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### THE TELEPHONE AND SOCIAL RECONSTRUCTION.\*

BY JOHN LEE, M.A.

THE air is filled with ideas of social reconstruction. We are looking, I hope not in vain, for the time when everyone will have the opportunity for a fuller and freer life. The prophets of the Victorian age, Carlyle and Ruskin, warned us of the horrors of the industrial epoch; they told us that industry and materialism had blackened the sky and narrowed our souls. Now it seems as if industry were to be the evangel. More and more steel is to be produced in the furnaces; more and more railways are to be built; more and more telephones are to be laid; more and more factories are to turn out more and more industrial products. And the new heavens are to be opened, and the lion-manufacturer is to lie down with the lamb-worker and there will be no more conflict.

I am not sceptical; I am afraid, rather. I wish I could see the millennium. I have my fears, though, that individualism, though out of favour as a theory, will still remain as a ghost at our corporate banquet. The building of Jerusalem in England's fair and pleasant land is a slow process. But it is in building. There will, I fear, be disappointments. Yet I think we can see that industry is exercising some influences for good and among them some influences on the inner life of our time. For it is that inner life which matters. The outer life of barter and building and bluster is of small consequence in relation with the quiet realm of the spirit. And there, in that intimate chamber, we are learning something and learning it from the industry which was scorned by Ruskin and screeched at by Carlyle. All manner of apparently materialistic industries are exercising their influence. The cathedral of the future will be built of reinforced concrete and will be completed in a fortnight; the cinematograph of the future will reproduce every event for us, with the appropriate acoustic effects, rendering the brilliance of journalism dull by comparison; the intimate communication of the future will be the telephone, and herein lies my claim to-night. Unseen and unappreciated the telephone is exercising and will exercise a vast influence on the rapidly developing life around us.

It is best to look on the telephone switchboard as a photographic visualisation of the world at large, but a photographic visualisation which has been transformed by a kindly hand much as the portraits which we see in photographic shops have been improved but still retain something of their original resemblance to the person photographed. The world outside consists of all manner of people, duchesses, greengrocers, members of Parliament, and dentists. All these varied social grades and many others are represented in our little inner world by lamps. There is no special lamp surrounded by gilt to represent the duchess. There is no special indication, green or otherwise, to represent the vegetable merchant. True the traffic section has invented a mysterious code to indicate differences of payment, and, I understand, differences of service rendered. But this has nothing to do with the social code. The duchess who has a telephone on the measured service has precisely the same lamp as the milkman with a measured service telephone who makes love to her parlour maid. The flat-rate member of Parliament—a juxtaposition of attribute which sounds odd—has exactly the same lamp as the flat-rate newspaper proprietor, though everybody knows that the member of Parliament is merely a pawn in the hands of the Napoleon of newspaper proprietors.

Looking at our switchboards, therefore, we are looking at a democratic microcosmos. Here, in Bentham's phrase, "Everybody counts for one and nobody for more than one"; and here, too, is a perfect picture of what the world ought to be. It puts everybody in his or her place. No one can choose his position on the switchboard, his telephone number, or the kind of lamp with which he is adorned, but in one tremendous levelling process humanity is redeemed from the social narrowness which give the suburbs their main subject of conversation. There was a conversation recently over a dinner table in the house of a peer, and that conversation surrounded the subject of what constitutes a perfect novel. Someone suggested that in a perfect novel there should be characters whom one would like to meet in real life, and the company proceeded to consider how they would like to meet Becky Sharp, Mr. Britling, and ultimately Sam Weller. "No," said Mrs. Dean, "we could hardly meet Sam Weller, you see we should not be on an equality." Now, thanks to the telephone switchboard, there is one place where Mrs. Dean and Sam Weller can meet on an equality. They may not desire to speak to each other—that would be Mrs. Dean's fault and not Mr. Weller's. Whether they wish to speak or not they are in a position to communicate, they are perfectly equal in telephonic social rank and the greatest joy of all is that the operator speaking to either of them uses the same standard expression in both cases.

Thus I would commit the social forces of the world to telephonic treatment. I lay on one side, as not worthy of considering, those blind people who say that one ought not to have a telephone. I read the other day an article by a lady in the *Fortnightly Review* which went on as follows:—

The telephone should be among renunciations, even though the contract stands the instrument should not, for it is a perpetual lure to luxury, to idleness, and to entertainment, and we seldom hesitate to use it for the mere gossip purpose, even at its increased toll.

Now let us look at this assault on the telephone. Apparently the good lady imagines that all that the telephone used to be used for is for the broadly unpoetical work of ordering her greengroceries, or beef, or asking a man to mend a trap. She shuts off with a ruthless hand all those most beautiful things in life such as what she calls "idle gossip," the interchange of pleasant thoughts, the communion of fellowship in ideas, and these she calls "idleness." Horrible to say, she proceeds to call them "luxuries," whereas, if there is anything that is necessary to us human beings, it is surely that exquisite and beautiful "gossip purpose" which makes the telephone the binding link in that sphere of mind and soul which separates us from the animal world. Her article would seem to indicate that horses and asses might find the telephone useful for ordering hay or a blacksmith. But human beings, whose wants are so much wider, to whom the world of intellect and the tender world of soul have some meaning, must be limited to their use of the telephone to what corresponds to ordering hay or the use of the blacksmith.

In its work of social reorganisation the telephone will not supply those bare necessities of which we hear so much. It will regard civilisation as the embroidery of life. It will not say "let us go back to the middle ages and have rushes on our floors, for rushes are all we need, and let us eschew carpets, and rugs, and the warmth of the fire, and the pleasantness of books, and the sweetness of music." On the contrary, the telephone will tend to lay a new emphasis on what we have previously regarded as luxuries. There has been some foreshortening of the picture as the result of the war, but we are not always going to be at war, we are not always going to live those lives which are narrowed into the sense of living on absolute necessities, food and raiment and a wooden chair to sit on, and drinking people's healths at the parish pump. Sooner or later we shall come to that clear vision of things in which the luxury of these tragic years will become a normal necessity, and in that transfiguration of thought the telephone will play a big part.

Thus as we have reduced our telephone subscribers, whatever their

\* A paper read before the London Telephonists' Society on Feb. 13, 1917

social rank, to a general level on the switchboard, it is interesting to observe how in other ways we have affected their methods of intercourse.

To begin with, there is our system of standardisation expressions. I am quite prepared to be told that standardised expressions crib and confine one's liberty. It must often be a temptation to an operator to say something different from the standardised expression merely for the sake of saying something different from that which is laid down. I confess that in such a matter as this my natural instincts would lead me in the direction of rebellion. The system would remind me of what Mr. Galsworthy said in *Fraternity*:

Like flies caught among the impalpable and smoky threads of cobwebs, so men struggle in the webs of their own natures, giving here a start, there a pitiful small jerking, long sustained, and falling into stillness. Enmeshed they were born, enmeshed they die, fighting according to their strength to the end; to fight in the hope of freedom, their joy; to die, not knowing they are beaten, their reward.

But still on cold consideration there is a good deal to be said for standardised expressions, not only in respect of their value in telephone work, but in respect of their influence on social life. Conventional language is largely made up of standardised expressions, but they have grown loosely and without scientific direction. We say "Good morning" and we say "Good evening"; we also say "So long," "By-by," and punctilious people say "*Au revoir*" to-day, and used to say "*Auf Wiedersehen*" yesterday. I know a rector, an exceptionally lovable rector, who bids good-by to his choir-boys by saying "Nightie-nightie," a phrase which seems to me quite suitable for boys in surplices. All these more or less are standardised expressions.

The dramatic critic of *The Times* the other day protested against a standardised expression. It seems that the lady said to the butler, "That will do, James," and the butler left the room. This is an example of a standardised expression which has crept into stage practice, though I gather from the criticism that it is unknown in real life.

It would be infinitely better if an imperial traffic section drew up a code of standardised expressions for greetings, good-byes, commiserations, congratulations, and all the other little intercourses of life. It might indeed go farther.

I confess I should like to see standardised expressions in the modern novels which I have to read for the good of my soul, my mind being temporarily unoccupied. Love scenes in the novels of to-day have drifted away from the long orations of the Victorian epoch, and have become slangy by-products of conversation, as if a man asked a woman to marry him in the intervals of thinking about tariff reform or the overthrow of the Cabinet system.

There are some standardised expressions which may be found in guides to letter writing. I came across such a book the other day, and in it there was an admirable letter suggested for use by a lady declining the hand of a missionary on the West Coast of Africa, and this was the critical phrase. "Although holding for you the highest esteem, and even affection, and recognising the honour which you have done me, I fear that the climate in (here insert place) will not suit my health, as I am suffering from (here insert asthma, bronchitis, &c.)." It reminds me of the form which people fill up when complaining of loss or delay to a telegram, one line of which says "nature of complaint," and the answer is frequently "rheumatism."

It is true that standardised expressions are used strictly for economy of words. That will be evident to anyone who looks at such a phrase as "Sorry to keep you waiting." I heard a subscriber once say that an operator using this expression did not sound exactly repentant, and I can believe him.

In real life we can convey meanings other than those of the words which we use. A lady in an omnibus, on whose dainty toes a conductor has unhappily trodden, can use "Thank you" with unmistakable meaning. The central object of the standardised expressions is to express appropriately and directly and without embroideries those feelings which we ought to feel and not those feelings which we do feel. Now if we all felt in life those feelings which we ought to feel and gave expression to them accurately and precisely, instead of those feelings which we do feel at the moment, life would be revolutionised for the better, novels would be impossible, and the theatre would have to be given up to acrobats, all of which would be obviously social reconstruction. "What did she say?" we read in Jane Austen's *Emma*, and then comes the reply, "Just what she ought to say; a lady always does."

Take our most familiar standardised phrase, "Number, please." This is most meaningful. The operator says that she and the whole organism are ready to connect that subscriber to any number in the United Kingdom or at the moment a portion of France; she places at the subscriber's disposal millions of pounds' worth of plant merely awaiting for him to express his demand. Then she adds the word "please," hoping that the service which she is about to render will please him (of that he will write to the secretary), placing herself as *servus servorum populi*.

What the subscriber sometimes understands by "Number, please," fired at him, I understand, in 3.7 seconds, is very difficult to state. Sometimes he is so dizzy by the amazing promptness of the reply that he forgets what he wanted.

One of our colleagues tells a story of a Dublin subscriber who said that "Number, please" said so hastily always frightened him into giving his own number. "I wish," he said, "they would say 'Good morning. Is there anything we can do for you to-day?'" The truth is, of course, that that is exactly what they do say; they abbreviate it to "Number, please," but it contains in its implications all sorts of affectionate offers of help and service. This interpretation of the inner meaning of standardised expressions opens the way to a somewhat pleasing conjecture.

In the romantic ventures of life where it is commonly understood that

freedom of expression is necessary I understand that the phrase, "No—but I will be a sister to you," obtained some currency in the Victorian epoch. It has fallen into desuetude, not because a standard phrase for that perfectly delightful situation is not needed, but because being a sister is a little out of fashion. She is now a "pal" or an "old thing" or a "good fellow," and there again you see the influence of standardisation. I am not aware in what phrases refusals of offers of marriage are conveyed nowadays, perhaps some ladies will enlighten us, out of their experience, in the discussion which will follow, and if anything can be done in the way of standardisation the traffic section, with the guidance of your president, will take it in hand.

It is said that in a town in New Jersey the telephone administration had determined to carry out the giving of information on a wide scale. One day a subscriber rang up and said to the operator: "There is a funeral going by. Who is dead?" The question, I believe, was aptly answered, but it would be difficult to have done it with the standardised expression. Similarly, there was a curious experience in Chicago. It seems that a lady living in a flat rang up the operator and said, "I am going to visit Mrs. Parker, at Western 1736, and I am going to leave my telephone receiver off. Will you ring me up if the baby cries?" Now it would baffle the ingenuity of any traffic section to formulate a standardised expression for that incident, but it shows the telephone in a pleasantly familiar, not to say domesticated light.

So we are reaching something in the way of conclusion. For the ordinary things of life, the unconsidered trifles, we invent standardised expressions, a kind of paper currency to avoid the use of gold, but for the real things, babies and funerals, and all aspects of romance, we do not attempt to make standardised expressions. For the more sacred things we have our secret methods of expression like the Slave of Midas who whispered his secrets to the reeds by the river. We are reducing the humdrum to further humdrum. We are lifting the exceptional to the loftiest heights of the exceptional, and no more beneficent influence can be exercised upon a public whose mentality and outlook is changing so rapidly.

Professor Royce, of Harvard, was once travelling in a tramcar, and the conductor gave him what in America is called a "transfer" ticket. On it was printed this advertisement: "Individuality sets you apart from all other person who might possibly be just like you. The average woman feels that she might as well be dead as to be out of the fashion. She wants to wear what everybody else wears, but it must be with a difference."

There is the perfect defence of standardised expressions. The expressions are alike: they stunt individuality. But they are to be used with a difference, that exquisite difference which reveals individuality, that subtle expressiveness by which the true lady can say "Number, please," with an almost affectionately intimate suggestion of friendliness, while someone else—a male, for instance, can use it with the bludgeoning of an ultimatum. It is just as Mr. R. H. Hutton said in his essay on George Eliot: "They have a familiar world of manners to paint, in which a modulation, an omission, or an emphasis here and there, are quite sufficient to make a character or indicate a real emotion." The standardised expression can so be used as to make a character or indicate a real emotion.

I have often been puzzled by the standardised words used in the analogical repetition of telegrams. I remember a case in Liverpool years ago where a subscriber, who had not the sweetest of tempers, dictated a telegram in a particularly rasping, irritating voice, with the accompaniment of certain comments. The operator in reply chose words of her own for analogy, and I remember she repeated "and" by A for ass, N for noodle, d for donkey. I understand she was punished, but I never felt quite happy about it, and I hope in the other sphere to which she has gone (she has married well, as we used to say) she will be suitably rewarded and find no further occasion for using the same analogical words. This, however, is a side issue, though it leads us to the consideration of the improvement in enunciation, in the slight emphasis of consonants, and the greater clearness of vocalisation which we are teaching the public gradually.

That a minister of religion should announce a hymn as eight-double-five is of small importance compared with the fact that he pronounced the word "five" so that it could not be mistaken for "nine," and the congregation which rejoiced in the improvement of his elocutionary gift did not quite realise that they owed the treasure entirely to the example of telephone operators.

Nor am I surprised to read in the *Grocer's Advocate*, which I now take weekly instead of the *Spectator*, an appeal thus, "Cultivate a telephone voice, a gracious, pleasant one, and let your customer hang up first." There hang the customers, rich, ripe fruit on the orchard boughs, like the fruit of King Louis, but no longer able to worry about sugar or other trifles.

It is, however, not merely a question of a kind and pleasant voice. In one of Mr. Bernard Shaw's older plays there is a sentence which is full of illumination. "Nowadays," he says, "we say unkind things in a kind way." There can be no doubt that this is a general criticism of our standardised expressions. We are understood to intend to be rude and uncivil, but we state our intention in a kind way and with a soft voice. I would protest against this. It is only in so far as the standardised expressions lead us to be really kind and really helpful that they are of value. They must not cloak stubbornness and bureaucratic sternness. They must indicate a standardised sensitiveness, a corporate spirit of service, a passion for help. Otherwise they are mere expressions, mere words, utterly detached from fact and act.

There are other aspects of the influence of telephony on human intercourse. Not only is speech standardised and economised, but we learn a desirable frankness and simplicity. For example, if we were to ask to speak to the Duchess of Hammersmith we should not say, "May I please speak to Her Grace the Duchess of Hammersmith?" as we should write it on an

envelope, but having described the lady by a mere number, we should say to the complacent housemaid, "The Duchess, please." Similarly having got through to what I believe is called a palace, we should not ask for "The Right Reverend the Lord Bishop of Tewkesbury, D.D.," but on the other hand, with a sense of camaraderie which is most desirable in every human relation, we should say to his butler, or valet, or secretary who answered the telephone in the first instance, "I want the I shop." Whether in the new social reconstruction which is coming this frank and unembroidered relationship will spread I am unable to prophesy, but if it does spread, that the telephone is the important agent in directing it, is, I think, beyond question.

We might take another aspect showing the influence of the telephone in inculcating personal courage. Before the invention of the telephone, a visit to a dentist meant shrinking on the doorstep. Now you ring him up and make an appointment, for as yet it is not possible to draw teeth by telephone, though it is possible to put teeth on edge by telephone. Having made the appointment, you are done for. True to precedent the tooth will stop aching a quarter of an hour before the time at which you are due at the dentist, but the telephone has tied you up. You have got to go. It is no use though an aching molar should play tricks upon you. Rather than be pulled out it stops aching, but the telephone stands no nonsense. That tooth has got to come out.

This is mere physical courage, of course, but it is very curious how mental courage can be developed by the telephone. We can say things by telephone which we should not like to say face to face, even with all the agents of the wink and the nod and the genial smile, and the other softening influences which convention has cultivated. For example, I believe one of our most exalted chiefs asked a telephonist a certain question the other night, and she replied, "Yes, dear." Now that is what we should all like to say to him, for it expresses the situation precisely, yet none of us would have the courage, and bold as she was she would not have had the courage if it had not been that they were separated as well as associated by the telephone.

From this we conjecture what it will mean when everyone has a telephone. When every artisan's house is in potential connexion with every other artisan's house, when every fishwife can relieve her soul without restraint, when every dominating square and lady bountiful can ring up every tenant or neighbour and explain the economic system to them, when every churchwarden can ring up every parishioner and hale him before the telephone bar of justice for his absence from church or other appalling delinquencies. For we are very much alike, after all. Froissart made his counts and nobles neither clothe themselves, nor talk, nor pray, nor swear like other men. Whatever may happen to us in this unpoetic day in respect to our prayers, at least we swear alike—so, I think, every telephonist would say.

A friend tells me of a Methodist preacher who gathers his little body of fellow-worshippers around him by means of the telephone, giving them a preliminary outline, so to speak, of the spiritual theme which it was proposed to discuss. Indeed I am not surprised that the telephone should thus assert itself in the spiritual realm. The clumsiness of table-rapping is obvious to any of us who have learned the value of the telephone.

It needs no great powers of imagination to foresee the possibilities of interchange of thought in the case of journals and newspapers, when every reader can ring up the leader writer and tell him frankly what he thinks of the leader writer's views, if indeed in that happy day there are any leader writers, since they may become leader speakers, when public men can address a public meeting on an elaborated multiplex system which is almost too overwhelming to conceive, and bring their moving oratory to our firesides. In that day there will be a sense of fellowship and of cohesion which to-day we lack; there will be a directorship in thought and in language which to-day is provided by convention, by pleasing our neighbours, by the growth of slang and corrupt words; then there will be a development of courage and individuality in mind and outlook which may redeem even the vastest of democratic organisms from what may seem to be the evil side of its denomination over thought and will. Whether you and I will live to see that day or not, it is just as well that we should place it before our minds, but I confess I was startled to see a notice in a restaurant reading, "Dinners ordered by telephone sixpence extra." Perhaps it did not mean what it said, and any excuse for putting on sixpence in these days is not to be despised.

The germs of development which will lead to such an improvement in the human species, and in its capacities and endowments, as will fit it for the use of the telephone, are present in the telephone organism which more or less successfully we are handling to-day. If we fail to see the vision in its true perspective, it is because, as de Maistre said, you can see nothing when your eyes are pressed against the object. Our eyes are pressed close against the telephone system, which is our day by day work, and perhaps we do not see in its fullness all that it is capable of, and the full and wide influence which it is bringing to bear on social development and on human life.

For my own part I believe that the telegraph and the telephone have their place, and an important place, in that spiritualising of human relationships which is the only progress worth having. To turn the clumsy written word into the less clumsy vocal word is not merely a convenience; it is a step toward a more exquisite and a more refined and a more intimate means of communication. Its rapidity is not a matter merely of speed, in that speed means impatient haste, but it means and includes the overcoming of obstacles and the bursting of barriers. I read the other day that a pork pie took ten days in coming at Christmas time from Staffordshire to London. I could not help but reflect that for a smaller cost than a pork pie entailed they might have had a tender intercommunication of thought, and though I am a firm believer in pork pies as a concrete (so to speak) offering, yet there is more to be said for the abstract gift. I am not at all on the side of the

Spoon River poet who swept all materialistic progress away with the sneering stanza:

To turn out typewriters,  
To invent a new breakfast food,  
To devise a dance that was never danced until now,  
To urge a new sanitation, and a swifter automobile.  
Have the life-surging heavens no business but this?

To that I should reply that the typewriter and the new sanitation and the automobile, and the telegraph and the telephone may be the media through which the life-surging heavens will influence the world. They may be the instruments which we shall use with more abundant benefit when we realise their value as warps and woofs in the weaving of our social fabric: they may modify many of our social habits, our speech, our manner of address: they may teach us the soft modulated voice which means the refinement of courtesy; but above all they may lead the social organism to be more sensitive to individual needs, more ready to provide, in so far as it is well to do so, for the gratification of those needs, and by these and other means they may tend to that closer corporateness of life which is insistently demanded by the spirit of the times.

It is worthy of notice as a final word that there lies a philosophy in the fact that the actual performance of telephone work has become an important portion of the realm of woman's responsibility. In that previous story, *Diana of the Crossways*, George Meredith has a thousand references to the essential characteristics of womanhood, but none is more enlightening than a sentence very near to the close of the book. "True poets," he says, "and true women have a native sense of divineness of what the world deems gross material substance." Our fierce and angry days are not the days for poetry, and we have to ask womanhood to give us this insight into the divineness of material substance. It is a sacramentalism, a consecration of commonplace things, which too easily we overlook.

It is well for the world that the telephone was not invented earlier in the Victorian epoch. If it had been it would have been a man's machine. The clumsiness of the railways is largely due to this fact—ponderous locomotives, growing more and more ponderous, heavier trains, size and avoidpoups being their masculine merits.

The telephone came on the eve of a daintier period in industrial development, a period when women were beginning to refine the sordid machines of the individualistic day. It came to bring to coarse commercial relationships the fine touch of exquisiteness to teach us all not merely to bear each other's burdens, but to behold, under our very eyes, that our burdens were being borne for us, to show us that our word of command was being waited upon and that we were woven into the body corporate and to bid us realise that it might be well for us to lose our identities in the great ocean of human mutual indebtedness. It came to rob us of the cheap distinctions of the Victorian epoch, the silly name on the garden gate and the sillier name in the register of baptisms, and for them to substitute the democratic blessedness of a number; it came to teach us directness of thought, simple sincerity of utterance and readiness of response.

Like the Post Office girl in Henry James's beautiful novel, *In the Cage*, you, my sisters, look out on a world which it is given you to mould. "What she could handle freely," she said to herself, "was combinations of men and women. The only weakness in her faculty came from the positive abundance of her contact with the human herd." I daresay, you have similar abundance of contact, but I am sure that you do not regard your subscribers, in Mr. Henry James's phrase, as "the human herd."

The American Telephone and Telegraph Company bids its operators be interested in their subscribers. It is too mild. I bid you to fashion your subscribers as you would have them be. I want you to take the hardhearted banker in hand and teach him that there is a kindly sentiment in the world; I want you to fashion the suburban grocer into a Sir Galahad, striving for the inner vision; I want you to transform the lawyer and make him a philosopher, the plumber and make him a lover of his kind, the journalist and make him a poet, the theatre manager and make him a purveyor of wholesome joy as his share of helping forward the progress of the world.

I bid you remember that every act of switching you perform is one more link in the beautiful golden chain which you are welding. It is not merely the pleasing of a customer; it is making the customer pleasing; which is a different matter. It is setting forth from these centralised positions which, stupidly, we call exchanges, such a stream of widening influence in courtesy, in readiness to help, in sensitiveness to appeal and in tenderness of judgment as will lay its softening and refining touch on a hard though malleable world.

Thus it is the best of all influences in such a reconstruction as will modify social relationships and the spirit which lies behind them, and will achieve the ultimate construction of a social state which will be responsive to each demand, will be quick to each offence, and will be the basis and the bond of a spirit of fellowship which will burst the barriers of clan and section, and will fashion for the world anew the Utopia of which our fathers have dreamed

#### IT COULDN'T BE DONE.

"Deposit your coins slowly, please," said the operator to the old lady who was placing a long distance call from a booth.

"But, honey, when the old things get started down the chute I can't stop them," replied the lady in plaintive tones.—*Telephone Talk.*

## TELEGRAPHIC MEMORABILIA.

It is strange how in the most unexpected places one lights upon references to our craft. Equally strange, too, are the various conceptions of those outside our profession regarding the status, work and duties of a telegraphist. One lady who glories in the advantages of her husband's business telephone for giving orders to the local tradesmen was heard to exclaim, "Well I don't see anything particularly difficult in *telegraphy*; it's only the same sort of thing as when I call up the butcher, or dad calls up the office."

Apart from the decidedly warped ideas regarding telegraphy one would dearly love to give this dear soul one quiet hour or two of life even in a moderately busy *telephone* exchange. These folks are, however, simply giving silent and indirect tribute to excellent public services which by telephone or telegraph deliver in their houses or at their doors the information they require. It is perhaps natural that the general public should accept such services without thought as to the skilled labour and intricacies of the mechanism and careful organisation needed for the smooth working of these systems with all their comforts and conveniences. We of these twin Services, on our part, think little enough of the organisation and labour involved say before the winter coal is shot into the cellar, and, in cities and larger towns at least, seldom if ever pause to reflect that there is anything wonderful in always being able to obtain a supply of pure cold water by the simple process of turning on a tap! We should, therefore, think as kindly as possible of those outside our own charmed circle who like ourselves with reference to other Services, have little opportunity for observing or meditating upon how things are done.

In reading a brief biography of Dante Gabriel Rossetti, my mind far away from wires and cables and currents, I lighted upon the following view of the telegraph profession evidently held by the biographer, who, wishing to emphasise the extreme straits into which the penurious artist and poet was at one time driven, wrote:—"He was so poor that he tried to become a telegraph clerk." This should be preserved as one piece of comforting evidence that someone somewhere amongst the B.P. does not consider that we form part of that "comfortable section" of a "pampered Civil Service." "So poor that he *tried* to become a telegraph clerk." *Tried* but, we read later on, "failed in his attempts to learn the instrument, finding it too difficult." A genius befriended and helped by Ruskin, Swinburne, William Morris and Meredith yet finding telegraphy "too difficult"! It was not that the artistic temperament could not live in a telegraphic atmosphere, for he never really entered that atmosphere, never actually having passed his novitiate. If the telegraphic world was the poorer by the artist-poet's inability to pass the preliminary efficiency bar, doubtless he himself was fortunate in discovering that weakness in its early stages. We who have been in the Service a decade or two have witnessed something of the tragedy of those who were not cut out for the craft still plugging wearily on with minimum result yet with maximum effort. There is, however, no small crumb of consolation to be derived from the fact that many of us who are but of average skill are nevertheless able to pass beyond even the initial degree of efficiency which a nineteenth century man of mark was yet unable to attain. Was it not the humble maid of the inn who showed the three learned professors how to put the pony's collar over its head? Thus do the weak things and minor tasks of this mundane life confound the mighty!

The interesting and well-tempered passage of arms between Mr. Davis and Mr. Baxter anent the relative spelling of telephonists and telegraphists appears to have missed the point in making it a question of telegraphist as against telephonist as regards orthographic efficiency. The writer would suggest that the whole matter is rather one of the relative educational standards of the officers, not only as regards spelling but as regards general knowledge and observation. On the telegraph side one has noted a case in which the island of the Solent was written as "White" and most emphatically insisted upon as being correct. Even the senders

of telegrams are not always beyond reproach, while Government offices distinctly senior to the poor Post Office have been known to have very grave doubts as to the geographical situation of the town to which they themselves were telegraphing. Modane has been almost angrily insisted upon as Italian territory and Chamounix as Swiss, although both are on French soil, so that all round as regards general knowledge it would appear hazardous to throw stones, there being so many glass roofs in the neighbourhood! Doubtless the solution lies in training staff for particular needs. There is no operation so simple but that practice under wise direction and kindly guidance leads to greater efficiency. The reading of good literature *should* help in acquiring both good general knowledge and sound orthography, if *careful* reading be insisted upon, but how is it to be insisted upon? Undoubtedly some of the trashy matter read by the youngsters of both sexes in our offices to-day is read with avidity, and although the phraseology sometimes smacks of the trans pontine drama, one cannot complain of the orthography. To spend time and money in training staff would therefore appear to be the only royal road to high efficiency.

Now and again on the Anglo French wires there comes across the copper thread a glorious attempt to cement the *entente cordiale* by a phrase or two in our Mother tongue, an effort which was rarely made in pre-war times. Two such sparklets were recently received, the remainder of the remarks being confined to our correspondent's native lingo. Momentary short staff the other side at a Baudot receiving point had called forth the query from London regarding the necessary R.D.s. The answer came from a willing *chef*: "Patience, sir, I glue myself." Yet another, this time a *dirigeur*, who thinking he had noticed a loss of speed at the London end most politely asked:

"Sir, have you oiled your quickness?"

The concession of a few minutes rest time to the male staff of the C.T.O. at the end of the 30 minutes mid-day meal relief will doubtless more than pay for itself. Outside critics of the Civil Service are wont to picture most of us as lounging in easy chairs between meals, and taking the latter most calmly and leisurely for our stomach's sake. The telegraph and telephone sections are not quite like that however.

The lack of rest accommodation for the staff and the general inadequacy of the present space available for providing suitable rest rooms was a matter which troubled the late Mr. Dunford very seriously. On more than one occasion he had sympathetically mentioned the matter, and the writer has very definite evidence that had the war not intervened a scheme would long ere this have been placed before the Secretariat which would have gone far to meet a real need in this direction. It is not necessary to labour the point as the "take action" order has very happily been given.

An interesting postcard has just come to hand from Mr. Gates, who penned the column on "Working a Wheatstone in German East Africa." It is written from Morogoro and on a postcard of the East African Railway Company.

He is evidently gratified at the results of the Wheatstone trials and what is more, apparently, their subsequent working—not *always* the same thing. The card is signed, "*Die Betriebskontrolle*," which will doubtless, together with other indications of a similar nature, be substituted by something less Teutonic in origin in future editions. All old friends of "Gates of M.R." will note with satisfaction the excellent work in which he is participating, while not a few of my own personal acquaintances will envy him the practical experience which an enterprise of this description so readily affords. These will envy him none the less because they are "fed up" with academical lectures on the Formation of the Understand Signal in Telegraphy," &c., &c., concerning which they esteemed they had already acquired some passing knowledge during an apprenticeship of a couple of decades. However, Army ways are not always in a line with Post Office practice, so our friends listen without gaping and carry-on.

The utility of the French telegram flap-form as well as the good quality of its texture have been very clearly demonstrated during the last few weeks by the actual use of these forms for occasional copying for post to the continent. Before the next stock of our

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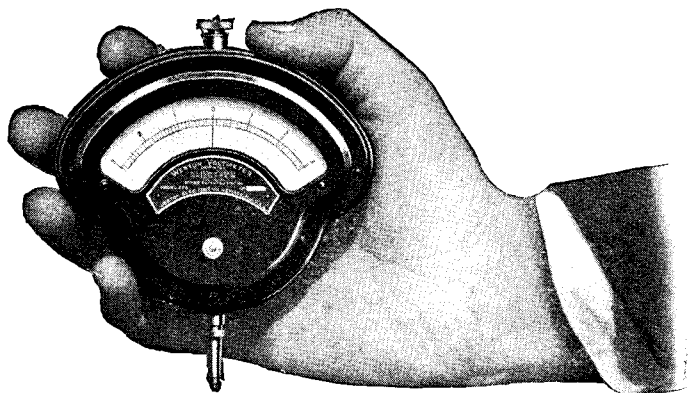
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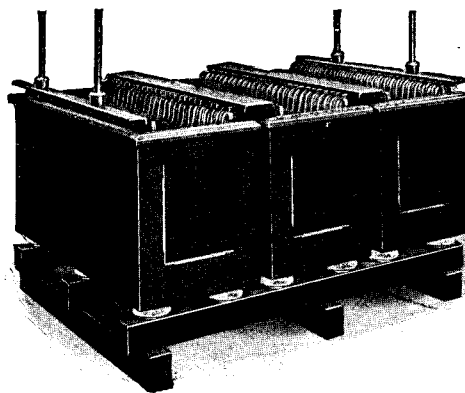
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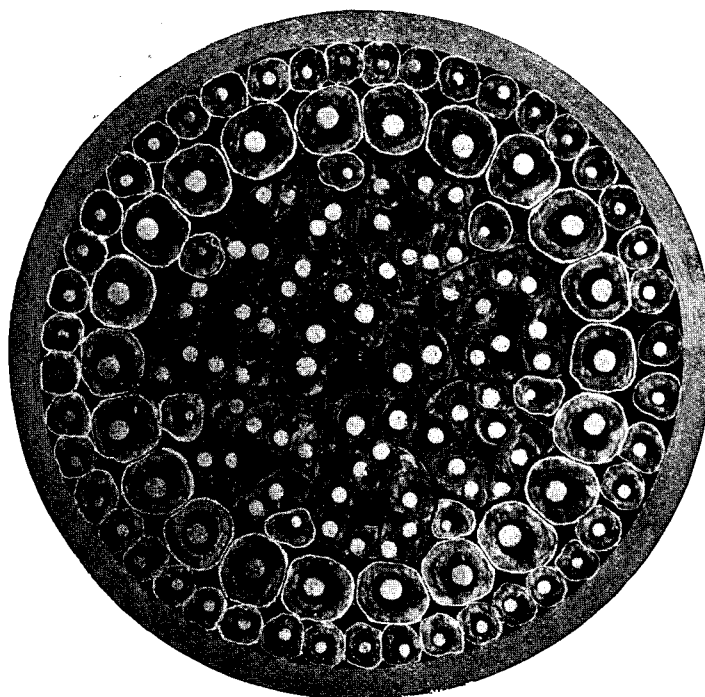
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own forms is exhausted it would not be time wasted to thrash out the matter anew regarding the abolition of envelopes and the provision of sufficient particulars of each telegram on an abstract sheet to satisfy F. T. B. requirements. This would abolish the counterfoil which is at best an elusive piece of stationery and concerning which there are very solid doubts in many cases as to whether it fulfils its accountancy mission by ever reaching the C. and A. G. O.

J. J. T.

### TELEPHONE DEVELOPMENT OF WORLD AT THE BEGINNING OF 1917.

By W. H. GUNSTON.

IN the absence of many official returns which have lapsed since the outbreak of war, and of other documentary information, it is not possible to give that relatively precise statement of the world's development which appeared in the first two issues of the JOURNAL in connexion with the years 1913 and 1914. Nevertheless some curiosity may exist as to the recent expansion of the telephone in the civilised world, and by the aid of certain official figures, reinforced by newspaper reports, I shall attempt to give an approximate idea of the present position. America, which has only recently entered the ranks of the belligerents, is amongst those countries whose figures are not founded on conjecture—at least as regards the widely extended system of the "Bell" companies; so also is Canada, and these exceptions are important seeing that North America contains nearly three fourths of the telephones in the world. Official figures up to varying dates have been obtained from New Zealand, South Africa, Russia, Sweden, Norway, Denmark and Switzerland, whilst newspaper reports have furnished recent data relative to Japan, Brazil and other places.

Europe which had 3,910,000 telephones at the beginning of 1914, had at the beginning of the current year probably 4,180,000 made up as follows:—

Country.	Total stations.
Great Britain (including emergency stations)	812,000
Russia (Jan. 1, 1916)	400,000
Sweden (271,797 at Jan. 1, 1916)	say 288,000
Denmark (150,000 at Jan. 1, 1916)	say 165,000
Norway (94,000 in January 1915)	say 100,000
Netherlands (78,743 at Jan. 1, 1914)	100,000
Switzerland (Jan. 1, 1917)	104,000
Spain (36,660 at Jan. 1, 1915)	say 50,000
Austria (170,000 at Jan. 1, 1915)	170,000
Germany (pre-war)	1,421,000
France (pre-war)	310,000
Italy (pre-war)	95,000
Belgium (pre-war)	51,000
Hungary, the Balkans, Portugal, Luxemburg, &c. (pre-war)	114,000
	<u>4,180,000</u>

Nothing has been added in this estimate to the pre-war figures for France, Germany and Italy, to the 1915 figures for Austria, or to the 1916 figures for Russia, in view of the complete lack of information regarding the development of the telephone in those countries in recent years and the small probability of any considerable expansion. The telephone system of the Netherlands had been increasing up to 1914 by 7,000 to 8,000 a year and there is no reason to suppose that this increase has not been maintained. Belgium's total has undoubtedly decreased, but against this may be set the probability of some increase in Portugal, Roumania and Greece. It is satisfactory to note that Great Britain has increased from the pre-war figure of 774,000. Even if the "emergency stations" be eliminated a small increase is still shown. London, despite statements in the Press to the contrary, has increased from 259,000 to 269,538. Again, even if the emergency

stations were disregarded, the movement would be seen to be in the right direction.

#### ASIA.

Asia had 303,000 telephones at the beginning of 1914. Since then there has been an increase of 20,000 in Japan, 6,000 in Siberia, and about 2,000 in Corea, Manchuria and Formosa. Making allowance therefore for the normal expansion in the Dutch East Indies (6,000), and some development in China and British India, we may safely put the total for Asia at 340,000.

#### AFRICA.

There were 59,500 telephones in Africa in 1914. The figures for South Africa had increased by 4,000 by the beginning of 1916. Allowing for some increase in Egypt, Algiers and Tunis, I should compute that there were at least 66,000 stations in Africa at the beginning of this year.

#### NORTH AMERICA.

Recent information shows that there are 11,300,000 telephones in the United States. Canada had 533,090 at June 1915. At the normal rate of increase there would be 550,000 by January last. The unknown quantities are Mexico and the West Indies, which had 70,000 stations amongst them before the war. The total for North America is thus at least 11,920,000.

#### SOUTH AMERICA.

Of South America I have no information, except of considerable development in Brazil. There were about 170,000 telephones in this continent in 1914, and as the Argentine and Brazil progress at the rate of some 10,000 or 12,000 a year, there cannot be less than 230,000 stations working at present.

#### AUSTRALASIA.

Official figures show that there were 168,416 telephones in Australia on June 30, 1916. New Zealand had 58,796 and Hawaii 7,000. Total 234,000. To resume:—

Europe	4,180,000
Asia	340,000
Africa	66,000
North America	11,920,000
South America	230,000
Australasia	234,000
<b>Total</b>	<b>16,970,000</b>

In January 1913 there were about 13,500,000 and in 1914 14,500,000 telephones in the world. It will be seen that at January 1917 there must have been close upon 17,000,000.

### TELEPHONE OPERATORS ON THE BRITISH FRONT.

(From the Boston Transcript.)

WHILE telephone operators in the trenches at the front in Europe are seldom in the limelight, their services are of vital importance in up-to-date warfare, and well do they perform them. A party of telephone operators, or signallers as they are technically known, is attached to a company occupying a front-line trench. The dug out where they and their instrument are installed is near the company commander's headquarters. A dug out is seldom a haven of rest, and never of safety. The work of these men is not always of a stationary nature. They have to repair their wires when broken—often under heavy fire. When an advance is made by the troops they have to follow closely the unit to which they are attached, so as quickly to establish communication with the officer directing operations.

The war game inside and outside the dug-out goes on un-

interruptedly till a time arrives when no answer can be obtained on the telephone.

"Wire's broken," ejaculates the operator.

Without a word two men, clutching up their rifles and tools, pass out into the white light of the German star-shells. More dangerous shells are falling with monotonous regularity to right and left of them as they go forward. To heed such happenings is worse than useless. At length they reach a shell hole, the cause of their unwished for promenade. The work of splicing a new piece of wire to the broken ends is soon accomplished. Then they retrace their steps to the dug out.

Again! The British guns are blazing away at the Boches' front trenches. Suddenly the captain raises his eyes from his watch, and with a quick scramble is on the parapet.

"Over, boys!" he shouts. The men clamber out. As far as the eye can see to right and left there is a wrinkled wave of khaki clad men surging forward.

The telephone operators, in accordance with orders, are waiting till their comrades have taken the hostile trench. They interpret these orders in the widest sense, for the attacking force can scarcely be said to have reached their objective before the three of them are doubling across. One carries a spool of wire which he unreels as he sprints along, the others carrying tools and the instrument.

Between their starting point and objective the German guns are putting a dense barrage through which they must pass. Shrapnel spatter on all sides like the first ominous drops of rain which precede a summer storm. Bullets, fired from the rear trenches of the enemy at the newly won position "phit" past in countless numbers. Suddenly the man with the reel of wire spins half round, staggers and falls.

"Only through the thigh. I'll follow on," he grinds out, as he hands his burden to a comrade.

The two gain the captured trench, where their captain awaits them.

Out of breath with his recent exertions, he pants out:

"Rig the telephone up here," pointing to a deep shell hole. "Only place."

The two men quickly adjust their instruments, and the captain, after handing a written message to be sent through, hurries away.

The German guns are now playing on the newly won position, the heavy boom of high explosives intermingling with the snap-like report of the shrapnel shells. The captain perceives a mass of the enemy collecting for a counter-attack. He hurries to the telephone to notify the artillery of the target. A glance into the shell hole shows that the shrapnel has taken toll—one of the operators is dead. The other is lying with the receiver to his ear, but he returns no answer to his superior's call. In a flash the captain realises that that recumbent position is too natural to be natural. He gently takes the receiver from the stiffened hands and gets his message through. Then, glancing up, he sees a man on all fours, looking down into the shell hole. It is the wounded operator who has crawled painfully after his comrades.

"I'll carry on, sir," says the newcomer, quietly.

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## THE WHITLEY COMMITTEE.

BY H. MONKS (*Sheffield*).

THERE is now the probability in industrial undertakings, and the possibility throughout the public services, that supervisors and supervised, administrators and administratees, may meet in common council to decide the destinies of their various departments.

Years ago—just how many let historians decide—a solitary voice was heard, the voice of the worker, surrounded by the unutterable loneliness of unsympathetic listeners. The burden of that worker's song was that his fellows should be allowed to join in framing the conditions under which they worked. And the voice yearned for that consummation wherein purity of theme would be esteemed, regardless of the faulty technique of rendition.

But the worker's note was alien at the time, and its gentle cadences submerged in the bolder, brazen, timbre of the chorus ever swelling in opposition. Alas, the chorus failed to understand the *motif* and so contented itself by making a mighty noise, rising in *crescendo*, wherein all weaker sounds were drowned.

Well, the lonely singer of years ago, imperfect as he must have been, established a school to which many disciples have rallied—disciples with perhaps the imperfections of the master somewhat modified. Inharmonious that school may yet be said to be. Numbers have, however, an appeal out of all proportion to individualistic effort; some mystic power has weaned away the opposition's strength and begot a lively regard for even untutored voices when they come as a multitude in inharmonious unison.

Isolated instances of joint control have materialised in the meantime; but the general acceptance of the process is only now maturing at the suggestion of the Whitley Committee. Seeing that the disciples themselves were far from perfect, far from being attuned with the infinite, it is unlikely that the Committee which they brought into being may be described as "all wise."

The members of the Whitley Committee may be very slightly, if at all, affected by their own decisions, else (comments the cynic) had their decisions been otherwise. If, however, they have failed to sound the true harmonious "pitch" they have at least been articulate in unison. However imperfect their voice, it is calling to an ideal; and an ideal is surely worthy of consideration.

Two forces, then, may shortly meet; one well controlled, powerful in the knowledge of ultimate aim—that of the masters; and one nebulously exuding from the workers, still more powerful, but lacking for the moment the precision of wisely directed energy. Are these forces, correlated we hope in the best interests of the Service, to flow into well defined channels from which to emerge predestined to succeed; are they to be weakly used by unimaginative minds, only to meet as two positive magnetic poles, foredoomed to work in opposition?

On the one hand there must be no conscious aim to retain the present ascendancy, or to frame decisions with retention of power as the objective. On the other hand there must be a tacit assumption that that ascendancy and power is being more wisely used. There must be no attempt to grasp whatever evils are thought to be in opposition and, in turn, to use them in defence. The metamorphosis of an evil cannot be obtained by continuing it in other hands.

To adopt contrary attitudes were to make failure a certainty; the suggested remedy for our present industrial strife can only be effective if acted upon in the spirit as well as the letter of the prescription. Let us bear in mind always that we are advised to have joint control, not special pleading for the advantage of any particular class.

I urge no finality to the present suggestions, but I do assert, almost as an axiom, that promotion is a matter upon which a cosmopolitan body like that under discussion might, in its infancy, dilate upon at length but agree upon never. Individual disciplinary matters would be equally difficult—would provoke a series of learned appendices to each case, and nothing but a surgical operation of the most painful character would induce any one appendix to consider itself on the ineffective list.

Moreover, discipline and promotion cases loom quite large in official life, and because of the fear of their maltreatment the whole scheme of joint council might be relegated to the limbo of the unachievable.

That is, of course, a criticism of the council in its juvenile state. I am quite convinced that a rapid growth of mutual understanding would supervene, and that matters at first taboo could soon be trusted safely to councils of joint control.

Few men are individually dishonest, though collectively a group of individually honest men are found to agree, frequently, to most outrageous, even criminal, actions. It is within the knowledge of everyone that throughout the country at all stages of Post Office development certain desirable, almost essential improvements have been "hung up" indefinitely on one excuse or another. Energy may have been expended, genius may have been employed, on planning the improvements, but these all count



for nought. Time, all unmindful of man's foolish waste, leaves to a later day the duplication of the task of years ago.

"High official" exclusiveness, quite unconsciously no doubt, can scarcely be *en rapport* with the aspirations of the lower grades, nor can it, therefore, take advantage of any proposals of value emanating from that source. Quite unconscious, too, is the ingrained desire for immediate economy—economy which begets a mortgage redeemable by a later generation at a cost out of all proportion to that entailed by immediate action.

But there are matters (policy, staff conditions, accommodation, &c.), upon which so cosmopolite a body as one of joint control would surely bring its honest opinions to bear. Matters which, during a reign of undemocratic control, might quite conceivably (yet inexplicably) be senselessly shelved, could under democratic control find ready ground for agreement. Out of agreement on the simpler issues would grow a trust and sympathy between the present contending parties, would grow a breadth of view and stability of purpose, rendering consideration of major subjects an easy and profitable matter for the same body.

If one wishes to walk from London to Lands End, the road is ready built, not necessarily a royal road, nor essentially the most interesting, or the least irksome, but that it leads to the desired destination there is no doubt. But to Utopia the road is more uncertain. It is not a thing of ironstone or macadam, but merely a mental state—largely a mental reservation—a philosophy of what to avoid, equally as much as what to achieve. In our early travels let us ask rather for meadow paths, for shaded nooks wherein to take our midday rest. A later date will come when conquest of the Alpine fastnesses and snow-capped peaks shall also be a task within our strength.

Dare the experiment be made of ceding to the subject class the little authority they are striving for? True they do not ask for "brief" authority; but surely brevity will be their portion if they fail. Ethically the right to govern should only be vested in the infallible; and from nowhere, then, can we choose our governors. But if infallibility is what we most desire, a generous understanding is more easily attained and is that which most nearly approximates to the ideal. In no other way but by the fusion of interests, the interchanging of views, can this second best be forthcoming.

Only the future can decide whether joint council (or control) shall be vindicated; but the future will unhesitatingly condemn the cowardice holding us back from the untried sea wherein may be found at last the present uncharted island of perfect administration.

## TELEPHONE WORKING AT SINGAPORE.

BY DOROTHY VICTORIA KEYWORTH.

IN a paper read before the London Telephonists' Society Miss Keyworth, after giving an interesting description of Singapore and its inhabitants, gave the following short account of the working of the telephone exchange:—

Now that you have heard my description of Singapore it will naturally interest you to hear something about the telephone working.

I cannot say much about it that is new, for the working is very similar to that of the London telephone exchanges. The exchange is owned by the Oriental Telephone & Electric Company. In June, 1915, there were only 1,620 telephone subscribers, from which you will gather that the exchange was not very large in comparison with the exchanges in London, but it is the largest in Singapore. The day telephonist is on duty from 7 to 1.

The rules and regulations are similar to those in force in the London Telephone Service, with the exception of the hours of duty, which are shorter (six hours) owing to the intense heat. The operating is not so complicated for we have no order wires, but only have the simple multiple working. We do not use codes

or junctions when getting through to another exchange, for each exchange has its own number in the switchboard multiple. We only have flat rate subscribers, therefore no registration is necessary. Public telephones are fitted up at wharves and piers and anyone may ring up without being charged for so doing.

In order to get the exchange the subscriber has to ring. On getting the glow the telephonist plugs into the jack and says, "Number please?" Should the subscriber not answer, she will repeat the phrase, and if no response is received the telephonist withdraws her plug. If the subscriber's receiver is off the hook the exchange does not get the signal unless the subscriber rings again. To get into communication with the called subscriber the ringing procedure, between 8 a.m. and 5 p.m. during which time the current is on, is precisely the same as that of the London Telephone Service. But from 5 p.m. to 8 a.m. the current is cut off; then we ring by means of generators. In front of each position is a little disc which operates when the telephonist is ringing. If the line happens to be out of order the disc does not work, so the telephonist advises the subscriber, "No reply." When a connexion is established satisfactorily any further signal is taken as a clearing signal and the line is then disconnected. When the subscribers have finished their conversation only one clearing signal is received. If no clearing signal is given after three minutes' conversation, the telephonist will tap the line and if no conversation is heard will say, "Have you finished?" If no response is received after this challenge the telephonist will take down the connexion.

The pegging of the multiple is similar to that of the London Telephone Service, only that the pegs are of a different colour.

They are as follows:—

Red	...	No line working.
Purple	...	Line temporarily out of service.
Green	...	Line out of order.

White and all the above pegs are dealt with by the supervisor, therefore the telephonist has to advise her supervisor before connecting to any pegged number.

In case of a fire the exchange is always informed first and the supervisor in charge sets the fire alarm (which is in the switchroom) then informs the fire station of the locality of the fire.

In December, 1916, a fire broke out in the telephone exchange from an unknown source. About 6.14 p.m. the telephonists noticed smoke issuing from behind the switchboard. The electrical engineer, who lives in the building, was at once informed. On opening the chute with another inspector he saw flames, which, unfortunately, they were unable to extinguish. The fire brigade was then summoned. In the meantime the telephonists were told to leave the building, and soon after the roof fell in, causing a blaze. A short time before the fire broke out the manager left for his residence, and on trying to ring him up the supervisor found that his line was already burnt out. The switchroom was greatly damaged, but fortunately important papers were saved.

You will be interested to know that every facility has been afforded to the Telephone Company by various firms who have loaned their switchboards until new apparatus can be obtained from England and Calcutta.

## ST. MARTIN'S SOCIETY.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

SINCE the influx of women workers into London a difficulty has arisen owing to girls coming to the City without having first made proper arrangements with regard to lodgings.

The council of "St. Martin's Society"—a society existing amongst Catholics in the Civil Service—for social and charitable objects, have appointed a sub-committee to grapple with this as far as their co-religionists are concerned. Would you kindly publish this letter in which we ask those interested to apply to the hon. secretary for information *re* hostels and lodgings before venturing to London for employment. A copy of our printed list of addresses will be forwarded to any Catholic applicant, or to any person interested.—Thanking you in anticipation,

MARY F. PHILLIPS.

77, Whitbread Road, Brockley, S.E. 4,  
and C.T.O., G.P.O., E.C.

## The Telegraph and Telephone Journal.

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

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### NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications, together with photographs, diagrams, or other illustrations, should be addressed to him at 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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No. 37.

### TELEPHONE DEVELOPMENT.

THE way of the collector of telephone statistics is at all times hard. In the normal days of peace the figures are difficult to obtain, variable in date, discrepant and by no means easy to collate. Private companies are often shy of furnishing information and State administrations dilatory. In war time figures are almost unobtainable from belligerent countries, and sparse in the case of neutrals. Moreover, since the outbreak of war the British Post Office has not troubled foreign government departments for their annual statistics of telephones. With many other records, useful in peace time, tables of foreign development fell into abeyance. Nevertheless from various sources a contributor has obtained figures relative to the United States, Canada, Australia, New Zealand, Russia, Sweden, Norway, Denmark, Switzerland and Japan, and from these it has been possible to construct a fairly approximate estimate of the total number of telephones in the world at the beginning of 1917. Lest readers may imagine that this is as conjectural as the shape of those extinct monsters which learned geologists reconstruct from a few footprints, we hasten to assure them that considerably more than three-quarters of the figures are obtained from reliable statistics and that the estimates for the remainder are based on recent information. If not possessing, therefore, that "tedious and disgusting accuracy" of which Gibbon complains in *Ammianus* in connexion with figures of quite a different description, the estimate is, we believe, substantially correct.

If the telephonic progress of Europe during three years of war has been slow—it has not been quite stationary, as our article shows—that of America has proceeded at something like its usual rate, and as North America contains nearly three-quarters of the telephones in the world, the slackening in the annual total increase is not so apparent as it would have been had Europe been the

principal field of telephonic development. At the beginning of 1913 there were in round figures 13,500,000 telephones in the world, at the beginning of 1914, 14,500,000, and at the beginning of 1917, 16,970,000, which, considering that the energies of so many great nations have been so largely diverted from the arts of peace, is a surprising figure. Further, whilst it has been assumed that no increase of the pre war total has taken place in France, Germany, Italy and some of the smaller States, it is possible that war industries and military requirements may have called for some telephone development in those countries, and seeing that January 1914 was succeeded by at least eight months of peace in some States and a much longer period in others, the balance of probability is, on the whole, in favour of an increase since that date. We think that the round figure of 17,000,000 for January 1917 is quite a probable one, in view of the activity, incompletely estimated, in South America.

### "TRIAL BY TELEPHONE."

WE are tired of tilting at solemn wecklies. Not long since the *Spectator* had an onslaught on "Petty Officials," and now the *Saturday Review*, under the above title, has one of those quasi-humorous articles, beloved by the lighter columns of the evening Press which animadvert on the Telephone Service in vague and various generalities. We do not deny the writer imagination, but apparently he has the kind of imagination which cannot imagine why difficulties should exist, but only why they should not exist. It is the commoner variety. He is always connected with the wrong number, he is always called up when someone else is wanted, he always gets the engaged number, voices insist that he is other than he is, and so on. He graciously makes every allowance for the worries of the telephone girls—but "they will have their fun," and, to cut the recital of his woes short, what is fun to them is death to him. We have heard it all before, even unseasoned by quotations from the Book of Job and literary disquisitions on patience; but like a diamond sparkling in the waste we find the precious admission that "everyone is not a telephoner by birth." We do not argue that those who can telephone without tears, happily and featly, are of the limited class which *nascitur, non fit*, but we do remember in our official experience to have come across a class which might be defined as untelephonable. A telephone call for them seems to be fraught with misadventure and annoyance. Whether they have the gift of answering the telephone after the prescribed period of ringing is accomplished, only to find their correspondent gone, whether they ignore or misread simple rules laid down for their benefit, whether their voices, projected at an ill-judged distance, jar and rattle in the transmitter, whether an evil star causes a disproportionate number of faults to arise on their line, whether their correspondents are unskilled or impatient in the use of the telephone, we cannot explain; but, where faults and causes of complaint are the exception in 999 cases in a thousand, with these folk they seem to be the rule. It may be that they do not conceive of the telephone system as a complex and delicate organism; perchance for them it is a series of lines connecting their telephone with those of their friends—an extremely simple

machinery on which difficulties could only arise from gross negligence or incapacity. At all events, somebody is paid to see that it is perfect, and with that easy philosophy they dismiss the extenuation of faults. A visit to a busy exchange has effected a radical cure in many such cases.

The writer essays to reproduce the pronunciation of the operator. "Number engaged: shall I call yew?" We are doubtful whether this implies a reproach, or whether it is a humble attempt at spelling reform. We incline to the latter view, for surely he would not pronounce "engaged" "engadged," "engahged," or—horrible thought—"engyged," and the "yer" sound for you is distinctly unfashionable. Not the least of "trials by telephone" is indistinct enunciation, and operators are trained to employ a precision which may appear affected to the hypercritical.

### HIC ET UBIQUE.

OUR readers, London readers especially, will be interested in the photograph of the air raid of July 7, which we reproduce by the courtesy of the *Daily Mirror*. The picture is a reproduction from a Dutch paper which in its turn reproduced it from a German one. The obvious join across the middle suggests that the photograph is a composite one and gives rise to some interesting conjectures.

THE writer of the letter which suggested that telephone "heroines" were prostrate with terror or excitement during a raid, comes in for rougher handling in the Chicago journal *Telephony* than he received from us. Their comment is: "The meanest man has been found!" and they rightly add—"The telephone operator needs no defence. . . . Try to remember that during a crisis she has public business to look after. Because she does not answer our foolish call instead it is no sign that she is prostrate with terror and excitement but calmly doing the greatest good to the greatest number."

### OPERATORS IN RUSSIAN REVOLUTION.

WE have the following on the authority of the *Telephone Engineer* of Chicago:—

In the Petrograd telephone exchange recently, the girl operators made a secret arrangement to deprive Lenine of telephone service for his paper, the *Pravda*. For three days they took no notice of calls for or from the paper and then they curtly replied, "Hang up. We aren't working for Leninists."

Three Leninists arrived at the exchange several days later and declared that the telephone did not work. Manager Sempovitch, surprised, searched the files for orders, but found none requiring that the Kshesinske house, which is the Leninists' headquarters, be isolated. He asked the delegates to accompany him to the operating room to question the girls.

Immediately the operators learned the identity of the visitors they whirled around in their seats, a clamour arose and shouts were heard, "Down with Lenine and his rioters! Throw them out! Get out, you dirty scamps!"

The delegates, somewhat awed, asserted that Lenine foresaw the possibility of bloodshed in the street rows between his followers and loyal Russians and that he could not avert it if he were not allowed to telephone. The girls replied that he was to blame for inciting people to bloodshed, and some of them added:

"Why don't you do an honest day's work and earn a few pennies to use in the telephone booth when you want to stop your thugs? Now clear out before we put you out."

Amid a storm of hissing from the operators the delegates hurriedly withdrew. In a towering rage they threatened the manager that they would send armed Leninists to seize the exchange. Sempovitch reported the threat to the military authorities, who sent an officer and 50 soldiers to wait behind the exchange door in readiness to demolish the Leninists should any appear.

Meanwhile threats, prayers, entreaties and ethical reminders of their duty slipped off the operators like water from a duck's back. They flatly refused to heed the Leninists' telephones and so arrangements were made for a man operator to sit in a private room of the exchange and attend to Lenine's conversations.

### BRITISH TELEGRAPH PRACTICE.

(Continued from page 157, Vol. III.)

#### VIII.—PRESS TELEGRAMS.

TELEGRAPH practice in respect of Press telegrams shows wider differences than in any other respect. The characteristic British system has grown out of the earlier practice of the telegraph companies. In the search for outlets for enterprise the telegraph companies undertook the collection and the distribution of news. When the time came for the transfer to the State it was evident that a Government organism could not collect news. For, in England, news is not the impersonal and detached record of bare events. It is associated with public discussions, it has a point of view; it contains party pleas and it records issues upon which, at any rate until the war, there were acute differences. At the transfer in 1870 it became necessary, therefore, to separate the functions of collecting news from those of transmitting the news, so "agencies" came into being and they undertook the collection of news, leaving to the Post Office the work of transmission. For this work of transmission a very considerable organism has been evolved, and later on we shall describe it, but in the discussion of the relative worth of collecting news telegrams and of transmitting them it seems that a very low value was set on the latter function. The 1870 tariff of 1s. for 75 words by day and for 100 words at night seems in itself to be ludicrously cheap, but its low cost is emphasized when we remember that extra copies were delivered, in any town in the United Kingdom, for 2d. per 100 by night and 2d. for 75 words by day. It has been said that this tariff was drawn up under a *misapprehension* but there is little ground for the contention. True an attempt was made a few years ago after the transfer to limit this duplicating charge to newspapers in the same town, but this attempt failed, though it brought into the full light of day the fact that single newspapers in a town would be hardly hit, in comparison with their rivals where there were several newspapers in a town.

Until the revision of rates after the war this tariff held good. The Reconstruction Committee recommended a tariff of 2s. 6d. per 100 by night and 2s. 6d. per 75 by day with a "copy" rate of 8d. It was, of course, a tremendous change. The newspapers—with a few exceptions—combined to protest. In vain were the words of Postmasters-General brought forward to the effect that the annual loss on Press telegrams amounted to £200,000. The common sense of the community agreed that the increase was too great and a compromise was effected whereby 80 words and 60 words became the night and day limits at 1s. with a "copy" rate of 3d. to apply to newspapers in any town. This compromise has not yet been brought into effect, but it has had the purpose of evolving a Press tariff more easily to be defended on the basis of telegraph economics, while it is a tariff which still maintains the characteristically British principle of catering at a cheap rate for the newspaper press. It is not too much to say that the English freedom of expression of opinion is largely ascribable to the cheap tariff on the public wires. It may be said at once that in no other country is there a tariff at all comparable with this, and while safeguarding ourselves against *post hoc ergo propter hoc* there is no country with a newspaper press which owes such a debt to the telegraph.

While this is the characteristic British principle of dealing with Press telegrams there are other methods which are more parallel with those which obtain in the United States and on the Continent. The system of rented wires is the backbone of American and German methods and it obtains on a considerable scale in the United Kingdom. In the early days of the transfer a method of night rental was devised whereby any newspaper with its publishing office at any distance from London might rent a telegraph wire at £500 a year, to operate nightly from 6 p.m. to 6 a.m., the Post Office to supply the staff. On the face of it this system appeared to have the advantage of obtaining income from wires when they were not needed for public telegrams, but as the staff charges increased this advantage became altogether illusory. At the same time the cost to the newspapers became illusory for a system of bonuses grew up to encourage the telegraphists to increase their product. Afterwards the greater newspapers in the provinces rented wires on a mileage basis for the whole day and night, and the Post Office then devised a system of rental on a mileage basis at cheaper terms to begin at 4 p.m. Both these systems threw on the newspapers the onus of providing the staff, but they provided a more satisfactory system on the whole, especially for evening newspapers, and not at a considerably greater cost than the old charge of £500, seeing that the maximum for the evening wires was £350. The flat rate of £500, including the services of the telegraphists, may now be said to have fallen into desuetude. The general result has been an appreciable reduction in the total amount of Press telegraph traffic, though probably this reduction has been accentuated by war conditions.

There is a Press tariff in the United States, though it is a nearer approach to the ordinary tariff. But in the main the American system uses the radiating wires of the Associated Press, the agency performing both the work of collection and the work of telegraph transmissions. The characteristic is the establishment of radiating centres, which in turn have wires direct to newspaper offices in neighbouring towns. The Press tariff is used principally, as we should expect, for the collection of items of news from distant points, the dissemination of news from the central points being almost entirely over the radiating wires of the Associated Press. In Germany there is practically no Press tariff and the provincial German newspapers bear evidence of this. During the last Reichstag election the *Manchester Guardian* had fuller reports than the *Frankfurter Zeitung*. The arrangements for rented wires are commonly said to be governed by the subtle principle that news-

papers friendly to the Government obtained specific advantages, not only in respect of the wires themselves and the charges for the wires, but also in respect of the "official" news which was given to their Berlin representatives for transmission over those wires. In France the newspapers have not been treated too liberally either by the Press tariff for telegrams or in the matter of rented wires. In the Colonies the British system is generally followed, a little less liberally than in the mother country.

Press telegraph practice in England in the transmission of telegrams over public wires begins with a modification of the methods of acceptance. A deposit system is of very old standing and agencies and newspapers are provided with passes whereby their representatives may hand in telegrams without occasioning the trouble and time of counting them at the accepting point. This arrangement is of considerable value both for long telegrams, reports of speeches in particular, though of recent years speeches have not been reported at the length which was common in the days of the Midlothian campaign. When Press telegrams are longer than a few hundred words the Post Office requires notice, especially where they are to be handed in at distant points, in order that arrangements may be made to provide wires, telegraph apparatus and telegraphists. It is not always practicable to give the requisite notice, for example, in cases of railway accident and the like, and in such instances the Post Office has made the necessary arrangements at short notice and with characteristic liberality. It has become the outstanding feature of British telegraphy, at one time a special telegraph staff of a specially experienced quality was held in readiness for such purposes, but recent developments have been in the direction of dividing the country into zones surrounding a large telegraph office, and certain members of the staff of those offices have been ear-marked as a special local staff to be sent to points where heavy Press work was expected. During recent years a rival has come into the field, and enterprising agencies have obtained the use of long distance telephone wires over which they transmit the intelligence to London. There have been, indeed, a few instances where the actual voice of the speaker has been conveyed by electrophone direct to the newspaper office. Cricket and football matches have frequently been described direct into a telephone from the ground to the linotype operator, a system which has been borrowed from the United States. As a general rule, however, the fundamental system is telegraph and it is based on the use of the Wheatstone. Wires are made up from the accepting point direct to the towns where the more important newspapers are published, and the towns are grouped according to the reports which they are destined to receive. This grouping is called the "YQ" system, on the ground that "YQ" is the signal which warns a number of offices that all are to read the signals simultaneously. The "YQ" system has been seriously modified of recent years by the use of the Creed re-perforator, which enables one office to re-transmit a long telegram with the minimum of human labour to a number of towns. This modern development has been used to the greatest purpose where long and important speeches have been delivered at towns served by comparatively few wires. Thus when Mr. Lloyd George spoke at Conway the reports were transmitted to Liverpool only and received there by Creed re-perforator, and it was Liverpool and not Conway which distributed it to the country at large. That this re-transmission did not affect the rapidity of transit is proved by the fact that the last sheet of the report was handed in at 5.10 p.m. and the newspapers were on sale in Paris before 7 o'clock. Probably, though we have no certain knowledge, it was not much longer in reaching Berlin. There has been little experience with race meetings for some years, but similar arrangements were always instituted for each race meeting, and the same applies to cricket and football.

It says no little for the efficiency of the system of radiating news from London that it has held good in its main essentials for over 40 years. The news is classified under headings and different newspapers subscribe to different classes. Thus no addresses are signalled. All telegraphists know which newspapers subscribe to Parliamentary Class I, or Reuter Class II or Sporting Class III. Some agencies merely number their classes and one uses an ingenious arrangement of colours, "red," "crise," "orange," &c. At a time when labour saving was less evident than it is to-day this system was devised, and no one knows to whom the tribute of praise is due. In the Central Telegraph Office there are special wires which radiate, on the "YQ" principle, to provincial towns. The grouping is admirably contrived. Liverpool, Manchester and Birmingham are on one wire; Glasgow, Aberdeen, Dundee, Edinburgh and Newcastle on another. Each group of towns reads simultaneously at a speed of about 200 words a minute. The signals are received as Morse signals and are transcribed either by hand or by typewriter. In a number of offices they are received at a somewhat lower speed by Creed re-perforator and are then printed in Roman letters on a tape by the Creed printer, the tape being gummed to a form. Where the signals are transcribed multiple copies are made on flimsy sheets. Where the Creed is used re-duplicators are employed, and new developments of re-duplicators are in process, either in the form of printing more slips than one simultaneously or in the form of re-duplication from the original gummed slip by means of a simple copying press. In this way the labour of re-transcription is being modified.

Wheatstone is thus the basis of the British system of distributing Press and it is a very efficient method. But there are signs that multiplex printing telegraphs will come into use at no distant date, with the direct printing on the forms instead of the "YQ" principle. In America the Morse is used for Press invariably, with an elaborated system of abbreviations and with automatic means of signalling successions of dots. The Hughes and Baudot are used in France, with no approach to a "YQ" system and the Hughes almost invariably in Germany. In Scandinavia the Creed is in favour. In the Colonies the British system is mainly in use, though on a smaller scale and with much less distribution of news in common to a number

of newspapers. The publication of identical newspapers in different towns is done in England on a considerable scale and is only achievable by high speed telegraphs on rented lines. Perhaps the British system is open to the criticism that it has led newspapers to depend too closely upon agencies and that there is less individuality in the provincial Press than in France or Germany. At least that is the German criticism. But nevertheless it is true that British newspapers give fuller reports of Parliament and of public utterances than any other newspapers, though perhaps they do not compare so favourably with American newspapers in respect of long descriptions. The fact remains that telegraph practice in respect of Press telegrams differs widely in various countries, and that these differences can only be understood if we take into account not merely the varied circumstances which affect the telegraph itself, but the temperament and the mental characteristics of the people.

#### IX.—TELEGRAPH TARIFFS.

It is a curious fact that telegraph practice has had singularly little influence on telegraph tariffs. Both in England and in Germany the tariffs have been arranged altogether apart from a scientific study either of profit and loss or of economic and industrial needs. In England in 1883 the House of Commons definitely arrayed itself against the expert, though to later ideas the tariff which was suggested by the administration seems hardly attractive in that it only allowed three words in the text at the minimum charge. In France the influence of the English tariff was felt, and an inland tariff very much on the same lines was adopted. There were some differences in Belgium, but in the main it is true that a generic tariff of sixpence for twelve words, or the nearest sum as represented by the coinage, was adopted on the Continent of Europe. In the United States the size of the territory and the more commercial point of view of the non-government administrations had their influence. A differentiated tariff according to distance still holds good, with several characteristics, such as the refusal of registered addresses and the arrangement for limiting the number of words signalled free of charge in the address. There are a few other cases of distance charges by other administrations covering wide territory, and of course the international administration, cable companies for the most part, base their charges absolutely upon distance. These differences do not affect the general judgment that a flat rate, irrespective of distance, and a flat rate ranging somewhere near sixpence for twelve words, with the addresses charged, is the characteristic method. Until the time of the war this system of charging had few critics. The United States was regarded as something of an eccentric oddity.

There can be no doubt that the analogy of the penny post was largely responsible for the spread of this idea. Yet this analogy is not altogether sound. The fact that the penny post in its uniformity was based upon a charge sufficiently small to be popular and sufficiently large to be remunerative in the main was overlooked. No administration has succeeded in making a flat rate of sixpence for a telegram of ten or twelve words a remunerative venture. This is altogether apart from the side issues—the Press tariff, the liberal bounds of free delivery. Sixpence for a telegram, however attractive it might be by reason of its simplicity, was not a parallel to one penny for a letter. Whatever faint claims it might have to being a parallel before the days of long distance telephony were swept away by the advent of that rival. The short distance telephone did not succeed in showing the absurdity of the flat rate for telegrams. No doubt it affected telegraph traffic, but probably in its early days it created far more traffic for itself than that which it robbed from telegraphy. And this was true for the very simple reason that there was little short distance or local telegraphy to steal. That was the price which was paid for a flat rate. There never was any considerable bulk of urban or local telegraphy. Even in London where, as we have seen, special plant was devised to cater for local telegraphy, in quantity it compared badly with the heavy bulk of long distance telegraphy. When it became possible to speak between two towns, such as Liverpool and Manchester, for sixpence the real rivalry began, and the telegraph was worsted.

The penny post needs no trumpeter. Thousands of writers have acclaimed it. Rowland Hill is mentioned in the history of industry and economics with reverence akin to that ascribed to Stephenson and Arkwright. But it should be remembered that there is something to be said on the other side. The centralising movement which regarded the country as an economic unit was essentially the same as the movement, in that period, which regarded the capital as the one centre of life. The development produced a London, but it robbed Edinburgh and Dublin of their individuality and it took from provincial cities much of their intellectual vigour. The current thought of to-day takes a different form. It is inclined to emphasize the local unit. It has a care for the special life of Ulster as for the Slovaks and for Alsace Lorraine. Had that current of thought been in motion when Rowland Hill's scheme was being considered it might have produced a halfpenny local post and a three-halfpenny distant post. Economic and industrial progress might have taken a very different form and altogether different influences might have moulded the telegraph tariffs.

It may seem that it was this change in the current of thought which brought about the differentiation, on a distance basis, of telephone charges. Such is not the case. The telephones grew from short distance outwards. The charge for short distance or local calls was on a co-operative or subscriber basis—hence the word "subscriber." This naturally was a flat rate and it recognised a general user for which it levied a general charge or "subscription." As the telephones developed and one "area" was linked with another it became evident that no longer was there a general user. Particular firms used certain longer distance routes and other firms did not use them. So the general charge or "subscription" was inapplicable, though a compound charge obtained in some cases until the Post Office acquired the longer lines, when a general system of unit charge was devised,

based upon a time period and upon distance. There is another differentiation which is of importance—lower charges are levied after 7 p.m., a system which has been abolished by the American telephone administrations though, as we shall see, it has been adopted on a wide scale by the American telegraph administrations. There have been sporadic claims for a trunk flat rate but significantly enough they have always fixed a limit, usually 50 miles, as the minimum. No one has had the hardihood to propose a truly flat rate to include every telephone conversation irrespective of the length of wires used. In itself this is the strongest condemnation of the telegraph flat rate. That rate only exists because there are so few really local telegrams, in other words, because there are so few telegrams which make a flat rate remunerative. We have noticed the absence of statistics of telegram mileage, but every telegraph man knows that there has been a steady increase in the average mileage. The German authorities, with characteristic thoroughness, have elaborate data which show year by year the steady increase in the number of miles of wires used for the average telegram. The war forced an increase of charges in every European country, ostensibly with a view to reducing traffic, but if there had been no war, and if it had proved to be necessary to continue the flat rate, an increase of charges was inevitable.

But distance is not the only differentiation. Gradually we have come to realise that there is a need for a differentiation in quality and that differentiation can only be made in respect of speed of transit. During the war it became evident in telephones also and certain calls, on Government or quasi-Government business, were given priority. The most striking instance in telegraph practice of this differentiation in quality is the night telegraph letter in America. History is uncertain as to its origin, but it is generally understood that it was begun by one company, a little reluctantly, under the impression that its rival was about to begin it. The result has been amazing. All manner of communications are conveyed by this means, including advertisements and prospectuses. Wires are as busy at night as in the day-time. Plant is more remunerative. Details are not easily obtained but it is clear from the annual reports of the companies that not the least profitable part of their business is this by-product. In a small country like the United Kingdom the system has naturally been less successful, but at certain centres it showed signs of success, if it had been pressed upon the attention of the public. Another instance is the equally successful week-end telegram of the international administrations at a charge much less than the normal. Here again there has been something amounting almost to a revolution in the public use of the system. Canadian soldiers in France have used it liberally: Englishmen in the far Pacific have sent welcome letters home; a further filip will be given to it by the American soldiers in Europe. It has proved that we are far from the end of the attractiveness of the telegraph. It has shown us that the Victorian conception of a telegram is not complete or inclusive. It has revealed the fact, which ought not to be a startling fact, that there is a demand for a telegram of secondary quality in respect of speed, and that it might fill a worthy place in the cosmogony of the interchange of ideas.

(To be concluded.)

## CORRESPONDENCE.

### DUPLEXING THE BAUDOT.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

In your issue of September 1917 you give a translation of a letter by Major A. C. Booth to the *Annales des Postes, Télégraphes et Téléphones*, in which Major Booth makes certain statements which constitute a serious reflection on me. I am sure Major Booth did not consciously wish to do me an injustice, but as that is the effect of certain portions of his letter, I must ask you to let me clear myself from a very unpleasant slur, by placing the facts before your readers. Major Booth says:

"I have given the successful duplex Baudot freely to the whole world, but must claim the honour connected therewith. . . . The successful duplexing of the Baudot has led to the production of the Murray duplex multiplex, the Western Electric duplex multiplex and the Siemens duplex automatic, all three of which are really modified duplex Baudot systems, and are bringing to the inventors both fame and fortune. For myself I merely claim the honour of devising and carrying out successfully the foundation of their success, viz., by duplexing the triple, quadruple, quintuple and sextuple Baudot sets, which had not been done successfully before."

In plain language this amounts to an accusation by Major Booth that I and others, without giving Major Booth credit, are reaping "fame and fortune" on the foundation of work done by Major Booth, and out of which he has only been able to claim honour. That is a very ugly accusation. I must therefore in the first place ask to have a few interrogatories administered to Major Booth as follows:—

1. What precisely does Major Booth claim to have done in duplexing the Baudot?
2. What inventive or constructive work did he perform in connexion therewith?
3. What difficulty did he overcome that had not been previously overcome by other inventors and telegraph engineers?
4. What difference is there between duplexing the Baudot and duplexing any other telegraph apparatus?
5. Was there anything patentable about the work he has given "freely to the whole world"?
6. Precisely what has he given freely to the whole world?

Coming now to facts, the Murray multiplex owes nothing whatever to Major Booth either in respect of duplexing or in any other way. A few dates and facts will make this clear.

Major Booth gives 1904 or 1905 as the years when he first became interested in duplexing the Baudot. He published his method in 1907, and the first practical experiments were made by him in 1910.

The Murray multiplex owes nothing to Major Booth, but it does owe a great deal in the way of inspiration to the Rowland multiplex, the very remarkable invention of the famous American scientist Professor Henry A. Rowland, and especially does it owe a debt to Mr. W. A. Houghtaling, a very competent and well-informed American telegraph engineer, who was my colleague for two years in the Postal Telegraph-Cable Company in New York during 1899 and 1900. Mr. Houghtaling afterwards joined the Rowland Company in Baltimore, and he had charge of the Rowland system during its later stages in Berlin. In company with Mr. Houghtaling, I saw the Rowland multiplex working quadruple-duplex in Baltimore in 1899, and I had many long talks with him both in Baltimore, New York and Berlin on multiplex questions.

The Rowland octuplex (quadruple duplex), I may remind your readers, was exhibited at the Paris Exposition in 1900, and was tried by the British Post Office in 1901, and was subsequently adopted by the Italian and German Administrations about 1903. When I saw it in 1903 in Berlin it was working to Hamburg, quadruple duplex.

The essential point to be observed here is that the Rowland was far more difficult to work duplex than the Baudot because it employed 7 cycles or reversals of current per letter, compared with only 2½ cycles per letter with the Baudot. Also the Rowland speed (quadruple duplex) was 40 words per minute per channel compared with only 30 words a minute with the Baudot. In other words the successful duplexing of the Rowland in 1899 and its commercial working between Hamburg and Berlin (started on Feb. 19, 1903) was equivalent to the duplexing of a Baudot installation of nearly 30 channels (29,866) on one wire (15 channels each way). Major Booth only claims 6 each way for his best Baudot performance.

Following the example of the Rowland multiplex in 1899, the Murray automatic system was worked duplex as a matter of course in 1901 on exactly the same general principles as the Rowland, and the Murray multiplex was worked duplex in precisely the same way and also as a matter of course when it started on commercial traffic between London and Manchester in 1911. The duplexing of the Murray multiplex owed nothing whatever to the work of Major Booth in duplexing the Baudot. On the contrary it followed what I had learned from Mr. Houghtaling and the Rowland multiplex and what I had acquired from the British Post Office officials in regard to successful duplex working of the Wheatstone (a very old story indeed).

Mr. Houghtaling left the Rowland Company and joined the Western Union Company in 1911, the Western Union having at that time decided to take up the development of multiplex printing telegraphy. Mr. Houghtaling became assistant to Mr. G. R. Benjamin, another very able American telegraph engineer in the employ of the Western Union, who had also had long experience with printing telegraphs and duplex working, particularly in connexion with the Buckingham-Barclay automatic system. The Western Union shortly afterwards purchased the American rights to the Murray multiplex and obtained my advice and assistance. They likewise called in the Western Electric Company to assist in development and manufacturing of the new Western Union multiplex, based on the Murray multiplex, which in turn took its inspiration from the Rowland and the Baudot.

The most surprising fact, however, is that the first person to point out how to work the Baudot with the duplex balance was Baudot himself in 1882. Baudot describes how to do this in his British patent 436 1882, in which he says: "The known methods of duplex operation may thus be employed. . . ." and he proceeds to give a verbal account of how to do it. The method Baudot describes is the same as that used by Mr. S. A. Pollock in 1896 for duplexing the Delany Morse multiplex (see Crotch, *Telegraph Systems*, page 113). It is the same method that was arranged for the duplexing of the Siemens photo-printer in 1900, and it is the same method as that used in the Rowland octuplex (see *Electrical World and Engineer*, page 959, vol. XI, Dec. 13, 1902, Fig. 35 "Connexions for Octuplex Transmission").

I do not see how it is possible to give to the world in 1907 what the world possessed in 1882, 25 years previously. Major Booth, it appears to me, deserves credit for having pushed forward duplex working of the Baudot in face of the usual inertia that all progress has to encounter, but the records do not show that he did anything beyond that.

It is of course well known to telegraph engineers that any telegraph system can be worked with the duplex balance, because it is not the system that is duplexed but the telegraph line and the main-line relay connected with the telegraph line. The rest of the apparatus comprising any telegraph system is essentially local, and there is nothing whatever about it that is duplexed. The transmitting apparatus of some systems is less favourable for the duplex balance than others, but the Baudot is specially favourable in this respect. Also some telegraph systems send out signals at higher frequencies than others, and that makes the work of establishing and maintaining the duplex balance more difficult than in other cases, but in this respect also the Baudot signals are very favourable for duplex working, more so even than the Morse (in the ratio of five to eight), and very much more so than the Rowland multiplex.

Major Booth raises the interesting question of the proportion of honour due to various countries for telegraph development. That is purely a matter of who is born where, and of circumstances and chance, but as it forms one of the strands in the thread of my argument, I shall be glad if you can find room for a few words from me on the historic aspect. Mr. H. H. Harrison is now our recognised telegraph-historical authority, so I hope he will correct me if I go wrong in any particular.

The compactness and density of population of Great Britain and its highly organised news service, made the Wheatstone automatic indispensable

for news distribution in the earlier days in the United Kingdom. This fortified the position of the Wheatstone automatic in Great Britain, and being a British invention the automatic idea took deep root in the minds of British telegraph authorities and others influenced by them, including me, to my sorrow and cost. This delayed progress along multiplex lines in Great Britain. A contributing cause was the unsatisfactory experience with the Delany Morse multiplex in England. The result has been that multiplex development has been essentially a French and American achievement, with a cosmopolitan flavour contributed by me from New Zealand, Australia, New York, London, Paris, Berlin, Petrograd and other capitals.

So far as the multiplex is concerned, the line of apostolic succession, as I understand it, was as follows:—

FARMER (United States), 1856.—First to propose the multiplex idea.

MEYER (France), 1873.—First working multiplex telegraph.

BAUDOT (France).—First practical working multiplex printing telegraph developed from 1875 to about 1883. Baudot is by far the most outstanding figure in the telegraph world since Morse, and the remarkable range of his inventive work in connexion with printing telegraphy is only now beginning to be appreciated in English-speaking countries, thanks to Mr. H. H. Harrison's publications.

DELANY (United States), 1882-1884.—The Delany multiplex branched off from the main line of succession. It was a Morse system, and was not a multiplex printing telegraph. There was no laying on of hands apparently, because it was not blessed with success, and it has passed out of use. It was arranged to work as a duplex multiplex by Mr. S. A. Pollock of the Engineer-in-Chief's Department, G.P.O., in 1896. This date indicates that it was Mr. Pollock and not Major Booth who was the first to duplex a multiplex successfully under practical working conditions. Mr. Pollock's task was also more difficult on account of the much higher frequency of the signals in the Delany compared with the Baudot.

ROWLAND (United States).—The Rowland multiplex (in practical working shape in 1899) was the first attempt at modernising the multiplex idea by applying to it the great accumulation of technical knowledge and skill gathered since the time when Baudot started work some 25 years previously. I regret that the Rowland system should have fallen so soon into oblivion. It was a remarkable achievement and one of the chief milestones along the path of progress in telegraphy. It was the Rowland system that gave the first impulse to the production of the modern multiplex, and I regret that Major Booth has not given due credit to its famous inventor, Professor Henry A. Rowland, for his great work in multiplex telegraph development. The important work of his assistant and successor, Dr. L. M. Potts, another brilliant American inventor and telegraph engineer, also deserves more than this passing notice, which is all I can find space for here.

MURRAY (New Zealand).—Assisted by the Postal Telegraph Cable Company in New York (America) from 1899 to 1901. At first followed the British automatic tradition. Ultimately shook this off as a result of seeing the Rowland at intervals from 1899 in Baltimore to Berlin in 1905 accompanied by opportunities from time to time of seeing the work performed by the Baudot. Assisted by the British Post Office (Great Britain) the Murray multiplex was developed and put on practical working trial in 1911 between London and Manchester, working duplex.

WESTERN UNION (America).—Engaged services of Mr. W. A. Houghtaling in 1911 and bought Murray multiplex American patent rights and advice and assistance in 1912, and proceeded to develop the Western Union multiplex, co-operation in development and manufacturing being given by the Western Electric Company (America). The Western Union multiplex and the Murray multiplex form practically twin multiplex systems, and their inspiration comes as much from the Rowland (America) as from the Baudot (France).

Major Booth in his letter says that the Murray multiplex, the Western Electric multiplex and the Siemens duplex automatic are all three "really modified duplex Baudot systems." That is incorrect. Certain elements of these systems are taken from the Baudot, but the great bulk of the work in each of them is original or taken from quite other sources than the Baudot. The inspiration was largely Baudot. That is quite a different matter.

Sept. 10, 1917.

DONALD MURRAY.

## LONDON TELEPHONE SERVICE NOTES.

THESE Notes finished last month with a reference to the good fortune of one of the first class clerks loaned from the L.T.S. to the office of the National War Savings Committee. We now learn that even his good fortune is bettered by the bonuses of Messrs. Bouchier and Burgess, second class clerks loaned to the War Trades Board. There are others too, we understand. Well, we tender to each of them our congratulations. If matters continue as at present it looks as if there will have to be a fund originated for the relief of distress amongst those clerks who cannot be loaned from the L.T.S., the fund to be provided by a 10 per cent. deduction from the additional emoluments of loaned officers.

Before these Notes are printed we shall have parted with one of the pioneers of the *Post Office* London Telephone Service. Mr. Livingston, the popular Exchange Manager of Victoria, leaves the L.T.S. to take up what promises to be a lucrative commercial appointment. We know no one whom prosperity is so little likely to spoil, and we wish him on behalf of the whole of the London Telephone Service a long and increasingly prosperous career. We ought perhaps to warn him that Christmas boxes are absolutely forbidden in the Service—not that we are teetotalers. Mr. Livingston's retirement seems likely to bring in its train a number of managerial cross connexions (telephones this for "general post") and frequent reference to our note books will have to be made when we want to locate a particular officer.

"Forward, forward let us range,

Let the great world spin for ever down the ringing grooves of change."

It's quite improbable that Tennyson intended any reference here to the London Telephone Service, but had the quotation commenced "Forward, backward, &c.," we might have claimed it as prophetic. The Traffic division of the Traffic branch of the Controller's Office has "ranged" once more to the Carter Lane building, and one section of that division in accompanying it carried out its second removal in three weeks. If the general body of the clerical force finds itself most unpleasantly crowded in its new quarters it should get some satisfaction from the knowledge that it has not been necessary to reduce the area of the carpeted conference chamber. By the way, space will not admit of our undertaking the task, but quite a deal might be written on the ethics of private rooms. Some have walls which reach the roof. Others have but screens. Some provide sanctuary for superintendents. Others seclude selected first or even second class clerks. Some have carpets. Others have none, and yet others seem to fall somewhere between these extremes. What deduction you are to draw from all this we cannot say, but we recommend it as a field for study to those who have a taste for psychological research.

Were it not that we have the immortal precedent of the "Busman's holiday," we should not have expected a telephone official in these days of emergency work to spend his vacation at Margate. Yet "such and so various are the tastes of men" that that was the *venue* selected by the Superintendent of Traffic for his change of air, and it is matter for congratulation that he is still uninjured, for the house in which he was staying was badly damaged by a bomb which fell but a few feet away. We have not been without our own excitements in London, but happily so far the Telephone Service has escaped attention (the penholder is a wooden one). In fact one of the exchange managers whose duties keep him in attendance all night at the Trunk Exchange, at intervals found time hanging so heavily on hand recently that he left behind him in the morning the following lines as proof of that fact:—

A is for Air Raids made by the Hun.

B is for bombs which make landing grounds run.

C the Police Commissioner great.

D is for Dive—the Trunk man of fate.

E for emergency—common of late.

F is for Fleming part time potentate.

G is for "get up" which wakens from sleep.

H it is Hell. May the Hun get a peep.

I for Instructions—one at a time.

J is for Jack commandeering a line.

K is for Kennedy, no other cues.

L is for log, a record of news.

M is for Mantle—horticultural seer.

N for the "notice" which gives the "all clear."

O is for "orders" of various kind.

P for the posts which a message can find.

Q is for questions, asked in the night.

R the replies, supervisors' delight!

S is for Searle when waiting for orders.

T the Test Call when on midnight it borders.

U is for "Underground" lights all turned out.

V Volunteer, still open to doubt.

W for warnings, given in haste.

X the unknown. Fill in to your taste.

Y for the year which we all hope to see,

and

Z is at Zero, where the Hun then will be.

The London Telephonists' Society opens its new session on Wednesday, Oct. 10, when Miss Celia Kate Hooper will read her

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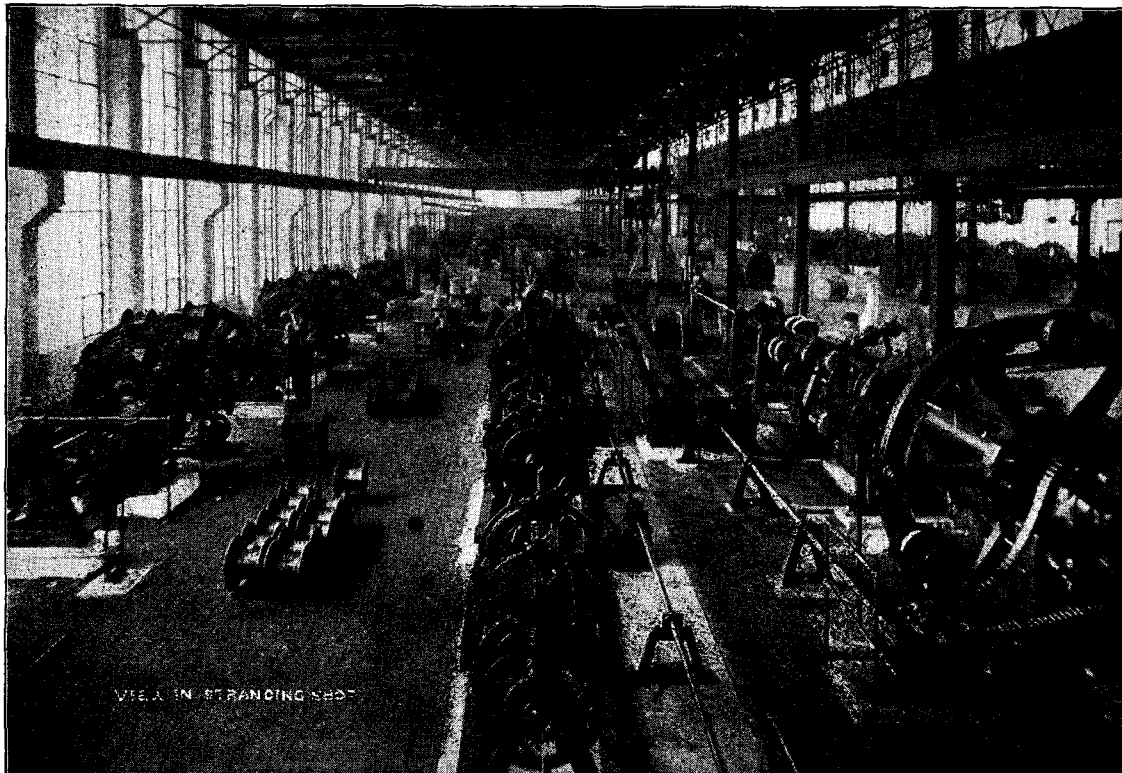
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presidential address on "Discipline and Control." The meetings are to be held this season in the dining room of the Museum Exchange, and this should make for "full houses." We understand that refreshments will be obtainable, another point in favour of the new place of meeting.

The programme of the P.O. Telephone and Telegraph Society of London includes papers to be read by Miss McCallum, Chief Supervisor of Gerrard, and Mr. James Jack, Assistant Exchange Manager at Trunks. The latter will write of "The Physical Effects of Telephone and Telegraph Work." This ought to prove particularly interesting, as Mr. Jack has a facile pen and he has had personal experience in both these branches of work.

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A ticket write when this is seen.  
Should you be asked for an exchange  
Which comes outside our inner range.  
Red opals, too, do often glow,  
Pennies are wanted they're to show.  
So always on the line just stop  
Until you hear the pennies drop.  
But be the colour what it may  
A bar across obstructs the way  
To all the lines for G.P.O.  
(The bar's to show that this is so.)  
Two lines down opal may appear  
(On this point always be quite clear)  
Two party line is what they mean  
The colour may be white or green—  
If green—be sure a ticket make  
If white—a note you need not take.  
If on an opal X or Y  
These letters are to signify  
Full service to the subs. who own  
The letter on the opal shown.  
Perchance a dot is seen instead  
On opal, white or green or red  
A call office by it is shown  
Where anyone may telephone.  
Some have Attendants, some have not—  
"A" in addition to the dot  
Denotes the lines where callers may  
Have calls to Trunks, but they must pay  
The Attendant *there* whose duty is  
To charge for Post facilities.

### PERSONALIA.

#### LONDON TRAFFIC STAFF.

Miss F. TIDY, Assistant Supervisor at London Wall School, has resigned to be married and was presented by her colleagues with a case of fish knives and forks and a sugar bowl with sifter.

Miss F. A. NORMAN, Assistant Supervisor at Hop Exchange, resigned in view of her approaching marriage and was presented with silver teaspoons and sugar tongs by the staff.

Miss EDITH A. BOWIE, Assistant Supervisor at Mayfair Exchange, who is about to be married, has resigned. She was the recipient of a silver tea service and several other useful gifts from her colleagues.

Miss ETHEL M. COSTALL, of Holborn Exchange, has resigned to be married. Miss MAUD WATFORD, of Holborn, was presented with a case of fish knives and forks and several other gifts on leaving to be married.

Miss F. B. ALLEN, of Museum Exchange, has resigned in view of her approaching marriage and was presented by the staff with a case of silver teaspoons and tongs and a salad bowl and servers.

Miss D. D. KLEIN, of Dalston, resigned to be married and was presented with a set of carvers by the staff.

Miss L. FREEMAN, of Paddington Exchange, has resigned for marriage and was presented with a cruet.

Miss D. S. THOMPSON, of Hop Exchange, has resigned in view of her approaching marriage. She was the recipient of a tea service from the staff.

Miss D. E. CLAFFERTON, of Kensington, resigned to be married and was presented by her colleagues with a silver cake basket, a coffee tray and several other gifts.

Miss A. M. WILLIAMS, of the Trunk Exchange, has resigned in view of her approaching marriage and was presented with cutlery and other useful presents by her colleagues.

Miss LOUIE MARGRIE, of Trunks, has resigned to be married and was presented by her colleagues with a dinner service and other useful gifts.

Miss R. E. LOCK, of North Exchange, resigned on account of marriage and was presented with a silver cake basket, teapot, sugar basin, milk jug and other gifts.

Miss EMMA LIVERMORE, of London Wall, resigned to be married and was presented with the following:—A dinner service from the operating staff, a tea service from the inquiry and monitorial staff, fish knives and forks and fruit dishes from friends in her section.

Miss D. A. WOODCOCK, of Streatham Exchange, resigned in view of her approaching marriage and was presented by the staff with a handsome cut glass and silver cruet and other useful presents.

Miss L. R. PINDER, of Streatham, has resigned to be married. She was presented with a tea service, a teapot and other useful presents by the staff.

Miss V. T. SMITH, of Sutton, has resigned to be married.

#### PROVINCIAL STAFF.

Miss F. S. E. RAWLINSON, Clerical Assistant, District Manager's Office, Lincoln, resigned on Aug. 18, in view of her approaching marriage and was presented by her colleagues with a case of knives and forks.

Miss L. G. GREEN, Travelling Supervisor, District Manager's Office, Lincoln, resigned on Aug. 31 in view of her approaching marriage and was presented by her colleagues with an *epergne*.

On Aug. 11 Miss M. L. GALLAGHER (Travelling Supervisor) resigned her position to be married. She was presented by the District Manager, on behalf of the staff throughout the district, with a handsome dining room clock and other silver articles.

Miss E. M. FINCH, of Harrow Exchange, has resigned to be married. She was presented by the supervising staff, exchange staff, engineers and postal staff with an inlaid mahogany palm stand and palm and several other gifts.

### LETTER FROM A WOMAN TELEGRAPHIST IN FRANCE.

TRUE to our promise, here is our first letter to you after leaving for "La belle France." You will be pleased to know that we find life very agreeable and have settled down to our duties quite contentedly. Our crossing was glorious—we might have been on a pleasure trip.

We stayed at the port of call for the first night, and, by the way, the draft that left before ours (*i.e.*, on the 16th) had quite a unique experience. Through some misunderstanding nothing was ready for them and they had to put up at a hotel that had not been opened since the beginning of the war, and the first thing the 50 girls did was to scour the place from top to bottom and make it fit to live in. Owing to a clerical error I had to fall out of the Saturday draft and come out later, so for me it was a lucky miss, you see. The way in which the officers and girls made the best of the situation was admirable, and to hear them talk of it one would think it was a huge joke.

The day after arrival I was sent on to one of the bases to join Miss M. at a little office you mentioned to us when we saw you. We consider we've dropped in most luckily, as this little village is delightful and one of the prettiest spots one could imagine, and a sight of the sea is as good as a tonic to us after a month in London. It is just at its best now, for the weather has been beautiful ever since we came, and we make the very most of our off duty time. Our hours are fine—perhaps you know the duties though. We work in two's—one telephonist and one telegraphist and supervise each other. We work three Sundays out of four—we say *work*, but in comparison to the way we used to work in LV, it is a holiday. It all depends, of course, when there's anything big on up the line we get rushed, but this does not happen often, so we ease our consciences with the thought that what bit we *do* do is very important. The telephonists work much harder than we do. By the way, we don't get the R.E. badge or "R.E." on our uniforms, only the signaller's badge on the arm, and we're very proud of the distinction—it has caused quite a mild sensation among the girls. Our hours are 9 to 1 and 6 to 9; 7 a.m. to 9 a.m. and 1 to 6. Night duty, 9 p.m. to 7 a.m. As I said just now, we make the most of our time off duty and are quite brown, as we fill our lungs with the ozone from the sea.

Our life in billets, being army, is of course very crude, but we are quite content and can adapt ourselves to circumstances, so we can't find anything to grumble at—which is most remarkable for P.O. clerks, isn't it? There are lots of things of course that we should like altered, but when we compare our minor inconveniences to the hardships of the men in the trenches we feel that they are insignificant. It was a study, by the way, to see the faces of the men just come up from the line when they saw English girls for the first time, and their cheery "Hello, girls," was as good as a tonic. The men here are very good to us and are delighted to have girls from their own country to talk to.

We are doing our best to live down the reputation of being "too flighty." We are billeted in a small house on our own because of getting more quiet when on night duty, a consideration that we very much appreciate. The other telegraph clerks are at a seaport town near by.



By the courtesy of the *Daily Mirror*.]

**PHOTOGRAPH OF THE AIR RAID OF JULY 7.** (See "Hic et Ubique," page 9.)

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### BRITISH TELEGRAPH PRACTICE.

*(Concluded from page 11.)*

THE future of the telegraph is naturally a subject of anxious discussion amongst those whose life-work is in telegraph practice. It would be too much to say that there is general unanimity on this question of differentiation. But it is certainly true that those who support a flat rate are declining in number and that as they decline they modify their claims. They are prepared to urge a night telegraph letter. They are ever disposed to say that the rapid transmission of letters at night by the penny post was somewhat over-refined in the days before the war and that a cheap telegraph system might well take its place. Giving full weight to their views, it is true, beyond a shadow of a doubt that the great bulk of telegraph opinion is in favour of two differentiations in charge, as regards distance and as regards speed. A discussion a couple of years ago at the London Telegraph and Telephone Society revealed practical unanimity on the point. The paper which was read urged a differentiated tariff of fourpence and eightpence respectively, each for twelve words, the former being the charge for local or urban telegrams delivered quickly or for long distance telegrams delivered by post; the latter, eightpence, being the charge for long distance telegrams telegraphed and delivered urgently. The discussion was most helpful and in the end most favour seemed to be given to an ingenious proposal by Mr. J. Newlands, C.I.E., the Controller of the Central Telegraph Office, by which the fourpenny tariff would be for eight words only, and the eightpenny for eight words, the ascent being a halfpenny a word in each case. This proposal is attractive in its simplicity, while it is less likely to be unremunerative than the original suggestion. Unfortunately for telegraphs this question of profit and loss as resulting from a change of tariff is a subject on which there is no definite guidance. Just as the American administrations were amazed at the results of the night telegraph letter so it is probable that every administration will be amazed when it sets out to attract traffic which hitherto has not been in evidence.

There is no real antagonism, nevertheless, between telegraphs and telephones. The antagonism is apparent, largely because telegraph tariffs, being based on uniform user, uniform quality, uniform economic and industrial need, uniform distance, are struggling against a heavy handicap. Some observations of the Postmaster-General of South Africa in his report for the year 1916 have the effect of drawing a distinction between the different spheres of usefulness of the long distance telegraph and telephone. "It has to be recognised," he says, "that for the longer distances the telegraph will remain the chief medium for all ordinary purposes," while later on it is remarked that for communication between towns within a range of about 100 miles the telephone is an ideal medium. This is, perhaps, only equivalent to saying that as telegrams are usually charged for at a flat rate, and telephone messages according to distance, it follows that the shorter the distance the closer the charge for a telephone call will approximate to that for a telegram, and the preference will go to the telephone. "The economic effect," it is said, "is that whilst a reply paid telegram from Johannesburg to Cape Town can be carried for 2s., the charge for a telephone conversation between these two places (if a trunk line existed) would, at the present tariff, be 14s. 6d. per three minutes." The question, of course, is purely an economic one, and no purpose would be served by spending 14s. 6d. on a trunk call if a 2s. telegram would answer one's purpose. But it is precisely here that the difference between the two modes of rapid communication comes in. A reply paid telegram covering a message in each direction is hardly comparable with a telephone conversation which allows of numerous messages in each direction,

and in which weighty matters can be discussed, objections met, instructions given, and varied or confirmed according to the tenour of a correspondent's replies. A dozen telegrams and the space of several hours would be required for the same purpose, by which time the "economic effect" would be operating in favour of the telephone. It is perhaps not desirable that long trunk lines should be loaded with messages of secondary importance; there is economic fitness in their being reserved for the rapid handling of such calls as justify their comparatively high cost, for as the Postmaster-General points out long telephone lines are expensive both to build and to operate. The telephone is not so suitable for communications requiring no answer, or merely a pure negative or affirmative answer.

This claim may seem, however, to go too far. The administration cannot in practice decide which form of communication is the most suitable for its clients. It will have some sharp surprises if it attempts such a course. To set out on a policy of telling the public that certain long distance telephone routes would be so expensive to build and to maintain as to be an extravagance to the public purse is assuredly to overlook the fact that the demand for communications has its subtle differences which no one can foresee. No doubt business was very well done between London and Liverpool when only the telegraph was available. Now there is a large group of underground telephone circuits which are kept fully occupied. Between Liverpool and Manchester there is a historic case where over a hundred telephone lines, giving a "no delay" service attracted an enormous increase of traffic. The truth would seem to be that telegraphs and telephones, themselves and within themselves, must cater for varying demands. They must be suited to different economic and social needs. They must be consistent with themselves. Their charges must not keep too close an eye upon the charges of their rivals. The telegraph charges, for instance, must be based upon telegraph exigencies, upon plant used and upon service given, and must not constantly be balanced against the postal charges on one side or the telephone charges on the other. All this points to differentiation. A flat rate telegraph charge is forced into competition with telephones in a way in which a differentiated telephone charge would not be.

There remains the question of attendant services. What responsibility should lie upon an administration for the immediate delivery of a telegram? To what distance should that delivery be undertaken free of additional charge? No question in telegraph practice has received such variant replies. The British system has run to an extreme. The concessions of 1897 fixing the distance at three miles are an amazement to experts in other countries. But it would be very difficult now to modify them, so deeply is the expectation rooted. It is an extravagance, but with a differentiated charge and a differentiated quality of service the financial aspect might be modified. Immediate delivery has always been regarded as essential. In practice it is difficult to achieve in the small town, where one or two messengers only are employed, as both may be away on the arrival of a telegram. In the small towns of the United States where railway companies are the agents for delivering telegrams, strange stories are told of means which are adopted to ensure delivery. On the Continent of Europe telegrams are frankly delivered in batches and at long intervals, with much less stringency than the British system has continued even in the stress of war. Probably another differentiation will creep in at this point and in commercial centres, where business of large dimensions depends upon rapidly changing prices, telegrams will be delivered with the utmost rapidity and only in batches when the speed of delivery is not impaired thereby. This will react as the main differentiation, so that the telegram which is slower in transit and is delivered by the next postal delivery will become the characteristic telegram of the smaller town, leaving the messenger (or messengers) more readily available for the fewer first class telegrams which come, and thereby ensure even more rapid transit than might be expected for those first-class telegrams and thus

giving, even to the smallest town, a telegraph service as rapid as that given to the most important commercial community.

#### X.—THE FUTURE OF TELEGRAPH PRACTICE.

It may be said, with justice, that it is not possible to understand present-day telegraph practice unless we compare country with country and past with present and present with future. At all stages in the history of telegraph practice the germs of the next stage in development are present. There are no clear-cut stages in the process of growth. There is overlap and interpenetration. Perhaps this has never been so true in the history of telegraphy as it is at the present moment. It is a truism to say that telegraph practice is always at a transition stage. At the moment, all over the world, it seems almost to be holding its breath for the next plunge. Of all the important influences which the war has exercised none is more definite than that which it has exercised on telegraph practice. It has taught us a new sense of proportion. We have learned new values. We have realised the importance of "lines of communication" and at the same time we have found that so-called civil telegraphy cannot be independent of military telegraphy. This has a profound influence upon the problem of Government ownership, evident perhaps more in the United States than in any other country, but it has had an even more telling influence upon the details of practice. It is not without significance that as a result of military operations on so grand a scale in Belgium and France the British forces had to construct a telegraph and telephone system of a size which makes it practically a second national system in the districts affected. But there was an advantage in building a system *de novo*. The officers of the British telegraph service who were thus employed found themselves face to face not so much with a new problem as with a new presentation of an old problem. And they learned that in the growth of telegraph practice there have been developments which called for re-examination in spite of the fact that the general tendency of British practice has been in the direction of simplification.

Looking back 40 years on the British telegraph service we find a steady tendency towards simplification in method. The 'seventies found a telegraph service not unnaturally timorous, making elaborate records of the telegrams at every stage, compiling elaborate statistics of delay and of costs, checking the original with the received telegrams to discover errors. As consistent with the spirit of the time the general purpose was to penalise wrong-doing. If the statistics had been used for the scientific study of delays, of telegram mileage, of the incidence of error, precious data would have been available to-day. And probably the building-up of scientific data would have stood in the way of the wholesale surrender of statistics. For the simplification has not been all for gain. When the day comes for a study of telegraph economics as a basis for a new tariff there may be some reason to regret the fact that the earlier statistics were not continued or, at least, that some step was not taken to put them to scientific use so that the continuous study of vital facts might be continued even with a simplification of method.

Be that as it may, the tendency is still in the direction of simplification, and those who cry out for scientific statistics meet with but little support. Opinions are expressed on tariffs and on methods of delivery which are the result of long experience and probably are well-substantiated by experience, but they cannot be supported by actual data. It may be that to state the fact thus baldly is to over-estimate the distinction. Telegraph practice is often guided by something which approaches instinct. I have come across evidence of it in America and in Germany as in England. The telegraph superintendent will describe with wonderful accuracy the nature of the traffic on this or that route, but when pressed he cannot put his finger on the data on which his description is based. He cannot even remember that he has studied the particular traffic which would enable him to form such an opinion. He has been a telegraphist; he has handled the telegrams; he knows how they have changed in their nature and his knowledge is most valuable, but it cannot be as valuable as careful statistics, thoroughly studied, would have been. In statistics of this kind the Germans have done the best work, and of course simplification of practice has been slower in Germany than elsewhere. But even in Germany these statistics are not comperable with the telephone statistics as affording a scientific basis for administration. The American administrations have made very useful studies, and the studies which preceded the adoption of the night telegraph letter were most carefully carried out. But this was a study *ad rem* and not a continuous exposition of telegraph data, suitable for historical consideration or for comparison. It is probable that it is with such sporadic statistics that we shall be compelled to be satisfied in future. The opinion of telegraph experts as a rule is strongly against the preparation of day-by-day statistics, and telegraphy has not yet reached that pitch of development as to bring into the foreground the need for such detailed knowledge.

While telegraph procedure changes, it changes amazingly slowly. The war increased the telegraph tariff in all European countries, but before that there had been stability in respect of the internal tariffs for something like 30 years. The 'eighties saw the development towards the generic sixpenny telegram and it seemed as if it were the last word. It was not a remunerative tariff, and year followed year and here a voice and there a voice, in France, in Germany, and in England, was raised in protest, but it was never loud enough to awaken public interest. Telegraph development in America had been very slow. Just before the war it was galvanised by the introduction of new methods, new machines, new adaptations to commercial needs. There was some agitation in favour of public ownership and a committee was appointed, which produced its report. But even in the United States as a whole telegraphy has seen but little real change during the past generation. Telegrams are printed by machine where once they were written by hand; important routes are served with the transit of telegrams at high rapidity,

but the fundamental basis of the telegraph system has not been changed and except as regards the night telegraph letter the small town sees but little difference in the telegraph service which is offered to it.

There are signs that in the immediate future there will be a real change, and that this real change will come from the West. The United States is fortunate in having a tariff already based on a differentiation by distance, and in having a differentiation by quality evidenced in the night telegraph letter. The entry of the United States into the war has brought its methods of telegraphy to the knowledge of British representatives, and a knowledge of European telegraphy to the knowledge of its own officers, in a way which could hardly have been imagined in peace times. The old mental shackles which bound telegraphy in the past are being burst. The old conception of what a telegram is needs immediate revision. Just as the night telegraph letter in America has become familiar to the public so we need a movement in all other countries to familiarise the public with the existence of a telegraph service. Its association with sorrow and death still hugs the public mind, one of the sad features of telegraphy which has been emphasised by the war in England, the United States, Canada and Australia, but not in France, Germany or Austria. The administrations in the past have been too readily contented with telegraphing the telegrams which came and too little desirous of cultivating or attracting telegraph traffic. Telegraph practice ought to begin with attractiveness. It is only during the past few years, and only in the United States that telegraph practice has made its proper beginning.

Theorists have attempted to claim that cheapness of tariff does not affect the number of telegrams to any appreciable extent. The fact that the increase of tariff in European countries as a result of the war has not reduced the traffic even more than it has done is used as an argument to prove that an increased tariff serves the public quite reasonably well in the emergencies for which a telegram is a suitable means of communication. That argument overlooks the fact that just as the tariff was increased the telegraph habit was showing signs of extending, and the incidence of the higher charges in European countries came just at an unfortunate moment in telegraph history, especially so on the Continent. It is a sounder deduction to argue that just as the increase in tariff has revealed that the telegraph had a stronger grip on the public than anyone deemed to be the case, so a reduction in tariff might reveal and probably would reveal an enormously extended demand which would sweep away all the conventional ideas and convert telegraphy from being a means of communication to be used only in emergencies into being a method of interchange almost as commonplace as the post. All the more so if the consideration of tariffs turns our ideas in the direction of estimating the possibility of rendering varied qualities of service to suit particular needs. Simplification may have a positive disadvantage if it directs our mind too definitely to one tariff and one alone, and too definitely to one quality of service and one quality alone.

Other aspects of simplification affect the treatment of telegrams during transit. The unification of the forms used, the reduction in the records, the developments of main routes so that the circulation is less complicated, the tendency towards the adoption of the typewriter keyboard as the generic method of signalling—these are the outstanding evidences. But this tendency brings with it the necessity for closer study. The newer types of telegraph instrument while they seem to be simpler in mere manipulation indisputably call for more skill in executive administration. The economy of the use of wires has to be safeguarded by the constant study of the signals which are not directly productive, the signals which control the paper at the receiving end, which move the carriage backward and force on the paper to enable the telegram to be torn off. Looseness in method might readily defeat the end of such instruments and non productive signals must be kept to a minimum. The American administrations have given close attention to this aspect of the newer telegraphy, and the instruction books which they have issued reveal an intention to bring economy in signals to a very high pitch of perfection. It is perhaps in an excess of timidity on this aspect of the newer telegraphy which has led the German administration to prefer to print the telegrams on tape and to gum the tape to forms, thus risking the cost of the labour of gumming against the cost of line signals for controlling the paper. At the present stage of knowledge there is a difference of opinion, and the French preference for the Baudot machine with its direct printing on tape brings that difference into the foreground. But making all allowance for the advantages of tape printing there can be little doubt that in the future the printing on forms ready for delivery to the public will be the adopted system, and that will bring with it an enhancement of the telegraph art with a view to safeguarding those minute losses of line time which, in their cumulation, are of enormous importance. The new telegraphy, while it may seem to make a less insistent demand upon digital skill, and while it will bring telegraphy more into the common or widespread art of typing, will make a greater and not a less demand on intelligence in control. It will call for such an application of those principles of scientific management which govern the use of machinery as will produce a better result without necessarily driving the human unit.

Probably the telegraphy of the future will be less secretive and less confined to the organism controlled by the administration. Rented circuits may become more common, much on the model of the United States, where they connect not only the branches of a great industry but industrial points which require quick and facile communication. The communications between various centres in Chicago and various centres in New York form a telegraph system of themselves. There is something of this nature in England between the stock exchanges and between the London and provincial offices of the greater newspapers, but it has not been developed in England, or in France, or in Germany, on anything approaching the scale which will be necessary for future economic needs. Not only the money market, but the iron market, and the corn market will require a rapid interchange of information and this can only be given by means of direct wires. Another need has some kinship

with this. At present information is largely disseminated by means of individual enterprise. It may be in the new era that Government agency will disseminate all sorts of prices and demands so that every producing agent can be put into possession of data. The old telegraph companies in England used to collect news as part of their responsibilities. At the transfer it was thought that this duty was unseemly for a Government Department. Perhaps progress, as in so many other cases, will be in a circle and the telegraphy of the future will include the collection of data on a scale never hitherto regarded as practicable. The widening of Government responsibilities must have its bearing on so important a network of communication as the telegraph system.

In other respects there will be greater closeness between the client and the organism. To some extent this has been indicated already by the use of the telephone for the acceptance and the delivery of telegrams. Not only is the telephone thus available, but types of telegraph machines which print the telegram or reproduce the original handwriting, such as the Steljes, the Siemens' printer, the telewriter (or telautograph). This development has begun in England. It has spread over a wider arena in the United States, and the development of so-called "short line printers" promises a still wider development. The central office in Berlin has row upon row of Siemens' printers for this purpose. In London and in provincial offices in England the telewriter has made headway. But in this respect we are only at the beginning. The old mystery of telegraphy is breaking down. The public is no longer to be separated from the organism by the fortification of a counter. The telegraph system is no longer to find its bounds and limits in telegraph offices. It will spread into industry itself: it will link up all manner of industries with each other and with whatever centralising bureau shall yet be evolved. Even with a new tariff we have almost reached the bounds of a purely "public" telegraph system, confined, separated, secretive. There will always be a need for such a system: probably it will always be the backbone of telegraphy, but we need to stretch our vision beyond those limits and to look to a time when telegraph practice will include a much wider field of operations and will serve the economic and industrial and social needs far more vitally and far more intelligently than it has been called upon to do in the past.

## THE FIRST TELEPHONE EXCHANGE IN EUROPE.

BY W. H. GUNSTON.

THE death of Mr. James G. Lorrain (one of the pioneers of telephony), which we greatly regret to record, recalls the controversy which took place in the *Electrical Review* at the end of 1909 concerning the opening of the first telephone exchange in Europe. It was singular that an event which occurred so recently as 1879 should be a matter for doubt, and the *National Telephone Journal*, whose editors were in close touch with several pioneers of the telephone world, compared the case with the uncertainty which existed as to the side of Whitehall on which Charles I was beheaded. Huxley, in his essay "On the Value of Witness as to the Miraculous," adduced that uncertainty in an age when the printing press was well established and prolific, and in a case where eye witnesses were numerous and public opinion deeply stirred, as a proof of the caution with which historical evidence must be accepted even under favourable conditions.

"Still stranger is it," commented the *Journal*, "that there should be any difficulty in determining accurately an event which occurred in an age when everything of importance is instantly recorded in hundreds of newspapers. The first exchanges, however, unlike the earliest railways, were not opened with the accompaniment of flags, brass bands, banquets and speeches, although as soon as the importance of the telephone began to be appreciated the installation of new exchanges in large towns was sometimes signalled by public ceremonies. The part which the supposed "scientific toy" was to play in civilisation was not appreciated in the year 1879."

Another difficulty which confronts the investigator is that in some cases at least there was probably no formal opening of the first exchange. At some period between the time when work was first commenced on the switchboard and the time when a fair number of subscribers enjoyed telephonic intercommunication, there would be a stage when half a dozen subscribers were receiving *bona fide* exchange service. Hence the first of these dates would be too early and the second too late to be fixed as the actual date of opening. We have been at some pains to collect evidence on the subject, and what is indisputably established appears to be that in September 1879 exchanges were working in Coleman Street and Lombard Street, London, and in Faulkner Street,

Manchester, with not more than about 30 subscribers between them, and that exchanges in Liverpool, Wolverhampton and Sheffield followed in quick succession. Mr. J. G. Lorrain is of opinion that he had the Manchester Exchange working in the July of the year mentioned, whilst Mr. Poole would put it at some date in September; Messrs. Fletcher and C. J. Phillips can testify that the Coleman Street Exchange was working in August 1879; and Mr. J. E. Kingsbury produces evidence that the Lombard Street Exchange was publicly opened in September, but has no doubt that service was given for some time previously."

All the gentlemen named were engaged in telephone work in 1879, but nothing decisive emerges from the inquiry except that that year was a historic one for European telephony.

*Electric Industries* reprints Mr. Lorrain's "Pioneer Story" from its columns of the year 1902, and from these we quote the following:—

"The Manchester Exchange was the first telephone exchange in Great Britain, and indeed in Europe. The switching apparatus consisted of a Williams' 'standard' switchboard, as it was called, and a separate operating table. Two operators were required to work 75 lines. One sat at the table to receive the calls and shouted them out to the other operator, who plugged the lines together at the switchboard. The noise in a switchroom fitted with a number of such operating tables may be imagined. It soon led to the abandonment of such apparatus in large stations.

Almost immediately afterwards the London Exchange was started, Mr. Ormiston and Mr. Fletcher acting as engineers. About three weeks later I went to Liverpool and started the exchange there; and this was quickly followed by an exchange started in Sheffield by the late Mr. Tasker and by one in Wolverhampton. About this time Mr. Edison's representatives started the formation exchanges in this country with, I think, the "Fitch" form of Edison carbon transmitter and the Edison "motograph" receiver.

In August 1879 a company—the Lancashire Telephonic Exchange, Limited—was formed to take over the Manchester and Liverpool exchanges; and that company subsequently, in 1881, transferred its business to the Lancashire and Cheshire Telephone Company, Limited.

In October 1879 I started a telephone exchange in Edinburgh, and when I was able to show it in working order some of my friends joined me and we formed the Scottish Telephonic Exchange, Limited, with a paid-up capital of £10,000. Progress was comparatively slow until Mr. Faithfull Begg took an interest in the company. He obtained for us permission to connect the Edinburgh Stock Exchange, and that led to our getting nearly all the stockbrokers as subscribers.

In planning the Edinburgh Exchange I made a good many departures from previous practice. Instead of taking the lines of all our subscribers to one central station, I put up four central stations, three in different districts of Edinburgh and one in Leith, and these I fitted with the "Jones" operating tables. This central switching apparatus differed considerably from that of the "Williams" type used in the English exchanges. With the Jones system each operator was seated at a separate table fitted with 50 lines and arranged in such a manner that flexible connecting leads could connect any two of the tables. A very much more rapid service could be given by this means; and there was no shouting in the exchange room. I also adopted magneto call-bells for the subscribers, instead of battery call-bells as had hitherto been the practice. Some of these were constructed on the old 'thunder-pump' principle."

Mr. Lorrain acted as consulting engineer in the erection of the Dundee and Belfast Exchanges, and specified and dispatched plant for the pioneer exchanges in Bombay, Calcutta and Madras in 1880, assisting also in the erection of exchanges in Milan and Bologna in 1884. Altogether it will be seen he played a great part in the pioneer work of telephony.

Unless more definite evidence can be adduced in favour of London, we must assume that Manchester possessed the first telephone exchange in Europe. But as already observed it is strange that an element of doubt should exist concerning so significant and so recent an event.

## DISCIPLINE AND CONTROL.\*

BY CELIA KATE HOOPER (*Chief Supervisor, Museum Exchange*).

As it has always been the practice for the president of this society to read a short paper on some topic of general interest, I have conformed to the usual custom and have taken as my title "Discipline and Control."

Before reading the paper, I wish, however, to thank you for the honour you have conferred on me by electing me your president for the current session. It is a distinction of which I do not feel myself worthy, or especially capable—the more so, when I remember the distinguished names of those who have preceded me in the office.

I feel myself this evening somewhat in the same position as the young bridegroom who—after a great deal of persuasion—was induced to get up and respond to the toast to the bride and himself. He nervously put his hand on the bride's shoulder and said: "Ladies and gentlemen—er—er—I did not want anything of this sort, this *thing* has really been thrust upon me."

In fact I had considerable doubts in my mind as to whether it was right that I should accept it, but I felt that by taking it I should be doing a small service to the society and helping it out of a difficulty—the difficulty of obtaining the services of someone better qualified, at a time when the energies of everybody are absorbed in the performance of additional duties. I also thought it was a compliment to the staff that one of its members should be selected for the post. I sincerely trust, however, that next year the war will be over and that we shall be able to resume our old practice and receive the benefit of the kindly offices of some higher official in the Service, who will be able to speak to us on matters relating to our work in a much more authoritative and certain voice.

The words "Discipline" and "Control" have been selected as the title for this paper because it was thought that they—in the various senses in which they are often used—express ideas which can be usefully discussed this evening.

I wish my remarks, as far as possible, to apply to all grades—the disciplinarian and the disciplined, the controller and the controlled, the supervisor and the supervised, and above all I want you all to bear in mind that, in expressing my thoughts, I am thinking as much of myself as of others.

Although I have the misfortune this evening to be placed physically upon the platform I hope you will not think that I regard myself as being metaphorically "on a pedestal." I would rather it be felt that we are interchanging our views upon a subject which is of supreme interest to all of us and are, by discussing it, striving after the same ideal—the perfection of the Service.

If I remind you of the primary and derivative meanings of these two words *discipline* and *control* I think you will at once appreciate what suitable pegs they are upon which to hang a few remarks which are to be addressed to those whose duty it is to observe and enforce regulations.

In the Service the words "discipline" and "disciplinary measures" have a very fixed and ominous significance, but "discipline" has other meanings. It has its origin in the same Latin word as "disciple" and primarily means "teaching" or "education," and also carries with it the idea of training.

The idea associated with military discipline, ultimately involving restraint and punishment, are the last of the senses in which it has been employed. In our remarks this evening we will not, if you please, overlook the earlier senses in which this word has been used.

On the other hand the word "control," in its primary meanings is of little use to us. Originally a "controle" or "contre role"—adopted by us from the French—meant an account or register kept to correct or check another account or register. In its verbal form it took the meaning of to check; to exercise control over; to submit to authority.

These two words, therefore, open up a wide field for comment and will permit us to consider in general terms the relationship of the various members of the staff to one another; their privileges, duties and obligations, whether they are in the position of controlling officers or not.

No great enterprise, such as the Telephone Service, can be created or carried on without systematic organisation. Its success will depend entirely upon the care, ingenuity and forethought with which its rules and regulations have been devised and the exactness with which they are observed. Such rules and regulations are imposed upon, and rigidly enforced against its workers of whatever grade, not with any idea of oppression but solely that its machinery may do its work efficiently, and move smoothly, and that its various parts may inter-act harmoniously and in unison.

It seems ridiculous to have to say that when a lot of people are working together it is indispensable that some must be placed over the others with authority over them, and that those, in their turn, must have others over them, until, at last, the ultimate authority and controlling voice is in one person. If work is to proceed successfully there must be grades of workers and it is quite useless to complain because we are not all on top.

The smallest household cannot be carried on unless there is someone at the head who has the power to impose upon its members some restrictions. It is necessary for the benefit of all concerned that hours be fixed for meals, so that they may be served for the benefit of the greatest number. The servants must be allotted their several tasks so that they shall not interfere with one another's labours and that it may be made quite certain that none of the necessary work is left unperformed. Unless there be this regulation of the members of the household and those who minister to them, with someone at the head to control, the home becomes uncomfortable and the family soon leave it for a place which they can manage for themselves. A house divided against itself cannot stand and the only way to prevent the division is for the members to agree to obey some one of their number whose word shall be law.

Law and order, rules and regulations, much as they appear at times to be a hardship, are in reality the beginning of comfort in any community and the foundation of successful enterprise. It matters little what the community is, or whether it be a commercial enterprise or not, rules and regulations are an absolute necessity and have always to be recognised as such. Every game has its rules, every club its bye-laws, every country its statutes.

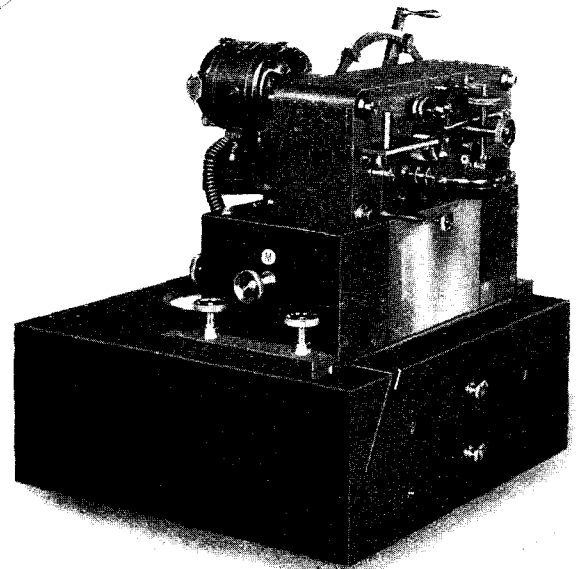
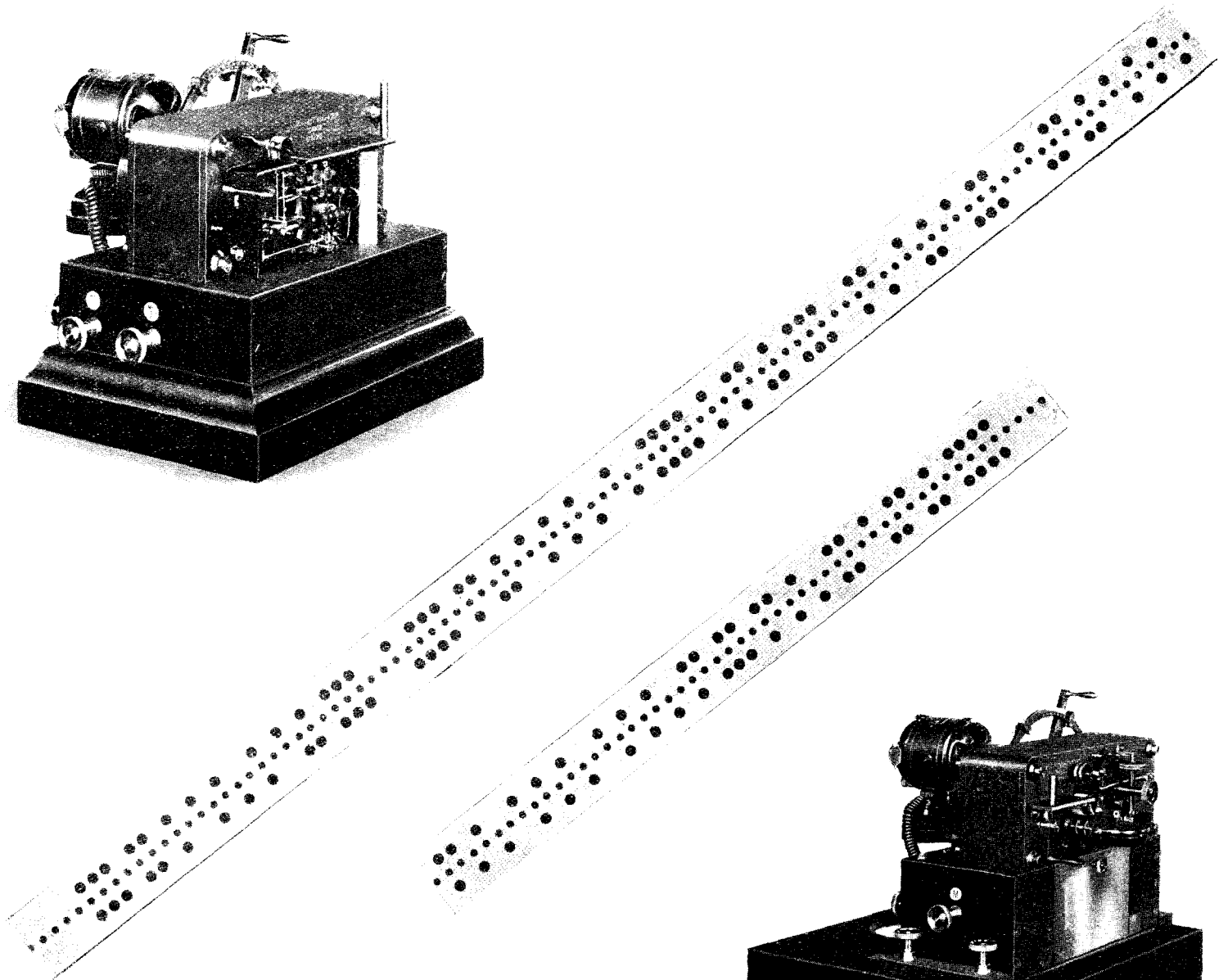
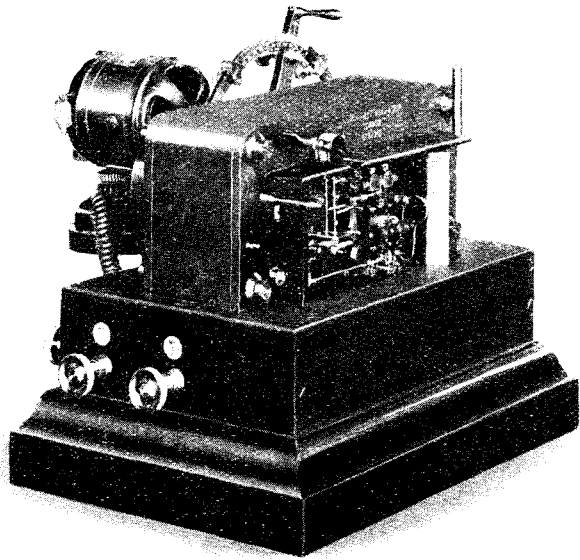
We, of the Telephone Service, are fully conscious of the fact that our actions are regulated by a code, the extent and complexity of which sometimes appal us. In our more thoughtless moments we are inclined to chafe at the restraint which is placed upon our doings and in our fits of impatience to declaim against them as useless and unnecessarily embarrassing. Yet a little consideration of the extent of the organisation of which we form part, its intricacies and complexities, soon convinces us of the real necessity of submission to these rules and the need of co-ordination and co-operation for their observance, if the work of supplying the country with telephonic communication is to proceed for one moment. Although the general public has, up to the present, failed in any way to appreciate the complicated nature of the telephone system, it is not necessary for me to remind any of you here of its magnitude and difficulties, but I would impress upon you that the more elaborate and complicated an organisation is, the more urgent it becomes for definite rules and regulations to be prescribed to cover every difficulty as it arises, so that the various parts may act in concert. Rules and regulations, therefore, being vitally necessary for the successful working of the telephone system, it is incumbent on all who form part of that system to familiarise themselves with the various instructions that from time to time are in force, and it is their duty to obey them.

It should always be remembered that, though in some cases general regulations may work hardly against individuals, they are not devised with any such object in mind. The sole object of their invention is the expeditious performance of the work in hand; the convenience and comfort of the workers considered as a

\* Presidential address to the London Telephonists' Society.



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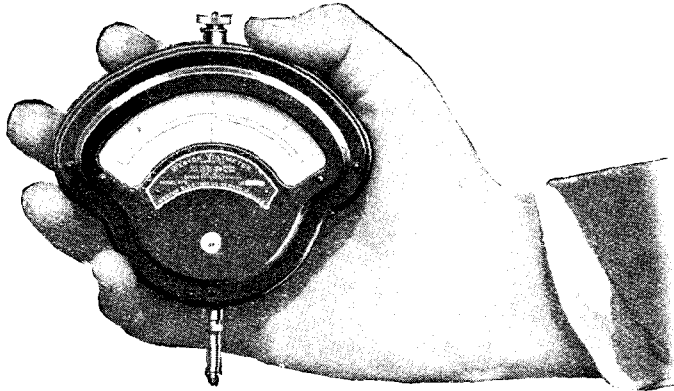
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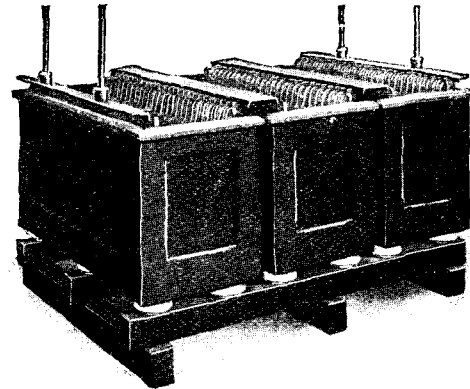
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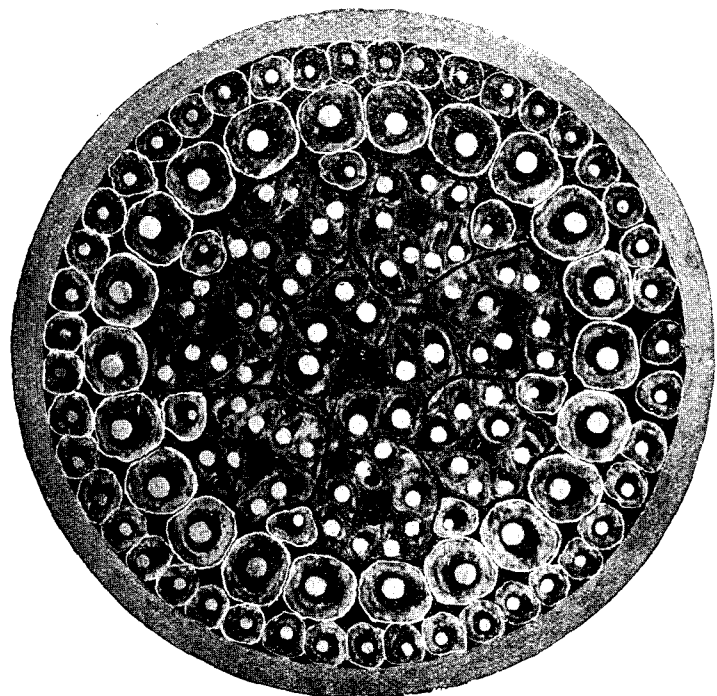
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whole; the uniformity of practice in every part of the undertaking; and last, but not least, of course, to make the Service of the greatest possibly utility to the persons for whose use it has been brought into being.

The other day I came across a passage in one of Ruskin's books which I thought was very appropriate to my present subject, which I would like to read to you. It is about the relationship of work to pay. He says: "There will be always a number of men who would fain set themselves to the accumulation of wealth as the sole object of their lives. Necessarily, that class of man is an uneducated class, inferior in intellect, and more or less cowardly. It is physically impossible for a well-educated, intellectual, or brave man to make money the chief object of his thoughts: as physically impossible as it is for him to make his dinner the principal object of them. All healthy people like their dinners, but their dinner is not the main object of their lives. So all healthily minded people like making money—ought to like it, and to enjoy the sensation of winning it: but the main object of their life is not money: it is something better than money. A good soldier, for instance, mainly wishes to do his fighting well. He is glad of his pay—very properly so, and justly grumbles when you keep him ten years without it—still, his main notion of life is to win battles, not to be paid for winning them. So of doctors. They like fees no doubt—ought to like them: yet if they are brave and well educated, the entire object of their lives is not fees. They, on the whole, desire to cure the sick and, if they are good doctors, and the choice were fairly put to them—would rather cure their patient and lose their fee, than kill them and get it. And so with all other brave and rightly trained men: their work is first, their fee second—very important always but still *second*." And if you will allow me I will add to this that the primary object of a telephonist, if I may use the word in embracing every member of the Service—should be the maintenance of an efficient service, irrespective of the pay they receive. It is not until one is able to take an intelligent interest in one's work that one can derive any pleasure from it. To act as an automaton, merely doing what one is told without taking the trouble to learn the whys and the wherefores and understand the inner working of the machine one is serving, can bring no joy in its train. Labour under such circumstances is servitude. The telephone and all that pertains to it is a sufficiently complex instrument and its use involves so much knowledge in various branches of science that anyone may be proud to master the rudiments of its working and to make acquaintance with the principles underlying its construction.

I daresay you have noticed that there is a tendency on the part of many of us to avoid responsibility, and that often the opportunity to rise to a higher grade is allowed to pass by. This, of course, shows a want of self-confidence. But is not that lack of confidence due to a want of knowledge? I think that almost certainly this hesitation to assume responsibility is the outward expression of some deficiency which very easily could be got rid of by a little trouble and study. And then again there is the old saying, "Nothing venture, nothing win." The actual responsibility lessens when one comes face to face with the work, it only presents itself as a piece of work to be done, a difficulty to be got over, and one never thinks of the responsibility while it is in hand. If one has taken care to understand the rules and the work of the exchange there will be but little difficulty in bearing the responsibility.

I have already pointed out the necessity for the relationship of master and servant in any such undertaking as ours. I wish also to emphasise the necessity for the loyal and proper observance of that relationship. The servant has obligations to the master and the master duties to the servant. I am afraid you will think that possibly my remarks are directed more to the controlling officer than to the operator. The person who is a master when looked at with regard to one set of persons becomes a servant when associated with others, and it is a very trite saying that no one can govern who cannot serve. By this I mean that those in authority should obey authority, otherwise they will have no control over those they command.

Now a word as to the use of authority. The keynote of the

success of a commander is justice. But Froude says that "Justice without wisdom is impossible," and it behoves us who have to judge between one another and dispense punishments, to exercise our duties with the greatest care and discretion. A controlling officer should never act impulsively nor be a martinet, her actions should always be governed by her reason and her personal feelings should never be allowed to sway her actions.

"Error is a hardy plant, it flourisheth in every soil," and we are not to be surprised and annoyed because stupid mistakes are made sometimes, nor should we jump to the conclusion that the person making them is necessarily incompetent. We must make some allowances for circumstances and temporary conditions, and it is our business to ascertain before condemnation what was really the cause of the mistake. Of course one should always hear both sides and endeavour to keep an open mind. It should be borne in mind too that accounts of the same thing seen from two different points of view will necessarily differ, and that the mere fact that they do not both accord is no reason for jumping to the conclusion that either, or both, are wrong. A little exercise of judgment, the recognition that both have been irritated, an endeavour to place one's self in the position of each will make it possible to appreciate the circumstances as they took place and to act accordingly. If it is known that every endeavour is being made to act fairly and to hold the balance evenly, it will be found that one's power of control has greatly increased and the maintenance of discipline will be facilitated.

The object of all reprobation and punishment should be prevention, and in many cases it will be found that an irregularity which cannot be cured by the officially prescribed disciplinary measures can easily be got rid of if one takes the trouble to find out the reason why the fault has been made. A little pains in this direction ending in a quiet talk with the offender, pointing out to her why her action is reprehensible, will often cure the fault entirely. It may only be that she really does not *understand* what she is doing: or she may have some mistaken notion as to *how* it should be done which she thinks is right. Here the disciplinarian will show herself the teacher and will patiently explain matters until the pupil is made to understand the error of her ways. If once she can be made to grasp the logical reason for doing a thing, in nine cases out of ten the fault will not be repeated. This, of course, will require some tact, for what was true in the days of Lord Chesterfield is true to-day. He told his son that "Advice is seldom welcome, and those who need it most, like it least."

It is very important that one should try to understand the temperament and character of those with whom one has to deal: their attitude towards their work and their various peculiarities. A little experience will help one in this direction, especially if one sets one's mind to it. A careless temperament or a quick temper is the source of many faults and irregularities.

One is bound to recognise that those actually engaged in operating and who come in direct contact with the public, often have a great deal to put up with and are subjected to treatment which is very irritating to a person with a hasty temper. A little tactful argument, an explanation of the means open for dealing with a subscriber who misbehaves, and a conviction that you, or the appropriate controlling officer, will always take up any matter which is of serious importance, will help the operator to try and keep her temper under control. There is no doubt that the way in which correction is given makes all the difference as to its efficacy.

"The little sweet doth cure much bitterness," as Keats said, and correction kindly administered—not with the fault-finding spirit but with the intention of being a real help—has a much greater effect. It must be equally understood, however, that if those in control are to act in the way I have suggested, there is a corresponding duty on the part of the controlled towards their supervisors. A little patience on occasions, a real desire to learn, a willingness to assist the supervisor in her work, an absence of irritating conduct when the supervisor's hands are full, will prevent much discord and many complaints being made. After all mutuality is a great power, and if there is a feeling on both sides

that each is doing her best to help on the work and each other there is much less room for misunderstanding and dissension.

It is essential that we should eradicate from our minds the idea of a figure head. It should never be thought by anyone in control that she is a figure head placed in her position simply to be paid and do practically nothing; that having become an officer of a certain standing she can delegate her responsibilities and labour to those under her, her sole duty being to complain and punish if the work is not performed. On the contrary, if she is to fill her post adequately, it is her business as a controller at all times to keep watch and ward and see what she requires is being done. She should further make it her business to understand thoroughly—at least in principle—the work of her subordinates in such a way that when they are in difficulties she can afford them assistance. Delegation of course is necessary, but she should be sure before delegating that she understands what she expects another to perform. Nor should one regard one's superior as a figure head simply because he or she does not appear to do the same work as one is doing one's self. The responsibility of looking after others, and of keeping the whole machine at work, and seeing that everyone is efficiently performing her duty, is no light task and requires a very great deal of application and alertness, and involves a large amount of anxiety, which those who actually do the work are spared. As you know the figure head of a ship, from which the metaphor is taken, is the projecting part of the head of a boat just under the bowsprit which is usually carved to represent, directly or emblematically, the name of the vessel. But what is it but the principal and most important timber in the whole ship's framework, into which all the other timbers are socketed and from which they derive their strength? It is in fact to the ship what the keystone is to the arch, and all persons in command should be careful that the positions they occupy serve the same controlling purpose.

It is, I believe, an open secret that new instructions have been issued with regard to the disciplinary measures to be taken in respect of irregularities. The instructions have been issued to exchange managers and supervisors-in-charge and are necessarily confidential, but I have been given permission to make known their general purport. Personally, I hope that the change thus initiated will have far-reaching effects and will do much towards the better maintenance of discipline and facilitate control.

The effect of these instructions will be to diminish the necessity of entering all minor irregularities upon the record. It is, of course, impossible for me to go into details, but in them the principle is recognised that one of the main objects of taking notice of a fault is the prevention of its repetition, and in dealing with minor cases, where there is no suspicion of carelessness or indifference, that "generous treatment will prove more efficacious. It is desired to foster a spirit of encouragement of right methods rather than carry on a campaign against wrong methods which may be out of all proportion to their part in the sum of the day's work."

Much more reliance will be placed upon the personal influence of those in control and it behoves us who are controlling officers to make ourselves more tactful and sympathetic so that we may rise to the occasion and carry out the spirit of the new instruction. Any incompetence on our part will do much to delay the benefit that will accrue to the service, and to the operators, and possibly make it necessary for the powers that be to withdraw their beneficent intentions.

To my mind the innovation will fulfil its avowed purpose of minimising that feeling of injustice which is created by every small fault being put into writing and recorded with cumulative effect against the offender. It is obvious that the experiment must be recognised by all in the spirit in which it is made, and it is imperative that those concerned shall not take advantage of the leniency which is contemplated. I need hardly say that the supervising officers are not given an absolutely free hand nor are they prevented from exercising their discretion if they find that the clemency which has been afforded is being abused. Dealing with minor offences in this way it is hoped that the Service efficiency will be increased, and

that those in control will be better able to exercise their own personal influence and have their section or exchange so well under control that they have been able to exterminate all such minor irregularities.

As a last word upon this subject I would impress upon you a point I am always trying to remember myself, that any suspicion of favouritism is absolutely subversive of discipline. When dealing with a large number of persons a certain amount of partiality for one over the other is but human, yet, depend upon it, one loses one's authority a great deal by indulging in it and a uniform treatment of all will win one the respect which is so indispensable for anyone whose duty it is to control and enforce discipline.

I have purposely avoided any attempt this evening at reviewing the doings for the year. From our point of view it has not been eventful except so far as it has been affected by the war. One startling innovation which the year has produced is the inclusion of women by the Army in its ranks and the enlistment of many of our supervisors and operators to assist in the telephonic work in France.

The question arose of closing down the society for the year because of everybody's pre-occupation in war work and the disinclination of members to venture out into the darkness in these times. Braver counsels prevailed and it was determined to "carry on" and keep our flag flying. So I must ask you, now that we have so determined, to do all you can to make the year a success by securing as many members as possible and a good attendance at the meetings.

#### TELEGRAPHIC MEMORABILIA.

THESE particular jottings are written somewhere on the English coast where only the fringe of the present world's upheaval appears to be felt, despite the occasional boom of guns away seaward, and the beat of quick-firers against the cliffs, the latter here sounding as much like flag-wagging in a heavy breeze as anything I have yet heard—and despite too of the number of cheery wounded who are enjoying the warm October sun, one as I write with but a single leg to his credit is swimming out yonder like a fish! It is true that the morning train brings down the latest news from Fleet Street, and the visitors from the Metropolis thereupon more or less leisurely find their way to the Post Office to wire or phone up to London. The majority apparently abandon the long *personal* wait necessitated by the latter system in favour of the former if slower method which does not deprive them of their morning dip.

In normal times when on leave one can blot out "the office" for a week or two, except perhaps a periodic wistfulness towards the Money Order Branch! But these are times by no means normal and let critics protest as they may, one cannot quite divorce one's self from the thought of "How are they getting on up there?" in much the same spirit as the entire war-world unfailingly if silently inquires, "How are the boys progressing over yonder?"

It is, however, the fashion to vocally profess a certain contempt for one's usual occupation when away from it; but while one may frankly vote the individual who is for ever "talking shop" as a decided bore, there are few men and women who really despise their vocation. With true British lack of desire to wear heart upon sleeve few may venture to express exactly a love for, well, telegraphy—let us say, but one has only to note the attitude of the majority of the followers of our profession when the craft is deliberately assailed, to arrive at the real heart of things. If then during these stressful periods one's happy fate is to be temporarily removed from the centre of the present hurly-burly I have no doubt but that I shall carry most of my readers with me when I endeavour to maintain that even during periods of recreation one may turn sympathetic thoughts office-wards without being deemed unduly sentimental. One would indeed be less than decent if one did not

do so, especially when one has full knowledge of the cheerful heroism of the men and women at so many offices, and let me add so many exchanges, in the United Kingdom during these years of war. Something of the humour of the trenches came back to one inquiry as to how matters stood, in the facetious reply, "Oh, we're all right though the Bing Boys have been here again!"

Telegraphy has so developed on its mechanical side during the last two or three decades that it is strange one cannot recall the slightest commendatory remark in print (I am open to correction on this point) regarding the excellent work put in by the mechanics of the Post Office telegraphs. Some of the internal wiring of multiplex apparatus for example, for which this section of the engineering branch has been chiefly responsible, not infrequently approaches a fine art. Naturally it is the C.T.O. which has provided the nucleus of a new type of skilled workman who at a moment's notice would be prepared to go to any portion of the British Isles, fit up and *maintain* any of the varying forms of modern multiplex telegraph apparatus now in use in the Service. Further, these same valuable officers are also able to instruct others of their type at the offices they may be called upon to visit. As one who owes not a little to many a kindly hint willingly given perhaps I may be permitted to place this much on record to their account, with the added hope that the Department will not be tempted to allocate these same duties to any but the present standard of skilled workman. Every *dirigeur* worthy of the name and competent by lengthy experience to judge, will testify to the absolute necessity of prompt and skilled *maintenance*. This is only to be obtained by specialisation of a kind solely acquired by close and constant acquaintance with the apparatus. Scrappy knowledge, a mere nodding desultory acquaintance by one, however skilled in matters mechanical, will not do for modern high-speed telegraphy. I have of course met those excellent Admirable Crichtons in the Service who, stationed at the same office for years, were able to maintain the delicate mechanism of Wheatstone transmitters, run and maintain gas-engines, dynamos and secondary cells, a few odd instruments of different types at out offices, and in their spare time keep a few score miles of open and covered wire well above standard I.R. and the criticisms of the superintending engineer. To such, after some experience doubtless the charge and care of modern high-speed apparatus could be entrusted, but it is doubtful whether there are sufficient of these at present available with a big program of developments looming ahead. It is possibly presumption on the part of a mere layman to venture these remarks, but solicitation for the future would appear to demand that high-speed telegraphy in the British Isles should not be satisfied with anything but that which would ensure an efficiency of the highest possible types. The writer has seen the effects elsewhere than in these islands—fortunately an experiment only—of second rate skill and of botchy maintenance, and the result could only be placed among the undesirables.

It is always with interest, although not perhaps always with agreement, that one reads the virile articles which generally appear on page 2 of the *P. & T. Record*. In a recent number under the head of "Supervision" the following sentence occurs, "Many employers . . . are devoting more attention to the *selection* of foremen and managers." It is neither my desire or function to criticise the subject-matter of the article itself, which simply bubbles over with intense sympathy for humanity in general and Post Office humanity in particular. The only word that caught my eye and which appeared to be suitable for comment here was the word "selection" in connexion with promotion as against the contention in quite a number of other quarters, of promotion by "seniority." The entire paragraph would appear to concede the point that some discrimination is after all really necessary in the selection of officers for supervising posts, and that these positions should not therefore be left to the mere haphazard of dates of entry into the Service any more than the appointment of president to a republic may be left to the freaks of heredity. The methods and principles to be adopted in making such selections are matters which the melting-pot of time will refine from age to age. Sufficient for the moment that a staff representative appears to have made it

clear that years and grey hairs *alone* do not spell competency, and the writer with mirror before him, self-abased, can only concur.

The question was recently asked whether the entry of the United States into the war had made any difference to the traffic to be dealt with by international cables. The reply thereto is better given in the general terms that with the entry of each new ally into the conflict corresponding new demands for "urgency" begin automatically to devolve upon the administrations responsible, leaving therefore less available line-time for private traffic—the latter itself in many instances of inter-allied importance—and last but not least a more restricted period for an increasing quantity of inter-continental "Press." With all respect to the fourth estate, the importance, utility and need of which is not likely to be forgotten in these pages, one wonders at times if the result of a baseball match or the report of some obscure person's wedding constitute Press service of a seriously urgent nature, or whether by any contortion of words and logical twists such intelligence could be classed amongst important war items for the use of the Entente Powers?

J. J. T.

### POST OFFICE HOSPITAL.

THE Committee of the Post Office Relief Fund are anxious to make it known as widely as possible that, in connexion with their work, a special Home Hospital is maintained at 20, Kensington Palace Gardens, London, W. (lent by Major and the Hon. Mrs. Marten Dunne), for the accommodation of members of the Department serving with the naval or military forces of the Crown who may be incapacitated or invalided. There is also a Convalescent Home at "Sealand," Littlestone-on-Sea (lent by Mr. and the Hon. Mrs. H. Gladstone), and another opening this winter at 16, Derby Road, Bournemouth.

These houses have been placed by the Army Council on their list of Supplementary Hospitals, and instructions have been issued to all Commands in the United Kingdom that ex-Post Office employees wounded or ill shall have the option of being transferred from Military Hospitals to the Post Office Hospital. A similar arrangement has been sanctioned by the Admiralty. Patients desiring such transfer should apply to the officer in charge of the hospital where they happen to be, and request him to communicate with the Lady Superintendent at 20, Kensington Palace Gardens (Telephone No. Park 2361).

If any difficulty arises in securing transfer to the Post Office Hospital, the matter should be reported to

ARTHUR G. FERARD, Esq.,  
Hon. Secretary of the Post Office Relief Fund,  
St. Martin's-le-Grand, London, E.C.

It is desirable that men applying to the officer in charge of their hospital for transfer should themselves tell the Lady Superintendent at the Post Office Hospital that they have done so.

### SWIMMING.—HOLBORN v. AVENUE EXCHANGES.

The first annual display of the Star (Ladies) Swimming Club, of Holborn Exchange, was held on Saturday, Sept. 22, at the Northampton Institute Baths.

The 130 seats provided were all filled, and so dense was the throng that quite a number of the audience had to stand.

The show started with a width race for novices. After this came a team race—Avenue Ex Club *versus* Star.

We are glad to say that the Star Club romped home nearly a length ahead of the Avenue. Never mind, Avenue, better luck next time (but not if we can help it).

Then came a diving competition, pyjama race, two lengths handicap, and other events too numerous to mention here.

The audience throughout were most enthusiastic, and it isn't altogether their fault that the balcony at the Northampton still remains.

The prizes were to have been distributed by our President, Miss Butler, but Mr. Grove, our Manager at that time, having just received his marching orders to Gerrard, consented to perform this pleasant task.

Audience and competitors both pronounced the affair a huge success.

## The Telegraph and Telephone Journal.

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

<i>Editing and Organising</i>	{	MR. JOHN W. LEE.
<i>Committee</i>		MR. J. W. WISSENDEN.
<i>Managing Editor</i>	-	MR. W. H. GUNSTON.

### NOTICES.

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

VOL. IV.

NOVEMBER, 1917.

No. 38.

### THE "C" FORM.

SINCE telegraphy began there have been reforming enthusiasts who have protested that a second copy of delivered telegrams was not necessary. It has been the favourite ground of assault on things as they were. But in spite of the apparent clumsiness there was always something to be said for carbon duplicates. As a method of accounting the system was less costly than the continental system, for the top copy rendered complicated book entries unnecessary. In fact it was a characteristically English method. It looked conservative and even unattractive, but when the facts were examined by no means a weak case could be made out for retaining it. Yet we all felt it had to go. In a service where unanimity on any subject is far to seek we were practically unanimous. The zealous enthusiasts formulated their proposals again and again but they were frustrated. Alternative schemes were tried. The counterfoil system was perhaps the most important and, indeed, it is likely that it had a considerable influence in leading the way to the more drastic change which is now in process. Attempts were made to imitate the American system of press copying, but it soon became clear that it was not suitable to English conditions. The American companies have legal responsibilities which compel them to insist upon a press copy of all delivered telegrams, as a *fac simile* to be produced in a court of law. Bit by bit the air cleared in England and now we are face to face with a development which abolishes the second copy except in the very small percentage of cases where a record is needed for charging purposes. At present the new method is limited to the larger offices, but it would be a hardy prophet who would declare that this is a final limitation.

Into the complicated accounting questions we need not enter, nor need we refer to the "check on revenue" which must be main-

tained. From the point of view of actual telegraph practice the change is of great value. It unifies the forms used at a circuit, and incidentally it leads the way to the readier use of typewriters. For one of the difficulties which arose at ordinary circuits in the use of typewriters was found in the fact that the receiving telegraphist did not know until hearing the "prefix" which form to insert, and this has been one of the reasons why the use of typewriters at sounder circuits is not so far developed in England as in America. Probably, too, the change will be of benefit in the matter of writers' cramp. The heavier pressure needed for making two copies was undoubtedly a factor. Then there is the question of economy. It is not possible at the moment to give the figures, and indeed estimates which have been whispered seem to the lay mind to represent a cost of paper so high as to be incredible. A journalist, however, is not the one to cavil at such statements. He is prepared to believe any statement as to the cost of paper.

Now is the time for the genius to suggest a new form. Of course he will try to sweep the envelope away. We all have tried. Here again is an interesting instance of American conservatism where the envelope is sturdily retained. The older systems on the Continent have an adapted combination and the New Zealand system has a very ingenious solution. But the advantage is debateable, and though many official communications are issued in wrapped circular forms a private telegram is hardly acceptable to the British public if only folded, however ingeniously. Still the British public has survived many shocks and it may survive another shock when one of us invents the acceptable combination of form and envelope. It is a big step forward to have a single form in use in all the larger offices. Those who are apostles for consulting the staff on all improvements have an admirable opportunity before them in the question of the further development. We shall look forward with interest to see the particular suggestion which will find favour. Yet it is a curious reflection, as one of our brethren in the North put it, that when Austria sent a certain ultimatum to Serbia it was little dreamed that a revolution of the British telegraph form would be one of the results.

### HIC ET UBIQUE.

WE publish in this issue the last instalment of the interesting and exhaustive series of articles on "British Telegraph Practice" which commenced in the June number. Many of our readers will have guessed that they are from the pen of Mr. John Lee. They are about to be published, extended and brought up-to-date, in book form by Messrs. Longmans, Green & Co., by whose kindness we have been enabled to insert them in the JOURNAL.

MR. MURRAY desires us to make a correction in his reply to Major Booth on "Duplexing the Baudot" which appeared in last month's number. Referring to the Delany multiplex he said: "This indicates that it was Mr. Pollock and not Major Booth who was the first to duplex the multiplex successfully under practical working conditions." He should have added the qualification "in England," for he says that M. Montoriol shows that the Baudot was worked duplex successfully in France some years before Mr. Pollock duplexed the Delany.

WE regret to record the death in action of another of those who have done good work for the JOURNAL as agents in the large provincial towns. We have to deplore the loss of Mr. J. F. Scott of Hanley, who has given his life for his country.

PERIODICALLY we get reports of the good work done by the Post Office Relief Fund. Three parcels of food (costing nearly 9s. each) are being sent every fortnight to some 529 Post Office prisoners in Germany. The reports as to the condition in which they arrive are upon the whole, fairly satisfactory, and the contents in most instances meet with high approval. The work incidental to the despatch of the parcels is undertaken by Miss Loch's staff at the Money Order Department as a labour of love, and as will be understood, it is necessary to deal with all the men concerned on a uniform basis. Nevertheless the hon. secretary of the Relief Fund keeps careful note of specific requests, in order that if there is a general demand for a particular article it may be included, if circumstances permit, on the next revision of the contents of the parcels. The regular supply of bread and tobacco is left in every case to the Regimental Association. In lieu of parcels a sum of 10s. is sent every fortnight to five prisoners in Turkish territory. Useful work is also being done in assisting claims for pensions or revisions of pensions.

MISS HOOPER in her address to the London Telephonists' Society on the subject of "Discipline and Control" is, we think, unduly modest about herself. Obvious as are the advantages of having high officials as presidents of such societies, and much appreciated as their acceptance of office undoubtedly is, we imagine that a capable and popular member of the staff is an excellent choice for that honour. Miss Hooper handled her subject both skilfully and sympathetically, and had evidently brought much thought and study to bear upon it. We are of the opinion that she will prove a most successful president.

### A DOCUMENT.

ON Jan. 15 and 16, 1881, a conference was held in Liverpool "for the purpose of deciding upon a united scheme of reforms to lay before the Postmaster-General for the redress of the grievances of telegraph clerks." A full report of the conference was issued in pamphlet form and after 36 years it is very interesting reading. There are many familiar names amongst the representatives. Mr. North of London; Mr. Plackett, now of Bradford; Mr. Morris of Liverpool; Mr. O'Toole, late Controller of Dublin; Mr. Livingston, then of Glasgow, now just retiring from the position of Assistant Postmaster of Leeds. The most amazing feature of the proceedings was the far-sightedness of some of these "agitators." They saw difficulties ahead; they realised certain dangers as inevitable. Above all there are indications of a vision of some method of intercourse between chiefs and the staff representatives which would be preferable to mere "fighting." A Dublin representative protested against any suggestion of menacing "the authorities," while a Manchester representative stoutly objected to the idea that anything of a trade union character should be established—"to form a trade union would be to forfeit the support of the public." The distinction between a benefit association and a trade union is hard to see nowadays.

The conference spoke in high terms of Mr. Fawcett, who "as an ardent reformer could not help being desirous of removing all cause for discontent, which must be prejudicial to the best interests of the public." The first contention afterwards seems to have been that telegraph clerks were a "clerical body" and had been described as such by Mr. Scudamore. To us that reads a little behind the times, seeing that there has been some movement away from the idea that mere penmanship was the mark of social superiority. The telegraphist of to-day does not envy the clerk at his desk;

rather he is proud of his own craftsmanship. Nor does he quite appreciate the argument that sorting duties were "degrading," though this grievance of being called on to do sorting duties did not apply to Ireland. For once we see an Irish representative pointing the superiority of Irish methods. The Dublin representative was "extremely surprised to hear such disclosures. It appeared to him that the surveyors in England were very hard ones. He had never heard of a similar case in Ireland. In Dublin, when they were busy in the Post Office, on such occasions as Christmas Day and Valentine's Day, they got the messengers to help them, and in his opinion the duty was only fit for messengers." This was received by an outburst of cheering. After 36 years it looks a little out of date.

But for all that the conference was alive and was dealing with very real grievances. There were suggestions of coercion, though the Glasgow representative stated that there had been no attempts at coercion in Glasgow. "Two members of the staff had been present with their postmaster for over three hours discussing matters." That has distinctly a modern note. There were curious arrangements brought to light about overtime, and one delegate thrilled the conference by stating that a clerk in the office of the Board of Works in Belfast was actually paid at the rate of time and a half for overtime. In Southampton "there were no holidays or half-holidays," and on Bank Holidays the staff was sent home as business permitted. One representative suggested a general or universal rate for overtime, but the proposal was defeated. One remarkable resolution was passed unanimously to the effect that when "clerks are called upon to proceed to and from their homes in order to work overtime the pay shall include the time necessarily occupied in going and returning." Somehow the account of "prices of food being enhanced" in 1881 leaves one strangely cold in 1917, but for all that it is pretty clear that many of our brethren at that time had some difficulty in making ends meet.

It is an interesting chapter in history. These men had high ideals for the Telegraph Service. Not yet had the transfer to the Post Office found them quite ready for the change, for their discussions were marked by constant comparisons with the "Post Office" staff of which they did not realise themselves to be members. The conference was the beginning of a movement which was to see many changes and many developments and is yet to see many changes and many developments.

### REVIEWS.

*Directions for Designing, Making and Operating High Pressure Transformers.* By Professor F. E. Austin, E.E. Second Edition. Price 65 cents. London agents: E. & F. Spon, Limited, 57, Haymarket, S.W. 1.—We reviewed the first edition of this book in our number of December, 1916.

The present edition appears to be only a reprint of the first one.

*Examples in Battery Engineering.* By Professor F. E. Austin, E.E. 90 pages. Price \$1.25. London agents: E. & F. Spon, Limited, 57, Haymarket, S.W. 1.—In this book a series of 26 lessons is given, in which, in an elementary manner, the theory of primary and secondary batteries and their various practical applications are discussed.

The subject is covered as fully as possible within the limits of the book, and many numerical examples are given, which assist the reader in obtaining exact ideas on the subject.

The price however is, in our opinion, excessive. The greater part of the information given in the book will be found in any good text-book of electricity, and we are afraid that unless Professor Austin's book can be published at a smaller figure it will be found that the demand for it will not be large.

### LONDON TELEPHONE SERVICE NOTES.

THE changes foretold in last month's Notes have now been carried into effect and Mr. Livingston has severed his *official* connexion with the L.T.S. It will be long indeed before his memory fades in the Service, although it is reported that already he symbolises private branch exchanges by the code "PBXXX." The Victoria staff bade him farewell on Friday, Sept. 28, when he and Mrs. Livingston were entertained to tea by the supervisors of the exchange and its associated private branch exchanges. Mr. E. H. Pounds, of the Controllor's Office, presided and on behalf of the Victoria Traffic and Engineering staffs presented Mr. Livingston with a handsome solid leather suit case with silver and ebony fittings, and a silver cigarette case with inscribed monogram. If these gifts had not of themselves been sufficient to show the regrets of the staff at parting with Mr. Livingston, the speeches of the engineering and traffic representatives present left no room for doubt—Miss Wells showing that elocutionary excellence gained as an L.T.S. supervisor is an invaluable training when called upon to fill the *role* of an after-tea orator. Mr. Livingston replied suitably to all the kind things said about him. Fortunately, for those present, regrets at parting were softened by the high hopes for Mr. Livingston's success in the commercial enterprise on which he now embarks.

Although Mr. Livingston's case is the only present instance in which a departing exchange manager relinquishes his activities in the L.T.S., it is far from being the only instance in which an exchange regrets the removal of its manager. Consequent upon Mr. Livingston's retirement new chiefs reign at Victoria, Trunks, Gerrard, Holborn, North and Hornsey, and one feels (notwithstanding commandments to the contrary) strong temptations to covet the gold watches, alberts, libraries and other articles of value which are carried away by transferred exchange managers.

The War Seals habit appears to be spreading to the L.T.S. Recently Miss Heap received a letter of thanks from Mr. W. J. Roberts, the Secretary of the War Seal Foundation, acknowledging a sum of £20, the first instalment from the sale of seals. An ample stock remains on sale. Who'll buy?

For the third year the staff are collecting for the purpose of sending Christmas parcels to those members of the L.T.S. who are away with His Majesty's Forces. Excellent results were obtained last year and in 1915, and although there are now a larger number than ever absent with a smaller number to contribute, we are sure that the idea of this bond between the absentees and those who remain is so attractive that a large sum is sure to be raised. This year we have the W.A.A.C.'s as well as the nurses from the women staff, whilst the sterner sex includes amongst our absentees almost every male grade known to the L.T.S., night telephonists full time and part time, call office attendants, coin collectors, cleaners, liftmen, messengers, clerks and paperkeepers, to quote a few. Even if butter is dear and tea almost unobtainable it is an advantage after all if it allows us to add a trifle extra to our Christmas gift for our comrades. There is not one of us probably who has not enjoyed opening a parcel on Christmas morning, but what additional pleasure it must bring when one is in a foreign land to have such a reminder of home.

For any sacrifice we may make we shall get a full reward when we read the acknowledgments from the girls who are adding to the laurels of the L.T.S. in France. If any reader has not already contributed before the issue of these Notes we trust they will make up for the delay by a double contribution. You can't give too much—it all goes to give added pleasure to those whom all of us delight to honour. An excellent and representative committee again has all the arrangements in hand and we who have only to contribute may rely upon the selection of good things sent being just what the absentees are craving for. This is the fruit of experience.

The staff of the Trunk Exchange are inured to air raids, therefore it does not surprise one to know that they held their second annual swimming gala on Sept. 24 at St. Bride's Institute. In order not

to betray the movements of such trusted servants of the State, the members hide their identity under the title of the "Imperial Ladies' Swimming Club." (We fancy some telephone subscribers might suggest "Imperious" as an alternative for the initial word in this title, but then *some* subscribers will stop at nothing.) In any case the gathering proved a great success and the chief events resulted as follows:—

- Learners' race, won by Miss G. M. Sutton.
- Handicap race (50 yards), won by Miss Battersby, the second place going to Miss E. Hall.
- Walking race, won by Miss Bristowe.
- Open length for learners of last year, won by Miss McCall.
- Championship, won for the second time by Miss E. Pickett.
- Blindfold race, won by Miss Temme, captain of the club, with Miss Pickett in the second place.

The prizes were presented by Miss Hough, the president of the club, to whom a most hearty vote of thanks was given before the gathering dispersed. Although the club is only in its second year it has a membership of 81.

The London Telephonists' Society opened its new session on Wednesday, Oct. 10, when the President, Miss Celia K. Hooper (it seems a matter of course these days to have lady presidents) read an address on "Discipline and Control." As we shall hope to see the address reproduced at length in this JOURNAL we will not set out here any detailed reference to the many excellent points it contained.

Miss M. Macmillan, of the Traffic branch, recited one of W. S. Gilbert's nonsense rhymes by way of checking any tendency to great gravity on the part of the gathering, and it fair to say that the success of her effort (for it was highly successful) lay much more in the manner than in the matter of this contribution. Thereafter a discussion on the subject of Miss Hooper's address was introduced by Mr. Stuart Jones who, as immediate-past-president, occupied the chair. Mr. Valentine, Mr. Edmonds and other male members continued the discussion, but the contribution of the lady members proved to be of a somewhat fleeting character—probably they felt that "actions speak louder than words" and that they showed by their active silence the best of discipline and the most complete self-control. In any case the gathering was of a pleasantly sociable description and the refreshments which were available at pre-war prices made one envy the lot of those whose working life is spent in the Museum Exchange building. The society already numbers just on 400 members, which for this year must be regarded as phenomenally good, and a great personal tribute to the popularity of the president.

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### WITH THE FIELD TELEGRAPHS IN EAST AFRICA.

WE have pleasure in publishing a further letter from Mr. F. J. Ford, Tabora, German East Africa.

Fortune has at length brought me to Tabora, the chief centre of a huge lump of this, the last colony in which the Germans are maintaining a foothold. Years and years ago when I was first crossing Lake Nyanza it was spoken to me by some Belgian officers on the boat as the future death-place of German power in Africa. But they were wrong as the newspapers have long since told you.

It took me two days by car to come here from Schinyanga, and interesting days they were. Sometimes we were on a road, sometimes on a mere track, and frequently neither was apparent as we cut across plains or through dense forests. The scenery in crossing the Tinde Mountains was superb, and even the dry plains were of constant interest to me by reason of the beautiful birds and insects and the huge palms and other tropical plants which we passed (at a reckless speed) from time to time. The distant hills, as is generally the case out here, seemed, by virtue of the clear atmosphere, to have height but no breadth having, as it were, the appearance of huge pieces of sand coloured cardboard arising out of the earth. Natives frequently stood forward in our way to present us with basins of refreshing milk. Had this occurred at home I should have gone on filled with delight at the donors' generosity; but I am inclined to doubt whether this virtue alone, if at all, prompted our black friends' action on this memorable journey. We did not encounter much game on the way, at which I was somewhat surprised;



but we wasted a few shots amongst a picturesque group of five huge baboons which crossed our path on the first day. The driver of my car, a young fellow from Johannesburg, was much troubled by malaria during our trip; but fought manfully against the violent attacks of sickness which frequently overcame him. He was able to get me here all right however and, after some difficulty, we managed to find the building chosen a few days previously as our office. It is situated in a beautiful bungalow of which I and my colleague, Cpl. Warren, have exclusive use. Right on top of a hill above the town it profits from every passing breeze. In construction it leaves nothing to be desired. The rooms are large, lofty and stone floored. The numerous windows are provided with iron gauze to keep out, or in, as the case may be, the flies and mosquitos. There is a bathroom, kitchen and spacious verandah, where we sit, shaded from the sun and enjoying the breeze, smoking innumerable black cigarettes. The garden is of fair size and abounds in cactus and sisal hemp plants. A black cook and two native boys attend to our wants in the way of food, and a small army of pagasis (native porters) are in attendance to fetch water, clean clothes, shine lamps or execute any other little job which may crop up. These chaps have constructed their little straw huts in the garden, in accordance with the usual practice of natives out here.

We are the only British stationed here and are miles from our nearest depot. We are rationed for two months, and have been provided with 30 bullocks for meat; so we have quite a decent farmyard. We have a bullock killed every second day, and reserving the choicest parts for our own consumption, leave the rest to the pagasis. As a matter of fact we are getting tired of ox tail soup, ox tongue, heart and brains, and long for a sheep or two. Luckily there are great numbers of Mango trees in the vicinity of the town, and although the fruit is not yet ripe, when boiled, it makes a most appetising dish especially when stewed with dates of which we have a sackful. Milk, eggs, and vegetables are unobtainable just now, but we anticipate being able to secure some after the heavy rains. The country has been swept clean of agricultural produce by the retiring and advancing armies. The two Belgian-Congo native soldiers attached to our staff for delivering messages sometimes find a fowl or two; but owing to complaints from local natives I have told them to find no more. The late residents here evidently went to considerable expense in furnishing the bungalow; and although nothing much is left of an easily portable nature, there is plenty to make things quite comfortable. It comes to us as a luxury after many months in the wilds to lounge in an armchair and to be able to have a decent bath when we feel like it.

My two other particular friends out here, McBride of Liverpool, and Haskayne of Manchester, have recently returned from Kampala hospital after a lengthy stay and are together at the next station down the Line, Igalula. They have a chap there who plays the accordion (I think that's how they spell it) and often on an evening when the wire is quiet, he gives us and the station on the other side of him, Malongwe, the benefit of his ability, as all kinds of sound are transmitted by the particular instruments we have in use on this section.

As far as I can judge at present Tabora is the healthiest place I have struck since leaving Uganda. I have not had a day's fever for over a month. The town is very interesting and of fair size. Years ago it was a large centre for the slave and ivory traffic and now has a population of about 30,000. The two principal streets are thronged in the evening with Belgians, who occupy the place, Greeks, Indians and natives, picturesque in their long white gowns and multi-coloured fezzes. We are saluted by all the natives as we pass by, and even small children playing in the dust rise and stand to attention. There are dozens of Greek, Indian and native shops, but beyond skins and tobacco there is little to purchase, as during the last two years the Germans appear to have experienced difficulty in obtaining goods from the outside world. Most of the thoroughfares of the town, including those of the extensive native quarters, are planted with trees, chiefly gum and Mango. But the prettiest road, in my opinion, is the one planted at short intervals on both sides with young cocoanut palms, now about 20 feet in height. The small market place is likewise planted with cocoanut and other palms. There is plenty of breathing space in the town, and besides the other trees I have mentioned, most of the open spaces are beautified by small clumps of banana plants, which reach the respectable height of about 20 feet. There is a public garden here filled principally with palms planted quite artistically, in straight ranks and files. Nosing about a few days ago I found several lime-bearing trees in this garden, and we now enjoy lemonade every afternoon. Frowning from the top of a hill, is the huge stone Boma or Government house, which, from the severe heavy style of its architecture, unless it had been planned by our German friends, would appear to have been constructed with the view of inspiring awe in the hearts of the people in the town. The natives go in more for dress than is usual out here, and in many cases the result is very comical. The women sometimes appear in European hats and sport umbrellas, even when there is no possibility of a shower. Yesterday I saw a youth with socks and suspenders, khaki shorts, two shirts, white and blue, both nigger fashion, hang out of his trousers, and a stiff high collar and a bow. On another occasion I noticed two girls wearing long straight trousers, quite tight, reaching to the ankles. These trousers of light grey material terminated at the lower end with huge flaps.

The country round about is covered with thin bush, but being very hilly presents some fine views particularly at dawn, sunset and in the moonlight.

Well I see I am nearing the bottom of the page and in any case I have little more to add, without risk of offending the Censor. There being no British Post Office here I shall have to send this through the Belgians or hand to a motorist for posting at Ndala or Igalula.

## AN R.E. IN BAGDAD.

THE following letter received by Mr. Preston from one of his staff, Mr. Patrick Kenny, R.E., in Bagdad, will interest our readers:—

On entering Bagdad our camp was pitched near the River Tigris in a wood shaded by tall palm trees adjacent to the signal office, which has been opened in a building in the main street and opposite to where General Sir Stanley Maude had taken up his quarters. We had orders to rest as much as possible, but early next morning (March 13) we were hard at it again because G.H.Q. had to be placed in telegraphic and telephonic communication with various important points.

This work kept the whole section very busy for some days, and took us to parts of the town where the majority of troops were not permitted to go.

Owing to the rapidity of the continued advance, the order was given for the greater part of the section to proceed further up the line for temporary duty with the pursuing columns, and I was left at G.H.Q. with other N.C.O.'s and the few remaining men to carry on, and it fell to my lot to be in charge of parties building lines to various parts of the town and surrounding neighbourhood: this included lines to the office of the Military Governor and the Provost Marshal.

In building some of the lines the River Tigris had to be crossed. At this point this was done by means of wires from aerial poles, about 100 feet high on either side of the river, which the Turks had left standing, and by laying submarine cable.

One morning one of our flying men had the misfortune to collide with the overhead wires, crossing the river, breaking one of them, but happily without causing serious injury to himself or his machine. The work of replacing the broken wire by means of cable (D5) was very dangerous, but was successfully accomplished after hours of risky hard work, and the honours of the day lay with a young permanent linesman of the G.P.O. staff from the Lancashire district. Of course all present lent a hand, but the manner in which he climbed those very dangerous poles was simply marvellous.

I have built permanent routes in various parts for considerable distances, all of which have proved a success. One thing I invariably do when responsible for building a line is to make the final test myself with the signal master: it proves more satisfactory to all concerned.

I do not profess to know all that might be known about army telegraphs, &c., but I have always managed to carry out satisfactorily every job which has been entrusted to me. I think I have now said enough regarding the work.

I mentioned briefly in my last letter that I had reason to believe that I had passed as a Field Line Telegraphist *skilled*. I am now pleased to be able to confirm this. I went through a further test in accordance with the requirements and passed O.K., and have been granted the extra rate of pay of 4*d.* a day from Jan. 1, 1917—there is not so much in the amount of extra pay but it goes a long way towards bucking one up to greater endeavours.

The town on arrival was in a very dirty and insanitary condition and the shops very dilapidated, the Turks having caused as much destruction to property as they possibly could in their hurried retreat. The manner in which the British Authorities dealt with the situation was marvellous. Departments necessary for the governing and control of a big town were brought into existence with a chief officer in charge of each, the principal ones being post and telegraph department, sanitary, supplies, shipping, lighting, civil police, native labour, medical, &c. After a few days considerable improvement became noticeable, native scavengers had the streets thoroughly clean by 7 a.m. each day, and it is now a pleasure to walk through any part of the town. All stray dogs (with which the place was overrun and which were a source of danger to us when working in the dark) have been shot and buried.

At first the whole of the population used to appear in rags, but now the majority of them (the lowest class Arabs being excepted) have donned beautiful Oriental costumes and the scenes in the town, especially during Saturdays and Sundays, are very picturesque, all the colours of the rainbow being used in the clothing worn by the ladies in general.

We were allowed out on pass and then in small parties, but fully armed, but now, although we still require a pass, we can go about single-handed and it is not necessary to carry arms unless proceeding outside the town. The people are delighted with the change and assist the authorities in every possible way.

As was to be expected, during the early days of occupation, violence, disorder, looting, &c., was rampant, but it was very seldom that the culprit or culprits escaped, if after arrest and trial they were proved guilty, short work was made of them. In cases of crime of a lesser degree the punishment awarded was that which justice demanded, and many a wrong-doer's back tingled for weeks. Crime and disorder has now practically ceased.

The business houses, hotels, shops and restaurants have been redecorated, re-opened and business is now in full swing. A few days ago I was invited into one of the houses by an Armenian merchant and shown carpets to the value of £30,000 awaiting shipment to America when opportunity arrives.

The streets are being named, the principal one is called New Street. Oil lamps have been fixed up for lighting purposes. Electric light is being installed at various points. Public gardens have been laid out on the banks of the river. Concerts are held there once or twice a week, the music being rendered by the bands of Indian Regiments stationed here.

One of the brightest sights to be seen in Bagdad is when General Sir Stanley Maude (accompanied by members of his staff and guarded by officers

of the Indian Army) is making his tour of inspection. The General rides in the centre of the roadway, a staff officer riding on each side of him, immediately behind follows one of the Indian officers carrying the Union Jack. On the General's approach everyone stands at attention and salutes, this the General acknowledges accompanied by one of his pleasing smiles which apparently satisfies everyone. It is on such occasions that the British Tommy feels about 3 inches taller than he really is.

One thing I will always be pleased with, that is, on Easter Sunday 1917, in the early morning, I had the honour and good luck to sit beside General Sir Stanley Maude at the celebration of Holy Communion in a small room attached to General Headquarters, the officiating clergyman being the Rev. Col. Jarvis one of the proud possessors of the Military Cross.

Our special work is now at an end until the next advance begins, the whole of the telegraph lines up to this point having been taken over by the Government of India, Telegraph Department. We get up at 4 a.m., attend stables and exercise until 7.30 a.m., then breakfast and rest until 5 p.m., when we again parade for stables until 7 p.m.

For the past two months I have been struck off other duties and placed in charge of 100 Arabs constructing a new camp for the section and making things as comfortable as possible. I have pitched eight large double Indian tents which cover a ground space of 42 feet by 18 feet each. The earth had to be dug out to the depth of 3 feet 6 inches, then mixed into mud and walls 2 feet 6 inches wide and 4 feet high, built up all round, leaving exits at each end, and an artificial roof made of cocoa nut matting. When the whole was completed the inside was quite cool and the place comfortable to live in, these places hold 28 men each.

The Commandant has expressed his satisfaction at the way I managed the Arabs and carried out the work, his opinion being that the places were more comfortable than many barrack rooms he has seen, many of the little improvements made therein being my own ideas.

At the present time I am engaged in building a riding school 50 yards by 20 yards. Of course, it will not be similar to those found round Kensington, but it will answer its purpose when I have completed it.

The Berlin to Bagdad Railway is a fine piece of work and has been put to good use by our forces up to the point they have reached. The engines, carriages and trucks are very massive, a splendid permanent telegraph route had also been built running parallel to the railway.

The views of Bagdad and neighbourhood as seen from the River Tigris are very beautiful indeed. I suppose the day is not far distant when Messrs. Cook & Son will be running cheap trips to this part of the globe.

I do not know that there is anything further in particular to mention only that although things in the past have been very hard, they have at times had their bright side. I am perfectly contented with my lot and have no desire to return until the job has been finally settled. I sincerely hope that my health will enable me to carry on the whole journey.

#### JAPANESE SUPERSTITIONS AND THE TELEPHONE.

The Japanese, like many Americans, we learn on the authority of the American *Telegraph and Telephone Age*, believe there is luck in certain numbers, and are willing to go to great lengths to gain the protection of these lucky symbols.

A single figure telephone in Tokio sells for from 800 to 1,000 yen (\$390 to \$490) a year. The luckiest number in the estimation of business is eight, because the character for it spreads downward and suggests the idea of gathering prosperity.

Number 753 is also believed to be a lucky number, because children are presented at Shinto shrines on their third, fifth and seventh birthdays. Indeed, odd numbers are lucky. Three figure numbers are not objectionable, if they are as easy to remember as 123 or 555.

The most unlucky numbers are 42 and 49, because the former may be pronounced "shini" which means "to die," and the latter may be pronounced "shiku," which means "death" and "suffering." Therefore, it is said that those numbers are avoided by individuals and generally taken by government officers, schools, police stations, and other invincible institutions.

#### POST OFFICE TELEPHONE AND TELEGRAPH SOCIETY OF LONDON.—PROGRAMME 1917-18.

Meeting Place.—Sunday School Union, 51, Old Bailey, E.C. 1.  
6.30 to 8.30 p.m.

1917.

Oct. 22.—Brief Introductory Address by the Chairman (Mr. G. F. Preston), followed by a paper entitled "The Working of C.B. Private Branch Exchanges," by Mr. H. S. Thompson (Engineer-in-Chief's Office).

Dec. 3.—"Impressions of Anglo-Continental Telegraph Working in War Time," by Miss Shell (C.T.O.). Second paper not yet settled.

1918.

Jan. 21.—"Some Points of Comparison between Two Large Exchanges," by Miss M. I. McCallum (Chief Supervisor, Gerrard Exchange).

"The Physical Effects of Telegraph and Telephone Work," by Mr. James Jack, Assistant Exchange Manager, London Trunk Exchange.

March 4.—"The Training of Boys," by Mr. C. E. Fenton, Staff Officer, Birmingham Factory.

#### FROM EGYPT.

A CORRESPONDENT attached to the Kantara Military Exchange sends us the following paragraphs:—

A traffic superintendent from Cairo Exchange, when visiting one of the exchanges (Kantara) in the main line of communication to Palestine, related some funny stories about the use of the telephone in Egypt.

A certain native shopkeeper had a telephone installed. The apparatus was fitted in the back room, and his servant was given instructions that if anyone called, he was to fetch his master from the shop in front. The bell rang and the servant answered the telephone. Upon being asked for the shopkeeper, the servant simply got a pair of scissors and cut the receiver cord and carried the receiver into the shop for his master to speak into. The subscriber then sent in a complaint to say that the telephone was out of order.

Another subscriber who could only speak Arabic, was rung up and the message conveyed to him was in Greek. As the subscriber could not speak this language he sent in a complaint to the exchange asking for his telephone to be taken away and one put in its place which would only speak Arabic.

#### THE LAY OF THE TELEPHONE OPERATOR.

(1)

The Officers, they ring us,  
They ring us when in need,  
And we must then insert a plug  
And answer them with speed.  
"Kantara" or "Exchange sir,"  
[s what we have to say,  
And if we are not quick enough  
There's little h—— to pay.

*Chorus.*

Its "Signals Here," "Ho Signals There," as the indicators drop,  
And sometimes indicators fall as if they'd never stop,  
The Officers may leave their 'phones, their orderlies may leave,  
We say "Kantara" or "Exchange" from morn till dewy eve.

(2)

Sometimes they ask for numbers,  
Again they gives us names,  
And if we don't know who they want  
Consign us to the flames.  
We take their call and ring away  
As hard as we can go,  
But sometimes there is "No Reply"  
And then the swear words flow.

(3)

And, if, by chance, the number  
He is seeking is "Engaged,"  
We often gather from his words  
Our sub. is much enraged.  
But usually we get him through:  
They talk like busy bees.  
But it is "Get off Signals"  
When we ask "Finished Please?"

(4)

The other things we have to say  
Are all in well-known phrases.  
"Line out of order" often gets  
Us sent to—well to Blazes.  
"Line Engaged I'll ring you,"  
For a trunk is often said:  
But should you once forget to ring,  
T'were better you were dead.

(5)

The operators troubles  
Are never far to seek.  
He must be careful what he says,  
Or else he's "giving cheek."  
But though Courts Martial hang around  
These do not cause my moan:  
'Tis the weariness of saying  
The same things down the 'phone.

"HADSOME" (*Military Operator, E.E.F.*)

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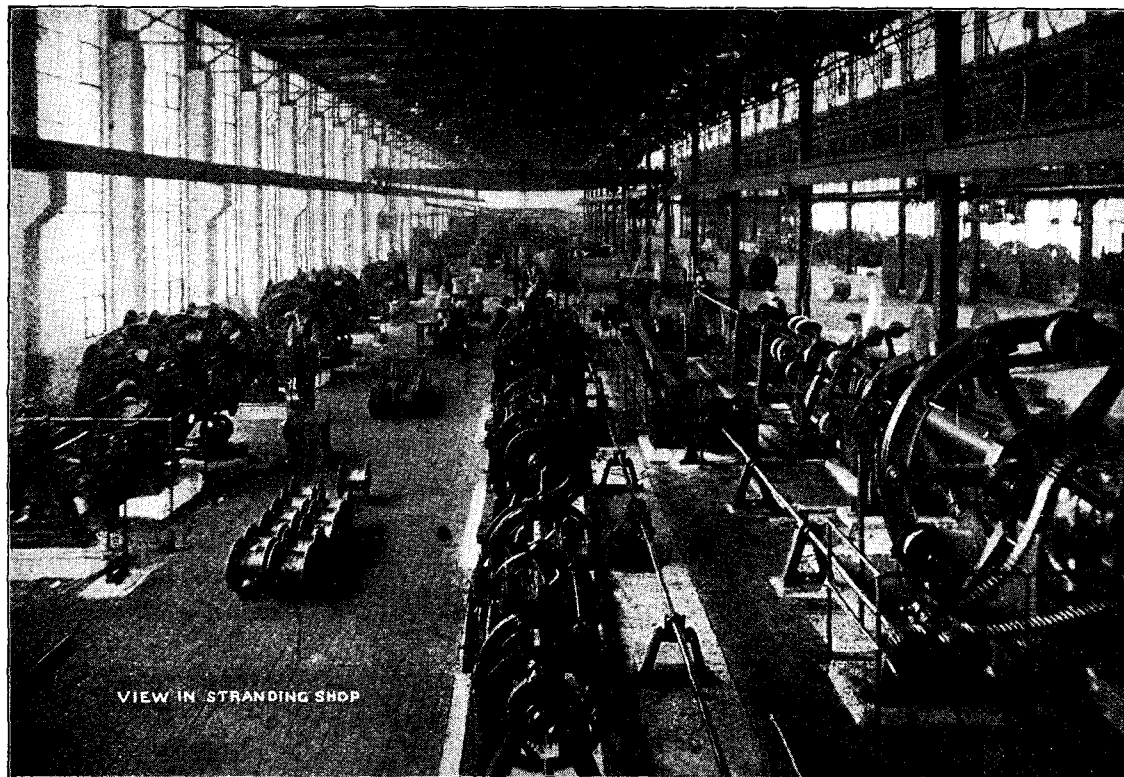
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## CORRESPONDENCE.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

WITH reference to the rather discursive letter by Mr. Murray regarding the duplexing of the Baudot I certainly would not willingly do him or any man an injustice, but as he has put forward certain questions he must not be annoyed if the answers are not exactly what he would like them to be.

Most if not all practical telegraph men are acquainted with the development of printing telegraphs and the way in which the British Post Office encourages and assists inventors in every possible way to develop their ideas. Unfortunately the majority of these ideas do not mature or are sometimes obviously hopeless, resulting in a verdict which is not always received with the same grace as the assistance. This attitude is to some extent pardonable if kept within reasonable limits because of the extreme disappointment that must be felt by those inventors.

Such a case occurred in 1906-7, when in a semi official capacity I criticised in a fair and unbiassed manner, as shown by subsequent events, the Murray automatic as compared with the Baudot multiplex, and showed by description and diagram how the Baudot duplex multiplex would be much more useful still. This criticism and suggestion made Mr. Murray very, very angry, and in order to appease him he was allowed to write a reply to my criticism, which reply was duly printed and published by the Institute of Post Office Engineers without reference to me and to which my rejoinder was not made public. His reply was reviewed in the *Electrical Review*, Vol. 62, No. 1,593, of June 5, 1908, and the reviewer did not appear to be favourably impressed by Mr. Murray's contentions.

Mr. Murray's reply is still in print and can be purchased from the Institute of Post Office Engineers. In it he attempted to show how impossible it was for any duplex multiplex to compete with his automatic. The statements contained therein are sometimes rather amusing in view of his latest contentions, as for instance, he stated "There is nothing to be gained in most cases by working a multiplex system by the duplex balance," also, "There remain only commercial reasons against the duplex balance for multiplex systems." Then, in reference to Baudot sextuple duplex handling an estimated 700 messages per hour, he stated: "Would any practical man in his right mind rely on one telegraph wire fitted with extremely complicated and delicate apparatus, to handle such a mass of traffic?" (Actually the Baudot sextuple duplex has dealt with more than 800 messages in one hour.) Again he stated: "What practical man is going to rely for the handling of telegraph traffic on a line having duplex delicacies superimposed on sextuple Baudot delicacies—the thing is absurd."

Yet in 1911 he saw the error of his ways and in regard to his duplex multiplex arrangement, in a paper before the Institute of Electrical Engineers, he stated: "Special arrangements have been designed to give up to six transmissions in each direction." This paper of his practically supported all my criticisms and suggestions of 1906-7 and makes it hard to believe that the Donald Murray of 1908 could be the same Donald Murray of 1911.

I notice in his recent letter he states that he ultimately shook off the tradition of the automatic as a result of seeing the Rowland at intervals from 1899 in Baltimore to Berlin in 1905. Yet he wrote that other paper in 1908 showing that he was even at that later date still not disillusioned, and apparently his recovery took place after the Baudot duplex had proved its worth in 1910.

The results obtained on the duplex Baudot had not only more than justified my estimate but the Murray automatic had also justified my criticism. Mr. Murray subsequently, presumably on account of those results, abandoned his own view and applied similar general duplex arrangements to his modification of the Baudot multiplex. But up to the present I have not seen or heard one word of acknowledgment from him of the correctness of the criticisms and practical suggestions that put him on the right path of progress in printing telegraphs and enabled him to obtain a certain amount of notoriety and fortune from following my lead which he might have done some five years earlier than he actually did, if he had accepted my advice and assistance which was freely given him from time to time as an official arrangement.

I will now answer his questions:

(1) I claim to have arranged and perfected the first thoroughly successful duplex multiplex, providing six, eight, ten and twelve channels on one circuit working under the usual difficult conditions of every-day service in the Post Office. Other duplex multiplex systems giving eight channels have been made to work but have failed to give satisfaction under average working conditions, and it was not until after the remarkably successful results had been obtained by the duplex Baudot that the Murray duplex multiplex and, later, the Western Electric duplex multiplex systems were arranged on similar lines with modifications of details and that the double duplex Baudot abandoned by France in 1900 was again revived in 1914.

In justification of this claim, the special committee appointed by the Postmaster-General to inquire into the various systems of high-speed telegraphy has done me the very great honour of describing the Baudot duplex multiplex as the "Booth Baudot duplex."

(2) I claim to have devised the successful arrangements of the connections, switches and balancing facilities that permitted the extraordinarily high output to be obtained, an output that in 1908 in a paper published by the Institute of Post Office Engineers, Mr. Murray described as "absurd" and in which he implied that only a madman would adopt such a system, and yet he adopted it within about three years.

The use of this method or working has not only saved the Post Office public service hundreds of thousands of pounds in line plant but has increased

the operator-output per hour considerably, with less labour to the individual operator. I am unable to supply figures to give an idea of the very large saving that is involved in this particular direction alone, but it must already be very large indeed. Similarly in India, Germany, France and America the saving due to the use of the duplex multiplex based on the Baudot duplex must be enormous. This brings up the question of the price of these instruments. Many people may consider that the cost price asked is not important in view of the tremendous saving involved, but this is incorrect. The value of these latest appliances must be reckoned in comparison with the value of the Baudot duplex, which is clear of all patent charges. If the saving is about the same as that of the Baudot duplex it is obvious that they should cost approximately the same. Keyboard perforators are quicker than the five-key keyboard of Baudot, but the maximum speed of the Western Electric multiplex receiver is said to be 52 words per minute, and an average speed is taken at 45 words per minute. The Baudot five-key keyboard and receiver work at 30 words per minute normally, but the writer has worked them at 45 without difficulty and with only a few false letters at 50. As any make of suitable keyboard can be applied to the Baudot without infringing patent rights there is not much possibility that any of the modified duplex Baudots will greatly exceed the output of the original duplex Baudot. Therefore there is no reason why a fancy price should be placed upon these machines.

(3) Several other duplex multiplex systems have been devised and have worked for periods, but they have all been turned down for specific weaknesses or disadvantages, whereas my arrangements have not those weaknesses or disadvantages and have thus proved successful where every other duplex multiplex has been abandoned.

The French Telegraph Service apparently had not attempted anything more than a double duplex, which they considered not so suitable for their service as a quadruple simplex, although they are now extending double duplex and triple duplex and will no doubt reach quadruple duplex if not sextuple duplex.

(4) There is as much difference in duplexing the Baudot and in duplexing any other telegraph apparatus as there is in the application of the phonic wheel motor drive to the Baudot distributor after it had been in use successfully for many years on the Delaney distributor (Mr. Murray, I believe, holds a patent for this). The same remark holds good in the case of the "automatic start and stop" (by the tightening of the paper tape) which Mr. Murray has applied to his automatic transmitter, although a similar arrangement had been in use for a number of years on the Creed translator. (Mr. Murray holds a patent for this application also.)

(5) Yes, the application of the duplex balance to the Baudot multiplex to procure—

- (a) Baudot triple duplex giving six channels.
- (b) Baudot quadruple duplex giving eight channels.
- (c) Baudot quintuple duplex giving ten channels.
- (d) Baudot sextuple duplex giving twelve channels. None of the above had been produced previously and all of them have proved successful.
- (e) The greatly increased means for utilising a number of stations on one circuit and giving direct communication by two or more channels between five or more stations on one line.

The French Telegraph Service had tried simple duplex (one channel in each direction) and double duplex, but had abandoned both by 1900 in favour of quadruple simplex; while their omnibus circuit working did not go beyond quadruple simplex with extensions.

(6) A successful duplex multiplex of six, eight, ten and twelve channels which did not exist previously.

The Rowland duplex multiplex failed on account of its obvious inferiority of more signals per letter than the Baudot.

I have already trespassed considerably on your space and good will, otherwise I should have liked to have dealt with all the other points raised but must beg your indulgence for two further remarks.

Mr. Murray claims that multiplex development has been essentially a French and American achievement, with a cosmopolitan flavour contributed by him, &c. Yet he wrote that paper of 1908 endeavouring to stop the development of the duplex multiplex that I desired in 1906-7. He was not, of course, aware of the fact that I had supplied, in my official capacity, considerable information and recommendation of the Baudot duplex to New Zealand officials and had advised them that the Murray multiplex was to all intents and purposes a Baudot duplex, and that they would run no risk in trying the experiment beyond that associated with the mechanical portions of Mr. Murray's apparatus. Similarly as regards Australia, Berlin, Petrograd and elsewhere.

He states that Baudot's work is only now beginning to be appreciated by English speaking countries, thanks to Mr. H. H. Harrison's publications. This is rather surprising as I was pressing for the Baudot in the British Service in 1902: the first full description of the Baudot system in an English work was written by myself for Professor Magnus Maclean in 1903, and my Institute paper that made Mr. Murray so very angry was written in 1906 and published in 1907. I have yet to find the paper by Mr. Harrison, of an earlier date than 1914, advocating or describing the Baudot system.

There are other misstatements of his that require correction or modification and I will deal with these in a subsequent issue if you can find space or consider it necessary in view of the facts which I have given in the foregoing. Otherwise, having carried out my duty to the Post Office as a public servant and having no financial interest in the controversy, I am quite content to leave the matter to the judgment of your readers.

A. C. BOOTH, Major R.E.

Oct. 10, 1917.

## THE TELEPHONE "DOING ITS BIT."

DISPATCHES from all of the war fronts of the nations engaged in the great conflict furnish convincing evidence that the telephone is certainly "doing its bit." While the telephone was expected by engineers to do its share, the ordinary soldier in the trenches probably had no idea what a vital part of the war the telephone would become. In open field manœuvres it has always taken a definite and prescribed place, and come to be considered indispensable by signal officers everywhere.

Modern war, as illustrated in the great conflict, has brought about many further uses and opportunities for greater application of the telephone. Most of the old equipment has been relegated to the function of a mere accessory in the new field that has thus suddenly been brought into existence. A very few technical war experts predicted trench warfare as we now know it, but even they did not foresee that it would almost monopolise all fronts of the conflict.

Detail descriptions of trench warfare and the illustrations accompanying them show very clearly that veritable small towns are built underground. That necessity for providing all of the requirements of the soldiers, not only for winter but also for the other seasons of the year, is readily apparent. In a great many instances, especially on the Western front in France, the inhabitants of villages, towns and even cities have developed almost permanent underground means of existence. A condition of this kind would make the use of a telephone indispensable with war in the immediate vicinity. Communication over any distance would be almost impossible without it.

The more recent dispatches from the front have stated that it is the practice in using the telephone to revert to the old system of ground return. They also describe the elaborate switchboard systems that are installed at advantageous locations and the large number of calls and orders that are transmitted for almost every conceivable purpose. By means of certain equipment not described the Germans are able to detect and decipher telephone messages sent over wires within 500 feet of their lines. This is possible only because the earth is used for a common return.\*

Other dispatches have pointed out the advantages to either side of locating the telephone switchboards and by sudden dashes capturing them. In this manner it is possible to obtain valuable information by acting as an operator for the enemy. It is said such an operator has so acted for hours before being finally detected.

It is clear, therefore, that in addition to efficiency, secrecy is a great asset in telephone war service.

It immediately occurs then that a suitable automatic system would be the most desirable. The automatic system would, of course, require a metallic circuit, but as pointed out this expense would be justified as a matter of secrecy. The automatic system would not require an operator. It would thus be impossible in capturing an automatic system to compel the attendant to answer calls of his officers.—(W. N. FURTHMAN, in *The Telephone Engineer*.)

\* This statement requires considerable modification. There are some circumstances when a telephone message may pass over a single wire circuit but, we believe, it is not correct to say that the majority of telephone wires at the front are earth return circuits. In fact we should consider it the exception.—(ED. "T. & T. J.")

### THE PENALTY OF BEING OBLIGING.

"What a nuisance the telephone is at times!"

"Yes, but it isn't half the nuisance it used to be."

"What do you mean?"

"I can remember the time, when telephones weren't so common, I used to have to spend most of my evenings carrying unimportant messages to the neighbours."—*World Forum*.

### THINGS ONE CAN'T SWALLOW.

At Mount Pleasant, Texas, a coloured man came into the public telephone office and insisted that some one should talk for him. Upon being told that he would have to do his own talking, he approached the telephone, took down the receiver and, after turning it over two or three times and examining it carefully, said: "Boss, Ah don't believe Ah kin get dat dah t'ing in mah mouf."—*Buffalo Commercial*.

## PERSONALIA.

### LONDON TRAFFIC STAFF.

Mr. J. WEST, Exchange Manager of North Exchange, has been transferred to Holborn. He was presented with a gold watch chain and a leather wallet by the staff of the North district.

Miss E. M. WILLIAMS, Assistant Supervisor, Class II, of Paddington Exchange, resigned to be married and was presented with a cruet, salad bowl and other useful gifts.

Miss R. ANSLOW, Assistant Supervisor, Class II, of Wimbledon, has resigned in view of her approaching marriage. She was presented with a tea service and many other useful presents from the staff.

Miss FLORENCE H. H. MOORE, Assistant Supervisor, Class II, of London Wall Exchange, resigned to be married and was presented with a case of silver fish knives and forks, and a pair of silver candlesticks from the staff, and a silver cake basket from the telephonists in her division.

Miss C. L. CRITTENDEN, of North, has resigned on account of marriage. She was presented by the staff with a tea service and other useful presents.

Miss KATHLEEN FARRELL, of the Trunk Exchange, resigned in view of her approaching marriage and was presented with a case of teaspoons and many other useful presents by her colleagues.

Miss HELENA G. FRIEND, of the Trunk Exchange, has resigned to be married. She was the recipient of a case of fish knives and forks and many other useful gifts.

Miss ELSIE L. NEWBURY, of London Wall, resigned on account of marriage and was presented with a dinner service from the staff, and a trinket set from the section.

Miss DOROTHY M. FARRANT, of London Wall Exchange, resigned in view of her approaching marriage. She was presented with a dinner service by the exchange staff, a silver cake basket, a case of afternoon tea knives and a picture from the Test Room staff, and several presents from other friends.

Miss E. A. M. BASS, of Hop Exchange, has resigned to be married. She was presented with a set of vases by her colleagues.

Miss M. A. HERRING, of the Western Exchange, has resigned on account of marriage and was the recipient of a Queen Anne teapot and pickle jar from the operating staff, and a silver cake basket and vases from the clerical staff, as well as other useful presents.

Miss R. BATH, of East Exchange, resigned in view of her approaching marriage and was presented by her colleagues with a pair of pickle jars on a silver stand and various other gifts.

Miss L. J. GARDINER, of East, has resigned to be married. She was presented by the staff with a silver and glass rose-bowl, a silver cruet and other gifts.

Miss M. A. S. NOBLE, of New Cross Exchange, resigned on account of marriage and was presented with a silver cake-basket and knife from the staff, also several other gifts from her colleagues.

Miss A. E. BADCOCK, of Greenwich, has resigned in view of her approaching marriage. She was presented with a case of silver tea knives and numerous other presents by the staff.

### PROVINCIAL STAFF.

Miss E. W. BRIGGS, Telephonist, Hanley Central Exchange, has been transferred to Whitstable on the grounds of health. She was presented with a wristlet watch on the occasion of her leaving the Hanley district.

Miss C. M. MOSS, Telephonist, Hanley Central Exchange, has resigned. She was presented with a silver purse on leaving.

Miss D. A. WEBB, Telephonist, Hanley Central Exchange, has left Hanley for work as Telephonist in France. Her fellow telephonists presented her with a silver watch on leaving.

Miss L. MYCOCK, Telephonist, Leek Exchange, has also taken up work as Telephonist in France.

Miss F. STEWART, Telephonist, Belfast, has resigned in view of her approaching marriage and was presented by the staff with a silver tea service.

Miss DOMGAN, Telephonist, Newtownards, has resigned to be married and was presented by the staff with a lamp and other useful presents.

Mr. T. BROWN, Traffic Office, Belfast, has been gazetted to a commission in the Royal Irish Rifles.

Mr. W. CLARKE, P.O. Engineers, Belfast, at present serving with the Ulster Division, has been awarded a Parchment Certificate for gallantry in repairing telephone lines under shell fire and devotion to duty during the attack by the Division on July 1, 1916, at Thiepval.

### OBITUARY.

We regret to record the death on Sept. 6 of J. T. GALE, Clerk on Overseer's scale, District Manager's Office, Middlesbrough.

Mr. Gale commenced his career in the Telephone Service in 1899 as a clerk under the National Telephone Company and was promoted to the Overseer's Class in 1913. He was held in great esteem and respect by the staff and the loss is keenly felt by his colleagues.

The deepest sympathy of all is extended to his sorrowing relatives.

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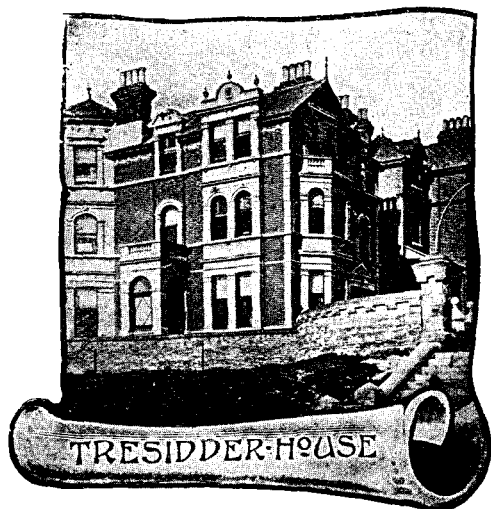
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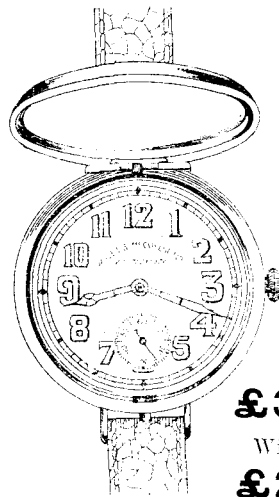
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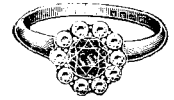
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# THE Telegraph and Telephone Journal.

VOL. IV.

DECEMBER, 1917.

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### WAR AND ITS EFFECT ON THE TELEPHONE.

BY HILDA MARY JOY (*Sutton Exchange*).

THE present day is one in which nearly every branch of trade and commerce has been greatly affected by this war, and although civilisation has reached a very high standard, and scientific inventions are in evidence in every direction, there are very few establishments indeed which have been able efficiently to carry out their usual routine under the present circumstances, in spite of the many labour-saving devices which exist.

In every business centre the male staff has been decreased more or less very considerably, and in many cases their places have been taken by women, but in the Telephone Service, although the female staff already play such an important part, they are unable to take the place of the engineers, who have joined in such large numbers.

Therefore under the prevailing circumstances it is very difficult to maintain the high standard of working which has been attained during the last few years. Especially at this period the telephone is perhaps the most used and most efficient means of communication between camps and headquarters, towns and cities and even country and continent. In the immediate vicinity of the war, the telephone is still in evidence and is the means of connecting the several lines of trenches with the various staff headquarters and is a boon to the army in more ways than one, especially as the means of saving the lives of many soldiers who in previous times might have lost their lives while carrying messages from one place to another.

Then again at home, camps and military centres situated miles, perhaps hundreds of miles, from London are enabled to hold conversation with either the War Office or Admiralty with the least possible delay, this saves much time and money, and in these days of a great national crisis it is necessary that the telephone system should be able to cope with all the demands upon it as a business necessity and public convenience.

To contend with this with insufficient staff, the cost of material higher and the additional difficulty of delay in obtaining them is not an easy matter.

If we take an exchange and compare it as it is now and as it was before the war, we find in many cases one engineer trying to do the work of two or even three. Naturally he cannot attend to the faults so promptly as could be desired, and under the heavy load of traffic it is obvious that more faults than ever are likely to occur. Consequently we find the operating staff having to work under far from favourable conditions.

Again in the case of air raids, which were at one time fairly frequent, operators were obliged to take up duty at their allotted exchanges at all hours: and to cross London with a few Zepps hovering overhead, dropping bombs, is far from being a pleasant task.

In the centre of the City, the operator's lot was not one to be envied. Operating with little or no knowledge of the state of affairs outside the exchange is not agreeable or easy. Nevertheless, the work has been executed well and I think fully appreciated by the Head Office and also the public.

The effect of the war on the telephone is not without "the lighter side," and not a few cases of amusing instances could be related by telephonists dealing with military circuits, particularly in cases where the control of the switchboard at a military convalescent home or barracks is taken over by an old soldier. I do not mean an old soldier in the literal sense of the word, he is by no means that. Very probably if a few more of the private branch exchange operators and, may I venture to say, some of our night staff (I allude to the male operators) were half as obliging, less antagonism between them would be noticeable.

Such expressions as "Good mornin'," "Miss—267. All good telephone 'gals' go to evvin," or "I say, Miss, don't put that old woman on to me agin. She thought I was a blooming inquiry agent," are not a little amusing.

After consideration one comes to the conclusion that if it is possible to benefit by warfare, then the telephone has certainly done so, not as regards financial affairs, but in the estimation of the public in general. People who were at one time only too ready to vent their feelings on the much abused telephone, have at last begun to realise that the telephone service is not an entirely systematic mechanical process of communication, but one in which the human factor plays a very prominent part.

Business men in particular are apt to forget that the Service or at least the telephonists are only human, and have always been foremost in airing their grievances or offering their criticisms freely, seldom waiting to ascertain if they are fair or accurate.

During the last year or so, many instances have arisen which have shown appreciation of the service on the part of the subscriber. Operators have noticed that in the majority of cases, he is now more ready to listen to explanation and his manner is less abrupt.

To a certain extent this is due to the effect of the war. Whereas on the other hand it must be admitted that in many cases it has originated from the result of that much-urged education of the subscriber. In that case some credit must be due to the operators and thus one finds another asset essential to a good service coming into evidence, that of perfect co-operation between subscriber and telephonist.



For a considerable time these two factors have been the general topics of discussion at meetings held concerning the improvement of the service, and after years of partnership have at least made a firm foundation in the hearts of subscribers and operators.

Another point. There is a time when every employment grows monotonous and telephony proves no exception, and an occupation which necessitates from the Head Office point of view a uniformity of procedure, *e.g.*, regular expressions, is much more liable to become irksome than one which has a wider scope of initiative. The sound of the perpetual click, click as keys and plugs are restored or inserted and the low hum of voices are coincident with the operator's work, and remind one of the incessant "whirr" of machinery. Towards the close of day this is certain to become somewhat trying, but if one has an idea—no matter how hazy, of the object of the calls, it surely makes one's work decidedly more interesting, and one can always work better with the object in view.

Most things considered then, one comes to the conclusion that the effect of the war on the telephone is considerably greater than one would imagine, and it is to be hoped that at the termination of the war it will be generally acknowledged that the telephone, although severely tried, was never found wanting.

### A LITTLE BIT OF HISTORY.

BY FLORENCE K. L. HUNT (*Supervisor, Military Exchange, Aldershot Command, Headquarters*).

It will no doubt afford interest to many of your readers to learn that the substitution of female for male telephonists at the "Headquarters Aldershot Command Military Exchange" has met with unqualified success. We naturally feel proud of the fact, for when the suggestion was first submitted to the Military Authorities, the idea was strongly opposed on the ground that women could not be expected to cope with the heavy traffic brought about by war conditions. It was considered that the strain would be too severe and the nature of the work too important to risk failure.

The Post Office Authorities persisted however, pointing out the tremendous amount of traffic dealt with by female telephonists throughout the country, which traffic the war has increased very considerably.

On Sept. 27, 1916, it was decided in favour of female operators being employed at this office. On Oct. 3, 1916, I interviewed the district manager and traffic superintendent: I was informed that I had been selected to fill the post of supervisor with a staff of established telephonists from Portsmouth who would require training in the abbreviations and technicalities of the military system, and for this purpose I had to acquaint myself with every detail.

When I look back to this time I cannot help but smile. The traffic superintendent remarked, "in fact, Miss Hunt, you will have to be the Military 'Telephone Directory.'" It may be added that there is no Military Telephone Directory published. The frequent changes taking place in the distribution of troops making it impossible to keep a directory up to date. There are also other objections of a military nature.

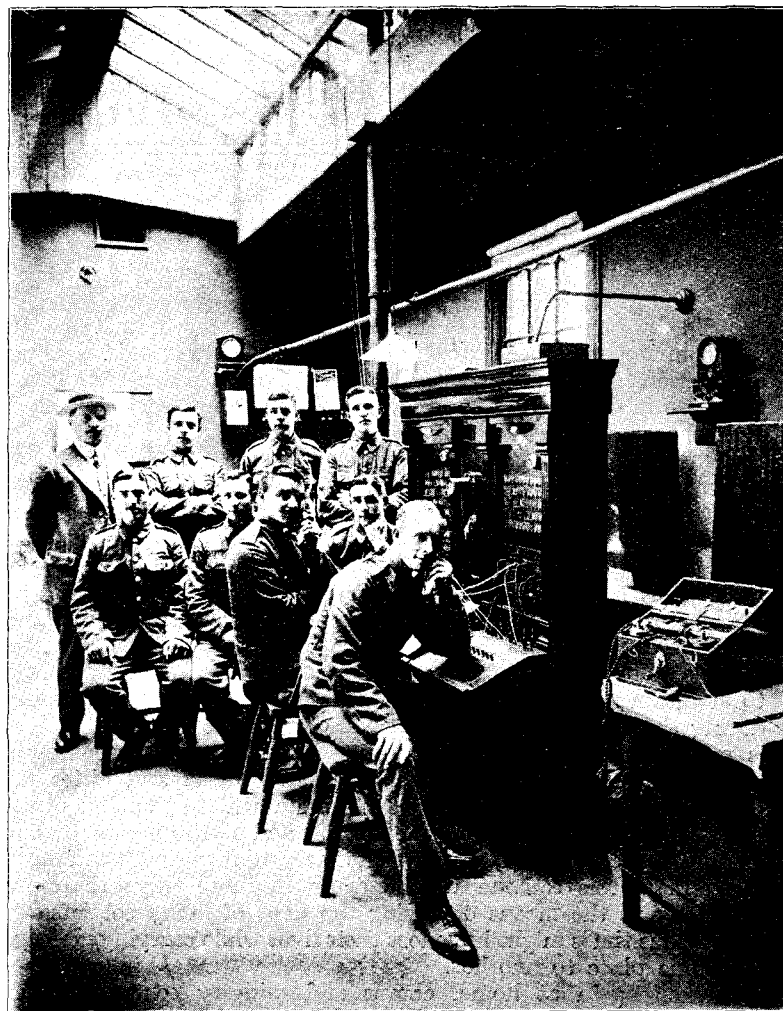
My feelings on learning that I was to take charge are difficult to analyse. I realised the importance of the work and that the traffic was much above the normal. We were to substitute L.T.S. men who had the advantage of two years' experience knowing intimately every installation and crammed with local knowledge. Let me say here that every encouragement was given me by the department.

My first visit to the Military Exchange somewhat damped my spirits but increased my determination to win through. Never in all my experience had I witnessed such telephone operations, top speed being required from 9.30 a.m. until 12.45 p.m. and again from 2 p.m. until 7 p.m.

I must admit that I felt the traffic would be too much for us, but remembered that we had handled over 800 controlled trunk calls in a day at the "Civil" Exchange with only fifteen minutes' approximate delay, in addition to 5,000 local calls. Then why hesitate to tackle this military work? The male telephonists seemed amused when I took a section, which only tended to dissipate any weakness I may have felt and nerved me to further efforts.

On Nov. 6, 1916, the staff arrived impressed with the novelty of the situation and fully prepared to embark on the undertaking, including night duty, in a spirit of earnest co-operation, and make it a success.

The state of the exchange was very bad, no clearing signals being received on any junctions, and P.B.X.'s were connected on junction indicators. The grouping of indicators had been made without reference to sequence of numbers and altogether the boards were in a very unsatisfactory condition for working.



FORMER SWITCHBOARD SECTION, WITH MILITARY STAFF.

Every assistance was afforded me by the postmaster, district manager and traffic superintendent to get this chaotic arrangement rectified.

The excessive pressure of traffic was considered and the telephonists were given a rest period in the morning, which is much appreciated. The Military Authorities had the switchroom painted and distempered, a room adjoining was allotted as retiring room and fitted up with lockers, armchair, small chairs, electric kettle, &c., and an electric fan was also installed in the switchroom. In fact every courtesy was shown us by all concerned.

The first military telephone exchange at Aldershot was supplied

by the military and was experimental. It was installed when the present headquarters offices were opened by H.R.H. the Duke of Connaught in 1895, at which time H.R.H. was in command at Aldershot. It consisted of one 20-line switchboard, battery ringing, earth return. The average number of calls per day was about



TELEPHONISTS WHO TOOK CHARGE OF THE MILITARY EXCHANGE AT THE OUTBREAK OF WAR.

60. Later, a post office 50-line magneto board was installed. Up to this time a great amount of the traffic was dealt with by "Military Telegraphs," but as the value of the telephone became recognised, the telegraph lines were gradually replaced by telephones. This necessitated the provision of a second switchboard. When this was put in, the lines were made metallic. Messages were forwarded and received and taken down on telegraph forms



PRESENT SWITCHBOARD STAFF WITH OFFICER IN CHARGE.

and delivered by orderlies, three silence cabinets being installed for this purpose.

The exchange was operated by soldiers up to the outbreak of war when they were withdrawn for service with their units overseas. The importance of the work and the exceptionally heavy pressure suddenly thrown on the exchange by the mobilisation

of the troops necessitated the employment of fully qualified telephonists. These were obtained from the London Telephone Service and all praise is due to them for the most efficient manner in which they carried out their duties.

The traffic becoming more congested, it was found impossible



SWITCHBOARD SECTION, ALDERSHOT MILITARY EXCHANGE.

to cope with the work under existing conditions, and the Post Office engineers fitted three new sections, C.B.S. pattern

5 + 60

trunks and local, a fourth section has since been added to distribute the traffic and will shortly be working. In consequence of this an increase of staff has been approved.

135

To relieve further the congestion during the busy hours, the Military Authorities issued an order that the military telephone must only be used between 10 a.m. and 1 p.m. for such calls as cannot be postponed until later. Private calls must be checked,



SWITCHBOARD SECTION, ALDERSHOT MILITARY EXCHANGE.

The electric lights on the switch sections have been arranged in a novel manner, to afford protection to the eyes whilst throwing a good light on the indicators.

As the boards are not fitted with multiples, transfer junctions have to be used, thus using up cords and making double operations. Under great difficulties, a return of traffic was taken on

Feb. 23, 1917, a double staff having to be employed to effect the same. The result was as follows:—

Originating local calls	...	...	4,340
Originating junction calls	...	...	2,628
Incoming junction calls	...	...	1,046
Originating trunk calls	...	...	200
Grand total	...	...	8,214

Busiest part of day 11 a.m. to 12 noon—1,048 (unvalued calls).

You will agree that to memorise such designations as D.D.M.S., D.A.D.R.T., D.A.D.L., D.A.D.R., D.A.A.G., D.A.Q.M.G., I.Q.M.G.S., &c., *ad infinitum* requires any amount of concentration. The staff have moreover fully mastered the intricacies of this and many other things foreign to their previous experience, and when it has been necessary to perform overtime on account of extra pressure, sick leave and "marriages," every demand has been met in a spirit of cheerful acquiescence.

### TELEGRAPHIC MEMORABILIA.

"OUR DAY" in the C.T.O. produced the particularly satisfactory sum of just over £158. As a matter of interest it may be stated that the three largest amounts were collected in the Cable Room, the Censor's Department and among the combine "G.," G.H.Q., and P.J. circuits, the amounts, in round figures, being respectively £20, £20 and £13.

When acknowledging the receipt of the cash from the hard-working collectors of the St. John's Ambulance, the Chairman of the Collection Committee of the British Red Cross was good enough to note that there was a very considerable increase upon even last year's liberal donation.

While last month's notes regarding the value of the work done by Post Office mechanics were being set up in type there also appeared an interesting account in the *Post Office Electrical Engineers' Journal* of Mr. J. E. Oliver's valuable improvement to the receiving apparatus of the Western Electric printing telegraph system. The apparatus is designed to save line-time to the value of about eleven or twelve signals at the end of each page-printed telegram. It is also claimed that the device ensures "uniformity of use of the paper at the receiving end."

The same journal publishes a highly technical but extremely interesting article on "Screw Thread Measurement," by the late lamented Mr. Arthur Brooker. Former students of Mr. Brooker's who may still retain an interest in matters mechanical will at once recognise the old spirit of thoroughness which always permeated the written work of our former C.T.O. colleague, A. B. The paper was read at the early part of the present year before the Engineering Society of Liverpool.

Yet another article in the same publication, and one even more closely connected with telegraph work itself is that by, to telegraphists, the best-known and one of the most respected of engineers, Mr. James Fraser, A.M.I.E.E., who expands upon the "Duplex Balance" in something like twenty pages. The mathematics of the subject will doubtless prove a stumbling-block to many of us "weaker brethren," but perhaps, as someone suggested, "that was only put in, like the elephant in the music-hall riddle, to make it look difficult." In any case it is hoped that the entire article and those that are apparently to follow will be published in pamphlet form, officially or otherwise. They should, combined, make an excellent hand-book for all aspirants to technical duties and honours.

Perhaps our own editor will chide me for my apparent conversion of mere memorabilia into eulogistic paragraphs of a contemporary production if I do not soon cease this series of reviews, and so I cease only pleading "the good of the Service" as my excuse and a knowledge of the fact that no professional jealousy lurks behind the editorship of the P.O. T. & T. JOURNAL.

It has been especially noteworthy of late to see the number of "retired" men who have come back to the office to "do their bit" during war-time. Such bring back with them the graciousness of former halcyon days, straight into the hurly-burly of a modernised

and war-time telegraph office. Men of whom some of us once stood in fear now genially remark of their successors:—"What a number of *youngsters* appear to have grown up into positions of responsibility!" while we, grey-haired, bald-headed *youngsters*, who have thus "grown up to positions of responsibility" ourselves begin to feel yet once again that knee-knocking awe with which we waited the castigation that more or less we probably deserved!

Dissatisfaction is frequently felt and sometimes, quite naturally, expressed concerning the litter of waste slip occasioned by machine and high-speed telegraphy employing paper in riband form. Trails of waste Wheatstone band and chips of Baudot gummed ditto are admittedly things divorced from drawing and dining-room neatness, and yet they are necessarily associated with the work in hand. One expects to see saw-dust and shavings in a carpenter's shop, brass and iron and steel filings near an engineer's bench. There is indeed a fitness in these disordered neatnesses, which absent, would denote the lazy apprentice and the idle steward.

There is nevertheless scope for the ingenuity of the inventor who can devise the best means of minimising the evil of untidy and unduly littered floors. Meanwhile individual care in disposing of waste will materially assist the desired end, despite the fact that on long-distant foreign wires the waste is undoubtedly greater and much in excess of that on inland circuits which enjoy days of undisturbed running as against at times almost hourly adjustments and re-adjustments to meet the varying conditions of lines far beyond terminal control.

Some little while ago there appeared in a contemporary the tribute of a colliery manager to the efficiency of modern technical evening classes. He cited more than one instance where youths who had received tuition in electricity, magnetism, &c., had become so expert as to be able to create artificial faults on the coal-pit signalling circuits. These same hopefuls then rested while they watched the anxious engineers ferret out the trouble and re-start the circuit. Telegraphists and telephonists are NOT invited to copy! The following American hint to advertisers is submitted gratis to the Telephone Publicity Department. When advertising choose the psychological moment. Do you wish to boom an electrical washing machine? Then post your circulars timed to arrive at the end of a tiring washing-day! Is it electric irons? Try Tuesday or Wednesday when the wind blows the wrong way and the coal-heated ironer is sooty! The ingenuity of our friends will doubtless supply the necessary telephonic parallels for tempting new subscribers.

In a discussion on "Telegraph and Telephone Stores in connexion with Colonial Practice," Sir William Slingo made the interesting statement that in order to meet all average needs with some margin for emergencies, stores to the value of over £2,000,000 sterling were always held in stock. This it is understood is the usual peace-time figure.

It is curious how the cycle of invention leads thought and design back into old paths. In the early days of the electric telegraph, Bain's chemical receiver held the field as a practical type of telegraph instrument. This gave way to other forms of apparatus and soon dropped into oblivion. Now comes the news of a new recorder of wireless signals in which a delicate pen connected to a swinging coil is suspended over a moving paper band. The paper band is moistened with a chemical preparation which when touched by ammonia vapour changes colour. The pen is so swung that to avoid friction it does not actually touch the paper but simply ejects the ammonia, the volatile fumes of which record a wavy line corresponding to Morse signals. Professor Turpain, a Parisian scientist, appears to be the inventor.

J. J. T.

### PHILADELPHIA MORSE RECORDS.

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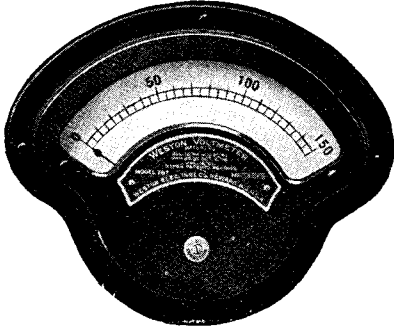
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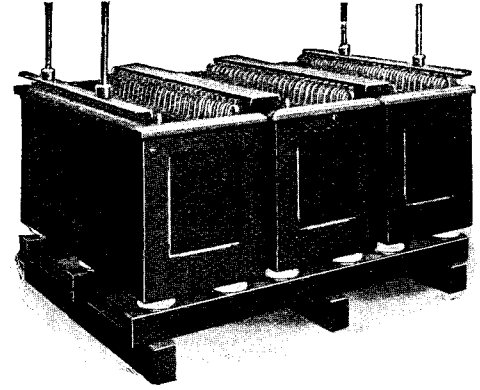
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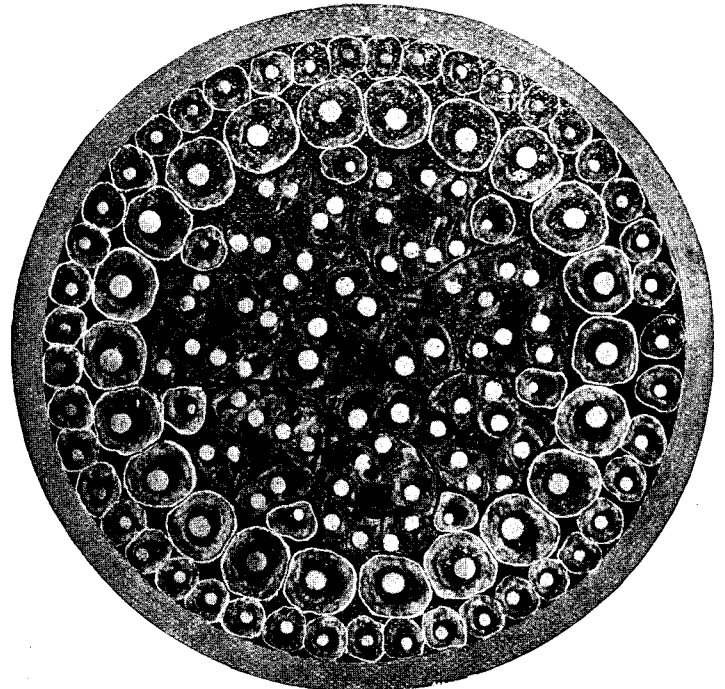
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*Back Row.*—2nd Lt. D. ST. C. HILL, R.E. attached R.E.; 2nd Lt. G. L. BULEY, R.E. (S.C. & T. Cardiff); 2nd Lt. J. T. GOLLOP, R.E. (S.C. & T. Cardiff); Lt. R. B. ROBINSON, R.E. (S.C. & T. Birmingham).

### LONDON TELEPHONE SERVICE NOTES.

WE have already referred twice in these Notes to Mr. Livingston's departure from the L.T.S., and it is necessary to make at least one more reference. On Monday, Nov. 5 (we are not sure who settled upon the date), the Exchange Managers and some of the Controller's Office staff entertained Mr. Livingston to tea, and occasion was taken to present to him a set of gold studs and links. The gathering was presided over by Mr. Preston who was supported by Mr. Harvey Lowe, Mr. Valentine and Mr. Edmonds. Tea having been disposed of (not a difficult matter these days) the Chairman made a most felicitous speech before making the formal presentation. He drew attention to the fact that the parents of our departing *confrere* had named him "Josiah," probably after a king who, as the Chairman pointed out, had been conspicuous for his "integrity of purpose." The speech was conceived in the happiest possible vein and as later speakers endeavoured to do justice to so excellent an example the gathering proved one of the most cheerful which under like

circumstances it has been our lot to attend. Mr. Livingston, in replying, dissipated the pretty romance woven around his name. It appears he had a rich uncle named Josiah and our hero's parents hoping he might partake of some of that uncle's personal qualities and quantities had had him so baptized, but nothing appears to have come of it. Never having had a rich uncle it seems to me it must be better to have loved and lost than never to have loved at all, besides Josiah is a capital name in any case. Mr. Kennedy on behalf of the Exchange Managers and Mr. Prossor on behalf of the Office staff, both paid tributes to Mr. Livingston, adding to their remarks just that spice of humour which serves to savour the whole with a pleasing flavour. A vote of thanks to the sub-committee (Messrs. Jacob, Arrowsmith and West) was proposed by Mr. Dive and seconded by Mr. Mantle—Mr. Jacob responding; after which Mr. Arrowsmith, supported by Mr. West, voiced the appreciation of all present for the chairman's kindly offices.

We ought to mention perhaps that letters of apology for absence were received from two or three of Mr. Livingston's

former comrades. These were duly read, as was also a somewhat lengthy telegram conveying hearty greetings in what we were assured was the "Scotch vernacular." In order that justice might be done to the richness of its expression the Chairman called upon one of Scotland's sons to declaim it to the gathering and this was done, there is no shadow of doubt, in excellent style, but we greatly regret that so far as we personally were concerned its precise meaning remains a riddle to us. However, it was apparent that Mr. Livingston understood it and appreciated it, and after all the message was for him, not for us. As we have said before, we wish him a long, prosperous and happy career in his new field of activity.

Possibly the fame of that tea spread abroad, for a comparatively short time afterwards a Food Economy Campaign was launched in the L.T.S. and the Office staff primarily, and later the exchange staffs have been invited to join Sir Arthur Yapp's "League of Safety." The London Telephone Service has done much already to assist in securing the safety of the nation. Its members are employed alike in normal times and in times of emergency in making straight the pathway of messages of paramount military importance. They are also to be found individually and collectively assisting in all the agencies that seek the welfare of our soldiers, our sailors, and the families of both. Their efforts in the War Savings movement have proved so splendid that the result is quoted up and down the country, and the modesty of their luncheon bills bears indisputable testimony to the fact that they have *heeded* rather than *needed* any advocacy of Food Economy. For our own part we are satisfied that in this matter as in any other which affects the vital interests of our country the L.T.S. will be "ahead of the field." We number among our staff many young growing girls and it would be a very false economy which suggested that the girls, on whom the future of our race will largely depend, should save food at the expense of their own efficiency. The whole point of the campaign is not that food should be saved but that food value should be saved, that is, that every scrap of food should be used and used to the best advantage.

Monday, Oct. 22, saw the opening meeting of the P.O. Telephone and Telegraph Society. Mr. Preston, who is chairman this year, gave an introductory address, the burthen of which appropriately enough was a plea for "economy"—economy of mental achievement which again does not mean a saving of mental achievement, so much as the complete and proper utilisation of the present considerable output of mental achievement. The paper is printed in the current issue of this journal and we commend its perusal to all readers. Would that there was some prospect of the early adoption of the principles enunciated. The Chairman's address was followed by a lecture from Mr. Thomson of the Engineer-in-Chief's Office on the subject of "Subscribers' Private Branch Exchanges"—a most useful paper illustrated by slides and working models. It seems extraordinary that two addresses of such an excellent order should have to be read before an audience so meagre—a mere handful of the members being present.

The London Telephonists' Society, the majority of the members of which are of the gentler sex (or should be it be braver sex) presents a sharp contrast in this matter of attendance. At the meeting on Wednesday, Nov. 14, more than 220 members attended and there was no lack of speakers to discuss the relative advantages of Civil Service and Commercial appointments. The praises of the Civil Service were sung by Miss McCallum with an ease which bespoke the poetic soul, and she rightly made much of the national value of the Telephone Service. In fact if her paper had a fault it was that it confused slightly the difference between Telephone Service as such and the Civil Service. Mr. Dive who bore as well as he could the responsibility for presenting the advantages of an ordinary commercial appointment had fortunately the support of a number of the later speakers, but exactly which way lay the balance of opinion must remain for ever a mystery, since time did not allow of a vote being taken. A recitation by Miss A. E. Esquilant of Hornsey Exchange, provoked loud applause and an *encore* was demanded. The President established her reputation for chairmanship, and the whole meeting was voted by those present to have been one of the most interesting and enjoyable of any of these gatherings, and that is saying a very great deal.

## CORRESPONDENCE.

### DUPLEXING THE BAUDOT.

We have received a reply from Mr. Donald Murray to Major Booth's letter which appeared in the November issue. As however the matter has become a subject of official correspondence between Mr. Murray and the Secretary of the Post Office we are precluded by official rules from publishing this letter.

### THE TELEPHONE AT THE FRONT.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

As the result of actual experience on the Western front, may I confirm your footnote to the article entitled, "The Telephone Doing its Bit," which appears in the November issue of the JOURNAL.

\* \* \*

The capturing by dashes of telephone switchboards and the subsequent operating of them, may have occurred, but neither myself, or those whom I have met, have ever heard of such a case, and it is rather difficult, when one bears in mind the location of telephone switchboards, to imagine such a feat being accomplished.

C. W. MESSENGER,  
R.E. Signals.

France,  
November, 1917.

### THE FIRST TELEPHONE EXCHANGE IN EUROPE.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

MR. GUNSTON'S article in the November issue regarding "The First Telephone Exchange in Europe," raises a point of considerable interest. It seems to me, however, that the evidence is rather too slender to support the assumption that Manchester was the first place in England or in Europe to have a telephone exchange, and I hope to be able to show good reasons for believing that the honour rests with London.

I regret that the article which appeared in the *National Telephone Journal* to which Mr. Gunston refers escaped my notice at the time, otherwise I should have pointed out certain directions in which the investigations might have been pursued.

Although the London and Manchester exchanges were opened a short while prior to my entering the service of the Midland Telephone Exchange Syndicate in Birmingham on Nov. 7, 1879, all my recollections and impressions strongly point to the belief that the first telephone exchange was established in Coleman Street, London.

I propose now to deal with the salient points of Mr. Gunston's article, and then to adduce some direct evidence and suggest other reasons in support of my views.

It will be noted from the extract which Mr. Gunston gives from the *National Telephone Journal* that the late Mr. Lorrain when asked apparently only expressed an *opinion* that the Manchester Exchange was working in July 1879, whilst Mr. Poole put it at some date in the September following; thus there appears to be some conflicting evidence between two men of recognised authority.

It will be seen, however, from the same extract that "Messrs. Fletcher and C. J. Phillips can testify that the Coleman Street Exchange was working in August 1879."

It would, therefore, seem that in order to prove that Manchester had the first exchange it is essential that there should be very much more definite evidence than that shown in the extract from Mr. Lorrain's *Pioneer Story*, which gives no date of the opening of the exchange, and was apparently written, or at any rate published, 23 years after the event; written I am sure in thoroughly good faith, but possibly from memory. Admittedly the direct statement of so competent an authority as Mr. Lorrain that "the Manchester Exchange was the first telephone exchange in Great Britain, and indeed in Europe," demands every respect, and would be difficult to resist were it not for the fact that he appeared afterwards to be not altogether certain as to the date, but was of opinion (*vide National Telephone Journal*) that it was in the month of July, whilst Mr. Poole, another good authority, believed it to have been in September.

It is curious that the author of the article in the *National Telephone Journal* and Mr. Lorrain in his *Pioneer Story* each mentioned Wolverhampton as one of the earliest exchanges, omitting mention of the adjacent but more important city of Birmingham, where an exchange was opened in November 1879, much earlier than the Wolverhampton Exchange which was established as a branch of the Birmingham one later on in 1880.

In order to obtain direct evidence as to the date of the opening of the Manchester Exchange, it appeared to me desirable to find out who were the earliest subscribers, and then ascertain their due dates and make allowance for the probability that they enjoyed, as was the practice in those pioneer days, some period of free service. Fortunately, my colleague, Mr. T. A. Prout, was able to help me in this respect. He was in possession of a copy of the first list of Manchester subscribers and we selected a certain number of firms having very low numbers whose names are recognised as being absolutely amongst the very earliest supporters. These names I sent to Mr. J. D. W. Stewart, the District Manager at Manchester, who has kindly had the local registers examined and fortunately been able to give dates of connexion as well as the due dates, with the result that four firms, including one added by Mr. Stewart, were found to have been connected as early as September 1879 and one in October of that year.

The earliest of these connexions was made on Sept. 7, 1879, and it is important to note that the due date in all five cases is given as Nov. 1, which

undoubtedly indicates that the Manchester Exchange was open for working in September, which supports Mr. Poole's recollection, and that the first subscribers there had a free service to one common date, viz., Nov. 1.

In view of the definite testimony of Mr. T. Fletcher and Mr. C. J. Phillips that the Coleman Street Exchange in London was working in August 1879, it seems abundantly clear that London had the first exchange in this country. Apart from this direct evidence the following points may be mentioned as sidelights. It will be remembered that the patent rights for Great Britain and Ireland were held by "The Telephone Company, London," the predecessors of "The United Telephone Company, Limited," which latter company came into being when the Bell and Edison interests were amalgamated, and that the early provincial syndicates and companies were established under licences from the former company from which they also received their supplies of instruments. It appears improbable that any of these provincial concerns would have got into practical working before the parent concern had made a start in the great field of London which it had reserved for itself.

I have before me a copy of a circular issued to the public by the Midland Telephone Company, Limited, in October 1880, from which the two following extracts are interesting:—

Over 60 firms in Birmingham (as will be seen by the annexed list) are availing themselves of instantaneous communication with each other by means of this Company's telephonic exchange. The London Exchange has over 800 subscribers, Liverpool and Manchester above 300 each, besides an increasing number at Glasgow, Sheffield, Bristol, Dundee, Leeds, &c.

These figures clearly indicate, even after allowing for the relative sizes of the places, that there had been no lack of activity in London, though admittedly it does not prove priority of working.

In all, except the smallest, towns in America it is in general use.

In Chicago for instance, compares with Manchester in size, the telephone exchange has been in operation thirteen months, and there are already more than 1,200 subscribers in constant communication.

When one reflects on the way in which the telephone "caught on" in America, in which country the instrument was invented, thought happily by one of British birth, Alexander Graham Bell, it would be rather a matter for surprise if Manchester had a telephone exchange before Chicago. From the preceding extract it is gathered that the Chicago Exchange was not established till September 1879, or August at the earliest, and it seems unlikely, in view of the other circumstances, that Manchester would have had an exchange working so early as in July of that year.

I have in my possession a copy of the original photograph of the Coleman Street Exchange, which I have always regarded and spoken of as the first exchange in this country. My impression certainly is that I was told this either by Mr. Ormiston, who was consulting electrician to the Midland Telephone Company, and who, as stated by Mr. Lorrain, was engineer to the London Company, or by Mr. Ryder, the secretary of the Midland Company. My recollection at this distance of time is not sufficient to make a positive statement on this point, but my impression on the point is very strong and I cannot but think that I should not have held the opinion through all the intervening years without having had originally good grounds.

I have been in communication with Mr. Ryder in the hope that as he connected with the enterprise in those very early days he might be able to throw some light on the point, and he has written me as follows:—

I am sorry I cannot recall the time of opening either the Manchester Telephone Exchange or the London one, but am quite of your opinion that London was first.

Nov. 12, 1917.

ARTHUR E. COTTERELL.

## LETTERS FROM TELEGRAPHISTS AND TELEPHONISTS IN FRANCE.

(FROM A BELFAST TELEPHONIST.)

I WOULD like to give you some idea of the conditions under which we live and work here, as so far I am the only one of the Postal Section of the Irish contingent who came out together sent here.

Regarding this place, it is true camp life, we are just in the vicinity of a large base, our own camp on a hill overlooks a large part of it, besides having a lovely view of the fishing village and river. We have about 200 women now, which includes workers of every section and all drafts from different parts of the country.

I am in a hut with five other telephonists and we are all friends and very comfortable together and each take turns to keep the hut tidy, as it is inspected every morning at 9.30. We have a large dining-room where we have meals, and sometimes we have to wait at the end of a fairly long queue before being served. Then the grounds about the camp are very nice, we are provided with a tennis court, hockey field and basket ball ground, besides a large recreation room, and in a few days the Y.W.C.A. are opening a large hall where we are to have a cinema and library.

I am at the "Camp" Exchange. It is only five minutes from the hostel; there are six operators for duty and each two relieve two; at present I am off duty at 12 midnight.

About the food, it is very good quality but there is not much variety, bread and meat being the staple Army diet, though I may say our two slices of bread, with bully or jam as the case may be, are not often refused at breakfast or tea. Now however by the aid of a mess fund we are able to have potatoes, vegetables and fruit so many days in the week.

We have roll call at 7 o'clock now, it is very early, but to pass the time, as well as the games we occasionally have either a drill or a route march with one of our officers. We are also allowed a late pass to any concert in the camp once a week, also on our day off we have a pass to P—, which is a seaside resort about twenty minutes in the tram, so that we are very well looked after considering we are on active service.

(FROM A SHEFFIELD MEMBER OF THE W.A.A.C.)

The days are lovely here now—cold and fresh in the morning and the day developing quite hot and summery. To-day closes the bathing season—though we are hoping to go on a bit longer. Some duties prevent us bathing and we miss it. Quite a lot of the girls in our billet swim and we have enjoyed some fine times—especially two weeks ago when the wind and tide was high and the breakers dashed mountains high and carried one off one's feet when bathing.

I have realised lately that in spite of being quite near to England the colourings are quite different over here. The sky seems always very blue and the myriad colours in the sky make a glorious effect—especially from the jetty. I spent yesterday afternoon down there—for the sea and various ships have a great fascination for me.

The fisher folk are always very busy and their huge boats with huge brown sails with their respective letterings look so quaint and picturesque on the sea, especially when it is as calm as it was yesterday. I have been off duty at midnight for four weeks now and am quite used to spending my afternoons by the sea with a book or some sewing.

Supervisors are now out here. We have a Miss B.—a senior girl from Glasgow. This is her second week with us. We also have a new Scotch corporal, so Scotland is well represented with us.

The Scotch and Irish element of our billet are having a "Halloween" party on Oct. 31 and some strange things will be carried out methinks! and the rest of Briton will be initiated into the mysteries thereof.

My friend Anne of Glasgow goes on leave to-morrow. She is the second—one each fortnight is the order of the day, so it will take a long time to get through them all here!

Peggy of Bristol returned yesterday (another from room 10). She has had a lovely holiday—but reports that she is quite glad to be back amongst us all again. That's cheering isn't it? Have just heard that Majorie W. goes home on leave on Friday. What excitement! They must be going more frequently from H.R., and have cast lots for their turns. We go by our regimental numbers.

We are settled very comfortably in our new office. It is a villa fitted up appropriately. You know the French style of house. The two rooms downstairs are retiring and dining-rooms, which we very much appreciate after having to share those with our French colleagues in our last office—which really haven't half the conveniences we are used to having. We now have a pleasant view from the front of the river and Boulevard and from the back a huge tree.

Life in the Army is an acquired TASTE, and I think we are pretty well seasoned to it ere this. Saturday morning presents an amusing picture for the mess committee who devote the morning to MARKETING. We enjoy it, you can imagine. Usually three of us and one of our officers, and we return to the billet laden with sacks of cabbages, carrots, apples and anything else in that line, reasonably cheap. The whole hostel pays .50 each per week to this fund and it enables the cook to vary our dinners a lot. The Army only supplies rice and jam as second course! We have a dripping fund which buys the cabbages. A week last Saturday our officer was so amused that on our way back—passing a photographers she would have us enter for a picture. She is very spontaneous like that and the photographer enjoyed the joke as much as we did. The picture is very good too and admired by the whole hostel as a souvenir of "market days." You will know the market place here I expect. I love it on market days. The country people with their wee hats, peasant costume, lingo, the pumpkins and other fruit on sale sale peculiar to this country—make a pleasing picture, and I look forward to Saturday mornings.

Last week I had a day off and went blackberrying with a London girl. We found quite a new direction—fine scenery—and plenty of good fruit. Not enough to feed the hostel so presented them to the officers' table, and they were delighted of course.

Had a pass out to dinner—were independent of Army rations with its monotony of cheese and bully—and managed to get a good meal of fried eggs, potatoes, pears, tea and the usual French bread and butter. This meal we had in a garden, and it was a gorgeous day. Are we not fortunate to have the opportunity of seeing the district like this?

Our French lessons are stopped for a time. Our first Mlle. left for England and the next one was not a good teacher.

I have one or two girl friends here (French), but we are not allowed to visit French homes without permission from Headquarters, when they investigate their character! *C'est la guerre, toujours!* We have many and varied strange experiences here.

### BORROWING THE TELEPHONE.

Mistress: "Goodness, Bridget, where is our telephone?"

Bridget: "Mrs. Jones sent over mum, askin' for the use av it and I sint it over, but I had the devil's own toime gittin' it off the wall, mum."—  
(*Toledo Blade.*)



# The Telegraph and Telephone Journal.

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

Editing and Organising Committee	{	MR. JOHN W. LEE.
		MR. J. W. WISSENDEN.
Managing Editor	-	MR. W. H. GUNSTON.

## NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications, together with photographs, diagrams, or other illustrations, should be addressed to him at 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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No. 39.

## FIFTEEN YEARS' TELEGRAPH DEVELOPMENT.

WE have on more than one occasion devoted space to the consideration of the development of the telephone throughout the world. The increase of the telephone system is, or was, so rapid that it was always desirable to keep our statistics as nearly up to date as the difficulty in procuring them permitted. The development of the telegraph system of Europe though advancing with more sober tread, is by no means so stationary as is often imagined. A comparison of the progress in the development of the mileage alone of telegraph lines during the period of fifteen years from 1898 to 1913 (the latest year for which complete figures are available) shows some noteworthy instances of rapid growth in one country contrasted with complete stagnation in another. Popular opinion is fully borne out in some cases, where the expansion of the telephone system has resulted in a retrograde movement of the telegraphs. In other cases economic conditions are probably responsible for slow development, but in the majority of countries the progress of the telegraphs has been steady and even marked. The countries which show the most considerable increase are Germany from 123,000 kilometres in 1898 to 237,000 in 1913, Great Britain from 70,000 to 130,000, Russia from 144,000 to 230,000, France from 127,800 to 194,000, Italy from 40,500 to 56,800, Austria-Hungary from 46,800 to 73,500, Spain from 31,900 to 44,500, and Norway from 12,000 to 20,600. The increase and development generally in Norway is remarkable when we compare it with Sweden, a much larger and more populous country (8,700 in 1898, 10,700 in 1913), but the well-known high telephone development of Sweden fully accounts for the apparent anomaly. Denmark, another well telephoned country, has declined from 4,800 km. to 3,600, and, similarly, Switzerland from 7,100 to 3,500. Bulgaria also shows a slight decrease, viz., from 5,200 to 5,100. Of the remaining principal States, the increase of Holland from

5,900 to 8,000, of Roumania from 6,800 to 9,000, and of Belgium from 6,300 to 8,300 (1912) calls for no particular comment.

It will be seen that France which was second in point of mileage in 1898, is now third, following Germany and Russia. When regard is had to the smaller population of France, the development of her telegraph system appears very high and points to the conclusion that more energy is devoted to its expansion than that of the telephone, which is admittedly poor. The geographical extent of Russia of course accounts for its huge mileage, for in relation to the length of telegraph routes, area becomes almost as important a factor as population. This accounts for the comparatively small development of countries like Holland and Belgium. Traffic figures, of course, would place the relative position of the different countries in another light. With these, however, we do not propose to deal in detail, except to say that in the number of inland telegrams despatched in 1913 Great Britain is easily first with over 75,000,000, France next with 51,000,000, and then come Germany, Russia, Italy and Austria-Hungary with upwards of 41, 35, 21 and 16 millions respectively. The high position of Great Britain on this list may be attributable to use of the Morse quadruplex and ordinary duplex method of working, and that of France to the employment of the Baudot multiplex: similarly, these considerations apply, on a smaller scale, to Italy. In other parts of the Continent duplex and quadruplex working did not in the period under review find general favour, although the use of these methods of increasing the output of wires had begun to spread rapidly shortly before the war commenced.

In comparative telephone statistics we have usually taken the "station" or telephone as the unit: to take the corresponding telegraph instrument as the standard in telegraph statistics would not be practicable or convenient. We have therefore resorted to the length of route for the purpose, just as in railway statistics miles of line and not miles of single track are generally adopted as the standard of comparison. Those who are in the habit of thinking in miles we may remind that a kilometre is about five-eighths of a mile.

## A CHANGE IN SPIRIT.

IT seems to be inevitable that some proposals will shortly be discussed having for their object some closer co-ordination between the control of the Post Office and the staff. Various rumours reach us as to the shape these proposals are likely to take. Indeed it is the fact that so wide an interest is being taken in proposals for changing or modifying Post Office machinery that the necessity for looking to the inner spirit is being overlooked. A perfect machine inspired by conflicting and discordant aims might achieve anything but satisfactory results. In fact the more closely co-ordinate the machinery, the more direct and simple in intention should be the spirit which informs it. During the past few years there has undoubtedly been a definite improvement in the human relationship of the Service. Under stress of national emergency many misunderstandings have been cleared away and there are more than a few signs of promise that the improvement will be obtained.

Such a journal as ours can best do its work by fostering this

improvement in the spirit. It has no concern with political or industrial theory. Whatever political or economical development is expected officially we shall do our best to make it a success. And if it should be the case that the future holds in the hollow of its hand some new development of the administrative machine, as we are assured on every hand is the case, it will be our work so far as we can, to attempt to cultivate that spirit of mutual understanding and co-operation by which alone such a development can succeed.

It is not with the object of being discouraging that we utter a word of warning. A recent writer has said that Parliamentary Government comes naturally when the hearts of the people are ready for Parliamentary Government. It may be the case that Industrial Government does not so cautiously wait upon the event. There is a danger lest the propagandizing of theory should run ahead of the development of human character by which alone that theory can be translated into efficient practice. If we are unduly anxious on this point the future will hold us up to derision and we shall bear the finger of scorn with due humility. But as the outlook is at the moment we think that all who have the good interests of this great Service at heart will do well to turn their eyes for a few minutes from the examination of economic theories of industrial management to the examination of our own hearts.

It would be a thousand pities if at this great juncture in social history a modest development should be wrecked because we, the human units of the vast machine, were in heart and in mind unprepared for such development.

### HIC ET UBIQUE.

COMMENT on the following extract from the *London Gazette* respecting the award of the Victoria Cross to Sergeant A. J. Knight (Clerical Assistant, North Midland Engineering District) would seem to be a work of supererogation:—

For most conspicuous bravery and devotion to duty during the operations against the enemy positions.

Sergeant Knight did extraordinary good work, and showed exceptional bravery and initiative when his platoon was attacking an enemy strong point, and came under very heavy fire from an enemy machine gun. He rushed through our own barrage, bayoneted the enemy gunner, and captured the position single-handed.

Later twelve of the enemy, with a machine gun, were encountered in a shell-hole. He again rushed forward by himself, bayoneted two and shot a third and caused the remainder to scatter.

Subsequently during the attack on a fortified farm, when entangled up to his waist in mud, and seeing a number of the enemy firing on our troops, he immediately opened fire on them without waiting to extricate himself from the mud, killing six of the enemy.

Again noticing the company on his right flank being held up in their attack on another farm, Sergeant Knight collected some men and took up a position on the flank of this farm from where he brought a heavy fire to bear on the farm, as a result of which the farm was captured.

All the platoon officers of the company had become casualties before the first objective was reached, and this gallant N.C.O. took command of all the men of his own platoon and of the platoons without officers. His energy in consolidating and reorganising was untiring.

His several single-handed actions showed exceptional bravery, and saved a great number of casualties in the company. They were performed under heavy machine gun and rifle fire, and without regard to personal risk, and were the direct cause of the objectives being captured.

Yet we must say that it is one of the most remarkable series of feats of which we have read. Sergeant Knight seems to be unconscionably greedy of perilous adventure, and achievements which would satisfy an ordinary hero are but courses in his full meal.

*Bureau Internationale*, at Berne, are now to hand and permit us to supplement the estimate made by our contributor on "The Telephone Development of the World at the beginning of 1917." We have, in addition, the official returns of the Swedish and Danish Governments for 1916. According to these there were 303,371 telephones in Sweden at the beginning of 1917, and 153,820 subscribers in Denmark. This latter figure is probably equivalent—on the basis of previous years—to 171,000 stations. We find that at the end of 1916 there were 104,561 stations in the Netherlands and 100,200 in Norway which, at the usual rate of increase, implies a greater number in January 1917 than was shown in our article.

The total for Europe might well be added to as follows:—

Sweden ... ..	303,371	instead of	288,000
Denmark ... ..	171,000	..	165,000
Norway ... ..	106,000	..	100,000
Netherlands ... ..	115,000	..	100,000
	695,000		653,000

Or 42,000 more than our contributor's estimate. Spain, however, we find has been increasing at less than the estimated rate by some 10,000. The revised total for Europe would therefore be 4,212,000.

THE following paragraph from the *Halifax Weekly Courier* baffles us. Perhaps some non-telephonic expert can solve the riddle, as the terminology employed is passing strange, and the upshot of the proposed change vague:—

At present the telephone system of this district was on the single battery system. A better system, Mr. Carmichael thought, would be, not the dynamo system, as Sir F. W. Whitley Thomson advocated, but the separate battery system. But for the war, this district would have been installed on that system in August or September 1914. Owing to the war, the alteration had been held up, and it was feared that it would have to be held up until after the war was finished.

"THESE are the days for rapid promotion, except perhaps in the Telephone Service," says our Liverpool correspondent, "and all will be glad to hear that Colin Burstall, Assistant Traffic Superintendent, Class I, at Liverpool, and, prior to joining up, Local Secretary of the JOURNAL at Liverpool, was promoted to a Captaincy on Aug. 8, 1917. Joining the Inland Water Transport Section in April 1916 as a private, Mr. Burstall quickly obtained a Commission. No doubt the technical training he obtained in the late National Telephone Company, and the fact that he made himself proficient in Morse telegraph, has helped him considerably in his military career. We join in congratulating Mr. Burstall, and wish him a safe return from France, where at present he is doing duty."

### POST OFFICE RELIEF FUND.—CONCERT IN BELFAST.

The third annual concert was given in the Ulster Hall, Belfast, on Wednesday, Oct. 24. With one exception all the solo artists were brought from England. They were: Miss Elsie Cockrane (soprano), Mrs. John Seeds (contralto), Mr. Laurence Leonard (tenor), Mr. Arthur Catterall (violin) and Dr. Lawrence Walker (pianist). The weather on the evening of the concert was of the very worst ever experienced in Belfast, but notwithstanding that fact about 1,500 people attended. While this rather small attendance was to be regretted it was, in a measure, compensated for by the enthusiasm of those who had the courage to face the elements.

Artistically the concert was a great success and Mrs. John Seeds, a local lady, received quite an ovation for her splendid singing. Great appreciation was expressed by the audience and in the Press of our choice of Dr. Walker who had not played in public for some little time.

This year the concert committee had the advantage of having the assistance of Miss Ritchie, Supervisor in the Exchange, and she was responsible for almost one-third of the audience, quite a feat of organisation in itself. Miss Wallis, of the District Manager's Office, also rendered valuable assistance.

The financial result cannot yet be announced with certainty, but it is thought something over £130 will be cleared.

THE official telephone statistics for 1915 published by the

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

### OPENING SPEECH OF THE CHAIRMAN (MR. G. F. PRESTON).

A CERTAIN learned judge has recently said that there is no such thing as the unwritten law. It is somewhat doubtful if this is correct: for it is one of the articles of that relentless though elusive code which requires that the individual who is honoured by nomination to the chairmanship of a society such as this should—for his own good and perhaps sometimes for the training of his audience in the patient endurance of hardship—deliver himself of something of the nature of a speech or an address—always an ordeal, but especially so when one's audience consists of those who have shown themselves to be past-masters in the handling of that instrument which we are told is given to enable us to conceal our thoughts! But, judging from my own experience, the cynic as well as the learned judge was wrong. For the crowded thoughts called forth by the stirring times in which we live, leave but little room in our minds for such prosaic things as telephone problems. Consequently there is a severe temptation—which I cannot altogether resist—to reverse the cynic's dictum and use language as an instrument to conceal absence of thought!

But an address, however short, must have a subject: and here the unwritten law helps to resolve the situation it has created. It is decreed that the newly-elected chairman should say something about the society of which he is a member, thus saving him the choice of a subject—perhaps the most difficult of all in giving an address.

In his wholly delightful opening address, our chairman of last year described the main object of the society—human intercourse—and with inimitable humour and charm dealt mainly with the second of its two elements, matter and form. This evening I propose to make a few remarks about the first—to speak of *what* our papers might express rather than *how* they might be expressed. It is a commonplace that the world is in the melting pot. What is our design for our society in the reconstruction at the peace that shall follow the breaking of the peace-breakers? We live in an age of economy, a condition which will not pass when the last shot of the present conflict has been fired. And what is economy? Surely profitable expenditure. What else could justify an expenditure absolutely unequalled in the world's history—using the term "profitable" in its ethical as well as its material sense? On its positive side, profitable expenditure: on its negative side, the elimination of waste. But we are inclined to think only of economy of matter: what about economy of mind, the force which makes economy possible? Perhaps in the scientific sense the distinction is artificial: but it is a useful practical distinction: for it is this aspect of the case which our present subject raises. Session after session individual members of the society spend days—it may be weeks—in the elaborate process of observation, analysis, and synthesis which traces design in the inchoate mass of industrial facts as a skilled workman will fashion the pattern in a mosaic. Year after year designs are traced and their message read; for what is a paper read before such a society as this but a message from the author to that section of the industrial world of which he is a member? Year after year at meetings like this, the letter is opened and the message read: but to what end? A reprint in the JOURNAL, perhaps a paragraph or two in foreign journals, and then—it is feared—nothing. Is this economy of mind? Do not we—the telephone system as a whole—rather treat the message as we treat a patent medicine advertisement, give it a glance and throw it aside? As our late chairman has pointed out, in this meeting we are sounding our official harmonies. But what avails if no one plays the tune? To come down from generalities to concrete facts, surely we all hope that in the brighter future, our society will not only lead telephone thought but to a greater extent definitely shape telephone action, otherwise there cannot be economy of mind. There are three things that might

be done to this end. The first is to print and distribute to each member a copy of every paper *in time for study before it is discussed*. The second is to take a verbatim report of the discussion; without this almost all the illuminating criticism of a debate is lost. The third is that there should be some small body of experts at headquarters whose duty it should be to go through each paper and the notes of the subsequent discussion, not with the object of proving the truth of the proposition "there is nothing new under the sun" but rather in the spirit in which a mining company would approach a new working—a spirit of real endeavour to extract what gold there may be, whether much or little, and when the gold is found to transfer it into current coinage. For until this last operation is performed, though the gold may be there it is of little practical use.

In so frequently referring to one only of the two component parts of this society—telephones—I must, as an old telephone man, claim the indulgence of members of our great sister Service—the telegraphs. The solecism is due to the absence of a suitable word to express our joint interest in the principles of verbal communication by means of electricity.

I have suggested that economy on its negative side means elimination of waste. In what way do we most often waste mind? Surely in our varying interpretation of those great principles which are the basis of all industrial organisation. Dialecticians tell us that for useful discussion the disputants must be agreed as to the meanings of terms. Are we so agreed in regard to those larger principles to which I have referred? It is very doubtful. As bearing upon this I was much struck with the point made by one of our members—Mr. F. C. Cook—in his able paper on the "Correlation of Public Administration and Finance," in which he showed, in effect, that no one—apparently not even the Treasury—knows what the term "finance" really means! And so it is with other terms we are accustomed to use. Economy: is it best represented by smallness of expenditure or magnitude of profit? Profit: must all profit necessarily be directly expressible in pounds, shillings and pence? Decentralisation: can decentralisation exist without decentralisation of power? These are principles of wide generality that enter into almost all our business relations one with the other, with certain waste of mind—not to mention temper—where there is confusion of definition, both sides arguing about or acting in accordance with different things under the impression that they are one and the same. Possibly in the new era new problems will arise with new names. In promoting economy of mind, one of the most important functions of a society of this kind is to secure agreement between members as to right definitions before long use of a faulty definition has distorted the image of the thing it affects to denote.

And how shall our society stand in relation to perhaps the greatest of all industrial problems which the present times have created—I mean that involved in the claim of woman to equal rights with man in the sphere of work? It has always seemed strange to me that in a society such as this, representing an industry in which the bulk of the workers are of the gentler sex, so few—hardly any—have given us the benefit of their quick intuition on—for example—telephone staff problems of the day. Where is the new woman, the woman of the emancipation? It is not lack of courage that accounts for her absence—of her courage we have many instances in the Telephone Service where the touch of the fiery cross has kindled something that the apostles of frightfulness have never contemplated. Not so very long ago on the occasion of an air raid, a supervisor at one of our City exchanges noticed an operator, white faced and tearful, struggling bravely to "carry on" with her work, manifestly distressed by the crash of the exploding bombs coming ever nearer. With kindly intention the supervisor asked the girl whether she would like to go downstairs into a place of safety. Still struggling to go on with her work she turned a tear-stained face to her questioner and answered tearfully but indignantly:—"No, I *won't* go down; I want to stay with the others." Then she added with an odd little smile, "But you must let me cry!" Pluck of a man and heart of a child—I like to think that this is a type of the new woman, daughter of the war and first of the flowers of the new dawn. Gentlemen,

is it too much to ask that she shall take her proper part in the papers and debates of this Society?

And surely development on the plan we have sketched would give new life to our papers and debates. The world of our old mentality is fading, like a dissolving picture in a biograph. Very dimly yet the new picture shows, but in its faintly traced outlines there are glimpses of new perspectives and new values, of reconstruction, and progress towards that harmony for which—in one form or another—our minds so vainly strive—a harmony indefinite and elusive, but always real. . . . And progress means difference—sometimes new points of view, sometimes new light on the old, but always difference. . . . And my faith is that our society will play its part in the great rebuilding. Sure in the confidence that their messages will be both heard and answered, our members will to an ever-increasing degree make their papers the media for the expression of new thoughts and ideas, of new hopes and aspiration, throwing new light on the vital problems of our great industry. And our criticism will have a new meaning. After all, reconstruction is a positive thing, and there has been destruction enough. And the real work of our society is a positive thing. On its more abstract side, the study and it may be the discovery of those laws—those great principles of cause and effect—the right understanding of which determines the efficiency of our Service: on its more human side, the study of the means whereby the best that is in us as human beings may be used in obedience to those laws and for our own well-being in its widest sense: of the means, too, whereby our society and the great industry of which it is a manifestation may be made always responsive to new currents of world-thought that may flow from the unknown sea of the future.

Probably most of us have been impressed with the strangely dramatic little story that our men from the Western Front tell us, how sometimes and for no known cause, the deafening roar of the artillery ceases for a moment, and in the tense silence that follows the hushed thunder of the guns, from the blue sky above the still wreathing smoke-clouds comes the song of birds. And so it is sometimes with us. In the heart of each of us there is always an echo of the guns in the west, and sometimes there, too, comes a silence, and in the silence a call from the new world that is being born—a call to each according to his measure. And to us as members of a society which is, as it were, a pioneer in one province of the world of thought, surely the call is this:

Keep ye the law—be swift in all obedience,  
Clear the land of evil, drive the road and bridge the ford,  
Make ye sure to each his own  
That he reap where he hath sown,  
By the Peace among our peoples let men know we serve the Lord!

## THE WORKING OF C.B. PRIVATE BRANCH EXCHANGES.\*

By H. S. THOMPSON (*Engineer-in-Chief's Office*).

In preparing to-night's paper it has been my endeavour to present in as interesting a manner as possible some of the basic principles on which modern P.B.X. working is founded. These main principles I hope to illustrate by means of actual connexions and operations on the models you see before you; and as far as is possible I shall endeavour to avoid troubling you with a mass of technical detail or wearying you in personally conducted tours along the rocky paths of intricate circuit diagrams.

Having thus confessed my aims I must entreat those members of my audience whose appetites crave for the stronger meats of power lead design, long lines, tie lines, transmission and the like, to sit patiently and share with their more fortunate brethren who are not troubled with such problems, the modest fare provided.

The private branch exchange in a business establishment may be regarded as a telephone reception counter at which clients or customers are received, their requirements ascertained and from which, if necessary, they are magically conducted to the inner sanctuaries of the various departments and, if the presiding genius is kind, even ushered into that Holy of Holies, the Managing Director's office.

In addition to fulfilling these functions the P.B.X. affords rapid internal intercommunication between the different branches of the establishment and completes with celerity and despatch all the connexions required over the ordinary telephone system.

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

It will readily be appreciated that the problem of designing equipment to meet satisfactorily such diversified requirements, and at the same time to work harmoniously in conjunction with all the ramifications of the public telephone system, affords ample scope for the combined ingenuities of the traffic and equipment engineer.

In the years, which already begin to seem remote, before the nuptials of the National Telephone Company and Post Office Telephones were celebrated, there had been considerable development in P.B.X. working under the auspices of the two administrations, but there were many points of difference in the types of apparatus used and corresponding absence of uniformity in the facilities afforded. It may be that these differences were due to the impress of the individuality of two different corporations, or possibly they were occasioned by the two administrations operating in different strata of the business world and catering for a somewhat different class of service. Whatever the origin of these differences in design it was early recognised, after the fusion of the two concerns, that unification was essential if unhampered development was to proceed on a sound basis.

With this end in view the whole situation was reviewed and an effort made to combine in new designs of switchboards all the best features of the methods hitherto in vogue under the two administrations.

The P.B.X. operator fulfils functions wholly different in many respects from those of the operator in an ordinary telephone exchange. In the first place she acts as a representative of the establishment in which she is employed in replying to incoming calls. She requires a considerable knowledge of the organisation and business arrangements of the firm in order to guide and direct such calls to their proper destinations. Calls by name rather than by number bulk largely in the day's work, necessitating frequent reference to lists or directory, and connexions generally will need "nursing" to an extent unknown in main exchange operating. All this specialised work and the peculiar conditions under which the P.B.X. operator performs her task must be kept in mind when the design of P.B.X. installations is under consideration.

Before passing on to an examination of the details of standardised P.B.X. equipment, it will be helpful first to clear the ground by referring briefly to some of the general principles on which these designs have been based.

*Speaking Keys* or their equivalent are necessary on all sizes of boards to enable the operator to exercise full supervision by listening in on any connexion at will. Diverse opinions have been held in the past on this question on account of there being at one time a demand from subscribers for "secret boards," i.e., boards on which the operator was unable to listen in on an established connexion. Many secret switchboards are in existence, but their operation is clumsy and constitutes a serious obstacle to rapid high grade service. Luckily this demand for secret boards is becoming less insistent. Even Government Departments in the sanctified precincts of Whitehall have lately consented to forego the cherished privilege, and one has developed so much enthusiasm for "open working" that it has gone to the length of re-narrating, in courtly terms, with the Post Office for the time it takes to effect the change.

*Supervisory Signals*.—Double supervision, i.e., one signal for each party connection, is required and whenever possible these signals should be positive in action, i.e., the intimation should be conveyed to the operator by the appearance of a previously invisible signal, not by the disappearance of a previously visible one.

On the smaller switchboards, as constant attention may not be practicable, the supervisory signals should be connected to an audible alarm. This will assist in obtaining prompt disconnexion of finished calls.

*Control of Exchange Lines*.—So far as an "A" operator at the main exchange is concerned, a call for a P.B.X. is effective as soon as the attention of the P.B.X. operator has been gained, and any subsequent extension of the call at the P.B.X. should produce no effect on the main exchange supervisory signals. When therefore the P.B.X. operator answers an incoming call the corresponding supervisory lamp at the main exchange should be darkened and should not light up again until the call is finished.

On boards with capacity for more than twelve lines in all, it is now customary to vest the control of the exchange lines entirely in the P.B.X. operator, that is to say the exchange line is permanently "held" from the time the P.B.X. operator plugs in to answer a call until she withdraws the plug when the call is finished. This method is permissible on the larger installations because the amount of traffic is generally such as to warrant the undivided attention of a special operator, and consequently the clearing of connexions can be effected promptly. It has the great advantage of permitting extension stations to signal to the P.B.X. operator during the progress of a call without affecting the supervisory signals at the main exchange, thereby permitting an extension station to get an established call transferred to another extension station when required, a facility which is regarded as an essential on the larger installations.

On the smaller boards with capacities for twelve lines or less, where as a rule the undivided attention of a special operator is difficult to justify and the clearing of connexions is frequently the reverse of prompt, it is necessary to modify these arrangements in order to secure the prompt release of exchange lines and junction circuits on the conclusion of a conversation.

On such installations the exchange line is "held" from the time the P.B.X. operator answers the call until the extension station hangs up at its conclusion, when a simultaneous signal is given on the "A" cord circuit at the main exchange and at the P.B.X. The main exchange acts on this signal and frees the exchange line and junction circuits concerned without having to wait until the P.B.X. operator has responded to her signal.

It should be noticed that on small P.B.X.'s working on this system the extension station is unable to signal to the P.B.X. operator during the progress

of a call, without at the same time causing false signals to appear before the main exchange operator. This is a distinct disadvantage when it is desired to transfer established calls from one extension to another, but it is a lesser evil than the unnecessary holding up of valuable junction lines which would result were the other scheme applied in these cases.

**Night Service.**—As P.B.X. operators are human and want to go home at night, and subscribers are not so human but want to go on telephoning after the operators have left, it is generally necessary to provide for giving exchange service to selected extensions after the P.B.X. is closed down. Arrangements to this end are made on all boards in a manner which will be described later when the various types are being considered in detail.

**Ring Back Keys.**—When an extension station desires a connexion over the ordinary exchange system, the correct procedure is for the extension to give the name of the exchange and the subscriber's number to the P.B.X. operator, who will pass the particulars forward to the main exchange and see the call through. If the user at the extension station is too busy (or perchance too important) to remain at the telephone until the connexion is established he hangs up the receiver and waits for the P.B.X. operator to ring him. This necessitates provision for ringing back to the calling subscriber and consequently ring back keys have to be provided on all P.B.X. connecting circuits.

**Current Supply for Extension Talk.**—Power for operating P.B.X.'s is generally drawn from the main exchange battery, over special feeders known as power leads. Considerations of economy and the nature of the external cable plant prevent these conductors being provided on a basis liberal enough to ensure the maintenance at the P.B.X. under all conditions of a voltage comparable with that of the main exchange supply. Actually sufficient conductors are provided to ensure that voltage drop in the power lead during the period of maximum demand shall not reduce the voltage available at the P.B.X. below a figure which with standard C.B. apparatus at the extension stations will afford a grade of transmission sufficiently good for local conversations between the extension stations.

A higher standard of transmission however is required for exchange talk and trunk work. To this end the circuits at the P.B.X. are so arranged that an extension station, connected through to an exchange line, draws current for operating its transmitter direct from the exchange line, and is quite independent of the fluctuating supply drawn from the power lead.

Having now reviewed the cardinal points of P.B.X. operating, we are in a position to consider in detail the standard types of equipment and to appreciate the why and the wherefore of the numerous points of difference in the designs.

**Cordless Switchboards.**—These boards, known to the initiated as "switchboards B.E.C.B. cordless," are stocked in three sizes, having capacity respectively for:—

- 1 exchange line and 3 extensions.
- 2 " " lines " 4 " "
- 3 " " " " 9 " "

On this type of board as the title implies, connecting cords with all their attendant evils and high maintenance costs are done away with and the necessary interconnecting between lines is effected by means of keys. A sample board of the latest pattern is on the table. The principal innovation in this design consists in arranging for the signals associated with the extension lines to act in the dual role of calling signal and supervisory signal. The necessary changes in the connexions of the signal are effected by means of additional contacts on the connecting keys, which when a key is operated cut the signal drift from the line circuit proper and connect it to the local contacts of a series relay associated with the connecting circuit. These will more readily be understood from a consideration of diagram 1, and by seeing the actual happenings on the switchboard.

\* \* \* \*

Two solid advantages are obtained from this dual use of the extension line indicators, first a positive supervisory signal associated with an audible alarm circuit is obtained, and secondly the supervisory signal is always directly in line with the key controlling the line to which the signal refers, so that the operator can instantly sever a connexion or enter a circuit in response to a signal without any mental effort to determine which key to operate.

**Double Cord Switchboards.**—From the maintenance point of view the cordless board is not far removed from the ideal, but unfortunately the cordless principle cannot be conveniently adopted for boards with capacity for more than twelve lines, and for larger boards it is necessary to resort to the use of plugs and jacks for setting up connexions.

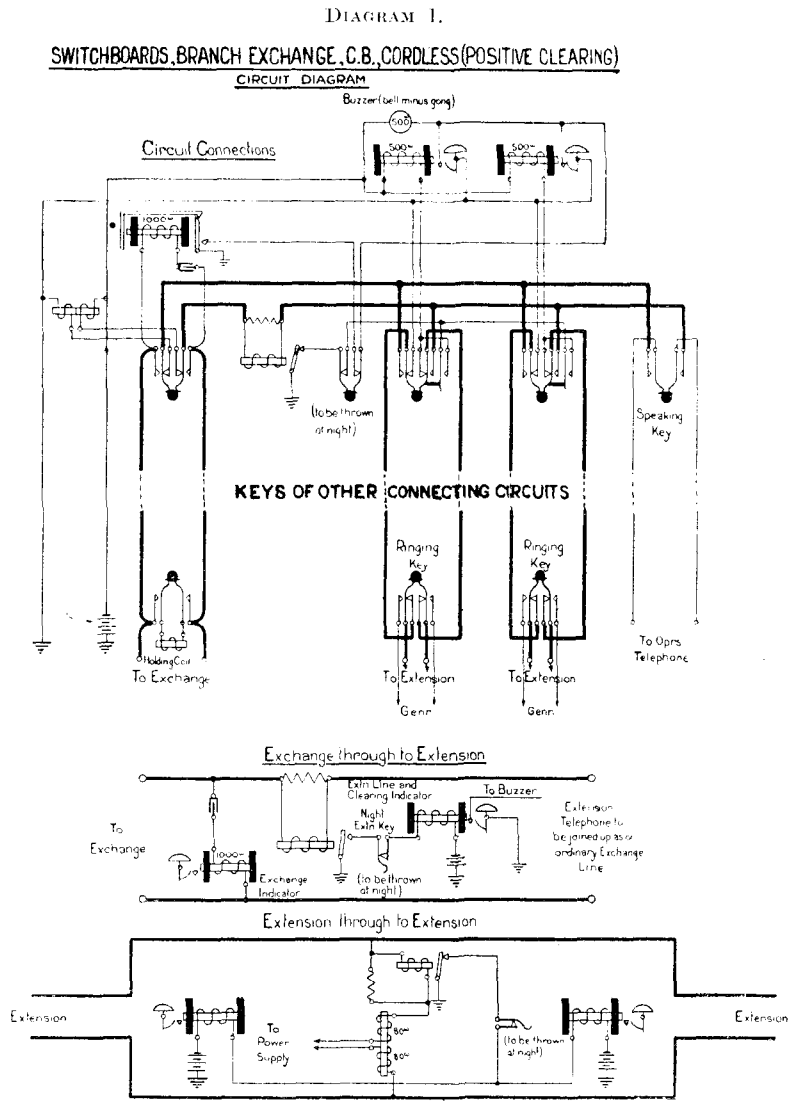
For installations with accommodation for 12 to 25 lines in all, a standard type of board very similar in its circuit arrangements to the cordless board, but provided with jacks and plugs in place of keys, has been adopted. These boards are only stocked in one size as regards line capacity, but they can be obtained fully or partially equipped as follows:—

- 5 exchange lines and 20 extensions.
- 3 " " " " 10 " "

A partially equipped board is on view. The circuit arrangements are shown in diagram 2. The only essential difference between these circuits and those of the cordless board lies in the method of controlling the exchange line.

\* \* \* \*

A point worthy of notice in connexion with this board is that the use of the extension line signals for supervisory signals results in the supervisory signals being displayed in a position readily visible from other parts of the room. For a small installation handling only a moderate amount of traffic this is a valuable feature in that it provides conditions favourable to prompt observation of signals and assists in the timely disconnexion of completed calls.



NOTES ON DIAGRAM 1.

For simplicity only one exchange line, two extensions and one set of connecting keys are shown.

Current fed on to connecting circuit from power lead or local battery through a retardation coil 80Ω +/- 80Ω and a series relay. Operation of connecting keys joins the extensions together via the connecting circuit. During conversation, series relay operated and extension line signals de-energised. When both extensions "hang up," series relay released and both extension line indicators operated giving positive clear signal with audible alarm.

When exchange line connecting key is operated, the local current feed is removed and talking current is drawn over the exchange line.

"Holding" key provided for exchange line and a special ringing key for each extension line. Holding key not used normally and extension clears simultaneously at main and private branch exchange.

Night switching key (one for each connecting circuit) renders extension line signal and alarm bell circuit imperative, and permits of extension being left through to exchange at night for through service.

For installations requiring a greater capacity than that afforded by the board just described, a double cord board of somewhat different design and with a capacity for 16 exchange lines and 50 extension lines is used. A sample board of this type equipped for 10 exchange lines and 30 extensions is on view.

In considering the design of this board it must be borne in mind that an exchange of this size carries a comparatively heavy traffic and is always given or should be given the undivided attention of a specially qualified operator. On these larger boards the scheme of utilising the extension line indicators as supervisory signals would be unwieldy and is therefore abandoned. Special supervisory signals are provided in association with the cord circuits, one for the calling and one for the called subscriber. Unfortunately these signals fall short of full compliance with the ideal conditions laid down in the earlier part of this paper. They are negative. They make a brave display so long as the conversation is in progress and they have no particular duty to perform, but when the conversation is ended and the critical moment arrives for them to intimate the fact to the operator they perform that duty by disappearing. However convenient such a scheme

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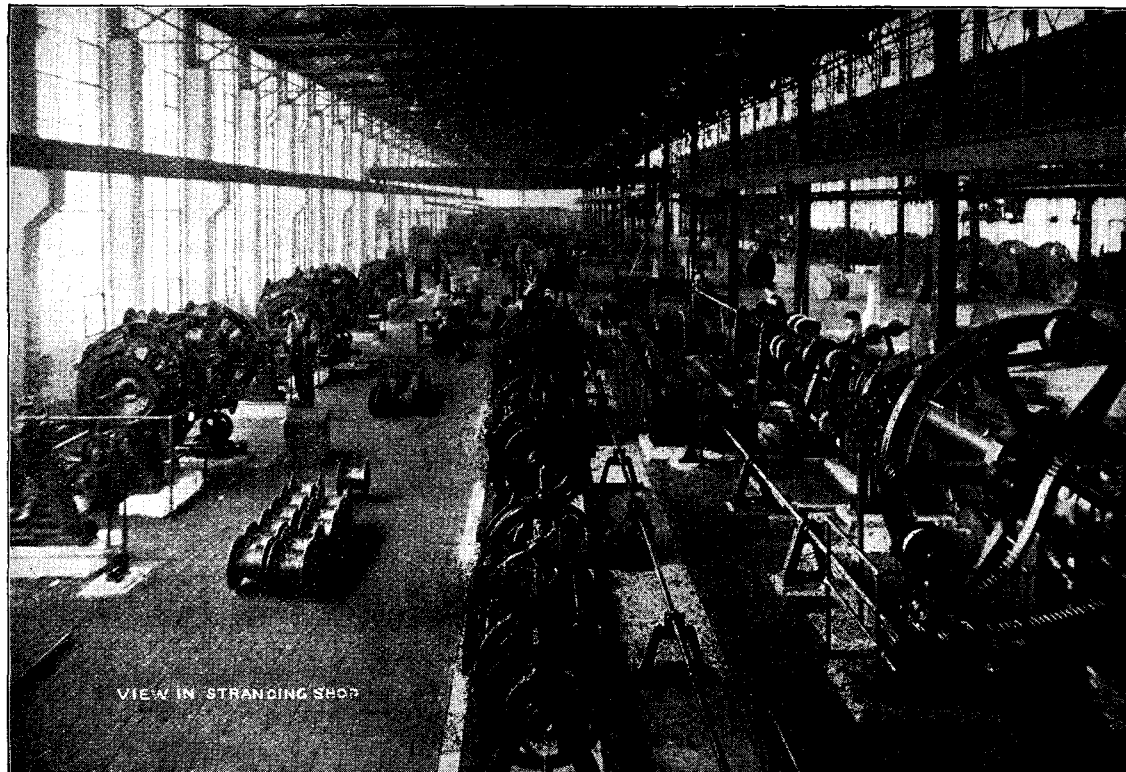
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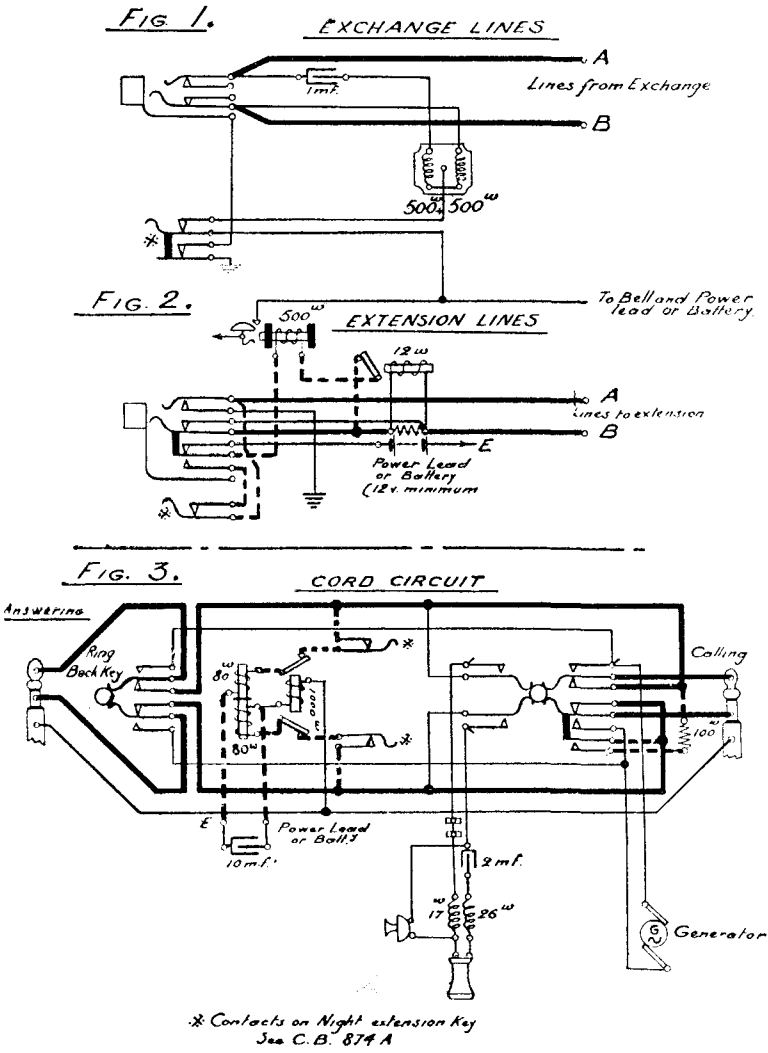
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of working might be if applied to one's own official duties, it is always objected to when applied on telephone switchboards.

DIAGRAM 2.

**C. B. SYSTEM. SWITCHBOARDS**  
*B. E., C. B.*  $\frac{3+10}{25}$  AND  $\frac{5+20}{25}$ .  
**LINE INDICATOR CLEARING,**  
**CIRCUIT CONNECTIONS.**



NOTES ON DIAGRAM 2.

**Extension Line.**—Normally A line to earth and B line to battery through extension line calling signal. Insertion of plug into extension line jack cuts battery off signal and joins signal in bridge across the extension line. Series relay disconnects this bridge during conversation.

**Cord Circuit.**—Current fed to cords through  $80\omega + 80\omega$  retardation coil. This feed is disconnected by third conductor relay when either plug is inserted into an exchange line jack.

**Control of Exchange Line**

- 1st by operator's instrument loop,
- 2nd by  $100\omega$  spool on calling plug ringing key,
- 3rd by signal bridged across extension line,
- 4th by extension instrument loop,
- 5th by signal bridged across extension line.

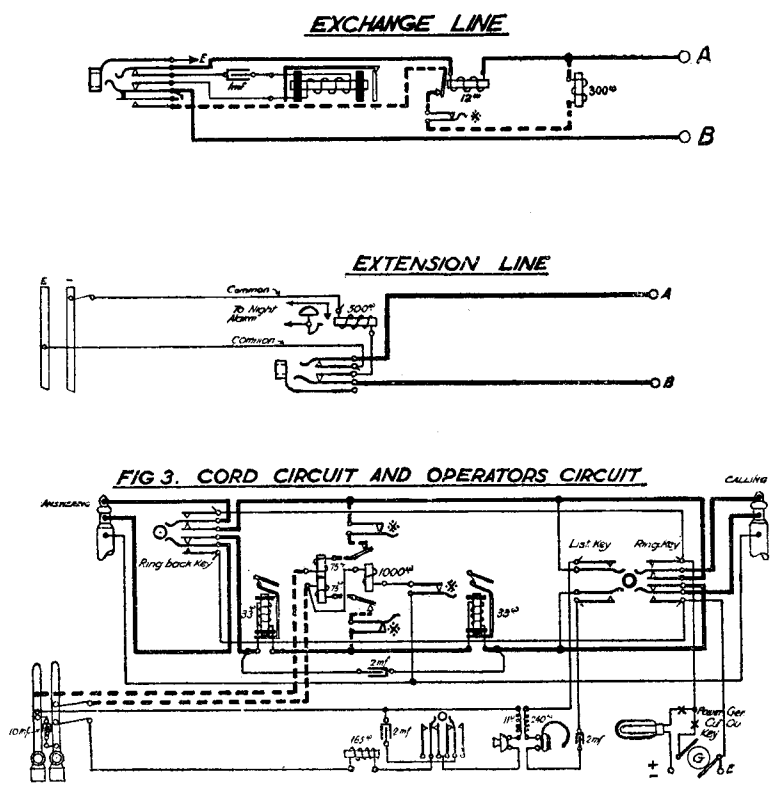
The foregoing is the order to operations on an incoming call from the main exchange for an extension station. Should the operator wish to consult privately with the extension station before connecting the exchange line she holds the exchange line by inserting the calling plug into a spare extension line jack labelled "hold," or into a special holding jack when fitted.

The extension clears to the P.B.X. only, on extension line indicator, and no clear is received at the main exchange until the P.B.X. operator takes down the connexion. Thus the extension can call in the P.B.X. operator and get calls transferred without producing false signals at the main exchange.

Night Extension Keys cut the current feed off the cord circuits, disconnect the audible alarm and cut the earth off the bush of the exchange line jacks, so that an extension can be left through to the exchange at night without wasteful current consumption.

DIAGRAM 3.

**C. B. SYSTEM. - SWITCHBOARD**  
*3 E., C. B.*  $\frac{10+30}{65}$  **CIRCUIT DIAGRAM.**



NOTES ON DIAGRAM 3.

**Cord Circuit.**—Talking current fed through  $75\omega + 75\omega$  retardation coil, cut off by third conductor relay when either plug inserted into an exchange jack. Supervisory signals one for each cord in series with line. Alternative path via condenser for speech currents. Negative signals without audible alarm.

**Exchange Line.**—Series relay disconnects holding coil during conversation, thus avoiding transmission loss. This relay shown in the diagram as  $12\omega$  actually has two windings, one  $20\omega$  inductive and one  $30\omega$  non-inductive.

**Control of Exchange Line**

- (1) by holding coil on exchange line jack when P.B.X. operator plugs in to answer,
- (2) by extension instrument loop during conversation,
- (3) by holding coil on exchange line jack from time extension hangs up till P.B.X. operator withdraws plug.

Night extension keys disconnect exchange line holding coils and cut off all current from cord circuits.

The provision of positive supervisory signals on these boards would undoubtedly be an improvement from the operator's point of view, but the proposition so far as the engineering side of the question is concerned is not a simple one, many factors are concerned, and up to the present a satisfactory economic solution has not been found.

The circuit arrangements adopted on this type of board are shown on diagram 3, and they will be most readily understood by considering them step by step as we follow through the process of setting up calls on the actual models.

When accommodation is required for more than 65 lines, two of these boards can be fitted side by side, thus providing for 30 exchange lines and 100 extensions to be worked by two operators.

If a still larger installation is required a multiple type board is provided. These boards are very similar in design to the ordinary N. 9 C.B. main exchange boards such as are installed in the Tottenham and Enfield Exchanges. The finances of the Telephone Society unfortunately would not permit of the installation of such a board for our benefit to-night, and I have no desire to inflict upon you an involved description of the working of these boards



unrelieved by what I trust you have found to be the less boring methods of actual demonstration.

In concluding I should like to express my grateful thanks to Major Robert Mitchell, the Director of Education at the Regent Street Polytechnic, for his kindness in lending us the Western Electric manual exchange model which has been of such great assistance in to-night's demonstration, to Mr. Mansbridge, who very kindly solved the difficulties of transport and facilitated the exhibition here of our own P.B.X. apparatus, and lastly, but in a very full measure to Mr. Gardner for the time he has so generously given in connecting up the apparatus and arranging the demonstration.

## PERSONALIA.

### LONDON TRAFFIC STAFF.

Miss L. SHAKEL, Assistant Supervisor, Class II, who was attached to the Office of the Superintendent, Female Exchange Staff, has resigned to be married. She was the recipient of numerous presents including a breakfast service from the supervising staff of the F.E.S., a silver sardine dish and a case of silver teaspoons and sugar tongs from the telephonists on the office staff, and pictures from old colleagues in the City and Central Exchanges.

Miss M. E. PORTER, of Hop Exchange, has resigned to be married. She was presented with silver teaspoons by her colleagues.

Miss E. A. M. BASS, of Hop, resigned in view of her approaching marriage and was presented with vases by her colleagues.

Miss E. EASTWOOD, of the Tottenham Exchange, has resigned to be married. She was the recipient of a tea service from the staff.

Miss A. STURBY, of Walthamstow, has resigned to be married and was presented by the staff with a hand bag.

Miss F. M. SMITH, of Loudon Wall, has resigned in view of her approaching marriage and was presented with a case of silver fish knives and forks by the staff.

Miss A. M. REDMAN, of Kensington Exchange, has resigned to be married. She was presented by her colleagues with a silver cake basket and various other gifts.

Miss C. NELSON, of East, has resigned on account of marriage. Her colleagues presented her with a silver cake basket and various other gifts.

Miss N. DENHAM, of North Exchange, has resigned in view of her approaching marriage and was presented with a fruit bowl by her colleagues.

Miss CRIPPS, of Victoria, has resigned to be married. She was the recipient of an oak biscuit barrel and silver butter dish from her colleagues.

Miss D. SHAKEL, of Victoria, resigned on account of marriage and was presented by her colleagues with a dinner service, silver cake basket and other useful gifts.

Miss MUNNS, of Victoria, resigned in view of her approaching marriage and was presented with a tea service by her colleagues.

Miss F. M. CLIFFORD, of Victoria, has resigned to be married. Her colleagues presented her with a biscuit barrel.

Miss N. MORRIS, of Victoria, has resigned in view of her approaching marriage and was presented by her colleagues with an inlaid oak clock.

Miss LILLIAN E. SMITH, of the Trunk Exchange, has resigned to be married. She was the recipient of a case of fish knives and forks and many other useful presents from her colleagues.

Miss ETHEL M. FARR, of Trunks, has resigned on account of marriage and was presented by her colleagues with a silver cake basket and other useful presents.

Miss B. M. COLLIS, of the Hop Exchange, has resigned to be married and was presented with a silver and cut glass epergne by her colleagues.

Miss VIOLET M. GOODLEY, of Holborn, has resigned in view of her approaching marriage. She was the recipient of a set of fish knives and forks, a case of tea knives and several other gifts.

Miss D. M. BALDWIN, of Paddington Exchange, has resigned to be married and was presented with a salad bowl, butter dish and other useful presents.

### PROVINCIAL STAFF.

Miss W. B. DORE, Telephonist, Colwyn Bay, has left Colwyn Bay for service in France as a Telephonist under the W.A.A.C.

Miss G. ELLIS, Telephonist, Chester, has left Chester for service in France as a Telephonist under the W.A.A.C.

Miss LEES, Telephonist, Hanley, has taken up work as Telephonist in France. She was presented with a signet-ring on the occasion of her leaving the district.

Miss F. MAGOWAN, Portadown, and Miss MAGEE, of Bangor, who volunteered for France as Telephonists, have now been called up for active service and will shortly proceed to London for training. The good wishes of the staff go with them and they trust they will have a safe and speedy return.

### A POST IMPRESSIONIST.

"What is Bill doing now?"

"He's a post impressionist."

"You don't tell me. What's that?"

"He has a job branding numbers on telephone poles."—(Mountain States Monitor.)

## PROFESSOR FLEMING ON THE WORKING OF A TELEPHONE EXCHANGE.

In the course of a lecture on the work of a telephone exchange, delivered at University College, Gower Street, Professor J. A. Fleming gave a simple account of the operation of a multiple switchboard.

He described it as consisting of a series of upright panels with desks in front, at each of which a girl is seated. Each panel is divided into a number of squares like a chessboard, and each square contains a spring clip or "jack" which forms the terminals of a subscriber's line, with a lamp and a telephone number below it. The whole area of the panel is such that the girl can reach any part of it without rising from her seat. The board is provided with a number of "flexible cords" containing two insulated copper wires; these terminate in a pair of plugs which fit into the jacks and can make connexion between any pair of jacks or subscriber's lines. The girl wears on her head a steel band carrying two telephone receivers held opposite her ears, and she also wears a breast-plate which carries a telephone transmitter opposite her mouth, so that she can speak and hear with her hands free. All the cord connexions (*when the key is thrown*) are connected to her telephone receivers and transmitter. In addition to the panel containing the jacks of the group of calling subscribers, about 200 in number, which she has to serve, the girl has within reach an upper panel containing the jacks of all other subscribers on the exchange, and the corresponding jacks on each upper panel are connected together so that any girl can call up any subscriber.

When a subscriber, wishing to make a call, takes his telephone receiver off its hook, a lamp lights up over his number on the switchboard. The girl then puts the plug attached to one end of a flexible cord into his jack, thus (*when she has thrown the key*) connecting her head telephone with his instrument, and then asks what number is required. Having received a reply she looks for it on her upper panel, and then has to ascertain whether it is at that moment engaged on another panel by someone else. For this purpose she just touches with a metal point on the end of the plug the jack of the required subscriber, and if she hears a buzzing noise in her telephone she knows his line is engaged. If it is free she calls him up by sending into his line an alternating current which rings his bell. When in answer he lifts his receiver off its hook the lamp over his number (*Prof. Fleming evidently refers to the lamp on the cord circuit which goes out when the subscriber takes his receiver off*) lights up, and she inserts the corresponding plug into his jack, thus (*after she has replaced the key*) cutting her own head telephone out of circuit and leaving the two subscribers in private communication. When at the end of the conversation they replace their telephones on the hooks the lamps (*on the cord circuit*) go out (*they glow until she withdraws the plug*); she then cuts them off by withdrawing both plugs. This description applies to calls between subscribers in the same 10,000 group, but there have to be cross connexions between various boards or exchanges and the central exchange in large towns.

Professor Fleming also outlined the principles of an automatic telephone exchange, and described its immensely complicated mechanism as the nearest approach the human mind has yet made to the construction of an artificial brain, with its ganglion switches, copper wire nerves, and electric current circulation, all controlled by an unseen intelligence in the shape of the distant subscriber. At present there are automatic exchanges in operation under the General Post Office in ten towns, the latest of them, at Blackburn, having been opened last week. Their present collective capacity is about 13,100 and their ultimate capacity over 25,000.—(*Times Engineering Supplement.*)

[Our readers will note from our amplifications in italics that the important part played by the speaking keys is not mentioned, and that there is some confusion (due no doubt to the unavoidable abridgement of the report) between the supervisory cord signals on the keyboard and the subscribers' lamps on the answering positions only—and not on the multiple—of the switchboard.]

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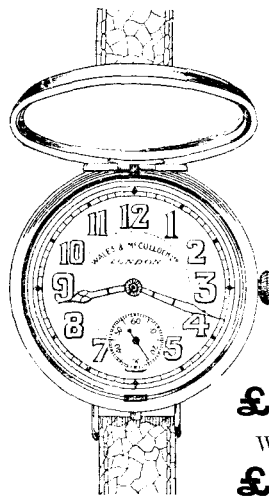
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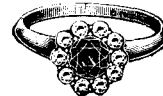
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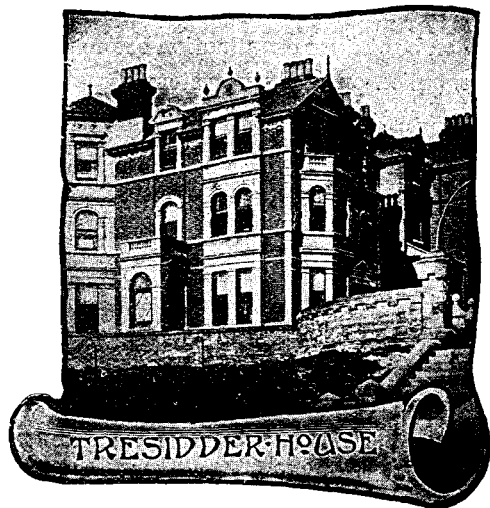
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# THE Telegraph and Telephone Journal.

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JANUARY, 1918.

No. 40.

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### THE DIRECTORY.

BY J. STIRLING (*Assistant Controller, London Telephone Service*).

ALAS! it has fallen—not from its proud estate, but on the evil days of war-time and so must e'en be rationed to its select public as some other necessities are to the greater public. For three years then (this period is not copied from Old Moore) it will only—to quote the apostrophe of Shakespcare's witches—"show our eyes and grieve our hearts" on four occasions instead of the former six. Truth forbids to write "*sic transit*" over this "falling-off," for there are compensations, material and moral. The former, including the saved paper which is unmistakably material, meaning pounds, shillings and pence, the latter a reduction of opportunities for errors and omissions with their consequent incentive to the use of unscriptural words: "doing our bit," "an example in economy," and similar appropriate catchwords of the time may be given as secondary results according to inclination.

"It" is to us in London "The Directory," to the Provinces "The London Directory," to the public "The Telephone Directory," and the views of each on its contents and compilers have been expressed "not once, nor twice," both flatteringly and otherwise in language of all gradations from laudatory to profane. Still it "keeps the noiseless tenor of its way," growing in usefulness, gaining in appreciation, and increasing in circulation. To one who has been in intimate touch with its preparation for now over ten years, has sighed over printers' errors, sinned over careless proof-checking, rejoiced over the falling percentage of mistakes, and tried to soothe the acerbities aroused by occasional omissions there can perhaps be little that is not prosaic in the book itself. Yet as each new volume replaces the old there is a charm in turning over, in scanning the pages, in mentally appraising this and that, even in letting more important matters wait, to muse awhile over its contents as one will do over some catalogue of books. And for this last we have high authority, for did not Mr. Birrell say of catalogues, "You get *them* at least for nothing and it cannot be denied that they make mighty pretty reading."

Has anyone ever read the Directory from cover to cover I wonder? Personally I plead not guilty, but one comes across so many strange things which people do that it would not be surprising to learn of a case—a self-inflicted penance probably. It would be a new sphere of usefulness although one dislikes the idea of converting into an article of punishment what was intended for enlightenment. Telephone numbers and absolution seem utterly unconnected, yet one has heard of cases where the latter

was required when the former could not be got. People talk of having read the Bible right through as if it had required a terrible effort; the Bible is literature and is easy and enjoyable reading; a thick volume of sermons about the Bible would be more worth boasting about. But such people must be warned off our Directory; it is not for reading through, but, like the cakes at afternoon tea, to be taken in dainty morsels. "A. K. H. B." now little remembered outside of his own St. Andrews, gives in one of his essays a picture of his delight when by the fireside on a rainy afternoon he had a pile of new books with uncut leaves by his side and could browse here and there amongst the pages as he cut them. The uncut page has gone but the joys of browsing have not and, if we would see this Directory of ours on other than a mere utilitarian-plane, that and a little imagination, is the key.

If some Polonius were then to ask, "What do you read, my lord?" the answer would be "Names! Names! Names!" And there is much of interest in names. In a little book of French poetry which I have wandered through at odd moments, there is a gem of Lamartine's with the alluring title "A Name."

"Si vous le demandez, ma lèvre est sans réponse,  
Mais tel qu'un talisman formé d'un mot secret,  
Quand seul avec l'écho ma bouche le prononce,  
Ma nuit s'ouvre, et dans l'âme un être m'apparaît."

\* \* \* \* \*

"—Oh! dites-vous ce nom, ce nom qui fait qu'on aime  
Qui laisse sur la lèvre une saveur de miel!  
—Non, je ne le dis pas sur la terre à moi-même  
Je l'emporte au tombeau pour m'embellir le ciel."

So the mind of the poet, the artist in words, can bring to a mere name beauty and grace and vision.

In this collection of ours, covering some 140,000 to 150,000 separate names, there must lie much that is suggestive. It is at least a democratic collection, for the lordly lion lies down with the plebeian lamb, and His Grace of X, is honoured with no more space and no larger type than plain Mr. A. B. Yet this statement must be qualified. Some names do hit one with their ostentatious and glaring display of large letters. The novice would doubtless think that these must be the great ones of the earth thus to stand out above their fellows. Oh, dear no, real greatness, at least in the social, political, literary and professional world has to be searched for. In the commercial world there is a different standard because nowadays we must advertise if we and our wares are to become known; hence the larger type which incidentally means money and will therefore be difficult to get rid of—the type not the money, please—if we should ever make up our minds to be really democratic. Perhaps, however, the solution may be reached from outside for if Trade Guilds, the latest remedy for capitalist control, ever become effective internal competition will presumably cease

and with it the need to advertise. It may be so; on the other hand it may not.

One finds sprinkled here and there the magic letters which tell of honours bestowed for service to the State. Yet there are probably more which could but do not appear. Indeed it would not be difficult to find the names of some whose fame is world-wide, the recital of whose consequent distinctions would fill many lines, yet without so much as a single affix to their names. There are many reasons for these differences. With some the name carried its own honour; with others, in the days of the Directory's youth its compilers inserted particulars as inspiration or capriciousness moved or an Honours list suggested and so they have continued; again the particulars have been supplied by a secretary who used his own sweet or wayward discretion; in other cases they have got in somehow, generally without the "by your leave" of the owner, and in all cases once in they cannot come out because no one wishes to be accused of false modesty in asking for the deletion of his own. It is not the "straight line" method which one expects a Government Department to adopt, but, it serves, and, best of all, there is never a complaint.

"What's in a name?" asked Juliet of Romeo. If the name is not there, much. Its value in the owner's eyes goes up a thousand-fold because he cannot see it in print. Far be it from me to disparage the "*cachet*" resulting from a Directory entry. It may not be a thing of beauty but it is a joy for ever; it gives a tone, a standing, a consciousness of superiority. Imagine the unsuccessful careless ease with which the newcomer into this paradise says to a client: "Oh, you'll find our address in the Telephone Directory;" his wife does it much better, but women always are to the manner born in these little social amenities. Then think what it means to be, by some accident, left out. To be in was life; to be out is worse than death—it is social and commercial ruin, lost "deals" involving thousands, shattered reputation, impaired credit. It sounds like the result of a European War. Fortunately for the peace of mind of both parties such happenings are of the rarest, but each one makes me more certain than before that those who are in must by now be millionaires, as they must each have been gaining as much as the poor fellow who was out had lost. Some future Chancellor of the Exchequer with a roving eye for after-war taxes may yet treat a Directory entry as if it were an entertainment and charge a percentage on the takings. In that day many a statement sworn to in haste will be repented at leisure.

Is there a psychology of names? If so where place the composite—I dare not call it hyphenated—name? Some of course possess a hyphen but as they had it before the war it would be unfair to bring it up against them. Personally I prefer the connecting link; it seems to add to the aristocratic sonorousness of the pronunciation somehow. It doesn't really, but that is the mental effect of the hyphen. The placing of the bearers of double names in their proper order never fails to yield "incidents" as the Press would say. In Directories even as in more stately circles there is an order of precedence which may not be departed from. Double single names—to be concise but not clear—are treated separately, whereas the connected ones are not. You may not understand that; many of the people with the names don't. Anyhow that is what is done. One lady quite recently was very much concerned about it to the extent of an hour of my time. I learned from her much about derivatives, the practice in other Directories, the grievous shortcomings of other Post Office officers with whom she had discussed the matter, and how delightful it was at last to find someone who grasped the point. She was a delightful talker and increased my interest in composite names, but she did not discuss their psychology.

A simple rule for the plain person would be—"if the name isn't in the book he hasn't a telephone." Such an one is really too innocent; the snares that lie in wait for the searcher after truth are unknown to him. You wish to find B's number, you search diligently under "B," your feelings rising through varied degrees of interest, amusement, excitement, rage; it is not there but it ought to be. If in a calm moment you decide to enlist the sympathy of the exchange you will be told in a gentle and understanding voice: "No . . . under G—Girls' Brigade"—your friend B being

secretary of that admirable institution. Evidently the last thing to be associated with many entries is the need for finding them, and if some zealous official yearning to be of service suggests something of the sort he will probably have Magna Charta thrown at his head by the owner of the offending name.

With one class of entry the insertion of a person's name should be made a penal offence—that is "Inns." Not hotels, look you! nor those "of court," but the real old English inn. You will find many "hotels" but they are generally either inns which have become snobs, or huge blocks of rooms at which your true Londoner looks askance. An inn is that rare combination of the name of a place and a place-name: some also call it a common place, others a place of common resort. But ask any "man in the street" to direct you somewhere and if he tells you to turn at the "Black Bull," go along by the "Red Lion," and turn in at the "Spotted Dog," he has the true guide spirit. Inns give a tone and reputation to a book, for to quote Mr. Birrell again are not "all good novels full of inns" and was that not reason alone for love of George Borrow and all his works. It may be that in time our Directory will even supplant those ancient volumes of "Country Life" which which decorate the inn-table, and the casual traveller will while away his lazy hour searching out the names of inns. He will not find "The First In and Last Out," but others of less rarity and some which have achieved fame in song and story are there and will reward the diligent. One is tempted to quote Hazlitt on the association of inns and books but readers of "Table Talk" will know the passage: others will be rewarded if they go search.

Have you ever been told—"The number is ex-Directory!"—and this time the tone is more hushed and there is even a hint of mystery. The expression is officially correct—can you imagine an exchange ever using one that is not, even under direst provocation?—and tells those whom it may concern that the person, firm or Government Department wanted does not wish the telephone number known, and there you are. One can imagine some Sexton Blake turning to his sharp-eyed, bright-faced youthful assistant and exclaiming with bated breath: "Ha, his telephone is not in the Directory!" What fancies one could weave out of those mysterious beings who are, but are not. Some are no doubt like the old gentleman who feared that he would be burned to death in bed, so had a shower-bath arrangement fitted in the canopy in order that when a certain temperature was reached the showers would descend upon the bed and its occupant; there never was fire, but the showers came down nevertheless from time to time and the old gentleman endured it lest a worse thing should befall him. So some people endure the telephone as a sort of necessary evil and therefore limit its powers of mischief. In actual fact our ex-Directory friends are a problem. Enquiries for them lead to great waste of time, and some day perhaps an adamant administration may say to them—"we cannot compel you to have your name in, but if it is to be out your telephone will cost you more." Even then the punishment might not fit the crime for some names would be an adornment even to a mere Directory.

Exchange names are a cult of their own. In the small suburban town or village with its one exchange the name is ready waiting and there's an end on't. But in London proper—what we call "Inner London"—with its 31 exchanges and more to follow, it is otherwise. Indeed there has been much pleasant talk bestowed upon the choice of a name before one is finally adopted. The ideal name is very rare because the combination required is seldom to be found. It must have some direct connexion with the district, it should be easy to pronounce, it should not be such as by association or prejudice will offend the susceptibilities of subscribers, should be limited in syllables, and should if possible have a pleasant or musical sound. Dare I suggest that there is only one exchange in London which comes up to that ideal, only one which seems to be without a single blot on its escutcheon, while all others, attractive as some of them are, have at least one little weakness which prevents them reaching perfection. There is an aristocracy in exchange names as is quickly discovered when removal involves a change. Nor, sentimental as it may be, can the fact be ignored in deciding upon a name. Suppose, for example, that Gerrard or Regent had been called Soho. Personally I like Soho—the sound of its name,

and its many tongues, are as pleasing to the ear as its viands to the palate, but it simply would not do for calling telephone numbers or printing on note-paper—it is too blatant, assertive, clamorous like its own streets, and so we choose something more neutral if less picturesque. (The right to recant all this is reserved in case a Soho Exchange should ever become necessary.)

Numbers again are in a class by themselves. They have as many idiosyncracies as the human beings who use them. It is curious that many people can remember every telephone number they use excepting their own. Others almost invariably transpose two of the figures in a number, asking for 457 when they want 475, then indignantly asserting "you've given me a wrong number; I asked distinctly for 475." "Five" and "Nine" don't look like each other but their similar telephonic sound—or phonetic similarity, to use an official phrase—makes them the bane of the telephonist, for it is curious how many telephone users will not or cannot pronounce distinctly. Not long ago a subscriber begged to be given another number because the one allotted to him was associated with a drug used to combat a certain disease. Others have objected to a number because its digits added up to the mystical figure of "13," but strangely we cannot find a case in which 13 itself was objected to. A number is an easy means of identification, but it also involves loss of identity; we become figures instead of persons. It is one of the difficulties in administration that the tendency is to regard the subscriber as a mere number instead of a creature of flesh and blood. Many subscribers retort by treating the operator as a cog in the machine instead of a human being.

The manifold uses of the Directory. The official statement or standard expression is "the primary object of the Postmaster-General in issuing a Directory is to enable subscribers to ascertain the numbers of those to whom they wish to speak;" it is not for general publication but sees service when we come across the gentleman who expects to have three lines of free space for his name, description and address. An enterprising south coast resort not long ago used the Directory as a happy hunting-ground for addresses to which its pictures of pierrots and band-stands might be sent. Many a tradesman refers to it on the quiet when someone unknown "would like to open an account." To judge by the keenness of many people to insert unauthorised entries it must have some value as an advertising medium. Why are the copies at railway station call boxes consulted so extensively? many of the consultants never make a call but they bang the book about nevertheless, just as if they had paid their 3d. It is a pleasant fancy that the tattered condition of so many call office Directories is due to the attentions of the person whose language is inadequate to the situation when he has put 2d. in the box and finds that he has not got the remaining 1d. necessary to satisfy a flint-hearted operator. Yet it has been said "sub rosa" that the operator—or is it the supervisor—can be cajoled if it is gone about in the right way. A story of the reply given to a kindly-voiced man who confessed that he had no coppers—"Oh! I'll put you through; I like your face," has the accents of truth and I rejoice to think—quite unofficially—that any man in khaki just back from the trenches would meet with a like sympathy. Only if he deceive her and she find him out, there will be heard a remorseless click, and "the rest is silence."

How many Directory users know that it contains a preface? Sometimes the ultra-official description is "the prefatory matter," the simple word "preface" being considered common and only associated with *ordinary* books. Now that "foreword" is coming into vogue some bold iconoclast may suggest to modernise the Directory and come into line "with current thought." There is, I fear, a dull monotony about our preface which makes it unexciting reading. It consists entirely of things a subscriber "ought to know." As the things that most interest people are those they ought *not* to know, our little homilies administered in the shape of information are rather neglected. We get a bit of our own back when we witheringly refer an inquirer to "page ..... of the Directory!" One day we may strike into a new prefatory line and give some breezy paragraphs with such headings as "Telephone Triumphs," "Exchange Extracts," or similar

alliterative titles. We might even adopt the old New Year speciality of giving a review of what has been done, and what left undone—equal portions of space to be devoted to each—but it is to be hoped that the style will be different from that used by some newspapers in their annual reviews which are often mighty dull.

The war—of course. It has brought us new names to conjure with. Ministries of Food, Pensions, Munitions, Shipping and many others are all chronicled and will in due time be placed in our library to be conned by that new generation which is to ask us "What we did, daddy," &c. At the request of our postal colleagues that new aid to letter-writing—the district numbers—is now finding a place. For some time there has been an obscure note to be found by those who diligently search—"Owing to the war it has been necessary to restrict the list of offices available for such services." We hesitated whether the description of the said services should remain, but it would have torn our hearts to bid it even a temporary good-bye, it would have made a big gap on the page, and the war may end sometime, so it remains. Deaths and marriages make their mark on every Directory; the war has probably increased them but the page still shows no gap where a name had been and only those who know see that a name has been changed.

What becomes of old Directories? So many people refuse to part with them. Ultimately I suppose some of them reach the camp libraries on the principle that they are not wanted, but I have never come across one in a second-hand book-shop although I have to confess to many peregrinations in Charing Cross Road. It has not yet become classical therefore like ".....'s Guide Books." It may be that some people are forming libraries and think that Directories make an ornamental and even useful nucleus. Now that a great editor has told them how to get a library for £5 this will doubtless cease and our waste-paper credit increase accordingly.

Will the Directory ever change? Of course one cannot be too confident about a Government production, but there are certainly changes to be discussed. The literary instead of the useful preface is the novel sort of change which one does not expect, but we may one day have the exchange and number at the end instead of the beginning of the line, we may eliminate all advertisements from the body of the Directory, we may get a complete instead of a partial trades list, and we may have three instead of two columns on a page. If and when we do there will then be other expectations to realise, for perfection never is but always is to be.

Of figures—circulation, deletions, changes; of regulations telling what to do and what not to do; of press-copy, and proof-checking and correspondence much could be written but probably to little good. One thing must be said however—the work is all done by women and done exceedingly well.

Pleasant as it may be to find food for reflection even in a Directory, yet it were well to listen to if not take the advice of Robert Louis Stevenson as to education from books in general: "While others are filling their memory with a lumber of words one-half of which they will forget before the week be out, your truant may learn some really useful art: to play the fiddle, to know a good cigar, or to speak with ease and opportunity to all varieties of men."

## REVIEWS.

*Telegraph Practice.* By John Lee. 102 pp. 2s. 6d. Longmans, Green & Co. A work on telegraph practice by Mr. Lee will require nothing from us to commend it to our readers. The book is, in fact, a reprint in an enlarged and revised form of a series of articles which ran through our columns. It forms a convenient and succinct hand book on the fundamentals of telegraph practice, and concludes with an interesting chapter foreshadowing future developments. Those who are not telegraph men and wish to obtain a condensed description of the chief types of telegraph instruments in use will find an admirable one in Chapter V. Another chapter, that on telegraph organism, describes in clear terms the complicated problem of distributing telegraph traffic

over a large country and the main lines on which routing is based. With all that Mr. Lee has to say on the subject of tariffs we are in hearty accord, and we shall hope to see some revisions of the basis of charge when the war is over. We think that those of the general public whose reading is not entirely confined to fiction would find more to interest them in such a work as this than its title indicates. To have an intelligent idea of a service which forms an important part of our economic life, and to acquire this, if we may so put it, on easy terms, is a desire of most thoughtful men. The public read and understand a good deal on the subject of railway working; they have but the vaguest ideas on telegraph and telephone practice, and such a book as that under review would demonstrate that telegraphy also is full of interest to the inquiring mind.

"Somewhere." By Sapper Robert Hall. 156 pp., 1s. 3d. Hodder & Stoughton.—We have made acquaintance with



SAPPER ROBERT HALL.

Sapper Hall's book with great pleasure. Probably many of our readers are familiar with it ere this, but to those who are not, especially if they like good short stories of an episodic character, we heartily commend it. Sapper Hall was a telegraphist in the C.T.O. when war broke out, and although over military age at once joined the Signals Section of the Royal Engineers. The stories and sketches here presented, therefore, are the outcome of his experiences with the Forces, and are in most cases first hand impressions of actual incidents. Indeed Sapper Hall disclaims the title of fiction for any of these narratives, and the book possesses a distinct documentary value as a record of the life at the Front. He has a humorous and graphic touch, the first sketch in particular showing a decided gift

for that difficult form of art, the short story. In other sketches he presents a vivid picture of the cheery attitude of the soldier under conditions of discomfort and danger, and of the signallers of course he has some tales of pluck and determination to tell. "When the full history of this war comes to be written," he says:

I hope the great part taken by the Post Office men will be recognised and appreciated.

The regular Royal Engineers who were serving with the colours when war broke out are splendid fellows, highly skilled and perfectly trained—there is nothing the Post Office official can teach them—but they were too few for the vast scale of operations. There was no time to train men: it takes five years' training before a telegraphist can be trusted on a circuit by himself, or a lineman can make a perfect joint. The need was imperative, and so the Post Office stepped in.

From all over the country, from offices large and small, telegraphists and linemen, already trained and skilled, volunteered to serve with the colours. High officials took commissions and accompanied their own operators and linemen; at the bases and the different Army headquarters the high-speed Wheatstone automatic instruments were installed, and staffed by experienced men; Morse operators took charge between divisions and brigades, and right up in the trenches the Post Office man lay in his dug-out with his "buzzer" strapped round his ears, and in that inferno of deafening explosions and shattering shell-fire, maintained communication and received and dispatched his orders.

When the telegraph or telephone line was broken by a bursting shell, the lineman grabbed his tools, and with a length of spare wire coiled round his neck, climbed out on to the fire-swept road or field, and, flat on his face, crawled along by the line till he came to the break, where, with cool nerve, he joined and repaired the breach, restored communication, and then wormed his way back into the trench again—if he were lucky!

In the early days of the war operators and linesmen were sent to man and hold the trenches; and here let me tell you of the only Central Telegraph Office man who up to now has been awarded the D.C.M.

And he proceeds to relate how Private Hastings, a telegraph office man, supported by one other only, held a culvert against the Germans and earned the D.C.M. We recommend all our readers to peruse this inspiring story. Another sketch, "With the Wire," also tells of the devotion of the Signal staff to duty. The last story "The Vision of St. Anne" trenches on the miraculous, and incidentally refers to the taste of our soldiers for poetry. With their taste in music he deals in another interesting sketch.

*The Development of Rates of Postage.* By A. D. Smith. 431 pp., 16s. George Allen & Unwin, Limited.—Although Mr. Smith in his comprehensive monograph treats only of postage rates, and does not touch on telegraph or telephone tariffs, the subject has so deep an interest for all Post Office men on whatsoever branch of the Service they are engaged, that we are sure this work will be read with profit and pleasure by any of our readers into whose hands it may come. Mr. Smith traces the history of the letter post from that embryo stage when only Royal messages were carried, through the periods when the posts were farmed out to Masters of the Posts and again resumed by the State down to the present time, dealing more particularly with the charges levied during each succeeding development of the public use of the posts, and furnishing ample statistics of the volume of mail traffic carried and the revenue earned by it during these different periods. Canada, the United States, France and Germany are successively dealt with, and then follow exhaustive accounts of the development of newspaper and parcels rates, of minor rates (such as those for books, postcards, &c.), and of international posts in Great Britain and the other countries mentioned. A useful series of appendixes shows at a glance the rates in force in the times of Charles I, Cromwell, Charles II, Anne and George III down to the establishment of universal penny postage in 1840 at the rate of 1d. for  $\frac{1}{2}$  oz., the increased weight allowed in 1871 and 1897, and the increased rate introduced as a war measure in 1915. They also include a concise sketch of the rise, development and extinction of the Thurn and Taxis posts in Germany, and some interesting documents and extracts illustrating aspects of postal history. An extract from a book on "The Present State of London" (1681) gives some particulars of the postal charges to various parts of the continent. For "single" letters they vary from 4d. for the nearer parts, to 1s. for Italy, Turkey, Southern France and Eastern Germany. The names of foreign towns are for the most part curiously Anglicised; we get Calice, Nants, Diep, Bulloign, Norembourgh, Colen (Cologne), Lipswick (Leipzig) and Delph (Delft), while Ypres appears as Ipers. Mr. Smith's book is written as a thesis for the degree of Doctor of Science (Economics) in the University of London, and the author in his researches has consulted some 200 books, pamphlets, periodicals, Parliamentary papers, Acts, reports, ordinances and documents in English, French and German on postal and allied subjects. Copious extracts from these illustrate the different chapters, so that it will be seen that Mr. Smith's facts are well supported by documentary witness. The book is undoubtedly a most useful contribution to the history of the cultural development of the world.

All the three books under review this month are from the pens of Post Office men. Mr. Lee is Postmaster of Belfast, and was perhaps better known as Deputy Chief Inspector of Traffic at Headquarters. Mr. Smith was a member of the Secretary's Office, and Sapper Hall, as we have already said, was and is now again a telegraphist in the Central Telegraph Office.

#### TELEGRAPH AVERAGES.

"Speaking of averages—," says the *Western Union News*, Operators Radford and Kennedy, Savannah, Ga., handled 904 and 877, respectively, during eight hours July 20.

The same averages were made by Operators Johnson and Cox, Atlanta, Ga., on the same date.

The operators mentioned are regularly assigned to the Atlanta-Savannah duplex.

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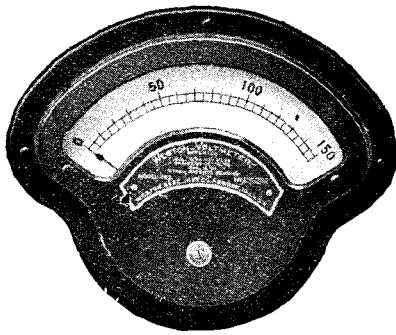
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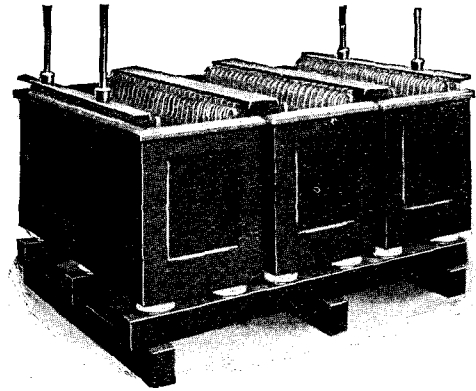
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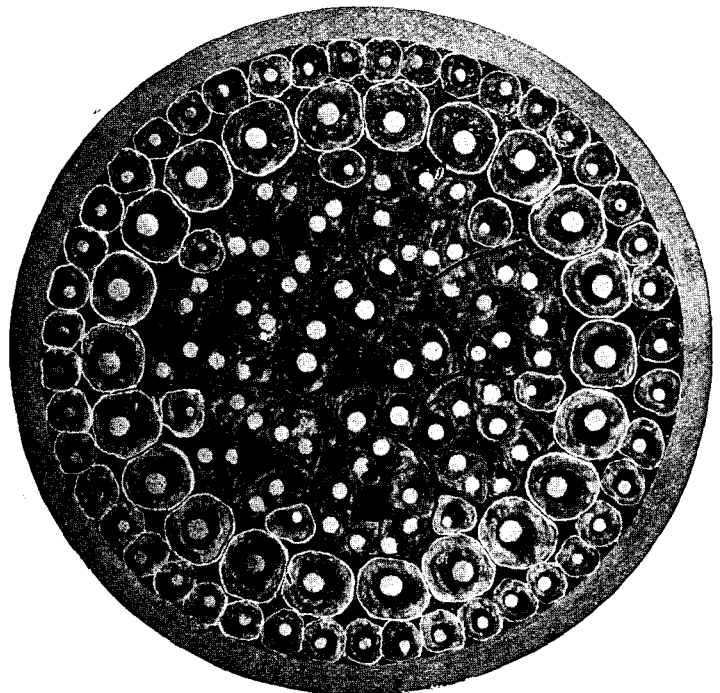
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## TELEGRAPHIC MEMORABILIA.

THERE would still seem to exist some hazy notion that on Anglo-Continental circuits the use of our native tongue is forbidden. Nothing of the sort. The only difficulty lies in the very solid fact that French having for so long been the language of diplomacy our nearest allies had always relied upon their own language as the medium for official conversation and correspondence across the wires. This and other factors have led the French particularly, the Italians, the Belgians, Swiss, Spanish, Portuguese, even the Austrians, and very frequently the Dutch, to utilise this branch of the Latin speech in international telegraphy. If also my memory serves me well the Telegraph Convention at one time laid down French as the means of written and telegraphed official intercourse. Official complaints from the above administrations are written in this expressive tongue and although now and again one runs across an English-speaking telegraphist on the channel ports circuits—perhaps more especially since the war, since which period one or two such appear to have been appointed for counter work, &c., as regards the Inland French towns and cities and the Mediterranean ports as also the Italian cities, French is insisted upon, very politely (?) by the simple method of utilising nothing else!

In pre-war times English and German were the media on Anglo-German circuits, with now and again French, although with certain cities which could be named the latter language was all but absolutely taboo.

For purposes of official message correspondence between the offices of the respective Higher Administrative Service, this may be written in the language of the initiating office, and may be replied to in the language of the replying office, an arrangement which appears to work very well, giving each party the advantage of the full fluency of his own tongue. This however naturally calls for a very close acquaintance with the light and shade and idiom of the language of one's correspondent, causing severe brain searchings at times as to the exact meaning of particular phrases. It will be seen, therefore, that in no case does it remove the obligation upon the British end of the line to make itself acquainted with foreign tongues. So far as both French and German are concerned the standard set by the Society of Arts, Second Grade, is none too high for circuit needs. This knowledge also permits the operator to correct the various telegraphic mutilations and errors on B and C forms, a further obligation upon operators employed on continental circuits. Needless to say some manage with a lower standard aided by the good comradeship of a colleague in cases of necessity. Since the entry of the Belgian staff into the cable room matters have been facilitated by the courtesy of these aforementioned exiles. War-time conditions have indeed been considerably eased by the linguistic helpfulness of this body of men who have thereby compensated in no small measure for any difficulty in assimilating *all* the complexities of departmental working, simple enough in many of its phases to those who have been brought up in the Service, but presenting many queer little points for the stranger in a strange land.

French phrases and terms in common use on the circuits have been circulated among the staff with, it is understood, good if limited effect, but mere dictionary knowledge of a language without some drilling in its syntax only leads to confusion, the calling in of the supervisor or *dirigeur* to clear matters up and the production of nonsensical sentences which would scarcely reflect credit upon the centre of the British Empire. Of such a type was the schoolboy's translation of "Custom's Board" by *planche de coutume* and the inquiry by one of ours as to where *Mal derigée* was situated as it could not be found in the list of stations! The Tommy in *Umteen Yarns* who complained to *madame* concerning some ham which offended the olfactory organs, that it was, "*je suis, très je suis*" was not more handicapped than the poor circulator who despairingly appealed that she could not find the station of *Angleterre* in any of the official books.

Since writing the above I have been informed that a certain branch of the war-time Telegraph Service has been reminded of the necessity of making its requests to the French authorities

in the latter language, showing that the contention of the writer regarding the necessity for linguistic qualifications in this connexion is no mere personal whim. Self-knowledge of one's own weaknesses in this respect would alone keep one silent were not the wide issue of efficiency at stake in the matter. The suggested exchange of French and British staffs originating, I believe, with a representative of the Telephone Department has added emphasis to the arguments—if such were really needed, and lends force to other assertions, viz., that the Telephone branch at least is alive to the needs of the future and means of communication with the continent and that the Telegraphs will have to look to its laurels.

Here again, however, the Telephone Department has felt the handicap of working Anglo-foreign as against uni-lingual circuits.

For the willing help in aiding the telegraphs with some of the evening Press telegrams, many thanks. There is no desire to qualify that appreciation but it cannot but be noted that the Telephones do not as yet appear to be ready to accept, and correct in transmission as far as possible, mutilated copy in French. It is of course early days yet and it is doubtless possible that the efficiency of the Anglo-French Phonogram Service will touch a sufficiently high standard to permit of a transmission and audition equal to that obtained by certain Press agencies across these same circuits in pre-war times. One hundred words per minute with trained stenographers was easily obtained, and neither English or figures were barred as is at present the case.

Despite this first class result I have made a rough calculation and am fairly confident that from the two similar conductors which at present constitute the telephone pair between London and Paris and over an "unloaded" cable nearly 500 words per minute should be possible telegraphically if the five-unit code for machine printed telegraphy be utilised. So please do not think that the Telegraphs contemplate giving up the ghost despite its present heavy handicap.

While I am on foreign cables ("when are you *not* on them?" growls someone) I may say that I have been asked by a few specially interested readers who have read the article of Mr. Fraser referred to in last month's issue whether that gentleman is likely to touch upon the balancing of long mixed lines composed of variable lengths of land lines and submarine lengths, the latter placed sometimes as the extreme of a land section "covered" or "uncovered," sometimes so placed only one-third of the way along a "covered" or "uncovered" land line with the remaining two-thirds of "uncovered" length stretching away the other side and no repeater office intervening. Should this meet the eye of the busy author of the articles now appearing in the *Post Office Engineers' Journal* perhaps he may be good enough to spare time for a postscript on the subject. Whether he be able to satisfy these scientifically curious ones or not, he may nevertheless rest assured that there is a small band of eager ones who are looking forward with very considerable interest to Part II.

Leading from Somewhere in — to Somewhere in — we have heard the, to us, curious Morse code of the American signallers and noted the dozen odd differences between the British and continental arrangement of spaces, dots and bars, and that of our cousins from over the Atlantic. For example while H remains as with us, thus . . . "Z" is changed to . . . Do you see the difference gentle telegrapher?

The meeting of the T. & T. Society held on the third of last month was in a small way memorable for the unanimity of opinion regarding the absolute necessity for better systems of training, or to use the emphasis of Mr. Dalzell more "thorough" and less "hurried" training of staff. Both the Telegraph and Telephone Departments have evidently felt this need although along different lines and linking these two departments, came an appeal from a representative member of the engineering branch voicing the same long felt want.

The gathering was quite a representative one, the Administrative, Traffic, Engineering and Commercial departments all being well advocated, the ladies emboldened by the quiet but effective reading of Miss Shell became slightly more vocal than usual while a small company of Belgian telegraphists added further variety to a comfortably filled room, and have since expressed their gratification

at being "permitted" to attend. Permitted? They will always be welcome. Is it not so Mr. Secretary?

One little point was struggled with during the evening and that was the evident and quite naturally misunderstood value of the phrase "talking" and "speaking" on a wire when used by a telegraphist and when used by a telephonist. The telephonist when he or she says, "I spoke to M.R." of course means that vocal expression was exchanged, but when telegraphists use the same phrase with reference to their daily occupation, it should be understood that though brain, eye, ear and hand are keenly alive and active, lips and tongue and vocal chords are dead silent. Thus dialect and accent do not directly affect the telegraphist's effectiveness. There are, of course, the phonetic abbreviations for ordinary "conversation" of the I.C. O.K. type and the A A . . . W A . . . of the "initials-only" school, the former practised by every type of telegraphist throughout the world. Nevertheless a practical knowledge of the two systems is needed to discover the bold differences of the high lights and especially the finer lights and shadows of our two similar yet dis-similar crafts. One was glad to hear Mr. Newlands clear up the mystery of why the special military circuits were removed from the cable room, *i.e.*, "because the cream of the staff had been removed on account of military exigencies." We trust that after this little tribute there will be no further "mystery" about the matter. For over three years there is no recollection of a single occasion upon which a complaint had been received, the reply to which was not satisfactory, and the credit of the C.T.O. maintained. Just before these circuits were finally transferred to their new home one little record was set up. On Nov. 20, 1917, from Somewhere in Italy the first Wheatstone telegram came hurrying in clear cut signals into T.S.F.

The official journal of the National War Savings Committee notes the India Rubber, Gutta Percha and Telegraph Works Company, of Silvertown, formed a War Savings Association in March last with a membership of 120. Up to the end of November this membership had reached the figure of 1,025, placing this association in the very front rank of the West Ham district War Saving organisations.

Those who have read Mr. Thompson's paper on P.B.X.'s and who were unfortunate enough to have been, as was the writer, precluded from attending the delivery of the lecture and its accompanying demonstration, are assuredly regretful for their absence. To one who has left telephone days a good many years behind him but who, nevertheless, still looks back with pleasure upon the seven years served for trunks, to watch the modern developments, the engineering difficulties and their solutions, the ever-increasing and ever-exacting demands of a keenly critical, not to say fastidious, public, is to appreciate to the full the really wonderful manner in which the various needs have been met, and to admire from afar the painstaking ingenuity which, ever patient, takes up each problem and never leaves it until a satisfactory solution has been discovered.

J. J. T.

## LONDON TELEPHONE SERVICE NOTES.

LORD TENNYSON in one of his poems refers to

" . . . that eternal want of pence,  
Which vexes public men."

and although we cannot claim to know much of the vexations of "public men" we do know that both the men and the maidens (we trust this may escape the eye of our pet critic) of one part at least of the public service certainly are vexed by a want of pence. That it may not be eternal we now have some hope. The hinges of the ivory gates have recently been oiled, we understand, and the air as we go to press is full of wars and the rumours of war bonuses. Railway servants are of course a privileged class and enjoying as they do facilities for free travel it is but right that they should have funds from which to equip themselves for their journeys. We cannot look to equal them but there are a number of pretty stories of quite substantial bonuses and *this* per cent. and *that* per cent. are spoken of in a manner to rejoice the heart of a professor of mathematics or a temporary clerk in the A.G.D. where even the

latest recruit is wont to do the most abstruse calculations without recourse to scrap paper.

With these stories ringing in our ears we feel justified in looking towards the New Year as towards a brighter prospect and we sincerely trust that if it does not see us at the end of the present world-conflict it will at least bring us to a height from which we may obtain an uninterrupted view of the approach of the angels of victory and peace.

The total of the subscriptions for the L.T.S. Christmas parcel fund has exceeded that of last year, which considering the depleted staff is a highly creditable result. It has allowed of the despatch of a really good parcel to each of our members who is overseas. If the standard of letter writing amongst the W.A.A.C.'s is maintained we ought to have some most interesting and entertaining acknowledgments from that quarter. Those L.T.S. representatives in their corps who have been over here for leave have all been in excellent spirits and the best of health—long may they so continue.

The entertainment of wounded soldiers still continues to occupy the leisure of the staff at many of the exchanges. A most successful gathering of this kind was organised by the Putney staff. It was held on Saturday, Nov. 24, and we learn from one who was fortunate enough to be there that it left nothing to be desired. It certainly seems a work worth undertaking to cast a ray of sunlight into the lives of men who have been through so much for us and for our country. It is a pleasure therefore to know that many of the exchanges carry on these activities regularly. Museum, we hear, has one arranged for the first Saturday in January.

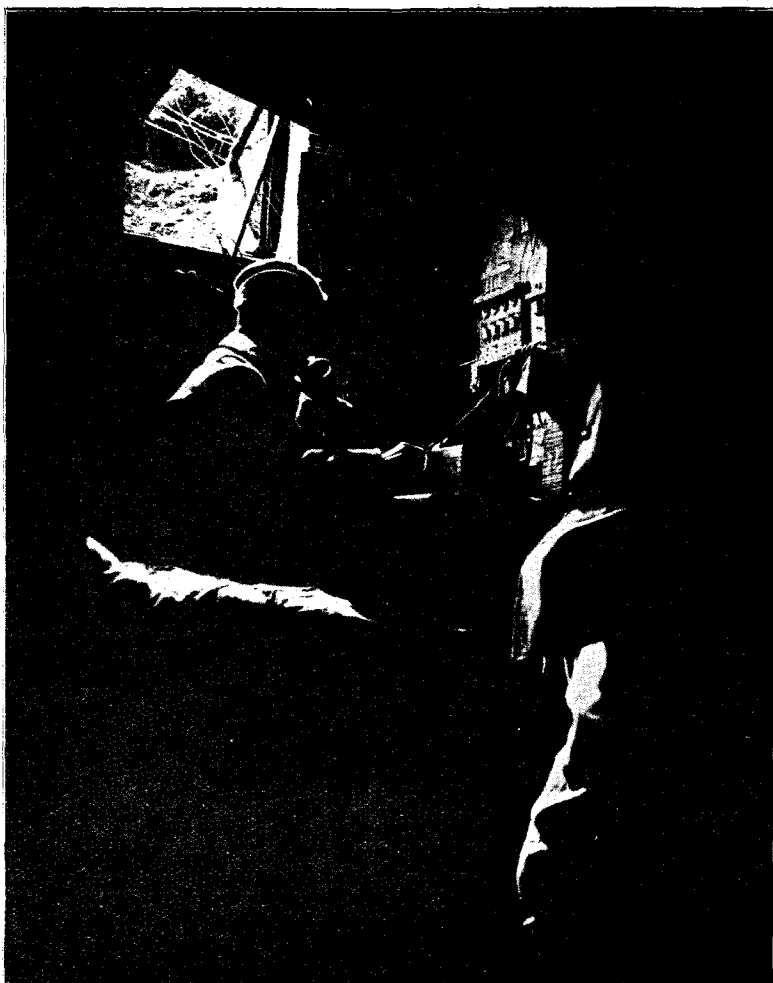
The Telephone and Telegraph Society held a further meeting on Monday, Dec. 3, to hear and discuss two papers dealing with International Telegraph working. The papers which were by Miss M. L. Shell and Mr. J. J. Tyrrell both proved of much interest and led to an animated discussion amongst the members present. The attendance, although better than at the opening meeting, was much below what is ought to be even in these days of strenuous war work.

The London Telephonists' Society met on Wednesday, Dec. 12, for the third meeting of this session. The programme was a full one. The first paper read was a prize essay by Miss Baldwin of the Trunk Exchange. Miss Baldwin has already made a reputation by her papers before this society and it was generally agreed that the present essay was even better than her earlier papers. It was followed by a discussion to which Miss Baldwin made a vigorous reply. A recitation was then given by Miss I. Hatherley of Brixton, and this earned the heartiest applause.

The second paper read was by Mr. J. Hinshelwood, Acting Exchange Manager of Battersea and district. It was entitled "Six Months in the Traffic Branch" and dealt discursively and often from an unexpected standpoint with a number of matters which had come before the writer during the six months referred to. The paper was certainly provocative of discussion but the possibility of a "certain liveliness" elsewhere ruled out the possibilities of a lively discussion, and the meeting came to a close. It is to be hoped that at the January meeting there will be an opportunity for the paper to be reviewed. The audience was again numerous with quite an unusual number of representatives of what one young lady persists in referring to as the "unfair" sex.

## EQUIPMENT FOR PHONOGRAM ROOMS.

THE rapid development of the transmission of telegrams by telephone throughout the country makes the question of the kind of equipment most suitable for phonogram rooms one of urgent importance, and although I know that the question is under consideration at headquarters, it will do good to endeavour to focus general attention on it. Most people, I believe, are not yet convinced that the concentration of circuits between exchanges and phonogram rooms on switches is a mistake. The concentrator certainly has advantages when the staff is closely adjusted to the traffic, but there is good reason to fear that this condition seldom exists in phonogram rooms. Indeed the fluctuations in the flow of phonogram work are peculiar, and it is not easy to be sure of



FRENCH UNDERGROUND TELEPHONE HEADQUARTERS.

From the *New York Telephone Review*.

(French Official Pictorial War Records.)

having just the right staff at all times, without extravagance in staff costs. Of course this difficulty would be felt with any kind of equipment, but I am convinced that better results would be obtained than are possible at present if all phonogram circuits which carry incoming traffic were multiplied over the maximum number of telephonists' positions required. It will be admitted that the circuits required for the outgoing traffic from large phonogram rooms should work direct from the telephonists' positions to the exchanges. The circuits which carry incoming traffic, however, should be multiplied, on lamps and jacks, over the maximum number of positions required. This would eliminate the concentration switches, and it would thus effect economy in staffing, inasmuch as it would save the switching telephonist. It would also ensure a quick answer, for it would make it possible for all the telephonists dealing with incoming traffic to answer a call on any circuit. There would be the further great advantage that the supervising officers could supervise the flow of incoming traffic, and the actual handling of the telegrams at the same time. This would tend to effect saving in supervision, and also make supervision more efficient. With a switch the supervisors are at a disadvantage, in that they cannot supervise the calling, which entails watching the switch, and keep an eye on the actual writing of telegrams without constantly moving between the switch and the positions. A few minutes in any busy phonogram room will demonstrate the wastefulness and inefficiency of the arrangements which make this necessary. But the multiplying of the incoming lines would afford many other advantages. For instance, it would provide ready means of concentration, since every multiple section would have all the lines terminated on it, which would give it all the advantages of a concentration switch without the disadvantages.

It is contended by those who do not support the multiplying idea that in the event of there not being enough staff to answer all calls immediately the multiple would be no better than the switch. To this it is rejoined that with the multiple it is more likely that calls would be answered quickly, since more than one telephonist would be in a position to answer. At the present moment it would, no doubt, be difficult to introduce such equipment as is suggested above, but I wonder if the department has not spare equipment which could be adapted to the purpose experimentally at a few centres? The transfer lamps and jacks used at trunk exchanges, of which there must be many spare, could, I presume, be so used. At Edinburgh Trunk Exchange many trunk positions will be out of use shortly, and there is such equipment there. Indeed I am tempted to ask whether the adaptation of disused trunk boards to phonogram purposes is not practicable. The sections would have to be shortened, and writing accommodation would have to be provided, but surely the economy that is now necessary, and will be more pressing the longer the war lasts, should make us seek by every means to make the best use of every scrap of old equipment we have.

These ideas are set down to stimulate interest in the question of phonogram development, from the point of view of the equipment. There are, of course, the other questions of fixing loads on the broad principles now in operation for the valuation of telephone work, under varying conditions; the training of telephonists for phonogram work; and the introduction of new methods of transmission, but these I shall not pursue at present. Much has already been written on these points.

I do not know if there has been a committee on phonogram questions, but I cannot help thinking that one would be an advantage. I am sure it would repay a hundredfold the cost it would entail, for one sees few developments in which economy and efficiency can be so well secured as in the extension of the transmission of telegrams by telephone.

R. G. D.



WAR SEALS.

Recently Miss H. Kennedy, telephonist, of the Greenwich Exchange, sold War Seals to the value of 13s. at a fancy dress dance at which she took second prize. The total value of War Seals sold by the London exchange staffs is now over £58.

## THE FIRST TELEPHONE EXCHANGE IN EUROPE.

*Errata.*—In Mr. Cotterell's letter the second line of the last paragraph but four should read: "In Chicago, for instance, *which* compares," and four lines further on "though" should be substituted for "thought."

## The Telegraph and Telephone Journal.

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

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### NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications, together with photographs, diagrams, or other illustrations, should be addressed to him at 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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No. 40.

### 1917.

WE take this opportunity of offering our readers the best of all good wishes for 1918. Each year one is moved to associate New Year's greetings with the hope that it may see the end of the devastating war which has withdrawn so many of our colleagues from the useful arts of peace—some of them, alas, for ever!—and again this year we venture the hope that its conclusion may see the dawn of a satisfactory and lasting peace. The past year, as was to be expected, was not fruitful of great telegraphic or telephonic events. However, the good work of "carrying on" (to use the popular phrase) has exercised all the energies of a depleted staff at home, by whom the vast and ever-increasing requirements of military, naval and munition authorities have been expeditiously met, and as for the glorious deeds of our colleagues in the Signal sections on all fronts are they not written in the imperishable chronicles of the Great War? They are the theme of many a brilliantly written episode of duty brilliantly performed, and it is our regret that they cannot be circumstantially and regularly described in these columns. Nevertheless when the fitting time arrives we trust that their full record will be available for all to read.

1917 saw the despatch of the first contingents of women telegraphists and telephonists to France, the nucleus of a fast-growing army of women workers abroad, who have added fresh laurels to those earned by the heroines of many an air-raid both in London and the coast towns. Amongst the principal telegraphic events of the year stands out the issue of the High Speed Committee's report; another is the great extension in the working of telegraph lines on the Baudot system and a considerable further development in multiplex working is in progress. A system for facilitating the disposal of telegrams by diversion has been introduced with excellent results, some 15,000 transmissions a day having been saved by this

means. This has the effect of relieving the large central offices where the staff is depleted, and giving more employment to smaller and less busy centres. The experimental abolition of the "office copy" has also had the most satisfactory results, effecting a saving of upwards of 50,000,000 forms and at least a million carbons together with economies in other directions, besides materially lightening the work of telegraphists.

On the telephone side, the opening of the new Central Exchange at Manchester marks the completion of a work of considerable magnitude. The exchange system has been extended to some dozen towns and villages during 1917 including Colston Bassett, Ackleton, East Norton, Edenham, Hazlewood, Alberbury, Woolston and Hayton (England), Pinwherry (Scotland) and Ballyhaise and Duleek (Ireland). The year has also seen a considerable extension of the system of handling telegrams over the telephone. In April, Edinburgh and Glasgow were placed on the direct system of trunk working similar to that in force between Manchester and Liverpool and other places. To the extensive networks of telephone lines provided throughout the country in connexion with home defence we can only refer in passing, for obvious reasons.

The principal staff changes were the appointment of Mr. A. G. Ferard as Assistant Secretary in charge of the Telephone branch in place of Mr. L. T. Horne who went to the Ministry of Pensions for a time and is now Assistant Secretary in charge of the Foreign and Colonial branch. Mr. V. M. Dunford, Deputy Controller of the Central Telegraph Office retired and was replaced by Mr. James Bailey; and Mr. T. Mackenzie has succeeded Mr. John Lee as Deputy Chief Inspector of Traffic at Headquarters. During the year death claimed Sir Geo. Franklin, the Managing Director of the late National Telephone Company and Mr. James G. Lorrain one of the pioneers of telephony in this country. Close upon 550 members of the Telegraph and Telephone staff alone (including Engineering staff) gave their lives for their country during the past year.

On entering another year of the great conflict we brace ourselves with the hope that its successful issue and the advent of peace will bring about a resumption of our full activities.

### A POST OFFICE RIFLES FUND.

I SHOULD like to make an appeal to my colleagues in all branches of the Post Office to help in maintaining a fund to provide comforts and recreation for the two battalions of the Post Office Rifles now serving in the field. The First Battalion which has been abroad since February 1915 has had no regular fund, although some kind friends have helped for special objects. The Second Battalion which went abroad about a year ago has a fund kindly organised by the Marchioness of Bath, but further support is required. Help has been given from different branches of the Service and from some Provincial Offices from time to time, but there has been no permanent arrangement for its support, and I am therefore making this appeal in order that a general fund may be instituted to work in co-operation with the friends of both battalions outside the Post Office Service.

It is not telling the enemy anything to say that both battalions have been many times in action since they went abroad and that their achievements have been such as to reflect great credit on the

Post Office. A Victoria Cross, several Distinguished Service Orders and a large number of Distinguished Conduct and Military Medals have been gained by officers and men.

I shall be glad to hear from friends in all parts of the Post Office Service who are willing to organise assistance for this fund and to act as its representatives. No large individual contributions will be wanted, but probably many subscribers would like to give small contributions to the fund. It will not conflict with or overlap in any way the work of the Post Office Relief Fund, which, in supplying the needs of the members of the Post Office who have unhappily become prisoners of war, has already taken on itself the burden which is usually the heaviest on all regimental funds.

A. M. OGILVIE,  
Colonel.

Secretary's Office, General Post Office, London.

Dec. 19, 1917.

### HIC ET UBIQUE.

"THE National Egg Collection for the Wounded" in making a special appeal to all telephone subscribers for contributions, invited them to recognise by their response the benefits they have received from the telephone. As occasions on which the telephone has been used as an incentive to gratitude are, to say the least, rare, the Secretary of the Fund was asked whether he had received any special expressions of gratitude along with the contributions. We learn that the appeal was financially entirely successful, and are left to understand that subscribers have signified their appreciation of the Service rather by the practical way of contributing to the fund than by direct expressions of gratitude.

THE number of telephones in the Dominion of Canada at June 30, 1917, was 548,421, or 1 telephone for every 14 persons, 323,109 were working on the central battery system and 225,312 on the magneto system. The total at the previous June was 533,090. The mileage of wire was 1,600,564.

THE retirement of Mr. M. Cameron, Chief Superintendent of Telegraphs at Glasgow, has given rise to a series of promotions in that office. Mr. W. Armour, Superintendent replaces him, and is, in turn, replaced by Mr. A. McQueen, while Mr. W. Coventry becomes Assistant Superintendent, Class I. Mr. Cameron, the retiring Superintendent, took great interest in the Boy Messengers Cadet Corps (Gordon Highlanders) of which he was Captain, and is still, we believe, retaining his interest in it.

### TELEPHONE MANNERS.

A careless man was Jules M. Snook;  
He never looked in the telephone book.  
He got wrong parties most of the time  
And swore at the Service and called it a crime.

A silly thing was Lizzie Zedd;  
She held the 'phone behind her head.  
When people cried, "We cannot hear,"  
She always answered, "Huh! That's queer!"

A busy chap was Jasper Jupp;  
He called a number, then hung up.  
"Hello!" the other folks would call  
And get no answer back at all.

Extremely prone was Maisie Miggle  
To give the hook a frantic jiggle.  
She drove a dozen Centrals crazy,  
But that was nothing much to Maisie.

A slothful man was Giles G. Goff;  
He used to leave receivers off.  
Repair gangs travelled miles and miles  
To hang receivers up for Giles.

But worst of all was J. Neill Waugh;  
He answered every ring with "Yaugh!"  
It made your very blood congeal  
To have to telephone J. Neill.—*Telephone Review*.

## ANGLO-CONTINENTAL TELEGRAPHS AFTER THE WAR.\*

BY JAMES J. TYRRELL (*Cable Room, C.T.O.*)

MOST of the prophecies concerning the war have so far ended disastrously—for the reputation of the prophets—and I have therefore *less* the intention of forecasting what will happen to the foreign telegraphs in the coming post-war period, than of placing on record what I esteem are likely to form some of the problems of that period, and what would probably prove to be the most advantageous conditions of the British Continental Cable system of the future.

It was evident to all who were very closely in touch with the happenings of the first 24 hours of the present war that the importance of International submarine telegraph and telephone cable systems had not been overlooked by the Naval and Military Government Departments of this country. Nevertheless one has reason to doubt whether the importance of the cable systems having their centre in the heart of the British Empire are always appraised at their true high value by many of those of us who have lived and moved in the very atmosphere of these systems for the better part of our official lives. We have not yet grasped the fact of their vital necessity to this island. Living on an island we have developed its insularity without its saving qualities.

There is indeed still a tendency to belittle the importance of anything in the nature of intercourse with the foreigner, and to forget that it is this very intercourse which has developed the British Empire as it stands to-day. None can dispute that the telegraph has quickened and developed this intercourse. None probably will deny that this intercourse could be usefully developed more extensively and that the telegraph and the telephone should be utilised more completely for that purpose. It has always seemed an illogical position of affairs and a very serious under-estimate of international and even inter-colonial cable value that it should have been left to private interests to develop them. It is even more incomprehensible that alien hands in private companies should ever have been permitted to control the cable heads of a single Anglo-Continental length. It is true that the Postmaster-General is armed with certain leasing rights of all land lines and that the State controls the landing of a cable upon these shores, but until war broke out, I am unaware of any real control exercised as to the nature of the traffic which passed to and fro over the leased lines.

Germany on the contrary was careful in those cases where she leased lines or cables to see that control existed and further that the control was a real one. As I previously had occasion to mention before this society there were lines leased in the Anglo-German cables which passed from this country through Emden, Berlin out to Odessa and on till connected up with the Anglo-Indian telegraph system, which were watched every minute of the 24 hours. I have myself witnessed, both at Emden and Berlin the Morse slip ceaselessly running, every word wound up every sentence recorded for future investigation. The *Deutsche Atlantische Telegraphen Gesellschaft* office at Emden was controlled by Government officials and its doors were closed even to official telegraph guests from this country.

The opportunity for the Teutonic surveillance of British East and Far East traffic is, I esteem, not likely to re-occur. Our main telegraphic communication with Russia could very naturally be established along our natural highway—the sea and without touching an intermediate country. The practicability of this scheme is one of the proved theories of war-time telegraphy. What however are to be the future conditions under which telegraphic communication with Norway, Sweden and Denmark are to be maintained?

In 1889 the Government of this country was wise enough to take over the Anglo-French Company's submarine cables together with the Anglo-Dutch and Anglo-Belgian cables which up to that period had also been worked by this company's staff. No one can deny that the bargain was a good one, financially, economically, and strategically.

I think that I am correct in saying that on more than one occasion this quarter of a century old section of the British Government telegraphs has made all the difference between profit and loss to the balance sheet of the British telegraphs. The financial side is not however the most important one, as has been found with regard to both telegraphs and telephones hundreds of times since August 1914.

A smaller chance offered itself of assuming working control of certain Anglo-Foreign cables just before the war, but for some reason or other there was a timidity of action and a resultant continuance of company—in this case what may be fairly termed—"alien" control of a network of the most valuable telegraph nerves.

Happily the entry of America into the war has definitely placed the Anglo-American cables in Allied hands. One is entitled to ask whether even here State ownership and management would not be the more satisfactory course, that is, Anglo-American co-operative control in place of American management at both ends of the cables.

The Eastern Telegraph Company is probably the most really British cable company in the world, and its ramifications, broadly speaking, form an actual part of the ramifications of the British Empire. I do not know of any other corporation which has co-operated so well and so truly with a Government Department as have this company's representatives during the

\* Paper read before the Telephone and Telegraph Society of London on Dec. 3, 1917.

war. Of this I have had repeated evidence. My own interviews have been mostly telephonic, but never once has the company failed to give assistance and advice to the Post Office telegraphs itself or through the latter to higher branched Government offices for whose very heavy and very important traffic the Cable Room C.T.O. is mainly responsible.

Some have doubted whether a Government Department would have developed this particular system so completely as has this company. I cannot, however, think that if Post Office engineers had been compelled to study more closely the problems arising out of extremely long-distance submarine telegraphy they would have been less keen or less successful than the admittedly capable officers of a private company. There is abundant evidence at present available for those who can see through the veil, that the war has brought the study of long-distance submarine cable working right home to British Government officers, and that neither engineers or telegraphists were lacking when the necessity arose. We should therefore look forward with confidence to a possible time when every cable landed on these shores shall be worked and controlled by a British Government Department.

I should evince no surprise even if after the war the British public were to find one or more Government-owned Atlantic cables at their daily disposal for diplomatic, commercial and social traffic. Thus, in connexion with the Canadian Pacific Railway, the Fanning cable route to Australia, and home again by already existing cables, *via* Suez or the Cape, the all-red submarine girdle of the earth would be completed. The advantages of Government control of these international and inter-colonial communications are principally political, strategic and diplomatic.

In the future lines of communication will assuredly be studied more from a national point of view than from the standpoint of individual interests and corporations, and the question of control becomes henceforward something more than a matter of parochial or private interest.

The prophets were wrong. Wireless telegraphy has not ousted cable telegraphy. "Wireless" indeed has carved a channel for itself, and moulded its own world, but the war has emphasised the value of submarine telegraphy a hundred-fold.

One feature of the various company cable systems and their success should not be lost sight of when considering the future of British telegraphy with special reference to its over-seas connexions.

Specialisation has had to be a feature. Gradually the various cable systems have formed special corps trained on somewhat different lines from those staffing our own inland wires. It is, however, useful and certainly gratifying to remember that the Post Office has for many years formed the recruiting ground for the majority of these same cable companies, proving that the basis of Post Office training was satisfactory and that Government telegraphists formed excellent material which the companies could mould to their own particular needs. Now as ever the human material in the Government Service is capable of turning out the finest manipulation of any type of telegraph apparatus which can be imposed upon it. Its adaptability to modern requirements has never yet failed the Department. It only needs intelligent and sympathetic organisation and control, and the staff will be found to rise to the occasion of the future telegraphy, whether that telegraphy be Inland or Foreign, hand or machine.

A Treasury Minute in 1899 recognised the necessity for specialisation in the handling and management of Anglo-Foreign telegraphy and created what is known as the Cable Room C.T.O. This specialisation was also extended to one other office in the kingdom—namely, Liverpool—which owing to its shipping and commercial interests had formed the nucleus of a second Anglo-Continental telegraphic centre, and which latter, it is hoped, post-war conditions will not be slow to restore. Both London and Liverpool had found the necessity of training a special staff for dealing with foreign correspondence, foreign administrations, and long and difficult foreign wires of mixed constitution, while it was found that telegraphists of the mere bird of passage type rendered the outputs both smaller and of inferior quality than those trained to a knowledge of the foreign tongues more generally employed, a staff indeed more alive to the main International rules which govern International telegraphy and to the many Secretarial rulings and addenda which from time to time accrue to and govern the working. It was found too that the temperamental atmosphere created by one's correspondent at the other end of a foreign wire needed more than ordinary patience, forbearance and diplomacy. Friction on Inland circuits can be settled locally. Friction on International circuits is likely to bring complaints through very high diplomatic channels. For the credit of the Post Office it is therefore well to have officers in charge of these lines whose experience both in the tongue and the temper of the telegraphist at the other end is sufficient to enable him or her to smooth over these rough edges and to help on the machinery.

It has been said quite seriously, why not conduct all necessary correspondence across the wires and by "service," through the medium of the English tongue? Simply because even the kindest disposed of Allies would hardly take the domination of the British tongue as the friendliest of acts, and the best is a compromise by which each country may send official messages in its own mother tongue. In this case it does not appear to have struck some of these suggestors that although, for example, we only need to know one language to *write* our communication to Paris, let us say, we certainly need the second language to read the reply! Also that this method is unsuited to the actual wire working. Also that this suggested laziness on our part to meet the needs of the situation would be on a par with the pre-war attempts to conduct a consular service without the necessary language qualification of the port to which consuls have been allocated.

I suggest that we have had enough of that attitude towards these questions. It is up to us to meet all comers somewhere on their own ground. We can do it if we rouse ourselves.

Some of the conventional rules have been set aside by war-time conditions and military necessities, and the language features have been cut down to a bi-lingual phase.

Post-war conditions will undoubtedly restore many of these same regulations, modifying or changing others, while the language and temperamental phase of the working will extend to something of its old proportions.

It is not likely that the diluted standards of working will all disappear, but certainly many of the rules will be re-insisted upon by the various signatories of the International Telegraph Convention. It does not appear to be understood by everyone that it is scarcely a light matter to set aside even a single paragraph of a Convention to which the nation as represented by the signatories has placed its name. If this can be done by agreement, well and good, but please do not forget that this is a matter for the higher administrative officials.

I have been told that a telegraph wire is a telegraph wire whether it terminates at Aldgate or Jericho, but I cannot conceive any practical telegraphist endeavouring to maintain this for long. I would go farther and submit that there are International circuits terminating in the Cable Room, C.T.O., which though shorter as regards both cable and total length than many of the cable companies submarine circuits, yet present more irritating and varying conditions, and call for considerably more tact and patience in their management, because they are not staffed at the distant end by our own countrymen.

I have emphasised these points because they are not so patent to the busy official whose experience has led him through other and different experiences and who is likely to retort, "You are only advertising your own job." I can quite understand that view. I was once told that "I was Baudot mad."

Time has turned that rebuke into a compliment. Thus with the Anglo-Continental telegraphs. In this the last decade of my Post Office service, I must frankly admit that I *am* really and actually "advertising" my job. But if *my* job, first and foremost it is the job of the British Post Office. It is a section of the British telegraphs which I hope to see more worthy of our Empire; it is a job which is worth doing well. I would therefore plead most earnestly for continued specialisation of this branch of the telegraphs. For purposes of co-ordination, concentration and the better and more economical working I would submit that all cable circuits whose traffic is governed by the International Telegraph Convention should be concentrated and controlled under one chief as now directly responsible to the Controller of the C.T.O., and through the latter to the Secretary, but that apart from this control the supervision and staff should be self-contained.

There is a section of the Secretary's Office in G.P.O. North which specially deals with matters appertaining to foreign and colonial telegraphs, and there are certain officers there who have made the work of the Cable Room in particular a special study. To such as these one can turn with the full knowledge that one will receive advice of the soundest type or kindly if searching criticism, whichever may be needed, in the hundred and one questions which arise during the year in connexion with the interpretation and treatment of foreign and colonial telegraphic relationships. This specialised assistance is but another witness to the necessity for specialisation of function in telegraphy as in every other industry.

I have no desire to see anything approaching sectionalism, but I do desire, as I sincerely believe we all desire, to see at least an efficient Anglo-Continental telegraph service. Diversity there needs must be, and our aim should be so to organise our forces as not to stifle these natural diversities but to create a very real unity *in* diversity.

The Cable Room, re-organised, should form the centre towards which all foreign submarine cables should gravitate and from which all future developments of international communications should radiate. The scattered working of cable circuits if persisted in will eventually work out less economically and less efficiently than a well organised concentration of circuits governed by similar working rules and conditions.

For the special needs of this section of the C.T.O. the staff should be specially trained not only for technical and manipulative purposes, but for its abstracting, official papers, cable interruption advices, service correspondence, &c. The latter could undoubtedly be done in half the time at present taken, if efficient training could be given and some structural alterations made enabling more efficient work to be done and permitting of more efficient supervision. For your re-organisation you have the nuclei of excellent quality, men and women whose loyalty and devotion to the Telegraph Service is unquestionable, and when thus speaking I would include men and women both of the Inland and Foreign Departments with whom it is an honour to co-operate. You have men, qualified technically and manipulatively in Creed, Syphon recorder, undulator, Morse, Souder, Wheatstone, Baudot and Hughes with adepts in Cell and other type-writing keyboards. With these as a commencement the Department has, ready to hand, an opportunity for producing a self-contained efficient foreign staff which by its very diversity of occupation would, while remaining an expert one yet provide sufficient diversion to reduce cramp to a minimum, and should remove the word monotony from its vocabulary. I would suggest however that your men and women should have facilities provided for training in the technical part of their craft. Room should be set apart where the actual apparatus can be taken to pieces and the working of each part shown. The present facilities for the study of Departmental Technical Examination subjects scarcely do credit to a Government Department, while the Technological Colleges do not thoroughly meet the need. As practically untrained teachers some of us have coached students in hired back rooms in the City, because the recognised Institutes did not meet the actual requirements, and it speaks much for the grit of these students that with such make-shift conditions so many successfully arrived and got through.

This is a question that affects the entire Telegraph Service and it may be profitable when reviewing post-war conditions to look into the matter.

One hopes that in re-organising the conditions of the future, sight will not be lost of the need for providing scope for the more ambitious young men of our Service by re-opening the doors of the Engineering Department to those who can pass the necessary examination. It has been proved over and over again that those telegraph and telephone engineers who have passed through the practical experiences of the Services have always proved the best judges of telegraph and telephone needs and conditions.

I have digressed slightly in so far that the last two items touch upon matters common to the whole of the Service. I now return to direct attention to a most serious problem. It is the question of whether a condition of continuing the International Telegraph Service after the war as a separate and specialised entity is wrapped up with the question of the permanent entrance of female labour into this department. The Cable Room staff of the future, is it likely to revert to its pre-war male exclusiveness? Personally I am doubtful if it be possible to do so. Whenever the war ends, it is likely to be not a matter of months but of years before all our male telegraphists are shepherded back from the many corners of the globe to London again. By that time many new international telegraph needs will have arisen, and will require satisfying.

Some of our boys will never return, and a few will probably be diverted into other more lucrative channels, so that from various causes there is bound to be a shortage of our original staff even when the last possible man returns. Where is the assistance to come from if not from the women already trained for Cable Room work, seeing that we have practically trained no young men for over three years.

I have no doubt of the capacity of women to cope with most of the difficulties of the Cable Room work, but please do not expect too much at once. At least no more should be expected from women than from men. It is no exaggeration to say that it formerly took from three to five years to thoroughly train a Cable Room telegraphist in the whole gamut of his duties. Many of the women have not been with us half the time and owing to war-time stress alone have not always had full facilities for learning. The *dirigeur* duties for example have not been touched by the female staff, although in this connexion I had always understood that the Inland Section had already given facilities to these officers.

Even supposing that the present female staff were only half as efficient as they are at present, it is obvious that the retention of the most competent of them for a long time after peace is signed would be the more practical step towards meeting the shortage due to the inevitable withdrawal of the Belgian staff, the re-opening of the Belgian and finally the Swiss, German, Austrian and Hungarian communications. It would be churlish indeed if one did not make the position of the Cable Room women clear and did not frankly acknowledge their unselfish attitude. From the first moment when they commenced to take the places of the men on military service they have steadily maintained that their position was of a temporary nature. Should subsequent events which no one could foresee three years ago, tend to modify that position certainly no blame could attach to the female staff. If moreover in this comparatively short period they have not fully acquired the highest possible efficiency in Cable Room working it should be remembered that the conditions have been none too favourable for *debutantes* and the wonder is rather that so large a number have done so well.

I know how much is involved in this matter. A nation which has poured out blood and treasure like water to defend a torn up scrap of paper cannot ignore its own written word as set forth in the Treasury Minute of 1899, which definitely laid down the conditions of service in the Foreign Section of the C.T.O., which Minute has only been *suspended*, not abrogated, by war time conditions. What is the solution then? I do not attempt to submit a solution here and now. It should be possible to re-construct the entire branch by common consent, adding or withdrawing such other circuits, traffic or duties, together with their respective staffs, in order to form one coherent whole. This, however, is but a personal view, the future is on the knees of the gods.

In re-organising the branch it also might be found necessary to allocate one or two of the simpler non-manipulative duties to the more junior officers, but whatever may be the difficulties, however complicated may be the post-war conditions, as practical men and women we have not to shirk the question but to walk up to the problem and face it out. Forces beyond our control in the outside world are placing men and women economically and politically side by side for the first time in history. The tiny Cable Room is no exception.

There are other problems. How shall we deal with post-war Anglo-Continental telegraphy? The war will undoubtedly be followed by an International Telegraphic Conference, and probably inter-State Conferences. How shall we utilise those opportunities? Should not endeavours be made to quicken up the Services and to provide the machinery for so doing? Are we taking any steps now? There is little evidence. I simply ask these questions not because I expect replies but because it is to be hoped that we shall be more ready for peace than we were for war. Have we realised the possible leap ahead which means of communication with the Continent are likely to take in the next ten years, with its inevitable aerial post and its highly probable though less inevitable Channel Tunnel? Is the International Telephone Service likely to stand still? Are we placing ourselves in a position to meet these coming competitions? With these interrogations in full sight and sound, there is "Work for all" with a vengeance. We are a modest department but I hope we are not afraid of our wares. I hope to see the day when the Post Office will not be ashamed to blazon upon the doors of the C.T.O.: "Direct telegraphic communication with France, Belgium, Italy, Russia, Norway, Sweden, Holland, Denmark, Portugal, Spain, Greece, Roumania, Germany, Austria, Turkey, &c."

Germany? Yes, certainly, and it will do us good to think about it, for these communications will certainly try the temper and natural instincts of the British telegraphist severely. Serbia? Roumania? Turkey? Yes, again, certainly. All should be within practical range of direct telegraphic communication by means of machine telegraphy with this country. Provided the contracting European countries will engage to erect efficient trans-Continental land lines and to maintain them efficiently, I think most engineers would support this latter contention, with forked Baudets as the probable type of apparatus.

We have been criticised somewhat bitterly, and somewhat unjustly at times, but without returning blow can we not in common council, round some representative table, help to lay the framework of a renewed and re-invigorated International Telegraph Service? A Service of which officials and public may one day be proud? We may not still the tongues of all the critics. We have need of them as a counterpoise to over-weening self-satisfaction, but bound together as one Service with efficiency as our goal may we not reach to something above the mediocrity of the past decade or two, and leave the same Service better than we found it? What is wanted for the days that are to come here in our own midst is men and women of broad catholic views, willing to entertain and examine the suggestion of a controller or a door-keeper, men and women who when "economy" is the watchword understand that economy does not mean supplying cheap ink with which one cannot write or writing paper that may be mistaken for "blotting," and who know that real economy does not mean cheap half-trained labour. I have seen the effect of the latter in the work turned out by a private company. It may be placed in category "U," i.e. "undesirable."

However trite may appear the statement, we have nevertheless always to remember that with all our calculations the human element cannot be omitted. This element too, I would submit for the special consideration of statisticians, will always count in telegraphy. It is a very real dimension in all the plotted curves of traffic outputs and estimates. It is the most difficult dimension to measure, for it defies both rule and measure, and yet without consideration of this most elusive quota your calculations are likely to reach surprising results. This element too has been sensitised by the war, not blunted as some would have us think. After the war it will need more than ever, consideration yet firmness, discipline exerted by itself as well as discipline exercised over it, sympathy of a rare type combined with logical and common sense methods of dealing with its needs, its weakness and its strength.

Something of this spirit brooded over Miss Hooper's admirable presidential address before the London telephonists, into which probably a man would put the necessary masculine touch.

General Smuts in May last gave that stronger touch when he said: "Under stress of great difficulty practically everything breaks down ultimately, and the only things that survive are really the simple human feelings of loyalty and comradeship to your fellows, and patriotism which can stand any strain and bear you through all difficulty and privation. We soldiers know the extraordinary value of these simple feelings, how far they go and what strain they can bear, and how ultimately they support the whole weight of civilisation."

Personally I have found the majority of men and women respond more readily to a real call of duty, of service, of comradeship, even of sacrifice than to any other forces or motives. An appeal to English men and women to play the game seldom fails, but one cannot blame them if they demand in their turn that the game shall be played straight on both sides.

Upon these factors more than anything else I place my high hopes for the future of our craft in general, and for the section which I represent in particular. These hopes may not all be fully realised but most fortunately neither are the gloomy predictions of the pessimists, who see nothing but red ruin in the train of peace for Europe, for England and, as the greater includes the less, for the Cable Room!

## IMPRESSIONS OF ANGLO-CONTINENTAL WORKING IN WAR TIME.\*

BY MARGARET SHELL (C.T.O.).

ONE whose acquaintance with the C.T.O. Cable Room is restricted to the very changed and curtailed service obtaining since the outbreak of war is necessarily unable to deal with the subject of Anglo-Continental working in general. It is desired to make clear, at the outset, that it is not intended to trespass on the preserves of the T.S.F. veterans by attempting anything approaching a history of the Cable Room. It is thought that certain aspects of foreign telegraph working, as they appear to an operator from the inland gallery, loaned to the Cable Room for the period of the war, might be of some interest to others.

The difference in conditions of foreign working since the outbreak of war, having regard to the closing down of points to enemy and occupied territories, and the opening up of new channels for military purposes, is very considerable. The former includes the stoppage of about 23 lines to Germany, not including three extended by T.S.F. to cable companies' offices in London, and two extended to Liverpool. Later came the closing down of two lines to Austria and one to Hungary, and the eventful months which followed marked the loss of communication with Northern France and the greater part of Belgium,

\* Paper read before the Telephone and Telegraph Society of London on Dec. 3, 1917.



OHE HERE PARISONSEINE SIR

BN LE BSR

HURRAH FOR ENGLAND =

MAIS VS VLEZ RIRE JENAI RIEN DU TOUT VS NE RLEREZ PA  
AVTKEJAIE MESRIOS

DEMANDE ZALYONCKI SPASZ O SUD

CEST CE

KEJEVSPRIDFÈRMNVXPUI SKTURCOI BNDMOICINUTILDRGLERENTRNS

= CAVATITKOMMESASVP MR

SPECIMENS OF PHONETIC FRENCH TELEGRAPHIC ABBREVIATIONS.

*Translations of the last four sentences :—*

But you are joking. I have nothing at all; you will not go on before I have my rios (*i.e.*, Received 10's).

Ask Lyons what is happening to the South.

That is what I am asking you to do, old man: since you are receiving well from me it is useless to regulate between us.

Is it all right like that, if you please, sir?

when Brussels, Antwerp and Lille passed one by one into silence, and Paris itself was threatened.

Belgium is now solely represented by a single current sounder connexion to a small town near the French frontier, well within the zone of operations. In fact the office is periodically untenable on the occasion of a "big push."

With regard to the special war-time connexions it is, for obvious reasons, impossible to enter into detail, and it is understood that all statements will be treated with proper reserve, as not being intended for general publication. The military circuits have, within the last few weeks, been removed from the Cable Room. Previous to this the circuits working to the British General Headquarters and to other military centres across the channel were housed in what is familiarly known as the "dug-out," whether out of compliment to the nature of the work or to the structural properties of the room is uncertain, but it is more probably the latter. There are also centres in connexion with aircraft defence and the Admiralty, and connexions to French and Belgian diplomatic and administrative centres "somewhere on the Continent."

The British Military offices are fitted up for Wheatstone working, owing to the facility with which the installation can be set up, and moved from place to place. Some such apparatus is essential, for the "office" over the water is frequently an old barn, a half-ruined house, or a genuine dug-out. These lines are specially controlled by the British Military authorities, and connexions on the other side are made at will, the destination being frequently represented by a code the meaning of which the receiving telegraphist in London is not permitted to inquire. The circuits worked with Hughes apparatus are those at more stationary offices. Such are controlled and staffed by the French Civil or Military authorities.

As against the connexions of particular interest opened up since the war there is to record the loss of many "special" points of peace time interest and industry. Amongst such were the "Riviera Season" wire to Nice, the special connexion to Rennes for the butter market, to Ostend for the holiday period, and to St. Malo for the potato season.

Of the two types of instruments mainly in use in the Cable Room, the Hughes and the Baudot, the former is being gradually superseded by the

latter, mainly no doubt owing to the higher line carrying capacity which the Baudot affords. Nevertheless the value of the Hughes is by no means to be despised. Many of the stations served by the Baudot have one or more alternative Hughes installations, which can be resorted to when the Baudot apparatus is being overhauled, or when line conditions are more favourable to Hughes working, and very creditable results can be obtained on a Hughes duplex set. An example of its usefulness as a reserve was seen during a break-down of the English land lines last year, when the Dutch wires were worked from a point near the cable head on the East Coast, by emergency Hughes sets installed and staffed from the London Cable Room. In spite of many difficulties the apparatus was ready for working within an hour of its arrival, a record which leaves the Baudot far behind. The retention of Hughes working in the Cable Room has also enabled us to utilise the services of a number of Belgian telegraphists who, with so many others from their unfortunate country, came over to England in the early days of the war.

The Cable Room was naturally the first English home of the Baudot, and from there the system made its way into the provincial gallery, the first installation being set up to Birmingham in 1910. The success of this experiment justified the extension of Baudot working to other inland towns. The training of women as Baudot operators began from this time, and this was probably an important factor in the question of the replacement for military purposes of men on the Cable Room staff by women loaned from the C.T.O. inland gallery. The first draft entered at the end of the year 1915, most of them possessing a fair knowledge of provincial Baudot working. In spite of certain differences of method this experience was found to be useful. The first Birmingham Baudot was installed with the assistance of *dirigeurs* from the Cable Room, and this, together with the use of French made apparatus, probably accounts for certain points of similarity between English and Continental Baudot working. The type wheels bore foreign symbols such as the small "H" on the figure inversion for indicating time, the small F for franc, and, on the letter inversion, the accented E. The English copies have been constructed on the same model. The term "*dirigeur*" is likely to remain as long as the Baudot itself, and another sign which has attached itself to English working is that indicating the repetition of figures: "et"

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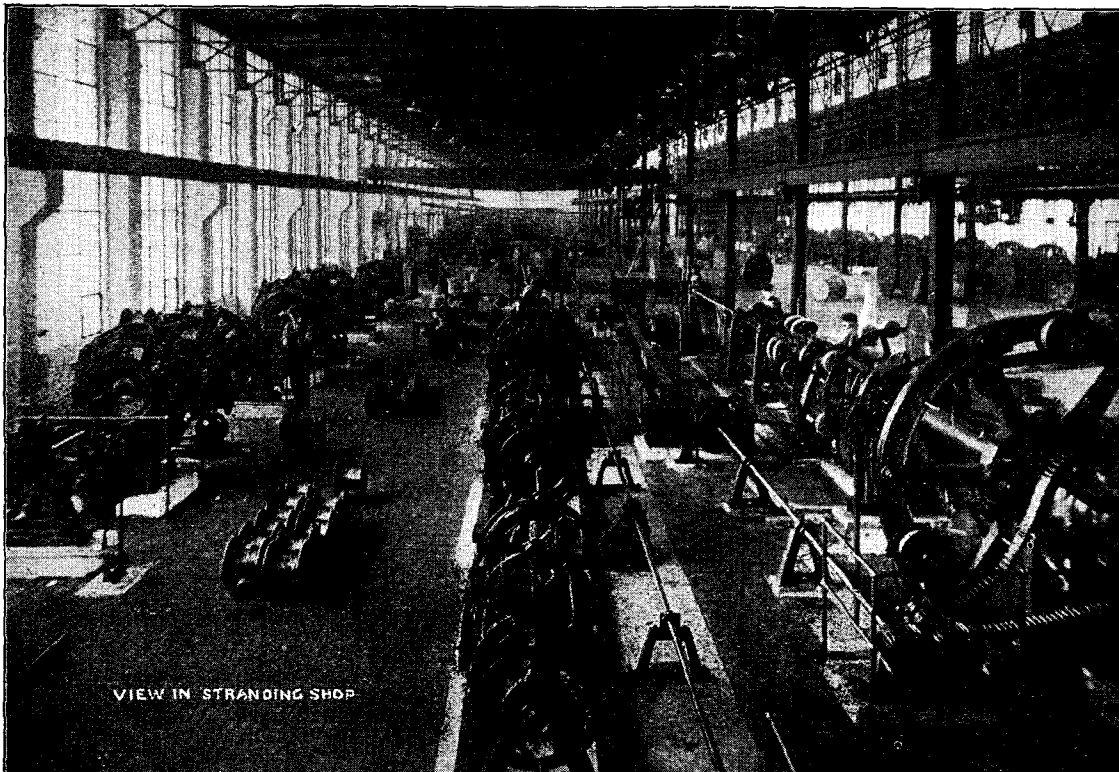
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(collationnement). The provincial stations also adopted the French method of signalling and acknowledging telegrams in batches of ten. The key manipulation is technically similar, but in practice it is found that owing to conditions peculiar to long distance working a greater amount of precision is required.

The chief item of difference between the nature of the work dealt with in the Cable Room and that of the inland gallery is the very large proportion of Press and Government work, the latter being mostly in figure or letter cypher, and frequently running to several hundred words. These form the bulk of the work at certain hours of the day, and need the utmost care in signalling, as they are repeated back from the receiving station and are not released until a perfect repetition has been received. Any line or apparatus faults will obviously prolong the time of transmission almost indefinitely, with a consequent reduction of output which is not easily understood by those not familiar with the working. With good conditions, however, very creditable transmissions have been made, including some of over 500 groups sent and repeated without a single error. The Press work offers no particular difficulty, although the Italian messages require careful perusal when the handwriting is indifferent, until one becomes accustomed to the form of the words and the peculiarities of their caligraphy. The messages of a personal nature are mainly confined to the circuit which carries the traffic to and from the British Expeditionary Force.

Much has been said at times of the difference between inland and Continental working in regard to the fact that in the Cable Room the supervision has authority at one end of the line only. This results in different and often less direct methods of dealing with line or apparatus troubles, cases of bad working, delay, &c. Whereas in the C.T.O. there exists a certain authority over the out stations, any service given to, or received from, the Continent must be regarded as "per favour," and this attitude is reflected in the service communications which pass between the "chefs" on either side. One can imagine the amazement which would be created at any of the home stations if, instead of the curtly worded instruction "Open arm 4 our use," the request commenced "Will you kindly," and finished with "thanking you in advance." Service complaints as to bad or obstructive working are comparatively rare, and are generally only sent when there is very tangible need for such, and when local efforts to settle difficulties have failed. This means that the operators have to bear with minor troubles which in provincial working might be eliminated. Occasional stoppages without apparent good reason, which in the inland gallery would be suffered impatiently or not at all, must be borne with a certain equanimity. Should the Cable Room operator consider the reason insufficient, and continue sending, she is probably pulled up with the remark, "all that you send goes in the basket," and as experience has proved this to be no idle threat she is constrained to stop. The method, common to inland working, of making a clear start at the beginning of each hour, is of course impossible in foreign working, as the clocks do not synchronise. There are, however, two periods, one about 11 a.m. and the other about 6 p.m., when the Italian and French circuits "liquidate," by reason of a general change-over of staff. It would appear from this that their duties are not so varied as ours.

There is, with Continental working, a much more elaborate system of relaying, there being as many as three or four repeater stations on some of the Italian lines. When any of these latter are in circuit with each other London is able to read the conversation in one direction only, owing to the position of the repeater switch. It is generally possible, on deductory evidence, to fill in the blanks and obtain a fair impression of what is taking place, whilst waiting for the expected "Ohé London" followed by the request for "Tgs" or a "Song."

In mentioning the latter method of testing perhaps some little digression may be permitted. To those hitherto only familiar with the prosaic Morse method of testing signals by the reiteration of the letters a b c, the "songs" on the Baudot are a somewhat novel element. The principle involved is the signalling of words which should be sufficiently well known to the receiver for the slightest error to be detected. There is no set formula, and the beginner is tempted to various literary flights of fancy, but this phase usually passes, and one settles down to "The quick brown fox," or "Mary had a little lamb." In the Cable Room the generally accepted "chanson" is the Marseillaise. In the early days of the war "Tipperary" was a great favourite, and many and strange were the versions received. It is rarely seen now, possibly owing to changes of personnel on the other side. The Dutch operators are more ambitious, and vary the "Marseillaise" with selections from English literature ranging from Keats and Wordsworth to "Sister Susie." On the whole, however, English is rarely spoken over the wires, and very amusing are the attempts sometimes made. A momentary stoppage at the other end of the Paris wire, due evidently to a march past, was explained by the statement, "Sir, the troops are defiled." Occasionally an operator desirous of self-improvement, asks for information which is not easily conveyed in a few words, such as the meaning of the word "Ltd." in an address. Another recent query, in would-be stately form, ran "Please, my dear sir, says me the signification of the word knowledge. I have losted it."

A good elementary knowledge of French is required for ordinary purposes, and this can, with advantage to the Service, be extended to enable one to cope with more difficult situations which occasionally arise. Certain phrases and forms of expression in common use may be acquired in the ordinary course of working, but this is only useful within its limits, and many prefer to add to their knowledge by private study. Generally speaking, it may be said that transfer to the Cable Room has aroused an interest in the language for its own sake, and many have added appreciably to their knowledge since entry. It would perhaps not be out of place here to mention the French Institute at Marble Arch House, conducted under the direction of the University of Lille. Just before the outbreak of war the late Deputy-Controller,

Mr. Dunford, was instrumental in obtaining special facilities for Postal servants at the above institution. The scheme in its inception promised to be far-reaching, and deserved every support, but the present abnormal conditions have for a time curtailed its energies. There is still however a "Postal" class with a proportionately large Cable Room element. It is hoped that after the war this semi-official encouragement will be followed by some system of interchange between the two countries.

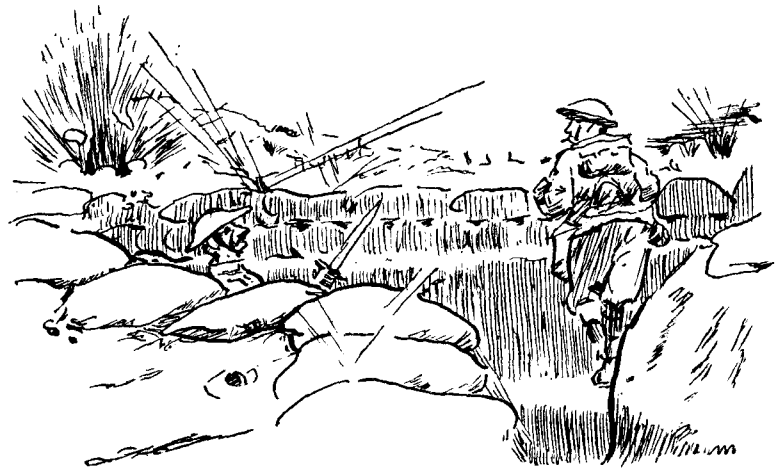
It may surprise some to hear that a knowledge of French pronunciation is required for foreign telegraph working, but a little reflection on the nature of telegraphist's English may offer some solution. Every operator knows how slow and irksome a means of expression the instrument may be when one wishes to express oneself quickly, and this results in abbreviations whenever possible. Our French friends no doubt feel the same inconvenience, but they make far more strenuous efforts to overcome it. Phonetic abbreviations, such as fé for fait, ke for que, and mové for mauvais, are invariable, and have occasionally extended to the use of "5ro" for "synchro." In addition to this the words are joined together so that one has to elucidate something like this:—"Cest ce kejevspriidfermnyxpuiskturecoibndmoicimulidrglerentrens." The latter is a remark which actually passed on the London-Marseilles installation.

The Frenchman of traditional fiery temperament is sometimes met with, but the present is not a representative time for judging of national characteristics. There is evidence that staffing difficulties on the other side of the channel are as acute, if not more so, than with us. Operators have at various times found themselves working with Spanish, Serbian and Swiss telegraphists. There is also a proportion of women Baudotists, and on more than one occasion a persevering "trier" has acknowledged himself to be a "poilu." If one may dare to say so of our Allies, there is a certain degree of impatience and obstinacy sometimes encountered on the French wires, and to a greater degree on the Italian wires, and it is on occasion such as these that one needs rather more than a rudimentary knowledge of the language, if one wishes to deal with the situation without seeking help.

It needs more than a normal, easy-going temperament to penetrate the medium of machine telegraphy, and it is probably on this account that the Dutch wires are comparatively uneventful. There are now no direct communications to Switzerland, and other neutral countries are served by the various cable companies.

It will be seen that the Cable Room does not offer such varied matter of interest as in pre-war days, but it may fairly be said, in conclusion, that it affords a welcome contrast to the monotony of inland working.

CORRESPONDENCE.



"Here, slick your head down, Charlie! Watch - I'm looking for my parcel!"

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

THE committee formed for sending parcels to the Western District (London) men on Active Service decided to hold a Gift Day, and the above sketch was drawn by a Western telephonist, Miss W. F. Hudson, to advertise this event. The result was most encouraging, enough gifts being received to send substantial parcels to the eleven men on the Western pay roll. The gifts received were as follows:—9 pairs of socks, 5 cakes, 3 writing pads, 8 magazines, 1 book, 8 tins of cigarettes, 4 packets chocolate, 4 tins of sweets, 3 tins of sardines, 2 tins of herrings, 2 tins of salmon, 2 tins of bloater paste, 1 tin of cocoa and milk, 2 cafe au lait, 2 cocoa, 1 milk, 4 packets dates, 5 tins of Brompton lozenges, 2 tins of tea tablets, 3 oxo, 3 tooth brushes, 1 shaving stick, 1 packet throat pastilles, 1 tooth powder, 1 packet playing cards.

B. ASHMEAD

(Supervisor in Charge).

Western, Dec. 3, 1917.

## WAR SAVINGS AND COMFORTS FUNDS— ROCHDALE TELEPHONE DISTRICT.

THE female clerical assistants of the District Manager's Office staff, as those who can "only stand and wait," have displayed a commendable spirit towards their *confères* of the same department who have released to answer the call of duty. These ladies took an active part in the formation



of a War Savings Association in August 1916 in order to assist in providing the silver bullets for the war. They have since conducted the active working of the Association, through which upwards of 400 War Savings Certificates have been sold to the members, the average purchase per member up to the

end of December exceeding 10 certificates. These energetic ladies, firm in the belief of systematic giving, as well as saving, inaugurated in October 1916 a "Comforts" Fund, and persuaded the members of the District Office staff to undertake to each contribute at least  $\frac{3}{4}$ d. per week to such a fund. The response to the appeal has, however, been on a more generous basis. In addition, the fund has been augmented by the profits of a fancy dress party, as well as those of two private house parties held at the respective homes of two of the members. By this means, upwards of £11 has been collected, which has enabled the workers of the fund to forward 33 parcels out to France, German East Africa and Italy, as well as to those still in training in this country.

One of the brave lads, Stanley Perry, male clerical assistant, who was transferred to the Rochdale district from Bradford about 1912, has paid the great sacrifice. Another, Harry Culpan has, as a result of wounds received in Flanders, been discharged from the Army and recently returned to his civil duties.

The letters of acknowledgment from the recipients of the parcels have been ample recompense for the efforts made on their behalf.

"No ours to hear the mad hoarse shout of battle,  
Not ours to see the agonies of strife,  
Not ours to feel the grip of death's dread rattle,  
Not ours to die for Britain—we have life.  
Through fields unravaged we may pass well knowing  
Our land is free—because our brothers paid.  
They gave their lives and shall we then inglorious  
Close up our purse strings where we gave our sons?  
They look to us in faith that's unafraid,  
Let faith in us be met by instant aid."

## PERSONALIA.

### LONDON TRAFFIC STAFF.

#### Resignations—

Miss F. CARTER, Assistant Supervisor, Class II, of Hampstead Exchange, has resigned to be married. She was presented with a dessert service by the staff.

Miss O. BESWICK, Assistant Supervisor, Class II, of Victoria Exchange, has resigned in view of her approaching marriage. She was the recipient of numerous presents including a case of silver fish knives and forks and a silver cake-basket.

Miss E. B. HOBDELL, Assistant Supervisor, Class II, of Mayfair Exchange, has resigned to be married. She was presented by her colleagues with a silver and glass fruit dish and biscuit box, and with numerous other presents by personal friends.

Miss R. HUGHES, Assistant Supervisor, Class II, of North Exchange, has resigned to be married and was presented by the staff with a silver-plated bread platter, knife and cask basket and with other useful articles by her friends.

Miss A. MOWER, of Mayfair, has resigned in view of her approaching marriage and was presented with a silver cake basket, fish knives and forks, and several other useful gifts.

Miss C. E. MORTON, of Dalston, has resigned to be married and was presented with a set of oak trays by the staff.

Miss G. M. BETTS, of Willesden, has resigned on account of her marriage. She was presented with a silver cake basket and other presents by the staff.

Miss D. E. MILES, of Willesden, has resigned in view of her approaching marriage, and was presented with a tea service and other presents by the staff.

Miss E. L. COOKE, of Ilford Exchange, has resigned to be married. She was the recipient of an egg cruet and several other presents.

Miss L. A. TRUDGETT, of Stratford, has resigned to be married and was presented by her colleagues with a tea service and several other gifts.

Miss MARGARET DENNIS, of East Exchange, has resigned to be married. She was presented by the staff with a tea service and numerous other gifts.

Miss E. M. GOLDSMITH, of Hornsey, resigned in view of her approaching marriage and was presented with a cake basket and jam dish by the staff.

Miss E. F. WOODCOCK, of Wimbledon, has resigned to be married. She was presented with a case of fish knives and forks and other presents.

Miss L. H. AMESS, of New Cross Exchange, has resigned in view of her approaching marriage, and was presented by the staff of the Woolwich Arsenal, P.B.X., with a case of fish knives and forks and a set of carvers.

Miss A. M. DAWSON, of Greenwich, has resigned on account of marriage. She was presented by the staff with a pair of vases with fruit and rose bowl to match.

Miss A. BADRICK, of London Wall, resigned to be married and was presented by the staff with fish knives and forks, teaspoons and several other useful gifts.

Miss MARJORY PRING, of the Trunk Exchange, has resigned in view of her approaching marriage. She was presented by her colleagues with a silver tea service and other useful presents.

Miss M. H. J. KIMBER, of Museum, has resigned to be married and was presented with a case of fish knives and forks, and an epergne.

Miss VIOLET HARRIS, of Battersea, resigned in view of her approaching marriage. Her colleagues presented her with a tea service and other useful gifts.

**WHERE TO STAY.**

The attention of our Readers is directed to the following list of Boarding and Apartment Houses.

**LONDON, S.W.**—Easy reach Gerrard and other Exchanges, also Central Telegraph. Comfortable room; lady or gent; very moderate. 63, Broxash Road, West Side, Clapham Common.

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### ASPIRATIONS.

BY ADA E. CARPENTER (*Croydon Exchange*).

No doubt you will wonder in what way the title of my paper holds any relation with regard to the work of "telephony." Well, let us first look at the meaning of the word aspiration—steadfast desire. If our work is going to be a success we must have a steadfast desire to do better than we are doing now. We know that we shall never really be perfect, but that does not prevent us from aspiring to become somewhat like our ideal. Do we not all of us at times aspire and long to be better than we are? And if we have such thoughts and longings, is it not natural that they will find expression in our work? and thus the service reaps the benefit of those aspirations. But we must make quite sure that we have the right kind of aspirations. The Germans were not without aspirations when they thought to rule Europe, but I think you will agree that they aspired in the wrong direction.

What then should be our aspirations—in which direction should we aspire. First, I should say in co-operation. A successful district or exchange can never be said to be as such unless all its staff co-operate. We must not only think of self but of all the work as a whole. The Telephone Service is like a huge machine and we are like the various parts which go to make up the whole. No one piece is complete in itself, and the inefficient working of one piece can stop the whole of the machinery.

Let me give you a very simple illustration: The setting up of a connexion. As you know there are four individuals concerned in one connexion. The originating subscriber, the A and B telephonist and the distant subscriber. One person failing to co-operate can prevent the satisfactory completion of the connexion.

Then let us look at the statistics. One month our irregularities are high, another low. One month we may have an aspirant answering on the lines which are under observation, and the next month a "slacker." Or perhaps I should say one who lacks ideals. The work is there and the subscribers have to be answered, but there is no enthusiasm brought into the work, no steadfast desire to make our figures better. I imagine that some of you are thinking, "Oh, yes, but the same telephonist does not answer on all the lines which are under observation." Quite so, but, whereas one circuit will receive excellent attention, another will not, and thus without the co-operation of all the whole can be marred.

Then it is very important that the supervisors and staff should co-operate. How much easier it would be if both parties tried to

realise each other's position, and what better results would be attained.

Some telephonists resent the slightest correction made by a supervisor, but if they only knew the intention, the reason for her so doing, I think that they would feel more kindly disposed towards her.

She should not be looked upon as a detective agent but rather as a "haven of refuge" where relief from telephonic difficulties can be found. It must also be remembered that a supervisor is not entirely without aspirations for her team and exchange, and the resented correction may be the channel through which the aspiration, both for telephonist and herself, can best be realised. Let me illustrate my meaning. A supervisor aspires to make her team as near perfection as possible. The telephonists must then co-operate with her. The tone, the repetition of numbers or some other detail is lacking in them, and consequently the other portion of their work is marred. She therefore has to point out these errors. Is it to find fault? No, surely not, but because she has a steadfast desire to bring forth all that is best both in her telephonists and also herself. I think that those who are aspiring will understand my meaning, for you know "Deep calleth unto deep."

Do we allow the standard of our work to be in proportion to our personal feelings towards those over us? If so our work will never be a success.

My sympathy often goes out to the "B" telephonists at the smaller exchanges where the work is slack (especially since the outbreak of the war) and the transmission bad. To sit at such a position for three or four hours at a time is, I think you will admit, apt to become monotonous. But at the same time they are indispensable. Without their co-operation a call cannot be completed. I wonder if any such telephonists here realise how important their position is? If so they will easily understand how very necessary is their co-operation, and this knowledge will do much to take away the monotony, and here the imagination will do much to help one, if by its proper use they are enabled to realise how very much depends on their efficient working.

Whilst speaking about co-operation there is a certain branch of the Service which can do much to help us in our work—namely, the engineers. How much nicer it is to work at a position with the cords all in order. To have instruments always available when the ones in use become faulty. Yes they can do much to help the day to go smoothly; we need their hearty co-operation.

What are all our instructions and rules but the aspirations of certain persons to give a better service, but their aspirations would be of no use unless we co-operated with them and put them into practice. We ourselves must also be aspirants, and then we can use such rules as stepping stones, as a means to an end



Patience and perseverance are two other virtues that we must possess in our work of telephony. Patience towards our subscribers and also towards one another.

How easy it is for some of us to become hasty with a subscriber when he does not use his instrument as we should like him to do. I think that it would help us to overcome this weakness if we thought of a cartoon which appeared in the *Daily Mirror* some time ago. It was a series of pictures depicting the effect which one person can have on others. The first picture illustrates the managing director of a certain business bestowing a kindly smile on his secretary, and so each employee passes it on until the office boy beams on the charwoman. The reverse side is then illustrated where the managing director commences the day by scolding his secretary, and the secretary scolds the chief clerk, and the chief clerk the typist, and the typist the office boy, the office boy the charwoman, and the charwoman ends the series by venting her feelings on the cat who comes in for rather a rough time of it.

It was suggested that these two pictures should be framed and hung up in every office. I think that this is a very good illustration and could be applied to our work, especially when we feel inclined to be hasty with our subscribers and also when we ourselves are irritated and annoyed. The remembrance of the above illustration will surely make us smile, or here we could bring into practice a saying of H. Black, which is as follows:—"If your face wants to smile let it, if it doesn't, make it." Thus, we shall also be enabled to bring into our voice the "bright, pleasant and smiling tone" in that oft repeated phrase, "Number please."

All our aspirations are of no use to us unless with them we combine perseverance, or in other words continue steadfast in our undertakings. We all of us know how at different times we have been roused by some splendid deed, speech or sermon. How at the beginning of each New Year we make, as we say, good resolutions. Think for a moment of the resolutions which you made last January and then ask yourself, "Have I steadfastly kept them?" Many of us I am afraid will have to say "No, I have not." Yes, we can all aspire, but not all can persevere. It is so easy at first, is it not? The daily round, the common task, is at times apt to become monotonous, but let me quote you some words of J. M. Gibbon which will perhaps help us. "An early, easy success is often disastrous. It relaxes effort while difficulty stimulates, and failure is a challenge that arouses dormant powers. Dr. Creighton failed to win the prize for an essay in history, and the failure saved him. Nothing more was heard of the man who won. But Creighton, stung into serious effort by failure, produced works which bear the hall mark of genius."

But let us not be cast down, do not stay down in the valley because you failed to persevere one day and things all went wrong. Come up to the top of the hill and be bathed in sunshine.

Thus, in conclusion I would say—let us therefore bring aspirations into the work of telephony, coupled with patience and perseverance, and the result will be—Well, shall we try it, and wait and see?

### ANTI-SHOCK AERIALS FOR SHIPS' WIRELESS.

An invention by Mr. S. Hall, of 4, Chatham Road, Rock Ferry, Cheshire, has just been accepted by the Patent Office, which reduces to a minimum the risk of wireless aerials on vessels being broken and the wireless apparatus thus put out of action when a ship becomes mined or torpedoed. Experts in wireless have admitted the practicability of this invention and the necessity of putting it into immediate use on steamers.

The invention is simple and not costly to fit, being merely one or more long extension springs specially constructed and fitted at each end of the present aerials, these springs automatically extending and contracting to allow the aerial to lengthen or shorten to take up the varying distances between the top of the masts when they spring out of position through an explosion.

These springs do away with the present necessity of lowering the aerial when a ship is being loaded, as they allow for the vibration of the masts caused by the derrick's working, and their use would in some cases save the aerial being blown away by shell-fire.

### THE EDINBURGH—GLASGOW "NO DELAY" SERVICE.

It has been the usual experience that when a trunk service of junction quality has been inaugurated between two large centres of population and industry the traffic has doubled, and sometimes more than doubled itself. This was hardly to be expected with the service provided between Edinburgh and Glasgow in April 1917, but the increase in the number of calls originated at Edinburgh Central Exchange for Glasgow and the exchanges in the West of Scotland included in the scheme, has been most satisfactory in spite of war conditions, and in spite of the fact that the charge for three minutes' conversation is relatively high, viz. *Sd.*

The following statement shows the number of originated effective calls dealt with at Edinburgh Central Exchange monthly from April to November, and the revenue the traffic produced:—

Month.	No. of charged calls.	Revenue.
April ... ..	9,784	£390 6 8
May ... ..	11,290	455 12 8
June ... ..	10,814	432 11 8
July ... ..	10,884	439 10 0
August ... ..	11,106	440 10 0
September ... ..	11,058	442 1 8
October ... ..	13,960	553 17 0
November ... ..	13,919	548 17 0

Altogether, the link which the new service has established between the two great cities has been productive of much good, and it is known that the free facilities have been much appreciated by the public. After the war is over such a service cannot fail to have a potent effect on the development of commerce and industry, and it is not difficult to see that many additional lines will be required. Indeed, if the traffic continues to increase at the rate indicated above, the facilities will have to be augmented in the near future. Schemes of the kind referred to are costly, but they are calculated to be very profitable, and there is no doubt, if economic conditions permit at all, that the Post Office will continue its policy of extending such services.

As was indicated soon after the scheme was introduced, the control of trunk calls by the local telephonists at the Central Exchange has not affected the local and junction service to any extent. To be sure a good deal of alertness on the part of the supervising officers and the telephonists is necessary when trunk calls are controlled at "A" positions on which the load is relatively high, and subject to sudden variations, but the staff have not failed to exhibit that alertness, and credit for the success of the new service is largely due to them.

It should be mentioned incidentally that all the traffic arrangements are completed for the transfer of about 60 short distance trunk circuits from Edinburgh Trunk to Edinburgh Central Exchange, and it is expected that the work of transferring the circuits will be carried out shortly. All these lines will be multiplexed over the "A" positions, in the same way as the Glasgow lines, and calls will be completed on demand as far as possible. All the short trunk lines are aerial circuits, however, and it is only to be expected in our severe climate, that the facilities will at times not afford a "no delay" service; but the eventuality of delay has been adequately provided for by special control arrangements which can be resorted to at any moment.

When the arrangements are completed, the Edinburgh Central Exchange will present an interesting object lesson. It will all but share with Glasgow Central the position of the largest combined exchange in the country, and, if it is not too bold to speak in advance, prove the wisdom of the policy of combining even the largest local and trunk exchanges.

R. G. D.

We congratulate Major A. A. JAYNE, M.C., on the receipt of another honour. He has now received the Distinguished Service Order.



First Row:—Col. Sir A. M. OGILVIE, K.B.E. Mr. L. T. HORNE, C.B.E. Col. F. H. WILLIAMSON, C.B.E. Mr. W. H. ALLEN, O.B.E.  
 Second Row:—Mr. A. MOIR, O.B.E. Mr. J. F. EDMONDS, M.B.E. Mr. E. LACK, M.B.E. Mr. C. E. FENTON, M.B.E.

**WAR HONOURS.**

**THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.**

The following appointments have been made to Post Office officials:—

*Knights Commanders (K.B.E.).*

Colonel ANDREW MUTER JOHN OGILVIE, C.B., R.F.,  
 Director of Army Signals (Home Defence); Second Secretary to the Post Office.

*Commanders (C.B.E.).*

LEONARD THOMAS HORNE, Esq.,  
 Assistant Secretary, Ministry of Pensions (formerly Assistant Secretary in charge of Telephones Branch, G.P.O., now in charge of Foreign and Colonial Branch).

CYRIL WILLIAM HURCOMB, Esq.,  
 Deputy Director of Commercial Services, Ministry of Shipping, (formerly Private Secretary to the Postmaster-General).

Colonel FREDERIC HERBERT WILLIAMSON, R.F.,  
 Director of Army Postal Service (Home); Principal Clerk, Secretary's Office, General Post Office.

*Officers (O.B.E.).*

WILLIAM HENRY ALLEN, Esq.,  
 Vice-Controller, Post Office Stores Department.

JOHN BOURDEAUX, Esq.,  
 Submarine Superintendent, General Post Office.

Miss JANE BUCHANAN,  
 Superintendent (Female Staff), Post Office Savings Bank Department.

Commander EDWARD LINDSAY ASHLEY FOAKES, R.N.,  
 Naval Assistant to Director of Army Postal Service, and Nautical Adviser to the Post Office.

EDWARD GOMERSALL, Esq.,  
 Superintending Engineer, General Post Office.

ALEXANDER MOIR, Esq.,  
 Metropolitan Superintending Engineer, General Post Office.

FREDERICK WICKHAM, Esq.,  
 Controller, Money Order Department, General Post Office.

WILLIAM HUMPHRIS WINNY, Esq.,  
 Knight of Grace and Deputy Commissioner of the Order of St. John of Jerusalem (Engineer-in-Chief's Office, G.P.O.).

*Members (M.B.E.).*

ROBERT BENNETT COBB, Esq., First Class Clerk, Ministry of Pensions (formerly in Secretary's Office, G.P.O.).

JOHN FRANCIS EDMONDS, Esq., Superintendent of Traffic, London Telephone Service.

CHARLES ERNEST FENTON, Esq., Staff Officer, P.O. Stores Dept.  
 JAMES STUART JONES, Esq., Inspector of Telegraph and Telephone Traffic, G.P.O.

EDWIN LACK, Esq., Assistant Staff Engineer, G.P.O.

Miss JESSIE LIDDIARD, Superintendent of Women Clerks, Ministry of Pensions (formerly and at present in London Telephone Service).

ROBERT STEWART, Esq., Postmaster, Margate.

ARTHUR THOMAS TAYLOR, Esq., Assistant Principal Officer, Sugar



MR. W. H. WINNY, O.B.E. MR. STUART JONES, M.B.E. MISS J. LIDDARD, M.B.E. COM. ASHLEY FOAKES, O.B.E.

Distribution Branch, Ministry of Food (formerly in Secretary's Office, G.P.O.).

REGINALD ERNEST THORNLEY, Esq., Assistant Principal Officer, Establishment Section, Ministry of Food (formerly in Secretary's Office, G.P.O.).

*Medals of the Most Excellent Order of the British Empire* have been awarded to the following for services in connexion with the war in which great courage or self-sacrifice has been displayed:—

ARMES, CHARLES, Cable Foreman, G.P.O.—Employed on cable ships and small craft in connexion with war work in dangerous waters.

BARBER, JOHN THOMAS, Carpenter, G.P.O.—Employed on cable ships and small craft in connexion with war work in dangerous waters.

BEAUMONT, FANNY ELIZABETH, Sorting Clerk and Telegraphist.—Displayed great courage and devotion to duty during air raids.

BESSENT, MYRA GRACE, Telephonist.—Displayed great courage and devotion to duty during air raids.

BOSTOCK, LILIAN ADA, Telephonist.—Displayed great courage and devotion to duty during air raids.

(Walked to the exchange through bombed area under heavy gunfire on several occasions. Remained at her post in exposed position during a daylight raid.)

BURRELL, MARION, Sorting Clerk and Telegraphist.—Displayed great courage and devotion to duty during air raids.

CAMPBELL, GEORGE PATRICK, Carpenter, G.P.O.—Employed on cable ships and small craft in connexion with war work in dangerous waters.

CARLTON, LOUISA MARGARET, Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids and bombardment from the sea.

CASS, FLORENCE MARIE, Telephonist.—Displayed great courage and devotion to duty while in charge of a telephone exchange during a serious explosion at a neighbouring munition works.

(Found her way in the dark to engine room and switched on emergency motors, and then organised the staff to deal with rush of traffic.)

CLARKE, MABEL ELEANOR, Telephonist.—Displayed great courage and devotion to duty during air raids.

(Has come on duty on every possible occasion of emergency through bombardment and gunfire.)

DARTNELL, LUÇTE JANE, Sorting Clerk and Telegraphist.—Displayed great courage and devotion to duty during air raids.

DAVIES, JAMES HENRY, Skilled Workman, G.P.O.—Showed habitual courage in carrying out repairs to submarine cables in difficult and dangerous waters.

DAVIES, VIOLET ANNIE.—For courage in remaining at her post at the telephone during a severe explosion. Age 15.

EASTER, BERTHA ANNIE FLORENCE, Telephonist.—Displayed great courage and devotion to duty during air raids.

(Walked to the exchange through heavy gunfire and falling bombs on the night of the first aeroplane raid.)

ETHERIDGE HENRY, Skilled Workman, G.P.O.—Employed on

cable ships and small craft in connexion with war work in dangerous waters.

FLINTOFF, BERTHA, Telephonist.—Displayed great courage and devotion to duty during an air raid.

GODFREY, MARGARET ANNIE LOUISE, Telephonist.—Displayed great courage and devotion to duty during an air raid.

HARMAN, ELSIE LILIAN, Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids.

HEALEY, ALICE ANN, Telephonist.—Displayed great courage and devotion to duty during air raids.

HEATHER, WILLIAM, Cable Foreman, G.P.O.—Employed on cable ships and small craft in connexion with war work in dangerous waters.

HICKEY, ETHEL NORA ELIZABETH, Telephonist.—Displayed great courage and devotion to duty during air raids and on the occasion of a fire.

(On the latter occasion she remained at her post dealing with fire calls, &c., although the rest of the staff had left the building.)

HICKEY, THOMAS, Skilled Workman, G.P.O.—Has displayed great courage while carrying out telegraph work under dangerous conditions.

HICKS, WILLIAM CHARLES, Skilled Workman, G.P.O.—Has rendered valuable service since the beginning of the war. Has remained at his post absolutely alone day and night, in spite of danger from submarine or other attacks.

HIRST, DORIS, Telephonist.—Remained at her post until relieved, on the occasion of a very serious explosion at munition works, notwithstanding the fact that the explosions were almost continuous, and that the police advised the officers on duty to leave the building.

HOBBS, GEORGE WILLIAM, Boatswain, G.P.O.—Employed on cable ships in connexion with war work in dangerous waters.

HUNT, MABEL, Telephonist.—Displayed great courage and devotion to duty during an air raid.

IVIN, HORACE, Skilled Workman, G.P.O.—Has done valuable service under dangerous conditions, repairing submarine cables carrying naval and military wires.

JOHNSON, ELLEN, Sorting Clerk and Telegraphist.—Displayed great courage and devotion to duty during air raids.

JONES, MAURICE, Inspector, Engineering Dept., G.P.O.—Has carried out two very dangerous missions, successfully passing through hostile lines at great personal risk.

LAMBE, PATRICK, Skilled Workman, G.P.O.—Rendered very valuable service in picking up and repairing wires which had been shot down.

LAWS, ADA MARY, Telephonist.—Displayed great courage and devotion to duty during air raids.

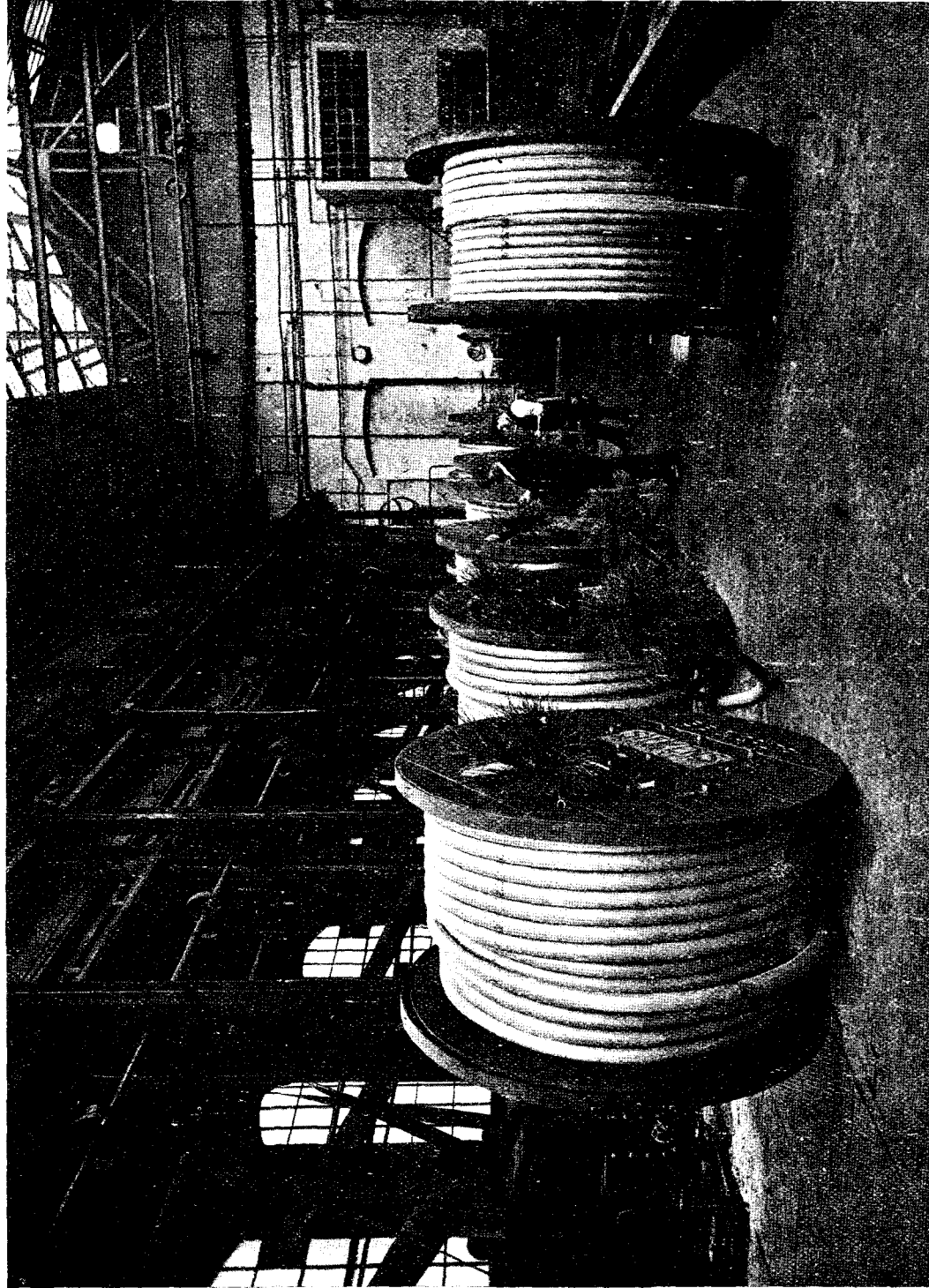
(Walked through the streets to her exchange on the night of the first night aeroplane raid on London.)

LEEDS, ETHEL MARY, Telephonist.—Displayed great courage and devotion to duty during air raids.

LOCKWOOD, ROBERT ANDREW, Skilled Workman, G.P.O.—Has done exceptional service during rough weather in effecting repairs to submarine cables carrying naval and military wires.

# TELEGRAPH CABLES

**SIEMENS BROTHERS & CO. LTD.**

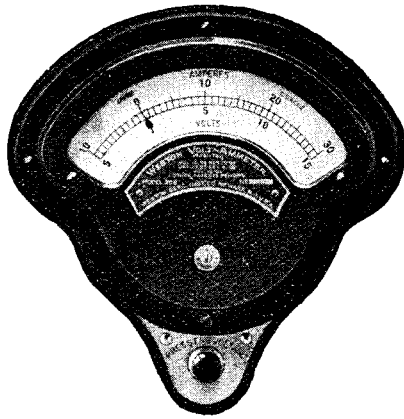


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# TELEPHONE CABLES

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Miniature Precision D.C. Instruments



MODEL 268 SWITCHBOARD VOLT-AMMETER.  
Overall dimensions, 4.25" x 4.2"

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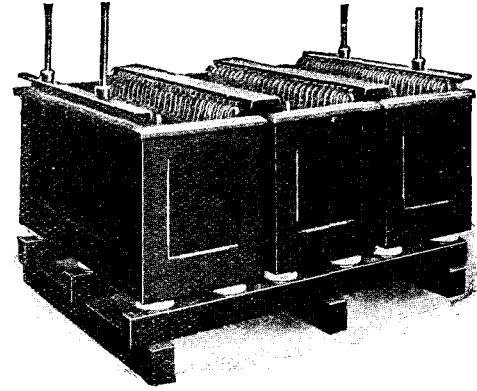
AUDREY HOUSE, ELY PLACE, HOLBORN, E.C. 1.

Telephone: 2029 HOLBORN. Telegrams & Cables: "PIVOTED, LONDON."

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**SPECIAL TYPES of HIGH DISCHARGE CELLS FOR TELEPHONE EXCHANGES.**

PRICE LIST ON APPLICATION.

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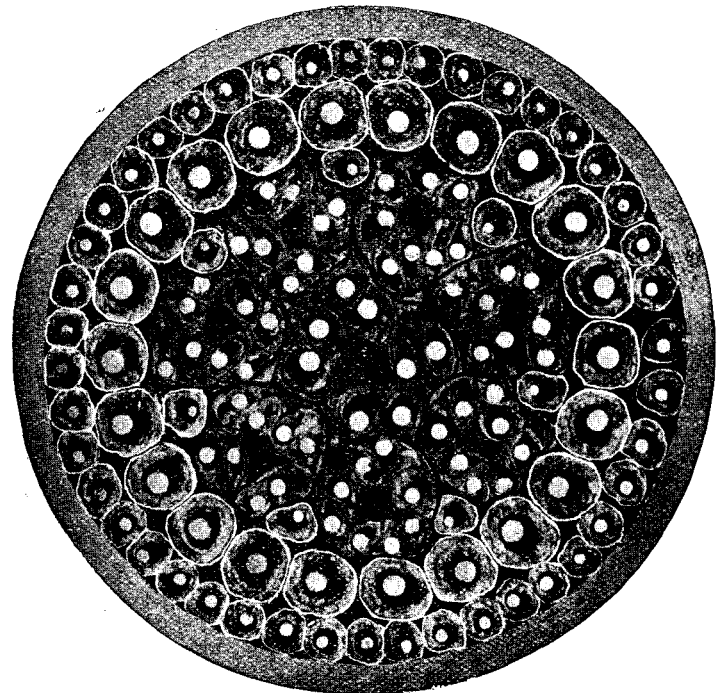
# DRY CORE TELEPHONE CABLES.

*Electrical Plant of every description for Power, Lighting, and Wireless Installations.*

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CHARLTON, LONDON, S.E.

ESTABLISHED 1875.





*First Row*:—Miss MABEL CLARKE. Miss LILIAN ADA BOSTOCK. Miss FRANCES E. E. SMITH. Miss FLORENCE M. CASS.

*Second Row*:—Miss AGNES PEARSON. Miss DORIS HIRST. Mr. SIDNEY SIMPSON. Miss BERTHA A. F. EASTER. Miss DOROTHY F. WHIBLEY.

*Third Row*:—Miss ETHEL HICKEY. Miss EDITH VENUS. Miss FLORENCE E. STEGSEL. Mrs. GERTRUDE WOOD.

LODDER, TOM OLIVER, Skilled Workman, G.P.O.—Showed great courage and devotion while in charge of a telegraph station carrying out his duties under fire.

MAW, EDITH BLANCHE, Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids.

MERRALLS, ANNIE DYER, Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids.

MONKS, JOHN JOSEPH CHRISTOPHER, Skilled Workman, G.P.O.—On many occasions continued his work under fire, displaying great zeal and courage.

MOODY, MARGARET, Telephonist.—Displayed great courage and devotion to duty during air raids.

OWEN, EDWARD HENRY LEWIS, Cable Hand, G.P.O.—Employed on cable ships and small craft in connexion with war work in dangerous waters.

PALMER, NELLIE ENA ANN, Telephonist.—Displayed great courage and devotion to duty during air raids.

PEARSON, AGNES, Telephonist.—On the occasion of a very serious explosion at munition works she remained at her post until relieved, notwithstanding the fact that the explosions were almost continuous and that the police advised the officers on duty to leave the building.

PORTER, HENRY WILLIAM JOHN, Skilled Workman, G.P.O.—Showed courage and devotion to duty during repeated air raids. On one occasion he returned to work on the restoration of naval circuits while explosions were taking place 50 yards away.

PULLINGER, ETHEL MARY, Telephonist.—Displayed great courage and devotion to duty during air raids.

ROSS, JAMES GORDON, Skilled Workman, G.P.O.—Displayed great courage and resource in maintaining telephonic communication during an air raid.

SIMPSON, SYDNEY, Skilled Workman, G.P.O.—Showed great courage as well as resource on the occasion of a very severe explosion at adjoining munition works. He sent away to a safe place the women operators, and himself maintained uninterrupted telephonic communication.

SLEEFORD, MINNIE, Assistant Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids.

SMITH, FRANCES EMILY ESTHER, Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids.  
(Has frequently travelled to her exchange during raids under difficult and dangerous circumstances.)

STAMMERS, SIDNEY ARTHUR, Cable Hand, G.P.O.—Employed on

cable ships and small craft in connexion with war work in dangerous waters.

STEGGEL, FLORENCE ELIZA, Telephonist.—Displayed great courage and devotion to duty during air raids.

(Has come on duty through gunfire and bombing. On one occasion a companion walking with her was killed.)

SUTCLIFFE, GEORGE GILBERT, Inspector, Engineering Department, G.P.O.—Rendered valuable service in the construction and maintenance of telephones during fire.

STEWART, FANNY ELEANOR, Assistant Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids.

VENUS, EDITH EMILY, Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids.

(Has taken up duty at all hours of the night, walking from her home to the exchange during raids.)

WARD, AMELIA JANE, Telephonist.—Displayed great courage and devotion to duty during air raids and bombardments from the sea.

WARD, DANIEL VINCENT, Inspector Engineering Department, G.P.O.—Displayed courage and resource while Controlling Officer in a neighbourhood exposed to many bombardments by sea-craft and aeroplanes.

WARD, NELLIE, Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids.

(Took charge of exchange during Zeppelin raid when neighbourhood was heavily bombed, maintaining the service and encouraging the staff.)

WEST, DOROTHY KATE, Telephonist.—Displayed great courage and devotion to duty during air raids.

WHIBLEY, DOROTHY FLORENCE, Telephonist.—Displayed great courage and devotion to duty during an air raid.

(Overtaken on her way home by a second raid, went back to take up duty at exchange.)

WILKINSON, MARY AGNES, Telephonist.—Rendered invaluable service at a telephone exchange on the occasion of a fire and serious explosion at a munition works close by, proceeding to her post through the danger zone at grave personal risk.

WINTER, JAMES, Inspector, Engineering Department, G.P.O.—Rendered special service in repairing wires under very dangerous conditions and was frequently under fire.

WOOD, GERTRUDE, Supervisor, Telephones.—Displayed great courage and devotion to duty during air raids.

(Has sent staff to place of comparative safety and remained in exchange herself during bombardment to deal with ambulance and emergency calls.)

### TELEGRAPHIC MEMORABILIA.

DESPITE war-time conditions technical classes are now being run by the Department with special reference to the Baudot needs of both the Inland and Anglo-Continental circuit working of the (C.T.O.)

In addition, a course of elementary French has been organised specially adapted to meet the necessities of the foreign circuits. As a point of additional interest it may be stated that the latter class is conducted by a certificated lady selected from the cable room ranks, and well qualified for the task. The language section of the classes is exclusively composed of women students while the technical section comprises both sexes amongst its devotees.

These arrangements are all to the good and although the accommodation possible and provided is far from ideal, it is sufficient to carry-on with until post-war conditions permit of something more worthy of the British Telegraph Service.

By the courtesy of an ex-National official I had recently the opportunity of rapidly running through some of the late company's educational works, of perusing a series of their staff examination papers, and of studying their system of "assistance" to knowledge. Serious if restricted efforts had evidently been made to help and encourage the employees in their studies, efforts which had apparently produced satisfactory results for both parties.

It will be a matter of regretful surprise to the present scribe if during the next few years very active steps are not taken along similar if considerably improved lines and by our own Administration.

"All telegrams are accepted at 'sender's risk,' and the risk is as much in the quality as in the quantity of the labour employed." So runs a sentence in a letter written to one of the Service organs, and is quoted as embodying a somewhat pernicious interpretation of an administrative war time regulation. "Sender's risk" indeed is not intended to encourage slovenly, careless or ignorant workmanship, any more than the torpedoing or mining of a ship caused by incompetent navigation would be condoned by war risk insurance.

One overhears strange dialogues at a Post Office counter at times, not infrequently touched with a subtle humour. "You can't find the Andaman Islands in your list, miss?" queried a lady in front of the grille. "No madam, I'm sorry, but there's evidently no telegraph office there," was the official's reply, followed immediately by these somewhat unconvincing final words, "Very strange, very strange. I've cabled there more than once to my husband. Its a convict station, you know, and he's been there twelve months!" And one member of the British public wondered why the remainder of the waiting queue smiled as the would-be customer left the counter carrying the rejected telegram addressed to her officer husband with her.

Congratulations to those British telegraphists who, though located by the fortune and needs of war in the neighbourhood of Halifax, N.S., were yet able to report "All well" after the memorable explosion.

It is to be regretted that *force majeure* has prevented the continuance of the experiment of 'phoning some of the Press telegrams to Paris. All that need be said of the present juncture is that it does not appear to have been the fault of the British administration that the trials were not continued more persistently. The writer is still convinced that effective work could be done in this direction provided the necessary stenographic experts could be employed as was the case with certain news agencies in pre-war times. However this is a telephonist's matter and I apologise for trespassing, only pausing to step over into my own ground and remark that the recent *telegraphic* re-arrangements appear, up to the present, to have effected a decided improvement in this Service, thanks to our old friend the Hughes printer. This form of telegraphic apparatus in skilled hands up to August 1914 had rendered excellent service to the newspaper worlds of Fleet Street, Paris and even Berlin. Despite the admitted higher outputs obtainable from multiplex five-unit apparatus the obstinate Hughes apparatus simply refuses to be completely ousted from the telegraphic sphere!

Come, let us now praise famous men! Three eulogies:—

The New Year's honour conferred upon our Colonel Ogilvie will be accepted as reflected glory upon the combined Engineering, Telegraph and Telephone Service of the British Post Office, while doubtless quite a number of silent plaudits will be expressed by his many admirers of the old "24th." It can be safely said that there is not a single official who has any knowledge of the Department over which this officer at present presides but would be ready to pay tribute to the immense war service rendered to the country by its unobtrusive but distinctly necessary ramifications. Its unobtrusiveness indeed is largely the reflex of the Director's own personality, to which the latter adds an approachableness that inspires immediate confidence and puts the veriest stranger at once at his ease. Yet another honour to the above united Services was conferred, although through the medium of a much humbler official, and has probably passed quite unnoticed by ninety-nine of the hundred who perused the lengthy list of distinctions. This time it is a lineman-telegraphist who for over three years has been stationed on a lonely portion of the coast open to the dangers of submarine and other enemy attacks. Night and day he has remained at his post, literally available any minute during the twenty-four hours, as has been repeatedly proved. Many a telegraphist in happier times has tramped past this exposed spot only to find, after trudging a mile or two that he had overshot his destination, so admirably has nature's camouflage hidden it from the eyes of the mere passer-by.

When commenting upon the duplex articles of Mr. James Fraser it was not then anticipated that the London office was so

soon to lose so excellent a friend. By the time these lines are in print he will probably have fared north to his beloved Aberdeen. One would have wished that the conditions could have been more favourable for a hearty send-off from the many friends and students (the terms were almost synonymous) who would have gathered round him by the score ere he left for that journey north of the Tweed and for which—he will forgive me—no Scotchman is ever supposed to have provided a return ticket! The kindest thoughts of the C.T.O. follow him into his new sphere! Here with us his influence has consistently been that of one who held high estimate of the telegraphist craft, was one well-qualified to express an opinion thereon, and whose every endeavour was towards a real unity in diversity of the engineering and commercial branches.

J. J. T.

## REVIEWS.

*Hand Book of Standard Telephone Construction Methods.* Frank B. Hall. Newton Falls, Ohio, U.S.A. 528 pp. Price \$4.00.—This volume, which is arranged on the loose-leaf principle, consists primarily of a set of carefully drawn specifications covering the construction of the whole of the plant—other than the exchange equipment itself—involved in the establishment of a public telephone system. The contents fall under 8 main headings, namely:—

- (i) Exchange aerial specifications (22 specs.\*).
- (ii) Exchange underground specifications (12 specs.\*).
- (iii) Toll line specifications (17 specs.\*).
- (iv) Sub-station wiring specifications (2 specs.).
- (v) Construction methods (220 drawings).
- (vi) Material specifications (6 specs.).
- (vii) Material catalogue (arranged alphabetically).
- (viii) Drawings of material (40 pages).

The specifications comprised in (i) to (iv) have for their object the placing of "works contracts," and those in (vi) the supply of materials. In division (vii) information is given to facilitate the preparation of demands for stores, e.g., particulars of grades, sizes, weights, &c. The drawings in (v) are numbered to agree with references in (i) to (iv) and those in (viii) with references in (i) to (iv), (vi) and (vii).

Probably nothing could indicate more clearly than does such a book as this the wide difference that exists to-day between the conditions under which the telephone system of a considerable portion of the United States continues to be developed and those which prevail in this country. In our case, the absorption by the State of the National Telephone Company's system and also the municipal systems, other than those of the Corporation of Hull and the States of Guernsey, have brought the public system as a whole under the control of the Post Office; and the extension and maintenance of the system are governed by a single standard of workmanship embodied in the various "Technical Instructions" (which are obtainable by the public) and other Departmental instructions (not so obtainable): in the United States some millions of the subscribers depend for telephonic facilities on the operation of thousands of "independent" telephone companies of whose activities readers of American telephone literature are not likely to remain for long either ignorant or unimpressed.

When it is borne in mind that many of the "independent" undertakings are relatively small and cannot sustain the financial burden represented by the salaries of several plant engineers—or even the cost of more than an occasional visit on the part of a consulting expert—it will be realised that a definite field exists for the sale of literature designed not only to save the time and increase the efficiency of the engineers and managers of such undertakings but also to protect them against that type of contractor who for his profit relies largely on the weakness of a contract or specification. A careful examination of the *Hand Book* shows that it is well adapted to secure the objects mentioned and it can hardly be doubted that many an "independent" telephone man regards it as one of his best investments; but even at a quarter

\* And detailed index.

the price it would be unlikely to appeal, in this country, to more than a few individuals, these being for the most part consulting engineers and those Post Office engineers at Headquarters who are engaged in the revision of existing practice with the object of

EFFICIENCY

securing the highest possible value of the ratio —————.

EXPENDITURE

The *Hand Book* indicates many substantial differences between British and American practice, but the explanation is generally to be found in the fact that the conditions—physical and other—themselves differ greatly; and although much of interest could doubtless be written on this subject, considerations of space preclude any such attempt on this occasion.

J. W. A.

*Telephone Troubles and how to Find Them.* By W. H. Hyde. Messrs. S. Rentell & Company, Limited, 36, Maiden Lane, Strand, W.C. 2.—We have received a copy of the 18th edition of this work which we are told has been sold in large quantities in America. We can well understand that the demand would be large. The book is written clearly and concisely, it is of a convenient pocket size, and the price 7d. is small. In the present edition the text has been revised in various directions so as to make it more in accord with practice in this country. The only fault we have to find, and that is one which can easily be remedied, is the flimsiness of the cover.

## CREED & COMPANY'S POCKET DIARY.

We have received a copy of the *Diary* prepared by Messrs. Creed & Company containing special instructions regarding the use and care of Creed apparatus. The information given is concise and to the point and should be of great use both to those who have to work the apparatus and those who have to keep it in order, as notes are given not only on the working adjustments but also in regard to replacing parts. A brief list of faults and their probable causes is also given, with the suitable remedy in each case.

We are informed that the demand for the *Diary* has been so great that the first edition was disposed of in a few days, but a second edition is in preparation so that applicants may not be disappointed, although there may be some little time occupied in its production.

The number of Creed instruments in use by telegraph and cable companies also by newspaper proprietors for private wire working is excellent testimony to the great value of these machines in handling expeditiously and economically the great amount of telegraph traffic that has to be dealt with daily by these institutions. Similarly in foreign and colonial countries excellent work is being done by these machines which at the present time are the only ones that have been designed for dealing with the Morse code running at high speed so as to do away with the labour and delay of transcription at the receiving end. The Creed apparatus is a worthy competitor to those other machine printing telegraphs of the Baudot type, and it is probable that a highly interesting competition between the two classes will take place when times become normal. In the interval both are doing good work.

## COMFORTS FUND, LANCASTER.

The female clerical assistants of the District Manager's Office staff, Lancaster, decided to organise a social evening on the lines of a whist drive and dance. The date chosen was Dec. 31 and upwards of 100 guests had a right royal time. The refreshments were provided by the staff, and the District Manager and his staff were good enough to contribute the prizes for the whist drive thus enabling the committee to devote the proceeds (£5) to the purchase of comforts for all the members of the District Manager's staff now serving with the forces both at home and abroad, amounting to 81 per cent. of the total male staff employed in the district office. It need only be added that the social proved so successful that a further effort will shortly be made (in conjunction with the operating staff at Lancaster) to arrange for a similar function on possibly a larger scale, and it is hoped that substantial contributions may then be made to the Post Office Rifles Fund and local charities.



## The Telegraph and Telephone Journal.

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

Editing and Organising	{	MR. JOHN W. LEE.
Committee		MR. J. W. WISSENDEN.
Managing Editor	-	MR. W. H. GUNSTON.

### NOTICES.

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

VOL. IV.

FEBRUARY, 1918.

No. 41.

### THE HONOURS.

THE fundamental difficulty in large-scale organisations lies in the fact that there is such little opportunity for a personal relationship between the chiefs and the staff. The Post Office exhibits this difficulty in an accentuated form. The chiefs in London see representatives of the staff from time to time, in interviews which are sometimes anxious and strained. They appear as protectors of the public purse, and there is little or no opportunity for them to be known personally apart from their necessary official attitude. It has been very interesting to watch the development of a personal appreciation of the Secretary himself through recent interviews. The Service papers reflect a new understanding and this has come about through the opportunities of personal interviews. If we could do something to unload our chiefs of their heavy burden of files of correspondence and bring them into personal touch with those who regard the "Secretariat" impersonally we should have initiated a peaceful revolution. Neither chiefs nor subordinates are to be judged by the written word.

These few words of introduction serve to indicate in what way we would speak of Sir Andrew Ogilvie. He heads our honours: he is the right and fitting apex for the pyramid. He is intimately known to the body of the staff from the days of the old "Middlesex," and through his work at the time of the transfer. To us who direct this journal he is a guide and a friend. Its first editorial words were from his pen: we hope that his spirit has informed other words, even when the form of the expression of opinion has not always found his favour. For he is tolerant, liberal-minded, catholic in appreciation, wide in sympathy and ready at all times to aid every movement for betterment of the body of the staff, every movement towards helping the weaker brethren and towards the conserving of the corporate spirit. For him it has been a hard three years with the dual responsibility of Second Secretary and of Director of Army Signals (Home Defence). Yet at no time has he failed in personal helpfulness. In his case the honour is

an honour to the body corporate. Conveniently we pass to Mr. Horne. His long association with Sir Andrew Ogilvie in the control of telephones links them together. Mr. Horne's new dignity seems, from the manner of its announcement, to be based on his work at the Ministry of Pensions, but we shall venture to offer a little affront to heraldic or chivalric accuracy and to claim it for telephones. Approachable, more than kindly, swift in intellectual grasp, insighted in respect of staff problems, Mr. Horne led us through the tangle of telephone difficulties with that spirit of leadership which bade us give the best which was in us, and to be proud of doing so. It is true administration. Colonel Williamsen as Director of Army Postal Service (Home) belongs to the sister branch, but he is known to many of our readers, and they are glad to see the great Postal Service recognised in him.

Mr. Allen of the Stores Department; Commander Ashley Foakes; Mr. Bourdeaux of the Submarine Cable Section; Miss Buchanan of the Savings Bank; Mr. Gomersall, Superintending Engineer of Ireland; Mr. Moir, Metropolitan Superintending Engineer; Mr. Wickham, Controller, Money Orders; Mr. Winny of the Engineer-in-Chief's Department—these are our representatives among the "Officers." Mr. Moir and Mr. Gomersall are nearest to us; their work in London and in Ireland has been of the highest value in making our Service the helpmeet of the country in the struggle. Of the "Members," there are Mr. Edmonds of the London Telephone Service, a "National" whom Post Office men have learned to regard with especial esteem; Mr. Fenton of the Stores Department (another "National" man); Mr. Stuart Jones, an old friend of our journal, an old friend of Post Office telephones from the beginning, and to whom it fitly fell to adapt telephones to the most onerous of all demands; Mr. Lack of the Engineering Department, genial, unruffled, skilful in achievements of which as yet we dare not speak (but the day will come); Miss Liddiard, now at the Ministry of Pensions; Mr. Stewart, the Postmaster of Margate, who made the dull office of postmaster into the very abode of chivalry. Of others, now absent from us, there are Mr. Hurcomb and Mr. Cobb, Mr. Taylor and Mr. Thornley. They are keeping our Post Office banner flying elsewhere.

A big list, indeed, but the most significant part of it we give in another column. The medals were well earned. The public now sees something of what has happened, of the fine qualities of courage, foresight and endurance which lie behind the apparent drab humdrum. Of course such a list cannot be inclusive. There are many others who might have made a claim. But it is a list of which the Service may well be proud. Telegraphists, we understand, feel a little sore. There seems some reason for this on the face of it, but to telegraphs has fallen a heavy day by day burden, never eased and never romantic. The telegraph brethren can afford to be generous-minded. There is a fairy story attitude to life which is worth cultivating. No one is envious of the princess who is suddenly pitched on a pedestal. All rejoice with her, because all share the reflection of the glory. And with those who are chosen as types of all that has been done by the Service in this time of trial we may all rejoice, just as in a sense we all may share the glory.

### HIC ET UBIQUE.

WE publish in this issue a number of portraits of the recipients of the new War Honours, and purpose to give a further series next month. We should be much obliged to any Superintending Engineer, Postmaster, District Manager or Exchange Manager who would procure us photographs of any of the telephonists, cable foremen, skilled workmen and others whose portraits have not yet appeared in the JOURNAL. As regards those who have received the Medals we have had to confine ourselves chiefly to London girls in the present issue, but our desire is, of course, to make the series as complete as possible.

WE have received a copy of the Christmas number of the *Akakar Magazine*, a publication containing an account of the sayings and doings of the First Army Signal Company. Its editors are Sappers H. E. Horton and H. E. Bryant and its contents are chiefly humorous. The Editorials are breezy, the "Answers to Correspondents" are helpful, and the "Fashion Notes" by Miriam, pontifical.

The *Revista de Telégrafos* of which we have received three numbers from Madrid is a new journal somewhat similar in scope to our own. We wish it all success. It contains articles on telephone and telegraph subjects from both the technical and administrative point of view, a monthly *Crónica telegráfica* (which perhaps corresponds to J. J. T.'s articles), reviews and notes of staff movements.

FROM a *New Zealand* staff journal we cull the following:—

The Chief Accountant,

Dear Sir,—I regret to say that there are three telegrams missing. I had them stamped and ready to send away. On account of being laid up, a calf accidentally strayed into the office and ate them with a number of other papers which was of no importance. I hope you will accept this explanation, as I do not wish to pay over again.

Yours truly,

X. Y. Z.,

Telephonist.

The letter is full of interest both from the grammatical and zoological point of view. Who was laid up—the calf, the telephonist or the telegram? Grammatically it should have been the calf, but he is ruled out, because we find him raging round and devouring papers. Not the papers, for if they had been duly laid up presumably the calf could not have got at them. Remains the telephonist. Query. Is a telegrannivorous calf properly a grannivorous animal? Can, for instance, grannivorous be held to include phonograms and all other grams?

A JAPANESE subscriber to a Western American telephone company wrote as follows:—

Mr. Manager, Telephone Office:

Gentleman,—Me applicated about three weeks ago that telephone to have move in from 105 East Market, immediately as soon as you can.

Importance and usefully to stand on business, but we passed twenty days over that without phone Althro ugh it is very modification for ous, so under this circumstance, we meet your office and advise her my intention, But her said only reason that there is no poul to connect line, That is disconsiderable and very doubtfully: Because our next door get satisfactory only few days after he applicated.

However, we wish only your especially kindness and we thanking very much befor recieve your help ous with your friendly noble heart.

Yours respectfully,

We are familiar, even in England, with those "next doors" who "get satisfactory only a few days after they have applicated," and the aggrieved would-be subscriber always finds the explanation very "disconsiderable."

It seems that the telephone is being dragged even into the Food question.

"A Clerk" writes to the *North-Eastern Gazette* (Middlesbrough):— "After reading 'E. B. B.'s' letter of the 4th with regard to orders given by telephone, I feel sure that someone has been joking with him, for I, a clerk, have taken hundreds of orders over the telephone, and never have I had such ridiculous requests for goods made to me from a private house, and especially at a time like this. I should advise 'E. B. B.' to ring up a firm of grocers and give a similar order and then publish the answer he got to such requests. It is not fair play either to the public or to the worried

grocers, to keep on writing about telephone orders and how much more food they are able to get than those who have no telephones fixed, for it only makes ill-feeling, and especially at a time like this when food and goods are so scarce. Surely those who take the orders should know, and I can truthfully say that there is no margin for food hoarding on orders that are given to and executed by one firm of grocers in Middlesbrough. It is not so much the people who have telephones who are hoarders as those who deal at no particular shop and spend their time in going from one shop to another getting all they can, and after obtaining scarce articles they brag about how much they have been able to get. I think many who give their orders by telephone are able to say how strictly they are rationed by one firm of grocers in the town, who devote their whole time arranging their supplies, so that each of their customers share and share alike when scarce articles are to hand. I think 'E. B. B.' can congratulate himself that he was mistaken for a grocer, for he would not find it a happy position if he were a grocer at the present time."

We have not seen "E. B. B.'s" letter and we have not met with this form of complaint before, but we think "A Clerk's" letter contains good sense, and puts the case very well. But the tendency to blame the telephone is inveterate.

### LONDON TELEPHONE SERVICE NOTES.

THESE Notes cannot be more suitably opened this month than by an expression of congratulations to those associated with our Service whose names appear in the recently published list of honours. A special illustrated record will be found elsewhere in this issue relating the circumstances or something of the circumstances in which medals have been awarded to twelve of the L.T.S. Supervisors and Telephonists. Of one thing we are quite certain and that is that each recipient well deserves the honour conferred upon her. We are equally sure there are many others whose experiences and devotion to duty during war emergencies would fully justify the bestowal of a similar distinction and we shall hope to see their names in future lists. In addition to the medallists however, we number amongst our staff two who have been promoted to Membership of the Most Excellent Order of the British Empire. These are Miss Liddiard and Mr. J. F. Edmonds. The former has returned from the Pensions Ministry, metaphorically speaking, clothed in scarlet and with a chain of gold about her neck. Mr. Edmonds very generously regards his award as conferred upon him as representing the Traffic staff, but it seems to us that this is somewhat like an attempt of a Food Controller to divide a pound of butter amongst a multitude. It were better for all that it should remain undivided—the value of honours like that of butter depending on their relative scarceness—so that one at least might appreciate the full flavour of the prize.

If we may be permitted so to do we would offer our congratulations also to Mr. Moir on whom is bestowed the dignity of an O.B.E., to Mr. L. T. Horne who has also returned from the Ministry of Pensions and ranks as a Commander of the same Order, and to Colonel Ogilvie who as a K.B.E. must be addressed in a manner in which we have always felt he ought to be addressed. We wish all those honoured long life and added honours.

It is said that we are already a bebadged nation, but one more distinctive symbol is to be added to those at present to be seen. This will be the badge of the L.T.S. Air Raid Volunteer and if all that rumour says is accurate the badge promises to be decorative, distinctive and distinguished. The badge is to be given to those who volunteer to carry on the telephone service for calls of urgent public utility during raids. There has been a most ready response to the Postmaster-General's appeal for such volunteers who according to one commentator should properly be known as the L.T.S. "W.A.A.C.'s" on the ground that they "Will Always Answer Calls," but for our part we think they could equally be known as the "W.R.N.S." as they "Will Render National Service."

The telephone societies have had no meetings since last month's Notes were written, and the demand for space in this issue makes it desirable that our Notes should be brief, but we feel that we ought not to close them without a reference to the death of London's most aged telephonist, Mrs. Marsh, the caretaker-operator at Cray. This old lady who has given many years of service has passed away at the age of 68. On behalf of the staff of the London Telephone Service we wish to express to her family, several of whom are also engaged in telephone activities, our sincere sympathy in their loss.

## A DAY IN THE LIFE OF A TELEPHONE SUPERVISOR.\*

BY MARY I. McCALLUM.

IN choosing the subject of this paper I was actuated by two motives: the first, that the impression which is abroad in certain quarters that a telephone supervisor has nothing to do but stroll up and down at the back of her telephonists, might be dissipated. The second, that it might be the means of inducing a supervisor from another branch of the Service to tell us something of her own particular duties.

It has always seemed to me that one branch of the Service knows too little about another branch, and that a more intimate knowledge of the troubles and trials which beset the supervising officers in all departments must be to our mutual benefit and better understanding.

One of our eminent engineers-in-chief said that there was "no finality in telephony." That is true. But we must not be obsessed by the idea that such a remark would not apply equally to telegraphy, or any other great invention, and it would be of the greatest possible interest if we could hear from time to time what our colleagues in other departments are doing.

I will endeavour now to outline as briefly as possible what may be regarded as the working day of a telephone supervisor on ordinary floor supervision. To enable those who are not quite familiar with the equipment of a telephone exchange to follow the technical terms, I should say firstly, that telephone traffic is of two kinds, incoming and outgoing, the former called "B" traffic, and the latter "A" traffic.

Incoming traffic is the demand for a subscriber and outgoing traffic is the demand from a subscriber. The point in the exchange at which the traffic is handled by the telephonist is called a position, and the position is "A" or "B" according to the form of traffic handled. Each "A" position is fitted with seventeen pairs of cords and will deal with demands from approximately 100 subscribers, each pair of cords is fitted with two signals whose action enables the telephonist to supervise a call or clear a connexion as the case may be. A "B" position is fitted with 27 cords, and corresponding supervisory signals, and carries the traffic from one exchange to another.

The section, as the area of responsibility of a floor supervisor is called, comprises ten "A" positions for an "A" supervisor, and twelve "B" positions for a "B" supervisor.

The duty of a day supervisor commences at 8 a.m., and the first responsibility is to see that she has sufficient staff to enable her to release the night staff. It sometimes happens that owing to travelling difficulties or adverse weather conditions the full staff cannot be on duty promptly at 8 a.m., and it is then within the discretion of the supervisor to retain a sufficient number of the night staff to deal with the traffic until the arrival of her own staff. Having placed her staff in the positions most advantageous for dealing with the work, the routine duties of the supervisor commence. The first, and it is a very important one, is to check that each telephonist has her operating apparatus placed in the proper position: the mouthpiece must be at the correct angle, and the proper distance from the mouth. If the mouthpiece is too low it means not only a loss of efficiency on every call, but a continuous jerking movement of head, neck and shoulders on the part of the telephonist, which is exceedingly tiring, and a great and unnecessary strain on the throat. Having satisfied herself on this point, the next duty of the supervisor is to arrange for the testing of every working cord in the exchange. The object of this is of course clear. The cords are of delicate mechanism, and susceptible to a sudden jerk or twist, and it is necessary, at the commencement of each day, to ensure that this important part of the apparatus is in perfect working order. A cord fault has far-reaching consequences, and one faulty cord per position would cause a great amount of trouble. Assuming that an exchange is equipped with 150 "A" positions, and 50 "B" positions, the number of cords to be tested each day would be 6,450. This does not include the cords on the information desk, which are also tested daily. Then follows a test of all Service circuits in the exchange, complaint lines, inquiry and testing positions, supervisors, and exchange managers, so that there will be no delay or difficulty in establishing communications from the public at a time when speed is of the greatest possible value. A test is also made of all lines to the Central Telegraph Office, and to the Trunk Exchange. All tickets left on the positions by the night staff are checked and marked and put away, and with the check of the radial time recorder before 9 a.m. the morning routine of the supervisor may be said to be over, and the exchange in perfect readiness for the business of the day.

There are of course occasions when it is part of the supervisor's early duty to distribute and check slips for special records and peg counts. With the advent of the 9 o'clock staff the duties become less general and sectional supervision becomes the order of the day. The first duty of every section supervisor, as the different groups take up duty, is to check her staff and report absentees. In sectional supervision the supervisor's duty now is to see that subscribers are answered promptly and courteously and in order of calling, that connexions are cleared as quickly as possible after the clearing signal has been received, that correct expressions are used by the telephonist. This not only results in uniformity of operating procedure but also facilitates the work. She must also see that the apparatus is handled carefully, especially that the cords are handled by the plug and not twitched by the cord.

It is necessary for the supervisor to keep a very careful watch on the

registration of calls, checking that double depressions are made when necessary, and register keys capped with the "No Charge" symbol for all credit calls. Close supervision must also be given to the collecting of call office fees when necessary and to the preparation of charge tickets in the case of certain subscribers. She must also be keenly alert to see that calls are credited in the case of subscribers receiving wrong numbers. Registration supervision is one of the important duties of a telephone supervisor, inasmuch as it has a direct bearing on the revenue to the Department on the one hand, and is probably the most prolific cause of complaint from subscribers on the other. In a telephone exchange it is frequently necessary to transfer calls from one telephonist to another, and in order to minimise registration irregularities it is necessary, when calling out the number, to give also the class of subscriber as denoted by the opal marking. To do this correctly the supervisor must memorise as many as seventeen different markings, and at the risk of appearing wearisome I will quote the different forms in order that some idea of this may be conveyed.

Message rate ...	White opal...	Full facilities.
Message rate ...	White opal with bar	No postal facilities.
Unlimited service...	White opal with black circle.	Full facilities.
Unlimited service...	White opal with black circle and bar.	No postal facilities.
County of London...	Green opal marked with "S."	Full facilities. Ticket to be made out for Outer London calls.
County of London...	Green opal marked "S" and a bar.	No postal facilities. Ticket to be made out for Outer London calls.
Measured rate ...	Green opal marked with "S."	Full facilities. Ticket to be made out for Outer London calls.
Measured rate ...	Green opal marked with "S" and bar	No postal facilities. Ticket to be made out for Outer London calls.
Message rate coin box.	Red opal ...	Full facilities. Fee to be asked for.
Message rate coin box.	Red opal with bar...	No postal facilities. Fee to be asked for.
Call office coin box	Red opal with white dot in the centre.	Postal facilities to be given if asked for by the counter clerk. Fee to be asked for.
Call office coin box	Red opal with white dot in the centre and a bar.	No postal facilities. Fee to be asked for.
Message rate ...	White opal marked with "R."	Refer to supervisor.
Measured rate ...	Green opal marked with "R."	Refer to supervisor.
Call office coin box	Red opal marked with "R."	Refer to supervisor. Fee to be asked for.
Call office attendant	White opal with black dot in centre	Full facilities.
Call office attendant	White opal with black dot in the centre.	Full facilities.
Call office attendant	White opal with black dot in the centre, with bar.	No postal facilities.

In addition to these there are special circuits, such as "war," "police," "hospital," "fire" and "ambulance," demanding special attention.

There is also a system of pegging the multiple with pegs of varying colours, yellow, red, white, black, green and grey. These pegs are not placed there simply to vary the monotony, nor to gladden the artistic eye, but with a definite meaning attached to each colour, and the supervisor must know the meaning of each colour so that she may give any information to her staff. Although these coloured pegs are selected primarily for utility and not for beauty, yet the general effect of a busy telephone exchange, with its softly shaded lights, reflecting on polished floors and woodwork, its multiple dotted with myriads of coloured specks, and intersected with hundreds of multi-coloured cords is very beautiful. Added to this the low insistent murmur of softly modulated voices, the rows of bright intelligent faces, the flashing of swift hands, deftly manipulating the apparatus, and you have before you a wonderful compelling picture of what may properly be regarded as one of the most important working points in the hub of the universe.

In addition to the ordinary routine work there are many other duties with which the supervisor must be familiar.

The war has brought about the necessity for a great scheme of emergency work, and in common with other Departments the Telephone Service has its share. It will not be possible for me to go into details on this point, but it will be common knowledge that to carry through her emergency work successfully, one requires accuracy, speed and great coolness. These qualities have been demonstrated over and over again by the telephone supervisor, and I think I am right in saying that in no other branch of the Service has any supervising officer to perform this important work with a staff so junior, many of them young girls of less than 18 years of age. Yet notwithstanding this, the Telephone Service has received many expressions of appreciation, not only from the Postmaster-General, but also from the Military and Police authorities, and quite recently a very highly placed officer of the R.N.A.S.

\* Paper read before the Telephone and Telegraph Society of London on Jan. 21, 1918.

desired that his thanks should be conveyed to the staff of a certain exchange because their habit of remaining on duty in the exchange until it became untenable has been the means of saving thousands of lives and much property.

The staff problem is one that is ever before the supervisor. The outside market is clamouring for labour and it will not be satisfied till it gets it. It is willing to pay almost any price for it at the moment, with the result that Services such as ours must suffer. This makes the lot of a supervisor extremely hard. The vacancies are numerous, and increase so rapidly, that the supply is not equal to the demand, and the supervisor must get the work of her section done with a depleted and frequently inefficient staff. It is here that the real value of the supervisor becomes apparent. It is here that we prove that it is essential to have established between supervisor and telephonist a human relationship, an understanding and a sympathetic understanding of the needs of the one by the other. To supervise is not to drive. It is literally "to oversee," and that is the function of the supervisor. She is to oversee, to help, to let her staff understand that she sees their efforts and knows the value of their work. There will be little differences; there must be when there are two human elements on different planes, but it rests with the supervisor to explain what is not understood by her staff. We all know from experience how much easier it is to do a thing, and how much more interesting that thing becomes when we know the reason for it.

We have in the Telephone Service an arrangement whereby each supervisor meets her staff once a fortnight for half an hour to discuss various points of interest. These meetings were arranged primarily as a means of carrying on school training, but they have become much more than that. They are now the excellent medium for the supervisor getting to know the mind of her staff. The time spent by a supervising officer—however highly placed—in getting right into the heart and mind of the staff is never wasted. It is indeed time well spent and supervisor and telephonist alike find the interchange of thoughts and ideas most helpful. This then, in my opinion is the secret of the successful supervisor, "carry the staff with you."

This is the situation which carries with it a satisfactory service to the public. If a telephonist is working under harassing and trying conditions, the sensitive, nervous structure becomes charged with their reflection, and it requires only an inflection of the voice to convey it to the subscriber. If, however, the staff, although hard worked are happy, and at peace in their minds, and in harmony with their supervisors, all is well with the Service. The latest discipline circular in use in the London Telephone Service is of course confidential, but I have been permitted to touch upon it here. It brings out very clearly, what has been the keynote of this Service since its inception in 1901, that is, "humanity!" It emphasises the need for understanding, it makes it clear that a fault is not a fault, until all the circumstances have been taken into consideration. It lays down that the extenuating circumstances are to be given due weight, and it gives to supervising officers a much freer hand than they have hitherto been permitted. This cannot but be for the good of the Service, as the supervisor who is working with the staff is the person best qualified to judge of all the circumstances. It is said that there is nothing new under the sun, and it is certain that our discipline circular was foretold by the ploughman bard of Scotland, Robert Burns, when he said,

"Then gently sean yer brither man  
Still gentler, sister woman,  
Though some may gang a kennin wrang,  
To step aside is human."

Thus then does the telephone supervisor strive to work in harmony with her staff and with the public whom she serves. Her day is crowded to the uttermost with human interests and she has not a moment to spare. She remembers that she is one set in authority, but with a duty to set the lines of her authority in unity and harmony. In the words of Baka Ullah we find the following words of wisdom:—

"O ye discerning ones of the people, surely the words which have descended from the Heaven of the Will of God, are the source of Unity and Harmony for the World. Be the cause of comfort and advancement of Humanity. This handful of dust, the world, is one Home. Let it be in Unity. Follow that which tends to Harmony!"

The account of a supervisor's day would scarcely be complete without touching upon "air raid" duty, since we have had on occasion, five raids in one week. Assuming that the order has been issued, four supervisors at once take up definite duties, one on military emergency work, a second on police emergency work, a third on necessary staff arrangements and the fourth on first aid duty. The whole of an exchange staff is thoroughly conversant with military and police emergency schemes, therefore the supervisors on that work have no difficulty in obtaining staff for their requirements. Theirs is the duty to see that all orders are given through accurately, and promptly, and that all entries are correctly timed. The supervisor on staff arrangements is meanwhile obtaining names of volunteers willing to remain in the exchange should hostile aircraft be reported in the immediate vicinity. The fourth supervisor is fully qualified to render first aid and she proceeds to lay out all requisites which might be necessary at the same time, handing out a red armband to any person qualified to render first aid. The duty chart is so arranged that an equal number of officers with first aid knowledge is always available. Everything is now in readiness, all advices given through and forms withdrawn. The traffic has dropped to an extraordinary extent and, except for calls from emergency circuits, few calls are now received. This drop of traffic is a feature after the order is issued—and the most trying time of any begins for the staff waiting for one knows not what! Then the guns are heard in the distance, the sound grows in intensity, and as it comes nearer one is able to distinguish that sound so different from the firing, the solitary dull thud. Telephonic communication is maintained however, and as soon as the firing becomes fainter and the immediate danger

seems to have passed further volunteers are called upon and the exchange is so worked until it is certain that the danger is over, when the ordinary staff returns to duty. In the case of raids where the clear is not received until a late hour, too late to allow of the staff going home, the duties of the supervisor are more arduous. It is necessary then to arrange for meals and rest periods. The staff of the various refreshment clubs have done yeoman service in this respect, returning to offer their services on some occasions through an actual bombardment. The first meal is supper, and the staff are released in groups until all have been served. Arrangements are then made with the night staff, who have ever co-operated most heartily, to allow the day staff to have the first rest period, and it became quite an ordinary sight to see members of the staff passing to and fro in the dining and retiring rooms about 5 a.m., manipulating kettles and teapots, and ready to ask with a smile if anyone wants the ever-cheering cup of tea.

As one who has been on duty through a large number of air raids, I cannot speak too highly of the devotion to duty of supervisors and staff. There might be a few cases of physical inability to face the ordeal, but generally speaking fear is unknown. I have seen a whole exchange sit through daylight raids when the sound of bombs dropping could be heard distinctly mingling with the thunder of big guns and the scream of bursting shrapnel, and but for a little blanching of the cheeks, and now and then a frightened glance round, there has been the same heroic meeting of the inevitable, as that which characterises the soldiers in the trenches. Truly "these flowers of the new dawn," spoken of so eloquently by our president in his opening address, are soldiers ready to lay down their lives for their fellows, but I have in my mind a title which will probably be more to their liking, and it is just "British Women."



Block lent by the courtesy of the Daily Graphic.

Sergeant A. J. KNIGHT of the London Regiment (Clerical Assistant, North Midland District) leaving Buckingham Palace after receiving the Victoria Cross. (See p. 37 of the JOURNAL.)

#### SUGGESTIONS AND REWARDS.

However we may indulge our national right to grumble in criticising the Post Office, it is undoubtedly a marvellous organisation, and it is built up on the combined intelligence of all its employees. For years there has been in operation a system of suggestions and rewards, and the number of suggestions adopted—and recognised—now runs into thousands. In all "suggestion" systems there is the difficulty inherent upon a subordinate putting forward ideas, the jealousy of his superior officer, and even the risk of the suggestion being "dotted" by him. But if the subordinate conveys his idea to the "superior" the latter very probably collars the credit. Thus most business houses have to work minus the help of the men who know, the men who do the actual work of detail, and see how improvements could be made. Of course, honourable secrecy—or privacy—between the employee and the management would obviate these difficulties, and by some means or other the Post Office has secured a very large and very loyal assistance from its officers of all grades, and several well-known firms are equally fortunate. They are among the most prosperous firms in the country, and perhaps we shall see a more general adoption of this important aid to industry when the war has passed and gone?—(Liverpool Daily Post.)

## SANDY McSPORRAN (RECRUIT).

## A BALLAD OF BLETCHLEY.

THE first o' March one-nine-one-six  
 Found Kaiser Bill still at his tricks,  
 So three bold birkies frae Dundee  
 Set out a bit o' sport to see,  
 Resolved was each to hae his name  
 Inscribed on roll o' fadeless fame;  
 'Twas Colonel Ogilvie's command  
 "Come on, braw lads, and tak' yer stand:  
 We need ye noo, wi' dot-and-dash  
 The news o' victory to flash;  
 Oor fers still find us firm as rocks,  
 Come on, my boys, pog' up yer socks!"

\* \* \* \* \*  
 So Jasper, Willie and mysel'  
 Stormed Major Cappon's citadel,  
 And there began a waesome "scutter"\*  
 That tried us sair bad words to mutter;  
 Frae place to place they kept us stottin',<sup>†</sup>  
 Oor fairy feet had corns through trottin',  
 A second time, in view of all,  
 We shivered in the Albert Hall:  
 In Nature's *match*-less beauty dressed,  
 Whilst doctor chaps oor banes caressed,  
 Ticked oor ribs, and squeezed oor horts,  
 (Like bakers shapin' rhubarb terts!);  
 Then made us hop like kangaroos  
 Till we were nearly in "the blues."  
 In fact, to gain lost weight, we three  
 Had each ten haddock's to oor tea!

\* \* \* \* \*  
 The six days' grace flew quickly past,  
 Partin' frae loved ones cam' at last,  
 (But here a veil I'll gently draw,  
 We set oor teeth and cam' awa').  
 Friends met us at the railway station  
 Wi' "grub" enough to feed a nation:  
 --(It's almost worth it to enlist  
 If but to see hoo much ye're missed!  
 We couldn'a bear to think--alack!  
 They didna want us quickly back!)  
 The sargeant paid the fares, and saw  
 We got nae chance to rin awa'.  
 Then cam' a band o' maidens fair  
 To treasure ringlets o' oor hair,  
 And mak' requests for Turkish rugs,  
 Blue Persian cats and dachshund dugs,  
 Then wave a lovin' fond farewell:  
 (This has nae reference to mysel',  
 But jist concerns the single chaps  
 --The married lads hang back--perhaps!)

\* \* \* \* \*  
 The whistle blew--the fiery steed  
 Steamed for the West at lively speed,  
 Mixed thochts began to flood the brain:  
 Oh, would we ever see again  
 The hobby-horses gaily birl,  
 And hear the bairns and lassies skirl?  
 Or view Auld Brook Street's lordly pile,  
 And sniff the "chips" and salad ile?  
 Twa other lads had joined oor squad,  
 And soon gay thochts dispelled the sad;  
 For jokes and stories passed that nicht,  
 The twelve hours' trip seemed short and bricht.

\* \* \* \* \*  
 The fleecy snow fell far and wide,  
 Mantlin' in white the countryside:  
 And troubled visions helped to raise  
 O' blankets scarce and frosted taes.

\* \* \* \* \*  
 We left the train at Rugby toon,  
 --Hallowed by memories o' Tom Broon--  
 Anither Scot cam' on the scene,  
 An Alyth billie, spruce and keen,  
 Twa mair at Bletchley Station made  
 Oor band a stalwart Scots Brigade,  
 We started on the one mile tramp  
 That lay between us and the camp,  
 The natives said as we passed by  
 Wi' martial tread and sparklin' eye,

\* Woeful confusion. † Rebounding.

"Juded by their looks and bulldog necks,  
 K. B. had best pass in his checks."  
 In truth we looked (but breathe it not)  
 A towsy and blood-thirsty lot!

\* \* \* \* \*  
 The Rest Camp gate we soon espied,  
 Wi' sentry brisk and dignified,  
 The next wee lodge and shrubby bonnie  
 Despite the snaw looked really "foney."  
 Wi' spacious lawns and stately trees  
 Noddin' and wavin' in the breeze,  
 The mansion--Staple Hall by name--  
 The officers had made their name:  
 (My word! they fairly ken the ropes.)  
 We journeyed on wi' rising hopes:  
 So far frae what we heard and saw,  
 A soldger's life seemed best o' a'.

\* \* \* \* \*  
 "Halt! Call at office next the guard"  
 --Oor whiskers bristled fierce and hard--  
 We called--then duly signed the roll,  
 And noo felt fairly "up the pole."

\* \* \* \* \*  
 The next command--"Hut No. 4,"  
 And there each warrior signed, and swore  
 Wi' weapons keen to guard his life,  
 And got a spoon and fork and knife!  
 Then to our several huts we sped  
 To leave our things and claim a bed:  
 (To mark his bed "Reserved," each chap  
 Jist spreads his bath-towel on the tap)  
 Recruits cam' in by every train  
 --(Some but a day or twa remain)--  
 One scarce has time to claim a chum  
 Ere one or other flits to "Brum";  
 There frae hard graft there's nae escape,  
 They fairly lick them into shape,  
 In three days' time each luckless joker  
 Displays a spine as straight's a poker!

\* \* \* \* \*  
 At one o'clock oor eager ears  
 Heard the sweet call that Tommy cheers  
 "Dinner." Each took the shortest cut,  
 All roads led to the Dining Hut.  
 A joyful crew, we yelled and sang  
 Until oor portion passed along,  
 Twa loaves was every table's share--  
 --Thrown to twelve hungry men, or mair--  
 Each man a slice would cut (or saw),  
 Then to his neighbour "passed the ba'."  
 The cook's assistant soon went by  
 Wi' tins o' salmon loaded high,  
 Planked doon a tin to each fourth man--  
 --O 'twas a fecht to grab the can--  
 Wha cut the lid aye picked the best,  
 His three sad partners shared the rest,  
 The last man sometimes had to grope  
 For his share wi' a microscope!  
 The grub was always o' the best:  
 Rough service gave an added zest,  
 Food faddists for a while felt strange,  
 Twa days revealed a wondrous change,  
 Wi' anxious eyes and hungry looks  
 Like grizzly bears they watched the cooks!  
 Breakfast and tea-time scenes were great--  
 --Attendance there was seldom "late"--  
 When tea in "dixie" pans appeared,  
 The "bhoys" in thundrous chorus cheered,  
 A dog-fight raged round every tub,  
 And mugs were dipped deep in the "dub":\*  
 Often as not, the "catch" would show  
 Tea-leaves twa inches deep below.

\* \* \* \* \*  
 "Fall in." 'Twas afternoon parade,  
 A curious mixed-up group we made,  
 (Some wisely wore their auldest togs,  
 Others were garbed as dandy dogs:  
 Some sported leggings, some wore spats,  
 "Doo-lichters,"† bowlers, opera hats:)  
 Shoulder to shoulder in the blast  
 We stood as on the postie passed,  
 Eager to hear him call the name,  
 And claim the billy-doo's frae hame,  
 The sargeant-major paced the line,  
 His "Shun!" soon stiffened every spine:  
 The corporal smartly called the roll--  
 --To hear the chaps respond was droll--

\* A small pool. † A peaked cloth cap.

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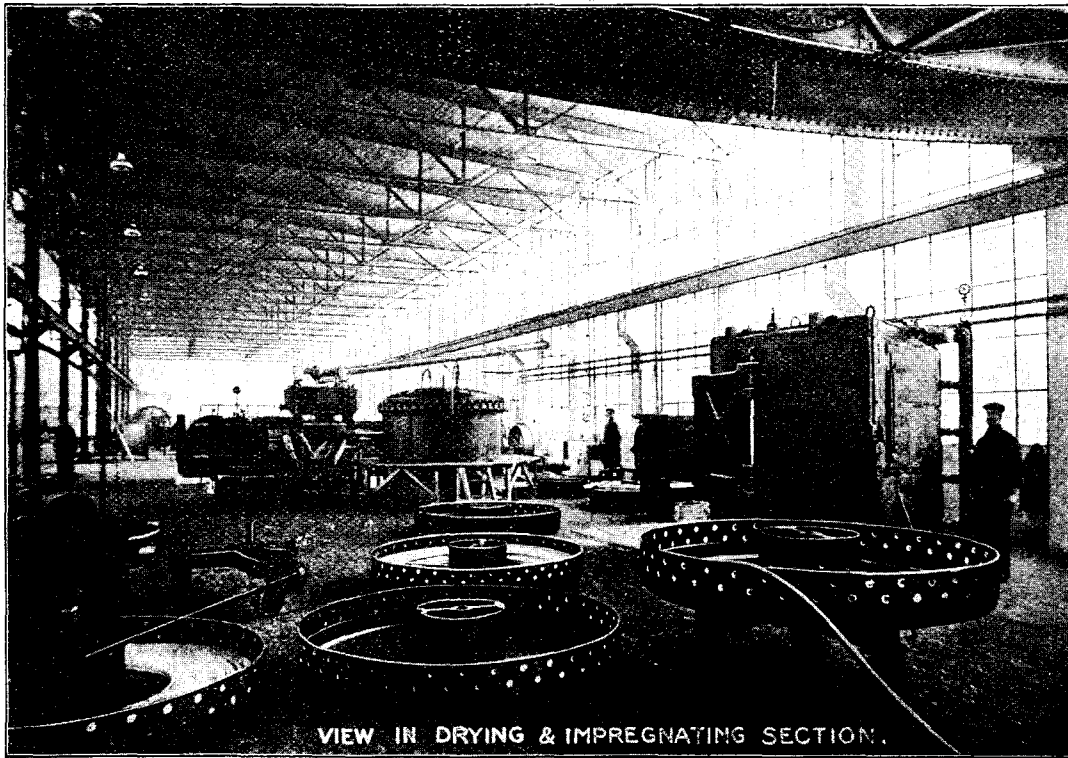
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I dinna ken wha was to blame,  
 One lad had Sneezeman for his name!  
 And when we heard it on parade,  
 O what a sneeze the warriors made.  
 A snottin' chorus rent the air,  
 The sergeant almost tore his hair.  
 Sneezeman, a nice lad, quietly smiled,  
 He liked the fun, and wisna wild.

The day's work done, we soon cleared out,  
 To see the toon and roond about,  
 Bonnie wee Bletchley boasted twa  
 Fine institutes, where gathered a'  
 The warriors bold as worthy foes  
 At billiards, draughts and dominoes.  
 Others would sing or read the news,  
 Or write their darlins billy-dooes.  
 The ladies did their best to see  
 That every ane might happy be,  
 Wi' cakes and tea at modest price  
 They made the evenings bright and nice,  
 And mony a grateful hert will praise  
 Their work o' love through length o' days.

Within the camp at half-past nine,  
 Each man was due to toe the line.  
 In every hut the roll was called—  
 —Hard lines on stragglers frae the fault—  
 The fun began, as in a raw  
 We laid oor planks and bags o' straw.  
 In blankets rolled to form a nest  
 We curled like bears, *supposed* to rest.  
 Yes, but "Lights out" at ten fifteen  
 Made tricky optics still more keen  
 Ere I could start my "beauty sleep"  
 A pillow smote my ginger "neep" \*  
 My Roman nose felt out o' place,  
 As if 'twere roamin' ower my face,  
 In case my weather eye should go,  
 Like submarine, I "went below."  
 And though the flying "bombs" I cursed,  
 'Twas nice to ken they widna burst.  
 Stories were told (they n'er were penned),  
 That garr'd oor whiskers stand on end.  
 Then followed on a chorus fine,  
 'Twas gently warbled doon the line,  
 So on, till snores prolonged and deep  
 Put the last wide-awake to sleep.

*Reveille* cam' ower quick for a',  
 Oot o' oor beds we sprawled cat-maw, †  
 Wi' chatterin' teeth (the frost was keen,  
 By jings! It fairly skinned oor e'en).  
 Half-dressed, across the snaw we dashed  
 A hundred yards—"first come, first washed."  
 A score o' men, each wi' a tub  
 O' icy water, tried to scrub  
 Their stubbly jaws, and didna care  
 Though icicles flew here and there,  
 Or though they made a neighbour's eyes  
 Shed soapy tears o' pained surprise:  
 —Back to the hut, where like a hive  
 The bhoys were kickin' and alive,  
 Lichtin' the stove their blood to heat,  
 Or foldin' bed to look quite neat,  
 Polishing, shaving, sweeping-up,  
 Till summoned for the breakfast cup.  
 Then followed fast the first parade,  
 The chief his lovely flock surveyed,  
 Called for the men he wanted, and  
 Announced their fates, and his command.  
 Next cam' the chosen draft for Brum—  
 Clearly weel pleased their turn had come—  
 Then lads for Morse and "Buzzer" test,  
 (Some anxious looks were manifest!)

What o' the noble residue?  
 Small wonder some looked black or blue,  
 No muscle twitched, no eye-lid stirred,  
 Obedient, each his orders heard,  
 (The same command at hame, I wot,  
 Had knocked some senseless on the spot)  
 Wash plates and tables thick wi' grease,  
 Or scrub the floor on tortured knees,  
 Or help the cook to peel the spuds,  
 Whilst dirty water soaked oor duds  
 Or carry scraps to piggy's tubs  
 Through drenchin' rain and deepenin' dubs

\* A turnip = one's head. † Head over heels.

Like some bewildered mountain sheep  
 Wobbling in mud six inches deep;  
 Nae slackers there; the gold-ringed "knut"  
 Toiled wi' the rest in cheeriest cut,  
 Nor "groused" though storm and Fate combined  
 To dim his zeal and peace o' mind;  
 Content to "rough it," and prepare  
 In sterner work to take his share.

Twā lively days, and then—alas!  
 The thing I dreaded cam' to pass.  
 Jasper and Bill were picked for Brum,  
 Whilst I—my turn had still to come—  
 Guid-herted lads, they cried: "McSporran,  
 "Cheer-oh, you'll follow us the mom."  
 But na, a few mair morns were spent.

And still new warriors cam' and went,  
 Some hame, rejected and doonest;  
 —My final summons cam' at last—  
 'Twas on Saint Patrick's festal day  
 I faced the Chicf, and heard him say  
 (But not in Scotia's Doric sweet),  
 My lad, your Army life's *complete*!  
 This night frae here you'll journey forth,  
 You're wanted in the heathery north  
 For home defence—the Kaiser means  
 To raid Dundee, so gie him "beans."  
 In fact, you're just the chap we need  
 The Lochce Light Dragons to lead,  
 Or steer to fame and Glory's scars  
 The game-cock Scouringburn Hussars.

SOME NEW YEAR'S RESOLUTIONS.

# RESOLVE

I WANT MAIN 123—  
I MEAN MAIN 213  
OH I GUESS I'LL HAVE  
TO LOOK IN THE  
DIRECTORY

**TO CONSULT THE TELEPHONE DIRECTORY**

YOU CAN'T HEAR ME?  
WELL I'M TALKING AT  
THE TOP OF MY VOICE  
GUESS PHONE'S OUT  
OF ORDER.

**TO SPEAK DIRECTLY INTO THE TRANSMITTER**

GO AHEAD WIMIFRED, THOSE PEOPLE  
ON THE LINE MAKE ME TIRED WHY  
WE HAVE ONLY HELD THE LINE  
TWENTY MINUTES

**TO ANSWER CALLS PROMPTLY**

WELL HELLO!! WHO  
IS THIS, WHAT DO YOU  
WANT

**TO BE CONSIDERATE OF OTHERS**

BUSY! BAH! I KNOW BETTER  
YOU DIDN'T TRY 'EM I KNOW THAT  
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Good-bye to Bucks, farewell to Fame,  
The "Grampian" bore me swiftly home,  
To drill my Happy Home Brigade,  
Which puts Napoleon in the shade;  
And though for me there's little chance  
To share the Victor's march frae France,  
One medal on my breast may go,  
OUR BULL PUT WON IT AT THE SHOW!

SANDY McSPORRAN.



A GREETING SENT BY A MEMBER OF THE W.A.A.C. IN FRANCE TO THE STAFF OF THE LONDON TELEPHONE SERVICE.

#### TUNBRIDGE WELLS.

"Carolling for Tommy."—A very satisfactory result attended the carolling of the clerical staff attached to the Tunbridge Wells District Manager's Office on behalf of those of our "Tomnies" who, by reason of military exigencies, had to find a "home from home" at Christmas in the town. The collections made aggregated £10 15s., and this amount was handed in on Sunday evening, when the carol party entertained the soldiers at the vanteen. It is safe to assert that the additional good cheer that this sum provided was fully appreciated by those who partook of it.

Retirement.—Miss M. Roberts who during her five years' service as Typist in the District Manager's Office, Tunbridge Wells, enjoyed the esteem and regard of every member of the staff, resigned on Dec. 29 to take up a commercial appointment in London. She was the recipient of an attache case as the tangible manifestation of the goodwill of the whole staff. The presentation was made by Miss F. Bourne and was suitably acknowledged.

## PERSONALIA.

### LONDON TRAFFIC STAFF.

Miss A. GRIFFIN, Assistant Supervisor, Class II, of Willesden, on resigning on account of her marriage, was presented with a tea service, cheese-dish and other presents by the staff.

Miss WILMOT E. LETHABY, Assistant Supervisor, Class II, at Bartholomew House, resigned to be married and was presented with a case of silver tea knives from the supervising staff at London Wall, and a silver toast-rack from the telephonists at Bartholomew House.

Miss HILDA K. BRYSON, of London Wall, has resigned in view of her approaching marriage and was presented with a salad-bowl with servers and a cruet by the staff.

Miss C. C. LOAD, of Willesden, has resigned to be married. She was the recipient of a brass kettle on stand, a crumb brush and tray and other presents from her colleagues.

Miss A. A. MEASURES, of New Cross, has resigned in view of her approaching marriage. She was presented by the staff with a silver cake-basket and several other useful gifts from individual members of the staff.

Miss F. E. CORDWELL, of Museum Exchange, has resigned to be married, and was presented with a fruit dish, cutlery, cake-stand, two jam dishes and ornaments by her colleagues.

Miss AMY BUDDLE, of the Trunk Exchange, has resigned on account of marriage, and was presented by her colleagues with a silver tea service and other useful presents.

Miss DOROTHY M. TAYLOR, of Holborn, has resigned in view of her approaching marriage. She was presented by the staff with a set of oak trays, a salad-bowl and biscuit barrel, and many other gifts.

Miss E. G. LAMPRELL, of Hop, has resigned to be married and was presented with a dinner service by her colleagues.

Miss F. A. FROST, of North, resigned to be married and was presented by the staff with a silver cake basket, salad bowl and a cruet.

Miss M. G. WEBB, of Walthamstow, has resigned in view of her approaching marriage. She was the recipient of a set of tea-knives from the staff.

### PROVINCIAL STAFF.

Miss C. GERRIE, Clerical Assistant, District Manager's Office, Aberdeen, having passed the Civil Service examination for a Woman Clerk, London, was presented with a leather wallet by her colleagues in the District Office prior to taking up her new duties.

### ENTERTAINMENT TO WOUNDED SOLDIERS, BRISTOL.

Another very highly satisfactory entertainment organised by the clerical staff of the Bristol P.O. Telephones, Telephone Avenue, was held on Saturday afternoon, Dec. 1, at Brunswick Lecture Hall, when some 60 wounded soldiers from Southmead were provided with a substantial repast, interspersed with musical and humorous items. The proceedings opened with a brief word of welcome from Mr. T. A. Bates (District Manager), and the following artistes very kindly contributed to the programme:—Mrs. Rowley Brooks,



the Misses Hunt, Dunn, Bubbear, Miriam, and Martin, also Messrs. Theo. Jones, Foweraker and Mass, with Mr. Southby ably presiding at the piano.

Much interest was added to the gathering by the presence of the Lord Mayor and Lady Mayoress and daughter, and Mr. Townsend of the Enquiry Bureau, both of these gentlemen expressing their extreme pleasure at being present, and the soldiers showed their appreciation by giving resounding cheers. The committee desire to thank all those who so kindly assisted in making the whole affair so successful, including those who so very generously presented gifts for the occasion.

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# THE Telegraph and Telephone Journal.

Vol. IV.

MARCH, 1918.

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### TELEGRAPHIC REVIEW OF 1917.

(FROM THE *Journal Télégraphique*.)

IN the course of the past year, no modification has taken place in the composition of the Union Télégraphique. As regards radio-telegraphy, however, the French Government has notified to the British Government the adhesion of Martinique to the Convention of London.

We cannot chronicle the opening of any international telegraph line. The Press, nevertheless, records that the Brazilian Government has accorded to the Western Telegraph Company concessions for laying submarine cables between Rio de Janeiro and the Isle of Ascension and between Belem (Para) and the Isle of Barbados. These lines will sensibly improve communication with South America.

The number of radio-telegraphic stations, of the opening of which we have been notified, was 6,113 at Dec. 31, 1917, composed as follows:—

687 coastal stations (for communicating with ships).

5,338 ship stations.

88 fixed stations (for communicating with other fixed stations).

But wireless telegraphy furnishes not only maritime correspondence properly so called, but is being used more and more to supplement ordinary telegraph lines. Powerful radio-telegraphic stations will therefore, it appears, be erected in the near future on the Pacific coast of the United States of America, in the Argentine, Brazil, Guadeloupe, the Philippines and Honolulu.

In France an extra-Parliamentary grand commission has just been constituted with a view of studying a project for creating a world-system of wireless telegraphy, more particularly destined to afford communication between the Metropolis and the colonies and amongst the latter.

The *Annales des Postes, Télégraphes et Téléphones* has, furthermore, announced that the French Administration proposes to erect a station which will establish permanent and continuous communication between France and the United States of America. This station will use continuous waves with a wave-length of at least 15,000 m. The contractor is required to guarantee the transmission from France to America of 10,000 words per 24 hours; the arrangements are to provide musical transmission and reception by sound at a speed of 200 words per hour; finally the transmission by the French station of the signals destined to be received in the United States of America, and the reception by the French station

of signals sent from the United States must be practicable and satisfactory, simultaneously and independently.

The Press has notified that the Bell Company has placed in service a telephone line between Montreal and Vancouver. Its length which exceeds 6,700 km. is greater than that of the New York-San Francisco line, hitherto considered the longest line in the world.

The *Annales* has given summaries of the trials of a telephone relay which has been established between Paris and Marseilles on a copper wire circuit of 3½ mm. The relay, which is a vacuum tube amplifier with three electrodes, was installed at Lyons. The trials have given most satisfactory results; the introduction of the relays rendered the hearing on the circuit of 3½ mm. equal to that given by circuits of 5 mm. The working of the apparatus being very stable the traffic passed satisfactorily.

The quantity of copper employed in a circuit of 3½ mm. being roughly half that which is necessary for a normal circuit of 5 mm., the utilisation of relays on telephone lines of medium lengths would allow a considerable saving to be realised on the cost of the establishment of these lines. For a circuit from Paris to Marseilles, for example, the gain would be to the extent of 150 tons of copper, which at the price of 4,000 francs a ton would be 600,000 francs.

As regards working, the most salient fact to be mentioned is the issue of new restrictions of service which have been added to the numerous restrictions which have been already notified since August 1914.

As against these unfavourable measures, we may record some which are advantageous:—

The charges applicable to correspondence exchanged with the British possessions on the West Coast of Africa have undergone reductions varying from 0 fr. 25 to 1 fr. 05.

A reduction of 50 centimes has been accorded to telegrams exchanged with the Republic of Panama.

Japan has reduced the terminal charge for correspondence with China *via* Nagasaki-Shanghai from 48 to 25 centimes, with the exception of telegrams to and from Formosa. It has also reduced from 48 to 20 centimes the terminal charge for correspondence exchanged with Russia in Europe and Russia in Asia.

The Great Northern Telegraph Company has consented to a reduction in favour of terminal correspondence exchanged between Japan and China.

Russia has reduced from 80 to 50 centimes its terminal charge for correspondence between Russia in Europe and Japan *via* Chosen, Sakhalin, Vladivostock or Kiakhta, and from 40 to 35 centimes its terminal charge for correspondence exchanged between Russia in Asia and Japan.

The additional radio-telegraphic charge application to correspondence exchanged with Spitzbergen has been lowered from 70 to 35 centimes.

Finally, the charge for Press telegrams exchanged with the Argentine *via* the Northern transatlantic cables has been reduced to 1 fr. 30 for all the offices in the Argentine.

The Press telegram service has been extended to relations between Germany and Denmark, Germany and Sweden, Austria and Sweden, and Hungary and Sweden.

Deferred telegrams have been admitted to the services between New Caledonia and Algeria, Tunis and Morocco, and to the services between Columbia, Panama and Ecuador. On the other hand the war has resulted in the provisional suppression of these telegrams in certain services where they were normally admitted.

Shortage of coal, which has made itself increasingly felt, even in the producing countries, had led, as in the previous year, to the advancing of legal time by an hour during the summer months in a good many countries with a view of reducing artificial lighting.

In the internal service of the different States few alterations of advantage to the public can be recorded. However, the *Revista de Telegrafos* of Madrid records the introduction of deferred telegrams in Spain.

In Holland the rules affecting the charges for internal telegraphic addresses have been modified, so that addresses not exceeding five words are counted as two words.

Last year we recorded a certain number of increases in internal tariffs; still further increases have arisen.

Greece has decreed a new internal tariff consisting of a uniform charge for telegrams not comprising more than seven words, another uniform charge for those comprising from eight to fifteen words and still another charge for words exceeding fifteen.

Norway has increased its telephone tariff in proportions varying from 5 to 50 per cent.

Since Jan. 1, 1917, new regulations and a new tariff for the telephone service has been put in force in Austria.

## HOW TO BUILD UP TELEGRAPH DIAGRAMS.

BY T. J. MONAGHAN.

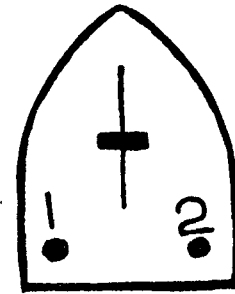
MANY students of elementary telegraphy experience difficulty in compiling the diagrams of connexions of the various sets, their troubles being attributable to not following out a logical system in building up the diagrams. They endeavour to memorise the various connexions, and apart from the objections on scientific grounds to burdening the memory with a mass of unrelated facts, a set joined up to such a diagram will not work correctly, except by accident, should a single connexion be misplaced. From the lowest, or examination, standpoint this is unfortunate, but if the diagram is used to join up a set intended for actual use the disadvantages are much more apparent.

It is proposed in this article to outline a logical method of building up diagrams of connexions of telegraph apparatus, and though at a first reading it may appear to be involved, a little practice will convince the student that it is rapid and reliable, the majority of the steps being made mentally. While it is possible in some cases for the diagrams to differ somewhat from those in the Official Diagram Book the sets will work correctly. This point is dealt with in more detail later. It is assumed that the reader is familiar with the functions and methods of operation of the various pieces of apparatus, and with the principles of the different methods of working. The student should draw all his diagrams freehand; if the lines representing connecting wires are all drawn horizontal and vertical, necessary changes of direction being made at right angles, neat and clear diagrams can be rapidly produced. In some of the illustrative diagrams in this article details presenting no difficulty, such as local sounder circuits, &c., have been omitted.

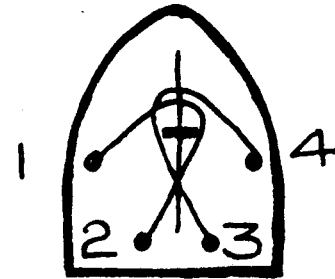
In every complete set of telegraph apparatus we must be able to send out currents to the distant station or stations and

to receive currents therefrom; further it is desirable to have some means of ascertaining when our transmitted signals are going out to line correctly and when incoming signals are reaching the set, in order that line or apparatus faults may be brought to notice quickly. In simplex working the receiving apparatus of a set is disconnected when signals are being transmitted, this being effected either by the mere depression of the key as in single current working, or by the manipulation of a switch thereon in double current working. In duplex and quadruplex sets the receiving apparatus is so connected that it is unaffected by the transmitted currents of the home station alone. To show when the currents are going out to or coming in from line correctly a galvanometer is generally used.

There are certain arbitrary facts about telegraph apparatus and its arrangement which must be memorised, but fortunately they are few. The more important of them for our purpose may



S.C. Galvo.



Differential Galvo.

FIG. 1.

be stated as follows: in the British Post Office system of telegraphy (with the exception of the central battery system and special sets) :—

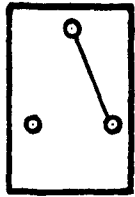
(1) A marking current always flows from the Up to the Down station in the line, and consequently from the Down to the Up station through the earth, no matter which station is sending the mark. A spacing current is of course in the opposite direction. It will be clear now why a relay is so marked that a current through the coils from U to D or (U) to (D) has a marking tendency, and a current from D to U or (D) to (U) a spacing tendency.

(2) The top of the galvanometer needle, as viewed from the front, moves in the direction in which the current is passing through the instrument, and to the right for a mark, whether the mark is being sent or received. Thus in the single current galvanometer (Fig. 1), a current from 1 to 2 moves the top of the needle to the right and a current from 2 to 1 to the left, and in the differential galvanometer

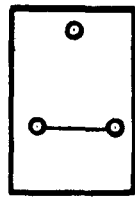
(Fig. 1), currents from 1 to 2 and 3 to 4 have a marking tendency, currents from 4 to 3 and 2 to 1 a spacing tendency. If equal currents flow from 2 to 1 and 3 to 4 there will be no resultant movement of the needle, the spacing and marking tendencies balancing each other.

(3) The connexions in the different positions of the various types of telegraph key in common use are as shown in Fig. 2.

It will be noticed that in each of the three keys there is one terminal which is in use under all conditions, key up or down and

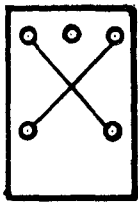


Key up.

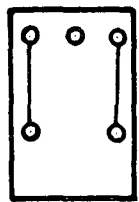


Key down.

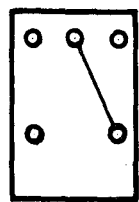
SINGLE CURRENT KEY.



Key up.



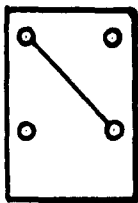
Key down.



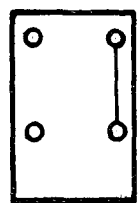
Sw. at "Receive".

Switch at "Send".

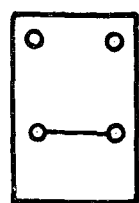
DOUBLE CURRENT KEY.



Key up.



Key down.



Sw. at "Receive".

Switch at "Send".

SINGLE CURRENT KEY WITH SWITCH.

FIG. 2.

switch (where fitted) at send or receive. In all three keys it is the front right hand terminal. This terminal is clearly the only one through which both outgoing and incoming currents must pass, and in simplex working (for the send and receive switch is not used when working duplex or quadruplex), therefore, the galvanometer, through which both sent and received currents must pass, is joined up to it.

As a first example of the application of the method consider the case of a universal battery double current simplex set. When the Up station key is depressed the positive of the battery must be joined to the front right hand terminal of the key in order that the marking current may flow from the Up to the Down station in the line. There is an earth on the centre of the battery and the free positive terminal of the battery must accordingly be joined to the right hand back terminal of the key and the negative of the battery to the left hand back terminal (Fig. 3a). The

outgoing marking current must pass from left to right through the galvanometer, hence the right hand front terminal of the key must be joined to the left hand terminal of the galvanometer and the right hand terminal of the galvanometer must be joined to the line. At the Down station the key switch will be at receive and the incoming marking current must pass through the galvanometer in the correct direction, left to right, and through the relay from U to D and (U) to (D). We thus arrive at Fig. 3a showing the connexions for the Up station to send a mark to the Down station. Now when the Down station is transmitting a mark, the current must flow in the line in the same direction as before, and a little thought will show that to ensure this the free negative terminal of the battery must be joined to the right hand back terminal of the key, and the positive to the left hand. We have already joined up the Down galvanometer correctly, and can follow our current through the earth to the Up station where it must pass through the receiving apparatus to line to get back to the battery at the Down station. In order to pass through the Up station relay from U to D and (U) to (D), the earth must be joined to (U) and D must go to the left hand front terminal of the

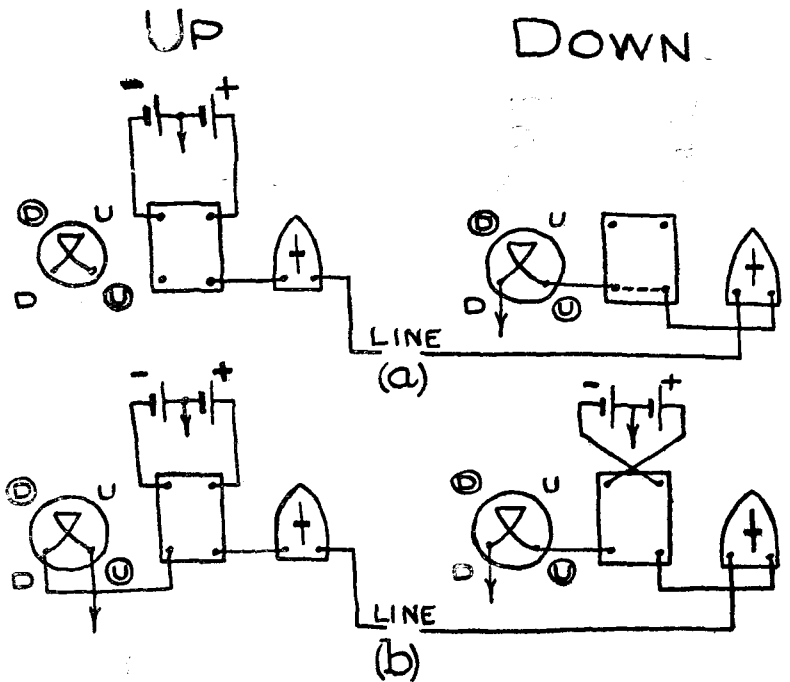


FIG. 3

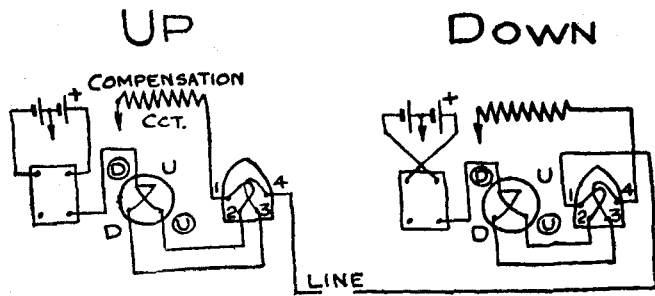
UNIVERSAL BATTERY D.C. SIMPLEX.

key, giving us Fig. 3b, the completed diagram, from which we see that the following alterations must be made to change an Up station set to a Down station set:—

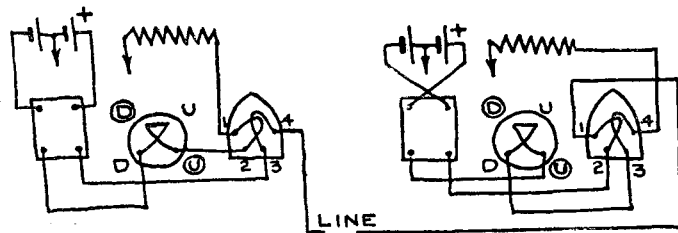
- (a) Cross leads on the back terminal of the key.
- (b) Cross the leads on the galvanometer terminals.
- (c) Cross leads on (U) and (D) of the relay.

It may be mentioned here that for a perfectly clear and complete answer to an examination question, "What changes must be made to convert an Up to a Down station in a universal battery double current simplex set," it would only be necessary to state the conditions which must be complied with, i.e., (1) and (2) above, draw the diagrams in Fig. 3, and tabulate the results.

In dealing with more complicated sets such as duplex, quadruplex, &c., the first step is to get a clear conception of the skeleton arrangements of the set being studied, and since these more complex sets are usually so arranged that by turning a switch we can work



(a) Duplex.



(b) Simplex.

CONNECTIONS WHICH CHANGE	CONNECTED AT		CONNECTIONS WHICH CHANGE	CONNECTED AT	
	Sx. TO	Dx. TO		Sx. TO	Dx. TO
R.H. front of key.	3 of galvo.	Split of relay.	R.H. front of key.	2 of galvo.	Split of relay.
D of relay.	L.H. front of key.	3 of galvo.	⊙ of relay.	L.H. front of key.	2 of galvo.

FIG. 4.

UNIVERSAL BATTERY D.C. DX. AND Sx.

simplex, it is necessary to compare the requirements for simplex working and duplex or quadruplex as the case may be. Quadruplex diagrams will not be dealt with in this article as once the student has mastered the method here outlined he will readily apply it himself to any case in which he may be interested. The skeleton diagrams may be obtained by simplifying the full diagrams given in official publications or elsewhere.

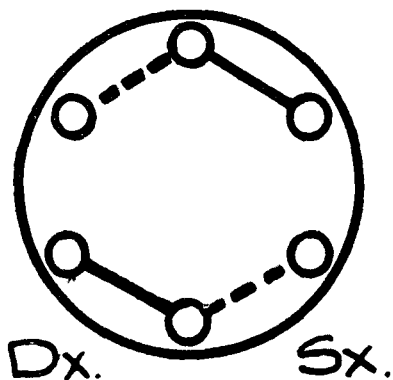


FIG. 5

In differential duplex working we have two sets of current to consider. At each station when a balance has been obtained there are equal currents flowing in the line and compensation circuits from the battery at that station; the compensation

circuit current is, so to speak local, completing its circuit through the set alone, but the line current goes to the far station and disturbs the conditions which would exist there in its absence. It either reinforces or wipes out the current flowing in the line coils at that station, and the resultant movements of the galvanometer and relay tongue there, depend upon the difference of the forces exerted upon them by the resultant line current and the compensation circuit current. In the British Post Office the standard method of duplex working is the "combination" differential system, in which when both stations have the keys down the line currents combine and flow in the same direction, the marks being caused by the preponderance of this doubled line current over the single currents in the compensation circuits. Hence it is clear that at either station when the key is in the down or marking position, the currents produced by the home battery must tend to mark in the line coils of the relay and galvanometer, and to space in the compensation circuit coils. The condition that a marking current flows from the Up to the Down station in the line still holds. In the "opposition" method of working when both stations have the key down the line currents are in opposite directions and wipe each

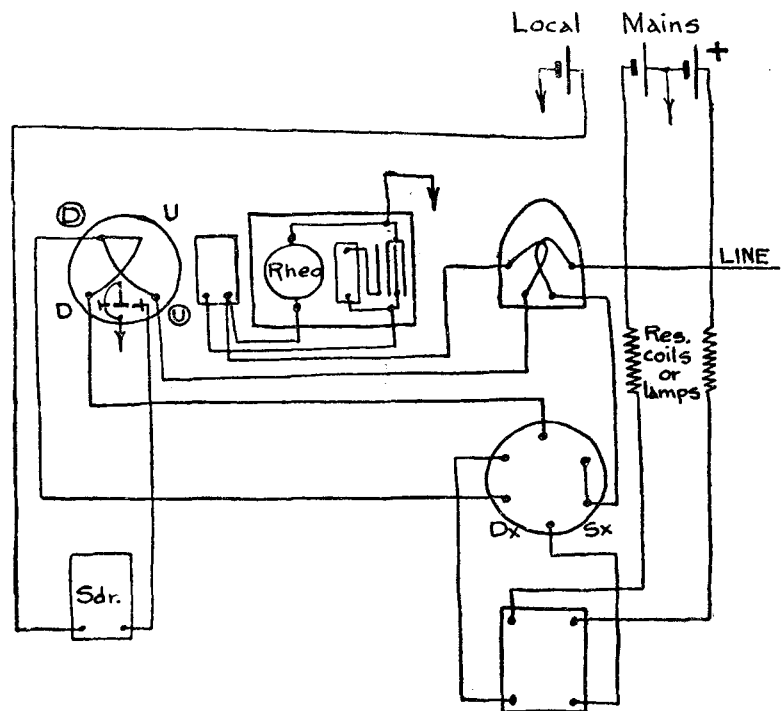


FIG 6.

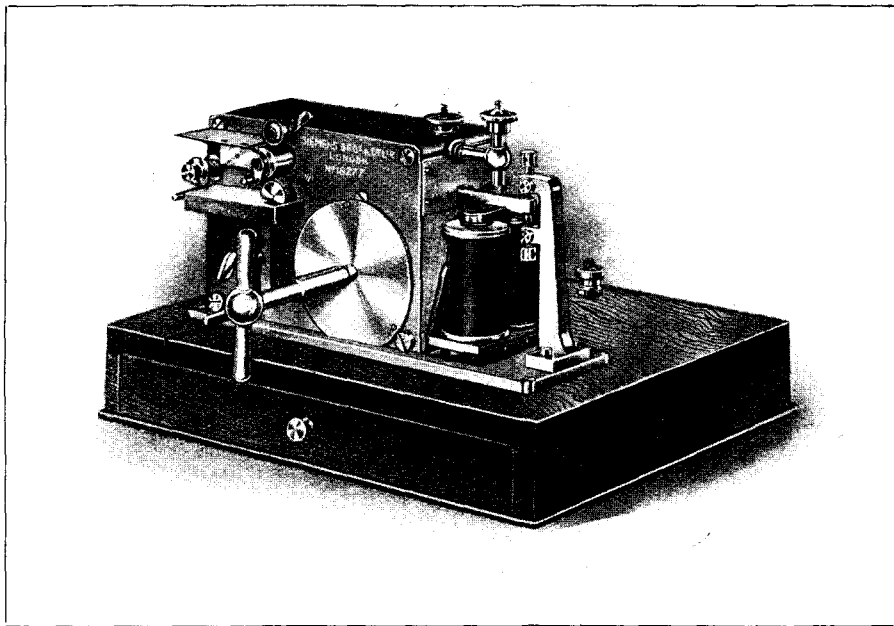
UNIVERSAL BATTERY D.C. DX. AND Sx.

UP STATION.

other out, the marks being caused by the then unbalanced currents through the compensation circuits. Hence in this system when the key at either station is depressed the currents produced by the home battery tend to space in the line coils of the set and to mark in the compensation circuit. In order that the currents may oppose we must join the same terminal of the battery to line at each station when sending a mark, that is the connexions of both sets are identical.

We will now deal with the case of a standard universal battery double current duplex and simplex set. Since we have to provide for both sets of conditions we must draw the two diagrams and note their agreements and differences. In Fig. 3b we have the ordinary simplex conditions. In Fig. 4a we have the duplex conditions. Since when the key is depressed the current due to

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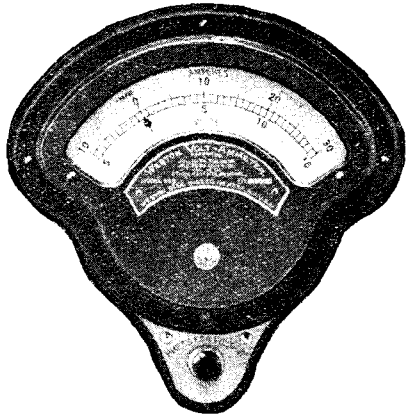
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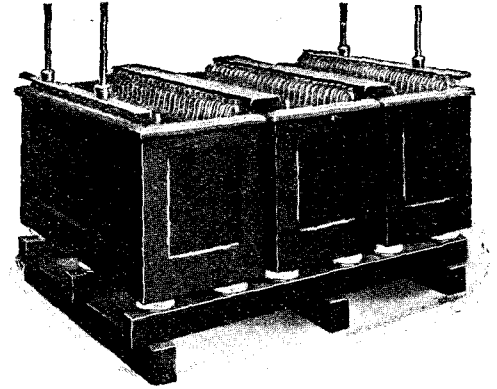
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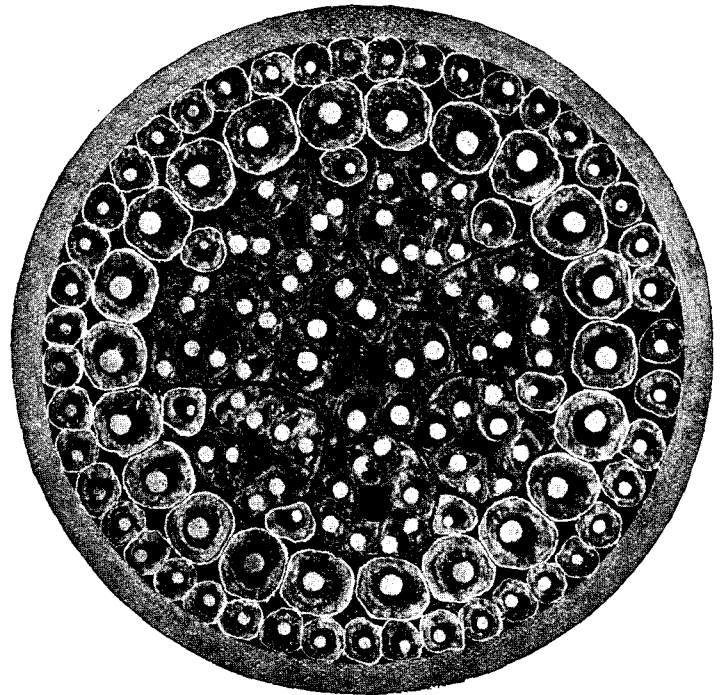
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the home battery must tend to mark in the line coils of relay and galvanometer, and a marking current must flow from the Up to the Down station in the line, we must join the batteries up to the keys as in the simplex diagram, and U to D and 3 to 4 will be the line coils of the relay and galvanometer at the Up station and U to (D), and 2 to 1 the line coils at the Down station. Fig. 3b shows single current galvanometers, but since differential galvanometers are required at duplex we must use them at simplex also; we can replace the earths on (U) and D in Fig. 3b by the earths on the compensation circuits in Fig. 4a by joining (U) to 2 of galvanometer at the Up station and D to 3 of galvanometer at the Down station. It can readily be verified that the currents flowing in the second coils of the galvanometers at simplex assist those in the line coils. This reduces the number of differences between the simplex and duplex conditions, and the resistance in the compensation circuit rheostat can readily be cut out when at simplex. We thus arrive at Figs. 4a and b as the two arrangements we must procure, and from the diagrams we can tabulate the changes necessary as shown in the tables in Fig. 4. We have two connexions to change at each station and this is done by a six terminal two-position switch, which is in effect two two-way switches operated by a single handle. The connexions made by the switch are indicated in Fig. 5, the full lines showing the connexions with the handle to the left, the dotted lines those made when the handle is to the right. Clearly the connexions which change must go to the common, i.e., the top and bottom, terminals.

We will now draw the complete diagram of connexions of the set at the Up station, Fig. 6. First set out the apparatus arranged approximately as on the instrument table; next insert the connexions which do not change,—namely, the battery connexions to the back of the key (inserting now the fuses and battery resistance coils), the compensation circuit (showing the details of its composition), earthed at one end and joined *via* coil 12 of the galvanometer to (U) of the relay at the other. Now deal with the connexions which do change. The right hand front terminal of the key is one, this is associated with the battery, and goes to the bottom terminal of the six terminal two-position switch. With the switch at simplex the bottom terminal is joined to the one on its right, and since our table shows that at simplex the right hand front terminal of the key goes to 3 of the galvanometer, the lower right hand terminal of the switch must be joined to 3 of the galvanometer. At duplex the table tells us that the right hand front terminal of the key goes to the split of the relay. With the switch at duplex the bottom terminal is joined to the one on its left, hence this lower left hand terminal must be connected to the split of the relay. The other connexion which changes is D of the relay, hence it must be joined to the top terminal of the switch. With the switch at simplex this terminal is joined to the one on its left, hence (see table) this upper left hand terminal must be connected to the left hand front of the key. With the switch at duplex the top terminal is joined to the one on its right, hence (see table) this upper right hand terminal must be joined to 3 of the galvanometer. But the terminal immediately below it is already joined to 3 of the galvanometer, and at duplex is otherwise free, therefore we obtain the same result if, instead of going right back to the galvanometer, we join the two right hand terminals of the switch together. In the official diagram the actual galvanometer connexion is made to the upper right hand switch terminal, but this is a matter of no importance. The insertion of the local circuit completes the diagram. If the connexions which change are reversed on the switch, that is right hand front of key taken to the top terminal and D of relay to the bottom terminal, the resulting diagram will differ from the official one but the set will work quite correctly. It may be objected that the tabulation of the connexions which change could have been made differently, commencing for example at the Up station with 3 of the galvanometer, but trial will show that three changes instead of two would have to be made. Begin with the battery (i.e., in this case the right hand front terminal of the key) and no mistake is possible.

The changes necessary to convert an Up station universal battery double current simplex and duplex into a Down station

are readily determined from Fig. 4. Two of them are evident—namely, (a) cross the battery leads on the key; (b) cross the leads on the top terminals of the galvanometer. From the table we notice that D of the relay changes at the Up station and (U) at the Down station, hence to bring the changing connexion to the six terminal switch we must (c) cross the leads on D and (U) of the relay. Having made this change, in order to keep (U) joined to 2 of the galvanometer and D to 3 (see Fig. 4a), it is necessary to (d) cross the leads on the lower terminals of the galvanometer.

The student will find it useful to remember that in primary battery simplex and duplex sets the battery connexions to the key are always the same, the positive pole going to the left hand front terminal of single current keys and to the right hand back terminal of the double current key. In primary battery differential duplex the battery, *via* the key of course, is inserted between the

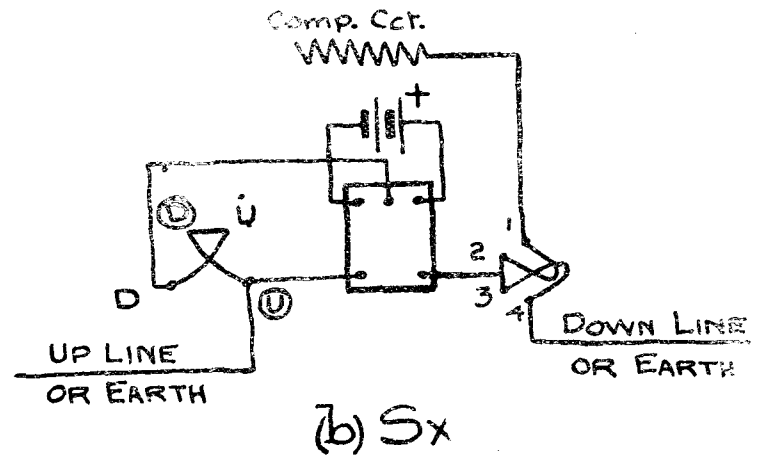
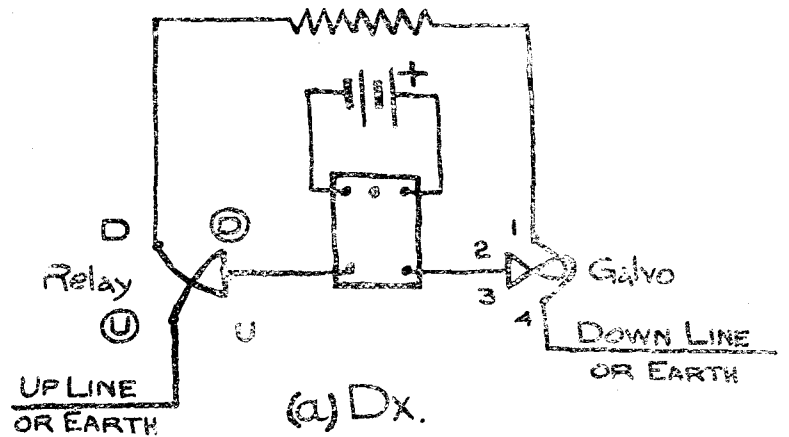


FIG 7.

SKELETON PRIMARY BATTERY

D.C. Sx. AND Dx.

splits of the relay and galvanometer and the galvanometer is joined to the right hand front terminal of the key, this being necessary as shown above for simplex working. The compensation circuit is disconnected at simplex. Fig. 7 shows the skeleton diagrams of primary battery double current simplex and duplex. It will be noted that the connexion associated with the battery which changes is that to the left hand front of the key and taking this to the bottom terminal of the six terminal switch the complete diagram of connexions for simplex and duplex presents no difficulty

### NEW AUSTRIAN TELEPHONE TARIFFS.

ON Jan. 1, 1917, new regulations and telephone rates came into force in Austria. There are as heretofore six classes of rates, A to F, depending chiefly on the use of the telephone made by the subscriber; but there are now eight groups of systems (depending on the number of subscribers connected with the system) instead of six as formerly. Class D which was formerly a residence rate applying to all the groups has now become a rural rate applicable only to the four lowest groups. Class A comprises very heavy users; Class B, heavy users; Class C, light users; Class E, 2-party lines; and Class F, four-party lines. In Group I (exchanges with over 20,000 subscribers) the tariff is now 500 instead of 400 kronen for Class A, 400 instead of 330 for Class B, 300 instead of 250 for Class C, 200 instead of 180 for Class E, 130 instead of 100 for Class F. In Group II (5,001-20,000 subscribers) the rates have risen as follows:—A, 340 to 400 kronen; B, 280 to 320; C, 220 to 240; E, 145 to 170; F, 85 to 100.

In Group III (2,001 to 5,000 subscribers) the rate is raised from 280 to 320 kronen (Class A), 240 to 260 (B), 200 unchanged (C), 120 to 140 (E), 70 to 80 (F).

There are now no rates applicable to Classes A and B in Group IV (501 to 2,000 subscribers). Class C pay 180 instead of 170, Class E 120 instead of 100, Class F 80 instead of 60.

The rural rate is not applicable to any of these four groups. Groups V, VI, VII and VIII cover exchanges with 500 subscribers and less. Only rates for Classes C, D, E and F apply to the first two; and only C and D (the light user rate and the rural rate) to the last two (exchanges with 50 subscribers and under). The rural rates for these four are 90, 80, 70 and 60 kronen respectively. Generally speaking it will be seen that the new rates show uniform increase in the tariffs, but some economical rates have been introduced for small users connected with the very small exchanges.

As £1 sterling is equal to roughly 24 kronen, it will be seen that the new rates in Group I are nearly £21 per annum (Class A), £16 8s. (Class B) £12 6d.; in Group II £16 8s. (Class A), £13 4s. (Class B) and £10 (Class C); in Group III £13 4s. (Class A), £10 10s. (Class B), £8 4s. (Class C).

It will be seen that the old basis of charging for service is retained and that the tariffs make no provision for a message rate service. The arrangement of the subscribers in groups results, indeed, in a kind of measured rate. For instance, Class C is limited to 3,000 calls per annum, Class B to 6,000, and Class A to 12,000. Not until a subscriber of the latter class exceeds 12,000 calls is he called upon to take another telephone. This maximum it may be observed is more than double the load which authorities in this country and America consider a fair one for a single installation, and under the conditions existing in this country would give rise to an inordinate number of "engaged" signals. The total number of a subscribers' calls is obtained by means of chance records, both effective and ineffective calls being included, but to cover the latter an allowance of 30 per cent. is made in Group I, 25 per cent. in Group II, and 20 per cent. in Group III.

W. H. G.

### TELEGRAPHIC MEMORABILIA.

IN reply to an appeal from this column, Mr. James Fraser kindly writes as follows:—

"In January's instalment of 'Telegraphic Memorabilia' reference is made to the balancing of a long composite or mixed circuit consisting of submarine cable with a variable land line extension at one or both ends. This is a problem of considerable difficulty, and one for which a solution would have to be found for every condition of the open work. In the article on the 'Duplex Balance,' published in the *Post Office Engineers' Journal*, the effect of introducing a variable resistance at one end of an underground circuit was shown to cause a redistribution of the cable capacity, the values of  $x$  and  $y$ , the resistance and capacity balance respectively being connected by an equation of the form  $y = A - B e^{-cx}$ , from which it will be evident that any formulae deduced on the assumption that the insulation of the land portion

is perfect would be of no value when applied to the balancing of a circuit where such a condition never obtains.

"For the benefit of those scientifically curious ones who desire to pursue the study of the subject further, I would refer them to Dr. Malcolm's great work, recently issued by the *Electrician Publishing Company*, on the duplexing of submarine cable circuits."

On behalf of the "curious ones" the writer begs to return thanks to our much esteemed friend.

To praise dethroned kings has not always been considered a "safe" job; nevertheless respect, and, what is more, affection, for the merits, and, as far as the present scribe is concerned, an intimate knowledge of the sterling good qualities of the late ruling dynasty of T.S.F. impel one to take all risks of decapitation and to pay the completest tribute of appreciation to the personalities of the ex-Assistant Controller and the ex-Senior Superintendent of the Cable Room, C.T.O., Mr. A. Tapley and Mr. H. F. Vandermeulen respectively.

Both have had practically a life-long acquaintance with international telegraphy, its rules, conventions, regulations, usages and its many phases of development. Both officers passed the retiring age after the outbreak of war and both readily responded to an appeal to their patriotism to remain beyond that period. Both were considerate and sympathetic to a fault towards their subordinates, yet neither spared himself in the Department's work, remaining repeatedly for hours beyond the expiration of his duty without fee, recompense, or hope of reward, except that which follows from the knowledge of work well done. Both possessed literary ability of no mean order, and in the case of the latter a mastery of the English language remarkable in one who first saw the light as a Belgian subject. Both were transparently honest, and there were surely never two who worked more disinterestedly for a department; never two who more quickly realised what Anglo-Continental telegraph communications meant to the Allied cause. Both were keenly appreciated by certain sections of the Secretariat, where there was more than the average opportunity for testing the value of their wide knowledge and their catholicity of view. Mr. Tapley entered the Telegraph Service Sept. 4, 1870, and was actually the Father of the C.T.O., when on Jan. 31, 1918, he and his colleague were seen, suddenly and simultaneously, to

... fold up their tents like the Arab  
And silently steal away

into well-earned retirement. One would fain cry out with Carlyle's three-fold query, "Whence? Why? Whither?" and with the same result, "there comes no answer across the rubicon."

The king is dead! Hail to his successor; and one is right glad to know that a hearty welcome has been given to Mr. F. T. Wadley, the new Assistant Controller, who, however, is by no means *new* to the work of the Cable Room, having had considerable experience in this Department some few years ago, although in less troublous times. The remainder of the appointments consequent on the vacant superintendentship will, it is understood, be made from the Cable Room staff, thus strictly conforming to the Treasury Minute which authorised the Special Establishment.

*Mutatis mutandis*, one may hope that the supervision especially will co-operate wholeheartedly with the new local chief. Let there be no more rumours of the be-littling of the work of this branch. Such under-estimation of duties and difficulties is no way of surmounting them. By far the braver, wiser course is to take their true and full measure, to recognise them and to face them with whatever resources may be at hand. Besides, such be-littling is a lowering of standard and ideals, and is at the same time a be-littling of the duties of everyone concerned, right up to, and including the responsible head of the C.T.O.—and one might even go further. Tell men and women their work is worth next to nothing, that anyone dragged from the street can do it, and you take away half the incentive to turn out not only good quantity but good quality. The best work after all, as Ruskin long ago maintained, is not given in return for money or wages so much as for love of one's craft. If ever there was a time when men and women needed sympathetic encouragement it is surely now, and if ever there was a period when unswerving loyalty to the controlling staff was needed that also is equally and surely now.

Talking to a friendly engineer not long since, who is more than ordinarily interested in multiplex type printing telegraphy, he gave me a sample of the abuses of what he called super-specialisation in connexion with the maintenance of certain Baudot circuits which had come under his notice, and which had certainly not produced the best of results. Cleaners from the Electric Light Department were deputed to keep the small motors of the receivers in order, the office lineman cleaned the remainder of the apparatus, the mechanic overhauled generally and removed faults, while the dirigeur kept his eye on all three, and with the assistance of the mechanic did his best to keep things going after the first-mentioned two had completed their well-meant attentions and which not infrequently resulted in a legacy of one or two avoidable faults. Upon enquiring still further he assured me that neither the lineman nor the cleaners had received any instruction regarding the delicacy of certain parts of the apparatus. Clearly "specialisation" appears to be an absolute misnomer in such a case, and attention was directed to the system of morning cleaning and overhaul, so satisfactorily adopted in London where mechanics *only*, though of various grades, are employed at stated scheduled times, and not on hap-hazard occasions during the day as was apparently the "arrangement" in this instance.

If Baudot, or any other type of high-speed apparatus, is to prove successful, it might prove useful to adopt some unified plan of skilled maintenance. It would pay. Despite my friend's good-humoured chaff at "specialisation," it is a perfectly safe statement to set down that even the fairly simple process of cleaning if carried out by wholly untutored fingers is most unlikely to produce the best results in connection with modern printing telegraphs.

Hustling *in excelsis* appears to be approaching very rapidly, judging from the most seriously advocated proposition which recently appeared in the staid pages of an electrical weekly—it was therein suggested that all infirm and elderly passengers (no definite age-limit is at present fixed!), should be excluded from the use of the tube railways in London during the busy hours of the day, so that the trains and stations could be filled and emptied more quickly and the absolute maximum load carried in the absolute minimum time.

Telegraphists have read the February editorial on "The Honours" with more than ordinary interest and in complete accord with the eulogies therein expressed, but they must crave pardon of the editors if they ask permission to underline the sentence "Telegraphists we understand feel a little sore." Let me be perfectly clear and frank. Telegraphists feel no soreness concerning the shower of well-deserved honours which has fallen to other sections than their own, and they would heartily endorse yet another sentence, *i.e.*, "The telegraph brethren can afford to be generous minded." They are grateful for the acknowledgment that, "to the telegraphs has fallen a heavy day by day burden, never eased and never romantic," except that, after studying the dictionary, they are doubtful what meaning is to be attached to the word "romantic"! Knowing what they do know of the part the civilian telegraphist has taken in the war since 1914, they would tremblingly suggest that certain efforts and incidents have even bordered on the heroic. Telegraphists, however, are "a little sore," because it is just such sentences as that last quoted above which appear to indicate that no one has troubled to tell, for example, how telegraphists fared north into the Arctic Seas on as risky and dramatic a venture as one could imagine for officers of an unromantic service. No one appears to have noted how others were rushed out to a coastal station during a phenomenal breakdown, how they worked in a mere hut while Zeppelins hovered over them and dropped bombs around them night after night, what time even the military guard took shelter in their dug-out, nor how one of their number being stranded miles from his destination by train-stoppage, and knowing that he had important naval, military and diplomatic telegrams on his person, assisted by the local police and postmaster commandeered a motor-car, then drove across country without lights while bombs were still falling around, and successfully handed over the precious charge to his superintendent at a secret *rendezvous*; no one appears to have noted the superintendents who saved scores of lives by quickly grasping

a dangerous situation and acting with marvellous promptitude; no one appears to know of overseers and telegraphists who when occasion has demanded it have stood at dangerous points, so that certain important telegrams might be despatched, nor of the cool and collected ambulance women telegraphists ready at the first call. Well, there are even other ventures—but enough. No claim is laid to super-courage, no claim to anything more than the doing of "the thing that laid nearest." Unfortunately for the Telegraph Service, though fortunately for the nation, publicity has been severely restricted, and to the elimination of just those points which would have touched the public imagination. The necessity for this strict censoring is fully appreciated, recognised and accepted, but we of the Telegraph side did expect that our own professional kith and kin would have better appreciated the part which we have tried to play during these last three and half years.

J. J. T.

## CORRESPONDENCE.

### EQUIPMENT FOR PHONOGRAM ROOMS.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

SIR,—The writer of the above article in the January issue is apparently not well acquainted with matters telephonic or he would surely refrain from suggesting that the switching telephonist could be saved by fitting a multiple of the incoming lamps and jacks on each message position.

The writer offers a further advantage however in the event of his proposal being adopted. He states "that with the multiple it is more likely that calls would be answered quickly, since more than one telephonist would be in a position to answer."

The saving of the switching telephonist should be effected by the introduction of the automatic distributor. This apparatus is designed to distribute each incoming call to a disengaged phonogram operator and in the event of no disengaged operator being available will acquaint the phonogram supervisor of the fact by either a visual signal, an audible alarm or both. The installation of such apparatus will also relieve the supervisors from "watching the switch," as the switch will probably not be in the phonogram room, but in another part of the building.

The further suggestion of R. G. D., that the multiple will reduce the speed of answer is not borne out by experience. In several telephone exchanges, ancillary working has been introduced with this end in view, but the results show that practically no reduction in the speed of answer can be effected by such provision.

If it is assumed that each phonogram operator is working at the maximum speed consistent with efficiency, it is not clear how the provision of the multiple would assist matters. The fact that so many glows requiring attention were flashing in front of the operator would be more liable to disconcert than to assist in the celerity of despatch. Further, when so many other officers are possibly waiting to take calls, it is only human to allow them a small margin of time in which to do so, and from this point of view the provision of the multiple is a retrograde step. It encourages the slack officer to delay taking up calls in case she is depriving a more zealous officer of the privilege; it leads to plugging up of circuits by over-zealous supervisors who may estimate erroneously the stage at which the operator already engaged on a message has arrived, and it would add considerably to the capital cost of the installation and to the maintenance. I am not in agreement with R. G. D.'s ideas of economy as to the best use of "every scrap of old equipment" we have. From the point of view of economy alone, the scrap heap is the best place for scrap, and the unsatisfactory results that so frequently arise from the use of old equipment are such as to condemn its use out of hand. I am writing solely from the point of view of telephone plant. With telegraph plant, it may be different—but I doubt it, even in war time.

The question of equipment is inseparable from the traffic conditions. If the staff is not sufficient to carry the load, no additional equipment will help matters so far as disposing of the traffic is concerned. The claim that R. G. D. makes for the introduction of the multiple, *viz.*, that more than one telephonist would be in a position to answer has no foundation. If the telephonists were in a position to answer, the connexion could be made as quickly at the concentration switch as by the operator plugging into a multiple. Trouble only arises when there is no telephonist in a position to answer. And one of the defects of the present system is that no provision appears to be made for answering such subscribers, taking particulars and ringing them up as soon as an operator is available to deal with the message.

W. J. W.

### OBITUARY.

WE regret to record the death of Mr. C. C. Worte, Telephone District Manager, Newcastle-on-Tyne, on Feb. 1. Mr. Worte was 52 years of age and had been in the Telephone Service for 33 years as Local Manager at Hastings, Cambridge, Watford and Reading, and as District Manager at Canterbury, Hull, Edinburgh and Newcastle in the order named. He had been a District Manager for 21 years, and was much esteemed by his colleagues and by the staffs which came under his control during his long service.

## The Telegraph and Telephone Journal.

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

Editing and Organising	{	MR. JOHN LEE.
Committee		MR. J. W. WISSENDEN.
Managing Editor	-	MR. W. H. GUNSTON.

### NOTICES.

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

VOL. IV.

MARCH, 1918.

No. 42.

### "CURIOSITY" CALLS.

NOTHING could better illustrate the difference between the economics of war and peace than the fact that the Administration is forced at the present time to look with disfavour on frivolous calls, even though they are paid for separately. According to accepted commercial principles it is sound business to sell as much as possible of the commodity which you supply, provided you can obtain a suitable price for it. Perhaps from the higher standpoint of economics there is little to be said in favour of the extensive sale of useless or redundant articles, but in the commercial world, the more you sell at a remunerative price the better you are pleased. Some years ago, when the telephone service was supplied chiefly to subscribers paying a flat rate, the question of the frivolous call gave rise to some acute controversy and was, very properly, made one of the chief arguments in favour of the introduction of the message rate. It was argued that many people paying a flat rate employed the telephone lines frequently for long conversations on the most trivial subjects and that they would not have done so had they had to pay for such calls. The subscribers argued with some heat that they did pay for such calls inasmuch as they paid an inclusive rate entitling them to unlimited service, but it was retorted that if each call had to be paid for separately, it would be found that the frivolous call would tend to disappear. Telephone companies had no objection to frivolous calls as such; what the subscriber chose to say in the course of a paid call was obviously a matter of indifference to them. It was admitted that if a call was important enough to be paid for it was important enough to be transmitted. It was purely a matter of business, and a very different problem from that of the superfluous trivial call which a flat rate subscriber might make, much as a greedy person might eat what he did not really require at a *table d'hôte* because he had paid for an *ad libitum* dinner. But war conditions have affected the business axiom that a frivolous call is no longer

frivolous when the subscriber thinks it serious enough to pay for. The pressure of war work, Government work and important commercial work on a depleted staff has rendered it highly undesirable that the service should be used merely to pass the time, or out of an amiable curiosity to know how one's friends are doing. It would be inexpedient to exclude all social calls whatsoever from the category of the permissible—indeed, to do so would rule out many residence telephones—but between an urgent time-saving message and one initiated merely from a desire to hold a conversation there is a wide range of telephone calls which can properly be considered legitimate even in times of stress.

We observe that in the elaborately graded new Austrian telephone rates, a table of which we publish in another column, there is no provision made for a message tariff. Subscribers are arranged in groups according to the size of the exchange with which they are connected and in classes according to the use they make of the service. We find that a subscriber, Class A, in Group I is entitled to make 12,000 calls per annum before he is required to take a second instrument. This is considerably more than double the number of calls which is considered in this country and in America to be a satisfactory load for one line, and, assuming that the subscriber received as many calls as he made, would probably mean that in the busy hours 50 per cent. of his incoming calls would be ineffective, owing to his line being engaged. We are not aware what rôle frivolous calls play in the amenities of Viennese life, either now or in peace time, but we think that the liberal allowance of free calls will distinctly encourage them, and we cannot see what means the Administration will have for keeping them within bounds under the present tariff.

### FLOWERS AND FLAGELLATIONS.

WE are indebted to Miss Baldwin for the freshness of her simile and the terror of her flagellations. We are proud of our telephonists and there is a charm in the idea that a telephone exchange is a huge garden. Its Lilies, Roses, Daisies, Mays and Violets gently blossoming round the board(er) while the super-blossoms are promenading up and down, training the young plants with loving and tender solicitude. What a picture! A heaven of delight whose show of bloom is equally pleasing in June as in December and whose peacefulness is only marred when some spiteful cat or wanton dog intrudes its unwelcome company, perchance making Rose rosy and May mad. The gentle murmur (speak clearly and close into the mouthpiece) as of wind sporting with the leaves, the sparks of sunlight on the switchboards, the silent tread on the floor, all aid the illusion until one shuts one's eyes and enjoys that *dolce far niente* which is of the life of gods. But is it all an illusion?

The glorious blossoming in our garden is an ideal of attainment. Work, constant work, care, constant care are the forerunners and companions of that beautiful *tout ensemble*. The result is achieved gradually with a mind always fixed on the ideal of attainment, which may vary in detail but in general outline remains immutable. The human organisation or garden is surely like its floral prototype. Its form is of necessity predetermined by its object; but the lovely blend of colouring and the harmony of the whole are due to the

personalities of the men and women in it. Its development must necessarily be gradual and the final achievement a matter of time. There is certainly no reason why we should not have a "Garden of Work" as well as a "Garden of Sleep."

The flagellations we really owe to an ill-conceived idea of the medieval religionists that discipline meant not teaching but mortification, punishment, penance and a generally disagreeable state of affairs. They seemed, or history has belied them, to ignore the greater powers of patience, kindness and truth, with the result that the word "discipline," so great in its conception, has reached the despised position it now holds in many circles.

We apologise to those stern moralists if they merely borrowed meanings and methods from the militarists of whom we hear so much nowadays, and whom we hope are doomed.

But despite the views of those who think we go too slow, times and their methods are changing steadily for the better. We no longer chastise our children to the breaking point because we early absorbed the principle of "Spare the rod and spoil the child," and this fact is probably one if not the chief cause of the growing spirit of independence in the younger generations. We hold the faith that the discipline of the future will depend almost wholly on the kindly admonitions of a guide, counsellor and friend.

### HIC ET UBIQUE.

WE have two appointments at Headquarters to record, Mr. F. T. Wadley has been promoted to be Assistant Controller, Cable Room Central Telegraph Office. Mr. R. P. Crum, Assistant Traffic Inspector, Class II, on the Traffic Staff of the Secretary's Office has been promoted to be Assistant Inspector, Class I. We congratulate both these officers on their promotions. On the other hand, we deeply regret to observe in the Casualty List the name of our colleague, Mr. P. A. Brown, late of the Telegraph Branch of the Secretary's Office.

"THE statement that telephone operators have been employed by their official superiors in working hours to wait in queues for margarine, etc.," says the *Pall Mall Gazette*, "must be investigated, and the practice, if found to exist, stopped at once. Such irregularities as this charge implies cannot be tolerated."

What the *Pall Mall Gazette* calls a statement was as a matter of fact a question in Parliament. Now a question in Parliament may be an innuendo, and an innuendo may be untrue. Like Pilate, our contemporary did not wait for answer.

WE take the opportunity of mentioning that Mr. Hall's *Handbook on Standard Telephone Construction Methods*, which we reviewed in our last issue, is obtainable in this country from S. Rentell & Co., 36, Maiden Lane, Strand.

WE cull the following extraordinary paragraph from the *Globe* newspaper:—

"Leeds is to have an automatic telephone exchange. As a change from the ought to answer telephone operator." Our contemporary must indeed be hard up for humour if such a poor pun is worth purchasing by a sneer at a class whom the King has recently been pleased to honour for their services to the community.

THE following paragraph is from *The "Old Vic."*, by John Booth (published by Stead's Publishing House), a book describing the

vicissitudes of the Victoria Theatre, Lambeth, during the century 1816-1916.

"One of the early lecturers was William Lant Carpenter, who in the days when telephones were unknown to the general public, took as his subject: 'How to Talk with a Man in New York.' Out of this, at the entreaty of two men in the audience, the Morley College for Working Men and Women, now numbering 1,113 students has grown. Its first vice-principal was Miss Caroline Martineau." It is interesting to record that the inception of the Morley College was the result of a telephone lecture.

### THE STUDY AND DEVELOPMENT OF THE INDIVIDUAL IN A TELEPHONE EXCHANGE.

BY VIOLET BALDWIN.

SURROUNDINGS are said to have a great influence on the development of individuals—so much so that it is not uncommon to hear certain people described as being typical teachers or typical shorthand-typists, but has one ever heard of such a person as a typical telephonist? We think not, because we are not a type and have no desire to be considered as such, although we are prepared to acknowledge that our work does bring a certain amount of uniformity into our lives. In any place where many people are employed there usually exists a variety of personalities, but I am inclined to think that that variety surpasses itself in a large telephone exchange. One meets there the journalist, the student, the artist, the athlete, the housekeeper, the musician, the dressmaker, and so on and so on until one begins to wonder if there is any calling that is not represented in some form or other among this great assembly. It is a splendid training school for the psychist.

Character reveals itself in so many ways in our office but not more distinctly than in the matter of dress. The embroidress and the artist usually express their feelings by exhibiting their handiwork in some way or another on their garments. The quiet, methodical woman habitually wears substantial, sober-looking clothes while those of the student often betray a certain amount of untidiness and indifference to detail. Yet this variety of personalities meets every day in its corresponding variety of dress, and it is known that each woman is capable of being a good telephonist. Observation proves that little Miss Powdered-Nose-and-Flimsy-Gown can accomplish satisfactorily quite as much work with her piping little voice as can sober Miss Navy-Skirt-and-Shirt-Blouse. A telephone exchange is indeed a place where extremes meet. Herein lies the very charm of existence.

Another point worthy of observation is the influence one person has on another. The gay, pleasure-loving girl has a certain way of showing her more reserved, self-contained associates that there is always a light side of life, while the steady, placid individual unconsciously points out to her more wayward companions that there is something more to live for than the mere pleasure of the hour. We feel then, that this variety is good for all. It has such a levelling, harmonious influence when allowed to express itself in a natural manner. Some natures have a remarkable way of adapting themselves to whatever surroundings they may be in for the moment. That is why one hears so many opinions about the same person. One supervisor may consider a certain telephonist a very jewel of an operator while another may deem her a frivolous little chatterbox. Investigation would have shown that the difference of opinion was due either to the amount of traffic or the type of individuals in her surroundings.

Then there are those who seem to change entirely. We all agree that Miss A. of to-day is quite unlike the Miss A. who entered the exchange some two or three years ago. Whether she has improved or not remains to be seen. At one time no one would have thought she could have said "Bo" to a goose, but now one trembles at the thought of what she might say next. Again we find among us those who stand out above the rest. Take Miss C. for instance. Everyone knows Miss C. although Miss C. may not know everyone else. There may be several reasons for

it. Perhaps she may be one of those unfortunate individuals who is noted for getting into scrapes or, better still, she may be one who possesses a certain charm of manner which attracts people of all sorts and conditions. Anyway, it is the universal opinion that she always has stood apart from the majority from the very first day she entered the switchroom.

It is very evident that "birds of a feather flock together" in a large exchange. How interesting it is to notice how soon a batch of learners can manage to find kindred spirits among the crowd. Occasionally, it is true, the beginners keep together for a few weeks and determine that the rest of the staff are a horrid lot of people, but that opinion melts away in time and gives place to a more generous one. However, this is not always the case, and one sometimes finds the most ill-assorted people trying to work together. A searching glance at a certain telephonist is a living proof of it. One wonders why she looks so crestfallen. Perhaps she has been reprimanded for some irregularity in operating or perhaps her companions have the obnoxious habit of considering themselves too senior to hold any intercourse with her. Whatever may be the reason it is certain that the poor sensitive little damsel must live in a more congenial atmosphere before good results can be obtained from her.

For what individual can take an interest in her work if she is unhappy? There is nothing for her but bitterness and discontent, or at best a state of apathy which affects not only herself but all those with whom she comes in contact. A freshness of outlook is as essential to the human being as is the sun to the trees and flowers. It is the stern duty of those in charge of such a variety of individuals to so place them that only that which is best in everyone may be developed. How disastrous are the results when those with certain rigid ideas of uniformity attempt to thrust their views on people with directly opposite opinions, at all hazards. The conflict is not merely momentary. It brings out that which is worst in each case and also tends to prejudice others against themselves. It is useless to expect the violet to flourish under the same treatment as the lily or to attempt to adorn the poppy with the petals of the rose just because one prefers roses to poppies. The lily and rose and many other delightful flowers live in our huge garden of an exchange, and it is not human to expect to produce only one kind of telephonist when there are so many different kinds at hand. That is why some flourish and some droop when all, with a little variety of treatment, might develop to the full.

I do not think anyone could forget the time when she entered a large telephone exchange for the first time as a beginner. Even the boldest must have had a certain amount of awe and shyness creep over her as she surveyed the large crowd of strangers around her. It is often the recollection of those awkward moments that is directly responsible for the friendly attitude of the more senior members of the staff towards the learners who come after them. There is nothing more gratifying than to see a junior made quite at ease in a comparatively short time. It reflects as much on the character of the junior as it does on the telephonist or telephonists who take her in hand. First impressions usually have a lasting effect on young people and it is to everyone's credit to see that they are made favourable. Beginners are not gifted, generally speaking, with the power of reading, in others, that which lies beneath the surface, and they are consequently very apt to judge their associates merely from their outward manners. Many telephonists are not fully appreciated because they hold themselves aloof instead of revealing to all that charming side of their nature.

We have now to consider what effect the actual work itself has on our development. No one could take up telephony for years without being influenced by it in some way or another. As might be expected, different temperaments are affected in different ways. Some telephonists become so absorbed in the incessant repetition of phrases which it is our lot to use that they lose their personality entirely and sink into mediocrity. Others develop a certain irritability of manner which is most distressing. Such cases as the latter require a difference of treatment if harmony is to be preserved, but unfortunately that relaxation is not always granted, and many who would otherwise take up their work with enthusiasm are to be found working in a very spiritless fashion.

In pre-war times, particularly, this condition was prevalent. The greater independence of women to-day has been a boon to the business woman. It has pointed out very effectively that the discipline of the past has been too severe, and we now find a much healthier atmosphere since this discipline has been somewhat relaxed. In spite of this improvement, however, we still find that telephonists with over six years of experience are subjected to as much observation as learners although they are given more responsible duties. It is very unsatisfactory to have the responsibility and not the credit of such work. The novelty of the telephone does not last for ever, and we are not wrong in supposing ourselves able as time goes on to take up our duty independently as reliable servants of the State.

Again, we are all taught to use the authorised expressions and as long as they assist the telephonist in her work they are worthy of consideration, but when the use of these phrases is detrimental to the individual they exceed their limit of usefulness and become instruments of torture. Observation will also prove that those who adhere strictly to the wording of the phrases are by no means the most intelligent individuals, neither are they the best telephonists. Indeed, one could imagine such people saying "Jack Robinson" instead of "Number Please" if required to do so and never even questioning the sense of the expression. There are occasions when the authorised words are very insufficient and unsuitable. I have seen many a telephonist take any amount of trouble over her work without getting as much as a "thank you" for it, simply because she has not kept minutely to the standard expressions. And yet it is such telephonists as these who make the business a success. How one longs for the time when we shall be judged not by authorised expression but by what we are worth. The cynic and the tyrant who exist in the exchange of to-day will become creatures of the past. The stringent rules in the office even now encourage little acts of deceit among the staff. The fear of punishment is in many cases directly responsible for many unsatisfactory explanations concerning difficulties or irregularities which have taken place. The being compelled to remain silent and motionless at the switchboard when there is no work on hand is another failing. The time could be more profitably spent if such telephonists were trained for other duties. There would then be no desire to get into mischief or sink into a state of laziness and indifference, and the telephonist would be afforded the opportunity of developing her powers of observation and acquiring miscellaneous knowledge concerning her work. A well-informed operator is always in demand especially in times of emergency. Her knowledge and practical experience also render her extremely valuable in training others.

Telephony impresses all those who are engaged in it with a remarkable sense of the value of time, a fact which accounts for the busy life so many of us lead even when off duty. All sorts of occupations are taken up zealously, but perhaps the most praiseworthy to-day is that of undertaking volunteer work at the Y.M.C.A. huts either after or before fulfilling one's legitimate duty daily as a telephonist. Many members of the staff spend all their spare time in such places.

The irregular duties in an exchange affect us in a great degree. Our hobbies, our amusements, and even our meals have to be subjected to this irregularity to correspond with them. We are trained from the very beginning to adapt ourselves to these changes and there are many who have learned to appreciate it. The telephone exchange, then, should be an ideal place for the lover of variety to work in and to develop herself over.

With many influences at work the subject of control becomes of vital importance and we feel that no one but an idealist with a keen knowledge of human nature could deal with such a variety of people successfully. The personality of the head is more than a mere word to us. Her influence affects everything and everyone. She is our social as well as our official representative. Her attitude towards us shapes or withholds our development. We look to her consciously or unconsciously as an example of what we shall or might become. We want to be made to feel that she is a guide to the goal of perfection in order that we may take up the same standard and serve under her loyally to the end.

## WAR HONOURS.



MR. E. GOMERSALL, O.B.E.



MISS A. M. LAWS.

We have pleasure in publishing further portraits of officials who have received War Honours, of which a full list was published in our last issue. Mr. Gomersall is an Officer of the Order of the British Empire. Miss Laws has received the Medal of the Order.

## LONDON TELEPHONE SERVICE NOTES.

THE committee charged with the responsibility of sending Christmas parcels to the overseas members of the L.T.S. has now issued the balance sheet in respect of the last distribution. The total sum collected on this occasion was well over £150, and in these days of "food" tickets one's mouth waters at a recital of the fact that the purchases for inclusion in the parcels embraced 30 lbs. of chocolates, 40 lbs. of other sweets, 450 lb. tins. of biscuits, 600 lb. tins of potted meat and 488 lb. tins of jam (not plum and apple), whilst amongst the non-edible items were 24,350 cigarettes, 544 novels, a large number of pairs of gloves and some bottles of eau-de-Cologne. As some of the latter items indicate, the L.T.S. absentees include a number of the gentler sex, and thanks to the popularity of service with the "W.A.A.C." that number is growing daily. Letters of acknowledgment coming to hand from the recipients are now circulating amongst the subscribers to the fund, and it is quite clear that the W.A.A.C.'s are a most grateful body, for many of the missives are from these misses. They all write in a most cheerful strain and all say that the new life is agreeing with them—notwithstanding the fact that at the time of writing many of them had to regard washing as a luxury owing to a shortage of water. The ubiquitous nature of the activities of the Y.M.C.A. is once more emphasised by a perusal of these letters, several of which sent by the girls being on paper bearing the well-known heading. All who wrote expressed their satisfaction with the choice of contents and once again the "novel" came in for special commendation; but singularly enough all the telephonists refer to "reading" as an after-duty recreation. This would come as an extraordinary surprise to certain London subscribers, who weary one with the re-iteration of their firm belief that an operator's usual occupation is reading novels and that she answers calls by way of occasional diversion.

As in previous years the letters from the men cover practically every rank from major to cadet, and the methods of address are as diverse as the ranks of the writers. The majority send to their colleagues in bulk or to the Honorary Secretary of the Parcels Fund, but some there be who presumably as a matter of habit address themselves to those in high places of the L.T.S. with a measure of intimacy quite startling to the more modest of those of us remaining at home, who only dare to think of these highly-placed personages as one thinks of the brightest stars in the firmament! Well, well, truly democracy is coming into her own. It is clear that the memory of earlier Christmasses lingers amongst some of the writers, for one refers to a letter which was printed in full in these Notes

two years ago. The reference is quite a happy one, so we will quote it in full:

"Just a line to advise you that I have received in safety the parcel which my colleagues have so kindly sent to me. Unlike the recipient of one of last year's gifts I had not the authority to stop the war whilst I discovered the contents; but I have none the less sampled them and am doubly grateful for them. After umpteen issues of 'Ruby Queen,' 'Trumpeter' and 'Ora,' Blighty cigarettes come as a welcome change, and although jam flows eternal from the factory vats there is a touch of sentiment about a pot from home that gives it a distinctive flavour.

"I have not yet probed into the pages of the book, but I promise you that if the next issue of candles be made before summer suns are glowing I will burn the midnight tallow (guards and other inconvenient things permitting) to devour it.

"Christmas 1917 has disappointed the hopes of Christmas 1916, but I trust that your message of greeting will be prophetic in its termination, and that next year will see us all re-united in commemorating a peace which shall ensure to generations to come uninterrupted enjoyment of that freedom from tyranny and militarism for which so many have made the supreme sacrifice.

"Remember me kindly to all my colleagues and convey to them my very best thanks for their generous gift."

So much for the Christmas parcels. The L.T.S. has just made a collection for comforts for the Post Office Rifles, and although very few of our men are with that Corps the Treasurer of the Funds has been sent a sum of £39 10s. 8d., and during the same month a somewhat similar sum has been subscribed for the Civil Service Lifeboat Fund. It is pleasant to record the fact that notwithstanding the further depletion of the staff the annual collection for the Lifeboat Fund continues an upward curve.

The Telephone and Telegraph Society had their best attended meeting so far this season on Monday, Jan. 21, when an excellent paper was read by Miss McCallum, Chief Supervisor of Gerard, which described a day in the life of a telephone supervisor. The facility with which Miss McCallum writes is well known, and all who have heard her read a paper are well aware how a nicely modulated voice can add to the charm of a well written paper. So it proved on this occasion, and the reader was highly complimented by Mr. Moir and Mr. Newlands, both of whom made extremely happy contributions to the discussion. It was clear that Miss McCallum had put the case irreproachably from the L.T.S. point of view, as in the official phraseology of a much revered branch of the Secretary's Office there was "nothing to add," so far as any representative of the L.T.S. was concerned.

Reference to the last meeting of the Telephonists' Society is held over till next month.

Reverting to the raid just past an interesting incident has come to our knowledge. A telephonist answering a call was greeted by the inquiry "Is the telephone all right?" and on giving a reply in the affirmative she was informed that the building in which it was installed had been entirely demolished. What a testimony to the work of our engineering *confreres*!

## REVIEWS.

*A Short Course in Elementary Mathematics and their Application to Wireless Telegraphy.* By S. J. Willis. Published by The Wireless Press, Limited, Marconi House, Strand, London, W.C. 2. 182 pages. Price 3s. 6d. nett. It is unfortunately a matter of common experience with those who have anything to do with instructing wireless telegraphists in the theoretical side of their profession that very few operators have a knowledge of pure mathematics sufficiently good to enable them to follow the investigation of the problems which are met with in the course of their work.

The present book has been written to overcome this defect, and the author has succeeded in producing a volume which should appeal strongly to the class for which it has been designed.

The author rightly assumes a knowledge of arithmetic and the rudiments of algebra, and begins his book with logarithms and their mechanical application in the slide-rule. The reader is then taken through a course comprising the most useful parts of elementary geometry, algebra, trigonometry, vectors and the



use of squared paper. The book concludes with a brief introduction to the idea of differentiation.

Throughout the book the special needs of the wireless operator have been considered, and we cannot call to mind any other book which, so far as it goes, so well meets these requirements.

It is very probable that further editions of the book will be required. We therefore offer the following suggestions to the author, suggestions which, if adopted, would, in our opinion, still further increase the usefulness of the book to wireless operators.

We think that it would be well if the explanation of the use of anti-logarithms were omitted, and the student taught to use a table of logarithms both for finding the logarithm of a number, and for finding to what number any given logarithm corresponds. If the student should ever have to use the larger tables of logarithms he would have to adopt this method, and there is no reason why he should not use it from the beginning.

We think that the section dealing with simultaneous equations could with advantage be extended to include an explanation of simple determinants, and their application to the solution of such equations. A knowledge of this method would greatly facilitate the student's work in dealing with problems, such as the calculation of the distribution of current in a network of conductors, where fairly complicated simultaneous equations may have to be solved.

The utility of the book to students of wireless telegraphy would be greatly increased if the brief introduction to differentiation given at the end of the chapter on the use of squared paper were expanded into a chapter, which need not be very long, in which sufficient of the elements of the calculus was given to enable the student to follow alternating current and condenser discharge investigations in which calculus methods are employed. Without this knowledge the student has to satisfy himself with involved "elementary" proofs, which, in addition to the waste of time which they necessitate, are seldom so convincing as those in which the easy and flexible methods of the calculus are employed. There is no reason why any wireless telegraphist, after working through this book as it is at present, should not be in a position to follow a chapter on the calculus, dealing with the differentiation of the simple functions with which he would meet with in the course of his work, the meaning of integration and its application to the special problems of the wireless telegraphist, and, finally, the solution of simple differential equations, such as those met with in the investigation of the discharge of a condenser and similar problems. We are speaking from experience. We have recently been teaching calculus work to some wireless operators whose previous mathematical knowledge was limited to very elementary algebra and trigonometry. By the avoidance of all parts of the subject not necessary for the purpose these men had, after only a few weeks tuition, sufficient grasp of the method to be able to make good use of it in their wireless studies, and to prove for themselves many results which otherwise they would have had to accept without demonstration.

We wish it to be clearly understood that in the foregoing remarks we have no wish to depreciate the book under review. It is excellent as it stands, and we only make the above suggestions to indicate how, in our opinion, it could be made still more useful.

#### ENTERTAINMENTS TO WOUNDED AND INVALIDED SOLDIERS \* AT EDINBURGH.

The telephonists of the Central Exchange, Edinburgh, gave a whist drive and musical entertainment to a company of wounded and invalided soldiers on Feb. 16, and the function proved most successful. Mr. and Mrs. Millar were present, and also a number of the supervising staff. Among those contributing to the musical programme were Misses Gray, Maltman and McCall, and Messrs. John King and E. Low, while Misses G. D. Malcolm, M. B. M. Sinclair, E. S. Sinclair, M. M. Anderson, J. M. McDonald and M. S. McCall, all telephonists, provided a very charming little sketch, which was excellently performed and much enjoyed. The arrangements were admirable in all respects, and the soldiers were evidently loth to go back to their hospitals. Such meetings do much to relieve the tedious period of convalescence, and to bring a little brightness into the lives of men who have suffered, and who enjoy but little of the intimate associations of ordinary life. Two of the soldiers contributed to the musical programme. One of them, from far away Alberta, recited "The Hobo," after the style of R. W. Service, and also sang a cowboy song. The telephonists are to be heartily congratulated on the success of the evening.



[From the *Telephone Review*, New York

#### THE TELEPHONE AT THE FRONT.

Telephoning from a Cement Dug-out within 500 yards of the Germans to transmit the orders of the Observation Officers to Gunners and alter the range for the Batteries.

#### "YE MERRIE BUZZERS."

(FROM "CARRYING ON." BY IAN HAY. PUBLISHED BY BLACKWOODS.)

PRACTICALLY all the business of any army in the field is transacted by telephone. If the telephone breaks down, whether by the Act of God or the King's enemies, that business is at a standstill until the telephone is put right again.

\* \* \* \* \*

If you are engaged in battle, and the wires which link up the driving-force in front with the directing-force behind are devastated by a storm of shrapnel, the matter assumes a more—nay, a most—serious aspect. Hence the superlative importance in modern warfare of the Signal Sections of the Royal Engineers, tersely described by the rank and file as "The Buzzers," or the "Iddy-Umpties."

During peace-training, the Buzzer on the whole has a very pleasant time of it. Once he has mastered the mysteries of the Semaphore and Morse codes, the most laborious part of his education is over. Henceforth he spends his days upon some sheltered hillside, in company with one or two congenial spirits, flapping cryptic messages out of a blue-and-white flag at a similar party across the valley.

\* \* \* \* \*

But "oot here" there is no flag-wagging. The Buzzer's first proceeding upon entering the field of active hostilities is to get underground, and stay there.

He is seasoned vessel, the Buzzer of to-day, and a person of marked individuality. He is above all things a man of the world. Sitting day and night in a dug-out, or a cellar, with a telephone receiver clamped to his ear, he sees little, but he hears much, and overhears more. He also speaks a language of his own. His one task in life is to prevent the letter B from sounding like C, or D, or P, or T, or V, over the telephone; so he has perverted the English language to his own uses. He calls B "Beer" and D "Don," and so on. He salutes the rosy dawn as "Akk Emma" and eventide as "Pip Emma." He refers to the letter S as "Esses" in order to distinguish it from F. He has no respect for the most majestic military titles. To him the Deputy-Assistant Director of the Mobile Veterinary Section is merely a lifeless formula, entitled Don Akk Don Emma Vic Esses.

He is also a man of detached mind. The tactical situation does not interest him. His business is to disseminate news not to write leading articles about it. (*O si sic omnes!*) You may be engaged in a life-and-death struggle for the possession of your own parapet with a Boche bombing party, but this does not render you immune from a pink slip from the Signal Section, asking you to state your reasons in writing for having mislaid fourteen pairs of boots, gum, thigh, lately the property of Number Seven Platoon. A famous British soldier tells a story somewhere in his reminiscences of an occasion upon which, in some long-forgotten bush campaign, he had to defend a zareba against a heavy attack. For a time the situation was critical. Help was badly needed, but the telegraph-wire had been cut. Ultimately the attack withered away, and the situation was saved. Almost simultaneously the victorious commander was informed that telegraphic communication with the Base had been restored. A message was already coming through.

"N-ews of reinforcements, I hope!" he remarked to his subordinate.

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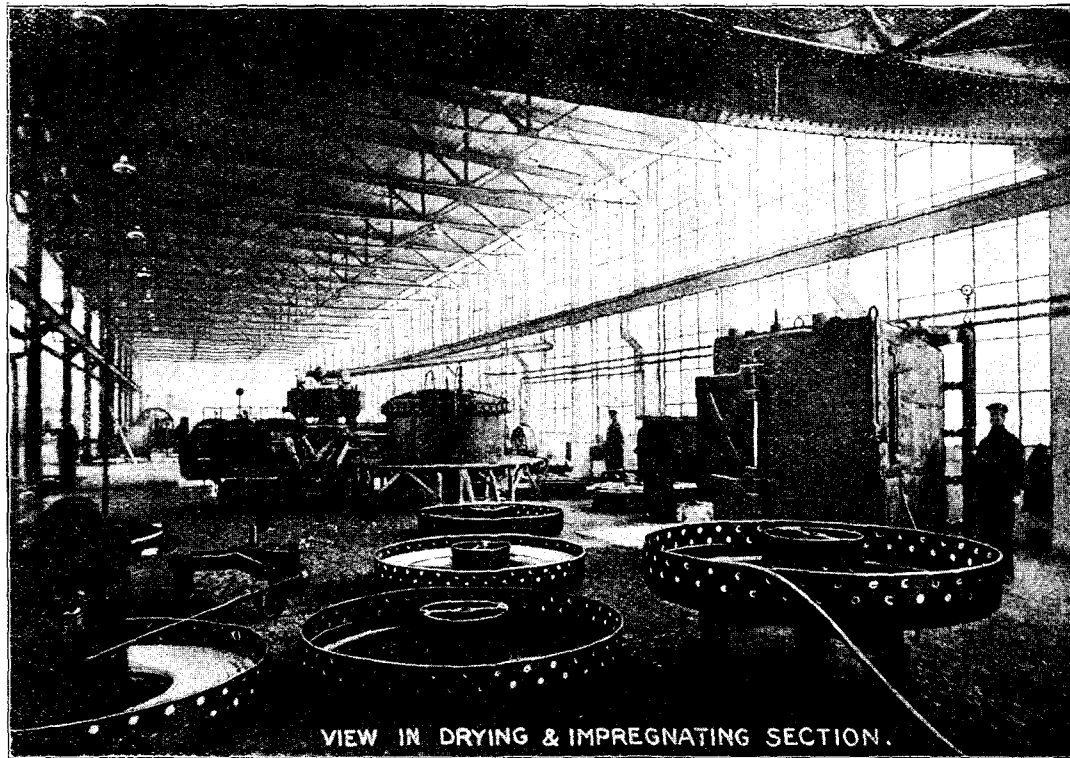
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But his surmise was incorrect. The message said, quite simply :—  
 “Your monthly return of men wishing to change their religion is 24 hours overdue. Please expedite.”

There was a time when one laughed at that anecdote as a playful invention. But we know now that it is true, and we feel a sort of pride in the truly British imperturbability of our official machinery.

Having briefly set forth the character and habits of the Buzzer, we will next proceed to visit the creature in his lair. This is an easy feat. We have only to walk up the communication trench which leads from the reserve line to the firing line. Upon either side of the trench, neatly tacked to the muddy wall by a device of the hairpin variety, run countless insulated wires, clad in coats of various colours and all duly ticketed. These radiate from various Headquarters in the rear to numerous signal stations in the front, and were laid by the signallers themselves. (It is perhaps unnecessary to mention that that single wire running, in defiance of all regulations, across the top of the trench, which neatly tipped your cap off just now, was laid by those playful humorists, the Royal Artillery.) It follows that if we accompany these wires far enough we shall ultimately find ourselves in a signalling station.

Our only difficulty lies in judicious choice, for the wires soon begin to diverge up numerous byways. Some go to the fire-trench, others to the machine-guns, others again to observation posts—whence a hawk-eyed Forward Observing Officer, peering all day through a chink in a tumble-down chimney or sandbagged loophole, is sometimes enabled to flash back the intelligence that he can discern transport upon such a road in rear of the Boche trenches, and will such a battery kindly attend to the matter at once?

However, chance guides us to the Signal dug-out of “A” Company, where, by the best fortune in the world, Private McGurk in person is installed as officiating sprite. Let us render ourselves invisible, sit down beside him, and “tap” his wire.

In the dim and distant days before such phrases as “Boche,” and “T.N.T.” and “munitions” and “economy” were invented; when we lived in houses which possessed roofs, and never dreamed of lying down motionless by the roadside when we heard a taxi-whistle blown thrice, in order to escape the notice of approaching aeroplanes—in short, in the days immediately preceding the war—some of us said in our haste that the London Telephone Service was The Limit. Since then we have made the acquaintance of the military field telephone, and we feel distinctly softened towards the young woman at home who, from her dug-out in “Gerrard” or “Vic.” or “Hop” used to goad us to impotent frenzy. She was at least terse and decided. If you rang her up and asked for a number, she merely replied :—

- (a) “Number engaged,”
- (b) “No reply,”
- (c) “Out of order.”

—as the case might be, and switched you off. After that you took a taxi to the place with which you wished to communicate, and there was an end of the matter. Above all, she never explained, she never wrangled, she spoke tolerably good English, and there was only one of her—or at least she was of a uniform type.

Now, if you put your ear to the receiver of a field telephone, you find yourself, as it were, suddenly thrust into a vast subterranean cavern filled with the wailings of the lost, the babblings of the feeble-minded, and the profanity of the exasperated. If you ask a high caste Buzzer—say, an R.E. Signalling Officer—why this should be so, he will look intensely wise and recite some solemn gibberish about earthed wires and induced currents.

The noises are of two kinds, and one supplements the other. The human voice supplies the libretto, while the accompaniment is provided by a synco-pated and tympanum piercing *ping ping*, suggestive of a giant mosquito singing to its young.

The instrument with which we are contending is capable (in theory) of transmitting a message either telephonically or telegraphically. In practice, this means that the signaller, having wasted ten sulphurous minutes in a useless attempt to convey information through the medium of the human voice, next proceeds, upon the urgent advice of the gentleman at the other end, and to the confusion of all other inhabitants of the cavern, to “buz” it, adapting the dots and dashes of the Morse code to his purpose.

It is believed that the wily Boche, by means of ingenious and delicate instruments, is able to “tap” a certain number of our trench telephone messages. If he does, his daily intelligence report must contain some surprising items of information.

*A propos* of Adjutants and Company Commanders, Private Wamphray, whose acquaintance we made a few pages back, was ultimately relieved of his position as a company signaller, and returned ignominiously to duty, for tactless if justifiable interposition in one of these very dialogues.

It was a dark and cheerless night in mid winter. Ominous noises in front of the Boche wire had raised apprehensive surmises in the breast of Brigade Headquarters. A forward sap was suspected in the region opposite the sector of trenches held by “A” Company. The trenches at this point were barely forty yards apart, and there was a very real danger that Brother Boche might creep under his own wire, and possibly under ours too, and come tumbling over our parapet. To Bobby Little came instructions to send a specially selected patrol out to investigate the matter. Three months ago he would have led the expedition himself. Now, as a full-blown Company Commander, he was officially precluded from exposing his own most responsible person to gratuitous risks. So he chose out that recently joined enthusiast, Angus M'Lachlan, and put him over the parapet on the dark night in question, accompanied by Corporal M'Snape, and two scouts, with orders to probe the mystery to its depth and bring back a full report,

It was a ticklish enterprise. As is frequently the case upon these occasions, nervous tension manifested itself much more seriously at Headquarters than in the front line trenches. The man on the spot is, as a rule, much too busy with the actual execution of the enterprise in hand to distress himself by speculation upon its outcome. It may as well be stated at once that Angus duly returned from his quest with an admirable and reassuring report. But he was a long time absent. Hence this anecdote.

Bobby had strict orders to report all “developments,” as they occurred, to Headquarters by telephone. At half-past eleven that night, as Angus M'Lachlan's colossal form disappeared, crawling, into the blackness of night, his superior officer dutifully rang up Battalion Headquarters, and announced that the venture was launched. It is possible that the Powers behind were in possession of information as to the enemy's intentions, unrevealed to Bobby; for as soon as his opening announcement was received, he was switched right through to a very august Headquarters indeed, and commanded to report direct.

Long-distance telephony in the field involves a considerable amount of “linking up.” Among other slaves of the Buzzer who assisted in establishing the necessary communications upon this occasion was Private Wamphray. For the next hour and a half it was his privilege in his subterranean exchange, to sit, with his receiver clamped to his ear, an unappreciative auditor of dialogues like the following :—

“Is that ‘A’ Company?”

“Yes, sir.”

“Any news of your patrol?”

“No, sir.”

Again, five minutes later :—

“Is that ‘A’ Company?”

“Yes, sir.”

“Has your officer returned yet?”

“No, sir. I will notify you when he does.”

This sort of thing went on until nearly one o'clock in the morning. Towards that hour, Bobby, who was growing really concerned over Angus's prolonged absence, cut short his august interlocutor's fifteenth inquiry and joined his sergeant-major on the firing step. The two had hardly exchanged a few low-pitched sentences when Bobby was summoned back to the telephone.

“Is that Captain Little?”

“Yes, sir.”

“Has your patrol come in?”

“No, sir.”

Captain Little's last answer was delivered in a distinctly insubordinate manner. Feeling slightly relieved, he returned to the firing step. Two minutes later Angus M'Lachlan and his posse rolled over the parapet, safe and sound, and Bobby was able, to his own great content and that of the weary operators along the line, to announce :—

“The patrol has returned, sir, and reports everything quite satisfactory. I am forwarding a detailed statement.”

Then he laid down the receiver with a happy sign, and crawled out of the dug-out on to the duck-board.

“Now we'll have a look round the sentries, Sergeant-Major,” he said. But the pair had hardly rounded three traverses when Bobby was hailed back to the Signal Station.

“Why did you leave the telephone just now?” inquired a cold voice.

“I was going to visit my sentries, sir.”

“But I was speaking to you.”

“I thought you had finished, sir.”

“I had *not* finished. If I had finished, I should have informed you of the fact, and would have said ‘Good night!’”

“How *does* one choke off a tripe merchant of this type?” wondered the exhausted officer.

From the bowels of the earth came the answer to his unspoken question—delivered in a strong Paisley accent :—

“For Goad's sake, kiss him, and say ‘Good Night,’ and hae done with it!”

As already stated, Private Wamphray was returned to his platoon next morning.

POST OFFICE RIFLES FUND.

A very successful concert in aid of Colonel Sir Andrew Ogilvie's Fund for comforts and recreation for the Post Office Rifles was organised by the London Engineering District, and took place in the Dining Hall at the Superintending Engineer's Office, Denman Street on Feb. 8 under the presidency of the superintending Engineer, Mr. A. Moir, O.B.E.

Mr. C. W. Cornwell (chairman), Miss W. E. Allen, Miss A. W. Couper, Messrs. T. A. Claydon, F. A. Curtis, C. A. Edwards, W. R. Penson and C. H. Barrett (hon. secretary and treasurer) were elected by the staff to form the concert committee.

The following artistes, nearly all of whom are employed in the district, kindly contributed towards the programme :—Mesdames R. Hoddinott and D. Martin, Misses M. Arnott, L.G.M., E. M. Cauvin, L. Cutting, I. Howes, E. M. Lowe, Olivia Maude, G. M. Purling, and E. Waller, Messrs. F. G. Bennett, T. A. Claydon, C. W. Cornwell, F. A. Curtis, H. Curtis, A. E. Heydon, A. E. Luxford, A. McGregor, W. R. Penson, Riches, J. Robart and A. A. Turner. Messrs. F. Saunders, H. C. Wilson, E. W. Casserley and H. Curtis ably presided at the piano, and Mr. W. R. Penson acted as musical director.

The whole of the nett proceeds of the concert—amounting to £29 1s. 2d.—have been handed over to the Fund. The concert committee desire to thank all those who assisted in obtaining this satisfactory result,

## TWO GROUPS OF SIGNALLERS IN THE W.A.C. IN FRANCE.



## BELFAST TELEPHONES: WHIST DRIVE AND DANCE IN AID OF POST OFFICE RELIEF FUND.

An extremely enjoyable function took place in Thompson's Restaurant, Belfast, on Feb. 8, when about 200 of the staff and their friends were present. Prizes were provided by a number of very kind friends, and were handed to the winners on behalf of the committee by Mrs. John Lee and Mrs. Archer Smith, as follows:—First lady's (silver backed hand mirror), Miss MacFarlane. Second lady's (silver butter dish and knife), Miss Morton. Third lady's (cut glass bottle of perfume), Mrs. Meharg. Sealed No. (lady's) (small silver chain purse), Miss Nicholl. First gentleman's (silver cigarette case), Lieut. Mawhinney. Second gentleman's (cigarette case), Mr. H. O'Kane. Third gentleman's (box of cigarettes), Mr. R. Bird. Sealed No. gentleman's (Treasury note wallet), Lieut. Matthews.

The ballroom was very tastefully decorated with streamers and flags of the Allies' colours, and the admirable organisation left nothing unprovided for. Credit is due to the committee, which consisted of Miss L. Ahern, Miss M. Petrie and the hon. secretary, Miss R. Ritchie; the last mentioned represents the lady members of the Queen Street staff on the local Post Office Relief Fund Committee, who worked hard to ensure the success of the undertaking. The M.C.'s were Messrs. W. E. Anderson and W. Finlay, and the stewards were Messrs. W. H. Campbell, R. Connor, P. McManon and H. O'Kane. Excellent music was supplied by Mr. Durand's orchestra. It is expected, as a result of the effort, that about £40 will be realised for the Fund, and the Committee are to be congratulated, not only on this result, but on having provided a most popular social evening.

## BIRMINGHAM CENTRAL EXCHANGE OPERATING STAFF'S WHIST DRIVE AND SOCIAL GATHERING FOR WOUNDED SOLDIERS.

SATURDAY, Jan. 19, was for the Central Exchange operating staff something in the nature of a red letter day, as it was, we venture to assert, for 45 wounded soldiers from Dudley Road Military Hospital. Great preparations had been going on for several weeks, entailing much labour, and, let us whisper, a certain amount of worry and anxiety; but it was a labour of love, and carried out cheerfully and enthusiastically by all concerned. It was, moreover, abundantly repaid by the unmistakable enjoyment of the soldiers on the day in question, when they were entertained to a whist drive and social gathering in the Grocery Exchange Restaurant. Mr. Piggott, as Master of Ceremonies, presided over the gathering with tact and humour. After the whist drive and prize distribution a meat tea was provided, followed by a musical entertainment. Mr. Percy Edgar's humorous selections and Miss Hauter's singing may be specially mentioned without detracting from the high standard reached by other contributors to the programme. A weight guessing competition for a nine and a half pound decorated cake caused much interest and excitement. The lucky winner carried off the cake in triumph for the benefit of his ward. The proceedings terminated with coffee and cigars and numerous votes of thanks. The greatest credit is due to Miss Willan and Miss Hopkins, who so ably organised the affair.

E. H. W., Birmingham.

## THE TELEPHONE STAFF HOSPITAL COLLECTIONS.

The annual general meeting in connexion with the Telephone Staff Hospital Collections was held on Wednesday, Feb. 6.

The meeting was well attended. Miss Heap occupied the chair.

Miss Heap was re-elected chairman, Mr. J. Leslie hon. treasurer, and the Misses H. Wormald and A. E. Reekie, joint hon. secretaries.

The following are particulars of the contributions and benefits received during the year 1917:—

	£	s.	d.
Staff collections	819	5	11½
Deducted for printing, stationery and postage	1	8	2
Paid into Hospital Saturday Fund	817	17	9½

This amount was contributed by the following Departments:—

	£	s.	d.		£	s.	d.
Controller's Office	41	8	10	Engineer's (External)	46	7	2½
Exchange Staff	674	12	5½	Electrophone Dept.	0	17	7
Contract Staff	12	0	1	Engineers (Internal)	43	19	9½

Benefits issued by the Fund during 1917:—640.

Private Dentists	284	Orthopaedic Hospitals	2
Dental Hospitals	44	Hospitals for Skin Diseases	10
Surgical Appliances (including Spectacles)	86	Hospitals for Nervous Diseases	5
Ophthalmic Hospitals	45	Hospitals for Diseases of the Chest	13
Ear, Nose and Throat Hospitals	57	Convalescent Homes	15
General Hospitals	35	Sanatoria	4
Women's Hospitals	26	Specialists (half fee)	1
Children's Hospitals	4	Ambulance	1

These letters were distributed between the following Departments:—

Controller's Office	50	Engineers (Internal)	64
Exchange Staff	459	Necessitous Cases outside the Staff	11
Contract Staff	8	Electrophone Dept.	1
Engineers (External)	47		

## PERSONALIA.

## LONDON TRAFFIC STAFF.

Miss A. M. RUFF, an Assistant Supervisor, Class II, has been transferred from Paddington to Dalston Exchange, and was presented with a fitted dressing case from the staff.

Miss E. FULFORD, an Assistant Supervisor, Class II, transferred from Dalston to Central Exchange, was presented by the staff with a clock.

Miss D. M. NICE, Telephonist-on-Allowance, at Reigate Exchange, has resigned to be married. She was presented with a case of fish knives and forks.

Miss J. E. IMPEY, of Central Exchange, loaned to the British Red Cross Society, resigned on account of her forthcoming marriage and was presented by the staff with a breakfast service.

Miss D. G. MOORE, of Museum Exchange, has resigned in view of marriage. She was the recipient of a case of silver tea spoons from the staff.

Miss H. V. WRIGHT, of the Trunk Exchange, has resigned to be married and was presented by her colleagues with cutlery and other useful presents.

Miss B. S. HEWETT, of the Trunk Exchange, has resigned to be married and was presented by the staff with a silver tea service and other useful presents.

Miss M. SALSURY, of the Trunk Exchange, has resigned in view of her approaching marriage. She was presented by her colleagues with cutlery and other useful gifts.

Miss D. BENTLY, of the Trunk Exchange, has resigned on account of marriage. She was the recipient of a silver tea service and many other useful presents.

Miss G. M. WALLIS, of the Trunk Exchange, has resigned in view of her approaching marriage and was presented by the staff with silver tea spoons.

Miss A. M. RICHMOND, of New Cross Exchange, has resigned in view of marriage and was presented by her colleagues with three pictures, pair of vases and 5 o'clock tea cloth.

Miss D. GOLDSMITH, of Putney Exchange, resigned to be married and was the recipient of a tea service from the staff.

Miss D. B. D. CLARK, of Kensington Exchange, has resigned to be married and was presented by her colleagues with a set of cutlery and other gifts.

Miss E. SWANSON, of Kensington Exchange, resigned to be married and was presented by the staff with a tea service and other presents.

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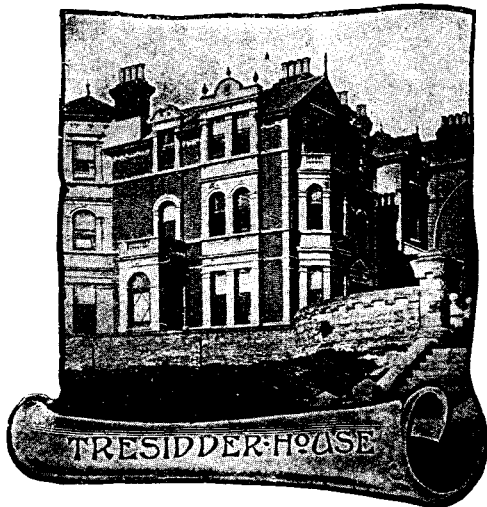
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# THE Telegraph and Telephone Journal.

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### THE PSYCHOLOGY OF TELEPHONY.\*

BY JOHN LEE.

THE true student is always working at experimental psychology. The working of the human mind is the most entrancing subject, and wherever we are we can watch its operations. The waiter in Mr. Bernard Shaw's early comedy asked us all to watch the working of the barrister's brain. But not only barristers have brains, and the true experimentalist will wish to gather his data from a wider field. He will be interested in the human mind normally, so to speak. He will watch carefully when any factor comes into the normal life which will enable him to study the human mind afresh. Now I am about to claim that the telephone is such a factor. It will be my effort to show that some of the fundamental problems of psychology are capable of fresh consideration by reason of the data which the use of the telephone has placed at our disposal. For the telephone was something more than a new instrument of communication; it was a revolutionary change in our method of communication; the telegraph was less revolutionary. The written message still obtained, not essentially different from the written message which we put carefully in an envelope. It was more brief, more blunt. It eschewed the pretty politenesses of the ready letter writer, the "kind regards," the "Yours faithfully," the "best love to all" and "hope to find you well as it leaves me at present." It went to the point without fuss or flummery. But the telephone wrought a revolution. It brought us back to the courtesies of speech; it threw the cumbrous art of handwriting overboard. It called on us to face each other direct and without intermediary, and so it affected our mental relationship. Deep called directly unto deep. And so it came about that the rector of a distant Yorkshire village, what time he spent his leisure making the telephone into a practicable means of day-by-day communication, really wrought more wisely than he knew. He really set out to put the human mind to a severe test, for the human mind had grown accustomed to the written word as its means of communication, and not readily, as I hope you will see, did it fit itself into the new conditions. Telephony is only at the beginning, we have heard again and again, but I think it is nearer the truth to say that the human mind in its appreciation of the differences which have been wrought by telephony is only at the beginning.

To begin with, we have not grasped the central fact that the telephone annihilates distance. Whatever may be our explanation and our theory of the Kantian categories of time and space, the fact remains that the telephone illustrates how deeply the framework of space is upon our minds. It is shown in the first place by the way we bawl into a telephone. That comes from the idea that the person to whom we are speaking is far away. We shout as if we were shouting at them across a valley. The fact is that the people are very near to us. They are so near in fact that in auditory efficiency they are only a few feet. This is proved by the use of the telephone for persons with inefficient hearing, where the telephone actually is only a few feet distance. But our mental framework is such that we cannot bring ourselves to realise that the telephone has annihilated distance, that it has broken down all walls and barriers, that it has given us a whispering nearness to the person to whom we are speaking. Which of us, using the telephone, realises for a moment that our lips are to our friend's ear? That puts in a phrase the fact that we have but little conception of what the telephone has done in the annihilation of space.

Now let us examine the content of this conservative psychology. In

the first place the phraseology which we use is based on the emphasis of distance. It is as though we thought we are still speaking with two tin cans and a drum of parchment, now shouting at the parchment and now turning our mouths away and shouting through the pure air, "Could you hear *that*, Bill?" The favourite phrase is "Are you there?" It is an emphasis of distance, a puerile phrase, an indication of vacuity of mind, for indeed we should shudder if the answer "No!" came along. The word "Hello!" which is regarded with disfavour nowadays, took its origin in the convenient shout which made the hills resound. We need other phrases, but much more than that we need the psychological realisation that the person to whom we are speaking is close by. Until we get this psychological realisation we shall never use the telephone efficiently. No matter how Science may improve it, no matter how clearly and distinctly the newer receiver may give us the distant voice, so long as we have the framework of distance and of wonder as the primary outfit of our minds, just so long shall we shout "Hello!" and "Are you there?" and so long will the telephone continue to be a tin can and a parchment diaphragm.

This conception of distance vanishes from the mind of the expert. I could show you a group of ladies speaking with infinite ease from London to all the great towns of the country. They pass from the Brighton subscriber to the Liverpool subscriber with infinite ease. They speak in a soft, subdued voice, a trained voice, as if they realised the new intimacy. They are not overwhelmed with the wonder of the thing; they are taught to harness the lightning and not to shudder at it. They will say "Liverpool" with a rising inflexion, which means "Please tell me, Liverpool, if you are within earshot"; they will reply "Liverpool" with a falling inflexion which says: "I am in attendance; I am Liverpool and not Newcastle-on-Tyne"; but it does not say or suggest "I am *at* Liverpool, two hundred miles away." That intimate and trusting use of the telephone needs to be cultivated and then the telephone will be really useful, but it is not done in a generation. The framework of mind to which we have grown accustomed is not readily changed. The psychology of adaptation to habit throws its tyranny over us and holds that tyranny fast for many a generation.

This is why we use stilted speech and why we shrink from intimacy. We speak in the mode of the writer rather than in the natural mode of the speaker. We labour under the burden of distance, which is always present with us, and we speak on the telephone, as Queen Victoria said of Mr. Gladstone, just as if we were addressing a public meeting. The personal nature of a telephone conversation has not yet been grasped. Of this fact we can see various evidences. The telephone is used outrageously in the drama. The speakers bellow through the instrument, and their conversation is a repetition of what the other fellow says: "Mayfair 1861, that you Jimmie? Oh, you are going to catch the 12.30 to Bournemouth, are you? Ah, it will be a very pleasant stay. Yes, I like the Royal Hotel, too." There is a typical stage conversation. It includes what Jimmie said and no more. In fact it is designed to convey what Jimmie said and nothing else. It is the crudest of stage conventions. But it is having one more influence in robbing the telephone of its intimacy. After seeing a telephone-play who would trust the instrument with any secret at all? What may thus be said of the drama can be said with redoubled energy of the Kinema. Watch the Kinema actress seize the telephone! Watch her as she brings it to her mouth! You can literally see her shouting into it. If ever there is a time when one rejoices at the silence of the Kinema it is when the telephone is in evidence. Indeed the telephone and its particular utility in disseminating sound has become the very warp and woof of the Kinema drama. And that is not the function of the telephone at all. It is the most secret of all methods of communication. To-day between 10 a.m. and 11 a.m. there were some 20,000 conversations in Belfast. They were intimate and secret. The operators do not listen to them: they have something else to do, for the

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operator's work is so scientifically scheduled that she connects some 240 calls in the hour, and you will at once see that she has little chance of listening, and if she had a chance the one thing she would have no taste for would be to listen. It is safer to speak on the telephone than to speak in a tramcar; it is safer to speak on the telephone than to write. Yet none of us really comprehend the fact.

I am assured that love-making on the telephone is only indulged in by rare souls who have learned to trust the instrument. I heard a story some years ago of a man who was known by all the public (including the telephone staff) to be appallingly in love with his wife; it was in the earlier days. An operator found him speaking to his wife; the temptation was too great and she listened, alas! "And besides," he said, "I think I saw a cobweb over the middle of the sideboard. I'd sack her, if I were you." It was unpoetic; it cured the operator of listening. But if you want evidence on this heading come with me to the realm of fiction. English fiction makes a good deal of the love interest. Yet you never can find an instance of a love scene on the telephone. The young couple will speak by telephone, but it is a chastened and restrained conversation. I saw a novel last year which handled the situation in this somewhat crude fashion: "Molly!" "Yes, dear." "Did you get my letter?" "Yes, what a lovely letter!" "Which part did you like best?" "Oh, the last paragraph, it was lovely." "I'll write again to-night." "Will you say it all over again?" "Yes, dear." "That will be lovely." Personally, I do not believe that such a conversation ever took place; I doubt if any self-respecting telephone would stand it. But it throws a light on telephone psychology. The writer of that novel was perfectly certain that on the telephone you could only hint at what you intended to say, and that the real declaration of one's inner feelings must be under a sealed cover. I shall come back to this aspect of the question later, but this timidity is all a part of the one fundamental characteristic of our use of the telephone—we have not realised that it annihilates distance—we have not realised its beautiful intimacy. Space is part of the framework of our minds, except when dissolved by the faculty of sight. Some telephone philosophers think that we shall never be rid of the disability until seeing by telephone (so to speak) becomes an accomplished fact; just as we read in that ancient classic, the Book of Job, "I have heard of thee by the hearing of the ear, but now mine eye seeth thee." Something has been done in that direction, but not yet is it part of the interchange of communication, and I am afraid that it is not likely to be. We shall have to modify our telephone psychology without the aid of sight, and it will be a good discipline for us.

Much the same might be said as regards time. For some mysterious reason, which I cannot explain, time is always erratic on the telephone. I have had respectable citizens, even ministers of religion, tell me in days gone by that the operator kept them waiting ten minutes. In one case it was a bishop, usually harmless, kindly disposed, and a lover of his kind. He had waited 35 seconds for an answer—too long, we admit, but his conception of the period was amazing. I tried him with my official stop watch, and I asked him to guess the length of certain periods of time both with the telephone in his hand and without the telephone. His guess was wonderfully accurate without the telephone, but with the telephone invariably he quadrupled the time once it got beyond ten seconds. Other citizens are affected in the other direction. They ask for a number; the operator picks up a peg and taps the terminal and finds the number engaged. She conveys the information to the caller. Of course she is quick; she is trained to be quick; we know to the decimal of a second how long it takes her to perform the operation. But I am constantly told that she never tries at all, that she just says "number engaged" out of spite or negligence. And this summary reflection on her honour is always based on the presumption that the interval of time is not sufficient. Now it may as well be said that with the telephone in one's hand the estimate of the lapse of small periods of time is invariably aberrant. Why it should be so I do not know, but I have tried my own estimate again and again and have found it hopelessly wrong. Certainly I am not ready to condemn an operator merely on my own conception of the passage of time; nor am I prepared to pit my conjecture of the passage of time against that of the various appliances given to the operator for making the record, appliances which both indicate the time and check the record. There are circumstances in which three minutes seems to be a desperately short period; I expect the young man and maiden, to whose conversation I have already alluded, would think it had only lasted seconds when, in truth, it ran into tens of minutes. Other types of conversation seem to be prolonged. But the telephone machine is ruthless. Three minutes in its eyes are three single minutes. The operator who asks you to have another call has no interest whatever in cutting you short. She herself has her observers. She is doing her duty under the eyes of strict supervision. She is not knitting, even in days when all the rest of the world is knitting. She is not reading novelettes. She is not talking to her young man, that phantom young man of the subscriber's fancy, for to her the telephone is a professional thing, and even when all the rest of the world does its lovemaking by telephone she will scorn to do so. For to her it is unpoetic, her bread and butter, her craft. To the rest of the world it is an embroidery on life; to her it is life itself. It has modified her conception of space and time in that it has made them real and accurate, the things-in-themselves. The rest of the world are only in process of having its conceptions modified. Psychologically she is in advance of her time.

There are other characteristics. It is strange how numbers are affected by the telephone. New limitations of memory are revealed. The transposition of digits follows broadly certain well-known laws. A subscriber will look at the directory and pick out a number, say 3547. That is a difficult number to remember in the brief period which elapses from the printed page to the telephone. Why? Because the human mind yearns to give the figures in sequence, and it will give them in sequence unless it is watched.

So that 3547 becomes 3457 in, as we may say, the twinkling of an eye. You will all agree that there are certain numbers which will not stick in your memory. There are many instances where subscribers are frequently unable to remember their own numbers. The introduction of the "double" was a help. 3, double 5, 7 is an easy number to remember, for this reason. No doubt some of you have felt aggrieved when we introduced "O" (Oh!) instead of "0" (nought), yet we had reason on our side. It is much easier to articulate "Oh" than "nought"; it is especially to be appreciated in respect of "double oh"; it is a clearer demarcation from 9. A telephone company in the middle West of America once proposed the substitution of "cing" for "five," in order to avoid the old confusion between "9" and "5." That was an heroic suggestion. We have to get over it by teaching the staff the careful articulation of "five"—rather long—and "nine," crisp and sharp. You will notice, though it is not so striking in Belfast as elsewhere, because it is nearer the normal in speech, that our operators roll their r's, that they say "sev—en," that they pronounce the consonants clearly; of course they repeat back the figures, as a safeguard, rather differently from the way in which the subscriber has passed them. All this, you say, has nothing to do with psychology; it is a mere matter of articulation.

But it has a great deal to do with psychology. Do not forget that the telephone is a metallic instrument. It makes its speech by the vibration of a metallic diaphragm. Compare this to the beautiful flexibility of the human instrument and you will realise that the telephone is at a great disadvantage. Moreover there are some sounds which it is said the telephone does not carry at all, such as sibilants. Now here comes in psychology. The telephone auditor, in listening to the sounds which reach his ear has to build them up into the likeness of speech which reaches his ear direct and without the interposition of a metallic diaphragm. There are therefore two arts involved. There is the art of telephone speech, which has acquired by a process largely subconscious the method of masking those sounds which are less efficiently carried by the metallic medium and of slightly emphasising those sounds which are definitely and clearly carried by the medium. There is also the art of telephone hearing by which one learns to rely on the clearer consonants and to fit in the sounds which come less definitely. So it comes about that the person who hears most efficiently on the telephone is not the person whose hearing is the most acute, but he who has reasonably good hearing and who also has the quasi-musical gift of building sounds into sound-phrases, "out of three sounds he makes," as Browning says, "not a fourth sound but a star." Everyone is not equally successful with telephone speech, but it is true to say that far more persons are successful with telephone speech than with telephone hearing. Having said this by way of fundamental, I have to point out that there are further subtleties. In some extraordinary way not yet explicable there are certain sympathies which we have to take into account. Certain speakers appeal to certain hearers. Certain methods of articulation seem to suit certain psychological tendencies in piecing together the sounds which do come and the sounds which do not come. I have known cases where speakers whom I should expect to be perfectly clear on the telephone do not produce this effect at the distant end. Also I have known cases where men whose hearing is thought to be imperfect have shown astonishing skill in being able to interpret methods of articulation which do not suit the metallic medium of the telephone. The fact is that the telephone does not seem to us to be mechanical. We have forgotten that it can only apply the transmission of sounds to human use by means of a mechanical medium. There is a great religious leader who is said to be buried with a telephone in his coffin, readily joined up, to be used in emergencies. That was a profound compliment to the telephone. For that religious leader always asserted the purely spiritual nature of the resurrection, and in doing so he forgot that by installing a telephone he was insisting upon a mechanical means of transmission.

But something more than the voice is carried. Mechanical though the instrument is yet it does convey a conception of character. There are some, though very few, well-authenticated cases of "falling in love," that emotional crisis of which psychologists have given so many and so varied explanations, over the telephone, without any personal or direct acquaintance. The New York Telephone Company tells its operators that the cultivation of a soft voice is a sure way to matrimony and points boldly to statistics which prove the thesis quite as readily as they prove anything else. But it is not the soft voice which alone, to use a colloquialism, "does the trick." There is some intangible method or inexplicable method of conveying the sense of character by telephone. The subscriber sometimes lays down his telephone, smiles benignly, and says "That is a real, nice girl." Of course she is. But why does he say so? He knows nothing of the colour of her hair, the poise of her head, the slow graceful carriage of her body, all so dear to the novelist who describes in his own way the motions of love. She has spoken courteously to him—perhaps to the extent of half-a dozen words, and at once he makes up his mind that if the worst comes to the worst he will take her as a daughter-in-law. He sums up her character in a twinkling, without a shadow of doubt, not caring how she behaves to her brother, what her ideals are for the future government of the world, or how she could make a currant cake, in days, that is, when there were currants. I believe that the arrival of our young women as telephonists in France had a marked influence. Crusty generals adopted almost tender addresses; weather-beaten colonels found the telephone suddenly efficient; subalterns developed new chivalrous instincts. They could not help it, for courtesy and determination to help are infectious. Indeed I could go farther. The telephone reveals character in an amazing way. Ordinary interchange of speech often hides our motives. "We say unkind things in a kind way." But the telephone brings out the hidden springs. John Smith, whom you just know as a decent citizen, cordial and reasonably kindly, is known to be a brute on the telephone. Not that he changes his spots like the leopard, but that the telephone

reveals the spots. There is something to be said, therefore, for the Cupid-blind method of making perfect marriages, not in Heaven, but by the telephone. Only those who do it must trust the telephone absolutely and, as I have shown, it is not easy. For the average man or woman amongst us the telephone will be an enemy to love-making. It will reveal that skeleton in the cupboard of our characters which, at any cost, must remain hidden. The telephone is the Mother Hubbard who goes to the cupboard and finds not merely a bone but the complete skeleton.

There is room yet for a vast amount of research on this subject. Not indeed that those of us who have spent years of our lives associated with telephone practice have ignored the subject. But for the true investigation the student will need a considerable knowledge of the mechanics of voice production and of the science of acoustics. Even so he will be imperfectly equipped unless he has some acquaintance with the modern developments of psychology. For some of the margin of these studies belongs to psychology. You will readily understand now how strange errors occur in telephone speech. There have been instances where whole phrases have been imagined, to use the popular phrase. It is as if the sub-conscious mind, in building up the material which I have indicated, was sometimes urged forward to operate beyond its proper limits. And other senses come into play. I once knew a telephonist who, whenever she had the task of controlling a certain telephone circuit, always declared that she could smell the chemicals, which were notably allowed to escape in the town at the other end. The remedy was simple. A telephonist who had never been in that town was altogether unaware of the smell. Indeed we have found that the active co-operation of the sub-conscious mind in telephone operating has produced the most curious results. It has not had the check which vision places upon it and in some temperaments has been rather inclined to lead to difficulties. But you must remember that in saying this we are dealing with a twilight realm. The simple fact is that clear enunciation of consonants reduces this twilight realm to very small dimensions. The experienced auditor, using reasonable care, reduces the possibility of error to almost a negligible degree. In that division of the Head Post Office where telegrams are accepted by telephone—the most severe ordeal to which the telephone is subjected—there is a singularly small proportion of error. Of course we take special pains and it is a subject which is always being studied, but in the main it is true to say that the errors are no more numerous than in the case of telegraphs proper. And it has long been known that even in respect of telegraph symbols, clear and definite though they appear to be, psychological factors have their place in the accuracy of signalling and receiving.

The new science of experimental psychology is making big demands upon us to-day. Even vast wars are influenced by psychological means: the temperament of nations is regarded as a proper field for the operation of suggestion, and it looks as if the might of arms were within the influence of psychology to some extent which we cannot estimate. From great things we come to small, and I claim that if we are to use the telephone efficiently we cannot despise the close study of these psychological factors. If we kept some sort of open mind on this subject, some sort of tolerant expectation of more light, we should be less prone, at times, to lose our tempers and less prone to blame a body of women who are rendering the public really faithful and zealous service. For the greatest beauty of the telephone lies in the fact that it makes a corporate demand. The best telephone in the world cannot give an efficient service to the man who does not speak clearly to the middle of the diaphragm and does not strive to gather together all the elements of sound which go to make up the speech which is destined for him. The psychology of the telephone is the psychology of mutual dependence. It affects us far more than we suppose. It modifies our speech; it quickens and enlightens our hearing; it sharpens that sub-conscious mind which works ever on our behalf. It shows us that evidence which we take to be certain is not always positive; it warns us that sometimes we err in that unconsciously we have made a mental contribution to contributory facts as they seem objectively to be. It is a check against over-confidence, a guide-post against assertiveness, a builder of character in that we learn the lowliness of the human unit and his dependence upon factors the existence of which he has scorned. Thus I claim for telephony a creditable position in the world of psychological practice. Not yet has it come into its own. Only for some 30 years has it affected on any considerable plane our day-by-day lives. But when the day comes, as come it may soon, for the telephone to be extended so as to fulfil more nearly its proper function, we shall realise how great has been its kingdom over the human mind, for in that day the kingdom of the human mind will have its true place among the realms of earth, its true dignity in the league of nations.

#### CONCERT AT THE POST OFFICE HOSPITAL.

A concert was given at the Post Office Home Hospital, Kensington Palace Gardens, on Friday, March 8. The arrangements were almost entirely carried out by Miss Crowe, of the Main Section, Telephone Branch, but owing to illness she was unable to be present. Miss Ware, however, deputised very successfully, and great credit is due to her for the energy she displayed. Miss Lewis and Mr. Lockyer of the Telephone Branch assisted at the concert, the other artists being, for the most part, professional friends of the staff. Cigarettes were handed round during the evening. At the close the Sergeant addressed a few words of thanks to Miss Crowe and her friends. The contributors to the programme were: Miss Gysberta Lewis (pianoforte solo), Miss Stella Emery, Miss Frederica Conway, Miss Edyth Rhodes, Miss Nora Conway, Miss Vera Lowe and Mr. Gilbert Lockyer (songs), Miss Marion Sinclair (violin solo), Miss Phyllis Le Mesurier (dance), Miss Nora Conway and Mrs. Keyser (recitations), and Misses Lewis, Mayo and Wilmshurst in a trio.

#### WAR DISPATCHES IN ANCIENT AND MODERN TIMES.

OUR enemy contemporary, *Blätter für Post und Telegraphie*, has some articles on the above subject which conclude with the paragraphs we have summarised below. They have a remarkably naive air and seem to call for an inevitable running comment. Though their connexion with telegraph and telephone work is but slender we think they are sufficiently interesting to be presented to our readers.

"The progress of events is notified daily by the German Higher Command. It is generally known that these reports, appearing as a rule about midday, are distinguished by their trustworthiness, and what they contain can be unconditionally relied on. Recently, in addition to the full daily report, an evening report has appeared summarising shortly the principal events of the day. The dissemination of these reports takes place through the newspapers, which obtains them in the quickest possible manner by telegraph and telephone, and are published by means of handbills or, where necessary, in special editions. To reach the inhabitants of places in which no newspapers appear, arrangements are made by which at a certain hour all telegraph offices of the German empire are notified from Berlin of an extract from the daily report of the Higher Command, which is made public by posters (handbills)."

The article goes on to say that newspaper correspondents are allowed, as far as possible, to penetrate even the front lines in order to witness the "battle joyfulness" of our troops and the hygienic and sanitary arrangements. From time to time representatives of newspapers are afforded opportunities of learning the activities of the army in the field and the conditions at the Front under the guidance of an officer of the general staff. "All reports of occasional or regular correspondents undergo military censorship, not from mistrust of the newspapers, which have shown themselves most self-sacrificing in the service of the Fatherland during the war, but because in many cases it can only be satisfactorily decided from the military side what can be published and what can not." (We know well enough that it is dangerous for German newspapers to be other than "self-sacrificing" in the service of the Fatherland.) Battle painters have received permission to make studies on the field. Large numbers of photographers have been admitted and have developed vigorous activity. (One recalls official pictures of kindly German soldiers dandling orphan Belgian babes.) Good firms have received permission to take cinematographic pictures, whose exhibition in picture houses has made a lively impression.

"In naval warfare, never before of such significance and extent as at present, the sending of newspaper reporters to the scene of action is naturally prohibited by us as by the enemy. Therefore, in general, we receive only the short and sharp reports of the general staff or of the Admiralty concerning the acts and deeds of our Navy, which appear as occasion requires and are published through the Press. Now and then they are complemented (*vervollständigt*) by full official descriptions, as in the case of the Skager-rack battle" ("Complemented" is admirable; if not precisely what is conveyed by *le mot juste* it is a comprehensive and elastic word!).

"The publishing of official reports on the progress of events is customary in the present war by all the combatant parties. Whilst, however, with us the publication of enemy dispatches, often coloured unfavourably to us, or quite incorrect or comprising disfigured statements, is generally allowed, in no enemy country is the publication of official German reports permitted, obviously because it is feared that the facts contained in them would have an unfavourable effect on the morale of the people—certainly the best proof of the supremacy of our arms."

One wonders if the writer ever sees an English newspaper. Does he not rather evolve it, as the traditional German evolved the famous camel, from his inner consciousness?

W. H. G.

## TELEGRAPHIC MEMORABILIA.

As was anticipated in the last issue of this column, the remaining appointments following on the retirement of the Assistant Controller and the Senior Superintendent of the Cable Room have been filled according to the Treasury Minute governing the situation.

Mr. W. T. West steps into the vacancy created by the retirement of Mr. Vandermeulen, so that once more a "Foreign Gallery" man is well to the fore, the new Superintendent having formerly been long associated with "F. G.," as was the case with his former colleague and late chief, Mr. A. Tapley.

One was pleased to see Captain Jayne within the precincts of the G.P.O. once more, if only for a brief respite from the anxieties of the Western Front, and if one was only permitted to worship from afar! Our old C.T.O. friend bore his honours modestly as was always his wont, and those who know him best know also that this attitude of mind is never likely to change in one of so genial and so well-controlled a disposition.

Now and again your scribe receives gentle reminders that these memorabilia are, like all things human, most fallible. Since the appearance of last month's issue the writer has, however, been humbled to the dust. A critic who has an awkward knack of looking at Post Office affairs from a non-Post Office point of view upbraided me most severely for "quibbling" over the honours rendered to the Telephone side of the House. "A plague on both your Houses," he says, "why should you people be recognised for simply doing your duty any more than the hundreds and thousands of humble citizens who carry out their allotted tasks in similar dangerous and trying circumstances. What about the tramway men and women, the bus drivers and conductresses, the railway men, the police? What about the—" but I was already convinced that there was very much to be said for this *outside* outlook upon matters, and overwhelmed by my friend's logic as well as by his vehemence I soon cried "Kamerad," and sadly noted the *outside* attitude towards such matters for my future guidance.

A brief sojourn of a couple of hours in the *underground* of a police station (not in the Cells Department, Mr. Editor) during a night-raid, and in the company of a most cheerful troop of boy-scouts, S.B.'s and Specials accentuated even my previous convictions that, "there are others."

In the discussion which followed on Mr. R. W. Weightman's paper on "Colonial Telegraphs and Telephones," read before the I.E.E. some considerable time ago, to which paper I have previously alluded, the Controller of the C.T.O. made some interesting comments, which owing to war pressure appear only quite recently to have become available. In the judgment of Mr. Newlands, "the proper sphere of a high-speed system such as the Wheatstone with or without printing adjuncts lies in its utility in the treatment of Press work, also in its usefulness in sudden emergencies such as breakdowns," but that, "for an ideal means of coping with a large traffic in public telegrams between two large centres the duplex Baudot with its multiple channels available at will stands easily in the foremost rank. It is sure and certain; it is far less costly to maintain, the staff like the style of working, and the apparatus can be safely left in their hands provided one or more of them be trained to act as a competent *dirigreur*. Certain other systems require far too frequently the attention either of skilled mechanics or even the time and attention of more costly engineers. These are very vital and important factors. The duplex Baudot is largely used in London up to quadruple, quintuple, and sextuple, this giving 8, 10 and 12 working channels respectively. It has practically displaced all other systems of working to and from the continent of Europe. It may therefore be said with truth that it has demonstrated its extreme suitability to meet all the requirements of the British postal telegraph service. By and by it will be provided with a keyboard perforator and its working speed will then be considerably increased. Later on, the French practice of utilising the Baudot to serve three or more offices on one extended circuit will be found most useful for linking up with a far more satisfactory service many of the large provincial centres in Great Britain."

It is an open secret that the present year will see yet further *extensions* of the Baudot, if not of the two last-mentioned *developments* of the system. It is also understood that the French administration is becoming something of an enthusiast in the matter of duplex working of this form of multiplex, despite the more difficult type of line upon which in the present circumstances the international and internal communications are necessarily worked.

I have before referred to the excellent work put into the installation of Baudot multiplex apparatus by the best type of Post Office mechanic, and with the knowledge of all that these officers have done, and all they have yet to do in these days of extended duties and war-time conditions, I would most humbly suggest to the powers that be whether these very practical evidences of competency should not be accepted as in some measure discounting the necessity for the possession of the necessary technical certificates which time and opportunity alone prevents them from obtaining as a stepping stone to higher things.

Now to a matter of more local interest and yet even national in character. It was surprising to learn at a very recent meeting of the C.T.O. Committee of the Post Office Relief Fund that the subscriptions had fallen off in the C.T.O. London by something like 5 per cent. I have no influence. This is readily recognised, but I could wish that every C.T.O. man and woman could be so placed that they were able to read through and investigate the various cases of distress and hardship brought before the Committee from time to time. That would open purses wide. It would open purses wider still if all could read the grateful letters received by those who have been helped, full of stately independence some of them, touched with human pathos and pain, always apologetic for the *trouble* caused but *never containing a single grumble*.

It can be confidently stated that no case is permitted to come upon the Fund unless the War Office and its kindred departments have done or intend to do their full legal duty by the dependants, but the many and various cases for which no official regulation or foresight of Acts of Parliament could possibly provide, but which are steadily and tactfully met, as these obscure but very real tragedies arise, are in themselves the completest answer to those who doubt the necessity of the Fund. Some of the very circumstances themselves would be quite un-understandable by any committee not conversant with Post Office usage and would probably be set aside from an outside view-point as "No case."

It is hard to credit the rumour, but some of the shortage of local income appears to be due to reduced subscriptions, and that not always from the poorest of the subscribers to the Fund. Wherever the cause may rest, the remedy is surely with some of us to increase, be it by ever so little our quota to this laudable cause. Even the gentle pressure which Mr. Ferard manages to apply so ably to other Government Departments on behalf of the applicants is worth the odd halfpence which are deducted from pay, and whether this mean one less stall at a theatre or one sixpenny seat less at the Cinema really does not enter into the essence of the matter. Forgive this screed, kindly readers. It is the heroism of the silent sufferers of the war that prompts this all too feeble appeal.

J. J. T.

## LONDON TELEPHONE SERVICE NOTES.

In our February issue we read of those of our number on whom the King has been pleased to confer medals of the Order of the British Empire for their services to the community in the times of danger which accompany the existing war conditions. The recipients are representatives of the majority of telephonists who have "carried on" in the past and have volunteered to "carry on" in the future and who will ensure that, as far as lies in their power, the vital needs of the community in times of air raids shall not lack telephonic communication. About 75 per cent. of the staff have expressed their willingness to remain in the switchrooms when necessary throughout an air raid for the purpose of attending

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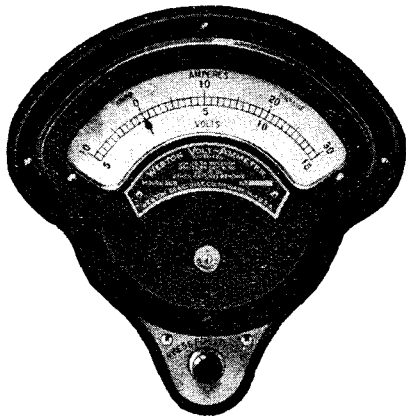
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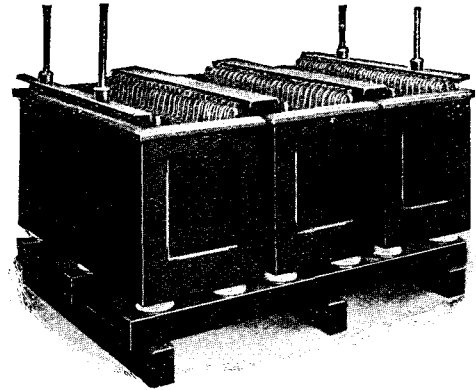
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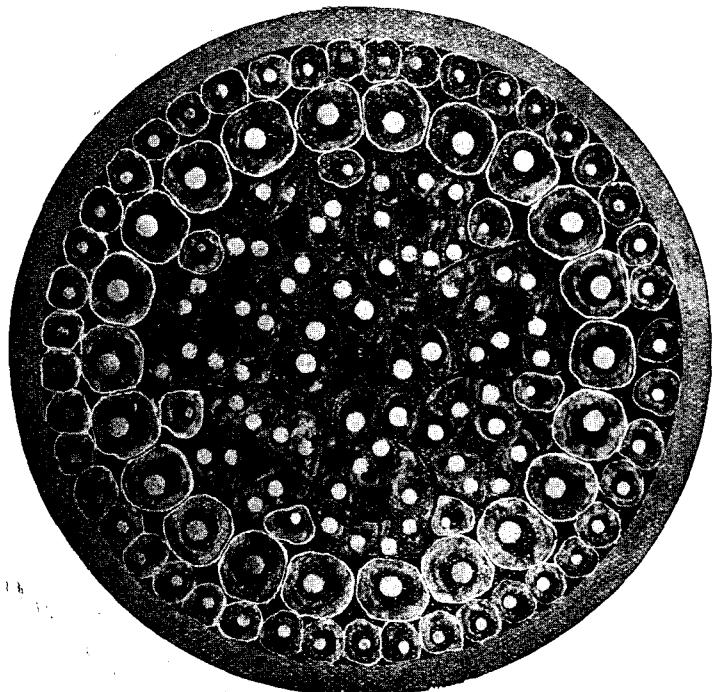
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to urgent calls. So large a proportion will of course not be required on any one occasion and officers in charge may find themselves confronted with the necessity for drawing lots to decide who shall hold the fort. One may recognise these volunteers by the badge



they will wear. It has been specially designed for the purpose and a photograph of it will be found inset in this column. The distribution is in progress and many exchanges have received their quota. Some of the badges were actually given out on the occasion of a recent raid.

We have heard of several suggestions as to the significance of the letters on these badges, but our readers need not heed them all. The following one, however, seems worthy of record:—"An Immediate Response Reaches All Important Demands."

Amongst those who have left us during the past month is Miss Hough, Chief Supervisor of the Trunk Exchange. She has been loaned to the Ministry of Pensions, not, we are told, "for the period," but for the comparatively short space of one month. Whether or not that be so, we wish her every success in her new sphere. She has not said good-bye, for, like others who have left us temporarily for pastures new, her gaze is on the happy day when she will renew her activities in the L.T.S.

The final meeting of this session of the London Telephonists' Society was held on the March 13, when prize papers were read by Miss J. M. McMillan (Traffic Branch), whose subject was "The Call," and by Miss A. E. Carpenter, who chose the title "Cheerfulness." We hope to see both papers in these columns at some future date.

Miss I. Hatherley added considerably to the pleasure of the evening by her rendering of the Trial Scene from the *Merchant of Venice*. That Miss Hatherley's recitation was appreciated was abundantly demonstrated by the acclamation accorded to her. The prizes awarded in the competitions were distributed by Mr. J. F. Edmonds, M.B.E., to whom a vote of thanks was proposed by Miss Ashmead and seconded by Mr. Townsend. The foregoing items had occupied a considerable portion of the evening and little time remained for the reading of letters from telephonists in France. An excellent letter was however read from Miss Mitchell, formerly of Museum Exchange. The letters prove very interesting reading. Several refer to the enjoyment of real white bread. All mention the good food, the efforts made for their comfort and the pleasant recreation provided in many cases by their male colleagues of the Signal Service. It is very gratifying to read the universal expressions of contentment and happiness and the resolve to do their "bit." One writes concerning the rumours which have been current in this country reflecting on the conduct of the W.A.A.C.'s. She denies the rumours in dignified terms, and she and her colleagues can rest assured that there is no need for the denial so far as we are concerned, and that we feel that the banner of womanhood is safe in their hands.

The meeting concluded with the election of officers for the next session. Mr. W. A. Valentine becomes the new president in place of Miss Hooper, who retires. Miss Hooper was accorded a special vote of thanks, and the Society congratulates itself on the conclusion of another successful session.

The many friends of Sergeant A. E. Ware, A.S.C., who, until he transferred his activities to the country's supreme cause, was Exchange Manager at East, will be pleased to hear of his marriage, which took place at Barking on March 14. The bride was Miss A. Jelly, formerly of the East Exchange staff. Our congratulations and good wishes go out to both, and we trust that ere long they will be able to enjoy those home comforts of which this war has deprived so many. The presents included a silver cake basket from the staff at East Exchange and District.

## ENTERTAINMENT TO WOUNDED SOLDIERS BY BATTERSEA EXCHANGE STAFF.

Wounded soldiers from Cedars Road Hospital were entertained at tea and concert at St. Barnabas Hall, Clapham, by the Battersea Exchange Staff on Saturday, Jan. 26.

Everything was made as bright as possible for the wounded guests. The tables were literally smothered with all sorts of good things, and floral decorations gave just the little touch of colour necessary to relieve the snowy whiteness of the cloths. The stage, too, was prettily decorated with flags, ivy and box hedge.

On the stroke of 2 p.m. strains of lively music greeted the wounded guests. As each soldier passed through the door he was presented with a programme of the afternoon and evening and a small diamond shaped card with the name of a flower printed thereon, and corner wise were tied ribbons to match identically with the flower shown. For this novel ideal of pairing partners one has to thank the Misses F. A. Sprang and E. B. Johnson. The cards were duplicated, the corresponding ones being given to the girls, each girl then having to go round in search of her partner. The idea of this of course was to put the guests at their ease.



"THE EVERGREENS," BATTERSEA EXCHANGE CONCERT PARTY.

Originality and daintiness describes the programmes, which were designed and printed by Miss A. K. Haselton, all were done by hand and no two were alike.

At 2.30 "The Evergreens" Concert Party, composed of supervisors and telephonists of the Exchange, opened the concert with a bright and cheery opening chorus, "The Entertainment Stores," which brought forth loud applause.

"The Evergreens'" costumes were designed and cut out by Miss R. Puell, and smartness, taste and talent were here displayed.

Three-quarters of an hour was now given for tea and everyone set to with real vigour, the repast being enjoyed by all.

After tea there were competitions for the guests, and suitable prizes were given. Following this came the second part of the programme.

The artists here, as "The Evergreens," in the first part received a great ovation and far surpassed all expectations. The performers in the two parts of the programme were Misses L. Smith, K. Gower, N. Riches, K. Money, E. Lane, M. Duglison, V. Collis, O. Endean, P. Francis, Messrs. Roberts, Jacobs, Stanley and Williams (vocalists), and Misses D. Holmes, Agate, M. Collis and Mr. Hinshelwood (pianists).

Thanks are due to the committee who worked untiringly all through and the success of the whole affair was the hearty co-operation of all.

### THE TRAFFIC DEPARTMENT.

OF the numberless disadvantages we have suffered through the war, one, although it may appear insignificant to many, is the arrest of the development of the Traffic Department. A combined Telegraph and Telephone Traffic Branch has been organised at Headquarters, and, doubtless, but for the war, definite steps would have been taken ere now to extend the combination throughout the country. There is still, I believe, some uncertainty in certain quarters regarding the real purpose of the new organisation, and it may not be uninteresting to suggest briefly what a combined Telegraph and Telephone Traffic Branch in the Provinces could achieve. Now, the activity which is mainly tending to draw the Telegraph and Telephone Services closer together is the development of the telephoning of telegrams between subscribers and the Department, and between telegraph offices. This work is partly telegraph and partly telephone work, and its future success is largely, if not wholly, dependent on complete co-operation between the two services in guiding its development. The proper handling of phonogram and telephone-telegram work requires a combination of the telegraph and telephone knowledge, which exists in a very high degree in the two services. In previous articles I have ventured to outline the kind of training which staff employed on phonogram and telephone-telegram duties require, and also what might be done in the matter of supplying more suitable apparatus for the work; but the one great step, which would speedily advance the ideals, which I, in common with many Telegraph and Telephone officers, have in view, is the early formation in the Provinces of a combined Telegraph and Telephone Traffic Staff. Such a staff, of course, must be a small staff of specialists, the telegraph men dealing with their own peculiar problems, and the telephone men with theirs, and both with general traffic problems, such as those associated with the handling of phonogram and telephone-telegram work, and the other telegraph-telephone problems, which are bound to arise as the two sections advance their course of scientific study of traffic. Many, perhaps, are not quite prepared to regard the study of traffic as scientific work, but it will come to be recognised, as time goes on, that the successful and economical handling of traffic demands as carefully applied a scientific method as engineering itself. The truth is that the two kinds of study are complementary. No matter how highly developed the knowledge of apparatus may be, the full advantage of such knowledge will only be secured if it be associated with the study of traffic data on scientific principles. Now the main bases of traffic study are statistical investigation and organisation, and the former should not be perfunctory, nor the latter casual, nor loose. The statistical study should not stop short at the tabulation of simple working averages, but should aim at revealing the general principles underlying the statistical facts obtained, while the organisation should have for its purpose the synthetical arrangement of the various measures which exhaustive investigation of the records of the work suggest. Now, some may think this kind of thing unnecessarily academic, and even abstruse, but it is not so. If this war has taught us anything it has taught us that our National methods have been too casual in some fields. In what we have been pleased to circumscribe as the domain of science, there can be no doubt that we have proved ourselves all but pre-eminent. We can make guns, and ships, and scientific instruments with the best; but in the organisation of administrative concerns we have found that we have had much to learn from others. Is it too much to say that in the Telegraph Service more attention has been bestowed on the study of electrical science than on the scientific organisation and economical management of Telegraph offices? I make no reflection on the splendid efficiency of the Telegraph staff in its study of electrical service, and in its practical work. My plea is that it would be enormously advantageous if as much attention were given to the science which governs organisation as to the science which controls equipment. Under present arrangements it is hardly practicable to do this, and what is needed to make it practicable is the creation of a combined Traffic Branch in every centre. The experience of the Telephone Service has shown that specialisation in traffic study is essential. Let me describe an ideal telephone traffic

staff in a provincial centre. First of all there is the Traffic Superintendent, who does no actual routine work, but studies organisation, and all that it implies; now come the Assistant Traffic Superintendents, who deal with the different kinds of traffic work, such as equipment, loads, staff arrangements, junction and trunk development, switchboard markings, service observation study, and so on. Then there is the clerical traffic staff, who prepare the details of the work of the Department. One officer deals with loads, a second with staffing, a third with complaints of different kinds, a fourth with junction and trunk line facilities, routing arrangements, etc. The combination of various branches of the work under one duty depends on the size of the district. There is an equipment record, which shows the details of the equipment at every exchange, a routing record, which indicates the routing of junction and trunk calls from every exchange, and also indicates the measure of control of trunk calls assumed, a duty record, which indicates the staff required during every half-hour of the day, on the basis of the traffic, scientifically valued, a junction and trunk line record, which gives the traffic carried on each group of trunk and junction lines, and so on. All this is kept up to date, and it is so possible, at a moment's notice, to ascertain the exact position of things in any particular at any exchange.

This, briefly, is the system pursued in a Telephone Traffic office, and in a combined Telegraph and Telephone Traffic Branch the arrangements would be infinitely more diverse and more interesting. Only those who have seen the arrangements in an ideal Traffic Branch can fully realise how enormously useful such an organisation is, and how very important it is that such arrangements should be developed throughout the whole Civil Service. If it was necessary for anyone to be convinced of the efficiency of this system of organisation in peace time, the use of its machinery in the time of war would furnish conclusive evidence of its worth.

Unfortunately this matter cannot be discussed at present, but it may safely be said that Mr. Herbert Samuel knew what he was doing when he relegated certain important war work to the Telephone Service. That work simply could not have been done as it has been done but for the system which prevails in the Traffic Department, and the Government's appreciation of the wonderful work done is not unfitly recorded in the recent recognition of certain officials. It is difficult, then, to resist the idea that a combined Telegraph and Telephone Traffic Department throughout the country is going to be one of the great developments of the near future. Such an organisation would be highly efficient without being oppressive, and economical without being parsimonious. It would open up a vast field of enquiry into the work of the two Services, which is still comparatively unexplored, and serve, by freshness of outlook, born of patient and scientific study, to rehabilitate the enthusiasm of the administration and the staff in their common task.

R. G. D.

#### SHEFFIELD NOTES:

##### THE LATE WILFRID MASON AND LONG WALKS.

It is just over twelve months since Mr. Mason was frozen to death whilst attempting, alone, to cross the Yorkshire and Derbyshire moors, between Hazlehead and Bamford, a distance of sixteen miles. Apart from the heavy snowfalls and extreme frost which made the walk all the more difficult to accomplish, it was inadvisable to attempt this walk alone under any circumstances. It may be of interest, however, to those who knew Mr. Mason, to say that, when about eighteen years old, he started from his home at Pitsmoor, about 4 o'clock one morning, walked to Thorne, called at a relatives, went four miles round the village, and returned home on foot, arriving about 11 p.m., having covered 60 miles, or 3 miles 272 yards per hour for the whole journey. This, perhaps, shows more tenacity and grit than prudence for a youth untrained to attempt such a task.

##### ENTERTAINMENT TO WOUNDED SOLDIERS, KINGSTON.

A very successful social was given by the Kingston and Esher Exchange staffs on Feb. 9, to which a number of wounded soldiers were invited. After a very enjoyable tea—to which the Food Controller was not invited—a musical programme was listened to with much appreciation. The various game and competitions which followed evoked much laughter and merriment, and when with the distribution of prizes the proceedings terminated, all were indeed sorry that such a happy evening had ended.

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Miss N. WARD.



Mr. T. O. LODDER.



Miss A. J. WARD.



Mr. G. G. STODOLLE.





## The Telegraph and Telephone Journal.

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

Editing and Organising	{	MR. JOHN LEE.
Committee		MR. J. W. WISSENDEN.
Managing Editor	-	MR. W. H. GUNSTON.

### NOTICES.

*As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications, together with photographs, diagrams, or other illustrations, should be addressed to him at 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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APRIL, 1918.

No. 43.

### VOCATIONAL TRAINING.

MR. FENTON'S paper, which we publish in this issue, opens up the controversial question of the hour. Those of us who have been long interested in educational matters have seen the question simmering, so to speak, for some years. Experts in pedagogy wrote learned articles upon it; professors of education either urged us forward or uttered shrill notes of warning against going forward. Now the subject is in the very foreground and Mr. Fenton does well in urging it upon us. He is himself an expert and an enthusiast. He is not blind to difficulties nor heedless of dangers. But in the main he "plumps," as the Americans say, for the vocational method. Now it is quite possible to be an enthusiast for education without claiming quite so much for the vocational system. We may believe in continuing the education of boys to a later age than at present; we may believe in the use of compulsion for continuation schools, and even yet we may not accept the vocational theory. For, on the other hand, it may be urged that it is not always well for us to be occupied in close relation to our day-by-day work, that education might be of more value which enabled the mind to be recreative, that true vocation comes not by seeking, and that, when all is said, in any social organism yet discovered precious few are able to follow their vocations. There are eminent barristers who are confident that they would be more eminent scientists, if only they had the opportunity, and politicians who imagine themselves to be geniuses in all sorts of other callings.

This is the issue. Which is the preferable side? Probably there is a half-way house. We have to realise that the industrial international competition, to which Mr. Fenton refers, is inevitable. We can only bear our part to "restore and make secure our position as the nation foremost in the peaceful path of industry" by seeking the best equipment for everyone concerned. The very fact that vocational education has been so extensively adopted in Germany forces it upon us willy-nilly. But we might easily exaggerate

the importance of the German method, just as we might easily overestimate its uniformity. There were instances in Germany where the greatest care was taken to balance the two methods, where continuation classes were arranged to include subjects of wider scope than the purely practical subjects, where in fact university teaching ran side by side with technical training in many cases.

It is probable that Mr. Fenton's paper would have represented this other aspect had it been delivered before a different audience. In a sense the Telephone and Telegraph Society represents the technical side rather than that of the liberal outlook or enlightenment for its own sake, and that must be so by the nature of the case. A paper which gives us so wide a vision as Mr. Fenton's affords must raise many and conflicting reflections. That he has given us his case with such balance and frankness is not the smallest merit of a contribution to what is likely to be the question of questions in the immediate future.

### HIC ET UBIQUE.

THE last report issued by the Post Office Relief Fund is too long for insertion in our columns. Moreover, as it has been published in the Post Office circular most of our readers will have seen it. It contains the usual record of good and useful work to which we are by now accustomed. We wish, however, to give prominence to the following paragraph and to express our hope and belief that the necessary support will be forthcoming:—

The Committee are satisfied that the amount of money shown as already invested is sufficient only to meet liabilities incurred up to August 31, 1917. Since that date the average number of new claims in deceased cases has considerably increased, and still more money will be required for the future. The Committee trust that local Committees will do their utmost to secure fresh support, and that every man and woman in the Post Office Service who does not now contribute to the Fund will immediately become a subscriber.

THE *Daily News* in the course of some remarks on life in Turkey and the progress of the New Woman movement there says:

"In Turkey, of course, such movements progress slowly. The efficiency displayed by the Turkish girl telephone operators is helping to break down old prejudices against female labour. The Turkish 'holloa girl' is extraordinarily alert. I have used the telephone in half-a-dozen European capitals, yet I experienced less difficulty in getting a communication in Turkey than in any one of them."

This, of course, is chiefly due to the pioneer work performed by Miss Minter (formerly of the National Telephone Company) for the Constantinople Telephone Company.

WE congratulate Sergeant F. H. Smith, of Lincoln, on his appointment as Postmaster of Jerusalem. We learn from the *Lincoln News* that Mr. Smith won a three years' scholarship to the Grammar School. During those three years he was prepared by Mr. Reville and the other masters of that period for an appointment in the Post Office, which he obtained, and very soon by careful and diligent work found promotion to the Postal Telegraph department.

In November, 1914, three months after war broke out, he "joined up," and after training was sent to France. From there he followed the fortunes of the Army, doing his bit in the Dardanelles, in Egypt, and in Palestine, and has recently had bestowed upon him, to use his own words in his letter, "the unique honour of being the first British Postmaster of Jerusalem."

Sergeant F. H. Smith is only 24 years old.

ACCORDING to the *Yorkshire Weekly Post*, a telephone subscriber in Newark asked his operator to ring his bell in three minutes, and immediately hung up his receiver. At the appointed time the supervisor rang on the line, and the subscriber responded merely with "Thank you." Later he called again to thank the operator, and explained that he had been boiling eggs and wanted to time them.

This kind of telephone "stunt," if we may so express it, is quite common in America. It is certainly new to the telephone practice of this country, and we hope there will not be an epidemic of it.

A PRINTER'S error and some inaccuracies in the shillings crept into the paragraph dealing with the English equivalents of the new Austrian Telephone Rates in our article last month. The correct figures are:—

	Class A.			Class B.			Class C.		
	£	s.	d.	£	s.	d.	£	s.	d.
Group I ... ..	20	17	0	16	13	0	12	10	0
Group II ... ..	16	13	0	13	7	0	10	0	0
Group III ... ..	13	7	0	10	17	0	8	7	0

THE *Western Union News* gives some recent figures of high-speed in telegraph work at Dallas, Texas:—

During a recent cold snap a good deal of wire trouble developed, causing the shortage of several important trunk circuits. In order to handle the traffic promptly our operating forces let out a few links in their speed limits, and when the day's rush was over, it was found that Operator Paine, who works the Dallas end of the first Dallas-New Orleans local, had averaged 103 messages per hour for nine hours. Several other records were hung up for operators to shoot at in the future. The automatic department reported that 757 numbers were sent to Oklahoma City between 8 a.m. and 3.35 p.m.

THE terrible explosion in the harbour of Halifax, Nova Scotia, says the *Pacific Telephone Magazine*, which occurred on Dec. 6, levelling a large area of that city and destroying hundreds of lives, furnished another demonstration of the value of the telephone



MR. ROBERT STEWART, M.B.E.

in emergencies and of the loyalty and efficiency of telephone people at such times. In spite of damaged exchanges and destroyed outside plant, the telephone forces worked night and day through violent storm and regardless of individual distress to place their stricken city in touch with the outside world and to further the work of restoration and relief. Many of the operators were left homeless, and out of the 165 employed at the time of the disaster two lost their lives, both, however, being at their respective homes at the time of the catastrophe.

WE are glad to be able to publish portraits of some more recipients of War honours. Mr. Robert Stewart's portrait is inset here, and a group of telephonists, inspectors and others who have received medals is given elsewhere.

HASTINGS HOLIDAY HOME.

We are informed by this institution, which is a holiday home for Lady Sunday School Teachers under the auspices of the Sunday School Union, that they are prepared to accept as visitors telephonists and women telegraphists and clerks in the employ of the Post Office on the same terms as teachers of unconnected schools, viz., at 20s. a week, covering all expenses, except laundry. Full particulars may be obtained from Mr. T. Hume, the Hon. Secretary, The Sunday School Union, 56, Old Bailey, E.C.

THE VOCATIONAL TRAINING OF BOYS.\*

BY C. E. FENTON, M.B.E. (*Staff Officer, Post Office Stores Department*).

VOCATIONAL training is one of the most important national questions of the day, associated as it is with the problems arising in connexion with re-construction after the war. In dealing with the boy I am not of course overlooking the importance of training the girl. Girls can, with training, perform certain kinds of industrial work with success equal to that of boys, and not infrequently better. This side of the question possesses considerable fascination but does not come within the scope of my paper.

I propose to deal with the question mainly from the industrial standpoint, and, for convenience, I have divided it into three parts:—

- The present national position;
- The position of other nations; and
- The probable future developments.

Whilst in conclusion you may perhaps be interested to hear what the Post Office Stores Department is doing in its factories, in the matter of training boys.

In examining the present national position, it will be well to remember that, as a result of the rapid strides made in science, the character of industries has changed. Machines have largely displaced craftsmen, and, concurrently with the decline in handicrafts, the system of apprenticeship has almost disappeared. These influences, together with inadequate methods of training, are largely responsible for the supply of skilled workers being insufficient to meet the needs of industry, unmistakable evidence of which has been forthcoming during the war period.

Educationalists have for many years pressed for educational reforms! Whilst other nations have made great progress in improving their educational systems, we have lagged behind to such an extent that our industrial position amongst the nations is endangered. The position into which we were drifting appears to have been realised before the war, as the question was then engaging the attention of one of the political parties. The war, however, has precipitated matters, and has awakened the national conscience to the necessity for taking more energetic steps to provide ampler facilities for vocational training. It must be admitted that the problem is a complex one, and that its solution presents great difficulties. Many interests are involved, and much thought and time must of necessity be occupied in meeting or overcoming their objections.

The development of the nation's industries depends primarily upon the capacity of the workers and the application of scientific knowledge. It is evident that in future the competition between the industrial nations will be much keener than hitherto, and if we, as a people, are to maintain our position as one of the leading industrial nations, greater facilities must be provided for the training of our workers, whereby their productiveness and efficiency may be increased. The development of industries and progress in vocational training must go hand in hand.

Our technical schools have accomplished much useful work in the past, but their activities have been confined almost entirely to evening classes attended by voluntary pupils. They have prepared the ground and laid the foundations for the great advance which is contemplated.

Private enterprise also has contributed much towards technical education, many large firms and corporations having established schools in connexion with their works. They have recognised the value of vocational training and its effects upon the successful development of their undertakings. The workers, as a result of such training, have become more valuable by reason of their increased skill and capacity. Both employers and employees have benefited as a consequence.

It is only with trained workers and well organised works that manufacturers can hope to secure and maintain a strong position in the coming keen competition for trade.

To enable the nation to maintain its position in the industrial world, it is now an urgent necessity that we increase the efficiency of the whole of the workers. The problem is a national one, and the State must find the solution.

If private enterprise can achieve satisfactory results through the vocational training of its workers, the efforts of the State should, at least, meet with the same measure of success on a larger scale.

At present attendance at school is compulsory, with certain exceptions, until children reach the age of 14; subsequent attendance is voluntary. Between the ages of 14 and 18 only about 20 per cent. are enrolled in day or evening schools and the problem is how to deal with the remaining 80 per cent.

The majority of boys have to make their first all important selection of a vocation at the age of 14, and many of them, unfortunately, without proper guidance. Not infrequently too much consideration is given to the wages attached to a situation, and too little to the greater questions as to whether the conditions of employment are favourable for intellectual development and future advancement, and whether the natural aptitude of the boy lies in a particular direction. Big pay is attractive but often leads to disastrous results. A large proportion of the boys frequently change their employment for the sake of a little extra money, with the result that they become casual unskilled workers.

Through lack of efficient training a large percentage of the boys have no opportunity of developing their natural abilities, and are, consequently,

\* Paper read before the London Telephone and Telegraph Society on March 4, 1918.

handicapped right from the commencement of their careers. The result is that the nation suffers a great loss in productive power.

Voluntary evening classes at technical schools do not appeal to all. There is a minority, it is true, who, urged onward by their own ambition, or through the influence of parents, make sacrifices in order to improve their education, and thus fit themselves for superior positions, but, speaking generally, boys have no inclination for study after a strenuous day's work. I think you will agree that the voluntary system no longer meets the needs of the nation.

\* \* \* \* \*

In reviewing what other nations are doing in connexion with the vocational training of their young workers, it will perhaps suffice if we take the case of Germany, of course before the war.



GROUP OF TEACHERS AT HOLLOWAY FACTORY.

The development of trade schools in Germany forms an interesting study. During the eighteenth century it was the custom in parts of Germany to supplement religious instruction in the Sunday schools with practice in writing and reading, but in the nineteenth century the Sunday schools were transformed into Sunday trade schools in which theoretical and technical instruction was given. Some of these Sunday trade schools still survive, but it has become the recognised practice for instruction to be given in the trade schools on week days. In all towns of importance throughout the German States, attendance at a continuation school is compulsory up to



GROUP OF TEACHERS, BIRMINGHAM FACTORY.

the age of 16, 17 or 18, the instruction given averaging 6 hours per week. In the trade continuation schools the lessons occupy from 8 to 12 hours each week for 40 weeks in the year.

The cost is met partly by Government grants and partly by contributions from local sources, and it is to the liberality of the latter that the satisfactory development of the trade schools is mainly attributable.

In addition to these continuation schools, voluntary schools exist for the purpose of training workmen, who have had at least four years' practical

experience, for positions such as foremen in factories. The course occupies from one to two years. The German manufacturers prefer, however, to select their foremen from the most capable men in their works who have been trained as boys in the trade continuation schools.



SCIENCE CLASS AT BIRMINGHAM FACTORY.

The arrangements in connexion with the trade schools of Munich, where vocational training is well developed, are of particular interest.

Boys leave the elementary schools at the age of 14, and, unless they attend the higher schools to prepare for professions, they attend the compulsory continuation schools until they reach the age of 18. After 18 they may, if they so desire, attend the continuation schools on payment of a small fee.

In the compulsory continuation schools the boys receive from 8 to 10 hours' instruction each week, for which purpose 55 trade schools and 11 general schools are provided. Munich has a population of about 600,000.

The trade schools are attended by apprentices, and the general schools by unskilled hands or by apprentices to trades which are too small to warrant a special trade school. A trade school is provided for every trade which has at least 25 apprentices.

An association of employers provides the materials used in the trade schools, assists in the management, and nominates the technical teachers.

The boys spend one whole day or two half-days at school each week. Some employers pay wages for time spent at school; others do not.



TRADE CLASS AT HOLLOWAY FACTORY.

From two to three hours each week are devoted to trade instruction connected with the study of materials, tools and machines. The teaching in drawing and arithmetic is closely associated with the trade instruction. Drawing is confined to articles made in the workshop, the lessons occupying two to three hours per week. In the arithmetic class estimates and costs of each process in the work are prepared, and in this manner the boys are taught not only the value of materials used but also the value of the labour expended upon the work. Calculations are made in connexion with deprecia-

tion of machinery and tools, interest on capital, carriage and general overhead charges. This lesson occupies about one hour per week. When the work is of such a character as to necessitate it, laboratory experiments are carried out by the students.

The lessons in composition and reading occupy at least one hour each week. The composition lessons have a trade bias, and books by the best authors are selected for reading.

One hour per week is devoted to instruction in general knowledge, the subjects taught embracing hygiene, laws relating to employers and employees, trades history, rights and obligations of citizens, and the history of German political and industrial development.

On Sundays games are played, and instruction given in gymnastics.

Other German cities and towns have followed the lead of Munich, and long before the war energetic steps were taken to extend, on the Munich lines, the organisation of trade schools throughout the German States.

For the particulars given regarding the German practice I am indebted to Mr. Scobell Armstrong who has written a pamphlet on the subject published by the Eighty Club.

Passing on to our own national proposals. In April 1916, a Departmental Committee on juvenile education in relation to employment after the war was appointed by the President of the Board of Education, and the question of special training for employment was one which received particular consideration.

The report of the committee was presented in March 1917, and among others, the following recommendations were made bearing directly on the subject of this paper:—

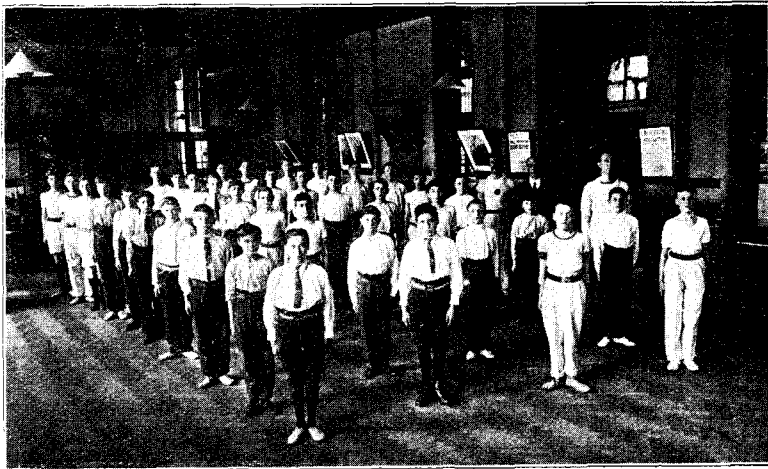
Attendance at elementary schools to be compulsory until 14 years of age.

Provision of suitable continuation classes for young persons between the ages of 14 and 18.

Compulsory attendance, with certain exceptions, of young persons between 14 and 18 years of age at day continuation classes for not less than 8 hours each week for 40 weeks in the year.

Classes to be held between 8 a.m. and 7 p.m.

The Committee suggested that the four years' course for the day continuation classes should be divided into two equal stages. In the first stage, for pupils between 14 and 16, their general education would be continued, some regard, however, being paid to future vocational needs. The second



PHYSICAL TRAINING CLASS.

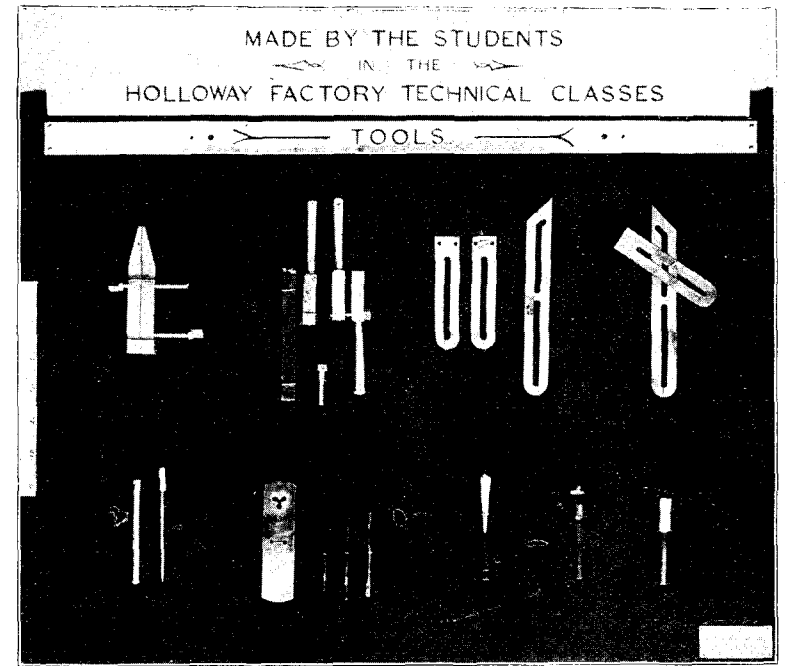
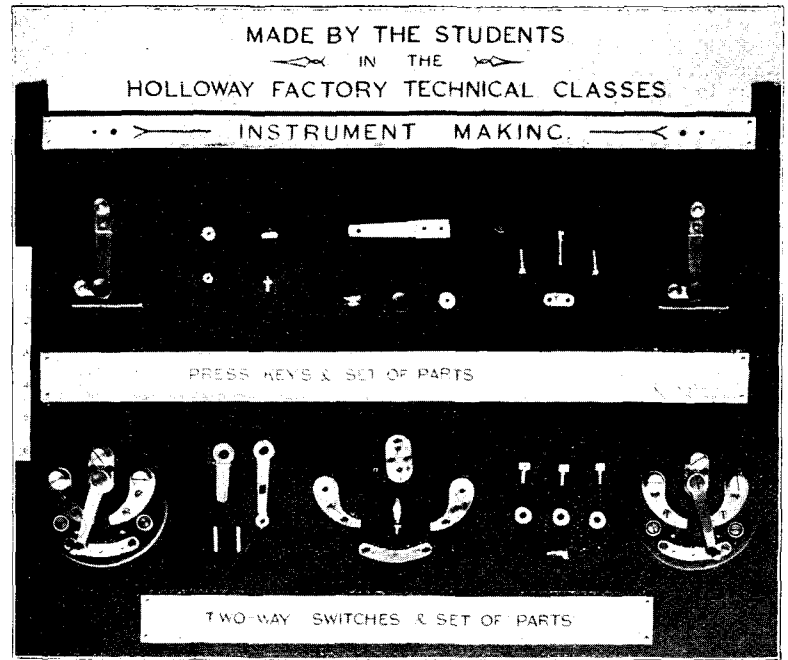
stage, for pupils between 16 and 18, would be devoted mainly to the technical and vocational aspects of training.

Following the Departmental Committee's report, a Bill was introduced in Parliament in August last to provide for increased educational facilities in England and Wales. On the whole the Bill was well received, but certain clauses were objected to by various bodies, and in consequence in December it was allowed to lapse. A new Bill was introduced in January under which extensive powers were sought, amongst them being the establishment and maintenance of sufficient continuation schools in which suitable courses of instruction and physical training would be provided without payment of fees for all young persons who would be required to attend such schools. Under the Bill a "young person" is a person under eighteen years of age, who is no longer a child. As to when a child ceases to be a child and becomes a young person appears to be governed by certain bye-laws; it may be at the age of either 14 or 15 according to locality.

The local education authorities are to be responsible for carrying out the provisions of the Act, subject to their schemes receiving the approval of the Board of Education.

The continuation classes may be held in schools provided by the local education authority, or in schools under their direction established by manufacturers in their works.

The classes are intended to be held between 8 a.m. and 7 p.m., but not on Sundays, holidays or half-holidays. Special provision, however, may be made for young persons employed at night.



Young persons will be under an obligation to attend the classes for 320 hours per year, and employers must permit them to suspend work on any day their attendance is required, not only for the period of the instruction, but also for such other specified part of the day, not exceeding two hours, as the local authority may consider necessary in order that they may be in a fit condition to benefit by such instruction.

The instruction given at the classes will be such as to meet the needs of local industries.

A day is to be appointed by the Board of Education on which the Act is to come into operation, but the appointed day may be varied for different districts.

As it is proposed that the Act should apply only to children under 14 years of age at the time effect is given to the Act, or to young persons who have informed the authorities of their desire to attend continuation schools, four or five years will elapse before the schemes will be fully operative.

The intense interest which is being taken in the Bill by the Trades Union organisations is gratifying. They recognise that the country is ripe for educational reforms, and are giving the Bill their support.

The primary object of the schemes is, of course, the production of good citizens; but as the instruction will have a vocational bias the boys will, because of such training, become more interested in their work, their industrial efficiency will be increased, and their productive capacity will consequently become greater.

In December a Scotch Education Bill was introduced following closely the lines of that for England and Wales, except that the school-leaving age

is to be 15 instead of 14, and that the continuation classes are to be compulsory between 15 and 18, instead of 14 and 18. At the present time, however, Scotland is in a more favourable position than England and Wales, continuation schools, in which trade instruction has been given during working hours to pupils between the ages of 14 and 17, having been established in certain districts for several years.

It will no doubt be urged that the compulsory attendance at the continuation classes will inflict hardship on parents on account of the loss of wages for the periods of instruction, but this point will be settled automatically by the law of supply and demand. I think, however, that it would be good policy on the part of the employers to pay for the time their employees attend classes under the Act, provided evidence of attendance is given. As a rule boys are paid at hourly or weekly rates, but in some industries payment is made by the piece, and it is with the piece workers that difficulties may arise. Employers will derive financial benefit through the increased efficiency of their employees, and in their own interests they should take an active part in the development of trade instruction. The payment for class time would have a beneficial effect upon attendance, and the ultimate cost to the employer would be trifling.

Employers and employees are linked together in common interests, and there should be whole-hearted co-operation between them. To secure this, employers must study the welfare of their employees, special attention being given to the boys.

Under the Bill of 1917 all young persons who may be over 14 years of age on the appointed day were excluded from the right to attend the day continuation classes. It appeared to be a hardship that the young

workers who have assisted their country in work of national importance during the great war should be denied the great privileges provided under the Act, and this has been remedied in the 1918 Bill, by the provision that young persons may be included on giving notice in writing to the authorities.

If the proposals become law, local education authorities will have power to establish, maintain, control and direct classes on premises other than schools. This is an excellent feature, and will doubtless lead to trade schools being more generally established in works and factories. Large employers of labour will do well to embrace the opportunity and arrange schemes suitable for their own particular requirements. Their employees will doubtless take a keener interest in instruction in which special prominence is given to work with which they are directly concerned than they would in instruction framed to cover a group of allied trades.

Instruction in any one trade covers a wide range of subjects, and the pursuit of these affords scope for the gradual development of that general knowledge which is so essential.

The choice of a boy's vocation on leaving school is a difficult problem. As previously mentioned, it is all too frequently left to the boy, and not always with beneficial results either to the boy or to the community. The determining factor should be the boy's natural aptitude, but at the age of 14 this has rarely asserted itself.

Although the instruction at the continuation classes is to have a vocational bias, it will be specialised only for boys between the ages of 16 and 18. Presumably the intention is to give such instruction between the ages of 14 and 16 as will enable the natural aptitude of the boy to freely develop.

I think it very necessary that each boy should be kept under close observation by the teachers during the earlier period, i.e., between the ages of 14 and 16, with the object of discovering the bent of the boy's talents, and the school authority should be in a position, when the boy reaches the age of 16, to advise the parents of the vocations for which he is best fitted. A change in the boy's employment might be involved, but it would be better for the boy to make a wise choice at the age of 16 than to continue in unsuitable employment which might prove a serious handicap to him when he attains manhood.

The aim should be to find employment to fit the boy and then place him in a class where he would receive theoretical and practical instruction connected with his calling.

Unless a boy is following an occupation for which he is fitted and for which he has an inclination, much of the energy expended upon him in the trade class will be wasted. He will be a disappointment, not only to his employer but also to the nation and to himself.

\* \* \* \* \*

I now come to the concluding portion of my paper—the technical training of boys in the Stores Department. While the vocational training of boys in the factories had been sympathetically treated for many years, it received a great impetus in July 1914 from the definite recommendations of the Standing Committee on Boy Labour in the Post Office that the attendance of Stores Department boys at educational classes should be compulsory and that the cost for fees should fall upon the Department. The classes were inaugurated in London and Birmingham in the autumn of 1915, under the control of the local education authorities, for boys up to the age of 17 working in the factories, or qualifying in the depots for transfer to the factories. At the outset the classes were held partly on official premises and partly in adjacent schools, the hours of attendance being six weekly—three in the Department's time (for which payment was made) and three in the boy's own time.

The arrangements during the first session were necessarily experimental, and it soon became evident that the time allotted for instruction was insufficient, and that, for the better co-ordination of the work, it was desirable for the classes to be conducted at one place in each of the centres. Since the commencement of the second session the classes have been held in the factories, whilst the hours of attendance have been extended to eight, three being in the boys' own time.

The compulsory attendance at the classes of all boys entering the service of the Stores Department became a condition of employment in September 1915, and the boys then in the service were expected to attend.

To the parents of the boys in the service letters were addressed by the Controller, explaining the scheme and urging them to encourage their boys to attend the classes regularly. These were followed by a letter to each of the boys outlining the objects of the classes, and impressing upon them the importance of taking the fullest advantage of the splendid opportunity for improvement afforded them; and subsequently the Controller addressed the boys at each centre and explained more fully the aims and objects of the scheme.

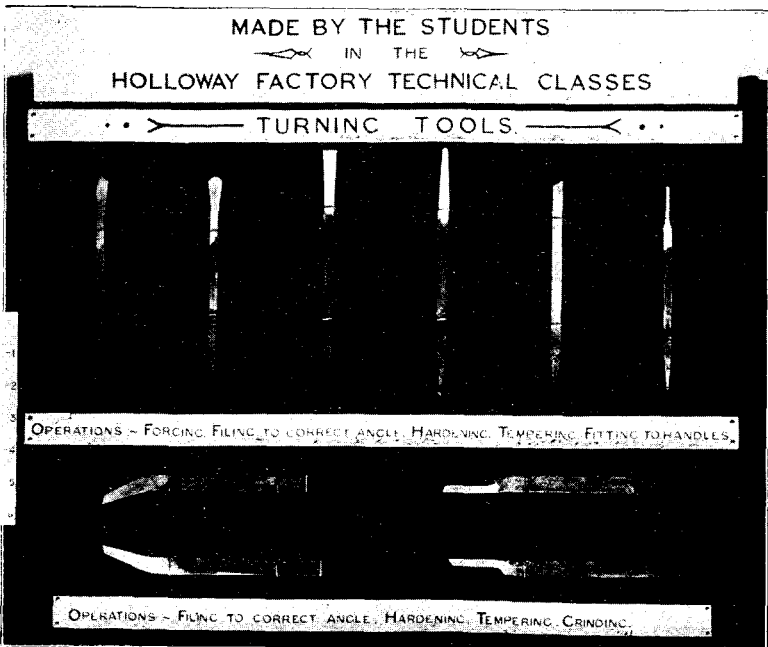
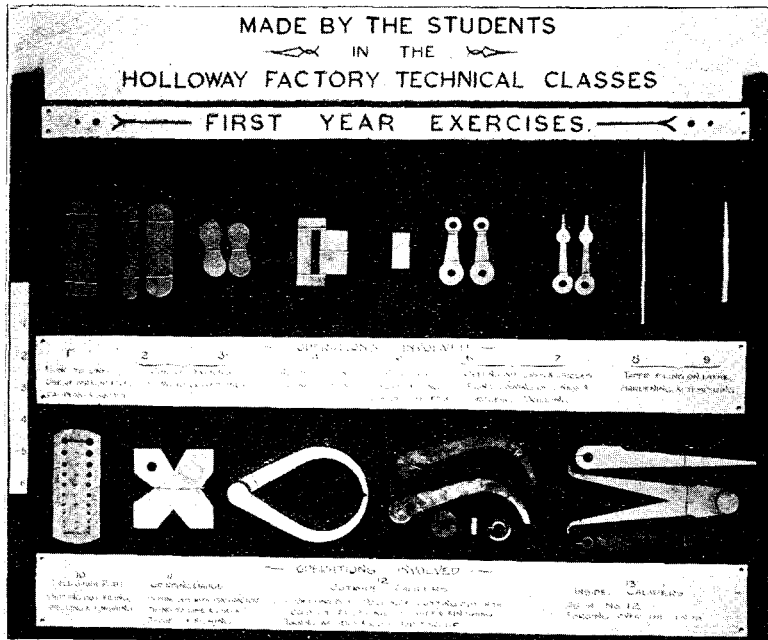
The majority of the boys welcomed the establishment of the classes and showed keen interest, but there was a minority who regarded the scheme with suspicion and dislike, especially that part which necessitated attendance in their own time, and a few went so far as to refuse to attend the classes at all.

The attendance at the classes held in the boys' own time has not been so good as one would wish. The abnormal times involving the necessity for working continuous overtime, the absence in many cases of the father's restraining influence, and the need of the boys' assistance at home, are some of the causes responsible for this. The time tables have been revised recently so as to bring the whole of the classes within the normal hours of duty, but this will be practicable only so long as extended hours are being worked in the factories.

Explanations are required from the boys for absence or misbehaviour, and some of those furnished give food for reflection.

The explanations are carefully considered and investigated, and those which are unsatisfactory are suitably dealt with.

As a rule the boys who show no aptitude for learning lack also the ability



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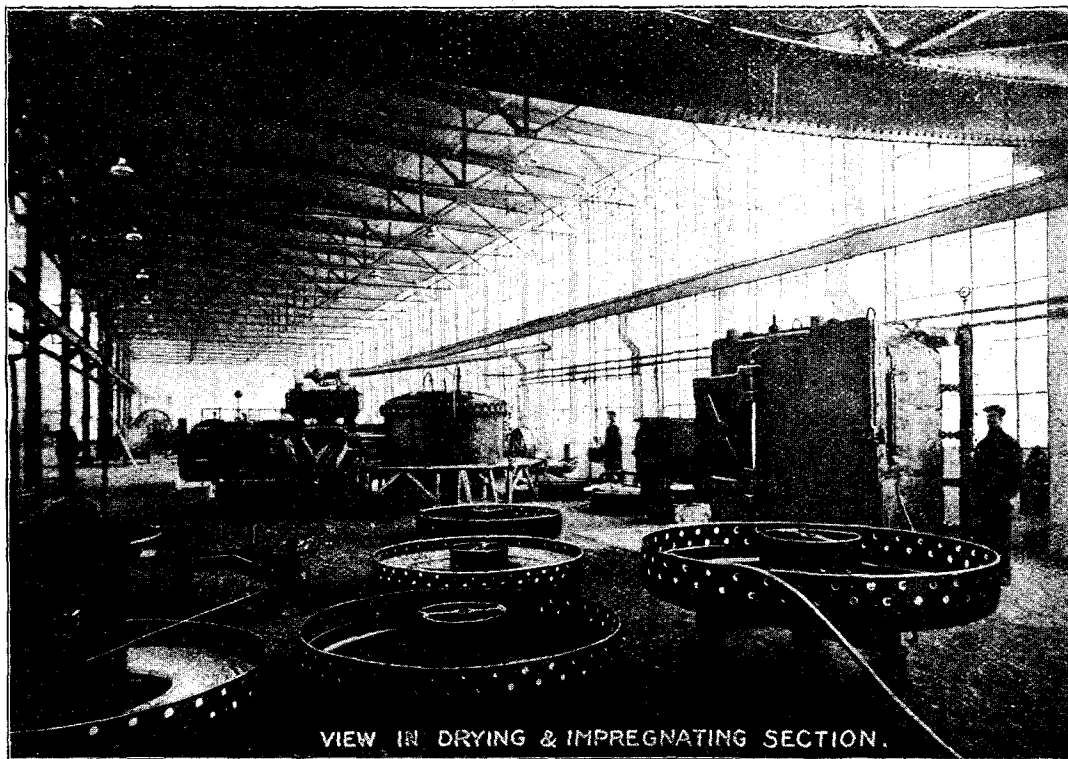
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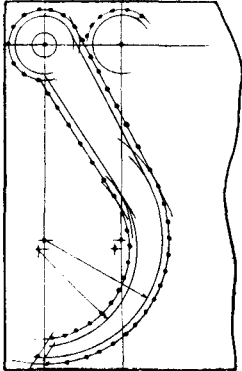
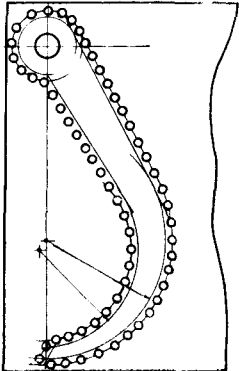
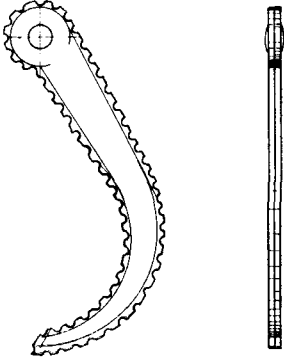
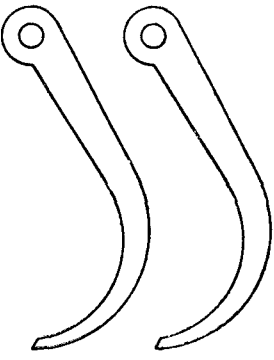
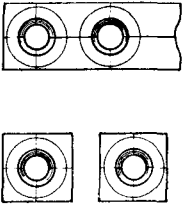



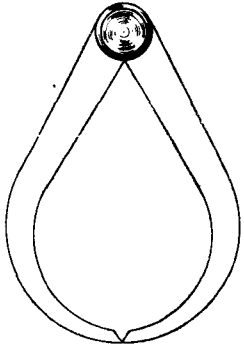
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<p>5<sup>th</sup> OPERATION</p>  <p><i>Mark out washers. Drill and countersink holes and cut off with chisel.</i></p>	<p>6<sup>th</sup> OPERATION</p>  <p><i>File up to outer circle &amp; face up one side.</i></p>	<p>7<sup>th</sup> OPERATION</p>  <p><i>Turn to size in the lathe using a graver. Chamfer the edge with same tool.</i></p>	<p>8<sup>th</sup> OPERATION</p>  <p><i>Turn rivet to size in the lathe and cut off to length.</i></p>	<p>9<sup>th</sup> OPERATION</p>  <p><i>Rivet together on the anvil. Face up washers with file &amp; finish with emery paper.</i></p>

for earning, and if, after a fair trial, they show no signs of improvement, it is intimated to them that they will be free, after one week, to seek other spheres more suited to their peculiar qualifications.

Owing to the labour difficulties incidental to the war, we have been compelled to take on any likely boy who offered himself, but when normal times are again reached we shall, no doubt, be able to revert to our former practice of restricting employment to boys who show signs of natural ability, and are keen on becoming skilled craftsmen.

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**Drawing.**—The boys are first taught the care and use of drawing instruments, followed by instruction in geometric construction and the planning and construction of working drawings of the tools and parts made in the trade classes. The senior boys make complete drawings of the detail and assembly of the piece of apparatus which later on they are to construct.

**Science.**—The principles of electricity and magnetism are taught by means of lectures and practical laboratory work. Carefully graded experiments, each illustrating a fundamental principle, are worked through by each student. These experiments are explained and linked up by the lectures, and the boys are encouraged to think out for themselves many of the problems encountered.

**Tradework.**—The boys are first instructed in the proper use of tools. Their first exercises take the form of a set of carefully graded examples of work with the file—shaping pieces of metal to precise form and dimensions. From this the boys pass to the making of simple hand tools for their own use,



which affords exercises in light forging, filing, hardening and tempering. Later on they construct simple instruments, such as keys and switches for electrical work, which involve a diversity of operations in their production.

*Physical Training.*—The lessons given form a course of progressive exercises which are selected for their nutritive, corrective and developmental effects on the body as a whole. Their object, too, is to foster a spirit of cheerfulness and the qualities of alertness, decision, concentration and perfect control of mind over body. In addition to trunk and limb exercises, instruction is given in jumping, skipping, marching, running and breathing. Each lesson terminates with games.

At Holloway there are seven classes, six being for day-workers and one for night-workers, and at Birmingham there are four for day-workers.

Occasionally the boys, accompanied by their teachers, visit public institutions of educational interest and workshops attached to technical schools.

During the 1915-16 session one of the Holloway boys was successful in obtaining a scholarship giving tuition at the Northampton Institute with a maintenance grant of £3 per year for three years, and in the 1916-17 session six of the Holloway boys were similarly successful.

At Birmingham, the local education authority granted free courses at the Municipal Technical School to two boys at the conclusion of the 1915-16 session and to three at the close of the 1916-17 session.

It must be remembered that the classes were inaugurated, and have been conducted, during abnormal times when all circumstances seemed unfavourable to their development. Nevertheless the results of the two years' work are most encouraging. It is significant that some of the boys on reaching 17 years of age, *i.e.*, when attendance ceases to be compulsory, have asked as a favour to be allowed to continue at the classes, and I need hardly say that their desire has been willingly met. Further, a number of the boys at each centre last year requested that certain of the classes might be continued through the summer months. This was arranged, and no less than 64 Holloway boys and 53 Birmingham boys (*i.e.*, about 50 per cent. of the total number at each centre) entered for a voluntary summer course in their own time.

The boys leaving the classes on reaching the compulsory age limit are interviewed by the teachers, who advise as to the most suitable course for them to take to continue their technical education at outside institutions. At the present time very few act upon the advice given owing to the long hours that are being worked and the possibility of their being called up for military service on reaching the age of 18. When the times are more settled it will be possible to impress more effectively upon each of the boys leaving the classes the advantages of continuing their technical education.

From a factory management point of view, there is one disadvantage incidental to the scheme. The classes, held within working periods, somewhat disorganise the work in the factories—particularly in the machine shops—and the output is adversely affected. In normal times this disadvantage might be less apparent than at present when every ounce of effort is required in order to obtain the largest possible output.

The majority of the teachers and assistant teachers are departmental officers who were nominated by the Controller of the Stores Department. They are experts in their respective branches, are keenly interested in the work, and have, through their personal influence, example, and sympathetic treatment of the boys, brought the classes to a creditable standard of efficiency. The excellent work in the classes is reflected in the greater skill and interest shown by the boys when at their benches in the factories.

When intimation was received that the Department contemplated the introduction of a scheme for training boys in the factories it gave me peculiar pleasure, as it provided the opportunity of realising a long cherished ideal.

It is almost unnecessary for me to say that the launching of the scheme involved much thought and time on the part of the Controller and the local officers, but the results obtained indicate that the pains taken have not been in vain.

In conclusion, may I urge all my hearers to use whatever influence they may possess in the direction of securing for the rising generation those facilities which, backed by that undaunted spirit so characteristic of Britishers, will restore and make secure our position as the nation foremost in the peaceful path of industry.

Mr. Preston, Mr. Moir, Mr. Dalzell, Mr. Wright, Mr. Morgan and Mr. Mansbridge took part in the discussion on Mr. Fenton's paper in the order named. It seems clear that Mr. Fenton had only dealt with one part of the question which will face the Post Office in the near future, *viz.*, the vocational training of all new staff. Mr. Preston pointed out that telephonists were put through a school course before taking up any position at the public exchange. Mr. Moir pointed out that his fitters and others were provided with continuation classes and that these classes had been doing very good work.

Mr. Dalzell raised the question whether it was desirable to spread the instruction over the whole week, as was done in the case of the factories, with the result, as stated, that some parts of the factory work were disorganised. He thought that it should be carefully considered whether it would not be advantageous for the whole of the instructional work to be given in one day of each week, possibly a Saturday.

Mr. Mansbridge pointed out that it would have been more useful if information as regards the vocational training in other countries, America, for instance, had been included in the paper, as he thought from his experience of work in that country that vocational training, and especially specialisation had been carried further in that country than in any other. He pointed out that the true value of vocational training was felt, not with the best type of human material, which could not be kept down in any case, nor by the worst type, which could not, or would not, be improved by any scheme of instruction, but by the average boy, who would otherwise have drifted into the unskilled labouring classes, and that the average boy represented 70 or more per cent. of the human material on which our industries were dependent.

## PERSONALIA.

### LONDON TRAFFIC STAFF (*Telephonists*).

Miss L. A. SOBEY, of Museum Exchange has resigned in view of her approaching marriage. She was presented with a dinner-service, tea service and salad bowl and servers by her colleagues.

Miss E. CHILDERSTONE, of Putney, has resigned to be married. Her colleagues presented her with a pretty tea-service and other useful gifts.

Miss E. M. PENDRY, of Park Exchange, has resigned to be married and was the recipient of numerous presents, including a silver and cut glass pickle-jar and a pair of silver sugar tongs from the staff.

Miss LOLA I. BURT, of the Trunk, resigned Feb. 18, in view of her approaching marriage. She was presented by her colleagues with a silver tea-service and many other useful gifts.

Miss ETHEL B. BARNS, of the Trunk Exchange, has resigned to be married. Her colleagues presented her with a pair of silver vases and other gifts.

Miss ISABEL O. PORTER, of Battersea Exchange, has resigned to be married and was presented with a tea-service and many other useful gifts by the staff.

Miss E. M. TOBITT, of Lee Green, on resigning to be married was presented by the staff with a case of fish knives and forks.

Miss H. E. GILLAM, a Clerical Telephonist, at New Cross Exchange, resigned in view of her approaching marriage on the 8th ult. She was the recipient of many presents, including a silver cake basket from the Traffic Staff of the exchanges in the district and the Engineering Staff at New Cross, also many beautiful and useful gifts from individual members of the Staff in the New Cross district.

Miss W. J. GIBBONS, of Mayfair, resigned in view of her approaching marriage and was presented by her colleagues with a pair of pictures, silver tea-spoons and sugar-tongs and other useful presents.

Miss E. M. BOTTOMLEY, of Mayfair, has resigned to be married. Her colleagues presented her with a silver cake-basket, salad-bowl and other gifts.

Miss F. M. RUFFY, of Hammersmith, on resigning to be married was presented with an oak clock by the Staff.

Miss D. A. DIVE, of Hornsey, resigned on Feb. 25 to be married. She was presented by her colleagues with a salad-bowl and servers, tea knives and other useful presents.

### PROVINCIAL STAFF.

Mr. T. McQUISTON, Traffic Office, Belfast, has been gazetted to a commission in the 20th Batt. Royal Irish Rifles.

Mr. GEORGE H. SISMAN, S.C. and T., has been promoted to be Overseer (T.) Darlington. Previous service: Sub-Office Assistant, Witton-le-Wear, Co. Durham, 1881 to 1885; S.C. and T., Darlington, May 4, 1885, until present promotion.

Miss G. L. LAWRENCE, of Devonport Exchange, has resigned to be married and was presented by the staff with a case of fish knives and forks, table and dessert spoons. She was also the recipient of other personal gifts.

Miss E. M. R. JENNINGS, of Plymouth Exchange, has resigned in view of her marriage and was presented by the staff with an oak and silver salad bowl and servers, and a silver vase.

Miss D. P. ROWE, of Falmouth Exchange, has resigned to be married and was presented by the staff of the adjacent exchanges with a silver cruet.

## EXPLOSION AT ESSEX MUNITIONS FACTORY.

At 4.55 p.m. on Feb. 13th, an Essex subscriber called the exchange and stated the factory was on fire, and asked us to summon the Fire Brigades as he wanted to get away from the office before the explosion. Urgent fire calls were made to those brigades and proved satisfactory, both brigades starting at once for the fire.

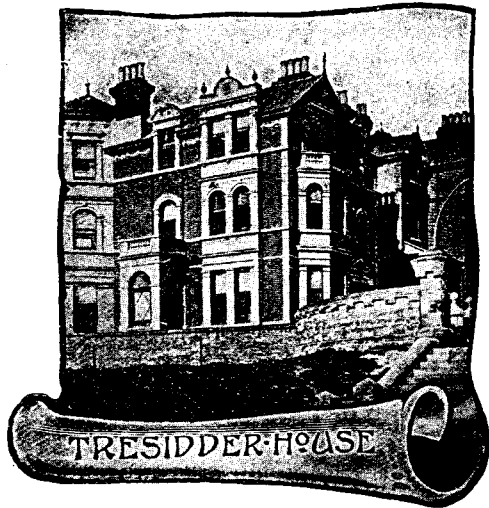
About 5.5 p.m. a small explosion occurred, another small explosion at 5.7 p.m. and a louder explosion at 5.10 p.m. At 5.20 p.m. we saw a huge ball of fire fly in the air, and a few seconds afterwards there was a terrific bang which shook the whole building and forced the door open, the catch being thrown to the other side of the room. The staff behaved splendidly, and although rather unnerved stuck to their posts, although a worse explosion was expected every minute. The traffic increased very much and by 5.30 p.m. was very heavy. At 7.30 p.m. Miss Harvey who was on 5 o'clock duty was able to be released, and at 8 p.m. Miss Biggs was released. Miss Hunter remained on duty until 10.15 p.m. when Mrs. Foster was able to manage alone, although she was kept up practically the whole night. The captains of three brigades and the police of two districts affected rang up and thanked the telephonists for their valuable assistance.

A. K. HUNTER, *Telephonist-in-Charge*.

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# THE Telegraph and Telephone Journal.

VOL. IV.

MAY, 1918.

No. 44.

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### LONDON CALL OFFICES.

By J. STIRLING (*Assistant Controller, London Telephone Service*).

WHEN in the autumn of 1915 the local call fee from London call offices was raised from 2d. to 3d., the change was accepted with little more than a mere murmur of protest as being only another of those necessary war-charges to which the nation was by that time becoming inured. The subsequent statement of the Postmaster-General that the "increase in the cost of telephone calls to 3d. had not come to stay" seemed to indicate that the experiment of increasing the fee had not been successful.

The increased fee has now been in operation for over two years and the two charts showing the comparative results for the last twelve months of the 2d. charge and the first two years of the new charge may, therefore, be of general interest. The charts do not show the actual amounts involved but they do give a rough indication of the effects of the change. The Revenue curve if flattened out would show a small progressive increase in each year and this tendency has been continued during the current year. The figures for the last available period of twelve months show that the increase is 10 per cent. on those for the twelve months immediately preceding the introduction of the new rate.

Some newspapers in commenting on the statement of the Postmaster-General assumed that there had been an actual decrease of revenue. This assumption was quite erroneous however, as even in the first year of the change there was an increase although not so much as had been anticipated, nor of course amounting to anything at all comparable with the 50 per cent. addition to the charge.

But, as showing how the whirligig of war-time brings in its changes of method and outlook, the second result achieved is at the present time of even more importance. The calling rate has been substantially reduced, thus alleviating the load on the exchanges at a time when the claims of Government work and messages thereon are paramount and the difficulties of obtaining staff are more acute than they have ever been. Normally a telephone administration bestows its benediction on a rising calling rate; nowadays it invokes the thunders of Armageddon to dissuade people from using the telephone. With call offices the policy has been effective with a reduction of 26 per cent. in the calls for the last twelve months as compared with the twelve months anterior to the increased charge. This is necessarily accompanied by a marked decrease in operating cost and, apart from the question of releasing trained staff for more important work, the combined figures of increased

revenue and decreased cost undoubtedly justify the new rate as a war measure.

Whether there is a natural law that increased cost of any article means decreased user may be open to debate. It would probably be easy to demonstrate that the cases in which this was not so were very casual exceptions. Also there is a certain psychological aspect of values. When the price of a newspaper is advanced ½d. to 1d. most readers, if it was a good paper, would probably continue it, but with an increase from 1d. to 2d., although the percentage addition is the same, the likelihood is that many would cease to purchase and either do without or borrow. An increase from 2d. to 3d. although the percentage is smaller, would doubtless involve an even greater proportional reduction in clientele. It would be interesting to know if the experience of London newspapers coincides with these views of human nature. Certainly as regards telephone calls the probabilities are that unless the call is urgent or important, 3d. would be looked at twice, and often—following the example of the legendary Scotoman—put back again; whereas 2d. would be dropped in the box with a smile.

On the other hand it has to be remembered that other factors are operating at present towards a decreased calling rate. Amongst them are:—

- (a) War economies. Not now so noticeable as in the early months of the war.
- (b) No racing.
- (c) A large number of idle people have become workers and have less time to spend on telephoning.
- (d) Decrease of social functions.
- (e) Large proportion of the male population out of the country.

There are of course some neutralising elements such as the large influx of naval and military men, both permanent and migratory, into London. It is practically impossible to attach a standard of value to each of these influences and to say whether with a return to normal conditions and a continuance of the present charges the telephone habit would be resumed in its entirety.

Even if this were to be so it would not follow that the increased charge should be maintained. A Government Department must make its rates for public facilities reasonable, and proportionate to the expense of providing the facilities.

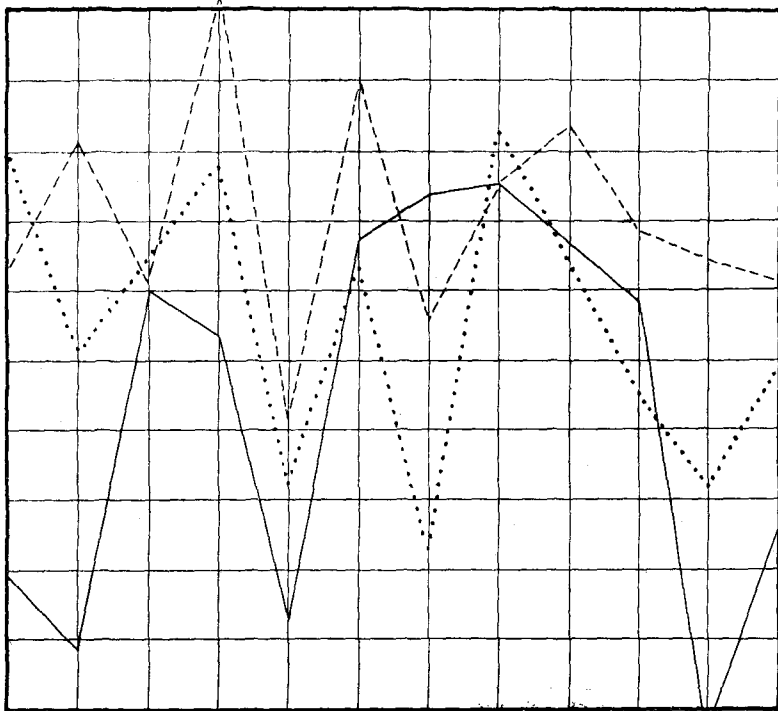
It seems difficult moreover to dissociate the question of call office charges from the general telephone rates question, and it may therefore be that it will have to be settled as part of the general problem which will call for solution when "reconstruction" is at hand. That also would be an opportune moment for considering the rates for short-distance telegrams, many of which are now dealt with by means of telephone circuits. One other feature ripe for

review is the lack of a differential charge for the long-distance telephone call within the London telephone area. If the 2d. fee is to be restored it may be possible to confine it to calls within a limited sector and so abolish the anomaly of a call from Barnet to Reigate costing no more than one from Charing Cross to Westminster.

The evolution of the public call office is one of the most interesting of the minor studies in telephone practice. It has grown up along with the motor 'bus and the tube. Indeed the latter has assisted in no small measure in its growth. At one time to find a call office it was necessary to "crick" one's neck looking at the public signs along the street and often in vain. Then the Electric Railway Companies agreed to provide sites; the main line Companies more reluctantly followed suit; now the Post Offices have been added to the list, and we have reached the stage where in the busy parts of the City and West-End it is the easiest thing in the world to find the nearest call office. The time may come when there will not a single railway station or Post Office in London without its public telephone, an ideal which at present

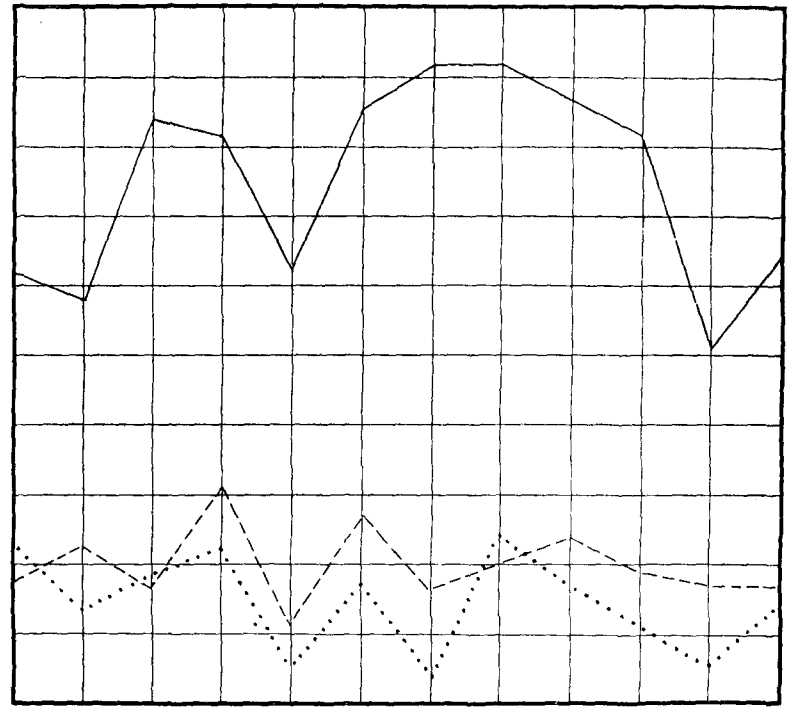
While the war has caused a diminution in the number of calls it does not seem to have lessened the idiosyncrasies which follow in the train of the call office user. The use of the meagre margin of the Directory for amateur literary efforts is probably due to the shortage of paper: the exponents of the art are doubtless of the type who make annotations in borrowed books. Silver coins are still fairly common, and while a badly lighted cabinet combined with an exhilarated condition may account for most of the two-shilling pieces, what are we to say of the person who puts a 6d. in the box instead of a penny, or the one who with energy worthy of a better cause insists on forcing a half-crown into a slot which is supposed to be too small to take it. French pennies are more numerous, but we must regard that as a sign of the closer entente with our gallant Allies. The caller who has "already put the money in" and the one who hasn't got any change are as a rule simply variants of each other, and if it "comes off" congratulate themselves on their cleverness; they do "queer the pitch" for the genuine case however. Two ladies still succeed in squeezing themselves and each other into a cabinet, the one to do the talking

CALL OFFICE REVENUE - LONDON



OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUN. JUL. SEP.  
 \_\_\_\_\_ 1914-15      ..... 1915-16      - - - - - 1916-17

CALL OFFICE COST OF OPERATING - LONDON



OCT. NOV. DEC. JAN. FEB. MAR. APR. MAY JUN. JUL. AUG. SEP.  
 \_\_\_\_\_ 1914-15      ..... 1915-16      - - - - - 1916-17

we are quite within measurable distance of. In this connexion the conversion of the Railway Companies forms a pleasant chapter full of incident, commencing with opposition, toning down, through gradations of unwilling experiment and reluctant assent, to voluntary provision of prominent sites on platforms and in booking-halls.

The most efficient type of call office has been found to be that at which the traffic is sufficient to justify a group of cabinets and the provision of a permanent attendant with no other duties. One of the best-known of this class is at Piccadilly Circus Station, and gives a fair impression of the rapid and reliable service which is possible under these conditions. Unfortunately it is only in rare instances that the extent of the traffic will permit of the employment economically of a constant attendant.

During recent years coin-boxes for call office use have been much improved, and not only are all new call offices fitted with them but gradually those without them have been converted to coin-box working until on a small minority now remain. These will be dealt with ere long and callers will then be enabled to give their calls direct to the exchange and pay for them without the intervention of a third party who has generally half-a-hundred other claims on his attention.

and the other the prompting. The selfish person still sticks inside the cabinet when his number is engaged regardless of the looks and unuttered remarks of those who await their turn. So while the world gasps as day after day brings its tales of tragic change, the small things go on just as before.

It as long been recognised that the immensity of London calls for easy, rapid and cheap means of communication. In accomplishing this the telephone call office has a part which ought to become even more important. At least one Railway Company now supplies its carmen with a list of call offices in the neighbourhood where he is delivering goods in order that he may speak to the central depot to obtain instructions as to collecting from firms in the vicinity who have goods ready for outward transit; for business purposes of this kind there is great scope. Greater publicity is probably necessary so that people may know that public telephones are provided for their use, that they are easily accessible, always available, and can be used for social and commercial purposes of all kinds. There must be thousands of men and women in London who simply require to be educated in the use of the telephone; such an education would be mutually beneficial, but to undertake it successfully the diffidence with which a Government

Department advertises its wares will have to be shed. There seems no good reason why telephone service should not be pushed in the same way as a tradesman brings what he has to sell to the notice of likely purchasers.

Not long ago an American Court decided that it could not interfere with the renters of a party line listening in when one of the other subscribers to the line was using it, and enunciated the doctrine that in lonely country districts the listening to other people's conversation on the telephone was one of the few social relaxations at the disposal of the inhabitants and ought not, therefore, to be discouraged. The call office in a large city cannot provide entertainment of that kind, but it can throw an invisible bridge of speech over the commonplace bricks and mortar, thus bringing even the outmost bounds into closer association with each other, and helping to make more real the city's corporate life

### THE AMERICAN TELEPHONE & TELEGRAPH COMPANY'S REPORT.

The following statistics of the Bell Telephone System in the United States are taken from the directors' annual report to the stockholders for the year ended Dec. 31, 1917:—

	Dec. 31, 1916.	Dec. 31, 1917.	Increase.
Total miles of wire ...	19,850,315	22,610,487	2,760,172
Comprising toll wire ...	2,682,910	3,088,808	405,898
Comprising exchange wire	17,167,405	19,521,679	2,354,274
Miles of phantom circuit...	221,994	281,016	59,022
Total exchange circuits	3,459,069	3,706,682	247,613
Number of Central offices	5,397	5,676	279
Number of Bell stations (owned) ...	6,545,490	7,031,530	486,040
Number of Bell-Con- nected stations ...	3,301,702	3,444,148	142,446
Total stations ...	9,847,192	10,475,678	628,486
Exchange connexions daily	28,530,073	30,845,153	2,315,080
Toll connexions daily ...	889,860	1,009,205	119,345

Extracts from the report relating to the activities of the company in relation to the war will be found of interest:—

#### *Employees' Military and Naval Service.*

In last year's report it was stated that employees of the Bell System who, on June 19, 1916, were members of the National Guard or Naval Militia and were called into service, and employees who enlisted subsequently, were allowed full pay during the first three months of their absence, and thereafter full pay less the amounts they received from the Government. Payment was continued up to July 1 to these employees and also made to the employees who, on March 27, 1917, were enlisted in the National Guard or Naval Militia, or were otherwise under oath to present themselves for active military service. Since that date allowances have been made to dependents of these and other employees of the Bell System called into military service who, upon investigation, were found to be in need of assistance; these allowances will be discontinued as soon as regular monthly payment of family allowances authorised by Congress can begin.

The total allowances made during the year by the Bell System, as above stated, aggregated \$612,554. At the end of the year the number of employees on leave of absence for military, naval and other Government war service, was 7,002; this represents about 9 per cent., of the male force, and 25 per cent. of the male force registered under the Selective Service Law.

#### *Summary of the Activities of the Bell System in Connexion with Government Matters.*

The officials of the Bell System, recognising the necessity of telephone service in the mobilisation of the resources of the

nation, for over a year prior to the declaration of war made studies of preliminary plans to meet war conditions.

What could be done to meet the problem of national defence, was demonstrated in 1916 during a mobilisation of our communication facilities conducted by a staff of the system at the request of the Secretary of the Navy and in co-operation with naval officers under the command of Admiral W. S. Benson, Chief of Naval Operations.

For three days, during which war conditions were simulated as far as possible, the Navy abandoned all other forms of communication between the Navy Department at Washington and the navy yards and naval stations in the continental United States, and utilised the Bell System for telephone and telegraph communication by wire with all of the naval forces in that territory. During the period of mobilisation, naval officers and the telephone officials assigned to the work were on duty day and night, and at all times could obtain instantaneous telegraph or telephone communication with any point involved in the mobilisation. The Secretary of the Navy himself conversed with a number of the principal naval stations, and the Admiral in command personally talked to the commanding officer at all of the naval stations on the Pacific Coast from Bremerton, Washington, to San Diego, California, and to the navy yards and naval stations on the Gulf and Atlantic Coasts and on the Great Lakes.

While the mobilisation was intended primarily to test the efficiency of the wire system in time of war, an interesting test of wireless telephony was made, *i.e.*, transmission by wire to wireless stations, automatically transferred to wireless, or *vice versa*.

The Secretary of the Navy, from his desk in the Department at Washington, talked with Captain Chandler on the battleship *New Hampshire* at Hampton Roads.

Under orders the *New Hampshire* proceeded to sea, as far as the Southern Drill Grounds and returned, reporting its position by telephone every hour to the Department at Washington.

Captain Bennett, in command at the Mare Island Navy Yard on the Pacific, conversed with Captain Chandler on the *New Hampshire*, which was at that time in a storm on the Atlantic. This conversation was transmitted over the transcontinental telephone wire circuit from Mare Island, California, to the radio station at Arlington, Virginia, and there transferred automatically to the ship at sea, the return conversation taking the opposite course."

Immediately upon the declaration of war Washington became the centre of great activity. Under authority of and co-operating with the Council of National Defence and military and naval officers, effective and harmonious methods were worked out by the Bell System, by which it has been able to meet the unusual requirements.

The following is a short summary of the resulting activities of the Bell System:—

Precedence was established throughout the system for all Government service, and at Washington and over the entire country for the maintenance of existing Government facilities and the construction of the numerous additional ones required.

Special attention is being given to, and special investigation is being made of this service, that it may be always available and as far as possible provided in advance of the need. For this, elaborate plans had to be worked out, special operating methods devised and some twelve thousand toll operators specially trained. Work has been done in a few weeks that ordinarily would have taken several months.

In times of peace telephone traffic flows along the channels of commerce. War has made new centres and new routes. Washington has become the centre of a vast new traffic. The growth during the last few months in the toll telephone service centreing at Washington has been greater than during the eight previous years.

To meet this increased toll business new facilities centreing at Washington have been provided; the number of lines radiating from Washington has been increased many times and further increases are still being made. There is also nearly completed between New York and Washington a new underground cable of the latest design, containing 80,000 miles of wire. This will be an

important addition to the underground facilities connecting the sea-board cities from Washington to Boston.

Five times already have the toll switchboards at Washington been increased and the plans are made and material ordered for additional increases. Notwithstanding the rapid growth of this service, and the scarcity of labour, material and transportation, a satisfactory service has been provided and maintained.

Local traffic of the Washington telephone exchange increased many times, making necessary one entirely new central office and substantial additions to all the existing ones. Large additions to the underground wire system have been and are still being made.

To meet the necessity for trained operators for both local and toll traffic, hundreds of operators have been brought from other cities. Large additions to the training schools have been established, where operators are being trained as fast as they can be secured.

To supply departmental and inter-departmental service in Washington, a large amount of underground cable has been laid directly connecting different governmental and departmental buildings widely separated. Existing private switchboard and other equipment has been thoroughly gone over and large additions made. Still larger additions are now under way. Several of the departmental multiple switchboards are large enough for a city of one hundred thousand population. The new and temporary buildings which have been and are being erected are being equipped with complete telephone systems and connected with other department buildings and the local system. For use in the National service 15,000 miles of toll wire and 27,000 miles of circuit for telegraph use have been taken from commercial service and devoted exclusively to the use of the Government.

To this work at Washington the expert and technical telephone men of the Washington system, as well as many others from all parts of the country, have devoted their entire time.

In other sections it has been necessary to provide telephone facilities and toll connexions for the National Army Cantonnements, National Guard Camps, Division Headquarters of the Army and Navy, Army Posts, Navy Yards, Aviation Fields, Supply, Quartermasters' and Training Camps, munition manufactures, shipbuilding yards, and various Federal and State camps and headquarters located in different parts of the country.

A full description of this work would require long lists and detailed statements of large undertakings at many hundreds of places in all parts of the country.

Many of them are located far from existing facilities and in sections heretofore not requiring extensive telephone facilities, and some of them are the equivalent telephonically of cities of thirty to forty thousand inhabitants.

This new traffic has necessitated trunk lines from all such points to adjacent cities, many new toll lines or additional wires on existing lines of the Bell System (including additional circuits on the transcontinental line), and in many local exchanges additions to the local switchboard facilities, wire system and operating force.

At the request of the United States Coast Guard complete plans for the enlargement of the Coast Guard telephone system were made, and the work of reconstructing and extending these lines done. This work includes connecting about 100 lighthouses and 200 coast guard stations, the laying of some 300 miles of submarine cable, the construction of over 650 miles of pole line and the stringing of over 1,200 miles of wire. The Coast Guard system is now connected with the Bell System.

The Bell System has been called upon to manufacture and furnish a very large amount of telephone equipment and supplies of every kind, including many special devices for the Army and Navy, both for use in this country and by the American Expeditionary Force in France.

The Signal Corps of the Army required a large force of men specially trained in telephone and telegraph work. From the Bell System some fourteen battalions of picked officers and men have joined this branch of the service. Many of these are already over the water, and those not needed for service in this country will soon join them. The training they have received in the Bell System together with the intensive training under officers of the

regular army in camps has made these men especially efficient, and we are gratified to know that they receive many commendations.

We have assisted in the organisation of a Division of Research and Inspection for the American Expeditionary Force in France, recruited largely from the scientific staff and laboratory forces of the Bell System.

Technically trained men have been detached from our service for special service in the Army and Navy. Over 150 men have been admitted to Officers' Training Camps, and 2,000 employees are members of the National Guard or Naval Militia and are in active service.

The Bell System has a total of approximately 7,500 employees now engaged in serving the country abroad and at home in various activities incident to the war.

These large deductions from the limited supply of trained men available for telephone work have come at a time when the system has had to meet the most extraordinary demands ever put upon its service.

### TELEGRAPHIC MEMORABILIA.

"Delightful indeed was Mr. Lee's paper on the 'Psychology of Telephony.'" This appreciation came, not from the friendly circle of the Belfast postmaster's friends, but from a rather severe critic of the Government Telephones and its "hidebound, red-tape, officials." I think those words fairly represent the conventional appreciation by the public of services rendered by the average Civil servant. This being so the compliment with which these notes open should possess more than ordinary value to the author who it will be recalled read his paper before the Natural History and Philosophical Society of Belfast.

There is a spirit in the ranks of telephonists of which Mr. Lee's paper is possibly its highest type which lifts up the profession out of the commonplace, touches it with poetic glamour and idealises the calling into something more than a mere occupation. One could wish that the Telegraph side could be rallied by some such leadership, but then not many men or women could combine Telephony, the Book of Job and Browning. Mr. Lee has done this. Perhaps he will also treat us to a dissertation on the psychology of Telegraphy? Telegraphy has had its amorous episodes across the wires even if when the parties met, one found that the smart manipulation which he thought could only have come from the dextrous brand of divine youth had in reality as its generator yonder staid maiden of the Victorian ringlets! Modern machine telegraphy has however abolished to some considerable extent the individual touch except in the case probably of certain multiplex systems. By so much therefore it has also abolished the irate telegraphist who thumped his key when he wished to be particularly impressive to his correspondent—the telegraphic parallel to the bawler on the telephone! Modern machine telegraphy too could provide many instances of the persistent tendency to the transposition of letters and figures. This type of error does not appear confined to telephone or telegraph psychology judging by the weekly collection of printer's errors of this and a similar type. Even the compositor who set up Mr. Lee's article appears to have become so confused with the writer's jugglery of 3547 and 3457 that he evidently took the middle course and combined figures and letters in "insta4ces" where subscribers are "frequently unable to remember their own numbers." Only some such brain storm could account for printer's errors in the P.O. T. & T. J., which readers will admit has been particularly free from these adornments.

One matter springing out of attendant thoughts on machine telegraph is the necessity for attention to the careful perusal of every telegram sent out from a circuit. Machine telegraph systems have each their weaknesses, and having no faculty of mental correction, it is more than ever essential that telegrams received by any of these systems should be scrutinised before being "racked" for collection and distribution. To the intelligent telegraphist it is not enough to affix a piece of gummed slip to the form or to tear off a printed form to count what stand for words and then despatch it. Obvious errors should be corrected. It is not sufficient

defence to say, "Oh, that's how it came out." That way danger lies, the danger of the deadening spirit of mere mechanical action creeping into the soul of one's profession, the danger of movement without intelligent direction.

I make no apology for once again referring to Mr. Weightman's paper on "Colonial Telegraphs and Telephones." It yielded discussion and comments so fruitful on matters telegraphic and telephonic as to have produced a symposium on these two branches of National Service such as one is quite unlikely to meet again for many a long day. Mr. Weightman at the close of his reply referring appreciatively to the C.T.O. Controller's ideals and prophesies regarding machine telegraphy of the future gave very hearty support to the Western Electric system as utilised in America, quoting the greater speed per channel of the latter as an advantage of that system. There is little doubt, but that Baudot developments will show how adaptable the French system may become to an increase of speed should such be found advisable. It should, however, be remembered that this cannot be done in the case of Anglo-Continental circuits where the distant offices themselves form part of a more or less rigid system of interlinking at a standard speed. Moreover wherever this or any other system may be used it is well to remind critics—although one would think that so obvious a point would not be missed—that the fact of each channel working at a higher rate does not increase the traffic carrying capacity of the line, although it does increase its economical working. Take the simple case of a circuit the KR<sub>2</sub> of which gives, say 120 words per minute as its working figure. If the system of Mr. X. will work at 40 words per channel and that of Mr. Y. at 30, the system of Mr. X. should prove more economical, other things being equal, wear, tear and capital charges of plant, &c., as it will save the cost of one telegraphist over the system of Mr. Y. which is arranged for four channels at 30 w.p.m., but the total output of the line will still be dependent upon the inherent capacity of the latter. There is a curious impression in certain non-technical quarters that somehow or other this, that or the other particular system *compels* the wire itself to carry an over-load of traffic!

Yet two more of the C.T.O. members have temporarily changed their address, this time to somewhere on the continent, on civilian telegraph service, of a peculiar type, which has already yielded good results for the allied interests at a time of peculiar stress, an "expedition" which in pre-war days would have been considered something approaching a foreign invasion! Nothing more may be said.

One is pleased to note that on the top of their many calls for financial help, the male and female members of the C.T.O. staff contributed well over £30 towards the Serbian Soldiers' Comforts Fund, practically in one day. Meanwhile there are signs that the Post Office Relief Fund has not been forgotten.

According to *L'Industrie Electrique* a number of French technical schools are accepting female students, and according to the latest London information female dirigeurs will shortly have an opportunity of applying their skill to the difficulties of Anglo-Continental telegraph working although at the British end of the wire.

According to the *Saturday Evening Post* of New York, the Japanese Telegraph and Telephone Services are "the worst" in the world without a single exception." According to the writer of the article, a woman by the way, it takes anything from one to three years to obtain the installation of a telephone in one's house, and then the transaction can only be completed through a telephone broker who charges something in the neighbourhood of 1,000 yen for the apparatus, or about £100. From the same authority one gathers that one of the feats of the competing Service, the Telegraphs, was Urgent Delivery at fivepence per word which covered the distance of eighteen miles—Yokohama to Tokio—in the somewhat leisurely time of 5 hours!

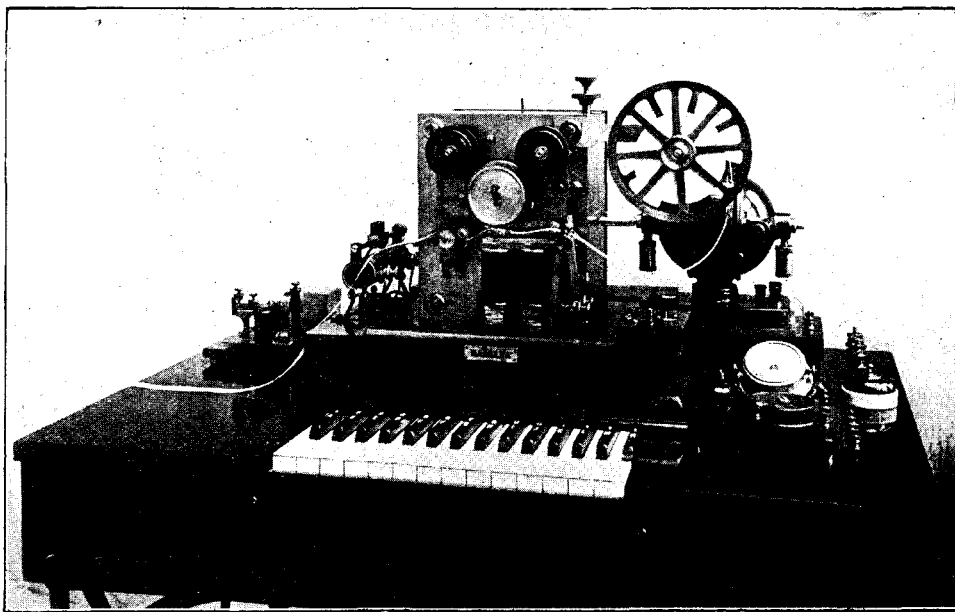
J. J. T.

### THE BALSERA TELEGRAPH PRINTING MACHINE.

AN event of considerable interest to the telegraph fraternity was the lecture at the Spanish Club in London on April 7, by Mr. M. Balsera with a new tape printing apparatus of his invention.

As will be seen from the accompanying illustration the instrument at once suggests the "Hughes" and is in fact an attempt to replace the older machine, which is very largely mechanical in action, by one in which four-fifths of the operations are electrical. This advantage is obtained by using a segmented distributor and rotary contacts on the back of the receiving portion of the apparatus—in appearance resembling Baudot's traducteur—and connecting the segments to each key of the sending keyboard so as to obtain either a home record or provide for the reception from the distant station.

"Synchronism" is arranged between the sending and receiving



instruments in the usual retarding manner through the agency of correction impulses and "phase finding" by the orientation of the receiving distributors segments.

The absence of suitable power prevented the inventor giving a comprehensive series of demonstrations, but there appeared to be no doubt that the new system, by reason of its mechanical simplicity, should commend itself to all of the administrations now utilising the Hughes system. It is claimed that an improved speed is obtainable owing to the fact that it is possible to transmit, as a maximum, fourteen signs or letters per revolution as against the five that can be transmitted by the Hughes. In ordinary commercial traffic this comparative advantage would be considerably reduced and it is probable that the relative speeds may be stated as Balsera 40 to 45 words per minute, Hughes 30 w.p.m. Of course like the Hughes it could readily be duplexed.

In the opinion of the competent English engineers present the instrument possessed several good features. It would, for example, afford an economical telegraphic installation for private firms desiring tape records, as it seemed to promise an excellent service at a cost perhaps less than half that of a Hughes equipment. H. W. P.

### OBITUARY.

WE regret to record the death of Mr. E. W. FARNALL, C.B., late Assistant Secretary of the Post Office, who retired from the Service only last year after a long and distinguished career. In recent years while in charge of the Foreign and Colonial Branch he was closely connected with International and Wireless Telegraphy as well as with Postal work. Mr. Farnall was one of the British Delegates at the Radio-Telegraphic Conference of London in 1912. During his service of just over 40 years he gained the esteem of all who were associated with him.



### LONDON TELEPHONE SERVICE NOTES.

It seems scarcely possible that a month can have passed since Miss Hough went from the London Telephone Service to the service of the Ministry of Pensions, yet so it is, and it is now no secret that she has taken up permanent duty in her new sphere. As Chief Supervisor of the Trunk Exchange during the past two years she has served an apprenticeship which will make almost any other post seem like a holiday, yet since her going the Trunk Exchange has surpassed all its earlier records and the traffic during the week before Easter was such that one quite expected the trunk lines to wear out from excessive use. Presumably this is the penalty which has to be paid by the Service which is giving a response to the public demand as good as or better than that before the war! Well, Miss Hough carries with her to her new duties the heartiest good wishes of all who worked with her in the L.T.S., and since we are not to have the opportunity of welcoming her on her return loaded with riches and honours we must be content to watch for the record of these rewards which we do not doubt she will earn. Miss Hough's transfer has entailed quite a number of changes amongst the supervisors of the various exchanges.

Miss Beaumont comes to the Trunk Exchange from Victoria and will probably ere long be as popular with her new staff as she has been with those she leaves. Miss Nurse goes from Avenue to Victoria, Miss Newman from Central to Avenue and Miss Johnston on promotion goes from East to Central. There are several other changes all of which no doubt caused excitement in the exchanges concerned. By the way, in connexion with these changes someone appears unconsciously to have been guilty of a hoax. A meeting of certain exchange managers was called, but its purpose was not made plain and rumour began to associate the gathering with such important matters as "the scheme" and "man power." Excitement ran high and with feverish steps these gentlemen sought the council chamber to discuss after all supervising changes. The commencement of April has long been associated with such incidents!

The end of March saw the marriage of one of the most popular figures of the office, Mr. J. F. Page, the Controller's personal clerk. Mr. Page has occupied his present post practically continuously since the inauguration of the Post Office London Telephone Service, and the best testimony to the manner in which he has carried out his duties so far as concerns the office staff generally has been the eagerness with which his return has been welcomed after any period of absence. His friends in the office presented him with a canteen of cutlery and everyone wishes him a long life of married bliss. It is written that in these matters "if one is wise two are happy," and it seems to us that the training and experience of a personal clerk ought peculiarly to fit one for marriage.

We understand that the committee of the London Telephonists' Society have lost no time in considering their programme for the 1918-19 session, and if it is possible to realise fully the proposals as outlined the meetings next winter should be not less attractive than those of past years. A "W.A.A.C." evening is talked of with a real live khaki-clad girl to lecture of the doings of that splendid corps, and a dramatic display is also suggested. The latter is to be given on the closing night, and if hopes are fulfilled is to be a telephone play by telephone players for telephone workers; the play to be the work of a telephone poet, and the scenery painted by a telephone artist. You are recommended to book your seats early. We have no authority whatever for saying that the *dramatis personae* will include:—

John Ireland, a wealthy bachelor and night Superintendent of the Buluwayo Telephone Company. (N.B.—He did not acquire his wealth through his association with telephones—his wage being the equivalent of 35s. weekly including all allowances. He is deeply in love with

Bertha Beswick, the beautiful blonde, who is at present working as night supervisor in charge at his chief exchange. She is of course carrying out these duties

simply and solely that she may keep observation on the circuit of

Peter Cooper, the multi-millionaire of Buluwayo, whose early history is a mystery, but who is engaged to be married to

Clarissa Cartwright, a prepossessing widow. Her late husband, Colonel Cartwright, married her whilst she was a telephonist in London (her dowry was £42 18s. 1d.) and brought her out to Buluwayo, where he owned large estates. She is at present living in a hotel the proprietor of which is

Reginald Horner, an international crook.

(The Editor most unreasonably suggests that a description of the other 22 characters might be deferred. We submit under protest.)

### THE CALL.\*

BY JEANIE MCMILLAN.

"THERE be three things which are too wonderful for me; yea, four, which I know not; the way of standard loads and speeds; the way of catering in war time; the way of a telephonist engaged on phonogram work; and the way of the ideal supervisor." This slight variation on the words of Solomon came irresistibly to the mind, at least of the uninitiated amongst us, on reading through the titles suggested for the yearly competitions. These things were too hard for us, and we were tempted to say with Congreve, "Invention flags, our brains grow muddy; and black despair succeeds brown study!" Then came to our aid the simple title just read—"The Call"

What is a "Call?" Both in the telephonic sense and in the wider sense it can be defined as "a cry for help." Someone who is helpless without our assistance is calling to us to give it. And if it lies within our power to do so, it will be conceded that it is "up to us" to respond. At this critical period of our nation's history, as probably never before, we are all called upon to help, to sacrifice ourselves, to deny ourselves, to live so that we may be worthy of our army and of our navy. How, then, is the call being answered? At some recent meetings held on the subject of "Economy in Food," one or two of the audience rose to their feet and announced that because of a certain regrettable banquet, they intended to eat as much as ever they could get. (I hope I am quoting correctly, but this was the spirit.) Surely this is hopelessly illogical, to say the least of it. Suppose 50 people were cast on a small island, where they have to remain until the apparently remote day that a ship sees the signal of distress, and comes to the rescue. There is enough food for all if reasonable care is exercised; but 30 of the company are frankly outside the pale, and are eating or wasting food all the time. Among the remainder are sick children and feeble women. Are the rest of them then justified in announcing their intention of following the base lead of the majority, and joining their ignoble ranks; or should not they join the minority, and help the ailing and feeble to hold out until the day of rescue? This is no flight of the imagination. We are on an island—the British Isles; the ship of peace is yet a great way off. There is need for us all to answer the call—to work together for the common good. And if those with "great possessions" choose the way of excess, of self-indulgence, of luxury, verily, they have their reward, and we need neither emulate nor envy them. Instead of dwelling on the displeasing vision of their opulence, let us allow our imaginations rather to wander over the seas to our sailors, to whose unceasing vigilance we owe our everyday necessities. Let us think of the perils through which they pass—the wild storms of winter, the terror of the floating mines, the menace of the submarine. Many pictures flash to the mind with just a little thought. And each one of us who answers the

\* Paper read before the London Telephonists' Society.

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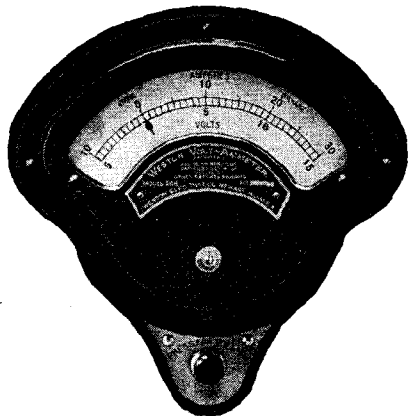
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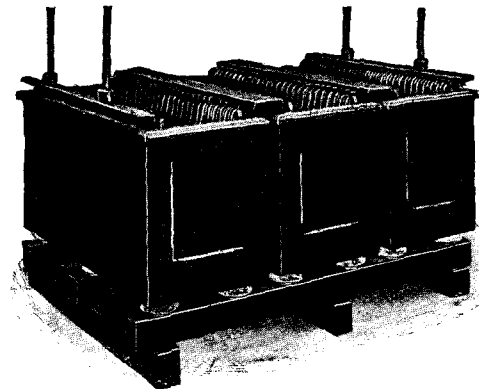
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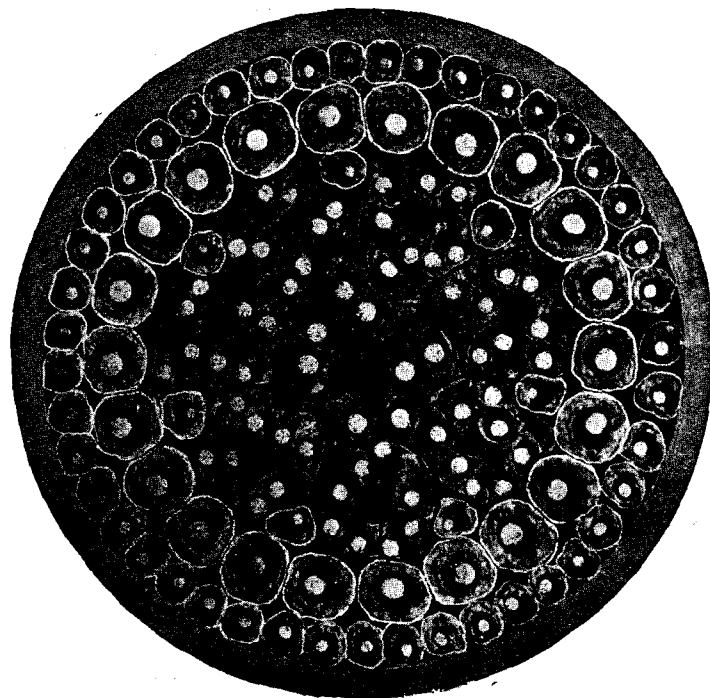
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call, however small our part may be, brings the day of peace appreciably nearer. The result of even one individual action may be far-reaching. There are many instances in history where an artist, an author, a poet, has been given to the world through the feeble hands of a child, a starving woman—someone apparently helpless, yet willing and eager to answer the call for help. Francis Thompson, whose poems and essays are amongst the most beautiful in literature, was saved from despair and death during the most tragic period of his life, when he was a homeless outcast on the streets of London, by a girl almost as poor and degraded as himself. He says of her :—

“Once, in that nightmare time, that still doth haunt  
My dreams—a grim, unbidden visitant—  
I had endured through watches of the dark  
The abashless inquisition of each star;  
Suffered the trampling hoof of every hour  
In night’s slow wheeled car;  
Until the tardy dawn dragged me at length  
From under those dread wheels; and, bled of strength,  
I waited the inevitable last.  
Then there came past a child—

And through the city streets blown, withering,  
She passed—O brave, sad, loveliest, tender thing!  
And of her own scant pittance did she give,  
That I might eat and live.”

However small our sacrifice may seem, IT COUNTS in the great scheme of things.

There are many who answer the call nobly, not once, but many times, who continually give themselves, their time, their service—probably many in this room to-night, notably in regard to our common peril—air-raids. The telephonist hurrying through the dangerous streets, with shrapnel shrieking overhead, with mobile guns roaring defiance of the unseen enemy, breathless, perhaps almost sobbing, but STILL GOING ON, is answering her country’s call in the same selfless spirit as the soldier or the sailor, and her country has now recognised the fact. What is she thinking of as she hurries through the darkened streets? Perhaps of someone in the trenches with whom she is marching in step; perhaps of the injured and dying for whom she is risking her life. She reaches the switchroom and her position. A bomb falls very near the exchange, almost—almost shattering her courage. But as she turns to run into safety, a glow on her position catches her eye—then another one; and to her imaginative soul each glow suddenly resolves itself into a definite cry for help—suffering children; injured men and women; girls imprisoned in burning buildings; calling, calling for the aid that she alone can give. Is she to bring death appreciably nearer to them by refusing to hear their call, by denying to them the ambulance to carry their poor hurt bodies into safety; by hindering the firemen in their work, by obstructing the doctors in their duty? There is a story told of an officer and a soldier riding together into battle. The soldier was white with terror, but he RODE ON! He said with chattering teeth, “I am a coward, sir. I am not fit to be a soldier.” And the officer said, “You are a braver man than I, because, although you are afraid, you are still GOING ON.” And that represents the splendid spirit of the girls in our exchanges to-day. The little girl who sobbed in terror, but begged her supervisor not to send her out of the room; the girls who kept their head—and their position—until all danger was over, and then promptly fainted—these are truly the bravest spirits amongst us. These, and scores of others, have answered the call nobly. How is it with the rest of us?

“No man,” says an American writer, “can see this war of wars fully, and in future ages none will see it truly but the children and the poets.

“To them, this barbed wire will be what it is—the brier rose where knights lie tangled, and these skies that cover us the skies of the heroic age

“On that great fourth of August, at a stroke, you became part of a story that will never die, an actor in a drama that will live for ever in the world of consequences and in the dreams of man. Though your part may be only the fixing of the spurs of a knight, field work to supply him with food, the lending of

your purse—as you play it so will your place be fixed for ever amongst the worthy and the unworthy. The trumpet sounds. Now for valour; now for service; now for sacrifice—the call is to me; the call is to you.”

POST OFFICE RELIEF FUND.

WE have received the following interesting information from the Hon. Secretary of the Fund, Mr. A. G. Ferard :—

It will be of general interest to know that, according to the records of the Post Office Relief Fund up to the end of March of this year, the number of Post Office men who had been interned in enemy and neutral countries, out of the 80,000 called to the colours, was 903, the majority of whom are still in Germany.

Some of the Post Office prisoners have fortunately benefited by the agreement come to at the Hague last year with regard to repatriation and transfer from Germany to neutral countries; and the position at the end of March may be summed up as follows:—

Interned in Germany	...	...	...	...	...	726
Interned in Holland (25 from the fall of Antwerp, 59 transferred from Germany)	...	...	...	...	...	84
Interned in Switzerland	...	...	...	...	...	39
Interned in Norway	...	...	...	...	...	3
Interned in Turkey	...	...	...	...	...	14
Repatriated (from Germany, 15) (from Switzerland, 8)	...	...	...	...	...	23
Escaped to England	...	...	...	...	...	2
Died after capture	...	...	...	...	...	12
Total						903

Of the prisoners in Germany 529 are being supplied with 3 parcels of food every fortnight by the Post Office Relief Fund, while 197 have been retained by Regimental Associations on their own lists.

The prisoners in Holland and Switzerland are fed at the expense of the British Government, and the men can draw on their pay. Several of the men in Switzerland have been visited by their wives or mothers (in one case by a fiancée for purposes of marriage) at the expense of the Post Office Relief Fund, under the scheme organised by the British Red Cross Society.

To 8 of the 14 prisoners in Turkey remittances of 10s. are being sent from the P.O. Relief Fund by money order every fortnight by arrangement with their Regimental Associations; and although acknowledgements of these remittances are by no means all that could be wished for, the experiment has been attended by sufficient success to warrant its continuance. The other 6 prisoners in Turkey are entirely on the list of Regimental Associations. Clothing and other wants of prisoners in Turkey are supplied at the expense of the British Government through a special committee at Constantinople established by the Dutch Legation.

GLASGOW.—CONCERT ON BEHALF OF INFIRMARY FUNDS.

The members of the Western Exchange staff organised a concert on behalf of the funds of one of the local infirmaries and of the Engineering Maintenance Staff Comforts Fund. The concert was held in the McLellan galleries on March 25 and was well supported, there being about 300 present. The talent was of a high order and the various numbers were accorded a warm reception.

Quartets were sung by a male voice quartet, solos by Miss Angus, Miss Samuels, Miss Fiona Malcolm, Mr. Roy Williamson and Mr. Hutton Malcolm, and two readings were given by Mr. Geo. Whyte.

Miss Rennie and the other ladies of the committee are to be congratulated on the splendid spirit which prompted the enterprise, as well as on the success which attended their efforts.

A TYPIST’S LAMENT.

Oh woe is me, I thought that I was clever  
And could put two to two and make it four  
And now, my head is bowed in dust for ever,  
My “Prince of Wales” was “Prisoners of War”!

My “moving finger wrote, and having writ  
Passed on” I think its time I did the same,  
No more I’ll guess and try to make a hit  
When I’ve initials I shall put no name.

E. R. H.

## The Telegraph and Telephone Journal.

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

<i>Editing and Organising</i>	}	MR. JOHN LEE.
<i>Committee</i>		MR. J. W. WISSENDEN.
<i>Managing Editor</i>	-	MR. W. H. GUNSTON.

### NOTICES.

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

VOL. IV.

MAY, 1918.

No. 44.

### A PARALLEL, AND AN EXCURSUS ON EXEMPTIONS.

ALL those gigantic preparations for satisfying promptly the manifold and urgent needs for rapid communication of a Government in time of war, that withdrawal of staff for military service at a time when extraordinary demands were being made on the Telegraph and Telephone Service, that formation of signalling corps of picked men, and that provision of telephonists for military communications both at home, in France and at other war fronts, in fact all those demands with which the British Post Office has been familiarised during the past three years and has so ungrudgingly met are now exercising the mighty organisation of the American Telephone & Telegraph Company. The illustrated journals published by that company in various American towns have lately bristled with photographs of camps, mess rooms, soldiers in training, signallers, operators who have volunteered for military work, groups of girls about to set out for France, and portraits of whilom telephone men who are now captains and majors. Already letters from France appear in the pages of these journals and in place of the customary articles on such subjects as the "Voice with a Smile," "Making Good," "Quality of Service," and so forth, we find others on "Getting Ready to go over," "How Many Dollars Worth will you Shorten the War," and "Seeing France with Some of Our Boys," together with many instructive pages on the part played by the company's staff in the war preparations of the United States, all of which are informed with American vigour and enthusiasm and are very inspiring reading. The annual report of the directors to the stockholders devotes six pages to the military activities of the officials, and when we read of the great demands made by Washington, the Divisional Headquarters of the Army and Navy, the aviation camps, the munition works and the shipbuilding yards, and learn that the company has furnished large supplies of

every kind for the Army and Navy, we find the parallel between the part played by the company and the Post Office sufficiently striking.

Of course there is one important direction in which the parallel is imperfect. At the end of 1917 the Bell Company had over 7,000 men, or 9 per cent. of their male staff engaged on naval, military or other Government war service. This is of course only a beginning, and a very good beginning, but in America the net of conscription is not cast so wide as in this country and the drain on the man-power of the company is in no way comparable with that which the Post Office has sustained. Of a total male staff of 188,000 of all ages about 80,000 are serving, or have served—for many, alas! will never return—with the colours. In addition some thousands of men indirectly employed by the Post Office are also in the army, and some 500 Post Office women have joined the ranks of the W.A.A.C. But even these figures do not throw out with sufficient clearness the high proportion of eligible men which the department has released nor do they exhibit the full measure of the service which it is contributing to the war. In a broad sense the whole staff whether old or young, male or female is carrying on the work of maintaining essential communications throughout the country or dealing with War Loans and the payment of Army pensions, while in a narrower sense a great proportion of the telegraph and telephone staff are engaged in providing a service directly bearing on the war. The work of the telephonists is intimately allied with home defence, the Engineering staff is almost exclusively devoted to the provision of lines urgently needed for military and administrative purposes and for munition works, and to the invaluable aid rendered by the Stores Department and its Factory staff in working at high pressure to keep up certain supplies at the Front in times of emergency, we can only refer briefly in passing.

The public has probably no conception of the extent to which the exemption of skilled men has been restricted in the Post Office. When they read that it is stated in the House of Commons that Civil servants *under* the age of 25 are to be vigorously "combed out," they may be forgiven for not knowing that the number of eligible men of the engineering staff and skilled telegraphists under the age of 35 retained for providing and operating an indispensable means of communication does not exceed 2,500, and that the exempted clerical staff (many of them doing administrative work) below that not extremely youthful age scarcely exceeds 100 out of a staff of some 6,000 in Great Britain. Without undue complacency, the P.O. can look with pride upon the part it has borne both in the military and civil side of the great conflict. It is contending with an enormous strain on its staff, and carrying on a highly technical service, the value of which is enormously enhanced by the conditions of the present war, with a minimum of exempted men.

### THE SANCTITY OF SERVICE INSTRUCTIONS.

EVEN as we set out to chide him gently on the error of his ways and to refute his heterodoxies, we are moved by a certain sympathy with our correspondent, *G. H. W.*, on his complaint of the multitude of Service instructions. Of the making of many regulations—as of books—there is no end; and much study of

them is a weariness of the flesh, even as in the days of the writer of Ecclesiastes. Not only telephone instructions, but regulations affecting all branches of the Service require frequent modification in these fast-moving days, not here alone but also in enemy countries as instanced by a German reference to "new rules following on each other's heels" which we quoted in a former issue. G. H. W. himself admits that perhaps the remedy is not in the restriction of the output of rules, and that each one if carefully examined will be found to rest on a solid foundation. It is unfortunately impossible to conduct a great public service on uniform lines without laying down the precise procedure by rule, and it is obvious that every modification, exception and amendment will require an addition to these rules. Certain sections bulk largely in the instructions laid down for the guidance of the Telephone Service. They are those dealing with tariffs and with accounting regulations. The charges levied for the service cannot be varied as between one member of the public and another without giving a preference, which the Postmaster-General is precluded by Statute from doing, and even were he not so precluded he would find it necessary, as the late National Telephone Company did, to avoid all exceptions and special treatment as conducive to dissatisfaction and a source of endless confusion. Every variation, due to the war or other causes, every exception and every special circumstance requires therefore to be legislated for and adds to the bulk of instructions. Similarly, with accounting practice, uniformity is imperative and rules for procedure must be specific and unalterable, for a go-as-you-please method of accounting in a large administration is unthinkable. If G. H. W. can point out any royal road to simplified but uniform accounting we feel sure the Comptroller and Accountant-General will hail him as a benefactor.

It is not, after all, necessary that any member of any staff should know the whole of a voluminous series of instructions by heart. He must be familiar with those closely anecting his own work; and have sufficient knowledge to know where to find the others as occasion may acquire. Our correspondent's letter is, we take it, chiefly a plea for initiative and increased efficiency. He goes so far as to suggest that rules are sometimes to be broken or "it would sound better to say . . . interpreted intelligently." It would. For while we may adopt his sporting metaphor and heartily concur in his maxim that the great thing is to keep one's eye on the ball, we may point out however desirable initiative may be, however it may conduce to brilliant play, it must be exercised within the rules of the game. Rules may be interpreted in a liberal and commonsense spirit, but play which is not in accordance with the rules is decidedly "not cricket" or "gouf."

**HIC ET UBIQUE.**

MR. ALFRED BIRD, M.P., writing to the Mayor of the borough he represents, says:

"The men from the Postal Service at the Front have over and over again distinguished themselves by their great courage and fighting power, and the country is under a deep debt of gratitude to them for the patriotic manner in which they have fulfilled combatant duties."

\* \* \* \* \*

The great machine of surveillance, says *The Nation*, works with its accustomed zeal, but sometimes perhaps a little impulsively. The other

day a lady of great energy and ability in war-work was surprised to find that her telephone service was cut off, and could not be resumed. She made inquiries, which she pursued when she found that she got only diffident, and even evasive, replies. At last she was told that she had been convicted of talking to a German. She searched her memory and burst into laughter. She had been conversing with one of our public-spirited Princesses on the question of raising the wages of the girl workers under their control.

This is a good example of the vague and elusive charges sometimes brought against Public Departments. It suggests that the speaker's telephone service was discontinued, i.e., as a telephone subscriber she has ceased to be, but what is meant probably is merely that conversation in the German language was barred. The use of German on the telephone even by people of the most patriotic and public-spirited variety is hardly permissible in these times. But why did the lady burst into laughter, and why did she have to search her memory? Is it implied that the conversation with the princess was in the past and the "disconnexion" of the telephone an act of retributive justice in the present? Or what does it mean? A more circumstantial story would probably throw a different light on the lady's complaint.

"In times of peace telephone traffic flows along the channels of commerce," says the Bell Telephone Company's report. "War has made new centres and new routes. . . . Several of the Departmental switchboards are now large enough for a city of a hundred thousand population." Reading these and succeeding paragraphs we can say to the Post Office: *Mutato nomine, de te fabula narratur.*

**POST OFFICE RIFLES REGIMENTAL FUND.**

I DESIRE to thank all those kind friends in the Post Office who have responded so liberally to my appeal in January. Thanks to their help I was able to send £45 to Lieut.-Colonel Vince for the New Year Entertainment and Sports Fund of the 1st Battalion.

Since then a strong committee has been formed to carry on a Regimental Fund for all three battalions, and I have arranged to support this fund as much as possible. I have therefore handed over the balance of the subscriptions to Lieut.-Colonel L. C. Du Cane, 15, Welbeck House, Wigmore Street, London, W. 1., who is the Hon. Treasurer. I should be grateful if friends would send him any further contributions direct, as unfortunately my illness makes it difficult for me to deal with them.

A list of the subscriptions sent to me is appended.

Care will be taken that the new Regimental Fund will not in any way overlap or conflict with the work of the P.O. Relief Fund, though its scope will be rather wider than that of the Comforts and Recreation Fund which I originally proposed.

A. M. OGILVIE.

**POST OFFICE RIFLES BENEVOLENT INSTITUTION.**

Subscriptions received up to April 4, 1918:--

		£	s.	d.	
1917.					
Dec.	4.	Rt. Hon. A. H. Illingworth, Postmaster-General	5	0	0
		Right Hon. H. Pike Pease, Asst. " "	5	0	0
		Sir A. Ogilvie	5	0	0
		Mr. A. G. Ferard	1	1	0
1918.					
Jan.	11.	London Engineering District Hospital Concerts Committee (per Mr. Moir, O.B.E.)	7	7	0
"	16.	Mr. Vity, Postmaster, Bolton	0	5	0
"	18.	Bolton P.O. Benevolent Society (per Postmaster)	2	2	0
"	18.	Mr. Jones, Postmaster, Plymouth	1	1	0
"	24.	Harrow P.O. Staff (per Postmaster)	0	10	6
"	28.	Sir Chas. King, C.B.	2	2	0
"	30.	Dr. Dundas Grant	2	2	0
Feb.	5.	Gloucester Head and Sub Office Staff (for part of January—monthly collection)	1	18	0
"	12.	London Telephone Service	37	15	6
"	13.	Mr. Malone, Derreenargan	0	5	0
"	19.	London Engineering District Concerts Committee (per Mr. Moir, O.B.E.)	29	1	2
"	21.	London Telephone Service	3	10	8
March	2.	Lancaster Telephone Staff, per Mr. R. Green	2	10	0
"	6.	Gloucester P.O. Staff (February contributions)	5	0	0
April	2.	Mr. W. H. Hipkiss, Mount Pleasant, E.C.	1	0	0

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 MEDALLISTS of the Most Excellent Order of the British Empire. (Miss Godfrey's and Miss Flintoff's portraits were published last month but the names beneath them were unfortunately transposed.)

## CORRESPONDENCE.

### TELEPHONE SERVICE INSTRUCTIONS.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

THERE are 37 things to think of in golf. In the Telephone Service there are 3,337. And the number is being added to every day. At the present rate of progress it will become necessary very soon to employ people specially to think about these things so that the staff generally may continue to give their attention to the work incidental to the provision of a telephone service.

In playing golf there are quite a number of the things that you are supposed to be thinking about which you may forget without suffering very badly, but there is one maxim which cannot be ignored without inevitable disaster. You must keep your eye on the ball. If you don't, not only will you fail to play the game but earth and sea and sky will laugh at and mock you. Sometimes you may forget that you are not to press and sometimes you may forget to follow through, but if you keep your eye on the ball your game may after all be not so bad. Let your eyes stray however and you will have need of all the swear words in the language. It doesn't matter how many other things you can think of and perform if you can't keep your eye on the ball you will never be a "goufer."

The Telephone Service should not perhaps be referred to in so serious a connexion, but "as a special matter and without prejudice" and more especially for the sake of the argument the reference may be permitted. Assuming that permission is granted, what is the point?

The drafting of rules and regulations, the laying down of instructions and the issue of memoranda on the interpretation of the aforesaid rules, regulations and instructions go on merrily. Every other day there comes a new rule or an amendment of an old one. Not a week passes without a new instruction. We are looking for more cupboard accommodation and the red covers are beginning to bulge. Points which it formerly took a whole page to elucidate are in some cases now dealt with in a small paragraph, others have been expanded into a section. But what shall it profit a man if he grasps the whole lot of them but loses his own initiative. Taken as a whole their dead weight is considerable and their application is apt to be bewildering. The number of different interpretations of a single little rule is sometimes limited only by the number of different people who may be asked to express an opinion. The difficulty of interpretation, however, is incidental to all legislation, and that is a point that need not be laboured. But are we not in danger of taking our eyes off the ball?

A rigid adherence to the terms of a regulation often leads to a position that is ridiculous. The members of the telephone staff are beginning to understand the Post Office a little and they are learning how to get their grievances redressed. But I am not concerned just now with the anomalies of the many regulations as they affect the staff. It is the effect on the public as present and potential telephone subscribers that I am anxious to appreciate. How can a man who is haunted by the aforesaid 3,337 things he has to remember deal effectively with an irate subscriber. The subscriber is not always furious but he is not therefore necessarily more easy to deal with. How utterly futile it is to keep on repeating that so and so is in accordance with the regulations of the Department." It is worse than futile, it is degrading. A gramophone could be provided for the purposes of stating the "Department's position." I need not furnish specific instances, for everybody in the Telephone Service knows what I am referring to.

The remedy is not to be found in the abolition of rules, regulations and

instructions nor even perhaps in the restriction of their output. Each one if carefully examined and analysed will be found no doubt to have a good solid foundation. But I think we are inclined to treat them too seriously or perhaps it would be more correct to say that we too readily accept them as final and as covering every possible contingency. It must be accepted as an axiom that those responsible for the issue of the instructions are concerned primarily and principally with the good of the Service. Regulations are not made for the purpose of harassing subscribers nor with the intention of mystifying the staff. And they are not made for fun. The underlying idea is the increase of efficiency. It may be difficult sometimes to see it in that light, but there can be no question about that being the purpose. But isn't that what we are all after? Isn't it the desire for a real efficiency that makes us so mad when we cannot attain it in a specific case without breaking a rule? The obvious thing to do, of course, when common sense demands it, is to break the rule. That is putting it quite bluntly. It would sound better to say that what is required is an intelligent interpretation of the rule.

This policy involves some risk, for if a rule is broken without effecting a "good settlement" there will be trouble for the transgressor. A man who fails persistently, however, should confine his passion for initiative to his potato patch. There isn't enough room for him in the Post Office. But the study of the law (of telephones) with a view to finding precedents is a soul-destroying as well as a self-denying ordinance, and it would be well for the Telephone Service, and better for those of us who are engaged in it, if we had the courage to treat the Telephone Service Instructions with less of reverence. Although they are intended to be and of course generally are helpful they are not exactly holy.

G. H. W.

### EQUIPMENT FOR PHONOGRAM ROOMS.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

SIR,—In reply to your correspondent, "W. J. W.," I would like to rejoin that the multiplying of all circuits carrying incoming traffic to phonogram rooms on lamps and jacks in front of the telephonists' positions, whatever else it would not achieve, would obviously save the switch telephonist. It would also, I think, ensure a quicker answer than is possible with the present system. Your correspondent says that the suggestion that it would do so is not borne out by experience. Where has the experience been obtained? Presumably the writer has in mind a comparison between the speed of answer at such an exchange as "Avenue" and a C.B. exchange. If so, the analogy is not a complete one. The conditions at an ancillary exchange are not the same as the conditions which would exist in a phonogram room, if a multiple were provided. In phonogram rooms delays are notorious, and so long as the switches exist, they will be inevitable, unless a surplus of staff is provided. The introduction of means whereby several telephonists are in a position to answer calling signals would, in my judgment, do much to reduce those delays, and, I think, less staff would be needed. To assume that each phonogram telephonist is working at the maximum speed, consistent with efficiency would not be correct. With the existing system this cannot be ensured, and it is the main reason why some means of eliminating the switches should be sought.

Then, it is suggested that a number of lamps glowing in front of the telephonists would tend to disconcert them. If a telephonist were writing a telegram she would not concern herself with the calling signals. The concern would be the supervisors. Again, the suggestion that the presence of the multiple of calling signals would encourage a slack telephonist to delay taking

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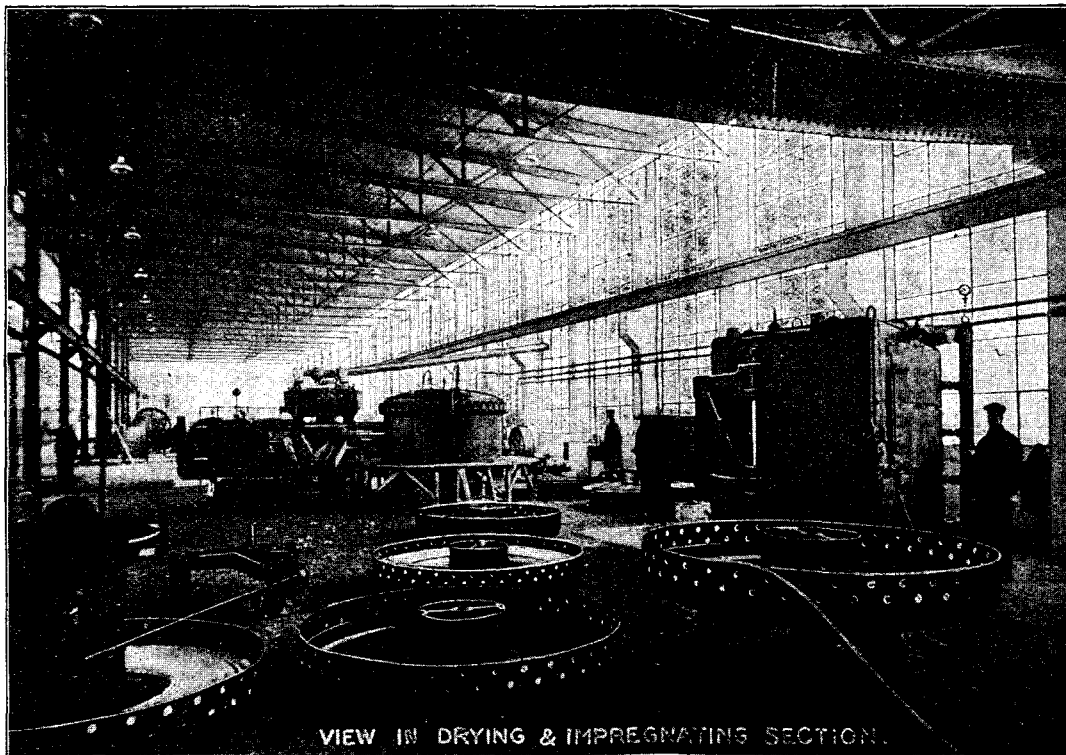
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up calls, lest she might deprive a more zealous officer of doing so, is surely rather an argument against team working generally. This also would be a matter for the supervisor to leaven. I am afraid "W. J. W." does not discriminate between legitimate criticism of ancillary working in an exchange and ancillary working in a phonogram room. Ancillary working in an exchange is admittedly not so good as C.B. working, but ancillary working in a phonogram room would be infinitely better than the system whereby a switch is intermediate between the exchange telephonists and the phonogram telephonists.

Now I come to your correspondent's reference to my suggestion that every scrap of old equipment should be used just now. In super imposing the slang expression "scrap" on what I wrote he is rather parodying the point raised. Much of the old equipment to which I referred is good, notably the transfer lamps and jacks used in Trunk Exchanges.

Finally, "W. J. W." states that if the staff is not sufficient to carry the load, no additional equipment will help matters, so far as disposing of the traffic is concerned. On the contrary, suitable equipment makes all the difference, and particularly equipment which substitutes team working for individual working.

The automatic distributor is an excellent device, but I think an adaptation of the ancillary system better for phonogram junctions.

R. G. D.

## OUR VISITOR.—A PRE-WAR INCIDENT.

BY H. C. TOWNSEND (*Exchange Manager, London Telephone Service*).

THE exchange had been recently opened and was new—thoroughly new. The polished floors and woodwork would have graced a ball room, and the brasswork would have gladdened the captain's eye on one of His Majesty's battleships. The exchange manager in his light flannel suit and with a smile to be proud of, greeted me upon my entry into the switchroom. He initiated me into my new duties, and with a twinkle in his eye, he said that they would naturally be arduous. I was to learn as much as possible with regard to this new exchange, and act as general pilot to the visitors, distinguished and otherwise, who should honour us with their presence. It really amounted to a fortnight's holiday, and I enjoyed myself as much as the visitors—probably more.

One of my visitors was the Chief Laboratory Assistant of Edison, the great inventor. He was both interested and interesting. Being a thorough American, he discoursed freely on American practices. He cheerfully criticised everything he saw. An invitation to lunch afterwards was equally cheerfully accepted.

One morning I received quite a shock when Lord . . . rang up and said that he would be pleased to accept the invitation of the National Telephone Company to visit the exchange. As his name was one of the great ones of the day, I was somewhat elated, but inwardly feared that the honour of piloting this noble personage would fall on the exchange manager himself. But the information left him cold, but still smiling. The news of the important visit spread, and one wondered whether the reputation of the staff would be upheld when such stirring events were happening, and whether they would avoid turning round and gazing with wonder. However, the time arrived, and punctually at 3 p.m. the card of our distinguished visitor was handed to me by the commissionaire.

My previous shock was nothing compared with the one I received as our visitor appeared in the switchroom. He was a little bent old man dressed in a black morning suit green with age, the coat nearly reaching his ankles. He wore an old black clerical hat, and being a very broad one, it gave him a wizard-like appearance. He wore his hat all the time he was in the switchroom. He also carried a large fish basket full of greengroceries.

I knew that the exchange manager seldom tolerated the wearing of hats in the switchroom, and occasionally our male visitors were courteously led to the hat stand. However I felt that the dignity of the occasion could not have been improved. On one occasion a gentleman from the Stock Exchange intended to walk through the switchroom in his top hat and smoking a cigar. He replied to my polite requests to remove the offending articles by saying, "Why man alive, I seldom have my hat off my head unless I'm in the street, and as for this cigar it's a 'Rothschild.'" He evidently realised that his arguments were not convincing, and removed his hat and put the cigar in his pocket. He managed to

surreptitiously keep his cigar alight all the time he was in the exchange. On another occasion, a messenger returned from the exchange, and astonished his colleagues by exclaiming: "That exchange manager is blind, he asked me where me 'at was when it was on my 'ead all the time."

I was very embarrassed on this particular occasion as the telephonists showed signs of great interest in our visitor, which was only exceeded by the interest taken by the visitor in themselves. He wished to be shown where his calls were dealt with, and his calling signal was shown to him. He was evidently impressed by the telephonist sitting in front of it, as he turned to me and confidentially said: "I knew she was a good girl." He was greatly excited when his calling signal glowed. He asked for details of the call, for he had apparently pre-arranged it, for he at once replied, "Yes, that's it—I knew she was a good girl."

I tried to entice him from the switchroom with visions of wonderful apparatus elsewhere, but it held him entranced. His face lighted up with interest as he caught sight of something new. However the "longest lanc has a turning," and after an hour our visitor disappeared together with my embarrassment, after momentary glances through the doors at the wonderful apparatus previously referred to.

## REVIEWS.

*Men, Women and Guns.* By "Sapper." Hodder & Stoughton. 254 pages. 1s. 3d.—*Sergeant Michael Cassidy, R.E.* By "Sapper." Hodder & Stoughton. 177 pages. 1s. 3d.—Although these stories bear exclusively on the great tragedy they are wide of range, vivid, realistic and filled with alternate humour and pathos. The author's graphic style and subject inevitably recall the earlier soldier stories of Kipling, but there is all the difference of the 19th and 20th century, of war in India and Flanders, between them. The stories belong definitively to the life on this side of the great chasm which opened in 1914 between us and the old world. If the reader is disposed at first to think that Sergeant Michael Cassidy derives from Mulvaney, he will not be long in finding out that the later hero had an individuality all his own. There is a deeper philosophy in the Sergeant which Mulvaney's less terrible experiences do not call forth. His reminiscences of the humours and the heroic are equally good reading; he has many frightful tales to tell of German atrocities, but though he is unsparing in his hatred and condemnation of them he endeavours to be just.

"'Tis fitting in with what they have been taught, I suppose," continued Cassidy after a pause. "They write of Louvain and Rheims and all the other beautiful places they have been after spoiling—and of them I would say nothing. 'Tis not for the likes of me to know the rights and wrongs of bombarding those beautiful cathedrals and the like. 'Tis part of their method; and perhaps, sir, 'tis better in the long run to strike terror into the hearts of the population by any means you can than to fight gentlemanly, like we do. I do not know about that at all—and 'tis not much that I hold with buildings anyway. 'Tis works of art that they are, so I read in the paper; but 'tis the little house at Ballygoyle, where 'tis the porter with a stick in it one is after getting, that appeals most to me. But, as I say, 'tis no judge that I am at all.

"And there is another thing, too—which one may be forgetting. A church is, often as not, the best place in the village to see from. 'Tis higher than the other houses around, and 'tis the best place from which to view the effect of the artillery fire. Well, sir, if 'tis used for that purpose, they have a perfect right to shell it, church or no church. Would we not be doing the same thing ourselves? And 'tis possible that some of those destructive atrocities for which they are blamed have been due to reasons of that sort. I would not be saying, for I do not know; but 'tis possible. One thing is clear, sir, about their method of fighting. 'Tis afraid they would make us, and 'tis nothing they will stick at to do that same; and are they not after saying that all is fair in love or war? 'Tis not excusing them that I would be, but there is perhaps something to be said for the knocking down of the villages we have read of in the papers. Swine they are, without a doubt, but 'tis possible in a few cases there may be an excuse."

Of the stories in *Men, Women and Guns* we think "The Fatal Second" is the finest; its conclusion is infinitely tragic and touching. "Jim Brent's V.C." contains perhaps the most thrilling exploit in the book, while "Spud Trevor" is a spy story with a development on quite novel lines. "Private Meyrick—Company Idiot" tells of a dull man who strives to make good and do something

heroic for his regiment. When the telephone communication is cut, he staggers dreamily out of the trench to see if haply he can find the broken wire, and ultimately he does find and clutch the two ends of the wire with a hazy intention of joining them with his hands, when he is struck down by a shell. The tale concludes:

"How the devil did he get here?" muttered Seymour. "It's one of my men."

"Was he anywhere near you when you kicked the telephone?" asked the other, and his voice was a little hoarse.

"He may have been—I don't know. Why?"

"Look at his right hand." From the tightly clenched fingers two broken ends of wire stuck out.

"Poor lad." The Major bit his lip. "Poor lad—I wonder. They called him the Company Idiot. Do you think . . .?"

"I think he came out to find the break in the wire," said the other quietly. "And in doing so he found the answer to the big riddle."

"I knew he'd make good—I knew it all along. He used to dream of big things—something big for the regiment."

"And he's done a big thing, by jove," said the signal officer gruffly, "for it's the motive that counts. And he couldn't know that he'd got the wrong wire."

\* \* \* \* \*

"When 'e doesn't forget, 'e does things wrong."

As I said, both the sergeant-major and his officer proved right according to their own lights.

In "The Land of Topsy Turvy" in the same book the author has something to say about the phrase "Doing his bit":

And lastly there is a third class, the class to whom that accursed catch-phrase, "Doing his bit," means everything. There are some who consider they have done their bit—that they need do no more. They draw comparisons and become self-righteous. "Behold I am not as other men are," they murmur complacently; "have not I kept the home fires burning, and amassed money making munitions. I am doing my bit." "I have been out; I have been hit—and he has not. Why should I go again? I have done my bit." Well, friend, it may be as you say. But methinks there is only one question worth putting and answering to-day. Don't bother about having done your bit. Are you doing your *all*? Let us leave it at that.

What strikes us chiefly, we think, about all these tales is the extraordinarily vivid pictures they present of the life out yonder. "Nothing," he says in "The Motor Gun," "in this war has so struck those who have fought in it as its impersonal nature. From the day the British Army moved north, and the first battle of Ypres commenced—and with it trench warfare as we know it now—it has been, save for a few interludes, a contest between automatons, backed by every known scientific device. Personal rancour against the opposing automatons separated by twenty or thirty yards of smelling mud—who stew in the same discomfort as yourself—is apt to give way to an acute animosity against life in general, and the accursed fate in particular which so foolishly decided your sex at birth."

Elsewhere ("The Death Grip") he refers to "the usual dull, strange, haunting trench life—which varies not from day's end to day's end" and "War, modern war; boring, incredible when viewed in cold blood." But he has plenty to say about the incredible things being done in hot blood!

"Bedad, sir, they cannot realise it at home here at all. Sure they are shown in the pictures as happy and laughing—them lads in the trenches—and 'tis laughing they are, for if they were not 'tis mad they would be for the horror of it. You have not heard it yet, sir, the noise. 'Tis the noise that is the devil, and 'tis almost impossible to describe what that noise is like to you. There's the whistle of their rifle bullets at times as they pass over your head. 'Tis a sound, you know, like the drone of bees on a summer's night, and the thud, thud, as they hit the parapet in front of you. Then there's the bark of their maxims—a coughing sort of noise it is, sharp and clear cut—three or four shorts at one time, and then maybe a great long bark for half a minute. And 'tis not one only, for the other guns take it up, and it seems continuous like all along their line.

"And then the shells. Their shrapnel is not much anyway, though 'tis dirty the bullets are, and an ugly wound they give one. But 'tis the dirt of the bullets more than their speed that has one caught. The big ones are different. 'Tis a strange noise they make. 'Tis like a huge hornet or may be a big cockchafer, like those one meets in the August evenings on the hills. You hear those Marias come buzzing out of the sky, and they pass over one's head with a droning sort of noise. And then they burst. 'Tis a big sort of 'plonk' they make and the dirt and the mud fly around. There's a great cloud of smoke too, and yet they look far worse than they are. Of course, as you will guess, sir, if they burst in the trench 'tis mighty unpleasant for these that are in the vicinity; and if they burst near the trench as like as not the side will fall in, and some of the lads will be buried, but generally 'tis dug out they can be."

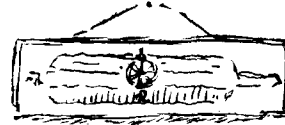
Incidents of the retreat from Mons, the first battle of Ypres, the first use by the Germans of gas give these stories a historic atmosphere, but most valuable and instructive of all are the pictures

of the daily trench life enlivened by heroic incidents. Sergeant Michael Cassidy concludes thus:

"I am going in three days, Cassidy," I said, as I got up. "Over yonder—with the new lads. Good-bye."

"Good-bye, sir," he said getting up, though I tried to prevent him. "We have been together before now, and we know one another. 'Tis good they will be, I know—but 'tis good they must be if they would live up to the reputation we have given them. 'Tis but remnants we have left of our original army, but there has never been anything in this world to beat it—and there never will be again. Good-bye, sir. Good luck."

To which we say Amen.



"What did you do in the Great War, Grandad?"

"I was a member of the A.C.U.M.M.D."\*

"Well, your pay's just come."

\* Auto-Cycle Union Motor Messenger Detachment.

#### COURTESY; ACCURACY; SPEED.

Ere on the school you turn your back.  
Learn well these lines, and you'll not lack  
To come out winner in the race  
Of those who seek the highest place.

*Be courteous*—(oh, phrase sublime)  
Not now and then, but all the time.  
A pleasing voice first cultivate—  
This point you cannot overrate.  
With ready and unflinching tact,  
Convey to one and all the fact  
That your sole aim and keen desire,  
Is to get *all* that they require.

*Be accurate*—each slipshod way.  
If practised, quickly comes to stay.  
Work by the rules, remember, too.  
That these were made for *helping you*.  
Learn the instructions; ev'ry one  
Will help the task you've now begun,  
And aid you in your purpose vast  
Be accurate—from first to last.

*Be speedy*—sluggish movements mar  
Your work, how'er polite you are.  
Your accuracy too, is foiled,  
If by slow working it is spoiled.  
Try to attain a quick, clean style,  
You'll find it more than worth your while.  
Unnecessary movements tend  
A careless haste your work to lend.

Courtesy! Accuracy! Speed!  
Acquire these three; no more you'll need.  
And you will be, quite soon, I wist,  
Your subs' ideal telephonist.

J. McMILLAN.



BRITISH SIGNALLERS AT THE FRONT TELEPHONING THROUGH GAS MASKS.

## OBITUARY.

A well-known figure in the telephone world in Lancashire passed away with the death of Mr. W. W. PUGH which took place on April 2 last.

Mr. Pugh entered the employment of the Lancashire & Cheshire Telephone Exchange Company, Limited, in the early eighties, and the whole of his service has been in and around Manchester. Throughout his long career his duties have been mainly that of an outdoor officer in the Traffic Section, and his work on service inspection and service matters generally brought him into close touch with the telephone public. He will be missed by many outside official circles.

Although beyond the usual retiral age, Mr. Pugh refrained, in view of the national emergencies, from exercising his option to a well-earned rest, and preferred to carry on. For the past few months his health has been indifferent but it was hoped he would see out these troublesome times and have some years to spend in retirement.

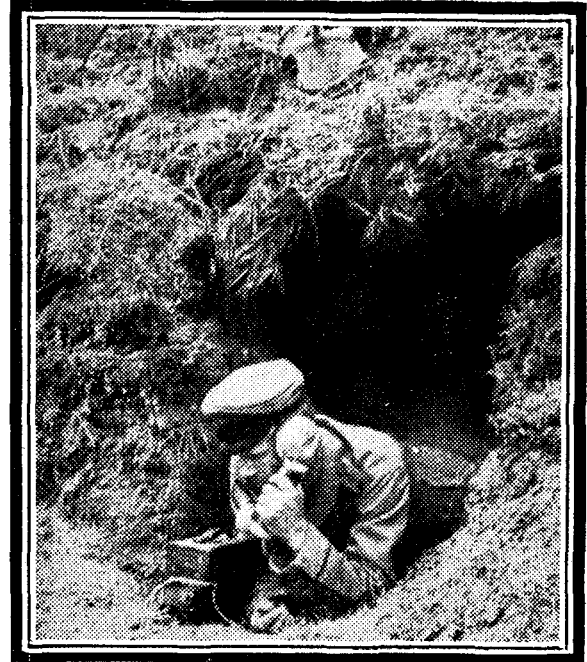
His quiet unassuming ways gained the regard and esteem of his colleagues and the funeral was attended by many official friends, including the District Manager and representatives from the Traffic and District offices, the Engineering Department and the exchanges. A number of beautiful floral tributes were sent by the many friends who were unable to be present.

Many readers will regret to hear of the death in France of HARDIE GREY ASHTON (Hardie), the youngest son of Mr. John Ashton, District Manager, Rochdale, and his wife (formerly Miss G. A. Blackburn, the first clerk in charge of the Blackburn Telephone Exchange). He was well known to the telephone staffs at Blackburn, Dublin, Leicester and Rochdale. Born at Cardiff in 1894, he was educated at the High School, Dublin, and Wyggeston School, Leicester, and then became a medical student at the Manchester University. Joined the O.T.C. in August 1914, gazetted Second Lieut. October 1914 to the East Lancashire Regt., Lieutenant December 1914, Captain September 1915. He was transferred as Captain in 1916 to 2/11 London Regiment (Finsbury Rifles) and took part with that Battalion in Service in France first as second in command D Company, and later as O.C. of A Company. The first decoration to the Battalion was awarded to one of his men, Rifleman White, and the Company was complimented by the Higher Command. Attached to the Royal Flying Corps as observer in October 1917, he passed to the H.Q. 25th Squadron, and obtained the observer's wing immediately on completing the period of probation, for good work within the enemy lines. His death resulted from injuries sustained on Feb. 26 last in an accident to the aeroplane when returning from a successful reconnaissance over the German lines. His pilot was killed and Ashton was rendered unconscious, remaining so up to his death, which occurred on March 11. He was laid to rest in the British Military Cemetery, Lapugnoy.

His various commanders write in glowing terms of his ability and service, one of whom states that he "feels he has lost a son who has gone far towards the achievement of glory."

His cousin, Second Lieut. J. R. W. Ashton, the son of Mr. W. N. Ashton, also well known in telephone circles, was mortally wounded in November 1917 whilst serving with the East Lancashire Regiment in France.

We regret to record the death of Mrs. RANDALL, wife of Mr. E. Randall, Exchange Inspector at Victoria. As Miss Dawes she was one of the first, if not the first, telephonist in the West of England, entering the service of the old United Telephone Company at the opening of the Plymouth Exchange in 1885. It was worked with a peg board and then consisted of only 3 or 4 subscribers. About a year later these had increased to 50, connected to double-ended cords and slipper plugs. When Miss Dawes retired in 1891 the staff had increased from 1 to 5 operators, of whom she was in charge.



GERMAN FIELD TELEPHONES.

## "CROSSED WIRES."

Division Cable Manager Sutherland, Atlanta, Ga., is a large man and laughs frequently. He was caught at it the other day and this is why he laughed. An editor of a country newspaper conducted a department in which he answered all questions sent in by subscribers. A farmer asked how he could rid his premises of grasshoppers and a young mother asked to be advised of the proper care for twins. Somehow or other the editor got his "wires crossed," so to speak, and this answer was sent to the fond mother:

' Sorry you are inflicted with these pests, but if you will use Paris green freely on them you will soon be rid of t' em.

The perplexed farmer read in answer to his query:

" Give them plenty of pure, fresh milk, a warm bath each day, rub down and keep in open air."

That department of the paper went out of business.—(Western Union News.)



Fairies King Richard Fairies  
 G.Oxley. M.Hodgson. J.Tuddenham. M.Girling I.Goatley. D.Deller. M.Clayton.  
 Forester. Friar Tuck. Maid Marian Robin Hood. Lettice Joan Little John. Humpty Dumpty.  
 G.Etheredge. E.Park. E.Furlwangler. D.Kirby. H.Gould. E.Dalloway. P.Pitfield. A.Price  
 Fairy Christabel Foresters  
 E.Atkinson. A.Tovey. V.Smith. F.Williams.

#### PADDINGTON ENTERTAINMENT TO POOR CHILDREN.

The staff of the Paddington Exchange gave their seventh tea and entertainment on Saturday, March 2, to the poor children of Paddington district, not only in the face of the difficulty of supply, but with the actual benediction of Sir Arthur Yapp. The absence of rich "goodies" did not deter the guests from enjoying the repast provided, in fact, food hoarding was the order of the day.

The entertainment took the form of a play entitled "Robin Hood," and the caste acquitted themselves excellently. The juvenile audience shouted themselves hoarse at the comicalities of the funny "men," and the topical items of the times met with a great reception. A shake of the hand with Humpty Dumpty, and a bag of fruit and a golden penny brought the proceedings to a happy ending.

#### POST OFFICE TELEGRAPH STAFF.—CONCERT FOR COMRADES COMFORTS FUND.

An enjoyable and successful concert was given on April 8 at the drill hall of the 10th Middlesex Territorial Regiment, Stamford Brook, lent for the occasion, by the Post Office Telegraph Staff with the object of providing comforts for comrades serving with the Army at the front. The concert was under the patronage of Sir W. Bull, M.P., the Right Hon. W. Hayes Fisher, M.P., and the Mayor and Borough Councillors of Hammersmith. Mr. A. Moir, O.B.E., Superintending Engineer, G.P.O., London District, presided and was supported by Mr. A. Bascombe, President of the fund and Mr. A. J. A. Hunt. The hall was well filled and decorated with good effect with flags.

The principal contributors to the concert were Miss E. M. Lowe, Mr. Carr McGregor, Mme. Jenny Walters, Miss May Atkins, Miss E. M. Canvin and Mr. R. W. Penson, vocalists, Miss F. Coleshill who gave some clever dances, Mr. J. E. Nestor, with stories, and Mrs. D. Master with a recitation. Mr. L. A. Walter, G.S.M., skilfully officiated as accompanist, and the duties of stage manager were ably carried out by Mr. R. W. Penson.

During the evening the chairman, in addressing the audience, said that he had to tell them that Sir William Bull and Mr. Hayes Fisher, owing to unavoidable circumstances, were unable to be present that evening. Nevertheless, he thought that the concert which had been arranged by Mr. Bascombe and the committee, with the assistance of Messrs. Stewart and Guest, had proved very successful indeed. In the London Engineering District in peace time there were 5,200 employees; of that number at the present time, 2,500 were engaged on active service. These concerts were arranged for the purpose of providing comforts for those who were engaged on active service at the front. As they knew, committees in the sections made it their business to look after the comfort and welfare of the wives and children of those who were representing them in France and elsewhere. (Applause.) He was sure that they would leave that hall feeling far better for their presence at the concert, and thereby helping to swell the fund which would be extended on providing comforts for their colleagues at the front. (Applause.)

On the motion of Mr. J. A. Hunt, a hearty vote of thanks was passed to Mr. A. Moir for presiding, and to the artists.

## PERSONALIA.

### LONDON TRAFFIC STAFF (*Telephonists*).

Miss E. SPROULE, Assistant Supervisor, Class II, of Victoria, has resigned to be married. She was presented by her colleagues with a silver serviette ring, a cushion and other useful gifts.

Miss E. A. M. HUTCHINS, Assistant Supervisor, Class II, at Woolwich Arsenal P.B.X., has resigned in view of her approaching marriage. The staff presented her with a silver tea-pot, cake basket and jam dish.

Miss E. M. WOOLL, Clerical Telephonist, at New Cross, resigned to be married on March 15. She was the recipient of a silver and cut-glass flower *epergne* from the staffs of New Cross, Woolwich, Woolwich Arsenal, and Lee Green Exchanges, and several other gifts from individual members of the staff.

Miss C. E. STARES, of Erith Exchange, has resigned in view of her approaching marriage. The staff presented her with a silver fruit dish and a cake knife.

Miss E. M. WALKER, of Greenwich, on resigning to be married, was presented with a butter dish and marmalade jar by her colleagues.

Miss L. BURNS, a Woolwich Telephonist, resigned to be married on March 15 and was presented by the staff with a dinner service and China cruet. She was also the recipient of many presents from individual members of the staff.

Miss ELIZABETH WASKETT has resigned in view of her approaching marriage. Her colleagues presented her with a dinner service and other useful gifts.

Miss MAUD E. MORGAN, Assistant Supervisor, Class II, of the Trunk Exchange, resigned to be married on March 31. She was presented with cutlery and other useful gifts by her colleagues.

Miss C. SMITH, of Mayfair, has resigned to be married. Her colleagues presented her with a handsome eiderdown, table glass and other useful gifts.

Miss J. BOTTEN, of Dalston Exchange, resigned on March 1 to be married, and was presented by the staff with a silver luncheon tray.

Miss K. L. STUBBINGS, of Dalston, on resigning to be married, was the recipient of a set of carvers from the staff.

Miss E. D. TAPPIN, of Chingford, has resigned in view of her approaching marriage, and was presented with a biscuit barrel and a bronze brush and crumb tray.

Miss ANNIE ROGERS, of North Exchange, has resigned to be married. Her colleagues presented her with a dinner service, rose bowl, jam dish and other gifts.

Miss M. E. STONEBRIDGE, of Hop Exchange, has resigned in view of her approaching marriage. She was presented with a silver cake basket by the staff.

Miss L. B. STUDLEY, of Paddington, has resigned to be married and was presented with a dinner service and other useful gifts.

Miss G. E. HUSSEY, of Paddington, has resigned to be married. She was the recipient of fish knives and forks and other presents.

Miss D. M. WRIGHT, of Paddington, on resigning to be married, was presented by the staff with a pickle jar, a case of teaspoons and sugar tongs.

Miss D. B. ETHEREDGE, of Hornsey, has resigned to be married. Her colleagues presented her with a set of carvers, breakfast cruet, teapot and other gifts.

Miss G. M. BRAY, of Avenue, resigned for marriage and was presented with a salad bowl and servers, biscuit barrel and other gifts by her colleagues.

### PROVINCIAL STAFF.

On the occasion of his marriage which took place recently, Mr. G. EDWARDS, Traffic Superintendent, Gloucester District, was presented by the District Manager on behalf of the District staff with a polished oak timepiece, bearing a plate suitably inscribed.

Miss D. B. STEPHENS, Typist, District Manager's Office, Swansea, has resigned in view of her marriage with Cadet F. H. Hellings (Clerical Assistant), at this office. They were presented with a handsome salad bowl, suitably inscribed. Several other useful presents were also given by individual members of the staff.

### TRANSFER OF MR. MACLEAN.

Mr. A. MACLEAN, District Manager of Canterbury, on leaving to take up an appointment at Belfast on 3rd inst., was presented by the staff as a token of respect and esteem with a desk clock, the presentation being made by Mr. Maddan, Assistant Surveyor, South Eastern District.

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# THE Telegraph and Telephone Journal.

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JUNE, 1918.

No. 45.

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### LIFE IN THE POST OFFICE SIXTY YEARS SINCE.

THE Recollections and Experiences of Edmund Yates, the novelist, which were published by Bentley & Son in 1884, unveil some interesting "scenes of clerical life" in the Post Office in the forties and fifties of the last century. Official life in those days seems to have had its compensations—and drawbacks—as now, but it was assuredly less austere in his time. With a staff and a volume of business (there were then no State telegraphs and the telephone was not yet invented) infinitesimal in comparison with the present, the work of the individual was perhaps more varied and less exacting and the pace less strenuous than now. Amusing characters are never wanting where large bodies of men are closely associated, and Yates did not fail to see the amusing side of official life. His book gives some lively sketches of the forgotten worthies of those times, and together with references to Rowland Hill, Anthony Trollope and some former Postmasters-General. "The book," he says, "is the product of a good memory . . . and a few diaries," and with this testimonial to its truthfulness, we offer some extracts from the chapter dealing with his early days in the Post Office, 1847-1865. It will be seen that Yates had a high idea of the dignity of a Post Office clerk, and relates an instructive instance in which it was maintained by his chief, as we believe it always has been by the best traditions of the Post Office.

I entered the Post Office Service on March 11, 1847, and remained in it exactly twenty-five years. I was not quite sixteen when I received my appointment, and I was nearly forty-one when I resigned it; so that I suppose the best years of my life were passed in the Government employ. Looking at what has happened since, I feel that I might very possibly have employed this time far more profitably. There were several occasions on which, had I chosen to give up the small certainty, I could have obtained valuable literary and journalistic appointments, the holding of which was incompatible with my daily attendance at St. Martin's-le-Grand. The double work was heavy, and not unfrequently harassing. On the other hand, the routine of a public office, in which certain things have necessarily to be done at certain stated times, gave me business habits and appreciation of the necessity of punctuality, which have been of great value to me in my other career.

I am by no means sure that the change in the work, from the dry official records of facts to the light essay or fanciful *feuilleton*, did not enable me to get through more work than if all the hours of labour had been devoted to one kind of subject. And I am quite sure that, though the pay was small and the work not particularly congenial, though I was general poor and always anxious, though my health was not very good, and my cares were perpetually increasing, I extracted as much happiness out of my position as was possible—more, probably, than I could have found in most other stations in life, where the responsibility would have been greater. I grumbled at my lot, as we all do; but I know that I never returned from my annual holiday without a half-pleasurable sensation at being back. My animal spirits were excellent. I was, I am pleased to think, very popular with most of my comrades; and the authorities, if not entirely in sympathy with

some of my eccentricities, were, on the whole, indulgent, and inclined not to see anything that was not specially brought under their notice. In my earliest official days, I formed one or two intimate friendships, which exist to the present hour, having never known a shadow. And generally in the course of every two or three months I find my way to St. Martin's—not, however, to the building in which my time was passed; that has been given up entirely to those engaged in letter-sorting, &c., and have a chat with old colleagues over old times.

\* \* \* \* \*

After a few days probation in the Registry, where the receipt and disposal of the various communications addressed to the department were recorded in huge ledgers, I was placed in the money-order department of the Secretary's Office, *i.e.*, where the correspondence relating to money-orders with the public and the postmasters was carried on; and there I remained about two years. Two years of almost unalloyed official happiness! We were about twelve or fifteen clerks altogether, dispersed in three or four rooms. Our principal was a bald-headed middle-aged man, given to taking snuff and imbibing a cheap Marsala—a man full of strange oaths without any modern instances, but of a kindly nature, and disposed to make allowance for youth. There were three or four fellows not much older than myself, and we were always telling the most ridiculous stories and playing the wildest pranks. Our room had a door of communication with that of the Chief Clerk, an old gentleman who had the reputation of being a little thick and cloudy after luncheon. One day some of the fellows, while larking, upset a huge screen, which fell with a resounding bang. I had had nothing to do with it, but was advancing to pick up the screen, when the Chief Clerk entered, flushed with lurch and rage. "What the devil's this row?" he called out; then, seeing me—he had scarcely ever noticed me before—he graciously said, "Oh, it's you, is it, sir? Please recollect you're not now on the boards of the Adelphi!" Again the old reproach of the schooldays cropping up! It seemed as if it were never to be got rid of!

I am sure, from all I hear, that the young gentlemen by whom the Secretary's office is now junior-officered, and who are mostly, I believe, graduates of the Universities or scions of the aristocracy, would scarcely believe the details of the audacious fun which used to be perpetrated by their predecessors just before the year 1850.

It was my prominent share in the perpetration of these jokes that first procured me the honour of an interview with Mr.—afterwards Sir Rowland—Hill, who was most kind and friendly with me so long as he lived. Our first meeting, however, scarcely boded well for the future. There has been a tremendous row, not unconnected with the peppering, with pease and pellets of saturated blotting-paper, of the passers-by in Foster Lane, a thoroughfare on which our windows looked; and I, who had been caught by one of the authorities in the very act, had been "reported."

Rowland Hill was then in a transition state; he had carried out his penny-postage scheme, and received some of his rewards; but he had many bitter, powerful and unscrupulous enemies, who had succeeded in having him removed from a berth at the Treasury, to which he had been appointed, on the plea that his services were no longer required. There had, however, been a loud expression of public feeling; Mr. Hill had been presented with a testimonial, raised by public subscription, and amounting to nearly fourteen thousand pounds; and in the year before I joined the Service he had been pitchforked into the department in a somewhat anomalous position. He was not made Secretary of the Post Office—that important berth had been for years held by Colonel Maberley. Mr. Hill was called Secretary to the Postmaster-General, a ridiculous title for a sham and non-existent position. The Post Office had its Secretary, the Postmaster-General had his private secretary, and no other was required. But it was necessary to find a berth



at St. Martin's-le-Grand for Mr. Hill, and he did not of course care what it was called, provided he got recognised status and sufficient salary. His duties were arranged, so far as possible, not to clash with Colonel Maberley, who was exceedingly jealous of the new arrival, and hated "the man from Birmingham," as he always called him, with a holy hatred. Mr. Hill, with two or three clerks, prepared statistical returns, suggested economies, and also had the supervision of that secretarial money-order department in which I worked. So that when, one morning, I was told "Mr. Hill" wished to speak to me, I felt as I had not felt since Dr. Dyne's invitation to his sanctum at Highgate School.

I found him seated at his desk, a middle-aged man of medium height and slight build, bald-headed, with deep-set gray eyes, wearing spectacles, and with a grave, but not unkind, expression. After exchanging bows, he commenced by saying that my name had been mentioned to him by his old friend Charles Manby, who was, he believed, my guardian. I admitted the fact, and began to think I was getting on pretty well, not having been summarily dismissed, as I had half anticipated. "I have been making some inquiries about you, Mr. Yates," he continued, "and I find you're very popular, and have plenty of energy and ability, and can do very good work if you choose, but that you suffer under a superfluity of animal spirits." He stopped, and looked at me keenly through his glasses, while I muttered something about "not being aware of it." "So I'm told," he said, "and I'm going to ask you one or two questions. Where do you live?" "With my mother, sir, in St. John's Wood—the Alpha Road." "Ah," said he, "a very nice part, though a little too far away. Now, how do you come down to the office?" "Generally on the top of the omnibus, sir." "Ah, I thought so. Now, if in future you would walk down to the office, Mr. Yates, I think you'll find it would bring those animal spirits to a proper level." And I bowed myself out, too delighted at having escaped so easily.

At the end of two years I was transferred to another branch of the Secretary's office, and placed under the care of John Strange Baker, to whom I owe my business training, my love for English literature, and many of the happiest hours of my life. It was a critical period with me just then; for though during my schooldays I had imbibed a taste for reading in a small way, the fact of becoming my own master, and the introduction to the grosser pleasures of London life, had almost extinguished it, and I was degenerating into rather a rowdy *farceur*, a senseless, sensuous, funny-story-teller, practical-joke-playing kind of cub, when I was rescued by my official apprenticeship to John Baker.

... My friend, who happily still survives as one of the principals at St. Martin's-le-Grand, was an admirable master of official style, and had the power of marshalling his facts and expressing himself in concise sentences, which must have been specially grateful to our chief, Colonel Maberley, who abhorred what he called "slip-slop." Gifted with a large stock of patience and toleration, gentle, kindly, full of fun himself, and with a keen appreciation of humour, an excellent official guide and a charming private friend, he was essentially a man to obtain influence over a youth of my earnest eager temperament, an influence which was always wholesomely and beneficially exercised.

In my new position I saw, for the first time, the virtual head of my office, the Secretary, Colonel Maberley\* and was frequently brought into communication with him so long as he remained with us. I cannot understand how Anthony Trollope, as he narrates in his *Autobiography*, found Colonel Maberley cruel and unjust; he may have had a personal dislike to Trollope, whose manner, I fear, was not conciliating; but though he was always pleasant to me after a fashion, his chief characteristic was, I think, indifference. He liked his status at the Post Office, he liked the salary which it gave him, for he was fond of money, and he went through the work; but he was an Irish landlord—a very different position then from what it is now; and his mind was running on whether Tim Mooney would pay his rent, or Mick Reilly the bailiff would get a good price for the heifer. He was married to a beautiful and brilliant lady, who wrote fashionable novels and went into society, so he had much besides the Post Office to occupy his thoughts.

He used to arrive about eleven o'clock, and announce his arrival by tearing at the bell for his breakfast. This bell brought the head messenger, whose services he arrogated to himself, who, being a venerable-looking and eminently respectable personage, probably well-to-do in the world, was disgusted at having to kneel at the Colonel's feet, and receive the Colonel's dirty boots into his arms with the short adjuration, "Now, Francis, my straps!" He wrote a most extraordinary illegible hand, and perhaps for that reason scarcely any holograph beyond his signature is to be found in the official records. The custom was for certain clerks of recognised status, who had a distinct portion of the official work in their charge, to submit the reports which had been received from the postmasters or district surveyors, on complaints or suggestions of the public, to the Secretary, and receive his instructions as to the course to be pursued, or the style of reply to be sent. This performance we used to call "taking in papers to the Colonel," and a very curious performance it was.

The Colonel, a big, heavily-built, elderly man, would sit in a big chair, with his handkerchief over his knees and two or three private letters before him. Into a closely-neighbouring seat the clerk would drop, placing his array of official documents on the table. Greetings exchanged, the Colonel, reading his private letters, would dig his elbow into the clerk's ribs, saying,

\* The Postmaster-General is, of course, the real head of the Post Office, but to most of the clerks he is a veiled *Mokana*; besides, Postmasters-General "come and go" with Ministers, while the Secretary, until death or resignation releases him, "goes on for ever."

"Well, my good fellow, what have you got there—very important papers, eh?" "I don't know, sir; some of them are, perhaps—" "Yes, yes, my good fellow; no doubt you think they're very important: I call them damned twopenny-ha'penny! Now, read, my good fellow, read!" Thus adjured, the clerk would commence reading aloud one of his documents. The Colonel, still half engaged with his private correspondence, would hear enough to make him keep up a running commentary of disparaging grunts, "Pooh, stuff! upon my soul," &c. Then the clerk, having come to the end of the manuscript, would stop, waiting for orders; and there would ensue a dead silence, broken by the Colonel, who, having finished his private letters, would look up and say, "Well, my good fellow, well?" "That's all, sir." "And quite enough too. Go on to the next!" "But what shall I say to this applicant, sir?" "Say to him? Tell him to go and be damned, my good fellow!" and on our own reading of those instructions we had very frequently to act.

With all this, Colonel Maberley was a clear-headed man of business; old-fashioned, inclined to let matters run in their ordinary groove, detesting all projects of reform, and having an abiding horror of Rowland Hill. As I have said, he was with me generally easily good-natured, but he could assume an air of *hautecur* and be uncommonly unpleasant sometimes; and I remember that when on a little slip of written memoranda which used to be kept on the edge of his green slope-desk we saw the words, "Kate—money," we might generally expect to find the Colonel's temper rather short that morning.

Amongst those clerks who were not brought much into communication with him he was supposed to be very high and haughty, and in connexion with this *trait* there was a good story told of him shortly after I joined the Service. It appears that one of Lord Clanricarde's recent appointments, a strapping Irish lad fresh from Galway, wished to effect an exchange of duties with a brother clerk named Williams, whose exact whereabouts he did not know. He roamed through the unfamiliar passages until he met a young fellow of whom he inquired where Williams was to be found. The young fellow was a practical humourist, and, at once comprehending the situation, pointed to the door of the Secretary's room and disappeared. In went the neophyte without an instant's hesitation, and found the Colonel writing at his desk. "Is it Williams ye are?" asked the Galwegian. "Eh?" cried the astonished Colonel, raising his head. "Are ye Williams, and will ye take me waithin' duty—" But here the outraged Colonel flung down his pen, and, waving off the intruder with both arms, called in a hollow voice, "Go away, man!"

The Postmaster-Generalship being one of those berths which are vacated on a change of Ministry, my kind friend Lord Clanricarde did not remain very long in office. While at the head of affairs, he took several opportunities of showing that he had not forgotten me. He had me sent out to assist one of the district surveyors in his travels of inspection round the country offices, a duty which, as it provided "per diem" and travelling allowances in addition to the salary, and gave me the chance of becoming acquainted with much of the internal working of the department, was, in every way, a really good thing for a young man. I am afraid, however, that, just launching, as I was into the pleasures of London life, I scarcely appreciated his kindness as I ought; and I know that when, later on, I was occasionally sent out to "take charge" of a country Post Office, *i.e.*, to represent the postmaster, who, through some dereliction of duty, had been temporarily suspended from exercising his functions—I used to groan in spirit at my exile from all I loved, though, of course, I could make no open demonstration. The ghastly days and nights I have passed in such places as Stony Stratford and Sittingbourne, with a dull mechanical duty to perform, and without a congenial soul with whom to exchange an idea, are still present to my memory.

Lord Clanricarde's kindness continued while he lived, though we only met occasionally; he always wrote to me when anything special in regard to me had occurred; and on my quitting the Service in 1872, I thought it right to acquaint him with the fact, and at the same time to thank him for his early kindness. His reply was in the most genial spirit. "I assure you," he wrote, "I feel very sensibly your kind recollection. It must enhance the pleasure I have often felt and feel in observing your distinguished, and well-deserved success in literature, gained while you did not fail to earn official credit likewise. That I have been at any time able to serve you, and to gratify your excellent and admirable mother, will always be to me a happy reminiscence."

After the retirement of Lord Clanricarde, the holders of the Postmaster-Generalship, in my time, were Lords Colchester, Elgin and Canning; the Duke of Argyll; Lords Hardwicke and Stanley of Alderley; the Duke of Montrose; and the Marquis of Hartington. Save in some special instances, the general body of the clerks knew little about their Great Panjandrum. On his accession to office, he used to be "brought round," that is to say, Colonel Maberley would open the door of each room and say, "Gentlemen, the Postmaster-General! then, turning to his lordship, "This is the such-and-such branch, and we would rise and bow, and our new master would return the salutation and depart.

This was the usual style of performance; but I remember two exceptional cases, in both of which the late Lord Hardwicke was concerned. He was a blunt, eccentric, mannerless person, with an overweening sense of the importance of his position; he had previously served in the Navy, which tact, coupled with the peculiarity of his ways, caused him to be known among us as "the Bo'sun." His first genial inquiry on his appointment, when the "list of officers of the department" was submitted to him, was, "Now, can I dismiss all these men?" And his general idea was that late

attendance, or any other shortcoming on the part of the clerks, should be punished by keel-hauling or the "cat." On the occasion of his being "brought round," it happened that a couple of dozen of Guinness's bottled stout—a pleasant beverage, which at that time I was sufficiently young and strong to take with my luncheon—had arrived for my consumption, and had been temporarily stowed away in a corner of the room. As the Bo'sun was about retiring the bottles caught his eye. "Hullo!" he roared, in a Jack Bunby-like voice. "whose are those?" I meekly acknowledged the proprietorship. I do not know what punishment Lord Hardwicke would have decreed me for the inexpiable offence of drinking beer, for Colonel Maberly hurried him away. In the next room they were not so fortunate. There one of the men was so absorbed in his *Times* that he had not heard the entrance of the Secretary and the new chief, but, with his back to the door, sat immersed in his reading. The wily Bo'sun marked this at once, and, stealing up behind the preoccupied man, gave him a dig in the ribs, exclaiming, "Hullo, you sir, if you can find time to read the newspaper, we can spare a clerk!"

(To be continued.)

## LONDON TELEPHONE SERVICE NOTES.

THERE is little in the London Telephone Service which at the moment is not dwarfed by the announcement of the approval of the special "Traffic" organisation. It has been long expected and was so long delayed that one almost began to doubt if it would ever come into operation, and lo, it burst upon the Service so suddenly as to appear almost unreal! It is a great scheme, for everyone of rank lower than a superintendent receives a new title and many receive improved scales; and oh, joy of joys in these days, some back pay! Fancy, gentle reader, the delight of handling something more than your month's salary. No wonder there are smiling faces in the London Telephone Service to-day. The First Class Clerk of the Traffic Branch assumes the style and dignity of Assistant Superintendent of Traffic, Class I. Three additional appointments of this class were available and are filled by Messrs. P. J. Mantle, C. F. Arrowsmith and W. J. White, formerly Exchange Managers. We offer them our heartiest congratulations. There are many other well-earned promotions which will be found set out in the recognised official records but for which we have not space in these notes. It is especially gratifying to know that a number of Exchange Managers and members of the Office clerical staff absent on military duties receive advances under the scheme.

The new organisation continues the division between the Traffic Branch and the Traffic Staff and Buildings Branch for reasons which are no doubt excellent, even if not readily comprehended, and there seems every reason to suppose that the good work of the traffic side will be carried on and improved under the new arrangements.

The O.B.E. medals gained by London Supervisors and Telephonists were presented on Saturday afternoon, April 27, by Lord Crewe in the Green Park. *The Times* account of the ceremony says that the telephone girls who had stuck to their posts were cheered with special heartiness. Lord Crewe in his speech said that "The war had brought new risks. There were the bombing raids on London, futile of military result but destructive of many innocent lives which men and women in responsible positions had confronted with a calm courage that could not be too highly honoured. . . . These men and women had one attribute in common. In the hour of danger they were able to think of others, not of themselves. Self-forgetfulness was the parent of all the greater virtues. These people had set duty first and themselves last."

One Supervisor who went to see a member of her staff decorated said that the whole ceremony was so impressive that she badly wanted to cry—woman's highest tribute!

The London Telephone Service has parted with one of its best liked members in Mr. R. M. Crawford of the Contract Branch. Mr. Crawford who has to own to 61 years has left the Office but, if we mistake not, will often be seen in the neighbourhood of St. Paul's, the pigeons of which noble pile are no less attached to their friend than are the Post Office Special Constables who were privileged to do duty with Mr. Crawford. His conversation was always interesting and edifying, and he will be much missed. As a token of appreciation his Office friends presented him with a watch and some War Savings Certificates. His letter of thanks is a model of what these communications should be.

## SO NEAR AND YET SO FAR.

By AMY BALL.

(Telephonist, London Wall Exchange. On duty in France.)

IN every British heart lies a great love for the mother country, a love which years of absence cannot smother. It is sincere and deep, and in spite of interests abroad, the homeland calls to each. Such a fascination and tenderness surrounds that one place, Home. Yet about this land of France there is something which appeals to the nature-loving soul, something about its green fields, its sluggish streams, its woods and its forests. Then, the grand beauty of its rugged coasts, the masses of jagged rocks, and its stretches of silvery sand. In the forest great sand dunes rise one after the other covered with luxurious undergrowth, and a pale green moss peculiar to the sandy soil. Tall, stately poplars abound and also thickets of larches and pines. Peace and stillness over all, until through an opening in the dense forest appears the sea, beautiful always, even in its roughest moods. Presently the sun sets in all its glory, masses of pink tipped clouds appear, the sky changes gradually until it is just a beautiful stretch of colours, varying from red and orange to the most brilliant yellow. Beautiful silver rays reflect for miles upon the water. About 30 miles distant this same sun sets upon our own dear land, and the heart is filled with a great yearning, for with this still, solemn, drawing on of night, comes thoughts of our dear ones at home. The sight stirs one's very being, it seems that the great things of the world are speaking, all else is forgotten in that grand uplifting from the sordid things of life to the mystic and wonderful. In its garb of silver and orange the whole sky speaks of joy and hope. The waves dance and curl, the village is deserted. A tiny tumble-down cottage here and there is the only sign of habitation, just the home of some of the fisher folk, who seem to live in lonely companionship, with that great wonder—the sea.

My life in France has been for the most part spent in one of these quaint, old-world villages, where one watches its inhabitants daily, and wonders if time is really passing, for each day life with them seems to be at a standstill, their cottages more tumble-down and dirty, and the streets more neglected. Such a village as one reads of in books, but of which one scarcely realises the existence, except in romance and fancy. Sadly neglected is its one big house, lying back in its grounds, sheltered by tall trees. Spacious grounds they are, now thickly covered with weeds. Poplar trees nobly standing, and many bushes growing thickly and intermingling with each other in the most delightful state of wildness. Fancy travels back to the days before the war and pictures the inmates. What scenes were enacted behind those discoloured walls and how many lives begun and ended in those days of peace and splendour. How proud must our sleepy village folk have been of their manor house. One can almost hear the church bells ring and see the family making their way to church on Sundays. It can be seen from its position on the hill, it is so tiny and picturesque, built of grey stone, and its spire in darker slate.

Just a farm opposite, and to the left built in an orchard stand the four little huts which comprise our camp—my home for duration. Standing each higher than the other, they remind one of bee-hives for they are hidden among the trees, and a covered verandah leads from one to the other. Two huts are sleeping huts and the fourth highest on the hill is the recreation hut. Some forms and a piano are the only furniture, unless one counts the decorations, which consist of poems on coloured paper, tins containing sprays of ivy, and some laurel wreaths. On Sunday the Church service is held here. One end of the hut represents an altar, a dark blue cloth embroidered with a gold cross, two wooden ones holding the candles, and a gold and white text above. Number two hut is the home of seven telephonists. Single mattresses on little iron bedsteads, and shelves above. We are responsible for the general tidiness, and the sweeping is done by those on late duty. On the shelves are just articles of use such as hairbrushes, mirrors, and books. Also our own personal treasures, a much prized photograph or a dearly-loved volume, reminding one of absent friends.

The messroom holds three tables, one of which is used for writing purposes. It is a square room with six windows, very pleasantly situated, but one gets tired of the monotony of white boards (everything is scrubbed wood), so it is relieved by chairs with green canvas seats, and by green blinds. Here we meet each night at 8 p.m. for roll call, after which comes supper and bed. At 10 o'clock all lights are out, and everyone to all appearances asleep. But only the girls themselves know of the many moonlight feasts partaken of in the seclusion of the sleeping huts, and the lengthy discussions held on everything in general.

About a hundred yards further down the slope, is the depot where our exchange is situated. It consists of a little wooden shed, with two boards in the old magneto style of working, not a very cheerful office, for in places the rain comes through, and daylight can be seen through the cracks in the wall. Our kindly linesman once obliged by putting up a waterproof sheet under the ceiling to catch the drops. Once in three weeks we get a week of night duty, and great is the excitement when the wind howls round our little wooden hut, and one is startled by the hurried scampering of a mouse across the floor in the dead of night, or a scraping underneath the floor, makes one dread the thought of rats. Once we were presented with a tiny white kitten, but alas, we were only able to keep it two days, and two nights. Our linesman (as useful as ever) made us a kettle out of a bully beef tin. It has a nice piece of copper wire for a handle, but the spout was the best part of it. It stuck out a little bit higher than the rest of the tin, and had a nasty habit of letting the water forth at the most unexpected moments. The second night it boiled over our kitten. We had a busy ten minutes comforting the little thing, then somebody trod on it, so next day we bade it a tearful farewell and gave it away. Who do you think had it? Our linesman.

Christmas time we were snowed up, men began to talk of the time when the camp would have to be dug out. Anyhow we survived it, and one night one of our girls relieved us with her coat collar turned up to her ears, her hat tied on with a woollen scarf, and carrying a huge lantern. All of us immediately greeted her with a carol: "See amid the winter snows."

The people on the depot were used to hearing strange noises from the telephone exchange, so no one came to see what was the matter.

The depot wants a little bit of explaining. One comes back quickly to the seriousness of life, for here are rows of offices, railway lines, trains and machinery. Such a busy scene it is, and only a result of this great war. Khaki clad figures hurry to and fro, all engaged in some kind of work, each doing a different task, but all with the same purpose in view, the bringing to an end of this war. Each British heart striving to "win," and doing its best. Such is life everywhere to-day, a series of small things all fitting in somewhere to make up the whole.

So the telephonists in a small exchange "somewhere in France" think, as they carry on the good work, making and severing connexions for the great business of war, in a place which is near and yet so far from our own dearly loved home.

When Army discipline and camp life become irksome, we can lose ourselves in the blue infinities of sea and sky, away from the atmosphere of war and work.

The spirit is free for a time when one feels the clean salt breath of the sea, and sees the hundred greys and browns and sombre-greens in the forest. Thus we find content and hope, hope which bids us be patient and wait for the peace which is soon to come to us all.

#### LEEDS AUTOMATIC TELEPHONE EXCHANGE.

The automatic exchange at Leeds, the largest yet installed in this country was opened on May 18. We hope to publish a description of it in our next issue. A writer in the *Yorkshire Post* says: "In the words of the philosophic Omar Khayyam, the subscriber will be able to murmur as he 'dials':

The moving finger writes, and having writ  
Moves on.

The rest of the quotation is not applicable. In case of error it is quite simple "to lure it back." One hangs up the receiver, releases the dial, and starts again. But the Persian sage had not anticipated the marvels of automatic telephony.

#### THE GERMAN POSTAL BUDGET FOR 1918.

THERE is little that is instructive in the new German Postal Budget, the figures for the receipts being evidently supplied, as in previous years, from the 1914 budget. There is again no provision for "Telephone Purposes" in the Extraordinary Budget (B), and the capital expenditure on extensions is practically stationary, but has decreased from 34,000,000 marks in 1915 to a little under 20,000,000.

The working costs (maintenance of posts, telegraphs, &c.), have been put up by exactly one million marks, the increase being allotted entirely to the postal side. Last year a saving of 9 millions was effected under this heading, but even then at the expense of telegraphs which were cut down by 10 millions while the postal costs were increased.

It is observed that provision is still made for Dar-es-Salam, Windhuk, Luderitzbucht, Tsingtau, Swakopmund and other places. We imagine these offices must be sinecures although we read in one of Suderman's novels "where does such exist in the Prussian realm?"

		RECEIPTS.	
		1917.	1918.
		Marks.	Marks.
Ordinary Budget	... ..	881,247,500	881,246,700
		(£44,064,237)	(£44,062,335)
		EXPENDITURE.	
A.—Ordinary Budget.			
Salaries, &c., headquarters	... ..	4,178,730	4,213,350
Salaries of oberpostdirektors, overseers, inspectors and officials generally in Germany and Colonies	...	353,702,842	371,484,742
Dwelling allowances	... ..	79,983,730	76,200,500
Other personal expenses for assistance, pensions, &c.	... ..	160,406,321	144,244,683
Working costs (maintenance of travelling post offices and apparatus, payment of railway administration, despatch of posts, maintenance of telegraphs, &c.)	... ..	78,353,970	79,353,970
Sundry expenses, travelling, rents, office expenses	... ..	41,391,900	41,591,900
Building costs	... ..	3,770,000	3,630,000
Other expenses (payments to foreign railway, telegraph and shipping authorities)	... ..	37,546,608	37,546,608
		750,334,101	758,265,753
		(£37,516,705)	(£37,913,287)
Receipts	... ..	881,247,500	881,246,700
Balance	... ..	130,913,399	122,980,947
Less capital expenditure (see (b) below)	...	19,285,£20	19,847,569
Surplus	... ..	111,628,179	103,133,378
		(£5,581,408)	£5,156,669)
B.—Extraordinary Budget.			
Telephone purposes	... ..	—	—
(b) Capital expenditure:			
Extensions (new land and buildings, &c.)	... ..	19,285,220	19,847,569
		(£964,261)	(£992,378)
Included in this amount are the following telegraph and telephone charges:—			
Repayment of and interest on capital	... ..	15,208,080	15,208,080

(The mark has been taken at the old approximate equivalent of twenty to the pound sterling.)

W. H. G.

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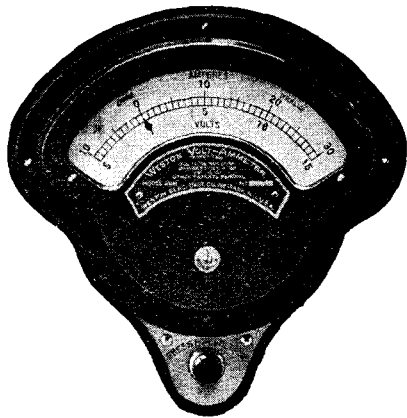
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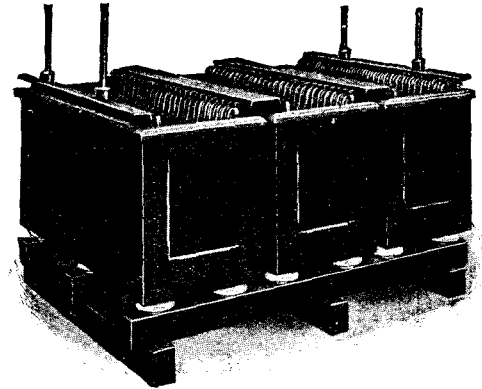
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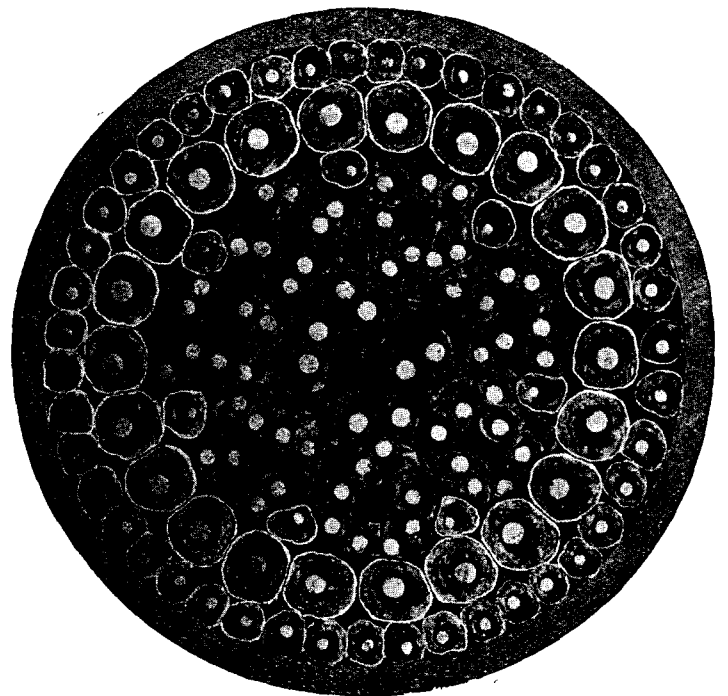
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### "TRAFFIC" DAYS.

THE question is sometimes asked: "What is the Traffic Office?" This comparatively young and tender shoot which has sprung into existence among the older and better-known branches of the Post Office has not yet attained to a growth that commands general recognition; its contours have not become familiar, and its functions are not matters of common knowledge.

In the course of changeable time, perhaps, the Traffic Office may attain to that dignity of position and publicity which entitles a branch of the Service to be known and referred to by initial letters. It may then be the T.O. But to some extent even such a dignity is rather uncertain, for very recently an officer of considerable experience asked, in reply to an official endorsement, "What does the contraction 'T.O.' mean?" The Traffic Office has, however, reached that consummation of alleged popularity—a nickname. In certain quarters it is known as the Intelligence Department. This sobriquet has a hackneyed sort of ring about it, with just a possible undertone of sarcasm. Nevertheless we accept the compliment, although we prefer our other appellation—the Terrific Office.

In the provinces the Traffic Office is, as yet, a factor in the telephone organisation. There are hopes, however, that its influence will extend—in time. It is responsible, under the District Manager, for the surveillance of the Telephone Service, and, if the Surveyors' Department will not grudge us the use of the phrase, it may be said that the "Traffic" is the eyes and ears of the "Telephone Service."

The *personnel* of the office consists of a traffic superintendent, one or more assistant traffic superintendents (Class I) and, again, one or more assistant traffic superintendents (Class II). It will no doubt be superfluous to inform those in search of historical official information that the salaries of the individuals who fill—or, perhaps, occupy—the positions are inversely proportionate to the length of their titles. The office has also the help of several clerical assistants whose duties in the way of preparing returns and keeping records are valuable and multifarious.

Strictly speaking, "Traffic" men are supposed to be travelling officers, but in these days of superlative economy—in the Post Office—travelling is conspicuous by reason of its rarity; and when necessity compels a visit to be made to, say, a town on the coast, it usually selects a day of east wind and rain. Still there is plenty and to spare of work to be accomplished indoors, which keeps the mind and the body from wandering, on a day of sunshine, along the hedgerows that lead to country exchanges.

The "Traffic" day, opening at the comfortable hour of 9 a.m., usually commences with a 'conference.' A Class I man and a Class II man assembled with the "Chief" in his sanctum now form a plenary sitting. There ought to be more present, but the exigencies of the times have called men to other spheres of activity. Yet the attendance is as a rule sufficiently large to ensure keen discussion—especially if the Scottish element has an idea. The subjects that come up for consideration cover the whole range of matters telephonic—the provision of junctions, the routing of calls, subscribers' complaints, war emergency measures, staff questions galore, &c., &c. The staff problems afford rare scope for debate, even with the aid of a Staff Rule Book, a Postmaster's Rule Book, and a borrowed Surveyors' Code. The last-named is a compendium of official wisdom which should be avoided, if at all possible, by everyone who would preserve his mental equilibrium. See *St. Martin's-le-Grand*, No. 106.

A recent topic that has called forth a considerable amount of eloquence is the Circular to Surveyors, &c., No. 4/17, albeit we behold with a sort of conscious awe the results of the workings of a master mind towards the scientific valuation of all sorts and conditions of telephone calls. As usual the first necessity was to express a desire for returns. Then the struggle commenced. We thought in decimals, discoursed on averages, and worked out percentages in our dreams. After many days the average values of originated calls at all the exchanges in the district were determined; and then we drew graphs to represent the amount of work done at, and the number of telephonists required by, the various

exchanges. What a thing is a traffic "curve"! It absolutely disdains the line of beauty; it is a product of modernity which might be given the place of honour in a Futurist gallery as a picture of Mount Everest.

But although our new acquaintance, the aforesaid circular, has endeavoured to secure a place of prime importance in our favour, there remains one old and tried friend whose familiar features we have almost learned to love. A sharer of our most profound thoughts, and the subject of our most secret opinions, this friend is known as "Call Office Differences." The coin-boxes deliver up a certain number of pennies, and the tickets prepared in the exchanges dispute the correctness of the number. The coin-boxes say "We're right," and the tickets reply "No, we're right." And so about the middle of each month our venerable friend walks in with a formidable list of disputes and peremptorily says "Please investigate and explain." Oh, shade of Sherlock Holmes, how we have investigated! With premises obvious, and with hypotheses of rare subtlety, our ratiocinative faculties have been stretched on the rack of possibility; and still the answer to the question eludes us.

"Myself when young did eagerly frequent  
Traffic and Fees and heard great argument  
About it and about: but evermore  
Came out by the same door as I went."

That is, we know, most execrable, O Discerning Reader; but your feelings are only akin to our own when month after month we fail to satisfy entirely our patient friend who so earnestly desires an explanation.

Of course there is always a compensating balance, and the Traffic Office finds it in the knowledge of the work that lies to its charge in the great scheme of the war. The romance of the telephone on the battlefield has been told and re-told, but the story of the telephone in that vast area "behind the lines" which is not immune from the dangers of war has yet to be heard. It is a tale for other days; but the Traffic Office knows something of its interest. What a task lies before the future historian of the war, for even in the Traffic Office there is a file of circulars which could not possibly be disregarded. It may even now be classed as a book—a book which ought to become a classic, being, as it is, a study in the applicability of the telephone for the purposes of home defence, a treatise which might be helpful to the theoretics of evolution, and a minute history of a conspicuous phase of Armageddon.

Then there are the soldiers who have been trained in telephone operating. The Traffic Office has become a sort of headquarters so far as the soldier-telephonists are concerned. True, we were allowed the services of a corporal to help us along with the problems of paying and billeting the men, the granting of leave, and—the maintaining of discipline. While these experiences were fresh upon us, we placed implicit faith in our Corporal, but he, no doubt sensing our extreme innocence, could not forbear to "swing the lead." He was a breezy individual, and used to herald his approach each morning long before he entered the office. By the time he had actually reached the door, he was breathless and well ahead with a direful tale of "no breakfast this morning," or "telephone men on fatigues." It was difficult to judge which was the greater calamity of the two. The "lead" increased in weight from day to day, and the velocity of its "swing" gained in momentum until the "lead" ultimately swung the Corporal. He was transferred from "Headquarters" to operating; his place was taken by a steadier type, and we returned in peace to the contemplation of loads and the elucidation of averages.

Even yet, however, our peaceful activities are occasionally rudely disturbed. Our office is situated in one of the least salubrious areas of a great commercial city, and is separated from a row of noisome tenements by a few feet of somewhat oppressive air space. Our neighbours are mostly of the gentle sex, and sometimes as we return from lunch we cannot avoid becoming aware of a jug being hurried away—a jug ineffectually camouflaged by an apron. That is a portent of a harassing afternoon. The concert usually opens at 2.30 p.m. Solos, part songs and choral efforts are rendered with unceasing fervour until harmony becomes painful, and to relieve the tensions discords creep into the scheme. The battle scene is

in full blast by 4 p.m. when the combatants reach the open, and the conflict rages to and fro until one or the other side succumbs from sheer exhaustion. At least that is how it *sounds*.

If only the previous paragraph could reach the eyes of those who scrutinise returns at Headquarters, it might serve as an acceptable explanation as to why the answer to a "sum" is given, say, as 2.44 instead of 2.45. To keep the average value of an originated call correct to the absolute nearest hundredth part is no easy matter when the syncopated top notes of "My Home in Kentucky" are entering into shrill contest with the sober rhythm of the metric system.

Amidst all the variety of "Traffic" days, one thing remains constant—the subscriber's complaint. But even our complainants are composed of a pleasing variation of types. They write us letters—matter-of-fact epistles, pleading notes, angry communications, and sarcastic effusions; they "ring us up," and they call upon us. In replying to the letters, there is as yet no section in "Correspondence with the Public" containing draft replies for telephone complaints to help us. Indeed, the hundred and one different difficulties that may arise and the subtle distinctiveness that each separate reply requires must render the compilation of standard drafts rather a big task. Nevertheless we have studied the style of the models placed before our brethren of the Telegraphs; and so far as it is humanly possible we endeavour to imitate the inimitable. The gentleman who borrows our ear on the telephone is, however, generally the most difficult subject to deal with. He catches us in all the white heat of his fury, and telephones and every-one operating or responsible for them are condemned beyond all hope of heaven. He knows the number he wanted was not "engaged"; he is certain the telephonist who reported "No reply" never tried the circuit; in fact he refuses to be reasoned with, because he has seen and heard all about it—on the music-hall stage. But the really mysterious thing is that, if the same gentleman pays us a visit, his attitude is not so full of frightfulness, his dictums are less sweeping, and he is not impervious to an explanation.

Recently a supervisor strayed into the office, and her eyes opened wide with a look of incredibility as she caught sight of a volume which a travelling supervisor had borrowed from a circulating library and which bore the ominous title, "Traffic." "Traffic," quoth the supervisor, "Don't you get enough 'traffic' on duty without taking it home to read about?" There's the rub. We do get so much of it while on duty that we cannot escape carrying it to our own firesides, and what is perhaps a worse offence we cannot avoid writing about it. Ah, well, the Traffic Office—whether it be an ideal one or otherwise—is certainly a place of infinite interest and, occasionally, just a little humour, and those who inhabit it and are responsible for the administration of the Telephone Service will certainly be entitled to early consideration when the vexed question is settled of increased rations for brain workers.

IDLER.

### PERSONAL GLIMPSES OF BRITISH AND AMERICAN TELEPHONISTS IN FRANCE.

A LITTLE group of young women have responded to the call of General Pershing, and are going "over there" to become a real part of the Expeditionary Force in France. There are one hundred and fifty of these volunteers who are known as the Switchboard Soldiers, and they are not only expert in the telephone business, but each one of them speaks, reads and writes both English and French. The New York *Evening Telegram* says of these young women:

These experts have been selected from all parts of the country, even from far-away California, and include women from all walks of life. There are French-born girls who have learned English while in employment here as maids; teachers who have studied in France, and gentlewomen, many born in France, who have laid aside their home duties and mastered the routine of the switchboard, for the purpose of filling in at posts on the war-front where they can be of more service than men.

Not that the men who have been doing this work have lacked either courage or skill, but because, under the excitement of battle, they have at times failed to stick to the strict business conversation necessary and have given vent to their feelings in language more picturesque than diplomatic.

Experiments proved that while women have more "nerves" than men, they stick closer to business in a pinch. This was demonstrated in Belgian and French cities where the girls stayed at their switchboards while the aircraft of the enemy overhead was hurling down bombs. Says the writer in *The Telegram*:

Some time ago a request was received from General Pershing for a number of young women willing to become a genuine part of the Expeditionary Force in France, and do their bit to win the war by giving necessary support to the boys in khaki who were training to "go over the top." Uncle Sam at once sent out a call for the requested assistance through the Signal Corps, and the drive for competent "switchboard soldiers" was on.

Of course the first young women selected were those already familiar with an operator's duties who spoke both English and French, but there were comparatively few of these. Then the work of picking from the volunteers was begun, and only the best were selected from the thousands who answered the call and said they were willing to go. These were placed in the hands of expert operators and taught the mysteries of the switchboard and made acquainted with certain other important duties, for their services on the other side once they begin their work will include talking with both American and French military officers and French officials. Additional units are to be formed to follow the first, so any young woman who believes that she is qualified for the tasks demanded may apply at the nearest telephone company headquarters.

Every member of this telephone organisation will be required, at all times, to wear a standard uniform approved by the War College. The different ranks are distinguished by different insignia on the white brassard worn on the left arm, operators wearing a black transmitter, supervisors a gilt laurel wreath beneath the transmitter, and chief operators the two symbols mentioned surmounted by the gilt lightning-belts used as insignia by the Signal Corps. The pay is \$60 a month for operators, \$72 for supervisors, and \$125 for chief operators, in addition to which allowances will be made for rations and quarters when these things are not provided by the Army.

It was impressed upon all of the young women selected before they actually were sworn into the service that the force was not destined for either a pleasure trip or a "joy ride," and that social opportunities were not to be included in the program. It was to be a war-task of a nature and size which would appeal only to the brave and patriotic, the Signal Corps wanting only level-headed women who were resourceful, able to exercise good judgment in emergencies, and even endure hardships if necessary.

The details of the work the young women will be called upon to perform once they reach the war-zone have not yet been made public, but this description of the British field-telephone stations, where orders to the various battalion officers are received and dispatched, will give some idea of the hazardous duties of the Switchboard Soldier:

The switchboard is carried on a wagon and can be operated without being unloaded. The cable is unwound as a wire section goes forward, and behind the cable drum is a mounted soldier carrying a lancelike pole, with a hook at the end, who deftly catches the cable as it is unreeled and thrusts it out of the way of following traffic. If the system is to be more or less permanent the engineering section which follows stretches the wires on light poles. When the section is moving rapidly in dangerous country it lays out a heavily insulated ground cable and hides it besides the road—in a ditch, for example.

Even in the early days of the war the British military telephone-service system was so comprehensive that it enabled Sir John French to direct the field-operations of the British Army in Flanders by telephone for three days from his home at Hyde Park, London.

The French system of telephone communication has been

successfully used by the French generals, particularly General Joffre, to regulate all troop movements over a 200-mile battle-front. At headquarters wax-headed pins on a huge map indicate the location of troops, ammunition, automobiles, &c. This map shows the physical geography of the country and all avenues of transportation. The Chief of Staff keeps the map up to the minute by changing the pins according to information received by telephone. Then, if he is advised that a certain division is being attacked by the Germans in superior numbers, he knows by referring to the map the positions of disengaged troops, telephones an order, and in a few minutes troops are moving forward to reinforce their comrades under fire.

It is in telephone operations of this character that the young women of this country will be called upon to help and possibly to assist in receiving and transmitting information which will direct gun-fire (*New York Literary Digest*.)

### TELEPHONE DEVELOPMENT OF THE BRITISH ISLES.

A TABLE is subjoined of the telephone development of the British Isles for the years from Dec. 31, 1914, to Dec. 31, 1917, covering the whole period in which the Service has been carried on under war conditions to the latter date. The number of telephones, which was nearly stationary in the middle years of this period, now shows a decided increase, while the increase of wire mileage has been uniformly maintained. The figures of telephone stations in the United Kingdom and London include those stations supplied for National emergency circuits.

#### EXCHANGE AND PRIVATE STATIONS.

	1914.	1915.	1916.	1917.
United Kingdom (Post Office System)	800,544	806,727	800,527	813,394
Hull Corporation (approximate) ...	12,500	12,500	12,500	12,500
Guernsey Corporation	2,162	2,197	2,235	2,281
	<u>815,206</u>	<u>821,424</u>	<u>815,262</u>	<u>828,175</u>
London (telephone area)	267,769	269,449	269,538	277,484
Glasgow ..	40,708	39,587	37,918	37,131
Liverpool ..	*33,038	*33,682	*33,648	*33,941
Manchester ..	32,921	33,045	33,157	33,883
Birmingham ..	20,615	21,330	21,635	22,346
Edinburgh ..	15,967	15,933	15,785	15,815
Hull .. (approx.)	12,500	12,500	12,500	12,500
Bradford ..	12,460	12,555	12,499	12,500
Newcastle ..	11,920	12,148	12,071	12,276
Sheffield ..	11,683	11,902	11,989	12,126
Leeds ..	11,203	11,316	11,318	11,504
Dublin ..	10,110	10,220	10,137	10,452
Call Office Stations...	14,649	14,591	14,120	13,778

#### TELEPHONE EXCHANGES.

United Kingdom ...	3,106	3,178	3,175	†3,171
London ...	79	80	80	80

#### WIRE MILEAGE (in terms of single wire).

United Kingdom (Overhead and underground)				
Local ...	2,284,924	2,464,917	2,522,723	2,566,579
Trunk ...	321,480	356,706	379,813	405,790

\* Includes an approximate figure of 2,000 private telephone stations.

† About a dozen new exchanges were opened in 1917. The apparent decrease in the total is due to combining certain trunk and local exchanges.

### RETIREMENT OF MR. ARTHUR MARTIN.

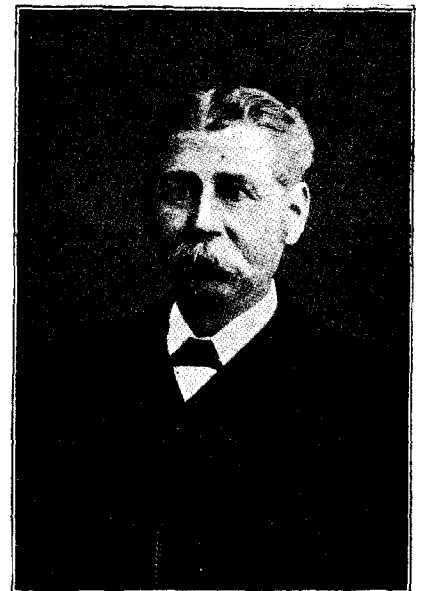
A NUMBER of Mr. Martin's official friends and associates assembled at St. Martins-le Grand on Tuesday afternoon, May 7, to bid him formal farewell on his retirement, and to present him with some permanent tokens of their esteem and goodwill. The gifts comprised a canteen of cutlery and plate, a case of fish knives and forks, a walking stick, all suitably inscribed, and a fountain pen, which had been subscribed for by numerous colleagues, &c., throughout the Telephone Service.

The presentation was performed by Mr. R. A. Dalzell (Chief Inspector of Telegraph and Telephone Traffic), who paid a very warm-hearted tribute to the recipient, sketching out Mr. Martin's telephonic career which commenced as far back as 1881 when he joined the Lancashire and Cheshire Telephonic Exchange Company and his subsequent service as District Manager for the National Telephone Company in Liverpool where he did so much excellent and untiring work towards the building up of the system there. He also reverted to the positions which Mr. Martin had since held as Assistant Provincial Superintendent, and latterly as an Inspector of Telegraph and Telephone traffic wherein he had performed valuable work and had endeared himself to his colleagues by his kindly and good-natured manner. Mr Dalzell also made some pleasant references to other activities which Mr. Martin had interested himself in outside his official duties, and expressed the hope that as he was still by no means old in age or temperament he would find therein a continuance of pleasurable enjoyment in the years of retirement, which all present hoped would be long and happy in every way. The cordial manner in which Mr. Dalzell's remarks were applauded indicated the unanimous feeling of the meeting, not only in its goodwill to Mr. Martin but its appreciation of the manner in which their sentiments had been voiced.

Mr. A. E. Cotterell who spoke next remarked that in performing the willing duty of Honorary Treasurer he had received not only many subscriptions but quite a number of letters which testified to the spirit of kindness prevailing towards Mr. Martin, as to which he read a selection as typical. Although they were all Post Office men now Mr. Martin might naturally suppose that the donors comprised old colleagues under the National Company and would therefore doubtless be gratified to know that amongst the cordial contributors and well-wishers were several of his new found colleagues and associates. Although they had both been in the Service for many years prior to their actual acquaintance, their friendship dated back exactly a quarter of a century to the time of the re-organisation of the National Telephone Company's system of management in 1893, and during all these years he had ever found Mr. Martin a loyal, warm-hearted and cordial colleague. It was a pleasant thing to look back on a long service ones self, but doubly pleasant when that service had been shared by so many colleagues who had grown in esteem and affection as the years passed by. They would all miss their old friend Martin, whose departure seemed to mark a milestone from which they might for the moment look back. In this connexion he had recently come across a copy of the actual Service instructions which brought the re-organisation, to which he had referred, into operation as at May 1, 1893. The country had then been divided up into 7 provinces and 39 districts. The surviving provincial superintendents who were then appointed had, as they knew, all retired. Of the 39 district managers serving in 1893 only 20 (including Mr. Martin) were now in the Service in that or some other capacity, and he thought it would be interesting if he mentioned these 20 remaining names and the districts to which they were then appointed: J. Ashton, Cardiff; W. Brown, Aberdeen; H. Chambers, Whitehaven; A. E. Cotterell, Birmingham; F. Cowley, Brighton; R. A. Dalzell, Leeds; G. Hooper, Plymouth; A. Lumsden, Fal'irk; J. Macfee, Bolton; A. Martin, Liverpool; J. Mewburn, Hanley; W. C. Owen, Cambridge; G. F. Preston, Sheffield; T. A. Prout, Bristol; J. D. W. Stewart, Hamilton; H. B. Sutcliffe, Bradford; J. Sinclair Terras, Galashiels; W. A. Valentine, Manchester; E. Willaimson; Hull; C. G. Wright, Glasgow. In conclusion he wished Mr. Martin long, life, good health and prosperity.

Mr. T. A. Prout cordially endorsed the remarks of the previous speakers.

Mr. A. Martin, in reply, spoke with much feeling as he thanked the meeting and through them all those who, though unable to be present, had associated themselves with the handsome gifts and expressions of goodwill. He said that he was far too overwhelmed by their kindness to express himself adequately, but that not only he but his wife and family would much prize these marks of their goodwill towards him. In looking back over a long service of some 37 years he had very happy memories of many kindnesses and much cordial goodwill, and they might rest assured that he should always recall with pleasurable feelings how good his old friends had been to him.





## The Telegraph and Telephone Journal.

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Editing and Organising Committee - - - { MR. JOHN LEE.  
MR. J. W. WISSENDEN.  
Managing Editor - - - MR. W. H. GUNSTON.

### NOTICES.

As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications, together with photographs, diagrams, or other illustrations, should be addressed to him at 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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### THE SPIRIT OF FELLOWSHIP.

WEEK by week the list of those who have given their lives for their country appears in the *Post Office Circular*. There are many gaps in our ranks. There is a danger lest we should fail, in the succession of losses, to appreciate what those losses mean. There is a greater danger lest the bitterness of domestic controversy should hide the tragedies from our eyes. Our great Service has been called upon to make a surrender which we should not have dreamed to be possible in August of four years ago. Men who were looked upon as leaders have paid the great price. They were not the less leaders because they culminated their life-work by aying down their life-work so gloriously. Friendships have been severed: ties closer than friendship have been broken: there has been a sad rupture of countless families and the family life of our own Service has been overshadowed. This family life is a real thing. It is not a merely sentimental phrase. The conception of industry which has reference only to that aspect of it which means work is only the outer conception, after all. The inner conception remains. Sometimes we realise more clearly than at other times what that inner conception involves. We are workers together; we know something of each other's lives and of each other's interests; we have our little jealousies, our little rivalries, our little disputes. So have all families. But these, as one may say, are the shells which only cover the real life. The spirit of fellowship is less articulate, but it is alive and it informs our daily conduct far more than we suppose.

Looking back on the four years it is certain that the spirit of fellowship has been vivified. Our brothers not in vain have taught us the great lesson. Indeed it would be of all tragedies the most stupendous had we not learned from all this anguish that there is something more in mutual association in one endeavour than the list of names in an Establishment Book. There is always a risk

of misunderstanding of tenderness. By a tradition from the Victorian age we had come to associate hardness with efficiency of discipline. The man of feeling has been regarded, too often, as a sloppy sentimentalist, incapable of a firm judgment, and unable to say "Yea" or "Nay," especially "Nay." The strong man, we say, must be unfeeling, whereas the real truth is that it is only the strong man who can afford to feel. His strength must bear something of the burdens of others if it is to be real strength and not mere dominance. The censure is all the more keenly felt when it comes from a man who does not live to censure, who does not throw off his condemnatory phrases merely because he must be a condemner. There are two aspects to considerateness. It is not always the considerateness which refrains from rebuke, for sometimes rebuke must be born of considerateness. It is not well for any of us to live unrebuked. It is not well for us to think of the spirit of fellowship in such terms as would negate the value of stern competition or the educative worth of discipline. The danger of democracy lies in the downfall of all authority and if we are to make the world safe for democracy we must make democracy safe for the world.

These are general terms, but they are worth brooding over. Too readily we jump to the conclusion that there is a dichotomy between the hardness of Nietzschean theory and the sickliness of mere meekness and that there is no middle ground. The truth would seem to be that in the process of the evolution of our kind there was truth in the Nietzschean philosophy, but that the careful, day by day, kindly consideration of all the factors which enter into the incidents which we have to judge must be the safeguard of what otherwise would be a ruthless and hurried condemnation. The battle is to the strong and the race to the swift, but the conquered have some strength which may be cultivated and the out-run have some speed which may be improved. The spirit of fellowship will lead us to make the best of those with whom we toil. It does not bid us to regard them all as equal in claim, nor does it urge us to be timid or hesitant in our estimates of that claim. But it does lead us to regard our day's work as a process making each of us more fit for the work of to-morrow. And that is not to say that to-morrow we shall all be captains and leaders, but it does say that we shall learn to give each other initial credit for the better motives and thus to encourage the better motives. The spirit of fellowship, therefore, is the spirit of true discipline.

### HIC ET UBIQUE.

It is not often we catch our contemporary, the *Engineers' Journal*, napping; but we notice in Mr. Stubb's paper which was published in the April number the following unique mathematical calculations. There is no prize for the correct answers.

11 pounds at £7 per cwt. ... ..	=	13s. 9d.
7 pounds at £11 per cwt. ... ..	=	13s. 3 $\frac{3}{4}$ d.
1 metre ... ..	=	1 $\frac{1}{10}$ yd.
1 centimetre ... ..	=	$\frac{5}{8}$ "
1 millimetre ... ..	=	$\frac{11}{25}$ "

In these days of short rations we should welcome the transfer to the metric system if the butter could be supplied under the centimetre and millimetre equivalents quoted above.

THE Postal and Telegraphic Journal of Berlin, from which we

obtain our information on the German Postal Budget, gives some particulars in one of its smaller paragraphs on the new German railway rates, which came into force on April 1, 1918. They are:— Ordinary trains: 3.7 pf. per kilometre (third), 5.7 pf. (second), 9 pf. (first class). Express trains: third class 6d. additional up to 45 miles, 1s. up to 108 miles, 1s. 6d. up to 214 miles, 2s. above that distance; second and first class double additional charge. Special holiday trains: 2 pf. per kilometer (third), 3.2 pf. (second). This is about equal to a third class fare of 3s. 9d. per 62 miles (ordinary train), 4s. 9d. (express), or 2s. (holiday). The express fares per 100 miles are therefore 7s. (third), 11s. 2d. (second) and 16s. 6d. (first).

No opportunity, in season or out of season, is lost for girding at the alleged extravagance of Government Departments. One grateful evening newspaper to whom a complimentary copy of the *Journal* is sent monthly takes the Post Office severely to task on account of an accompanying slip of paper containing the words "with the compliments of the Postmaster-General." This slip is only a single half sheet (notepaper size) of poor paper, and even so it presumably does not occur to our contemporary that it is more economical to use up the small existing stock of this form than to scrap it. A smaller complimentary slip was already in type for future use. It is about the size of those bills which butchers affix to a joint of beef and we hope it will meet with the approval of our critics. When our readers think of the thin paper and abbreviated half-sheets on which they have long conducted their official correspondence they will be saddened by the thought of these unappreciated reforms.

We recently came across a good example of "Things one would have expressed differently" in an American Telephone contemporary. A lady, writing in appreciation of the help rendered by the inquiry operator in tracing the daughter of a sick man, says: "She arrived home about seven minutes before her father lapsed into unconsciousness, thanks to the chief operator's kind efforts."

### EMERGENCY TELEPHONE SERVICE.

THE telephone company, in its admirable campaign for simplifying life, has recently devised a system of emergency calls whereby it is no longer necessary to give a number. All one has to do in case of a conflagration, for example, is to remark: "I want to report a fire." Anyone urgently desiring an officer of the law has only to say: "I want a policeman"—and presto! the bluecoat appears. And if one has had the worst of an encounter with the cook, he has but to moan: "I want an ambulance."

But here the system, excellent as it is, stops short. This seems to me a pity. I do hope that the benevolent telephone company will some day put in an extension to cover still other emergencies of life.

For example, when somebody with an overflowing ego takes up a seemingly all-night abode in my living room, I'd like to be able to go to the telephone and call: "Hello! I want an assassin."

When my landlord and grocer and baker become unduly obtrusive, it would be ever so handy if I could call: "Hello! I want to report an insolvency. Please send a bullion wagon."

And when the dreariness of solitary existence reaches a climax, it would be a decided convenience to be able to call: "Hello! I want a wife." Fancy the pleasurable thrill of waiting while this call was being answered! The operator at "Central" would ring up "Information" to find out what were my amatory preferences as stated on the back of my contract, and she would be told that I had stipulated "blue eyes, auburn hair, medium plumpness," &c. Then she would consult the file of female applicants for wedding service. In an almost incredibly short time an emergency limousine would draw up at my door and out would step a bride. If, by chance, I should find that "Central" had made a mistake, I should only have to say: "Pardon me, but this is the

wrong number." Otherwise it would be: "Oh, so it's you. I've been trying to get you for a perfect age!"

And the next time anyone attempted to ring me up, the report would probably be: "Busy—don't answer."—*Judge* (New York).

### TELEGRAPHIC MEMORABILIA.

BRAVO C.T.O.! When commenting last month on the satisfactory collection which had been made on behalf of the Serbian Soldiers' Comforts, it was hinted that the Post Office Relief Fund was not meanwhile being forgotten. Ample proof of this has just come to hand, for no less a sum than something considerably over £200 PER ANNUM has been guaranteed, either by new subscribers of the staff or by increased subscriptions from those who were already contributing. By the way a large portion of this new money has been promised by the women of the Temporary Staff. Much misunderstanding has been removed in connexion with this fund by the personal explanations of members of the local committee regarding the criticisms respecting the large sum of money which was apparently held in reserve. At one time it had not been thoroughly understood that the Fund would be needed for more than a decade after the conclusion of peace, owing to the self-imposed obligation of the membership to do all that it could in the way of continuing and completing the education of the many young children left fatherless by the ravages of the war. With new cases coming in weekly the situation now seems to have been fully recognised and in the most practical and generous manner. Whatever else may be wrong with the Telegraph Service it is certainly very sound in the region of its heart!

Evidence is constantly available of the need for the use of the French language on the Anglo-Continental telegraph circuits, but on a recent occasion additional confirmation arrived, if such were needed, and in an altogether unexpected manner. An ordinary and quite simple DS from our friends of Carter Lane was absent-mindedly signalled across the wires to a French coastal station without first having been translated into the foreign lingo by the TSF telegraphist. Shortly afterwards the superintendent this side was surprised to receive the same DS back from the Continent accompanied by a covering SU politely requesting that the former should be translated. "And yet," remarked one of ours with a smile, referring to the technical use of *friture* in respect to telephone work, "they expect us to understand that a phone line is noisy even at the mere hint of a French frying-pan!"

At first thought it might be supposed by some that wireless telegraphy would be immune from interruption during snow and sleet storms. Second thoughts would however turn one's mind to the aerial, concerning which it is said by an electrical authority that "the most severe test is that arising from a combination of snow or sleet and wind. If the wind rises whilst the load on an effective diameter of wires is increased by a sheath of ice, there is great danger of some of the wires being broken." Nature is to be combated here as elsewhere with her own powers, while those powers are readily available in the power-house close by, for in connexion with long distance wireless services on the American continent it is stated by this same authority that, "The best way of avoiding this difficulty is to melt the ice as soon as it is formed. This may be done by grouping the antenna wires together in pairs which run as a loop from the power-house to the free end of the aerial and back to the power-house, where the open ends of the loops are all joined by a common busbar during normal radio-working. When it is desired to melt ice from the aerial, the loops are opened at the power-house and a current (of the order of 100 amps. per loop) is passed through the wire from a suitable 60 cycle circuit. Wireless service is interrupted during the few minutes required to melt the ice, but costly damage and some hours interruption of service may be avoided by this means."

As an old T.C. the writer must needs place one small tribute on the grave of the late Mr. John Gennings of the Central News

agency and formerly of the Telegraph Service. Despite his trenchant criticism of the Service which he had quitted no one of those who really knew and understood him could ever doubt his keen interest in and intense love for his former if less congenial occupation. Rugged yet lovable to the end, the staunchest of friends, and a foe only to those personalities which to him, at least, appeared to embody a forbidding principle.

According to *Electricity* the use of a vacuum amplifier at Lyons on the Paris-Marseilles telephone circuit has rendered possible the saving of 150 tons of copper representing a sum of considerably over £20,000. This is due to the fact that the insertion of the above-mentioned apparatus has so far improved the quality of the speech transference as to render the speech value of a 3.5 mm. line quite equal to that ordinarily possible with a line of 5 mm. representing double the weight.

That the Telegraph Service of the future will have a keen competitor in the Aerial Post has, comparatively, long ago been contended in these columns. That the long distance U.K. services are likely to feel the competition seems fairly certain, while it is a sure forecast to repeat that Anglo-Continental cable telegraphy will find a much keener contestant in the aeroplane than it has ever yet discovered in its next-of-kin the wireless. To many this view-point has savoured of the foolish, most foolish, even panicky. It has, however, never been urged that aviation is going to wipe out telegraphy, long or short distance, but it is most certainly urged that aviation will prove a very big factor in speeding up medium distance telegraphy, that is to say distances from 200 to 1,500 or even a couple of thousand miles. It may even accelerate the decision to establish an Urgent rate for both Inland and Foreign telegrams.

In peace times telegrams of a score or so of words were conveyed by telegraph to the continent with delays that not infrequently totalled into hours. With the present speed of a well-organised aeroplane service bags of letters containing thousands upon thousands of words could be transferred across the silver streak and delivered not at one or two centres only but to many centres and with the same ease as they are now delivered from our express trains. Sight has not been lost of the adverse conditions under which Anglo-Continental telegraphy has been compelled to work during these months and years of conflict. The story may not yet be told. It nevertheless behoves all those who take any interest in telegraphy to weigh up the *pros* and *cons* of the future of their craft and to this end to watch the developments of the science of aviation. To note for example that Sweden is arranging a regular air service between Stavanger and Aberdeen, that in the paper read before the Society of Arts by Colonel O'Gorman in November last, and in the discussion which followed, the practicability of establishing aerial services between London and Paris with extensions to Marseilles and Turin and thence to Egypt was fully proved, while the idea of an extra late-fee post, to catch up the American mails after they had left Queenstown, by means of a sea-plane service with Galway as its jumping-off point, would appear, from the support this scheme received from a commercial audience, to be equally within the bounds of imminent probability. All quickening of any of the means of communication is bound to act and re-act upon all other systems, and the system which ignores these movements of the times can only do so by jeopardising its own future and progress.

Nothing could have been more opportune at a moment when there appears to be some further chance of Parliament converting our present system (?) of Weights and Measures from a conglomeration of parochial and differing units into serviceable tables understandable by all peoples, than the plea of the present Assistant Engineer-in-Chief, Mr. Arthur J. Stubbs, M.I.C.E., &c., for the adoption of the Metric System for the British Empire, which appears in the current quarter's number of the *P.O. E.E. Journal*. As an example of the ludicrous and obsolete system now in vogue he quotes the following figures which show that a bushel may weigh 38, 39, 40, 50, 52, 52½, 60 or 62 lbs. according to the kind of grain sold, while, "it is said that there must be 200 sizes of bushel in use." Every possible practical phase of the question is touched

upon with naturally specialisation in matters telegraphic where the change-over would be likely to effect construction and other measurements, giving tables to show with what comparative ease the change to decimals could be made.

A homely and enjoyable function took place last month when a small but representative gathering of those who subscribed to the farewell gifts for Messrs. A. Tapley and H. Vandermeulen, late Assistant Controller and Senior Superintendent of the Cable Room respectively, was held in the happiest and cosiest of conditions, thanks to the hospitality of Mr. and Mrs. Broughton. Amongst the company were Messrs. Edwards, Wadley and Dunno of the Controlling Staff of the C.T.O., and the first-named handed to Messrs. Tapley and Vandermeulen each a French timepiece of excellent workmanship on behalf of the donors. Mr. Edwards was particularly happy in the phrasing of his presentation speech, just striking a tender chord or two mingled with that touch of merriment which relieves the tension of moments spent at the "parting of the ways." The recipients, abashed as schoolboys, then stumbled out their thanks which had it been more fluently vocalised could have had no truer ring of sincerity behind it than those deepest thoughts which only half expressed, were understood by all. Mr. Wadley followed with a few appreciative words indicative of the kindly spirit behind his personal administration, and "Books" having reported "only one absentee, cause unknown, no certificate yet to hand," the party like most Britishers glad of a relief to emotional strain, began to ask with the Premier, "Why shouldn't we sing?"

Despite the regrettable absence of the younger male songsters on grimmer business, the company then "carried on" with fairly creditable results, aided it must be very frankly admitted by the cleverly sympathetic touch of Mr. J. G. King who, at the piano mercifully camouflaged the occasionally faltering notes of some of us, the weaker brethren. Incidentally the company was not surprised to learn that the services of Mr. Tapley had been gladly secured by one of the senior branches of the Civil Service in connexion with war duties of very considerable responsibility.

J. J. T.

## CORRESPONDENCE.

### EQUIPMENT FOR PHONOGRAM ROOMS.

TO THE EDITOR OF THE "TELEGRAPH AND TELEPHONE JOURNAL."

SIR,—Your correspondent, "R. G. D.," has endeavoured to substantiate his proposal that the introduction of a multiple in front of each phonogram operator and the elimination of the distribution operator would reduce the delay that now exists on phonogram traffic and further that less staff would be needed.

In his reply to various points that I raised in connexion with the proposal R. G. D. states:—

- (1) His proposal would save the switch telephonist.
- (2) The delay, so long as the distribution switches exist is inevitable unless a surplus staff is provided.
- (3) The provision of a multiple would reduce the delay and the number of staff required.
- (4) That I do not discriminate between ancillary working in an exchange and ancillary working in a phonogram room.
- (5) That my arguments are based on ancillary working in an exchange.
- (6) That the supervisor will suffice to leaven the lump of disadvantage of the multiple system.
- (7) That equipment which substitutes team working for individual working will reduce the delay.
- (8) That an adaptation of the ancillary system is better for phonogram junctions than an automatic distributor.

Dealing with these points in order:—

(1) R. G. D.'s proposal would of course save the switch telephonist but the cost of the saving would more than counterbalance the saving itself. I presume therefore that R. G. D. intends to offer this advantage as a subsidiary one only.

(2) There will be no delay with either distribution or the ancillary system if there is sufficient staff to handle the busy hour load. The existence of the intermediate distributing point does not cause delay, as it is immaterial whether the phonogram operator or the distribution operator connects the call. The usual position is that the distribution operator has calls waiting but no operator is available to whom connexion could be made.

(3) If each operator is engaged on a phonogram, the provision of a multiple would be of assistance. The delay would be in evidence by the

increasing number of glows in front of each operator and this would not tend either to reduce delay or the number of staff necessary. It would in fact emphasise the necessity for increasing the staff.

(4) and (5) The question of ancillary working in exchanges is a different matter and does not affect this question. I had no thought of such comparison and my arguments were based on some years of experience with the two systems, *i.e.*, the multiple system advocated by R. G. D. and the distributor system condemned by him. R. G. D. will find both systems actually in operation in the London Trunk Exchange, and his proposed multiple system can be studied further in the Central Exchange in the same building.

Item (6) requires no discussion. As regards R. G. D.'s statements with reference to team working, it is apparent that he has failed to realise that the distributor represents the ideal of team working. With the distributor, the whole staff acts as a single team and every disengaged operator is available to take the next call.

(8) R. G. D. thinks an adaptation of the ancillary system better than an automatic distributor. He may therefore be interested to know that the experience gained by a careful study of both systems is such as to leave no room for doubt in the minds of the Traffic Officers who decide such matters that the automatic distributor is preferable.

As a good general secures his line of retreat, so I hasten to assert that the foregoing observations are based solely on the requirements and conditions obtaining in the London area. It is of course possible that R. G. D. is speaking from the point of view of small provincial offices, in which case I am prepared, with reservations, to accept his statements, even though I am unable to follow them.

W. J. W.



Capt. A. H. NUTT,  
8th Staffs.  
(Wounded and Missing).

Corpl. C. G. NUTT,  
R.E. Postal Section.



T. NUTT, Sapper R.E.  
Missing.

THE three brothers whose portraits we publish are the sons of Mr. F. Nutt, Postmaster of Wolverhampton. They are all in the Civil Service, the first two in the Post Office and the third in another branch. Mr. Nutt has recently organised a concert on behalf of Sir Andrew Ogilvie's Fund for the Post Office Rifles, the proceeds from which, including donations, reached the splendid total of £135 1s. 9d.

## THE TELEPHONIST AS A WAR WORKER.

BY MISS DORA L. HATFIELD (*Telephonist, Holborn Exchange*).

IT has often been reiterated that the telephonist is not recognised by the world at large as a war worker, and until recently she was not.

One would inquire on whom the blame lies for such an omission when there is not an event or crisis of national importance that does not very naturally affect her, and I am only echoing the experience of many, when I quote the continually repeated, thoughtless query, to one who has spent the best part of a night on duty in the service of King and country: "I can't think what on earth you are wanted for."

It would appear in spite of the vast advance of science, and the rapid progress of mechanical aids, towards the world's millennium, that the mind of the ordinary human being remains stagnant. The telephonist is to the cynic such a butt on which to sharpen his wits, that her utility is entirely ignored.

"How did we manage in other wars without you?" says the cynic. I answer, "In other wars we dealt with a clean foe. In other wars no land was bombarded from the sky. The approach of raiders, had never to be signalled from town to town in a few seconds. The presence of the enemy was notified by the Coast Guards, who patrolled the shore and passed the news on from mouth to mouth, until the chain around our Island Home was complete.

The fact that the telephonist does not immediately respond to the cynic's impatient summons, because, forsooth, she has many such, places her quite beyond the pale of usefulness. It must be with rather a shock that he wakes up to find this "source of never-ending complaint" suddenly being called upon to don khaki and take an active part in the world's struggle. Of course the war is already lost, in his estimation, when proud England is reduced to such straits!

One wondered how it was that the telephonist, who has helped slowly and surely in Empire building, was not accorded her proper place in public minds, long ere the horrors of war broke over Europe. How is it that the public has even to-day to be educated to the fact that the telephone exchange holds the vital keys of necessary and important communication? Is it because the exchange is a sealed book, that the public is not familiar with its unending uses, thinking only of its own especial want when signalling? That the war should claim the services of the subscriber's telephonist at such a crucial time as an air raid during the day or night is beyond comprehension. The telephone is the subscriber's special property, and if it fails in such an emergency he has a great grievance against the Government for asking payment for such a useless commodity!

I would make it an offence under the "Defence of the Realm Act" for any private subscriber to use his telephone for two or three hours at least after an air raid during the day; as recent experiences have proved the work at such times is almost beyond control. The timely appeal of the Postmaster-General, now exhibited in call offices and elsewhere, has explained and relieved the pressure somewhat, but it still leaves much to be desired.

For my part I am proud to belong to a service that in these critical times is of such vital necessity. Not for the glorification of a Government—but because it is places one in a position of service—service to the land one loves, and the King one honours.

Yet in the early stages of raids I must say I felt a little indignant, when boarding a car at 2.30 a.m. to find myself under a fire of inquiring eyes of "specials" and others bearing badges proclaiming that they were out in their country's cause, while I wore nothing to show I was on the King's service.

It is not always those who walk in front that lead. We are all supernumeraries on the stage of life; professional "walkers on" in the greatest drama that the history of the ages has seen enacted. Isolated and detached minds are capable of great service if not crushed by that officialdom which kills individuality!

The telephonist is looked upon in the main as a human machine. Her stereotyped expressions, her mechanical acts, all tend to machine-life precision. Rules are meant for our guidance, the

strictest letter of them should be on a sliding scale. Create by all means a high standard, but expect to fall below it. I am pleading for the emancipation of the telephonist who, in these days of strained hearts and jangled nerves, cannot possibly be regarded as of yore.

The prejudice of years is not thrown aside in a day; but higher minds realise the possibility of industrial strife when the dawn of a new era is proclaimed by the cessation of arms. The whole aspect of the world will be changed and yet—

“Our deeds still follow us from afar.

And what we have been make us what we are.”

For the telephonist is a disciplined soldier of the great civilian army of “Liberation.” Enchain her allegiance and she will serve well. It is just a matter of a little capitulation all round—“Life demands capitulation—capitulation in the larger affairs of State and particularly in the smaller interests of separate individuals.”

An eminent present-day divine has written appropriately: “The world will insist on a closer and more constant connexion between words and their meaning, between actions and their motives, between estimates of men and things, and the actual worth of both. The same text will be applied to systems. Men will no longer be put off with phrases and forms, they must have a tolerable harmony between names and facts, The unpardonable sin will henceforth be unreality, but it can only be good for us to realise that war does finally make for the victory of reality over sham, and to prepare ourselves for the time when our own familiar world will be brought into question and drastically handled by men who have made up their minds to have done with everything that cannot justify itself at the bar of the general conscience.”

“Uneasy lies the head that wears a crown.”—The same axiom can surely be applied, to those in authority upon whom the grave issues of decision have been thrust in this, the time of our National stress, and those of us that have the good of our land at heart comprehend how tremendous is their task and the responsibility that is theirs, for it is only as emergencies are sprung upon them that they finally reduce chaos to order. Take for instance the first great raid on Sept. 13, 1915, when every exchange was packed with willing helpers—the outcome of that was the ordered “Emergency Scheme,” which from time to time has been improved upon until the minimum risks are run.

A daylight raid was undreamed of then, but with the first—no, the second—“Baptism of Bombs” the same stringent rules were applied, but re-amended as further precautionary measures become necessary. So it will be until the next untoward event happens that calls for resource of those in charge and the initiative of the loyal worker. She will not be found wanting, for “The moral courage of a brave and determined woman is the second greatest force in civilisation.” A handful alone is all that is needed at such times to save the situation.

Who is not aware of the effect of thought upon action? It is the thinkers that are the real leaders, for the outcome of their thoughts are actions. It is the brain behind their pen that most readily puts thought into practice, because their perspicacity has placed them in all sorts of positions, and found a way out, or at any rate given them a decided line of action—be they head or subordinate.

In this war of endurance where deeds count most, what tribute should not be paid to the fortitude and staying power of the telephonist and other officials who have braved much at the call of duty?

The telephonist is not only a war worker, and as much a soldier on guard at home as any of her brothers than handle a gun in the field, but she is also a woman in very truth, for her interests are unflagging in those acts of mercy that call forth the best within her. Previous statistics have told us what the “Post Office women” have done and are doing, but it would require a library to enter the individual acts of self-sacrifice and devotion quietly done from day to day. The cheery letter to that “Tommy” out yonder whose thoughts are always with his women-folk at home. The sympathetic visit to the lonely mother, whose heart is aching for her idol over there. That wounded friend of his in hospital whose home is miles and miles away, how eagerly she seeks him out, her private entertainments, the comforts to be made, the pennies to be saved to buy the things that “Tommy” wants. And if—oh, if—Well, she just knows how to be brave.

Thus much for the telephonist as a war worker at home. Now let for us a moment follow her as, with “The Women’s Army Auxiliary Corps,” she ploughs through the lurking dangers of the deep to France, “the chosen home of chivalry, the garden of romance,” peopled by a vision of that “simple village maiden” from the distant long ago. How her imagination must be fired! Yet she is practical and knows that it is not to dream that she has been the envied one to go.

At present she is just “the telephonist,” but it seems to me a pity that she was not a little more acquainted with the engineering part of her work before she went, for I am very sure that “Thomasina” would like to be every inch a “handy man.” In the ebb and flow of battle we do not know what she may be called upon to do. Remember the Amazon Army of Russia where war has annihilated fear!

A contemporary writes that “Tommy” is a proverbial grouser.” Another contemporary is swift to answer that “Miss Atkins has inherited his grouching propensities, although hers, like her male comrades, are not of a serious nature.” One thing, however, is certain, her pre-regimental delinquencies will enable her to maintain the best traditions of the British Army in that respect at least!

In due course it will be interesting to read, and I hope hear read, an uncensored account of the very definite part the telephonist has played in “The Great Adventure” within sound of the daily booming of the devastating guns. Her never-to-be-forgotten experience—her actual work with its difficulties faced and overcome—her descriptions of peoples and surroundings, her interests when off duty, and all the trifles that have gone to make the sum total of her absorbing career until her final triumphant return to “England’s fair and pleasant land” in that glorious yet awesome time when “The Thunder of Jehovah” is stilled and the riddle of the Sphinx may perhaps be read on those blood-stained, battle-ploughed fields.

### THE GERMAN—AMERICAN CABLES.

BEFORE the war there was but one cable direct from Germany to America. This cable was owned by a German company, and reached America *via* the Azore Islands.\* I endeavoured to obtain permission for the Western Union Company to land a cable in Germany, but the opposition of the Germany company, which did not desire to have its monopoly interfered with, caused the applications of the Western Union to be definitely pigeon-holed. In August, 1914, after the outbreak of war, when I told this to Ballin, of the Hamburg-America Line, and Von Gwinner, head of the Deutsche Bank, and when they thought of how much they could have saved for themselves and Germany and their companies if there had been an American-owned cable landing in Germany, their anger at the delay on the part of official Germany knew no bounds. Within a very short time I received an answer from the Foreign Office granting the application of the Western Union Company, providing the cable went direct to America. This concession, however, came too late, and, naturally, the Western Union did not take up the matter during the war.—(From *My Four Years in Germany*, by Jas. W. Gerard.)

\* There were, in fact, two German cables to America *via* the Azores. They both suffered the same fate on the outbreak of war.—Ed. T. & T. J.

### NEW ZEALAND TELEGRAPH AND TELEPHONE STATISTICS.

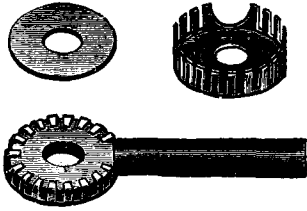
TELEGRAPH—Miles of wire.		No. of offices open.		Tlms. f'w'ded during year.	
March 31, 1915	46,788	...	2,386	...	10,827,968
March 31, 1916	48,052	...	2,413	...	10,836,751
March 31, 1917	50,320	...	2,409	...	10,875,120
TELEPHONE—				Direct lines.	Stations.
March 31, 1915	...	...	...	46,260	—
March 31, 1916	...	...	...	50,308	58,976
March 31, 1917	...	...	...	52,986	62,523

There are 267 exchanges and 142,469 miles of wire. Auckland claims 7,766 connexions, Wellington 7,724, Christchurch 5,913 and Dunedin 4,939.

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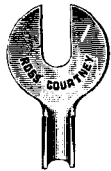
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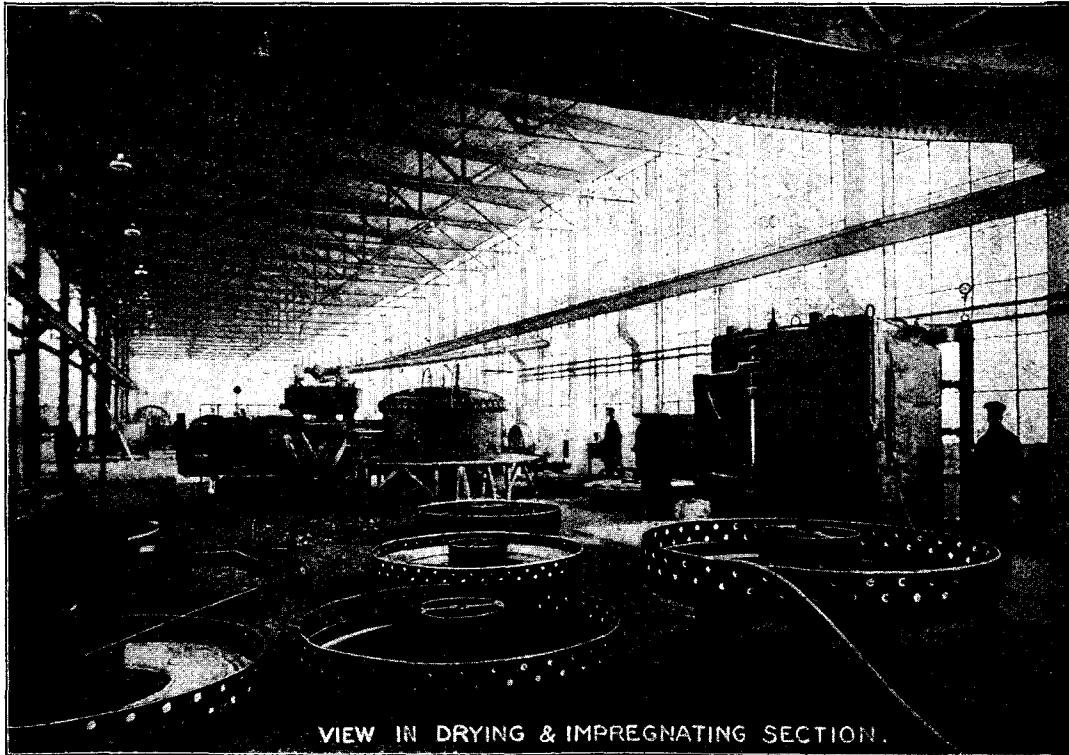
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WE reproduce in facsimile the first page of the prospectus of a newspaper published on the *Great Eastern* during its abortive attempt to lay an Atlantic Cable in 1865. The list of subscribers contains some distinguished names, including Sir Daniel Gooch, Cromwell Varley, Henry Clifford, Wm. Thomson (Lord Kelvin) and Mr. W. H. Russell. As many of our readers are aware an Atlantic cable was laid between Newfoundland and Valentia in August 1858, but had ceased to work in the October of the same year. The *Great Eastern* set out to lay another in 1865, but when it had proceeded two-thirds of the way across the Atlantic and 1,186 miles of cable was laid, the cable parted and sank. In the following year a second expedition on the *Great Eastern* successfully recovered and completed the laying of the 1865 Atlantic cable.

*Great Eastern. Augt 2<sup>d</sup> 1865.*

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## PERSONALIA.

### LONDON TRAFFIC STAFF (*Telephonists*).

Miss T. E. SQUIRES, Assistant Supervisor, Class II, of Woolwich Exchange, has resigned to be married. She was the recipient of a dinner service and other useful articles from the Traffic and Engineering staffs of Woolwich, New Cross, Bexley Heath and Dartford Exchanges, and several other gifts from individual members of the staff.

Miss E. KELLAND, Assistant Supervisor, Class II, of Victoria, has resigned in view of her approaching marriage and was presented by her colleagues with a salad bowl, case of fish knives and forks, and other useful articles.

Miss V. SMITH, of Victoria, on resigning to be married was presented with a salad bowl, case of afternoon tea knives and other useful articles.

Miss E. M. BARRATT, of Victoria, has resigned to be married, and was presented by her colleagues with a silver cake basket.

Miss E. E. K. CANFIELD, of Willesden, has resigned in view of her approaching marriage. The staff presented her with cutlery.

Miss GLOVER, of Hornsey, resigned on account of marriage. She was presented by the staff with a biscuit barrel and several other useful presents.

Miss C. A. WOODS, of New Cross Exchange, resigned in view of her approaching marriage and was presented by the staff with a silver cake

basket. She was also the recipient of several other gifts from individual members of the staff.

Miss A. M. HART, of London Wall Exchange, has resigned to be married. She was presented with a case of silver fish knives and forks and a biscuit barrel from the staff.

Miss ADELAIDE KNIGHTS, of the Trunk Exchange, resigned in view of approaching marriage, and was presented by her colleagues with a silver tea service and other useful presents.

Miss LAURA PARTRIDGE, of East, has resigned to be married. She was presented with a cut glass salad bowl and servers, and a cruet by the staff.

Miss W. E. FORSYTH, of Paddington, has resigned for marriage. She was presented with a floating flower bowl, teaspoons and sugar tongs.

Miss C. A. HUNT, of Paddington, on resigning to be married, was presented with a case of fish knives and forks, and other useful gifts.

### PROVINCIAL STAFF.

On his being recalled to Birmingham on April 27 Mr. H. BRISTOW, who has been Acting Traffic Superintendent in the Tunbridge Wells District for the past thirteen months, having commanded the esteem and regard of every member of the staff in the various departments with whom he came in contact, was presented with a silver hot water jug and a silver pen as a tangible expression of goodwill. The presentation was made by Miss L. Bishop.

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JULY, 1918.

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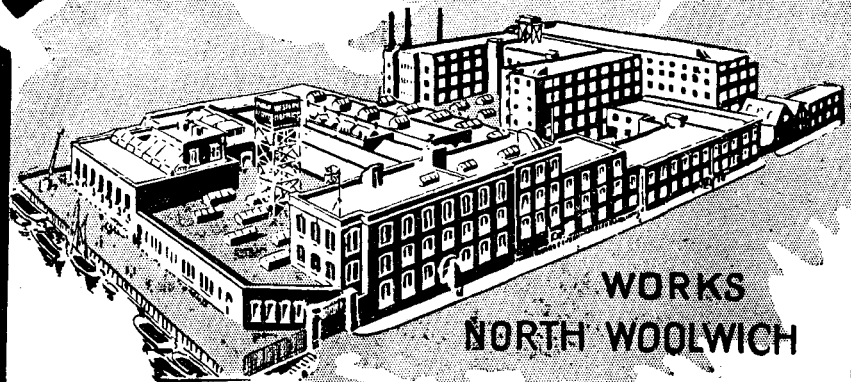
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# THE Telegraph and Telephone Journal.

VOL. IV.

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### LEEDS AUTOMATIC EXCHANGE.

THE new automatic exchange at Leeds, which was formally brought into service by the Postmaster-General on May 18 is the largest automatic exchange in operation or under construction in this country. With the opening of that exchange, which replaces the old magnetic equipment at the Central Exchange, the present programme of the Post Office with regard to automatic working has been well advanced towards completion, the remaining automatic exchanges under construction or on order being Grimsby, Stockport and three village automatic equipments.

The automatic equipment at Leeds provides for 6,800 direct exchanges lines and comprises

- 6,800 primary line-switches in units of 100.
- 900 secondary line-switches in units of 20.
- 840 1st selectors,
- 810 2nd selectors,
- 730 3rd selectors
- 740 connectors

the auxiliary apparatus required in connection with the circuits from the automatic apparatus to the manual switchboard (a) for subscribers' calls and (b) for calls from sub-exchanges where dials have been provided, apparatus for phonogram circuits, &c.

The automatic switching apparatus with the usual power plant, testing equipment, distributing frames, &c., is accommodated on the top floor of the Telephone Buildings, Basinghall Street, the subscribers' call registers being on the floor beneath. The manual equipment has been associated with the trunk exchange which is in the Post Office about ¼ mile distant from Telephone Buildings.

The arrangement of the selector levels is shown below—

Selector levels.	Type of circuit.
0	Circuits from the automatic apparatus for originated junction and trunk calls.
90	Phonogram circuits terminated on the concentrator switch in the Telegraph Instrument room.
99	Used for Engineering purposes, such as
98 } 97 }	Test Desk circuits, &c.
96	Dead Level.
95	Dead Level.
94	Dead Level.
93	Dead Level.
92	Circuits to the Manual Board for calls to official numbers.

91	Enquiry circuits terminated on the monitors' desk.
8	Dead Level.
7	Dead Level.
6	Dead Level.
5	Dead Level.
4	Dead Level.
3	Dead Level.
200-209	Connected with the corresponding connector units which are equipped for P.B.X. working.
210-214	Dead Levels.
215-216	Connected with the corresponding connector units which are equipped for P.B.X. working.
217-272	Connected with the corresponding connector units for ordinary exclusive circuits, for coin-box circuits and for party circuits as explained below.
1	Dead Level.

The 12 units equipped for P.B.X. working are provided with a total of 160 connectors, four units having 14 and eight 13 connectors. All these units are to be equipped with 15 connectors each.

The unit number 21900—21999 has been set apart for the attended call offices and the 22900—22999 unit for the unattended call offices. In these two cases the 10 circuits from the line-switches are terminated on the manual switchboard. The call office instruments are not, therefore, equipped with dials but the exchange is called by the telephone being removed from the rest, the line-switch associated with the particular call office circuit making connection with an idle circuit to the manual switchboard. Incoming calls are completed *via* the connectors as in the case of ordinary exchange circuits.

With the units 23900—23999, 24900—24999 and 25900—25999 the subscribers' circuits equipped with coin boxes are connected. These subscribers' circuits are so arranged that when a Leeds number is called the subscriber originating the call can hear the called subscriber reply but is unable to speak with him until a penny has been inserted in the coin-box.

The "X" party line subscribers have been allocated numbers on the 25600—25699 "hundred" and the "Y" subscribers have been given numbers in the 25700—25799 and 25800—25899 units. These subscribers can call other Leeds numbers by means of the dials on their telephones but, if on the limited rate, they are unable to speak with the subscriber called until a push button, which is fitted at the base of the telephone, has been depressed. The depression

of this button registers the call on a call register fitted at the subscriber's premises. This register is read periodically by an officer from the Post Office; it is not visible to the subscriber. A party line subscriber wishing to communicate with the subscriber who shares the circuit with him dials 91 (the instruction card shows the number of the other subscriber on the circuit) and obtains connexion with the monitors' desk. The monitor, having ascertained and confirmed the number wanted, asks the calling subscriber to replace his telephone. She then dials the number required and by means of a special key rings the calling subscriber also. A ticket has to be prepared for such calls

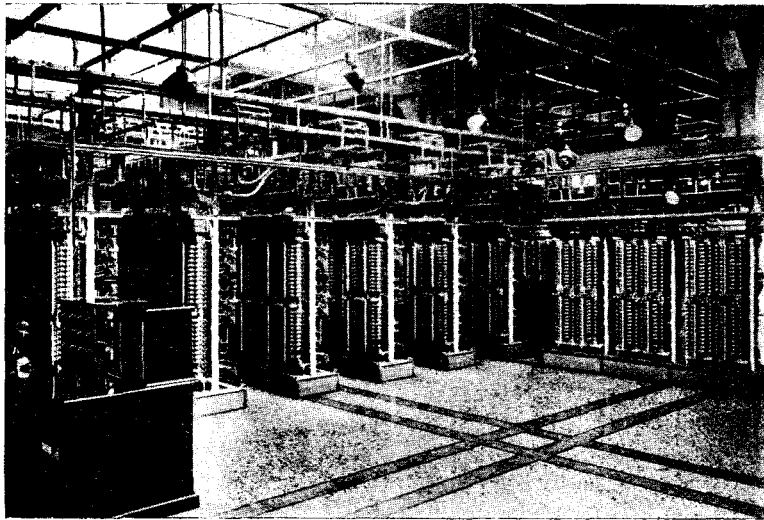


FIG. 1.

The insertion of the secondary line-switches between the subscribers' line-switches and the first selectors causes the subscribers' calls to be distributed over a greater number of first selectors than in the case of some of the earlier automatic installations where these intermediate switches were not provided. Each one of a group of 10 outlets from a group of subscribers' line-switches is connected with a secondary line-switch in a different division and the 10 outlets from the different divisions of secondary line-switches are each connected with a first selector. A subscriber may therefore be connected with any one of a hundred 1st selectors.

Fig. 1 shows some of the line-switch and connector units, the line-switches being fitted on the left of the framework as seen in the illustration and the connectors on the right.

Fig. 2 shows some of the selector units, the frame at the left containing some of the auxiliary apparatus in connection with the junction circuits, &c.

The general arrangement of the manual switchroom is indicated in Fig. 3 and the switchboard sections associated with the automatic exchange are illustrated in Fig. 4.

Positions 1 to 38 are trunk positions on which the trunk circuits operated on a trunk basis are terminated.

In addition to the usual trunk equipment each position is provided with a dial associated with the cord circuits.

Positions 63—68 are reserved for the extension of incoming tandem order-wire working.

Positions 69—74 are equipped for incoming tandem order-wire junction working, each position being equipped for 24 junctions.



FIG. 2.

Order-wire keys and speaking and dialling keys are provided and an interchangeable dial is fitted on each position. The depression of an order-wire key or the movement of a key to the dialling position connects a tone with the order-wire, indicating that the "B" telephonist is not in circuit. On these positions the larger groups of the incoming short distance trunk circuits have been terminated.

Positions 75 and 76 are equipped for jack-ended junction working and connected with these positions are the bothway junctions and the smaller groups of short distance trunk circuits.

Positions 77 and 78 are used for incoming calls to the official circuits. One number, Leeds 92, has been shown in the directory for the telephones in the different Post Office departments and the circuits from the 2nd selectors associated with that number are terminated on these positions. A subscriber wishing to speak with any of the departments dials 92 and is answered by one of the telephonists at these positions who, having ascertained the

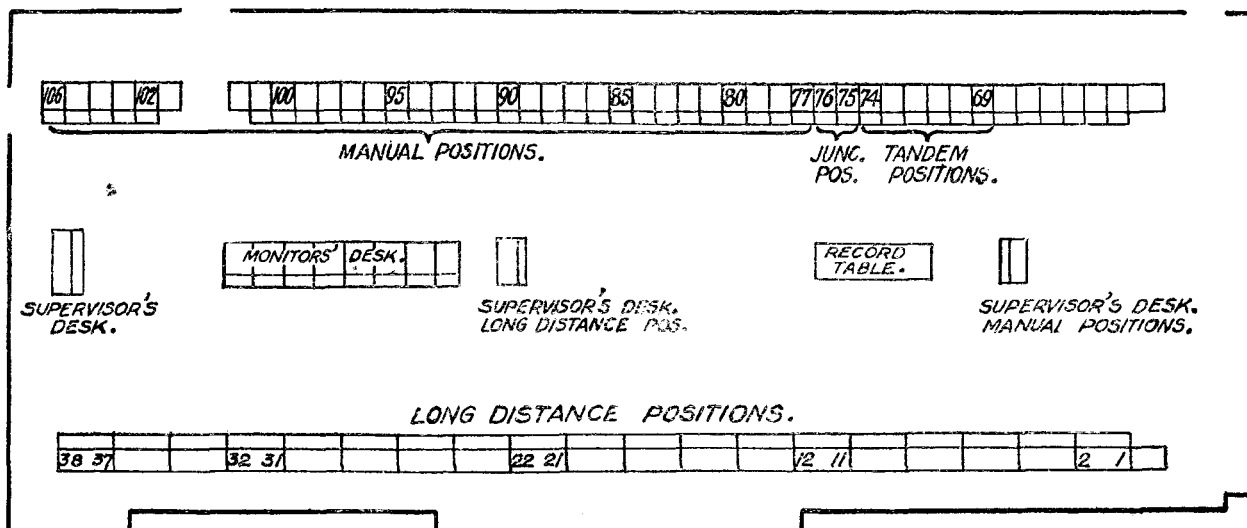


FIG. 3.

department required, dials the appropriate number and establishes the connection. The various departments have been allocated numbers in the 254 and 264 "hundreds" and have been provided with standard automatic telephones. They obtain department to department calls through the automatic apparatus.

Positions 79, 80 and 81 are set apart for coin-box working. As indicated already the call office circuits are so arranged that the act of raising the telephone from the rest connects the caller with the manual board by means of the circuits from the line-switches on the call office units. All the originated traffic from the call offices passes over these circuits, which are marked with the appropriate lamp cap, code 26C in the case of the attended call offices and 17C in the case of the unattended call offices. The incoming "O" level circuits associated with the subscribers' coin-box circuits are connected with positions 79-81 also and are marked with plain red lamp caps. The originated junction and trunk calls from the coin box subscribers are dealt with at these positions.

With the exception of the bothway junction groups all the incoming junctions from the sub-exchanges in the Leeds telephone area are connected directly with the automatic apparatus, and the Leeds numbers required are obtained by dialling direct. Inter-changeable dials have been provided and are associated with the

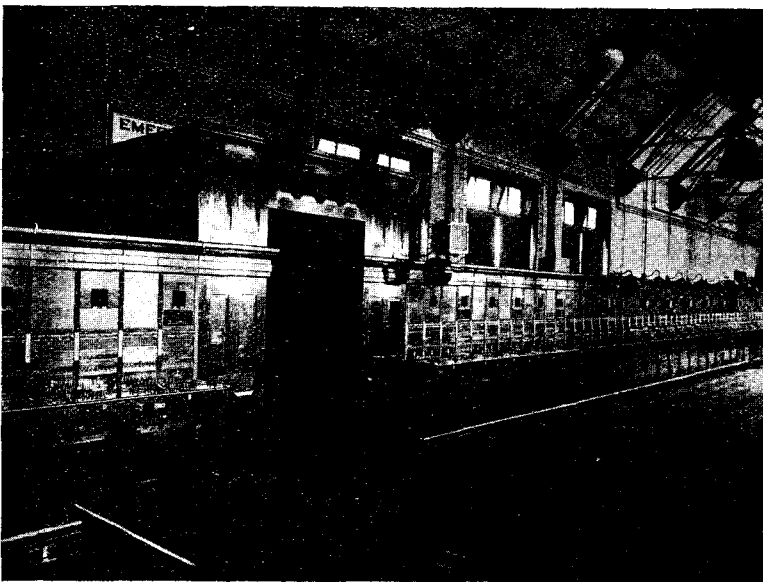


FIG. 4.

cord circuits in the case of the sub-exchanges having the larger groups of junctions to Leeds Exchange and with the junction circuits in the case of the smaller groups.

Supervisory signals, associated with the cord circuits or junction circuits as the case may be, enable the sub-exchange telephonists to supervise the Leeds calls. For junction and trunk calls obtained *via* Leeds the sub-exchange telephonists dial "O" and obtain connection with Leeds manual switchboard (positions 82 and 83).

To obtain junction and trunk calls the Leeds subscribers dial "O" and are connected with the manual positions 84 to 106. The operating at these positions is very similar to ordinary "A" operating except that tickets have to be prepared for all calls (it is not possible to distinguish between calls originated on limited or unlimited rate circuits) and that the calling subscriber's number must be ascertained in each case.

If a long-distance trunk call is required the manual board telephonist depresses an order wire key marked TK. This connects her with automatic selecting apparatus which in turn connects her with an idle record telephonist. A lamp is fitted which warns the supervising staff when calls are being delayed, the lamp remaining alight so long as there is a call waiting connection with a record telephonist. Associated with this automatic apparatus there

are also ten record circuits with which the exchanges terminated on positions 69-76 are connected to pass particulars of zone calls required. The record table equipment is of the usual type.

For calls to the automatic exchange 220 junctions have been provided. It has been customary in other automatic exchanges to provide visual engaged signals in association with these junctions. In view of the disadvantages of having so large a group of visual engaged signals and in view also of the difficulties of dealing with so large a group of ringing junctions these circuits have been divided into separate groups and have not been multiplied. The number of junctions in each group has been varied in accordance with the traffic on the different positions thus: 5 junctions per two positions are provided on the long distance switchboard, 9 junctions on each of the tandem positions, 7 on each of the jack-ended junction positions, &c.

An 8-positions monitors' desk has been provided on which the Dead Number, Dead Level, Intereception, Complaint and Enquiry circuits have been terminated. The calling equipment has been installed on the ancillary system.

Shortly after the transfer it was decided to introduce a tone to indicate when the number obtained is a deal level number and so relieve the monitors' desk of that traffic. The connection of the tone causes the supervisory signal on the calling cord to glow in those cases where the call is dialled from the manual positions or a sub-exchange where dials have been installed. This is a temporary arrangement; the final scheme which includes the connection of a tone for all numbers not obtainable, except changed

0																			
2	4824	2984	3455																
4	0948	0948	5090	0334	0334	5797		5044	5224	5224	5224	5224	5224	5224	5224	5224	5224	5224	5224
6	0364	C	3190		2345	2345	2073	2350	6916	0564	0564	0564	0564	0564	0564	0564	0564	0564	0564
8	0364	0364					2354	2355	3460	3186	3191	2891							
0	4771	4773	5251	5252	5273	2724	5253	3661	3266			0839							
2	3663						3280	2653	2074	3201	C	7158							
4	3263	C	3285	3666	3266			2981			2386	PH560	3670						
6	1501	1501	4776	3671			3003		5991	3271		4775							
8	2274	2531	7246	3275	4780	3010					3672		0465						
0	6922	6923	2560				7012	6926	2093	3604	3794								
2	5686		6900		5671	5255				5684	2561	5480							
4	2694	2583	6924	6925	5766	5764	0155	0155	0155	2670	5293								
6	7000	3056		0521	0521		6811	3683	4597	2684									
8	3061	3643	3207	3013		3197	3722		6772			6842	4						
0	3294				7156			6937	1993	5540									
2				2756		2661				2836	3054								
4		1994			3053														
6			0981	0981	0981	0981			2760										
8	3222		C		2781	2762					2763								

FIG. 5.

NOTE.—The new number is obtained by prefixing "2" to the number shown in the appropriate space, e.g., Leeds Central 5000 is now Leeds 26922.

numbers, provides for a flashing supervisory signal. The tone is quite distinct from the busy-back.

The foregoing gives a general idea of the working arrangements at Leeds, mainly from an operating point of view. With the transfer to automatic working the purely local traffic has been eliminated from the telephonists' work which has therefore become more interesting and less routine in character.

The transfer involved the changing of about 4,800 telephone numbers and a chart was necessary in order that any calls received for old numbers might be diverted to the correct new numbers. A portion of the chart, approximately full size, is shown in Fig. 5, the complete chart of 54 "hundreds" measuring 18 inches broad by 12 inches deep, including a small margin. The chart is arranged on the basis of a subscribers' multiple and to obtain the new number the figure 2 is prefixed to the four figures shown in each case except the old number 1 which is now Leeds 92, thus, number 5000 has been changed to 26922.

The subscribers have become accustomed to the new method and appear to be well satisfied with the change. The operation of the dial gave rise to some difficulty at the outset, which was to be expected as so many subscribers returned to the new system after their Whitsuntide holidays and doubtless had forgotten many of



the points to which their attention had been directed by the special staff which spent about six weeks visiting them and explaining the new methods. One subscriber was puzzled at the absence of a second "2" on the dial when a number such as 22456 had to be dialled.

The Press was kind in allowing space for explanation of the manner in which the difficulties encountered in the working of the first few days were to be avoided, and it was somewhat remarkable to observe the extent to which it was realised that the subscribers are now dependent for their calls on their own manipulation of the apparatus. "One of the advantages of the automatic system," it was said, "is that a subscriber can obtain a wrong number without the assistance of the operator."

### TELEGRAPHIC MEMORABILIA.

THE 44th annual report of the C.T.O. Benevolent Fund is the record of a most successful year. "The membership has been augmented and a further step forward has been made with the Orphanage work. A donation of £50 has been sent to the Reedham Orphanage and the Committee have also agreed to send an Annual Donation. The Executive Council of the Institution have arranged to place such amounts to the credit of the C.T.O., to be used in purchasing presentations when the necessity arises. The income for the year amounted to £293 18s. 8d., and the disbursements to £152 6s. 4d."

It is satisfactory to note that as a "War Emergency" measure the Committee have decided not to print this report." Especially is this so as the ratio which the secretarial, printing, &c., expenses of 1917-1918 bear to the six grants to members and the one donation to Reedham Orphanage paid out during the year under review is considerably over 12 per cent. The net increase in membership was 302, one of the best augmentations in this direction for some long time past. Not satisfied with the above good work, the recent contribution to the Servian Fund already noted in these columns, and the splendid rally to the Post Office Relief Fund, the C.T.O. has come to the aid of the Lord Roberts' Memorial Fund for Disabled Soldiers and Sailors on behalf of the Workshops Extension Scheme, a simple appeal through the kindly medium of Miss Briault quickly producing the sum of £31 14s. 8½d.

Then one of the sections of the C.T.O., the Cable Room, which had already contributed its quota to the various general funds and collections, was specially appealed to by the Secretary of the Y.M.C.A. on behalf of the special Hut Fund for the troops in France, and by the kind courtesy of the Controller, a collection was made with the result that £10 was forwarded to yet another good cause. Here where so many women have filled the places of men now serving with the colours all over the globe it is cheering to note how well the former have kept up the reputation of the latter for the support of all deserving needs.

It is some time since a leading article in the "T. & T. J." has drawn so many kindly comments as *The Spirit of Fellowship*, which appeared in the June issue. Some, it is true, have shaken their heads incredulously and said, "the ideal is too high. We of the Telegraph Service cannot attain unto it." Others with a touch of bitterness mingled with something of sadness have voiced the doubt that any but a few in the Post Office administrative branches would ever attempt to rule the Services in so kindly a spirit. Nevertheless not one but agreed that the writer himself aimed high and wrote every line in all sincerity. There is only one obstacle in the way, but that obstacle is a very serious one. It is the spirit of MISTRUST. Until this ghostly but very real stumbling block is removed there can be no real fellowship between the varying grades of our Service, no self-forgetting labour given for the work's sake, and until the new spirit arises "For the good of the Service" will prove to be an unpronounceable shibboleth serving only to betray the insincerity of those who attempt its utterance.

Those journals giving considerable technical attention to the subject of illumination have been compelled to point out the danger of undue reduction in offices, workshops and factories—and this with all respect to the recent lighting restrictions.

One of these authorities emphasises the fact that "a very large percentage of the total war-output of the country is obtained during night-shifts, and the net result of any undue lighting restriction would appear to be disadvantageous rather than otherwise." The notes further suggest that the authorities when framing the restrictive order had more in their minds the accustoming of the public to earlier hours, reduced travelling—and dining out!

It is however, certain that we of the Telegraphs who spend no small portion of the usual sleeping hours poring over closely and not always legibly written cipher telegrams for hours together, can perhaps as fully as any war-workers realise the absolute necessity for illumination of the best type, and the highest quality. One recognises the necessity for economy but there always has been a conflict between the true and the false economies, and this question of economy in lighting is no exception.

Mr. L. Gaster, speaking at the annual meeting of the Illuminating Engineering Society in May of the present year on this very question of economies in lighting stated that, while extravagance, undesirable at all times, was especially so in the present circumstances, it would be false economy to reduce lighting to an extent prejudicial to health and safety. Similarly the maintenance of output and efficiency of work demanded good illumination, a view to which the Home Secretary and the Ministry of Munitions had recently subscribed. In the U.S.A. the percentage of lighting for advertising and luxury had been practically extinguished since America entered the war, but in industrial spheres there were cases in which more rather than less had been found needful. At this same meeting a series of Recommendations on Economies in Lighting issued by the Society with the concurrence of the Board of Trade was presented, and from this series one or two simple suggestions are submitted as likely to prove useful to our own departments, submitted be it said with all deference. (1) All worn out and inefficient electric lamps should be discarded. (2) Only properly designed shades and reflectors should be used. (3) Both lamps and shades should be cleaned at frequent intervals. (4) Carbon lamps should only be used in positions where they are required for short intervals.

The following table from the same source may interest the more scientific readers and convince them of the necessity for following out the advice in clause (4).

After a series of exhaustive tests with tungsten and carbon lamps, the following comparative values of costs, life and watts have been obtained:—

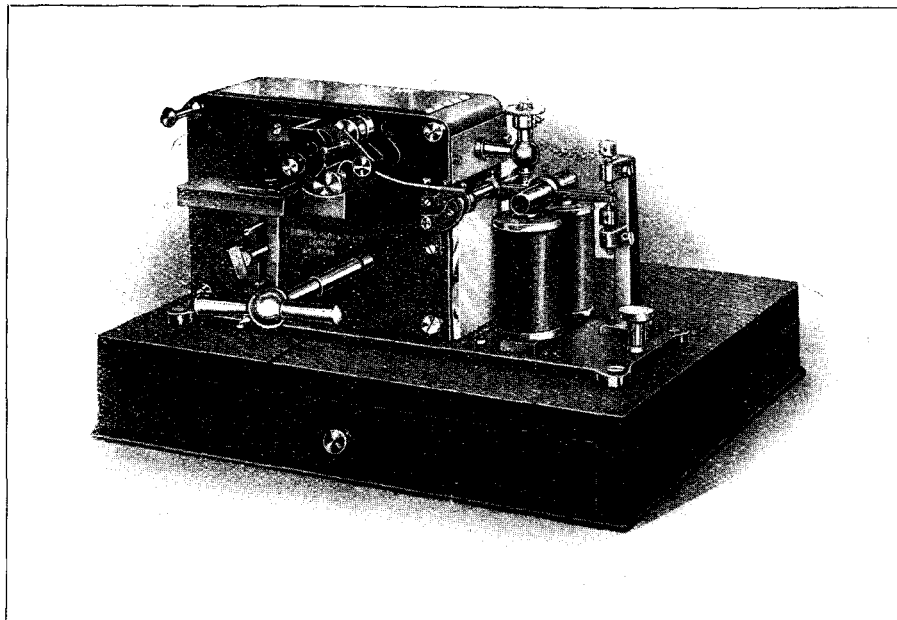
Lamp.	Useful Life hours.	Watts per candle-power.	Candle-power hours.	Cost per 1,000 c.p.hours at 4d. per unit.
Tungsten ...	1,385	1.58	42,426	6.3d.
Carbon ...	1,000	3.93	16,500	26d.

Our contemporary *Electricity*, writing a few weeks ago on the inefficiency of certain so-called "electricians" who dabble with the maintenance of telephone and signalling apparatus, laid emphasis upon "the lamentably small number of even experienced electricians who can justly claim any special adaptability to the maintenance of telephone and signalling apparatus and circuits." It is, however, gratifying in the extreme to read that the writer excepts "of course the trained staffs of the public Telephone and Telegraph Services."

*Elektron*, the writer above-mentioned, in further helpful lines on the theme of the necessity for the "mutual co-operation between industrial, professional and labour organisation" with a view to enhancing the efficiency of the various sections of the electrical industries, makes the following very cogent remark which should certainly be read and re-read by those who it is sometimes feared expect a little too much from high-speed machine telegraphy, for example. The italics are mine.

"In this era of highly specialised and automatic or semi-automatic machinery and appliances there is an increasing tendency to regard such machines and appliances as absolutely self-maintaining. Obviously the more complex the machine the greater the need for skilled attention, although this does not necessarily imply an increase in the number of maintenance staff necessary.

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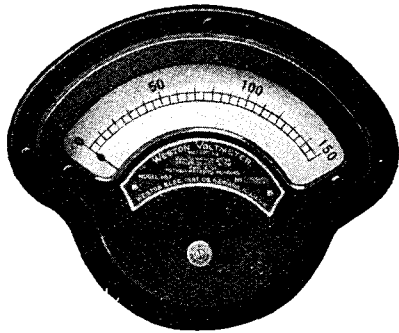
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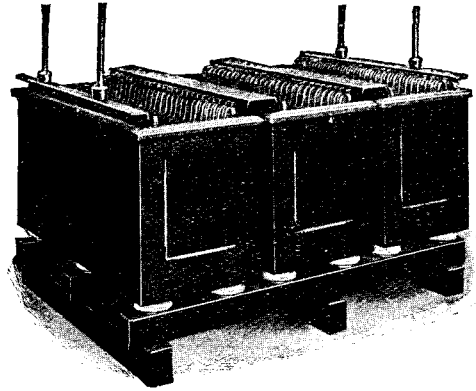
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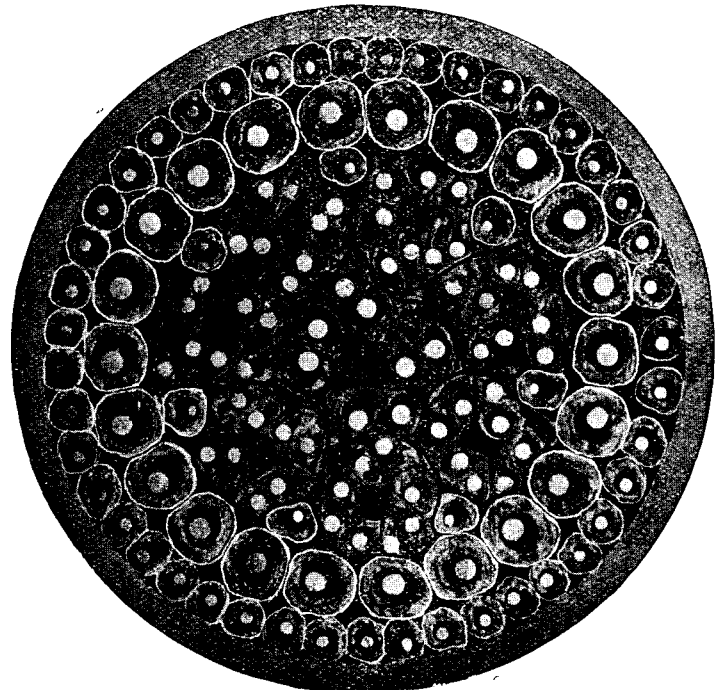
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What is really required is a more highly specialised training of the rank and file charged with the handling and upkeep of the plant in question."

A most pleasing act of reciprocity was that of a number of the C.T.O. male officials who recently subscribed for a Roll of Honour to those women of the C.T.O. at present serving with His Majesty's Forces.

One's feelings are somewhat mixed regarding the last list of successes of the C.T.O. Female Staff in the examination for Women Clerkships in which more than a couple of score of these young ladies have appeared on the pass list. Without exception, I am given to understand, they are all amongst the first flight of expert telegraphists and of a type which the office can ill spare. While regretting deeply the forthcoming loss of so many who have borne much of the burden and strain of these last four stressful years they are one and all to be specially congratulated upon having qualified for higher posts, for study during these war-times is most certainly no easy matter.

Those whom it may concern in the telegraph world are aware that Wheatstone working is but little known to our Allies the French, who have therefore but little acquaintance with the meaning of our technical use of the word "reversals."

Recent Baudot developments have however necessitated the use of an equivalent in their own tongue by the expressive word "roulements," slightly imitative in sound to the rattle which this succession of alternate signals makes in a relay or on a sounder. Curiously enough this same word has also been recently used by the French to represent the method, adopted by the Germans, of passing forward of their reserve troops into the forward trenches through the decimated and retiring ranks of their front lines, representing in effect positive and negative direction—a grimly poetic application indeed!

J. J. T.

### THE POST OFFICE ESTIMATES.

THE debate on the Post Office estimates produced many interesting speeches which we should like to have reproduced in full. As, however, they occupied nearly 70 columns of Hansard this is out of the question, and we therefore give our readers a brief summary of the debate with some extracts from the principal speeches:—

The Postmaster-General (*Mr. Illingworth*) in the course of his speech said: There is still a large number of men of the postal service in the Army. It is now close upon 80,000. Three thousand have been discharged and returned to the Post Office, and have been given the work which is most suitable for them. Many men will be liable for military service under the new Act, but I do not think, taking into consideration the low medical category of many of them and the necessity of retaining them in the Post Office for carrying on the service of the country, that many of them will be able to be spared. As the war goes on year by year there is more and more work carried out by the Post Office which might not fall strictly within its purview but with its large ramifications all over the country it has been considered the best authority for doing it. Of this the largest amount of work is caused by the Army allowances and pensions to the various dependants of soldiers. The Army, Navy, and Royal Air Force in this respect entail over 4,000,000 counter transactions per week.

Automatic telephones, for which great expectations were entertained before the war have not been developed to that extent which one would have liked, but the Leeds Exchange, I am glad to say, has been completed, and I had the pleasure of opening it for the public service early in May. This is the largest automatic exchange in Europe, as it contains at present some 6,800 lines, and the ultimate capacity will be somewhere in the region of 15,000. I have no doubt that after the war the development of telephones in this respect will be very considerable.

*Mr. Rowntree* and *Mr. Wiles* regretted that the Whitley Report had not been put into operation in the Post Office.

*Mr. H. S. Muell* said: I believe that the principles of the report can be applied in a Department such as the Post Office, not only without danger, but with very great advantage. We have, indeed, during the last ten years gone very far towards that end. *Lord Buxton*—*Mr. Sydney Buxton* when he was Postmaster-General—created something of a domestic revolution in the Post Office by, for the first time, recognising the trade unions and endeavouring to take them into consultation with himself as Postmaster-General and working with them on friendly terms, instead, as had previously been the case, of holding them at arm's length and refusing even to recognise their existence. Soon after he had carried out that change in practice he resigned from that Department. I had the privilege of succeeding him, and

carried on the system and developed it a good deal beyond the point at which it was then left. I think, on the whole, that has been a very successful experiment. No doubt there have been difficulties from time to time, no doubt there has been friction, but I am quite certain the difficulties and the friction would have been infinitely greater if the trade unions had not have been recognised.

*Mr. Anderson* said: I believe we ought to establish joint committees in the Post Office on the lines of the Whitley Report, and that any difficulties or dangers that may be created in regard to the application of these principles to privately-owned industries are greatly minimised when it comes to an enterprise like the postal service.

The character, the ability, and the intelligence of the men and women in the employment of the Post Office are on very high lines. If you take, for example, the number of men who are guilty of defalcations, and so on, who abuse your trust, it is very low—less, I believe, than 1 per cent. of the people in your employment—and therefore you have got men and women of skill and of ability and of a high range of intelligence, and they are willing to work with you and asking to work with you.

*Sir W. Rutherford* and *Colonel Lord Henry Cavendish-Bentinck* also advocated that the Whitley Report should be adopted by the Post Office service. The latter said: "It is said that this war is a war which has liberated a great many new forces. Undoubtedly this war has been, and will be, a war of liberation, but whether there is much new in these new forces I am not so certain, because human nature is the same now as it was in the days of the Garden of Eden. Human nature has struggled from the very earliest days towards self-realisation. It is quite certain that this war has given a great impetus towards that tendency. That is what is meant when we speak of things not being the same after the war as they were before the war. Undoubtedly the people of this country are not going to be satisfied with being treated, as they were before the war, as soulless machines; they are going to ask for a much fuller recognition of their humanity. I really and honestly believe that the only danger to the stability of our society and of our institutions is that these new democratic ideals should be stemmed and obstructed. If we have only the statesmanship and wisdom to call to our councils those who work and associate them with those who direct the work, I am perfectly certain that the result will show us how very reasonable, sensible, and patriotic are the great masses of the working people of this country."

*Lord Henry Bentinck* and *Col. S. F. Holl* took up the question of the grievance of second class engineers, and *Sir J. Fleming* put forth the claims of cheap telephones, with the classic reference to Scandinavia.

*Mr. Hughes* asked whether *Mr. Rowntree* was prepared to allow his newspapers to be controlled to be run by committees composed of one-half who provided the brains and one half who provided the money.

*Mr. France* said: It is not as the hon. member (*Mr. Spencer Leigh Hughes*) says, in order that these servants may run the business but that they may assist in doing what the Whitley Report desires to do, that the relationship of those employed and those who employ should be so improved that there should be a new atmosphere and a co-operation in purpose which will make for harmony and efficiency which in the past too often has been absent.

*Mr. Pease* referred to a reply intended to be given that afternoon by the Postmaster-General in reference to the Whitley Report. He said that he could not say anything with reference to the question put to him, because the matter of applying the principle of the Whitley Report to Government Departments was a matter which did not concern the Post Office alone. The matter is, or will be, continued *Mr. Pease* very shortly before the War Cabinet, and in these circumstances it is not possible to say anything further, nor do I know what the decision is likely to be. I think that this afternoon there was a misapprehension shown by the speech of the hon. member for York in regard to the relation of the Postmaster-General and myself to the trade unions. My right hon. friend the ex-Home Secretary in his speech referred to the revolution which was carried into effect by *Lord Buxton* some time ago and the relationship which existed between trade unions and himself on two occasions when he occupied the position of Postmaster-General. It is difficult to say exactly what the position would be if the Whitley Report were carried out to the full, but I have no doubt there are certain matters which could be well discussed between a body of that kind and the Post Office. With regard to the question of conciliation and arbitration, the record of the proceedings for 1917 of the Conciliation and Arbitration Board was recently published. Twenty claims on behalf of Post Office servants were heard by the Board in the year 1917, of which fourteen were settled by arbitration and five by conciliation, and one claim is outstanding. Twelve of the cases dealt with by arbitration were settled by war bonus awards in May and December, and the total amount of money received is £6,000,000. The total amount of money for the last award in December was over £2,000,000. The remaining two cases relate to claims (1) by the National Federation of sub-postmasters for increased remuneration for (a) dealing with Army and Navy allowance forms and (b) the issue of War Loan and Exchequer Bonds, and (2) by the London supplementary clerks for (a) the retrospective application of a scale of pay introduced in 1910 and (b) the application of the scales of pay recommended by the Holt Committee without the increase in bonus recommended by the Committee.

I mention that because some criticism this afternoon gave the impression that the Post Office was an absolute autocracy. Everyone in the House knows perfectly well that, so far as these matters are concerned, this question is outside the Postmaster-General's jurisdiction. The award is made by the Arbitration Committee, the chairman of which has been sitting here this afternoon. The bonus is a very considerable amount.

## THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.



Mr. R. J. MACKAY, C.B.E.  
Mr. W. J. JAMES, O.B.E.

Mr. J. NEWLANDS, C.B.E., C.I.E.  
Mr. H. P. BROWN, M.B.E.

Mr. F. SALISBURY, C.B.E., I.S.O.  
Mr. A. GARNER, M.B.E.

Mr. J. I. DE WARDT, O.B.E.  
Mr. A. J. WALDEGRAVE, M.B.E.

THE following officers of the Post Office have received appointments in the above Order, for services in connexion with the war :

## COMMANDERS :

ROBERT JOHN MACKAY, Principal Clerk, Secretary's Office.  
JOHN NEWLANDS, C.I.E., Controller, Central Telegraph Office.  
Col. WILLIAM PRICE, C.B., C.M.G., V.D., Director of Army Postal Services, B.E.F., France.  
FRANCIS SALISBURY, I.S.O., Surveyor.

## OFFICERS :

Major SYDNEY HERBERT GEORGE DANTON, Assistant Director, Postal Services, B.E.F., France.  
WILLIAM JOHN JAMES, Postmaster of Southampton.  
Miss RUTH LOCH, Superintendent (Female Staff), Money Order Department.  
EDWARD HERBERT SHAUGHNESSY, Staff Engineer.  
JOSEPH SCHOLES, Assistant Director of Vegetable Supplies, Ministry of Food, late of Staff Branch, Secretary's Office.  
JOHN ISAAC DE WARDT, First Class Clerk, Secretary's Office.

## MEMBERS :

HARRY PERCY BROWN, Assistant Staff Engineer.  
HORACE DIVE, First Class Clerk, London Telephone Service.  
ARTHUR GARNER, Staff Officer, Stores Department.  
JOHN HARDIE, Assistant Superintending Engineer.  
WILLIAM BLANDFORD HARRIS, First Class Supplementary Clerk, Secretary's Office.  
FRANCIS GRAHAM RAMSAY, Executive Cable Engineer.

JOHN SCOTT, Postmaster, Sheffield, Joint Hon. Secretary Sheffield War Savings Committee.

ALFRED JOHN WALDEGRAVE, Accountant General's Department.

## MEDALLISTS :

The following telephonists and telegraphists have received the medal of the Most Excellent Order of the British Empire for "displaying great courage and devotion to duty during air raids."

ANDREWS, GERTRUDE, Sorting Clerk and Telegraphist.  
BECK, EDITH AMY, Telephonist.  
BEVERLEY, LILIAN ALICE, Supervisor, Telephones.  
BINNS (Mrs.) MARY ALICE, Acting Caretaker Operator, Telephones.  
BULLIONS, ANNIE DOROTHY SCOTT, Telephonist.  
BURT, ELSIE MAY, Sorting Clerk and Telegraphist. Displayed exceptional courage and devotion to duty at a dangerous position during air raids and bombardment.  
CARPENTER, ADA ELIZABETH, Supervisor, Telephones.  
COWELL, ELSIE, Telephonist.  
CUTHBERT, IVY, Telephonist.  
DONOVAN, EILEEN ANNIE, Telephonist.  
ENEFER, ELLEN HILDA, Telephonist.  
EVERARD, ETHEL ROY, Supervisor, Telephones.  
FAKELEY, ETHEL EMILY, Telephonist.  
GITTINGS, PHYLLIS, Telephonist.  
GRASHAM, LILIAN FLORENCE, Telephonist.  
HARRISON (Mrs.), ROSA ELEANOR, Telephonist.  
HAYLOCK, FLORENCE MARY, Telephonist.



Miss M. J. JAMISON. Miss DORIS E. SEAMER. Miss E. H. ENEFER. Miss FLORENCE HAYLOCK. Miss JESSIE LIGHTBODY.

HAYNES (Mrs.), EDITH MARY, Supervisor, Telephones.  
 HENBREY, EMILY MARY, Sorting Clerk and Telegraphist.  
 HOLLAMBY, ROSETTA ELIZABETH, Telephonist.  
 HOWE, ISABEL LOUISA, Telephonist.  
 HUNTER, AGNES KERR, Telephonist. "Displayed great courage and devotion to duty during air raids, and especially when in a position of responsibility and grave danger on the occasion of a serious explosion."  
 JAMISON, MARY JANE, Supervisor, Telephones.  
 JOHNSTON, MARY DOTT, Supervisor, Telephones.  
 JONES, ANITA MYFANWY, Telephonist.  
 LIGHTBODY, JESSIE, Telephonist.  
 MARLOW, ETHEL VIOLET, Telephonist.  
 MITCHELL, LILIAN, Supervisor, Telephones.  
 MORRISROE, CATHERINE, Telephonist. "Remained at her post until relieved on the occasion of a very serious explosion at munition works, although the explosions were almost continuous and the police advised the officers on duty to leave the building."  
 PERRITT, GRACE PRISCILLA, Telephonist.  
 PHILBRICK, BEATRICE SARAH, Supervisor, Telephones.  
 PRICE, ADA, Telephonist.  
 SAVAGE, HENRY, Night Telephonist.  
 SEAMER, DORIS EMILY, Supervisor, Telephones.  
 SMITH, CHARLOTE EMILY FRANCES, Sorting Clerk and Telegraphist. "Displayed exceptional courage and devotion to duty during air raids and bombardment."  
 STOKES, EMILY KATE, Telephonist.  
 STOREY, LILIAN, Telephonist.

THOMPSETT, MAY ESTHER, Sorting Clerk and Telegraphist. "Displayed exceptional courage and devotion to duty during air raids and bombardment."

*Engineering Staff.*

The following have received the medal, "for displaying zeal and courage in carrying out telegraph work under dangerous conditions" :—

- CAMPBELL, JOSEPH, Skilled Workman.
- GILLEN, ROBERT, Skilled Workman.
- JOHNSON, ERNEST WALTER, Youth, Engineering Department.
- MCDONNELL, JAMES, Skilled Workman.
- MANSLEY, WILLIAM, Skilled Workman. "Displayed great courage in maintaining telephone service during a series of explosions."

And the following for "courage in connexion with submarine cable work in dangerous waters" :—

- BOBIN, FREDERICK GODFREY, Cable Hand.
- HALL, WILLIAM JOSEPH, Quartermaster.
- HARRIS, HAROLD BAKER, Stoker.
- NELMS, THOS. WILLIAM, Stoker.
- PHILLPOTT, THOS. HENRY, Cable Hand.
- SHEPHERD, WILLIAM JAMES, Quartermaster.

IMPERIAL SERVICE ORDER :

A Companionship of this Order has been conferred on Mr. JOHN WILKINSON SHERGOLD, Postmaster Surveyor of Birmingham.



Miss ISABEL HOWE. Mrs. EDITH M. HAYNES. Miss ADA PRICE. Mr. H. SAVAGE.

## The Telegraph and Telephone Journal.

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

Editing and Organising	{	MR. JOHN LEE.
Committee		MR. J. W. WISSENDEN.
Managing Editor	-	MR. W. H. GUNSTON.

### NOTICES.

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

VOL. IV.

JULY, 1918.

No. 46.

### INTERNAL COMMUNICATIONS.

THE exigencies of war have nowhere made themselves felt more keenly than in the realm of internal communications. Whatever branches of business, whether ancillary to necessity or luxury, have contrived, however speciously, to get themselves carried on "as usual," this one certainly has not. And now the temporary lapsing of the penny post comes as a last, signal reminder of the abnormal times through which we are passing and of the wide chasm which yawns between the present and the summer of 1914. To bridge over this chasm, to effect a happy continuity between the interrupted path of progress on the other side and the broad vista of the future will be the hopeful task which will exercise our most ingenious care and call forth all our best energies when Peace returns.

The high perfection to which communication had attained in Western Europe was the especial pride and one of the most material blessings bequeathed to us by the nineteenth century. Enjoyed only in a rudimentary form by our grandfathers, facilities for rapid communication in person, by the written word and latterly by the living voice seemed almost to have reached their zenith in the second decade of this century. How mightily they worked for civilisation, for the closer knitting together of peoples and for the breaking down of barriers which divide humanity is a truth none the less weighty because it had become a commonplace, and it is in the ironic fitness of things that communications should be more seriously affected by the anarchy and disruption of war than almost any other triumph of the arts of peace. We have seen our food, our household necessities, our paper, and such pleasures as are fitfully snatched by a civil population in time of war, gradually rationed; but this most rigorously of all. Few living men ever expected to see the reforms of Rowland Hill and the Cheap Trains Act annulled, even if only for a time.

The restrictions on communication were gradual. The withdrawal of all cheap railway tickets and the first modest reduction

of trains was succeeded by the abolition of the sixpenny telegram and an increase in telephone charges. Postal services were reduced and long delays in civil telegrams became normal. Then followed the 50 per cent. increase in railways fares and the slowing down of express trains, until the current *Bradshaw* can show timings, especially on the Midland and Great Northern lines, which compare unfavourably even with those of the early 'eighties. Atalanta stops so often to pick up her apples and carries so heavy a load that she is become a laggard. Our only consolation for this retrograde state of affairs is that matters are infinitely worse in enemy countries, where slowness and delays in railway, postal and telegraphic services exist in a more aggravated form.

One explanation why the hand of war falls with especial heaviness on all forms of communication is that it is just the men who carry on these services who are best equipped for indispensable work of a like nature in the field of action. Telegraphists, engineers, railwaymen of all ranks are invaluable in the front and in the lines of communication. Telegraphic and telephonic material, railway engines and other rolling stock are required in vast quantities. The very measure of their value at home is the index of their importance to the forces in the field or at sea. A diminution of the means of intercourse throughout the country is thus inevitable.

The Postmaster-General in his speech on the Budget said that although we might not have reached the end of these curtailments, he hoped that in future they would gradually become fewer and fewer. We have indeed the future before us. We are supporting without undue strain the decline from the speed and fulness of communication enjoyed in 1914, and we shall hope to progress from stabilisation to a resumption, when Peace dawns, of the full enjoyment of those facilities for rapid interchange of personal, oral and verbal communion which mean so much to civilised life.

### HIC ET UBIQUE.

THE Secretary of State of the German Post Office said in the Reichstag on introducing the Budget:—

"The construction of new lines for telephone and telegraph traffic is unfortunately not possible owing to the lack of building materials and staff. The heavy snowstorms and hard frosts of this winter have disturbed telegraph and telephone working worse than has been the case for a long time. Only by bringing up all available forces and by military help has it been possible to repair the heavy damage. It is apparent that our open wires are insufficient and that it will be necessary after the war to extend the cabling of at least the main trunk lines on a regular plan. After the war, moreover, automatic and semi-automatic working of the telephone traffic must be again extended."

The *Daily Chronicle* has the following story:—

"The newly-formed signal company had just assembled on parade, and the O.C. was classifying his men for their various duties. "Fall out any operators," he shouted. A number of telegraphists promptly stepped to the rear, but the O.C. was surprised to notice Sapper Black amongst the party. "Are you a competent operator?" inquired the O.C. "Yes, sir," was the immediate response. "And your speed of working?" "Five thousand feet per hour." "Five thousand what?" roared the O.C. "Telegraph operators don't send messages by the yard." "Perhaps not, sir," replied Black, "but you see I'm not a telegraph operator; I'm a cinematograph operator!"

*Punch* occasionally finds space for reference to the telephone amidst its jokes on the subject of army mules and aliens—or bomb-dodgers, for in comic-paper mentality the terms are interchangeable.

"Since the increased postal rates," it says, "it appears that people have taken to sending more messages by telephone. In several cases it has proved a much quicker method of communication."

We commend ungrudgingly to our postal *confreeres* this handsome testimonial to the rapidity of the postal service. We are awaiting with impatient longing paeans from *Punch* on the speed of our railways, when it discovers that they are still faster than mail coaches.

ACCORDING to the *Economist* the Swedish Government proposes to acquire the Stockholm Telephone Company. It is said that the deal will be advantageous to the shareholders, but that on the other hand the public is likely to suffer as telephone charges will be considerably enhanced. The competition which has made the telephone development of Stockholm the highest in Europe is, of course, not remunerative, but telephone users naturally have no objection to securing a cheap service at the expense of competitors—and of the taxpayer. If the deal is accomplished and the rates are raised what will become of the Mayors, Corporations, Members of Parliament, publicists and critics of the telephone service generally who for the past twenty years have, if we may borrow a phrase from Ibsen, "waved aloft the banner of the ideal"—always the same ideal, Stockholm? No matter if the rates were unremunerative, they were low!

OVERHEARD in the corridor of a Government office. First temporary lady clerk: "How much sick leave is due to you this year, dear?" Second ditto: "Oh, about two days, and I think I shall take it next month." (A fact.)

We propose to publish next month further portraits of medallists of the Order of the British Empire. We should be glad to receive from District Managers, Postmasters or Superintending Engineers photographs of telephonists, engineering staff or others whose portraits have not yet been published.

#### NORTH-WESTERN DISTRICT. ROLLS OF HONOUR UNVEILED BY SIR WILLIAM SLINGO.

Rolls of Honour, containing the names of 480 members of the Engineering Department on the staff of the North Western District, who have joined H.M. Forces, were unveiled by Sir William Slingo, Engineer in Chief, on the 21st May, 1918. The memorials included the General District Roll, and Sectional Rolls as follows:—Headquarters staff, Halifax, Preston, Carlisle and Southampton. The function took place at the Superintending Engineer's Office, Preston, and was largely attended by representatives of the staff from various parts of the District. The Superintending Engineer (Mr. T. E. P. Stretche) presided, and was supported by Mr. H. Wooster (Surveyor, G.P.O.), Mr. F. W. Le Fevre (Postmaster of Preston), and Mr. A. C. Haley (Telephone District Manager, Preston).

The Chairman, after expressing the keen sense of indebtedness of the District to Sir William Slingo for consenting to unveil the Rolls, stated that the number of casualties to date was 29 (equal to 6 per cent.), and the distinctions won include one Military Cross, ten Military Medals, one Medaille Militaire (French), and four D.C.M.'s, whilst five had been mentioned in despatches, making a total of 21.

Sir William Slingo, who was received with acclamation, touchingly referred to the many sacrifices made by those who had joined the colours, and eulogised the work of the men serving in the Signal Sections of the Royal Engineers.

Upon the motion of Mr. J. W. Sullivan (Assistant Superintending Engineer) seconded by Mr. R. A. Jones (Chief Clerk) a cordial vote of thanks was accorded to Sir William for his presence and services in unveiling the memorials.

The hall was tastefully decorated by the staff with flags, bunting, &c., and an orchestra, composed of instrumentalists connected with the Post Office departments, under the baton of Mr. J. Sinclair Terras (Assistant Superintending Engineer), rendered selections during the proceedings. Elgar's "Land of Hope and Glory" was feelingly rendered when Sir William Slingo had unveiled the Rolls of Honour.

THE Meritorious Service Medal has been awarded to 149746, L.-Cpl. W. Thomas, R.E. (Liverpool), ex P.O. Linesman, Wavertree, Liverpool, for gallantry in the performance of military duty.

## LIFE IN THE POST OFFICE SIXTY YEARS SINCE.

EXTRACTS FROM "EDMUND YATES: HIS RECOLLECTIONS AND EXPERIENCES."

(Continued from page 115.)

WITH only one other of the Postmasters-General—Lord Stanley of Alderley—was I ever brought into contact, though towards the close of my official career I was treated with kindness and consideration by Lord Hartington, at a time when I required both. I had not, nor have I, any personal acquaintance with Lord Hartington, but I desire to place on record my appreciation of his friendliness. Lord Hartington has, I believe, a character for *hauteur* and want of sympathy; but his interest in the Service and his impartiality won him great respect in the Post Office; whereas his predecessor Lord Stanley of Alderley, known as a *bon-vivant* and a joker, "old Ben, Stanley" among his friends, was heartily detested by most of the officials whose ill-luck it was to have to see him. That he was cross-grained and tyrannical, and stingy to the letter-carriers and messengers, I knew from his treatment of official matters; that he was insolent and overbearing to his subordinates I had heard, but little thought I should ever have any personal experience of the fact.

One day, however, I was sent for by Sir Rowland Hill. I was at that time the head of the Missing Letter branch, and as such it had devolved on me to carry out a pet scheme of Sir Rowland's—the reduction of the fee for registering letters from sixpence to fourpence, by which it was hoped that, as the opportunities for obtaining almost certain security were made cheaper, the chance enclosure of coins and valuables would be proportionately diminished. The measure had taken many months' close attention to elaborate, but at last it had been worked out in every detail, had received the sanction of the Treasury, and only required the Postmaster-General's signature to a certain deed to become law. This deed had been prepared and forwarded to Lord Stanley, and we were awaiting its return. Obedying his summons, I found my chief rather anxious.

"I am afraid I have rather a disagreeable job for you, Yates," was his salutation.

"Indeed, sir?"

"Ye—es. In connexion with the registration-fee. The papers are with the Postmaster-General, are they not? I've just been told by the solicitor, Mr. Ashurst, that it is absolutely necessary his lordship's signature should be attached to the warrant before twelve o'clock to-night, or the whole thing will lapse as informal, and all our trouble will be lost. It will be necessary, therefore, that some one should see his lordship at once, explain the matter to him, and get his signature. Now you are the only person in the office who understands all about the question, and therefore you must go."

"Very well, sir. Can you tell me where I am likely to find Lord Stanley?"

"Yes; that's just the point. I understand that Lord Stanley is at Newmarket Races, with—rather a fast party of friends. You'll have to go to him there."

This was horrible. To have to drag an irritable elderly nobleman away from his fun—bother him about business!

"Dear me, sir," I said, "that is a disagreeable job, indeed!"

"Yes," he said; adding instantly in his peculiar hard manner, "but you'll have to do it. I don't exactly remember the name of the house or hotel where Lord Stanley is staying, but you'll get that from his confidential butler in Dover Street. So be off as quickly as you can, and be sure to get the signature before midnight. Here is a letter of introduction for you to present to Lord Stanley, in which I have told him who you are. Good-day!"

Sir Rowland nodded my dismissal, and, though I detested the mission, there was nothing for me to do but to go. I drove off in a cab to Dover Street, was admitted by a footman, saw the confidential butler, and learned from him that Lord Stanley had just arrived from Newmarket, and was at that moment actually in the library. I gave the man Sir Rowland's letter of introduction, and in a few moments was bidden to follow him.

I can see that room and the scene which occurred perfectly plainly at the present moment. Standing on the hearthrug, with his back to the fireplace, and facing me as I entered, was a thick-set elderly man of middle height. On the table close by him was a yellow paper-covered French novel which he had evidently just thrown down, and on a further table were three or four of the heavy leather pouches in which official documents were forwarded to the Postmaster-General.

As the butler closed the door behind me, I made the gentleman a bow, of which he took not the smallest notice. He did not offer me a seat, so I remained standing, *planté-là*.

"What do you want?" was his gracious query.

"I have come about the reduction of the registration-fee, my lord. I thought Sir Rowland Hill had explained in his letter. It is necessary that your lordship's signature—"

"Yes, yes, I know all about that," he interrupted. "I have signed the damned thing!" going to one of the official pouches, and rummaging in it. "It's here somewhere—no, that's not it. I can't find it; but I know I've signed it. Look here, have you got a cab outside?"

"Yes, my lord."

"Then," pointing to them, "just take these pouches back to the office; you'll find it when you get there."

It was just too much. I am of a hot temper, and I boiled over.

"What!" I cried, in a tone that made my friend jump again. "What!"



do you expect me to carry those bags to the cab? If you want that done, ring the bell and tell your servant to do it. I'm not your servant, and I won't carry bags for you or any man in London!"

He looked petrified; but he rang the bell.

"What's your name, sir?" he asked.

"My name is Yates, my lord," I replied.

"I don't like your manner, sir," said he.

"And I don't like yours, my lord," I rattled out. "I came here, properly introduced by the Secretary; I made you a salutation, which you had not the politeness to return; you have never asked me to take a seat—"

"Wasn't I standing myself?" he interpolated.

"That is no affair of mine. Your business as a gentleman was to ask me to be seated. And now you think I am going to do your servant's work!"

Here the servant entered the room and was ordered by his master to carry off the bags. I was preparing to follow him, when Lord Stanley said:

"You shall hear more of this, sir!"

"Whenever you please, my lord; I shall be quite ready!" and off I went.

I was desperately upset, and I suppose I showed it; for when I arrived at the office I made straight for Sir Rowland's room. His face, on seeing me, expressed more astonishment and concern than I had ever seen there.

"What, back so soon!" he said. "Why, what's the matter with you, my good fellow? You're trembling, and—tell me, what has happened?"

I told him shortly. The old gentleman was greatly excited, and very sympathetic. He rose from his seat, and laid his hand on my shoulder.

"I'm very sorry you've been exposed to this, Yates," he said, "but you mustn't mind. He's a damned rude fellow; he's been very rude to me before now. Don't you be afraid of his threats; I'll take care of that. And he will think better of what he said when he's a little cooler. Depend upon it, you'll hear no more of it."

I did not hear any more of it in the way I anticipated. But the story got wind, and another one was speedily improvised to the effect that Lord Stanley had been so frightened by my display of independence that the next time one of the messengers was sent to him with some official papers he rushed at the astonished man, seized him warmly by the hand, and insisted on his stopping to luncheon.

IN the second volume of his "Recollections and Experiences" Yates tells how he was promoted to be the head of the Missing Letter Branch. After relating in the chapter "Later Days in the Post Office" some instances of detection of theft, and some stories of the courts, magistrates, barristers and detectives, he continues:—

I remained for nearly ten years at the head of the Missing Letter Branch, and thought I should remain there until I had become disabled, or until I had served the necessary number of years for securing a pension, when the acquisition by the Government of the telegraphic system of the country most unexpectedly influenced the whole course of my future life.

The suggestion of this gigantic addition to the regular work hitherto performed by the Post Office Department had originated with Mr. Scudamore, and, when sanctioned by Parliament, had been handed over to him to carry out. The history of that extraordinary time has yet to be written, but certainly not by me, as my share in the carrying out of the scheme was infinitesimal; but when it is written, the public will read with wonder of the desperate unflagging energy by which it was carried through by the man who had planned it, and his devoted band of followers, who sat up night after night, denying themselves rest, comfort, almost food, in order that the compact with the Government might be duly executed.

From my personal friendship with Mr. Scudamore I knew a good deal of what was going on; but I had no hand in the affair, and never thought I should have. One day, however, very soon after the telegraphs had been taken over by the Post Office, I was sent for by Mr. Scudamore. He spoke to me in the kindest manner, telling me he felt sure I must be somewhat wearied of the duties of the Missing Letter Branch after such long performance of them, and hinted it was not improbable that before many months certain sweeping changes might be made in the administration of the Office, under which I might find myself shelved. Of my ability, he was good enough to say, there was no doubt; but the selection of those to be "compulsorily retired" would rest with Mr. Tilley, the Secretary, with whom I was no special favourite; and that, possibly, Mr. Tilley might not be sorry of an opportunity for displacing me in favour of someone whose "zeal for the service"—a convenient official phrase—was more conspicuously manifest. In truth, I had had one or two conflicts with Mr. Tilley, in which, notwithstanding the weight of his official position, I had not been wholly unsuccessful.

Mr. Tilley was a shrewd, caustic, clever man, bred in the Post Office service, and knowing it thoroughly; by no means a crotcheteer, but, with his public office experience, tempered by plenty of worldly knowledge, and as unimpressible as an oyster. An excellent public servant, had he not been a *sic volo, sic jubeo* gentleman—one who never allowed anything or any one to stand in his way; who was accustomed to do as he liked without being called upon for his reasons; and with whom, as I have stated, I, not being entirely willing to prostrate myself in order that I might be ridden over roughshod, had more than once come into collision.

I had led the mill horse life for so long—I had been jogging easily round and round for so many years—that I had never contemplated the arrival of a time when I might have to surrender my post, and with it the £500 a year which, though but a portion of my income, was a certainty.

No such contingency was, however, immediately at hand. Mr. Scudamore told me he had a plan for effectually utilising my services in a way that would be pleasant to myself and valuable to the department. The Govern-

ment, it appeared, had in contemplation an enormous extension of telegraph business. Under the private companies comparatively few places, and those only towns of fair size, had telegraphic intercommunication; but now that the affair had been acquired by the Post Office it was intended that every place of sufficient importance to be a money-order office should also be made a centre for the receipt and despatch of telegrams. This extension of business would necessitate the erection of poles, and the carrying of many thousand miles of wire over public and private property; and it was to obtain the consent of the various corporate bodies and private landowners to the Government's amiable trespass on their domains that my services were about to be called into requisition.

Mr. Scudamore laughed as he showed me the minute to the Postmaster-General, in which it was set forth that the person to fill the appointment should be a gentleman of pleasant manners, possessing a certain knowledge of the world, and assured me that I was the very man to meet the requirements. Then he gave me twenty-four hours to turn the matter over, and I retired.

I at once commenced making inquiries from some of the higher officials in the Telegraph Department as to the details of my proposed duties, and all I learned was most satisfactory. I found I should be practically my own master, taking a certain district at a time, and working in it until I had exhausted my schedule of persons on whom I was to wait, and then moving on elsewhere; that I should get rid of the long familiar life of the Office, with its stated hours of attendance and its jog-trot routine; that I should necessarily have plenty of leisure time in which to pursue my literary labours; and that I could always take my wife for my companion whenever she was so inclined. Moreover, I felt convinced, more from my old friend Scudamore's manner than from anything he actually said, that he thought it very much for my interest that I should accept the proffered berth; and as this view was ratified at home, the next morning I signified my thankful assent.

And so, though I was still an "officer of the department," my old servitude at St. Martin's le Grand came to an end after twenty-three years, and I entered upon a new official career. The necessity for punctual arrival, with its concomitant hateful "attendance book," the daily dreary grind, the perpetual attachment to the "desk's dull wood"—all were abolished for a time at least, and, as it proved, for ever.

My duties were pleasant, and thoroughly congenial. The engineer, in proposing a certain extension of telegraphic accommodation, would report that difficulty might possibly be experienced in "getting consent," as we used technically to call it, for the erection of poles or carrying the wires over certain property. This might mean on public roads or private lands, across gardens, through streets, or over chimneys. I was then despatched to see how the difficulties could be smoothed. I took up my quarters in the place, harangued mayors and corporations in council assembled; presented myself before local magnates in their libraries, on their lawns, even in the midst of their shooting parties when time pressed; sat with old ladies, and dissipated their fears of the wires proving lightning conductors, and importing the "electric fluid" into their bedrooms; persuaded invalids that the sighing of the wind through the wires, instead of being an annoyance, had an Æolian harp like quality of soothing; laughed, chaffed, persuaded, cajoled, threatened—when necessary; but generally got my way.

One of my funniest experiences was in attending the Local Board of a little town on the Thames, where I was told we should be hotly opposed, as we proposed to take the wires along a pretty road leading from the station, on one side of which ran the garden of a wealthy lady, whose agent was to be my chief adversary. He was pointed out to me when I entered the little room, where perhaps fifteen people were assembled—a very stout little man, with a roll of paper in his hand. He was evidently much excited, and at once demanded that "the inspector," as he would persist in calling me, should "lay his proposition before the meeting." I accordingly made a brief statement, during the delivery of which the little man fidgeted and fumed, but said nothing. When I sat down, one or two of the tradesmen after exchanging a nod with my friend, asked me some questions which had evidently been pre-arranged.

Then the little man arose, and commenced to denounce the scheme which I had propounded as one which would overwhelm with ruin and confusion their lovely and peaceful village, so well known to, and so sought after by, the angler, the oarsman, the tired and weary citizen, who flew thither for rest. After a good deal in this strain, the little man stopped and mopped his forehead; then, striding across the room, he bore down upon me, and, waving his roll of paper close under my nose, cried "And you are you who would, unbidden and uninvited, proceed to force your posts and wires down our throats? Minion of the Government! I defy you!" Then he struck an attitude, and was greeted with subdued cheers by his friends. There was no chaff in this, it was all meant perfectly seriously. I was afraid my little friend had expressed the wishes of the meeting, and I retired covered with ignominy.

(To be continued.)

#### THE BRISTOL POST OFFICE MINOR ENGINEERING INSTITUTUTE.

The opening meeting of this Institute was held at Bristol on Wednesday, May 29, when a most interesting and instructive paper was read by the President, Mr. H. O. Boulter, entitled "The Ashton Gate Swing Bridge."

Through the courtesy of the Docks Engineer a party of members visited this bridge on Saturday, June 8, and a most enjoyable time was spent.

## UNVEILING OF ROLLS OF HONOUR BY THE ASSISTANT POSTMASTER-GENERAL.

A REPRESENTATIVE gathering of the Central Telegraph Office staff assembled in the Deputation Room on June 4 to witness the unveiling by the Assistant Postmaster-General, the Rt. Hon. Herbert Pike Pease, M.P., of two Rolls of Honour.

The first Roll to be unveiled was in reality a continuation of the names of the male staff who had joined His Majesty's Forces and, like the two which had preceded it, was the gift of the lady members of the staff. The second was a reciprocal acknowledgment on the part of the Controlling and Supervising Officers of the patriotism displayed by the members of the female staff who had joined the Queen Mary's Women's Army Auxillary Corps.

Both Rolls of Honour were the production of members of the staff, the former being the work of Mr. E. F. Poole, and the latter of Miss E. L. Wilson, and their execution bore eloquent testimony to the artistic genius of their respective designers.

The Controller, Mr. J. Newlands, C.I.E., C.B.E., to whom we offer our congratulations on the distinction of Commander of the Most Excellent Order of the British Empire recently conferred upon him, presided, and in introducing the Assistant Postmaster-General said the fact that the C.T.O. had already two such Rolls of Honour showed that it began well by doing its duty in order to furnish men, and they were then met for the purpose of having two other similar Rolls unveiled and were very much honoured by the presence of the Assistant Postmaster-General to perform the ceremony.

Mr. Newlands stated that a greater number of the C.T.O. staff were willing to enlist than it had been possible to release, and furnished information showing that up to the present 1,590 men and 38 women were serving and, of the former, no fewer than 57 had either been killed or had died while on active service. It had been the practice from the beginning to send in the name of the staff a letter of sympathy and condolence to the sorrowing relative of each man. Whilst the majority of those who had enlisted were attached to the Signal Section, that was not entirely so, and a number were in other units; 49 officers including 1 boy messenger and 1 tube attendant held commissions and 36 had gained distinctions or had been mentioned in despatches.

Mr. Newlands then requested the Assistant Postmaster-General to perform the ceremony of unveiling.

Mr. Pike Pease said that he appreciated fully the kind invitation which had been accorded to him and was glad to have the privilege of unveiling the Rolls of Honour, a ceremony which would recall sad memories for some of those present. He expressed regret that he had so few opportunities of making the acquaintance individually of many of the staff of the C.T.O. He had served with three different Postmasters-General and they all realised, as he did, the splendid work of the department, believing that when the History of the War was written, the record of Post Office work generally would be a bright page in that History. We were all trying to do our duty in the same way as those employed in districts more closely connected with the conflict, and we all realised the sacrifices now being made in France by the Sons of the Motherland and her Allies.

He sometimes thought that in everyday life we were inclined to forget that we were living at one of the greatest moments in the history of mankind, and continued, "We are fighting for a righteous cause, not only our existence and happiness but the liberty of the whole world is at stake."

Though we had made sacrifices at home, they were infinitesimal in comparison with the greater sacrifices made by many in the war zone, and he alluded to the loss of those nearest and dearest to many of the members of the C.T.O.

Mr. Pease said that he had been a member of the House of Commons for nearly 20 years and appealed for sympathy for members of that House, especially for the Prime Minister, realising that on his actions, possibly, depended to some extent the future of the whole human race.

The war had taught us as a nation many lessons, many of which would have a beneficent effect. Some writers speculated on the ration between evil and good derived from the lessons of the war: for his part he felt that every man knew individually what the effect of the war had been upon him personally.

He believed that Almighty God would not grant Victory to Germany in this conflict, for He knew that we were fighting in a just cause, for an enduring Peace with no ideas of aggression but simply that life in this world might be made worth living.

In unveiling the Rolls of Honour Mr. Pease expressed his deep and sincere sympathy with the relations of those who had laid down their lives.

After the actual ceremony of unveiling the Rolls of Honour had been performed, Miss Briauet, the Chief Supervisor, in presenting the one bearing the men's names expressed the pleasure felt by the Female Supervisors and staff in being permitted to give it as a memorial and testimony of the courage and valour of the men who had responded to the call of duty and were now serving their King and Country.

Mr. Herbert Parker in accepting the gift on behalf of the staff wished that the men whose names were inscribed on the Roll could have been present, and expressed the hope that when the men returned they would find that their names had not been put on in vain.

Mr. A. W. Edwards, Assistant Controller, who was responsible for the arrangements in connexion with the ceremony, presented the Roll bearing the names of the women who were serving in the Army Auxillary Corps. He said that it stood as a testimony of the admirable courage, loyalty and

patriotism of those who had so splendidly volunteered and that it afforded the donors great pleasure to provide a permanent record of their devotion.

Miss Barnfield expressed the gratitude of the ladies and briefly spoke of the valour of those who had gone and of the valuable services still rendered by those who remained.

The proceedings terminated with a vote of thanks to the Assistant Postmaster-General.

## LONDON TELEPHONE SERVICE NOTES.

THE London Hospital Million Half-Crown Fund could not help but make an appeal to the exchanges in the City and Eastern district and from seven such exchanges a total of £10 has been forwarded to Lord Knutsford. The Fund for Smokes for Wounded Soldiers and Sailors in hospital and convalescent homes has also benefited by over £60 as the result of a collection in the L.T.S. A fund of this character always appeals but at the moment the L.T.S. is perhaps especially interested in the wounded. One of the most popular personalities of the office staff in times of peace, Leonard J. Lee, has held a commission in the R.N.V.R. since the early days of the war and he was in charge of one of the Motor Launches that took part in the ever-famous Ostend-Zeebrugge exploit. Lieutenant Lee, whose name with some account of his doings appeared in the public press at the time, is now in hospital at Deal, the bone of his right arm having been broken in three places. Already he is becoming an expert writer with his left hand and therewith assures us that he is rapidly mending and hopes to go home shortly. He says on no account would he have missed the "scrap," and that seems to have been the spirit in which the whole affair was conducted. The L.T.S. is certainly proud of its representative in the fight. News is also to hand that another well known member of the office staff is wounded. Captain H. J. Stone (Registrar), after being in France five weeks sustained a wound in his knee. He was at Rouen Hospital for a time, coming later to England where he is now at the Princess Christian Hospital for Officers. We offer hearty congratulations to Lieut. J. Webb (Croydon Exchange Manager) who has been awarded the Military Cross for his services at Cambrai, and also to H. A. Berry (Service Section) who has been promoted to Captain. Frank Gray, of the Service Section, is again in France (this time as a commissioned officer) and we sincerely trust that the good fortune which has so far attended him will continue to dog his footsteps. A long and interesting letter has been received from Hugh Williams in which he describes his doings on the other side during the exciting days at the end of March, and as showing the interest of the JOURNAL to men abroad he refers with appreciation (we are asking the Editor for increased remuneration on the strength of it) to the Notes of a recent month. He claims to have discovered our identity, but with a consideration which we duly acknowledge he refrains from "giving us away" to his distinguished correspondent.

The list of Birthday Honours contains a considerable number of additional appointments to the Most Excellent Order of the British Empire and twenty medals of the Order are conferred upon members of the exchange staff of the L.T.S. Details of these awards will be found in another part of this issue, but we should like to be allowed to offer our congratulations to the medallists. They have all thoroughly well earned the award and it would be easy to extend the list fourfold and still make the same comment. We are particularly pleased to see the name of Mr. H. Savage, a night operator at Central, who has never spared himself during the raids in his efforts to make the other members of the staff comfortable. He has been the only male officer available to keep a look out for the approach of the Hun.

Mr. John Newlands, C.I.E., the Controller of the C.T.O., is appointed a Commander of the Order, as are Mr. R. J. Mackay, of the Secretary's Office, and Mr. Francis Salisbury, I.S.O., the Surveyor. Amongst the Officers of the Order are Miss Ruth Loch, of the Money Order Office, who in addition to her arduous official duties, supervises the whole of the arrangements for the despatch of the P.O. Relief Funds Parcels for Prisoners of War. Mr. E. H. Shaughnessy, Staff Engineer, and Mr. J. I. de Wardt, of the Secretary's Office, have similar rank. The Members of the Order include Mr John Hardie, Assistant Superintending Engineer, and

Mr. H. P. Brown, Assistant Staff Engineer—well known to members of the L.T.S. as at one time the Sectional Engineer in charge of the exchange plant in the G.P.O. South. The Accountant-General's Dept. is represented on this class by Mr. A. J. Waldegrave; the Stores Dept. by Mr. Arthur Garner; the Secretary's Office by Mr. W. B. Harris; and the L.T.S. by Mr. Horace Pive. The list does not appear unduly long when one bears in mind the war work performed by the Post Office, and we could have wished it had been extended to include some other member of Miss Loch's sex to bear her company. Possibly the next list will adjust the balance.

## TONE—ITS EFFECT ON THE SERVICE.

BY AMY BALL.

(Telephonist, London Wall Exchange, now on duty in France.)

WHEN speaking of tone, I am introducing a very old subject, one which we often hear discussed, but one which (as we realise how much depends on it) brings with it fresh interest as time goes on. We cannot attach too much importance to a subject which affects us all personally. As each day brings its work, we realise the value of a good tone more and more.

Apart from our business life we see the effect of tone on others, how much more so than when we are judged by voices only. We are given our voices, we cannot alter those, but we can help our tones; we have the power of introducing into our tone just what we feel. Let us suppose we are going on a shopping expedition. We walk into a shop to purchase something; we are going to pay for that something, therefore we expect the best, not only as regards the actual purchase but also the attention we receive. If the assistant is willing and obliging, all goes well. On the other hand suppose an assistant said in a disobliging manner, "Well, what can I get for you?" we should look up surprised, and, in all probability, feel like walking out of the shop. In any case we decide to go elsewhere in future. We look at the assistant's face, and try to find out if she is naturally cross or only out of temper for the time being. Let us think of this in connexion with telephony. Our subscribers cannot see to whom they are speaking; they merely judge by the voice. They have no power to go elsewhere when answered by an ill-tempered operator, who should therefore cultivate a pleasant tone and let them know they have someone who is ready to attend to their wants cheerfully.

Tone betrays an operator's character always. It is no use thinking: "Well, we are separated by distance; my subscriber cannot possibly know how I feel." The subscriber does know, and, what is more, a cross, ill-tempered tone has the effect of putting him out of temper also, and making things bad all round.

Out of fairness to the subscriber this should never happen. He claims a cheerful answer as his right. He absolutely expects his operator to answer in a pleasant, cheerful way. A cheerful "Number Please?" and he knows at once someone is waiting in readiness to do her best, and he trusts her at once. He feels "Here is an obliging operator, I will accept her statements as correct." He does not dispute the advice given because of the tone in which the words are spoken. He hears the sympathy in the voice, and is content to wait until he is called, and is at peace with the exchange in general. To gain confidence from others an operator must have confidence in herself. Her tone again gives the right impression. She answers, knowing quite well she is competent, and her tone seems to say, "Just give in your number, I am able to get what you want." The number is given in, he trusts his operator fully.

Now let us think of the hurried, thoughtless "Number, Please?" From the impatience betrayed by the tone the subscriber thinks his operator means, "Oh, do be quick," and he doesn't like being told to hurry, even though it is only through a hint conveyed by the operator's tone. He comes to the instrument, perhaps feeling a little out of spirits himself, ready to have his troubles all charmed away by a cheerful little voice, asking him politely what number he requires, and then, alas, he is disappointed. The voice is not what he expected; it has the effect of making him feel a little more

out of sorts. We can never tell how much trouble we are causing, and all through tone once more. What a great deal depends on those two words, or rather on the way they are spoken! We receive a signal, answer the call in a mechanical fashion perhaps, and think nothing of the hints thrown out by our voices. "Oh, dear, I wish you wouldn't want numbers just now." When an operator feels like this she must be careful lest her subscriber should know. Naturally he resents that sort of "Number Please?" Should anything go wrong with the call? If his number is engaged for instance, he concludes it was too much trouble for his operator to try the number, and he says so. More trouble, and all through that can't-be-bothered tone conveyed in a little phrase: "Number Please?" Thus we can see that what probably seems but a trifle has more than trifles depending on it.

It may be thought that through repeating the expressions hundreds of times as a telephonist does, she says everything in a mechanical sort of way. To prevent this state of things she must have her heart in her work, and when she knows she is talking to another person it is only reasonable to suppose she will put some expression and meaning into the words.

Her tones tell her subscriber what she cannot actually say in words. She is willing to help him with his little worries. When he is cut off he can do nothing for himself. The first person he tells is his operator. "I am sorry, can you tell me what number you were speaking to?" asks his telephonist. She really is sorry; her tone tells him so, and he regrets he cannot tell her. He was through to a call office, and was cut off in the middle. Here we have two people, both sorry, one sorry for her subscriber, the other sorry for himself. She requests him to replace his receiver, and the caller will probably come through for him. Her voice has a sympathetic tone now, he knows someone is sorry for him, and he takes her advice, replaces his receiver, and waits and hopes, while his operator goes on with her work conscious she has done her best.

It will be seen therefore how necessary it is for an operator to have a pleasant voice. What is really wanting is enthusiasm and interest in the work. Once she allows herself to think of the monotony of her work, her tone will betray it to her subscriber, and he will think he is being attended to in a half-hearted way. It is really best to believe absolutely in the saying: "What is worth doing is worth doing well," and apply it to every call. I think I am right in saying there are not many people who love work for work's sake. We all like to work for results, and a good tone is something which brings results, results worth working for too.

I should like to say something also about the feeling between "A" and "B" telephonists. We never hear them quarrel but we know exactly how the "B" operator feels at the distant exchange, not by what she says but by her tone again. Don't we always know when an "A" operator has had a wrong number? Tone again. The operators understand each other perfectly; they are merely repeating the same expressions, but in different tones to suit the occasion. We know when a "B" telephonist wants to tell someone not to break in. No words are spoken, they are quite unnecessary, the tone is sufficient.

A "B" telephonist can influence a great many operators by a smiling tone. I expect we have all listened to a telephonist whose very way of allotting a junction seems to give a hesitating operator fresh encouragement. The way the numbers are spoken, clearly, decidedly, cheerfully, seems to say, "Come on, I am ready for you all."

And now, "A" operators, just a word with you. "Don't give all your smiles to your subscribers, just think of the "B" operator who reserves hers for you. She has no subscribers to break the monotony. She deserves all your pleasant tones and rising inflections. She completes the calls for your subscribers; you get the credit. How many subscribers know anything about the "B" operator working for "A" telephonists as well as subscribers.

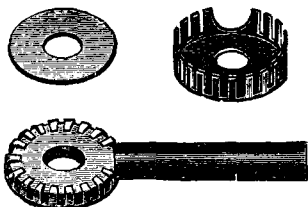
And, "B" telephonists, don't lose your tempers. If you have allotted an engaged junction to a certain operator twice, and she comes on again, with the wrong number tone in her voice,

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A

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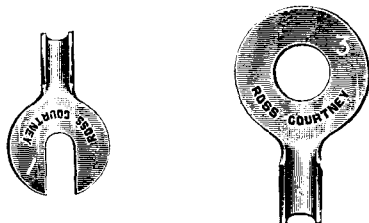
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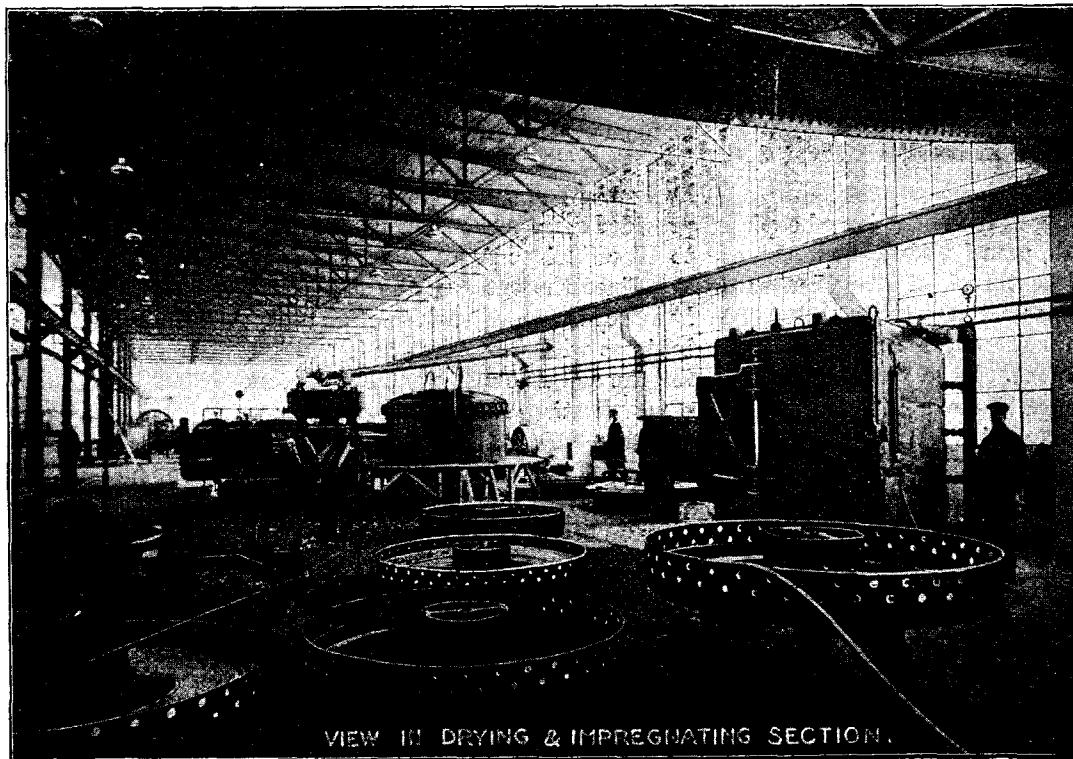
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# SIEMENS BROTHERS & CO. LTD.

The Ordinary General Meeting was held on Tuesday, the 11th instant, at Winchester House, Old Broad Street, Mr. G. Mure Ritchie, the Chairman, presiding.

The Chairman said that during the past year the Company had adhered to its past policy, and the volume of the business done exceeded that of 1916 by about one-third. The expansion in output occurred principally in insulated wires and cables, ebonite and batteries. In regard to the development of automatic telephony, which the Company foresaw before the War, the advantages of eliminating the human exchange operator had been demonstrated in practice and all technical difficulties surmounted, and they were equipped to provide large exchanges for public service, and also private exchanges of 25 to 500 lines. Notwithstanding the demands of War-work, they had completed a semi-automatic exchange of 1,000 lines at Port Adelaide for the Commonwealth of Australia, and a full automatic exchange of 1,300 lines at Grimsby for the G.P.O., while good progress had been made with a full automatic exchange of 950 lines for Stockport, also for the G.P.O. Many private exchanges had been established in Munitions Factories, and had given every satisfaction.

After speaking of the cordial relations existing between the Company and the workpeople, the Chairman went on to say that the year's profit of £208,524 showed substantial increase over that of 1916, due to the very much larger volume of business done. An interim dividend of 10 per cent., free of Income Tax, had been paid, but no further distribution for the year 1917 could be considered until the Government claim for excess profits duty had been adjusted.

The Balance Sheet showed £764,524 for materials, manufactured goods and work in hand. This was more than double the pre-War amount of £377,385, the increase being due entirely to the growth of expenditure on orders in hand, which at 31st December exceeded in value £1,500,000.

An important asset was the holding of the entire issued capital of Siemens Bros. Dynamo Works, Ltd., namely, £200,000 in shares and £200,000 in Debentures. At the outbreak of War the Share Capital of Siemens Bros. & Co., Ltd., was £600,000 with £150,000 of 4 per cent. Debentures, nearly all the shares and about one-third of the Debentures being held by Germans. Moreover, the German shareholders had supplied funds to meet the capital requirements of the growing businesses of the two companies. When War began, the entire German interest in the shares and the additional capital referred to was vested in the Public Trustee, who took steps to realise it by sale to a British buyer, and on 14th December, 1917, the share capital of Siemens Bros. & Co. was purchased by Messrs. C. B. Crisp & Co. The contract provided for the issue to the Public Trustee by the Company of £1,330,000 of 4½ per cent. Debentures to provide for the repayment of capital (other than share capital), and the participation in the 4 per cent. Debentures employed in the business by the former German owners; and the Public Trustee had a right after the conclusion of peace to call for the redemption of these Debentures on one year's notice. Subject to such arrangement, they were redeemable by annual drawings calculated to extinguish the whole in 25 years from the date of issue.

Following this arrangement with the Public Trustee the Board was re-constituted, and now consisted of Mr. G. Mure Ritchie (Chairman), Sir William Bull, M.P., Sir Clifford Cory, M.P., Lord Queenborough, Mr. H. J. Thomas and Mr. G. Chauvin (Managing Director). The new Board had devoted attention to many questions concerned with the development of Siemens Bros. into a great national manufacturing asset, leaving little time for discussion of a scheme of re-arrangement of the share capital. The Board, however, recognised the advisability of changing the capital arrangements so as to establish equilibrium between share capital and Debenture debt, and at an early date the Shareholders might be asked to approve a scheme for increasing the share capital to £1,500,000 (or even more) in £1 shares, of which a substantial portion would remain in reserve for future developments: but as to £400,000, if issued for cash, the proceeds would be available for the retirement of a corresponding amount of Debentures. If the matter were carried through on the lines thus indicated, the joint concerns—Siemens Bros. & Co. and Siemens Dynamo Works—would be represented by an issued share capital of £1,000,000, with £150,000 of 4 per cent. Debentures and about £1,000,000 of 4½ per cent. Debentures, the latter being held by the Public Trustee. These re-adjustments were all subject to the consent of the Authorities concerned, but he could go so far as to say that, as the Board of Trade wished the Company to be so assisted as to ensure its future expansion in British hands, they were justified in believing that sympathetic consideration would be given by the Authorities to their proposals for the financial re-construction of the Company when they were put forward.

Dealing with Siemens Bros. Dynamo Works, Ltd., entirely owned by Siemens Bros. & Co., the Chairman said that the turnover in 1917 increased in the United Kingdom and decreased overseas as compared with 1916. The value of unexecuted orders on 31st December was £1,145,000. Siemens Bros. & Co. and the Dynamo Works had purchased £50,000 of War Loan, and had provided several thousands of pounds to give temporary assistance to War Savings Associations for the work people.

Since the entry of the new directors into office, negotiations had been inaugurated with other companies doing similar industrial business with the object of bringing such manufacturers together for the reduction of unnecessary competition and the avoidance of duplicating machinery, workshops and offices. Co-operation would make for the more continuous running of plants with the attendant advantages of cheaper production, increased efficiency and improved quality of the work done, avoiding unnecessary expense in storage, selling organisations, and reducing the duplication of stocks to a minimum. An even more important advantage aimed at was the amalgamation of designing offices and interchange of experience, designs and methods to the promotion of economy and efficiency. Such industrial alliance would, moreover, make it possible to carry out complete installations within the allied group. An alliance of this nature had already been arranged with Messrs. Dick Kerr & Co., Ltd., in the field of dynamo installations in all its ramifications, and other alliances were contemplated. He moved the adoption of the report and accounts, and the motion was unanimously carried. A vote of thanks to the Chairman concluded the proceedings.

just give out the next junction in a pleasant, unconcerned sort of way, as if you haven't the faintest idea why she is cross. That will have far more effect than losing your temper.

Of course more rests with each individual operator than we realise. If her subscribers are all satisfied with the attention they are receiving, she can leave her work conscious she has done her best, and with the knowledge that her efforts have not been wasted and her subscribers know and appreciate it. Such a result is worth working to obtain. Sometimes we know it needs a great effort to be cheerful, especially if it happens to be one of those mornings when nothing goes right. We have trouble with certain other exchanges, plenty of busy-backs and wrong numbers, and everything, cords included, seems to be in a muddle. It needs a great effort then to be cheerful, but I think if we all possessed the knack of putting ourselves in our subscriber's place, and looking at matters from his point of view as well as our own it would not be quite so hard.

For after all, if things are wrong with us, they are more so for him. He is getting the busy-backs and wrong numbers, and it rests with us to let him know we are not downhearted, so there is no need for him to be so.

It is quite understood that an operator is only human. She can do her best and no more, and I think with all her little difficulties it is practically impossible to be what her subscriber expects—an ideal operator. But it is well to aim high, and if we continue to do so, we can be what is next best, an operator who knows, in her own heart her work is well done: and all her subscribers satisfied.

**AUSTRALIAN TELEGRAPHS & TELEPHONES.**

THE Postmaster-General's report for the year ending June 30 1917, contains information that a saving of approximately £2,000 has been effected by the adoption of a system of folding telegrams in such a manner that the use of envelopes may be dispensed with. A further advantage lies in the fact that the possibility of errors in copying the address of a telegram to the envelope is obviated. It is recorded that a profit is shown on the telephone working of £17,234—for the first time on record. Contracts have been let for the supply of automatic switchboards at the City North (Sydney) and Malvern (Victoria) exchanges. The following statistics will be of interest:—

**TELEGRAPHS.**

	Total No. of telegrams received and despatched.*		No. of Offices. 1917.
	1916.	1917.	
New South Wales ...	11,504,271	11,678,845	2,231
Victoria ...	7,071,588	7,243,763	1,711
Queensland ...	4,084,880	4,955,874	795
South Australia ...	4,386,774	4,611,598	516
Western Australia ...	3,327,470	3,222,825	503
Tasmania ...	1,106,753	1,137,744	433
<b>Commonwealth ...</b>	<b>32,201,736</b>	<b>32,850,649</b>	<b>6,189</b>

\* Telegrams "Inland" and "In transit" having been received and despatched within the State are included twice in these columns.

**TELEPHONES.**

	No. of exchanges.		No. of stations.	
	1916.	1917.	1916.	1917.
New South Wales ...	705	765	69,010	72,884
Victoria ...	586	622	48,812	51,820
Queensland ...	248	256	21,430	22,616
South Australia ...	143	189	13,404	14,521
Western Australia ...	105	111	10,852	10,760
Tasmania ...	95	101	4,908	5,136
<b>Commonwealth ...</b>	<b>1,882</b>	<b>2,044</b>	<b>168,416</b>	<b>177,737</b>

The number of subscribers in Sydney was 34,082, in Melbourne 25,665, in Brisbane 7,170, in Adelaide 7,837, and in Perth 4,981. As the proportion of "lines" to "stations" in the Commonwealth was as 137,000 to 177,000 there should be over 43,000 stations in Sydney, 33,000 in Melbourne and 10,000 in Adelaide.



"L." SIGNALS R.E., A.P.O. FRANCE.

**POST OFFICE RIFLES BENEVOLENT INSTITUTION.**

In addition to the contributions acknowledged in the JOURNAL for May, I have received the under-mentioned amounts for which I desire to express thanks on behalf of the Regiment. We are especially grateful to Mr. Nutt, Postmaster, Wolverhampton, and to Miss Fanny Mason and members of the Wolverhampton staff for the handsome sum raised by their kind efforts. Mr. Madder and the staff at the Gloucester Post Office are kindly sending us monthly contributions.

Amount previously acknowledged ...	...	...	£112 11 7
April 10.—Gloucester Post Office Staff (March contributions)...	7	1	0
May 2.—Mount Pleasant Post Office Staff (April contributions per Mr. W. H. Hipkiss) ...	1	0	0
" 8.—Gloucester Post Office Staff (April contributions)...	5	4	5
" 8.—Officers and N.C.O.'s "C" Signal Depot, R.E., Bedford, per Major Jayne, D.S.O., M.C....	8	14	0
From Mr. F. Nutt, Postmaster of Wolverhampton, during April, May and June, as result of concert and local appeal ...	136	4	9
June 4.—Mount Pleasant Post Office Staff (May contributions) ...	1	0	0
" 5.—Gloucester Post Office Staff (May contributions)...	5	8	4
" 13.—Sheffield Post Office Staff (per Mr. John Scott, M.B.E.)	10	0	0
<b>Total ...</b>	<b>...</b>	<b>...</b>	<b>£287 4 1</b>

**SIEMENS BROTHERS & CO.**

PRESIDING on Tuesday, the 11th June, at the Annual Meeting of this Company, Mr. G. Mure Ritchie said that during 1917 the past policy of concentrating upon the execution of Government orders had been adhered to and the turnover exceeded that of 1916 by about one-third. In new departments automatic telephony had been given prominence and all technical difficulties had been surmounted. The Company was now installing both large exchanges for public service and smaller private exchanges.

The profit of £208,524 showed substantial increase. An interim dividend of 10 per cent. had been paid, but no final distribution could be considered until excess profits duty had been adjusted. The German shareholdings in the Company were sold in December, 1917, by the Public Trustee, and the Company had issued to the Public Trustee £1,330,000 of 4½ per cent. debentures, in settlement of the loan cash capital supplied by the former German shareholdings. The Board had been reconstituted and now consisted of Mr. G. Mure Ritchie (Chairman), Sir Wm. Bull, M.P., Sir Clifford Cory, M.P., Lord Queenborough, Mr. H. J. Thomas, and Mr. G. Chauvin (Managing Director). Since the appointment of the new board, the directors had given their attention mainly to developing the undertaking into a great national manufacturing asset. They recognised, however, the need for re arrangement of the capital, and at an early date would enunciate a scheme increasing the share capital to £1,500,000 or more. A substantial portion would be held in reserve, but the proceeds of £400,000, if issued for cash, would be used to retire debentures. If a reconstruction were carried through on the lines proposed, the joint concerns (Siemens Bros. & Co. and Siemens Dynamo Works) would be capitalised at £1,000,000 in shares, £150,000 of 4 per cent. debentures, and about £1,000,000 of 4½ per cent. debentures. As the Board of Trade desired to ensure the Company's expansion in British hands, they expected that the authorities would give sympathetic consideration to any such scheme.

The directors had opened negotiations with similar companies, in order to bring manufacturers together for the reduction of competition and the elimination of duplicate machinery, workshops and offices, in the interests of increased economy, cheaper production, greater efficiency, and improved products. Such an alliance had already been arranged with Messrs. Dick, Kerr & Co., Ltd., in regard to dynamo installations, and other alliances were contemplated.

## CONCERT PARTY AT THE POST OFFICE HOSPITAL.



Mr. Lockyer, Miss Le Cheminant, Miss Q. Smith, Miss Crafter, Mr. M. B. Morris,  
Miss D. Ware, Miss G. Lewis, Miss Crowe,  
Miss Gwennie Gunston.

A very successful concert and entertainment was given by the ladies of the Telephone Branch (Main and Statistical Sections) at the Post Office Home Hospital, Kensington Palace Gardens on Friday, May 31. The programme was arranged by Miss Gysberta Lewis and all the artists who took part in it were members of the staff or their friends. Despite the glorious weather the concert room was full and the programme much appreciated. The principal contributors to the programme were: Miss Gysberta Lewis (pianoforte solo), Miss Gwladys Le Cheminant, Miss F. G. Crafter and



*"Such is Fame."*  
Miss Crowe. Miss Lewis. Miss Ware. Miss Le Cheminant.  
(Aunt Agatha.) (Jessica.) (Aunt Rebecca.) (Jane.)

Mr. Gilbert Lockyer (songs), Miss Marion Sinclair (violin solo), Miss Queenie Smith (recitations), and Miss Gwennie Gunston (dances). Miss Dorothy Ware officiated at the piano. The evening concluded with an amusing sketch entitled "Such is Fame," in which the characters were well sustained by Miss Lewis, Miss Le Cheminant, Miss Crowe and Miss Ware.

Cigarettes were handed round during the entertainment, at the close of which a vote of thanks was proposed to those who had taken part in it.

## CONCERTS GIVEN BY MEMBERS OF THE PARK EXCHANGE STAFF FOR THE WOUNDED.

Members of the Park Exchange staff organised concerts for the Post Office wounded soldiers at 20, Kensington Palace Gardens, W., on March 19, and for the wounded soldiers in the Devonshire Ward, West London Hospital, on May 9. Flowers and cigarettes were supplied on both occasions.

The principal contributors to the programme were Misses Rutter, Welsh, Wood and Chetwood, and Messrs. J. Robart and Harman Williams (vocalists). Misses Huckell and Wood (recitations), and Miss Irene Burville, who gave some clever dances. Miss D. Harmer and Mr. W. Cyril Martin skilfully officiated as accompanists.

Both concerts appeared to be very much appreciated, the time allowed being extended on each occasion.

## THE POST OFFICE SANATORIUM SOCIETY.

The eleventh annual report shows that 241 claims were dealt with during 1917. In 139 completed cases the following results were obtained—

Disease arrested	...	...	85	61.15 per cent.
Improved	...	...	27	19.42 per cent.
Unimproved	...	...	17	12.23 per cent.
Died	...	...	10	7.19 per cent.

To the completed cases 2,907 weeks' benefit was granted, making an average of 21½ weeks.

MEN.—Longest stay	...	...	62 weeks 4 days.
Shortest stay	...	...	3 days.
WOMEN.—Longest stay	...	...	54 weeks 1 day.
Shortest stay	...	...	4 weeks.

Up to Dec. 31, 1917, the Society had treated 1,086 cases of consumption. Of this number 654 had the disease arrested, 293 had their condition much improved, 100 were unimproved, and 39 died. Thus an experience of nearly eleven years shows that the Society has been able to secure arrest of consumption in more than half of its patients, and has either arrested or very materially improved no less than 87.20 per cent., a result which is practically identical with that of the previous year. The Society is to be congratulated upon maintaining so high a percentage of good results.

## MR. C. J. MILLAR.

Mr. C. J. Millar, District Manager of the Edinburgh Telephone District, left Edinburgh on the 25th May to take charge of the Scotland Western District. Before departure, Mr. Wilson, Chief Clerk, Mr. Magrath, Contract Manager, and Mr. Davis, Traffic Superintendent, asked Mr. Millar to accept a token of the esteem and affection of the combined staff.

Mr. John Macfee has assumed control of the Edinburgh District.

## PERSONALIA.

LONDON TRAFFIC STAFF (*Telephonists*).

Miss F. E. GIBBS, of London Wall Exchange, resigned on May 16 to be married and was presented with cutlery, silver teaspoons and sugar scoop by the staff.

Miss W. L. ELWELL, of Hammersmith Exchange, resigned on May 3 in view of her approaching marriage. She was presented by the staff with a travelling case.

Miss A. A. SHEARS, of Hammersmith, was the recipient of a dinner service and set of jugs, on resigning to be married.

Miss E. K. FENNELLY, of Hornsey Exchange, resigned on May 3 to be married. She was presented with a case of tea knives from the staff and several other presents.

Miss I. WORSLEY, of Hornsey, resigned on May 6 to be married, and was presented with a pair of vases and several other presents from the staff.

Miss WINIFRED RUSHAN, of Stratford Exchange, resigned on May 24 in view of her approaching marriage. She was presented by the staff with a pair of Carlton vases and several other useful gifts.

Miss E. L. M. DALLAWAY, Paddington Exchange, has resigned in view of her approaching marriage. She was presented with a salad bowl and tray.

Miss D. M. HUNT, of Paddington Exchange, on resigning to be married was the recipient of a cruet from her colleagues.

Miss E. P. MORGAN, of Hampstead Exchange, resigned on May 24 to be married. The staff presented her with a tea service and a set of tumblers and water jug.

Miss HORGOOD, of Holborn Exchange, resigned on May 10 to be married. She was presented with two oak trays, a salad bowl and several other gifts.

Miss A. S. D. BULLIONS, Greenwich, resigned on May 29 in view of her approaching marriage, and was presented by the staff with a cut glass salad bowl and servers, also jam, butter and fruit dishes.

Miss G. V. CHART, of Sidecup Exchange, resigned on May 17 in view of her approaching marriage and was presented by the staff with a dinner service and a pair of silver serviette rings.

## PROVINCIAL STAFF.

Miss L. A. S. DAILEY, Clerical Assistant, District Manager's Office, Swansea, on retiring from the Service owing to ill-health, was presented by the staff with a silver manicure set and leather card case.

**WHERE TO STAY.**

The attention of our Readers is directed to the following list of Boarding and Apartment Houses.

**(BARMOUTH the Beautiful).** "Glencairn"—The most comfortable Private and Residential Hotel in North Wales. Charmingly situated, overlooking bay and mountains. Large lounge. Excellent cuisine. Moderate inclusive tariff. Highly recommended.—Mrs. Dennis, Proprietress.

**BLACKPOOL, S.S.**—"Sunnyside" Board. Estab., 8, St. Chad's Terr. Prom.; mod. terms; liberal table; dinner 6 p.m. Tel. 529. Mrs. E. BROWNE.

**BRIGHTON.**—"Ferndale" Boarding Establishment. A comfortable holiday home. Liberal table. Piano. 1 min. sea, Palace Pier. Terms from 35/- 6/- per day.

**BRIGHTON.**—Grafton House, Grafton Street, Marine Parade. (Door Sea). Comfortable Board Residence. 10 bedrooms; bath (h.c.) Electric light throughout. Good table. Moderate cycle accommodation.

**CLEVEDON (Somt.)**—"Ravenswood," beautifully situated on cliffs, overlooking sea and woods; ideal holiday resort; charming walks. All comforts studied. Moderate inclusive terms. Misses Bruce and Hall.

**DEAN FOREST, Severn-Wye Valleys.**—Beautiful Holiday Home (600 feet up). Spacious house, grounds, bath, billiards, tennis, croquet, motors, magnificent scenery. Vegetarians accommodated. 38s. 6d. to 45s. week.—Photos, prospectus Hallam. Littledean House, Littledean, Glos.

**EASTBOURNE.**—"Polytechnic" Boarding House. Recommended by "Polytechnic," Regent St., since 1894. A comfortable holiday home. Liberal table Terms 30s. wkly inclusive.—Mrs. Edwards, 109-111, Tideswell Rd

**ILKLEY, Yorks.**—Marlborough House Hydro, for comfort and rest. Billiards, golf, croquet, tennis, fishing. Own pig, poultry, and vegetable farm. Tariff from Managing Director.

**NORTH DEVON.** High situation, close to sea and river. Comfortable Board Residence. Moderate Terms. Hofland, Uplands, Appledore.

**SHANKLIN, I.W.**—"Homelands," Arthur's Hill. High-class Board Residence, south aspect. Close to cliffs and sea; tennis. Terms moderate. Personal supervision.—Miss Mark, Proprietress.

**TAYNUILT, Oban District.**—Forrest Bank Boarding House, own grounds overlooking Loch Etienne. 3 miles Ben Cruachan. Open all the year. Recommended. Terms from 30s.— Young.

**HASTINGS** An Ideal Autumn Resort



**HOLIDAY HOME FOR LADIES.**

VACANCIES FOR SEPTEMBER AND AUTUMN MONTHS.

For particulars and terms write to the Hon. Sec.:

**Mr. THOS. HUME,**

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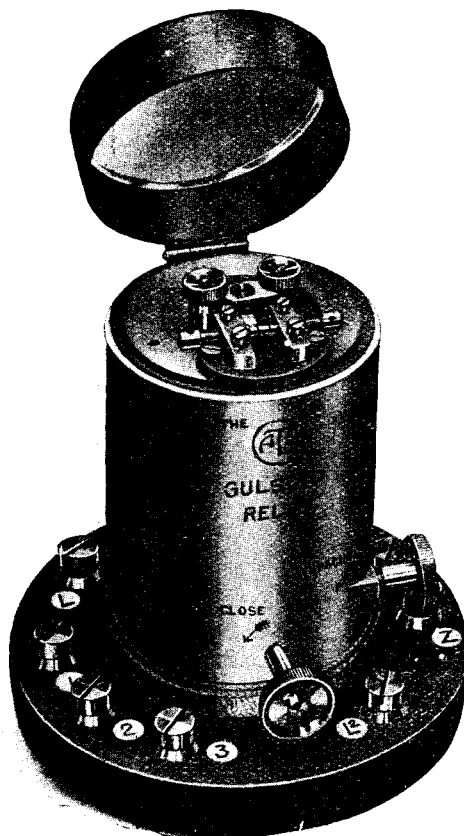
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### ANTI-INDUCTION.

BY ARTHUR E. COTTERELL.

GLANCING over some old documents recently, I was reminded of the period when the telephone service in this country was carried on under the various companies by means of single wire circuits and the extent to which it thrived notwithstanding the undoubted disadvantages of such a system. These disadvantages were fully recognised at the outset both by the Post Office and the companies, but were regarded from different angles of vision. The Post Office, as became a State Department, decided that if or when it embarked on the business it would only supply twin wire circuits; the efficiency of which was unquestionable. The companies on the other hand were on an entirely different footing. Their financial resources were of a more limited character and they were hampered as trading concerns with venal questions of dividend. Moreover, having no wayleave powers it was, apart from considerations of cost, an important point to take advantage of the beneficent earth whereby they could conduct the service with half the wire mileage which would have been essential had they adopted the metallic circuit system.

It is thought that a few notes on this era may not be without interest to those whose experiences have lain under the happier auspices of the twin wire or metallic circuit system either as having been connected with a Department which all along resolutely set its face against any other arrangement or as having entered the service under the old company subsequent to the time when the single wire system had been swept away.

For nearly half the period of the licenses the single wire system held sway and at least 20 out of the 31 years had elapsed ere complete conversion from single wires to metallic circuits was effected. Some figures presented by the National Telephone Company before the "Select Committee on the Telephone Service" in 1895 are not without interest in this connexion. At that time the conversion of the company's system was in progress. One hundred and seventeen exchanges comprising 18,978 subscribers' lines had been reconstructed on the metallic circuit principle, whilst 43,480 lines were still working as single wire circuits on 476 exchanges, though 78 of these latter exchanges had been fitted with metallic circuit switchboards in preparation for the final conversion which had now become part of the company's policy. This, however, was not completely effected for at least another 5 or 6 years. There were also 706 local metallic circuits, provided for call offices or official purposes and for subscribers who rented the same in order to facilitate their use of the trunk and junction wires.

The early practice of the Companies in adopting the single wire system was not without justification. They had an uphill fight in feeling their way through a new thing, and though it might quite properly be argued that it would have been wiser to launch their enterprise under the best possible auspices it cannot be gainsaid that quite commercial results were obtained on single wires, particularly in the earlier years at which time the circuits were comparatively few in number, short in length and somewhat rarely ran in groups; whilst the traffic loads were low in consequence of which overhearing between line and line was less frequently noticed than would have been the case had the circuits been more freely used and that simultaneously.

Moreover in the early eighties little or no progress had been made in the matter of electric lighting, power or traction, and therefore the only serious disturbance other than telephonic induction was confined to that arising from contiguity with the telegraphs. This was not often very serious inasmuch as the two systems under separate ownership were carried on independent routes which seldom ran parallel; the telegraphs following, very largely, main direct routes which the telephone wires for the most part merely crossed in angular directions.

In the early nineties when electric tramways, worked by means of single trolley wires, began to spread, a serious change was of course brought about, telephonic circuits being very badly affected, and doubtless this hastened the telephone companies in their adoption of the metallic circuit system which was happily much facilitated by the introduction of dry core cables which exhibited several important advantages such as cheapness, as compared with the heavy cost of gutta percha covered cables, compactness whereby hundreds instead of tens of wires could be contained in a pipe of given size together with a quality of the highest importance as regards the reduction of that electrical condition known as "capacity," which had not a little impaired telephonic transmission through gutta percha covered cables.

To return to the beginning of telephony it may be said that the single wire system met reasonable requirements quite adequately so long as the service remained of a purely local character, and that difficulties only began to arise on the introduction of a few short trunk lines connecting neighbouring towns. In some of these cases the companies having no available routes of their own applied to the Post Office to provide them with the necessary circuits. As the trunks thus provided were erected on the poles which carried the telegraphs it was essential, apart from the practice insisted upon by the Post Office, that they should be constructed on the metallic or twin wire system, the wires being of course arranged on the twist.

The question at once arose as to how the subscribers' single

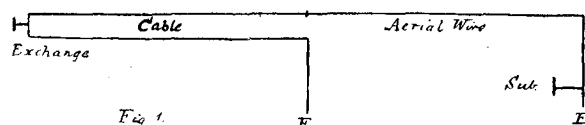
wire earthed circuits were to be connected to the looped trunk circuits to admit of direct intercommunication. This was got over by the application of translators (an invention of Mr. A. R. Bennett's) a simple form of induction coil the single line being earthed through one of the coils and the trunk circuit joined through the other whereby transmission was effected by induction in either direction. The arrangement was ingenious and maintained the anti-inductive qualities of the trunk lines, but the volume of transmitted speech was reduced particularly when two translators were used, *i.e.* one at each end of a trunk circuit. A few of the subscribers agreed to pay extra rental to have their own lines converted into metallic circuits in order to get direct connexion, whilst others whose use was less frequent sometimes adopted the expedient of going to an exchange at one end of the trunk whereby one at least of the translators was eliminated from the circuit.

The introduction of translators in their earliest form was attended with some difficulties in regard to signalling; the induced currents being in some cases insufficiently powerful to operate the indicators which greatly complicated the working arrangements. At a later stage this was got over by the introduction of the Coleman-Jackson combined translator and indicator. Later on considerable improvements were made in the construction of the translator itself whereby the transmission of speech even through two translators was so greatly improved that it was possible to give a commercially effective service for a number of years, as was evidenced by the volume of traffic and the revenue which accrued.

With the expansion of the telephone service, in other words the largely growing number of circuits, the increased average lengths as the ramifications extended towards the boundaries of the areas, the clustering on definite routes and more particularly in cables, and the increasing traffic loads, the adverse effect of telephonic induction was greatly emphasised.

In view of the simplicity and general effectiveness of the single wire system it was natural that many attempts should have been made by numerous telephone engineers to devise some method whereby the inherent disturbances and overhearing might be eliminated. In accordance with the recognised law that induction between wire and wire varied inversely as the square of the distance it naturally followed that the trouble was most pronounced in those cases where cables were used between the exchanges and certain distributing points whence the lines were distributed aerially to the subscribers.

A suggestion which seemed plausible enough was that the circuit should be looped back within the cable, thus using two wires for each circuit in conjunction with the single aerial section as shown in Fig. 1.



Theoretically the induced currents from other wires in the same cable would tend to neutralise one another as in the case of a complete loop.

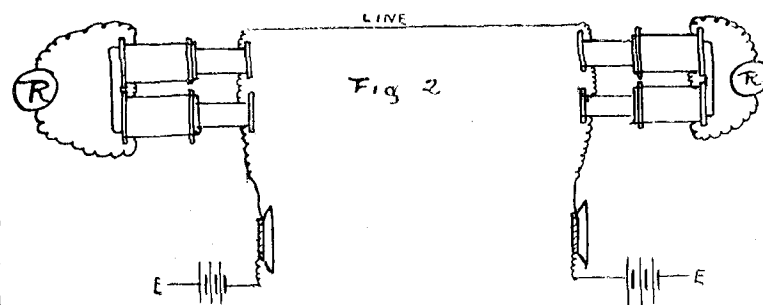
In practice, however, no satisfactory result was obtained as the two sides of such circuits were unequal in character, the one going direct to earth whilst the other included the extension of open aerial wire and the resistance of the subscribers' instrument not to speak of disturbances through the earth connexions.

Clearly the trouble so far as related to the cable could have been overcome by the adoption of translators at the ends of the cable, but this course would have presented difficulties in providing accommodation for a number of translators at the distributing point and complicated arrangements at the exchange end, added to which was the objection that the transmission would have been lowered together with the difficulty of ensuring satisfactory ringing through.

Several attempts were made to minimise these inductive

effects by the provision of thin lead sheathing between the wires and the outer covering, also by the insertion of an earth wire laid by the manufacturers in the centre of the cables. The underlying theory was that the central wire having a negligible resistance in consequence of being put to earth direct at each end of the cable would be more strongly affected by induction than the working lines, and seeing that the currents induced in it would obviously be opposite in direction to those in the inducing wire, a counter-acting influence might be expected in regard to the other wires. In practice it was possible to detect some effect of this sort but the results were so extremely small as to be of little value. It was found, however, that by earthing all the spare wires in a cable at both ends quite an appreciable improvement was effected, the result being a perceptible minimisation of the induction though certainly a very long way off elimination.

Experiments were made with apparatus designed by Mr. W. Langdon, the electrical engineer to the Midland Railway, whose invention rather revolutionised the usual arrangement of telephone circuits. Instead of the transmitters being worked as local circuits through the primaries of the induction coils the secondaries of which were joined with the line and receivers, his arrangement provided that the transmitters and batteries should be on the line and the receivers (Gower Bell type) on the local side of the induction coils. Greater battery power was of course essential and granular transmitters were necessary instead of the delicate Blake instruments which were the standard pattern then in use. In place of the usual form of induction coil he used a transformer similar in appearance to a horseshoe electro-magnet with extended pole pieces on which latter an additional pair of coils was arranged to form the primary in relation to the main coils as shown in Fig. 2.



This system was designed primarily for railway service on routes carrying telegraph lines, the underlying idea being that the larger battery power and more powerful transmitters would be an advantage in overriding telegraphic induction, and that the receivers might perhaps be less affected by foreign induction in view of the fact that they were not placed in direct connexion with the telephonic line circuit.

I remember very well assisting the late Mr. W. F. Bottomley, engineer of the National Telephone Company, in some experiments made with the apparatus quite 35 years ago. We tried the same on various local routes, both overhead and underground, and also on the trunk lines between Birmingham and Walsall, in this case cutting the loop to form two single wires.

The speech was loud and the telephonic induction from other circuits equipped with the ordinary Bell and Blake apparatus seemed less pronounced, but the induction observable on these latter circuits from the Langdon system was accentuated, as was to be expected.

Induction as between two Langdon circuits seemed to compare very much with the induction experienced between two Bell and Blake circuits, as any minimising of the effect on the receiver in the former system was counteracted by the more powerful transmitting arrangements; it therefore appeared that however useful the arrangement may have been for the purpose for which it was designed, it offered no advantages in regard to exchange working.

The late Professor Sylvanus P. Thompson proposed the introduction of resistance coils as a shunt to the receiver on ordinary

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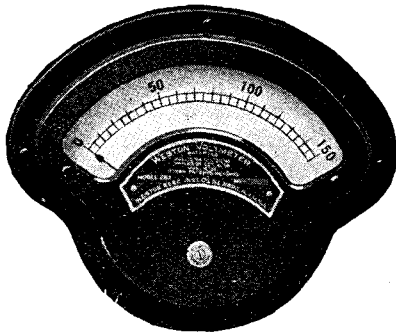
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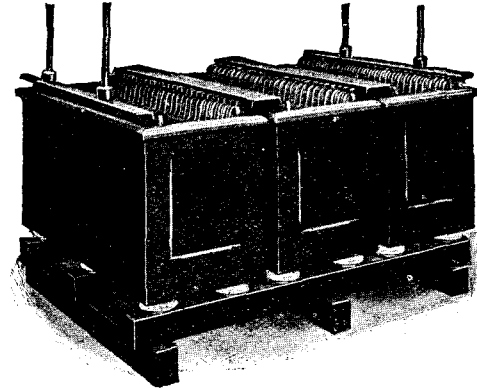
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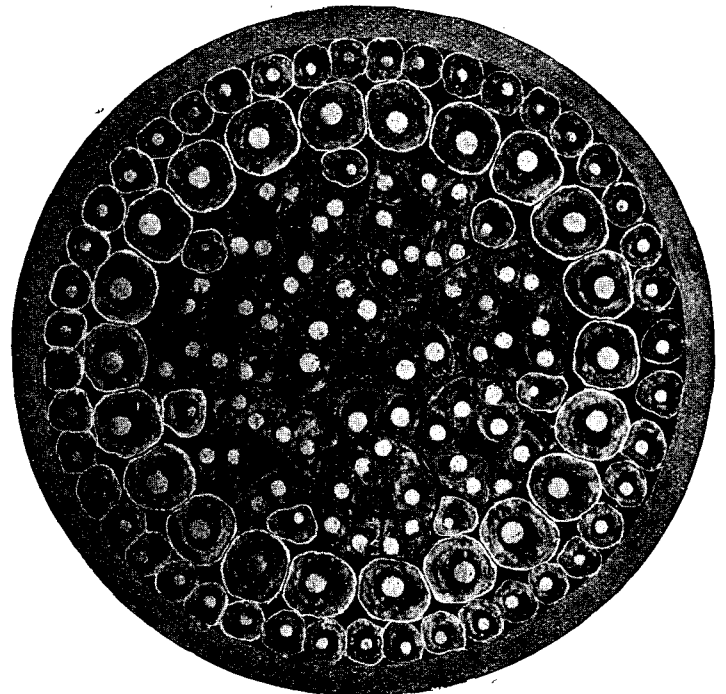
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telephone circuits, and undoubtedly by this means was able to minimise the foreign induction, but at the expense of the volume of sound proper to the circuit.

In 1890 the writer filed a Provisional Specification for an anti-induction arrangement which though falling short of ideals attained results which may not be without interest.

The generally recognised aspects of the question were to increase the power of the transmitter and reduce the sensitiveness of the receiver.

There was of course a near limit to which the first condition could be attained which was also open to the objection that increased power implied stronger induction. The alternative seemed to be to reduce the sensitiveness of the receiver, and the question arose as to whether it was possible to differentiate on any clear basis between the currents proper to the circuit and those which were "foreign" to the same. It required very little reflection to perceive such difference. The currents were more or less similar in character but of different degree. The induced currents proper to the circuit acted directly on the receiver joined to the line, whilst the foreign currents though arising from similar ones were necessarily of less strength as apart from any loss which might be due to re-induction, under the most favourable conditions, it had to be remembered, having regard to the law of inverse squares, that the separation of the line wires, though only a matter of a few inches or feet in the case of aerial wires, necessarily implied a weaker class of current and even in the case of cables where the wires necessarily ran closely side by side the effects were not likely to be so powerful as would have been the case for instance if the wires had been wound side by side in coils on a suitable core.

The need therefore seemed to be to provide some means whereby the receiver could be made inoperative to the weaker foreign currents whilst remaining sensitive to the stronger ones proper to the circuit, which was attained by the introduction of an arrangement of induction coils inserted between the line and the receiver as shown in Fig. 3.

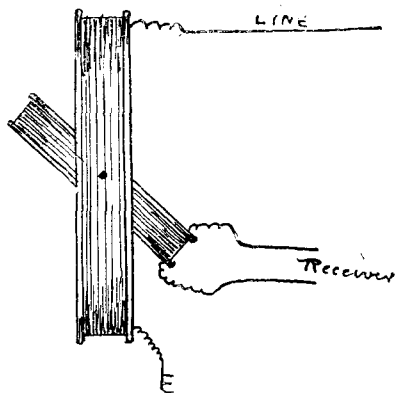


FIG. 3.

Two flat coils were arranged so that the smaller one moving on pivots within the larger one could be adjusted in plane with the latter, or set at any angle between zero and  $90^\circ$ . It was thus possible to readily find a position at which the foreign induction was eliminated while conversation proper was still audible. Undoubtedly the speech when the coils were in such a position was attenuated though quite clear, but the results were quite definite and obviously by moving the inner coil to a less angle the speech could be improved at the expense of some re-appearance of "induction" thus it was possible to make a choice between the two evils, viz., no induction and weak speech or an improvement in the latter with some re-appearance of the induction. In the course of the experiment a test was made on a trunk line over 40 miles in length which was temporarily converted into two single circuits, when connexion was found to be just possible with freedom from induction when other persons were conversing on the other wire.

Another form of the apparatus comprised two flat coils of

equal size made to slide along a bar, thus enabling them to be separated at appropriate distances.

Although the arrangement did not prove sufficiently satisfactory for general adoption it did serve a very practical purpose in one instance. A certain Corporation in the Midlands had contracted for a long private line to one of its pumping stations, but suffered so much from induction, particularly from telegraph wires which ran on a neighbouring route, that they declined to pay their subscription, and as the company was loath to sue them, thereby possibly disturbing other advantageous relations, an *impasse* for a time was reached. Eventually it was decided to apply the last mentioned anti-induction apparatus, the results of which completely satisfied the Corporation who paid up all arrears of subscription, and no further difficulty or dispute arose during several ensuing years; after which the line was ultimately converted into a metallic circuit under the reconstruction scheme.

These attempts and others, though dreams of the past, were pursued at the time with zeal and enthusiasm by many workers, and there was a good story told about one of the most enthusiastic of these men, long since deceased. Experimenting with a long length of cable of some special kind wound on a drum, his delight was exuberant on finding that he was at last able to converse without suffering from induction from any of the other wires. In consequence of this achievement he telegraphed to the chairman of his company advising him that induction was overcome. A message of such transcending importance had the effect of inducing that gentleman to journey from London to a certain Northern town to see or rather hear for himself, but, alas, it was discovered, too late to intercept his journey, that, for some reason or other which was never adequately explained, the two ends of the wire which had proved immune had been in contact whereby the cable was merely short-circuited much to the dismay of the enterprising official and to the disgust of the chairman who expressed himself rather forcibly.

With a mileage to-day which totals to something near 3,000,000, in terms of single wire, there is perhaps some temptation to wish that one day newer inventions and advancement of knowledge may open up an era when the expenditure on wires might be effectively reduced. On the other hand apart from physical difficulties which present themselves, as to the use of single wires there are physical advantages arising from the use of twin wire circuits as there are reactions between the two wires forming a loop which assist transmission, but though any idea of a reversion to single circuits may continue to remain outside the range of practicability it is worth a thought whether an extension of the principle of phantom circuits might not ultimately take place in the case of subscribers' lines. It is known that transmission over phantom circuits is often better than on the actual physical lines, and the fact that so much of the system is in the form of underground cable would largely reduce the danger of disturbance due to destruction of balance.

Whilst such a system offers attraction there would naturally arise complications in regard to the arrangements for signalling, &c., but though these would undoubtedly present difficulties they would not necessarily be insurmountable.

## TELEGRAPHIC MEMORABILIA.

AMID all the tempest of war it is more than re-assuring to find so many men and women in various professions and occupations earnestly engaging themselves in thoughts and plans regarding *post-war* affairs. It speaks well for British spirit and optimism and well for the future of our nation.

It is of course impossible to lay down definite plans in certain matters until the murky atmosphere of European affairs has cleared somewhat, but there are undoubtedly subjects which it would be advisable and which it should be perfectly possible to tackle here and now. "Education" and again "Education" has been shouted across the country while our present system has been torn to shreds by the critics only to be neatly patched by its criticised supporters.



Let it be said that discussions of this character are a healthy sign of national vitality and awakenedness and perfectly consistent with "getting on with the war"—but while these discussions are proceeding it is a matter for professional and departmental congratulation that the efforts of the various Telegraph and Telephone Societies to carry on have been, in the main, very successful. It was not to be expected however that any new societies would spring up during war time but quite an ambitious little society came into being at Bristol in May of the present year under the title of the Bristol P.O. Minor Engineering Institute. Membership is open to all ranks under that of an Inspector, but honorary members from a wider sphere may be elected. The first paper was read by the president, Mr. H. O. Boulter, on the "Ashton Gate Swing Bridge," followed by a visit a few days later to the object of the study.

On July 26 the less local matter of "Underground Cable Construction" was introduced by the vice-president, Mr. A. H. Mansfield, the lecture being illustrated by lantern views and followed by a discussion described as both "lively and interesting." The organisers of this institution are entitled to all praise for their war-time effort in the direction of mutual help along educational lines which cannot but have fruitful results in the near future, when so much departmental leeway will have to be made up and when every competent technical helper should be welcomed by the powers that be.

Indeed, here in the Metropolis one feels just a little envious of the apparent larger opportunities for personal leisure and study than would appear in any way possible situated as are the editorial offices so near the centre of things, with the rumble of the Flanders guns no stranger to our ears, and short Saturdays a relic of pre-war times. Let it be written down at once however, that we are not unkindly envious and that this little after-thought of mine is not intended to detract from the deep satisfaction expressed on the very real service performed to the State by institutions kindred in aim and nature to that of the Bristol organisation.

While other and perhaps in a way greater folks are discussing the technical education of the future, this modest body of men of the West are taking practical steps to "get a move on!"

Sadly relevant to technical matters there comes news of the almost sudden death of Mr. R. Laslett, one of the finest spirits that ever trod the floors of the C.T.O. Technically he was mostly self-taught and possessed what many a professor would be willing to yield up half his knowledge for—the power to impart that knowledge to others. So far as the writer is aware he had no teaching certificates. He was a born teacher and neither school, academy or university could have taught him the subtle methods he employed. His personality would probably even have suffered had it been trammelled by academic rigidities. He literally loved his subject, and this is not too tender a phrase to use regarding those whose privilege it was to study the intricacies of telegraph apparatus &c. under him, and to say that when a student failed it was to him no mere matter of personal chagrin at a fall in percentage of passes but a real manly sympathy with the honest "trier."

Generous to a fault his deep and wide knowledge of his subjects, his resourcefulness and his tact were equally and unreservedly at the disposition of those below him or those above him, with a very strong penchant for the under dog and the man in a difficulty. Yet he asked no favours and so far as one could see received none from our little world, which like the larger ones is rather prone to neglect its own prophets. Thus has passed away—only a telegraphist!

Comes there also news of yet another telegraphist in the person of Mr. John Monro, formerly of the Cable Room, C.T.O., now recently promoted to Major in His Majesty's Army on one of the European fronts. As will be recalled by his more intimate friends Mr. Monro was associated with the late F. J. Furnivall, M.A., Ph.D., D.Litt., in a small but erudite volume on "Shakespeare's Life and Work," which was jointly published in 1908. He was subsequently engaged on the life and letters of the late Dr. Furnivall himself and when war broke out he was actually continuing his studies at one of our two most historic universities. As an officer he showed no less efficiency in the arts of war than he had shown

as a civilian in his more peaceful and to his nature more congenial pursuits of ancient and modern history and literature. His latest promotion will prove no less a satisfaction to his many admirers at home by the knowledge of little services rendered to troops under his charge, the rifle, or pack carried on behalf of weak or fagged private as they marched side by side in the mud or dust of the roads of the Nearer East. The M.C. is also to be associated with the promotion so it is given to be understood.

The humour of the trenches is still with us despite nearly four years of war and still finds new phases and new phrases in the middle of the monotony not to speak of the danger of it all. It is known that bivouacking is now largely in vogue in France during the summer months and that the improvised shelters are not always noted for their architectural orthodoxy either as regards plan or material; while the naming of these temporary abodes is very frequently distinctly unconventional although at times condescending enough to accept "Hotel Cecil," or "Imperial Cafe" as a makeshift!

A writer from the French front however instances the naming of these bivouacs which may be new to some of our readers and certainly interesting to the Telegraph and Telephone sections alike. Stretched across the temporary dwelling in variously sized letters was the sign of "The Wire-Wasters Institute." The tenants, it was discovered were linemen of the Signal Service!

The Ordinary General Meeting of Siemens Brothers & Company held during the month of June was full of interest to the electrical world as evidencing the increase of output for 1917 by one-third over that of 1916. The bulk of this increase was due to insulated wires and cables not a small portion of which was attributable to the telephone and telegraph needs of the public services. Among the specially striking items, to readers of this JOURNAL, are doubtless the full automatic telephone exchange of 1,300 lines completed for the Grimsby Post Office, the 950 lines for Stockport still in course of construction and the semi-automatic telephone exchange of 1,000 lines fitted up by the company at Port Adelaide for the Commonwealth of Australia. All three confidently taken in hand in spite of the war.

As a citizen the Civil Servant is commonly supposed to be a pampered individual exempt from most of the claims and burdens of the ordinary citizen—including, as I overheard it confidently stated in a railway carriage, Income Tax! Well, really, I had to protest, but was asked very forcibly, "What do *you* blooming well know about it, eh?" Catching sight of an extract from D.O.R.A. on the wall of the carriage I thought that somehow I might get entangled in a compromising altercation so lapsed into silence. Of course I could have defended the Service very well, especially the Telegraph and Telephone Sections! I could have argued that with duties varying with almost every home of the twenty-four, at home when your friends are at business; at the office or in the exchange when these same friends are in "whites" on the tennis field, or in coarser garb on the allotment, alert and awake throughout the hours of dusky night, abed and striving to allure the embrace of Morpheus what time the merry milkmaid bumps her can at the door or the dustman drops the iron bin into his cart in a very decent attempt to simulate the distant thud of a bomb, eating one's almost solitary meal at home instead of in the company of one's home circle and with the additional anxiety of wondering how the new gas and coal rationing can be accommodated to double sets of cooking for one's household. Yes I really think it would not be difficult to prove that we of the twin Services are not amongst the "pampered" tribe but have our own little special burdens to bear.

Trudging home after the last vehicle has run into the terminus, the garage or the depot, when one has time and silence for one's thought, I have tried to estimate which was the more heroic service to the State, plodding one's weary homeward way against a driving sleet in the dark or standing-to in the exchange or office, waiting for an air-raid? After deep deliberation of the question I have decided that the first is the lighter duty—IF, the tax is not further increased on tobacco!

J. J. T.

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# The Telegraph and Telephone Journal.

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Managing Editor	-	MR. W. H. GUNSTON.

## NOTICES.

As the object of the JOURNAL is the interchange of information on all subjects affecting the Telegraph and Telephone Service, the Managing Editor will be glad to consider contributions, and all communications, together with photographs, diagrams, or other illustrations, should be addressed to him at 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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AUGUST, 1918.

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## BUREAUCRATIC INEFFICIENCY.

THIS is something like a heading. It conveys about as much in two words as could be conveyed. It is a *petitio principii*, a call to arms, a protest on behalf of liberty, a bold and vigorous assault on the defenceless—all in one, or, more accurately, all in two. We can hear the multitudes applauding. When anything went wrong in the days of Nero the crowd shouted, "Christiani ad leones." When anything goes wrong (or can be declared to go wrong) in the twentieth century the crowd shouts, "Bureaucratic Inefficiency." And it is as reasonable to say that the Christians caused the clouds of rain as to say that the "Bureaucrat" causes this or that little slip in the vast organism which it is necessary that the State should be in these days. The Christians caused the sunshine, too, but the crowd did not notice the fact. The Bureaucrat is responsible for the thousand things which go right, but the angry writer does not see those things. Indeed he does not begin at the beginning. What is a Bureaucrat? A man in an office. How shorn of tyranny he seems when thus translated! Whose knees would shake at the thought of a man in an office? Every organisation is governed by a man in an office. The humblest saw shed is controlled by a bureaucrat—probably signing his letters and cheques with a weary heart and an unskilled hand. When all is said the bureau is merely the place where the centralised functions of keeping a record are performed. Yet it is looked upon as a dump of high explosives and the occupant of a chair therein is regarded as a monster who breathes fire and slaughter in the intervals of making a mess of things generally.

Here comes a little book putting all things right. The title does not matter. It is a well-intentioned little book and its philosophy is no concern of ours. But as it proceeds the author bursts into fits of anger. Here he is on telephones. "Bell and his telephone were denounced in this country as a specimen of the latest American humbug; his appeals, his explanations fell on deaf ears, and he went back to America discouraged. That is one

reason why the State of Ohio to-day has more telephones than the whole of Great Britain." Let the reader try to put that piece of logic into the form of a syllogism. Bell went back to America discouraged. The State of Ohio to-day has telephones more than Great Britain. Therefore the discouragement of Bell was the cause of telephone advance in Ohio—Q.E.D. But later on the Bureaucrat is handled as (we suppose) he deserves. "Our people have now had great experience of the workings of Government departments. They are, I think, practically unanimously agreed that anything even approaching efficiency, as far as executive work is concerned, is a practical impossibility in their case." We are not quite sure that the pronouns follow the bureaucratic rule of grammar, but there is the sentence. Manifestly we are writing for a pitifully small minority when the country is "practically unanimous" that a Government department is inefficient. But as the writer gets warm to his subject he surprises us. "A sound organisation implies the existence of a single head of high directing ability, exercising sole control and assuming sole responsibility. . . . There can be no such real authority as this in the Government work of modern democracy: its exercise would not be tolerated. Any one who attempted to assume such dictatorial power would at once fall from his office. For that reason alone Government work is doomed necessarily to permanent inefficiency." It is a dizzy argument. Bureaucracy is bad because it is not bureaucratic enough.

As if to upset the whole kettle of fish—boiling and bubbling, though it is—President Wilson coolly takes over the whole of the telegraphs and telephones of the United States and they become a Government Department. He offers an apology for so doing. He says that in war-time it has been found impossible to leave these means of communication in private hands. Indeed the half-way house has been found impossible, that is, the arrangement whereby private management would be controlled on behalf of the Government. So there must be a complete "transfer." Presumably the assailants of bureaucracy will go along gaily, covering up such a tangible fact with smoke-clouds of wrath. We began this JOURNAL by defending State ownership of telephones. Ours was not a new argument. It was as old as Napoleon: it belonged in its origin to the dear, placid days of the semaphore on the hill-tops. But it is as good an argument to-day as ever it was. That is why we can smile at "bureaucratic inefficiency." It is a veritable bogey. The bureaucrat is a figment of disordered imaginations, and for a figment one attribute is as good or as applicable as another. We shall watch the development in the United States with affectionate interest: we shall read the assaults on "inefficient bureaucracy" with more and more glee.

## HIC ET UBIQUE.

HULL CORPORATION are raising their telephone rates in order to meet expenditure on war bonuses and other increased costs. There was a decrease in profit last year of £3,812, and during the war there has been a net decrease of 1,500 instruments in service. The accounts for the year ending March 31 next are expected to show a considerable loss.

THE Secretary of State to the German Post Office says in

reference to continuous hours of working that he has found from personal experience, that if one sits continuously from 9 to 3, a tendency exists in the last hours to think whether it is not time to be going home. One is not in a condition to hold out so long. He thinks the introduction of continuous hours justified in large towns where the officials mostly dwell in the suburbs and are disinclined to make the journey to the office twice a day, but he is not in favour of the practice generally. If one has a couple of hours' rest and something to eat one is able to last better.

This reads as though German officials do not, generally speaking, obtain refreshments in the city but are obliged to go home for meals. Besides, they require the siesta which Mr. Gerard says is indispensable to the German clerk.

THE Secretary of State says regarding the question of the employment of women: "Women have been everywhere useful. They have made good in most Departments, especially in telephony. I believe that they will be employed afterwards as they were before: but certainly woman is not so capable of endurance. In the field of telegraphy conditions are harder where various types of apparatus are in contiguous use. Still less is woman employable in postal work, because she cannot endure the night service and the long shifts. Generally speaking, however, our women-assistants have made good in all branches. How it will be after the war is hard to say."

We give these pronouncements of a German point of view purely for what they may be worth.

ALTHOUGH not now attached to the P.O. Telephone Service, Capt. E. Mannock, D.S.O., is a Telephone man and the Canterbury staff are proud of him and of his success. He is said to have brought down 51 enemy aeroplanes and is officially credited with 47.

Several years ago, Capt. Mannock was a Junior Clerk in the Canterbury District Office, but finding early in life, what Charles Lamb found too late, that he had no affinity with "the desk's dead wood," he transferred to the Engineering Department, and was subsequently stationed at Wellingborough.

When war broke out, Mr. Mannock was with the Constantinople Telephone Company, and he has some lively experiences to relate in connexion with his escape and return to England.

THE lively contributor of our "London Notes" seems to suggest that the ubiquitous alien is the only unreasonable grumbler at the telephonist. Remembering the implications in *Punch* and other daily and weekly comic papers that only the alien moves from London into the raid-less zones, we are tempted to consider how far we ought, even in war time, to saddle all our foibles and failings on the alien? It is a nice point. Who in peace time "reserves" three seats of a railway carriage with his bags when he only requires one? The Judæo-Ukrainian, of course. Who hoot referees in the football field? Only the Ashkenazim. Who rides first class with a third class ticket, or eludes the conductor on the tram when he (or she) asks for fares. The Oppenheims and Goldsteins. A movement ought to be made to prohibit the reading of the Old Testament in churches. Some Sunday we might hear read the lesson of the scapegoat—and blush.

THE Editing Committee would be greatly obliged if their agents would revise their monthly requirements, so that they may be supplied only with as many copies of the JOURNAL as they can sell. The present high cost of paper makes it imperative that there shall be as few unsold or spare copies as possible.

#### WAR SAVINGS' ASSOCIATION, COLCHESTER.

The members of the District Manager's staff here formed a War Savings' Association on Jan. 21, 1918. Up to date (July 13) £370 had been subscribed. A "Do your Damndest" week in March raised £76. A curve (which is too large for insertion) showing the number of certificates bought and issued shows a rise from 20 odd at the end of January to 460 at the end of June. If other War Savings' Associations would state their figures, a healthy competitive spirit would result.

## HIGH SPEED TELEGRAPHY PROBLEMS.

By F. E. MARKIN.

THE gradual development of high speed mechanical apparatus as applied to the transmission of commercial telegrams is a subject fraught with the deepest interest to every member of the Postal Telegraph Service, for upon the type of apparatus selected, the extent of its introduction, and the provision made for securing freedom from repeated or prolonged interruptions depends the efficiency of the service of to-morrow, whilst the status of the telegraphist of the future is very closely connected with the class of operators to be employed thereon.

Economy, in wires, staff and office space, is in my opinion the only justification for the use of mechanical apparatus for the transmission of commercial telegrams over direct circuits for it is doubtful whether any of the systems at present under trial can, even at their best, be compared favourably with Morse sounder working, given expert telegraphists and sufficient outlets during periods of peak pressure. "Economy" will, however, doubtless be the watch-word for many years and will have to be practised rigidly, but there is a point at which mere reduction of expenditure may cease to be economy and that point will be reached in the Postal Telegraphs whenever the outlay in money is allowed to interfere with the establishment of a thoroughly reliable and speedy service.

Whichever of the various mechanical systems may be adopted by the Department for general use it is essential that expense should not be spared in the provision of ample spare parts for replacements, and also of spare sets and lines so that in case of interruptions transfer of staff from one to another may be effected without appreciable loss of time. The absence of such provision in the past has frequently been the cause of serious delays and disorganisation of the traffic rendering the service of little or no utility to the public and creating despair in the minds of the officers acquainted with the old-fashioned telegraphy and the standards of bygone days. Many of the difficulties have admittedly been attributable to a large extent to war conditions but the experience gained should serve to emphasise the imperative need for ample provision in normal times when the public will certainly not tolerate the treatment of telegrams little more expeditiously than letters.

Apart from systematic Wheatstone Creed working about which opinions differ considerably in various offices, each of the various mechanical installations has its own special merits and the selection of any one as the absolute best will probably be no easy matter. For actual output of work, under favourable conditions, the Western Electric, and Murray multiplex which, owing to their tape transmission processes, can be worked to their fullest capacity of 40 words per minute on each channel, are probably difficult to surpass, whilst the Baudot which under present conditions is restricted to a maximum of 30 words a minute, and the output of which depends upon the expertness and diligence of the operators, is credited with being less liable to interruptions of a serious or prolonged kind. It is doubtful, however, whether during the past few years it has, owing to the inability to obtain apparatus, the shortage of mechanics, staff difficulties, &c., been possible to work any of the high speed circuits under conditions which would allow of fair comparison of their relative capabilities. Experience has nevertheless sufficiently demonstrated the unsuitability of systematic Wheatstone working for the transmission of ordinary commercial traffic. It is costly, inefficient, and to be condemned if for no other reason than the excessive delays which occur in obtaining repetitions which at times are required in appalling numbers. It has helped to ease staff difficulties during the war but will not stand the test of post-war requirements.

Owing to its relative freedom from interruptions the Baudot probably stands highest at the moment in the favour of the officers directly responsible for the disposal of traffic, to whom the breakdown of any of the mechanical circuits becomes an immediate source of anxiety and worry, owing (1) to the absence of reserve circuits of a similar kind, and (2) to the inability of the staff employed at

such circuits to staff the emergency circuits brought into use. In these circumstances disorganisation naturally becomes widespread.

Cause No. 2 opens up the very important question of staff. Specialisation absolute or partial is unquestionably desirable and this combined with the fact that, as a war emergency measure, it has proved possible to introduce a relatively low paid class of operator and to employ the same in dealing with live traffic after very short periods of tuition creates the danger that for economical reasons attempts may be made to extend such labour to the gradual exclusion of "telegraphists" from all the main line channels. Assuming it to be possible to maintain the requisite efficiency such a policy, which would quickly reduce the status of telegraphists, would be difficult to contest at a time when every effort will have to be made to save every possible penny of the public funds. Given ample spare parts and reserve sets such efficiency as is possible, apart from the personal element, might be secured, but it would be a matter for speculation as to how long the operators working the mechanical circuits between the principal towns would remain content with less remuneration than telegraphists employed on minor circuits.

The establishment of a lower grade class would be justifiable only if a very high standard of efficiency could be guaranteed and in the attainment of this the personal element would play an important part. The absolute best should be the objective and achievement of this would seem to be most probable by the employment as operators of telegraphists who have served their apprenticeship and gained sufficient experience of telegraph work in general to enable them to deal intelligently with the telegrams passing through their hands. The emergency staff has done wonderfully well, all things considered, but the dumping of operators, after a few weeks or months of training, at important circuits to deal with telegrams of a varied business character is not calculated to secure efficiency or to create in the public mind that sense of trust which is essential to the future development of the Telegraph Service. It is to be hoped, therefore, that the administrative officials upon whom will devolve the responsibility for the great extension of mechanical systems which will almost certainly take place during the next few years will not allow the demand for economy to interfere with the adoption of every precaution for securing an expeditious, reliable and efficient service.

### TELEPHONE ACCOUNTS 1916-17.

A FEW notes in amplification of the Telephone accounts for 1916/17, House of Commons, White Paper No. 162, may perhaps be of interest to those concerned with the financial aspect of the Telephone Service.

For the first time since the outbreak of war, Telephone Revenue, taking the Exchange and Trunk Services together, is in excess of the Expenditure, the net balance for the financial year 1916/17 being £201,729, as compared with deficits of £118,117 in 1915/16 and £111,018 in 1914/15. The Exchange Service is entirely responsible for the credit balance, the Trunk Service resulting in a deficit of £37,383, although the latter figure is a considerable improvement on the previous year's results, when the deficit amounted to £111,720.

The annexed tables show the increase or decrease under the various heads of revenue and expenditure in 1916/17 as compared with 1915/16, for the Exchange and Trunk Services separately. Decreases are shown in italics.

Dealing with the *Exchange Service* first it will be seen that the total expenditure increased by £743,507. £722,304 of this additional expenditure, however, refers to "Stores supplied for war purposes" for which a corresponding sum is included on the revenue side of the account under the heading "Value of services rendered to other Government Departments." The civil pay of men with the colours increased by £92,005, and there is a credit of £103,990 to adjust overcharges in connexion with the sums provided for pension liability in the previous four years. Excluding these three items the expenses showed an increase of £33,188 only.

The largest increases in expenditure, apart from the foregoing, occurred under "Administrative and operating expenses,"—£29,000; and "Maintenance of System,"—£68,000. As regards the former, additional war bonuses were paid to the extent of about £60,000, whilst the severe storm damage in March 1916, together with extra war bonus, more than accounts for the additional expenditure under the heading "Maintenance of system."

The reduction in the charge for Interest is due partly to the small amount of construction work now being carried out, loans repaid exceeding the sums borrowed, and partly to the cessation of certain items relating to the transfer of the National Telephone Company's plant.

As regards the increase of £989,076 in the Accrued Revenue, £722,304 refers to stores supplied for war purposes. The balance of £266,722 is chiefly in respect of services rendered to other Government Departments, ordinary subscriptions and fees showing an increase of only £21,661. Various factors contributed to this final net increase. The chief among these were:—

#### Gains.

(1) The Budget increase in the Flat Rate Tariffs produced an additional Revenue of £125,000 over 1915/16.

(2) The amount paid in Surcharges was £20,000 more than in 1915/16.

#### Losses.

(3) The income for the year suffered to the extent of some £30,000 or £40,000 through lost calls and refundment of rentals, the result of the severe snowstorm in March 1916.

(4) The net reduction of 13,000 in the total number of stations during the year was responsible for a drop of approximately £80,000 in the total Revenue.

#### Trunk Service.

If the special items "Stores for war purposes," "Civil pay of men with the Forces" and "Pension adjustment" are again eliminated it will be seen that there was actually a net balance on the Trunk Accounts of £11,894 as compared with a deficit of £79,723 in 1915/16. Expenses, excluding the three special items referred to above, increased by £91,760 of which £74,436 was in respect of "Maintenance." Here again storm repairs and additional war bonus are responsible for the increased expenditure. The increase in Revenue, excluding "Value of War stores," was £183,377 of which £117,696 was in respect of services rendered to other Government Departments, calls on behalf of the War Office and Ministry of Munitions forming the bulk of the extra traffic. As regards the Trunk revenue generally it is estimated that the snowstorm in March 1916 affected the receipts adversely to the extent of £90,000, but the additional revenue due to the Budget increase of 33 $\frac{1}{3}$  per cent. in the tariffs more than made good this deficit.

#### Depreciation Account.

As reference has been made on various occasions of late to the apparently large and increasing balance standing to the credit of the Depreciation Account, attention should perhaps be drawn to two new features that have arisen as a result of the war and which have a direct bearing on this point:—

(1) In view of the shortage of staff, difficulty in obtaining material, financial restrictions, &c., all renewal and reconstruction work which can possibly be held over, is being deferred till after the war.

(2) Provision for depreciation has been based on the prime cost of the work, whereas, if the present increased prices of material and labour do not revert to the pre-war level, the actual cost of replacement will be considerably higher.

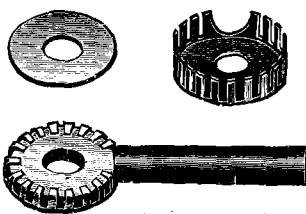
#### Development.

In conclusion and as an indication of the healthy condition of the Telephone business it might be pointed out that, notwithstanding the introduction of a surcharge and the restriction of new telephones practically to firms engaged on work of national importance, orders for 35,000 new stations were accepted during

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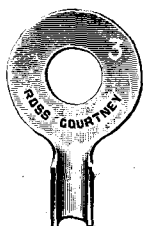
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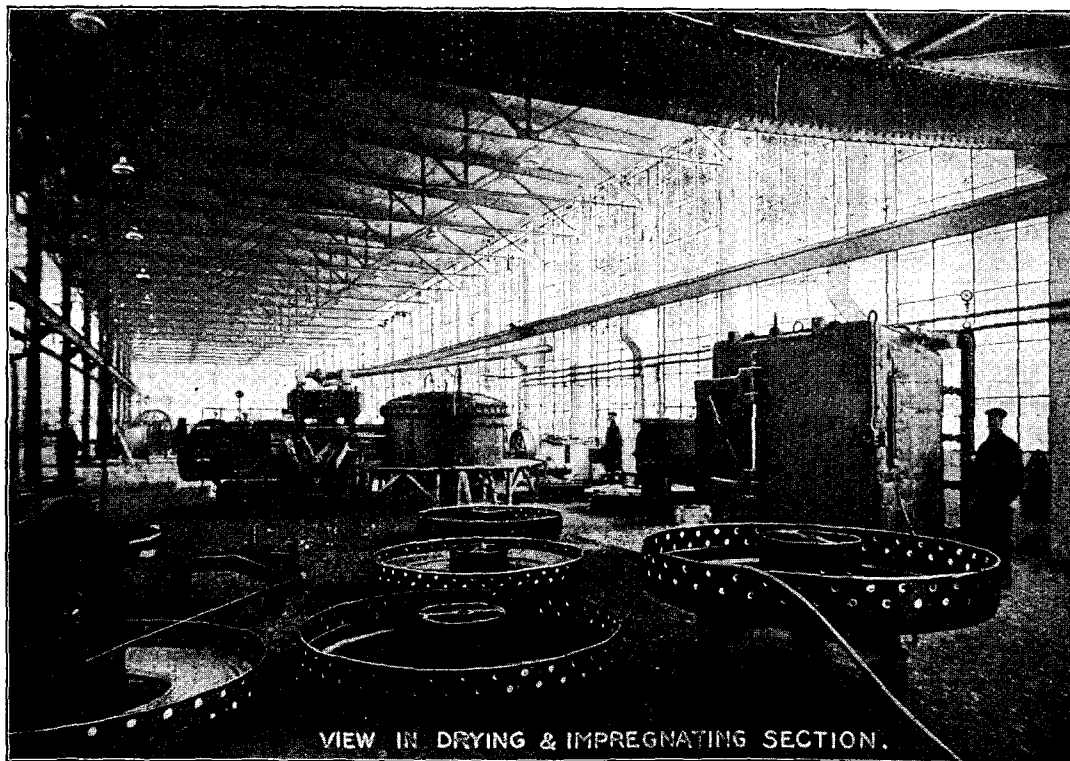
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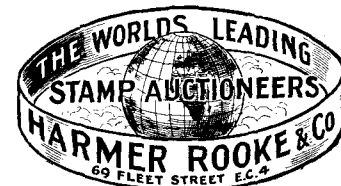
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the year, the total surcharges paid in respect of which amounted to over £60,000. In addition, 11,000 Emergency Circuits (Stations) were provided for the Naval and Military Authorities, &c. On the other hand, the number of stations for which notice to cease

was received in 1916/17 was only 43,000 as compared with 55,000 in 1915/16, 53,000 in 1914/15 and 44,000 in 1913/14—the year prior to the war.

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	1915-16. £	1916-17. £	Difference. £	Rate per Station.		
				1915-16. £ s. d.	1916-17. £ s. d.	Difference. £ s. d.
<i>Expenses</i> :—						
Administrative and Operating ... ..	1,311,769	1,341,193	29,424	1 12 7	1 13 7	0 1 0
Maintenance of System ... ..	1,304,350	1,372,893	68,543	1 12 5	1 14 4	0 1 11
Stationery, Printing, &c. ... ..	16,536	39,888	23,352	0 0 5	0 1 0	0 0 7
Rents, Rates, Heat, Light, Furniture, &c. ...	329,090	319,011	10,079	0 8 2	0 8 0	0 0 2
Value of Engineering Stores supplied for War purposes ... ..	200,568	922,872	722,304	0 5 0	1 3 1	0 18 1
Interest ... ..	615,383	553,587	61,796	0 15 4	0 13 10	0 1 6
Pension liability ... ..	394,950	362,748	32,202	0 9 10	0 9 1	0 0 9
Depreciation* ... ..	1,396,715	1,409,491	12,776	1 14 8	1 15 3	0 0 7
Civil Pay of Men with the Colours ... ..	172,224	264,229	92,005	0 4 3	0 6 7	0 2 4
Adjustment of Pension Liability—overcharges in four previous years ... ..	—	103,990	103,990	—	0 2 7	0 2 7
Sale of plant to Hull Corporation ... ..	3,170	—	3,170	0 0 1	—	0 0 1
<b>Total ... ..</b>	<b>5,738,415</b>	<b>6,481,922</b>	<b>743,507</b>	<b>7 2 7</b>	<b>8 2 2</b>	<b>0 19 7</b>
<i>Revenue</i> :—						
Subscriptions and rentals accrued ... ..	5,187,369	5,209,030	21,661	6 8 11	6 10 4	0 1 5
Royalties ... ..	6,706	8,254	1,548	0 0 2	0 0 2	—
Value of services to other Government Dept... ..	511,358	1,473,307	961,949	0 12 8	1 16 10	1 4 2
Value of services to Telegraph Service ... ..	26,525	30,443	3,918	0 0 8	0 0 9	0 0 1
<b>Total ... ..</b>	<b>5,731,958</b>	<b>6,721,034</b>	<b>989,076</b>	<b>7 2 5</b>	<b>8 8 1</b>	<b>1 5 8</b>
<i>Balance</i> :—						
Excess of Revenue (Deficits shewn in italics) ...	6,157	239,112	245,569	0 0 2	0 5 11	0 6 1

TRUNK SYSTEM.

	1915-16. £	1916-17. £	Difference. £	Rate per call.		
				1915-16. d.	1916-17. d.	Difference. d.
<i>Expenses</i> :—						
Administrative and Operating ... ..	406,582	409,292	2,710	2.42	2.53	.11
Maintenance of System ... ..	212,333	286,769	74,436	1.26	1.77	.51
Stationery, Printing, &c. ... ..	6,692	8,853	2,161	.04	.06	.02
Rents, Rates, Light, Heat, Furniture, &c. ...	75,860	75,925	65	.45	.47	.02
Value of Engineering Stores supplied for War purposes ... ..	42,003	197,206	155,203	.25	1.22	.97
Interest ... ..	258,181	258,131	50	1.53	1.60	.07
Pension Liability ... ..	74,009	76,508	2,499	.44	.47	.03
Depreciation* ... ..	333,811	343,750	9,939	1.98	2.12	.14
Civil Pay of Men with the Colours ... ..	31,997	60,642	28,645	.19	.37	.18
Adjustment of Pension Liability—overcharges in four previous years ... ..	—	11,365	11,365	—	.07	.07
<b>Total ... ..</b>	<b>1,441,468</b>	<b>1,705,711</b>	<b>264,243</b>	<b>8.56</b>	<b>10.54</b>	<b>1.98</b>
<i>Revenue</i> :—						
Accrued Revenue ... ..	1,113,576	1,158,095	44,519	6.62	7.16	.54
Value of Services to other Government Depts... ..	176,819	449,718	272,899	1.05	2.78	1.73
Value of Services to Telegraph Service ... ..	39,353	60,515	21,162	.23	.37	.14
<b>Total ... ..</b>	<b>1,329,748</b>	<b>1,668,328</b>	<b>338,580</b>	<b>7.90</b>	<b>10.31</b>	<b>2.41</b>
<i>Net Loss</i> ... ..	<b>111,720</b>	<b>37,382</b>	<b>74,337</b>	<b>.66</b>	<b>.23</b>	<b>.43</b>

\* Renewals met out of Depreciation Fund :—

	1915-16. £	1916-17. £	Difference. £
Exchange Service ... ..	656,036	421,876	234,160
Trunk Service ... ..	49,461	86,541	37,080



## LONDON TELEPHONE SERVICE NOTES.

ANTICIPATING by a few days the anniversary of the independence of our American cousins, traffic officers in the London Telephone Service awoke on July 1 to find that the yoke of independence, dependence and interdependence had shifted on their shoulders with the introduction of the new traffic establishment, and henceforth they trace their channels of responsibility along lines either dotted or continuous on the diagram of the new organisation which forms part of the necessary traffic instruction. Notwithstanding the plea of G. H. W. in our issue of May on the subject, a traffic instruction has been prepared and has been given a number. Someone has pointed out that according to one of the best favoured figure alphabets a figure word corresponding to the number which has been allotted to the institution is "malaria," and one wonders whether there is any relation between the new organisation and the organism which has produced in so many the conditions which we call "Spanish flu." The evidence we have so far traced is that with both maladies the patients are feverish and both words malaria and influenza have their origin in the language of Italy, which country enjoys much in common with the alleged home of the latest epidemic. We must, however, leave the decision to the reader. Whatever conclusion is arrived at there is no doubt that the influenza had a greater effect adversely on the Service than had the new organisation in the same period, either for better or for worse. In many exchanges the staff was so depleted that notwithstanding that most of the remaining members worked the clock round it was scarcely possible to carry on. We hope that those who have been unfortunate victims of the complaint will make a speedy recovery.

The new organisation has achieved at least one striking purpose—the "Exchange Manager" becomes only an echo of the past. Think of what this will mean to the subscriber who with that sweet reasonableness for which his kind are noted made application directly he learned that the number he required was engaged, "Ah, vell, gif me ze Exchange Manager." Perhaps if certain recommendations are carried out this particular type of subscriber will make his final exit also and the passing of the Exchange Manager thus go unsung. If and when zese subscribers are again heard of they will no doubt soon acquire the habit of asking for ze Traffic Officer and satisfy themselves with a personal complaint to an Assistant Superintendent of Traffic. By the way there is no truth in the suggestion that the probationers attached to the Traffic Staff and Building Division are to be classified as Assistant Superintendents of Traffic and Buildings, Class 10. The last of the Exchange Managers are keeping up the reputation of the class for acquiring personal property on their removal to new spheres. Mr. Jacob, formerly of the Avenue Exchange and now superintending the night service in London, was the recipient of a most handsome gold watch-chain and we understand that the night staff are making a supreme effort to accomplish something worthy of their former chief—will they succeed?

Our reference last month to Mr. Savage seems to have been misunderstood. It was not intended to belittle in any way the work done by the band of special constables who for years now have done duty at the G.P.O. South, but it is the case that raids have occurred when the constables were not on duty and at some of these times Mr. Savage has been the sole representative of the sterner sex available to keep watch and ward upon the roof. As we said he has never failed to give a good account of himself, in fact he has been as good as a "special"—what praise could go beyond that.

Honours are still coming to members of the L.T.S. with the Forces. H. E. Reimann, Third Class Clerk in the Controller's Office, has been awarded the Military Cross, and A. J. Zecek, Paperkeeper, has received the Military Medal. We regret to learn that the latter is reported killed as is also S. L. Smith, Third Class Clerk. It seems to us it is time the L.T.S. had a memorial service of its own in honour of its brave dead.

## PERSONALIA.

LONDON TRAFFIC STAFF (*Telephonists*).

Miss A. E. C. JUDD, Assistant Supervisor, Class II, of East Ham Exchange has resigned on account of her approaching marriage. The exchange staffs of East, Stratford and East Ham presented her with a tea service and salad bowl. Her old colleagues at City Exchange presented her with a cruet and other useful gifts.

Miss E. F. RICE, Assistant Supervisor, Class II, of Museum, has resigned to be married. The supervisors and staff presented her with a silver cake stand, silver tea-spoons and sugar-tongs and several other useful presents.

Miss E. HARVEY, Assistant Supervisor, Class II, of the Trunk Exchange, resigned June 29 in view of her approaching marriage. She was presented by her colleagues with a silver cake basket, a case of tea knives, and many other useful gifts.

Miss E. A. HARRIS, of Mayfair Exchange, has resigned to be married. Her colleagues presented her with a silver cake basket, silver egg stand, silver cruet and tray.

Miss M. R. COUGHIN, of Museum, on resigning to be married was presented with a salad bowl and servers, vases and a jam dish from her colleagues.

Miss K. E. WARNER, of Museum, resigned to be married and was presented with a case of silver teaspoons and sugar-tongs and other gifts by her colleagues.

Miss A. E. HARRISON, of Hop Exchange, resigned to be married on June 28. Her colleagues presented her with a silver and china biscuit barrel and a cut-glass pickle jar.

Miss E. A. S. BARWELL, of Hop, has resigned in view of her approaching marriage and was presented by the staff with a silver cake dish.

Miss N. M. HILLS, of Hop, has resigned to be married. The staff presented her with half a dozen silver teaspoons, and the clerical officers with a pair of china vases.

Miss V. PAVEY, of Hop, on resigning to be married was the recipient of a cruet and other gifts from the staff.

Miss E. M. WALKER, of Hop, resigned in view of her approaching marriage and was presented with half a dozen knives and forks and two cut-glass salt cellars by her colleagues.

Miss E. S. ORPIN, Assistant Supervisor, Class II, of Avenue, has resigned to be married. The staff presented her with cutlery, a tea service, and many other useful presents.

Miss L. A. E. EARL, of Holborn, has resigned to be married. Her colleagues presented her with a tea-service and many other useful gifts.

Miss M. M. SELMAN, of Putney, resigned on June 1 in view of her approaching marriage, and was presented by the staff with a case of spoons and other gifts.

Miss M. KEBBY, of North, on resigning to be married was the recipient of a clock, silver teaspoons and other gifts from her colleagues.

Miss M. CHISHAM, of Palmers Green, has resigned in view of her marriage. The staff presented her with a fruit bowl, salt cellars and other presents.

Miss E. M. McCANDLISH, of Park, resigned to be married on June 6, and was presented by the staff with a silver and cut-glass pickle jar and fork, and other gifts.

Miss N. E. TISDALL, of Bartholomew House, has resigned to be married. Her colleagues presented her with a coffee service.

In consequence of the re-organisation of the Traffic Branch, Avenue and the exchanges in the North district have lost their Exchange Manager, Mr. J. R. JACOB.

The esteem in which Mr. Jacob was held was manifested on June 29 when at a little informal gathering Mr. Jacob was presented with a gold watch chain and a gold pencil from the combined staffs of Avenue district. That Mr. Jacob on his appointment as Assistant Superintendent, Class II, also carries with him the good wishes of his former staff is quite certain.

It has not been previously recorded in these columns that Miss E. NURSE on the occasion of her transfer to Victoria Exchange was presented by Avenue staff with a gold wristlet watch as a mark of their very great esteem.

Both Miss Nurse and Mr. Jacob leave many friends behind them.

## PROVINCIAL STAFF.

Miss C. DUNCAN, Typist, District Manager's Office, Aberdeen, resigned on June 29 in view of her approaching marriage, and was presented by the staff with a cake stand.

Miss E. MERCER, Clerical Assistant, District Manager's Office, Tunbridge Wells, on resigning from the Service on June 15 was presented by the staff with two specimen vases and a trinket box.

Mr. F. ROONEY, Assistant Traffic Superintendent, Class II, at Liverpool, now with the R.A.F. (Balloon Section), has been granted a Commission on the Field dating from June 2. In addition to his duties as Section Telephone Officer, he has also qualified as Balloon Observer, and has received the full appointment of Balloon Officer.

Mr. Rooney has been in the Army just over twelve months, and is to be heartily congratulated on his rapid advancement, and for the circumstances which lead to his promotion.

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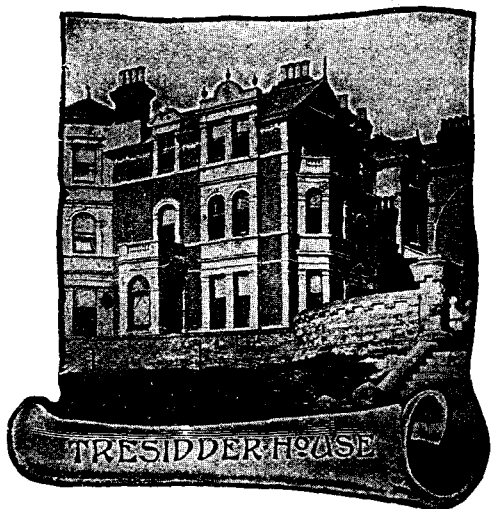
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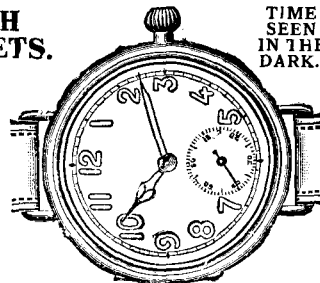
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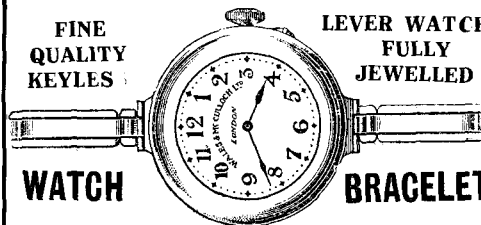


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# THE Telegraph and Telephone Journal.

VOL. IV.

SEPTEMBER, 1918.

No. 48.

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*The attention of our readers is called to the new price of the JOURNAL as shewn above. The issues of Vol. V (commencing October-November) will appear every two months (instead of monthly as heretofore); viz., Oct.-Nov., Dec.-Jan., Feb.-March, April-May, June-July and Aug.-Sept. The next issue will be published towards the end of November.*

### LIFE IN THE POST OFFICE SIXTY YEARS SINCE.

EXTRACTS FROM "EDMUND YATES: HIS RECOLLECTIONS AND EXPERIENCES."

(Continued from page 136.)

ONE more anecdote of my experiences in those pleasant days. A gentleman, a large landowner in Lancashire, had written to the Post Office complaining that in some recent extension of the telegraphs a trespass had been committed on his property, and desiring that the matter might be immediately set right. The tone of the letter was exceedingly offensive and dictatorial, and it was evident that he was a very ugly customer. The telegraph engineer reported that though a little modification of the selected route might be made, to clear off entirely from the complainant's land would involve a considerable *detour*; and, under all the circumstances, it was considered advisable that I should go down and see what could be done with our obstreperous customer in a personal interview.

I did not receive much encouragement from the landlord of the inn at the town near Mr. P—'s estate, where I put up for the night before paying my visit, who described him as being a "hoigh handed un"—whatever that might mean—as very proud and arrogant, and as having all these evil qualities inflamed and intensified by constant illness. This did not promise well; and I received much the same account from the man who drove me over in a gig the next morning. However, I was in for it; and, on arrival, I walked boldly up the steps and set the bell clanging.

I gave my card to the servant who appeared, telling him to take it to Mr. P—, and say that I had come down from London to see him on the subject upon which he had written to the Post Office. The man looked very doubtful, and told me Mr. P— was ill, and never saw anybody.

Was there a Mrs. P—, I asked, who could represent her husband? Oh yes, there were; but she "was wusser nor him," the man said—not in illness, but in temper. I could not go away without having seen somebody, so I told the man to take the card to his master, and bring me some message in reply. He returned speedily, bidding me wait where I was, and Mr. P— would come to me. So I lounged round the big stone hall and examined the family portraits.

Presently a door opened, and the servant reappeared, conveying an elderly lady with a flaming face. I stood at "attention" and made a salaam; but she took no notice of me, and went straight to her carriage, which had drawn up at the steps. About ten minutes after, the door opened again, and a wheel-chair was pushed in by another servant, who retired at once.

The occupant of the chair was a big man, who had been handsome, and who still preserved his *distingué* looks, though his features were a good deal distorted by constant pain. He had keen black eyes and a bristling

grey beard, and a general air of great *hauteur*. He turned slowly round to where I stood, and called to me, "Come here, sir," very much as though I were a dog, and then asked me what I wanted.

I referred him to my card, which he was twisting in his thin bony fingers, and was just beginning a statement of the object of my visit, when he broke out into the most desperate tirade against the Government, against me, against the telegraphs, and almost against everything. Why the etcetera had the Government meddled in the matter? The private companies did the thing well, and in a gentlemanly manner, without interfering with the rights of property; but this etcetera Liberal Government wanted to grab everything. What the etcetera did I mean by coming to his house and demanding to see him? Didn't I consider it an etcetera liberty? Because he did; and he'd be etcetera'd if he'd put up with it, &c.

I kept perfectly quiet, though I felt very hot and uncomfortable, until Mr. P— stopped for sheer want of breath, and then I struck in. I told him that he was probably the best judge of how he should receive any one in his own house; but that such a reception, in the course of a tolerably wide experience, was a novelty to me; that it was not for me to say anything about his diatribes against the Government, and that, as for myself, I was there merely as an official sent on a mission to discharge certain duties; but that, as I was perfectly certain the Postmaster-General would not like me to stay to be further sworn at and insulted, I would take my leave.

I was moving towards the door, when the old man, looking very faint and spent after his recent exertion, motioned me to him, and said, in a weak voice, "You are quite right, sir, and I have to ask your pardon. I forgot myself, and let my passion get the better of me. I am very sorry for having caused you pain; but I am an old man, and I have been desperately ill. When I recover, in a minute, I will talk to you." He touched my hand gently with his, and then lay back, gasping for breath.

Of course I was considerably moved at this, and I at once begged him to think no more of it; that I could perfectly understand his state; that I would wait his convenience, and do everything I could to arrange the business on which I had come down in accordance with his wishes.

He bowed his head in thanks, and touched my hand again; then he sat up in the chair—he had revived considerably while I had been speaking—and, to my intense astonishment, he burst out into loud cries of "Yates! Yates!" For a minute I thought he had gone mad. I tried to speak, but he stopped me, and cried "Yates!" again, as loudly as he could.

I was relieved to find that Yates, who speedily put in an appearance, was the farm-bailiff, who was despatched with me to the scene of the trespass and with whom I soon entered into amicable relations. On my return to the house, Mr. P— approved of all that had been settled between the two Yateses; I found luncheon laid for me; and my host had his chair wheeled to my side, and proved an agreeable companion.

My experiences, on the whole, were remarkably pleasant and enjoyable and while leading a very agreeable life during the two years, I may fairly claim to have "done the State some service."

\* \* \* \* \*

But the pleasant times, like all other times, pleasant or unpleasant, had to come to an end. After two years' most happy wanderings I found my occupation gone. The purchase of the telegraphs, and the manner in which the business had been carried out in all its ramifications, had cost far more than the Government had originally intended to spend over the affair, and the Treasury positively forbade our entertaining the idea of any further extension of empire or expenditure of capital. Economy and retrenchment were the order of the day, and I received instructions to wind up all the work I had in hand as quickly as possible, and to enter upon nothing further.

I ran up to town directly I received this communication, and went

straight to the G.P.O. to seek advice from Scudamore. The official storm, which shortly afterwards burst upon him with such fury, was then only rumbling in the distance; but though I have no doubt he knew perfectly well what was coming, and although he was beset on every side by worries which would have tried the nerve or confused the sense of most men, he was too good a friend not, even in the midst of this whirling excitement, to have given a thought to the fortunes of those in whom he was interested. He saw me at once, told me he felt convinced I should come to him; that he had, therefore, thought my case out, and was ready with his advice. There was no further employment for me in the Telegraph Department, he told me plainly; there would be no further extension of the system for a very long time, and consequently no further "consents" to gain; after the life of comparative freedom which I had led for so many months, a return to the ordinary routine of a Government office would probably be very irksome to me.

I confessed so much, but what was I to do?

Scudamore did not hesitate; he advised me to resign my appointment, and ask for superannuation. The change in the constitution of the Secretary's office which he had mentioned two years before was now imminent; the position which I had previously held was about to be abolished, as part of that large measure of reorganisation, and that would enable me to count ten extra years in my claim for a pension, the amount of which was regulated by the number of years of service. I might serve an additional ten years, Scudamore pointed out, and then only be superannuated in the same sum which I should now receive—now, when I was in the prime of life (41), with all my faculties undimmed, and with my command of the literary market at its best. . . . Feeling perfectly certain that Scudamore had not tendered his advice hurriedly or without due consideration, I determined on following it.

My application, indorsed with the Secretary's recommendation, was speedily sent in to the Treasury; and, on a bright morning in March 1872, exactly twenty-five years after I entered the Service, as I opened my letters at an hotel in Falmouth, I found one among them informing me that my prayer was granted, and that I was a free man with a pension of about £200 a year.

\* \* \* \* \*

I must not close this chapter without further reference to the two members of the Post Office Service who are best known to the public, Rowland Hill and Anthony Trollope, with both of whom I was more or less associated; and, as a bystander is said in the old proverb to see most of the game, it is probable that I, who interfered with neither, had better opportunities for observing their various peculiarities than if I had occupied a less subordinate position.

The two men cordially hated each other. Trollope admits it in his *Autobiography*. "And then there was the feuds—such delicious feuds! I was always an anti-Hillite, acknowledging, indeed, the great thing which Sir Rowland Hill had done for the country, but believing him to be entirely unfit to manage men or to arrange labour. It was a pleasure to me to differ from him on all occasions; and, looking back now, I think that, in all such differences, I was right."

Sir Rowland Hill was far too cautious and reserved ever to put his likes or dislikes into print. But he hated Trollope very cordially, and could not avoid showing it when they were brought into contact. On such occasions there was a fund of amusement for any bystander who knew what was going on. Trollope would bluster and rave and roar, blowing and spluttering like a grampus; while the pale old gentleman opposite him, sitting back in his armchair and regarding his antagonist furtively under his spectacles, would remain perfectly quiet until he saw his chance, and then deliver himself of the most unpleasant speech he could frame in the hardest possible tone.

\* \* \* \* \*

It is scarcely possible to imagine a greater contrast to Rowland Hill than Anthony Trollope, physically—save that both were bald and spectacled—and mentally. One small, pale, and, with the exception of a small scrap of whisker, closely shaven; the other big, broad, fresh-coloured, and bushy-bearded: one calm and freezing, the other bluff and boisterous; one cautious and calculating, weighing well every word before utterance, and then only choosing phrases which would convey his opinion, but would give no warmth to its expression; the other scarcely giving himself time to think, but spluttering and roaring out an instantly-formed opinion couched in the very strongest of terms. "I differ from you entirely! What was it you said?" he roared out once to the speaker who preceded him at a discussion of Surveyors.

\* \* \* \* \*

Trollope was as "thorough" in his Post Office work as he was in his literary labours. His declarations of affection for his official employment are frequent in the *Autobiography*; and in a speech which he delivered at a meeting held at St. Martin's-le-Grand in 1858, to establish a Post Office Library and Literary Institution, he said, "We belong to the Civil Service. That Service has not always been spoken of in the terms I firmly believe it deserves. It has been spoken of as below those others posts to which the ambition of Englishmen attaches itself; but my belief is that it should offer as fair an object of ambition as any other service, and that the manner in which the duties are generally performed by most of the departments with which I am acquainted deserves that the men belonging to it should not be placed in a lower position than those in any other service. I myself love the Post office. I have belonged to it ever since I left school. I work with all my heart, and every one else should do the same; then they will rise with the department, and the Civil Service will rise to the level of any other profession, whether it be the Church, the Bar, the Army, or the Navy."

## THE PAST JUBILEE OF THE TELEGRAPH AND THE COMING JUBILEE OF THE TELEPHONE.

BY ARTHUR E. COTTERELL.

THIRTY-ONE years ago, in July 1887, a goodly company assembled in the Venetian Hall, Holborn Restaurant, at a dinner held to commemorate the Jubilee of the Electric Telegraph. The guests, some 250 in number, comprised a few of the surviving pioneers, a large representative gathering of those who had been and were still responsible for the development of the wonderful enterprise, many of the great leaders of science, and a very modest sprinkling of those who were representative of the newly sprung up sister science of telephony, whose presence was justified not merely as an act of courtesy but by virtue of the fact that the telephone was claimed under the meaning of the Telegraph Act to be a telegraph.

What a wonderful story was unfolded even within the limits of those after-dinner speeches!

The Postmaster-General, the Right Hon. Henry Cecil Raikes, M.P., who presided, recalled the oft-told tale of Wheatstone and Cooke's successful experiment between Euston Square and Camden Town. From this starting point he briefly traced the progress which had taken place during the half-century which had elapsed since the introduction of that ingenious but cumbersome system which involved the use of five needles and what was more serious five connecting wires between the two stations.

The contemporaneous development of railways had opened a field in which the telegraphs were destined to play a most important part for signalling purposes; the London & Blackwall Railway being apparently the first to utilise it in a practical way. In 1844 however the Government of the day conceived wider ideas as to its possibilities, and in that year four wires were established between Waterloo and Gosport, two of these circuits being reserved for State purposes and two for the use of the railway company.

In 1846 the first telegraph company was formed under the title of the Electric Telegraph Company.

In 1850 the first attempt was made to lay a submarine cable, which comprised gutta percha covered wires without any metallic sheathing, between Dover and Calais.

In the following year a cable with a protective covering of iron wires was laid in substitution, thus leading to the establishment of regular intercommunication between this country and the Continent.

These events had been followed by the establishment of other telegraph companies which were formed to compete with "The Electric."

Next came the then matchless story of the Atlantic telegraph of 1858, a tale which was caught up and echoed back by some of the subsequent speakers.

With the acquisition of the telegraphs by the State in 1870 the irregularities and inequalities of services conducted by numerous competing but uncontrolled companies were swept away.

In tracing the progress during the 50 years which had transpired since Cooke-Wheatstone's experiments in 1837, the Postmaster-General touched on such developments as the introduction of the single and double needle instruments, the Hughes printer, the Embossers, Bains chemical printer, Bright's Bell, Wheatstone A.B.C. and Automatic, the Sounder, &c., mentioning also that the line circuits had passed through various phases commencing with the reduction from five wires to two and then to one after which came the duplex, the quadruplex, and the multiplex systems of working. In the matter of speed of operation and transmission great advances had been made during those fifty years.

A speed of about 5 words per minute in the earlier days had been raised to 17 in 1849 in the case of hand transmission and afterwards doubled. With the introduction of the Wheatstone Automatic, the speed had been raised to 462 words per minute in 1887 in the case of a circuit between London and Dublin (a speed which has been greatly reduced since with the extended use of underground wires).

The total number of telegrams had reached the high figure of 51,500,000 per annum or practically 1,000,000 per week (inland and foreign) a volume of business which inevitably expanded in after years as a result of the introduction of sixpenny telegrams in 1885, which had brought down the average charge to eightpence as compared with one shilling and a penny prior to its introduction, and two shillings and twopence under the companies at the time of the transfer in 1870.

As one of the respondents to the toast of the evening, Mr. Edwin Clark traced some vicissitudes of the early days in connexion with which it appeared that he was responsible for introducing Wheatstone to Robert Stephenson, whose fame in railway matters should not hide his enterprise in taking part in the formation of the Electric Telegraph Company. Mr. Clark's reminiscences included the introduction of the block system for railway working.

Mr. (afterwards Sir) John Pender in his speech was able to inform his listeners that no less than 115,000 miles of submarine cables had already been laid at the bottom of the seas at a cost of some £39,000,000 sterling; a mileage which was approximately enough to girdle the earth five times, while their system would enable a message to be sent round the world in twenty minutes. As he aptly quoted:

"Far as the breeze can bear the billow's foam

Survey our empire, and behold our home,"

adding in perhaps more inspiring prose: "Wherever the British ship goes or the British flag flies, there we have the submarine telegraph, and at the

present moment, while I am speaking to you, human thought is travelling like lightning to every part of the world."

Sir William Thomson (afterwards Lord Kelvin) whose great genius as exemplified in the mirror galvanometer and siphon recorder had rendered Atlantic and other long distance submarine telegraphy possible, refrained with much modesty from allusions to his own achievements, but paid generous tribute to those scientists and others through whose investigations, enterprise, and labours the art had been built up and carried to so high a level. Thus he brought into review the names of Coulomb and Ampere, Gauss and Weber, Cooke and Wheatstone, Steinheil, Morse, Henry, Faraday, Werner and William Siemens, Willoughby Smith, Canning and Clifford, Varley and Jenkins, Charles and Edward Bright, Whitehouse, Cyrus Field, John Pender and Moriarty, the famous navigator under Sir James Anderson, who commanded the "Great Eastern." The tribute to and mention of many illustrious names as they fell from the lips of the speaker could hardly have dimmed the lustre of his own personality amongst an audience which could not fail to recognise his great work in this and numerous other fields of research whereby he had raised the status of British scientists to the highest level.

Amongst other names mentioned by later speakers were those of the brothers Brett.

As a fitting climax to the proceedings came the following message:—"Kindly convey to Chairman of Jubilee dinner the following from the Cape of Good Hope telegraphists: Heartiest congratulations and fraternal greetings on Jubilee of Telegraph."

Such was the very brief epitome of the achievements of half a century which had raised the almost doubtful experiments to a great system of national and indeed world-wide importance. Time and distance had been as it were annihilated so that it almost seemed that finally had been reached having in view the new and perhaps more romantic invention, the telephone. But art and science could not stand still, therefore when the centenary comes to be celebrated there will be a much fuller story to unfold.

The invention of Baudot belongs properly to the past era prior to the Jubilee, but its adoption in this country is part of the after developments which include the Creed perforator, the Creed printer, the Baudot varied in different degrees up to sextuple duplex, the Siemens automatic, the Western Electric multiplex, Murray's multiplex, the telewriter, and such auxiliary apparatus as the Gell and other keyboard perforators, &c., &c.

Great advances have been made in line construction, notably in the laying of an extensive arterial system underground whereby the principal cities in Great Britain are exempt from interruptions from climatic and many other causes.

But the story is by no means complete by a recital of the names of these different inventions or developments or of the men who achieved them, as to which the space available and the purpose of this article does not admit of more detailed treatment. The success of the enterprise is hardly less bound up in the vast organisation and methods by means of which the messages are transmitted, circulated, retransmitted where necessary, and circulated for delivery, all of which are so minutely and completely dovetailed as to ensure speed and accuracy.

This second period of 50 years was destined however to witness a still greater marvel, when the ether was captured as the medium for the transmission of wireless messages. Truly great and unexpected wonders have been accomplished since that day of Jubilee.

These thoughts arising from mention of the Telegraph Jubilee inevitably lead one to a contemplation of a Telephone Jubilee, an epoch which we are rapidly approaching, dating from Bell's practical success of 1876.

Unlike the telegraph the speaking parts of the telephone have undergone little essential change if we except certain unsuccessful instruments which were mostly attempts to evade Bell's patent. At a quite early stage the Bell telephone which was utilised both as transmitter and receiver was supplanted as to the first mentioned purpose by the carbon transmitter, but although both the transmitter and receiver have undergone some slight modifications, making for greater efficiency, their elemental form has been practically maintained and seems likely to remain so. The adjunctive signalling apparatus has however passed through several stages since the early days when trembler bell and battery were used. The first change being that to magneto and later to central battery, each of which was distinctly progressive. The greatest developments in the apparatus of course relate to the switchboards, in which enormous strides have been made since the days when such switches were of a cumbersome and primitive character and the indicators associated therewith very unreliable through defects in design. The advent of the multiple switchboard swept away much delay and difficulty arising from the use of transfer or junction wires for the provision of inter-communication between the increasing number of separate switchboards as the exchanges grew. The multiple board went through not a few variations such as reduction in the sizes of the jacks so as to bring a greater number of lines within the reach of an individual operator. Some of the boards were arranged to lie in a horizontal plane so as to bring the multiple field within the reach of double the number of operators, who sat in double rows, *i.e.*, on each side of the board. The introduction of self-restoring indicators relieved the operators of at least one movement in connexion with each call. Space, however, does not admit of a detailed description of the numerous modifications which were made in regard to minor details.

Undoubtedly the most far-reaching stride was made when central battery working was adopted both for speaking and signalling, which secured greater reliability and uniformity of working.

The previous system, involving the use of separate batteries at each of the subscribers' offices meant not only expensive maintenance but led to much inequality in the transmission of speech. With the C.B. system the needful current is readily kept up to the needful standard for uniform

distribution as required. The lamp signals proved more reliable and arresting to the operators than other forms of indicators, and at the same time have the useful quality of the self-restoring indicator, whilst their use on the cord circuits facilitates a supervision of the conditions at each stage of a call which makes for efficiency in the service. The development of the common battery system with all its complexity of arrangement but simplicity in working seemed to mark a stage which could hardly be surpassed, but like the achievements in telegraphy it was far from finality; the ingenuity of it being exceeded by the invention of the automatic switch which were utilised dispenses with the general services of operators.

The telephone service has necessitated various kinds of adjunctive apparatus such as coin collecting boxes, switching and signalling devices, &c., in which considerable ingenuity has been displayed.

The line construction has involved many interesting problems owing to the delicate nature of telephonic currents, which emphasised some of the difficulties noticed in telegraphy and introduced some fresh ones. The use of metallic circuits run on the twist marked the first important stage as eliminating induction between line and line and stray disturbance through the earth connexions. Such use in the early days, applied only to trunk or junction lines, necessitating the application of translators in order that the subscribers' single lines could be connected through. Another important stage was the introduction of the dry core cable which greatly overcame the difficulties experienced in telephone transmission due to the higher "capacity" associated with gutta percha covered cable wires, besides enabling larger groups of wires to be compacted in a pipe of any given size and that at a considerable reduction in the average cost of each circuit.

Deeper problems were attacked by O. Heaviside, S. P. Thompson and more definitely by Pupin, having reference to the physical properties of telephonic lines in relation to the transmission of the waves of telephonic speech which led to the practice of "loading" lines by the introduction of coils which correct the opposing waves due to capacity, self-induction, &c., which otherwise tend to distort and attenuate the transmission of speech. These discoveries have not only proved advantageous on land lines but have increased the range of efficiency of submarine telephony.

The practice of working duplex on telegraphic circuits inevitably suggested something of the sort in the case of telephony, a system which has been raised through various stages to great efficiency. Nor has the lead in wireless telegraphy passed unchallenged, as wireless telephony is amongst the later achievements.

Numerous attempts have been made to attain an effective relay for telephonic purposes, which have led to the introduction of the Mercury Vapour and other lamp systems which exhibit no little promise.

The use of the telephone has been many sided, such as electrophone transmission from churches, theatres, concert halls, political meetings, &c., &c., whilst its development for the general purposes of our commercial and social lives has been so extended that at December 31st last there were in the British Isles alone 828,175 telephone stations served by 3,171 telephone exchanges, in connexion with which 2,566,579 miles in terms of single wire, were utilised for local purposes and 405,790 miles for trunks.

With telephone calls aggregating something approaching 750,000,000 per annum, or 1,500,000,000 messages counting each call as involving one message only each way, it is needless to remark that a high state of organisation is essential and that many intricate engineering and traffic problems have to be attacked and subdued.

Like the telegraph the telephone was developed under public companies and ultimately acquired by the State, and it is interesting to note how history repeated itself. The telegraph was acquired by the State 33 years after Cooke and Wheatstone's demonstration in 1837: the telephone 35 years after Bell's invention or 33 years from its introduction as a commercial utility in 1879.

It is to be hoped that the Jubilee of the Telephone will be duly celebrated when the time arrives.

Brief and incomplete as the above sketch of progress is, it is manifest that there will be ample material available for unfolding a tale of triumphs and achievements which will not only bear worthy comparison with what was or could have been brought under review at the Telegraph Jubilee, but which have so marvellously realised what must have seemed to be an idle and fantastic prophecy only fit for the Fairy Story book in which it was written nearly a century ago.

"Let their voices be heard afar  
At a distance no sound can reach  
And swiftly as thought  
Let the words be brought  
And the lightning endowed with speech."

## TELEGRAPHS AND TELEPHONES IN S. AFRICA.

THE Postmaster-General's Report for 1917 shows a decrease in the telegraph receipts of £39,670 compared with 1916, and an increase in telephone receipts of £47,013.

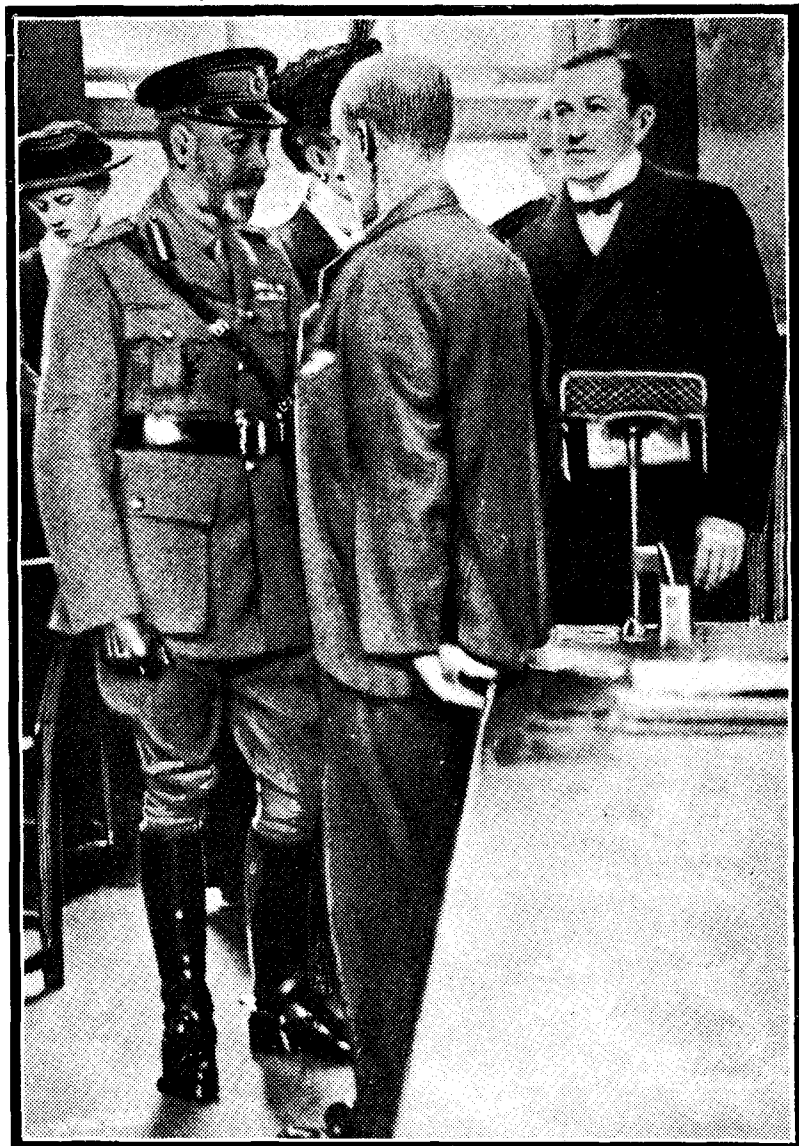
The number of telegraph offices was increased by 8 to 1,703. The total messages increased from 5,692,873 to 6,174,888.

Telephone exchanges increased from 422 to 437, call offices from 2,038 to 2,151, and telephones from 35,463 to 36,846. It is estimated that 74,116,133 local and 3,270,612 trunk calls were made during the year.—MILEAGE OF WIRE:

Telegraph, 53,785; Telephone, 111,498; Telephone (spare), 13,004

### THE ROYAL VISIT TO THE G.P.O.

On Aug. 1 the King and Queen accompanied by Princess Mary paid a visit of over two hours to the General Post Office, making a tour which included the Central Telegraph Office, King Edward's Building and the Central Telephone Exchange. Their Majesties were received by Mr. Illingworth (Postmaster-General), Mr. Pike Peace (Assistant Postmaster-General) and Mr. Murray (the Secretary). In the G.P.O. West Mr. Newlands and Sir Wm. Slingo, were presented, and their Majesties inspected the Central Telegraph Office, displaying great interest in the systems and processes employed and receiving loyal greetings over the wires from various parts of the United Kingdom. The Secretary's office and the Postmaster-General's room were then visited, where Sir Charles King, Mr. Carey, Mr. Walkley, Mr. Horne, Mr. Raven, Mr. Ferard, Sir H. Davies, Mr. Wickham, Mr. Morgan and Dr. Sinclair were presented.



[Reprinted by the courtesy of the *Daily Mirror*.]

The Royal party then crossed over to the Public Office in King Edward's Building, where Sir Robert Bruce was presented. After passing through the ranks of the P.O. Special Constables, their Majesties made a thorough inspection of the work of the London Postal Services. Lastly the Army Letter Office was visited, where Col. Williamson was presented. Several bouquets were handed to the Queen on behalf of women and girls at various points of the tour, and the King, Queen and Princess were heartily cheered by all ranks of the staff.

Carter Lane was next visited, where Mr. Preston and Mr. Moir

were presented, and their Majesties saw the Central Telephone Exchange at work. Miss Heap informed the Princess Mary that 600 women and girls were now on duty during the night releasing men who were formerly thus employed. A message from the staff who were debarred from the pleasure of seeing their Majesties was conveyed to the King by Mr. Preston who asked him to send the following message of thanks:—

"I desire to thank the staff of the Metropolitan exchanges for the welcome extended to myself and her Majesty the Queen on the occasion of our visit to the Headquarters of the London Telephone Service. I have been greatly interested in and impressed by the nature of the work performed and recall the many instances of zeal and devotion to duty that have come to my knowledge. Many telephonists attached to the London Telephone Service are now in France, but their colleagues who remain at home are also engaged on work of great national importance, and I recognise and appreciate the excellent service so loyally and zealously rendered to the State, often in difficult and exacting conditions."

The Postmaster-General has received the following letter from the King:— Buckingham Palace, Aug. 1, 1918.

MY DEAR MR. ILLINGWORTH,

I am desired by the King to let you know how great a pleasure it was to their Majesties to inspect the Post Office this morning. I am to thank you all for the excellent arrangements made for the visit.

The King and Queen were much impressed with all they saw and were glad to have this opportunity of showing their appreciation of the splendid work rendered to the Nation during the Great War by the men and women employed in your Department.

Yours sincerely, CLIVE WIGRAM.

### THE VISIT OF THE KING AND QUEEN TO THE CENTRAL TELEGRAPH OFFICE.

By A. W. EDWARDS.

On Thursday morning, Aug. 1, the Central Telegraph Office was honoured by a visit of the King and Queen, accompanied by Princess Mary. The King's Royal Rifle Cadet Corps formed a Guard of Honour. After Mr. Illingworth had formally presented Mr. Newlands (Controller), Sir William Slingo (Engineer-in-Chief), Mr. James Bailey (Deputy Controller), and Mr. A. W. Edwards (Senior Assistant Controller), to their Majesties, a visit was made to the experimental room where Sir William Slingo described various appliances of Telegraphy as applied to Military and Naval operations. Thence the Royal Party proceeded to the Central Hall on the ground floor in which are situated the pneumatic tubes connecting the Central Telegraph Office with the more important City and West-End offices for the direct conveyance of telegrams, and from which such telegrams are circulated by local, or house, tubes to the various floors. Their Majesties and Princess Mary displayed much interest in the large number of women and girls employed there and the Queen and Princess Mary made several inquiries as to the hours of work and the conditions under which this service is performed. Proceeding by lift to the fourth floor the Royal Visitors were shown the method of inter-communication of telegrams from and to offices in the London Postal area, and also the concentrator switches to which are led the majority of towns in the Home District and which provide for economy in staffing. The Queen's attention was directed to one woman telegraphist (Mrs. Rollason) who although in her 70th year had recently resumed to "do her bit." "Do you find the work irksome," asked the Queen. "No, your Majesty," came the reply, "I love it." Before leaving this floor, Mr. W. Webb, Acting Assistant Controller in charge of the floor, and Miss Briault, Chief Supervisor, had the honour of being presented to their Majesties.

Descending to the third floor gallery, in which are a large number of high speed and other circuits working to important provincial offices, and whereon are situated the News Division, and the Special Section, the Royal Visitors were shown, among others, the Dublin Wheatstone Creed circuit, and the Glasgow and Bristol Baudot circuits over which loyal greetings to their Majesties were received. On this floor are exhibited the three Rolls of Honour, containing the names of 1,590 officers, the vast majority of whom are performing Military and Naval duties. Their Majesties evinced considerable interest in these and also to a fourth Roll containing the names of 38 women telegraphists who are performing duties overseas in Queen Mary's Army Auxiliary Corps. The method of disseminating news throughout the United Kingdom was explained to their Majesties and in this connexion they were shown the several methods of preparing the perforated slips for transmission, viz. hand or stick punching, pneumatic punching and the more modern "Gell" method, which, by the mere depression of the alphabetical keys on a keyboard resembling a typewriter, the desired Morse signals are punched, thus obviating the necessity of a knowledge of the Morse code—as required by the two former systems. Passing to the Special Section, their

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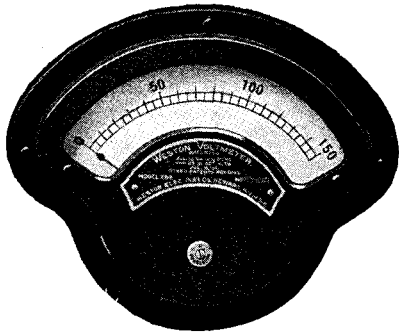
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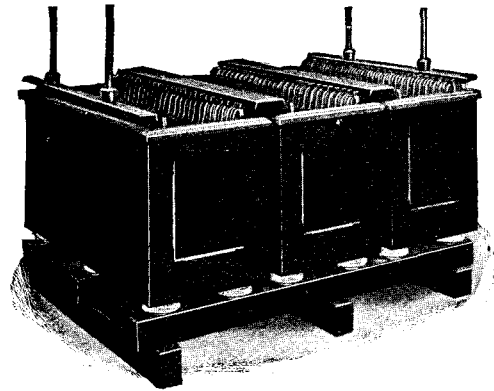
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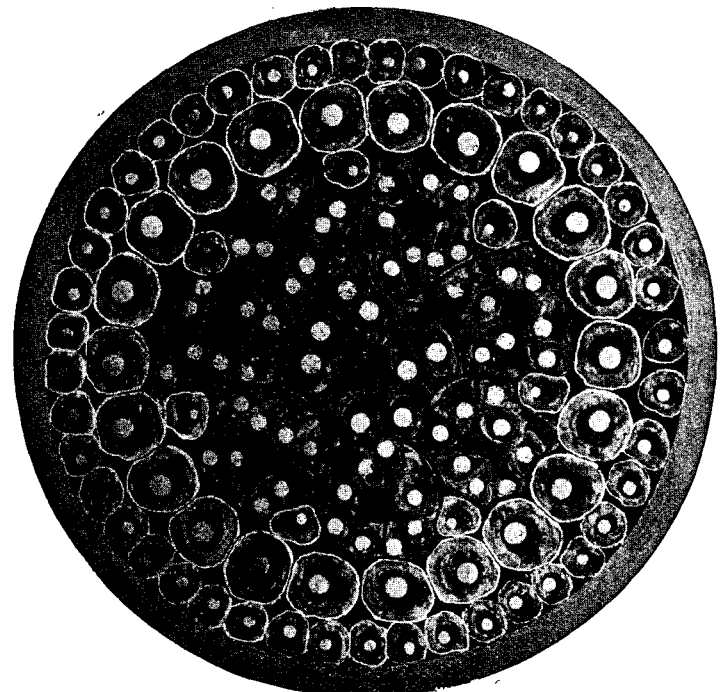
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Majesties were shown special circuits which connect important places on the Western Front with London, also the several methods by which transmitted Wheatstone slip is transcribed, viz., hand transcription, typewriting, and Creed printing. In the Centre Gallery on this floor is the central circulation table, and the method of circulating telegrams from point to point throughout the building was explained.

Leaving the third floor, the Royal Party descended to the floor below on which is located the Cable Room, and in which their Majesties saw traffic proceeding to and from France, Italy, Holland, &c. Here, Mr. F. T. Wadley, Assistant Controller of the Cable Room was presented to their Majesties, to whom a message of greeting from Paris was handed, and read by them with much pleasure. As in the case of the other towns from which such messages were received, the King desired that replies conveying his thanks and appreciation should be sent.

At the entrance to the Censor's Department on this floor, their Majesties were met by Colonel Lord Arthur Browne (Chief Censor), and Colonel Donne, C.B., C.M.G. (Deputy Chief Censor), and after formal introductions by Mr. Illingworth, a visit was paid to a section of this department where the system was briefly explained and where their Majesties saw at work numbers of officers on the retired list.

Passing from this department, his Majesty was attracted to a fair-sized American flag which adorned a circuit at which sat an American bluejacket operating to the American Navy Headquarters in London. As the King approached, the bluejacket rose and came to the salute, and the King had a long chat with him. Thence the Royal Party saw further evidences of high-speed working to important provincial offices, such as the Western Electric apparatus to Manchester, the Siemens-Halske to Liverpool, and Baudots to Brighton and Birmingham, and commented on the array of small allied flags adorning circuits working to important Government offices.

The King noticed in the course of his tour several men wearing Silver Badges and other Service decorations, among whom were gas victims and wounded men who had been discharged from the Army and had resumed their civilian duties. Wherever these were seen, the King paused and spoke to them.

Before leaving the Telegraph Department, their Majesties and Princess Mary passed to the Controller's room where they inscribed their names in the Distinguished Visitors' Book.

(A fuller account of the Royal Visit to the Central Exchange appears in "London Notes.")

### DAVID MITCHELL STEWART, I.S.O.

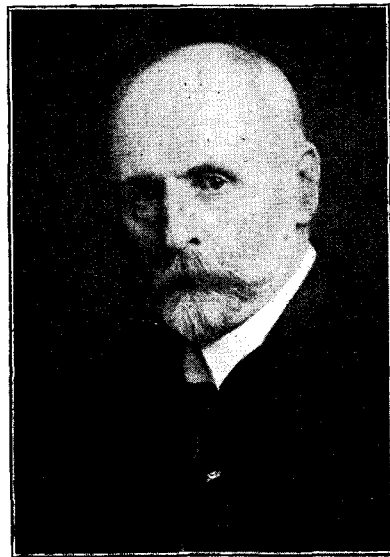
THE retirement of David Mitchell Stewart, I.S.O., on June 30, 1918, brought to a close an official career which was unique in the annals of the Post Office Engineering Department. Entering that Department in 1871, Mr. Stewart had completed close on half a century's service in the same district and at the same headquarters. His early official life was spent indoors and it was only in 1892 that he found the call of the road too strong to resist and began the engineer's life which has made his name a household word throughout the Department. Shortly after his appointment as engineer the Department embarked upon a scheme of backbone trunk lines, and in the erection of these he had a lion's share both of work and credit.

A few years later he was engaged with the late Mr. Ashton and Mr. McNair in important experiments to establish signalling without wires, and on his suggestion certain alterations were made in the disposition of the plant on the Island of Mull and the mainland which enabled the desired communication to be established and maintained as a working arrangement.

The transfer of the telephone trunk lines to the Post Office took place in his first year as Superintending Engineer, and only those who were associated with him at the time can realise the amount of energy and ability he threw into the work and appreciate how successfully he accomplished it.

Then came the years which had to be devoted to rebuilding the dilapidated acquired lines and developing them for the public benefit. The evidence of Mr. Stewart's success in these directions is to be found on nearly every main road in the Scotland West District. By this time a reputation which was already high was being added to in lumps, and it came as no surprise to his old staff to learn that he had declined "a call" to a higher sphere. This "call" though renewed and pressed was never accepted, and Mr. Stewart preferred to remain in charge of the District where his career began rather than allow himself to be attracted to the Metropolis even by the almost certain prospect of the reversion to the highest position as his final reward.

When the Postmaster-General acquired the telephone undertaking of



the Glasgow Corporation Mr. Stewart was selected to represent the Department at the transfer, and it was agreed on all hands that no better choice could have been made. At a later and greater transfer (that of 1912) he again distinguished himself and during the busy and anxious years since then he has directly and by encouragement to his subordinates rendered most valuable services to the Department and the State.

It is common knowledge that he was a valuable member of the "King" and "Walkley" Committees, and that his services as Chairman of the Superintending Engineers' Committee and as a member of the Advisory Committee were greatly appreciated both by the Department and those who were affected by these Committee's decisions.

Shortly before his retirement Mr. Stewart was decorated by the King with the Imperial Service Order in recognition of his many valuable services.

In his early years he was a slave to duty, but for some time before his retirement he devoted his leisure to the breeding of Shetland ponies and shorthorns, and not only carried off the highest honours with his ponies but was selected to fill the President's chair of the Shetland Pony Society. Following up these interesting hobbies now that official cares are only a memory, he has extended his farming activities and his many friends wish him a long and successful career on the land.

Before leaving Mr. Stewart was presented with several tokens of esteem and remembrance from the Engineer-in-Chief's and District staffs at a meeting presided over by Mr. R. A. Weaver, and taken part in by Messrs. W. Noble, T. E. P. Stretche, J. D. Taylor, R. Waring, C. Crompton, J. Hardie, C. J. Millar, J. MacCallum, J. J. Gillespie, J. B. Bell and F. Blackburn, when tributes to his qualities of head and heart found expression on all hands.

### LONDON TELEPHONE SERVICE NOTES.

THE outstanding feature during last month was the visit of their Majesties the King and Queen with the Princess Mary. The Royal party accompanied by the Postmaster-General, the Assistant Postmaster-General and the Secretary arrived at the Carter Lane entrance shortly before one o'clock, and were met by the Controller. They proceeded to the Trunk Exchange where a number of presentations were made. These included Mr. Valentine, Mr. Moir, Mr. Stirling and the Superintendents, Messrs. W. R. Bold, P. W. Coleman, J. F. Edmonds and W. F. Taylor. Miss Heap and Miss Liddiard were also presented here. The day was brilliant and the exchange was gaily decorated with flowers. The party having passed through the Trunk and Toll Exchanges came down to Central Extension, where Mr. Dive was presented standing sentinel over an almost alarming array of Red, White and Blue Emergency files. The King who is well acquainted with other aspects of these special schemes told the story of how he had remonstrated with a member of his family who had rung him up on the telephone during an air-raid, exhibiting once again his faculty for setting the right example. His Majesty whose attention was drawn to the private wires from Central to the other exchanges authorised the despatch thereover of a message of thanks to the staff (see p. 154).

In the main Central Exchange Miss Butcher, the Chief Supervisor of City, Miss Beaumont of Trunks, and Miss Johnston of Central were presented. Their Majesties and the Princess Mary signed the Visitors' Book and each took as a souvenir of the visit one of the L.T.S. Air Raid badges. The Queen and Princess Mary spoke to several of the staff during the visit, the Princess displaying an especial interest in the work of one of the girls doing cord repairs. The Royal guests left by the Adle Hill door and were again vociferously cheered by waiting crowds. If some of those in the switch rooms joined in the cheers, what of it—it is not every day that we have such distinguished visitors. The Engineers, as ever in the G.P.O. South, assisted in a hundred and one ways in the preparations for the visit, and if we had a personal regret in the matter it was that they did not come more into the picture. However they may a visit all to themselves one of these days, and if we can help in any way we won't fail to do it. Of course after such an occasion there follows a sheaf of rumours, but one at least we are able to squash—the Royal party made no promise to be present at a Traffic Officers' meeting.

Since last month the official notice has appeared in the Gazette of the award of the D.S.C. to Lieut. Leonard James Lee, R.N.V.R. It runs:—

"Volunteered for specially dangerous work in charge of machine guns in a motor-launch. Took command when the commanding officer was killed and the vessel so damaged that she had to be sunk to avoid capture. Showed great coolness, setting a fine example to his men in spite of a severe wound."

We are glad to know the wounded arm is making good progress.

Sapper Nora Mitchell, formerly of Museum Exchange and now of the Q.M.A.A.C. (Signal Service), several of whose letters from France have appeared in these pages was recently home on leave and visited her L.T.S. friends. Unfortunately shortly after her return to France she got into difficulties whilst bathing and came terribly near to being drowned. We are thankful to report however, that the latest advices show her to be going on well and we trust she will soon be quite fit again.

Writing of the Q.M.A.A.C. reminds us that the London Telephonists' Society hope to have a paper from one of the members of that well known corps. Indeed they are to have a competition of their own, and Mr. Valentine, the President of the Society, this year has offered a prize of a guinea for the best paper sent in by a "Quack" as we understand they are now called. This ought to make a most interesting evening. If any would-be competitor wishes for further information she should write to the Hon. Secretary of the L.T. Society, c/o the Deputy-Controller.

## The Telegraph and Telephone Journal.

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

Editing and Organising	{	MR. JOHN LEE.
Committee		MR. J. W. WISSENDEN.
Managing Editor	-	MR. W. H. GUNSTON.

### NOTICES.

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

VOL. IV.

SEPTEMBER, 1918.

No. 48.

### OUR FUTURE ISSUES.

OUR readers will perhaps be little surprised to hear of a proposed rise in the price of the *Telegraph and Telephone Journal*. They have become accustomed to pay double for their daily newspaper, for their favourite weekly and for the less indispensable monthly magazine, and they have become no less accustomed to a reduction in the quantity and quality of the paper and to the consequent inferior reproduction of the pictures in almost all periodical publications. These retrograde measures have not, of course, been taken by the publishers of popular and successful journals from choice, nor have they been dictated solely by questions of cost. Paper like many other commodities is now strictly rationed in accordance with weight, and it is necessary to decrease the quality in order to obtain a sufficient quantity to carry on. The Editors of this JOURNAL feel that it is impossible further to decrease the quality of the paper used for the JOURNAL without seriously detracting from its value, and they are therefore compelled to reduce their quantity by reducing the number of issues per annum.

While the quality and quantity has decreased, the price of paper has nevertheless so materially increased, that the JOURNAL costs practically over 2d. per number for paper alone. So long as the present conditions continue it is impossible to supply the JOURNAL at 2d. a copy to the staff and 3d. to the public without heavy loss. It has therefore been decided with great reluctance to meet the difficulty as regards quantity by issuing a number every other month, and the difficulty as regards cost by raising the price to 4d. and 6d. respectively. The result of this is that annual subscribers will pay the same amount as heretofore and will receive 6 instead of 12 issues.

We have every reason to believe that the JOURNAL still meets a distinct want and we hope that such support will be forthcoming as will enable it to be carried on until the present difficulties vanish. Needless to say it is not the intention of the Editing Committee to maintain either the proposed price or restricted output and the whole question will be again reviewed at the first appearance of more favourable conditions.

### AMERICAN TELEGRAPH AND TELEPHONE CONTROL.

AN event of unusual importance in our world is implied in the recent transfer of the American telegraphs and telephones to Government control for the duration of the war. A significant comment in the *Times* says that "it is highly unlikely that they will return to private management after the war without considerable relics of the war period by way of restrictions."

It may be remembered that early in 1914 a Special Committee of the U.S. Post Office Department reported to the Postmaster-General of the United States recommending that Congress should declare a Government monopoly over all telegraph, telephone and radio communication, and acquire by purchase the telephone commercial network. It was remarked that the United States alone of leading nations had left to private enterprise the ownership and operation of telegraph and telephone facilities. The usual arguments were rehearsed in support of these recommendations, viz.: the contention that the services in question had long been recognised as adjuncts to a complete postal service; the unwillingness of commercial companies to extend the system to unprofitable territory; the desirability of fixing rates with more regard to the needs of the people than to profit; and the inherently monopolistic character of the services. Mr. Vail, the president of the Bell Companies had pronounced equally strongly in favour of single control, but where, of course, he does not see eye to eye with the Committee and other economists is upon the question whether the monopoly should be public or private. The telephone press of America, which is largely controlled by telephone interests, protested loudly against the proposals for State control, and all usual moral drawn from the backwardness of European development was pointed to adorn the oft-told tale.

The war, however, has played into Postmaster-General Burleson's hands, and for the present, at least, State control becomes a *fait accompli*. The *Times*, referring to "home keeping folk who have not had the experience of telegraphing and telephoning in the United States," says that "perhaps they do not realise what a revolution it must seem to American citizens when the control of the telegraph and telephone systems . . . is taken over by the public," and wonders whether they will suffer or tolerate the experience of an inefficient service being run at a loss as in this country. The *Times* would perhaps do better to dissociate the Telegraph and Telephone Services in its sweeping condemnation. As regards telephones it would be bootless to rehearse all differences of circumstance existing between conditions in Europe and America, or to prove, as could easily be done, that the slower development of Europe is not entirely due to State control. As regards telegraphs, we doubt if casual visitors to the large cities of America would appreciate the fact that telegraph facilities have not been extended to small towns and villages along with the posts as in this country and in Western Europe generally. We need not labour the point which grieves so many, viz., the handsome profits which might be divided amongst grateful shareholders with the approval of satisfied telephone and telegraph users, instead of being frittered away in quixotic attempts to serve unremunerative districts and remote country places. After all, if places are not

populous why should they have telephones and telegraphs? Why should they have even posts? You perceive, if your vision is that way inclined, the cloven hoof of State Socialism sticking out again. The views of the two orders of economists will never coincide; but there is much to commend the ideal of a really national co-ordinated service of posts, telegraphs and telephones serving alike every member of the community, as far as possible without loss to the taxpayer and to the ultimate greater gain of the commercial and social body. It may here be remarked that the existing extensions of telegraphs and telephones under State auspices to remote and outlying places has proved of incalculable benefit during the war in connexion with the defences of this country.

### HIC ET UBIQUE.

GERMANY, says the *Tägliche Rundschau*, has let the fiftieth anniversary of one of the most important of German technical inventions slip by unnoticed in these stirring times. Fifty years ago England joined the British motherland to the Indies by means of a cable, rendered practicable by the brain of Werner Siemens. Thus a German cable served humanity, England unfortunately first of all.

The usual asseveration follows that Germany must have her own cables after the war and be independent of England. "This will be a self-evident requirement at the Peace Conference."

A DAILY air post has been established between Vienna, Cracow and Lemberg. Cards and letters must be posted at the Head Office in Vienna. We gather that the charge is a krone (10*d.*) plus 1*s.* 3*d.* special charge for the air-post for each section, Vienna to Cracow, and Cracow to Lemberg. If the letter is not delivered within 12 hours the special charge can be reclaimed. As express trains in peace time cover these sections in 8 hours and 5½ hours respectively, 12 hours does not seem wonderfully rapid for the rather high charge of the air post.

AN American spiritualist writer (Rose Levere) claims that an essay has been communicated to her by Professor Morse. His ghost would seem to haunt New York habitually, for he observes with apparent regret the disappearance of horse-trams and old landmarks, and the dwarfing of historic buildings by huge modern structures. His "essay" concludes with a touching adieu to his friend and benefactor "the immortal Cyrus W. Field."

THE *Telegraph and Telephone Age* gives an amusing instance of French-English.

Recently an operator in a Paris office interrupted the English operator at the other end of the wire in order to run to the window to join other members of the staff who were viewing a passing regiment of American soldiers. Upon returning to the key the French operator in "French-English" explained his brief absence by remarking: "The American soldiers are defiled."

A NEWCASTLE correspondent says:

The Germans have been blamed for a good many things during this war, and rightly so in most cases, but when a sub-postmistress states that "The decrease in the night calls is due to German prisoners not escaping," surely their last possible sin of omission has been discovered.

Arrangements might be made, our correspondent suggests, for the authorities to have an escape of prisoners on the day when a further record has to be taken, so as to equalise matters.

*Vires acquirit eundo!* The Swedish legend grows. It is venerable, it is persistent, but it reached the full perfection of mendacity in a recent paragraph in the *Manchester Guardian*

which surmises that the Bolshevik dream of a free telephone in every house may be inspired by some knowledge and envy of the facilities enjoyed by the Swedes. Stockholm, we learn, has more telephones than New York and nearly twice as many as London or Paris! Thus the writer of the "Miscellany" in the *Guardian*, and thus the facts:—New York has between 500 and 600,000 telephones, London 277,000 Stockholm 113,000. Paris before the war had 100,000 telephones but we have no later information on its development.

### TELEGRAPHIC MEMORABILIA.

ONE of the most momentous decisions affecting the organisation and direction of Government establishments was undoubtedly that announced by Mr. Bonar Law as the mouthpiece of the Cabinet. How far the application of the Whitley Report to the Post Office will affect the Telegraph and Telephone branches time and circumstance alone can definitely indicate. "A very circumspect and very non-committal prophesy," may be the comment of the reader. The soft impeachment is admitted. "Never prophesy until you know," said *Punch*, and as the writer does *not* know, he certainly does not intend to adopt the prophetic garb. If the administrative, controlling and executive sections of the Services could together with the staff just honestly throw aside all prejudice and suspicion and endeavour to meet without the mean shadow of secret diplomacy lurking in the distance all would be well. In any event there should be a full and free desire to judge each case on its merits, and to remember that over and above all our own little sectional or personal hopes and ambitions—natural enough within limits—should unquestionably loom the efficiency of the Services for which we are all in our various spheres individually responsible.

This indeed is the true discipline. In a recent article by Charles Whibley on *The Philosophy of General Foch*, the French General is reported as saying: "To be disciplined does not mean to keep silence, to abstain from action. . . . It is not the act of avoiding responsibilities. . . . Discipline equals activity of mind. Idleness of mind leads to indiscipline just as does insubordination. . . . Discipline is activity of mind to *understand the views* of a superior officer and to enter into those views, and *activity of mind to find the material means to realise those views.*"

If the rank and file really *understand the views* of the administration (true understanding can only come from free and frank discussion), much of the *material means to realise those views* will prove immediately available. This truer discipline of following a clearer and reasoned objective cannot but act with invigorating influence upon intelligent men and women. Reasoned obedience to intelligent direction is more likely to produce the finer type of output than obedience of the blind automatic school. To quote once more, I trust not inaptly, from Foch's lectures: "Force of soul in the commander, high moral in the soldier—without these no army can conquer." With these two factors working in harmony in the more peaceable spheres the conquest or solving of the many problems of the near future, all a-bristle with difficulties, should also be rendered the more easy. There will be disappointments for the idealist, and surprises for those who cannot conceive any other world than that which at present is struggling hard to get out of its swaddling clothes of mere materialistic rules, regulations, aims and appeals. One has notwithstanding firm ground for faith in the spirit of the British race to adapt itself to new conditions with a happy and a hopeful heart not untinged with a firm belief in itself and its own powers. The Post Office claims to have at least its share of "high moral" with which to meet new privileges and new rights, which latter must always be accompanied by a strong sense of new and graver responsibilities.

The T. & T. Society has again decided to carry on with its work during the coming winter season and has again mapped out a restricted programme of four gatherings. The dates were not quite settled when my last information came to hand but the nature of the papers promised to be unusually interesting. Telegraphy and Telephony would appear to have equality of treatment, which should suffice to please both arms of the Service.

Judging from the titles of the papers it seems possible that the members may be treated to a glimpse of parts of the war-zone in France and we have even been promised a sight of Jerusalem and its environs. With the hope that members will endeavour to rally more enthusiastically to these gatherings, arrangements it is understood, are being made by which it is hoped that a more commodious hall will be available on the S. S. Union premises in Old Bailey.

A very fitting and graceful tribute was recently paid to an esteemed member of the Acting Controlling staff on a certain anniversary, in recognition of life-saving action taken at a critical moment some time ago. A basket of flowers with the words, "In happy and grateful memory of the wreaths that were not."

Readers must forgive, if once more announcement is made of the liberality of the C.T.O. staffs. It is not the fault of the writer but simply the continued evidences of the calls and the willing responses for benevolent service which compel at least the simple record in these pages. This pen has certainly been busy in these directions of late, but when it learns that in addition to items already jotted down, the Children's Country Homes Fund, though somewhat reduced, is still supported to a helpful extent, that the Hospital Saturday Fund has not been entirely neglected, and that during the last two years the C.E.S., thanks to the women representatives, has made itself responsible for

collections to the War Clothing Fund amounting to no less than £700—well, what can a useful "Swan" do else but scribble away?

The gas rationing scheme is likely to be specially felt by both telegraphist and telephonist, and more especially in those homes where two or more of the family happen to be employed on Post Office service. The varying duties, early and late, frequently render meals to be taken at the two extremes of the day, the early breakfast necessitating use of the gas-stove equally with the deferred supper "kept hot" for the weary one at the end of a winter day. Though not expecting any special consideration for our craft on the strength of this plea, the difficulty of cutting down in these circumstances is a very real one, which, it is feared, the outsider will find it impossible to realise. More especially is this so because one finds that even within the precincts of our own buildings in St. Martins-le-Grand there appears to be a very hazy realisation of what let me say, to speak more particularly, are the actual duty conditions of the Telegraph side.

"Surely you can leave your work for half an hour and catch up afterwards by staying an equivalent period," was the recent reply to a telegraphist by a friend in the Service who could not see why the lightning-grinder was unable to attend an afternoon meeting without inconvenience to the public! This was equivalent to one's many outside friends who through over three decades of friendship have never yet been able to understand why "you telegraph people can't get off at one o'clock on Saturdays and never seem over certain of Sundays or even Bank holidays." Personally I have given up trying to explain.

Sincere congratulations to M. Collignon, one of the most respected of our Belgian "temporaries" now performing telegraphist duties in the Cable Room, C.T.O., and who this month completes half a century in the Telegraph Service. At the outbreak of war he was Superintendent in the new Central Telegraph Office at Antwerp in Rue Jesus, where he held on until ordered to leave by the Belgian authorities.

To those who have at times belittled Government ownership of Telegraph and Telephones in this country, the projected action of the U.S. Government with a view to their complete absorption by the State should act as a salient object lesson. The necessity for absolute State control has been remarkably and repeatedly proved in our own country since 1914. Only the secret history of the war could disclose how really vital has been the connexion between national safety and these twin branches of the Post Office.

The above lines were written prior to any knowledge of the visit of the King and Queen to G.P.O. West and to G.P.O. South. Their Majesties thereby set the seal of national appreciation upon our willing labours by their personal appearance in our midst on Aug. 1. With that official recognition the Telegraph Service is unmistakably pleased and can with renewed zeal and energy—carry on.

So Alexander McEwan has quitted the Telegraph Service for good, though certainly not for the good of the Telegraph Service. Yet surely a servant of the State never earned his rest-time more adequately than "Mac." Born on April 12, 1856, in Hamilton, Ontario, Canada, of Scottish parents, he was educated at the Edinburgh High School and for a time at Charterhouse, London. Entering the Service in old T.S., December 1870, with about twenty other youths, of whom the present Deputy-Controller, Mr. James Bailey, is now the sole active survivor, Mr. McEwan has thus seen 48 years of telegraph life. Twenty-seven of these were spent as a "telegraph clerk"—the ancient title—fourteen as Assistant Superintendent and seven as Superintendent. Mac has played upon the whole gamut of telegraph experience, including News, Special, Racing and Commercial traffic. He has seen considerable Special Event Service and was detailed for working on the original duplex, quadruplex and multiplex (Delaney) installations.

He had much to do with the experimental Wheatstone trials to Edinburgh with their triple phases of writing, gumming and Wheatstone Creed. These trials occupied practically the whole of 1909. Kotyras, Kleinschmidts, (tells and other forms of perforating keys and keyboards came within the scope of these experiments with the result that telegraphy in the C.T.O. has been revolutionised. For these efforts Mr. McEwan received the thanks of the Secretary, Mr. King (afterwards Sir Alexander), the then Controller and Mr. Leonard. A mechanical rotary slip carrier is attributable to Mac's inventive skill and several of these have since been manufactured by the Department for use in London and in the provinces.

Some of us will miss him at the dinner table for he was a happy raconteur whether retailing anecdotes of Belgium, French or Scottish travel, whether he was engaged in gibing us for our lack of knowledge of English history—from the Scottish view point, or engaged in describing the drolleries of ancient characters of the old school of the telegraph world. There was never a touch of bitterness in look or tone or temper, for Mac was blessed with a large share of the saving grace of a keen sense of humour, as when he mentioned that the "passover cake was everlastingly indigestible." He was generous to a fault and never referred to any successful achievement without mentioning the staff which had co-operated with him, not even omitting the representatives of the workshop—so often overlooked.

Much more interesting matter could be written with "Mac" as the text, but personal affection must not be permitted to trench upon the paper ration, besides which another pen will probably do greater justice elsewhere.

A beautifully symbolic wreath of laurel and white flowers was placed on the War Shrine in Hyde Park on Intercession Sunday in proud and loving memory of the C.T.O. men who have fallen in the war. Graceful serrated orchids drooped their fleshy delicacy tinged with red across the verdant leafage, their long trailing petals terminating in gorgeous clots of crimson—as of newly-shed blood.

Not so very long before this emblem of our mingled pain, pride and gratitude had been placed on view, a Paris *dirigeur* while testing one of the

duplex Baudot installations, instead of utilising the usual stock sentences, keyed the following charming fragment across the wires:—

"Entre les plus beaux noms leur nom est le plus beau  
Toute gloire près d'eux passe et tombe éphémère,  
Et comme ferait une mère  
La voix d'un peuple entier  
Les berce en leur tombeau."

J. J. T.

### ALEXANDER McEWAN'S FAREWELL TO C.T.O.

"It is certain that no retirement from the C.T.O. has been attended with more genuine and widespread regret on the part of those who have shared with him 'the trivial round, the common task,' and it may be said, without fear of contradiction, that he has endeared himself to everyone with whom he has come in contact."

This splendid tribute, from the Deputy-Controller of the Central Telegraph Office, well expressed the sentiments of the supervising body and all the friends of Mr. Alexander MacEwan, as they gathered around him at his farewell meeting in the Lecture Hall of the Sunday School Union, Old Bailey, on July 22nd.

The old minstrel Allan, in that thrilling passage describing to his dying chieftain, Roderick Dhu, the swift advance of the warriors of Clan Alpine to the battle of Beal An Duine exclaims:—

"Twere worth ten years of peaceful life,  
One glance at their array!"

and it was worth the gallant endeavour of nearly half a century honestly to win the above approval, emphatically confirmed, as it is, by all who knew him. He has "fought a good fight!" In our everyday phraseology, "He has played the game!"

We were all delighted to see Mrs. MacEwan acknowledging with ease and amiability the congratulations and kind expressions of old friends. Reminiscences, many and happy were called forth by the appearance of a goodly number of our old, retired friends such as Messrs. Warmington, Trollope, Farnan, Gough, Penney, Hilton, Harrison, Bird and Beetlestone.

In the unexpected and regretted absence of the Deputy-Controller, the chair was taken at 7 p.m. by Mr. Andrew Frew, who carried through his pleasant and, what we believe will be, historic duties with fine, sympathetic feeling, for his heart was in it all. The attendance of so many of the "Old Brigade" made a glad re-union, and happy and jovial experiences were exchanged. Reminiscences! yes, humorous, pathetic, practical, sometimes dramatic withal, as when:—

"They fought their battles o'er again!  
And thrice they vanquished all their foes!  
And thrice they slew the slain!"

The first stage was enlivened by suitable selections rendered by our musical friends, Messrs. Culley, Griffiths and T. Peel (violins), Poulton ('cello) and Len Coombes (piano), and the guest of the evening! One cannot keep old ducks off the water! Songs were rendered by Messrs. Bowden and Partridge, and a recitation by Mr. Knowles.

The presentation took the form of a handsome salver most artistically engraved with the following inscription:—

To express the love and esteem  
ALEXANDER McEWAN, Esq.,  
on his retirement  
JUNE, 1918,  
of his colleagues of the C.T.O.

"The rank is but the guinea's stamp  
The man's the gowd for a' that."

A very neat gold bracelet for Mrs. MacEwan accompanied the gift of the salver.

In a few well-chosen words, addressed to Mr. and Mrs. MacEwan, expressing his admiration for all that he had seen in the past, and his earnest hopes for a very happy future, and well-deserved rest, the Chairman made the presentation. Not one who witnessed will ever forget the generous outburst which greeted "Mac" on his coming forward to receive the gifts. All rose to greet him with cheers, then spontaneously rang out

"For he's a jolly good fellow,"

cheer after cheer succeeded the singing.

After letters from the Deputy-Controller and Mr. Alfred Morgan had been read, then followed congratulatory and eulogistic speeches from Messrs. Doree, Warmington, Trollope and Hilton. Amid renewed cheers "Mac" now rose. He thanked all for the remarkable demonstration of their affection and for the valuable gifts presented to Mrs. MacEwan and himself. With much feeling he referred to the presence there of his old and tried colleagues, Messrs. Warmington, Farnan, Trollope and others. He reminded us how he had gathered up life-lessons from his various official experiences, of the influence exerted over him by the sympathetic and magnanimous treatment of genial Alfred Askins, and by the frank, manly conduct of Mark Purdon. References to these and other gentlemen struck a very tender chord in the hearts of all as we thought of the kindly ways and manly deeds of the men who have long since "gone West."

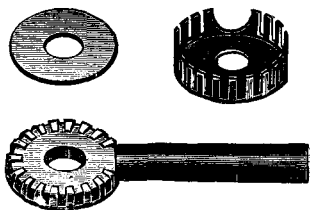
A successful meeting terminated with the singing of the "National Anthem" and "Auld Lang Syne."

Mr. MacEwan entered the Service from Charterhouse School in 1870 as a boy clerk and was then attached to the C.T.O., and with Sir William Slingo (the Engineer-in-Chief), Mr. James Bailey (Deputy-Controller) and others quickly became proficient in Wheatstone working, so that on his retirement he had performed no less than 48 years' service at T.S. During that long

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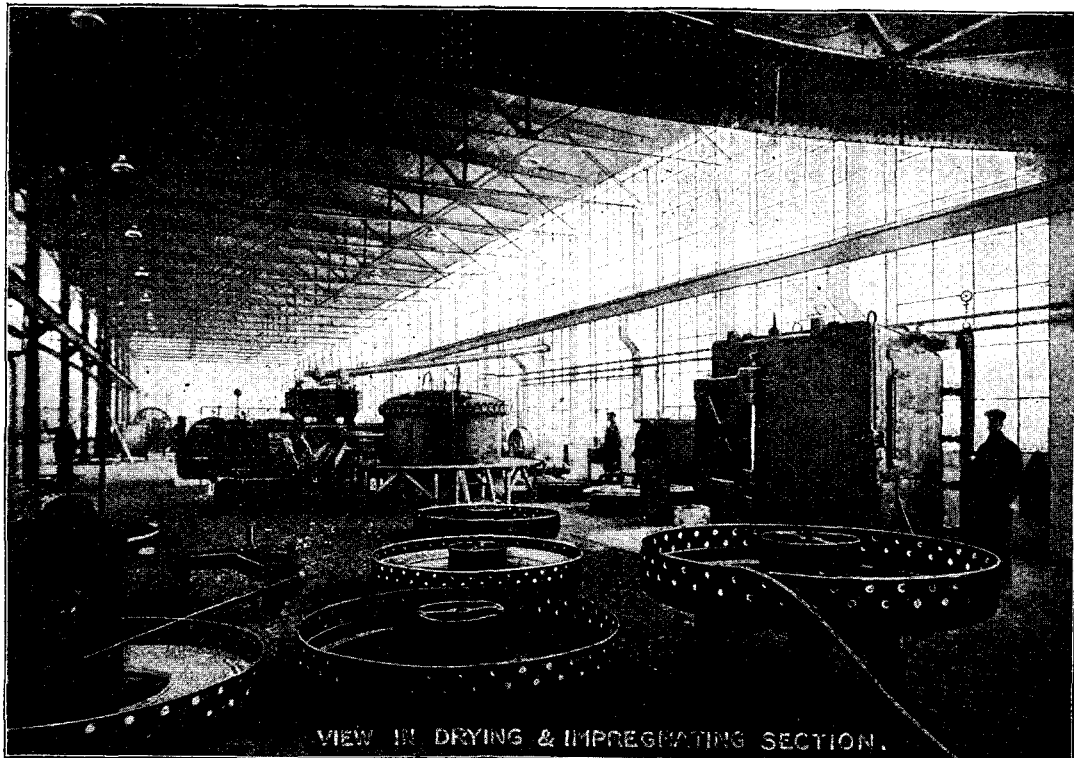
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period he also became a most ardent athlete, excelling in boxing, running, gymnastics, rowing and swimming—even at the present time indulging in the last-named nearly all the year round in the River Thames at Teddington. Along with Mr. Bailey he joined the Cadet Company of the old 3rd London Rifles and later transferred to the old 49th Middlesex Volunteers. He was sergeant and marksman at Aldershot in 1879 and whilst there that time won the Silver Medal in the 220 yards race in a field of 80 competitors. This victory secured for him an introduction to Prince Arthur (Duke of Connaught) and the late Dukes of Edinburgh, Albany and Teck. Mr. MacEwan was for some time a student at the Guildhall School of Music, and as a frequent visitor to Flanders became a most proficient linguist in French and German.

### CHEERFULNESS.

BY ADA E. CARPENTER.

ON turning up the word "Cheerfulness" in the dictionary one finds the following explanation given—gaiety.

There never was a time in the history of our lives, when this virtue was so much needed to be practised as it is at the present time, and I think I am correct in saying that never was it so hard to do so. During the last three years, what changes have taken place in every sphere of life, and not least in that of the Telephone Service! Men—yes and women also, have gone from our ranks in order to do their bit in the great struggle which is going on around us. We have all had to adapt ourselves to circumstances entirely new to us. Who for example would have thought in 1912, that we should be called from our beds, in order to take up duty at twelve or one o'clock at night? Who would have thought of sugar cards, who would have thought of the struggle to obtain most of the necessaries which are needed for our daily consumption? I do not think that there were many people.

Speaking of night emergency calls, when called from our cosy beds, what memories flash through one's mind. I well remember one midnight call, when the snow was beginning to fall. The familiar knock was heard on the door. I was up and dressed in a very short time (one war-time lesson learnt—the art of dressing quickly). On mounting a bicycle (which was too high for me) I started for the exchange. Before very long my lights went out, and I had the misfortune to fall off twice (no one about to see me). However, I remounted and set off again. On going down a certain street I was surprised to hear voices in the darkness saying, "Why, it's a 'lidy'!" For a moment my courage failed me, as I realised that it was two policemen speaking, and I had no lights. I therefore hastily called out, "It is all right—emergency call," and then peddled away harder than ever, with the snow driving into my face.

Now some of you may be saying "What has this to do with 'Cheerfulness,'" I will try briefly to explain.

When all these forces are at work, they naturally have their effect on us. We human beings are so much influenced by circumstances. When all is going well, what hardship is there in being cheerful? Not any at all—it is natural that we should be so; but when things are not going well with us, I think you will admit that it is very hard to "keep smiling."

Let us consider for a few minutes what it is that makes for "Cheerfulness." *First* on the list I would write down *good health*. Don't you all know how different everything looks when we are feeling well. Obstacles are more easily overcome, and we feel better able to cope with difficulties, which may beset us on our daily path. Therefore if healthiness means happiness, it behoves us to take care of our health.

If the health of the staff is to be good, there are several points to be considered. The ventilation and heating of the switchroom, good food, suitable clothing. It may seem hardly necessary to mention these points, but the cheerfulness of a staff depends more upon such details than one would imagine.

*Secondly*, I would say the influence of other people. Don't you know how nice it is to be greeted with a cheery "Good Morning," or perhaps not even a word may be spoken, but a bright face or a smile is like a glorious sunbeam, and has tremendous lifting power. One feels ready, or rather shall I say, helped for the day's work, and that smile or pleasant voice will be infectious, and the cheerful spirit will spread, and infect other people.

The "B" telephonist will allot her junctions in a bright manner, and the "A" telephonist will in turn plug into the subscribers' answering jack with a pleasant "Number please?" The subscriber in his turn will probably feel happier, and be pleasant in his manner towards other people. (All this will most probably take place unconsciously.)

*Thirdly*, Enthusiasm and Encouragement. I wonder how many of us are enthusiastic over our work. If we are truthful with ourselves, the number who would answer in the affirmative would, I think, be a small percentage of the staff.

The daily round *does* become monotonous, and there are days when we should welcome a variation from our work. Why is this? War strain—No—I would answer, "Human nature." In order to go on from day to day we need "Enthusiasm."

If this is so, how can "Enthusiasm" be brought into our work. Here I would bring in my second word "Encouragement."

Many of the failures in this life are due to *lack* of "Encouragement." Just a word of encouragement spoken here, an acknowledgment of good work there, how such words *encourage* one on to *further efforts*.

The day's duties performed satisfactorily bring a certain amount of satisfaction, but, even so, the humanity in us is pleased by a little acknowledgment and encouragement.

If work is performed inefficiently, naturally one's attention will be called to it. Therefore, if work is well done, why not remark upon it, and thus encourage one to further attempts to heights of perfection.

What effect will "Cheerfulness" have upon our work? It will help to take away the monotony—it will raise the standard—irregularities will be fewer, and hence better results will be obtained.

Now one may say, "What effect will 'Cheerfulness' have upon ourselves?" Why, we shall be able to overcome difficulties with greater ease, and in practising this virtue of "Cheerfulness" we shall be happier ourselves.

Let us each ask ourselves the question: "Is it easy to be cheerful?" To some people it is much easier than to others. Some people are naturally cheerful, whilst others are by nature pessimistic.

If we wish to worry, we have not far to look for a cause, but logically, is it worth while? Emphatically, No!—but at the same time it is often very difficult not to do so.

Have you not all met the person with a cheerful disposition, and rather envied such a one? At some later date one hears of the thorns that are strewn along that path, and the daily difficulties which beset her. Oh, the unselfishness of such a person to hide her difficulties under a smiling face!

Can you imagine the atmosphere of an exchange where each member of the staff practised this virtue. Difficulties will arise and must be overcome, but the greater number of them would be overcome or minimised assuming the staff co-operated in practising this, a very much needed virtue at this time—"Cheerfulness."

I will conclude with the following lines which were sent to a soldier in France. I think we could equally apply them to ourselves in our daily work:—

#### "JUST KEEP ON."

The onward path winds uphill all the way  
Through rut and mire;  
The rough uneven bits your footsteps stay  
Faint not, nor tire.  
Just keep on fighting, conquer all your fears,  
Just keep on waiting till the darkness clears,  
Just keep on *smiling*, tho' you smile through tears,  
Just keep on trusting, for 'tis faith that cheers;  
Keep on, on, on! Each day the victory nears.  
Press on—keep on!

When sorely tempted, don't forget  
That gold is tried by fire.  
Renew your ideals, character unfold,  
Be strong, aim higher.  
Just keep on struggling up through toil and pain,  
Just keep on loving tho' but scars remain,  
Just keep on climbing till the heights you gain,  
Hear that Well done, Courage you shall attain?  
On! Just keep on.





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The teams represent the W.A.A.C.'s (amongst whom some members of the London Telephone Service will be recognised) and the staff of St. John's Hospital.

## REVIEWS.

*Automatic Telephone Practice.* By Harry E. Hershey. Published privately by the author at Merriam Park, St. Paul, Minn., U.S.A.—This is an excellent book dealing with many phases of the automatic problem which we have not before seen treated in this way. There are chapters on the number and selective signalling of party line circuits and on the "reverting call," i.e., the automatic operation of a call from one subscriber to another on the same party line. A feature of the publication which prevents the chapters being scanned hastily is the list of questions at the end of each chapter concerning its contents.

The book is on sale in this country through Messrs. S. Rentell & Co., Ltd., Maiden Lane, Strand, Ss. in paper covers, and 10s. 6d. net in cloth.

## PERSONALIA.

### LONDON TRAFFIC STAFF (*Telephonists*).

Miss E. P. HARVEY, Assistant Supervisor, Class II, Trunk Exchange, resigned on July 7 in view of approaching marriage, and was presented by her colleagues with a silver cake basket and many other useful presents.

Miss R. M. WARE, Assistant Supervisor, Class II, Hop Exchange, resigned in view of her approaching marriage and was presented by the staff with silver teaspoons, tongs, and tea knives.

Miss N. A. THORNE, Assistant Supervisor, Class II, Paddington Exchange, has resigned to be married and was presented with a case of fish knives and forks and other useful gifts.

Miss C. G. WATTS, Telephonist, Park Exchange, has resigned to be married and was presented by the staff with a case of silver teaspoons and sugar tongs.

Miss MAUD H. DUNCOMBE, Telephonist, Trunk Exchange, has resigned in view of approaching marriage and was presented by her colleagues with a carving knife and fork in case.

Miss AMY W. ATHERTON, Telephonist, Trunk Exchange, has resigned in view of her approaching marriage and was presented by her colleagues with a silver teapot.

Miss ETHEL E. COLLINS, Telephonist, Trunk Exchange, has resigned to be married and was presented by her colleagues with a dinner service and many other useful presents.

Miss HISEMAN, Telephonist, New Cross Exchange, was presented by the staff with a silver teapot on the occasion of her marriage.

Miss R. F. DAVIS, Telephonist, Lee Green Exchange, has resigned in view of her approaching marriage and was presented by the staff with a pair of ornaments, fern pot and fern, and several other gifts.

Miss C. M. WOODMAN, Telephonist, Paddington Exchange, has resigned to be married and was presented with a case of fish knives and forks.

Miss E. A. WORPELL, Telephonist, Mayfair Exchange, has resigned in view of her approaching marriage and was presented with a cake basket, egg stand and other useful gifts.

Miss G. GORSTON, Telephonist, Regent Exchange, on resigning to be married was the recipient of an Irish linen bed spread, a case of silver teaspoons and other useful presents.

Miss ALLARDICE, Telephonist, Regent Exchange, has resigned on account of her approaching marriage. She was presented with a silver and cut glass preserve jar.

Miss F. A. MCSORLEY, Telephonist, Hampstead Exchange, has resigned owing to marriage. She was presented with a tea service by the staff.

### PROVINCIAL STAFF.

Miss MINNIE SWANN, Clerical Assistant District Manager's Office, Bristol, on her transfer to Birmingham, was presented by her colleagues with a case of electroplated teaspoons as a slight token of their esteem.

### HEADQUARTERS.

Mr. R. UPJOHN, Statistical Section, Telephone Branch, Secretary's Office, was presented with a set of cutlery by his colleagues, on the occasion of his marriage.

Miss D. WARE, Temporary Clerk, Telephone Branch, Secretary's Office, was presented with silver sweet dishes and a preserve jar by her colleagues on the occasion of her marriage with Corpl L. V. Bull, attached to the Intelligence Office.



Miss EDITH AMY BECK, who received the medal of the Most Excellent Order of the British Empire.

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The attention of our Readers is directed to the following list of Boarding and Apartment Houses.

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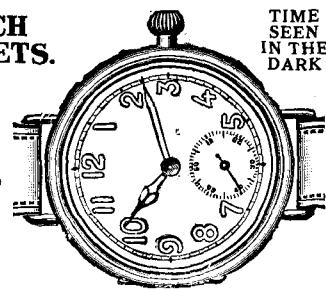


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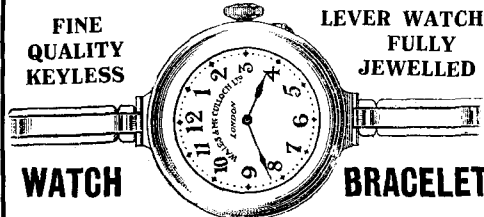
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