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TELEGRAPH AND TELEPHONE MEN AND WOMEN.

XLII.—

MISS JESSIE LIDDIARD.

[Photograph by Elliott & Fry.

MISS LIDDIARD has been at the head of the women's clerical establishment in the London Telephone Service practically from the inauguration of a London service by the Post Office.

She obtained her early experience in that pioneer Department of women's clerical work—the Savings Bank, came over to Telephones in 1904, when she was the first woman on the L.T.S. clerical establishment in which she is now Superintendent, and there is an authorised women's clerical force of some 580.

The growth of the service in the intervening years has been considerable, and amongst those who have shared in the work of building up and adapting the organisation to fit the increased load, the changes in tariffs, and alterations in accounting procedure, Miss Liddiard has borne a leading part.

Her knowledge and experience of telephone accounting work are of real value, and even more so are her interest in and knowledge of women's needs. This latter quality is not confined to her own staff, although they naturally have first place, but Miss Liddiard has always kept in unobtrusive touch with national and other efforts outside for the training and fitting of women to take positions in professional and commercial life.

Miss Liddiard brings a liberal culture and broad outlook to lighten her official load, and in her private hours gives to music and church life some share of that energy and devotion which have marked her Post Office career.

TELEPHONY FROM VARIOUS VIEWPOINTS*

BY AGNES E. COX, LONDON TELEPHONE SERVICE.

(*Continued from page* 159.)

SO FAR, I have discussed telephony as a career for women from the point of view of their employment in the Exchanges only ; there is another avenue in which it offers employment—that is at subscribers' private branch exchanges, and it seems possible that with the coming of Automatics, this avenue will widen. One traffic officer, I don't know whether he should be considered optimistic or pessimistic, recently gave it as his opinion that the majority of subscribers would not then be bothered to obtain their numbers personally, but would rent extension instruments and employ telephonists to do the dialling.

There is a prospect, too, foreshadowed by an advertisement of the Automatic Telephone Co. in a recent issue of the *Telegraph and Telephone Journal*, where the test clerk pictured is unmistakably a woman, that the coming of automatics may open up a new field of work for women in the Engineer-in-Chief's Department.

We might broaden our view still further, and take into consideration the thousands, perhaps tens of thousands of women, employed in the manufacture of telephones and telephone apparatus—almost all the lighter machine manipulations and the assembling of the different parts are done by women—but that is rather beyond the scope of this paper.

Our next viewpoint takes us to the School at Clerkenwell, at which telephony is taught. This school, opened in March, 1923, replaced two smaller schools, one in London Wall, taken over with the National Telephone Co., and the original Post Office School at Carter Lane. I am indebted to Miss Webb, who was in charge of the school at the time of its opening, for the following description which is taken from a paper which was broadcast by Miss Webb from the London station :—

"The School comprises Lecture, Study and Examination rooms, as well as a spacious switchroom, which is modelled on the plan of an up-to-date telephone exchange. The time-table is arranged so that the learners spend a certain amount of time every day in the various class-rooms.

"The curriculum combines both theoretical and practical tuition. A course of 20 lectures is given—each lecture being confined to a particular section of the world. The lecturers, who are trained for teaching, are experts in exchange operating.

"A small switchboard by means of which the teacher is able to demonstrate the correct method of handling the different types of calls, is fitted in the principal lecture room. There are also charts with which she can illustrate special features of the work.

"Very few beginners are accustomed to using a telephone, and one of the first in the series of lectures is on the subject of clear enunciation and voice expression. The speech and hearing of every student is carefully tested and it is scarcely necessary to dwell upon the fact that in view of the nature of the work for which they are being trained, the greatest importance is attached to this part of the curriculum. The tendency of every novice is either to shout or speak in a whisper. Happily for the telephone public, and incidentally for the staff of teachers, a well-modulated tone is acquired by the majority of the students after a short training.

"A second lecture room is fitted with an amplifier and sets of headgear which enable students to listen to a skilled telephonist actually working in an exchange. It is, in effect, a system of "broadcasting" with the object of training by example. This arrangement also enables learners to become accustomed to different types of subscribers' voices and accents, which is one of the difficulties every telephonist has to contend with.

"In the switchroom are a number of switchboards, similar to those in use at many of the London Exchanges, which are fitted with all the equipment necessary for answering calls and effecting connexions—these are operated by the students. Special apparatus is provided for the use of the teachers by means of which they can continually pass calls to the learners. The teachers act the part of subscribers. They are extremely versatile, and many are the ways and means employed by them for training new staff to handle all kinds of calls with accuracy and speed. In this connexion it can be truly said that "one teacher in a day plays many parts" for she represents all types of callers, from the man who has not used a telephone before to one who imagines he knows—well—a great deal more about the telephone system than the Controller of the London Telephone Service.

"Every learner must attain a high standard before she passes out of the school. Report forms showing the progress of each student are filled in week by week. At the end of four weeks, if the reports are satisfactory, the learner is drafted to one of 12 exchanges which are regarded as training centres and at each of which a supervising officer is specially appointed to continue the training of learners under actual working conditions. The average time taken to gain an efficiency certificate is 8 weeks.

"From the day of her entrance, and throughout the whole of her service, a telephonist is taught to appreciate the difficulties that the telephone subscribers experience ; in effect, mentally to put herself in the subscriber's place. She is taught to exercise courtesy, self-control, and a wide tolerance—even in the most trying circumstances. No day passes in a telephonist's official life without blame being cast upon her for something for which she is not personally responsible. It is a natural impulse to defend one's self when wrongly accused or unjustly criticised ! A telephonist must, however, restrain that impulse, and she must therefore cultivate patience and an exceedingly good temper very early in her career."

Before leaving the training aspect mention should perhaps be made of the assistance which has been given to other countries in this respect. When Miss Minter left the Post Office Service in London in April, 1913, to take up pioneer work in connexion with the setting up of the first telephone system in Turkey, it was to the London School that she, with the permission of the Secretary to the Post Office, sent her original staff, eight in number, to be trained ; and it was to London that in the early days of telephones in South Africa and Ceylon the respective governments of these countries turned for women to train and organize the operating staffs.

In enumerating the duties which cannot be transferred to automatics, mention was made of the Street Index Section and Directory Centres, and I should like to review the work at these points briefly.

The Street Index System is, as its name implies, an index in street order of all the telephone subscribers in London. It is kept on the "loose leaf" system, the particulars regarding the name, number and address of each subscriber being recorded on a separate leaf which can be corrected or removed as required.

Reference to this index to obtain a subscriber's number is restricted to those cases in which the address but not the name is known. It is somewhat surprising, therefore, to find that the last record taken shows that in one day the number of cases referred was 979, of which 133 occurred in the busy hour—I understand that this record is found very useful officially in tracing the names of subscribers whose writing is so bad that their signatures cannot be read.

The directory centres at present number five. Their function is to deal with enquiries regarding the numbers of subscribers which have been added to the list or altered between the half-yearly issue of the directories.

The approximate number of alterations and additions between the issue of the last two directories was 45,000. A list of alterations and additions is circulated to each centre daily, and the clerical work of keeping up-to-date the card index at 5 points in order that this information may be readily available to answer subscribers is very heavy. We are therefore looking forward hopefully to the time when our promised Central Bureau for this work shall materialize.

It will then be possible by means of a looseleaf filing system to have a complete record of all subscribers in exact alphabetical order, including the day-to-day additions and alterations. This will considerably facilitate matters as at present despite enquirers' assurances to the contrary in a certain number of cases the particulars required are eventually found to be in the current directory and not on the supplementary cards.

Approximately 5,000 enquiries are dealt with daily, in two-thirds of the cases the required number being traced. Some subscribers take a very broad view of the information they are entitled to ask for at this point. One recently stated that he wanted a new lock for his door and asked the telephonist to suggest a suitable number that he might ring up ; another said that he had been asked by his wife to ring up a certain draper in Oxford Street but had forgotten the name, would the telephonist please suggest a few names. He had a vague idea it had something to do with a bird and was satisfied with Swan & Edgars.

Let us next review what I will call for want of a better term the language aspect of telephony.

It would be interesting to know how many additional words the introduction and spread of telephony has given to our language, I understand that they are so numerous (especially on the technical side) that it has recently been necessary to issue a standardised list, and I assume that there must be somewhat similar additions to the languages of other countries. Earlier in this paper I touched on the language difficulties which have been experienced already in connexion with Continental work, and it seems quite possible that with the rapid spread of communications to other European and Asiatic countries, it may be necessary to evolve a universal language—a sort of Esperanto—which will at least cover the phrases usually required for operating calls. These might be prepared somewhat on the lines of the operating expressions at present authorised for use for Inland working, expressions which have grown out of the requirements of the service. In the very early days the operator passed her calls and operated them in the words and phrases which pleased her best, but the necessity for using words which were phonetically most suitable, and phrases which exactly described the situation at the moment without unduly wasting time, very soon became apparent.

The necessity for avoiding waste of time is clear when it is appreciated that an additional second on the operating time of the calls at present handled in London would be equal to the time of 58 additional 48-hour telephonists.

Our mispronouncement of some of the numerals, for instance :—foer for 4 and fife for 5, and the substitution of O for nought, in order to avoid phonetic confusion with 2, 5 and 9, roused a good deal of adverse comment

*Paper read before the Post Office Telephone and Telegraph Society of London, Feb. 21, 1927.

when it was first introduced, but to a considerable extent, we have now obtained the co-operation of the public on this matter, as we have on the stile-strip system, which requires a pause between the hundreds and the tens. This system was introduced as it was found easier to remember four numerals in two groups of two, than in a single group, and also because the multiple being divided into hundred blocks, the telephonist having selected the block—during the pause—has then only to find the particular jack required in that block.

There is one other language aspect on which I should like to comment and that is spelling by analogy—necessary chiefly in phonogram work and to a lesser extent in telephone operating.

The necessity for its use is obvious when one considers how easily such words as bare, care, dare may be confused, and how similar in sound are the differentiating letters B, C, D.

I remember on one occasion when it was the practice to pass the code-time on all calls (before the introduction of analogy) hearing a telephonist try to pass the code for 7-35 G.G. The distant operator interpreted it in every conceivable way except the correct one, G.B. G.C., G.D., G.E., until in desperation she provoked the retort "Oh, can't you understand G.G.—a little horse."

This illustrates the reason for a standard analogy. It must be suitable and dignified.

Let us now turn for a minute or two to review the buildings now in use as telephone exchanges. The difficulties in obtaining suitable sites at or near the centre of each area was exhaustively dealt with in a paper read before this Society in October, 1924, by Mr. Kidner. I think the present policy of the Department to build new, rather than to adapt existing premises is a wise one. It certainly results in greater comfort for the staff both in their switchrooms and in their domestic accommodation. The plans of two exchanges recently erected, Bishopsgate and Sloane, prepared by Mr. John A. Markham, an Office of Works Architect, had the distinction of being exhibited in the Royal Academy. The 112 exchanges at present working in London are accommodated in 102 buildings. Forty-two of these buildings were erected specially to accommodate exchanges, fourteen are shared jointly with the London Postal Service and six are adapted Army huts, in which exchanges are accommodated temporarily. The remainder were built originally for some other purpose and have been adapted for our use.

The most notable adaptation probably is that of G.P.O. South, which has the unique distinction of having housed in succession three of the principal P.O. Departments in London, the Savings Bank, the M.O.D., and the London Telephone Service, and which is now the home of three exchanges, Trunks, Central, and City.

An adaptation of special interest to telephone folk is that which gave us our present North Exchange. This building was originally a Chapel, and a brass plate on its wall bears the following inscription:—

> "Erected by the staff of the National Telephone Company, Limited, to commemorate the fact that Michael Faraday used to worship here from 1862 till the date of his death in 1867. From 1862 to 1899, this building was the meeting house of the Sandemanians, of which body Michael Faraday was an elder. This plate marks the position which he usually occupied on the platform. The position of his pew is indicated by a plate on the floor."

The plate on the floor simply bears his initials "M.F."

Other unusual adaptations are those of a Church, complete with a spire and stained-glass windows to give us Primrose Hill, and a Fire Station to give us Maida Vale.

AUTOMATIC TELEPHONY.

By C. W. Brown.

(*Continued from page* 175.)

IV.

As it is proposed to explain the circuit operation of the line switch, group and final selectors already discussed, some remarks of a general character on diagrams and the scheme of tracing circuits will be useful in assisting the reader in his task.

The writer has had some experience in the Engineer-in-Chief's training school with students of automatic telephony and, with others, has dealt with the problem of simplifying diagrams for study purposes. After trials with several schemes, a system of "detached contacts" with standardised symbols and conventions has been found to have many advantages.

With the system of detached contacts, the circuits, both primary and subsidiary, are drawn as "elements" of the complete circuit; contacts of relays are placed in the portion of the circuit with which they are immediately associated. Identification between a relay coil and its contacts (which are dissociated from the coil) is provided, by assigning a letter to each relay and placing below the letter the number of contacts concerned, thus $\frac{J}{5}$ signifies relay J which has 5 contacts; the relay contacts are marked with the relay letter, followed by the contact number, thus J4 signifies number 4 contact of relay J. (The contact number does not in all cases indicate the proximity of the contact to the relay armature, i.e., in the case of the relay mentioned, number 1 contact may not be the first nor number 5 the last.)

An example is given in Fig. 1. Here a simple impulsing circuit has been drawn in the usually accepted "attached" method and also in the "detached" method.

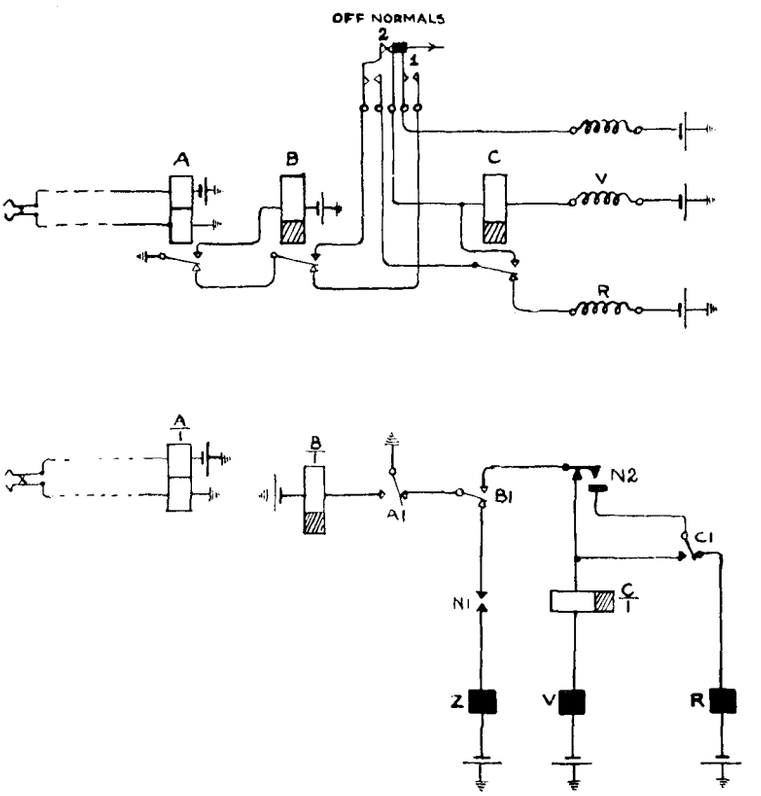

FIG 1

The "detached" contact system has several advantages, the separate circuits are drawn as they occur in the building-up of the whole circuit, crossing of lines is avoided, short lines only are necessary in most cases, and the addition of facilities, &c. to a diagram is simplified.

Fig. 2 shows some of the symbols and conventions now standardised by the Post Office and used on all study diagrams relating to automatic circuits. The significance of the symbols is as follows:—

(*a*) *Change over contact.*—When the relay is energised, the contact represented by the sloping line is assumed to move forward, disconnecting the contact against which it normally rests and connecting the contact towards which it moves.

(*b*) *Break contact.*—The sloping spring moves forward and disconnects the contact.

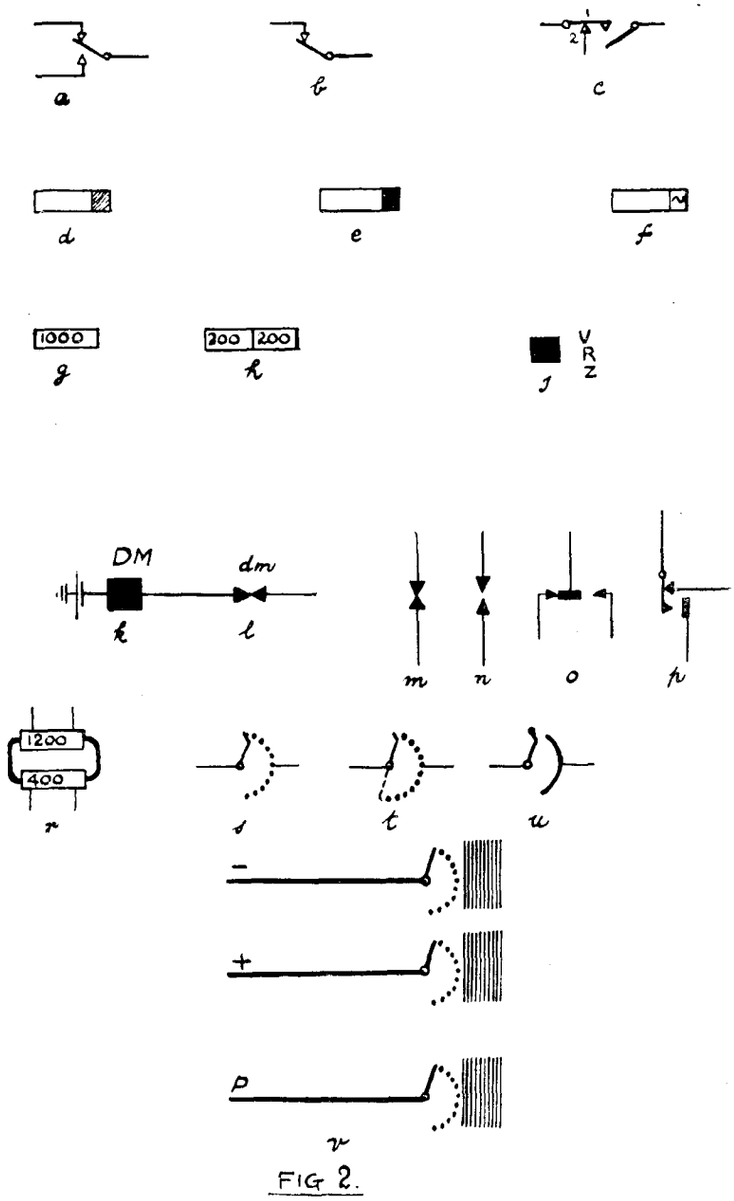

FIG 2.

(*c*) *Make before break contact.*—The sloping spring moves upward and disconnects 1 from 2. The new connexion between the sloping spring and 1 is established before 1 and 2 are disconnected.

(*d*) *Relay with a "slow to release" feature only.*

(*e*) *Relay with "slow to operate" and "slow to release" features.*

(*f*) *Relay used on circuits carrying alternating current.*

(*g*) Indicates the method of showing the resistance of relay coils. (Neither the ohm sign nor the word "ohms" are used.)

(*h*) Shows a two-coil relay, i.e., two separate windings on the same core.

(*i*) *Magnet* (two-motion switch).—The letters V.R.Z. indicate respectively vertical, rotary, and release.

(*k*) *Magnet and magnet contacts* used on line switches of the reverse action (self drive) type. The contacts dm, are normally making, and upon full energisation of DM, the contacts break, thus disconnecting DM which de-energises (the wipers are stepped when the magnet de-energises).

(*l*) *The dm contacts* referred to under (*k*).

(*m*) *Mechanically operated contacts which break* when the mechanical action is applied, e.g., off normal contacts of selectors.

(*n*) *Mechanically operated contacts which make.*

(*o*) *Mechanically operated change over contacts.*

(*p*) *Mechanically operated make before break contacts.*

NOTE.—The off-normal contacts of, and the cam springs associated with selectors, are examples of mechanically operated contacts. In diagrams the contact points of mechanically operated springs are filled in, while relay contacts are not. Contacts operated by vertical movements of selector shafts are marked N and cam springs S. There are no relays bearing these letters.

(*r*) *Shunt field relay.*

(*s*) *Standard line switch.*

(*t*) *Line switch having 50 contacts in the associated bank.*

(*u*) *Homing arc of line switch.*

(*v*) *Wipers and bank of two-motion switch.*—The 10 vertical lines signify 10 levels. Private (P) Levels of group selectors have 11 contacts and Final selectors 10.

An understanding of the facilities provided by the separate pieces of apparatus is useful when dealing with the circuit operations, and before taking the reader through a circuit, its functions will be tabulated. It is necessary to state a fundamental principle here; in order to engage a circuit an earth is connected to the relative P bank contact by the operation of relays, so that circuits in that condition will test busy to hunting switches.

Commencing with the line switch used in provincial areas, the following facilities are provided :—

1. The wipers hunt from the home position and extend the caller to the first free outlet, when the receiver is lifted.
2. Guards the calling line from intrusion by connecting an earth on the private (P) bank contact at the final selector (multiple).
3. Guards the circuit seized by the wipers from intrusion by other hunting line switches having access to the same outlets.
4. Maintains the guarding conditions until alternative conditions are provided by the selector to which the caller has been extended.
5. Prepares the calling subscriber's meter for the registration of the call.
6. If all outlets are engaged, the wipers hunt continuously until an outlet becomes free (or the caller replaces the receiver).
7. Upon release conditions being applied to the connexion, the wipers return to the "home" position.

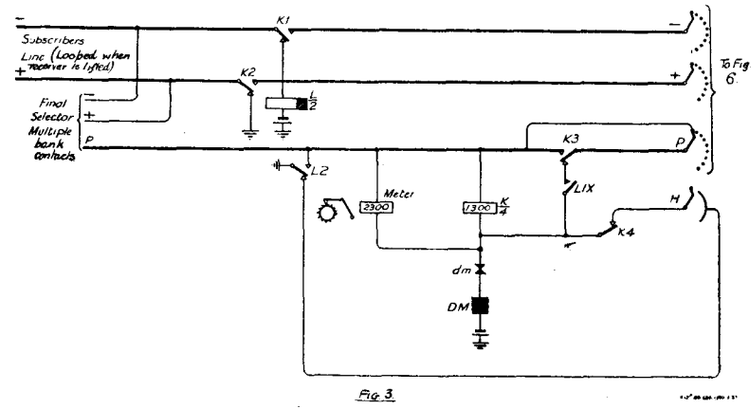

Fig 3.

Fig. 3 is a diagram of the circuit, the operation being as follows. (It should be noted that contacts are always shown in the unoperated position) :—

Relay L energises over the path—Negative, relay L, K1,—line, subs. loop, + line, K2, positive (earth).

Relay L has two contacts. (L1 closes slightly in advance of L2, the fact being signified by placing the letter X against it.)

L1 and L2 complete the following circuit : Negative, DM, dm, L1 operated, K3, P wiper standing on the home position, L2, positive (earth).

L1 also short circuits relay K to secure the immunity of that relay for the present.

L2 also connects an earth to the P bank contact of the subscribers' circuit at the final selector thus rendering it engaged to incoming calls.

The drive magnet DM is therefore energised and when fully saturated the dm contacts open, hence DM is de-energised and the wipers step to the first contact in the bank.

If this circuit is engaged, DM will again energise over the path-Negative, DM, dm, L1 operated, K3, P wiper, positive (earth) on the bank contact.

Another step will therefore be taken by the wipers. It will be observed that as the — and + wipers are disconnected at K1 and K2, no interference is caused to subscribers on the circuits over which the wipers pass.

While hunting is in progress, relay K remains short-circuited due to an earth on one side via L2, and on the other side via L1, P wiper and the earth on the bank contacts.

The wipers step on until a circuit is encountered that is free of earth. There is then no longer a path for DM, and as an earth is removed from one side of relay K, the relay is no longer short-circuited and a path for its operation is provided as follows :—

Negative, DM, dm, Relay K, L2 operated, positive (earth). Relay K is thus placed in series with DM. The current available is sufficient to operate relay K, but is insufficient for energising DM ; the wipers therefore come to rest on the contacts and relay K operates. The reason for a " bridging " P wiper can now be seen. If, when the wiper is passing from an engaged contact to an engaged contact, a break in the continuity were permitted, when the wiper is between the contacts, the path for K already traced, would be available, the relay would operate prematurely and put the caller through to an engaged circuit. The bridging wiper maintains the short circuit across relay K. Relay K has four contacts.

K1 and K2 extend the calling subscribers loop to the — and + lines of the selector associated with the bank contacts on which the wipers have come to rest, and remove relay L from the circuit (relay L does not de-energise immediately, owing to its slow-to-release feature). K3 extends the private wire to the selector, from which an earth will be returned, thus replacing the earth supplied by contact L2, which restores due to the fact that relay L is disconnected from the circuit by the operation of K1 and K2.

K4 opens the homing circuit of the line switch, to prevent homing when L2 resumes its normal position, due to the earth connected to the homing segment.

The meter is joined in parallel with relay K, now extended to the selector. The meter is specially designed not to operate with the normal current flowing in the circuit, and consequently is unaffected at present.

If all outlets from the line switch bank are engaged, the circuit of DM is maintained until the caller replaces the receiver thus disconnecting the circuit for relay L, when the DM circuit is also disconnected due to L1 resuming its normal position.

Homing the wipers.

Upon the receiver being replaced, the de-energisation of relays in the final selector results in the removal of the earth from the private wire, hence relay K is de-energised.

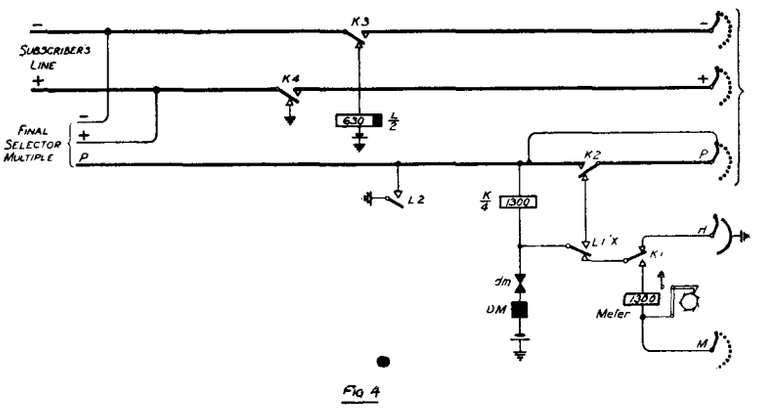

FIG. 4

K4 completes a path for DM from : Negative, DM, dm, K4, H wiper in contact with the continuous segment, L2, positive (earth) ; this path is available until the wiper reaches the home position where it is broken.

While the wipers are returning to the home position, the callers' line is unguarded because an earth is not connected to the P bank contact at the final selector, but the chance of a call being received for the subscriber while the wipers are returning to the home position is an extremely small one. A circuit is given later that provides for guarding until the wipers reach the home position.

Incoming Calls to a Subscriber.

The operation of the final selector connects an earth (positive), to the P bank contact, thus operating relay K in series with DM to negative. DM does not operate. The line relay L is disconnected by the operation of K1 and K2, hence the completion of the circuit for DM is prevented because L1 cannot operate. As the wipers of the line switch are not standing upon a selector circuit, the question of extending to a selector does not arise, and the call passes out to the subscriber via the line, as explained later in connexion with the operation of the final selector circuit.

Fig. 4 is a diagram of the line switch circuit used in metropolitan areas. In this case, as already explained, a separate meter bank is provided, marked M in the diagram.

The circuit differs only with regard to the arrangement of the contacts of relay K and the homing and metering circuits. As will be seen, the operation of relay K in the manner already described results in the following :—

K1 completes the preparatory circuit of the meter over the path : Negative, DM, dm, L1 at normal because relay K has operated, K1 operated, meter, M wiper, selector. When the call matures a positive (earth) is connected to the meter wire from the selector and the meter operates and locks up over the path : Negative, DM, dm, L1, K1 operated, meter, local contact of meter, positive (earth).

K2 extends the private wire to the selector at which an earth is connected to replace the earth provided at L2.

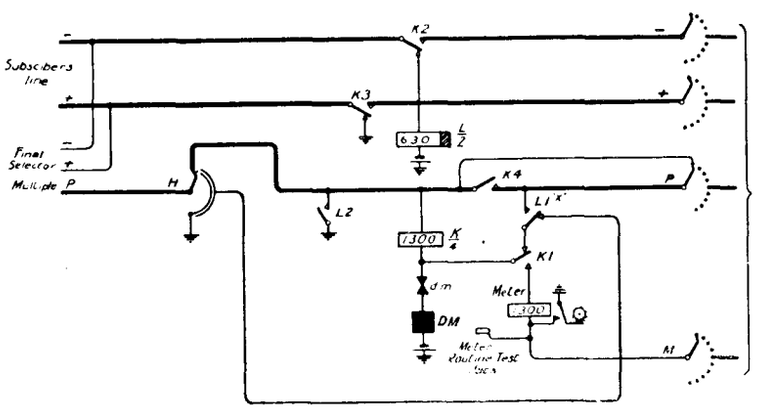

FIG. 5.

K3 and K4 extend the callers' loop to the selector for the next stage of operation.

Fig. 5 is a diagram of the line switch circuit arranged for maintaining an earth on the calling subscribers final selector (P) bank contact until the wipers return to the home position. In this case, the homing (H) level consists of two separate segments which are "bridged" by the H wiper, so that there is an earth connected to the final selector bank (P) contact while the wiper is off the home position. Otherwise the circuit is substantially the same as that described in connexion with metropolitan areas.

It remains to indicate the reason for the slow-to-release feature of relay L. When the caller is switched through to a selector by the operation of relay K, a period of time elapses before the selector relays complete their train of operation. Unless the earth is retained on the private wire until an alternative is returned from the selector, the connexion will break down because relay K will release. Relay L is therefore sluggish and its contact will retain the earth connexion because it does not release until the selector circuit is fully established; actually an overlap occurs.

9. Provides a signal to indicate when the selector has been taken into use but not operated by impulses (faults may be responsible for such a condition).
10. Releases when the caller replaces the receiver.
11. Provides an alarm signal if the shaft fails to restore when release conditions are applied.

The circuit operation is as follows (the connexions at the points marked X and numbered in Fig. 6 will be seen in detail in Fig. 7):—

The caller is extended from the line switch (Fig. 3).

The loop is extended to relay A which operates the path-Negative, A 200, H2, — line, loop, + line, H3, A 200, S1, positive (earth) via tone transformer (point 7).

Relay A has one contact.

A1 completes a circuit for relay B and the PL (permanent loop) lamp from negative (point 8), B 700 and PL in parallel, A1 operated, H1, positive (earth). Relay B therefore operates and the lamp glows.

Relay B has two contacts.

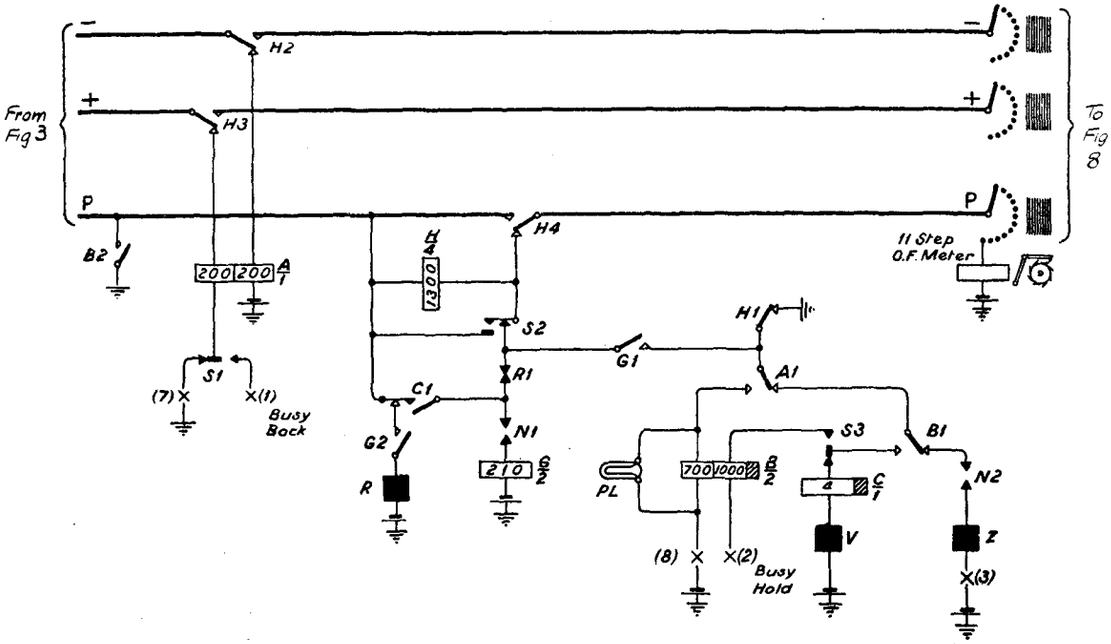

Fig 6

The selector circuit to which the caller is extended is given in Fig. 6, and the facilities afforded by the circuit are as follows:—

1. Transmits dialling signal to the caller. (This facility is only required on first group selectors.)
2. Returns an earth over the P wire to the preceding switch.
3. The wipers step vertically under the control of impulses transmitted over the lines.
4. The wipers automatically enter the level reached and if the first outlet is engaged:—
5. The wipers hunt to the first free outlet and extend the call for the next stage of operation.
6. Guards the circuit taken into use from intrusion by other selectors hunting in the same level.
7. Maintains the guarding condition until an alternative is returned from the selector to which the call has been extended.
8. If all outlets from the level are engaged, the wipers step to the 11th position and transmit to the caller (*a*) busy tone, (*b*) lamp flash for standard requirements when the call is from a manual position, also an overflow meter associated with the level is operated.

B1 prepares the V magnet circuit, which, however, is disconnected at A1; B2 connects earth to the P wire, thus meeting the condition required by the line switch, the control of which is now transferred to the selector. If impulses are not now received, the relay connected with point 8 will have operated and an audible signal given.

The caller dials the first digit.

The circuit of magnet V is established over the path—Negative, V, relay C, S3, B1 operated, A1 making and breaking due to impulses, H1, positive (earth). As relay B is slow to release, it is not de-energised while A1 is impulsing.

With the break period of the first impulse relay C becomes energised and being slow to release remains energised during the receipt of the whole of the impulses of the digit. Also, with the first step of the shaft, the mechanically operated contacts N1 and N2 close.

Relay C has one contact.

C1, in conjunction with N1, completes a path for relay G over the following: Negative, relay G, N1 operated, C1 operated, P wire, B2 operated, positive (earth). Relay G thus operates.

N2 prepares the Z magnet circuit, but B1 being operated, the circuit is not completed, and is not yet required.

Relay G has two contacts.

G1 completes an alternative path for holding relay G operated as follows: Negative, relay G, N1 operated, R1 (these contacts are associated with the R magnet and open only when the magnet is fully energised), G1, H1, positive (earth). Relay G will therefore remain operated independently of C1.

G2 prepares the circuit of magnet R which is disconnected because C1 is operated. The magnet circuit is thus ready and is awaiting the release of relay C.

At the end of the train of impulses, the pause that occurs before the next digit is dialled is longer than the sustaining period of relay C hence the relay restores—the reader will remember that the pause between the transmission of separate trains of impulses is, the lost motion period due to the slipping cam of the dial plus the personal pause of the person dialling, plus the time taken to pull the dial round to the finger stop.

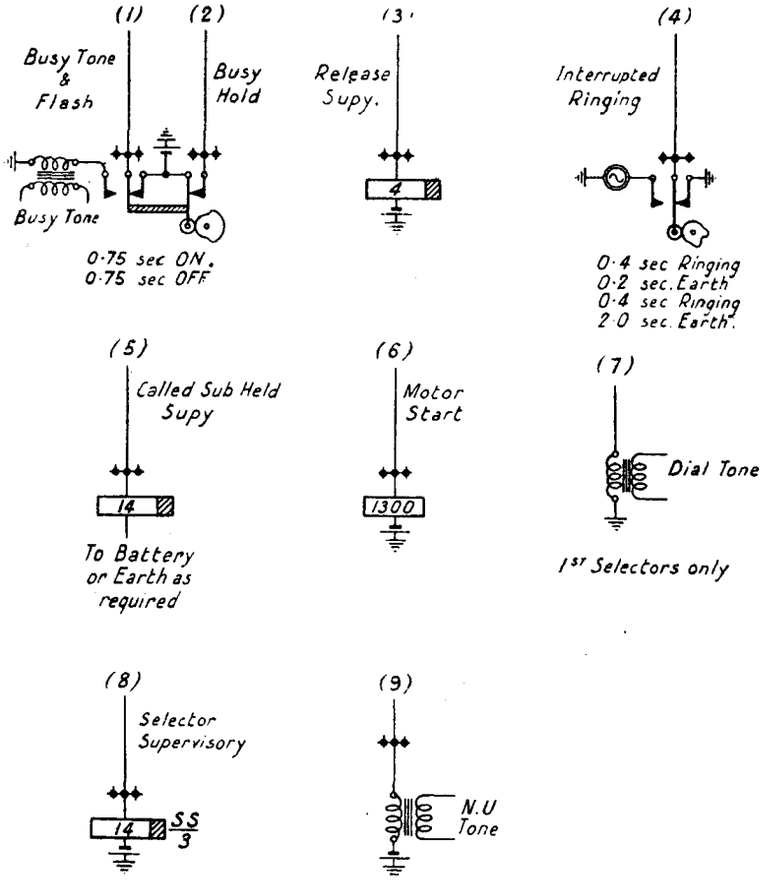

Fig. 7.

C1 upon restoring completes the circuit of magnet R and the wipers step into the level and rest upon the first contact, when the wipers are centred on the contact, R1 contacts are open, hence relay G releases because its circuit is disconnected at R1, the wipers thus halt.

If the circuit associated with the first contact is engaged an earth will be encountered on the P bank contact and a circuit for relay G is again established from negative, relay G, N1 operated, R1, S2, H4, P wiper, bank contact, positive (earth).

G1 again holds relay G independently.

G2 once more establishes the R magnet circuit from Negative, G2 operated, C1, B2, positive (earth).

The wipers move to the next contact, the process being repeated until a disengaged outlet is reached.

While hunting is taking place relay H is short circuited due to an earth on one side from B2 and on the other side from the engaged P contacts via H4.

When a disengaged outlet is reached, the earth necessary for the operation of relay G is absent, hence the R magnet circuit is disconnected at G2 and the wipers remain on the contacts. The short circuit is also removed from relay H, which now operates as follows: Negative, relay G, N1 operated, R1, S2, relay H, B2 operated, positive (earth). Although relays H and G are thus connected in series, the current available is only sufficient to energise relay H.

Relay H has four contacts.

H1 disconnects the positive (earth) connection that is required for the establishment of the Z magnet circuit, this circuit not being required yet. H2 and H3 extend the calling subscriber to the selector associated with the bank contacts and remove relay A from the circuit.

H4 extends the private wire to the selector over which an earth will be returned to replace the earth provided by B2. Relays A and B restore and lamp PL is extinguished. Relay B being slow to release, the earth at B2 remains until the selector ahead is fully operated.

The calling subscriber is now extended to another selector and the control of the line switch and the first selector is transferred to that selector.

If all outlets from the level are engaged the cam springs already described and marked S1, S2 and S3 in the diagram, are operated.

S1 transfers the — line from dialling signal to busy signal (point 1), the tone is thus transmitted round the calling loop.

S2 completes a circuit for the O.F. (overflow) meter from: Negative, meter, 11th P bank contact, H4, S2 operated, private wire, B2, positive (earth).

S2 also short circuits relay H to prevent its operation.

S3 disconnects the V magnet circuit and provides a circuit to hold relay B operated during the 0.75 secs. silent period of the busy signal, as follows: Negative, interrupter springs and busy hold wire (*see* point 2, Fig. 7), B1,000, S3 operated, B1 operated, A1 released during the silent period, H1, positive (earth).

It is necessary to explain at this stage, that during the tone period of the busy signal, relay A is energised because point No. 7 is connected to positive (earth) and point No. 2 is disconnected. After a lapse of 0.75 second (750 millisecs.) point No. 1 is connected to negative to provide the necessary condition for operating the cord circuit relay if a call from a manual position is concerned. During this period therefore, each winding of relay A has the same potential across it, and the relay will release. During the same period, however, point No. 2 is connected to negative, thus a circuit for holding relay B is provided. It must be remembered that 750 millisecs. is too long for relay B, the release period of which is about 300 millisecs.

Release of the selector.

Upon the replacement of the calling subscriber's receiver, the earth from the final selector is withdrawn from the private wire and relay H releases.

H1 completes a circuit for magnet Z over the path: Negative, Z, N2 operated, B1, A1, H1, positive (earth). The release magnet armature knocks out the holding dog, the shaft spring asserts itself and the wipers and shaft return to normal.

If the call is extended to a 2nd group, 3rd group, &c., selector, the circuits concerned are identical with the 1st group selector with the exception that dialling signal and the PL lamp are not required. On such selectors point No. 7 is connected to positive (earth) and the PL lamp is not provided.

(*To be continued.*)

TELEGRAPHIC MEMORABILIA.

AUSTRIA.—After months of experiment and tests, the Innsbruck broadcasting station was officially inaugurated last month. Normally it will relay the Vienna programmes.

BELGIUM.—According to the *Financial News* there is a proposal to form a national broadcasting company in Belgium, with a capital of three million francs, to continue for ten years, with the right to extension for a further five years. The present company's equipment and clientele would be taken over, and the State would be interested to the extent of 60% of the receipts. The board of directors is to consist of 11 members, of whom the Minister of Posts and Telegraphs will appoint the chairman and five other members, and the rest will be appointed by the general meeting. The State will reserve the right to use all the company's equipment for communications of public interest.

BULGARIA.—The *Evening Standard*, London, states that: "Marconi's Wireless Telegraph Company, Limited, has secured a contract for the supply of wireless telegraph transmitting and receiving stations to the Bulgarian Government, for the purpose of placing Bulgaria in direct wireless telegraphic communication with England, Austria, and other European countries."

To this Reuter's Sofia agency adds: "the price to be paid is 33 million leva, or about £50,000, the Minister of Posts and Telegraphs having confirmed the decision of the two German firms and Commission appointed to examine the tenders for the construction of the wireless stations."

In this connexion the *Electrical Review* provides the following additional information :—

"Among the apparatus to be installed at the stations, which will be at Sofia, will be a high-speed transmitter with anode power of 10 k.w. and a wavelength range between 36 and 72 metres. It will be used for communication with stations which are operated in England by Marconi's Wireless Telegraph Co., and through which Sofia will be in touch with the principal cities of the world. The Sofia stations will also contain a high-speed long-wave combined telegraph and telephone transmitter for communication with Vienna, with a wave range of from 2,000 to 4,000 metres; and all the necessary electricity supply equipment and reserve generating plant will be installed under the contract. For the receiving station a set of high-speed commercial receivers with a combined overall wave range of from 1,200 to 25,000 metres, and one short-wave non-radiating receiver with a wave range of from 15 to 100 metres, are to be supplied, and one complete set of apparatus for the Central Telegraph Office control of the transmitters and receivers which will be operated by the Postal and Telegraph Administration.

CANADA.—A Reuter message from Victoria, B.C., states that the cable ship "Restorer" sailed on June 10 with 70 miles of cable to complete the link of the second cable connecting Canada with the Antipodes. The Canadian Pacific telegraphs will link up the cable with the newly-completed copper line between Vancouver and Halifax, Nova Scotia, approximately 3,400 miles in length, thus completing duplicate cable communication between Australia and England.

The following three items are communicated by Reuter's :—

It is reported that the Ontario Government will shortly undertake the erection of a 1,000-watt broadcasting station near Toronto to be used by the Department of Agriculture for broadcasting lectures, weather reports, and possibly general entertainment.

Wireless receiving licence revenue in Canada during the 11 months ended February last totalled 207,328 dollars at one dollar each, an increase of 77,462 dollars over the revenue during the corresponding 11 months of the previous fiscal year. Ontario led the provinces in the number of licences issued with 97,851.

The Winnipeg Grain Exchange will this summer operate a 500-watt broadcasting station, to be erected at a cost of 25,000 dollars; its call letters will be "CJCW."

World Radio informs us that one of the most powerful stations in Canada is to be erected in Red Deer, Alberta, by the Alberta Pacific Grain Co. Studios will be operated in both Calgary and Edmonton by remote control from the main station. It is also announced by the *Electrical Review* that Alberta is to have a permanent radio inspector to serve the entire province, whose headquarters will be at Calgary.

COLOMBIA.—According to Reuter's Trade Service (Bogotá) the Government has concluded a contract with a foreign corporation for the installation of a complete broadcasting station, with a range of 300 km., at Bogotá. The international call letters assigned are HJH-HKZ. The recently completed stations at Carácas (Venezuela) and Balóba (Panama) are expected to make the development of radio easier for Colombia. A wireless telegraphic station will also be installed, establishing communication with the remotest provinces.

It will be recalled that in our last issue it was mentioned that the President of Colombia had announced the decision to immediately provide an improved broadcasting service, and apparently no time has been lost in completing arrangements.

GREAT BRITAIN.—Lord Gainford, vice-chairman of the British Broadcasting Corporation, speaking at Truro, Cornwall, recently, is reported to have said that it was impossible to increase the size of the broadcast wave-band in view of the just requirements of the Army, War Office, Air, and commercial and marine services. The only alternative was to reduce the number of stations in Europe from 170 to 100. He hoped such a change would be adopted in the near future. There were 19 stations in Britain working on the broadcast wave-band, excluding Daventry. Their proposals were to decrease the number of British transmitters using the broadcast wave-band, for which exclusive wavelengths would be granted to Britain, in an equitable international agreement. The objective was to bring to every listener the choice of a minimum of two contrasted programmes capable of reception on the cheapest and simplest apparatus. In addition, there would be the long-wave station at Daventry, giving a total of ten transmitters altogether. Lord Gainford was referring to the regional scheme under which the whole country will ultimately be served by five, six, or seven high-power stations using ten or more wave-lengths, so that it will be possible for each to send out two programmes on different wavelengths.

During two recent week-ends 24-hour broadcasting tests were carried out by the two short-wave "annexes" to the American station at Schenectady (WGY) uninterruptedly: 2XAF used 32.77 metres and 2XAD 26.8 metres in order to enable distant reception effects to be observed. According to the wireless correspondent of the London *Evening News*, the charts drawn by B.B.C. engineers to illustrate the reception in England of those test transmissions are not encouraging to those who believe in the immediate establishment of world-wide relaying of programmes. Throughout the whole 48 hours of the tests engineers were listening at the B.B.C.'s listening-post at Keston, using special short-wave super-heterodyne sets, and from about 10 p.m. till 4 a.m. the signals were at their best, strong and clear enough to be successfully relayed, there being during this period practically no difference between the 32-metre, 26-metre, and 22-metre wavelengths. At other times, except for short "freak patches," signals were weak, badly distorted and subject to violent fading.

The Eclipse.—The British Broadcasting Corporation's stations at London, Daventry, Manchester, Birmingham, and Newcastle-upon-Tyne assisted observers of the sun during its eclipse on the morning of June 29. They transmitted a programme of time signals in accordance with the suggestions of the Astronomer-Royal. Mr. F. Hope-Jones is the B.B.C.'s time expert. They also radiated for the benefit of observers who attempted to ascertain the effect of the eclipse on radio transmission itself a continuous wave, unmodulated, but swinging continually over a wave-band 10 metres broad, 5 metres on each side of the station's normal wavelength, not merely on June 29, but in the early mornings of June 27, 28 and 30. This wave was only interrupted by the time signals. As for short-wave tests during the eclipse, transmissions were arranged by the Radio Research Board in conjunction with the Radio Society of Great Britain on 90 metres, 45 metres and 22 metres.

The British Broadcasting Corporation proposes to adopt forthwith the principle of stating the kilocycle figure instead of the wavelength for all stations. This means that the measurements will be stated in terms of frequency. Support for this step is furnished by the fact that the Union Internationale de Radiophonie, Geneva, has throughout based its system of measurement on frequencies and not on wavelengths.

The fact that the *T. and T. Journal* is only published monthly sometimes has the effect of apparently offering belated information, and this is the case when mention is made of the annual general meeting of the institute of Wireless Technology which was held at the end of May, after our own publication had gone to press. For the information of our many colonial and foreign readers it may still be interesting to learn that the progress of the Institute during the past year has been very satisfactory.

Ordinary meetings have been held monthly at the Engineers' Club, where papers have been read and discussed. A first number of the *Journal* has also been published, and an enlarged and improved number is now in the press. The Institute is receiving a good measure of support, and the membership is steadily increasing. The next session of ordinary meetings will open in October, and it is anticipated that sufficient support will be forthcoming to hold informal meetings monthly for discussions on problems of special interest. Those desiring further particulars of the activities of the Institute are invited to address themselves to the hon. secretary at 71 Kingsway, London, W.C.2.

The London *Daily Telegraph* recently made the following interesting statement and published the following equally interesting opinion of the headmaster of an elementary school on "Teaching by Wireless" :—

Teaching by Wireless.—That 372 new schools had come on the British Broadcasting Corporation's register this term, and that there were 3,000 schools now in wireless communication with London and Daventry, was the statement made by Mr. J. C. Stobart (B.B.C. Director of Education) at a distribution of prizes at the B.B.C. Studio, Savoy Hill, to 19 children successful in examinations dictated by wireless. Captain Ian Fraser, M.P., made the distribution, and said that though, perhaps, the schools would not be superseded in the future, there could be no doubt that teaching by wireless would be of great value to education. The service had gone beyond the experimental stage. Captain Revel, the headmaster of an elementary school, said Captain Fraser had been instrumental in providing more than 3,000 free licences for blind hearers. [The exact number of free licences at the end of May was 7,158.—*Ed., T. & T. J.*]

Dr. H. R. Wright, managing director of Siemens Bros. and Co., Ltd., London, has joined the board of the British Columbia Telephone & Telegraph Co. (a Delaware (U.S.A.) Corporation with offices in Chicago), in which Siemens Bros. & Co., Ltd., hold a substantial financial interest. The British Columbia Telephone & Telegraph Co. owns a controlling interest in the British Columbia

Telephone Co., Ltd., which operates nearly 100,000 telephones in British Columbia, with headquarters at Vancouver.

The following details of exports of radio apparatus from Great Britain are supplied by the *Wireless Trader*: "The total value (excluding re-exports) £109,092, includes valves valued at £21,746. Our principal customer was Australia, whose share is given as £27,230 (valves £8,397); this figure represents a substantial increase. The share of New Zealand—£12,444 (valves £2,087)—was more than double that of the preceding month. The chief foreign customer was Holland, which took goods to the value of £6,503 (valves £89). Although Japan remained in the second place with a total of £4,452 (valves £105) the share of the latter country diminished considerably.

Parliamentary Questions.—On May 26, Viscount Wolmer informed Capt. Fraser that the beam stations for communication with South Africa were expected to be ready for the official tests in the course of the next few weeks. If the tests were successful, the stations would be taken over by the Post Office and a wireless telegraph service with South Africa would be opened. It was impossible at that stage to say whether the stations would be full occupied with telegraph traffic, but it seemed doubtful whether a directional station was likely to be as suitable for purposes of Imperial broadcasting as a station capable of transmitting in all directions.

On the same date, Capt. Fraser asked if the Government would make a grant to the British Broadcasting Corporation to enable it to establish and maintain a short-wave wireless transmitter to relay existing programmes to the Empire or parts of the Empire in order that such a project might be proceeded with immediately without hindering the development of the Corporation's new British scheme.

Viscount Wolmer, Assistant Postmaster-General, said that the British Broadcasting Corporation had been given authority to conduct experiments in short-wave transmission, and he understood that it was its intention to carry out those experiments before putting forward any proposals for a service to distant countries. The incidence of the cost of such a service, if it should be found to be practicable, would be a matter for settlement between the Corporation and the Dominions and Colonies concerned.

GREECE.—*The Times* (London) *Engineering Supplement* states that: "His British Majesty's Consul-General at Salonica reports that the Wireless Telegraphy Board in Athens has now decided to allow the use of radio receiving sets in Salonica and Cavalla. The necessary licence for the installation of wireless receivers must be obtained from the Wireless Department of the Post Office in Athens. For the time being permission will only be granted to Greek subjects, but it is thought that the privilege will shortly be extended also to foreigners. Macedonia is a virgin market for the sale of wireless apparatus. British manufacturers wishing to do business there should therefore communicate at once with local dealers and agents, quoting prices and sending illustrated catalogues in French, if possible, as well as English. The names of the principal dealers in electrical goods, also small dealers in wireless apparatus, can be furnished on application to the Department of Overseas Trade, London, S.W.

INDIA.—It is proposed to introduce in Calcutta as an experimental measure a system which will provide facilities for telephone subscribers to send and receive telegrams in plain English by telephone. The subscriber will be required to pay an additional charge of two annas only per telegram transmitted, while received telegrams will be transmitted free of charge.

The Viceroy will visit Bombay on July 23 and will open the Indian Broadcasting Company's station, which is now practically complete.

India has kept well ahead in radio-telegraph development, says the annual report of the Indian Posts and Telegraphs Department for 1925-26. She has now an efficient system of stations to meet immediate requirements and an organisation which will enable full advantage to be taken of future developments. The wireless stations in Burma and the Andaman Islands, which were erected in 1905, were among the earliest in the world for maintaining communication between fixed points on land. Coast stations for communicating with ships were erected a few years later at the principal ports and were followed by a chain of inland stations linking up the most important towns. Progress has called for a complete revision of regulations since the war; during the last five years a series of licences to suit various purposes has been brought into existence, and arrangements have been made for the issue of broadcast receiver licences on an extensive scale, broadcasting on a temporary basis being carried out by several radio clubs, which are allotted a share of the fees derived from licences. As regards new construction, only one large modern high-speed duplex wireless service between Madras and Rangoon has been inaugurated. A temporary direction-finding station was also erected at Karachi, and the results were of great value to shipping. Schemes have been approved for completely remodelling the coast stations at Karachi and Bombay and constructing permanent direction-finding stations to assist ships and aircraft, which work was in progress at the end of 1925-26, and arrangements have also been made for a temporary direction-finding station at the mouth of the Hooghly River to assist ships bound for the port of Calcutta.

SCOTLAND.—The *Electrical Review* states that it was reported at a meeting of the Clyde Lighthouses Trust that wireless telephonic communication between Cumbrae and Toward was now in working order. The licence of the Postmaster-General was limited to sending and receiving messages on the private business of the Lighthouses Trust, but the clerk was instructed to communicate with the Postmaster-General with a view to having the licence extended to include helping both shipowners and mariners in reporting the arrival of vessels, and also in communicating with steamers during fog, and giving them directions. It was stated that, owing to an invention by Mr. D. Alan Stevenson with synchronised clocks, the installation would be under the estimated cost of £700.

SOUTH AFRICA.—It is stated that Marconi's Wireless Telegraph Co., Ltd., has completed preliminary tests with South Africa with the "beam" wireless stations which it is erecting at Bodmin and Bridgwater for the General Post Office. Further tests by the company under ordinary traffic conditions will commence immediately; should they prove satisfactory, the stations will be handed over to the General Post Office for the official seven days' trial. During the tests so far made by the Marconi Company, speeds of between 200 and 250 words per minute have been maintained over long periods daily. (The Post Office tests have now been successfully passed.—ED., *T. & T. Journal.*)

SWITZERLAND.—The following items regarding wire and wireless matters are excerpted from a report on economic and financial conditions in Switzerland published by the Department of Overseas Trade, London:—

"Telegraphic traffic continues to decrease and several inland lines were put out of circuit in 1926; two new international lines were opened, however.

New broadcasting stations were opened at Berne in November, 1925, and Basle in June, 1926, thus bringing the total for Switzerland to five stations. The Lausanne station was re-equipped and improved in 1926. At the end of the year there were 51,194 licensed receiving sets; the increase since January was nearly 18,000. The stations at Berne, Basle, Geneva and Lausanne are now working together, the programme of each of these stations in turn being relayed by the others. The Swiss Marconi Company's station at Berne-Muenchenbuchsee dealt with more than 500,000 telegrams in 1926, i.e., an increase of over 100,000 since 1925. A short-wave transmitter will be added shortly to the two high-speed and one broadcasting transmitters already installed."

TURKEY.—At present, says the *Electrical Review*, there is only one wireless station in Turkey, that at Osmanié, 16 miles outside Constantinople, which has a wavelength of 1,200 metres; its call is "Radio Stamboul." On June 15, however, a new station, which has cost over £100,000, was to be opened at Angora, and, says the *Times*, will be the most powerful in the Near East. The control of wireless telegraphy in Turkey is in the hands of a limited company in which the Post Office, the official Anatolian News Agency, and the Banque d'Affaires are interested. Any one can purchase a licence by paying £T14 (30*s.*), and a heavy fine is imposed on *persons who listen without possessing a licence.*"

We are unable to say whether the words *italicised* by our own printer are to be taken literally, and that the head of a household has to provide a licence for each member of his family!

U.S.A.—The American news is particularly lengthy this month, but is also particularly interesting as will, no doubt, be admitted by many of our regular radio readers, witness the following on the "New Radiogram Relay Station," for which once more we are indebted to our contemporary, the *Electrical Review*:—

That history repeats itself is once again emphasised by the fact that two decades ago Marconi chose the Newfoundland coast as the best site for the reception of signals originating in England; more recently, transoceanic traffic has been handled from the north shore of Long Island, far to the south. Hence the Belfast, Maine, receiving station of the Radio Corporation of America marks the return of transoceanic radio reception to the north-eastern coast of America. It appears that extensive tests proved that the reception of European signals was much better at Belfast than at Riverhead, on Long Island, where the main receiving station is located. A survey of thunderstorms during the past decade by the United States Weather Bureau indicates that that there are twice as many thunderstorms at Riverhead as at Belfast, and so the reception at the former point is more affected; also, while Belfast is nearly north of Riverhead, it lies almost directly on the great circle route from Riverhead to Europe, and is 300 miles nearer the distant transmitters than is Riverhead; for this reason the European radio signals are at least 30% stronger at Belfast. The new station at present houses 12 complete long-wave receiving sets, operating on wavelengths from 8,000 to 23,000 metres, in addition to battery and motor-generator equipment, oil heating and steam plant, and has its own water supply. The function of the new station is to pick up radio-telegraph signals from European stations on a uni-directional triple antenna, consisting of three antennas, each nine miles long and spaced six miles apart throughout their parallel spans. It is highly directional, covering only a small angle and capable of receiving signals from Norway to the north and sweeping down to Italy on the south. It is the invention of Mr. H. H. Beverage, and is only 20 feet high itself, strung along on poles very much after the fashion of a rural telephone line. A multiplicity of receiving sets are worked on one Beverage wave antenna, each set being provided with a wave trap and filters so that signals from the desired transmitter are taken off the antenna and then built up by radio-frequency amplification for subsequent detection and amplification, and are automatically relayed over leased telegraph lines to the central office in New York City, where they are automatically recorded on high-speed recorders, while the inked paper tape with its wave-line passes by the operator seated before a typewriter on which the dots and dashes are transcribed into complete radiograms."

The *T. and T. Age* says that photographs sent by radio can now be enlarged to nine times their original size by means of certain new receiving apparatus tested out successfully by the Radio Corporation of America.

Our American contemporary explains that the paper used for receiving the pictures was made especially for the purpose. The actual enlarging is

done by a small asbestos device attached to a rubber tube, through which hot air is constantly blown; a tiny opening at the end of the tube lets hot air blow on the paper, making a black mark. The pictures are made, however, by a second tube conveying cold air, the passage of which to the paper is controlled by radio signals; if the cold air passes in front of the current of hot air, it prevents the hot current from making a mark on the paper. Thus there is obtained the succession of black dots and lines and white spaces, which when seen together, make the picture. The receiving marker moves across three times as far and up and down three times as far as in the original photograph.

The same journalistic authority says that: "Short-wave transmitters are being used by the U.S. Army Signal Corps to circumvent static in the transmission of official messages over the Army radio net which connects the War Department with the Corps' area headquarters and Army posts throughout the country. During the severe static months at least 75% of the Army telegraph business, both day and night, from Washington was transmitted by ten of the new sets that were installed, and they worked so well that more sets have been ordered. The sets are crystal controlled and designed to operate in two frequency bands, one of approximately 4,000 to 4,500, the other of 8,000 to 9,100 kilocycles.

Through the medium of Reuter's Trade Service, Washington, we also learn that developments in broadcast transmission are announced by the Westinghouse Electric Company, which claims that a system developed at KDKA eliminates three-quarters of the transmitting valves, permits of the broadcasting of a radio wave many times sharper than has heretofore been possible, and provides the same range and quality of transmission with less than half the usually required power input. The new system is regarded as important in offering solutions to many problems, including the possibility of a reduction of station interference and an opportunity to overcome static and local interference in receiver design, whilst an immediate effect noted by operators of receivers in the vicinity of KDKA is a lifting of the blanketing effect that usually surrounds high-power stations, due to the sharpness of the radiated wave. The new system is defined as "frequency modulation," instead of the present method of "power modulation"; heretofore the frequency band required for station operation has been 10 kilocycles, but in the new system the band has been cut to one-half kilocycle. It is explained that the 10-kilocycle separation between stations will still be required with present-type radio receivers, but the new system requires such sharp tuning as to eliminate the annoying interference set up by powerful stations operating on adjacent wave bands; also in transmission, instead of varying the amplitude or strength of the signal, as is present practice, Westinghouse engineers are maintaining constant strength of signal and are varying the frequency of the transmission by an amount usually not more than from 500 to 800 cycles, which they refer to as "frequency modulation." There has been a great reduction of the number of valves and power required; all modulator valves are eliminated, which (at KDKA) means 12 of the 10-kilowatt water-cooled type. In present-day methods of broadcasting, half the total energy supplied to the transmitter is absorbed and dissipated as heat, amounting to 80,000 watts; this energy is now saved and can be made available to increase the power of the transmitter if desired. So radical is the departure from the present practice that engineers hesitate to forecast the improvements likely to result from the general application of the new system."

According to Reuter's Agency, successful experiments indicate that approximately 1,900 stations can operate in exclusive channels at one time without sharing waves or "splitting" time, and the Company claims that the system will solve the congestion problem which the Radio Commission is now attempting to deal with, and will permit the operation of 300 applicants for licences in addition to the 680 stations already licensed.

A very friendly reception, says the same agency, was given by members of the Federal Radio Commission to a suggestion of the National Association of Broadcasters that radio stations be named instead of merely listed by call letters. At the same time, members suggested that such a movement might come from the broadcasters and need not alter the present plan of classifying stations for licensing and regulation. A commissioner, Mr. Caldwell, said that there was a good deal of protest against the constant repetition of a combination of letters. He saw no objection to the use of a name by a station, though of course the licence would have to contain some method of registration by letter, or number. Radio inspectors were at present continuously testing the ability of each station to stay in its assigned radio channel and the announcement of the letters helped them to keep this check, but when the reassignment of broadcasting channels had been made and radio transmission had settled down thoroughly the call letters might be dropped almost completely and the lawfully operating station use its name.

The Federal Radio Commission has, however, directed all stations to announce their call letters and location once every 15 minutes at least. It has also ordered that all stations must not deviate more than half a kilocycle from the wavelengths assigned to them. Owing to constant complaints of interference caused by broadcasting stations using too much power within residential sections of Chicago, three of them have been directed to reduce their maximum power output to 500 watts, effective at once, and to use no more until further notice.

World Radio states that the United States Department of Commerce has estimated unofficially that the total investment in radio in the United States was, on Jan. 1, 1927, approximately $750,000,000, which figure is the estimated aggregate of the current value of the 6,500,000 receiving sets in use, and of the investment represented by the 700 or more broadcasting stations, the 2,550 manufacturing plants, and the 30,000 dealers.

Although the annual meetings of the Eastern and the Eastern Extension Telegraph Companies were briefly noticed in last month's Memorabilia, justice would not be done to the fascinating speeches made by the Chairman, Sir John Denison-Pender, on these two occasions, were room not to be found in these columns for at least an abridged report of each of the two statements.

Speaking at the meeting of the Eastern Telegraph Company, Sir John said: "We have received a contribution from one of our subsidiary companies of £206,500, and had thus been able to write off entirely the remaining balance of £493,000 in respect of expenditure on new cables and cable renewals. Nearly four and a half million pounds had been charged against the reserve fund since the Armistice in respect of new cables and cable renewals, and since the company was formed approximately twelve million pounds had been so charged. Their negotiations with the British and French administrations with regard to the direct line between Paris and London had been successfully concluded, and the new direct route was opened for service on Mar. 1 last. Negotiations had practically been completed both with the Palestine and Egyptian administrations for the laying of a new cable between Egypt and Palestine. The negotiations with the Greek Government had been brought to a satisfactory conclusion, and they had been granted a concession for 50 years. It had been decided to lay further submarine cables between Alexandria and Port Said and underground lines between Port Said and Suez. The improved means of communication would enable them to install their direct regenerator system between London and India, with substantial benefits to the service. Thirty-one cables of the associated companies were now being operated by the regenerator system: this gave considerable increase in capacity with resultant gain in transmission times. Having carefully watched the development of wireless during the past 30 years, he (the chairman) had no cause to alter the opinion formed and expressed over that period that the cables would remain more reliable than the wireless service. The prospect of the return to normal trade conditions would counterbalance to a very large extent the present-day competition with which they were faced, but the obvious solution, in the interests of the public and others, was co-operation in some form or another which would eliminate wasteful and unremunerative expenditure and, at the same time, provide a dual and alternative means of communication. Given a fair field for the unrestricted development of the cable industry, it would continue to prove itself the best and most reliable means of telegraphic communication.

Speaking two days later to the shareholders of the Eastern Extension, Australasia & China Telegraph Co., Sir John reported that the actual traffic receipts showed a decrease of £35,115, but in view of the disorganised trade conditions, the result could not be considered as unsatisfactory. In conformity with the action taken by the cable system worked by the Pacific Cable Board their tariff had been reduced. That reduction of tariff and the competitive "beam" service must naturally result in a certain loss of revenue. Their thanks were due to the Commonwealth Postal Department for the speedy construction of the new land-line between Adelaide and Perth. Worked in conjunction with the duplicate Perth-Cocos cable, it had already proved itself a valuable adjunct to the system.

With the state of affairs at present ruling in China, it had been found impossible for the Great Northern Telegraph Company and themselves to continue negotiations with the Chinese Telegraph Administration, and these had been postponed until a more opportune time. China failed to pay the instalment of a loan which fell due on June 30, 1922, and after extending every possible consideration and realising that affairs in China were not tending to become stabilised, but rather the reverse, the companies decided to exercise their lien, whereby amounts falling due to the Chinese Administration as its share of the revenue derived under the joint purse agreement had, since January, 1927, been retained by the companies and placed towards the liquidation of outstanding instalments. Interruptions of their cables had been few in number, and owing to duplication throughout the system, quite immaterial.

The *Westminster Gazette's* New York correspondent, *a propos* of the transatlantic flight by Lindbergh, makes the following statement: "Experts here (New York) analysing Lindbergh's trip claim that he followed the lines of the Western Union Telegraph Company's northern cable, and conclude that cables may serve as guides for seagoing airplanes."

There are one or two questions one would wish to ask before accepting this pretty little theory and the first would be: "Who were the experts, and in what science were they expert?"

Among the Birthday Honours there can be nothing but intense satisfaction at the O.B.E. conferred upon Lt.-Col. A. G. Lee, M.C., M.I.E.E., while the Cable Room C.T.O. will doubtless acclaim the decoration of Major J. J. Munro, Deputy Inspector-General of Telegraphs Egyptian Government, as yet another tribute to the high capacity and worthiness of their former colleague-telegraphist.

It is also noted that Mr. H. M. Johnson, Asst. Telegraph Engineer, Sudan Telegraphs, and Mr. R. Moffat, Asst. Engineer, Posts and Telegraphs Department Palestine, have also been duly honoured for good work done.

Last, but not least comes another telegraphist, namely, the much respected Mr. H. Sparkes, O.B.E., Controller of Stores, who has been promoted by the King to C.B.E., yet another piece of reflected glory for the C.T.O., where he was also at one time a telegraphist.

FIFTY YEARS OF BAUDOT.—In July, 1877, the first practical communication by means of the telegraph apparatus, now known the world over by the name of its inventor, M. Emile Baudot, was instituted in the country of his birth. The system constituted a revolution in telegraphy and has had many imitators.

Baudotists in the C.T.O., Paris, says *L'Interligilo*, are desirous of celebrating the 50th anniversary of this historic invention and to honour the memory of its inventor. A committee has been appointed with M. Delatête, Minister of State and General Secretary of the P.T.T., as president.

A national subscription has also been opened in P.T.T. circles, with the object of erecting a bust of M. Emile Baudot.

With No. 2,587, the issue of June 24, our much-admired and respected contemporary the *Electrical Review*, completed it one-hundredth volume. It may not be generally known among the younger generation of our readers that this now well-recognised authority on every phase of matters electrical started its career on Nov. 15, 1872, as the *Telegraphic Journal*, and added "Electrical Review" as a sub-title the following year, the present format being adopted in 1882, when a wider field presented itself. Our respectful and sincere congratulations !

In a little book on Television recently published by Sir Isaac Pitman & Sons, Ltd., by A Dinsdale, A.M.I.R.E., the author appears to have very considerable faith in the ultimate success of Mr. Baird's experiments although the writer of the interesting brochure admits that "the transmitter has not yet left the laboratory."

According to the *Electrical Review*, at the annual meeting of *l'Union Internationale de Radiophonie*, which was recently held in Lausanne," agreement was arrived at on certain questions, with regard to which experience has shown the need of international collaboration, which are to be discussed at the coming international conferences at Washington and Rome. The adjustment of some of the wavelengths allocated in the Geneva plan was also discussed, but the suggested modifications have yet to be approved by the respective Governments. It was decided, among other things, to establish a permanent central post where a check will be kept by nightly observations on the stability of wavelengths from the technical point of view."

The following broadcasters have been elected members of the Union : Polskie Radjo (Poland), Radiogenossenschaft Basel (Switzerland) and Nederlandsche Draadlooze Omroep, the Dutch organisation which will shortly work the Huizen station. Extra-European associate members have been elected as follows : National Broadcasting Co. (U.S.A.), Nihon Hoso Hyokai (Nagoya, Japan), Indian Broadcasting, Ltd., Amalgamated Wireless (Australasia), Ltd., Cuban Telephone Co., the Peruvian Broadcasting Organisation, and General Broadcasters, Ltd. (Australia). The European broadcasting organisations which are members of the Union now direct 113 transmitting stations serving approximately 7,000,000 receiving sets.

Vice-Admiral Carpendale (Great Britain) was re-elected president of the Union ; Messrs. H. Giesecke (Germany) and R. Tabouis (France) vice-presidents ; and M. M. Rambert, delegate of the Council.

W. T. Henley's Telegraph Works are one of a small group of cable makers which for years have enjoyed considerable prosperity. The trading profit last year was nearly up to the previous year's level at £306,984.

In connexion with the recent Colonial Conference in London the *Electrical Review* states that when wireless problems were discussed before it, "the opinion was expressed that progress in the application of wireless-telegraphy was so rapid that the formulation of a definite general scheme for the Colonies would be premature. It was pointed out that the amount of work in the Colonies and Protectorates had not been very extensive. During the past 15 years about 30 small stations had been erected, and were utilised for local requirements and communication with shipping, but they were regarded as the preliminary links in a chain of inter-Imperial communication which might ultimately be established. The adoption of a short-wave service between Singapore, Penang and neighbouring States is contemplated by the Straits Settlements Government, and Kenya looks forward to being in a position to pick up short-wave transmissions from this country."

For nearly two years the British Broadcasting Corporation (*née* Company) has expressed its willingness to co-operate in any practical scheme having for its aim the interchange of programmes between the many parts of the British Empire, but was obviously hampered by restricted financial resources. The Corporation has actually, however, received permission to construct the necessary experimental apparatus, but the question is a huge, not to say also a complicated, one, as was apparently recognised by the meeting of the Conference in London on May 20 when, according to our contemporary, "the delegates are reported to have expressed a desire for the formulation of a policy of broadcasting as a channel of communication and a means of entertainment, but stated that prolonged experiments would have to be made before a scheme of distribution throughout the Empire could be regarded as technically practicable in all respects. Ceylon took the lead in establishing a broadcasting service in 1924, and Hong Kong, Palestine, the Gold Coast, Cyprus, and Zanzibar have been considering the possibilities of setting up broadcasting services."

It is of interest to remind our readers that the Sydney (Australia) broadcasting station (2BL) successfully relayed the (5 to 8 p.m., May 20) programme of the British Broadcasting Corporation's London station (2LO) between 3 and 6 a.m. on May 21. The relay took place via the B.B.C.'s Daventry station (5XX, 1,600 m.) and the short-wave station of Messrs. Philips in Holland ; it was relayed again by Broadcasters, Ltd., from Sydney to New Zealand, and in South Africa also from the Cape Town, Johannesburg, and Durban stations, while the programme was heard at Rangoon in India as well.

This feat of PCJJ, the Philips experimental station at Eindhoven, Holland, which broadcasts on a wavelength of 30.2 metres, merits attention, and its success has been mentioned on more than one occasion in these columns.

It is not inappropriate at this point to mention that the Australian Beam created a record for the Derby result that it will be very difficult to beat. It is even stated by some that the actual limit of physical possibility was reached.

The wisdom of working cables and wireless communications between any two cities, under the same roof and indeed in close physical contact, was also very clearly demonstrated during the May interruption of the Imperial cables, if such policy ever needed demonstration to experienced telegraph traffic experts.

Despite the special pressure upon space in the present number, the cause of which will be readily appreciated, and the justification for which no one will question, it would be ungracious to omit from the present number a few words of appreciation of Mr. J. D. Laxton, Superintendent, C.T.O. (Inland), who reached the age-limit a month ago. Mr. Laxton leaves behind him a host of friends and quits the service he has served so well in an atmosphere of affection which many of us might well envy.

Congratulations to Mr. G. E. Taylor who, it is understood, succeeds to the vacancy thus created.

A much respected reader and correspondent of the *T and T. Journal* forwards me the following probably unique record of two C.T.O. telegraphists :—

In April of this year there passed away Mrs. E. E. Lemon, relict of Mr. Charles Lemon, both of the old Electric Telegraph Company and of T.S. Mrs. Lemon entered the Company's service in 1865 and married twelve years later, surviving her husband by four years. Her will has just been proved for over £70,000 !

Literary Ethics.—We assume that all thought is already long ago adequately set down in books—all imagination in poems. . . . A very shallow assumption. Say rather, all literature is yet to be written. Poetry has scarce chanted its first song. The perpetual admonition of Nature to us is "The world is new, untried."—Emerson, in *The Conduct of Life*.

J. J. T.

PROGRESS OF THE TELEPHONE SYSTEM.

THE total number of telephone stations working at April 30, 1927, was 1,517,842. New stations during April numbered 22,100 and ceased stations 13,044, resulting in a net increase of 9,056, on the total at the end of March.

The growth for the month is summarised below :—

	London.	Provinces.
Telephone Stations—		
Total at April 30	535,654	982,188
Net increase for month	3,588	5,468
Residence Rate Installations—		
Total	116,654	189,548
Net increase	1,376	1,765
Call Office Stations—		
Total	4,758	17,335
Net increase	34	125
Kiosks—		
Total	478	2,670
Net increase	13	84
Rural Party Line Stations—		
Total	—	9,987
Net increase	—	—
Rural Railway Stations connected with Exchange System—		
Total	—	758
Net increase	—	13

A brief review of the trunk statistics for the year 1926/27 is as follows :—

The total number of inland trunk calls dealt with was 94,661,136, an increase of roughly 8½ millions, or 10.0% over the figure for the previous year.

A comparison of the inland trunk statistics for the two past financial years is below :—

	1925-26.	1926-27.	*Increase.*	
No. of Trunk calls ...	86,001,248	94,661,136	8,659,888	10%
No. of Exchange Lines (mean for year) ...	838,813	920,207	81,394	10%
Average No. of Trunk Calls made per Exchange Line	103	103	—	—
No. of Trunk Circuits at end of year	13,075	13,955	880	7%
Average No. of Trunk Calls made per working day	278,321	306,347	28,026	10%

During the year 1926/27 283,121 calls were made to the Continent, representing an increase of 58,934, or 26%, over the total for the previous year.

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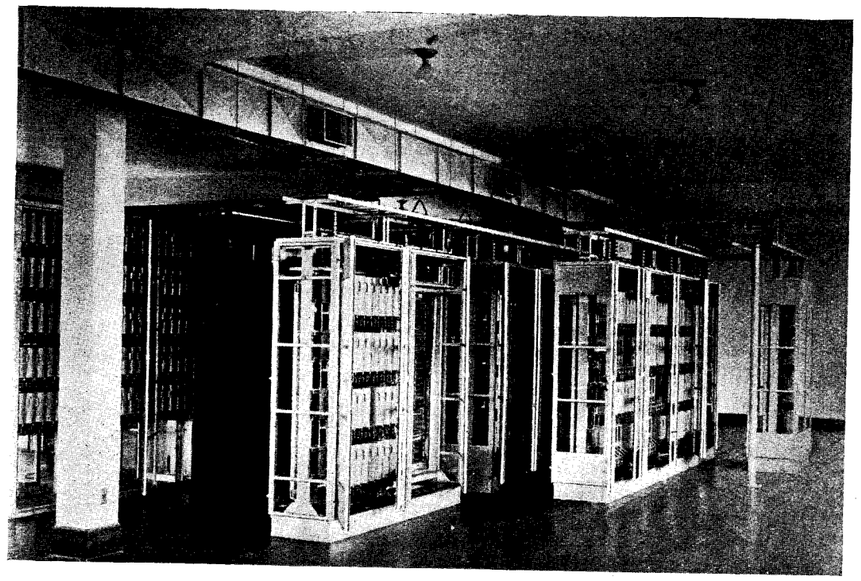

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PUBLISHED MONTHLY IN THE INTERESTS OF THE TELEGRAPH AND TELEPHONE SERVICE, UNDER THE PATRONAGE OF THE POSTMASTER-GENERAL.

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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JOHN LEE.

MR. JOHN LEE, C.B.E., who retired from the Service on June 16, having then attained the age of sixty, entered the Post Office at Liverpool as a Second-Class Telegraphist in January, 1883; reached the grade of Assistant Superintendent in May, 1901; was transferred to Headquarters as Assistant Traffic Manager for telephone purposes in October, 1907; rose by successive promotions to be Deputy Chief Inspector of Telegraph and Telephone Traffic in April, 1916; was appointed Postmaster of Belfast in July, 1917; and returned to London in July, 1919, as Controller of the Central Telegraph Office, which post he occupied till his retirement.

Thus far (though in slightly fuller detail, and with even greater economy of words) the Establishment Book of the Post Office. Let us not despise this bald chronicle of official facts, in which we may trace the stages of Mr. Lee's ascent from almost the lowest rung of the telegraph ladder to its summit. But let us not look to it for any revelation of that which is our concern here—of the essential John Lee: as well might we expect Bradshaw to convey a sense of the glory of motion. Nor, again, shall we find much help in the chronicle—sufficiently impressive in itself—of his principal achievements during his long term of service. We merely record, in passing, that he reorganised the Indian Railway telegraph system in 1909-10; that he was in 1916 a member of the Committee on High-Speed Telegraphy, which inaugurated a far-reaching departure in Post Office telegraph practice; that in 1917 he did important work in France in connection with the employment of women as telegraphists and telephonists behind the lines; that in 1920 he was a member of the Post Office delegation to a European conference held at Paris, under the auspices of the Transport Committee of the League of Nations, for the restoration of European communications; that in 1925, again at Paris, he played a brilliantly successful part, as leader of the British Delegation, in the International Telegraph Conference; that, finally, he was a member of the International Committee which met last year at Cortina to study the question of code language in telegrams. These are, after all, but lifeless facts: and our concern is with a living fact, which belongs to a different order of things.

We may get somewhat nearer to the essential John Lee by turning from dry facts to characteristics and qualities. An Establishment Book which dealt with these more important matters (if such a wild flight of imagination may be permitted) would have much to record, in its laconic style, under the heading of John Lee. As thus: open and attractive manner; humour; generosity and warmth of heart; a genius for friendship; a rare gift of words (the compiler-in-chief would probably cut out his subordinate's audacious reference to the Blarney stone); dynamic energy; rapidity of thought and action; breadth of outlook; idealism combined with shrewd practical sense; an invincible optimism. And so forth. All very well, no doubt, in its way—yet still quite inadequate. For by no summary, whether of facts or of characteristics, can we arrive at that *je ne sais quoi* which is the all-important thing. We seek in vain to catch and fix in words the personality, the ultimate differentia, the unique John-Lee-ness of John Lee—that indefinable something which has made him a singularly vivid and arresting figure among the actors on our Post Office stage, and one destined, after his exit, long to be held in the affectionate recollection of those of us whose parts are not yet finished.

Mr. Lee's official duties, though never very light and not seldom highly exacting, have not absorbed more than a part of his abundant store of energy: indeed, the over-spill has been little short of phenomenal in its magnitude and the variety of its directions. His work for this Journal—his editorial contributions to which were anonymous merely in the formal sense of being unsigned—lay within the sphere of the quasi-official. In the Institute of Public Administration, of which he was one of the founders and moving spirits (he served both as Chairman of its Council and as Editor of its Journal), he had a field of work which, while it reached beyond the limits of the Post Office, was yet in the main an affair of Civil Servants. But these more or less intramural activities are but a fraction of the whole. Mr. Lee has been able to double—or rather treble—the part of Civil Servant with those of student and teacher. He has taken degrees at two universities, and has made himself an authority in the field of economics, in which his literary output is both considerable in quantity and distinctive in quality. The fact that he has been chosen to edit the Dictionary of Industrial Administration, about to be published by Messrs. Pitman, is sufficient

indication of the position attained by this amazing amateur in *what we are apt to regard as a close preserve of the professionals*: so also his chairmanship on no less than five occasions of Industrial Conferences at Oxford and Cambridge. That position he owes not only to his books, but also to his ceaseless activity as a lecturer on economic and industrial questions. The dominant note of his work in this field has always been an insistence on the subordination of the mechanical to the human element in industrial relations, and a steady warfare against the tendency of the machine—be it the physical or the administrative machine—to cramp and fetter the human soul.

Mr. Lee has, unfortunately, had to pay the penalty of his devouring energy and his versatile genius. At the beginning of this year his health broke down, and he was forced to give up both official and non-official work some months before the date of his retirement. That he was unable to resume his official duties, even for a short time, is a matter of the keenest disappointment to all of us, as it must have been to himself. We console ourselves with the hope that a period of complete rest will restore him to health and vigour, and that, freed from official trammels, he will yet be able for many years to carry on the good fight for the humanisation of industry.

L. S.

TRUTH AND FICTION.

ATTACKS on the British telephone system are usually bolstered up by extravagant statistics. Why, we do not know, for it is common knowledge that America is far ahead of Europe in telephone development, and we should have imagined that accurate figures would sufficiently demonstrate the shortcomings of the Old World. But, somehow, our critics do not think so. Last month the *Daily Express*, with the familiar concomitants of fat headlines, comic pictures and articles by "experts," in criticising "out of date Post Office methods" stated that in "the whole of the Kingdom there are fewer telephones *than are at work in many a single town in America*." The truth is that in Great Britain and Northern Ireland at the beginning of this year there were 1,510,755 telephones, particulars of which we gave in our February issue. In New York at the same date there were 1,502,376 telephones. Thus, not *many*, but not *any* cities in the United States have more telephones than Great Britain. According to the latest figures (those for Jan. 1, 1927) the following were the cities of the world with the largest number of telephones:—

New York	1,502,376
Chicago	848,017
London	519,969
Berlin	427,070

It will be seen that not only in America but in the world, only two cities have more telephones than London. Only two countries have more telephones than Great Britain, viz., the United States with 17,746,152 and Germany with 2,688,495.

RETIREMENT OF MR. JOHN LEE.

JOHN LEE FROM A STAFF SIDE POINT OF VIEW.

BY A. C. WINYARD.

THURSDAY, June 16, 1927, saw the last General Order issued to the staff of the Central Telegraph Office by Mr. John Lee. In a few brief and characteristic sentences he announced his retirement and conveyed his farewell to the staff of the largest telegraph office in the world, which he had governed as Controller for so long. In this quiet fashion—so typical of the man—did the greatest Controller in the history of the C.T.O. pass away from the scene of his activities to a retirement which, however well-earned, is, one ventures to suspect, not altogether welcome.

MR. JOHN LEE.

The first chapter in the post-war history of the C.T.O. has thus closed; a chapter distinguished for all time by the initiation of a regime of efficiency running concurrently with that humanitarian attitude which has always typified the administration of Mr. Lee wherever he has been.

Reflections on the past inevitably follow an event of this character, and memories of Trenam, Newlands, and Eames pass naturally through the chambers of one's mind.

In their own way all those mentioned were vivid and dominant personalities, though combining in more than one instance a rigidity of outlook with stressful and successful ideas which have been inscribed so deeply in the office annals. Not one, however, belonged to the same school as Mr. Lee, and somehow one fears that the majority of bygone Controllers would have been sadly out of tune with the spirit prevailing in these days of Whitleyism.

It was, perhaps, just as well for the peace of mind of the C.T.O. Staff, not to mention that of the Secretariat, that the advent of Mr. Lee to office coincided with the new outlook on staff matters.

It is not necessary to draw invidious comparisons, but the younger men now at the C.T.O. can scarcely believe that a time existed when for many men and women the daily travel to the office was a journey to an eight-hour sojourn in purgatory. The older men and women will remember it well enough. No man or woman can now say that the C.T.O. is other than a pleasant place in which to work, provided he or she performs the appropriate side of the bargain.

Concurrently, efficiency has been increased to a marked degree, a supreme achievement indeed when one remembers the difficulties of administration following the war period.

Mr. Lee can justifiably be proud of the part he has played in this respect, and in later years the Central Telegraph Office will recall with grateful pleasure the historical position he has secured for it in public estimation.

During an earlier period of his career, while stationed at Belfast, he had voluntarily introduced a system of staff consultation on the Whitley model, and it was fitting, therefore, that the official adoption of the Whitley system throughout the Civil Service should coincide with his appointment as Controller in London. Automatically he took the Chair on the introduction of the system in the C.T.O., and he has filled the position ever since. By a coincidence the Staff Side of the Committee has also honoured me by election to the Vice-Chair throughout the whole of the period so that unusual opportunities have fallen to my share over a period of years to learn something of Mr. Lee's methods, and observe the play of his temperament.

It would simply be stating the obvious if one said that in the handling of the many intricate problems which have confronted a man in his position he has used infinite patience and tact. This has been patent to all observers.

What has definitely struck me has been his consummate ability in overcoming difficult situations by securing in subtle manner that breathing time which is so necessary for reconsideration of a question if successive crises are to be avoided. His innate quickness of mind naturally did not render the task of the Vice-Chair an easy one, but that is all in the day's march.

His dexterous handling of difficult problems on which the Staff Side view differed from his own, was always a matter for admiration, though his almost uncanny command of language often rendered a counter speech a necessity. Discussions have nearly always been exceedingly keen, but he was always most courteous in debate and no hint of "scenes" ever marked the proceedings.

He can rest assured that in his retirement he carries the unanimous esteem of the staff and perhaps the greatest tribute that can be paid is that from every point of view he has left the C.T.O. a better place than he found it.

It is reassuring in the hour of his departure to know that his successor, Mr. Stuart Jones, will carry on by high endeavour and frank forthrightness the high standard so worthily established.

SOME APPRECIATIONS BY FOREIGN AND COLONIAL COLLEAGUES.

BY MONSIEUR E. BROIN, VICE-PRÉSIDENT DE LA CONFÉRENCE TÉLÉGRAPHIQUE INTERNATIONALE DE PARIS.

L'ORGANISATION et la mise en œuvre des moyens d'action de plus en plus puissants que nécessite la correspondance électrique internationale exigent, on le comprend, une collaboration directe et amicale et de tous les moments de la part des chefs d'exploitation de chaque pays intéressé. On doit reconnaître que, s'exerçant en ce qui concerne les relations entre la GRANDE-BRETAGNE et la FRANCE, cette nécessaire collaboration a, au cours des dernières années, donné les plus heureux résultats. Il m'est agréable de dire ici que, du côté français, on en attribue tout le mérite à M. JOHN LEE, Controller of the Central Telegraph Office, à son initiative prévoyante toujours en éveil, à ses dispositions conciliantes dans les études poursuivies en commun à ce propos.

Mais c'est surtout dans la discussion des intérêts généraux de l'Union télégraphique universelle, lors de la Conférence de PARIS en 1925, que se sont affirmées aux yeux des représentants de toutes les Administrations assemblées la hauteur de vues, la maîtrise supérieure de M. JOHN LEE, alliées à la droiture et à la fermeté du caractère.

Appelé par acclamation à présider les travaux de la grande commission qui devait reviser les règles de service de l'Union, règles alors vieilles de quinze années, M. JOHN LEE a su mener à bonne fin et à la satisfaction de tous cette tâche entre toutes difficile. Sans abandonner jamais la manière courtoise et souriante qui est le secret d'une autorité personnelle à laquelle chacun se plaît à rendre hommage, il a su constamment tenir les discussions à un niveau élevé, obligeant toutes les opinions, et même les intérêts, à céder sur les considérations de détail, à compter avec les nécessités d'ensemble du présent et à préparer l'avenir merveilleux qui attend la correspondance télégraphique mondiale.

Lorsque la délicate question des tarifs se présenta devant la Conférence, la même largeur d'idées, le même souci des intérêts économiques généraux inspirèrent les interventions de M. JOHN LEE, vigoureusement soutenues en toutes circonstances par le très distingué M. F. W. PHILLIPS, secrétaire adjoint au Général Post Office. La plupart des délégations réclamaient avec insistance le relèvement des parts unitaires qui rémunèrent la participation des Offices au trafic télégraphique international. A l'encontre de ces exigences, M. JOHN LEE fit valoir le danger qu'elles comportaient pour le commerce et l'industrie considérés dans leur activité mondiale. Or, cette activité a le plus grand besoin d'être facilitée et encouragée, dans le moment où toutes les nations s'efforcent à reconstituer leur condition économique bouleversée par la guerre. Il fit valoir aussi que l'opportunité manquait pour augmenter les taxes demandées au public, alors que l'utilisation plus étendue des moyens nouveaux que permet la T.S.F. devrait plutôt en commander la réduction. L'argumentation de M. LEE, si puissamment servie par sa connaissance approfondie des questions d'économie politique et sociale, ne manqua pas de faire impression sur la Conférence, qui, finalement, limita à des chiffres raisonnables les majorations demandées dans un souci uniquement fiscal.

C'est avec la même volonté de faciliter toujours davantage le développement de la télégraphie mondiale, que M. JOHN LEE participa aux travaux du Comité international constitué par la Conférence de PARIS pour rechercher les bases d'une tarification nouvelle applicable au langage télégraphique convenu. Je me garderai bien, la question restant ouverte, de formuler aucune appréciation sur la valeur des opinions qui se sont confrontées devant ce Comité. En tout cas, je puis dire que l'action prudente de M. LEE en cette circonstance a été fort remarquée. Elle a encore augmenté la très haute considération dont il jouit dans l'Union télégraphique et elle a donné à celle-ci de nouveaux motifs de placer M. JOHN LEE au premier rang des hommes éminents de qui les avis sont le plus profitables à l'Union et qui lui font le plus grand honneur.

E. BROIN.

[The organisation and operation of more and more powerful means of action necessitated by international electric communication require, it will be understood, direct and amicable collaboration at all times on the part of the chiefs of the service of the countries concerned. It should be recognised that this necessary collaboration, exercised in the relations between Great Britain and France in the course of late years, has given the happiest results. It is pleasant to me to say here that, on the French side, all the merit for this is attributed to Mr. John Lee, Controller of the Central Telegraph Office, to his watchful foresight and initiative and to his conciliatory disposition in the common studies pursued for this purpose.

But above all it is in the discussion of the general interests of the International Telegraph Union at the Conference at Paris in 1925, that the loftiness of Mr. John Lee's views, and his mastery, his uprightness and firmness of character have been confirmed in the eyes of the representatives of all the assembled administrations.

Called upon, with acclamation, to preside over the labours of the *grande commission* to revise the service regulations of the Union—rules then 15 years old—Mr. John Lee knew how to bring this difficult business to a happy conclusion to the satisfaction of all. Without ever abandoning that courteous and smiling manner which is the secret of a personal authority to which all are pleased to render homage, he knew how to keep the discussions on a high plane, obliging all opinions and even interests to yield upon considerations of detail, to take into account the present necessities of the whole, and to prepare for the marvellous future which awaits world-telegraphy.

When the delicate question of tariffs came up before the Conference, the same breadth of ideas, the same care for general economic interests inspired Mr. Lee's interventions, vigorously sustained in all circumstances by the distinguished Mr. F. W. Phillips, assistant-secretary at the General Post Office. The majority of the delegates called insistently for the raising of the unit charges for international telegraph traffic. In view of these exigencies, Mr. Lee made them appreciate the danger they threatened to commerce and industry in their world-wide activity. Now this activity has the greatest need of being facilitated and encouraged at a moment when all nations are obliged to reconstitute economic conditions upset by the war. He also made it appreciated that it was no opportunity for increasing public charges at a time when extended use of the means offered by wireless rather suggested a reduction. Mr. Lee's arguments, powerfully supported by his profound knowledge of questions of political and social economy, did not fail to impress the Conference, which at last limited to reasonable figures the increases demanded to purely for fiscal reasons.

It was with the same will ever to facilitate further the development of world-telegraphy, that Mr. Lee took part in the labours of the International Committee constituted by the Paris Conference to find bases for a new tariff applicable to code-language telegrams. I forbear, the question being open, from formulating any appreciation of the value of the opinions placed before this committee. In any case I can say that Mr. Lee's prudent action on this occasion was much remarked on. It has increased still more the high consideration which he enjoys in the Telegraphic Union, to which it gives new motives for placing Mr. John Lee in the front rank of the eminent men whose opinions are most valuable to the Union and do it the greatest honour.]

BY MINISTERIALRAT OTTO ARENDT, BERLIN.

JOHN LEE will Feierabend machen. Er räumt die Arbeitsstätte auf und legt besinnlich das Werkzeug zusammen. Wir nehmen regen Anteil an allem was in diesen Tagen sein Herz bewegt, wo er eine Arbeit beschliesst, die bis dahin sein Leben ausgefüllt hat, wo er zurückblickt auf Mühen und Erfolge. Wir alle grüssen ihn heute, die wir ihn kennen, und das sind nicht wenige. Wenn man auch zu jeder Zeit vom Londoner Telegraphenamt und von seiner Bedeutung gewusst hat, so war doch die Person seines Leiters dem internationalen Kollegenkreise nicht immer so vertraut und so beliebt wie JOHN LEE.

Sein Amt war ihm keine Bürde ; man las es aus seinen Augen, dass es ihm Freude und Befriedigung schuf in seinem Reich zu wirken. In froher Harmonie schloss sich ein weiter Kreis von Mitarbeitern um ihn und gern kehre ich in der Erinnerung zu der Stunde zurück, wo ich bei einem Besuch in London in diesen Kreis eintreten durfte, begrüsst von JOHN LEE, aus dessen heiterem Gesicht eine Freude lachte, die von innerem Gleichgewicht getragen wird. Wir kannten uns seit langen Jahren. Er hatte uns mit seiner Gattin in Berlin besucht, um die deutschen Einrichtungen zu studieren und wir haben uns nicht nur über Sicherheit und Schnelligkeit von internationalen Telegrammen, nicht nur über die Wirtschaftlichkeit unseres Dienstes unterhalten, sondern von Allem, was des Menschen Herz in seinem Werden und Streben bewegt. John Lee wusste überall Bescheid und entpuppte sich als ein geschickter und liebenswürdiger Schriftsteller und Redner.

Als nach dem grossen Weltkrieg die Länder Europas sich in Paris zusammenfanden um sich darüber auszusprechen, wie die alten Verkehrslinien möglichst schnell wieder in Gang zu bringen wären, da bekannte JOHN LEE durch einen warmen Händedruck, dass das Wort von der grossen Familie der Telegraphisten für ihn nicht leeres Wort, sondern aufrichtige Wirklichkeit war.

Bei einem Besuch in London traf ich ihn im Fahrstuhl und erlebte die ersten Stunden seines Dienstes mit ihm. Wie dankbar ein freundlicher Gruss, eine kurze teilnehmende Frage nach persönlichen Verhältnissen von dem ihm unterstellten Personal anerkannt wurden, offenbarte sich schon auf unserem kurzen Wege über den Korridor. Der Schreibtisch in seinem Zimmer ist leer, denn der Leiter eines Betriebes in dem so intensive, so schnelle und so genaue Arbeit zu leisten ist, wie in einem grossen Telegraphenamt, befasst sich nicht viel mit Feder und Papier sondern steht mitten drin im Getriebe seiner Räder, und hört und sieht und konzentriert alle seine Sinne darauf, dass die Zusammenarbeit all der vielen einzelnen Teile eine möglichst hohe Gesamtleistung ergebe. Einige Briefe, an den Leiter des Amtes persönlich gerichtet, waren schnell gelesen und ebenso schnell war die Antwort diktiert ; es schien mir, als wenn diese Antworten darauf angelegt wären, ein besonders freundliches persönliches Verhältnis mit dem Briefschreiber herzustellen. Und dann war die Bahn frei für den täglichen Gang durch alle Dienststellen des weitverzweigten Amtes und für die Besprechungen mit den Mitarbeitern.

Im Herbst 1925 sahen wir JOHN LEE in Paris als den Führer der britischen Delegation zum Welt-Telegraphen-Kongress. Die Versammlung wählte ihn zum Vorsitzenden für den Ausschuss zur Beratung der Betriebsvorschriften. Sie ist mit ihm wahrlich nicht schlecht gefahren. Den Betrieb kannte JOHN LEE, und wer den Stoff beherrscht, der kann Verhandlungen so führen, dass erspriessliche Arbeit geleistet wird. Meinungsverschiedenheiten lassen sich durch logische Beweisführung ja nicht immer aus der Welt schaffen, aber JOHN LEE wusste sie durch das Berühren einer menschlichen Saite immer freundlich zu überbrücken. Unter seinem Vorsitz zu arbeiten war ein Vergnügen, und keine Sitzung schloss ohne eine erheiternde Anregung unseres Vorsitzenden, die zuweilen vielleicht auch unfreiwillig herauskam, wenn ihm die verflixte Ähnlichkeit der französischen Sprache mit seiner Muttersprache ein Schnippchen schlug. Warm und herzlich war der Dank der Versammlung am Schluss der Kommissionssitzung, und wir werden nicht vergessen wie unser Vorsitzender sein Streben, die gemeinsame Arbeit zu fördern, kennzeichnete, durch eine Anspielung an die im Englischen übliche Beteuerung "your obedient servant."

Wieder trafen wir ihn im Sommer 1926 in Cortina, wo er an der Seite seines Freundes PHILLIPS im Comité d'Etude mit uns über die Vorschriften für die Abfassung der Telegramme in Code-Sprache zu beraten hatte. Der Beratungsstoff, so wichtig er für unser Handwerk ist, war trocken und stachlig. Die herrliche Landschaft gab uns wahrlich tiefere Anregungen zum Austausch freundlicher Gedanken. Sollte nun, da JOHN LEE aus unserem dienstlichen Gesichtskreis ausscheiden wird, dieses das letzte persönliche Zusammentreffen gewesen sein, so wird die Erinnerung daran erheitert durch den warmen Schein der Dolomitensonne,—just der rechte Rahmen für das freundliche Bild unseres lieben Freundes.

Ich bin aber der Zustimmung vieler unserer Kollegen im internationalen Dienst sicher wenn ich sage, wir wünschen uns ein frohes Wiedersehen mit JOHN LEE, und wir wünschen ihm noch viele Jahre heiteren Zusammenlebens mit seiner verehrten Gattin und seinen Kindern. OTTO ARENDT, Berlin.

[John Lee is taking a holiday. He is clearing up his workshop and wistfully putting away his tools. We take a lively interest in all that stirs his heart at this time when he concludes a labour which has hitherto filled his life, and when he looks back on his struggles and successes. All we who know him greet him to-day—and we are not few ! Whoever at any time has known the London Telegraph Office and its significance, knows that none of its chiefs was ever so trusted and beloved in the circle of his international colleagues as John Lee.

His office was no burden to him ; one read in his eyes that it was a joy and satisfaction to him to work in his metier. In happy harmony he united a wide circle of co-workers round him, and I turn gladly to the memory of that hour when, on a visit to London, I entered this circle, greeted by John Lee, on whose smiling face shone the gladness of an equable disposition. We knew each other for many years. He and his wife had visited us in Berlin to study German installations, and we talked not only of speed and reliability

in international telegrams, not only of the economics of our service, but of all that moves the heart of man in its being and striving. John Lee had knowledge of everything and developed into a clever and kindly writer and speaker.

When after the Great War European countries found themselves together in Paris to consider how the old means of communication were to be set going again as speedily as possible, John Lee signified by a warm pressure of the hand that the word of the great family of telegraphists was for him no empty word but a downright actuality.

On a visit to London, I found him in his chair, and spent the first hours of his duty with him. How thankfully a friendly greeting, a short intimate question on personal affairs, was received by the staff under him, was soon manifested during our short walk through the corridors. The desk in his room is empty, for the chief of a service in which such intensive, rapid and close work is conducted, as in a great telegraph office, does not deal much in pen and paper, but standing at the very centre of the machine hears, sees and concentrates all his thoughts upon obtaining by co-operation of all the many single parts the maximum of service possible. Some letters, addressed personally to the chief, were quickly read and the answer dictated just as quickly; it seemed to me as though those answers were designed to establish a specially friendly connexion with the writer of the letter. Then the way was free for the daily visit to the many branches of the office and for conversations with his colleagues.

In the autumn of 1925 we saw John Lee in Paris as leader of the British delegation to the World-Telegraph Congress. The assembly chose him as president of the Commission du Réglement.

Truly they did not fare ill with him. John Lee knew the service, and whoso is master of his material can so guide meetings that profitable work is performed. Differences of opinion do not always yield to logic, but John Lee always knew how, by touching a human chord, to bridge them over in a friendly manner. To work under his guidance was a pleasure, and no meeting closed without a humorous remark from our president. Warm and hearty were the thanks of the Committee at the conclusion of the sittings, and we shall never forget how our president signalised his efforts to further our common labours by a playful reference to the expression, usual in English correspondence, "Your obedient Servant."

We met him again in the summer of 1926 at Cortina, where he, in company with his friend Phillips, had to consider with us in the Comité d'Etude the question of telegrams in code-language. The material for consideration, though important for our service, was dry and thorny. The splendid landscape, however, gave us a deeper stimulus for the exchange of friendly thoughts. If this, now that John Lee has departed from our official circle, should have been our last personal meeting, the memory of it will be enlivened by the warm glow of the Dolomites—just the right frame for the friendly picture of our dear friend.

I am assured of the concurrence of many of our colleagues in the international service when I say that we hope for a joyful reunion with John Lee, and we wish him still many years of happy life with his wife and children.]

BY SIGNOR GNEME, MINISTRY OF COMMUNICATIONS, ROME.

Ho avuto l'onore ed il piacere di conoscere il Sig. LEE nella breve Conferenza delle Comunicazioni Elettriche, tenutasi a Parigi nel Luglio del 1920.

La Conferenza telegrafica internazionale di Parigi del 1925 mi ha permesso di annodare più strette relazioni personali col Sig. LEE, di cui ho avuto agio, durante i lunghi lavori della Conferenza medesima, di ammirare l'alta coltura scientifica ed economica, la solida competenza in tutti i rami dei servizi telegrafici e telefonici, l'abilità nel dirigere le discussioni della Commissione del Regolamento di cui era ben qualificato Presidente, l'amabilità mai smentita anche nei momenti più difficili delle vive discussioni fra tanti Delegati di opinioni divergenti, ed il fine umorismo che gli permetteva con una battuta felice di metter fine ad una pesante seduta, rallegrando il severo ambiente della sala del Consiglio dei Professori della Sorbona—sede delle adunanze della Conferenza.

Nell 'ambiente luminoso di Cortina, ove è stato tenuto nello scorso agosto il Comitato internazionale di studio del linguaggio convenuto, che ho avuto l'onore di presiedere, la vita comune in albergo e nelle gite fra le bellezze incantatrici di quelle maestose e sempre varie montagne, mi hanno consentito di apprezzare ancor di più le alte doti del Sig. LEE e di stringere seco lui rapporti di cordiale amicizia.

Nel momento in cui il Sig. LEE lascia l'Amministrazione a cui ha dedicato tutta la sua grande capacità ed esemplare attività gli giungano i miei più vivi auguri di vita longeva, fra la pace della famiglia e le soddisfazioni che certamente gli procureranno gli studi economici di cui è sì alto cultore. GNEME.

[I had the honour and pleasure of knowing Mr. Lee at the short Conference on Electrical Communications held at Paris in the July of 1920.

The International Telegraph Conference of Paris in 1925 permitted me to strengthen my personal relations with Mr. Lee, in whom, during the long labours of this Conference, I had occasion to admire the high economic and scientific culture, the solid competence in all branches of the telegraph and telephone services; the ability in directing the discussions of the Commission de Réglement (of which he was the well-qualified president); the imperturbable amiability in the more difficult moments of a lively discussion between so many delegates of divers opinions; and the fine humour which enabled him by a happy stroke to put an end to a heavy session and lighten the severe atmosphere of the Conference Hall of the Professors of the Sorbonne—the seat of the Conference above mentioned.

Standing: Mr. PHILLIPS, Sig. GNEME, Mr. LEE.

CORTINA.]

In the bright atmosphere of Cortina, where was held last August an International Committee on the study of code-language, over which I had the honour to preside, our common life in the hotel and in journeys amidst the enchanting beauty of majestic and ever-changing mountain scenery made me appreciate still more Mr. Lee's great gifts and bound faster the relations of a cordial friendship.

At this time, when Mr. Lee is leaving the Administration to which he has dedicated his great capacity and exemplary activity, I extend the heartiest wishes for his long life amidst family happiness and in the satisfaction which he will certainly derive from those economic studies in which he is so deeply versed.]

BY MR. H. P. BROWN, M.B.E., SECRETARY OF THE POST OFFICE OF THE AUSTRALIAN COMMONWEALTH.

Although my official connexion with the British Post Office was severed some three years or so ago, I reflect with not a little sadness that the time has arrived when one of the most versatile and picturesque personalities amongst my late colleagues is to relinquish his position from that great service.

There is some subtle quality which grants the licence to speak of certain men in terms which would ordinarily be regarded as unduly familiar in other cases. The question of disrespect does not arise. The informal reference does not rob the personality of dignity, but it does certainly convey a sense of affection. Consequently I feel quite free to write of my subject as JOHN LEE. I should certainly be slow to associate the man with any other form of address. I am not one of those who readily adopts the informality, being, perhaps, unduly English, but the question never arises in my mind in thinking of this particular man, who possesses those subtle inherent qualities which make him different from most of us.

To know JOHN LEE has been my privilege for many years. I have never seen him moody or dull, I have never been in his company without being conscious of a new interest and stimulation. There is always a problem to consider, always something to elucidate, invariably a new train of thought opened up, and always a point of view to develop.

The influence of such a mind may not be realised as it should but if one ponders a moment on the outcome of associations of this character, there will be an appreciation of the fact that much enjoyment has resulted, mental activity has been stimulated, and from that fertility of thought undoubted benefits have followed. To make a man think is a great virtue, to do the imaginative work needed to stir another mind, to develop a useful process of thought is a quality of no mean order.

I should imagine that one of the prominent achievements of JOHN LEE'S administration has been the degree of co-operation invariably secured in all the many important tasks with which he has been associated.

If a man has the knowledge and competence to guide, and the faculty to command co-operation without demanding it from his colleagues the success of his endeavours is assured. Without any one of these qualities he will fail as a leader of men; his administration may carry on, but there will be no evidence of landmarks on which its history may be written.

There are numerous phases of telegraph and telephone development in the British Post Office with which JOHN LEE'S name must always be associated, and in his retirement he can with justifiable pride meditate on the progress and improvements which he has been so largely instrumental in securing. There have been names to conjure with in the Controllers of the Central Telegraph Office, but without fear of challenge I will say none will stand out more prominently than that of JOHN LEE.

It cannot be doubted that much of the success so justly deserved, much of the affection so lavishly bestowed arises from the fact that JOHN LEE is one of the most human of men, unselfish, devoted to the interests of others, zealous to a degree for the advancement of the business for which he is responsible, and consequently jealous for the prestige of the department to which his life's work has been devoted. These qualities are contagious and irresistible, and exercise an enormous influence for good in whatever sphere they are found.

JOHN LEE simply radiates good cheer. His conversation and nimble wit informs and delights, and his mode of expression fascinates. His life has influenced many, and I acknowledge to be one amongst the number. His long years of service have been spent to some purpose, and the impress which he has made will persist long after he has bade St. Martin Le Grand's an official farewell.

It would be in his nature to lay down one task only to pursue another, and I do not doubt that his self-imposed burden will be a continuance of service to others. He knows the secret of Life's happiness.

H. P. BROWN.

BY MR. J. McMILLAN, GENERAL MANAGER OF TELEGRAPHS, CANADIAN PACIFIC RAILWAY, MONTREAL.

IT has been my privilege to have known Mr. JOHN LEE for some years. He has supervised and controlled a national service and has applied his talents and experience to making as near perfect as possible the wonderful telegraph system, the details of which it has been my pleasure to discuss with him. Mr. LEE is as enthusiastic at the time of his retirement as a beginner entering the service.

After many years' experience he is retiring from very heavy responsibility, and notwithstanding the pressure of official duties and the multiplicity of services, he has retained in a wonderful measure the respect of all with whom he came in contact.

Visiting Mr. LEE, discussing and comparing London service with Canadian service has been very interesting indeed, the Central Telegraph Office in London being the greatest telegraph plant in the world, having every known type of telegraph service and connecting direct with almost all points in Europe, with Canada and other Colonial possessions. The building-up of the Central Telegraph Service has been a great achievement; a step by step process, the additions and improvements requiring constant supervision for which Mr. LEE has been at all times practically responsible. The success of the service to-day is a monument to the enthusiasm with which his administration has been so marked.

When men retire there is a certain element of regret, and while no one begrudges Mr. JOHN LEE the period of rest and relaxation which comes as a result of long and efficient service, we are sorry, indeed, to see him sever his direct connexion with the British Telegraphs, and take this opportunity of extending to him our appreciation and wish him many years of good health and enjoyment away from the stress of business.

When I visit London I shall miss Mr. LEE very much. He has at all times shown a sympathetic interest in all that pertains to the service. May he have many happy days and health and strength in such measure as will permit him to enjoy for many years his well earned retirement.

BY COL. H. E. SHREEVE, TECHNICAL REPRESENTATIVE IN EUROPE, AMERICAN TELEPHONE AND TELEGRAPH COMPANY.

To those who have known John Lee over a term of years, the announcement of his approaching retirement from active service with the Post Office comes as a great surprise and something of a shock, for his maturity of judgment, breadth of vision and ripeness of scholarship have never subdued the energy or stifled the driving force of the abundant youth that has ever been his.

His friends in the American Telephone and Telegraph Company remember with pleasure his all too infrequent visits to the United States. We have always profited by his keen analysis of the points of difference in the technical practices of England and America and we have ever been deeply conscious of the whole-hearted friendliness of his comments. It is unthinkable to us that his activities and sphere of influence will decrease. Rather do we picture him as pushing on with renewed vigour in those fields to which his official duties have heretofore permitted him only intermittent access. We heartily congratulate him on the brilliant record of achievement which he is about to complete and on the opportunity for continued intensive devotion to what were formerly his avocations.

May his years be many in continued service toward the goal to which his ideals shall point the way!

REVIEWS.

"The Post Office." By Sir Evelyn Murray, Secretary to the Post Office since 1914. (The Whitehall Series.) (Messrs. G. P. Putnam's Sons, Ltd. 7s. 6d. net.)

Sir Evelyn Murray has succeeded, within the modest scope of some 200 pages, in giving a brief history of the Post Office, a review of its finance, an account of the main branches of its activity, and a record of its general organisation and staffing, together with a short chapter on what the Post Office did in the Great War, and a generally prophetic epilogue. So ambitious a task demands a nice sense of proportion and a rigid conciseness; not only does this work display both qualities, but it avoids the dullness which so compressed a treatment frequently entails, without recourse to anecdotal "frills."

The telegraph and telephone services are treated comprehensively, and the main objects of Post Office policy are frankly discussed. In the treatment of inland telegraphs, the explanation of the deficit appears by implication to lay rather too much emphasis on rates of wages as distinct from staff costs; one could have desired a comparison with the telephone service, in which the financial effect of a probably greater increase of wages has been offset by other factors. Under foreign telegraphs we are given the full story of the Wembley telegram which travelled round the world in 80 seconds; but records become out of date very quickly, and the transmission of the Derby result to Melbourne in three seconds by the Australian Beam puts all previous achievements in the shade. Of the Beam system Sir Evelyn writes with optimism; he frankly admits that its intermittence stands in the way of its complete efficiency, considers that if this handicap could be removed, "wireless would be in almost impregnable position," and later in the book expresses confidence that the advance of science will render the handicap practically negligible. In connexion with telephones, Sir Evelyn traces back the difficulties of the present to the errors of the past; but he shows also that the retarded development before 1912 was due not so much to the errors of the National Telephone Company but to the well-intentioned, yet profoundly mistaken, policy pursued by successive Governments.

We could have wished that space had permitted a fuller account of the staffing and organisation of the Post Office; the local organization of a post office is hardly mentioned, and the account of the organisation of Headquarters is perhaps too compressed for the inexpert reader. We are assured, for instance, that "the administration of the Post Office entails an immense amount of clerical labour, ranging from large blocks of purely routine work, such as the keeping of savings bank and other accounts, to highly responsible and difficult duties." It is not quite clear what duties are referred to in the latter category, but the absence of specific mention of any of the other "Treasury classes" suggests that the word "clerical" is used to comprise duties which would not normally be so described. The rôle of the Comptroller and Accountant General is admirably described as a combination of vigilant criticism with "a temperate enthusiasm for the Post Office and its manifold operations."

The book is written mainly for the general reader, and may be specially commended to those who accuse Government Departments of a cautious timidity. Members of the Post Office staff will not find technical exposition; but they will probably be refreshed by the direct vigour of the style and the almost complete absence of that official jargon which is our daily fare. (We note as a minor example the rarity of initial capitals, in contrast to the excessive indulgence in their use which characterises most official publications). The Post Office servant, after reading this book, feels like a dweller in a small suburb of a great city who is taken up in an aeroplane, surveys the whole perspective, and knows himself to be a citizen of no mean city.

HIC ET UBIQUE.

WE heartily congratulate our colleague, Mr. J. STUART JONES, on his appointment to the Controllership of the Central Telegraph Office, in succession to Mr. John Lee. It is an excellent principle to have one of the seats on our Committee filled by the Telegraph Controller and we could not wish for a more acceptable representative than Mr. Stuart Jones.

Towards the end of last month, telephone service was established between London and Stockholm by means of a through circuit between those cities. The charge for a 3 minutes' call between 8 a.m. and 9 p.m. is £1 1*s.* 6*d.*, and between 9 p.m. and 8 a.m. 12*s.* 11*d.* On the 27th communication was established between Great Britain and the Free City of Danzig. The charge for a day call between London and Danzig is 19*s.*

At the beginning of 1926 direct telephonic communication was available between Great Britain and France, Belgium and Holland only, whilst Switzerland could be reached somewhat uncertainly, owing to the busy state of the Anglo-French lines, via Paris. Through circuits now exist between this country and France, Belgium, Holland, Germany, Switzerland and Sweden, Danzig can be reached via Berlin, and furthermore, with the aid of wireless, the United States and Cuba are also obtainable by telephone. This represents quite a notable progress.

Somebody, says the *Daily News*, should draw up a list of popular fallacies on the lines of those which Lamb prepared a century ago.

Here is one modern fallacy I should like to contribute to the list: "That the Post Office is always slow."

The explanation is that I am glowing with a reflected enthusiasm.

The man next door has had a telephone installed within a week of asking, and he is chanting the efficiency of the State service to every rabid individualist on the morning train.

There is no doubt, however, that the telephone service has vastly improved in recent months. Yet it has become such a consecrated subject of musical comedy jests, that few people ever think of saying a good word for it.

Very true. But if one abolished those consecrated jests where would our comic papers be? *Punch*, for instance, which has the "wrong number" complex, would lose a paragraph a week if debarred from jests on that favourite theme.

According to the American papers, a striking object lesson in the complete dependence of the commercial world on the telephone service has just been afforded in New York.

Following a fire which destroyed the telephone connexions for the Eighth Avenue area, 15,000 instruments were silent for three days and the entire district was in effect wiped off the business map of the city. Worst of all was the plight of those whose businesses were carried on high up in the skyscraper buildings. The fire had destroyed also the electric cables that supply the power to the lifts. "We could do just as much business on a desert island," said a manager ruefully.

Many offices closed for the time being. Some took temporary accommodation in other sections of the city where the telephone service was not impaired; others struggled along by using messengers.

As the *New York Times* said: "The telephone is one of those great conveniences or blessings of which we think little until we are deprived of them. It has become second nature to believe that we have only to take down the receiver in order to be brought into instant touch with whom we wish to speak on business, social or personal affairs. It is a striking tribute to the excellence of the service that people feel so lost and bewildered when it is broken off. . . .

"A generation has grown up to whom the telephone appears indispensable. That we should not have it instantly at command

has come to seem incredible. It is accepted almost as if it were a gift of nature. Only when something goes wrong with it do we stop to realise that it is the result of inventive skill and the application of vast capital. Without it our complicated civilisation could not now go on."

It may not be generally known that one of the sportswomen who competed recently in the German Olympic Games, to uphold Britain's prestige in Berlin, is Miss D. Uglow, a telephonist of Putney Exchange. She finished second in the hundred metre race, won her heat in the relay race, and is now the possessor of two artistic medals.

On Saturday, June 18, 1927, she also won the 220 yards race at the Inter-Club Sports at Stamford Bridge. Our correspondent in the Putney Exchange adds: "We are all following her sports career now with great interest."

THE LONDON POSTAL SERVICE.*

BY LT.-COL. W. T. BRAIN.

(*Continued from page* 182.)

The Staff and Establishment Branch deals with those matters which are common to such branches throughout the service, viz.:—

Recruitment,	Leave,
Appointments,	Accidents,
Promotions,	Pensions,
Discipline,	&., &c.

One important item has been added recently, viz.: Promotion Boards Procedure.

This is perhaps the appropriate moment to say that in the Controller's Office there is a Senior Promotion Board dealing with higher promotions; an L.P.S. Promotion Board dealing with all other promotions, and the Assistant Controllers in charge of the E.C. and Foreign Sections, and the Inland and Parcel Sections, as well as the District Postmasters have their own local Promotion Boards.

(d) *The Travelling Post Office.*—This Section exists for the purpose of accelerating correspondence by performing *en route*, in special carriages built expressly for the Post Office, all the processes of sorting usually performed in a stationary office. Obviously, if quantities of work can be sorted on the railway journey, a later time of accepting it can be given to the public. By means of special apparatus fixed to the side of the specially constructed carriage a Travelling Post Office is able to collect and despatch bags of correspondence whilst travelling at a high rate, thus obviating the necessity for stopping the train for mail purposes.

The story of the Travelling Post Office is a fit subject for a lecture in itself, and time will not permit me to do more than touch on some of its fascinating features.

In early railway days it was customary to attach mail coaches to trains; the horses were taken out and the mail coach placed on a flat platform-truck at the end of the train.

Later mail coaches were attached to first-class passenger trains. In those days (1837) the carriages for first-class passengers were closed, whilst second-class passengers rode in open trucks.

Even in the days of mail coaches the practice of delivering the mail without stopping obtained, and undoubtedly this suggested the apparatus system introduced in 1838.

"Adopt, adapt and improve"—the Prince's slogan—seems to have been that of the Post Office even in bygone days, and in very early railway days, viz., 1838, we had our own railway carriage, even though it was a converted horse box, complete with apparatus for receiving and despatching mails.

When bags are ready for despatch by apparatus they are packed into strong leather envelopes which are folded over the bags and tightly strapped. There is a thong made of compressed leather attached to the pouch with an eyelet at the end.

The despatching officer stands at the open door and draws into the carriage the "delivery arm," which moves on a swivel and is fixed to strong iron tubes containing a spiral spring. This spring keeps the arm in an upright position by the door pillars when the arm is not in use. Each arm has a pin forming part of its head which is protected by a spring cover, and on this pin the eyelet on the thong of the pouch is fitted.

On reaching the appropriate point in the journey, which has to be determined in the darkness largely by the sounds made by the train passing through tunnels, cuttings, &c., the arm with the pouch attached is swung out of the carriage, and lowered gently into a slot of a semicircular iron rest called a "Sweep" and is thus brought to a level at right angles to the train. The arm is held in the slot of the "Sweep" by the weight of the pouch until it is released by the "detaching line" of the wayside net striking the leather thong and knocking the pouch off at the rail side. The arm then automatically springs back against the door pillar of the carriage.

The operation of despatching *from* the wayside to the carriage, which I will explain in some detail.

It should be remembered that the Post Office runs four trains entirely composed of Post Office carriages each night, viz., between Euston and Aberdeen and between Paddington and Penzance in each direction. The P.O. carriages are joined up by gangways, and it was this system which suggested "corridor" trains. Reference should also be made to the fact that the personnel for T.P.O.'s and sorting carriages is drawn from provincial towns as well as from London.

A branch of the T.P.O. Section deals entirely with Apparatus working and is responsible not only for the maintenance of all Mail Bag Apparatus, whether attached to carriages or at the wayside, but for the proper instruction of all officers dealing with apparatus work.

In all these Headquarter Branches the personnel consists of—Higher Executive (or Staff) Officers, Executive and Clerical, with Assistants on writing work selected from the manipulative classes.

Passing from the purely administrative realm of the Controller's office (from which is excepted the T.P.O. Section), we come now to the large executive sections which are in charge of Assistant Controllers.

The front block of King Edward Building contains, besides the Controller's office, the office of the *Assistant Controller, E.C., and Foreign Section*, and on the ground floor the Chief Office counter. This is a handsome office, 152 ft. by 52 ft.—the largest in the country—built throughout with Irish and Italian marble, the pillars having bronze bases and capitals, the counter grille and electric fittings being of the same metal. In addition to the Chief Office counter the Assistant Controller, E.C., has under his charge all the Branch Offices (except Threadneedle Street) and the Town Sub-offices, in the City area. He is virtually the Postmaster of the City of London.

The variety of the work dealt with at Branch Offices, &c., has, as you are all aware, increased with the advent of social services organised by the Governments of the last few years.

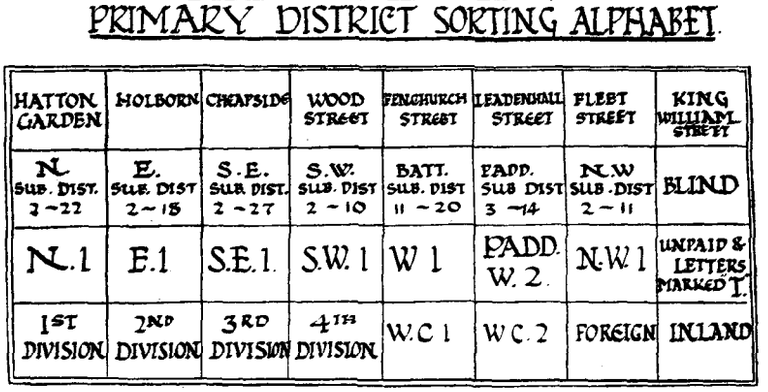


FIG. 3.

Behind the front block and connected with a bridge from the second floor of King Edward Building, is the "Sorting Office Block," occupied by the E.C. District Sorting Office on the ground floor (picture), and by the Foreign Section on the first floor. Beneath both these blocks is a basement measuring 446 ft. east and west, and 210 ft. north and south. There is also a sub-ground floor of slightly less extent.

The E.C. Sorting Office deals entirely with London work. It is not only a delivery office for E.C. (i.e. City) work, but it has direct connexion with all the District Offices and makes despatches to the 104 Sub-District Offices to connect with each delivery, throughout the day. Over 5,600,000 letters, &c. (excluding registered letters) are collected weekly from City posting boxes, of which just over 1,000,000 are for abroad, the rest being for London.

London work is brought in in separate bags collected from town boxes for disposal in the E.C. Section but *Country* work is also collected and sent for treatment to Inland Section at Mount Pleasant, a mile away. Eeven from Chief Office posting room this country work is simply bagged off

* Paper read before the Post Office Telephone and Telegraph Society of London.

and sent by an underfloor conveyor to the platform on the other side of the building and despatched by van to Inland Section. Be careful, therefore, to post your letters in the proper boxes, or you run the risk of their being delayed. We are taking special steps to impress this upon the public just now in an endeavour to reduce the number so misposted to something less than a million a week. Letters brought in to E.C. by van collections and on foot then go through the processes of "Facing."

The "Facing" tables where the letters are gathered up and arranged *with the postage labels in the right-hand top corner, are fitted with two running* bands or small conveyors. On one band are placed the letters to be stamped, and these are conveyed to one end of the table, where they are put through electric stamping machines (picture), whilst on the other band are placed thick letters (unsuitable for machine stamping) and packets. These are conveyed to the other end of the table, whence they are collected for hand stamping at another part of the office. Having been stamped the letters are placed on the "Primary" sorting tables for the initial sortation. (*See* Fig. 3—Primary District Sorting.)

LETTER FITTING.
PRIMARY WALK SORTING ALPHABET.

BLIND & UNPAID	CALLERS	STATES	ALDERSGATE STREET.	BARBICAN	BARTHOLO-MEW SQ.	BUNHILL ROW	CENTRAL STREET
CHARTER-HOUSE	CHISWELL STREET	CITY ROAD	CLERKEN-WELL GN.	CLERKEN-WELL RD	FARRING-DON RD	GOSWELL ROAD	HATTON GARDEN
HOLBORN	JEWIN STREET	LEATHER LANE	MYDDEL-TON SQ	NEWGATE STREET	NORTHAMP-TON SQ	OLD STREET	RED LION STREET
ROSEBERY AVENUE	ST JOHNS SQUARE	WEST SMITHFIELD	WHITECROSS STREET	FRUDEN-TIAL	2ND DIVISION	3RD DIVISION	4TH DIVISION

FIRST DIVISION.

FIG. 4.

"Primary" sorting in the E.C. Section consists in dividing letters for *all the Head Districts in London, for groups* of Sub-Districts, for the geographical Divisions of the City, 1, 2, 3 and 4, and for a few well-known streets, as shown on this plan. Each of the E.C. Divisions is made up of a number of "Walks," varying from 16 to 25. There are 81 Walks in all at present. The practice of making a first sortation to Divisions in the City is a survival of an old practice of splitting up the whole of postal London into Divisions. (In 1796 when London clung more or less to the river, there were 12 of these Divisions, extending from Westminster to Wapping, and from Lambeth *in the south to Aldersgate Street and Goswell Road in the* north.)

Letters for the City are next taken to the appropriate Division for "Walk" sorting, and a plan of the first Division (Fig. 4) is shown as an example. Those for other parts of London are conveyed to another portion of the office, where they go through a process of sub-division according to the numerical indicator of the District or Sub-District. They are then bagged off, dropped through an opening in the floor on to a conveyor which takes them to the platform for despatch.

After being "Walk Sorted," letters for the City are taken to special tables set aside for "Walks," and are there prepared by the postmen for delivery. Similar processes of "Walk Sorting" and preparation for delivery have, of course, to be gone through when the letters despatched to Head District and Sub-District offices reach their delivery points.

Bags which are received from the provinces, &c., containing bundles and packets for London generally, are opened at a different point, on a table also fitted with conveyor bands. The bundles are placed on one band for transfer to a *Bundle* sorting table, whilst the packets flow on another band into a basket at the opposite end of the table.

The number of items delivered weekly in the City is approximately 9,500,000. Of these, over 6,000,000 weekly fall into the first delivery, and there are 6 deliveries a day. In other Town Districts there are usually seven deliveries, and in Sub-Districts four.

In the E.C. Section alone the force numbers more than 3,600—Postmen 2,041, and Sorters 886, being the largest classes. The most interesting time to see the E.C. Office is between 5.30 and 7 p.m., or between 7 and 8 a.m.

Foreign Section.—The first floor of the Sorting Office block of King Edward Building is the main despatching office in London for mails for abroad.

The system of sorting is similar, *mutatis mutandis*, to that in the E.C. That is to say, there is a "Primary" in which countries or groups of countries form the Divisions, after which there is a further sub-division. The sub-division stage is necessarily more difficult than the first.

The work for abroad increased so rapidly that a few years ago it became necessary to set up other despatching points throughout the country so that large provincial centres such as Liverpool, Manchester, Birmingham, Bristol, Glasgow, Edinburgh, &c., &c., now make up complete mails for places abroad.

This system of decentralisation has also been carried out in London, and the District Offices now make up and despatch mails for many places overseas.

All the sorting work in the Foreign Section is performed by Sorters, of whom there are approximately 700. There are no Postmen in the Section. Most of the letter sorting is done on the standard box fittings and drop bag frames for news and packet sorting are also used. Mechanical aids are utilised as in the E.C. Section, and there is a long Conveyor which runs nearly the whole length of the Colonial side of the Foreign Section, on which full bags are placed. This Conveyor takes the bags to the west end of the building and automatically deposits them into a spiral chute down which they pass to the platform, whence they are despatched by motor to a railway station or direct to the docks.

The mail to the Far East is the largest weekly despatch, the bags disposed of numbering on an average 7,500.

(To be continued.)

LONDON TELEPHONE SERVICE NOTES.

Accounts Branch.

THE number of accounts for the June quarter showed the usual increase over the number for the preceding quarter, 265,387 being despatched between April 7 and 29, or nearly 6,000 more than the number sent out in January. In addition, there were several hundreds which could not be despatched during this period for various reasons, such as removals or transfers in course of completion, and, of course, there are the new lines which arrive daily and mean the despatch of first accounts throughout the quarter to the number of about 400 per week.

A large proportion of the subscribers seemed to consider the first week in May the most suitable time for settling accounts, as in the five days from May 2 to 6 inclusive £397,955 passed through the hands of the Cashiers. This represented 29,182 cheques and postal orders sent direct to the Controller's Office and 29,177 accounts paid at Post Offices. Each of the former involved the writing of at least on receipt, so that the officers responsible for this part of the work had a busy time.

The last Directory is already three months old and work is now in full swing for the next issue. Needless to say, it will be bigger than ever and at the present rate of progress it looks as if, in a few years' time, we shall have to send it out in volumes like an encyclopaedia, with a suitable artistic book case to hold it!

* * * *

Cricket.

The Accounts Branch Cricket Club is going strong, like Johnny Walker. On June 1 a match was played with the London Engineering District, when after a most interesting game, the Accounts won by 13 runs. On June 3 they met an eleven from the Secretary's Office, but were not so successful, as the visitors carried all before them. However, matters were kept even by the League match against the Contract Branch on June 7, which ended in a draw, the Accounts being all out for 110 while the Contract had 91 for 9 wickets.

An interesting event in connexion with the Accounts Branch Cricket Club was the match *versus* the Ladies of the Branch at Mottingham on May 25. The ladies displayed such skill at the game that one is tempted to describe it as a "Gentlemen *v.* Players" match.

The Gentlemen gallantly elected to place themselves at a disadvantage by batting and bowling left-handed, with the exception of one or two players who were accustomed to play in that manner. The Ladies batted first and succeeded in knocking up 37 runs, 17 of which were scored by Miss Locke. The Gentlemen followed on and although they obtained 46 runs it was no easy task. Some of the overarm bowling of the Ladies was quite good and there was keenness in the fielding. Lbw. is often a questionable decision and this match was no exception.

The Club were pleased to see quite a number of spectators, amongst them being the President, Mr. Stirling, and the Vice-President, Mr. Bold. We hope to see them all again at future matches, together with many other members of the staff, particularly at the Chiswick events, where provision for the general comfort of players and supporters is so excellent.

Contract Branch.

The volume of new business obtained by the Contract Branch during May was as follows :—

	Stations.
New business obtained	7,415
Ceasements	3,322
Net gain ...	4,093

The witness to a telephone agreement recently gave his description as "Male, 5 ft. 9 in., tall, medium complexion." The name indicated that he was a foreigner so he may be more accustomed to passports than telephone agreements.

The streets of the City of London have recently been brightened by the appearance of several kiosks painted the well-known pillar-box red. Particularly conspicuous are those behind the Royal Exchange, outside the *Times* Office in Queen Victoria Street and that by the Secretary's Office in King Edward Street. Members of the staff of the late N.T.C. who were acquainted with the Company's Headquarters will be interested to know that two kiosks have been installed in the garden of Telephone House facing the Embankment.

The recent attempts of a certain morning paper to belittle the Post Office generally and the Telephone Service in particular are certainly interesting for the number of inaccuracies the articles contain and the remarkable feebleness of the expert who is quoted from time to time. The whole thing would be laughable if it were not for the fact that the public are apt to believe every word they see printed in their favourite paper.

Among other things, the Telephone Service is blamed for the inadequate telephone installations in Hotels ! But the doorsteps of hotels in this country have been worn down by the feet of generations of Contract Officers who have been endeavouring to persuade the "business" men who run them that telephones are essential to the comfort and welfare of their guests. Progress is slow but that is not the fault of the Post Office, and the newspaper in question should look elsewhere for the culprits and with the clue given above their discovery should not be difficult.

Cricket.

Exceptional interest is being taken this year in the affairs of the cricket team, mainly due to the introduction of triangular games between the Accounts, Contract and Traffic Branches, and the Branch is grateful to the L.T.S. Sports Council for the assistance they have given in connexion with the season's arrangements. There is much speculation already as to who will be the winners of the initial tournament.

So far the Contracts have played two matches, which have resulted as follows :—

Versus Traffic—

Contracts 122 for 8 wickets. Innings declared closed.
Traffic 49 for 2 wickets. Match drawn.

Versus Accounts—

Accounts 110.
Contracts 91 for 9 wickets. Match drawn.

The game against the Accounts Branch provided a most exciting contest. The Accounts batted first and made a total of 110, which was incidentally assisted by unfortunate lapses in the field. Left with 1¼ hours to obtain the necessary runs and batting in a very bad light the Contracts were soon fighting to stem the tide of several early disasters but a splendid stand halfway through the innings suggested the possibility of a win being forced. However, the game veered round again and for the last four minutes the last wicket had to withstand a desperate attempt to dislodge it. The atmosphere was so tense that one of the umpires forgot to call "over" when time was up, but everybody else had carefully counted those last six balls and so the game ended.

* * * *

P.O. Sanatorium Society.

Eight delegates from the L.T.S. attended the Tenth Conference of the Society which was held in Birmingham on May 26.

The delegates were accorded a civic welcome and were addressed by the Lord Mayor, the Medical Officer for Health, Col. H. V. Prynne and Mr. Garland, founder of the Society.

Miss M. M. Worth of the Hop Exchange was re-elected to the Board of Management, gaining a high place in the ballot.

Our delegates were especially gratified by the Secretary's special commendation of the work done in the L.T.S. in contributing towards the increase of 951 in the membership during the preceding six months.

* * * *

Sports Association.

The representative of the L.T.S. Sports Council who attended a meeting of the Development and Publicity Committee of the Civil Service Sports Council on May 24, reports that reference was made at that meeting to the need for further support of the *Civil Service Sports Journal*.

The number of copies circulating to the various Departments was quoted and the L.T.S. figured very low in the schedule with a circulation of 36 copies. Seeing that the L.T.S. membership of the Civil Service Sports Society is now 1,000, our representative suggested that the publication may not be known to the majority of the staff. The Journal is the official organ of the Society and contains much useful and interesting information with regard to C.S. sports and the doings of the Council. The subscription is 1*d* per month. Agents are required in the various branches and exchanges, and will any of the staff who are prepared to assist in the circulation please communicate with Mr. Hugh Williams, Private Wire Section, Cornwall House.

Mr. Williams hopes to be able to report at the next General Council Meeting that every L.T.S. member of the Society is now a subscriber to the *Civil Service Sports Journal*.

* * * *

Cricket Scores.

The first of a series of matches in connexion with the newly-formed L.T.S. Cricket League was played at the Civil Service Ground, Chiswick, on May 31, between the Contracts and Traffic Branches.

The game resulted in a draw, the scores being as under :—

Contracts.		*Traffic.*	
Staples, b. Berry	6	Adams, c. Wilson, b. Canham	2
Hodgkiss, b. Berry	38	Thompson, not out	26
Oliver, b. Crossley	30	Crossley, c. Griffiths, b. Cowdrey	6
Dickinson, run out	19	Holdstock, not out	14
Canham, b. Berry	10	Extras ...	1
Mitchell, c. Adams, b. Berry ...	0		
Cowdrey, c. Adams, b. Holdstock	10	Total (2 wkts.)	49
Wilson, run out	0		
Griffiths, not out	1		
Extras ...	8		
Total (8 wkts. dec.) ...	122		

Frankenstein and Harris did not bat.

Grove, Shepherd, Berry, Dodson, Gregory, Webb and Evans did not bat.

* * * *

Cricket Fixtures for July.

July 5.—Accounts Branch *v.* Traffic Branch (L.T.S. League).
" 12.—Traffic Branch *v.* Contracts Branch (L.T.S. League).
" 20.—A.G.D. *v.* L.T.S.
" 26.—L.T.S. League Champions *v.* The Rest.

All matches will be played at the Civil Service Sports Ground, Chiswick.

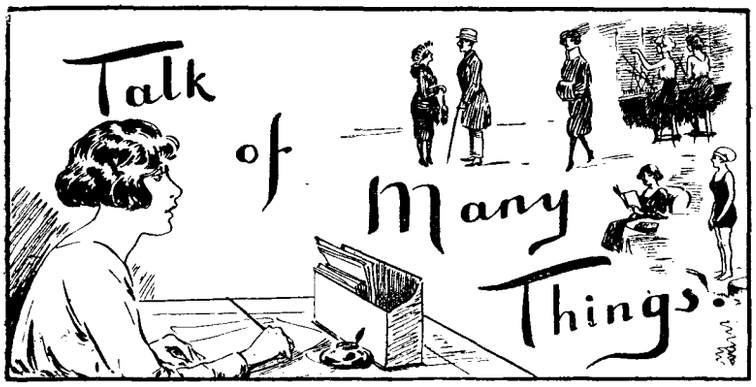
PERSONALIA.

LONDON TELEPHONE SERVICE.

Promotions to Assistant Supervisorships, Class II :—

Miss O. H. SHEPPARD at City Exchange.
Miss W. M. PRESTON, at Hop Exchange.
Miss E. A. HARVEY, at Streatham Exchange.
Miss L. H. EVANS, at Gerrard Exchange.
Miss E. M. BATH, at Regent Exchange.
Miss EDITH M. WEBB, at Trunk Exchange.
Miss E. M. BREEZE, at Sloane Exchange.
Miss C. S. LONTIT, at Trunk Exchange.
Miss G. L. COOPER, at Paddington Exchange.
Miss H. J. CAMPBELL, at Kensington Exchange.
Miss F. L. DANIELS, at Central Exchange.
Miss D. J. ENGLISH, at Clerkenwell Exchange.
Miss L. A. GRAY, at Museum Exchange.
Miss B. E. HARROP, at Regent Exchange.
Miss E. F. BRYAN, at Maryland Exchange.

WE TELEPHONISTS



Leaves of Grass.

I HAVE a friend whom I will call Hezekiah. That's not his real name, I am glad to say, because I could not bear to know a man with such a heathenish Christian name. I will call him that to conceal his identity. Although you may never have met him you will, doubtless, be familiar with his type. He is frightfully learned and is a man of wide interests. He wears longish hair, a shabby suit, a soft collar and an enormous bow of arresting colour. He is the sort of man whom you can take around with you as an exhibit and thereby gain no small amount of respect for yourself. He is, of course, dreamy and highly unpractical but he has intervals of sly practicality which deceive the most wary. I met him in one of these moods one day which, perhaps, explains how I came to mow his lawn. I say "mow" advisedly, because the grass was knee-deep. I found him standing in it dreamily and in his eye was a look of poetic and contemplative abstraction. I have since learned that at such times he is most dangerous. I greeted him, and his gaze gradually turned upon me and the abstract look slowly dissolved in recognition. "Oh, hullo," said he. I remarked that the grass was long, that it needed cutting and that his lawn would be spoiled. "Yes," he said, "*it is, it does, it will*; I thought of a sheep." "Stupid," I said. "They are," he went on, "or a mower." "Too long," I said; "or a scythe, perhaps," he added. "Look here," I said, "scythes are dangerous to the user and the public in the vicinity. Your first sweep would probably convert your Alsatian into a Dachshund. What you want is shears." "Sheer nonsense," he said. "I don't, but you . . . ," and then I fell to his dreamy fascination and I set to work. I felt like one of those explorers one reads of who cut their way through virgin forest, scarce seeing daylight and pursued by hosts of insects with no tails and sharp teeth. Intent on my work I heard a sudden yell followed by unpoetical expressions. I looked up and found that I had sheared Hexekiah's *white shoes and had, moreover, bitten well and truly.* "Pardon me," I said, as politely and pleasantly as possible, "if in my zeal I have exceeded my duty in cutting your grass and have cut your corn." I reminded him of the saying of Asparagus (57 B.C. or thereabouts) that a corn in the ear is worth two on the feet. But he merely snorted and disappeared profanely into the house. In the fulness of time I completed shearing and mowing and I stacked the cut grass in a neat rick at the end of the garden. Then I brought him forth to show him the shingled landscape. He was profuse in his thanks; he complimented my skill, my expedition, my courage and my extreme friendliness. He slaked my thirst and grasped me by the hand. "What will you do with the grass?" I asked. "I really don't know," he replied. "What does one usually do with it?" It pained his nature-loving heart to think of burning it, so I suggested that he might give it to a horse or, perhaps, a donkey. "Excellent," said he eagerly, "take it, my friend." "But," I began. "No, no," said he, "I'll take no refusal, and besides"—this sternly—"it is ungracious to refuse a gift." Then he re-entered the house rapidly, rubbing his hands gleefully, and murmuring delightedly, "excellent, excellent." So here am I with a haystack on my hands and with a profound suspicion in my heart that *I* am the donkey.

PERCY FLAGE.

Switzerland.

Our holidays draw near. Soon we shall bid a short farewell to the office and hasten to the land of exquisite beauty—Switzerland. What an experience it is to travel abroad! Pack up your summer dresses and a warm coat: it is very hot in the valleys but chilly in the high Alps.

The joy of the Lugano I am not yet acquainted with, but I guarantee that you will be delighted with Brunnen. It lies on Lake Lucerne and looks out on to range after range of mountain peaks.

We will saunter through the famous Axenstrasse with our cameras, and take some fine snaps.

I think we ought to join an excursion from Lucerne to Altdorf; there are so many objects of interest round the Lake and in the little town.

The romantic story of William Tell will be related to us whilst we are on the steamer; we shall see the wonderful pictures in his chapel, and hear of the events which led to the freedom of the Swiss people from the tyranny of the Austrians. A monument to Schiller stands on the lake—it was Schiller who inspired the great musician, Rossini, to write the opera "*William Tell.*"

The village town of Altdorf is the capital of the Four Forest Cantons. It possesses its own Parliament, a Court of Justice, a fine memorial to William Tell, and a theatre entirely devoted to his opera.

The Parliament in Altdorf is the smallest in the world, it consists of one large well-appointed room; but the Court of Justice is even more quaint. It is a room no larger than our locker room! William Tell's theatre has a most wonderful stage. Last year we stood in the middle of it while the scenic effects were displayed. First, stars shone above us in a clear sky, then came a mighty storm, a noise as of angry waves dashing upon the shore, the howling of the wind in a tempest, vivid flashes of lightning, and peal upon peal of terrific thunder.

We must take a trip to lovely Lucerne to obtain the best view of Mount Pilatus. There is a curious legend concerning this mountain, which is supposed to have derived its name from Pontius Pilate. According to the legend, Pilate became in disfavour with the Roman Emperor after the death of Christ, and fled to Switzerland to escape execution. He lived for a time on Mount Pilatus, but the part he played in the Crucifixion so preyed upon his mind that he eventually committed suicide by throwing himself from the summit of the mountain into Lake Lucerne. Severe thunderstorms immediately broke over *the town which threatened to destroy the lives of the inhabitants.* The superstitious peasants of that time thought that the ghost of Pilate haunted the Lake, and until his body was recovered and sent to Rome for burial, there would be no peace. Many patriots went to the Lake to lay the ghost, but all returned declaring that they had seen Pontius Pilate sitting on a throne in the middle of the Lake. The uneasiness became so acute that the Lake was searched. Whether the body was found is not known, but the thunderstorms ceased and Pilate troubled the people no more.

We must climb the Rigi! There is the mountain railway when we get too tired to continue walking. The scene from Rigi-Kulm surpasses all description. Wooden crosses up the mountainside mark the places where mountaineers have perished, but you need have no fear! The Great Architect who planned the Land of Beauty has ordained that man, in this generation, shall have domination over the works of His hands.

G. M. T.
Sydenham Exchange.

New Versions of Old Songs.

No. 1.—I SEE YOU CALLING ME.

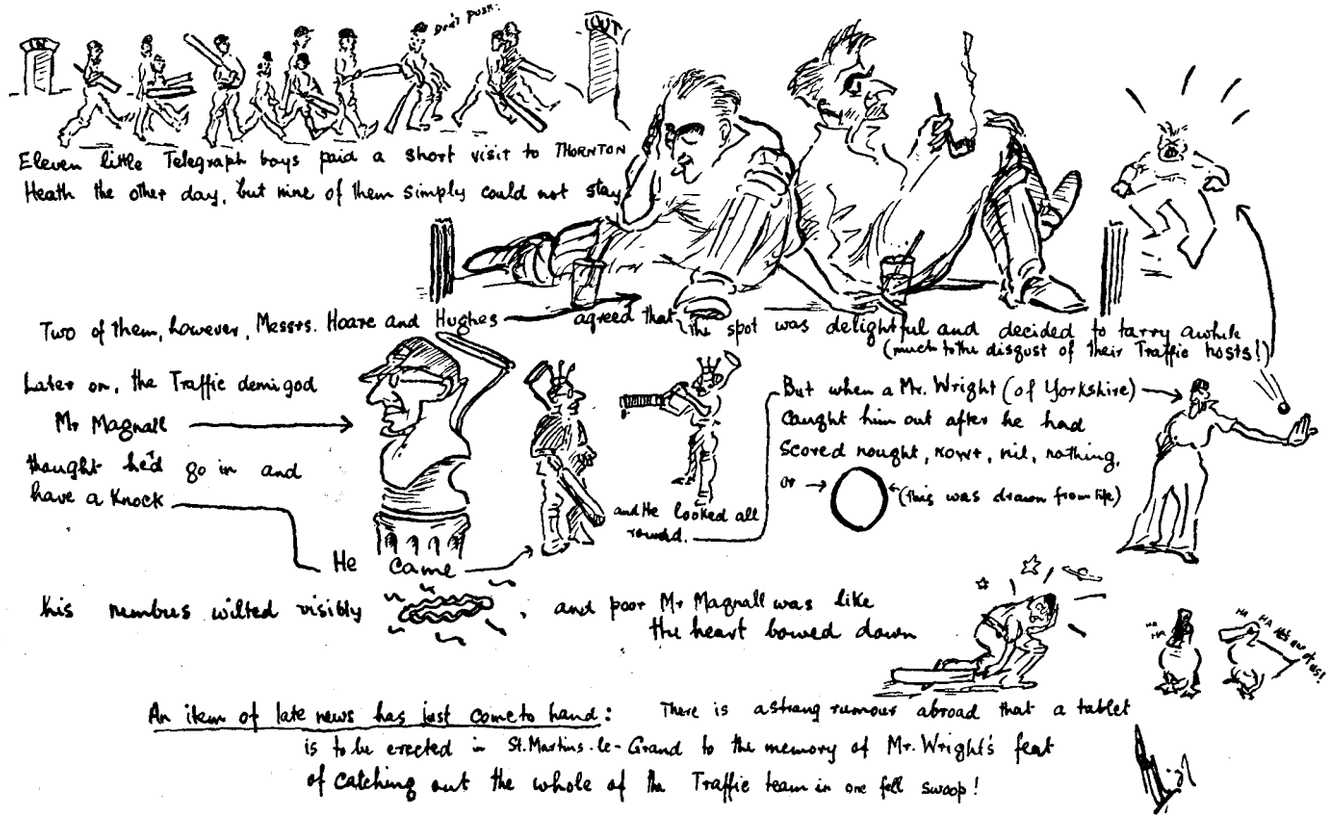
I see you calling me!
You called me when your line was T.O.S.
For re-connexion you began to press,
You cleared—do you remember, when you heard
That you would have to pay five bob excess!

I see you calling me!
And oh! the flood of language you released!
I tried to soothe you, but your wrath increased,
Because, do you remember, your best girl
Had just been misinformed your line was ceased.

I see you calling me!
Though vast positions stretch their weary length between.
You still are answered from the multiple, I ween,
You flash—and I behold you, slogging here,
But oh! I have a buzzer stuck, old Bean!
I see you calling me!

C. A. S.

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.



SECRETARY'S OFFICE CRICKET CLUB.

INTER-BRANCH COMPETITION.

Building and Supplies and Establishment Branches v. *Registry.*

B. & S.B.		*Registry.*	
C. G. Bray, b. Asplin	30	R. Douch, b. Hambridge ...	0
F. E. Waters, b. Devenport ...	1	C. W. Devenport, b. Hambridge	0
G. H. Banton, c. Cove, b. Reussiet	18	G. Asplin, b. Newman ...	1
C. J. Newman, lbw., b. Asplin	6	P. P. Cove, b. Newman ...	0
A. J. Garrett, c. Walton, b. Asplin	8	C. Paul, b. Newman	0
J. W. Bambridge, b. Cove ...	12	E. Beviss, not out	1
J. Scholes, not out	10	G. Stutchbury, b. Hambridge	0
G. W. Colyer, c. Douch, b. Asplin	2	P. Reussiet, b. Hambridge ...	0
F. J. Pearce, not out	5	R. Walton, b. Hambridge ...	0
Extras ...	8	G. Crisp, c. & b. Hambridge	0
		F. Reason, c. Garrett, b. Hambridge	0
		Extras ...	3
Total, 7 wickets, declared	100	Total ...	5
Asplin took 4 wickets for 21		Hambridge 7 for 2. Newman 3 for 0.	

Mails Branch v. *Staff and Investigation Branches.*

Mails.		*Staff and Investigation.*	
D. Lester, c. Masters, b. Plouviez	13	C. W. Whitehurst, c. Wyles, b. Appleby	1
N. Abramovitch, lbw., b. Plouviez	17	L. F. Masters, b. Abramovitch	18
W. Appleby, run out	24	F. Kemp, b. Appleby ...	1
F. W. Viney, b. Cramp ...	0	R. S. Hardie, c. Lester, b. Appleby	5
E. J. Joyce, b. Hardie ...	9	C. A. W. Plouviez, b. Appleby	22
F. H. Brooks, c. Plouviez, b. Border	8	D. W. L. Hughes, b. Appleby	3
R. Oakshott, b. Plouviez ...	22	R. J. Border, run out ...	5
W. H. Wyles, c. & b. Cramp ...	0	J. C. Mathieson, b. Appleby ...	0
E. A. Figures, b. Cramp ...	6	G. H. Hunter, run out ...	6
W. Sellars, c. Whitehurst, b. Cramp	10	J. Cramp, not out	2
G. O. Wood, not out	5	T. E. Spiller, b. Appleby ...	0
Extras ...	10	Extras ...	10
Total ...	124	Total ...	73
Plouviez 3 for 38. Cramp 4 for 29.		Appleby 7 for 37.	

Telegraph Branch v. *Telegraph and Telephone Traffic Section.*

Telegraph Branch.		*Traffic Section.*	
A. H. Read, b. Findley ...	5	J. Magnall, c. Wright, b. Moore	0
F. G. Birkett, b. Magnall ...	1	C. Leaver, run out	2
A. C. Belgrave, c. Whiffen, b. Findley	1	J. Lennox, b. Moore	0
A. W. B. Price, c. Key, b. Findley	0	C. Earle, c. Crowe, b. Moore	2
S. Moore, b. Findley	1	F. J. Key, c. Price, b. Moore	10
F. S. Hoare, c. Earle, b. Magnall	57	J. A. Beaver, run out ...	2
R. E. Hughes, c. Leaver, b. Magnall	50	G. F. Findley, c. Birkett, b. Moore	14
R. J. Crowe, b. Findley ...	0	H. J. Still, c. Price, b. Hoare	9
G. L. Mallett, c. Magnall, b. Findley	1	J. Whiffen, b. Moore	1
A. J. Hill, c. Beaver, b. Findley	1	G. Pybus, b. Price	16
S. P. Wright, not out ...	4	Higham, not out	0
Extras ...	6	Extras ...	1
Total ...	127	Total ...	57
Findley took 7 wickets for 47.		Moore took 6 wickets for 24.	

WEDDING PRESENTATION—ABERDEEN.

A LARGE and representative gathering of the Telephone House staff met on Friday, June 10, in the District Manager's Room. The occasion was the presentation of a wedding gift to Mr. David Smith, Traffic Branch.

Mr. A. Clow, Chief Clerk, who officiated as chairman in place of Mr. Edmond—absent on leave—congratulated our much-esteemed colleague on the step he was about to take.

Mr. Forrester, Traffic Supt., made the presentation—a handsome mahogany clock with Westminster chimes—and in happy vein referred to Mr. Smith's popularity.

This was demonstrated in further speeches by Mr. Webb, Asst. Traffic Supt., on behalf of the Traffic and Operating staff; Mr. Coulsell, Contract manager; and Mr. Scott, Overseer, on behalf of the Accounting staff.

Mr. Smith expressed his warm thanks for the gift and good wishes in an excellent reply, and an altogether pleasant function closed with votes of thanks by Mr. Kay, Asst. Traffic Supt.