amendment supporting the "maintenance of the Post Office as a national institution, subject to the control of Parliament" was carried.
- 1930, Feb. 14 ... Ship-shore public wireless telephone service opened with S.S. *Majestic* (calls from ship only).
- 1930, Feb. 20 ... Anglo-Danish facsimile telegraph service opened.  
Anglo-Vatican telephone service opened.
- 1930, Feb. 23 ... Ship-shore telephone service with S.S. *Majestic* extended to both way calls.
- 1930, Feb. 26 ... Postmaster-General rejected a proposal to transfer overseas wireless telephony to Imperial and International Communications, Limited.  
British Government, on advice of independent technical experts, decided to utilise the Rugby-Ballock wireless stations for overseas telephony on the grounds that the system was more elastic and economical than that of the private company using beam wireless.
- 1930, Mar. 10 ... Transatlantic telephone service extended to Finland.
- 1930, Mar. 15 ... Anglo-Lithuanian telephone service opened. Charge to Kaunas 17s.

(To be continued.)

# THE Telegraph and Telephone Journal.

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FEBRUARY, 1933.

No. 215.

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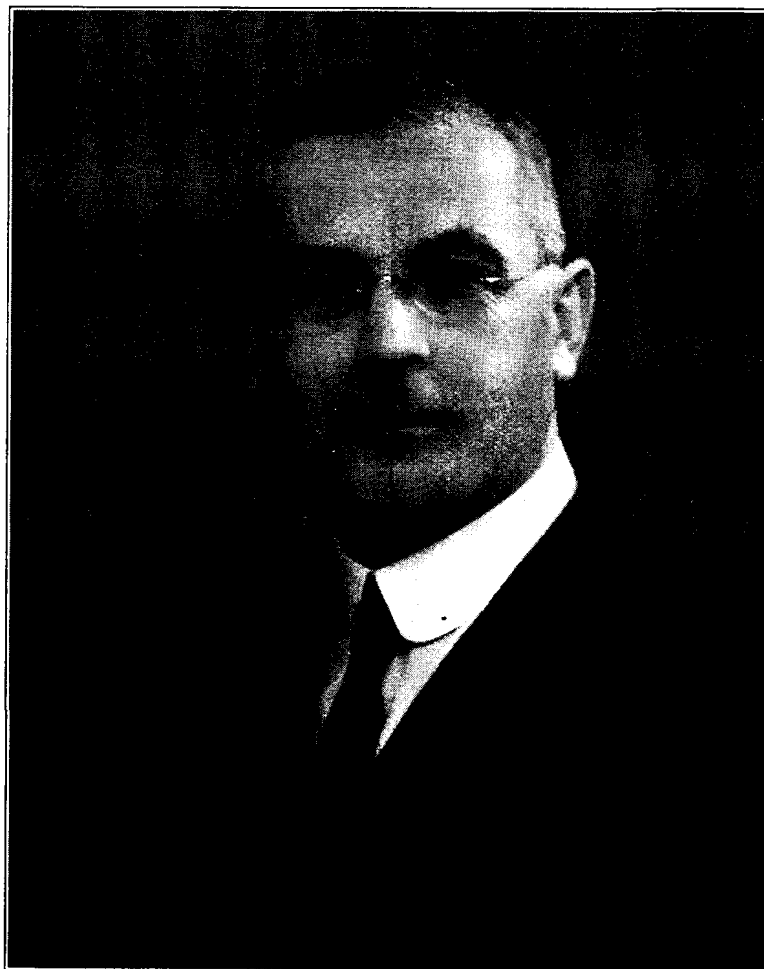
*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CV.

MR. A. G. TYDEMAN.

MR. A. G. TYDEMAN entered the Post Office in October, 1894, as a Boy Clerk. He was appointed to the Stores Department in February, 1898, and from the Third Class of Clerks (Supplementary) he was promoted to the Second Class in February, 1905, and to the First Class in February, 1914. He became Deputy Staff Officer in October, 1919, Staff Officer in July, 1920, Senior Staff Officer in April, 1922, Assistant Controller in September, 1926, and Vice-Controller in September, 1930. For many years his activities were centred largely in the purchasing functions of the Stores Department and he gained a wide experience of all matters relating to the provision and cost investigation of the great variety of supplies and services obtained under Stores Con-



tracts. His knowledge of the business world and of the methods and conditions of production in the industries with which the Post Office is concerned, allied with his faculties of judgment and insight, enable him to probe the diverse problems presented to a supply Department in a manner which ensures the best possible bargain for the State. In official life he takes the broad view, tolerant when circumstances warrant latitude, but concentrating firmly on the things that matter. In social life Mr. Tydeman is a thoroughly "all-round" man; he was well known on the cricket, "rigger" and "soccer" fields, he was a popular member of the Civil Service Rifles, he can take care of himself at the bridge and billiards tables, he is well known as a golfer, he is a Vice-President of the Civil Service Boxing Club and he is a valued supporter of the various social organisations of the Stores Department staff.

# The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

Editing and Organising Committee - - -	}	Col. A. A. JAYNE.
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		G. H. TAYLOR.
Managing Editor - -	}	J. W. WISSENDEN.
		W. H. GUNSTON.

## NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

VOL. XIX.

FEBRUARY, 1933.

No. 215.

## TELEPHONE CHARGES.

FROM time to time letters from correspondents appear in the London and provincial press advocating wholesale reductions in telephone charges. The advocacy of lower charges in any sort of commodity or service is natural enough, and when it is supported by economic justification is even laudable. But persistent demands conceived in complete ignorance of the economic aspects of the case are unfortunate, inasmuch as when reasonable reductions of charge become possible they may disappoint a public which has had instilled into its mind the dream of some absurdly low rate.

We have already dealt in these pages with the suggestion that it should be remunerative to provide telephone service for the price of a wireless receiving license, a suggestion based on total inability to conceive the difference between the nature of the two services in question. Demands for an installation charge of about £1 a year still persist, usually supported by the argument that the vast increase of business which would result would soon justify the low charge, despite the fact known by telephone experts all over the world that increase of size in a telephone system increases its complexity and does not reduce the over-all cost per capita, but has the reverse effect.

Another implied demand for reform is based on the suggestion, often repeated of late by correspondents, that "in America" no rental is charged, and payment for calls only is required. In America, as most of our readers are aware, no uniform rates are in force. Thousands of companies are in operation there whose rates not only vary in amount in different

towns, but also vary widely in respect of the system of charging. In most of the largest cities, however, as the correspondents we refer to may know or have learned by hearsay, the companies make a charge varying in different towns from 6 dollars a month for 75 calls to 4 dollars for 60 calls, and so on. These charges should properly be considered as a monthly rental including a specified number of outward calls. It can, of course, also be argued that these rates are monthly payments in advance for a minimum number of calls, and that no rental is charged. The New York resident pays 4.25 dollars a month for which he gets 66 calls. If he be considered as paying for calls only, it will be seen that he pays nearly 3½d. each for them, and has, moreover, to pay for at least 66 a month. A London resident who had to pay some £2 13s. 0d. a quarter for a minimum number of 198 calls, would not thank the apostle of reform for the privilege, even though he were assured "you are charged nothing for telephone rental!" He would doubtless prefer to pay the present "rental" of £1 12s. 6d. plus a penny each for as few or as many calls as he desired to make. It seems, therefore, rather a question of terminology whether an American charge of 4.25 dollars a month is described as a payment for rental plus a given number of calls or a payment for calls only. The subscriber has to pay all the same, whatever he calls it, an amount with which the British charge for comparable use of the telephone compares very favourably.

In 1923 the German Telephone Administration experimented with a purely message tariff under which there was no "basic charge" (i.e., rental) but the subscriber paid for a minimum number of calls at the rate of nearly 2d. each. In 1927, according to an official report, "the disadvantages of the pure message tariff" compelled a return to the principle of "rental" plus a charge per call. We know of no other country in which a "purely message rate" was attempted.

## HIC ET UBIQUE.

WE regret to record that John J. Carty, pioneer in the development of the telephone art since its early days and former Chief Engineer and Vice-President of the American Telephone and Telegraph Company, died on Dec. 27 at Johns Hopkins Hospital, Baltimore, Maryland.

Perhaps the most important engineering problems solved by Carty during the years while he served as Chief Engineer of the American Telephone and Telegraph Company, was the completion in 1915 of the transcontinental telephone line which made possible the first transmission of speech between the Atlantic and Pacific coasts and thus achieved a dream which Carty himself had long cherished—nation-wide telephone service.

Shortly after this, engineers working under Carty's direction accomplished the first successful transmission of speech by radiotelephone from New York to San Francisco, to the Hawaiian Islands, to the Canal Zone and to Paris.

He was a Major in the U.S. Signal Reserve Corps during the War, and a Colonel on its conclusion. He was promoted to the rank of Brigadier-General in the Reserve Corps in 1921.

The following extensions of the Overseas telephone service took place in January:—(1) Service is now available between



all parts of this country and all parts of Corsica, communication being provided by wire to Nice and thence by radio to Corsica. The service is available daily from 8 a.m. to noon and from 2 p.m. to 6 p.m. (2) The Anglo-Brazilian Telephone Service, which has hitherto been restricted to the States of Rio de Janeiro and Minas Geraes, has now been extended to subscribers in the cities of Sao Paulo and Santos.

According to Reuter (Madrid) the threats to friendly commercial relations between Spain and the United States have disappeared following the withdrawal of the proposal before the Cortes to cancel the concession granted to the National Telephone Company of Spain. The proposal to cancel the concession was put forward in the first place on the ground that the concession, which was granted during the Monarchy, was "illegal." Under the terms of the contract, should the Spanish Government decide to take over the company, which is a subsidiary of the International Telephone and Telegraph Company, it may do so only upon payment of the sum invested in it, estimated to be at present in the neighbourhood of 1,000,000,000 pesetas (£25,000,000 at present rates). When the Spanish Republican Government announced its intention of cancelling the concession the United States Ambassador in Madrid made a strong protest and the matter has now been settled by the withdrawal of the cancellation proposal.

Mr. E. S. Byng, the Managing Director of Standard Telephones & Cables Ltd., has been elected chairman of the Telephone Development Association, in succession to Mr. Ll. B. Atkinson. Mr. Byng has been an active member of its council since 1928.

The following letter was received at the Brighton District Office from a Durrington subscriber :-

As one of those to be much benefited by the change of name of Durrington to "SWANDEAN" in March next, I write at once to thank you for the courtesy and attention thus exhibited to the wants of subscribers.

It had become a real necessity, and we were always being rung up here for some "INGTON" other than our own and thus we write to say

"THANK YOU,"

because we realise that those who cater for the general public and sometimes for telephones in particular, often get, as the saying goes, "more kicks than halfpence" !!!

Now this should make all your office SMILE and we want them to do so, for we receive every kind and courteous attention from the Durrington Exchange and Worthing Supervisor.

P.S.--Frame this letter if you wish.

Yours very truly,

It is indeed unusual for a subscriber to bless the Post Office for changing the name of his exchange, although such changes are, of course, invariably made with a view to ameliorating the service.

A gentleman recently wrote to the Press complaining that after waiting some time for the installation of his telephone, he was awakened one morning at 7.30 by the bangings and shouting of workmen erecting a pole outside his bedroom window. He concludes "It is hard for men to have to start work so early in the morning, and it is *harder still* for those who are roused from their slumbers by the activities of telephone workers."

THE WEE SMA' HOURS.

By the unthinking unsophisticated,  
London is often reckoned civilised;  
But if they knew the horrors tolerated  
Near home, they'd be surprised!

For lately I was roused at 7.30  
(Almost the middle of the night, I think)  
By workmen rough and, peradventure, dirty,  
With hideous clank and clink,

Planting a pole before my bedroom casement  
(The pudic curtains, happily, were drawn),  
Needful, perhaps—but why for its emplacement  
Proceed before the dawn?

What other city, jealous of its culture,  
Allows its sons to be disturbed o' nights  
By sleep-destroyers ruthless as the culture  
Which gnawed Prometheus' lights?

Hard must it be for these poor pole-insetters  
To start their toil before the morning-red,  
But infinitely harder for their betters  
To be disturbed abed!

W. H. G.

THE TELEPHONE DEVELOPMENT OF THE WORLD AT DEC. 31, 1931.

(A FOOTNOTE.)

STATISTICS recently received from Japan show that the total number of telephones in Japan proper increased during 1931 from 991,407 to 1,016,564. Of the principal cities, Tokio has 155,219 stations, Osaka 104,902, Kyoto 36,729, Kobe 29,849, Nagoya 29,238, and Yokohama 17,091.

As a result, the total number of telephones in Asia may be put at 1,433,000, an increase of 20,000 on 1930. The amended figures for the world will be:

	1931 (Telephones in Thousands).
Europe ... ..	10,926
Asia ... ..	1,433
Africa ... ..	244.5
North America ... ..	21,281
South America ... ..	633
Australasia ... ..	676.5
	35,194

The density table in the third column of the article on this subject, published on p. 79, included all countries with upwards of 100,000 telephones, not "inhabitants."

W. H. G.

TELEPHONES AND TELEGRAPHS CONSTRUCTED BY SCHOOLBOYS.

THE pictures which appeared in our January issue under this heading were reproduced by the courtesy of the "Special Press" and were sent to the Controller of the London Telephone Service by Mrs. Hill, Headmistress of the school. She mentioned that the primitive apparatus is the outcome of the metal and wood lessons in the boys' department, the construction and installation having been effected by the boys. Officers of the London Telephone Service who have visited the school testify to the keen interest of staff and scholars in all matters telephonic, and the Controller has sent various pamphlets and other items to foster this interest. The children are certainly getting the telephone ear and habit, and those of us who appreciate the value of these qualities can see what a real asset this will prove when these children come to take their place as active members of the business world.

## LEEDS DEMAND SCHEME.

By S. W. SMITH, Assistant Traffic Superintendent, Leeds.

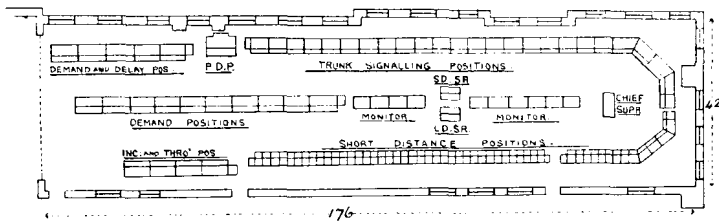
ON Nov. 26 last, at 1 p.m., the initial stage of the Leeds Demand Scheme was officially inaugurated.

At the outset the service was limited to calls from subscribers in the Leeds Local Fee Area and the more important exchanges in the Bradford Local Fee Area, to exchanges in the London 10-mile circle, the Birmingham and Liverpool Local Fee Areas, and the Manchester and Hull Groups. The demand system will be extended from time to time, as conditions permit, and preparations are now in hand to include other large areas at an early date.

### EXCHANGE ACCOMMODATION.

To provide accommodation for the new type of switchboards required for demand working, an extension of the switchroom was inevitable. This necessitated structural alterations of a difficult character, which included the demolition of a two-foot supporting wall and a light partition wall. Although the space between the end of the trunk signalling suite and the latter was very restricted, a soundproof partition was erected temporarily, to minimise the noise and inconvenience caused by the builders' operations.

LEEDS EXCHANGE SWITCHROOM.



PLAN OF SWITCHROOM.

The extended switchroom has absorbed the old Phonogram Room and now extends over the whole top floor of one wing of the H.P.O. The result is a switchroom of imposing appearance, measuring 176 ft. in length and 42 ft. in width.

### DESCRIPTION OF EQUIPMENT.

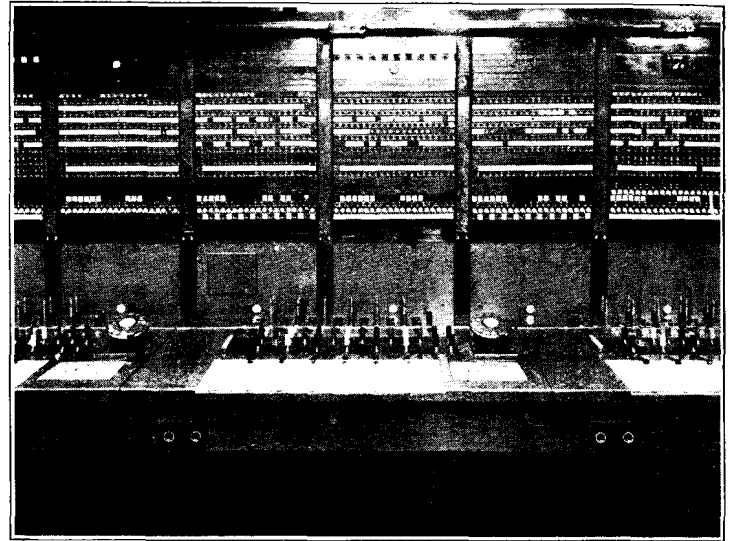
Three new suites of positions have been installed and are arranged as follows:—

- A—30 demand positions. (Island suite.)
- B—15 demand and delay positions. (Side suite.)
- C—12 combined incoming and through positions.

Initially, suite A is being used for traffic completed on demand, and suite B, (i) for traffic proper to be completed on demand but delayed due to "No reply," "Number engaged," "Trunk line engaged," &c., and (ii) for traffic from the Leeds group, other than the areas with demand facilities, to exchanges obtained over the demand routes. When the scheme is in full operation the island suite will be used for auto exchange demand traffic only, and the side suite for manual exchange demand traffic. Delayed demand traffic will then be dealt with on a new suite which will replace the existing trunk signalling suite.

**Demand Positions.**—The demand positions, in the centre of the switchroom, are of the low built type and form what is known as the island suite. This suite consists of ten 7-panel, 3-position sections with C.B.10 jacks. The whole of the record circuits from the "94" levels are accommodated on the 7 panels forming a 3-position section, and capacity is therefore provided on the island suite for 10 appearances of the calling signals. These signals are also ancillared with the same frequency on the demand and delay suite on which 5 additional appearances are provided.

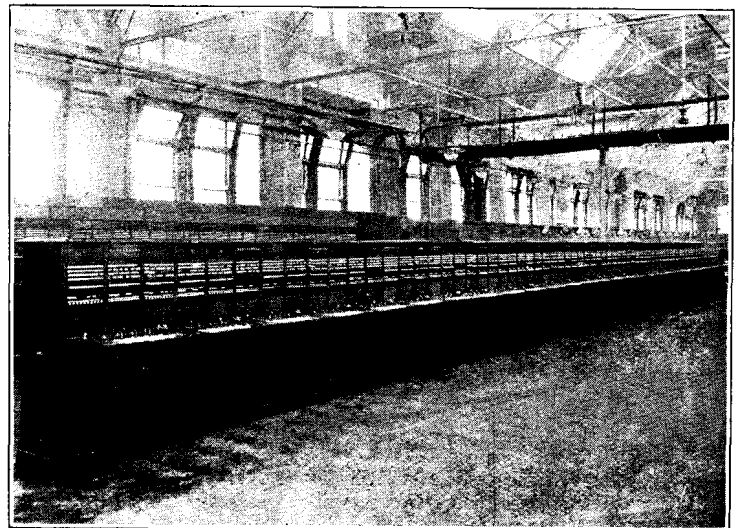
The lay-out of the keyshelf is almost identical with that shown in Fig. 7 of the article on the Birmingham demand scheme in the *T. & T. Journal* of May, 1932. The general arrangement of the face equipment and keyshelf of one of the demand positions is shown in the accompanying photograph.



GENERAL VIEW OF ISLAND SUITE.

[By courtesy of Siemens Bros.]

**Demand and Delay Positions.**—These positions are of the normal height, and there are five 7-panel, 3-position sections in the suite. The arrangement of the equipment is similar to that on the island suite except that a tube from the pneumatic distribution position (described later), is provided to each pair of positions. The outlets from these tubes are in the switchboard panels, and the tickets are delivered on to the cord shelf between the positions served.



DEMAND POSITION IN ISLAND SUITE.

[By courtesy of Siemens Bros.]

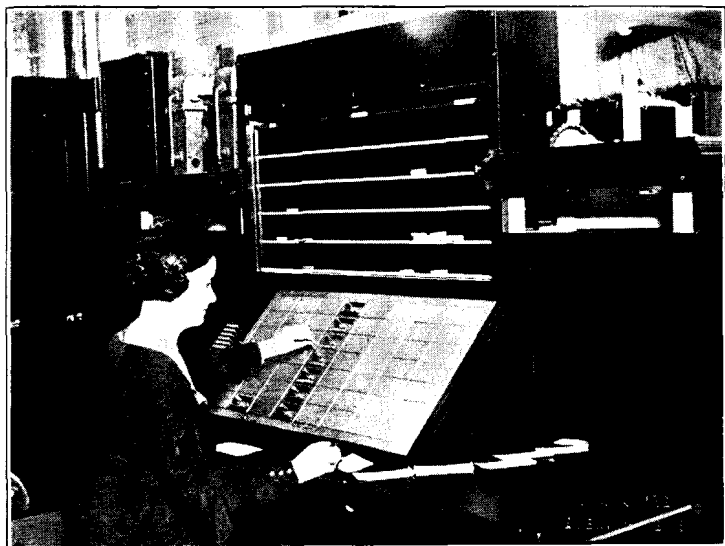
**Incoming and Through Positions.**—The incoming and through positions are also of the normal height, and this suite consists of four 3-position sections. Capacity is available for 180 incoming trunk circuits initially, and 280 ultimately, with four appearances of each calling signal.

**Miscellaneous Equipment.**—A pneumatic distribution position has been installed which includes a combined receiving, sorting and distributing table, together with a ticket sorting rack for

completed tickets. Details of the tubes terminated on this position are as follows:—

- (a) TO the demand and delay suite for the distribution of tickets to the positions in this suite.
- (b) FROM the demand, demand and delay, and incoming suites for the disposal of tickets dealt with at positions in these suites.

Inlets to the tubes from the latter-mentioned suites are provided at the right-hand side of the keyshelf on each position.



PNEUMATIC DISTRIBUTION POSITION.

*By courtesy of "Yorkshire Evening News."*

An interesting feature of the new equipment is the provision of chargeable time indicators on the demand, and demand and delay suites.

A strip of 18 lamps which, when glowing, display numbers from 1 to 18 is fitted on the face of each position. The timing device is associated with any particular cord circuit by the operation of the appropriate timing key, which may be moved into any one of three positions, viz., away from the operator to "Start," normal to "Stop and display," and towards the operator to "Reset." The apparatus is so arranged that the timing of any particular call ceases when the dialling subscriber clears and the number of chargeable minutes is displayed when the timing key is restored to normal.

A time check lamp associated with each cord circuit glows for 12 seconds before the expiration of each 3-minute period, except at 18 minutes when the lamp flickers as a warning to make the appropriate announcement and to reset and restart the timing apparatus.

The provision of visual idle indicating signals has considerably simplified the selection of idle trunk circuits, which are indicated by a glowing lamp behind a pin-hole in the designation strip. Immediately an operator plugs into an idle trunk circuit this lamp darkens and the signal associated with the first free circuit in the group then glows.

#### TRAINING OF STAFF.

The training of the staff was divided into three stages, the first of which consisted of an explanation of the demand system in general terms and detailed instruction in the operating procedure. This occupied half a day and was given by a specially-trained Assistant Supervisor. A demand position fitted temporarily with lamp caps, labels, trunk multiple markings, &c., was utilised for demonstration purposes and the instruction was based on a booklet describing demand operating procedure which was prepared for use in connexion with the Leeds demand scheme. The second stage, which also lasted half a day, was in the nature of a refresher course and *via voce* examination. The final stage was commenced

about ten days before the date fixed for the transfer and consisted of actual operating under trained supervision on the demand positions, calls being dealt with on a delay basis. A few days later, on Monday, Nov. 22, the practice of connecting subscribers at the manual exchanges in the demand area direct to Leeds via the "94" level was introduced, and on the same day record work was commenced on the demand positions. The new type of ticket was also brought into use together with the pneumatic tubes.

A series of practice calls embracing the new procedure was then carried out under actual demand conditions. These calls were pre-arranged and both day and night staffs at Leeds and the manual exchanges were given the opportunity of dealing with them. In the case of the smaller exchanges the calls were originated by the Travelling Supervisors.

#### TESTING OF EQUIPMENT AND TRANSFER TO NEW POSITIONS.

The traffic test of the equipment was commenced on Nov. 14 and was continued for a week, during which two telephonists were fully occupied in carrying out ringing, signalling, and speaking tests, checking labels, testing chargeable time indicators, &c., and where possible, setting up the various types of connexions anticipated under working conditions. Schedules covering the tests had previously been drawn up, and any faults brought to light were reported to the engineer for attention.

Mention should be made at this point of the close co-operation given by the Engineering Department in all phases of the work; in particular, whilst the testing was in progress and during the initial stages when the new equipment was being brought into use.

In order to provide facilities for the third stage of the training, a group of trunk circuits, scheduled for demand working, was tested out, transferred from the trunk signalling suite to the demand positions and operated as hitherto on a delay basis. As soon as one route was working smoothly on the new positions another was cut over. In this way all the demand routes were transferred to and operated from the demand positions, delay working being maintained. At the same time the incoming routes were also transferred, route by route, to the new incoming suite, and by Nov. 19 all circuits scheduled for transfer were working on the new positions.

The gradual introduction of the demand service by scheduled stages is considered to be one of the main factors which contributed to the general success of the scheme. The arrangement enabled the staff to become familiar with the manipulation of the new equipment, the position of the circuits in the multiple, &c., before the method of operating was changed. An equally important fact was that the apparatus and circuits were given a thorough test, under working conditions, before the scheduled date of transfer.

#### RESULTS ACHIEVED BY THE SYSTEM.

So far, the results obtained indicate that the scheme is working successfully, and some of the salient features extracted from a special analysis of traffic and the service observations, taken during the first week after the transfer, are quoted below.

Percentage of calls proper to be completed as demand	
which were actually completed on demand ...	89.3%
Average time to answer ... ..	4.5 seconds.
"    "    "    disconnect ... ..	10.0 "

After the scheme had been in operation for a week a memorandum, briefly describing the system, was drawn up and taken by hand to the offices of the principal newspapers in the areas affected. The memorandum was supplemented by a short verbal description by the visiting Traffic Officers, and the Press representatives were then invited to test the service by making calls themselves. The method of approach and the satisfactory nature of the test calls created a good impression, and a considerable amount of prominence was given in the newspapers to accounts of the system. In the case of one newspaper the matter was thought to be of such importance as to warrant a placard, drawing attention to the progressiveness of the Post Office in the provision of this new method of obtaining long-distance trunk calls.

## POWER AND LIGHTING IN POST OFFICE DEPARTMENTS.

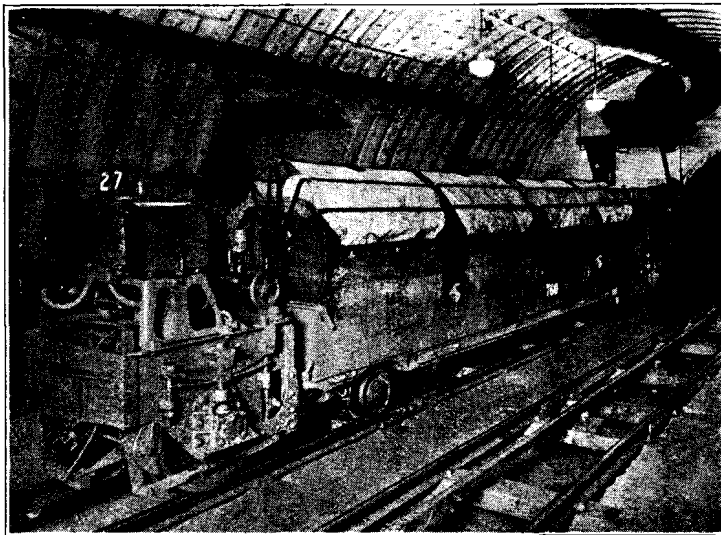
BY H. C. GUNTON, M.I.E.E., M.INST.T., *Principal Power Engineer.*

(Continued from page 78.)

### *Post Office (London) Railway.*

MANY of those present will have made the personal acquaintance of this scheme, which has been fully described in the Technical Press and also dealt with in a lighter vein by the Daily Press, who supplied to the rolling stock the title of "Ghost Trains," although, as far as the author is aware, the only occasions on which they have acted like ghosts were during the difficult days of inauguration, when they were apt to haunt the engineers at night.

For the purposes of this paper it will, therefore, be sufficient to show a few representative views, including the only recent development of any magnitude, viz., one of the new bogie wagons which has superseded the four-wheel wagons which were originally employed and which were only adopted after obtaining the best available professional advice. The original wagons had run a total of 11,227,500 miles or 124,760 miles per wagon.



P.O. (LONDON) RAILWAY—BOGIE ROLLING STOCK—LOADED.

It may not be out of place to point out that the Post Office (London) Railway is a pioneer scheme without any counterpart and that it has not been a question of replacing an obsolete design by a modern design having regard to practice elsewhere, but of ascertaining through actual experience the ultimate design which would give the best results. As a matter of fact, there were many difficulties which had to be overcome in getting the new rolling stock to give the desired results. It might be added that the cost of changing the rolling stock has amounted to about 1% of the total cost of the scheme. The railway is now operating smoothly and the effect of the change has been to reduce wear of the permanent way and to increase the capacity of the line and economy in working.

The number of equivalent letter bags carried (counting one parcel bag as equivalent to 2.6 letter bags) was, in 1931-32 nearly 14,000,000, the corresponding bag mileage being about 35,763,000.

The P.O. (London) Railway scheme has occupied the attention of the Power Section for rather more than 20 years, including preliminary investigations and Parliamentary proceedings and during this time we have had the value and pleasure of professional assistance from Mr. Dalrymple-Hay and from Sir John Snell up to the time he was appointed Chief Electricity Commissioner and thereafter from Mr. A. M. Sillar. Mr. Dalrymple-Hay was responsible for the tunnel and permanent way and the other gentlemen were associated with us in connexion with the equipment of the line.

Following Mr. Evan Evans, who, having been lent by the Underground Railways, managed the railway for some time after its inauguration and to whom the use of containers was due, Major W. G. Carter has acted as manager, and no one can appreciate his ability more than Mr. Sillar and the author, who have been in the closest touch with him throughout and who realise how much the present smooth running is due to him.

### *Conveyors.*

During the last 25 years there has been a continuous and large development in the application of conveyors to the transport of mail bags and loose letters, packets and parcels, and a point is now rapidly being reached where the handling is reduced to a minimum; this applies not only to transport inside sorting offices but also for connexions to the Post Office (London) Railway. The following are brief descriptions of the principal types and approximate order in which they have been evolved:—

Slow moving bands erected along the centre of facing tables are used for conveying batches of faced letters to the end of the tables where the stamping machine is fixed, while packets and bulky letters which cannot be passed through the stamping machines are delivered at the opposite end of the table by means of the return band.

Band conveyors are also employed to convey letters and packets, as they are dropped into the posting boxes, to the facing tables. Similar conveyors are also used for carrying newspapers, packets and loose parcels in connexion with Bag Opening Tables.

Tray conveyors with selective delivery arrangements are being introduced to convey primarily sorted correspondence to the divisions.

Band conveyors having wider bands than those used for letters and packets are also used for conveying made-up letter and parcel mail bags from the Sorting Office to the Loading Platform, and from the Loading Platform to the point desired in the Sorting Office. Where possible, these conveyors are run underneath the Sorting Office floor, the band at the delivery point being brought up through the floor at a suitable angle and generally under a sorting fitting in order to economise the space taken up by the conveyor.

For large parcel office work the inward conveyor is placed under the loading platform and the parcel bags are emptied directly from the mail van to the conveyor, and are carried and delivered on to a glacis near the primary sorting position. A number of conveyors radiate from the primary sorting position to the secondary positions situated at various points in the Sorting Office. At the primary sorting position access to these conveyors is obtained through the medium of hoppers and chutes passing through the floor. The hoppers are thickly padded with spongy rubber to reduce the possibility of damage to parcels which are sorted from the glacis into the various hoppers and are carried by means of conveyors to the secondary sorting positions. At the secondary positions the parcels are sorted into bags which are then placed via chutes through the floor on to the outward conveyors and conveyed to the Loading Platform. Trucking inside the Sorting Office is almost entirely avoided. Examples of installations on this system can be seen at Mount Pleasant and at Birmingham and also at Manchester in the less developed form which was referred to in the author's paper in 1916.

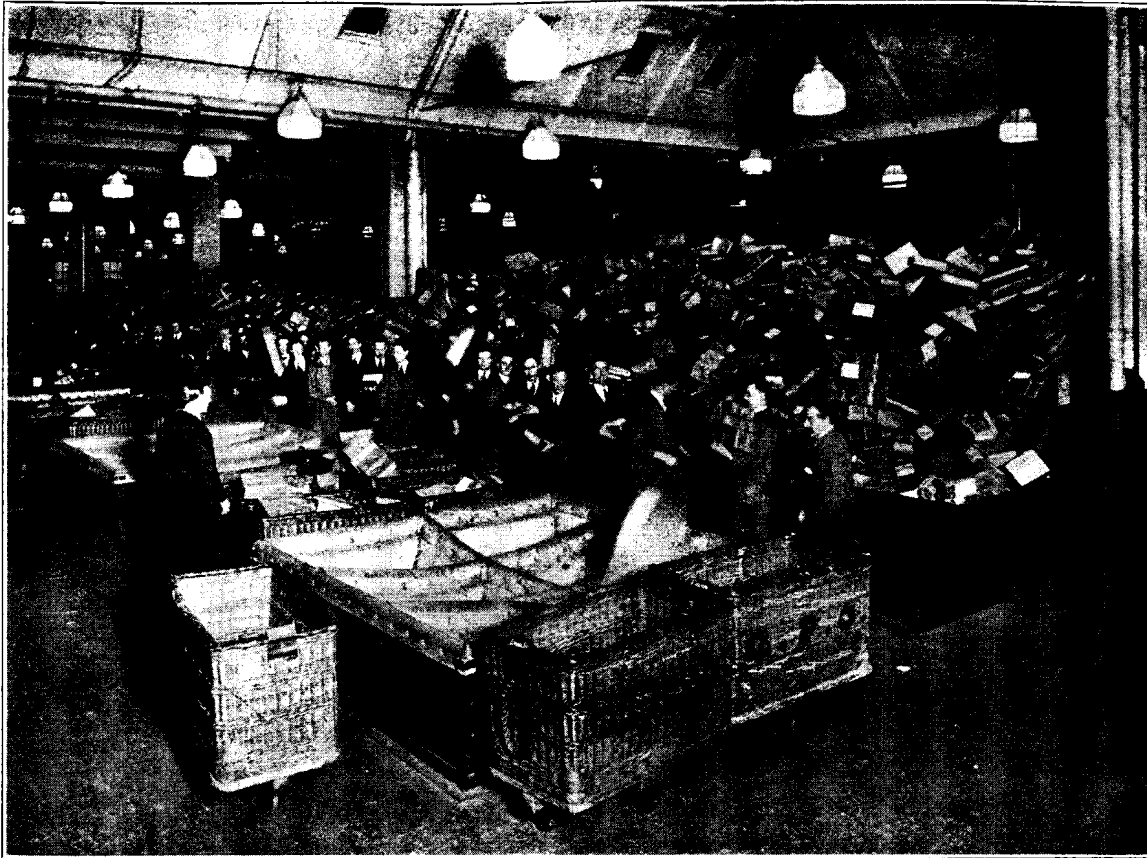
In an alternative arrangement which is being installed at the South Eastern Parcels Office access to the conveyors to the secondary sorting positions will be obtained directly or by transverse shoots and conveyors in the manner indicated on the model exhibited, instead of through holes in the floor.

A comprehensive scheme for the mechanical handling of packets will be included at the New Letter Office at Mount Pleasant. The packets will be delivered by means of band conveyors on to each of two conveyors which will run at a height of about 6 ft. above and alongside two stamping tables, and, by means of electrically operated ploughs, the packets will be evenly distributed into bins along the whole length (about 100 ft.) of each stamping table which will allow for 68 stamping positions, 34 on each side. These stamping tables will be placed between the first and second and between the second the third of three sorting fittings along which the packets, having been stamped, will be placed.

Each sorting fitting will consist of nine sets each of 24 boxes arranged in four rows of six, the size of each box being 12 in. by 12 in. by 1 in. and will be provided with remote controlled flaps at the bottom. Similar rows of flaps of the four boxes in each set will be operated together to allow the sorted packets to be discharged on to a system of conveyor bands which will run underneath them; the total time for a complete cycle of operating all flaps will be three minutes. At each end of one of the sorting fittings two conveyor bands emerge which will deliver the packets on to a rising twin band conveyor which in turn will deliver on to high level bands to the divisions; altogether there will be 12 of these rising bands and extensions to serve 24 divisions, the discharge at the division being effected automatically and synchronously with the opening of the respective flaps of the sorting fittings. To allow for any breakdown of the distribution bands emergency shoots will be provided at the ends of each sorting fitting so that the sorted letter packets can be delivered into baskets as an emergency measure.

The inclusion in this scheme of the twin rising bands marks a definite step forward in the use of an elevating conveyor. The rising twin band arrangement enables a very wide range of mail matter to be carried upwards at an angle of about 60°, as compared with 18°, which is the limit with the ordinary smooth band. The twin band consists essentially of a heavy band with internal corrugations applied above an ordinary smooth band.

As regards the letter sorting procedure there still remains the solution of the problem of transferring letters from the point where they leave the facers' or sorters' hands right through to the point where they are stacked in divisions. Much experimental work has been done and many alternative



MOUNT PLEASANT PARCELS OFFICE—CONVEYORS, GLACIS FULLY LOADED, AND BINS.

designs have been under review, but so far the cost of any such apparatus or the space which it occupies or the difficulty of maintaining the letters in a perfectly faced condition have proved unsurmountable under the conditions which have to be met in this country. The matter is, however, still being pursued for the underlying principles and potential gains are of considerable value.

Another innovation will be used at the new Letter Office and will consist of two complete sets of escalators, one for up and the other for down traffic, each escalator being reversible. The escalators will run between the ground and third floors with landings at the first and second floors, they will be 3 ft. wide with treads 2 ft. 5 in. wide and their speed will be 90 ft. per minute, which will mean that the time taken to travel between the ground and third floors will be about 1½ minutes. The capacity of each escalator will be 6,000 passengers per hour and the total escalator installation is comparable in capacity with that of nine electric lifts each carrying about 30 passengers. The escalators have, of course, very great advantages of continuous availability and the self-contained provision of an easy staircase in the event of breakdown, while they are simpler and safer. In the buildings where large staffs have to be moved between several floors the provision of escalators will result in the saving of many man, woman, boy and girl minutes. But it will be unnecessary to press these advantages, since travellers in London will have realised the relative advantages of escalators and will not have failed to notice that the Underground Railways are installing them to replace lifts even where expensive special approaches have to be constructed.

Another form of contrivance has had to be used in order to deliver letter bags from the Post Office (London) Railway to Mount Pleasant Letter Office and in this case takes the form closely corresponding to a dredger. Under-platform conveyors in the railway station collect the bags from the trains, being loaded through trap doors in the platforms and deliver them into buckets of the elevator which in turn unloads them at the sorting office level.

In telegraph instrument rooms mechanical handling is replacing hand collection and delivery with consequent time saving and smooth working. In addition to Lamson carriers and pneumatic tubes, which have mainly been used for point-to-point work, a new system involving conveyor bands has recently been introduced.

For clearing telegrams from the operators' position a conveyor, known as a Vee Conveyor because of the form of access, is placed between the two banks of operators' tables. At the bottom of a V-shaped trough a band 1½ in. travels at a speed of about 200 ft. per minute. The operator places the telegrams in the trough lengthways on their edges and the band carries them to a central point for despatch.

For distributing telegraphs to the operators a system of multiple bands is used. The telegrams are placed at the sorting fitting between two moving bands, which are about 2 in. apart. On leaving the sorting fitting the bands are brought into close contact thus gripping the telegrams and conveying them to the desired point. The release of the telegrams is affected by bending the lower band back over a roller, thus allowing the telegrams to fall. The system is very flexible, permitting all parts of the Instrument Room to be easily served. Mr. D. P. Gilbert has been responsible for the design of this system.

Another inter communication link which is being tried consists of a band running along a steel plate, the telegram form being inserted between these two elements, a speedy and simple device.

#### *Electric Lifts.*

It will be unnecessary to deal at any length with such well-known contrivances as our electric lifts which are installed in every Post Office building of any size. By degrees every mechanical and electrical safeguard, to ensure safety to the users, has been incorporated; even with these safeguards very efficient maintenance is necessary.

Recently it has been the custom, where the usage of the lift differs materially in different parts of the day, to instal a dual (alternative) control switch to enable the lift to be operated either on the automatic push button principle or by means of an attendant in the car. To ensure absence of delay during heavy periods the use of an attendant in the car is much to be preferred.

Another improvement is about to be incorporated in the case of the lifts for the new Faraday Building. In this case, with a view to smooth and noiseless working the alternating current supply will be converted to direct current through the medium of specially designed motor generators. This arrangement ensures a wide range of speed control by varying the voltage and can be applied with satisfactory results both in the accelerating and stopping periods.

#### *Electric Battery Trucks.*

In cases where a letter or parcel sorting office is in close proximity to a railway station, electric battery trucks, similar to those used extensively by railway companies and industrial concerns generally, are employed for the conveyance of mails. By this means the haulage of hand-drawn trucks within the sorting office and on the railway platform is avoided, as well as the necessity for transference at each of these points, the trucks being driven alongside the mail van. There is, in addition, an appreciable saving of time, and, where favourable conditions obtain, a financial saving can also be effected. The employment of these trucks depends upon the existence of a reasonably

good surface over the route which has to be negotiated, the maximum gradient and the length of the same included in the route, the dimensions and carrying capacity of existing lifts which have to be used, and the possibility of providing a ramp to give access to the loading platform in cases where the truck can otherwise pass direct from the sorting office into the street. In cases where the use of lifts is unnecessary two or three trailers drawn by one battery truck are employed and the carrying capacity is thereby increased and a reduction of staff is effected.

The electric battery truck normally used has a carrying capacity of about 10 cwt., a loading space of about 21 sq. ft., an overall length of about 7 ft. 6 in., an overall width of about 4 ft. and a total weight, including load and driver, of about 30 to 35 cwt. Its maximum speed is about 6 miles an hour.

#### *Electric Battery Vans.*

Experiments are being made in London and Leeds to ascertain the comparative suitability of electric vans for postal purposes. At Leeds two 20-cwt. and one 25-cwt. vans and in London seven 15-cwt. vans are being tried.

The speed of these vehicles is about 18 miles per hour and their mileage, fully loaded, about 20 to 24 miles on one charge.

#### *Stamping and Franking Machines.*

The most gratifying development as regards what are really post marking and cancelling machines is that although a British firm is still not available as a manufacturer, those firms who have up to now supplied us from America have made arrangements to manufacture in this country.

The machines which have recently been introduced to frank envelopes and which are very ingenious as regards the precautions taken to guard against improper use are drawn from British sources.

It should be explained that these latter machines are not maintained by the Post Office and remain the property of either the Company which manufactures them or their clients.

#### *Heating.*

The installations for heating Class I Post Office premises are installed by the Office of Works after the plans have been agreed between that Department and the Post Office Power Engineers, but they are maintained by the Post Office Superintending Engineers.

Heating is normally on the low pressure hot water system with sectional radiators designed to maintain a temperature of 62° F. with an outside temperature of 32° F. In sick rooms and retiring rooms slightly higher temperatures are allowed.

#### *Ventilation.*

In clerical offices ventilation is normally provided by inlets behind the radiators and where window outlets would be insufficient extractor fans are employed.

In sorting offices precautions have to be taken against draughts due to access to platforms and under-floor conveyors. In the special cases of offices connected with the Post Office underground electric railway a mechanical ventilation scheme for the latter had to be specially designed to avoid draughts and impure air in the sorting office, the intake being sucked down through one or more of the vertical shafts between the basement and the inverts of the station tunnels and the heated and vitiated air being expelled by means of a separate fan to a system of ducts leading direct to the outside air.

The chief problems arise in the ventilation of the telephone exchanges and automatic telephone apparatus rooms. There are two main methods of ventilation: suction and plenum, or pressure, systems. The former is generally used where it is necessary to get rid of fumes, &c., where the supply of clean fresh air and the circulation of air in the building present no difficulty.

The case of automatic telephone apparatus rooms, however, presents difficulties which are not met with elsewhere in that the rooms are fitted with apparatus racks reaching from floor to ceiling, presenting very great impedence to the circulation of the air and a very large surface for the settling of dust complicated by the attraction of dust to electrified surfaces. It is thus necessary to clean the air by filters and to maintain a forced circulation of air in the room by means of a plenum system, the air being introduced into the room to be ventilated by means of ductwork provided with numerous outlets.

In the standard system the air is discharged into the room from the ducts by means of revolving louvres which facilitate movement of air between the racks, this serving two purposes, viz., prevention of the formation of pockets of stale air, and by keeping the air in movement preventing the deposit out of the air of the very fine particles which may have passed the filter.

#### *Standardisation.*

No account of progress would be complete without a reference to standardisation. The Power Engineers of the Post Office are or have been represented on sectional committees, sub-committees and panels of the British Standards Institution dealing with electrical machinery, prime movers, electric control gear, lighting and heating fittings and accessories, and steel ropes; on the British Electrical and Allied Industries Research Association Sub-Committee dealing with switchgear, and on the National and

International Illumination Committees of Great Britain; co-operation has also taken place with the representatives of other government departments with a view to unifying practice.

The mills of standardisation grind very slowly, necessarily, but a number of British Standard specifications are now available which should be of the greatest assistance to the power engineer.

It may perhaps be worth while to draw attention to the fact that while the intelligent application of these standard specifications can very much reduce the work of the engineer, the greatest care is necessary in specifying the particular alternative designs or procedures of which some of these specifications contain several; and in adding such contractual or additional clauses as will make the complete specification as clear and comprehensive as is desirable. This care is necessary not only in connexion with the invitation to tender but also in regard to the use of specifications by inspecting officers. Looking at the matter from another point of view, engineers using these specifications should remember that they cannot have it both ways and insist that plant shall conform with the standard specification and at the same time with additional clauses which, instead of being rationally supplementary, are fundamentally incompatible.

It is hoped that enough has been said to show that we are trying to pull our weight in the standardisation boat, though we still find it necessary in many cases to paddle our own canoe.

It would be very useful if we could effect the standardisation of envelopes and also of legibility of typing. Handwriting might follow if penalties for non-compliance were made sufficiently severe!!

#### *Technical Instructions.*

A great deal of work has been involved during the last few years in connexion with the preparation of up-to-date technical instructions for the guidance of all who are connected with the design, installation and maintenance of plant.

In order to ensure uniformity of form the data supplied by the Power Section is edited by the Technical Instruction Group of the Telephone Section. Technical instructions have already been issued dealing with heating, ventilation, pneumatics and stamping machines and another will shortly be completed dealing with electric lighting.

#### *Conclusion.*

It is desired to emphasise that the work described has largely been the result of close collaboration with the Departments and Sections concerned, and it may be the source of some gratification to this Society, as it certainly is to the author, to know that the idea underlying the Mechanical Aids Committee was first put forward in a previous paper laid before this Society in 1916. And now, in addition to the Committee appointed by the Secretary, the London Postal Service has its own Mechanical Aids Committee, which includes a liaison engineer from the Power Section. All this collaboration and cultivation of mechanical mindedness is proving of the utmost value in considering schemes for facilitating the operations of the Departments. Nor is it confined to the Postal, Telegraph and Telephone Services; a comprehensive transportation scheme is at present being worked out with the Controller of the Savings Bank for handling a large amount of clerical records which circulate in that Department.

The following table gives an indication of the expansion during the period under review of certain representative services:

	<i>Year ended Mar. 31, 1909.</i>	<i>Year ended Mar. 31, 1932.</i>
Electric Lifts ... ..	104	337
Postal Conveyors ... ..	5	191
Letter Stamping Machines ... ..	59	717
Electric Fans ... ..	156	1,271
Offices electrically lit ... ..	427	2,432

The author is anxious to take this, the last opportunity which he may have on an occasion such as this, to express much more than his thanks to all those in the Power Section who have assisted in the preparation of this paper.

He wishes to put on record his sincere appreciation of the able support which has been afforded to him since he entered the Service in 1909. To mention names is almost invidious, but he cannot help referring to those who have acted as Assistant Staff Engineers; Messrs. Cornish, Rees and Matthews (in the early days), Messrs. Powell, Walters and Kingston, and to the Assistant Engineers who have worked under them; to the Head of the Power Drawing Office, Mr. Gusterson, and to the Draughtsmen, amongst whom must be mentioned Mr. Pettit, who has been associated with so many of the transportation schemes, and to three most devoted and necessarily patient personal clerks, Messrs. Medland, Laws and Eames, and their assistants.

He also wishes to thank Sir Thomas Purves for permission to read this paper.

The paper was followed by an interesting discussion in which Mr. D. R. Wilson, C.B.E. (Chief Inspector of Factories, Home Office), and Mr. C. Le Maistre, C.B.E. (Director and Secretary, British Standards Institution) took part.

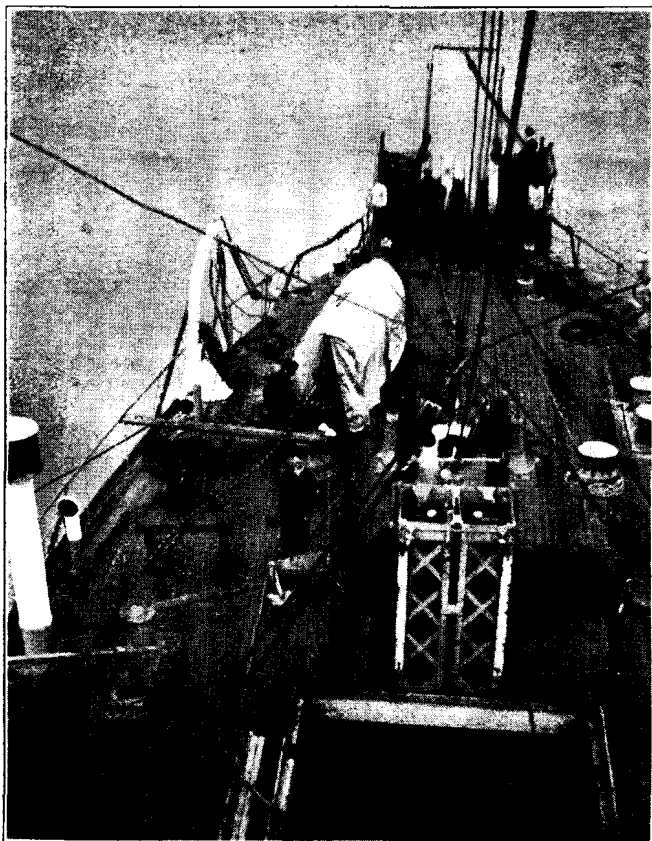
## LONG DISTANCE TELEPHONY.

## NEW BRITISH OVERSEAS EXCHANGE—(contd.).

J. F. DARBY (*Headquarters Traffic Section*).

THE cables indicated in the statement at the end of the previous article are normally grouped in three categories—(i) *Anglo-French*, serving France, Spain, Switzerland, and Italy; (ii) *Anglo-Belgian*, serving Belgium, South Germany, Austria, Hungary, and Czecho-Slovakia; and (iii) *Anglo-Dutch*, serving Holland, North Germany, Denmark, Norway, and Sweden. Germany, it will be noted, is served by both the Belgian and Dutch cables; these cables are able to give a certain amount of assistance to each other in times of congestion and breakdowns, depending upon the land line facilities available at the Continental ends. Similarly with the Anglo-French and Anglo-Belgian cables, temporary help can be rendered, one to the other, in exceptional circumstances. The actual choice of the submarine cable channel is determined by the routing which will give the best service and the lowest overall charge to the public.

Before leaving the subject of submarine cables, it may be of interest to review in outline some of the features of design upon which research has been focussed and which are producing definite effects from economic and service points of view. If the statement



A JOINT IN PROGRESS ON THE CABLE SHIP "FARADAY."

referred to above is perused it will be noticed that the capacity of the successive cables as regards physical wires has progressively increased, 4—16—17—28, with the last, a 120-wire capacity. The question of cable capacity is a highly technical one, and it will perhaps suffice to mention the main considerations involved. In modern long-distance telephone practice, it has definitely been

accepted that a 4-wire circuit (2 wires for the "go" channel and 2 for the "return") is preferable to a 2-wire circuit, mainly on the grounds that no loss of electrical stability is experienced when two or more circuits are interconnected. Such an arrangement does not necessarily imply the use of more copper per circuit; on the contrary, economy in copper can be effected, since the size of the conductors on a 4-wire basis can be very considerably less than on a 2-wire basis. 160 lbs. per nautical mile conductors were



ANGLO-BELGIAN 1932 CABLE. LAYING A SHORE END.

used in the 1891 cable as compared with 20 and 40 lbs. per mile for the 1932 Belgian cable, and it follows, therefore, that the effective capacity of the latter is, for the same space, greater than the former. Further, the actual diameter of the latest cable is slightly greater than that of the earlier types (1.23 times that of the 1910 cable and 1.05 times that of the 1927 cable). The adoption of paper insulation for cross channel cables has also affected the circuit capacity.

Apart from the physical 2- or 4-wire circuits provided by the cables in question, certain *derived* circuits are also made available for commercial telephone use, viz., *phantom* and *carrier current*.

"Phantoming" (superimposing of circuits by means of balancing transformers) has been fully exploited on the Anglo-Continental cables and, in the case of the Anglo-Dutch paper insulated cables, 8 derived circuits, viz., 4 single phantoms, 2 double phantoms, 1 quadruple phantom and 1 octuple earth phantom are available in addition to the 8 physical 2-wire circuits, making 16 in all.

(Phantom working on the 4-wire circuits of the new cable cannot yet be counted upon and this must be taken into account in assessing the maximum capacity of the 1932 cable.)

Carrier current working, which involves the provision of a "speech band" (with fairly even attenuation at all frequencies in the band) of the same size but distinct from the normal speech band, cannot generally be applied to the normal *coil loaded* cables on account of the comparatively low cut-off. The pre-1932 *continuously* loaded cables, also, are not highly suitable for carrier current working, owing to the rapid increase of attenuation outside the normal audible frequency range. Nevertheless, a carrier current circuit on a 4-wire basis is in operation on the Anglo-Dutch No. 3 cable. On the other hand, in the design of the 1932 Belgian cable, consideration has been given to the provision of attenuation characteristics at much higher frequencies than were available on the older cables, to admit of better carrier current facilities, and at least one separate carrier current circuit (4-wire basis) per 4-wire physical

circuit, will be available, if required. It can, therefore, be said that the capacity of the latest Anglo-Continental submarine cable is 60 working telephone circuits, and from the service point of view it is probable that these circuits will give greater stability than "phantom" channels, owing to the interdependence of side and phantom circuits, although it must be confessed that, so far, there has been remarkable stability on the Dutch cables where "super phantoms" are employed.

The second point of interest is the subject of *Loading*. From further reference to the statement of Anglo-Continental submarine telephone cables it will be observed that at first the cables were unloaded, later, loaded with coils, then continuously loaded, and finally—an apparent reversal of policy—semi- (or intermittent) continuously-loaded.

Loading was introduced, in days before amplification could be obtained by means of thermionic valves, to reduce the attenuation losses, and is achieved by the introduction of inductance into the circuit artificially. This is arranged in practice by either the insertion of coils at regular intervals or by the wrapping of fine iron wire (or tape) around the whole length of the conductors. The chief merit of coil loading over continuous loading is that the former is less costly. There are, however, a number of disadvantages to be set against this economic aspect. Apart from general inconvenience of handling cables in tidal waters with bunches of coils enveloped at intervals within the cable sheathing, loading coils require to be uniformly spaced; repairs involving the insertion of lengths of cable seriously interfere with spacing. Further, the *cut-off* frequency is more abrupt in the case of coil loading—the attenuation rising very rapidly after the normal maximum frequency for which the cable is designed is reached. Another feature of loading by means of coils, particularly where heavy loading is involved, is that the time of propagation is high and varies considerably over the speech range. This gives rise to a phenomenon known as "transient effect."

The disadvantage of continuous loading is its cost and the use of 4-wire circuits in place of 2-wire accentuates this difficulty. The question has been met in the case of the 1932 cable by the adoption of a half-way course. Each conductor is so arranged that alternative sections ( $\frac{1}{8}$  nautical mile) are provided *continuously loaded* and *unloaded* respectively. Actually half the conductors in the cable are continuously loaded and the other half unloaded, the two halves being separated by a screen. Circuits are made up in such a way by the use of short lengths of conductors, alternately, in the screened and unscreened portions, that the "go" channel is screened from the "return" channel throughout the complete length of any one 4-wire channel.

By this scheme the costs of the loading were materially reduced; they were, in fact, no higher than would have been the cost of coil loading. As regards the resulting characteristics, it can be said that they are very satisfactory. The attenuation, although higher than in the case of the earlier cables for the normal audible frequencies (this is completely made good by the use of repeaters) is much flatter for higher frequencies than previously obtainable, thereby making provision for carrier current channels, as already mentioned, and for music transmissions on any of the circuits—a range up to 10,000 cycles being available. The time of propagation for all working frequencies is practically constant, the speed of transmission from end to end of the cable being about 0.002 seconds.

While on the subject of times of propagation, a phenomenon which is met with in long-distance telephony may perhaps be mentioned, viz., *echo*.

Owing to the time which elapses from the moment of the speaker energising the "go" side of a channel until the speech is heard by the speaker on its return from the distant end by means of reflection, an echo effect is produced. To meet this difficulty a piece of apparatus called an *Echo Suppressor* is inserted in the telephone circuit, whereby speech currents on the "go" side actuate a valve device which blocks the "return" side. Some idea of the speed of propagation can be gained from the following figures:—

<i>Class of Circuit.</i>	<i>Velocity of transmission in miles per second.</i>
Unloaded cable ... ..	130,000
Loaded cable (long distance) ...	20,000
Loaded cable (ordinary trunks) ...	10,000

With such a complicated and vulnerable object as a submarine cable at the bottom of the sea—exposed to the effects of tides and currents and damages from rocks, ships' anchors and trawls—one perhaps wonders how the high standard of maintenance necessary for dry core paper insulation is attained and how repairs are effected. From time to time in the London and Continental exchanges, it becomes very apparent that a cable has "gone." At Headquarters a bulletin is issued giving the extent of the breakdown, the prevailing delays on the routes affected, and the steps taken in the use of *voies de secours*. Testing stations locate the fault—each cable is accurately "charted"—and a cable ship leaves its depot, proceeds to the location of the fault and "drags" for the cable. The cable is pulled up and run over the sheave—at the bow of the cable ship. In some cases, where damage is severe, the faulty section may be apparent; in any case the cable is cut as near as possible to the fault and, after testing, the "good side" is sealed, buoyed and returned to the sea. Testing on the faulty side continues until the faulty portion is cut away and a new length of cable (held in reserve in the ships tanks) is spliced in.

After further testing, the good side is recovered and the cable joined up, sealed and returned to its bed in the ocean. All this assumes good weather. In the case of rough seas, the cable ship must stand by and patience has to be exercised in the switchrooms while the circuits remain out of order. The public does not fail to understand the difficulty when the cause of the delay is explained.

It is hoped that the foregoing notes on the line plant side of overseas telephone service will enable readers to appreciate to some extent the work which goes on outside the switchroom and problems which are under continuous investigation with a view to effect improvement both technical and economical in this service.

(To be continued.)

## REUNION OF RETIRED OFFICERS OF THE C.T.O.

THE annual tea and talk of the above Association at the Express Dairy's Bloomsbury depot last month proved, as usual, a great success, thanks to the excellent arrangements made by the ever-reliable organisers, Messrs. C. S. Keen and H. E. Adams, and the indulgent chairmanship of Mr. J. Bailey, I.S.O.

There were two events which gave special pleasure to those assembled, the unexpected presence of Mr. W. S. Fisher, the doyen, after the very serious accident with which he and Mrs. Fisher had met, when a motor-bicycle knocked them both down, and severely injured them. It was much regretted, however, that the full recovery of Mrs. Fisher is likely to be prolonged. The second event was the return of Mr. McEwan, who from one cause and another, has for some time been prevented from attending these gatherings. Once more his jovial personality, ready wit and piquant retorts were in evidence. Mac as a penitent was unbelievable! It was rather a case of *rectus in curia* and as such the assembly gave him a well-deserved ovation. There were no less than 113 officers present.

As space is at a premium these days, it appears preferable to give the names of those absent instead of those present: J. P. Aldis, old East Anglian Octogenarian; J. B. Batho and F. Seager, old musicians of Stock Exchange, latter P.M. Hitchin, Penrith and Sutton, Sy.; O. Bathurst, A. W. North, G. T. Bennett and H. Trollope, rebels of the past and founders of the P.T.C.A., the latter still working on Benenden Sanatoria with W. Davis; C. Bent and George Lund, old militarists of S. African War; Harry Cook, the linguist; F. Goodheart, late Controller's Office; Chas. Honeysett, still prominent Boy Scout in Devon; Jack Goldsack, octogenarian, incapacitated while pruning elm trees; P. King, antiquarian, versed in heraldry and church archaeology; Alf and Frank Morgan, of aged renown; H. Penney, early journalist, horticulturist, C.T.O. Dining Club and P.M. several towns; Luke Powell and Joe Twyford (gentlemen), latter P.M. Malton, Yorks; R. J. Talbot and Teddie Allen, still playing chess—by post!; H. R. Testar and R. Young, wireless experts; W. J. Twyman (Archbishop), in residence Mt. Ephraim, T.W.; F. White, formerly P.M., now prominent Deal angler; W. Wilson (Tug), rusticated, Cornwall; Freddie Cooper, late C. T. School, now Kogarah, N.S.W.; "Brother" Furby, writes from down under, Wellington, N.Z., on world trip, homing via U.S.A.; Arthur Ward, formerly teacher telegraphy, &c.; J. Y. Hopgood, old-time athlete, militarist Egyptian and S.A. Wars. J. J. T.



## ENTERPRISE AT BRIGHTON.

This year the Post Office has come forward, with what is believed to be a unique effort, as a competitor for public interest in the pre-Christmas shopping effort usually organised in Brighton and Hove. A shop was acquired and suitably and tastefully redecorated throughout. A new front with chromium steel fittings was erected. Above the window is a fascia board with "Post Office Telephones" in block letters against an illuminated orange background.

The window display is particularly pleasing and attracts, indeed compels, attention; purple is the dominating colour of the scheme, and a series of chromium-plated cubes in the base of the window helps to set off the exhibits which include telephones of various kinds and advertising literature. An eye-arresting notice on chromium plate inviting all and sundry to "Step in and see how the Automatic Telephone works" occupies the whole of one side of the entrance.

A curved screen separating the window space from the remainder of the shop is an important part of the display scheme; at eye-level there is

effective in this respect, is of a hand-microtelephone placed on a hall table just inside the entrance, with the "main" to which it is connected located at the back of the shop. The offers to inspect the working of a private branch exchange and to make test calls, even if only from one end of the shop to the other, or from one extension to another which these arrangements render practicable, are eagerly accepted by many of the visitors. The three telephonists who assist with this duty exhibit in a marked degree the enthusiasm common to all connected with the venture. Although the interest evoked by the extension instruments has been referred to first, the interest connected with the automatic demonstration set is the greater so far as numbers of onlookers may be taken as an indication. The layout of the apparatus and switches allows the intricacies of dialling from one number to another to be readily followed; the various tones are produced at will, either in the ordinary way, or amplified by loudspeaker; and the requirements and safeguards associated with the registering of calls can be appreciated.

A courteous and competent lecturer of the local engineering staff is in attendance as demonstrator, and his services are in constant demand. On the first day his audiences ranged from an intelligent schoolboy, who knew how to repair an electric bell, to a Professor of Engineering, who advanced one or two "posers."



BRIGHTON TELEPHONE PUBLICITY SHOP. VIEW OF INTERIOR.

a number of recesses, each, excepting the centre one, containing a coloured hand-microtelephone toned by suitable lighting. The centre recess is occupied by a miniature "theatre," or scenograph, complete with footlights, displaying a short series of scenes illustrative of progress in communications during the past two centuries: for example, the 1732 scene is of a mounted post-boy; the 1832 scene depicts a stage-coach, and, as may be expected, the 1932 scene contains a telephone as a prominent feature. Whether the man apparently making an early telephone under date 1876 represents an historic person is not clear, but he fits into the series of pictures remarkably well. The intriguing regularity with which the "theatre" curtains open and close, and scenes change, has created a "traffic" problem of its own—during most of the day the pavement outside the shop is blocked with interested spectators. A goodly proportion of these spectators, however, eventually find their way inside, where Sales, Engineering and Operating representatives are waiting to welcome them.

The apparatus available for inspection includes an automatic demonstration set, working P.B.X. switchboards, and telephones working on various extension plan numbers. "Boudoir" hand-microtelephones of all available colours are to be seen, and an amplifier and a multi-coin box are also on view. Extension instruments are placed on the business tables and elsewhere in the shop to demonstrate realistically the advantages of various plan numbers; one arrangement, probably the one which is most

Immediately preceding the opening of the shop, a personal letter of invitation to visit the display was sent to numerous prominent people having local connexion; these included Members of Parliament; mayors and councillors; members of the telephone advisory committees of Brighton, Hove, Eastbourne and Tunbridge Wells, and leading members of various traders' organisations; in addition 35,000 card invitations printed in script were distributed in Brighton and Hove, and surrounding places.

The period between the final decision to embark on the scheme and Dec. 12, the date upon which it seemed desirable to open the shop, was very short, but close and sustained co-operation between headquarters, the District Manager, the Sectional Engineer, and the Head Postmaster, and a most gratifying display of enthusiasm and esprit-de-corps by the members of the staffs concerned, allowed everything to go forward according to schedule without hindrance or delay. Appreciation must also be expressed for the assistance and advice given by the architect responsible for the design and decorative scheme.

The average daily attendance at the demonstrations has been about a thousand. This is considered to be a gratifying figure when account is taken of the fact that the effort stands by itself, and is not connected with a trades exhibition, or installed as a "side show" on premises primarily

devoted to the sale of some commodity or commodities other than telephones and telephone service. It may be taken for granted, therefore, that the majority of those who enter the shop have been genuinely attracted by the Department's efforts, and this is of special advantage to the Sales Officers who receive them. Sales Representatives, when canvassing normally, are embarrassed to some extent by initial difficulty in obtaining introductions, or of gaining access to responsible people, but this initial disadvantage is absent, it may almost be said to be reversed, when business is conducted at the shop, as all who enter do so voluntarily. Visitors who appear to evince special interest in exchange work are handed one of the Postmaster-General's card invitations to visit the Brighton Main Exchange.

The coloured hand-microtelephones cause considerable interest, as also does the method of registering calls. One visitor had thought that all automatic exchanges were run by a private company. Another visitor—an elderly gentleman—gazing at the automatic set, remarked somewhat



BRIGHTON TELEPHONE PUBLICITY SHOP. EXTERIOR.

sadly "Women are difficult to understand, but that machine is worse." Some have entered the shop and "purchased" telephones in much the same way as they would enter a shop for any other class of purchase; but what about the man who enquired from the Sales Supervisor about the price of furniture? Did the general air of commercial efficiency lead him to think he was dealing with an understudy of the famous Mr. Drage?

All expenditure for publicity purposes must, in the final reckoning, be justified in the light of the financial results obtained, and this standard will ultimately be applied to the Department's "publicity effort" in Brighton. Up to the present, orders taken have fully warranted the venture!

The advertising and educational value of the undertaking cannot, however, be calculated wholly in terms of cash revenue; the psychological effect is of a very high order, and the interest and knowledge gained by the visitors will be widely dispersed. The immediate reaction of the public to the enterprise of the Department, has been most encouraging. Spontaneous expressions of approval that the Post Office is at last adopting commercial methods, and many appreciative comments on the quality of the exhibition, have already been forthcoming.

C. O. P.

## PROGRESS OF THE TELEPHONE SYSTEM.

THE net increase in stations for December, 1932, was 6,410, bringing the total number of telephone stations in the Post Office system at Dec. 31, 1932, up to 2,119,275.

The following gives a brief review of the growth of the Telephone System during the year 1932:—

	TOTAL NO. OF STATIONS.		INCREASE.	
	At Dec. 31, 1931.	At Dec. 31, 1932.	No.	Per cent.
London ... ..	735,433	791,584	21,557*	2.9*
England and Wales (excluding London)	1,113,762	1,116,785	37,617*	3.4*
Scotland ... ..	178,454	183,352	4,898	2.7
Northern Ireland ...	26,049	27,554	1,505	5.8
United Kingdom ...	2,053,698	2,119,275	65,577	3.2

NOTE.—34,594 Provincial stations were transferred from the Provinces to London in connexion with the extension of the London Telephone Area in February, 1932. This has been allowed for in calculating the figures marked \*.

Residence-rate stations at Dec. 31, 1932, numbered 252,969 in London, and 332,609 in the Provinces, the total of 585,578 representing an increase of 27,134, or 4.9% for the year. The increase in business subscribers' exchange stations for the same period was 34,127, or 2.4%.

The total number of call offices at Dec. 31, 1932, was 38,934, or 2,175 (5.9%) more than at the end of the previous year. Of the total of 38,934 public call offices, 8,753 were in the London Telephone Area and 30,181 in Provincial Districts.

14,506, or 37% of the total call offices working were of the Kiosk type, at which service is available at all hours of the day and night, the increase for the year being 2,346 (19.3%). At Dec. 31, 1932, Kiosks in London numbered 3,435, and in the Provinces 11,071.

The number of rural party line stations working at Dec. 31, 1932, was 7,796, as compared with 8,474 a year previously. Many such lines are being replaced by exclusive lines in connexion with the opening of rural automatic exchanges.

The number of effective calls originated during the year 1932 is estimated at 1,470 millions, or 60 millions (4.3%) more than the total for the year 1931.

At the time of going to press the final results for the last two months of 1932 in respect of trunk calls were not available, and the year's figures will be given in a later issue. Particulars of the October traffic, which have not yet been quoted, are as follows:—

The total number of inland trunk calls dealt with was 10,835,152, representing an increase of 70,875 (0.7%) on the October, 1931, figure. International calls numbered 99,984, as compared with 112,946 in October, 1931.

Further progress was made during the month of December with the development of the local exchange system. New Provincial exchanges opened included:—

Bangor (reconstructed manual): Failsworth, Main (Oldham), Middleton, Urmston, Walkden (all automatic conversions); and the following rural automatic exchanges: Carsington (Wirksworth), Cumledge (Duns), Chirk (Wrexham), Cowbridge (Cardiff), Crosby-on-Eden (Carlisle), Dormans Park (East Grinstead), Dunsoore (Dumfries), Haltwhistle (Hexham), Grendon Underwood (Aylesbury), Ide Hill (Sevenoaks), Lower Shelton (Bedford), Moulton (Spalding), Morchard Bishop (Crediton), Milton Keynes (Bedford), Pembroke (Milford Haven), Portlethen (Aberdeen), Selside (Kendal), Thursford (Fakenham), Whitburn (Bathgate): and among the more important provincial exchanges extended were:—

Bishop Auckland, Chorley, Langside (Glasgow) (all manual); Stoke-on-Trent (automatic).

During the month the following addition to the main underground system was completed and brought into use:—

Stevenage—Hitchin—Baldock :

while 75 new overhead trunk circuits were completed, and 84 additional circuits were provided by means of spare wires in underground cables.

## TELEGRAPHIC MEMORABILIA.

THE lecture at the Institution of Electrical Engineers, Victoria Embankment, by Mr. R. P. Smith of the E.-in-C's. Office, on Dec. 19, on "The Inland Telegraph Service—Maintenance of Instrument Room by the Traffic Staff," merited a much larger attendance than that which assembled. The close proximity of the date of the lecture to the Festive Season probably accounted for the poor attendance. It may have been the case that pater-families was busy purchasing the Yuletide presents and poultry. One cannot say, but one did observe that some of the ladies present had already managed to make a number of their Xmas purchases, yet also managed to grace the gathering with their presence—plus their spoils from the popular Stores.

However this may have been, nothing disconcerted our friend "R.P.," who held his audience well.

The discussion which followed was bound to reveal here and there the spirits of the past who quite naturally, would have felt something in the shape of disloyalty to the comparatively simple Morse and Wheatstone systems, had they remained absolutely silent.

It was not mentioned by anyone then present, but the first official recognition, so far as one can recall, of the Maintenance of the Instrument Room by the Traffic Staff was well over thirty years ago, when the Baudot Multiple system was first introduced by French experts. This writer is however open to correction on the subject.

By the way, it was evidence of the excellent feeling existing between the commercial and engineering departments that the lecturer reproduced on the screen the cleverly humorous Xmas card from the pen of Mr. Johnson of the C.T.O., which card portrayed some possibilities and impossibilities of the transition stage of the change-over from Morse to full mechanisation in the C.T.O. itself.

*High-grade Imbeciles!*—According to the report of a leading London daily newspaper, Dr. Millais Culpin, Professor of Medical Industrial Psychology at the London School of Hygiene and Tropical Medicine, in an address at Bedford College for Women, was understood to condemn the conditions of work in the Civil Service. Said the professor, "we have allowed a bad system to grow up in the Civil Service. We take a large number of bright young people, make them pass examinations, and then put them down to work in the Civil Service, which can be adequately done by high-grade imbeciles! We make them mere cogs in a vast machine."

Really one is at a loss to know upon what intimate knowledge of any branch or branches of the Civil Service the learned professor has assessed the mental effort of Civil Service duties. Naturally there are hewers of wood and drawers of water: naturally too, young people, however bright, cannot at once be placed on the responsible jobs. No organisation of any considerable size, can be satisfactorily carried on without a certain percentage of routine work and procedure. There is, for example, no small amount of very rigid routine in the daily duties of a bank clerk, which duties have fretted and galled many a bright young person in the early stages of his or her career. The trend of modern civilisation with its increasing mechanisation will of necessity increase the amount of routine duties everywhere, and which, according to the professor,

will need the services of yet a further number of "high-grade imbeciles." In any case and to go no farther than the Post Office section of the British Civil Service, the cogs in the wheels of all sizes, doing their particular duty faithfully and in harmony with the entire scheme, have at least succeeded in producing something in the shape of solid cash to the tune of a few million of very welcome pounds on the credit side of Great Britain's balance-sheet.

*Personal.*—The *T. and T. Age* informs us that Mr. Bancroft Gherardhi, vice-president and chief engineer of the American Telephone & Telegraph Co., has been awarded the Edison Medal for 1932 by the American Institute of Electrical Engineers for "his contributions to the art of telephone engineering and the development of electrical communication."

It is also noted that among the recent honours, Mr. W. D. MacGregor, M.I.E.E., Indian Posts and Telegraphs Department, has received a G.C.I.E. Mr. MacGregor was lately Postmaster-General, Bengal and Assam.

*Retirements.*—Mr. G. Marshall, Chief Inspector, Post Office Engineering Dept., Newcastle-on-Tyne, has just retired after 46 years' service. He was presented with several very useful articles of furniture, and—a pipe!

We also hear that Mr. James J. Kenny, Controller of Telegraphs, Dublin, having just retired after 45 years' service in the Telegraph Department, G.P.O., was presented by the staff with a wireless set, a bureau and a bookcase as a mark of esteem and respect.

*Countries.*—AUSTRALIA.—The *Electrical Review* informs us that the Australian Postal authorities have made arrangements by which a wireless receiver can be installed in the home of a prospective purchaser on approval for three days in a Metropolitan area before a licence need be taken out, or for six days in country districts. In special circumstances this period may be extended to one or two weeks. If a licence is not obtained on the expiration of the specified period, the owner of the set, or the occupier of the premises becomes liable to prosecution. Traders are also liable to prosecution for infringing the conditions.—"Amalgamated Wireless."—Mr. Thornby speaking in the House of Representatives, on the Postmaster-General's estimates, urged the Government to give immediate notice of its desire to terminate the agreement entered into with Amalgamated Wireless (Australasia) Ltd., in 1927. Under this agreement, said this New South Wales member, the Government paid to the company a royalty of three shillings from every licence fee on account of patent rights. Already, Mr. Thornby is reported to have said, £250,000 had been collected on patent rights worth only £96,000, and by terminating the agreement the Government could save £73,000.

It is alike satisfactory and interesting to learn that for thirteen months in succession, up to the end of October last, the number of radio receiving licences in force in Australia has shown steady progress. The total number on the 31st of that month was 317,490.

CEYLON.—*Ceylon and I. & I. Communications Ltd.*—The Indian Correspondent of the *Electrical Review*, reports that in connexion with the proposal that I. & I. Communications Ltd. should take over the Ceylon telephone and telegraph system, Sir Wm. Barton, who recently visited Colombo, has pointed out that the Ceylon system on its present working showed an annual deficit of Rs. 500,000 on telephones and Rs. 1,000,000 on telegraphs, and if the proposal materialised a local company would be formed, with Ceylonese directors on the board. The Government would receive a royalty on gross profits which would increase as the business expanded. The automatic telephone would be installed at once and there would be a link with the Beam wireless telephone system to London via Bombay. At the expiration of two years or so the Government, at its wish, to resume the two services if required, on reasonable terms. The P.M.G. of Ceylon has the matter under consideration.

CHILE.—Reuter's Agency at Santiago de Chile reports that the capitals of Chile and Peru have been linked by wireless telephone

and there was a cordial exchange of courtesies between the presidents of the two nations in Santiago and Lima, respectively. This new circuit will also be used for communication with Brazil and Ecuador.

**CUBA.**—*A new Wireless Station.*—The International Broadcasting Co., Havana, recently inaugurated a new transmitter. Its call signal is CMAF and it uses a frequency of 68.0 kes. with a power of 1 kw.

**CHINA.**—*A novel instruction to Consulates.*—The *Electrical Review* informs us that the Ministry of Foreign Affairs has instructed all Chinese consulates abroad to install receiving sets in order that they may obtain direct home news from the 75-kw. central broadcasting station at Nanking. This station opened a daily service on Nov. 12 last.

The Telegraph Department of the Ministry of Communications will in future supervise the Inland service provided by the international radio station at Chenju, Shanghai. The International Communications Bureau will be responsible for foreign radiograms only.

**EGYPT.**—Reuter's Cairo correspondent informs us that the next International Cable and Wireless Congress will be held in Cairo in 1937. These congresses are quinquennial. The same authority states that Egypt and India are to have a radio-telephone service in March of the present year.

**GREAT BRITAIN.**—*The New B.B.C. Transmitting Station.*—The new B.B.C. station to replace 5XX long-wave and Midland Regional transmitters, has been fixed at Wychbold, near Droitwich (Worcestershire). Indeed some of the contracts have already been placed, and it is hoped that the plant will be completed by the middle of 1934. The new station particulars are :—A medium wave, power 70 kw., and long wave, power 100 kw. *Scotland Yard, Crime and Picture Telegrams.*—A special correspondent of the *Daily Telegraph* states that the Criminal Investigators of Scotland Yard, London, have recently made considerable use of picture telegraphy between London and similar headquarters of the police abroad, say Berlin, Vienna, &c. By this means "The Yard" is able "within an hour of starting their inquiry, whether or not the police of certain European countries have any record of the person inquired about." Should the reply be in the affirmative, "a facsimile of the finger-print of such person can be telegraphed to, let us say, Berlin, in about twenty minutes."

**HOLLAND.**—The number of wireless listeners in Holland at the end of September last, says *World-Radio*, was 554,778. Of this number 294,814 had their own receiving sets, the remainder being connected to local wireless exchanges.

**INDIA.**—The *Electrical Review*, writing on the Empire Broadcasting Service of India, says that "the question of how far it is possible to take advantage of the Empire broadcasting service, is now being widely discussed in India itself." It is then pointed out that "the Bombay and Calcutta stations were only built for comparatively local distribution, and there arises the question whether these stations should be equipped with long-range transmitting apparatus, or (2) whether the broadcasting organisation should be expanded for the establishment of more short-range stations such as those at present existing." Our contemporary adds that the latter plan "would be a comparatively simple way of overcoming the language difficulty." Perhaps the present writer is not very clear on the existing technique and/or the organisation, but one would appreciate information as to in what way the establishment of short-range stations would overcome the language difficulty, say in an Empire broadcast. It is interesting to read from the notes of the *Review's* Indian correspondent that there "has recently been a great increase in the number of wireless receivers in that great dependency."

The Indian Radio & Cable Communications Company is now endeavouring to arrange a sufficient number of communication channels between its control office at Bombay and the radio transmitters and receivers in Kirkee and Dhond respectively. This

is subsequent to the completion of the radio-telegraph link between India and Japan as well as the radio-telephone link between India and England. The difficulties of maintaining any number of overhead wires through the jungle in this district are well known and recognised, in addition to the heavy prime cost of building the extra lines required. Experiments are therefore to be made with carrier circuits on one pair of the existing two. If successful it will be "the first multi-channel installation in India with both telephone and telegraph carrier channels on the same pair," the *Electrical Review* informs us.

**JAPAN.**—Reuter's Tokio Agency informs us as follows :— "Wireless sets in Japan may receive only on the fixed wavelength of the Japanese semi-government stations. They are not permitted to be adapted for receiving on short wavelengths, which are reserved for government use. Some alarm has been caused by the report that Russia is planning the erection of powerful broadcasting stations in Siberia. Preparations are being made to build a Japanese broadcasting station of 100 kw."

**NORWAY.**—A wireless communication service has recently been established between Norway and Torgilsbu (Eastern Greenland).

**RUSSIA.**—According to the Tass Agency a powerful radio station, generating 500 kilowatts, is about to start shortly near Moscow. A 20-kw. transmitting station at Rostov-Don and a 4-kw. station at Lievsk are also about to commence, says Reuter's Agency. From the latter source we also learn that the Soviet Union has at present 59 broadcasting stations, and that the system will be greatly extended in the present year. Several new stations are to be built, mainly in Russia proper, but it is also intended to construct a 100-kw. station in Minsk, the latter in the centre of the White Russian Republic. A station of equal power is also to be built in Kiev, in the Ukraine.

**SOUTH AFRICA.**—It is generally understood in Cape Town that the African Broadcasting Co. has actually purchased a site at Milnerton for the new broadcasting station for Cape Town. Its power is designed to be twenty times stronger than that of the present station.

*Interference.*—Motor-driven machinery, &c. in Dundee, Natal, it appears, has so seriously interfered with radio reception that the Town Council is about to enforce a new by-law compelling all users of such electrical apparatus to first satisfy the Borough electrical engineer that the running of the same will not interfere with radio reception in the immediate neighbourhood. *World-Radio* say that such offending apparatus would have to be altered at the owner's expense.

**SWITZERLAND.**—In twelve months the number of licensed radio listeners has increased by 75,252, a remarkable figure for so small a country. The total number on Oct. 31 last reached 208,234.

**U.S.A.**—Since the transfer of the Radio Division of the Department Commerce to the Federal Radio Commission, an annual saving of approximately £7,000 has resulted, and, according to *World-Radio*, a further saving of £15,000 a year is likely to be effected by reducing the personnel by thirty-three. Under the new plan the United States will be divided into twenty districts, each in charge of an inspector. The present supervisors will automatically be appointed to these posts and will exchange territories from time to time to familiarise themselves with operating conditions all over the States. *Wireless sets in the U.S.A.*—A census of wireless apparatus was taken in 1930, when, according to *World-Radio*, every other family of city-dwellers owned a receiver as against 21% of rural families. At the present time, according to the latest estimate, there are 18,000,000 sets, which as the total number of families in that country is given as 29,904,663, there are nearly twelve million families still unsupplied!

*The False and the True.*—The false is susceptible of an infinite number of combinations. Truth has but one tale to tell.—  
ROUSSEAU. J. J. T.

**THE CETEX TELEPHONE SERVICE.**

WE attended a demonstration of the new Cetex telephone service at the office of the company at 19, Grosvenor Place, S.W.1, last month. The function passed off very successfully, the efficiency of the operators, all trained telephonists speaking more than one language, being amply demonstrated. In fact, it was clearly shown that it should not take longer than fifteen seconds for any enquirer to receive any message which had been previously deposited for him. The working of the teleprinter aroused great interest in the Press representatives who attended.

The Postmaster-General sent the following congratulatory message over the Company's Teleprinter line:—

“The Postmaster-General welcomes you to the circle of Telex subscribers, and desires to assure you that no effort will be spared on the part of the Post Office to provide you with an efficient service and to meet your requirements in every way”:

and the Postmaster-Surveyor of Birmingham said:—

“This is a message to Messrs. Cetex Ltd. by the new Telex system from the Birmingham Head Post Office, to greet you on the opening of your new venture. We congratulate you on the introduction of such an institution and desire to convey to you all our very best wishes for the New Year and for the future.”



OPERATORS AT CETEX OFFICES TAKING MESSAGES FROM SUBSCRIBERS.

[By courtesy of Photopress.

The new service is designed to reduce the “no reply” trouble which is experienced by every telephone subscriber, and enables you to ascertain, whenever you wish, wherever you are, whether anyone who has attempted to communicate with you during your absence from the telephone, has left a message for you with “Cetex.”

By the Cetex Service, therefore, the risk of undelivered messages is reduced. Thus a subscriber to Cetex who cannot get in touch

with anyone direct, will 'phone CETEX, SLOANE 4554, giving his name and secret membership number, the message and for whom it is intended.

Assume that you were leaving your office unattended and did not wish to lose business, as a subscriber to Cetex you would 'phone SLOANE 4554, telling them that you were to be away from your



SENDING MESSAGE BY TELEX AT THE CETEX EXCHANGE.

[By courtesy of Photopress.

office from, say, 1.0 p.m. to 6.0 p.m., and instructing them to take all messages for you which you will call for by telephone after 6.0 p.m. Your business acquaintances and others, having been advised by the Company that you are a member of Cetex, will automatically 'phone CETEX, SLOANE 4554, when they find that they cannot get in touch with you direct.

There is no doubt that this Service will prove great value to telephone subscribers and others. It cannot fail to make an appeal to business men and private individuals alike, who can become subscribers for a period of six months for the cost of £3 3s. 0d., or £1 1s. 0d., and upwards. We wish the enterprise every success.

**OBITUARIES.**

WE regret to note the death at Aberdeen of Mr. Walter Geddes, Inspector of the Engineering Department at the G.P.O. in that city, at the comparatively early age of 48 years. Deceased entered the Government service at the age of 18 years.

Also, at Southampton, on the 2nd ult., there passed away a well-known figure in the person of Mr. G. S. Kemp, in his 76th year. “Mr. Kemp,” says the *Electrical Review*, “spent his early days in the Navy, and was an instructor in electrical and torpedo work at Portsmouth.” He was at one time laboratory assistant to the late Sir William Preece when the latter was E.-in-C. of the G.P.O. Mr. Kemp was closely associated with Marconi in the latter's early demonstrations, and joined the Marconi Wireless Telegraph Co. in 1897.

We also much regret to announce the tragic death of Mrs. J. J. Philpott, *née* Blance, sister of Miss Blance formerly Superintendent, C.T.O. Mrs. Philpott's death was the result of a fall downstairs, just as she had nursed her husband safely through a severe illness. Mr. Philpott was formerly an old Electric Telegraph official at Southampton, then for many years at the old Stock Exchange office; and later Asst. Supt. of the combined Stock Exchange and Threadneedle Street B.O' until his promotion to the Postmastership of Chesterfield, retiring therefrom in 1911. To him, Miss Blance and other members of the family, the sincerest sympathy of old friends and ex-colleagues of the above-mentioned offices is respectfully tendered.

J. J. T.

Readers of the *Journal*, and especially those who were in the service of the late National Telephone Company, will regret to hear of the death of Thomas Caparn, in his 78th year. Mr. Caparn was in the Stores Department, both of the Company and the Post Office. He did much good work in connexion with the Special Constabulary after his retirement.

## THE FIRST WIRELESS TELEGRAM.

THOSE numerous listeners who, every evening, tune their wireless receivers to stations in all parts of the earth, look back with wonder to the first experiments of Marconi and recapture something of the thrill which he must have had when he first received on Dec. 12, 1901, the signal "S" from Newfoundland—a distance of 1,800 miles. They may also know that the first paid wireless telegram was transmitted from the Needles station on June 3, 1908. I wonder how many people are, however, aware that the first transmission of paid telegraphic messages without the use of wires antedates the latter event by 13 years?

The Engineering Department of the Post Office had for some years prior to 1895, been experimenting with the phenomena of electric induction and had found as early as 1885 that signals could be induced in a completely insulated circuit by passing currents through another completely insulated circuit—the original experiment effected this result over a distance of  $\frac{1}{4}$  mile.

In March, 1895, the cable between the Isle of Mull and the mainland became interrupted, and the opportunity was taken to try the new method of communication on a commercial basis. The distance to be bridged was two miles. It was found that there was actually an overhead line on the island which skirted the coast, and a gutta percha insulated wire was laid along the coast of the mainland. Without going into technical details it can be stated that the experiment was crowned with success—although this was jeopardised at one time by the action of a cow which developed a fondness for the taste of gutta percha sheathing—and that signals were read perfectly at both the Island and the mainland stations. Communication was established on Mar. 30, 1895, and continued until April 3 on which date the cable was repaired and normal communication by this means restored. The number of telegrams dealt with was 156. A good deal of interest was naturally evinced in the matter and both the ordinary and technical press devoted some notices to it. The German Post Office also addressed an inquiry on the subject to the British Post Office and were furnished with full details.

T. L. D.

## REVIEWS.

*Le Secret Télégraphique et sa Protection.* By Victor Meyer, docteur en droit. E. de Boccard, Paris. 172 pp.

Dr. Meyer opens his treatise with the statement "Telegraphic secrecy is an essentially modern notion, but the law which protects it is not." The right to secrecy was born at the moment the telegraph was placed at the disposal of the public. The optical telegraph system, which was widely extended in France, was confined to governmental and police use, and when the electric telegraph arrived its use was extended first as an indispensable necessity to the railways, and subsequently to the public. Other countries, taking France as a model, says Dr. Meyer, legislated noticeably on the same lines.

He seeks to demonstrate, basing his view chiefly on Gieseke's "Das Recht des Privaten an der eigenen Geheimsphäre," that the law of telegraphic secrecy did not emanate from state monopoly, as some authors seem to admit, but has its juridical foundation on the right of each user, whether individual or state, in his private sphere. He sets out to answer the three following questions:—

Of what does telegraphic secrecy exactly consist?

Is it effectively protected?

What are the advantages and inconveniences of its regulation?

These questions are dealt with fully in chapters on (1) Secrecy in General, (2) Telegraphic Secrecy, (3) The Juridical Foundations

of the Law of Telegraphic Secrecy, (4) Its Positive Regulation, (5) Species of violation of Secrecy, (6) Self-Protection by the User and (7) Juridical Protection in Public Law.

The violation of telegraphic secrecy may be voluntary or involuntary. All States, says Dr. Meyer, have not made this elementary distinction, and in order to stress the importance attached to the inviolability of secrecy he indicates those countries which punish by the same penalty the two species of violation, assimilating the act of violating telegraphic secrecy with that of violating the secrecy of letters.

As regards wireless telegraphy, after references to the proceedings of the radio-telegraphic conferences of Berlin and Washington, it is said "One of the greatest reproaches levelled at wireless telegraphy is that it is not discreet: the secrecy of these services may be nothing but the 'secret of Polichinelle.' In fact, administrations find it impossible to act effectively against illicit interception." But modern technical procedure, he adds, such as the employment of codes, extremely rapid signals and synchronised automatic cryptography augment the difficulties of interception, and the day is not distant when it will be rendered impossible.

Chapter VII (ii) gives a summary of the penal protection of secrecy afforded by law in the principal countries of the world.

The treatise is a very explicit and fully documented work which should be of great value to all concerned in the legal aspect of telegraphic administration. A fairly full bibliography is appended, which, however, includes no English work on the subject. Indeed, the only publication in the English language mentioned is the *Telegraph and Telephone Journal*.

W. H. G.

"*Naša Pošta*.—We have received from Belgrade a special number of this Jugo-Slav review, devoted to the jubilee of the principal discoveries of Nikola Tesla, who was born at Gospic, in Croatia, in 1856. Besides articles in the native languages, there are English, French and German articles in appreciation of the great inventor, who is variously described as the founder of modern industrial electro-technique, and the founder of high frequency and radio-technique. The review is illustrated by a portrait, and is a most enterprising production.

## C.T.O. NOTES.

*Promotions.*—Misses F. E. Colliver and C. Liddell, Assistant Supervisors, to Supervisors; Misses A. A. Hodge and M. E. Tabor, telegraphists, to Assistant Supervisors; Miss J. Enoch, telegraphist, to Assistant Supervisor (Provisional).

*Retirements.*—Messrs. J. R. Van der Ent, Superintendent, E. R. Morton, Assistant Superintendent, A. O'Williams and J. W. Thompson, Overseers, A. H. Sennitt, tube attendant, Misses E. C. Russell and A. Horne, Assistant Supervisors.

*Sport.*—On Jan. 10, alas a cold, damp, foggy day! the Centels Sports Association arranged a triple bill, football, hockey and netball at Chiswick, followed by a dance. At football the Southampton Post Office were the opponents and after a ding-dong game the Centels won, rather luckily, by one goal to nil. Mr. Stuart Jones was to have kicked off, but in his absence, due to ill-health, Mr. G. T. Archibald kindly obliged. At Hockey, where Miss Luffman, Chief Supervisor, bullied off, the Centels were badly beaten by the Imperial Hockey Club (L.T.S.) to the tune of 7 goals to 1. In the netball game, also against the L.T.S., the first throw being given by Miss McCarthy, Supervisor, Higher Grade, the Centels fared even worse, being beaten by 27 to 10. In spite of the inclement weather, which no doubt accounted for the lack of support, the games were much enjoyed, as also was the dancing at night, when at least 100 made full use of the floor.

*Influenza.*—The epidemic of flu has hit the Central Telegraph Office rather severely, the maximum number away being 371, out of a total staff of approximately 3,000.

## LEEDS DISTRICT NOTES.

ONE of the most enjoyable functions of the social season is the Leeds Telegraph Messengers' annual concert and prize giving, and this year's concert, although held on Friday, Jan. 13, was no exception to the rule. Col. Jayne, D.S.O., O.B.E., M.C. (Postmaster-Surveyor), was in the chair and was supported by a distinguished platform party. The large audience voiced enthusiastic appreciation of the excellent entertainment which was provided and which was eloquent of the wealth of musical and humorous talent which exists amongst the staff. The Boy Messengers' Mouth Organ Band, which rendered numerous items in perfect harmony, simply brought down the house.



BOY MESSENGER SMITH, WINNER OF THE P.O. TOTAL ABSTINENCE SOCIETY'S ESSAY COMPETITION, RECEIVING HIS PRIZE FROM MRS. JAYNE.

Prior to the presentation of the prizes, Col. Jayne, in reviewing the work of the Boy Messengers during the year, paid a tribute to the efforts of Mr. Smith (Inspector) and referred to the educational attainments of the boys which had obtained for them the highest average marks in the country for the fourth examination in succession. Further, Leeds had again provided the winner in the Essay Competition promoted by the Post Office Total Abstinence Society. This competition, which was open to all Boy Messengers in the country was won by Boy Messenger Alfred Smith, who, appropriately enough, had appended the nom-de-plume of "I. Drinkwater" to his winning effort.

After Mr. P. Beevers, Chairman of the City of Leeds Education Committee, had also complimented the boys on their success, Mrs. Jayne presented the prizes.

In the unavoidable absence of Mr. Mansell (Chief Superintendent), who was in London, suitable acknowledgment of the services of all who had contributed to the success of the evening was made by Mr. Best (Superintendent of Telegraphs).

An interesting lecture on the introduction of modern machinery and methods in the Inland Telegraph Service was given under the auspices of the North Midland centre of the Institute of Electrical Engineers, by Mr. R. P. Smith, A.M.I.E.E., on Jan. 10, at the Hotel Metropole, Leeds. Prof. E. L. E. Wheatcroft, M.A., was in the chair. There was a good attendance which included Col. Jayne (Postmaster-Surveyor) and Mr. J. W. Atkinson (Superintending Engineer) and many members of the Post Office Engineering and Telegraph staffs.

Mr. Smith, in a wide survey of the field of telegraph developments, dealt with the teleprinter and its problems, including the Telex service; panel mounting of telegraph apparatus; conveyors and other labour-saving devices; typewriter reception of telephone-telegrams and phonograms; and also touched on such questions as the lighting and the furniture equipment of instrument rooms. The many references which had of necessity to be made to the reorganised Leeds Instrument Room with its up-to-date

equipment made the paper of especial interest to the audience. The address was fully illustrated by lantern slides and in the discussion which followed there were many expressions of appreciation of Mr. Smith's lucid description of the developments which are making the British telegraph service a pattern for the rest of Europe.

We observe with interest and, may we add, with much pleasure that the proud position held by the West Yorkshire District during the first 9 months of the Staff Salesmanship Scheme is now being seriously challenged by several other provincial districts. The progress made in the West Yorkshire District during the quarter ended Dec. 31, 1932, has brought orders for 49 new stations and 272 items of auxiliary apparatus which brings the total for the District since the commencement of the scheme to 2,147 items, made up as follows:—

Exchange lines ... ..	153
Extensions ... ..	164
Hand microphones ... ..	1,622
Bells ... ..	168
Other apparatus ... ..	40

The initiative and co-operation of the staff in achieving these results is much appreciated.

## SOUTH WALES DISTRICT NOTES.

ALTHOUGH the voice of South Wales is not often heard in the *Journal*, it must not be assumed that its work and play are less strenuous than those of other districts and it is felt that our conferees outside the principality would like a few words about recent happenings.

We first record a soiree held by the Cardiff Telephonists' Gymnasium Club on Nov. 18 last. The object was two-fold: (1) to augment the club's funds and (2) to preserve the spirit of comradeship among the members. The object was well attained in both respects. Quite a number of well wishers from various branches joined in the happy throng, including Mr. Ryland (District Manager) and Mrs. Ryland, who presented prizes for whist, Mrs. Dainton, the wife of Colonel Dainton, Head Postmaster of Cardiff, who was unfortunately prevented by illness from attending, Mr. Cotton, Assistant Postmaster, and Miss Cotton, Mr. Grosvenor (Traffic Superintendent) and Mrs. Grosvenor, Mr. Smith, Chief Superintendent (Postal) and Miss Smith, Miss Spearing, Chief Supervisor. It was evident long before the end that all were thoroughly enjoying the function, and a repetition of this enjoyable event is eagerly awaited.

A particularly happy gathering of the District Office staff took place on Jan. 3 to welcome out new District Manager, Mr. A. E. Ryland. Opportunity was given to all present to join in a game of whist, and afterwards the younger and more agile section made full use of the dancing floor and band until the early hours of the following morn. The attractive prizes for skill (or good luck) at cards were graciously presented by Mrs. Ryland. Mr. Ryland is not new to South Wales, having served here some years before the Great War, and his erstwhile familiarity with the district will, no doubt, serve him in good stead in guiding the fortunes of the service in this part of "Cymru."

Times are bad in South Wales, perhaps somewhat more so than elsewhere in this country, because of considerable dependence on the heavy industries, which seemed to have suffered more severely than the lighter ones by the general depression, and so the feelings of the telephone exchange staff go out to the poor children in their distress. At the Christmas which has just gone by the staff of the Cardiff Exchange organised, as they have done for years past, a Christmas tree, distribution of gifts, sumptuous teas and various amusements for the poor children living in the neighbourhood of the docks. Colour is very pronounced in this locality, but black as well as white children are helped by our girls. Mr. W. I. Hopkins, Assistant Traffic Superintendent, and Mr. W. Mogford, late Assistant Superintendent (Telegraphs), again performed the duties of Santa Claus. Although the youngsters only see their benefactors once a year the bright memory of the Christmas tree will relieve the drabness of their little lives.

Considerable interest is centred around the advent of demand working to South Wales, and work is well advanced in adapting the Cardiff Exchange to accommodate the new equipment. The new system, by which South Wales stands to gain considerably, will be put in operation on all inter-zone routes and it is confidently felt that the success which has been achieved elsewhere will be repeated in South Wales, bringing, it is hoped, increased business in its train. Several meetings have already been held to initiate the telephone staff into the new methods and will be repeated from time to time to ensure the success of the innovation.

We are glad to welcome back to our midst Mr. J. Mills, Higher Clerical Officer, who has undergone a severe operation for the removal of eye trouble, which necessitated a stay in hospital of nearly a month.

## BIRMINGHAM NOTES.

*Presentation to Mr. C. W. Piggott on his Retirement.*—On Dec. 31, 1932, a numerous gathering representative of all branches of the service assembled in the Traffic Office to bid farewell to Mr. C. W. Piggott, Traffic Superintendent, Class I, on the occasion of his retirement. The chair was taken by Mr. J. L. Parry, District Manager, and the presentation, which comprised a G.E.C. "Nomad" all-mains wireless receiver, was made by the Postmaster Surveyor, Mr. W. P. Baines. The wireless receiver was subscribed for by members of the Telephone and Engineering staffs of the District, including Head Postmasters, Exchanges, Traffic, Accounts and Sales Branches of the District Manager's Office and the Engineering staff.

In opening the proceedings Mr. Parry remarked that the event was of more than ordinary interest as Mr. Piggott was a pioneer in the telephone world and with him would go some of the earliest history of the telephone in this country. Mr. Piggott had seen 45 years' service and had contributed freely during this period to the development of the service to its present standard of efficiency. Mr. Parry also referred to the recent introduction of director automatic working in Birmingham, the success of which, he said was largely due to the good work put in by Mr. Piggott. He wished him every happiness and prosperity in his well-earned retirement.

In making the presentation Mr. Baines referred, among other things, to Mr. Piggott's success, and said he was of the opinion that this was largely due to the fact that he thoroughly enjoyed his work.

The esteem in which Mr. Piggott was held was evident from the nature of the ensuing speeches, made by representatives of the various branches of the service. Among the speakers were Mr. H. Pearson (Assistant Postmaster),



MR. C. W. PIGGOTT.

Mr. S. F. Hill (Sectional Engineer), Mr. Hughes (Traffic Superintendent, Class II), Mr. Cope (Staff Officer), Miss Frost (Trunks), Miss Cockbill (Central), Miss Lambert (Midland) Miss Williams (Branch and sub-exchanges), Mr. Caine (Sales Branch) and Mr. Davis (Clerical Staff).

Mr. Piggott, in replying, expressed his keen appreciation of the good wishes accorded him and said that the present he had received would be a constant reminder, if one were needed, of old friends in the service. He naturally felt keen regret at the severance of his official connexions, but was looking forward to rest and relief after a somewhat strenuous time.

*Demand Trunk Working.*—The demand trunk system was extended on Jan. 14 to embrace the Nottingham and Lincoln groups. Subscribers in the Birmingham 7-mile circle are now able to obtain calls on demand to London, Manchester, Bristol, Leeds, Sheffield, Liverpool, Nottingham and Lincoln. It is proposed at an early date to extend demand trunk working in the Birmingham Area to exchanges within a 9½-mile circle centred on the Cathedral.

## SCOTLAND (WESTERN DISTRICT) NOTES.

THE annual dinner of the Sales Representatives took place on Friday, Nov. 25, in the Grosvenor Restaurant, Glasgow, and was a great success. Mr. W. Thyne, District Manager, in reply to "The Administration," made a very interesting and entertaining review of the changes that had taken place since the last dinner. Mr. Dunn, Staff Officer, was, as always, very witty and once again disclosed his ability as a raconteur. Mr. Brodie, Sales Manager, who is a father to "his boys," was in reminiscent vein, comparing the present-day Sales Representative with his prototype of earlier days, to the advantage of his present staff.



ANNUAL DINNER OF THE SALES BRANCH.

Included in the group are Messrs. Thyne, District Manager; Dunn, Staff Officer; Brodie, Sales Manager; and Groves, Sales Supervisor (who acted as Chairman).

A very fine musical programme was sustained by the Sales Representatives themselves, and the supply of talent seemed to be inexhaustible.

The artistic work on the menu cards was also executed by one of their number, and was of an extremely high standard. Mr. W. Groves (Sales Supervisor) was in the chair and his racy conduct of this exacting duty contributed in heavy measure to a very happy and pleasant evening.

A "Christmas Party" was held in Miss Rombach's Tea Rooms on the evening of Dec. 14. The programme presented by the committee was the embodiment of taste and originality, nothing having been left undone towards the object of giving the fullest enjoyment to the company. Commencing on the usual lines the first hour was spent at whist, in which all took part, with the effect that the period allocated for this seemed all too short. Tea was then served. At the conclusion of the tea Mr. Muir, on behalf of the staff, welcomed Mrs. Thyne, who was making her initial appearance amongst the staff, an appearance which it is to be hoped will be the forerunner of many more. He then called on her to present the prizes to the winners of the whist. Thereafter the programme of song, games and dance was indulged in.

Mr. J. R. Craig, Traffic Superintendent Class II, was, on the occasion of his transfer to the Glasgow District, presented with a small token of esteem from the Supervising Officers. He leaves with the best wishes of all sections of the staff.

We also welcome to our midst Mr. A. E. Tanner, Assistant Traffic Superintendent, Canterbury, who has been promoted to the position of Traffic Superintendent, Class II, in this District. We trust that his stay with us will be a pleasant one.

During the past few years it has been the custom for contributions to be made by the members of the staff towards the various infirmaries, &c., in the District. In 1925 the amount collected was £26 12s. 11d., and the contributions have steadily increased. The amount collected during 1932 was £51 0s. 6d., making a total sum of £327 since 1925. In all 13 infirmaries, &c., have benefited and expressed their appreciation of the help extended.

A MUIR.



# G.E.C.

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### THE POSTMASTER-GENERAL AT COVENTRY.

SIR KINGSLEY WOOD, the Postmaster-General, visited Coventry on Jan. 18 and inspected the works of the General Electric Company, and in the afternoon the Post Office and Telephone Exchange.

Speaking at a luncheon presided over by Sir William Noble, the President of the Coventry Chamber of Commerce, Sir Kingsley Wood, after referring to the decrease in the total number of the world's telephones, said:—

"In these circumstances the net increase of 66,300 telephones in 1932 in Great Britain as a result of considerable effort and the adoption of publicity and other new methods could, he thought, be regarded even by the most critical as not unsatisfactory, though there was still much leeway to make up.

At the end of the year Great Britain had secured a total of 2,133,000 exchange telephones. During the year the number of exchanges had increased by 206 to 5,270 and the number of call offices by 2,200 to some 38,950. There had been considerable development in our automatic system. We had opened 67 new automatic exchanges and in addition there were 318 rural automatic exchanges opened in the same period."

### THE LONDON TELEPHONE PLAY.

THIS ever-popular feature of the London Telephonists' Society programme is to be given at St. George's Hall, Tottenham Court Road, on April 11 and 12 next.

This year's play includes all the attractions of previous productions—topical allusions, bright and attractive music, pretty dresses, and pretty faces; while the fact that part of the action takes place in Egypt gives added opportunities for picturesque colours and costumes of which we may be sure the producer will take full advantage. Record attendances are expected.

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## WESTERN DISTRICT NOTES.

THE old year drew to a close with a disastrous fire at Camelford, which entirely destroyed the sub-post office and telephone exchange. The premises were occupied by the Sub-Postmaster, his wife, daughter and a young lady assistant, who were asleep on the premises when the fire was discovered by passers-by at about 1 a.m. on Dec. 22.

There is no fire engine in the town, the nearest being at Bodmin, 12 miles away, and it was impossible to call that brigade by telephone as the exchange was situated in the middle of the premises, which, in a very short time, was a mass of flames. A messenger had to be sent by motor car to Bodmin to call the fire brigade. When the brigade arrived it was hopeless to attempt to save the premises and all the brigade could do was to concentrate on saving the adjoining and opposite buildings, and it is understood that had it not been for a small river running at the back of the premises from which water was obtained the whole of the small town would probably have been destroyed. As quickly as possible emergency arrangements were carried out. A call office was established at the Conservative Club, and exchanges whose only outlet was Camelford were connected through to distant places on the trunks and junctions.

The Engineers arranged for the despatch of a new switchroom from Birmingham. This arrived at 8.30 p.m. and immediate steps were taken to get it into position in temporary premises opposite the old site. The following day, by 2 p.m., the new switchboard was working with 16 subscribers and one trunk to Plymouth. By 9.30 p.m. 30 subscribers and nearly all the junctions had been restored. On the second day (Dec. 24) nearly all the subscribers were working; by 2 p.m. normal conditions had been restored.

Travelling on official business recently in Cornwall an officer of the Western District had a somewhat startling experience. Whilst rounding the outside of a curve a cattle lorry appeared, rounding the inside of the curve at obviously too high a speed, when suddenly the side of the lorry shot out and a cow was deposited in the road immediately in front of the officer's car. He was only just able to pull up to avoid it. The cow was eventually got into the yard of an adjacent cottage, limping, but apparently without broken bones.

*A Clerical Error.*—An assistant at a sub-office having a telephone exchange was scrutinising an Advice Note and remarked to the Sub-Postmaster, "there is an order here from Headquarters to remove the telephone from the Vicarage, it says that the parson is deceased, that cannot be right as he has just passed by the office." "Headquarters must be wrong, then," said the Sub-Postmaster, "the Rev. Brown has only given up the living."

A subscriber recently reported that another subscriber's bell in the same building was continuously ringing. Therefore, at 1.45 a.m. an emergency message was sent to the lineman. When the latter arrived it was found that what the subscriber had heard was not the telephone but the Penlee Point fog signal, which on this particular evening was almost incessant.

During the year 1932 gratifying progress has been made in the Western District. As in former years there has been a substantial net increase in the number of stations connected to the system and the figure of 50,000 will be reached early this year. Business in the Western District is largely dependent on various seasons, i.e., visitors, fishing, agricultural produce, &c. Fortunately for the telephone revenue (and for those whose livelihood depends on the number of visitors to the many seaside resorts) the season was a good one, and the total number of calls handled approximates to 52½ million, compared with 48½ million in 1931, 47½ million in 1930. Since the whole of the energies of those engaged in the various branches of telephone work centres on the ultimate provision of telephone calls it can be fairly claimed that their labours have resulted in a good harvest.

During the year 65 call offices were added, the total number in service at the close of the year being 1,653.

*Street Kiosks.*—Progress has been made in increasing the number of kiosks, and the number was increased from 193 to 288.

The new Sales Branch is functioning well, and in addition to the Headquarters Sales staff at Exeter there are now 23 Sales Representatives distributed throughout the District under the direction of three Sales Supervisors stationed at Exeter, Plymouth and Taunton respectively. The staff salesmanship scheme has met with considerable success and resulted during the past year in 459 orders of all descriptions being secured.

*A Personal Call.*—The telephone bell rang in the dining room and the maid was told to answer. This she did in the following manner:

"Hullo!" "Yes." "Sure!"

and then hung up. The bell rang a second time and the procedure was repeated. Again the bell rang and the same conversation took place. The master of the house, who overheard the incidents, was curious and asked who was calling. The maid said "The Exchange asked me if Mr. — was in and I replied 'Yes.'" The operator then said "It's a long distance call from Glasgow," and I said "Sure." F. J. F.

## SOUTH MIDLAND DISTRICT NOTES.

AN outstanding event took place at Reading on Dec. 31, 1932, to mark the passing of Mr. F. C. French from the old years of District Office Accounting, with all the manifold responsibilities and problems, into a New Year of hope and promise to the telephone world in general but to Mr. French in particular on the occasion of his promotion to the rank of District Manager of Norwich. It is perhaps also worthy of note that this promotion represents the fourth of a series of promotions to the rank of District Manager which has been made from heads of branches in the South Midland Telephone District during the past five years.

Mr. J. H. Davie (Higher Clerical Officer), as Chairman, opened the ceremony with remarks appropriate to the occasion, paying high tribute to one who by efficiency and exceptional organising ability has raised the Accounting Branch to an exalted position in the service. He also read a letter from Miss A. H. Lawrence (Higher Clerical Officer) couched in such terms as to leave no doubt in the minds of listeners of the genuine friendship Mr. French has engendered during his period of office in the South Midland District. Mr. E. Drescher (Higher Clerical Officer), as representative of his fellow Supervising Officers, spoke briefly in praise of his old chief.

Expressions of appreciation were voiced in turn by Messrs. W. S. Coulsell (Sales Manager), A. H. Sergeant (Senior Clerical Officer), Captain F. H. Neate, O.B.E. (Traffic Superintendent, I), and W. A. Frame (Traffic Superintendent, II), after which Mr. C. F. Moorhouse (District Manager), in a reminiscent mood, sketched part of Mr. French's earlier career with a somewhat hazy background of a precocious junior clerk coming up to London from Canterbury to form part of the old Eastern Telephone District of London staff, of which Mr. Moorhouse was then District Manager. From thence, after many changes, Mr. Moorhouse renewed acquaintance with Mr. French on the occasion of his transfer to Reading as Chief Clerk eleven years ago, since which time the District has made phenomenal strides in telephone development, the stations during the period in question having been approximately quadrupled. Such rapid growth has brought with it many problems not generally met with in less rapidly growing areas, and the experience so gained, coupled with Mr. French's efficiency and ability to successfully surmount difficulties as they arise has especially fitted him for his new position as District Manager. Special reference was also made to the loyal and arduous labours of the Accounting staff involved in the experimental system of machine ledgering of subscribers' accounts, now in force in the South Midland District, for the organisation of which Mr. French is mainly responsible.

In conclusion Mr. Moorhouse presented Mr. French with a nest of mahogany tables and a mahogany stand electric lamp and wished both him and Mrs. French and family health and happiness in their new sphere.

In accepting these tokens of good will Mr. French warmly thanked the District Manager and staff for all the kind expressions and feelings which had prompted the gifts. He left the District with much regret in having to break with old associates. He appreciated the fact that his success could not have been accomplished without the loyal co-operation of the whole staff, particularly the supervising staff. He fully appreciated the cordial relationship that existed between the Accounting, Traffic and Sales staffs and would always recall with affection memories of his days at Reading.

The vacancy created by the promotion of Mr. French has been filled by the transfer of Mr. J. H. Hood, Staff Officer from the Guildford Telephone District, to whom a cordial welcome has been extended.

W. A. F.

## MANCHESTER NOTES.

*J. G. Maddan, C.B.E.*—We all experienced great pleasure on hearing of our Postmaster-Surveyor's decoration and felt that it was a recognition of meritorious service over many years. In reply to the staff's congratulations Mr. Maddan very generously has said that he feels himself the representative of the Manchester District staff in this honour.

*Post Office Telephones Social Club.—Carnival Dance.*—A very successful carnival dance was held at Telephone House on Jan. 7. About 230 were present, including the District Manager.

Dances also have been arranged at Telephone House on Feb. 4 and 28.

*Pantomime.*—"Dick Whittington and His Cat" will be presented at Telephone House on the eight nights from Saturday, Feb. 11 to 18. The prices are 2s. and 1s. 6d., and there are special seats for children. This is the fourth annual pantomime given by our versatile girls, and, in view of the attendances at the previous pantomimes, early application for tickets is advised. The caste includes many who already have made names for themselves in this sphere.

*Civil Service Sports Club.*—A successful carnival dance was held at "The Plaza," Oxford Street, Manchester, on Jan. 19.

*The Manchester Trunk Exchange Amateur Operatic and Dramatic Society* presented "The Quaker Girl," by James Tanner, at the Chorlton Town Hall, Manchester, on Jan. 27 and 28.

## GUILDFORD DISTRICT NOTES.

*Staff Changes.*—During last month, two of our members have left us for new pastures. Mr. Hood, Staff Officer, has gone to a similar post at Reading, and Mr. Beal, Higher Clerical Officer, has gone to Brighton. The former was presented with a loudspeaker, and the latter with a Drawing-Room Clock. We were very sorry to lose both these officers, and wish them every success in their new work.

We welcome to our midst Mr. Hampton from Liverpool, and Miss Chapple from Norwich, and trust that their sojourn in Guildford will be pleasant.

*Staff Meetings.*—The fourth of a series of Staff Meetings in the Guildford Telephone District was held at Farnham on Dec. 15, and was presided over by Mr. H. C. France, Traffic Superintendent. There were 30 present, including Mr. Mack, Head Postmaster, of Farnham.

A paper was read by Mr. W. F. Goodman, Assistant Traffic Superintendent, entitled "Staffing of Exchanges."

The Agenda included the following items:—

- Training of Learners—Form T. 332 W.
- Pricing of tickets.
- Alternative routing.
- "On Demand" service.
- Directory enquiries.

Refreshments were supplied after the Meeting by the Farnham Staff.

*District Office Dance.*—The Staff of the Guildford District Office held their Annual Dance on Wednesday, Jan. 11, at Ayres Hall, Guildford.

Amongst those present were Mr. Crombie, District Manager, and Mrs. Crombie; Mr. Surplice, Head Postmaster of Guildford, and Mrs. Surplice; Mr. France, Traffic Superintendent, and Mrs. France; and Mr. Hickman-Clarke, Sales Manager.

The Dance was well supported by the Staff, and was carried on until midnight.

Prizes for Spot Dances were won by Mr. Bosley and Miss Tingey.

Mr. Garrod made a very efficient M.C.

The evening was voted by all to have been most enjoyable, and a request for more frequent social gatherings of the staff is being considered by the Organising Committee.

*Sales Training Course.*—Keen interest is being taken in the monthly Sales Staff Meeting. Following last month's Meeting, a paper was read by Mr. Alcock, Sales Representative, Alton, entitled "Selling Alternative Service, i.e., Two Party Line Service." A lively discussion followed.

## BELFAST DISTRICT NOTES.

*Staff Changes.* We offer our congratulations to Mr. A. J. Maskrey on his promotion from Traffic Superintendent, Class I, to District Manager and wish him every success in his new position.

We extend a very hearty welcome to Mr. H. C. Froom, Traffic Superintendent, Class I, who came to us on promotion from Manchester, and hope that his stay in Belfast will be a happy one.

*Retirement.*—On Dec. 30 there was a well-attended gathering of the District Manager's Staff to bid farewell to Mr. J. B. Gossan, Sales Representative, who retired after 24 years' service in what is now the Sales Branch. Mr. A. J. Maskrey, District Manager, occupied the chair and made the presentation which took the form of a canteen of cutlery. Representatives of all branches paid tributes to Mr. Gossan's many sterling qualities, and he left with our best wishes for many years of happy leisure.

*Transfer of Bangor, Co. Down, Exchange.*—On Dec. 31 the Bangor Exchange was transferred from Magneto to C.B. working. The equipment is of the No. 10 type and consists of 1 B, 6 A, and 1 Testing Positions, and has accommodation for 1,160 subscribers. There are no features of special interest but as this is the first C.B. exchange with register recording to be opened in Northern Ireland, it was a matter of considerable interest to the local staff.

The official opening took place on Jan. 6 and was performed by the Mayor of Bangor, who in a few well chosen words outlined the increase in telephone subscribers in Bangor since the first exchange was opened, and expressed the appreciation of the town for the up-to-date equipment provided.

The visitors made a tour of the exchange and following the opening ceremony the Mayor (Mr. Walter Malcolm) made a telephone call to Sir Kingsley Wood, H.M. Postmaster-General, and was afterwards presented with a golden souvenir key by the Contractors who carried out the construction of the building.

The company at the ceremony included the Right. Hon. Sir Dawson Bates, Minister of Home Affairs for Northern Ireland, Mr. A. J. Ardern, Postmaster-Surveyor, Mr. A. G. Highet, Assistant Controller of Sales, Mr. T. T. Partridge, Superintending Engineer, Mr. A. J. Maskrey, District Manager, and the members of Bangor Borough Council.

The following is an extract from the "Bangor Spectator" which speaks for itself:—

"The opening of the Exchange gives me the opportunity—which I embrace with the greatest goodwill—of saying on behalf of the more than 700 telephone subscribers connected with the exchange, how much they appreciate the cheerful, efficient service they have received. No town could be better served than Bangor has been by obliging and intelligent operators. To most people they are not persons, but merely "voices," but they are cheerful, willing voices which count it no trouble to meet the demands of the public, no matter how great the rush and bustle.

There is a superstition in some quarters that Government officials are not always as polite and obliging as the employees of private business firms, but I have yet to hear any disparaging criticism made on the service given in Bangor by the employees of the telephone exchange, both day and night staffs.

Their work means so much to the efficient running of every business place and hundreds of private houses that one feels remiss at not having paid more frequent tributes to the telephone staff."

## LIVERPOOL NOTES.

Mr. A. KEMP, Assistant Traffic Superintendent, left us on Dec. 17, 1932, to take up duty as Traffic Superintendent, Class II, at Manchester. Our sincerest congratulations have already been conveyed to Mr. Kemp, but we hope to express our esteem and appreciation of his good companionship and sterling qualities in some tangible form at a function to be arranged in his honour.

Mr. Kemp is now the youngest Traffic Superintendent, Class II, in the country and we feel that he will go far. His sojourn with us has been of about 10 months' duration and in this short period he has become most popular with all members of the staff. We extend to him our best wishes for health, wealth and happiness in his home town.

Mr. G. K. Geill, Traffic Superintendent, Class II, has returned to us from Colchester, where he has been stationed for the past 12 months. Mr. Geill was originally an Assistant Traffic Superintendent at Liverpool, being transferred to Colchester on promotion. He has, like most Liverpudlians, seized the first opportunity of returning to his native town. We extend to him a real "Welcome Home."

A distinctly enjoyable evening was spent at the Stork Hotel on Dec. 2, 1932, when Mr. S. J. Swinnerton, our old friend and late Traffic Superintendent, entertained the male members of the Traffic Office Staff to a function which took the form of a high tea followed by a social evening.

Mr. Swinnerton was in good form, as were the very able body of entertainers who succeeded in maintaining a high standard and in keeping the fun rolling merrily throughout a far too short evening. The Sales Manager was among the guests and was accorded a warm welcome. The few speeches at this informal gathering were short, but the deep regard which is entertained for our colleague was very evident. Again we would extend to Mr. Swinnerton our very sincere wishes for every success and happiness in his new sphere of activity.

We hope that he will afford us many opportunities of seeing him again.

The following letter was received in connexion with the fire at the Shell Mex works at Ellesmere Port.

"On behalf of nine members of the Press, I have pleasure in conveying to you their sincere admiration and thanks on the excellent service rendered by you on the night and morning of the 3rd and 4th instant, your courtesy and civility being admirable under trying circumstances. I feel it a duty to endorse above remarks and do sincerely compliment yourself and staff on smartness and courtesy at all times.—Yours very faithfully

\_\_\_\_\_."

Also a Christmas greeting from a subscriber:—

"May we once again say how very very satisfactory our telephone service has been during the past year.

We really feel it is only fair to let you know how very much we appreciate the promptness and care exercised by you and your staff; it certainly does you all very great credit.

Wishing you all a very Happy Christmas and a prosperous and Happy New Year.—Yours truly,

\_\_\_\_\_."



### Missing a Train.

The fire clicked sullenly. It looked like a grey old man who was half asleep—and would be entirely asleep were it not for my disturbing presence. He stirred uneasily now and again and appeared to be giving me to understand that although aware of me, I was utterly without interest for him. I rubbed my hands, stamped a bit and coughed to see if I could rouse him from his feigned slumbers. Then, feeling a draught rather more icy than the rest of those poking fingers of January I said testily "Brighten up a bit old fellow, I'm cold." He stirred slightly and winked one dull red eye, but he still evinced no desire to acknowledge my presence. "Come, come," I said, "throw up a flame and do your job." He roused himself a bit more and said rather sulkily, "My job! what do you mean and what do you want?" "Your job," I replied, "is to keep people warm who have the misfortune to be stranded in this waiting room because they have missed their train. What I want is to be warmed now and to be kept warm until the next train arrives in one hour six minutes." "Oh," he growled, "well, you've got all your facts wrong: so wrong, in fact, that they're not facts at all." "Perhaps," I said, "you'll be good enough to explain." He grunted and then yawned and flicked out a cold cinder contemptuously. "Well," he said at last, "since you appear to be a nit-wit and since I can't sleep so long as you're here perhaps I will explain. My job is to be an advertisement for the Company—" "A mighty poor one," I said tartly. "An advertisement," he continued, "to the people who catch their trains. It's the passengers who matter. So long as there's a train in this station or there's one due I burn brightly. The people in the train or those who are getting in or out see me and they think to themselves 'what a nice bright fire: how good of the company to provide warm waiting rooms!' After the train's gone I settle down to sleep again but the passengers continue to think of me as a bright, cheery fire and it does the company no end of good." "But surely," I protested, "we who are condemned to spend hours in waiting rooms—" "Don't deserve any consideration whatsoever," he broke in. "It's not our fault you people miss your proper trains. You should be more careful. What's the use of my issuing time-tables? Serve you right if you are cold." "Well," I said, "I only just missed it—another minute and—" "Ah," he replied, "only just missed it. That's the trouble. I've accumulated a lot of wisdom in the course of my long service with the company and I can tell you from my own observations at this very station that it's far better to miss a train thoroughly than just to miss it." "Of course," I said, "that's because there's not so long to wait for the next." "If that," he replied "is an advantage at all, which I doubt, it is quite a minor one. That reminds me of a man who used to travel from this station years ago. He acquired the reputation for being a most methodical person because he was always in plenty of time for his train, but the fact was that he always thoroughly missed his proper train and consequently was always found waiting for the next one. No, believe me, the man who only just misses his train fills his day with regrets and endures his journey with impatience. First, he has the mortification of seeing the train leave the station as he arrives. He swears and looks accusingly at the station clock and then at his own watch—forgetting that with a watch it's not faith that is required so much as works. Then he asks for the time of the next train and checks the information by timetable and probably swears again. He begins to feel lonely and friendless as the station becomes deserted: he even talks to porters if he can find any—which usually he can't. He reads all the advertisements and grows to hate them: he tries to make sense out of the bye-laws and fails. He sits on all the seats and curses their hardness and he wanders about like a lost soul. He laments the time he wasted saying good-bye to his wife and repents stealing back into the kitchen to bag a box of matches in order to save a penny. He fumes about waiting: he declares to himself that the train he's condemned to catch is sure to be late and he composes spiteful letters to the Company. Once in the train you may be sure he groans each time it stops and declares

it's the slowest thing on wheels he has ever entered. He hates to think of the hour and a half he has lost but nevertheless he continues to think of it and of all that he could have done in the time. He works himself into such a state that when he does reach the terminus he jumps from the coach and probably leaves his bag on the rack. Now if that man had only missed his train thoroughly all that fuss and bother would have been avoided and he'd have been much calmer and in a more philosophic frame of mind. He wouldn't have heated himself to a cinder and torn his temper into shreds. And he wouldn't have regretted kissing his wife twice when he left home." "Yes," he muttered drowsily, "it's a far better fire bitter—" Just then a porter came along with a poker and a bucket of coals: the station woke into activity: bells sounded: porters sprang from nowhere: lights went up: signals went down: points clicked and in came my train—which I proceeded to catch thoroughly.

Maybe he's right, the ashen old scoundrel.

PERCY FLAGG.

### Brixton Exchange.

Our usual "Christmas" visit to Queen Mary's Hospital, Roehampton, was paid on Dec. 18.

Three telephonists, who had not previously visited the hospital, had the pleasure of taking our gift of £9 to be used by Matron and her patients.

The joy of taking a little cheer to the suffering was very keenly felt. Admiration for the cheerfulness of the patients and for the wonderful work carried out by the hospital staff was expressed; and the resolve to carry on our "Tommies" Fund in spite of hard times is stronger than ever.

A. U. D.

On Wednesday, Dec. 21, the staff of the Brixton Exchange held their Christmas Dinner. The sign "The House of the Dragon" prepared us for the interior, which was painted to give the illusion of a Chinese cafe. On the walls dragons in black on orange alternated with the Willow Plate design in the same colours. A miniature pagoda, perfectly fashioned, adorned the chair-table and heightened the oriental effect. Miss Hedges is to be congratulated on a very fine reproduction, and quite apart from the clever and artistic decorative scheme one must applaud the industry of the Misses Mason and Rose, who, with many others, utilised all their leisure time for four weeks prior to the dinner in creating this delightful scheme of decoration.

The District Superintendent, Mr. Durrant, and the Service Superintendents, Messrs. Saunders and Hickmott, attended, and I feel sure that all present greatly appreciated a well-chosen dinner and a very happy social evening.

A. C. V.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), E.C.1.

## LONDON TELEPHONE SERVICE NOTES.

### Sales Branch Notes.

DURING the month of December there was a net increase of 1,807 stations, as compared with a loss of 840 in the corresponding month of last year.

### Staff Salesmanship Notes.

The progress in the London Area is given below:—

	Total No. Ordered.	No. Ordered Month ended	
		Jan. 14, 1933.	
Exchange lines ... ..	1,579	101	
Extensions ... ..	1,563	125	
Private lines ... ..	19	1	
Plugs and sockets ... ..	247	21	
Hand-microphones ... ..	7,886	749	
Extension bells ... ..	647	59	
Other apparatus ... ..	806	81	
Total ... ..	12,747	1,137	

The Post Office, and particularly the Telephone Service, has been very much in the public eye during the year 1932, and a feeling has been aroused in some quarters that the Post Office is lucky in its enthusiasts.

The efforts of the staff in connexion with the Staff Salesmanship Scheme are becoming well known outside the Service, and with the experience acquired

during the past year, together with the wide field open for telephone expansion the outlook for 1933 is encouraging.

Happy is the individual of average size.

The trials and tribulations of the giant and midget in a world arranged for average mortals is often the cause of inconvenience. Those lacking in inches, however, are usually endowed with a keen sense of humour as the following correspondence shows :—

Referring to telephone kiosks a lady writes :—

“Why are these only fitted up for giraffes or rubber necks?  
I wish you would consider the needs of short women.

Why not fix an adjustable step and save me the ignominy of sallying forth with a soap box.”

After quoting from the 28th Chapter of Deuteronomy, v. 16 and 19, our good-tempered critic reveals her versatility in verse :—

“Dearest the night is over,  
Gone is my one and nine,  
You must go back to your Contract,  
And I must go back to mine,  
And call seven ‘No trumps.’”

The lady was very pleased to learn that the substitution of the fixed type of telephone by the movable H.M.T. was being made by stages, and we feel sure that this will be another “step” towards bringing the telephone with the “reach” of all.

### The Opening of “Bowes Park” Exchange.

On Thursday, Jan. 5, another automatic exchange, Bowes Park, came into service in London.

This exchange relieves “Palmer’s Green” and “Tottenham” exchanges and serves parts of the Wood Green, Southgate and Tottenham districts is a full unit exchange, equipped at the outset to take 3,600 lines.

Mr. W. H. U. Napier, C.B.E., Controller, presided, and after some explanatory remarks by Mr. E. Gomersall, O.B.E., Superintending Engineer, regarding the new exchange, 700 Palmer’s Green and 280 Tottenham lines were transferred following a signal given by Sir William G. Rice, J.P., in the presence of a representative company.

The first call from the new exchange was made by Sir William “dialling” the Editor of the *Wood Green and Southgate Weekly Herald*. The following exchange of messages took place :—

“This is Sir William Rice speaking from the new Bowes Park Automatic Telephone Exchange. The Post Office authorities are, I think, to be congratulated on their new buildings, the development of the telephone service and the work of their Engineering Department. I am proud, Mr. Editor, to have made the first call to you from this exchange.”

To this, the Editor replied :—

“It is a great pleasure and privilege to receive the inaugural message of the new automatic exchange through you, Sir William, one of our leading citizens, interested as you are in the welfare and progress of the district. I congratulate you on getting your first call through with such despatch. The necessity for the construction of the exchange shows that our residents are becoming more telephone-minded. May I take this opportunity of wishing the enterprise of the Post Office, in installing these latest devices for quick and reliable telephone communication, every success.

We feel sure that the new automatic exchange system will be to the entire satisfaction of all the subscribers.”

The exchange opened, Mr. Napier referred to recent telephone progress in London and then called upon Sir William Rice to address the company. Sir William put his listeners in a happy frame of mind by telling them that although he knew very little about telephones that was not going to prevent him from making a speech because the London Telephone Service had kindly provided him with one. Sir William concluded with witty and complimentary remarks on the telephone service.

The following gentlemen also spoke : Mr. F. W. Locke, Vice-Chairman Wood Green U.D.C., Mr. M. C. Pink, Deputy Controller, and Mr. G. Marlow Reed, J.P., Chairman Middlesex County Council, thus concluding this part of the proceedings.

Visitors were then shown over the exchange by members of the engineering and traffic staff and tea was served.

J. A. R.

### London Telephone Service Sports Association.

The annual general meeting is to be held on Friday, Feb. 17, 1933. Every member is requested to make a note of the date and to be sure to attend. The Entertainment Committee has started work already and it is hoped that there will be one item at least of very great interest. Readers may be assured that the business atmosphere of a general meeting will not be allowed to prevail a moment longer than necessary, but business is business and members will be serving their own interests by attending and voting on the subjects discussed.

The Association has agreed to take the responsibility of insuring all trophies (collective and individual) and cups belonging to affiliated clubs or to any of their members. The Honorary Secretary is carrying out the arrangement and it is up to anyone interested to see that their prizes are covered. This scheme should prove a useful service to clubs if full advantage is taken thereof.

The Rifle Club has been accepted for affiliation to the Association, and the Executive Committee is waiting to welcome its youngest member’s representative. This club, although at present only 14 strong, is doing well, especially the ladies (as usual). Two lady members are to shoot with the Admiralty team in the County of London League. Readers will observe there is plenty of room for more members in this club. It is a very inexpensive sport. A small annual subscription is paid plus a few coppers for ammunition. Excellent rifles are provided free and the range, which is situated in the basement of Cornwall House, is a very good one.

The L.T.S. Ladies’ Rowing Club joined with Headquarters Club (Chiswick) in races at Barnes against University of London on Dec. 18 last. Light and heavy fours only rowed. L.T.S. won their race by  $\frac{3}{4}$  length. On Feb. 18 next the same clubs race again but only eights will be out. Our own Captain, Miss Emms (T O B) rows as L.T.S. representative.

Rowing is ever increasing in popularity and it should not be long before the L.T.S. Club reports “full up.” It therefore behoves anyone hesitating the join to hurry up or she will be disappointed. The boat-house at Chiswick is particularly well equipped. It has excellent accommodation adjoining the Sports Grounds. The members of the Club practise assiduously, which does not deter the enthusiastic tyro. The Club Committee would be delighted to welcome prospective members.

With regard to ladies’ cricket, matters have not progressed because of the little support forthcoming. The Honorary Secretary has been requested, however, not to drop the matter before making a further appeal. Will all those readers (who have not already done so) who would like to take an interest in this side of the sport either as playing members or by helping with the finances communicate with Mr. A. H. Harris, Accounts Branch, A.R.5, and say whether they would be willing to attend a meeting at Cornwall House.

The women’s representative reported very highly on the story told by Sir Noel and Lady Curtis-Bennett and Miss Hiscock on what they saw and did in Los Angeles at the World Games in 1932. The talk was given at the annual general meeting of the Civil Service Sports Council (Women’s Committee) last November. Miss Hiscock was captain of the English team of women athletes. There is some hope of getting the trio to give their description again to the L.T.S. S.A.

It is up to the members to support the Civil Service Sports Council in all its undertakings. At the moment, one of the most useful ventures is suffering from lack of support. The Sports Journal is worth more than is asked for it. An annual subscription of 9d. (not 9s.) secures the supply of a copy every month. If the Association representative cannot get copies, the Honorary Secretary will be pleased to arrange supplies.

Some of our members will be interested to know of the following events organised by the Civil Service Sports Council :—

Badminton Tournament at Nine Elms Baths on Feb. 20, 21 and 22.

Netball match between Civil Service and Oxford at Chiswick on Feb. 25.

Ice Skating Gymkhana at Hammersmith Ice Drome on Feb. 28.

Further particulars from our Honorary Secretary, Mr. A. H. Harris, at Cornwall House.

### London Telephonists’ Society.

The fourth meeting of the present session of the London Telephonists’ Society was held in the Cornwall House Dining Club on Jan. 13, and in spite of the prevailing epidemic of influenza and very unpleasant weather a good audience turned up to hear a discussion on “What the Engineers have done to assist the Operating Staff,” and “What they might have done.”

The President, Mr. R. P. Crum, was one of the victims of the epidemic, and in his absence the chair was taken by Mr. Horace Dive, who filled it in his usual inimitable style.

Mr. J. Reading, B.Sc. (Eng.), of the Engineer-in-Chief’s Office, proved an able advocate for the Engineers and he was supported by a fellow engineer, Mr. Prickett.

The telephonists’ point of view as to what the Engineers *might* have done was expressed by Miss Chambers, of Flaxman, in a very entertaining paper, and she had the support of two other telephonists, Miss Middleton and Miss Willis, the latter’s paper being read by Miss Smith.

A lively and interesting discussion followed and the evening concluded with a short social programme, the musical items being provided by members of the East District.

All members are advised to look out for the announcement of the February meeting, which is to be something *Special* and *New*.

**Retirement of Mr. J. E. Williams.**

Mr. Williams was a Draughtsman in the Sales Branch. At a gathering of the Staff, Mr. Taylor, Assistant Controller, presented him with a Barometer, an Easy Chair, an Umbrella, and a Fountain Pen and Pencil, and spoke of his many excellent and unusual qualities, and fittingly referred to the mental characteristics of the man in portraying his humorous side, which was a feature so well known to his many victims and colleagues in the office. Mr. Hinshelwood also shed some interesting sidelights on his whimsical nature.

John Ellacott Williams was a Cheshire man and started his career in the office of his father who was a Civil Engineer. He later spent some time in the drawing office of the British Thomson Houston Company and the London County Council before joining the National Telephone Company in 1907. For many years his neat drawings and diagrams have played an important part in the statistical side of the Development section.

In private life he will continue to amuse himself with sleight of hand and conjuring, and will now have more time to spend with his friends of the Mystic Circle. Amateur photography and gardening are his other pursuits. We wish him well.

**Retirement of Miss C. A. French, Assistant Supervisor, Class I, Regent Exchange.**

On Dec. 30, in the Gerrard Exchange dining-room, Miss C. A. French was at home to her friends and colleagues of the L.T.S. Judging by her sunny smiles, retirement means happiness in full measure to our old colleague. Surrounded by her Regent and Gerrard associates, including Miss Hooper, Miss Goodway, and Miss Bedford, Miss French took her leave of the old building which has been her official home for so many years.



MISS C. A. FRENCH.

At a subsequent date a reception was held by Miss Cox, Superintendent, and many old friends attended. The District Superintendent, Mr. Boucher, presented gifts to Miss French including a silver teapot from the Regent Exchange Staff.

We regret the parting and we wish her health, happiness and prosperity in her retirement.

**Obituary.**

*S. Johnston.* Everyone in the L.T.S. associated with Mr. S. Johnston will have learned with deep regret of his death with tragic suddenness on Sunday, Jan. 8. He was at his usual place in the Central Exchange on the preceding Friday, but, not feeling well on the following morning, he stayed at home, although much against his will. His condition unfortunately became rapidly worse and death from septicaemia ensued.

Mr. Johnston entered the Post Office service in 1907 as a Boy Clerk in the Secretary's Office, and upon successfully competing in the Supplementary Clerks' examination, was transferred to the London Telephone Service in 1913. At the outbreak of the War he enlisted in the Royal Engineers (Signals) and saw active service in Palestine. On his return, his work, both at Headquarters and in the various Districts, gained for him considerable experience in telephone matters.

His readiness to help at all times and his unselfish and generous nature endeared him to all his colleagues in the L.T.S. He will be sadly missed by the many friends whom he made during the course of his career.

*J. P. Bissell.*—The sudden death on Jan. 17 last of Mr. Bissell, at the early age of 35 years, was quite unexpected and came as a great shock to his friends and colleagues in the Sales Branch. Influenza has claimed a genial and energetic man after only a few days' illness.

Mr. Bissell was a Temporary Writer in the Royal Artillery Clothing Department from May, 1918, to July, 1923, when he passed a special examination and was posted to the A.G.D. as a Clerical Officer. He was, shortly afterwards, transferred to the L.T.S., and for many years was employed in the Western District Sales Office. At the time of his death he was employed in the City Office.

He was a most capable and likeable man, always willing and ready to help others, and we extend to his wife and child our deepest sympathy in their great loss.

**Personalia.**

*Resignations on Account of Marriage.*

*Telephonists.*

- |                                     |                                |
|-------------------------------------|--------------------------------|
| Miss A. M. Vincent, of Toll "A."    | Miss L. A. Fisk, of Victoria.  |
| " V. K. Jones, of Monument.         | " E. M. Reddick, of Victoria.  |
| " E. M. Fletcher, of East.          | " K. M. Peachey, of Gulliver.  |
| " R. I. C. Osborne, of Fulham.      | " E. L. Thompson, of Gulliver. |
| " L. L. Watson, of Tottenham.       | " A. S. Robelou, of Toll "B."  |
| " M. A. Hester, of Brixton.         | " L. M. Hiscoke, of Tandem.    |
| " E. S. Wilden, of Tilbury.         | " E. M. Peters, of Tandem.     |
| " K. M. Saban, of Greenwich.        | " I. P. Andrews, of Trunks.    |
| " N. G. C. Browning, of Abercorn.   | " H. C. Walters, of Trunks.    |
| " E. Wood, of Lee Green.            | " K. M. Nicholls, of Trunks.   |
| " D. F. Moore, of Holborn.          | " G. Latimer, of Temple Bar.   |
| " E. L. Longhurst, of Sydenham.     | " D. K. Robinson, of Central.  |
| " J.S.A. Northeast, of Clerkenwell. | " E. Hill, of Terminus.        |
| " L. A. Moyses, of Clerkenwell.     | " C. Hooper, of Terminus.      |
| " W. Garner, of Victoria.           | " K. D. L. Hammond, of Museum. |

**NORWICH DISTRICT NOTES.**

THE Cafe Royal, Norwich, was the scene of a large gathering on Jan. 2, when the staff of the District Office assembled to bid farewell to Mr. C. F. Ashby, late District Manager, who retired at the end of the year. After justice had been done to an excellent dinner, Mr. R. Inglis, Chief Clerk, briefly outlined Mr. Ashby's career as a telephone expert, and after expressing an appreciation of the excellent work done by Mr. Ashby since his transfer to Norwich in 1916, presented him with an all-mains wireless set, the parting gift of the staff.

Supporting speeches were made by Mr. R. A. David and Mr. C. A. Gate, of the Traffic Branch, Mr. H. A. Stokes and Miss L. M. Claxton, of the Accounts Branch, and Mr. F. W. W. Stammers, representing the Sales Department.

On behalf of the Head Postmasters in the District, Mr. Redfern, Head Postmaster of Norwich, presented Mr. Ashby with an easy chair, stating in the course of his speech that the helpful advice which Mr. Ashby had always been so ready to offer the Head Postmasters on telephone matters had been greatly appreciated.

Mr. Ashby then responded. He stated that he was deeply touched by what he had heard that evening, and stated that when he tuned in with his new wireless set his mind would always take him back to the many happy years he had spent in the Norwich Office. He felt sure that his successor, Mr. F. C. French, would always have the wholehearted support of the staff, as he had had in the past.

A hearty welcome was extended to the new District Manager who attended the event.

A very enjoyable and amusing entertainment, consisting of songs and sketches then followed.

All present were charmed at the singing of Miss Forster, of Eaton Exchange. Mr. Betts and Mr. Woods, of the District Office, provided an excellent cure for the blues, the latter's impersonation of "The Night Watchman" leaving no doubts in the minds of the audience that a good night watchman had been lost to the world. An entertaining "spot of bother" by Messrs. Chapman and Garrod, of the Engineering Department, and songs by Mr. Ellis were also well received.

Prior to her appointment to an allowance post at Guildford, Miss E. C. Chappell, Clerical Officer, received from the staff of the District Office, as a parting gift, a pewter coffee set. The presentation was made by the District Manager, Mr. Ashby.

J. T. B.

# THE Telegraph and Telephone Journal.

VOL. XIX.

MARCH, 1933.

No. 216.

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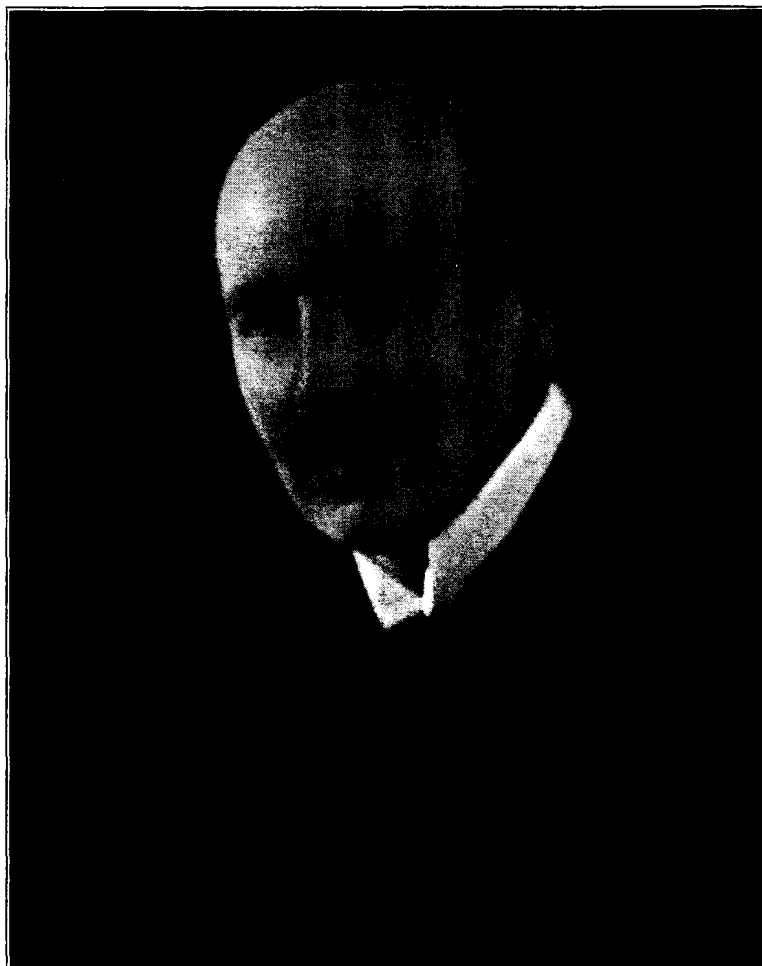
## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CVI.—

MR. J. K. MURRAY.

MR. J. K. MURRAY entered the service of the late National Telephone Company in Glasgow as an apprentice in 1896. Six years later he was appointed Local Manager at Paisley, which service was followed by a period in a similar position at Tunbridge Wells. While in Tunbridge Wells he was engaged on the work of combining the systems of the Corporation and the Company: an experience of which he has lively recollections. But there was a call from the North and he returned to Glasgow in 1906 as Assistant Engineer, which position he held at the time of the transfer when he was appointed to a similar position on the Engineering staff of the Post Office.

In 1924 he was promoted to Executive Engineer in



[Photograph by Elliott & Fry.]

charge of the Dundee Section, but remained there only a short two years, when he changed his allegiance and went to the Scotland West District as District Manager. Three years later found him occupying a similar position in Preston, but the call of the pibroch was loud and to his native land he returned a second time (surely a unique case) as District Manager, Edinburgh.

Mr. Murray possesses the qualities of his race. He has a genial personality combined with a keen and enthusiastic spirit, and his avowed aim is to satisfy the subscriber in all cases.

As a motorist he enjoys being at the wheel and has an extensive knowledge of the roads of his native land. He also confesses to a taste for gardening.

## The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

Editing and Organising Committee - - -	}	Col. A. A. JAYNE. J. STUART JONES. W. D. SHARP. W. H. U. NAPIER. G. H. TAYLOR. J. W. WISSENDEN.
Managing Editor - -		W. H. GUNSTON.

### NOTICES.

As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.

VOL. XIX.

MARCH, 1933.

No. 216.

### TELEPHONING IS GOOD FOR YOU.

"THE whirligig of time brings in its revenges," says the clown in *Twelfth Night*. This quotation expresses so aptly an ever recurring human experience that it is constantly leaping to the mind; and when we read in the newspapers that the regular use of the telephone has been prescribed for a woman suffering from nerves, we feel that, to pursue a line of further Shakesperean quotations, we have moved far from the "Silence that dreadful bell!" of *Othello*, until the telephone instead of harassing the nerves is to soothe them, and is now comparable with "medicinal gums of Arabia," alluded to in the same play.

We are told that the treatment was administered on the theory that the sense of security which the telephone gives to nervous people who live alone tends to alleviate unnatural fears and helps the patient to develop a normal outlook.

Another case, we learn further, is on record where the telephone was instrumental in curing a woman who had lost all interest in ordinary life. The telephone was installed in her home, and the doctor began the treatment by telephoning to her several times each day. Soon her interest in life began to revive, and the first step to a permanent cure was made.

It seems but yesterday that the medical profession, or at least those members of it who prescribe for our well-being in newspaper articles, were still insisting how many of our modern ills were due to the nerve-wracking effects of the telephone. We

still cherish legends of Salisburys, Gladstones, Asquiths, and others who were fabled never to have used the telephone "in the course of their long and busy lives"; of the public men whose days were made a burden by the importunity of reporters seeking "interviews" by telephone; of the private men and women whose reason threatened to become "like sweet bells jangled, harsh and out of tune," by the insistence of inescapable acquaintances who will take no denial on the telephone. We have always thought, indeed, that the villain's part in these sad dramas might more properly be considered as being played by the telephoner rather than the inanimate telephone. The chatterbox, the boring friend, or the too-insistent reporter are the parties who should take the blame and who should be eliminated. The reporter may cry plaintively, "But I must live," and the long-suffering subscriber may rejoin, with the hard-hearted French publisher in the story: "*Mais je n'en vois pas la nécessité.*" There, however, would lie the remedy. But now the telephone is coming into its own with the medical profession; it is recognised as a blessing not a bane. It is beginning to be realised that it affords a sense of security, and of accessibility to friends; that it can even create an interest in life. Like many other conveniences, it is not by its abuse, but by its use that it must be judged. It is perhaps strange that it requires the unremitting efforts of publicity departments to ensure the full appreciation of its benefits, but this, after all, is the way of the world. It is a guardian for the nervous, a comfort for the lonely, a companion for the sociable, an informer for the enquiring, and a *sine-qua-non* for the busy.

Those ingenious editors of books explaining Popular Fallacies, demolish briskly enough the pretensions to validity of all kinds of legendary lore and old wives' tales, but they seldom treat of the now long-standing fallacy that most modern ills are due to the strain and worry caused by modern inventions. Every time-saving and distance-removing discovery of science has in its turn been stigmatised as increasing the pressure at which we live, until the nerves of the community at large are shattered, and degeneration of the race sets in. And still new inventions come, and still we survive their inroads. The fallacy arises doubtless chiefly in the inability of prophets and philosophers to weigh duly the advantages conferred by those inventions, the time and labour saved, and the discomforts abolished by them. And now at last (in a moment of vision) our mentors tell us: "Telephoning is good for you!" Truly, "the whirligig of time brings in its revenges."

### HIC ET UBIQUE.

ACCORDING to the annual report of the American Telephone & Telegraph Company, there was a total loss in telephone stations of its associated companies last year of 1,596,765, and approximately of 2,100,000 in stations of the associated and connecting companies together:—

	1931.	1932.
A. T. & T. Co. (Bell companies) ...	15,389,994	13,793,229
Bell & Bell-connecting companies ...	19,600,000	17,500,000



Due in large measure, however, to the financial policy followed in the past, the Company was able to continue dividends to its 700,000 stockholders at the regular rate in 1932, although the system did not fully earn them. During the 47 years of the Company, it has never made large profits, but it had by Jan. 1, 1932, accumulated by careful management and conservative financing a substantial surplus. The Company has never in any year prior to 1932 paid out all its earnings in dividends, payments to stockholders being limited at all times to reasonable, regular dividends. During the boom period culminating in 1929, in spite of considerable pressure growing out of the speculative fever, the Company declared no extra or stock dividends, and did not split up its stock. On the contrary it made three substantial reductions in long-distance rates and at the same time greatly extended the scope, increased the speed, and improved the quality of both local and long-distance service.

We are now able to give the exact figures of British telephone development at the end of December last :—

P.O. exchange stations ... ..	2,077,019
Hull Corporation ... ..	17,771
States of Guernsey ... ..	4,675
States of Jersey ... ..	4,033
Railway and other telephones with exchange connexions ... ..	15,427
<b>Total ... ..</b>	<b>2,118,925</b>

A total increase of 66,293.

The Post Office also owns and maintains 27,484 private lines.

A dog in the State of Maine, U.S.A., acquired a habit of putting his ear against telephone poles by the roadside and listening to the humming of the wires. The music evidently did not soothe his savage breast, for he attacked the poles fiercely with his teeth, chewing holes in 5 of them. As in Goldsmith's poem, "the dog it was that died." But we cannot continue the analogy with "the poles recovered from the bite," for they all had to be replaced.

Another dog story :

A subscriber in the Scotland Western District telephoned one morning to convey congratulations to the night operator and all concerned for their smartness and efficiency. It appears that the subscriber was awakened that morning at 5.30 a.m. by the Police knocking at his door wishing to know if someone had taken seriously ill or was there anything wrong. The subscriber was unable to understand this and asked the constable to explain. He said a message had been received from the telephone exchange saying that the calling lamp of subscriber's number was signalling, and although there was no one answering, groans could be heard. On investigation being made by the subscriber, it was found that the dog in the house had inadvertently knocked the telephone over and the receiver had come off. The dog, quite unaware of what it had done, lay down beside the instrument and fell fast asleep, and as with most healthy animals, human and otherwise, sleep was not of the silent order, and when heard by the Night Telephonist at the exchange, gave him the impression that a murder at least had been attempted.

The subscriber stated that it might have been an illness and considered that the telephonist had proved how efficient and invaluable the telephone is and can be.

The night operator has been officially commended.

A public telephone service is now available between London and Istanbul. The service will be extended both in this country

and in Turkey as soon as technical conditions permit. The charge for a three-minute call from London to Istanbul is 23s. between 8 a.m. and 7 p.m. and 14s. at other times.

A Supervisor reports to one of the London Assistant Controllers :  
 "An *alarm call* is made to Regent . . . , M— Club . . . every night (except Sundays) at midnight. It is understood that the proprietors depend upon this call as a signal to cease the sale of intoxicating liquor."

We can foresee developments of this idea :

I heard a Voice within the Tavern door,  
 Piercing the Reveller's discordant roar—  
 Not in "high-piping Pehlevi," but shrill—  
 Cry "Time, Time, Time! Stay not a minute more."

"No more the goblet, cup or beaker fill,  
 Lay down pint-stoups and tankards. If you will,  
 Take up the sizzling siphon. But no more  
 To Bacchus highly-taxed libations spill."

"Whence come these sounds?" frustrated Topers groan,  
 And someone answers "'Tis the Telephone!  
 (Man's ever ready Slave and tireless Friend)  
 A No-Delay call, as you might have known."

"To what base Uses do we come at last?"  
 Some will exclaim, while others will hold fast :  
 "That was a blessed use." While simpler Souls  
 Declare : "The Age of Wonders is not past!"

W. H. G.

## TELEGRAPH NOTES FROM SOUTH AFRICA.

THERE were two cases recently in South Africa in which the telegraph was very prominent and well held its own.

During November, 1932, the famous de Melker poisoning trial took place in Johannesburg and lasted almost a month. There was world-wide interest in the trial and very full reports were telegraphed daily to all parts of South Africa, and to London for overseas distribution. The number of words of press traffic handed in was about 600,000, but the number actually transmitted over circuits exceeded a million. On the concluding day two short ordinary-rate press messages containing the verdict and sentence were delivered in London in four and five minutes respectively from the time of handing in in Johannesburg, and about eight minutes from the time of delivery of the sentence in the Law Courts, situated nearly half a mile distant from the Telegraph Office. This excellent service was given on the JH—CP—LN circuit working direct from the Central Telegraph Office, Johannesburg, to the Overseas Communications Company.

In connexion with the international boxing match between Stribling (U.S.A.) and McCorkindale (S. Africa) held in the open air at Ellis Park, Johannesburg, on Dec. 18, 1932, the original press arrangements provided for a special telephone circuit from the ringside to the C.T.O. for the transmission, during the fight, of short urgent press messages for overseas newspapers. The correspondent, however, from previous experience of outdoor events, considered that the noise would be too great for accurate telephoning and the telephone circuit was therefore substituted by a double current sounder circuit from the ringside to a position in close proximity to the overseas creed circuit in the C.T.O.

A rush service was thus given, to the satisfaction of all concerned, and the result of the fight was through to London in some three minutes, which included signalling from Ellis Park, preparation at JH, and transfer at CP, without any special clearing of the lines.

Despite the world-wide severe economic depression, and reduced traffics, the Christmas and New Year seasonal pressure on the Overseas circuit, Johannesburg—London, which carries practically the whole of the South African overseas traffic, was well maintained, the totals for the seven days ending Dec. 24, 1932, being 19,856, as compared with 20,305 for the similar period of 1931. For the 14 days ended Dec. 31, 1932, the total number of messages handled in the C.T.O., Johannesburg, was 269,785, as against 269,838 in 1931, and the number of words of press for the same periods of the two years 1,289,183 and 1,118,473 respectively.

These figures denote high pressure for the largest Union Office, when the white population of only 1½ millions, and the total number of telegrams handed in in a normal year for the whole Union, about six millions, is taken into consideration.

E. E.

## SELLING THE SERVICE.\*

By J. M. CROMBIE, *District Manager, Guildford.*

By selling the service I do not mean selling telephones. What I intend to speak to you about is actually selling calls, and paving the way for the sale of telephones. Our responsibility does not end when our good friend the Sales Manager and his able assistants present us with additional subscribers. It is then that the work of the operating staff begins. There is an old saying that you can take a horse to the water, but you can't make him drink. However, this does not apply to the Telephone Service, because when one gets the telephone installed into one's home, you can induce the subscriber to use it freely by showing the necessary promptness, courtesy and helpfulness. Now I should like to say a word or two under each of these headings.

Regarding promptness, as you know, the Department expects the operating staff to give a speed of answer of 5 seconds, and our reputation is measured a good deal on the attainment of that figure. That is all right up to a point, but an equally important matter is the successful handling of the call, stage by stage, to the point of its completion. That is, avoid (1) plugging in before you are able to answer a calling signal, (2) the transposition of the figures of the calling or called subscriber's number, (3) plugging into the wrong junction group, (4) delay in advising the subscriber of "no reply," (5) delay in first supervision of delayed answer calls, (6) delay in answering supervisory flashing signals, and (7) incorrect metering of calls.

All these inexactitudes slow down the speed, and act like a brake on the telephone wheel. I would like to impress upon you the advantages derived from a clear and accurate handling of all calls throughout their various stages.

Now we come to courtesy. This, also, is a very important point, and one of the main factors in selling calls. When the operator is courteous and helpful, the subscriber finds the use of the telephone a pleasure, instead of a disagreeable necessity. The tone of voice makes all the difference. As we all know, many an irate subscriber has been soothed, and pacified, by the charm and tact of an operator. You realise yourselves that you always patronise shops where you are accorded a welcome, and made to feel that your custom matters. In fact, the whole selling of the Telephone Service is like selling goods. There is nothing more annoying than to enter a shop and be kept waiting; and, having waited, to be brought the wrong goods; and, worse than all, being left by the assistant whilst she attends to another customer. A customer would not be likely to patronise, very often, a shop where she experienced such discourteous treatment. In the case of shops the public have usually a large choice, but, with the Telephone Service, there is no alternative, and if the subscriber is not well attended to, he refrains from making use of his telephone, which has a serious effect upon the calling rate. Then there is the voice. Always remember that the soft answer turneth away wrath, and that each of you can achieve the honied tones of the B.B.C. announcers, which make "listening-in" a pleasure. An operator may not mean to show irritation, but if a voice is sharp and unsympathetic it may lead to that frequent complaint on the part of subscribers of irritability and haughtiness. Of course, we all realise that some subscribers are very trying to the operators, just, again, as customers are to shop assistants; but, in the interests of the business, the workers must cultivate tact and patience.

I now come to the last point, namely, helpfulness. As we all know, the telephone service affords a very wide scope for helpfulness. The public are only now becoming telephonically minded, so that in the past a very large section of the public seemed

absurdly ignorant of the uses of the telephone. By showing sympathy with the troubles experienced by subscribers, and by aiding them when opportunity offers, you have a great chance to improve the popularity of the service, which, in turn, should be reflected in an increase in the calling rate. For instance, if a subscriber wishes to be put through on a long distance call where delay or difficulty may be experienced, be ready to suggest the personal call service. Then there are the other services which may be recommended in suitable cases, namely: phonograms, night telegram letters, fixed-time calls, contract calls, deferred calls, express letters. I have heard many people boasting of the wonderful operators attending to their calls, and I have had several letters sent me here, in Guildford, in grateful recognition of the kindness and courtesy experienced at the operator's hands. If I could only get the subscribers together, and point out to them that to increase the efficiency of the Service they also have an equal responsibility. Perhaps, in the fullness of time, it may be possible to arrange such meetings.

I would like to add a word about the telephone kiosk. The kiosk must be looked upon as one of the principal advertisements of the Telephone Service, that is if the service given from it is a perfect sample of what the service ought to be. It is sometimes said, and with some truth possibly, that indifferent service from the kiosks deters possible non-subscribers from having a telephone installed in their homes. Again, the telephone kiosks get at every class of the community, including visitors from abroad. In many cases, therefore, the reputation of the Telephone Service stands or falls by the kiosk. The great thing nowadays is to encourage the public to become telephonically minded, and the kiosk, if proper treatment is meted out, encourages the telephone habit. Bear in mind here, again, the three points which I have already mentioned, and which cannot be emphasised enough, namely, Promptness, Courtesy and Helpfulness.

Possibly some of you may not be aware of the fact that a complete reorganisation of the Sales Section is contemplated, and, at the moment, new selling methods are being tried out in six different classes of Districts, throughout the country. One of the duties assigned to the sales representatives is the selling of service. This is to be achieved by periodical visits to existing subscribers, with the idea of building up amongst the subscribers a feeling of goodwill. This goodwill can only be obtained by the entire machinery of each Department being kept in good working order. However good a salesman may be, to achieve his object he must be able to point out the advantages derived from the Service with regard to our slogan "Promptness, Courtesy and Helpfulness." A sales representative has a much easier task when he calls on a subscriber who has experienced some little difficulty with his Service, if he is assured of the co-operation of the exchange operators, and, so far as this District is concerned, I am sure that assurance can be given to the sales staff. The sales representatives are calling upon subscribers every day trying to induce them to increase, for instance, their number of extensions, and, where a subscriber may not be an immediate buyer, patient salesmanship, combined with a first-class exchange service, will often work wonders and win him over. So I want you to realise that the sales representatives are greatly at the mercy of the exchange operating staff. On them rests the responsibility of additional sales, and for laying the foundation of goodwill which we are so anxious to establish between ourselves and the public generally.

I don't know whether it is fully realised how few calls are operated per day from each subscriber's line. The average figure for the whole country is 4.8, with a busy hour of not even one call per line. This figure includes all business firms, large and small, so that you will readily understand that there must be a very large number of residential subscribers whose average does not exceed 3 calls per week. Such a poor use of the telephone is lamentable in these days, and it seems to me that this class of subscriber calls for our special care and attention, bearing in mind, at all times, the points I have already emphasised. Business firms of any standing cannot afford to be without the telephone, and

\* Paper read at staff meeting held at Guildford.

on that account our future subscribers must be obtained very largely from the residential class. If, therefore, we cannot induce the private subscribers to make more use of their telephones, the calling rate will fall still further.

I don't wish to infer that the lack of the words of our slogan has anything to do with the low calling rate, but only to point out that we must do everything within our power to increase it.

We read and hear a good deal of telephone systems in other countries, particularly in America and Sweden, which are sometimes held up as models of efficiency, but I want to assure you that we are quite up to their standard, and in many respects better. The British telephone girl can hold her own with any foreign operator; and we are all proud to belong to such an organisation as the British Post Office Service.

### PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at Jan. 31, 1933, was 2,123,909, representing a net increase of 4,634 on the total at the end of the previous month.

The growth for the month of January is summarised below:—

	London.	Provinces.
Telephone Stations—		
Total at Jan. 31, 1933	793,016	1,330,893
Net increase	1,432	3,202
Resident Rate Stations—		
Total	253,658	334,143
Net increase	689	1,534
Call Office Stations (including Kiosks)		
Total	8,818	30,300
Net increase	65	119
Kiosks—		
Total	3,470	11,216
Net increase	35	145

The total number of inland trunk calls dealt with in November, 1932 (the latest statistics available), was 10,587,582, representing an increase of 703,131 or 7.1% over the total for the corresponding month of the previous year.

International calls in November numbered 103,672 as compared with 103,431 in November, 1931.

Further progress was made during the month of January with the development of the local exchange system. New exchanges opened included:—

LONDON—Bowes Park. Grosvenor (automatic);

PROVINCES—Elmbridge (manual); Acocks Green (Birmingham), Priory (Birmingham) (automatic conversions); Ardrossan—Saltcoats (reconstructed manual); and the following rural automatic exchanges: Ardgour (Fort William), Bickleigh (Tiverton), Chipping Campden (Gloucester), Compton Dando (Bristol), Ditton Priors (Bridgnorth), Gunnerside (Richmond, Yorks), Hamble (Southampton), Llanteg (Tenby), North Newbold (Market Weighton), Parracombe (Barnstaple), Pevensy Bay (Eastbourne), Raughton Head (Carlisle), Spalford (Newark), Theydon Bois (Loughton);

Among the more important Provincial exchanges extended were:—

Burslem, Chatham, Longton (automatic); Horsham, Upton (manual).

During the month the following addition to the main underground system was completed and brought into use:—

Cambridge—King's Lynn;

while 70 new overhead trunk circuits were completed, and 80 additional circuits were provided by means of spare wires in underground cables.

### THE INLAND TELEGRAPH SERVICE.\*

BY R. P. SMITH, A.M.I.E.E. (*Engineer-in-Chief's Office*).

#### TRANSFER OF MAINTENANCE DUTIES TO THE TRAFFIC STAFF.

*General.*—The Inland Telegraph Service of this Country is passing through a transition period so far as the machinery and methods employed in the instrument rooms are concerned. Modern type-keyboard, direct-printing machines have almost entirely displaced manual, multiplex and automatic transmission. The passage of a telegram through the stages associated with the instrument room has been accelerated at the larger offices by various mechanical and other devices, such as timing stamps, gumming equipment and labour-saving message forms. Band conveyors are being installed to substitute carriage by hand for both inward and outward traffic. The consequent increasing number of machines entails additional maintenance responsibilities of a technical nature; in a modern telegraph instrument room the adjustment, lubrication and minor repair of working machines require the continuous attention of a staff freed from other duties. The stoppage of an important channel of communication is a serious matter which may be prevented, in many cases, by having skilled attention available the moment signs of trouble appear.

Maintenance duties, apart from relay and balance adjustments, have in the past been allocated almost entirely to the engineering staff, who carried out the work in the instrument room. Engineering routine maintenance was usually given in the early hours of the day and other attention as required. Anything beyond minor adjustment of apparatus was, of course, attended to in the mechanics' or lineman's quarters.

This system of maintenance has been overhauled and revised to give traffic officers sole control of the machines so long as they are in the instrument room. Such a change is important and its introduction inaugurates a new era in the Service.

*Historical.*—It may be of interest to recall that the arrangements now under revision have been in force for over 30 years. Prior to that the whole of the Southern District, roughly that part of England below the Thames and the mouth of the Severn, excluding the London District, was under military control. Commissioned officers acted as superintending and assistant superintending engineers, sergeants were in charge of the sections, corporals acted as gang foremen, whilst sappers erected poles and wired. These ranks were all of the Royal Engineers, Telegraph Battalion. In the Southern District all construction, fitting and maintenance of apparatus, wiring of buildings and other duties incidental to the service were performed by this specialised body of army workers. They had their own mechanics' shops where instruments were tested and repaired. At the larger offices a proportion of the Royal Engineers took duty in turn with the civilian clerks and handled public traffic. They developed into expert telegraphists and were frequently retained as telegraph clerks at the end of their period of active service. In districts other than the Southern Command the engineering personnel was employed in a civil capacity. This state of affairs continued until the reorganisation of the Post Office Engineering Department. I am indebted for these details to a telegraph engineer, Mr. A. H. Roberts, who was contemporary with the period referred to.

The system in force since then has its advantages, the engineering officer by his training, constant application, and prolonged experience is eminently qualified to diagnose and deal with defects in machinery; he has at his disposal a wide range of tools and is usually able to improvise arrangements to tide over an emergency. One disadvantage of the system is that it is sometimes difficult to give continuous engineering attendance without incurring waste of man-hours, during the evening hours, for instance. This problem is serious in the case of a number of smaller towns having the telephone and telegraph quarters in separate buildings.

There has also been real difficulty in defining a strict line of demarcation between the duties of engineering and traffic officers in the instrument room. As a matter of fact, although attempts have been made to define the territory as between mechanic and telegraphist, the practice at the various centres has been widely different, particularly as regards multiplex apparatus, possibly due to the varying degree in which the traffic staff interest themselves in the technical aspect of their craft. Some indication of the local conditions is given by candidates at the departmental technical examinations. Frequently an unwelcome question is parried by the remark "we do not interfere with adjustments," elsewhere you get "we dare not touch the instruments," giving the impression of a dragon in the background. The chief drawback of the dual system is, perhaps, psychological. To a supervising officer carrying the responsibility of a traffic load, any stoppage of a circuit is a dire disaster. The engineer, brought into consultation, views the situation from a different angle, his method is thorough examination and efficient repair even though it involves a stoppage. The traffic man would be content with any temporary arrangement to minimise time lost; methodical examination and professional deliberation act as an irritant to him. It must be recognised, however, that on many occasions a short stoppage is completely justified by subsequent improved service.

\* Paper read before the Telephone and Telegraph Society of London.

*The Simon Report.*—In spite, however, of anything that can be said against the system now passing, the engineering workman has been a very present help in time of trouble, and he will be missed in the instrument room by not a few of his traffic confrères. The reorganisation of instrument rooms now proceeding and the transfer of increased maintenance responsibilities are, of course, mainly due to the recommendations of the Commission of Enquiry which visited the United States of America in 1928, but even prior to this the minds of telegraph officials were moving in the same direction. A small committee consisting of officers from the Secretary and Engineer-in-Chief's offices visited all the large telegraph centres early in 1924 to enquire into the stability of multiplex circuits and the arrangements in force for their maintenance. In several matters that Committee made recommendations foreshadowing the changes now being made, particularly in the direction of the selection and training of operating staff to undertake duties of a technical nature.

The recommendations of "the Simon Commission" affecting maintenance are as follows:—

Section (C) Maintenance, par. 13.

(C) Maintenance.

- (13) Responsibility for the efficient working of circuits and for the control, adjustment and day-to-day maintenance of apparatus should be definitely vested in the traffic officers in charge of instrument rooms.
- (14) All testing, regulating and maintenance work in the larger instrument rooms should be allotted to officers selected from the operating staff, who must possess the necessary technical knowledge and skill, and should receive an appropriate special allowance. The departmental technical examination, suitably revised, should serve as a qualifying test for these officers, and a scheme of training should be drawn up for those who qualify. The selected officers should normally be relieved of operating duties, but should be liable to be called on to perform them in case of need.
- (16) At the smaller offices the day-to-day maintenance should be carried out by the operators subject to periodical inspection by engineering staff.
- (17) A life history of each apparatus unit, including a record of faults, adjustments and periodical overhauls, should be kept at every office.
- (22) In the case of operators at small offices with teleprinter circuits, the training of keyboard operators should include instruction in the day-to-day maintenance of teleprinters.

Following consideration and agreement with the staff organisations concerned these recommendations were adopted and have been actually introduced at certain large offices this year.

*Scope of Scheme.* The offices selected as being suitable for transfer of maintenance duties to the traffic staff number 71, they are offices having two or more working teleprinters; in some cases telegraph and postal work is performed by the same staff, but it is probable that ultimately each of these offices will be "divided," having separate telegraph and postal staffs. Owing to candidates for the new duties not being forthcoming at a number of these offices, or, in certain cases, not being qualified, the scheme will not come into force immediately in every case, but provision is made enabling outstanding offices to come into line during the next two years.

*Personnel of the Service.*—Consideration of the present personnel and conditions of the telegraph service suggests that the moment is favourable to the success of a testing and maintenance system on the lines recommended. The range of instruments requiring skilled attention has been practically narrowed down to the teleprinters No. 3A and 7A and typewriters. The abolition of Morse, Wheatstone and multiplex apparatus of several types obviates the necessity of a great deal of training and application to somewhat difficult technical subjects. There is continuity of employment upon the same type of machine, whereas formerly the rotation of duties frequently involved an entirely different class of work. Also, it is undoubtedly true to assert that at no previous period has there been such a large body of technically minded and technically efficient officers to select a class of testing and maintenance officers from. Since 1916 there has been a steady advance in the scope and amount of technical education given to telegraphists by the Department during the hours of duty. Prior to that date very little training was given. To provide for the introduction of any new system a small number of telegraphists were selected and specialised on the particular circuit, they acquired information in the course of the day's work during the trial period of the apparatus under test. With the rapid increase in the number of inland Baudot circuits something more was required and in the Central Telegraph Office a body of telegraphists were given lectures and practical instruction during their hours of duty by a lecturer released from operating duties. These men, in turn, visited the provincial centres at which Baudot apparatus was being installed and instructed the prospective Dirigeurs; later, provincial men performed the same service for further centres. This scheme of training had its limitations, since it was not permissible to dismantle the apparatus or experiment with anything beyond the simplest adjustments and very little official literature was available.

Shortly after the advent of the teleprinter, arrangements were made to impart technical information in a very much more thorough and efficient

manner. A school was set up in London, staffed by engineering officers, liberally supplied with teleprinters and the associated apparatus. The course of training covered 10 days and was attended by selected telegraphists and supervising grades, male and female, from London and the provinces. Every part of the teleprinter was dismantled, the whole system explained and personal copies of engineering diagrams issued to the students. Over 500 officers received instruction in this school.

As the result of private study to obtain the various technical certificates, departmental tuition, and the inevitable bit of dabbling in wireless there is now a good proportion of technically-minded men in the general body of telegraphists.

When the Simon Commission scheme, henceforth known as the "Testing and Maintenance" scheme, was about to be launched, volunteers to perform the new duties were called for. The response, from the larger offices, was overwhelming.

*Instrument Room Conditions.*—The reorganisation of the service tends to simplify maintenance; segregation and panel-mounting of all apparatus other than that actually required for operating removes the cause of many stoppages. With the panel system there are no plugs to fall out, or terminals to break, or screws to work loose, or connexions exposed to contact faults. All joints are soldered and placed under metal dust covers. With the panel-mounted equipment facilities for testing are centralised, testing apparatus is supplied as a fixture. New and improved methods of fixing adjustments have been introduced, such as relay test panels and teleprinter test tables. The teleprinter test table is a valuable adjunct, it enables the electromagnets of the teleprinters in the instrument room to be regulated to a given minimum operating standard so that they will function on any circuit: formerly with a

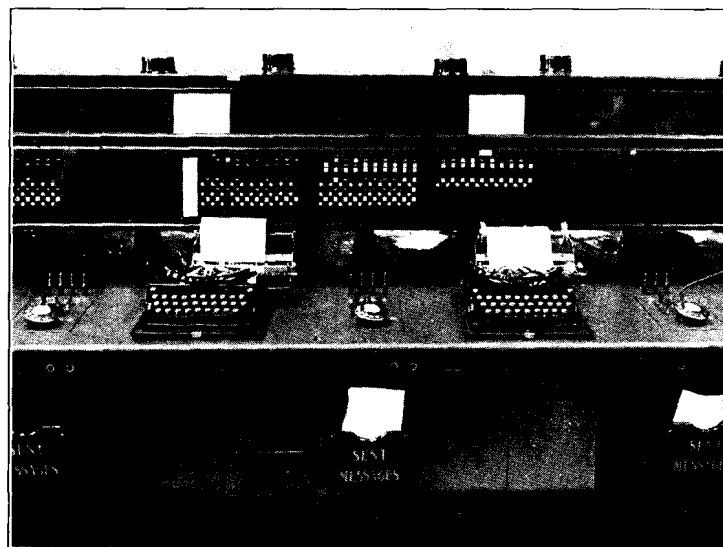


FIG. 1. T.T.T. PANELS RECENTLY INSTALLED AT BIRMINGHAM.

rougher setting, certain machines were liable to give trouble on the circuits that required sensitivity of receiving apparatus. The arrangements for phonogram working and T.T.T. circuits (telephone, telegram, typewriter) have been remodelled to quicken and improve the service. Fig. 1 shows a suite of T.T.T. panels recently installed at Birmingham. Coincident with the introduction of teleprinters new methods of marking up the lines have been introduced, necessitating the use of additional line terminal apparatus and somewhat more complicated wiring than the normal duplex set. In one arrangement 16 wires are in use to give the equivalent of a duplex channel, telephone circuits are formed by the physical pairs and phantoms, the telegraph channel being the second superposition, or double-phantom. To prevent interference from telegraph to telephone, filters, transformers and spark quench devices are introduced at the apparatus set. These items do not require adjustment, once fixed, but their addition adds to the complexity of the diagram with which a maintenance officer must be familiar in order to trace possible faults. There is a considerable number of these channels in use, giving good service and stable conditions. The latest development as regards transmission is voice-frequency telegraph circuits, which are likely to be considerably increased in the near future. The line terminal equipment of this system is telephone rather than telegraph, the lines from end to end are ordinary four-wire telephone lines interchangeable with other telephone lines without change of the intermediate repeating equipment. The adoption of this system is the first step towards unification of line plant for the sister arts telegraph and telephony. For channels terminated close to the equipment, the apparatus in the instrument room is of the simplest character. Where channels are continued from the terminal voice-frequency equipment to remote points they become normal physical circuits. In both double-phantom and voice-frequency working the staff is relieved of the troubles that arise from the necessity of maintaining a duplex balance. Before passing from this part of the subject it may be interesting to show the telegraph instrument room

old style Fig. 2 and new style Fig. 3. Part of the centre gallery of the Central Telegraph Office is illustrated. The congestion of apparatus on the tables in the former case is very noticeable. In Fig. 3 the new form of conveyor at floor level may be seen at the right-hand end of the first table. With a view to clarity one table only is furnished with apparatus.

Subsequent to the adoption of the recommendations in the "Simon" report a good deal of investigation and organisation was required to prepare for the new order of things. The transfer of instrument room duties from engineering to traffic officers involved a reduction of Staff hours in the one case and the selection and training of a sufficient number of officers to form the new body in the other. The scope of testing and maintenance duties needed to be defined, suitable tools made available for issue, and a training school equipped and organised. These matters were pressed forward and in February 1932 training commenced.

*Qualifications of T. and M. Candidates.*—The testing and maintenance staff at the 71 offices embraced in the scheme is recruited from telegraphists, or sorting clerks and telegraphists, male or female, who are teleprinter operators and volunteer for the work. The following conditions must be fulfilled: each candidate must have qualified for:

The first and second technical allowances or, alternatively, the technical allowance and departmental technical certificate. Officers over 40 years of age at the date of introduction of the scheme, or those having been on a Dirigeur rota for at least six months, may become candidates if they possess either the technical allowance or the departmental technical certificate under the old scheme or the first technical allowance under the new; a certificate as regards conduct and efficiency is also required. Officers having a sufficient number of volunteers to fill the posts are visited by an officer from the Engineer-in-Chief's staff who carries out a pre-training test. The object of the test is to discover whether the candidate's knowledge of apparatus is abreast of the times, whether there is an appreciation of modern electrical problems, aptitude for making electrical and mechanical adjustments and tracing circuit connexions.

*Training School.*—Officers who pass this test are called, in turn, to London for a course of training covering five weeks. The school is very conveniently situated in the Central Telegraph Office, where the students have the privilege of using the Dining Club and other advantages. Each officer, at the commencement of his course, is provided by the Controller of Stores with protective clothing in the form of a long coat; a kit of tools, substantial note-books and folders for diagrams and literature are issued in the school. The school is equipped with teleprinters and teleprinter apparatus sets of every description. One-half of each course is devoted to lectures, demonstrations and practical work on these machines. Diagrams and descriptive matter are distributed freely and full opportunity is given each student to obtain a comprehensive knowledge of the construction, assembly and adjustment of teleprinters. At the half-session the students are given a practical test and an examination paper to answer. The second half of the course is taken up with the standard panel-mounted scheme. Full details

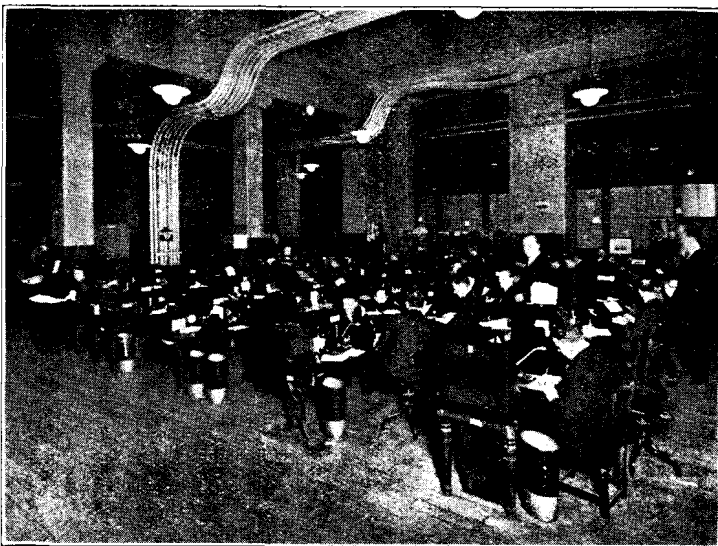


FIG. 2. TELEGRAPH INSTRUMENT ROOM, OLD STYLE.

of the wiring, circuits, apparatus and testing facilities are given. Power supply from accumulators, convertors and rectifiers are dealt with, also circuit arrangements, single-wire, two-wire, super-positions and voice-frequency, filters, transformers, testing apparatus and methods of using them. Every branch of telegraph technique under the new conditions has a place in the curriculum. A considerable programme of experiments is gone through, with a view to familiarising the students with the apparatus and giving them confidence in handling live electrical circuits. The experiments are recorded in the student's notebook and also the daily lecture. All notes are made in the student's own composition, there is no dictation in the school.

The books are checked daily and it can be seen at once whether a clear grasp of the subject has been obtained. At the end of the course a second test is made similar to the half-term. A certificate is supplied to the Postmaster-Surveyor or Postmaster in respect of each student who is successful in passing the examination tests and the duties are then undertaken on probation.

Since February, 1932, 264 officers, men and women, have passed through the school. Of this number 235 have qualified. Unfortunately, in spite of the efforts to eliminate unsuitable candidates by means of the pre-training test, a small percentage reach the training stage who fail to fulfil the final requirements. Generally speaking the failures are due to weakness in practical work and inability to assimilate the new methods and arrangements

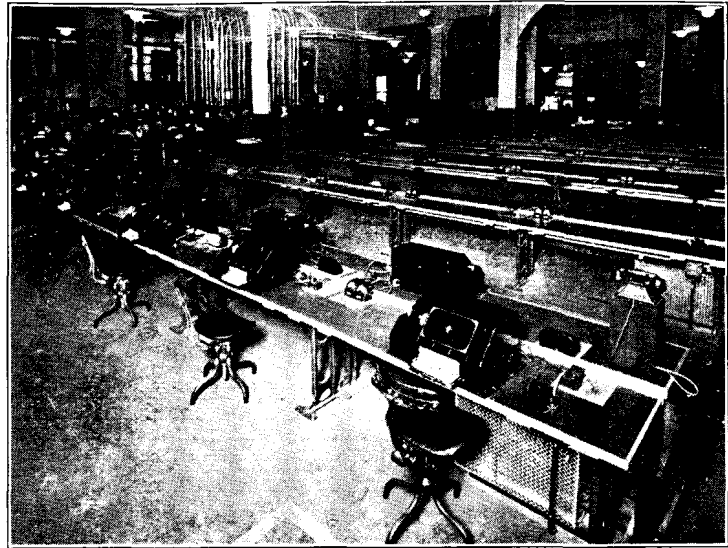


FIG. 3. TELEGRAPH INSTRUMENT ROOM, NEW STYLE.

associated with the reorganisation scheme. The average age of the students is 35 to 40 years, a period when the mind is not so quick or retentive as earlier in life. There would appear to be other contributory causes, however, as students from certain offices invariably reach a high standard, whereas from other towns a brilliant man is the exception. Possibly a tendency to discourage men who are prone to be "inquisitive" about the apparatus still lingers in certain offices, repression of this character would in a measure account for the disparity in results. The number of women volunteering for the new duties is of necessity small, since very few possessed the necessary technical qualifications. A special examination for women telegraphists and sorting clerks and telegraphists was held in May, 1932, to enable them to obtain the Second Technical Allowance with a view to becoming eligible. The response, however, was not overwhelming; and only eight have passed through the school. There are indications that women will be well represented at future examinations and this is desirable, as there are no male officers in the instrument room at certain of the 71 offices embraced by the scheme and pending the advent of qualified technical women nothing can be done. It should, perhaps, be mentioned that where a testing and maintenance staff is not available the existing arrangements for maintenance remain in force, that is to say, the engineers carry on.

*Duties of the T. and M. Staff.*—The work proper to teleprinter maintenance in the instrument room has been carefully defined, the following are the chief duties undertaken:—

- (1) Daily cleaning, lubrication and testing of teleprinters.
- (2) Adjustments of the paper feed, printing parts, transmitting contacts, governor, electro-magnet, mechanism of the keyboard and printer units.
- (3) Adjustment and replacement of certain springs that are readily accessible.
- (4) Cleaning and oiling of telegraph typewriters.
- (5) Adjustment of balance for duplex working.
- (6) Testing and adjustment of standard relays.
- (7) Testing of lines and apparatus at the panel equipment.
- (8) Maintenance of repeaters at offices where they are installed.

*Engineering Maintenance.*—It is not desirable that repairs requiring special tools, precision instruments, noisy operations or dismantling of the apparatus should be carried out in the instrument room and machines requiring attention in these directions are taken to the engineering repair shop accompanied by life history cards upon which details of each fault is recorded. A system of periodic engineering overhaul has been instituted by means of which each teleprinter is dismantled and thoroughly overhauled every six months, and the life history card then provides a useful indication of any particular weakness of the machine to which special attention can be given.

It must not be thought that the engineering workshops are idle as a result of the introduction of the scheme. As a matter of fact, there must be, necessarily, more machines than ever in the shop, since many repairs previously carried out in the gallery by engineering workmen are outside the T. and M. duties. So far as the Central Telegraph Office is concerned the following figures are interesting. In March, 1932, prior to the introduction of the scheme, the average number of teleprinters passing through the workshop was 38 per week. During April, the first month under the new conditions, the average was 80 per week. In September last the position had improved to 60 per week.

*Small Office Case.*—The recommendations of the Commission include a change in the maintenance even at small offices; of these there are about 160 having one working teleprinter only. The circuits are of a minor character as a rule and the amount of testing and maintenance work is very small indeed, insufficient to warrant either special training or allowance. At the same time certain adjustments made by the T. and M. staff could not be undertaken safely without experience and training. It seems probable that a solution will be found in the direction of divided maintenance, the traffic staff carrying out adjustments of a simple character, such as adjustment of the printing parts, leaving cleaning and adjustments requiring skilled attention to the engineering staff. The position will improve eventually, due to the influx of new entrants who have received technical instruction on the teleprinter as part of their training.

*Results.*—Until the scheme has been introduced at a larger number of offices it is not possible to say very much about results. The Central Telegraph Office was the first to take over maintenance, the scheme coming into force in April last. Since then several of the zone centre offices have also effected the transfer, but ability to do so depends upon the success of their candidates in passing the school. The final training course, the eleventh, does not terminate until February, 1933, so that a general simultaneous transfer could not be achieved.

The stability of teleprinter circuits throughout the country has reached a very high standard, hence sensational results from the new scheme cannot be expected.

The Central Telegraph Office stability returns, however, covering 270 circuits, show a gratifying improvement since the scheme came into force. In April, when the testing and maintenance staff took charge, 102 circuits reported interruptions of 30 minutes and over per week. In July the number of circuits had fallen to 70. In September the number of circuits was further reduced to 49. In January, 1933, only 35 circuits were reported. These figures reflect a great deal of credit on the T. and M. staff and justify the faith of those who believed in the potential technical ability of the telegraphist.

In one other respect the training course cannot fail to increase general good working and absence of friction between offices. The spirit of fellowship is engendered as men from all parts of the country merge in the melting pot of a novel and strenuous struggle with the inner mysteries of their craft. Contacts made in the school will persist and have beneficial results upon the service.

*The Future of the New Class.*—As regards the future, there should be a steady stream of capable men and women coming forward for the work. A certain amount of technical instruction is now given to new entrants as part of their training. At 21 years of age they may obtain the first technical allowance. At the completion of 10 years' service the second technical allowance may be taken. The possession of these allowances qualifies a candidate for testing and maintenance duties. There is thus a systematic approach to the responsibility of maintenance duties. Formerly telegraphists with a technical turn of mind succeeded, in many instances, in securing posts on the engineering staff, chiefly through the avenue of the telegraph repeater stations. The highest positions in the Engineering Service have been held by men to whom the telegraphist class was the first stepping-stone of their career. Opportunities of advancement in this direction are dwindling but, even so, the individual who is highly qualified and experienced in duties of a technical nature is ready, waiting at the door of opportunity, which has a knack of opening when least expected.

*Conclusion.*—It is doubtful whether the transfer of maintenance duties to the traffic staff could be justified on economic grounds alone. The benefit to the Service must be looked for in other directions, mainly in a reduction of lost circuit time, consequent reduction of lost operator time and a general quickening up due to a trained officer being always available in the operating field with the sole duty of maintaining smooth working of the machines. His work will prevent delay on messages, possibility of lost messages, reduction of output and irritation of the staff by circuit changes. It would appear that circuit stability is reaching the high-water mark. The speed and accuracy of transmission of a telegram is almost beyond reproach; the shrinkage of public complaints shown in the latest returns is a testimony to this fact. In April, 1932, compared with April, 1931, complaints of errors in messages fell by 19%. Loss during transmission fell by 35.2%, and of delay in transmission fell by 27.7%. One cannot, however, ignore stories and experiences of discreditable delay of the telegram in reaching the addressee subsequent to transmission. It is obvious that something remains to be done in this direction. One of the ancients remarked "Little foxes spoil the vines," the truth applies, since a service fruitful in the public interest is marred by occurrences actually affecting a small number of people but having repercussion through the general body. There is scope for humane "fox hunting" in this direction.

## TELEGRAPHIC MEMORABILIA.

THIS is a world of automata! Trains work their own signals, cut off their own power, or, should their driving and lighting power fail, even for one moment, emergency illumination is at once switched on throughout, without a human touch,—and so one might continue. Motorist readers of these lines may be interested, if they are not already acquainted with the Bull Inn, Birchwood, Kent, where, as one approaches that hostelry by motor car after sunset, the rays of one's head-lamps are picked up by the red eyes of the "Bull" which glare out at one's approach, while as an accompaniment, both sides of the hotel are simultaneously lit up for 20 seconds to be dulled for seven seconds, re-lit, and so on. A weird effect, but a telegraphed advertisement probably unique of its kind. There is no prize for finding out how this is done!

*The Ether College!*—Between four and five thousand schools in this country are receiving instruction by means of radio, the raising of funds for which fall to a very large extent upon the teachers. Germany can boast of 22,000 schools whose children all listen-in, expenses being paid for out of official funds.

*Modern Generation!*—This head line has no reference to the young people of to-day and their supposed shortcomings. Rather is it an indirect tribute to the brains and resources of the seniors of tomorrow. In an article with the above heading, perhaps the oldest of our Electrical weeklies, in reviewing the immense advances made in the generation and distribution of electricity during the last few decades, pays a passing compliment to "those developments in telephony and protective gear, upon which interconnected working depends."

*Assistant Examiners in the Patent Office.*—There are doubtless some of our younger readers of the *T. and T. Journal* whose qualifications would well meet the requirements of the Civil Service Commissioners. Age limit 20 to 25, with extension in certain cases. Particulars &c. will be sent in reply to requests, preferably by postcard, addressed—The Secretary, Civil Service Commission, Burlington Gardens, London, W.1, giving title as above. Latest date for applications, June 1 next.

*Countries.*—BELGIUM.—*A Broadcasting Conference.*—A new allotment of wavelengths is the main problem before the International Broadcasting Union which met at Brussels under the Presidency of Vice-Admiral Sir Charles Cappendale, Controller of the British Broadcasting Corporation, on Feb. 9, and is sitting as this journal goes to press.

The new scheme of allotment is to be submitted for consideration at an international conference at Lucerne in May, and if adopted will be known as the Lucerne Plan and would supersede the existing Prague Plan. Great Britain and the other European countries (except Soviet Russia) as well as Egypt and Morocco, are represented at Brussels, and the International Wireless Committee (represented by Commander Slee and others) is taking part in the discussions. The first work of the Conference was to appoint three committees, the technical committee taking up the main question of allocation of wavelengths. These committees are expected to report to the main council and their conclusions will eventually be submitted to the full conference. "All sittings are private," says Reuter's Brussels Agency, "but a communique will be issued when the conference ends."

Great Britain's representatives are Mr. Noel Ashbridge, Chief Engineer of the B.B.C., and two of his colleagues, Messrs. Hayes and Atkinson. Col. A. S. Angwin, of the Post Office, attends as an observer. The new plan will need to secure the approval of the various governments before it can come into operation.

CANADA.—The Radio Broadcasting Corporation held its first regular meeting on Jan. 18 last. The headquarters of this organisation are in the National Research Building, Ottawa. The

*Electrical Review* adds that one of its members attended the recent International Radio Congress at Madrid.

**DENMARK.**—The financial year 1931-32 of the Danish administration for telegraph and telephones shows that there were 5,542 route-miles of telephone and telegraph lines in operation in Denmark, representing a total of 78,660 actual miles of telephone wires and 8,474 miles of telegraph wires in actual use.

**EGYPT.**—*Teleprinters and the Sinai Desert.*—It is recorded that in connexion with the recent Levant fair held at Tel-Aviv, the manager of the Cairo Branch of Standard Telephones & Cables Ltd., assisted by the resident engineer and the office mechanic, conveyed a couple of Creed page-printers by motor car across the Sinai Desert to the above-mentioned fair at Tel-Aviv, a distance of over 370 miles. The apparatus was there set up, demonstrated, re-packed, and conveyed back by the same means. Despite the double journey through the sandy desert, we are assured that the instruments were re-erected and operated immediately they again reached Cairo without requiring any adjustment.

**EUROPE.**—*World-Radio's* estimate of the number of wireless licences now in force in the following five European countries is as follows:—**GREAT BRITAIN**, 5,262,953; **GERMANY**, 4,307,722; **DENMARK**, 499,235; **BELGIUM**, 350,000; and **SWITZERLAND**, 231,400.

**FRANCE.**—*Interference!*—The Civil Tribunal of Versailles has decided in favour of a wireless listener, as against the dynamo in a neighbour's place of business! In court the lawyer acting for the owner of the dynamo endeavoured to maintain that "business interests were more important than mere entertainments." To which the Public Prosecutor chimed in to the effect that broadcasting "far from being a mere entertainment, was an important educational instrument and rendered services of the highest order." The Court immediately agreed with these views, and in agreeing, declared that "relations between neighbours should be adapted to the diversity of modern life." As if this was not sufficient the Court also solemnly laid down a further dictum, adding that "the seriousness of inconveniences should be measured in relation to a civilisation and an epoch." The proceedings were terminated by an order to the culprit to abate the nuisance within one month and to pay ten shillings per day until the necessary changes had been satisfactorily made!

*Parisian Police and Wireless.*—The Sureté is to have its own transmission post, capable of communicating with all Continental stations. At the same time certain French centres are to have transmitting and other installations. Provision is also being made for the receipt and transmission by wireless of the photographs and finger-prints of "wanted" men.

**GERMANY.**—*Broadcasting in Bavaria.*—According to the latest figures there were 321,805 registered listeners in Bavaria on Jan. 1 last, and this includes those listeners using the special facilities offered outside the service areas of the local stations and listening *via* the "wired" service over the telephone lines. These, we learn, numbered 21,245 on Jan. 1 as against 15,054 on Jan. 1 of the preceding year.

**GREAT BRITAIN.**—In connexion with the above-mentioned wireless plans of the Parisian police, it may be mentioned that for some considerable period, such documents as "a power of attorney," the "contract of an actress," &c., have been successfully dealt with by means of the picture telegraphy services between London and Edinburgh, Glasgow, Liverpool in the British Isles, as also by the Continental services of a kindred nature, mentioned below under "Holland."

The work of a Postmaster-General in recent years has proved no sinecure, and such visits as those recently paid to the Hendon works of Standard Telephones & Cables Ltd. on Jan. 25, and that on Feb. 8 to the Strowger Works of the Automatic Electric Co., Ltd., Liverpool, by Sir Kingsley Wood, so thoroughly carried out as they necessarily would be, should leave no doubt upon the minds

of citizens of to-day as to the real and practical interest taken nowadays in State organisations by their political chiefs in these islands.

*Police Teleprinters.*—It is understood that, "the more important police stations in the Metropolitan area are being equipped with Post Office Exchange Teleprinters," and furthermore, that "the service is likely to be extended to Police headquarters throughout the British Isles."

The *Daily Telegraph* reports that "the appeal of the Chairman of Imperial and International Communications Ltd., and governor of Cables and Wireless Ltd. for a voluntary sacrifice from the staff has met with a practically unanimous response, and will result this year in a saving of £180,000."

*Printing Telegraphs and the G.W. Railway.*—Creed high-speed direct-printing telegraph apparatus was installed during the past year between Newport, Cardiff (General), and Cardiff (Queen Street).

**HOLLAND.**—*Picture Telegraphy.*—The Postmaster-General of Great Britain has announced the opening of a service of picture telegraphy between Great Britain (London) and Holland (Amsterdam). The conditions are the same as for those already in operation between Great Britain and Austria, Denmark, Germany, Italy, Norway, and Sweden.

**INDIA.**—*Indo-Japanese wireless service.*—This new and even historic service was inaugurated at the Central Telegraph Office, Bombay, by Sir Frank Noyce on Jan. 11 last. The success of the realisation of this scheme for direct communication between these two important countries has been due to the negotiations skilfully carried out by Mr. Uchida, of the Japanese Wireless Telegraph Co. with the Indian Radio Co. It is most regrettable that Mr. Uchida should not have been able to witness the actual opening of this valuable service, for he passed away suddenly not more than a week prior to the actual opening. It is understood that the licence from the Government of India had previously been obtained by the Indian Radio Co. Wireless stations have been erected in Kirkee, near Poona and Dhond, as previously foreshadowed in these columns.

As a sequel to the above, Reuter's Poona Agency reported, on Jan. 19, that telephonic communication between England and Poona by means of Beam wireless was successfully tested out on that date, when wireless engineers talked freely to London during the experiment.

**IRISH FREE STATE.**—The new high-power broadcasting station at Athlone was officially opened on Monday, Feb. 6. The new station is using the Dublin station's present wavelength, i.e. of 413 metres, the last-mentioned station remaining dead when new transmitter working. The station is equipped with a Marconi 60-kw. transmitter, and during the official tests it is satisfactory to learn that the test program was received in Newfoundland, India, Iceland, Greenland, and practically the whole of Europe.

*New Automatic Beacon.*—A new Marconi automatic wireless beacon is to be installed on the Irish Lightship *Comet*, and is to be operated in conjunction with a submarine sound-signalling device, an arrangement which should materially assist navigators to ascertain their position in respect to the lightship and their distance from it.

**JAPAN.**—The Japanese have decided to organise a service of alternative programs shortly, the Broadcasting Corporation of Japan having adopted a "regional" broadcasting plan on similar lines to that of the British Broadcasting Corporation, says the *Electrical Review*. The station at Osaka is to be fitted with an additional transmitter which will broadcast simultaneously with the present Marconi installation.

**ROUMANIA.**—*Radio Interference.*—It is remarkable how drastically are becoming the measures taken to suppress all types of avoidable interference with broadcasting. The Roumanian

Government recently promulgated a law, according to the *Electrical Review*, requiring "owners or users" of any appliance which disturbs radio reception, to take the necessary steps for the elimination of interference within two years. Those not complying are liable to a heavy fine, while a repetition of the offence will mean the permanent stoppage of the guilty disturbing apparatus. Owners of receiving sets may also claim damages and request the courts to intervene against parties disturbing their radio reception.

**RUSSIA.**—Reuter's Helsingfors agency states that the Soviet Government intends to erect three new broadcasting stations in Asia. One of these will be at Vladivostock.

**SWITZERLAND.**—With reference to the Conference of the International Broadcasting Union, i.e., The International Union of Wireless Organisations now in session at Brussels. See also under **BELGIUM.** Swiss information adds that the full conference will take place at Lucerne in May next and that the present gathering in Brussels is a preparatory one.

**U.S.A.**—According to the *T. and T. Age*, Mr. Albert A. Ahronheim, a German scientist, who for the last two years has been working in the town of Jackson, Michigan, on account of his experiments with "the introduction of natural colours in the transmission of light rays," has recently declared that, "Everything is in readiness for television to become as satisfying a mode of entertainment and education as the movies or the radio. The receiving sets," he adds, "and the transmission sets are mechanically perfect. Our problem is the high-frequency waves, and as soon as we are able to handle them, television will become a perfected thing." That little more, how much it is!

*A Use for the Morse Key!*—The *T. and T. Age* records that the electrical milking machine broke down at the Florida Experiment Station on the University of Florida grounds. A very smart electrician dashed to a Western Union telegraph operator, borrowed a Morse key, and connected the key with the pulsator of the milking machine. The key was then closed and opened to make and break the current at a speed of 45 pulsations per minute! This method, says our informant, was employed for several days until the new parts arrived. It is here permissible to indulge in a little Latin at this juncture, so one accepts *cum grano salis!*

*Custom.*—"True to the jingling of our leader's bells,  
To follow foolish precedents, and wink  
With both our eyes, is easier than to think.—*Cowper.*

J. J. T.

## BRIGHTON NOTES.

IN his sermon on Thanksgiving at Tandridge the Rev. Harold Anson, R.D., paid a tribute to public servants, and particularly to the telephone officials. He said we very often forgot how extremely dependent we were on our public servants; they were paid for their work, but they were not paid for the considerable amount of courtesy, consideration, and patience exercised by them in their dealings with the general public. No one who had lived for any length of time abroad could fail to be struck by this on landing in this country. "During the four years I have lived here," said the vicar, "I have never had any telephone call 'go wrong,' which depended upon the local officials. Not only are they so very efficient, but they also take endless time and trouble in helping one over difficulties." So many people, he proceeded, concentrated all their attention on the very few times that things did go wrong, and forgot how immensely their path was smoothed in life by the numberless people who were ready to help them in the little troubles and difficulties of everyday life.

The following letter was received by the Head Postmaster of Worthing from a Broadwater subscriber:—

"I should like, if I may, to express my appreciation of the way in which the telephone service handled my call to Cassel, Germany, yesterday. It was typical of the courtesy and efficiency which I have always enjoyed from the exchange.

"The reception, I may add, was remarkably clear, the conversation being conducted with complete absence of strain."

## ANNUAL REPORTS OF TELEPHONE PROGRESS, 1932.

WE have received copies of the reports of the London, Manchester, Liverpool and Birmingham and other districts. We regret that space only permits us to refer to them very briefly, and we confine ourselves chiefly to development figures, which, having regard to the financial depression which prevailed during the year, must be regarded as very satisfactory.

**London.**—The number of subscriber's stations in the London area increased during the year from 731,000 to 787,000, and although this increase is partly attributable to a transfer of an area containing 25,000 subscribers to the London district, a substantial margin of increase is still apparent. 15 new automatic exchanges were brought into service, and at the end of 1932 there were 49 of these exchanges working with accommodation for 238,000 subscribers' lines. The number of originated calls increased from 681 to 745 million. The opening of the new Continental switchboard in G.P.O. South and the introduction of the "Telex" services has already been dealt with in our columns.

**Manchester** showed an increase of 1903 telephones during the year, the present total having grown to 98,972 from 32,946 twenty years ago. Conversion of the system to automatic "director" working in Manchester, Oldham, and Stockport were continued during the year. 64,500,000 local calls were originated in 1932.

**Liverpool** increased its total number of telephones from 76,697 to 77,543. During the past 20 years the total increased by 42,633 or 122%. Automatic service was opened early in the year at St. Helens and Prescott. The reconstruction of the Telegraph Instrument Room and Telephone-Telegram room at the Liverpool Head Post Office is nearing completion.

**Birmingham** increased its total by 2,216 telephones, which now number 83,598. During the year 15 automatic exchanges were opened in the Birmingham group and 6 in the Wolverhampton group. The number of calls made by subscribers increased by 2,100,000 to 63,300,000.

The **North Eastern District**, which includes Darlington, Hartlepool, Harrogate, York, Grimsby, and Lincoln, amongst other places, increased its number of telephones by 1,660 or 3.3%, the total rising from 47,860 to 50,265. Nearly half this number are working automatically. The number of originated local and junction calls was 4,713,161, an increase of 3.7% on the previous year's figure.

**Chester, North Wales & Hanley** showed a net addition of 2,022 telephones, the total now reaching 47,146. Local calls increased by 1.3% to 21,425,000.

We notice in the *Spectator* some rather disparaging criticisms of the London report. Unfortunately the reviewer relies largely on his impressions or recollections. He says: "Reviewing the period of the last ten years, which has been one of vast telephone expansion in most parts of the world, we find that even in this busy metropolitan area neither the number of telephones nor the number of calls has been doubled." Two years of the last ten have been years of substantial decrease in telephone development in the United States, Canada, Germany, and Australia at least. Moreover the number of telephones in London has doubled, rising from 369,000 to 787,000 (or about 760,000 if allowance is made for the extended London area). His recollection is that "there was far more use of the telephone in New York twenty years ago than there is in London to-day." Twenty years ago New York had 483,653 telephones as compared with London's present figure of 787,000. What the reviewer calls only a small increase, is really a fairly substantial one and is the more creditable in face of the decline in the large cities of America and Germany.



## LONG DISTANCE TELEPHONY.

### NEW BRITISH OVERSEAS EXCHANGE—(contd.).

By J. F. DARBY (*Headquarters Traffic Section*).

CONSIDERATION will now be given to the subject of the Overseas switchroom and the Continental switching equipment. As regards the switchroom, little choice could be exercised in connexion with its location. It was essential that it should be closely associated with the London inland trunk exchange in order to obtain joint access with that exchange to the inland long-distance circuits on one hand and the high-grade transmission circuits to the London local exchanges on the other hand. The first floor G.P.O., South, was the only position where sufficient clearance could be effected to obtain a clear run for switchboards and accommodation for distributing frames with associated engineering equipment. This was arranged by transferring the dining room, kitchens, &c. which occupied the accommodation to other premises; the remainder of the space was in use for record positions, and these were recovered with the introduction of inland demand working.

The Continental operating can be regarded as of a special nature owing, firstly, to the high monetary value of the calls, secondly to the necessity for the use of foreign languages for operating, and thirdly to the impracticability of applying a precisely uniform operating procedure because of the variations in facilities and local practice in the various Continental countries. A further factor is the less liberal provision of circuits as compared with the inland trunk service and the absence of facilities for quick alternative routing.

These special features are, however, catered for in various ways. The International circuits are, by agreement, worked on the basis of the termination of two circuits per operating position, in cases where the two circuits serve the same country. As regards single circuits (or a remainder of one circuit after circuits have been allotted on the basis of two per position) serving individual countries, the allocation is on the basis of one circuit per position as, for example, in the case of the circuits to Oslo, Prague, and Budapest. The language question is met—again by international agreement—by an arrangement to operate each route in a particular language. The present arrangement is:—

Country.	Route.	Language.	
France ... ..	Paris	} French.	
	Lille		
	Calais		
	Marseilles		
Belgium ... ..	Brussels		
	Antwerp		
Switzerland ... ..	Basle		
	Geneva		
	Zurich		
Italy ... ..	Milan		} German and English
	Rome		
Spain ... ..	Madrid		
Germany ... ..	Berlin		
	Hamburg		
	Düsseldorf		
	Cologne		
	Frankfort		
Bremen			
Austria ... ..	Vienna	} German.	
Hungary ... ..	Budapest		

Country.	Route.	Language.
Holland ... ..	Amsterdam	} English.
	Rotterdam	
Czecho-Slovakia ... ..	Prague	
Denmark ... ..	Copenhagen	
Sweden ... ..	Stockholm	
	Malmö	
Norway ... ..	Oslo	

The Anglo-German circuits are divided into two approximately equal groups, one being operated in German and the other in English.

Operators and Supervisors with ability to speak fluent French or German are employed—in some instances dual language qualifications are possessed by individuals. In addition, a number of officers with Spanish and Italian qualifications are employed to meet special cases. The Traffic Officer in Charge—the Chef de Bureau—is required to keep in close touch (telephonically) with his colleagues in European cities. The interesting duty frequently devolves upon him to make speaking tests in connexion with the opening of new services. One day a call to Russia may be involved, another day calls to say Yugo-Slavia and Turkey may have to be attempted. The Chef de Bureau acts, in minor matters, as an agent for the Department in dealing with Continental centres.

To deal with the subject of unification of international operating procedure, the C.C.I.\* has functioned since 1924, having regular meetings sometimes twice or three times a year.

Last year an *Anglo-European Telephone Operating Procedure Handbook* was issued—the work of the above-mentioned committee—and translations in English are supplied to the Continental exchange staff. (A further step in the organisation of overseas operating procedure will be taken in connexion with the arrangements shortly to be introduced for concentrating all provincial overseas *booking* and *enquiry* work on provincial group and zone centres).

Consideration has also been given to the improvement of the amenities of the switchroom by special attention to lighting, noise, reverberation, and floor traffic. A form of artificial “daylight” lighting with a proportion of indirect illumination has been introduced. The floor covering is of cork tiles and a false ceiling of sound absorbing materials has been provided. The latter consists of “tiles” in the form of bevelled-edged perforated metal containers (16 inches square) filled with a material composed of rock wool (a mineral somewhat similar to asbestos wool). The under surface of the “tiles” is finished in hard white enamel; it is easily cleaned and gives good light reflection.

A reduction in floor traffic has been effected by the liberal provision of pneumatic tubes and travelling conveyor bands for the circulation of tickets amongst record line operating, enquiry and ticket filing positions.

The effect of these measures is most marked and the quietness and orderliness of the switchroom should have a very beneficial effect on the general working of the exchange.

The design of the new exchange has been based on the continuance, at any rate for the time being, of the present system of *Trunk Signalling Working* with *record* positions dissociated from the *line operating* (trunk signalling) positions as described in the February and March, 1931, issues of this *Journal*. Provision has, however, also been made for associating the record work with the setting up of calls, so that, at some later date, a service on a basis somewhat analagous to the Inland Demand working may be introduced, at any rate during the less busy periods of the day. Certain difficulties in connexion with language and accounting questions have, however, yet to be met and international discussions may be involved before the latter system of working can be introduced.

\* Comité Consultatif International des Communications Téléphoniques à grande distance.

Switchboards of the same type as those used for inland trunk working have been used and fitted with *sleeve control* cord circuits. (A description of the sleeve control cord circuit\* is given in the *Post Office Electrical Engineers' Journal* of October, 1931—Volume 24, part 3). The positions are, therefore, interchangeable with inland trunk and radio positions, and this will materially facilitate re-arrangements of switchrooms in the G.P.O., South, building when the necessity arises at some future date.

A few special features have been included in the design, viz., *continuous chargeable time display indicators*, and *route delay indicators*. Modern devices, already in use on the inland service, have been included on the line operating positions, such as multiples of the outgoing ends of all long-distance circuits—Continental and inland trunks, (this arrangement obviates the use of transfer circuits and duplicate connexions on *trunk to trunk* connexions), visible index files for route and rate information, visual idle indicating signals (to facilitate the selection of disengaged circuits), and keyboard bulletin frames. The use of *cord circuit repeaters* has been reduced to a minimum by the provision of 4-wire Continental

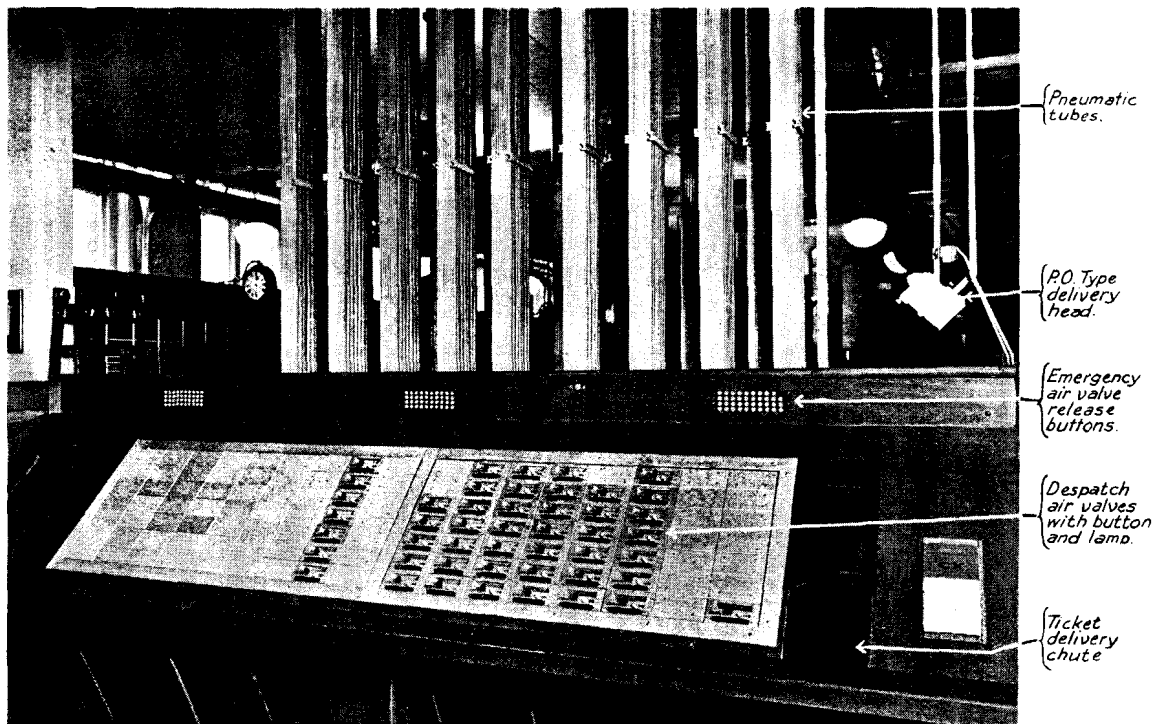
however, been provided for dialling-in (key-sending later) into automatic networks—local or distant—and, as the arrangements for *voice frequency pulsing* over long distance circuits develop, the process of dialling-in (or key-sending) will be extended.

The switchroom equipment can be classified as follows:—

- (a) Combined record and enquiry (general) positions.
- (b) Pneumatic tube distribution positions.
- (c) Route and rate (telephone fees) quoting position.
- (d) Directory position.
- (e) Master Delay indicating position.
- (f) Line operating positions.
- (g) Finished ticket filing position.

Positions (a) and (f) form, of course, the main equipment and the remainder can be regarded as subsidiary. Comments will be made on the functions and facilities of each in the order given above.

Subscribers in the London area making demands for Continental calls (and also Provincial "overseas" booking operators) obtain



PNEUMATIC TUBE DISTRIBUTION POSITION.

circuits on the one hand and zero loss *back bone* inland circuits on the other. To meet emergencies and special cases, cord circuit repeater is, however, available. It is proposed to install shortly (on a spare panel of the *master delay indicating* position) approximately 8 *repeater* cord circuits. These will be brought into operation when the existing cord circuit repeater positions in the inland switchroom (3rd Floor main) are recovered.

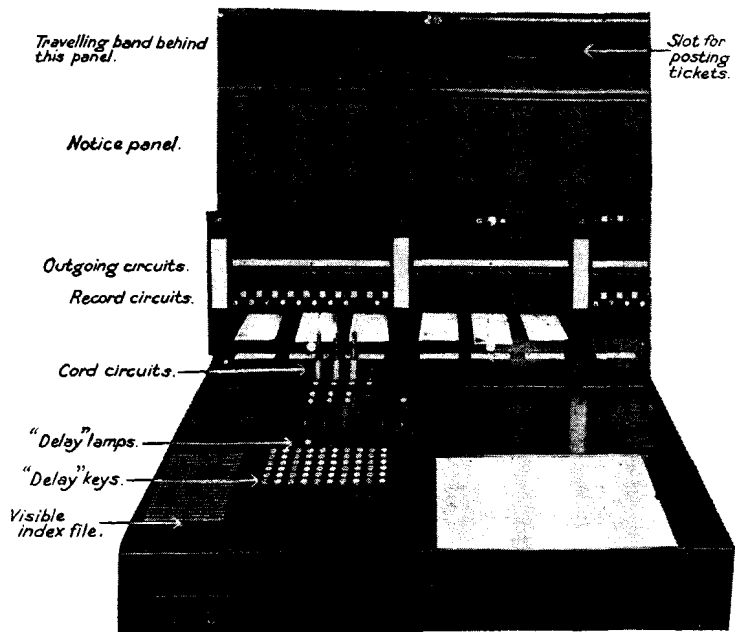
The question of the extent to which switching in the Continental exchange could be mechanised was considered, but having regard to the varying transmission values of the circuits involved and the need for a very high traffic output of the long-distance circuits, the question was not pursued; instead a manual multiple of outgoing trunk circuits has been provided. Again, automatic distribution of incoming "record" calls has not been adopted—the record circuits have been terminated on multiple (ancillary) answering equipment so that any incoming record call can be answered by any disengaged record operator. Facilities have,

access to the record positions *via* record circuits from the inland trunk switchboards. Facilities are provided for switching these record circuits over to the line operating positions, in connexion with the contemplated system of associating the record work with the setting up of the calls during the less busy hours of the day. The accompanying illustration shows the panel and keyboard equipment of the combined record and enquiry positions. The operator at the record position, after having recorded the necessary particulars of a demand on a ticket, inserts thereon the *routing* (the code of the distant *tête de ligne*) which she ascertains from her visible index file. The ticket is then "posted" in the slot indicated at the top of the panel and is immediately conveyed by means of a fast travelling band contained in the switchboard to a *pneumatic tube distribution position*, whence it is despatched by an air pressure tube to the line operating position assigned for working to the *tête de ligne* indicated in the routing instructions on the ticket.

In addition to the travelling bands which convey tickets to the pneumatic tube position, an incoming "vacuum" tube is provided for the re-circulation of tickets from the *finished ticket*

\* Article by Mr. I. H. Jenkins, M.I.E.E., on the Demand Trunk Service.

position. This tube is terminated on a new type of delivery head (shown on the right of the illustration of the pneumatic tube position) designed by Post Office Engineers. It is unique as far as "vacuum" tubes are concerned in that it does not depend on an electrical or mechanical device for the discharge of a ticket. A balanced "gate" is provided which is opened by the momentum of a ticket and closed by gravity.



PANEL AND KEYBOARD OF RECORD AND ENQUIRY POSITION.

The outgoing ends of the despatching tubes (operated on an air pressure basis in contrast to the "vacuum" tube mentioned above) are normally open. A ticket to be despatched is inserted into an open end with the "sail" or flap of the ticket uppermost. An associated press button is then depressed and this closes the despatching end (and causes an indicator lamp to glow); at the same time air pressure is automatically applied until the ticket is discharged from the tube. The ticket in passing out of the delivery end of the tube, operates a device which re-opens the despatching end, dims the indicator lamp and cuts off the air pressure. Emergency press buttons are provided on the pneumatic tube position to cut off the air pressure on an operated tube and to restore the tube conditions to normal, should the release device at the delivery end fail to be operated for any reason.

Information regarding telephone rates to distant Continental places is also contained in the visible index file on the record positions, and subscribers' enquiries as regards rates can normally be handled thereon. When, however, the required information regarding routing or rates is not contained in the visible index file, the operator can call a central *Route and Rate Quoting Position* where a rotary file is provided containing full information regarding more than 7,000 Continental places.

Situated adjacent to this position is a directory rack accommodating directories in respect of all the European countries with which telephone service is available.

To supply subscribers with information regarding the "delay" existing at any moment on the various Continental routes, a bank of press button keys is provided, as shown in the illustration, on each record position—one key in respect of each route. In front of these keys and associated with them are 3 "delay" lamps—white, green and red. (On the line-operating positions, in place of the press key, one jack, normally the first of the group, in respect of each continental route is provided together with a "delay" cord on the keyshelf; the insertion of the plug of the "delay" cord into a "delay" jack performs the same functions electrically as the depression of the press key on a record position.) The

operation of the three "delay" lamps on record and line-operating positions is controlled at a *Master delay indicating position*. On this position, as shown in the illustration of the panel, retaining press buttons are provided—four press button keys in respect of each Continental route. They are used as follows:—

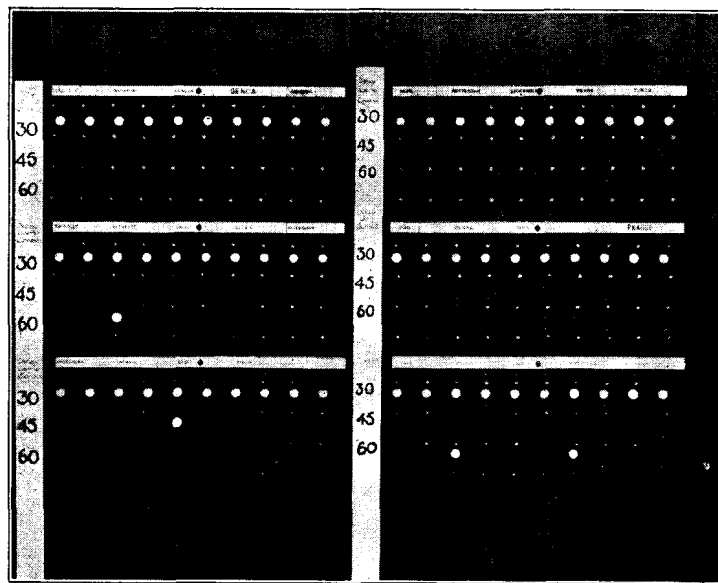
Key No. 1.—When operated, a lamp (pinhole with red disc) associated with the outgoing multiple of the route concerned glows, indicating "delay" on the route.

Key No. 2.—When operated, a white lamp associated with it on the master position glows and an "earth" condition is put on the white "delay" lamp circuit of the route in question, so that the operation of the press key in respect of the route in question (but no other) on any record position (or the insertion of the "delay" plug into the "delay" jack of the route in question on any line operating position) will cause the white lamp on the record position in question to glow as long as the key is depressed (or the "delay" plug remains inserted). This signal indicates 30 minutes delay on the route in question.

Key No. 3.—Similar to No. 2 but operates a green lamp on the master position and an "earth" condition is put on the green delay lamp circuit of the route in question. The operation of a press key (or insertion of a "delay" plug into the "delay" jack) of the route in question will cause a green lamp to glow on a record or line-operating position. The green lamp indicates 45 minutes delay.

Key No. 4.—Similar to No. 2 but operates a red lamp on the master position and an "earth" condition is put on the red delay lamp circuit of the route in question. The arrangements are then similar to those outlined for Nos. 2 and 3. The red lamp indicates 60 minutes delay.

The white and red lamps glowing together indicate 90 minutes delay and all three lamps glowing together indicate indefinite delay.



PANELS OF MASTER DELAY INDICATING POSITION.

It will be seen, therefore, that on the master delay indicating position a continuous picture is given of the "delay" conditions of the exchange, and that on any record or line-operating position the delay on any route can be instantly ascertained by the pressing of a key or the insertion of a plug, as the case may be.

(To be continued.)

## YOUNG PEOPLE'S TELEPHONE EXHIBITION AT BIRMINGHAM.

By W. A. S. (Birmingham Traffic Section).

The outstanding success of the Young People's Telephone Exhibition, held in London last year, was such that it was decided to hold similar exhibitions in the provinces and Birmingham was chosen as the site of the first. The Exhibition was accordingly held from Jan. 4 to 25 and has resulted in a great impetus being given to the Telephone Publicity Scheme as far as Birmingham is concerned.

The object of the Exhibition was to create interest in the telephone and telegraph services not only in the minds of the rising generation but in those of adults also. A real effort was made to make the children of the town "telephone minded" in order that now and in after years they would turn to the telephone as a natural ally and an essential part of their business and social existence. In these objects it is felt that the exhibition has succeeded beyond all expectations, and it is certain that the results achieved, although perhaps not immediately evident, will be felt in the future to the benefit of both the public and the telephone organisation.

*General Telephony.*—This stand showed, first of all, some of the very earliest types of telephone transmitters and receivers. A replica of the first telephone invented by Graham Bell in 1876 and which served both as receiver and transmitter, requiring to be moved from mouth to ear, was shown side by side with a replica of the gold-plated hand micro-telephone presented to His Majesty the King.

Then there was an original Bell telephone as first used in the Royal Household in 1877, together with models of the old Blake and Gower Bell instruments, and also the original central battery type of telephone as first installed at Bristol in 1900.

Adjoining these very interesting exhibits was a complete demonstration set of the director type of automatic equipment, and the demonstrators had a busy time explaining the intricacies of the mechanism to crowds of interested listeners. A final selector type of switch was also mounted in order that the public could dial two figure numbers and step up the switch for themselves.

Over the demonstration set was hung a map of the Birmingham Director Area, with coloured lights to indicate the present position of the system and the extent of future development.



FIG. 1. FORMAL OPENING OF THE EXHIBITION BY TWO SCHOOL CHILDREN.

[By courtesy of "Birmingham Mail."]

The general telephony stand was completed with exhibits of amplifying devices for deaf people and with telephone kiosks for demonstrating the operation of the modern type of multi-coin box instruments. The great interest displayed by visitors in the working of the call offices was very gratifying, but not so gratifying were the actions of the youngsters who listened with deep interest to the guide's explanations and then went outside to public kiosks to experiment for themselves.

A modern type of  $\frac{10+30}{50}$  CB private branch exchange switchboard served the official needs of the Exhibition and its operation in full view of the visitors attracted great interest.

*Telegraphy.*—The exhibits on this stand ranged back to the old Morse keys and sounders, the Wheatstone perforators, Baudot instruments and finally the modern teleprinters, numbers 3A and 7A. The Wheatstone tape, although rather bewildering to most, proved very interesting, but the centre of technical interest naturally lay with the teleprinters and there was a general demand to know how they worked.

The teleprinter exhibits were excellently arranged and visitors could see telegrams handed in, passed to the operator, typed out and received on a similar instrument at the other end of the stand. Some visitors found it hard to believe the state of perfection that had been achieved with the instruments and one child would not be convinced that the messages had not been surreptitiously passed underground.



FIG. 2. INTERIOR OF OVERSEAS TALKS CABIN.

[By courtesy of "Birmingham Mail."]

Perhaps the most popular feature of this stand, and in fact of the whole exhibition, was the arrangement by which children were enabled to write out telegrams to themselves or their friends in the Exhibition, hand them in, see them sent, and then collect them from a messenger at the end of the stand. Many children would have quite happily spent all day doing this if they had been permitted. The faces of some of the children, however, became very familiar to the attendant and it was unfortunately necessary in view of the press of children trying to send their first telegram to send out those known already to have sent rather more than their share. Actually many hundreds of telegrams were sent in this way.

*Testing and Research Exhibits.*—This stand proved exceptionally interesting, especially to those who were technically minded and well repaid a visit. On the rack at the rear of the stand were mounted a row of two-motion Strowger switches wired so that they were continuously operating, to demonstrate their reliability and freedom from faults. A continuously operating tester for subscribers' meters was also on show, as well as a machine colloquially known as "Galloping Gus," for making life tests on receiver magnets.

Two particularly interesting exhibits were the "voice tester" and the frequency cut-off apparatus. The "Voice Tester" was an ingenious device consisting of an H.M.T. connected to a display of neon lamps, each of which lit up when a note of a certain frequency was spoken into the telephone. Normal conversation usually caused a flickering effect over all the lamps, although the predominant frequency could usually be detected. Some voices, we might add, gave surprising results.

"Frequency cut-off" was demonstrated by means of a radio-gramophone provided with a press key attachment. The depression of the various keys inserted inductances into the circuit and had the effect of cutting out certain frequency bands from the music or speech being played.

*Rural Automatic Exchanges.*—A modern type of R.A.X. was installed complete with telephone pole and kiosks and backed with an artistic countryside scenery, even to the white painted fence round the exchange building. The R.A.X. proved a great attraction and there was usually a queue waiting to inspect its mysteries.

*Cables.*—A model cable manhole was fitted up and provided with various types of cables. The demonstrator in attendance had a busy time explaining the methods of joining the multitudinous wires and piecing together the cable sheaths.

On an adjoining stand was the "thousand mile telephone talk," various trunk routes up and down the country being joined up to a total length of 1,000 miles and connected to two telephones on the stand so that visitors could speak to each other over the thousand-mile length.

Samples of different types of cable and loading pots and a map of the repeated routes in the country completed the exhibit.

*Radio.*—This was actually a radio interference station and its object was to demonstrate the interference caused to radio sets by ordinary household and commercial appliances, vacuum cleaners, electric fans, &c. It proved of special interest to the adult visitors, who thus learned the reason of many strange noises that had puzzled them.

Another exhibit of great interest on this stand was a short-range radio installation, the terminal stations being some 2 yds. apart. A hand-micro-telephone was connected to each station and conversation could be carried on between the two.



FIG. 3. CABLE STAND WITH 1,000-MILE TALK IN PROGRESS.

[By courtesy of "Birmingham Mail."]

*Overseas Talks Cabin.*—A number of overseas talks had been arranged for the benefit of visitors and to make things more realistic a model of a modern liner's wireless cabin was installed and equipped with a number of plug-in head-sets. The exhibit excited general interest, especially in one small boy who walked up to a kiosk attendant standing outside the cabin, proffered two pennies and asked to speak to his uncle in Japan!

Two other exhibits which attracted much attention were a postage stamp obliterating machine and a working model of a travelling post office. The latter, complete with miniature mail bags and letters, was a source of intense delight to the children.

The Exhibition was opened by the Postmaster-General, Sir Kingsley Wood, at 11 a.m. on Jan. 4, in the presence of the Lord Mayor of Birmingham, members of the city council and general public. A number of telegrams had been sent to boys and girls in the town inviting them to the opening ceremony and further telegrams of invitation to a total of 691 were sent during the run of the Exhibition.

The actual opening of the Exhibition doors was performed by a boy and girl from local schools who were handed antique bronze keys for the purpose by the Postmaster-General.

The total attendance at the Exhibition exceeded all expectations by reaching a total of 150,500, the highest number attending on one day being 13,676. The first few days were rather hectic, as the school children were still on holiday and rolled up in their thousands.

During the last two weeks of the exhibition, however, a large number of conducted parties from schools were arranged and more control over the children was possible.

A novel feature arranged towards the end of the Exhibition was in connexion with the opening of Acocks Green Director Automatic Exchange, which took place on Jan. 21. A special telephone was wired up and one of the young visitors was able to make the first call to the new automatic exchange.

Great credit is due to the Exhibition staff, who worked hard and succeeded admirably in making the Exhibition an outstanding success and nothing but praise was heard on all sides for the splendid efforts made by the demonstration to gain the public interest. Although the Exhibition was held during the height of the 'flu epidemic it is noteworthy that only two days' sick absence were incurred by the whole of the Exhibition staff. This was largely due to the foresight displayed in supplying throat lozenges and to frequent spraying of disinfectant.

This article would not be complete without a word of praise for Capt. F. C. Taylor, Sales Manager, Birmingham, as Exhibition Manager, and Mr. O'Roarke, of the Local Sectional Engineers' Office, on whom the bulk of the engineering arrangements fell. We are sure that they were the chief factors in the success of the Exhibition.

A dinner and dance was held at the Imperial Hotel on Feb. 3 to mark the close of the Exhibition, and was voted very enjoyable and successful. The chair was taken by the late Postmaster-Surveyor, Mr. W. P. Baines, the guests of the evening being Mr. G. H. Taylor, Controller, Sales and Publicity, and Mrs. Taylor.

## MANCHESTER NOTES.

*Post Office Telephones Social Club.*—"Dick Whittington and His Cat."—This year's pantomime has proved an outstanding success. It was given at Telephone House on the eight nights commencing on Feb. 11. On most nights the seating capacity was fully taxed.

The show as a whole attained an excellent level, but the dancing and comedienne were particularly clever. The harem scene brought roars of masculine applause and demands for encores, whilst the tambourine dance was professional in the uniform grace and synchronised movement, which could only have been attained after much hard work. The cast included H. Monaghan (Dick Whittington), E. Brookes (Alice), L. Massey (Capt. Cute), E. Lynch (Fitzwarren), H. Walter (Patty), E. Qualter (Idle Jack), M. Hewitt and N. Phillips (Mate and Bosun), E. Barnett (Emperor of Morocco), M. Leeming (Princess) and E. Sweeney (the Cat).



"DICK WHITTINGTON AND HIS CAT."

[By courtesy of Robert Fuson.]

*Dances.*—Some 200 people gathered on Feb. 4 to enjoy the very successful dance which was held at Telephone House on Feb. 4.

By the time these notes appear another dance will have been held on Shrove Tuesday, Feb. 28.

A dance at Telephone House also has been arranged on Mar. 18.

*Talk on "The Telephone Service."*—Mr. Magnall, the Traffic Superintendent, gave an after-lunch talk on "The Telephone Service" to the Eccles Rotarians on Feb. 16. After describing the wide range of facilities offered to the public, Mr. Magnall emphasised the commercial basis of the Department, and demonstrated that its governing principle was "Service to the Subscriber."

*Telegraphs.—Telegraph Messengers' Institute.*—A lantern lecture was given in the Manchester Head Office Dining Hall at 7.30 p.m., by Colin Campbell, D.Sc., on "A Pinch of Salt." The lecture was well attended and was presided over by Mr. Hartley, the Chief Superintendent.

*Retirements.*—On Feb. 9 Imperial Service Medals were awarded to Mr. J. Heap, Overseer, and Mr. J. W. Lydon, S.C. & T. (Telegraphs). The presentation was made by Mr. Hartley. Mr. Heap joined the Post Office in 1889 and Mr. Lydon in 1890.

## A BRIEF CHRONOLOGY FOR STUDENTS OF TELEGRAPHS, TELEPHONES AND POSTS.

BY HARRY G. SELLARS.

(Continued from page 100.)

- 1930, Mar. 19 ... Post Office Advisory Council met. (Members: Sir C. C. Barrie, J. Cairns, Sir A. Churchman, Sir G. Courthorpe, C. T. Cramp, Lord Daryington, R. Holland Martin, Lord Luke, Sir S. Machin, Sir E. Manville, Lt.-Col. Rouse Orlebar and W. Smithers.)
- 1930, Mar. 20 ... Ship-shore telephone service opened with *Olympic*.
- 1930, Mar. 26 ... Ship-shore telephone service extended to France.
- 1930, Mar. 28 ... Ship-shore telephone service extended to Holland.
- 1930, Mar. 29 ... Ship-shore telephone service extended to Belgium.
- 1930, Mar. 31 ... Ship-shore telephone service extended to Spain.
- Trial wireless telephone call took place between England and Brazil.
- Post Office income and expenditure for previous 12 months:—
- |                  | Expenditure. | Income.     |
|------------------|--------------|-------------|
| Postal ... ..    | £35,245,000  | £44,883,000 |
| Telegraph ... .. | 5,788,000    | 5,003,000   |
| Telephone ... .. | 21,350,000   | 21,868,000  |
| Total ... ..     | £62,383,000  | £71,754,000 |
- Surplus £9,371,000. Paid in salaries £39,788,000. Staff 225,934.
- Costs charged against the various services in following proportions: Postal 61.57%, telephone 28.54%, telegraph 9.89%.
- Surplus of £14,000 on year's working of Rugby wireless station.
- Total revenue received for advertisements displayed in post £36,925 offices.
- Total receipts for wireless receiving licences £1,537,377. Paid to British Broadcasting Corporation, £963,171.
- £12,936,778 spent on telephone and telegraph construction.
- 1930, April 1 ... "Personal call" telephone service extended to Irish Free State.
- 1930, April 4 ... J. B. Kramer and two members of Birmingham University Electrical Engineering staff claimed important successes in "television" at a distance of 100 miles.
- 1930, April 8 ... Ship-shore telephone service extended to Switzerland.
- 1930, April 9 ... Ship-shore telephone service extended to Germany.
- Postmaster-General proposed establishing an exchange in London, subscribers to which would communicate with each other (or with the Central Telegraph Office) by means of column printing "teleprinters."
- 1930, April 14 ... Description and noises of Post Office Parcels Railway broadcast by British Broadcasting Corporation.
- 1930, April 16 ... Wireless telephone conversation took place between Buenos Aires and Batavia, via Berlin, a distance of 14,375 miles.
- 1930, April 23 ... Ship-shore telephone service opened with *Leviathan*.
- 1930, April 27 ... Wireless telephone conversation took place between London and a train travelling between Montreal and Quebec.
- 1930, April 30 ... Anglo-Australian wireless telephone service inaugurated. British Premier (Ramsay MacDonald) conversed with Australian Federal Premier (Mr. Scullin).
- 1930, May 1 ... Postmaster-General stated that the capital value of the equipment, real estate, buildings, and other assets of Post Office property was approximately £134,000,000.
- 1930, May 5 ... Union Internationale de Radiodiffusion met at Lausanne. Demonstration of wireless telephonic conversation between Australia and Switzerland, via England, took place.
- 1930, May 7 ... Anglo-Argentine, Anglo-Chilean and Anglo-Uruguayan wireless telephone services opened (via Madrid).
- 1930, May 11 ... Transatlantic telephone basic charge reduced from £3 to £2 a minute.

- 1930, May 12 ... Anglo-Australian telephone service extended to France, Ireland (N. and S.) and Isle of Man.
- 1930, May 13 ... Anglo-Australian telephone service extended to Switzerland.
- 1930, May 14 ... Anglo-Brazilian wireless telephone service opened (via Paris). Charge to Rio de Janeiro £6 9s.
- Anglo-Australian telephone service extended to Belgium.
- 1930, May 16 ... Anglo-Australian telephone service extended to Denmark.
- 1930, May 19 ... Anglo-Australian telephone service extended to Germany.
- 1930, May 20 ... Anglo-Australian telephone service extended to Sweden.
- 1930, May 21 ... Anglo-Australian telephone service extended to Norway.
- 1930, May 22 ... Anglo-Australian telephone service extended to Poland.
- Television variety performance given in a theatre in Schenectady under the direction of E. F. W. Alexanderson. The actors actually performed in the General Electric laboratories—a distance of one mile.
- American Senate passed a resolution calling for the removal of dial telephones from the Capital on the grounds that automatic telephones were not speedier than manual and that the caller actually took the place of the operator.
- 1930, May 23 ... Anglo-Australian telephone service extended to Czechoslovakia.
- Anglo-Dutch East Indies wireless telephone service opened (via Amsterdam). Charge to Bandoeng, &c., £5 2s. for three minutes.
- 1930, May 26 ... Anglo-Australian telephone service extended to Austria.
- 1930, May 27 ... Anglo-Australian telephone service extended to Hungary.
- 1930, May 28 ... John Hays Hammond (U.S.A.) introduced a television "eye" by means of which an aeroplane pilot could ascertain his correct location and also obtain views for retransmission.
- 1930, May 29 ... Ship-shore telephone service opened with *Homer*.
- Anglo-Australian facsimile telegraph service opened.
- Irish Free State voted £5,000 to aid James J. Drumm in experiments in connexion with his new electric storage battery.
- 1930, June 1 ... Post Office decided to return all deposits held in respect of telegraph credit facilities.
- System of advising registered letters in bulk adopted between England and Sweden on the suggestion of Swedish Post Office.
- 1930, June 2 ... Anglo-Estonian telephone service opened. Charge to Tallinn 22s. 3d.
- 1930, June 5 ... Anglo-Latvian telephone service opened. Charge to Riga 17s. 6d.
- French Post Office introduced a system of "wireless maritime letters" between French coast stations and ships.
- 1930, June 16 ... Comité Consultatif International (telephonique) met in Brussels.
- 1930, June 18 ... First Royal Air Mail van (blue) ran between London and Croydon air port.
- World Power Conference in Berlin and National Electric Light Association Convention in San Francisco addressed simultaneously from Berlin, London and San Francisco by means of the Berlin—London—New York—San Francisco telephone service. Marconi (England), Edison (U.S.A.) and Carl Koettgen (Germany) were among the speakers.
- 1930, June 20 ... Anglo-Australian telephone service extended to Finland.
- Bruno Lange, of Berlin, devised a form of photo-electric cell.
- 1930, July 1 ... Blue pillar boxes introduced in London for receipt of air-mail correspondence.
- Allen Dumont introduced a rotating grid for wireless valves.
- Telephone cable laid between Boulogne and Folkestone.
- Wireless conversation took place between Sydney and Montevideo via London, Madrid and Buenos Aires.
- Representatives of telegraph administrations in Czechoslovakia, Denmark, Finland, France, Germany and Great Britain, the Secretary of the International Telegraph Union and delegates from electrical manufacturing firms in England, Germany and Switzerland, visited Sweden to ascertain inductive effects between parallel conductors.
- 1930, July 28 ... First public demonstration of Baird system of television took place at the Coliseum, London.

- 1930, July 30 ... India House, London, opened. Speech of George V. broadcast.
- 1930, July 31 ... Drumm storage battery used successfully to drive electrical coach on Irish Great Southern Railway.
- 1930, Aug. 10 ... Universal Postage Stamp Exhibition opened at Antwerp by the Minister of Posts and Telegraphs. Special six-franc stamps issued to commemorate the occasion.
- Union Internationale de Radiodiffusion met in Lausanne.
- 1930, Sept. 4 ... Wireless telephone conversation held for the first time between London and a Channel steamer.
- Anglo-Swedish facsimile telegraphy service opened.

(To be continued.)

## THE G.P.O. PLAYERS IN THE "ADMIRABLE CRICHTON."

THE G.P.O. Players gave an excellent rendering of Barrie's famous comedy, "The Admirable Crichton," at King Georges Hall on Feb. 23, 24, and 25. The principal burden of the play fell on Mr. Horace Pilkington as Crichton, and Miss Kathleen Emery as Lady Mary. Mr. Pilkington portrayed wonderfully well the alternate proud servility, the dominating power, and the quixotry of the "Perfect Butler," a character seldom off the stage and one requiring that complete grasp of the part which this actor possessed. We have never seen Miss Emery to greater advantage than in the part of Lady Mary. There was a fine Rosalind touch in her bearing in the third act. She also compassed admirably the many requisite changes of mood and development of character. The roles of her two sisters, Lady Catherine and Lady Agatha, were charmingly sustained by Miss Law and Miss Henniker, and the somewhat exaggerated "commonness" of Tweeny was well played by Miss Gwladys Foote. Against the strong personality and natural ability of Crichton, the author has set some remarkably weak characters, the Earl of Loam, a most amusing figure, strikingly impersonated with Mr. Sellars' versatile art, the languid and feeble-souled Ernest, whom Mr. Gartland portrayed with much humour, and the rather colourless clergyman of whose amiable docility Mr. Eric Hudson made the most.

The main theme of the play is a most suggestive and promising one, viz., what would happen, when under entirely natural conditions with all accidents of birth and environment set aside, a small society is dependent for its well being and very existence on the resourcefulness and directive power of the ablest man amongst them. This is admirably brought out when Crichton, the only constructive and inventive member of the party, shipwrecked on a desert island, fends for them all and falls naturally into his place of command, almost as a king. But we wonder whether the dilemma which calls forth Crichton's heroic devotion to duty when a ship is finally sighted would have arisen in any other realm than that of light fantasy. He has just become engaged to the proud Lady Mary, who accepting all the implications of their changed values is now in love with him. He signals to the ship, and falls back into his position of Perfect Butler. But they have been *two years* on a desert island, in natural and unconventional conditions, and the four young women and three young men have remained in single blessedness. They have given up hope of ever returning to England, and there is even a convenient clergyman to marry them when needed. We cannot but feel that the author omnisciently knew, if they did not, that they were to be restored to Society, and meant them to be restored untroubled by complications. Well might the domineering and suspicious Lady Brocklehurst (convincingly played by Miss Kathleen Lilly) wonder what exactly every one did on that desert island. It should be mentioned that Mr. Robert Crowe was very good as her son, Lord Brocklehurst, a "silly ass" type with a quaint sense of *noblesse oblige*.

The play was excellently produced in the costumes of the early 20th century by Mr. Gerald Storr, by now quite an experienced producer.

## LIVERPOOL NOTES.

*Visit of the Postmaster-General to Liverpool.*—Sir Kingsley Wood, the Postmaster-General, visited Liverpool on Feb. 8. Although he arrived the evening before he must have found the day all too short to see and hear all there was to be seen. An early start was made to visit the works of the Automatic Electric Company, where Sir Kingsley was met by the Chief Engineer, Mr. A. F. Bennett, Sir Alex Rogers, Chairman of the British Insulated Cables, Ltd., Mr. T. A. Eades, Director and Manager, and Mr. J. Nixon, Director and Works Manager. The Postmaster-Surveyor and Superintending Engineer also accompanied the Postmaster-General. A complete tour of the works was made and great interest was taken in the new A.T.M. Multi Party Unit.

The Postmaster-General expressed his pleasure at all he saw and said he was impressed with the space, cleanliness, and good order and was more particularly interested in the employees' cheerfulness and the way they did their work. It was, he said, a pleasure to know that such a large number were engaged on British telephone work.

Leaving the works, the next item on the programme was to take lunch with the Liverpool Chamber of Commerce. After justice had been done to the meal Sir Kingsley Wood addressed the members and gave a very interesting and extensive résumé of the activities of the whole Post Office service, with particular reference to the recent improvements in the several services. The President of the Chamber of Commerce, Mr. J. A. Eckes, presided, and the guests included the Lord Mayor (Mr. A. Gates) and Mr. H. Graham White, formerly Assistant Postmaster-General. The principal officers of the Liverpool Post Office, Postal, Telegraph, Telephone and Engineering Branches were also present.

A vote of thanks, proposed by Mr. J. C. White, a member of the Advisory Committee, in the absence, due to illness, of the Chairman, Mr. Cook, was carried with acclamation.

The Postmaster-General then visited the various departments of the postal branch, the new Telegraph and Phonogram Rooms and the Trunk Exchange; then to the Central and Bank Local Exchanges and the District Manager's Offices.

A number of the staff were presented to him and his cheery optimism was very acceptable, and it was felt that the staff had a Chief who took a live interest in their activities.

As before stated, the time was all too short and we were sorry to see so little of him, but Sir Kingsley is a busy man and he took his departure soon after 5 p.m. with the best wishes of all with whom he had come into contact.

May he find time to visit us again. It is good for us and (may we suggest?) not a waste of time for him.

The District Office dance organised by a committee from the Traffic, Sales and Accounts Branches, was held in the Mecca Café, India Buildings, on Saturday, Jan. 14. Mr. Gauntlett, the District Manager, and his wife were present, and in a short speech during the interval he aptly expressed the feelings of all present in saying that the evening was most enjoyable. Judging from the expression of opinion since heard, the evening was only too short—and so "Here's to the next one."

The Traffic and Clerical staff of the Traffic Branch held one of their informal functions in the Stork Hotel on Friday, Feb. 3, to say farewell to Mr. A. Kemp, Assistant Traffic Superintendent, on the occasion of his promotion to Traffic Superintendent, Class II, at Manchester. Mr. Gregory, Traffic Superintendent, in the chair, congratulated Mr. Kemp on being the youngest Traffic Superintendent, Class II, in the country, and paid tribute to the work carried out by him during his stay with us, and on behalf of the Traffic Office staff presented him with a Parker Duofold pen and stand as a token of their esteem. Mr. Gauntlett, the District Manager, was unfortunately unable to be present. Mr. Kemp takes with him the good wishes of the Liverpool Traffic staff.

## GLASGOW DISTRICT NOTES.

*Transfer.*—Mr. W. F. S. Brock, Assistant Traffic Superintendent, has left us in order to take up duty in the Canterbury District.

Tangible expression of the esteem with which he is held in this District was conveyed by means of a smoker's outfit. Mr. Brock carries our best wishes with him.

*Appointment.*—We are pleased to welcome Mr. J. R. Craig, Traffic Superintendent, Class II, who has been transferred to this District from the Scotland West District. We trust that his stay with us will be a very pleasant one.

*Retirements.*—Mr. George Bruce, Clerical Officer, Accounts Section, has retired on account of age. Possessed of a genial nature, he was an extremely popular colleague and we part from him with deep regret. Owing to the present state of his health, it was not possible to bid a farewell in the usual manner, but this function was carried out by a few colleagues who visited him at his home.

*March.*—I'm as mad as the Mad March Hare,  
From the "tang" I feel in the air  
Whenever I go out of doors  
I want to run over the moors,  
As I feel the wonderful whiff  
Of Spring on the breeze and I sniff,  
My nostrils dilate with delight  
My outlook on life becomes bright,  
Winter is gone and dull care;  
I'm as mad as the Mad March Hare.

M. L. T.

*On Instructions and Rules.*—When Caesar says "do this," it is performed.—(Julius Caesar.)

We cannot lay down rules about the highest work; either when it is done, where it will be done, or how it can be made to be done. It is too immaterial for our measurement; for the highest part even of the mere business of the world is in dealing with ideas.—(Helps.)

I do all things out of all rule—is a man to follow rules—or rules to follow him? (Sterne.)

One of the old committee has kindly told me since, that if he'd known how little damage I would do as a lawyer and how quiet I'd have been about it, blamed if he wouldn't have suspended the rules in my case and moved my admission.—(Bill Nye.)

For new occasions do demand  
New rules and new precautions.—(Castellanos.)

He is all right at heart; but the trouble with him is that every time the still small voice of his instinct tries to speak, he stands on its neck, and listens to what some book of rules has to say on the subject.—(Wason.)

"What is your rule of business?" a Throgmorton Street magnate was asked. "Very Simple," he answered, "I pay for something that I cannot get, with money that I haven't got, and then sell what I never had for more than it ever cost."—(Anon.)

Confining myself to no rules but those of my own discretion.—(Herbert.)

The King's labourers have, by the directions of his Majesty's Surveyors, been for these sixteen hundred years employed about this patch of ground, if perhaps it might have been mended; yea, here hath been swallowed up millions of wholesome instructions (the best materials to make good ground of the place), if so be it might have been mended; but it is the Slough of Despond still, and so will be when they have done what they can.—("Pilgrim's Progress.")

## OBITUARIES.

THE death is announced, at Bournemouth, of Mr. John McNeil, late Director of Telegraph Engineering, Indian Post and Telegraph Department.

The death has taken place at Maldon, Essex, of Mr. John Williams Tanner, who for 30 years resided in Persia, where he was assistant director of the now defunct Indo-European Telegraph Department. He returned to England in 1917.

With much regret one announces the death, after a long illness, of Mr. L. Morgan, which took place at the home of his son, near Bristol, on Feb. 7 last. Deceased was for several years at the C.T.O. and Threadneedle Street offices, to which he was transferred from Brighton. He later became Postmaster of Middlewich (Ches.), in 1909 was promoted to the Postmastership of Hatfield (Herts) and successively filled the postmasterships of Batley (Yorks) and Trowbridge (Wilts), the latter for seven years, when, in 1926, he retired from the service and took up residence in Bournemouth. Of quiet demeanour, he yet had many interests, especially in the town of his last postmastership, and not less in that of his retirement.

Also the demise of Mr. H. C. Hambro, on Feb. 14, at the age of 63. He was a director of Cables & Wireless, Ltd., I. and I. Communications, Ltd., Marconi's Wireless Telegraph Co. Ltd., and the Western Telegraph Co. and associated companies.

## C.T.O. NOTES.

*Centels Sports Association.*—It is with great regret that we have to report the death of Mr. C. R. Cotsford. "Charley" entered the C.T.O. in 1918 and from his earliest official days was one of our most promising footballers. As a half-back he did valuable service for the club and latterly he had been vice-captain of the first eleven, playing regularly right up to the end. His sudden demise from pneumonia on Jan. 24, following a few days' illness, came as a shock to us all, and left in our ranks a gap we shall find it difficult to fill. The Council of the Brixton League, in an appreciation, expressed their admiration of his "Gentlemanly Sportsmanship."

The club were represented at the interment by Messrs. Sampson, Freeman and Muchmore.

*Football Tour.*—Jan. 16. Centels 0, Portsmouth 2. Jan. 18. Centels 1, Southampton 2, abandoned five minutes after the interval owing to fog.

*Brixton League.*—Feb. 8. Centels 1, Clock House 1.

*Netball.*—Jan. 14. Centels 19, Public Trustee's Office 11. Jan. 21. Centels 12, Admiralty 9. Feb. 11. Centels 17, Board of Trade 2. Feb. 13. Toll A 17, Centels 9.

*Chess.* By defeating the Office of Works 5½-4½ the first eleven qualified for the final of the Minor Cup. The date of the final has yet to be arranged, our opponents being the Air Ministry.

## NORWICH DISTRICT NOTES.

WE regret to announce the superannuation of Miss A. E. Drake, Travelling Assistant Supervisor, on the grounds of ill-health, after a very severe attack of bronchitis last year.

Miss Drake has been closely connected with telephone work for over 43 years, entering the service of the South of England Telephone Company on Oct. 6, 1890. She was later employed by the National Telephone Company and finally entered the service of the Post Office at the transfer in 1912 as an Assistant Supervisor, Class II.

In 1917 Miss Drake was appointed Travelling Assistant Supervisor, Class II, and has held the position from that date.

Miss Drake gained the respect of all with whom she came in contact during her official career and, in her well-earned retirement, she will bear the good wishes of her many friends in the exchanges and in the District Manager's office.

The parting gift of the staff to Miss Drake is to be a wireless set.

J. T. B.

## FOR OUR ADVERTISERS.

ALL enquiries should be addressed to the Department of Overseas Trade, 35, Old Queen Street, London, S.W., except where otherwise stated, quoting reference number in all cases. Supplies, &c., required by:—

*Australia.*—Melbourne. Mar. 7. Department of Posts and Telegraphs. Telephone handsets (A.X. 11675). Mar. 21. Tumbler switches (A.X. 11676). Telephone terminal strips (A.X. 11677). Microphone component parts (A.X. 11678).

*Egypt.*—Cairo, Mar. 22. Lighting installation on the new bridge at Minia (A.X. 11665).

*New Zealand.*—Wellington. Mar. 7. Public Works Dept. 21,300 yds. v.i.t. cables for Waitaki. Dunedin. Mar. 10. Corporation. Centrifugal pump, motor and accessories.

*S. Africa.*—Cape Town. March 15. Metal-clad switch and fuse boards (A.X. 11697).

The Sarawak Government, reports *The Electrical Review*, has introduced changes in its Customs tariff with regard to certain goods. These include electrical and wireless apparatus which were previously admitted free of duty. Under the revised scale a preferential tariff is imposed on this class of apparatus of 10% *ad valorem*, with a general tariff of 30%.

J. J. T.



## LEEDS DISTRICT NOTES.

THE protection provided by the telephone service was amply demonstrated recently at Huddersfield, when the initiative and prompt action of Mr. Sunderland, the night telephonist at the Huddersfield Exchange, resulted in the smart capture by the police of one of two burglars who had broken into the office of Messrs. Jas. Kenworthy & Sons, Hillhouse Sidings. The presence of the burglars became known to the night telephonist owing to the fact that one of them accidentally dislodged the transmitter of the office telephone, thus calling the exchange. The night telephonist obtaining no response to his "Number please" when he answered the call, listened intently and thought he detected suspicious sounds. Realising that this was no ordinary "p.g.," he immediately informed the police, who proceeded to the address by motor cycle and, arriving at the premises within 10 minutes from the receipt of the call, captured one of the burglars in the act of making his exit. In an appreciative letter to the Head Postmaster the Chief Constable expressed the thanks of the police to Mr. Sunderland for the valuable help he had given in the matter.

On Jan. 28 nearly 300 poor children, gathered from all parts of Leeds, were entertained to tea by the staff of Leeds Exchange.

St. Clement's Schoolroom had been kindly lent by the vicar for the occasion, and the liberal distribution of paper hats and carnival novelties made the scene bright and attractive, whilst Miss Morfitt, the genial Chief Supervisor of Leeds Exchange, led her team of cheerful helpers to meet the "food demand service," for which there was a heavy calling rate among the children.

Helpful assistance was given by members of the Traffic staff, and Miss Howdill's party of child players afterwards delighted the youthful audience with their presentation of the phantasy "To-morrow." Community singing followed, and Mr. Edmondson, the popular ventriloquist, with "Jerry," finished off an evening which gladdened many little hearts.

Thanks are due to all those who, by contributions or other assistance, ensured the outstanding success of the venture.

The Institute of Public Administration claims many members of the staff as its adherents, and it was not surprising, therefore, to find these in full force at the Public Services Dinner, which was held in the Hotel Metropole, Leeds, on Feb. 11. Col. A. A. Jayne, D.S.O., O.B.E., M.C. (Postmaster-Surveyor), was in the Chair. The guest of honour, Lord Harewood, K.G., proposed the toast of the "Public Services," which was responded to on behalf of the Civil Service by Sir Henry Bunbury, K.C.B. An excellent concert of musical and humorous items also contributed to make the dinner—the first of its kind held at Leeds—a great success and a credit to Mr. J. F. Hunter (Asst. Postmaster) and Mr. J. Craig Walker, of the Survey Branch, on whom the organisation of the function was mainly centred.

The West Yorkshire Telephone District Social Circle held their second whist drive and dance of the season at the Metropole Hotel on Jan. 20. King Carnival reigned on this occasion, and the 240 participants, who included Mr. Murray (District Manager) and Mrs. Murray, danced till 1 a.m. and voted the function one of the happiest on record. Mrs. Murray presented an excellently-chosen selection of prizes to the successful whist competitors and the winners of numerous "lucky number" and "spot gifts." All branches of the Post Office service were once again well represented, notwithstanding the ravages of the influenza epidemic.

The very interesting monthly meetings which are being held by the Sales staff are notable for the free and frank, yet helpful, criticism of selling methods contributed by all grades in the Sales Department. At the January meeting a diversion from the usual programme was provided by a short talk on the new demand trunk service. Mr. Lawrence (Traffic Superintendent), who gave an interesting account of the main features of the new service, also answered questions on the many points relating to traffic matters with which the fully-equipped Sales Representative likes to be familiar.

## GUILDFORD DISTRICT NOTES.

*Promotion.*—We are pleased to record that Miss Mansell, Writing Assistant, has been promoted to the position of Clerical Officer, and attached to the Traffic Branch.

*Monthly Staff Sales Meeting.*—The usual monthly sales meeting, presided over by the District Manager, was held during the forenoon of Jan. 27 when an interesting agenda was gone through which included an instructive paper read by Mr. Howlett Sales Representative on the provision of new kiosks from a Sales Representative's point of view. A lively discussion ensued.

Mr. Melville, Sales Supervisor, gave a description of the various extension plans as laid down in the portfolio, explaining each one fully, and suggesting

the circumstances under which each one could be recommended for adoption. Questions were invited after each extension had been dealt with, and it was felt that great benefit had been derived from this discussion on the various extension Plans.

In the afternoon the telephone salesmanship meeting was held under the chairmanship of Mr. Howlett, Sales Representative. A very instructive and interesting afternoon was spent in discussing the various matters connected with Handbook No. 3.

*Presentation to Mr. Melville, Sales Supervisor.* Mr. Melville, Sales Supervisor, who left us on Feb. 1 to take up a similar appointment at Reading, was presented with a complete safety razor outfit of the latest design. The District Manager, Sales Manager and several members of the staff spoke of their regret at losing Mr. Melville, and hoped that he would be happy in his new District. During the interval at the salesmanship meeting, Mr. Melville entertained his friends to tea at a café nearby.

*Staff Meeting.*—A telephonists' staff meeting was held in Trinity Hall, Guildford, on Feb. 17, at which 85 members (including assistant supervisors, telephonists, night telephonists, traffic, sales and district office staffs) were present. The agenda was up to the usual standard, which proved both interesting and beneficial to everyone present. Mr. France, Traffic Superintendent, read short but interesting papers on the automatic versus manual systems of working, and a general description of the treatment accorded transatlantic and Continental calls by the operators who handle such calls in the London Trunk Exchange.

This is the sixth meeting of the kind held at various centres throughout the District, and it has been very satisfying and encouraging to see how well these meetings have been attended.

*District Office Dance.* A very enjoyable dance was held at Holy Trinity Hall on the evening of Feb. 17. Approximately 130 were present, including members of the various telephone staffs throughout the Guildford District. The District Manager, Chief Clerk, Sales Manager, Traffic Superintendent and the Head Postmasters of Guildford and Farnham were present. We were also very pleased to have with us Mr. Evans, Assistant Surveyor, and Mr. Phillips, of the Secretary's Office, who happened to be in Guildford on official business. The music was provided by Eddie Perrin's Band, and Mr. H. C. France, Traffic Superintendent, made an excellent M.C.

The usual prizes were given for special dances.

*Is this a World's Record.*—A subscriber in Camberley, who had serious illness in the house, and wanted a telephone urgently, made her request known at 4.50 p.m. on Jan. 23. The agreement was signed at 5.15 p.m. and the Engineering Branch had the telephone installed and working at 6.10 p.m. Total time 1 hour 20 minutes. The house had not previously been connected by telephone, and the whole of the work was carried out during this period, including a survey of the house, and the external wiring as well as the internal fixing of the instrument.

## NEWCASTLE-ON-TYNE NOTES.

IN view of the fact that the work in connexion with the inauguration of the Newcastle Demand Scheme was well under way, the visit of Mr. Darby, of the Headquarters Traffic Section, on Dec. 13, to lecture to us on the Demand System of Trunk working was most timely.

The Connaught Hall was engaged for the purpose and Mr. Darby had an audience of about 275, comprising telephone staff as a whole and many members of the Engineering Department. Mr. F. Ferguson, Postmaster-Surveyor, occupied the chair.

The lecture, which was accompanied by lantern slides was received with much interest. Mr. Griffith, of the London Telephone Service, following the lecturer, talked interestingly on the question of service. Mr. F. G. C. Baldwin, Superintending Engineer, and Mr. J. D. W. Stewart, District Manager, spoke, and questions were asked and replied to by Mr. Darby.

Yet another promotion to record at Newcastle-on-Tyne. This time the officer concerned is Mr. S. R. Wright, who has gone to Birmingham to take up an appointment as Traffic Superintendent, Class II. Mr. Wright was Exchange Superintendent at Newcastle for a number of years and on the eve of his departure to Birmingham he was met in the Rest Room by Members of the Exchange Supervising and Operating staffs and presented with a silver cigarette box and tobacco jar.

Mr. S. J. Swinnerton, Traffic Superintendent, made the presentation, and Miss E. M. Holt, Supervisor, and other members of the exchange staff expressed their appreciation of Mr. Wright's many good qualities.

Later Mr. Wright was met by members of the District Office staff, under the chairmanship of Mr. J. D. W. Stewart, District Manager, and presented with a china tea service. Mr. Wright bears with him the good wishes of all his colleagues at Newcastle.

## BELFAST DISTRICT NOTES.

### INTRODUCTION OF DEMAND WORKING.

ON Saturday, Feb. 11, the first stage of the Belfast Trunk Demand Scheme came into force. This consisted in the introduction of demand working outgoing from Belfast on the routes to the three Group Centres in the District, viz., Enniskillen, Londonderry and Omagh, and embraces the local fee areas of the terminal exchanges.

Prior to the change the Belfast Trunk Exchange switchboard consisted of 10 trunk sections D.1 and to allow of the introduction of demand working three additional positions of a similar type were added. The suite was then divided into 1 incoming, 4 demand and 8 delay positions, the extensive alterations being carried out without interruption to the service.

The incoming position is equipped with 40 calling equipments; 10 record circuits, all from the Belfast Local Exchange, in the same building, are ancillared on each of the four demand positions and the trunk multiple of 40 jacks is complete on every two positions. The trunk routes not yet included in the scheme are connected to the delay positions, but arrangements have been made to transfer the incoming end to the incoming position for concentration purposes during the slack periods of the day and night. Zenith clocks are used for timing purposes.

Visual idle circuit indicators, chargeable time indicators and ticket tubes have not been provided in view of the fact that in about three year's time the Belfast local fee area will be changed over to automatic working and a new and up-to-date trunk board will then be provided. The present equipment is expected to meet the requirements until that time. It is anticipated that during the present year some, if not all, of the trunk routes to England and Scotland will be changed to demand working.

We wonder what effect progress in telegraphy will have on Post Office humour; shall we be treated to brighter flashes than the following, which can be vouched for when the A.B.C. was in the front line of telegraph development. A Head Postmaster, visiting a scale payment sub-office, found the Sub-Postmaster engaged at the telegraph instrument, and one can only guess at his feeling on being greeted with the remark, "Don't interrupt me for a minute, I have two or three messages in my head"; and this was before the days of Pelmanism.

## BIRMINGHAM NOTES.

*Obituary.*—It is with very real regret that we have to announce the sudden death of Mr. W. P. Baines, Postmaster Surveyor, Birmingham.

His death was a great shock to all, as it followed an illness of a few days only and he had been quite recently on duty.

Although Mr. Baines had only been in Birmingham for a comparatively short time he was firmly established in the respect and affection of all his colleagues and his sudden decease has caused a feeling of personal loss among all.

Mr. Baines entered the Post Office service in 1896 and rose rapidly to the rank of 1st Class Clerk in the London Postal Service. His service was then interrupted by the war and he served with the army from 1917 to 1919. After his return to civil life he rose to the rank of Assistant Controller, London Postal Service, and was appointed Postmaster-Surveyor, Birmingham, in April, 1932.

With deep regret we also have to announce the deaths of Miss R. A. Browne, telephonist, Trunk Exchange, and Miss E. N. Whiston, telephonist, Midland Exchange.

Miss Brown died on Feb. 11, after a few days' illness, following an operation. She entered the service in 1920 and her death was a matter of deep regret to her many friends and colleagues.

Miss Whiston died at the early age of 27, after 6 weeks' illness. She entered the service in 1924, and the deep affection in which she was held by her many friends in the service was evidenced by the mass of floral tributes at her funeral.

*Promotion.*—We offer our heartiest congratulations to Miss E. Pope on her promotion from Assistant Supervisor, Class II, to Assistant Supervisor Class I. We feel that Miss Pope has well earned her promotion and she has our best wishes in her new duties.

*Birmingham Automatic Scheme.*—The Birmingham Director Automatic Scheme was further extended on Saturday, Jan. 21, by the opening of Acocks Green and Priory Automatic Exchanges.

About 1,500 subscribers' lines were concerned in the change-over and, as usual, the transfer was a complete success.

## WESTERN DISTRICT NOTES.

ON Jan. 30 a meeting was held in the District Office to give the District Office staff a description of the demand system of trunk working. The meeting was convened at the request of the staff, who desired to have information respecting this latest development in trunk service. With the exception of those on annual and sick leave and away on official business, practically all the staff were in attendance, which was very gratifying to the organisers.

The chair was taken by Mr. F. J. Frost, Traffic Superintendent, and Mr. G. D. Bateman, Traffic Superintendent (II), gave a paper in which he traced the history of the Trunk Service from early days up to the present time, and explained generally the whole scheme that was planned.

Mr. D. Simpson, of the Equipment Section, gave a paper on the Equipment aspect, the alterations that would be necessary in exchanges and the description of the demand positions, &c., and illustrated his remarks with some very large and clear diagrams and pieces of apparatus.

Mr. S. Payton, of the Equipment Section, then gave a paper on the circuit aspect, the provision of lines, circulation of calls, &c., and also illustrated with some very clear diagrams. After reading the papers numerous questions were asked and replies given which showed that a considerable amount of interest was taken by the staff generally.

Mr. T. A. Beck (District Manager), at the close of the meeting, proposed a vote of thanks to the Chairman and complimented the Officers, who gave the papers on the concise and clear way in which they had explained the intricacies of "Demand Working" without entering into technicalities which the general staff would not understand, and he invited the Accounts and Sales Branch to come forward with something from their branches to attract equal interest and not to let the Traffic Branch "get away with it."

The following is the covering note which was received from a subscriber in sending a cheque to pay his account:—

Dear Mr. Beck,  
You have a neck  
To ask for cheque.

Herewith please find,  
Some of my mind.  
And aren't I kind?  
A spot of dough  
For you I know  
Will give sweet looks  
To clear your books.  
What ho!

Within due course,  
Without some force,  
From you to me  
In lieu of the  
Enclosed bill  
A receipt will  
Put things K.O.  
So cheerio.

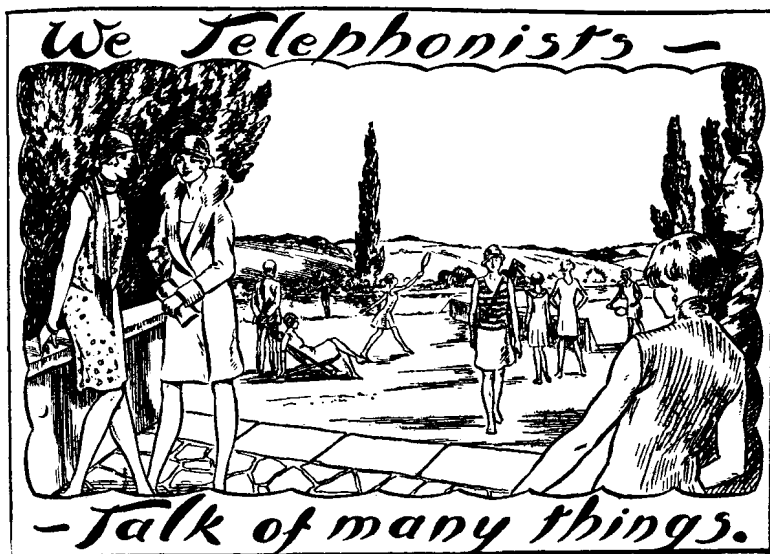
The second staff whist drive and dance of the season was held at Deller's Café on Friday, Jan. 27, when 220 members of the staff and their friends enjoyed a very bright and social evening. The influenza epidemic was at its peak at that time and unfortunately many members of the staff and friends were prevented from attending. Among those present were Mr. Kay (Staff Officer) and Mrs. Kay, Mr. Stanbury (Staff Officer, Surveyor's Office) and Mrs. Stanbury.

Mr. T. A. Beck (District Manager) was unable to attend through indisposition.

The 6-ft. model candlestick pattern telephone which had become the mascot of these festivities was unfortunately accidentally broken at the opening dance of the season, but it has a successor in the form of a 6-ft model of the new type of telephone (No. 162), which again was the handiwork of Mr. Cyril Frost (son of the Traffic Superintendent). Incidentally this model caused a good deal of excitement in the streets when being carried up to Deller's Café. After the last dance the whist prizes were presented by Miss M. C. Jinkin, Travelling Supervisor from Plymouth, who we were pleased to see with us once again.

Mr. A. Barnes, the latest addition to the Traffic Branch here, is, we understand, a B.Sc., and whilst it is quite likely that he may be able to retain the science, it is very doubtful whether the ladies of the Western District will allow him to retain the bachelor part of the title. Judging by previous instances there is a considerable risk in this respect.

F. J. F.



### Going to Bed Late.

THERE is something to be said for going to bed early—but not much: not much, that is, which merits any particularly serious attention. I am told, for example, that it saves light—usually by those people who get up in the dark and use the light at the other end of the day. And that by late hours I lose my beauty sleep—what they actually think when they say that I do not know. Perhaps the true meaning is mercifully hidden from me: but anyway what are cosmetics for? Or I am told after the manner of a proverb that one hour before midnight is worth two in the bush, or some such nonsense. Well, who wants to sleep in a bush even for one hour? It would be different if it were *under* a bush—but for zealous park-keepers!

Personally I think midnight is a very fitting time to go to bed, but Camou has ideas upon the subject. She says I am an owl, or a bat, or a night-hawk and sometimes all three. She endeavours to effect a reformation and proposes as an alternative that I should go to bed early and *get up early!* Did you ever hear such a preposterous suggestion! So I turn a bland smile and a deaf ear and make up the fire. Bindle, the Hound, also has ideas upon the subject. He nudges my arm at about 11 p.m. as an indication that he proposes to curl up in his basket and that perhaps I'll be good enough to draw him some fresh water, arrange his blanket and turn off the light. Sometimes, after about half an hour, he emerges from his bed, looks at me in astonishment and says, "Oh, it's you—I thought it was a burglar." Then I have to rub his head, pull his ears and tickle his chest before he'll return to his slumbers.

No, I think midnight is a very good time to turn to rest. The day is then really ended and one may retire with the thought of a day fully used—if not use-fully. To go to bed earlier seems to me to be ungracious. It is like leaving a book in the bookcase half-read. Each day is a gift worth receiving gratefully, worth having and worth using to the full. After all, a day—without bothering about astronomical exactitude—is only twenty-four hours and a wakeful day only about seventeen. Days are much too short and years too few for us to be able to accomplish all that we should, could or would. So why spend more in sleep than we need and dream all sorts of stupid nonsense for the delectation of the psycho-analysts?

On the other hand, I do not agree with prolonging to-day until it becomes yesterday. That appears to me to be a species of greediness. It is like grabbing a second chocolate before you've eaten the first. To add a few hours to your day by stealing from the next is mean and in business would lead to bankruptcy. Let us go to bed on the same day as we got up, and let us call a day a day and be thankful.

It is good to become familiar with midnight, if only to dispel the illusions which have been attached to it. Midnight is, of course, merely an arbitrary, if convenient division between to-day and to-morrow—but take care not to think of it as the division between yesterday and to-day. It belongs to neither day and is at once the ending and the beginning. You may, if you like, endow it on that account with a special significance in the same way as you do the last night of the year. But it is not a witching or a mystic hour—or at any rate not more so than any other of the twenty-four hours. The spooks of midnight are far less real and far less to be feared than the spectres of the day, and if you are not afraid to be left with nothing but your own company, it is a very wholesome time for quiet thought. You can see the stars, and being alone you can possess them. You can appreciate immensity and begin to realise infinity, and in so doing you gain a truer sense of proportion. You can think of the human beings slumbering beneath the thousand roofs around you, and you conceive a kindlier regard for them.

The drenching silence is broken by the chiming of a clock; the sound of the twelve strokes dies away to its last vibration: perhaps an owl screeches

mournfully. You no longer hear them with a sort of superstitious awe for you have looked into the face of midnight and have found him to be very quiet, gentle, and just a little weary. And so to bed—the day gone is left as a pleasant memory, to-morrow can be met with a smile.

PERCY FLAGG.

### Gratitude.

I heard the twitter of a hungry bird,  
Seeking his food upon a winter's day,  
Forlorn and weary in that biting wind,  
He seemed to speak to me, to bid me stay;  
He suffered me to feed him ere he took to flight,—  
My soul was saddened by his hapless plight.

I heard a songster singing in the morn,  
The sun was rising from his nightly rest,  
The tree which sheltered him obscured my view,  
I could not see that songster or his nest;  
But I seemed to hear him singing that Spring day long,—  
My heart was gladdened by his happy song.

G. M. T.

### London Wall.

Despite the prevailing influenza epidemic, the staff of the London Wall Exchange and their friends held a very enjoyable dinner and dance on Jan. 12 at the First Avenue Hotel, High Holborn. An informal reception in a private lounge before dinner created a spirit of friendliness which remained throughout the evening. Mr. Buckeridge, the East Central District Superintendent, presided at the dinner and was ably supported by Miss Cox. Two toasts, "The King," and "The Committee," were heartily received.

Mr. Pratt's orchestra provided delightful music during the dinner and kept the dancers busy tripping the "light fantastic toe" until nearly midnight.

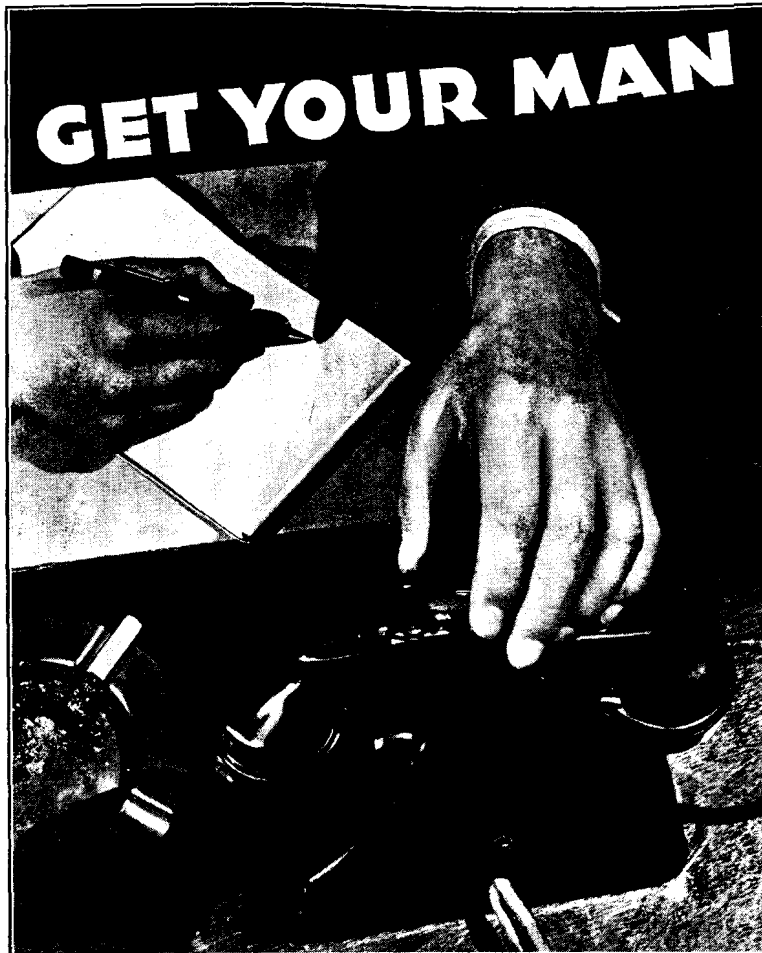
The Committee have specially thanked the Hotel management for the excellent arrangements made for the comfort and convenience of all.

A. W. W.

### To the Editors.

Your pathetic New Year's Greeting  
Has touched me so, that I,  
Though not having much rhyme in me,  
Have decided to have a try,  
At writing a little sonnet,  
And have risked my colleagues' taunts,  
That I have a bee in my bonnet.  
It's about a ghost that haunts,  
Our exchange, whose name is Rodney,  
We called him Clammy Claude.  
He was heard at night in the switchroom,  
He wandered behind the board,  
He flung wide open the swing doors,  
He trailed across the roof.  
In fact he travelled all over the place,  
Click-clack went his foot like a hoof.  
He rattled the cups in the kitchen,  
He tinkled at the bell,  
He tickled the night ops. toeses,  
Till they said, "Oh! go to—well,"  
I won't repeat what they muttered  
But pass on to my tale.  
Clammy at times was given  
To uttering such a wail,  
That our blood all curdled within us,  
And our very cheeks turned pale.  
We sat and shivered like jellies,  
Yes, shivered in tooth and nail.  
Clammy only seemed to haunt us  
When the wind was blowing strong,  
When the weathercock just opposite  
Was creaking out a song.  
So we put our heads together,  
Each one of us took stock,  
Of the facts that we'd gathered together,  
And it gave us quite a shock,  
When we found our ghost was nothing  
But the gale blowing round the block.

I. V. E. J., Rodney.



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(T.T.J.)

### The Telephone System in the London Stock Exchange.

All telephone traffic at the London Stock Exchange is dealt with by means of a system of attended call offices and it says much for the efficiency of the system, hampered as it is by restrictions of space, that almost 4,000 stockbrokers and their authorised clerks are enabled to carry on their business with so little trouble. Not more than half a dozen written complaints have been received concerning the working, either of local or trunk calls, during the past twelve months, despite some considerable shortages of staff owing to sickness.

Although the House is opened at 9 a.m. business does not commence officially till 10.30 a.m. and very few calls are passed until that time. Business ceases at 4 p.m., when the brokers swarm out into Throgmorton Street and the surrounding courts and carry on unofficial deals there. Any telephone traffic necessitated by this activity is carried on the boxes in Shorter's Court. Some of these lines are rented by brokers, but there is also access to one of the Exchange Telegraph Co's rooms, in which there are call offices on

their private system, from this court. Inside the House two Supervisors and 27 attendants control 133 call office cabinets situated in ten "rooms" or enclosures at convenient places around the main room of the building. This room is of irregular shape but is approximately 220 ft. long by 130 ft. broad. On this space there are numerous pillars, stands for the "waiters" (of whom more will be said later), small writing desks, &c., so that it will be seen that as all the authorised clerks and their principals have to conduct their business in this room there is considerable congestion at the busy periods. Efforts are continually being made to persuade the Stock Exchange authorities to provide additional accommodation for telephone boxes, but it will be realised that little can be done in this direction. Continual dripping will wear away the hardest stone, however, and since the great extension made during the war period, when the House was closed, a further 54 cabinets have been installed. Nevertheless, the crowding in the telephone rooms is such as to prevent easy access to the boxes and the attendants' counters. The reason for this is easily seen when the record number of outgoing calls made in 1920, 12,600 per week, is compared with the 27,502 outgoing calls passed during one week this year. A large number of these calls are inland trunk or foreign and the revenue for the week in question this year was therefore over £1,500. No one who has not witnessed the work in the Stock Exchange can quite realise the strain put upon the attendants, but some idea of the rushes which are experienced can be gained if it be considered that every call holds for the broker concerned the possibility of making or losing money. The traffic occurs in great rushes just at the time that the market prices change and the attendant is therefore bombarded by a crowd of brokers with applications for calls, questions as to who requires the attention of a broker who has been called from the House, where certain incoming calls are connected, how long particular outgoing calls are going to be, &c. As these lines were being written a change in the bank rate was announced, resulting in the usual dash for boxes on which to pass local calls to the brokers' offices and clients. There are but six telephonists at London Wall Exchange to deal with this traffic and as the change always occurs when the distant ends of the outgoing order wires are lightly staffed owing to lunch reliefs being in progress, it is inevitable that there shall be some delay in answer at these times. The average busy hour outgoing calling rate for these lines during the four weeks in March last year was 9.5, so it will be gathered that when there is a rush neither the attendant nor the operator has time to go to sleep.

The general conditions of work having been outlined, perhaps it would be of interest to detail the more important points in the operating and accounting methods.

*Outgoing Service.*—(1) Local Calls.—Officially the caller should in every case go to the counter and ask the attendant for the number required, allow him to obtain the connexion and then take up the call on the cabinet allotted him. Practically it is not possible for the attendant to obtain all the calls himself without unnecessarily delaying the completion of the connexions and the practice adopted is therefore as follows. The caller comes into the room, calls out the number he requires, enters any disengaged cabinet and passes the call to the operator himself. The attendant must recognise to what firm the caller belongs and note his call office sheet with the name of the firm and particulars of the called number. All the keys on the attendant's switchboard are left in the through position to enable this procedure to be carried out. One difficulty which arises as a result of this is that the caller will sometimes pass a second call on the circuit either without replacing his receiver by waiting for the operator to challenge or by replacing his receiver for about two seconds only. Instructions have, of course, been given to the operators to draw attention to brokers passing "follow on" calls, but it is difficult for her to differentiate between the caller's voice and that of the attendant. In rush periods, too, she is never sure that she has not missed a clearing signal for the boxes are not vacated for more than a second or so before they are taken up again by another caller. Similarly at the busy times the attendant is never certain that he has not overlooked a clearing signal on his supervisory indicator. There is evidence, however, that the loss of revenue from this cause is small and arrangements are made to bring to light any increase so that the caller responsible may be traced. The calls are not strictly timed but where there is a queue waiting for a disengaged cabinet the calls are limited so far as possible to six minutes duration.

(2) Toll Calls.—These are dealt with similarly to local calls except in that the attendant passes particulars of the call to the London Wall operator, who completes the call over the Toll "through" junctions and is responsible for its control and timing.

(3) Trunk Calls.—Difficulty was experienced at one time owing to a great number of callers rushing to the counter as soon as the House opened in order to book calls. A difference in booking time of, say, one minute, would, of course, be vital to a broker, as it would cause a change in the order in which the calls would be completed and might easily mean his gaining business or losing it to another broker who had obtained an earlier call, especially if, as is frequently the case, the call is to the same client. Under this scheme it was, of course, possible for an attendant, if he wished, to give preference to any particular broker and in order to prevent this and so far as possible to give each regular caller his proper share of early completions it was agreed to form a rota. Accordingly those brokers who passed daily calls to certain foreign places were invited to make a list of their calls and appoint one of their number to manage it. This selected broker takes charge of the list for an agreed period and is responsible for booking the calls as early as possible. He sets down the callers' names in a pre-determined order, each day moving the callers one up the list, the man at the top one day going to the bottom the next. Each day the calls are passed over to the Trunk Record operator by the attendant and they all recorded with the same booking time but with a literal suffix, the first call being shown as (say) 9.0 a.m. A, the next as 9.0 a.m. B, and so on. The calls are subsequently completed in alphabetical order, except, of course, in so far as calls are delayed by number engaged or similar difficulty. A separate rota is made out for each route on which there is sufficient regular traffic to justify it. Incidental calls may, of course, be booked with the attendant in the usual manner. Two order wires to Trunk Records are provided and multiplied on each switchboard to enable this to be done expeditiously. Each room which deals with trunk calls has lines direct to the trunk exchange on which the calls may be completed. These lines are accommodated in the junction multiple at trunks and are coded SGG, SGF., &c., the first two letters indicating that the lines are to the Stock Exchange and the last being the designation of the room in which they terminate. The method of obtaining the attention of the broker when the call matures is identical with that for an incoming call and will be dealt with under that head.

To expedite the completion of trunk calls each room dealing with a rota holds one or more lines to the appropriate trunk position during the busy hours and the calls are completed on a basis very similar to the standard "Special Attention" scheme. These circuits are known for convenience as "Custodian Lines."

(4) Foreign Calls.—All foreign calls are dealt with in one room. There is a Paris rota on which it is arranged that each caller shall have two calls, the rota being repeated after it has been completed the first time. Lines are segregated specially for this traffic in the trunk exchange. There are also Brussels and Amsterdam rotas and a fair amount of traffic is received for various other foreign stations.

(To be continued.)

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), London, E.C.1.

## LONDON TELEPHONE SERVICE NOTES.

### Sales Branch Notes.

DURING the month of January there was a net increase of 2,683 stations as compared with an increase of 3,136 stations in the corresponding month of last year.

A pictorial postcard depicting the Winter comfort of the telephone was sent out with the October accounts and the following results accrued:—

Postcards returned.	Exchange Lines obtained.	Extensions obtained.	Hand Microphones obtained.	Other Apparatus.
2,022	22	333	1,556	19

The seasonal leaflet entitled "Give yourself a Christmas present," which was circulated just before Christmas, resulted in orders being obtained for 47 Exchange lines, 2 Extensions, and 11 Hand Microphones.

The telephone exhibits at the Schoolboys' Exhibition held at Messrs. Selfridges Store, Oxford Street in January attracted large crowds.



SELFRIDGE'S SCHOOLBOYS' EXHIBITION.

The Post Office exhibit (of which a photograph is shown) included a large variety of interesting things including a model manhole, an electrical instrument which amplified the sound of the heart beating, a talk about London service, kiosks, switchboards, teleprinters and so on. The facility with which young people availed themselves of the various communication services, is a sign of the progress being made in developing the habit of making more use of the telephone.

### Staff Salesmanship Notes and Incidents.

The progress of the scheme in London is given below:—

	Total No. ordered since beginning.	Number ordered month ended February, 1933.
Exchange lines ... ..	1,685	106
Extensions ... ..	1,697	134
Private lines ... ..	20	1
Plugs and sockets ... ..	283	36
Hand-Microphones ... ..	8,735	849
Extension bells ... ..	711	64
Other apparatus ... ..	872	66
<b>Total ... ..</b>	<b>14,003</b>	<b>1,256</b>

A salesman recently overheard a lady, speaking to a friend, say that she never felt lonely at home now since her husband had had the telephone installed. The Salesman adds that the lady has given him an idea which he hopes to make use of sometime.

This incident reminds us of two others which have lately come to our notice.

"Take three telephone calls a day, madam, the dose to be gradually increased." This was ordered by a specialist for a woman suffering from nerves on the theory that the sense of comfort the telephone gives to nervous people, tends to alleviate unnatural fears.

In another case the telephone was instrumental in curing a woman who had lost interest in life. The 'phone was installed in her home and the doctor began treatment by telephoning to her several times a day. Soon interest in life revived and the first step to a permanent cure was made.

"I stood looking at a building undergoing repairs, wondering what was happening inside," writes a Salesman, "when I was approached by a man, who, noticing my interest, explained that he was shortly opening a Billiards saloon. He invited me inside to look over the place. Conversation was easily turned into telephone channels, and although no thought had been given to the provision of telephone facilities, the proprietor was soon convinced of the value of a telephone, and signed an agreement for a line that day."

#### London Telephonists' Society.

The meeting of the London Telephonists' Society, which was held on Feb. 10, proved one of the greatest successes which they have achieved.

Despite the malign influence of a February thunderstorm, about 350 members gathered in the Cinema Theatre of the Imperial Institute, S. Kensington, to hear Mr. W. Sharp of the Accountant-General's Department, Mr. H. Townshend of the Secretary's Office, and Mr. G. H. Wallace, a Telephone Subscriber, give expression to their views of the London Telephone Service as seen from their respective positions.

It was apparent from the outset that a feast of good things was in prospect, for Mr. Sharp quickly raised his audience to a state of enthusiasm, whilst Mr. Townshend and Mr. Wallace, in following him, kept the interest and enthusiasm at the same high level.

It is to be feared that many of the members of the L.T.S. who were present must have departed to their homes with opinions of their importance enhanced almost to the degree of conceit, for whilst we were expecting that the "Unfamiliar Views" presented would, because unfamiliar, necessarily be unflattering, all the speakers seemed determined to extol the good qualities possessed by our members. A sudden thought strikes me—if favourable views are "unfamiliar," were our speakers as complimentary to us, by inference, as we have been fondly imagining? But surely this is a needless fear; I am sure that the geniality displayed by each was too real to be insincere!

To be serious—we are much indebted to each of those who thus addressed us for giving so much instruction in such entertaining form, and we trust that the interest so evident in their audience and the discussion which followed, will have rewarded them for the trouble they must have expended.

The debate was followed by a display of the Post Office Sound Films depicting various activities of the Department, including the Overseas Telephone Exchange, the Rugby Wireless Station, the opening of Mayfair Automatic Exchange, the Telex Services and the Post Office Tube.

It is perhaps superfluous to remark that these films proved of absorbing interest, and our best thanks are due to Mr. G. H. Taylor and all those members of his staff who rendered this treat possible. Altogether an outstanding evening; hats off to Mr. Crum, our President, who devised it for us and carried it through!

Members are specially reminded of the ever-popular Competition Night on Mar. 3; the meeting will be held as usual for this Session in the Cornwall House Dining Room.

#### Stamford Dramatic Society.

The Stamford Dramatic Society, which in the past has been so successful in keeping the London Telephone Service to the fore in the world of amateur theatricals, has chosen "A Murder has been Arranged," by Emyln Williams, for its next production.

In response to the request of many of our supporters who find the Cripplegate Institute somewhat inaccessible, it has been decided to present the production at the Fortune Theatre, Russell Street, W.C.2. The date is Wednesday, April 19, and, as it is anticipated that the change to a West End theatre, coupled with the popularity of the play chosen, will impose a severe strain on the capacity of the house, early application for tickets is advised.

The tickets are priced at 3s. 6d., 2s. 6d., and 1s. 6d., and may be obtained from the Business Manager (Miss D. Coleman, Clerkenwell Telephone School, Ironmonger Row, E.C.1), the Secretary (Mr. L. Davies, Controller's Office, T/ES, Cornwall House, Waterloo Road, S.E.1), or any member of the cast.

#### Battersea Exchange.

The annual tea and entertainment to poor children took place on Saturday, Jan. 21, when, by the kindness of Mr. Gibson, the Vicar, St. Philip's Parish Hall, was once again placed at the disposal of the Staff.

Nearly 150 children were present, all of whom did ample justice to the plentiful supply of food which the donors of the "treat" provided. Traffic Officers, Engineers, Night Staff, and Cleaning Staff assisted in waiting at table, and the Catering Committee worked with their unfailing wholeheartedness to give their guests a good time.

After tea, "Community Singing" was indulged in (Mr. Roland acting, as on previous occasions, as accompanist and conductor) and two or three of the youngsters assisted in entertaining their companions with recitations. Mr. Willis (Sales Representative) introduced Mr. Sam Hardy, the veteran ventriloquist, who, despite his three score years and twelve, proved that he had lost little, if any, of his famous ability as an exponent of the voice throwing art and vocal imitations. Mr. Hardy very generously gave his services without remuneration and his action was much appreciated. The members of the Battersea Staff then presented Miss Hatherly's version of the pantomime "Aladdin," and the adventures of the young hero in search of the magic lamp, and the ultimate "happy ending" which succeeded the wicked magician's repentance were heartily applauded. The artistes taking part in the pantomime were:—

Aladdin	...	Miss Trixie Lancaster.
Princess So-Shi	...	Frances Thompson.
Widow Twankey	...	Hilda Muggidge.
Washee	...	Florence Webb.
Magician	...	Ivy Hatherly.
Slave of the Ring	...	Mary Gardner.
Slave of the Lamp	...	Eileen Homer.
Min-Toi	...	Elsie Wessell.
Flames	...	Misses Larnar, Laxton, and Williams.
Boys	...	Gardner, Marchant and Milton.
Girls	...	Larnar and Laxton.

The Widow Twankey's masterly manipulation of the Yo-Yo evoked envious admiration, while the graceful dancing of the "Flames" and the delightful "Pidgin-English" of Washee were outstanding items in an altogether excellent programme.

The scenery and lighting effects were the work of our old friends the local Engineers, Messrs. Martin and White, with their assistants, being eminently successful in their respective departments.

The hard-working organisers have the satisfaction of knowing that their "good deed" brought happiness into many little hearts that day!

After the small visitors had departed, each with parcels of tuck, a gift of money and a balloon, the floor was cleared for a Social-Dance which continued, to the music of a "Radio-gram," until 11 p.m.

Several friends who have sought fresh fields and pastures new came to see their old colleagues, among them being Mr. A. D. Rollings (formerly Service Superintendent) and one or two erstwhile Battersea Telephonists whose left third fingers were adorned with plain gold or platinum bands! Their presence, and the glad welcome they received, showed that there exists a lasting feeling of affection for the atmosphere of good fellowship which surrounds the official and social activities of this Exchange.

L. D. S.

#### Streatham Exchange: Children's Tea and Entertainment.

An enjoyable time was spent on Saturday, Jan. 21, at Holy Trinity Institute, North Lambeth, when the Streatham Exchange Staff gave a festive time to 150 children of that poor locality. The good things were thoroughly appreciated by the youngsters, particularly as all remains of the feast were taken home to share with members of the family.

The Staff had arranged a most attractive entertainment consisting of songs and dances, and all items received great applause. Thanks are also due to a group of our local Brownies who performed a very pretty Toy Town act. In fact, so popular have the troupe proved that their services are being sought for further charitable performances. The programme concluded with Father Christmas stripping an immense tree of its load of dolls and toys, thus speeding the little ones happily homeward.

#### Personalia.

##### Resignations on Account of Marriage.

##### Telephonists.

Miss D. M. Thurley, of Putney.	Miss G. Lowery, of Gerrard.
" I. M. A. Fraser, of Flaxman.	" N. N. Hatton, of Terminus.
" D. M. Diment, of Acorn.	" C. V. I. Kentish, of Central.
" A. J. Batty, of Tandem.	" D. Chelin, of Museum.
" M. E. Mier, of Tandem.	" E. M. Wright, of Chiswick.
" M. Q. Herridge, of Tandem.	" H. Tidy, of Victoria.
" E. L. Davies, of Tandem.	" M. D. Parfit, of Cuninghnam.

# THE Telegraph and Telephone Journal.

VOL. XIX.

APRIL, 1933.

No. 217.

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*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

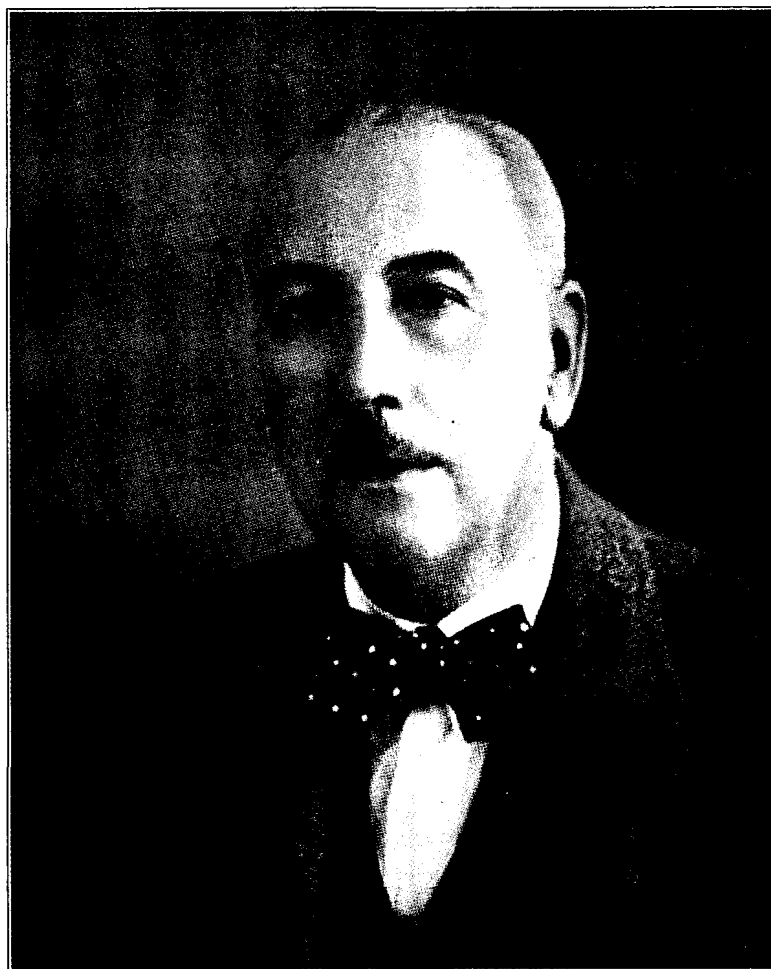
## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

### CVII.

#### MR. T. E. HERBERT.

MR. T. E. HERBERT may be said to have come of good telegraphic stock, for he was the son of the first Chief Superintendent of Telegraphs in Birmingham on the transfer of the telegraphs from the Companies to the State. He was born in June, 1875, and entered the Service at Manchester as a telegraphist on Dec. 16, 1891. He became a Junior Clerk in the Engineering Department at Manchester about four years later, was made Sub-engineer in August 1896 and on the transfer of the trunk telephone lines to the Post Office was made responsible for the Manchester Trunk Exchange. After four years in London (1902-1906) his rise was rapid. He was promoted to be Sectional Engineer, Sheffield, in 1906, Assistant Superintending Engineer at Glasgow, 1919, and at Manchester, 1920, becoming Superintending Engineer of that district in 1930.

Mr. Herbert did much lecturing on telephony and



telegraphy in his younger days and is well known as the author of a number of works on the subject, of which perhaps the best known is "Telegraphy," a standard book on the subject, now in its fifth edition. More recently he has published a work on "Telephony" written in conjunction with Mr. Procter.

As Superintending Engineer, he is responsible for carrying on the conversion of the Manchester system to director automatic working. Manchester is now in the throes of introducing Trunk On-Demand working, and beside his activities in this connexion Mr. Herbert is busied in the reorganisation of the Telegraph Instrument Rooms at Manchester and Liverpool. His is a genial yet forceful personality, and he is one of the most able and outstanding of Superintending Engineers.

Mr. Herbert's hobbies are motoring and billiards. He is eminent as a Freemason, was a former President of the Manchester Association for Masonic Research and is present Editor of their Transactions.

## The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

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### NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

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### PUBLICITY.

ADVERTISEMENT is an art—or science—which it is very difficult for a layman to understand. It is a psychological art, making its appeal via the dark and secret places of the human soul to dissimilar and disparate intelligences; indeed, some forms of advertisement must appeal to intelligences to which the term itself is somewhat of a misnomer. All but the most cultivated and sympathetic minds find it difficult to realise how differently from themselves other people react to ideas and circumstances. The generality, of course, recognise that they differ in their reactions from the criminal and the degenerate, but they conceive the fabled "normal" man as acting or thinking in given conditions much as they would themselves. Yet the plain man does not often understand the artist, the combative man the pacific, the philistine the man of culture, the sensuous man the frigid, the bookish man the devotee of sport, and so forth: one often believes the other is a *poseur*, a wastrel, a hypocrite, or a barbarian, as the case may be. Hence the difficulty which varying types of mind feel in understanding the appeal of advertising. People know that it is a costly business: they hear on the best authority that it must be persisted in and extended, and they cannot conceive of its repaying the outlay it involves. They may gaze on the widespread and constantly-changed ingenious and humorous posters of Feeder's Oats or Softe's Soap with friendly interest and amusement for years, and then declare

quite truly: "Well, this is all very fine, but it has never induced me to have a box of the stuff in my place! Where does it all come in?" But it *does* come in, nevertheless: it has appealed to countless thousands with a vastly different outlook: the oats and soap which would have languished in inglorious obscurity are sold in ever-increasing quantities, and the advertising expenditure is justified.

There is also the type of person who regards the expenditure of money on advertising by public companies as laudable and indeed imperative, but who regards similar expenditure by a Government Department as extravagant. To this type, telephone publicity is a waste of money. The receipt of an artistic pamphlet will never induce such a man to acquire an extension line or a new hand microphone. He is unable to appreciate that there are others who will be so persuaded. Public telephone service, a utility for which there is a certain regular demand, can, of course, in no wise be compared with a possibly unwanted new soap or cereal: but the necessity for advertising it by all the most persuasive and attractive means at command nevertheless exists. America owes its intensive development to this cause, and in Europe publicity is playing a large part in Swiss telephone practice. Good service is one of the best sellers of the telephone, and the public call box is a mighty cultivator of the telephone habit. But there are still vast numbers of people who do not realise all that a telephone in the house can mean to them and who cannot be reached except by some form of publicity. The habit of doing without a thing—even the most serviceable and time-saving thing—which one has always done without is hard to overcome. The incalculable advantages of the telephone need to be driven home, strange as it may seem, by publicity and good salesmanship.

The Post Office activities in telephone publicity have been more than justified. Not only have they contributed materially to the expansion of the system during a period of unusual financial stringency, when the systems of other large telephone-using countries have suffered a heavy decline, but they have cultivated by various happy devices a fuller appreciation of the benefits of the service amongst those who are already subscribers. Extensive press advertisements and attractive posters have reminded the public that the service is conducted on progressive business lines; they have persuaded the wavering that it does not pay to remain outside the ever-increasing circle of telephone-users and they have procured orders for extensions and accessories from those already within that circle. Educative exhibitions and films have furthered the same good work: leaflets and handbooks have played their useful part. Ceremonial openings of new telephone exchanges in the presence of a large number of guests have afforded ocular demonstration of the latest developments in the telephone field and have impressed the public mind with a sense that an event worthy of public record is taking place. As the result of these activities there is not the least doubt that a more appreciative attitude towards the telephone now exists, an understanding that a great administration is unswerving in its endeavours to serve its public. The results of Post Office publicity may fairly be said to demonstrate the truth of the new adage: It pays to advertise!



## HIC ET UBIQUE.

FROM a German official publication we learn that the number of telephones in Germany declined during 1932 from 3,157,744 to 2,995,917. The 1932 figures for the three principal telephone-using countries in the world are therefore now available. They are:—

	Telephones.	Loss or Gain.	Telephones per 100 inhab.
U.S.A. ... ..	17,500,000	— 2,100,000	14.3
Germany ... ..	2,995,917	— 161,827	4.7
Great Britain ... ..	2,118,925	+ 66,293	4.6

Operations in Poland, according to the *Electrical Review*, have recently been commenced on the conversion of the manually operated telephone system to automatic working. The first work to be put in hand is the establishment of automatic exchanges in Katowice and Krolewska Huta. The conversion of the exchange in Warsaw is approaching completion, while, later, automatic exchanges are to be established in Gdynia, Czestochowa, Cieszyn, Brzesc, Torun, Grudziadz, Tczew, and Kielce.

The Postmaster-General, said a Birmingham journal recently, saw himself on the screen yesterday. In accordance with the traditions of the service, the film was run in slow motion.

We can only add that it could never be run too slowly for the intelligences of some of our light-hearted critics to follow.

There are still actually living, we are glad to be able to report, people who write letters to the papers signing themselves "Pro Bono Publico." A recent correspondent of a Glasgow paper with this self-effacing *nom de plume*, asks why we can't cut down hordes of officials and give efficient, cheap, popular, and universal service. He says that in New York telephones are "built-in" and when you become a tenant in an apartment block you 'phone as often as you like, and the janitor charges up 'phone calls and house rent combined. This sounds rather jolly. It reminds us somehow of those Christmas clubs which announce: "You pay what you like, and have what you like." But this does not mean that you can pay 1s. a week and have a turkey, a ham and a dozen of whiskey at Christmas. You can 'phone as often as you like in New York, but the telephone charges there would be found by "Pro Bono Publico" after he had carefully disentangled them from the house rent, to be dearer than in London.

Another instance of telephones to the rescue: Arrangements had been made at a large emporium for a mannequin parade and display, and a well-known Continental actress had been engaged to deliver a talk during the proceedings. On the morning of the day this lady was taken suddenly ill and was refused permission by the medical attendant to leave her bed. An appeal was made to the Post Office to assist them in their difficulty. Accordingly, one of the hotel circuits was extended through to the Show Room and was terminated on a couple of radio gramophones, with the result that the talk was duly delivered. A letter of appreciation to the Sectional Engineer followed:—

"I would not like the job you did for us the other day to pass without due acknowledgement.

"Will you be good enough to congratulate for me all those who were concerned in the effort of relaying the telephone from Middle D'Alroy's bedroom at the Adelphi to this Store.

"Thanking you."

## RETIREMENT OF MR. FRANK HAWKER.

A LARGE number of friends and colleagues assembled in the Deputation Room at G.P.O. North on Feb. 10 to say farewell to Mr. F. C. Hawker on his retirement. Mr. Simon, Director of Telegraphs and Telephones, made him a presentation on their behalf of various handsome articles of furniture, referring in a happy speech to Frank Hawker's popularity and the humanising influence he brought into the aridities of official life.

Mr. Hawker entered the service of the National Telephone Company in April, 1892, and was attached as personal clerk to Mr. W. E. L. Gaine, the newly appointed General Manager and passed many strenuous days (and nights) with that able, hard-working chief, who was busily engaged in obtaining a grip of his new post, and carrying out numerous schemes of administrative reform. As private secretary and "right-hand man" to Mr. Gaine, Mr. Hawker was closely concerned in all the eventful developments of the Company's later life, the parliamentary enquiries into the service, the sale of the Trunk lines, the disputes with Corporations and the London County Council, and (during Mr. Goddard's General Superintendentship) with the long negotiations with the Post Office for the transfer of the system. That he was able to satisfy and enjoy the confidence of his exacting chief is sufficient testimony to Hawker's great abilities.

On his transfer to the service of the State as a First Class Clerk (Higher Division), Mr. Hawker served for a short time in the Telephones, Mails, and Establishments Branches, and was then transferred to the Inland Telegraph Branch where he remained until his retirement.

One quality of Hawker's which is uppermost in the mind of the present writer after 41 years' association with him, is his kindness and constant readiness to assist his colleagues. He was unflinching in his efforts to help anyone forward, to cover up anyone's blunders, or to obtain a fresh start for anyone in actual disgrace if he could not avert the punishment. Many a man in the past has to thank that "humanising influence" of his to which Mr. Simon felicitously referred. In his earlier days, Mr. Hawker was a good elocutionist and amateur actor. He was always something of a raconteur. All his numerous friends must wish for him a long and happy period of leisure.

W. H. G.

## OBITUARIES.

THE death is announced, on Feb. 17 last, in his 70th year, of Sir Robert Donald. He had many newspaper interests from time to time, and among his public services must not be omitted his chairmanship, in 1924, of the Committee on Imperial Wireless Telegraphy.

In connexion with the demise of Mr. George Stephen Kemp, on Jan. 2 last, at the age of 75 years, it is now revealed that one of the witnesses of Mr. Kemp's will, 1904, was "G. Marconi, 90, Piccadilly—Gentleman." Mr. Kemp was closely associated with the Marchese, as the latter's first assistant from that year onwards until the day of the death of Mr. Kemp, at Southampton.

A remarkable figure in the South African Telegraph Service has recently died in her 67th year at Port Elizabeth, in the person of Mrs. Sarah Glueck. She was Postmistress of the small town of Lady Grey, in Aliwal, North district, when the Boers put the telegraph service out of action by smashing the entire apparatus. No sooner were the military out of sight, however, than "Sarah" managed to obtain a new working set and carried on. Some time afterwards the enemy returned to Lady Grey, but as soon as it was known, this resourceful lady hid the new instruments and fitted the old and damaged apparatus on to the line. On this occasion, however, all Government officials were ordered to leave, nevertheless it is recorded that Mrs. Glueck carried away not only her own goods and chattels, but "every bit of property of value in the post office, including her precious telegraph instruments."

The death is announced of Mr. W. J. Potter, at the age of 77, after serving the W. T. Henley's Telegraph Works Co., Ltd., from May, 1887, to March of 1932. He was a trustee of the Staff Pension Fund and held a seat on the company's board from 1913 until the end. The funeral took place at Golder's Green Crematorium on the 17th ult.

J. J. T.

## SIDELIGHTS ON THE MADRID CONFERENCE.\*

By F. W. PHILLIPS, *Assistant Secretary in charge of Overseas Telegraph Branch.*

WHEN I had the honour, three years ago, to occupy the Chair of this Society, now occupied with such distinction by Mr. Grant, the Committee invited me to give a paper during my period of office, and I am ashamed to say that I urged various excuses why I should not do so. I think I said I was too busy! That, of course, is really no excuse. We are all too busy to do anything about which we are not frightfully keen. Then I salved my conscience by the argument that I had not the power to prepare a learned and scientific paper such as this Society has a right to expect from its lecturers.

Well, last summer your very efficient Secretary approached me and said that he understood there was to be a Conference in Madrid; would I give a paper on it? It was impossible to deny that, in 1925, Mr. John Lee had given a paper "Sidelights on the Paris Conference"; and, of course, if the Paris Conference had its sidelights, possibly the Madrid Conference might have them also. If, in 1925, that kind of paper was acceptable, possibly it would not be rejected in 1932 or 1933. So I agreed that if I returned from Madrid alive I would give a talk on the Conference. But I warn you it is only going to be a talk; and it is not going to be either learned or scientific. I hope the great scientists, whose portraits adorn these walls, won't stir in their frames or feel that this sanctum is being desecrated by the intrusion of an unscientific speaker.

*Events leading to Conference.*—Now let us turn to Madrid. But before we go there, I think we ought to answer this pertinent query: What was the Conference and why was it allowed to happen? The second question was asked frequently by members of the British delegation. One member in particular used to refer to it constantly as "this comic opera Conference" or "this Bedlam." His view was that the proposal for a Conference ought to have been strangled at birth like an unwanted kitten. Nevertheless International Conferences on our subjects, if they are an evil, are a necessary evil. If you have an international service of telegraphs, radio, or telephones covering the whole world, obviously you must have international rules; and representatives of all countries must occasionally meet together to frame and amend them.

The practice has been to have a Conference on telegraphs and telephones, and another on radio matters every five years. The last Radio Conference was held at Washington in 1927, and it was there decided that the next one should be held in 1932. There were three countries that put up proposals inviting the Conference to be held in their countries. Holland proposed The Hague; Egypt, Cairo; and Spain, Madrid. These Conferences are very polite bodies. They refused to discuss in public the merits or demerits of various capitals; so a secret ballot was taken; and Madrid was selected by a majority vote.

In 1928, at the Telegraph Conference at Brussels, the Spanish Government very nobly offered Madrid as the place of meeting of the next Telegraph Conference. This was in order to give effect to a scheme proposed on various occasions to combine the two Conventions—the Telegraph and the Radio—and have only one. It was accordingly decided that the two Conferences should meet in Madrid in 1932. So there we are. The Conference met on Sept. 1, 1932, and lasted until Dec. 10. As our Chairman has pointed out, its duration was 14 weeks; and we have to explain and defend ourselves for having spent the taxpayers' money for all that time.

*Size and Scope of Conference.*—First of all, it is necessary to say that this Conference was not only the longest of the kind ever held, but also the largest. Eighty-one Governments were represented; and also 58 cable and wireless companies, and 31 other bodies. There were over 600 delegates and representatives; and they included Government delegates and the representatives of cable and wireless companies, broadcasting, air and marine interests, amateurs, Chambers of Commerce, and all kinds of people. The Spanish Government were very hospitable in every sense and held open house. The International Bureau followed the usual practice of inviting all Governments and operating Companies to prepare proposals in advance, which were circulated in two large tomes to all concerned to be dealt with at the Conference. Over 3,000 formal propositions were submitted, which seems to show that the Administrations concerned have very fertile minds! In addition, they had the imagination to suggest others during the Conference itself. As a matter of mathematical curiosity, the papers of all kinds distributed during the Conference amounted in the aggregate to over three million pages, and they were absorbed by some 600 people.

*How it Worked.*—How could a Conference function with that vast crowd, representing different countries, interests and delegates? I don't know whether you remember the problem at school where one was asked "If 10 men can mow a field of so many acres in 10 days, how long will 60 men take?" Well, I used to work such problems and could sometimes get them right, but I never believed the arithmetical answer was true. When I went to Madrid I asked myself the question, "Suppose six average delegates could draft

the new Convention and Regulations in a fortnight, how long will 600 take?" I once, in my younger and more confident days, wrote an article for *St. Martin's Magazine*, in which I expressed the view that the speed of working of a Committee varied inversely with the square of the number of its members. I tried to apply my rule to the Madrid Conference, but I found that we should all be staying there for the rest of our lives. So obviously I was too pessimistic in my younger days, and perhaps my rule was not sound. But I think it is rather a wonder that 600 people could get through the work in any reasonable time. They could only do it by a process of sub-division. There were seven main Committees, namely, Convention, Telegraph Regulations, Telegraph Tariff, Telephone, Radio Regulations, Radio Tariff, and Technical. These seven committees divided themselves up into many sub-committees; and the sub-committees followed the example of their parents and had sub-sub-committees, and so on. One of these bodies got down to three members. Even then it did not seem to make much progress, so a British member suggested it might be a good idea if they divided again and formed a sub-sub-sub-committee of one, so long as the right member was chosen. Unfortunately the three could not agree as to who the right member would be.



THE OLD PALACE OF THE SENATE.  
(The Meeting Place of the Conference).

The working of these committees depends very largely upon the Chairman. If you get an efficient Chairman you can make good progress; if not, your progress is slow. It is the usual practice to invite the heads of the delegations of some of the principal countries to take charge of the main committees, but, of course, the head of such a delegation is not always the best chairman.

The chairmanship most sought after was that of the Convention Committee. Several countries had their eye on it and a lot of strings were pulled. The Spanish Government were very worried by these proceedings and solved the problem in an amusing way by appointing one of their own people instead, a member of the Spanish delegation.

At the Conference at Paris in 1925, Mr. John Lee was given the chairmanship of the Telegraph Regulations Committee; and, in conformity with tradition, the Conference authorities offered me the same chairmanship, which I was glad to accept. It was the largest, in point of propositions—it had 628—but it did not deal with the most exciting and important questions. My committee slogged along, however, through a great quantity of detailed matter which was not vastly important, and it finished in good time.

\* Address given to the Telephone and Telegraph Society of London.

You may like to know how these committees really work. There are no very formal rules of procedure but the Chairman has two standard questions which he asks. Sometimes he says, "Is there any objection to this proposition?" and if there is not, he says, "No objection: Adopted." Sometimes he asks if the proposition is supported. If no-one answers he says "Not supported—fallen." I am not sure that it is always a fair way of handling propositions. One of the Belgian delegates complained on a certain committee that when there was a proposition by Great Britain, the chairman always used to say—"Is there any objection?", whereas if it was the proposition of a small country like Belgium he would ask if anyone supported it. General Williamson, who has acted as the head of the British delegation at many Postal Congresses, told me a similar story. It was at Madrid and he was in charge of one of the principal committees. A vast number of very tiny alterations had been suggested by the delegation of a small country. The General thought they were not of much importance and he used to ask if anyone supported them. No-one ever did so and they were therefore rejected. After a time he felt sorry for the delegate and tried to give him a chance, so he adopted the other formula—"Is there any objection to this proposition?"—and as no-one cared one way or the other there was no objection and they were always adopted. The delegate was extremely grateful and came to General Williamson in his hotel and thanked him most profusely for the very kind way in which he was treating his propositions, adding that the vote of his country would be cast in favour of all British proposals during the remainder of the Conference!

The place of meeting of our Conference was the Senado—an old building where the Senate used to be held. It had a fine hall, where the Senate formerly sat, and a number of committee rooms. The hall had one small defect, namely, it had no ventilation and after an hour or two became very stuffy. In fact, irreverent delegates used to refer to the Senado as the "gas works," or even sometimes as "the poison gas works." Around the committee rooms were very fine pictures, although of a somewhat sanguinary type. One particular room which had no window but was adorned with a number of terrifying pictures, was called the "chamber of horrors."

The hours of meeting may be of interest. They were 9.30 to 1 or 1.30 and, in the afternoon, from 4 or 4.30 to 7.30. The reason for the big gap is, of course, the famous habit of the siesta. In Spain no-one can work in the middle of the day—at least not in the summer,—so we all fell into that old Spanish custom—the siesta. If you went into the Hotel Roma at about 2.30 p.m. you would find sundry members of the British delegation lying about in a state of *coma*, overcome by the heat, which, during the first part of our stay, was intense.

*Language.*—The official language of these Conferences is French; but for the last seven years we have been carrying on a struggle to secure the adoption of English also. At the Paris Conference in 1925 the Japanese proposed that English should be permitted but the proposal was not adopted. However, at the Washington Radio Conference in 1927, it was absolutely essential to do something. If French had been the only language permitted, many of our distinguished hosts would have been practically dumb. Something had to be done; so the Americans and ourselves met the French delegates, and after a great tussle persuaded them to agree that English should be permitted. An elaborate formula was drawn up stating that, out of deference to the inviting Government, English would be permitted side by side with French, but this should not be treated as a precedent.

Then the next year, at the Telegraph Conference at Brussels in 1928, we tried again; but there we were in a French-speaking country, and the American delegation were only in the position of observers, so they could not help us much. After a long discussion, an Italian delegate made the Machiavellian suggestion that, if the English language were agreed on, would the British delegation—which had so far spoken in French—agree to continue to talk French? Sometimes one has to make a sacrifice for the sake of one's principles; and we agreed. It was therefore arranged that English should be permitted and should be translated into French so long as the British delegation did not take advantage of the concession. French, of course, was not translated into English. We thus had the position that the delegates of the *Dominions* and of many foreign countries spoke in English, and the only delegates who were not allowed to speak English were the English themselves.

The United States authorities and ourselves determined to make a big effort on the language question at the Madrid Conference. The American delegation suggested a good plan. It was this: that on the first day of the Conference we and they should go to the Chairman and ask for an interpreter to be allowed to sit on the platform and to translate the opening congratulatory speeches as an act of courtesy. This was agreed to; so we got an American interpreter on to the platform and he started interpreting. But he did not stop after the opening speeches; when the real business started he still continued, much to my surprise. That might have passed unchallenged; but unfortunately a delegate from Cuba got up and spoke in Spanish. The interpreter interpreted in English only; and thereupon the head of the French delegation rose and asked if French was not the official language. I had to get up and apologise for the interpreter having gone further than was covered by my original request. Soon after that we came to the rules of procedure, and at that point the American delegation said that, as we were going to discuss the rules of procedure, including the rule as to the language itself, could English be used whilst the language question was being discussed? That sounded reasonable and was approved. We then discoursed for a long time in two languages but could not settle the language question, so it had to be referred to a sub-committee. Then we went on to the question

of votes, which also could not be settled and had to be referred to a sub-committee. Meantime the interpreter continued to sit on the platform, and the practice of using two languages was continued until the sub-committee reported on the language question. This was not until about two-thirds of the way through the Conference, and by that time the situation had become absolutely safe.

The arguments against the use of English are, that if it is permitted, why should not other languages be permitted, and secondly the delay to the work. The arguments for English are that it is used by a far greater number of people than French; it is the language of telegraphy and of radiotelegraphy and even of broadcasting. We had a long discussion on the subject, and in the end it was agreed that we should insert a rule in the Convention that English should be permitted side by side with French as an official language for debates at Conferences, and that it should be interpreted by interpreters provided by the International Bureau. We did not win on the further question that the official documents should be published in both languages; but the main decision was of great importance, and we regard it as a great score for the English-speaking peoples.

*Votes.*—The question of votes is very troublesome, and whether it refers to votes for women or votes for nations, it always rouses man's worst passions. At this Conference we discussed it at great length. It was agreed that each of the Dominions and India should have a vote in its own right; but there was difficulty in regard to Colonial votes. The French insisted on two Colonial votes—one for Tunis and one for Morocco; but other countries wanted the principle of one country one vote with no votes for Colonies. In the end the British delegation put forward a compromise. Instead of giving France two Colonial votes, we proposed one; and we also proposed to give Germany an extra vote and the Soviet delegation an extra one on the ground of tradition, because in the past they had always had a number of votes. Apart from



THE OPENING SESSION, MADRID, 11 A.M. SEPT. 3, 1932.

these, the principal Colony-owning countries should each have one extra vote for the totality of its Colonies. At the last moment the United States delegation had instructions from home that as France and her Colonies would receive one more vote than the United States and her Colonies, they could not agree that the new rule should go into the Convention, although it was agreed that it should be adopted for the Madrid Conference. It was accordingly left that the question of a permanent voting rule should be pursued through the diplomatic channel before the next Conference.

*Comments on Delegations.*—A few words about some of the delegations. The United States had the largest delegation at Madrid. They had only four full delegates, but a great number of experts, secretaries, interpreters, and stenographers. Their total staff was very large indeed, and they took a large suite of rooms at the Palace Hotel. I am afraid the British Treasury would have been very alarmed if we had proposed to spend half as much on our delegation as the United States spent on theirs. The head of their delegation was Judge Sykes, chairman of the Federal Radio Commission. He had an interesting habit of beginning his speeches in a very soft, gentle tone; and then, as he warmed to his subject, he spoke more loudly and forcefully and gave a most emphatic and dramatic exposition of his case. He was made Chairman of the Technical Committee and adopted the plan of dividing his work between two sub-committees. He made Col. Angwin chairman of one of these and gave the other to one of the technical experts of the German delegation. The full Technical Committee did not meet again until near the end of the Conference.

The French delegation also had a very distinguished chief—Jules Gauthier—who was 76 years of age, with a long beard and a very venerable appearance. He made some of the most eloquent orations I have ever heard. He had vast experience of conferences and had attended many League of Nations committees; he devoted himself mainly to the general questions such as language and votes.

The Germans as usual sent a very thorough and capable delegation, in charge of an efficient telegraph administrator, Mr. Giess. I may say that Germany and Great Britain found their views on many subjects very similar and often worked together.

Italy had a distinguished chief, Mr. Gnome, who is an old hand at these Conferences, and knows the International Regulations as thoroughly as a good Christian knows his Bible, or more so. He is an extremely able and energetic man, and made a very effective Chairman. He had a great influence at the Conference.

The Japanese had a great number of delegates whose names were very difficult to remember. They always knew what they wanted, and spoke briefly and emphatically.

The Chinese had an interesting head—Dr. Wang—a very amiable, humorous and popular man.

The Norwegian delegation had a very likeable Chairman—Mr. Engset—who was, I believe, nearly 70 years old but was still hale and hearty. He had two great principles: one was that he was anxious to keep one of the precious long wavelengths for the Oslo broadcasting station, and the second was his admiration for Great Britain. He supported our delegation on many occasions. At one small committee meeting, when asked his views, he said "I support Great Britain; what Great Britain says is good enough for me."

We had two delegates from Ethiopia, who said very little at the Conference but made a very attractive bit of colour at the meetings.

Naturally our best friends were the Dominion and Indian delegates. Most of them stayed at the Hotel Roma and we formed a very happy party. Our interests were usually the same, although, naturally enough, on some questions Canada found her interests more akin to those of the United States than to those of Great Britain.

The Soviet Government sent a very able man at the head of their delegation—Dr. Hirschfeld. He used to make long speeches and was very clever although rather obstructive. Throughout the Conference he had a standing grievance, and that was that his Government had not been invited by the United States to the Washington Conference in 1927. Consequently they had not signed the Convention; and they had developed their radio service by using wavelengths contrary to the Washington Regulations. This was very unfortunate for the rest of the world, but he was constantly suggesting that the fault lay with the United States and not with his country. He was made Chairman of the Radio Tariff Committee and adopted the plan of dividing the work between two sub-committees of which Mr. Read was chairman of one, while a German delegate took the other.

The British delegation consisted of sixteen members—ten Post Office representatives and six from other Government Departments, namely, the Admiralty, Air Ministry, War Office, and Board of Trade. In my opinion it was a very good delegation. It pulled its weight at the Conference; it obtained a very good share of chairmanships; and I think it did well. The relations between the delegates of the different Departments were extremely cordial.

We also had happy relations with the Cable and Wireless Companies and the B.B.C. In most cases our policy did not differ from theirs and we helped one another.

*Fusion of Conventions.*—Let us now turn to the results of the Conference. The first thing is that it resulted in a single Convention of Telecommunications signed by the whole world. It coined this new word "Telecommunications," which includes telegraphs, telephones, radio, broadcasting, picture transmission and television. There was objection by some of the countries to the fusion of the two Conventions, but in the end agreement was reached. In our lighter moments reference was made to a contemplated marriage between old Mr. Telegraphs and young Miss Radio, the latter being distinguished by her beautiful permanent waves, although she was admitted to be of rather an interfering disposition. At the closing session the wish was expressed that the marriage would be happy and that there would never be a divorce in the Telecommunications family.

The rate for urgent telegrams was reduced from treble to double. The Administrations and Telegraph Companies hope that this will increase traffic and give them more revenue. It will be received by the public as a concession; so that everyone should be pleased.

*Letter Telegrams.*—The Conference also made an important concession to the public in introducing a service of European letter telegrams at half rates, with delivery on the following morning. We shall have rates in farthings, such as 1½d. to places like Holland and Belgium. I have always disliked the use of farthings and have tried to prevent their use, but I am told that the ladies at the Post Office counters will positively enjoy quoting rates of "two three" or "three three," as it will remind them of happier things.

The Madrid Conference withdrew some of the categories of letter telegram services to extra-European countries and increased the rates for others. The Cable and Wireless Companies have in the past gone far in introducing cheap rates for letter telegrams, and it was felt that in these hard times, if any increase of rates had to be made, it was better to make it on the letter telegram services.

*Gold Standard.*—Now let us turn to a subject which is very contentious, and upon which I am only going to touch lightly, namely, the suspension of the gold standard. International telegraph rates are quoted in gold francs, and each country is required to notify an equivalent of its own currency in terms of gold francs. We have the equivalent 9.6 pence = 1 gold franc, which we did not change during the war, and have not changed since the gold standard was suspended in 1931. The effect of a regulation adopted at Madrid would be that, on Jan. 1 next, we should have to notify a new equivalent based on the market value of sterling, which would result, assuming the rate remains about as at present, in an increase of more than 40% on all overseas telegraph and telephone rates from this country, and that at a time when the cost of living figure is at its lowest point since the war. The Post Office, if it did this, would certainly be accused of profiteering. After much discussion, Great Britain, Australia and New Zealand made a formal reserve declaring that they would not regard themselves as bound by this particular article; and about thirty other countries then made a somewhat similar reserve in order to maintain their liberty.

(To be continued).

## PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at Feb. 28, 1933, was 2,129,334, representing a net increase of 5,425 on the total at the end of the previous month.

The growth for the month of February is summarised below:—

Telephone Stations—	London.	Provinces.
Total at Feb. 28 1933	795,020	1,334,314
Net increase	2,004	3,421
Residence Rate Stations—		
Total	254,892	335,903
Net increase	1,234	1,760
Call Office Stations (including Kiosks)—		
Total	8,880	30,400
Net increase	62	100
Kiosks—		
Total	3,510	11,328
Net increase	40	113

The total number of inland trunk calls dealt with in December, 1932 (latest figures available) was 10,866,000, representing an increase of 343,000, or 3.26% over the corresponding month of the previous year.

International calls in December numbered 99,637, as compared with 101,992 in December, 1931.

Further progress was made during the month of February with the development of the local exchange system. New exchanges opened included the following:—

LONDON—Advance (Bethnal Green) (automatic); Langham (automatic conversion);

PROVINCES—Stechford (Birmingham) (automatic conversion); Woodseats (Sheffield) (automatic); Stafford (manual); and the following rural automatic exchanges were opened: Balvicar (Oban), Beddgelert (Portmadoc), Eastdean (Eastbourne), Hartland (Bideford), Hope (Sheffield), Kentisbeare (Cullompton), Lovington (Castle Cary), Luppitt (Honiton), Newbiggin-on-Lune (Kendal), Nantglyn (Denbigh), Ryhope (Sunderland), Tregynon (Newtown);

and among the more important provincial exchanges extended were:—

Staveley (automatic); Ibrox (Glasgow), Budleigh Salterton (manual).

68 new overhead trunk circuits were completed, and 77 additional circuits were provided by means of spare wires in underground cables.

## COMPLAINTS FROM A HEADQUARTERS' ANGLE.

It has been the writer's fortune, good or ill, to read through the correspondence and official reports in more than 2,000 "cases" over a series of years, where trouble has arisen in reconciling the claims of the public in general (as the owners of the telephone service) with the claims of its individual members (as telephone users)—in plain English, "complaint cases." Those readers of the *Journal* who have come into such "cases" at an earlier stage, and so have viewed them from a different angle, may perhaps care to see the composite picture which they themselves have helped to frame.

If we look back over the years, the high lights and dark spots of the picture stand out very clearly. Let us first peer into the gloom of the latter.

How did the trouble arise? Why was the worm not nipped in the bud? Not, as might be supposed, because the claims of the revenue have been pressed too firmly. On the contrary; all subscribers are taxpayers, and few in these days are likely to forget it. In almost all cases of *serious* friction, a close examination of the whole story reveals that the first official on whom the complainant unloaded his grievance was unfortunate enough to give him the impression (as a rule, quite unfounded), that his case was being "non-suited" from the beginning, before the real hearing. How does this happen? and why does it happen—violently, so to speak—in the small minority of complaints which do lead to serious friction, while not happening at all in the large majority of subscribers' troubles which do not? Probably as follows:—

In the process of adjusting the subscriber's difficulty, friction may develop at the outset in one of two ways.

1. Sometimes (but not often) the subscriber has voiced his grievance at the outset to his telephone exchange—just as we wish and encourage him to do. This nearly always saves the situation; but in the small minority of cases which are now in point, this first conversation has not been satisfactory. It is often difficult to tell from the written records exactly what has gone wrong, but the subsequent part of the story shows clearly that something that has been said (probably on both sides), has magnified a "grouse" into a rankling sense of injustice or injury not to be soothed by any letters, however emollient, from the D.M.O. But this is rare.

2. Far more often the subscriber has not, as we would wish, talked to his exchange about his troubles, but has nursed them in his breast, or unloaded them on his friends, who naturally return the compliment but can't as a rule help him much, until his feelings are sufficiently worked up for him to take the trouble to write us a letter about them. This is always a pity, because an attitude is hardened by the very act of putting its expression down on paper. Nevertheless, in the large majority of such cases, a prompt reply in a tone of the correct shade, directed accurately and specifically to the subscriber's particular grievance and combining sympathy with a business-like firmness, resolves the "complex," and—especially when followed up by a "good-will" visit—converts the dissatisfied customer into a friend of the service.

But this majority of happy cases is not germane to our present point. In the minority of cases which develop into disputes which reach Headquarters, it is the *first* reply which has prevented the normal happy consummation.

(a) Sometimes it is the very trouble which has been taken to put right some difficulty of service, the possibility of which has been suggested by the complainant's first letter, which paradoxically hardens his grievance. A thorough examination to diagnose and cure a service defect takes a long time, often involving several branches of the service. Very often, at an early stage, enough has been discovered to write an informative interim reply, or at

best some kind of an interim reply, enlarging on what is being done. But if this is omitted, the complainant has no means of knowing that *anything* is being done. Of course, he has his acknowledgment; but this is often interpreted as conveying only the information that his letter has been received, and since, *ex hypothesi*, he starts out with a certain amount of bias towards the notion that the telephone service does not intend to do anything, a blank lapse of time confirms this ill-founded suspicion.

(b) More often than this, perhaps, a reply is sent quickly, but does not conform in some way to the psychological conditions of success (cited above), viz., that it should be directed accurately and specifically to the subscriber's particular grievance and that it should combine sympathy with a business-like firmness. Sometimes the failure is in mere phrasing—which of us, for example, would not react more favourably if we were told, in reply to a letter disputing some items of an account, "the records have been carefully examined but nothing has been found to account for the discrepancy," than we should if the reply read "the records have been examined and have been found to be correct"? Sometimes the trouble is in the length of the official letter. A short reply to a complaint may suggest insufficient attention to the original letter; a long one may suggest, paradoxically, no attention at all, particularly if the subscriber gives it none—which is liable to happen if it begins with the part of the story where we must disagree. A "long" reply should begin rather with a brief survey of the ground common to both parties, so as to suggest to the busy reader, as he glances through it, "Well, this is reasonable enough *so far*, anyhow." Yet both short and long "first" letters are extraordinarily effective when they satisfy the necessary conditions. Experience of the cases of failure suggests that first letters sometimes err in being too long. But more often the failure in the case of an abortive "first" letter has been the proffering, to a man wanting to carry *his point of detail*, of an explanation of *our general procedure* in which his point is barely touched upon. Of course, once a subscriber's friendly curiosity has been aroused as to how the Post Office does things, a full and frank explanation of procedure will often confirm his friendship, but the order cannot be reversed without grave risk. The only golden rule—and it seems to be practically infallible—is to tell the subscriber frankly as early as possible what he wants to know, whether this be much or little, and nothing else.

So much for friction generated by an initial shock. The other kind of story, which begins well but drags out to an unhappy ending, is now even less common than it was. In the nature of things, some troubles must require more than one exchange of letters; for example, the subscriber may not have made the nature of his difficulty clear in his first letter. Then (unless it is simply a query, not suggesting any specific grievance) the first reply must be directed to asking him for a fuller statement. (There is nothing more fatal than to assume particular troubles which may not exist.) But a protracted correspondence about a difficulty is always a pity; not only does each letter which the subscriber writes tend to harden his feeling of dissatisfaction; but each letter he receives tends to strengthen the feeling that the whole thing is a nuisance—which, of course, all service difficulties unavoidably are. Cases in which two or more letters have been exchanged are fortunately very rare, because an interview or a telephone call at an early stage usually settles the matter to everyone's satisfaction, leaving only one more letter to be written, viz., a brief confirmation of the settlement. (This is quite frequently followed by a letter of appreciation from the subscriber.) The worst troubles of all, perhaps, are those few cases where the issue has not been faced at an early stage, and has been allowed to develop and extend itself over a protracted correspondence, each side finding it more and more difficult to see the other's point of view, so that any action taken in the end to meet the subscriber in a business spirit seems to him to have been extorted from an unjust judge by importunity.

So much for the dark spots of our picture of "complaint cases." Now for the brighter side. Just as a lawyer has been

said to see too much of the seamy side of human nature, so perhaps the writer sees less than would be good for him of the bright side of complaint cases. (That is why he has not left himself enough space to do this side justice.) Nevertheless, enough happy endings, even of stories where the path of true service has not all run smooth, stand out to prove fully the dictum that "every complaint is a potential source of good publicity." There is no firmer friend of the telephone service than a satisfied critic. That is one reason, and not the least important, why we welcome criticism: difficulties exist to be overcome, and people who tell us of their troubles help us to remove them.

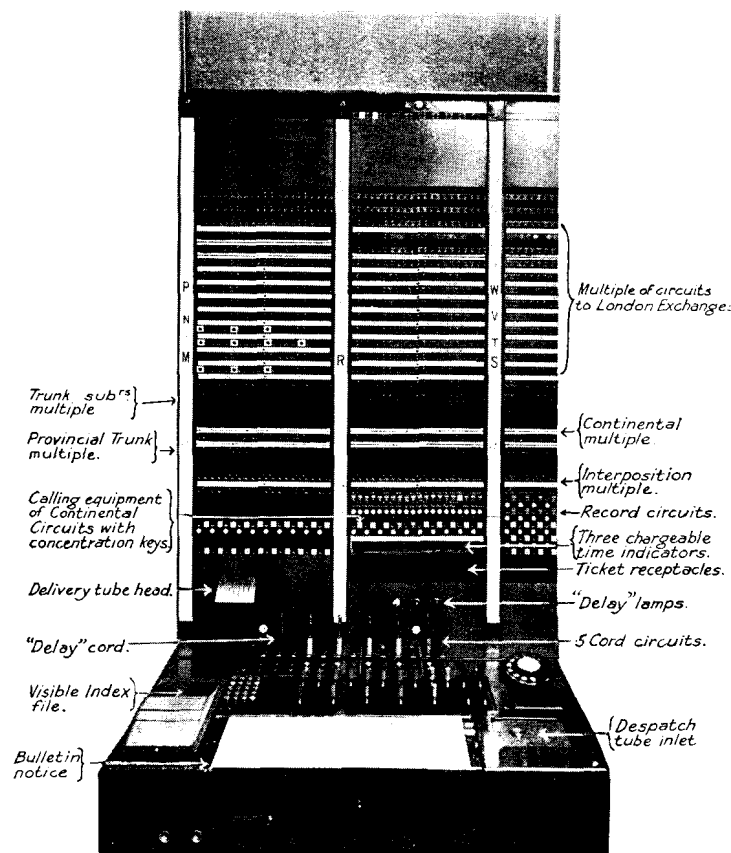
H. T.

## LONG DISTANCE TELEPHONY.

### NEW BRITISH OVERSEAS EXCHANGE—(contd.).

By J. F. DARBY (Headquarters Traffic Section).

THE next class of Continental exchange apparatus to be dealt with is the *Line Operating Switchboard*, the positions of which form the main equipment of the exchange from a traffic point of view. A typical single position is shown in the accompanying illustration.



LINE OPERATING SWITCHBOARD.

The *Continental Circuit Terminations* are the most important items on the position—they are provided on the basis of two calling equipments per position on the "non-concentration" sections (four per position on the "concentration" sections) and are suitable for both "in" and "out" working with the present system of delay (trunk signalling) operating. Above each pair of calling equipments is a *push-pull key* which enables the calling

signals to be transferred to, or "concentrated" on, another position. Under this arrangement, the circuits distributed over the "non-concentration" positions (numbers 1086 to 1121) can be concentrated on other positions (the first concentration sections) (numbers 1007 to 1057), on the other side of the switchroom. The circuits connected with the 4 calling equipments—two "normal" and two "concentration," on these sections can be further concentrated, by means of two push-pull keys, on 12 positions (numbers 1007 to 1018) known as the "final concentration" sections. On these positions the line calling signals are arranged on a multiple basis of three complete appearances, the first of which is on positions 1007 to 1010, the second on positions 1011 to 1014, and the third on positions 1015 to 1018. During slack periods, therefore, the whole of the traffic can be handled on four, eight, or twelve positions as required.

The Continental circuits are also terminated on *outgoing multiple* equipment (provided with visual idle indicating signals) to give, on each line operating position, access to all Continental services for use during such times as the work of recording calls and completing the connexions is combined on these positions. The provision of this Continental circuit multiple, which extends over the extra-European line operating positions (*en suite* with the Continental sections) also enables connexions to be set up on the former positions between European countries on one hand and other continents on the other hand, with the use of a single pair of cords.

Situated above the Continental circuits is the multiple of lines to London exchanges, Provincial trunk centres and trunk subscribers; facilities are, therefore, available for setting up connexions between the Continent and London subscribers, Provincial subscribers or trunk subscribers, as the case may be, without the use of transfer circuits.

An *interposition* multiple is also provided to give ready access between line operators, not only on the Continental suite, but on other positions (inland and extra-European) in the G.P.O., South, building.

The terminations marked "record circuits" in the right-hand panel of the illustration are calling equipments which can be associated with the Continental record circuits (normally terminated on the Continental record position) when it is desired to close down the separate recording of Continental demands and combine this work with the setting up of calls on line operating positions. These record equipments are provided on a multiple appearance basis. The transfer of the record circuits from the normal record positions to the line operating positions is effected by the operation of keys on record position number 1.

Each line operating position is assigned to work with a particular Continental *te de ligne* (under the present system of delay working) and tickets prepared at the record positions are circulated *via* the pneumatic tube distribution position (already described) to the particular line operating position indicated in the routing instructions on the ticket. The ticket arrives on the line operating position *via* the *Delivery Tube Head* (indicated in the bottom of left-hand panel in the illustration). One tube head serves two positions.

A connexion is set up by means of a cord circuit, five of which are provided on each normal (or bothway) line operating position. A few positions (numbers 1002 to 1006) have been earmarked for incoming work only and have been equipped with eight cord circuits. The latter are not provided with timing facilities but in the case of normal five-cord circuit positions, three *Continuous Display Chargeable Time Indicators* (coloured red, green and white) are provided and accommodated in the panel as indicated in the illustration. These time indicators are associated with the cord circuits on the basis of the first display (red) for cord circuits 1 and 2, the second (green) for cord circuits 3 and 4 and the third (white) for cord circuit No. 5. White lines indicate this division of the cord circuits. Only one of any two grouped cord circuits should be used for connecting calls at the same time, but a second cord

circuit of a group of two can be used for the preparation of a "follow on" call. Each cord circuit is provided with a three-position timing key for "start," "stop" and "re-set" operations.

The timing device is associated with the back cord only and in setting up a call—outgoing or incoming—the back cord is connected with the *inland* circuit. When the timing key of a cord circuit is operated (at the commencement of conversation) to the "start" position, the figure "1" is shown in *steady* illumination for 48 seconds and then changes to *flicker* illumination (for a period of 12 seconds). At the end of an overall period of 1 minute, the figure 1 is replaced by a figure 2 with steady illumination, changing to flicker illumination 12 seconds before it is replaced by the figure 3, and so on. The flicker signal, 12 seconds before the commencement of a new minute of conversation time is in the nature of a warning to a controlling operator to supervise a call in hand; it ensures regularity of supervision each minute at the moment when any additional charge becomes due (apart from the minimum 3 minutes charge) and eliminates the possibility of a subscriber being over-charged through the absence of clearing signals.

At the end of approximately 2 minutes 48 seconds elapsed time, a *time check lamp* (red) on the keyboard, associated with the cord circuit in use, glows and remains alight for 12 seconds, i.e. until 3 minutes have elapsed. This is a special warning to the controlling operator to announce the duration—3 minutes—to the subscriber. At the end of the 3-minute period, the time check lamp is automatically extinguished. It relights at 5 minutes 48 seconds, 8 minutes 48 seconds, and so on, 12 seconds before the expiration of every 3-minute period, for duration announcement purposes. The mechanism is arranged so that the timing of any call ceases automatically when a clearing signal is received from the inland subscriber in cases where through "switch-hook" supervision is available.

At the termination of a call the timing device is reset by operating the timing key momentarily to the "reset" position. The device in question is limited for direct reading to durations of 18 minutes. On calls which exceed this period, the time check lamp flickers at the end of 18 minutes and the apparatus has then to be reset by means of the reset key.

In practice the device gives a simple means of timing conversations; overcharging the public and under collection of revenue are both avoided. The continuous display of the chargeable duration of a call in small illuminated figures on a plain white or coloured strip in the panel is attractive as well as effective.

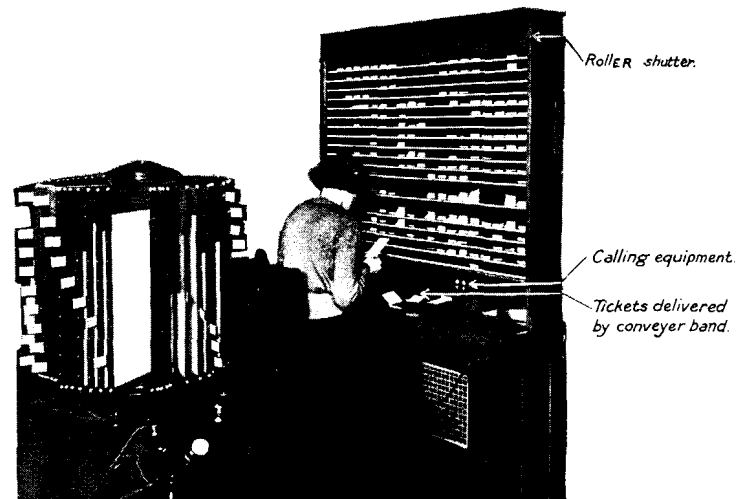
In the previous article a reference was made to the facilities provided on the line operating positions for the purpose of indicating "delay" on Continental routes. In the illustration of the line-operating position now given, the "delay" cord is shown on the left of the plug shelf, and the three *Delay Indicating* lamps—white, green, and red—at the bottom of the middle panel.

In the outgoing multiple of Continental circuits, the first jack of each group of such circuits is the "delay" jack of the particular route concerned, and it will be recalled that the insertion of the plug of the "delay" cord into the "delay" jack of any particular route causes an indication of the delay to be given by means of a "colour code" on the panel *Delay Indicating* lamps.

Above the "delay" jack of each route is the *Route-Delay* lamp (pinhole with red disc) operated by key number 1 on the Master Delay Indicating Position. This lamp corresponds to the *Route Delay* lamp on inland demand trunk switchboards and has been provided primarily for use when a service on a combined recording and completing basis is in operation to the Continent to indicate a particular route or routes on which "delay" working is in force.

The remaining items of importance on the line operating positions are (i) *Visible Index Files*, provided mainly for routing

purposes (also rate quoting when recording and enquiry is transferred to the operating positions), "inland" and "Continental" files being supplied on alternate positions to give "inland" and "Continental" details respectively. (ii) *Bulletin Notices* which give special information regarding the Route operated from a particular position; (iii) *Despatch Tube* inlets in the keyboard, for sending tickets (normally completed tickets) to the *Finished Ticket Filing* position. Up to nine inlets, serving nine line operating positions, may be fitted to the same Despatch Tube. The tube is operated on a vacuum principle.



FINISHED TICKET FILING POSITION.

The second illustration shows the *Finished Ticket Filing* position (also the central *Route and Rate quoting* position referred to in the previous article). Tickets from line operating positions are carried *via* pneumatic tubes and discharged on a travelling conveyer band at the rear of filing position. They are delivered in front of the operator as indicated in the illustration. This operator sorts and files "completed" tickets, re-circulates "uncompleted" tickets *via* a tube to the pneumatic tube distribution position and answers enquiries from subscribers regarding durations and charges on completed calls. The cabinet is fitted with a roller shutter so that completed tickets—valuable revenue vouchers—can be left in security when the position is closed.

The arrangement provided ensures that a ticket in respect of a call completed on a line position is placed expeditiously in a position where it can be readily traced, thus enabling enquiries regarding completed calls—enquiries which are very numerous—to be handled with the greatest ease and minimum delay to the enquirer.

(To be continued.)

#### FOR OUR ADVERTISERS.

ALL enquiries should be addressed to the Department of Overseas Trade, 35, Old Queen Street, London, S.W., except where otherwise stated, quoting reference number in all cases. Supplies, &c., required by:—

*Australia.*—Melbourne. May 2. Post and Telegraph Department. Loading coil pots (A.X. 11716). Brisbane. May 15. City Electric Light Co., Ltd. Coal conveyor. Company's offices, Boundary Street, Brisbane (specifications £2 2s.). June 22. 45- and 11-kV switchgear. Company's offices as above and specifications ditto. July 20. Supervisory control equipment, ditto, ditto.

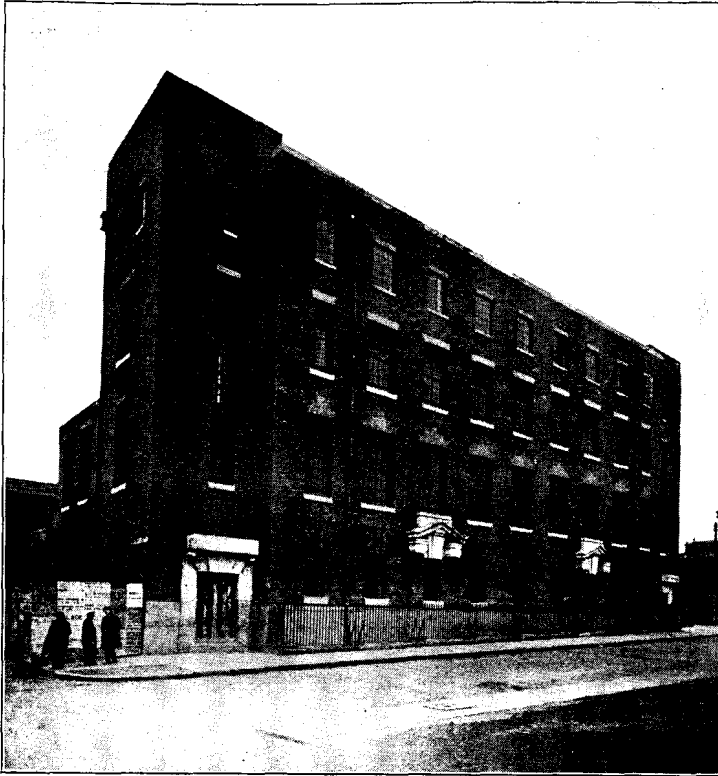
*South Africa.*—Cape Town. April 5. Overhead line material (A.X. 11730). Johannesburg. April 20. City Council. Weatherproof braided copper conductors (A.X. 11724) and a 1,000-kw. A.C. to D.C. converter plant (A.X. 11725). Durban. April 21. City Council. Lead-covered paper insulated telephone cable (A.X. 11726), cable distribution boxes and sundries (A.X. 11727) and lead-covered indoor telephone cable (A.X. 11728).

J. J. T.

## "ADVANCE."

### OPENING OF LONDON'S FIRST "BYPATH" AUTOMATIC TELEPHONE EXCHANGE.

ON Thursday, Feb. 23, "Advance" Exchange was formally opened by Major C. R. Attlee, M.P., before an unusually large and representative gathering. The exchange relieves "East" and "Clissold" Exchanges and is equipped at the outset for 3,300 lines.



ADVANCE EXCHANGE. EXTERIOR VIEW.

The Controller, Mr. W. H. U. Napier, C.B.E., presided and following some remarks on the exchange and its establishment by the Superintending Engineer, Mr. E. Gomersall, O.B.E., a signal was given by Major Attlee, and 1877 "East" and 126 "Clissold" lines were transferred to the new exchange.

The first call was made to the Rt. Hon. Sir H. Kingsley Wood, M.P., H.M. Postmaster-General, and the following exchange of messages ensued:—

Major Attlee: "I am most grateful to you for allowing me to put through the first call from 'Advance' Exchange. I know the difficulty which you experienced in getting a name to suit the citizens of Stepney, Bethnal Green and Bow. 'Advance' at once voices the aspirations of us all and is the keynote of the telephone policy in which you and I believe, and which you are actively pursuing."

The Postmaster-General: "I am very glad that you put through the first call on the opening of the new 'Advance' Exchange to me, as it gives me a chance of thanking you for performing the opening ceremony. I don't think we could have hit on a more appropriate person than yourself for this purpose. Apart from the fact that the 'Advance' Exchange is in your constituency, I know well that as Postmaster-General you took a very keen interest in the development of our telephone service, and however you and I may differ in other matters, we have one thing in common. We both regard it as the first duty of the Postmaster-General to do everything in his power to provide the public with an efficient and satisfactory service. I earnestly hope that the 'Advance' Exchange will live up to its name in this respect."

The conversation was heard by the visitors and others by means of local-speakers.

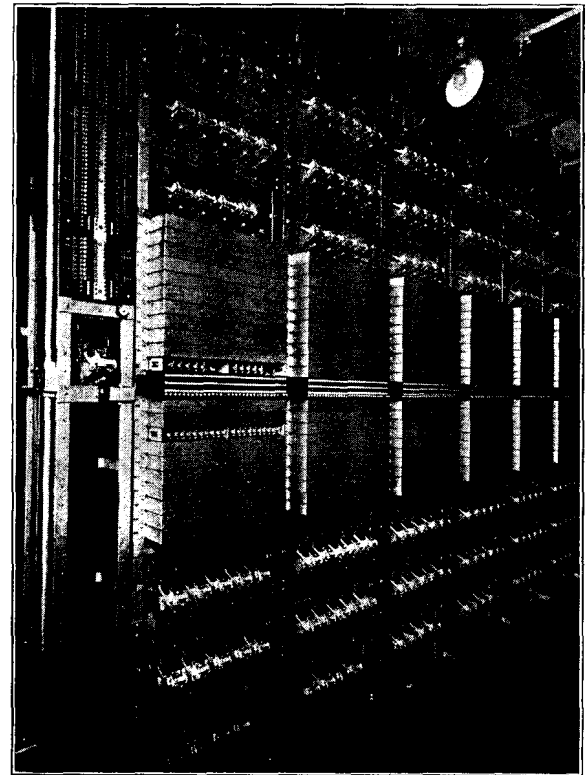
Major Attlee then addressed the company which included the Mayors of Poplar and Stepney, members of the Councils of these Boroughs and of Bethnal Green, Members of Parliament, local business representatives and many "interested" in telephones, both departmental and manufacturing.

A vote of thanks to Major Attlee was then moved by Mr. E. T. Campbell, M.P., Parliamentary Private Secretary to the Postmaster-General, and seconded by Mr. H. Dive, M.B.E., Assistant Controller.

The visitors were then conducted over the exchange and finally served with tea. J. A. R.

The exchange was manufactured and installed by Standard Telephones & Cables Ltd., of Hendon. It represents the first of a number of trial equipments embodying an arrangement whereby the majority of the apparatus required for setting up a connexion is released as soon as the conversation starts.

The building, which consists of four floors, is located in the Mile End Road, and houses an initial equipment of 3,300 subscribers' lines with an ultimate of 10,000. The area served by this equipment embraces such a vital nerve centre as the London Docks, and forms an important link in the general development of the London Automatic Telephone network. The building was originally intended to house the existing type of automatic equipment, two floors, i.e. the second and third, having been set aside for this purpose. In laying out the Bypass equipment, however, it was found that one floor only would be required, the second floor being left available for any further development which may be found necessary in this area.

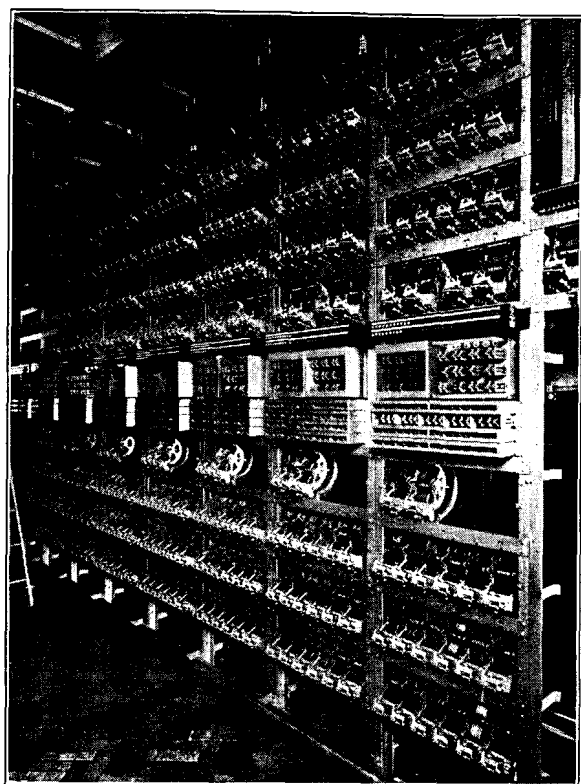


LINE FINDER BAYS.

It has been found possible to use only two types of apparatus in the Bypass System—the relay and the uniselector. The uniselector is slightly larger than that used by the Department in the past and is noteworthy because it is so designed that the mechanism may easily be removed from the bank after unloosening a single thumbscrew. It is anticipated that this facility will be found valuable to the Maintenance Staff.



The uniselector which is designed with 51 sets of terminals, uses either staggered or double-ended wipers; each wiper carries four brushes contacting with the bank terminals.



FIRST CODE SELECTOR RACK.

The Bypass Exchange, apart from the fact that it uses one type of equipment throughout and does not hold any of the expensive switching apparatus during a call, offers many new facilities to the



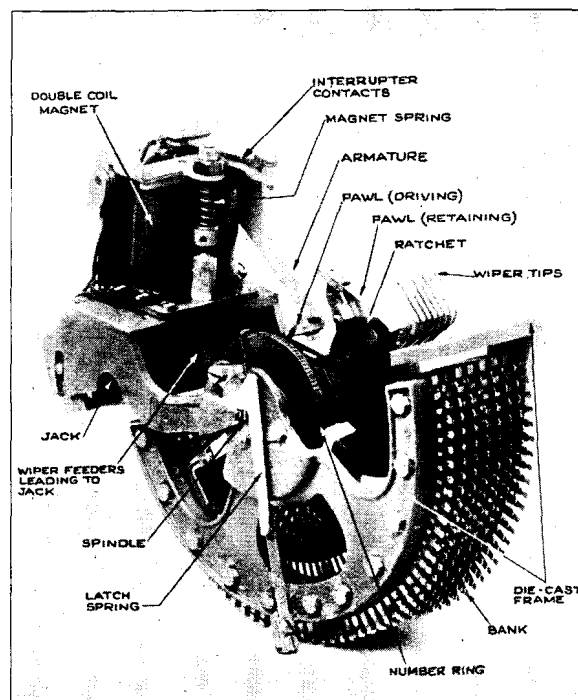
WIRING-UP BAYS.

general public which have not previously been provided. Chief among these are the following:—

(1) *The Speed of Service.*—Although full translating facilities are provided, the originated call is not recorded in a register if it can be switched through directly to the

required subscriber. In consequence, a saving of several seconds is achieved in the waiting time before the bell is rung.

- (2) *Long Distance Calls.*—Special circuits available to the trunk operators permit a trunk call to be offered to a busy subscriber by the depression of the trunk operator's ringing key. If the trunk call is accepted, the connexion is set up by re-application of the ringing key.
- (3) *Alternative Trunking.*—A very large economy in the number of inter-office junctions is made possible by the introduction of alternative trunking. Only approximately 66% of the direct junctions hitherto provided are installed, the traffic overflowing being completed via the tandem or sub-tandem exchange most conveniently placed. In addition to the junction saving, automatic equipment is saved in the distant manual or automatic exchange.
- (4) *P.B.X. Facilities.*—All the lines in the exchange are available for private branch exchanges. In addition



THE UNISELECTOR.

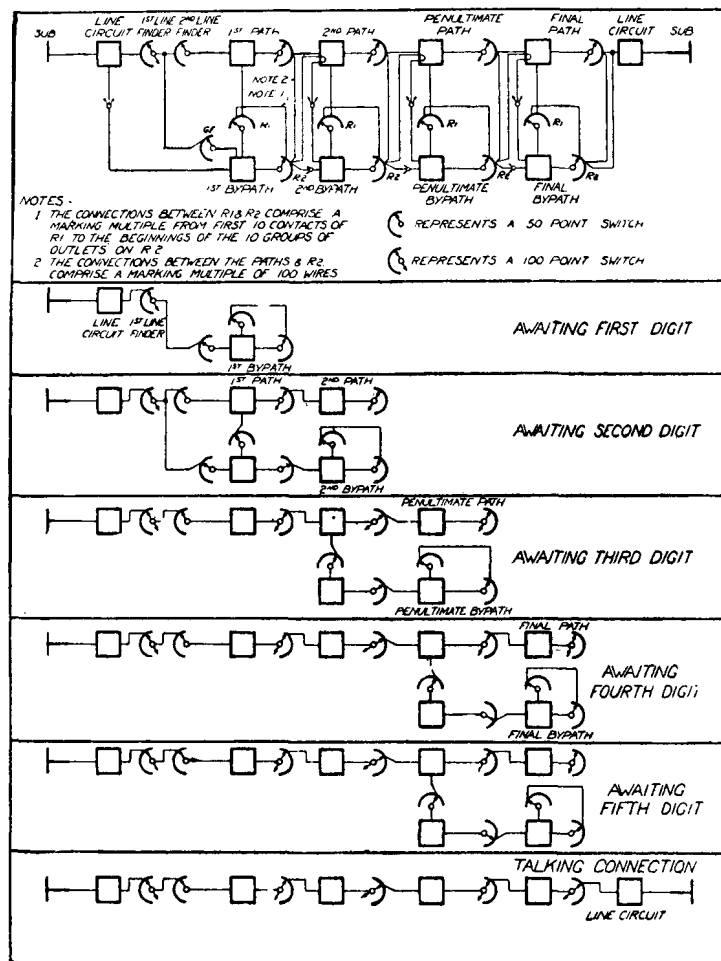
to the facilities provided hitherto, in the Advance Exchange it will be possible for a P.B.X. subscriber to retain a number which has been used in the past, and it is also possible to add several additional lines without changing the number. It is not necessary for all lines associated with the same P.B.X. to be adjacent.

- (5) *Transmission.*—Improved transmission conditions are obtained by the use of only one transmission bridge in the exchange for any type of call. Moreover, an increased transmission current is provided on long lines for trunk calls.
- (6) *Assisted Service.*—The system is arranged so that the subscriber obtains immediate access to an assistance operator after dialling "O." In case of doubt, the operator is able to supervise the connexion being reset up by throwing a single key.

The manual boards use sleeve control circuits recently developed in connexion with the new London Trunk Exchange. The registers do not carry any strapping and act as storage and sending switches for the numerical digits of automatic and call indicator traffic. Code transmission is effected by a single group of translator switches and here again, it is anticipated that the amount of work necessary by the maintenance staff for translation changes should be very much reduced.

A new method of automatic traffic recording has been installed, the arrangements being such as to eliminate the use of cords and plugs. The record will be stored on the Department's new type of message register.

THE BYPATH AUTOMATIC TELEPHONE SYSTEM



PROGRESS OF A CALL THROUGH THE EXCHANGE.

In addition to the normal dial speed test facilities associated with the test desk, an experiment is being made with the use of an automatic tester which can be controlled by linesmen at the subscribers premises.

The diagram reproduced shows the progress of a call through the exchange, and it will be seen how the switching apparatus is dropped off and made free to take up another call as the present call proceeds through the exchange. This picture gives a very good explanation of the origin of the term "Bypass," as it will be seen that the switching equipment is not definitely held in a line as in the present automatic equipments, but is merely brought in by a series of bypaths to pass the call forward, and is then immediately released.

## PROGRESS IN MANUAL TELEPHONY.

### ELMBRIDGE EXCHANGE.

It is gratifying to record that automatic telephony is not achieving its admirable technical development to the neglect of its sister branch of the art.

The Elmbridge Manual Exchange, which was opened on January 11, 1933, at Surbiton, Surrey, embodies two types of equipment which are here used in a new local exchange for the first time. The more important of these is the Straightforward junction apparatus. There are four Straightforward "B" positions, each equipped with 36 cord circuits, 36 associated combined calling and clearing lamp signals, a busy back key and a release key. The incoming junctions are terminated on the cord circuits, and the seizure of a junction by an "A" telephonist is indicated by a flicker signal on the relative junction lamp, concurrently with the operation of a pilot signal. The "A" telephonist, after connecting with the junction, hears a "double-buzz," or "pip-pip," signal as an indication that the required number should be given. The



EXTERIOR VIEW OF ELMBRIDGE EXCHANGE.

[Christopher Bristow, A.R.I.B.A., Architect, H.M. Office of Works.

Elmbridge "B" telephonist responds with "Right!" and plugs into the required multiple jack, or presses the busy back key, as may be necessary. Two of the positions are at present working, and 66 junctions are connected, including a group of 37 junctions from London Toll "A" Exchange. The other new equipment is the chargeable time indicator. This device is fitted to every "A" position, in association with the prepayment coin-box cord circuits. A key in addition to the usual speaking and ringing key serves to start and reset the time recorder associated with the cord circuit, and also to bring up on the time indicator, situated below the outgoing junction multiple, a display of the chargeable minutes in illuminated figures. Time check lamps are also provided in the cord circuits.

Elmbridge Exchange is noteworthy in that the architect has given more than usual consideration to the aesthetic aspect of his design. Dignified lawns separate the building from the road, and decorative additions in the way of four bronze lanterns and an illuminated stencil sign "Telephone Exchange" lend an appearance of completeness to a straightforward and well-designed edifice. The entrance hall and staircase are most effectively decorated, the upper walls being painted in celestial blue and the balusters of flat metal strips in old gold. Light oak doors and frames, mosaic inlays in the stairs, enclosed electric lights on the walls and ceiling, and a bronze radiator cover contribute to the pleasing effect.

The Exchange has been designed for a capacity of 9,600 lines and is at present equipped for 4,180 lines. F. E. BISHOP.

## TELEGRAPHIC MEMORABILIA.

NATURALLY this writer paid a visit to the British Industries Fair at Olympia last month, and also, quite naturally, steered for the Post Office exhibits, with a particular penchant for "Telex." Personally one felt that here was an exhibit, comfortably housed, handsomely yet not extravagantly furnished, well worthy of any modern organisation with a name for efficiency to maintain. It is very difficult to mention the staff when one meets so many familiar faces, but it would be simply impossible, with any sense of justice, not to give expression to one's pride at the sane enthusiasm and the completeness with which the C.T.O. representatives met the various (very!) enquiries. The holder of this pen is somewhat of a Zaccheus in stature, and it was therefore not difficult for him to be lost to sight for a considerable time in the midst of an interested crowd.

One noted the greatly increased confidence in the merits of the new system as compared with last year's exhibition of "Telex." This was no doubt due to the increased experience of all of the Government officials concerned in the system, now confirmed in their faith of its utility and stability, and assured that it has come to stay as an indispensable aid to the business efficiency of the future.

Any suggestions? Could not copies of the current number of the *T. and T. Journal* be available for the public on such occasions? Anyway there is time to think over the proposal between this and next year.

*Countries.*—BELGIUM.—The International Broadcasting Union Conference proceedings held in Brussels in February onwards, does not appear to have received very much attention in the British press. This was probably due to the fact, that, important as the Brussels gathering undoubtedly was, it was looked upon as preparatory to the Inter-Governmental Wireless Conference fixed for May next at Lucerne.

It may, however, be useful to mention that three sub-committees of the Brussels conference were appointed, the second of which was probably the most important as well as the most difficult. It was "deputed to define the principles upon which a new allotment of wavelengths should be based. It covered the whole problem of wavelengths and their uses and is considered of extreme importance," says Reuter's Belgrade representative. It was the third sub-committee which was charged "to draw up actual suggestions based on the findings of the first two." All the countries of Europe except Soviet Russia are taking part, as well as Egypt and Morocco. Before the conference concluded the Australian Radio Commission was admitted as an associate member of the Union and the Latvian Broadcasting Company as an active member. Advantage was taken of the meeting to discuss a number of matters relating to broadcasting, apart from the question of wavelengths.

CHINA.—That the Chinese Ministry of Communications has been negotiating for the cancellation of the Mackay Co.'s radio contracts has been common knowledge in certain well-informed and financial quarters. The *Chinese Economic Bulletin* now informs us that the Ministry and the Marconi Company have arranged to obtain loans from the British Boxer Indemnity refund for the purchase of the necessary materials and apparatus required for a proposed Sino-British project, which is expected to provide direct communication with England in about six months' time.

The Eurasia Aviation Corporation has arranged with the Sinkiang Provincial Government for the establishment of radio stations at Tihua and Hami, on the north-western airway!

GREAT BRITAIN.—*Radio Licences.*—Sir Kingsley Wood, the Postmaster-General, on Mar. 6, informed the House of Commons that the number of wireless receiving licences issued during 1932

was approximately 5,263,000. The number of prosecutions undertaken during the year for the use of unlicensed wireless sets was 2,825, and the total amount of fines and costs imposed was £2,833.

A propos of the Broadcasting Conference mentioned above, under "Belgium," a special wireless correspondent of the *London Daily Telegraph* is of the opinion that the result of the Prague wavelength plan and its forthcoming revision at the coming Conference in May at Lucerne, is an assurance of "Better Radio" in 1934. He points out that, "In sixteen months from March 1933, the new Droitwich station will supersede Daventry, using a power of 100 kilowatts, i.e. four times as great as that of the present long-wave transmitter. He further forecasts changes which "may affect a powerful cluster such as Breslau, Poste Parisien, and Milan."

It is further considered that "the new plan may increase the separation from 9 to 11 kilocycles, even though this will reduce the number of available channels."

Mr. Noel Ashbridge, Chief Engineer of the B.B.C. is reported to have made the following guarded statement:—"Anyone purchasing a new receiver should see that it covers the whole band allocated to broadcasting." This with certain gaps, it may be added, extends from 200 to 2,000 metres.

Mr. Marsland Gander has added to our hopes and knowledge by his recent statement in the *Daily Telegraph* that next winter British listeners will hear Italian opera from the land of its birth, not on the "catch-as-catch-can" basis of direct listening but incorporated in the B.B.C. programmes.

"Important events," our informant adds, "are impending in the sphere of international broadcasting." When the inter-Governmental wavelength Conference meets at Lucerne, simultaneously a meeting of the International Broadcasting Union will be held there.

*Wireless and Crime Detection.*—There is considerable steady progress in the use of wireless as an aid to crime detection in the British Isles. A radio transmitter has recently been established by the Stockport, Cheshire, police for communicating with patrol cars. A similar transmitter is being installed at Glasgow, linking up the police wireless apparatus with 300 police *telephone* call boxes. The Lanark County Council has also under consideration the installation of a radio set costing £1,500.

INDIA.—A fairly recent report from Madras states that a sub-committee of the Madras branch of the European Association has expressed its opinion that any system of broadcasting in India which depends upon the principle of individual listening will be subject to serious limitations because of the poverty of the people.

*Short-wave Broadcasting.*—Up to the present the Calcutta broadcasting station has served a local area within a radius of about 300 miles. "More listeners," says the *Electrical Review*, "are now to be served by the Indian State Broadcasting Service's short-wave transmitter which was recently opened at Cossipur."

From the Indian Correspondent of the same periodical we learn that Sir Frank Noyce, Government of India Member for Labour and Industry, recently introduced a Bill in the Legislative Assembly to regulate the possession of radio-telegraph apparatus. Judging from Sir Frank's observations all is none too well with broadcasting in that portion of the British dependencies. There are many cases of broadcast "piracy," with which in the present conditions and without further legislation it is quite impossible to cope. The suggested Bill was to prevent possession of apparatus without a licence by providing penalties. By the way the tracing of illegal radio apparatus over so huge a territory as that comprising India cannot be but something of a hopeless task. Sir Frank's final item of information declares that "the financial position of the service was radically unsound, there was no prospect of any

improvement of the service, nor could more transmitting stations be established without increased revenue!"

One is glad to be able to present to our readers a somewhat brighter view of matters than that revealed above. There is evidently a public in India which is urging "the wider aspect of the utility of the broadcasting service for mass education and mass entertainment," and that this should be taken into account. The service of the Madras Corporation, it is gathered, "is becoming very popular," and Lahore and Poona were trying to follow Madras. Provincial broadcasting services catering in particular provincial languages are looked forward to as a means of mass education and entertainment. The multiplicity of languages and dialects within the immense boundaries of the territory known as India, of themselves provide problems enough and to spare!

**NORTHERN IRELAND.**—Mr. W. Reay, who has been connected with the Contract Office at Lisburn of W. T. Henley's Telegraph Works Co., Ltd., since 1928, has been appointed manager of the company's Belfast branch in succession to the late Mr. C. Magee.

**NORWAY.**—The Norwegian broadcasting system is to be converted into a Government undertaking. This was decided in principle by the Storting some weeks ago.

**PHILIPPINE ISLANDS.**—Reuter's Agency reports the opening of a wireless telephone service between Manila and Berlin on Mar. 1.

**RUSSIA.**—That most reliable of news agencies, the Reuter organisation, informs us from *Moscow* that, "What is claimed to be the most powerful radio broadcasting station in the world has been completed at Noginsk, some forty miles from Moscow. Its aerial capacity is rated at 500 kilowatts, which greatly exceeds that of any other broadcasting station in Europe."

The total cost of construction has amounted to 7,500,000 roubles (nominally £750,000), 3,250,000 roubles of which has been spent on equipment. A cable about forty miles long connects the station with the Moscow studios, whence programmes will be broadcast.

**N.B.**—If correctly rated at 500 kilowatts the Noginsk station would surely cause considerable interference with radio reception in Europe, and would prove to be four times as powerful as any other European station.

**SIAM.**—The *Electrical Review* informs us that a picture telegraph service has recently been inaugurated between Germany (Berlin) and Siam (Bangkok).

**SOUTH AFRICA.**—The *Electrical Review* in a recent issue gave some interesting information regarding the future of the Slangkop wireless station. Comprehensive improvements are being carried out there. New receiving equipment is being installed and it is hoped shortly to replace with modern plant the short-wave apparatus which was recently transferred to the Cape Town air-port wireless station. The aim is to render Slangkop the most modern coastal station in South Africa. It is to have a range of from 5,000 to 6,000 miles on the ordinary shipping wavelength band of 600 metres, and it will also be in touch with ships using short-wave sets in all parts of the world.

**SWEDEN.**—Reuter's Trade Service reports that a big new underground telephone cable is to be laid between Malmo and Gothenburg at a cost of Kr. 8,650,000.

**U.S.A.**—The Western Union Telegraph Company announces that its telegraphic Money Order service between Great Britain and North America, which was suspended while the banks in the United States were closed has been resumed.

*Liberty.*—" 'Tis Liberty alone that gives the flower  
Of fleeting life its lustre and perfume."—COWPER.

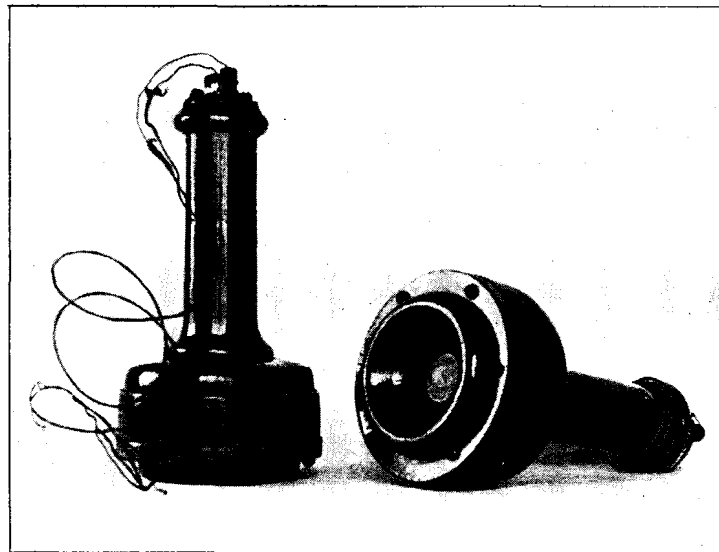
J. J. T.

## BRITAIN'S FIRST TELEPHONE.

R. F. BRADBURN, *Assistant Traffic Supt., Leeds.*

FROM information gleaned incidentally, it appears that Leeds was the first place in Britain where the human voice was heard through the medium of a telephone. Mr. Charles S. Bedford, Managing Director of the Leeds firm of Wood & Bedford, Manufacturing Chemists, was good enough at an interview to supply the following facts.

In 1876, he (now a man of over 70 years of age, but appearing at least 15 years younger) and his brother the late Mr. James Edward Bedford, later to become the first Lord Mayor of Leeds in the Great War period, were two youths interested in all kinds of mechanical contrivances. To assist them in their hobby, they perused among others, the periodical "Scientific Americans." From it they were vastly intrigued by a description of Graham Bell's new invention, the telephone, and they immediately decided to make two replicas.



[Photograph taken by courtesy of Leeds City Museum Authorities.]

A suitable piece of beech was first obtained and by turning on a lathe the frames of two telephones were evolved. Mr. Charles Bedford has rather poignant memories of this lathe, for he states that he provided the necessary power, whilst the future Lord Mayor performed the more skilled operations. For the next stage a bar of steel 2 feet long and  $\frac{3}{8}$ -inch diameter was obtained and cut to the desired lengths. The pieces were then bored and tapped for an adjusting screw, and magnetised.

The diaphragms were made of thin ferro-type plate and were very similar to the modern type. The coils were made of fine wire wound round bobbins, the latter being fixed to the bar magnet and the two ends of the wire coils led out to terminals at the other end of the magnet. A wooden cup, bevelled in the centre similar to the present receiver caps, was fitted by means of screws, and the combined receiver-transmitter was ready.

Bell wire was run on pot insulators from the attic to a workshop about 30 yards away in the grounds of their residence, Sycamore Lodge, Woodhouse Cliff, Leeds. The internal leads to the instruments were of gutta-percha covered wire.

Although no batteries were used, speech could be heard quite plainly at the first trial after a preliminary adjustment of the adjusting screws.

The first conversation over the line was :—

“Are you there?”

“Yes, I am, will you count?”

“1, 2, 3, 4, 5, 6, 7, 8, 9.”

“That’s all right. Will you go through the alphabet.”

“A, B, C, D —”

“Wait a minute while I adjust the screw.”

The new telephone was an object of interest to all the friends of the family and many were the demonstrations given in the evenings. The two original instruments are now in the Leeds City Museum at Abbey House, Kirkstall.

Mr. Charles Bedford, the survivor of the two pioneers, is still interested in scientific developments and spends the major portion of his time in supervising the technical side of his large business. With the passing of years he has lost none of his mechanical skill or organising ability, and only a few years ago designed and planned in his Leeds office the whole of the building and equipment of a branch factory in South America with such success that the completed plant was acknowledged by his competitors to be a model of efficiency. An indication of his remarkable memory and capacity for detail can be gained from the sketch of the telephone drawn by Mr. Bedford during the progress of the interview.

It may be interesting to state the grounds on which the claim is based. The chronology of the early electro-magnetic telephone is :—

June 2, 1875	...	Bell transmitted by wire the sound of a twanging clock spring.
Feb. 14, 1876	...	Bell filed a specification for the transmission of vocal sounds by wire.
Mar. 7, 1876	...	Bell granted patent No. 174,465.
June, 1876	...	Bell exhibited telephone at Philadelphia.
Sept. 9, 1876	...	Brief description of Bell's telephone contained in "Scientific Americans."
Oct., 1876	...	Messrs. J. E. & C. S. Bedford, of Leeds, made copies of Bell's telephone. Transmission of voices effected over a distance of 30 yards.
Dec. 9, 1876	...	Bell patented telephone in England.
Mar. 3, 1877	...	E.-in-C. to Post Office reported he had not seen Bell's telephone.
Aug. 23, 1877	...	Bell's telephone exhibited by Mr. W. H. Preece before the British Association at Plymouth.
Jan. 14-15, 1878	...	Bell personally demonstrated his telephone before Queen Victoria at Osborne whilst on his wedding trip.

## EDINBURGH NOTES.

SOME time has elapsed since a contribution from this District appeared in these columns, but we believe that "advertising pays," and it is our intention to fall into line with our colleagues in other Districts by giving regularly some account of our more interesting activities. This decision has, to a certain extent, been influenced by the fact that in the past few months local interest in the *Telegraph and Telephone Journal* has shown distinct signs of increasing.

During the afternoon of Feb. 28 members of the staff met in the District Manager's Office to bid "au revoir" to Mr. D. J. Meikleham, Sales Manager, who has left us to renew his activities in the Glasgow District. On behalf of the staff, and as a token of our esteem, Mr. J. K. Murray, District Manager, presented Mr. Meikleham with a handsome and suitably inscribed canteen of cutlery. Mr. Murray, in a happy little speech, referred to his earlier associations with Mr. Meikleham in the Glasgow District, and expressed the hope that both the recipient and Mrs. Meikleham would be long spared to use the cutlery. In drawing his remarks to a conclusion, the District Manager stated that he had no doubt that Mr. Meikleham would carry to Glasgow the energy and enthusiasm characteristic of his activities in Edinburgh.

After Mr. Meikleham had suitably responded and Mr. Wilson, Chief Clerk, Mr. Gairn, Sales Supervisor, and Mr. Oram, Clerical Officer, had endorsed Mr. Murray's remarks, the meeting closed with the usual handshakes and wishes of goodwill.

A. W. C. C.

*Extraordinary Happenings in Fife.*—The scene was the Kingdom of Fife, which had been invaded by the Telex Service on the previous day.

The hour was 1.25 p.m., when the office staff had departed for their well-earned lunch. The main office was deserted but for two energetic joiners engaged in fitting up shelves. To the amazement of these industrious artisans, the teleprinter under experimental conditions in the corner of the room commenced recording a message apparently without effort or fuss. Being convinced that something abnormal had happened, the workmen dropped their tools and rushed to the Secretary, who was still in his private room, and reported in faltering tones, the mysterious occurrence.

Assured that everything was in order, and that this might happen daily, they returned to work, casting glances of respect at one of the wonders of modern electrical machinery.

This is a glimpse of a communication miracle which, if contracted for, is possible with a Telex installation connected to a magneto exchange. During unattended office hours, the switch may be left at "Teleprinter," so that the machine can start up automatically. The messages are thus recorded during the absence of the office staff and attended to on their return.

## C.T.O. NOTES.

*Promotions.*—Mr. T. Galbraith to be Superintendent (L.G.), Miss C. J. Goldsack to be Supervisor and Misses A. E. Crossley, E. M. Thompson, G. S. Horrex, A. J. Robinson, G. Derwent and F. A. Roycroft to be Assistant Supervisors.

*Retirements.*—Supervision: Messrs. A. E. Wheeler, Superintendent (L.G.), F. Norton, Assistant Superintendent, and R. Kent, Overseer; Misses R. M. Crawley and L. M. Toothill, Supervisors; G. S. Schirgos, K. E. Ewart and M. Giles, Assistant Supervisors. Telegraphists: Messrs. W. I. Beattie, R. Shobbrook, A. W. Swan, C. J. Wilson, W. J. Peek, W. J. Latter, J. H. Clark, G. H. Reynolds, F. G. Hollis, W. Irvine, G. W. Willis and E. H. Hatcher and Misses I. Dingwall and E. C. Ithell.

*Obituary.*—We deeply regret to record the passing of three of our colleagues. Two of them, Messrs. C. Cotsford and H. W. Thurlow, were victims of the influenza epidemic and were only ill two or three days. Mr. G. Gibson, the third, had been ailing for some time. To all their relatives we offer our sincere sympathy.

We have also been informed of the death of one of our retired officers, Mr. Lew Morgan, who came to the C.T.O. from Brighton in the early 80's and later became Postmaster of Middlewich. He retired in 1926. To Mrs. Morgan and family we extend our condolences.

*New Layout.*—A further stage in the layout of the C.T.O. Instrument Galleries has been reached. The N.W. and S.W. galleries on the third floor have now been equipped with standard tables and teleprinter positions. The walls have been repainted in two colours and the whole aspect is pleasing. The staff have co-operated in helping to minimise the difficulties arising from the disturbance and it is hoped that on the completion of the scheme there will be satisfaction all round. There is a quietude in the galleries now as compared with the Morse and Baudot days and it is expected that when traffic increases, as we hope it will, the smoothness of the working of teleprinters will be still more apparent. Parts of the gallery are still shrouded in mystery, but we await the unveiling without misgivings.

*Centels Sports Association.—Cup Finals.*—The netball and football finals were played at Chiswick on Friday, Mar. 3. In spite of very inclement weather a good muster made the journey. Mr. Stuart Jones kicked off in the football match and Miss Luffman threw down for the netball. Play in the former game was fast, although the surface of the ground was treacherous and provided no foothold. The third floor, through Dickey, took the lead early on and with the wind at their backs had the better of the first half. On the resumption "H" Division pressed heavily and midway through the second half equalised, Day being the scorer. Time arrived with no further score, so extra time was played. Rain at this time was falling heavily, and despite strenuous efforts neither side could obtain the deciding point, the final result being Third Floor 1, H. Division 1. A consultation amongst the players resulted in the decision to hold the cup jointly.

The netball provided a fast and rather even first half with first the Third Floor and then Central Hall taking the lead, and at half-time the teams crossed over with the score 8-6 in favour of the Third Floor. Rain fell heavily throughout the second half, and under these depressing conditions the Third Floor gained the upper hand, eventually winning by 14-10.

The Cups were presented at the conclusion by the Controller, to whom, coupled with the Chief Supervisor, we should like to tender our thanks for their presence and support in the rain.

*Football.—Brixton League.*—Feb. 22.—Centels 4, Kennington Police 0. Mar. 8.—Centels 0, Brixton Police 0. Mar. 15.—Centels 0, Clock House 3.

*Netball.—Civil Service League.*—Feb. 22.—Centels 17, Land Registry 19. Mar. 11.—Centels 15, Public Trustee's Office 23.

*Chess.—Civil Service League.*—Centels 5, L.C.C. II 5. Centels 4½, G.P.O.N. II 5½. Centels II 5½, Ministry of Health V 4½. Centels II 4, Board of Trade III 6.

## LEEDS DISTRICT NOTES.

THE pleasure with which the news that Col. Jayne, our Postmaster-Surveyor, has been appointed to the Postmaster-Surveyorship of Birmingham was received throughout the District was mingled with a sense of regret that we shall lose a chief whose interest and activity were reflected in every avenue of Post Office development and were felt and appreciated by every grade of the staff.

Yorkshire suffered heavily in the great blizzard of Feb. 24, 25 and 26, when the unprecedented snowfall disorganised all transport and communication for many days. Telephones and Telegraphs suffered severely, over 10,000 exchange lines being rendered ineffective in the West Yorkshire District alone, whilst many exchanges were entirely isolated from outside telephone communication for several days.

The Traffic and Engineering organisations had a heavy task to deal with the problems of disposal of traffic and the restoration of the services, but the emergency liaison arrangements specially set up contributed largely to the prompt and efficient handling of the situation.

The Press were very helpful in their day by day reports of the position regarding the restoration of the telephone service, and photographs of the damage to poles and wires which they published left no doubt in the minds of subscribers as to the extent of the damage to the external plant. The subscribers, almost without exception, exercised exemplary patience and showed the greatest goodwill to the service, as well as a full appreciation of the difficulties attending the work of restoration. The cartoon by "Richardson" which we reproduce by kind permission of the *Yorkshire Evening Post* is typical of the good humour with which the subscribers faced the situation.



These notes would not be complete without placing on record that the staff throughout the district attended in full force for their duties, notwithstanding the absence of regular transport facilities and the existence of terrible road conditions which caused legions of trams and motor cars to be abandoned in the snowdrifts. The loyalty, cheerfulness and courage of everyone sustained the public service under conditions which were amongst the worst in living memory.

The third whist drive and dance of the session, organised by the Social and Discussion Circle, was held at the Metropole Hotel, Leeds, on Saturday, Feb. 25, while the storm was at its height. The enthusiasm which these functions arouse resulted in the remarkable attendance of 180 members of the staff and their friends, who enjoyed the dance in surroundings of gaiety which were in sharp contrast to the wintry weather conditions outside. Mr. Murray (District Manager) presented the prizes to the successful whist competitors, Mrs. Johnson and Mrs. Clitheroe. The difficulties in regaining their homes through the deep snow will long be remembered by those who braved the elements on this occasion.

The transfer of the Ossett Exchange from magneto to C.B.S. working and the opening of the re-constructed Post Office were made the occasion of an interesting civic ceremony at Ossett on Feb. 22, when the Mayor (Ald. J. Illingworth) formally declared the new exchange open for service. The Mayor, who was accompanied by members of the Council, the Chamber of Commerce and the Chamber of Trade, made an interesting and amusing speech advocating the wider use of the telephone service, to which Col. Jayne

(Postmaster-Surveyor) replied. Mr. Murray (District Manager), Mr. Whetton (on behalf of the Superintending Engineer) and Mr. Thomas (Head Postmaster, Wakefield) also spoke. After light refreshments had been served the company was conducted, in small parties, through the various sections and had the working of the different P.O. services explained to them.

The second annual concert in aid of the Rowland Hill Benevolent Fund, which was given in the People's Hall, Leeds, on Feb. 17, was voted a huge success and resulted in a profit of £10. The artistes, who were all members of the staff, gave an excellent entertainment and thoroughly deserved the thanks of the committee for so readily giving their services. Col. Jayne, in a short speech, stressed the need for more regular supporters who were willing to contribute, say, 1d. per week to the fund by deduction from pay.

On Feb. 8 a lecture entitled "The Telephone Service" was given by Mr. T. W. Lawrence (Traffic Superintendent) to the members of the Milnsbridge Evening Institute. This was one of a series of evening lectures which are given under the auspices of the West Riding C.C. Education Committee. The interest exhibited nowadays in telephone matters was demonstrated by an attendance at Mr. Lawrence's lecture of more than double the average attendance at the lectures on other subjects which have been held during the present session.

The promotion of Mr. S. W. Smith to the newly created post of Traffic Superintendent, Class II, is one that has given particular pleasure throughout the District, and we congratulate him on his well-deserved step up.

A very popular member of the staff, Miss L. M. Benson, the Supervising Telephonist at Ilkley Exchange, has left us to join the London Telephone Service. Miss Benson was an occasional contributor to these notes and her pithy comments and originality of outlook will be missed. She was presented with a reading lamp and statuette by the Ilkley Post Office staff and with an inscribed clock on behalf of the Wharfedale and District Exchanges. The latter presentation was made by Miss Trenham, of the Otley Exchange.

POST OFFICE ENGINEERING DEPARTMENT,  
NORTHERN DISTRICT STAFF DINNER.

THE third annual staff dinner of the Northern District was held in the County Hotel, Newcastle-on-Tyne, on Saturday, Feb. 18, 1933. A company of 120 sat down to dinner under the chairmanship of Mr. F. G. C. Baldwin, Superintending Engineer.

The toast of "The Post Office Engineering Department" was proposed by Mr. F. Ferguson, Postmaster-Surveyor of Newcastle-on-Tyne, who mentioned the rapid developments in communications engineering which had occurred of recent years. He said that the three developments which had impressed him most were the improvements in long distance telephony, the advance of the all-conquering teleprinter and the development of wireless communications. He referred to the eulogies of the Post Office Engineering Department contained in the Bridgeman Report and paid a graceful compliment to the Superintending Engineer and staff of the Northern District.

In replying to the toast Major H. Brown, O.B.E., Assistant Engineer-in-Chief, expressed his pleasure at having been invited to attend such a happy function as this staff dinner. In acknowledging the appreciative references of Mr. Ferguson to the achievements of the Engineering Department, he expressed the opinion that probably the most remarkable advance of all had been in the study of the problems of transmission, and the application of the resultant discoveries to the improvement of communications through cables by means of repeaters. He embellished his reply with several anecdotes of official life to the considerable entertainment of the company.

Mr. T. Fewster, in proposing the toast of "The Visitors," reminded them that in visiting the Northern District they were visiting an area which might justifiably be claimed to be "the cradle of modern engineering." Within its borders had been born the inventors of the steam locomotive, the steam turbine and other revolutionary inventions. He hoped that they would enjoy the Northern District dinner and would carry away pleasant impressions of the occasion. He referred to the presence of Major Brown, Mr. Ferguson, Mr. Whillis (Superintending Engineer, Scotland West District), Mr. Atkinson (Superintending Engineer, North Eastern District) and Mr. Elliott (former Superintending Engineer, Northern District).

Mr. Whillis replied to the toast and in his remarks doubted whether it was proper to regard him as a visitor. He first lived in Newcastle when only a few years old, and had spent 18 years of his official career in the Northern District. Consequently he regarded Newcastle as home, and in proof thereof he showed his command of the vernacular in relating some delightful stories of local characters. He expressed appreciation of the fare and entertainment provided.

A surprising item of the musical portion of the proceedings was the rendering of part-songs by an octette composed of members of the staff under the direction of Mr. F. J. Shadforth, Staff Officer. An enjoyable programme was also contributed to by Messrs. J. B. Anderson, A. G. Farrer, J. E. Jordan, W. Lockhart, G. Newby, J. Rogers, K. Weightman, and G. S. Young. Mr. Shadforth played the pianoforte accompaniments.

## BIRMINGHAM NOTES.

*Telephone Lecture Society.*—After an interruption necessitated by the event of the Young People's Telephone Exhibition the Birmingham Telephone Lecture Society resumed its meetings on Tuesday, Feb. 21, when a paper on "Letter Carrying" was ready by Mr. C. E. Morgan, of the Postal Department. Mr. Morgan sketched the history of the postal service from its earliest days and then outlined the organisation of the service as it is to-day, with particular reference to the travelling post office arrangements.

Mr. Morgan is to be congratulated on a very interesting and informative paper and it was obvious that it was thoroughly enjoyed by his audience.

This is the second occasion on which a paper has been read to the society by a member of a branch other than telephones and the success of the occasions has led us to hope for still further papers from members of other sections.

The lecture was followed by an exceptionally enjoyable concert of Gilbert & Sullivan items arranged by Miss Hyatt, of Central Exchange, and the evening concluded with a short dance.

*Birmingham Automatic Scheme.*—Stechford Magneto Exchange was transferred to automatic working as an extension of the Birmingham Director Automatic Scheme on Feb. 18. There are now 23 director automatic exchanges working in the area, serving a total of over 14,000 subscribers. Further extensions to the system are to be made shortly.

Taking the Birmingham District as a whole, there are now 40 automatic exchanges, either director or non-director, and nearly 50% of the total subscribers in the District are served on an automatic basis. In addition there are eight call display exchanges to which subscribers in the director area can dial their calls and there is also inter-dialling between the Dudley non-director area and certain of the director area exchanges.

*Promotion.*—A representative gathering assembled in the Traffic Superintendent's Office on Mar. 4 to say good-bye to Mr. K. W. Mills, Assistant Traffic Superintendent, who left us to take up an appointment as Assistant Inspector of Traffic, Class II, at the Secretary's Office.

The Traffic Superintendent, Mr. G. F. Findley, took the chair, and conveyed his congratulations to Mr. Mills on his promotion, but deplored the loss that it entailed to Birmingham. Various other members of the Traffic Department expressed their best wishes to Mr. Mills for his future success and happiness, but we at Birmingham are all very sorry to lose him.

The District Manager, Mr. J. L. Parry, then presented Mr. Mills with a set of Gilbert & Sullivan gramophone records as a token of the esteem and affection in which he is held by his colleagues.

*The British Industries Fair, Castle Bromwich.*—The usual temporary telephone exchange serving the heavy section of the British Industries Fair, held at Castle Bromwich, Birmingham, was opened this year on Feb. 6, 1933, two weeks in advance of the opening of the Fair.

The exchange consisted, as for several years past, of 4 C.B.'s, No. 2 switchboards provided with junctions to most of the principal exchanges in the district, and was, as usual, a source of considerable interest to the many thousands of visitors who visited the adjacent post office counter.

Several new records were established this year, the figures, as compared with previous years' figures, being as follows:—

	No. of Lines Connected to Fair Exchange.	Total Calls in Busy Hour.	Receipts Long Distance Boxes.
1927	55	149	£58 18 2
1932	151	344	104 7 8
1933	176	431	111 0 0

A total of 21 call offices was provided, 4 solely for long distance calls, 5 ordinary, adjacent to the post office, and 12 others in various parts of the building. The 17 ordinary call offices were connected to Central Exchange in order to give prepayment facilities, but the charges appropriate to the Fair Exchange were, of course, made.

An innovation this year was that the four call offices reserved for long distance calls, which were fitted with the new hand-micro type of telephone, and were without coin boxes, were connected to Fair Exchange through a special control switchboard on the post office counter, from which was also connected a direct line to trunk records. This enabled the counter clerk to exercise closer supervision over the call offices.

It may be of interest to note that special arrangements were made in view of the large number of trunk routes from Birmingham now working on the "Demand" system, to afford demand facilities to the four special call offices referred to above, in addition to the ordinary Fair subscribers, although the facility has not yet been extended to call offices generally. As a result, many expressions of approval of the improved long distance service were made.

A teleprinter display was also installed on a separate stand in a very conspicuous part of the Fair, on similar lines to that provided last year.

A tariff D installation was installed with alternative teleprinter and telephone service between the Birmingham Fair and the London section at Olympia, together with a Telex service working on a direct line to Central Exchange for normal Telex communication. An almost continuous demonstration of teleprinter working was arranged and attracted very great interest throughout the duration of the Fair.

## MANCHESTER NOTES.

*Lectures.*—"Telephone Operating and Correlative Subjects."—Mr. Magnall, Traffic Superintendent, gave a lecture on this subject at Telephone House in the evening of Mar. 7 to a gathering of Engineering and Traffic Officers.

The lecturer classified operating into three main types; "A," "B," and Trunk. "A" operating gave so much food for thought and discussion that little time was left for the other two types. Particular attention was paid to those points where engineering and traffic work go hand in hand.

In proposing a vote of thanks appreciation was expressed of the lecturer's whimsical style and clear exposition, which proved a relief from the detailed technicalities that constituted the daily work of most of his audience. He acknowledged the valuable assistance given by Mr. Green, Assistant Traffic Superintendent, in the preparation of data for the lecture.

"Traffic Work on Sales Orders" was the subject of another lecture given by Mr. Magnall at Telephone House on Mar. 10. Mr. Whitelaw, the District Manager, introduced the speaker and remained for the earlier part of the lecture. Captain Cooper, the Sales Manager, then took over the chair. The appreciative audiences consisted of Sales and Traffic Officers, including several ladies from the Toll Exchange. The lecturer defined the essential function of the Sales Branch as that of obtaining orders for additional lines, and of the Traffic Branch as that of ensuring adequate equipment and staff at exchanges to meet the orders obtained. He then explained in detail what is done in the Traffic Branch and Exchanges when new orders or cessations are received. The allocation of numbers proved of great interest to the Sales Representatives, as this is a thorny question with many new subscribers. A discussion followed and several Sales Representatives expressed their appreciation of being able to clear up points which had not been perfectly clear to them.

The main purpose of these and similar lectures has been not only to extend very valuable information but to promote good relations and appreciation of one another's problems and difficulties.

*Telegraph Messengers' Institute.*—A lecture was given on "The Hills and Valleys of North Wales," by Mr. B. J. H. Bitton, at 7.30 p.m. on Mar. 17, in the Manchester Head Office Dining Hall. The lecture was illustrated by lantern slides and was well attended. Mr. W. S. Hartley, Chief Superintendent, presided.

*Post Office Telephones Social Club.*—A very pleasant dance was held at Telephone House on Shrove Tuesday, Feb. 18. About 200 people were present.

Another dance was held on Mar. 18, and a carnival dance has been arranged for April 8.

As this will be the last dance of the season we anticipate that it will be particularly popular.

*Postels Amateur Dramatic Society.*—The society presented "The Land of Promise," by W. Somerset Maugham, in the Lesser Free Trade Hall. This was the society's sixth public production, and was very well received. It is one of Maugham's earlier plays, and the struggle between Norah, the refined English lady's companion (Miss Gladys Crosbie), and Frank Taylor, the uncouth Canadian hired man (Mr. A. H. C. Knox), was very well portrayed. The other parts were in capable hands, and the whole of the production reflected credit on the society in general, and on the producer, Mr. Frank Whitehurst.

*Civil Service Sports Club.*—Cricket.—A knock-out competition, for which any Civil Service office or department is eligible, has been arranged to commence in April. The team fee is 6s., and tackle will be provided free by the club. Matches will be played on the club ground, and medals will be presented to the winners. Those enthusiasts who have admired and wish to emulate Larwood will be attracted especially by this knock-out competition.

*Tennis.*—Four new courts are being laid. At a meeting on Mar. 14 officers were elected, and the season's programme drawn up. There will be many and varied tournaments, and details of these will be exhibited locally from time to time. The courts will be open for play throughout Sundays.

*Golf.*—Mr. Maddan, the Postmaster-Surveyor, presided over a meeting of enthusiasts on Mar. 10 to consider the formation of a Golf Section.

*Dance.*—When these Notes appear the club will have held a dance at the Piccadilly Theatre Cafe, Manchester, on Mar. 30.

**Staff Change.**—Mr. S. R. Hayman, Assistant Traffic Superintendent, apparently is unable to face another Manchester summer, for when this is read he will have left us for Reading, on April 1, the fourth anniversary of his advent in Manchester. Mr. Hayman has made himself liked and respected for his good fellowship and capacity for hard work.

**Extension of No-delay Area.**—Further improvements to the service were effected on Mar. 18 by the further extension of the no-delay area to include the whole of the Leeds group. The exchanges concerned at this end are in the Manchester and Preston groups. We expect that subscribers will appreciate the change as well as they did the recent extension to Bradford, Barnsley, Chester, Hanley and Sheffield areas. Our no-delay system now covers approximately a quarter of a million subscribers, but the significance of this number will be lost when the new trunk demand exchange is completed in the autumn.

**Miss M. H. Whalley.**—We regret to announce the death of Miss M. H. Whalley, Assistant Supervisor, Class II, of the City Exchange. Miss Whalley's death occurred in very tragic circumstances. She was on duty as usual during the day and in the evening was knocked down by a motor lorry and killed instantly. It was a great shock to all the staff when the news of the accident was received.

The interment took place at the Southern Cemetery, and was attended by many of Miss Whalley's colleagues. Their sympathy was expressed by the many beautiful floral tributes.

## THE MANCHESTER TELEPHONE AND TELEGRAPH EXHIBITION.

MANCHESTER, in common with other Districts, has had its Exhibition, from Feb. 6 to 18, and it undoubtedly was a great success. The accommodation provided by Messrs. Lewis's, Ltd., in their huge store, was so ample that serious congestion was avoided, although the number attending, children and adults, was 110,000. During the busiest day no less than 13,000 came to see it, although it was only open from 9 a.m. to 6 p.m.

The publicity was very good, as the opening ceremony by Sir Ernest Bennett, M.P., the Assistant Postmaster-General, was broadcast by the British Broadcasting Corporation, who very kindly altered their already arranged programme. Mr. F. J. Marquis, J.P., Joint General Manager of Lewis's, Ltd., Mr. Zimmern, of the Manchester Chamber of Commerce, and Mr. F. E. Warbreck Howell also made speeches.

The Manchester Board of Education took a great interest in the Exhibition and it made special arrangements for conducted parties of children to attend at the rate of 180 per hour for practically the whole period. Their interest was intense. At the telegraph stand they played with the morse key and sounders, many of them knew morse and sent messages, the Wheatstone perforator intrigued them, but what delighted them most was to be able to write telegrams and watch their transmission and reception on the 3A teleprinters and to receive the actual messages at the end of the stall on souvenir forms in the official orange envelopes. Grown-ups were nearly as much interested. The telegraph staff were kept very busy, on one day no less than 1,091 messages were sent. Visitors were also allowed to have free calls, within the local fee area, over two kiosk circuits, and these were never empty. A complete rural automatic exchange, including its house and associated kiosk, was shown, there again the youngsters enjoyed themselves in dialling calls to each other.

The travelling post office and a "very latest" stamp obliterating machine, so interested them that it was hard to move them on to the more serious exhibits. These included, among others, a complete director auto unit, a manhole with a jointer working on a 1,000-pair cable, two telex circuits, the 1,000-mile underground cable talk, a Wimshurst machine, the magic ring and the cable ship. The museum exhibits also attracted much attention.

Adults visited the Exhibition in much greater numbers than the children and they were equally interested and impressed. Many of them made very complimentary remarks on the progress in telephonic and telegraphic science and particularly with regard to the fact that the Post Office is now advertising its facilities. From the publicity point of view the Exhibition was a great success and the number of orders taken at the sales stand was very gratifying; there were so many enquiries that it was necessary to have two Sales Representatives on duty.

The overseas talks were very popular as these were broadcast in the hall.

The police signal system was of special interest to municipal authorities, for whom a special demonstration was arranged when the store was shut. Nearly every Chief Constable within 50 miles of Manchester attended and many others have since inspected it. It is considered that a number of orders will be obtained.

The outstanding feature of the Exhibition was the wonderful qualities displayed by the demonstrators and guides; throughout the whole period their arduous duties under difficult conditions were performed with tact, cheerfulness and patience. This was the subject of many complimentary remarks by visitors and of a number of complimentary letters which were received.

## SOUTH MIDLAND DISTRICT NOTES.

In spite of the fact that the book Tp. 60D will tell a different tale, the South Midland District has just completed one of its most successful records for increase in stations for any one quarter since the general depression set in, by making a net increase of 834 stations up to Dec. 31.

Unfortunately, certain territory has been handed over to other adjacent districts, with a consequent transfer of stations. It is, however, very gratifying to have some indication that business is at last on the up-grade.

On Wednesday, the 8th instant, a large number of students from the Radley College, Abingdon, visited Oxford Post Office and Exchange, where the District Manager and Head Postmaster met and welcomed the party. The visitors expressed their thanks for the efforts made to entertain them, and added that everything they saw was highly interesting and instructive and that they were particularly pleased with the clear explanations of all the automatic mechanism.

One selected at random from a score. "*Ex uno disce omnes.*" :—

Baldock, Feb. 4, 1933.

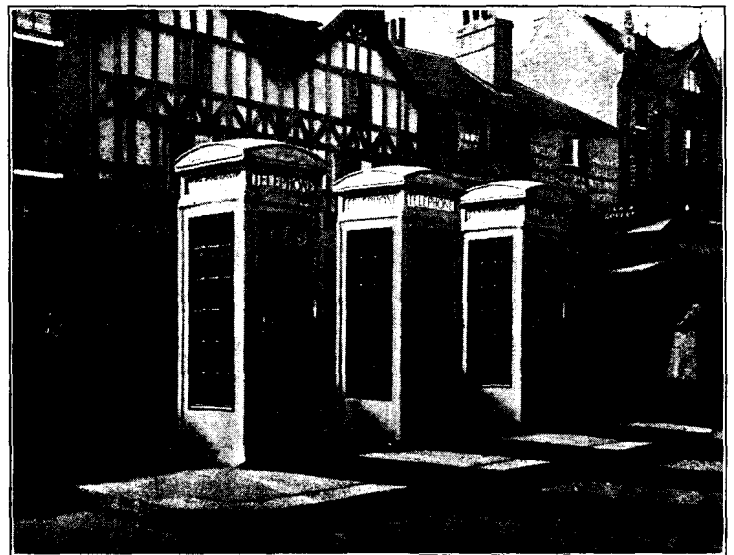
"Having been confined to bed with influenza, I one day expressed a wish that I had an extension to my bedside. Within 24 hours I was using such an extension. I cannot allow this to pass without expressing my gratitude for, and admiration of the efficiency of the service. I should like to add that the particular man who called to attend to the job was not only efficient, but possessed of the most charming manner that I have come across for some time."

It seems almost impossible to visualise that in canvassing for a new exchange within 30 miles of Oxford Circus the only possible means of calling at one house was by methods more usually in favour 200 years ago, but it is a fact that one of the Sales Representatives found it necessary to hire a horse and to ride across ploughed fields to meet his prospect, who incidentally signed an agreement.

Normally the track to the house is so bad that the butcher, baker and candlestick maker refuse to call, and the postman looks upon his duty of delivering letters there as a glimpse of his future existence—being a Post Office servant. Just now the track is under water, and the Sales Representative had no other method of calling but by riding a-cockhorse.

I think Messrs. Harold Whitehead and staff would agree that the "Will to get there" is fairly strong in the South Midland District. Incidentally the C.M.8 forms for the day are illuminating—first call 8.10 a.m., last call 10.25 p.m.

The sketch showing the position of three kiosks at Reading may be of interest, not that it is uncommon to see three kiosks side by side, but the point is that not only did we get a free wayleave from the corporation, but we induced them to build an island site for their accommodation only.



TELEPHONE KIOSKS, READING.

The site is an excellent one, the meeting place of most of the buses for miles around, and a very high revenue is fairly certain.

W. S. C.



*Staff Meetings.*—The annual series of staff meetings was held during January and February. It had been intended to hold meetings at 5 centres, but owing to the ravages of "flu"—both in the exchanges and in the Traffic Office—the programme had necessarily to be confined to Reading, Luton and High Wycombe, the telephonists from these exchanges and from surrounding districts being present.

At each centre 6 meetings, extending over three days, were held, a total number of 204 Assistant Supervisors and telephonists attending. Each meeting was opened by the Traffic Superintendent (Capt. F. H. Neate, O.B.E.), who welcomed the staff and then proceeded to give an outline of demand trunk working. He was followed at the first two centres by Mr. H. R. Jones (Traffic Supt., Class II), who described the procedure followed in the Traffic Office in connexion with staff revisions and who also gave a talk on ticket preparation, and timing of trunk calls. (These two items were dealt with at High Wycombe by Mr. Woodland (Asst. Traffic Supt.). In view of the forthcoming transfer of Reading area to automatic working Mr. Jones also gave, at Reading, a short lecture on "automatics" in general, and on the Reading scheme in particular. The results of following up the points raised at last year's meetings were tabulated by Mr. Tatchell (Asst. Traffic Supt.) and read out to the meeting.

Following the talks and lectures the meetings were thrown open for informal discussion and in most cases the time at our disposal was quite inadequate to discuss all the questions raised by the enthusiastic audiences. Nevertheless, a total of 106 very interesting questions was raised and those cases in which immediate answers could not be given were tabulated for "follow up" treatment.

There is no doubt that such meetings serve a very useful purpose in improving the contacts between the exchange staffs and the Traffic Branch and allow everyone concerned to express themselves quite informally and frankly on many questions which might otherwise never be brought to light.

At each centre we were pleased to welcome representatives of the Union of Post Office Workers and of other branches of the Department, and at Reading we were honoured by the attendance of Mr. W. Storr (Asst. Surveyor, Class I) and Mr. T. L. Davies (Head Postmaster).

*Reading Post Office Telephones Cricket Club.*—The annual whist drive and dance was held at the Cadena Café, Reading, on Friday, Feb. 3, and a large number of the staff and friends was present. Twenty-three tables were occupied for whist, at the end of which 16 prizes were graciously distributed by Mrs. W. S. Coulsell.

The dance which followed to the strains of the Savannah Dance Orchestra was well attended and thoroughly enjoyed, the company breaking up at 1 a.m. The M.C.'s were: for whist, Mr. P. W. Luscombe; and for dancing, Messrs. Watson and Woodland.

## GLASGOW DISTRICT NOTES.

On Mar. 9 we were favoured with a visit by Sir Kingsley Wood, M.P., the Postmaster-General. It is perhaps needless to say that Sir Kingsley would have a very full programme, he nevertheless found time to meet the senior officials of each section of the Post Office, and representatives of the staff, who were charmed by his personality and humorous but pertinent comment on the things that mattered.

During the forenoon Sir Kingsley inspected the Head Post Office and the Instrument Room and attended a meeting of the local Advisory Committee, while he was an honoured guest at a Chamber of Commerce luncheon, at which he spoke, with effectiveness on the many activities of the service. After luncheon visits were made to some of the brighter post offices in Glasgow and, subsequently, Sir Kingsley was entertained to tea by the Lord Provost of Glasgow. In the evening the Postmaster-General attended and addressed a meeting of the Junior Imperialist Association and later travelled back to town by the Night Scot.

Surely a busy day! Before leaving Glasgow Sir Kingsley kindly expressed himself as being very pleased with his visit and referred particularly to the good relations which existed between the Glasgow public and the Post Office staff and to the evident harmony and co-operation within the office itself. We hope Sir Kingsley will find time to visit us again at some early convenient date.

*Presentation to Mr. F. Lucas.*—Presentation and farewell ceremonies, as a rule, tend to develop into rather dry and wordy dissertations, frequently interspersed, in generous measure, with broad sentiment. Not so the little ceremony which took place in the St. Vincent Restaurant, Glasgow, on Friday, Feb. 24, when our old but ever young friend Mr. F. Lucas, Sales Manager, was the guest of honour on the occasion of his transfer to Preston.

Under the cheerful guidance of our Chairman, Mr. A. E. Coombs, were assembled representatives of all branches, together with friends and colleagues from neighbouring districts. The most outstanding feature of the remarks passed by the speakers, without exception, was the spirit of cheerful and happy raillery with which they regaled the company and bade "bon voyage"

to the departing guest. The actual presentation was made by Miss Jean Barrett, who enjoys the unique distinction of being the only lady Sales Representative in the Kingdom.

The musical programme which followed was remarkable for its diversity of talent, ranging, as it did, from humorous examples of the "raconteur's" art by Mr. D. Rankine, serio-comic items by the Sales Sextette (which, incidentally, constituted this group of entertainers' very successful debut), to lilting melodies by Miss Coombs, Miss McGill and Mrs. Hall, and finally Miss P. Dow, who, over the radio, frequently charms Scottish listeners.

*Central Telephone Exchange Dance.*—A dance under the auspices of the Central Telephone Exchange Staff was held at the Ca'doro, Union Street, Glasgow, on Tuesday, Feb. 28, from 7.30 p.m. to 1.30 a.m. This function passed off splendidly and was well attended, about 260 people being present. A well-varied assortment of dances gave great pleasure to the assembled company, which included Mr. A. E. Coombs, the District Manager, and Mrs. Coombs. Mr. Hamilton, the Exchange Superintendent, acted as master of ceremonies and carried out his duties with characteristic energy, and needless to say with great success.

We were pleased to see Mr. E. E. Wilkins, Mr. Hamilton's predecessor as Exchange Superintendent, in attendance at this dance. Mr. Wilkins very often comes to his beloved Glasgow for a busman's holiday—popular gossip wonders why.

*Glasgow Post Office War Hospitals Entertainments Committee.*—The Ralston Hospital for Disabled Ex-soldiers was again visited by a Post Office party on the evening of Thursday, Mar. 16. This time the entertainment was arranged by the Telephonist and Supervising staffs of the Ibrox and Govan Exchanges, together with their friends. Tea was provided for the soldiers, and was followed by vocal solos by Miss McRoberts and violin solos by Mr. Macdonald. The Corporation Motor Transport Concert Party held the platform from 7.30 to 9.30, and our thanks are due to this party for the high class of entertainment provided.

Mr. Teasdale (Traffic Superintendent) was present and he proposed a vote of thanks to the hospital staff for the graceful reception which had been accorded to the Post Office staff.

The matron replied in suitable strain, and said, with regret, that this was the last entertainment for the season at Ralston. The matron paid great tribute to Mr. Ward, the Secretary of the Committee, for the increasing efforts he had expended on behalf of the war hospital.

*Resignations on Account of Marriage.*—Miss T. Wilson, Bell Exchange; Miss I. M. McLeod, Bell Exchange; Miss I. Neville, Central Exchange.

We extend a hearty welcome to Mr. D. J. Meikleham, Sales Manager, in succession to Mr. Lucas. Mr. Meikleham's appointment to the Glasgow post is in the nature of a homecoming. A Glasgow man, he commenced his telephone career in the second city of the Empire under Mr. W. F. Taylor in 1900. In 1907 he was transferred on promotion to Plymouth, thence to Dundee, Scotland Western, Newcastle and Edinburgh, and after 26 years we congratulate him upon his return as chief of the branch which he entered as a junior officer.

*On Speeding Up.*—Neither accuracy nor clearness should be sacrificed to speed.—(Tp. Circular.)

The study and synthesis of bricklaying have discovered a method which requires only 1.75 motions to lay a brick instead of 18 motions. . . . Such a machinery as this might well take the place of the Speed Boss. . . . Scientific management does not intend him to "speed up" at the cost of those who are speeded up. It is intended that the "speeding up" shall be the result not of mere pressure, but of easier and more facile operations.—(J. Lee.)

Work which runs in a fixed groove may be urged on occasionally at express speed without any perceptible injury to the quality of it. A clever violinist can play a passage prestissimo as correctly as if he played it adagio; a banker's clerk can count money very rapidly with positively less risk of error than if he counted it as you and I do. . . . But notwithstanding the many instances of this kind which might be cited, the truth remains, the highest kinds of intellectual labour can hardly ever be properly performed when the degree of pressure is in the least excessive.—(Hamerton.)

There n' is no werkman whatever he be,  
That may both werken well and hastily  
This will be done at leisure parfitly.—(Chaucer.)

It will be a wonder if he succeeds, since he will only stitch away in haste, like a tailor on Easter-eve; for works that are done hastily are never finished with that neatness they require.—(Sancho Panza.)

Love moderately; long love doth so;  
Too swift arrives as tardy as too slow.—(Romeo.)

Whoever is in a hurry shows that the thing he is about is too big for him. Haste and hurry are very different things.—(Chesterfield.)

## REVIEWS.

"Telephone Theory and Practice." By Kempster B. Miller. McGraw-Hill Publishing Co., Ltd., Aldwych House, W.C.2. Volumes 2 & 3. Price 30s. per volume.

Volume 2 of this book deals with manual switching and sub-station equipment. The author is well known to many of our readers as the writer of "American Telephone Practice 1904." It is an up-to-date treatise thoroughly well produced, and it gives a description of broadcasting transmitters and loudspeakers—chiefly from the American standpoint.

The sister Volume (No. 3) deals with Automatic Switching and Auxiliary Equipment in a very comprehensive way, separate chapters being devoted to the Strowger step-by-step system, the Panel Dial system, the Rotary Automatic Telephone system, and the All-Relay Automatic system. The author in summing up the general position, considers machine switching to be superior to manual switching, and subscriber-controlled dials to have proved themselves preferable to operator-controlled mechanisms. He points out that the process of conversion to automatic working must necessarily be slow for three principal reasons: To keep within the bounds of reasonable capacity for the manufacturers of equipment; to conserve investment in existing manual equipment still adequate; and to cover service during period of conversion. Few will quarrel with these conclusions.

There is also a chapter of 60 pages devoted to power plants for telephone systems, and further chapters on protective services, distribution frames, private branch exchanges and toll switching.

## GLOUCESTER NOTES.

*Whist Drive and Dance.*—The second whist drive and dance of the season took place on Mar. 3, and was well attended by members of the District Manager's staff and their friends. Again we feel compelled to express our appreciation of the presence of many of the staff who live at considerable distances from Headquarters and our thanks to those who generously gave their services and means of transport in order to ensure a safe and comfortable homeward journey for their colleagues after the dance. The Sales Department was particularly well represented, every Sales Representative in the District being present. The dance room was gaily decorated with fairy lights, streamers and plants. The lighting effects were provided by Mr. John Newth, a well-known local electrical engineer, and the plants by Messrs. A. Hurran & Son, a firm of high-class nurserymen and floral experts.

As on the previous occasion, whist and dancing were timed to commence simultaneously. The whole party met at the supper table, where carnival hats added to the gaiety of the feast. After supper, the whist prizes were presented by Mrs. McLarty and the District Manager, Mr. R. M. McLarty, briefly welcomed all present and expressed the thanks of the social committee to all who had assisted to make the evening so enjoyable.

Following supper a humorous song was rendered by Mr. P. H. Allen, and Miss Olive Shaw delighted the audience with a recitation. Dancing was then recommenced, but an interval was taken about midnight, when Miss M. K. Risbey entertained us with a song, and humorous items were given by Mr. Stanley Bennett and Mr. R. D. Hope. The remainder of the available time was occupied on the dance floor and prizes were distributed to the winners of two spot dances.

The party broke up at 2 a.m. amid acclamation of the success of the evening and unanimous agreement with the perversion of the old adage that "There is no time like the pleasant." We should like once more to express our gratitude to Mr. S. H. Simonds for his prodigious efforts as secretary of the social committee, in ensuring this success.

*Hockey.*—Owing to illness amongst the Bristol District Office staff the return match which was to have been played at Gloucester had to be abandoned. We, at Gloucester, hope that we may look forward to a meeting with our Bristol colleagues and friends next season.

*Informal Dance.*—In order to obtain the maximum enjoyment at our social functions, a number of the staff and their friends have this winter taken a few lessons in the art of modern ballroom dancing. As a fitting conclusion

to the session, an informal dance was arranged for Monday, Mar. 13. The decorations and catering were carried out by the staff and friends, thus enabling the cost to be kept at a minimum.

The party, numbering about 100, spent a very enjoyable evening and our reputation for jolly parties was considerably enhanced by this further success.

We have heard a rumour that future publications of the Gloucester Guide Book will contain among the entertainments section "The Social Functions of the Telephone District Office Staff." Our modesty has precluded the obtaining of official confirmation and in any case "Rumour is a lying jade."

*Personalia.*—Mr. F. C. Blackman, Assistant Traffic Superintendent, who had been with us on loan from the Manchester District, has now been transferred to the establishment of the Gloucester Traffic Branch. In addition to his contribution to the work of the District, he has, from the time of his arrival, regularly supported the social activities and we are pleased to know that we shall enjoy his company for a longer period than we originally anticipated.

Miss G. M. Francis, who has been with us for more than 8 years as a temporary typist, has now been appointed to the establishment as a typist. We offer our congratulations to one who, through long association, had already been regarded as a member of the staff.

## NORWICH DISTRICT NOTES.

A COMBINED staff and supervisors' meeting was held in the District Office on Mar. 2, 25 officers attending representing five of the larger exchanges in the District. Mr. F. C. French, the District Manager, extended a welcome to those present and called for a frank discussion of any difficulties that might be in their minds. Mr. R. A. David, who acted as Chairman, gave a brief talk on Service Questions, followed by papers on "Service Observations" and "The Equipment Aspect of Demand Working," by Mr. E. P. Runing and Mr. A. E. Trowbridge respectively. Some discussion followed each of the papers, after which a number of points raised by the staff were satisfactorily dealt with. By the time these notes appear in print a further meeting will have been held at Cambridge on Mar. 23.

*Social.*—A whist drive and dance was held by the Post Office Sports Club at The Regent, Norwich, on Mar. 9. Among the crowd of whist enthusiasts, numbering more than 70, the prestige of the District Office was upheld by Miss Dunbar, of the Traffic Branch, who, playing as a gentleman, carried off the first prize. Dancing followed, some 50 couples taking the floor, and although the number was considerably reduced when 1 a.m. came the event was voted by all a decided success.

## SHEFFIELD DISTRICT NOTES.

*Obituary.*—After a long and painful illness Mr. J. R. Robertson, unestablished Sales Representative, passed away on Feb. 9. Mr. Robertson was in the prime of life and it was with great regret that his colleagues learned his illness would necessitate early retirement. His colleagues in the Sales Branch maintained close touch with him during his illness and eased the burden of straitened circumstances.

*Sheffield Demand Scheme.*—Prior to the introduction of the new method of working a series of lectures, illustrated by lantern slides, was given by Mr. Sanderson (Exchange Superintendent). All members of the Sheffield Traffic, Supervisory and Operating staffs made voluntary attendance at one or more lectures after 7 p.m. Welcome visitors also included officers from the Engineers, Accounts and Sales Branches, with Supervisors and Telegraphists from "out" exchanges.

Amid the many problems confronting the Traffic Branch matrimony has figured recently. This has been solved by the undermentioned members.

On Jan. 21 Mr. A. V. Sanderson (Exchange Superintendent) and Miss N. Raynes (Telegraphist) were married at Norton Lees Church, and on Feb. 11 Mr. C. Young (Clerical Officer) and Miss D. G. Faries (Writing Assistant) were married at St. Catherine's Church.

The goodwill of the staff was expressed both in attendance at the ceremonies and in the presents given.

## THE LONDON TELEPHONISTS' SOCIETY.

COMPETITION Night, on Mar. 3, proved, as ever, a popular feature of the Society's programme.

Before the finalists in the Elocution Competition were heard, the Chairman gave expression to the thanks of the Society to Mr. Buckridge for the work done by him and his helpers on the committee in carrying out the preliminary auditions. Mr. Buckridge, in replying, made brief comment on this year's competition, pointing out that the subject set for this year—Francis Thompson's "Envoy"—offered considerable scope in interpretation, requiring subtle delicacy in rendering, which afforded an excellent test of poetic insight and elocutionary skill. The keenness displayed, and the high standard attained by the competing teams, had, he mentioned, been very marked, and he pointed out that the leaders who were successful in reaching the final stage—once more Buckhurst and Paddington—were only a few points ahead of their nearest rivals.

Our grateful thanks are due to the members who kindly consented to act as judges for the Final, Miss J. M. McMillan, Miss E. L. Staitc and Mr. A. H. Morris. These officers found their task no sinecure, for it soon became evident that Paddington were determined, if possible, to wrest the trophy from the present holders, whilst Buckhurst showed equal determination to win it for the third successive time.

Members of the two competing teams were heard alternatively, and the supporters of the respective teams must have felt jubilant and depressed in turn, as each competitor heard seemed to have secured the trophy for her side.

After the contest was over, and whilst the judges were totalling the marks awarded, we heard the rendering of the test piece given by Miss N. E. Smaldon, of Livingstone, who had been awarded a special personal prize for the distinction of securing 100% marks in the preliminary audition. Her performance on this occasion was received with great enthusiasm, and it was obvious that the audience held her to be fully deserving of the special award. It was also announced by the Chairman that the judges of the auditions had given a special prize to Miss Turner, of Victoria, for her consistent high standard throughout this series of competitions.

The anxieties of the rival teams and of the audience generally were not yet to be allayed, however, and it was fortunate for our nervous systems that the prize papers in the essay competition, read by Miss B. McDonald and Miss O. Flanagan, proved so attractive that our minds were temporarily diverted from the issue of this struggle.

Miss McDonald, of Shepherd's Bush, who received the first prize in the telephonists' class for her paper, "Things I would Like to Know about the Telephone System, and Why," is evidently of a very enquiring turn of mind. Nearly everything and everybody in the telephone service occasions her cause for wonderment: from the magical tact of the Controller in subduing recalcitrant subscribers, to the mysterious language alleged to be used by the Engineers amongst themselves. Since Miss McDonald did not hesitate to express curiosity about the early life of senior and grave officials, perhaps we may be permitted to wonder if her conversation, in her extreme youth, was chiefly limited to the interrogation "Why?"

Miss Flanagan, of Museum, who received a consolation prize in the same class, chose for her subject "The Type of Operating I Prefer, and Why." With dexterous description she made her audience feel how essential to the peace of mind of all subscribers in trouble was the ministering angel of the information desk. In vivid pictures she painted the distress of the unfortunate caller who wanted to put "something" on the 3.30, and found, alas, that others had the same desire at the same time; and the woes of the lady who urgently required an appointment to wave her hair.

Alarm calls for Museum subscribers apparently carry Miss Flanagan into realms of imagination, where she visualises the luxuries surrounding those who do not have to be called until 8.15; and it is only by an effort that she returns from dreams of hot buttered toast, served in bed, to the realities of 8.15 a.m. in Museum Exchange.

But Miss Flanagan's incursions into this idealistic existence evidently brought back to her memories of a fairy tale, concerned with early morning tea, which tale she proceeded to relate to us, to the obvious amusement of her hearers, who, apparently, recognised in it something of familiar application.

With the time thus beguiled, we were able to wait, more or less patiently, for the verdict of the judges; and when Mr. Morris announced that they had awarded the prize to Buckhurst, though by a small margin, and that Miss Dunn was given the consolation prize for the best performance in the losing team, everyone applauded the decision, and felt satisfied that it constituted an exceedingly fair appraisal of the merits of the competitors.

Congratulations to Buckhurst, who thus continue to hold the trophy; and congratulations, too, to Paddington on the splendid performance they they put up. Unfortunately, both teams cannot win; and Paddington have every reason to be proud of their success in reaching the final of such a keenly contested fight, and in being so very near to complete success.

The Controller, who had again kindly consented to present the prizes, received a very enthusiastic welcome. Although we all know what heavy demands there must be upon his time, he insisted that he had himself thoroughly enjoyed the evening; and, in the light of the happy speech which he made before the presentations, and of his obvious appearance of pleasure, we could not do otherwise than believe him.

## WHERE TO STAY.

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Mr. Napier had a kind word for each of the successful competitors as they came up to receive their prizes, and the meeting closed with a very hearty vote of thanks to him, which was given with tremendous enthusiasm.

Members are very specially reminded of the Telephone Play on April 11 and 12. Full particulars are given on the bills, which are now displayed at all exchanges; or enquiries may be made of Miss Etheredge, Controller's Office, Reference T O B.

## LIVERPOOL NOTES.

Mr. W. DAVIDSON, Traffic Superintendent, Class II, has left us to return to his native town of Aberdeen. In this connexion there was a gathering on the afternoon of Mar. 17, at which representatives of the exchanges and the Traffic Office were present. Several speakers testified to the great esteem in which Mr. Davidson was held. He had been with us for a period of about 7 years, and during this time had become extremely popular with the exchange staffs and with every member of the Traffic Office. A present of a wireless set was made as a tangible expression of the good wishes of all. Contributions had been made by the Traffic, Sales and District Manager's Offices, the exchanges, and the Sectional Engineers' Offices.

A function was held later in the day at the Stork Hotel. Practically all the male members of the Traffic Office were present. Messrs. Jeary (Sectional Engineer (Internal)), Pratt (Sectional Engineer (External)) and Irwin (Sales Manager), together with members of their staffs, were also present. Mr. Gauntlett was unfortunately unable to attend owing to indisposition.

The function took the form of a high tea followed by a smoking concert, which everybody thoroughly enjoyed. It was very evident that Mr. Davidson had won the affection and admiration of all the sections with whom he had come in contact, and he leaves for Aberdeen with the best wishes for health, wealth and happiness in the frozen North. The good wishes are extended to his very charming wife.

"The Scots are a hardy race."

We extend a very hearty welcome to Mr. S. A. Manser, who comes to us as Traffic Superintendent, Class II.

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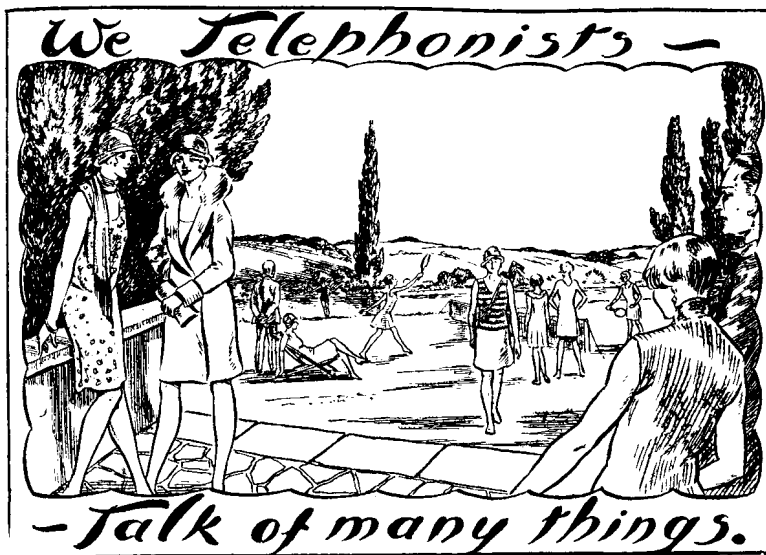
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### The Wind.

THE advantage of reclining on a hillside, providing it be a steep hillside, is that you can stretch at your ease and still see the spreading view below. It may appear to be a lazy way of seeing the country, but it is really a very economical use of time. One must rest occasionally, and if, by disposing of the body at an acute angle one's line of vision commands something more than clouds and tree-tops there is every excuse for doing it and no reason for not doing it. With these thoughts of justification in my mind I left the track, scrambled up over the scattered boulders and through the bracken to the wood. The wood crowned the brow of the hill just above the point where the track curved before it commenced to descend the hillside. There I indulged my inclination to incline and to rest awhile.

There was a strong wind blowing but I scarcely felt it now, sheltered as I was amongst short bracken and a few boulders. It is remarkable how much shelter can be obtained close to the ground. The wind swept along and filled the wood with a wild music. The trees swayed, the branches waved and the leaves quivered. They were performers in a superb orchestra controlled by an invisible conductor. Below me in the distance the valley appeared peaceful and undisturbed; behind me the tumult in the wood. The wind ignored me; had I raised my voice I should have been unheard; I had no part or place; I was merely an incident— one of the boulders and an accidental listener to a supernatural performance of inexpressible beauty. I had never heard such music before; I have only heard it rarely since.

The wind is a moody old fellow. Sometimes he makes you feel that you cannot be alone or friendless when he is with you. At other times he has the power of making you feel utterly lonely, unprotected and powerless. He can be playful and fierce, gentle and cruel, soothing and nagging. He will rustle the reeds by the river, smooth the golden head of the cornfield, whisper or sigh through the hedges, flick the surface of a pool into a bright smile. Or he can stir the sea into a sullen roar, crash the elms, stream through the crevices, hurl the sleet in a stinging fury and blind and choke you with dust. He will roll the majestic cloud over the peak, sweep away the stealthy mist, bring the sweet smell of hay, of the sea, of warm, moist earth or the song of a distant bird. The wind from the east dries and shrivels the best in mankind; it makes him peevish and irritable to his fellows; it fills the earth with a snarl and we long for a warm—even a wet—wind to restore our humour.

"There's a wind on the heath, brother;  
If I could only feel that, I would gladly live for ever."

PERCY FLAGE.

### A Lyric of the Lift.

When to the Auto. School one day  
I hurriedly had made my way  
(For I had not a tick to spare!)  
I found no lift nor liftman there!  
With frantic haste I rang the bell  
And then I waited for a spell.  
When lo! the lift came down alone,  
I stepped inside it with a groan.  
Then, trembling much, pressed button B,  
And hoped to get to storey three,  
But not a tremor moved that lift—  
The wretched thing refused to shift.  
I pressed the button hard once more,  
Got no response to my encore  
Except an intermittent buzz  
That seemed to go from bad to wuz! (Sorry!)

I flung the gates back and sprang out,  
For I had not the slightest doubt  
That if much longer I abode  
The whole contraption would explode!

No sooner did I step outside  
Then up that lift began to glide—  
With awe I watched its noiseless flight  
Until it vanished from my sight.

Then up the stairs I sadly crept,  
And with vexation almost wept  
To think I'd nine long flights to climb  
And do it all in record time!

To manage it I did contrive  
And signed on more dead than alive.  
(And I may tell you, by the way,  
I used the lift no more that day.)

Now it has just occurred to me  
I *shouldn't* have pressed button B.  
No doubt if I'd pressed button A  
I should have landed quite O.K.!

C. A. S.

### A Lee Green Lament.

Oh, operating's tiresome when spring is skipping by,  
And busy backs and ringing tones seem awfully dull and dry.  
Who wants to know about "no glows," and stupid things like these,  
While buds are bursting everywhere,  
And in the Spring-enchanted air,  
The thrushes sit a-twittering  
On scented lilac trees.

G. L. G.

### Buckhurst.

On Saturday, Feb. 18, the Buckhurst Exchange held its first social in recent years. About 60 colleagues and friends foregathered, including old colleagues and members of Woodford Green Head Post Office staff; while Miss Kay, the Supervisor, made a charming and able hostess. Dancing and games formed a considerable portion of the programme, and in the first half the Misses Wood and Wells, of the exchange, and the Head Postmaster, Mr. Gabby, contributed to the entertainment by rendering songs and monologues. Items after the interval were hysterically humorous, especially a quintet by telephonists, a quartet by members of the Post Office staff and impersonations by colleagues of Leytonstone Exchange. A very enjoyable evening concluded with the singing of "Auld Lang Syne" and requests of "More soon, please!"

### A Traffic Officer's Fantasy.

The diaphragms rattled and nearly broke free,  
The dial spun round and revolved rapidly.  
The figures and letters began to transpose,  
Where the extra receiver went nobody knows.  
The base of the instrument turned inside out,  
The trains of impulses had brakes on no doubt;  
And from the receiver came sparks and blue smoke,  
And carbon granules made the transmitter choke.  
The cords became twisted and tied into knots,  
The holes in the dial just dwindled to dots—  
Then things became peaceful—the noises all dropped,  
Receiver rest rested; the finger stop stopped.  
The trembling then ceased and the sun really shone  
The subscriber had groused, but thank heavens he'd gone.

R. F. H.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), London, E.C.1.

## LONDON TELEPHONE SERVICE NOTES.

### Sales Branch Notes.

DURING February there was a net increase of 2,352 stations. In connexion with the British Industries Fair, held at Olympia and White City, the number of exhibitors was 1,530, and 623 telephones were provided.

Street kiosks have often been the centre of many amusing incidents. The latest one is: A young woman was discovered by a man who was waiting to make a call, closely examining the telephone directories. After a long wait, and observing that no attempt had been made to make a call he opened the door and asked whether he could help in any way.

"Oh no," hurriedly replied the young woman, "I was only looking for a name for my baby."

*Sales Representatives' Corner* is held over to next month owing to pressure on space.

**Staff Salesmanship Scheme.**

The progress of the scheme in London is given below:—

	Total Number Ordered.	Number Ordered Month ended Mar. 15, 1933.
Exchange lines ... ..	1,797	112
Extensions ... ..	1,848	151
Private lines ... ..	22	2
Plugs and sockets ... ..	318	35
Hand-microphones ... ..	9,550	815
Extension bells ... ..	806	95
Other apparatus ... ..	955	83
	<u>15,296</u>	<u>1,293</u>

A salesman, after much persuasion, succeeded in obtaining an order for a telephone from an acquaintance of his. Meeting him some time later the new subscriber expressed his satisfaction with the service and described a few instances where the 'phone had proved to be of more value than at one time he would have believed to be possible.

A man in business, who has been a subscriber about a month, met the salesman who obtained his order, and was delighted to tell him that he obtained two new customers in a week through the aid of the telephone.

By way of contrast, the following incident is reported of a lady who entered the shop of a multiple firm, and finding that her requirements could not be met at the moment offered her telephone number in order that she could be advised when the goods arrived. When told that the shop was not on the telephone she left without making a purchase.

**Stamford Dramatic Society.**

We feel it our duty to apologise to those readers of the *Journal* who applied for seats for the Dramatic Society's next production. "A Murder has been Arranged," after reading the notice in last month's issue.

We said then that we anticipated a great demand for tickets; this expectation was more than realised and actually all tickets had been disposed of when the announcement appeared! Those whose applications were unsuccessful, however, may like to know that there will be a few "rover" tickets available at the Fortune Theatre on the night of the show, Wednesday, April 19.

May we suggest to those who have been disappointed this time that, in order to make sure of seats in future, they should become honorary members of the Society? This injunction will, of course, be unnecessary as far as those who see the play are concerned; they will require no persuasion to make certain of obtaining seats for future productions.

Any member of the Society will be pleased to give you information, or this can be obtained from the Secretary, Mr. L. Davies, T ES, Cornwall House, Waterloo Road, S.E.1 (Tel. City 2000, ext. 545).

One point might, however, be mentioned here: that is that, apart from the prestige and privileges conveyed by honorary membership of the Stamford dramatic society, the value of the seats allotted is alone greater than the membership fee!

Why hesitate?

**London Telephone Service Sports Association.**

The annual general meeting was held on Feb. 22, 1933, and proved another successful function socially.

The actual amount of business was small but the large audience gave an appreciative hearing to our President's congratulatory speech and to Mr. Pink, who is the Chairman of the Executive Committee, during his survey of the past year. Several of our clubs are developing and the others are maintaining a fairly satisfactory level. Mr. Tinniswood shortly stated his appreciation of the work being done and judging by the recent attendances at the last two social gatherings, he forecasted a very great success for the sports day.

It is unfortunate that Mr. C. Drabwell has given up the treasurership as his great interest and lively personality will be missed. However, Mr. Frank Rapps has stepped into the breach and no doubt the Association will derive more benefit from the new blood.

Sir Noel and Lady Curtis Bennett visited us and the staff listened eagerly to a recital of their experiences and adventures in Los Angeles when attending the Olympic Games. Apparently the most striking thing was the overwhelming and sometimes embarrassing welcome the visitors received from Uncle Sam. Miss E. M. Hiscocks, who captained the English women's team, spoke and gave us some lively details of the difficulties and trials of training when subject to an almost continuous attention from the American Press.

Altogether the annual general meeting was a success and will, it is hoped, help our associated clubs to increase their membership and develop general interest in our sporting activities.

*Table Tennis Tournament.*—The semi-finals and finals were played off at Cornwall House on Mar. 3 last and some brilliant play was witnessed.

The players engaged were the Misses Emdin, Fitt, Gardner and Young and Messrs. Angus, Ayers, Cameron and Crawley. In the finals Miss Emdin beat Miss Gardner and Mr. Crawley beat Angus. None of the losers were disgraced, as they put up a great fight to overcome their St. Albans' foes. The standard of play was very good and the games keenly contested. The cups and prizes were well earned.

At the end of the tournament spectators were treated to a delightful exhibition game between Miss D. M. Emdin, the lady champion of England, and her sister, Miss D. L. Emdin, the tournament winner. There was no "pat ball" about this game and the skill and force with which the drives were sent home were remarkable. The whole evening was thoroughly interesting and enjoyable.

In the Civil Service leagues the ladies' team is doing exceptionally well, and L.T.S. may easily pull off a championship. The gents' team has no such aspiration.

*Lawn Tennis.*—The tournaments for the "Agnes Cox" Cup (Ladies' Doubles) and the "Pink" Cup (Ladies' Singles) increase in popularity from year to year. Entries are again invited from all exchanges and office sections. The staff are asked to make this a record year. Closing date for entries is April 8, 1933. The Secretary is Miss McGlade (Central 0101, Ext. 29).

*Swimming.*—The staff at Cornwall House are again reminded of the opportunity now provided by the Rana (Ladies) Swimming Club for specially good training and coaching. The club's new coach is Mrs. G. Pichon, who has an excellent reputation for successful work.

*Annual Sports Day.* This is to be held at Chiswick again and is fixed for Tuesday, May 30, 1933, at 5 p.m. Every member of the staff should make an effort to attend this gathering of the clans as a most enjoyable evening out of doors is assured (weather permitting). Further announcements will be made in due course. The Honorary Secretary is open to receive suggestions of any kind as to these proceedings.

**Battersea Exchange.**

Another highly successful dance was held at the Town Hall on Mar. 1. Over 140 persons attended, including a number of friends and colleagues from other exchanges. Brixton, Central, Holborn, London Wall and Putney, were amongst those represented by the ladies, while Sales Representatives Engineering and Traffic Officers from Headquarters, the West, East Central and South East Districts helped to swell the male ranks. A noteworthy fact is that the men are never in a marked minority at these functions and, although they are not on this account in such great demand as is the case at many departmental dances, they all seemed to be well supplied with partners.

Miss Hatherly and the Catering Committee worked hard to ensure that their reputation for providing a more than adequate supply of refreshments should be maintained. Theirs is a labour of love, seeing that they are unable to take part in the festivities until everything has been cleared away after the "interval."

It was a pleasure to welcome Miss E. D. Stevens—also the District Superintendent (Mr. E. A. Durrant), who looked in for an hour or so. The Arcadians Band provided a varied programme of music in their usual efficient style and the Service Superintendent (Mr. L. D. Saunders) acted as M.C.

Despite a heavy downpour of rain between 11 p.m. and midnight, the party dispersed in cheerful mood having spent a very enjoyable evening, the profits from which will be devoted to the annual tea for local poor children.

**Wimbledon Exchange.**

Another enjoyable evening was spent on Friday, Feb. 24, by the staff and their friends—at a dance held at the Wimbledon Park Hall.

In spite of the "Noel" type of weather, a jolly crowd attended, and a gay spirit prevailed throughout the evening, helped considerably by the admirable services of Mr. Bishop, the M.C.

We hope to see all our old friends again at the next dance, which is to be held very shortly.

**Personalia.***Resignations on Account of Marriage.*

Assistant Supervisor, Class II.

Miss M. A. Game, of Fairfield.

*Telephonists.*

Miss F. E. Reed, of Wanstead.	Miss E. M. E. Baynes, of Tudor.
" M. E. Pillow, of Brixton.	" J. W. Harvey, of Clerkenwell.
" M. E. D. Longhurst, of Mitcham.	" N. Carpenter, of Clerkenwell.
" M. E. Baker, of Richmond.	" M. Donovan, of Toll "A."
" E. B. Box, of Richmond.	" A. M. M. Bryant, of Terminus.
" E. M. Hume, of Harrow.	" V. Jones, of Terminus.
" E. Flight, of Royal.	" M. G. H. Froom, of Trunks.
" E. M. Bawden, of Tandem.	" G. A. Nichols, of Trunks.
" B. Ralph, of Holborn.	" C. N. McCulloch, of Trunks.
" M. I. Cable, of Willesden.	" W. M. Nash, of Museum.

# THE Telegraph and Telephone Journal.

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MAY, 1933.

No. 218.

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*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CVIII.

MR. R. U. TUCKER.

MR. R. U. TUCKER, the subject of our biographical sketch this month, was born in Birmingham, and entered the service of the National Telephone Company in February, 1893, as a junior clerk. His abilities soon marked him out for promotion, and in 1900 he was appointed Chief Clerk at Coventry. In the December of that year he was transferred to Wolverhampton in a similar capacity, and in 1905 made a considerable move forward as Chief Clerk of Birmingham. From October, 1910, to October, 1912, he was engaged on the



inventory of the Company's plant prior to the transfer to the State. He was still at Birmingham at the time of the transfer, becoming Staff Officer in 1921. In 1925 he was appointed District Manager at Guildford and transferred to the North Western District in April, 1932, the managership of which important district he still holds. Since the transfer, Mr. Tucker has sat on various Departmental Committees, the last being that dealing with the Whitehead report.

Naturally enthusiastic, Mr. Tucker possesses an alert and active mind, combined with a pleasant personality. He confesses to a taste for reading and a penchant for bowls.

The  
Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

Editing and Organising Committee - - -	{	Col. A. A. JAYNE.
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		W. H. U. NAPIER.
		G. H. TAYLOR.
Managing Editor - -	{	J. W. WISSENDEN.
		W. H. GUNSTON.

### NOTICES.

As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.

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## TELEPHONING TO INDIA AND THE FAR EAST.

THE opening of telephone service between this country and India, which occurred on the 1st of this month, is an event of no ordinary importance and is worthy of special comment for more than one reason. In the first place, India is the last of the great constituent members of the British Empire to enjoy speech with the Mother Country. As a result of the wonderful advances made in radiotelephony, Canada, Australia, New Zealand, and South Africa have in their turn been placed in communication with this country. With the addition of India to the Overseas telephone services the cycle is now complete. A second noteworthy feature of the event is that India is the first of the more important countries of Asia to which telephone communication with Western Europe has been established.

The Overseas telephone system of this country, after beginning in a modest way with a couple of circuits to France in 1891 and a similar number to Belgium in 1903, was extended, after a long interval which the occurrence of the Great War helped to protract, to Holland in 1922 and Germany in 1926. Thence it spread rapidly and successively to all the other European states, Turkey the last country to be included, being admitted only this year. Service to the United States, the first radiotelephone service to be opened, was established in 1927. Other North American States followed in due course. Communication with the Argentine was opened in 1929 and extended to other South American countries in 1930.

In 1930 also, radiotelephonic communication was inaugurated with Australia, and extended to New Zealand in 1931. The turn of Africa came in 1932, radio channels being provided both to South Africa and Egypt, although, strictly speaking, the first telephone service in existence between this country and Africa was that opened to Ceuta in 1928, while service to French Morocco was established in 1931.

In the meantime, the only places in Asia enjoying telephonic communication with this country were two distant European Colonies of the Dutch East Indies and French Cochin China. In 1931 service was opened to Siam, and this present year has seen communication extended to the Philippine Islands and Palestine. It could still, we think, be maintained that so far Asia, the neighbour of Europe, and one of the three continents bordering the Mediterranean which we are wont to look upon as the cradle of our civilisation, compared unfavourably with Africa and South America—to say nothing of North America—in its facilities for telephonic communication with the rest of the world. None of its historic empires has until now been placed in telephonic touch with Europe or America. India is the first: and as the activities of telephone administrators are restless and the energies of telephone engineers incalculable, it can be predicted that its extension to the Far East is only a matter of time.

We have referred, in our remarks so far, only to the establishment of communication between this country and Europe and distant continents, but the well-informed reader is aware that telephone services opened between any two countries are almost invariably extended soon afterwards to other countries. The closest co-operation exists between the various administrations of the world, and no sooner is a service inaugurated, say, between Great Britain and the United States or Australia, than it is speedily made available to the other European countries and the other North American countries. As the majority of the great radio-telephone channels (those to America, Australia, and South Africa, for example) terminate in London, it is via London that the Continents of North America and Europe obtain their communication with each other and with South Africa and Australia. The Indian service will no doubt soon add one more to the numerous transit services handled by the London Trunk exchange, and will further substantiate its claim to be the hub of the long-distance telephone world.

### SOUTH ESSEX REUNION.

THE second South Essex Reunion of Pensioned Officers of the C.T.O., London, and their friends took place on Mar. 20 last at Boots' Café, Southend-on-Sea, when the Chair was graced by Mr. Freddie Goodheart, formerly of the Controller's Office. An old friend in the person of Mr. C. S. Keen, one is informed, added no little gaiety to the gathering, fresh as he came from the upper reaches of the Thames! It is also understood that to the genial Sammy Pearce was specially allocated the chargeship of the "foreigners" present, and right loyally and tactfully performed his task. Among those present were Messrs. H. F. Adams, W. H. Aldred, E. J. Allen, J. W. Baker, A. E. Balls, W. Blay, C. Brown, W. Clamp, H. Cox, A. Crane, T. W. Dawe, H. T. Elvey, R. A. Furness, F. Goodheart, C. R. Goater, F. W. Harrison, T. Hodgson, T. W. Jones, C. S. Keen, C. A. Kindon, E. T. Lock, W. A. Lock, C. R. Lowe, R. H. Mulock, S. Pearce, H. S. Ruffhead, H. J. Stevens, E. J. Stone, J. H. A. Warren, H. A. Webberley and J. C. White. J. J. T.



## HIC ET UBIQUE.

A RADIO-TELEPHONE service to India was opened on May 1. Communication is available to and from all parts of Great Britain and Northern Ireland, but will at the outset be restricted in India to Bombay and Poona. The service will be extended to other cities in India as soon as technical conditions permit.

The hours of service will be from 9 a.m. to 1 p.m. each week-day. (This corresponds to 1.30 p.m. to 5.30 p.m. in Bombay.) For the present the service will not be open on Sundays.

The charge for a three-minute call from any place in Great Britain to Bombay or Poona will be £6.

A message from Reuter's agent at Helsingfors which has been quoted in the Press, gives some extraordinary figures of world telephone development. It seems to us (from such of the figures as are correct) to be based on an article in the *Ericsson Review* by Mr. Lignell of the Swedish Administration, which has been strangely misquoted. The total number of telephones in the world is given as 101,401,419! instead of 35 million odd. It is stated that Australia added 520,169 and New Zealand 164,739 telephones to their total during the last 10 years. As a matter of fact those figures represent their total number of telephones at the end of 1930. In any event the figures are now 2 years old, and the total number of telephones in the world, especially in the New World, has decreased sensibly since then.

The following paragraph quoted from the *Daily Telegraph* represents, we believe, not inaccurately some of the difficulties would-be subscribers in France have (or had) to encounter:—

As a result of strong protests, it is shortly to be made more easy to obtain a telephone in France. A decree is about to be published providing that any person may secure a 'phone within two days or so, following the simple payment of two months' subscription in advance.

This ought to be good for the telephone department for at present the formalities to be undergone by would-be subscribers are so complicated that many have decided to do without the instrument rather than waste precious time in filling up a myriad forms.

I have just heard, for instance, of a headmistress of a school here who, when she declared her wish to become a subscriber, was asked to furnish a copy of the journal in which the statutes of the school were published in 1914, and, further, a copy, certified by a notary, of the document by which the founder of the institution transmitted her powers to her.

Nor was this all. Several other legal documents and copies of old newspapers were demanded, the authenticity of each having to be guaranteed by a signature duly witnessed by a notary.

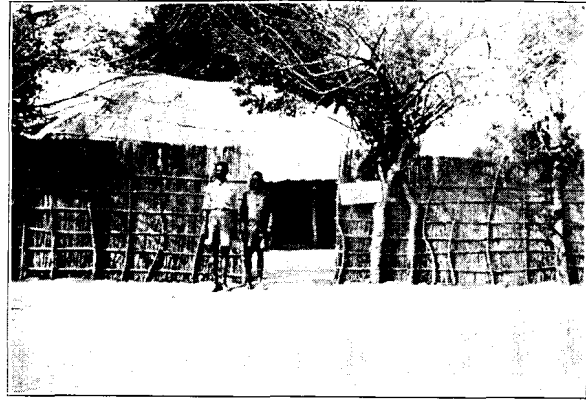
The result is that while the headmistress has a grievance she is still without a 'phone.

It is not often that any ray of hope may be discovered in telegraph traffic-returns. In the returns so far available for 1933 (covering the months of January and February) the total decline of traffic still continues: but inland traffic by itself shows for each month a slight increase (under 17) over the traffic for the corresponding month of 1932. (The traffic per working day is the basis of comparison). It is four years since inland telegraph traffic has shown an increase for two months in succession.

We learn that the net growth in the number of new telephone subscribers in France in the last 6 months of 1932 was 31,773, of which 5,543 was in Paris.

The Postmaster-General of Zomba, Nyasaland, sends us the photograph taken recently of a Central African telegraph office, reproduced below.

The office in question is Ntakataka, on the shore of Lake Nyasa, Nyasaland. The office is housed in the wattle and daub hut inside the fence, while the gentlemen standing in the foreground are the telegraph operator and lineman.



NTAKATAKA.

For the information of your technical readers, he says, it may be stated that there are no pneumatic tubes, Press, Stock Exchange or phonogram sections, high speed automatic instruments, or even a picture palace at Ntakataka. On the other hand, as compared with telegraph offices at home, there is excellent fishing in the lake and big game shooting available in the neighbourhood. Elephants cause as much trouble to the line as a heavy snowstorm in England.

A gentleman on finding an old family photograph with a somewhat undecipherable inscription—

Eric F—

Cameo.

17, Rupert Street, Gerrard

appealed to Gerrard exchange to help. The F turned out to be a G, but the photographer was duly traced and put into communication with the subscriber. As our correspondent says, detective agencies will have to look to their laurels.

General Sir George Squier, late Chief Signal Officer to the American Army, dedicates the following "story" to

### THE TELEPHONE GIRL.

In Hamlet and Metropolis, Her Light is *always* burning.

Her Sweet Voice connects up our Joys, our Sorrows, and the Nation's business.

Without her deft hand, the whole fabric of our vast Wire-Pattern would remain dumb and silent, and all the Reaches of Science be of no Avail.

In all the Ravages of War, Fire, Flood, Earthquake, Burglary, and Illness, history does not show a finer Heroism than Hers.

She is now Master of Multi-million Contacts which permit us to live as never before.

Dip the Flag to the Telephone Girl.

GEORGE OWEN SQUIER.

## SIDELIGHTS ON THE MADRID CONFERENCE.

BY F. W. PHILLIPS, *Assistant Secretary in charge of Overseas Telegraph Branch.*

(Continued from page 154.)

*Code.*—Another difficult question was that of code language. The right to use code words up to ten letters was introduced about thirty years ago and everyone agrees that a very good bargain was given to the code user. The average length of a word in a plain language telegram is six or seven letters, whereas the code user gets ten letters to a word and uses them. Great Britain has always opposed proposals made to reduce the code word to five letters. All the tariffs of the world have been framed in the knowledge that ten letter code is permitted. The roots of the system have gone very deep and it would be difficult to reorganise the tariff structure on a five-letter basis. Moreover, commercial interests would suffer if such a reduction were made. The matter was discussed in Paris in 1925, when a committee was set up. This met at Cortina in 1926; and the British delegates found themselves in a minority of one to fourteen. There was, it is true, disagreement among the fourteen as to the kind of five-letter system desired. The matter was discussed again at Brussels in 1928 and there Great Britain and certain other countries strongly supported the 10-letter system. In the end the Conference agreed on both—the five-letter system being placed side by side with the ten, at a rate of two-thirds. At Madrid an effort was made to abolish the ten-letter system, but we opposed this strongly. We were supported by the Dominions and by the United States, although the latter did not vote on telegraph questions. The Chambers of Commerce also opposed the abolition of the ten-letter system; and the Cable and Wireless Companies were not anxious to abolish it. We thus had a majority in terms of traffic, and in terms of financial interest, but we had only a minority in votes. The matter was voted on formally three times and each time we were beaten. Towards the end we felt that there were only two alternatives—to refuse to sign or to give way, and we decided to accept the majority view. I remember a remark of John Lee's. He said that whenever the British delegation climbs down it always climbs on to a pedestal. On this occasion I made a declaration, repeating our views, but stating that rather than split the Union we would bow to the majority view and would do our best to make the new scheme a success. We gave way handsomely, and our action was received very cordially. The result was, however, very disappointing from our point of view. I feel sure that the solution adopted will not be permanent but will have to be altered at the next conference.

*Wavelengths.*—Another difficult question was the allocation of wireless wavelengths, which was discussed for the whole fourteen weeks of the conference. The problem is something like the classic one of trying to get a quart into a pint pot. Science has not moved fast enough to provide for the increasing use of wireless. Selective apparatus has improved matters, but the supply of wavelengths is not equal to the demand. Many delegates came with very long speeches already prepared, defending their use of an unauthorised broadcasting wave or demanding additional waves. The British policy was defined in a speech in which we said that we thought the Washington allocation generally was good, and we only wanted minor alterations. We urged that a limit should be imposed on the power of broadcasting stations and that the regulations should be stiffened to prevent the use of unauthorised waves. We also suggested that the organisation of broadcasting in Europe should be improved so as to make the best possible use of the waves available. When the time was ripe we circulated a revised allocation table. Other countries circulated other schemes.

I should here like to say how well Col. Angwin managed his sub-committee. He preserved a very impartial attitude and yet gradually pushed matters towards a sound solution. Many countries said they would not sign the radio regulations unless they got certain waves assigned to them; and, as it was clear that the Madrid Conference could not settle the actual allocations of waves, it was decided there should be a European Conference in May at Lucerne, where the new broadcast bands should be shared out among the European stations. This enabled agreement to be reached on a general allocation table. The Soviet delegation, however, made a reserve, declaring their right to use certain additional wavelengths for broadcasting. Japan, China and other countries on the borders of Russia then put in somewhat similar reserves to the effect that, if the Soviet stations caused interference, they would have the right to take special measures. A sub-committee, under the chairmanship of Mr. Faulkner, dealt with the British proposal to restrict the power of broadcasting stations. Our view was that it was impossible to allow this constant "race for power" to go on, and that a limit was essential. The sub-committee drew up regulations on the subject; but the Soviet delegation would not agree to their going into the Radio Regulations; and they were finally put into an annex to the protocol that set up the Lucerne meeting, which will have them as a guide. The general wavelength result was not quite in accordance with the proposal which we circulated, but we considered it moderately satisfactory. The real test, however, will come at Lucerne.

*General Results.*—As to the general results of the Conference, the first point is that it was a great achievement to get the whole world to sign the

new Convention and all the three sets of Regulations, except that the United States and Canada did not sign the Telegraph and Telephone Regulations.

The second result was that an enormous mass of regulations were brought up to date.

The third point I would mention is that the Conference was perhaps even more successful in what it avoided than in what it did. There were many proposals that we were glad to see rejected. There was a proposal for a minimum number of words in all international telegrams—six in full rate and twelve in deferred telegrams. This was rejected after a long discussion. There was also a proposal to permit the stopping of telegrams which were considered damaging to the economic interests of a State; and another, to permit the jamming of wireless stations under certain conditions. Both of these were rejected, as was also a proposal to establish a Preparatory Committee which should meet before each conference and go through all the propositions. The Canadian delegation opposed this proposal very strongly on the ground that it was unfair to countries not represented at the Preparatory Committee, when one of the advocates of the scheme pointed out that Canada had invited the Preparatory Committee of the Postal Congress to meet at Ottawa in 1933. The Canadian delegate was by no means nonplussed. He stated that Canada was such an extremely hospitable country that it felt impelled to invite conferences to Ottawa—not only those of which it approved, but even those which it was inclined to think should never have been established.

Our general verdict on the results of the Madrid Conference was that they were reasonably satisfactory. To put it in another way, we considered the results satisfactory on most points except the code question, the decision on which was disappointing.



THE BRITISH DELEGATES.

### BACK FOUR.

Col. E. Gold, D.S.O., F.R.S. ( <i>Meteorological Office</i> ).	Mr. M. B. Esson ( <i>New Zealand</i> ).	Mr. J. M. Crawford ( <i>Australia</i> ).	Mr. H. Faulkner ( <i>Post Office</i> ).
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### SECOND ROW.

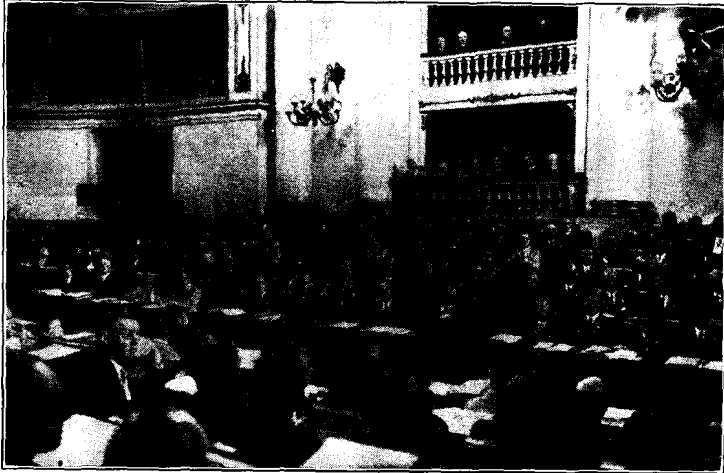
Col. F. W. Home, R.M. ( <i>Admiralty</i> ).	Mr. S. T. Keyte ( <i>Post Office</i> ).	Mr. B. L. Barnett, M.C. ( <i>Post Office</i> ).	Mr. A. H. Read ( <i>Post Office</i> ).	Mr. F. M. Attwooll ( <i>Post Office</i> ).
Mr. N. F. S. Hecht ( <i>Air Ministry</i> ).	Mr. H. Booker ( <i>Post Office</i> ).			

### FRONT ROW.

Col. J. P. G. Worledge ( <i>War Office</i> ).	Mr. J. Louden ( <i>P.O.</i> ).	Air Commodore A. D. Warrington-Morris, C.M.G., O.B.E. ( <i>Air Ministry</i> ).	Mr. F. W. Phillips ( <i>P.O.</i> ).	Mr. F. Strong ( <i>P.O.</i> ).	Col. A. S. Angwin, D.S.O., M.C. ( <i>P.O.</i> ).
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*Points of Interest.*—Now I will deal with a few special points. There is a word, "Economy," which is very familiar to all of us in these hard times. The British delegation was the only one which stressed the need for the exercise of economy in the work of the International Bureau. Mr. Strong was the British member of a committee which dealt with the Bureau's work: it was called the "Gestion" Committee and was commonly known as the "Indigestion" Committee. It was not a popular task to preach economy. The British delegates were second to none in their appreciation of the good work of the officers of the Bureau, and yet it seemed essential, at a time when every Administration is having to economise, to stress the need for economy in the work of the Bureau. Some good was done; and obviously somebody must take the lead in a matter of this kind.

At times the progress of the Conference was appallingly slow. I have known a committee spend the whole of a meeting discussing whether it was within its power or not to discuss a particular question. Another committee discussed for an hour whether the word "Union" should be used or not. It is not easy to make a large conference move quickly. At a conference which I attended at Washington in 1919 one of the more sporting members of the British delegation tried to stimulate quick working by starting a sweepstake. One had to pay a dollar a ticket and one could back any of the six committees: the committee which finished its work first was the winner, and those who backed it divided the spoil. The Chairman of the committees were not allowed to take part, as it was felt that it might place too heavy a temptation on a Chairman to back his own committee and then insist on finishing it in one sitting.



A MEETING OF THE CONFERENCE.

During the Conference many delegates were very down-hearted and thought we should never come to any unanimous agreement. I always maintained, however, that we should get a Convention signed by the whole world; and, in order to encourage an optimistic spirit, I once related the following story, which gives the classic example of optimism. A workman tumbled from the top of a forty-floor building, and as he hurtled past the thirtieth floor he was heard to say "Well, we are all right so far!"

One of the committees spent a vast amount of time in defining important terms denoting familiar things. It is extremely hard to agree internationally upon an exact definition of anything. I remember reading that at a League of Nations meeting, when a definition was being discussed, Lord Cecil made the apt remark, "It is extremely hard to define an elephant, but we all know one when we see one."

There was much discussion as to whether we should go on expressing wavelengths in metres, or whether we should always refer to frequencies expressed in kilocycles. I must confess that, being a non-technical person, I have always found it much easier to understand a wavelength of so many metres than a frequency of so many kilocycles per second. At the Washington Conference it was decided that both terms should be used; and, speaking for the non-technical community, I am glad to say that the Madrid Conference made no alteration in that decision.

It was decided to hold the next conference at Cairo in 1937. It is rather remarkable that a Railway Conference is to be held in Cairo this year; a Postal Congress in 1934; and Telegraph and Radio-telegraph Conferences in 1937. Perhaps it is anticipated that problems which are beyond the wit of man to solve may be solved by the Sphinx. I should certainly like to have the candid opinion of the Sphinx on such questions as code language and the wavelength problem.

As the Madrid Conference lasted so long, some of the delegations had to leave before the end. In such a case a delegation usually left its vote with another delegation. For example, the Persian delegate left his vote with one of the delegates of "A"; and the latter always made it clear when he spoke whether he was expressing the views of "A" or Persian views. He said on one occasion that he was becoming impregnated with Persian ideas and, in fact, was becoming quite a Persian. He then naively remarked that the Persian law permits a man to have two wives. The delegate of "X" left his vote with a delegate of "Y"; and the latter once explained that whenever he said something particularly foolish it must be understood that it was "X" speaking, but that if his remarks happened to be profound and wise it was obviously "Y" speaking.

The centenary of the day on which Samuel Morse first thought of his wonderful alphabet occurred during the Conference; and a special meeting of a very solemn character was held in Morse's honour. At a meeting of my Committee next day, when a Spanish proposal was under discussion for making certain changes in the Morse signals, a delegate remarked that it was rather sad that the Conference should honour Morse one day and should try to destroy his work the next day; but a Spanish delegate then rose

and said dramatically that he was convinced that if Samuel Morse could rise from his grave he would support the Spanish proposal. That settled the matter and the proposal was adopted.

*Press Reports.*—The Press in this country occasionally published news about the Conference. The most remarkable report was that published with a large "banner" headline on the front page of the *Daily Herald* of Oct. 22. I will show you a cutting. It reads:—

#### RADIO EXPERTS FIGHT WITH FISTS AT CONFERENCE.

COLLARS TORN AND CHAIRS UPSET.

*Sea Wireless Conflict.*

BY SYDNEY A. MOSELEY.

"Excited Delegates punched one another, and coats and collars were torn during the International Wireless Conference at Madrid. Chairs crashed on the floor and papers flew in the air.

Attendants were at first too aghast at such a happening to interfere. Then they tried to separate the mass of struggling delegates.

They were too few, too feeble—and had to fetch reinforcements from outside the Conference Hall before they could separate the radio experts of the nations. An end had to be called to the meeting."

As soon as a copy of this remarkable production was received, I sent a telegram to the Editor of the *Daily Herald* stating that there was not a word of truth in the story from beginning to end; that his correspondent had apparently been the victim of a hoax; that the proceedings at the Conference had been perfectly orderly; and that in view of the serious reflection on an International Conference, I must ask that my telegram of denial should be published in as prominent a position as the original report. The *Daily Herald* merely published a brief statement in small type which, although mentioning that I had denied that there had been the slightest disorder, still gave the impression that the original report was true. The paragraph was headed "We are not in Radio Row"; and it stated that "British delegates in particular are anxious to clear themselves of having taken part in the heated scenes that have taken place in Committee." I am not sure which was the worse—the publication of the original story, which was a pure fabrication, or the refusal to make a decent and honest withdrawal.

The *Times* occasionally published good accounts of proceedings at the Conference. In one report, however, they printed the word "better" instead of "letter" with amusing results. The passage, as printed, read as follows:— "Arrangements have been made for a better telegram service between European countries at one-half the ordinary telegram rate, with a minimum of 25 words and delivery early on the following morning." The service was announced to start on April 1; and careful readers of *The Times* must have wondered if this was the Conference's idea of an April fool's joke.

Free telegraph and telephone facilities were given to delegates during the Conference. So great was their appreciation of these privileges that an increase in telegraph traffic was noticed all over Europe and telegraph staffs began to think that better times were coming. The privilege of talking home was specially appreciated, and it was stated that one delegate had long conversations with his wife every day—in fact that he had spoken more to her during the period of the Conference than during any equal period since his wedding day.

The Conference was opened by the Prime Minister and closed by the President of the Republic. The latter gave a reception to the delegates at the National Palace. The Conference authorities gave a number of functions and outings, which I have no time to describe, and were very kind in every way.

*Madrid.* Now may I say a few words about Madrid. It is a curious mixture of the ancient and modern. There are many old buildings and narrow streets; but there are also some fine wide thoroughfares with many skyscrapers. Personally, I like the look of skyscrapers, but some people don't. There is a story of Lord Haldane who was being shown over a skyscraper in New York and was told how many floors it had, how many rooms, how many lifts, and so on. To all these statements he replied "Indeed." Then, as a crowning glory, his guide stated that the building was made of some special material and that it would be impossible for it to be burnt down. "What a pity!" said Lord Haldane.

Madrid is very noisy. All night long the streets are crowded and there is a constant symphony of motor hoots. The General Post Office is called "The Palace of Telecommunications," and it certainly deserves the name of "Palace." It is one of the most beautiful buildings I have ever seen.

Bull fights are held every Sunday and attract enormous crowds. Six bulls are killed at each performance; and when a bull enters the arena it has, on an average, only 20 minutes longer to live.

*Spain.*—The Spanish climate is hot and dry; but when November comes, although the sun is still hot, the wind is sometimes cold and treacherous. There is a saying that the wind of Spain is not strong enough to snuff a candle but is yet strong enough to kill a man.

The people of Spain are kind and hospitable; and life seems to be quite normal and peaceful. I had a letter from home suggesting that it must be very exciting to be in Spain just now owing to the Catalan dispute and the

trouble over the agrarian problem. As a matter of fact we hardly knew there were such things. People who were reading their *Times* at home knew much more about what was going on in Spain than we did.

The ladies of Spain are not so tall as I had imagined they would be. They are modern in some ways; they wear silk stockings and short skirts, and they have short hair; but they do not smoke or drive motor cars, and they are very much subject to the authority of their husbands. So in these latter respects they are obviously old-fashioned.

*Speaking for Great Britain.*—To return to the Conference, I should like to say what a great thrill it gives one to be able to speak for Great Britain. The subject may not be of vital importance, but whatever it is, for the moment one's voice is the voice of Great Britain. The influence of this country at such conferences is very great; and the greater this influence the more it is incumbent on us to ensure that it shall be wisely exercised. In my experience it is of great importance at a large conference to speak slowly, loudly, firmly, and sincerely. It is of no use being half-hearted; one must not "sit on the fence." I remember a warning on this subject when an excited speaker said that "Sir Henry Campbell-Bannerman had sat on the fence so long that the iron had entered into his soul." So one must avoid that at all costs.

*Conclusion.*—I am sure most of us, when we returned to England, were so delighted to be home again that we felt like falling on our knees and kissing the soil, although the state of the landing stage at Dover does not encourage this form of emotion. But this joy in returning to England is no reflection on Madrid. We had some trying times there and some good times also, and the whole thing was extremely interesting.

As time passes we shall, I am sure, forget the heat and noise of Madrid; the stuffiness of the Senado; the indigestible food; and all our other worries; and we shall remember the incredibly brilliant sunshine and deep blue skies of Spain; the romance of its cities and villages; the kindness of our hosts; the many friendships we formed; the good comradeship of those 600 men of 80 nationalities; and the final success of securing a Convention signed by all the world. And so our lasting memories of the Madrid Conference will be not a nightmare—as you might imagine from some of my remarks—perhaps not altogether a dream of delight; but at any rate the memories of an intensely interesting and not unhappy episode in our lives.

### GUILDFORD DISTRICT NOTES.

*Monthly Staff Sales Meeting.*—The usual monthly meeting was held during the forenoon of Feb. 24, when an instructive and helpful agenda was discussed. One of the items was an interesting paper read by Mr. Hickman-Clark, Sales Manager, entitled "Some Aspects of a Sales Representative's Work." This covered, amongst other things, the need for enthusiasm and determination as necessary to success.

In the afternoon the Telephone Salesmanship Meeting was held under the chairmanship of Mr. Howlett, Sales Representative, when Handbook No. 4 was fully discussed. A very interesting and profitable afternoon passed all too soon.

#### The Sales Supervisor's Address to His Troop.

(With apologies to Shakespeare.)

Once more unto the breach, dear friends, once more,  
Or stop another gang of Engineers  
In peace—that is to say when orders come  
Swiftly and surely, we will keep our hours  
As other sections do from nine to five.  
But, when our clever craftsmen clamorous call  
In their desire for work, and yet more work  
We will ignore the swiftly passing hours  
In our determination to obtain  
At least one order each ere we return.  
Remember, that we seek not to receive  
But to confer, a favour since we bring  
Trade to the Merchant, to the Noble ease,  
Security and happiness to all.  
We know that this facility we give  
Touches at every point each phase of life  
Without exception, no small detail shows  
In business, pleasure, science, sport or art  
And all the changing framework of the land  
But is increased, advantaged and improved  
By our swift service,

Therefore friends go forth  
To publish this with courtesy and zest.  
Let your enthusiasm have no bounds  
Be urgent in your forceful argument  
Till those fair documents your satchels hold  
Show fairer for the signatures engrossed.  
Remember, too, that man who brings to me  
Full meed of new Agreements every day  
Shall be my brother whatso'er his rank  
Established or but Acting his returns  
Shall gentle his condition.  
Hence On I say, On, on, you noble Section  
Communication's finest, first front line.

H. H.-C.

## LONG DISTANCE TELEPHONY.

### NEW BRITISH OVERSEAS EXCHANGE—(contd.)

By J. F. DARBY (*Headquarters Traffic Section*).

#### EXTRA-EUROPEAN SECTION.

THE previous articles have dealt with matters relating to the Continental Section of the new exchange. In this and subsequent issues an outline of the services beyond Europe will be given. The new extra-European switchboard was actually brought into use on April 8 last, thus completing the transfer to the new exchange equipment.

The development of the extra-European services has been, perhaps, even more impressive than the progress made in the Anglo-Continental system. The growth in calls has been rapid and, from the point of view of the number of subscribers embraced within a common intercommunication scheme, the expansion has been almost overwhelming.

Up to the end of 1926 Great Britain had no telephonic communication with subscribers outside Europe and, at that time, very few people expected it. In January, 1927, however, a telephone channel was provided between London and New York giving facilities for speech between the vast telephone network of the United States of America, on one hand, and the telephone system of Great Britain on the other. This step was made possible by the achievements of the engineers of the American Telephone & Telegraph Company and the British Post Office in connexion with radio-telephony.

The development of the European services is indicated in the table given below, and at the present moment intercommunication is now available between the majority of subscribers in the continents of Europe, America (North and South), Africa (North and South), Australasia (Australia and New Zealand). Asia is only served to a small degree by the system at the moment; tests are, however, in progress with Angora, Simla, Delhi, Calcutta, &c., and are also in hand with Japan. The linking of the five continents is carried out mainly in the London Overseas exchange, and it is not an exaggeration to call this exchange the foremost of the "world wide" telephone switching centres.

#### Extra-European Telephone Services.

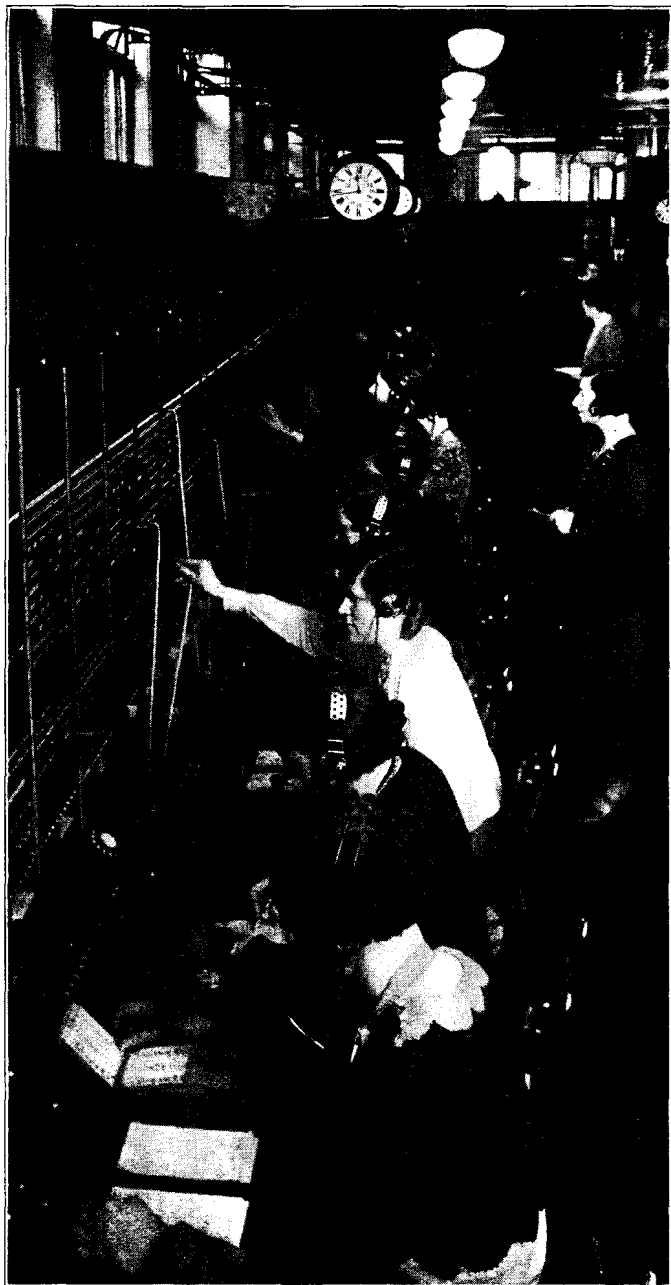
Date Service opened with Great Britain.	Country, &c.	European Radio Terminal.	Extra-European Radio Terminal.
1927. January ...	United States of America	London ...	New York.
March ...	†Cuba ...	London ...	New York.
October ...	†Canada ...	London ...	New York.
1928 July ...	†Mexico ...	London ...	New York.
1929 July ...	Argentina ...	London ...	Buenos Aires.
1930 February ...	Ships at Sea ...	London ...	Ships.
April ...	Australia ...	London ...	Sydney.
May ...	Brazil ...	London ...	Rio de Janeiro.
	†Uruguay ...	London ...	Buenos Aires.
	†Chile ...	London ...	Buenos Aires.
	*Dutch East Indies ...	Amsterdam	Bandoeng.
1931 March ...	*French Morocco ...	Paris ...	Rabat.
	*French Indo-China ...	Paris ...	Saigon.
	*Canary Islands ...	Madrid ...	Teneriffe.
July ...	†New Zealand ...	London ...	(Sydney, Wellington.)
December ...	*Siam ...	Berlin ...	Bangkok.
1932 January ...	*Venezuela ...	Berlin ...	Maracay.
February ...	South Africa ...	London ...	Cape Town.
March ...	†Bermuda ...	London ...	(New York, Bermuda.)
	†Hawaiian (Sandwich) Islands.	London ...	(New York, San Francisco, Honolulu.)
June ...	Egypt ...	London ...	Cairo.
July ...	Canada ...	London ...	Montreal.
November ...	*Belgian Congo ...	Brussels ...	Leopoldville.
1933 March ...	*Phillipine Islands ...	Berlin ...	Manilla.
April ...	†Palestine ...	London ...	Cairo.
May ...	India ...	London ...	Poona.

† Through service.

\* Indirect service.

For all these services one link, at least, in the chain of connexions is a radio channel, and this is because of exceptionally long distances to be traversed or because of difficulty in providing a physical (or derived physical) circuit between two points, such as between an island and its mainland. In some cases both reasons may apply.

The services fall into four classes, (a) direct, (b) through, (c) indirect and (d) switched. For direct services—the most important from the British point of view—the European radio terminal is situated in Great Britain and the distant radio terminal



NEW EXTRA-EUROPEAN SWITCHBOARD.

is in the country concerned. In the case of through calls, communication is given over a direct radio channel from Great Britain to an intermediate centre, whence connexion is made over another international circuit (physical or radio) to the country concerned.

Indirect extra-European services are provided via radio channels, the European terminal of which is at a *Continental* centre such as Paris, Berlin and Madrid.

The switched services are those in which the connexion of two extra-European channels in London is concerned, as, for example, Sydney to New York and Dutch East Indies to North America.

The position as regards the area accessible to the Post Office telephone system can perhaps be illustrated by the facts that from the inauguration of the telephone system in Great Britain in 1879 up to 1891 approximately 120,000 square miles were involved, from 1891 up to 1927 the area was increased to 550,000 square miles: during the last 6 years the figure of approximately 12,500,000 square miles has been reached.

While these areas bear no relation to the traffic which has resulted from the extensions, it is perhaps a satisfactory feature that, since the first year of extra-European communication this traffic has increased tenfold. The growth has been due more to the increased use of the earlier services (American) than to the inclusion of new areas in the system.

The number of radio channels has also correspondingly increased. From the one long-wave channel, which operated alone for the greater part of 1927 and 1928, the system has developed to 12 channels, although in a few instances common plant (transmitters and receivers) is used for two different channels: some channels are operated for a few hours a day only. The number of pairs of transmitters and receivers has now reached a figure of 8.

As regards quality of service, two aspects—transmission and speed—are concerned. The question of good transmission is, of course, one of the main problems of the radio engineer and, indeed, is even more complex than the one attaching to line telephony.

Not only is a special question of attenuation involved—attenuation which is variable in cycles of years, for various periods of the year and different hours of the day, but the natural phenomena of *fading*, *magnetic storms* and *atmospherics* have to be dealt with. Broadly speaking the difficulties are extreme weakness or variation of signal strength, and noise. The former is met by choice of the most suitable hours of the day for each particular service, the use of highly efficient receiving equipment and directional aerial arrays and also by a system of *automatic gain control* whereby variations in strength of received signal of, say, a million times result in barely noticeable fluctuations in the speech delivered to the subscriber. In connexion with the noise element, endeavour is made to make the ratio of the "noise" level to the "speech" level as high as possible and the directional aerial systems and filters provided ensure that extraneous signals can intrude only from one direction and on a narrow wave band.

The effectiveness of these measures is very noticeable on the one long-wave channel between London and New York, the efficiency of which can be classed as almost 100%.

The main trunk circuits used in this country for the completion of calls passing over radio channels are of the *zero loss* class and the net result of the various measures taken in connexion with transmission is the provision, under normal conditions, of an entirely satisfactory standard of speech on extra-European calls.

Facilities are provided for the rapid setting up of extra-European calls. Where straightforward calls, such as London to New York, are concerned and the persons required to speak are available (such calls are normally person to person calls) a service without waiting can usually be given. Very little additional time is involved in the case of calls to main centres remote from the radio terminals owing to the priority given to extra-European connexions over inland and Continental calls. In cases where a number of long distance links have to be connected, for example, say Teneriffe (Canary Islands) to Honolulu (Hawaiian Islands) or the parties require to speak cannot readily be found at the same time some hours may elapse before a connexion can be satisfactorily established.

(To be continued.)

## WIGAN "COMMON CONTROL" NEW AUTOMATIC EXCHANGE.

ON Mar. 11, 1933 the township of Wigan became the proud possessor of the most up-to-date telephone exchange in the Provinces. The new exchange, which is worked on the "common control" system, was installed by the Automatic Electric Co., of Liverpool (formerly the A.T.M.), and incorporates special switching features designed to reduce overall costs in first equipment, floor space, and volume of equipment, whilst retaining



GROUP OF WILLING WORKERS WHO WERE BEHIND THE SCENES MAKING THE TRANSFER A SUCCESS.

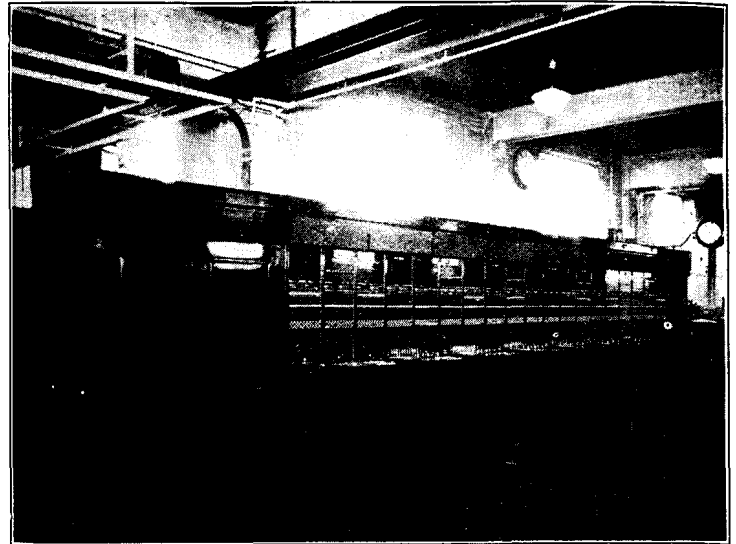
the essential principles of existing Post Office practice. Two exchanges of this type are being installed initially, the first in Wigan (non-director) and the second (Director) in the London Automatic Area at a new exchange to be called "Arnold." The manual board associated with the new Wigan exchange is also the last word in modern telephone practice, and last, but not least, two rural automatic exchanges of the 25 200 type—probably the first of their kind—were opened at the same time as the main Wigan exchange.

In order that there should be no possible doubt that the plant would operate successfully under load, "samples of traffic" were taken for a period of three weeks prior to the transfer. Artificial traffic to the tune of over 5,000 calls a day, with intensive simultaneous assaults were made by a specialist staff of telephonists, and eagle eyes watched for any sign of failure. The exchange passed out, however, with flying colours and is now settling down to a long—and we hope very busy—life of public usefulness.

*Demand Working.*—Wigan—with demand working will be a group centre under Manchester and will, as such assume a greater degree of trunk control than is at present carried. The new manual board has been designed to include all features essential to demand working so that when the scheme comes into force—probably in September next—Wigan will be ready to take



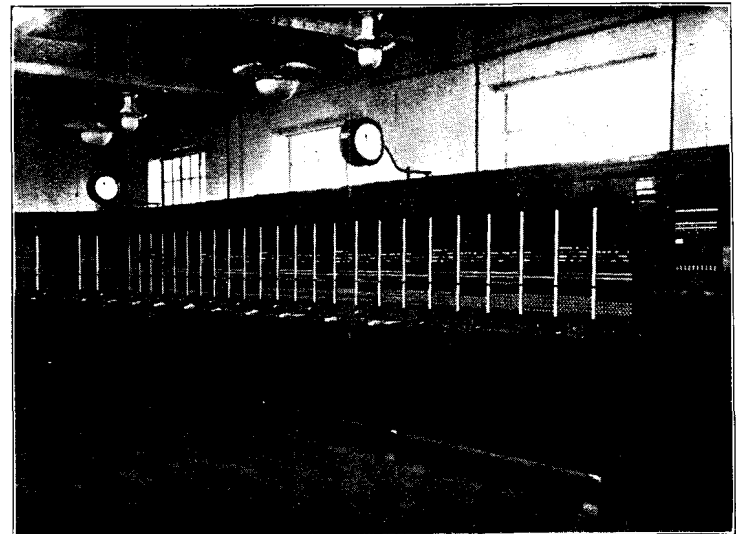
THE OLD EXCHANGE. LAST DAY OF SERVICE.



[By courtesy of Messrs. Ericssons.]

INCOMING DEMAND POSITION.

its place without equipment modifications and with a minimum of operating changes. Provision on the new manual board includes common control cord circuits, chargeable time indicators, visible idle circuit indicators, long distance multiple, transfer circuits, trunk train and an "assist" facility on the Monitor's desk. In fact, the board contains so many intriguing features that during the days of training the staff became so interested in the novelty of their work that they showed visible reluctance to leaving at the termination of their spells of duty.



[By courtesy of Messrs. Ericssons.]

WIGAN NEW EXCHANGE SWITCHBOARD.

*The Old Exchange.*—The old exchange of Wigan was probably unique inasmuch as it never moved but opened and finished its career in the Victoria Buildings, Wigan. The first exchange was opened by the Lancashire Telephone Company on April 1, 1882, with nearly 50 subscribers.

The following extract from the *Wigan Observer*, dated Nov. 26, 1881, brings home vividly the vast changes which have been accomplished in 50 years.

### PROPOSED TELEPHONE EXCHANGE IN WIGAN.

It is proposed to establish a telephone exchange in Wigan, and the Lancashire Telephonic Company have this week opened an office in Victoria Buildings, King Street. Already active measures have been taken to lay down the wires, and it is probable that the system will soon be in extensive use. The directors, wishing to prove to the public the advantage of the telephone system, have decided to grant to such firms, institutions and individuals as they think would find it useful, permission to use the wires and instruments, without charge, for a period of at least three months; and, further, when the rates are fixed, they are under no obligation to retain the instruments, and they will be removed without any charge being made. The Blake Transmitter and Bell Telephone have been adopted, after a lengthy trial, as the best adapted for exchange purposes, and the instrument

can be arranged so as to be used at varying distances ; as, for instance, it can be placed on the other side of the writing table or desk, so that a subscriber can be writing his letters at the same time as he is holding a conversation. The whole expense of erection, maintenance, wayleaves, renewals and general working of the exchange, is borne by the Company. In addition to private houses, hotels, clubs, cab proprietors, ironworks, collieries, mills, lawyers', engineers' and agents' offices, tradesmen's shops, railways, &c., the borough courts, fire station, infirmary, gas offices, &c., will be offered connexion with the exchange. One or more instruments will be placed at the Central Offices, King Street, for the general use of subscribers when in town ; and subscribers are permitted to allow other subscribers the use of their instruments. A wire can be run so that any subscriber can send or receive a telephonic message ; but for this privilege an additional annual charge is made by the postal authorities. The Postmaster-General has arranged connexion between towns for the Company, and by this means any Wigan subscriber will be able to speak direct with the subscribers in Manchester, Liverpool, Preston, Blackburn, Burnley, Rochdale, Oldham, &c. It is hoped that the business firms in Wigan will give the exchange a fair trial.

*Official Opening.*—The Mayor (Councillor W. Atherton, J.P.) made the first call from the Supervisor's desk at 2 p.m., and in speaking to the Editor of the *Wigan Observer* said :—

"In availing myself, as Mayor of the ancient and loyal borough of Wigan, of the privilege kindly offered me by the Post Office authorities, to send the first message over the new Wigan Automatic Telephone Exchange, I feel sure I cannot make better use of that privilege than by sending, through the *Wigan Observer*, to the inhabitants of my native county of Lancashire, a message of greeting, coupled with the earnest hope that the industrial concerns, the public utility undertakings, and the housewives of Lancashire, will see to it that a fair proportion of the fuel they use is Lancashire fuel.

The appeal to use Lancashire coal at first sight appears to have little connexion with the object which inspired the official gathering, but, when the parlous plight of Wigan industries is realised, it is sincerely hoped that the appeal will bear fruit and reflect in due course, by an increased calling rate, returning prosperity.

**PROGRESS OF THE TELEPHONE SYSTEM.**

The total number of stations working in the Post Office System at Mar. 31, 1933 was 2,137,100 the net increase for the year being 68,509, or 3.3%.

The growth for the year in London, England and Wales (excluding London), Scotland and Northern Ireland, was as follows:—

	Total number of Stations at Mar. 31.		Increase.	
	1932.	1933.	No.	%
London ... ..	774,618	798,153	23,535	3.0
England and Wales (excluding London) ... ..	1,087,898	1,126,451	38,553	3.5
Scotland ... ..	179,706	184,618	4,912	2.7
Northern Ireland ... ..	26,369	27,878	1,509	5.7
<b>Total ... ..</b>	<b>2,068,591</b>	<b>2,137,100</b>	<b>68,509</b>	<b>3.3</b>

Residence rate stations at Mar. 31, 1933, numbered 256,248 in London and 337,492 in the Provinces, the total of 593,740 representing an increase of 28,056 or 5.0% for the year. The increase in business subscribers' exchange stations for the same period was 36,186 or 2.6%.

The total number of call offices at Mar. 31, 1933, was 39,416, an increase of 2,035 or 5.4% on the total at the end of the previous year. Of the total of 39,416 public call offices, 8,929 were in the London Telephone Area and 30,487 in Provincial Districts.

14,984 or 38% of the total call offices working were of the Kiosk type, at which service is available at all hours of the day and night, the increase for the year being 2,166 or 16.9%. At Mar. 31, 1933, Kiosks in London numbered 3,538 and in the Provinces 11,446.

The number of rural party line stations working at Mar. 31, 1933, was 7,704 as compared with 8,291 a year previously. Many such lines are being replaced by exclusive lines in connexion with the opening of rural automatic exchanges.

The total number of inland trunk calls in January, 1933 (the latest statistics available) was 10,597,587, representing an increase of 719,934 or 7.29% on the total for the corresponding month last year. International calls in January numbered 98,297 and show an increase of 1,211 or 1.2% over January, 1932.

Further progress was made during the month of March with the development of the local exchange system. New Exchanges opened included :—

LONDON—Terminus (automatic) ; Valentine (automatic conversion) ;

PROVINCES—Barnwood (Gloucester), Wigan (automatic conversions) ; and the following rural automatic exchanges : Appley Bridge (Wigan), Bradenstoke (Chippenham), Bluebell Hill (Chatham), Broomfield (Chelmsford), Dalton Holme (Market Weighton), Drochil Castle (Peebles), Elsworth (Cambridge), Hindon (Tisbury), Ingoldsby (Grantham), Overstrand (Cromer), Parbold (Wigan), Pontrilas (Hereford), Ravenglass (Barrow), Trefnant (Rhyl), Torranyard (Irvine) ;

and among the more important provincial exchanges extended were :—

Hanley, Llandudno (automatic) ; Exmouth, Lancaster, Maryhill (Glasgow), Merrylee (Glasgow), Taunton, Tunbridge Wells (all manual).

During the month the following additions to the main underground system were completed and brought into use :—

Salisbury—Tidworth,  
Bristol—Yeovil,

while 65 new overhead trunk circuits were completed, and 74 additional circuits were provided by means of spare wires in underground cables.



THIS MONTH  
**THE AUTOMATIC TELEPHONE SERVICE**  
WILL OPERATE IN WIGAN.

Have YOU made your new 'phone number  
Alteration on your Stationery?

**RUBBER STAMPS**

FOR THIS PURPOSE MAY BE OBTAINED  
FROM THE

**"Wigan Observer" Stationery  
Department.**

SUITABLE SPECIMENS FROM

**1/6 each.**

*Publicity.*—The Press—in addition to giving the usual publicity before and after the opening—took the opportunity of utilising the change for their own advantage, and a specimen of their activities is reproduced.

These advertisements were reproduced in the papers and also distributed as handbills. As regards the specimen relating to "rubber stamps," we particularly wish this well as one of the most prolific causes of wrong number trouble is known to be the retention of old numbers on current stationery.

## "THINGS I WOULD LIKE TO KNOW ABOUT THE TELEPHONE SYSTEM, AND WHY!"

BY MISS B. M. McDONALD.

Prize essay in the London Telephonists' Society's Competition, Session 1932-33.

My first question appears rather irrelevant, being addressed more to myself than the Telephone Service, but having tried in vain to find a satisfactory solution, I am hoping that someone with a greater knowledge, or wider experience of human nature than myself, can supply the answer. The question is—"Why am I in the Telephone Service?" When I first entered the Department, there was every reason to believe that the position was entirely suitable in every way; with interesting, if at times arduous work, pleasant companions, good discipline, and almost certain promotion. An average telephonist knew that if she remained in the Service, she would eventually become a second-class supervisor, then first and later perhaps attain the much coveted position of Chief. The advent of automatic telephony has changed all that.

Why, then, am I here? And hundreds of others like me? Is it because we like the Service and all it stands for, in spite of apparent disadvantages. Or is it that we *are* the Service, incomplete without it, just as it would be incomplete without us?

On entering the Service we are somewhat overwhelmed by the numerous rules and regulations, and yards of red tape and officialdom to be observed everywhere. After a short while, we begin to realise that there is a reason for every single one, not always apparent to the mere telephonist, of course, but the very fact that an instruction or rule seems pointless, usually goes to prove that it is really very clever. Take the recent instruction which ordered all "casuals" to cease—not one of us could see a grain of good in that at the time, but now we know it was only issued in order to make us more appreciative when a later instruction cancelled the first. Our morning tea is absolute nectar, because of our enforced abstinence. Oh, wise Department! What private firm would think of little treats like that for its staff?

It is impossible to be in the Service for any length of time, without realising what an efficient organisation it really is, perhaps it is equally impossible to sever our connexion with it, because we are proud of "belonging" and wish to remain as long as we are wanted. This feeling would be vastly increased, I feel sure, if we were able to take a personal interest in the financial side of an exchange. For instance, if an annual balance-sheet were issued for every exchange, giving the income, from subscribers lines and call offices on the one side, and the outlay, showing overhead charges, wages, &c. on the other. It would also foster a friendly spirit of competition. Supposing Park gave a larger profit than Riverside during one year, then Riverside telephonists would be extra careful about collecting call office fees and—"switching-off lights when no longer required"—during the next, in order to get even.

Now let us pass to lighter topics. I would like to know what soothing balm the Controller applies to irate subscribers? It is always magical in effect, no matter who the individual. In an exchange an unreasonable caller is sometimes passed from telephonist to Information Desk, from "I.D." to Supervisor, then to Chief Supervisor, but nothing will satisfy, no explanation receive attention, until the Controller is obtained—then peace! Is it just because he *is* the Head, or does he cast some magic spell?

Speaking of "Heads," how do they manage to acquire such awe-inspiring personalities? Why is it that an interview with our Female Superintendent, or Traffic Officer even, causes us to become completely tongue-tied, glassy-eyed, and horribly conscious of our hands, so that we fiddle with pencils, buttons, or anything else available? Are they born with this aura of impressive strength and dignity, or like Topsy, does it just grow? I really think they must have had it always, for I cannot imagine them ever being any different. Surely they were never chubby infants, like the rest of humanity. Can you imagine an Assistant Controller cooing and gurgling and playing with his toes? No, neither can I! Only a short time ago I was completely staggered when a friend of mine said casually—"I'm going over to old So-and-So's place tomorrow evening, you haven't met him, but I believe his father's something to do with your office." "Not the Mr. So-and-So?" I gasped, mentioning a name as familiar to us as that of George Robey, though not quite in the same street, and when my friend said, "Yes," I felt as though he'd told me he was taking tea with the Archangel Gabriel. It seemed absolute sacrilege to be so familiar with one of our "Heads." Why do we feel like that about them?

Section Supervisors, too, are rather wonderful. How do they get their foreknowledge of when a subscriber is going to call the exchange? I can be gazing religiously at a clear board, when a voice at my elbow says—"Sub, calling," and hey presto, there it is! Yet I could swear it wasn't there before my supervisor spoke, and my eyesight is perfectly good. It must be telepathy. What a pity we cannot all acquire the knack! How useful it would be when wishing to carry on a conversation with the adjacent telephonist, while a supervisor stands behind. But I suppose she would intercept the thought and say—"Stop thinking" just as now she says—"Stop talking."

We do rather a lot of talking, I admit. I wonder why tongues don't wear out! I've never heard of a telephonist suddenly becoming dumb because her powers of speech were exhausted, but really it wouldn't be surprising. To talk all day because of her work, and also in spite of it—and then to talk twice as quickly immediately she leaves it (that can be proved by entering any exchange dining-room at meal times) seems rather a strain but nobody seems to notice it.

At any rate, we *do* all speak the same language, engineers do not. They seem to use some individual and jealously guarded tongue, of which we know nothing. If ever it is necessary to descend to the lower regions—not in search of his Satanic Majesty, but just to read a meter—and a group of engineers is passed, a sudden deathly silence is apparent, as though they are thinking, "Has she heard?" Or if you enter quietly unobserved, they turn quickly, demanding to know how long you've been there, and look very relieved on learning that you have just arrived. Are all engineers members of a Freemasonry, with its own private language? I wish I knew.

There ought to be an information bureau for the Service, as infallible as Selfridge's; there are lots of little things I'd like to know. For instance, why are exchange copies of advice notes always pink? It is a colour I particularly loathe, not because of its association with remarks about old maids' last chances, but just instinctively; and as an exchange clerk, with more than the usual number of advice notes always requiring attention, I do hate to sit literally, as well as figuratively, "in the pink."

Then why don't we have the latest designs in hand-micro telephones used in exchanges? If one has something good to sell, one naturally displays it, in order to stir up the covetous instincts of mankind. Lots of subscribers calling at exchanges for various reasons would be impressed and envious if they saw smart telephones in use. Besides, hand-micro's are seen in films, and every Garbo fan would want a telephone like hers, if they knew how easily it could be obtained. As it is, some of the instruments in use, the metal green with age, and enamel nearly all worn off, would almost discourage prospective subscribers.

Though I suppose in areas served by automatic exchanges there *are* no prospective subscribers. Why should people rent telephones and pay for calls when they can enter a call office, dial "0" and after telling the operator they have had a wrong number, receive their call free gratis and without argument? The telephonist may feel convinced that the complaint is not authentic, but she must still complete the call. Why can't one of our clever engineers invent a device to overcome this difficulty? Or better still, put call offices back on the manual board, they could then be challenged at three minutes, with a consequent increase of revenue.

Our engineering brains are required in another direction also—cannot the C.C.I. apparatus be perfected so that it is no longer necessary to intercept numerous calls? It is very irritating to subscribers and often causes considerable delay. Call office users, too, are inconvenienced, for they frequently receive "number engaged" or "no reply" advice, and many of them are unaware of the refundment system, so that they leave the box feeling they have been swindled, a feeling that no Englishman enjoys, no matter how trivial the sum—and I shudder to think of the opinion of our Scots friends.

That brings me to another thing I should like to know—why are so many of our Departmental heads Scotsmen? If we visited Scotland, should we find a corresponding preponderance of Englishmen in their Telephone department? I wonder! But I fear that is dangerous ground. It is time I ceased my wondering and contented myself with hoping—hoping that I shall eventually receive an answer to all my questions.

## CORRESPONDENCE.

### A TRUNK CALL TO HEAVEN.

TO THE EDITOR OF "THE TELEGRAPH AND TELEPHONE JOURNAL."

Sir,—Faith in the Telephone Service is surely exemplified by the following little episode which occurred at my exchange to-day.

Operator: "Exchange Enquiry?"

Little Boy: "I want to speak to my Daddy."

Operator: "What is your Daddy's number?"

Little Boy: "I don't know."

Operator: "What is your Daddy's name? Then perhaps I can put you through."

Little Boy: "Colonel —."

Operator: "Does your Mummy know the number?"

Little Boy: "My Mummy is out shopping, and I am looking after the telephone."

Operator: "Where is your Daddy?"

Little Boy: "My Daddy is in Heaven."

Operator: "Ask your Mummy to speak to me a moment."

Mummy (on her return): "Has my small son been worrying you? Poor little boy, his father died a short time ago and he has an idea he can telephone to his Daddy."

Flaxman Exchange.

I. Wood.



## TELEGRAPHIC MEMORABILIA.

*A Correction.*—In the February issue of the *T. and T. Journal* the present writer, in commenting on the lecture of Mr. R. P. Smith, of the E.-in-C.'s Office, on "The Maintenance of the Telegraph Instrument Room by the Traffic Staff," made a statement to the effect that "the first official recognition of the maintenance of the Instrument Room by the Traffic staff was well over 30 years ago, when the Baudot Multiplex system was first introduced by French experts." The paragraph was terminated by the words "the writer is, however, open to correction on the subject."

Too late for publication in last month's issue the culprit was favoured with the following interesting letter from Sir William Slingo:—

"I usually take great interest in your 'Telegraphic Memorabilia' in the *T. and T. Journal*. There is one paragraph in the February issue, page 113, on which I may throw a little light. In 1870, when the Post Office took over the telegraphs, the Engineering Department had a staff of engineers in the C.T.O. This lasted until about 1878, when Mr. Graves became E.-in-C., and then the Engineers in the C.T.O. were divided into two groups, under Mr. T. Hill, forming part of the Metropolitan District Engineering staff under Mr. Eaton and having no maintenance responsibilities in T.S. The other group, under Mr. J. T. Hill, was transferred to Mr. Fischer's staff to take over the maintenance of apparatus, &c., line testing, line fault, reporting, &c. Additions to this staff were made from the Instrument Room, i.e., the Traffic staff. Frank Morgan was, I think, the first, and I believe I was the second. I joined it in 1881.—Sincerely yours, W. Slingo."

Naturally this communication from the telegraphists' "Friend and Teacher" of—well, let us say—last century, will be much appreciated by our telegraphist readers especially. The interest taken by Sir William is typical of the old style and school of telegraphist, who never forget their *alma mater*.

This writer should, however, state here and now that when he mentioned "Maintenance of the Instrument Room by the Traffic staff" it was rather a narrower interpretation of the item "maintenance" than that more fully given by our esteemed correspondent, and was not intended to cover line testing, for example, but simply the telegraph apparatus *in situ*.

*Is Morse Telegraphy Dead?*—Judging from much that one has seen and heard one is inclined not to believe that the last has been seen or heard of Morse signals, and strange to say the latest sign of the times is a resuscitation of not only Morse, but of the more primitive type, i.e., that of the hand key! Lord Trenchard, it appears, has decided to instal wireless telegraphy in the cars of the uniformed police as well as in those of the Flying Squad. Recent tests made by the Commissioner with R.A.F. wireless tenders and transmitting and receiving stations erected in certain London districts have conclusively proved that for police purposes radio-telegraphy (in Morse code) is much better than radio telephony. The following words are from a report from Scotland Yard: "The radio-telephone, although simpler than Morse, was even found to be slower, more liable to mistakes and more erratic in transmission than telegraphy. Telephone messages were also easily overheard by people with wireless sets."

*Personal.*—Sir Courtauld Thomson, K.B.E., and Wing-Commander Sir Norman Leslie, Bt., C.M.G., have been elected to the courts of Cables & Wireless, Ltd., and Imperial & International Communications, Ltd., and the boards of their associated companies.

Mr. C. E. Morgan, secretary to the Direct Spanish Telegraph Co., Ltd., who has been with the company for 59 years, has been elected to the board of directors.

Major Gladstone Murray, controller of the British Broadcasting Corporation, has been on a mission to "advise the Canadian

Government on the creation of a national broadcasting system on the model of the B.B.C."

Felicitations to Mr. Fred Hayward, formerly Asst. Superintendent, Telegraphs, C.T.O., upon successfully entering the ranks of the octogenarians! Mr. Hayward was formerly an old railway telegraph clerk in the service of the late South Eastern Railway Company. His transfer to the Post Office took place in 1873.

*Promotions.*—Congratulations to Mr. E. Gooding upon his well-earned appointment to the rank of Superintendent, Cable Room, C.T.O., London, *vice* Mr. C. R. Gladman, retired, and equally, also, to Mr. W. Annible, who steps up in place of Mr. Gooding as Asst. Superintendent in the same department. A further reference is made elsewhere in this issue to the departure of Mr. Gladman upon reaching the age-limit.

*Countries.*—AUSTRALIA.—"Between December, 1931, and January, 1933,"—presumably Jan. 1 to Dec. 31, 1932—says a report from a usually authoritative source, the number of broadcasting radio receiving licences increased by 90,163 to a total of 427,821; N.S. Wales increased by 3,167, Victoria by 266, Queensland 854, S. Australia 1,232, W. Australia 512 and Tasmania 208.

CANADA.—It has been decided by the Dominion House of Commons to make no change in the broadcast receiving licence fee which is to remain at 2—about 8s. 4d. at par, for another 12 months. For the 10 months ended Jan. 31 the revenue was £279,290, representing 725,000. *Reduction of Advertising.*—According to Reuter's agency at Toronto, advertising, as from April 1 last, is to be restricted to 5% of the Canadian broadcast performances in order, so it is said, "to give audiences some relief from the United States broadcast programmes, which include advertising matter."

CHINA.—According to Reuter, negotiations have already been concluded for a direct wireless service between London and Shanghai, which will probably be opened by the end of the coming summer. It is further stated that the Shanghai installation, which is being supplied by Great Britain, will be financed from the proceeds of the Boxer Indemnity Fund, and it is even believed that the first portion of the machinery is already on its way to China.

CHRISTMAS ISLANDS.—The *Electrical Review*, in stating that the small British settlement on Christmas Island, in the Indian Ocean, is 800 miles south of Singapore, and 1,000 miles north-west of the Australian continent, informs us that the Christmas Island Phosphate Company has for some time maintained a small wireless station. This, however, is to be modernised by the provision of two Marconi stations for direct communication with Singapore and with distant ships. The link with Singapore is by short wave, covering the wave-band 20 to 100 metres, with a power to aerial of 250 w. when operating continuous wave telegraphy. For working with ships on medium wavelengths a special 200-w. transmitter has been supplied.

FRANCE.—The French Ministry of the Merchant Marine has issued a number of supplemental regulations which stipulate that all passenger vessels of over 10,000 tons must be provided with two separate wireless telegraph receiving and transmitting installations, situated in *different parts* of the ship.

*Radio Toulouse.*—The regrettable destruction of Radio Toulouse by fire on the 6th ult. is said by the Paris correspondent of a London newspaper to have probably resulted from a dropped cigarette by one of the bandmen. It is understood that the loss is to be replaced almost immediately by the substitution of a new wireless station—in a castle at St. Aignan, about 10 miles from Toulouse.

GREAT BRITAIN.—*Birmingham.*—The total number of wireless interference cases dealt with in the Birmingham telephone area during the last 12 months was 1,425. Of these 1,066 were traced to electrical interference from various sources, thus, printing works, dentistry, flash signs, heat-ray equipments, while 285 were due

to oscillation from neighbouring receivers. Of the 150 miscellaneous cases are included amateur transmitting stations, illicit transmitters and alleged tramway interferences. "The activity of the Birmingham direction-finding van," says an unofficial report, "has no doubt contributed substantially to the increase of 32,000 new licences during the year ended December, 1932." *Droitwich*.—The B.B.C. has recently announced that the purchase of a site has now been completed for the new long-wave high-power transmitting station to replace the Daventry (5XX) transmitter. The site is three miles north-west of Droitwich. The new transmitter will radiate the National programme and is designed to work on 100 kw. The station will contain, in addition, a high-power medium-wave regional transmitter, which will replace the existing Midland Regional transmitter (5GB) now situated at Daventry. *London*.—The annual general report of the B.B.C. for 1932 states that out of 59,547 hours of broadcasting only 17 hours 46 minutes were lost to the public. The number of receiving licences issued grew to a total of 5,262,953.

*Middlesbrough*.—The Middlesbrough Corporation is seeking powers to establish a broadcasting relay service in its area—the first municipal station in the country. Lord Daryngton, in the House of Lords, stated for the promoters of the Bill that the B.B.C. and the Postmaster-General agreed to the Corporation's proposal, with one or two minor alterations.

*Romford*.—All the aircraft for the new air services operated by Hillman's Airways from their Aerodrome at Romford are to be fitted with Marconi equipment. Every expedient has been adopted to reduce the size and weight of the apparatus to the minimum. *Tottenham*.—The Tottenham Urban District Council Housing Committee has agreed with the North Metropolitan Elec. Power Supply Co. that, due to the rapidly increasing number of tenants desirous of using mains-operated sets, the company shall allow the extension of the use of electricity for the purpose for an additional fixed sum of one penny per week in each case, the council to collect money less 5% cost of collection. *Washford Cross*.—According to a *Times* report, Mr. Appleton, Regional Director of the B.B.C., at the Cardiff Rotary Club, on April 3, said that the new West Regional transmitter of the B.B.C. at Washford Cross, Somerset, would be opened in the summer.

The *London Daily Telegraph* says that it is estimated that the Washford Cross transmitters "will serve a population over a radius of 70 miles of 3¼ millions. South Wales should reap considerable benefit by this new station. It is noted that one of this station's wavelengths is to be 261.6 metres, the same as London National. The first public tests of the new station are proceeding as we go to press."

**NORTHERN AFRICA.**—The February-March numbers of our worthy contemporary, *Le Relais*, the official organ of the Literary Society of the Posts, Telegraphs and Telephones of France and her colonies, have been combined into one complete number and are devoted entirely to *Les Postes et Télécommunications en Afrique du Nord*. The issue is a wonderfully compact account of the postal, telegraphic and telephonic services and their respective peculiarities in Algeria, Morocco and Tunis.

The photograph on page 44 of the huge Salle des Baudots in the new Central Telegraph Office in Oran, is evident proof of a stern and continued faith in the future of telegraphy in general and in the multiplex printing system in particular!

**SCOTLAND.**—The new telegraph and telephone cable between the mainland of Scotland and Lewis was completed by the British Post Office cable ship *Monarch* and was formally opened on Mar. 21. To maintain the volume of speech, amplifiers had to be installed at each end of the cable. A new telegraph circuit has been superimposed on the telephone line. The new cable is 34 nautical miles in length, while across Skye there are 60 miles of double wire for telephony and a similar length of single wire for telegraphy. *Glasgow*.—"An expert from the Air Ministry," says the *Electrical Review*, "is to be invited—if this is not already done, to advise Glasgow city police force on the use of wireless telegraphy and telephony."

**U.S.A.**—The American technical journals give some interesting notes on the broadcasting, on Feb. 17 last, of the Manchurian Report from Geneva. The International Morse code was, of course, used and the transmission, commencing at 9 a.m., New York time, was terminated at 7.22 p.m., or just over 10 hours of continuous signalling. "All arrived correctly." The wave used for the U.S.A. transmission was 20.64 metres, as being the better suited for daylight period. From 2.45 p.m. onwards 38.47 metres appears to have been used.

*Courage*.—But what if I fail of my purpose here?

It is but to keep the nerves at strain,

To dry one's eyes and laugh at a fall

And, baffled, get up and begin again.—*Browning*.

J. J. T.

## WEEL MAY THE KEEL ROW.

### INTRODUCTION OF DEMAND WORKING AT NEWCASTLE-ON-TYNE.

UP to some 400 years ago the Priors of Gateshead had the privilege of levying a tax on all laden sea-going colliers passing their Priory on the banks of the Tyne.

As their exactions grew more onerous the wily up-river Tyneside collier in due course devised means to circumnavigate the Priors. The coal was loaded into flat-bottomed "keels" holding some eight to ten tons, which were rowed down to Tynemouth and there transhipped, and in due course Tyneside's classic "Weel May the Keel Row" was born.

The more musical of the *T. and T. Journal's* readers may not have a great opinion of the music to which the song is usually sung—but they cannot help but applaud the determination which inspired the song.

"Weel" indeed, too, has the telephone keel been rowed on Tyneside since that day in September, 1883, when "The Northern District Telephone Company, James A. Bradley, Mgr." deposited with the City Surveyor, Newcastle-on-Tyne, an application "for liberty to lay telephone pipes" together with a map showing three routes on which the "pipes" were proposed to be laid.

Only seven years have elapsed since Messrs. J. E. & C. S. Bedford, of Leeds, constructed their home-made receiver—the first in Britain—and Newcastle is applying for liberty to lay an underground scheme!

Unfortunately history does not relate the type of "pipe" proposed to be laid, the type of conductor to be protected or the precise use of the circuits. From an examination of the plan deposited with the City Surveyor it appears probable that the three routes were in connexion either with police or fire circuits.

From the date of what was possibly Great Britain's first proposals for an underground scheme to Newcastle's recent demand scheme is a big jump in telephone history, and those interested can fill in many of the intervening milestones by a perusal of the article entitled "Reminiscences of the Old P.O. System at Newcastle," by E. M. H., which appeared on page 177 of Volume XVIII of the *T. and T. Journal*.

The demand system of trunk working was inaugurated at Newcastle on Jan. 14 last very successfully. The scheme was limited at the outset from exchanges in the Newcastle Unit Fee Area on the one hand, to the London 10-mile circle and the Edinburgh, Glasgow, Leeds and Liverpool Local Fee Areas on the other.

This was extended on April 1 last to include calls from all manual exchanges in the group having five or more junctions to Newcastle and to the no-delay areas of all trunk centres to which Newcastle-on-Tyne has direct outlets.

The equipment, which is similar to that described in Mr. J. F. Darby's articles on "Long Distance Telephony," was manufactured and installed by Messrs. Ericson, of Beeston, Notts, with the exception of the pneumatic tube system, which was installed by the Standard Telephone Company.

All operating positions are equipped with keyboard tubes for the despatch of "dead" tickets to the ticket filing position, whilst in addition the demand positions are provided with a panel tube for the circulation of "live" work to the pneumatic distribution position. From this position radiate pressure tubes to the delay positions—one per pair of positions.

The new Post Office type delivery head is fitted on the pneumatic distribution and ticket filing positions. An illustration of this type of delivery head appeared in the March, 1932, issue of the *T. and T. Journal*.

The introduction of the limited demand scheme in the middle of January had a good Press and numerous subscribers were moved to express their appreciation of the Department's latest move to improve the trunk service. The sting was, of course, in the tail—the inevitable question being "When are you going to give us a similar service everywhere?" Fortunately, arrangements for an extension were well in hand and the Department was in the happy position of being able to make promises capable of early fulfilment.

At the end of January, bothway working was introduced over the Newcastle—Leeds route, the area at Leeds being the Local Fee Area, together with Bradford and certain of its dependent exchanges.

In order to provide the manipulative staff with a reasonable amount of practice on live incoming work, six unidirectional London and three unidirectional Carlisle circuits were transferred simultaneously with the Leeds circuits to the incoming suite from "B" and trunk positions respectively, so that the barometer was "set fair" for the main transfer on April 1.

In spite of line conditions, due to the recent snowstorm, not being ideal, the fact that 81% of the total traffic proper to be completed on demand was so completed is an indication of the success of the scheme. If to this figure is added the percentage of calls not completed on demand due to causes within the subscribers' control, such as number engaged, no reply, &c., the total becomes 90%—not a mean achievement by any standards.

The speed-up of the Trunk Service has had two slight repercussions, not wholly unexpected. There is a decided tendency for subscribers to make less use of the fixed time service and an increasing use of the personal service, and there is little doubt that this tendency will increase.

The general stagnation of trade has hit Tyneside possibly as badly as any other district in Great Britain, but armed with the latest developments known to telephone science the Department can offer its telephone subscribers service second to none. It is in the happy position of being able to cater without difficulty for the increased traffic which must surely circulate in the very near future.

J. H. ANSTEE.

## BRIGHTON DISTRICT NOTES.

THE following letter has been received by the Postmaster of Bexhill from a Cooden Beach subscriber:—

"I cannot help writing you a line of congratulation on the efficiency of the Cooden and Bexhill telephone service.

"I have to telephone a great deal from different places, large and small, all over England. If other services were up to the Cooden and Bexhill Exchanges the frequent complaints against the telephones would not be necessary. The operators of both sexes are always most kindly and courteous, very quick and efficient.

"To use the telephone from here is really a pleasure, and not the usual ordeal it is in other places. I feel it is only right and nice, when one has such courtesy and efficiency, that you should be told of it, and I trust that you can see your way to pass it on to the operators.

## DIRECTORY ENQUIRY, LONDON.

THE publication of a telephone directory not unnaturally causes enquiries to be made concerning persons who may or may not be entitled to an entry therein, but one is tempted to ask the old conundrum anent the chicken and the egg in a new form with regard to the directory and the directory enquiry. When directory enquiries first arose, I do not know, but I have been permitted to examine some of the early directories published by the Telephone Company, Ltd., April, 1880, The United Telephone Co., July, 1880, *et seq.*, and the London Globe Telephone Maintenance Co., December, 1883.

Some information extracted from these may be of interest.

*The Telephone Co., Ltd., April, 1880.*

This directory contains the names of 446 subscribers arranged in alphabetical order and in numerical order and with an appendix on "Buff Book" lines.

It is interesting to note that two of the subscribers mentioned in that directory are now Telex subscribers, and appear in the Telex Directory. According to the information contained in the cover of this issue there were seven exchange stations in London. Under the heading of Provincial Exchanges 17 towns are mentioned followed by "etc. etc. etc." Whether the "etc." covered other towns not thought worthy of mention or whether it was merely a "sales and publicity" stunt is left to the imagination.

However, there was no intercommunication between London and these towns until some years after this date.

*The United Telephone Co., July, 1880.*

The number of subscribers in this directory had risen to 725, 11 exchange stations are shown as existing in London, but no mention of provincial exchanges is made. This directory shows the subscribers in alphabetical and numerical order, but there is no Trades list. In this Company's issue of February, 1882, there are two lists, one showing "alterations since last issue" and "new subscribers since last issue."

*The London Globe Telephone Maintenance Co., December, 1883.*

The number of entries in the directory total 109. The preface shows an interesting item under the heading "Cheap rate of subscription" in which the Company announce their intention to fix the annual subscription at 10 guineas, "being about half the rate charged on other systems." In view of the relatively small number of entries the following extract from the preface no doubt originated in the fertile brain of a "sales and publicity representative" of that period.

*"Advertisements.*

"Traders whose affairs are promoted by advertisement will find their business *enormously developed by the gratuitous advertisement* of their address and trade to *thousands* of subscribers with whom they will also be in immediate telephone communication for the receipt of orders."

What is probably the first reference to an Ex-Directory facility is mentioned in this issue, a paragraph as follows being included.

*"Privacy.*

"Firms who desire to be protected from the continual interruption caused by the communications of persons with whom they are not in business communication can secure a perfect immunity from this annoyance. At their request their names will be withheld from publication in the List of Subscribers, and their numbers will not be divulged to inquirers. They can themselves privately communicate their numbers to their more intimate business connections and they will, of course, enjoy full facility of communication with every subscriber whose name is published."

A publication issued by the United Telephone Company in July, 1884, is in the form of the present-day Buff Book and was possibly a subsidiary to the telephone directory issued by that Company. In this book there are 46 entries under "Private Residences." An interesting feature is the inclusion of the names of W. S. Gilbert and Sir Arthur Sullivan. I notice, also, that, possibly for the first time, two ladies appear as subscribers. One may perhaps be excused if one suggests that the first Directory Enquiry probably originated about this time.

One might continue almost indefinitely with items of interest from early directories but, as the purpose of this article is to deal with the Directory Enquiry, sufficient has perhaps been said about early telephone directories.

During the years covered by the directories I have referred to subscribers asked for calls by number only. Exchange names were not made standard for some time and enquiries for subscribers not shown in the current list were dealt with by the Clerk in Charge (now Chief Supervisor), who made enquiry of the exchange serving the area in which the required subscriber was situated.

At a later date when Information Desks and Daily Reports were in use all directory enquiries were referred to the Information Desk of the exchange on which the call originated, and Information Desk officers were responsible for obtaining whatever information was available from the recognised sources.

Each Information Desk was supplied with interleaved copies of the London Telephone Directory, and these copies were kept up to date by means

of the "Daily Report"—a circular issued by Headquarters to all exchanges containing information relative to all changes in subscribers' and call office lines.

A few years prior to the transfer of the National Telephone Company's system in 1912, local Directory Enquiry practice was abandoned in favour of concentration on particular centres, and ten such centres were established. These Directory Enquiry Centres were situated at the larger exchanges of geographical groups. At this time the importance and amount of Directory Enquiry work made it necessary to divorce that work, wherever possible, from the other work of the Information Desk and to segregate it on positions reserved for that purpose.

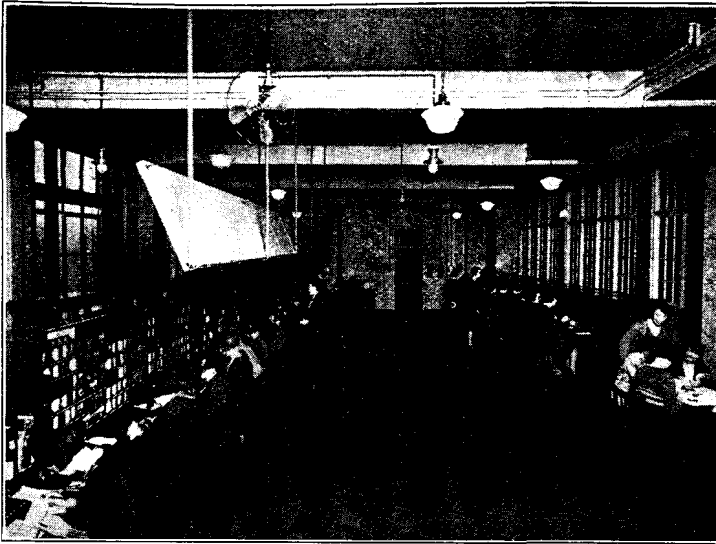


FIG. 1.

Subscribers making Directory Enquiries, when recognised as such, were connected direct to the appropriate Directory Centre, or where the demand was not recognised until connected to the local Information Desk, the Monitor made the necessary enquiries from the Directory Centre serving her exchange.

Each Directory Centre was self-supporting so far as officially compiled records were concerned, but other publications such as Kelly's London Directory, were held at two only of the Centres—Central and Gerrard—so that a certain proportion of the enquiries, although directly reaching Directory Centres, suffered delay owing to reference having to be made to other centres or to the Headquarters Directory Section.

At this time the number of additions and alterations to be made to the Telephone Directory between its publication and the next issue had become so large that the interleaved directory had become uneconomical as a means of reference, and a general system of card indexing was introduced. Copies of the ordinary issue of the Telephone Directory were supplied to Directory Centres, and no alterations or changes were made in this book, but the latest information was recorded in an alphabetical card index in which all additions, alterations and corrections were entered, with the exception of cessations. Local exchanges were still supplied with copies of the interleaved directory which were kept up to date so far as each individual exchange was concerned, and in this way local exchanges were an additional source of information for the ten centres. Suburban exchanges were authorised to obtain local street directories, if occasion demanded, for use in cases where addresses only were known.

While this system had the effect of standardising to a certain extent Directory Enquiry procedure, the existence of so large a number of centres still involved very considerable clerical work in keeping records up to date and in 1914 the number was reduced to seven (Avenue, Central, Gerrard, Hop, Kensington, London Wall and Paddington). The districts of the Exchange Managers (consisting of one or more exchanges) were grouped into seven divisions, each division being served by one of the Directory Centres. Directory Enquiries relative to telephone areas other than London were referred to the Trunk Exchange, where complete issues of the Post Office Telephone Directory were available.

This system remained in force until 1919, when the re-organisation of the Traffic Branch necessitated the regrouping of exchanges and afforded an opportunity to still further reduce the number of Directory Centres. This led to the introduction of the system which remained in force, with minor alterations, until August, 1932.

For the purposes of Director Enquiry work, the exchanges in a Traffic District were regarded as a group, and all Directory Enquiries originating in that group were dealt with at a central exchange in the district. The Directory Centres in the various groups were Avenue, Central, Gerrard, Hop and Paddington.

The following records were provided for enabling the Director Enquiry staff to answer enquiries :—

- (a) London Telephone Directory.
- (b) Card Index of Additions and Alteration to London Telephone Directory since the last issue.
- (c) Card Index of Ex-Directory Subscribers.
- (d) "Official" Telephone Directory (for official use only).
- (e) Telephone Directory of Government Departments.
- (f) "Kelly's London Directory." (This directory was used where the address alone was known.)

Towards the end of 1919 this publication was distributed to all Directory Centres.

- (g) In addition, some Directory Centres kept a form of record not covered by official instructions in which was recorded chiefly information likely to assist in tracing Telephone Numbers where the caller supplied a name other than that shown in the Telephone Directory. For instance, many demands were received for the "O'Cedar Mop Company," the entry in the Directory appearing under the actual name of the manufacturers, i.e., "The Channel Chemical Company."

The expansion of the telephone service and the consequent growth of the entries in the directory made this method of dealing with enquiries more and more arduous and the limits of the equipment available at the five directory centres made evident some years ago the necessity for a new method of handling this traffic. In considering the manner in which directory enquiry work could most efficiently be handled it became obvious that a central point on which all enquiries could be concentrated presented the most economical solution, and investigations were pursued on this basis.

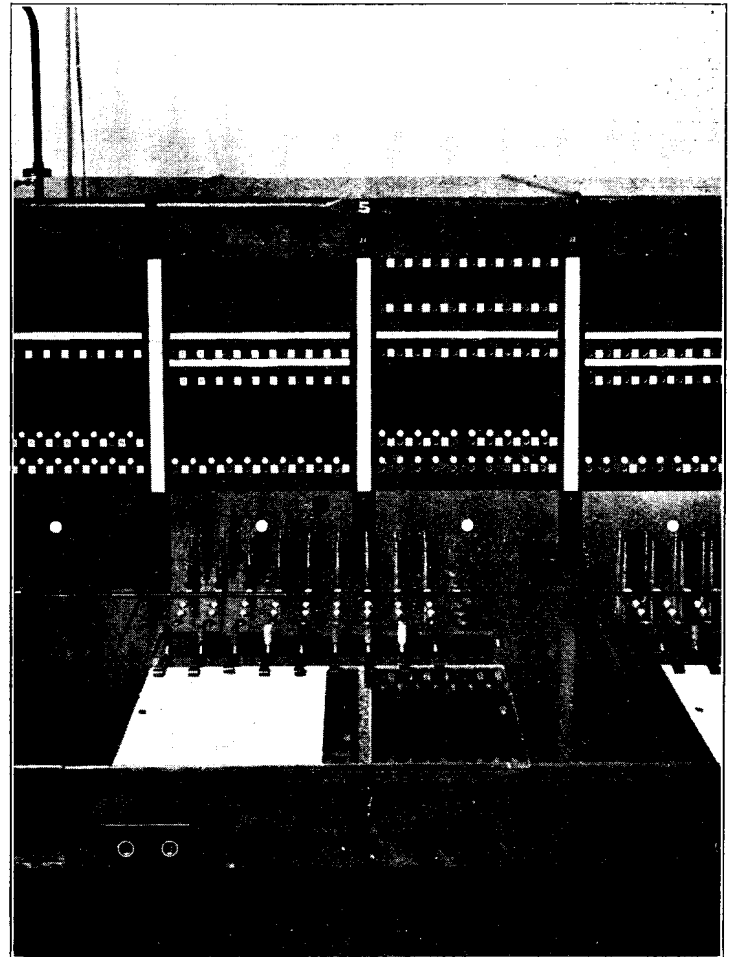


FIG. 2.

The system of searching through a list of names printed in the small type necessarily used in the directory was conducive to eye strain, with possible omissions or errors and a satisfactory substitute for this form of reference was an essential part of any new system.

It was necessary that the substitute should be such as could be kept up to date by daily amendments, readily referred to by any one of the staff, and printed in larger type than was possible in the directory.

An endeavour was made to discover a visible index which would enable any operator to have immediate access to the whole of the directory. If this had been possible the equipment could have been designed so that the

operator answering the call would search for and give the required information. The Rotary Index system seemed to be suitable, but the large number of entries in the London Directory made it impracticable to provide a visible index of a size suitable for each operator's use. The question of the upkeep of duplicate indexes was also a factor which militated against the adoption of the Rotary system. An examination was made of the systems in use in some of the American and German Companies using the Rotary Index. In these cases, however, the number of entries was generally less than one-third of those in the London Telephone Directory and after due consideration it was decided to prepare an index using loose-leaf books.

By this time the Street Index which had been removed from Headquarters and associated with the Directory Enquiry at Central Exchange had been typed into loose-leaf books.

The work of compiling the Name Index on similar lines to the Street Index occupied approximately 15 months, the London Directory was copied into loose-leaf books, three entries per page. Amendments and additions were extracted from the Daily Report and entered on cards and transferred

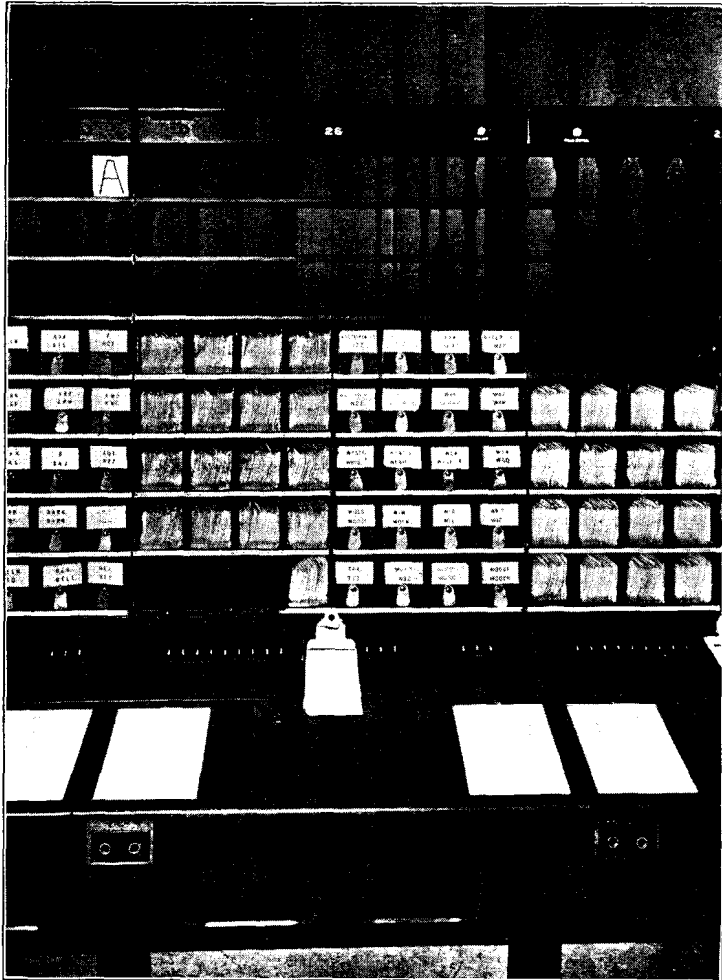


FIG. 3.

to the books later, except where the Directory entry had already been copied. This work, although apparently a simple straightforward job, entailed great attention to detail, especially with regard to the correct placing of the entries. It may not be generally known that alterations and additions to the London Telephone Directory approximate to 400 per day.

When the Index had been nearly half completed the London Telephone area was extended bringing in another 24,000 subscribers. These had to be incorporated in the existing Street Index as well as in the Name Index under preparation. That this was successfully accomplished and both Indexes completed and brought up to date at the time of the opening of the new unit was due to the excellent and careful work of the staff employed at Headquarters and Central. When the work was completed the two indexes and associated Ex-Directory books contained approximately 800,000 entries.

The equipment of the Directory Enquiry consists of 12 Distribution positions where calls are received and distributed and 30 Index positions, on 28 of which the loose-leaf books comprising the Indexes are arranged alphabetically. The remaining two are equipped as Supervisors' positions (see Fig. 1). The Distribution positions are of the Auto Manual type with such modifications as are required for this class of work. The face equipment comprises 90 answering lamps and jacks arranged in a 6-panel appearance

with 3 ancillaries, there being 4 complete appearances over the whole suite; 30 outgoing junction jacks to the Index positions with associated idle operator indicating lamps are provided, also 10 service multiple jacks. Ten jacks for Cord Test, &c., are also provided. The outgoing circuits to the Index positions are arranged in a two-panel multiple and provide a complete appearance of the outlets to these positions in front of each Distributor operator. The service multiple appears in every fourth panel.

The keyshelf equipment of nine pairs of cords with associated supervisory signals and speaking keys. There are also nine hold lamps, one associated with each speaking key. A Bulletin panel is provided in the keyshelf of each position (see Fig. 2).

Although the apparatus on the Distribution positions is similar in appearance to that on Auto-Manual Boards with the addition of the hold lamps there is a difference in the operation of a call. The speaking keys are wired so that when in the normal position the answering cord is connected to the operator's headset and when in the ringing position the calling cord is thus connected and hold condition is placed on the answering cord. The two cords are connected and the operator's circuit cut out when the key is thrown in the speaking position.

The Index positions are of special design and are arranged in a double-sided suite of 15 positions with pigeon holes open at either end arranged between the two sides. The pigeon holes are built up in eight rows of eight per position, the four rows on the right-hand side containing the books proper to the position at which the operator is seated, the four on the left-hand side containing books proper to the position opposite, where, of course, there are the four right-hand pigeon holes. The books are arranged with their backs to the operator controlling the position. The keyshelf equipment consists of 12 transfer keys with associated idle operator indicating lamps, a call supervisor key, a flashing key and a clearing key. A call Supervisor lamp and a Pilot lamp are provided in the canopy of each position.

The transfer keys are of the two-way locking type and in operation connect the headset to the position associated with the key thrown, one Index position being associated with each side of the key. At the opening only 23 of the Index positions were in use the remainder being used for Clerical Record and Supervisor positions. Alterations have since been made to convert the Clerical positions and to provide one additional Supervisor position and five additional Index positions.

A clip is provided in the centre of each position to hold the slips prepared by the Clerical record staff showing particulars of additions and alterations to the index books. Two bulletin panels are provided on the keyshelf of these positions (see Fig. 3).

Originally the Name and Street indexes were arranged in two separate groups of 14 Street Index and 9 Name Index positions. It has since been found better to combine both Indexes and arrange them over the whole suite. Thus on each index position are the books containing entries under subscribers' names and under addresses commencing with the letter or letters of the alphabet allotted to that position.

In order that the Indexes may be kept up to date arrangements have been made for exchanges to telephone particulars of any completed work affecting an entry (except recoveries) to the Record Clerk. A special form is provided on which particulars of the subscriber's name, address and telephone number are entered. These forms are sent to the appropriate Index positions where they are placed under a clip and become supplementary to the information in the books proper to that position. The forms are prepared, in manifold, in sufficient numbers to allow of one being placed in front of each Index operator using books to which the information is proper. In the case of Removals and Changes of Name or number particulars of the old and new entries are given on each form. At frequent intervals during the day the requisite page is removed from the book and replaced by a pink slip. This page is associated with the relative form and sent to the typist, where the necessary amendment is made and the page is then returned to the book. The forms are kept until the Daily Report relating to the work is received when they are checked and destroyed. By this means the Index is kept up to date almost from hour to hour except so far as recoveries are concerned. These are dealt with when the Daily Report is received, the relative entry being marked by a rubber stamp with the word "Ceased." The possibility of an enquiry being received for an entry on a page which is being amended is very small, but should such occur the presence of a pink slip denoted to the Index operator that the page is with the typist and the information can quickly be obtained.

There is no doubt that a better service has resulted since the opening of the London Directory Enquiry in August last. The average time taken to ascertain and advise the caller of the number he requires is now in the neighbourhood of 130 seconds. Previously this figure was very much higher due principally to the necessity for searching the directory and supplementary cards.

Apparently some callers are under the impression that the Directory Enquiry is a source of general information, since some of the questions which are put to the staff there have very little relation to directory enquiry work. Two cases within my own knowledge may be of interest.

A lady on one occasion asked the operator who answered her call whether her son, who was apparently to leave his school, would require a pass in matriculation in order to obtain a post. In this case the Distribution operator, with commendable promptitude, advised her to consult her son's headmaster. In the other case a lady enquired whether there was a certain road in South London. On being informed that there was such a road and asked whether she required to know the telephone number of some resident in that road she replied: "Oh no, thanks; a fellow made a date with me there and I thought he was pulling my leg."

H. L. POUNTNEY.

## THE SHEFFIELD TEMPORARY DEMAND SCHEME.

SOME apology appears to be due for this article on the Sheffield Demand Scheme in view of the fact that several contributions describing schemes at other trunk centres have already appeared in the *Journal*. Perhaps the present item will be excused on the ground that the scheme has certain outstanding features, e.g. :—

- (a) Sheffield had the honour of being the first trunk centre to give a demand service on all routes where a no-delay service was not already in operation.
- (b) The demand service is given on the trunk suite installed in 1926. No new positions have been fitted and the cost of the scheme is probably the lowest on record.
- (c) All traffic and engineering work was completed within the short period of 3½ months following the decision to proceed with the scheme.
- (d) The service results detailed at the end of this article show that nearly half the total record traffic is actually completed on a demand basis, and that the time taken to connect the called subscriber is very satisfactory.

A gradual speeding-up of the trunk service at Sheffield commenced several years before demand schemes were contemplated. The provision of a trunk multiple was a factor which suggested promising possibilities and it was soon found that delays could be reduced by arranging for disengaged operators to set up calls via the trunk multiple when the home position operators were busy. This treatment of outgoing traffic on a team basis was developed to such an extent that when the principles of demand working were published it was considered locally that a similar service could be afforded by simply upgrading the record circuits and terminating them on the trunk suite. A suggestion for providing a temporary and restricted demand service by such means and at very little cost was submitted in January last year. In June an interesting experiment was carried out during busy period on several days. This consisted of abandoning the "position" basis and dividing the normal trunk staff into three teams for (a) outgoing, (b) incoming and (c) suspended traffic. The outgoing team was accommodated on positions adjacent to the record table, and probationers distributed the tickets to any free operators in the team, to ensure that the first attempt to complete a call was made at the earliest possible stage. If a call failed to mature at the first attempt, the relative ticket was passed immediately to the team dealing with suspended traffic. The incoming traffic was handled at the concentration positions and all incoming lines were concentrated. The results were very encouraging, especially as the experiment was carried out without the knowledge or co-operation of the distant centres.

On Oct. 29 considerable progress was made in the acceleration of the trunk service by the extension of the Sheffield no-delay area to the Manchester Zone (excluding Barrow, Kendal and Lancaster groups). This resulted in the immediate transfer of more than 33½% of the total delay traffic to a no-delay basis, and increased the number of exchanges in the Sheffield no-delay area from 369 to 621. The extended no-delay area includes all exchanges in the Sheffield zone and 535 exchanges in the Leeds, Nottingham and Manchester zones.

The introduction of a temporary demand service followed on Dec. 3. At the outset the service was given on all long distance routes hitherto worked on a delay basis, but it was confined to calls from the Sheffield local fee area to exchanges in the local fee areas of the distant trunk exchanges. The existing positions on the trunk signalling suite were re-arranged as follows :—

- 5 delay positions,
- 13 combined demand or delay, and
- 2 incoming positions.

No additional equipment or circuits were provided other than—

- (a) a group of 20 "94" level circuits for auto subscribers and a group of 6 "94" circuits for dialling-in exchanges,
- (b) two transfer circuits from the automanual suite to the trunk suite for R.A.X. long distance traffic.

During the first week of the demand scheme the following busy-hour results were obtained :—

Percentage of total record traffic proper to be completed on demand ... ..	44.6
Percentage of demand calls completed on demand ... ..	78.4
Percentage of total record traffic actually completed on demand ... ..	34.9
Average delay on all calls completed at delay positions ... ..	3.4 mins.
Average speed of answer on the demand positions ... ..	3.0 secs.
Average time taken to set up the demand connexions from the receipt of the calling signal ... ..	60.0 ..

The foregoing results were regarded as very satisfactory, especially as traffic was above normal and the special facilities normally provided for demand working were not available, e.g., visual idle indicating signals, pneumatic distribution tubes and chargeable time indicators.

On Jan. 3 the scope of the scheme was extended to include all the exchanges in the no-delay areas of the distant trunk exchanges, and on the 20th of that month operating facilities were considerably improved by the provision of visual engaged signals on the trunk multiple and an engaged test on the multiple jack when the calling lamp lights on the Sheffield incoming positions. A return for the week ending Jan. 27 was taken under the improved operating conditions, the busy-hour results being as follows :—

Percentage of total record traffic proper to be completed on demand ... ..	57.1
Percentage of demand calls completed on demand ... ..	84.5
Percentage of total record traffic actually completed on demand ... ..	48.3
Percentage of demand calls completed or on which "number engaged" or "No reply" is given ... ..	93.22
Average delay on all calls completed at delay positions ... ..	3.47 mins.

The observations for the month of February showed the following averages :—

Average time for demand operator to plug in	3.9 secs.
Average time taken to set up the demand connexions from the receipt of the calling signal on the record circuit ... ..	61.8 secs.

A further extension of the scheme is now being arranged to afford a demand service to every exchange in the Sheffield zone (except Gainsborough) from which any appreciable long distance traffic is originated. In this connexion subscribers in the Chesterfield auto system will dial "94" and call direct on the demand positions at Sheffield. It is estimated that when the extended scheme is in force the percentage of the total record traffic proper to be completed on demand will reach 84.

A large measure of very favourable publicity has been obtained from the national and local newspapers, and in the case of the *Sheffield Telegraph* the Editor kindly consented to the publication of a large sketch showing the main exchanges in the no-delay, demand and ordinary trunk areas and how to obtain calls from the Sheffield auto system to each area.

G. A. BEAUMONT,  
Traffic Supt., Cl. II.



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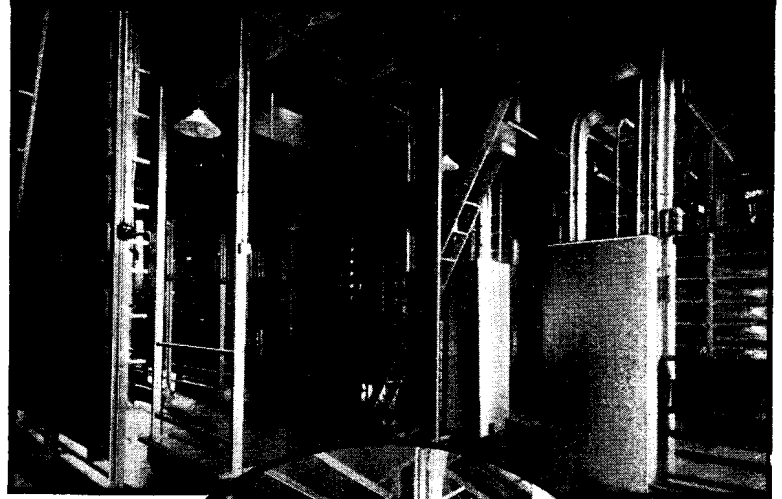
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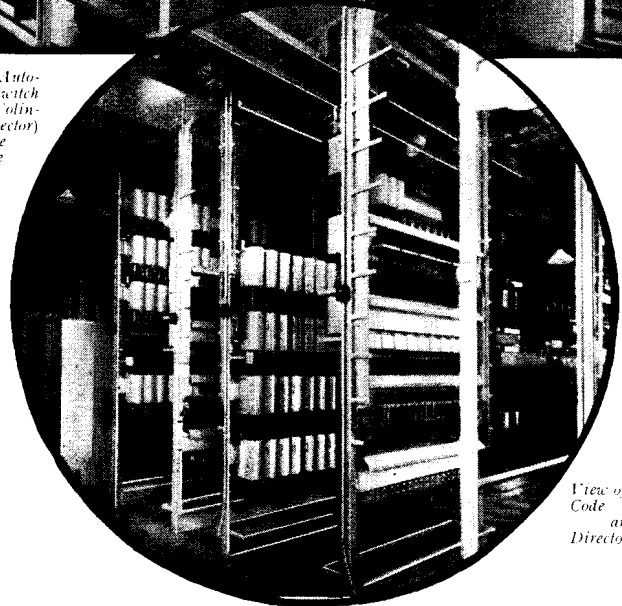


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**TELEPHONE EXCHANGE EQUIPMENT**



"CAIRO CALLING."

[Photograph by The Central Photographic Service.]

### "CAIRO CALLING."

THE Telephone Play is always nothing if not topical, and Miss McMillan's annual venture, given at King George's Hall on April 12 and 13, was no exception to the rule. The play was as great a success as ever, and was this year exceptionally well produced. The play opens, by what we must now consider as an inviolable precedent, in a telephone exchange, and it is this scene which gives occasion for Miss McMillan's most happy hits. Staff salesmanship, television, service instructions, and redundant staff in turn provided scope for topical allusions, all of which were appreciated by the audience with the greatest gusto. The distribution of telegrams to each of the operators raises hopes of fortunes bequeathed or other exciting news. The telegrams, however, contain the following message:—

Dear Girls, one question, one alone.  
Have you installed the telephone?  
For if you haven't, you really should.  
Yours faithfully (signed) Sir Kingsley Wood.

The entrance of Travelling Supervisors, clad as girl guides and carrying enormous knapsacks to contain "Service Instructions" was hailed with much delight: and when the Supervisor, on turning her back, was found to be wearing a huge placard depicting a telephone and the legend "Stop me and buy one" the applause was uproarious. The introduction of a disguised Egyptian princess into the exchange as an operator furnishes a pretext for a "cruise" *à la mode* and a visit to Cairo, where an extremely pretty scene was staged.

Miss Cecilia Lawless, in excellent voice, and Miss Peggy Murray bore the chief honours amongst the ladies, Miss Nora Cheason, Miss Ada Price, Miss Enid Phillips and Miss Grace Pfeiffer being also worthy of special mention. Mr. Arthur Hemsley was, as usual, a host in himself in the chief humorous role. Mr. Durrant was very good as the Professor, and Messrs. Whiffen, Williams and Craft all shone in their respective parts—indeed, it is a somewhat invidious task to single out names from a cast of a high level of excellence. The dancers, led by Miss Christine Edwards, were better than ever, and the musical services rendered by Miss Garvey and Mr. A. C. Vincent. We have already referred to the splendid production of the play by Mr. Gordon Dean. Special credit is also due to the designers and constructors of the robot (Messrs. Austin Penn and Arthur Hemsley) and of the exchange (Messrs. Petche, Armstrong, Russell, Cruft, Payne, Beazley, Bradshaw and Watson) works of much ingenuity and considerable labour.

Amongst the visitors to the play were Sir Kingsley and Lady Wood, Sir Evelyn Murray, Sir Warren Fisher and Friends, Mr. W. H. U. Napier, Sir Noel Curtis Bennett, Sir R. W. Woods, Mr. E. T. Campbell, M.P., Mr. J. Y. Bell, Mr. F. H. S. Grant,

Dr. Bashford, Miss Buchanan, Mr. Gomersall, Mr. A. G. Clarke (of Selfridges) and Mr. Wallace (the subscriber who took part in the Telephone Debate at the Operators' Society). Amongst the numerous bouquets and other tokens of appreciation given to the performers, special mention may be made of a dial telephone ingeniously constructed of primroses and violets, handed by Sir Kingsley Wood to the authoress.

We wish we had space to quote some of the topical songs. As a specimen we give some verses from the "Good-night" song.

Good-night, everyone,  
Don't oversleep till nine,  
Mind you're there in the morning,  
To sign above the line.  
Good-night, Sir Warren Fisher,  
We're very glad you came,  
We only wish we still possessed  
Some notes that bear your name.  
When first we saw you enter,  
It thrilled us to the core,  
But when we met between the acts  
We liked you even more.  
Good-night, Sir Evelyn Murray,  
Good-night, and pleasant dreams,  
Although I fear you have the knack  
Of seeing through our schemes,  
Good-night to Mr. Campbell,  
The popular M.P.,  
The one I'd choose from all the rest,  
To plead a cause for me.



THE ROBOT.



Good-night to dear Sir Kingsley  
 Who meant it for the best,  
 When he endorsed instructions to  
 Disturb our nightly rest.  
 And so we all forgive him,  
 But do not wish in Heaven,  
 The staff with hours from 9 to 4,  
 Who'd keep us till eleven.

Good-night to our Controller,  
 No fortune may he lack,  
 We'll always think of him because  
 He gave our casuals back.  
 And when this song is finished  
 And all is over quite,  
 We hope he'll come behind the scenes  
 And kiss us all "Good-night."

Good-night to Mr. Grant,  
 Of the Secretariate (*poetic licence*),  
 Whose cheery numbered circulars  
 We much appreciate.

Good-night to Mr. Clark,  
 Who to Selfridge's belongs,  
 We hope he won't object to be  
 Included in our songs.

Good-night to Mr. Wallace,  
 In spite of all he's said  
 And all subscribers everywhere,  
 Who "ha'e wi' Wallace bled."

Good-night, everyone,  
 Remember what we've said,  
 Don't be late in the morning,  
 Good-night, and so to bed.

#### The Telephone Play.

Dear Author,

You will doubtless find a full and critical account of your wonderful play in the next issue of the *Journal*, but as a shy and timid member of the packed audience on the second night I feel I must write to let you know how much we at the back of the hall enjoyed the feast placed before us. I occasionally by your courtesy see some poor effort of mine in the *Journal*, after hours of labour and revision on my part and so I am one of the few who can perhaps realise something of what it must have meant even to one like you with the "pen of a ready writer," to present for the eighth or ninth year consecutively a play dealing with the telephone theme (and presenting it in a new guise) with such delightful touches of wit and wisdom, always hitting the mark, yet never leaving a bruise.

One could not watch the play without appreciating the masterly work of the producer, or paying tribute to the talented group of actors and actresses, dancers and pianists, and that ardent band of workers the result of whose labours gained a publicity denied to the men themselves; yet when all is said and done, excellent as was each of them, none was indispensable, but YOU, dear Editress and Authoress, could not be replaced. You might well exclaim "La pièce c'est moi." But, of course, when we called for you, you with your natural and sweet modesty sought to give all the credit to others.

We humble members of your audience are not deceived, however, and this note is to assure you (though you can scarcely need the assurance) that we hold you in highest honour, our admiration of your devoted labour year after year is unbounded, and even at the risk of confessing to membership of the gentler sex I cannot refrain from adding we would willingly, if you would permit, salute you with the kiss of homage, and crown you "Queen of the Play."

Yours in humble admiration,  
 "BACK ROW."

#### NEWCASTLE-ON-TYNE SALES BRANCH SUPPER.

This initial venture, the purpose of which was to cultivate the co-operation and goodwill of the other departments and branches, was an unqualified success.

The supper was held in the Royal Turk's Head Hotel, the aim being to secure the best of everything; and together with the programme of entertainment it was generally conceded afterwards that the function added prestige to the branch.

The Sales Branch were gratified at the support given by the other departments.

The Postmaster-Surveyor, Mr. F. Ferguson, proposed the toast of "The Sales Branch" and in an eloquent and instructive manner, to which Mr. R. P. Lowe (Sales Manager) replied. Mr. F. G. C. Baldwin, M.I.E.E. (Superintending Engineer), replied to the toast of "The Visitors" in a most able manner, which was proposed by Mr. Alfred Peel (Sales Representative). Those present included Mr. J. D. W. Stewart (District Manager), Mr. B. Todd (Chief Superintendent, Postal Branch), Mr. Matthewson (Superintendent, Survey Branch), Mr. Preeley (Postmaster, Durham), Mr. Swinerton (Traffic Superintendent), and other representatives from the Telegraphs, Engineering and Accounts Branches.

## SALES REPRESENTATIVES' CORNER.

A YEAR ago last September the staff salesmanship scheme was launched.

Since then, in London, a total of nearly 15,300 orders have been secured up to the middle of March of this year, particulars of which are published each month in this journal under London Telephone Service Notes.

To induce anyone to take up something which they have never had before, presents difficulties which can often be overcome by the transfer from one salesman to another of incidents and methods employed to secure orders. This exchange of experience is particularly useful to the growing number of amateur salesmen engaged in this work, who have not had the opportunity to study all the arts and artifices of professional salesmanship.

Thus it has been found useful, whenever the idea could be employed, to exchange experiences. So far the pooling of ideas has been limited, and as a general rule has been confined to conversation between people in close touch with each other. Therefore, it seems to follow that if any good can be derived from this exchange of experiences and relating of incidents in a narrow circle, it should not be without some value in a wider field.

I remember a man telling me that he pointed out to a friend of his how much money he expended on newspapers. He was surprised to learn that it nearly equalled the cost of the rental of a telephone. This comparison so impressed him that he is now a subscriber.

Then again, it surprises some people to know that an extension telephone can be had for about the cost of a cigarette a day. Simple comparisons like these bring home to people the fact that telephone service is not so expensive after all when compared with other items of expenditure, accepted without thought, and of much less solid value.

These comparisons led me to try a similar idea on a tradesman who was induced to take a line by the simple process of revealing to him that my trade alone with him in a year considerably exceeded in value the cost of renting a telephone. Moreover, he quickly realised the risk he was taking of losing his customers, already subscribers, who could trade more conveniently with his competitors on the telephone. He also is now a subscriber.

It sometimes happens that a subscriber, in a moment of wrath, involuntarily emphasises the true value of the telephone. An alleged delay of two minutes in effecting a trunk call to a stock exchange spot market drew forth the remark that the 'phone was no good, as the delay had meant a loss to him of £50 on a transaction.

When it was mildly pointed out, by a Sales Representative, that any other available means of communication employed could not compete with the Telephone Service in speed, and might, therefore, in the case of a soaring market, mean the loss of hundreds of pounds, he seemed surprised; but acknowledged the fact.

In the January issue of *Sales Management* an article by Edward P. B. Lawrence, on "Getting in Outstanding Accounts: How the Telephone can be Successfully Used," provides an interesting sidelight on the value of personal contact afforded by the telephone.

After showing that hesitancy in collecting outstanding accounts adds to the all-round difficulty of settlement, consequent on a shortage of liquid assets, he relates a conversation with a friend who, when asked what he considered to be the most effective mode of approach, pointed to the telephone on the desk beside him.

He emphasised that you have to be tactful in making use of the telephone for this purpose and have to make sure, however, that you are speaking to the right individual and not to someone else who may garble the message.

He produced a card file on which was written the customer's name, address and telephone number, also the amount of his indebtedness. The card records dates on which telephone calls have been made, with notes of any arrangement made or result arrived at. They are kept in date order, and every morning are examined and dealt with. It is claimed that the system has undoubtedly speeded up collection, and pays better than continually mailing statements that are barely glanced at, and which frequently produce no response of any kind.

Sales Representatives can turn this actual experience to a variety of good uses, and it appears to be an excellent idea for promoting an increase in the calling rate.

In support of the above system, the experience of one firm who were pressing for the settlement of an outstanding account is worth relating here. In the usual not over-polite commercial language the firm enclosed a letter together with the account asking for settlement. This is the reply received.

"You do not seem to be aware of our system of paying accounts.

At the close of each month we ascertain the amount standing to our credit, and after deducting a certain percentage, the balance is divided between our creditors by placing their accounts into a hat and drawing them out until the available balance is disposed of. If we receive any more impertinent letters from you your account will not go into the hat."

A tactful telephone call would have obviated such an unpleasant experience and might have produced payment without having to wait for the doubtful gamble of the "hat trick."

Knowing the value of telephone service, we are not surprised to receive many letters of appreciation like the following, which reached us the other day.

"I am entirely satisfied with service and already have added to my business through the acquisition of the telephone."

And this:—

"I have pleasure in sending cheque, &c., in recognition of a great boon."

## GLASGOW DISTRICT NOTES.

*Retirement.*—A pleasant function took place in the Douglas Exchange on April 11, when Miss Louisa Mortimer, Supervisor-in-Charge, was presented with a solid silver tea service as a parting gift from the staff on her retirement from the service.

Mr. Coombs, Mr. Teasdale, Miss Wood (C.O.A.) and Miss Mowat (U.P.W.) spoke in eulogistic terms of Miss Mortimer's qualities. As one speaker remarked, in trying to enumerate her many and varied qualifications, it was difficult to believe that one person could have so many accomplishments. Her knowledge of anatomy and kindred subjects, and her helpful advice and treatment in this respect, had earned for her the phrase that "she knew her staff inside and out."

We hope she will continue to enjoy good health and have many happy years of retirement.

A very enjoyable function was held in the South Telephone Exchange on April 5 when, at a whist drive and tea, Miss C. J. Fleming, Assistant Supervisor, Class I, recently superannuated on grounds of ill-health, was presented with a magnificent display cabinet and bureau, a gift from members of all grades of the telephone staff.

Mr. A. E. Coombs, District Manager, in making the presentation, was humorously reminiscent in his remarks. He also expressed his own regret and that of the general staff on the loss of Miss Fleming's valuable services. That she might enjoy contentment and good health in her retirement was his and our earnest wish. Mr. Teasdale, Traffic Superintendent, Miss Caughie and Miss Wood, of the C.O.A., and several other speakers also paid high tribute to Miss Fleming's many good qualities.

It was pleasing to meet our old friends Miss Bell, Mrs. Reid and Mr. Robertson, who attended to wish their colleague a full measure of the joys of retirement that they are at present enjoying. The whist prizes were won by Mrs. Teasdale, Miss Isaacs, Miss Meikleham and Miss M. Teller.

In addition to the presentation from the general staff, Miss Fleming was the guest of honour at a whist drive and tea held at the Ca'doro on the evening of April 7. On this occasion the staff of the Western Exchange gathered together to do honour to their popular Supervisor, their good wishes being expressed in tangible form in the gift of an occasional chair. The presentation was made by Mr. G. Hunter, Western Exchange Superintendent, who wished Miss Fleming, on behalf of the Western Staff, a healthy and happy retirement and expressed the deep regret of all associated with Miss Fleming at parting prematurely from her.

*On Weddings.*—When you're a married man, Samivel, you'll understand a good many things as you don't understand now; but vether its vorth vvhile goin' through so much, to learn so little, as the charity-boy said ven he got to the end of the alphabet, is a matter of taste. I rayther think it isn't.—(Tony Weller.)

*Marriage*—the fulfilment of the great purpose in life of young ladies.—("Pendennis.")

I was married at 30 years of age, and commend the opinion of 35. Thales appointed the best limits, who by his mother, being instantly urged to marry whilst he was young, answered that it was not yet time; and when he came to be old, he said, it was no more time.—(Montaigne.)

Our hopes are set on inaccessible El Dorado. When you have married, you would think you were got upon a hilltop, and might begin to go downward by an easy slope. But you have only ended courting to begin marriage. Falling in love and winning love are often difficult tasks, but to keep in love is also a business of some importance to which both man and wife must bring kindness and goodwill. The true love story commences at the altar, when there lies before the married pair a most beautiful contest of wisdom and generosity, and a life-long struggle towards an unattainable ideal. Unattainable? Ay, surely unattainable, from the very fact that they are two instead of one.—(R. L. S.)

In the most commodious chamber of the house, the elegant wedding gifts are conspicuously displayed; let us stand beside the one which we have contributed, and point out its excellence to those who pass by.—(Kong Ho.)

*Matrimony is so nice and critical, that it not only requires our own cautious management, but even the direction of a superior power to choose right.* Whoever undertakes a long journey, if he be wise, makes it his business to find out an agreeable companion. How cautious, then, should he be, who is to take a journey for life, whose fellow-traveller must not part with him but at the grave; his companion and sharer of all the pleasures and fatigues of his journey, as the wife must be to the husband! She is no such sort of ware, that a man can be got rid of when he pleases. She is an inseparable accident to man.—(Don Quixote.)

There are no bargains driv'n,

Nor marriages clapp'd up in heav'n

And that's the reason as some guess,

There is no heav'n in marriages.—("Hudibras.")

A gentleman who had been very unhappy in marriage, married again immediately after his wife died; Johnson said, it was the triumph of hope over experience.—(Boswell.)

## WHERE TO STAY.

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## MANCHESTER NOTES.

*Civil Service Sports Club.—Cricket.*—A team has been entered in the Manchester and Blackley District League. The matches are played on Saturdays and the first already has taken place. A team has been entered also in the Manchester Wednesday League. Anyone wishing to join the Cricket Section should get in touch with Mr. H. Podani, Postmen's Branch, Newton Street. A match has been arranged with the Civil Service Crusaders, London, and will take place at Manchester on June 3.

*Football.*—We congratulate the Junior Section on its success in its first year in the Manchester League. The juniors finished in the second place.

*Tennis.*—Courts have now been opened for some time and the Tennis Section's activities are going with a swing. The courts' being open throughout Sunday has proved a great attraction. Miss Fitzpatrick, Toll Exchange, is the Tennis Secretary.

*Golf.*—Separate Ladies' and Men's Sections have been organised. For the present games are played on the Municipal course at Heaton Park. Miss Armstrong, Inland Revenue Offices, Arkwright House, and Mr. H. Brown, Stationery Office, Hollinwood, are the acting Secretaries for the Ladies' and Men's Sections respectively.

*Social.*—Owing to the success of the last dance, which was held on Mar. 30, another one has been arranged at the Piccadilly, Manchester, on May 5. The tickets are 2s. 9d.

*Post Office Telephones Social Club.*—The winter season was wound up very successfully with a carnival dance at Telephone House, on April 8. About 200 members of the staff and their friends attended, including Mr. Whitelaw, the District Manager, and Mr. Field, Sectional Engineer. Miss L. Bell and Miss M. Gee won the Spot Waltz Prizes.

*Manchester Post Office Orchestral Society.*—The Society is being reorganised, and instrumentalists in any branch will be welcomed.

The hon. secretary is Mr. W. B. Brookes, Circulation Branch, Newton Street Post Office.

*Manchester Telegraph Messengers' Institute.*—The annual prize distribution and concert was held in the Milton Hall, Deansgate, on April 19.

The Rev. Herbert Leggate, M.C., gave the address and the Postmaster-Surveyor presided.

*Postels Amateur Dramatic Society.*—The Society presented three one-act plays at the Lower Mosley Street Schools, Manchester, on Mar. 24. "Master Wayfarer," by J. E. H. Perry, was given first, and was followed by "The Lovely Miracle" and "Sad About Europe," by Philip Johnson.

There was a good attendance, and the audience enjoyed the triple show.

## EDINBURGH NOTES.

THE staff of the District Manager's Office held their annual whist drive and dance in Mackie's Rooms, Princes Street, on Mar. 24, and were very pleased to have the company of Mr. J. K. Murray, District Manager, and Mrs. Murray.

Whist took place under the direction of Mr. Younger, Sales Representative, and it was gratifying to note that in a company frequently accused of "over-recording," nothing of this nature occurred. Supper followed, but notwithstanding the good fare provided, it was interesting to observe the impatience of the younger members to get on with the dance. Mrs. Murray kindly presented the whist prizes and had the pleasure of handing over one to Mr. Murray, who, we understand, did not have his ace trumped the whole evening. Dancing commenced at 11 p.m., the band being ably led by Mr. MacNaughton, Sales Representative, who performed deeds of valour with that most obstinate of instruments, the saxophone. One or two "hot" numbers were played in the approved style, but we are pleased to record that both players and dancers have now fully recovered.

Dances both old and new went merrily on throughout the evening, and it was no surprise to have the announcement of an extension of time so heartily applauded. A very jolly evening terminated at 2 a.m. with "Auld Lang Syne" and three cheers for the organisers, Messrs. MacNaughton and Younger. We close this short account with the familiar words of Henry Hall, of B.B.C. fame, "Here's to the next time!"

We feel constrained to publish the following extract from a letter written by an influential subscriber in acknowledgment of his receipt of the new booklet, "Telephone Services." Knocks are sometimes hard and frequent, and anything in the nature of a bouquet is a welcome change.

"I cannot refrain from writing to you both as a subscriber and British citizen, to warmly congratulate the Post Office Telephone Service upon the production of such a very fine, high-class piece of work.

"I am mainly resident in California and use the 'phone constantly, especially long distance, &c., and the service is excellent. Nevertheless, over here the promptness with which cables are 'phoned to me from —, the skilful manner in which my calls outwards are handled fills me with pride that our country is still in the van in one of the most vital services of this century, i.e., the telephone.

"You have embodied in 16 pages everything of real interest to a telephone user. I again congratulate you."

The following report furnished by a police constable may also be of interest as illustrating the vigilance of law and order:—

"P.C. — begs to report having, on above date, discovered a telephone kiosk erected on the — by the G.P.O. Engineering Dept."

This would appear to be a case of mushroom growth, where the kiosk reared its head in the course of a night. Whether or not it "came quietly," we feel sure that it would offer stout resistance to any peremptory order to "move on"!

A. W. C. C.

## WESTERN DISTRICT NOTES.

MR. H. M. SMART, Assistant Traffic Superintendent, who has been attached to the Western District for some little time, has now been appointed to a post in the Traffic Section of the Secretary's Office. On leaving the Western District he was presented by his colleagues in the Traffic Section with a fountain pen and pencil to match as a mark of the esteem, and appreciation of his co-operative work during his passage through the Western District.

The presentation was made by Mr. G. D. Bateman, Traffic Superintendent, II, in the absence of Mr. F. J. Frost, Traffic Superintendent, on official business.

MR. R. CLINICK, Assistant Traffic Superintendent from the North Midland District, has been transferred to the Western District.

A hearty welcome is extended to him by his new colleagues.

A kiosk has recently been erected in the front garden of the District Office, which is in a quiet residential road, and it is amusing to hear some of the comments respecting it.

The following shows the desirability of educating children in the use of the telephone:—

Two little girls and a little boy on their way home from school one day carried out an extensive examination of the kiosk, passing all sorts of comments as to its purpose. Finally one of the little girls decided, and the others agreed, that "it was a little house for the postman to go in when it was wet," and all marched off thoroughly satisfied.

"I have never heard it was a crime to hope for the best."

F. J. F.

## C.T.O. NOTES.

*Promotions.*—Mr. E. W. Gooding to be Superintendent and Mr. W. Annible to be Assistant Superintendent, Cable Room.

Miss E. M. Ashdown to be Supervisor and Misses A. J. Robinson, G. Derwent, F. A. Roycroft, A. C. Booker, F. G. Price, A. M. Martin, and G. M. E. Sweeting to be Assistant Supervisors.

*Retirements.*—Messrs. F. T. W. Chisham, Higher Clerical Officer, C. B. Franklin, Superintendent (L.G.), F. Tremayne, Overseer, and H. J. Charles, Telegraphist, Misses M. Tomkins and E. E. Smith, Assistant Supervisors, M. A. R. Bray, N. E. Woodgate, E. W. Black, F. E. Williams, E. F. E. Chillingworth, B. C. Morris, E. H. W. Walker, E. E. Cockle, G. Heagarty and E. K. E. Hodgson, Telegraphists.

*Obituary.*—We regret to record the death of four of our retired officers, viz., Miss A. Berry, who was in her 77th year, Mr. C. Driscoll, who was superannuated in 1927, Mr. Ernie Reay at the age of 63, and Mr. Dooley J. Wells, who was pensioned owing to ill-health in 1929.

Our sincere sympathy is extended to all their relatives.

*Rambles.*—Although the reorganisation of the instrument galleries has resulted in a fresh nomenclature for the new divisions, the old "F" division stalwarts are arranging a ramble to Downe on May 5, leaving Cannon Street by the 3.13 p.m. for Hayes. Everybody will be welcome.

*Octogenarian.*—We wish to congratulate Mr. Fred Hayward, a former Assistant Superintendent at the C.T.O., who has completed his eightieth year.

*A South Essex Re-union.*—It is pleasing to learn that our retired C.T.O. friends in South Essex keep the TS spirit alive by annual reunions, the second of which was held recently at Southend-on-Sea. Mr. S. Pearce, formerly Chief Superintendent of C.T.O., is an energetic honorary secretary.

*C.O.D.O.C.*—The Dramatic Section wound up their season with a presentation of "Tons of Money." Two very happy evenings were given to present and past C.T.O. officers with their friends. Miss Large and Mr. Haddock gave a very good performance of their respective parts whilst Miss D. Mason and Messrs. F. Misselbrook and Fred Roberts were also good.

*Boy Messengers.*—The C.T.O. Boys have done very much better in the indoor games this past season than previously. They reached the finals of the billiards, draughts and table tennis games, winning the last-mentioned. The sectional final in chess was also reached.

*Football.—Centels versus Barts, April 5.*—The annual charity match was played on the enclosed ground at Chiswick in ideal weather. Mr. Stuart Jones, C.B.E., kicked off and a thoroughly enjoyable game ensued. Barts, with a fair breeze in their favour, had the best of the opening exchanges and midway through the first half scored from a free-kick just outside the penalty area, Shackman being the scorer. In spite of the difficulty in controlling the ball due to the hardness of the ground and the consequent capriciousness of a light ball the standard of play continued high and some good combination work was developed by both teams. A few minutes before the interval an unfortunate accident robbed the Centels of their inside left, A. M. Cooke falling heavily as the result of a charge and sustaining a broken collar bone.

Half time arrived with Barts leading 1-0. On the resumption the Centels fielded a reserve in the place of Cooke, a proceeding rendered possible by a sporting suggestion from Barts. Play after the interval was more in the Centels' favour, the Barts goal having several narrow escapes until after 20 minutes Dickey netted for the Centels, following good work by Negus and Ellwood on the right wing, ending in a perfect centre from the former from which Dickey scored with a beautiful diagonal shot into the corner of the net.

Both teams made strenuous efforts to obtain the deciding goal, but time arrived with no further score, so extra time was played during which both goals had narrow escapes but no further addition to the score was made. It was therefore decided that the Aldwych Cup should be held jointly, and the Controller presented the cup to the Barts Captain to hold for the first six months.

A good muster of supporters included the Controller, Deputy Controller and a large sprinkling of ladies, who lent their vocal support in a wordy duel with a number of Barts students.

About £5 10s. will be handed to Barts Appeal Fund as a result of the game.

## SHEFFIELD DISTRICT NOTES.

In connexion with the pending transfer of the phonogram equipment and staff to the Telegraph Establishment, preliminary steps have been taken in training members of the phono room staff (telephonists) and several have already been up-graded to S.C. & T.'s

A correspondent on the Accounting Branch contributes the following anecdotes concerning the lighter side of his work:—

Last August a lady who had been unfortunate in having her service suspended called to see why her service had been "cut off," and the following dialogue took place:—

Lady: I can't use my telephone. What's the matter?

I: (After the usual reference.) I'm sorry to say that owing to non-receipt of your remittance, the service has, according to regulations, been suspended.

Lady: Indeed! My husband and I have been telephone subscribers for I don't know how many years, and you might know I was away on holiday. Everyone is on holiday in August.

I: I'm sorry, but I'm afraid that is not entirely so. Did you advise the office, and did you not receive a final notice (producing specimen) before you left for your holiday?

Lady (smiling): Oh, yes, but I didn't think you meant it. (I explained how useless the notice would be if it was not intended to carry out the suspension as indicated).

Lady: Yes, but I do think you ought to know when I'm away.

I: How do you suggest this can be found out, Madam, if you don't advise the office?

Lady: Oh, you could ring up and ask, couldn't you?

I: (After explaining regulations.) But that cannot very well be done. Would there be any one to answer the telephone?

Lady: Of course not, if I'm away!

After a little while the lady saw the humorous side of the case and went away happy.

Some time ago a case of dispute as to the accuracy of the number of calls charged for brought forth the following epistle:—

My Esteemed Friend,—I received your letter, but we never had the calls as you say. My son says you are a l—r and I say you are a l—r, so you must be a l—r, &c., &c.—Your ever esteemed Friend.

## LEEDS DISTRICT NOTES.

To our new Postmaster-Surveyor, Mr. V. R. Kenny, M.B.E., we offer congratulations and a hearty welcome to Leeds. We feel sure, from all we have heard, that his tenure of office will be as happy and successful as that of his predecessor.

The Lord Mayor (Ald. R. H. Blackburn) and the Lady Mayoress visited the Leeds Head Post Office on Mar. 20 and, accompanied by Col. Jayne (Postmaster-Surveyor), Mr. Atkinson (Superintending Engineer), Mr. Murray (District Manager) and other departmental heads made a tour of the telephone exchange, the instrument and phonogram rooms and the sorting office. During their visit to the Telex demonstration room the following message, to which the Lord Mayor sent a suitable reply, came through from the Postmaster-General:—

The Lord Mayor Leeds.

I am sending you this message by the new Telex service to bid you welcome to Leeds Post Office and to assure you of my earnest wish for the continuance of happy relations subsisting between civic authorities and the Post Office, Leeds. KINGSLEY WOOD.

The interest which the Lord Mayor and the Lady Mayoress took in the operating of the telephone, telegraph and postal services was much appreciated by all grades of the staff.

Among the souvenirs of his stay in Leeds which Col. Jayne took with him to Birmingham was a camera presented by the Supervising Officers of the District Manager's Office and the Leeds Exchange. Mr. Murray (District Manager), who made the presentation, stated that the gift, in addition to being an expression of the popularity of Col. Jayne with the telephone staff, was also an appreciation of the active interest which he had always taken in the development of the telephone service. Mr. Lowe (Sales Manager), Mr. Lawrence (Traffic Supt.) and Mr. Parsons (Staff Officer) also conveyed the good wishes of their respective sections. Col. Jayne suitably expressed his thanks and in the course of his reply paid a high tribute to the efficiency of the telephone service in the West Yorkshire District.

To meet the strongly expressed wishes of its supporters the West Yorkshire Telephone District Social and Discussion Circle organised yet another whist drive and dance at the Metropole Hotel, Leeds, on April 1. The attendance of 250 included Mr. J. F. Murray (District Manager), Mrs. Murray, Mr. T. W. Lawrence (Traffic Superintendent) and representatives of all the Post Office departments. A thoroughly enjoyable evening formed a fitting conclusion to a successful winter's programme.

The attractive prizes for whist went to Mrs. Wilcock, Miss L. Gould, Mrs. Bailey and Messrs. Sykes, Hornby and Gledhill.

The efforts of the ladies supporting the local committee of the Rowland Hill Benevolent Fund culminated in a splendidly attended whist drive at the Y.W.C.A. Rooms in Leeds on Mar. 28, as a result of which the committee was enabled to make a substantial contribution to the Fund. Mr. Righton (Chief Superintendent, Survey Branch) fittingly expressed an appreciation of the labours of Misses Dexter and Thornton, who were splendidly supported by Miss Morfitt (Chief Supervisor, Leeds), and a host of willing helpers. Amongst those present were Mr. Hunter (Acting Postmaster-Surveyor), Mr. Murray (District Manager) and Mr. Mansell (Chief Superintendent, Telegraphs).

A further effort which benefitted the Rowland Hill Fund was the annual social held by the staff of the Settle Post Office. The first part of the programme consisted of an excellent concert, after which whist was played. Supper followed and later dancing was enjoyed to music played by Mr. Edmondson and his "Post Office Players." The guests were welcomed by Mr. Savage (Postmaster) and Mrs. Savage, who later presented the prizes to the successful whist players. At the close of the concert Mr. Middlemass, the Staff Medical Officer, suitably expressed the thanks of the company to the artistes and all who had helped in the success of the gathering.

Another step in the campaign to popularise the telephone service was taken on Mar. 14, when Mr. Lawrence (Traffic Superintendent) gave a lantern lecture on "The Telephone" to over 70 members of the Men's Fellowship attached to the Armley Methodist Church, Leeds. The interest created by the lecture was so apparent that arrangements were made for the whole party to visit the Leeds Exchange on the evening of Mar. 17. The visitors were profuse in their expressions of appreciation and the result of the combined lecture and visit cannot fail to benefit the service in many ways.

An item of especial interest in the agenda for the monthly meeting of the Sales staff, held on Mar. 29, was a visit to the Leeds Exchange to see first-hand the operation of the new "Demand" service. Under the guidance of the Traffic Officers the Sales representatives made the most of their visit and were suitably intrigued with the ingenuity of the new timing devices and the efficiency of the pneumatic system of ticket distribution.

Our congratulations on his promotion and a hearty welcome to Leeds are extended to Mr. R. B. Graham, who has come to us from York to take up the post of Sectional Engineer in the Leeds Internal Section of the North Eastern Engineering District.

Mr. E. B. Parkin, Clerical Officer, Motor Transport Section, Superintending Engineer's Office, on his promotion to the rank of Higher Clerical Officer at Reading, South Midland District, was presented with a clock of the grandmother type as a token of the esteem in which he was held by his colleagues. Mr. J. W. Atkinson, Superintending Engineer, in making the presentation, conveyed to Mr. Parkin the well-wishes of the staff and expressed the hope that he would be happy in his new sphere of operations.

Mr. G. Bailey, Assistant Engineer in the Technical Section of the North Eastern Engineering District, retired on Mar. 31 after 43 years' service. Friend George commenced his services at South Shields as S.C. & T. and was transferred to the Engineering Department in 1903 as a Junior Clerk. He travelled extensively during his official career and passed through what he called the "comfortable days" to these more strenuous ones.

Mr. Atkinson, the Superintending Engineer, on behalf of the staff, presented Mr. Bailey with a fitted-up travelling case, "including a flask" and a trickle charger. In making the presentation, Mr. Atkinson conveyed to Mr. Bailey the esteem and good wishes of the staff, also wishing both Mr. and Mrs. Bailey long life and happiness in their well-earned leisure.

## NORTH MIDLAND DISTRICT NOTES.

*Presentation.*—In the Traffic Office at Nottingham recently there was a good attendance to bid farewell to Mr. H. Ridge, on his departure to take up an appointment as Traffic Superintendent, Class II, in the Colchester Telephone District. Mr. C. N. Carter, Traffic Superintendent, in making a presentation to Mr. Ridge on behalf of the staff of an oak bureau, spoke of regret at losing Mr. Ridge and wished him every success in his new District. Other colleagues also associated themselves with the good wishes expressed. Mr. Ridge responded suitably in a brief reminiscent speech.

*Whist Drive and Dance.*—The District Manager's Office Whist Drive and Dance, under the auspices of the Social Committee, was held at the Palais de Danse, Nottingham, on Mar. 7, when the attendance numbered just under 700. Amongst those present were the Surveyor of the North Midland District, Mr. J. W. Jay, and Mrs. Jay; Major Kenny, Head Postmaster of Nottingham; and Mr. D. J. Barnes, District Manager. The whist drive was ably controlled by Messrs. Chreseson and Riley. Dancing took place to the alternate accompaniment of two bands. The whole of the proceedings were most enjoyable and next season's fixtures are awaited with pleasurable anticipation.

## TELEPHONES IN SCHOOLS.

THE policy of inviting school children to take an interest in the telephone received a further impetus at Bognor Regis recently, where a demonstration was arranged in co-operation with the local engineers and the school managers.

The Chairman of the managers is a well-known local solicitor and takes a great interest in the teaching of commercial subjects. He has found by experience that persons taking up positions in offices do not understand the telephone and consequently waste a good deal of time. It was suggested to him that a small P.B. Ex. board with extensions to various rooms should be provided and the school children should be instructed in its use. In addition to the foregoing, a Hall multi-coin box was provided and suitable instruction given. Two talks were arranged, one in the afternoon to the senior boys, and the other during the evening to the students taking commercial subjects: at the evening session, in addition to the students, a number of parents and friends attended.

A brief description of the telephone organisation was given and the various points covered by the preface to the telephone directory emphasised, then the operations of the P.B. Ex. board and Hall multi-coin box were explained.

The students were invited to ask questions and a large number availed themselves of the privilege. The questions asked enabled the speaker to explain the various services provided over the telephone such as personal and fixed time calls, phonograms, continental and overseas services. One small boy was anxious to know whether the wind would not blow a telegram out of its proper course—he evidently had visions of hundred of pieces of paper sailing out of the C.T.O. at stated intervals. A simple explanation of the beam system was given to him and set his small mind at rest.

Perhaps the most entertaining part of the evening was the practical operation of the switchboard: the students entered into this with zest, passing calls to each other and operating the board under the watchful eye of the Traffic Officer who corrected any tendency to mis-operation.

To conclude the evening a small party afterwards visited the exchange, where they had an opportunity of clearing up their ideas regarding points of difficulty which had come to light during the talks.

It is evident that the Department's action in the matter was highly appreciated by the West Sussex Education Committee as letters of thanks were received both from the Headmaster and the organising secretary of the evening classes.

G. H. CALCUTT,  
Asst. Traffic Supt.

## NORWICH DISTRICT NOTES.

*Staff Meeting.*—A combined staff and Supervisors' meeting was held at Cambridge on Mar. 23, 25 officers attending. Mr. R. A. David, Traffic Superintendent, who acted as Chairman, in his opening remarks summarised development in the District for the past year and spoke at some length on the timing of trunk calls. Papers on "The Effect of the Introduction of Demand Working at Cambridge" and "Local and Trunk Service" were given by Mr. A. E. Trowbridge and Mr. J. T. Baldry respectively. A number of very interesting points raised by the staff were then dealt with.

The following note received from a Sales Representative suggests great possibilities:—

"About three weeks ago I made a call on the Rev. ——. I was unsuccessful in obtaining an order at the time, so duly made a follow-up call yesterday, without, I regret to say, any immediate tangible result. The reverend gentleman, however, took the opportunity of thanking me for having been the source of inspiration for a sermon he preached on the Sunday following my first visit to him. I gathered that in the course of the service he made metaphorical application of my arguments to his text. Unfortunately, there is no verbatim report of his sermon available. It was apparent, though, from his notes, which he loaned me, that he had favourably compared the telephone service with the Christian faith. As far as I am aware, this is the

first occasion on which the telephone service has received publicity from a pulpit and you may consider it of interest. For my part, I think that if this sort of thing becomes fashionable, it behoves Sales Representatives to be very circumspect in canvassing wearers of the cloth.—J. S. R."

*Obituary.*—We regret to report that Miss A. E. Drake, who was superannuated from the position of Travelling Assistant Supervisor on Jan. 15 last, died on April 1. The Department was well represented at her funeral on April 7.

*Sport.*—The badminton season closed on April 11, when a large number of members turned up to an informal feed. Those who have no active pursuits for the summer are invited to join the Post Office Golf Club, which already boasts some 25 members, of whom quite a number are beginners. Some of the latter are in the habit of practising mashie shots at odd moments and if this persists we may well look for a boom in the walking stick and umbrella industries.

J. T. B.



The Blackbird.

THERE he sits, morning after morning, sometimes on the ridge of a roof, sometimes on a tree-top just above the platform of the railway station. He pours out a stream of sweet song and we, who are bound city-wards, raise our eyes from our morning papers to look at him. He doesn't appear to care a bit about the weather but—it may be just fancy—his song seems more joyous and fuller of rich music when the sun is shining. He doesn't care a jot about the headlines in the papers, about the money market, the racing news or scores, whether of runs or goals. I'm not at all sure that he cares a jot about us, either, although he does occasionally favour us with a downward glance. His fluting notes flood us with purity and we are lifted momentarily out of the preoccupations of the coming day. What memories he stirs in our minds—the hedged lane, the footpath from the stile, the trees leafing into tender green, the first violet or cowslip, the quiet village, the peaceful setting of the church, the unfamiliar clip-clop of horses' hoofs, the sound of cattle and of ducks, the splash of the brook, the rustle of last year's leaves. We can almost feel again the warmth of that spring day: the sweet smell of the fresh countryside comes back faintly to our senses. The present slides away and we live for the breadth of a sigh in the joyous past.

The train comes in: we board it and we are dragged off to town, but the note of the blackbird is still in our ears and beauty lingers awhile in our hearts. We are grateful to him and we should miss him. Probably we are better for his morning song: maybe it influences the actions of the day. Who can tell?

Most often he is there at the end of the day—still singing. Shall I then slink beneath his tree with downcast gaze and shall I blush to hear his pure note again? Or shall I be able to look up to him and say, "Friend, I have done the square thing to-day. Thank you. Good evening"?

"O Blackbird what a boy you are!

How you do go it!

Blowing your bugle to that one sweet star—

How you do blow it!"

PERCY FLAGE.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), London, E.C.1.

## LONDON TELEPHONE SERVICE NOTES.

## Sales Branch Notes.

DURING the month of March there was a net increase of 2,385 stations, as compared with an increase of 2,599 stations in the corresponding month of last year.

A further reduction in the rental of hand-microphones is notified as from April 1, 1933. Instruments of this type are now provided on payment of a lump sum of £1 or at the subscriber's option on payment of six quarterly instalments of 4s. Existing renters will continue to pay 2s. per quarter until a sum of 24s. is paid. Coloured additional receivers to match standard coloured hand-microphones are now being supplied. The number of hand-microphones ordered continues to be maintained, and during the quarter ended Mar. 31 orders were received for 18,662. Coloured instruments ordered during the quarter total 262. It is anticipated that the announcement of the reduction in the tariffs for hand-microphones will result in an acceleration in the demand, and at the time of going to press approximately 85% of recent orders indicated that subscribers were taking advantage of the option to pay a lump sum in preference to quarterly payments.

In connexion with the British Industries Fair at Olympia, a Post Office exhibition was arranged which consisted of the Postal, Telegraph and Telephone Services. The display included automatic apparatus, a demonstration of the various types of extensions and displays of hand-microphones and the Telex service.

*Washable Labels.*—Over 6,000 of these have been despatched to 119 hotels and a comparison recently made in 39 cases disclosed that the display of these was advantageous both to the Department and to the hotels.

*"Telephone Your Order" Labels.*—A total number of 5,000,000 of these labels has been despatched to subscribers who agreed to accept them. The labels are intended for use in connexion with correspondence, bill heads, &c., and it is confidently expected that this means of advertising will result in an increase in the calling rate.

*Loans of Apparatus.*—Many applications are being received under this heading, and the British International Pictures, Ltd., and the British and Dominion Film Corporation, Elstree, have applied for the loan of switchboards in connexion with pictures which they are shooting.

## Staff Salesmanship Scheme.

	Total Number Ordered.	Number Ordered Month ended April 15, 1933.
Exchange lines ...	1,913	116
Extensions ...	2,064	216
Private lines ...	22	—
Plugs and sockets ...	361	43
Hand-microphones ...	10,692	1,142
Extension bells ...	920	114
Other apparatus ...	1,023	68

In a current issue of *Advertising Display* the case is reported of an American firm who were recently given a new telephone number. Instead of advising its customers of the change by means of postcards, it has gone about the business in a very interesting way. The following is some of the copy from an extract to their clients:—

"We announce another smashing reduction. Everything is down, and now through the splendid co-operation of the Telephone Company we are able to announce a special reduction in our telephone number from 7200 to 4901—a drop of over 30%."

Accompanying the notification is a chart, like a sales graph, depicting the fall.

A new London restaurant has introduced a novelty which has proved successful after only a few months' operation. In the restaurant there are alcoves named after famous theatres; for it is in the heart of theatreland. Each table is equipped with a jade green telephone, and instead of diners having to wait for a waiter they telephone their orders to the service department, indicating that they are dining in the "Duchess" or the "Tivoli" arch.

## A True Story.

A lady speaking from a call office in Gerrard area complained of difficulty in hearing her correspondent, although she had inserted a further twopence "to get more power."

## The P.O. Sanatorium Society: L.T.S. Section.

AN account of the concert given by the L.T.S. Staff and friends at Benenden on Saturday, April 1, is rather fittingly described by one of the patients, who writes as follows:—

The patients were favoured with a visit by a concert party organised by Miss Margaret Worth (Vice-Chairman of the Society) and made possible by the kindness and generosity of the staff of the L.T.S.

The concert was a huge success and the delight of the patients was evident in their laughter (what a tonic) and their applause.

Miss Mollie Aldridge was highly entertaining with light songs and a musical sketch, Miss Madge Harwood recited with great ability, switching at will from cockney to modern dame. Miss Worth sang two songs and took part in a duet and a quartette and Miss Eileen Braid showed considerable skill in her elocutionary portrayal of various feminine characters.

The male talent was well to the fore, Mr. Hugh Williams (tenor) with popular operatic Italian arias, and Mr. Charles Phillips in cheerful baritone songs. As for Harry Hearne, humorist, he proved a very versatile and amusing entertainer. Then there was the accompanist, Mr. John Harris, who, in addition to the labours at the piano, favoured with songs at the piano and monologues and duets with Miss Mollie Aldridge.

It was observed that the artistes wore blue favours to celebrate the victory of Cambridge in the boat race and to honour the resident M.O., Dr. Spurrier, an old Cambridge blue.

Before the concert closed with the singing of "Auld Lang Syne," Miss Worth and her fellow artistes were accorded a very hearty vote of thanks and presented with a basket of primroses picked by the patients. Added to the thanks a hope was expressed that before very long it would be possible for them to come again.

Well, that's only one tribute of appreciation of what is done through the voluntary contributions of the L.T.S. staff.

A concert held at the Cotswold Sanatorium, Cranham, Gloucester, on Saturday, Mar. 11, drew quite a number of appreciative letters from patients, particularly Miss Alma Humphries and Miss Joyce, both of the L.T.S. Headquarters Staff. Here again further visits were requested and while conditional promises were given it remains for the L.T.S. to make such repetitions possible.

Oh! if only the contributors to the voluntary fund for these concerts could be with us on these occasions, what joy it would give them. To share in the mirth, laughter and general appreciation would well repay the depositing of a spare copper in the annual passing round of the "Hat."

All the patients say, thanks and more thanks and again thanks.

## Personalia.

## Resignations on Account of Marriage.

## Telephonists.

Miss F. E. Ledford, of Toll "A."	Miss I. K. Lewsey, of Ilford.
" E. Busby, of Fulham.	" D. M. Dunford, of London Wall.
" E. M. Emerson, of Victoria.	" G. Letheren, of Paddington.
" M. G. Sadler, of Croydon.	" F. E. Seymour, of Primrose.
" P. C. Cooke, of Trunk.	" E. E. Cole, of Tandem.
" W. E. Denham, of Trunk.	" E. E. Butler, of Tandem.
" L. M. Pull, of Trunk.	" K. N. Kingsley, of Tandem.
" J. J. Ferguson, of Trunk.	" A. E. Aldridge, of Tandem.
" I. K. Madle, of Walthamstow.	" O. Martin, of Kensington.
" I. F. Jones, of Abercorn.	" M. A. Hall, of Directory Enquiry.
" K. M. Arkle, of Holborn.	" F. H. Jennings, of Metropolitan.
" W. M. Cole, of Hop.	" M. J. Cable, of Willesden.

## THE FREEDOM OF BLACKPOOL: OFFER TO JUNE HOLIDAYMAKERS!

JUNE is a beautiful month in Blackpool: the weather is usually brilliant and the full summer season's programmes of entertainment are in full swing. Despite all this, it is a month which is, in the main, jilted by holidaymakers. Blackpool has, therefore, been doing a little thinking, and has devised a new and novel scheme for the attraction of holidaymakers during June. It is very aptly termed "Guest Week," and means that every holidaymaker staying in this progressive northern resort for the five days of June 19 to 23 will be presented with a book of voucher tickets which will entitle the holder to:—

- 10% reduction in hotel and boarding establishment charges.
- 20% reduction in many apartment house charges.
- One free admission to the Blackpool Tower, with its magnificent ballroom, aviaries, aquarium, roof gardens, &c.
- One free admission to the Tower Circus.
- One free admission into a Pier Pavilion entertainment.
- Two free admissions into a choice of two cinemas.
- One free admission to one of three piers.
- Four free rides on the famous Pleasure Beach attractions.
- One free visit to the luxurious open-air bathing pool.
- One free game of golf, tennis, bowls or putting.
- One free ride on the promenade or circular tour tramcars.

In every case these facilities are to be available for the best seats at any ordinary performance, and they are valued at over 15s. exclusive of the advantage of the specially reduced apartment fees. All Blackpool is co-operating with the corporation to ensure the pleasure of their guests, and during the week there will be special gala balls, mannequin parades, cabarets, and the Chamber of Trade has agreed to organise a gigantic Shopping Festival in which thousands of valuable prizes will be distributed to guests without the necessity of their having to make any purchases whatsoever. The scheme is both novel and courageous in its conception, and by it Blackpool claims to offer to all the best, the most comprehensive and cheapest holiday in the world.

# THE Telegraph and Telephone Journal.

Vol. XIX.

JUNE, 1933.

No. 219.

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*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CIX.

MR. A. O. SPAFFORD, O.B.E.

MR. A. O. SPAFFORD was born at Darlington and was educated at Wellington College, Berkshire, and Hertford College, Oxford. On leaving Oxford he became an Assistant Master at Marlborough School.

Success in the Open Competition for the Home Civil Service led to his appointment to the Post Office as Assistant Surveyor in the North Eastern District. After serving in a similar capacity in the South Western, Home, and East Scotland Districts, he returned to the North Eastern District on promotion. His official service was interrupted during the war, when he served as Assistant Director of Postal



Services (Home Defence) from 1914 to 1918.

He has now been a Surveyor for over 5 years and, by his keen sense of fairness, and his ability to do the right thing in the right way at the right time, he has won the affection and respect of the whole staff in his District.

He has occupied himself particularly with the development of the Telegraph and Telephone Services, and evidence of this was forthcoming recently at the ceremonies at Plymouth, when the Postmaster-General laid foundation stones by the use of the telephone lines, of three new automatic telephone exchange buildings in Mr. Spafford's District.

Mr. Spafford's hobbies are work and tennis.

## The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

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		W. H. GUNSTON.

### NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

VOL. XIX.

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No. 219.

### CHRONOLOGY.

WE conclude in this issue the comprehensive and valuable Chronology of Telegraphs, Telephones and Posts, which has been running intermittently through the *Journal* since November 1927, and for which we are indebted to the painstaking care and research of Mr. Harry Sellars. It has been a matter of constant regret that the limited size of the *Journal* and the space at our disposal has prevented us from offering larger and more regular instalments of this work. There seems, at first blush, almost an element of irony in styling "brief" a record which has appeared in the *Journal* over a period of upwards of five years. But brief in the true sense it actually is, for, of course, the ground covered by the work is vast, and it is only possible to record very succinctly the progress and development since the dawn of civilisation from century to century, from year to year, and finally from month to month of all the varied means of communication associated with Postal administration. Mr. Sellars has spread his wide net over all systems of posts, couriers, and signals, over inventions and discoveries, over philosophers, physicists and administrations, and even over soulless councils and committees. The earliest centuries naturally furnish scanty material for our subject. Couriers and post-houses were, of course, known to the ancients, and some of the properties of electricity were known to the early Greek philosophers. It was not until the Renaissance period that the establishment of postal routes, even of the most limited kind, was fairly general in Europe.

The seventeenth and eighteenth centuries show the steady development of electrical discovery of which the full fruits were not reaped till the nineteenth century. In the nineteenth century we begin to get a record of some event in the progress of communication in nearly every year, and, towards the end of that century, in nearly every month.

Mr. Sellars' record ends with the end of 1930 with radio telephony and radio telegraphy well established and practically every country in the civilised world in wire or wireless communication one with another. It is a striking commentary on the ceaseless progress of electrical communication, to record that even in the short period since the beginning of 1931, radio telephone communication has made several further important strides and has been extended to South Africa, Egypt, and India, which now are in contact (via this country) with the rest of the telephone-using world.

Chronology is a subject which never stands still; its records become incomplete with each passing year. It used to be a matter of complaint and criticism in the latter half of the last century that schoolboys were taught little history later than the Battle of Waterloo or the Reform Bill. But this was due either to the laziness of historians or their disinclination to induct schoolboys into the mysteries of more or less contemporary politics, and not because no great events happened after 1815 or 1831. There may, however, be times when one could close down the political history or the literary history of the world for considerable periods and say that nothing of importance occurred for several decades. With the recent history of electrical communication this is not the case, and in an incredibly brief period we find some fresh event of outstanding moment has happened which it is necessary to record. Hence the value of Mr. Sellars' year-by-year record; it illustrates very clearly the rapid progress of recent years to which we have referred. It is not because records are scanty or defective that there are few items to record for earlier centuries; it is the facts themselves which are scanty, whereas in recent years, developments come thick and fast. It is just when the Victorian school history books began to be silent, that the great steps forward in "postal chronology" occur. In 1830 the mails were first conveyed by railway between Manchester and Liverpool. In 1837 Cooke and Wheatstone patented their telegraph and demonstrated its working between Euston and Camden. In that year, too, the first "travelling post office" (improvised in a horse box) ran between Manchester and Birmingham. Thenceforward new links in the chain of communication were forged year by year. For precise information of the more important steps forward we refer the enquiring reader to Mr. Sellars' tables.

### "WEEL MAY THE KEEL ROW."

It is regretted that the photograph illustrating the Incoming Demand Position at Newcastle-on-Tyne Exchange was erroneously inserted on page 180 (top of right-hand column) in the article on Wigan "Common Control" New Automatic Exchange.



## HIC ET UBIQUE.

THE following letter, of a familiar type, appeared recently in the *Sheffield Daily Telegraph* :—

Sir,—One is getting a little tired of reading the appeals of the Postmaster to instal telephones.

I have just received my account for the quarter ending Mar. 31, viz., £1 10s. 3d.; I have had 33 calls; this works out at a cost of exactly 11d. per call. Is there any wonder that people won't instal telephones?

We cannot supply a better comment on it than that furnished editorially by the *Yorkshire Telegraph* :—

A correspondent of the *Telegraph* complains of the cost of telephoning. He works out that his telephone calls cost him 11d. each. He reminds us of a friend of ours who runs a cheap car. We say "runs," though we perhaps ought to say "keeps." He has shown us some elaborate figures proving that his motoring costs him 3s. 10d. a mile.

It should be familiar to both these people, and to all business men, that the way to get things at a cheap rate is to reduce the incidence of your overheads.

The telephone correspondent, for instance, had 33 calls which cost him 11d. each. If he had had 500 calls they would have cost him just over 1½d. each. On the other hand, of course, if he had only had one call it would have cost him exactly £1 7s. 7d. So with the motoring gentleman. His car costs him depreciation, tax, insurance, and garage if he takes it out at all. The way to get cheap motoring is to have a lot of it!

The Head Postmaster of Sevenoaks received the following appreciative letter from a subscriber :—

This being my last day for the Sevenoaks Exchange, I should like to place on record my grateful appreciation of the kind and courteous attention I have received at all times from your Telephone Operators, both Day and Night Staffs.

I cannot call to mind any single occasion when their diligence and zeal could have been in any way improved or surpassed.

\* \* \* \*

In making the above statement one cannot help thinking of a portion of Gray's beautiful poem :—

"Full many a flower is born to blush unseen,  
And waste its sweetness on the desert air."

The subjoined cutting from the *Star* seems to us an excellent example of How not to take a Hint :—

Although the National Gallery is on the telephone, the number does not appear in the directory. When, anxious to phone the Gallery, I sought the aid of Telephone Inquiries, I was informed that the line was for private use only, and neither exhortations, appeals, nor cajolery could secure either the number or the exchange.

After much search I was able to discover the number which was allocated to the National Gallery five years ago. It was then on the Regent Exchange. I decided, as a last desperate effort, to ring this old number. But it was no longer that of the National Gallery. It was that of a private firm.

Surely a perseverance worthy of a better cause! It recalls to our mind some ancient apologue about a man who was carrying a basket of snakes carefully covered by a cloth. A certain fellow asked him what was in the basket. "It is covered," quoth the other, "for the very purpose that none may know what it contains."

"The following may interest you," writes a subscriber, "in calculating value of telephone.

"I live on borders of Clacton, Holland rd., bus fare is 2d. each way. 4d. return into shopping centre.

"My account for local calls is 111 = 9s. 3d. at 1d. a call. These are practically all calls that meant a journey by bus into town and back, costing 37s. Deducting trunk calls 3s. my full

account comes to £1 16s. 9d. so I have saved time inconvenience besides the advantage of immediate calls for urgency, illness or accident. I have used 'phone now for 20 years and would not be without it."

A correspondent in the *Sunday Times* was recently asking for the name of the author of a poem of several verses summarising the history of the world. He was referred to "Mangnall's Historical Questions" (in which the verses occurred), a mid-Victorian compilation of the most heterogeneous kind, which was to be found in most households some 50 years ago. The writer well remembers some lines of the poem, in which universal history is summed up in thirty or forty sonorous and succinct four-line stanzas. The following is an imitation of its style—in decidedly less ponderous vein :—

## OVERSEAS TELEPHONY.

Ere yet the Nineteenth Century  
Departed, full of years,  
No longer could *La Manche* defy  
The feats of engineers.

John listens to the welcome cry  
"Allo! Allo!" from Jules  
And makes appropriate reply  
In French—as taught in school.

And, as the century recedes,  
(And with it woman's bustles)  
We meet the Anglo-Belgian's needs,  
And London speaks with Brussels.

Far-reaching plans now fill the air  
And schemes are set in motion  
To lay a cable here and there  
Across the German Ocean.

But lo! "The Day" our progress bars  
And sweeps all plans aside,  
The peremptory claims of Mars  
Must first be satisfied.

When 1922 arrived,  
Dutch accents first were heard  
Through British telephones, contrived  
To speed the winged word.

The service being now well set  
O'er Germany expands,  
And one by one its spreading net  
Embraces neighbouring lands.

The thermionic valve extends  
Telephony's empire  
Until to Europe's utmost ends  
Friend talks to friend by wire.

Meantime a greater marvel stirs  
A world to wondering prone,  
And London with New York confers  
By radio-telephone.

To Rio and the River Plate,  
To Indies East and West,  
In tongues divergent circulate  
Voices that never rest.

And now from Afric's golden sands  
The spoken word goes forth  
To reach Australia's sunny strands  
Or hail the frozen North,

While London's telephonic Sun  
Sends rays to all the Earth—  
A Babel-tongued exchange, and one  
The Muses' tribute worth.

W. H. G.

## ELECTRICAL INTERFERENCE WITH BROADCASTING.\*

By COL. A. S. ANGWIN, D.S.O., M.C., T.D., B.Sc., M.I.E.E.,  
*Assistant Engineer-in-Chief.*

ELECTRICAL interference with the reception of broadcasting has recently come very much into prominence, and has raised many questions of difficulty by reason of the large number of the general public who are concerned and the various interests involved.

In the early days of broadcasting complaints of interference were mainly confined to those arising from oscillation from a neighbour's receiving set and from spark transmissions near the coast. These sources of disturbance are now both very much reduced; in the first instance primarily from improvements in receiver design and in the other from the conversion of spark transmitters to less interfering types.

What, then, are the reasons for the present interference conditions. The improvements which have taken place in the technique of broadcasting may be placed first. The transmissions are better, and great attention has been paid to the acoustic effects in studios. The background as far as Morse is concerned is so greatly improved that any extraneous noises introduced at the receiver are much more noticeable. Further, the programmes of a musical and dramatic type are more adversely affected by interfering noises. Jazz music may be improved by additional noise but the addition of unwanted sounds to a symphony is objected to. In a dramatic sketch, a crash from the effects studio is appropriate at the right time, but an added shriek in the receiver from other sources may spoil the effect.

The improvement in receiver design has also accentuated the trouble of electrical noise, particularly in the mains-driven or all-electric receiver, and the position at present is that almost every item of electrical plant is a potential source of interference.

*Cause of Interference.*—Any type of electrical apparatus which in its operation is subject to sudden changes of current, is likely to produce spurious currents, which may have no effect on the performance of the normal function of such apparatus. These spurious currents will be propagated as high-frequency radiation (which may include frequencies of the same order as those used for broadcasting) and also conducted over the mains and thereby conveyed into listeners' premises.

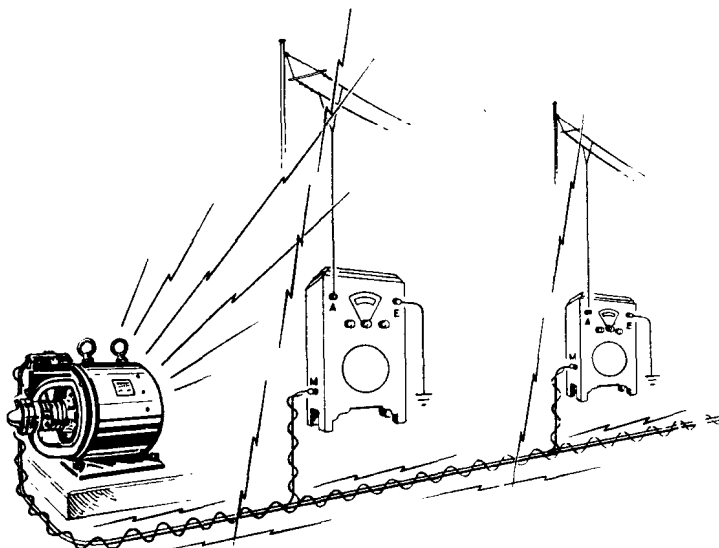


FIG. 1. PICTORIAL REPRESENTATION OF THE RADIATED AND CONDUCTED TYPES OF INTERFERENCE.

Fig. 1 gives a pictorial representation of the two types of interference which are usually referred to as the "radiated" and "conducted" types. The former type is shown as direct radiation from the source and also as radiation from the mains. The direct radiation affects only those aerials which are in close proximity to the interfering source, whilst the mains-borne radiation is capable of affecting aerials located along the route of the

electric mains, but at considerable distances from the interfering plant item. In the case of the conducted type of interference, currents of both radio- and audio-frequency may thereby be fed into radio receivers along with their normal power supply.

*Principal Types of Interfering Plant.*—The principal types of interfering plant which have so far been investigated are enumerated below, namely:—

(a) Motors and generators.

These include both A.C. and D.C. types, although the ordinary forms of A.C. induction motor give little trouble. The interference from motors is usually of the radiated type, much of which is carried over the supply mains to distances up to about 200 yds. One of the most troublesome types is the small motor employed for domestic purposes.

Generators produce both radio- and audio-frequency interference.

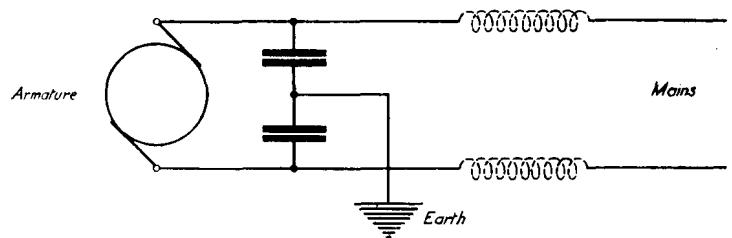


FIG. 2. TYPICAL SUPPRESSION DEVICES AS APPLIED TO AN ELECTRIC MOTOR.

Commutator sparking is not an essential feature of the interference from motors and generators. A machine may be working, apparently quite sparklessly and yet cause marked interference.

(b) Rectifiers of the commutator type.

The interference consists principally of direct radiation from the plant, including the batteries undergoing charge. It is very severe up to a range of 300 yds. The mains-borne radiation is small, in comparison with the direct radiation.

(c) Vibrating reed rectifiers; flashing signs of various kinds, including road and railway control signals; telephone switching plant; electric bells; ovens; heating pads and other forms of thermostatically controlled plant, also electric tramway and lift controllers.

The interference in all these cases arises from the making and breaking of current-carrying circuits. It consists for the greater part of mains-borne radiation and has a range up to about 100 yds.

(d) Neon signs.

Direct and mains-borne radiation arise in this case. The range is about 200 yds. in the high-frequency indoor type signs and about 50 yds. in the case of the low-frequency outdoor type.

(e) Lift plant.

This includes the motor and controller and the trailing cables. Lift motors of the D.C. type generally cause more severe interference than those of the A.C. type. The interference is of the radiated and directly conducted types, the influence of the former, which is due mainly to the controller, extending up to distances of about 25 yds.

(f) Tramway and trolley-bus systems.

The traction and compressor motors, controller and collectors are the interfering source in this case. Much of the interference is radiated from the overhead feeders and is in consequence widespread in regard to its range.

(g) Mercury arcs.

These include the types used at rectifier sub-stations on D.C. supply systems, as well as the smaller types used for operating D.C. plant, such as lifts and cinema arcs, from A.C. mains. The interference is mainly of the directly-conducted type and is of audio-frequency character, but is accompanied by the radiated type. It is widespread in range in the case of the sub-station arcs.

(h) High-tension overhead transmission systems.

Such systems cause interference chiefly by reason of corona discharge at insulators. Radiation from the transmission lines takes place over considerable distances. In addition to interference with the medium- and long-wave broadcasting bands, short-wave radio services are at times also affected.

\* An address given to the Telegraph and Telephone Society of London.

(j) Spark ignition systems.

The ignition systems of motor car and aeroplane engines interfere by direct radiation, but only with short-wave and ultra-short-wave services.

(k) High-frequency medical apparatus.

This class of apparatus interferes much in the same way as a spark radio transmitter. The direct radiation is intense. The mains-borne radiation is effective at distances up to about 300 yards.

NOTE.—At this stage of the address the nature of the interfering sounds from a number of the items of plant listed in the previous paragraph was demonstrated to the audience by means of gramophone records.

*Principles of Suppression.*—Freedom from interference can be obtained by the use of suitable suppression devices such as choke coils for reducing the magnitude of the effects of variation of the working currents and condensers for bypassing the interfering currents to ground in the neighbourhood of their source, thus preventing their widespread propagation. Electrical screening may also be made use of in certain cases. Fig. 2 shows in diagrammatic form a typical suppression device consisting of condensers and/or choke coils for an electric motor.

*Means of Suppression.*—The principles of suppression may be applied to the interfering item or at listeners' premises.

NOTE.—At this stage a number of slides were thrown on the screen for the purpose of showing the make-up and method of fitting suitable suppression units, embodying the above principles, to various items of electrical plant. In addition a range of sample units were exhibited.

Applied at listeners' premises, the devices take the form of mains filters at the main switch for the prevention of radiation from the internal wiring of houses, of smoothing circuits inserted in the power supply lead of the radio receiver, for limiting the magnitude of directly-conducted interfering current, and of screened aerial leading-in wires for reducing the effects of local interfering radiation.

Application of suitable devices to the plant is preferable in almost all, if not every case. It renders unnecessary the fitting of additional apparatus at listeners' premises and by preventing widespread propagation, it permits of much more satisfactory control of the interference. Furthermore, it provides the only effective means of dealing with some forms of radiated interference.

NOTE.—At this stage a demonstration was given of the interference to a radio receiver from (a) an electric fan, (b) a neon sign, (c) a traffic control signal, (d) a coffee mill, (e) a small commercial motor, (f) a flashing sign, (g) a mercury arc rectifier. In each case suppression of the interference was demonstrated by switching appropriate devices into circuit.

*General Methods of Dealing with Radio Interference in Various Countries.*—Attempts are being made to deal with the problem of electrical interference on an international basis. The C.C.I.R. are dealing with the technical aspects of the question and the International Electro-Technical Commission are considering the question at a conference to be held this year. The Madrid Conference have also included in the Radio Regulation an article on the subject. Denmark and Belgium have introduced legislation on the subject. Other countries have regulations of a local character, as, for example, police regulation in Germany.

*Means Adopted in this Country.*—In this country the Postmaster-General is the statutory authority administering the Wireless Telegraph Acts, and is therefore responsible for licensing. The Post Office assists as far as possible in the elimination of interference from avoidable causes with the full co-operation of the B.B.C.

All complaints of interference, either received direct or via the B.B.C., are investigated by the Post Office Engineering Department and traced to their source.

The number of complaints have now reached the total of about 20,000 per annum.

The Wireless Telegraph Acts do not deal with the difficulty of electrical interference and owners of offending plant can repudiate liability and refuse to co-operate in eliminating interference.

The work so far done has depended on the goodwill of the electrical operating companies and the owners of electrical plant, and in the majority of cases it is recognised that it is in the general interests of the public and goodwill has been obtained.

This is not always the case, and means are now being explored to deal with the problem in a general way, and it is possible that some legislation may be desirable to deal with the difficult case where a demonstrated cure will not be applied and the cost is not onerous.

It is hoped and anticipated that manufacturers and users of electrical apparatus will wholeheartedly co-operate in the problem of avoiding interference. Some of the demonstrations given this evening are an indication as to how far this co-operation has already gone.

## WHO WAS THE FIRST WOMAN TELEGRAPHIST ?

THERE has come to the *T. and T. Journal*, in the most courteous manner possible, what amounts to a friendly challenge as to which country of the International Telegraphic Union holds the earliest record of employing women as telegraphists. A highly-placed official of the Department of Posts and Telegraphs of the Union of South Africa quotes certain notes under "Kingwilliamstown" in one of the South African service papers, wherein a Mrs. MacDonald, the mother of the present postmaster of that town, was claimed as "the first telegraphist at Fort Beaufort in 1865, probably the only woman employee of the old Telegraph Company and perhaps the only woman telegraphist in the world at that time."

In the *Verordnungsblatt der Direktion der Grossherzoglich Badischen Verkehrs-Anstalten*, No. 54, July 27, 1864, page 216, it is recorded that the first three German women who became telegraph learners were as follows, and were allocated thus :—

Caroline Maier to Pforzheim, Leopoldine Trueck to Philippsburg and Lucie Hoppe to Mannheim.

It was also in this same year that women were employed as telegraphists by the Danish, while in Norway there are records showing that women were working telegraph circuits in that country as early as 1858.

From a book published in 1913 by Dr. Oskar Wagner, entitled "Die Frau im Dienste der Reichspost und Telegraphenverwaltung," the following table has been extracted by a very worthy official of the German Post Office.

Dr. Wagner says women telegraphists were first employed in the following countries as hereunder :—

Austria	...	1870	Norway	...	1858
Belgium	...	1879	Portugal	...	1880
Bulgaria	...	1880	Roumania	...	1881
Denmark	...	1864	Russia	...	1865
Hungary	...	1871	Spain	...	1880
Holland	...	1878	Switzerland	...	1869 (? 1854)
Italy (Early seventies)			Sweden	...	1865 (? 1863)

The bracketed figures are dates supplied from other sources which conflict with Dr. Wagner's figures. From France we learn that in 1869 the Bureau International du Télégraphe at Berne was advised by the French administration that 200 small offices were staffed by women or their daughters being relatives of old or disabled servants of the State. It was not, however, until 1877 that women were admitted to the Paris Central Office as working telegraphists. Soon afterwards, however, the arrangement was extended to all the large provincial telegraph offices. To the above list may also be added Finland, 1864.

Finally we come to our own country, where, not without considerable research, it has been proved that Miss M. Craig, in February, 1853, was the first woman telegraphist and was appointed as such by the Electric and International Telegraph Company. Miss Saul followed in the service of the same organisation in October of the same year, Miss S. Hayward, December, 1853, and Miss M. Greer in March, 1854. Miss Craig became Matron in 1860, and was subsequently succeeded by Miss H. Saul, who was then Headmistress of the Telegraph School in Cannon Street, London. All were transferred to the British Post Office in 1870 when the State took over the whole of the inland telegraph lines.

The writer is greatly indebted to Herr Kunert, of the German Post Office, Monsieur E. Montoriol, now retired from the French Service, and Mr. C. S. Keen, formerly of the C.T.O., London, for valuable information, without which this interesting piece of telegraph history could not have been written. It should also be mentioned that the editor of *The Illustrated London News* very kindly placed the early files of their well-known weekly at my disposal, but by a curious coincidence the particular information came to hand through another and unexpected channel.

J. J. T.

## LONG DISTANCE TELEPHONY.

### NEW BRITISH OVERSEAS EXCHANGE—(contd.).

By J. F. DARBY (*Headquarters Traffic Section*).

The tariff charges in respect of extra-European services and the apportionment of such charges amongst the various administrations concerned have been arranged somewhat on the same lines as for Anglo-Continental services.

The areas at each end served by extra-European services are arranged in zones, the 1st zone, where more than one is involved, being that in which the radio telephone channel tête-de-ligne is situated. The 1st European zone for such services radiating from London embraces England, Scotland, and Wales. The 2nd zone covers Belgium, France, Holland, Irish Free State, Isle of Man, Luxemburg, and Northern Ireland; the 3rd zone covers Austria, Czecho-Slovakia, Danzig, Denmark, Germany, and Switzerland.

The United States of America and Canada are each divided into 5 charge zones; Australia, Egypt, and South Africa, on the other hand, each comprise one zone.

The tariff in respect of extra-European calls is based on the charge levied in respect of a unit (3 minutes) call between the 1st zones of the two countries, &c. concerned. For the direct services with Great Britain, the basic charge is £6 except in the cases of the Egyptian service for which the charge is £3 12s. 0d., and Ships at sea for which £1 16s. 0d. is applicable for ships within 500 miles of Lands End and £3 12s. 0d. for ships beyond this area.

In cases where an extra-European call becomes ineffective due to reasons unconnected with the telephone service—such as the “called” subscriber not being available—a *report charge* (in most cases 12s. for direct services) is levied. This charge is analogous to the *personal call* fee in the inland trunk service except that no report charge is applicable in the case of an *effective* extra-European call.

The rendering of international accounts in respect of the apportionment of charges for extra-European calls is somewhat different from the arrangement for Continental services. For Continental services, an administration sends to each of the other administrations concerned an account in respect of all *incoming* calls received by the former administration. In the case of extra-European services, an administration sends to each other administration concerned an account showing the amount due to the latter in respect of *outgoing* calls from the former administration.

Before describing the equipment provided in the switchroom for the setting-up of radio connexions, it is proposed to mention briefly the developments which have led up to the present system of world-wide telephony and to touch upon the technical features involved.

As far back as 1915 actual speech was transmitted from Washington to Paris and also to the Hawaiian Islands. The difficulties encountered at the outset in the commercial application of radio-telephony were very considerable, one of the chief problems being the provision of a sufficiently powerful modulated output. The developments which have taken place in connexion with thermionic valves have played an extremely important part in meeting these difficulties. The problem of associating a radio circuit with the public telephone system had also to be solved in a manner which would not involve a subscriber in any procedure not included in normal telephone practice.

In July, 1920, a radio channel was brought into service between Avalon and Los Angeles linking the public telephone system of the Island of Catalina with that of North America. Later in that year successful telephony was established between the North American system and ships in the Atlantic off the American coast; and about the same time a similar link was provided between Copenhagen and Bornholm in the Baltic.

The radio channel provided between New York and London in 1927 was, however, the first link of the inter-continental class, leading the way to world-wide telephony as the first submarine cable (Dover—Calais) laid in 1891 was the fore-runner in the development of shorter telephone services across the seas.

As regards the complete “make up” of a radio circuit, the arrangements involved are most highly complicated, technical and elaborate. They follow in outline, the principles employed in long-distance telephony over physical circuits and in addition include devices and apparatus peculiar to radio itself. The radio channel appears on the switchboard of the Overseas exchange as a two-wire circuit to which can be connected any other telephone circuit terminated on a two-wire basis.

From the switchroom the two-wire circuit goes to a *radio terminal equipment* housed in the *Radio-Terminal* room adjacent to the switchroom. The terminal equipment consists of a balancing network (known as the *Hybrid*), similar in principle to the 2-wire—4-wire fork on physical circuits, and amplifiers (repeaters). From the hybrid the circuit is on a 4-wire basis—one pair of wires for the “go” side and one for the “return.” Also associated with the circuit at the radio terminal is a device known as a *singing suppressor* (corresponding to the echo suppressor on physical circuits) which normally keeps the “return” line open and blocks the “go” line by biasing the amplifiers. When, however, speech passes through the hybrid to the “go” line, the “go” line circuit is opened and the “return” line blocked. This apparatus is operated automatically by the voice of the speaker and is provided to avoid the possibility of outgoing speech passing back along the incoming channel and causing oscillation or “singing.”

The amplification at the Radio Terminal is controlled by a Technical Operator who is in a position to make good, from moment to moment, losses in signal strength due to weak speaking, land lines, &c.—the use of cord circuit repeaters in the London overseas exchange on radio connexions is thus obviated. The 4-wire circuit from the radio terminal proceeds on the two separate paths (high grade trunk circuits) indicated above, one to a *Radio Transmitter* and the other to a *Radio Receiver*. These two equipments, situated many miles from the radio terminal, can be regarded in the *role* of two huge repeater stations taking the place of the numerous regularly spaced repeater stations on a long physical circuit.

In place of the long-distance physical circuit itself, the ether is used as the transmitting medium for the speech circuits and, instead of providing copper conductors from one point to another as requirements dictate, the radio channels have to be obtained by the utilisation of various wavelengths of the radio spectrum, with margins to cover speech bands and to avoid interference between channels.

The problem of the allocation of wavelengths is one of complexity and difficulty because, apart from technical considerations as to suitability for the service required, the demand from all classes of interests all over the world, is overwhelming. The requirements for broadcasting, naval and military services, aircraft, ships at sea and commerce of the various nations have to be met out of a common medium, and, from time to time, international conferences are arranged to regulate the matter. The last world conference was held in Madrid in 1932.

In actual practice, only certain bands of wavelengths are suitable for long-distance telephony, viz., *long waves* 3,000—20,000 metres (100—15 kilocycles) and *short waves* 13 to 50 metres (23,000—6,000 kilocycles).

As regards the former, owing to the relatively small frequency band embraced and appropriations for other radio interests, also for technical reasons such as vulnerability to atmospherics and the heavy power and expensive apparatus required, the development of long-wave radio telephony, to any great extent, is unlikely.

The short-wave band provides more scope for development owing to the broader band of frequencies covered. One characteristic of short-wave working—the *skip effect*—results in only certain wavelengths being suitable for working between any two points, and these wavelengths vary according to the time of day and season of the year. In consequence it is common practice to allot three or more different wavelengths for the operation of one short-wave channel. On the other hand, owing to the skip effect and to the directiveness which can be obtained with short waves, there are possibilities of working two or more channels on the same wavelength over different parts of the world. In the radio system working from Great Britain, one channel (the original London—New York circuit) is worked on long waves (5,000 metres): the remainder are short wave.

Reverting to the subject of the plant involved, the transmitters and receivers are directly associated with *aerial* systems and one of the many problems of the Post Office Engineer has been to design systems to give the highest degree of directiveness compatible with low cost.



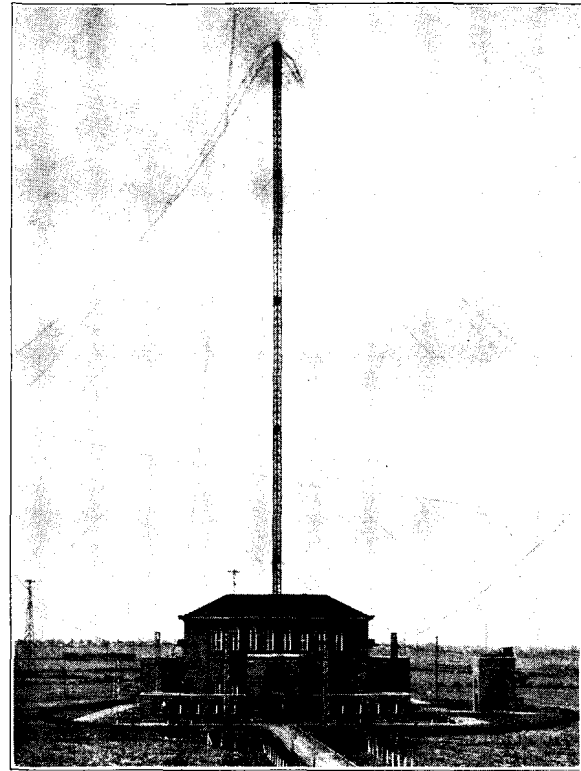
“GREAT CIRCLE” MAP OF THE WORLD, GIVING TRUE DIRECTION AND DISTANCES FROM ENGLAND.

It is not easy for the layman to visualise the direction which radio signals take in their course from England to the various centres of the world and, in this connexion, the accompanying *Great Circle* map of the world, giving true direction and distances from England, may be of interest. It is not perhaps generally realised that the direct path to New Zealand passes almost over the North Pole or that the direct line to Japan crosses Scandinavia.

The transmitting and receiving systems are spaced far apart in order to avoid interaction between sending and receiving channels—all the transmitters are accommodated on a site of some 900 acres in the vicinity of Rugby, and, with the exception of the main and one reserve receiver associated with the long-wave channel and one reserve short-wave receiver, all receivers are

situated at Baldock in Hertfordshire. The main long-wave receiver and the reserve long- and short-wave receivers mentioned above are at Cupar in Fifeshire.

The Rugby Radio station comprises the largest collection of radio equipment in the world, and the aerial system for the long-wave transmitter (for operation from London to New York) is supported on 4 of 12 insulated steel masts 820 feet high. The long-wave receiving system at Cupar consists of a series of 8 units



RUGBY RADIO STATION.

each comprising a large frame aerial of 4 turns in the form of a rectangle 90 feet high and 600 feet long combined with a vertical aerial, the whole unit being carried on two 130 ft. steel towers. The whole antenna system extends over an area 6 miles long and 1 mile wide.

The aerial systems for short waves are less elaborate and costly; they consist of networks of wires carried by self-supporting lattice towers about 120 feet high. Each aerial system or array is designed for working to a definite direction and on a definite wavelength and three or more different arrays may be assigned for one particular radio channel. Facilities are available to admit of a rapid change over from one array to another.

Mention should perhaps be made of a feature in radio telephony which is absent in the case of telephony over physical circuits, that is the necessity of preventing radio eavesdroppers from “listening in” to subscribers’ conversations. Radio Engineers have devised means by which the radio signals are “inverted” or “scrambled” so as to be unintelligible when received on ordinary broadcast receivers but, by means of converting devices at the Radio Terminal they are restored to their original characteristics.

(To be concluded.)

[Readers are asked to correct two errors in the print of the previous article (May 1933). In line 1 of paragraph 4, the word “European” should read “extra-European” and in line 13 of the 4th paragraph from the end, the words “noise” and “speech” should be reversed.]

## TELEGRAPHIC MEMORABILIA.

WITHOUT ostentation, in the first week of last month, there was opened a new laboratory at 30, Chesterford Gardens, Hampstead, London. Formerly situated in the basement of King's College in the noisy Strand of the metropolis, thanks to the Sir Halley Stewart Trust Benefaction, the removal to an electrically-quiet locality, the lease of the premises, "together with a substantial yearly grant towards the maintenance of the laboratory" have made more easily possible researches in the physical sciences and, "in particular the prosecution of Professor A. V. Appleton's investigation of the electrical properties of the upper atmosphere in relation to short-wave radio transmission and reception."

There is an apology due to readers of these columns as regards our last issue of the *T. and T. Journal*. Owing to eleventh-hour pressure several items had to be withdrawn at the last moment, and those readers who may have been disappointed at the non-appearance of certain personal references in the May number will, without doubt, charitably pardon these quite unavoidable delays. Those not fully conversant with the production of a monthly issue are at times quite unable to understand why such conditions should arise, exclaiming "Well you have a whole month to set up your paper!" To which the reply of the present writer is the very simple one of, "There is also a whole month in which things can happen, and with a monthly issue happenings do not always happen to suit the convenience of the editor any more than in the case of the smartest daily newspaper."

*Promotion.*—The caution of "When all men speak well of thee, Beware!" does not apply to Col. A. A. Jayne. Whether his advancement was made in Civil or Military service, always the decision has been unchallenged, unquestionable, while his transfer to Birmingham as Postmaster Surveyor of that city, is but the loss of Leeds!

*Personal.—Golden Weddings.*—Congratulations the most sincere to Mr. and Mrs. Alfred Bathurst on the celebration of their wedding in April, 1883. Alfred, it will be recalled was Superintendent C.T.O. who retired in 1920, and Mrs. Bathurst will be remembered by old friends of the nineteenth century as Miss Bullen. It is interesting to learn that they were feted by the Cambridge Bowling fraternity on the happy occasion.

The *Willesden Chronicle* heads half a column on the Golden Wedding of Mr. and Mrs. Robert Young, with a photograph of the happy pair, in which "Bob" looks as happy as ever, while the bouquet of flowers which Mrs. "Robert" holds will probably carry her back to the happy event in Wimbledon Parish Church on May 5, 1883. Congratulations then to this former Assistant Controller of the C.T.O. and his faithful partner, whose care for her spouse is as ever evident.

It is not generally known that Mr. C. A. Baker, the Senior Electrical Inspector of the London County Council, and who has recently retired from that service after more than a quarter of a century, was elected a student of the then Society of Telegraph Engineers in 1898. At a dinner to Mr. Baker on April 6, the Chief Engineer of the London County Council, Mr. T. Pierson Frank, who presided, in the course of responding to a toast, referred to the excellent relationship that existed between the different departments of the Council and with the Post Office, among other organisations.

Mr. R. H. Tree, Chief Clerk of the Institution of Electrical Engineers, is to retire on pension during the present month after forty-six years in its service.

It is announced that Sir Maurice G. Simpson, C.S.I., M.I.E.E., has been elected as a director of Messrs. W. T. Henley's Telegraph Works Co., Ltd. Sir Maurice entered the Indian Telegraph Department in 1887, and became Electrical Engineer-in-Chief in 1906, retiring from the Indian service in 1914. It was during the regime

of Sir Maurice that the Baudot system of printing *télégraphie* was installed between Calcutta and Allahabad, Simla, Bombay, and Madras.

Mr. G. Shearing, B.Sc., has been nominated chairman of the Wireless section of the Institution of Electrical Engineers for the session 1933-34.

*Obituaries.*—The passing of Mr. W. E. Pearce, formerly Assistant Superintendent C.T.O., who retired early in 1914, in his 80th year, may recall the fact that Mr. Pearce was originally in the Admiralty Telegraphs at Plymouth in 1868, until 1874, when he was transferred to the Devonport Post Office. Ten years afterwards he came to the C.T.O. London. In 1894 he was placed on the Testing Staff and finally in 1899 reached the then rank of Assistant Superintendent 1st Class.

The death of Herr Walter Schaeffer in his fifty-second year is announced from Berlin. As chief engineer of the Reichs-Rundfunk Gesellschaft he took a prominent part in the technical deliberations of the Union Internationale de Radiodiffusion, and was well-known for the work done in radio engineering and high-frequency technique. A man of great charm and with many technical talents, his death leaves a gap in the communication world not easily replaced.

Strangely enough yet another well-known figure on the Continent has also passed away, and also like Herr Schaeffer, all too soon apparently to have given the world all of which he was capable. Georges Viard, administrateur-directeur générale de la Société Lignes Télégraphiques et Téléphoniques, *Le Relais* informs us, died at the premature age of 45 years. Monsieur Viard was a leading French authority on telegraphy and telephony. He entered the French Thomson-Houston company in 1919 but so quickly did his superior talents make themselves manifest that in 1920 the company released him for la Société Lignes T. and T., in view of the manufacture and carrying out of the French network of long-distance telephones. In 1928 the Algerian Government decided upon the Oran-Alger-Constantine cable, which at once seized the imagination of Viard. In 1930 he was made "chevalier de la Légion d'honneur." Alas, too soon he has left behind his works, his studies, and those students of the Ecole Supérieure d'Électricité he loved so well!

To Mr. A. Tapley, formerly Assistant Controller, Cable Room C.T.O., have gone out very many expressions of sympathy from old telegraph colleagues, at the passing-over of his beloved wife Celia Brown Tapley (*née* Christian), who died peacefully in her sleep on April 9 last. A special Memorial Service was held in the Streatham Congregational Church. The Cable Room was represented by Messrs. Vandermeulen, Broughton and Poffley. There was no doubt but that Mrs. Tapley's health had suffered very considerably of late, due to the shock of two accidents to Mr. Tapley, one in 1926 when he was knocked down by a bus which mounted the pavement and again when in 1930 a motor-lorry similarly treated him.

To Mrs. Alfred Morgan (*née* Mary Hitch) her son and daughters is tendered the sincerest sympathy of the loss they have sustained in the death of their much respected husband and father in the person of Mr. Alfred Morgan, who retired with the rank of Superintendent in the C.T.O. upon reaching the age-limit in 1911.

*Countries.*—ARGENTINA.—It is understood that "Test" transmissions of the "Radio Excelsior" broadcasting station at Buenos Aires have been received at Chelmsford, Essex. The wavelength of the station, says the *Electrical Review*, is 361 metres, and the power 20 kw. (unmodulated aerial carrier energy). The programme was clearly heard, says the same authority, "particularly before sunrise, a frame aerial being used when atmospherics became troublesome and an ordinary 'open' aerial at other times." The transmitter was the design and construction of the Marconi works, Chelmsford, to replace a low-power installation. Low-power modulation, crystal frequency control are among its modern features. It may be recalled that "Radio Excelsior" has one of the highest broadcast aerials in the world. Its *horizontal* member is suspended between two towers at a height of no less than 700 feet.

**AUSTRALIA.**—The Federal Ministry is expected shortly to review the terms of the agreements at present in force between the Commonwealth Government and Amalgamated Wireless (Australia) Ltd., under which overseas radio-telegraph services are conducted.

**CHINA.**—*Wireless and Smuggling!*—The Chinese Government has in hand the establishment of a Customs radio service as a means of rapid communication to assist in the prevention of coastal smuggling, according to the *Electrical News*.

**DENMARK.**—The Danish Minister of Public Works has decided that a "listening" fee of 10 kr. (nine shillings) is to be paid for the financial year April 1 to Mar. 31, 1934. A fee is also to be paid for receiving sets which are let out on trial or loan, and says *World Radio*, listeners avoiding or attempting to avoid payment are liable to a minimum fine of 40 kr. In certain cases, adds our contemporary, "the receiving sets of the culprits will be confiscated."

**FRANCE.**—An article of the Finance Bill recently put into force authorises the following taxation. Crystal receiving sets 15 fr., private valve sets 50 fr., valve sets used in public 100 fr., and valve sets used in places where the public is admitted by payment 200 fr. Valves are to be taxed at 15% on their sale price. The comforting features, however, are that "The Minister of P. and T. has given *formal assurance* that the revenue derived from this new taxation will be devoted entirely to the improvement of broadcasting and the suppression of electrical interference therewith." The following cryptic announcement has also been made from the same quarter, that "a new statute governing the general conditions of broadcasting would be drawn up in the near future." Our French friends are wondering whether the new statute will in any way modify the benefits thus assured!

**GREAT BRITAIN.**—*The First Television Revue.*—The first Television Revue was broadcast by the British Broadcasting Corporation on April 22 last and was entitled "Looking In." A correspondent of the London *Daily Telegraph* who was present at the demonstration, while admitting the remarkable technical progress which has been made in transmission, cannot say as much for reception and maintains that so far "stage performances cannot yet be regarded as an ideal subject for television," and sums up the matter by stating that "The most satisfactory numbers were those in which the artists stood still right in front of the televisor," and adds, "The spectacular aspect of the ordinary stage revue cannot be transmitted at all."

**Dorchester.**—*Aerials and Chimney-pots!*—The Dorchester Corporation Housing Committee has reported that some tenants have attached wireless aerials to the chimney pots of their premises and have not removed them in spite of several requests by the borough surveyor. The latter has now been instructed to give 48 hours' notice, says a local correspondent, to the culprits to the effect that unless the aerials are removed, the Council will itself remove the wires and charge the tenants with the expenses incurred, and there, dear reader, for the present we must leave them!

**Nottingham.**—The Postmaster-General speaking at the Chamber of Commerce here recently, made mention of the loss of £800,000 on the Telegraph Service, and a profit of £500,000 on the Telephone service in the financial year recently ended. It is, however, just a little heartening to note that in the latter months of the same financial year the rate of decline of telegraph revenue had slowed down. Actually in January and February the public Inland Telegraph Service showed an increase. Telephone revenue also showed an increase concerning which the Postmaster-General is reported to have said, "while not so large as he had hoped, was not unsatisfactory." *Manchester.*—The Marconi station erected for the British Air Ministry at the Manchester Air Port came into operation on the first of last month. This is the first fully-equipped wireless station to be erected in a municipal air port in Great Britain, so this writer has been given to understand. It will provide the following services:—Ground-and-air communication by telephone or telegraph, meteorological broadcasts, wireless direction-finding, and inter-aerodrome communication. It has sufficient

power and range to keep in touch with aircraft making the Irish Sea crossing either to Belfast or Dublin.

*Air-Taxis and Wireless.*—From Manchester also comes the information that the first air-taxi operated by Airwork Ltd., from Barton Moss is to be equipped with a new type of Marconi light-weight apparatus which will enable the pilot to keep in touch with the new wireless station at the air-port, or with other ground stations in Great Britain and the Continent when long-distance flights are undertaken. An ingenious device in this equipment is that the transmitter and receiver are in a single instrument box of small dimensions, and obtains its power from a wind-driven generator. The latter is mounted in the slipstream from the propeller of the aircraft! This same generator can be used if required to supply current for the general lighting of the machine.

*Watchet.*—The new West Regional station of the B.B.C. at Washford Cross, near Minehead, commenced transmission tests on April 20. The wavelength anticipated to be used will probably be that of the old Cardiff station, says the *Electrical Review*, i.e. 309.9 metres. Later the Watchet National transmitter will be synchronised with the London National transmitter on the 261.6 metres wavelength.

**INDIA.**—The report of the Indian Posts and Telegraphs Department for the year 1931-32 to hand is as usual very interesting. At the close of this official year the Department was maintaining 106,000 miles of "line," which actually means in this case nearly five times the length of actual wire, or to be specific 498,700 miles. In addition there are 1,200 miles of cable carrying 84,000 miles of conductors. Well over eighteen millions of Inland and Foreign telegrams were dealt with, representing a revenue of Rupees 2.02 lakhs, but which revenue was far exceeded by that of the Telephone.

Points of interest in the report are:—The triple communication routes between India and Burma. (1) A land line round the coast of the Bay of Bengal; (2) a land line through Assam; and (3) a high-speed wireless Wheatstone circuit between Madras and Rangoon. The Andaman Islands, formerly without any regular communication of this kind, are now in constant touch by wireless connexions. It may be of special interest to the Home Telegraph Service to learn that "except," says the report, "in the case of the Madras Rangoon wireless link," mentioned above, "all high-speed telegraph work is dealt with by the Baudot system." This system, it may be mentioned, was introduced into India just over a quarter of a century ago!

**IRISH FREE STATE.**—We are informed that the 2.5-kw. Dublin broadcasting station is to be re-opened, and that a wavelength between 200 and 230 metres is to be used. It may be recalled by some of our readers that the old wave-length of 413 metres is now in use by the Athlone transmitter. As a point of interest it may also be mentioned that there are "about three thousand crystal-set listeners in the neighbourhood of Dublin and Cork."

**JAPAN.**—The *Daily Telegraph* informs us that "the largest wireless station in the Orient is to be built at Kurume City," such is the decision of the Japanese Government. It is to have a power of 100 kilowatts. The cost is estimated at £100,000.

**NORTHERN IRELAND.**—The *Electrical Review* states that the B.B.C. is seeking a suitable site on which to erect a new broadcasting station. Special attention has apparently been given to the Craigartlet locality, about five miles from the city, an elevated position in the Castlereagh range of hills to the north-east of Belfast.

**SPAIN.**—Reuter's Madrid agency states that a new 100 kw. radio station costing £100,000 is to be erected shortly in Madrid, according to an announcement by the Spanish Home Office. The existing station is run by a private concern but the new one will be entirely under State control. Income from licences will go to defray the cost.

**SWEDEN.**—The number of broadcast wireless receiving licences in force at the end of March of this present year was 632,840. This, according to a Reuter's Trade Service communication from Stockholm, represents 102.7 per thousand of the population.

U.S.A.—*Television*.—After reading quite a number of paragraphs on the advance made in the art of Television, it is refreshing to read the following very candid expression of opinion in the Annual Report of the Radio Corporation of America for 1932. Among research and developments, mention is made of Television thus:—"The Radio Corporation adheres to the conviction that the introduction of purely experimental equipment of mere novelty interest would not provide a satisfactory source of general entertainment on the basis of a regular service to the public. *Television of a nature that will permit entertainment and broadcasting on a national scale, still presents unsolved problems.*" The italics are the present writer's. "Television transmission," continues the report, "at the present stage of development seems most practical on ultra-short waves and these are being constantly experimented with."

*Price only!*—"There is hardly anything in the world that some man cannot make a little worse and sell at a little cheaper and the people who consider price only are surely this man's lawful prey!"—JOHN RUSKIN. J. J. T.

### BRIGHTON DISTRICT NOTES.

*Sales Representatives' Dinner*.—The Sales Representatives of the Brighton District held their third annual dinner, at Booth's Restaurant, East Street, Brighton, on Friday, April 28, following an official conference held during the day at Brighton. The company totalled 45 and included the following guests: Messrs. Randall Bell (the Surveyor), G. H. Taylor (Controller of Sales and Publicity), A. K. Murray (Assistant Controller of Sales and Publicity), G. Edward (District Manager), E. Brown (Sales Manager), R. Williamson (Traffic Superintendent), W. R. Kelly (Chief Clerk).

Mr. A. G. Matthews (Sales Supervisor), Brighton, presided.

Mr. Taylor, replying to the toast of the of the Publicity Department, spoke of the help the Publicity Department were now giving, and were always ready to give. Everything was being done to make the "approach" to potential subscribers easier. Very wide and interesting advertising schemes had been devised. The Sales Representatives, however, were the spearhead of the attack, and it was theirs to achieve success in the obtaining of the actual order. He urged Sales Representatives to make every effort to increase their return of new business.

Mr. Murray spoke enthusiastically of the deeply engrossing and interesting nature of the sales and publicity work. The machine, of which we all were a part, was colossal and the capital involved stupendous. Our work and efforts provided employment for others. The Sales Representatives were showing unbounded enthusiasm throughout the country.

Mr. Cook (Sales Supervisor), Tunbridge Wells, Vice-Chairman, proposed the toast "Our Guests" in his usual admirable style, paying tribute to their many likeable qualities.

Mr. Randall Bell (the Surveyor), in responding, spoke of the pleasure at the opportunity afforded of being present. He emphasised the excellence of the service which it is our pleasure to sell. It was this knowledge which gave us such enthusiasm for our work.

After speeches by Messrs. Brown (Sales Manager), W. R. Kelly (Chief Clerk) and R. Williamson (Traffic Superintendent), Mr. H. Hine (Clerical Officer), Brighton, proposed the toast "The Sales Supervisors and Sales Representatives." He spoke of the friendly feeling between the inside and outside staff. That relationship had always existed and would, he knew, continue to exist.

Messrs. A. G. Matthews (Sales Supervisor), Brighton, and W. C. Murphy (Sales Representative), Brighton, responded.

Mr. H. K. Young (Sales Representative), Tunbridge Wells, proposed "The Committee."

Mr. J. H. James (Sales Representative), Brighton, Secretary to the Dinner Committee, in replying on behalf of the Committee, expressed thanks to the company for their response and support.

It was abundantly evident that the Sales Representatives showed enthusiasm and initiative and the team spirit was uppermost in our social activities as well as in our daily contacts with the subscribers to the great service to which we have the honour to belong.

Mr. Brassington (Sales Representative), Uckfield, proposed a vote of thanks to the "Artistes."

Messrs. A. K. Murray, H. E. Luetchford, W. C. Murphy, J. Tice, H. Ansell, J. P. Batts and H. K. Young contributed to the entertainment.

Mr. Victor Courteney the popular entertainer, was again present and kept the company in happy and enjoyable mood with capital items from his wide repertoire.

Mr. McVitty, as announcer, kept things going with a swing, and a really jolly and enjoyable evening concluded with the singing of "Auld Lang Syne."



ANGLO-PORTUGUESE TELEPHONE COMPANY'S BALL. THE COMMITTEE.

### BALL OF THE ANGLO-PORTUGUESE TELEPHONE COMPANY.

This annual function took place at the Navy League Ballroom at Lisbon on Mar. 18. Its success may be gauged by the fact that over 600 people were present and the issue of tickets had to be



FRONT PAGE OF INVITATION CARD.

suspended three days prior to the dance. We publish a photograph of the Ball Committee (which included Mr. W. G. T. Pope and Mr. W. A. Loweth) and a reproduction of the ingenious sketch which adorned the invitation cards.



# SIEMENS No. 17 AUTOMATIC SYSTEM.

APPLICATION TO DIRECTOR AREAS.

By C. W. GERRARD.

The Siemens No. 17 Automatic System is characterised by the employment of a specially constructed high-speed switch. New principles have been introduced into the design of the system which make it particularly attractive from a traffic point of view.

The purpose of the present paper is to offer a general description of the significant features of design, with special reference to the traffic facilities afforded.

The switch, which forms the basis of the new system, is a specially developed motor uniselector capable of operation at the rate of 200 steps per second (or faster if desired).

In all existing systems, particularly in the case of non-director schemes, there are limitations due to restricted operating speed of selector equipment. The drive is normally provided by a ratchet and pawl arrangement and the practical speed limit so far attained with this type of movement is approximately 60 to 70 steps per second. The inter-digital period is approximately 420 milli-seconds and, after deducting a certain time to cover relay operation the effective period for search operation between digits is approximately 265 milli-seconds. It therefore follows that with a speed of search of 60 to 70 per second only, the scope of search for outlets to succeeding stages is restricted to approximately 15 steps. Various artifices have been employed in different systems to overcome this restriction but previously it has not been possible to attain the desired flexibility.

The new Siemens switch is a 50-point uniselector with a split wiper arrangement and 4 separate sections. This assembly comprises, in effect, a 200-outlet switch. Its construction and method of operation are new and novel.

The driving mechanism consists of a small electric motor. Revolving between its pole pieces is a rotor on the spindle of which is attached a small toothed wheel. This engages with a larger driving wheel attached to the wiper shaft. A latch engages with the outer teeth of the latter.

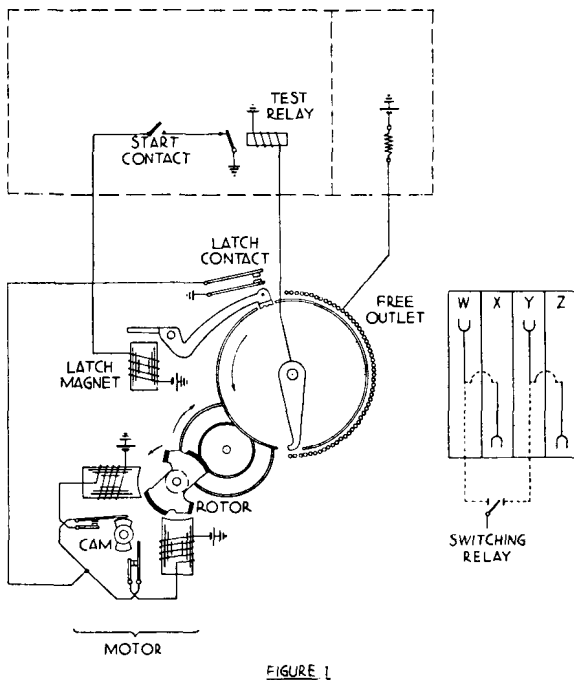


FIGURE 1

Fig. 1 shows the electrical connexions of the uniselector. Figs. 2-6 show the rotor in various positions relative to its operating magnets. The rotor action may be described briefly as follows:—

Assume that the rotor is in the position shown in Fig. 2. Magnet 1 will be in circuit and torque on armature main pole 3 will rotate the rotor in a clockwise direction. When pole 3 reaches the position shown in Fig. 3, and only axial pull would be exerted, the change-over springs operate and magnet 2 is brought into circuit. At this point auxiliary pole 4 is attracted by magnet 2, thus maintaining a clockwise driving torque. Similar action can be traced in the remaining figures and by the alternate energisation of the magnets a clockwise drive is maintained.

The driving action is as follows:—

When a switch is operated the motor is switched on and the latch released. The switch now rotates at a constant velocity to test for a free outlet. When this is found a testing relay operates which releases the latch, arrests the drive and disconnects the motor. It will be seen, therefore, that there is only one start and one stop condition in any hunting operation. With a ratchet and pawl drive there is one start and one stop operation at each step of the switch and this essential difference explains why such greater speeds are possible with the new system of drive.

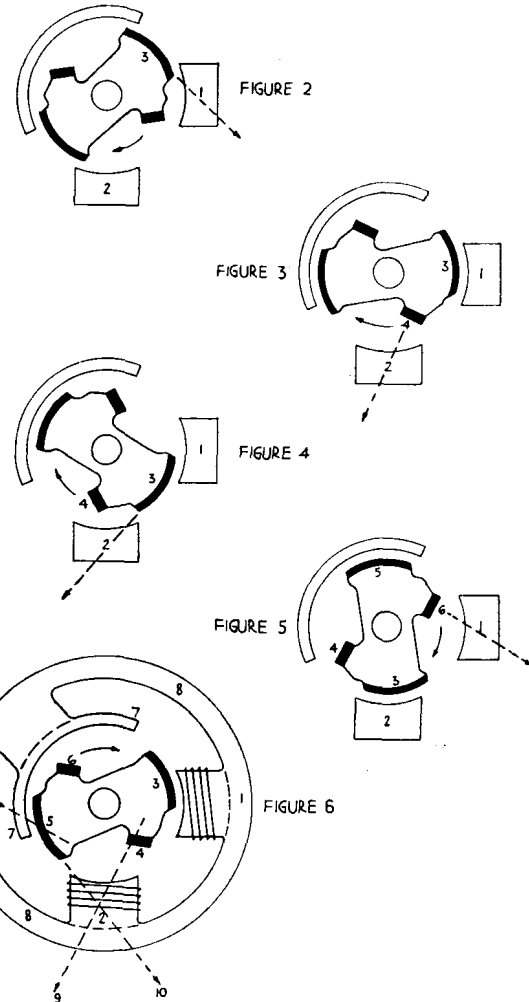


FIGURE 6

The rotation of the rotor is at the rate of 3,000 revolutions per minute. The gearing is such that the wipers take 4 steps during each revolution of the rotor so that the rate of stepping is 12,000 per minute, or 200 per second. The whole bank can therefore be tested in a  $\frac{1}{4}$ -second, which means that all contacts in any one of the 4 sections (i.e., 50) may be tested between the dialling of successive digits. In order to ensure that ample margin is provided for arresting the switch on any desired contact a special testing relay had to be constructed. The time allowed for stopping is no more than 5 milli-seconds and during this period the testing relay is required to operate and the latch to release. The new testing relay has an operational time of  $\frac{1}{2}$  milli-second. The latch can be released in 2.5 milli-seconds, so that it will be seen that an adequate margin is provided.

You will observe from the title that the scope of this paper is limited to the operation of a director system. In the succeeding paragraphs I hope to show how numerous and important are the advantages to be gained in the application of the new system to director areas. In passing, however, I would like to say that all the advantages apply similarly to non-director systems, possibly with even greater force since in the non-director case all switching operations are directly under the control of the subscriber's dial and search operations are therefore strictly limited to the time represented by the length of the inter-digital pause. In director systems this is not of the same vital importance since switching operations are controlled by the director, and the inter-digital pause may therefore be varied.

The main features of the new system are as follow:—

(1) *Decimal System.*

Although the system so far as the subscriber is concerned is based on the normal 10-digit principle the director is designed to transmit up to 15 impulses, thus making it possible to effect 15 selections at a single switching stage. Material switch savings can thereby be effected.

(2) *Outlet Capacity.*

The system is operated on a 200-outlet basis and the trunking is normally arranged to secure an average availability of 20 outlets per group. Investigation has shown that this arrangement is the most economical generally.

(3) *Flexibility of Outlet Group.*

The choice of a uniselector as a switching medium has certain definite advantages over a 2-motion selector. In the latter case the groups of outlets are mechanically fixed in size, i.e., 10 groups of 10 or 10 groups of 20 as the case may be, and as the working outlets in each group are not necessarily exactly 10 or 20, a proportion of the total available outlets is almost invariably wasted.

In the case of the uniselector regular grouping is unnecessary and groups of varying size can be arranged continuously along its bank. The idea is not new, but with all existing types of uniselectors there are severe limitations. As search within any group has to take place *within the inter-digital pause*, arrangements have to be made for intervening groups to be passed over as impulsing proceeds. This not only requires that groups shall be accommodated in digit numerical order but it also limits the size of particular groups.

The Siemens No. 17 switch has no such limitations on account of the rapidity of its operation.

With this switch 50 outlets (at least) may be tested within the space of an inter-digital pause and in view of the steering facilities between various sections of the bank, any desired arrangement may be made within the limit of capacity of the switch. Grouping need not be carried out in any special numerical sequence. The number of groups at any switching stage may be less or more than 10, according to requirements. No redistribution is necessary when a group has to be increased, circuits being added anywhere in the relative bank section or division.

As an example of its flexibility the case of a uniselector accommodating local and junction groups may be cited. The availability of the former may be restricted if necessary to secure economy in the size of the latter. Or again, if, for example, only a few groups require to be accommodated in any rank, every bank outlet is available for use, whereas with a 2-motion selector whole levels of outlets would need to be left spare. A further advantage lies in the fact that only one "last contact" per are is required, i.e., 4 "last contact" positions for 200 outlets instead of 10 in a 10-level 2-motion selector.

The possibilities opened up by such a high degree of flexibility may be imagined, even at this stage.

(4) *"Pairing Principle."*

This is a new feature. The conditions are such that traffic in respect of two separate groups may be combined and routed over a common group to the next switching stage, the necessary separation being effected at the latter point. The importance of this feature may be seen from the following example. A switch is assumed to have 200 outlets. (The actual economy that could be secured by providing an outlet availability in excess of 20 would in any event not be large and in practice an availability of 20 would in most cases prove to be the most economical.) In all existing systems each group has a separate identity and the maximum number of 20-line groups that could be routed from a 200-outlet switch would obviously be 10. By the system of "pairing" employed in the No. 17 system, however, groups could be combined in pairs so that 20 outlets might be used as a common group for two separate blocks of traffic which in the standard case would require two separate groups of 20 each. This means that although only 10 groups, each of 20 outlets, would still be available on the bank of the 200-outlet switch, these would serve for the routing of 20 "blocks" of traffic instead of 10. Actually complete ranks of switches can be dispensed with by the use of this principle and it may be interesting at this stage to consider its application in particular cases.

*"Pairing" applied to the Final Bank in Siemens No. 17 System.*—In certain existing systems 200-line final selectors are employed, the separate 100's being associated with odd and even levels of preceding 2nd numerals. Connexion to the desired "hundreds" group is determined by the value of the "hundreds" digit, separate paths being associated with the odd and even levels. The path employed for "entering" the final selector thus determines the choice of "hundreds" and the scheme is termed the "path of entry" method. Under such a scheme only 5 groups of final selectors can be associated with any particular rank of 2nd numerals, the latter thereby having access to 1,000 lines.

In Siemens No. 17 equipment, however, by the application of the principle of "pairing," each 2nd numerical group may have access to as many as 2,000 lines. The traffic to each 200-line final group is routed over common outlets and the required "hundreds" group is selected by means of a differentiating signal transmitted to the final selector from the 2nd numerical. It has already been shown that 20 "paired" groups—forming 10 common groups—may be accommodated on the banks of a 200-outlet switch whilst preserving an average availability of 20 per common group. In this case, therefore, there would be 10 such groups and since each group is associated with 200-line final selectors access to 2,000 lines is secured.

An alternative arrangement to the foregoing is, of course, possible, 100-outlet 2nd numerals may be used in place of 200-outlet switches in which case only 5 common groups would need to be provided to serve 1,000 subscribers.

(5) *"Pairing" applied to Second Numerals.*

It will be appreciated that if a 2nd numerical selector group is to have access to 2,000 lines it will be necessary to employ some discriminating scheme so that alternative "1,000" groups may be selected as required. The difficulty is solved by applying the principle of "pairing" to the outlets from 1st numerals. In a 10,000-line exchange, therefore, only 5 groups of outlets from 1st numerals will be required, each group carrying the traffic proper to 2,000 lines. A differentiating signal is passed forward from the 1st numerical to effect the necessary separation into the respective "1,000" groups at the 2nd numerical stage. Since only 5 "common" groups are required from 1st numerals these switches are of the 100-outlet type.

At this stage it may be interesting to consider the proposed arrangements so far as numerical and final switches are concerned for exchanges of varying size.

*Exchanges up to 2,000 lines.*—The effect of the "pairing" scheme, coupled with the flexibility of outlet grouping renders it possible to dispense with 1st numerals. Pre-finals and finals only are provided. The pre-final accepts both the 1st and 2nd numerical digits. The 1st is employed to effect differentiation as between the alternate "1,000" groups which, in the case of larger schemes employing 1st numerals, would be received by the 2nd numerical over the trunk incoming from the 1st numerical. By the arrangement proposed considerable switch savings are obviously possible.

*Exchanges of 4,000 lines.*—In this case it is again possible, by employing the same trunking principle, to dispense with a considerable portion of switching equipment. 200-outlet 1st numerals would, in this case, be provided. Twenty of these outlets would be used to form a common group extending to one rank of 2nd numerals which would have access to ten groups of 200-line finals, making a total of 2,000 lines.

The remaining 2,000 lines would be served by means of 10 "paired" groups direct from the 1st numerals to 200-line finals, no 2nd numerals being interposed. The availability on these groups would be 18 only, but in view of the reduction in 2nd numerals considerable aggregate savings would be realised.

*Exchanges of 6,000 lines.*—A similar scheme could also be employed for exchanges of this size and with particular advantages if the incoming calling rate were low. In this case two ranks of 2nd numerals would be provided serving 4,000 lines, whilst the remaining 2,000 lines would be served as in the previous case direct from 1st numerals. The outlet groups would now have a reduced availability of 16.

It may be of interest in passing to note that a 5-digit non-director system can similarly be dealt with by providing only three ranks of switches.

These examples should be sufficient to make clear the trunking principles employed which are summarised in the following statement:—

"A selector makes a selection of a group of outlets under the co-ordinated control of the values of the digit which selected it and the digit which it directly receives. The former sets the selector in the direction of all the groups which it represents and the latter causes the selector to choose a group in that particular direction."

(6) *P.B.X. Final Selector.*

The final selector provides for the maximum flexibility as regards numbering arrangements.

The principle of operation is as follows: The tens and units digits are received on common control digit-receiving apparatus which marks the required line or lines on the bank of the final selector. The latter does not operate therefore until both tens and units digits have been received. This admits of a multiple numbering in any order desired. Strict numerical sequence (i.e., 0-99) can be arranged if considered to be desirable.

The arrangements proposed provide for two classes of P.B.X. final selectors only:—

(a) *Small Intermediate (original proposal).*—This switch caters for P.B.X. groups of from 2 to 100 lines. In any group the lines need not have consecutive numbering nor is it necessary that they shall occupy adjacent multiple contacts. There are no restrictions as regards the selection of the Directory number, which may be any number in the bank. Lines of different P.B.X. groups and ordinary lines may be indiscriminately mixed. Arrangements can also be made for working an auxiliary sub-group within a main P.B.X. group—a facility that may be useful when a number of lines requires to be reserved for trunk calls. Such lines could then be operated as a supplementary P.B.X. group. Night service may be given on all lines with the exception of the first.

Two schemes are possible with this type of final selector—it can accommodate numbers within the numbering range only or, alternatively, a 200-line final may comprise 100 ordinary and 100 auxiliary numbers. The latter scheme was devised having in mind the possibility of increasing the numbering capacity by allotting auxiliary numbers in respect of P.B.X. lines other than those used for Directory purposes.

In practice this scheme is likely to have limited application in view of the unrestricted night service facilities that P.B.X. subscribers at present enjoy. In certain cases, however, the scheme would probably be advantageous, e.g., where the bulk of a P.B.X. group in a manual exchange is operated on

a "Hospital" basis, number changes could probably be avoided when the exchange was converted to automatic working by the use of the auxiliary P.B.X. scheme.

*Small Intermediate (latest proposal).*—A less costly final selector circuit has recently been developed which, although having certain limitations, would appear to meet the majority of cases and might therefore reasonably be made the standard circuit. The facilities provided are as follow:—

The selector accommodates two 100-line groups of regular multiple numbers—one group being in the WX division and the other group in the YZ division. For single lines the regular facilities are provided and any line may be a single line. Any line may also be the directory number of a P.B.X. group. Night service is available on any line other than a P.B.X. directory number. The lines of a P.B.X. group need not be consecutive and they may be indiscriminately mixed with single lines or other P.B.X. lines.

Each 100-line group may accommodate any variety of groups from 50 groups of 2 lines to 1 group of 51 + 49 ordinary lines, although for certain reasons it is not expected that the circuit will, in practice, be used for groups exceeding about 20 lines.

The following restrictions operate:—

Auxiliary lines in the WX division must be located in the X section and similarly those in the YZ division must be located in the Z section with the exception that the directory numbers may be in any of the four sections as desired. This means that the auxiliary lines of any group having its directory number in the W or Y sections cannot be adjacent to their directory number.

The scheme has certain special advantages in that it is relatively cheap and employs a common control circuit which may be used to serve selectors in more than one F.S. group. It is a selector which is suitable, *without modification* for both ordinary and P.B.X. lines.

(b) *Large Type P.B.X. Final Selector.*—This type will be arranged to deal with P.B.X. groups having up to 200 lines. Separate numbers would require to be allotted for night service. Arrangements could be made to discriminate on the tens or units digit as required.

The important traffic advantages offered by the foregoing will be readily appreciated. With the numbering limitations on existing systems extensive number changes are almost invariably necessary when an exchange is converted from manual to automatic working. In most cases number changes would be avoided altogether under the No. 17 system.

(To be continued).

## BURTON-ON-TRENT.

### THE FIRST PROVINCIAL "BYPATH" AUTOMATIC TELEPHONE EXCHANGE.

THE new automatic telephone exchange was opened at Burton-on-Trent on April 22. The Mayor performed the opening ceremony and made the first call, in the presence of a number of Post Office Engineers, Traffic Officers and officials of the Standard Telephones & Cables, Ltd. He said that the automatic telephone might be simple, but to the lay mind it did not appear so on viewing the elaborate mechanism of the new exchange.

The telephone staff are very pleased to be working under such improved and modern conditions and hope to continue to work amicably with the subscribers, who now include those of Swadlincote and Tutbury.

The installation, which has been designed and equipped by Standard Telephones & Cables Ltd. of Hendon, is the first of its kind in the Provinces, although an Exchange of similar type, equipped by the same firm, has recently been opened at Bethnal Green.

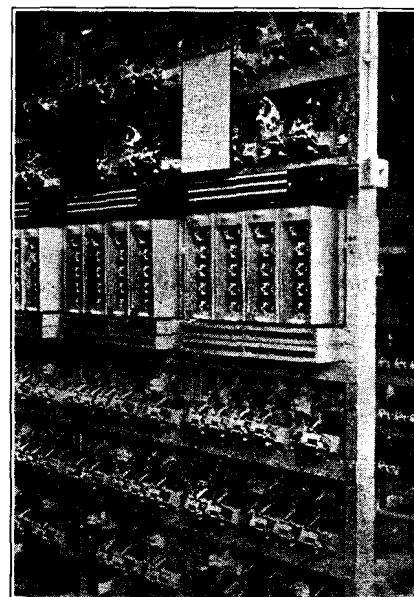
The system is known as the Bypass Automatic Telephone System. The term "Bypass" is descriptive of the operation of the system, in that the circuits fall into two main categories conveniently known as Paths and Bypaths. The Path constitutes the speaking connexions which are engaged throughout a conversation, the Bypass being engaged only for a short period during the setting-up of a call. In the Burton Exchange the proportion of Bypass circuits to speaking circuits is about 10%, and this is sufficient to deal with all calls whilst the connexions are being set up. The system is a distinct departure from the well-known Strowger or Step-by-Step system, in which the switches engaged are held throughout a conversation, and it is hoped that considerable economies will be effected in respect of apparatus, maintenance and floor space, without sacrifice of efficiency. The most prominent feature of the installation is the rotary switch or uni-selector, the bank of which is semi-circular in shape and has a capacity of 51 outlets per level distributed equally round an arc of 180 degrees. This gives 50 outlets and one routine test position when double-ended wipers are used, or 100 outlets and two routine test positions when single-ended wipers are employed. The subscribers are

arranged in groups of 100 with 12 or more finders to each group, according to traffic. When a subscriber lifts his receiver, two of these finders will start to hunt for the calling line, and, when found, extend the call to the next group of switches, returning the dialling tone to the calling subscriber, to indicate that all is in order for him to dial the number required. Simultaneously with the opening of the new system, subscribers in the Burton area desiring to send telegrams, will obtain the Phonogram Room at the Derby H.P.O., by dialling the appropriate number.



SWITCHBOARD AND NEW FORM OF CHAIRS.

The new Burton Automatic Area includes Satellite Exchanges at Swadlincote and Tutbury; subscribers at either of these exchanges are thus enabled to dial direct to other subscribers in the group, without the assistance of the telephonist, as in the case of the present Manual system. The main exchange at Burton has an initial equipment of 1,700 exchange lines with an ultimate capacity of 6,000 lines, whilst those at Swadlincote and Tutbury are equipped for 430 and 100 lines, with an ultimate capacity



SECTION OF BYPATH SWITCHES.

of 1,000 and 400 lines, respectively. The suite of manual positions at Burton is also equipped with dialling-out facilities to Birmingham, Hanley, Leicester, Nottingham, Derby, and a number of smaller exchanges, thus providing for inter-working with other automatic and manual areas. The main battery in the Burton Exchange consists of duplicate sets of accumulators of the Tudor type, with a capacity of 600 ampere hours. These batteries supply energy for all purposes in the exchange, and are charged by means of 19 h.p. motor generators, each set being used alternately.

## PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at April 30, 1933, was 2,142,740, representing a net increase of 5,640 on the total at the end of the previous month.

The growth for the month of April is summarised below:—

Telephone Stations—	London.	Provinces.
Total ... ..	799,845	1,342,895
Net increase ... ..	1,692	3,948
Residence Rate Stations—		
Total ... ..	256,621	338,845
Net increase ... ..	373	1,353
Call Office Stations (including Kiosks)—		
Total ... ..	8,971	30,602
Net increase ... ..	42	115
Kiosks—		
Total ... ..	3,575	11,565
Net increase ... ..	36	120

The total number of inland trunk calls dealt with in February, 1933 (the latest statistics available) was 9,715,924, representing an increase of 114,742, or 1.2% over the total for the corresponding month of the previous year.

International calls in April numbered 94,176 as compared with 101,006 in April, 1932.

Further progress was made during the month of April with the development of the local exchange system. New Exchanges opened included the following:—

LONDON—Euston (automatic);

PROVINCES—Congleton (reconstructed manual); Bedford, Burton-on-Trent, Swadlincote, Tutbury, Sutton Coldfield (all automatic conversion); and the following rural automatic exchanges: Beckley (Hastings), Brent Knoll (Burnham-on-Sea), Eastgate (Bishop Auckland), Fimmere (Buckingham), Harleston (Norwich), Haswell (Sunderland), Holland-on-Sea (Clacton), Langley Park (Durham), Llandrillo (Corwen), Medbourne Green (Market Harborough), Shebbear (Holsworthy), Steeple Bumpstead (Haverhill), Swallow (Grimsby), Thornton-le-Moors (Ellesmere Port), Iynygongl (Bangor), Wembury Bay (Plymouth).

Among the more important Provincial exchanges extended were:—

Bamber Bridge (automatic); Bearsden, Edgbaston, Camberley, Reading (all manual).

During the month the following addition to the main underground system was completed and brought into use:—

Carmarthen—Milford Haven;

while 66 new overhead trunk circuits were completed and 73 additional circuits were provided by means of spare wires in underground cables.

## NEWCASTLE-ON-TYNE NOTES.

*The Great Exodus.*—The retirement of six telephone supervising officers within a few weeks in the Newcastle-on-Tyne District with a total service of approximately 225 years to their credit is probably a unique experience for a provincial telephone district.

These officers are taking advantage of the recent Treasury offer to retire before the normal retirement age and their acceptance has considerably clarified the problem of redundant supervising officers provided by the transfer of large exchanges to automatic working.

The Misses Holt and Amers, Supervisors, and Miss Spraggon, Assistant Supervisor, Class I, spent a very trying last day on duty on April 28 last, and were followed on May 18 by Miss France, Schoolmistress, and Miss Readdie, Assistant Supervisor, Class II—all of Newcastle-on-Tyne.

Miss Alderwick, Assistant Supervisor, Class I, of Sunderland, finished her official career on May 23.

The best wishes of their colleagues of all ranks follow these officers in their retirement, and it is whispered that at not very far future dates these wishes will be crystallised into something much more substantial. Of that, however, more anon.

## "A MURDER HAS BEEN ARRANGED."

THE Stamford Dramatic Society are to be congratulated on their last play, "A Murder has been Arranged." This was undoubtedly their best performance since "The Young Person in Pink," the first play performed by them.

The theme of the play was distinctly tragic—which some thought a pity—but the acting throughout was excellent, and the characters well cast. The play was produced by Mr. S. W. Poole, whom we congratulate heartily. (He appears in the photograph on the extreme left.)



[Photograph by L. G. Cossar.]

(Names left to right.)

S. W. Poole, Dorothy Coleman, Gladys Pond, Helen Robertson, Eva Clarke, Reginald Barrett, Harold Cooper, Lawrence Davies, Olive Rogers.

Olive Rogers was very effective as the sinister Miss Grose, Helen Robertson gave a most entertaining presentation of Mrs. Wragg; and Eva Clarke and Gladys Pond were convincing as Beatrice Jasper and Mrs. Arthur. The men, too, were exceptionally well cast. Mr. Lawrence Davies was very happy, and therefore natural, in the part of Jimmy North, the hero; Reginald Barrett, as Sir Charles Jasper, was excellent both before and after he was murdered (the ghost of the murdered man sits down to dinner—a really horrible incident); and Harold Cooper gave a fine performance, only marred towards the end by a somewhat girlish scream, as Maurice Mullins, the poisoner—a very modern Cesare Borgia. Dorothy Coleman and Frederick Crossley had too little to do, but did that little very well.

In all, an entertaining evening. We look forward with pleasurable anticipation to the Society's next play.

"FRONT ROW."

## CORRESPONDENCE.

### THE TELEPHONE PLAY.

TO THE EDITOR OF "THE TELEGRAPH AND TELEPHONE JOURNAL."

Dear Sir,—Having read the account of the "Telephone Play" in your May issue I feel disposed to agree that the selection of individuals for praise must be an invidious task. May I be permitted to suggest that there are three people whose work received no separate commendation, but whose performances merited such recognition.

Miss I. M. Young, as one of the principal dancers was responsible for an Eastern dance which was surely worthy of mention, whilst Miss Norah Regan and Mr. E. A. Thorogood sang and acted with a verve that marked them as two of the happiest additions to the caste that any play could have.

Forgive my presumption, but as a humble partaker in the show I feel that no report would be complete without some mention of these three "charming people."

Traffic Section, Secretary's Office.

"RACHEL THE ROBOT."

## A BRIEF CHRONOLOGY FOR STUDENTS OF TELEGRAPHS, TELEPHONES AND POSTS.

BY HARRY G. SELLARS.

(Continued from page 141.)

- 1930, Sept. 7 ... Exposition Internationale de Radio held in Bucarest.
- 1930, Sept. 9 ... Motor cycle telegraph messenger service inaugurated at Bournemouth.
- 1930, Sept. 12 ... International Postage Stamp Exhibition held in Berlin.
- 1930, Sept. 22 ... International Juridical Conference on Wireless Telegraphy held in Liège.
- 1930, Sept. 26 ... Head of a film organisation speaking by wireless telephone from New York, addressed a convention held in Sydney, Australia.
- 1930, Oct. 13 ... International Radio Union met in Budapest. Dean and Redgrave introduced a pocket wireless receiving set for police officers weighing 1 lb. 12 oz. and capable of reception over a 100-mile range.
- 1930, Oct. 31 ... Trial of telephone conversation took place on the route Bangkok—Berlin—London—Washington, U.S.A.
- 1930, Nov. 6 ... Longest distance telephone call made on a route from Melbourne by radio to London, radio to New York and landline to Los Angeles, California.
- 1930, Nov. 11 ... Opening of the Indian Round Table Conference by the King in London, broadcast by wireless throughout Denmark, Germany, Holland, Hungary, America, Australia, Canada, India, and New Zealand. Radio communication opened between Germany and Persia.
- 1930, Nov. 16 ... Radio facsimile service opened between Germany and U.S.A. via London.
- 1930, Nov. 18 ... First wireless telephone conversation (apart from experiments) took place between New Zealand Prime Minister in London and his deputy in Wellington, N.Z. 20 closely printed pages of a report of a law suit telegraphed from London to Australia. A telegram handed in with 16,654 different inland addresses.
- 1930, Nov. 19 ... The Pope opened new automatic telephone exchange of the Vatican City. First international exhibition of Air Mail Stamps opened in Paris.
- 1930, Nov. 20 ... Union Internationale de Radiodiffusion met in Paris. Submarine telephone cable laid between Stralsund, Prussia, and Sweden (75 miles) containing 85 circuits.
- 1930, Nov. 25 ... Wireless telephone service opened between Australia and New Zealand. British Postmaster-General rejected suggestion that the administration of the telegraph and the telephone services should be handed over to a public corporation independent of political control.
- 1930, Nov. 29 ... U.S.A. Post Office invited bids for an Air Mail between United States and Europe. Regular radio-telephone service available between Germany and Japan, and a radio-picture service between Germany and Argentine.
- 1930, Dec. 1 ... New York—Prague wireless telegraph service opened. Post Office Advisory Council met.
- 1930, Dec. 12 ... Direct radio-telephonic communication established between Great Britain and Argentina, with extension by landline to Uruguay and Chile. P. T. Farusworth, of California, produced a valve for use in connexion with television. Wireless communication opened between Berlin and Shanghai.
- 1930, Dec. 31 ... Harlan Stetson, astronomer of Ohio University stated that wireless conditions improve and deteriorate in an irregular fifteen-months' cycle and that the moon is a disturber of wireless reception. Western Union Telegraph Company system comprised 1,911,257 miles of wire; 217,458 miles of pole lines; 2,842 miles of underground line. Revenue 133,200,000 dollars. Number of telephones a square mile:—Holland and Belgium, 22; Denmark and Great Britain, 21; Switzerland, 18; Germany, 17; Japan, 7; Austria and United States, 6; France, 5; Sweden, 3; New Zealand and Norway, 1.5.

Total number of British P.O. telephones, 1,961,941. Exchanges 4,700. Call offices, 33,900. 31 automatic telephone exchanges and 177 rural automatic exchanges opened in Great Britain during the year. Inland Trunk Calls made in Great Britain during the year 120,310,006. International calls 1,126,219 (outgoing 542,568, incoming 583,651). Local calls 1,350,000,000. About one complaint received in respect of every 20,000 telephone calls. 150 Telephone Exchanges and 703,500 telephones in the London Area. 668,000,000 London telephone calls dealt with during the year. 14,760,000 two-shilling and 12,320,000 three-shilling books of stamps sold. About 600 stamp vending machines in use in the London Postal Area. 40,000,000 mailbags carried by British railway companies. 47 lost in transit and £500 paid in compensation. 17 persons prosecuted and convicted for mail robberies. About 600 motor omnibuses and trams carrying posting boxes. 41 tons of Air Letter Mails dispatched abroad during the year and 65 tons of Air Parcel Mails—total 106 tons. An increase over 1929 of 20%. Approximately £54,000 spent on telephone research work during the year and over 200 people engaged in research. £2,804,000 held by Post Office in deposits from subscribers. 3,501,007 wireless receiving licences issued in Great Britain. Receipts £1,696,000. Over 2,290,000 Phonograms received at the Central Telegraph Office. Over 1,150,000 delivered by telephone. 1,268,046 miles of overhead telegraph and telephone lines in Great Britain. 7,344,400 miles of underground lines. Total number of staff employed by the Post Office 231,000. Amount deposited in P.O. Savings Bank £290,000,000. Total capital investment of the Post Office £140,000,000. Percentage of profit on the average capital investment, before charging interest on capital, 11.86%; after charging interest on capital, 7.23%.

The following particulars show the amounts handled by the Post Office on behalf of other departments:—

<i>Payments.</i> —1. War Pensions (i.e. payments made on behalf of Ministry of Pensions ... ..		£40,534,000
2. Old Age, Widows' and Orphans' Pensions ... ..		73,793,000
3. Repayments of National Savings Certificates (including £16,885,000 paid as interest) ... ..		53,797,000
		<hr/>
		£168,124,000
 <i>Receipts.</i> —4. Sale of National Savings Certificates ... ..		£50,473,000
5. Sale of Ulster Savings Certificates ... ..		436,000
6. Sale of Health and Pensions Insurance stamps ... ..		45,934,000
7. Sale of Unemployment Insurance stamps ... ..		28,000,000
8. Sale of Inland Revenue Stamps (not including £2,384,597 paid to Inland Revenue Department for postage stamps used for Inland Revenue purposes)		2,796,000
9. Sale of licences: Local Taxation ... ..		1,560,000
Road Fund ... ..		3,078,000
(excluding Wireless Licences £1,812,171).		
10. Sale of Income Tax Stamps		121,000
11. Sale of Entertainment Duty Stamps ... ..		312,000
		<hr/>
		£132,710,000

END

of first Chronology (2634 B.C. to 1930, A.D.).

### ERRATA.

The following amendments should be made in the items which appear under the dates quoted:—

- 1753, Feb. 17 ... Delete "Feb. 17" and read "Feb. 1."  
Delete "Charles Morrison" and read "C.M."
- 1774 ... .. Delete "Lesarges" and read "Le Sage."  
Delete "Morrison" and read "C. M."

1820 ... ..	Delete "Ampere, or Lyons" and read "Ampere, of Lyons."
1860, May ...	Delete "Glamond" and read "Clamond."
1863, May 11...	Delete "Australia" and read "Austria."
1880, July 1 ...	Delete item commencing "J. Poole" and insert it under date 1891, July.
1899, Feb. 12 ...	Delete "Geneva introduced mechanism for," &c., and read "Mechanism introduced at Geneva for," &c.
1917, July 17 ...	Delete "July 17" and read "July 7."
1920, April ...	Delete "Schweningen" and read "Scheveningen."
1920, July ...	Delete item commencing "First criminal" and insert it under date "1910 July."
1930, May 29 ...	Delete "Anglo-Australian" and read "Anglo-Austrian."

HARRY G. SELLARS.

## BIRMINGHAM NOTES.

*Birmingham Automatic Scheme.*—Since the last appearance of the Birmingham Notes in these columns the Birmingham Director Automatic Scheme has been further extended by the transfer of the Shirley, Warstock and Sutton Coldfield Exchanges.

It is generally regarded as tempting providence to attempt an important job on April 1, but in spite of the date the transfer of the 700 subscribers' lines and junctions concerned was a complete success.

The transfer of Sutton Coldfield on April 29 was equally successful, nearly 1,300 lines being connected to the new exchange with a remarkably small number of faults.

Sutton Coldfield and Shirley were both auto-clear magneto exchanges, and so the problem of persuading subscribers to operate their change-over switches at the required time had once more to be faced. The extensive arrangements made, however, including letters to subscribers, press notices and ringing of subscribers shortly before the transfer, had the effect of reducing the number of switches still not operated at the transfer to a satisfactorily small number.

Sutton Coldfield is a large district on the outskirts of the Director area, and in order to assist in the instruction of subscribers and stimulate interest in the automatic system generally, the automatic demonstration set was moved temporarily from Birmingham to the auto exchange at Sutton Coldfield.

Letter invitations to visit the demonstration set were sent to all Sutton Coldfield subscribers, and the total of 460 visitors within a few days was very gratifying.

*District Manager's Office Cricket Club.*—We are hoping to have commenced our cricket activities again by the time these notes appear. This will be the club's third season and we are fortunate in having many good fixtures before us.

*Lecture.*—An extremely interesting lecture on "The Bypass System" was given to the I.P.O.E. in the Lecture Room, Midland Exchange, on April 6. An invitation was extended to the District Manager's staff, many of whom attended. At a later date several members of the Traffic Department were fortunate in being able to pay a visit to the Burton-on-Trent Automatic Exchange to inspect the Bypass equipment. We have to thank the North Midland staff for an extremely enjoyable and instructive visit.

*Demand Scheme.*—The Birmingham Trunk Demand Scheme has been further amplified by the extension of demand facilities to all call offices in the Birmingham demand area with collection of fees by controlling operator at Trunk Exchange. This scheme commenced on May 8.

A further innovation, commencing on May 15, was the collecting of fees for coin box trunk calls by the controlling operator at the Birmingham Trunk Exchange for all controlled calls in the Birmingham zone.

*Police Broadcast Services.*—On May 18 a private teleprinter service was installed for the City of Birmingham Police.

The installation provided teleprinter communication between the police headquarters and the five divisional stations in the city and district. Bothway teleprinter communication between headquarters and each station individually is provided, as well as broadcast service from headquarters to any number or all of the out stations.

One teleprinter re-perforator and one automatic transmitter are also included in the installation. Messages from any of the out stations can be received on the headquarters teleprinter and also on the re-perforator simultaneously. The latter provides a perforated tape which, when passed through the automatic transmitter with any or all out stations in circuit will automatically broadcast the original message to the out stations.

A telex service was also installed on the same date to provide telex communication with other police administrations throughout the country.

*Telex and Teleprinter.*—Good progress is being maintained in the introduction of teleprinter services in the business circles of Birmingham. Telex and teleprinters on Tariff D lines have been introduced by a number of firms and Tariff A circuits are steadily increasing in number.

## LEEDS DISTRICT NOTES.

ON Friday, April 28, a gathering representative of almost all branches of the Post Office, and including a good number of "gallants" from the happy band of retired officers, met at the Guildford Hotel, Leeds, to say farewell to Mr. J. W. Atkinson (Superintending Engineer), N.E. District, on the occasion of his transfer to London as Deputy Superintending Engineer.

After an enjoyable concert, which included songs both old and new, the Chairman, Mr. W. D. Seutt (Sectional Engineer) proposed the toast of the guest of the evening, and in the course of his remarks referred to Mr. Atkinson's untiring activities during his 5 years' sojourn in Leeds. Then followed from numerous speakers expressions of warm appreciation of Mr. Atkinson's personality, of his willingness to help all grades on all occasions, of his highly skilled capabilities, and of his human qualities which were in evidence in his dealings with all grades of the staff. He was aptly described as "one of Nature's Gentlemen." Mr. W. Stewart (Assistant Superintending Engineer) gave tangible expression to the good wishes of the assembly by presenting to Mr. Atkinson a dinner service and a Globe Wernicke book-case subscribed for by members of the Engineering and Clerical staffs throughout the District, and by some of his departmental friends, retired and serving.

Mr. Atkinson, in reply, expressed his thanks for the loyal support and co-operation he had received in all his official undertakings and for the useful gifts. These, he said, would always serve to offer him happy memories of the North East Engineering District and of the many sincere friendships which he had made there.

Congratulations and a hearty welcome to the District are extended to Mr. C. A. Taylor, M.C., the new Superintending Engineer. Mr. Taylor was formerly Assistant Superintending Engineer in the South Eastern District and has thus, for a Scotsman, reversed the usual order of things by travelling North instead of South.

A further step in the complete conversion of the Halifax area to automatic working was taken on April 29, when the Stainland Automatic Exchange was officially declared open by Councillor Sutcliffe Shaw, J.P., Chairman of the Stainland U.D.C., who made the first call by dialling the Mayor of Halifax. After a brief explanation of the working of the system by Mr. Graham (Sectional Engineer) the visitors adjourned to a nearby Hall, where light refreshments were served. Mr. Reid (Head Postmaster), Halifax, who presided at the function, referred in humorous terms to the services which the public now expected from the Post Office, and suggested that although they might reasonably expect to be able to fill their fountain pens with Post Office ink he was sure that they never expected that the Post Office would ever provide them with a cup of tea, as they had done that afternoon. Mr. Murray (District Manager), in the course of his remarks, referred to the spread of the telephone habit and expressed the hope that in spite of the liberal provision which had been made for development, the growth in the number of telephones in the area would cause the Department to extend the exchange beyond the limits for which it was at present designed.

On April 6 a lantern lecture, entitled "The Leeds Automatic System," was given by Mr. R. F. Bradburn (Assistant Traffic Superintendent) to the Science Society of the City of Leeds Secondary School. The lecture was supplemented by a visit to the Leeds Auto Manual and Trunk Exchange, and the keen interest taken in the subject was demonstrated by the number and type of questions asked by the students, most of whom are well used to the telephone.

The lantern slides supplied for the operating school at Leeds have been particularly valuable for outside lectures and have now been used on many occasions.

Mr. C. H. Mansell, Chief Superintendent (Telegraphs), bade farewell to the Leeds staff on May 3, on his retirement after 44 years' service. Mr. and Mrs. Mansell, who entertained the telegraph staff to tea, were the recipients of several beautiful gifts from the telegraph, phonogram and messenger staffs. Mr. Mansell began his Post Office career at Glasgow in 1888, and after serving as a telegraphist and Overseer there was transferred to Plymouth as Telegraph Superintendent. He came to Leeds as Chief Superintendent in 1925 and during his term of office at Leeds has been responsible for carrying out the local arrangements for the new lay-out of the Instrument Room and the change from Morse and Baudot to Teleprinter working.

The Leeds Civil Service Golfing Society held its Spring meeting at Sandmoor on May 8. Over 60 members took part and the battle for the Hobbins Shield—decided by the aggregate of the four best net scores from each Department—was very keen. The winning aggregate of 309 by the P.O. Survey Department, North East District, was a very fine performance. Leeds Post Office were runners-up with 314. The Adams Cup for the best gross score was won by Mr. J. T. Ounsworth (Inland Revenue) after a tie with Mr. T. P. Hobbins (Surveyor, N.E. District), which was decided by re-playing 4 holes. The prizes for the best net scores went to A. Sayers (N.E. Survey Department), with 72 and F. W. Stokes (P.O. Engineering Department), with 73.

WESTERN DISTRICT NOTES.

Making Post Office History in the West: Foundation Stones laid by Telephone.

THE Western District generally, and the City of Plymouth in particular, were greatly honoured by a visit on May 17 from the Postmaster-General, The Rt. Hon. Sir Kingsley Wood, M.P., the occasion being the opening of the new Public Office at Plymouth Post Office, and the laying of foundation stones at Plymouth, Exeter, and Torquay by electrical means from the Guildhall, Plymouth. Large crowds gathered in the vicinity of the Guildhall Square to watch the Postmaster-General accompanied by the Mayor and prominent Post Office and Civic Officials proceed from the Mayor's Parlour to the new Post Office. On arrival Sir Kingsley Wood gained entrance by knocking on one of the two oak entrance doors with an ivory gavel which had been presented to him by the Contractors.

The new Office has been designed by H.M. Office of Works. The woodwork is of British oak in Gothic style to suit the outside surroundings. The wood carving is chiefly on the counterfront and in the caps of the columns on which are shown various Coats of Arms, one of Plymouth City, another of Drake's Drum with his Coat of Arms thereon, another of Lord Devon and the British Lion is quartered on the Royal Coat of Arms. The mosaic flooring contains designs to represent the maritime side of Plymouth history such as Mariners' Compass, Elizabethan Galleon *Mayflower*, and various other early types of ships.

A separate telephone room containing 7 fitted cabinets adjoins the public office and will be available at all hours, special provision being made for the handing-in of night telegrams. The room is handsomely appointed and is accessible either from the public office or the street, the woodwork being entirely of light oak and the floor of mosaic.

After the inspection of the building a reception was held in the Guildhall which was attended by a representative gathering of Post Office officials and prominent citizens. Tea having been served and disposed of the whole party stood while the National Anthem was rendered on the great organ, after which the Chairman (Mr. A. O. Spafford, Surveyor, Western District) addressed the gathering, and in welcoming the Postmaster-General said that he had left London in the height of the season; and had vacated that chair in his office from which he guided and inspired a staff of nearly a quarter of a million. He had delegated his duties in the House of Commons specially to come to Plymouth. The Chairman also expressed delight to see such a large and representative gathering of citizens of Plymouth and welcomed Capt. The Hon. F. C. Guest, M.P. and the Commander-in-Chief. At the conclusion of his address the Chairman asked Sir Kingsley Wood to press 3 buttons. Sir Kingsley then rose and pressed all three buttons in turn which by means of trunk lines, set into their place, 3 foundation stones of new Telephone buildings at Plymouth, Exeter, and Torquay. Almost simultaneously with the pressing of each button a green lamp glowed indicating to the visitors that each stone had gone down into its position "Well and truly laid."



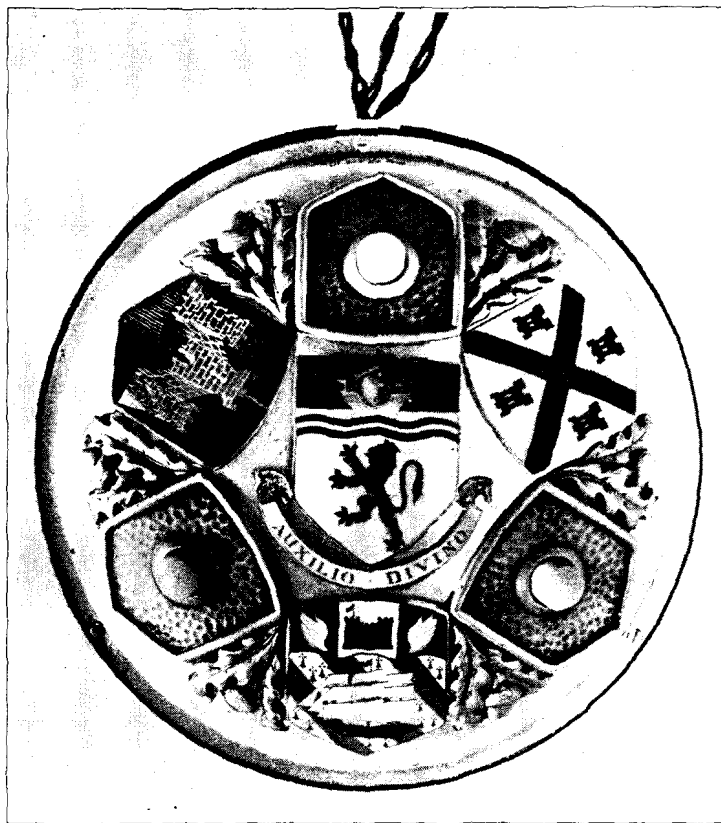
[Photo by Cyril H. Gill Ltd.]

THE POSTMASTER-GENERAL PRESSING THE BUTTON DURING THE CEREMONY AT THE GUILDHALL.

Sir Kingsley said that day was a red letter day in Post Office development in the West Country because they were inaugurating 3 big extensions which all at the Post Office hoped would make for the increased comfort of the public and further facilities for trade and business in that important part of the country. Addressing the Mayor, Sir Kingsley said, "May I suggest it is well worthy of your great city. I am glad to think that the days have gone by, so far as the Post Office and Office of Works are concerned, when official buildings used to be a blot on the landscape, and at any rate I will confess this afternoon that we have repented of all our sins that we have so often committed in the name of City Architecture!" Sir Kingsley congratulated

the Architect—Mr. Seccombd—and Capt. Carkeek, the Contractor; and also gave a special word of commendation for the carving work executed by Miss Pinwell. Sir Kingsley referred to the various activities of the Post Office and the many advantages offered to the public and the great extent to which they are expanding. He also said he regarded Plymouth as a valuable customer to the Post Office. The Plymouth Post Office handled 20,500,000 letters per week and some 40,000 telephone calls passed daily through the 9 exchanges in the local area. Sir Kingsley said the Post Office has its critics, and constructive criticism should not be resented, but he did want to say that it is not always that the Post Office is wrong, for we did realise that the Post Office was made for man and not man for the Post Office.

This method of laying foundation stones is probably the first of its kind in Post Office history and was carried out under the direction of Mr. P. Thornton Wood, Superintending Engineer, South Western District. The stones were suspended over their final resting places by block and tackle. When Sir Kingsley Wood pressed the buttons and sent an impulse over the trunk lines, a local circuit was closed which fused a wire and released the



[Photo by Cyril H. Gill Ltd.]

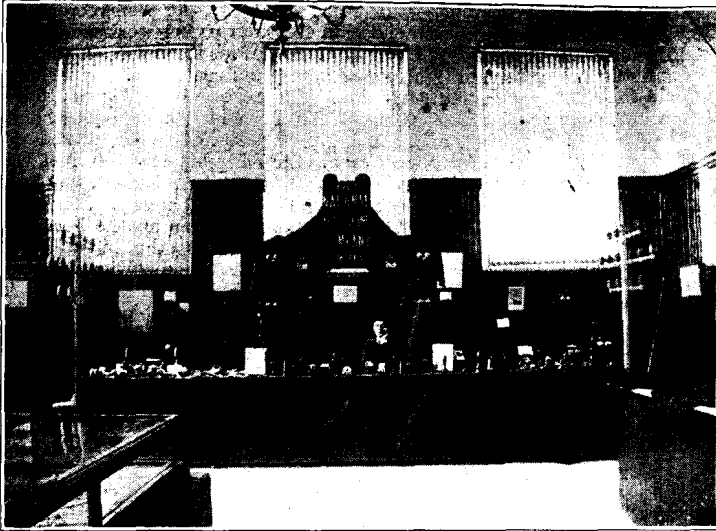
DIAL ON WHICH THE PUSH BUTTONS WERE MOUNTED. It shows the arms of the three towns (Plymouth, Exeter, and Torquay) and the Devon County arms in the centre.

tackle holding the stones. The descent of the stones brought other apparatus into operation resulting in the glowing of the green lamps at the Guildhall. Having pressed the buttons and seen the 3 green lamps glow, the Postmaster-General sent telegrams from the Guildhall to the Mayors of Exeter and Torquay and later received congratulatory replies. The stones were all similarly inscribed "This stone was laid by H.M. Postmaster-General—The Right Hon. Sir Kingsley Wood, M.P., on the 17th May, 1933." In a cavity under the stones were placed a small piece of telephone apparatus (a dial) a copy of the current Telephone Directory, a copy of a newspaper of the day's date, and a copy of the Programme of the Ceremony. Later the 3 buttons which were made of ebony, silver, and ivory were presented to Sir Kingsley.

At Exeter the ceremony of the laying of the stone was watched by Mr. J. Morgan, Sectional Engineer, Mr. J. Shaw (Engineering Inspector) Mr. W. H. Bowers, Clerk of the Works, and Mr. R. T. Hockey, Chief Superintendent (representing the Head Postmaster of Exeter who was at Plymouth).

In the evening representative members of the Western District entertained Sir Kingsley Wood, the Mayor, Capt. the Hon. F. C. Guest, M.P., and other important Civic Officials, also some Post Office officials from London and adjoining districts, to a Dinner at the Grand Hotel at which all the visitors were presented to the Postmaster-General.

Speeches were made by the Chairman (Mr. A. O. Spafford, O.B.E.), Sir Kingsley Wood, M.P., Mr. D. Laws, the Head Postmaster, Plymouth, the Mayor of Plymouth, and Mr. T. R. Gardiner, Controller, London Postal Service. The dinner in turn was followed by a ball at the Guildhall, arranged by the Staff side of the Whitley Committee, the attendance at which numbered nearly a 1,000.



INDUSTRY AND ART EXHIBITION, ABERDEEN, 1884-85. THE NATIONAL TELEPHONE CO.'S EXHIBIT.

## TELEPHONE PUBLICITY IN 1884-85.

A CORRESPONDENT sends us the above unique photograph which shows that a telephone exhibit was displayed in a public exhibition in Aberdeen nearly 50 years ago. It is particularly interesting both as showing that such an exhibit was made in the earliest days of telephony and for purposes of comparison with the present more elaborate exhibitions.

## GUILDFORD DISTRICT NOTES.

*District Office Dance.*—The staff of the Guildford District Office held the last of this season's dances on Saturday, Mar. 25, at Ayres Hall, Guildford. Amongst those present were the District Manager and Mrs. Crombie, Traffic Superintendent and Mrs. France.

The dance was well supported by the staff and was carried on till midnight. Mr. Marchant made an efficient M.C., and a most enjoyable evening was spent.

*Sales Training Course.*—Keen interest was taken in the discussions occasioned by a résumé of Book No. 6, the last of the series, together with a comprehensive review of the whole study. Mr. Howlett, Sales Representative, Woking, was complimented on the able manner in which he had performed the duties as Group Leader. It was quite evident from all present that the course had been an unqualified success, and that much useful information and help had been derived.

### The Song of the Telephone.

(With acknowledgments to Rudyard Kipling.)

For a letter you must wait a day or two  
For a telegram at least an hour or so.  
I send and take a call from the table or the wall  
In one single silent motion, swift or slow.  
And whether to a tradesman in the town  
Or a relative a hundred miles away,  
Directly you've elected with the same to be connected  
It's a matter of split seconds night and day.

When my musical magneto madly rings  
Telling trivial or quite tremendous things  
Of the Diplomatic Corps keeping peace or threatening war  
Of provincial retailer who has run right out of stock  
Of negligent dressmaker who has not sent home a frock  
Of board meeting of astute financial kings.

When wild winds, half in fury half in sport,  
Played pitch and toss with many a tall D.P.,  
When observed from any angle all the wires were in a tangle,  
With grim determination our S.E.  
Remarked "There'll be no wailing on the Wey"  
In a few short days he had the district clear  
Which made a Transatlantic cousin say  
"Gosh! that Guildford guy is sure some engineer."

With a rapid rush the wreckage to repair  
Inspector, linesman and S.W.1  
Across meadows deep in flood, over pathways mostly mud,  
They hauled and hammered till the jobs were done.

O you ladies fair who live at home at ease,  
Busy housewife, spinster slim, or widow rich!  
You can slack it soon or later, but the switchboard operator  
Must always keep herself at concert pitch.  
Yet even hers is but the lesser part  
In the turmoil of the Traffic's rush and range;  
You must see how brains and beauty perform Supervisor's duty  
To appreciate the work of an exchange.

O the ceaseless push and pull of pointed plugs!  
O the lamps, the little lamps that flash and fade!  
If you knew but half the mood of their exactitude  
No more, Dear Public, would complaints be made.

In the brain of Britain's best and brightest bard  
Was first conceived the thought that gave me birth  
Tho' three hundred years have sped since Puck to Oberon said  
"I'll put a girdle all around the earth."  
With the rigour of contemporary commerce  
I blend the rapture of old-time romance  
And my trunk or local fee is an Open Sesame  
To the portals of the House of Happy Chance.

Hear, O Hear, my splendid Servitors of Sales

Assuring you fulfilment of desire

Here, there and everywhere non-subscribers come and share

Power and Pleasure of my wonder working wire.

H. H. C.

*Conference of Exchange Supervising Officers.*—The half-yearly all-day conference of exchange supervising officers was held at Guildford on Monday, May 8. The District Manager presided, supported by Mr. France, Traffic Superintendent. There were 37 present, including Mr. Ingram, Head Postmaster of Haslemere, Mr. Hickman Clarke, Sales Manager, Mr. Hampton, Chief Clerk, and representatives from the Sectional Engineer's Office. The exchanges represented were Aldershot, Alton, Basingstoke, Bramley, Bookwood, Camberley, Farnham, Farnborough, Fleet, Frensham, Godalming, Guildford, Haslemere, Hindhead, Midhurst, Petersfield and Woking.

Mr. Crombie, in extending a hearty welcome to the members attending the conference, stated that he was gratified to see that the agenda—which covered a wide range of subjects—included 23 items, and that the majority of the items had been submitted by the officers attending the Conference.

## LIVERPOOL NOTES.

MR. W. E. GAUNTLETT, who retired from the position of District Manager on May 3, after having served with the Telephone Administration for 46 years, was amongst those pioneers who were responsible for the development of the Telephone Service. He had occupied the position of District Manager in Liverpool for seven years and during this period had become much respected by those associated with him.

In connexion with his retirement, and to provide an opportunity of making a tangible expression of the esteem in which he was held, a function was arranged at The Hall, India Buildings, on May 6. This took the form of a dance, with musical items of some merit, and was attended by approximately 250 members of the telephone staff. Amongst those present were the Postmaster-Surveyor and Superintending Engineer, as well as the District Manager, Manchester, and the District Manager newly appointed to Liverpool. Prior to the presentations which were made by Lt.-Col. F. H. Kempe, M.C., Postmaster-Surveyor of Liverpool, and which took the form of a gold wristlet watch to Mrs. Gauntlett and a Murphy wireless set to Mr. Gauntlett, speeches conveying the goodwill and best wishes for a lengthy and happy retirement were made by officials representing all branches and grades of the commercial and engineering departments.

Opportunity was also taken to extend a very warm welcome to Mr. A. L. Barclay, the newly-appointed District Manager, who comes to us from Chester.

Miss Preston, who, prior to the conversion of the Prescott Exchange to satellite working, was Officer-in-Charge at that exchange for many years, was on May 3, 1933 the recipient of the Imperial Service Medal. Owing to the condition of Miss Preston's health, the presentation was made at her home by the Traffic Superintendent, Mr. J. A. W. Gregory. Miss Preston has been in indifferent health for some time and was retired on these grounds at the end of 1932. We trust that the freedom from official duties will assist in the building up of her health and that she may enjoy many years of retirement.



## CHESTER DISTRICT NOTES.

A LARGE gathering of the staff took place in the District Office on Wednesday, May 3, to wish Mr. Barclay, District Manager, au revoir on his promotion to Liverpool. The opportunity was taken to present Mr. Barclay with a gramophone (H.M.V. Portable), a record case and a number of specially selected records.

Mr. Clough (Sales Manager) was in the chair, and Mr. A. Roberts, Staff Officer, in an excellent speech during which reference was made to Mr. Barclay's good qualities, subsequently made the presentation. Mr. Wickham, Traffic Superintendent, Mr. Russell, Higher Clerical Officer, Mr. Clutterbuck, Traffic Superintendent, Mr. Cole, Assistant Sales Manager, and Miss Magrath, Higher Clerical Officer, spoke on behalf of their respective sections. All speakers referred to the happy relations which had existed during Mr. Barclay's stay at Chester, special references being made to his interest in the staff's welfare.

Mr. Barclay, in accepting the present, thanked the Staff for their kindness, he appreciated very much such a large number of all sections being in attendance. He referred to the wholehearted support given to him by the staff and whatever success had come his way during the last five years was the result of willing co-operation of the staff. He regretted leaving the District, but as he was not going far away and as he had several connexions still with Chester he hoped to retain a close connexion with the Chester staff.

It is interesting to note that Liverpool supplied Chester with its first District Manager over 30 years ago, and Chester has reciprocated.

In addition to the above presentation Mr. Barclay received a silver cigar case, and box of cigars from the staff of the Chester switchroom. Mr. Jones, Head Postmaster of Chester, made the presentation, Miss Parry, Chief Supervisor, was in the chair, and the following spoke in appreciation of what Mr. Barclay had done and the interest he had taken in the switchroom staff: Mr. Jenkins, Chief Superintendent, Miss Freeman, Supervisor, Miss Fitzsimon, Supervisor, Miss Roberts, Supervisor, Miss Arden, Supervising Telephonist, and Miss McCreadie, Telephonist.

*Sales Branch Dinner.*—A very successful conference of all Sales Representatives was held in Chester on April 28, and advantage was taken in the evening by all male members of the Sales staff of attending a social function at the Pied Bull Hotel. Mr. W. T. Jones, Head Postmaster, and Mr. A. L. Barclay, District Manager, were the guests of the evening. This gave an opportunity to officers stationed away from Headquarters of saying au revoir to Mr. Barclay, who, to their regret, was shortly leaving to take up duties in the Liverpool District. Mr. R. H. Clough (Sales Manager), was the chairman.

The toast of "Our Guests" was proposed by Mr. F. Cole (Assistant Sales Manager), supported by Mr. Haughton (Clerical Officer).

The toast was received with musical honours. Mr. Barclay responded for "Our Guests," and spoke very kindly of the period he had been District Manager in Chester and thanked the staff for their loyalty. Any encouragement which it had been stated to have been given, he modestly explained as being part of his duty.

Mr. R. H. Clough (Sales Manager) then proposed the toast of "The Post Office."

Mr. W. T. Jones (Head Postmaster) responded and in an excellent speech referred to the Post Office prior to and since the transfer of the telephones to the State. The happy relationship of the Postal and Telephone Departments of the Service was due in no small measure to the personality of Mr. Barclay, who was not only a colleague but was a personal friend.

During the evening a very enjoyable musical programme was arranged, and it was a very pleasant surprise to find the amount of talent amongst the members of the staff.

## MANCHESTER DISTRICT NOTES.

*Civil Service Sports Club.*—The annual general meeting was held on April 27, at Telephone Buildings. The Postmaster-Surveyor was in the chair.

*Cricket.*—The first round of the Inter-Office Knock-out Medal Competition was completed last month. The round was remarkable for the number of players who had not played cricket for years, but who turned out to give support to the office teams in their hour of need. Of the District Manager's Office the Sales Branch triumphed over the York Street Engineers, but the Traffic Branch went down to the East District Office Team. Apparently outdoor duties are conducive to success in this sphere.

The Civil Service Crusaders will play the Sports Club Team on June 3, and a gala has been arranged on the sports ground on that day.

*Football.*—On May 15 the Manchester Messengers beat the Circulation Branch Second Eleven by three goals to one in the Final of the Stanley Cup Competition.

Improvements to the football pitch will be carried out during the summer and the ground will be in good trim for next season.

*Bowls.*—The Bowling Section is proving very successful and the greens are well patronised.

A larger income is necessary to the club if it is to be run on the lines that everyone desires and new members will be welcomed with open arms.

*Stockport.*—We congratulate Mr. E. F. Wills, Superintendent, at the Stockport head office on his promotion to the Head Postmastership of Penrith. Mr. Wills has been at Stockport for five years, and will take up duty at Penrith on July 1.

## OBITUARIES.

A SOMEWHAT belated issue of an American journal notifies the death of Mr. George Bain on Jan. 22 last, due to a sudden heart attack. Mr. Bain started his telegraphic career with the British Government, later joining the Direct U.S. Cable Company, and subsequently transferring to Halifax, Nova Scotia. After 17 years in Halifax he joined the Western Union Co.'s service in New York. In 1901 he made a further move and joined the French Cable Co., and was Cable Engineer when he retired in 1924. Mr. Bain was a native of Scotland and was born in Wick, 1861.

To the many old friends and colleagues of Mr. Alfred Tapley, a former Assistant Controller of the Cable Room, C.T.O., London, the news that Mrs. Celia Brown Tapley, *nee* Christian, his beloved life's partner, "passed on peacefully in her sleep on Sunday, April 9," will be received with tenderest sympathy, knowing how specially close were the ties that bound these two together through the many years of their marriage. A memorial service was held in the Streatham Congregational Church on the 12th ult., Mr. Harold Jenner presiding at the organ, while Miss Frances Hatfield, as soloist, effectively rendered Mendelssohn's "O Rest in the Lord."

True to the courageous view of life and death which our dear old friend has consistently taken, there was "no moaning of the bar," throughout the ceremony, as witnessed the chosen quotations of "She has Outsoared the Darkness of our Night," and "There is no Death but Life, more Life." Owing to the short notice of the arrangements, Mr. Tapley's late office could not be adequately represented, but Messrs. Broughton, Vander, Meulen and Poffley, on the retired list of Cable Room Superintendents, were present at the Memorial Service.

Also, on Saturday, April 8, at his home, Buckhurst Hill, Essex, a lovable personality in the name of Alfred Morgan passed over, after a stroke supervening severe congestion of lungs. "Alf," was in his 83rd year and entered the old E. & I. Telegraph Company in 1863, transferring to the Government service in 1870. Promoted Assistant Superintendent 1890, our friend was made Superintendent 1907, retiring at age-limit in 1911. He served for several years in the 49th Middlesex R.V. A man much esteemed, one might say without exaggeration "beloved," so charming was his personality. Over 50 years ago he married a Miss Hitch, who survives him and to whom, his daughters and son the sympathy of old friends and colleagues is sincerely tendered.

J. J. T.

## THE RETIREMENT OF MR. C. R. GLADMAN.

APRIL 6 last saw the departure from the C.T.O., London, into his well-deserved retirement one of the most competent and trusted Telegraph Superintendents who have ever passed through the Cable Room.

Transferring from the Inland Telegraphs at an early stage in his career, Mr. Gladman's penchant for organisation matters, and his general adaptability to the needs of any and every branch of the Foreign Telegraph Services, could not but be admitted by all those with whom he came into contact and were themselves competent to judge. A very considerable portion of the last fifteen or more years of Mr. Gladman's duties have been connected with Staff and Traffic matters, organisation and kindred problems. The outstanding feature of "Dick" Gladman's character was his frankness alike with those above or those below him in official rank. Never from our friend's pen did there come an endorsement or statement which could not be successfully defended by its sponsor, for he had the head of a lawyer in foreseeing or realising what "the other fellow" would be likely to say. His suggestions, his advice, might at times be rejected by the more timid, but there was no gainsaying their practical value, as has not infrequently been proved. Much of his duties in these later years have been performed under conditions of impaired health, which only the strongest of will could have overcome. Therefore, among the many good wishes for his future which follow Mr. Gladman into his retirement, is that priceless desire of his many friends for a full share of renewed health and strength in that new abode in Southern England where he has already taken up residence.

J. J. T.



### Competition.

A prize of half-a-guinea is offered for the most suitable design for use at the head of this column. The drawings should be submitted on or before July 10 next, and addressed as below.

### Alliterative Anecdotes.—No. 1.

Stella Starterne, Supervisor, started Staff Salesmanship stunt sceptically, scenting snubs.

Strolling shopwards, Stella suddenly saw Stan Stapleford serving shoppers swiftly—selling surplus stock.

Stella stopped. Smiling sweetly, she stood surveying Stan.

Stan stared, stammered stupidly, stopped serving, shut shop.

Stella seated, soon said stuff, shyly showing stationery.

“Sound scheme!” said Stan, signing straightaway—simply stipulating Stella should supervise switchboard service.

Staff (a) sighed sentimentally, (b) smiled significantly, seeing Stella subsequently sporting scintillating symbol.

SEQUEL: Stan superintends Stapleford's Stupendous Stores—staunch, satisfied Subscriber.

Stella, Stan's spouse, says Stan's sturdy son Sales-Manager someday.

C. A. S.

### Unsent Replies.

I suppose we have all been amused by the “obstinate artist” of a certain London daily. Here are a few extracts from the works of a contemporary in the complaints section of a D.M.O.

From a Scotsman: “I get music on my calls at night. . . .”

Reply: “Dear Sir—There is no extra charge for this entertainment.”

A business man's plaint: “I am sorry to have to complain, but my wife was *not* out when I rang her up. . . .”

Reply: “Dear Sir—We suggest that you try a different time when next you ring up.”

A farmer's troubles: “As I have had the short cord for a longer period than the long one, I don't think you should charge me any longer for the short, or rather the long one.”

Reply: “Dear Sir,—The long and the short of it is that we cannot any longer overlook the shortage of your cheque.”

From the heart of the cider country: “I pay 5s. per quarter for night service while my friend on the P— rural automatic exchange gets it for nothing. . . .”

Reply: “Dear Sir,—We are arranging to examine your friend's call recording meter.”

Retired Colonel (from sparsely populated region): “I fail to see why calls to B—, (4 miles away) should have to circulate via C— and D—.”

Reply: “Dear Sir,—We are pleased to be able to assure you that direct communication between your exchange and B— is confidently anticipated by April 1, 1954.”

No saga could pretend to be complete without reference to the fair sex. The following is the most presentable, though by no means the choicest example.

Aristocratic logic: “I cannot agree that my trunk call to London was of fifteen minutes' duration as I was only ringing up my friend the Earl of D—.”

Reply: “Lady B—, Madam: The District Manager notes Her Ladyship's remarks and shudders to think what the disputed amount would be had Her Ladyship chosen to ring up the Countess of D—.”

### A Lament *re* Observation Figures.

Dear Superintendent, sorry our figures are high,  
Dear Superintendent, sorry we've made you sigh,  
To give a speedy service is always our intent,  
And to our Noble Service our thoughts are always bent,  
But “The best laid plans of mice and men gang aft agley,” they say,  
And so Dear Superintendent, have our efforts ganged agley,  
We watch the Telsts. like policemen, we poke them in the back,  
We make them work like one o'clock, they never, never slack,  
They seem to answer promptly and challenge when subs. flash,  
To say they do not concentrate is really only trash;  
For you should see their brows sometimes, they're furrowed deep with lines,  
Of course they'd only concentrate on work, it *can't* be play!  
Their thoughts could only dwell on that for which they take their pay.  
Dear Superintendent, don't judge your Staff too badly,  
For really we do regard our state so sadly,  
So when our next month's figures, you view with critic's eye,  
You'll find a real improvement, for we will *do or die*.

A SUPERVISOR.

Contributions to this column should be addressed: The Editress, “Talk of Many Things,” *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), London, E.C.1.

### C. B. CLAY FOOTBALL CHARITY CUP.

THE Testing Branch (Engineer-in-Chief's Department) and the City Internal (holders) were the two teams which succeeded in reaching the final of the above football competition this season. The match was played at Tufnell Park on April 19, before a crowd of about 500 spectators, who witnessed a most exciting and hotly contested game. Full-time arrived, however, with the scores equal (1-1), and although extra time was played no further scoring took place. The two teams were most evenly matched, the defence on both sides predominating.

The re-play took place on Messrs. Johnson & Phillips' Sports Ground at Kidbrook, S.E., on May 4. The Testing Branch were able to place the same team in the field, but the City Internal were without Gilmore and Todd owing to injuries. Another closely contested game was witnessed, although each goal, particularly that of the City Internal, had some miraculous escapes. Half-, and then full-time arrived without either side scoring. Extra time was played, and about five minutes from the end Waters, of the City Internal, succeeded in scoring, to be followed almost immediately by a second goal due to a splendid shot from Trimmer and the game then ended with the City Internal, the holders, retaining the Cup by two goals to nil.

The Testing Branch may be considered to have been distinctly unlucky to lose after the great fight they had made covering in all 4 hours of very strenuous football. Both games were admirably controlled by the Referee, Mr. A. L. Lake, L.F.A.

The presentation of the Cup, together with miniature cups to each member of the winning team, was made by Colonel C. B. Clay, the original donor of the cup, and everybody was delighted to see him looking so fit and well. Colonel Clay, when congratulating the teams on their fine exhibition of football, said he was pleased to see that great interest was still being taken in the competition, and he felt sure that the good fellowship it created amongst the staff must be as beneficial to all concerned now as it was when he first presented the cup in the days of the late National Telephone Co., 35 years ago.

This Football Challenge Cup is open for competition to all teams representing the staff of any branch or section of the Post Office associated with the Telephone Service in London, including the following Departments:—

Secretary's Office.  
London Telephone Service.  
Post Office Stores Department.  
London Engineering District.  
Engineer-in-Chief's Office.

Entries for the competition are cordially invited, and particulars can be obtained from the Hon. Secretaries, Mr. C. J. Head (London Engineering District), Mr. A. E. Wild (London Telephone Service) or from Mr. F. Woollard (Engineer-in-Chief's Office).

The proceeds of all matches are devoted entirely to charity and the competition has been the means of raising upwards of £250 during the past few years.

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## YOUNG PEOPLE'S TELEPHONE EXHIBITION AT NEWCASTLE-ON-TYNE.

MAR. 1 TO 15, 1933.

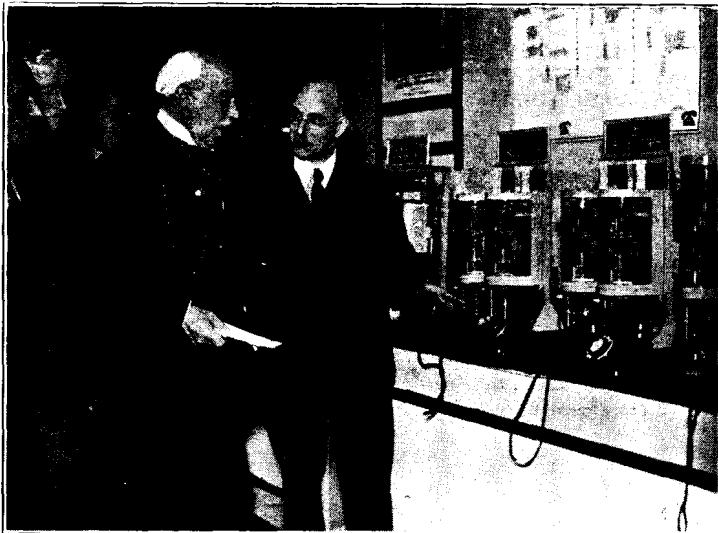
THIS Exhibition was held at the Chronicle Hall, Newcastle-on-Tyne, and comprised most of the exhibits which went to make up similar Post Office displays at London, Birmingham, and Manchester during last year and early this year.

A comprehensive account of the exhibits which were shown at Birmingham appeared in the *Telegraph and Telephone Journal* for March, so I will not set out in detail the various items which went to make up the exhibition held in Newcastle. It is only right, however, to mention that the R.A.X. and Overseas Talks Cabin were not used at Newcastle, the space available not being sufficient.

The Exhibition was opened by the Lord Mayor of Newcastle (Dr. J. W. Leech, M.P.) on Mar. 1, Mr. V. Ewart Berry, a Director of Newcastle Chronicle Ltd., being in the Chair on the temporary platform erected for the opening ceremony, and he was accompanied by a number of prominent local personages and officials.

After the opening ceremony the Lord Mayor and the Postmaster-General exchanged complimentary telegrams.

During its run arrangements were made for 161 parties of school children consisting of over 8,000 scholars to visit the Exhibition during school hours. In addition nearly 36,000 children and adults were admitted.



THE LORD MAYOR OF NEWCASTLE AT THE AUTO-SWITCHES.

The number of souvenir telegrams dealt with was 8,011—an average of 616 a day, and the number of free local calls made from the Telephone Kiosks was 2,470—an average of 170 a day.

The Exhibition was organised by the Newcastle Chronicle Ltd., who control a number of local papers, and a considerable amount of publicity was secured. The slogan "Making Tyneside Telephone Minded" was often used in press notices.

Judging from the number of appreciative letters received by Mr. R. P. Lowe, the Officer in Charge, there is no doubt that the Exhibition created an immense amount of interest in the telephone service and, bearing in mind that the young people of to-day are the potential telephone users of to-morrow, it is expected that much good will result.

A feature, which was much appreciated by the youngsters, was the messages of welcome made through a loudspeaker to the school parties by name. As the result of oral enquiry of the teachers, it was sometimes found that the date of the visit coincided with the birthday of one of the scholars and an announcement of birthday greetings created an element of mystery and gave rise to much favourable comment.

The staff employed at the Exhibition as Supervisors, Demonstrators, and Guides threw themselves whole-heartedly into the work, and the enthusiasm displayed went a long way in ensuring the success of the venture.

It speaks well for the engineering workmanship that only slight stoppages occurred in the various exhibits, despite the fact that they were in operation from 10 a.m. to 8 p.m. each day.

R. P. L.

## MORE RECOLLECTIONS OF AN OLD TELEGRAPHIST.

ABOUT a week after the Telegraphs Acts had been placed on the statute book, Col. Du Peat Taylor, who was Private Secretary to the Postmaster-General, paid me a visit at the office at which I was employed (Kensington, Russell Road) merely to know whether or no I wished to be enrolled in the Post Office. I told him I had not seriously considered the position but would probably go with the majority. He said that they would not all be taken on. A week after this the Surveyor of the Western District (Vere Street) paid me a visit and on learning that I was an efficient Morse telegraphist, said there was a paucity of such operators at TS Plymouth, Manchester, and Birmingham, and if I would like a transfer to either of these places, to go and see Mr. R. W. Johnston at the G.P.O. (Mr. Johnston ended his official career as Postmaster-Surveyor of Manchester.) At the G.P.O. he was employed in interviewing applicants for berths as telegraphist, one of whom I saw when I went to Birmingham. This man was a retired Station-master and did not know the Morse alphabet. I accepted Mr. Johnston's offer and settled down at Birmingham. At Kensington my hours of duty were 8 a.m. to 8 p.m. daily and the same hours every alternate Sunday, and my wages averaged 21s. 6d. weekly. I breakfasted at my lodgings, the remainder of my meals I had to get the best way I could—no relief.

About 15 years after my meeting with Col. du Peat Taylor in 1870, I became associated with him in a humble way. He was Colonel of the 24th Middlesex, and I was Corporal of the Birmingham Detachment of 10 men of the 24th Middlesex. We performed our efficiency drills with the Warwickshires and attended the Annual Inspection in Hyde Park and a week's training at Aldershot. Ill-health caused my retirement from military life after nearly 4 years' service.

My first Race Meeting under the G.P.O.—this was the October, 1870, meeting at Warwick—there were 4 or 5 telegraphists from TS and a similar number from Birmingham, with a man named Cooper in charge. At the time of the transfer, Cooper was in the E. & I.T. Co. and employed at Shoreditch Station. On the last day of the meeting there was a big rush of tipsters at the town office with big batches of telegrams. There was such a big fight among them to get them in first that they smashed a large pane of glass. This commotion was caused by the scratching of one of the favourites in the Manchester November Handicap. The Birmingham staff called at the office before returning to Birmingham to make out their expenses account to leave with the Postmaster. While doing so the Surveyor walked in. He sat on a high office chair immediately in front of the public counter. He said to the Postmaster: "Who are these men?" He told him they were the telegraphists from Birmingham for the races. The Surveyor then said "I think they might take their hats off in a public office—"

Had he been a gentleman he would have exemplified the accuracy of the old adage "Example is better than precept" by removing his own bowler, but he didn't. A few days after this our expenses returns were sent from the Surveyor's Office to Birmingham on the ground that the rate of subsistence which we claimed was incorrect—6d. per hour instead of 5d. We knew that the TS men were paid 6d. so we contested it and requested the matter be referred to the Secretary, with the result that we gained the day. Although the memory of to-day is not like the memory of the past, I do not think I shall ever forget 2 telegrams I received in 1870. The first was on a bright sunny morning in June announcing the death of Charles Dickens. The other was a Ruter telegram over the news-wire on Sept. 4 to the effect that Napoleon the Third surrendered his sword to the ex-Kaiser's grandfather at Sedan.

About this time *Punch* published a so-called telegram which the German Emperor may or may not have sent to his Augusta. Here it is:—

"By Will Divine, my dear Augusta,  
We've had another awful buster.  
Ten thousand Frenchmen sent below,  
Praise God from whom all blessings flow."

P. J. S.

## C.T.O. NOTES.

*Promotions.*—Miss R. Cutbush to be Assistant Supervisor.

*Retirements.*—Misses A. C. Whitteridge, Assistant Supervisor, and H. L. Smalley, Telegraphist; Messrs. C. R. Gladman, Superintendent (L.G.), C. Custance, Assistant Superintendent, and N. O. Davies, Telegraphist.

*Sport.*—We would like to remind friends of the Central Telegraph Office that the joint Centels and Fortels sports meeting will be held on the enclosed ground, Chiswick, commencing about 4 p.m., on Friday, July 21. The trains from Waterloo for Barnes Bridge leave at 19 and 49 minutes past the hour, with additional trains after 5 p.m. The return fare is 9d. We hope the sports will be enthusiastically supported.

*Obituary.*—Another well-known figure of TS, Mr. A. Morgan, has, we regret, passed away, in his 83rd year. Mr. Morgan entered the old Electric

and International Telegraph Company as long ago as 1863, and retired in 1911 with the rank of Superintendent. To his wife, who was a TSite, and her son and daughters we extend our deepest sympathy.

We also regret the death of Mr. J. F. Smith, Overseer, Cable Room, after a long and painful illness.

*Annual Dinner.*—The Threadneedle Street B.O. annual dinner was successfully held at the beginning of April. Many retired friends undertook considerable journeys in order to fraternise with old colleagues. Mr. Stuart Jones proposed "The Staff," dwelling on the fine esprit de corps which is evidenced. The musical programme was very enjoyable and the various items much appreciated.

## MR. J. W. G. KENNEDY'S RETIREMENT.

ON May 5 last, the Paddington Exchange Dining Room was the scene of a presentation ceremony, the occasion being the retirement of Mr. J. W. G. Kennedy, North District Traffic Superintendent. Mr. W. H. U. Napier (Controller) Mr. H. Dive (Assistant Controller "T") and Mr. W. B. Benham (Superintendent, Service Division) were amongst the large gathering of colleagues of all grades who, no doubt, as in the case of the writer, felt that they could not let J. W. G. Kennedy go without a handshake and an expression of goodwill.

The presentation (which took the form of a gold watch, books, and a travelling case), was made by the Controller. On behalf of the staff of the London Telephone Service, he asked Mr. and Mrs. Kennedy (who was also present) to accept the gifts as an expression of the esteem in which he knew that Mr. Kennedy was held by all grades, and which he fully shared. He said that Mr. Kennedy and the North Traffic District had become almost a natural entity—a fact which he ascribed to Mr. Kennedy's personality, which combined efficiency with kindness and tact in all matters affecting the interest of the staff. He wished Mr. and Mrs. Kennedy many years of happiness and health.

Mr. Dive referred to his long association with Mr. Kennedy as a colleague and as a friend, and said that, in regard to both of those relationships, he had the happiest of recollections.

Miss Berry, on behalf of the Supervisors and Staff, said that Mr. Kennedy's departure would leave a gap which it would be hard to fill. As a Chief he had displayed qualities which had endeared him to the Staff, who had felt that in their District Superintendent they had a friend who was always helpful and always sympathetic.

Mr. Kennedy suitably replied.

Everyone who knows and has worked with J. W. G. Kennedy will re-echo the foregoing sentiments. His kindness, his consideration for others, and his evenness of temper invariably soothed ruffled feelings and, by their very simplicity and naturalness, engendered reciprocation. By his retirement the Service has lost a gentleman in the strictest sense of that term.

### FOR OUR ADVERTISERS.

ALL enquiries should be addressed to the Department of Overseas Trade, 35, Old Queen Street, London, S.W., except where otherwise stated, quoting reference number in all cases. Supplies, &c., required by:—

*Argentina.*—Buenos Aires. June 19. Ministry of Public Works. Hydro-electric plant, including turbo-generators, transformers, switchboards, accessories, spares and tools (A.X. 11767).

*Australia.*—Melbourne. June 7. City Council. One or two boiler units (G. 12425). Brisbane. June 22. City Electric Light Co., Ltd. 45-kV. and 11-kV. switchgear (A.X. 11749). July 20. Supervisory control equipment for circuit-breakers (A.X. 11750). Sydney. June 14. N.S.W. Department of Railways. 500-kw. turbo-alternator for Zarra Street power station (A.X. 11762).

*Egypt.*—Cairo. June 27. Minister of Interior. Electrical distribution network to supply Samallout and Maassaret Samallout (A.X. 11780). June 15. Ministry of Education. Diesel generating set (A.X. 11783). June 6. Ministry of Public Works. Pumping station and plant at Zagazig (G.X. 12567).

*New Zealand.*—Wellington. June 6. Post and Telegraph Department. 100 miles of v.i.r. insulated wire (A.X. 11770). July 18. Posts and Telegraphs Department. Secondary cells (A.X. 11803).

*Portugal.*—June 24. Department of Posts, Telegraphs and Telephones. Supply and installation of a short-wave broadcasting station. Administracão Geral dos Correios Telegrafos e Telefones 3a Divisao da Direcção dos Serviços de Exploração Electrica.

*Southern Rhodesia.*—Salisbury. June 6. Municipal Council. Turbo-alternators, switch-gear, cable and transformers (A.X. 11771).

J. J. T.

## LONDON ENGINEERING DISTRICT NOTES.

*Police Telephones.*—A Police telephone system was brought into use in the Streatham, Norbury, and Croydon areas in April. This system not only provides for communication between the Police in the streets and their headquarters, but it is also available to the public for calls to the police authorities. The telephones are fitted in blue painted kiosks and at several points alternative communication to adjacent stations is available for police use only.

A modification introducing additional features has already been carried out at Norbury and it is now possible to be connected to one line with selective calling in both directions together with an "intrusion" signal at the Norbury Police Station to indicate when a second telephone is removed from the rest when one is already in use. The apparatus which is in accordance with the latest practice is designed on the jack-in principle, both in the kiosk and the station. An extension of the system to other areas is anticipated.

*Flood Lighting.*—Flood lighting has been installed on the new Faraday Building in Queen Victoria Street. At present the installation is of a temporary nature, but it is expected that it will be made permanent. Another novel feature of the electric light and power equipment in this building is the use of the Ward-Leonard system of control for the passenger lifts.

*"Ideal Homes" Exhibition.*—The exhibit at the "Ideal Homes" Exhibition in April, 1933, included apparatus for reproducing the sounds produced by a beating heart, a set demonstrating the effect of introducing echo suppression on a talk over a 1,000-mile line and an apparatus for demonstrating the existence of various frequency bands in speech currents and the effect of their elimination. 7-digit automatic demonstration set, groups of apparatus comprising various "Plan No. Extensions," two continuously operated teleprinters and two others for transmission and reception of messages between visitors, were included in the exhibit.

The lighting effects and the power points were installed by the Electric Light and Power Section in conjunction with the Empire Marketing Board. Some 135 Neon tubular lamps totalling 17 kilowatts were used. Those for the horizontal fascia round the exhibit being untinted lamps with special side contacts, so presenting an uninterrupted line of light, whilst others on the pillars were tinted with various colours for decorative purposes.

*Long-Distance Telephony.*—A great step forward in the development of international telephony was effected when the new radio positions in the Overseas Exchange in G.P.O. South were brought into service on Saturday, April 8. This new equipment consists of 29 operating positions *en suite* with the Continental positions but forming a separate group with two Enquiry positions, 2 Observation positions, 1 Supervisor's Desk, and 1 Exchange Superintendent's Desk.

The outgoing multiple is common with that provided over the Continental positions and gives access to outgoing, and both-way Continental circuits, Inland Trunk circuits, junctions to London exchanges, Trunk subscribers, transfer circuits, and service lines.

The answering field consists of 3 separate portions, viz.:—Radio Overseas Record circuits, Radio-Channel Terminations and Transfer Circuits. Each position is equipped, among other items, with 3 connecting cords and connexions from Radio to London, Toll, Trunk, Continental, and other Radio circuits may be set up at any position, thus giving considerable flexibility in operating various classes of calls.

For a period of three weeks prior to April 8, intensive tests on the new positions were carried out by the Engineering and Traffic Staffs. Spare radio terminals were used and tests made by setting-up the various types of connexions experienced in practice.

Consequent upon the successful completion of these tests the radio channels were transferred on April 8, one by one, from the old positions to the new terminations, and by the end of the afternoon all channels were working successfully on the new equipment.

The Prince of Wales inspected the exchange after the official opening by the Lord Mayor of London on May 4.

*Euston Automatic Exchange.*—The establishment of the new subscribers on the Euston portion of the Terminus Automatic equipment took place at 1.30 p.m. on Tuesday, April 18, by the transfer of approximately 550 lines from Museum and 250 from North. At the same time the following area correction transfers to Terminus took place:—

North to Terminus	...	...	600	approximately.
Clerkenwell to Terminus	...	...	200	"
Museum to Terminus	...	...	35	"

It will be seen that the whole transfer was of a complicated nature, but in spite of this and the fact that Tuesday was an ordinary working day, the operations were completed without interference to the subscribers' service.

The initial equipment for the Terminus-Euston unit caters for 4,920 lines with an ultimate number of 10,000. Both Terminus and Euston subscribers are served by common groups of outgoing junctions, but the incoming junction groups are separate. When the Euston subscribers are transferred to the permanent Euston equipment in Euston Road, a step which is not economically justified for some years, the Euston equipment in the Terminus building will be merged with the main Terminus unit.

## LONDON TELEPHONE SERVICE NOTES.

## Sales Branch Notes.

DURING the month of April there was a net increase of 2,118 stations.

Upwards of 300 additional extensions have been fitted in the new wing of the County Hall, the headquarters of the London County Council and an order has been obtained for 13 additional exchange lines.

The following large orders have recently been secured:—

	Telephones.
Wickham Court Hotel, Springpark ... ..	51
May Day Hospital, Croydon ... ..	47
Heathfield Hotel, Blackheath ... ..	24
Peak Frean, Ltd., Bermondsey ... ..	48
Royal Arsenal Co-operative Society, Lee Green ... ..	25
Whitehall Residential Hotels, Ltd., Paddington ... ..	72
Taincourt Flats, Ltd., Sloane ... ..	52

At the Ideal Home Exhibition, held at Olympia from Mar. 29 to April 29, there were 537 exhibitors for whom 235 telephones were provided. The Post Office stand at the Exhibition included a variety of exhibits, and Sales Representatives and Demonstrators were continuously in attendance. The following orders were obtained:—

	London.	Provinces.
Exchange lines ... ..	101	15
Extensions ... ..	94	12
Hand-microphones ... ..	242	88
Other apparatus ... ..	47	4

443 agreements were taken away by visitors to the stand and, in addition, 175 cases were noted for following up.

The Postmaster-General himself signed an agreement for a gold-coloured hand-microphone.

Altogether the number of telephone inquiries amounted to about 14,750.

Faraday Building and the new Post Office International Telephone Exchange were formally opened on May 4 by the Right Honourable The Lord Mayor (Alderman Sir Percy Greenaway), who was accompanied by the Lady Mayoress, and the Sheriffs of the City of London.

The occasion was honoured by a visit of His Royal Highness the Prince of Wales.

His Majesty's Postmaster-General (the Right Hon. Sir H. Kingsley Wood, M.P.) addressed the company, giving some particulars of Faraday Building and the International Telephone Exchange. He then called upon the Lord Mayor to perform the opening ceremony and to address the company present, which numbered about 500.

Later, Mr. W. H. U. Napier, Controller, and Mr. E. Gomersall, Superintending Engineer, received the Prince of Wales, the Lord Mayor, and the Postmaster-General in the International Exchange and showed them round, explaining the working.

Mr. Napier then conducted the Prince of Wales and the Postmaster-General over several of the exchanges in the G.P.O. (South) building. The Prince of Wales spoke to various members of the supervising and operating staffs about their work, and expressed his interest in all he had seen.

## Staff Salesmanship Scheme.

The progress of the scheme is tabulated below:—

	Total Number Ordered.	Number Ordered Month ended May 13 1933.
Exchange lines ... ..	2,018	105
Extensions ... ..	2,232	168
Private lines ... ..	24	2
Plugs and sockets ... ..	402	41
Hand-microphones ... ..	11,610	918
Extension bells ... ..	1,023	103
Other apparatus ... ..	1,091	68

Mr. Gossip, of the *Daily Sketch*, prefixes the following item of news with the exclamation "Crikey!"

"Here is a breathless tale of a telephone.

A friend who has a shop in North London received a visit from a canvasser at noon on Tuesday.

She agreed to have a telephone put in.

By noon the next day the instrument arrived and by 4 o'clock the lady's number was up (not metaphorically, of course)."

This is quite commonplace to us.

How would he describe the case of a subscriber who ordered a hand-microphone instrument during the day and found it working when he arrived home the same evening?

## L.T.S. Sports Association.

*Netball.* The Netball Association held their Annual Tournament, together with the final of the "Liddiard" Shield Competition, on Saturday, May 6 last, at the Civil Service Sports Ground, Chiswick. The tournament was won by the Controller's Office team, who remained unbeaten throughout the afternoon. The final of the "Liddiard" Shield Competition was played between Museum and Toll "A" Exchange Teams. The match was quite a good display of netball, and Museum led well at half-time. However, Toll "A" were eventually the winners by 18 goals to 14. We were very pleased to welcome Exchange staff who, together with Miss Cox, turned out to watch the matches. We sincerely trust that any members of exchanges who are interested in netball will communicate with Miss E. L. Sanders, A.N.C., Controller's Office, S.E.1, as it is particularly desired to develop this sport throughout the L.T.S.

## Gerrard Exchange.

*Retirement of Miss R. James.*—Another happy yet sad event took place in the Dining Room at Gerrard Exchange on Friday, May 5. The occasion was the retirement of Miss R. James, after 31 years with the London Telephone Service, the last 14 of which have been spent as Chief Supervisor of Gerrard. Friends from all branches of the L.T.S. gathered to bid farewell to Miss James, and the large number of beautiful gifts presented to her expressed the affection and esteem with which all who knew Miss James regarded her.

The proceedings commenced with tea at 4 p.m., and amongst those present were the Controller, Mr. Napier, Miss Cox, the Female Superintendent, Mr. Dive, the Assistant Controller, Mr. Boucher, the District Superintendent, Mr. Pounds, our former District Superintendent, and many friends from other exchanges and Departments.

During the evening Mr. Boucher, on behalf of the staff, presented Miss James with an electric vacuum cleaner and in a few well-chosen words expressed the feeling of all when he spoke of the kindly sympathy Miss James had always extended towards her staff and the keen interest which she had taken in social affairs. Miss Spalding, Assistant Supervisor, Class 1, in seconding Mr. Boucher's remarks, said that the number of old friends present testified to the affection and goodwill felt towards Miss James.

In replying, Miss James thanked her Supervisors and staff for their loyalty and co-operation during her years at Gerrard and provoked laughter when she spoke of her early days in the Service and said that if a Supervisor were required during the afternoon it was first necessary "to wake her up."

The presentation then terminated with an enthusiastic rendering of "For She's a Jolly Good Fellow" and three hearty cheers. The large crowd of cheering telephonists which surrounded the taxi in which Miss James departed caused a passer-by to remark: "Who is it, the Queen?"

We shall all miss her and the sincere wish of all her friends and colleagues is that she may enjoy good health and a happy retirement in her sunny South Coast home.

## Battersea Exchange.

The last dance of the season took place at the Town Hall on Wednesday, May 3.

About 100 persons were present, including Traffic Officers, Sales Representatives and Engineers. Amongst the ladies were noticed several who had been transferred to Avenue, Central, London Wall, Whitehall and other exchanges, while Miss E. D. Stevens was welcomed from Paddington and members of the staffs from Brixton, Putney and Wimbledon helped to make the evening a success. Traffic Officers from Headquarters, South-East and West-Central Districts joined their South-West colleagues, and all appeared to enjoy the excellent programme of music rendered by the Arcadian Dance Band.

Special praise is again due to the Entertainments Committee and the catering staff, under Miss Hatherly, for the refreshment arrangements. Considering that the inclusive charge for admission is only 2s., the fact that an appreciable profit is always available for a predetermined object—either for a poor children's tea or to swell the funds of the Swimming Club—points to capable management on the part of the officers responsible.

L. D. S.

## Resignations on Account of Marriage.

## Telephonists.

Miss K. A. Lewis, of Sydenham.	Miss M. A. Holland, of Trunks.
" P. K. Branch, of Park.	" G. K. Spooner, of Trunks.
" M. R. Spearman, of Bishopsgate.	" M. J. V. Hazell, of Trunks.
" H. M. Scott, of Gerrard.	" E. W. Verinder, of North.
" A. M. Cobbett, of Gerrard.	" M. I. Blake, of North.
" W. F. McDonald, of Gerrard.	" D. V. Lyddon, of Chislehurst.
" C. M. Titman, of Wimbledon.	" W. E. Ball, of Romford.
" H. C. Ford, of Clerkenwell.	" E. E. Tomlinson, of Tandem.
" N. C. Callaghan, of Brixton.	" R. I. Pearce, of Wembley.
" M. M. Lett, of City.	" E. F. Duddington, of Toll " B."
" D. Weir, of City.	" E. C. Hawkes, of Toll " B."
" G. Bilbe, of City.	" M. K. Barritt, of Riverside.
" E. L. Sargent, of Central.	" P. M. Price, of Victoria.
" P. R. Sanders, of Central.	" M. Willcocks, of New Cross.
" A. J. Fordham, of Loughton.	" F. M. Sheehan, of New Cross.
" F. W. Dolden, of Rodney.	

# THE Telegraph and Telephone Journal.

VOL. XIX.

JULY, 1933.

No. 220.

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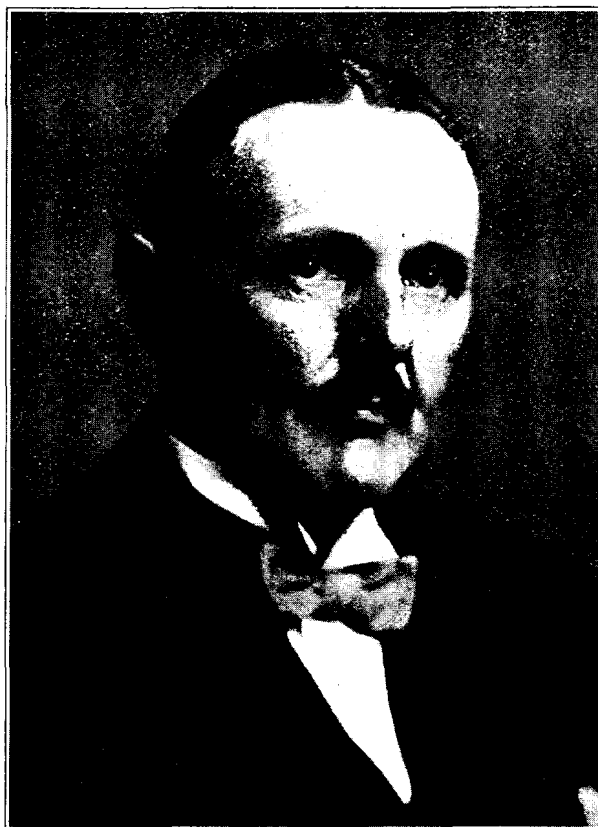
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*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CX.

COL. A. S. ANGWIN.



COL. A. S. ANGWIN, D.S.O., M.C., T.D., M.I.E.E., joined the Post Office Engineering Department in 1906, after receiving a training as engineer with the well-known ship-builders, Messrs. Yarrow & Co. He was educated at East London College, now one of the colleges of the University of London.

Transferred to Glasgow, Col. Angwin gained experience in automatic telephony and exchange installation, and specialised in underground construction. During the War he served in Gallipoli, and Palestine under General Allenby, where he was awarded the D.S.O. and M.C., finishing his service on the French Front.

After demobilisation, Col. Angwin was attached to the Radio Section of the Engineer-in-Chief's Office and played a large part in the completion of the Leafield and Cairo stations. He was also responsible for the erection of the masts and antennae

of the Rugby high-power station, as well as for the water supply system. He was promoted to Assistant Staff Engineer in 1925 and took charge of all development and experimental work. He visited the United States in 1928 in connexion with the development of short-wave technique.

He was promoted to Staff Engineer in 1928, in charge of the Radio Section, and during the 4 years in which Col. Angwin has been at the head of that section, the great development of the Overseas radio telephone services with which our readers are familiar has taken place. He attended the International Telegraph and Radio Conference at Madrid in 1932 as senior technical officer in the British Delegation, acting as chairman of the committee on wavelengths with signal success. He was recently appointed Assistant Engineer-in-Chief.

Amongst his other activities Col. Angwin acts as examiner in Electricity and Magnetism to the City & Guilds of London Institute, and is Deputy-Chief Signal Officer to the Eastern Command in the Territorial Forces. He is very popular with his colleagues.

[By courtesy of the P.O.E.E. Journal.  
Photograph by Elliott & Fry Ltd.]

# The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

Editing and Organising Committee - - -	{	COL. A. A. JAYNE. J. STUART JONES. W. D. SHARP. W. H. U. NAPIER. G. H. TAYLOR. J. W. WISSENDEN.
Managing Editor - -		W. H. GUNSTON.

## NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

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## KIOSKS.

THERE are signs that the telephone Kiosk will soon become as familiar an object in our highways and bye-ways as the more historic red pillar-box. With its cheerful hue by day and its welcoming bright light at night, its promise of ever ready aid to all in need of rapid communication, it forms a friendly figure in the scene whether it stands as one of a row in a busy railway station or shopping centre, or solitary in a suburban High Street, or embosomed in bushes at the entrance to a park or recreation ground, or—a link with the urbane world—conspicuous on the village green. It is undoubtedly a persuasive standing advertisement of the telephone service. It offers a "sample" of that service for all to taste. It is consequently a stimulator of sales, and as Mr. Lane truly says in an article printed in another column, the Sales Representative who does not recognise this fact is a "die-hard." A newspaper correspondent who wishes to strengthen his plea for a reduction of rates may pretend that while he can make a twopenny call from a Kiosk he does not see the force of becoming a subscriber at "exorbitant" rates. But experience shows that such a call-office user does tend to become a subscriber: the "sample" has done more to make him "telephone-minded" than any other form of publicity could do. Mr. Lane makes a special plea that the Publicity Department should advertise more extensively all the facilities obtainable at a Kiosk, not only with a view to its wider use, but also with a view to beginning the telephone education of the public before they are yet subscribers. The idea is a good one for which there is much to be said. We think, nevertheless, that

our contributor's idea of the limited nature of the field in which Kiosk-telephones are used is hardly warranted, nor do we think that Sales Representatives need have any misgivings in arguing with shopkeepers that when on the telephone system they are available to potential customers from kiosks or call offices. The suggestion that we have not progressed very far from the idea that the kiosk is some kind of elaborate fire alarm is rhetorical rather than accurate. Local circumstances, of course, vary, and it is impossible to generalise on the conditions existing in a given area. But there is no doubt that the call-office system of the country, looked at as a whole, is used regularly in the widest possible manner for all kinds of communications, business and social. It is used, too, by all sorts and conditions of people. It is an encouraging thought for those interested in furthering telephone development that all these call office users, whether gentle or humble, are speaking to correspondents at the other end of the line who must be telephone subscribers. In the busiest centres the kiosks are continuously occupied during the working hours of the day, in suburban high streets they are in regular use, and even in the quieter districts they are engaged with a surprising frequency. This general use, this kiosk-habit as we may style it, altogether precludes the idea that they are not used except in cases of emergency. It indicates conclusively that call offices are used for all kinds of messages, business and social. Even the claim—whether vain or not—to which we have referred, that a handy call office dispenses with the necessity of becoming a telephone subscriber, is a proof that those who make it would use the kiosk for all the purposes for which a subscriber uses his own line. Nevertheless, telephone-minded as the town-dweller is undoubtedly becoming—and, of course, we do not here refer to London only—there is no doubt that there are regions where the kiosk is less regularly occupied and where all the services it can render are imperfectly appreciated. Any steps taken to spread more light in these darker places would be steps in the right direction.

## HIC ET UBIQUE.

WE offer our congratulations to the following recipients of Birthday Honours:—

### *Knight Bachelor.*

Edward T. Campbell, M.P., Parliamentary Secretary to the Postmaster-General.  
Brig.-General Sir F. H. Williamson, C.B., C.B.E., Director of Postal Services.

### *O.B.E.*

A. J. Ardern, Postmaster Surveyor, Belfast.  
J. T. Whitelaw, District Manager, Post Office Telephones, Manchester.

### *M.B.E.*

Chas. Blackwood, Head Postmaster, Bath.  
E. L. Clair, Superintendent, C.T.O.  
W. J. Hodgetts, Assistant Engineer, G.P.O.  
Edith Nurse, Chief Supervisor, London Telephone Service.

### *Imperial Service Order Companion.*

Hedley, John, Staff Engineer, G.P.O.



The Anglo-Indian telephone service, opened last month, has been extended to Calcutta, Madras, Nagpur, and other places in India. The charge is the same as for calls to Bombay, viz., £6 for the first 3 minutes.

Service to Central America was opened during June, being available to San Josi (Costa Rica), Guatemala City (Guatemala), Managua (Nicaragua), and to all places in Panama and the Canal Zone. The charge for the first three minutes is £7 16s. 0d.

Statistics of the telephone development of the five chief telephone using countries in 1932 are now available. It is as follows :

	No. of Telephones.	Loss or Gain.	Telephones per 100 inhab.
United States ... ..	17,547,000	-2,143,000	14.3
Germany ... ..	2,995,917	- 161,827	4.7
Great Britain ... ..	2,118,925	+ 66,293	4.6
France ... ..	1,292,254	+ 63,275	3.
Canada ... ..	1,279,565	- 100,472	12.09

We regret to record the passing of another pioneer, Mr. F. Barr, who was with the old United Company in the early days of telephony. He was associated with Mr. Addenbrook at Newcastle, and was local manager at Sheffield at the time of the transfer of the National Company's system to the State.

A Police telephone and signal system and a Police teleprinter system were installed for demonstration purposes at the Highland Show, Dundee, from June 20 to 23, and proved a centre of interest to the Scottish Chief Constables and Town Councillors who visited the Show. The Duke and Duchess of York spent some time examining the exhibit, which was also inspected by Sir John Gilmour, the Home Secretary.

The following story reaches us from New Zealand :—

A young man undergoing an examination was asked to describe different electric batteries, among them one named the Daniel cell.

His reply was : " About Daniel's cell very little is known, but it is generally supposed to have been a bare den furnished with lions. As Daniel is dead and the lions dead, what on earth is the good of raking up an old story ? "

One has to go 'outside' for really 'inside' information. " *Reynold's* " *Secret Service Man* says :—

" I hear that the Government has laid down a secret telephone service for official use only. The lines are laid very deeply, and certainly economy has not been studied in the matter."

The italics are ours. We like to linger over the picture of the malevolent spy having to dig half-way down to the antipodes before he can tap the dark secrets flashing along those very deeply laid lines.

### PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at May 31, 1933, was 2,149,384, representing a net increase of 6,644 on the total at the end of the previous month.

The growth for the month of May is summarised below :—

Telephone Stations—	London.	Provinces.
Total ... ..	801,836	1,347,548
Net increase ... ..	1,991	4,653
Residence Rate Stations—		
Total ... ..	257,061	340,277
Net increase ... ..	440	1,432

### Call Office Stations (including Kiosks)—

Total ... ..	9,039	30,727
Net increase ... ..	68	125

### Kiosks—

Total ... ..	3,619	11,704
Net increase ... ..	44	139

International calls in March numbered 107,120, making the total number of international calls for the financial year 1,173,557, as compared with 1,227,291 for the year ended March, 1932.

Further progress was made during the month of May with the development of the local exchange system. New Provincial exchanges opened included the following :—

Hayling Island (reconstructed automatic); Ranmoor (automatic); Swinton (automatic conversion); and the following rural automatic exchanges: Arisaig (Mallaig), Aston Common (Sheffield), Chapelton (Strathaven), Crooklands (Kendal), Dunton Green (Sevenoaks), Fleggburgh (Acle), Glenridding (Ambleside), Hest Bank (Lancaster), Holmrook (Cumberland), Horden (Newcastle-on-Tyne), Kirtlebridge (Lockerbie), North Kelsey (Brigg), Pantydwr (Rhayader), Ratley (Banbury), Stalham (Norwich), Stockland (Axminster), Wallop (Southampton), Wroxton St. Mary (Banbury);

and among the more important Provincial exchanges extended was :—

Wolverhampton (automatic).

During the month the following additions to the main underground system were completed and brought into use :—

Yeovil—Dorchester;  
Salisbury—Southampton;  
Gallows Corner—Mark Tey;  
Derby—Leeds;

while 64 new overhead trunk circuits were completed, and 72 additional circuits were provided by means of spare wires in underground cables.

### DEATH OF MR. R. SHEPHERD.

WE regret to record the death, after a painful illness, of Mr. Robert Shepherd, who was well known to an, alas! ever-decreasing number of our readers. He was one of the pioneers of the telephone system, having made his first acquaintance with telephony in 1879. Mr. Shepherd was born in 1860 and, after being educated at Queens College, Belfast, and Edinburgh University, he entered the service of the Scottish Telephone Exchange Limited in 1880. He was sent by this company to Belfast to open the first exchange in Ireland. After acting as Assistant Engineer to the National Telephone Company (which had acquired the Scottish Company) Mr. Shepherd went to Italy, where he did pioneer work for the Anglo-Continental Telephone Company in Florence, Bologna and Leghorn. After developing Cambridge telephonically for the South of England Co. he rejoined the National Telephone Company in 1886, and was appointed District Manager for Ulster. In 1896 he was appointed Provincial Superintendent for the West of England, subsequently being moved to Liverpool as Superintendent of the more important North Western Province. He retained this office until the transfer of the Company's system to the Post Office on Dec. 31, 1911. Mr. Shepherd has long been living in retirement at Constantinople, where his death occurred. In his pioneer days in Ireland (and especially in Italy) Mr. Shepherd had to train his own men, devise apparatus and overcome many of the difficulties incident to an entirely new art, which he did with exemplary skill and patience.

W. H. G.

## DEVELOPMENTS IN ENGINEERING CONSTRUCTION.\*

By P. J. RIDD.

THE havoc caused to the overhead line plant in many parts of this country by the blizzard which occurred on Feb. 24 last, and the complete dislocation of the telegraph and telephone services which ensued in some of the affected districts not served, or not adequately served by underground plant, have directed attention to the hazard to which, in exceptional conditions, overhead line construction is unavoidably exposed, and perhaps lend interest to a description of the development of modern alternative methods of external plant construction.

The British Post Office has a reputation for the excellence of its heavy aerial line construction, but notwithstanding the ample safety factors allowed for in this class of construction the risk of very serious breakdowns cannot be entirely eliminated. Occasionally, though fortunately in this country at comparatively long intervals, poles and overhead lines are subjected to conditions of ice loading and wind pressure that no practical methods of construction could withstand.

The February blizzard certainly produced those conditions and as a result there were some 1,600 poles broken, 14,000 poles brought down or deflected, and 65,000 trunk junction and subscribers' lines thrown out of service. Happily, on this as on other occasions of disaster to telephone plant, there was no loss of life or case of serious injury.

We may claim that quite apart from the technical advantages now obtainable by the use of underground cables for long distance circuits there



FIG. 1. WORKMAN FITTING RINGS.

is a resultant increase in the reliability of the service, but it would be a mistake to assume that all our troubles disappear when an underground service is brought into use and that the underground cabling system of the Post Office, once laid, gives no further cause for anxiety to the responsible engineers. This, unfortunately, is by no means the case, and I shall refer later to a few of the problems in connexion with underground cables which present roadway conditions and modern transport methods have presented the Engineering

\* Abstract from paper read before the Post Office Telephone and Telegraph Society of London. The paper was illustrated by a large number of explanatory slides, of which owing to considerations of space, we are only able to reproduce a limited number.—Ed., T. & T. J.

Department and indicate in some measure the steps which are being taken for their solution.

The network of underground telephone cables now in operation is very extensive indeed, but it was unfortunate that in one district in Wales between Carmarthen and Milford and Narberth and Tenby not served by main underground cables, the damage to the overhead plant in February last was especially severe, so that many exchanges and even towns were completely isolated. This provided an excellent opportunity for emergency work, which was undertaken by Messrs. Pirelli General Cable Works, Ltd., and Standard Telephones & Cables, Ltd., under the direction of the Lincs Section of the Engineer-in-Chief's Office, by which 50 miles of steel tape armoured lead covered cable has been manufactured, jointed, loaded and placed in position on the surface, where this was found possible without causing obstructions, but otherwise in trench, to enable service to be given within 4 weeks from the commencement of the work. The work was duly carried out to the scheduled date and it will be agreed that it was a very creditable performance.



FIG. 2. LORRY DRAWING CABLE INTO POSITION.

I shall have a good deal to say about lead-sheathed cable armoured with steel tape, as used on this job, and it will perhaps be well here to describe its special features. The lead-sheathed cable is passed through a bath of bituminous compound and is then lapped with compounded paper. Further compound is applied to the paper, which is then served with compounded jute yarn to form a bedding for a mild steel tape 20.40 mils in thickness, which is wound with a suitable open lay followed by a second and similar tape so applied that it covers the gaps between the lappings of the first tape. The tapes are compounded and wrapped with jute yarn and a final application of compound completes the cable which is treated with whitewash to prevent adhesion between the turns when wound on the drum.

Prior to the introduction of the tape-armoured cable in 1932, experiments had been carried out with lead-covered aerial cables, notably the London-Southend and London-Brighton Cables with the the object of providing additional trunk circuits more cheaply than was possible by the standard method of construction—viz., lead-covered cable in duct. Aerial cables, and even lead-covered aerial cables, were in use for local service very many years ago, but there are certain constructional features which are of interest and which distinguish the London-Brighton cable from its predecessors.

In 1929 the Engineer-in-Chief appointed a committee to enquire into the conditions which necessitated the use of heavy gauge conductors in cables for relatively short trunk circuits, whereas 20-lb. conductors were in use and giving excellent service for long distance circuits such as London-Glasgow or London-Berlin. This committee recommended that the practice already adopted for long distance circuits should be extended to the shorter circuits and that transmission improvements should be obtained on those circuits by the use of valve repeaters associated with light-weight loaded conductors.

The use of small-gauge conductors and the adoption of quad formation which permits wires to be accommodated in an area 40% less than that of the corresponding multiple twin formation made possible the manufacture of cable of conveniently small diameter suitable for aerial suspension in spans of normal length. The intention at this time was that use should be made so far as possible of the well-built stout pole lines then existing between the group centres. By this means the capital cost per circuit mile could be reduced to approximately half that for underground cable in duct, the then standard. With improved methods of aerial cable suspension it was anticipated also that the annual maintenance charges would be lower. It was decided, therefore, to provide additional circuits required between London and Brighton by means of an aerial cable to be erected on poles already in position, and this work was duly completed. The diameter of the London-Brighton cable is 0.82 in., and it contains 37 four-wire circuits, the weight of the conductors being 10 lb. per mile.

Prior to 1931 the standard methods of suspension of aerial cables of less than 1½ in. diameter was by means of marline suspenders secured by hooks to the steel suspension wire and the method of erecting the cable in position was to place the hook of every fourth suspender on the suspension wire at the first pole and draw the cable across the intermediate spans whilst hanging on the hooks, the remainder of the hooks being placed on the steel at each pole as the last span was being drawn into position. This type of suspender allowed the cable to hang several inches below the suspending wire and in course of time the suspenders varied in length or moved along the cable and sometimes became detached. As a consequence renewal of suspenders was a frequent necessity and maintenance costs were high.

On this account consideration was directed to the use of steel cable rings for small cables, and accordingly these were used on the London-Brighton cable to obtain additional experience. The cable ring is made of spring steel wire and is fixed by hand on the strand suspension wire, which it grips securely by reason of its special hooks. In the process of construction the strand wire is erected first. This is terminated at the pole end of a section which may be at a convenient point on the outskirts of a large town or at an

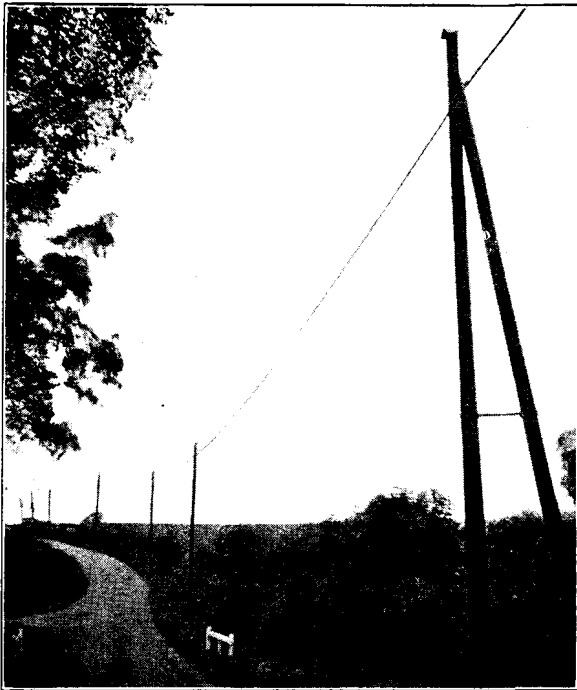


FIG. 3. CLOSE-UP VIEW OF CABLE AND VIEW OF CABLE IN POSITION.

underground crossing of high or extra high tension power wires where both open and aerial cable circuits have to be taken underground. At intermediate poles between these terminals the suspension strand wire is clamped in special brackets bolted to the pole, and if the pole is at a road or railway crossing, strengthening of the suspension is given by clipping to the suspension strand, auxiliary lengths of strand, which are given two turns about the pole. The strand wire having been erected, the next step is to place the cable rings in position at intervals along it and this is done from a travelling "ringing chair," Fig. 1. As each ring is placed on the strand it is made to enclose a draw-rope or a sash-line which will enable a draw-rope to be drawn in. The draw-rope is used to pull the cable into position. A winch may be used, or the draw-rope may be guided via snatch blocks so that a lorry can be used for drawing in as shown in Fig. 2. The cable drum has been set up 500 yds. away and is not shown in this photograph; the lorry is shown travelling towards it. This method is sometimes adopted for drawing in underground cables. At the other end of the section, where the cable is fed into the rings, a temporary guy carrying snatch blocks is erected to carry the cable from the drum up to the level of the suspension system. Joints between cable lengths have to be made aloft and a certain amount of ingenuity has to be exercised to obtain a stable platform from which the joiner can work.

The most recent development of aerial cable construction is shown in Fig. 3. In this arrangement the suspension strand and the cable are laid up side by side by the manufacturer and are bound together with two galvanised steel tapes in open spiral.



FIG. 4. PLACING 310 PAIR 25-LB. PLUS 4-SCREENED PAIR 40-LB. LEAD COVERED AND ARMOURD CABLE BETWEEN ASHFORD AND HYTHE.

The cable may be drawn into position by means of special cable sheaves or may be laid along the road and lifted into position. The cable shown in Fig. 3 was drawn into position in lengths of about 800 yds. over cable shears fitted at each pole. This type of cable will probably be restricted to relatively short lengths for local service and it is expected that it will prove to be a cheaper form of construction than that previously described.

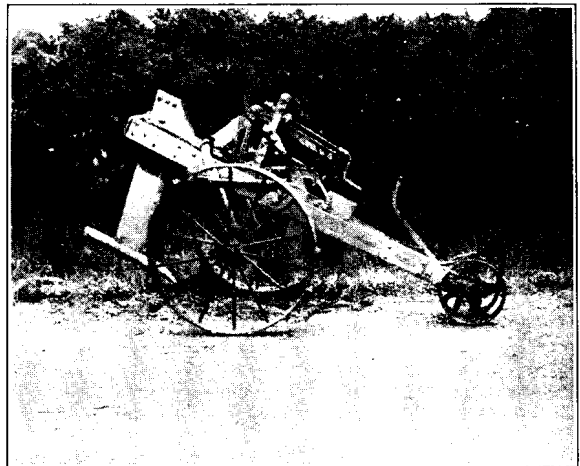


FIG. 5. RANSOME MOLE DRAINER.

[By courtesy of P.O.E.E. Journal.

It cannot be claimed that aerial cable construction of any type is entirely satisfactory or is suitable in all situations. It may be a sound engineering job, but it is exposed to at least some of the hazards of open wire and in sporting districts to one additional risk, namely, that of being shot. Further, it must be admitted that rural protection societies, such as the Council for

the Preservation of Rural England, profess no admiration for it, and in fact in some situations they press for open wires rather than cable. Apart from any question of storm risk or amenity there is with pole routes an increased liability to disturbance and of unproductive expenditure due to wayleave difficulties or alterations necessitated by roadway widenings. Since the erection of the Brighton cable it has been necessary to move the poles on account of road widenings over a route length of  $4\frac{1}{2}$  miles and within the last few weeks it has been found necessary to agree to place underground a section of the cable exceeding  $\frac{1}{2}$  mile in length.

Consideration was therefore given to methods of reducing the cost of providing underground circuits to enable underground construction to compete more favourably with aerial cable and it was decided to introduce steel tape armoured cables and to place them with associated loading coil pots directly in the ground without provision of ducts or manholes. The first main cable to be laid in this manner was that laid in the spring of last year between Ashford and St. Margaret's Bay, the cable containing 360 pairs of 25-lb. conductors and 4 pairs of 40-lb. conductors. This cable was laid in a trench 9 in. wide and at depths varying between 14 in. and 2 ft., the excavation being carried out by manual labour.

The cable may be pulled into position by a winch over rollers placed to bridge the top of the trench at suitable spacings or may be payed off a drum and laid as the drum passes along and at the side of the trench. The former method is very expeditious and convenient when a reasonably straight trench line is being dealt with and avoids difficulties arising from pipe or other obstructions which may cross the trench by the simple expedient of passing the forward end of the cable under the obstruction and of widening the spacing of the rollers on either side of the obstruction so that the natural sag of the cable under stress enables it to clear the obstruction and also the bottom of the trench. The operation of removing the rollers and lowering the cable into the trench is shown in Fig. 4.

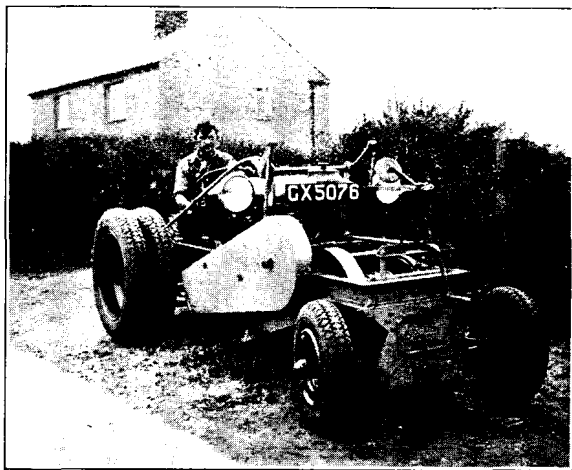


FIG. 6. FRONT VIEW OF FORDSON-AUTOMOWER TRACTOR AND WINCH, SHOWING WINDING DRUM AND ONE OF THE ANCHORS.

[By courtesy of P.O.E.E. Journal.]

It has been the practice for many years to lay directly in the ground short lengths of local cable protected by servings of bitumen and hessian or other fabric tape, but the Ashford-St. Margaret's Bay cable was distinguished from earlier protected cables by the addition of steel tape armouring and by the adoption of the practice of burying specially designed loading pots directly in the ground. There was no departure from normal practice in the method of laying the cable in an open trench.

The excavation and re-filling of trenches and the reinstatement of surfaces are, however, costly operations and immediately following the introduction of armoured cable consideration was given both at Headquarters and in the Districts to the adoption of methods by which the cost of laying this type of cable might be reduced. The plough had already been used with advantage as an auxiliary to manual excavation, and we were now to benefit further by the adaptation of another old-established agricultural practice to cabling operations. The practice of draining agricultural land by means of bores made about 2 ft. below the surface by a solid wedge-nosed cylindrical steel implement, aptly termed a mole, rigidly fixed by means of a knife-edged steel plate to a wheeled chassis, and drawn through the soil by horse or tractor power, has been followed for probably a century.

A modern type of agricultural "mole" drainer, made by Messrs. Ransome, Sims & Jeffries, of Ipswich, is shown in Fig. 5. The wedge-nosed "mole," which is 3 in. in diameter, and the knife-edged coulters by which it is attached to the chassis of the machine are clearly shown. The mole is shown in the raised position. It is lowered by the operation of the lever to be seen at the front of the machine.

Towards the end of the Great War, officers of the Royal Engineers considered the feasibility of using a machine of the mole drainer type for drawing in military cables by attaching them to the rear of the "mole" but, so

far as is known, no cables have actually been laid in this way other than for experimental purposes by the military authorities. The first practical application of the method in this country appears to have been in 1921, at Leafield Radio Station, where earth wires were drawn in behind a "mole" hauled by a tractor.

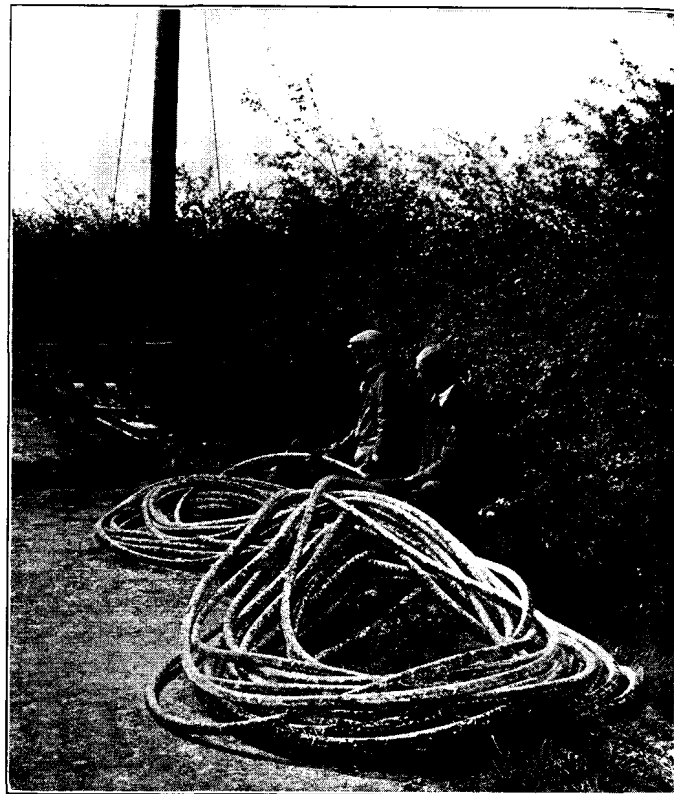


FIG. 7. SMALL MOLE DRAINER DRAWING IN CABLE. CABLE IN FIGURE OF 8 IN FOREGROUND.

It was not until the introduction of armoured cable 10 years later that any considerable application of the practice could be made, but with the advent of the new type of cable Colonel Sir Thomas Purves directed that experiments in cable laying should be made with the mole drainer. These experiments were proceeded with and demonstrated the practicability of the method. In the meantime an armoured cable to be laid between Cambridge

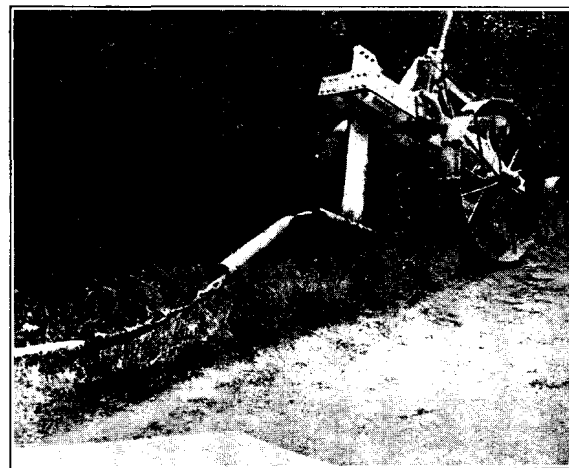


FIG. 8. MOLE DRAINER, SHOWING MAKE OFF OF CABLE, SAFETY LINK AND CYLINDRICAL COVER FOR LINK WITH TORPEDO END.

[By courtesy of P.O.E.E. Journal.]

and King's Lynn, had been authorised, and the Eastern District Engineers, with a view to the adoption of mechanical methods, had carried out trials of ploughs and mole drainers with the co-operation of Messrs. Ransomes, Sims & Jeffries, and were able to demonstrate so effectively the practical value of the method that steps were at once taken to acquire the necessary equipment.

The main items, in addition to the mole drainer already described, consist of a suitable tractor winch and a small type of mole drainer suitable for use where sufficient width of grass margin is not available to permit of the use of the large machine. The tractor which is shown in Fig. 6 is equipped with a self-anchoring device and power driven winch with steel hawser.

The small mole drainer, which was considerably modified and strengthened by the Engineering Department to meet the requirements for cable laying, is shown in operation in Fig. 7.

It will perhaps suffice to describe the pulling in of a typical length of 122-pr./10-lb. cable. The overall diameter of this cable is slightly less than 2 in., so there is reasonable margin for clearance in the mole drain of 3 in. diameter. A pit having been dug at the beginning of the length, which on the King's Lynn cable was about 260 yds., the mole and the cable drum

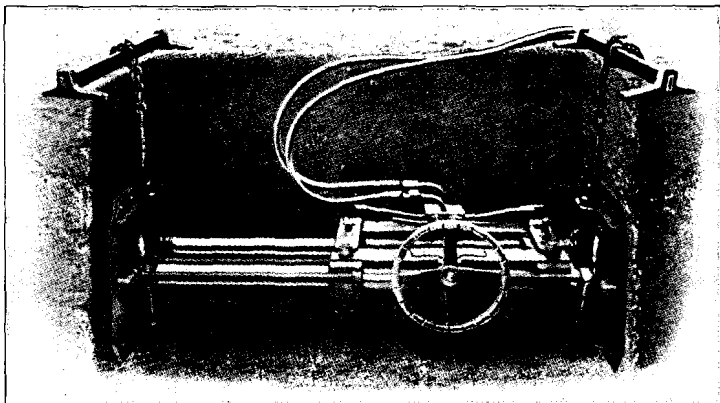


FIG. 9. READY TO COMMENCE THRUST-BORING.

are brought to the starting point and the cable end, stripped of its armour for about 2 ft., and with the lead sheath dressed down on to the conductors, is passed through a swivel and bent back on itself, and bound. To safeguard the cable against overstrain (a most essential precaution) the swivel is connected to the rear of the mole through a safety link of pre-determined breaking load (in this case  $7/148$  G.I. wire of breaking load 21 cwts.) and the cable head and safety link are enclosed in a torpedo-headed cylinder which takes the pull of the draw wire connected to the mole. The protection cylinder is shown in Fig. 8. It serves a very useful purpose in preventing any stones or earth which may have fallen in behind the mole from fouling the cable head and has materially reduced the trouble previously experienced from the breaking of the link. The mole drainer with the mole, adjusted to the required depth, usually about 2 ft., is now brought into position at the pit and the hawser having been hitched to the mole drainer through a safety link of  $4\frac{1}{2}$  tons breaking load, the tractor moves off in the direction of the pull, paying out the hawser as it goes, to a position at which suitable anchorage can be found about 80 yds. ahead. The tractor motor is then engaged with

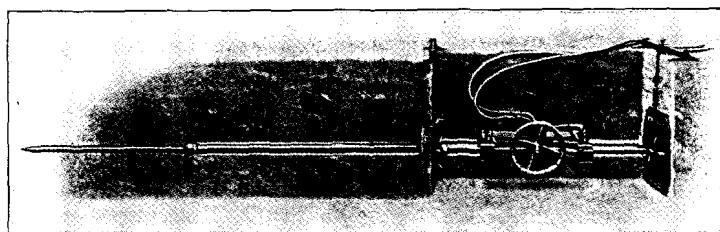


FIG. 10. THE PILOT-HOLE BEING "PUSHED."

the winch and with the hawser taking up the load the anchored tractor moves back very slightly towards the mole drainer until its further movement is arrested by its anchors now buried in the ground. The mole drainer is then pulled forward at the rate of about 80 ft. per minute and when the hawser has been completely wound on the winch the tractor motor is again transferred to the wheel drive and the tractor moves forward to repeat the operation. The draw bar pull in this operation may vary between two and four tons but the strain on the cable, as previously stated, will not exceed 21 cwts. It has been found that the strain on the cable is reduced by the application to the cable of a lubricant consisting of whitewash. When the going is hard a pailful is poured into the pit from time to time as the cabling proceeds. The mole drainer will break through or displace obstructions to a surprising extent without untoward incident, but not infrequently the stress exceeds  $4\frac{1}{2}$  tons and the main safety link is ruptured. The link has, however, been effective in preventing serious damage to the machines which have given no trouble from mechanical defects. Less frequently the link protecting

the cable is broken. The replacement of this link is a troublesome operation as it is necessary to dig down to the cable head.

The length of cable which can be pulled in one length can be increased by pulling in each way from the centre of the length. One-half the length is drawn in from the drum and the remainder is taken from the drum and formed in the figure of 8 on the ground and then drawn in the opposite direction. Lengths of 400 yds. of 122/10-pr. cable have been drawn in in this way. The method of operation is illustrated in Fig. 6.

It should be understood that these operations have been carried out not only on flat surfaces but on slopes and ditch banks with the mole drainer inclined from the vertical at angles up to  $45^\circ$ , while on occasions the bottom of a ditch has been considered acceptable. In these latter positions the small mole drainer is used. It is preferable, but not essential that the mole drainer should travel towards the winch in a straight line. No difficulty arises in guiding the mole within limits by passing the hawser through a snatch block or, where smaller deflections are necessary, by passing the hawser round a crowbar inserted in the ground and held by hand. Deflections in the vertical plane due to irregularities in the ground surface are naturally disadvantageous, but except in the case of very abrupt changes of level do not call for special treatment. In such exceptional cases the necessary levelling can readily be dealt with.

The results expected on the Cambridge-King's Lynn cable were fully realised and of the 38 miles of armoured cable laid, 25 miles were pulled in behind the mole at a cost per yard, including all ineffective time and the usual establishment charges, not exceeding one-half the average cost per yard of four recent contracts for trenching and cable laying in similar conditions. The saving, as compared with the average contract price, was, in fact, more than sufficient to defray the whole cost of the tractor and mole drainer plant.

The mole drainer has since been employed for drawing in cable between Horsham and Pulborough and Horsham and Cranleigh. The total length of the Horsham-Pulborough cable is approximately 20,000 yds., and includes—

In existing duct	...	...	...	1,000 yds.
By mole drainer	...	...	...	13,000 "
In trench	...	...	...	6,000 "
Thrust borer	...	...	...	90 "

The 90 yds. dealt with by the thrust borer covered 7 bores across roadways. The thrust borer is used to avoid trenching across roadways with expensive pavings or where such trenching would cause undue interference to road traffic. It is very useful, also, when a conduit is required to be provided under level crossings.

The thrust borer has been employed by the Engineering Department for some years for such works and even for passing under rivers, and canals. It operates on the same principle as the mole drainer, i.e., the channel in the ground is formed by displacement and compression of the surrounding earth without the production of spoil.

The machine consists of a hydraulically operated crosshead working on parallel fixed piston rods. A system of sighting rods, plumb lines and levels is included in the equipment. The pressure is applied by means of a hand pump in which oil is compressed up to 2 tons per square inch and supplied to the working crosshead through flexible pipes.

Fig. 9 shows the apparatus in position in the pit (4 ft. 4 in. by 2 ft. 6 in.) the piston rods being braced against thrust plates at the ends of the pit. The depth of the pit is determined by the depth at which the bore is required to be made. The depth of the bore is frequently dependent upon the positions of pipes, cables, or obstructions in the roadway. It should not be less than 2 ft. below the surface of the roadway.

A pilot rod is first attached to the crosshead, its pointed head being 18 in. in advance of the crosshead and the latter is moved forward 18 in. along the fixed piston rods by admitting oil under pressure into the crosshead cylinders, through controlling valves. In this operation the pilot rod has been driven forward 18 in. into the soil. The crosshead is then drawn back by admitting oil at the opposite ends of the cylinders and with the pilot point now 3 ft. in advance of the crosshead the operation is repeated. Screwed rods are attached to the rear of the pilot one by one, as shown in Fig. 10, and driven forward for the required length of bore. Each rod is 3 ft. long and requires two strokes of the crosshead to drive it into the ground. There is no rotary action of the boring rods—merely pressure. The usual equipment consists of 60 ft. of boring rods, which are sufficient for normal crossings.

When the pilot rod breaks through into the pit previously dug at the distant end of the required bore, the bore may be enlarged by pulling back an enlarging head of 3 in. to 6 in. diameter, according to the size of pipe or cable to be drawn in.

Pipes were drawn in at all the crossings on the Horsham-Pullborough job. This enabled the thrust boring work to be carried out in advance of the main cabling work. Although the use of the thrust borer is mainly confined to road and railway crossings, pipes have been laid along roads by thrust boring between pits spaced at convenient intervals. In grass margins such work would now, however, be regarded as ideal for mole draining, and the use of the mole drainer is the logical development of thrust boring methods.

(To be continued.)

## THE MONETARY AND ECONOMIC CONFERENCE.

As all the world knows, London is honoured by being chosen as the venue of what will probably go down in history as the greatest of all Conferences. As an effort to put an awry world straight it is without parallel and the hopes and fears of the 60 odd nations sending delegates will be centred in London for the next few months. That these hopes will be realised and the fears banished and the world's difficulties solved in such a way as to give lasting peace and prosperity is, I am sure, the earnest wish of us all.

That communication services will play an important part in the rapid and successful conduct of the business of the Conference will be obvious to everyone. It is, indeed, fortunate that 95% of the world's telephones are now within reach of London and the part this world-wide facility will play in the results attained is inestimable.

It will perhaps be of interest to readers of the *Journal* to learn something of what has been done to assist the work of the delegates and to ease the strain and responsibility put upon them by their respective Governments.

It is a matter for congratulation that such a suitable building as the new Geological Survey Museum was so far advanced as to enable it to be used for the meetings of the Conference. It contains not only a wonderful hall suitable in every way for the main Conference to hold its meetings in, but also, by some marvellous adaptations by the Office of Works, committee rooms of a size and convenience which must be seen to be believed. In addition, the building contains an office block, which, if it had been built for the purpose, could hardly be surpassed for the housing of the League of Nations staff from Geneva, which is responsible for the organisation and running of the Conference.

A building unfinished 6 weeks ago has been magically converted into a sumptuous home for the Conference. The furnishings alone must have taxed the Office of Works to the utmost. Thousands of square yards of linoleum and carpet of standard pattern cover the floors. Curtains adorn the windows. Tables and hundreds of chairs made to one pattern are a noticeable feature while specially made desks for the delegates and Press fill the main hall. To one who has had to fight many losing battles for a special chair or a few square yards of carpet, it is all marvellous.

All departments of the Post Office have vied with each other in preparing a truly comprehensive system of communications. The experience gained at previous conferences on a fairly comprehensive scale in London since the war is a fortunate circumstance, for, while they do not compare in size or importance with such a World Conference as is now being held, we obtained much useful knowledge of the requirements of meetings of nations on a considerable scale. We had, too, the experience and guidance of Mr. Alfred Hersly, a League of Nations official with a unique knowledge of the requirements of conferences generally. He has helped to solve many knotty problems and our thanks are due to him.

As a preliminary step when it was decided during the Prime Minister's visit to Washington at the end of April that the Conference would be held in London, starting on June 12, a meeting was called of representatives of the various Government Departments concerned and the role each was to play decided upon. This was followed by other meetings, at which various points of procedure were discussed and progress reported. These meetings have been invaluable in clearing the air and getting the very essential co-ordination between the various interests concerned.

The help and co-operation of every Department has been of such a nature that it will not readily be forgotten and has been an example of the Civil Service at its best. The inter-departmental co-operation of the various sections of the Post Office must not

be allowed to pass without a word of praise and thankfulness, for without such mutual help and understanding the work of building up a complicated system in the short time available would have proved impossible.

The Conference telephone system had, like Roman Gaul, to be "quartered into three halves." A system for the Secretariat, with which was combined one for the delegates and a separate installation for the Press.

The first and second combined consist of a 5-position C.B. No. 9 P.B.X. switchboard providing 25 exchange lines to Western Exchange and 2 lines direct to the record and demand positions in the Trunk Exchange, about 80 extensions for the League Secretariat and 14 extensions installed in cabinets in various parts of the building for the use of the delegates for local calls only and 6 extensions in cabinets placed conveniently in the delegates' tea lounge for Toll, inland trunk and international calls. The latter nest of cabinets will be in charge of a Post Office attendant. As the calls from these will be paid for at normal rates it has been necessary to devise a system of deposits to overcome the difficulty of the delegates having to pay cash for each individual call, no small matter these days, when calls to the ends of the earth are possible, costing anything up to £6 or so for a three minutes' call.

The switchboard will be staffed all night, if this should be proved necessary, and to meet normal occasions 25 selected extensions have been provided with dials for night service.

A rest room has been provided for the convenience of the operators.

Lines have also been run to the car parks for calling the cars of the delegates and diplomats. At the car parks these will be in the charge of Automobile Association attendants.

Messrs. Thomas Cook & Sons, who have an office in the building, and the caterer have rented direct exchange lines.

Broadcasting being made a feature of the Conference, circuits have been run between the Conference Hall and Broadcasting House for the British Broadcasting Corporation.

External extension lines have also been run from and to various Government Departments in Whitehall and to the Stationery Office Printing Works at Harrow.

The necessary circuit for a Reuter's "Ticker" has been installed.

In the basement, which is of the "semi" variety, has been provided ample accommodation for the Press, including a writing room and a restaurant.

Forty telephone lines in cabinets have been installed for the use of pressmen, 9 for local and Toll calls fitted with multi-coin boxes, 16 for Toll and trunk calls fitted also with multi-coin boxes, but normally under the control of Post Office attendants at a specially designed 2-position control board, and 15 direct to the record and demand positions at the Trunk Exchange for trunk, Continental and overseas calls, these also being connected through a similar attendants' control board.

In the case of the Press also a special system of deposits to be paid at the Conference Post Office has been introduced to save the necessity for payment in cash and a special form of receipt will be given which will be produced at the time of making a telephone call or sending a telegram and will show the cumulative charges against the amount deposited. When exhaustion approaches the caller will be asked to deposit a fresh sum at the post office in the building so that his account may be kept in credit so far as possible.

The various cable companies have accommodation close by. We have provided nine teleprinter circuits, and in the majority of cases the instruments as well, and in addition three private telephone lines in cabinets to certain of the companies' headquarters.

The special wiring necessary for the installations has been provided by means of lead-covered cables run on the outside of the building.

As the Geological Survey Museum is one of a number of buildings in the neighbourhood which serve a similar purpose and of which the telephone requirements are not great, the number of cable spares proved insufficient to meet the unexpected strain and special arrangements had to be made to provide additional cable capacity. Including the wiring of the building no less than 3 miles of lead-covered cables of varying capacities were installed.

In the basement also is to be found the post office, with two teleprinter circuits to the Central Telegraph Office and complete in every respect, including post boxes for normal and air mail and stamp vending machines, to cope with all classes of business except Savings Bank transactions.

In another part of the building adjacent to the Conference Hall 11 cabinets have been installed with private telephone wires direct to the London offices of news agencies and newspapers.

In all over 80 telephone cabinets have been provided in the building. The engineers produced them at very short notice by something little short of a miracle. As they were not all of the same pattern, however, they have had to be levelled up and the Office of Works has fixed a cornice on top and painted them to match the surrounding decorations. Each has been equipped with a light and shelf, and the ubiquitous Office of Works has provided stools for the comfort of users.

A writer in the Press compared the largest suite, which he saw with the doors open, to a railway train disgorging its passengers.

Hand microphones have been fitted throughout.

The majority of telephonists and attendants and the counter clerks will be French-speaking in order to give assistance to those members of the delegations and Press whose acquaintance with English is insufficient to carry them through.

In addition to all this it has been necessary to make special arrangements to provide facilities at the hotels accommodating the delegates and their staffs.

The London Engineering Staff, whose untiring effort I should like to acknowledge, has done some exceptionally smart work, in addition to that carried out at the Conference Hall, in providing additional switchboard capacity ranging from two additional sections on an existing 8-position lamp signalling multiple switchboard to several  $10 + 50$  non-multiple boards providing 65 separate accommodation for the delegates' service. Private wires have also been provided in some instances from the hotels to the Conference switchboard.

So we leave it all to the Traffic and Accounting Branches with the hope that the helpful spirit of co-operation and good will which prevailed throughout a strenuous six weeks will be equally evident among those who attend the Conference, so that we may feel that our work has not been in vain and that we have had some little part in bringing about peace and prosperity to this country and the world as a whole.

W. F. T.

## MODERN SALESMANSHIP.

MR. A. S. BRODIE, Sales Manager of Scotland Western District, recently travelled by aeroplane (in his own time and at his own risk) from Glasgow to Campbeltown and returned by air with agreements which he had successfully negotiated. The double journey was completed in  $2\frac{3}{4}$  hours (allowing one hour in Campbeltown), against the normal travelling time by train and steamer (including 2 hours ashore) of 12 hours. Will the future buildings which house the offices of the Sales Section be flat so that the service 'plane can be accommodated for instant use?

## SAMPLES.

By F. J. LANE.

SALES Representatives (or Contract Officers as they were) have always, as a matter of individual policy, dabbled to some extent in the calling rate business, but it has now been recognised as a general policy, that the calling rate problem is largely a sales one, and plans are being evolved to enable the Sales Branch to deal with it.

This necessity of taking active measures to increase the use of the telephone amongst subscribers means that in the duty of obtaining orders, the Sales Representative is working on barren soil—that is, he is selling telephones to people who are not telephone minded. If this were not so the service would be much easier to sell and the calling-rate would almost be left to look after itself, with but very little encouragement. Every Sales Representative knows how much easier it is to sell extensions than exchange lines; yet, if we exclude the matter of comparative cost, it should obviously be a more difficult thing to do. The, at least, partial establishment of the telephone habit provides the key.

It would no doubt be an exaggeration to say that by first selling the telephone and then trying to inculcate the telephone habit into the "sellee," we are putting the cart before the horse. To some extent it is unavoidable in spite of displays and exhibitions which are constructed with little attention being paid to securing orders, but more with the object of putting the horse in its right place. This is all to the good and as time goes on the effect of this form of publicity will be more and more apparent. But surely there is an instrument ready to hand costing nothing (or rather paying for itself) which offers to the public the most tempting of all advertisements—the sample. I mean, of course, the street kiosk.

Curiously enough, the beneficent influence of increased public telephone facilities upon sales has long been recognised (the Representative who still believes that their effect is an adverse one is indeed a die-hard), yet beyond providing more and more kiosks, no very special attention has been given to making the most of this weapon.

At a group-meeting held recently in this district, it was suggested that people (non-subscribers) used kiosks for telephoning to tradesmen, hairdressers, and so forth. Do they? I very gravely doubt it (as, in fact, did everyone present after a moment's reflection). In fact, isn't it fairly obvious that they do not?

Kiosks which "earn" large receipts are to be found in main highways and centres where they are of value, especially to subscribers and to employees of subscribers. There is naturally no record of what people who use call-offices in residential areas do talk about, but the "user" of such kiosks clearly indicates that the conversations relate chiefly to what might be termed "emergencies" rather than to the commonplace of ordinary residential telephone usage. I doubt very much if we have progressed so very far (although we have a little) from the idea that the kiosk is some kind of elaborated fire alarm. Very likely call-offices are sometimes used by non-subscribers to get into touch with friends who are subscribers (and this is undoubtedly progress), but as a whole they do not use the kiosk—nor think to use it—as subscribers use their telephones subject to the obvious limitations inseparable from one-way traffic, to mention but one disadvantage. Sales Representatives, when faced with the small tradesman's objection that few of his possible customers are on the 'phone, do argue that anyone can use the kiosk, but I doubt very much if many officers believe in the real force of the argument themselves.

Yet why shouldn't people use the handy public telephone? They do not really prefer a sixpenny ride to the town in a bus or

crowded tram on a rainy day. Clearly, it simply doesn't occur to them to telephone—they haven't even a suspicion of the telephone mind. It is nevertheless to these people that the Sales Representative has to sell the service. Small wonder then that when these people become subscribers their telephone education has to be begun at the very beginning, and an incessant war has to be waged against "avoidable" cessations.

I suggest that here is an excellent opportunity for the Publicity Department. The present leaflet announcing the opening of a public telephone is not a publicity item at all, and could be usefully replaced by something more in keeping with advertising activities. In addition, at all times, the practical use of the kiosk could be brought to the notice of the non-subscribers by means of a leaflet or brochure distributed by post.

It would be of great value if the kiosks themselves bore some well-worded indications of the uses to which they can be put. There is, however, a difficulty here: kiosks are of well-proportioned design and any proposal to attach advertisements to them would have to be very carefully thought out. Nevertheless, it might be done, and in any case the inside of the kiosk is available for use without giving offence to good taste.

It can hardly be gainsaid that the creation of the telephone habit is the very core of our business. People talk of reductions in rentals and charges, but telephone men are little impressed. "A man affords what he wants" was an editorial pronouncement some time ago, and that is as near the full truth as one can get in a few words. Vast numbers of people of the classes as yet are barely touched on by telephone sales, spend far more than telephone rentals in all sorts of trivialities which have caught their fancy or which have become habits. If these people were telephone conscious the present rates would not deter them. They all have need of the telephone, but as yet they don't want it. Why not invite them to sample it?

## REVIEWS.

"*The Principles of Radio Communication.*" By John H. Morecroft, D.Sc., assisted by A. Pinto and W. A. Curry. Published by Chapman and Hall, London. Third Edition. 1,084 + xviii pp. Price 46s. 6d. net.

The two previous editions of this book, published respectively in 1921 and 1927, were at the times of their appearance the most up-to-date treatises available on the subject.

The rapid development which made the second edition necessary has continued so that to-day a considerable amount of the matter contained in that edition has become obsolete and has been deleted, while at the same time so much new matter has been included that 83 pages have had to be added.

The principal sections of the book which are either new or have been amplified in the present edition are those dealing with the subject of rectifying apparatus and circuits, the action of filters, the shielding of wireless sets from external electrical influences, the electrolytic condenser, modern valves and the more extended fields of application of the older types of valve, the use of quartz crystals for frequency control, microphones and the theory of modulation in wireless telephony, short waves, the transmission of wireless signals, and directed radiation and reception, both for telegraphic and telephonic channels and for beacon purposes for ships and aircraft.

The book is the most complete exposition of the principles of wireless telegraphy and telephony with which we are acquainted, and it is produced with the same excellent style of printing and clearness in the reproduction of the diagrams for which the earlier editions were distinguished.

It should belong to the library of anyone associated in any way with the scientific or engineering sides of wireless telegraphy and telephony.

## LONG DISTANCE TELEPHONY.

NEW BRITISH OVERSEAS EXCHANGE—(contd.).

BY J. F. DARBY (*Headquarters Traffic Section*).

THE switching arrangements for setting up extra-European calls in the Overseas exchange are of a comparatively simple character. The switchboards are of the same type as those used for inland and continental services, and the standard *sleeve control* cord circuit with a small modification (mentioned later) as regards monitoring facilities is used. Connexions whether, *radio channel to inland circuit*, *radio channel to continental*, or *radio channel to radio channel* are made on a two-wire basis, enabling ordinary type jacks and plugs to be used for switching.

Apart from a small suite of observation and enquiry positions accommodated in the centre of the switchroom, the equipment consists entirely of line operating positions (28 positions in all) *en suite* with the continental positions and differing very little in appearance from them.

Subscribers in the London area (and also Provincial operators and booking operators on the Continent) are connected to the extra-European exchange by record circuits, the calling equipments of which are ancilliaried around the line-operating positions. The line-operating positions are, therefore, used both for recording calls and setting up connexions. Normally after accepting a booking a recording operator releases the subscriber before attempting to set up the call. The facilities provided will, however, admit of a subscriber being held while an extra-European call is being set up, although, for the time being this method of operating has not been introduced.

The equipment of the old extra-European positions was arranged in pairs of positions—one for a controlling operator, in charge of the radio channel and the other for an "advance calling" operator, responsible for preparing the European side of a connexion. The new positions, however, are not so linked, and any position can be used for operating a radio channel or the European link. The new arrangements admit of the two operators being separated if necessary, i.e. not on adjacent positions, and also for the operating on both the radio and European links being undertaken on one position only as mentioned later.

As regards the equipment of the position, the upper portion of the panel is similar to that of the continental suite, being a multiple of the same circuits. It includes circuits to trunk subscribers, London exchanges, provincial exchanges and continental centres and also a multiple of interposition and service lines. This arrangement admits of the setting up of a connexion with a single pair of cords between a radio channel on one hand and a trunk subscriber's line, inland zone centre or continental *tête-de-ligne*, as the case may be, on the other hand—the use of internal transfer circuits being obviated.

The lower portion of the panel accommodates equipment proper to the extra-European positions only, *viz.*, an ancillary of record circuits and circuits from the *technical* operators, and a multiple of the radio channels. Associated with the latter is equipment for (a) monitoring (one jack per channel), (b) indicating disengaged channels (one lamp, operated by a press key, per channel), and (c) indicating the *state* (transmission quality) of each channel (three "spotlight" lamps per channel as described later).

The circuits from the *technical* operators in the *radio terminal* room are arranged so that a technical operator in charge of a particular radio channel can obtain immediate access over a local speaking circuit to the traffic operator controlling the channel. The signal from the former is received over the local circuit at all line-operating positions, on a lamp, the labelling of which indicates the particular channel in question. The traffic operator upon



seeing a "technical operator's" lamp glowing in respect of the radio channel under her charge, speaks on the *channel* if it is not in use, otherwise she enters the local speaking circuit mentioned above by depressing an associated order wire key on her keyboard.

This enables a technical operator (who always gives continuous listening on a radio channel) to call the traffic operator into circuit on the radio channel when, during slack periods, continuous listening is not given by the traffic operator; it avoids the complication (from a technical point of view) of providing direct calling signals between the traffic operators at the two ends of a radio channel.

The technical operator can also speak to the traffic operator on the monitoring circuit, when the latter operator is monitoring, without interfering with the radio connexion.

The keyboard is of the new standard type, but is equipped with only 3 cord circuits apart from a special monitoring cord. On the right hand a visible index file is accommodated together with the usual master keys which provide dialling and "splitting" facilities on the individual cord circuits.

Monitoring facilities are non-standard. In the place of the usual monitoring key per cord circuit which places the operator's headset, *via* a high impedance transformer, across the cord circuit, a single monitoring cord is provided. The insertion of the plug of the monitoring cord into the monitoring jack of a particular radio channel (providing that all speaking keys are at normal) automatically switches the operator's headset *via* a high impedance transformer to a two-wire circuit which terminates in the radio terminal on a monitoring amplifier on the 4-wire side of the hybrid coil of the radio channel in question, giving monitoring facilities without transmission loss on the channel.

The operation of a speaking key on the position on which a monitoring connexion is set up, automatically disconnects the monitoring circuit. A controlling operator can, therefore, change from the monitoring to speaking condition or *vice versa* by the movement of the speaking key.

The keyboard also accommodates a small group of order wire keys, some of which are for use in setting up connexions to the larger London exchanges, and others for gaining access to the technical operators.

Two *stop watch timers* are mounted on a holder on the left of the keyboard: one is used for recording the *overall* duration of a call and the other for the *chargeable* duration. The timers are controlled by levers &c., as follows:—

Levers, &c.	Movement.	Result.
Left-hand ...	Right to left ...	Starts both timers.
Left-hand ...	Left to right ...	Stops chargeable timer.
Left-hand ...	Right to left ...	Restarts chargeable timer.
Right-hand ...	Left to right ...	Stops both timers.
Top plunger ...	Press ...	Resets both timers at zero.

By these devices a subscriber's call is accurately timed to within a second.

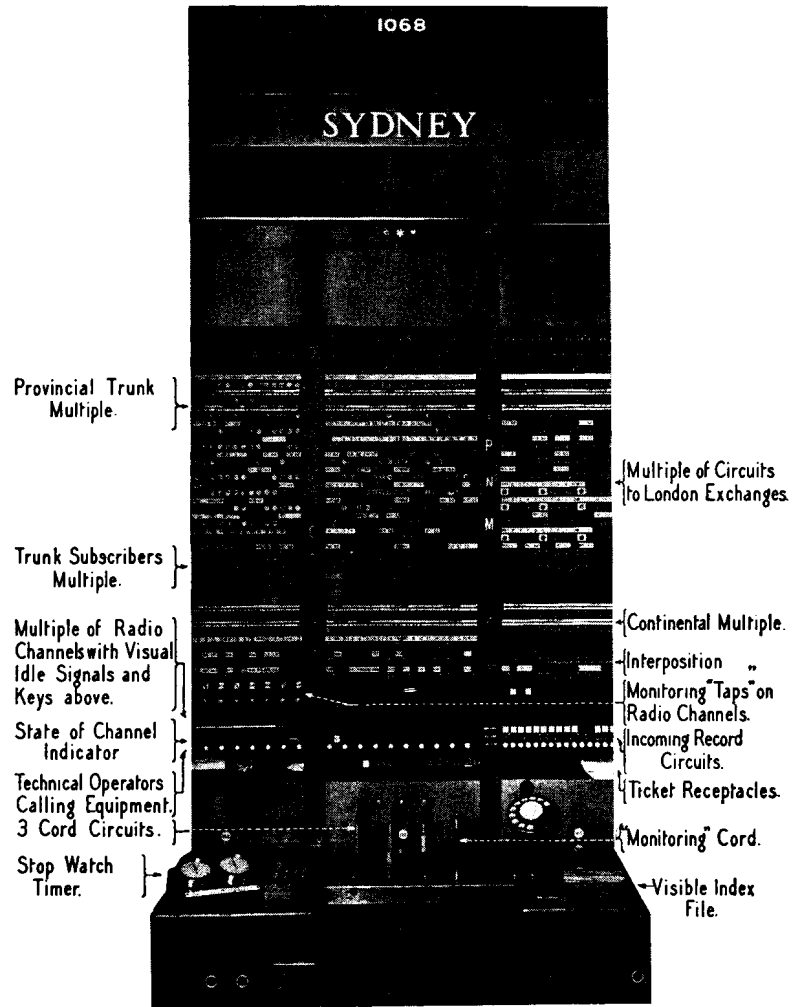
The usual *Bulletin Notice Frame*, *Call Supervisor Key* and *Instruction Circuit* are also provided.

The equipment mentioned earlier for indicating the *state* of the radio channel, consists of three horizontal strips, one above the other, panel width, coloured red, yellow and green respectively and is provided on each line operating position. Behind the three strips are switchboard lamps the lighting of which is controlled by the technical operators. Each set of 3 lamps corresponds with the radio channel termination appearing immediately above it. The significance of the indication given is as follows:—

Lamps glowing.	Condition of Radio Channel.
Yellow ...	Suitable for all classes of calls.
Yellow and red ...	Unsuitable for calls beyond the local area at the London end.
Yellow and green ...	Unsuitable for calls beyond the local area at the distant end.
Yellow, red and green ...	Unsuitable for calls beyond the local areas at both ends.
Red and green ...	Suitable for passing service details only.
Nil ...	Unsuitable for working or closed.

The *Enquiry and Observation Desk* consists of a double-sided section with two enquiry positions on one side and two observation positions on the other. Circuits to and from the extra-European line-operating position are provided in addition to an appearance of the multiple of the radio channels. Between the two enquiry positions is a ticket rack for holding tickets awaiting completion.

For the setting-up of connexions, *home* positions are assigned for working each radio channel and, during periods of pressure, continuous attention is given by the traffic operators on the channels. (The plunger keys are operated to indicate that the channels are



EXTRA-EUROPEAN (RADIO) LINE OPERATING POSITION.

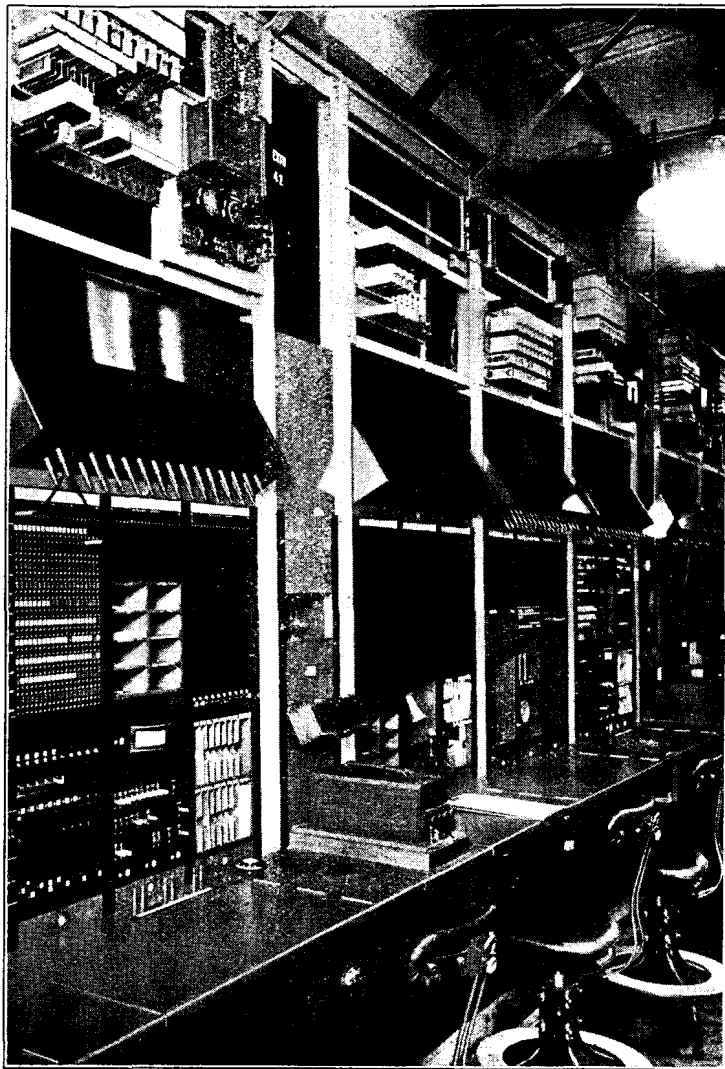
engaged.) In such cases two operators (normally on adjacent positions) undertake the *preparation* of a call, one operating on the radio channel side and the other on the European side of the connexion. The preparation is carried out in each direction at a stage which will enable the European subscriber to be obtained at approximately the time when the distant radio operator offers the other subscriber, as far as can be judged from experience and from information and reports received. When a "foreign language" is involved, arrangements are made for the European preparation to be carried out by a "language qualified" operator.

At the point when the two subscribers are obtained, the operator in charge of the European side of the call takes over the complete connexion on her position, the other operator being released. (This is the reverse of the arrangement previously in force.)

During the less busy periods, any position may be chosen for the setting-up of a connexion—only one operator, in the simpler cases, undertaking the work. During such periods the channels

are indicated as disengaged until actually required for traffic, when the appropriate plunger key is operated on the position handling the call to indicate to other operators that the channel has been taken into use.

Communication with North America is maintained for the whole 24 hours of the day throughout the year. On the other routes, however, only a limited service is given depending upon the traffic demand and upon technical considerations. In consequence, considerable care in the treatment and preparation of calls has to be exercised. In the case of *switched* services involving the use of two radio links, the working hours of which do not overlap, it is



TEST RACKS AT THE LONDON LONG-DISTANCE EXCHANGE.

necessary to arrange specially for one of the channels to work "out of hours" in order that both shall cover the same period to enable the connexion to be set up.

#### TEST DESK FACILITIES.

Opportunity has been taken in connexion with the reconstruction to install new Test Desks on the ground floor of the G.P.O., South Building. An illustration is given of a section of the boards in question. Circuits serving the Overseas exchange are led through jacks in the panels of these boards and provision has been made for testing, monitoring, and patching. Similar arrangements are being made at the other trunk centres, and it is hoped, in the near future, to develop a scheme for accelerating the substitution of faulty circuits, the bringing into use of additional circuits out of reserve, and patching circuits to meet emergency conditions.

#### CONCLUSION.

It is hoped that the general review in these articles of the Overseas Telephone Services has given to those interested in these services a picture of the various problems and undertakings involved and will enable them more easily to appreciate the importance of every operation in connexion therewith being carried out with the utmost thoroughness. The production of the greatest possible efficiency in the working of such a system on which so much time in design and research has been spent and on which so much money on plant and the maintenance thereof has been and is still being expended can only be achieved by each and all concerned making their full contribution to the common object of *service to the public*.

#### NOMENCLATURE.

Since the commencement of these articles it has been decided by the Department to rename the Overseas Telephone Services with the description "Post Office International Telephone Services." The extra-European services are now known as the "Overseas Telephone Services" and the title "Continental Telephone Services" remains.

#### ACKNOWLEDGMENT.

The writer desires to acknowledge his indebtedness to Officers of the Engineer-in-Chief's Office—Messrs. R. M. Chamney, A. J. Gill, and I. H. Jenkins, for the assistance given to him, both as regards data and photographs of equipment, &c., and also to Messrs. Siemens Bros. for the loan of photographs and permission to publish the same.

#### C.T.O. NOTES.

*Promotions.*—Misses H. M. Miller, Assistant Supervisor to Supervisor, and B. M. Lawrence, Telegraphist to Assistant Supervisor, and Mr. J. T. Traer, Tube Attendant and Night Collector to Assistant Inspector of Messengers.

*Retirements.*—Misses L. Gibberd, Supervisor, and A. Chillman, Assistant Supervisor, and Messrs. E. J. Lloyd, Overseer, S. R. Powell and P. W. Steer, Telegraphists.

*Golden Weddings.*—We offer our sincere congratulations to Mr. and Mrs. Alfred Bathurst and Mr. and Mrs. Robert Young, both of whom have celebrated their golden wedding.

*Sports.*—May we again remind friends of the C.T.O. of the date of the annual sports at Chiswick, i.e., July 21.

*Cricket.*—The Centels won their first round game in the Curtis Bennett Cup, beating the Natural History Museum by 4 wickets.

*Table Tennis.*—The Cable Room is to be congratulated by reason of two of their members being elected to the Executive Committee of the Civil Service Table Tennis Association.

#### SHEFFIELD DISTRICT NOTES.

*Salesmanship.*—Extract from letter received:—

"Your representative used such forceful argument that I decided to keep the installation for the present."

*Social.*—On June 13 a very happy time was spent at Nottingham, when a party of the Sheffield staff were entertained to cricket, tennis, tea and dance by the staff at Nottingham and we are once again indebted to them for another enjoyable social event. It is our hope to rise to the occasion when our turn comes to welcome Nottingham friends to our own fireside later in the year (at least, it is hoped that the weather will not confine us to the literal meaning).

*Obituary.*—Amongst those who have recently crossed the "Great Divide," we find an old colleague in Frederick Barr, who was Local Manager in Sheffield under the National Telephone Co., Ltd., and served in the Engineering Branch as Assistant Engineer on transfer until his retirement through ill-health.

## TELEGRAPHIC MEMORABILIA.

WHILE the guest of honour at a luncheon given by the Royal Empire Society in London on May 31 last, Marchese Marconi made some interesting remarks on the present and future of wireless communication. Other pens may deal with the view of the Marchese regarding the "unduly high cost of telephoning to-day." For this present writer, however, the evident belief of the "Empire" guest in a great future for the micro-waves for "really big distances" is much less debateable. In fact, when referring to television the speaker also appeared expectant regarding considerable further developments "in the realm of television," where he believed that "ultra-short waves will help very considerably."

There was also a very gracious acknowledgment by the Marchese of "the foresight of the British Post Office which prompted its pioneer work in developing wireless communication." "The Post Office officials, both past and present," he continued, "had helped to make wireless the efficient medium of communication it was to-day. Through their belief in the possibility of the commercial application of short waves, England had become the first country to adopt the short-wave system for the purpose of establishing wireless communication on a world-wide scale."

The Committee of Management of the Institute of Electrical Engineers' Benevolent Fund is to be congratulated upon the success of the Electrical Engineers' Ball in February last, when 760 members and friends then being present, it has now become possible to hand over for benevolent purposes no less a sum than £224, the surplus, after defraying all expenses.

Among the various awards of premiums for papers read during the session 1932-33 by the Council of the I.E.E., it is noted, are found the names of Messrs. C. E. Horton, M.A., and C. Crampton, B.Sc.—Webber Premium. Mr. G. Yoganandam, B.E. (India)—Overseas Premium, while among the Extra Premiums are to be found the well-known personages of Lt.-Col. A. G. Lee, O.B.E., Lt.-Col. F. A. Cortez Leigh, T.D., and Mr. R. P. Smith. In the Wireless Section the Duddell Premium goes to Mr. E. C. S. Megaw, B.Sc.

*Legal.*—A *British Judge and a defective wireless set!*—Judge Owen Thompson is evidently up to date in his practical knowledge of wireless apparatus. In a recent hire-purchase case a certain gentleman purchased, on the instalment system, a wireless receiver, the total price of which was well over thirty pounds. On the first occasion, according to the purchaser, the set worked well. Thereafter, although the London Regional program reached him passably well, the "National" was only faintly heard and foreign stations not at all! Accordingly the disappointed one refused to pay another farthing, whereupon the vendor brought the matter into Court, where the worthy judge ordered "the purchaser to return the set to the vendor, who was to make no further claim on the former," for added this modern Solomon of a County Court, "If a three-valve radio set did not give more than the London Regional and National stations when it was bought, it certainly was not worth £35, nor is it now"! Then added the judge, somewhat sadly, as one with experience, "But it really is hard to get the Midland station!"

In the Chancery Division, recently, the Performing Rights Society Ltd. sought to restrain Hammond's Bradford Brewery Co., Ltd., from permitting the George Hotel, Brighthouse, to be used for the performance in public of musical works without payment of royalties, and claimed damages for alleged infringement of copyright by the unauthorised reproduction by loudspeaker of music broadcast by the B.B.C. The judge decided in favour of plaintiffs.

*Personal.*—Col. A. G. C. Dawnay, C.B.E., D.S.O., M.A., has been appointed Controller, Outdoor Division, to the British Broadcasting Corporation. This is a new post due to changes in the organisation by which it is hoped to bring about a clearer co-ordination of responsibility.

Wing-Commander Sir Norman Leslie has been appointed joint managing director of Cables & Wireless Ltd., I. and I. Communications Ltd., and their associated cable companies. Messrs. H. A. White, managing director Marconi's W. Telegraph Co., Ltd., and E. Wilshaw are appointed to the boards of these companies, the latter as Chief General Manager. The further changes are Mr. J. J. Denison-Pender, Deputy Chief General Manager; Mr. N. C. Lawson, General Manager; and Mr. S. G. Farmer, Secretary.

Major W. T. Conder has been appointed General Manager of the Australian Broadcasting Commission *vice* the late Mr. H. P. Williams. "His salary," says the *Electrical Review*, "will be £2,000 a year."

Mr. R. B. White has been elected president of the Western Union Telegraph Co., succeeding Mr. Newcomb Carlton, the latter now becoming chairman of the Board, says Reuter's New York agency.

Mr. Toyokichi Nakagami has recently resigned his position as Chief Engineer of the Japanese Department of Communications. It would appear that he is to take up an appointment with the International Telephone Company. This company has been established in Tokio to operate a series of radio-telephone exchanges in Japan and her colonies, in which case the previous experiences of Mr. Nakagami will doubtless prove of considerable value to what is undoubtedly a new organisation.

Mr. J. M. Crawford, Chief Engineer of Telegraphs in the Australian P.M.G.'s Department, has been elected chairman of the Institution of Engineers, Melbourne Division, Australia.

Mr. A. J. Christie, Deputy-Director Posts and Telegraphs, Victoria, Australia, has retired after 47 years' service.

*Obituary.*—It is with deep regret that the sudden death of Mr. Alfred Eddington has to be recorded, at the comparatively early age of fifty-five years. Mr. Eddington joined the staff of Marconi's Wireless Telegraph Co. Ltd. at Chelmsford in 1906, of which he subsequently became works manager until 1924.

*Countries.*—AUSTRALIA.—The Australian Government is considering the installation of wireless control for the lighthouses on the Australian coast. Mr. Mehaffey, the Commonwealth Director of Lighthouses, is to attend the International Lighthouse Conference which is to be held in Paris in July, says the *Electrical Review*, and is to obtain information concerning the latest developments of radio beacons. At the annual exhibition of the Victorian Radio Association at Melbourne, twenty-five local firms exhibited their latest equipment. It was stated that 90% of the receiving sets now in use were made in Victoria, valves being the only important item imported.

The report of the Australian Postmaster-General for the year ended June 30, 1932, shows a loss on the telephone branch of £379,090, although this is a considerable improvement upon the previous year. On the Telegraph Branch the deficit is £183,367, and on the wireless a surplus of £30,932. Further light was thrown upon the latter item by Mr. Parkhill, who recently stated that there was a surplus of £73,000 for the past two years on the working of this same branch, and who added the information, that the surplus was due "to the suspension of the broadcasting construction programme." Hope was, however, held out that money would be made available for the building of additional stations in the coming year.

CEYLON.—It is understood, says an Indian source of information that in connexion with improvements in the India—England telephone service and also partly the telegraph service of Ceylon, the cost of a new cable between Dhanushkodi and Tataimannar is to be budgeted equally between the Government of Ceylon and the Indian Government. The new cable will carry both telephone and telegraph traffic.

CHINA.—The *Telegraph and Telephone Age* informs us that "new agreements affecting the interests of the international cable

companies in China are reported to have been signed at Nanking by representatives of the Ministry of Communications and officials of the Commercial Pacific, Great Northern and Eastern Extension Cable Companies, providing for greater control under the Ministry of Communications."

According to the *Chinese Economic Bulletin*, the new Government radio station at Chenju is expected to establish direct radio communication with England before the end of the summer. The wireless equipment is being paid for out of the proceeds of a £50,000 loan from the British Boxer Indemnity Refund, and consists of two transmitting and four receiving sets from the British Marconi works.

**FINLAND.**—The *Electrical Review* informs us that the Helsinki Telephone Co. is now relaying radio programmes from the studio through main and sub-amplifiers to its subscribers who choose certain numbers on the dials of their automatic telephones.

**FRANCE.**—The name of D'Arsonval is not likely to have escaped many students of early technical telegraphy, although few of the present century are probably aware that Professor d'Arsonval is still in the land of the living and in his 83rd year! It was as recently as May 27 last that he was feted in Paris by a distinguished company to celebrate the professor's sixty years connexion with the Paris University. The French President himself assisted and with other speakers paid affectionate tributes to this great scientist. Among those present were included M. Leonce Armbruster, President of the Renaissance Française; M. Joseph Bedier, Academie Française; M. Langevin, College de France; and M. Georges Claude, Academie des Sciences. *Vive la galvanometre D'Arsonval!*

**GERMANY.**—It appears to be generally understood in electrical communication circles that the German Atlantic Telegraph Company is to be credited with the intention of raising funds for the extension of the cable network, more especially the laying of a second cable to the Azores.

**GREAT BRITAIN.**—*The Communications Conference.*—This conference has as its chief end and aim the European if not the complete international redistribution of wavelengths. It was opened at Lucerne on May 15 last. Great Britain was represented by Mr. F. W. Phillips and Col. A. F. Angwyn of the G.P.O.; Mr. C. H. Boyd, Board of Trade; while the B.B.C. delegates were Admiral Sir Charles Cappendale, Mr. Noel Ashbridge, and Mr. C. F. Atkinson. *Short waves.*—Reference has already been made in this month's Memorabilia to Marchese Marconi's hopes for the future of ultra-short wavelengths. One would therefore at this moment desire to place on record the following successful experiments with waves of 5 and 4 metres, under the *patronage*, shall we say?, of the Postmaster-General. On May 17 last, when Sir Kingsley Wood opened the new head Post Office at Plymouth, he also inaugurated "the first regular commercial radio-telephone service using *ultra-short waves.*" The actual wavelengths were 4.8 metres in one direction and 5.1 metres in the other. The primary experiments were made across the Bristol Channel, between Cardiff and Weston-super-Mare.

Similarly, on May 21, Mr. H. Thomas, assistant organist of the Crystal Palace, using his own amateur transmitter (GSQB) from the north tower of the Crystal Palace (550 feet above Thames level) was successfully picked up by amateurs at Wendover, forty miles away. A five-metre wave was used.

At the 52nd Ordinary General Meeting of Siemens Bros. & Co., it was stated that one of their most interesting contracts during the past year was that for the Anglo-Belgium telephone cable. This new cable contains no less than 120 conductors.

A regular photo-telegram service was opened between Paris and London last month.

*Stockton-on-Tees and the Corporation Baths.*—The Baths Committee of Stockton has recently been dealing with a case of "alleged interference with broadcasting reception by an electric

motor," used by the Corporation, and is apparently under the impression that the Postmaster-General should supply free any "suppression devices," necessary to cut out the trouble. It is however, officially stated that the P.M.G. "has no statutory power under which he could provide such devices," at the cost of his Department. The cost of supplying and fitting such devices by the Post Office is about three guineas, and it is understood that the matter has been re-referred to the Baths Committee. It may be added that invariably owners of "interfering machinery" with real patriotism, do everything in their power to remedy such interference when justly attributable to their own plant, and at their own cost.

**INDIA.**—*The King's Broadcast.*—According to the Bombay correspondent of the *London Daily Telegraph*, the success of His Majesty's broadcast on the occasion of the opening of the now historic Economic Conference on the 13th ult., was without doubt, unqualified. "His Majesty's speech," says the correspondent, "was received here with perfect clarity on all kinds of wireless sets, an experience hitherto unknown. Previous efforts at relaying have been unsatisfactory." As a sequel to this success, the same correspondent understands that the Government of India is exploring the possibilities of renting the radio telephone during certain periods when otherwise unoccupied, for broadcasting purposes.

**IRISH FREE STATE.**—The number of broadcast radio receiving licences in force on Mar. 31 last was 32,000, an increase of 3,317 in a year. There are some interesting variations in the charges made for certain purposes, thus:—the normal fee is 10s. per annum; schools and institutions, £1; hotels and restaurants, £5; while cinemas and halls to which the public is admitted on payment are charged £1 per week. An outside loudspeaker used for advertising or demonstration is charged £5 per year.

**JAPAN.**—*A Television Institute.*—A television research institute, the first of its kind in Japan, says Reuter's Tokio Agency, will shortly be completed in the Japanese capital. It is being built by Waseda University, and is to have six studios, in addition to a broadcasting room and a receiving room.

**NEWFOUNDLAND.**—Reuter's representative at St. Johns, N.F., informs us that a wireless station is to be established on "Signal Hill," where Marconi received the first transatlantic wireless in 1904. It is intended for the use of the Newfoundland Posts and Telegraphs Department, and will be erected by the Canadian Marconi Company.

**PORTUGAL.**—Reuter's correspondent in Lisbon informs us that the Government has just opened a new short-wave "Empire" wireless station near Lisbon. "British engineers," he continues, "have supervised the erection of the station throughout, and most of the machinery was supplied by a British firm." The station is part of a scheme to bring Lisbon in touch with Portuguese colonies in Africa and India.

**SOUTH AFRICA.**—*The South African Engineer and Electrical Review* announced quite recently that Cape Town and Western Province are to be provided within the next few months with a most up-to-date broadcasting station, due to the African Broadcasting Corporation's decision to erect a new transmitting station at Milnerton, where the 600 feet masts of the Wireless Companies have been quite idle since the Beam system came into vogue. The equipment is being manufactured by the Marconi organisation. A new building is also in course of erection.

**U.S.A.**—Reuter's New York Trade Service states that a new direct radio-telegraph circuit connecting the United States with China has been opened between the Mackay Radio and Telegraph Co.'s San Francisco station and that of the Chinese Government Radio Administration at Shanghai. The new circuit is to operate throughout the twenty-four hours, and all kinds of telegraph service are to be available.

*Arcturus and the Colombrian Exhibition.*—When this exhibition of 1893 was opened, the fixed star just mentioned, one of the first

magnitude in the Constellation of Bootés, was, as now, forty light-years distant from our Earth. It was therefore something more than a happy thought that at the opening of the "Century of Progress Exhibition" in Chicago on May 27 last, those very rays which commenced their long though speedy flight forty years ago, and were only just reaching this Earth of ours, on their arrival here were utilised to ignite a powerful searchlight on the Chicago Exhibition Hall of Science tower. Immediately, this searchlight in its turn, caused the complete exterior of the exhibition to be illuminated. The scheme was carried out with the co-operation of the Western Union Telegraph, the General Electric, and the Westinghouse Electric Companies, behind which were the American observatories of Yerks, Harvard, Urbana Ill., and Allegheny.

J. J. T.

*The Flowers.*—"Buy my English posies!  
Kent and Surrey may—  
Violets of the undercliff  
Wet with Channel spray."—KIPLING.

## SIEMENS No. 17 AUTOMATIC SYSTEM.

APPLICATION TO DIRECTOR AREAS.

BY C. W. GERRARD.

(Continued from page 209.)

### (7) *Busy Subscribers' Recording Equipment.*

The standard system lacks any comprehensive facilities for the identification and recording of busy subscribers. Various artifices have been employed, but the only complete scheme so far evolved has been rejected on account of cost.

Siemens's 17 system offers a complete solution of the problem at a nominal cost. With each final selector may be associated meters to record "total offered" and "total ineffective" calls to the group. If the traffic recorded on the "ineffective" meter is abnormal, arrangements can be made to divert all ineffective calls to a manual board circuit, at which point the identity of the called subscribers may be ascertained. If abnormal figures are recorded against any one subscriber, this particular line may be dealt with in two ways:—

- (a) It can be associated with "total calls" and "ineffective" meters for a period of days to confirm whether or not the manually recorded figure was abnormal.
- (b) Alternatively, or additionally, it can be connected separately with a manual board circuit in order that the usual certified record may be taken.

### (8) *"Engaged Trunks" Tone.*

A distinctive tone may be given to the Trunk operator in the event of a line being engaged (incoming or outgoing) on a Trunk call.

### (9) *Increased Dialling Speeds.*

By slight modification of existing equipment it would be possible to receive satisfactorily impulses dialled at the rate of 16 per second. This would be of considerable advantage to P.B.X. operators.

### (10) *Barred Trunk Services.*

Separate units for Barred Trunk subscribers are not required. A discriminating condition is provided in the line circuit of a Barred Trunk subscriber which is instrumental in communicating a special signal to the director to indicate that the call originates from a Barred Trunk subscriber.

### (11) *Transmission Bridges.*

Transmission feeds are provided as separate units. They may be inserted at the particular switching stage which secures the maximum economy. Complications due to the repetition of impulses are avoided, the circuit arrangements being such that the transmission bridge is by-passed by a metallic circuit until the completion of impulsing.

In the case of outgoing junctions the transmission element is incorporated in the outgoing junction relay set. In this relay set is provided the necessary metering facilities according to the type of junction served. This avoids the provision of sets having universal facilities which would otherwise be necessary if they were located in a position common to different types of junctions. If the local bridge were in a 1st selector this would be by-passed in the case of an outgoing junction call.

### (12) *Ballast Resistances.*

Ballast resistances are fitted in series with the feeding coils serving—

- (a) Called subscribers;
- (b) Calling subscribers on outgoing junction calls.

By this means the local line sending allowance is reduced enabling economy in junction plant to be effected.

### (13) *Metering Arrangements.*

The subscriber's meter is operated by booster battery and multi-fee registration facilities are provided.

Booster battery is applied at the bridge circuit. At the Line Finder circuit this signal is transferred via a metal rectifier from the private to a fourth metering wire connected with the line circuit. This necessitates one rectifier per Line Finder only instead of one per subscriber's line circuit which would be necessary if 2-motion selectors were used as Line Finders.

### (14) *Control of Uniselector type Switch.*

The switch may be adapted for either common or individual control. Common control is employed where economical.

There are two problems in utilising a uniselector in a selecting stage, viz. :—

- (a) The setting of the uniselector to a particular group in accordance with dial impulses.
- (b) Moving the wipers to the commencement of the required group in time to permit a complete search within the interdigital pause.

(a) may be overcome by employing a separate digit receiving switch to mark the required group on the bank of the uniselector, and (b) by the use of by-path circuits.

In the No. 17 system, however, the high speed of the uniselector not only eliminates the second difficulty but in cases where outlet groups are uniform in size and accommodated in regular order prior setting by a receiving switch also becomes unnecessary the uniselector being set by direct impulses.

In cases where separate digit receiving switches are required for setting purposes these, together with the various auxiliary relays concerned with the setting operation, are embodied in common control equipments.

There are alternative methods of coupling selectors to common control equipments, viz., relay coupling or switch coupling. The relay method secures instantaneous coupling, but since under this scheme a common control equipment is exclusive to a number of selector circuits the engagement of any one common control temporarily "busies" all associated circuits. Switch coupling is preferable if time permits and is therefore employed in the case of junctions incoming from director automatic exchanges.

### (15) *"Testing for Battery."*

This method of outlet testing is now standard and is used throughout the No. 17 equipment.

### (16) *Director.*

The location of the director is similar to that of the standard B.P.O. system. The facilities it provides are discussed later.

### (17) *Alternative Routing.*

The system provides for alternative routing via Tandem in the event of all direct junctions being engaged. The facility may be applied to all or only a proportion of the direct routes as desired. Further reference to this facility will be made later.

### (18) *Line Finders.*

The system makes use of a Line Finder scheme in preference to individual uniselectors for each subscriber's line. The new high-speed switch is particularly suitable for use as a Line Finder. In order to avoid undue delay in the connexion of dialling tone it is usually the practice in existing Line Finder schemes for the Finders to be preselected. The rapidity of operation makes it unnecessary to employ a preselection scheme and this has resulted in some simplification of circuit design.

It is now proposed to detail certain features of interest at various switching points in conjunction with a description of the main operations which occur during the process of connexion of a call. Fig. 7 shows a typical trunking diagram for a director exchange which may be of assistance in following this description.

*Line Finder Distributing System.*—Each subscriber's line terminates on a line equipment. The line equipments are multiplied in groups of 200 on the banks of Line Finders.

In effect, however, each group of 200 is separated into four sub-groups associated with the sections W, X, Y and Z of the Line Finder switch. The selection of Line Finders is controlled by "Allotters," which are operated over one of four common start wires from the line circuits according to whether the calling line is located in the W, X, Y or Z section.

A complete Line Finder system will generally consist of 800 lines served by four separate sets of Line Finders. Common to the 800 lines is a group

of four allotters which control up to a maximum of 96 Finders, i.e., 24 in each group.

Any line has access to any allotter. A calling line transmits a signal over its particular start common which operates an allotter. The signal not only indicates to the allotter the respective 200-line group in which the caller's line appears but also the particular section of wipers a Finder must use to locate the caller. A Line Finder is selected only if the associated first code and common control equipment are free. The dialling tone is transmitted to the subscriber from the latter.

In the event of all Line Finders being engaged the allotter does not hunt continuously but is arranged to re-test at short intervals.

As soon as the Line Finder makes connexion with the calling subscriber the allotter is freed, its average holding time being approximately 200 milli-seconds.

Normally the start signals operate "preferred" allotters and by distributing the allotters in this manner a more or less equal share of work

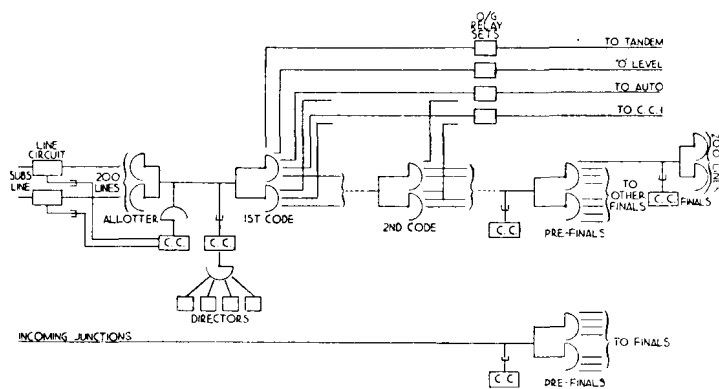


FIGURE 7.

is performed by each allotter. If the "preferred" allotter is engaged the next available allotter will, however, be seized.

When an allotter is freed it will normally return to a "home" position, but in the event of another call originating in the meantime in the same section of the multiple and providing that further outlets are available on the allotter bank, the allotter will deal with this call before "homing." A fleeting test is made at the end of each call for this purpose. If all allotters are engaged and a further start signal is received, the occurrence is recorded on an "allotter overflow" meter.

If all Line Finders in the required group are engaged an appropriate meter is operated and a re-test made after a short interval.

If the Line Finder fails to connect with the calling line the allotter remains "locked" and after a short interval an alarm is operated. Arrangements can also be made for the traffic via each start lead to be recorded on separate meters.

#### First Code and Associated Common Control Equipment.

The common control equipment deals with the "A" digit selection and extends the call to the required director. Only four groups of directors are required, the latter each having combined translation fields to deal with the traffic for the following groups:—

ABC and DEF
GHI .. JKL
MN .. PRS
TUV .. WXY

The common control equipment signals the director to indicate which of the sub-groups is required.

Access to directors is provided via a 100-point switch so that an availability per group of 25 is secured. "O" calls are discriminated in the common control equipment, and a director is not brought into use on this class of call.

In the event of "Barred Trunk" subscribers dialling TEL, TOL or TRU, the director, having received the "Barred Trunk" discriminating signal, causes the 1st code selector to search for an outlet in a N.U.T. group. Excess fee calls from "Barred Trunk" subscribers are similarly dealt with except that in this case routing is made to a special manual board group.

"O" calls from Barred Trunk and ordinary subscribers are routed over a common group of assistance circuits to the manual board but by use of the discriminating signal alternative calling equipments are operated according to the class of subscriber calling.

The first code selector can be arranged to accommodate 24 groups. For the whole of these groups only one last contact position per arc is required to deal with overflows, although separate overflow meters are provided for each group. The first code selectors are 200-outlet switches. In one division (100-outlets) are accommodated all the Tandem and sub-Tandem groups and any group on which re-routing is not required and in the other division groups to 2nd code selectors and any direct routes on which re-routing may

or may not be desired. "O" level and local numerals may be located in either division, whichever is more convenient.

The Tandem and sub-Tandem groups are divided so that overflow traffic from direct routes is routed over circuits separate from those accepting traffic routed indirectly in the first instance. This preserves the normal grade of service for the latter, which would otherwise be disproportionately affected by any fluctuations in the amount of "overflow" traffic.

Re-routing may be provided as desired. When all junctions are engaged on a route not connected for alternative routing busy tone is in all cases given from the 1st code irrespective of whether the route is accommodated on 1st or 2nd code selectors.

Summarising, the 1st code selector may accommodate—

- (a) Tandem and sub-Tandem groups;
- (b) Locals;
- (c) "O" level group;
- (d) Junctions to automatic or manual exchanges with or without alternative routing;
- (e) Single or multi-fee junction groups.

No transmission bridge is provided in the 1st code. This simplifies the provision of the reverted ringing facility and obviates the necessity for universal metering equipments.

The 1st code is operated from the director, the latter commencing to pulse out after the "B" and "C" digits have been received.

In the event of all directors being busy, tone is given from the 1st code common control circuit.

In the event of congestion on 1st code selector outlets, the director is released and busy tone is transmitted from the control circuit. If the N.U.T. group is busy, however, N.U.T. is given from the control circuit. In the event of incomplete dialling N.U.T. is given from the control circuit. A P.G. condition is indicated by a supervisory alarm on the Line Finder and in this case the 1st code common control is released. Spare codes are routed to the 1st code N.U.T. group.

#### Director.

The director is similar in principle to the standard director in that it controls the routing of the call. In the Siemens No. 17 equipment it embodies the alternative trunking feature and, as has already been stated, its translation arrangements provide for the combined handling of traffic in respect of two "A" digit selections. The appropriate sub-group is determined by a discriminating signal passed forward from the 1st code common control equipment.

It makes provision for as many as 12 code trains instead of 6, as in the present director. Its BC code capacity is 100.

It can transmit up to a maximum of 15 impulses in one train.

In the case of Tandem-routed calls the director controls the metering setting in the outgoing junction relay set. This is arranged by an impulse train which is sent out at the appropriate stage between the local and Tandem routing trains.

If re-routing is necessary a signal is returned to the director, which proceeds to cancel out the original routing train and to re-route the call via Tandem or sub-Tandem. On junction calls a "bridge cut-in" signal is passed from the director at the conclusion of impulsing.

The normal inter-digital pause on the existing standard director is 650 milli-seconds. In order to increase the flexibility of the system and secure the maximum advantage of the uniselector 200 milli-seconds is added to the first pause in the case of the No. 17 director which makes a total pause of 850 milli-seconds before the 2nd routing digit is transmitted. This permits search over 100 contacts in the case of 1st code selectors. At subsequent stages a maximum of a 50-step search would normally be more than adequate and the standard 650 milli-seconds pause obtains between 2nd and subsequent digits.

#### 2nd Code Selectors.

The 2nd code selector is a 200-point switch with capacity for accommodating up to 55 groups. Although only four last contacts are required separate overflow meters are provided for each group.

The increased facilities for providing a larger number of groups of junctions at 1st and 2nd code switches partly on account of the use of 15 impulses from the director enable large switch economies to be effected. For example, Perivale, if operated on a No. 17 system, would not require a 2nd code switching. The requirements at Livingstone could be met by one group of 2nd codes only and Advance would need but two groups. (On the by-path system eight 2nd code groups are required.) 3rd code selectors would be unnecessary even in the largest exchange.

#### 1st and 2nd Numerical Selectors.

For the present purpose it will be sufficient to refer only to the functions of pre-final selectors—that is, where the first and second numerical digits are dealt with by one selector only.

The switches are of the 200-outlet type. The 1st numerical digit determines the appropriate 1,000's division and the 2nd numerical digit effects connexion to the required final selector group and controls the differentiating signal and wiper switching arrangements in the final selector.

In the event of congestion, busy tone (and flash) is connected from the control circuit.

If connexion is made to a spare level, N.U. tone is connected from the control circuit.

#### Final Selector.

This is a 200-outlet switch. Selection of the particular "100" is governed by the receipt (or absence) of a differentiating signal from the preceding selector.

(a) *Ordinary Type Final.*—On seizure, the impulsing circuit is switched to the common control circuit. The "tens" digit is received on the digit switch and indicates in which 50 outlets the selector will be required later to search. The digit is recorded in a relay group and the digit switch released for the receipt of the "units" digit. The latter completes the marking circuit, the required line being suitably indicated on the bank of the selector. When connexion is made to the "marked" line the common control circuit is freed.

In the event of the number being engaged, busy tone is given from the common control equipment.

Spare numbers are identified by an earth on the positive lead and if this condition is met with, N.U. tone is given from the control equipment.

(b) *P.B.X. Final.*—The operations in the case of the P.B.X. final are similar up to the marking stage. In this case the lines in a P.B.X. group are marked 6 at a time and the selector searches to test the marked contacts. As each set of 6 is tested a new set is marked up to the limit of the group. In the case of the auxiliary scheme the directory number is first tested in the regular bank and the auxiliary lines tested on a subsequent search.

#### Trunk Off-ring.

Incoming trunk junctions are terminated on special 1st numericals in order to provide for delayed ringing and trunk offering. Regular 2nd numericals and finals are, however, employed. The "busy" arrangements are flexible—"Busy tone without flash" or, alternatively, "busy tone and flash" may be provided, whichever is preferred, in order to indicate the condition of "outlets engaged."

In conclusion, may I repeat that the object of this paper has been to present an outline—necessarily brief and possibly inadequate—of the significant points of design and the principal operating features of the new Siemen's No. 17 director equipment.

From a service point of view I think it can fairly be stated that the equipment offers a range of facilities unique in an automatic system. Its application to London Exchanges has yet to be considered but whatever its fate in this respect, I feel quite certain that the advent of the No. 17 System marks a new and important stage in the development of automatic systems.

## KEW GARDENS AGAIN.

ALTHOUGH the *thirteenth* annual gathering of the Retired Officers of the C.T.O., the number "thirteen" had no terrors for the Veterans. It was, indeed, a summer gathering in glorious weather when 170 met in the lovely gardens. Over 160 sat down to tea at the Imperial Restaurant, Kew Green. J. Bailey, our late D.C., was in the chair, as before. W. S. Fisher, again the doyen, now in his 86th year, hearty as ever, despite a bad accident some while before. E. Lewis celebrated his 81st anniversary and "majority" in retirement that day (late I.D.). Miss Jessie Burrows, radiant on a visit from Cheshire, and Mrs. Button, *née* Miss Jessie Smith of years gone by, were present from Brighton. Miss Rita Gallally, now a Supervisor in another department, and Miss Mary Tynan, both well-known elocutionists, late of T.S., made their debut amongst the many "has beens." Ben George Askew and Arthur Ward were cheery representatives of old company days, while Brother Furby arrived fresh from a trip round the world. E. L. Hilton, R. E. V. May and Herbert Parker refreshed our memories of the P.T.C.A. and all that meant. Other old friends perpetuating their companionship in the Service of days long ago, along with Jack Gough, from the L.P.S. The gathering was voted a huge success all round. C. S. K.

## PARLIAMENTARY ITEMS.

ON May 9 Mr. Hales asked the Postmaster-General whether, "having regard to the inconvenience and delay caused through the inefficiency of the dial telephones, he would arrange for the exchanges not already converted to remain in their present condition?"

Sir K. Wood, in reply, said that the operating statistics showed that the service given by automatic exchanges compared favourably with that given by manual exchanges. If Mr. Hales had information of specific instances of difficulty with the automatic service, and would let him have particulars, he would be pleased to have them investigated; but he was not aware of any ground for staying the process of conversion to automatic working, which was, he believed, giving general satisfaction. J. J. T.

## MANCHESTER DISTRICT NOTES.

*Manchester's 100,000th Telephone.*—The 100,000 stations mark in the District has now been reached, and in order to celebrate the occasion a new kiosk has been opened opposite the Town Hall, in Albert Square. It is fitted with a hand combination telephone with an old-gold finish and contains a suitably inscribed tablet.

The kiosk was officially opened on June 13 by the Lord Mayor of Manchester, who spoke with the Postmaster-General in London. Following this talk Mr. Oswald G. Moseley, of David Moseley & Sons, Ltd., the first subscribers in Manchester, spoke with Mr. F. H. S. Grant, of Headquarters.

Both talks were broadcast by means of loudspeakers, and there was a large audience in the Square. The street traffic arrangements were handled admirably by the police and transport authorities. Amongst those present were Messrs. J. G. Maddan, C.B.E., Postmaster-Surveyor, T. E. Herbert, M.I.E.E., Superintending Engineer, and J. T. Whitlaw, O.B.E., District Manager.



"THE LORD MAYOR OF MANCHESTER SPEAKING FROM THE 100,000TH TELEPHONE, WITH MR. MADDAN AND MR. O. G. MOSELEY."

(By Courtesy of Allied Newspapers, Ltd.)

*New Exchanges.*—The Swinton Automatic Exchange was opened on May 27. It is the 19th exchange in the Manchester director system, and some 23,000 direct lines now are included in the system.

The new Mossley Exchange, of the CBS2 type, with some 150 lines, replaced the old magneto exchange on May 30.

The Taddington Rural Automatic Exchange was opened on June 21 with 25 direct lines.

J. T. Whitlaw, Esq., O.B.E.—We were very glad and proud of the District Manager's inclusion in the King's Birthday Honours List. Mr. Whitlaw's distinction has been well earned by his long record of public service.

*Resignations.*—Three of our Assistant Supervisors have taken advantage this spring of the voluntary retirement scheme. Miss A. Parrott, Assistant Supervisor, Class I, entered the service of the National Telephone Co. in 1892 and has had a varied career. She was for many years in the Central Exchange and finally was transferred to the Toll Exchange.

Her colleagues at the Central, City and Toll Exchanges gave her several presents as a token of their esteem.

Miss C. Stockdale, Assistant Supervisor, Class I, and Miss A. Critchlow, Assistant Supervisor, Class II, began their telephone careers in 1897. Almost the whole of their service has been with the Trunks. The esteem in which these two ladies were held by their colleagues was shown by the many beautiful and useful presents which were given to them on May 19, when many of their friends gathered to bid them farewell.

Miss Parrott and Miss Stockdale retired on May 31, and Miss Critchlow on June 6.

*Manchester Telegraph Messengers' Institute.*—The Annual Sports will be held on the Manchester Athletic Ground, Fallowfield, on July 15. The proceeds will be in aid of the Messengers' Institute.

## GLASGOW DISTRICT NOTES.

*Telephone Publicity from the Pulpit.*—The Norwich District notes of last month have been read with interest. Our colleagues and readers may like to know that, subsequent to the issue in this District of the booklet "Telephone Services," an eminent divine of a Glasgow West End Church based his Children's Address on the good advice contained therein and, after complimenting the Department on the booklet, its make up and its contents, went on to say that he thought the good advice to subscribers may be summarised in the following eight words:—

Answer Quickly,  
Listen Patiently,  
Speak Clearly,  
Talk Cheerfully.

There was a very good congregation, which included many telephone subscribers, and a representative of the Service present was the recipient of much good-humoured chaff about the service and the very fine free advertisement it had that morning received.

*The Glasgow Post Office War Hospitals' Entertainments Committee.*—How quickly happy events recur! It seems no time since mention was made of last year's outing—and here we are again. This year's outing, held on Thursday, June 15, went, by special desire of the lads in the hospitals, back to the pretty little fishing village of Dunure, in Ayrshire. The weather was ideal when we set forth; all were in great spirits and happy songs were heard.

After journeying to Ayr and thence along the coast, we arrived at Alloway, where an excellent tea was thoroughly enjoyed by all. Unfortunately rain came on before we reached Alloway, but this in no way detracted from the beauty of the place.

When we reached Dunure, the rain was still falling, but fortunately we were able to have the use of a hall, and soon whist was in full swing. After whist, a balloon competition was held. The prizes for whist, &c., were graciously presented by Mrs. Currie.

The journey back was joyous, the men singing lustily as we hied homewards. In the opinion of the men, the outing was a great success and was undoubtedly enjoyed by all.

*On Statistics.*—Statistics—the lowest grade of information that exists.—(O. Henry.)

The reader may please to observe that, in the last article for the recovery of my liberty, the emperor stipulates to allow me a quantity of meat and drink sufficient for the support of 1,728 Lilliputians. Some time after, asking a friend at court how they came to fix on that determinate number, he told me that His Majesty's mathematicians, having taken the height of my body by the help of a quadrant, and finding it to exceed theirs in the proportion of twelve to one, they concluded, from the similarity of their bodies, that mine must contain at least 1,728 of theirs, and consequently would require as much food as was necessary to support that number of Lilliputians. By which the reader may conceive an idea of the ingenuity of that people, as well as the prudent and exact economy of so great a prince.—(Gulliver.)

Weight of learning was no handicap to Dabster. His statistics were the sprigs of parsley with which he garnished the feast of small talk that he would set before you if he conceived that to be your taste. And again, he used them as breast-work in foraging at the boarding-house. Firing at you a volley of figures concerning the weight of a lineal foot of bar-iron 5 in. by 2½ in., and the average annual rainfall at Fort Snelling, Minn., he would transfix with his fork the best piece of chicken on the dish while you were trying to rally sufficiently to ask him weakly why does a hen cross the road.—(O.H.)

O Lord, sir! it were pity you should get your living by reckoning, sir.—("Love's Labour Lost.")

I have just received your letter—the one in which you doubt my veracity about the statements I made in a letter to you. That's right. I don't recollect what the statements were, but I suppose they were statistics.—(Twain.)

Make enumerations so complete and surveys so wide so as to be sure of omitting nothing.—(Descartes.)

It would not be difficult to prove by statistics . . . those mournful little budgets that seem to attract some minds, that . . . ("The Good Companions.")

Let us not be for ever calculating, devising and plotting for the future.—(Mr. Pecksniff.)

In Mathematics he was greater  
Than Tycho Brake or Erra Pater;  
For he, by geometric scale,  
Could take the size of pots of ale;  
Resolve by sines and tangents straight  
If bread or butter wanted weight;  
And wisely tell what hour o' th' day  
The clock does strike, by Algebra.—(Hudibras.)

*Resignations on Account of Marriage.*—Telephonists.—Misses M.O. Cumming, of Govan, J. T. Williamson, of Baillieston, J. T. McLeod, of Douglas, A. Murray, of South.

## GLOUCESTER DISTRICT NOTES.

*Traffic Branch Meeting.*—A meeting held at the District Manager's Office on May 11 was attended by the District Manager, Traffic Officers and staff from Gloucester and seven other exchanges in the District.

After introductory remarks by the District Manager, who occupied the chair, and Captain H. E. Parry, Traffic Superintendent, Class I, the meeting was addressed by Mr. A. Barker, Traffic Superintendent, Class II, on "Demand Working and its Effect on the Gloucester Telephone District Exchanges."

Mr. Barker opened his remarks by expressing appreciation of the staff's co-operation in current schemes of extension of control within the district and outlined the improvements already effected.

He then went on to describe "Single Channel Demand Working."

Blue prints and notes for the use of all present were provided as follows:—

- (a) Method of setting up a trunk connexion—"Single Channel" demand working.
- (b) Panel lay-out of a demand position.
- (c) Plan of keyshelf.
- (d) A brief description of Chargeable Time Indicators.
- (e) A brief description of Visual Idle Indicators.
- (f) Synopsis of "Demand Operating Procedure" at Group Centres.

In conclusion, Mr. Barker made reference to two imminent changes in procedure to be made to facilitate demand working in other districts, viz.: (1) New operating procedure at trunk exchanges to be introduced on June 6 and (2) Altered procedure in respect of multi-coin boxes at exchanges in the Birmingham demand area, to be introduced on May 15.

Mr. A. M. Raymond then dealt with the question of "The treatment of Subscribers' complaints and the effect of the timing of trunk calls thereon." He stressed the necessity for complete and accurate endorsements on the relative tickets and dockets and the correct procedure to be followed in specific cases. At the conclusion of the paper various items of interest were discussed.

The meeting was then opened for discussion of matters of general interest and the nature of the points raised indicated the keen desire of the operating staff to ensure a highly efficient service.

*Post Office Sanatorium Society.*—Every member of the Gloucester District Manager's staff is now a member of the Post Office Sanatorium Society, and a letter of congratulation has been received from the Secretary of the Society.

*Outing.*—Our first outing of the season was held on Saturday, May 27. The weather was disappointing. Heavy rain fell during the morning and necessitated an alteration in the original programme, but in spite of this set-back, an enjoyable time was spent.

It had been intended to play a cricket match in the afternoon and hold sports in the evening. In place of these events the afternoon was spent in billiards and indoor games. After an excellent tea at Hillgrove Guest House, Woodchester, Mr. R. M. McLarty, the District Manager, expressed the pleasure of the Gloucester Staff in having the company of Mr. H. Macdonald, Head Postmaster of Stroud, and Mr. H. B. Carroll, Traffic Superintendent of Liverpool. Mr. Macdonald, in reply, spoke of the happy relations existing between his and the District Manager's departments.

An improvement in the weather enabled the party to spend an hour or so of the evening in the open air. Skittles matches and other games were played on the lawns of Hillgrove House, and for the rest of the evening we were entertained by members of the staff and a few friends. Our host, Mr. Cowburn, went to a great deal of trouble to ensure our comfort and enjoyment. Before we departed he regaled us with light refreshment and we contemplate paying him another visit before the summer ends, when, we hope, the weather will be more favourable.

On this occasion, in addition to the efforts of our Social Committee Secretary, Mr. S. H. Simmons, we gratefully acknowledge the valuable help of Mr. H. J. Morris, Sales Representative at Stroud, who made all the local arrangements, including the last-minute alterations necessitated by the inclement weather. A few days after this outing Mr. Morris was taken ill and is now in hospital recovering from an operation. We all hope that he may make a speedy and complete recovery.

Arrangements are in hand for a further outing in July, when we anticipate a trip to the Thames Valley.

*Resignation for Marriage.*—Miss P. M. M. Norman, Writing Assistant, resigned on May 31, and on June 12 she became Mrs. Taylor. Before she left the staff presented her with a dressing set in enamel, a case of silver coffee spoons and a knight in armour whose vizor concealed a cigarette lighter. Mr. Taylor's business necessitated long sojourns in West Africa and we understand that our late colleague intends to accompany her husband to that country. We all offer our heartiest congratulations and good wishes. We shall not soon forget the lively personality of "Mich."



**BIRMINGHAM NOTES.**

*Birmingham Automatic Scheme.*—An unusual type of automatic transfer was made on June 21, when the Birchfields Automatic Exchange was transferred to new premises. The exchange had previously been working hypothetically on Northern Automatic Exchange and had been open since March, 1921. The testing of the incoming automatic and tandem junctions was an awkward matter, as part of the old exchange had to be cut out of service, but by performing the tests on a Sunday very little inconvenience was caused. Needless to say, the transfer was a complete success.

*Retirement.*—Miss E. M. A. Moreton, Assistant Supervisor, Class II, at Central Exchange, retired on age limit on June 20. Miss Moreton entered the service of the National Telephone Company as a junior operator on



MISS E. M. A. MORETON.

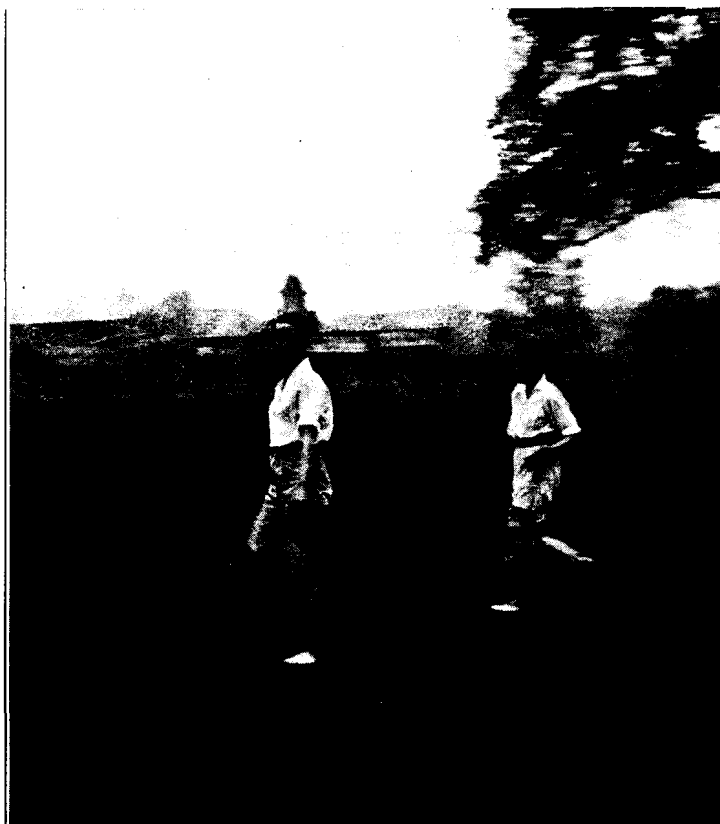
October 13, 1898, and was promoted to senior operator on May 30, 1902. In August, 1907, she became a Supervisor and was re-graded as Assistant Supervisor, Class II, when the Telephone Service was transferred to the Post Office.

Miss Moreton was the recipient of a diamond ring and a handsome dinner wagon as a token of the esteem and affection in which she is held by her colleagues and carries with her our best wishes for the days to come.

*Transfer.*—Mr. N. Wiles, Assistant Traffic Superintendent, who came to us in 1931 from Newcastle District, is to return there on June 26; apparently they cannot do without him after all.

We hope that he has enjoyed his stay in Birmingham as much as we have enjoyed having him here and wish him every success in his new position.

*Cricket Club.*—Whilst the form of the cricket team this season has shown some improvement the phenomenal run of non-success continues. Up to the present four games have been played, three of which have been lost,



BIRMINGHAM LADY CRICKETERS.

and one drawn, and the draw, against our friends the Engineers, was scarcely in our favour.

We are due to play the Postal Section in the Area Shield, and the odds do not seem to be in our favour, but . . . Cricket is a funny game.

*Ladies' Cricket Club.*—In these days the attraction of the more strenuous games for the fairer sex has developed to the ancient game of cricket and great enthusiasm in this game has been shown by the staffs at the Central and Trunk Exchanges. Considerable interest is also manifest by the staffs of the other exchanges, Midland, East, South, &c., and it is hoped that a Ladies' Cricket League may soon be formed of the teams from the various exchanges.

Such good form has been shown by the lady cricketers of Central and Trunk Exchanges that it has been found possible to make up a good side from each exchange and play a cricket match on the sports ground. The match was well attended by supporters of the two teams and other members of the service interested in this development of sport and it was agreed that the girls could play a straight bat, well hit a loose ball for 4 when it came along, and showed real bowlers' action with their over-arm bowling, and the way in which the catches were accepted had quite a professional touch.

The score card for the match was as follows. Trunk Exchange won the toss and batted first:—

<i>Trunk Exchange.</i>		<i>Central Exchange.</i>	
D. Pinner, c. Norton, b. Harrington	11	C. G. Briers, not out	27
E. Belston, c. Norton, b. Mason	4	E. Norton, c. Jackson, b. Emery	3
E. Albutt, b. Harrington	15	P. Sproull, b. Pinner	0
W. Healey, c. Harrington, b. Mason	2	H. Hainge, c. Ingram, b. Pinner	0
M. Ingram, c. Briers, b. Harrington	0	J. Harrington, c. Albutt, b. Healey	27
E. Titterton, b. Mason	3	W. Mason, b. Titterton	23
D. Jackson, b. Harrington	2	I. Moore, b. Healey	0
I. Randle, c. Norton, b. Harrington	0	D. Martin, c. Albutt, b. Pinner	0
M. Johnson, c. Sproull, b. Mason	0	N. Heming, c. Ingram, b. Pinner	2
R. Martin, c. Briers, b. Mason	1	E. McKeever, b. Titterton	3
M. Emery, not out	0	Extras	5
Extras	0		
	38		92

A match has been arranged between the Central Exchange (Ladies) and the Birmingham and Midland Red Bus Co. (Ladies) for June 20, and a victory for our girls is anticipated.

**CRICKET (SECRETARY'S OFFICE).**

THE first match in the annual competition for the "Leech" shield between the various branches of the Secretary's Office was played on the Polytechnic ground at Chiswick on Tuesday, May 23, 1933, between the Telephone and Staff and Investigation Branches, and won by the latter by 20 runs.

The Staff and Investigation Branches won the toss, and after 18 had been made for 2 wickets the expected rain fell, causing an adjournment for 10 minutes. The rain was not sufficient to affect a hard and fiery wicket, and although dense black clouds commenced to pile up all round the horizon, there was no more rain, and when the ninth wicket fell at 69 the Telephone men began to feel that they were well on top. Then Johnstone in a few overs collected 33 runs, including seven boundaries, and the score reached 111.

After a short tea interval, which in the gathering gloom needed artificial light, the Telephone Branch made a disastrous start, losing their first two wickets for 8 runs. Seven wickets were down for 60 runs and the light, which had never been good, became very bad as great black thunder clouds rolled up. Moore and Higgins made a gallant stand and carried the score to 91 before the former was bowled. The last two wickets failed to add anything to the score.

Scores:—

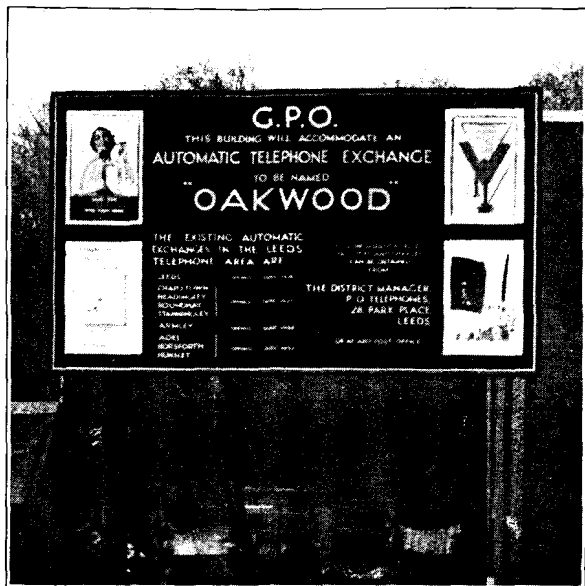
<i>Staff and Investigation Branches.</i>		<i>Telephone Branch.</i>	
J. Vaughan, c. Sellars, b. Watts	14	S. G. Watts, b. Johnstone	0
G. W. Adlam, b. Cooper	4	F. J. Pearce, c. Adlam, b. Norris	0
A. G. Ransley, c. Richardson, b. Pearce	10	L. W. Higgins, b. Johnstone	45
F. Kemp, b. Watts	1	G. H. Taylor, b. Adlam	10
R. H. Clay, c. Pearce, b. Sargent	20	A. C. Belgrave, b. Adlam	0
C. Irving, b. Cooper	2	J. H. Richardson, run out	3
J. Cramp, not out	15	H. C. Cooper, b. Johnstone	3
W. W. Norris, b. Higgins	4	S. D. Sargent, b. Johnstone	1
M. Brodie, c. Cooper, b. Higgins	0	S. Moore, b. Norris	15
D. W. L. Hughes, b. Higgins	2	W. Sellars, b. Johnstone	0
J. Johnstone, b. Higgins	33	H. J. E. Smith, not out	0
Extras	6	Extras	14
	111		91

Bowling:—

	<i>Runs.</i>	<i>Wickets.</i>		<i>Runs.</i>	<i>Wickets.</i>
Cooper	21	2	Johnstone	36	5
Watts	23	2	Norris	18	2
Moore	9	0	Adlam	9	2
Pearce	23	1	Clay	8	0
Sargent	5	1	Vaughan	6	0
Higgins	10	4			
Sellars	14	0			

## LEEDS DISTRICT NOTES.

ROUNDHAY PARK, Leeds, is, after Hyde Park and Richmond Park, probably the best-known park throughout the length and breadth of England. The attractiveness of the park, no doubt, accounts for the Roundhay area being classified in the development studies as a desirable residential district, and by the Sales Department as a Sales Representative's paradise. An increase during the past 7 years of more than 100% in the number of subscribers' lines, viz., from 970 in 1926 to 1,950 at present, has made it necessary to relieve the existing Roundhay Automatic Exchange and by the time these notes appear the new Oakwood Exchange will have been put into service for this purpose.



OAKWOOD NEW EXCHANGE NOTICE BOARD.

The erection of the new exchange building on a site in Oakwood Parade, the shopping centre of the suburb, attracted a good deal of attention, not a little of which was focussed on the notice board shown in the photograph.

Rapidity of completion of lines for new subscribers has become somewhat of a commonplace these days, but the fact that the following occurred on a Saturday afternoon, when the staff were normally off duty, makes it worthy of record:—

At 2.30 p.m. on Saturday, May 27, the Supervisor of the Leeds Exchange received a telephone call asking if an exchange line could be installed at the caller's residence urgently as one of the occupants was dangerously ill. The Supervisor expressed doubt as to whether the line could be provided before the Monday but stated she would ascertain what could be done. She telephoned to the Exchange Superintendent, who got in touch with the Sectional Engineer (External) and through the efforts of the latter an exchange line was joined up and service given by 5.30 the same afternoon. The commercial aspect of the transaction was put in order by the visit of a Sales Representative on the Monday, when the subscriber took the opportunity of conveying his grateful thanks to all the officers who were concerned in the special effort which the provision of his service had entailed.

The following is culled from the correspondence columns of the *Yorkshire Evening Post*:—

### BUSINESS METHODS.

Sir,—A week ago I despatched three communications to:—

1. The Post Office Telephone Department;
2. A railway company;
3. A private firm;

requesting that each should send their representative to discuss new business.

No. 1 was an easy first, calling the next day at 9 a.m. soon after the receipt of the letter (much to my surprise).

No. 2 called shortly after.

No. 3. Nothing doing; not even an acknowledgment, and in this case the business will not be given.—Yours, &c., OBSERVER.

With regard to the bracketed phrase, we can only say that we are surprised that the correspondent was surprised.

Leeds Post Office and Sheffield Post Office cricket teams decided the first round cup-tie of the Yorkshire Postal Cup at Leeds on June 13, Sheffield winning the match by 32 runs. Unfortunately the weather was not all that could be desired for cricket, the day turning out to be very raw, with a decided threat of rain in the atmosphere. However, the match was concluded before the rain came down. Sheffield batted first on a slowish wicket and put together a total of 89. Kirkwood was the highest scorer with 15 and five others obtained double figures. Bartle, the youngest member of the Leeds side, bowled extremely well, taking 5 wickets for 14. When Leeds went in to bat it was thought that the cup defeats of the last two years at the hands of Sheffield would be avenged, but once again Sheffield proved superior and dismissed Leeds for 57. Gaunt, with 16, was the most successful batsman. Dyson, Sheffield, proved very deadly with the ball, and aided by some fine team work ran through the Leeds tail, taking 5 wickets for 6 runs. After the match the Sheffield team were entertained to tea, the visitors being welcomed by the Postmaster-Surveyor, Mr. V. R. Kenny, M.B.E., and the Assistant Postmaster, Mr. J. F. Hunter. Mr. T. J. Hubbard, the Postmaster-Surveyor of Sheffield, responded on behalf of the Sheffield Post Office.

## WESTERN DISTRICT NOTES.

An operator, answering a subscriber's call recently, was greeted with the remark "Are you the goods?" "I hope so," was the demure reply.

A caller at a small Post Office call office not very far from Land's End recently made a call to London and was through in about 2 minutes. As he was leaving after finishing his call he remarked to the attendant "This demand system is a great improvement."

As a matter of fact the demand system has not yet been introduced into Cornwall, but incidentally the Western District has for some considerable time been giving a practically "No delay" service throughout.

A certain telephone official some short time ago observed some boys throwing stones at insulators. Arrest, trial, sentence and punishment were carried out rapidly on the spot, but the incident gave rise to the following problem in the officer's mind:—

Supposing an insulator were hit by a stone several times in the same spot, the first six shots showed no effect but at the seventh the insulator was shattered. If only six stones had hit it, would it have remained sound, and would it have been shattered by a single shot, i.e., the seventh, at some considerable time later, or would it have required again seven successive shots to break it?

The same remark applies to breaking a piece of coal.

Perhaps someone would like to give the solution.

A very irate subscriber (Scots) called at a certain office recently to make a complaint regarding his service. The officer who interviewed the caller was also a Scotsman. Before the commencement of his troubles the caller asked "Are you Scots?"—then followed an animated discussion on Scotland, Scots people, golf and their respective handicaps (whisky), and the conversation ended with a cordial invitation to the officer to visit the subscriber at his home town, with which the caller departed. In less than two minutes, however, he was back again and said "Here! I say, I came in here with a serious complaint and you made me forget all about it!"

F. J. F.

## GUILDFORD DISTRICT NOTES.

On Tuesday, May 30, the staff assembled at the District Office to bid a regretful farewell to their popular District Manager, Mr. J. M. Crombie, on his appointment to the Chester District.

Mr. France (Traffic Superintendent) opened the proceedings, and in an eloquent and interesting speech described his appreciation of Mr. Crombie's personality, particularly emphasising his manner of cordial encouragement to all members of his staff.

Mr. Hampton (Chief Clerk), following, remarked that though under the disadvantage of quite recent appointment to the Guildford District, he was well able to confirm Mr. France's remarks, since his own relations with Mr. Crombie had been most pleasant.

Mr. Hickman-Clarke (Sales Manager), after heartily endorsing all that had been said by the previous speakers, stated that in Mr. Crombie's philosophy happiness made for efficiency, and he certainly showed this by

**WHERE TO STAY.**

**DEAN FOREST.—SEVERN-WYE VALLEYS.—Littledean House,** Littledean, Glos.—**BEAUTIFUL GUEST HOUSE** (600 ft. up). 80 rooms, 5 acres grounds, garage, golf, billiards, tennis, bowls, croquet, dancing. Electric light. Brd.-res. 50s. to 70s. Illust. Tariff free.

**“HIGH TOR” GUEST HOUSE, MATLOCK.**—Spend your holidays in the beautiful Peak District. A really delightful home, with spacious lounge, library, all modern conveniences, varied and liberal table. Tariff on application.

**EASTBOURNE.—ROSFORDE Pte. HOTEL, 51, Jevington Gdns.,** Overlooking Sea. Two minutes Devonshire Park and Band Stand. Within short distance of Golf Links. Excellent and liberal catering. No restrictions. No extras. Terms moderate. Phone 3699.

**SHANKLIN.—GLENAVON Pte. HOTEL.** Three minutes sea, station and tennis. Electric light, gas fires, hot and cold water in all bedrooms. Excellent cuisine, separate tables. Billiards, table tennis, bagatelle.—Phone 37. Y. Geere.

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PORTMAN SQUARE, W.1.

GENTLEMEN'S WEST END TAILORED SUITS FROM  
5½ GUINEAS.

**Silk & Cotton-Covered H.C.**

Copper Wire.

**Asbestos-Covered Wire**

Charcoal Iron Core Wire, Resistance and Fuse Wires, Binding Wires, &c., &c.

**Braided and Twisted Wires, Bare Copper Strand and Flexibles of any Construction**

Wire Ropes and Cords, down to the finest sizes, in Galvanized Steel, Phosphor Bronze, &c.

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precept and example. During the past season every member of the Sales Branch had enjoyed peculiar privileges of association with Mr. Crombie, because, having enrolled himself as a student of the Salesmanship Course, he had presided at their monthly meetings.

Mr. Weller (Sales Supervisor) ruefully complained that the previous speakers had left him little to say but that, for his own part, he should ever remember with great pleasure, Mr. Crombie's term of office at Guildford.

Miss Chapple, representing the fairer members of the staff, spoke in warm terms of Mr. Crombie's unflinching courtesy and kindness and expressed their wishes for his prosperity and happiness in the Chester District.

Mr. France then asked Mr. Crombie's acceptance of a handsome leather bag and case of hair brushes as a slight mark of the Guildford staff's esteem.

Mr. Crombie, in responding, thanked the staff for their kindly wishes and gifts, all of which were extremely gratifying, especially in view of the fact of his short term of office at Guildford. He then alluded to the strong personal feeling which had animated him toward all members of his staff and assured all present that he would take away only the most pleasant memories of his experiences at Guildford, and hoped that any of the staff visiting the Chester District would make a point of calling on him.

Our congratulations to Mr. A. E. Higgins, Assistant Traffic Superintendent, who will, by the time these notes appear, have taken the fatal plunge, in other words, ignored Mr. Punch's advice. We hope later to show our appreciation in a tangible form.

Mr. France, Traffic Superintendent, following a talk on “Telephones” before the Farnham Rotary Club in April last, was invited to give a similar talk before the Guildford Rotary Club. This took place on June 19. In both cases Mr. France was able to do some propaganda work, and the talks were well received.

*Postmasters Cricket Shield.*—Camberley P.O. played Guildford P.O. Engineers and Telephone C.C. at Camberley on May 24, resulting in a win for the Engineers and Telephones (the holders of the trophy) after an enjoyable game. In this first-round game Camberley, newcomers to the competition, had a hard task to face in meeting the Guildford Engineers and Telephones, who have three times won the trophy out of four attempts, and it proved to be beyond their power to prevent them winning.

General all-round efficiency in the field and bright batting enabled the Engineers to dismiss their opponents and declare after a short innings, in order that Camberley could bat again.

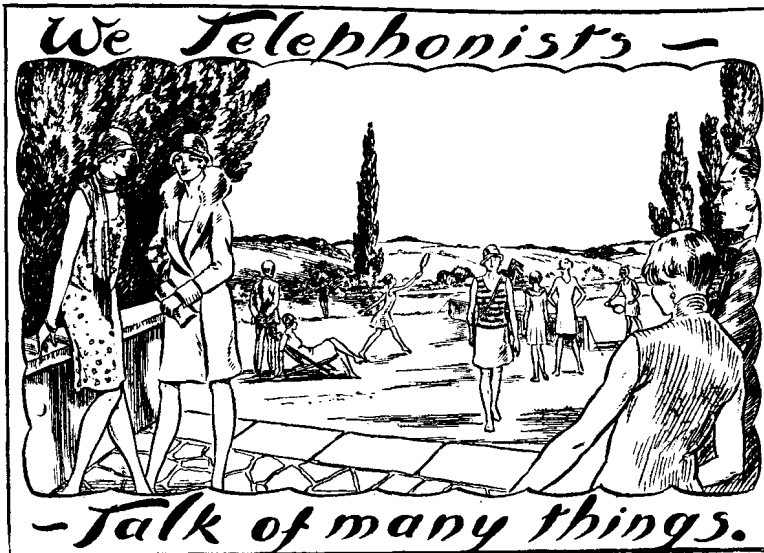
*Camberley P.O.*

First Innings.		Second Innings.	
R. Randall, c. Woodham, b. Piper	0	R. Randall, c. Stewart, b. Amey	0
H. Young, b. Jenner	...	A. Coston, c. and b. Plant	...
S. Gibbons, stmpd. Hart, b. Jenner	...	Sumner, c. Piper, b. Amey	...
Sumner, b. Jenner	...	H. Young, c. Ansell, b. Amey	...
H. Griffiths, b. Jenner	...	Coles, stmpd. Hart, b. Amey	...
D. Reynolds, b. Piper	...	H. Griffiths, not out	...
L. Ayres, b. Piper	...	W. E. Groves, not out	...
A. Coston, not out	...		
W. E. Groves, b. Jenner	...		
H. Peckham, c. and b. Jenner	...		
Coles, B. Piper	...		
Extras	...	Extras	...
Total	...	Total, for 5 wkts.	...

*Guildford Engineers and Telephones.*

S. D. Pendry, stmpd. Reynolds, b. Peckham	18
W. Hart, c. Groves, b. Ayres	...
C. A. Stewart, not out	...
W. E. Jenner, c. Randall, b. Peckham	...
R. Piper, b. Griffiths	...
F. Amey, not out	...
L. Ansell,	} did not bat.
J. B. Plant,	
R. Woodham,	
R. Lee,	
R. Connell,	
Extras	...
Total, for 4 wkts. (dec.)	...

Bowling R. Piper, 14 runs, 4 wkts.; W. E. Jenner, 17 runs, 6 wkts.



### The Telephone System in the London Stock Exchange.

(Continued from page 146.)

**Incoming Calls.**—Local and Toll Calls.—Certain London Wall local numbers are published in the directory under the name of the Stock Exchange. Callers desiring to speak to a broker in the House call the room nearest to the market in which he operates. The attendant in this room has speaking tubes to the waiters on the adjacent stands and on receiving a call for a broker he calls through the appropriate tube (say) "John Smith." If a particular member of this firm should be required the name of the firm would be preceded by the name of the man desired. The waiter immediately roars out the name so as to be heard above the din of the bidding in the markets. Any representative of this firm who hears the call proceeds immediately to the telephone room indicated by the waiter, where the attendant directs him to the box allotted. Incoming local calls are charged for at the rate of 2*d.* for six minutes. If a broker is not immediately available to take an incoming call the attendant offers to record the number of the caller and ask the broker to pass a reversed call when he attends. In this case the 2*d.* fee for the incoming call covers the cost of the reversed call. This course is advantageous to the Department in that it reduces the holding time of the box—in this case the most valuable part of the installation.

**Trunk Calls.**—In the more important trunk rooms the attendant is supplied with a switchboard controlling an electric number board in the House in addition to the speaking tubes. The larger trunk users have the use of a number on this board and when they are required to take a call the attendant merely switches on the light behind the number of the firm. Should this be unnoticed he passes the call to the waiter via the tube in the ordinary way.

In the Foreign room there is an officer known as a "Spotter," whose duty is to observe the brokers and clerks entering the room, know the firms to which they belong and direct them to the box allotted for an incoming call or for an outgoing trunk call about to mature. He assists, also, with booking calls and answering enquiries, &c., so as to leave the attendants free to carry on their operating duties without hindrance.

On all timed calls the "time on" counts from 30 seconds after the attendant answers, except when the required broker was called late owing to the previous call being of short duration, in which case the time counts from the expiration of three minutes after the commencement of the previous call. Should the broker already be engaged on a trunk call the call may be suspended until he is disengaged. Personal calls are not catered for as the normal service is practically a person to person one without modification. Demand trunk calls have so far been excluded from the Stock Exchange but the question of introducing this service is at present under consideration.

**Accounting.**—The majority of the brokers run accounts, but some few pay cash for their calls. Each attendant is provided with a certain amount of cash each day in order that he may be able to give change to the cash callers. It is not necessary for the attendant to record the name of the calling firm in these cases and he therefore merely ticks the remarks column of his sheet to indicate that cash has been paid. The attendant has to remember the firm to which each caller belongs and whether the firm runs an account. If the call is to be on a credit basis the name of the firm is entered in the remarks column of the call office sheet. At the end of each day fair copies of the sheets are made out and passed to the Threadneedle Street Post Office, together with all the cash and other sets of sheets on to which have been extracted all account, trunk and local calls under the names of the brokers responsible for them. The Post Office is responsible for making up the accounts for the brokers from this information. The Post Office passes the call office sheets to the Controller's Office daily and they are subsequently compared there, so far as local and second fee call area calls are concerned,

with the register readings taken daily at London Wall Exchange and for other calls with the relative tickets. Any discrepancies discovered are dealt with before the accounts are despatched.

In order to ensure that the call office sheets are properly kept by the attendants surprise checks are made by the two Supervisors. A spare set of sheets and bag of cash is kept for this purpose and are given to the attendant for use while his own are being checked.

(To be continued.)

### Alternative Anecdotes: No. 2.

Anne Ashford (Accounts), an aspiring amateur athlete, attended an Athletic Association's annual antics at Amersham. Anne's astonishing agility attracted abundant admiration and applause, and Archie Abercorn, acting as adjudicator, acclaimed Anne's achievement, an award airily accepted and acknowledged.

Anne's attitude allured Archie, and Archie accompanied Anne assiduously all afternoon.

Anne, apparently Archie's affinity, accepted Archie's attentions, artfully anticipating arrival at altar, appropriately attired, amid assembled acquaintances, and afterwards acquiring all Archie's assets.

Alas! Another Atalanta alienated Archie's affections and audaciously annexed Archie.

Anne, affronted and almost apoplectic, asked Attorney's advice.

Action advocated—Anne's atrophied affections assessed at agreeable altitude, and amazing amount awarded.

Addendum:

Anne—amply avenged, Atalanta—arrogant and amused. Archie—absolutely all—in! C. A. S.

The name of Mr. C. B. Clay, the last Metropolitan Superintendent of the National Telephone Company, is familiar to most telephone people. We have very much pleasure in printing the following, sent in by Mr. Clay:—

"A manager of the National Telephone Company invited subscribers to state whether the service given was to their satisfaction. In reply he received a postcard inscribed as follows:—

"Your thing of wires and electricity  
Brings daily to my heart felicity  
While your studied attention  
To the boonful invention  
Makes it a blessing deserving publicity,  
So this word-bearing wonder  
Child of lightning and thunder  
Is the very perfection of useful simplicity."

W. A.

Other subscribers, please copy.—(Ed.)

### Answer to Correspondents.

Yes, "Anxious," Mr. Flage *is* on leave. He will, we hope, resume in this column next month.

"Worried," "Perplexed," "Grieved," "Apprehensive," and all others please see reply to "Anxious" above.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), London, E.C.1.

## EDINBURGH NOTES.

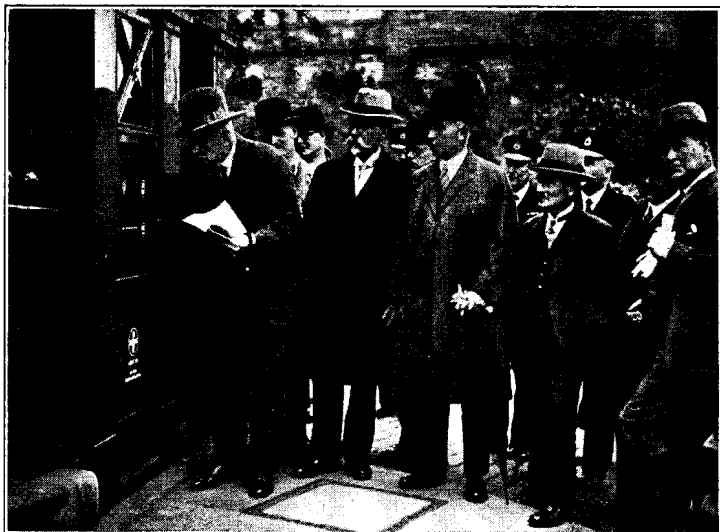
THE Police Telephone and Signal System, which has recently been installed in the Edinburgh City area, commenced working on the morning of Sunday, May 28. The apparatus for this system, which is the first of its kind in the country, and which it is understood, is likely to be adopted in several other districts, was designed and supplied by Messrs. Ericsson of Nottingham. The plant was installed, and will be maintained by the P.O. Engineering Department, which is to be congratulated on the successful completion of the work after many technical difficulties had been overcome. A luncheon was held in the City Chambers on May 29 to mark the inauguration of the system. After the luncheon Lord Provost W. J. Thomson made happy reference to the special occasion and was followed by Chief Constable Roderick Ross who explained the organisation. Mr. F. G. Milne, Secretary to the Post Office in Scotland, in a few words made reference to the work involved by the Installers and the Department's Engineers. Mr. Milne (who was supported by local representatives of the Departments and Sections concerned) emphasised the interest of Headquarters in the system and made suitable reference to the presence of Mr. F. H. S. Grant, Assistant Secretary, Telephone Branch, London.

The Institution of Mechanical Engineers held their Annual Meeting in Edinburgh during the week commencing May 29. Various places of interest were visited by the Members of the Institute during their sojourn in the City, and on Thursday, June 1, a party was conducted over the Edinburgh Automatic Exchange. The visitors were received by Mr. J. K. Murray, District Manager, and Mr. H. Kitchen, Superintending Engineer; light refreshments were provided at the conclusion of the inspection.

Readers may be interested to learn that the Telex Service has received publicity by reason of a descriptive article, illustrated by two excellent photographic views of a teleprinter and a reproduction of the telex message of welcome from the District Manager, Edinburgh, which appeared in the April edition of the *Rothmill Quarterly Magazine*, the *Work's Journal* of Messrs. Tullis, Russell & Co., Ltd., Markinch, Fife, who are Telex subscribers. The article in eulogy of the Telex service, refers to it as "this wonderful new invention," &c., and concludes with the following:—

"The advantages to be derived from the teleprinter service in large business organisations are very apparent, and Messrs. Tullis, Russell are to be complimented on leading the way in the East of Scotland."

A. W. C. C.



EDINBURGH POLICE BOXES.

The above photograph, reproduced by kind permission of the proprietors of the *Scotsman*, shows a group of prominent city, police and P.O. officials testing one of the police boxes. Those in the foreground include (reading from left to right) Bailie Fortune, Chief Constable Ross, Mr. F. G. Milne and Mr. H. Kitchen.

## LONDON ENGINEERING DISTRICT NOTES.

**External Construction.**—An interesting experiment in conduit provision is being carried out on the Kingston By-pass Road, at Malden. As is well known, the standard multiple conduit line consists of short lengths of glazed earthenware ducts either of the octagonal form laid in concrete or of the self-aligning type. The new method provides for building *in situ* concrete ducts in continuous lengths of 100 to 200 yds. Lengths of rubber hose filled with water are laid on a concrete bed and completely embedded in concrete. After setting the water is released and the hose withdrawn. The method should provide a strong, watertight duct line with economy in labour and material.

**Canonbury Exchange.**—The provision of leading-in ducts for the new Canonbury Exchange being erected at Highbury Grove has involved the laying of 36 steel pipes across the L.M. & S. Railway bridge. The existing bridge was not considered strong enough to carry the extra weight. An extra girder has, therefore, been placed midway between the existing ones and 18 steel pipes laid either side.

**Reconditioning of Telegraph Cables.**—Recent developments have made it possible to use to better advantage the old telegraph cables and steps are being taken to recondition the London-Manchester and London-Birmingham cable. The circuits are being balanced and loaded and when the work is completed the telegraphs will be worked on phantom circuits and 86 additional telephone channels will thus be made available.

**New Anglo-French Cable.**—Work on a new Anglo-French cable has been commenced between London and Ashford. The cable is a 4/40 ÷ 360/25 P.C.Q.T. and includes 4 pairs specially provided for Continental broadcasts.

**Voice Frequency Telegraph Equipment.**—On the ground floor of G.P.O. West, Standard Telephones & Cables Ltd. are installing 33 six-channel bays of Voice Frequency Telegraph Equipment. Five of these bays will be brought into service very shortly and will serve the Northern routes.

The equipment is of the same type as that now serving the principal towns in Scotland and Northern Ireland.

**Monetary and Economic Conference.**—A large installation has been provided at very short notice for the World Economic Conference at the Geological Museum, South Kensington. The installation consists of 5 No. 9 Switchboards converted for automatic working and equipped with 25 exchange lines, 20 private wires and 120 direct extensions, to offices, cabinets and delegates' rooms. Two special cord circuits on each position are provided for trunk through clearing.

The external work concerned was of considerable magnitude and special steps had to be taken to complete in the time available.

The work was commenced by the laying of 300 yds. of duct from the Queen's Gate entrance of the Museum grounds to the rear of the Geological Museum. A 150/20 cable was then drawn in and continued to the junction of Cromwell Road and Queen's Gate, where pairs to Western Exchange were picked up. A second cable, a 24-pair 20, was also drawn in the duct and continued to the north end of Queen's Gate for Trunks.

The cabling and wiring of the building has been run for the most part on external walls owing to the need of avoiding as much as possible the cutting away of walls and to reduce surface wiring inside the building. Altogether some 4 miles of cable have been run having a single wire mileage of approximately 180 miles.

Twenty-seven multi-coin boxes in cabinets have been installed, 16 of which, for the use of the Press, are connected via a special control board to Western Exchange. Fifteen call boxes work to Trunks via a second control board. Two other cabinets are connected to the P.B.X. via one of these boards; this enables a caller ringing up the main P.B.X. (Western 7,260) and requiring the Press to be switched through to the control board. Amongst the suite of cabinets in this room are three for private wires provided for the cable companies, with Plan 1 extensions to the companies' stands. Twelve private wires terminated in cabinets are provided for the Press and other users. Teleprinter services for the cable companies and tape machines are amongst the other facilities provided.

For the B.B.C. five lines to Broadcasting House are available, with the necessary extension from the Control Room to the main Conference Room, Committee Rooms and Studio.

From the front and rear entrances of the Museum lines to a car park control point have been provided with extensions to A.A. boxes erected at the car parks.

**Exhibitions.**—At the Building Centre, New Bond Street, W., a window display entitled "Progress" was opened on May 15 for three weeks, and included a working final selector, two linen photographs illuminated at the rear, one indicating an early manual CB exchange, the other a modern automatic exchange. On the "Scenograph" four stages in the development of telephony were shown. The whole display was enclosed in "Plymax" and illuminated by low-tension tube lighting.

In connexion with the Anglo-Palestine Exhibition at the Royal Agricultural Hall, Islington (June 7-17), a stand with tube lighting was provided and the exhibition of apparatus included the "Inverted Speech demonstration," a wireless short-wave telephony (2 stations) demonstration set, two scenographs and, in connexion with the air mail display, a model of an air mail aeroplane, kindly lent by the Imperial Airways, Ltd.

## LONDON TELEPHONE SERVICE NOTES.

### Sales Branch Notes.

DURING the month of May there was a net increase of 2,616 stations, as compared with an increase of 1,687 stations in the corresponding month of last year.

A large telephone installation has been provided in connexion with the World Economic Conference, which opened on June 12 at the Geological Museum, South Kensington, and probably on no other occasion has the importance of the telephone in world communications been so abundantly demonstrated. Some sidelights on the Conference will be found in another part of this journal.

The Post Office had an exhibit at the Anglo-Palestine Exhibition, held in the Agricultural Hall, Islington, from June 7 to 17. The telephone display included a repeater 9A, short-wave set, speech inverter, switchboards, multi-coin boxes and hand-microphones of all colours. Opportunity was also provided for a 1,000-mile talk. The air mail services were represented by an up-to-date map.

**Retirement.**—Mr. D. Deverell, Sales Representative of the West District Sales Office, who entered the Post Office in 1907, retired from the Service on May 22, at the age of 61. On the occasion of his departure the District

Sales Manager presented him with a gold watch, suitably inscribed, as a token of esteem from his colleagues in the various offices in which he had served.

*Obituary.*—It is with deep regret that we have to announce the death, on May 13 last, of Mr. G. C. Tucker, Unestablished Sales Representative of the West Sales Office.

Mr. Tucker, who was ill for only a short time, died in a Nursing Home following an operation. He entered the service of the Post Office in October, 1928.

*Staff Salesmanship Scheme.*—The results in the London area to date have been as follows:—

	Total Number Ordered.	Number Ordered in June, 1933.
Exchange lines ...	2,130	112
Extensions ...	2,363	131
Private lines ...	26	2
Plugs and sockets ...	430	28
Hand-microphones ...	12,386	776
Extensions bells ...	1,115	92
Other apparatus ...	1,175	84

*Promotion.*—Congratulations to Mr. T. T. Archibald on his appointment to the grade of Executive Officer.

Sales Representatives will be interested in the following letter. Suggestions are invited as to the next step to be taken in the case:—

"For the last two years my wife has been worried by canvassers calling at the door endeavouring to persuade her to have the telephone fitted in my house.

"Each time this happens her reply is the same, namely, that *under no circumstances whatever* will we have a telephone in the house. One would have thought that after being told the same thing about a dozen times, the information would percolate through the thickest skull that though there might be many things in the world which the inmates might require, the telephone was definitely not one of them; but apparently the cranial equipment of your canvassers is made of sterner stuff, for only yesterday my wife was again interrupted in the middle of her household work to repeat the by now familiar, but apparently useless, refusal.

"I cannot, I suppose, blame the canvassers themselves, as they are, I presume, hoofed out on the road with instructions that constant dripping will wear away the most stubborn stone. I do not even know whether I can blame *you*, as their instructions may come from even higher up, but perhaps you will be good enough to convey to the proper authority that—

"I do not want the telephone, I never shall want the telephone, and I am not going to have the telephone.

"In case you want an explanation of this, apparently to the Post Office, imbecile objection to such a boon to mankind, I will mention that a large portion of my working day is spent in answering the beastly thing, and the very last object in this world which I want to see when I enter my front door is a telephone. As a wall ornament, or a hat-rack, they may have their points, but I prefer something more restful, such as wax fruit, antimacassars or velvet whatnots.

"In short, no more canvassers, please, as the next time one of your Ballyhoo Boys calls, my wife will probably go completely gaga and bite him in the dress circle."

#### London Telephone Service.

*Sports Association.*—The fourth annual sports and gymkhana was held at the Civil Service Sports Ground, Chiswick, on Tuesday, May 30. Once again the weather was everything that could be desired, and the number of spectators testified to the interest aroused by this occasion.

The programme covered 32 events, all of which were keenly contested by a record number of entrants.

Considerations of space will not permit a detailed account of the results of the events, and it is difficult to single out individuals for special mention when all did so well. In the Ladies' Inter-Exchange and Section Relay Race, Trunks, who were the winners in 1930, 1931 and 1932, repeated their success on this occasion; and in the Ladies' Invitation Inter-Departmental Relay Race, the London Telephone Service were again the victors, with the time of 52½ seconds for the 440 yds.

Enjoyable light touches were provided by the obstacle, wheelbarrow and other races of this character, and the Men's One Mile Scratch Walk provided thrills and amusement for all. All honour to the veterans who turn up regularly for this event.

At the conclusion of the meeting, after some comments from Mr. M. C. Pink, the Chairman of the Sports Association, the prizes were distributed by Mrs. R. P. Crum, who was the recipient of a bouquet from the hands of little Miss Mary Harris. A most important feature was the presentation of the "Napier" Challenge Cup, which went this year to Mr. A. D. Rollings, a replica being presented to last year's holder, Mr. H. S. Read.

After a vote of thanks to Mrs. Crum, a move was made to the Pavilion for a very enjoyable dance.

The success of this meeting emphasises the importance of the sports movement as a feature of the social life of the London Telephone Service.

The success was assured by the untiring efforts of Mr. A. H. Harris, the Honorary Secretary, and the Sports Committee, and they are to be congratulated on the results.



TOLL "A": RENOWN NETBALL CLUB.

"Seven" netball enthusiasts of Toll "A" who participated in the Liddiard Shield Competition with Museum, reported upon in our June issue.

#### Mountview Exchange.

*The Mountview Amateurs.*—A variety entertainment by "The Mountview Amateurs," given on May 18 at Christchurch Hall, Crouch End, was the culmination of a scheme conceived by the staff at Mountview telephone exchange in aid of the poor children of Hornsey. An enthusiastic audience of nearly three hundred thronged the hall to lend their support to the venture.

The show, carefully blended to suit all tastes, commenced with a cabaret by five nattily-attired members of the Mountview staff. There followed a song of Bantoch's, sung with restraint and precision, syncopated songs, a lilting duet at the piano, a little step-dancing, and Part I was brought to a close with a light one-act play, "The Bathroom Door."

Part II opened with a snappy little song-dance which amply compensated for the absence of the cabaret, followed by some excellent renderings of Hebridean songs, skilfully interpreted character-pieces, a happily-chosen solo at the piano, comedy songs that awakened a hearty response from the audience, and then, to conclude, a really polished presentation of the dramatic one-act play "Let it go at that."

I forbear to mention names, for I feel that there was none participating who was undeserving of mention. But surely it is unusual to find such a concentration of talent as must be at Mountview? There was not a dull moment in the programme, and I should be really sorry to miss the further efforts which I am sure the success of their initial enterprise will lead the staff at Mountview Exchange to make. How many exchanges are there in the London area? I hope that some, at least, will be inspired by Mountview.

"ONE OF THE THREE HUNDRED."

#### Personalia.

*Resignations on Account of Marriage.*

*Telephonists.*

Miss I. M. Brooks, of Putney.	Miss E. E. Seall, of Monument.
" C. B. L. Byatt, of Putney.	" M. C. Elliott, of Avenue.
" K. W. Adams, of Hop.	" M. J. Rooney, of Silverthorne.
" E. J. Archer, of Leytonstone.	" A. E. Collarbone, of Central.
" E. J. Lilleystone, of London Wall.	" S. A. P. Harding, of Royal.
" O. M. Ward, of Brixton.	" E. F. Steel, of Royal.
" C. I. Martin, of Battersea.	" D. E. Robinson, of Royal.
" N. Eldridge, of Bermondsey.	" K. M. Price, of Croydon.
" D. Middle, of Ealing.	" R. Gates, of Maryland.
" M. S. Clayden, of Ealing.	" C. E. Goodacre, of City.
" M. J. Pickard, of Streatham.	" V. M. Gibbs, of City.
" B. Donaldson, of Toll "A."	" M. Austin, of Mayfair.
" K. E. Artis, of Victoria.	" E. O. Newham, of Gerrard.
" G. Board, of Victoria.	" I. Fenner, of Gerrard.
" P. E. M. Green, of Victoria.	" R. P. M. Martin, of Kensington.
" T. E. Jones, of Victoria.	" E. C. Alexander, of Trunk.
" W. M. Marsh, of Victoria.	" K. J. Astins, of Trunk.
" E. A. M. Jenner, of Upper Waringham.	" D. E. Hills, of Willesden.
" A. L. Smith, of Pollards.	" W. E. Sewell, of Mountview.
" E. E. Simmons, of Toll "B."	" W. S. Pearson, of Paddington.
" C. L. Brown, of Toll "B."	" E. C. Dyer, of Paddington.
	" M. C. A. Tester, of Paddington.

# THE Telegraph and Telephone Journal.

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AUGUST, 1933.

No. 221.

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*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CXI.

MR. A. FAULKNER.

THE subject of our sketch, Mr. Alfred Faulkner, F.I.A., S., was born in London in 1868 and educated at a private school. He was for some time engaged in domestic architecture under Mr. Lennard Stokes. In 1905 he received an appointment in the service of the National Telephone Company under Mr. Gaine. He was subsequently appointed Buildings Surveyor in the Metropolitan District under Mr. C. B. Clay, and supervised the construction of all the new exchange buildings in London from the erection of the Gerrard Exchange up to the time when the Company (in view of the impending transfer), was no longer allowed to build. He was responsible for the maintenance of all telephone exchanges and call office cabinets in the London area, and of the White Lion Street workshop. He was also responsible for all roof



repairs in London, which he reorganised in a manner resulting in a considerable saving to the Company. The overhead construction in those days played a larger part in the London telephone system than it now does, a greater proportion of cables were led into the exchanges overhead, and, of course, overhead distribution was employed, rendering the question of roof repairs a problem of first importance. As Buildings Surveyor, Mr. Faulkner was transferred to the Post Office service in 1911. At this time the continuous and rapid extension of the underground system involved the taking down of much overhead construction, which in its turn involved complex negotiations with wayleave owners and the settlement of heavy claims for damage to buildings. All these Mr. Faulkner carried through with his customary tact and skill. Again, in the protracted and difficult proceedings arising after the Holborn explosion,

*(Continued on page 249.)*

# The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

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## NOTICES.

As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.

VOL. XIX.

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No. 221.

## "RINGING UP."

AN Irish newspaper, commenting on the impending abolition of the magneto type of instrument in Belfast, says: "It is impossible to calculate how much bad temper, time, and elbow grease will be saved by this reform." It confesses that the "magneto" has a long and dignified history and possesses virtues of its own. "No harm is done," it alleges, "when the baby or the housemaid pulls it off its rest, and one always can vent one's spleen on the exchange by turning the handle furiously for ten minutes or so." We have, of course, a shrewd idea of the period of time which the aggrieved subscriber's "ten minutes" represents; but this is by the way. But it is certain that, human nature being what it is, the subscriber who has to wait beyond the legitimate few seconds for a reply from the exchange, must get more satisfaction from vigorously turning a handle than from jiggling the receiver-rest up and down. The saving of temper to which our contemporary refers may be thought to take place rather in the exchange than at the subscriber's end of the line, for it may well be that the old-fashioned expedient of ringing, as though grinding furiously at a coffee mill, must often have acted as a safety valve to a waiting subscriber's temper. This questionable psychological advantage, however, pales before the benefits of the common battery system, with its effortless method (on the part of the caller) of securing connexion with the wanted number.

The expression "ringing up" which now figures so largely in our colloquial speech, derives, of course, from the early days of telephony when every subscriber had actually to ring up the

exchange and state his requirements. The world-wide introduction of common battery working reduced the expression almost to a misnomer, for the act of lifting a receiver and causing a lamp to glow at the exchange, gave the subscriber little share in the process of "ringing up" his friend. Yet the average citizen still talks of "ringing up," though he has no magneto handle to turn, even as the steamship companies continue to announce the "sailings" of vessels which do not carry a stitch of canvas. The majority of subscribers, however, will soon be justified in adhering to the old formula, for with the rapid development of the automatic system, they actually ring up their correspondents themselves, not indeed by turning a crank, but by revolving the dial. Therefore while the Administration may be said to "ring down" the curtain on "ringing up" at Belfast and other places, it is at the same time extensively engaged in "ringing in" the new—the automatic service—by which subscribers "ring through" to their friends without the intervention of an operator.

## HIC ET UBIQUE.

THE latest official returns from Germany show a decrease in the number of telephones for the March quarter of 35,516. This brings the number of telephones in Germany below the 3 million mark, reducing it to 2,960,401.

Great Britain has now passed Germany in percentage development, and thus occupies ninth instead of tenth place amongst the chief telephone using countries of the world:—

	Telephones.	Telephones per 100 inhabitants.
Germany ... ..	2,960,401	4.57
Great Britain ... ..	2,141,700	4.63

According to a news despatch from United States Commercial Attache of Istanbul, Turkey, the only cities in Turkey which have modern public telephone systems are Ankara, Istanbul, and Izmir.

The number of telephone subscribers in these cities increased from 15,879 in 1930 to 16,155 in 1931, while the number of conversations declined from 18,330,000 to 18,050,000. Long distance telephone service is available between Istanbul and Ankara, and a few other Turkish towns; and between Istanbul and Ankara and most of the important centres in Europe.

According to Reuter (Baghdad), good progress is now being made with the oil pipe-line and the telephone cable which are being laid across the desert from Iraq to Palestine. The Iraq Petroleum Co.'s pipe-line must be finished by 1935, when the Haifa and Kirkuk ends are expected to meet. The telephone line, it is anticipated, should be completed by the end of this year. It is a joint project of the British and the Iraq Governments.

The Postmaster-General of Australia, in a letter to Mr. Jennings, member of the House of Representatives, states that financial considerations prevent the granting in the near future of any reduction in telephone charges. Mr. Parkhill states that more than £1,500,000 has been lost on the telephone services of the Commonwealth in the last five years.



Before the present rates came into force in December, 1929, the trunk line charges had remained unaltered for 13 years and local charges for nine years, in spite of the heavy increases in the costs of labor and material. The present rental is £5 10s. per year, plus charges for calls, the rental for the first year being paid in advance.

Public telephone communication between centres in Japan proper and those of Korea was recently established by the Government Department of Communications. On the completion of the work of laying cables between Fukuoka (Kyushu) and Fusan (Korea) in the near future, an augmented scale of communication is expected to be achieved. Furthermore, trial communication by telephone between Tokyo and Mukden, or Dairen, has also been successful, and the Communications Department is now planning to open a public service shortly.

Amongst other recent extensions of the Overseas Telephone Service is that available to the cities of Ancon, Callao, Chosica, Puente, Piedra, and Lima in Peru. The charge for a three-minute call from London to any of these places is £7 7s. 0d.

Telephone communication with Portugal, hitherto restricted to Lisbon, has now been extended to all places in Portugal. The charge for a three-minute call from London to any place in Portugal is 17s. 6d. between 8 a.m. and 7 p.m. and 10s. 6d. at any other time.

The Chinese Minister of Communications is discussing with the Kwangtung Provincial Government a project for a long-distance telephone service to connect Nanking, Shanghai, Canton, and Hankow, the principal cities of south and central China. According to the *Chinese Economic Bulletin*, the Canton authorities have intimated their readiness to co-operate in carrying out this enterprise. Work is in progress for the erection of two additional lines for Shanghai-Nanking long distance phone service.

There is a story now going round the Clubs, Turkish Baths, Vestries and Dog-racing tracks, says Mr. K. R. G. Browne, in the *Evening News*, concerning an ambitious young politician who, having occasion one day to ring up the Leader of his Party, mistook the "number engaged" signal for his master's voice and stood for ten minutes with his hat off, saying "Quite" at intervals. But that, as the sceptical citizen of Rheims remarked on seeing a puffin for the first time, is probably only a *canard*.

Under the caption "Putting It Nicely" *Reynolds News* prints the following letter from a correspondent: I have just had the account for my telephone, in which the Controller writes: "I shall be much obliged if you will be so good as to let me have a remittance within seven days."

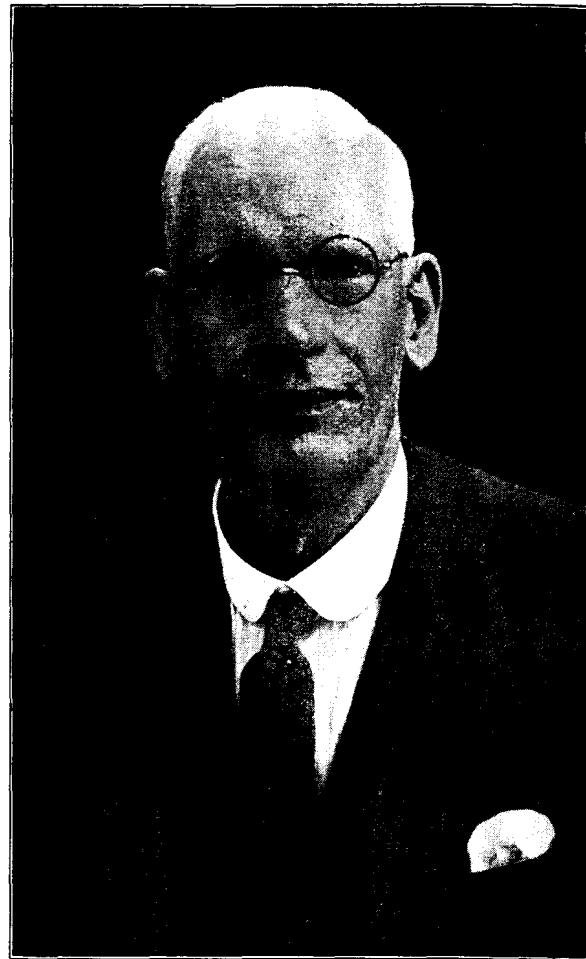
On the other hand, my local rate collector informs me that "the council demands payment of" &c., &c.

Politeness costs nothing. Could not the council take a hint from the Controller of Telephone Services, and at least "request" payment?

Still, you have got to pay either way.

## MR. A. T. TAYLOR.

A LARGE gathering of his old colleagues, including several retired ones who returned to the scene of their old activities specially for the occasion, assembled in the Deputation Room, G.P.O. North, on Friday, June 30, to say farewell to Mr. A. T. Taylor, who retired after more than 41 years service in the Post Office. The function was concluded by the presentation to Mr. Taylor of a grandfather clock subscribed for by his numerous friends in the service as a mark of their esteem. Mr. F. H. S. Grant, Assistant Secretary, in making the presentation, recounted Mr. Taylor's principal activities, both on behalf of the Post Office and of his colleagues, and happily described him as an ideal civil servant, with all those merits and virtues which the public, when in a favourable humour, ascribes to Civil Servants.



MR. A. T. TAYLOR.

Mr. Taylor's first established post was that of a Clerk, 2nd Division, in the Savings Bank Department, on May 16, 1892. He entered the Secretary's Office as a Third Class Clerk in July, 1894, being appointed to the Correspondence Branch, subsequently incorporated in the Mails Branch. In this branch he remained (becoming a Second Class Clerk in 1905 and First Class in 1910), until 1916, when he joined the Ministry of Food. He was there placed in the Sugar Distribution Branch. He carried out this important work with such credit that he was ultimately put in charge of the Branch, and awarded an O.B.E.

He returned to the Post Office (Telegraph Branch), becoming a Staff Officer in April 1921, and remained there until his promotion to Senior Staff Officer on July 1, 1924, when he was transferred to the Telephone Branch in which he remained until his retirement.

Mr. Taylor was Secretary of the Entertainments Committee for the International Radio Telegraph Conference in 1912. He was Treasurer of the Secretary's Office (No. 2) War Savings Committee for 10 years. In his younger days he was a member of the Civil Service Rifles for 10 years.

His good work on behalf of the Society of Civil Servants hardly needs recounting to our readers. Suffice it is to say that he was a member of the Branch Committee for 10 years, Chairman of that Committee for 4 years and Member of the National Executive Committee for 4 years. For four years also he was Chairman of the Office Whitley Committee. Amongst his other activities on behalf of the staff it may be mentioned that he was a representative of the Clerical Staffs on the Committee of Management of the Post Office Relief Fund. His social work was not confined to the Post Office, however, for he was for 18 years the secretary of a local Friendly Society, and has been president of that Society since 1911.

Amongst Mr. Taylor's other interests, vocal music figures largely. He is a member of various choral societies. He is a keen motorist and fond of gardening, two pursuits which he should find plenty of opportunity to enjoy more fully in his years of retirement. That these may be long and blessed with good health is the wish of all his colleagues and other friends.

### A YEAR'S DEMAND TRUNK WORKING IN RETROSPECT.

In the issue of the *T. and T. Journal* of May, 1932, an article appeared on Birmingham's introduction to the "Demand" system of Long-Distance Telephony. At the time the article was written, which was before the actual introduction of the system into Birmingham, we, in the District, were naturally viewing the scheme with a certain amount of trepidation not as to whether we were right in all the hundred and one requirements, estimates and details, but as to whether the new scheme would "deliver the goods."

Twelve months have gone by since that date and the doubts that existed have been blown to the four winds. The experience and evidence now at hand show clearly that the demand system is the fastest and most efficient long-distance telephone system ever offered to the public. In March of last year Demand working was introduced to London, Bristol and Manchester. The following schedule indicates the further extensions of demand working since that date. The areas to which Demand facilities both incoming and outgoing are available are also indicated.

#### DEMAND WORKING.

A Demand service is given to subscribers as far as Birmingham is concerned in the 9½ miles circle excluding Walsall, Wolverhampton and Dudley, and their associated exchanges, viz. :-

- Dudley*, Stourbridge, Cradley Heath and Brierley Hill.
- Wolverhampton*, Penn, Bilston, Fallings Park, Tettenhall and Finchfield.
- Walsall*, Streetly, Bloxwich, Aldridge.

Route.	Outward from Birmingham to :	Incoming to :
London Toll B	London 10-mile circle ...	—
London Trunk	London Telephone Area except 10-mile circle ...	Birmingham Group.
Bristol ...	Bristol no-delay area ...	Birmingham Group.
Manchester ...	Manchester no-delay area ...	Not demand working.
Liverpool ...	Liverpool 7-mile circle ...	Not demand working.
Leeds ...	Leeds no-delay area ...	Birmingham Group.
Sheffield ...	Sheffield 5-mile circle ...	Birmingham local fee area.
Nottingham ...	Nottingham no-delay area ...	Birmingham Group.
Leicester ...	Leicester 5-mile circle ...	Birmingham Group.

The Nottingham and Leeds routes are worked on a Demand both-way basis. The outgoing circuits terminated in the Outgoing

Trunk Multiple and the incoming ends terminated on jack-ended B positions in the Trunk Exchange. Three letter codes have been introduced in all exchanges in the local Fee Area and have been found to be of great advantage particularly to new entrants to the service, who more quickly group the various codes. Some short while after the introduction of Demand working, air tubes were installed over all the Demand positions for the circulation of tickets from these positions to the central circulation point on the Enquiry Suite.

The first *McGregor* outlet valves to be installed for use were introduced at Birmingham. These valves are opened by the impetus of the moving ticket and immediately close after the ticket has passed through. Except for occasional stoppages the system has worked well. The effect of tube working is most noticeable in the absence of probationers patrolling the sections collecting tickets. A calm effect is produced instead of the previous air of continuous movement.

One of the greatest difficulties experienced since the early part of 1932 has been the question of "Through clearing." This question has been attacked from two points :-

- (1) P.B.X.'s
- (2) Exchanges.

All exchanges in the local fee area are now giving through clearing conditions, and it is hoped to obtain the same conditions from the whole of the no-delay area. The question is in the hands of the Engineers.

P.B.X.'s have been a source of a great deal of trouble and very necessary patience. So far all P.B.X.'s on nine exchanges in the local fee area having non-through clearing conditions have been visited with a result that approximately 300 subscribers out of a total of 325 have agreed to the facilities. 186 have been already converted. P.B.X.'s on other exchanges will be visited in due course.

The new changeable Time indicators on the Demand Suite make through clearing very necessary as a general scheme, particularly in view of the following figures which indicate that 60% approximately of the whole originating traffic for the Birmingham area is being dealt with on the Demand Suite.

#### TRAFFIC ON DEMAND ROUTES.

Route.	Day.	BUSY HOUR.	
		On Demand.	Passed to Delay.
Bristol ...	125	20	2
Leeds ...	102	18	2
Leicester ...	164	21	3
Liverpool ...	181	25	4
London T.T. ...	303	52	1
London Toll B ...	1,387	181	2
Manchester ...	522	88	9
Sheffield ...	168	27	2
Nottingham ...	242	40	5
	3,194	472	30
Total Traffic ...	5,400	900	
Demand ...	3,194	502	

59% total originated traffic completed on demand.

From the figures of April last, it will be noticed that there has been a very large percentage increase of traffic completed on demand.

#### APRIL 6, 1932.

Route.	Day.	BUSY HOUR.	
		On Demand.	Passed to Delay.
London ...	1,009	130	13
Manchester ...	269	38	2
Bristol ...	78	12	—
	1,356	180	15
Total Traffic ...	4,105		
Demand ...	1,356		

33% total originated traffic completed on demand.

The Birmingham Incoming Demand Suite of nine positions is at present fully loaded and the extension of Demand working to Birmingham is therefore limited for the present until further positions are installed. The old trunk signalling suite has been partially demolished in order to make room for the new incoming positions which are to be installed almost immediately to make a suite of 32 positions.

It is hoped that by the end of 1933 all long distance routes in the Birmingham Trunk Exchange will be worked on a demand basis, and in order that this ideal may be accomplished further demand positions will be necessary.

The old trunk signalling suite is to be reconditioned on a demand face plan basis and 4 panel multiples for Trunks Service and junctions with the whole of the Trunk circuits multiplied will be provided. This, of course, will necessitate an alteration to the multiples on the existing demand suite.

It has been found that the simple enquiries can be dealt with by the demand operator whilst the more complicated enquiries are connected to the enquiry suite. All enquiry dockets either completed or dockets enquiring "How Long," "Number of Minutes," &c., are passed to the circulation position by air tube.

Although the total number of Trunk complaints have not appreciably diminished since the introduction of Demand working the characteristics have altered, and it is most noticeable that the disputed duration cases have diminished by approximately 25%. This is probably partially due to the increased use made of the A.D. facility, and it is a question seriously to be considered whether the advice of duration should not be made a standard practice on every call exceeding three minutes. There seems little doubt that the practice would tend to reduce to almost a negligible quantity the number of disputed duration when accounts are rendered.

In the Birmingham area it has been found possible to reverse immediately and mature all originating calls capable of being matured over demand routes between the hours of 5 p.m. and 10 a.m. with consequent improvement in the service generally, together with a general advertising advantage. The idle circuit indicators have been the source of some experiment during the year. It was found that if one I.C.I. per 20 jacks was used, the probability of simultaneous connexions was increased. This was actually proved by observations and therefore recommendations were submitted to revert to the one Idle Circuit Indicator per 10 jacks. The efficiency of the I.C.I. and Chargeable Time Indicator has been proved in Birmingham as no trouble has been experienced during 12 months working.

B. T. S.

REVIEWS.

"Wireless over 30 Years." By R. N. Vyvyan. Routledge. 8s. 6d. net.—This is a very attractive book and it enables the reader to follow the growth and development of wireless equipment and services from its very inception. The author spent 31 years of his life on the technical staff of the Marconi Company, and when he retired had attained the position of Engineer-in-Chief. We do not know which to admire the most, his evident enthusiasm for his job, the care with which he served the infant in its early years, or the pride of accomplishment. The book owes much of its charm to the intermingling of autobiography and the step-by-step description of progress, an intermingling which enables Mr. Vyvyan to present a vivid picture of actuality.

We can strongly recommend this book to our readers as being both interesting and entertaining.

"Fernmelde-Relais." By Carl Muhlbrecht and Johs. Boysen. (Franz Westphal Verlag, Lubeck. 176 pp. 5.50 Marks.)

This claims to be the first book on the subject—in German at least—although the relay was actually invented by Wheatstone

in 1839. The first part of the work deals with relays in general—magnetic, electric, thermionic, &c. Part II deals in turn with the power employed, the methods of working, switching, and construction: part III with testing, and part IV with the practical application of relays. The book is fully illustrated with 149 figures and contains within a comparatively small space a full investigation of the subject. There is a comprehensive bibliography at the end, and a useful index of the principal branches of the subject.

PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at June 30, 1933, was 2,155,589, representing a net increase of 6,205 on the total at the end of the previous month.

The growth for the month of June is summarised below :—

	London.	Provinces.
Telephone Stations—		
Total at June 30, 1933 ... ..	803,948	1,351,641
Net increase ... ..	2,112	4,093
Residence Rate Stations—		
Total ... ..	257,842	341,485
Net increase ... ..	781	1,208
Call Office Stations (including Kiosks)—		
Total ... ..	9,072	30,846
Net increase ... ..	33	120
Kiosks—		
Total ... ..	3,658	11,837
Net increase ... ..	39	133

The number of International calls in April, 1933, was 92,337, as compared with 97,100 in April, 1932.

Further progress was made during the month of June with the development of the local exchange system. New exchanges opened included Birchfields (Birmingham) automatic, and the following rural automatic exchanges :—

- Blean (Canterbury), Charlton Mackrell (Taunton), Cheriton Fitzpaine (Crediton), Ferryside (Carmarthen), Ginton (Peterborough), Harbertonford (Totnes), Loganswell (Giffnock), Lowick Bridge (Ulverston), Mitchell (Truro), Reay (Thurso), Selsted (Folkestone), Tregony (Truro), Taddington (Buxton), Tongue End (Spalding).

Among the more important provincial exchanges extended were :—

- Barrow-in-Furness.
- Doncaster.
- Malton.
- Penzance.
- Redditch.
- St. Austell.
- Weston-super-Mare.

During the month the following addition to the main underground system was completed and brought into use :—

Taunton—Minehead,

while 68 new overhead trunk circuits were completed, and 76 additional circuits were provided by means of spare wires in underground cables.

(Continued from page 245.)

he represented the Department and successfully dealt with the claims. Mr. Faulkner has a happy combination of good nature and astuteness. His distinctive personality and knowledge of the world have proved invaluable in his negotiations for the Post Office, and it would be difficult to appraise these qualities sufficiently highly. He is kindness itself and seems always willing to place his professional knowledge at the disposal of his friends and colleagues. Mr. Faulkner has done a lot of rowing and still runs a boat. Gardening is amongst his other hobbies; he also owns a car, but does not consider motoring as a hobby.

## DEVELOPMENTS IN ENGINEERING CONSTRUCTION.

By P. J. RIDD.

(Continued from page 227.)

THERE is undoubtedly a very wide field for the use of the mole drainer in laying cables along roads provided with grass verges, and perhaps, exceptionally, by direct route across fields in a manner similar to the grid power service of the Central Electricity Board. It is probable, however, that the roadways will continue to be found in the great majority of cases the most suitable sites for cables. In America, where the cross-country method has been adopted to a considerable extent, the Communication Authority actually purchases a right of way, but in this country difficulty would no doubt be experienced in acquiring such rights, even if these were considered desirable, and in any case facilities for access to cables would be much inferior to those obtainable by road.



FIG. 11. OCTAGONAL DUCTS.

In the meantime the appearance of the mole drainer has stimulated efforts to cheapen the cost of trench excavation. Within a few weeks of the publication of the results obtained with the mole drainer preliminary design drawings of a mechanical excavator to cut a trench 4 in. wide and 2 ft. or more deep in grass verge, footways and roadways, had been prepared on the initiative of Mr. J. J. McKichan, Assistant Superintending Engineer, and I hope shortly to see this machine in operation.

It seems that there is a sufficient field for the mole drainer and the mechanical excavator and the reduction in the cost of providing an underground route obtained by the introduction of armoured cable and by the use of these machines will no doubt preclude the erection of further aerial cables for trunk or toll circuits.

Duct lines will, however, still continue to be necessary under expensively-paved roads and in areas in and near urban districts and it will continue to be necessary to give attention to any processes or methods of construction in relation to duct lines which seem to offer possibilities of improvement on existing practices or reduction in cost.

In the first underground works carried out by the Post Office cast-iron pipes with spigot and socket joints, caulked with yarn and lead, were employed and these undoubtedly provided a satisfactory housing for cables, but considerations of cost and the desire to reduce to a minimum the space occupied by conduits soon led to the abandonment of cast-iron pipes and the adoption of earthenware ducts other than for special works.

Two types of conduit were standardised—the octagonal single-way duct (Fig. 11), to be used very exceptionally to form large nests surrounded by concrete in congested city streets, and particularly to facilitate changes of formation, and the Sykes, or self-aligning, duct (Fig. 12) for general purposes.

The self-aligning duct is manufactured in 2 ft. and 2 ft. 6 in. lengths, with one to nine ways, and has been in use for more than 20 years, and it

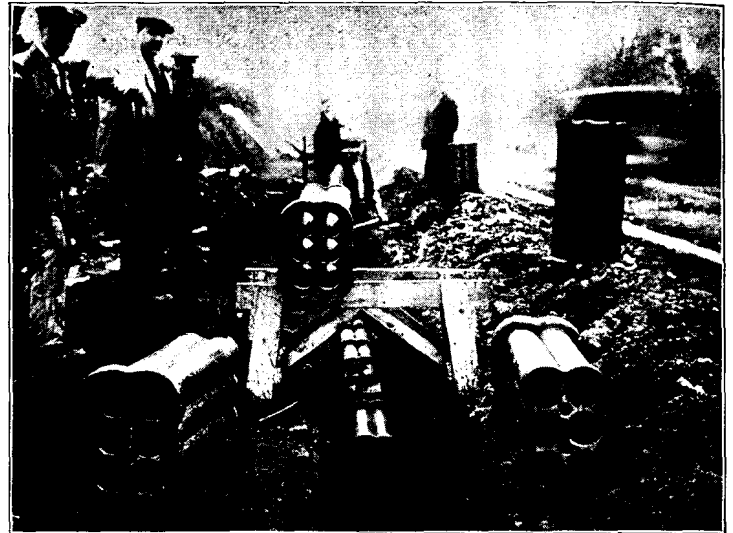


FIG. 12. 6-WAY SELF-ALIGNING DUCTS.

is evident from that fact alone that in general it is suitable for its purpose. It has, however, one disadvantage arising from the difficulty of jointing duct to duct to ensure that a water-tight joint is obtained. The ingress of water and silt to the duct line is not only a source of inconvenience and of unproductive expenditure when constructional or maintenance work in manholes is required to be undertaken, but in some localities it is a contributory cause of corrosion of cable sheaths and resultant failures of service. A succession

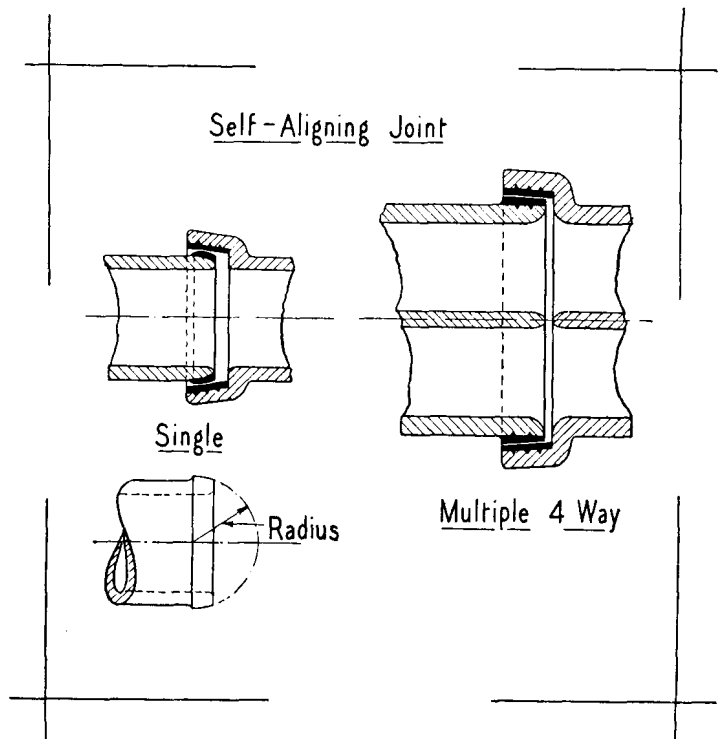


FIG. 13.

of manholes waterlogged to a depth of 6 or 8 ft will hinder very seriously the completion of cabling operations or delay, possibly for several hours, access to a cable at a time when access is urgently required for the purpose of dealing with a breakdown. Breakdowns per mile of main cable due to corrosion of the lead sheathing have increased during the last six years by as much as 80%. If, therefore, in future construction we could devise some means of securing an effective seal for the joints of ducts without increasing the cost, we should certainly secure an advantage. Many attempts have

been made with various luting compounds, including those of bitumen and of rubber latex, but it cannot be said that any compound so far tried has given a result superior to that obtained with the Department's compound, which consists of tar, French chalk and pitch. A disadvantage of this compound is that it is required to be applied at a temperature from 170° to 200° F.

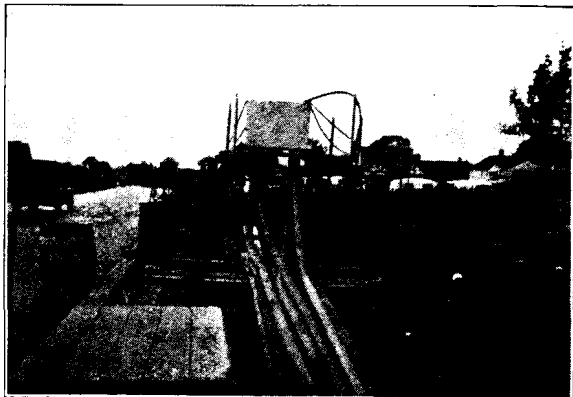


FIG. 14. RUBBER HOSE FORMERS SHOW PRESSURE TANK AND CLOSED ENDS WITH SECTION OF COMPLETE LAYER OF MULTIPLE DUCT.

This introduces practical difficulties, especially in connexion with the sealing of multiple ducts, and the tendency of duct layers is to depart from the specified requirements as regards temperature and to apply the compound in an unsuitable condition.

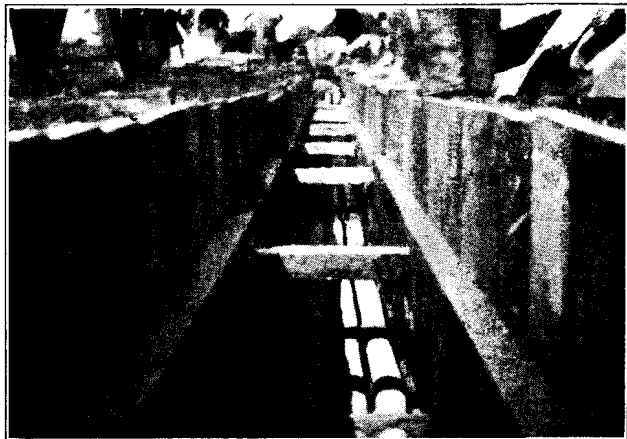


FIG. 15. GENERAL VIEW OF HOSE FORMERS IN TRENCH WITH SPACING COMBS IN POSITION.

The ducts are provided with the "Stanford" joint, which consists of a compound of sulphur, sand, and tar moulded and pressed on to the spigot and socket ends of the ducts and shaped as shown in Fig. 13. It will be seen that in the case of the single duct the joint is between the surfaces of a cone and an arc of a circle and that with this joint it is possible to permit a certain deviation from the straight line without breaking the joint. In the case of the multiple duct the joint is between the surfaces of two cones, and even with a liberal application of luting compound a deviation from the straight

line to the maximum extent permitted (1 in. per duct length) cannot be made with any certainty of maintaining a sealed joint.

It seems that the only means by which the full advantage of the Stanford joint, as fitted to the single duct, could be obtained would be to manufacture the multiple ducts also in circular formation.

It may seem that a practice which secures a watertight house-drainage system should be able to produce the same conditions with cable ducts, but, apart from differences of design, the difference in the route lengths must be borne in mind. The ducts could certainly be designed for cement joints, but even if the joints were most carefully made they would not remain watertight unless they were supported by a concrete base. Further, it is probable that the rigidity of the duct line with joints so made and supported would necessitate an increase in the depth of cover now standardised at 2 ft. or, alternatively, the provision of a concrete arch over the duct line. Apart from the cost, which would be considerable, this would provide a satisfactory solution. If, however, it were found necessary to use cement mortar and concrete protection in all cases the increased cost would possibly lead to the adoption of some other type of construction.

Consideration has been given on many occasions to the possibility of using cement conduits. As early as 1904 a continuous cement conduit system was demonstrated to the then Engineer-in-Chief. At this demonstration 12 ducts were built up by casting cement round lengths of steel tubing

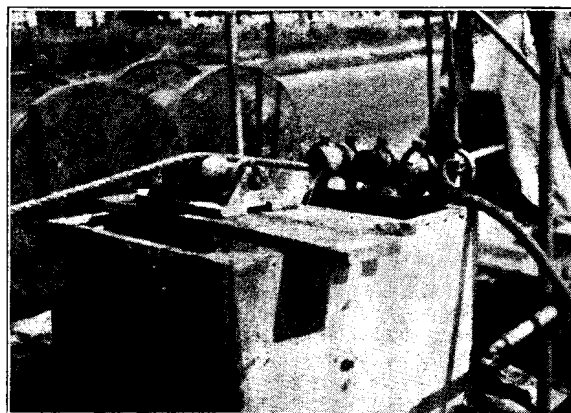


FIG. 16. COMMENCEMENT OF THE HOSE "SKINNING" OPERATION, SHOWING DISCHARGE TANK END AND DISTANT END OF HOSE.

screwed together and coated with a mixture of paraffin wax and graphite. After the cement had set, steam was driven through each line of tubes in succession to melt the wax coating on the tubes, which were then withdrawn from the moulded duct by means of a winch. It was stated that a maximum length of 70 yds. could be dealt with in this way. An insuperable objection to this system was that straight sections only could be dealt with. The manufacturing company quoted the experience of the National Telephone Company in support of the view that corrosion of the cable sheath by the cement need not be feared. The National Telephone Company had used multiple-way ducts of concrete for several years prior to 1911 and had not experienced any trouble, and so far as I have been able to ascertain after very extensive enquiry no case of corrosion caused by these concrete ducts, which are still in use, has been brought to notice. It is possible that this immunity was secured by the weathering to which the ducts were subjected prior to being brought into use. The ducts were moulded at works and normally allowed to weather for 6 months, but it is on record that the moulding of ducts *in situ* had been considered. This proposal was not proceeded with owing to anticipated objections on the part of local authorities to the increased time during which trenches would remain open. In due course, on the transfer of the Company's undertaking, the Post Office Engineering Department compared the Company's ducts with the self-aligning ducts

standardised about that time, and they were shown to possess no advantage in price or utility and became obsolete. Since that date the question has been revived by various manufacturers, who have offered pre-cast Portland cement ducts with or without bituminous linings, the former to guard against corrosion by the cement, and also aluminous cement ducts to obtain similar protection, and the prices tend to become more closely competitive with that of the self-aligning duct. I do not propose to deal further with the pre-cast type of duct and shall confine my attention to the development of the continuous type of cement duct moulded *in situ*, of which a trial is

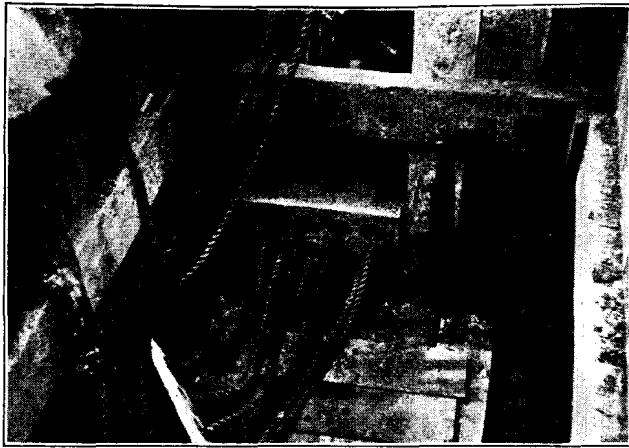


FIG. 17. VIEW OF COMPLETED MULTIPLE DUCT.

now being made at Kingston-upon-Thames, where a length of 3,000 yds. of 8-way continuous ducts is being laid by Messrs. John Mowlem & Co., Ltd.

One method by which lengths of continuous duct were obtained was in operation in New York in 1924. In this system the cores were each composed of a rubber hose  $\frac{1}{2}$  in. in thickness, which was strong enough without other support to act as a former for the cement cast round it. The hose was 50 ft. long and was fitted with fibre sleeves at intervals of 3 ft. to facilitate withdrawal, which required the effort of seven men. The feature of this system was that it was non-rigid; considerable deflections from the straight line were, in fact, made successfully. The conduits were provided for electric lighting cables. They have not been adopted to any considerable extent for telephone cables in America.

Concrete Arch Cover  
placed over S. A. ducts to arrest Cable Creepage.

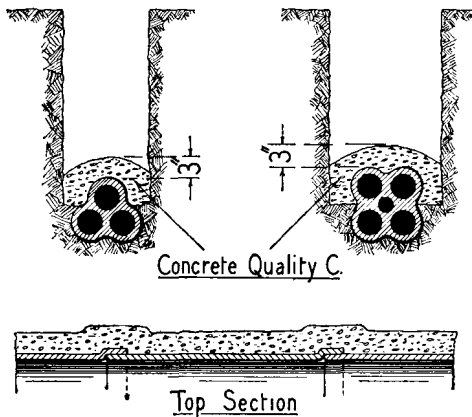


Diagram showing Duct Route covered with 3" of Concrete.

FIG. 18.

A patent issued to a Japanese subject in 1924 covers a further development in which a rubber hose is filled with water to strengthen it as a former and is subsequently emptied and withdrawn from the mould. This method was adopted on certain works in Japan.

In these systems the withdrawal of the hose offered considerable difficulty, and the most recent development is the introduction by a French company of a fabric hose faced on both sides with rubber. In the French system, which is known as the Cravetto system, the hose former is filled with water, which is maintained at pressure by a small water tank erected a few feet above the street level. A rope passes through the hose from the tank end to the far end and on the setting of the cement the hose is transferred from

the pressure tank to the discharge tank and the far end is pulled or "skinned" inside itself by means of the rope which is hauled by several men, the water flowing out from the hose into the tank as the operation proceeds. When the withdrawal is complete the hose is inside out, in which condition it is again ready for use. Reports of the satisfactory and economical operation of this system having been published in the French technical journals, it was decided to view some works in progress in France, and on closer acquaintance the system was considered to be sufficiently promising to make it desirable that the Department should acquire practical experience. A single duct,  $4\frac{1}{4}$  in. in diameter and 130 yds. in length, was constructed in the first place, at the Research Station, Dollis Hill, for the purpose of demonstrating that a hose of that length could be satisfactorily withdrawn. No difficulty was experienced on this length, and as previously mentioned, a contract was subsequently entered into with Messrs. John Mowlem for the construction of 3,000 yd. of duct line.

The specification provides for a reinforced concrete base 3 in. in thickness with two layers of four  $4\frac{1}{4}$ -in. ducts spaced laterally and vertically 1 in. apart, the spaces to be filled in with cement mortar and with 2-in. cement mortar surrounds at the sides and on top. The construction of the ducts is required to be carried out in sections of about 80 yds. that is to say with one joint in each manhole length. Manholes and ducts are required to be watertight. This is regarded as an essential requirement.

WOOD BLOCKS

For use in case of Cable creeping,  
to prevent movement of the Cable.

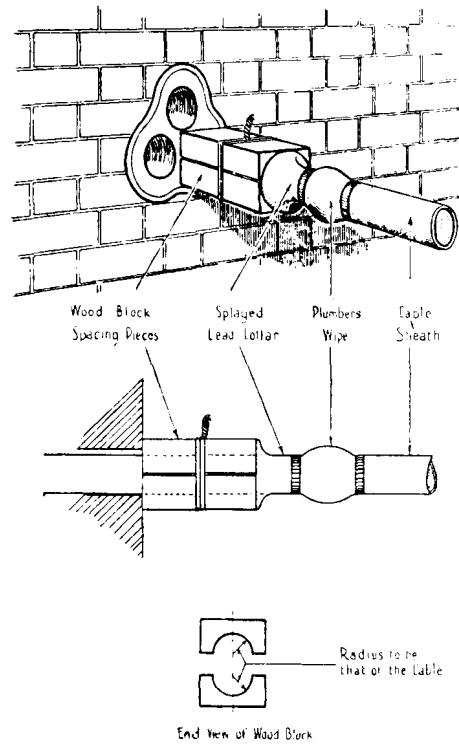


FIG. 19.

It was desired to use aluminous cement in preference to Portland cement in order to secure the relative immunity from risk of corrosion of the lead cable sheaths obtainable by the use of aluminous cement. The increase in cost was, however, prohibitive, and Portland cement is being used, reliance being placed upon weathering of the cement before the cables are pulled in, and the application of sodium silicate in petroleum jelly to the cable sheaths, to obtain the necessary safeguard.

Figs. 14 to 17 are from photographs of the works now in progress at Kingston.

I referred early in this paper to the effects on Post Office underground plant of modern methods of transport. It is probably not generally known that the great development during the last few years of fast-moving and heavy motor traffic has added to the worries of Engineers responsible for the maintenance of underground cables laid in carriageways and has necessitated the adoption of measures in a number of cases to anchor cables in position to prevent their progression or creepage along the ducts in the direction of the traffic passing overhead.

The movement of cables has been as much as 15 in. in some manholes, so that the plumbed joints were forced to the mouths of ducts and fractured,

and the conductors were stretched taut after the manner of piano wires. In general, efforts to pull cables back have been unsuccessful in spite of the very considerable stresses applied and it has been shown to be safer and more satisfactory to extend the manholes in the direction of the creepage in order to render the joints accessible and obtain room for anchorage.

This phenomenon is a development of recent years and in general is confined to cables laid in the carriageways or within 3 ft. of the carriageways of roads not provided with concrete or other stable foundations and therefore not suitable for the heavy loads, particularly those of solid-tyred vehicles which they are now called upon to carry.



FIG. 20. CABLE IN JOINT AND BOX FITTED WITH COLLAR TYPE OF ANTI-CREEPING DEVICE, SHOWING EFFECT OF CONTINUED "CREEP" INTO THE BOX.

Roads are now placed in three categories—Class I, Class II and unclassified. To quote the report of the Conference on Rail and Road Transport, usually referred to as the Salter Report, the road "classification is not on the basis of differing quality, but upon traffic usage"; and again—"The roads have in fact been adapted in very unequal degree to the needs of motor transport."

Post Office engineers accordingly welcome most cordially the paragraph of the final report of the Royal Commission on Transport, which expresses the view that "it is not in the national interest to encourage further diversion of heavy goods traffic from the railways to the roads," and are glad to note also the recommendation of the Salter Report that the Ministry of Transport should be empowered to prohibit classes of traffic unsuitable for road haulage. Let it be said at once that the Rail and Road Conference, in proposing this restriction, gave no thought to the effect of such traffic upon the underground works of public services. Indeed, the use of the roadways by the State and public and semi-public services is held in the Salter Report to justify a certain relief in the assessment of the taxation which the motor

**ANTI-CREEPING DEVICE TYPE 2 EXPERIMENTAL**

(For Jointing Chambers 3'-0" to 7'-0" in length & Buried Jointing Chambers J.R.C. 7 & 8)

Engh for Details J.R.C.3 Before fitting - Coat of paint black for corrosion After fitting - Coat of paint black for corrosion

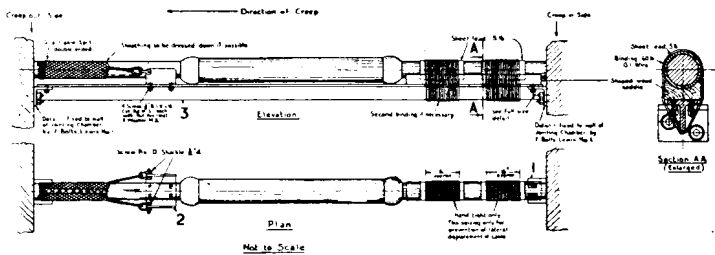


FIG. 21.

haulage organisations should be called upon to bear, so that the loss to the State appears to be twofold—loss of revenue and loss sustained by damage.

We may reasonably expect a reduction of the trouble now experienced as the requirements of the Road Traffic Act, 1930, become effective. The Act requires that any heavy motor vehicle constructed after January, 1933, shall be equipped with pneumatic tyres and that any heavy vehicle equipped with solid or semi-solid tyres, put on the road before January, 1933, may continue to operate so equipped not later than 1940. We may hope to benefit also as road improvement works now suspended are proceeded with, but in the meantime the Post Office will unfortunately continue to find it necessary to incur expenditure in fitting anti-creeping devices.

Cable creepage is seemingly analogous to that of rail creepage, which has long been a source of difficulty for railway engineers and has formed the subject of papers read before the Institution of Civil Engineers. The conclusions which we have formed from our experience and observations can, in fact, be stated to be in general agreement with those arrived at by

railway engineers. The investigation has not yet been completed, but a short statement of the present position will be of interest.

The cables creep with practically no exception in the direction of the traffic stream and move up or down hill or on level ground. Other than in one case where cast-iron pipes were concerned, creepage has been confined to cables in self-aligning ducts, that is to say, ducts with flexible joints which permit of wavemotion as the load passes, and it may be prevented by conversion of the duct line to a rigid structure by the addition of a continuous concrete arch, as shown in Fig. 18. Concrete protection is now required to be provided for ducts when they are being laid in carriageways constructed on a sub-soil of a yielding character and subjected to heavy motor-lorry traffic. This method of protection is too costly to be applied other than at the time of laying the ducts. Anti-creeping devices have been developed for use on existing duct lines but they must be fitted at frequent intervals (normal manhole spacings) to be effective. If more widely spaced they may hold the cable until the sheath cracks forward of the anchorage or cause a bend to form in the joint box or manhole by the continued inward movement of the cable behind the anchorage. Alternatively, the lead collar may fail under the load. All these results have, in fact, been obtained.

An anti-creeping device formed by wiping to the cable sheathe a lead collar which bears upon a split wooden block placed between it and the duct mouth is shown in Fig. 19. The collar has been used without filling or with filling of plumber's metal or lead wool.

A photograph of a cable in a joint-box held at the forward end by an anti-creeping device is shown in Fig. 20. It will be noted that the cable has continued to creep into the box to form a pronounced bend.

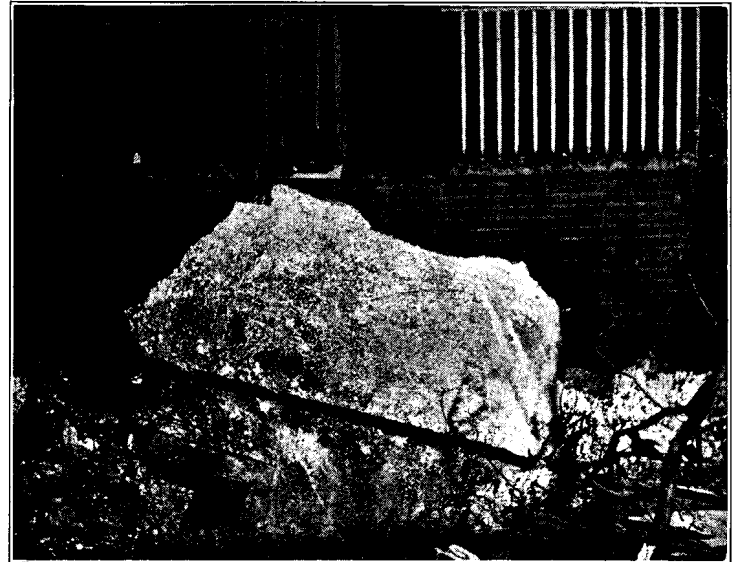


FIG. 22. READING EXPLOSION. WRECKED MANHOLE.

A drawing of an anti-creeping device designed to hold the cable at the forward end and to prevent lateral movement at the creep-in end is shown in Fig. 21. Note the cable grip at the forward end and the lashing at the incoming end. This device was developed to overcome the difficulty illustrated in Fig. 20, but it is more complicated and expensive than the lead collar and is more difficult to apply to multiple ducts. In certain exceptional locations creepage has been shown to occur even when the cables have been anchored by collars at practically every joint in the sections affected, but it is believed that with this close spacing the lead collars will in general be found to meet the requirements.

A further menace to the underground cabling system and a danger to the men employed in its construction and maintenance arises from leakages of coal gas and the accumulation of the gas in voids in roadways, including Post Office duct lines and manholes. These leakages are probably due in some degree to the vibration to which the gas pipes are subjected by the heavy traffic now carried by the roads and there is reason for fear that with increasing age of the gas pipes the leakages may become more numerous.

Since the great disaster in London in December, 1928, more than 50 gas explosions affecting Post Office plant have occurred in different parts of the country. The damage has usually been confined to one or two manholes, but a very serious explosion occurred in Reading on Jan. 30 last which caused extensive damage to manholes and duct routes within an area of approximately 120 yds. radius in the centre of the town. Within this area three manholes were completely wrecked and three suffered damage to roof and shaft so that rebuilding of the roof and shaft has been necessary. The covers of other manholes were blown off and rose to such heights that in falling they were smashed to pieces.

One of the wrecked manholes is shown in Fig. 22. In this photograph the cover of the manhole is to be seen projecting above the wall of a churchyard

into which the cover fell. The railings surmounting the wall were broken by the cover in its descent. The concrete mass piled against the churchyard wall formed part of the manhole roof and was estimated to weigh more than one ton.

The explosion occurred about 9.30 in the evening and was fortunately unaccompanied by loss of life or serious injury. The only casualties were a lady who walked into an open and waterlogged manhole and luckily escaped with bruises and a soaking, and a frenzied dog, not so fortunate, which, racing around, fell into a manhole and was drowned. These casualties serve to point a moral.

The present practice of the Engineering Department is to provide ventilating covers for those manholes which are regarded as liable to infiltration of gas. This practice was introduced following the report of the Commission of Inquiry into the Holborn explosions. The Commissioners considered the risks attendant upon the retention of gas accumulations in sealed chambers, and upon the continuous release of gas in relatively small quantities by ventilation, and regarded the risk incurred by ventilation as the lesser.

Now there are at least two known cases of steam wagons causing ignition of gas escaping from manholes and there is suspicion of a motor car exhaust in another case. If, therefore, when driving you should be so unfortunate as to cause an explosion of gas in a manhole and escape an immediate penalty, speed not heedlessly away but remember that, ahead, may lie—awaiting the unwary—another manhole, minus its cover. In any case do not look to the Post Office for recompense—the Post Office is itself an innocent victim and will probably seek to attach to you some share of the responsibility for the nuisance.

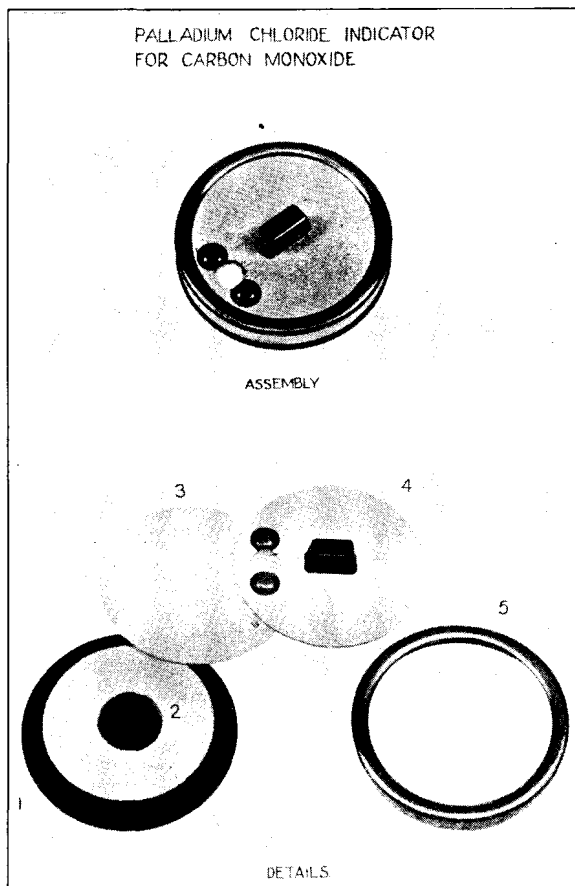


FIG. 23.

underground. An explosive mixture contains not less than 7% of coal gas while a mixture containing 0.5% of that gas is a poisonous mixture necessitating caution and 1%, if inhaled for a period approaching one hour, is definitely dangerous. Cases are reported from time to time of men suffering from gas poisoning even to the extent of collapse, and it has been found necessary to introduce for general issue to workmen a gas indicator which will function reliably within the poisonous range.

This indicator, developed by the Research Section and protected by Patent, consists of a base which supports a sorbo rubber disc, a plain plate and a face plate in which a circular hole has been drilled, the hole being flanked by two colour reference buttons. A white disc of test paper (filter paper) is placed between the plates which are assembled on the base and clamped as shown in the assembly photograph (Fig. 23). A disc of white

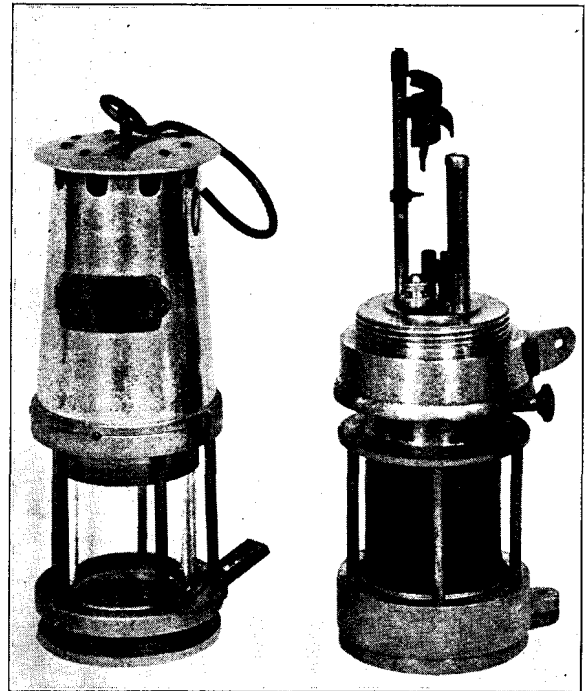


FIG. 24. NAYLOR GAS-DETECTING SAFETY LAMP.

paper is now visible through the face plate. When the indicator is required to be used the visible paper disc is moistened with a solution of palladium chloride in acetone and water, which stains the paper the colour of the face plate—approximately straw colour. If now the indicator is exposed for not less than 5 minutes to the atmosphere of a manhole containing coal gas, the presence of carbon monoxide, which is invariably present in coal gas to the extent of about 15% and is its most poisonous constituent, will be indicated by the darkening of the paper disc. A darkening to the colour of the lighter reference button indicates the presence of 0.05% of carbon monoxide—a condition in which it is safe to work. A colour intermediate between the light and dark reference buttons indicates a condition requiring caution and a colour darker than that of the darker button is indicative of the presence of more than 0.1% of carbon monoxide. A manhole should not be entered when this test has been obtained. This test, if made before a flame is brought near to the manhole, will also provide a safeguard against the risk of explosion.

It will be evident that by periodical repetition of this test the safety from coal gas poisoning of men working underground could be assured and warning would be received in time to prevent risk of explosion. But it is necessary also to provide an indication of the presence of non-explosive asphyxiating gases and for this purpose a safety lamp of the flame type has been used for many years. A flame lamp of a new type, shown in Fig. 24, has recently been developed for the dual purpose of detecting asphyxiating gas and explosive gas. The lamp operates normally in an atmosphere deficient in oxygen—that is to say, the flame is diminished or extinguished—but in the presence of inflammable gas the flame increases in size and causes an electric lamp to glow. It will be noted that the lamp is provided with a fitting fixed above the wick of the lamp. This fitting is a bi-metallic spiral which is partially uncoiled by the unequal expansion of the two metals when heated by the flame. If the flame is burning in an atmosphere comprising inflammable gas the extent of the uncoiling of the bi-metallic spiral is increased by the excessive heat so that the circuit of an electric lamp in the red lantern is closed and the lamp glows. This lamp, although less sensitive than the palladium chloride indicator, will operate the alarm signal in a gaseous mixture much below the explosive limit, and is a notable improvement on any lamp hitherto used for the detection of gases by the Post Office Engineering Department.

There is no practical means by which escaping gas may with certainty be excluded from manholes or other voids, and with ventilation decided upon as a policy, it is of importance that the ventilators should, if possible, be designed to secure such rapid dispersal that the gas concentration in a manhole will not normally form an explosive mixture. With this end in view experiments are being conducted by the Research Section to ascertain whether by any improvement in the design of manhole cover vents an increased rate of dispersal of gas can be secured. No other precautionary measure to reduce the general risk appears to be practicable at a reasonable cost, but further precautions have been considered necessary to enable Departmental operations to be conducted with the maximum degree of safety. We are concerned not only with explosion risk but also with that of gas poisoning, and it should be noted that the presence of coal gas in concentrations involving no risk so far as explosions are concerned may be dangerous to men working



### TELEPHONIC DEVELOPMENT OF CITIES AND TOWNS AT MARCH 31, 1933.

BY W. H. GUNSTON.

THE annexed tables show :

- (a) The development of all urban telephone areas with upwards of 7,000 telephones.
- (b) The development of all telephone areas with between 2,000 and 7,000 telephones and not less than 5 telephones per 100 inhabitants.

Taking tables (a) and (b) together it will be seen that there are 45 telephone areas in the country with a development of 4.8 and upwards telephones per 100 inhabitants. Indeed, if the boroughs and urban districts adjoining or in the vicinity of the County of London are considered as separate entities probably another 20 areas could be added to the list. For example :

	Telephones.	Population (thousands).	Telephones per 100 inhabitants.
Purley—			
Coulston ...	5,322	37.6	14.1
Beckenham ...	4,950	43.8	11.3
Hendon ...	12,900	115.6	11.2
Hornsey ...	8,580	95.5	9.0
Willesden ...	12,400	184.4	6.7
Croydon ...	14,100	233	6.1
Ealing ...	7,000	117	6.0
Kingston—			
Surbiton ...	7,050	68.4	10.3

Richmond, Wimbledon, Brentford-Chiswick, Southgate, Bromley, Watford, St. Albans, Walton-Weybridge, which are now included in the London Telephone Area are all places with between 2,000 and 7,000 telephones and a telephone density of 6% and upwards.

The number of telephones shown in the above list of suburban areas are only approximate as the areas served by the exchanges do not, of course, correspond exactly with those of the boroughs or urban districts. Allowance has been made for the fact that Speedwell (Hendon) serves a certain number of subscribers in Hampstead, and Tudor (Hornsey) a certain number in Finchley. But after making all necessary allowances it is clear that Purley with 14.1 telephones per 100 inhabitants, is telephonically the best developed urban district in the country outside London proper, whilst Hendon and Beckenham with over 11, Hornsey with 9 telephones per 100 inhabitants, Kingston and Surbiton with 10.3, Richmond with 9.0, and Bromley with 8.6 are all highly developed.

Of the 45 telephone areas with a development in excess of the average for the whole country (4.7),

- 20 are in the South.
- 11 " " " North.
- 6 " " " West (including Wales).
- 4 " " " Midlands.
- 4 " " " Scotland.

Less than half these 45 places are large cities and manufacturing towns. The list comprises no less than 18 watering places, 2 university towns, 3 towns, chiefly residential, 2 moderate-sized country towns (Chester and Exeter), and the military area of Aldershot—26 in all.

It will be noted that the Hull municipal system takes 12th place in Table A.

TABLE A.  
AREAS WITH UPWARDS OF 7,000 TELEPHONES.

	No. of Telephones.	Population (thousands).	Telephones per 100 inhabitants.
1.—London Administrative County	532,743	4,396	13
London Telephone Area ...	798,153	8,800	9.07
2.—Bournemouth (including Christchurch and Poole) ...	14,183	183.2	7.8
3.—Brighton and Hove ...	15,070	202	7.4
4.—Edinburgh ...	30,497	439	6.9
5.—Blackpool (including Lytham) ...	7,616	127	6
6.—Manchester (including Salford, Eccles, and Stretford) ...	63,712	1,090.9	5.9
7.—Southend-on-Sea ...	7,013	120	5.8
8.—Leicester (including Wigston) ...	14,199	250.5	5.7
9.—Cardiff (including Penarth) ...	13,550	241	5.6
10.—Bradford (including Shipley) ...	18,084	326	5.5
11.—Nottingham (including Arnold and Carlton) ...	15,995	305.6	5.2
12.—Hull area (Municipal system) ...	17,771	350	5.1
13.—Glasgow (including Clydebank, Renfrew, and Rutherglen) ...	57,833	1,175.5	4.9
14.—Liverpool (including Birkenhead, Bootle and Wallasey) ...	56,983	1,177.7	4.9
15.—Aberdeen ...	8,198	167	4.9
16.—Bristol (including Kingswood) ...	10,196	410	4.9
17.—Birmingham (including Smethwick and West Bromwich) ...	56,027	1,168	4.8
18.—Leeds (including Morley) ...	23,224	506	4.5
19.—Southampton ...	7,648	176	4.3
20.—Belfast ...	17,516	415	4.2
21.—Newcastle-on-Tyne (including Gateshead, &c.) ...	19,229	468	4.1
22.—Dundee, Monifieth, &c. ...	7,383	179.8	4.1
23.—Plymouth ...	8,132	202	4
24.—Sheffield ...	19,287	511.7	3.7
25.—Portsmouth (including Gosport) ...	9,203	287	3.2
26.—Wolverhampton (including Wednesbury, Willenhall, &c.) ...	8,048	264	3
27.—Stoke-on-Trent (including Newcastle-under-Lyme, &c.) ...	7,514	330	2.3

TABLE B.  
AREAS WITH UPWARDS OF 2,000 TELEPHONES AND NOT LESS THAN 5 TELEPHONES PER 100 INHABITANTS.

	No. of Telephones.	Population (thousands).	Telephones per 100 inhabitants.
1.—Harrogate ...	4,441	39.7	11.4
2.—Bexhill-on-Sea ...	2,306	21.2	11
3.—Guildford ...	3,037	30.7	9.9
4.—Eastbourne ...	5,622	57.4	9.8
5.—Altrincham and Bowdon ...	3,438	35	9.8
6.—Woking ...	2,550	29.9	8.5
7.—Tunbridge Wells ...	2,952	35.3	8.3
8.—Cheltenham ...	3,065	36.7	8.3
9.—Southport ...	6,383	78.2	8.1
10.—Chester ...	3,316	41.4	8
11.—Torquay ...	3,393	46.1	7.4
12.—Worthing ...	3,439	46.2	7.3
13.—Margate ...	2,190	31.3	7
14.—Cambridge ...	4,707	66.8	7
15.—Folkestone, Hythe, &c. ...	3,795	54.5	6.9
16.—Oxford ...	5,171	80.5	6.4
17.—Slough ...	2,042	33.5	6.1
18.—Scarborough ...	2,472	41.7	5.9
19.—Bedford ...	2,342	40.5	5.7
20.—Bath ...	3,923	68.8	5.7
21.—Ayr and Prestwick ...	2,630	45.3	5.7
22.—Exeter ...	3,701	66	5.6
23.—Hastings ...	3,635	65	5.6
24.—Reading ...	5,241	97	5.4
25.—Warwick and Leamington ...	2,250	43	5.2
26.—Huddersfield ...	5,812	113.4	5.1
27.—Luton ...	3,487	68.5	5
28.—Aldershot and Farnborough ...	2,533	50.6	5



importance, since in effect by loading the operator who is free to answer a waiting call, it removes harassment from the operator who is already engaged upon a call and whose attention should not be distracted.

Speed is aimed at in Automatic exchanges just as much as in Manual exchanges. We have been brought up on the word; but new work calls for new standards. A 5-second speed average on assistance calls is not a reasonable figure and could suggest that full assistance was not being given. A 20-second average would be out of the question! Our aim should be to arrive at a just and reasonable figure and then to seek ways and means, little by little, of bettering it.

The question of distribution seems to offer scope for constructive thought. The general scheme of distribution is for calling signals to be distributed evenly (taking into account the grading) between the number of working positions, giving one or sometimes two appearances of each signal. This scheme works out fairly well during the busy hour, when all positions are staffed, but even then it has a weakness, since calling signals are often seen glowing outside the reach of a waiting operator. Supervisors try to get over this difficulty by using double-ended cords in conjunction with local transfer lines, but this again is not entirely satisfactory for clearing reasons. The use of TKO circuits for transferring calls is definitely not good. Outside the busy hour distribution plays a more important part, and the question continually arises as to whether it is best during slack periods for the staff to be distributed evenly over the suite of positions, or for the staff to be concentrated. But whichever scheme is used it is not ideal, since all operators cannot always reach a signal which is glowing and on which delay is occurring.

The following charts have been prepared to show at a glance the circuits on which the work normally falls. A scrutiny of the charts seems to prove that the later choice circuits require less duplication (appearances) than the busy first choice ones. Indeed, more than one appearance of some of the later choice circuits appears unnecessary. During the slack periods of the day, when the staff at the positions is very low in number, distribution plays a very big part, and it will be seen that the feature of busy first choice circuits as against unused later choice circuits stands out very prominently. It seems to prove that *equal distribution of staff over all the circuits, whether busy or slack is uneconomical in procedure.* At most exchanges there are a number of spare jacks on every position, and the problem of distribution would be helped considerably if these idle jacks were used for the purpose duplicating, say, the first 5 or 6 busy choice circuits on every other position, so that *every time a first choice signal glowed it would be within the reach of an operator, no matter how the staff was placed.* I am informed that the necessary jumping on the I.D.F. could be arranged.

It should be explained that the information contained in the charts was obtained by means of an operator walking up and down the suite of positions every  $\frac{1}{2}$  minute, noting the number of the engaged circuits. A study of the sequence in which calling signals glow would also prove very interesting, but no convenient means for taking this record is available, and the Engineers cannot assist in this matter. A scrutiny of the charts, however, shows that the busier circuits are picked up again and again when freed!

A last thought on the subject of speed. At my exchange we decided that if an operator was unaware of the order in which calling signals appeared, she should answer in the following order:—

R. O. S.

This order was decided upon in view of the fact that a very large number of emergency calls are received on R circuits, O circuits come next in order, and only isolated misrouted emergency calls are received on S circuits. Different exchanges probably merit different order being applied, but whatever or wherever the exchange, there must be plenty of "ways and means" if we only look hard enough.

#### FOR OUR ADVERTISERS.

ALL enquiries should be addressed to the Department of Overseas Trade, 35, Old Queen Street, London, S.W., except where otherwise stated, quoting reference number in all cases. Supplies, &c., required by:—

*Australia.*—Melbourne. Aug. 14. City Council. Fibre or glazed stoneware conduits. City Electrical Engineer (deposit £1 1s.). Aug. 29. Posts and Telegraphs Dept. Radio measuring equipment (A.Y. 11885). Sept. 5. Telephone instrument cords (A.Y. 11878). Telephone switch cords (A.Y. 11879). Sept. 12. Telephone switchboard plugs (A.Y. 11880).\* Also automatic telephone switching equipment (A.Y. 11848).\* Posts and Telegraphs, same date. (Tenders) Four radio broadcasting stations at Townsville, Grafton, Sale and Launceston. First two with initial power 5 kw. each; ultimate power 20 kw. Second two initial 2 kw. and ultimate 20 kw.

*India.*—Simla. Aug. 14. Indian Stores Dept. Electric lamps (A.Y. 11853).

*New Zealand.*—Christchurch. Aug. 8. Electricity Dept. 11,000-V. sub-station switchgear (A.Y. 11841).

*South Africa.*—Cape Town. Aug. 30. Electricity Dept. Oscillograph, &c. (A.Y. 11869).

*Turkey.*—Istanbul. Aug. 16. Dept. Posts, Telegraphs and Telephones. 150 tons iron telegraph wire (G.Y. 12748).\* Aug. 19. 60 tons copper wire and copper sleeves (G.Y. 12747).\*

\* Further particulars can be obtained at the Department of Overseas Trade (Inquiry Room), 35 Old Queen Street, S.W.1.

J. J. T.

## IMPRESSIONS IN AN AUTOMATIC TELEPHONE EXCHANGE APPARATUS ROOM.

[The following interesting article was written by one of the girls of the County Secondary School, Bradford-on-Avon, Wilts, after the visit of a party from the School to the Bath Automatic Exchange. We might gently suggest that if the young lady, instead of nodding in dumb amazement when the guide asked: "You're sure you understand?" had asked for enlightenment, it would have been readily furnished.]

"Twitchings to the right of them,  
Twitchings to the left of them,  
Twitchings all round them,  
Buzzed—clicked—were still again."

SUCH was the impression received in the unscientific mind of a school girl ushered for the first time into the main room of the Telephone Exchange at Bath.

She enters warily, keeping a close eye on the multitudinous "Do not touch" notices. Then, closely drawing her skirts round her for fear of touching things she ought not to touch, she bravely steps between two massive columns of frames, wires, wires and still more wires, when—"Phrrpp, phrrpp, click!" sounds somewhere in the region of her left elbow. She gives a guilty start, and hastily hops to the right, when—"Phrrpp, phrrpp, click!" and the same thing happens again. This is really too bad, she decides, so she resolutely stands stock still in the middle of the aisle. Then she realises that these eternal jumpings and clicks are going on (or rather "going off") all round her, all over the frames, and she suddenly sees a most humorous side of it.

Thus she is absolutely convulsed with laughter, and glancing at her fellow-sufferer in front, she perceives that she is in the same plight. Soon, however, seeing the questioning eye of the guide turned upon them in pained surprise, amusement gives way to utter and absolute bewilderment, and the guide is soon gratified by a rapt and attentive audience, which hangs on to his every word.

Do not believe for one moment that we understood him. Like so many people whose job it is to instruct, he assumed we knew too much. We were not rapt because we realised the logic of all the lofty truths he was expounding, but merely because he could talk, talk, and still talk, without giving us the remotest idea of what he was talking about. It is true that he did punctuate his oration with an occasional "It's quite simple, really," "You see that, don't you?" and "You're sure you understand?", but we could do no more than nod in dumb amazement. Realising at last, I suppose, the utter futility of trying to remove the blank appearance of our countenances, he suggested that we should go upstairs.

Here we were a little more at home, for there were seated, along two sides of the room, some half-a-dozen or so young ladies, who were an almost unbelievable relief after our gazing on block after block of solid wires and metal. A closer inspection, however, revealed the fact that they were engaged in work quite as bewildering as that which was done by machinery downstairs. They all wore earphones (although some of them did not fit on the ears, but only over the head) and were seated in front of a long, flat desk with a back at right-angles to it. The desk was covered with knobs, and the back with holes and electric light bulbs. Then, as the messages came through the earphones, the operator pulled out some of the knobs (which were attached by long tubes) and fixed them into holes on the back. After a while she pulled them out again, and they automatically flew back to their previous positions. All this was, of course, extremely fascinating, and I, for one, could have stood watching much longer, but our guide was growing impatient, and we had to be hustled downstairs.

We went once more into the main room, where they left us for a time to collect our scattered senses, until the others were ready, and when we finally did go, I think our impressions were somewhat mixed. For my part, I really have never been so bewildered in all my life, and as for the telephone, I thought before that it was marvellous, but now, well—!

## TELEGRAPHIC MEMORABILIA.

"*Interference with Radio Reception*" is apparently beginning to make a good headline in certain quarters, and complaints regarding the same have been voiced in the House of Commons. It may, therefore, prove of some solace to listeners-in who are particularly troubled that the Institute of Electrical Engineers has appointed a committee to consider the question of "interference" with broadcast reception, arising from the operation of other electrical plant. Naturally the Air Ministry, the B.B.C., and the Post Office are very specially concerned in the matter from their varied responsibilities to the public and the nation.

It is understood that no less than four sub-committees have been set up to deal respectively with disturbances due to domestic apparatus, large electrical plant, traction, automobiles, and aircraft. That wonderful person, The-Man-in-the-Street, will no doubt laugh, if he does not sneer at so many sub-committees for what he may consider so small a task, but those who know most concerning "interference," are not likely to be moved by observations of that type. Much could be done and is actually being done by those unwilling offenders, who, unaware that they are causing trouble, are even eager to apply the remedy when apprised of the fact and the cure. Of course, there are others. See under Great Britain!

*Short-wave Tests.*—According to the *Daily Telegraph's* Rome correspondent, Senator Marconi is proceeding in the "Elettra" and intends to resume his experiments with short-wave transmission between his yacht and an island in the Mediterranean.

It is not without interest that during the second week of last month the "London Chapter of the International Short Wave Club" established a station 125 feet above Fleet Street on the roof of the offices of the above-mentioned newspaper, but failed to receive the Morse signals from Mr. S. G. Morgan in a Gipsy Moth from a height of 10,000 feet during the latter gentleman's flight from Croydon to Liverpool, via Aylesbury, Daventry, Birmingham, Stafford, etc., although transmission on five metres was picked up clearly from *ground* stations in South London and Hornchurch. These two events have been brought together, not to advertise the disappointment of a body of enthusiastic amateurs, but rather to point out that both the experts and the amateurs are alike and are only just feeling their way as regards short-wave transmission.

In the case of the Short Wave Club, there was the curious fact that already *ground* signals had been most satisfactorily received by an aeroplane in flight, but by means of the same short wavelength *from* the aeroplane, signals had not been readable on or near the *earth*. It is all very interesting, and one would wish to be able to ask a few questions, but refrain, as a little knowledge is a dangerous thing, and silence is golden when one is an amateur of amateurs! One thing stands out clearly, and satisfactorily, and that is that the puzzles of micro-wavelengths are being followed up not by one or two but by many bands of international truth seekers who so surely as they open one door, will find yet another mystery to solve behind it!

*Television.*—Captain Ernest H. Robinson in the *Observer* writes of a "Complete departure from accepted methods" in the organisation of television methods and apparatus, by means of which a Mr. G. W. Walton maintains that television reception apparatus will before long become much simpler in weight and adjustment, and much cheaper. We are promised a "junior" vision receiver "which is shortly to be put on the market by Ferranti Ltd." It is evidently a development to be watched for, "The whole of the essential portion of this receiver can be put in a jacket pocket!"

*Obituaries.*—The death is announced from Glasgow of Mr. T. W. H. McEwen in his 62nd year. He was South African Manager for British Insulated Cables Ltd.

Also, on June 14 last, at the age of 71 years, Sir William Moir, Bart., a director of Callender's Cable & Construction Co. Ltd. A memorial service was held at St. Margaret's, Westminster, on June 19.

The death of Mr. Wm. Segrave at the age of 83 is announced. He was formerly representative in Australia of the Eastern Extension Cable Co. He was trained as an electrician by Latimer Clark. Truly a long link with the past.

At Dawlish, in his 89th year, there passed away another veteran telegraph expert in the person of Mr. Charles Edward Pitman, C.I.E., formerly Director-General of Indian Telegraphs. Appointed to the Indian Telegraph Department in 1868, in 1876 he went on a mission to the Khan of Kalat, and remained in Baluchistan on telegraphic construction and assisted in completing the field telegraph from Quetta to Kandahar. He retired in 1900.

*Personal.*—Sir Ambrose Fleming, the inventor of the first form of thermionic valve, has been awarded its Gold Medal of Honour by the Institute of Radio Engineers of New York.

The writer has refrained from commenting upon the retirement of Mr. S. W. Belderson from the postmastership of Neath in March last, for the simple reason that our mutual friendships have been so intimate that had one attempted anything approaching the eulogistic, without which truth could not have been told, there would surely have arisen grave doubts as to the veracity of the penman! The Letter-Bag of *St. Martin's Le Grand Magazine* for the July quarter, has, however, well-voiced the general appreciation of his worth. Our thanks are due to the writer in that well-known periodical, who himself will be the first to realise that the present generation of telegraphists will never know how much they owe to S. W. B. and his old colleagues of the last century.

*Countries.*—AUSTRALIA.—An official statement published by the Australian Government informs us that the total amount paid by the Australian Government to Amalgamated Wireless (Australia) Ltd. under the 1927 agreement was £464,361. Of this £260,997 was for patent royalties and £203,363 for the operation of coastal and island radio services. The P.M.G. added that the actual value of the patents was unknown, but the company's balance-sheet on June 30, 1932, gave them as the figure, £93,000. The Commonwealth had received dividends amounting to £26,250 from the company for 1931-32.

*Dry Batteries and a Tariff!*—The Australian Tariff Board has recommended a reduction in the duties on dry batteries and dry cells. The recommendation has been made on account of the excessive profits when importation was entirely prohibited, and the slackened demand. The *ad valorem* duties had reached as high as 300%.

Opening a new broadcasting station at Mildura, Victoria, the Postmaster-General, Mr. Parkhill, said that it was the aim of the Department to establish sufficient stations to ensure at least one national station being received satisfactorily in areas remote from the centres of population. It is to be noted that inquiries are actually being made into the question of erecting a station at Bendigo. It is also understood from reliable quarters at home here that tenders have already been invited for new broadcasting stations in Queensland, New S. Wales, Victoria, and Tasmania, and that all particulars may be obtained from the Department of Overseas Trade, London, S.W.1.

CZECHO-SLOVAKIA.—According to *World Radio*, the number of broadcasting radio receiving licences held by licence holders in April last was over 500,000. These figures represent an average monthly increase of 10,000 during the past year. It is also recorded that 40% of the listeners had four-valves receivers; 14% used crystal sets, while 2% owned sets with more than five valves.

DUTCH INDIES.—There is considerable activity in the Dutch Indies in relation to broadcasting, for not only is the Dutch Indies Broadcasting Company about to erect a new broadcasting station at Tandjong, but even contemplates the erection of several others.

FRANCE.—*Wireless World* informs us that the French Chamber of Deputies and the Senate have voted in favour of the issuing of broadcasting receiving licences. The annual cost of these is to be 50 francs on *each* valve set, and 15 francs on crystal sets. A French correspondent informs us that pending the repair or re-building of Radio Toulouse, the Toulouse broadcast is to be resumed, and that quite soon, from a new station at the Chateau de Saint Agnan.

**GREAT BRITAIN.**—*The London Overground Wires Bill.*—With reference to this Bill, at the moment engaging the attention of the House of Commons, and arising out of a joint petition against the same Bill by the following plaintiffs:—British Wireless Ltd., English Relay Wireless Ltd., and the London Relay Wireless Ltd., it is now announced that the London County Council has given the petitioners the definite assurance as follows:—"A company will not be required to obtain the consent of the local authority in respect of wires erected by the company before the coming into force of the provisions of the Bill, providing such existing wires have been erected and are maintained in accordance with the by-laws in force under the London Overhead Wires Act 1891, a company will not be required to remove the wires unless they become dangerous or an obstruction to traffic." The draft of any new by-laws is also to be sent informally to the companies in time for any observations which they may have to make thereon. *Stockton-on-Tees.*—The Corporation of Stockton's "Baths" Committee appear to have had a little misunderstanding with the Post Office Engineering Department in relation to an alleged "interference" with broadcasting due to an electric motor owned and used by the Corporation in connexion with their Baths, the remedy, for which "interference" the "Baths" Committee had apparently understood, would be supplied gratis by H.M.'s Post Office; the cost and fitting of the "suppression device," it is stated, is very little over £3. As we go to press the Stockton "Baths" Committee have the matter once more under consideration. Meanwhile their attention is most courteously directed to the reply of the Postmaster-General to Mr. Holford Knight in the House of Commons on June 19 last on the same subject.

**HUNGARY.**—The Hungarian Radio Co.'s licensed listeners numbered 322,163 last April. There was, however, a decrease of 3,394 during March, but the recent inauguration of four new relay stations, viz., Pecs, Magyarova, Miskolc, and Nyiregyhaza, will soon, it is expected, affect the situation most favourably.

**IRISH FREE STATE.**—In Dail Eireann during the Annual Estimates, Mr. G. Boland, Minister for Posts and Telegraphs, moved an estimate of £43,530 for broadcasting services for the current year. This figure compared with £60,310 for the year 1932-33, and the decrease of £16,780 was due to the fact that the cost of the high-power station at Athlone had been almost cleared last year. The following are other interesting features of the estimates which were passed:—Estimated revenue for current year, £88,000, viz., Licences, £20,000; Customs duties, £50,000 (Custom duties are the duties imposed on wireless apparatus entering the Free State); Advertising programmes, £18,000. Estimated expenditure on broadcasting for current year, £55,000.

On a vote of £1,344,564 for Posts & Telegraphs, Mr. Boland said that the Telephone service made a profit of £39,289 and the Telegraph a loss of £89,000 during the year 1931-32. The Telegraph service, however, he maintained was an essential service, and losses on it had been considerably reduced.

**ITALY.**—The Turin correspondent of *World Radio* reports that a decree for the establishment of a Rural Broadcasting Organisation has been passed by the Italian Chamber of Deputies and has now been made law. The objects of the new society are twofold; to propagate in country districts culture in general, and rural instruction in particular. A very comprehensive committee of members of the Government, of workers, of the trades, &c.; has been formed.

**JAPAN.**—Reuter's Tokio agency reports that one of the largest wireless stations in the Orient, to cost 1,000,000 yen (£100,000 at par) is to be built at Kurume City, according to a decision of the Japanese Government. It is to have a power of 100 kw.

**MANCHURIA.**—*Eastern Engineering and Commerce* affirm that an agreement has been signed between Manchukuo and Japan whereby all electrical communications in the Kuantung leased territory, the South Manchuria Railway zone, and the rest of Manchukuo are brought under joint Japanese-Manchukuo control.

**NORWAY.**—Reuter's Trade Service at Oslo and other authorities inform us that as a first step to the reorganisation of the Norwegian

broadcasting system which came under Government control on July 1 last, is that a new high-power broadcasting station is to be erected at Trondhjem, replacing the existing low-powered station. The order for the new station has been placed with Marconi's Wireless Telegraph Co. Ltd. The power of the transmitter is 20 kw. and it will be adjustable to any wavelength within the limits of 200 and 545 metres.

The new broadcasting corporation will have a Board of Directors, including five Government appointed members, also a Programme Committee of fifteen members, four of whom will be appointed by the Storting and the remainder by the Government. The Storting will decide all questions regarding licences, stamp fees, the building of new stations, and the annual budget will also be submitted to the same body for approval. The net profits may only be used for the development of the broadcasting service. The technical system is placed under the Telegraph authorities (Ministry of Commerce), the Ministry of Ecclesiastical Affairs and Education will predominate on the choice of programmes as the latter Ministry is entitled to three representatives on the board of directors against but two by the Ministry of Commerce.

**POLAND.**—The Ministry of Posts and Telegraphs has reduced the broadcast radio receiving licences to the original figure of three zlotys per month by withdrawing the temporary increase of thirty gross authorised two years ago in order to provide extra revenue for the benefit of the unemployed. *A new cable!*—From the same source, the *Electrical Review*, we gather that the Polish Government is about to lay a new cable between Varsovie and Gdynia, with a number of branches, presumably the cable will carry both telegraph and telephone circuits.

**SCOTLAND.**—It is understood that the General Purposes Sub-Committee of the Edinburgh Corporation has had an application, says the *Electrical Review*, from Mr. Andrew H. Baird, for permission to install a wireless Relay system in the city. All former applications of a similar kind have been declined, it is stated, but Mr. Baird's has been remitted for consideration to the Streets and Building Committee.

**SOUTH AFRICA.**—Out of loan funds to be spent by the South African Government during the current financial year, £400,000 is allocated to telegraphs and telephones.

**SWITZERLAND.**—The Broadcasting Relay Exchange Service in Switzerland is owned partly by the State and partly by a private concern. Over 13,000 listeners have chosen this system of listening-in.

**U.S.A.**—The Federal Radio Commission, says *World-Radio*, has won its first radio test case to reach the Supreme Court. This ruling has confirmed the Commission's authority to grant the Gary, Indiana, broadcasting station unlimited time use of the 560 kilocycle frequency, which has hitherto been assigned to two Chicago stations without compensating the latter. The decision has far-reaching implications, but one informant states that "the Commission will not embark upon any general re-distribution of wavelengths until next year, when new assignments will be made."

With pleasure one adds the following information from U.S.A. telegraphic sources as a supplement to "Who was the first Woman Telegraphist?" which appeared in the June issue of the *T. and T. Journal*. It is claimed that "the first woman commercial wireless operator was an American young lady named Miss Anna A. Nevins, who entered the service of the De Forest Company, U.S.A., on Jan. 6, 1906." It is considered that this claim will not be challenged. In any case, it is certain that, like many others of her sex and profession, she found an excellent opposite number in one of her own craft by subsequently marrying Mr. Henry J. Hughes, Telegraph Superintendent of United Wireless!

"Never get into a stingy way,  
I don't say it's wise to lend,  
But always put by for a rainy day  
And never desert a friend."

—*Mid-Victorian Street Song.*

J. J. T.

## CENTELS AND FORTELS.

### JOINT SPORTS MEETING AND GARDEN PARTY.

THE above joint meeting of the Inland and Foreign Telegraph Departments of the Central Telegraph Office, London, took place on the Civil Service Sports Grounds, Chiswick, in glorious weather, on the 21st ult.

It is understood that this new combination of the two departments was in the nature of a trial trip, and so far as the smoothness with which the arrangements was concerned, the co-operation of the two committees was without fault, giving excellent evidence of the goodwill of the organisers to make a success of the undertaking.

The twenty-four events were completed well up to scheduled time, by no means an easy task. This permitted the presentation of the Prizes, by the kind consent of Mrs. J. Stuart Jones, to be carried out without undue haste, each recipient receiving a congratulatory word from the Controller's competent partner, who, despite the heat, showed no undue signs of fatigue, though physically the task was by no means a light one.

This brief report has been prepared with the urgent need behind it that space and time were lacking for all but a few words, and that's that!

J. J. T.

## LEEDS DISTRICT NOTES.

THE fourth Telephone and Telegraph Exhibition during the past three years in the West Yorkshire District was held at Ossett during the Ossett Carnival and Shopping Week, July 10-15. The civic authorities placed the Winter Garden in the Town Hall at the disposal of the Department for the Exhibition, and the Carnival Committee provided all the decorative effects and advertised the Exhibition widely on the trams and buses and by poster. The joint effort was all that could be desired and the black and white wall panelling surmounted by coloured drapings provided an attractive setting for the various exhibits.



R.A.X. EXHIBIT, OSSETT T. AND T. EXHIBITION.

The Mayoress of Ossett, who, accompanied by the Carnival Queen and her train bearers, performed the opening ceremony, was received by Mr. V. R. Kenny, M.B.E., Postmaster-Surveyor, Mr. C. A. Taylor, M.C., Superintending Engineer, Mr. J. F. Murray, District Manager, and Mr. R. B.

Graham, Sectional Engineer. Mr. Kenny, in his introductory remarks, referred to the development of publicity and advertising in connexion with the telephone service and assured all intending subscribers that although the Exhibition was being held in the Winter Garden there would be nothing wintry about their reception by the Sales Representative. Mr. Taylor then gave some interesting details regarding the exhibits and, when the Carnival Queen, at his invitation, pressed a switch, all the working exhibits commenced to function and the electric decorative effects lit up. Simultaneously the teleprinter on the platform beside the Mayoress ticked out a message of welcome and thanks. During the week special arrangements were made with the Education Authorities to give demonstrations to the senior school children and two hours daily were devoted to this; at other hours children were only admitted if accompanied by adults. The success of the Exhibition was due in no small measure to the untiring efforts and inexhaustible patience of the demonstrators, none of whom overlooked the fact that the main object of the Exhibition was to increase the number of telephone subscribers and to sell telephone and telegraph service. Agreements for five new subscribers were obtained and many promising contacts were established.

The Leeds Telegraph Messengers' annual sports were held on the Yorkshire County Cricket Ground at Headingley, on June 29, and the verdict of the spectators was, "Better than ever." The entries for the various events showed a large increase over those of former years and keen competition was the order of the day. Several novel events were very pleasing to the crowd, especially the one described in the programme as the "Don't be late race for Boy Messengers," the boys having to put on tunic, hat, belt and pouch, overcoat, cape and leggings, and run to a point to be inspected.

The results of the principal events were as follow:—

- 100 yds. Championship for Leeds Sportsmen's Cup: Winner—G. Poulter.
- 800 yds. Championship for the G. W. Smith Cup: Winner—H. Briggs.
- Half-mile open event: Winner—W. Palmer.
- 400 yds. Championship for the Stock Exchange Cup: Winner—G. Poulter.
- 220 yds. Championship for the Joseph Pickersgill Cup: Winner—H. Briggs.
- Ladies' Race: 1st—Miss Hall; 2nd—Miss Clitheroe; 3rd—Miss Hebden.

The concluding item of the sports was a ladies' cricket match between the Leeds Exchange and the District Office. A time limit of  $\frac{3}{4}$  hour was placed on each innings and the District Office captain won the toss for first innings. The shades of Sutcliffe and Leyland seemed to be hovering around as, in spite of some excellent bowling, the District Office proceeded to score rapidly and the innings closed at 81 for 5 wickets; Miss Clitheroe, the captain, being top scorer with 43. The Leeds Exchange made a valiant effort within the time limit to beat this total and hit out at nearly every ball, but the fielding was very keen, several boundaries being saved almost on the line. Time was reached with the score at 62 for 7 wickets, Miss Boston with 14 being top scorer. On both sides excellent catches were taken and the quality of the cricket surprised many of the spectators.

Prior to the presentation of prizes, Mr. Best (Chief Supt. T.) expressed the pleasure of the assembly at the presence of Mr. Kenny, Postmaster-Surveyor, and Mrs. Kenny, at their first official function at Leeds. Mr. Kenny, in reply, said how much they had enjoyed the sports and trusted there would be many more staff functions to follow. The prizes to the winners for the various events were then presented by Mrs. Kenny. Mr. Murray (District Manager) closed a very enjoyable evening by proposing a vote of thanks to Mr. and Mrs. Kenny and to all who had assisted to make the sports such a success.

## MANCHESTER DISTRICT NOTES.

To mark the occasion of the installation of the 100,000th telephone a dinner and dance was held at Telephone House on July 20. Our guests were Mr. and Mrs. Maddan, Mr. and Mrs. Whitelaw and Mr. and Mrs. Darke.

Advantage was taken of the occasion to congratulate our District Manager on his obtaining the Order of the British Empire in the recent King's Birthday Honours List.

*Messengers' Sports.*—The messengers' sports was held on Saturday, July 15, before a good crowd of spectators. A remarkable feature was the splendid performance of Messenger F. Foulks, who was successful in obtaining six first prizes.

Mrs. Moorhouse, wife of our Assistant Postmaster, kindly presented the prizes.

*Resignation.*—Miss Hodgkinson, Assistant Supervisor, Class II, has taken advantage of the voluntary retirement scheme. She commenced her telephonic career in 1897 and in 1909 was promoted to Assistant Supervisor.

Miss Hodgkinson spent the whole of her service in the Central Exchange. She was the recipient of many beautiful and useful presents on her last day of service.

## SOUTHAMPTON DISTRICT NOTES.

*Farewell Dinner and Presentation to Mr. J. W. Stelling.*—An interesting function took place recently at the Dolphin Hotel, Southampton, when the staff of the Southampton Traffic Branch gave a farewell dinner in honour of Mr. J. W. Stelling, late Traffic Superintendent, Class II, who has retired on age limit after 46 years telephone service in various parts of the country.

Mr. Stelling was accompanied by his wife, and during the evening they were presented with a "Buoyant" chair and a cut crystal trinket set, which were subscribed for by the District Office and Engineering Staffs and by the staffs of the Southampton, Portsmouth and Bournemouth Telephone Exchanges.



MR. J. W. STELLING.

Mr. W. H. Kynaston, Traffic Superintendent, presided and among those present were Mrs. Kynaston, Mr. O. G. Lee, District Manager, and Mrs. Lee, Messrs. C. S. Weston, Staff Clerk, D. Wallace, Sales Manager, and P. J. Spence, Traffic Superintendent, Class II, and Mrs. Spence.

The toast of "His Majesty The King" being honoured, Mr. P. J. Spence proposed the toast of "The Other Branches" (Sales and Accounts), to which Mr. D. Wallace and Mr. C. S. Weston responded.

The toast "The Guests of the Evening" was proposed by the President and received with musical honours. In his speech Mr. Kynaston referred to his very happy association with Mr. Stelling, and wished Mr. and Mrs. Stelling health and happiness in the years which lie before them.

Mrs. Stelling very charmingly responded and thanked the company for the honour afforded her husband and herself that evening.

In a speech preceding the presentation, Mr. O. G. Lee alluded to Mr. Stelling's long and varied career in the Telephone Service, and eulogised his work in the Traffic Branch. He asked Mr. and Mrs. Stelling to accept the presents mentioned above and expressed the hope that they would live very many years to enjoy them.

Mr. Stelling, in his response, thanked the District Manager and all his late associates for the very acceptable gifts and kind wishes.

In recalling the milestones of his long career, he mentioned that he entered the service of the Northern Telephone Company at Stockton-on-Tees as long ago as Mar. 10, 1887. In those days the telephone had not established itself in the life of the community, and it was the duty of the employees of the pioneer telephone companies to prove to the public the utility and indispensability of the telephone in commercial and private relationships. The fruits of their labours can be witnessed in the very highly organised service of to-day, which permits of almost world-wide telephone communication.

In subsequent years Mr. Stelling saw service in Middlesbrough, Sunderland, South Shields and Halifax. In 1912 the State took over the Telephone Service, and Mr. Stelling was in turn transferred to Oldham, Lincoln, York and, in April, 1923, Southampton.

In his closing remarks, Mr. Stelling spoke of the kindly consideration and co-operation which had been shown him at all times by his colleagues in the District Manager's Office, Southampton.

During the evening a very much appreciated musical programme was provided, the artists including Messrs. W. Thorn, solo violin, and C. J. Andrews, piano, both members of the staff.

After votes of thanks to the artists and the organising committee, the function closed with the singing of "Auld Lang Syne" in appropriate manner.

Mr. H. R. C. Hickish, Assistant Traffic Superintendent, was M.C.

Mr. J. H. Anstee has taken up his appointment as Traffic Superintendent, Class II. We congratulate him and extend a very warm welcome.

We lost another of our Traffic colleagues when Mr. D. T. Gibbs, Assistant Traffic Superintendent, joined Headquarters staff on July 24 as Acting Assistant Inspector of Telegraph and Telephone Traffic, Class II.

Before leaving, Mr. Gibbs was asked to accept a memento of his stay in Southampton.

He carries with him our best wishes for future success and happiness.

Miss P. M. Burrige, Writing Assistant, who was employed in the Traffic Branch for six years, has retired on account of marriage.

She was presented with a beautiful scroll chiming clock, which was subscribed for by the whole of the District Manager's staff.

## NORWICH DISTRICT NOTES.

THE following letter received from a subscriber compensates for those occasional ones written in a different vein:—

"We should like to pay tribute to the excellent service we have had here and especially to the courtesy and help we have received from the operators at this exchange.

"We have never had such a service. In three years we have only received two calls for wrong numbers and in each case it was not the fault of the operator but of the caller."

*Sport.*—The defeat of the Norwich Post Office cricket team in the Surveyor's Shield competition when visiting Ely was a surprise to all. Arrangements made by supporters for attending the final have accordingly been cancelled and the players are consoling themselves by saying "Think of the Arsenal."

The lady cricketers have also sallied forth. The score in their first match, a defeat by 96 runs to 29, was scarcely representative of the play. In the second match they met with deserved success by 76 runs to 64; the margin would have been greater but for 22 unfortunate wides!! This year's best efforts include 48 by Miss Johnson and 7 wickets for 29 by Miss Kent.

The Tennis Post Office team, which finished top of Division III of the Parks League last year, was promoted to Division I. The inevitable occurred and they finished seventh out of eight. We dread to think of the final position had not the ladies won four of their seven matches.

J. T. B.

## BIRMINGHAM NOTES.

*Ladies' Cricket Club.*—The enthusiasm of the Birmingham telephonists for our national game of cricket shows no signs of abatement. The as yet unbeaten Central Exchange team have now added two more victories to their record. They defeated the Birmingham and Midland Omnibus Coy. (Traffic Team) by 18 runs, the score being Central 39 (Miss Henning 10), Midland Red Traffic 21. They then played and beat the Bell Athletic Club by 49 to 35, Miss Harrington capturing 6 wickets for 17 runs, including the "hat-trick," while Miss Briers was top scorer with 9 runs.

The Trunk Exchange team, although not quite so strong as Central, gave a fine display by defeating the Midland Red Omnibus Coy. (Stores team) in a close and exciting game by 7 runs. Misses Martin and Titterton earned the chief honours, the former making 15 runs and the latter taking 6 wickets.

In the second match the Trunk Exchange were not so successful, being outplayed by the Traffic Department's team of the bus company and losing by 109 runs to 67.

Misses Allbutt and Titterton shared the distinction of being top scorers with 14 runs each. The latter claimed 6 wickets, but her final average was spoilt by the fine batting of the opponent's captain, who compiled a brilliant score of 53.

*Transfer.*—We extend a hearty welcome to Mr. W. E. Fenton, Assistant Traffic Superintendent, who has returned to this district from Bristol.

## RETIREMENT OF CHIEF CONSTABLE OF BRIGHTON.

THE pending retirement of Mr. Charles Griffin, Chief Constable of Brighton, must not be allowed to pass without comment in these columns as, although not a telegraph or telephone man in the ordinarily accepted sense, he has had many points of contact with the Department's Officials, and others interested in electrical communications, and is a member of the Home Office Special Committee dealing with the question of providing wireless for police.

Owing to Mr. Griffin's keen interest in the subject the Brighton police force is equipped with pocket wireless sets which enable constables on patrol to receive verbal instructions and information from Brighton Town Hall. The instrument weighs only 1 lb. 14 oz., and fits into the breast pocket of a constable's tunic. A transmitter has been installed at the Town Hall, and when this sends out signals a small bell tinkles on the pocket set; the constable adjusts an earphone and is able to hear messages within a circle from Headquarters of from 6 to 15 miles radius, according to the amount of traffic and noise in his immediate neighbourhood. The present form of the apparatus is the outcome of experiments extending over several years and close co-operation between Mr. Griffin and the inventor, Mr. C. L. P. Dean, of Slough.

Under Mr. Griffin's guidance Brighton was the first town in the South of England to have police boxes linked to Headquarters by telephone.

"Roundabout" traffic, which has been introduced in so many places recently, had its origin at Brighton, where Mr. Griffin applied with remarkable success a suggestion advanced by Mr. Gordon Volk, a local journalist and author, that the traffic at the Aquarium danger zone should be controlled on a gyratory system.

Mr. Griffin inaugurated also the electrically operated semaphore signal system of traffic control at several of the busier street crossings in Brighton, and although it now seems likely that semaphores will be replaced by the coloured light system, so that advantage may be taken of the lower operating costs of the latter and uniformity in traffic control secured, Mr. Griffin is of opinion that the semaphore is the more definite of the two systems.

Although retiring from the "Force," Mr. Griffin has no idea of retiring from an active life, as it is understood he now intends taking up farming in Lincolnshire.

C. O. P.

## INVICTA.

[Lines inspired by reading in a report that "Mrs. —, the caretaker-operator at —, is an able-bodied woman who, to use her own words, is not afraid of anyone."]

Air—"The British Grenadiers."

Some talk of Greta Garbo  
And Amy Mollison;  
Wills-Moody, Betty Nuthall,  
And many a suchlike one.  
But of all the world's great heroines  
There's none, where'er you range,  
With a ting-a-ling ring-a-ling ring ring  
Like the dame at our Exchange.

She operates and care-takes  
With undisturbed aplomb.  
No burglar can affright her,  
No madman armed with bomb.  
Irate subscribers on the line  
Who start to rail and curse  
Are soon reduced to silence  
By her answers firm and terse.

No Travelling Supervisor  
Has ever made her quail;  
She brooks no interference  
From female or from male.  
She laughs at Head Postmasters,  
And a mien as bold as hers  
Routs Traffic Superintendents  
And District Managers.

And if, when work is over,  
She joins her friends at tea,  
They all cry, "Good old Susan!  
"Let's give her three times three."  
So here's to all Caretakers  
Who operate also;  
And down with the R.A.X.'s  
If they're going to spoil their show.

J.

## SHEFFIELD DISTRICT NOTES.

*Retirement.*—Miss M. A. Carr, Supervisor, Sheffield Exchange, retired at 60 years of age on July 17. Miss Carr entered the service of the National Telephone Company in 1891, was promoted Supervisor in 1905, became Assistant Supervisor, Class II (Travelling), on transfer to the Post Office, and was promoted to Assistant Supervisor, Class I, and Supervisor in 1917 and 1920 respectively.

The occasion of Miss Carr's retirement was marked by the presentation of many tokens of her colleagues' esteem, including an electric standard lamp and chiming mantel clock from the Controlling Officers' Association; a pewter tea set from the District Manager's and Sectional Engineer's (Clerical) staffs; electric radiator from the Telephone Engineering Section; and a unique gift of a "Sealyham" puppy from the Telephonist Section.

At the well-attended presentation the Sealyham was christened "Jimmy" and his presence encouraged various remarks regarding Miss Carr's energy and vivacity, and also "Jimmy's" good fortune. Whether he will aid Miss Carr to "keep young" or vice versa it is difficult to say. In any case we are confident that Miss Carr left us with no sense of uncertainty as to our good wishes for her future.

Miss Phyllis Downes (telephonist) left the service for marriage on June 22 after 13 years' service. She was the recipient of many beautiful and useful gifts, among which was an electric radiator from the Supervisors and staff.

## GLOUCESTER DISTRICT NOTES.

*Outing.*—A party of 46 members and friends of the Gloucester District Manager's staff left Gloucester on July 8 and journeyed by road to Windsor via Cheltenham, Oxford and Henley.

An alfresco lunch was enjoyed at a roadside hotel a mile or so on the London side of Henley. On arrival at Windsor the whole party made a tour of the Castle grounds and State Apartments. We next repaired to the Windlesora Café, where we partook of an excellent tea. Here we had the pleasure of the company of the Head Postmaster of Windsor, Mr. J. Wilkin, and two other friends from the Metropolis. After tea Mr. A. Barker, Traffic Superintendent, Class II, in the absence of the District Manager, voiced the thanks of the party to Mr. Wilkin for his assistance in making our visit so enjoyable. Mr. Wilkin replied suitably and offered his services as guide to any of the party who cared to visit the places of interest in the Royal Borough.

Unfortunately the length of the return journey necessitated an early departure and prevented acceptance of this offer. We bade adieu to our friends and took to the road again. The homeward journey was made via Ascot, Reading, Streatley, Wantage, Faringdon and Cirencester, Gloucester being reached shortly before midnight. We all enjoyed the beautiful scenery of the Cotswold country, the Thames Valley and the North Downs, but many of the party found the journey rather too long and it is improbable that our future outings will include so much travelling.

Once again we wish to acknowledge the excellence of the arrangements made by our Social Committee Secretary, Mr. S. H. Simmons.

*Bowls.*—Mr. A. G. Miles, of the District Manager's Office, has emerged successfully from the first round of the South Wales Surveyor's District Bowls Competition and he has our good wishes for further success in the competition.

## CHESTER EXCHANGE AND TEST ROOM STAFFS.

A VERY enjoyable motor drive through Wales was made by members of the Chester Exchange and Test Room Staffs on Sunday, June 18.

Commencing from Chester Exchange at 9 a.m. and proceeding by way of Wrexham, Llangollen, Corwen, Bettws-y-Coed, Capel Curig, through the Pass of Llanberis to Llanberis, a halt was made. Lunch was taken at the Royal Victoria Hotel.

The journey was resumed around the coast via Caernarvon, where another halt was called to enable the Castle to be visited, thence via Bangor, Penmaenmawr and Conway to Llandudno, where tea was served at the North Western Hotel. Some time was spent in Llandudno and the journey home was made along the coast road via Colwyn Bay and Rhyl. At the latter place another halt was called; from Rhyl the journey home was resumed and Chester was reached after a most enjoyable time. Notwithstanding the inclement weather, all expressed pleasure of the day's trip.

The Exchange Staff appreciate the arrangements made by the Engineering Staff, special appreciation being accorded to Mr. Ostin and Mr. Jones.

It is rumoured that the District Manager's Staff is going to organise a trip—it is hoped that rumour is not a "lying jade."



# FIRE - RESISTING TIMBER

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and years of experience is

### A Very Important and Highly Successful Art.

It gives ENGINEERS, ARCHITECTS and BUILDERS new opportunities in Design, Construction and Decoration, all the convenient qualities of wood being retained.

**FAR** safer than thin steel.  
**FAR** more convenient than concrete.  
**FAR** preferable to light alloy metals  
and steel for panelling and furniture.

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**Braided and Twisted Wires, Bare Copper  
Strand and Flexibles of any Construction**

*Wire Ropes and Cords, down to the finest sizes, in Galvanised Steel, Phosphor Bronze, &c.*

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Holborn 1041-1042.

## WESTERN DISTRICT NOTES.

*The Country Satellite Exchange.*—In an earlier number of the *Journal* reference was made to an experimental "Country Satellite Exchange" (auto, of course). This is now in service and is working well.

We are all familiar with the expression "up the pole," but in this case the exchange is actually "up the pole." It consists of a metal box containing an arrangement of relays in conjunction with certain other apparatus at the parent exchange to which there is one junction. This new type of exchange is designed to serve those remote rural districts where full R.A.X. facilities cannot be justified. It has a great advantage over the rural party line in that secrecy is assured and the subscribers have in effect a direct line to the parent exchange. When a subscriber calls he automatically locks out of circuit all the other subscribers, as also does the parent exchange for an inward call to a local subscriber. When a subscriber desires to originate a call, a tone is received if the junction is free, and a lamp signal is operated at the parent exchange. When the operator answers, the tone is disconnected and the calling lamp extinguished; if the call is for a subscriber on the parent or a distant exchange it is completed in the ordinary way. A call, however, may be between two subscribers on the satellite exchange itself. In this case it is completed by means of a special inter-communication jack provided for the purpose.

For the completion of incoming calls to the satellite exchange subscribers, multiple jacks are provided at the parent exchange, one jack for each subscriber. The operator plugs into the jack of the subscriber required, the apparatus then selects that subscriber and locks out the others. When conversation is finished and the subscribers "hang up," the usual clearing signals are received.

This system will no doubt cause a revolution in telephony. I see the time coming when it will be extended to every city, town and village in the country, each D.P. will be a satellite exchange. The Traffic Branch will work out the busy-hour load of the subscribers on a D.P. and arrive at the number of circuits required to the exchange. Suppose, for instance, the D.P. carries 50 subscribers, it may be found that perhaps, say, 10 circuits to the exchange will carry this traffic. It will be readily seen what enormous saving there would be in the provision of outside and inside plant. Perhaps we may even look further ahead and visualise the time when there are no wires to D.P.'s, when each street is served by a main similar to the electric

power main, when wavelengths can be separated per millimeter or less and each house is allotted a wavelength working "carrier wave" on the main to the exchange.

The staff of the district office had their usual summer outing on Saturday, July 1. The party, numbering about 100, left at 12.30 p.m. and proceeded through "Glorious Devon" to the beautiful Saunton Sands, where the afternoon was spent in playing a cricket match. After this the journey was continued through winding Devon lanes, up and down dale, around real Devon corners (those charrs-a-banc must have been flexible) to Ilfracombe, where justice was done to a tea of strawberries and cream, during which Mr. T. A. Beck, District Manager, presented the cricket prizes, which consisted of Ilfracombe rock, toy balloons, &c. The members of the party then found their own amusements. "All aboard" was sounded at 7.30 p.m. and the journey home commenced. The cavalcade consisted of 3 charrs-a-banc, 5 private cars and 2 motor cycles. A halt was made for the thirsty and weary at the Fox and Hounds, a famous old posting house set in typical Devon scenery. On loading up one vehicle seemed to have a particularly gay party. Enquiry elicited the fact that they had discovered that farmhouse cider has a real kick in it.

Exeter was reached at 11 p.m., after a most enjoyable and beautifully fine day.

We were pleased to have with us as visitors Mr. W. Y. Smith-Saville, Manager and Engineer of the Exeter Corporation Transport Dept., and Mrs. Smith-Saville. The principal officers accompanying the party were: Mr. T. A. Beck, District Manager, Mr. F. J. Frost, Traffic Superintendent, and Mrs. Frost, Mr. W. Kay, Staff Officer, and Mrs. Kay, Mr. C. W. Beauchamp, Sales Manager, and Mrs. Beauchamp, and Mr. T. Green, H.C.O., the latter being responsible for the excellent arrangements made.

Miss K. Julian, one of the ledger clerks in the Exeter District Office, was the recipient of a presentation of cutlery on the occasion of her resignation on account of marriage. The very pretty wedding ceremony took place at Exmouth on June 12, and a number of her office colleagues were present to give this very popular lady a good send off.

Miss R. Knight, Writing Assistant, Fees Section, resigned on June 24. She was presented with a dinner service by the staff as an expression of their good wishes for her future happiness.

F. J. F.

## LIVERPOOL COMPARED WITH OTHER DISTRICTS.

By J. P. URWIN.

THE following particulars extracted from the Blue Book entitled "An Industrial Survey of Merseyside" made for the Board of Trade by the University of Liverpool and published by H.M. Stationery Office are of interest in comparing telephone growth.

Viewed in relation to the sea trade of Britain as a whole, Liverpool appears to be one of the five great "general" ports of the Kingdom. By a "general" port is meant one which normally trades equally with all parts of the world and handles all the commodities comprised in the over-seas trade of the country. This is in contrast with "specialised" ports, which are more numerous and tend to trade each with one particular area, or in one particular commodity or group of commodities. Examples of such ports are Southampton, which favours the North Atlantic passenger trade, and the South Wales ports, which are particularly concerned with the export of coal and the import of timber and pit props. The total trade of the United Kingdom is shared between the major ports in the following proportions:—

London (general port)	...	...	...	31.3%
Liverpool	..	...	...	25.5%
Hull	..	...	...	5.5%
Manchester	..	...	...	5.1%
Glasgow	..	...	...	4.2%
Southampton (N. Atlantic and Continent)	...	...	...	3.9%
Swansea (coal, timber and general)	...	...	...	1.3%

These percentages are obtained by taking an average of the figures for three years (1924, 1926, 1928) before the present acute depression began.

Although the general ports are concerned with practically all commodities and all trade routes, the individual relations which each has established with the various industrial centres of the country lead them to develop different aspects of trade in different proportions. This is a fact of some importance, for it helps to explain the differing degrees of depression characterising the various British ports. It is necessary, therefore, to examine the trade of Liverpool as it compares with London and other general trade centres.

In the trade of the United Kingdom as a whole there is a marked excess of imports over exports. A typical British port might, therefore, be expected to reflect this disparity between goods brought into the country and those sent out. The trade statistics relating to Liverpool, however, show that over a period of years the values of goods inwards and goods outwards are about equal. In other words, Liverpool has more than the average share in the export trade and stands to lose by a depression in British industry more immediately than do many other shipping centres. One may contrast its position with that of London, which is above all an importing centre and on an average handles 38% of all the foreign goods entering the country but only 21% of the goods leaving it. Liverpool's dependence on industry is visible not only in the export trade but in the import trade also. An analysis of the trade figures for 1928, a fairly average year, shows that 98% of its exports were composed of industrial goods and 49% of its imports were industrial raw materials. As in that year exports and imports (excluding re-exports) were about equal, it may be said that no less than 74%, or nearly three-quarters of its total trade in 1928, was associated with British industries. It will thus be appreciated how vital is the dependence of Merseyside upon the prosperity of these industries.

It is not enough, however, to examine the broad figures of imports and exports. Depression is found to a varying degree

in different commodities and on different trade routes. Some closer analysis is therefore necessary. Among imports of industrial raw materials to Liverpool the first place is easily held by cotton. It accounts for some 55% of Liverpool's imported raw materials and some 27% of the total import trade. In the export trade, too, cotton goods are much more important than any other single item. In 1928, before the depression set in, they represented 32% by value of the total exports from Liverpool. Combining the two figures we have 30% as the share of cotton in Liverpool's total trade. Hence the fortunes of Liverpool are closely linked with those of Lancashire: together they rise or fall.

It should be noted that practically all the goods handled in the port come from, or are destined for, Lancashire, the West Riding or the North Midlands; and the trade of Liverpool reflects in particular the industrial conditions in this section of England.

The direction of the Merseyside sea trade might be summed up in the statement "Liverpool shipping serves the world." But, as in commodities, special preference is shown for certain ports. Thus, Liverpool is peculiarly bound up with the North Atlantic trade, the outward trade to India, and with the trade to and from the East Coast of South America. In actual gross tonnage these constitute 60% of the total port trade and any decline in these quarters would affect Liverpool very seriously.

Mention must also be made of the passenger traffic to and from Liverpool. For long it was by far the greatest passenger port in England, but the rise of Southampton has recently caused Liverpool to take second place.

The main points of significance which appear from the foregoing are as follows:—

1. Liverpool is a "general" port and does not depend entirely upon the trade in one particular commodity or with one particular area.
2. Liverpool is the second port after London and on an average handles about a quarter of the total trade of the United Kingdom.
3. Liverpool is of more importance as an exporting than as an importing centre. (Imports = 20% of United Kingdom total; exports = 33%.)
4. The port is above all an industrial port and no less than three-quarters of its trade is directly related to British industry.
5. Special note should be made of the importance of cotton and cotton goods (30% of total trade).
6. Liverpool owes little to the industry of Merseyside itself, but is essentially dependent upon the trade of Northern England as a whole.
7. Liverpool is the second passenger port of the United Kingdom.

## DEATH OF MR. A. WATTS.

WE regret to learn, as we go to press, of the death from heart failure, on July 25, of Mr. Arthur Watts. With him passes another link with the earliest days of telephony. Beginning as an operator in the service of the United Telephone Co. in 1883 he was soon made second in charge of the new Eastcheap Exchange, where he gained practical experience of engineering by working in the evenings with the construction staff. By 1885 he had fitted himself for the position of local Manager and Engineer at South Shields. He was transferred to the Engineer-in-Chief's staff of the National Telephone Co. in 1895 and was made Technical Officer for underground works, with headquarters at Manchester. He was from that time associated with practically all the underground schemes undertaken by the company. He was transferred to the Post Office as a Staff Engineer, and was Superintending Engineer for the North Midland District until his retirement some 15 years ago.

## WE TELEPHONISTS—



## "TALK OF MANY THINGS."

Above.

ALAS and alack! Astounding apathy and absolutely amazing aloofness. Are all Academicians (A.R.A.'s) and amateur artists away—ailing—antagonistic?

Anyway, apologies are always accepted avec alacrity, art-drawings all August and after anxiously awaited, and an award anticipated.

"ANON."

## In-Laws or Outlaws.

The world is populated by quite a large quantity of in-laws. Many of us, I suppose, are in-laws and the state of being an in-law inevitably involves the possession of an in-law—possibly lots of them. Furthermore, besides having a set of in-laws one may also have that more distant degree of pseudo in-law which may be called the in-law in-law. In-laws have this in common with relations—you can't choose them. You either get them or you don't. They are in the nature of a bonus presented on marriage—the outcome of the type of pushing salesmanship which says "If you marry this person you will be presented with this very fine assorted collection of in-laws of both sexes." To which may be added as an inducement "They'll each give you a wedding present."

People who marry are rather inconsiderate. They do not appear to be able to see beyond each other's noses. They never seem to think about the in-laws they are going to fasten upon you. They don't come along and say "I'm going to ask Edwin (or Evangeline) to marry me, but before doing so let me know if you can bear to have his (or her) scrag of a sister (or oaf of a brother) for an in-law." They don't even ask if you are prepared to accept Edwin (or Evangeline) as an in-law, and if they did I doubt very much whether your reply would influence their actions. Selfish, of course, but I don't see what can be done about it.

Your view of in-laws as a class will depend upon whether you think of them in terms of yourself or in terms of themselves; whether you have acquired them owing to your own wilful action or weak acquiescence or whether they have been conveyed to you by the action of a member of your family. If you think of in-laws in terms of yourself you may think that the family with whom you are about to ally yourself is double blessed by the addition to its poor stock of (a) one perfectly splendid person (to wit, yourself) and (b) one perfectly splendid family (to wit, your own). From this point of view there can be no doubt that in-laws in general are a perfectly splendid crowd who confer a lasting benefit upon the families to whom they become attached in law. If, however, you think of in-laws in terms of the persons imported into your family either by your own or another's action then, without calling your own judgment in question or disparaging another's good sense and taste, you may be rather snuffy about the genus in-law. You may think of them as a blot upon the escutcheon, a smear on the polish or at least rather curate's eggish.

It is best to take a detached view of in-laws, but this will not be possible, if you have become possessed of them by your own action. No one can take a detached view of his or her mother-in-law and it is not easy to adopt that attitude towards sisters- or brothers-in-law. Fathers-in-law don't count—everyone regards them with an air of detachment, simply, I think, because their star is dimmed by the fierce light of the mothers-in-law. The detached air is only really possible if you have had the in-laws foisted upon you. In that case you can look at them as you please. You may even dare to be flippant with a mother-in-law. Your impartial review will enable you to accept them as in-laws or reject them as outlaws.

PERCY FLAGE.

## The Telephone System in the London Stock Exchange.

(Continued from page 242.)

In addition to the Post Office telephone system there is in association with the Stock Exchange an inter-communication system known as Bartholomew House. The system is maintained, and so far as the switchboard is concerned, staffed by the Post Office for the Exchange Telegraph Co., Ltd. The board provides for inter-communication between the subscribers' offices and between those offices and the Stock Exchange but gives no access to the public exchange system. There are at present approximately 600 subscribers, who fall into four classes. The first consists of those people who rent a tape machine and telephone; the second of renters of telephones only. The third class of subscriber has no telephone of his own but is entitled to share with others the use of the Company's call offices in the House. The remainder are entitled only to the use of the call offices in Shorter's Court after the closing of the House and up till 6 p.m. The majority of the subscribers are stock brokers, but the large banking interests and the City Editors of the newspapers also rent lines.

The methods of operating are interesting in that everything possible has been done to give a lightning service. For calls from one office to another the procedure corresponds very closely with that of an ordinary exchange, the main differences being that (1) all lines are rented on a flat rate (as well as the use of the call offices) and therefore no registration facilities are provided and (2) keyless ringing is provided on all positions.

Should a subscriber require to call a member of the firm in the House he answers the telephonist's question "Number please?" with the name of the firm (say) "John Smith." Now the subscribers have calling signals fitted with lamp caps of five different kinds to indicate in which room at the Stock Exchange the principal is to be found. One cap is an R opal and signifies that the subscriber is not entitled to calls to the House and each of the other four corresponds with the marking of one of the outgoing order wire keys. On receiving the demand mentioned above, therefore, the telephonist will repeat it to the caller, withdraw her plug, depress the order wire key corresponding to the marking of the caller's lamp cap, repeat the name, listen for the repetition by the attendant at the distant end of the order wire and then release the key. The caller has meanwhile replaced his receiver. The attendant at the Stock Exchange calls the name of the firm required through a speaking tube to the waiter on the stand nearest the position of the floor of the House where the broker operates, the waiter calling the name aloud in his turn. The broker hearing the call proceeds to the room indicated by the waiter and passes a call to his own office. There is a continuous stream of brokers into these rooms and the attendant, sitting near the entrance, has to know the firm to which each man belongs and remember his telephone number as well as whether the broker has been called by his own office or some other. As the file passes his counter the attendant calls on the order wire to the "B" side at Bartholomew House the number required and the box on which it is to be connected, thus: "574 on 78." The broker proceeds to the box indicated while the "B" telephonist makes the required connexion. It will be realised that the "B" operating is quite silent except for the telephonist asking for a repetition, if necessary. The load is extremely heavy on these positions, having reached as much as 1,000 calls in the busy hour on one position on past peg counts. If a broker requires to get into touch with some firm other than his own in the House it is necessary for him to indicate, when he calls, the room at the Stock Exchange in which the required firm is to be found. He does this by passing his demand as (say) "William Brown in 3 room." The operator notes the caller's number, goes on to her third outgoing order wire and says "William Brown for (say) 276." The attendant calls for William Brown and when he appears in the queue he must remember who requires his attention and inform the broker before he passes the demand on the order wire.

Calls for the brokers' offices from the House are dealt with in precisely the same manner as the reversed calls detailed above in so far as is applicable.

One other interesting point is what is known as the "Challenge System." This is a scheme whereby a broker renting a tape machine who wishes to buy or dispose of stock, is enabled to advise all other brokers on the system simultaneously on the tape of the details of his requirements and receive any offers on the telephone associated with the machine. The Exchange Telegraph Co. claim that by means of this system "within a minute, and without leaving his office, it is possible for a broker to lodge a "Notice" of his requirements at the office of every other broker in the Stock Exchange, thus reducing the physical obstacles of time and space in the constitution of the market to a minimum." The result of the system so far as the exchange is concerned is that there are great rushes of traffic for certain numbers, the majority of the calls receiving the busy tone. Of recent years the use of this system has, however, fallen off considerably.

## Correction.

(On page 242 of the July issue of the *Journal*, in an article on the London Stock Exchange telephone system, it is stated in paragraph 4 that a general allowance of 30 seconds is made on timed calls. This practice has been discontinued.)

### What the Tournament Meant to us, or Tennis on (?) at Wimbledon.

Subs to the right of them,  
Subs to the left of them,  
Subs in front of them, flashing and calling.  
Theirs not to dilly dally,  
Theirs but a voice to rally,  
Husky with "Hello's."

Our Section "Sup" comes bearing down,  
With a T.3B. and a harassed frown,  
"A sub's been kept waiting"—we look aghast,  
And know perhaps he won't be the last.

Against the odds make no demur,  
For overtime you may incur;  
Such a great magnanimous action,  
Surely calls for some detraction.  
Press critics write with increasing ire,  
But what could they do without a "live wire."

G. M.

### On Saturday Night.

Freedom from toil and sounds of pleasure,  
We less-favoured mortals long for our leisure;  
With "Number please?" "You are through!" "Press  
Button A;"

Come cries from old Croydon; "They're all fresh to-day";  
The crowds in the Old Town, the cinema bright—  
It's always the same on a Saturday night.  
With many who are from duty immune,  
We hear the Town Clock chime the Westminster tune  
As it strikes six.

'Midst buyers and sellers on every hand,  
An outdoor Mission takes up its stand;  
The preacher informs us we're doomed to h—,  
A "sub" says that someone is ringing his bell;  
The trumpet gives out its message at last,  
It seems that our troubles for ever are past,  
For "We rest our weary feet  
By the crystal water sweet,  
Over Jordan."

Through warnings of doom and exhortation  
To fit our souls for their salvation,  
And answering calls the whole afternoon  
The evening wears on. Release will come soon  
When the hours of labour will be at an end.  
The long flights of stairs we will quickly descend  
To join in the cinema's nightly throng;  
We'll hear no more of the number that's wrong  
When it strikes eight.

G. M. T.

Contributions to this column should be addressed: The Editress,  
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## LONDON TELEPHONE SERVICE NOTES.

### Sales Branch Notes.

DURING the month of June there was a net increase of 1,220 stations, as compared with an increase of 549 stations in the corresponding month of last year. A further milestone on the way to 1,000,000 telephones was passed in the second week in June, when the 800,000 mark was exceeded. The number of kiosks existing in the L.T.A. had reached 3,658 by the end of June, 223 of this total being erected during the previous six months.

The reduced rental for hand-microphones, assisted by a postcard circulated with the quarterly telephone accounts, has stimulated the demand for these instruments. The total number ordered to the end of June was 185,851, an increase during the previous three months of 20,304.

The distribution of advertising literature in selected districts by postmen was first introduced in 1928. From this medium of advertising, 4,973 exchange

lines, and 651 extension orders can be attributed to a large extent to this method of publicity up to the end of June last. It has been proved that this method of approach often prepares the way for a call by a Sales Representative, particularly in cases where prospects view with suspicion all canvassers.

*Staff Salesmanship Scheme.*—The progress of the scheme since the commencement is given below:—

	Total Number Ordered.	Number Ordered month ended July 13, 1933.
Exchange lines ...	2,223	93
Extensions ...	2,531	168
Private lines ...	28	2
Plugs and sockets ...	462	32
Hand-microphones ...	13,284	898
Extension bells ...	1,207	92
Other apparatus ...	1,255	80
Total ...	20,990	1,365

A postcard was recently received in a Sales District Office asking a representative to call at a given address.

On arrival the Sales Representative learned that the applicant had only just arrived from the East and was anxious to know the cost of a dog licence, a wireless licence and the availability of exchange. The information required was promptly furnished, supplemented by the cost of a telephone—the three completing a useful trio.

A subscriber of foreign extraction in business in London was recently persuaded materially to increase his telephone installation. On receipt of his telephone account he discovered that the additional cost was much higher than he anticipated, and alleged—wrongly, of course—that the additional charges had not been correctly represented to him. Correspondence and interviews ensued, during the course of which it was discovered that the subscriber after experiencing the use of the additional facilities, mellowed considerably in his attitude, and plainly veered round to the view that the additional facilities were proving to be a profitable investment after all. A clear example that the proof of the pudding is in the eating.

### London Telephone Service Sports Association.

Sports club secretaries are reminded that arrangements have been made for trophies and cups to be insured by the Association. It is essential that particulars of such prizes should be scheduled by the insurance company and the necessary information should be passed to the Association secretary for the purpose.

The accounts for the annual gala have now been made up and there is a profit of over £4. This result is due to the wonderful response of the staff and the various staff associations. One of the latter bodies is turning over in its mind the question of the provision of another trophy. It is hoped an affirmative decision is soon reached, as there are plenty of sportsmen and women in the L.T.S. ready to go for it. Don't let the matter drop, Mr. Shepherd!

Football in the L.T.S. is now dead. What a shame! We have Mr. Culley bursting to expend his energies on L.T.S. players and we have to let his services go to others.

An honour has been conferred on the L.T.S. (C.O.) Netball Club. At the invitation of the City of Oxford Education Committee and the All England Women's Netball Association, our 1st team was invited to play an exhibition match *v.* Oxford University on May 30 last, at Oxford, where a rally of some 200 netballers was held. The match commenced directly after a long journey (on a grass court vastly different from the hard court in London), and resulted in our team beating the University by 16 goals to 5, notwithstanding the handicaps.

After a very hurried tea, and a rush through Oxford to the station, without time for changing, the team returned to London tired, perhaps, but happy at not only being able to win their match but also to know that their game was so greatly admired by those who know in the netball world. This team is to be congratulated on their attainments, as they are the champion team of the Civil Service and their standard of play on all occasions is first class. Now why should not some more L.T.S. teams reach this standard? Toll A Exchange have done a good bit to raise their standard of play and set a good example for all L.T.S. clubs. More netball clubs are wanted in the L.T.S. and Miss Sanders (City 2000, Ext. 610) will tell anybody interested how to join or form a club.

It is hoped the hockey and swimming members of the staff whose clubs have been disbanded recently will get together again wherever possible. There must surely be sufficient numbers in the new multiple exchange buildings to form clubs. If any help is wanted the Hockey or Swimming Association members will give it or the Sports Association Secretary would gladly help, if at all possible.

The Exchange Swimming Association has fixed Oct. 5, 1933, for the annual gala at the Marshall Street Baths. Keep the date free.

The L.T.S. cricket team is giving and taking hard knocks. A bold entry was made into Civil Service cricket this season. In the Curtis-Bennett Shield our first and last round match was against the Admiralty (not a bad little team). We lost, but we can honestly put defeat down to the weather. L.T.S. batted first, and made over 160, but during tea interval rain poured down and on resumption of play the pitch and field were like a skating rink. On the Friday before Whitsun the Secretary's Office went down to the L.T.S. In the L.T.S. League the leaders at present are the Messengers. The Traffic Branch is wondering whether the Messengers will stay on top to the finish.

There is some talk of a real good social evening at the Lambeth Baths in October. It is hoped that if the scheme comes to a head the staff will turn up in hundreds, especially those in the Districts south of the Thames.

The Civil Service Sports Council has had to face a very serious financial problem for many months. Debts have been mounting up. Loans incurred on the personal guarantee of some of the members. Can it be imagined what these sportsmen have endured with this burden on their shoulders and *au contraire* the immense relief they now enjoy—a well wisher has made an anonymous gift of £10,000 to the Council—bless him!

#### London Telephone Service Horticultural Society.

The summer show of the above society was held at Cornwall House on Friday, June 30, 1933, and was highly successful. The opening ceremony was performed by Mr. W. H. U. Napier, C.B.E., the Controller (President of the Society), at 1.15 p.m. and during the remainder of the day, up to 7 p.m., the exhibits were a source of delight to the many members of the staff and their friends who visited the show. During the afternoon Mr. Napier got Sir Edward Campbell, M.P., Parliamentary Secretary to the Postmaster-General, to pay a surprise visit to the show. In a delightful speech Sir Edward offered his congratulations to all the exhibitors, and complimented the prize winners on the high standard reached.

Other distinguished visitors were Mr. Gomersall, the Superintending Engineer for the London District, and Mr. Robinson, Chief Inspector of Taxes in Cornwall House.

The "Sage-Taylor" Challenge Cup for roses was won by Mr. J. Hinshelwood, and the full list of prize winners is as follows: *Class 1*—Mr. H. E. Reimann, Mr. F. Oliver, Miss H. Oakley; *Class 2*—Mr. J. Hinshelwood, Mr. F. Oliver, Mr. H. J. Hamilton; *Class 3*—Miss I. E. Impey, Miss V. F. Young, Mr. H. A. Baker; *Class 4*—Mr. J. Hinshelwood, Mr. H. G. T. Adams, Mr. H. J. Hamilton; *Class 5*—Mr. H. G. T. Adams, Miss Rendlesham; *Class 6*—Miss Rendlesham, Mr. H. G. T. Adams; *Class 7*—Mr. H. G. T. Adams, Mr. C. C. Jolly, Miss Rendlesham; *Class 8*—Miss Young, Mr. H. J. Hamilton, Mr. H. G. T. Adams; *Class 9*—Miss Maffey, Mr. H. J. Hamilton; *Class 10*—Mr. H. A. Bishop, Mr. H. J. Hamilton, Mr. A. M. B. Hough; *Class 11*—Mr. E. Bolton, Mr. H. G. T. Adams, Mr. A. C. Norris; *Class 12*—Miss E. M. Tringham, Mr. A. C. Norris, Mr. E. Bolton; *Class 13*—Mr. H. J. Hamilton, Mr. C. C. Jolly, Miss F. E. Barrows; *Class 14*—Mr. E. Bolton, Mr. J. Hinshelwood, Mr. H. J. Hamilton; *Class 15*—Mr. H. G. T. Adams, Mr. H. J. Hamilton, Miss C. Maffey; *Class 16*—Miss V. Taylor, Mr. F. Oliver, Mr. H. G. T. Adams; *Class 17*—Miss Hunt, Miss I. E. Impey, Miss Temme; *Class 18*—Mr. H. J. Hamilton, Miss Maffey, Mr. H. A. Bishop; *Spotting the Seeds*—Mr. H. J. Hamilton, Mr. H. A. Bishop.

#### Retirement of Five Chief Supervisors.

"And doth not a meeting like this make amends,  
For all the long years we've been wandering away,  
To see thus around us our youth's early friends,  
As smiling and kind as in that happy day."

Some such thought must have been present in the minds of many of those who met in the dining room of Faraday Building on the evening of May 25, when the room, large as it is, was filled to overflowing with telephone staff, past and present, of all ranks, at a farewell gathering and presentation to five "Chief Supervisors" on the occasion of their voluntary retirement from the Service.

The officers concerned were Miss M. D. Johnston, Miss R. James, Miss A. L. Morrison, Miss E. R. Johnston and Miss A. L. Knapp. Evidence of the affection and esteem in which these ladies are held was provided by the enormous crowd of friends who were present. Each of our retiring colleagues was the recipient of a handsome present from the L.T.S. staff as a whole, but, in addition, each had a beautiful gift from the staff of her own exchange and numerous individual presents from personal friends in the Service.

Among those whose presence gave great pleasure to the gathering were the Controller, Mr. Napier, the Deputy Controller, Mr. Pink, Assistant Controller, Mr. Crum, Mr. Edmonds, Chief Inspector of Telegraph and Telephone Traffic, and Mr. P. G. Head, Miss Cox, Superintendent of Female Staff, and her predecessor, Miss Heap.

Mr. Dive, Mr. Corner, Miss Ralph and others who were unavoidably prevented from attending sent letters of greeting and farewell which were read to the assembly by Miss Cox, who, in opening the proceedings, referred to incidents of interest in the official careers of the women who were retiring, and expressed her appreciation of the assistance they had always given her. Mr. Pink also paid tribute to their good work and helpfulness in the earlier days of telephony.

Miss Heap, in an amusing speech, described the difficulties encountered and overcome when she, with some of the Supervisors now retiring, first mastered the rules of telephone operating and then trained the necessary staff and opened the London Telephone Service. Miss Cox then asked the Controller to make the presentation. The gifts, which were chosen with regard to the wishes of the recipients, were as follow: Miss M. D. Johnston, diamond ring and beaten silver cream jug and sugar basin; Miss R. James, field glasses; Miss A. L. Morrison, a cheque; Miss E. R. Johnston, a wireless set and cut-glass scent spray; Miss A. L. Knapp, a vacuum cleaner.

The Controller presented the gifts with an appropriate and amusing speech in each case. His reference to the awkwardness of presenting a ring to a lady before so many witnesses caused much laughter.

Miss James responded on behalf of the recipients of the presents, and although obviously moved by the occasion, conveyed in a happy speech the thanks of her four colleagues and herself. Following the presentation refreshments were served and the *Conversazione* began in real earnest. How we enjoyed it!

Although the gathering was tinged with regret at the departure of our five colleagues, it was also one of reunion and greeting with hundreds of others.

News of the gathering had spread far and wide and crowds of old friends no longer in the Service, including many who are now wives and mothers, turned up to honour the occasion. The tide of greetings and reminiscences rose high, and the general feeling was that one such evening was inadequate.

The efficient organisation and catering arrangements, and the service of Miss Phyllis Murray's Band, which provided a pleasing "side tone," assisted greatly in the undoubted success of a memorable evening.

#### Personalia.

##### Resignations on Account of Marriage.

##### Assistant Supervisors, Class II.

Miss E. M. Webb, of Putney.

##### Telephonists.

Miss D. I. Barnsley, of Tottenham.	Miss O. M. Kirby, of Sutton.
" E. M. Wilson, of Harrow.	" D. E. Wallis, of Tandem.
" A. A. Thurston, of Waterloo.	" E. F. M. Bignell, of Holborn.
" M. W. Featherstone, of Ealing.	" N. E. Hitchcock, of Holborn.
" D. M. A. Little, of Tudor.	" L. E. Wade, of Museum.
" O. G. Norrington, of East.	" E. D. White, of Museum.
" G. E. Wedge, of East.	" G. E. Goodchild, of City.
" D. G. D. Janes, of East.	" E. E. Rockall, of Toll "A."
" V. G. Gostling, of Chigwell.	" M. B. Jaggs, of Toll "A."
" H. E. E. Taylor, of Brixton.	" D. W. M. Brooker, of Toll "A."
" E. C. Pilditch, of Acorn.	" A. C. Adams, of Toll "A."
" K. A. Yates, of Acorn.	" D. M. E. Fear, of Toll "A."
" G. E. Fall, of Toll "B."	" H. M. Lechup, of Amherst.
" J. P. C. May, of Toll "B."	" L. D. Barrett, of Trunk.
" E. M. Flower, of Kingston.	" H. E. Cox, of Trunk.
" E. M. Yalden, of Kingston.	" N. R. Brooker, of Trunk.
" M. D. Absolom, of Royal.	" W. M. Godfrey, of Trunk.
" G. M. Fuller, of Royal.	" G. W. Layton, of Metropolitan.
" K. L. Cuell, of Royal.	" L. A. Pateman, of Malden.
" C. G. Moore, of Royal.	" C. Hillman, of Welbeck.
" M. E. Wiles, of Central.	" E. M. Carter, of Wanstead.
" E. E. Jones, of Central.	" R. A. Hayland, of Willesden.
" A. M. M. Tant, of Central.	" E. B. Pleasants, of Romford.
" C. Oliver, of Clerkenwell.	" L. J. Liddall, of Directory Enquiry.
" M. B. Smith, of Clerkenwell.	" B. Willy, of Directory Enquiry.
" M. Haizelden, of Hop.	" J. E. H. Jones, of North.
" P. E. Briggs, of Hop.	" A. E. Blay, of Molesey.
" M. M. Parker, of Hop.	" D. S. Bench, of Victoria.
" J. M. Black, of Lee Green.	" E. M. Cocker, of Victoria.
" B. E. Reffell, of Mayfair.	" M. Edwards, of Victoria.
" K. M. Day, of Mayfair.	" I. E. Tucker, of Victoria.
" O. M. Perkins, of Hayes.	" M. S. O. Williams, of Victoria.
" A. B. Monkhouse, of Reliance.	" V. M. Frost, of Chiswick.
" I. Moir, of Clissold.	" A. A. Lee, of Kensington.
" L. F. Challis, of Clissold.	" A. C. Davidson, of Kensington.
" I. M. A. Smith, of Hounslow.	" E. J. Searle, of Kensington.
" G. P. M. Wood, of Hounslow.	" D. M. Cooper, of Kensington.

## LONDON ENGINEERING DISTRICT NOTES.

*City of London Police Signalling System.*—The supersession of the City of London Police Ambulance system by a telephone system with outward lamp signalling is in hand. The existing street call points will be replaced by 47 posts of a new type and 4 kiosks. An additional point will be established by a kiosk. The scheme involves the provision of an electric supply to each point for the 100-watt lamp which is contained in a lantern fitted to the roof of the kiosks and to most of the posts. In eight cases the lantern will be fitted on a wall bracket separate from the post. The posts have three compartments; the uppermost will contain the telephone, the middle will be reserved for the accommodation of ambulance stores, and the lowest will contain the terminating and protective devices. The points will be connected to a new 2-position switchboard equipped for 80 lines on a C.B. basis at the City of London Police Headquarters.

*Diversion of Underground Plant.*—In connexion with the reconstruction of Chancery Lane Tube Station, extensive alterations to the Department's underground plant are being made in order to clear the space required for the new underground booking hall and subways. The work entailed the replacement of a portion of the old Parcels Tube and 71 junction cables, 21 trunk cables, and several subscribers' cables are being diverted to new routes; 18 of the important trunk cables, among which are those connecting London, Derby, and Bristol, are being rebalanced. In all, 3½ miles of new cable will be drawn in, 33,000 wires jointed, and 80,000 wires changed over.

The widening of the roadway at High Street, Stratford and the rebuilding of the bridge over the Three Mills River have necessitated the diversion of 12 junction cables and 6 trunk cables to new routes.

The reconstruction of Bromley Market Square and the building of a new Town Hall have rendered it necessary to divert the following trunk cables:—

London—Sevenoaks—Tunbridge Wells, No. 1.  
 " —" —" —" —" No. 2.  
 " —Westerham, " —" —" —"

together with 9 subscribers and junction cables, new ductwork being necessary.

*Exhibition at the Advertising and Marketing Exhibition held at Olympia from July 15 to 25.*—The Post Office stand in the Grand Hall included a display of the latest types of telephones, a working teleprinter, a "self-talking" telephone (aided by gramophone record), a final selector switch operated by the number dialled, and a demonstration of the "on demand" trunk service. Visitors were invited to make calls on an automatic basis via trunks to those towns to which the "on demand" service is available. The progress made in publicity by the Department was illustrated by posters, literature, and the use of a projecting lantern and screen.

*Kensington Automatic Exchange.*—This exchange was opened on July 15, replacing the old National Telephone Company's exchange of the same name, which has been in service since 1901, thus making another step towards the completion of the scheme for the conversion of all the exchanges within the 10-mile circle to automatic working. The number of subscribers' lines changed over at this transfer was 5,006, and the number of trunks and junctions brought into use at the new exchange was 1,477.

*Kensington Sub-Tandem,* which is housed in the same building, and which will serve as an automatic switching centre between exchanges in the western portion of London and exchanges in certain other districts, where direct routes are not justified, was opened beforehand on April 10, 1933. Both transfers were made without hitch and the two exchanges are working very satisfactorily.

*Sports.*—The Civil Service ¼-mile Swimming Championship was decided on July 3 at the Tooting Bee bath, and resulted in a win for D. K. Brenton of the London Engineering District in 6 mins. 18 secs. H. F. Crow (L.E.D.) finished 5th, and C. E. Green 9th. Brenton also won this title in 1931, when he covered the distance in 6 mins. 51 secs.

The L.E.D. Cricket team have had a great fight in the Civil Service Shield against the Ministry of Labour (Headquarters), beating them (after 2 drawn games) by a score of 201 (Bromfield 81). This qualified the L.E.D. for the 4th round, in which they have been drawn against the holders of the shield—the Customs and Excise. The game will be played at Raynes Park on Aug. 1.

A novel item of the season has been a cricket match between the Football Club and the Motor Club. A most enjoyable time was spent when these two enthusiastic clubs met on "neutral ground." There were no fouls, no off-sides, but a few skids and a "touch" of body line. The Football Club scored 104 and 35 for 2, the Motor Club 42 and 79. The next "contest" between these two clubs will be a swimming race at the annual Gala at Marshall Street Baths on Sept. 19.

The L.E.D. Lawn Tennis championships were decided at Waddon during the week ended July 22.

In the Gents Doubles, H. W. Fulcher (Headquarters) and W. F. Boryer (X.W.) defeated E. C. Dobie and V. Smith (L.N.E.) by 3-6, 6-4, 6-1. The winners are both Vice-Presidents of the Sports Association.

In the Gentlemen's Singles, E. C. Dobie defeated H. W. Fulcher by 7-5, 7-5. The Ladies' Singles were won by Miss Aylett, who defeated Miss Griggs 4-6, 6-3, 6-2, and the Ladies' Doubles by Miss Solway and Miss Griggs who defeated Miss Lynch and Miss Aylett, 5-7, 6-4, 6-1.

The L.E.D. athletics section scored a great win in the Civil Service Inter-Departmental Relay Championship. C. E. Cheyne (I.N.W.) ran a magnificent ¼-mile and finished first and handed over to R. C. W. Walker (I.C.T.) for the 1st 220, who retained the lead. He handed over to W. Codling (X.C.T.), but lost a couple of yards in passing the baton. Codling handed over to Bareford for the final 440, four or five yards behind, and Bareford, running a well-judged race and saving himself for the "home straight," came along with a splendid burst to win on the tape. A wonderful all-round effort. H. E. Bareford was also second in the 220 yards handicap, and is evidently a youngster of very great promise.

## "HOW TO GET THE BEST VALUE FROM YOUR TELEPHONE SYSTEM."

THIS is the title of a booklet published by the Telephone Development Association. It is designed more especially to meet the case of the P.B.X. subscriber and contains many useful suggestions and hints on how to get the best out of a private branch exchange. One section deals with suggestions to the management, another with suggestions to P.B.X. operators, and a third with suggestions to all telephone users in business firms. The maxims of courtesy, common sense, promptness, clear-speaking, and attention to time-saving detail which they contain, are old and yet ever new, and there are few subscribers and operators who will not gather from them something which will enhance the quality of their telephone service. The preface rightly insists that, in truth, "telephone users can do a great deal more than they realise to bring about the ideal state of affairs."

Copies of the booklet are available free to all P.B.X. subscribers on application to the Telephone Development Association, 10, Bedford Street, Strand, W.C.2.

## PARLIAMENTARY ITEMS.

ON June 13 last the Postmaster-General, in the House of Commons, in reply to Mr. Hannon, who desired to be informed as to what precautions had been taken to avoid "listening in" by amateurs on the telephone circuits between London and Montreal, India and South Africa, said so far as the British terminals of the various overseas radio-telephone services operated from London were concerned, special equipment to ensure privacy of conversation against wireless listeners had actually been provided. "Complementary apparatus was already fitted at the corresponding overseas terminals in practically all cases, and every effort was being made by the administrations concerned in the few outstanding cases to provide the necessary apparatus at their end at the earliest possible moment. No complaints had been received by the Post Office of tapping of telephone calls between London and any of the overseas countries with which telephone connexion could be obtained in London."

On June 19 last also Sir K. Wood maintained, in reply to Mr. Holford Knight, who asked "what steps the Postmaster-General proposed to take to safeguard the interests of listeners-in," owing to the "frequency of interference with broadcast reception by electric tramway and trolley omnibus services," that "the difficulty could only be cured economically at the source."

# THE Telegraph and Telephone Journal.

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SEPTEMBER, 1933.

No. 222.

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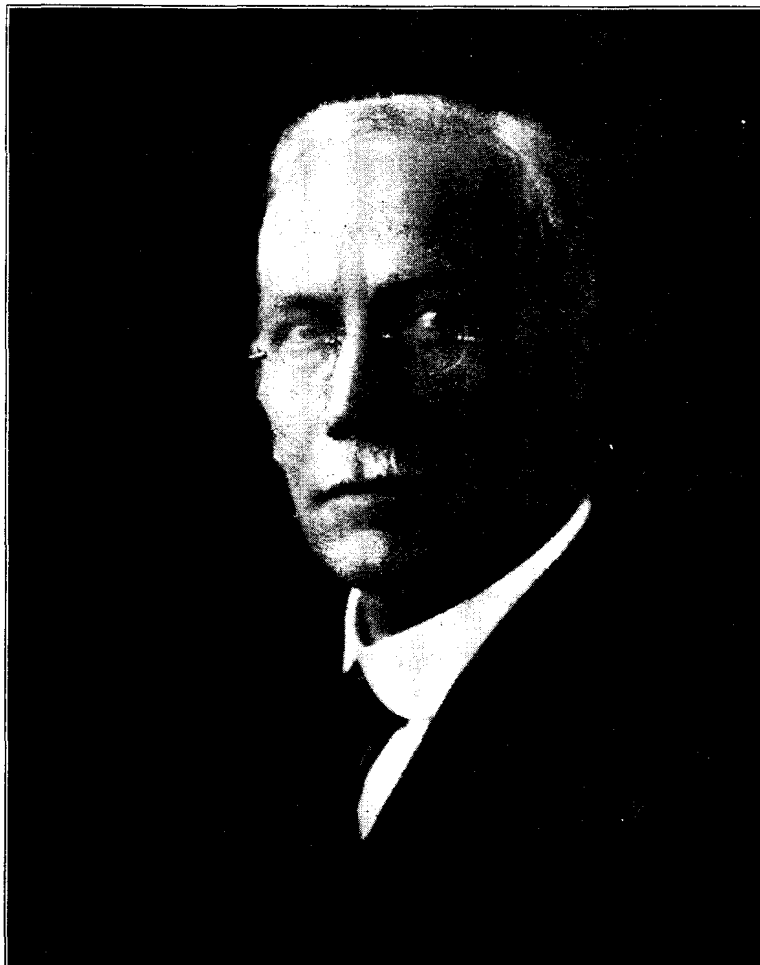
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## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CXII.

MR. F. FERGUSON.

MR. FERGUSON has had a varied and interesting career. For many years he was British Postmaster of Constantinople, when he was not infrequently called upon to handle matters which would be regarded as wholly outside the functions of a Head Postmaster in this country. His intimate knowledge of the oriental character and his fluency in the French and German languages placed him in a favourable position to deal with many knotty problems. The foreign Post Offices were objects of intense suspicion and dislike to Turkish officials, who lost no opportunity to show their hostility. Especially was this the case in the three months preceding the entry of Turkey into the world war. When the final crash came all the British officials



were forced to leave Constantinople at 24 hours' notice.

After joining the Home Service, Mr. Ferguson was appointed to Boston for a few months, afterwards serving in succession as Head Postmaster at Croydon, Exeter and Hull, from which city he was appointed to his present post of Postmaster-Surveyor of Newcastle-on-Tyne. He has taken a keen interest in welfare work, serving for many years as a Governor of a large Hospital and as a Prison visitor, besides being an active member of various committees.

Always greatly interested in sport, he was an ardent cricketer and tennis player in his younger days: and a "hiker" long before that word came into popularity. He is particularly fond of gardening and looks forward to the time when greater leisure will enable him to indulge this hobby to the fullest extent possible.

# The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

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Managing Editor - -		W. H. GUNSTON.

## NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

VOL. XIX.

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## TELEGRAPH TRAFFIC AND REVENUE.

THERE have been welcome signs of hopefulness in the telegraph world of late. For many years we have been used to declines of traffic: but in the last six months there have been definite *plus* signs. For example, the total telegraph traffic for June last shows an increase of 2.7%, as compared with the traffic for June 1932; and both inland and foreign traffic contribute to this increase. The increase of revenue (1.6%)—though smaller—is still significant.

It is not possible, however, to base any sound conclusions on a comparison of one month with another. For example, the Whitsun holidays came in June this year, in May in 1932. It is necessary to take a period of six months to make sure that such fluctuations are fully eliminated. A comparison between the first halves of 1932 and 1933 respectively leaves one in a mood of slightly chastened optimism. Traffic under all heads shows a decrease, but the total decrease is less than 1%. The decrease in ordinary inland telegrams is only .47%, but there is a decrease of 4.1% on the foreign side. Revenue is down by 2.8%.

Though the balance is still on the wrong side, the position is far more hopeful than at this time last year. The total traffic for the first half of 1932 showed a decrease of over 8% on the traffic for the first half of 1931; and foreign traffic in particular was down by over 14%. One of the most encouraging signs of the present situation is that foreign traffic, which for several years past has been sharply declining, shows an increase for both May and June last in comparison with the same months in 1932.

The deficit for 1932-33 is likely to be about £876,000 as compared with about £810,000 for 1931-32. Telegraph income decreased by about £255,000, and expenditure by £188,000: of the decline in expenditure about £150,000 represents a reduction in working expenses. As far as it is possible to judge from the first few months, the present financial year should make a better showing.

## HIC ET UBIQUE.

THE Board of Management of the German Post Office has approved the abolition of the installation charge of 50 marks hitherto required on the installation of the telephone service. France took a similar step last year.

Mr. Magnus Volk, the founder of the old well-known electric railway at Brighton, celebrated his 81st birthday last month. It is not generally known that when the first telephone exchanges were projected he devised and supplied instruments and switches for the Brighton, Hastings and Eastbourne exchanges and started these exchanges for the United Telephone Company.

Mr. Volk relates that in his early days there was no scientific method available for testing coils. But a strong minded girl worker volunteered her services, and when each coil was tried upon her "we judged its strength by the violence of her contortions." He also relates that when his railway was opened, an old lady thought there would not be so many thunderstorms, "since the railway would use up so much electricity."

Direct telephone communication is about to be established between Calcutta and Madras. Hitherto this has only been possible *via* Bombay. Three new telephone lines are also to be established between Calcutta and Bombay.

Developments are also taking place in Afghanistan. The telephone lines between Dir and Lalqila and between Chandarra and Lalqila are now completed. Construction of the line between Dilaram and Farah in Kandahar is making rapid progress, and is to be taken up to Sian Ab. When finished there will be telephone communication between Kandahar and Herat. There is already a through telephone service between Kabul and Kandahar.

It is reported that the Dutch Government has decided to take over the municipal telephone systems of Amsterdam, Rotterdam and The Hague, at a cost of 60 million florins, and to effect this transfer in five years' time.

From a typical Press cutting:—

"We boast about progress, but we have a great deal to learn. The automatic telephone system was generally used in Portugal, in even the smallest business places, several years ago, which is more than can be said of England, even to-day.

The writer contrives to suggest that the automatic system is in general and not partial use in Portugal, which is not the case. Automatic telephones have been in use for a great many years, not only in the smallest business places in Great Britain, but also in rural districts. Moreover, in this country the proportion of automatic to manual is greater than in Portugal.



COUNTING YOUR BLESSINGS.

Speaking, as Darby speaks to Joan,  
Said Smith: "I often wonder, wife,  
How we controlled our complex life  
Before we had the telephone."

"Some say their souls are not their own  
But at the stranger's beck and call  
When they are on the telephone.  
I have not found it so, at all!"

"From my armchair, as from a throne,  
With business I can keep in touch  
When I'm 'not feeling up to much'  
By turning to the telephone."

"And, when premonitory groan  
Warns me the doctor I must get,  
I need not plod through mire and wet.  
I get him by the telephone."

Said she: "I never feel alone  
Since, when I will, the voices clear  
Of distant dear ones I can hear  
Borne to me by the telephone."

"Moreover, we've acquired a tone  
And circulars come in galore  
Which never came to us before  
Ere we were on the telephone."

"Generous offers of a Loan  
Investment sound, or Car to drive.  
Such jolly little books arrive  
Since we came on the telephone."

"Before we had the telephone  
I often had to take a tram  
And buy two shillingworth of ham  
Else we must sup on mutton-bone."

"Such *contretemps* are now unknown  
Our larder always is replete  
Tradesmen for patronage complete  
Since we are on the telephone."

Blessings as though by zephyr blown  
Descend upon us in our street—  
Friends, taxis, doctors, things to eat—  
All summoned by the telephone.

W. H. G.

PARLIAMENTARY ITEMS.

IN the House of Commons, on July 27 last, Mr. Mabane asked the Postmaster-General whether any conditions were attached to licences issued by him to radio relaying stations regarding the publication of programmes distributed by these stations to their customers.

Sir E. Bennett, the Assistant Postmaster-General, said that the licence for a wireless exchange contained a clause to the effect that nothing in the licence authorised the licensee to do any act which was an infringement of any copyright which might exist in any published programme. The question whether the publication of programmes for radio exchanges giving certain details constitutes an infringement of copyright was a legal question which the Postmaster-General had no authority to determine.

The Postmaster-General, Sir K. Wood himself, in answering Mr. Gledhill, made substantively the following replies to questions regarding, "complaints of interference with broadcasting," and "the amount spent during the last five years, in research for remedial measures against such interference." No complete record of the number of complaints was available before October, 1931. During six months ended Mar. 31, 1932, the number was 7,114, and thence to Mar. 31, 1933, the figures were 20,624.

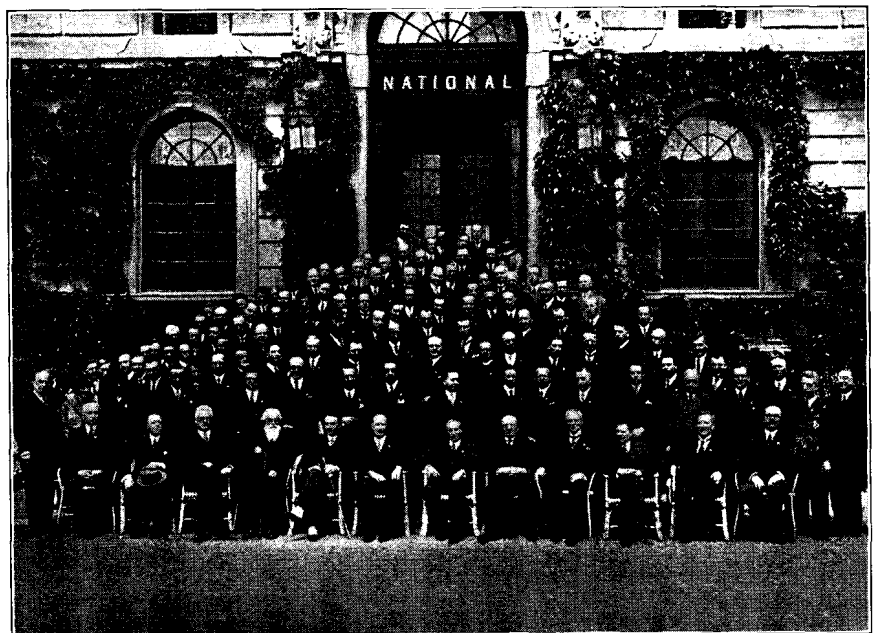
The total cost of engineering work in connexion with broadcasting during the last five financial years was: 1928-29, £12,245; 1929-30, £16,498; 1930-31, £23,103; 1931-32, £33,441; and 1932-33, £51,000 (approx.). It was not practical to sub-divide these amounts.

J. J. T.

THE LUCERNE BROADCASTING CONFERENCE.

INTERNATIONAL conferences, like the human race, have the "will to live" strongly developed. They usually last longer than is expected; and no conference worthy of the name feels that it has done its duty if it does not give birth to one or more future conferences. True to this tradition the Radio Conference which met at Madrid in the autumn of 1932 made elaborate provision in a special protocol for the holding of a European Broadcasting Conference in the spring of 1933.

This Conference met at Lucerne on May 15 and closed on June 19, thus lasting five weeks instead of three as anticipated. The Swiss Government were extremely kind and hospitable to their guests; but they let it be known at the outset that they had made their plans on the assumption that the Conference would finish in three weeks; and when it dragged on beyond that time, with no agreement in sight, the position became rather embarrassing. The various



DELEGATES AT THE LUCERNE BROADCASTING CONFERENCE.

committees then worked feverishly at all hours—on Sundays as well as on week-days; and even Whitmonday was treated as an ordinary working day. Several times the Conference nearly broke down: and on one occasion, when a deadlock seemed to have been reached, the Swiss authorities announced that the Conference would be wound up next day. Fortunately, however, the difficulty was overcome and the work continued.

The Madrid Conference allocated bands of wavelengths to the various types of services—broadcasting, marine, aeronautical, &c.—and it was the task of the Lucerne Conference to share out the waves in the broadcasting bands among the countries of Europe. A similar task had been undertaken by a Conference at Prague in 1929, which in the short space of two weeks had produced what is known as the "Plan de Prague." In those happy far-off days, however, the ether was not so congested as it now is. The Prague Plan provided waves for 145 stations, whereas at Lucerne it was necessary to find places for 235 stations. Not only this, but the power of stations has increased enormously since 1929.

No less than 35 Governments were represented at Lucerne; and most delegations included representatives not only of the Telegraph Administration but also of the broadcasting, marine and aeronautical services. The British delegates were Mr. F. W. Phillips and Col. Angwin of the Post Office; Col. Home of the Admiralty; Flight Lieutenant Duncan of the Air Ministry; and Mr. Boyd

of the Board of Trade. Mr. Ashbridge, the Chief Engineer of the B.B.C., and one of his assistants, Mr. Hayes, were attached to the delegation as expert advisers. Certain international marine organisations sent special representatives; and this small band of experts defended their interests so vigorously against the encroachments of broadcasting that they were popularly known as "the marine monsters."

At the outset, suggestions were made that wavelengths should be divided between countries in accordance with a mathematical formula, in which account should be taken of such factors as area, population, and the number of wireless licences. There are, however, a number of other less tangible factors which must be taken into consideration, and the Conference decided that it was impossible to establish a mathematical formula which would be fair to all countries. What it did was to agree upon a number of general principles, and then to set up a committee to frame a plan on the basis of these principles. Unfortunately, every country wanted to be represented on this committee; and anyone who is familiar with committees knows that the larger you make your committee the harder it is to make it do any useful work. The committee therefore adopted the wise plan of setting up a sub-committee consisting of only two persons—the Chairman, who was the head of the German delegation, and one other member—the President of the Technical Committee of the International Broadcasting Union. This sub-committee of two drew up one plan after another. Each plan, when it appeared, met with a great deal of criticism and had to be modified; and it was not until Plan No. 8 had been produced that a sufficiently large majority could be secured to justify its formal adoption.

In spite of all the efforts of the Conference, it was, unfortunately, found to be impossible to produce a Plan which every country regarded as acceptable. Twenty-seven countries approved the final plan and signed the Convention. Eight countries did not sign, namely, Holland, Sweden, Finland, Poland, Hungary, Greece, Lithuania, and Luxembourg. Any of these countries may, however, adhere to the Convention at a later date; and the Conference passed a resolution expressing its earnest hope that they will all do so, or that they will, at any rate, take up the wavelengths allotted to them in the Lucerne Plan.

Great Britain had ten waves under the Prague Plan; and the B.B.C. are at present using eleven, having borrowed one of the less valuable waves by arrangement with the country concerned. The Lucerne Plan gives Great Britain eleven waves. Most of them, instead of being exclusive as at present, are shared with low power stations in distant countries—for example, Russia and Palestine—which are not likely to cause interference. The long wavelength of Daventry remains exclusive.

The Plan contains a number of provisions in regard to the power of broadcasting stations. It lays down the general principle that stations should not use power in excess of that required for the provision of a satisfactory national service. In other words, if a station is giving a satisfactory service in its own country its power should not be increased merely in order that it may be heard over a wider area in other countries. In the case of certain stations a special maximum is prescribed in the Plan: other stations are subject to the general rule that on waves above 1,000 metres, the power must not exceed 150 kilowatts; on those between 272 and 545 metres, it must not exceed 100 kilowatts; between 240 and 272 metres—60 kilowatts; and between 200 and 240 metres—30 kilowatts.

The new Plan comes into force on Jan. 15 next, or to be exact at 00.01 G.M.T. on that date. At that moment almost every broadcasting station in Europe will be expected to change its wave. There will be a kind of wireless "general post"; and anyone who listens at that moment, while the stations of Europe are falling into their new places, may expect to hear some strange sounds. One delegate suggested that the noise would be like that of "devils unchained."

As usual at Conferences there was a long discussion concerning the next Conference. It was eventually agreed that a further

Conference should be held at any time to revise the Lucerne Plan if one-third of the signatories demanded it, and that in any case a Conference should be held after the Plan had been in force for two years. An attempt to reduce this period from two years to one year was defeated by the narrow majority of 16 to 15. While the Convention is in force any new station not mentioned in the Plan may only be established if all countries concerned agree.

A few days after returning from Lucerne, the writer was invited by the B.B.C. to broadcast a short talk about the Conference immediately after the second news bulletin. After spending five weeks arguing about broadcasting stations and wavelengths, it was interesting to have a few minutes practical experience of the art of broadcasting. Probably the best known voice in the world—and certainly one of the best in quality—is that of Mr. Hibberd, the chief announcer of the B.B.C. It was extremely interesting to sit beside him in a tiny studio at Broadcasting House while he read the news bulletin. Visitors to a telephone exchange are usually struck by the fact that the operators are speaking very quietly. It is the same thing with an expert broadcaster. Mr. Hibberd speaks very quietly and calmly; and one could not help being struck with the everlasting miracle of broadcasting when one reflected that that calm, quiet voice, which hardly broke the dead silence of the studio, was reaching millions of people hundreds of miles away. The talk on the Lucerne Conference was probably not of much interest to the great majority of broadcast listeners. Fortunately for the peace of mind of a broadcaster, he remains in blissful ignorance as to the number of listeners who switch off immediately they hear his voice. The case is very different in the House of Commons, where immediately a dull speaker rises—even though he may hasten to explain that he is not going to detain the House for more than a few minutes—Hon. Members rise in a body and troop out without any regard for his feelings.

Everyone who attended the Lucerne Conference was impressed with the enormous importance of broadcasting and its vast potentialities for good or evil. The use of the broadcasting service for international propaganda is one of the burning problems of the moment, and was present in everyone's mind, although, as it was not on the agenda of the Conference, it could not be discussed in public. The importance now attached to broadcasting is illustrated by the fact that the European Governments sent no less than 200 delegates to Lucerne to decide on the sharing out of 130 wavelengths. Truly wavelengths are more precious than rubies.

There was a great feeling of relief at the Conference when it at last became clear that it would be possible to obtain a Convention and a Plan acceptable to all but a few countries. If no agreement had been reached and the Conference had broken down, the situation would have been very serious. Even now there will be difficulties; but one can only hope that, in the general interests of Europe, the eight non-signatory countries will fall into line, and that every country, without exception, will loyally accept the new Plan and will strive to make it a complete success worthy of the beautiful city whose name it bears.

F. W. P.

#### FOR OUR ADVERTISERS.

ALL enquiries should be addressed to the Department of Overseas Trade, 35, Old Queen Street, London, S.W., except where otherwise stated, quoting reference number in all cases. Supplies, &c., required by:—

*Australia.*—Melbourne. Posts and Telegraphs Department. Sept. 19. Telephone transmitters and parts (A.Y. 11903). Sept. 26. Telephone receivers and parts (A.Y. 11916). Oct. 3. Telephone cord tags and connexion plates (A.Y. 11917). Sept. 9. *Special* (extended from Aug. 18 last). State Electricity Commission. Paper and varnished-cambic insulated and lead-covered and steel-wire armoured cable. Mr. W. J. Price, Secretary, Electricity Commission, 22-32, William Street, Melbourne.

*Egypt.*—Cairo. Sept. 11. Controller of Technical, Industrial and Commercial Education. Mechanical and electrical equipment for the Abbassia Technical School (A.Y. 11879).

*New Zealand.*—Wellington. Sept. 12. Post and Telegraphs Department. Battery plates (A.Y. 11898).

*Portuguese E. Africa.*—Lourenco Marques. Sept. 22. Port and Railway Administration. Cable connecting boxes and terminal boxes (A.Y. 11909).

*South Africa.*—Cape Town. Sept. 27. Electricity Department. 20-h.p. motor-alternator set for meter testing (AY 11896). J. J. T.

## PORTABLE TELEX.

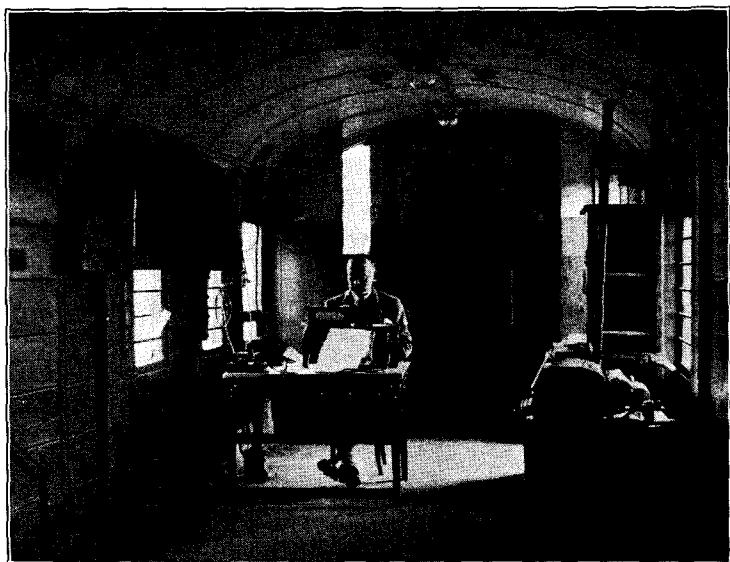
BY A. P. OGILVIE (*Headquarters Traffic Section*).

COMMENDABLE enterprise on the part of the *Scotsman* newspaper afforded the Post Office an opportunity, recently, of testing under actual conditions the utility of the Telex system for transmitting press copy on the occasion of an important national tournament, or show, from a centre at which Telex service is not at present available. The usual alternative methods of communication adopted by reporters at such events are to send their copy either (a) by train, (b) by public telegraph when special facilities are provided, or (c) by telephone. Each method has its merits, but the direct connexion afforded by the telephone places it in a favoured position as far as speed of transmission is concerned. On the other hand, incidental internal difficulties apparently arise which detract from this advantage, and in that connexion it is appropriate to quote from a recent issue of the *World's Press News* :—

“ A standing complaint with correspondents is the amount of time and money needlessly wasted in trying to telephone stories. After getting through to Manchester or London there is generally a barrage of questions to be answered before someone can be found to take the story.

“ It is annoying, when after having rushed to the telephone with not a minute to spare, an accredited correspondent is met with such demands as ‘ Who’s that ?,’ ‘ What have you got ?,’ ‘ Is there much of it ?,’ ‘ When did it happen ?,’ and ‘ Can you hold on a minute and I’ll get someone to take it off ?.’

“ Thousands of pounds must be wasted annually in such needless delays.”

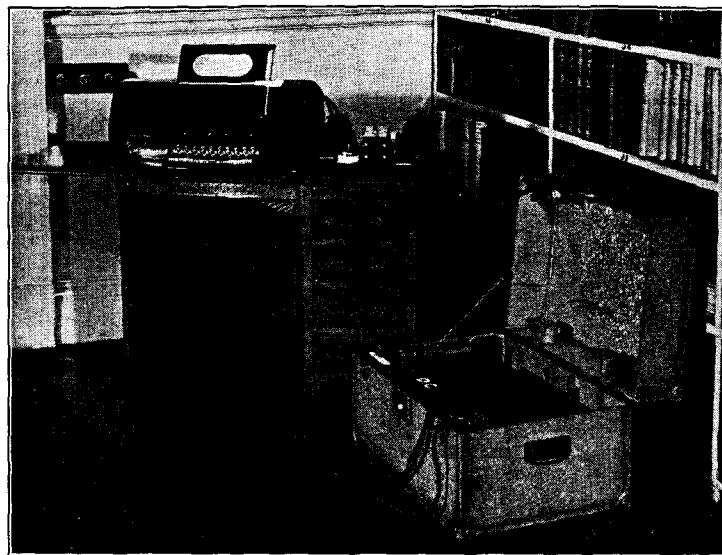


[Photograph by Ian Smith, Edinburgh.]

FIG. 1. TELEX ACCOMMODATED IN RAILWAY COACH.

It may also be added that telephoned copy taken down in shorthand at the newspaper office involves, first, continuous attendance at the telephone, sometimes for long periods, and then transcription, usually by the same person. This imposes a serious drag on the quick handling of all but “ flash ” messages, and it is not surprising that the Telex system offering the advantage of direct telephonic connexion with the added attraction of typewritten reception, without continuous attendance, should appeal strongly to the imagination of the newspaper man.

Before, however, temporary service of this kind could be offered, details regarding the transportability of the Telex equipment, line and power facilities, routing and operating procedure required investigation and study. Discussion with the *Scotsman* technical representative assisted in determining the limits within which an initial scheme could be operated, and ultimately the newspaper management showed their confidence in the system by placing a firm order for the first portable Telex set to be constructed.



[Photograph by courtesy of “ The Scotsman.”]

FIG. 2. STANDARD TELEX SUBSCRIBER'S SET.

How well the Post Office engineers surmounted the problems involved in arranging the equipment in portable form and, at the same time, affording protection against damage may be gathered from a reference to Fig. 1.

The Teleprinter itself is carried in a strong packing case of special design which is in general use for the transport of these machines, while the auxiliary equipment, viz., converter, switches, &c., is accommodated permanently in a metal-lined case measuring 2 ft. 1 in. by 1 ft. 3 in. by 1 ft. 5 in. and weighing 56 lbs. Two auxiliary units have been supplied, one for use when the local power supply is D.C., the other for use with an A.C. power supply. A universal Teleprinter motor capable of being driven from either D.C. or A.C. is fitted.

While this apparatus was being assembled the prospective renters made an urgent request for temporary Telex facilities to be provided at Gleneagles (Perthshire) during the Ladies' Open Golf Championship. It was agreed that a “ trial run ” would yield valuable experience but neither power nor accommodation were readily available. Ultimately the newspaper representative secured accommodation in the railway coach shunted into a siding adjacent to the golf course, which is provided by the L.M.S. Railway Company for the Post Office temporary telegraph office, and the power difficulty was overcome by arranging for a separate lead to the Telex from the “ special event ” petrol generator supplied for public circuits. A temporary line to the Auchterarder Exchange switchboard, which was given an appropriate Telex number, provided the necessary connexion with the telephone system, and the terminal station was completed by installing a standard Telex subscriber's table set (Fig. 2).

The results were entirely satisfactory. Calls were passed by *Scotsman* representatives to the Edinburgh Telex number at intervals throughout the event and many thousands of words of press copy were transmitted. An interesting feature was the procedure adopted in most cases of the reporter transmitting his copy from rough notes by Telex direct, with a consequent saving in work and time. For this purpose the Teleprinter local copy

was valuable. At the *Scotsman* office terminal the Telex apparatus was left unattended until copy was required or the bell signal indicated the finish of a message. Altogether the trial exceeded expectations and the terms of the letter of thanks sent later on behalf of the newspaper management to the Postmaster-General indicated how much the facilities afforded were appreciated.

The real test, however, came on the occasion of the recent Open Golf Championship Competition at St. Andrews, an event of world-wide interest. Already the portable equipment had been tested from Dundee at the Highland Show held there in June, and from the Burgess Golf Club later, where an international golf match took place. In addition, the *Glasgow Herald* newspaper—also teleprinter users—asked for Telex facilities at St. Andrews. Temporary conditions were readily established, and when the competition commenced the *Scotsman* set was working over an ordinary telephone circuit in an hotel adjacent to the Golf Course, while the *Glasgow Herald* set was installed in a temporary kiosk outside the Press Tent. The position of the latter attracted considerable public notice as the upper half of the kiosk door was open and the operation of the machine could be followed. The estimated amount of copy handled over both sets totalled from 10,000 to 15,000 words daily. On this occasion expert newspaper telegraph operators were employed to deal with the large volume of traffic. During the week of the event approximately 140 Telex calls from St. Andrews to Glasgow or Edinburgh were handled, totalling 53 hours paid time. The daily average holding time per call varied between 16 minutes and 40 minutes, while actual minimum and maximum holding times were 3 minutes and 121 minutes respectively. Both subscribers claim that their Telex service provided speedier communication than the alternative means adopted by competitive agencies and expressed gratification with the arrangements made, a result which reflects much credit on the efforts of the District Staff concerned.

## SERVICE SIDELIGHTS.

BY ENID CHAMBERS (*Telephonist, Flaxman Exchange*).

QUITE recently I have been reading in the American Telephone journals several very interesting accounts of cases where operators have been of valuable assistance to the public, and I would venture to submit the following stories, with the hope that they may be of use for insertion in our *Journal*.

The first one is rather pathetic! The caller was a charlady who was trying to get in touch with a boy whose mother was dying; and was calling for her son. The poor woman was so upset and unused to the telephone, she could not make the necessary enquiries herself, so a lady was doing her best to help.

Apparently the boy was once employed at a furriers in X. The name of the firm was not known, nor the full address. The Directory Enquiry were unable to help, owing to the incompleteness of the enquiry, and there was no record at all of a furriers in the road mentioned. The Buff Book was then consulted and other channels tried, but with the same result. The police in the district were then spoken with and asked if they could assist in any way. They did not know of a furriers, but suggested the name of a probable "hide" firm. The number was looked up in the Directory and rung, but after making extensive enquiries the P.B.X. operator said she was unable to trace anybody working there of the name required, but she suggested another firm. This number was looked up and rung, and eventually the required person spoke on the telephone.

The calling subscriber was then rung and the connexion set up between the son and the ailing mother's representative. The message given was a very urgent one, imploring the son to come at once as his mother was dying and calling for him.

This enquiry took, with the aid of my Supervisor, 45 minutes to settle, but it was worth it.

Another case was that of a young nurse-maid left in charge of a small infant, who suddenly had an attack of convulsions. Apparently her first thought was to fly to the telephone and ask for a doctor, feeling confident that the "O" operator would know just how and where to find one.

The address and telephone number from where the caller was speaking was taken and confirmed with the exchange records, in case, in the girl's agitation, a wrong number had been given. The Doctor's list was then consulted, and one by one they were rung in order of their proximity to the required address, but as it was during the afternoon several unsuccessful attempts were made; the advice from each being that "The Doctor was out visiting."

During this investigation the poor nurse-maid had hung up her receiver, only to dial "O" shortly after, more distressed than ever, asking what more she could do for baby. She was assured everything was being done to find a doctor for her.

Whilst several attempts were being made to obtain a doctor, my Supervisor called a Nursing Home which worked on the exchange, and explained the position to the matron. The nurse-maid was then connected to her and advice given.

In the meantime a doctor was obtained and the position again explained to him. He took particulars of the address, &c., and stated he would go round at once.

Shortly afterwards the Exchange was advised that the doctor had arrived, and we all felt very relieved. Poor baby!

The next little story might have cost me a P 18 form, but it would have been worth it.

Yesterday a call was received from a Call Office for "Directory Enquiry." As the connexion seemed to be set up for a very long time, I entered circuit to ascertain if assistance was being given, and was addressed by "Directory Enquiry" that they were endeavouring to help the caller.

It appeared that a very poor woman was trying to find the telephone number of the Convent where she had been staying the previous night, and where she had since heard a telegram enclosed in a letter had been sent to her. She was most distressed as she had not sufficient money to make the journey back to see if the telegram had arrived, and it probably meant work for her.

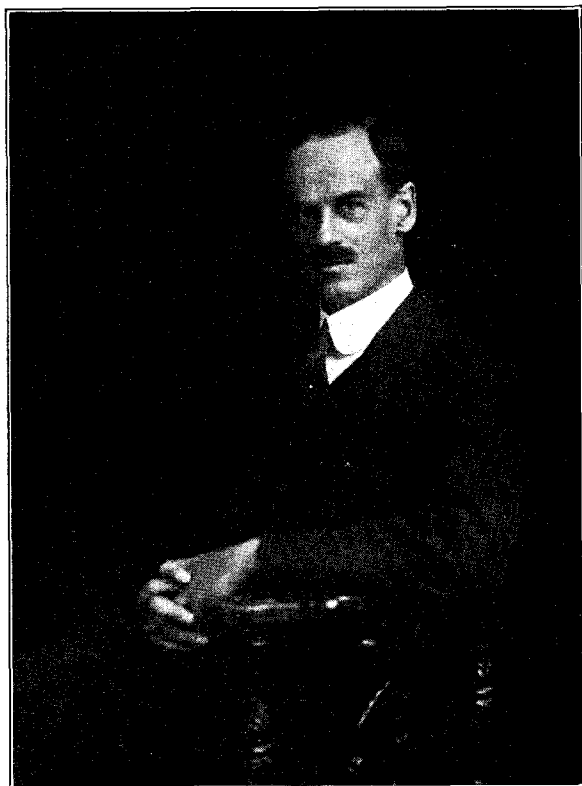
The Directory tried in vain to trace the number. The caller then asked "Directory Enquiry" if she could possibly give her the telephone number of any other Convent, because they would be sure to know of the one she wanted and would give her the number. After a short while Directory gave her an A . . . . number, and whilst the poor woman was trying to copy down the number I set up the connexion. The woman could not understand when she was through and kept asking if she should insert the two pennies (which I had not the heart to collect). This number was apparently not the right one, but the subscriber who answered knew of the Shelter, and offered to look it up for the caller, but he, too, was unsuccessful. I spoke with him, when he said he thought it might be near B . . . . I thanked him for his trouble and rang B . . . S.R., who suggested a probable number.

I rang the number given which proved to be the correct one, and then I connected the caller. She told her story, and after being kept waiting for some time was told that the letter with telegram inside was waiting for her and that it was in respect of work being offered.

The woman's expression of gratitude will long be remembered. The call took some time to settle, but to us in the London Telephone Service the word "service" stands for much! Besides is not our Exchange Motto—"Decus nostrum ministrando"—"Our Pride is in Serving."

## MR. W. BLANDFORD HARRIS—AN APPRECIATION.

MR. W. BLANDFORD HARRIS entered the Civil Service as a Second Division Clerk in 1892 and joined the Accountant-General's Department. In 1896 he was nominated for and passed the examination for the Supplementary Establishment, Secretary's Office, and served in the Telegraph Branch, Secretary's Office, until 1904. He joined the Foreign and Colonial Branch, Secretary's Office, under Mr. H. Buxton Forman and Mr. E. Crabb, and became one of the officers travelling with the Indian Mail to Brindisi. In 1912 he was attached to the International Bureau of the Universal Postal Union for the purpose of the International Radio Telegraphic Conference which was held in London in June and July, 1912, under the Presidency of Sir H. Babington Smith. In 1914 he had been appointed Attaché to the British Delegation to the Postal



[Photograph by Elliot & Fry.]

MR. W. BLANDFORD HARRIS.

Union Congress which was to have been held at Madrid in that year, but which was prevented by the outbreak of the Great War. During the whole of the War, Mr. Harris remained in the Foreign and Colonial Branch of the Secretary's Office, concerned with the Foreign Mail Services, arrangements for parcels for Prisoners of War, and various confidential matters. In June 1918 he was awarded the M.B.E.

In 1919 an Inspectorship of Postal Traffic was created to deal with Foreign and Colonial Mail arrangements, and Mr. Harris was the first holder of this post.

In July, 1920, he attended an International Conference at Paris, held for the purpose of facilitating and accelerating the renewal of Postal, Telegraph, and Railway Communications in Europe; and in October, 1920, he went to Madrid as Secretary to the British Delegation to the Congress of the Universal Postal Union.

In July, 1930, Mr. Harris was appointed Postmaster-Surveyor of Bristol and he immediately set to work to make himself thoroughly acquainted with the multifarious duties of his new

post. During his term of office there, Mr. Harris saw the Telephone system converted to Automatic working; the "Demand" service introduced to London and Birmingham, followed by other developments. His last act was to preside over the Civic Opening of the remodelled and re-equipped Instrument and Phonogram Rooms.

As a chief, Mr. Harris was always accessible to members of the staff, who were received with unflinching courtesy. If, as sometimes happened, he was approached by an officer with a grievance, and Mr. Harris felt he could not accede to the officer's request, the latter invariably felt he had been given a fair hearing. Perhaps the chief was seen at his best—at least by members of the staff—when presiding over Whitley Committee Meetings. In these meetings he was scrupulously fair, and whilst not forgetting his duty to the Department, whenever he could make a broad interpretation of a rule, in favour of the staff, he invariably did so. At the last meeting which he attended, the Vice-Chairman and Branch Secretary of the Union of Post Office Workers bore eloquent testimony to the Chairman's broad-minded administration, and to his custom of always being ready to hear the other fellow's view. Other instances of Mr. Harris's sense of fair play were seen in cases of promotion. Perhaps only those officers who were in close touch with him knew of his anxiety always to do the right thing.

Mr. Harris was very human and did not expect impossibilities from his subordinates. Whilst he did not "suffer fools gladly" he recognised that "to err is human." Moreover, in cases of distress or bereavement, his practical sympathy always went out to the sufferer.

His chief recreation was Golf, but he was not averse to joining in a Staff Skittle Match.

Many officers in Bristol and District will cherish very pleasant and grateful memories of our late Chief and will wish him a long and happy life of leisure, which is the fitting culmination of a highly successful official career.

T. R.

## "SALES AND PUBLICITY"—IS THAT ENOUGH?

BY H. W. SMART (Assistant Traffic Superintendent, Exeter).

THE Department's recent activities in the productive field of Advertisement have been much commented upon by both Public and Press, but after the element of surprise has been eliminated, the general tone is distinctly favourable. It would appear to be the common opinion, both outside and inside the Service, that the new Headquarters Section devoted to Sales and Publicity will, undoubtedly, serve a very real and useful purpose—which opinion has been, of course, already justified. This article, however, as will be seen from its heading, is intended to point out what is considered to be a weak spot in the present organisation, but at the same time it is intended to make the criticism as constructive as possible.

To state the case, in the first instance, as baldly as possible, it is considered that the word "Service" has been omitted from the above heading and from the title and constitution of the new Section. *The Department's best advertisement is the satisfied subscriber.* That, it will be said, is a well-known advertising motto adaptable to any trade or profession and so much used as to be "used out." But it is nevertheless true, and although the phrase itself may be rather ineffective through overuse, the principle behind it stands firm. Once the telephone has been installed, it is the service given which makes the subscriber satisfied or otherwise, and a subscriber's "advertising powers" are therefore dependent upon the service. Unfortunately, the said advertising powers do not vary, mathematically, with the quality of the service, for a slight drop in the quality reduces them practically to *nil*, while a further slight deterioration usually converts them to a malignant negative quantity.

At gatherings of business men in larger towns, or on social occasions in the smaller towns and country districts, it is rather surprising to note the frequency with which the telephone—and, always, the service it renders or fails to render—becomes the subject of conversation. This is especially noticeable at large cafes which cater for the business man's 11.0 o'clock coffee, and the fact is well known to, and often utilised by, contract officers in the large cities. The number of non-subscribers who are prejudiced against

the Telephone Service at such discussions must be very real, and such persons must also be difficult for the Sales and Publicity section to convince; for, despite the usual cynics, it is more natural to believe the views of people one knows than those expressed by a canvassing representative—especially if he represent a Government department.

A sudden burst of publicity may be able to swamp the insinuating effect of the dissatisfied subscriber on the man without a telephone, as a thick coat of paint will cover up rust, but rust on metal will work through any paint and such publicity will have no lasting effect.

The better course would, therefore, appear to be for the new Section to use publicity as a means of convincing such non-subscribers as are ready to be convinced, but also to do everything to satisfy existing subscribers who have justified or outstanding grievances. The Telephone Service *does* render a very efficient "Service after Sales," and advertisements should not be afraid of including this. One of those well-known inferiority complexes appears to have attached itself to this feature of the service, and the public have not been slow in sensing the fact and making good use of it.

It is the fashionable thing nowadays—and therefore much derided—to study the psychology of every type and combination imaginable, but important in this connexion as it may be to study the psychology of the ever-complaining subscriber, space mercifully prevents, and it will be best, perhaps, merely to study the general nature of the complaints received.

Complaints received (1) in the districts composed of a large city and its environs (e.g., Birmingham, Glasgow, &c.) differ from those received (2) in the large area country districts (e.g., Chester, Exeter, &c.), but the types of complaints vary but very slightly. There is, however, a decided variation in the number of complaints of each type received. For the purposes of this article, the complaints may be divided into just two types:—

(a) Trunk Service complaints.

(b) Maintenance complaints.

The proportion of complaints of type (a) (with which may be included disputed duration of trunk calls) is usually greater in districts such as (1) above, owing to the greater use made of the long-distance trunk service in those districts (although the question of transmission tends to even this out in more remote country districts). Conversely, the proportion of complaints of type (b) is usually greater in districts such as (2) above, owing to the smaller amount of underground cable in such districts and the consequently longer aerial lines, some of the Rural Party Line type.

Similarly, the method of handling subscribers also varies in these two types of districts. Subscribers in some of the larger towns do not mind (in some cases actually prefer) receiving replies to their complaints as verbal telephonic messages. In these cases, given a suitable officer, it is usually far easier to satisfy the subscriber and close the complaint case properly, i.e. to feel fairly certain that the point is settled and will not be raised again, but at the same time to leave the subscriber in an amiable mood. In the majority of cases, however, a written complaint must have a written reply, and the writing of a letter that will conclude a case in the full manner just mentioned is no mean achievement. This is a matter that could receive a good deal more attention than it does at present, and is also a matter which affects the Sales and Publicity section very closely; for a badly or carelessly written letter to a subscriber may affect development in an area where that subscriber is well known. Take an imaginary case: Mr. Jones is a non-subscriber whose friend, Mr. Brown, is a subscriber with a grievance that has remained and rankled due to the unsatisfactory closing of a case by careless letter. Mr. Jones receives a call from a telephone representative, or sees a telephone advertisement, and he, being already rather undecided about the matter, puts two questions to the representative, or to himself, similar to those very commonly received in complaints:—

(1) "Why should I have a telephone when Brown says it is out of order half the time?"

(2) "Why should I use the telephone when Brown says that, although he can get a good call to London, he can't speak to people at Little Snodbury-under-Hill? My business isn't with London, it's with Little Snodbury, and that's only 20 miles away."

These are questions which Mr. Jones must have definitely explained to him before he will sign for a telephone and be glad that he has done so. The last phrase is important, for we cannot be too often reminded that what we are really selling is not a telephone but telephone service.

Although more could obviously be written on this point, the foregoing will probably be sufficient to substantiate the opening statement—that a necessity exists for including the Service factor in the Sales and Publicity "movement." If agreed on this point, it seems that the best way to ensure its being carried out would be for a portion of the personnel of the Headquarters Sales and Publicity Section to be allocated to the duty of watching the service aspect of all new advertising schemes, and the same duty would also serve indirectly as a Headquarters liaison, in this connexion, between the provincial Traffic and Sales sections.

There would also be another very useful outlet for the activities of such a duty. At present, the transfer of the telephone service to a more modern system of working (at all but the smaller towns) is usually accompanied by a function which, in the relative official papers, comes under the heading of "Publicity." The C.B. or automatic telephone is now, however, much less the novelty that it was formerly, and there is a tendency for the function referred to to deteriorate into a mere occasion of social affability.

## TELEGRAPHIC MEMORABILIA.

WHEN this *Journal* went to press last month, the result of the action brought by Marconi's Wireless Telegraph Co., Ltd., against Philips Lamps, Ltd., for alleged infringement of certain patents, had not been given owing to the fact that "leading Counsel engaged in the case was also engaged in the Court of Appeal in another patent action."

The Marconi-Philips action was a particularly interesting one to the electrical world, but readers of these pages were doubtless not surprised to know that, "owing to the complexity of the technical matters arising therein, Professor E. V. Appleton sat with the judge as assessor during the hearing!"

His Lordship, Mr. Justice Maughan, in an elaborately written judgment traced the history of wireless down to the introduction of the de Forest Valve, and said they were concerned largely with the grid or repeat circuit and the anode circuit. His Lordship declared that "the valves used in the defendant's machine possessed very different qualities to the soft valve used in the 1913 patent, and that it was *not a valve* for receiving magnifications. He therefore came to the conclusion that the defendants had not infringed the plaintiff's patent, and that the action would be dismissed." The general costs were apportioned by His Lordship as to the Defendant's four-fifths and the Plaintiff's one-fifth.

An appreciable portion of the argument dwelt upon the point that His Lordship made regarding the issue of the "common general knowledge, that it was perfectly well known in 1913 that in order to obtain selectivity on sharp tuning it was necessary to reduce the resistance as much as possible."

One cannot but ask the question, without much chance of receiving anything like a satisfactory answer:—"What, on the basis of the above-mentioned standard of 'general knowledge of wireless in 1913,' could be taken as the basis for fixing a reasonable criterion of the general knowledge of the five million licence holders of Great Britain to-day?"

*Obituaries.*—In New York on July 10 the death occurred of a well-known director of research in the Bell Telephone Laboratories in the person of Dr. Harold de Forest Arnold, who, studying under Professor R. H. Millikan added very considerably to the efficiency of telephone transmission, thermionics and magnetics. Among other things he was also responsible for the development in the Bell Telephone Laboratories of the magnetic alloys, permalloy, and permivar. Dr. Arnold was a member of the Franklin Institute, the American I. of E. Engineers, &c.

It is regretted that this is the first opportunity which has been possible to figuratively place a few flowers upon the grave of the remarkable scientist, Dr. E. Fournier-d'Albe, D.Sc. (London and Birmingham), A.R.C., Sc., who passed hence recently in his 64th year. Born in London, educated in Dusseldorf and London, he was for some time assistant in the physical laboratories of the Royal College of Science for Ireland, and Trinity College, Dublin. He was Assistant Lecturer in Physics at Birmingham 1910-14, and Special Lecturer in the same subjects, Punjab University, Lahore, 1914-15. In 1912 he invented the Optophone, which enabled blind people to read normal print but the value of which could not become of general use due to the heavy cost. This latter difficulty was one he tried to remove, practically up to the day of his death. In 1929 he lost the use of one arm but still persevered with his useful work in telephotography and television.

Captain V. Campos, Commander of the Submarine Telegraph Cable Ship *Domina* (Telegraph Construction and Maintenance Co., Ltd.) is to retire at the termination of the present year, one is given to understand, after thirty-three years in this service. It is claimed for the gallant Captain that he has been present at the laying of well over sixty-thousand miles of submarine cable, and is likely to add yet a few more miles before he hauls down his flag.

In fact the *Dominia* at the actual time of writing is laying a new telephone cable this (August) month between St. Margaret's Bay and Calais.

*Presentations.*—There was a large gathering of friends and colleagues on the 9th of last month, who assembled in the Special Service Room, C.T.O., London, on the occasion of the presentations to Messrs. W. Charrosin, H. Lang, W. J. Peek, and W. Savage, all stalwarts of the Cable Room who have recently retired. In order of the names as above, the following were the respective choices of the right worthy recipients:—Two fireside armchairs, a gold watch, an electro-plated tea service, and a wireless set.

Professor Angelo Banti was recently the honoured guest at a banquet in Rome to celebrate the fortieth birthday of *L' Eletttricista*, of which Prof. Banti was the founder and is still editor.

*Countries.*—AUSTRALIA.—The Australian Broadcasting Commission, which commenced its operations twelve months ago, has apparently made its mark upon broadcasting in Australia. The number of listeners' licences have increased by 85,000. In the first place it is officially estimated that the A.B.C. would receive round about £250,000 from licence fees for the first complete year now closing. The Postmaster-General has even stated that listeners' licences may be reduced by three shillings from March next, when the payment by the Government to Amalgamated Wireless (Australia), Ltd., of 3s. from each fee, in payment of patent rights, will cease, so foreshadows the *Electrical Review*.

It may be interesting to briefly recall the happenings of the last four years. The Australian Broadcasting Co. has purchased Radio Broadcasting, Ltd., and has thus the monopoly of the "B" class station "2 UW." The company which conducted the national service under contract to the Commonwealth Government from 1929 to 1932, has kept its executive organisation complete throughout Australia with an eye to entry into the "B" class. The purchase of "2 UW" is presumably "the first step in organising an Australian-wide broadcasting circuit which will be operated on lines similar to the former national service organisation of the company." We are informed that other associations will be announced shortly extending the company's operations to other States. The company was formed four years ago, but when the Commission took its place in 1932 it was naturally relegated to what may be considered, without offence, a somewhat lower authority.

BELGIAN CONGO.—Proposals to set up a broadcasting service are being considered by the Belgian Ministry of Colonies, so it is understood in technical circles. The *Electrical Review* confirms this by stating that "tests have shown that transmission on 29.04 metres with 9 kw. power from Ruysselede were received in the Congo at good strength.

CANADA.—Here again the financial year ended 31st March, 1933, shows an increase in the number of wireless licences sold, the total issued registering 761,288—one in fourteen of the population—an increase of 163,030.

CHINA.—Discussions are now in progress among the authorities of the International Settlement, French Concession, and Greater Shanghai, concerning the control of wireless stations. It appears that the French Municipal authorities have published additional regulations which include a scale of licence fees fixed for stations in the Concession broadcasting speech or music. The municipal administration will assign wavelengths. *World Radio* states that precautions will be taken to prevent interference and stations are forbidden to disseminate political propaganda or news likely to cause public disturbance.

DENMARK.—The new high-power broadcasting station at Kalundborg was opened on July 18 and replaced the 10-kw. station installed not more than six years ago. It is operating on 1,260 metres, and has a tenfold increase in power. The last amplifier stage is equipped with 200-kw. water-cooled valves of an entirely new type, say the manufacturers, and operates with a plate

supply of 20,000 v. The rectifier is claimed to be the largest of its kind yet put into commercial use, and uses twelve hot-cathode mercury vapour rectifier valves. Crystal control is used to stabilise the wavelength. The manufacturers are Standard Telephones & Cables, Ltd., of Hendon, London, whose engineers personally installed the equipment.

FAROE ISLANDS.—A new direction-finder?—The Aviation Correspondent of the London *Daily Telegraph*, communicating to its readers on the proposed flight of Mr. John Grierson, the British airman, to New York by the North Atlantic route, gives an interesting note regarding the aims of Mr. Grierson who, "is testing a method of wireless direction-finding which depends upon, neither a ground base of two wireless stations far apart (making a triangle with the aeroplane) nor the visual wireless beacon (which sends two parallel beams between which the aeroplane travels)." Mr. Grierson is testing the new apparatus over the particular region which he is attempting the present flight because it is a region of "great disturbance of the compass needle," and the inventor maintains that if his apparatus can be used in the Arctic it can be used anywhere.

As these pages go to press a telegram from Reykjavik (Iceland) reports that Mr. Grierson has crashed when taking off for Angmagsalik (Greenland). *Nil desperandum*, friend Grierson!

GERMANY.—Reuter's Agency report that Herr Hadamowsky, officer in charge of broadcasting in Germany, has just concluded a tour of the various stations, and announces that on May 1, 1934, every German national from New Zealand to Chicago will be brought into touch, through broadcasting, with the Fatherland.

The German Ministry of Posts has announced that no less than four main broadcasting stations will have an increase of power to the maximum international limit of 100 kw. this year, and further than that, four others will be similarly equipped before the end of 1934, while the *Deutschlandsender* will be replaced by a 150-kw. transmitter. Wavelengths are also to be redistributed; the changes are being made, says the *Electrical Review*, to compensate for the loss of local range, which will occur when the shorter wavelengths come into use on Jan. 15 next, according to the Lucerne re-allocation.

GIBRALTAR.—Reuter's News Agency at Gibraltar, on Aug. 12, advised the death of Mr. Johnson Pogson, the boatswain of the well-known cable steamer *Telconia*, due to the "breaking of a cable during a high sea." The body was brought on shore for interment in the British cemetery.

GREAT BRITAIN.—Publicity should certainly be given, and that very liberally, to the appreciative statement made by the Postmaster-General in the House of Commons on July 24 last, when presenting the Post Office Estimates. Sir Kingsley Wood was drawing the attention of the House to the fact that there were many important technical and scientific developments of which the British Post Office engineers could legitimately claim a very prominent part, and expressed his keen gratification of the tribute paid to the British Post Office and its chief officers, for all that they had done in helping to make radio an efficient medium of universal communication." More was to follow, "for," continued Sir Kingsley, "no less a person than Marchese Marconi himself, had generously referred particularly to the fact that England had been the first country to construct short-wave stations for direct communication throughout the Empire."

*History and Geography while you ride!*—The Southern Railway Company last month inaugurated a special sight-seeing excursion between Brighton and Chichester. By means of power amplification equipment installed by the Brighton and Preston Relay Station Ltd., a running commentary on the historical, geographical, and on other points of interest on the route was maintained throughout the trip. The train was equipped with thirty loudspeakers and a microphone.

INDIA.—Sir Frederick Sykes, Governor of Bombay, on the occasion of the sixth anniversary of the opening of India's

broadcasting system, advised the authorities that they "would do well to follow the English pattern" in their developments. The sale of receiving licences had only increased as follows:—1928 closed with 3,000 licences; 1930 the figures were 7,600, and by 1933 they had only just touched 10,000, while the country's population is at least well over 340 millions. There are strong suspicions that piracy is inclined to be freely practised in towns and cities, and a corrective Bill is to be passed in the next session of the Legislative Assembly. By the number of sets known to have been purchased and other methods, it is calculated that there are at least 20,000 holders of sets.

**IRISH FREE STATE.**—Preparations are being made for the holding of the Annual Wireless and Gramophone Exhibition in the Mansion House, Dublin, during the week, Sept. 18 to 23. The whole of the available space has been booked. A number of *new exhibitors* will include one Irish manufacturing firm.

**ITALY.**—According to the Italian correspondent of the *London Daily Telegraph*, Marchese Marconi, on Aug. 14 last, reported to the Royal Academy of Italy that he had "succeeded in transmitting micro-waves through a distance of 93 $\frac{3}{4}$  miles during recent experiments on board his yacht *Elettra*."

The famous Senator added that last month he "was able to make further trials in telegraphic and telephonic radio transmission by means of micro-waves of about 60 centimetres. The tests were between a transmitting apparatus at Santa Margherita Ligura (near Genoa) and the yacht *Elettra*, which moved along the coast." Though the distance over which one would have expected good reception was only 30 kilometres, the transmissions were received on the yacht with great force and regularity at a range of 150 kilometres. Last year the greatest distance effected was only 52 kilometres. Feeble Morse signals were perceptible as far as Port Santo Stefano, a distance of 258 kilometres, high mountains intervening between the two small stations.

**MALAYA.**—The Government of the Federated Malay States recently issued a regulation prohibiting the possession and sale of radio apparatus and material *except under licence*. *World Radio* adds that all the receivers in use are of the short-wave variety, and a regulation has been in force for more than a year which compels the use of a screen-grid high-frequency stage before the detector.

**NEW ZEALAND.**—According to the *Electrical Review*, a committee of experts of the Post & Telegraph Departments, the Broadcasting Board, the Public Works Department and the electrical trades has completed a report on radio interference. The report has not been published, but it is understood that it recommends the adoption of official regulations, and suggests that the committee should continue to act in an advisory capacity to the Postmaster-General, and as an appeal board if and when compulsory powers are obtained.

**NORWAY.**—A second Marconi broadcasting transmitter has been ordered by the Norwegian Government for erection at Bergen, in connexion with the re-organisation scheme. It is to have a power of 20 kw. in the aerial, similar to that ordered in July for installation at Trondhjærn. Both stations are being designed and built in England at the Marconi works, Chelmsford.

**PORTUGAL.**—The new broadcasting station working on the short wavelength, 31.25 metres, was opened on July 14. Situated near the capital, it is to be known as Lisbon (CTIAA) station.

**SWITZERLAND.**—*Inspection of Radio Sets.*—Commencing on July 1 last the following regulations referring to all listeners who have constructed or construct their own sets and fix their aerials and earths themselves, come into force. Such require a Post Office licence, and specially appointed officials examine every set, to each of which a stamp is affixed after examination. The cost of these tests has to be borne by the listeners, states *World Radio*, which adds that "this is one of the steps which are being taken to combat the evil of interference with reception." *Registration of Radio*

*Salesmen.*—On July 1 last the Ministry of Posts and Communications brought into force new regulations which "will permit registered dealers only to sell radio receivers and erect aerials. Such firms must have a licence which will be issued only after both owner and employees have passed a technical examination! All staff changes of a firm must be notified to the local postal authority. Further, the Ministry reserves the right to issue a list of approved sets; they must be so installed as to suffer the minimum of 'outside' interference," while receivers which interfere with neighbouring sets (i.e. direct reaction coupling) will not be permitted. The dealer is to pay five francs for each set he installs.

**U.S.A.**—*A new radio station.*—Reuter's Trade Service, New York, informs us that a combined radio communication station and radio range beacon, to transmit voice and directional signals simultaneously, has been installed by the Department of Commerce at Elizabeth, New Jersey, to serve the New York area. It is to supply airmen in flight with aural and visual directional signals, either simultaneously or independently, and can also transmit voice and signals of the visual type in a like manner.

The Western Union Telegraph Co., on July 1 last, restored the 10% reduction in wages effected on Aug. 1, 1932.

*An Edison Relic.*—A telegraph instrument desk, in the service of the Canadian National Railway since 1858, when Saint Mary's station was opened, is to be presented by the company to the Edison Institute at Dearborn, Mich. It was at that desk that Thomas Alva Edison worked when a lad of 16 years. He also worked at Stratford Jc. station for the Grand Trunk Railway.

*A New York story.*—It is recorded most seriously by the *T. and T. Age* that Jacob Schumann, an 88-year old telegrapher, who was recently a patient in the New Albany (Indiana) Hospital for a short time, one night while there, in a dream, suddenly threw off the bed-clothes, dashed down a fire escape to carry out an urgent order he had received in the war between "North and South" years ago. Then he woke up and was taken back to his bed!

"No one is useless in the world who lightens the burdens of it for anyone else."—DICKENS. J. J. T.

## APPRECIATIONS OF SPEED OF INSTALLATION.

EXTRACTS FROM LETTERS RECEIVED FROM MEMBERS OF THE PUBLIC.

*Hastings.*—I should like to give you my very best thanks for, and to compliment you on, the rapidity with which you have had my telephone installed, namely, within 24 hours of your call upon me.

*Oxford.*—The 'phone was installed on the above date, and I wish to give credit for the way the work was carried out. The order was given in the morning and in the afternoon the line was working.

*Worthing.*—On Tuesday last some friends of mine got on to the exchange saying I wanted a telephone quickly. On Wednesday your representative came in with the agreement and on Thursday evening the whole thing was finished and I was connected with the exchange. This I call a very smart piece of work, and you have my best thanks.

*Hastings.*—"No one could have been nicer than your agent who came to-day to see about it."

(The business in hand referred to the erection of a pole.)

*Bezhill-on-Sea.*—*Appreciation of Directory Enquiry Facilities.*—"On several occasions . . . has enabled me to speak to subscribers in . . . when I did not know the numbers . . . this service has always been rendered in a prompt and efficient manner which is to be highly commended."



## SPANNING THE ATLANTIC.

By W. T. LOWE.

YOUNG readers of the Telegraphs, and maybe an older generation of other branches of the Service, may perhaps be interested in a few words regarding the manufacture and laying of an Atlantic cable.

For my subject I have chosen the Western Union Telegraph Co.'s "permalloy" cable, which is capable of transmitting 2,400 letters per minute.

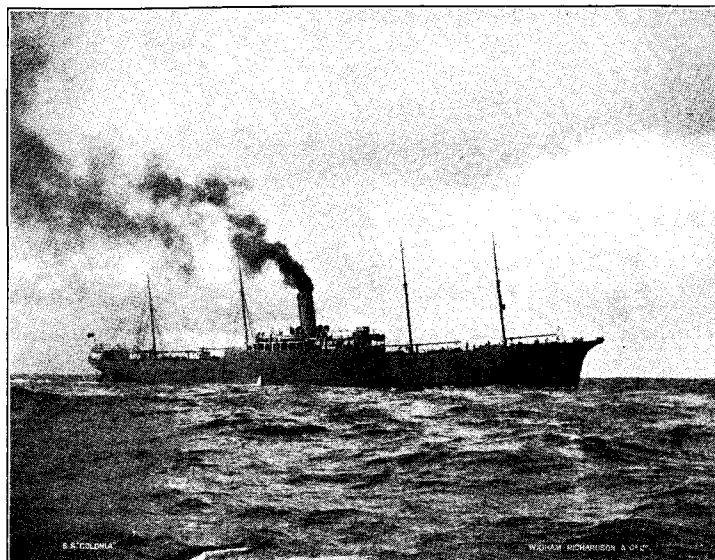
This cable is about 3,400 nautical miles long. The copper conductor consists of a round wire around which are wound spirally five copper tapes with their edges in contact with the central wire. Around the copper is wound a single continuous strip of permalloy, one-eighth of an inch wide, six thousandths of an inch thick and nearly 20,000 miles in length, the magnetic qualities of which give the cable its great speed. The permalloy is "bedded" in a special compound which is first applied to the copper conductor in a thin film, and is coated on its outer side with the same compound.

The total diameter of the copper conductor and its wrapping of permalloy tape is just a fraction short of a fifth of an inch. That is all there is to this essential working part of a trans-Atlantic cable; a tiny metal strand, not as thick as an ordinary lead-pencil. All the rest of the cable is for the insulation and protection of this little conductor.

Next to the conductor is placed the insulation, which is formed of three successive layers of gutta-percha. The greatest pains have to be taken in applying the insulating gutta-percha, to make sure that there are no air-holes which would permit the access of sea-water to the conductor, thus short circuiting the cable. The gutta-percha used must be of the purest quality, and throughout the fabrication of the cable it is guarded against any external impurities. Metallic particles of any kind embedded in the gutta-percha insulation might give the current access to the open sea.

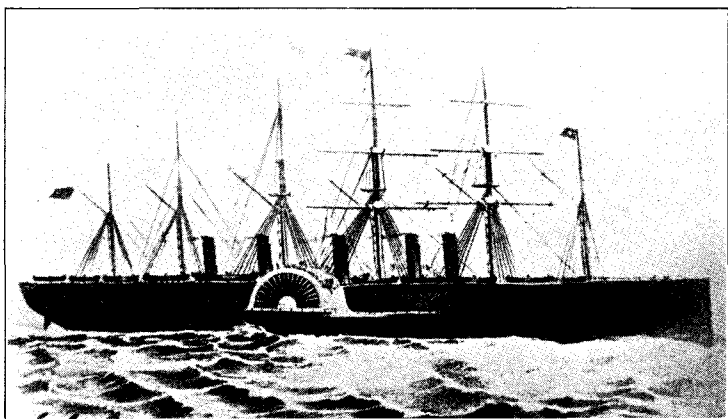
On several occasions faults in cables have been found to be due to bits of wire in the insulation, either forming a direct contact with the conductor or developing holes in the insulation.

Over the gutta-percha insulation is placed the first layer of the protective armour which is to prevent the cable from being abraded or broken by any accident which might occur on the bed of the ocean where it will rest. This is a serving of jute yarn, which has been previously steeped in a preservative liquid containing a high proportion of tannic acid, called "cutch." This yarn is



[By courtesy of The Telegraph Construction and Maintenance Co. Ltd.  
CABLE SHIP "COLONIA."]

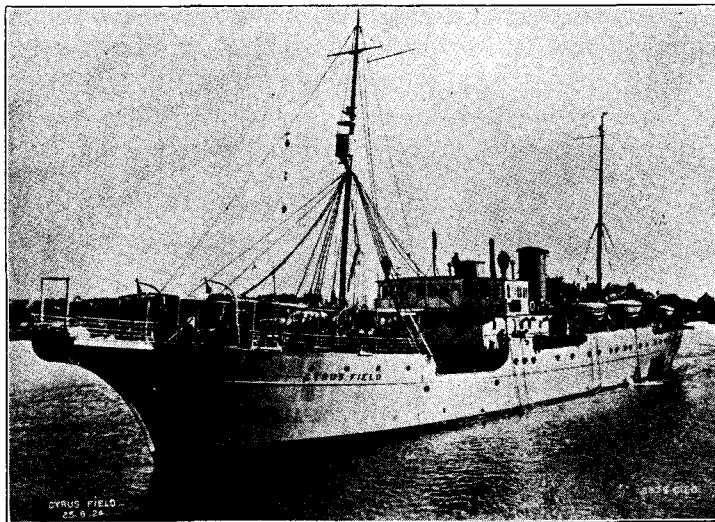
In 1926, the *Colonia*, also at this period the property of the Telegraph Construction & Maintenance Co., Ltd., laid the Western Union's Permalloy cable across the Atlantic. On that occasion she was skippered by Commander G. F. Carlton, O.B.E., R.N.R., and navigated by Lieutenant-Commander H. U. Inglis, R.N.R. From cables to whales is not a very far cry. *Colonia* is chasing blubber. She's now a whaler!



[By courtesy of The Western Union Telegraph Co.  
S.S. "GREAT EASTERN."]

Designed by Mr. Isambard K. Brunel, and built at Millwall by Scott Russell at a cost of £732,000, the S.S. *Great Eastern* succeeded in laying the first successful Atlantic cable. In 1866, after failing as a passenger steamer, she was detailed for the job of linking the Old World with the New. The vessel was then the largest afloat. She measured 691 feet in length, 83 feet in breadth, was of 22,800 tonnage, and 11,000 h.p., and driven by both paddle wheels and screw.

For some years this famous ship was engaged in cable laying in the North Atlantic and the Mediterranean, and afterwards purchased for public exhibition. What a pity it could not have been preserved as a monument of peace; for surely the work of cable ships is nothing more or less than a huge gesture of international friendship! But in those days peoples' thoughts do not appear to have run in that direction. In 1888, *Great Eastern* was sold, however, and three years later broken up.

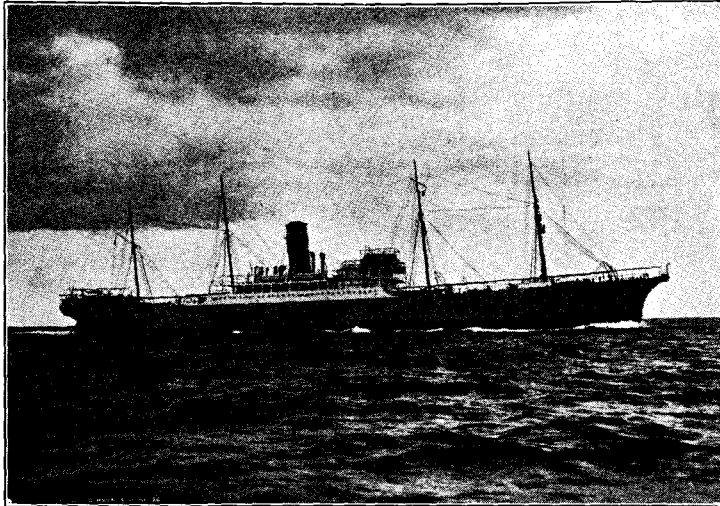


WESTERN UNION CABLE SHIP "CYRUS FIELD."

wound tightly round the gutta-percha, and outside of it are wound two whippings of hemp yarn spiralling in the other direction. These three layers of jute and hemp protect the gutta-percha against abrasion from the armour wires or sheath which is next applied.

In the case of the Western Union cable there are eighteen of these sheathing wires, of galvanised steel. And before being applied to the cable each wire is wrapped over its entire length with a fabric tape similar to the familiar adhesive insulating tape used

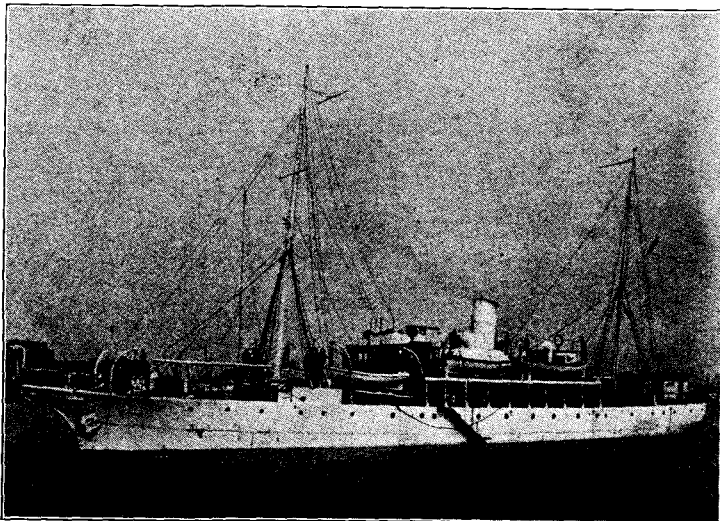
by electricians and coated with a preservative compound. This serves to protect the steel wires against oxidation under water. Each wire is also tested for ductility as well as for tensile strength; the test is to twist each wire three times about its own diameter and back again without breaking. The eighteen sheathing wires are wound in a spiral at an angle which gives each wire a complete revolution around the cable in each twelve inches of length.



[By courtesy of The Telegraph Construction and Maintenance Co. Ltd.  
CABLE SHIP "DOMINIA."

At the present day the largest cable ship afloat is the *Dominia*. She is the property of the Telegraph Construction & Maintenance Co., Ltd., of London. The vessel was built in 1926 by Messrs. Swan Hunter & Whigham Richardson of Newcastle-on-Tyne. In the year of her birth she laid the longest submarine cable in the world. This runs from Vancouver to Fanning Island, and is 3,467 nautical miles in length.

*Dominia* has a gross tonnage of 9,273, and can carry ten thousand tons of cable in her four tanks. Her length over all is 510 feet, breadth 59 feet, depth (to awning deck) 41 feet. She burns oil fuel, and her large bunker capacity gives her a steaming range of more than 13,000 miles, fully loaded. The ship is equipped with most up-to-date apparatus for her work. This includes gyro compass, range finder, wireless direction finder, echo sounder, and what is known as sal log.



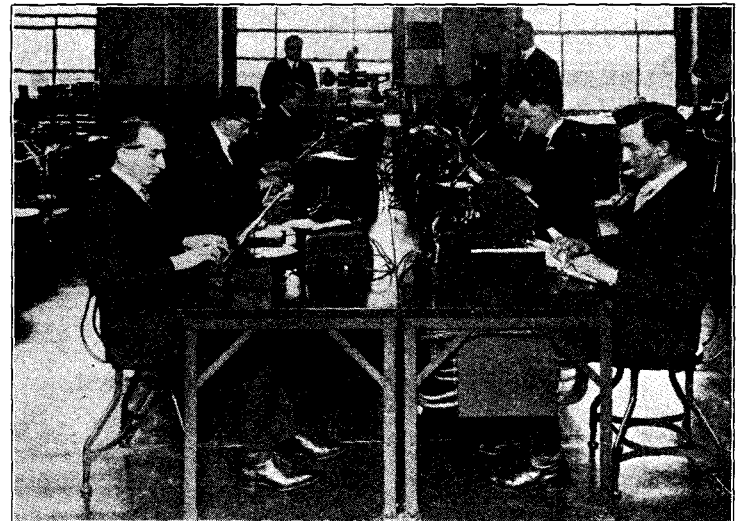
[By permission of the Engineer-in-Chief.  
H.M. TELEGRAPH SHIP "ALERT."

Once more the cable is wrapped, this time with two servings of three-ply jute yarn saturated in coal tar and wound spirally. Between the sheathing wires and the first layer of jute is applied a coating of preservative compound, laid on hot. Another coating is applied (between the two layers of jute, and a third, which complete the cable), over the outer coating of jute.

The completed deep-sea section of the cable, the construction of which has just been described in detail, is only an inch in diameter, somewhat smaller than the diameter of a golf ball. This is the main body of the cable, the part which will lay in the depths of from 1,000 to 3,000 fathoms, or from one to three nautical miles below the surface of the sea. As the water gets shallower near shore, heavier cables are used; the increased bulk and weight, however, is only in the protective armour, the essential working parts, the conductor, is of the same size throughout.

As a protection against the teredo, the boring sea worm, the shore ends of cable have a layer of brass tape wound about them between the gutta-percha insulation and the galvanised sheathing wires. The shore ends, laid in the shallowest water are not more than 20 fathoms deep, and are so heavily armoured by successive casings of jute and wire reinforcements that they are about 3 in. in diameter and weigh 30 tons to the mile. Between these two extremes are five other sizes, for different ocean depths and characters of bottom.

From the factory where the cable is manufactured it is coiled directly into the large circular tanks aboard the cable ship, capable of holding some thousands of miles of cable. Since the finished cable has a tarry exterior it is treated first to a coat of whitewash



PENZANCE.  
OPERATING AT THE EUROPEAN END OF THE WORLD'S FASTEST CABLE,  
DESIGNED TO TRANSMIT 8 CABLEGRAMS AT THE SAME TIME.

to keep the coils from adhering to each other when stowed; in the factory tanks and those of the cable ships the cable is kept under water at all times, to prevent it from drying out and losing its flexibility.

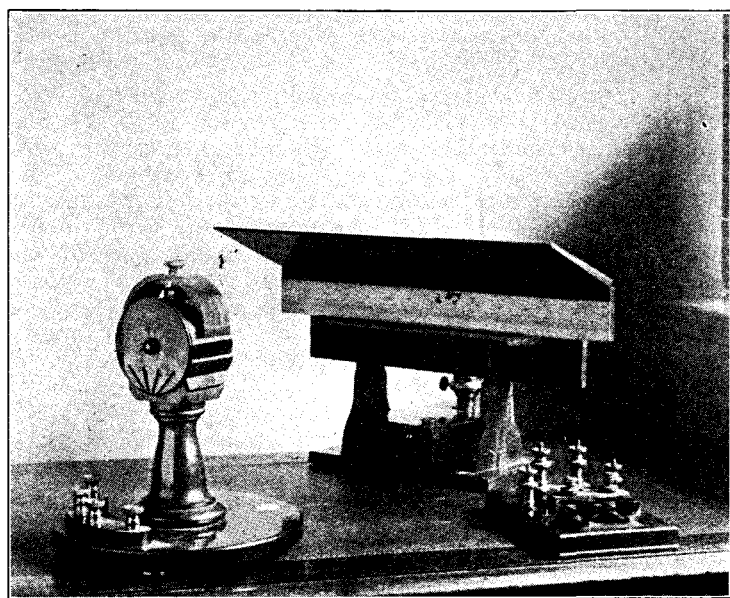
The different sections of the cable as they lie in the ship's tanks are spliced together in the order in which they are being laid; first the European shore end, then the various intermediate sections down to the 2,000 miles and more of the deep-sea section, then the intermediates and shore end to be landed on the American Continent. The coiling of cable into the tanks and its proper uncoiling as it is paid out is an art in which the men of a cable ship have become expert through long drill, and in which they take as much pride as do the electrical experts in their end of the work. Indeed, the whole crew of a cable ship, above the stokehold, is composed of cable experts.

Left to itself the cable, once uncoiled, has a tendency to twist into intricate curves and knots. This is because of the various twists and spirals which the various layers of its interior are laid. It is of the utmost importance, therefore, that each layer or "flake" of cable be coiled flatly around the central conical spool in its tank, each layer precisely filling the space from centre to circumference.

The taking of soundings over the proposed route is an important preliminary step in laying an ocean cable. Indeed, the greatest ocean depths have been discovered by ships engaged in making these preliminary surveys for cable layings. The survey of the route of the first cable was made by Lieutenant Maury of the United States Navy, in a war vessel lent for the purpose by the United States Government. Lieutenant Maury subsequently became world-famous as an authority on the ocean bottom because of his work in exploring the bed of the sea, and it was when he was in command of the U.S.S. *Tuscarora*, making preliminary surveys for a possible Pacific cable, nearly thirty years before the first telegraph wire was stretched across the Pacific, that he discovered the "Tuscarora Deep" off the coast of Japan, where the ocean has a depth of more than five sea miles, greater than the height of Mount Everest. For nearly fifty years the "Tuscarora Deep" was regarded as the lowest spot on the earth's surface; a cable survey a few years ago, however, disclosed an even greater depth of water, 36,614 feet, the "Challenger Deep," at a point in the Pacific off the island of Guam.

Over the established routes in the North Atlantic, extensive preliminary soundings are not necessary in laying a new cable, since the depths and character of the bottom have already been thoroughly charted. The greatest depths encountered during the laying of the Western Union Telegraph Company's "Permalloy" Atlantic Cable was 15,720 feet.

All cable ships are equipped with apparatus for taking soundings in any depth of water, and a careful record is kept, at intervals of a few miles, of the depth as well as the precise latitude and longitude, so that in case of trouble at any point along the route of the new cable a repair ship can steam straight to the spot and know in advance how deep it will have to grapple for the cable.



THE MIRROR GALVANOMETER.

(Lord Kelvin's first invention of a device for receiving cable signals was a mirror galvanometer, by means of which the effect of the impulses received through the cable was greatly magnified. A tiny mirror, a quarter of an inch in diameter, was fixed by means of a drop of wax upon a tightly stretched silk fibre, so that the mirror would rotate from right to left and vice-versa under the slightest impulse. To the back of the mirror was affixed the needle of a sensitive galvanometer. The mirror would thus move in one direction or the other, according to the polarity of the impulse affecting the galvanometer. A ray of light was focussed upon the mirror and reflected upon a white surface a few feet away. A movement of the mirror which the eye could not detect was thereby magnified into a wide fluctuation of the light beam, as the mirror, suspended from its silken fibre weighing no more than a strand of spider web, was vibrated as gently as that structure trembles in the morning breeze, by the electrical impulses impressed upon the cable conductor from across the sea. The cable operators learned to translate these vibrations into dots and dashes, and for several years after the first deep-sea cables were laid this was the only means of reading their messages.)

The apparatus with which cable ships are equipped for measuring the depth of the water consists essentially of a weight attached to a coil of fine piano-wire several miles long. When the weight touches the bottom the contact springs a trigger which releases the weight from the wire; leaving, however, a small cylinder still attached to the wire which brings up a sample of the soil of the ocean bottom. This sounding apparatus, the invention of Admiral Sigsbee, U.S.N., is that in general use, but one or two of the newest cable ships, including the Western Union's "Cyrus Field," are equipped with the "sound" sounding device developed during the war by the United States Navy. This is an intricate but extremely accurate apparatus by means of which the depth of the ocean beneath the ship is determined by measuring the time required for sound to travel from the ship from the sea bottom and back again. A highly sensitive microphone catches the echo as the sound is reflected from the ocean floor, and accurate computing instruments, which take into account the speed at which the ship is travelling as well as the elapsed time, translate the result into fathoms of depth. A ship so equipped can take continuous soundings while steaming at full speed; the only craft in the world except naval vessels which carry this equipment are cable ships.

### PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at July 31, 1933, was 2,159,140, representing a net increase on 3,551 on the total at the end of the previous month.

The growth for the month of July is summarised below:—

Telephone Stations—	London.	Provinces.
Total ... ..	804,349	1,354,791
Net increase ... ..	401	3,150
Residence Rate Stations—		
Total ... ..	257,845	342,520
Net increase ... ..	3	1,035
Call Office Stations (including Kiosks)—		
Total ... ..	9,131	30,932
Net increase ... ..	59	86
Kiosks—		
Total ... ..	3,690	11,971
Net increase ... ..	32	135

The total number of inland trunk calls dealt with in the year ending March 31 last was 128,613,235, representing an increase of 4,151,615, or 3.3% over the total for the previous year.

For the first two months of the current financial year, inland trunk calls numbered 22,573,041, representing an increase of 1,647,552, or 7.9% over the total for the corresponding months of last year.

The number of international calls in May was 116,009, an increase of 23,639 (25.6%), compared with May, 1932.

Further progress was made during the month of July with the development of the local exchange system. New exchanges opened included Kensington (automatic conversion) and the following rural automatic exchanges:—

- Ashreigney (Barnstaple), Blackford (Perth), Bamburgh (Newcastle), Coombe Bissett (Salisbury), Capel Curig (Bettws-y-Coed), Cracoe (Skipton), Compton (Newbury), Esh Winning (Durham), Harrold (Bedford), Kyre (Gloucester), Laver-de-la-Haye (Colchester), Matching (Bishop's Stortford), Newton (Wisbech), New Galloway (Castle Douglas), Pendine (Carmarthen), Paincastle (Hay), Staverton (Totnes), Trossachs (Callender), Widgates (Plymouth), Winsham (Chard).

Among the more important provincial exchanges extended was:—  
Rotherham.

During the month the following addition to the main underground system was completed and brought into use:—

Bristol—Clevedon—Portishead,  
while 65 new overhead trunk circuits were completed, and 74 additional circuits were provided by means of spare wires in underground cables.

## THE TELEGRAPH SYSTEM.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

SIR,—At a recent meeting of the Telegraph and Telephone Society, the lecturer, in replying to the discussion, remarked that whatever grounds may exist for assuming the approaching demise of the Telegraphs, there is abundant evidence that the service is not only alive but that it is capable of "kicking" with considerable vigour and effect.

No one who is in close touch with the changes which are now taking place in the British Telegraph Service, will be disposed to question the justice or moderation of the claim; indeed, the lecture itself was a convincing demonstration of the progress which is being made towards establishing the internal maintenance arrangements upon a thoroughly scientific basis both as regards training and equipment.

That the provision now being made by means of the Testing and Maintenance scheme, whereby maintenance of the instrument rooms is in large measure transferred to a segregated body of specially selected and highly trained telegraphists provided with scientifically designed equipment, will result in a material increase of efficiency throughout the service, and more particularly on the main telegraph routes, is a hope the realisation of which is not in doubt.

The stability of Telegraph circuits, however, depends even more upon the line conditions than upon the internal maintenance arrangements, and in this direction the introduction of Voice Frequency working upon all main line routes, promises to revolutionise the service from a stability point of view, and after due provision is made for reserve lines and channels, to provide a means of communication which should be practically immune from interruptions of a serious nature.

When in addition to the foregoing, we take into consideration the increased operator output, the reduction of the office "lag" consequent upon the new layout of the Instrument Rooms, the assurance against the total interruption of telegraphic communication save on a few exceptionally difficult routes, the reduced liability to errors due to the more scientific training of new entrants, the guarantee against the loss of messages provided by the introduction of the Serial number check system, and the improvement in delivery arrangements likely to result from the introduction of motor cycles, when all these improvements are taken into consideration it may surely be claimed with justice that the Service is not simply "alive and kicking" but that it is in a fair way to justify its claim to be the most efficient Telegraph Service in the world.

It is hardly too much to claim that the Telegraph Service is in process of carrying out a reorganisation which for thoroughness and efficiency is unparalleled in the whole field of British industry to-day, and this being so it would be ungenerous to withhold a tribute of admiration and of praise from those who have with such painstaking care and laborious thought brought the reorganisation of the service to a point well within sight of triumphant completion. Mistakes, of course, there have been but these, so far, at any rate as concerns policy, have been due not so much to any want of foresight or of wise planning but rather to the accepted necessity to trim the sails to the political winds of the day.

But when all this has been admitted there remains the question "to what end?", for after all, organisation is not in itself an end but a means thereto, and its success or failure depends on the measure in which the end in view is achieved. It is just here that we find ourselves at a loss, for so far at least as the writer's knowledge goes, no clear and authoritative pronouncement of the end in view has ever been put forward. If we put the same question in respect of outside industrial concerns, the position is perfectly clear. The reorganisation of the cotton industry, for example, on the basis of 8 looms per weaver is advocated in order that we may

compete more successfully in the markets of the world, or in other words to the end that by lowering the costs of production it may be found possible to manufacture and to sell an increased quantity of cotton goods. Exactly the same is true of coal, iron and steel, gas, electricity, motors, machinery, boots, woollens, or any other of our great industries—in each and every case of reorganisation the end in view is increased sales. There is no instance on record of a great industry incurring any considerable capital expenditure on reorganisation without its being accompanied by constant persistent and intensive effort designed to increase the volume of sales or of services rendered—indeed it is inconceivable that any great scheme of reorganisation should be undertaken apart from the hope and belief that it would result in an increased, and generally in a greatly increased, turnover.

The Telegraph administration stands alone in that having induced the Treasury to agree to a capital expenditure amounting to some hundreds of thousands of pounds, it regards with unruffled equanimity the dismal tale of traffic figures which month by month achieve a new low level record. If the reorganisation now being carried through is unparalleled for thoroughness and efficiency, it is equally unparalleled in that no serious attempt is being made to increase the volume of traffic or of revenue, nay more, no serious attempt is being made to maintain either traffic or revenue at its present figure. Those of us who have waited with ever receding hopes for the evidence of some reaction to existing conditions, find a genuine difficulty in justifying to ourselves the capital expenditure now being incurred in the light of a probable continuance of the alarming drop in revenue.

Some three years or more ago an official of the Telegraph Service, for whose judgment the writer has the greatest respect and who was in a position to form a reasoned opinion, stated that "the administration viewed with composure the question of capital expenditure, being fully assured of an adequate return on the initial outlay." One wonders whether the position is quite so clear to-day.

Since that statement was made, telegraph traffic and with it telegraph revenue have fallen by something like 25%, and there are not wanting indications that with the progress of certain developments now taking place, the decline will continue, and may even continue at an accelerated rate during the next year or two. To the plain man it seems clear that however closely the adjustment of staff to traffic be made, and whatever financial benefits may accrue to the Telegraphs from other sources, such as the extension of voice frequency working, sooner or later, if revenue continues to decline, a point must be reached when we shall be forced to say good-bye to the hope of reaping any adequate return upon the capital invested.

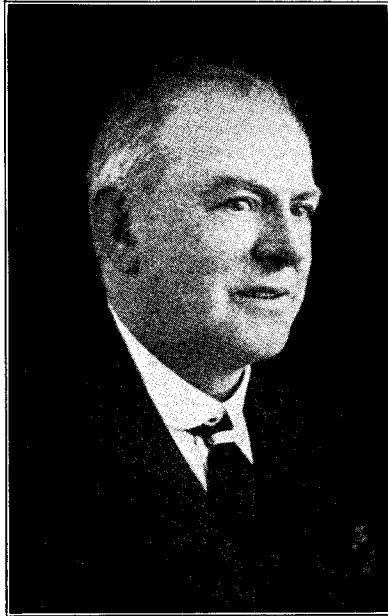
It would be interesting if someone qualified by experience and financial knowledge would favour us with his views on the economics of the subject, accepting as a basis for investigation a prospective decline in telegraph revenue for the ensuing three years, approximately equal to that of the period 1929-1932.

"MENSANO."

[NOTE.—It gives us great pleasure to publish "Mensano's" letter, and those chiefly responsible for the administration of the telegraph service will appreciate his opinions as to its heightened efficiency. But the process of rationalisation aims no less at improvement in the financial position of the telegraph service; and there is no doubt whatever that the service is already reaping a handsome return on the capital invested. Anyone who would like further detail on the point is referred to an article on page 251 of the September number of this *Journal*. It is hardly fair to conclude that, because the administration has not succeeded in stemming the decline of traffic, it views the whole situation with "unruffled equanimity." Active steps are being taken to stimulate telegraph traffic in those directions in which it is capable of development; but in the main the decline is due to outside causes which no administration can control. As regards "Mensano's" gloomy forebodings for the future, we hope that the latest traffic-returns will bring him a little comfort. It is only fair to add that "Mensano's" letter, and the remainder of these comments, were written some months ago, when traffic returns were much more discouraging than they are now. We are sorry that pressure on our space has delayed publication for so long.—ED., *T. & T. Journal*.]

GLASGOW DISTRICT NOTES.

Mr. D. J. MEIKLEHAM, who recently returned to Glasgow, is a living refutation to all those, from Dryden onward, who say "For never Scot . . . to his own country willingly returned." He joined the service of the late National Telephone Co. in 1903, being attached to the Contract Branch in the strenuous competition days of the company and the Glasgow Corporation. Promotion quickly followed, his first appointment to Contract



Mr. D. J. MEIKLEHAM.

Manager being at Plymouth in 1907, and from that date to the present he has been stationed at Dundee, Glasgow (Scotland West), Newcastle and Edinburgh.

Mr. Meikleham has an enviable health record. During his service of 30 years he has not been absent from duty owing to sickness of any description. He attributes this to retiring early and rising early. His interests outwith salesmanship lie between football, cycling, singing and municipal matters—being a member of the Dennistoun Ward Committee. Now that he is back again in Scotland his feelings are well expressed in "Ibid" :—

An' when I stap oot ower the cluds,  
There's Scotland yet! The birlin' fluds;  
The broomy braes; the whusslin' wuds;  
Gowans the same!  
God! but my heart starts aff in thuds,  
To ken I'm hame.

We were indeed sorry to bid farewell to Mr. C. S. Scantlebury, Assistant Traffic Superintendent, who has been transferred to Reading after over four years' service in this District.

He was always ready to assist with his musical talents at war hospital entertainments, social functions, &c., and, in addition to ourselves, many persons outwith the Department will have cause to regret his departure. This was particularly emphasised by Mr. Coombs, District Manager, in presenting to Mr. Scantlebury on behalf of the Traffic Staff, a camera and umbrella.

We wish Mr. Scantlebury every success in his new District and trust that Mrs. Scantlebury's health will be materially improved by the transfer.

*Glasgow Post Office War Hospitals Entertainments Committee.*—If a social evening in Scotland does not finish with Auld Lang Syne some explanation is required. The explanation on this occasion was that enthusiasm was so lively and the company so jolly that the patients considered something extra was needed, and "They are Jolly Good Fellows" was rendered with great gusto.

The occasion was a "Gala Evening" (to use the matron's description) provided at Erskine Hospital for ex-service men, by the "Douglas" Exchange Girls and Sales Representatives, with Mr. D. Reid as Chairman. The programme included bowling, putting, nail driving competition, tennis, sing song and be-ba-babitty,\* and was sufficiently varied to meet all tastes. The keynote of successful entertaining is novelty, and Douglas's brainwave, which culminated in a garden party should be classed as one of the great discoveries of the age.

Ideas, however excellent, require to be translated into action, and in this connexion the honours go to Miss E. Gray, the able and enthusiastic

(\* This pastime is outwith the Editor's ken. No doubt Scots readers recognise it.)

secretary of the Glasgow Post Office War Hospitals Entertainments, who had the general arrangements in hand.

A Testimonial.

*Glasgow's Telegraph and Telephone Service.*—During the past three years I have been responsible for sending 2,000,000 words per annum by telegraph from Glasgow to Manchester and London. This represents a dispatch of 40,000 words per week. During these three years I don't remember a serious error in transmission.

Most of the articles and messages have been typed, but a fair number have been written by hand, and one must always allow for transmission errors in one's copy, particularly if his handwriting is a pale imitation of that of Cunningham Graham, whose penmanship is compared to the scratching of a hen's claw.

Perhaps I can illustrate the efficiency of the postal telegraph service in another form.

*They have handled for me the equivalent of sixty full length novels in three years, each containing 100,000 words. All this has been put across to the office of delivery without a serious mistake.*

Can one say more than this in praise of the efficiency of the Glasgow telegraphists and their colleagues at the receiving ends at Manchester and London?

They have always put our messages across in good time, and whenever an arrangement has been made for the special transmission of copy, it has been carried out by the Post Office.

I can say as much of the telephone service.

I have put through calls to all parts of Scotland, many parts of England, and to towns and cities on the Continent. Ninety-nine per cent. of these calls have been efficiently handled, and if mistakes did occur, they were as much due to our negligence as to the carelessness on the part of telephone operators.

I have never had any trouble in getting the telephone service to assist me in making special calls. The operators have been most eager to help, and in many journalistic difficulties have aided in securing scoops and information that otherwise would have evaded our keenest activity.

My experience suggests that those who have grouses against the telephone service really complain against their own inefficiency.

*For those who know how to use the telephone service, it is the indispensable guide and helpmate. It is all that to the journalist, and, I imagine, is of equal importance to the business man and to that shadowy person described as the "man in the street."*

I have always found the mechanical side of the telephone service ever anxious to assist, and to provide us all the facilities necessary to ensure a speedy and effective service.

I, for one, should like to acknowledge, here and now, my indebtedness to the unknown men and women in the telephone service who have helped to make journalistic work a pleasure in the years in which I have been connected with the reporting profession.

This article looks like an advertisement for the Post Office. Perhaps it is so. It would be hard to find a service more efficient and comprehensive for its purpose—the purpose of quick and accurate communication.

(Councillor Dollan, in *St. Mungo*.)

The Traffic Side Permits a Moment's Relaxation!

Papers in every tin,  
Papers surrounding him,  
Papers still coming in,  
Jobs by the hundred!  
Praise is also too rare,  
Snags appear everywhere,  
Observe him tear his hair,  
Not to be wondered!

His not to reason why  
Blindly to do or die,  
Always a T.S.I.,  
Policy fixing,  
Each paragraph a law,  
Amendments by the score—  
There's always something more  
Terribly mixing!

Then a subscriber's plea  
Wants service instantly—  
Can't understand why we  
Purposely vex him.  
Waiting so patiently  
Seems an eternity,  
And he's convinced that she  
Always neglects him.

Staff needs to satisfy  
Circuits to justify,  
Instructions to supply—  
No time for jesting.  
'Phones ringing all day long  
(For numbers right or wrong),  
Taking what comes along,  
No use protesting.

## LEEDS DISTRICT NOTES.

FLUSHED with their victory over the Leeds Exchange, the District Office Ladies' Cricket Team travelled to Sheffield on Aug. 2 to play the Sheffield District Office Ladies and, in addition to being most pleasantly entertained by their Sheffield hosts, received the shock of their lives by being beaten by a score of 59 against 34. Much hard practice was subsequently the order of the evenings in preparation for the return match, which took place on Aug. 17, at the Police Sports Ground, Leeds. The match was favoured with good weather and Sheffield batted first on a hard wicket. Losing Miss Tomlin, their star batsman (or should it be batswoman?), who was out to a fine catch off the fourth ball of the first over, Sheffield completely



LEEDS DISTRICT OFFICE LADIES' CRICKET TEAM.

collapsed and were dismissed for 5 runs, the junior member of the Leeds team, Miss Metcalfe, doing the hat trick and taking no fewer than 8 wickets. It seemed as if the Leeds team would follow suit when Miss Clitheroe, the captain, was out for a duck, but scoring afterwards proceeded steadily, and at 54 for 4 wickets Leeds declared. At their second innings Sheffield played the bowling with much greater confidence and when stumps were drawn had scored 16 for 1 wicket. After the match the two teams and a large party of friends concluded an enjoyable evening by doing ample justice to the supper which was served in the Staff Dining Room. During the supper Mr. Murray (District Manager) extended an official welcome to the Sheffield team and Mr. Knight suitably responded on behalf of the visitors.

Since the introduction of "demand" working from the Leeds and Bradford areas on the more important trunk routes last November, extension of the demand system has been so rapid that Leeds is now affording subscribers probably the most complete demand trunk service in the country. In January of this year the new method of working was extended to the Newcastle and Nottingham groups, and in March to the Leicester group. On May 6 the first portion, consisting of 18 operating positions, of a new delay suite at Leeds Trunk Exchange was opened for service and concurrently demand working was extended to cover all the exchanges within the "no delay" areas of the 23 trunk centres with which Leeds has direct communication. Arrangement for including the majority of the exchanges in the existing Leeds group were, in the meantime, in hand and commencing on May 17 with Huddersfield and Dewsbury the service was rapidly extended to cover the 55 manual exchanges with two or more direct junctions to Leeds. This stage was completed by June 3. The remaining manual exchanges and R.A.X.'s were then dealt with and by the end of June all the exchanges in the West Yorkshire District, with the exception of 3 automatic exchanges, Halifax, Keighley and Wakefield were given demand service. By July 12 all the exchanges in the old Leeds group other than the 3 cases quoted and Harrogate automatic exchange were included in the scheme. Altogether 129 exchanges are now being given demand trunk service from Leeds, and this total will be increased by the inclusion of Harrogate on Sept. 2.

The following extract from the *Daily Mail* once more emphasises the value of the telephone in the case of emergency:—

### 'PHONE S O S.

#### DRAMATIC CALL TO OPERATOR. INJURED MAN SAVED.

"Tell the police. Send help quickly." This dramatic call to a telephone operator on the exchange at Halifax late on Saturday was followed by the noise of the instrument falling and groans.

The number of the caller was known, and Detective Constable Downes hurried to the printing and stationery works of Mr. Wilfrid Senior in Queen's Road. There he found Mr. Senior lying unconscious on the floor at the side of a guillotining machine with his left hand severed. It is thought that Mr. Senior, who is a master printer, of Spring Hall Place, Halifax, was working late on an order when he got his hand caught in the guillotine. In spite of the immediate heavy

loss of blood he managed to get to the telephone and shout for help before collapsing. But for the presence of mind of the operator and the quick response of the police he would have bled to death in a short time.

Halifax is an automatic exchange, but as the subscriber concerned was in the habit of making frequent night calls, the manual board night telephonist, Mr. Barker, fortunately recognised the voice and was able to inform the police immediately.

## RETIREMENT OF MR. S. J. GODDARD.

MR. S. J. GODDARD, the vice-president of the Western Union Telegraph Co. in this country, will have retired under age-limit rule of the company by the time these lines are printed. Mr. Goddard was educated at Rottingdean and Uppingham, was at one time employed in a leading accountant's office, joined the National Telephone Co. in 1892, and was appointed head of the Audit Department, subsequently becoming Assistant General Manager and latterly General Superintendent. In January, 1913, he was appointed European Representative of the Western Union Tel. Co., and in 1920 promoted Vice-President. He carried out the amalgamation of the Anglo-American, the Direct U.S. Cable, and the W. Union Telegraph Companies, and most satisfactorily negotiated with the French Government (1927) for the landing of the W. Union Co.'s cable at Havre, thus giving France and the U.S.A. direct communication. These were not the only foreign negotiations which were successfully carried out by this veteran. It would not be surprising if the County of Herts were to prove a special claim to his sports and hobbies in the happy years of retirement which it is hoped are now to come.

J. J. T.

## SHEFFIELD DISTRICT NOTES.

*Social.*—On Wednesday, Aug. 2, 1933, as a result of a challenge, a cricket match took place between the ladies of the Leeds District Office and the Sheffield District Office, at Sheffield.

A most enjoyable game ensued, with Sheffield worthy victors, Miss Tomlins (captain) and Miss Bray rendering good service with the bat and Miss Stephenson proving that underhand bowling, when well done, is equally if not more effective than the overarm variety.

Exceptional fielding ability was displayed on both sides and several catches were taken that "brought down the house."

It is hoped that this is a commencement of a series of such social meetings between the various office staffs and it is understood a return match is early contemplated.

*Marriage.*—Miss A. E. Longley, Clerical Officer, District Manager's Office, resigned on Aug. 3 for marriage. The good wishes of the staff go with Miss Longley as she enters her new sphere for which no Civil Service certificate is required.

*Retirements.*—We have recently lost by retirement two of our colleagues in the Engineering Department—Messrs. H. G. Rowe and E. W. Rowson (Chief Inspectors).

Mr. Rowe entered the service of the N.T. Co. in 1900, and retired on reaching 60 years of age on Aug. 12, 1933.

Mr. Rowson entered the service of the N.T. Co. at Liverpool in 1895, and was transferred to Sheffield in 1920. He retired owing to ill-health on Aug. 11, 1933. We trust that his health will soon improve.

Both Officers leave us with our good wishes for their future welfare.

## SOUTH MIDLAND DISTRICT NOTES.

ON Aug. 5 the Traffic Branch bid farewell to Mr. A. H. Woodland, Assistant Traffic Superintendent, on the occasion of his official departure prior to taking up the duties of an Assistant Surveyor, Class II, in the North Eastern Survey District.

The chair was taken by Mr. W. A. Frame (Traffic Superintendent, Class II), who, in a speech characterised by its humour, congratulated Mr. Woodland on his recent success and expressed the hope that he would meet as many friends in his new sphere as he had made in this district. Captain Neate (Traffic Superintendent), although actually on annual leave, specially attended the meeting and expressed his personal good wishes and hopes for Mr. Woodland's success and happiness in his new sphere. These sentiments were endorsed by Mr. H. R. Jones (Traffic Superintendent, Class II), who referred to some of the admirable qualities which Mr. Woodland possesses. Messrs. J. W. G. Tatchell and E. W. Miles also spoke on behalf of the Assistant Traffic Superintendents and Clerical Officers respectively.

In presenting a camera to Mr. Woodland as a token of the staff's good wishes, Mr. C. F. Moorhouse (District Manager) said the occasion was unique in that it was the first at which he had experienced the pleasure of congratulating an Assistant Traffic Superintendent on his appointment to the Survey Branch. He hoped that Mr. Woodland's success would continue.

In replying, Mr. Woodland thanked those present for the expression of their good wishes and referred to the happy time which he had spent in this district.

Mr. C. S. Scantlebury, Assistant Traffic Superintendent, who transferred from Glasgow District vice Mr. Woodland, commenced duty in the South Midland District on July 14, 1933.

**MANCHESTER DISTRICT NOTES.**

*Civil Service Sports Club, Manchester Area.*—A gala and sports meeting has been arranged at the Sports Ground, Newton Heath, on Sept. 9. A ladies v. gentlemen cricket match, foot races, bowls competition and side shows should provide sufficient variety to ensure a success.

The Sunday tennis is thoroughly enjoyed by those who turn up, but now that the four courts are available more players could be accommodated.

In a Curtis-Bennett Shield cricket match at the Sports Ground on Aug. 8 the Manchester Civil Service beat Rampton by 10 runs. The scores were: Manchester 138 (J. L. Makin 33, E. A. Kirkness 40) and Rampton 128.

*Marriages.*—A few years ago the Manchester Traffic Branch contained a remarkably high proportion of carefree bachelors, but now their numbers are diminishing fast before the onslaughts of Cupid. Mr. C. Simpson, Assistant Traffic Superintendent, and Mr. F. Evans, Clerical Officer, both were married on Aug. 26. Mr. Simpson "walked 'neath Hymens bower" with Miss Edna Sweeney, telephonist, Toll Exchange. Their friends were glad to see the friendship of two popular people come to so happy fruition.

Miss Estella Smith, Telephonist, who was on loan from the Toll Exchange to the Traffic Branch, left the Service for marriage on Aug. 25. Their colleagues in the exchanges and the District Manager's Office subscribed towards many beautiful and useful presents as tokens of the esteem in which they are held.

*Appreciation.*—Appreciation of the telephone service is so rare a flower that we feel justified in including the following letter in these Notes:—

"The District Manager,

"Dear Sir,—We criticise your Department on various occasions. In all fairness, therefore, I must thank you for the prompt attention and speedy transfer of my 'phone on my recent household removal. Congratulations on the efficiency displayed, and again many thanks.—Yours faithfully,

"———"

*Novel Advertising.*—The Capitol Cinema Theatre, Manchester, was burned out some months ago and now has been rebuilt. Posters bearing intriguing statements, as:—

"Joy is on the 'phone again. Didsbury 2464."

"Even Father Gloom was tickled by ringing Didsbury 2464."

"There may be rings within rings—ring Didsbury 2464."

led to much speculation on the part of the public. The only information on the posters was the telephone number. The theatre management considered the telephone an admirable instrument with which to play on the curiosity of the man in the street, and their advertising policy was justified by the flood of bookings which were made by telephone.

*Unusual Assistance for the Sales Branch.*—From a recent issue of the *Buxton Gazette*:—

"There are 35,200,000 telephones in the world. If a certain shopkeeper in Buxton installed one there would be 35,200,001."

We hope that the Sales Representative was able to convince more than one shopkeeper that the cap fitted them.

**WESTERN DISTRICT NOTES.**

*The (Not so) Sleepy West.*—In a country town recently, at the weekly luncheon of the Rotary Club, the Head Postmaster was having to face the usual sly digs at the efficiency of the telephone service and the conversation turned to the question of the types of instruments. The new hand-micro set was described to the chief critic and he agreed to the Head Postmaster's suggestion that he should have one in place of his existing telephone.

Immediately following the luncheon the Head Postmaster telephoned the Sectional Engineer, ascertained that an instrument was available and that a lineman was ready to take it out at once. The subscriber's wife was then telephoned to make certain that there was access to the installation and the word "go" was given to the engineers. The result was that before the subscriber reached his home the change of instrument had been effected. The aforesaid subscriber cannot now pass the Post Office without indulging in a sly chuckle and keen observers from the Post Office building declare that it is only by exercising great restraint that he prevents himself from raising his hat.

The real moral of this story is that it is only through the medium of the telephone service that smart pieces of work such as this can be accomplished.

F. J. F.

**LONDON TELEPHONE SERVICE NOTES.**

**Sales Branch Notes.**

DURING the month of July there was a net increase of 2,244 stations, as compared with an increase of 834 stations in the corresponding month of last year. A feature of this year's figures was the substantial reduction in the number of ceased telephones.

The Advertising and Marketing Exhibition was held at Olympia from July 17 to July 22.

Out of a total of 119 exhibitors, 152 telephones were provided, and in addition Government and Service lines numbered 5, whilst 32 call offices were available in various parts of the building.

Exhibitions are held primarily for the promotion of business, and the importance attached to these displays with regard to the use of the telephone has undergone considerable change in recent years.

It is not surprising, therefore, to find the Advertising and Publicity experts making far greater use of the telephone than that recorded at any other Exhibition.

The amount of interest displayed in the methods put forward by the advertising experts attracted widespread attention, and business men and traders might, with advantage to themselves, observe the importance attached to telephone communication, by those who have made a study of "How to increase sales."

The Post Office also had a display at this Exhibition which included a demonstration of "On Demand Trunk Service," and a "Self Talk Telephone" assisted by gramophone records. Visitors were attracted in large numbers to the stand and a fair amount of new business resulted.

With the co-operation of the Postal Service experiments are being carried out for the purpose of testing the value of advertising the Telephone Service in post offices. Orders have been secured from displays now being conducted at Cricklewood and Norbury.

**Staff Salesmanship Scheme.**

The progress of the scheme to date is given below:—

	Total Number Ordered.	Number Ordered month ended Aug. 14, 1933.
Exchange lines ... ..	2,313	90
Extensions ... ..	2,707	176
Private lines ... ..	31	3
Plugs and sockets ... ..	489	27
Hand-microphones ... ..	13,954	670
Extension bells ... ..	1,287	80
Other apparatus ... ..	1,329	74

Subscribers and members of the public generally are invited to visit exchanges, and it is to be hoped that Sales Representatives and others will not neglect this form of publicity.

The story has often been told of the farmer who, when asked to point out to a visitor his best milking cow, slyly nodded towards the nearby pump.

The long-standing joke of the milkman watering down the milk has recently reappeared in another form. A lady, on receiving an account for 25s. for the removal of her telephone, complained that she had been informed that the cost was only 12s. 6d.

She admitted, when interviewed, that she had obtained the information from the milkman. He had only watered down the charge 50%!

**London Telephone Service Dramatic Society.**

The London Telephone Service Dramatic Society, which under its original title of the "Stamford Dramatic Society" has been one of the most successful of the Civil Service Societies, is giving its next production at the Fortune Theatre, Drury Lane, on Nov. 29 and 30. The play chosen on this occasion is "Alibi," by Michael Morton, adapted from the novel "The Murder of Roger Ackroyd," by Agatha Christie, and the production is again in the capable hands of Mr. S. W. Pooles.

Application for seats, which are priced at 5s., 3s. 6d., 2s. 6d. and 1s. 6d., may now be made to the Business Manager, Miss D. Coleman, Telephone School, Clerkenwell Exchange, Ironmonger Row, Lever Street, E.C.1, or to any member of the Society.

Those who have seen the Society's previous productions will, of course, need no urging to come again, but for the information of those whom we have not as yet had the pleasure of numbering among our supporters may we remark that all seats for our last production were sold six weeks before the performance and that it was subsequently described by a competent critic as the best amateur show he had seen!

L. D.

**Exchange Cricket: Putney v. Battersea.**

Played at Chiswick Sports Ground, on Wednesday, Aug. 9, this game attracted a small but enthusiastic crowd of supporters.

Putney, the challengers, won the toss and sent their opponents in first. This appeared to be an error of judgment, giving Battersea the advantage of the light, which began to fade soon after Putney's innings began.

Although unaccustomed to overarm bowling, the Battersea team obtained the respectable total of 95, the chief scorers being Misses E. Brown (24 not out), G. Dean (captain: 19), D. Laxton (12) and B. M. Heath (11).

Putney's innings opened disastrously, thanks chiefly to the underarm bowling of the opposing team, whose "daisy-cutters" caused havoc and resulted in the dismissal of the side for 24.

A return match was played on Aug. 16, when a more evenly contested game was witnessed. Bad light necessitated the drawing of stumps before Putney's innings was completed, the result being a draw with the scores: Battersea 72 (Miss J. Thirkell 26, Miss Low 4 for 26); Putney 29 for eight (Miss Kay 6 for 5).

Well played, Battersea!

ONLOOKER.

**Obituary.**

The London Telephone Service has suffered a grievous loss in the untimely death of Mr. L. T. Woolley, who was for many years so well known as the Personal Clerk to the Controller and who was at the time of his death a Staff Clerk in the Staff and Buildings Branch.

Mr. Woolley was only 49 years of age; he was in good health when he started for his summer holidays, but unfortunately a few days before his return he contracted a poisonous germ which inflamed his face. Blood poisoning set in and his sudden death, following an operation, came as a great shock to his many friends.

Mr. Woolley entered the service of the National Telephone Company in 1898 and was transferred to the London Telephone Service as a 3rd Class Clerk. He was promoted Higher Clerical Officer on April 1, 1921, and was personal clerk to Mr. W. Napier, the Controller, until he was promoted Staff Officer in the Staff and Buildings Branch on Feb. 6, 1932.

Mr. Woolley's unflinching good humour and kindness earned him considerable popularity with his colleagues, who feel that they have lost a very good friend. He never spared himself and always performed his duties in a cheerful and helpful manner. The Department has lost an intelligent, zealous and valuable officer.

**Personalia.**

*Resignations for Marriage.*

*Telephonists.*

- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| Miss L. Cooper, of Central.         | Miss I. Youle, of Wanstead.       |
| " L. M. Gardner, of Central.        | " D. F. Gibson, of Walthamstow.   |
| " M. I. Lawrence, of Central.       | " D. I. Last, of Leytonstone.     |
| " C. Long, of City.                 | " P. E. Wakeford, of Lee Green.   |
| " F. A. J. Worman, of Park.         | " W. M. Smith, of Avenue.         |
| " A. P. Sutherby, of Rodney.        | " W. G. Lantree, of Avenue.       |
| " M. M. Wilkins, of Ealing.         | " H. M. Muggeridge, of Battersea. |
| " G. A. Chant, of Springpark.       | " K. Wright, of Toll "A."         |
| " I. E. Morgan, of Toll "B."        | " V. W. Parker, of Metropolitan.  |
| " D. M. Boniface, of Toll "B."      | " F. K. I. Gerrish, of Greenwich. |
| " E. C. Matthews, of Sutton.        | " V. M. Jessop, of Tandem.        |
| " D. W. Pitkeathly, of Clerkenwell. | " I. J. B. Foreman, of Tandem.    |
| " H. A. Emmerton, of Clerkenwell.   | " D. M. Coyne, of Tandem.         |
| " V. H. Peters, of London Wall.     | " H. C. Ottaway, of Museum.       |
| " I. M. Candy, of London Wall.      | " A. D. Pineles, of Museum.       |
| " L. Archer, of Victoria.           | " A. A. M. Davies, of Trunk.      |
| " M. K. Beek, of Victoria.          | " M. Ferris, of Trunk.            |
| " P. B. Lee, of Victoria.           | " A. M. Fitch, of Trunk.          |
| " D. E. E. Parklow, of Victoria.    | " R. E. Eyres, of Trunk.          |
| " D. L. L. Rymer, of Victoria.      | " I. E. Pearman, of Trunk.        |
| " C. I. Scoble, of Victoria.        | " M. E. Westbrook, of Trunk.      |
| " E. M. Smith, of Victoria.         | " K. M. Sheedy, of Trunk.         |
| " C. Gosnell, of Mayfair.           | " O. M. Evans, of Trunk.          |
| " D. L. Horner, of Temple Bar.      | " D. M. Marks, of Trunk.          |
| " V. Waters, of Temple Bar.         | " M. E. A. Lumsden, of Chancery.  |
| " M. M. Haywood, of Richmond.       | " E. M. Furnford, of Gerrard.     |
| " M. Hacon, of Richmond.            | " G. Hill, of Gerrard.            |
| " G. V. Stevens, of Paddington.     |                                   |

**WE TELEPHONISTS—**



**"TALK OF MANY THINGS."**

**Early and Late Attendances.**

I AM about to make a statement, and having made it I shall be quite prepared to learn that you disagree with it, more or less violently. It is perhaps the sort of statement you would expect me to make and if by any chance you should trouble to wonder why I made it, you will no doubt in your own mind assign as the reason ignorance, sophistry or an abandoned sense of humour. I will admit a degree of ignorance. Few of us bother to write or talk about the things with which we are thoroughly familiar—the commonplace routine items of our daily life about which we know most. Imagination is often more entertaining than knowledge and, despite the proverb, fiction on the whole is still stranger than truth. Whether or not your charge of sophistry is true must be left to you to judge. It may be that the wisdom born of experience will reveal to you the fallacy in the statement and the unsoundness in the argument. You will not accuse me of an abandoned sense of humour if it is your habit to think of the cloud with the silver lining primarily as a silver line rather than as a cloud. The important thing is the silver line—the letter "r" which gives an entirely new significance to gloy and transmutes it into glory.

So then I say that one of the advantages of your job is the variation in the hours of attendance, both as regards duration of duties and the time at which they begin and end. There is even an appeal in the words "early and late at ten dances." What a vista of jollity opens to the view—ten dances and a full evening at each lasting from the very commencement to the very end. Of course, the reference is beside the point (or not germane to the argument, if you prefer the phrase), but it seemed a pity not to perpetrate the pun and so forestall someone else.

First there is the early duty involving rising, say, at 6.30 a.m. Early rising is a habit which gives you a feeling of virtue and does much to develop that superiority complex without which you are a sidewalker in these days. Then you enjoy an unthumped possession of the bathroom, whilst the rest of the family is sunk in sluggard snoreful sleep and you proceed to breakfast, whereat you can bag the best bits of bacon and crisp toast, the fresh-made tea and lap up the marmalade. Then out of the house into the silent streets, sniffing the sweet morning air and feeling a regular he-man or a glorious creature, as the case may be. On duty at 8 a.m. and then a break for one of those jolly little ten-minute reliefs. At the end of the day you pack up at 4.30 p.m. (or perhaps 4 p.m.) and have a whole evening of leisure.

On the occasion of a late duty you may pose as a martyr on the ground that you will still be working long after everyone else has finished and come home. To feel a martyr will give you some little sense of self-importance which is not to be rejected. The family must move silently in the morning so that you may not be disturbed and it is rather amusing to wake at the normal time and listen to them creeping about and speaking in whispers. And oh! the glorious feeling of stretching luxuriously and "turning over again" for another hour or so. Probably your breakfast will be brought up to you—not so much, be it remarked, out of regard for you, as for the purpose of clearing the dining room and setting the household wheels revolving. At the end of the day, when you eventually reach home (about 9 p.m.) you are the "poor tired darling" for whom, until bed-time, the family must fetch and carry. If you are one of those to whom the "liberty" of late nights may be allowed with "reliance" you may not reach home till after 11 p.m., in which case the family may "rise" to the occasion to an even greater extent.

Both early and late duties afford opportunities for shopping denied to the people who are chained to a regular set of hours. Instead of having to rush into shops just before closing time you can stroll round the departments in leisure and purchase with greater discrimination and profit. Having shopped profitably, you can afford to indulge in a small extravagance and you may thus stop to tea in the store—an adventure which always brings with it a feeling of opulence. If you do not shop you will have time for tennis, the open-air baths or a tramp with the dog.



Travelling to and from duty is much less hectic and your chance of a seat in the train, bus or tram is greater, especially on late duties. The elbow and the knee are not required to force your body into a vehicle nor are others used upon you to keep you out. In consequence, temper and clothes aren't worn into holes or frayed into rags. Those unfortunates with a fixed duty who catch the same old train morning and evening must eventually fall into a rut. They meet the same set of people and see the same set of faces. Whilst they may meet their friends they find it difficult to escape the bores. You, however, see variety and you may spread your net wider and enlarge your circle of intimates. Your friends will not fade away because you don't meet them every morning and evening and you can console yourself with the thought that a personality inflicted upon you one week will search in vain for you next week.

Now, who's for early and late duties? Don't all speak at once. There's no need to rush, for in view of the great advantages of the duties I expect they will all be given to the Supervisor's favourites. (Oh yeah.)

PERCY FLAGG.

“Telephone” Cross Word.

(Solution next month.)

1	2	3	4	5		6	7	8	9	10	11	
12					13							14
15						16			17			
18					19	20						
21				22					23			
				24			25					
26		27					28					
		29				30			31		32	
33	34			35		36				37		
38				39				40				
41					42				43			

DOWN.

1. Plenty of these in the telephone service.
2. If it wasn't for these we might not able to read the *Journal*.
3. Close.
4. "GOT THERE" (Anagram).
5. A ratio in reverse.
6. Specifies.
7. A hoard.
8. "I TRAIN TRIO" (Anagram).
9. Directory entry code.
10. If you swallow certain food without painful results you'll know it's this.
11. Condition.
13. What a 11 down will sometimes proclaim.
14. Eaten very often between meals and very often at the end of them.
20. Mixed art.
22. A metal.
26. The age of the moon.
27. Suggests betting.
28. Insect.
30. A New Zealand bird.
31. No catch if you put this backwards.
32. Crude.
34. A plant used in medicine.
35. Stupid fellow.
36. A kind of moisture.
37. Keen resentment.

ACROSS.

1. A form of written complaint.
6. These are private yet intended for the public.
12. One not altogether unconscious.
13. "TEN RATES" (Anagram).
15. Uncharitable.
16. Alternative.
17. To prepare and dress.
18. The atmosphere between two planets.
19. "TRITE AIR" (Anagram).
21. Little more than a drunkard, yet with a temperate ending.
22. Eight.
23. Insect.
24. Read with 20 down, to commence.
25. Nothing left if you take this.
26. Add S to "STM."
28. Denotes position.
29. Gold.
30. Unite.
33. Indicate existence.
35. For hearers—
38. Amateur dramatists should watch carefully for this.
39. A British winter bird.
40. A fragrant plant.
41. An engineer does this—cricketers would like to join in.
42. England likes to this in 41 across.
43. An equal.

R. F. H.

Alliterative Anecdotes.—No. 3.

Basil Bayswater, budding barrister, but briefless, breakfasted bleakly beside Blackfriars Bridge.

Betty Byron, busy B buzzing blithely by, beheld Basil biting broken Bath bun, brooding bitterly.

"Business bad, big boy?" babbled Betty, brightly.

"Betcherlife, baby!" barked Bermondsey Bert, bruiser, boldly bagging Betty's bracelet—bolting bridgewards.

Betty blanched, bewildered. Basil bounded beyond Bert, butting bully below belt. Burly Bobby "buckled" Bert. Basil brought back bracelet, bowing.

Betty blushed becomingly, but being behindhand, both boarded bus, Betty blessing Basil's bravery—Basil blaming Bert's brutality.

Betty befriended Basil, "Big Boy" being briefed by brother Bob.

Blackmailing book-maker beautifully brow-beaten—Basil became brilliant barrister, backed by bench.

Betty busy (bottom-drawer, blankets, bedspreads)!

Briefs booming—bank balance big, Basil bought beautiful bungalow, befitting Betty.

Bridal blossoms bedeck Betty's brow. Bye-bye bachelor.

C. A. S.

Dreams.

I dream of sunlit gardens, where damask roses grow,  
Where virgin lilies fold their hands, and tiny breezes blow.  
Where larkspur and forget-me-nots their tender blues entwine,  
And gay laburnum sheds its gold on beds of columbine.  
I dream of mossy streamlets that laugh their happy way  
Through quiet woodlands, cool and green, where nymphs and dryads play.  
Where you may lie at evening, and watch the shadows pass,  
When sunlight glancing through the leaves makes patterns on the grass.  
I dream of many wondrous things, throughout the whole day long,  
When all my wishes shall come true and Life shall be a song.  
But all I get is P 18's, because I dream all day,  
And Supervisors hovering near, to chase my dreams away.

J. L. G.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), London, E.C.1.

C.T.O. NOTES.

*Promotions.*—Miss A. M. Campbell, telegraphist to Assistant Supervisor; Messrs. E. F. Cumber, Overseer to Assistant Superintendent (Cable Room); G. Classey, Overseer to Assistant Superintendent (Cable Room); A. Sanderson, Assistant Inspector of Messengers to Inspector; A. Knight, Tube Attendant to Assistant Inspector of Messengers.

*Retirements.*—Messrs. H. A. Songhurst, Assistant Superintendent (Inland); W. H. Webb, Assistant Superintendent (Cable Room); N. Harris, Inspector of Messengers.

The rearrangement of the Inland Gallery is gradually approaching completion, and it is now possible to visualise the future appearance of the main Instrument Room. When finished, the room will be impressive in its provision of all sorts of ways and means, mechanical and electrical, for the speedier handling of telegrams. It is a gratifying coincidence that there are clear indications in the traffic returns of a revival of telegraph business.

*Cricket—Curtis-Bennett Competition.*—The Centels visited Bristol on July 31, meeting Bristol Civil Servants, and were beaten by one wicket, the scores being Centels 193, Bristol C.S. 204 for 9. F. A. Randall was top scorer for the Centels with 59, his brother A. W. reaching 34. The latter, with 5 wickets for 73, was the most successful bowler.

We would like to thank our Bristol friends for the excellent manner in which they catered for our needs and comfort.

*Bowls.*—The C.T.O. Bowls Club have had a very successful season, being undefeated in the First Division of the Civil Service League.

### LONDON ENGINEERING DISTRICT NOTES.

*Gerrard Exchange.*—The work of replacing the present manual Gerrard Exchange by an automatic exchange on the same site has called for some unusual operations. It is necessary to demolish the present building completely and to accommodate the main frame on the ground floor of the new building.

The ground floor of the existing building was occupied by the Regent switchboard. This was recovered immediately after transfer of Regent to the Automatic Exchange in Mayfair Building in November last.

The upper parts of the existing building are occupied by the Gerrard Manual Exchange, the recovery of which will be made possible by the transfer of the subscribers temporarily to a second automatic unit in the Whitehall building.

The retention of the main frame on the site during the reconstruction of the building is necessary to facilitate the ultimate transfer of the subscribers to the new automatic exchange, and whilst working at Whitehall the lines will be routed via this frame.

The ground floor has been reconstructed inside the main walls of the old building, but detached therefrom, and the new main frame erected thereon.

Further circuits will be transferred in September, after which the old Trunk Exchange on the third floor (main) will be recovered preparatory to the installation of additional demand suites.

*Voice Frequency Telegraphs.*—A considerable portion of the voice frequency telegraph equipment at the Central Telegraph Office has been completed and brought into service. The circuit arrangement and apparatus are of the latest type and will comprise ultimately 33 bays of 6 channels per bay. Up to the present 84 channels of the new system have been completed and made available for service, and of these 60 channels are carrying telegraph traffic to the North of England, Scotland and Northern Ireland. It will be appreciated that as each system of 18 channels utilises an ordinary four-wire trunk telephone circuit a considerable saving of physical circuits has been effected.

*Panel-Mounted Telegraph Equipment.*—The installation in the C.T.O. of the panel telegraph system is proceeding apace and three-quarters of the instrument room accommodation on the third floor have been modified. Briefly this entails the withdrawal of all auxiliary apparatus from the instrument tables and the segregation of the equivalent of such apparatus on racks in a space under the control of the testing and maintenance staff, leaving on the instrument tables, which are of a new double-width type



[Photo by Bassano, Ltd.]

*Standing*—H. D. Jones (X.N.W.), Trainer, C. E. Maris (X.C.Y.), J. T. Donegan (X.W.), W. T. Finall (I.N.E.), N. V. Tod (I.C.Y.), A. W. Kelly (Hon. Sec.).

*Seated*—W. D. Gilmore (X.C.Y.), G. H. Smith (X.C.T.), L. E. Pulling (I.N.E.), F. S. Lever (X.S.W.), Captain, A. G. Brown (X.W.), J. Casey (Sth. Power), and S. P. Maguire (Nth. Power).

To protect the frame from dirt and dust during the demolition of the old building and the erection of the new and from the weather, it has been completely enclosed in a steel structure covered on the outside with corrugated iron and lined on the inside with asbestos sheet.

*Trunk Exchange.*—A further step in the reconstruction of the London Trunk Exchange was taken on Saturday, Aug. 12, when a suite of 45 positions was opened in the 3rd floor annexe (south side), G.P.O. South.

This suite is known as Inland Exchange and is designed to deal with traffic from the Provinces to London and elsewhere.

The positions are equipped with cord circuits of the "sleeve control" type, as is the case on the other recently opened trunk suites. The multiples are fitted with visual idle circuit indicating equipment and make provision for trunk, toll and junction circuits. There are also service and other multiples and many of the circuits are common to other suites in the Trunk Exchange.

The following teed circuits were brought into use:—

Circuits teed to the outgoing junction multiple on other floors	186
New outgoing junctions	161
Trunks transferred from Provincial Exchange	100
Trunks transferred from third floor main (old trunk suite)	10

with band conveyor down the centre, the teleprinter and milliampere-meters for indicating the sending and receiving currents. The band conveyors are displacing the low vacuum pneumatic house tubes in the building.

*Sports.*—The seventh annual swimming club gala will be held at Marshall Street Baths, W.1., on Tuesday, Sept. 19. The programme includes the 100 yds. Civil Service Junior Championship; the London Business Houses Ladies' Diving Championship; the club 100 yds. race for the McIlroy Cup; and the inter-section team race for the Denman Cup. A novel feature will be an inter-exchange race between teams of two ladies and two gentlemen.

A photograph is printed above of the L.E.D. Football Team, which was successful this year in winning the Civil Service Challenge Cup. The team will play during the coming season in the Premier Division of the London League. This is thought to be the first occasion on which a District team has played in senior amateur football. On Sept. 16 the first team is drawn to play Streatham Town in the first round in the F.A. Cup. The game will be played at Waddon.

*Staff Changes.*—Mr. W. E. Gravill has been appointed Assistant Superintending Engineer in the Eastern District. Since 1927 Mr. Gravill has been the Executive Engineer in charge of the South West External Section of the London Engineering District.

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GENTLEMEN'S WEST END TAILORED SUITS FROM  
5½ GUINEAS.

There have lately been several changes in the clerical staff in the District Office:—

Mr. A. E. Everett, who retired in March, has been replaced by Mr. J. E. T. S. Hilton as Officer in Charge of the Wayleave Section. Mr. F. J. Paine has taken charge of the Staff Section and Mr. A. E. Bennett has been appointed Higher Clerical Officer in the Staff Section.

Mr. E. J. Tucker has been placed in charge of the Warrant Accounts Section in place of Mr. G. T. McNally, who retired in May. Mr. H. Gardiner has been transferred to Warrant Accounts from the South East External Section, and succeeded there by Mr. H. H. Emmett, from the West Internal Section.

Mr. A. E. Spears has been appointed Higher Clerical Officer and transferred to the Testing Branch, Studd Street, to replace Mr. F. G. Petchey, who retired on Aug. 10.

Mr. E. W. Casserley, who was in charge of the Stores Section, unfortunately retired in February owing to ill health. He has been replaced by Mr. De Coster, whose position on the District Cash Accounts has been filled by Mr. A. W. Edwards from the South East Internal Section.

*G.P.O. North.*—A new electric lift has been fitted in substitution of the old hydraulic lift at the north-east entrance of G.P.O. North.

*Staff Salesmanship.*—During the month of July the staff of the London Engineering District were instrumental in obtaining orders for 32 exchange lines, 153 extensions and 1,017 hand-micro telephones, plugs, sockets, bells, extra receivers, &c.

*Radiolympia.*—At the National Radio Exhibition, held at Olympia from Aug. 15 to 24, a stand adjacent to the B.B.C. Theatre was equipped by the Post Office for the exhibition of radio apparatus, telephone switchboards and instruments, teleprinters and working models illustrating many phases of communication engineering. The resources of the staff of 36 engineering demonstrators, ably assisted by ladies from the L.T.S., were fully extended in entertaining the many visitors attracted to the display. The "Heat Beat" exhibit proved to be most popular. An interesting link with the past was the Electrophone table and receivers, which may be regarded as the forerunner of broadcasting. The model of a cable manhole containing a section of a cable with the joint open showing the special screened wires used for long distance transmission of music attracted considerable attention. The short lectures on radio interference were well attended, the capacity of the theatre on the stand was fully taxed at every session, and it is estimated that 1,000 complete demonstrations were given on the automatic demonstration set.

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## "WHY I LOST THAT ORDER."

(From the *Vauxhall-Bedford News*.)

If every salesman would have a "truth meeting" with himself after every lost order, and would make a critical analysis of the reasons for his failure, he would soon profit by an immeasurably improved sales technique. Here is a simple check list. How many of the reasons have lost *you* sales in the past? Be honest with yourself.

1. I lost the order because I was afraid the prospect would say "No."
2. I called without knowing anything about the prospect's business or needs.
3. I lost the order because I didn't have enough facts to prove my product was worth the money.
4. I had neglected my prospect too long.
5. I let myself get into an argument with the prospect—which I won. That is why I lost the sale.
6. I accepted the prospect's objections too willingly. He said he would be more favourable after Easter, but was that really a reason?
7. I talked too much about my product and the service and not enough about what my product would do for the prospect.
8. I talked myself into a sale—then talked myself out of it.
9. I had nothing newsy or fresh to offer a buyer who has been hearing the story of the service for years.
10. I tried to do too much high-pressure selling. I was too much of a scientific salesman, and not enough of a human being. Consequently, I've shut the door in my own face.
11. I failed to sell everybody in the buyer's organisation with whom I came in contact. Could his assistant—whom I ignored—have had more authority than I thought?
12. I went over the prospect's head in an undiplomatic way.
13. I let a ticklish service situation upset things. If the department sent a letter which annoyed the prospect, I should have been salesman enough to re-win his goodwill.
14. The prospect didn't seem to have any confidence in me. Am I a poor advertisement for my company? Perhaps I'd better pay more attention to shoes, clothes and clean collars.
15. I lost the prospect's sympathy because I spent too much time criticising competitive products, and not enough time talking about the advantages of my own.
16. I let the prospect scare me. After all, my business is as legitimate as his, and I shouldn't have been afraid of him. I was not attempting to impose on him; I was there to serve him.
17. I tried to sell the man who was easiest to reach, and did not take the trouble to find out who was the *real* prospect. I lost his order because I didn't go to the head of the business.

The simple wisdom of the foregoing is that it is all very human. There is nothing mysterious about it. The objections or excuses are just those we might set up ourselves and the frailty of them must be admitted.

Selling is only a matter of looking at buying as though we were buyers and then approaching the prospect as though approaching ourselves. "Treat the prospect as you would be treated" is the best advice that can be given to a salesman.

To get the full import of this helpful contribution it is necessary to read it again and again.

F. ENGLAND.

## A HOLIDAY IN IRELAND.

By E. E. C.

THIS is the story of a delightful holiday in Western Ireland, a holiday crowded with adventure, surprises, and fun. If you catch the spirit of it, maybe you will want to go too!

Westport, in Co. Mayo, is the starting point. It is 500 miles by rail from London and the speediest journey thither by way of Holyhead, Dublin, and Athlone, can be done in just over 15 hours. We arrived there just after midnight one Saturday in July—a party of five: two ladies and three gentlemen. Westport is a quaint little town. The wide main street with a fine avenue of trees and a river running through the middle is the only street worth mentioning. The houses are small, constructed of a dull grey stone. Some of them do not bear close inspection. Large, empty warehouses down by the quay are a dismal reminder of prosperity that is gone. But the people, although poor, are happy, friendly, and boisterous in a typically Irish way.

We had come to Western Ireland with the intention of having a roving holiday, carrying all our equipment with us. We set out into the unknown on a jaunting car in picturesque style. Pat Riley, our driver, a talkative fellow, treated us with a constant round of stories about people in the district, and within a couple of hours we were quite well-informed about local affairs—particularly about local scandal. I shall never forget a priceless piece of Irish humour which came from the lips of a bearded ancient as we left our jaunting car at Newport and walked out of the town. Something had attracted my attention and I was walking some paces behind the other members of the party, when suddenly the old man appeared from a cottage, and seeing instantly that our party consisted of three male members and two females, he cried to me "Hi, you! where's your woman?"

For three days we wandered on Achill Island, a mountainous, barren, boggy and rather forbidding island about 45 square miles in extent—a paradise for adventurers. At the western end of the island, Achill Head breaks the colossal force of the Atlantic rollers, and here, rising sheer from the sea, are cliffs which are among the highest in Europe. Slievemoor Mountain sits firmly in the middle of the island, and at the foot of the mountain in the shelter of a number of bays, there are small settlements of fisher folk, whose houses, with their white walls and thatched roofs outlined against the black mountainside, present a striking picture. These people live in splendid isolation. One omnibus a day is their only means of transport to Westport and telephonic communication is non-existent. The men, dark-haired and dark-skinned, spend most of their time fishing; the women, bare-headed and bare-footed, looking very picturesque in their shawls and red petticoats, work on the land or ride donkeys out to the moor to gather peat for the fires. Dugort, Dooaugh, Keel, Dooega—strange names, small straggling settlements—we explored each of them. A common characteristic of these



ROAD ALONG KILLARY BAY.

places is a long flat stretch of sand, called a strand, lining each bay, and so deserted is this corner of the world that frequently we found that we had the exclusive use of one of these strands two to three miles long. Bathing was excellent.

One day we ventured forth on a fishing expedition with two fishermen in a corraque, a frail home-made craft, constructed of thin boards covered with canvas. When we had cast two nets we spent a half-hour exploring a small island and then returned to the nets. Hauling in was slow work for the sea was rather choppy, but fish quickly appeared in the meshes, and

the bottom of the boat was soon alive with large turbot, gurnard, plaice and skate, all wet, slippery, and jumpy. We landed a good catch and our fishermen friends were delighted.

Croagh Patrick is a famous mountain to the south of Westport on the way to Connemara, which was our next objective. The mountain is 2,500 feet in height—not high as mountains go—and there is a well defined route to the top, but the route is strewn with boulders which increase in size as you proceed, and the last 500 feet is a strenuous climb. We climbed Croagh Patrick, and from a great height were able to see the wild rocky coasts of Connemara bound with a regular white bank of Atlantic foam, the mountains of Joyce's Country, and the famous range of mountains named the Twelve Pins of Connemara, far off Achill Island from which we had just come, and countless smaller islands flecking the deep blue of the Atlantic. It was a wonderful panorama, well worth the energy expended in climbing the 2,500 feet.

Journeying south towards Leenane in Connemara we were one day overtaken by a violent storm, and the result of our search for shelter provides me with my next picture of Ireland. Anxious to shelter from the deluge we stumbled into a small one-roomed cottage. We found that the place was occupied by two rather corpulent women and five small children,



THE JAUNTING CAR.

the youngest, a baby about six months old, being asleep on a bed. We were given a hearty welcome and were soon seated on stools in various parts of the room. Peering through masses of hanging laundry, we observed two beds slung one above the other along one wall of the room, and in the middle of another wall a fireplace, over which hung a huge iron pot—used, we were informed, for a multiplicity of purposes, boiling, roasting, baking, &c. Near the door of the cottage was a small table at which four children were having their midday meal of boiled potatoes and boiled cabbage. A dog squatted by the door ready always for any morsel which might be thrown to him. The nearest drinking water was half a mile away. The women were very hospitable and offered us tea and bread. We stayed long enough in this cottage to obtain a lasting impression of the conditions in the homesteads of the poor in Ireland.

Leenane is a small village on the south side of Killary Bay, a long, narrow fjord-like bay with some of the finest mountains in Ireland rising on either side. At the eastern end of the bay, beside the picturesque Aasleagh Falls, we fell in with a press photographer, who found in our party sufficient material for seven photographs. Proceeding south towards Galway, we stayed for some time at Kylemore Castle, a beautiful white castle on the shore of a lake and at the foot of a thickly-wooded mountain, built some years ago as a residence by a very wealthy gentleman. The scene here is one of the most beautiful in all Connemara. The Castle is now a Catholic school for girls. We stayed there for tea and then proceeded to Letterfrack, the southernmost point of our journey.

We made our way back to Westport in a Ford car, and from there returned to London, spending some hours in Dublin en route. Our holiday was over. What of it? We had stood on the roof of Ireland; we had sat by the hearth of the poorest and the richest in the land; on our outward journey we had caught a glimpse of the man who has been elected to control the destiny of the Free State—Eamon de Valera; we had sampled Irish hospitality and Irish humour, and last, but not least, we had seen Dublin "the city that wears its grandeur like an old coat that still fits."

Limitations of space prevent me writing more, but if you want to separate yourself by 500 miles from London, if you want to meet people who will respond to your friendliness with a passionate sincerity which is seldom found elsewhere; if you want to get beyond the sphere of activity, even of the telephone, throw a ruck sack on your back sometime this summer and pay a visit to Western Ireland.

## BELFAST DISTRICT NOTES.

*Honour for our Postmaster-Surveyor.*—The last Birthday Honours List contained the name of Mr. A. J. Ardern, Postmaster-Surveyor of Belfast, who had conferred on him the Order of the British Empire. This signal honour was the occasion of congratulation from all grades in the Service and the opportunity was also taken by the Post Office Golfing Society to present him with a bag of golf clubs in recognition of the deep and practical interest he has always taken in the society, and which owes its success in no small measure to Mr. Ardern's presidency. The members of the golfing society have had a number of enjoyable days this year as we had a visit from the Glasgow Electric (Post Office Telegraphs) team and travelled to Dublin to play a team representing the Dublin Post Office, and to Londonderry, where we met a team representing the Post Office in the North West. It must, unfortunately, be admitted that we suffered defeat on all three occasions, but we live in hope that the position will be reversed next year, when return matches will be played.

*Londonderry.*—The ancient city of Londonderry has enjoyed a fair share of the limelight lately, first as one of the stopping places for the Italian transatlantic flight and more recently on the opening of the Craigavon Bridge by the Lord Mayor of London. The exchange in Londonderry is of the C.B. No. 9 type, the only one of its kind in the country, and perhaps in the world. Each keyshelf is fitted with five rows of ringing buttons and one row of speaking keys, while the clearing signals are "negative," i.e., they are in the operated position so long as the subscriber's receiver is off the switchhook. Transfer to automatic working is expected about 1937 and in the meantime it is not possible to introduce demand working.

*Phonogram and Telephone-Telegram Equipment.*—The new phonogram and telephone-telegram suites in the Belfast Post Office were opened on Aug. 3. The equipment consists of two separate suites of 12 positions, each accommodated on a double table with the now standard V-type belt conveyor and known as the 5-panel 2-position double tier continuous ancillary type. An additional ancillary of the incoming phonogram lines is provided on the telephone-telegram suite for concentration purposes and a repetition of the incoming telephone-telegram circuits is provided on the phonogram suite in order that relief may be afforded if necessary. Each position is fitted with two cord circuits with their associated keys and supervisory lamps and in addition a "dial" switching and transmitter cut-out key and a rheostat volume control are also provided. For circulation purposes the necessary equipment is provided on the telephone-telegram suite to indicate whether an office served by a direct line is already engaged and the position at which it is engaged. In order that calling signals may be answered as far as possible in the order in which they appear arrangements have been made for the steady glow of the calling lamp to be changed to a flashing signal after a predetermined period.

Typewriter reception is in operation and the new equipment has proved very satisfactory since its installation, faults being very few and mainly confined to adjustment of relays.

*Obituary.*—The District Office and Sales Section each lost a male clerical officer by death within a week of each other. Mr. Gordon was a clerk with the National Telephone Company, and entered the Post Office at the time of the transfer. His death came with tragic suddenness at the beginning of his annual leave, and was a great shock to his colleagues. Mr. MacIlwaine was also an ex-employee of the National Telephone Company and his death came very shortly after his superannuation, following a long illness.

To their sorrowing families we extend our deep and sincere sympathy.

## SCOTLAND (WESTERN DISTRICT) NOTES.

ON the occasion of her resignation on account of marriage, Miss A. M. Macdonald, Writing Assistant, was presented with a clock, as a token of the esteem in which she was held by the staff.

It was with much pleasure that the staff received the news of the promotion of Mr. C. R. Dickenson, Assistant Traffic Superintendent, to the grade of Assistant Inspector of Telegraph and Telephone Traffic, Class II, Secretary's Office, London. We congratulate him on the appointment and wish him success in his new sphere.

On Saturday, June 24, 1933, a representative gathering of the staff had a tour of the Five Lochs, per Alexander's Sunshine Saloon Motors. The route covered embraces some of Scotland's loveliest and most varied scenery.

Leaving Glasgow by the New Boulevard, the route taken followed the river to Dumbarton, thence inland to Loch Lomond, along the side of which

the road skirted the water for over 20 miles and on to Crianlarich, where a short halt was made. Continuing the journey Loch Dochart and Loch Luib were passed and then Glen Ogle, one of the wildest glens in Scotland, was entered. In delightful contrast to the Glen was Loch Earn, which came into view at the end of the Glen. An interval of two hours was taken at Strathyre, on the shores of Loch Lubnaig. Here tea was served. The company then had an opportunity of having a look round the village and its neighbourhood. The time allotted for this seemed all too short. The homeward journey was made by Callander (passing the Lake of Menteith) and Aberfoyle, arriving back in Glasgow at 9 p.m.

The outing was favoured with splendid weather, which greatly added to the enjoyment.

Mr. George Graham, Sales Representative, succeeded in carrying off the 1st prize (handicap) in the recent Scottish Civil Service Championship, which was played on June 12, over the fine links belonging to the Hamilton Golf Club. Mr. Graham's handicap was 18 and his net score 68. How's that for a budding champion?

A. MUIR.

## FAREWELL TO A NOTABLE "QUAD" OF THE SUPERINTENDENT CLASS.

It is necessary to record this month an occurrence which, if memory is not playing falsely, is unparalleled in the history of the Cable Room—the retirement on reaching the age of 60 years of four officers of supervising rank. Sept. 12 will terminate the service of the last of a quartette with whom it has been a pleasure to serve, whose attributes are varied and appreciated and for whose happy future the best wishes have been voiced in all ranks.

In parting with Messrs. F. S. Gullan (Assistant Superintendent), W. H. F. Webb (Assistant Superintendent), T. H. Corkill (Assistant Superintendent) and J. G. King (Superintendent, Higher Grade) our feelings are mixed; we are regretful at the loss of their companionship and co-operation, but delighted to see that their excellent physique and keen mentality promise long healthy lives.

Denizens of an ever-changing official world, they, as the "oldest inhabitants" of the Cable Room, have seen more alterations in method, regime and personnel than the vast majority of the colleagues they leave behind. They were members of the little band from the Central Telegraph Office which migrated in 1889 to Throgmorton Avenue to assist in operating the cables transferred from the Submarine Telegraph Company to the Pct Office. After the transfer of the communications from Throgmorton Avenue to G.P.O. (West) they saw the apparatus change from Morse and Hughes to Baudot and Siemens, and watched the Cable Room expand beyond the area now covered by cloak-room lockers, until it embraced the whole of the second floor, housing for certain periods the trunk telephone lines and the "Beam" wireless colonial communications.

In the various phases of official and social life, each of them took his part. In earlier days, like all good operators, they did their "totals." They worked and played, inspired by the Cable Room spirit. To the younger generation they may appear old, but they are young at heart, as their regular appearance at sports and concerts has proved. The popularity they gained has been retained as the years have flown, and a mention of their names will always give rise to affectionate memories of striking personalities.

Each of them has always been ready before and after promotion to assist his colleagues to the best of his ability: Mr. Gullan, in a modest and unassuming, yet withal jovial and expanding, manner, while the others added "Association" work to their private activities. We shall not forget that when it was considered necessary to form an independent branch of the P.T.C.A., Messrs. King, Corkill and Webb were among those who met in an alcoved underground place of refreshment, not a hundred miles from the crypt of St. Paul's Cathedral, and formed the first Cable Room Branch of that organisation. Since then they have at various times occupied the honourable and onerous positions of Secretary, or Chairman (or both) in our professional associations. In addition to carrying out the duties connected with these posts, Messrs. Corkill and Webb were among those who presented the aspirations and claims of the Cable Room to the Hobhouse Committee (1906) and the Industrial Court (1930), respectively, while Mr. King was included in the British delegation to the meeting of the Comité Consultatif International (Télégraphes) at Berlin in 1929.

Each of them leaves us with a record of which any man might be proud, and for which the thanks of every Cable Room man are due.

We shall no doubt have the pleasure of confirming our friendship on many future social occasions, but the end of our joint official lives has come and we bid our four friends *au revoir*, tendering the sincerest good wishes of the whole Cable Room staff, and hoping they will live long and happily in their well-earned retirement.—H. G. S. in *The Overseas Telegraph*.

## SOME ENCOMIUMS FROM THE NEWCASTLE DISTRICT.

### EXTRACT FROM LETTER RECEIVED FROM A STOCKSFIELD SUBSCRIBER.

In concluding this application I should like to record my warmest appreciation of the telephone services enjoyed during the past two years in my present home at Stocksfeld. On several occasions business has involved quite a lot of telephoning at a most uncongenial time in the "Wee sma hours," and I have at such times received such uncomplaining and helpful assistance from your Stocksfeld Exchange in particular that I feel impelled to take this opportunity of placing my appreciation on record.

### IN A MOTOR ACCIDENT EMERGENCY.

I want to convey to you my great appreciation of the helpfulness of the operator at Wideopen Exchange on Wednesday evening.

A terrible motor accident occurred and I went to the telephone belonging to the North Eastern Estate Developments Company to ring up ambulance, doctor and police. This was at twenty to eight. He very promptly put me through to an ambulance and whilst I was speaking to them he rang round one or two policemen till he found one, asked him to proceed at once to the spot and rang up golf clubs and other places for a doctor.

By the time I had finished with the ambulance he had tried several places without success and I suggested a doctor in Gosforth. Without asking for any number or anything he got me through very shortly. He was most helpful and his co-operation resulted in the two injured people being in the infirmary within 18 minutes of the accident's occurring—a truly remarkable feat.

Later in the evening I rang up to thank him and his cheerful reply was, "Oh, that's all right, Colonel. That's what we're here for." Even so, it is a great pleasure to be able to pay spontaneous tribute to the helpful co-operation of this official.

### A CASE OF SICKNESS.

Although it takes a long time to get in touch with "Trunks" or "Telegrams" from my house in Osborne Avenue, I feel I must pay a tribute to the excellent service afforded me by the operators on duty last night.

I was desirous of getting in touch with my brother, whom I believed to be at the Royal Pavilion Hotel, Folkestone, and the very personal and intelligent interest which your operator gave to the matter was indeed a pleasure, and was the more gratifying in view of the fact that a matter of illness had caused me to try and get through. When later I sent a couple of telegrams after midnight, the service was very good also, and one could do no better even if one had a private telephone operator of one's own in the house.

## NEWCASTLE-ON-TYNE NOTES.

*Supervisors' Presentation.*—On May 25 a large and representative gathering assembled at Telephone House to bid farewell to our five Telephone Supervisors (Misses Holt, Amers, Spraggon, France and Readdie) who had recently retired from the Service on a voluntary basis. Mr. F. Ferguson (Postmaster-Surveyor) presided, and paid tribute to the excellent manner in which each officer had performed her duties. On behalf of the Supervisors and Staff, Mr. J. D. W. Stewart (District Manager) presented beautiful gifts to each Supervisor and conveyed to them the best wishes of their former colleagues for a long and happy retirement. These officers have left behind a tradition of good service of which they can be justly proud. The high standard maintained at this office owes much to their outstanding abilities and devotion to duty.

Congratulations to Mr. J. H. Anstee on his promotion to Traffic Superintendent, Class II, at Southampton. Before leaving Newcastle Mr. Anstee received handsome presents from the staffs at Newcastle and Jesmond Telephone Exchanges and from the District Manager's staff.

Welcome back to Mr. Wiles, A.T.S., re-transferred to us from Birmingham.

Messrs. Slater (Sales) and Mr. Helliwell (Traffic) dead heated for the marriage stakes on June 1. Mr. McGann, Exchange Superintendent, followed suit in July. Who's next?

All three were the recipients of handsome presents, together with plenty of good advice.

## GUILDFORD DISTRICT NOTES.

The usual monthly meeting of the Sales Branch was held on Monday, July 31, when a very interesting agenda was discussed.

*Postmasters' Cricket Shield.*—The 2nd round replay Winchester v. Guildford Engineers and Telephones C.C. was played at West Down School Ground, Winchester, on July 20, 1933, resulting in a victory for the visitors, after an interesting game. The first meeting ended in a drawn game at Guildford, the scores being Guildford 179 for 5 (declared) (S. D. Pendry 59 not out, C. White 53 not out, W. E. Jenner 52), Winchester 83 for 6 (F. Langridge 42 not out). In the replay Guildford had to field a weakened side owing to illness, but managed to dismiss Winchester rather cheaply, and passed their opponents' score for the loss of only three wickets, but the remaining wickets fell rapidly. For the winners J. B. Plant took 6 wickets for 30 runs and R. Piper 4 wickets for 47 runs.

Winchester.		Guildford Engrs. and Telephones.	
F. Langridge, c. Pendry, b. Plant	6	S. D. Pendry, b. E. J. Smith	15
E. J. Smith, c. Ansell, b. Plant	11	W. Hart, c. Rawlings, b. R. Smith	40
F. Bandy, b. Piper	11	C. White, b. R. Smith	23
W. Rawlings, b. Piper	22	R. Piper, b. R. Smith	0
D. Shefferd, c. Weller, b. Plant	13	L. Ansell, b. E. J. Smith	0
L. Gates, b. Piper	4	R. Woodham, b. R. Smith	8
R. Smith, l.b.w., b. Piper	4	J. B. Plant, c. sub., b. Shefferd	1
P. Stevenson, b. Plant	8	R. Ayears, c. Gates, b. Shefferd	0
I. Perrot, c. Hart, b. Plant	2	L. Weller, not out	8
W. Nightingale, not out	3	A. Kings, b. Langridge	0
R. Lawrence, b. Plant	0	R. Connell, b. Shefferd	1
Extras	9	Extras	13
	86		109

*A New Force.*—Being an abridged, hitherto unpublished and entirely imaginary essay of the late Lord Macaulay.—We have recently enjoyed a most interesting, and indeed enthralling, experience. Some days since, on Tuesday last, to be precise, we were invited personally to investigate an invention which will undoubtedly prove advantageous in an extraordinary degree to the whole human race. We allude to the wonderful new means of communication called the telephone system, which we were privileged to inspect in the drawing room of Melbourne House, Lady Caroline Lamb being what is termed the subscriber. We were first shown a printed list of names with several of which we are quite familiar. Against each name was a number, and Lady Caroline suggested that we should speak to one of these. Our choice fell upon Mr. Disraeli, the new member for Maidstone. Lady Caroline then took a part of the apparatus containing a mouthpiece, rang a bell and said "Give me 77, please," then, so rapidly that she seemed merely to be continuing the conversation, she said, "Is that you Benjamin? Lord Macaulay would like to speak to you." She then handed us the instrument and we instantly recognised the voice of our ambitious young friend with whom we held for several minutes, an interesting conversation. The obvious result of this experience was that we immediately requested the proprietors of this amazing invention to instal the same in our study, and we can now, without even leaving our room, converse quite freely with any other person sharing the same facility.

When we contemplate the immense possibilities of this invention, our astonishment grows to bewildering proportions. It must be admitted that in this enlightened age, we are provided with luxuries and comforts which alleviate greatly the previous issues of human experience, yet as the means of communication must, by virtue of its very essential application, be more valuable than any other boon conceived by man, therefore, the invention of this system and those who introduce, operate and maintain the same must obviously rank high among the benefactors of their kind.

A few words in conclusion. We render ungrudging admiration to those men who, with unerring judgment of mechanical power, provide, and to those maidens whose nimble fingers disperse, the current of speech, but the intensity of our admiration and gratitude must be reserved for that noble band, who, heedless of apathy or antagonism, and indifferent to climatic conditions, do, with incomparable enthusiasm, daily adventure forth through grey city and green countryside, spreading far and wide the good news of this splendid service and inviting, nay, even urging, the general public to avail themselves of its advantages.

H. H.-C.

[Our imaginative contributor attributes to Lord Macaulay great prophetic instinct in foreseeing in the 'forties an invention which took place in 1876.—Ed., T. & T. Journal.]

# THE Telegraph and Telephone Journal.

Vol. XX.

OCTOBER, 1933.

No. 223.

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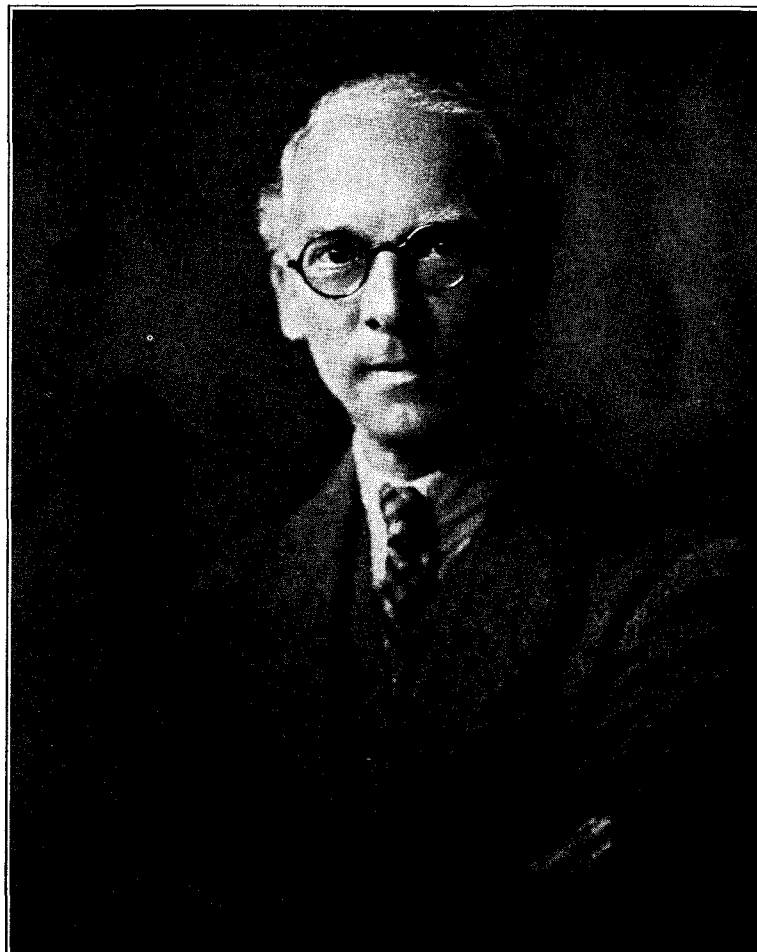
*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CXIII.

MR. B. R. MEAD.

MR. B. R. MEAD, whose portrait appears this month, joined the Post Office Service as a Counter Clerk and Telegraphist in 1900, and eight years later, passing the Supplementary Examination, was appointed to the Money Order Office. From there he was transferred to the London Telephone Service, and during the war suffered a metamorphosis from the grade of Clerk to Assistant Superintendent of Traffic, Class II, being promoted in 1925 to the first class, and went to Canterbury as District Manager in 1930. He possesses studious qualities and has a facility of expression, including a partiality for the



"honeyed" phrase which is perhaps only to be expected in one of his patronymic—qualities which stand him in good stead in the successful running of his district. Before going to his present post he lived at Chipping Barnet, and took an active interest in its rich associations of the past and in the administration of its old charities. He, therefore, finds life in the shadow of England's premier cathedral much to his liking, although he still retains a great fondness for London. In his leisure moments he keeps a garden as orderly as he keeps an office, and with car and camera manages to fill all "indirectly occupied time," as they say in telephone traffic circles. Mead's motto in all that he does is "Thoroughness."

[Photograph by W. Fisk Moore, Canterbury.]

The  
**Telegraph and Telephone Journal.**

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

Editing and Organising Committee - - -	}	Col. A. A. JAYNE.
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		W. D. SHARP.
		W. H. U. NAPIER.
		G. H. TAYLOR.
Managing Editor - -	}	J. W. WISSENDEN.
		W. H. GUNSTON.

### NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.*

VOL. XX.

OCTOBER, 1933.

No. 223.

### THE OLD AND THE NEW.

It gives us great pleasure to publish an official announcement of the new *Post Office Magazine*.

The pleasure is tinged with sadness at the reflection that our contemporary, *St. Martins*, comes to an end this month, after continuous publication for 43 years; and that the days of this Journal are also numbered. Both *St. Martins* and this Journal are ceasing publication because of the retirement of their respective editors from the service. The present journals are not being ousted by the new magazine: on the contrary, one of the objects of the magazine is to fill the gap which the lapse of the present journals will cause.

Our relations with *St. Martins* have always been most cordial. Though it has by no means neglected telegraphs and telephones, the postal services have been its main interest. It has maintained a high standard throughout. It has usually been most felicitous in its personal notes, and the quality of its illustrations deserves special praise. In particular, it has given abundant scope to the extra-official activities of Post Office servants; and every Post Office man who has attained distinction in the world of letters has been among its contributors. Its present editor, Mr. R. W. Hatswell, and his predecessor, Mr. E. Bennett, who, from the first number to the last, has been a contributor, have every reason to reflect on their achievement with pride; and all the readers of *St. Martins* will regret its passing.

Of this Journal we will not speak, partly from modesty, and also because it is not dead yet (the last number will probably be issued in December). But *St. Martins* and this Journal between them have established a sound tradition of Post Office journalism; and that tradition and the "goodwill" that is based on it are wholly at the service of the new magazine. Its main objects are set out in this number; in our remaining numbers we hope to make fuller statements showing the means by which it proposes

to attain these objects. We do not yet know how far the new magazine will carry on the main features of its predecessors, but it is safe to say that in many respects it will strike out on new lines. Good art is never imitative, nor is imitation the form of flattery that we desire.

We sincerely wish all success to the experiment. Sir Kingsley Wood is embarking on the project in a spirit of optimism; we hope that the event will more than justify his expectations.

### COMPARATIVE STATISTICS.

A CORRESPONDENT in Portugal, whose letter we publish elsewhere, remarks that statistics comparing the ratio of telephones to population in various places are subject to so many modifying conditions that any comparisons made on such a basis should only be applied with the greatest care. This is true enough, and indeed we have often insisted on the fact in these columns. Whilst our correspondent modestly hints that some abler pen than his might suggest a more comparable basis, his criticism, it seems to us, amounts to a suggestion that telephone statistics should in some way be equated by taking into consideration economic factors. We have sometimes pondered on the idea of trying to relate telephone development to income or the cost of living in different countries or districts, but the difficulties of doing so were enormous, and during these recent years, which have seen such extraordinary fluctuations in exchange values and such a rapid, and unexpected decline in spending power, almost insuperable. Even if it were possible to ascertain that the average income in the United States, for example, was one-third (or any other given figure) higher than in Great Britain, it would not follow that the telephone development of the former country should be no more than one-third higher than that of this country. Questions of cost of production and local conditions still further complicate the question. There is still another consideration. All-important though the telephone service is to us who are engaged in its service, and rightly though we direct all our endeavours to multiply its use and popularity, the telephone is not the only criterion of comfort and civilisation. In some countries other and older means of communication are so well developed that the lack of the telephone is not so urgently felt as in countries and parts of countries where the telephone is the only available form of quick communication. Some countries, such as South Africa, endeavour to improve their figures by showing the ratio of telephones to white population. This, however, could not fairly be compared with the telephone ratio of Western European countries, which, though they have no "coloured" population, have a large population of domestic servants and farm labourers who are as unlikely to rent telephones as Kaffirs; nor, on this basis, is any sort of comparison between South Africa and a country such as Egypt (one of those instanced by our correspondent) conceivable.

We fear that the only course for the statistician is to collect and summarise his figures as carefully as possible, calculate the ratio of telephones or miles of wire (as the case may be) to population or area, and preface his tables with any caveat as to variability of conditions in different places which may suggest itself to him. Speaking broadly, we may generally (though not, of course, invariably) assume that the cause of marked differentiations between country and country and town and town is not solely enterprise on the one hand, and laxity on the other. It is often due to economic and even cultural causes. The reasons why such districts as the Potteries, the Black Country, or a large



colliery town do not show such a telephone density as Bournemouth, Brighton and Harrogate are well known or easily explained, if necessary, in a prefatory note. All countries show these disparities in their telephone development. In the United States, for example, the percentage development of New York is 22, of Chicago 23, while that of Jersey City is 11.7 and of East Chicago 6.5. In Germany, whilst Hamburg, Munich, Frankfurt, &c., have a telephone density of over 10 per 100, that of places like Dortmund, Duisburg and Essen is under 5.

If, therefore, abler pens can bring forward any suggestions for placing telephone statistics on a more favourable basis for purposes of comparison they will be welcomed, we believe, by all statisticians.

### THE "POST OFFICE MAGAZINE."

We have received the following official notification:—

"The Postmaster-General has approved a proposal to publish a monthly journal for circulation among the staff of the Post Office. Its objects will be to keep the staff more fully informed of the main activities of the Post Office, and to maintain and further encourage *esprit de corps*, and the sense of a common interest in providing the public with a service of the highest efficiency.

"The journal will be known as the *Post Office Magazine*. Its price (to members of the staff) will probably be one penny a month.

"The magazine will be freely illustrated. A large part of its contents will consist of local news, including suitable items of personal news and records of social activities among the staff; and a correspondent will be appointed in each Department and District in order to keep the editor in close touch with local developments.

"It is hoped to publish the first number in January next. The *Post Office Magazine* is in the nature of an experiment, but the Postmaster-General has every hope that its circulation will be so great as to justify the very low price at which it is to be sold."

### TO OUR AGENTS AND SUBSCRIBERS.

#### IMPORTANT.

As far as can be seen at present the *Telegraph and Telephone Journal* will cease publication at the end of this year, after the issue of the December number. As will be seen from the foregoing notice, a new journal, the *Post Office Magazine*, covering all fields of Post Office activity, will probably make its appearance in January.

Agents for the *Journal* in the various telephone districts and head post offices are therefore requested not to accept a full year's subscription for Vol. XX, but should either collect a quarter's subscription, or the relative monthly payments for the October, November, and December issues. It is hoped that they will endeavour to remit these payments before the end of the current year, in order that the *Journal* accounts may be promptly closed.

Those readers, home and foreign, who pay subscriptions direct to the Editing Committee, and whose subscriptions do not expire until some date in 1934, will be given the option either of transferring the balance of their subscription to the new magazine, or of having it refunded. The Managing Editor will communicate with them in due course, but it will facilitate settlement if those to whose notice this paragraph comes, will write and make known their wishes.

### HIC ET UBIQUE.

WE offer our sincere congratulations to Mr. G. T. Archibald, who has been appointed Controller of the Central Telegraph Office to fill the vacancy caused by the retirement of our colleague (and Chairman of our Editing Committee), Mr. J. Stuart Jones.



MR. G. T. ARCHIBALD.

Mr. Archibald has been Deputy Controller since 1930. A short biographical sketch of his career appeared in the October, 1929, issue of the *Journal*.

Commander E. L. C. Grattan, D.S.O., has been appointed Deputy Controller.

Articles on demand trunk working bulk largely in this issue of the *Journal*. There are articles describing in some detail its introduction in Glasgow, Nottingham and Leicester; but not the least important reference to the system is the modest paragraph in "London Engineering Notes" recording that it is now possible for London subscribers to obtain the great majority of their trunk calls on demand. This our correspondent rightly describes as the culmination of the scheme as regards London. On Sept. 18, for example, 88% of London subscribers' trunk calls were dealt with on a Demand basis, and 70% actually completed on demand. The event, as was fitting, attracted a good deal of attention in the daily Press. What a difference from that not-so-distant time when, on booking a trunk call, the operator used to ring the subscriber a quarter of an hour, half an hour later—or more—to inform him that he was "through"! It is, moreover, proposed to introduce a limited measure of demand working on the Anglo-Continental trunk service shortly.

In referring, last month, to the abolition of the installation charge for telephone service in Germany, we should have explained that the charge referred to is that formerly levied for supplying the subscriber's apparatus. The charge for the actual cost of work and materials in installing the line still remains.

A correspondent in Haifa, Palestine, writes with regard to the paragraph on page 246: "The route from Iraq to Palestine, i.e., from Haditha through Transjordan and Iraq via Haditha to Kirkuk in the South, a distance of Miles 620, and Tripoli to bifurcation point Haditha, in the North, Miles 370, was completed in April last. The actual conductors used were 300 lb. cadmium copper wires. Construction was commenced in September, 1932, and completed in April, 1933. Full telegraph service is now working all over the system, but of a temporary nature during construction."

The *Manchester Guardian* explains to its readers in lively fashion the correct reason for the naming of automatic exchanges after poets, artists, statesmen and actors:—

The news that the new automatic telephone exchange at Wembley is to be named "Arnold," in honour of Matthew Arnold, I hope will suggest a practical subject for a cartoon by "Max." One can picture a heated scene at the G.P.O. with a dozen or more of the telephone service experts seated round a table, each of them thrusting forward the claims of his favourite poet to have the newest exchange named after him. The unromantic explanation of the matter is that the names are chosen on strictly mathematical grounds by the Post Office engineers—the principal consideration being that the first three letters of the name of the exchange shall not coincide with the first three letters of another. The new names, however, are always chosen with the approval of the local authorities, who are invited to suggest the name of a famous man of past times who had associations with the neighbourhood. Hence "Byron" at Harrow, "Popesgrove" at Twickenham, "Gladstone" at Dollis Hill, and "Flaxman" at Chelsea.

Why Cricklewood should have been renamed "Wordsworth" is a mystery only to be explained by a Post Office engineer. "Advance" for the Bow district, it is said, owes its inspiration to Mr. George Lansbury.

It is a pity, however, that such high-sounding names should, under the new automatic system, be irreverently abbreviated into their first three letters, so that "Popesgrove" becomes "Pop" and "Macaulay" mere "Mac."

As to this, we may quote from "The Fruit Garden of Learning for the Nourishment of the Discerning":—

Quoth Pop to Mac: "This is a sorry game  
To shear the splendour of an honoured name,  
To serve the dull, mechanic-minded mob  
In their strange antic diallings. Oh, shame!"

Quoth Mac to Pop: "Ah, surely, if one serves  
The body-politic's electric nerves  
By lending one's truncated name thereto,  
More honour than before that name deserves."

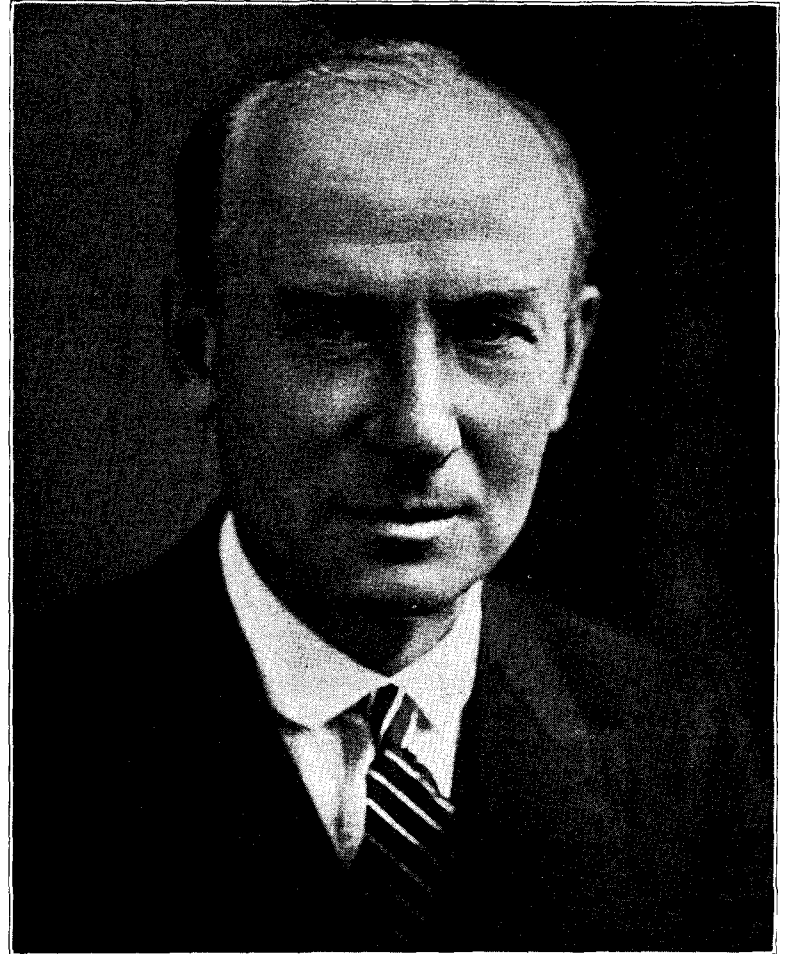
## RETIREMENT OF MR. J. STUART JONES, C.B.E.

MR. JAMES STUART JONES, C.B.E., Controller of the Central Telegraph Office, retired on pension on Sept. 30 last, after nearly 44 years' service.

Mr. Stuart Jones commenced his career as a copyist in the Lunacy Commission Department in February, 1892. Three months later he was appointed Second Division Clerk at the Savings Bank, where he remained until 1895, when he was transferred to the Secretary's Office as Third Class Clerk. Promotion to the Second Class followed ten years later. His experience in the Telephone Branch led to his appointment as Assistant Traffic Manager in 1907, and from that time his progress was rapid. He became Traffic Manager, Class II, in 1910; Traffic Manager, Class I, in 1912; Inspector of Telegraph and Telephone Traffic (on the

formation of the Headquarters Telegraph and Telephone Traffic Section) in 1916; Deputy Chief Inspector in 1924. In 1926 he transferred to the Central Telegraph Office as Deputy Controller to Mr. John Lee, C.B.E., whom he succeeded in the office of Controller in 1927. His services were recognised by conferment of Companionship of The Order of The British Empire in 1932.

Mr. Stuart Jones paid two official visits to the United States of America. The earlier mission was concerned chiefly with



MR. J. STUART JONES.

telephone development. The second, which took place in 1928, was made under the leadership of Mr. L. Simon, who headed the Commission appointed to study American telegraph practice.

His exceptional knowledge of telephone matters gained for Mr. Stuart Jones considerable fame in the Post Office. He played an important part in the negotiations for the transfer of the Trunk Telephone Service from the National Telephone Company to the State in 1895-6; and during the period 1904-7 he discharged responsible duties in connexion with the development of trunk line services, the reconstruction of trunk switchboards, and the main line zone routing scheme. The ensuing nine years were closely occupied with the wider aspects of traffic management; the consummation of the transfer of the National Telephone Company's undertaking to the State, followed by the amalgamation of trunk and local exchanges, and the commencement of the "no delay" service on short distance trunk routes.

From 1916 until the end of the war, although technically attached to the Telegraph Traffic Section, Mr. Stuart Jones was fully occupied with the scheme for air raid warnings. He attacked post-war problems with characteristic energy, one of the successful

issues of his studies during this period being the introduction of the telegraph zone routing scheme.

His Controiership of the Central Telegraph Office has covered an interesting and critical period of its history. The change in the methods of telegraph communication from Morse and automatic autoplex to teleprinter and telephone has taken place during his term of office, and his retirement coincides with the last stages of the work of reorganisation of the galleries to suit the newer systems.

Mr. Stuart Jones was an enthusiastic participant in all the social interests of his staff. His genius for seeing the other fellow's point of view, his strong human sympathies and lovable character held him in the affectionate regard of his staff who will miss the influence of his genial presence at their social gatherings.

The official connexion is severed: but the wide circle of his friends in the Central Telegraph Office, the Headquarters Departments, and in the provinces, will continue to think of Mr. Stuart Jones with a very sincere and intimate kindness.

## SERVICE.

"EXCUSE me!" With this remark I was touched on the arm by a neatly-dressed, attractive woman of, perhaps, thirty summers; somewhat pale, and obviously nervous in the process of addressing a strange man. Happening, as it did, in a busy West End thoroughfare, natural doubts assailed my mind. Was this the old, old hard-luck story, or merely a request for information or direction? One thing was certain. This was no siren exercising the "Standard Approach." "Excuse me! Could you help me with a little matter of telephoning?"

"Certainly!" After all, that is my job as a public servant.

A kiosk was within a few paces, and to this I was led. With faltering voice the woman made her request known.

Would I ring Victoria 9999 and ask to speak to Mr. Dean. A lady secretary would answer, and would comply with the request provided the voice was that of a male. Immediately I grasped her meaning, but a thousand doubts crowded one upon the other. Who was she? The wife, sister, friend, lover? Was this farce, comedy or tragedy? Why was I, of the millions in London, called upon to become an actor in the piece?

However, it was too late to withdraw now. Already she had placed the necessary coins in the box, and I found myself asking for the required number. True, the lady secretary replied, but Mr. Dean was in conference. Who was calling? By this time I was being thrilled by the venture, and only too anxious to get past the secretary's defences. It was an important matter, and I should be glad to be put through to Mr. Dean. My name was of no consequence.

In a few moments the elusive Mr. Dean answered and I discreetly withdrew.

Although my curiosity felt it had received the full force of a cloudburst, I was amply compensated by the gracious smile of the overjoyed woman.

C. F. G.

NOTE.—The story is true, but the number and name are, for obvious reasons, fictitious.

## MY TELEPHONE BELL.

A WONDERFUL contrivance is the telephone bell. The wire attached to it is the line of communication between me and the universe. The universe knows it—and so do I. The telephone bell is the one thing about a private dwelling that is public property. If a stranger walked in at my front gate and began to interfere with anything else, I should instantly send for the police; but if, with all the confidence of proprietorship, he comes straight in to my residence via the telephone, I regard the position as perfectly normal. No man living may enter my gate in order to inspect the roses, to admire the view, or to stroke the cat. But anyone has a perfect right of access to my domain by the pass provided by the telephone. A man may do what he will with his own; and the telephone bell is *his*. It is more *his* than mine. It is perfectly true that I ordered the bell to be put there and that I paid for it, but it is also true that the outsider has more right to the use of it. A visitor from Mars, seeing the telephone fitters working to my order, might be pardoned for supposing that I was gratifying in this way my insatiable passion for music. Not at all. In giving the order for the apparatus, I was actuated by no selfish motive. The telephone bell is not my bell. It is everybody's bell—everybody's, that is to say, but mine.

That is why such a thrill runs through the house when the bell rings. It is one of the sensations of the commonplace. A ring at the telephone is a bolt from the blue, a call from the vast, a message from out of the infinite. It presents to the imagination such a boundless range of possibilities. There are about fifteen hundred million people on the planet, and this may be any one of them. It may be a salesman endeavouring to dispose of a cake of soap—a cake of soap that he, perhaps, poor man, may need so much more than I do. It may be a telegram with some startlingly pleasant or poignantly painful message. It may be the very man I want to speak to, or the very man I don't. Or, then again, it may be "good old Sam." Everybody knows the accents of pleasure in which it is announced that the ringer of the bell is a member of the family circle. It may be anybody; that is the point. When the telephone bell rings, you are prepared for anything. You feel, as you lift the receiver, that you have suddenly dipped your hand into the lucky bag of the universe and you are in a flutter of curiosity as to what you are about to draw. Tinker, tailor, soldier, sailor: rich man, poor man, beggar man; smiles, frowns, laughter, tears: they may any of them come with the ringing of the telephone bell.

When the bell rings, you are eating your dinner, or reading the paper, or romping with the children, or chatting easily beside the fire. The atmosphere is perfectly tranquil; all the wheels are running smoothly; life is without a thrill. The bell rings; all eyes are lifted; each member of the household glances enquiringly at all the others; is anybody expecting a ring from anybody? We vaguely feel, when the bell rings, that life is about to enter upon a fresh phase. Whether the change will be for weal or for woe, for better or for worse, we cannot tell. We only know that things are not likely to be quite the same again. Somebody will announce an early visit or somebody will be called out, or something fresh will have to be done. The cards of life are all shuffled and dealt afresh at the ringing of the telephone bell.

But my bell is not my own bell. The next-door neighbour's bell is my bell and the bell of the telephone fixed in the house beyond that; and so on to the end of space. For, if it is humiliating to reflect that the bell on the telephone in my own house is not altogether mine, it is extremely gratifying to know that, beyond my door, there are millions of bells that I can proudly call my own. I am not generally considered musical, but I spend, and incidentally save a good deal of my time by bell-ringing.

(With apologies to F. W. Boreham, D.D.)

## PROGRESS OF NOTTINGHAM AND LEICESTER DEMAND SCHEMES.

### NOTTINGHAM EXCHANGE.

DEMAND working was introduced at Nottingham exchange on Jan. 14, 1933. Lack of space in the switchroom necessitated the removal of sections of the trunk switchboard in stages to provide accommodation for the demand positions, and arrangements were made to instal 22 positions of the new suite at the outset. The 10 positions at the beginning of the suite were incoming, thus leaving 12 for use for outgoing and through controlled demand and delay traffic. With the restrictions imposed by the equipment available the scope of the scheme as introduced was, of course, limited; demand calls being completed only to exchanges in the Birmingham 7-mile circle and the London 10-mile circle.

#### Stage 1. January, 1933.

Calls originated at 13 exchanges To :—  
(approximately 14,700 working lines). Birmingham, 7-mile circle.  
London, 10-mile circle.

Arrangements were made to use a few of the incoming positions as delay positions by affixing Zenith clocks to the face of the switchboard, and when this was done and transfer circuits provided, the scheme was extended.

#### Stage 2. February, 1933.

Calls originated at 13 exchanges To :—  
(approximately 14,700 working lines). Birmingham No-delay area.  
Bristol No-delay area.  
Cambridge Group.  
Cardiff No-delay area.  
Leeds No-delay area.  
Liverpool No-delay area.  
London 10-mile circle.  
Manchester No-delay area.

As soon as the trunk signalling positions on the old suite were freed by the transfer of circuits to the demand positions they were recovered, and in their place additional demand positions were installed. By May sufficient equipment had been provided to allow of the transfer of all the remaining trunk circuits, and of the recovery of what was left of the trunk signalling positions in readiness for the completion of the demand suite.

The demand service was now extended to include 11 more exchanges and the position was as follows :—

#### Stage 3. May, 1933.

Calls originated at 24 exchanges To :—  
(approximately 16,300 working lines). Birmingham No-delay area.  
Boston Group.  
Bristol No-delay area.  
Cambridge Group.  
Cardiff No-delay area.  
Coventry Group.  
Hull Group.  
King's Lynn Group.  
Leeds No-delay area.  
Leicester (alternative route).  
Liverpool No-delay area.  
London Special control area.  
Manchester No-delay area.  
Newcastle-on-Tyne No-delay area.  
Northampton Group.  
Peterborough Group.  
Skegness Group.  
Spalding Group.  
Wisbech Group.

Extension of the switchboard has since been completed, and there are now 10 incoming, 20 demand, 8 demand-delay and 12 delay positions. One position is in use temporarily for service observation purposes, and one for Telex.

Steps were taken to include all the Nottingham group exchanges in the scheme and to bring in those call offices which had not hitherto been given a demand service. This has increased the number of exchanges to 48 (approximately 17,300 working lines), but there has been no extension of the areas to which demand calls are effected.

The number of calls passing over the trunk routes and the proportion completed on demand can perhaps best be shown in table form.

	January.		February.		July.	
	Busy Hour.	Day.	B.H.	Day.	B.H.	Day.
1. Originated controlled calls over demand routes ... ..	63	463	156	835	354	2,072
2. Percentage proper to be completed on demand ... ..	85.7	82.7	86.5	84.3	52.3	53.4
3. Percentage completed on demand or report given (N.E., N.R., &c.)	88.4	91.0	90.1	94.2	84.9	93.9
4. Percentage "Trunk engaged"	.4	.7	6.8	2.5	12.9	4.8

From this table it will be seen that there was a marked decline in items 2 and 3 for the month of July. This, however, was due to the effect of the batch traffic which is experienced during the fruit and potato season. As many as 90 trunk calls are booked by one subscriber and about 70 by other seven subscribers each morning, and as the calls must be completed in a particular order the effect is to congest the trunk routes at times. Practically all the batch traffic now controlled at Nottingham will later on be controlled on a demand basis by the group centres, but this will not reduce the trunk congestion. No doubt it will be possible to obtain a few additional temporary trunk lines specially for batch calls, and thus leave the normal circuits free for demand traffic. With the up-grading of the trunk circuits, and the consequent free use of alternative routes, the flexibility of the system should be increased with a corresponding increase in the percentage of calls completed on a demand basis.

Most of the calls which are at present handled on a delay basis are originated at group centres and passed to Nottingham exchange for control. When the demand equipment at these exchanges is available, and they take over control, the percentage of calls proper to be completed on demand at Nottingham will be much higher.

### LEICESTER EXCHANGE.

Conditions at Leicester were much more favourable. By the removal of the Monitors' desk suite to the middle of the switchroom sufficient space was made available for the full installation of the demand equipment. Twenty-five positions were installed, 4 incoming, 10 demand and 11 demand-delay; and on Mar. 11, 1933, demand working was introduced.

#### Stage 1. March, 1933.

Calls originated at 24 exchanges To :—  
(approximately 12,400 working lines). Birmingham No-delay area.  
Cambridge Group.  
Hull Group.  
Leeds No-delay area.  
Liverpool No-delay area.  
London Special control area.  
Manchester No-delay area.  
Nottingham Zone (and as alternative route).  
Peterborough Group.  
Sheffield Zone.

The remainder of the exchanges in the Leicester Group have now been brought into the scheme and the number of exchanges has thus been increased to 50 (approximately 13,600 working lines). Call offices were given a demand service from the outset.

	March.		July.	
	B.H.	Day.	B.H.	Day.
1. Originated controlled calls over demand routes ... ..	215	1,133	187	1,133
2. Percentage proper to be completed on demand ... ..	83.3	81.9	84.5	83.5
3. Percentage completed on demand or report given (N.E., N.R., &c.)	92.3	94.5	91.1	94.0
4. Percentage "Trunk engaged"	4.0	2.0	5.7	3.8

The introduction of demand working at the group centres should increase the percentage of calls handled on a demand basis (item 2) considerably.

General Notes.—The trunk traffic during the summer of 1933 has shown an increase over the corresponding period of 1932. At Nottingham, for instance, there were, in June, 1933, 3,229 more charged trunk calls than there were in June, 1932.

One of the difficulties experienced with demand calls completed over generator signalling routes has been due to the operator at one end of a route plugging into the trunk jack and pausing for a few seconds before ringing, with the result that an operator at the other end of the route could, and did, pick up the same circuit which to her appeared to be idle. This difficulty will now be removed by arranging the circuits in numerical sequence at one end (1, 2, 3, 4, — 12), and in the reverse order at the other (12, 11, 10, 9, — 1). These changes, of course, involve alterations to the labelling, and as there are a considerable number of labels (there are 153 V.I.I. designation labels in the trunk multiple at Nottingham) the department which supplies them will be kept busy. Changes, at any rate for some months, will be necessary as the need for combining groups of N.D. and L.D. trunk groups arises and as automatic signalling replaces generator signalling. Incidentally, the provision of a label which would not readily fall out would be hailed by all as a boon.

Loose-leaf charging slips have been brought into use at Leicester exchange, and while it is perhaps premature to express an opinion regarding them, there is no doubt that they will prove much more serviceable than the Trunk charge schedules.

On the whole the demand schemes at Nottingham and Leicester have proved to be a success, and the demand service is undoubtedly appreciated by subscribers. Difficulties have arisen and they have been surmounted. Others will present themselves, but eventually, when the system is fully developed, operators and subscribers alike will recall the time when it was necessary to book a trunk call and then wait and wait for it to mature as a comparatively primitive stage in the development of the telephone service.

W. C. YARROLL.

## TELEPHONES: THE VIEWPOINT OF A SALES REPRESENTATIVE.

PERHAPS one of the most obvious results of the difficult times from which the business world is now emerging is the way in which the spotlight has been focussed on the art of selling. The point of view of a sales representative may therefore be of some little interest.

In his admirable book entitled *The Speciality Salesman*, Mr. Herbert N. Casson states that the technique of salesmanship is twenty years behind manufacturing. This is a very sweeping assertion, and one that many a housewife will readily deny when she recollects the dud stuff which she has so willingly bought at one time or another from a salesman well versed in the art. "The Speciality Salesman"! that is in many respects what a sales representative of the Telephone Service is. He is a man who must often go where he is not wanted, but he must make himself wanted. To quote Mr. Casson, "A Specialty Salesman must have 'guts'; he must not be slowed down by resistance, he must be like a steel wedge. He must be harder than the things he is up against."

One of the most vital questions from a salesman's point of view is "What is the public thinking of the service I have to offer." For purposes of comparison it will perhaps be best to divide the public into two classes, non-subscribers and subscribers. Taking non-subscribers first, the following is an analysis of the replies which were obtained in a house-to-house canvass of a typical road in North-West London:—

- 5%, early prospects.
- 15%, more distant prospects.
- 25%, no use for it.
- 55%, can't afford it.

These figures show that roughly 40 or 50% of the persons canvassed can be regarded as prospects over, say, a twenty-year period. Of the 25% who have no use for it, many are business men who are answering the telephone all day at business, and they state that when they get home they have had more than a sufficiency of telephones. Some of them do not put it quite as politely as that! The majority of these are uncanvassable, but a small percentage may be forced by circumstances to become subscribers sooner or later. Regarding the 55% who say they cannot afford it, it is found that they are thinking of the service in terms of its cost. It is the job of the telephone salesman to make them think in terms of what the telephone service will do for them.

Regarding subscribers, one finds that the vast majority are satisfied, some will admit it rather grudgingly, but occasionally one comes across a subscriber who is really enthusiastic about the service. The other day I met one such; she had no grouse about the rental; she scarcely ever received any wrong numbers in either direction; she always found the operators perfectly efficient, was never over-charged—in fact she considered the British system excellent. Far superior to some of the continental systems she averred; she had given up her telephone in France because of the haughtiness of the telephonists. What a splendid advertisement this lady is, and she costs the Department nothing! Would that we had a million such. She is literally bursting with goodwill towards the telephone service.

In a service of such magnitude one supposes it inevitable that a proportion of subscribers should have a grouse of one kind or another. These are the people who must be won over to our side at all costs, and the function of the sales representative is to obtain and maintain their goodwill by the personal touch, and by seeing that their telephone requirements are adequately met. It is an unfortunate though well-known fact, that one really disgruntled subscriber can do untold harm. Occasionally, when canvassing, one comes up against the excuse, "Oh no! we shan't have the

phone, my brother has it, and he's advised us not to have it because of so-and-so and so-and-so." The problem of sales thus turns on one vital point, how to get the good-will of all subscribers. This necessitates co-operation between every department, traffic, engineers, accounts, and sales. In this connexion I believe it will be agreed that telephonists, generally speaking, perform a difficult job efficiently. Telephonists should, however, develop the sales outlook, for they are primarily sales-women. Their business is to sell telephone calls, and in the humble opinion of the writer a telephonist should be trained as a sales-woman in addition to being trained as an operator. Many years ago the writer had some experience as an operator and he has a very clear recollection of how impossible some subscribers can be, but it is astonishing how easy it is to placate an irate subscriber if the sales outlook is well developed. Whilst appreciating that economy of words is essential in operating, one cannot help but think that an occasional "Sir" or "Madam" to anyone in difficulty would go a long way to help smooth things out. The baldness of the standard phrases may be satisfactory until a caller gets into difficulty, but after that the sales outlook should predominate.

To conclude, perhaps, I may be allowed to tell a canvassing story, partly against myself and partly against jerry-builders. In my "tenderfoot" days I was canvassing some recently occupied houses, and, as I was opening the front gate of one of these, an upright bar detached itself from the frame of the gate and I found myself standing on the garden path of a stranger with a portion of her brand-new front gate in my hand. I rapidly debated whether I should stick the darn thing on again and say nothing about it, or whether it would be better to walk boldly up to the front door and apologise to the owner for having ill-treated her gate. I had decided upon the latter course, when suddenly the front door of the house opened and out rushed an Irish terrier, not at me, but at a mongrel which was evidently trespassing in the garden. A stand-up fight ensued, and the terrier's mistress appeared on the scene, distracted. Now this is where the piece of gate came in handy. Using it as a kind of battering-ram I literally pushed the mongrel out on to the road, whilst the lady rescued her Peter. Of course the lady thanked me profusely, and when I explained about the gate she said it was "quite alraite"; thus we arrived at the real object of my visit and I made what capital I could out of the situation. The lady did not, however, want a telephone, and no efforts of mine had any apparent effect. A few months later I saw an announcement that this particular lady had won a newspaper competition. Did she want a telephone? That, my masters, I am unable to tell you, but I made it my especial business to see that she signed an agreement and the telephone was installed before she had had time to get over the excitement of winning a substantial amount of money.

No-one would describe the life of a present-day sales representative as a bed of roses, but nearly every telephone salesman will tell you that his job is at once the most interesting and the most difficult he has ever tackled. Interesting, because of the variety of the work and the variety of personalities with whom one has to deal; difficult, because your real salesman is never satisfied with his results. What, never? Well, hardly ever!

## NEWCASTLE-ON-TYNE NOTES.

It is an unusual event, in this District, at any rate, for a member of the female telephone manipulative staff to be the recipient of the Imperial Service Medal. Not that the female staff do not deserve the honour but simple because telephonists retiring on the age limit are as rare as the proverbial dead donkey. Assistant Supervisors, Class II, retiring on pension, too, are an uncommon species, and Miss France, our Schoolmistress, would undoubtedly have advanced a step or two had she chosen to remain with us longer. However, she chose to take advantage of a Departmental offer to retire on a voluntary basis with still a good few years to go, and to mark her very fine service to the Department was awarded the Imperial Service Medal.

The medal was presented to Miss France in the Telephonists' Room by Mr. J. D. W. Stewart, District Manager, in the presence of a representative gathering of Miss France's late colleagues.

## INTRODUCTION OF "DEMAND" TRUNK WORKING AT GLASGOW.

THE Glasgow subscriber has always enjoyed a fast and efficient Trunk service, but nevertheless the advent of "Demand" working in this district has been hailed with approbation. The actual transfer took place on Saturday, Aug. 5, at 12.30 p.m., and was a complete success.

Attempts are made to complete on demand calls to exchanges obtained on a no-delay basis from those trunk centres which have direct communication with Glasgow. The scheme was at first limited to the Glasgow local-fee area (seven-mile circle), but the results obtained were such that it was found possible to extend the scheme to the whole of the Glasgow district one week after the opening date. Further extensions are contemplated in the near future.

The "Demand" equipment and the new operating procedure have both been described at some length in previous issues of this journal, and it is not proposed to discuss these aspects in detail. Owing to the fact that no entrance to the Head Post Office building was wide enough to admit the switchboard sections, the contractor



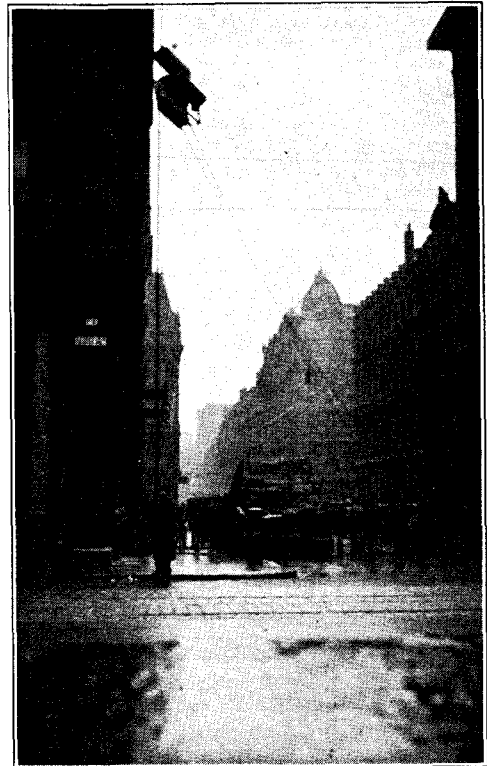
THE OLD TRUNK EXCHANGE, GLASGOW, TAKEN A FEW DAYS BEFORE THE TRANSFER.

was forced to remove one of the windows on the third floor, together with some of the masonry, and haul up the sections by means of pulleys and chains. This procedure was a source of interest to the public, and the Press commented on the queer appearance of the apparatus suspended in mid-air, alluding to them as "pianos."

Twenty-six "Demand" positions are installed on the south side of the switchroom, and on the north side appear fourteen "Delay" and eight "Incoming" positions *en suite*. A six-panel outgoing trunk and junction multiple has been provided, making a total of 21 multiple appearances. The record circuits and the incoming trunk circuits are ancillared every seven panels; there are accordingly nine appearances of each record circuit and three of each incoming trunk circuit.

A great deal of through traffic is dealt with at Glasgow, and on this account it was impossible to transfer trunk routes to the new switchboard one at a time, as was done by other districts, since no transfer circuits existed between the old and the new switchboards. With the exception of the London Toll B and London incoming groups, all trunk circuits and the majority of the junction circuits were transferred to the new suites in one operation on Aug. 5, so that the transfer was something more than merely a "nominal" one, and its completion in 45 seconds reflects credit on all concerned.

Some difficulty is experienced in attempting to give a "Demand" service on single-circuit routes, of which Glasgow



HEAD POST OFFICE, GLASGOW: HAULING UP THE "DEMAND" TRUNK SECTIONS.

has four, but it is hoped that additional circuits will be provided on two of these routes before long, when the position will be considerably improved.

Prior to the inauguration of the new system, a large number of private branch exchanges and a few public exchanges in the Glasgow district were not providing the necessary through-clearing

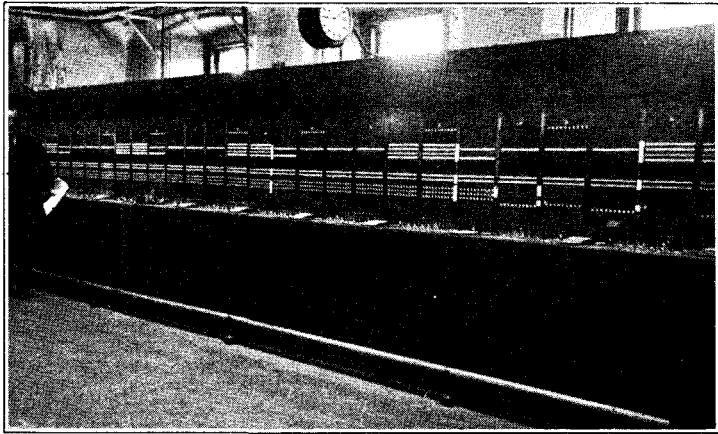


THE NEW TRUNK EXCHANGE, GLASGOW, IN COURSE OF CONSTRUCTION.

facilities, but, thanks to the efforts of the engineering staff, this difficulty is fast disappearing.

The compilation of the visible index file presented no little difficulty, since Glasgow is the main switching centre for the whole of Scotland: special records, however, have revealed that the file provides the necessary information for over 95% of the total originated traffic.

No cord circuit repeater has been installed in connexion with the new suites. The C.C.R. equipment which served the old trunk-signalling positions was unsuitable for the new Demand switchboard;



THE GLASGOW INCOMING AND DELAY SWITCHBOARD.

the cost of a new C.C.R. position was quite out of proportion to the number of calls on which it would be used, and the more satisfactory expedient of upgrading the low-efficiency lines was finally adopted.

Great interest in the new working has been displayed by the staff of both the Trunk exchange and the local exchanges, and the psychological effect of this will no doubt show up in the general quality of the trunk service.

The full co-operation of the Press was secured by inviting representatives of the more important Glasgow newspapers to the Trunk exchange, both before and after the transfer, and supplying them with complete and correct information on which to base their reports. The articles which subsequently appeared did full justice to the subject and were of considerable assistance to the department.

S. W. DABBS,  
Assistant Traffic Supt., Glasgow.

### PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at Aug. 31, 1933, was 2,164,167, representing a net increase of 5,027 on the total at the end of the previous month.

The growth for the month of August is summarised below:—

	London.	Provinces.
Telephone Stations—		
Total at Aug. 31 ... ..	806,285	1,357,882
Net increase ... ..	1,936	3,091
Residence Rate Stations—		
Total ... ..	258,262	343,720
Net increase ... ..	417	1,200
Call Office Stations (including Kiosks)—		
Total ... ..	9,165	31,007
Net increase ... ..	34	75
Kiosks—		
Total ... ..	3,723	12,076
Net increase ... ..	33	105

The total number of inland trunk calls dealt with in June, 1933 (the latest statistics available), was 11,736,874, representing an increase of 825,166, or 7.56%, over the total for the corresponding month of the previous year.

International calls in June numbered 116,955, an increase of 21,744 (22.8%), compared with June, 1932.

Further progress was made during the month of August with the development of the local exchange system. New exchanges opened included Whitton (Ipswich) (automatic) and the following rural automatic exchanges:—

Blyth (Notts) (Worksop), Croesgoch (Letterston), Chathill (Newcastle-on-Tyne), Harewood (Leeds), Kerry (Newtown), North Molton (South Molton), Orton (Kendal), Plymtree (Exeter), Pontyclun (Cardiff) Rhydlewis (Llandyssul), Roadhead (Carlisle), Weeton (Blackpool), Westham (Eastbourne), Wolvesnewton (Usk).

66 new overhead trunk circuits were completed, and 73 additional circuits were provided by means of spare wires in underground cables.

### CORRESPONDENCE.

#### TELEPHONE DEVELOPMENT OF TOWNS AND CITIES, &c.

TO THE EDITOR OF "THE TELEGRAPH AND TELEPHONE JOURNAL."

DEAR SIR,—Mr. Gunston's statistics have gained a world-wide repute in telephone circles and probably most of us, before settling down to digest them, make a hurried survey to see if at any point they touch on circumstances or places within one's own special knowledge. The writer certainly does and even on those occasions where they do not so touch him, they give much food for thought and some constructive criticism. If this criticism has not hitherto reached the Editor it is because in the opinion of the writer the statistics in the main are more general than specific in their application, though none the less valuable.

For many years we have been accustomed to compare telephone growths in terms of telephones per 100 inhabitants, and I believe that it was one of the American companies which first put forward comparisons in this form. A ratio of telephones to population, however, does seem to be subject to so many modifying conditions that any comparisons on such a basis must be applied with the greatest care. It cannot always justifiably be used in the sweeping statements that one occasionally encounters in the press and elsewhere, and I think that the article in the *T. and T. Journal* of August very clearly emphasises this fact.

It is inconceivable that the ratio of telephones to population say in Stoke-on-Trent will ever become so high as the ratio in Brighton, yet in regard to the possibilities in each place, the former may be better developed than the latter.

We cannot expect Egypt to absorb telephones per hundred head of population to the same extent as say the U.S.A.

A comparison of the towns and countries mentioned reveals the following general facts. Stoke-on-Trent is essentially an industrial area employing a very high proportion of unskilled workers. Brighton is definitely a non-industrial town and contains a very high proportion of good class houses.

Egypt is a country mainly populated by a class of people whose standard of living is very low and simple. In the United States the population in general has a standard of living higher than in any other country in the world.

Now these facts appear to be the main influences in the telephone density of the places mentioned, but it is difficult to express them in figures.

It does seem, therefore, that if comparisons are to have other than a mere academical value, they should be made on a really comparable basis, and if some abler pen than mine can suggest such a basis, this letter will not have been in vain.—Yours faithfully,  
H. A. H.

Oporto, Aug. 31.

[This letter is referred to in our editorial column.—Ed., T. & T. J.]

## TELEGRAPHIC MEMORABILIA.

THERE is quite a little bundle of rumours and whispering in corners regarding the B.B.C. and what its new plans are likely to be in the near future. (a) It is going to buy up an old skating rink in Maida Vale, premises which if the writer is not mistaken were once used as offices for the Ministry of Health. It is a tall edifice and covers roughly sixty thousand square feet. Its possibilities for variety broadcasts &c., &c., are "immediately apparent," says another informant. (b) It has its eyes on a site in the neighbourhood of Vauxhall. Of the first one would not be surprised to find something more than mere supposition. Of the second, while it cannot be classed as a *canard*, the safest position to take is, simply that one does not know! Regarding yet a third scheme, which presumed that certain works at the moment in progress were actually "the building of a new underground B.B.C. studio in the vicinity of Chancery Lane" (*sic.*), this present writer was able to assure a particular wiseacre that his presumed "studio" is nothing less than the removal of something approaching 70,000 telephone wires into a new and more convenient subway due to improvements in connexion with developments of the Central London Railway!

"And p'raps some other goblin tale  
Maybe were quite as true,"

to quote from the "Fakenham Ghost."

*Personal.*—Mr. J. J. Denison-Pender of the Managerial Department of I. and I. Communications, as we go to press, is on his way to Rio de Janeiro for a three-months tour and visit of the Western Telegraph Co. in Brazil, Argentina, and Uruguay.

Dr. Oliver G. Buckley, Assistant Director of the Research Department of the Bell Telephone Laboratories for seven or eight years has been appointed director in place of the recent and much-regretted death of Dr. H. De Forest Arnold.

*Golden Wedding.*—"The Times," 1883. Aug. 26.—Congratulations to a former Deputy-Controller of the C.T.O.

"Bailey—Reynolds.—On Aug. 25, 1883, at Holy Trinity, Cloudeley Square, N., James Bailey to Annette Emma Reynolds."

The retirement of the genial Mr. J. Stuart Jones, C.B.E., from the highly responsible post of Controller of the Central Telegraph Office, London, and his succession by Mr. G. T. Archibald, the well-known Deputy Controller of that important office, will no doubt be referred to in this issue by a more competent pen.

*Obituaries.*—On the 3rd ult. was put to rest the earthly portion of the well-known Asst. Superintendent, Mr. George Aldous, late of T.S., who retired in 1916 at the age limit. Mr. Aldous was in his 76th year at his death, but has not, unfortunately, enjoyed good health for a very long time. In fact it is generally agreed, however, that the very constant attention of his devoted wife has been the means of preserving her husband's life for a period certainly to be measured in years. Among those present at the funeral—he was buried in Barkingside Church—were, Mr. and Mrs. A. Furness, Messrs. W. Barry, F. H. Halfpenny, A. E. Johnson, H. T. King, A. W. F. Ludlow, A. W. Malein, J. J. Smith, and H. W. Vincent.

To Mrs. Aldous and her son are tendered the sincerest sympathy of the late Mr. George Aldous' old friends and colleagues.

The death occurred on Aug. 29 last of Sir Philip Magnus, Bt. in his 91st year. He was particularly devoted to technical education, and was the first secretary of the City and Guilds of London Institute. It was largely due to Sir Philip's influence, adds the *Electrical Review*, that the University of London, when reconstituted in 1899, included a Faculty of Engineering.

A distinguished member of the Vyle family, Sir Gilbert Christopher Vyle, passed away last month in his 63rd year. Sir Gilbert was a son of that well-known electrical pioneer, Samuel

Vyle, who was a "power pioneer of electricity supply, and was not unknown in telegraphic circles." Sir Gilbert was himself trained as an electrical engineer and entered the service of the Post Office. He was knighted in 1928 and was made a K.B.E. in the New Year Honours of 1932.

*Countries.*—AUSTRALIA.—Australian papers inform us that the Federal Government has appointed a committee to consider the advisability or otherwise of compelling small sea-going vessels to install wireless equipment.

Nothing disrespectful is intended by the announcement that there are going to be some "loud-speakers" in that House, but it has been suggested that the acoustic properties of the Legislative Assembly Chamber might be considerably improved by a system of amplifiers.

BELGIUM.—It is officially announced that on June 30 last the total number of radio receiving licences issued was 400,284, an increase of 128,705 for the preceding twelve months. The figures include 6,872 free licences for the blind, &c.

BRAZIL.—*An Up-to-date Police Station.*—The *Electrical Review* gives a very interesting account of what appears to be a highly organised police wireless service, which has been instituted by the Brazilian Federal Authorities. The inter-communication has the police headquarters in Rio Janeiro for its centre, radiating locally to the provincial police stations, to the motor cycle patrols, to the marine police stations, and to vessels in the harbour or at sea. Marconi transmitters for medium- and short-wave working are in use, and two receivers constitute the headquarters equipment, provision being made for either telegraph or telephone operation. Communication is possible between all the Brazilian States and "a large number of foreign countries."

CANADA.—*Broadcasting in Canada.*—The report of Major Gladstone Murray of the B.B.C., recently submitted to Mr. R. B. Bennett, the Canadian Prime Minister, will be considered as disappointing by not a few Canadians. The major considers it "unwise to make broadcasting a department of State and agrees with the Canadian acceptance of public utility broadcasting." He however considers that, "whatever the form of its constitution, broadcasting must embody State control plus independent business management." Five zones are suggested, viz., Maritime Provinces, Quebec, Ontario, Prairie Provinces, and British Columbia: each, it is understood, with its assistant commissioner. Mr. H. Charlesworth, of the Canadian Radio Commission, however, apparently found it impossible to accept the scheme on financial grounds despite "the excellent suggestions."

FRANCE.—120 kilowatts instead of 8 kilowatts!—Within twelve months from now, says the Paris correspondent of the London *Daily Telegraph*, "the new transmitter will be erected at Villejuste, about 12 miles from the actual studio in Paris." The cost is anticipated to be not less than £1,000,000. It is stated in cold print that "the purpose of the increase is to bring the programme within the day-time range of owners of crystals sets throughout Paris and its suburbs." From the same source we learn that, "the present wavelength will be retained." In the circumstances it is too much to hope that something of this will not be heard on this side of the Manche!

*World-Radio* gives us the following unofficial figures which are nevertheless considered trustworthy, and publishes 600,000 as the number of listeners who have registered themselves for the purpose of the wireless tax in the departments of Seine and S-et-Oise alone. It is further recorded that all present estimates for the whole of France, exceed 2,000,000 listeners. This, adds our informant, "excludes pirates"!

GERMANY.—The number of broadcast receiving licences has been steadily decreasing since the beginning of May, and on Aug. 1 the total was 4,483,278, i.e. 37,828 less than on July 1, and notwithstanding that over half a million were issued free to the unemployed.



Notwithstanding this feature, we have been given to understand that the new 60-kw. broadcasting station at Tegel, Berlin, is to be in operation by the end of the present year.

**GREAT BRITAIN.—Television !**—Not overmuch has been heard of *Television* of late, but this is not because the brains of many of those specially interested have abandoned the fascinating study, or are less intrigued. It is well known, for example, that experiments in television are actually being carried out by certain manufacturers and also, it is whispered, by the B.B.C. in the use of 7.75-metre transmission, utilising the cathode-ray tube. This system gives the advantage of the reproduction of a 120-line image instead of the 30-line.

**Brighton.**—To prevent interference with broadcast reception, the Brighton Electricity Department has decided to fit attachments to motors, "let out on hire," a really public-spirited decision, if one may comment on the decision made.

**Llantarnam.—Cheaper power for wireless sets !**—The Electricity Committee has decided that when consumers use wireless receivers connected to the heating circuits, the charge for electricity so used shall be at the lower heating rate instead of the lighting rate.

**INDIA.**—The Mysore Municipality has decided to start a broadcasting service. It is interesting to note that Dr. Gopalswamy, professor at Mysore University, is to be in charge of the arrangements if he has not already done so.

**IRISH FREE STATE.**—The number of radio receiving licences issued had reached a total of 36,228 on July 31 last.

**MALAYA.**—*World Radio* informs us that the broadcasting company which it is proposed to form in Singapore, has not yet received approval or the issue of its licence. As, however, the technical plans "are still being considered," so we are informed, and are "being finally formulated," it may be looked upon as a going concern when the company applies to the public for funds.

Reuter's Agency at Bandung, Java, reports that successful experiments in wireless telephone communication with Kuala Lumpur have been made and these efforts are to be extended to communication by wireless telephone to the whole of Malacca, including Singapore !

**PORTUGAL.—A Marconi Station Wrecked !**—On Sunday, Sept. 10, Reuter's Agency at Lisbon reported as follows :—"The beam section of the Marconi Company's wireless station at Alferragide was completely destroyed by fire to-day. Firemen from Lisbon and the surrounding villages saved the other buildings and the electrical installations."

**SWITZERLAND.**—The following figures, &c., are excerpted from the second annual report of the Societe Suisse de Radiodiffusion. In 1932, the number of wireless licenceholders increased by 81,000, a total of 231,397. Taking three as the average number of persons listening to each set, the wireless audience of the Swiss is about 700,000. By the way, the figure taken—three—as the average actual listener to each set would appear to be extremely low out of a total population of 4,000,000. Financially the situation appears to be a sound one. According to *World-Radio* the society had about £60,000 at par at its disposal during 1932, and for 1933 it is now approximately £80,000. The Swiss licence costs 15 fr. of which in 1932 7.32 fr. was retained by the Postal Administration to cover maintenance, depreciation, costs of technical installations, administration expenses, &c. Any balance is handed over to the broadcasting societies and their studios.

**TRINIDAD.**—The London *Times* informs us that the City Council has unanimously passed a resolution expressing regret that it is unable to be a party to the transfer of the wireless stations at Trinidad and Tobago, to Imperial and International Communications, Ltd., on the terms of the draft lease "forwarded by the Government to the municipality." Those terms, according to the same authority, provided that the stations should be taken over at an annual rental of £120.

**U.S.A.**—A correspondent in America sends the following item which is published with due reserve. He reports that a certain Mr. Philo Farnsworth, a San Francisco scientist, claims to have perfected the world's first successful television system to be commercially possible.

*Rash Vows.*—"Take then no vows at random  
Ta'en with faith, preserve it ;  
Yet not bent as Jephthah once,  
Blindly to execute a rash resolve."

—Dante's *Paradise*.

J. J. T.

## THE POST OFFICE TELEPHONE AND TELEGRAPH SOCIETY OF LONDON.

SESSION 1933-1934.

AN interesting and varied programme has been arranged by this society for the forthcoming session. The opening meeting will be held on Monday, Oct. 16, at 5.30 p.m., at the Institute of Electrical Engineers, Victoria Embankment, W.C.2, when Mr. E. Phillips (Central Telegraph Office) will read a paper entitled "Developments in Television." Mr. M. C. Pink (Deputy Controller, London Telephone Service), the Chairman for the session, will preside. Prior to the meeting, from 5 p.m. to 5.30 p.m., tea and light refreshments will be provided for members and visitors in a room adjoining the Lecture Hall.

Particulars of the other meetings during the session are as follow :—  
1933.

Nov. 20, Monday.—"The Air Mail Service," by Brig.-Gen. Sir F. H. Williamson, C.B., C.B.E. (Director of Postal Services, Secretary's Office, General Post Office).

Dec. 11, Monday.—"Room Noise and Reverberation," by Mr. W. West, B.A., A.M.I.E.E. (Engineer-in-Chief's Office, General Post Office).

1934.

Jan. 15, Monday.—"Communications from a Manufacturing Viewpoint," by Mr. E. S. Byng (Standard Telephones & Cables, Ltd.).

Feb. 19, Monday.—"Telegraphy, its Debut, Development and Destiny," by Mr. H. G. Sellars (Central Telegraph Office).

Mar. 19, Monday.—"The Post Office and its Relations with the Public," by Mr. H. Dive (London Telephone Service), Mr. J. Leader (London Postal Service) and Capt. W. G. Bouch (Central Telegraph Office).

April 16, Monday.—"Submarine Cable Laying and Repair," by Capt. F. G. Ramsay (Engineer-in-Chief's Office, General Post Office).

The Post Office Telephone and Telegraph Society of London was established in 1913 as a development of, and successor to, the London Telephone Society which was conducted for many years by members of the staff of the National Telephone Company.

The objects of the Society are—

- (1) To read and discuss papers during the winter months.
- (2) To receive suggestions and interchange ideas in connexion with telephone and telegraph work generally.
- (3) To maintain a lending library of technical publications.

Many interesting papers have been read before the Society since it was established, and the lively discussions provoked have not only added to the enlightenment of the members of the Society but have provided suggestions of great value to the telephone and telegraph services.

The meetings of the Society provide an open court for the discussion of subjects arising out of the day-to-day events in the telephone and telegraph services; and contributions from officers who are specialists in particular aspects of the work help to develop not only the interest in the meetings but also the efficiency of the services.

All members of the staff of the Post Office are eligible for membership; and any member of the staff of any other branch of His Majesty's Civil Service, may be elected by the Committee.

The meetings of the Society are held at 5.30 p.m. on the third Monday of each month, from October to April, at the Institution of Electrical Engineers, Victoria Embankment, W.C.2. Before each meeting tea and light refreshments are provided from 5.0 p.m. to 5.30 p.m. for members and visitors.

The annual subscription is 2s. 6d. (ladies 1s. 6d.) and membership cards and any further particulars may be obtained from the Honorary Secretary, Mr. A. J. Wadey, Secretary's Office, General Post Office (North), E.C.1. (Telephone: NATIONAL 6321, Extension 768.)

## LONDON ENGINEERING DISTRICT NOTES.

*Sports.*—The L.E.D. cricket team, unluckily defeated by the Customs in the Civil Service Shield, have received some measure of consolation by winning the Premier Division of the London Business Houses League, and become holders of the "Watney Cup."

The Civil Service One Mile Track Championship was recently won by Mr. M. G. Southall (L.E.D.), at the Herne Hill track. Mr. E. W. Mirrington (L.E.D.), a promising young rider, finished third.

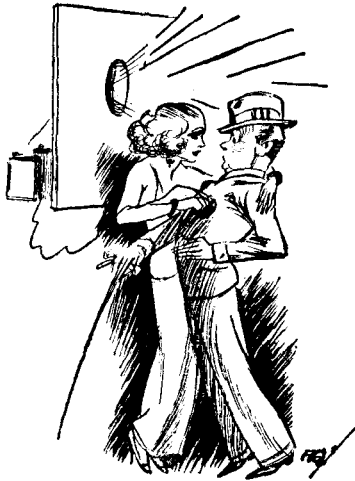
Miss Grace Fuller (L.E.D.) won the Civil Service Ladies' One Mile River Swim. Miss Fuller was also successful in 1931 and finished second in 1932 in this race.

*Correspondence.*—The following reply was recently received to a letter asking for information with regard to an accident involving damage to a motor cycle:—

"Dear Sir,—Re your letter of Sept. 5 about the accident, it was absolutely unavoidable. The pony came on skittish and kicked me off the vehicle and galloped into Brixton Road, so I was not driving it. There is no power in this world that can prevent a pony turning horsy, so you can see that it is an act of God.—Respectfully yours,

*Exhibitions.*—Reference was made in last month's Notes to the Radio Exhibition at the Olympia. The following is extracted from the *Wireless World*:—

"The most spectacular exhibit, notwithstanding the B.B.C. show, was that provided by the General Post Office, and I was rather pained to hear that a thing that attracted most people to the G.P.O. section was an apparatus for reproducing heart-beats on a loudspeaker, where the microphone was held in the cardiac region. The arrangement, I was told, was superintended by a damsel who applied the microphone to the chests of young men and demonstrated how her close proximity accelerated their heart-beats."



Accelerating the heart beats.

At the Shipping, Engineering and Machinery Exhibition, held at Olympia from Sept. 7 to 23, the Post Office stand again proved very popular. The Shipping side was represented by a model of H.M. Telegraph Ship *Monarch* and samples of submarine cables, ably explained by a petty officer from the ship. The invitation to dispatch a free telegram limited to 12 words to British ships at sea was responded to with an average of 100 messages per day, via the Central Radio Office, G.P.O. (W.).

Telephony was represented by the "Inverted Speech," the 1,000-mile inland cable line with echo suppressor, and a final selector switch, together with working plan numbers. Telex service by two stations equipped with additional apparatus to demonstrate the tones produced by the working of the teleprinter over the telephone line and a cathode ray oscillograph.

The demonstration of "Delayed Speech," or "Electrical Echo," proved of considerable interest. The apparatus consisted essentially of a steel tape in the form of a loop impressed with varying magnetisation corresponding to speech currents. The tape was rotated by a motor and the record produced by speaking into a microphone, the speech was reproduced approximately 2 seconds later in a loudspeaker.

*Retirements.*—Mr. F. E. Mitton, Executive Engineer in charge of the Centre External Section of the London Engineering District, retired at the end of August. Mr. Mitton had completed 44 years of service in the General Post Office, and had been in the Engineering Department since 1903, when he commenced as a Junior Clerk in the South Wales District. He was transferred to London in 1904 as Sub-Engineer and reached the position

of Executive Engineer in 1928. The majority of his service in London was in the Centre External Section, but a short period was spent in the Technical Section of the office of the Superintending Engineer, where Mr. Mitton was keenly interested in the Standardisation of Costs. His personality included a humorous vein of very subtle character, but the sincerity and kindness of his nature quickly resulted in a creation of friendship with those he was brought into contact. Expression was given to this feeling on Aug. 31 at Museum Exchange, Chenies Street, when the Deputy Superintending Engineer, Mr. J. W. Atkinson, presented him with a wide variety of mementoes of his own selection. These consisted of binoculars, wireless testing set, wireless cabinet, carpenter's bench, and books ranging from Shaw to text-books on chess, and indicated the diversity of his interests. The meeting was a crowded one, and included representatives from the office of the Engineer-in-Chief, and other sections. An exceptionally large number of speeches were made which all bore evidence to the high esteem in which Mr. Mitton was held.

All his colleagues and friends will feel a loss at his retirement, and it is sincerely hoped that he will be spared many years to enjoy that freedom from official cares which has been so well earned.

Mr. H. J. Richards, of the South East External Section, retired on Aug. 31. At a gathering held at Denman Street to wish him farewell he was presented with a clock, barometer and table. The presentation was made by the Sectional Engineer, Mr. P. C. Martin, who referred to the long experience of Mr. Richards, who served the National Telephone Company in the Western District of London. Since the transfer he has been engaged on the supervision of external work in the South West and South East Sections.

*Trunk Exchange.*—A further section of the Inland Exchange in the Third Floor Annexe, G.P.O. South, was opened on Sept. 16, bringing the introduction of trunk demand working from London to the Provinces to its culmination. It is now possible for London subscribers to obtain the great majority of trunk connexions on demand. The addition consists of two Telex positions, and two straightforward junction positions (south suite); and 32 demand and delay positions (north suite).

The following multiples are provided:—

- (1) Trunk multiple, equipped for 720 circuits.
- (2) Toll multiple, equipped for 120 circuits.
- (3) Outgoing junction multiple, equipped for 1,080 circuits.
- (4) Trunk subscribers' multiple, equipped for 160 circuits.
- (5) Inter-position multiple, equipped for 220 circuits.
- (6) Service multiple, equipped for 100 circuits.

Arrangements are made for circuits appearing in the multiples in the International (1st Floor) Exchange, Inland (3rd Floor) Exchange, Provincial (4th Floor) Exchange, and Country (5th Floor) Exchange to be commoned as required by means of jumper tees on the I.D.F. All circuits are of the latest sleeve control type.

A preliminary change-over took place on Aug. 12, when incoming trunks from the Provinces were changed over from the 4th Floor Provincial Exchange to the 3rd Floor South suite. On Sept. 16 the remaining circuits, trunks 154, junctions 499, Toll circuits 61, service circuits 59, in the old Trunk Exchange, 3rd Floor Main, were transferred to the new Inland Exchange. The clearance of the old 3rd Floor Main Exchange is being commenced immediately in readiness for the installation of additional demand and delay switchboards to provide for further development.

*Arnold Automatic Exchange.*—This exchange, which is situated at Carlton Avenue, Preston Road, Wembley, was brought into service at 1.30 p.m. on Sept. 13 with the transfer of 1,678 subscribers' lines from Wembley Manual Exchange. In addition 291 junctions were brought into use.

The initial equipment is for 3,320 subscribers' lines with an ultimate capacity for 10,000. The initial common apparatus installed is as follows:—

1st code selectors	...	...	...	187
"A" digit selectors	...	...	...	27
Directors	...	...	...	52
Final selectors—Ordinary	...	...	...	154
" " P.B.X.	...	...	...	94
Auto-manual positions	...	...	...	8

The equipment which has been installed by the Automatic Electric Company is of the common control type and is the first of its kind to be installed in the London Engineering District. The system is similar in principle to the director system, the essential difference being that in certain types of switches, viz., line finders, second numericals, second codes and final selectors, the relays, which are only in use during the setting up of the call, are removed from the individual switches and placed in common control groups, with a consequent saving of equipment. Line finders are also employed in place of the usual subscribers' uniselectors, again enabling a considerable saving in equipment to be effected. A re-routing facility is employed on the directors whereby a call is automatically routed via an indirect junction group, should all the junctions in a particular direct group be engaged. This facility not only allows of a reduction in the size of direct groups of junctions but it also makes it economical to provide direct routes for carrying small amounts of traffic that would otherwise be more economically routed indirectly.

*Staff Salesmanship.*—During the month of August the staff of the London Engineering District were instrumental in obtaining orders for 23 exchange lines, 152 extensions, 732 hand-microphones, plugs and sockets, extension bells, &c.

TELEPHONE STAFF MEETINGS.

BY JAS. MAGNALL.

THE policy indicated by the Secretariat in July, 1930, with regard to the holding of Telephone Staff Meetings, as put into practical effect in the Reading District, has proved by experience to be a wise one.

As visualised, the arrangement for the release of the staff at a minimum cost, without a detrimental effect on the service, and the avoidance of hardship to the staff in the matter of leave, involved a good deal of ingenuity and organisation. It involved, also, the close co-operation and interest of Head Postmasters, and this was given unstintingly. In fact, their assistance in the provision of accommodation for the lectures and in the staffing arrangements made the scheme run smoothly and successfully. The co-operation of the Head Postmasters among themselves was a source of encouragement to the lecturer.

The Reading District is an extensive one, including Reading and Oxford, and reaching from Banbury on the North to Newbury on the South, and from Wycombe and Maidenhead to Swindon, Marlborough, and Moreton in the Marsh. It will be seen at once that the first problem was to decide suitable centres. This was solved by an examination of the geographical situation of the larger centres, regard being given to the number of small units associated with them, and means of transport to the centre together with the costs. A rough scheme was planned and enquiry made as to the accommodation available for a lecture room.

It was finally decided to hold meetings at Reading and Oxford in the first series and at Reading, Oxford, High Wycombe, and Windsor in the second series, after much manipulation with the areas to be served.

A scheme for the release of staff was devised by the suspension of leave for a short period (in the winter) by taking full advantage of excess leave reserves and fixing the dates in the known slack periods. Only one exchange suggested an alteration in the dates fixed.

A schedule was prepared indicating the details and a copy of the schedule relating to the meetings held in 1932 is attached. It will be seen that the lectures were spread over three days at each place. Two sessions per day were fixed upon at each centre with an average attendance of 14 per session. The total cost of the meetings was relatively small in regard to the value of the estimated results. Each lecture took about one hour and the discussion was expected to take a similar time. In practice the tendency was for the latter to extend as the interest aroused was great.

The lecture room in each case was made as comfortable as possible and no attempt was made to set it out in school fashion except at Reading where there is a school-room.

Informality was the policy followed.

A blackboard and easel were provided and large scale charts of the following pinned thereto in the order to which they were referred:—

- (a) Average speed of answer to line calling signals.
- (b) Average speed of answer to supervisory signals.
- (c) Percentage of operators' irregularities.
- (d) Percentage of subscribers satisfied.
- (e) Percentage of ineffective calls.
- (f) Form Tf. 135 call valuation.
- (g) Form Tp. 123 operating statistics.
- (h) Demand position key shelf.
- (i) Ticket (T.T. 3).

It is considered that the provision of a portable lecture lantern would be advantageous in this connexion.

The policy followed in the lectures was to describe the fundamental principles involved in giving a telephone service and careful explanations given as to what the curves indicated to students of them, e.g. Curves showing poor speed of answer might include:—

- (a) Faulty distribution.
- (b) Faulty equipment design.
- (c) Insufficient staff.
- (d) Inexperienced staff.
- (e) Excess staff.
- (f) Switchboard markings, &c.

Then a specific item was taken, e.g., Preparation of tickets. In this matter a history of the evolution of the telephone ticket from the simple local and junction ticket of the National Telephone Company's days to that in use to-day. Samples of tickets used in London and the larger Trunk Exchanges were shown and the reasons for their use explained.

At the next session the service principles would be repeated but the specific items would be changed, e.g., the development of precision timing devices, demand working, reasons for the present timing system, transmission, overseas services, &c.

In this way each set of people carried away some information not given to the others, and it was expected that they would discuss them later amongst themselves. It is of considerable interest to note that during a subsequent visit to an exchange in a rural district, the part-time telephonist there volunteered the information that she and the full-time telephonist had found the lectures of very great interest and they "often discussed the points raised."

This policy proved to be the right one when judged from the lively interest taken and the thanks expressed by many of the listeners. The giving of fresh information to each group was very effective, and it was observed that marked interest was given to the description of developments for the future.

In this connexion, it is regarded as extremely important that local officials should be kept in close and current touch with the developments in hand. It is thought that more could be done in this direction than is done at present, particularly as regards costs and revenue. Local traffic officers are generally woefully ignorant on this subject.

At each session points of interest raised by the staff were recorded for study and attention.

The complete list was very extensive and the items extracted for attention provided a good deal of work, but it was labour spent in the right direction. A list has not been included in this paper because of the domestic significance, but the items covered such matters as improvements in operating practice, difficulties with other exchanges, improved equipment design, circuitous routings, cases of poor transmission, timing of trunk calls, call value, preparation of operating statistics, overseas charges, training and style of telephone service instructions, design of meters, switchboard markings, timing devices, &c., &c.

At the sessions in Reading, the Central Secretary of the Union of Post Office Workers, and another official of that body attended all the lectures. They both expressed appreciation of the arrangements and the matters dealt with, and one wondered why such a scheme was not launched on the Telegraph and Postal sides. At three of the offices, local telegraph officials attended, and at another, the Head Postmaster. On the occasion of the second series of lectures suggestions for agenda items were invited from the staff and three exchanges put forward suggestions which were included on the agenda.

While the foregoing relates to meetings in official hours, the interest aroused suggests that more might be done by local officers in forming Telegraph and Telephone Societies or the like.

		TIME.												
		Morning: 10 a.m.—Noon.												
Date.		Reading.	Goring.	Pangbourne.	Souning.	Wargrave.	Treyford.	Maidenhead.	Newbury.	Wokingham.	Bracknell.	Crowthorne.	Winkfield Row.	Henley-on-Thames.
Feb.	Morning	9	—	—	—	1	—	3	2	1	1	—	—	1
	Afternoon	9	1	—	1	—	1	3	1	1	—	—	—	1
17	Morning	9	—	—	—	1	—	3	2	1	1	—	—	1
	Afternoon	9	1	1	—	—	—	3	1	—	—	1	1	1
18	Morning	9	—	—	1	—	—	3	2	1	1	—	—	1
	Afternoon	9	—	1	—	1	—	2	1	—	1	1	—	1
Total		54	2	2	2	3	1	17	9	4	4	2	2	4

		TIME.										
		Morning: 10.30 a.m.—12.30 p.m.										
Date.		Oxford (Exchange and Phonograms).	Banbury.	Abingdon.	Wantage.	Wallingford.	Bicester.	Chipping Norton.	Thame.	Faringdon.		
Feb.	Morning	5	2	1	1	—	—	—	—	—	—	9
	Afternoon	5	2	1	1	—	1	—	—	—	—	10
24	Morning	5	2	1	—	1	—	—	—	—	—	9
	Afternoon	5	2	1	—	—	—	1	—	—	—	10
25	Morning	6	1	—	—	1	—	—	—	—	—	9
	Afternoon	6	1	—	—	1	—	—	1	1	—	10
Total		32	10	4	2	3	1	1	1	3		57

		TIME.												
		Morning: 11 a.m.—1 p.m.												
Date.		Aylesbury.	Wendover.	Princes Risborough.	Chesham.	Amorsham.	Gl. Missenden.	Chalfont St. Giles.	Little Chalfont.	High Wycombe.	Beaconsfield.	Bourne End.	Marlow.	Total.
Jan.	Morning	1	—	1	1	1	—	—	—	2	—	1	1	8
	Afternoon	3	—	—	1	1	—	1	—	2	1	1	1	11
13	Morning	1	—	—	1	1	—	1	—	2	1	—	—	8
	Afternoon	3	1	—	1	1	—	—	—	2	1	—	—	11
14	Morning	—	—	1	1	1	—	1	1	1	1	—	—	8
	Afternoon	2	1	—	1	—	1	—	1	1	1	—	—	9
Total		10	2	2	6	5	3	2	2	10	5	4	4	55

Date.	TIME.	Ascot.	Burnham.	Farnham Common.	Gerrards Cross.	Slough.	West Drayton.	Windsor.	Ashtford.	Egham.	Feltham.	Ruislip.	Staines.	Wentworth.	Wraybury.	Uxbridge.	Total.
	Morning : 11.0 a.m. to 1 p.m.																
	Afternoon : 2—4 p.m.																
Jan.																	
19	Morning ...	2	—	—	1	3	—	2	1	1	1	1	2	1	—	2	17
	Afternoon ...	2	1	1	3	—	2	—	—	1	1	1	2	—	1	3	18
20	Morning ...	2	—	—	1	3	1	2	1	1	1	1	2	1	—	2	18
	Afternoon ...	2	1	1	3	1	2	—	—	1	—	1	2	—	—	3	18
21	Morning ...	1	—	—	1	3	1	2	1	1	1	1	2	—	—	3	17
	Afternoon ...	1	1	—	1	2	1	1	1	1	1	—	3	1	1	3	18
	Total ...																106

(NOTE.—Uxbridge, Staines, West Drayton, Egham, Feltham, &c., are now part of the London district.)

### LEEDS DISTRICT NOTES.

LEEDS was *en fete* on Aug. 23 for the visit of Their Majesties The King and Queen to open the new Civic Hall. The admirable arrangements which had been made by the civic authorities for the ceremonial occasions of the day were the subject of much favourable comment in the Press. The Telephone Service, in playing its part in the general scheme, was faced with its own particular problem of intensive traffic conditions on the new 200-line type rural automatic exchange which had been brought into service at Harwood only three weeks previously to serve, amongst others, the residence of the Princess Royal, where Their Majesties resided during their stay in Yorkshire. As a precautionary measure special engineering attendance was given but the augmented junction groups and the automatic apparatus units carried the heavy administrative and police telephone traffic without delay or failure.

The first meeting of the re-constituted Postal, Telephone and Telegraph Advisory Committee for Leeds and District was held in the Lord Mayor's Rooms on Aug. 31. The Deputy Lord Mayor presided. Sir John Eaglesome, K.C.M.G. (President of the Leeds Chamber of Commerce), was appointed Chairman, and in his inaugural address expressed the hope that the Committee would be of real service in helping the Leeds Post Office administration to meet the business and social requirements of the community. Mr. V. R. Kenny, M.B.E., Postmaster Surveyor, who with Mr. Murray, District Manager, and Mr. Stewart, Assistant Superintending Engineer, represented the Department, in his reply, welcomed the formation of the Committee and extended to its members a cordial invitation to visit the Post Office and see at first hand the working of the various departments.

The high standard of service to which the Bradford subscribers have long been accustomed was reflected in letters received recently during the same week from two Bradford subscribers. The first came from a subscriber who acknowledged the somewhat difficult task he had set the Directory Enquiry by writing, "May I compliment you on your telephone staff at Bradford. The courtesy and patience received this afternoon when wanting Darlington was simply splendid—and I am really sorry the rules do not permit me to make a gift to all who tried to help me." The second was from a subscriber who found unwelcome visitors in his house in the "wee sma" hours of the morning and at the same time found the telephone a very useful ally in the emergency. He writes: "Just a line to thank you for your very prompt attention to my 'phone at 4.30 a.m. on Sunday last. You may be interested to hear that I was successful in keeping the two burglars until the arrival of the police."

It is with regret that we record the superannuation, through ill-health, of Miss A. Holt, Clerical Officer in the Traffic Branch of the District Manager's Office. Her Post Office experience has been most varied, commencing, as it did, in 1894 in Telegraphs, and continuing in Telephones, first as operator and then as Clerical Officer. A tangible expression of the esteem in which Miss Holt was held by the members of the staff was conveyed to her in the form of an all-mains wireless set, with hopes that relief from official duties may bring about a restoration of her health.

In these days of rationalisation it would appear from the following application for a Classified Trades Directory that the channels of trade have some unusual tributaries—"Will you please forward me the Telephone Book with the Classical Trades, as I am a dealer in soft fruit and wants various addresses of same.—Yours truly, . . ."

### SOUTH EASTERN DISTRICT P.O. SPORTS ASSOCIATION.

THE efforts of the Surveyor and his staff have this year resulted in the formation of the above-named sports association, embracing tennis (mixed doubles), bowls (rinks and pairs), swimming, cricket and football. The association is governed by an executive committee presided over by the Surveyor, Mr. Randal Bell, expenses being met by each office paying an affiliation fee to the Association, the amount varying according to class of office. The success of the association is evidenced by the fact that the following entries were received:—

Tennis ... ..	24 teams.
Bowls (rinks) ... ..	18 "
Bowls (pairs) ... ..	26 "
Cricket ... ..	24 "
Football ... ..	12 "
Swimming ... ..	8 "

The District Manager's Office, Brighton, entered the tennis competition, and after defeating Lewes, Brighton and Eastbourne Post Office teams, qualified for the final by defeating Reigate and Redhill Post Office in the semi-final.



BRIGHTON DISTRICT MANAGER'S OFFICE. WINNERS OF THE SOUTH EASTERN DISTRICT TENNIS CUP.

- |               |                           |
|---------------|---------------------------|
| K. Eames.     | H. J. Turner.             |
| Miss B. Shaw. | C. H. Wright (Secretary). |
|               | Miss K. E. M. Lay.        |

The finals in bowls and tennis were played in the Calverley Grounds at Tunbridge Wells on Aug. 30 last, when a party of 54 journeyed from Brighton to see the final between Rye Post Office and the District Manager's Office, Brighton. After a keen game the District Manager's Office emerged the victors by three matches to one.

Excellent arrangements for the comfort of visitors were made by the Post Office officials at Tunbridge Wells, tea being provided for 152.

Worthing Post Office defeated Sevenoaks by 24 points to 21 points in the bowls (rinks) and the pairs honours were secured by Rochester and Chatham Post Office by 15 points to 5 points.

The Tennis Cup, Bowls (rinks) Shield and Bowls (pairs) Cup were presented to the winners by Mr. Randal Bell.

The cricket final between Tunbridge Well Engineers and Brighton Post Office was played at the Neville Ground, Tunbridge Wells, on Sept. 7, when Brighton won by two runs. Before a gathering of some 100 supporters the Cricket Shield was presented to the Brighton Post Office team by Mr. Randal Bell.

Except for football, the season's activities terminate on Oct. 5, when the swimming final takes place at Maidstone Baths.

C. H. W.

**NORTH WESTERN DISTRICT NOTES.**

*Salesmanship—Modern Style.*—The results which follow co-operative effort are exemplified by the example quoted below, where the Sales Department, Head Postmaster and Engineers, acting together, with expedition and despatch, brought satisfaction to a new subscriber and kudos to the Department. Recently a Newcastle firm acquired a network of Cumberland Collieries which were in liquidation, and a telephone message was received to the effect that one direct exchange line was required as early as possible. The message was received at 11 a.m.; by noon the agreement was signed and by 3 p.m. the line was working. The matter did not, however, end here. The Sales Department smelled further business. It was known that the collieries involved in the deal had been served by a private telephone system and, striking whilst the iron was hot, a Salesman was immediately sent out to place himself at the new firm's disposal. The result, in short, is an agreement for a P.B.X. with four direct lines, nine internal extensions and seven external extensions and, in negotiation, a further agreement for three internal extensions and seven external extensions. The private telephone system was rendered *hors de combat* and a letter of appreciation has been duly received from the new subscriber. Thanks are due to the Head Postmaster, who kept the Sales Department posted, the Engineers who delivered the goods, and the Sales Department who told the tale, for a fine piece of co-ordinated work which reflects credit upon all concerned.

*Cricket.*—Preston Post Office won the North Western District Post Office Cup in a finely contested match at Chorley on Saturday, Sept. 9.

The runners-up (Bolton Post Office) batted first and scored 96. Preston replied with 93 for 7, then lost 2 wickets for 2 runs—95 for 9, and we had the exciting position of last man going in with one run to tie and two to win. A silence which had not hitherto been noticeable among the Bolton telephonists—who comprised the major portion of the lady spectators—then fell, but everyone joined in the applause for the winning hit. The Cup was presented by Mr. Campbell, Assistant Surveyor, and Mr. Postlethwaite replied for the winners.

Preston P.O.		Bolton P.O.	
J. W. Postlethwaite, c. Sedgwick, b. Ditchfield ... ..	22	J. S. Byers, b. Postlethwaite ...	11
H. Smallshaw, run out ... ..	0	J. Morley, c. Freeman, b. Postlethwaite ... ..	29
W. Whiteside, Sen., b. Ditchfield	11	F. Sedgwick, b. Whiteside ...	1
H. Woods, lbw., b. Hayton ...	20	J. Ditchfield, b. Whiteside ...	2
E. Griggs, b. Morley, ... ..	2	J. Glover, b. Whiteside ... ..	0
W. Whiteside, b. Ditchfield ...	12	H. Barlow, run out ... ..	1
G. Cass, b. Morley ... ..	2	J. Beddows, b. Whiteside ... ..	0
J. Freeman, lbw., Ditchfield ...	19	G. A. Pugh, b. Whiteside ... ..	0
C. Sullivan, not out ... ..	9	A. Haslam, b. Postlethwaite ...	26
W. Bass, c. Barlow, b. Hayton	0	J. Fearson, b. Postlethwaite ...	14
E. Gregory, run out ... ..	3	R. Hayton, not out ... ..	4
Extras ... ..	3	Extras ... ..	8
	<hr/> 103		<hr/> 96

For Preston W. Whiteside took 5 for 19 and Postlethwaite 4 for 22.  
For Bolton Ditchfield 4 for 20.

*Personal.*—Our congratulations are extended—and will in due course take material form—to Mr. W. M. Hodgkinson upon his promotion to Traffic Superintendent, Class II. Mr. Hodgkinson has been posted to the Brighton District and took up duty there on the 18th instant. We welcome Mr. P. Dunn from the North Eastern District, who is to take the vacant Assistant Traffic Superintendent's post.

An interesting gathering took place at Wigan on the 14th instant, when Captain Buchanan, A.M.I.E.E., Sectional Engineer, handed to Mrs. James Pendlebury the Imperial Service Medal which has been awarded posthumously to her late husband, Mr. James Pendlebury. The meeting was well attended by Mr. Pendlebury's late colleagues.

**SHEFFIELD DISTRICT NOTES.**

*Social.*—We had the pleasure of entertaining members of the Nottingham District Manager's staff on Aug. 29. On the previous two or three occasions of their visits the weather has seriously interfered with the outdoor arrangements, but on this occasion no rain marred the proceedings, and our visitors were enabled to give full effect to both their cricket and tennis form.

*Retirement.*—Time does not consider the merits of equality as between man and woman, hence Mrs. Davis, Assistant Supervisor (Class II), having reached the allotted span of years, has passed into the "retired" order. We hope her days of retirement will bring increasing joy.

**GLASGOW DISTRICT NOTES.**

*Resignations on Account of Marriage.—Telephonists.*—Miss A. M. Wilson, of Bridgeton, Miss C. M. Hamilton, of Trunks, Miss L. M. Couper, of Western, Miss J. C. Dickie, of Douglas, Miss V. H. Skinner, of Trunks, Miss M. G. Rossborough, of Bell, Miss M. S. McCreadie, of Trunks.

*The Smile and the Voice.*—The voice with the smile wins.—(Wodehouse.)

Do not imagine that all is well with you when you see all around you smiling, because you may "smile and smile and be a villain."—(Mr. Baldwin.)

Apparently the Earl of Murray had made some jest, for the smiling countenances of the statesmen expressed that sort of cordial reception which is paid by courtiers to the condescending pleasantries of a prince.—("The Abbot.")

The smile of a person of low caste melts away when he discovers that the mandarin's stern words were not intended as a jest.—(Kong Ho.)

The joke pleased him. He smiled within a sixteenth of a note of the audibility permitted by the laws governing employecs.—("The Trimmed Lamp.")

Her voice, when she spoke, dwarfed her theme. It was the voice capable of investing little subjects with a large interest.—("Whirligigs.")

The fat smile of prosperity.—("The Man.")

Why, I can smile, and murder whiles I smile.—("K. Henry VI.")

O villain, villain, smiling, d— villain!

My tables—meet it is I set it down,

That one may smile, and smile, and be a villain.—(Hamlet.)

Thoughts are chords, and words are single notes—for which reason music so often expresses thought more profoundly than speech. Perhaps in another world there will be a kind of orchestrated literature combining the two—a speech of many parts all blending into one immensely enriched meaning. Dante's magical description of Beatrice's speech has the effect of a chord by its blending of the voice and the smile in one infinitely caressing phrase.—(Bagshot.)

I live in a constant endeavour to fence against the infirmities of ill-health, and other evils of life, by mirth; being firmly persuaded that every time a man smiles—but much more so when he laughs—it adds something to this Fragment of Life.—("Tristram Shandy.")

Sugden was a tallish fellow with a long bony face and a vast shaven upper lip, a Lancashire man. . . . He had one of those hard, flat Lancashire voices that give every statement they make a lugubrious and disillusioned air.—("Angel Pavement.")

The boy or the girl in an office who answers the telephone is for the time being the Voice of the firm.—(Telephone Development Association Lecturer.)

**SCOTLAND (WESTERN DISTRICT) NOTES.**

Mr. C. R. DICKENSON, Assistant Traffic Superintendent, on the occasion of his approaching marriage, was presented, on Aug. 25, 1933, with a case of cutlery. In making the presentation, Mr. Finlay referred to the high esteem in which Mr. Dickenson was held, and how that, although his stay in this District had been a short one, yet he had won the affection of the staff. Mr. Dickenson, in reply, thanked the members for the token of their appreciation and good wishes. He expressed how delighted he had been during his stay in the District, and regretted that the call to another branch of the service necessitated his going south.

On Sept. 7, 1933, a very pleasant staff gathering took place in the District Office, at which the opportunity was taken to present Miss A. Paterson, Fees Supervisor, with a canteen of cutlery as a token of the esteem in which she was held by the staff, and to convey to her the good wishes of all on the occasion of her forthcoming marriage. The presentation was made by the District Manager, Mr. Thyne.

Mr. Dunn, Staff Officer, spoke in terms of high praise of the work performed by the Section under Miss Paterson's charge, and of the cordial relationship between that Section and all the other branches of the District Office. Miss Fulton, Female Clerical Officer, and Miss Anderson, Writing Assistant, expressed good wishes on behalf of the staff.

Miss E. C. Moffat, Writing Assistant, died very suddenly on Sept. 5, 1933. News of her death could, at first, scarcely be credited, for she had been on sick leave only for a few days. She was of a quiet disposition, yet to those of the staff who knew her intimately, she had a word which she spoke in due season and how good it was. We shall miss her companionship and mourn her early death.

*A Smart Piece of Work.*—A subscriber's premises in Greenock were on fire the other morning, and, while the firemen were still playing the hose on the flames, a Post Office Engineer arrived and provided temporary telephone service at a fresh position.

**WESTERN DISTRICT NOTES.**

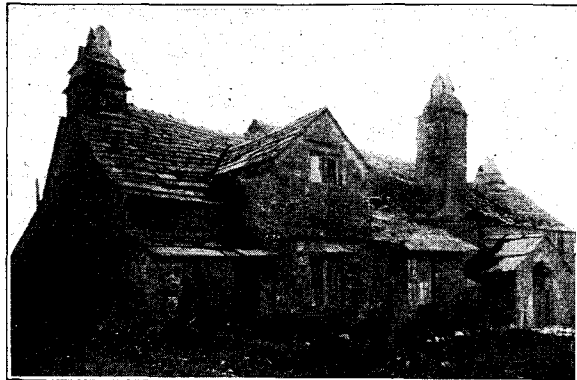
On Sept. 2 Miss E. M. Balchin, Shorthand Typist in the District Manager's Office, was married. She was presented by the staff with a handsome dinner set.

On Sept. 9 Miss Freda Perrin, Clerical Officer, District Manager's Office, was married, and she also was presented with a handsome dinner set.

Whilst we wish them both every happiness, the dinner sets seem rather significant—it looks as though there is a possibility of the respective husbands being "fed up."

Owing to a storm recently, which upset the arrangements of a certain rural automatic exchange, a farmer subscriber, in making a complaint, expressed himself thus:—

"I've twisted and twirled that dial—drat 'em—and nothing happens. Give us back the maids, say I."



*Old Post Office, Tintagel, Cornwall.*—The above photograph is of the old Post Office at Tintagel, Cornwall. It is an old Saxon house now preserved as an ancient monument, and is open to visitors at a small charge. It will, no doubt, be recognised by many telephone men and women who have, no doubt, seen it on their holiday tours. F. J. F.

**MANCHESTER DISTRICT NOTES.**

*Post Office Telephones Social Club.*—The committee of the club has arranged a series of social events for this winter. The events will be held at Telephone House and the programme is:—

Hot-Pot (staff only) ... ..	Oct. 12 1933.
Dance ... ..	Oct. 21 1933.
Dance ... ..	Nov. 18 1933.
Dance ... ..	Dec. 2 1933.
Carnival dance ... ..	Dec. 23 1933.
Dance ... ..	Jan. 20 1934.
Hot-Pot (staff only) ... ..	Feb. 13 1934.
Dance ... ..	Feb. 24 1934.
Dance ... ..	Mar. 17 1934.
Carnival dance ... ..	April 24 1934.

*Civil Service Sports Club.*—A gala was held on the Sports Ground on Sept. 9, and proved a great success. The Ladies v. Gentlemen cricket match was closely contested, but their self-imposed handicaps proved too much for the men. The foot-races and bowls competition attracted a good number of entries.

The Sports Club will hold a dance at the Grand Hotel on Oct. 14. We anticipate a very enjoyable evening and hope that it will prove as successful as the previous dances held by the club. Tickets will be 3s. 6d.

*Marriage.*—We were glad to congratulate Mr. E. F. Cowley, Assistant Traffic Superintendent, on his marriage on Sept. 23. His friends and colleagues in the District Manager's Office gave him several beautiful and appropriate presents to mark the happy occasion.

*Phonograms.*—The phonogram work was transferred from the Telephones to the Telegraphs on Aug. 26. The employment of freshly-trained staff in the new Phonogram Room, of course, made the work difficult at first, but the staff soon settled down to the new conditions.

*Albert Outram.*—It was with deep regret that we learned of the death of Mr. Albert Outram, Foreman Cleaner, Telephone House, after only a few days' absence from duty. "Albert" had given 37 years' faithful service, and was known to all and sundry in the Manchester Telephones.

The funeral was attended by practically the whole of the cleaning staff from Telephone House, and Messrs. Williams, Hamilton and Bridges represented the District Manager's Office. There were floral tributes from various sections of the Post Office.

**BIRMINGHAM DISTRICT NOTES.**

THE development of the Director Automatic Telephone System at Birmingham continues. On Aug. 26 the new Aston Cross Exchange was opened. This exchange is made up of 1,000 subscribers working hypothetically on the Central Exchange and 400 subscribers transferred from the East Exchange.

On the same date another conversion took place from bachelor to benedict. A certificate of readiness had been furnished for our colleague, Mr. W. A. Stripp, to be converted from bachelor to benedict and we took the opportunity of wishing him every happiness when we asked him to accept as a token of our esteem a portable gramophone.

*Cricket.*—Although victory is elusive of the District Manager's Cricket Team, it is with pleasure we record that the Trunk Exchange Ladies' Team drew with the male members of the District Manager's Cricket Team. The scores were as follow:—

<i>Trunk Exchange Ladies.</i>		<i>District Manager's Side.</i>	
E. Titterton, b. Findley ...	10	M. Dodd, b. Titterton ...	0
H. Griffin, b. Vallence ...	0	E. Belston, b. Pinner ...	4
E. Belston, b. Vallence ...	12	G. Saunders, b. Pinner ...	0
R. Martin, c. Smith, b. Vallence	0	G. Pinney, b. Titterton ...	6
M. Ingram, b. Findley ...	1	H. Humphrey, b. Titterton ...	4
D. Pinner, b. Vallence ...	20	G. Findley, c. Townsend, b.	
G. Robinson, b. Findley ...	1	Titterton ...	4
M. Townsend, b. Findley ...	0	D. McDonald, b. Emery ...	4
D. Randle, c. Findley, b. Vallence	1	E. G. Smith, l.b.w., b. Martin	5
M. Emery, st. Brown, b. Findley	0	E. T. Vallence, st. Belston, b.	
M. Johnson, not out ...	0	Emery ...	14
R. Mould, b. Findley ...	2	H. L. Brown, not out ...	1
Extras ...	4	Extras ...	9
	51		51

*Ferney Migrates.*—A very pleasing event took place on the Traffic Branch on Sept. 2, when Mr. F. E. Ferneyhough was asked to accept several presents, armchair, Stanley plane, &c., as a mark of appreciation of his good comradeship. The chair was taken by Mr. W. H. Cope, in the absence of the District Manager, on annual leave, and Mr. G. F. Findley, in a characteristic speech, congratulated Mr. Ferneyhough on his promotion to Headquarters.

Mr. Ferneyhough's ability as a Traffic Officer may have been improved by his ability as a magician, and his prowess on the cricket field should not be overlooked.

A large gathering attended the presentation and several speakers testified to Mr. Ferneyhough's spirit of helpfulness when dealing with traffic and accounting problems.

His Birmingham colleagues wished him every success and happiness in his new sphere.

**THE LATE MR. C. F. MOODY.**

THE many friends and colleagues, be they of this or of the last century, will read with deep regret of the passing, last month, of Mr. C. F. Moody, formerly Assistant Superintendent (Technical) of the Foreign Cables, C.T.O., in his 73rd year.

Mr. Moody was a unique personality, with a supreme sense of the meaning of the word "probity" as the basis of all that he did or said.

His value as a technical expert in telegraphy, including all types of printing telegraphy from the Hughes simplex and/or duplex systems, forwards to the Baudot principle in all its variants. Should it be said that Mr. Moody's explanatory methods of approach were somewhat of the slow order, it could well be retorted that those methods contained the not-too-frequently discovered merit of unflinching exactitude. The outstanding feature of his work was his amazing patience when searching for a fault or when endeavouring to drive in the truth to a laggard student!

He never sought for reward: he was never jealous of those who happened to be chosen before him; he never considered there was any need of praise to himself for help and guidance he had rendered, brushing any attempt to express such quietly aside, with a smile. Those of us who knew him best will agree that friend Moody was indeed one of God's own good folks!

He was laid to rest in Elmers End Cemetery, and in addition to the family mourners and their friends, the following were present and represented old colleagues from the C.T.O.: Messrs. Bing, Bradley, Froom, Gutteridge, Hibbs, A. Jay, Lange, G. Matthews, G. Owen, F. Poffey, J. Rist. Among the many wreaths placed upon the grave were noticed one each from the Supervision and the staff of his old office, a simple tribute he would have appreciated.

J. J. T.

TELEPHONE: WELBECK 5362.



Merchant Tailor

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PORTMAN SQUARE, W.1.

GENTLEMEN'S WEST END TAILORED SUITS FROM  
5½ GUINEAS.

REVIEWS.

It may interest certain of our constant readers to learn that "The Proceedings of the International Consultative Committee on Long Distance Telephony," is now available, and that the English translation may now be obtained from the International Standard Electric Corporation, London, price One guinea. The volume contains a complete list of delegates to the 1931 gathering, together with verbatim reports of the opening and closing sessions of the plenary meeting.

"*Television et Transmission des Images.*" By René Mesny. Paris: Armand Colin. Price 10.50 fr.—Criticism of this book has been of a very favourable character on this side of the Channel, and quite naturally so when one considers that it is actually No. 162 of the "Collection Armand Colin." The *Electrical Review*, for example, emphasises how eminently qualified Monsieur Mesny is to write on the subject of television and the transmission of images, and commends that able authority upon making no attempt to minimise the technical difficulties of television. What, however, will the amateur say to the following approbation of Monsieur Mesny's deliberate decision "to offer no suggestions for a home-made or amateur television set."? Still, more is to follow, for to this is added the following: "In the present state of knowledge, television and the transmission of pictures demand a complexity and quality of equipment which are beyond the scope of the average amateur." Perhaps, after all, an amateur somewhat over the average degree may arrive!

J. J. T.

GUILDFORD DISTRICT NOTES.

*Resignation.*—Miss A. D. Elstone, Writing Assistant, resigned on the 9th instant, in view of her forthcoming marriage. She was presented with a very handsome cruet, accompanied by the best wishes of the staff for her future happiness.

*Cricket.*—The match for the final of the Postmaster's Cricket Shield, Guildford Engineers and Telephones (holders) v. Salisbury, was played

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at Basingstoke, Hants, on Aug. 23, 1933, before a representative company, including Mr. H. S. Bullock, Assistant Surveyor, who, in the absence of Mr. E. J. Gayes, the Surveyor, presented the Shield and Medals to the winners at the conclusion of the game. Mr. Cornfoot, Superintendent Engineer, Mr. H. G. France, Traffic Superintendent, and Mr. Hickman Clarke, Sales Manager, were also present. Salisbury batted first and compiled the useful total of 120, but Guildford Engineers and Telephones passed this total with seven wickets in hand, and so retained possession of the trophy, which they have now won four times out of five attempts. In the semi-final Guildford beat Farnham easily, the scores being Guildford Engineers and Telephones 186 (for 8, declared), Farnham 33; and Salisbury 172, beat Bournemouth 145.

Salisbury.

Guildford Engrs. & Telephones.

Russell, c. and b. Jenner ...	3	S. D. Pendry (not out) ...	49
Smith, b. Jenner ...	11	W. Hart, c. Hardy, b. Grundy	10
Grundy, l.b.w., b. Jenner ...	25	C. White, b. Waite ...	9
Jenkinson, b. Jenner ...	32	W. E. Jenner, l.b.w., b. Grundy	40
Viney, c. Woodhams, b. Piper ...	1	R. Piper, l.b.w., b. Russell ...	9
Harris, l.b.w., b. Jenner ...	0	F. Amey,	} did not bat.
Waite, c. White, b. Jenner ...	0	R. Lee,	
Austin, c. White, b. Jenner ...	7	J. B. Plant,	
Bruton, b. Jenner ...	7	L. Ansell,	} did not bat.
Hardy, b. Piper ...	13	R. Woodhams,	
Norton (not out) ...	8	R. Ayears	
Extras ...	13	Extras ...	5
Total ...	120	Total, for 4 wks. ...	122

Three Calls.

There was once a pretty maiden who, presuming on her charm,  
Offended much a man too fondly true;  
But when the dance was over she was filled with dire alarm  
Lest the rose of her romance should change to rue.  
Next morn she called to him, and said: "I'm sorry Jim."  
He answered: "Dearest are you all alone?  
Well you won't much longer be." And she thanked the P.M.G.  
For the Phone.

Once an opulent financier took a needed holiday,  
Changing tiresome tyranny of shares and stocks  
For the joy of healthful bathing in a charming Cornish bay  
And bracing rambles round the rugged rocks.  
There was no *Financial News* in the village of Tregooze  
But an item in the wireless report  
Made him glad to see the red of a kiosk just ahead—  
In five minutes he was through to Capel Court!  
There was conversation brief but pregnant with relief  
Concerning an important Foreign Loan.  
Then he walked down to the sea grateful to the P.M.G.  
For the Phone.

Once a frantic father waited with agony intense  
For a verdict which should either break or bless  
And the leaden hours were laden with intolerable suspense  
Of an operation's failure or success.  
Came a summons swift and clear: "You will be glad to hear."  
And the Matron's voice had Heaven's happiest tone  
As he gladly kissed the rod and devoutly thanked his God  
For the Phone.

H. H. C.



### Houses.

I saw a house the other day on the wall of which was a tablet recording the fact that Charles Lamb had lived there. It gave reality in my mind to Lamb. To see where he had lived, worked, eaten, thought and slept, to realise that he must often have come out of that door and walked in the very road along which I was passing, made me think of him as a human individual instead of as a famous man of letters, now dead. The purpose of the tablet, of course, was to record an historical fact of general interest to literary people and of particular interest to Lamb's admirers. But it did more than that. It honoured the house that had sheltered him: it paid an indirect tribute to the service the house had rendered to Lamb and to other generations of people. The house had stood there for scores of years serving mankind faithfully and silently and acknowledgment had come at last, although fortuitously.

It is the common lot of houses to be unhonoured and unsung. Most of us change from one to another without thought. Sometimes one meets the sentimentalist who goes back to look at the old house. He stands before it or inside it: he recreates old scenes and repeoples it with the living and the dead. Its every aspect has a memory and the changes within and around sadden or hurt him. As he leaves he turns again to look and it seems that the staring windows are eyes which grow dim as he retreats.

Houses are born, live and die just like human beings, but nobody really believes it. How bright, gay and youthful is the new house—full of up-to-date ideas and surrounded with a joyful pleasantness. But in age, how sombre. In the course of years it has suffered. It has become old-fashioned, ugly, scarred and weathered and the neighbourhood has declined in attractiveness. The procession of occupants passes on with its joys and sorrows but the old house must remain. It suffers shame upon shame and degradation. It may be pulled down. An empty old house is pathetic, but a house in course of demolition is even sadder. One thinks of it as a faithful old servant abandoned or as a soulless body. Think of the love and life which pulsed within it, of the laughter and happiness which echoed within it, of the light which streamed from it, of the warmth and comfort of it, of the welcome of its flung door. And now look at it—silent, broken, neglected, deserted.

Only a few houses have tablets which confer a lasting fame upon them, but many more deserve well in the thoughts of men for the humbler lights they have sheltered—the men and women of nobility, bravery and sacrifice. No one thinks of the old house now in terms of the humanity which developed under its roof: of the lives which went out from it into the everyday world. It bears no tablet but it played its part to the end.

PERCY FLAGE.

### A Tribute.

I sing in praise of Clerkenwell—  
Where everyone is "matey"—  
Where all goes like a marriage bell  
In matters small or weighty!

There harmony doth reign supreme  
From Chief to latest learner!  
There's not a curdle in the cream—  
Or lamp-black in the burner!

One never feels depressed and strange  
For no-one's ever "sniffy"—  
And if one wants a duty-change  
One gets it in a "jiffy"!

They've learnt the secret of success—  
(To lack which, discord mars!)  
You can't preserve home happiness  
In little family "jars"!

In short, it seems that, truth to tell,  
If I don't find the leaven  
I'll get so fond of Clerkenwell  
I'll cease to sigh for Heaven!

### L'Envoi.

Then, too, the School's at Clerkenwell  
The home of dear Miss Reekie—  
To whom with tears we bid farewell  
With phrases kind or cheeky!

"And now you've passed your final test,"  
(Her benison of yore!)  
I'm sure, dear, you will do your best,  
And no one can do more!"

Her courtesy—her charm and tact  
Through all the years we've known her,  
Has made young dreams accomplished fact;  
And all our hearts enthrone her!

We wish her many happy years  
Free from the claims of duty—  
With mem'ries fond, of her compeers,  
As age comes on in beauty!

C. A. S.

### Telephone Cross Word Puzzle.

#### Solution.

ACROSS.	DOWN.
1. Letter.	1. Lines.
6. Asides.	2. Editors.
12. Idiot.	3. Tight.
15. Entreats.	4. Together.
16. Or.	5. Etar.
17. Taw.	6. An.
18. Ether.	7. Store.
19. Irritate.	8. Irritation.
21. Sott.	9. De.
22. Octet.	10. Eatable.
23. Bee.	11. State.
24. Sta.	13. Edicts.
25. All.	14. Sweets.
26. Esteems.	20. R.T.A.
28. At.	22. Osmium.
29. Or.	26. Epact.
30. Knit.	27. Totes.
33. Art.	28. Ant.
35. Auditorium.	30. Kiwi.
38. Cue.	31. Trap.
39. Smew.	32. Rude.
40. Nard.	34. Rue.
41. Tests.	35. Ass.
42. Win.	36. Dew.
43. Peer.	37. Ire.

Contributions to this column should be addressed: The Editress, "Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office, G.P.O. (North), London, E.C.1.

## GLOUCESTER DISTRICT NOTES.

*Address to Hereford Chamber of Commerce.*—At the monthly meeting of the Hereford Chamber of Commerce, held on the evening of Sept. 4, an address was given by Mr. R. M. McLarty, the Gloucester Telephone District Manager, on "Some Post-War Developments in the Telephone Service." The chair was occupied by Mr. Cyril Franklin, and among others present was the Mayor of Hereford.

After dealing with the developments in Great Britain as a whole, the speaker gave—as a matter of special interest to the Chamber—the details of the local developments.

A brief discussion followed, at the close of which Mr. McLarty was cordially thanked for his address.

*Presentations.*—Since our last notes, presentations have been made to four members of the District Manager's staff, and we are all pleased that in none of these instances have the circumstances also necessitated a parting from the recipient of the present.



Miss G. M. Francis, who for some nine years was a temporary shorthand typist in the District Manager's Office, was recently appointed to the establishment of the Gloucester Postmaster's office, and as a token of the regard and esteem in which she is held her former colleagues presented her with a travelling case and hat box to match, and a bedroom clock. Miss Francis's duty includes a share of the typing work of the District Manager's Office and she is a frequent visitor to her old friends.

Mr. A. R. Bull has been with us for a considerable time in the capacity of Acting Sales Representative. He recently decided to endow a partner with all his worldly goods. His colleagues in the Sales Branch increased those goods by presenting him with some soft furnishings. Their good wishes for the future happiness of Mr. and Mrs. Bull accompanied the gift and every member of the staff of the District Office joins in the expression of goodwill.

The Traffic Branch is often concerned in the personal call service and recently two of the young men in our local Traffic Branch, Messrs. H. W. Mogg and A. Scarborough, were particularly interested in very personal calls. We understand that the controlling operator, having ascertained that the required person was not "engaged" and was, therefore, "available," established communication and then left the circuit. In each case the ensuing conversation was so satisfactory that the gentlemen promised to give another "ring" later. The happy termination of these calls is not surprising in view of the fact that the controlling operator was cupid, who, as we all know, is "experienced in his duties." Both of these "he-men" have now paid homage to Hymen, and to mark the occasion and demonstrate their esteem for their colleagues the members of the District Office Staff met on Sept. 12. The chair was taken by Capt. H. E. Parry, Traffic Superintendent, Class I, who referred, in humorous vein, to the nature of the gifts but refrained—noticeably—from tendering advice. He wished Mr. Mogg and Mr. Scarborough every happiness and asked the District Manager to present each with a chiming clock, for which those present, and some who were unable to attend that gathering, had subscribed.

Mr. McLarty's remarks also reflected the atmosphere of jollity and good will which pervaded the meeting. He expressed his personal pleasure in asking both to accept the presents from their colleagues.

Mr. A. Barker, Traffic Superintendent, Class II, also offered felicitations.

Mr. Mogg and Mr. Scarborough made suitable replies and thanked all for the good wishes and presents.

*Sport.*—In the sports competitions open to all members of the staff in the South Wales Surveyor's District, the District Manager's staff was represented in the bowls competition by Messrs. Miles and Hayward, the former being successful in the preliminary, first and second rounds. Mr. Blackman also represented us in the singles tennis tournament. The finals of the cricket, tennis and bowls competitions were played at Gloucester, in ideal weather, on Sept. 6, and a most enjoyable afternoon and evening were spent by competitors and spectators. No decision was reached that day in the cricket match, but cups were presented by the Surveyor, Mr. C. A. Jackson, to the winners of the gentlemen's singles and mixed doubles tennis and the bowls competitions.

At the annual gala of the Gloucester Swimming Club, held on Sept. 15, the Post Office Telephones team won, for the third time in succession, the Ladies' business House Shield. The members of the telephone Team were the Misses Nightingale, Chivers and Hughes. At the same gala the Works Shield, presented to the winners of a team race for men from works and business houses in the city, was won by the General Post Office indoor staff.

*Appreciatory Letters.*—We often receive posies, but the fragrance of two bouquets recently handed to us will remain for some time.

This was received in the District Manager's Office: "Whilst paying his account Dr. H— T— would like to express his appreciation of the unvarying courtesy and efficiency of the local exchange at all hours of the day and night"—and the following letter was addressed to the Head Postmaster of Worcester by the Secretary of a Federation of Flying Clubs: "May I take this opportunity of sounding a word of praise for the courtesy and smartness of the lady operators at your exchange. After 3 years of constant use in the summer months, never once has there been the slightest cause for complaint. Fifteen trunk calls handled and answered regularly in as many minutes is my weekly experience."

## RETIREMENT OF MR. W. THYNE.

A COMPANY representing practically every member of the Scotland Western District Manager's staff assembled in the Ca'doro, Glasgow, to do honour to Mr. Thyne, District Manager, on the eve of his retirement. Mr. Thyne was accompanied by Mrs. Thyne and Miss Thyne.

After tea the company settled down to the more serious business of the evening, under the chairmanship of Mr. Finlay, Traffic Superintendent,

who ably performed the duties of Chairman in a very acceptable manner, and in his opening remarks paid tribute to Mr. Thyne, our guest. Messrs. Brodie (Sales Manager), Tanner (Traffic) and Dewar (Accounts) each spoke on behalf of their respective branches. Thereafter, on the call of the Chairman, Mr. A. F. Dunn, Staff Officer, in a short but appropriate speech, asked Mr. Thyne to accept an all-electric wireless set as a parting gift from the District staff. Mr. Thyne, in his reply, was reminiscent, and expressed his appreciation of the gift and thanked all for their good wishes and also for the loyalty and encouragement which had been given him during his term of service in the District. On behalf of the District Managers' Association, Mr. Coombs, District Manager, Glasgow, made a presentation to Mr. Thyne of a handsome bookcase, and associated himself with the eulogistic remarks of the other speakers.

Mr. Thyne is spending his retirement at Dunoon on the Firth of Clyde.

A pleasant little incident was the presentation to Mrs. Thyne of a mystery box from the younger members of the staff, and which was graciously handed over by Miss M. Porterfield. Mrs. Thyne suitably replied.

The more festive part of the evening followed, Mr. Brodie acting as M.C. A programme of songs and recitations was carried through. Miss Aitchison, Miss Rae and Mr. Wright, the artists, gave of their best. Thereafter a few dances were enjoyed, and a delightful evening was brought to a close by our retiring District Manager wielding the music baton to the community singing of the assembly.

## BELFAST DISTRICT NOTES.

*The T.T. Motor Car Race.*—The sixth International Tourist Trophy Motor Car Race was run on the Ards Circuit, near Belfast, on Saturday, Sept. 2, and witnessed by a huge crowd, including many cross-Channel visitors. The race, which is a handicap event, over a distance of more than 400 miles, was won by the Italian, Nuvolari, driving an M.G. Magnette at an average speed of 78.65 miles per hour, while the second car finished just 40 seconds behind the winner.

The course is roughly triangular in shape, with Newtownards, Comber and Dundonald at the three corners, and is a severe test for both cars and drivers. As in former years, the control point at the grand stand was linked by telephone with eight points round the course, at Cree's Corner, Mile Cross, Newtownards, Glassmoss, Comber, Ballystockart, Dundonald Railway Station and Central Inn (names which have become famous in motor car racing history) by means of six private wires terminating on table instruments in the control room. In addition, a private line installation with four internal and three external extensions was also provided, as well as a private wire from the timekeeper's hut to the scoreboard. An exchange line was provided for the R.A.C., one for the Press Association, two for the use of the Press generally, one for the Belfast *Evening Telegraph* and three call office lines. All these were connected to the Knock Exchange.

Fifteen members of the night operating staff were loaned to the R.A.C. for duty in the control room and at the various points round the course, where their time was fully occupied in telephoning information supplied by the marshals regarding the progress of the various cars and any unusual happenings.

## THE G.P.O. PLAYERS.

AFTER a triumphant tenth season the Players consolidated their position at the head of the Service dramatic Societies by carrying off the Russell Scott Trophy for the second time. Their opening venture this season will be Noel Coward's "The Marquise," presented on Oct. 26, 27, and 28, at King George's Hall, Caroline Street, W.C.1. This play, which was dedicated to Marie Tempest (who achieved a great personal success in the title role), has for background the domestic affairs of the French aristocracy in the 18th century.

A one-act play "The Prince who was a Piper," by Harold Brighouse, will also be presented each evening.

Tickets, 2s. 4d., 3s. 6d., and 5s. 9d., may be obtained from Mr. W. L. Gartland, N.E. Room, 5th Floor, G.P.O. (N.), E.C.1. (Phone: National 6321—Ext. 871.)

## LONDON TELEPHONE SERVICE NOTES.

### Sales Branch Notes.

DURING the month of August there was a net gain of 3,364 stations, as compared with an increase of 1,037 stations in the corresponding month last year.

An order has been obtained from the Strand Hotel, Ltd. (Regent Palace Hotel), for 1,306 additional extensions in connexion with which 1,155 hand-microphones are to be provided.

The Radio Exhibition, held at Olympia from Aug. 15 to 24, resulted in 152 telephones being provided for 196 exhibitors. The Post Office had a display at the exhibition which attracted considerable attention. A variety of apparatus was on view and demonstrations in the use of automatic equipment interested thousands of visitors who were attracted to the stand.

A similar Post Office display has been arranged in connexion with the Shipping, Engineering and Machinery Exhibition, to be held at Olympia.

In connexion with Dartford Charter Week a display was arranged at the Head Post Office.

In the early part of this year a canvass of market gardeners was made, in view of the possibilities afforded for telephone expansion, due to the introduction of import duties on foreign produce. A large number of calls was made, and so far orders have been obtained for 14 additional exchange lines and 10 extensions.

A similar drive is being made amongst several other classes of traders.

*Staff Salesmanship Scheme.*—The progress of the scheme to date is given below:—

	Total No. Ordered.	No. Ordered during Month ended Sept. 16, 1933.
Exchange lines ... ..	2,435	122
Extensions ... ..	2,902	195
Private lines ... ..	32	1
Plugs and sockets ... ..	515	26
Hand-microphones ... ..	14,758	804
Extension bells ... ..	1,375	88
Other apparatus ... ..	1,416	87

In connexion with the fitting of additional apparatus a subscriber writes as follows:—

"I wish to say that your workmen were the quickest, quietest and cleanest in their work I have ever experienced.

"They did not smoke or shout or do any of the rough and unseemly things that so many workmen do.

"They are a model to any firm and I am glad to give such a tribute to a much-abused service."

Another says: "I have always been a critic of the telephone system, but I must acknowledge the speed and efficiency with which you fitted my telephone, which was ordered on the 22nd and was, in fact, fitted and working on the 23rd.

### The London Telephonists' Society.

So October has come round once again, and with it the opening of the new session of the London Telephonists' Society.

On this occasion we break away from tradition for our opening meeting, and commence the session's activities with a social evening on Oct. 9, at which our new President, Mr. W. C. Griffith, will be introduced to us. Readers are referred for details to the announcement bills which will be exhibited at all exchanges before these lines are in print, but we can promise them a very full and attractive evening. A varied programme, with something for everybody's taste, has been arranged, and will be carried out under the direction of Mr. Horace Dive, who has kindly consented to fill the role of master of ceremonies for the evening; no further guarantee of the success of the event should be necessary.

We hope, this new session, to welcome all our old members, and also very many new ones. The programme for the session should provide items of interest for everyone, and each London reader of this Journal should make a point of carefully examining the bill announcing the meetings which have been arranged, and of making a note of the date of each.

Space does not permit detailed reference here to all the meetings, but special attention is drawn to the visits to the London Postal Service, and to the Central Telegraph Office. These visits constitute another novelty for members of this Society, and should prove specially attractive. On each occasion we shall first hear a talk briefly describing the activities of these branches of the Post Office Service, and shall then divide up into parties to be conducted round the sorting galleries of the Postal Service, and to the P.O. Tube Railway, on the L.P.S. visit; and round the galleries of the

Central Telegraph Office on the second occasion. The arrangements which have been made afford unique opportunities for our members, and should receive wide support.

All the meetings have been planned upon equally attractive lines, so look out for the London Telephonists' Society announcements—and obtain your membership card from your local representative NOW.

### Honour for Former Member of Exchange Staff.

An interesting function took place at Cornwall House on Aug. 21, when the Controller had the pleasure of presenting to Miss Rosa A. Ost, Assistant Supervisor, Class II, Avenue Exchange (retired), the Imperial Service Medal recently awarded to her by His Majesty the King.

Accompanying the medal was a letter addressed to Miss Ost by Sir Russell Scott, K.C.B., C.S.I., I.S.O., Permanent Under Secretary, Home Office.

### The St. John Ambulance Association: Post Office Ambulance Centre.

Classes and lectures to be held during winter session:—

Money Order Department.—First Aid. Commencing Oct. 3, at 5 p.m.  
Lecturer: Dr. Evans.

Savings Bank Department.—First Aid. Commencing Oct. 17, at 4.30 p.m. Lecturer: Dr. Hellier.

Accountant General's Department.—Home Nursing. Commencing Aug. 31, at 4.30 p.m. Lecturer: Dr. Hellier.

L.T.S. Controller's Office.—Home Nursing. Commencing Oct. 10, at 4.30 p.m.

Clerkenwell Exchange.—First Aid. Commencing Oct. 12, at 6 p.m.

G.P.O. South.—First Aid. Commencing Sept. 28, at 6 p.m.

N.B.—We hope that a large number of new members will join these classes, which are being held at times and places to suit all.

E. K. M. MEESER,  
Gen. Sec. Women's Sec. P.O.A.C.  
(Telephone City 2000, Extension 452.)

### Personalia.

#### Resignations on Account of Marriage.

##### Telephonists.

Miss W. L. Norris, of Palmers Green.	Miss M. G. A. Parker, of Maryland.
" A. E. Barker, of Palmers Green.	" H. M. Attoe, of Eltham.
" G. M. Budgen, of Toll "A."	" W. E. Buckley, of Seven Kings.
" R. V. McLening, of Toll "A."	" D. E. R. Pollard, of Harrow.
" H. M. Ryle, of Toll "A."	" L. G. Adey, of Central.
" W. M. P. Swinyard, of Toll "A."	" N. M. Comber, of Central.
" W. A. Tucker, of Toll "A."	" V. L. Harper, of Central.
" N. E. Brittle, of Primrose.	" P. E. Keen, of Central.
" S. A. Cannings, of Reigate.	" D. M. Prior, of Central.
" D. L. Daverson, of Rodney.	" E. E. Warn, of Central.
" E. A. Holder, of Rodney.	" K. E. Gotts, of Metropolitan.
" E. J. Norrington, of Rodney.	" M. E. Lathey, of Toll "B."
" W. Apsey, of Brixton.	" B. M. Gill, of Toll "B."
" D. I. Last, of Leytonstone.	" M. L. Munford, of Sloane.
" F. M. Benson, of Clerkenwell.	" G. G. Marlow, of Park.
" M. R. Farrier, of Clerkenwell.	" E. C. Matthews, of Sutton.
" D. Blackwell, of Clerkenwell.	" G. I. Bunney, of Trunks.
" L. F. Welch, of Clerkenwell.	" F. I. Matthews, of Trunks.
" E. M. Perring, of Fulham.	" D. L. Newman, of Trunks.
" I. K. Springate, of Chancery.	" M. Sheen, of Trunks.
" A. Brooks, of City.	" G. M. Beagley, of Willesden.
" R. M. Owen, of City.	" I. M. Jones, of Holborn.
" G. Ellis, of City.	" W. R. Vine, of Holborn.
" A. E. Feakes, of Victoria.	" E. Allen, of Holborn.
" F. M. Musk, of Victoria.	" H. T. Wills, of Holborn.
" K. Sears, of Victoria.	" M. V. Richards, of Holborn.
" W. M. Sellar, of Victoria.	" D. I. Maylard, of Holborn.
" M. Reynolds, of Victoria.	" D. E. Fitzsimons, of Museum.
" P. J. Edwards, of Streatham.	" G. L. Squires, of Museum.
" P. J. Notley, of Hounslow.	" W. E. Haynes, of Museum.
" V. F. Dennis, of Hop.	" A. A. Terry, of Speedwell.
" D. E. Bishop, of Sydenham.	" M. Jackson, of Royal.
" C. R. Webb, of Finchley.	" L. B. J. Hayter, of Gerrard.
" E. M. Pinney, of Finchley.	" D. E. Stewart, of Directory
" V. M. G. Clifford, of Finchley.	Enquiry.
" P. M. Lloyd, of North.	

# THE Telegraph and Telephone Journal.

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## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CXIV.

MAJOR J. F. DARBY.

THE subject of our sketch entered the Secretary's Office in 1904 equipped with a liberal technical education. He received training as an exchange manager at Sheffield in 1913, returning to London later in that year to serve as Traffic Inspector in the newly-formed Headquarters Traffic Section. He was promoted to Assistant Inspector of Telephone and Telegraph Traffic, Class II, in 1916, and Class I in 1925. Last month he was appointed District Manager of the North Midland Telephone District. He represented Headquarters on a Commission sent to the United States in 1930 to investigate Long Distance Telephone methods and organisation. He has played a leading part in carrying into effect the recommendations of that Committee, viz.: the immediate introduction of demand working throughout the Long Distance Service of this country and has achieved a reputation as a



specialist in this field, notably by his thoroughness and energy and also by his cordial and successful co-operation with other colleagues in all spheres. His lectures and writings on the subject are probably well known to most of our readers.

Major Darby served four years in France with the Royal Engineers during the war, passing through the various ranks from Sapper to Acting Captain. He commanded No. 70 Motor Air-Line Section, and concluded as O.C. Signals, Douai-Valenciennes area. He has commanded a Signal Company for many years since the war and is now Second-in-Command of the 44th (Home Counties) Divisional Signals.

In his younger days he exercised the art of prestidigitator with astounding proficiency, juggling with balls and packs of cards with the same aptitude with which he handles trunk problems in his maturer years. Now much of his leisure is absorbed in writing articles, he finds time for relaxation in tennis, badminton and bridge. He enjoys horse-riding and has recently acquired a car.

# The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

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## NOTICES.

As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.

VOL. XX. NOVEMBER, 1933. No. 224.

## DOLLIS HILL.

THE formal opening of the Post Office Engineering Research Station on <sup>Oct</sup> Nov. 23 last by the Prime Minister, in the presence of a large company including many scientific and official notabilities, afforded a fitting opportunity for public recognition of the good work achieved by the station, and at the same time served to launch the new building into its varied seas of activity with due ceremony. The Research Station, as we all know, was established at Dollis Hill before the War, but until recently has carried on its work in buildings—some of them of a temporary character—not specially constructed for the purpose. The new building is ideal in many respects, and is in every way a worthy home for an institution already credited with important inventions and devoted to ceaseless useful investigations affecting the electrical transmission of speech. The building which is of a standardised and modernised Georgian style and is of handsome appearance was designed by Mr. A. R. Myers of the Office of Works. It consists of a main research building, lecture theatre, laboratories, training schools, demonstration building and machine shops equipped with all the latest and most ingenious devices. Captain Cohen, in his short account of the activities of the establishment, stated that 500 research cases—all directed towards improving the effectiveness and increasing the facilities of the communication services—were dealt with there in the course of a year. The invention of the echo-suppressor, with its far-reaching effects on the international trunk telephone services, was the work of two Post Office engineers. Not only research, however, occupied the attention of the Research

Station. The training of students, of whom there were 1,700, engaged in 25 different courses, was amongst the most important of its activities; and “refresher” courses were provided to keep engineers and others fully acquainted with the latest developments of their art.

Mr. Ramsay MacDonald, referring to the experiments of 30 and 40 years ago—the “scientific toys” as they then seemed—asked whether the people who witnessed or read of them ever thought that in 1933 “they would affect the whole of our lives so intimately and so powerfully that a new kind of life was being introduced to mankind on account of them.” In truth the prolific benefits of scientific invention follow one another so fast and yet are assimilated in our lives so gradually that we hardly realise how great a change they effect. When we think of the last 30 years only and remember the changes wrought by the gradual extension of the telephone service from the few to the many and from the local to the universal, the spread of wireless communication, and the developments in television which seem likely to follow, we may indeed say that, compared with our fathers (and even our younger selves) we lead almost a new kind of life on account of them.

## HIC ET UBIQUE.

AMONGST the appointments notified in the Post Office Circular last month, two are of special interest to us, viz. that of Mr. A. P. Ogilvie to be Assistant Controller of the Central Telegraph Office, and that of Major J. F. Darby to be District Manager of the North Midland Telephone District. We offer them both our sincere congratulations. Mr. Ogilvie has been a contributor to this *Journal* from its first issue and could always be relied on to supply an article on the latest developments on the telegraph side, while Mr. Darby, an expert on trunk traffic questions, has been the regular contributor of some series of valuable articles.

It is now possible to show the telephone development of all the countries possessing upwards of 500,000 telephones at 31st December, 1932, with the exception of Japan, the figures for which are not yet to hand:—

<i>Country.</i>	<i>Telephones.</i>	<i>Telephones per 100 inhabitants.</i>
U.S.A. ... ..	17,547,000	14.3
Germany (March, 1933) ... ..	2,960,401	4.57
Great Britain (March, 1933) ... ..	2,141,700	4.63
France ... ..	1,292,254	3
Canada ... ..	1,279,565	12.09
Japan (December, 1931) ... ..	1,016,564	1.4
Sweden ... ..	577,281	9.3
Russia ... ..	509,111	0.35

In the above list Great Britain is third in point of numbers and fourth in density.

The correspondent of a *Nottingham* newspaper pours out the woes of a friend who desired to photograph a pretty country rectory; but although it was “surrounded by masses of delightful flowers,” stand where he would, “he could not eliminate the disfiguring telephone wires.” Would not underground cables do away with

this unsightliness? He does not ask, be it noted, whether it would be economic or practical to put the wires underground but merely whether to do so would do away with unsightliness.

There are many things, people even, whose disposal "underground" would improve the aesthetic amenities of a place. "I do not like thee, Dr. Fell." (He'd be better underground.) But the underground remedy seems an unfeeling one—even in the interests of abolishing unsightliness.

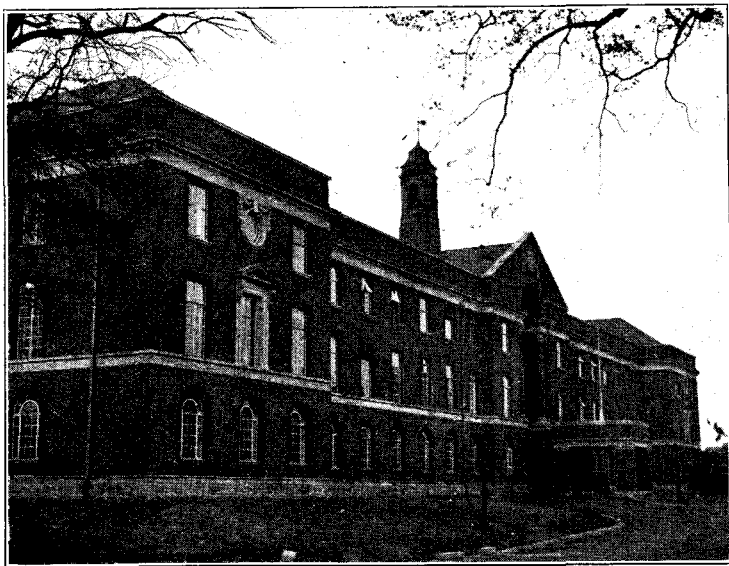
A bright paragraphist in a Liverpool paper, apropos of the figures on automatic dials, asks "why have figures at all? . . . Letters might be used instead of figures. With these letters words could be formed of easy memory. The letters chosen would need to have a good sprinkling of vowels and well-chosen consonants. After all, just as many variations can be obtained from ten letters as ten figures."

Yes, my dear sir, but not a large number of words of "easy memory, with a good sprinkling of vowels and well-chosen consonants"—K Z Q R U is no easier to memorise than 58346. Even a vocalised work like AMRUQ might lead a man who had memorised it to dial AMROOK, and then he would be miles out! Would it be easier, for instance, to remember whether your friend's "number" was QUADINGLE or QUODINGAL, than to memorise, say, HOP 21857?

A paragraph in the *Daily Mail* records the death of Sir Sydney James O'Bryen Hoare, who was well known to many of the staff in the Metropolitan district as a member of the National Telephone Company's staff under Col. Clay.

## OPENING OF THE POST OFFICE ENGINEERING RESEARCH STATION.

On Oct. 23 the Right Hon. J. Ramsay MacDonald, the Prime Minister, opened the new building of the Post Office Engineering Research Station at Dollis Hill. After speeches by the

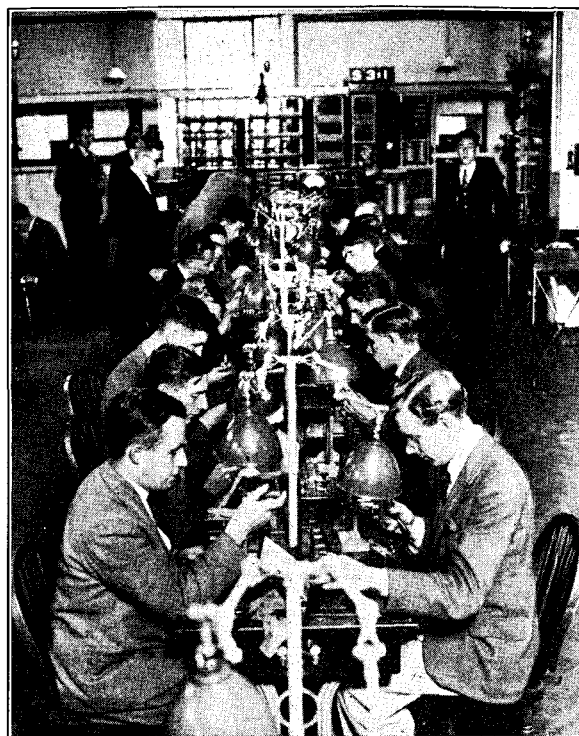


[By courtesy of Planet News, Ltd.]

POST OFFICE ENGINEERING RESEARCH STATION, DOLLIS HILL.

Postmaster-General and Captain B. S. Cohen, the Prime Minister performed the ceremony in a speech in which he referred to the great changes in the life of mankind brought about by science

in the last 30 and 40 years. A vote of thanks to the Prime Minister was proposed by Capt. H. Leigh-Mossley, J.P., Chairman of the



[By courtesy of Planet News, Ltd.]

AUTOMATIC TELEPHONE TRAINING SCHOOL.

(A group of men being trained in the maintenance of certain types of automatic exchange apparatus.)

Willesden Urban District Council, and seconded by Lieut.-Col. A. G. Lee, the Engineer-in-Chief of the Post Office.

The subject is referred to more fully in an editorial.

## THE G.P.O. PLAYERS IN "THE MARQUISE."

THE G.P.O. Players celebrated the tenth anniversary of their existence with a signal triumph in the production of Mr. Noel Coward's eighteenth century comedy, "The Marquise." In this play the author exhibits another facet of his many-sided talents, achieving the same dazzling effect of wit and acute observation of character in this romantic costume-piece as in modern comedy. The piece is not altogether romantic or it would not be authentic Noel Coward. It is tempered by much acid wit, and produces some cynically humorous situations. The Marquise Eloise de Kestournal is a wonderful piece of vivacious character drawing. The Players were happy in finding in Miss Blodwyn Pugh a most accomplished actress who was fully equal to all the exacting demands made upon her. Her scenes with Mr. Gerald Storr (who took the part of Comte Raoul to the life) furnished one of the most finished pieces of acting we have ever seen achieved by the Society. But the whole play was splendidly staged and acted. Miss Aileen Myres was excellent in the emotional part of Adriense and Mr. Leslie Higgins got quite the right atmosphere as the loose-living Duco de Santagana. The only criticism we have to offer concerns his make-up rather than his acting, for certainly he did not look older than his son, a part well filled by Mr. Robert Crowe. Mr. Eric Hudson was characteristic as a faithful butler, and Messrs. Mitchell and Cole should be honourably mentioned in the small parts of Rijar and Father Clement. We wish to avoid superlatives, but, even after making allowance for the fact that the excellency of

many past productions is not now so fresh in the memory, it is our opinion that this is the best production yet offered to its members by the G.P.O. Players, and reflects great credit on Mr. Gartland.

"The Marquise" was preceded by a fantasy, "The Prince who was a Piper," by Mr. Harold Brighthouse. The slight theme required an originality and a distinctive poetic touch in its treatment which it scarcely received from the author. The "Players" did their best with the material at their command. Mr. Gartland was a massively humorous King, and Mr. Jack Scott cut a gallant figure as the Prince who was a piper. Miss Gwladys Foote made the most of the rôle of the Princess, and the same may be said of Mr. Sellars, who found the rather thin humours of Jègu too slight for his robust comedic gifts.

At the close of the first night's proceedings Sir Kingsley Wood, accompanied by Sir Ernest Bennett and Sir Edward Campbell, made a short speech complimenting the Players on their excellent performance, and then Sir Russell Scott handed to Mr. Simon, on behalf of the G.P.O. Players, the Russell Scott Challenge Cup, which they have held since 1931, and won again in the 1933 competition.

## PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at Sept. 30, 1933, was 2,170,756, representing a net increase of 6,589 on the total at the end of the previous month.

The growth for the month of September is summarised below:—

Telephone Stations—		
Total	808,902	1,361,854
Net increase	2,617	3,972
Residence Rate Stations—		
Total	259,135	345,457
Net increase	873	1,737
Call Office Stations (including Kiosks)—		
Total	9,191	31,149
Net increase	26	142
Kiosks—		
Total	3,747	12,219
Net increase	24	143

The total number of inland trunk calls dealt with in July, 1933 (the latest statistics available) was 11,931,672, representing an increase of 817,451, or 7.36% over the total for the corresponding month of the previous year.

International calls in July numbered 114,876, an increase of 20,698 (22.0%) compared with July, 1932.

Further progress was made during the month of September with the development of the local exchange system. New exchanges opened included:—

LONDON—Arnold (Barn Hill) (automatic); and the following rural automatic exchanges: Aldford (Chester), Amesbury (Salisbury), Chirnside (Berwick), Fenton Claypole (Newark), King's Somborne (Winchester), The Lee (Chesham).

PROVINCES—Bassett (Southampton), West End (Southampton) (both automatic conversion); Shiphay Collaton (automatic); Heswall (reconstructed manual);

and among the more important Provincial exchanges extended was:—

Wakefield (automatic).

During the month the following additions to the main underground system were completed and brought into use:—

Ashford—Canterbury,  
Ashford—St. Margarets,  
Perth—Dundee;

while 64 new overhead trunk circuits were completed, and 72 additional circuits were provided by means of spare wires in underground cables.

## CAM YMLAEN.

By J. J. EVANS (*Traffic Superintendent, Class II, Cardiff.*)

THE above title is not that of any sensation of the moment but simply two words signifying "a step forward" culled from the ancient language of this island, and still extant in the principality of Wales.

A long way has already been travelled since 1930, when the commission which visited the United States of America revealed that the American Trunk Service had reached a standard far in advance of that which had been attained in Great Britain, and the recommendations of that commission that the service across the Atlantic be copied in this country has been put into practice in a large number of centres. The American speeds of service seemed incredible, but the application of the Demand system in this country shows that such speeds are possible, and can even be improved upon.



[By courtesy of the "Western Mail."]

THE ASSISTANT POSTMASTER-GENERAL SPEAKING FROM CARDIFF ON A CALL OBTAIN ON DEMAND TO THE PUBLIC RELATIONS OFFICER OF THE POST OFFICE IN LONDON.

Following such success it was without diffidence that the Demand system was brought into operation at Cardiff on Saturday, Sept. 30, and the innovation meant a considerable step forward in the South Wales Telephone Service. If any part of the country requires every possible help to recover its economic position, it is South Wales, which is almost entirely dependent on those industries that have suffered most heavily from post war depression, namely coal and shipping. The support to be derived from speedier long distance telephone communication cannot but tend to restore prosperity, or, at any rate, to be at hand when trade revival does definitely take place. Much is hoped from the hydrogenation of coal, and the business men who visited the Cardiff Trunk Exchange to view the new equipment at its inauguration were very gratified to see that the Post Office was doing everything possible to prepare the way to new prosperity.

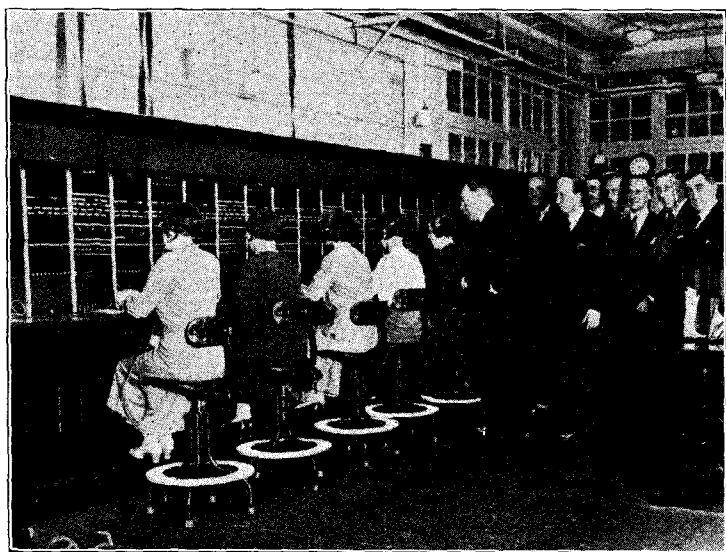
The new equipment is of the type by now familiar to readers of this *Journal*, and embodies all the aids associated with the operation of Demand calls. Altogether the switchboards represent a fine example of the craftsmanship of the cabinet maker and the ingenuity of the telephone engineer. The face equipment, too, presents an improvement upon earlier designs of Demand switchboards in that the multiples of outgoing circuits and the repetition of incoming signals appear more frequently—actually outgoing multiples are repeated every four panels and incoming signals

every six panels. The switchboard layout is in the form of two parallel suites, one consisting of 12 Demand positions and the other of 8 delay and 5 incoming positions.

A thorough course of training, preceded by numerous lectures spread over the period since the scheme was first launched in this country, ensured that all the staff were well prepared to undertake the new work. About 55 of the Day and Night Staff were furnished with the comprehensive Operating Instructions prepared at Headquarters. Training was then given to Supervisors and Telephonists in batches of six for two days under the tuition of the Telephone Schoolmistress, who had already undergone instruction in another district where the new system was already in operation. During the period of training the staff were given demonstration at the actual switchboards which, fortunately, were sufficiently advanced in construction to allow this. On Sept. 23, Record working was commenced on the news switchboards, the calls being passed from the Cardiff Local Exchange via the record circuits to accustom the staff to this phase of the work.

All the circuits and associated apparatus had been subjected to an exhaustive test during the fortnight prior to the day of transfer, but it was possible to confine the traffic testing of all circuits at the transfer on Sept. 30 to the hours 8 a.m. to 12 noon and 1.0 to 2.45 p.m. The Engineers had, of course, already completed their tests, and verified that through clearing was obtained from all P.B.X. extensions connected to exchanges in the Cardiff Group. This verification meant a considerable amount of labour in overhauling P.B.X. installations and junctions, and the engineers spared no effort in completing the task in time for the introduction of the new system.

To inaugurate the Trunk Demand Service, an interesting gathering, presided over by Mr. C. A. Jackson, Surveyor, South Wales District; and supported by Messrs. A. E. Ryland, District Manager; H. C. A. White, Head Postmaster, Cardiff; H. A. Ashton, Secretary's Office; R. S. Grosvenor, Traffic Superintendent; and H. E. Cotton, Assistant Postmaster, was held at the Cardiff



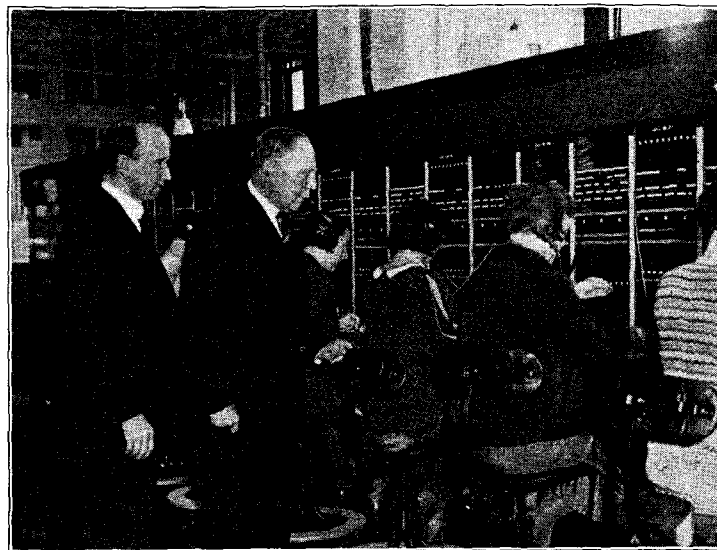
[By courtesy of the "Western Mail."]

THE CARDIFF DELAY AND INCOMING POSITIONS.

Head Post Office on Monday, Oct. 2. The occasion was to enable the Assistant Postmaster-General (Sir Ernest Bennett, M.P. for Cardiff Central), the Lady Mayoress of Cardiff, and representatives of the business community of Cardiff, to view the new Trunk Exchange. The Assistant Postmaster-General passed a "Demand" call to Sir Stephen Tallents, Public Relations Officer at the General Post Office, in London. Replying to Sir Ernest, Sir Stephen said, "I am particularly interested that you should welcome me on my first day in the Post Office Service, from Cardiff. You have probably forgotten it, but I well remember that our first meeting

was on the Cardiff train on the day when Prince George opened the extension to the National Museum of Wales. I have other good reasons, too, for remembering Cardiff. One of the earliest exhibitions arranged by my old department, the Empire Marketing Board, was staged in the Cardiff Drill Hall. The people of Cardiff gave it a splendid welcome.

"Later on we opened our first Empire shops in St. John's Square, and you may remember that it was our talk on the Cardiff train that led to the Post Office later occupying it with marked success; first for a telephone and then for a savings bank display.



[By courtesy of the "Western Mail."]

THE CARDIFF DEMAND POSITIONS.

"Cardiff, in fact, has proved itself a good friend both to the old department, which I left two days ago, and to the new department which I joined this morning.

"So you will understand why I welcome this new 'On Demand' system as bringing Cardiff nearer to London, and why I look forward to renewing old friendships and acquaintanceships in Cardiff before I have been much longer in the Post Office Service."

The working on October 2 produced very good results notwithstanding pressure due to the desire of subscribers to test the new service. Observations showed the following results:—

- |  |           |
|--|-----------|
| 1. Percentage (on total of long-distance calls) of calls proper to be completed on Demand ... .. | 79.2      |
| 2. Percentage (on item 1) of calls actually completed on demand ... ..                           | 83.3      |
| 3. Average time taken to answer Long Distance calls on Record circuit ...                        | 8.9 Secs. |
| 4. Average time taken to disconnect after receipt of clearing signal ... ..                      | 7.0 "     |

There is every prospect as time goes on of improving these results, and subscribers are already speaking in glowing terms of the amelioration in their telephone service.

All long-distance routes, comprising a total of 55 circuits are of sufficiently high transmission value to afford Demand service to all parts of the country, and the full facilities were available for exchanges in the Cardiff Local Fee Area at the outset, extension being gradually made to the whole of the Cardiff Group by the end of the first week.

With the extension of the new system in the near future to the Swansea Zone, which embraces West Glamorgan, Carmarthenshire, Pembrokeshire, and Cardiganshire, and, on the reconstruction of the Newport Automatic Exchange next year, to the Newport Group, South Wales will possess a long-distance service worthy of the British Telephone system.

## DEVELOPMENTS IN TELEVISION.\*

BY E. PHILLIPS.

TELEVISION is the latest invention in the science of electrical communication. Television may be described as "seeing by wire or wireless," as it is the transmission of the effects of light, and the reproduction of these effects at the receiving end. Actually it is "seeing by telegraphy," the definition of the Patent Office being that television apparatus is that used for "transmitting instantaneously to a distance images of views, scenes or objects by telegraphy, either wire or wireless." The chief point in this definition is the word "instantaneously," which marks the difference between television and telekinematography, or the telegraphing of cinema films, as will be shown in due course. Television has been the dream of scientists since the invention of telegraphy in the early years of last century. Practicable telegraphy was introduced by Cooke and Wheatstone in 1838. Inventors then sought means of telegraphing in facsimile. Bakewell introduced a facsimile Telegraph in 1850. The Abbé Caselli introduced an improved form in France in 1853, which was in use for some years. These were mechanical methods depending upon the breaking of an electrical circuit for transmission and reproduction. In 1873 the light-sensitive properties of selenium were discovered by the engineer at the Valentia Island office of the Atlantic Cable. Selenium is a metalloid alkali. When in the dark, it offers a very high resistance to electric current, but when light falls upon it its resistance alters in varying degree, according to the light value, and current can then pass in corresponding amount. Inventors thought that in this substance was the solution of the television problem and facsimile telegraphy. However, very little success was obtained, owing to the slowness of response of selenium to changing values of light. Dr. Fournier D'Albe, with his optophone, found that selenium responded up to 600 light impulses per second. This is much too slow for television, and introduced difficulties in facsimile telegraphy, so that apparatus invented for its use seldom emerged from the laboratory stage. Mr. George Carey, of Boston, Massachusetts, invented a television apparatus using selenium in 1880, which was described then as a wonderful apparatus. It transmitted the image of a scene to a receiving apparatus in which it was translated as a picture on chemically treated paper. Another form of receiver used carbon and platinum points, which glowed when current passed through them and so presented a picture to the eye. Only simple objects, such as outlines of letters, could be presented by this means.

Other scientists experimented on similar lines, notably Graham Bell, the inventor of the telephone, and also Edison, who invented an apparatus he called the electrophonoscope, which was cartooned by *Punch* in 1879. But little success was obtained, and invention languished. Professor Korn stuck to his idea of facsimile telegraphy by means of selenium, and did just before the war produce a practicable apparatus, which was used in Germany. Otherwise television research was practically abandoned. But as "a little nonsense now and then is relished by the wisest men," it is recorded that at the Post Office Jubilee in 1890, at the South Kensington Museum, Professor Hughes, the inventor of the Hughes Printing Telegraph and the microphone, and William Preece, the Post Office Engineer, displayed a device which they called the "Electrophonoscope," which was attached to telephone apparatus and enabled the users to see the reflection of the speaker. Though regarded as a hoax it was greatly enjoyed. H. G. Wells forecast "Phonovision" in his novel "The Sleeper Awakes," which was published in 1899. So the dream of television continued, but invention was at a standstill.

The discovery of the principle of the thermionic valve by Professor (now Sir) Ambrose Fleming in 1912, and its improvement for amplifying purposes during and after the war, gave experimenters the means of increasing weak electric currents for which they had been looking. There was, in addition, a great deal of research into the light-sensitive properties of the photo-electric cell, and it was with this last apparatus that the problem of television was finally solved.

The photo-electric effect was first noticed by Hertz in 1888, who in his experiments found that electric sparks passed more readily when rays of ultra violet light lay in their path. This effect was investigated closely by Hollwachs, Elster and Geitel and other scientists, who found that plates of the alkali metals were most susceptible to this effect. Sir J. J. Thomson showed that the effect was due to the liberation of electrons from the atoms of the active metal, and this is still the accepted theory of this apparatus.

The modern form of photo-electric cell is in the form of a glass bulb which has part of its inner surface coated with a fine deposit of one of the alkali metals, such as potassium, caesium, sodium, rubidium or lithium. Placed just in front of this surface, and also inside the bulb, is a wire mesh or grid. This is connected to the first valve of the amplifying system. A voltage is also connected to the metal surface. Now when light is allowed to fall upon the potassium it is found that a small current flows from the wire mesh to the amplifier, and this current varies definitely according to the amount of light which falls upon the cell. A bright light produces a large

current, and a dimmer light produces a smaller value of current, thus providing a perfect means of converting terms of light into terms of electricity. A working theory of the action of this photo-electric cell is that all matter is built up of atoms, which consist of a central mass or nucleus, composed of protons, which are charges of positive electricity, round which revolve in separate orbits a number of electrons, or negative charges of electricity. Some of these electrons are bound tightly to the protons by attractive forces, but some of the electrons, which revolve in outer orbits, are attracted less strongly, and may be detached comparatively easily, if the right kind of force is used. This force is supplied by light. These latter are termed Valency electrons.

Light is a form of etheric disturbance, similar to electricity, which is caused in some incandescent body, such as the sun or a lamp, and travels in waves through the ether to some destination. Visible light, that by means of which we see, is formed of very small waves indeed, ranging between 450 and 700 millionths of a centimetre. Below 450 we have ultra-violet, X-rays and cosmic rays, and above 700 we have infra-red, or heat rays, which are now being harnessed for noctovision and infra-red photography. Other waves, such as Hertzian and those used for wireless communication, are all of the same nature. All these rays travel at the uniform rate of 186,000 miles per second.

For television purposes we deal almost exclusively with visible light rays. These rays are generated in some source such as the sun, or a lamp, and travel like waves across space, until they strike upon some solid matter, such as the retina of our eyes, giving us light, or upon the sensitive surface of the photo-electric cell, causing tiny electric currents to flow. Now, reverting to the atomic theory, when the waves strike upon an atom, they do so with a certain force, which will detach a few or many of the Valency electrons. The stronger the force the greater the number of electrons detached, up to a limit. Like throwing stones into water, the bigger the stone the greater the splash. These electrons fly off into space, and impinge upon the wire mesh, and thus appear as a small current of negative electricity. This passes to the grid of the first valve of the amplifying system and is then built up to sufficient strength to pass over the line. The photo-electric cell thus provides a means of converting different values of light and shade into corresponding values of electric current, and these eventually pass over the line or through the ether to the receiving station.

The metal from which the best results were obtained at first was potassium on a base of copper. The response to light of a cell composed of this metal showed great sensitivity to the blue end of the spectrum, diminishing towards the red. In this respect it showed a reaction similar to the ordinary photographic plate. Recently researches by the General Electric Company at their Wembley laboratories have produced a cell composed of caesium on a base of silver. This shows greater response to the red end of the spectrum. The performance of this cell is superior to potassium and it is now in general use for broadcasting.

Applying this to television, the problem was to split up the subject to be televised into thousands of tiny fragments, transform these fragments seriatim into electric impulses of varying strength corresponding to the amount of light and shade they reflect, and reconvert these impulses into light at the receiving end and present them to the eye in proper order.

By 1923 several experimenters had succeeded in televising shadows: among them being Jenkins and Moore in America, Holweck and Belin in France, Mihaly in Austria, Baird in England, and others. But real television, the presentation of the image of the living form, was attained only by J. L. Baird in England, who, in January, 1926, gave the first demonstration of television before members of the Royal Institution in an attic room in Soho, sending the images from one room to another. The result was as crude as the apparatus, no doubt, but it was real television, and only required development. The original apparatus is now kept in the Science Museum, South Kensington.

When better apparatus had been built television over longer distances was tried. In 1927 Mr. Baird transmitted television from London to Glasgow, by means of land lines. Later in that year the American Telephone & Telegraph Company transmitted television from Washington to New York, a distance of 200 miles, using apparatus of the Baird type. It is said they required a staff of 1,000 men to accomplish this. The London to Glasgow transmission required Mr. Baird and two assistants only. In February, 1928, Baird transmitted television across the Atlantic, from London to New York. The wavelength used was 43 metres, and the test successful, though the images were crude. Sitting before the televisor is an eerie business at first. Mr. Fox, who was one of the people televised, said it was difficult to realise that through the little window facing him his face was being disintegrated and flashed across the Atlantic for inhabitants of the New World to see. Yet such was the case. The next feat was television transmission to the liner *Berengaria* in mid-Atlantic from the studio in Long Acre. Here the wireless operator on the *Berengaria* had the felicity of seeing the picture of his fiancée seated before the televisor in London. The image was crude, and fading very obvious, but the sitter was recognisable, and the transmission was clearly a feat.

Subsequent developments were colour television, stereoscopic television, phonovision, or the recording of television signals on gramophone discs, from which they could be repeated at some future time, daylight television, and most strange of all, noctovision, or seeing in darkness, by means of the infra-red rays.

\* Paper read before the London Telephone and Telegraph Society.



All of these transmissions were made by means of the graduated perforated disc, and the photo-electric cell. Though the disc has been largely superseded by the mirror drum, it still retains its qualities of simplicity, cheapness and ease of operation, and for the amateur is the best means of *beginning* the study of television. This disc is the invention of the German Professor Niepkow. It makes use of the function of sight which is known as "persistence of vision," whereby the image of anything seen remains on the retina of the eye for one-tenth of a second after the stimulus has passed. If one looks at an object, and then closes the eyes the image can still be seen for a short period before it fades away. The Niepkow disc makes use of this faculty. The disc has a series of holes punched round its rim, each succeeding hole being staggered towards the centre by a distance equal to the cross section of the hole. So if we have 30 holes in a disc of 60 in. circumference, each of 1/15th in. diameter, and each hole 2 in. from its predecessor, and displaced towards the centre by 1/15th in., as the disc revolves a beam of light directed through the holes will fall upon an object in a band of interrupted light 2 in. wide. If the disc revolves sufficiently fast this band will appear almost as a permanent square of light. In television the disc is arranged to revolve  $12\frac{1}{2}$  times per second. Now we can see that as the disc revolves light will shine through the first hole and fall upon the subject at the top, and move rapidly downwards. As spot No. 1 leaves the subject, No. 2 appears at the top of the subject slightly to one side of the line taken by No. 1. This, too, moves rapidly downwards, and as it leaves the subject spot 3 appears at the top slightly to one side of No. 2, and so on to No. 30, after which No. 1 comes in again. By this means the whole subject is explored by small spots of light, and these spots are reflected from the subject into the photo-electric cell or cells placed near by. As these light impulses fall upon the sensitive surface of the photo-electric cell, small currents flow across the cell. The response is instantaneous, and proportionate to the amount of light reaching the cell. So if the spot is reflected from a light portion of the subject, say the forehead, cheeks, &c., a large current flows across the cell, to the amplifier and the line, while if the light is reflected from a dark spot, like the hair, shadows in the face, &c., only a small current flows across the cell, and passes to the amplifier for transmission. By this means the subject is disembodied and flashed across space. At the receiving end, a similar disc, revolving at an exactly similar speed, is used. Behind one rim is placed a Neon lamp. This is a gas discharge lamp giving a reddish glow. The discharge varies according to the strength of the current at the terminals: a large current gives a bright glow, and a small current a small glow, with values in between. "Neon" lamps may be of the nightlight type, but better results are obtained by a flat plate instead of the wire spiral. The television currents are brought into an amplifier, and then brought to the lamp, which glows bright or dim in accordance with the strength of the received currents. The revolving disc passes before it, and presents to the eye a series of lines from side to side, through which the lamp can be seen. Owing to the persistence of vision, the varying glow is merged into a whole, and the eye sees as a result an image in red of the object before the transmitting apparatus. A sheet of ground glass placed before the disc tones down the edges, and a lens in front of this will enlarge the result. The image is small, but quite satisfactory, and this kind of television receiver is easily built and easy to run. The output of the amplifier should be 250 volts at 40 milliamps.

Moore, in America, produced a crater Neon in which the glow is concentrated and gives a much brighter result for projection purposes.

The photograph was taken by Mr. Campbell, the image being reproduced by means of the disc. I understand better photographs have now been taken by Mr. Campbell, through the new apparatus.

This disc method held the field for a long time. It was used for colour television. In this case three spirals of holes were arranged round the disc, one spiral being covered with a red filter, one with blue and one with green. These filters analysed the subject into the photo-electric cell, passing in succession, red, blue and green light only or combinations of these. A similar disc at the receiving end revolved in front of two lamps, connected through a commutator on the axle to the receiving amplifier. Filters were again used, the red filter passing in front of a Neon lamp, and the green and blue in front of a mercury and helium lamp. The lamps lit up in succession, and the combination of colours was presented to the eye as an exact reproduction of the original.

For stereoscopic television a disc was used in which two spirals of holes were punched, one spiral being nearer the centre than the other. Two Neons were used at the receiving end, connected to a commutator so that only one lamp lit up at a time. When viewed through a stereoscope, the picture stood out in relief. Phonovision has already been mentioned. Daylight television was done by means of a large lens concentrating the image on to the photo cell. This has now been superseded by the mirror drum. Noctovision, or seeing in darkness, was the result of Mr. Baird's attempts to reduce the discomfort of the sitter owing to the heat and glare of the banks of lights then used. In the early days the subject was illuminated brilliantly, and the reflections passed through the perforated disc into the photo cell. The glare and heat of the lamps were very trying. To obviate this a photo cell very sensitive to the red end of the spectrum was used, and all the lights were shielded from the sitter by sheets of very thin ebonite. This cut off all the visible light rays but allowed the infra-red rays to pass. These illuminated the sitter to the photo-electric cell, and when the resultant currents had been suitably amplified and transmitted, a person looking-in to the receiving apparatus could see the image of the person before the transmitter,

even though he was not visible to a person in the same room! In test transmissions of this kind people in Glasgow, in Leeds and other places have thus been able to see people in London, though to others in the transmitting studio they were invisible! Infra red rays have greater penetrating power than the visible light rays, and pass through fog and smoke with facility. They may thus become useful for ship navigation in fog, for all kinds of travel at night, and anti-camouflage in wartime. They penetrate different materials to different degrees, and it was recently found that cotton is transparent to them, though silk is not. The infra red rays are now being widely used for photographic purposes, and you may remember some of the fine examples of distance-conquering photographs published recently in *The Times* and other journals. Development of these rays for television as well as photography offers surprises for the future. Improvements in the photo cell and method of illumination reduced the need for brilliant banks of lights, and now the subject is illuminated by the interrupted light, which is reflected into the photo cells placed in the studio itself.

The disadvantage of the disc method was that the number of people who can see the picture is limited to two or three, and attempts were made to produce apparatus giving larger and brighter images. In 1930 a demonstration of a large screen built up of electric light bulbs was given at the London Coliseum at all performances during a week. A revolving disc with a larger number of holes was used for transmission. The receiving apparatus was housed in a closed van, on the end of which the screen was fixed. Round the interior of a large rim a number of brass strips was fixed. Each strip was connected to a lamp arranged in a honeycomb. A metal brush was arranged to travel round this rim, touching each strip in turn. The brush was connected to the receiving amplifier, and so caused the lamps to light up serially. The result was a picture in mosaic. The photographic result in Fig. was obtained at a Stockholm demonstration. The disadvantage of this method was that as electric lamps practically only flash in and out, the representation of tone values was harsh. This method, however, presented a picture visible to all the audience and many famous people appeared on this novel screen, being transmitted from the studio in Long Acre. In the meantime, however, experimenters had been very busy trying to evolve apparatus for larger and better pictures. In Germany Professor Weiller had evolved what is called the mirror drum. This is a revolving cylinder, which has on its rim a number of mirrors, each fixed at a slightly greater angle than its predecessor. A beam of light is directed on this drum, and as it revolves the beam is reflected on to a screen in a series of lines, each displaced so that it travels by the side of its neighbour. The drum is revolved 750 times per minute and the eye sees the result as a square of light on a large screen. This apparatus was used by Professor Karolus, of Leipzig, together with a light modulator called "The Kerr Cell," to transmit and receive television images. Professor Karolus is the inventor of the picture telegraphy apparatus now in use by the Post Office for the public service. In this system the same method of light modulation for reception is used. The apparatus consists of two "nicol prisms" placed with their optical axes at right angles to each other. In this condition light which shines through the first nicol prism will normally be prevented from passing through the second. Between the two prisms is placed a Kerr cell, which consists of a small electric condenser immersed in nitro benzole in a glass cell. This cell has the property of rotating the plane of rotation of a beam of polarised light under the influence of an electric current and thus with a varying voltage across the Kerr cell more or less light is allowed to pass through the second prism. The whole arrangement thus acts as a light valve without inertia. So if a bright spot of light is directed into the system, normally no light emerges, but with a voltage on the Kerr cell, brought there from the receiving amplifier, more or less light is allowed to pass, in accordance with the impressed voltage. So if the varying currents from the transmitter suitably amplified are fed into the Kerr cell, varying amounts of light in accordance with these currents pass through. This light shines upon the rapidly revolving mirror drum, and is reflected on the screen, and thus builds up a picture in light and shade. The disadvantage of this system is the high voltage required to operate the Kerr cell. The Baird Company are now marketing a receiver of this kind which requires a maximum of 500 volts for white. It is difficult to see how this can be reduced. The Nicols and Kerr cell are mounted as one unit, and the whole arrangement gives a compact picture 14 by 6. A Hungarian scientist, Herr Von Okolicsanyi, claims to have discovered that zinc sulphide crystal can replace the Kerr cell. This gives greater light efficiency and requires less power. Another disadvantage of the nicol prism system is that only about one-third of the originating light can emerge, even when the fullest voltage is being used. Here again experimenters have tried to effect improvement, so that this method can be used for projection purposes on large screens. The Marconi Company and Mr. Myers, of Captain Wilson's laboratories, have had success in this direction. The Marconi Company are experimenting on 5 metre waves for communicating overseas. We understand they have had some success in this direction. They have also built apparatus whereby the image can be seen on a four- or five-foot screen. This was shown at the Television Society's exhibition last April, and was quite successful. The second nicol is replaced by a Thompson prism, and both emerging beams are used. The mirror screw is a modification of the mirror drum, and has advantages for small pictures. It is less weighty than the drum, and no stray light is reflected. Another method tried by Baird was the modulation of the electric arc itself by means of the received currents. Some success was achieved by this means, but it has not been followed up.

Synchronisation of the receiver with the transmitter is done automatically by means of electro-magnets acting on a toothed wheel. A synchronising

signal is sent out from the transmitter at the beginning of every line of scanning and this passes through the coils of the electro-magnets. It shows itself in the picture as a black line at the top. If this disappears slight readjustment of the motor rheostat brings it back.

The transmitter in use at the B.B.C. can be moved horizontally through a portion of arc and so follow artists over a certain area. The cover houses mirror drum and motor, and the arc light and reflectors. The photo cells are in the studio.

In 1932 the Derby was televised by means of mirror drum scanning, and shown on the screen at the Metropole Cinema at Victoria, S.W. In this case three wires were used for transmission: and three mirror drum systems at transmitting and receiving end. Each mirror drum dealt with one portion of the picture only. The result was quite good. Other ways in which television has been tried in America have been transmission from aeroplane; and television weddings. These last took place in an exhibition in New York in 1929. The bride and bridegroom occupied separate telephone/television cabinets and the officiating clergyman was at Yonkers, a town about 20 miles away. The ceremony was watched by an interested audience, and the responses, &c., were heard from loudspeakers. Other couples used this method of being married. What a difference to Mr. Baird's first attempt, when he had to bribe an office boy from another office to sit before his fearful machine!

Mention of the radio wedding reminds me that the adaptation of televisions in telephone cabinets has been tried in America and France, using the interruptor disc method. The experiments were successful, but the cost is perhaps prohibitive. The photo cell used in America is of a large size. The preference in England is for the smaller type.

Many experimenters have contended that mechanical methods of television are limited in their application and that further success can only be obtained by other means. For this purpose attention has been directed towards the adaptation of the cathode ray tube. The cathode ray is a purely electrical effect. It consists of a stream of electrons, moving at a high speed through an evacuated tube, and impinging upon a fluorescent screen at the end of the tube. When the electrons strike the screen they cause a bright greenish glow. As electrons are charges of negative electricity without any weight, they may be attracted or repelled by electric currents of opposite or similar nature, or by the poles of electro-magnets. Campbell-Swinton, in 1907, proposed a method of using these rays for television, and Rosing, in Russia, Messieurs Belin, Holweck and Dauvillier, in France, produced apparatus for this purpose. None was very successful, however. Of recent years the work of Manfred Von Ardenne, in Germany, and Zworykin, in America, and the G.E.C. and Messrs. Ediswan in this country, to mention only a few, has during the last year resulted in improving the cathode ray tube so that its application to television by the amateur is becoming possible. In use for television two pairs of plates are set at right angles to each other, one controls the up and down line and the other the number of cross lines forming the picture. The cathode ray passes from the filament as a stream of electrons through a small aperture in the anode, and then impinges upon the screen at the end of the tube, where it causes a bright green spot to appear. One pair of plates is fed with alternating current at  $12\frac{1}{2}$  times per second, and the other at 375 times per second. By means of these two influences the spot is caused to move at a rapid rate over the screen surface, giving the impression of a square of light. The currents from the receiver amplifier are brought to the anode, and have the effect of increasing or diminishing the size of the aperture thus causing corresponding alteration in the strength of fluorescence, or brightness of the green spot. Manfred Von Ardenne, in Germany, tries to obtain the same effect by varying the speed of the ray—and thus controlling its brilliance. The most recent device for transmission by this tube is that of Zworykin, in America, which he calls an "Iconoscope." He uses a mica plate over which is scattered spots of photo-sensitive material, the nature of which is not made known. The mica plate is backed by a plate of silver, which is connected to the amplifier. Mr. Zworykin says that the spots of active material constitute, in effect, 3,000,000 photo-electric cells. Over these cells the cathode ray beam passes at a high speed. The mica constitutes the dielectric of a condenser of which the photo-sensitive material and the silver are the plates. The picture is focussed on the sensitive surface by a lens, and the amount of light thus falling on each spot releases electrons and thus charges the condenser formed by the plate and silver. This charge is held until the cathode ray in its methodical travel rests on that particular spot. When this happens, the condenser discharges, sending a current into the amplifying system which is proportional to the amount of light which fell upon it. It is claimed for this method that as it is a small apparatus, swift, without inertia, and possesses a memory it will provide the long-sought-for means whereby television may progress. It is, however, expensive, and has not yet been thoroughly tried out. In the meantime the cost of the ordinary cathode ray tube is being reduced, the power required to work it also reduced, and the length of its life increased; and cathode ray tubes are now within the reach of the amateur. In this apparatus we shall, perhaps, ultimately find the perfection of television for the home, and it may do for sight what the moving coil speaker has done for sound.

For some years television seemed to have come to a full stop. But a great deal of research was being carried on during this time, and has resulted in the Baird Company being challenged as to the superiority of their apparatus. The Gramophone Co., Ediswan, Standard Telephones put intensive research into cathode ray tubes, and during this year interest in television has been

increasing. We are promised cheaper apparatus, mechanical and cathode ray, very shortly, though performance does not always wait upon promise.

This review of television is not complete without mention of telekine-matography, or the broadcasting of cinema films by means of television apparatus. Televising films is simple, compared with television of scenes. The film is moved before the revolving disc, mirror drum, or cathode ray tube, and the light directed through the film into the photo-electric cell. There is thus more light available to affect the cell, and the exploration of the film can be very minute. Most experimenters achieved this in the earliest attempts, and the new broadcast transmitter at the Crystal Palace will for some time confine its energies to televising films on six metres. Inventors have sought to speed up the preparation of the films, so that they could be run through the transmitting apparatus in the shortest possible space of time. The latest success in this method has been achieved in Germany. There the film is emulsified, sensitised, exposed, developed, fixed and dried, and run through the transmitter in 15 seconds. The film is then cleaned off and passes through the same cycle again and again. So the scene is presented to the looker-in 15 seconds after its happening, sound being delayed in the same degree. This method has great possibilities, though it is not real television.

Germany is concerning itself very closely with television. The German Post Office is in control of this. The rate of scanning is 90 lines, and 25 pictures per second, and the apparatus is constructed to show the picture horizontally at the top of the disc. They have recently been experimenting with 120 holes, and a standard of 180 holes is expected to be announced during the next year. 180 holes is considered to be the limit, it is thought a further increase will cause deterioration rather than improvement. There also experiments are being made on the seven metre wave. These ultra short waves have the disadvantage of restricted range. The transmitter in Berlin has an effective range of 80 miles, but it has been picked up in Leipzig, 200 miles away. The cathode ray tube has been the subject of a great deal of investigation, and some novel forms of apparatus have been produced. At present, however, it appears to be agreed that mechanical means are superior for television reception and transmission. An apparatus of the mirror type, invented by Mihaly, is of quite a novel form. The mirrors are fixed upright on the inner side of a cylinder, which is stationary. A very light silvered mirror is placed in the centre of the cylinder, and light modulated by the received signals is focussed upon this mirror by a lens. The receiving system may be either crater neon, or nicol prisms with Kerr cell. The revolving mirror receives the modulated light and reflects it into the fixed mirrors, which in turn reflect it back into the revolving mirror, from which it is reflected on to a translucent screen. As the revolving mirror is very light, very little power is required to turn it, and a motor similar to that used in synchronous clocks may be used: the power being derived from the receiving amplifier. This is a very ingenious apparatus which gives good results, and we may see it marketed in this country shortly. In Germany the interest appears to be mainly professional, there does not seem to be any amateur interest in the problem, as there is in this country and the U.S.A. Cathode ray tubes at low cost are expected shortly from Germany, but firms in this country are also active, and though little is known at present, it is possible that several manufacturers will place apparatus on the market before long. Baird showed 120-line cathode ray apparatus before the British Association recently, transmitting cinema films. Although results were good, the spectators preferred the 30-line scanning of real television scenes.

Hollywood is investigating television very closely. When they decide to take it up seriously and bring to bear upon it their flair for publicity we shall perhaps see the public sitting up and taking notice. Selling methods in this country have been very lackadaisical. The broadcast is from Brookman's Park, from 11 to 11.30 p.m., using a mirror drum for transmission and cesium cells hung at strategic points. Making-up for television is an art, similar to that for films, and the producer has an anxious time. The transmissions are good and varied. The work of the operating staff is arduous, as the characters move about anywhere from about 30 ft. away to close up to the apparatus, and the results have to be focussed and adjusted moment by moment.

Russia broadcasts television pictures with the revolving disc. They are satisfied with sending still pictures and lantern slides.

This review has been of necessity rather lengthy, and a lot of interesting matter has had to be omitted. We are, however, on the eve of seeing the popular development of television, and its extension into all walks of life may be expected in the future. No doubt that will add fresh difficulties to the complexities of life, as is foreshadowed by recent pictorial comment in the humorous press.

## SCOTLAND (WESTERN DISTRICT) NOTES.

We welcome to the District Mr. A. Kerr Murray, on his promotion from Acting Assistant Controller of Sales and Publicity, Secretary's Office, London, to District Manager; also Mr. A. L. Cruickshank, Assistant Traffic Superintendent, transferred from Aberdeen.

**LONDON TELEPHONE SERVICE NOTES.**

**Sales Branch Notes.**

DURING the month of September there was a net increase of 2,779 stations, as compared with an increase of 1,935 stations in the corresponding month last year. The gross new business for the month totalled 10,228 stations, which is higher than any previous recorded figure for this month. Unhappily, the number of ceasements continues high. From a development aspect the above progress, however, is an indication of the important effect a continuation of such results would have on the lag in growth, on current development estimates, when ceasements fall to a normal level again.

The number of kiosks in the London telephone area at the end of September was 3,747 and there were advice notes on hand for 52 more. Since the beginning of the year the number has increased by 312.

The number of black hand-microphones ordered up to the time of going to press is about 210,150. Of these, 55,430 have been ordered during the present year. Coloured hand-microphones ordered now total 1,762 and about one-half of this total have been ordered since Jan. 1 of this year.

At the Motor Show, held at Olympia during October, there were 500 exhibitors, and for these 438 telephones were provided. A separate exhibition, organised by Messrs. Fords, was held at the Albert Hall, and 43 telephones were provided for 53 exhibitors.

Some idea of the value of the results secured from the system of circulating advertising literature with quarterly accounts can be formed from the following figures, representing orders obtained since the inception of the scheme in January, 1927 :—

Direct exchange lines	...	...	...	918
Extensions	...	...	...	6,646
Hand-microphones	...	...	...	32,706

*Staff Salesmanship Scheme.*—The progress of the scheme to date is given below :—

	Total No. Ordered.	No. ordered during Month ended Oct. 14, 1933.
Exchange lines	2,558	123
Extensions	3,114	212
Private lines	34	2
Plugs and sockets	548	33
Hand-microphones	15,697	939
Extension bells	1,448	73
Other apparatus	1,491	75

*Telephone Hustle and a Sequel.*—Saturday.—Sales Representative calls on a man interested in telephone service and leaves an agreement for signature.

Monday morning.—Signed agreement received in the office.

Monday afternoon, 5.10 p.m.—Work completed and telephone service available.

Tuesday, 3.0 a.m.—Case of sudden illness. Telephoned for ambulance and patient removed to hospital. (*Cui bono.*)

**London Telephone Service Sports Association.**

Another winter session has begun, but before putting the summer activities behind us the executive committee would like to thank all those of the staff who claim allegiance to the Association for their support and interest in its work. The Association's chief object is the furtherance of sport of all kinds throughout the Service, and it is very pleased when an exchange, section or branch comes along with proposals for the formation of clubs and one may rely on the best possible assistance being given to such projects.

Several of our members have won distinction in Civil Service sporting activities this past summer. Miss Emms (T/OB) rowed in the Civil Service boat against other clubs and she was presented with representative colours. Mr. R. Cleland (T/MG) won the Civil Service Bowls (Singles) Championship and he paired Mr. S. J. Heard in winning the Pairs Championship. Miss Parker, Maryland, won the Public Parks Tennis Tournament. She has also been placed sixth on the list of Civil Service tennis players.

The start of the Ladies' Cricket Club has given much pleasure to the executive committee and it is hoped to develop the movement by the formation of local clubs so that an L.T.S. Ladies' Cricket League can be started. Anyone willing to help should get in touch with the Association Secretary.

The L.T.S. Men's Cricket League provided a number of pleasant matches between the branches. The Sales Branch is to be congratulated in coming out on top. At the start of the season our Boy Messengers looked as if they would run away with the Shield.

L.T.S. ladies still make hay while the sun shines in the game of tennis. The two established competitions were well supported, with the result that "Toll A" won the "Agnes Cox" Cup for the doubles and Miss Parker carried

off the "Pink" Cup in the singles. If only the men could play tennis another cup could have been won.

By the way, the London Engineering District Sports Association has issued a kind invitation to the L.T.S. staff living out Croydon way to become members of their Tennis Club at Waddon, and anyone interested should apply to Mr. A. W. Kelly, P.O. Engineering Dept., Denman Street, S.E.1.

The Service Ice Skating Association have been busy during the summer in exacting further special facilities out of the Hammersmith Ice-drome management. Members are entitled to reduced entrance fees and lower instruction fees. Work on the Association Carnival on next Shrove Tuesday, in February, is already well in hand.

The L.T.S. Section is hoping to run a team in the Civil Service Ladies' cross country races this season and our runners should get in touch with Mr. Robinson (SP/SE).

Netball is not going as strong as usual. Why do not adjoining exchanges get together to form teams? If anyone is interested and wants some assistance, Miss Sanders (A.N.C.) will give it gladly.

The annual prize distribution will take place on Nov. 16 next. Will everyone note the date and watch for further announcements?

The Civil Service Ball will be held this year at the Albert Hall, on Friday, Nov. 24. A further announcement will be published and all applications for tickets should be made to the Hon. Secretary of the L.T.S. Sports Association, Mr. A. H. Harris, A.C., Cornwall House.



[Photograph by Reginald Haines.  
MISS A. E. REEKIE.]

**Retirement of Miss A. E. Reekie, Supervisor-in-Charge, London Telephone School.**

On Sept. 29, a reception was held in the dining room of Faraday Building, and a presentation was made to Miss A. E. Reekie, Supervisor, who retired from the London Telephone Service on the 30th, at the age of 60.

The Superintendent, Miss Cox, M.B.E., took the Chair, and was supported by the Controller, Mr. Napier, C.B.E., the Deputy Controller, Mr. Pink, the Assistant Controller, Mr. Horace Dive, M.B.E., Mr. Benham, Superintendent, Miss Wormald, Supervisor, Miss Curtis, Assistant Supervisor, and Mr. W. H. Reed, F.S.S.A., Secretary to the Hospital Saturday Fund.

Among those present, and there were about 430, were Mr. J. F. Edmonds, M.B.E., Headquarters Traffic Section, Miss Reekie's father, Mr. and Mrs. J. L. Reekie, Mr. and Mrs. R. T. Reekie, Mr. and Mrs. R. Ord and a number of retired friends and colleagues.



DINNER TO MISS REEKIE AT THE COVENTRY RESTAURANT, WARDOUR STRET.

[Photo by Rawood.]

Miss Cox gave a very interesting resumé of Miss Reekie's career, and one noteworthy feature of the past 25 years is that she has not incurred one day's sick absence during that period. Another is the excellent work she has done in training and inspiring the staff to attain the high standard of service of which we are to-day so proud. She spoke of her graciousness, so evident in both her official work and in the honorary work she did with Miss Wormald as joint secretary to the Hospital Saturday Fund of the London Telephone Service, collecting £33,111 in 20 years and distributing £24,148 benefits.

Two letters were read, one from Mr. G. E. Simpson, Secretary of the Hospital Saturday Fund Surgical Appliance Committee, who on behalf of his committee thanked Miss Reekie for the splendid work she had done, and said she was the first woman to be elected on any committee of the Hospital Saturday Fund. The other was from her first supervisor, Miss Ralph, who, unfortunately, had met with an accident and could not be present.

Testimony was given, in six speeches, of Miss Reekie's many virtues, but one speaker, thinking that Miss Reekie's name might go down to posterity as one too good to have been employed in the London Service, told of an occasion when she had been frightfully annoyed, and later had said "My dear, I felt most rebellious."

In making the presentation of a diamond ring and a cheque for £40, the Controller made a happy speech, remarking in true Scotch fashion "Lang may your lum reek."

In expressing the pleasure she felt in receiving so generous a token of affection, Miss Reekie said that she had always been extremely lucky in having good chiefs, loyal staffs and many friends during her service. The chiefs in office now were deserving of the highest praise and she held much affection for them. She called to mind that the first words of praise she had received had come from Mr. Benham, and they had incited her to greater effort. She refused to say goodbye because, as a subscriber, she still belongs to the London Telephone Service.

A Dinner was arranged at the Coventry Restaurant, Wardour Street, W., by the School Staff on the previous evening, Sept. 28.

Miss Cox, M.B.E. (Superintendent) was present, together with 47 teachers, each of whom had at some time worked with Miss Reekie at the School. The only guests invited were Mr. Reekie (Miss Reekie's father) and Mr. and Mrs. Ord (personal friends of Miss Reekie).

Miss Curtis took the Chair and in presenting many gifts thanked Miss Reekie on behalf of the teachers for her sympathetic understanding and splendid example. Special tribute was paid to her lovable qualities and concluded by wishing her every year some new love of lovely things (particularly beautiful colours and her favourite red),

"And some new forgetfulness of the teasing things,  
And some higher pride in praising things,  
And some sweeter peace from the hurrying things,  
And some closer fence from the worrying things,  
And longer stay of time when she is happy,  
And lighter flight of days that are unkind."

One of the gifts (a book of Character Sketches of the Teachers) compiled by a member of the Staff caused much diversion and was particularly entertaining.

Miss Reekie, in responding with thanks and appreciation, expressed extreme regret that Miss Hobdell could not be with them owing to illness. Her proposal to send a special message through Miss Curtis was heartily applauded. Altogether a very happy evening which concluded with the singing of "Auld Lang Syne" and "She's a Jolly Good Fellow."

#### Battersea Exchange.

The first Dance of the season was held at the Town Hall on Sept. 27 and was attended by about 100 members of the Staff and their friends.

There were not so many visitors as usual—probably owing to the fact that the mild weather made it appear to be rather early for dances—but other Districts and Exchanges were fairly well represented. Miss E. D. Stevens (Abercorn), Miss E. P. Hairs (Hop), Mr. Willis (Sales Representative), and Mrs. Willis, and colleagues from Brixton, Central, Molesey, and Putney were present.

The Catering Committee, under Miss Hatherley, was responsible for excellent refreshments and the music was provided by the Arcadians Dance Band.

A very enjoyable evening was spent and arrangements have now been made for the next Dance to be held on Dec. 5.

L. D. S.

#### Walton-on-Thames Exchange.

A large and representative gathering attended on Oct. 12 to bid farewell to Miss C. E. Lucking, the popular Supervisor-in-Charge, upon her transfer from an official to a matrimonial appointment.

Mr. Windebank (Head Postmaster), who was accompanied by Mrs. Windebank, was in the Chair, and Messrs. Pinson and Roden, his predecessors in office, were present to show their appreciation of Miss Lucking's services to the Department.

Several letters were read conveying good wishes and regret at being unable to attend and, in asking the lady to accept, as a token of her colleague's esteem, a handsome electric-lamp standard, the hope was expressed that she would manage her husband as satisfactorily as she had managed the exchange!

Mr. Pinson referred in eulogistic terms to the tact and efficiency with which he associated Miss Lucking while he was in charge.

Miss Greenaway (Walton-on-Thames) testified to the pleasure which the staff experienced in working with Miss Lucking, and assured her of their heartiest good wishes.

Miss Neale (Weybridge), speaking on behalf of the Supervisors, wished her colleague every happiness in her new sphere.

Mr. Saunders (Service Superintendent) spoke of the happy relationship existing between Walton and the London exchanges in the South-West Traffic District. On behalf of the District and Assistant Superintendents of Traffic and Supervisors-in-Charge attached to the Battersea Section, he asked Miss Lucking to accept a large crystal vase as a token of esteem and goodwill for her future.

Representatives of the Indoor and Outdoor Postal and Engineering Staffs also offered their best wishes.

Miss Lucking and her fiancé (Mr. Marshall) suitably replied and, after refreshments had been handed round, the proceedings terminated in a manner which left no doubt that the future bride and bridegroom were taking with them the sincerest wishes of their friends.

L. D. S.

### Personalia.

#### Resignations on Account of Marriage.

##### Telephonists.

Miss K. B. Stedman, of London Wall.	Miss A. E. White, of Bishopsgate.
" L. E. Chapman, of London Wall.	" V. M. Mercer, of Battersea.
" E. Everington, of London Wall.	" M. C. Smith, of Battersea.
" G. A. Flahey, of Wanstead.	" L. Beech, of Cunnigham.
" E. E. Pepper, of Holborn.	" C. I. Bridgland, of Sydenham.
" E. L. D. Churchill, of Holborn.	" G. E. Hadden, of Riverside.
" I. R. Stanley, of Rodney.	" C. F. Melville, of Metropolitan.
" G. M. Hartley, of Central.	" W. E. Fox, of Brixton.
" M. I. Sycamore, of Central.	" E. A. Jones, of Brixton.
" B. Dumbleton, of Bermondsey.	" J. L. Ingle, of Reliance.
" I. M. Leggett, of Flaxman.	" M. L. Chapman, of Shepherds
" F. M. Fitzgerald, of Woolwich.	" L. V. M. Pike, of Rainham.[B.
" E. G. J. Hodges, of Streatham.	" K. H. Manktelow, of Kensington.
" W. E. Bradshaw, of Avenue.	" E. W. Loveday, of Royal.[ton.
" V. F. Luck, of Avenue.	" M. A. Jakob, of Royal.
" D. E. M. Bird, of East.	" F. M. Jackson, of Monument.
" C. M. Bull, of East.	" E. D. Adams, of Clerkenwell.
" I. M. Green, of Clissold.	" L. D. Rooke, of Mayfair.
" F. M. Smith, of Clissold.	" B. M. Trickey, of Mayfair.
" M. O. Barter, of Clissold.	" D. Davidson, of Mayfair.
" E. L. Hawkins, of Palmers Green.	" M. Ruffy, of Mayfair.
" K. I. Nicholls, of New Cross.	" A. L. Wilks, of Museum.
" E. A. Greenfield, of Hop.	" C. M. Stevens, of Trunks.
" M. E. Vicary, of Grangewood.	" D. M. Digweed, of Trunks.
" D. L. Wright, of Grangewood.	" P. E. Finer, of Trunks.
" E. I. L. Parker, of Bexley Heath.	" M. A. M. Gaul, of Trunks.
" D. I. Fountain, of Tandem.	" E. D. King, of Trunks.
" E. A. Burman, of Tandem.	" D. B. Boyle, of Trunks.
" L. L. McCrae, of Tandem.	" P. E. Collins, of Trunks.
" E. D. Langsdon, of Tottenham.	" D. C. Williams, of Trunks.
" K. Mullins, of Waltham Cross.	" L. M. Challen, of Toll 'A.'
" K. M. Gelleff, of Molesey.	" W. A. Atterbury, of Victoria.
" C. Beaton, of City.	" B. J. Last, of Victoria.
" E. A. Woods, of City.	" A. C. Smith, of Victoria.
" M. S. S. Wood, of Toll 'B.'	" M. H. L. Wyatt, of Victoria.

## SOUTH WALES DISTRICT NOTES.

A SOCIAL gathering and concert, which had been organised by the combined staffs employed in the Head Post Office, Cardiff, was held in the Park Hotel on Oct. 2, to meet Sir Ernest Bennett, M.P. for Cardiff Central, the Assistant Postmaster-General, and Lady Bennett, who had come down from London to inaugurate the new Trunk Demand Service.

Mr. C. A. Jackson, Surveyor, South Wales District, presided, and in a happy speech, well interspersed with humorous anecdotes, introduced the guests. Sir Ernest Bennett related numerous humorous incidents in his official capacity as Assistant Postmaster-General, and expressed the hope that social gatherings like the present would become a regular feature at all Post Offices. Lady Bennett, in a racy speech, showed that she took a keen interest in the affairs of the Post Office and that she was able to assist her husband in deciding some intricate official matters. The other speeches made were also well received.

The Cardiff Post Office Band played during the assembly of the gathering and the capital musical programme was provided exclusively by members of the Post Office staff.

Songs were rendered by Mr. E. Thomas, Miss Hobbs, Mr. R. A. Weir, Miss I. Hinton, Mr. G. H. Lodge, Mr. R. L. Patterson, Miss A. Easterbrook, L.R.A.M., contributed a pianoforte solo, Miss Turpitt a monologue and Mr. A. H. Caldicott, a humour selection. Miss Watkins ably accompanied at the piano.

The enjoyable proceedings were brought to a close by the singing of the Welsh National Anthem, "Hen Wlad fy Nhadau," the British National Anthem and "Auld Lang Syne."

## TELEGRAPHIC MEMORABILIA.

THE Post Office Telephone and Telegraph Society of London opened its 1933-34 session on the 16th ult. at the Institution of Electrical Engineers, Victoria Embankment, London, under the chairmanship of the well-known personality of Mr. M. C. Pink, whose interest in the society has been unflinching these many years.

There was an excellent attendance of both sexes to listen to Mr. E. Phillips, of the Cable Room C.T.O., on "Developments in Television." Mr. Phillips, we know, would not himself lay claim to any higher status than that of "amateur." The lucidity of the lecturer, however, the easy delivery, and the very obviously high standard of his presentation of the intricacies of the subject to his audience left no doubt upon his listeners—many of whom were by no means potentially uncritical—as to the competency of this modest exponent of the newest art to deal with its interesting history. By the way, one was glad to hear Mr. Phillips mention the "First Television experimental apparatus," which has been in the care of the South Kensington Museum authorities for a year or two now. It is worth a visit, if only to stand and wonder however it was induced to work at all!

*Obituaries.*—Mr. Hernand Behn, president of the International Telephone and Telegraph Corporation, died at his residence at St. Jean de Luz on Oct. 7, at the comparatively early age of 58 years. Deceased had not been in good health for some considerable time. Mr. Behn, it will be recalled, with his brother Colonel Sosthenes Behn, founded the I. T. and T. Corporation, of which the Colonel is chairman and chief.

It is with deep regret that the sudden death of Mr. W. A. Lock has to be recorded, which took place at Ilford last month. He had made what appeared to be an excellent recovery from an illness some months ago, and was actually enjoying the company on the evening which immediately preceded his demise, and had anticipated visiting Southend with some old colleagues on the succeeding Monday. He had retired from his post of Chief Superintendent, C.T.O. little over twelve months ago, in which office he was a great favourite by all who were associated with him, irrespective of rank. To his mourning relatives is offered the sincerest sympathy of his many friends and colleagues.

We have also to regret the passing of Mr. G. T. Underwood, an old member of the C.T.O., who commencing his service at Hastings in 1875, migrated to London the following year, and retired in 1919, having held the position of Assistant Superintendent successfully for eighteen years.

*Octogenarians!*—The history of these elderly gentlemen quite naturally coincides with the early history of telegraphy, thus Mr. F. W. Bate, who now resides at Westcliff-on-Sea, dates his service to the year of the transfer of the Inland Telegraphs to the State, and commenced his duties in the Metropolitan Gallery under the regime of the late Miss Saul. He was subsequently allocated to the Provincial Gallery where his skill as a telegraphist frequently sent him out on Special Duty to Race and other meetings. In 1909 he was promoted to Assistant Superintendent and retired in due course.

Mr. W. F. Jackson's recollections go back to telegraph service abroad in the near East, in the earliest days of long-distance submarine telegraph cables, then to telegraph duty in the old Submarine Telegraph Company of Threadneedle Street and Throgmorton Avenue, and finally in 1889, transferring to the British Government Foreign Cables, now known as the Cable Room C.T.O. He was better known as "Colonel" Jackson, due to his early enthusiasms in the old Volunteers. It is pleasant to be able to add that despite the rough and tumble of life, these old friends and colleagues are still enjoying its eventide.

*Countries.*—AUSTRALIA.—The director of the Australian Posts and Telegraphs, Mr. H. P. Brown, at the annual meeting of the Radio Engineers in Sydney, estimated that

at the present rate of progress they could anticipate 650,000 listeners by 1937, and somewhere in the neighbourhood of 700,000 in 1940. It appears that the question of long-wave stations is still held up, but the Radio Research Board, Mr. Brown assured his audience, was going into the matter thoroughly. It appears to be the fact that "there were facilities for not more than six long-wave stations in Australia," and it is further stated that in all probability it would be inadvisable to use more than four. The latest actual figures for radio licences, those for the year ended June, 1933, give 469,477 for the whole of Australia including Tasmania. The increase, however, for the month of June showed, what would appear to be a very encouraging figure, viz., 10,470, while that for the complete year was only short by about seven hundred of reaching one hundred thousand new licences.

The Seamen's Union, on the occasion of a recent marine court of inquiry into a disaster to a coaling ship on the Australian coast emphasised the fact that the Adelaide Steamship Company had already installed in its small vessels, wireless telephones at a cost of over four hundred pounds. These have a range of 200 miles and do not require the employment of a special wireless operator. The above-mentioned court of inquiry has recorded its conviction that, "all sea-going vessels on the Australian coast should be fitted with wireless apparatus." The latest information is to the effect that a Government Committee is now investigating the whole matter.

CEYLON.—It is apparently now settled that the Ceylon Government has agreed to the scheme of a new cable between Talaimannar and Dhanushkodi in South India. This would replace the old one, and it is agreed that it will be one of the newest type—to carry both telephone and telegraph circuits. The cost to the two governments is estimated to be £35,000, equally divided between them. The probable amount of telephone traffic between Ceylon and India, and Ceylon (with Colombo as the centre) and London, has yet, however, to be calculated.

CHINA.—"During the past few years," says the *Electrical Review*, "a net-work of Government wireless stations has been developed throughout China until at present, besides the stations operated by the Provinces, there are thirty stations in the larger cities, all operated by the Ministry of Communications and provided with a total of eighty transmitting sets—eighteen in Shanghai, eight in Hankow, five in Canton, four each in Nankin, Amoy, Soochow, and Tientsin, and the rest scattered among small centres. Efforts are now being directed toward improvement of existing stations rather than at expansion."

According to the *Chinese Economic Bulletin*, eight additional aerial towers for the International radio station at Chenju were to be completed last month. Three are situated at Chenju and five at Liuho, and have a height of 160 feet.

DUTCH EAST INDIES.—A radio-telephone connexion between the island of Java and the port of Makassar in Celebes was recently inaugurated by the Dutch East Indian T. and T. Service.

FRANCE.—*World-Radio* informs us that it is understood that over 600,000 listeners have registered themselves for taxation in the department of Seine and Seine-et-Oise alone in connexion with the new "wireless tax." Our contemporary adds that "all estimates that are being made exceed 2,000,000 listeners for the whole of France—excluding pirates!"

The Lucerne Plan, together with the French Ferrié Plan, will affect the private stations in France, it is stated, though the extent is not yet realised. As a matter of fact it is now well known that Radio-Normandie (Fecamp) has been compelled to reduce its power to 700 w.

GERMANY.—*World-Radio* informs us that there has been a decided drop in the issue of wireless licences in Germany of late, the total decrease since May 1 last has approximated to close on 90,000, "whereas the number of free licences has only decreased by 20,000." In Germany, as in Great Britain and other countries, a continued look-out has to be kept for "radio-pirates."

GREAT BRITAIN.—Part of the well-known London Crystal Palace is to be rented—probably will be so by the time these lines are under the eyes of *T. and T. Journal* readers—and will be devoted to carrying out certain experimental television transmission tests. It is understood in technical quarters that the present arrangement between the B.B.C. and Baird Television, Limited, is not likely to be affected thereby.

*Television*.—There has been quite a number of paragraphs in the daily and weekly newspapers of late regarding the progress of television in this country. To those who desire to know in a few words the exact situation, there could be nothing more concise and informative than the following paragraph taken from the *Electrical Review* of Oct. 2 last, which runs as follows:—"The B.B.C. has decided to experiment with high-definition television through its ultra-short-wave transmitter at Broadcasting House. The first series of tests will be with apparatus installed by Baird Television Ltd., and will go on until the end of 1933. The second series of tests, beginning in January, will be with apparatus installed by Electric & Musical Industries, Ltd. The B.B.C. may, at its discretion, give other companies similar opportunities of installing high-definition television apparatus for transmission experiments. These tests will be experimental and intended primarily for reception by the engineers of the B.B.C. and the television companies concerned. The present thirty-line transmissions radiated by the London National transmitter will be continued until the date of the expiry of the existing arrangement with Baird Television, Ltd., which is Mar. 31, 1934. No decision with regard to a further series of thirty-line transmissions after that date has yet been made."

*Droitwich*.—The completion of the new high-power long-wave National broadcasting station now under construction at Droitwich by the B.B.C. to replace the old Daventry station is likely, says the *Electrical Review*, to render the National transmitters at Brookmans' Park, London, Watchet (Western), and Moorside Edge (Northern) redundant. There is, however, more than a possibility that the plant will be transferred to new Regional stations in the North East of England, North of Scotland, and Droitwich, to serve the Midlands.

HUNGARY.—According to Reuter's News Agency, two aerial towers are being built just outside Budapest for a new broadcasting station which will be three times more powerful than the existing transmitter. When finished it will be 1,045 feet high, cigar-shaped, with guys 2.5-in. thick.

HOLLAND.—In connexion with the International Broadcasting Conference held in Amsterdam last month, under the presidency of Sir Charles Carpendale, Controller of the B.B.C., there still appears to remain some considerable disagreement regarding "the Lucerne wavelength re-distribution plan." Soviet Russia, it appears, was only taking part in the *discussions* of the technical commission, while the Baltic States, according to Reuter's Agency, were not represented.

Marsland Gander, in the *Daily Telegraph*, commenting on this matter in his "Radio Topics" of Oct. 19, adds the following:—"While 'breakers ahead' still sums up the prospect of the Lucerne wave plan due for January, the outlook is not alarming, as the Amsterdam assembly found a working agreement in the medium wave-band. There remains the difficulty of the long waves. Here again comes the danger of a clash. Holland claims the 1,875 metre wave (Huizen) now allocated to Roumania as from January next, and this on 'the right of possession.'" Roumania's claim is that of geography!

INDIA.—Reuter's Agency at Simla reports an increasing interest in Empire broadcasts from England, and this it is considered to be partly responsible for a big increase in the number of wireless receiving licences taken out this year. The total for the whole of 1932 was 8,557, but for the first six months of the current year 6,276 licences were sold, as against 4,105 during the corresponding period of last year. The above figures are those quoted by Sir Frank Noyce, Member for Industry and Labour

in the Assembly. It is naively added that some of the increase is due to "public anxiety to make their position a lawful one"!

**IRISH FREE STATE.**—A new Broadcasting Advisory Committee is about to be appointed as the old Committee had ceased to function as from the end of last June.

**JUGO-SLAVIA.**—The opening of the new transmitting station at Belgrade is expected to bring in a large number of new listeners. Dutch and American makers are said to be in keen competition in receiving sets, although there is no mention of any special push from British firms as yet.

**MANCHUKUO.**—The Mukden Telegraphic Administration has commenced the establishment of radio stations at Tunhwa, Tungliao, Taonan, Yingkou, and Antung, and to provide long-distance communication between Mukden and Jehol, the administration is negotiating for the enlargement of the power plants at the existing stations at Mukden, Shunhaikwan, Peipiao. *Strange Effect of Police Regulations.*—The Manchukuo, some little while ago, issued a special inhibition against the use of short-wave wireless sets. As a result the public, it is said, have construed this regulation "as meaning that listening is discouraged"! At any rate the Dairen station was opened early in 1932, and by May of the same year there were no less than 11,726 listed owners of wireless sets. This year, up to date, only 8,053 have been registered!

**NORTHERN IRELAND.**—It is publicly stated that the B.B.C.'s scheme, whereby greater receptive service will be provided throughout Northern Ireland by a new transmitting station designed to furnish adequate reception for 80% of the population will extend only to the technical side of the service, and the form of the programme now being broadcast will not undergo any radical change.

**PORTUGAL.**—*World-Radio* reports that State control of wireless came into force on September of this year, and an annual tax of twelve shillings was forthwith imposed. Heavy fines are to be inflicted for failure to register receiving sets. "The presence of an outside aerial will be taken as proof that a set is in use."

**RUSSIA.**—The organ of the Russo-British Chamber of Commerce, the *Bulletin*, announces that a decree of the Council of People's Commissars of R.S.F.S.R., provides for the equipment during the current year of 18,980 schools with new radio apparatus.

**SOUTH AFRICA.**—*Aircraft and Wireless.*—The Union Government of South Africa, it is understood, has under consideration the establishment of wireless stations for communication with aircraft at Durban, Port Elizabeth, and East London.

*Economy.*—"Economy does not consist in the reckless reduction of estimates. On the contrary, such a course almost necessarily tends to increase expenditure. There can be no economy where there is no efficiency."—  
BEACONSFIELD, 1868. J. J. T.

## A SOUTH ESSEX REUNION.

The third reunion of old ex-colleagues of the C.T.O. residing in South Essex took place on Monday, Oct. 9, at Messrs. Boot's Restaurant, Southend-on-Sea, when 33 guests responded to the kindly invitation sent out by Mr. S. Pearce, a former Chief Superintendent at T.S. Mr. C. J. Faunch, another old ex-Superintendent, was in the chair, and he was well supported by many retirees from London and the various places around Southend-on-Sea, a very enjoyable time being spent by all there.

The list of those present included Messrs. H. E. Adams, W. H. Aldred, E. J. Allen, J. W. Baker, W. Blay, C. Brown, S. H. Burchell, W. H. Clamp, H. Cox, H. E. Dauncey, E. J. Dawe, T. W. Dawe, C. B. Franklin, F. J. Furby, R. A. Furness, C. R. Goater, F. W. Harrison, T. E. Hodgson, P. Hutchins, C. S. Keen, C. A. Kindon, C. R. Lowe, A. W. F. Ludlow, R. H. Mulock, F. Norton, A. J. Stevens, E. J. Stone, E. Veale, J. H. A. Warran, H. A. Webberley and J. C. White.

C. S. K.

## SOMETHING MORE THAN SAMPLES.

BY F. J. LANE.

IN a recently published article, "Samples," an attempt was made to point out the value of kiosk telephones as a means of establishing the telephone habit in people who are not yet subscribers. To define and analyse the telephone habit is no easy job, but I think it would be fair to say that a "symptom" of it is the immediate thought to use the telephone to meet the ever-recurring major or minor emergencies of life (taking the fullest license with the word emergency).

When a subscriber, thoroughly acquainted with his telephone, thinks—say—of going to the theatre or making an appointment with his dentist (or better still, cancelling one!), he automatically reaches for his telephone. There is no "visible" train of thought between thinking of the project and finding the means of executing it—it has become routine or habit. Insensibly the uses to which he puts his telephone extend beyond anything which by any stretch of imagination could be called "emergency," and the telephone becomes part of the routine of ordinary life.

The non-subscriber—not telephone conscious—does not react to the near-at-hand kiosk anywhere near so quickly. Faced with the emergency, his mind ranges about seeking a means of putting his plans into effect. He tries this method and then that, and then (if he is a twentieth century product) he thinks of telephoning. The farther the situation is from emergency the less likely is his mind to get so far.

In order to try and shorten or eliminate these successive stages of thought and to bring the kiosk more to the fore in the mind, it was suggested that the Publicity Department should take a hand. This seems essential, but there is every reason to employ any collateral schemes of encouragement.

Suppose tokens were allowed to be used by agents, travellers, and transport men employed by big companies or small ones for that matter. The tokens would, of course, be identifiable and on collection be charged to the subscriber concerned not at ordinary rates, but, for the sake of encouragement, at a small discount.

A novelist writing a fanciful novel having for its subject "Commerce in 1970," might well supply all travelling agents and employees with wireless sets concealed in their hats, thus bringing them into as close touch with the executive in charge as those reachable by extensions within the office. This may be a dream (and a bad one for the travellers in question!) but the suggestion made above can virtually make it a reality relying only on the meagre scientific achievements of 1933. By carefully pre-arranged plans the Sales Manager or Transport Manager can maintain control over his "executive" staff nearly as well as over his clerical assistants. From our point of view the usefulness of the telephone (and consequently its use) would be considerably enhanced.

But, it might be objected, there is really nothing to stop anyone doing it now by using ordinary coins. The direct answer to this is simply that they don't—with a few exceptions—and these exceptions make it clear that the idea is both possible and valuable. The fact is that in advocating a scheme of maintaining touch by means of kiosks, the Post Office would (without the tokens) have nothing *striking* to offer. It is as though one said that a sofa could be used as a bed: we all know that it is possible to sleep on a sofa, and we don't consider the observation very original. But offer us a sofa with a drop arm to convert it more realistically into a bed and we might buy one if we were short of sleeping accommodation.

The use of coins by travellers in an extensive scheme would moreover lead to difficulties in the firm's accounting and, since also it would mean that the travellers would virtually lend the company money, only to be recovered on a weekly or monthly account, they would be sparing in their telephoning. There are ways round these difficulties but they all put the onus on the company—the subscriber—our customer.

The discount though small (it would have to be) would also prove an attraction: the bargain instinct is not confined to the lower stratum of the proletariat.

Perhaps the strongest point in favour of the scheme is constant reminder given by the tokens. A penny is not just a telephone token—one can do all sorts of things with pennies besides putting them in coin boxes—but the token has only one use. There is a considerable difference in the position of a man having in his pocket a stamped addressed envelope and that of another driving forty miles an hour past a stationer's shop licensed to sell postage stamps!

Would such a scheme, if put into operation, have any effect on the telephone consciousness of the public? I think that it must. True not everyone is a traveller or a lorry driver (though quite a number are), but anything which increases the usefulness of the telephone indirectly *demonstrates* its usefulness, and this produces a reaction. People do not become subscribers entirely because they succumb to the blandishments of Sales Representatives—the Representative skilfully puts the finishing touches to a work half-formed. His "victims" often pick up telephone *habits* if not the telephone habit in their commercial life: they are unconsciously affected by the usefulness of the instrument during the working part of their day. What power of suggestion there must be behind constantly hearing "I phoned So-and-So to-day —," "I'll give you a ring," even if the remarks are addressed to another person? Again—to come nearer "home"—the subconscious observation of the constant use of kiosks must have its effect. "Everybody's doing it" is a piece of psychology besides being the title of an ancient rag-time song—indeed wasn't the psychology of it the "motif" of the song? Can it be doubted that if one half of the population had the telephone habit (or looked as though they had), the other half would follow suit? Man has a long ancestry of imitators!

## LEEDS DISTRICT NOTES.

THE Brighter Homes Exhibition, held under the auspices of the *Leeds Mercury*, was considerably brightened by an artistic stand displaying the latest models in telephones which had been arranged for by the Telephone Development Association.



[By courtesy of the "Leeds Mercury."]

THE LORD MAYOR OF LEEDS CALLS UP THE LADY MAYORESS AT THE T.D.A. STAND AT THE BRIGHTER HOMES EXHIBITION, LEEDS.

The Exhibition was opened by the Lord Mayor and Lady Mayoress of Leeds, the Post Office being represented by Mr. V. R. Kenny, M.B.E. (Postmaster-Surveyor) and Mr. J. F. Murray (District Manager). During the 11 days the Exhibition was open, the combined efforts of the Association Officers and the Sales Representatives who were in attendance were successful in obtaining agreements for 16 exchange lines, 15 extensions, 54 H.M.T.'s and 1 bell. In addition, 113 enquiries, mostly for H.M.T.'S, were recorded and will be followed up.

The reconstituted Postal, Telephone and Telegraph Advisory Committee for Bradford held its first meeting in Commerce House, Bradford, on Sept. 21. Mr. W. H. Suddards, J.P. (President of the Bradford Chamber of Commerce), was in the Chair. Mr. Ferguson (Head Postmaster), accompanied by Mr. Cole (Assistant Postmaster), Mr. Taylor (Superintending Engineer), Captain Linsell (Sectional Engineer) and Mr. Murray (District Manager), represented the Department. After the election of Mr. J. H. C. Hodgson, who has long been associated with the Postal Committee of the Bradford Chamber of Commerce, to the office of Chairman of the new committee, and Mr. H. Illingworth (President of the Chamber of Trade) to the post of Vice-Chairman, the committee proceeded at once to get down to business. The lively discussion on various points which ensued evidenced the keenness of the members to keep Bradford in the forefront so far as its postal, telephone and telegraph facilities are concerned.

The autumn competition of the Leeds Civil Service Golfing Society was held on Monday, Sept. 25, on the Moor Allerton Golf Course, Leeds. Nearly 50 entries were received from the various Departments, but unfortunately the day opened with torrential rain. As a result the list of entries was reduced to 35 actual competitors—a very satisfactory position, having regard to the weather conditions. Two competitions were held during the day: a stroke competition in the morning for two prizes presented by the President, Mr. A. J. Lyddon (Ministry of Transport) and a bogey competition under handicap for the Johns Cup.

Considering the depressing conditions under which the morning competition was held, some very good scores were put up and the winners were:—

Best gross.—Mr. J. Guild (Post Office Telephones) 82  
Best nett.—Mr. G. C. Cooper (Ministry of Labour) 87—15—72

In the afternoon the conditions improved, but bogey was difficult to beat, and only two players were successful:—

Mr. A. Sayers (N.E. Survey Dept. Post Office), handicap 13, and  
Mr. P. R. Williamson (Ministry of Labour), handicap 24,

who each finished 1 up. In order to obviate a play off, Mr. Williamson very sportingly suggested that the Cup should be presented to the lower handicap man. Mr. Sayers therefore took the Cup and second prize and Mr. Williamson first prize.

We were sorry to say good-bye to Mr. P. Dunn, Assistant Traffic Superintendent, who left us on Sept. 30 for the North Western District. Our best wishes were, however, extended to him at a little ceremony in the Traffic Office, when, in the absence of the Traffic Superintendent, he was presented by Mr. S. W. Smith, Traffic Superintendent, Class II, on behalf of the staff, with a chromium-plated head lamp for his Riley car as a token of goodwill. We believe that Mr. Dunn had many regrets at leaving, and it was clear from his reply that he had found his stay in the Leeds District both happy and beneficial.

To mark the occasion of his approaching marriage, Mr. V. Culliton (Clerical Officer) was presented, on Oct. 2, by his friends and colleagues in the District Manager's Office with a silver electric reading lamp. With it were also conveyed the hearty congratulations and good wishes of all concerned.

## EDINBURGH NOTES.

"It was fortunate that Messrs. Smith had the telephone installed recently, and an immediate summons was sent to the city fire brigade."

The above extract has been taken from a report which appeared in a recent issue of the *Dundee Courier and Advertiser*. The fire, which occurred on a farm at Kinnoull, Perthshire, occasioned considerable damage, but there is no doubt that the telephone rendered valuable assistance. The subscriber concerned would doubtless be duly thankful that he had followed the present trend by "being on the telephone."

From time to time touches of humour are supplied by subscribers, and the following extract from a letter written by a doctor in explanation of his delay in paying his account may be of interest:—

"One of my colleagues here was asked by a lady who rang him up in the middle of the night, "Oh, doctor, isn't the telephone a God-send?" To which he replied, "It depends which end you're at!"

The doctor would, however, be the first to admit that being telephoned in the night hours is infinitely less disturbing than receiving nocturnal visitors.

The Scottish Radio Exhibition opens in Edinburgh on Oct. 11, and the Organiser, Mr. T. Percy-Bentley, has kindly made provision for a P.O. Stand. Excellent publicity and business should result from the display, which will consist of several very interesting exhibits illustrating the various activities of the P.O. Telephone Service.

It is hoped to be able to give some account of the Exhibition in the next issue of this *Journal*.



One or two humorous incidents have occurred recently at the opening of rural automatic exchanges in this District, and we crave indulgence to relate them in these columns.

In one instance a subscriber was busy with his poultry when the P.O. representative visited him. He evinced little interest in the fact that an automatic service had been provided, but enquired if his visitor knew anything about chickens, as he was entirely lost in the absence of his "right hand man." The demonstrator replied in the negative, but expressed the hope that the necessary advice would be forthcoming with the return of the "right hand man." Much to his surprise, however, the subscriber replied that his assistant knew no more about the confounded birds than himself!

On another occasion a subscriber stated that he knew all about the automatic telephone, and proceeded to support his statement by calmly dialling a number. Nothing happened, however, and it was gently explained that he would need to remove his receiver before he could hope to receive any assistance from the apparatus.

A. W. C. E.

## C.T.O. NOTES.

*Promotions.*—Mr. G. T. Archibald has been appointed Controller and Commander E. L. C. Grattan, D.S.O., R.N., to be Deputy Controller. Mr. A. P. Ogilvie from the Secretary's Office has been appointed Assistant Controller.

Mr. C. H. Badderly, Superintendent Lower Grade, to Superintendent, Higher Grade.

Mr. J. D. Edwards, Assistant Superintendent, to Superintendent Lower Grade.

Miss B. E. R. Saxby, Telegraphist, to Assistant Supervisor.

### *Cable Room.*

Mr. C. A. Peters, Superintendent, to Superintendent, Higher Grade.

Mr. B. F. Ward, Assistant Superintendent to Superintendent.

Mr. F. W. T. Fursman, Overseer, to Assistant Superintendent.

Mr. J. McCarthy, Overseer, to Assistant Superintendent.

*Retirements.*—Mr. Stuart Jones, C.B.E., Controller; Mr. E. G. Baldry, Clerical Officer; Mr. H. E. Chapman, Telegraphist; Mr. J. G. King, Superintendent, Higher Grade, Cable Room.



PRESENTATION TO MR. STUART JONES.

Mr. Archibald. Mrs. Stuart Jones. Mr. Simon. Mr. Stuart Jones. Mr. Raven.

*Mr. Stuart Jones' Retirement.*—On Sept. 29, on the 4th Floor of the Central Telegraph Office in the presence of over 200 of his friends, Mr. Stuart Jones, on his retirement from the Controldership of the Central Telegraph Office, was given several mementoes from his contemporaries in the Post Office Service.

Mr. Archibald took the chair and he was supported by Miss Luffman, Mr. Raven, Mr. Simon, Sir Henry Bunbury, Sir Frederick Williamson, Mr. Edmonds, Commander Grattan, Mr. Clair, Mr. Peters and Mr. Robins.

Mr. Archibald, in opening the proceedings, dealt briefly with the business and said that Mr. Raven would give a short resumé of Mr. Stuart Jones' career. Mr. Raven's remarks were made in a very happy vein, and he touched on the difficult times that Mr. Stuart Jones had had to pass through, especially the last two or three years in the Central Telegraph Office, when, as a result of the American Commission, the whole life of the Central Telegraph

Office was being reorganised. He said he was probably one of the oldest official friends of Mr. Stuart Jones, and he had always found him painstaking and of proved ability and he thought he was echoing the wishes of all there and those who could not be present in wishing both Mr. Stuart Jones and Mrs. Stuart Jones many happy years in retirement.

Mr. Clair followed next and he presented Mr. Stuart Jones, on behalf of the Inland side of the Central Telegraph Office with a Radio Gramophone. Mr. Clair said that he and, he thought, the staff had always found Mr. Stuart Jones very approachable and very human, and he felt sure that during Mr. Stuart Jones' retirement he would not sever his connexion with the Central Telegraph Office, and he assured Mr. Stuart Jones that they would always be pleased to see him.

The Cable Room staff, through Mr. Peters, presented Mr. Stuart Jones with a clock. This was followed by Mr. Robins, who presented a golf bag on behalf of the Uniformed Staff, and in a few words expressed a wish that Mr. Stuart Jones would sting the Treasury for many years to come. Mr. Simon then, on behalf of the Headquarters Departments, presented a silver salver, and in a very happy speech he expressed the Headquarters Departments' deep appreciation of Mr. Stuart Jones' worth. He was followed by Mr. Edmonds who, on behalf of Headquarters Telephone and Telegraph Traffic Section, handed to Mr. Stuart Jones a silver cigarette box and silver cigarette case. Mr. Edmonds referred mainly to Mr. Stuart Jones' career in the Telephone and Telegraph Traffic Section, which extended roughly over 20 years, and mentioned one or two items which were instigated by Mr. Stuart Jones and which have stood the test of time. Miss Luffman followed and in a charming speech asked Mrs. Stuart Jones to accept three travelling cases from the Central Telegraph Office, expressing the hope that when being packed and unpacked she would always have a lively memory of this Office.

In addition the Telegraph and Telephone Representatives gave Mr. Stuart Jones an all steel putter.

Mr. Stuart Jones, in a general reply to the presentations was, it is thought, labouring under the stress of the occasion. He admitted quite frankly that he felt honoured by the assembly, and in a few well chosen words he thanked all his friends, not only for attending but for showing their regard for him, in the shape of the beautiful presents which had been handed to him.

*Reorganisation of the C.T.O.*—Past and present friends of the C.T.O. will perhaps be interested to know that the West side of the Fourth Floor has now been cleared of all instruments, and is busily occupied by workmen of all descriptions preparatory to the transfer of the Phonogram Room to that position. This movement brings up memories of the old Intercommunication Switch and what might be termed the Dead Letter Section of the Circulation, i.e., N.W. Floor also. Those who had happy memories of the Met. Test Board will heave a sigh of sorrow at the removal of past glories, but those who remember the old Intercommunication Switch in the heyday of telegraphs for the London Area will perhaps view it with mixed feelings. It was, on the switchboard portion of it, a pretty stiff job and a little bit more complicated than a telephone switchboard, whilst those who worked to the stations will remember how all sorts of sending and reception were encountered. The term "grocer's shop assistant" was very frequently used, and it was a term without venom, used merely to indicate that the sender at the small London office had not been trained or passed through a proper Telegraph School, whose "o's" were "g's," whose "m's" were "n's," who stumbled for figures and who had very often the impudence to rattle and say "get clerk." The removal of this Intercommunication Switch, of course, took place years ago, but Morse apparatus still continued on that side to be worked to London Postal Offices. As regards the N.W. Floor Circulation, here came all those insufficiently addressed telegrams for places in the London Postal Area. Here were kept all the reference books and Kelly's Directories, here was nearly a specialised staff at one time who unpacked or decided on the proper destination of all sorts of indifferently addressed telegrams. That has gone for ever. What will happen under the new Circulation arrangements remains to be seen.

*Obituary.*—We regret the passing of Mr. R. W. Hill, well remembered as "Bob." He was a prominent member of the Volunteers and was well-known in the old News Division of the Special Section, retiring with the rank of Superintendent in 1922. Another death has to be announced, and that is Mr. George Aldous, who passed away in his 76th year of age. He retired with the rank of Assistant Superintendent. Cable Room friends will remember Mr. C. F. Moody, who, we regret to say, died recently in his 73rd year. He retired with the rank of Assistant Superintendent in 1921. We also have to record with regret the death of Mr. G. T. Underwood, formerly Assistant Superintendent of this office, who was superannuated in 1919, and also Mr. Jos. Carter, who retired about six years ago.

To all their relatives we extend our deepest sympathy.

*Golden Wedding.*—In *The Times* a short time ago was the following announcement:—

*Bailey-Reynolds.*—On Aug. 25, 1883, at Holy Trinity, Cloudesley Square, N.—James Bailey to Annette Emma Reynolds.

"Jimmy," as he was known by most people, was Deputy Controller of the C.T.O., and we heartily congratulate him on his Golden Wedding anniversary.

## THE OUTPOST END.

BY H. P. BONSER.

AT the down end of the long line of telephonic communications is the rural call office.

In no other sphere of the G.P.O.'s activity is the Department's representative taken so literally as a public *servant*.

"I get muddled wi' them things. You'd better do the talking" a caller remarks, and the Call Office Attendant—another name for the Sub-Postmaster, who is something of a Poo-Bah in the variety of his offices—is expected to carry on the conversation with the distant subscriber, repeating his words to the caller and seeing generally that the business in hand is brought to a successful issue.

Quite a number of telephone users look upon the village Postmaster as a general messenger, and demands that he "walk over to Mrs. Cook's and say we're coming on the late bus" are common occurrences.

This is a sore point with Sub-Postmasters, who find themselves a trifle awkwardly placed. Theoretically the matter is simple, and the obvious course is to inform the applicant that the service is outside the scope of the Postmaster's duties, and to advise the sending of a telegram.

In practice it is not quite so easy. One of the parties may be a customer of the shop, and a shop-keeper cannot afford to offend customers. Doctors and veterinary surgeons, too, are the worst offenders in this respect, and to refuse a request from a member of either of these be-haloe'd professions might get the Sub-Postmaster a bad name in the village.

The result is he shrugs his shoulders and tries to ignore the fact that in being neighbourly he is cheating himself of the official delivery fee he would have claimed had the message come in the form of a telegram or a telephone express letter.

Possibly it is this conflict between official procedure and local habit that imparts to country services a homeliness altogether absent from the process of entering a kiosk and putting "two pennies please" into a slot.

At the rural call office one may be invited, with enjoinders to "mind the lard" or "the bacon," to "come this way," and be led round the back of the counter, along a passage hung with domestic utensils, into a back store-room, where a wall telephone shares the honours with the kindling, paraffin, soap and such other goods as must be kept away from the edible stock in the shop.

Thus is the standard of privacy maintained.

The caller waiting impatiently for a long distance call to mature is a bit of a white elephant in a small shop, but where, as is sometimes the case, the "post office" is also the front parlour, he can be an anxiety as well.

A picture comes to mind of an estimable but irate old lady looking wrathfully at the mudstains on her front room carpet.

"It's that Charlie Short again" she exclaimed indignantly.

It appeared that a particular local farmer was in the habit of coming straight from the fields to put through a call to his wholesalers.

He was an impatient man, and instead of sitting down with his boots resting on the piece of sacking spread for the purpose he made a practice of pacing to and fro across the room.

At the completion of a call the Sub-Postmistress had to bring in a bowl of warm water and a sponge and wash the carpet.

Nothing the good lady could do made any difference.

"It's a public office, isn't it?" he would retort in response to her remonstrances, and go on pacing up and down.

The matter almost developed into a feud, and the Sub-Postmistress threatened to resign rather than have her front room carpet spoiled. Happily the difficulty was solved by the timely visit of a Sales Representative, who persuaded the farmer to have a telephone installed in his own house.

Another instance where a particular telephone user nearly brought about the resignation of the Sub-Postmaster occurred at a village with a small exchange on continuous service.

The village was within a few miles of a military camp and the wife of one of the officers settled in the village, buying a house and becoming a telephone subscriber.

The gallant officer made it his nightly practice to ring up at 12.45 a.m. to say good-night to his wife. This involved the Sub-Postmaster leaving his bed to connect and disconnect the call. His normal day's work began with the arrival of the morning mail soon after five, and he soon found the nightly disturbance affecting his health.

He told his Head Postmaster he would have to resign as he couldn't stand the strain. He was a good man, and complaints from the village were so rare that the Head Postmaster was loth to lose him.

The possibility of conversion to R.A.X. working was spoken of. The Sub-Postmaster welcomed the idea, and a recommendation for the exchange to be included in the scheme was put forward in the next report on R.A.X. extension.

Conversion to automatic working is not always welcomed by the Sub-Postmaster, as it may involve reduction of emoluments. One case is recollected, however, where, some little time after a new R.A.X. was installed and a kiosk erected on land adjoining the post office, the Sub-Postmaster was asked how the change affected him.

"Not too badly," he answered. "I used to get 21s. a year for call office work. The minimum is now 30s. Now I get 9d. a week for cleaning the kiosk, and they let me have the bit of garden round the automatic exchange so long as I see it's kept tidy. I reckon I'm 18s. a year and a bit o' tater ground in pocket, and I don't have the bother of people telephoning from the shop."

Occasionally a Sub-Postmaster will be taken aback by the demands of his customers.

At one call office in Huntingdonshire a woman from a hamlet some three miles away entered with the remark that she had come about the telephone message.

"What message?" enquired the Sub-Postmaster.

"The one you sent by the postman this morning about somebody wanting to speak to me on the telephone. I put my hat and coat on and came down straight away."

"But I didn't send you any message."

"Yes, you did, and I've got it here." The by-now-voluble lady produced from her pocket a letter in the cancelling datestamp across the face of which appeared the slogan "You are wanted on the telephone."



Other People.

WE who live in towns and large cities are so used to crowds of people that we do not often stop to look at them. We are apt to see them as one of the active elements of the city streets and merely as that. They are as inevitable as the traffic, the shop fronts and office buildings, and unless we take thought, seem to have scarcely any more individuality. If the streets are the stage then the people are marionettes rather than actors.

A visitor from overseas once said to me of the people in the London streets that they all appeared to be going somewhere, that they were all in a hurry and that they all looked very serious. Until then I had not noticed these characteristics, but he had looked at the crowds through the eyes of one accustomed to the more leisurely East. It is good to take a new or even original view of other people. Recently I looked down on a stream of hurrying people from a window high up in a building. I was at once impressed with their squat shapelessness and their ungainly walk. Their feet struck out at a wide angle from beneath their hats and, but for the fact that the movement of their feet was accompanied by a progression of their bodies, there appeared to be no logical connexion between them. The effect was most absurd and, since those remote and awkward fellow creatures were unaware of the amusement they were affording me, I was able to enjoy the spectacle to the full.

The advantage of being in a crowd is that one can study people without appearing to be staring rudely. Just as in music it is amazing what a variety of tunes can be obtained from the combination of a few notes, so with human beings it is amazing what a variety face exists. After all the only physical components of any face are two eyes, two ears, two cheeks, a mouth and a chin. One is led to speculate as to how much of our appearance we owe to our ancestors and how much to our own thoughts and habits. Whatever opinion one may hold of other people's faces it is probable that someone somewhere thinks kindly of them and someone's eyes light with pleasure at the sight of them. This is perhaps even more amazing than the faces themselves.

The feet and hands of other people are remarkable, too, for their diversity of size, shape and expressiveness. One feels from the appearance of some feet that one might be kicked by them on the slightest provocation. Other feet would willingly walk with one—be it over springy turf, hard roads or scattered boulders. Some feet are different, some sprawl assertively, some move nervously, others are planted square and immovable. There are hands one would grasp with pleasure or drop with a shudder: some are fine and sensitive: others are coarse and grimed. Some are destined to soothe and others to furrow. There is the warm, generous hand: there is the hand which looks what it is—a rake.

It is curious how much alone one may be in a crowd. The people in it are indeed other people. How many people does one know in a tube train, even by sight, and how many of the people, so herded together, know each other. That is one of the dreadful things about a crowd—the sense of loneliness and friendlessness, the apparent reserve of people and their exclusion of the individual. Fortunately the other people feel it, too: it is merely a mask which will quickly disappear in particular circumstances.

Why do all these other people move about as they do, and why do they move about to do what they do, and when they do what is it that they do? One may speculate endlessly or seek a solution in a census of occupations, in volumes of vital statistics or of life and labour. All these important and busy other people—all of them—were once chubby rosy babies, staring out of uncomprehending blue eyes into a world of other people—glorious

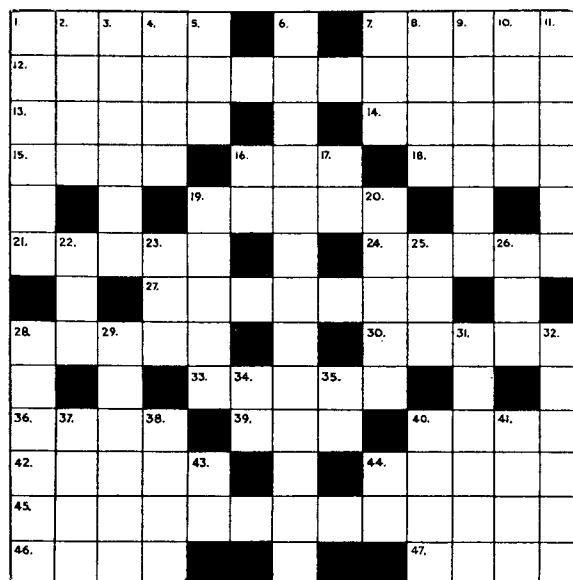
in form and yet gloriously unformed. What a pity it is that some of the other people ever grew up. Whilst one may not agree with Walter Raleigh one may on occasions feel some degree of sympathy with his "Wish at a Garden Party":—

"I wish I loved the Human Race:  
I wish I loved it's silly face:  
I wish I liked the way it walks:  
I wish I liked the way it talks:  
And when I'm introduced to one  
I wish I thought What Jolly Fun!"

PERCY FLAGE.

"Telephone" Cross Word.

(Solution next month.)



ACROSS.

DOWN.

- 1. Next production of the L.T.S. Dramatic Society.
- 2. Little Edward on the carpet.
- 12. What day telephonists are made of? [Three words.]
- 13. Pachyderm's exchange?
- 14. Ocean about an Indian coin.
- 15. Concerning a little publicity.
- 16. Unaspirated wash-tub.
- 18. A heavenly body shows bad temper when reversed.
- 19. Ecclesiastic Council.
- 21. ? Orient.
- 24. More mature.
- 27. Guided about eternity.
- 28. Attendant on Bacchus.
- 30. A, for example, is
- 33. More pleasant.
- 36. The Emerald Isle in its own language.
- 39. To spread for drying.
- 40. A thousand less than a punctuation mark.
- 42. Old English coin.
- 44. Avid.
- 45. Blow wracks cat [Anag.] [Three words.]
- 46. Mixed teas.
- 47. A river running to the south-east.
- 1. Like salver.
- 2. Confused rule.
- 3. Pleurodont lizard.
- 4. Musical binder.
- 5. With some this is tedious.
- 6. White heat.
- 7. Thousand on a vessel.
- 8. Imitates.
- 9. Twin peaks of perfection.
- 10. Italian town.
- 11. How the nervous man might begin his proposal.
- 16. See 17.
- 17. With 16, Punch's playmate.
- 19. Severe.
- 20. Five hundred on the back.
- 22. Christian name of one of the 18 of 1 across.
- 23. Fifty in a pleasure boat.
- 25. Roman gods in a muddle.
- 26. Priest, half a prophet.
- 28. Can these be had for as little as they sound.
- 29. Fish which is another mixed up with a bee.
- 31. Baby's repeated approval.
- 32. Meagre.
- 34. See 35.
- 35. With 34, the man who runs a journal has no alternative.
- 37. One of the U.S.A.
- 38. European river.
- 40. Fish.
- 41. These sounds are often heard in this at night.
- 43. Article in Arabia.
- 44. Postal or traffic district.

### A Telephonist's Eight-Hour Day.

Through morning mists the shy sun peeps,  
As from the bus Miss "Dial O" leaps,  
With inward fears that she is late,  
For lo! the clock is just on eight,  
With beret safe in locker six,  
An instrument she now must fix,  
With skilful touch to set it firm,  
Upon her fair expensive perm.  
To switchroom then with hurrying feet,  
The Supervisor there to greet,  
An upward glance reveals her fate,  
She signs the book one minute late.

At section four she takes her place,  
With pencil, pad, and cheerful face,  
With cords, and plugs, and dials, and keys,  
And ever tuneful "number, please?"  
She tries to answer every call,  
And satisfaction give to all,  
The calling signals left and right,  
The supervisory's flashing light.  
A different voice on every line,  
Some kind and friendly, others whine,  
Some wait with patience, others wont,  
Some say "Good morning," many don't.  
The morning grouse is always there,  
With temper short; she has to bear,  
Effects of late nights, wife or gout,  
Calls, "no reply" when folks are out.  
The busy hour is at its peak,  
Assistance 'tis no use to seek,  
The cords leap up, the jacks are full,  
On every section multiple  
With aching arms, and throbbing head,  
And nerves worn to a single thread,  
She must the calling signals take,  
Until the lunch hour's welcome break.

A jolly hour, or just a half,  
In which to eat, and talk, and laugh  
With kindred souls who may be free,  
To drink a friendly cup of tea,  
Discuss the great affairs of State  
Arrange for Subs their future fate,  
Read rules and regulations, *Punch*,  
Issued to help digest the lunch.  
With strength renewed and headache gone,  
She's game to tackle anyone  
Of those bright subs, who flash and shout,  
Until their little light is out.  
Now section six falls to her lot,  
Collecting money in the slot;  
Of coin box calls she has a few,  
When callers know not what to do,  
Press button "A" then go ahead,  
But button "B" is pressed instead,  
Untiringly she must explain,  
To get the money in again,  
While distant sub has left the line,  
Until a more convenient time,  
At last, caller and sub unite,  
And blame the girl who's out of sight.

The caller who disputes the fee,  
Others who press "Emergency,"  
The dear old things who cannot read,  
The few who all instructions heed,  
Then make enquiries such as this:—  
"Who is my correspondent, Miss?"  
The ones who ask for Mr. Brown,  
Who keeps a shop somewhere in town,  
Initial, street, they do not know,  
But think his father's name was Joe.

All these and more her patience try,  
As afternoon creeps slowly by.

At last there falls upon her ear,  
A sound that tells relief is near,  
The five o'clocks are coming on,  
Oh, joy of joys, she now can run,  
Forgetting not to sign the book,  
She takes her beret from its hook,  
Dabs powder on her shiny nose,  
Then flying down the stairs she goes,

Off duty, freedom once again,  
So now to catch a bus or train,  
A few hours left in which to play,  
To ease the strain of an eight-hour day.

O. A. W.

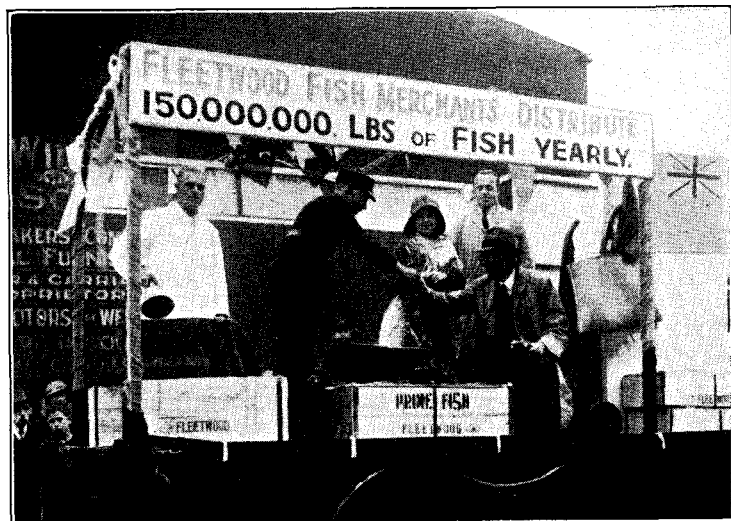
Contributions to this column should be addressed: The Editress,  
"Talk of Many Things," *Telegraph and Telephone Journal*, Secretary's Office,  
G.P.O. (North), London, E.C.1.

## FLEETWOOD CHARTER CELEBRATIONS.

TELEGRAPHS AND TELEPHONE TO THE FORE.

FLEETWOOD had a historic day on Oct. 4, when Prince George visited the town to present its Charter of Incorporation. Admirable arrangements had been made by the civic authorities for the ceremonial occasion of the day, and a small part the Post Office played in the proceedings was the subject of much favourable comment.

After the ceremony of presenting the Charter, a message of loyalty to His Majesty the King was read to the crowd of 20,000 people by the Charter Mayor before it was publicly handed to a telegraph messenger for despatch. The boy who had been waiting in readiness outside the enclosure had to cross the arena to receive the telegram direct from the Charter Mayor, and his smart appearance, correct saluting, and the manner in which he approached and retired before the distinguished company was the subject of much favourable comment. It was noticed that both Prince George and Lord Derby closely watched the boy, and leaned forward in their places to more clearly follow his movements.



WHOLESALE FISH MERCHANTS' TABLEAU.

The Telegraph and Telephone Service was again prominently before the public at the Historical and Trades Pageant, held in connexion with the Charter Celebrations on the following Saturday. The fishing industry staged a tableau representing the premises of a Wholesale Fish Merchant at the Fish Market Wyre Dock. The scene showed a fish merchant using the telephone at his stand on the Dock, surrounded by boxes of fish and the paraphernalia of his business.

Approaching the stand was a Boy Messenger holding out a telegram for delivery and at the same time calling out the names of the addressees of other telegrams. It should perhaps be explained that while the auction sales are in progress and the merchants are absent from their regular stands, the Boy Messengers have to visit the sales, and by calling out the names they attract the attention of the addressees and are thus able to deliver their telegrams. The tableau which paraded the main streets and was witnessed by thousands of people was very effective, and the inclusion of the telegraph messenger and telephone hand microphone, emphasised the importance of the telegraph and telephone services to the fishing industry.

Letters of thanks and appreciation for the part the Post Office undertook have been received from the Charter Mayor and the President of the Fleetwood Wholesale Fish Merchants Association.

## WESTERN DISTRICT NOTES.

A PARTY of 75 Australian boy scouts who attended the World Jamboree in Hungary and have since toured the United Kingdom made a week-end halt at Taunton, Somerset, on Oct. 7, before continuing their journey to Plymouth on Sunday.

On the day preceding their visit the Head Postmaster, Taunton, received a communication from a Scoutmaster travelling with the contingent stating that a member of his party—Scout F. Griffith—whose home is at St. Kilda's Road, Melbourne, Australia—was desirous of telephoning from Taunton to his parents in Melbourne. It was stated in this communication that the call was desired at 12 midnight on the Saturday, which corresponds with 11 a.m. Sunday in Melbourne. Unfortunately the Australian service is at present only available during certain fixed periods and this call was required during the closed period. The letter received by the Head Postmaster furnished no address, but simply stated that the contingent was on tour and it seemed impossible to get into touch with Scout Griffith and explain the circumstances to him. Here the Post Office organisation came into operation. The route to be followed by the contingent on its journey to Taunton was first ascertained and it was calculated that at the time it was desired to communicate with Scout Griffith the contingent would probably be somewhere between Coventry and Taunton. The Head Postmaster, Taunton, the Traffic Superintendent, Western District, at Exeter, and the Superintendent of the Overseas Service at the London Trunk Exchange then got busy, with the result that Scout Griffith was first tracked to Coventry, then to Bath, thence to Wells, where he was "run to earth" in a café at 5 p.m.

The Head Postmaster was then able to explain to him the restricted period during which the calls to Australia were accepted. He agreed to the call being timed to mature at 9 a.m. on Saturday, Oct. 7, and arrangements were made accordingly.

When the scouts arrived at Taunton at 6.45 p.m. on Friday, Oct. 6, the Head Postmaster was waiting to discuss with Scout Griffith the details for making the call, and he was offered the use of the telephone in the Head Postmaster's private office, which he accepted. Scout Griffith attended at the Taunton Post Office at 8.55 a.m. on Saturday, Oct. 7, and at 8.59 a.m. the telephone bell rang. He answered, and his first exclamation was "Hullo, Dad, isn't it wonderful." He discussed a host of questions and also spoke to his mother. At the finish of the conversation at 9.3 a.m. Scout Griffith replaced the receiver and stated "the conversation was perfectly clear, and we could recognise each other's voices just as though we were only speaking from one room to another."

He was surprised to know that his call was the first West Country call to Australia. He was very interested when it was explained that his own conversation passed from Taunton to London and thence to the Post Office high power wireless station at Rugby by landline, from this station it "hopped over" 12,000 miles of space to a wireless station at Sydney, Australia, the remainder of the journey of 400 miles to Melbourne being linked up by a landline.

The conversation from Australia to the receiver used by Scout Griffith passed over a different route. After covering the 400 miles from Melbourne to Sydney by landline it "hopped over" from the wireless station at Sydney to the Post Office wireless station at Baldock, Herefordshire, subsequent transmission being to London and Taunton by ordinary telephone line.

Mr. Griffith was amazed at the clearness of transmission and considered that the call was worth the charge of £2 per minute—total £6.

He was also much interested and grateful to hear the steps which had been taken to "waylay" him in the café at Wells, Somerset. He has now left the country a real enthusiast for the British Telephone Service, still wondering how speedily we tracked him and whether we have an army of secret service agents.

The Western and Bristol Districts are closely linked, being adjoining districts.

On Oct. 14 a closer bond was formed between them when Mr. F. Veal, Assistant Traffic Superintendent, Western, led to the altar Miss Edna Pearce, of the District Manager's Office, Bristol.

The wedding was celebrated at Henbury Parish Church. Mr. W. A. Stanton, Assistant Traffic Superintendent, Bristol, acted as best man.

A presentation from the Western District will take the form of an electric fire when Mr. Veal returns to duty, which will, no doubt assist in house warming arrangements.

At an exchange where pre-payment multi-coin boxes had recently been installed an operator was having difficulty with a caller. After several times giving advice without any result, the operator said "Will you please read the instructions and try again." The reply was "I can't do that Miss, I can't read."

The question arises, how is the Department going to provide instructions for the benefit of callers who cannot read, and in the country districts there are many.

F. J. F.

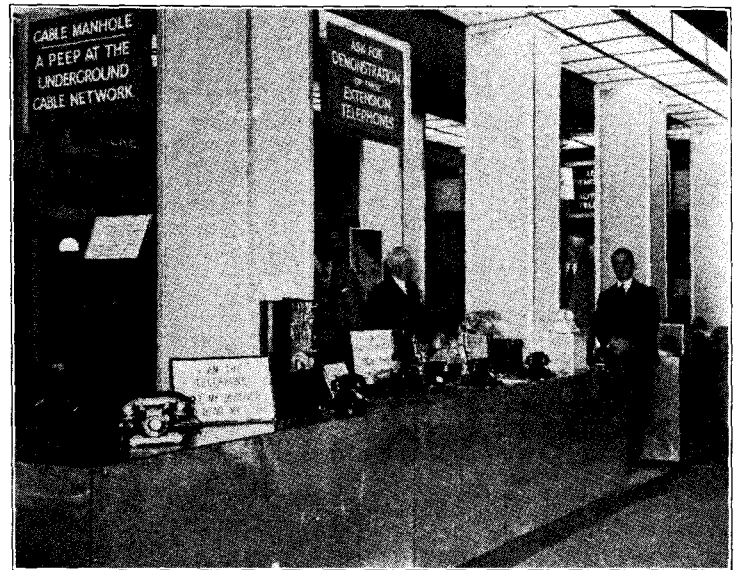
## ABERDEEN DISTRICT NOTES.

A RECENT event of considerable local importance was the Trades Exhibition held in the Olympia Halls, Aberdeen, during the three weeks commencing on Sept. 4 last.

The Department arranged a very pleasing and attractive exhibit of telegraph and telephone apparatus, &c. Teleprinter working was demonstrated and several thousand souvenir telegrams were dealt with. The display of coloured hand-microtelephones and the self-speaking telephone were a great centre of attraction. The Air Mail was brought under prominent notice by the display of a model aeroplane.

It was pleasing to hear the favourable and complimentary comments, not only in regard to the stand itself, which, by the way, was very artistically designed, but also in regard to the various exhibits.

Nearly 186,000 people paid for admission to the Exhibition and it is estimated that at least 90,000 people viewed the Post Office exhibits. The staff on duty had an exceptionally busy time explaining and demonstrating



TRADES EXHIBITION, ABERDEEN.

the numerous services and it was gratifying to note the keen interest displayed by the public. We had visitors from South Africa, Canada and many from the Orkney and Shetland Islands, and very favourable comments were made regarding the quality of the telegraph and telephone service in this country.

The value of such an Exhibition cannot, of course, be assessed solely by the orders obtained at the time, but, if the obvious friendliness and goodwill of the public towards the Department count for anything, then the Exhibition was indeed an unqualified success and fully justified the expenditure involved. It will be of interest to know that agreements for 30 stations—18 exchange and 12 extensions—were received at the Exhibition, and although we were by no means satisfied, the results may be considered as fairly satisfactory and worth the effort.

From an advertising and educational point of view, it is considered that it would be impossible to devise any better means of bringing the many services which are now available, before the public than by the direct contact which such an exhibition affords. The general goodwill of the public was borne out by the great interest and friendly criticisms heard on all sides regarding the Department's enterprise.

The above photograph will no doubt be of interest to those who have not hitherto had an opportunity of seeing for themselves the pleasing design of the Post Office stand.

## BRIGHTON NOTES.

*Personal.*—Local friends of Miss Puttick, Assistant Supervisor, Class I, Brighton, and all in this and other Districts who have expressed sympathy with her in her extended sick absence, will be pleased to hear that there now are good prospects of resumption of duty within a comparatively short time.

We wish to take this opportunity of welcoming Mr. W. M. Hodgkinson, who has come to us from Preston and to congratulate him on his promotion to rank of Traffic Superintendent, Class II.

A few days ago we said good-bye and good luck to Miss E. M. Grist, Clerical Officer, of the Sales Branch, who has resigned on account of her approaching marriage; her colleagues and friends in all branches of the District Office presented her with a keepsake and memento in the form of a cabinet of cutlery suitably inscribed.

*Appreciations.*—Recently three letters came to hand on the same day and the similarity of their themes is notable: A well-known author, on the occasion of his removal to another District, expressed his gratitude for the courtesy and efficiency of the staff of the exchange from which he was severing connexion; A Lieutenant-Colonel (retired) expressed thanks for attentive and efficient service during the past five years; and a High School Mistress expressed her appreciation of the patience and consideration shown by an operator in handling a particularly difficult call.

*Private Broadcast.*—Recently a private broadcast took place in the Brighton District, the circumstances and arrangements connected with which may be of interest.

A husband and wife were involved in a motor accident; the man succumbed to his injuries and the lady was severely injured, but she was conveyed to her home and subsequently expressed a desire to listen to the service when her husband was interred in the local churchyard.

Prompt action and co-operation between the Department's officers, the Marconi Company and, incidentally, the local vicar, allowed these wishes to be met.

The lady and the vicar were both subscribers, and their lines were connected together at the local exchange; amplifying apparatus was fitted in the lady's house, whilst the line to the vicarage was extended by temporary lines running, in part, through and over trees, one to the interior of the church and the other to the graveside, each terminating in a microphone. A switch in the vicarage allowed either of these microphones to be brought into circuit at will.

These arrangements were remarkably successful and, if we may be allowed to use the expression in view of the tragic circumstances which called for them, gave satisfaction to all concerned.

## MANCHESTER DISTRICT NOTES.

*Civil Service Sports Club.—Social.*—The Club held their first Social of this winter at the Grand Hotel on Oct. 14. About 160 members of the various Departments and their friends were present, and the Dance proved very successful. "Laddie" Clarke's Band from the Blackpool Hydro was in attendance.

*Tennis.*—The final of the Mixed-Doubles Knock-out Competition, which was in progress at the Club for some months, was played off on Oct. 14. The winning couple were Miss A. Boustead, Writing Assistant of the District Manager's Office, and Mr. F. Maurice.

*The Telephone Social Club.*—A "Staff only" Hot-Pot and Social was held at Telephone House on Oct. 12 and gave a good start to the series of Socials which has been arranged for the winter. After Hot-Pot we were entertained by the girls who produced the Pantomime "Dick Whittington" at Telephone House last February, and dancing occupied the remainder of the evening.

When these notes appear the Social Club will have held a Dance on Oct. 21, and a further one has been arranged for Nov. 18.

*Miss A. Critchlow.*—On Oct. 6 the District Manager had the pleasure of presenting an Imperial Service Medal to Miss Critchlow, Assistant Supervisor, Class 2, who retired last June under the terms of the Department's special offer. Miss Critchlow joined the National Telephone Company in 1897 and went over to the Post Office in the same year. She was appointed to the supervising class in 1908 and, at her retirement, was the Senior Assistant Supervisor, Class 2. She spent the whole of her career with "Trunks."

*Telephones "On Demand."*—The Editor of the *Manchester Evening Chronicle* recently telephoned the Sales Branch at 2.45 p.m. that, as he was unwell and would be going home to bed, he wanted an extension instrument installing at his bedside. The extension was working within three hours.

*Telegraph Messengers' Institute.*—The Manchester Telegraph Messengers' Institute held their Annual Swimming Gala on the evening of Oct. 6 at the Victoria Baths. A new feature of the Gala was the Ladies' Squadron Race. Teams were entered from the Telegraphs, and the Trunk, Central, and Toll Exchanges, and the event was won by the Central Team—Misses Crawford, McHugh, Roseby, and Thompson. There was a good attendance, and the events were well contested. The prizes were awarded by Mr. Moorhouse, and Messrs. Hartley, Whitelaw, and Magnall also were present.

## BIRMINGHAM DISTRICT NOTES.

*Obituary.*—We regret to announce the death of Miss M. K. Tyrrell, telephonist, of Central Exchange. The shock to all her friends and colleagues was greater because of the suddenness of her decease. She was on duty at 8 p.m. on Oct. 10 but died before the following morning. The funeral was at Witton Cemetery, on Oct. 19, and the affection in which she was held was evidenced by the beautiful flowers sent from her friends in the service.

*Ad Infinitum.*—We are still receiving letters of commendation on our service, three came on one day recently, but our modesty does not permit their publication.

*Telephone-minded School Boys.*—The policy of teaching school children the advantages and usefulness of the telephone is still being actively pursued in this District. The Five Ways Grammar School have a special curriculum on the telephone and have purchased themselves various instruments for their own use and edification. A party of 75 of these boys, with their head master and science master, visited the Midland Exchange on Oct. 17. They were lectured by the Traffic Superintendent, Mr. G. F. Findley, on the actual works of the telephone system, were shown samples of various types of telephones and cables, &c., and were told all that could be told in the time about the automatic demonstration set. They afterwards visited the Midland and Toll Exchanges. Entertainment to tea by the Traffic Department concluded what we hope was for them a very instructive and enjoyable afternoon.

The interest taken by the Press in these matters was evidenced by the appearance of a photograph and notes in the local newspaper.

*Opening of the Remodelled Telegraph Office at Birmingham.*—On Thursday, Oct. 5, the remodelled Birmingham Telegraph Instrument Room was opened by the Lord Mayor (Councillor H. E. Goodby), and an opportunity was afforded a number of the City's prominent citizens and business men to inspect what is claimed to be the most up-to-date telegraph installation in the world.

Before the Lord Mayor formally opened the reorganised room, a blessing was given by the Rector of Birmingham (Canon Guy Rogers), and the company then proceeded to an inspection of the Instrument Room and Trunk Telephone Exchange.

The visitors were then entertained to tea.

The occasion marked the first appearance in Birmingham of Sir Stephen Tallents in his capacity as Public Relations Officer, and in his speech he said that the re-constructed Department was conclusive proof of the determination of the Post Office to give the most efficient service possible.

On Friday, Oct. 6, an invitation was extended to the officers of all departments in the Birmingham Post Office Survey Area to inspect the new equipment and on Thursday, Oct. 12, about 60 pensioned officers of the Birmingham Telegraph Service revisited the scene of their former activities. Judging from the comments which one heard and the evident interest shown by these stalwarts of a past age they will not readily forget their visit. They found it difficult to believe a room once famous for dust and draughts with a floor whose splintered boards were a trap for the unwary could ever have been this beautifully clean room with its ceiling and walls in cream and green.

*Birmingham Telephone Lecture Society.*—The Society has recommenced its activities, and the winter session opened with a dance at the Midland Exchange on Thursday, Oct. 12.

The attendance, as usual, was very good and we were glad of the company of the Postmaster Surveyor, Col. A. A. Jayne. We can safely say that everybody present thoroughly enjoyed the evening and it provided a splendid opening for the season.

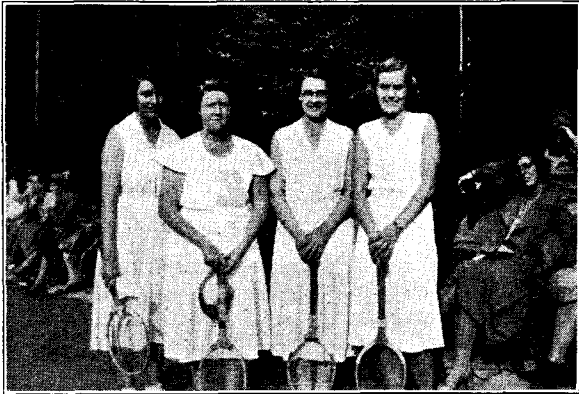
A series of attractive lectures has been arranged, commencing on Oct. 26 with a paper by the Traffic Superintendent, Mr. G. F. Findley, on "International Telephony."

Successive lectures will be held monthly and we hope and expect that the season will be as interesting and successful as in previous years.

Following in the train of the turnover of the phonogram work to the telegraph branch, certain telegraph officers are at present visiting the Traffic Department to obtain an insight into the organisation and working of the telephone system. This is being followed by a return visit of Traffic Officers to the Telegraph Department. The arrangement is undoubtedly in the best interests of the Service and will prove beneficial to all concerned.

## NORWICH DISTRICT NOTES.

The final of the District Managers' Tennis Shield Competition in the Eastern District, was played at Ipswich on Sept. 28, Miss Sumner and Miss Wilshire, last year's winners, representing Colchester, defeated Miss Inglis and Miss Johnson who represented Norwich, 6-1, 6-4, but in fairness to the



COLCHESTER TEAM. NORWICH TEAM.  
Miss Wilshire. Miss Sumner. Miss Inglis. Miss Johnston.

losers it must be said that the match was more even than perhaps the score suggests. After the match, spectators from the two offices proceeded, *en masse*, to a local Cafe for tea, where later Mr. F. C. French, the Norwich District Manager, presented the shield to the winners.

At the Annual General Meeting of the Norwich Post Office Sports Club, held on Sept. 29, at the end of the first complete working year, the Treasurer revealed the fact that there was a balance of £20 to start the winter's programme of football, hockey, badminton, and dances. The subsequent election of officers resulted in Mr. Redfern, the Head Postmaster; Mr. Gallop; and Mr. Pipes, being re-elected President, Treasurer, and Secretary respectively for the ensuing year.

The following letter received from a member of the public suggests possibilities for obtaining additional orders in Rural Districts:—

"Permit me to call your notice to the heinous state of affairs by which the Public Telephone business is conducted in an open shop, not in a cabinet. Do you wonder people hire private telephones?"

## GUILDFORD DISTRICT NOTES.

*Sales Representatives' and Group Meeting.*—Our monthly Sales Representatives' meeting was held in the morning of Friday, the 29th ult., when all present participated in a very helpful and stimulating discussion of the agenda.

The group meeting was held in the afternoon, when Handbook No. 1 was again carefully considered and discussed.

*Still More Guildford Records.*—During last month a call was received one morning, at about 10 a.m., from Mr. Powell-Jones, Secretary to the Telephone Development Association, to the effect that a personal friend, Mr. A. G. Macdonnell (the brilliant journalist whose articles in the *Daily Express* have aroused so much interest), urgently required service at Goldalming.

The Engineers were at once advised and arrangements made to connect that same afternoon. On arriving at the house, however, completion was not possible, owing to Mr. Macdonnell's absence until the following Monday, when the service was opened, to Mr. Macdonnell's very great satisfaction. A letter of warm appreciation was subsequently received from Mr. Powell-Jones.

On the morning of Thursday, Oct. 5, an agreement was received from Portsmouth Newspapers, Limited, with an urgent request for immediate service at Petersfield. Local engineers were advised, and although no staff was available until the afternoon, service was opened before 5 p.m., to the surprise and gratification of the subscribers.

*Telephone Staff Meetings.*—A series of staff meetings has been arranged to take place at various centres in this District during the winter months. The first of these was held at Haslemere on Sept. 28, under the chairmanship of Mr. H. C. France, Traffic Superintendent. There was a good attendance and considerable interest was taken in the paper read by Mr. France on "Demand Working." A general discussion followed, after which an opportunity was given to the telephonists present to see the new tickets, visible index file, loose leaf charge list, &c., which will be used when demand working is introduced.

Mr. Ingram, Head Postmaster of Haslemere, expressed his appreciation and that of the staff present, to Mr. France for the clear manner in which the new system of demand working had been explained to them.

## Silk & Cotton-Covered H.C.

Copper Wire.

### Asbestos-Covered Wire

Charcoal Iron Core Wire, Resistance and Fuse Wires, Binding Wires, &c., &c.

Braided and Twisted Wires, Bare Copper Strand and Flexibles of any Construction

Wire Ropes and Cords, down to the finest sizes, in Galvanised Steel, Phosphor Bronze, &c.

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## LONDON ENGINEERING DISTRICT NOTES.

*The Journal.*—Considerable regret is felt in the London Engineering District at the approaching demise of the *Telegraph and Telephone Journal*. This Journal has played an important part in the extensive developments involving engineering operations of considerable magnitude during the last few years and has been of increasing interest to the telephone engineers most intimately concerned. Its pages have provided a field for the publication of many extremely interesting articles which, without being highly technical, have been of great value to the Department in assisting the interchange of ideas between the Engineering staff and the Traffic and Sales staff. The Editor is to be congratulated on his achievement over a period of 20 years. He and the Journal will be remembered for many years to come.

*Exhibitions.*—An exhibition of a semi-permanent nature is being held by the Post Office at No. 73, Strand, where the ground floor and basement will be opened to the public daily from 9 a.m. to 10 p.m., except on Sundays, until Christmas. The exhibits will be changed from time to time. Those during the first period are principally concerned with automatic telephony and include a working automatic routiner connected to a bank of 10 group selectors; a 7-digit set incorporating line plant features; a demonstration of dial repairs and selector adjustments; a working 10 + 50 P.B.X. switchboard, together with various Plan No.'s, &c. A teleprinter (telex) is also exhibited and a cable manhole is available for inspection. A cinema is provided in the basement where films will be exhibited.

*Voice Frequency Telegraphs.*—This system has been further extended. 174 channels have been completed and made available for service, of which 117 are in use on routes to Dundee, Edinburgh, Derby, Birmingham, Glasgow, Manchester, Newcastle, Leeds and Liverpool.

*Chancery Lane Tube Station.*—The alteration to Chancery Lane Tube Station, in High Holborn, necessitated the diversion of 18 important balanced trunk and junction cables, including the London-Derby and London-Bristol cables. The route deviation was approximately 50 yds. and the conditions were regarded as being suitable for the employment of the "substitution" method. Generally, this method provides for the measurement of the capacity unbalance values of the quads of the length to be withdrawn and their substitution by quads in the new length having similar characteristics.

In each case the cable was first numbered from the terminal station to both points of interception; all the pairs were then diverted to a temporary cable over the affected portion of the route, thus rendering the old length free for testing. Capacity unbalance measurements were then taken on both the old and new lengths, and the process of substituting quads having similar characteristics, usually termed "selecting," was carried out. A jointing schedule was prepared, showing the crosses required to be inserted in the jointing of the cores, and, in effect, became a "selected" diversion schedule.

No difficulty was experienced in the selection of the quads, as the unbalance values on both the old and new cables were small and similar in character. The "substitution" method, although perhaps not ensuring the best possible overall capacity unbalance values as the more detailed re-balancing method, had, in this case, decided advantages, and enabled the work to be completed in a much shorter time, and at a great saving in cost.

*Area Correction Transfers.*—800 subscribers were transferred from Sloane Exchange to Kensington Exchange on Saturday, Oct. 14. These formed the second portion of a batch of approximately 1,800 subscribers to be

transferred, of which 250 were cut over at the opening of Kensington Automatic Exchange. The remainder will be transferred in the middle of next January.

These transfers are from one automatic exchange to another and are of interest as regards the arrangements made for dealing with the resulting special enquiry work after the transfer. Two portable changed number interception tables with associated automatic equipment have been fitted at Sloane. The tables are equipped with calling circuits from 50 relay sets to each of which varying numbers of final selector terminations have been connected according to the amount of incoming traffic.

Owing to the large number of circuits involved, change-over strips were fitted to enable final selector terminations to be connected to the changed number equipment without delay after the cut over. These strips will again be used for the January transfer and their efficacy was proved by the fact that on Oct. 14 all the lines were connected to changed number interception equipment within four minutes of the transfer.

*Bulk Electric Supply.*—The electric power supply for the various buildings, comprising "G.P.O.," King Edward Building, Mount Pleasant, West Central District Office, and Post Office Tube Railway, is obtained in bulk at a P.D. of 11,000 volts. Alternative supplies are available from the City of London and Charing Cross Electric Supply Companies and an automatic device for changing over from one supply to the other in case of failure is now being installed.

*Staff Notes.*—Mr. C. Graham has been appointed Sectional Engineer for the Centre External Section, vice Mr. Mitton, whose retirement was announced in last month's "Notes."

Mr. H. B. Somerville has been appointed Sectional Engineer for the South West External Section.

An Imperial Service Medal was presented to Mr. J. Cooper, S.W.11, at New Cross Exchange, on Oct. 6, 1933. Mr. Cooper first entered the Service on April 2, 1902. The presentation was made by the Sectional Engineer and was attended by a number of Mr. Cooper's colleagues.

*Swimming.*—On Sept. 19 our seventh annual gala, held at Marshall Street Baths, began with the 100 yds. Club Championship. For the second time in succession and the fourth altogether H. F. Crow won this event, with the excellent time of 65½ seconds. In striking contrast to this speedy event was the slow methodical judging of the L.B.H.A.S.A. Ladies' Diving Championship, a high standard of proficiency being attained by all competitors in this event.

The high light of the evening was the Inter-Section Team Championship for the Denman Cup, won this year by N.E. Internal, amongst the mingled cries of enthusiastic and disappointed supporters. The runners up, W. Internal, came in a very good second, themselves closely followed by Centre.

An innovation in team races this year was supplied by the inter-exchange mixed team handicap, which provided a very interesting and hard-fought race. The winners, Park, are to be congratulated on an excellent display, although Barnet, starting from scratch, were unfortunate in not securing a position. Royal finished a close-up second.

Leaving team races we returned to individual events, one of the most interesting in this category being the 100 yds. Junior Championship of the Civil Service for the "Sir Edward Ward" Challenge Cup. It was won in the record time of 61 seconds by R. Reeves, of Brighton. Heartiest congratulations! S. C. Raine, of Buckingham, was second with a time of 68 seconds.

To the man at scratch the handicapping may not have appeared all that could have been desired, but some finely contested races in the gentlemen's 33-yds. handicap were seen as a result of it. After elimination by heats seven swimmers met in the final, the first three places going respectively to Lowman, Lawrie and Hedges. The winner's time was 28 seconds, going at 10. The ladies' counterpart of this event was won by Miss Goldsmith, Miss Fuller and Miss Baird coming in second and third.

As a contrast to the bustle characteristic of modern youth, Mr. J. H. Bell, Assistant Superintending Engineer and a vice-president of the L.E.D.A.S.A., proved conclusively in the veterans' race that a prize can be secured just as easily with 35 seconds as with 18.

In lighter vein, members of the Highgate Diving Club gave us an excellent display of trick diving, with many variations; also a very realistic exhibition of how lives should not be saved.

Undoubtedly the most successful gala yet.

*Staff Salesmanship.*—During the month of September the staff of the London Engineering District was successful in obtaining orders for 39 exchange lines, 190 extensions and 993 hand-micro telephones, plugs and sockets, extension bells, extra receivers, &c.

## A BRIEF CHRONOLOGY FOR STUDENTS OF TELEGRAPHS, TELEPHONES AND POSTS.

BY HARRY G. SELLARS.

SUPPLEMENT No. 1.—TELEGRAPHY.

- |                |     |     |  |
|----------------|-----|-----|--|
| 1558           | ... | ... | John Baptista Porta described a "sympathetic" telegraph composed of two magnetic needles, each of which was imagined to be responsive at a distance to movements of the other.   |
| 1665           | ... | ... | Joseph Glanvil foretold communication at a distance of the Indies by means of "sympathetic" telegraphy.  |
| 1727           | ... | ... | Stephen Gray and Wheeler transmitted frictional electricity along 700 feet of insulated wire and discovered the difference between conductors and insulators.  |
| 1765           | ... | ... | Joseph Bozulus, in Rome, suggested a spark electric telegraph.   |
| 1773           | ... | ... | Odier, in Geneva, suggested a form of telegraphy.  |
| 1790           | ... | ... | Reveroni Saint Cyr proposed an electric telegraph for lottery drawings.  |
| 1794           | ... | ... | Boeckmann suggested a spark electric telegraph.  |
| 1796           | ... | ... | Joseph Bramah devised a hydraulic signalling system.   |
| 1798           | ... | ... | Henri Monton Berton suggested a form of electric telegraph.  |
| 1802           | ... | ... | Jean Alexandre, in Paris, introduced a step-by-step needle indicator A.B.C. telegraph apparatus.   |
| 1806           | ... | ... | Ralph Wedgwood submitted a frictional electricity system of telegraphy to the British Admiralty.   |
| 1816, Feb.     | ... | ... | J. Redman Coxe, of Philadelphia, suggested an electro-chemical telegraph.  |
| 1825           | ... | ... | P. L. Schilling introduced a needle telegraph at St. Petersburg.<br>Vallance devised a hydraulic signalling system.  |
| 1826           | ... | ... | Harrison Gray Dyar produced in New York a telegraph in which signals were produced by chemical discoloration of paper tape.  |
| 1827           | ... | ... | Jobard devised a hydraulic signalling system.  |
| 1828           | ... | ... | Kemp, of Edinburgh, suggested the use of earth-batteries.  |
| 1829           | ... | ... | T. W. C. Edwards claimed to have devised an apparatus for conveying signals through tubes—the "Auticatephor."  |
| 1830           | ... | ... | Hubert Reey devised a system of teletatodydaxie in which signals would be indicated by the electrical ignition of alcohol.<br>Abraham Booth lectured on electricity and suggested an electro-magnetic telegraph.   |
| 1832           | ... | ... | "Corpusculum" suggested an "earth return" for telegraph circuits and a typewriting telegraph.  |
| 1835           | ... | ... | S. F. B. Morse devised a working model telegraph using cast type set up in the transmitter which, moving regularly, closed and opened the circuit. He afterwards introduced a handkey and a receiver which printed zigzag lines on paper tape—a feature of the siphon recorder.  |
| 1836, Mar.     | ... | ... | Moncke exhibited a needle telegraph at Heidelberg.   |
| 1837           | ... | ... | Cooke introduced a "detector" for telegraph linemen and with Wheatstone, patented a two-needle telegraph.<br>Stratingh, of Groningen, devised an acoustic telegraph with two gongs of different tones.<br>American House of Representatives asked the Secretary to the Treasury to report on the propriety of establishing a system of telegraphs for the United States.<br>Amyot invented an automatic telegraph reproducing signals on paper tape. |
| 1837, June     | ... | ... | William Alexander, of Edinburgh, submitted a proposal for an electro-magnetic telegraph to the Treasury.<br>Morse, assisted by Leonard G. Gale, devised a telegraphic relay.   |
| 1837, Sept. 23 | ... | ... | Morse and Vail formed a partnership.   |
| 1838, Jan. 6   | ... | ... | Morse and Vail made a successful trial of a recording telegraph, the words "a patient waiter is no loser" being transmitted and received.  |
| 1838, Feb.     | ... | ... | Morse recorder successful through ten miles of wire.<br>Gauss suggested earth-batteries for telegraphic purposes.  |



- 1838, Sept. ... Patent refused in France for Morse recorder.
- 1839, Jan. ... *Vorszelmann de Heer* exhibited at Deventer an electro-physiological telegraph in which the operator received in his fingers combinations of electric shocks which represented letters of the alphabet.  
Steinheil experimented in transmitting time from a standard clock.
- 1840 ... R. S. Newell introduced wire rope for submarine cable.
- 1840, Nov. ... Wheatstone exhibited an electro-magnetic clock and proposed the distribution of correct time from a standard clock.
- 1841, Jan. ... Alexander Bain patented an electro-magnetic clock.  
Wheatstone patented a typeprinting telegraph.
- 1842, Oct. ... Bain used earth-batteries for working electric clocks.
- 1843 ... Cooke and Wheatstone patented a "sound" telegraph in which bells were used for signalling.  
J. B. Lindsay proposed a submarine electric Atlantic telegraph with bare wire and earth-batteries.
- 1844 ... Gauss, Bain, Weare and Steinheil dispensed with batteries on earth return circuits by using copper and zinc earth-plates at the respective ends.
- 1845 ... Werner Siemens patented a dial and printing telegraph apparatus.
- 1846 ... J. W. Wilkins constructed a relay consisting of movable coils of wire suspended between the poles of a magnet.  
Steinheil introduced a "lightning discharger" for telegraph receivers.
- 1849 ... Wilkins suggested a means of telegraphing from England to France without wires.  
W. O'Shaughnessy laid bare rods in the River Huldee in India and transmitted signals.  
Public telegraphs established in Prussia and Austria.
- 1850, Dec. ... George E. Dering patented a needle telegraph which was used on the Great Northern Railway and afterwards between London and Paris on the Dover-Calais cable.  
Public telegraphs established in Bavaria and Saxony.
- 1851 ... Public telegraphs established in France, Belgium, Wurttemberg, and Baden.
- 1852 ... Public telegraphs established in Sardinia, Parma, Modena, Tuscany, Hannover, Holland, Switzerland, and Brazil.
- 1853, Feb. ... A woman telegraphist appointed in England.  
Wilkins developed his relay and invented a writing telegraph in which the "pen" was placed between two electro-magnets and produced a zigzag line.  
Public telegraphs established in Sweden.
- 1854 ... Public telegraphs established in Denmark.  
C. W. Siemens patented a serrated plate lightning guard for telegraph apparatus.  
Women telegraphists employed in Switzerland.
- 1855 ... Public telegraphs established in Norway, Spain, and Portugal.
- 1856, May ... Petition signed in Southampton requesting the Emperor of France to permit a submarine cable to be laid between that port and Le Havre.  
Public telegraphs established in Russia.
- 1856, June ... System of telegraph (landline and cable) completed between New York and St. John's, Newfoundland to meet a transatlantic cable.  
Farmer, of U.S.A., suggested a form of multiplex telegraphy.
- 1856, July ... Isham Baggs patented an electric telegraph.
- 1857, Aug. 21 ... East India Company decided to grant pecuniary assistance to the Red Sea Telegraph Company to ensure telegraphic communication with India.  
Public telegraphs established in Sicily.  
French telegraph administration adopted the Morse telegraph.  
International Code of Flag Signals introduced.
- 1858 ... Women telegraphists employed in Norway.  
Reid invented pressure tanks for use in cable manufacture.
- 1859, Jan. ... Wheatstone described his automatic Morse telegraph system before the Paris Academy.  
Public telegraphs established in Greece.  
Wheatstone appointed by Board of Trade to report on Atlantic cables.
- 1860 ... Septimus Beardmore dispensed with batteries on earth return circuits by using an alloy of sodium and zinc as earth-plates at the respective ends.
- 1861, Oct. ... Siemens produced a magneto-electric type telegraph.
- 1861, Nov. ... Telegraph system between New York and San Francisco completed.
- 1862 ... Thomson constructed an astatic reflecting galvanometer.
- 1863 ... Women telegraphists employed in Sweden.  
Du Jardin invented a typeprinting telegraph system.
- 1864 ... Women telegraphists employed in Germany and Denmark.
- 1865 ... Expedition started to lay cables between Alaska and Siberia. Project abandoned when Atlantic cable was successful in 1866.  
Women telegraphists employed in Russia.
- 1866, Jan. ... S. A. Varley constructed a lightning protector for telegraph apparatus.
- 1869 ... Women telegraphists employed in France.
- 1870 ... London—Teheran telegraph opened.  
Munier introduced an arrangement for printing letters or figures as desired in telegraph receivers.  
Cable communication between England and Bombay completed.  
Women telegraphists employed in Austria.  
Cable laid between England and Jersey.
- 1871 ... Society of Telegraph Engineers and Electricians (Great Britain) formed.  
Women telegraphists employed in Hungary.
- 1873, April ... H. Highton used chemically treated tar as an insulating material.
- 1873, Nov. 27 ... Joseph Barker Stearns patented a system of duplex telegraphy.
- 1874, Oct. 23 ... Muirhead patented a system of duplex telegraphy.  
British Post Office introduced through switching arrangements for its A.B.C. telegraph system, serving public and private circuits.
- 1875, July 22 ... Union Telegraphique Internationale formed.
- 1876, Feb. ... J. J. Fahie patented a system of duplex telegraphy.
- 1876, May ... C. E. Webber suggested inland "deferred" telegrams.  
R. Hobson proposed that telegrams of 12 words, inclusive of addresses, should be accepted for sixpence.  
R. W. Johnston suggested an extension of the Metropolitan tube system.  
Automatic cable transmitter introduced by William Thomson and Fleeming Jenkin.
- 1877 ... Telegraph lines used for simultaneous telegraph and telephone communication.
- 1878 ... Women telegraphists employed in Holland.
- 1879 ... Women telegraphists employed in Belgium.
- 1880 ... Women telegraphists employed in Bulgaria, Portugal and Spain.  
Baudot designed an automatic 5-unit telegraph transmitter using cross-perforated paper tape.
- 1881 ... Women telegraphists employed in Roumania.
- 1882 ... Duprez constructed a reflecting galvanometer with a suspended rectangular coil in the magnetic field.
- 1883 ... Single duplex *baudot* multiplex telegraph opened on Paris—Nantes line (abandoned in 1887).  
Pneumatic multiple telegraph tape-perforating apparatus introduced into Central Telegraph Office, London.
- 1887 ... Oliver Heaviside showed how the effects of cable capacity could be overcome by loading coils.
- 1889 ... Hughes printing telegraph introduced into British Post Office.
- 1891 ... Sacco and Giacomini devised a mechanical distributor for use in telegraph printers.
- 1892 ... Double duplex Baudot multiplex telegraph opened on Marseille—Toulon line (abandoned in 1900).
- 1897 ... Baudot multiplex telegraph brought into permanent use between London and Paris.
- 1900 ... S. G. Brown constructed a regenerating transmitter.  
Siemens telegraph photo-printer duplexed.
- 1902 ... Favarger invented the polarised phonic-wheel motor for direct connexion to supply mains.  
Krarup proposed loading cables continuously with iron wire.

- 1903, Feb. 19 ... Rowland quadruple duplex telegraph opened between Berlin and Hamburg.
- 1903, Oct. 1 ... Teleprinter (Ferndrucker) exchange opened in Berlin.
- 1906 ... Teleprinter (Ferndrucker) tried in England. First Pupinised cable laid in Lake Constance. Creed keyboard telegraph tape perforators introduced into Central Telegraph Office, London.
- 1908 ... Factory established in Cassel, Germany, for the manufacture of glass telegraph poles, the glass being strengthened with strong wire threads. Bakeland produced "Bakelite" as a substitute for vulcanite.
- 1910 ... Quadruple duplex Baudot opened between London and Birmingham.
- 1911, Feb. 15 ... Telegram of 15,523 words transmitted from New York to Paris via London.
- 1912, Aug. 24 ... Fire at the Central Telegraph Office, London, destroyed the "Test Box" through which Provincial wires ran.
- 1914, Dec. ... 947,392 miles of overhead telegraph and telephone lines in Great Britain. 1,926,743 miles of underground lines.
- 1920, Dec. ... 1,063,372 miles of overhead telegraph and telephone lines in Great Britain. 3,657,285 miles of underground lines.
- 1927, Sept. ... International Scientific and Technical Telegraph and Telephone Conference held in Como. Committee on Inland Telegraph Service appointed.
- 1929, June ... Comité Consultatif International (Télégraphes) in Berlin considered a proposal to introduce a unit of speed to be called a "Baud," in honour of Emile Baudot.
- 1931, Jan. 15 ... Montreal—Ottawa 24 channel telegraph circuit (one pair of wires) put into commercial service.
- 1931, Feb. ... British and French Governments inaugurated teleprinter exchange systems for subscribers.
- 1931, Feb. 11 ... Official Conference of Telegraph Supervising Officers held in Leeds.
- 1931, Feb. 28 ... London—Teheran telegraph lines 8,500 kilometres (via Indo) closed after being in use for 61 years.
- 1931, Mar. ... Direct cable telegraphic communication opened between London and Buenos Aires and Rio de Janeiro.
- 1931, Mar. 31 ... Totals of telegrams passing through Central Telegraph Office, London, during previous twelve months:—Inland, 21,085,940; Press (pages) 1,375,001; Foreign, 7,902,940. £772,789 loss on British telegraph service during previous twelve months.
- 1931, May ... Teleprinter exchange opened in Italy.
- 1931, May 11 ... Comité Consultatif International des Communications Télégraphiques met in Berne.
- 1931, June ... Direct telegraph communication opened between Iraq and Persia.
- 1931, July 28 ... Postmaster-General supplied the following data concerning the Telegraph Service:—Capital investment in telegraph engineering plant and stores, £8,924,000; gross operating income, £4,211,000; net operating loss, £967,000.
- 1931, July 29 ... Imperial Communications Advisory Committee appointed a sub-committee to enquire into the causes and consequences of the discrepancy between the standard revenue and the present earnings of Imperial and International Communications, Limited.
- 1931, Aug. ... Regenerator relay used successfully on London—Capetown Beam radio telegraph circuit.
- 1931, Sept. 10 ... British Postmaster-General stated that the loss on telegraphs for 1930-31 was estimated at £997,000. Total loss on telegraphs since 1870, £48,300,000. Buffetaud introduced in France a Baudot distributor with three plates which permits the examination of brushes on retransmitting installations without stopping the distributor.
- 1931, Sept. 15 ... Demonstration of "voice frequency" took place near London. Twenty-four teleprinters were operated simultaneously over one pair of wires.
- 1931, Sept. 28 ... Telegraph Money Order Service between Great Britain and South Africa suspended. 16,000 telegrams to motor dealers handed in at Birmingham by a manufacturing firm.
- 1931, Oct. ... Co-operative scheme arranged between the Western Union Telegraph Company and the Radio Corporation of America (Communications) Inc.
- 1931, Oct. 19 ... Telegraph and Telephone Commissions of International Chamber of Commerce met in Paris.
- 1931, Nov. ... U.S.A. inaugurated a teleprinter exchange system for subscribers. First commercial installation of "Stenode" system of multiplex telegraphy working on the *Scotsman* London—Edinburgh private wire.
- 1931, Dec. ... Western Union Telegraph Company had in operation 1,875,812 miles of overhead lines, 3,879 miles underground and 30,768 nautical miles of submarine cable. German government inaugurated a modern teleprinter exchange system for subscribers. All Post Office special news circuits abolished during the year. Teleprinter displaced the Wheatstone automatic at many race meetings.
- 1932, Feb. 16 ... System of short telegrams (Kurztelegramm) inaugurated in Germany—length restricted to 8 words.
- 1932, Mar. ... An American automobile firm handed in 1,200,000 telegrams addressed to over 700 towns inviting clients to visit their local agencies. 80,000 were delivered in New York.
- 1932, Mar. 31 ... Number of telegrams passing through the Central Telegraph Office, London, during the previous twelve months:—Inland, 20,039,836; Press (pages), 1,278,157; and Foreign, 6,713,242.
- 1932, April 5 ... 10,000 telegrams despatched by a Dentifrice Company to chemists throughout the United Kingdom. In relation to the recommendations of the Commission for the reorganisation of the Inland Telegraph Service, it was stated that the aim of the Post Office was to abolish Morse working altogether, replacing existing Morse circuits by teleprinter operation or telephone.
- 1932, April 25 ... British Railway Clerks interested in a Parliamentary Bill took the unique step of deluging Members of Parliament with telegrams.
- 1932, May ... 100th anniversary of transmission of the first Morse code message celebrated in New York. Congratulatory speeches radio-telephoned from England (Marconi), Germany (Siemens), and France (Morse's granddaughter).
- 1932, July 1 ... British Night Letter Telegram Service extended to most towns in the United Kingdom.
- 1932, Aug. 15 ... London "Telex" Exchange opened. Teleprinters used on telephone subscribers lines for intercommunication and for transmission of telegrams to the Central Telegraph Office.
- 1932, Sept. 3 ... International Telegraph and Radiotelegraph Conferences opened at Madrid. 80 countries, 58 telegraph and wireless companies and 31 other organisations were represented by over 600 delegates.
- 1932, Oct. 27 ... At Madrid International Telegraph Conference the British delegation refused to agree to a proposal to raise charges for telegrams and telephones from a sterling to a gold basis. A proposal by Great Britain to allow the administration some latitude in the matter was lost by 27 votes to 6. The British delegation then announced that in signing the Convention they would make formal reservation refusing to be bound by the regulation. Some of the delegates who voted with the majority then spoke in the same sense.
- 1932, Dec. 10 ... Madrid International Telecommunication Conferences formally closed. Among the many decisions reached were the following. The rate for "Urgent" telegrams, at present treble the ordinary rate, to be reduced to double the ordinary rate on April 1, 1933. On the same date "letter telegrams," as extra-European services, to be charged at one-third ordinary rates with a minimum charge as for 25 words. A new "night letter telegram" service to be introduced between European countries at half rates, with a maximum charge as for 25 words and delivery on the morning after handing in. Maximum length of code words to be reduced to five letters and charges for code telegrams to be reduced to 60% of the full rates in services with countries outside Europe and to 70% in services within Europe. An Article was re-enacted under which it would be necessary for international telegraph and telephone rates to be revised and fixed upon the current exchange value of sterling in relation to gold. (The British delegation accepted no obligation under this regulation.) Provisions were adopted for avoiding unnecessarily high power by radio stations, for reducing interference between wireless services, and for ensuring a wider international observance of the agreed apportionment of wavebands. The band of wavelengths for broading was extended, and it was agreed to hold a conference in Switzerland early in the following year to re-allocate radio wavelengths.

# THE Telegraph and Telephone Journal.

VOL. XX.

DECEMBER, 1933. (FINAL ISSUE.)

No. 225.

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*All correspondence relating to advertisements should be addressed to MESSRS. SELLS, LTD., 168, Fleet Street, London, E.C.4.*

## TELEGRAPH AND TELEPHONE MEN AND WOMEN.

CXV.

MR. W. H. GUNSTON.

THE portrait gallery of notable men and women in the Telegraph and Telephone Service cannot be more appropriately brought to a close than by adding W. H. Gunston, whose hand and brain have guided this *Journal* since its birth in October, 1914, and who is primarily responsible for any success which it has achieved.

Born in 1873, Gunston was educated at a private school and joined the ranks of the National Telephone Company in May, 1892. He has thus had over 41 years of unbroken telephone service. When the *National Telephone Journal* was inaugurated in April, 1906, he was appointed first Sub-Editor, and then a year or two later Acting Editor. Transferred to the Post Office on Jan. 1, 1912, Gunston was the obvious choice as Managing Editor of this *Journal*: and he tackled with success a task which was most difficult owing to the outbreak of war before the appearance of its first



[Photograph by Howard Brooke, Rushey Green.]

number. Apart from his editorial duties, he has contributed many original articles to our pages; and his verse and prose are as familiar to our readers as they were to those of *Judy*, *Moonshine*, and other publications thirty years ago.

Fond of walking and dancing, Gunston has wandered over most of Western Europe; and as a linguist he has studied Omar Khayyam in the original. He finds pleasure in puzzling over Arabic and Persian texts and, as he puts it, in the acquirement of unremunerative knowledge generally.

Those who have been fortunate enough to be associated with him on the Editorial Committee will always carry with them the pleasantest recollection of his lovable personality; and in the columns of this *Journal* his happy turn of phrase, his kindly wit, and his scholarly handling of statistical data have won him the affection and respect of a wide circle of readers. He may look back on his official career with pride, and we wish him happiness in his coming retirement.

# The Telegraph and Telephone Journal.

PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

Editing and Organising Committee - - -	}	Col. A. A. JAYNE.
		J. STUART JONES.
		W. D. SHARP.
		W. H. U. NAPIER.
		G. H. TAYLOR.
Managing Editor - -	}	J. W. WISSENDEN.
		W. H. GUNSTON.

## NOTICES.

As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications together with photographs, diagrams, or other illustrations, should be addressed to him at the G.P.O. North, London, E.C.1. The Managing Editor will not be responsible for any manuscripts which he finds himself unable to use, but he will take the utmost care to return such manuscripts as promptly as possible. Photographs illustrating accepted articles will be returned if desired.

VOL. XX. DECEMBER, 1933. No. 225.

## A VALEDICTORY LETTER FROM THE POST-MASTER-GENERAL.

THE following letter has been received by the Chairman of the Editing Committee:—

Nov. 14, 1933.

DEAR MR. NAPIER.

I write to you as Chairman of the Editorial Committee of the *Telegraph and Telephone Journal*.

I understand that the next number of the *Journal* will be the last, and I want to express my keen regret at its passing. The *Journal* has done excellent work in keeping its readers in touch with the latest developments in telegraph and telephone technique, and in producing comparative statistics of telephone development with admirable accuracy and promptitude. It has handled difficult and even controversial subjects with impartiality, kindness and humour. It has welcomed the recent developments in publicity and salesmanship, and has produced excellent and well-illustrated accounts of what is being done in this direction. Lastly, by means of its series of "Telegraph and Telephone Men and Women," by its regular feature, "We Telephonists," and by its notes from the districts, it has helped to keep to the fore the human aspect of the work of our vast organisation.

I should like to offer my warm thanks to you and your colleagues on the Editorial Committee. I should like in particular to thank Mr. Gunston, who has edited the *Journal* throughout its nineteen years of publication. I think you will agree that the main work of the *Journal* has fallen to him, and that its success is mainly due to his efforts. The Telegraph and Telephone services owe him a big debt of gratitude.

I should be glad if you would appeal to readers of the *Journal* to transfer to the new *Post Office Magazine* the support which they have hitherto given to the *Journal*. I am very gratified by the welcome which the new project has already received, and I have every confidence that it will achieve success.

(Sgd.) KINGSLEY WOOD.

W. H. U. NAPIER, Esq., C.B.E.

## OUR RECORD.

THE *Telegraph and Telephone Journal* was launched in the year 1914, mainly at the instance of the late Sir Andrew Ogilvie, Second Secretary of the Post Office. The preliminary arrangements were undertaken by Mr. J. W. Wissenden (who with the late Mr. John Lee formed the original Editing Committee) and completed in the early Summer of that year, but, before the first issue was published in October, war had broken out. This was an inauspicious commencement, for the upheaval naturally circumscribed the usefulness of the *Journal* and affected its circulation adversely. This last effect, however, was not felt until a year later. The circulation rose from an estimated 10,000 to 13,000, but by the end of 1915 the drain on the staff caused by enlistment and by the loan of many of its members to other Government Offices, caused it to drop by rapid steps to 5,000. Owing to the enormous increase in the cost of paper and printing, the price of the *Journal* had to be raised from 2d. to 3d., and there is no doubt that the higher price militated against a recovery of the circulation to its original figure, although 6,000 was reached during the trade boom after the Armistice. At one time during the War, when paper was being rationed, the existence of the *Journal* was threatened, but it was successfully maintained that the *Journal* was serving at least as useful a purpose as some of the chatty weekly purveyors of sentiment, sensation, and domesticity whose paper supply was not threatened.

The *Journal* was designed to be an open court for the exchange of opinion, a vehicle for the dissemination of ideas and information, and a chronicle of events in the telephonic, telegraphic, and wireless world. Its aim was to keep its readers abreast of the latest developments in those fields by means of articles descriptive and informative rather than technical. Its columns were the channels through which the papers read before the London Telephone and Telegraph Society were broadcast to the staff, and as these papers were mainly by experts in their respective subjects, they formed not the least valuable part of the *Journal's* contents.

As we have said, the original Editing Committee consisted of Mr. John Lee and Mr. J. W. Wissenden. The Managing Editor was Mr. W. H. Gunston, who had acted in a similar capacity to the old *National Telephone Journal*, and he and Mr. Wissenden have therefore been concerned in the production of the *Journal* since its beginning right up to the present time. Mr. Wissenden, besides a constant co-operation in the editorial work, has done yeoman service in smoothing the financial path of the *Journal*.

Mr. Lee (subsequently Controller of the Central Telegraph Office) whose eloquent pen furnished so many stimulating articles to the *Journal* during the first twelve years of its life, and whose expert knowledge and guidance were so invaluable in those years, retired in 1926. His lamented death shortly afterwards was no doubt partly due to his overtaxing his abundant energies. The first addition to the original Committee was Mr. J. J. Tyrrell (also of the C.T.O.) to whose work we shall refer later. In the September of the same year (1919) it was thought that the interests of the London Telephone Service should be represented on the Committee, and the Controller, Mr. W. A. Valentine became a member, acting as Chairman on the retirement of Mr. Lee, and also doing good work in promoting the popularity of the *Journal* in London. Mr. J. Stuart Jones, our last Chairman, joined the Committee in 1922, taking a warm interest in all aspects of the *Journal's* work, and especially (as Controller of the C.T.O.) in the telegraph side. Another active member from 1926-1929 was Mr. J. Stirling (Deputy Controller, London Telephone Service). In 1926 also, Mr. W. D. Sharp (now Principal, Inland Telegraphs Branch) joined the Committee and besides contributing to the editorial columns, constantly reviewed telegraphic questions from the administrative angle.

In 1929, Col. A. A. Jayne (now Postmaster-Surveyor, Birmingham) was asked to join the Committee as representative of the provincial staff, and devoted much energy to proposals for increasing the circulation of the *Journal* in the provinces; and in the same year, Mr. W. H. U. Napier, the new Controller of the London Telephone Service, succeeded Mr. Valentine on the Committee. He has always taken the liveliest interest in London's place in the *Journal*, which, as his district furnishes nearly a quarter of our readers, is no inconsiderable one. Finally, in order to keep in touch with the Sales and Publicity Section, a year ago the Committee asked Mr. G. H. Taylor (the Controller) for his assistance, and he very cordially gave it.

In pursuance of our mandate to keep our readers informed of the latest developments in the telephone and telegraph field, we published in early issues of the *Journal* descriptions of the Siemens High Speed Telegraph, the Murray Multiplex (by the inventor, Mr. Donald Murray), the use of the Lamson Carrier for distributing telegraph forms, the use of the Typewriter in Telegraphy, some Non-Technical Notes on the Darlington automatic exchange, and articles on Field Telephony. Special numbers were devoted to the Central Telegraph Office and the London Telephone Service, and the work of those offices was fully described in all its aspects. Letters from the Front, of course, formed a feature of the War days, a regular series from Mr. A. A. Jayne, "With the Expeditionary Force," being the first of his many contributions to our pages. Indeed it is interesting to note that A. P. Ogilvie and "J. J. T." (Mr. Tyrrell, late of the C.T.O.) two more of our regular contributors made their bow in the first issue. In the issue of June, 1915, "J. J. T." first contributed his "Telegraphic Memorabilia," which have appeared without a break up to and including the present month. This invaluable chronicle and commentary on telegraph doings, collected from all sources, soon became a special feature of the *Journal* much appreciated by telegraph men all over the world.

The second, third and fourth volumes also contain many articles on air raids and doings at the different fronts, letters from telephonists with the Forces in France, and lists of military and other war-time honours conferred on Post Office staff, together with numerous portraits of the recipients. Several articles by telephonists dealing with their experiences during air raids stand as eloquent records of the devotion to duty of the operating staff in those stirring days.

In volume six commenced Mr. Tyrrell's series of articles explaining the Baudot system with great detail and clarity. This series was followed in subsequent years by other equally instructive series, such as Mr. F. Addey's articles on "Modern Wireless Telegraphy and Telephony," Mr. Crotch's articles "How the Telephone Works," Col. Purves' exhaustive paper on "The Post Office and Automatic Telephony," Mr. C. W. Brown's series on "Automatic Telephony," Mr. G. T. Archibald's series "Notes on Telegraph Practice," Mr. A. P. Ogilvie's articles on "The Teleprinter" and Mr. J. F. Darby's articles on "Long Distance Telephony."

The papers read before the London and other Telephone and Telegraph Societies, mostly of an authoritative character, provided the *Journal* with some of its best material, and enabled it at the same time to disseminate amongst a wider circle than that comprised in a lecture hall many valuable and helpful treatises. They included (to mention only a few) papers by such masters of their subject as Sir Henry Bunbury, Sir Thomas Purves, Col. A. G. Lee, Sir Wm. Slingo, Sir Andrew Ogilvie, Messrs. L. Simon, John Lee, A. J. Stubbs, F. Gill, J. Stuart Jones, H. G. Trayfoot, H. Townshend, M. C. Pink, G. T. Archibald, A. J. Waldegrave, A. B. Hart, N. Ashbridge, Col. Crawley and others.

In pursuance of the other part of our programme, viz., to provide an open court for the exchange of opinion we have printed articles containing useful suggestions by officers of all grades, and our correspondence columns have been open for the discussion of all questions except the obviously inadmissible. In addition we have chronicled, through the diligence of our local correspondents, local official events, personal news, sporting and dramatic events. We have also regularly reviewed the excellent productions of the G.P.O. Players and other Service dramatic societies.

The practice inaugurated in the first volume of providing our readers with full non-technical accounts of all manifestations of telephone and telegraph progress has been assiduously pursued. Descriptions of new automatic exchanges, new services, improvements in trunk line practice, telegraph office reforms, &c., have regularly appeared. Developments which we have followed and described with close and special interest have been the ever-progressing conversion of the telephone system to automatic working, the introduction of the teleprinter and the Telex services, the introduction of Demand Working on the trunk system, and the rapid spread of overseas telephone communication. When the *Journal* was first published overseas telephone service was practically confined to communication with Paris, Brussels and Antwerp. From the laying of the first Anglo-Dutch cable in 1922, the extension of service to Germany in 1926 and the opening of radio telephone

communication with America in 1927, we have chronicled the spread of the overseas service to practically all countries in Europe and North America, to most countries in South America, to Egypt, South Africa, Australia, New Zealand, India and the Dutch Indies until British telephone subscribers can now obtain communication with 95% of the telephone subscribers in the world.

We resisted many pleas for the institution of a fashion or "home notes" column for the operators as being outside our scope, but in July, 1922, was commenced the page "We Telephonists—Talk of Many Things," successfully conducted by Miss J. M. McMillan as editress. Miss McMillan is well known to us all as the author of the happily-conceived annual telephone play, and has besides contributed many articles to the *Journal* on more serious topics. We cannot here omit a tribute to the articles by "Percy Flage" (Mr. R. C. Atkins), whose wit and charm of expression is a distinctive feature of this page. In this the last number of the *Journal* it is fitting that the veil of anonymity, with which they have modestly surrounded themselves, should be torn away.

Believing, with the compiler of the "Arabian Nights," that the records of past times serve as guidance and instruction to those who come after, we have been at pains to collect and reprint reports and documents relating to the dawn of telegraphy and telephony, the early Atlantic cables, the old telegraph galleries, and the first telephone exchange. A feature of the last few volumes has been the valuable and painstaking chronology of Mr. H. Sellars, now brought down to the present time. Another feature of the *Journal* has been articles containing comparative statistics and accounts of the development of foreign countries. Comparisons are said to be odious, but the use of fairly-presented statistics undoubtedly afford useful standards by which to mark our progress. We have from time to time published translations from foreign journals illustrative of telegraph and telephone practice abroad, and in addition have received interesting contributions from our fellow countrymen overseas, such as the articles by the late Miss Minter on Telephones in Constantinople, by Mr. Praat on Ceylon, Mr. Burstall on Egypt, Mr. Pook on Dar-es-Salaam, Mr. Hincks on Portugal and Mr. Egleton on South Africa, to name only a few of our colonial and foreign readers who have displayed a warm interest in the *Journal*. The reports of various commissions and committees, where of general interest, have been summarised in our pages. Mr. F. W. Phillips has furnished our readers with lively impressions of the Washington, Prague, Madrid and Lucerne International Conferences, while the Paris Conference was dealt with fully by Messrs. F. H. S. Grant, F. Strong, John Lee and E. E. Street.

In our tenth volume was commenced the series of portraits and short biographical sketches of leading Telegraph and Telephone Men and Women. Personal chronicles of retiring or promoted officers have also been a feature of the *Journal*, and the record of many pioneers in these services has brought to light interesting facts concerning the early days of wire communication.

During the 20 years of our life we have reviewed the principal works in the English language (and many foreign books) dealing with the subject of our work.

Finally, in our editorial columns we have touched on most of the passing events in the telegraph and telephone world, especially addressing ourselves to the correction of wrong impressions such as frequently had currency and to challenging erroneous statements (published from time to time) concerning the service. Before the establishment of the Publicity Section we often found it necessary to combat ill-founded criticisms with the trusty weapon of correct facts and figures. Besides the Editorial body, most of the chief officers of the Post Office on the telegraph and telephone side have contributed editorials on non-controversial topics—amongst them Sir Andrew Ogilvie, Mr. L. T. Horne, Mr. A. B. Walkley, Mr. G. F. Preston, Mr. A. R. Kidner, Mr. R. A. Dalzell, Mr. Leon Simon and Mr. F. H. S. Grant.

Before concluding we should like to express our indebtedness to those writers not already mentioned who have contributed either regularly or occasionally to our columns for many years past, and to the local correspondents who have furnished monthly those notes which besides recording the social activities of our provincial readers have also recorded many important and interesting events pertaining to the services. We may instance Mr. H. Dive, Mr. E. H. Shaughnessy, Mr. W. F. Taylor, Mr. B. S. T. Wallace, Mr. A. E. Coombs, Mr. R. S. Grosvenor, Mr. D. Howieson, Col. A. C. Booth, Mr. J. M. Crombie, Mr. J. Skinner, Mr. W. C. Griffith, Mr. H. W. Camp, Mr. G. F. Greenham, Mr. J. F. Lane, Mr. R. T. Gregory, Mr. H. G. S. Peck, Mr. L. Bartington, Mr. J. F. Murray, Mr. W. E. Dance, Mr. F. J. Frost, Miss Agnes Cox, Miss M. Clement, Miss C. K. Hooper, and others too numerous to cite by name. We are also grateful for the onerous work of distribution performed by our local agents and by our successive representatives at the Stores Department, Messrs. J. Robson, W. E. Oughton, A. S. Weston, D. D. Phillip and S. S. Skeel.

We hope that their efforts and ours have contributed something towards keeping the staff in general informed of the progressive developments of telegraphy and telephony in all their aspects during the past 20 years, towards their entertainment (may we add) as well as their instruction, and towards arousing in all a fuller interest in the great task in which they, in common with ourselves, are engaged. If we have succeeded in this aim our labours will not have been in vain. We have received ample evidence of the interest taken by the telegraph and telephone staff in the technical and semi-technical articles which have appeared in our columns. We hope—and, indeed, believe—that the need which the *Journal* has tried to meet will continue to be met after the *Journal* has passed away.

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## THE WORLD'S TELEPHONES.

TELEPHONE statistics are so soon out of date, and their upward (or downward) trend has recently become so incalculable, that it is desirable to collect and summarise them every year as speedily as possible. In another column we publish tables of the development of the world at the end of 1932, but already another eleven months with their unpredictable developments have elapsed since that date. The figures at least represent, however, the latest procurable

data on the subject. Not many years ago it could be estimated with safety that not less than a million telephones would be added to the world's total in the course of a year, but it will be seen from the article referred to that that total decreased by over two million in 1932. There is a good prospect that nothing like so large a fall will be recorded in 1933. Figures recently received from America show signs of a recovery—whether permanent or not we are unable yet to gauge—which should favourably affect the figures for the current year.

It may therefore be hoped that the 33,000,000 million telephones of 1932 will represent the lowest figure to which the total of 35,340,000 reached in 1930 will fall. One satisfactory feature of those statistics is that the total for Great Britain has not only shown no sign of falling off, but has actually increased during these unfavourable years, and there is every likelihood that British telephone development will show an even greater increase in 1933 than in 1932.

### "THE POST OFFICE MAGAZINE."

IN bidding adieu to our readers we take a last opportunity of cordially recommending to their support, *The Post Office Magazine*, which is due to make its appearance on the first Friday in January. We learn that all grades of the staff in all offices are welcoming the venture with enthusiasm, and that advance orders have already reached and passed the first one hundred thousand.

The *Magazine* aims at reaching every section of the staff and will be a co-operative effort on the part of all concerned. Its pages will be as open to the country telephonist as to the head of a London department. The only qualification required of contributors is that they have something of interest to tell to the rest of their colleagues.

The *Magazine* will offer topical illustrated articles on Post Office subjects, pages of pictures from far and near, personal notes and news, a page of sports and a radio page, news from every area in England, Wales, Scotland, and Northern Ireland, and lists of promotions and retirements. When we add that the price is one penny, there does not seem much more to be said to ensure the *Magazine's* popularity.

With an *Ave, morituri te salutant!* we of the *Telegraph and Telephone Journal*, now at its last issue, offer our sincerest greetings to the newcomer and wish it every success.

### HIC ET UBIQUE.

By the time these pages are in the hands of our readers Christmas will be well in sight, and we take the opportunity of adding to our valedictory greeting all seasonable good wishes for a "Merry Christmas" and the earnest hope that 1934 may truly be a happy New Year.

Our contemporary, *Telephony*, had recently an article on Japanese telephone conditions containing the oft-repeated statement

that would be subscribers in Japan have to pay a premium before they are allotted a telephone number. This is said to be, on an average, 700 Yen (say £42) in Tokio. It is also said that in 1933 only 4,000 out of nearly 40,000 applications for telephone service were accepted. Nevertheless, we note that the telephone development of Tokio, despite this handicap is over 4 per 100 of population, i.e., about half that of Vienna or Sydney, and about two-thirds that of Buenos Aires.

We also learn from *Telephony*, of Chicago, that a net gain in telephone stations is reported in September and October last in the United States for the first time for 3 years. The Bell system reported a net gain of 53,000 telephones in September. Of this total the New York Co. gained 9,900 (as against a loss of 11,167 in September last year), the Illinois Co. (Chicago) 6,753 as against a loss of 4,242, the Pacific Co. a gain of 1,526 in August (increased in September), in Wisconsin 1,559 telephones were gained, in Southern New England 1,717, in Baltimore 938, and in Georgia 1,104. The New England Co. reported a net loss of 2,470 stations as compared with 10,880 in September last year.

The independent companies likewise report increases, but definite figures are not yet available.

The foregoing figures indicate that the heavy loss of telephone stations which has occurred in America during the last two years has stopped at least for the present. We may hope that the process of recovery will be continued.

Following the example of other European Administrations in abolishing or reducing installation charges, the Czecho-Slovakian Administration has recently reduced the installation charge from 2,000 crowns to 500 crowns. This step is said to have aided materially in stimulating new business.

At the end of October a direct trunk circuit between London and Warsaw was brought into use. Service to Poland had hitherto been provided by switching at Berlin.

According to the report of the Postmaster-General for South Africa, "measured service" tariff in Johannesburg and on the Witwatersrand is being replaced by a "message rate" tariff.

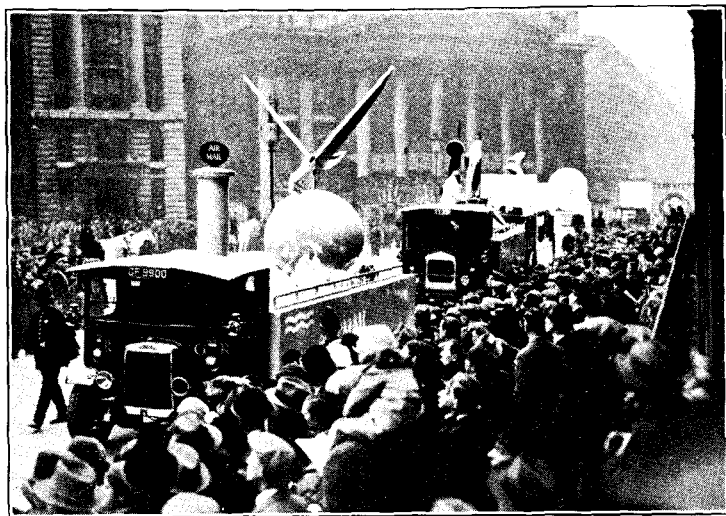
The new tariff provides for a uniform basic annual payment of £3 12s., plus 1½d. for every call, and is regarded as more convenient and attractive than the measured service tariff which contemplates payment for a minimum number of calls regardless of the subscriber's actual needs. With the object of making the new rate still more attractive, subscribers throughout the Witwatersrand system may now pay the rental charge quarterly, half-yearly, or annually, whilst the call fee accounts are settled monthly.

The result of the change was remarkable, and notwithstanding the adverse financial conditions which existed throughout the year, the increase in the number of subscribers in Johannesburg since the introduction of the new rate has greatly exceeded all expectations. Whilst the sales campaign is in a large measure responsible for the development, it is clearly evident that the new form of tariff, with its easy payment system, is proving very acceptable to a large section of the community which was not disposed to subscribe to the system at the tariffs previously in force, and that, upon the return to normal financial conditions, a further considerable number of new subscribers, particularly in the residential areas, can confidently be looked for.

The new rate has been introduced at Pretoria and Kimberley, where ample plant is also available to meet additional development. The result in Pretoria has been highly satisfactory, and there is no reason to fear that the public at Kimberley will not similarly welcome the change of tariff.

## POST OFFICE CARS IN THE LORD MAYOR'S SHOW.

ANCIENT and modern were curiously blended in this year's Lord Mayor's Show, when the Lord Mayor and City Officers, in some of the panoply of bygone centuries, were preceded by cars exhibiting the development of various modes of communication.



(By courtesy of Sport & General Press Agency Ltd.)

THE AIR MAIL AND TELEPHONE SERVICE CARS PASSING THE MANSION HOUSE.

Along with cars exhibiting the Cable companies', the Radio, and the Railway companies' progress, were the cars depicted in our illustrations, one containing an ingenious representation of the flight of the air-mail over the globe, and another the development



(By courtesy of Sport & General Press Agency Ltd.)

CAR REPRESENTING A HOUSEWIFE TELEPHONING TO HER BUTCHER.

of the telephone habit in private life, showing a housewife passing an order to her butcher and bearing the watchword "Get on the Telephone." Both cars, which reflect great credit on the designers, attracted considerable attention in the crowds through which the procession passed.

## THE PASSING OF MORSE.

BY B. BRADLEY, B.Sc. HONS. (ECON.), (*Headquarters Traffic Section*).

THE scheme to abolish morse working in the British Post Office may be regarded as having reached its final stage.

With the opening of the new phonogram and telephone-telegram equipment at Edinburgh, morse working has now been abolished at all provincial zone centres. The installation of the necessary equipment to cease Morse at the area and group centres is well in hand and will be completed early next year. The arrangements for the abolition of morse in London are in an advanced stage, and conversion to telephone working should commence early in the New Year. It will not be many months, therefore, before the morse code and morse working will, for all practical purposes, have been abolished in the British Post Office after being, from almost the inception of communication by electric telegraph until recent years, the principal method used for the transmission of telegrams.

Although morse working had been superseded by the baudot over the main telegraph routes by the end of the War, and telephonic transmission was gradually supplanting it at offices which dealt with an average of less than 70 messages a day, this method of working existed at all head offices and salaried sub-offices and quite a number of scale payment offices in 1929, when the American Commission made its report. Since that date a complete revolution in the Inland Telegraph Service has been taking place. Teleprinter working has been extended to supersede all inland baudot circuits and the busy morse circuits on the one hand, and telephone circuits have been rapidly replacing the remaining lightly-loaded morse circuits on the other.

There are two chapters in the story of the abolition of morse in the British Post Office. The first, describing the general introduction of teleprinters to replace the baudots and the busier morse instruments, was given in a joint paper read by Mr. A. P. Ogilvie and Mr. F. W. Dopson at a meeting of the London Telegraph and Telephone Society in 1931 and reprinted in the May and June (1931) issues of this Journal.

It is the purpose of this article to give briefly the second chapter—the substitution of telephonic for morse transmission over routes where it was not economical to introduce teleprinters.

One of the merits of the teleprinter is the relatively low circuit load which makes its introduction economical compared with morse, and consequently, under the teleprinter programme, morse routes generally which carried over 150 messages a day were converted to teleprinter working.

It was already the policy, when the circumstances were advantageous, to substitute telephone for morse transmission where the traffic load did not exceed 70 messages a day, and when it was decided to introduce teleprinters at offices where an average of 150 messages a day was dealt with, a comprehensive review of the telegraph routing arrangements for the whole of the country was undertaken in order to reduce the number of small transmitting offices and to concentrate the traffic by telephone on the teleprinter centres.

The number of transmitting offices had already been reduced in previous years from about 1,200 to 600, and under the revised scheme of grouping it was arranged for the number to be further reduced to about 230. This drastic reduction in the number of transmitting offices was made possible by (1) the zone routing scheme introduced in 1922, (2) the decline in telegraph traffic, (3) the increase, despite the decline in telegraph traffic, in the number of telegrams received from and delivered to subscribers



by telephone and (4) the rapid extension of the telephone system since the War, which facilitated the provision of the necessary telephone circuits, particularly where spares were available in underground cables.

Fig. 1 shows the new telegraph grouping arranged for one part of the country.

The new grouping prepared the way for the abolition of morse at the group centres.

Before, however, it could be definitely decided that morse working should be abolished altogether, it had to be demonstrated that (1) traffic loads up to 150 messages a day could be transmitted efficiently by telephone, (2) the secrecy of telegrams would not

large offices and that conditions (2) and (3) could be satisfied. The experiments were therefore extended to include the remaining morse circuits at Leeds.

Modified ancillary equipment, which permitted typewriters to be used by the operators, was installed in the Leeds instrument room. In addition to the operating positions the Engineer-in-Chief installed a special panel, provided with suitable facilities, to expedite the distribution of outgoing messages to positions. The equipment at the operating positions consisted of (1) five ancillary panels, each wired for two operators' positions, at which typewriters could be used, (2) two special lamps per position, one coloured red and the other green, to indicate when a staffed position was idle (red) or engaged (green) and (3) one valve amplifier, with volume control, per position. A red light (position staffed but idle) appeared over the position as soon as an operator inserted the plug of her head-set in her position jack, and the light was changed to green (position staffed and engaged) when the operator plugged into a circuit jack. The green light was changed to red immediately the circuit was disconnected.

The facilities provided on the distribution panel consisted of—

- (1) two rows of press-button keys—one key for each telephone-telegram circuit—and
- (2) one row of lamps—one lamp for each operating position.

It was arranged, on the depression of the key associated with any circuit connected to a position, for the lamp associated with that position to glow; otherwise the position lamps remained dark. This enabled the distributor, when a message arrived for transmission to an out office, to ascertain, by depressing the relative circuit key, whether the office concerned was already engaged at an operating position (indicated by the glow of the position lamp), and, if so, the message would be taken immediately to the operator at the engaged position for disposal. When a message arrived for an out office that was found not to be engaged at a position (no glow of a position lamp on depression of circuit key) it would be taken to a position at which a red (position idle) lamp was glowing.

These distribution facilities, which enabled the distributor readily to transfer messages coming to hand for offices already connected to the equipment to the engaged operators, and to dispose of other messages to disengaged operators, met condition No. 3.

The equipment provided at the out offices consisted mainly of the new hand microphone type of telephone instrument, but where the local conditions were noisy, or the number of telegrams dealt with made it desirable for the operator to have both hands free, a pedestal instrument, with headgear attachment instead of a bell receiver, was fitted. Typewriter reception was arranged at two offices and in these cases operators' headgear instruments of standard pattern were supplied.

In some cases the telephone instrument was located at or behind the counter of the public office, and to enable quiet speaking into the microphone, and thus prevent any member of the public overhearing messages being dictated, each operating position at the main office was, as already mentioned, provided with an amplifier, with volume control. In addition, the circuits on which quiet speaking was necessary were specially marked on each position panel to warn the operators that special amplification of received speech was necessary. It was arranged, before the experimental equipment was brought into use, for a number of the Leeds touch-type operators to be trained in the new operating procedure and in typing voiced messages. The out office operators also received suitable instruction, which included the training of a number of the staff at the two typewriter offices in touch-typing.

Traffic records were taken periodically during the course of the experiment. They clearly proved that the operator output and standard of service under telephone-telegram working conditions,

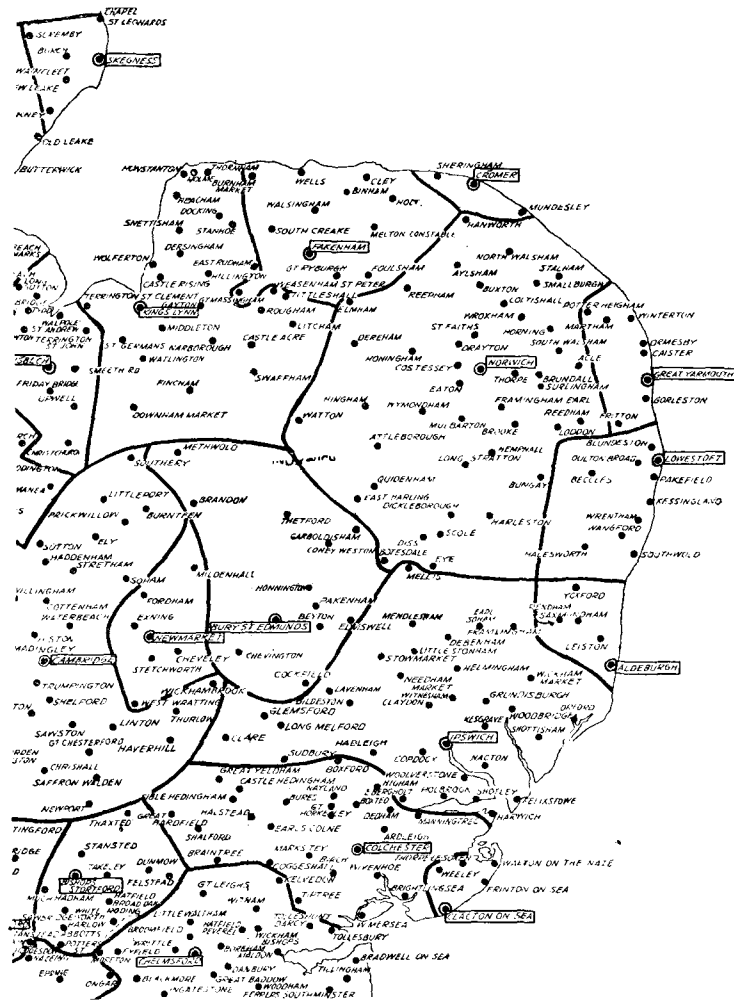


FIG. 1.

be jeopardised by telephonic transmission from the out offices and (3) the internal distribution arrangements at the larger offices would be efficient.

The first step was to prove that No. 1 was possible. Experiments were carried out at a few selected offices, and morse routes were chosen to cover typical samples of traffic. The operators were provided with typewriters and with efficient telephone equipment, including valve amplifiers where necessary, to ensure satisfactory transmission. The equipment at the main office, was in each case, installed in the instrument room. The experiments demonstrated that traffic loads up to at least 150 telegrams a day could be transmitted as efficiently over a direct telephone circuit, the operators using typewriters, as over a morse circuit.

It had now to be demonstrated that telephone-telegram working could satisfactorily replace morse concentrator working at the

with typewriter reception, were certainly as good as under morse working conditions, and that the distribution facilities (condition 3) were satisfactory. It was also conclusively demonstrated that, given efficient equipment for telephonic reception at the main office, telegrams could be telephoned from behind simple screens at public counters without risk of members of the public overhearing, which met condition (2).

The series of experiments having proved successful, there was now no further need to hesitate to abolish morse working, even at the largest telegraph offices.

The next step was to design standard equipment to meet the requirements at the larger offices for telephonic transmission of telegrams and for typewriter reception. In this connexion it was decided that the telephone-telegram traffic should be dealt with in a separate section adjacent to the phonogram positions at the transmitting centres, and that phonogram equipment and operating should be modified, where necessary, to meet the special needs of telephone-telegram working.

As a result of (1) the recommendation of the American Commission that typewriters should be used in phonogram rooms and (2) the decision to take advantage of the reorganisation of the larger instrument rooms (under which an appreciable amount of floor space was made spare) to have the phonogram work dealt with in close proximity to the main instrument room, new equipment to provide for the changed conditions was already being designed.

The principal aim in designing the new equipment was to make provision for the use of typewriters and to link up the conveyor system with that of the main instrument room, where double tables, with "V" conveyors running through the middle of the tables, were being provided; but opportunity was taken to incorporate certain improvements to facilitate operating.

The equipment in use at most of the larger offices consisted of the continuous ancillary type, which comprised a row (or tier) of panels mounted on a table 30 in. high and 27 in. wide. Each operating position was provided with two pairs of cords and associated ringing and speaking keys, and the operators had access to a five-panel multiple. It was decided that the design of this type of equipment should be modified to provide a second (upper) tier of panels to face in the opposite direction to the first (lower) tier, to enable operators to work at a separate suite of positions on each side of a double table.

By this simple modification it was possible to arrange for a "V" belt conveyor to run along the centre of the double table and for the engineering maintenance staff to have ready access to the cabling at the back of each panel. To enable typewriters to be used, and to give access to the belt conveyor, it was arranged for the panels to be mounted 6 in. above the table level.

The following are the more important facilities which, after preliminary experiment, are being provided in connexion with the new "double tier" equipment:—

- (1) A distribution panel on the lines of that introduced for the Leeds experiment, but with the following improvements:—
  - (a) A "circuit engaged" lamp associated with each circuit key on the distribution panel. This lamp glows throughout the whole of the period the respective circuit is connected to an operating position; and
  - (b) A "position hold" lamp and associated clearing key (press-button type) on each operating position.

The "position hold" lamp glows when the distributor, in the course of her work of distributing messages, depresses, at the distribution panel, the key of any circuit which, at the time, is connected to the particular

position. The position operator consequently is automatically warned that a message for the office to which she is working is about to be brought to her. When the distributor brings the message to the position, she depresses the clearing key and so extinguishes the glow of the "position hold" lamp.

- (2) A flashing device, which causes the steady glow of any calling lamp to be changed into an intermittent flash after a prescribed period, to draw attention to the longest waiting calls. A more even speed of answer results from the provision of this facility. The use of the flashing device to secure team work between suites of positions is mentioned later.
- (3) A footswitch transmitter cut-out. This type of cut-out allows both hands of the operator to be free while typing.
- (4) A super-sensitive receiver, with rheostat volume control, on each operating position, to provide improved speech conditions on difficult calls. These receivers supersede the valve amplifiers, the maintenance costs of which are relatively high.
- (5) A complete multiple of the outgoing ends of all circuits over each two positions.
- (6) Transfer circuits between the operating positions and the enquiry and supervisor's positions.
- (7) Switches to cut in and out the ancillary of the calling lamps on any suite, as required.
- (8) Suitable small containers on each position to hold (a) messages waiting to be forwarded, (b) messages forwarded and awaiting transfer to the finished check position and (c) waste paper. These containers are an integral part of the position equipment and assist in keeping the positions tidy.

The adoption of the flashing signal has had, in the case of the larger installations, an important influence on the arrangement of the calling equipment provided on the operating positions, as will be seen by the following description of the ancillary scheme for an installation of 4 suites of 8 positions each.

The incoming circuits in this case were divided into 4 groups (one group per suite), and the answering equipments of one group were repeated 4 times on its primary suite, to enable any of the 8 operators staffing that suite to answer any call. The answering equipments of each group of circuits were also terminated on a second suite to provide for team work between the suites. The termination of the incoming groups of circuits was arranged as follows:

*Calling Equipment Provided.*

<i>Suite.</i>	<i>Primary of</i>	<i>Secondary of</i>	<i>Concentration of</i>
A ...	Suite A ancillary.	Suite D ancillary.	Suites B and C ancillary.
B ...	" B "	" A "	
C ...	" C "	" B "	
D ...	" D "	" C "	

Under the foregoing scheme the operators on suite B normally answer calls in the primary ancillary group, but flashing calls in the secondary group (A ancillary) are answered in preference to any call in the primary group (B ancillary). Similarly, the operators on suite C normally answer primary signals, but give preference to flashing calls in the secondary group (B ancillary). This might result in delay in answering the "C" primary signals and, should these signals flash, assistance will be given by the operators on suite D answering the suite "C" secondary signals and so on. Under this arrangement incidental pressure on one suite is relieved by operators on the next suite answering the flashing signals in the secondary ancillary. By this means extremely efficient team

work has been secured between the whole of the suites, and at the same time a considerable reduction in the amount of ancillary calling equipment required has been made possible.

In addition to dealing with traffic from offices provided with direct circuits to the equipment, it has been arranged for the telephone-telegram traffic routed via the telephone exchange system from the smaller offices, and which had previously been merged



FIG. 2. DOUBLE TIER EQUIPMENT.

with the phonogram traffic, to be also dealt with on the telephone-telegram equipment. This has necessitated the provision of a separate group of circuits from the main exchanges to the telephone-telegram equipment, and also some modification of the exchange operating procedure. For automatic exchanges, a separate dialling code ("95" for non-director areas and "MES" for director areas) has been introduced.

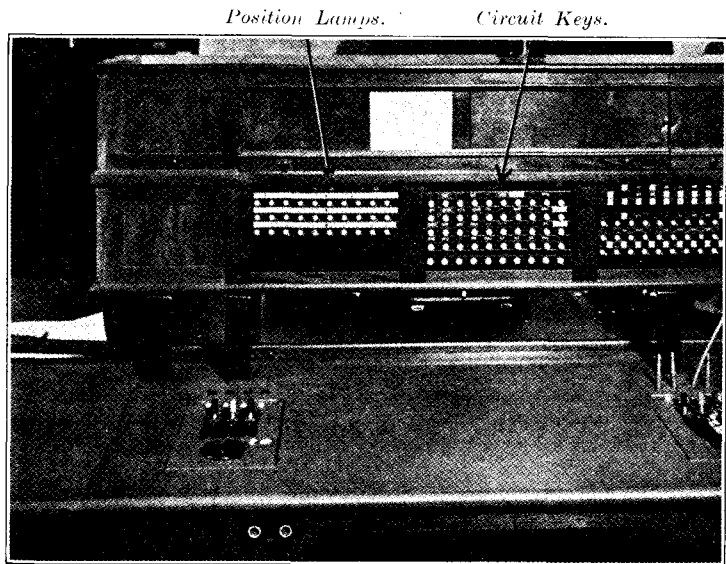


FIG. 3. DISTRIBUTION POSITION.

In order to facilitate typing, a typewriter attachment has been developed to carry a roll of 100 message forms, and a special fitting enables individual message forms to be cut off the roll as the messages are completed.

The layout of the message form has also been rearranged to permit of sequential typing.

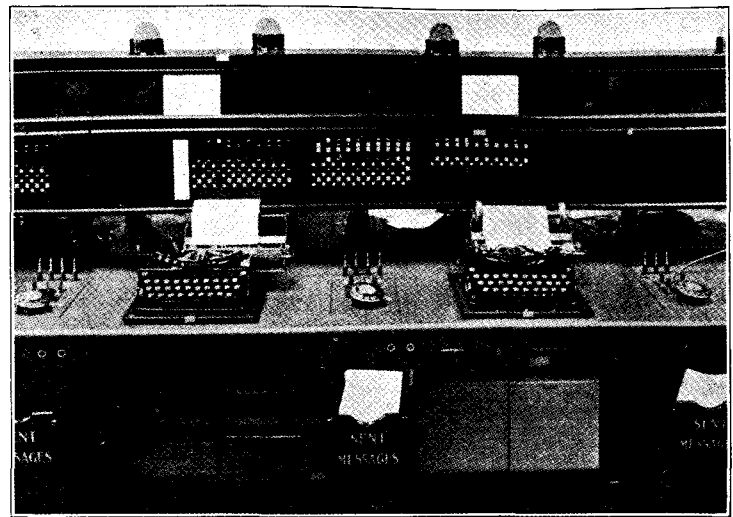


FIG. 4. 5-PANEL 2-POSITION SECTION FACE EQUIPMENT LAY-OUT.

In the case of the larger installations the phonogram and telephone-telegram work is dealt with in two separate sections, but a certain amount of team work between each section has been arranged by affording common access from the outgoing junction multiple to the larger telephone exchanges. The telephone-telegram section can, as a result, assist the phonogram section, when required, by dictating messages to subscribers who accept their telegrams by telephone. Similarly, the phonogram section can assist the telephone-telegram section by dictating messages to the smaller offices which receive their telegrams for delivery by messenger via the exchange system.

Figs. 2, 3 and 4 show different views of the new double-tier equipment installed in the telephone-telegram section at one of the zone centres. This type of equipment is being provided at offices where 16 or more operating positions are required, i.e., where belt conveyors are warranted.

The old single-tier type of equipment, modified to provide for typewriter reception, is being installed at offices where 7 to 15 operating positions are required.

PROPORTIONS OF TELEGRAPH TRAFFIC HANDLED UNDER VARIOUS SYSTEMS OF WORKING IN 1929, 1932, AND 1933.

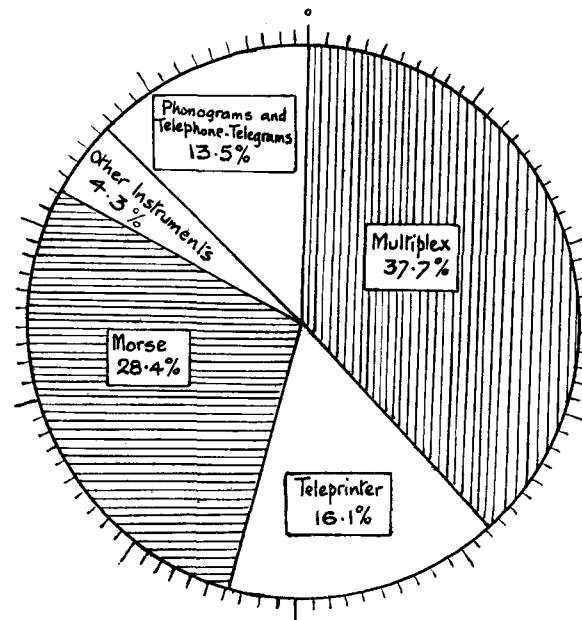


FIG. 5. (1929.)

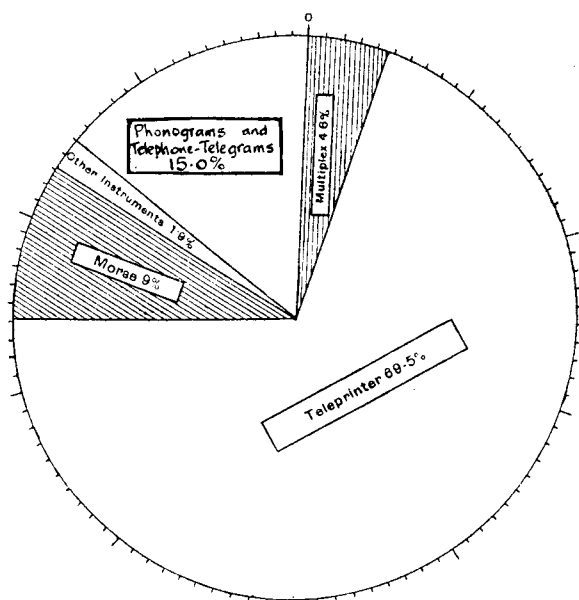


FIG. 6. (1932.)

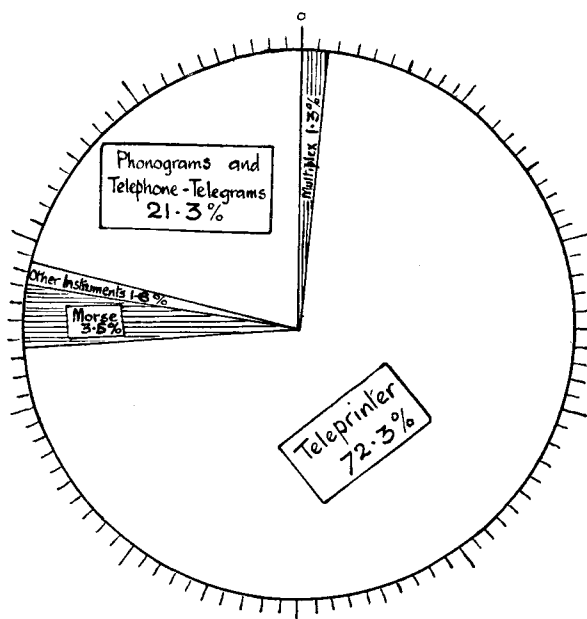


FIG. 7. (1933.)

For the smaller transmitting offices, where it is proposed to introduce typewriter reception and no more than 6 operating positions are required, single panel equipment, mounted 6 in. above table level and each serving two operating positions, has been designed and is at present being installed at a large number of offices.

It is anticipated that the whole of the new equipment will be brought into use before the beginning of the next season, when the reorganisation of the Inland Telegraph Service will be practically completed.

The rapidity with which the policy to adopt either teleprinter or telephonic transmission, in substitution for other methods of transmitting telegrams, has been applied will be seen by reference to Figs. 5, 6 and 7, which show graphically the proportions of traffic dealt with under the various methods of operating in 1929, 1932 and 1933 respectively. The period between 1929 and 1932 may be regarded as the teleprinter stage, and the period 1932-1933 the telephone stage of the changes taking place. The bulk of the remaining morse traffic will be transferred to telephone when the new telephone-telegram equipment is brought into use at the Central Telegraph Office early next year.

## THE LIGHTER SIDE.

LIKE *Terence*, this *Journal* considers nothing human as alien to it or beyond its province. The vagaries and humours inherent in the work of the daily round claim our attention no less than the problems which it is the task of our colleagues in service to endeavour to solve. The wrong-number trouble, for instance, which figures so largely in the mind of the humorist (and is, after all, incident to so infinitesimal a percentage of calls), has its compensations for the imaginative and adventurous. From what realms of romance may not the unawaited, misdirected call arise? With what welcome, fair unknown may we not be placed in sudden haphazard correspondence and indulged in the intimacy of a heart-to-heart talk? Such at least are the thoughts which arise when we read of the adventures of the more lucky recipients of wrong numbers. Some years ago we commented on the case of a Member of Parliament who complained to the Postmaster-General of that day that he had been rung up in the small hours by some Zaza (unknown), who said that "she was now ready to come home." We have no further tidings of the further development of this adventure; but a few years later we have the evidence of M. Tristan Bernard, the well-known French author, which did not escape the notice of our Argus-eyed contributors. M. Bernard related how a friend of his, connected in error with a charming lady whom he did not know maintained with her a conversation "presque galant" and rang off with "Au revoir, madame, until the next wrong number!"



Then, as recently as last month, we have a journalist describing his experiences in the *Daily Mirror* (to which we make due acknowledgment for the above illustration) as follows:—

For instance, the telephone rang last night. "Hallo!" I said.

"Oh, darling," a voice cried, "is that you?"

"Well, yes," I said.

"Look!" she murmured. "I just had to ring you up to tell you that I love you *still*. I love you and love you and love you. You're the nicest man in all the world!"

"Oh, well—" I began modestly.

"All is forgiven," she cried, "all. We shall make a fresh start. Life is going to be *such* fun."

I sighed and hung up the receiver.

No maintaining of a conversation "presque galant" for him! Yet could he have been said—to quote *Troilus and Cressida*—to "give accosting welcome ere it comes" in this case, if he had endeavoured to seize "the spoils of opportunity"?

From what we know of their habits, we feel sure that any sociological or psycho-historical writer who was worthy of his keep would be able successfully to maintain from three such pieces of evidence that English and French telephone subscribers in the second and third decades of this century habitually began their happiest affairs of the heart by the intermediary of a beneficent "wrong number." But as we are not sociologists, we shall conclude our idle speculations with some sceptical lines on the subject of

### *Entertaining Angels Unawares.*

Who knows, whenas in some untoward hour  
The shrill bell rings and with persuasive power,  
Draws thee from leisured ease in slippared feet  
To answer its appeal, what voice shall greet  
Thy vexed "Hallo!" from what enchanted bower?

Put off, perturbed soul, thy cloud of care,  
Seeing, perhaps, some angel unaware  
Thou mayest entertain across the wire—  
A presence manifest in words of fire,  
Endearing, artless, unexpected, rare!

If to thy churlish challenge there respond  
Accents not yet familiar (but how fond!),  
And "darlings" undeserved assail thine ear,  
Check not their flow, nor seek thy line to clear,  
Ere thou hast learned if she be dark or blond.

For surely here are seeds of a romance  
Ready to hand; and so mayst thou advance  
That soon not unfamiliar will appear  
Those accents, and thou mayst not only hear  
But taste those sweetness-speaking lips, perchance.

So runs the tale; but, reader, thou and I,  
When to a peccant telephone we fly,  
Hear not such prodigal endearments flow,  
But rather: "Are you six, one, eight, one, oh?"  
And snortings greet our negative reply!

W. H. G.

## RETIREMENT OF MR. D. J. BARNES.

PRESENTATIONS to Mr. D. J. Barnes, who retired from the position of District Manager, North Midland District, after a lifetime's association with the Telephone Service, were made at a staff social gathering at the Victoria Station Hotel, Nottingham, on Friday, Oct. 20, 1933. A whist drive preceded the presentation.

Mr. J. L. Magrath, Sales Manager, presided over a large gathering, which was of a domestic character but included also the Surveyor of the District, Mr. J. W. Jay; Mr. S. H. Hunt, Assistant Surveyor; the Superintending Engineer, Mr. A. B. Gilbert; the Sectional Engineer, Mr. Watson Weatherburn; Mr. S. R. Vaughan, District Manager, Sheffield; Major J. F. Darby (Mr. Barnes' successor); Mr. Squirrell, Head Postmaster, Nottingham, and other members of Departments thus represented. Mr. Magrath referred appropriately to his personal regard for Mr. and Mrs. Barnes.

Mr. F. E. Collins, Staff Officer, spoke feelingly of Mr. Barnes, who, he said, had always inspired his staff with a cheery word, endeared himself to those with whom he worked, and joined with them in their recreations. Mr. C. N. Carter, Traffic Superintendent, referred to his long association with Mr. Barnes, both in earlier and later times, and said how deeply he appreciated the splendid spirit of helpfulness and kindness invariably shown by Mr. Barnes. Mr. Lake (Assistant Sales Manager), Mr. E. Fitzpatrick (Accounts Branch) and Mr. E. W. Swan, on behalf of the Sales Representatives, also spoke appreciatively of the guest of the evening. Mr. J. W. Jay, Surveyor, in happy vein, testified to Mr. Barnes' faithful service and to his "quiet strength," which, in his opinion, was the secret of the success achieved in his duties and the source of the regard which Mr. Barnes inspired in such marked degree in those around him.

Mr. Barnes was presented by the staff with a grandfather clock. A presentation was also made to Mrs. Barnes of a necklet of pink tourmaline with oriental pearls and rose diamonds.

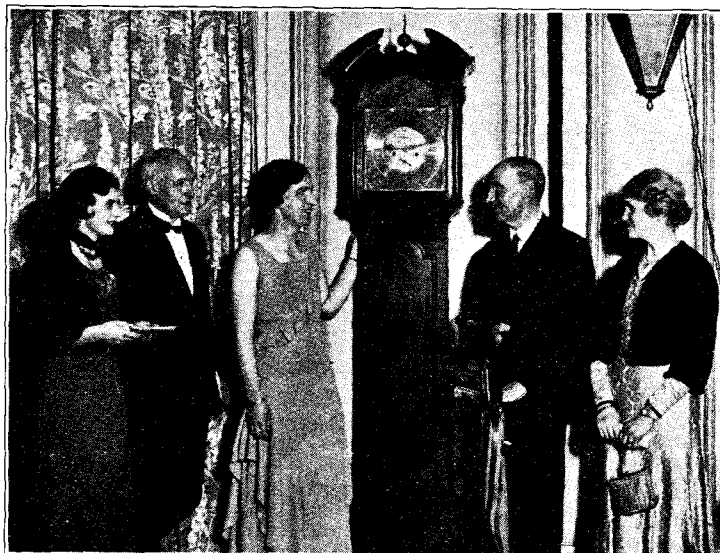
Mr. S. R. Vaughan, on behalf of District Managers, handed to Mr. Barnes a bag of golf clubs, warmly expressing the hope

that they would be used in many happy and successful games and humorously suggesting they should be the means of keeping down his handicap and his weight. After musical honours Mr. Barnes replied. He referred to his long association with the Telephone Service, first with the National Telephone Company, which he joined in 1887, to his appointment as Engineer and Manager of the Brighton Municipal Telephone Department, and, since the transfer of that undertaking to the Post Office, to posts held at Bradford, Blackburn, Guildford, York and Nottingham.

Mr. Barnes recalled the establishment of a trunk line between Carlisle and Whitehaven, a matter of 40 miles, which was regarded as being of sufficient importance to justify a Civic opening and a champagne banquet. Now, he said, services are opened to the ends of the earth with hardly more than a notice in the Post Office Circular. Mr. Barnes warmly returned thanks for the valued gifts which he would so much treasure, and referred to the happy time he had spent in the District. Mrs. Barnes also replied graciously, saying the gift to her came as a complete surprise. She thanked the donors very much.

The speeches were followed by musical items, sketches, &c., by members of the staff, after which dancing proceeded until 1 a.m. As an expression of affection and regard to a much-loved chief and colleagues the evening will long be remembered, and we wish Mr. and Mrs. Barnes, with all our hearts, long life and prosperity. The arrangements for the evening were ably carried through by the office social committee.

To the *Nottingham Guardian* we are indebted for permission to reproduce the accompanying photograph of the presentation ceremony.



PRESENTATION TO MR. BARNES.

From the *Nottingham Evening Post* we print the following account of a further presentation to Mr. Barnes:—

"Mr. D. J. Barnes, who recently retired from the position of District Manager of the North Midland District (Post Office Telephones), was the recipient, on Nov. 3, of presents from the Surveyor and staff of the District, and from the Head Postmasters of the area. The presentations were made at a social gathering at the Black Boy Hotel, Nottingham, and on behalf of the Surveyor's staff Mr. J. W. Jay, Surveyor, North Midland District, asked his acceptance of a silver salver. Mr. J. A. Bytheway, Head Postmaster, Leicester, presented him with a silver entree dish on behalf of the Head Postmasters. Mr. Barnes suitably replied."

## PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations in the Post Office System at Oct. 31, 1933, was 2,178,815, representing a net increase of 8,059 on the total at the end of the previous month.

The growth for the month of October is summarised below:—

Telephone Stations—	London.	Provinces.
Total at Oct. 31 ... ..	812,237	1,366,578
Net increase ... ..	3,335	4,724
Residence Rate Stations:—		
Total ... ..	260,472	347,482
Net increase ... ..	1,337	2,025
Call Office Stations (including Kiosks):—		
Total ... ..	9,227	31,200
Net increase ... ..	36	51
Kiosks:—		
Total ... ..	3,775	12,392
Net increase ... ..	28	173

The total number of inland trunk calls dealt with in August (the latest statistics available) was 11,706,425, representing an increase of 867,144, or 8%, over the total for the corresponding month of the previous year.

International calls in August numbered 95,839, representing an increase of 2,619, or 2.8%, compared with August, 1932.

Further progress was made during the month of October with the development of the local exchange system. New rural automatic exchanges opened included the following:—

Hallaton (Market Harborough), Holmesfield (Sheffield), Joppa (Ayr), Minster (Sheerness), Newby Bridge (Ulverston), Repton (Derby), South Ockenden (Upminster);

while the Macclesfield automatic exchange was extended.

During the month the following additions to the main underground system were completed and brought into use:—

Aberdeen—Alford,  
Stirling—Perth,

while 66 new overhead trunk circuits were completed, and 75 additional circuits were provided by means of spare wires in underground cables.

## TELEPHONE DEVELOPMENT OF THE WORLD AT THE END OF 1932.

BY W. H. GUNSTON.

THESE statistics are assembled a month earlier than in previous years in order to include them in the final issue of the *Journal*. They do not, however, lose any value in this case, as official returns or reliable estimates of the telephone development of all the principal telephone-using countries in 1932 have been received, except those for Japan, which it will be remembered were not available in 1931 in time for inclusion in the article published in January last.

As in 1931, the number of telephones in the world diminished in 1932—but more heavily, as the following summary shows:—

	1931. Telephones in thousands.	1932. Telephones in thousands.
Europe ... ..	10,926	11,096
Asia ... ..	1,433	1,436
Africa ... ..	244.5	250
North America ... ..	21,281	19,045
South America ... ..	633	665
Australasia ... ..	676.5	670
	<u>35,194</u>	<u>33,162</u>

—a decrease of over 2 million, as against 150,000 in 1931. The principal decreases during 1932 were those which took place in the United States of 2,143,000 telephones, in Canada of 100,400, and in Germany of 161,800. Against these may be set increases of 96,457 telephones in Russia, of 66,293 in Great Britain, of 63,375 in France, of 35,000 in Italy, 30,000 in Spain, over 20,000 in Switzerland and nearly 17,000 in Sweden.

Europe increased its total with a net gain of 170,000 stations, while North America went back by 2,236,000. Australasia lost about 4,500 stations.

The following table shows the number of telephones per 100 inhabitants in all countries with upwards of 100,000 telephones and not less than 2 telephones per cent. of the population:—

1. United States ... ..	14.3	9. Gt. Britain (31.3.33) ...	4.63
2. Canada ... ..	12.09	10. Germany (31.3.33) ...	4.57
3. New Zealand ... ..	10.1	11. Netherlands ... ..	4.0
4. Denmark ... ..	9.8	12. Finland ... ..	3.7
5. Sweden ... ..	9.3	13. Belgium ... ..	3.6
6. Switzerland ... ..	8.5	14. Austria ... ..	3.5
7. Australia ... ..	7.4	15. France ... ..	3.0
8. Norway ... ..	7.0	16. Argentina ... ..	2.9

(In the above table the figures for Great Britain and Germany refer to the end of their respective financial years. In the following tables they refer to Dec. 31, 1932, for convenience of comparison with past years' statistics.)

### I.

#### (a) EUROPE.

	Telephones per 100 inhabitants.	
Albania ... ..	1,121	0.1
Austria ... ..	239,495	3.5
Belgium ... ..	296,068	3.6
Bulgaria ... ..	22,769	0.37
Czecho-Slovakia ... ..	150,355	1.0
Danzig, Free City of ... ..	18,956	4.6
Denmark ... ..	353,157	9.8
Estonia ... ..	17,437	1.6
Finland ... ..	135,033	3.7
France ... ..	1,292,254	3
Germany ... ..	2,995,900	4.7
Great Britain & Northern Ireland ...	2,118,925	4.6
Greece ... ..	16,137	0.26
Hungary ... ..	117,228	1.3
Irish Free State ... ..	33,888	1.1
Iceland ... ..	4,773	5
Italy (481,000, 30.6.32), say ... ..	500,000	1.2
Latvia ... ..	57,391	3
Lithuania ... ..	16,361	0.7
Luxemburg ... ..	13,084	4.3
Netherlands ... ..	329,776	4.0
Norway ... ..	196,000	7.0
Poland ... ..	216,403	0.66
Portugal ... ..	43,000	0.66
Rumania ... ..	55,000	0.3
Russia ... ..	569,111	0.35
Serbs, Croats & Slovenes, Kingdom of	40,351	0.3
Spain ... ..	282,592	1.2
Sweden ... ..	577,281	9.3
Switzerland ... ..	346,205	8.5
Saar Territory ... ..	24,377	3.0
Turkey ... ..	16,000	—
Approximate Total ... ..	11,096,000	2.3

The figure of percentage development of Europe (2.3) is handicapped by the backwardness, telephonically speaking, of more than half the continent. A more favourable view of European development is obtained by taking the northern and western portions of the continent separately. An area comprising Scandinavia, Germany, Austria, France, Switzerland, Holland, Belgium and Great Britain and Ireland will be found to contain about 8,770,000 of the 11 million telephones in Europe, equal to a density of 4.5 per 100 of the population.

The total number of telephones in Great Britain at the end of 1932 was made up as follows:—

Post Office exchange stations ... ..	2,077,019
Hull Corporation ... ..	17,771
States of Guernsey ... ..	4,675
States of Jersey ... ..	4,033
Railway and other telephones with exchange connexions ... ..	15,427
	<u>2,118,925</u>

(b) ASIA.

	No. of telephones.
Ceylon ... ..	9,375
China ... ..	150,000
French Indo-China ... ..	7,700
Federated Malay States ... ..	6,025
India ... ..	58,222
Iraq ... ..	2,177
Johore ... ..	772
Japan (1931) ... ..	1,016,500
Chosen ... ..	43,800
Sakhalien ... ..	6,300
Kwantung ... ..	19,800
Taiwan ... ..	16,600
Netherlands Indies ... ..	43,416
Palestine ... ..	5,329
Persia ... ..	6,000
Philippine Islands ... ..	26,400
Siam ... ..	2,629
Syria and Lebanon ... ..	3,522
Straits Settlements ... ..	2,406
Singapore ... ..	6,675
Turkey in Asia ... ..	2,000
Total, say ... ..	<u>1,436,000</u>

The population of Asia is about 1,013,000,000 and number of telephones per 100 inhabitants is therefore 0.14.

(c) AFRICA.

	Telephones.
Algeria (est.) ... ..	43,000
Belgian Congo ... ..	1,420
Egypt (est.) ... ..	44,000
Kenya and Uganda ... ..	3,461
Madagascar ... ..	2,500
Mauritius ... ..	778
Morocco ... ..	14,200
Mozambique ... ..	1,200
Nigeria (est.) ... ..	2,000
Soudan (est.) ... ..	1,500
South Africa ... ..	109,985
South-West Africa ... ..	4,756
Southern Rhodesia ... ..	4,458
Tunis ... ..	13,000
Tripoli ... ..	1,250
Total (incl. other places in Africa) ... ..	<u>250,000</u>

The population of Africa is estimated at 143,000,000 and the ratio of telephones to 100 inhabitants is 0.17.

(d) NORTH AMERICA.

	No. of telephones.	Telephones per 100 inhabitants.
United States ... ..	17,547,000	14.3
Canada ... ..	1,279,565	12.09
Mexico ... ..	96,000	0.6
Cuba ... ..	55,500	1.5
Porto Rico ... ..	12,500	0.8
British West Indies—		
Jamaica ... ..	3,191	
Trinidad ... ..	3,966	
Antigua ... ..	800	
Barbados ... ..	1,996	
Grenada ... ..	715	
Bahamas ... ..	1,127	
	<u>11,855</u>	
Dutch and French West Indies ... ..	2,000	
Haiti and Dominica ... ..	4,500	
Central America ... ..	25,700	
Newfoundland ... ..	8,500	
Other places ... ..	2,000	
	<u>19,045,000</u>	<u>11.2</u>

The total for the United States is made up as follows :—

American Telephone & Telegraph Co.'s system ...	13,793,000
Telephones having connexion with above ...	3,668,000
Purely "Independent" ... ..	86,000
	<u>17,547,000</u>

The principal systems providing the 1,279,500 telephones in Canada are the Bell Telephone Co. of Canada and connexions (851,500), British Columbia Telephone Co. and connexions (120,541), Manitoba Government system (71,000), Saskatchewan Government system and connexions (81,000), Alberta Government system and connexions (61,000), Maritime Telephone Co., Nova Scotia (45,000).

(e) SOUTH AMERICA.

	No. of Telephones.	Telephones per 100 inhabitants.
Argentina ... ..	335,000	2.9
Brazil ... ..	170,000	0.43
Chile ... ..	50,000	1.2
Peru ... ..	15,000	0.27
Uruguay ... ..	30,000	1.5
Other countries ... ..	65,000	
	<u>665,000</u>	<u>0.87</u>

(f) AUSTRALASIA, & C.

	No. of Telephones.	Telephones per 100 inhabitants.
Australia ... ..	486,873	7.4
New Zealand ... ..	155,760	10.1
Hawaii ... ..	25,700	6.5
Fiji ... ..	900	
Other places ... ..	1,000	
	<u>670,000</u>	<u>8.0</u>

II.

THE LARGE CITIES.

The following is a list of the cities of the world with upwards of 100,000 telephones :—

	Telephones.	Telephones per 100 inhabitants.
New York ... ..	1,576,616	22.2
Chicago ... ..	831,679	23.6
London Administrative County Area ...	532,743	11.8
Paris "reseau" ... ..	482,773	10.5
Berlin ... ..	469,270	11.07
Boston ... ..	408,999	21.8
Philadelphia ... ..	381,200	19.3
Los Angeles ... ..	362,597	26.7
Detroit ... ..	263,123	15.4
San Francisco ... ..	245,196	36.5
Cleveland ... ..	210,401	17.8
St. Louis ... ..	203,284	18.4
Washington ... ..	195,683	33.3
Toronto ... ..	193,885	25.6
Pittsburg ... ..	193,838	19.4
Newark, N.J. ... ..	186,824	17.7
Montreal ... ..	175,672	17.7
Buenos Aires (1931) ... ..	163,057	6.6
Vienna ... ..	157,330	8.6
Tokio (1931) ... ..	155,219	4.5
Hamburg ... ..	153,547	9.39
Copenhagen ... ..	151,727	18.1
Cincinnati ... ..	142,307	18.4
Stockholm ... ..	139,407	31.8
Milwaukee ... ..	138,772	18.6
Baltimore ... ..	130,722	15.9
Kansas City ... ..	129,430	23.1
Minneapolis ... ..	121,456	24.4
Oakland (Cal.) ... ..	120,622	26.3
Buffalo ... ..	115,019	17.1
Seattle ... ..	107,083	26
Moscow ... ..	106,776	3.8
Sydney ... ..	106,472	8.5
Osaka (1931) ... ..	104,902	4.2

The following table shows all the cities of the world with upwards of 10,000 telephones, indicating by more detailed figures most of those with upwards of 50,000 :—

United States :—(Principal cities given in foregoing list) ... 148

Germany :—(Berlin 469,270, Hamburg 153,547, Munich 73,569, Leipzig 64,879, Cologne 63,898, Frankfurt-on-Main 61,427, Dresden 58,211, Stuttgart, Düsseldorf, Breslau, Nürnberg, Hanover, Bremen, Essen, Dortmund, Duisburg, Wuppertal, Chemnitz, Magdeburg, Bochum, Königsberg, Stettin, Mannheim, Kiel, Halle, Kassel, M. Gladbach, Crefeld, Aachen, Karlsruhe, Bielefeld, Erfurt, Brunswick, Wiesbaden, Münster) ... 35

Great Britain :—(London 532,743, Manchester 63,712, Glasgow 57,833, Liverpool 56,983, Birmingham 56,027, Edinburgh, Leeds, Bristol, Sheffield, Newcastle-on-Tyne, Bradford, Belfast, Nottingham, Brighton, Leicester, Bournemouth, Cardiff, Hull) ... 18

Canada :—(Toronto 193,885, Montreal 175,672, Vancouver, Winnipeg (both upwards of 50,000) Ottawa, Hamilton, Quebec, Calgary, Windsor, Edmonton, Victoria, B.C., London (Ont.), St. John, Halifax, Regina) ... 15

France :—(Paris 482,773, Lyons, Marseilles, Bordeaux, Lille, Strassbourg, Nice, Roubaix-Tourcoing) ... 8

Italy :—(Milan 78,675, Rome 74,559, Turin, Genoa, Naples, Florence, Bologna, Trieste) ... 8

Japan :—(Tokio 155,219, Osaka 104,902, Kyoto, Kobe, Nagoya, Yokohama) ... 6

Switzerland :—(Zurich 51,210, Basle, Geneva, Berne, Lausanne) ... 5

Australia :—(Sydney 106,472, Melbourne 92,253, Brisbane, Adelaide, Perth) ... 5

Netherlands :—(Amsterdam 53,080, The Hague, Rotterdam, Haarlem, Utrecht) ... 5

Belgium :—(Brussels 95,354, Antwerp, Liege, Ghent) ... 4

Sweden :—(Stockholm 139,407, Göteborg, Malmö) ... 3

Russia :—(Moscow 106,776, Leningrad 72,349, Kharkov) ... 3

New Zealand :—(Auckland, Wellington, Christchurch) ... 3

China :—(Shanghai, Hong Kong, Peiping) ... 3

Spain :—(Madrid 53,667, Barcelona, Valencia) ... 3

Poland :—(Warsaw 57,000, Lodz, Lwow) ... 3

India :—(Calcutta, Bombay) ... 2

South Africa :—(Johannesburg, Cape Town) ... 2

Norway :—(Oslo, Bergen) ... 2

Austria :—(Vienna 157,330, Grätz) ... 2

Denmark :—(Copenhagen 151,727, Aarhus) ... 2

Egypt :—(Cairo, Alexandria) ... 2

Algeria (Algiers), Argentina (Buenos Aires 163,057), Brazil (Rio de Janeiro), Chile (Santiago), Columbia (Bogata), Cuba (Havanna), Czecho-Slovakia (Prague), Danzig, Finland (Helsingfors), Hawaii (Honolulu), Hungary (Budapest), Ireland (Dublin), Latvia (Riga), Mexico (Mexico City 50,000), Philippines (Manila), Portugal (Lisbon), Rumania (Bucharest), Saar District (Saarbrücken), Turkey (Stamboul), Uruguay (Monte Video), Venezuela (Caracas) ... 21

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Of these cities, 165 are in North America, 111 in Europe, 12 in Asia, 9 in Australasia, 6 in South America and 5 in Africa.

“TWENTY YEARS AFTER.”

In the first issue of this Journal (Oct., 1914) were published telephone statistics of the world relating to the end of 1912, and, except during the war period, annual summaries have been offered to our readers showing the progress of the telephone system in all countries. It may not be without interest to compare, 20 years after, the present development of the chief telephone-using countries with that of 1912 and 1922.

	1912.	Per 100	1922.	Per 100	1932.	Per 100
	Telephones.	inhab.	Telephones.	inhab.	Telephones.	inhab.
U.S.A. ...	8,729,592	9.1	14,347,935	13.1	17,547,000	14.3
Germany ...	1,302,672	1.9	2,073,308	3.5	2,995,900	4.7
Great Britain ...	732,045	1.6	1,045,928	2.3	2,118,925	4.6
Canada ...	431,000	5.6	944,029	10.4	1,279,565	12.09
France ...	285,000	0.7	524,622	1.3	1,292,254	3
Japan ...	219,551	0.4	519,600	0.9	1,016,564	1.4
Sweden ...	217,554	3.9	394,535	6.6	577,281	9.3
World ...	13,500,000		22,288,000		33,214,000	

In the 20 years Japan has increased more than fourfold, France nearly fourfold, and Great Britain and Canada nearly threefold. It will be seen that only two countries possessed a million telephones in 1912, whereas 6 countries had passed this total in 1932. Three countries had more than 50,000 telephones in 1912; in 1932 nine exceeded this number, if we include Russia and Italy. It should be remarked that the total number of telephones in the world exceeded 35,340,000 at the end of 1930, when the United States had 20,200,000 and Germany 3,248,800.



[By courtesy of the London News Agency Photos Ltd.]

THE G.P.O. PLAYERS IN “THE MARQUISE.”

Miss Blodwyn Pugh and Mr. Gerald Storr in a scene from the above performance, which was reviewed in these columns last month.

BELFAST DISTRICT NOTES.

*Transfer.*—Mr. A. Covell, Higher Clerical Officer, left us on Sept. 30 on transfer to Liverpool, and his departure was deeply regretted by all members of the staff, by whom he was held in the highest esteem. He carries with him the best wishes of the Belfast telephone staff, and an early opportunity will be taken to express our appreciation in a tangible form.

*Trunk Demand Working.*—With the early introduction of “Demand” working at Manchester and Douglas all the trunk routes from Belfast (with the exception of those to the Irish Free State) will be worked on a “Demand” basis. A rearrangement of the trunk suite is under consideration at present.

*Belfast Automatic Exchange.*—The erection of the building to house the new Belfast Automatic Exchange is proceeding rapidly and it is expected that it will be ready for the staff of the District Manager’s and Engineer’s Offices about September next year. The control sheet date for the transfer of exchange is September, 1935.

The building is being erected on what was once the bed of the River Lagan and a trial pile driven a depth of 60 ft. failed to find a solid bottom. Consequently the building has not got a “foundation” in the accepted sense of the word but is “floating” on a raft placed on piles. Over 400 concrete piles about 30 ft. long were placed in position by the pressure piling system, and on this was built a solid concrete raft about 5 ft. thick, which supports the weight of the building. It is to be hoped that we do not sink.



## TELEGRAPHIC MEMORABILIA.

*History repeats itself!*—"I am glad to learn that a new departure is being made in, and a new journal added to, the literature of the Post Office," the Postmaster-General, *vide* the *Telegraph and Telephone Journal*, No. 1, Volume I, October 1914.

"It is hoped to publish the first number"—of the *Post Office Magazine*—"in January next. The *Post Office Magazine* is in the nature of an experiment, but the Postmaster-General has every hope that its circulation will be so great as to justify the very low price at which it is to be sold," excerpt from the *T. and T. Journal*, No. 223, Volume XX, October 1933.

*Obituaries.*—Mr. L. T. Jones, Commander, Eastern Telegraph Company (retired), died on the first of last month, at the age of fifty-five years at a London nursing home.

The death has recently been announced in Berlin of Professor Dr. Hermann Beckmann at the age of sixty years. The professor was associated for nearly thirty years with the Berlin-Hagen Akkumulatorenfabrik Gesellschaft, and was a leading German authority on accumulator manufacture.

*Personal.*—Professor E. V. Appleton has been rewarded the Hughes Medal by the Royal Society for his researches into the effect of the Heaviside and Appleton layers upon radio transmission.

Mr. J. L. Hill, superintending engineer of the South African Posts and Telegraphs Department, retired at the end of last month after thirty-one years' service in South Africa.

Mr. Hill began as a telegraphist in the Home Service, in the Bristol Post Office in 1889, and was transferred to the Engineering Branch in 1894. During the South African War he went out with the British Forces, and remaining in South Africa he joined the Engineering Branch of the Transvaal Post Office with the rank of Inspector, at Pretoria. He was later transferred to Johannesburg and when the Union took place he was given charge of the Transvaal district. During the World War, Mr. Hill served with the South African Forces in France and was awarded the Military Cross. As Superintending Engineer for the Union in 1929, he has been responsible for many important developments, more especially in the installation of automatic exchanges and long distance telephony. A most remarkable, not to say exciting career even for a telegraphist!

*Countries.*—AUSTRALIA.—The Australian Postmaster-General has indicated that a reduction in the present fee of twenty-four shillings for broadcast listeners' licences will be favourably considered when the payment of three shillings on each fee as a royalty on patents used in broadcasting expires on Mar. 1. The amount thus saved is estimated at about £75,000 a year. "Many a mickle makes a muckle"!

*New Stations.*—Invitations for tenders for the erection of three new broadcasting stations have been invited by the Postmaster-General's Department. They will be more powerful than any yet erected in Australia. Provision will be made for an initial power in the aerial of 10 kw., with the possibility of the use of 60 kw. if necessary. They will be located in the south-western district of Western Australia, western Victoria, and western New South Wales. Tenders for four others are under consideration, the *Electrical Review* informs us.

BELGIUM.—Due to the co-operation between the Belgian National Air Transport Co. and the Belgian Government, passengers between London and the Belgian capital are now able to both telephone and telegraph by wireless to any address. The Belgian Government operates all the wireless stations at Belgian aerodromes, we are given to understand, thus similar facilities are available to aeroplane passengers of other nationalities.

CANADA.—The new 5 kilowatts broadcasting station of the Canadian Radio Commission was opened at Montreal on Nov. 4.

CHINA.—The *Electrical Review* informs us that the coastal authorities in Uruguay, Roumania, and China, are among the most recent to adopt the Marconi automatic wireless beacon as an aid to navigation for ships. The chain of beacons at the entrance

to the Shanghai river is now complete. During the last three months, two beacons have been established to the Shanghai river approach, one on the island of Ta-chi-Shan (Gutzlaff), and another at the lighthouse on the island of Shawsishan, which with one other already in service, completes the necessary chain. It is said that the apparatus is very simple, running for long periods without expert attention. The entire apparatus is controlled by a master clock which switches on the transmitting apparatus at pre-determined times, when the transmitter sends out a characteristic signal.

*Broadcasting.*—No official scheme for the central control of broadcasting stations in Shanghai has yet been approved by the Council of the International Settlement, but practically all stations have now registered with the Chinese Government's Bureau of International Telegraphs, and changed their call-signs in conformity with the letters allotted to China by the Madrid convention. Foreign broadcasters' compliance with the Bureau's regulations is voluntary, but *World-Radio* informs us that, "a noticeable improvement in reception has resulted from the alteration of overlapping wavelengths."

FINLAND.—*Broadcasting.*—It is understood by a correspondent at Helsingfors that there is a reasonable likelihood of the establishment of a radio programme relay service for the benefit of the subscribers to the telephone corporation of that city.

FRANCE.—The London *Daily Telegraph* says, referring to their correspondent's information that plans have been completed for the raising of the power of the P.T.T. Paris broadcasting station from 8 to 120 kw., that the object is to bring the programmes within daytime range of crystal-set users throughout Paris and its suburbs. As has previously been announced, the new transmitter will be erected at Villejuste, the studios remaining in Paris.

*Arabs and Pensions.*—As is well-known, quite a number of educated natives in the French colonies are employed in the Government Civil Service, some of fairly high rank—in the posts, telegraphs, &c., and are due to receive the usual pensions relevant to such positions upon reaching the statutory age, 65 years. Now it appears that Arab chiefs have an aversion to retirement on a pension so long as they feel physically fit to perform such duties. The following official reply to a question by a Deputy on the subject is as follows:—"The French Government maintains the tradition according to which Arab chiefs remain in the service as long as their physical strength allows them to do so."

GREAT BRITAIN.—*Is it the turn of the tide?*—The Postmaster-General, last month, announced that for the first time in ten years the decline in Telegraph traffic was arrested, in August. *No more wireless entertainment on trains!*—Owing to legal points raised by the Performing Rights Society, the London and North-Eastern Railway are not to provide any more wireless entertainment for the use of passengers in express trains, at least at present. It appears that the "Performing" company has demanded certain copyright fees. Gramophone records may, however, continue to be used by agreement for a period of twelve months.

Brighton.—*Pocket wireless.*—Last month "pocket" wireless receiving sets were issued to all policemen throughout the town. This, it is stated, will enable them to receive instructions from a central transmitter to be installed on the roof of the Town Hall. *Line telegraphy for the police.*—The official view is that for communication between headquarters, i.e., from one police force to another, the present method of line telegraphy, particularly if teleprinter service is available, best meets requirements. The Home Office has accordingly decided that, while the use of wireless for police service is desirable and will not be discouraged, its development should be on an area basis, not national.

*Radio sets and electrical output.*—In reply to the contention that "radio sets are usually regarded as negligible electrical energy users," the *Electrical Review* computes that, "assuming nearly seven million license holders in Great Britain, if only half of these operated all-mains sets averaging 40 w. a piece for 500 hours per annum, the total consumption would be 60 million k.w.h.—equivalent to the amount of energy sold for all purposes in a town

of the size of Stockport." *Micro-Ray Telephony and Teleprinter service.*—The British Air Ministry has established focussed beam radio-telephone communication across the English Channel between Lyme Aerodrome, Kent, and St. Ingelvert, France. Two-way speech can be maintained on a wavelength between 17 and 19 cm., but the circuit is to be used for regular Teleprinter service. The input to the transmitter is only 500 w., and connexion with land lines at both ends is entirely automatic. Standard Telephones & Cables Ltd. are responsible for the equipment. *Further developments in Television on the way?*—The Prime Minister and his daughter, Miss Ishbel Macdonald visited the H.M.V. factory at Hayes, Middlesex, on the 17th ult., and according to the *Daily Telegraph* "spent nearly an hour behind locked doors inspecting the secret developments in high definition ultra short-wave Television."

HOLLAND.—Reuter's Agency informs us that the Hilversum broadcasting station is to change its wavelength from 296.2 to 301.5 metres. Huizen, the Dutch long-wave station, will remain on 1,875 metres. The former change is in accordance with the Plan de Lucerne. The latter is not.

INDIA.—By the time these lines are in print, Lieut.-Col. H. R. Hardinge, at the invitation of the Punjab Government, says the *Morning Post*, will have sailed for India in order to demonstrate the possibility of equipping villages in the province with broadcast radio receivers for communal use. The scheme, a very interesting one, is expected to be inaugurated experimentally next year. The type of receiver to be used will be set to one wavelength and locked, so that it cannot be interfered with. Switching on and off will be by means of a key, which will be in the care of the village schoolmaster or headman, in whose house the receiver will be installed. The loudspeaker will be in the village schoolroom or meeting house, and power will be derived from a single car-type battery.

As we go to press the London *Daily Telegraph* modifies the above to the extent that Colonel Hardinge "is not undertaking his task at the invitation of the Punjab Government as reported. Lt.-Col. Hardinge is a member of the Indian Village Welfare Association and is proceeding to Lahore to co-operate with Mr. F. L. Brayne, the recently appointed Commissioner for Rural Reconstruction to the Punjab Government in connexion with rural broadcasting."

IRISH FREE STATE.—Mr. T. J. Monaghan, head of the Dublin Post Office Engineering Branch, who represented the Free State at the recent Amsterdam Radio Conference, has announced that the wavelength of the Athlone station is to be altered from 413 to 531 metres, together with those of the Cork and Dublin stations on Jan. 15, 1934.

MANCHUKUO.—*Eastern Engineering and Commerce* informs us that the telegraph and telephone services in Manchuria, including those in the Kwantung Leased Territory, have now been placed under the consolidated control of the Manchuria Telegraph and Telephone Co. It is also understood that the radio services will be brought under the same management. As we go to press, we learn from the same reliable source that the M.T. & T. Co. has already "commenced to establish a network of telegraph and telephone lines, and a total of 1,475 miles is due for completion by the end of 1934." This change like that of Hilversum, mentioned above, is also in accordance with the Plan de Lucerne.

NEW ZEALAND.—*Christchurch Broadcasting Station.*—For the erection of this new broadcasting station, tenders were called for in Great Britain, Australia, the United States, France, and Germany. The tender of Amalgamated Wireless (Australia) Ltd., was accepted.

The transmitter will require 20 kw. and radiate 3 kw. actual power from the aerial. Similar transmitters are to be provided at Auckland and Dunedin, it is understood.

POLAND.—*Radio pirates.*—The regulations recently issued by the Ministry of Posts, Telegraphs, and Telephones against radio pirates are all severe. Users of receiving sets who have not provided themselves with the necessary licence are "liable to be sentenced to three months' imprisonment, fined

up to 3,000 zlotys (about £75), ordered to surrender their apparatus, and also to pay the Polish Post Office the monthly fee of 18 zlotys!

SOUTH AFRICA.—As a very clear sign of the continued trend of modern telegraphy, in the direction of increased mechanisation, the following item from the London *Daily Telegraph* is most interesting:—"An order for over 200 teleprinters, secured in the face of foreign competition, has been obtained by Messrs. Creed & Co., of Croydon. The machines are for use in the Union of South Africa Postal Telegraph Service, and for the promotion of a point-to-point service for stockbrokers and other commercial users in the Union."

*More wireless stations.*—The S. African Government has arranged for the erection of a wireless station at Kimberley, for aviation purposes, while a wireless direction-finding station, with a range of 400 miles is also to be built near the Pietersburg aerodrome. This latter now completes the wireless chain of stations on the "All-Red" route between Capetown and Kisumu.

*One or two systems for Post Office and Railway systems?*—A commission which was appointed to inquire, "whether it was necessary to maintain and operate two separate telegraph and telephone systems by the South African Post Office and Railway Administration" has reported, not surprisingly, in the affirmative. The commission, however, has recommended and the government has appointed an inter-departmental committee of technical officers, who are to put forward recommendations for the greatest measure of common use of the construction, maintenance, operating and supervisory staffs, as well as of the plant and apparatus, of both departments. Judging the task of the "commission," and that of the "inter-departmental committee," from a distance, it would appear that the more difficult one is likely to prove that of the latter body!

SPAIN.—*A big wireless scheme for Telegraphs, Telephones, and Direction-finding!*—The *Electrical Review* gives the following interesting outlines of a new wireless organisation which is in course of preparation for the new air route between Spain and the Canary Islands, to be operated by a private company known as Lineas Aereas Postales Espanolas (L.A.P.E.):—

"The aircraft will be fitted with Marconi dual-wavelength equipment capable of communication by telegraph and telephone on the wavebands of 40-80 metres and 500-1,000 metres. For the terminal airport in the Canary Islands a new ground wireless station is to be erected at Gando, Las Palmas, with a medium-wave Marconi 1½-kw. transmitter. The short-wave transmitter will utilise an independent valve drive and will be suitable for 15 to 75 metres. The power to the aerial system on continuous-wave telegraphy, is to be 100 w. The receiver will be a stable and selective instrument for the reception of telegraph and telephone signals between 10 and 200 metres. For direction finding, a Bellini-Tosi combined tuner and amplifier with a wave-range of 350 to 4,000 metres will be employed."

SWEDEN.—*Reuter's Trade Service.*—Stockholm emphasises the continued growth of the interest in wireless in Sweden. The number of licences in the third quarter of the present year was over five thousand. At the end of September there were 649,381 sets, or about 105 sets for every one thousand inhabitants.

TURKEY.—*Demise of the Eastern Telegraph Office.*—Reuter, from their Istanbul correspondent, sends us reliable information regarding the situation of the Eastern company's cable, established thirty years ago, and whose staff must have seen many amazing changes under their own eyes during that period, so full has it been of national upheavals. The Turkish Government, it appears, have decided that "there is no further use for the submarine cable," and from now onwards "All messages will go by radio, a special new station having been erected by the Government outside Istanbul to receive these messages." The message adds that the company's offices have been closed down and "taken over by the Turkish Government," and it may be presumed with the "offices" the "officers" also.

U.S.A.—*The Telegraph and Telephone Age* states that Rear-Admiral Richard E. Byrd has taken with him on his two years of

exploration and scientific discovery in the Antarctic, "the last word" in new instruments provided by Mackay Radio & Telegraph Company. The brave admiral is reported to have said that the continent he hopes to explore is covered by an ice cap. The entire area estimated to cover 500,000 square miles will be charted from the air and claimed in the name of the United States!

*Nota bene.*—This is the last time that the present writer will have the pleasure of meeting so many of the telegraphic fraternity, through the medium of the printed page. Whatever measure of success these particular columns have reached during these nineteen years, have only been possible by the assistance of colleagues inside and outside of the Empire, and includes therefore, for example, French and German correspondents in Europe, others in New Zealand, and South Africa, and our own technical press, notably the *Electrical Review*. To that section of the Secretariat in G.P.O. North, which has so regularly loaned the *Age* from the U.S.A., sincerest thanks is also respectfully tendered.

What says Carlyle regarding Time and change?

"Time and change! What changes are wrought not by Time yet in Time! For not mankind only, but all that mankind does or beholds is in continual growth, re-gensis and self-perfecting vitality!" J. J. T.

## SOUTH WALES DISTRICT NOTES.

*Extension of Demand Trunk System to Swansea.*—An interesting ceremony was performed in the Head Post Office, Swansea, on Monday, Nov. 13, when the Mayor of Swansea inaugurated the "Demand" system in this important South Wales port and industrial centre. A considerable number of influential visitors, representative of the business and municipal life of the town, was present to witness the initiation of a demand call to the Assistant Postmaster-General.



[By courtesy of the Western Mail.]  
THE MAYOR OF SWANSEA PASSING A "DEMAND" CALL TO THE ASSISTANT POSTMASTER-GENERAL IN LONDON.

The Mayor said he wanted Sir Ernest to convey to Sir Kingsley Wood that it gave him great pleasure, as Mayor of the important borough of Swansea, formally to inaugurate the new system in the district.

In response, Sir Ernest Bennett thanked the Mayor for his message. They in the Post Office were honoured that he should have found time to take a personal interest in the service. Sir Ernest assured the Mayor that it was known throughout the country that Swansea was in the centre of a great industrial and commercial area, and he hoped that the "Demand" service would contribute towards the prosperity of the town and district.

In introducing Major W. R. Roberts, Assistant Surveyor, G.P.O., who presided in the unavoidable absence of Mr. C. A. Jackson, Surveyor (who was indisposed), Mr. T. McGowan Hole, Swansea's Head Postmaster, said that the occasion marked an important development in the progressive science of telephony.

Major Roberts said he knew that Swansea was a go-ahead town and it was hoped the service they were inaugurating that afternoon would be of great value in forwarding their aspirations towards greater growth and efficiency.

Mr. H. S. Thompson, Superintending Engineer, who was a member of the commission to the United States in 1930 to investigate American telephone methods, gave an able and enlightening account of the development of the Trunk Service from its inception to the present time, whilst Mr. A. E. Ryland, District Manager, recounted interestingly the various chapters in the history of the Telephone Service in Swansea, tracing the course through the period when there were three services operating in the town—the National Telephone Company, the Swansea Corporation and the Post Office.

The addresses were much appreciated by the visitors, who were then invited to inspect the new system in operation under the guidance of Mr. R. S. Grosvenor, Traffic Superintendent.

Mr. W. J. Hodgetts, M.B.E., Assistant Engineer, demonstrated the working of the plant of the Swansea automatic system and that used for repeating on trunk circuits.

The party were also shown the new telegraph and phonogram apparatus by Mr. C. J. Chislett, Overseer, and the Postal Sorting Office by Mr. J. Griffiths, Assistant Superintendent.

The demand system at Swansea has been brought into being through skilful adaptation of the existing trunk switchboards by the local engineers, under the direction of Mr. D. E. Knapman, Assistant Engineer, Mr. J. G. Gordon, Chief Inspector, and Mr. J. Baker, Inspector, with the guidance of Mr. J. Radford, of the Engineer-in-Chief's Office, and Mr. C. G. Brooks, of the Secretary's Office. It is understood that the adaptation has been effected with comparatively little cost and is one of the few jobs of the kind which have been carried out entirely by Departmental labour.

The visitors were clearly impressed with the extent of the activities of the Post Office and such an event as this cannot fail to popularise the services and foster new business.

## LEEDS DISTRICT NOTES.

THE West Yorkshire Telephone Social Circle held its first social event of the season in the Hotel Metropole, Leeds, on Nov. 4. This took the form of a dance and a bridge and whist drive. The popularity of these functions makes the task of the Committee in limiting the sale of tickets an unenviable one, but the presence at the dance of 338 members of the staff and their friends leaves the impression that on this occasion they had too easily succumbed to the blandishments of last-minute applicants. It must be said, however, that the crowded dance floor seemed to give an added zest to the enjoyment of the dance and to encourage the orchestra to unexpected bursts of enthusiasm. Among the guests were Mr. Kenny (Postmaster-Surveyor) and Mrs. Kenny, Mr. Murray (District Manager) and Mrs. Murray. The presentation of the prizes was performed by Mrs. Murray, who had the especial pleasure of handing one to Mrs. Kenny and one to Miss Morfitt, Supervisor of Leeds Exchange, for their prowess at bridge and whist respectively. The other prize winners were: Bridge.—Mrs. Crowther, Mr. Chable and Miss Dexter; Whist.—Miss Sykes, Miss Shaw, Mrs. Beal, Mr. Friedman and Mr. Foster.

During the past month the number of telephones in the West Riding of Yorkshire has exceeded the 76,000 mark, and this, taken in conjunction with the wide-spread extension of the demand trunk service, gives an added interest to the following extract from the *Wakefield Express* of 1883, which describes the telephone development at that time.

"About 450 firms and public bodies in the West Riding are now in telephonic communication, or, in other words, are able to speak to each other by wire, and the number is increasing daily. There are about 150 telephones in use in Bradford, 120 in Leeds, 60 in Halifax, 40 in Dewsbury and Batley, and in Wakefield about 12. Any person or firm having a place of business or private residence within one mile from a telephone exchange will, on payment of £15 per year, be connected with the exchange. For distances over a mile the extra charge is £5 per mile. If a subscriber desires not only to be placed in communication with the other subscribers in his own town, but also in a neighbouring town, the extra charge is £10 per year. The Wakefield Exchange is located in two upper rooms at the Town Hall Chambers, King Street, and it is possible to speak with persons 30 or 40 miles away! The Telephone Company have generously offered to connect the Clayton Hospital with the members of the honorary medical staff at very considerably reduced charges, so that in the event of any serious accident case being received at the hospital a medical gentleman can be summoned instantly to attend the sufferer."

That the recovery of the lost sheep gives greater satisfaction than the possession of the ninety and nine which have not strayed was the impression left by a letter received from a certain subscriber on Nov. 14. The mildest term which had previously been applied to the subscriber concerned was "very difficult," as a letter or a telegram to headquarters was the usual *modus operandi* when the slings and arrows of outrageous fortune loosed themselves in the direction of his telephone calls. The letter of Nov. 14 expressing warm appreciation of the courteous and painstaking way in which a telephonist had handled a difficult and important call was a pleasure which might be said to have been well earned, and will be treasured accordingly.

## REVIEWS.

*“Die Kathodenstrahlrohre und Ihre Anwendung in der Schwachstromtechnik.”* By Manfred von Ardenne. Published by Julius Springer, Berlin.

The rapid development and use of radio-communications and the consequent crowding of the ether are causing more and more attention to be devoted to the lower wavelengths, where the congestion is not yet so great as elsewhere in the spectrum. This means that the propagation of electro-magnetic waves of very high frequency is increasingly engaging the attention of radio engineers. The phenomena to be dealt with in these researches are highly complicated. This book, written by one of the most prominent and distinguished investigators in this field, Herr Manfred von Ardenne, describes the latest developments of a tool for carrying out this vitally important work—an instrument which is becoming more and more indispensable: the “Cathode Ray Oscillograph.” It is a development and adaptation of an invention which dates from 1897—called, from the name of its inventor, the “Braun Tube.” This is a sealed-off glass tube, originally highly evacuated but, in its latest form, filled with rare gas, from one end of which a stream or jet of electrons is shot to the other end, where it impinges on a fluorescent screen—a coating of, for example, zinc silicate on the end of the closed tube—and becomes visible as a luminous, moveable spot. As this spot moves with extreme rapidity across the screen, under the influence of a “time basis” electrical control, it can be deflected by means of the oscillating current under examination, acting at right angles to the direction of the electronic stream. The result gives directly a picture on the screen—which can, under certain conditions, be photographed—of the form of the wave which is being investigated. Although, as indicated, the Cathode Ray Oscillograph is being increasingly used in radio research, it was not originally designed for this work, and indeed is now being put to the most surprisingly varied uses over a very wide field of investigation, including for example, ordinary telegraphy and telephony (fault localisation, in particular), high power electrical distribution, acoustics, mechanics, chemistry, internal combustion engines, medicine and cinematography (“talkies”).

In radio technique it is extremely useful in “direction finding” (radio-goniometry) as well as in the investigation of the propagation of very short waves and “transient” phenomena. Perhaps, however, its most notable—certainly its most spectacular—success is being achieved, in conjunction with the photo-electric cell, in the development of television. All these and other applications of this remarkable invention (which many electrical experts believe to be destined to play almost as revolutionary a part in the development, in the near future, of certain aspects of electrical research as the well-known thermionic valve has done in other fields of electrical science and practice) are described with admirable clarity and with a wealth of illustrations, in Herr von Ardenne’s book. Perhaps the section dealing with television, which is developing with such rapidity, will excite the greatest interest.

In addition to the practical applications of the Oscillograph, the author gives a succinct account of the theory and construction of the auxiliary apparatus used in connexion with it.

Herr von Ardenne is to be congratulated in having condensed and made available in comparatively small compass a very large amount of information which, hitherto, has had to be sought from a great variety of sources. The book is sure to be welcomed heartily by investigators in this particular field. It bears all the marks of a master hand, as was to be expected from the author’s reputation. It also exhibits characteristic German thoroughness, but, surprisingly, this comprehensiveness is not associated with the prolixity usually associated with German technical and scientific works.

A word of praise must be given to the excellent illustrations, of which there are over 400.

Dr. Henning Knoblauch collaborated in the preparation of the text.  
B. J. S.

## MANCHESTER DISTRICT NOTES.

*Transfers to the Ministry of Labour.*—Four of our Assistant Supervisors, Class II, were transferred from the Telephones to the Ministry of Labour on Nov. 6. These ladies—Miss Hartley (School Teacher), Miss Llewellyn (Broughton Exchange), Miss Grocott (Eccles Exchange) and Miss Johnson (Toll Exchange)—were very popular with their colleagues, and their loss is yet another sacrifice to the progress of automatic telephony, with its resulting redundancy of staff.

*Post Office Telephones Social Club.*—The club held a very successful dance at Telephone House on Nov. 18; some 250 people were present and spent a very enjoyable evening. The spot-waltz prizes were won by Miss L. Bell, of the District Manager’s Office, and Miss J. Richardson, of the Central Exchange and their partners.

When these Notes appear the club will have held another dance, on Dec. 2.

*Lecture.*—On Oct. 31 the Traffic Superintendent, Mr. J. Magnall, addressed the Oldham Rotarian Club on “The Telephone Service.” The speaker was introduced to the meeting by Mr. Farrant, the Head Postmaster of Oldham, who is a member of the club. Captain E. S. Cooper, the Sales Manager, also was present.

The lecturer discussed, in particular, the quality of the service given in Oldham and the surrounding district, and reminded his listeners that as Rotarians doubtless they felt an irresistible impulse to turn round every dial they set eyes upon, and perhaps they found themselves making call after call for the mere sensuous pleasure of turning something round. Mr. Magnall explained to his audience that the quality of the telephone service which the Department offered was under constant examination by means of Service Observations, and that when a weakness was discovered immediate attention was given to the problem of removing that weakness. He hoped that his listeners’ opinions of the telephone service were based on their own experience, not on what they heard second-hand from others. After the talk the bombardment of questions which the lecturer underwent was evidence of the lively interest which his talk had aroused.

## EDINBURGH NOTES.

HER many friends have heard with deep sorrow that the health of Miss A. W. Abbot, Travelling Supervisor, did not permit her to continue her duties until the normal retiring age. Miss Abbot’s health, unfortunately, broke down in August last, and she was superannuated on Oct. 16.

Miss Abbot has had a long and interesting association with the Telephone Service, having commenced her official career in 1889 as an operator in the old Dundee local exchange. She recalls that in those days the Dundee local exchange consisted of 13 sections, each with a capacity for 50 subscribers, a call wire system being in use. Under this system any number of subscribers up to 50 or 60 had access to a common wire for calling the exchange, and this was done by the subscriber pressing a bell push type key on his telephone and announcing his own number and the number required; this information was repeated until the bell rang to indicate that the required connexion had been set up. We have no doubt that in the busier hours subscribers with loud voices would receive better attention than their less forceful brethren!

There was no subscribers’ multiple in those early days, and to connect a subscriber on, say, section C, to a subscriber on section L, the C operator pressed a piano-like key marked L and requested the L operator to put “573 on 2 to C” (the “2 to C” referring to a disengaged transfer junction between the corresponding sections). The C operator then connected her subscriber on number 2 transfer junction to section L.

Miss Abbot recalls that the sections were similar to small tables equipped with piano keys, and in the middle of each section on the table top was placed a large square box transmitter; the operator pressed a foot pedal to connect the battery when speaking into the transmitter. The receivers in use were of a heavy hand type, and “elbow rests” suspended from the ceiling were supplied to alleviate the strain to the operator’s arm. Loose cords for setting up connexions were kept in boxes, placed beside the operators. Present-day operators will learn with amazement that in the “good old days” the remuneration for four hours’ Sunday duty was 1s.!

Miss Abbot was appointed Travelling Supervisor in 1910, and in those days of poor travelling facilities she walked many a weary mile on her visits to exchanges.

We are glad to intimate that Miss Abbot’s health is improving, and it is the wish and hope of all her many friends that she will enjoy a long and happy retirement.

Miss Abbot has been presented with a gold wristlet watch as a token of the high esteem in which she is held.

## COIN BOX WORKING.

PREPAYMENT VERSUS POSTPAYMENT—A COMPARISON.

By S. J. G.

THE decision in Traffic Serial No. 5/33 to replace all "pennies only" coin boxes in C.B.S. and magneto areas by the new post-payment type taking shillings, sixpences and pennies is a very decided step forward in coin-box working, for the older type was unsatisfactory from a traffic point of view by the frequency with which the buzzer went out of order and the operating time necessary for the collection of the fee in pennies; from the caller's point of view by the necessity, in the case of trunk calls, of having a large number of pennies and the restriction of service to calls controlled by the A operator; and from the point of view of the subscriber renting a coin box by the limitation to 4d. per call in the amount collected in the box, which has been a matter of frequent complaint and dissatisfaction. The new type overcomes all these difficulties for the collection of money in the box is rapid and the gongs cannot very well go out of order, the trunk service is unrestricted and the charge for all calls can be collected in the subscriber's coin box.

From an examination, however, of the prepayment Multi-coin box and the new postpayment type, there is little doubt that the balance is in favour of the postpayment box, for the advantages of the prepayment type appear to be completely outweighed by its disadvantages when compared with the new coin box.

On a comparison the only advantages on manual exchanges which the pre-payment type has over the other appear to be the saving in operator's time as the result of the charge for a local call having already been inserted in the coin box and the fact that only one pair of cords is used to complete a call against the two pairs required by the operating procedure in the case of the postpayment type. There is a further problematical advantage in the fact that children and irresponsible persons cannot make a false call without first inserting two pence.

Dealing with these in the above order, we have:—

(1) The saving in operator's time.—The time necessary to say "Two pennies, please," is not any greater than that required for "Please press button A," and the total saving is therefore only the time required for the actual collection of the coins in the case of local calls, which would not normally be more than two seconds, and a calculation based on an allowance of three seconds would not err on the low side. Assuming, therefore, an allowance of three seconds per local call and a "day" calling rate of 10 (which again is high), we have a total saving per coin box line of 30 seconds. In the case of an exchange having 100 coin-box lines this would amount to a total daily saving of 50 minutes, or one-ninth of an operator, which, at the mean of the scale at a Class I exchange, amounts to a saving of £13 17s. 0d. a year (including bonus).

Against this saving in the hypothetical case quoted above we have heavier maintenance charges, additional time required for the training of the operators in coin-box working and the drag on the operating caused by the absence of full team work and the need for using special cords and a different operating procedure for this class of traffic. But ignoring these, so far as actual cost in money is concerned we have an additional capital expenditure in providing 100 coin boxes of a more complicated design at a difference in cost of, say, 15s. 0d. each, or £75 for the 100 instruments. Assuming that 75 of these 100 coin boxes have to be provided with emergency calling equipment the additional cost will be about £50 and the modified cord circuits will cost about £15. The total additional cost of providing prepayment instead of the new type of postpayment coin boxes will therefore be in the neighbourhood of £140 against an annual saving of £14 in operating expenses.

The figures given above are only approximate, as much of the apparatus is not yet included in the rate book, but there appear to be grounds for an enquiry into the relative costs of the two types.

(2) Only one pair of cords is used to complete a call from the prepayment type against two pairs in the case of the postpayment type. In the past it has been the practice for the operator to answer a call from a postpayment coin box with the answering cord of one pair and obtain the required number on a different pair, finally connecting the two after the money has been collected. What is the reason for this operating procedure, which is in opposition to that employed in connexion with an ordinary call? There appears to be only one reason, and that is to prevent the caller from passing a short message before the money has been inserted. Now the number of cases in which callers would attempt to obtain a free call in this way would be very small, and the number in which they would succeed before the operator disconnected them would be negligible. Further, it is most unsatisfactory to call a subscriber and say "One moment, please, you are through to a call office," then leave him for a period of from five seconds to thirty or more while the money is collected, during which time he is growing impatient and may leave the instrument. Telephone operating is becoming so complicated to-day that every effort should be made to make the operating procedure for each type of call as similar as possible, and there appears to be no really sound reason for the use of two pairs of cords in the completion of a call from a postpayment coin box. If it were decided to use one cord circuit to complete a call the amount of money which the Department is likely to lose through dishonest callers passing a short message instead of first inserting the fee when the called subscriber answered, and before the operator could disconnect the circuit, would be very small and be entirely off-set by the advantages which would result, both from the operator's and the called subscriber's points of view.

If the operating procedure were altered accordingly there would then be no advantage on this ground between the prepayment and the postpayment type of coin box.

(3) Deliberate false calls. These have been a source of trouble in most places, and are usually made by children and young people. In the case of the prepayment type the need for first inserting two pennies would ordinarily almost completely eliminate this trouble, but the provision of the emergency button entirely destroys this advantage and is, in fact, more troublesome for the operator because such calls are given priority.

There is a further advantage possessed by the pre-payment type in that the fee for a long-distance trunk call can be collected as an overlapping operation and held suspended until the called subscriber is obtained, when it can be deposited quickly, thus saving a certain amount of trunk line time.

Some of the disadvantages of the prepayment type of coin box are:—

- (a) More expensive apparatus is required.
- (b) Maintenance charges are heavier.
- (c) Special operating instructions are necessary.
- (d) Special cord circuits have to be provided.
- (e) Full team work is not usually possible.
- (f) In Traffic Serial No. 9/33 the operating procedure in connexion with long distance trunk calls from such lines was amended so that now these calls are reversed by means of ordinary cord circuits and thus the caller can carry on a conversation while the money is held suspended in the box. The controlling trunk operator asks the caller to insert the required coins and when the called subscriber is available, to press button A so that the money may be deposited. The only indication she has that the button has been pressed is the noise of the coins falling into the receptacle and very careful supervision is necessary for this purpose.

As regards automatic areas, it is no doubt within the powers of our Engineering Department to design a postpayment coin-box circuit which would permit of the required number being dialled, but having the transmitter short-circuited until the fee is inserted, after the called subscriber has answered.

This article is merely an examination of the two types of boxes and it is not suggested that any change should be made in the existing type of coin boxes fitted in C.B. and automatic areas, but it is suggested that the operating procedure should be altered to permit of only one cord circuit being used to complete a call and it would appear that some consideration is necessary in respect of (f) above.

On the whole it is considered that the postpayment type of multi-coin box is a very satisfactory piece of apparatus and generally speaking is superior to the prepayment type.

### DEATH OF MR. J. F. ROONEY.

It is with deep regret that we publish news of the death, on Oct. 15, 1933, after a long illness, of Mr. J. F. Rooney.

Mr. Rooney was born on June 5, 1883, and entered the Post Office service in Birmingham in September, 1902. He came to London in June, 1909 and has held a position as Assistant Superintendent of Traffic in the London Telephone Service since 1919. Most of his work in London was performed in the long distance exchanges.

His friends in the Provinces will regret with those in London the passing of a colleague whose naturally kindly and genial disposition endeared him to all who had the privilege of knowing him.

The interment took place on Friday, Oct. 20, at St. Patrick's Cemetery, Leyton. Low Mass was celebrated at St. Ignatius Church, Stamford Hill; a number of Mr. Rooney's London colleagues attended.

### WESTERN DISTRICT NOTES.

*Telephone Staff Social.*—The Western Telephone District staff held their first *whist drive and dance* for the season at Deller's Cafe on Friday, Nov. 17, when 280 past and present members of the staff attended with their friends and helped in the success of an enjoyable evening. The company was pleasingly representative of all sections of the Post Office, including the Western District, Surveyor's Department, the Head Post Office and the Sectional Engineer's Department (Exeter Section).

Among those present were Mr. T. A. Beck, District Manager, Mr. T. Muir, Assistant Surveyor, Mr. W. Kay, Staff Officer, and Mrs. Kay.

Unfortunately Mr. Wint, Head Postmaster, Exeter, was prevented from coming on account of the indisposition of Mrs. Wint; and Mr. F. J. Frost and Mrs. Frost were away for the wedding of their son. We were, however, pleased to have with us Mr. Julian, the late Head Postmaster of Dover, with his wife and family.

A subscriber recently called at the Engineer's Office and handed in his telephone instrument which he had recovered himself, saying he had brought it as he was leaving the town.

A very pretty wedding was celebrated at Totnes, Devon, on Saturday, Nov. 18, the bridegroom being Mr. Gerard E. R. Frost, Sales Representative, stationed at Newton Abbot, and the bride, Miss Madeline Joan Francis of Totnes. They were the recipients of some very handsome presents numbering between 60 and 70, amongst which were a handsome oak clock presented to the bridegroom by the Sales and Traffic staff of the District Office, following a meeting of the Sales staff at Exeter, and an oak and silver biscuit barrel presented at Newton Abbot from the telephone staff (Engineering and Traffic) of the Newton Abbot area. A reception was held at the Royal Seven Stars Hotel, Totnes, at which 35 guests assembled.

As the happy pair were bidding their adieux preparatory to leaving for London by road, conspirators were busy painting their car with gum, to which, of course, the showers of confetti stuck fast and as the car moved off it gave the impression of something that had become detached and lost its way from a carnival.

Fools wander,  
Wise men travel,  
But Civil Servants "proceed."

It is the habit of the gardener to "look forward." Telephone men seem to have contracted this habit. No doubt we inherit it from our ancestors, who probably planted their potatoes and then looked forward to the result.

### GLASGOW DISTRICT NOTES.

We regret to announce the death of Mrs. Wm. Campbell (Mary Anderson), which took place on Nov. 4. The name of Miss Anderson will be affectionately remembered by members of District Managers' staffs in connexion with the Telephone Provincial Clerical and Contract Officers' Association, which she did much to keep alive during the war years, and as the very capable editor of that Association's magazine, the *District Office*.

Although Mrs. Campbell was an idealist, at the same time she was eminently practical, and until her marriage about nine years ago, she was a force in local service activities.

We offer our deepest sympathy to her husband and sister, the latter a member of the Glasgow Traffic force. The staff of the Glasgow District Office sent flowers as a mark of their sympathy, and they were represented at the funeral by Mr. H. Murray and Mr. T. Rowand.

Our Glasgow correspondent adds the following apt but contradictory "Thoughts on Retirement":—

The hour approaches when this one displays his shutters.—("Kai Lung.")  
Tears are unavailing! I once more become a private citizen, clothed only with the right to read such postal cards as may be addressed to me, and to curse the inefficiency of the Post Office Department.—(Bill Nye.)

As newer comers crowd the fore,  
We drop behind—  
We who have laboured long and sore,  
Times out of mind,  
And keen are yet, must not regret  
To drop behind.

—(Thomas Hardy.)

It is now some years since I detected how many were the false beliefs that I had from my earliest youth admitted as true, and how doubtful was everything I had since constructed on this basis. To-day, then, I have delivered my mind from every care (and I am happily agitated by no passions) and, since I have procured for myself an assured leisure in a peaceable retirement, I shall at last seriously and freely address myself to the general upheaval of all my former opinions.—(Descartes.)

I've done a good deal of hard work in my time, and I feel as if I had a right to a little rest.—(O. W. Holmes's Landlady.)

A lady of great distinction and power once said to me: "A man in your position can never retire: you may die, but you may not retire!" I have not the slightest intention of doing either at present.—(Mr. Stanley Baldwin.)

Why seekest thou rest, since though art born to labour.—(A. Kempis.)  
The spirit of my father, which I think is within me, begins to mutiny against this servitude. I will no longer endure it.—("As You Like It.")

When thou hast done this chare, I'll give thee leave  
To play till doomsday.—("Antony and Cleopatra.")

The place (on which I have my eye) seems just the kind of spot in which a quiet, pensive man, fatigued but not soured by the turmoil of the world, might settle down, enjoy a few innocent pleasures, make his peace with God and then compose himself to his long sleep.—(Borrow.)

There we'll forget the world of work-a-day.—(W. S. Gilbert.)

In your retirement you will carry with you the admiration and earnest good wishes of the oppressed and toiling scribes. This will be better than bread. You will carry with you another thing, too—the affection of the scribes; for they all love you in spite of your crimes. For you bear a kind heart in your breast, and the sweet and winning spirit that charms away all hostilities and animosities, and makes of your enemy your friend and keeps him so. You have reigned over us thirty-six years, and, please God, you shall reign another thirty-six—"and peace to Mahmoud on his golden throne."—(Twain.)

This collection would scarcely be complete without a thoughtful reminder of St. Luke 12; 19-20.

### SCOTLAND (WESTERN DISTRICT) NOTES.

#### A Possible Explanation of Call Office Discrepancies at Attended Call Offices.

*Scene: Local Highland Post Office.*

A VISITOR recently entered the post office and made a purchase of postcards, postage stamps, &c., in payment of which he tendered half-a-crown. After the purchase he wended his way down the village street, and when some distance off he was loudly hailed by the now excited Postmaster, who had run after him to ascertain if he, the visitor, had observed which "bowl" he, the Postmaster, had put the half-crown in.

Greenock's new Labour Provost was elected at a meeting of the council on the afternoon of Nov. 10, 1933. At a later meeting, held the same afternoon, it was decided that an exchange line telephone be installed at his residence. The agreement was negotiated at 5.25 p.m. by the local Sales Representative and the service was in operation at 10 a.m. on the following day. The Town Clerk expressed his appreciation of the expeditious manner in which the circuit had been installed.

The attention of readers of the "Telegraph and Telephone Journal" who were interested in the technical articles published in its pages is directed to—

### **THE POST OFFICE ELECTRICAL ENGINEERS' JOURNAL.**

Established in 1908 as a quarterly publication devoted to the interests of the Communication Engineer, the "**Post Office Electrical Engineers' Journal**" has won a high place in the technical literature of the subject. It contains authoritative and informative articles of a technical character which are of interest to all engaged in Communication Engineering. Accounts are given not only of the latest practices of the British Post Office, but also of the outstanding features of developments occurring in other Administrations. The articles are profusely illustrated by drawings, photographs, and diagrams; and each is contributed by an acknowledged expert in the subject.

The Journal is the only periodical publication which is **expressly recommended to students** of Telegraphy, Telephony, and Radio Communication by the City and Guilds of London Institute. For the benefit of the student, too, an 8-page Supplement is presented free with each issue; in this are given answers to the questions set in the City and Guilds Examination Papers in these subjects, the whole of the examination papers being covered in the four quarterly issues.

To all who require to keep themselves well-informed on the many and varied changes in the art and practice of Telegraphy, Telephony, and Radio Communication, **the Journal** is indispensable. It is published in January, April, July, and October, and the cost of 1s. per copy (1s. 3d. post free) **represents a worth-while investment** for the student as well as for those actively engaged in any branch of electrical communications.

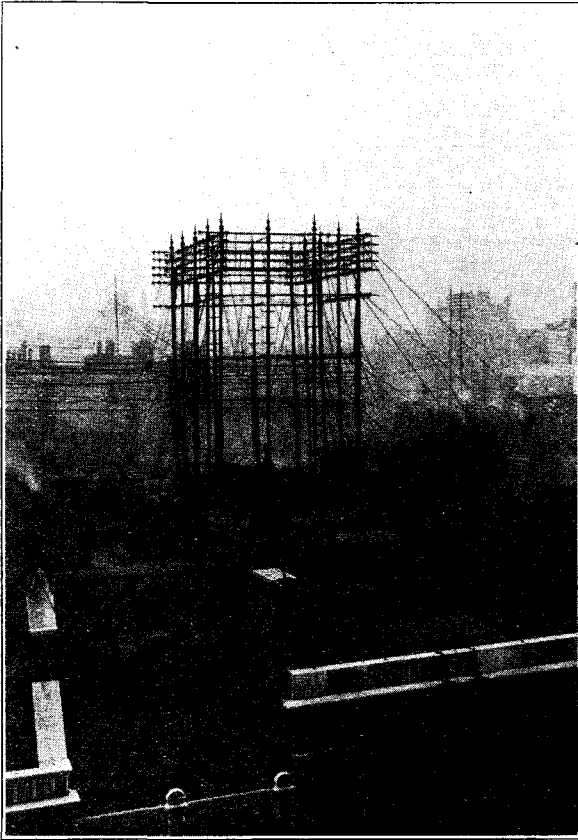
The subscription terms to members of the Post Office Staff are 4s. per annum; to others, the terms are 5s. per annum, post free. Intending subscribers should forward their subscriptions to the Managing Editor, *P.O.E.E. Journal*, G.P.O. (Alder House), London, E.C.1.

## LONDON ENGINEERING DISTRICT NOTES.

*Staff.*—On Oct. 31 last Mr. W. H. Isherwood, Inspector, retired under the age limit, after having completed no less than 46 years' service in the Engineering Department. He was presented with a gold watch by the Sectional Engineer on behalf of his colleagues, whose best wishes go with him. During the last 5 years Mr. Isherwood was employed upon the plans for the development of the engineering plant to accommodate the anticipated growth in subscribers. Prior to this he was engaged on the supervision of external work, and during the war was intimately associated with the provision of many circuits for searchlights, &c., in connexion with the aerial defence of London.

A representative gathering attended the farewell to Mr. A. E. Harsum, Higher Clerical Officer, at the Centre External Section, on his retirement on Oct. 31. Mr. Harsum commenced his career in the Central Telegraph Office in 1889, joining the Engineering Department in 1901. His quiet but genial personality brought him many friends, who all wish him many years' of happiness in his retirement. We shall no doubt hear of him in the future, as he is a prominent bowler and has earned renown in local and Civil Service circles.

Mr. G. Dimond, Inspector, also retired on Oct. 31, after 36 years in the Post Office. He was employed during the last part of his service on the supervision of external work in the North-West Section of London.



*London Wall Derrick.*—The above photograph represents the derrick on the London Wall Exchange, which stood for 30 years, a landmark in the City of London. It was erected on the rebuilding of the exchange in 1902, after the previous exchange had been destroyed by fire, and it was dismantled in October of this year. The foreman in charge of the demolition was by coincidence also engaged in its erection.

There are undoubtedly many members of the staff scattered throughout the country who can claim to have been associated with the design and construction of this standard, and there are many more also who have been engaged since in its maintenance or in the more arduous work of running and maintaining the wires and cables radiating from it.

Owing to the development of underground distribution and the transfer of many subscribers to other exchanges its glory of recent years had departed. Finally, it was possible to divert the few remaining circuits which it carried.

It was the last and one of the finest of a number of roof structures in the City of London, and its demolition may be said to mark the end of a phase in the history of telephone engineering. Its passing at the time of the passing of this journal will have a significance for many.

*Cumberland Hotel.*—The Cumberland Hotel, Marble Arch, the latest addition to the modern London hotels, and is to be opened this month.

The building occupies a commanding site overlooking Marble Arch and Hyde Park, and comprises 950 bedrooms and sitting-rooms situated on the upper floors, whilst the ground floor and basement are utilised as winter garden, restaurant, banqueting hall and grillroom, &c. A portion of each of these floors is also set apart for the accommodation of the Maison Lyons Restaurant.

The building is served by an 8-position C.B. No. 10 switchboard, together with standard racks, frames, &c. Telephones are installed in every room—a total of 1,050 hand-microtelephones with combined bell sets being fitted. The numbering scheme provides for the telephone and room numbers to coincide, the excess over the hundred on each floor being catered for by a separate "X" multiple. The power plant consists of two 300-ampere-hour batteries together with the necessary charging plant.

Separate suites of public call offices, with control switchboards and special groups of exchange lines, serve the hotel and the restaurant, the exchange lines working direct to the control boards during the day, but being switched back to the main P.B.X. by night, the call offices then becoming direct extensions from that switchboard.

Steel screwed conduit was installed throughout the building by the Department for the accommodation of the internal wiring, which is entirely concealed. The system employed is of a central corridor run with branches off to each room, the whole being covered with cement floating with the lids of the drawboxes level with the surface. Great care was necessary in maintaining the level of these boxes, continuous working in conjunction with the floor layers being involved in order to avoid sinking or projection. Many difficulties were met with in the endeavour to keep below the surface of the 2-in. cement flooring, especially where crossing other pipes and girders, but these were successfully overcome.

There are nine distribution areas on each floor, the whole being linked up together by the conduit system. A total of 60,000 ft. of conduit and 21 miles of 1-pair L.C. cable were used in wiring and building.

*Staff Salesmanship.*—During the month of October the staff of the London Engineering District was successful in obtaining orders for 51 exchange lines, 197 extensions and 1,176 hand-microtelephones, plugs and sockets, extension bells, extra receivers, &c. A very gratifying achievement.

*South Ockendon R.A.X.*—The South Ockendon Rural Automatic Exchange was brought into service at 11 a.m. on Monday, Oct. 30, 1933, when 24 lines were transferred from Upminster and three from Tilbury. The parent exchange is Upminster C.B. No. 1 Exchange, to which three both-way junctions are provided.

The equipment consists of two units auto No. 6, each having a capacity for 25 subscribers' lines. This equipment, which supersedes the unit auto No. 5, is the first of its kind to be installed in the London Engineering District. The general facilities afforded by the unit auto No. 6 are similar to those of the unit auto No. 5, with the addition of P.B.X. working, a modified form of coin-box discrimination and the use of battery testing.

*Toll Amplifier Equipment.*—In connexion with up-grading of junction routes in the London Toll Area, amplifier equipment and associated power plant is being installed at Leatherhead Exchange and G.P.O. South.

The equipment at Leatherhead consists of four equipments amplifier No. 5 15/15, i.e., 60 amplifiers in all, and these amplifiers will be used for the circuits between the following exchanges:—

London (Toll A and Toll B)—Leatherhead	...	20
" " " " " " —Oxshott	...	12
" " " " " " —Bookham	...	11

The circuits, which are four-wire, are routed on a 228-pair 10-lb. paper core quad type loaded cable between London and Leatherhead. Circuits terminating at Leatherhead are extended to the exchange signal equipment on two wire cable and jumpers. Oxshott and Bookham circuits are extended from Leatherhead on ordinary two-wire local circuits.

*Sports.*—The representative "soccer" team have continued to shine in senior amateur football circles and have established a record in reaching the Divisional (Surrey) Final of the Competition. They were, however, defeated in this match by Sutton United after a terrific battle by 2 goals to 0. Their path to the final had been by virtue of "away" victories, one Dorking 4-0, Beddington Corner 4-0 and Leyland Motors 4-2.

In the London Senior Cup they were defeated by the Casuals by 3-0. The Casuals, with their strongest possible team in the field, had to play a hard game to win; their team included six Corinthians and two English internationals in A. H. Fabian and W. H. Webster—to hold this team to 2 goals was an excellent performance.

In the Civil Service Cup, of which the L.E.D. are the holders, they easily won their 1st round by defeating K.E.B. also away, by 7 goals to 0.



*Gomersal Cup*.—First round results :—

West Internal (Blackwell 3, Ellis, Mills, Pledger).	6	Headquarters ... ..	0
South-West Internal (Dowden 2, Shepherd).	3	North-West External (Drew) ...	1
South-West External (Hudson 4, Mears, Beach, Greaves).	7	C.T.O. ... ..	0
City External (Gilmore 3, Cowell, Davenport, Hughes, Roberts (o.g.)).	7	Centre External (Codling 2, Fales, Smith, Surrige).	5
City Internal (Walters 4, Tod 2, Bullen).	7	Power (Casey, Blakeborough, Broderick).	3
North-East Internal (Billson, Evans, Pulling).	3	South-East Internal ... ..	0
Centre Internal (Jordan 2, Hammock 2, Brown).	5	North-West Internal ... ..	0

The second round draw is as follows :—

- Centre External v. North-East Internal.
- West or South-East v. West Internal.
- City Internal v. South-West External.
- South-West Internal v. City External.

Matches to be played by Feb. 10, 1934.

LONDON TELEPHONE SERVICE NOTES.

Sales Branch Notes.

DURING the month of October there was a net increase of 4,225 stations, as compared with 3,711 stations in the corresponding month last year.

It is encouraging to find that the gross new business of 11,553 stations for the month constitutes a record for any month. The previous highest figure of 11,306 stations was attained in October, 1929, but the number of cessations continues to be a serious handicap to better net results.

The Commercial Motor Vehicles Show was held at Olympia from Nov. 2 to 11. There were 346 exhibitors and 281 telephones were provided.

A Post Office Exhibition was opened on Oct. 25, at 73, Strand, and will remain open until Dec. 23, 1933.

The Exhibition is devoted principally to telephone service, but the Air Mail and Savings Bank services are also represented.

A comprehensive array of telephone apparatus is on view and includes a working demonstration of automatic testing apparatus, step by step progress of calls originated on the automatic system, teleprinters, voice frequency and many types of private branch exchanges.

The home is represented by a furnished lounge, bedroom and kitchen, complete and up to date with telephone service.

Another feature is a cinema display, where films dealing with the many branches of Post Office activity are shown.

The Exhibition is attracting considerable attention and it is estimated that upwards of 90,000 people attended during the first two weeks.

It is with deep sorrow that we have to record the death of Mr. D. J. W. Mathias, Clerical Officer, Western Sales Office. Mr. Mathias had been ill for a long time and died on Oct. 24 last, in Mount Vernon Hospital, Northwood.

He entered the service of the National Telephone Co., Ltd., in 1909, and was transferred to the Post Office as an Assistant Clerk in 1912.

He was 39 years of age.

*Staff Salesmanship Scheme—London Area*.—The results of this scheme have been as follow :—

	Total No. Ordered.	No. Ordered during Month ended Nov. 14, 1933.
Exchange lines ... ..	2,703	145
Extensions ... ..	3,307	193
Private lines ... ..	34	—
Plugs and sockets ... ..	580	32
Hand-microphones ... ..	16,650	953
Extension bells ... ..	1,562	114
Other apparatus ... ..	1,589	98

There seems to be an increasing desire among telephone subscribers to express appreciation of the methods of the administration and of the service generally. A few extracts from a large selection of letters recently received are given below.

"The prompt and courteous attention in finding a doctor when my own medico was out is deserving of the highest praise."

"Since the installation of the line 130 calls have been made and the correct number has been given without delay."

"Thanks for the very efficient service supplied to me during the past 16 years."

"I much appreciate the efforts of the telephone department in my endeavours to trace Doctor — on the Continent."

"The quick service is a tremendous boon to us."

"The Post Office Telephone Service, for courtesy, attention, business-like methods and rapidity of execution, is unapproachable; in fact, would take any 'medals' that were going."

Faraday Building, Queen Victoria Street, E.C.4.

A bronze plate bearing the following inscription :—

THIS BUILDING WAS OPENED BY  
THE RIGHT HONOURABLE  
THE LORD MAYOR  
SIR PERCY GREENAWAY, J.P.  
ON THE 4TH OF MAY, 1933.

has been fitted in the vestibule of the east entrance to Faraday Building to commemorate the official opening of the building.

London Telephonists' Society.

Meetings of societies, and particularly those of societies within the Service, have a tendency to become stereotyped in character. Novelty of outlook is not easy to achieve and so often the officers responsible succumb to the temptation to take the easier course, and prescribe "the mixture as before." This common failing, however, provides one good feature: when some society breaks away from the traditional practice, our appreciation is all the keener by reason of the rarity of the treat.

A meeting recently held by the London Telephonists' Society provided an excellent example of the success of an adventure into the unusual. The evening had been advertised as "A Debate in Parliamentary Form," and it was evident from the number who attended that the announcement had made strong appeal, but the success which was achieved in capturing a very realistic Parliamentary atmosphere was probably a surprise to most.

The Society was fortunate in securing the use of the Cordwainers' Hall for this occasion. This splendid hall, with its dignified oak panelling, its lofty and ornate ceiling and with its furnishings of fine red leather created a very impressive and suitable setting. The hall was arranged in true Parliamentary fashion, the Ministerial and opposition benches being separated by a massive oak table, complete with despatch boxes and headed by the Clerk to the House of Commons—a position very ably filled by Mr. F. B. Nichols. The Speaker's Chair was elevated on a dais at the head of the room.

The proceedings began with an orthodox Speaker's procession, headed by the Sergeant-at-Arms, Mr. E. W. M. Mann, bearing the mace, followed by the Speaker, Mr. W. C. Griffith, with wig and robe and the Clerk to the House (Mr. Nichols). After the Speaker had taken his seat and the mace had been duly laid on the table, the House got down to business, disposing of the "Questions for oral answer." Pertinent questions on varied subjects were put to members of the Government by Miss Cheason (member for Deptford), Mr. Morris (member for East Finchley), Mr. Hinshelwood (member for St. Albans), and Mr. Pratt (member for Hounslow). The replies were in every instance most illuminating and must have provided the questioners with ample material to satisfy their constituents.

The Clerk to the House then announced the Bill which was to be debated upon: "Telephonists' Resignation for Marriage Bill."

The Bill was introduced to the House by the Postmaster-General, Mr. J. W. Shepherd, who, in a very able speech, endeavoured to persuade the House that a compulsory service of 12 years before resignation for marriage would be for the good of the country in general and of the Telephone Service and all its members in particular. During his speech the member for Deptford caused an interruption, contradicting the Minister's statement, and continuing her protest in defiance of the Chair. She was duly "named" by the Speaker and was removed, still protesting, by the Sergeant-at-Arms. The Postmaster-General then continued his speech. He was followed by the Chancellor of the Exchequer, Mr. R. Tinniswood, who worthily upheld the tradition of Chancellors in his concern for the national revenue—and his sublime indifference to the provider of the same.

The member for Flaxman, Miss Chambers, then rose from the Opposition benches and displayed the Bill to the House in a very different light. Not for her were any of the platitudes of the Government supporters, and she maintained an inflexible opposition to all their wiles. She was followed by the member for Waterloo, Mr. Oldham, who made a vigorous attack on the Government and their policy, whilst a still further protest was heard from the member for Shepherd's Bush, Miss McDonald, who proceeded to formally move the rejection of the Bill.

The member for Clydebank, Mr. Munro, then caused some consternation among the Opposition members, for, rising from the Opposition benches,

he spoke in support of the measure. At least, that was his own account of his intentions, though by the manner in which his speech was received by members of the Government it did not seem as if they were too grateful for his support. Perhaps some sinister reference of his to the Nemesis which would overtake the Government if the Bill were passed may have accounted for the lack of cordiality with which they welcomed this unexpected ally.

The leader of the Opposition, Mr. R. C. Atkins, followed with a speech which obviously created a profound impression on the House. Eloquence, the happy phrase, and the original point of view we always expect from the member for Palmers Green—and we got them. Only the last-ditch die-hards can have failed to be moved by his impassioned appeal.

But was the Prime Minister, Mr. Horace Dive, appalled by this display of eloquence directed against the Government, or was he disheartened by the obvious popularity of the Opposition view? He was not. Entirely unmoved by all the invective which had been hurled against the Government, he proceeded to tear the Opposition speeches into very small pieces, and to demonstrate quite conclusively to the House that the Bill was a veritable panacea for all ills. It is regrettable to have to record that despite all the skilful support which the measure received, the Government lost the day when the vote was taken.

The meeting achieved a success which justified the effort which had been expended in preparing for it; about 360 members attended—a large increase on the usual figure, and everyone thoroughly enjoyed the evening, which was distinctly instructive besides providing exceedingly good entertainment.

In addition to the officers mentioned, out thanks are also due to Mr. F. W. B. Thwaites and his staff of Stewards, Messrs. Gerrard, Kern, Baker, Jackson and Horgan, who were so assiduous in looking after the comfort of all the members.

The cordial appreciation of the Society for the courtesy and helpfulness displayed by the Cordwainers' Company in the arrangements for the meeting, and in allowing us to make use of their own mace to add realism to the proceedings should also be placed on record in this account of so memorable an evening.

#### Cordwainers.

The recent "Parliament" held by the London Telephonists' Society at Cordwainers' Hall has caused many enquiries as to what a cordwainer is. He is not, as has been suggested, a man who mends a wagon with string, but a shoemaker. Originally the name denoted a worker in Spanish, or Cordovan, leather. Cordovan leather was made in this country in the reign of Henry IV in imitation of the leather of Cordova, or Corduba, in Spain. It was later manufactured to a great extent from goatskin. Workers or makers of new leather were called "Cordwainers" and workers or makers of old leather were called "Cobblers." In the year 1410 these workers were incorporated under the title of "The Cordwainers and Cobblers."

Cordwainers' Hall is first mentioned in the year 1524, reference to it being made in "Letters and Pamphlets of Henry VIII," which are preserved in the Public Records Office. The hall originally stood on the north side of Distaff Lane until that street was absorbed and re-named Cannon Street (1853-4). The present Hall was erected in 1911 in place of a hall erected in 1788 by Sylvanus Hall, architect.

Cordwainer Street, which is now identified as Bow Lane, was named after the Cordwainers, who in early days carried on their trade there. According to Stow, "the shoemakers and Curriers of Cordwainer Street removed the one to Saint Martins le Grand, the other to London Wall near Mooregate."—(H. L. Pountney.)

#### London Telephone Service Sports Association.

The annual prize distribution was held in the Cornwall House Refreshment Room on Thursday, Nov. 16. The proceedings commenced with a thè dansant at 4.30 p.m. Tea tables were tastefully arranged around the sides of the dining room, leaving the centre clear for the dancers.

At 6.30 p.m. Sir Stephen G. Tallents, K.C.M.G., C.B., C.B.E., arrived to distribute the prizes. Although the meeting took on a little more formal aspect for this, the spirit befitting the occasion still prevailed and everyone settled down to hear the various speakers and learn the results of the sports competitions, &c.

Mr. M. C. Pink, Chairman of the Association, invited the President, Mr. W. H. U. Napier, to occupy the Chair and he in turn requested Mr. Pink to open the proceedings by reviewing the position of the Association. The various activities of the Sports Sections were referred to, special mention being made of the development of a ladies' cricket club, the success of Miss Parker (Maryland Exchange) in winning the Public Parks Tennis Tournament, and Mr. R. Cleland (Traffic Branch), who won the C.S. Bowls (Singles) Championship. Later in the evening Mr. Pink presented him with a pair of pipes in recognition of his achievement. The success of Miss Emmis (T/OB) in gaining her colours for Civil Service Boating was also mentioned.

The Chairman then introduced Mr. A. E. Watson, C.B.E., Vice-Chairman of the C.S. Council and invited him to speak of the Council's work.

Mr. Watson, after congratulating the L.T.S. on their achievements in the C.S. sports world, proceeded to report on the general work of the Council and stated how the gift of £10,000 by an anonymous donor had assisted in placing their finances in a much improved condition.

Mr. Napier, afterwards called upon Mr. Hugh Williams to announce the competitions and winners and Sir Stephen Tallents to make the presentations, which were as follow:—

*Athletics.*—The "Napier" Cup for the best all-round athlete, to Mr. A. W. Rollings, of the Traffic Branch.

*Cricket.*—The Shield presented by the President and Vice-Presidents of the league clubs, to the Sales Branch.

*Football.*—The Civil Service League Shield, to the L.T.S. team.

*Netball.*—Shield presented by Miss J. Liddiard, O.B.E., the late Lady Superintendent of the Accounts Branch, to Toll "A" Exchange.

*Swimming.*—The "Rana" Club Championship Cup, also given by Miss Liddiard, went to Miss Hardy, Accounts Section, A.L.I. The Style Cup, presented by Miss E. Mahlendorff, the present Lady Superintendent of Accounts, to Miss V. Nicol, Accounts, A.L.4, and the Club Diving Cup, to Miss M. E. Parsons, Accounts, A.D. On the men's side the "Prosser" Cup, presented by Mr. A. Prosser before his retirement, for inter-Traffic Sectional competition, was won by T/OB Section, and the Lotus Shield for inter-branches went to the Sales Branch.

*Lawn Tennis.*—The Agnes Cox Cup for Ladies' Doubles, a gift from Miss Cox, the Exchange Lady Superintendent, for competition between teams from exchange and office sections, went to Toll A, and the Pink Cup for Singles, open to all L.T.S. ladies, was returned to Miss Parker, of Maryland Exchange, who was also last year's winner. A suitable present was made to Miss Goddard, of Hayes Exchange, who was the runner-up.

*Table Tennis.*—This section of sports takes the form of a tournament running during the winter months and the winning lady and gentleman (separate competitions) are awarded cups presented by Mr. W. R. Bold, Principal Clerk of the Accounts Branch. The last tournament result was Miss Emden, Traffic Branch, and Mr. Crawley, Accounts Branch. The Ladies' L.T.S. Team also won the C.S. Divisional League and they were presented with that trophy and a silver spoon for each member of the team.

The Prize distribution being completed, Sir Stephen Tallents addressed the meeting. In a witty manner Sir Stephen related some of his experiences in Government Departments at home and abroad. He also convinced us of his ability in "scything" and claimed a championship in this respect after the previous holder, an 80-year-old local veteran, had died. Another claim put forward was that he was the youngest Post Office servant in the meeting, as he had only 6 weeks' service. So far as L.T.S. sport was concerned, Sir Stephen expressed his delight at the magnificent gathering that evening and his appreciation of the manner in which the senior officials supported the Association by presentation of trophies and general interest in the sports activities.

Miss Mahlendorff proposed and Miss Cox seconded a vote of thanks to Sir Stephen Tallents, which was warmly confirmed by the meeting.

A vote of thanks to the Chairman, Mr. Napier, proposed by Mr. Harris, the Association Secretary, and seconded by Mr. Hugh Williams which was also cordially received, brought the presentation of prizes to an end.

Following this, dancing was resumed. Competitions, games, &c., were indulged in at intervals and altogether it was agreed that the Association had provided a really jolly evening for its members and friends.

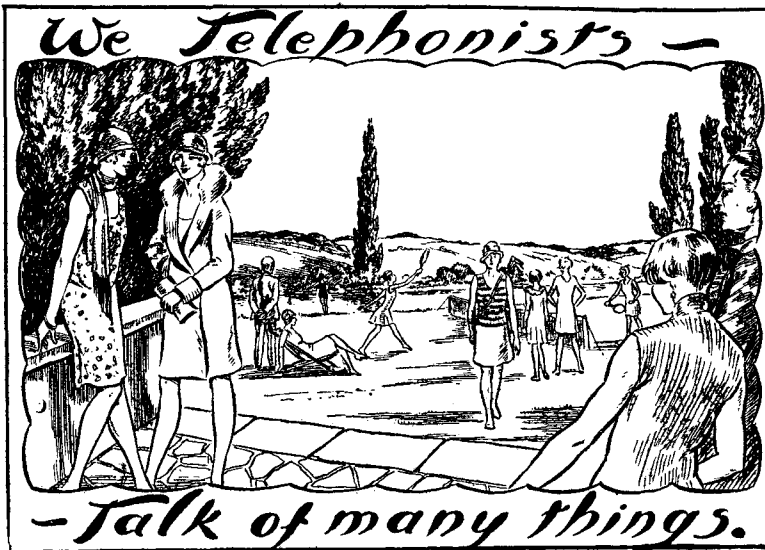
It should be mentioned that during the social Miss Gwendoline Pike, of City Exchange, gave some exhibition dances. She displayed much skill and agility and her "turns" were some of the most enjoyable events of the evening.

#### Personalia.

##### Resignations on Account of Marriage.

##### Telephonists.

Miss W. A. Spencer, of Burgh Heath.	Miss J. Longford, of Gladstone.
" G. E. Searle, of Toll "A."	" D. C. G. Buckle, of Gladstone.
" G. A. L. Reynolds, of Chiswick.	" W. Stibbs, of Tilbury.
" I. M. C. Banks, of Leytonstone.	" P. M. Lineham, of Riverside.
" I. L. Keetch, of Holborn.	" D. Bryant, of Willesden.
" D. M. E. Newton, of Holborn.	" E. F. Harris, of Willesden.
" N. A. Cropper, of New Cross.	" W. Chandler, of Willesden.
" I. M. Howes, of New Cross.	" Z. C. Marley, of Trunks.
" F. M. Austin, of Mayfair.	" A. Theakston, of Trunks.
" D. J. Hornett, of Hounslow.	" F. M. Luff, of Trunks.
" E. Quick, of Hillside.	" M. Elener, of Royal.
" Z. M. Davies, of Victoria.	" F. C. Edwards, of Museum.
" M. J. Gardiner, of Grangewood.	" H. G. Pilgrim, of Museum.
" B. Speed, of Sydenham.	" E. E. Burrows, of Tandem.
" P. A. S. Cheetham, of Albert Dock.	" P. R. Jackaman, of London Wall.
" E. L. Bartholomew, of Seven Kings.	" P. M. Winter, of Metropolitan.



**Farewell.**

DEAR Readers and Contributors,—I come with aching heart, for Time, relentless Time, decrees that thou and I must part. For ten long years we've met each month, we've voiced our joys, our woes; we've told each other anecdotes, in rhyme, blank verse, and prose. We've heard how "We Telephonists" in all they do, excel, in sport, at social functions, and in kindly acts as well. We've opened gates with Percy Flage, and looked through windows, too, at bright, domestic scenes complete with Bindle and Camou. We've sighed and smiled with "Renrut," and laughed aloud with glee, at dauntless Birdie Twilfit, C. A. S., and G. M. T. And now our column ceases, and we are very sad, the while we render grateful thanks for all the help we've had. But though our spirits droop and faint, our tear-drops fall like rain, our hopes are in the future, when we may meet again. So with this thought to lighten and brighten our distress, we sign yet once, with wishes true,—Yours aye,  
THE EDITRESS.

**Arnold Exchange.**

In these days we have become accustomed to that familiar instruction to the effect that "Provision has been made for a new Exchange, &c., &c." Usually our only response is a faint sigh of disgust at the peculiar name to be given the new Exchange.

Most of us, I fancy, say it to ourselves two or three times, and imagine ourselves demanding a number on the order wire, or answering an irate subscriber with the new Exchange name as a prefix to "supervisor." Being creatures of habit we generally decide that we do not think much of it.

When preliminary advice was first received of the opening of "Arnold" Exchange, we were saved any speculation, as we had previously learned that the name had been chosen to complete the "Poets' Corner."

So far, so good! but who would be the next shade to be drawn from his stygian retreat to endow a telephone exchange with an aroma of refinement? Still, it cannot be denied that "Arnold," as an Exchange name, is a definite improvement on such a name as "Gulliver." Phonetically it would probably be a success. What connexion then, was Matthew Arnold? An extensive search in the family bookcase (so often deplored by the lady of the house, for its untidiness) revealed a poem, entitled "Tristram and Isolde." In this was found these pleasing lines:—

"There's a secret in his breast  
Which will never let him rest."

Surely, a most apt description of a Telephone Exchange.

It is doubtful whether there is ever a moment of complete silence in this building, which houses the most perfect automatic equipment in the district.

How different from the oldest building, which is but a few yards down the road. Here is found John Lyons Farm. A square brick building dating from the sixteenth century, surrounded by hay ricks, barns and sheds. An absolutely rural atmosphere is accentuated by the pond near the gate, the noisy home of many ducks, who are only ousted when a coat of thick ice covers it, sufficiently to enable the skaters of the neighbourhood to exhibit their prowess.

The new Exchange seems to throw a challenge to this ancient building, proclaiming the efficiency and progress of the Twentieth Century.

The switchroom, as in all new Exchanges, is spacious and airy, and provides interesting landscapes from the windows.

Even here, the sharp contrast between the old and the new cannot be ignored. A splendid view of Harrow Hill can be seen from the West. No

longer can Harrow claim the best view from the switchroom of any Exchange, for on the South rises the Wembley Stadium, one of the most favoured of London's playgrounds.

Further East, the sloping ground leads up to Barn Hill, which is a place of excitement in the winter when fortnightly drag hunts are organised by the proprietors of Preston Hotel, a modern Inn, which provides all the old-time amusements, coupled with modern comforts.

These are the circumstances and surroundings in which Arnold Exchange finds herself. What influence will she have, in a district so old, and yet so new? Only time can reveal.  
W. E. K.

**A "Redundant" Reverie.**

How blest are they at Duty's call  
Who leave their home at London Wall  
(Or any old Exchange at all!)  
Because they are redundant;  
Who, toddling round from place to place  
With meek docility and grace,  
Contrive to wear a smiling face—  
Their joys must be abundant!

Such fresh, delightful folk they meet  
When tramping round from beat to beat,  
And oft-times friends of yore they greet  
With reminiscent chortles!

Theirs not to prate of weariness,  
Nor think their wrongs require redress—  
Theirs not to sink beneath the stress,  
Or grouse like other mortals!

Redundant of whatever rank,  
A kind Department they must thank  
That they've escaped the hopeless blank  
Of boredom and satiety;  
For them no uneventful round—  
No pacing of familiar ground—  
For them a wider sphere is found—  
Of infinite variety!

Thrice blest are they if they can laugh  
While conning o'er their unknown staff  
(And wondering which are wheat, or chaff!)

Thus they defy dejection.  
When instantly they must acquire  
Location of each order-wire—  
(And o'er their two-fold task perspire!)

'Tis thus they reach perfection.  
For when they've wandered far and wide—  
Both Manual and Auto, tried,  
And each fell circumstance defied

With humour unabated,  
Perchance they'll be amazed to find  
Their status once for all defined—  
In other words (to be unkind!)  
They're superannuated!

C. A. S.

**"Telephone" Crossword.**

*Solution.*

- |   |   |  |
|---|---|--|
| <p>ACROSS.</p> <p>1. Alibi.<br/>7. Mated.<br/>12. Sugar and spice.<br/>13. Trunk.<br/>14. Sepia.<br/>15. Read.<br/>16. Bat.<br/>18. Star.<br/>19. Synod.<br/>21. Yeast.<br/>24. Riper.<br/>27. Levered.<br/>28. Satyr.<br/>30. Aegis.<br/>33. Nicer.<br/>36. Eire.<br/>39. Ted.<br/>40. Coma.</p> | <p>42. Noble.<br/>44. Eager.<br/>45. Two black crows.<br/>46. Sate.<br/>47. Pose.</p> <p>DOWN.</p> <p>1. Astray.<br/>2. Lure.<br/>3. Iguana.<br/>4. Band.<br/>5. Irk.<br/>6. Incandescence.<br/>7. M.S.S.<br/>8. Apes.<br/>9. Tip-top.<br/>10. Ecia.<br/>11. Dear-er.<br/>16. By.</p> | <p>17. To.<br/>19. Stern.<br/>20. Drear.<br/>22. Eva.<br/>23. Sly.<br/>25. Ide.<br/>26. Eli.<br/>28. Scents.<br/>29. Turbot.<br/>31. Goo-goo.<br/>32. Sparse.<br/>34. It.<br/>35. Ed.<br/>37. Iowa.<br/>38. Elbe.<br/>40. Carp.<br/>41. Mews.<br/>43. El.<br/>44. E.C.</p> |
|---|---|--|

**Birdie's Last Flutter.**

It seems all too positively ghastly, I mean about the *Journal* ceasing publication and so on. I mean really. I had quite a wee eye-trickle when I heard about things. Of course, I mean I know really that it's all so to

## Silk & Cotton-Covered H.C.

Copper Wire.

### Asbestos-Covered Wire

Charcoal Iron Core Wire, Resistance and Fuse Wires, Binding Wires, &c., &c.

**Braided and Twisted Wires, Bare Copper Strand and Flexibles of any Construction**

Wire Ropes and Cords, down to the finest sizes, in Galvanized Steel, Phosphor Bronze, &c.

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Established 1793.

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"Ormiston, London."

Holborn 1041-1042.

speak for the best if you know what I mean—I mean about having a P.O. Magazine and so forth—but, as a poet or somebody once said, all good ends have a something or other—or was it good things? Well, anyhow, of course one realises that it sort of had to be in a way, don't you think. I mean progress and what not. And so I mean—well I suppose really it's Good-bye in a manner as it were. Its been—I mean everything's been most fearfully jolly really—I mean really. Don't you think so, or don't you?

BIRDIE TWILFIT.

### Finale.

It was about ten years ago that I first met "We Telephonists" who "Talk of Many Things" and I appear to have been talking more or less continuously ever since. This, the last issue of the *Journal*, affords a fitting opportunity to offer apologies for my intrusion and to thanks to the hospitality you have extended to me.

I am not going to ask why you have tolerated me for so long. Truth can be most uncomfortable! Have I droned, have I bored?—alas, forgive and forget. Remember Camou, who had each effusion tried out upon her first—and weep for her. Applaud Bindle the Hound, who has played ball with many a crumpled manuscript.

I am obliged to you and to the Editress for the use of the Column. As a player once said at the conclusion of an amateur play: "Well, anyhow, we enjoyed it; blow the audience." I have enjoyed it; I trust you have. Labouring in the hope—and possibly under the delusion—that you have, I have ploughed on because I believe that "We Telephonists" are worth working for. You are warm-hearted, open-handed and a jolly sporty crowd withal. So—

"I'll hang my harp on a weeping willow tree,  
And may the world go well with thee."

PERCY FLAGE.

## BIRMINGHAM DISTRICT NOTES.

In this, our last appearance in these columns, we wish to express our regret at the passing of an old and familiar journal. We feel that it has done its job well over the passage of many years and we know that it will be missed by all its readers.

*Stourbridge Rotary Club.*—The general public interest taken in the Telephone Service was again in evidence when the Stourbridge Rotary Club invited the District Manager, Mr. J. L. Parry, to speak at a luncheon held on Nov. 8. Mr. Parry gave a short address on the Dudley Automatic System and illustrated his talk with lantern slides.

The following letter has been received:—

"HARD HIT, BUT HOPEFUL.

"Dear Sir,—Re your communication re wireless licence I am quite aware that it as expired so as my batteries my employment and unemployment pay as also expired my savings as well all that is left to me now is to expire myself I have dismantled my Ariel they are all for sale as a Job Lot though if my Prospects improve in the meantime I may take out another licence.—Yours as above."

## A BRIEF CHRONOLOGY FOR STUDENTS OF TELEGRAPHS, TELEPHONES AND POSTS.

BY HARRY G. SELLARS.

SUPPLEMENT No. 2.—TELEPHONY (WIRE).

- |               |     |   |
|---------------|-----|---|
| 1779 ...      | ... | Kratzenstein constructed a machine which produced vowel sounds.   |
| 1782 ...      | ... | Kempelen devised an apparatus which emitted the sound of words.   |
| 1829 ...      | ... | Willis, of Cambridge, invented a talking machine which produced vowel sounds.   |
| 1844 ...      | ... | Taylor proposed a compressed-air telephone (siren).   |
| 1876, Aug.    | ... | Speech transmitted by telephone between Brantford, Ont., and Paris, Ont.  |
| 1876, Oct.    | ... | J. E. and C. S. Bedford copied Bell's telephone and transmitted speech over a distance of 30 yards.   |
| 1877 ...      | ... | Nissl and Urbanitzky experimented in the telephonic transmission of music in Vienna.  |
|               |     | Prescott published in U.S.A. a work on the telephone.   |
|               |     | Telephonic communication installed between the top of Bow Church, Cheapside, London, and the street for the convenience of workmen replacing the dragon on the spire. |
| 1877, Sept.   | ... | Concerts given in New York transmitted by Edison telephone to Saratoga, Troy and Albany.  |
| 1877, Dec.    | ... | Telephone used by German government for communication with villages where telegraph was uneconomic.   |
| 1878 ...      | ... | Theodore Puskas exhibited a telephone switchboard in France (Paris).  |
| 1878, Sept.   | ... | A. C. Brown devised a photophone.   |
| 1880, June    | ... | Fahie constructed a telephotophone.   |
| 1880, July    | ... | Directory of United Telephone Co. contained 725 subscribers. Eleven exchanges operating in London.  |
| 1881, April   | ... | German government established a telephone exchange in Berlin. Exchanges were brought into use in other cities later in the year.                                      |
|               |     | First public exchanges opened in Austria, Sweden and Switzerland.   |
|               |     | Francois Puskas opened the first telephone exchange in Hungary (Budapest).  |
|               |     | Theatrophone introduced in Paris by Theodore Puskas.  |
| 1882 ...      | ... | "Orchestrion Telephonique" installed in Antwerp by Theodore Puskas.   |
| 1883, Dec.    | ... | Directory of London Globe Maintenance Co. contained 109 subscribers. Annual subscription, £10 10s. 0d.  |
| 1884 ...      | ... | Belgian government constructed telephone trunk lines. Boston—New York telephone circuit of 235 miles opened.  |
| 1884, July    | ... | United Telephone Co. issued a list of subscribers classified according to trade or profession.  |
|               |     | National Telephone Co. displayed a telephone exhibit at Industry and Art Exhibition, Aberdeen.  |
| 1885, Dec.    | ... | 15,114 telephone subscribers in Great Britain.  |
| 1886 ...      | ... | Austrian government constructed telephone trunk lines. Telephone used by Norwegian government to connect isolated villages with the telegraph system.                 |
|               |     | Telephone introduced into Spain.  |
| 1887 ...      | ... | Austrian government opened its first local telephone exchange.  |
| 1888 ...      | ... | Hungarian government established public telephone exchanges.  |
| 1889 ...      | ... | Swedish government constructed trunk telephone lines. W. H. Preece published " <i>The Telephone</i> ."  |
| 1889, Sept. 1 | ... | French government assumed ownership of telephone exchanges.   |
| 1891, Mar.    | ... | Telephone communication established between London and Paris.   |
| 1891, April 1 | ... | Anglo-French telephone service opened. Charge eight shillings for three minutes.  |
| 1892 ...      | ... | New York—Chicago telephone circuit of 900 miles opened. Theodore Puskas inaugurated a broadcasting telephone service for news in Budapest.                            |

- 1893, Jan. 1 ... Belgian government acquired the public telephone exchanges.
- 1896, Oct. 30 Municipal ownership of public telephone exchanges commenced in Amsterdam and Rotterdam and afterwards became general throughout Holland.
- 1897, Sept. 30 Dutch government acquired the trunk telephone lines.
- 1899, Dec. ... 175,300 telephones in use in Great Britain.
- 1903 ... Night calls at half rates admitted in Anglo-Belgian and Anglo-French services.
- 1907 ... Italian government acquired the local and trunk telephone systems.
- 1909, Dec. ... 610,000 telephones in use in Great Britain.
- 1913, Mar. 31 Surplus on previous years Post Office telephone working £303,343.
- 1914 ... "No-delay" call system instituted on Glasgow—Edinburgh and Liverpool—Manchester telephone routes.
- 1915, Jan. 25 Telephone conversation exchanged between A. G. Bell in New York and Thomas W. Watson (his assistant in 1875) in San Francisco. Shreeve telephone repeaters were used.
- 1915, Mar. 31 Deficit on previous years Post Office telephone working £111,018.
- 1921, Mar. 31 Deficit on previous years Post Office telephone working £4,721,970.
- 1921, Dec. ... Number of telephones in the United Kingdom reached 1,000,000.
- 1923, Mar. ... Surplus on previous years Post Office telephone working £939,009.
- 1924 ... Longest "through" telephone circuit in the world working between Chicago and Los Angeles, California (2,937 miles).
- 1927 ... Comité Consultatif International (Téléphones) met in Como.
- 1927, Dec. 1 ... Reductions made in telephone charges from Great Britain to the Netherlands, Germany, Danzig, Sweden, Norway and Denmark.
- 1928, Dec. ... Gas explosion in London interrupted several hundreds of telephone and telegraph lines.
- 1930, Mar. 31 Net deficit on Post Office telephone working since 1913—£1,430,180.
- 1930, Dec. 31 35,343,000 telephones in use in the world distributed as follows:—Europe, 10,532,000; Asia, 1,413,000; Africa, 238,000; North America, 21,836,000; South America, 620,000; Australasia, &c., 704,000.
- 1931, Jan. 8 ... Additional annual rent for new pattern telephone—combined transmitter and receiver—reduced from 16s. to 8s.
- Greek telephone service denationalised and transferred to Siemens and Halske, of Berlin, on a 38 years basis, the State having the option of re-purchase after thirteen years.
- 1931, Feb. 24 Direct telephonic circuit opened between London and Budapest.
- 1931, Mar. 5 ... Telephone service opened between Great Britain and French Morocco (Rabat and Casablanca).
- 1931, Mar. 21 Largest private telephone exchange in the world put into operation for the National City Bank, New York, and its affiliated concerns. It has 800 trunk lines, 800 junctions, 8,000 extensions and a capacity of 45,000,000 calls per annum.
- 1931, Mar. 26 Cable telephone communication opened between Guernsey and Jersey and the mainland of Great Britain.
- 1931, April ... First Russian automatic telephone exchange opened at Rostow.
- 1931, April 15 Comité Consultatif International (Téléphones) met in London.
- 1931, April 30 Telephone service opened between Paris and Bucarest, Budapest and Bucarest, and Vienna and Bucarest.
- 1931, May ... Anglo-Roumanian telephone service opened.
- 1931, June ... 2,000,000th telephone connected with the British Post Office telephone system accepted by the King for use in Buckingham Palace.
- 1931, June 17 Postmaster-General placed an order with a London firm for 200,000 hand-microphone telephones.
- Comité Consultatif International (Téléphones) met in Prague.
- 1931, July ... London Telephone Advisory Committee suggested the appointment of an independent administrative authority for the telephone service.
- Anglo-Sardinian telephone service opened.
- 1931, July 29 Trunk telephone service opened between Capetown and Natal.
- 1931, Aug. 10 Ship-to-shore (line) telephone service inaugurated at Newport, Mon.
- Brisbane—Perth Western Australia telephone service opened—3,400 miles.
- 1931, Aug. 28 "Demand" system tried at the London Trunk Telephone Exchange.
- 1931, Sept. 14 Comité Consultatif International (Téléphones) met in Paris.
- Chiappé, Paris Prefect of Police, devised an automatic attachment for telephones which called the police and registered the subscribers telephone number at the exchange.
- American Telephone and Telegraph Company proposed laying a loaded telephone cable between Ireland and Newfoundland connected at intervals with floating anchored artificial islands.
- 1931, Oct. ... Telephone indicator buoy fitted for the first time to a submarine on the British Submarine "Rainbow."
- 1931, Nov. ... Anglo-Jugo Slavian telephone service opened.
- 1931, Nov. 28 First "demand" service on a long-distance trunk route in Great Britain opened between London and Birmingham.
- 1931, Dec. 3 ... Anglo-Spanish telephone service extended to Majorca.
- Telephone service opened between Union of South Africa and Portuguese East Africa.
- Service for reception of radio broadcast programmes on exchange telephone circuits inaugurated in Switzerland.
- 1931, Dec. 31 2,039,537 telephones in use in Great Britain. 36,759 call offices. Number of calls during the year estimated at 1,410,000,000. Sixty-three automatic telephone exchanges opened in the United Kingdom during the year. 108 telephone channels in operation between Great Britain and the Continent.
- 35,194,000 telephones in use in the world distributed as follows:—Europe 10,926,000; Asia, 1,433,000; Africa, 244,500; North America, 21,281,000; South America, 633,000; Australasia, &c., 676,500. American Bell Telephone system made up of more than 19,600,000 telephones.
- 1932, Jan. 5 ... Young Peoples' Telephone Exhibition opened in London (Imperial Institute).
- 1932, Jan. 25 "All-Canada" telephone service inaugurated.
- Case dealt with in a Manchester police court reported by the British Blattnerphone Stille system.
- 1932, Feb. 10 Lord Mayor of London laid foundation stone of new central international telephone exchange in Queen Victoria Street, London—built on the site of Doctors Commons.
- 1932, Feb. 23 First All-British Bypass Automatic exchange installed in London. Cost of plant 20%, floor space 30%, weight of plant 40%, junction plant 29%, and current consumption 10% less.
- 1932, Mar. 14 Anglo-Bulgarian telephone service opened.
- Esclangen devised an apparatus whereby telephone subscribers can receive the correct time from talking clocks installed at Paris Observatory.
- 1932, Mar. 31 1,227,291 International telephone calls handled in United Kingdom during previous twelve months.
- 1932, April 1 Charges for telephone calls between Great Britain and trans-Atlantic liners reduced.
- 1932, April 10 Russo-German telephone service opened.
- 1932, April 13 Telephone callers granted the option of booking a "Personal" call to anyone at a Continental telephone number who speaks a given language.
- 1932, May 4 ... Anglo-Russian telephone service opened.
- 1932, June 2 ... 1,000th automatic telephone exchange (Byron, London) installed by the British Post Office.
- Comité Consultatif International (Téléphones) met in Munich.
- 1932, Oct. 28 Telephone service opened between Great Britain and Salonika (Greece).
- Cable 55 miles long and providing 30 telephone circuits laid between England and Belgium.
- 1932, Dec. 31 2,200,000 exchange telephones in use in Great Britain, 5,300 exchanges and 39,000 call offices.
- Number of telephones in United States, 17,547,000; Germany, 2,995,917; France, 1,292,254; and Canada, 1,279,565.

## C.T.O. NOTES.

*Retirements.*—Messrs. E. L. Clair, Superintendent (Higher Grade) and G. H. Baker, Assistant Superintendent.

*C.T.O. Educational Whitley Sub-Committee.*—This committee is helping members of the C.T.O. to realise and appreciate what is taking place outside the walls of the C.T.O. They have arranged trips to the H.M.V. factory, British Gaumont Films, Peak Frean's factory and, lastly, to Fords, Dagenham.

In connexion with the last-mentioned, a trip was arranged on Nov. 8. A party of about thirty left this office by Green Line coach at two o'clock and immediately on arrival at the Dagenham Works two guides were available and we proceeded on a tour of the factories at about a quarter to three and which concluded about a quarter to five. During those two hours we must have walked a considerable distance and were interested in seeing to what heights mechanisation has proceeded. Everything under the roof seems to be on the move, and although the rate of this movement, at first glance, appears to be slow there is no doubt that its cumulative and ceaseless effect is to speed up the various processes and that to work at the required speed for eight hours a day, even for five days a week, demands physical fitness and skill of manipulation for its maintenance. For instance, there is a "Heath Robinson"-like arrangement of a moving band, now high up in the roof, now descending to within a few feet of the floor, now in the open, now inside, on which are hung every conceivable part of a motor car, or tractor, i.e., piston rods, fronts of radiators, nuts, bolts, bars, hubs, wheels—all are placed on this moving band. It seems that this moving band passes all the material points which are concerned with these various articles hanging thereon and the workmen remove each particular piece of machinery proper to him and deals with it according to pattern. Talking of patterns, everything seems to be specialised—men at one job and one job only. For instance, the wheels were painted by a spraying process in a small enclosed chamber. The men looked as if they were going "over the top" with their gas masks on, but it is very necessary to have gas masks in this room, considering the spraying of the wheels is by a mechanised sprayer. There seems no stopping: a man hangs a small wheel on a hook, he sprays both sides, takes it off, puts it on a moving band, then reaches for the next one. Similarly a man is wholly engaged in putting on tyres and having the inner tubes blown up. Other men are engaged in making moulds for casting. Each man appears to be engaged in making a special mould and is not concerned with those of another pattern. Other men are baking hubs in an oven of white heat. There is no upstairs work space except on a moving band anywhere in the Ford Works—it is all on the ground floor and waste by movement of the staff is eliminated as far as it is possible to devise. Waste seems to be the bugbear; nothing is wasted there. Garbage, it is understood, is bought from all over London. It is sorted and burnt: the metal is used for some purpose or other—the coke for the coke ovens after the fires are cleared is screened again into three sizes—into what are known as "peas," "walnuts" and "large," and each one of those qualities is again used until they are no more. By-products are sold and the whole business is one of soulless efficiency, with speed as the task master.

There is a fully equipped miniature hospital with its operating theatre, X-ray department, dispensing chemist, house surgeon and, in addition, a small hospital ward with three beds, which are used for men who perhaps feel a bit overcome in the factory and are taken into this ward, put to bed for an hour or two and then sent back to work again.

It is somewhat startling to realise what organisation can do; to see a chassis placed on a moving band and to leave it after traversing, say, about 75 yds. as a motor car driven under its own power—just leaves the ordinary man bewildered. One cannot expect to get a full understanding in a two-hour visit, but one was rather sorry to see little, if any, humour or happiness on the workers' faces. They are apparently too intent on keeping pace with a time basis output.

Whilst one may not agree with or like the methods adopted, one must pay tribute to the wonderful organisation which has made it possible for so huge a workshop and its various concerns to be run so smoothly and efficiently.

## SHEFFIELD DISTRICT NOTES.

THE number of stations reached 30,065 during September, in consequence of which the district has been up-graded.

The returns for October showed a gratifying increase in the number of new orders (stations) obtained and this factor, coupled with a decrease in cessations, and the fact that the number of trunk calls and phonograms dealt with during the quarter ending Sept. 30, 1933, shows an increase of 7.3% on the figures for the corresponding quarter of last year, appears to be indicative of improving industrial conditions.

The Postmaster-General visited Sheffield on Nov. 16 and the following comment relating to the visit is extracted from the *Sheffield Daily Telegraph* of Nov. 17.

### "INDUSTRY AND THE P.M.G.

"Of the Government Departments which should be devoted servants of trade and industry, the Post Office ranks only second in importance to the Board of Trade. For this reason it was only natural that local business men turned up in good numbers to listen to what Sir Kingsley Wood had to say at the quarterly luncheon of the Sheffield Chamber of Commerce yesterday. It is apparent that the Post Office is gradually warming to its

responsibilities to industry. Sheffield manufacturers, to their credit, are among the first to encourage such developments, which assist the business activities of this country. Not only was a local firm the first to take out a licence for the Business Reply Card system, but at yesterday's function it was announced that application was being made by local interests for the use of the Business Reply Telegram system, particulars of which the Postmaster-General gave in his address. The method of dealing with this new innovation is as follows: A credit account is first opened with the Post Office, and special reply telegram forms are supplied to the applicant. These are dispatched with letters requiring an immediate answer. The advantages are that only those forms which are made use of have to be paid for, and that replies will be expedited."

With regard to the new business reply telegram facility, it is understood that the first licence will be given to Messrs. Thos. Firth & John Brown, Ltd., of Sheffield.

*Obituary.*—Mr. E. W. Rowson, formerly Chief Inspector in the Engineering Department, passed away on Oct. 28, 1933. He had been in failing health for some time. The internment took place at Congleton and was attended by Mr. W. Lomas, Sectional Engineer, Sheffield, and Messrs. F. Hopps and C. Marsden, of the Engineering Department.

*Retirements.*—Mrs. Davis, Assistant Supervisor (11), having reached the age limit, has retired and has now ceased to be troubled by such matters as "Demand" working and those other facilities which have attended the growth of the telephone service. Her severance from active association with other members of the operating staff was marked by useful tokens of regard and good wishes for the future years.

*Marriages.*—Two members of the operating staff have resigned for marriage—Misses C. Marriott and P. C. Wilson. Both were recipients of parting gifts and it is hoped that life in the new sphere will be attended by increasing happiness.

## GLOUCESTER DISTRICT NOTES

*A Gem from the District Manager's Post-bag.*—Dear Sir,—I am returning the enclosed notice as the footnote so considerably suggests, but I regret I cannot enclose remittance. My creditors say my cheques, in addition to being badly written, are wholly bad, a sentiment endorsed by bank managers who diligently seek audiences with me. A money order would no doubt suit your department, but even the lowliest of sub-post offices refuse to part with same without exchange of current coin. It is therefore with extreme regret that I have to inform you that it is quite impossible for me to help you clear your books. I am a poor book-keeper at best, but I will remember the phrase; it smacks more of Caledonia than London, but you may be glad to know, by way of consolation, that my books are entirely cleared—cleaned out is a vulgar, but more descriptive, expression.

By my method of sweepstake hazard of choosing which creditors shall be paid each month the P.O. has been singularly unfortunate of late but, who knows, you may be lucky in next month's draw!

If by any chance you choose to be unduly pressing I am afraid I shall be reluctantly compelled to keep your account out of the draw completely.

Hoping you find your system working as efficiently as the system you so ably control.—I am, Your tyrant master, (Signed) H— McT—.

*Personalia.*—At the time of writing these notes we have just heard that our District Manager, Mr. R. M. McLarty, is leaving us to take up duty in a similar capacity at Newcastle. Mr. McLarty has been with us since March, 1932, and we are all pleased to know that his departure from Gloucester is a step in the right direction. His loss to the district will be keenly felt and we shall miss his help and patronage at our social functions, which, since his advent to the district, have been given new life.

Another of our young men, Mr. F. H. Jacka, Sales Representative, has set sail on the matrimonial sea. We all wish him and his "mate" calm seas, favourable winds and "bon voyage." We understand that a tangible expression of his colleagues' good wishes will be made in the near future.

### Valediction.

"Farewell—Farewell"—it is an awful word.

So mourned the poet the passing of a friend.

And we, in Gloucester, share this thought avered.

At this, our *Journal's* most untimely end.

In Notes-Provincial thus, our last appearance,

Prompts gratitude's expression from our pen

To all, who by their knowledge and experience,

Have added to our pleasure and our ken.

Of matters telegraphic, telephonic,

Of distance nibilated through the earth.

Could this make "peace" a word, in truth, euphonic,

No man might gauge the *Journal's* power and worth.

But though to bid farewell we all are loth,

We turn to Nature's work for consolation,

Find falling Sere denotes but nascent growth,

And thus rejoice in Coming Publication.

W. E. D.