

THE National Telephone Journal

Vol. V.

SEPTEMBER, 1910.

No. 54.

TELEPHONE MEN.

LII.—ALFRED BRAUN GILBERT.

ALFRED BRAUN GILBERT was born at Erdington, Birmingham, in 1873, and educated at King Edward VI Grammar School, Birmingham. In the January of this year he completed twenty years' service, having entered it at Birmingham in 1890, under Mr. Alfred Coleman, who was then the General Manager for the Midland counties. In that city the Company had a workshop, where apprentices were first trained and all classes of work undertaken; switchboards for small exchanges were constructed and additions to existing switchboards in the Midland counties were carried out by the shop mechanics. Apprentices had, in addition, experience of switchboard maintenance, and afterwards received training in the Instrument Department.

In 1892, Mr. Gilbert was transferred to the Coventry centre as Inspector, and had all round experience, taking his share in the opening of several new exchanges and in the building of trunk routes.

In 1895 he was transferred back to Birmingham as Service Inspector for that district. That was in the days when Birmingham embraced what now is three districts, when single circuits were the order of the day, and when operating supervision was hardly thought of. Everything that should not happen did happen from the subscriber's point of view; and nothing happened that should not happen from the operator's point of view, and it was no easy task to adjust matters.

Mr. Gilbert was temporarily placed in charge of the Coventry centre for a short time twelve months later. During that period he had the experience of opening a new exchange at Nuneaton in the morning, and finding on his return to the exchange after lunch that most of the working indicators and other apparatus had been fused by a violent thunderstorm which visited the district in the interval.

When Coventry became the headquarters of the then new South Midland district he was appointed Local Manager at Derby for the Derby and Burton-on-Trent centre under Mr. W. W. Cook, the Nottingham District Manager.

After a stay of three years Mr. Gilbert was appointed Local Manager at Nottingham, Mr. E. Williamson then being District Manager. Here he assisted in a big scheme of metallic circuiting the single lines, extending the underground system, opening new premises, and changing over from the magneto system.

In 1902 he was appointed District Manager for the new district of Exeter, which had been formed out of the Plymouth district, serving first under the superintendence of Mr. R. Shepherd, and later of Mr. R. A. Dalzell. Mr. Gilbert received further promotion in 1906, when he was appointed Chief Engineer for the Glasgow district, where many plans have been drafted and re-drafted to meet the many altered circumstances which Glasgow has been subjected to during the last few years.

The difficult conditions under which telephonic affairs in Glasgow have had to be conducted have entailed an exceptional amount of work on the part of the staff, and in all this work Mr. Gilbert has contributed a full share, bringing to bear on it the scientific spirit which he commended to the telephone society in a paper published in this JOURNAL in May, 1908.

Mr. Gilbert has taken very great interest in all educational and social matters in Glasgow, and was chairman of the Glasgow and West of Scotland

Telephone Society for the session 1909-10.

Whilst in the south gardening was his chief recreation, but in the north Mr. Gilbert says he finds photography more interesting than golf.



SOME TRAFFIC STUDIES.*

BY PERCY SANSOME, *Leicester.*

SUPERVISORS AND THEIR WORK.

It will generally be agreed that you cannot overestimate the importance of the supervisor, who is directly responsible to the clerk-in-charge for the conduct and discipline of the operators in her sections and for the service they are giving. You might call her the moving spirit of good service. Supervisors should be expert operators themselves, assiduous and, above all, enthusiastic with it. One thing the Operating Department should bear in mind is, "without enthusiasm the service can never reach a high standard of efficiency."

Team work as a whole should be strictly encouraged by the supervisor, and in the case of a rush of calls (which is by no means a rare occurrence), she should help them to clear. The operator looks to her for guidance and assistance, and when irregularities appear, she should show the operator her faults at once, and the remedy to be applied.

Supervision should pay for itself. There is no need for supervision if it does not result in improvements, and therefore increased profits. An interesting point crops up here, that is, how many operators should a supervisor control? I do not know if the Company have any standard number.

TEAM WORKING.

There is no doubt about the importance of this. If a good service is to be given, team working should be strictly encouraged and adhered to.

There are two methods of team working:—

First, the whole operating staff working as one team; and secondly, what might be called "sectional teams," that is to say, so many operators working as a team under the charge of a supervisor. They both have their advantages, but a diversity of opinion exists as to which is the best.

Personally, as regards team work, I have not the slightest hesitation in saying that it should be done on the whole and not in sections. I fail to see where a gain can be obtained in having branches of co-operation: and this is what sectional teams mean. As an analogy, take the case of a war; each battalion is in some way a support of another, and the same principle applies to exchange operating.

It is an operator's duty to endeavour to get as many calls through as possible, and this is what she should live up to, giving help and receiving help ungrudgingly.

Reverting to sectional teams, the only good argument in favour of separate teams is that it instils a spirit of competition among the operators, and also tends to cause the speed of answering to be slightly quicker, owing to the keen competition among the teams. But I may say that any figure of merit obtained would yield only a qualified result and engender endless discussion, which more often than not causes bad feeling. Further, I fail to see how anyone with our existing plant could possibly get a correct average of separate divisions.

1a.—Whole Team Working.

A B C D E F G H I J K L M N O
 X Y Z

1b.—Sectional Teams.

A B C D E F G H I J K L M N O
 X Y Z

FIG. 1.

In Fig. 1, 1a represents "whole team working" and 1b "sectional team working." The advantage of whole team working is obvious.

1b is divided into three separate divisions, denoted by X, Y and Z, in charge of one supervisor for each division. It will be seen that if the speed of answer is slightly improved the effect will be more than neutralised by the fact that operators E and F and J and K are working in direct opposition to one another, showing that the

method is wrong in principle. In my opinion there is nothing to warrant divisions working against each other.

This is a very difficult matter to explain clearly, and I will reduce the argument to this. It is said that with "sectional teams" and competition among operators a quicker service is given. It is also known that with whole-team work a quicker service is given, and in face of this latter assertion some advocate making points in the board, represented by E F and J K, where no team work must take place. It may be argued that the gain through competition is greater than the loss sustained on points E F and J K; therefore you must increase the scale of competition by decreasing the size of the competitive divisions, or, in other words, you are driven to separate operating.

Another disadvantage of competitive divisions is that on cohesion exists among supervisors.

We will suppose that supervisor A is attending to a subscriber on E and completes the details of the call; but if supervisor B is at J, and is also wanted at F, supervisor A would not do anything with F. But why? If she did it would tend to damage her division's figures.

The personal element, not only as regards the operators, but more particularly as regards the subscriber, comes into play, and I consider it is unfair for any division to be compared until the subscribers' element is eliminated.

Then comes an interesting question. What is the best way to arrange operators to obtain the quickest service with efficiency? Personally I consider a good arrangement is to put a slow girl between two sharp ones, getting an arrangement like this:—(S indicates sharp, L indicates slow) S, L, S, L, S, L, and so on. This will show how wholesale team work operates—the slower operators are all covered by the sharper ones. But in any system of "sectional team working" this facility is lost.

I have from time to time noticed that operators have a strong tendency to answer subscribers on their own position first, irrespective of the order of calling. Preference in this way should not be given, as it is bound to cause undue delays, and upset any observation figures that might be being taken; the order of calling, to obtain a uniform speed of answer (and that is just what is required), should be rigidly impressed.

Team work is one of the principal factors of giving good service, and to be absolutely effective should extend the whole length of the switchboard. There should not be any points even where it ceases or diminishes, except, of course, where it cannot be avoided, such as at the dead ends, when the load should be somewhat below the average to compensate for limitation of team work at these positions.

SERVICE OBSERVATION.

This system is frequently described as the ways and means of checking the operators.

The particulars that can be obtained from this source at the end of the month are very interesting, and provide a means whereby the quality of the service can be expounded. Both the speed of answer from operator is obtained, also that of the subscriber, which is a matter that I shall refer to later. The accuracy of the connection, and numerous other items, so that with details supplied, the supervisors and others can see the results of their own work.

It may not be clear to many present in what manner the tests are handled. The chief apparatus is a headgear receiver, ordinary two-way plug and cord, and a "chronograph stop watch" with split seconds.

Only one call at a time should be observed, whether that call lasts for 30 seconds or 30 minutes or even more. The call is timed step by step and entered in the columns marked. Take for instance an outgoing call. Immediately the subscriber rings, he energises the indicator on the observation board, the same time as at the switchboard, the watch is immediately started. When the operator answers, the time is entered, the same when the subscriber answers, also the time the conversation finishes, and last the time from ring off to the operator taking the plug out and disconnecting.

When an incoming call is received, the indicator drops and same manner of timing is gone through.

In working out the speed of answer, the average is considered, together with the percentage of calls answered within a given time, say, two, three, four, five, ten, twenty seconds.

* Extracts from a paper read before the Leicester Telephone Society.

A good average may appear, yet, contain a number of calls answered in 25 to 35 or more seconds, the average being kept down by a large proportion of calls answered in two, three, or four seconds. But this is not so satisfactory as when a three to five seconds' answer consistently is given, with no very slow answers, and operators should bear these remarks in mind, as a few very slow answers cripple the averages. Irregularities are denoted by a stroke in the appropriate column, of which there are some twelve for operators' irregularities, and six for subscribers'; provision is also made for recording cases in which the call is affected by maintenance trouble. A few of the former are, "Failed to answer 'O.K.," "Failed to repeat 'O.K.," "Asked second time for number, "Cut off," etc.; of the subscribers' irregularities, "Failed to hold line, "Called wrong number," "Left telephone before completion of connection."

A frequent change of lines for observations is made, and they are selected indiscriminately from all positions of the exchange, so that the results are representative of the whole of the exchange.

Having already dealt with lines engaged and their remedy, another lost call is "No reply." These of course have varied reasons for occurring:

1. Subscriber may be slow in answering.
2. Not in at time of call.
3. Subscriber busy, could not answer.
4. Faults on circuits, etc., etc.

It is not an unheard of thing for a subscriber to call the exchange after an inward call has been abandoned, and enquires "Who is calling me?" The operator is not in a position to say, and should use the expression "I am sorry I do not know; there is no one on your line now."

The efforts of the Traffic Department seem to be in one direction, that is in giving a quick service for the operating, which is entered in a column marked "Time taken to answer and clear." No effort seems to be made to get the time "Called subscriber answered," reduced.

Every effort should be made to get the subscriber to respond promptly to the call, and in the case of a subscriber having the option of a wall or table set fitted, the table set should always be recommended from a traffic point of view, as the reply is always quicker from this class of instrument, because it is nearly always at the subscriber's elbow, whereas if on the wall, it has to be walked to. The curve which I have prepared is on the block system, and will readily explain the advantage from a traffic point of view of the table set over the wall set as regards speed of answer from the subscriber. Of course the time varies, but I might say only business premises were selected for the test.

On ten different occasions the time was recorded by the chronograph stop watch on ten subscribers with wall sets, represented by the shaded portion in red, and ten table set subscribers, represented by the blue shaded portion. The vertical side or abscissa represents seconds, and the horizontal side or ordinates represents number of tests one to ten.

One curve is superimposed on the other; the excess of red is the lost energy in the exchange or delay in speed of answer over table sets.

The figures resulted as follows:—

Test No.	1—Wall set reply	Seconds.	Table set reply	Seconds.
" 2	" "	93	" "	64
" 3	" "	116	" "	110
" 4	" "	93	" "	66
" 5	" "	99	" "	73
" 6	" "	96	" "	71
" 7	" "	119	" "	56
" 8	" "	104	" "	63
" 9	" "	93	" "	78
" 10	" "	107	" "	87
		103	" "	77

1,023

741

Seconds in favour of table sets = 1,023 - 741 = 282.

Average speed of answer from wall set = 10'23 seconds.

" " " " table set = 7'41 "

Average gain in time over each call by table instrument 2'82 seconds.

The method of dealing with observations is not to discover individual operators at fault, this is rendered practically impossible by team work, and if it were desirable to do so, the service and quality of same does not entirely depend on the operator.

If the records are correctly taken, and analysed at the end of the week or month, investigation often results in removing trouble of a general nature. Taking the case of subscribers who are notorious for long delays, these people can be specially watched and the remedy applied, a quiet talk with the superior official would, I am sure, result in a quicker service from those subscribers. In some of my recent tests, it is surprising how slow some of them are in answering, and in other cases the reverse is the effect. In a few cases of undue delays, I have mentioned the matter, and it is remarkable how quickly they see their mistake, a further observation is taken, and the results obtained show a marked improvement.

In the case of irregularities, such as failing to say the name of the exchange before the number, or, failing to repeat "O.K.," particulars can be obtained from the summary at the end of the month. Thus the supervising staff can be instructed to keep a careful look out for repetitions of these irregularities,

Personally I think the operators should be told and cautioned generally with regard to an irregularity that appears to be numerous. As a matter of principle, attempts should not be made to trace delays and irregularities to individual operators by means of the "Day observation forms." In any case an analysis for this purpose would be inaccurate, owing to team work, reliefs, etc., and to try and allocate faults on such a doubtful basis would be wrong.

THE NATIONAL TELEPHONE STAFF DISTRICT BENEVOLENT SOCIETY, BOLTON.

CERTIFICATE for month of May, 1910.

Total number of members, 151.

Total number of members who have paid their subscriptions during the month, 150.

Total amount of subscriptions due for the month, £2 13s. 2d.

Total amount of subscriptions received during the month, £2 8s. 11d.

AIRMEN AND TELEPHONE MEN.

"I suppose you will find that the routes round Pollok Estate grounds want a good deal of attention this afternoon," said a fellow engineer to me that morning.

"What's the matter with Pollok?" I asked, "there are only two wires on that route."

"Oh, the aviation display starts there to-day," he said, and I noticed the duplex edge.

"No," I said, with simple dignity, "duty calls elsewhere, and with me duty is law"; but fate had linked me with aviation that day.

About midday I received a command from the office to raise an army, and proceed by forced marches to the aviation ground, as the air of Pollok was dense with airmen tangled in the wires.

I collected a relief expedition and made a dash for the pole.

On reaching the entrance we were met by a deputation of stewards, and assured that, though no actual entanglements had occurred to date, such were imminent, that the aeroplanes were being deflected from their course, that wires are not considered a natural hazard in the flying game, that, in fact, we were spoiling the show, and the crowd wanted its money back.

"Be comforted," we vouchsafed them, "this shall not be."

The stewards conducted us to the enclosure, but no further, it being there imparted to us that stewards, committee men and such minions do not lightly enter the bodily presence of live airmen.

I halted the army inside the enclosure, but without the danger zone, and proceeded on foot, alone and unarmed.

There arose an awed murmur from the multitude, "Oh, these are the telephone men."

The airman was seated on the machine.

I knew he was the airman because he had a square jaw and smoked a cigarette. All serious students of the ha'penny illustrated press know that aviators smoke cigarettes. It shows reckless daring.

For a moment we two strong men faced each other, then I spoke my lines. "I'm from the telephone company," I said.

After a pause for effect I added, "We've come to shift things," and the army glanced to the refreshment tent.

"Welcome, brother," said the aviator, or words to that effect, "wait till I come back and I'll show you."

Then he started the engine, and realising that I was, so to speak, a point in the proposed route, I recovered myself at full value.

When, later, a man donned the climbers and went up a pole, it was something in the nature of a spectacular ascent.

"We are getting some excitement for our money now," said the crowd, "he can go up."

LONDON AND ITS ORGANISATION.

CONTRACT DEPARTMENT.

By J. STIRLING, *Metropolitan Chief Accountant*, and W. F. TAYLOR, *Metropolitan Contract Manager*.

(Concluded from page 98.)

Methods adopted to secure new business differ very slightly in the several districts, notwithstanding the class distinctions which in some cases form a very marked line of cleavage between one area and another. With most commercial people, whether Jew or Gentile, rich or poor, the first question to be answered is "will it pay?" If an affirmative can be proved, the contract officer's work is done. In a rich city like London, there are naturally numberless people to whom expense is no object; with such, the usefulness of an adequate telephone system is the main point to be advocated and driven home. Between these two classes is a vast number who have to be convinced that a telephone service is a necessity, and that not only can they afford it, but that they cannot afford to do without it. The arguments of the "new business" man do not vary much; the style of putting them must naturally be adapted to the position of the prospective subscriber—one would not be wise to talk to a bishop, for example, in the free and easy manner which suits the bookmaker—but the main lines of advocacy are the same. One contract officer puts it, "I show what I have to sell to the customer to such advantage that I seldom fail to accomplish my object—viz., to get the person I am interviewing to sign a contract."

Telephone contracts are signed under all sorts of circumstances, but surely the case where a canvasser interviewed a lady while she was having a bath in a bath-cabinet, then passed the agreement for an extension instrument through the neck aperture from which the lady's head protruded, and ultimately obtained it signed, albeit in a somewhat "wriggly" manner, must take pride of place for originality. Mrs. Grundy, we may mention, was not present.

Private branch exchanges on the measured rate have developed considerably during the last year or two. Bearing in mind the existence of a flat rate tariff, this growth has been rather remarkable. Of course, when once a few representative firms had been persuaded of the benefits to be derived from an adequate and properly thought-out system, the power of example was a formidable lever with which to move others. The progress in this branch of the Company's business is best shown by the following figures, taken up to the end of December in each year:—

	Private branch exchange	
	Lines.	Stations.
1907	124	886
1908	431	2,347
1909	707	3,363

Certain large hotels in which installations were fitted a few years ago on a special basis are not included in the above. A *sine qua non* of success as a business venture, particularly in large departmental stores and similar places of business frequented by the public, is a complete advertising scheme to make customers aware that the instruments at all the public counters and boxes can be used by them on payment of a small fee. So successful has this been in at least one case that something like £300 a year is received by the subscriber in fees, and goes a considerable way towards paying the annual charges made by the Company.

In recent years the erection of large blocks of residential flats has been one of the striking features of London's building development. It would naturally be thought that these would present ideal conditions for the establishment of private branch exchanges. Two sets of circumstances, however, have combined to falsify our hopes in that respect. The first is the disinclination of landlords to undertake the collection of fees from their tenants; it has been suggested that those who occupy flats are very keen in scrutinising their bills for "extras," and require each item to be so carefully explained and proved that the management avoid all additions to them as if they were the plague. There are probably two sides to

that story. Anyhow, the difficulty is one which we have not found it easy to overcome. Trouble No. 2 arises on the question of operating. Where only a limited number of the rooms have extensions installed, it does not pay to have a properly qualified operator at the switchboard. The patient and long-suffering hall-porter, therefore, has the answering of telephone calls added to what he considers the already heavy burden of his responsibilities; when he does answer a call, as one of many other matters requiring attention, he may not be exactly in that chastened mood which can bear with equanimity the choice reproaches of an angry caller. The inevitable explosion results in the telephone service being discredited, and the Company blamed. Great care has, in consequence, to be exercised in accepting contracts for such buildings, as, unless efficient operating can be guaranteed, it will be far more satisfactory to the tenant and the telephone administration alike to have a direct exchange line to each suite of rooms in which telephone service is required.

To a man whose sense of humour has not been blunted by disappointing results, contract work affords some moments of quiet enjoyment over the curious things people will say and do. Was it facetiousness, or a delightful buoyant hopefulness in the future of scientific achievement, which inspired the gentleman who asked a contract officer if he thought that in the near future subscribers in London would be able to communicate with people in South Africa. That useful phrase "Wait and see" had not then been invented, so the answer was "Some day, perhaps: not yet." To which came the reply, "Well, when they can, give me a call."

There is also the case which, with slight variations, we meet almost daily, of the lady who, when it was explained that her line could not be got through, owing to wayleave difficulties, could not understand why people could be so disobliging. Only a short time before, the good lady had flatly refused to allow a neighbour's line to be attached to her property. It ought to be said that inconsistencies of this kind are not a prerogative of one sex; the difference probably is that men see and even admit the inconsistency of it; the ladies somehow can't or won't.

The contract officer certainly had the laugh on his side in the end, when a small group of tradesmen openly boasted that they could use a certain neighbour's telephone free. The free service was very promptly stopped, and three new orders for exchange lines booked. Pirates of that kind are worth watching for; the exchange staff can give valuable help in their detection.

Revenue-earning possibilities played an important part in the outlook of the lady who wrote to say that she would be pleased to see someone *re* the telephone, and then explained to the contract officer that as her shop had a formidable array of chimney stacks it had been suggested to her that the Telephone Company would pay "something handsome" to have the telephone attached to the chimney. Such childlike faith deserved a richer reward than was bestowed.

Call office development has had a good share of Contract Department attention. Up to a few years ago, one had to search very diligently for a public call box, and then the chances were against one being found. Now all that is changed, and London will bear comparison with any large city in the effective provision of public telephones. The old theory of a call office in every block has now gone by the board, and it has been realised that while such a rough and ready ideal might have had some force in undeveloped and congested areas, a more scientific principle is required to secure economical working and adequate distribution according to the needs of the public. There are streets and places of rendezvous in London where it would be almost impossible to have too many call offices, and it is in such localities that all our best-paying ones are situated. Obviously there are other neighbourhoods where no amount of telephone facilities will succeed in cultivating the telephone habit to a paying extent; as call offices cannot be installed on a philanthropic basis, and the expense of maintenance is considerable, very great care and discretion must be exercised before the Company is committed to the heavy expenditure involved. It has been said, "If it doesn't pay, we can take it out;" the charges involved render this a costly form of procedure, and a policy of forethought scarcely needs to be commended as infinitely superior to that of cutting your losses. The total call

offices in the Metropolitan area at Dec. 31 in each of the last four years was as follows:—

1906.	1907.	1908.	1909.
2,140	2,779	2,959	2,996

The reason for the drop in the increase for 1908 and 1909 is that in the former year we began to call a halt in the "forward" policy of planting call offices at more or less arbitrarily prescribed distances from each other, and also commenced a salutary process of weeding out the worst specimens of unsuitable and non-paying boxes. The result was a pronounced diminution in the rate of growth and a welcome increase in the average takings per box, with, of course, a corresponding decrease in the percentage of maintenance expenditure to revenue.

Of the 2,996 call offices at the end of December last, 357—12 per cent.—were at railway or tube stations. At many of these the number of boxes could with advantage be trebled and quadrupled were space available, or could the authorities be persuaded to grant the further facilities. There is an undoubted preference on the part of the public for call boxes not situated in shops and private premises; hence the rapidity with which the takings at an additional box in a railway station reach the level of the old one without in any way reducing the amount taken at the latter. It also shows that there is an immense public demand for the service, and it is difficult to understand the policy of the railway management which declines to allow provision to be made for it.



FIG. 4.

The records of busy lines furnished by the Traffic Department are most useful in pressing for auxiliary lines. In the City it is estimated that in at least 60 per cent. of the cases referred from the exchanges new orders are obtained. As a rule the subscriber when approached denies with more or less warmth that his installation is inadequate to deal with the traffic. The figures of engaged calls, and probably the telephone numbers of a few good customers who could not get through to him, however, constitute evidence which it is rather difficult to shake; and if it is well rubbed in that business is probably being lost through his failure to appreciate the true value of an immediate service, the order can generally be pulled off.

Training staff for contract work is a topic upon which much could be said. There can be little doubt that a proper school such as has been established for operators would solve many of the difficulties met with in securing suitable men and giving them the necessary education in the telephone business. It is said that experience will soon enable a man to feel his feet; that is generally a more costly method than telling a man all you can first and leaving it to experience to tell him how best to apply his knowledge. Considerable care is naturally bestowed on the process of selection, and in many cases it is manifest, after a few questions, that applicants are quite unsuited for the work. A candidate having been

selected, he, has to apply through the Ocean Accident Guarantee Corporation for a guarantee of £25 in favour of the Company; this was found necessary to prevent the entrance into the Company's service of a certain undesirable class of man who had previously made a happy hunting ground of the department for a brief space, then departed compulsorily, and left to others the reaping of a harvest of weeds which he had sown. Literature bearing on the Company's work and rates is then given to the new officer to study, after which he is taken in hand by the contract agent, instructed in the Company's methods, shown how to fill up contract forms properly, and given the main arguments necessary to clinch a contract. The "dummy" interview is the next stage through which the pupil has to pass, an experienced contract officer playing the part of prospective subscriber who wants to know a lot, and the contract agent being a combination of audience and judge. Following this last ordeal, the novitiate is completed by a short turn "on the road" with an experienced officer, and a visit to the exchange, where the elementary points of switchboard working are made clear to him. This curriculum has worked well in practice, and to an adaptable man ought to be sufficient for most everyday purposes.

All "sales" work is under the charge of a sales manager, who deals with orders throughout the whole of the Metropolitan area. Competition is very keen, and good orders have to be wrestled for with many eager combatants. Unfortunately a good deal of "shoddy" work at cheap rates is done by worthless firms who are here to-day and gone to-morrow; the Company having a reputation to maintain cannot undertake low-grade jobs of that kind, and consequently business people whose knowledge of telephone equipment is limited pass orders elsewhere, only to regret it later when "the chickens come home to roost." The guarantees given with many of the cheap installations fitted to-day are not worth the paper they are written on, as long before the guarantee has expired the firm giving it has. In the long run the policy of sound work tells, and during the last year or two many orders have been got because it is known that the Company can carry out orders by skilled workers in a skilful manner.

It is requisite that sales officers should be able to estimate on the spot for installations, unless of a complicated character. They must therefore possess some technical knowledge, and for that reason are more difficult to obtain than contract officers. One effective method of keeping sales canvassing staff at a minimum is to encourage all the company's employees in every department to bring in sales orders or pass on any information which may lead to an order being secured. Inspectors, fitters, new business and cessation officers—all who come in contact with the public can help. The policy has certainly been successful in London, but even here there are still wider possibilities in store if the desired interest could be engendered. The commission paid helps the officer concerned; the order got helps the Company's business, and thus assists in providing work for other members of the staff. The number of sales orders dealt with during each of the last two years—

1908 =	2,138
1909 =	2,430

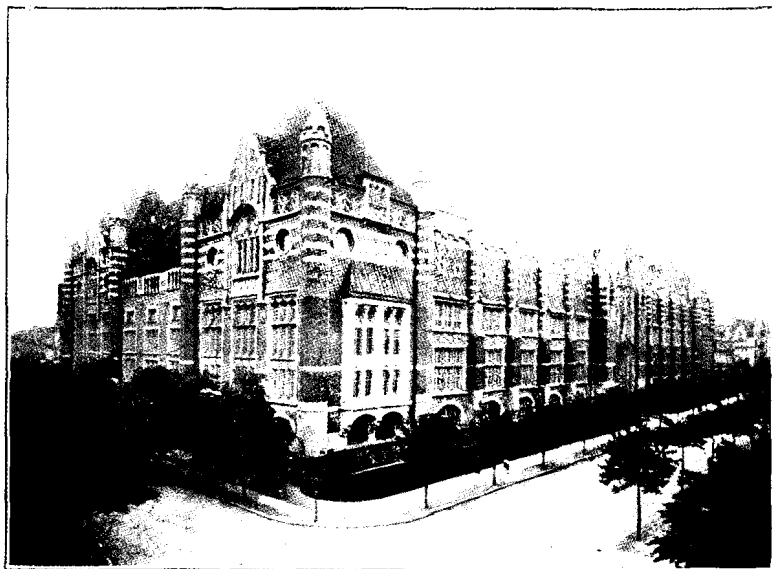
shows that the department is doing valuable work. Many of the jobs are only for repairs and replacements at existing installations, but others are substantial contracts, involving a fairly heavy outlay, and bringing in a commensurate profit. We are satisfied that it pays to foster this branch of the business.

There are many ardent workers on the contract staff. That sounds rather trite, remembering the assiduity with which enthusiasm and other virtues have been drilled into them, through the columns of the JOURNAL, and in other ways. However it has come about, they have certainly imbibed the spirit so alluringly and eloquently presented to them. Contract officers, it must be admitted, have not an easy time of it; the work is no doubt often interesting, and may even be exhilarating, when trying to convince a prospective subscriber that he is being given advice "entirely for his own good." The other side of the picture comes on "off" days when orders are scarce, and no amount of persuasive eloquence seems to exercise any effect; then discouragement and depression set in, and the poor canvasser "dreams o' nights" of signed contracts which elude him as he is about to grasp them. The best man is he who accepts such ups and downs of fortune

philosophically, who is equally cheerful whether the maid announces him as "the gentleman from the Natural Telephone Company" (as has happened more than once) or does not announce him at all: who puts his best foot foremost on good days in order to make up for the ground lost whilst the order barometer was low. There are many such in the Company's service, and they are the men upon whom the Chief relies when things are inclined to get stale, and a special effort is required to convert them to a happier and more inviting condition. It is by the work of such men that successful Contract Departments are built up.

THE NEW HAMBURG EXCHANGE.

With the opening of the the new Hamburg Exchange the process of modernising the extensive telephone system of that town is brought to a conclusion. This new exchange, with its ultimate



capacity for 80,000 lines, constitutes the largest exchange in the world. Special new and difficult problems arose from the enormous size of the exchange, but the principal point of view in the technical construction was to attain the greatest possibly celerity in getting connections through and to place before Hamburg a service worthy of the importance of its commerce. The common battery system now preferred as the best for all large systems was introduced, together with the call distributing system in conjunction with a divided board, by the help of which each calling subscriber on receipt of his request is in a moment directed to an unoccupied operator, and thereby the certainty of the desired rapidity of working is assured.

The call distributing system rests on the principle of a division of work founded on a close observation of telephone service and its variable traffic. Whilst under the ordinary system each operator is allotted a certain number of subscribers' lines all of whose connections she must carry out alone, under the divided-board system the incoming calls before being answered pass to a position where they are at once so divided amongst the total number of operators that each operator has always only one call to attend to at a time. In this place, the distributing positions, are brought in closely packed arrangement the glow lamps representing the calling signals of 40,000 subscribers' wires. Thence a number of junction wires leads to each operator in another part of the office, the answering positions. Special visual signals at the distributing positions denote at all times which of the answering operators are busy and which are ready for the receipt of calls, and therefore unoccupied. When a call is received at the distributing board it is at once passed on to one of the latter operators, who asks the subscriber for the group-number he requires. In the Hamburg Exchange the subscribers' wires are divided into groups of 10,000. On the answering operator devolves the calling of the connecting

office, which consists of four divisions corresponding to the above-mentioned groups. As the distributing office is informed as to the answering office, so the answering office is able to learn whether the operators of the connecting office are busy or unoccupied. Here also the call always reaches an operator who is ready forthwith to make the connection. The connecting operator asks the number of the desired subscriber and makes the connection. The calling of the wanted subscriber is repeated automatically at intervals until he replies. The principal features of the divided-board system are quick completion of connection, however busy the traffic, avoidance of overloading of one part of the staff during simultaneous idleness of the other part, and therefore better utilisation of the working strength, and finally an increased security to the subscriber of quickness of connection due to the even loading of individual operators.

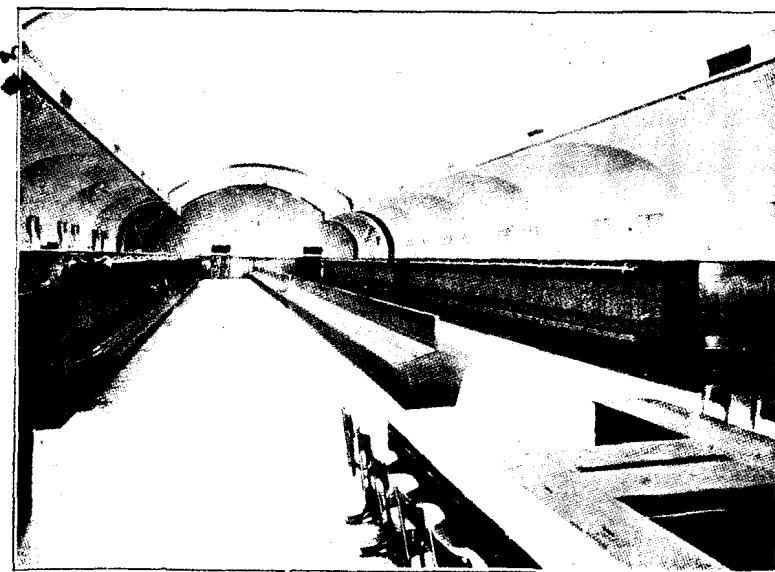
The new Hamburg Exchange* is a building expressly designed for the purpose and erected by the Imperial Postal Administration at the corner of Binder and Schlüterstrasse. In its external appearance alone the building gives evidence of the enormous extent of the plant within.

The room containing the local exchange is situated in the uppermost story, is of hall-like shape, 20 metres broad, 9 metres high and 132 metres long. Both ends of the hall are cupola-shaped, and in one of them the distributing office is located. Along the length of the hall run the four imposing rows of switchboards for the four groups of subscribers, and in the middle are the tables of the answering board. The simplicity of the arrangement according with the architectonic decoration of the hall gives the observer a pleasing impression of suitability of all the parts.

An adjoining room on the upper story contains the supervisory office of the local exchange, in a way the brain of the establishment. From here the service in all its branches is watched and regulated, faults are observed, the idle made attentive, the varying load of traffic is observed, and therefrom the requisite number of staff is determined.

To the technical plant of the local exchange belong 112,700 relays, which close and reopen the circuit for the calling signals of the numerous lamps—in all, 70,000.

Fifty-five thousand jack strips (1,100,000 single jacks) are installed, and in order to connect these jacks with one another and with the relays, keys, connecting cords and other apparatus inside the exchanges, 1,000,000 metres of cable were employed, the single



wires of which comprise a total length of 35,000,000 metres. There is a total of 15,000,000 soldered connections.

The current for the microphones of all the subscribers' apparatus, for the numerous signals and the relays is supplied by two

*An illustrated article describing this building appeared in our issue of November, 1906.

accumulator batteries, each possessing a capacity of 7,800 ampere-hours and sufficing to cover the requirements of the exchange for 24 hours.

For the service of the total telephone traffic of Hamburg, Altona and Wandsbek a staff of 1,500 is employed, for whom commodious locker accommodation, refreshment and rest rooms are provided in the new building.

The trunk exchange to accommodate the long-distance traffic is situated in the hall on the second floor. Like the local exchange it is fitted with the most modern apparatus and has been in operation since September, 1908, and by its good working has given satisfactory evidence of the suitability and excellence of its arrangements. The trunk boards consist of twelve double rows serving 240 trunk lines, connecting with the whole of Germany and the most important cities of neighbouring countries.—(Abstracted from an official pamphlet, *Das neue Fernsprechanst Hamburg.*)

TELEPHONE WOMEN.

LXXIV. MARGARET ELIZABETH EVANS.

MISS MARGARET ELIZABETH EVANS, Clerk-in-Charge, Penarth, joined the Company's service early in 1900 at the Cardiff Exchange, and occasionally acted as a Supervisor in the Cardiff Exchange. She was transferred to Penarth as Clerk-in-Charge in May last.



MARGARET ELIZABETH EVANS.

Miss Evans is very enthusiastic in her work, is very ambitious, and has very high ideals of what telephone service should be. She has been a member of the Cardiff Telephone Society since its inauguration, and also an active member of the Operators' Thrift Club.

LXXV.—LILY RIGGALL.

MISS LILY RIGGALL, Clerk-in-Charge of Grimsby Exchange, entered the Company's service in November, 1890, and has therefore nearly twenty years' service to her credit.

Her first experience was of a type of board which required for its operation certain gymnastic performances—a craning of the neck to the transmitter and screwing of the foot round the board to the transmitter switch. Such contortions are now, happily, unnecessary.

Miss Riggall has seen the evolution of telephone working from the day of the primitive "flapper" indicator, which roused the house when it fell, to the No. 9 C.B. system now installed, and, as illustrating the growth of traffic, Miss Riggall remembers the time when fifteen trunk and 100 local calls was considered a busy day. The load is now over 300 and 6,500 respectively, and in Grimsby

there are over 1,000 exchange instruments, five sub-exchanges and an operating staff of nine.

Miss Riggall has served under three district and three local managers. She has always studied the interests of the Company



LILY RIGGALL.

and subscribers, and all testify to her unflinching attention and courtesy.

Miss Riggall has no particular hobby, but is an enthusiast in her work and is fond of reading.

SPECIAL CLASSES FOR NATIONAL TELEPHONE COMPANY'S EMPLOYEES AT THE MANCHESTER SCHOOL OF TECHNOLOGY.

For the third year in succession classes in telephony, especially designed to meet the requirements of the Company's staff, have been held at the above school. Twenty-nine students were enrolled for the advanced stage, and 26 for the elementary stage. The examination was held on April 13, and the following results obtained:—

ADVANCED STAGE (Lecturer, G. S. Wallace, Chief Electrician).

First-Class Certificates: M. A. Clarke, J. N. Hindle, S. G. Pearson, J. S. Cheetham, J. M. Jackson, G. H. Taylor and J. H. Wilson.

Second-Class Certificates: C. F. Chambers, J. Dawson, R. Mentasti, W. J. Blacow, J. H. Holloway, T. A. Minta, G. H. Bradock, A. Jones, J. C. Wrighton and T. B. Knight. Failures five.

ELEMENTARY STAGE (Lecturer, J. Hayward, Chief Fitter).

First-Class Certificates: A. Holt, G. McGowan, J. Sumner, J. E. Locke, F. Reilly, J. H. Smith and C. H. Teasdale.

Second-Class Certificates: H. Cleary, M. Hamilton, W. J. Cassidy, C. Kibble, H. Hughes, J. L. Sands, R. Howarth and H. Williams. Failures six.

A POLE ON FIRE

A FIRE took place in Hamilton one evening recently under somewhat unusual circumstances. The Clyde Valley Electric Power Company supply current at 10,000 volts to various collieries in the district. The wires from the underground mains on the country roads are carried on wooden "H" poles across country to the collieries. The wires are bound on to insulators which are fixed on iron arms bracketed to the wooden poles. During the evening, which was a very stormy one, one of the wires burst its binder, the wire falling on the iron arm, heating it to a white heat, and eventually setting on fire the creosoted "H" pole, which was burned to the ground line. Owing to this line of poles being on high ground and in open country the conflagration could be seen for miles, the country in the vicinity of the burning pole being very brilliantly illuminated. It is a matter of surprise that the fuses did not blow, as a result of what was practically a short circuit, and the current could not be cut off until an employee of the Supply Company withdrew the switches at the distributing station.

THE TRANSMISSION OF SOUNDS.

WE quote from an interesting article in the *Transmitter* of Denver. It contains some general information on the subject of vocal sounds, and some useful hints to operators and all speakers over the telephone system:

We read that the telephone transmits sound. It does not, however, transmit the original sound, but electrical waves carry vibrations corresponding to those of the vocal organs or other sound producers, reproducing them at the distant receiver, which emits its own sound identical with the original. What sounds are really transmitted over the telephone, and is there any interference by external vibrations? Due to the lack of space, we cannot dwell on all kinds of sound, but will refer particularly to the transmission of speech sounds, for the chief use of the instrument is to produce conversational tones, and will devote a few minutes to a study of the alphabet.

All public speakers, actors and singers must learn from the beginning that the vowels carry the sound because they compel an open mouth and throat which acts as a sounding board, and the action of the vocal cords, which are the only human means of creating sound, is unimpeded or muffled by the lips or tongue. For instance, take the sound of "a" in "Kate," or better, as in "father," and note that there is no real sound of the "K" until the sound of "a" is given; also note that "t" in "Kate" is purely breath and carries no sound in itself. Notice the "f" in "father," which has no carrying qualities until the "a" is sounded. Let's analyse the alphabet. Use of

- a—sound.
- b—very little sound until followed by a vowel.
- c—practically no sound.
- d—very little more than b.
- e—sound.
- f—purely breath; no sound.
- g—some sound, but very guttural.
- h—purely breath.
- i—sound.
- j—some sound, but very guttural.
- k—practically no sound.
- l—little sound (formed by a tip of tongue being placed high against the roof of the mouth, the sound coming only past the sides of the tongue).
- m—humming sound; nasal.
- n—sound, but very nasal.
- o—sound.
- p—purely breath.
- q—purely breath.
- r—the trill carries sound, and "r" is sometimes called a semi-vowel on this account. Other uses of "r" carry very little sound.
- s—a hiss, but carries very little vocal sound.
- t—purely breath.
- u—sound.
- v—more sound than "f," but muffled.
- w—no sound, except as a combination of "oo" and "ä" ("oo," "ä," "z"—"was"). "w" compels heavy breath action when followed by "h," as in "where."
- x—combination of "k" and "s" or the sound of "z."
- y—sound, or rather a combination of "e" and "u"; as, "e," "u," "ok"—"yoke." "y" also takes the sound of "e" or "i" at times.
- z—like "s," has but little sound.

In selecting prefixes for exchanges it should always be considered that the vowels a-e-i-o-u and y carry sound; m and n are very nasal and are very easily conflicted, carrying very little sound over the telephone, and that terminations in vowels are the most desirable; b, d, g, j, l, r, v and w have but very little sound in themselves, and c, f, h, k, p, q, s, t and z are breath consonants and are very bad to use, except in the middle of words where they can be preceded and followed by vowels. Enunciation plays a most important part in telephone business and operators should be trained to produce the sounds of the alphabet in a little extreme manner and to make use of vowels at every opportunity.

If every operator could be given elocution lessons, she would very soon learn that these principles must be adhered to. You can't build a box (closed lips) around sound and expect it to carry well. Breath impulses against a transmitter diaphragm have a tendency to interrupt the real sound waves, and this is why a quiet manner is so essential in talking over a telephone. Distinctness does not mean loudness or explosiveness or affectation. It calls for deliberate naturalness.

As stated before, the more the sounds come from the mouth the easier they are transmitted over the telephone. People who try to talk with their mouths nearly shut are hard to understand. Persons who talk in a thick manner have not acquired perfect control of the tongue, and adenoids and other obstructions in the nasal passages destroy the nasal over-tone necessary for a smooth voice, and the sound of "m" and "n" is impossible to produce correctly.

Supervisors everywhere should take interest in training their operators to make the best of the vowel sounds and cultivate a pleasant tone of voice. For relaxation and strengthening of the voice laughter and yawning are the most beneficial, and nature will do its work if you live in a happy mood and take care of yourself.

MR. CARTY ON THE POSSIBILITIES OF SPEECH TRANSMISSION.

MR. J. J. CARTY, the well-known Chief Engineer of the American Telephone and Telegraph Company, addressing a recent meeting of the Telephone Society of New England made some interesting remarks on the possibilities of speech transmission. Referring to an early trunk line, that from Boston to Worcester, which represented the limit of long-distance transmission some 30 years ago, Mr. Carty said:

"This Worcester line was made of iron, and it was a very large size. The difficulties growing out of such a construction I need not emphasise. Iron wire of all kinds was tried and failed. Copper, it was realised, was the material from which to make successful long-distance lines. But copper as then obtainable would on a day like to-day, for instance, slack out, and no matter how cold it got to-morrow it would never get back; and a succession of hot days would bring the wire down to the ground, so that it made it very easy for the linemen to shake out the crosses. The story of the development of hard-drawn copper wire is an old one, and it has been often told.

"Then the importance of the-transmitter was realised, and very great improvements were made in the transmitter. The result was that the transmitters used by the American Telephone and Telegraph Company have been for years and are now the best and most efficient transmitters in use anywhere in the world. But even with the best transmitters and with hard-drawn copper wire the limits of speech transmission were reached. Then came the story of loaded lines, a very remarkable development, particularly in view of our early work. An inventor proposed to insert into the line a lot of magnets having inductance, the very thing we had been labouring all our life to take out of the line and keep out. But he showed that if these magnets were placed in the line, or these inductance coils, to speak more accurately, placed in a particular part of the line, with proper regard to the wave length, that their effect would be beneficial.

"The result is that very, very great improvements have been made in overhead lines and in underground lines by the use of this loading invention. But the loading invention and the complexities of which it must form a part had not yet been adjusted to each other. For instance, we were not able to load a No. 8 line. That is, the heavy copper wire upon which we would have to rely for our transcontinental work. It was not practicable to load such a line for the reason that a higher degree of insulation was needed under those conditions—under the conditions where you used No. 8—a higher degree of insulation was needed than when a No. 12 was used. I won't undertake to explain why that is the fact.

"So one of the results of my California trip was to stir up the whole question of this matter of insulation, work upon which was proceeding, but very great pressure was put on. A review of the whole problem of insulation was made. It was found that in America glass insulators are the rule, but in other parts of the world porcelain insulators are the rule; and it was difficult to find from anybody why glass was used or why porcelain was used. A very exhaustive study, covering not only experience in this country but in all other countries, has resulted in the development of a porcelain insulator which, when applied to loaded lines of No. 8 gauge, very largely removes the insulation difficulty. But it also appeared that there was difficulty at the bridle wire. The braid upon the bridle wire used in these lines in wet weather conducted the speech, so to speak, and then we had the problem of insulating the insulator. That was successfully accomplished. An experimental line was loaded between New York and Chicago, and in dry weather the degree of transmission was very remarkable; in wet weather it fell off. But with the improved porcelain insulators, with the improved bridle wire insulator and with an improved transposition method the insulation on that line now, under the most unfavourable weather, is entirely satisfactory, so that we have accomplished the problem of successfully loading the No. 8 lines.

"But that is only part. It has not been practicable to phantom the No. 8 lines. The coil—the induction coil used for that purpose—was good enough for the No. 12, but was insufficient for the No. 8's, and the reason was that it was a coil through which we attempted to ring and talk; it was a compromise coil. We tried to

please both sides, with the usual result, we did not please either. It was not a good talking coil. So we designed a coil that was good for talking, and then developed a high-frequency ringing current. The result is a coil available for phantoming No. 8's in which the losses are practically negligible. The bearing of this phantom work and of this loading will appear as I go on. It had not been possible to phantom loaded wires of any kind. We were obliged to choose between a loaded circuit or a phantom circuit. If we made a phantom circuit we could not load, and that was a state of affairs not to be tolerated. That has been tackled, and a method is now issuing which enables us to load phantom circuits or phantom loaded circuits. So there we have started in with No. 8's, that is, the big wires. We can load them, we can phantom them, we can phantom them loaded.

"Now see what that accomplishes. Between New York and Chicago we will load two pairs of No. 8's. These will be phantomed. That work is going on. Between Omaha and Denver we are stringing two pairs of No. 8's. They are to be loaded and they are to be phantomed. Between Omaha and Chicago we have one pair of No. 8's that is to be loaded. See, then, the circuit that we can construct. From New York to Chicago a phantom circuit composed of two loaded 8's. That phantom circuit will be the equivalent of a pair of loaded 6's, and it will be got at a trivial cost. We will make the company a present, so to speak, of a pair of loaded 6's between New York and Chicago. Then, between Chicago and Omaha, that phantom circuit will become a single circuit, but at Omaha again it will be connected to a phantom circuit, the loaded 8's to Denver, and over that circuit we expect to get a talk which will be practically commercial and good, between New York and Denver. . . .

PRESENT OPPORTUNITIES FOR YOUNG MEN.

"The question is often asked whether nowadays, in the telephone business, there is any opportunity for young men. Now my conception of the telephone business and I know that it is the conception of the highest authorities we have—is that our work will not even nominally be accomplished until we have obtained this result: That any man in the United States, wherever he may be located, may, within a reasonable time, be connected with any other man in the United States, and talk to him successfully. That is a very large order. Just contemplate for a moment the magnitude of a plant of that sort. If I had time I would have liked to have sat down and forecasted it. We are talking of a 30-year period. See the magnitude of the telephone plant which will be under your charge. There is no plant of that character in the universe. It is not like a great steel works, where the factory can be viewed at once, where your plant can be examined, but our property, our wires, our interests, our methods and our men permeate into every jurisdiction in the United States—into every State, into every Federal jurisdiction, into every city, into every town, every village and every borough, every street and pretty nearly every back yard. There is no problem approaching that in complexity, whether viewed from the standpoint of the political economist, from the legal standpoint, from the financial standpoint, from the standpoint of the engineer, or from the commercial standpoint. There is no plant, there is no problem, there is no activity that will compare with it in magnitude, interest, importance and opportunity."

THE TELEPHONE AND HISTORICAL PAGEANTS.

DURING recent years historical pageants have occupied considerable public attention. Some information therefore as to the part played by the telephone in their presentation will not be without interest.

When these lines appear in print the Chester pageant will be a thing of the past. The eight episodes so faithfully portrayed with as much attention to detail as it was possible to give have joined their prototypes in the historical past. That it has been a great success, financially and otherwise, and what is generally recognised as one of the finest pageants of modern times, is due to the whole-hearted way in which the people of the city and county threw themselves into the work.

Played in Eaton Park on one of its fairest sites, a field

specially lending itself to a display of this kind, surrounded on three sides by trees, fine weather only was wanted (and with the exception of one day was enjoyed) to show to the best advantage the 4,000 odd performers and some 200 superb horses—chiefly from the Duke of Westminster's own stud.

In previous pageants the Company had, in some cases, supplied telephone instruments, but the staff to work them was left in the hands of contractors with the somewhat natural consequences that when the telephones were required the staff "was not."

The Chester pageant master, Mr. Hawtrey, on this occasion was insistent that not only the instruments but the attendants should be supplied by the Company in order that the service should be reliable. The Company was asked to set up a telephone service between the master's controlling box on the top of the grand stand and various points of the ground, which will be seen on the accompanying plan, the object of the service being to convey instructions from the master to the performers, or troupe of performers, when to "go on."

There were twelve stations in all supplied by five circuits, two direct and three party lines, the latter containing three, three, and four stations respectively. The direct lines served, of course, the most important points, being those most frequently required.

The circuits were carried in one pair V.I.R. cable—ordinary leading-in wire—with earth return, so that it was not necessary to erect more than one V.I.R. on the same route. The cable was attached to trees, to scenery, and at other points to scaffold poles provided by the pageant authorities and erected by the Company.

The names of the stations, and the arrangements for ringing, were as shown here.

Number of station.	Switchbd. number.	Name.	Code of rings.
1	1	Band	—
2	5	North entrance	1
3	5	Middle entrance..	2
4	2	Home (stage managers)	—
5	5	South entrance	3
6	5	The Firs	4
7	3	The Spinney	1
8	3	The Passage	2
9	3	The Grove	3
10	4	Far Gate... ..	1
11	4	Rowton Gate	2
12	4	The Guns	3

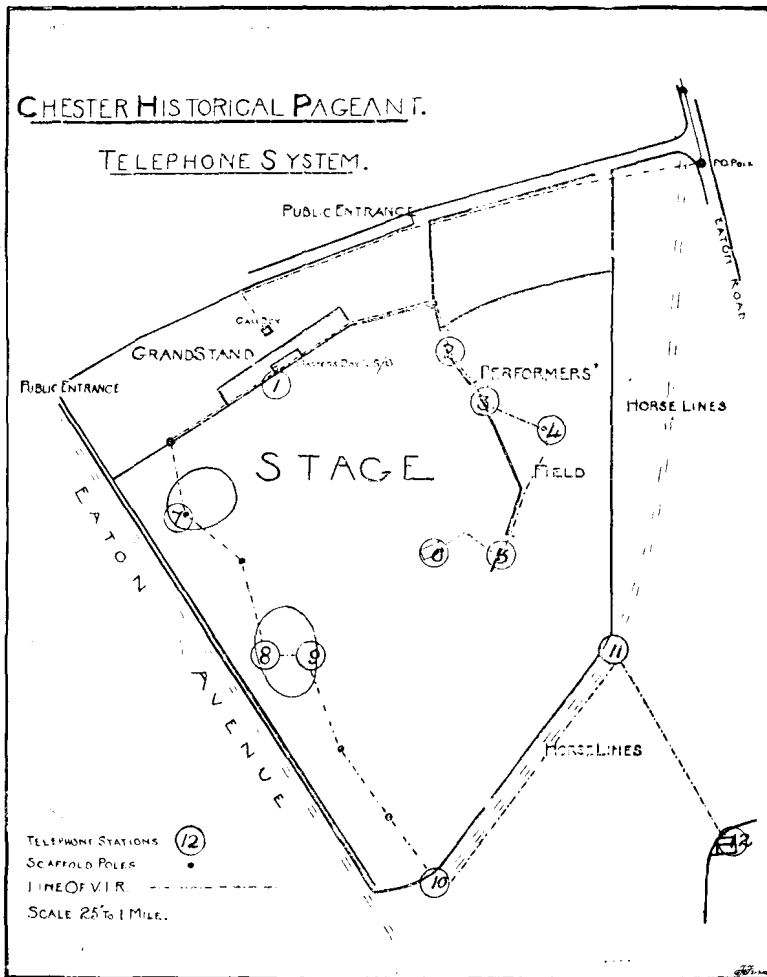
Only the two direct lines were allowed to "ring up." The handles were taken off the other instruments to prevent calling from them.

It was necessary to put in the master's box a reliable operator who was found in one of the Company's apprentices. The attendants at the other telephones were young ladies specially engaged for the work.

Each telephone was enclosed in a box screwed to a tree, and each attendant was provided with a chair.

The pageant lasted for a fortnight—a week of public rehearsal and a week of finished performance. The hour of the former was at six in the evening, and of the latter at 2.45 in the afternoon. The performance lasted some three and a half hours. The operating staff assembled at the Company's office one hour before the performance began. A responsible officer was told off each day to walk up with the girls to the pageant ground and see them posted at their positions. Each station tried its instrument and circuit with the controlling operator in sufficient time to enable anything that might be out of order to be put right in good time. Each attendant was provided with a special home-made badge, consisting of the well-known bell sign stuck on a disc of cardboard and attached by means of a blue ribbon and safety pin to the breast of each attendant. The telephone arrangements worked without a single hitch of any kind, and were warmly spoken of by the master, of whose unsolicited testimony a copy is appended.

The order, efficiency and punctuality of all the arrangements connected with the pageant were very striking, having regard to the large number of performers, most of them unaccustomed to discipline of any kind. The most laconic command given by the master to our switchboard operator (occasionally anticipated by the latter) was transmitted instantly by him and was seen to be as



quickly responded to in the sudden appearance of either "band" (at the opening), "fairies," "horse," "guns" (when to be fired), "crowd," "property men," or what not, from their various hidden points of assembly.

To the District Manager,
National Telephone Company, Limited, Chester.

Dear Sir, — As master of the pageant I wish to express to you my very great appreciation of the splendid manner in which the telephones were worked on the ground during the past week.

At neither of the pageants which I have previously managed have I met with anything like the efficiency which proved such a material help to me on the present occasion.

I am, dear Sir,

Yours very truly,

July 25.

GEORGE P. HAWTREY.

A FEW THOUGHTS ON SUPERVISION—FROM AN OPERATOR'S POINT OF VIEW.

BY FLORENCE KERRIDGE.

WHAT an influence a supervisor has over her section. The class of work done by it depends almost altogether upon her. The operators all take their cue from her—perhaps unconsciously—but certainly they do. How much better an operator will manage if she knows her supervisor is taking a keen interest in the work, and is ever ready to help her small staff in every way that is possible. Sometimes an encouraging word to a young operator will work wonders. She may be feeling tired and a bit discouraged, but if the supervisor shows that she is taking an interest in her, not passing over careless work, but in a kindly manner pointing out her mistakes, how that operator will strive to come up to the standard

expected of her, and respect the supervisor far more than if she had spoken sharply and showed irritation at her shortcomings.

The supervisor who is most respected and has the most influence over her section is not the one who flies hither and thither calling out numbers for anyone to take, regardless of the fact that the other boards are quite as busy as the one from which the numbers are being called. I have noticed this many times, and in exchanges where there are signals that drop down, they have been put up when the number has been called out, the supervisor not having made it her business to see that it was being answered; and in a great many cases the call has not been taken, and consequently the subscriber has had to ring again. If, instead of calling out numbers at random the supervisor would quietly watch the traffic and when opportunity occurred call out a number and see that it was taken it would be much better than unduly exciting herself and everybody else near her, with the result that the work is hurried, the operator irritated, and everything goes wrong. Instead of the subscribers hearing a clear, cheerful voice, which invariably forces them to speak cheerfully, at the other end of the wire—and a cheerful tone is generally a clear one—they hear something like "Num plea" "Plea" and so think the operator abrupt and uncivil.

I have rejoiced and suffered under good and bad supervision and so realise what it means to be under a good supervisor.

As regards the senior operators relieving the supervisors, personally I think it a splendid idea, for it gives the operator a wider experience and a sense of responsibility which is good for her. She takes her place again at the board with very different feelings.

Although it is looked upon as an honour to take the supervisor's place, and an operator would feel very much aggrieved if she were passed over, she does not find it a pleasant sensation at first, but in the course of a short time begins to look forward for the change and it becomes a relief from operating. Consequently she returns to her work refreshed both in mind and body.

Perhaps it would be of interest to relate the experiences of a senior operator "brought out" for the first time.

Naturally she is feeling shy and rather awkward, and finds herself wishing that the floor would open and swallow up the whole room. Anything however rather than show the white feather: so she bravely walks up and down the section, conscious that the eyes of the whole room are upon her, of course not openly, but sly looks and side glances all come in her direction, just to see what she looks like and how she is managing. After she has recovered her breath, it dawns upon her that she should be doing something, so she calls out a number and feels quite alarmed at hearing her own voice. Determined to persevere she grasps some scribbling paper or pad, thinking it will give her some confidence to hold on to something if only a bit of paper. This has the desired effect for the time being, until the exchange manager comes along and requests her not to walk up and down looking like an enquiry agent. After some time patience and perseverance are rewarded and the desired confidence is gained.

To put the matter in a nut-shell, a supervisor, in my opinion, should be possessed of great tact, calmness of mind and patience, and should realise that kindness and consideration to those under her charge not only gains their esteem and affection but gives them a greater interest in their work, thus securing for the Company greater efficiency of working and satisfaction to the great body of subscribers.

THE TELEPHONE SOCIETIES.

So much has been said of the good work done by the telephone societies, and the interest in them is so general, that we take the opportunity of publishing a full list of these bodies together with some details of their membership and average attendance. It will be seen that they number 56 in full, an average of over one for each district, indeed there are four in London and three in the Southampton district. The largest membership is naturally that of

London with 1,008. Liverpool Operators' Society comes second with 250, and Glasgow Operators' with 234. In the percentage of the average attendance on the total membership, Cheltenham comes first with the excellent figure of 94.2. As this is a small society perhaps the record of the Bristol Operators' (93.5) is even better. Truro, another small society, shows an average of 91.2, Bolton 84.6, Warrington 84.3, Plymouth 81.2, and Coventry 80.4. Among the large societies with over 100 members the ladies are again well to the fore, Liverpool Operators coming first with 55.8, Glasgow Operators second with 50.8 and Glasgow third with 46. London is last with 16.2, but for this there are many reasons. First, the huge and scattered nature of the membership, the distances at which members live from headquarters, the disarranged meals and long journeys entailed—often in inclement winter weather. London shows the largest average attendance (165), but the Liverpool Operators are a good second with 133.6.

Name of society.	Number of members.	Entrance fee.	Annual subscription.	Is there a library?	Number of meetings.	Average attendance.	Per cent. average attendance.
Birmingham ..	71	—	1s.	—	8	34.2	52.3
Blackburn ..	78	—	td. per week	Yes	7	57.5	72.7
Bolton ..	52	—	2s. seniors 1s. juniors	—	6	39.3	84.6
Bournemouth ..	68	—	td.	Yes	7	41.4	95.2
Bradford ..	30	—	1s.	Yes	6	15.5	57.2
Brighton ..	35	—	3d.	—	9	21	92.3
Bristol ..	60	—	Nil	—	6	55	94.8
Cardiff ..	80	—	1s.	Yes	6	39	48.7
Cheltenham ..	20	—	td per meeting	—	9	17.2	94.2
Chester ..	26	—	3d.	—	6	18.8	98.6
Cork ..	40	—	Nil	—	8	26.6	60
Coventry ..	20	—	1s.	—	7	17.4	80.4
Douglas ..	18	—	Nil	Yes	11	14.2	78.8
Dover ..	47	—	1s. seniors td. juniors	—	7	27.5	59.7
Dublin ..	80	—	2d.	Yes	9	23.7	35.4
Dundee ..	42	—	td.	—	6	27	94.2
Exeter ..	28	—	1s.	—	9	24.7	79.5
Glasgow ..	193	—	1s.	Yes	7	88.8	49
Gloucester ..	49	—	td. per meeting	—	7	26.8	97
Greenock ..	45	—	td.	—	8	28.1	62.1
Hanley ..	35	—	Nil	—	8	18.3	57.7
Hastings ..	41	—	td. per week	—	7	28.1	91
Hull ..	58	td.	1s.	—	6	34.5	94.5
Leeds ..	61	—	td.	—	8	39.5	55
Leicester ..	35	—	td.	—	7	29.3	99.2
Liverpool ..	100	—	td.	Yes	7	55.4	55.4
London ..	1008	—	11s. gentlemen 19s. ladies	Yes	14	166	16.2
North-Eastern ..	115	td.	1s.	—	8	32.1	31.7
Southern ..	93	—	1s.	Yes	7	27.2	34.4
Western ..	45	td.	1s.	—	8	28.6	54.1
Luton ..	59	—	Nil	—	11	39	65.1
Manchester ..	155	td.	td. per month	Yes	10	45.9	28.1
Newcastle ..	34	—	1s. seniors td. juniors	Yes	7	39.1	68
Northampton ..	14	—	1s.	—	5	16.2	74.4
Nottingham ..	60	—	1s.	—	9	35.4	58
Factory ..	148	—	Nil	—	9	79.3	42.9
Oldham ..	49	—	Nil	—	5	22	55
Paisley ..	26	—	1s.	—	7	17.7	95.4
Plymouth ..	39	—	Nil	Yes	9	39.5	81.2
Portsmouth ..	85	—	1s. seniors td. juniors	Yes	7	14.4	49.8
Sheffield ..	85	—	td. gentlemen 3s. ladies	—	7	41.5	51.7
Stirling ..	57	—	Nil	—	7	25.2	41.3
Sunderland ..	24	—	1s. seniors td. juniors	Yes	7	16.5	72.2
Swansea ..	47	—	Nil	—	6	33.8	71.8
Torquay ..	18	—	1s.	—	8	14.2	76.5
Truro ..	20	—	td.	Yes	8	21	91.2
Tunbridge Wells ..	49	—	1s.	—	6	18.3	41.0
Warrington ..	50	td.	td. per month	—	6	42.1	84.3
Weymouth ..	13	—	td.	—	7	10.7	75
Wolverhampton ..	80	—	1s. gentlemen td. ladies	—	7	48	61.5
Total ..	3766	—	—	—	377	1707.6	3941.9

Number of societies 50. Average members 75.3. Average number of meetings 7.5. Average attendance 34.1. Per cent. average attendance 60.8.

OPERATORS' SOCIETIES.

Name of society.	Number of members.	Entrance fee.	Annual subscription.	Is there a library?	Number of meetings.	Average attendance.	Per cent. average attendance.
Birmingham ..	185	—	td.	—	6	71.8	41.7
Bristol ..	72	—	Nil	—	6	62.6	93.5
Cardiff ..	73	—	Nil	Yes	6	41	56.9
Glasgow ..	234	—	1s.	Yes	5	118	50.8
Liverpool ..	250	—	3d.	Yes	5	133.6	55.8
Swansea ..	34	—	Nil	—	6	25.3	74.4
Total ..	848	—	—	—	34	452.3	373.1
Grand total ..	4614	—	—	—	411	2159.9	341.5

Number of societies 6. Average members 141.3. Average number of meetings 5.6. Average attendance 75.4. Per cent. average attendance 62.2. Total Number of societies 50, average membership 82.2, average number of meetings 7.3, average attendance 38.5, per cent. average attendance 60.9.

THERE is one thing about London, says a writer on "The Rediscovery of London," in the *Daily Express*, which my French friends and myself who are wondering what has become of the London Christmas (*Le Noel de Londres*, which is as well known on the Seine as the much talked of London fog) greatly admire the telephone. You can telephone in London now without losing your temper. Londoners tell me they do not do so, but we do, who are used to telephones abroad. I am certain that all the young ladies in all the exchanges will make the best of wives. Their voices are charming, and their patience and their quickness are a marvel to my French friends and myself.

NEWPORT THIRIFT CLUB.

A THIRIFT club has been formed, all the indoor staff being eligible for membership, and it is satisfactory to note the majority of the staff are availing themselves of the advantages to be gained. Mr. B. Waite, District Manager, has been elected president, with Mr. K. Williamson, Local Manager, and Mr. W. J. Marsh, Traffic Manager, vice-presidents.

THE TELEPHONE IN THE VATICAN.

MR. R. M. CRAWFORD writes: On reading lately Douglas Sladen's fine book on the Vatican, published in 1907, I came across the following statement, which may interest some of your readers: "As the Pope feels that his position will prevent him ever visiting his beloved Venice, he has a trunk-line telephone of his own to the Bride of the Adriatic. Nor is this the high water mark of modernity in the Vatican, for the Pope has the first wireless telephone ever erected for practical use."

BURGLAR CAPTURED BY THE AID OF THE TELEPHONE.

THE smart capture of a burglar was effected at Southampton on June 13 through the agency of the telephone. The local manager was cycling through the Howard Road about 1.30 p.m. when an agitated servant maid came out of a doctor's residence and informed him that a man had broken into the house adjoining, the tenant of which was away. Having instructed the girl to go back to the house and ring up the Freemantle Police Station, the local manager secured the aid of a driver of a passing laundry van and, a constable going to duty on his cycle fortunately passing at that moment, the laundry man was deputed to watch the premises, whilst the constable and the telephone man searched the house, the burglar eventually being discovered locked in a box room. With the arrival of five other constables in company of Inspector Allison, the house was surrounded and, on the door of the box room being broken open, "Bill Sikes" was discovered seated on a box, an interval of ten minutes only having elapsed from the time he broke in until he was safely under arrest.

CARDIFF CHARITIES.

DURING the past year the sum of £18 8s. 8½d. has been collected by the staff of the Cardiff district for charitable purposes. This has been located as follows: -

Cardiff Infirmary	£	s.	d.
Barry Voluntary Hospital	12	0	0
Merthyr Hospital	1	0	0
Bridgend Hospital	0	15	0
Pontypridd Hospital	0	15	0
Cardiff Blind Institute	1	10	0
Balance towards current year	0	8	8½
Total	£18	8	8½

The National Telephone Journal.

"BY THE STAFF FOR THE STAFF."

Published Monthly at
TELEPHONE HOUSE, VICTORIA EMBANKMENT, LONDON, E.C.

NOTICES.

All communications to be addressed—The Editing Committee, "NATIONAL TELEPHONE JOURNAL," 41, Telephone House, Victoria Embankment, London, E.C.

The Editor will not undertake to be responsible for any rejected MS. All photographs will be returned if the sender desires.

Subscription: To the general public, 4s. per annum, including postage to Great Britain or abroad.

To the Staff, 2s. 6d. per annum, with free delivery to the Offices of the Company. Single copies may be obtained, 3d. each, or 4½d. post free.

For rates for the insertion of Advertisements apply to H. SELL, 167-168, Fleet Street, E.C.

VOL. V.]

SEPTEMBER, 1910.

[No. 54.]

THE OPENING OF THE NEW EXCHANGE AT HAMBURG.

THE description of the Hamburg Exchange appearing in this issue gives some further details of this interesting equipment.

An engineer's natural desire to experiment with systems of which he has not had practical experience is constantly being repressed by the results of calculations which inform him relentlessly that, provided his data are correct, he is not justified in making the investment. Call distributing systems and divided boards have separately and in conjunction received attention here, but the Company has not installed either, so that when another administration, no doubt using basis figures appropriate to its own conditions, decides to use these methods in a city so important as Hamburg one's interest is at once aroused, and one begins to speculate as to the conditions which permit of it.

The concentration of subscribers' lines in one large building originated on the Continent, and in its early stages seems to have been brought about by a desire to avoid junction working. In this connection it is interesting to note that in the Hamburg system every call is handled by three operators, one of whom, however, only connects the calling line with a disengaged operator. Before the days of automatic signalling this distrust of junction working was to some extent justified, but the elasticity of the common battery system is such that the equipment engineer has generally no difficulty in designing circuits which will give to the traffic authority such automatic and reliable indications as may reasonably be required, and a junction call is very little more difficult to handle from the operator's point of view than a local call, and scarcely distinguishable on the subscriber's part.

As we have previously indicated, we do not wish to question the decision of the Hamburg Administration to instal the system, but we do wish to state quite definitely for the benefit of our own staff our conviction that a given standard of service can be provided

in this country more economically by means of more numerous exchanges, the application of distribution to the subscribers' lines amongst the operating positions according to the load, and by the employment of team-work.

FALSE ENTHUSIASM.

WHILST we are in the main in sympathy with the trend of the article by our contributor, Mr. NICK, whose argument, broadly stated, is that honest and steady good work is of greater value than a sporadic and self-advertising assumption of enthusiasm, we think he is a little hard on that hard-worked word. Without involving ourselves unduly in philological intricacies, we can fix the root-meaning of enthusiasm as the state of being touched with divine fire. Enthusiasm, therefore, is a somewhat exalted state, and can only be accurately applied in connection with religion, poetry, patriotism, duty and such high matters. As in the case of most words, custom has extended the scope of its application, and we hear the incongruous combinations: "an enthusiastic race-goer" or "an enthusiastic stamp-collector." It is, however, neither possible nor profitable to confine words strictly to the meanings signified by their roots. By "sarcasm" we do not mean tearing the flesh from people's bones, nor by a "cynical" manner do we suggest anything dog-like, as we should have to do if purism ran altogether mad. The word enthusiasm, therefore, will serve well enough to express a state of keen interest in something when that interest is fervent and high minded and when that something is not commonplace or puerile. Simulated enthusiasm, manifested in rushings to and fro, futile gesticulation and external or lip-service of one's calling are quite another matter. Enthusiasm is not to be confounded with hustle; it animates the quiet and painstaking man of science equally with the fervid preacher or reformer. True enthusiasm is a quality which lends to work a brighter hue and a deeper interest; it tends to efficiency rather than incompetence. It points towards success, but if, indeed, it does not always insure it to its possessor, it makes life fuller; and it must be remembered that there are many failures that are more glorious than successes.

"RUMOUR MANY-TONGUED."

PRECISELY what purpose is served by the circulation of mischievous and misleading paragraphs in the press as to the position of the staff after 1911; whence they emanate; and who are the shadowy officials and representatives alleged to have made pronouncements or been interviewed, are matters equally for surprise and vain speculation. Most of our readers will have seen the statements in the *Standard* and various provincial newspapers which begin: "Eighteen thousand people—men, girls and boys—will be temporarily thrown out of work when at midnight on Dec. 31, 1911, the Government takes over the business of the National Telephone Company," goes on to credit the Postmaster-General with stating that "as vacancies occur he will be able to take on about 50 per cent. of the older servants of the Company," and sketches imaginative pictures of a man of, say, twenty years' seniority drawing 45s. being offered a position at 25s.

The bulk of the staff to whom the contents of Lord STANLEY'S memorandum are well known will, no doubt, have read these paragraphs with complacency and not without a certain amused contempt; but amongst the varied grades and remote stations of so

large a staff as the Company's there must be many members to whom these circumstantial and quasi-authoritative statements caused much needless fear and alarm. We are surprised that such statements should be attributed to the Postmaster-General in so well-informed a paper as the *Standard*, and still more are we surprised that any responsible official of the Post Office should be credited with contenting himself by saying, when interviewed, that "50 per cent. of the staff was a modest estimate of his chief's proposals, and that as opportunity offered probably the whole of the staff would find employment under the new régime," when he would of course know that Lord STANLEY'S undertaking provided that all the staff who have been not less than two years continuously in the service of the Company on Dec. 31, 1911, and who are in receipt of salaries of less than £700 a year will be taken over by the State and given equivalent work for equivalent pay. Mr. SAMUEL'S subsequent statement confirms the utter baselessness of the rumour.

HIC ET UBIQUE.

OUR Manchester correspondent points out that in the results which have just been published in connection with the Correspondence Classes for the past session the Manchester district has done exceptionally well in the "B," "C" and "D" Courses. In the "B" Course nine members of the staff are in the first twenty; in the "C" Course four members of the staff are in the first twenty, and in the "D" Course six members of the staff are in the first twenty. Thus in the three courses we have nineteen members of the staff or nearly one-third of the best results.

From a cursory glance of the schedules it would appear that Manchester has set up something of a record, especially as two Manchester men head the "B" Course with 100 per cent. of marks and a Manchester man heads the "D" Course with 98.7 per cent.

IN this column we recently made reference to a paragraph quoted in our contemporary the *Michigan State Gazette* concerning operating in Oklahoma, and concluded by saying "We observe for the enlightenment of our readers that the nearest equivalent of 'stunt' in a civilised language that we can call to mind is *tour de force*."

The *Gazette* after some kind compliments on the JOURNAL, which we heartily reciprocate, gently takes us to task as follows:—

We are sorry about our 'cross-pond friend's limited knowledge of civilised languages. What's the matter with his own? He might have found by consulting a modern English dictionary that "stunt" is "a feat or performance striking for the skill, strength, or the like, required, hence any feat or performance (colloquial). 'He does not try to do stunts.'—L. Hutton." . . . As for *tour de force*—à bas it! The idea of carrying over a fine healthy, vigorous word like "stunt" into a slap-on-the-wrist incompetency like "*tour de force*"!

We confess to feeling unconvinced and very unrepentant. We suspect that the "modern English dictionary" referred to is an American one, or at best an English one modernised for American consumption. The author quoted from is admittedly American, and, after all, the inclusion of a word in a dictionary, especially when it is labelled "colloquial" or "familiar," does not hall mark it as good English. The word "stunt" is of doubtful orthography, and utterly destitute of etymology. As to being "healthy and vigorous," "stunt" conveys to the English mind the exact opposite, viz., to dwarf or hinder growth.

ACCORDING to *Telephony* there is a small independent telephone exchange in a town near Columbus, Ohio, where the plan in operation during the night season when calls are few, is unique. Owing to the construction of the plant the proximity to its lines of high-powered electric light lines, many of the telephones work very poorly at night because of noise. On some lines it is almost impossible to hear because of the noise. When a call comes in for

a physician, or any call which is believed by the operator to be urgent, she telephones the lighting company to turn out the electric lights in the village while the conversation is being held. With this request the light company kindly complies and the conversation is uninterrupted.

A correspondent thinks this might be included in the facilities given by public authorities in America referred to by Mr. Franklin in his speech at the half-yearly meeting.

TELEPHONE girls, in addition to the sins and negligences of novel-reading, sweet-eating, knitting and gossiping, with which they have from time to time been charged, are even suspected of the most frightful levity to the Pope. Says the *Pall Mall Gazette*:

If there is a publication which is decidedly obnoxious to clerical circles here and elsewhere, it is the supposedly comic journal *Asino*, which is opposed to all form of clericalism, and goes further than does the Munich organ *Simplificissimus* in its attacks on the Church generally. In every number the Pope is criticised in unmeasured terms. Naturally, the *Asino* is the last newspaper office with which the Pope would wish to communicate in any way.

The Pope's sisters are in the country at Frascati, and he wished to speak with them by means of the telephone; but, by a mistake, he was put into direct communication with the *Asino*. When the Pontiff found out that this mistake had been made he was exceedingly wroth, and sent a special messenger to request Signor Luzzatti to discover which of the girls in charge of the telephone had dared to play such a trick.

Signor Luzzatti at once announced to the telephone staff that unless somebody confessed to the awful deed, everybody in a certain department would be dismissed at once. A timid girl came forward and explained that she had made the mistake quite unknowingly. This explanation was accepted.

AFTER several interviews, a non-subscriber in the South-West Lancashire district was converted to see the importance of the telephone service, but, unfortunately, owing to wayleave and other difficulties, the connection could not be made. In consequence of this, it was suggested to the gentleman in question that he should remove to another address, which he did. When it is realised that the premises vacated had only just been improved at a heavy cost, the persuasiveness of the contract officer appears all the more extraordinary.

THE 46TH ORDINARY GENERAL MEETING OF THE NATIONAL TELEPHONE COMPANY, LIMITED.

AT the meeting held on July 28, Mr. GEORGE FRANKLIN, the president, after commenting on the half-year's accounts, said:

Now, I do not think I can leave the accounts without making a short reference to the result of the adoption by the Company a few years ago of the system of payment according to user; what is commonly called the measured rate. The adoption of this method of charge caused quite a little excitement among the Associated Chambers of Commerce and other authorities, and some opposition, on the ground that the Company's scale of charges would impose a heavy burden upon those paying under the measured system. How unfounded and groundless those fears were is proved by a reference to the facts. At the present time the Company has in the provinces about 124,000 stations upon the measured rate, producing an annual average revenue of £6.45. per station. I think it must be a boon to anyone to have a telephone at a moderate figure such as that indicates. Having so many small users is a great advantage, because the larger your telephone system becomes the greater use it is to those who are already subscribing to it.

Whilst on the subject of our critics, I might also mention that some comparisons have very recently been made as the result of the visit of the Engineer-in-Chief of the Post Office to the United States. Criticisms have been made as to the varying rate of telephone development in Great Britain and in the United States. It is pointed out, with no doubt perfect truth, that on Jan. 1 last the United States had 7.6 stations for every 100 of the population as compared with 1.3 stations in Great Britain. But what are the facts? In the United States there has been no State ownership of the telephone; there has been no ingenious decision by which the telephone has become a telegraph: there the telephone companies have an unlimited life, and instead of having municipalities always introducing obstacles in the way of their expansion, they have had, generally speaking, the greatest facilities given by such authorities. More than all, they have not had to pay a royalty of 10 per cent. upon their gross incomes, they have not had to hand over this sum of between £3,000,000 and £4,000,000, which I referred to just now. They have had practically free trade in telephones which has enabled them to develop their business to a remarkable pitch of excellence, which I venture to think we should have been able to equal, and more than equal, if we had not been from the very first hampered, cribbed, cabined and confined, first by the legal decision which made the telephone a telegraph, secondly by the conditions of the license, and thirdly by the fact that, having granted the license, the Government of the day has always appeared to desire to hamper the telephone industry in the interest of the telegraphs owned by the State. ("Hear, hear.") This large business, in which is invested £16,000,000 of capital, has been built up under the greatest

difficulties and in spite of the most vigorous efforts which have been made from time to time to stifle and smother it, and I think it is satisfactory to know that we have done so well, and that, as compared with Europe, there is only one country, viz., Germany, which beats us in the number of instruments to population. This shows how unfair it is of our critics to make a comparison under circumstances which are so entirely different. (Cheers.)

I mentioned at the last half-yearly meeting that in the absence of an agreement with the Postmaster-General as to the value of the Company's assets such value would have to be determined by arbitration, and that the Company's officers were engaged in preparing for the inventory upon which the Company's claim would be founded. Since that time the preparations have been actively proceeding, and I observe that the Postmaster-General, speaking in the House of Commons the other evening on the Post Office estimates, stated that he had very small hope that the terms could be settled otherwise than by arbitration. If this be so, as it probably is, the Board have confidence in the case which it will have to put before the arbitration tribunal, and whilst in the public interest it will always be ready to co-operate with the Postmaster-General as far as possible in arriving at an early solution of the problems to be solved, the shareholders may rest assured that the Board will strongly guard the interests committed to their care. Negotiations are at this moment proceeding having for their object the preparation of an inventory of the Company's plant, and to have this inventory and the age agreed to by the Post Office as the inventory proceeds, and, although I am not a prophet, I venture to hope that these negotiations will result in an agreement which will minimise the contentious operations as far as possible.

The task before us is a very heavy one. It was described the other day by the Postmaster-General in the same speech to which I have referred as the most gigantic industrial operation that this country will ever have known. The responsibility, therefore, upon the two parties to the operation is a very great one, involving as it does not merely the immediate future of the telephone service of the Company, but also to a large extent the happiness and comfort of the Company's staff, who have for so many years loyally and faithfully served the Company.

Before we meet again the inventory proceedings will doubtless have commenced. A staff of about 300, divided into groups, will be occupied for a period of probably more than fifteen months in trying to enumerate the plant, and in trying also to determine its age, and this inventory, when it is finished, will be the foundation of the claim to be ultimately made. I need hardly say to you that the Board will make every effort consistent with its duty to the shareholders to facilitate a settlement in as speedy and satisfactory a manner as possible.

We also want to acknowledge the great help which the Directors have from quite a remarkable staff; many of them extremely gifted, who are devoting themselves, without any regard, I was going to say, to either hours or emoluments, to a business which appears to fascinate all who touch it. The Board have the devotion of a staff, I venture to say, without parallel in any other business, and with the help of the staff in the future I believe the Board will be able when the time comes, although I am not a prophet, to satisfy you that at all events they have done their best with the property which you gave them to manage.

ENTHUSIASM AND ENERGY.

By A. C. NICK.

Of late years the word enthusiasm has been very much to the front, and the man who is classed as an enthusiast would appear to have attained a much coveted distinction in his business or profession, but I venture to state that if the word were taken in its literal sense he would hardly be complimented by the appellation.

The true meaning of an *enthusiast* is a person who imagines that he has a special converse with the Almighty, or special communication with Him. Now I can hardly believe that there is anyone that is so filled with overweening vanity that he really believes this, although I am bound to admit that there are certain people in this world who act in such a way as to rudely shake my belief.

There is no getting away from the fact that this is the true meaning of the term, as it is derived from Greek words meaning "divinely inspired." There is however another construction put upon it, but which has no connection with the true derivation, and is "One who has a violent passion or excitement of mind." This is almost as bad as the other.

Enthusiasm in one or more persons is not an unmixed blessing. This is what Locke says about it—"Enthusiasm is founded neither on reason nor divine revelation, but rises from the conceits of a warmed or arrogant imagination." Again Ames remarks that "Faction and enthusiasm are the instruments by which popular governments are overthrown."

Enthusiasm alone is utterly unable to achieve any great object, but, on the other hand, unless checked by calm, deliberate men, may bring on great disasters to nations, or, in the case of business, large pecuniary losses.

How often do we read of political and other meetings where

the audiences have been carried away by enthusiasm, but had such meetings been correctly reported it would be found that the audiences were so overcome with hysterical emotion that they forgot they were men and women.

Take the case of all great wars. They invariably commence with great enthusiasm on the part of the nations making them, but enthusiasm never won a fight, the calm, calculating nation, unless overwhelmed by great odds, coming out the victor. The French army in 1870 was filled with great enthusiasm, and we all know how disastrously that army failed. Something more than enthusiasm was required. On the other hand, no one would call the British army at Waterloo enthusiastic. The majority of the soldiers were raw militia who had been dragged away from their homes, and who knew little of the circumstances under which they had been sent to a foreign country to fight, and yet in their half-starved condition they stood up to the hammering and gruelling like men, but not enthusiastic men. There was something in them far better than enthusiasm. It was not only courage—the French had that in 1870—but a fixed stubborn determination to win or go under fighting.

I think you will find that all the great works in the world have been carried out by strong, earnest men who could not have raised a shout if they had tried, and then look at the failures, and I think I am not wrong when I say that in nearly every case you will find an enthusiast directing the operations. It is the calm, earnest men who lead others on to success, and not the so-called enthusiast who gets carried away with excitement and more often than not when a rot sets in whimpers and bleats that it is someone else's fault.

I have often heard certain people say, "Oh, So and so is not enthusiastic," inferring, of course, that they are themselves; but on carefully weighing the matter up their enthusiasm appears to chiefly consist of getting out of their fair share of work and taking the credit themselves of anything well done, which is justly due to their subordinates. They also appear to derive a fiendish joy from the downfall of a comrade. They are neither divinely inspired, strong, nor determined, but only shirkers.

Coupled with enthusiasm we generally find the term energetic applied to certain individuals, who from the first are obviously not entitled to it, their proper name should be blusterers.

How many people are there who are said to be energetic simply because they put most of their time in rushing about trying to impress their superiors with their vast importance. It is energy of a sort I will admit, but it is not to be compared to the energy of a man who sticks to his work all day, and although to outward appearance he does not appear to be of an active disposition, he will at the end of the day have expended more productive energy both manually and mentally than the rushabout. He is by far the most energetic of the two, and yet if a judge of character (commend me to a so-called judge of character for making more mistakes in summing up a man in a given time than any other person) were to give an opinion on him he would place him amongst the steady-going plodders. A more insulting expression could hardly be applied to one who devotes the whole energies of his mind and strength to his employer's business. A man with an energetic mind is rarely of an active disposition, which most of the world's great thinkers prove.

Energy means great strength, either of mind or muscle, and therefore a man engaged in laborious work is energetic, but he will most likely be called a plodder, and the man who is engaged in great mental problems, or in scientific discovery, is also energetic, but he most likely will earn the title of crank, or dreamer, but the blusterer rushing about with his hands full of paper and not enough ears to put his pens and various coloured pencils at the back of, will, without the slightest doubt, be considered a most promising and energetic person. His energy is the energy of a warped intellect.

A manager for a large company once remarked to me "What is wanted in this world is a school of honour, where men who require it can be taught, before going out into the world, how to act in a straightforward and manly way, both to their superiors and inferiors, and to scorn all underhand and shady actions." If such a thing could be there would be no necessity to use such adjectives as "energetic" and "enthusiastic" to certain individuals, as all would then do their utmost for their employers and this being so, all would be making the most of their energies and all would be, if I can make use of such an expression, divinely inspired.

THE CORRESPONDENCE CLERK.

By A. H. HUDSON, *Metropolitan Office.*

THE correspondence clerk occupies a somewhat isolated position in our offices. He takes no part in dealing with the ubiquitous works order in its routine through the various departments, cash books do not trouble him, and he keeps no returns. He is misunderstood by the majority of the rank and file, the general idea amongst the uninitiated, formed on an incorrect basis, being that his work is easy and almost anyone could do it. Of course, this is entirely wrong, as persons holding such views would find were they to be transferred to correspondence work for a short while. To quote a recent writer in this JOURNAL: "The work requires tact, courtesy, firmness, a capacity for sifting wheat from chaff, and some knowledge of human nature." Unfortunately in the past this was not recognised to the extent it is now, and instead of a clerk already to some extent experienced being put on to the work when a vacancy occurred, it was not at all uncommon for an entirely new man to be brought into the service. From this fact was formed the incorrect notion already referred to, the idea not unnaturally being that if a new and inexperienced man could do it, anyone could. I remember one case where a new man was put on to the work, as a junior, whose only qualification was that of being an army reserve man, and the remarks of the register clerks, when he carefully wetted his lead pencil when making notes in the registers were not to be found in any service instruction, especially as strong pressure was applied to the pencil. Fortunately he did not stop long on the work, and for awhile after he made a satisfactory doorkeeper. His notes in the registers, however, remained long after his removal as a memorial of his conscientious work.

The youth deputed to correspondence work should of all things know shorthand well. In the early stages of his training he will find it an advantage to draft out his letters before dictating them to a typist, and, with shorthand at his disposal, this can be done quickly. He would also find it useful for the purpose of taking notes of points suggested to him when he is referring a letter for advice, and in many other ways find it a great convenience. Therefore I say that all correspondence clerks in the service should be able to write shorthand at a fair speed and be able to read it easily. A youth who has already had experience in typing or writing letters from dictation, has an advantage in that he has absorbed a fair amount of knowledge as to how a letter should be written. When starting on his career he should be taught how to fasten papers together correctly and neatly (this is a lost art in some offices in the service) and how to file them so that they may be found quickly when required. Nothing is more irritating to a manager or chief clerk than, when wanting papers, to be kept waiting for them.

With regard to filing, we have here a system of keeping the current papers in Amberg files each marked with a letter of the alphabet. Each batch of papers before being put away is marked in the top left-hand corner with a date, thus—24—signifying that the batch would not be required again until May 24, unless anything happens in the meanwhile. Each day the junior correspondent goes through the files and extracts those bearing the current day's date, at the same time putting away those dealt with on the previous day. In this way each paper gets turned out of the files in due course, but an occasional supervisory inspection is made to see that none has been overlooked.

In course of time our junior obtains a good knowledge of the Company's books owing to his continual reference to them for information in dealing with the letters handed to him. In his junior stage, of course, he does but little dictation, his duties being the obtaining of necessary information for his seniors. As, however, he sees most of the letters and the replies, he is gradually becoming more and more experienced and ultimately will fit himself for actual correspondence when a vacancy arises.

Then he becomes a full-fledged correspondence clerk, but he still has a lot before him and his troubles are only beginning. Like a boy leaving school his real education is commencing. It is true that to some men it is an easy task to put together a letter, fluent, correct and above criticism, but these men are not always to be found. Our correspondent, moreover, has to work to some extent

under difficulties, as it is assumed that it is necessary he should be in the general office where all the noise and bustle is going on. Not for him is the quiet private office where he can collect his thoughts and dictate his letters in peace. Telephones are fitted all around him and are in constant use. Register clerks are checking over cash very audibly, and fragments of conversations over the three or four telephones all within hearing disturb him. Then there is another source of trouble. As is known, in many of our offices the dictation of letters is done by telephone, and it is no unusual thing on the part of the office staff to interrupt the correspondence clerk when he is in process of dictating. These queries are often of the most simple nature, but any protest on the part of the correspondence clerk deeply offends the querist who cannot be convinced that a few minutes later would probably not have mattered. It is this same sort of person who will go to another clerk and interrupt him in the casting of a long line of figures, or stand by in sight of the caster with such mute pathos written on his or her face as to effectually prevent the adding of any figures correctly, except by a person of iron nerve.

A further difficulty which faces the correspondence clerk is the necessity for dictating early if he would avoid stopping late. All letters must, as far as possible, be answered the same day as received. The typists work up to the same time for leaving as the general office clerks, and, therefore, if the correspondent does not wish his letters included in the batch which is being completed at closing time, he must dictate his letters as early as possible, but he must not hurry, as directly a correspondent hurries he may look for trouble. He is apt to miss some portion of the routine laid down in matters pertaining to correspondence. It has for a long time been my opinion that the typists in a large office should, half an hour before closing time, cease dating letters for that day, the balance being dated for the next day and signed in the morning. The small delay in answering the letters would not matter much, and the official who has to sign the various letters, memorandums and notices would have more time to check them without having to stay after the usual office hours.

Our correspondent has to deal, at any rate in London, with all sorts and conditions of subscribers, from a duke down to a fried fish dealer, and, therefore, must be in a position to write accordingly. He must be well up in the etiquette of addressing titled persons, and keep an eye on the typist who will commence a letter "My lord" and end up "Yours truly." He must not make the mistake that one clerk did who, on answering a telephone, was told that the "Earl ——" was speaking. The clerk was most careful to be correct in his speech, only to find to his disgust at the finish of the conversation that the person at the other end was the landlord of a public-house.

Our correspondent is told to answer as many letters as possible by telephone, and, conscientiously, he tries to do so. He has, perhaps, some successes at first, probably when the chief clerk is looking on—things generally happen that way—but altogether he gets disheartened. He quite appreciates that the Company are out to induce the public to make use of the telephone service, and that therefore the Company's staff of all people should believe in the telephone. But he does find it hard after taking perhaps ten to fifteen minutes explaining to a subscriber to be asked "Well, you might confirm it in writing," and thus all his time, he feels, has been wasted and his other work delayed. Of course the time has not always been wasted, as some subscribers appreciate the attention. The private house subscriber in London, however, is hopeless for this practice. One only gets the butler, or a boy, or a maid who knows nothing, and the master or mistress is out, so the correspondent feels it is useless leaving a message, which might be forgotten, and writes his letter after all. In these attempts he also comes across the subscriber who appears to feel that the Company, in trying to reply by telephone to his letter, is afraid to put in black and white the explanation of his poser. You can almost feel the warmth of his indignation at being troubled by telephone when he says, not always politely, that he requires an answer in writing.

Our correspondent does not handle money, but he has his temptations when subscribers sometimes offer a small inducement to leave the line working for a while, but these offers are not often made. It is not at all unusual, however, for a subscriber, grateful for attentions shown, to suggest that the clerk shall go round and



THE NATIONAL TELEPHONE OPERATORS' SOCIETY AND CLUB, GLASGOW. PAST AND PRESENT MEMBERS OF COMMITTEE, SESSIONS 1907-8 TO 1910-11.

receive something in kind. I have at different times had a hat, a pair of boots, and something in the hosiery line offered me if I cared to pay a visit.

Our correspondent in course of time finds that most of his troubles are on account of subscribers who are notoriously backward in payment, and he has to keep his eyes well on these gentry. It is this sort of subscriber who waits until the last day of the final notice has expired before finding that his telephone has been out of order for months, or that three years ago he was promised something or other by the contract officer which he has never had; that the contract officer promised him he need not pay for three months; that the instrument is not fixed as he wanted it, etc. He *always* considers it "disgraceful, but only to be expected from a monopolist Company." Of course it is only to be expected that subscribers soon find out our routine, and delay payment until the last day.

The subscriber who says he is a shareholder arrives in due course, and also the one who says he is a friend of someone or other, and who endeavours to frighten our clerk into giving way on some point.

When our correspondent has been through all these experiences he begins to feel how important a part he fills in the service. He understands that when he is writing or speaking to a subscriber it is the Company who is writing or speaking, and not his personal self.

This renders him careful of what he says for fear he should compromise the Company. He gets to know the subscribers in his district (with some he gets quite friendly), and generally acquires a knowledge of human nature as placed on paper. He does his best for the Company, and if he does not always succeed—why, who does?

THE NATIONAL TELEPHONE OPERATORS' SOCIETY AND CLUB, GLASGOW.

We publish in this month's issue a photographic group of the past and present members of the committee of "The National Telephone Operators' Society and Club, Glasgow." This organisation has successfully completed its third session, and the fourth session is being anticipated with the liveliest interest. As its name implies, it combines education with enjoyment. The first hour of the programme is set apart for the reading and discussing of papers on telephone or other subjects of an educational nature, and the remaining hour and a half is taken up by the club meeting.

During the club part of the meeting, cards, games, songs, instrumental selections, readings, sketches, and dancing are indulged in. Needless to say the club programme is much enjoyed, and the dancing is participated in with much spirit.

It is not too much to say that the society and club are responsible for the spirit of friendliness and co-operation pertaining amongst the staff in the various exchanges, which prior to the inauguration of the society and club did not to the same extent exist.

ELECTRIC CLOCKS.

By J. H. STEWART, *Gerrard Street.*

Now that electric clocks form part of the equipment at so many of our modern exchanges, and are fitted and maintained by the electrical staff, a description of some of the systems in common use may interest our readers.

Some remarks upon the properties of the pendulum are also included, for whether a clock be electrically impelled, key-wound, or otherwise driven, it is upon the pendulum or spring balance that its performance as a timekeeper depends.

Electric clocks may be grouped into two distinct classes:—

(1) Those that are self-contained, being often ordinary clocks which are wound up electrically through the medium of a motor which is brought into action when the spring runs down. (2) Those in which a set of dials is driven from a master clock. This latter class may be further divided into those in which the master clock is key-wound and merely used to send out current impulses to actuate the dials, and those in which the master clock itself is electrically driven.

Sometimes synchronised clocks are classed as electric, but, they are usually key-wound clocks, timed at intervals (usually hourly) by an electric impulse from a master clock, and are not electric clocks as usually understood.

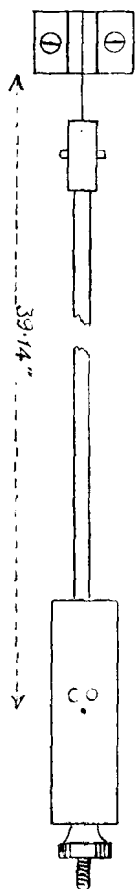


FIG. 1.

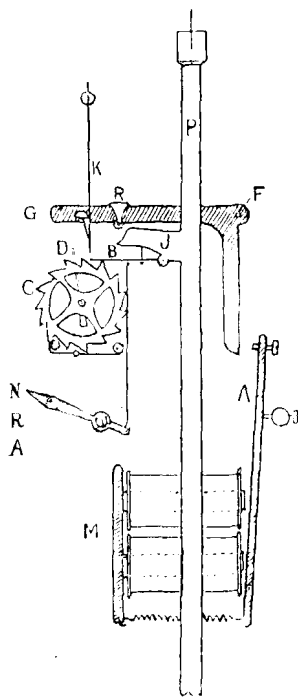


FIG. 3.

Attempts to drive clocks electrically date back almost to the discovery of the electro-magnet and it is somewhat surprising, and, to those interested in electrical science, a matter for regret that progress in this branch of applied electricity has been so slow.

There have been several contributory causes to this want of progress; (1) the difficulty of making transient electric contacts at once light and reliable; (2) the difficulty of causing the pendulum

to make these contacts without interfering with its timekeeping properties, (3) the difficulty of making a suitable step-by-step motion for the dials, and (4) the prodigal waste of electrical energy in some of the earlier systems.

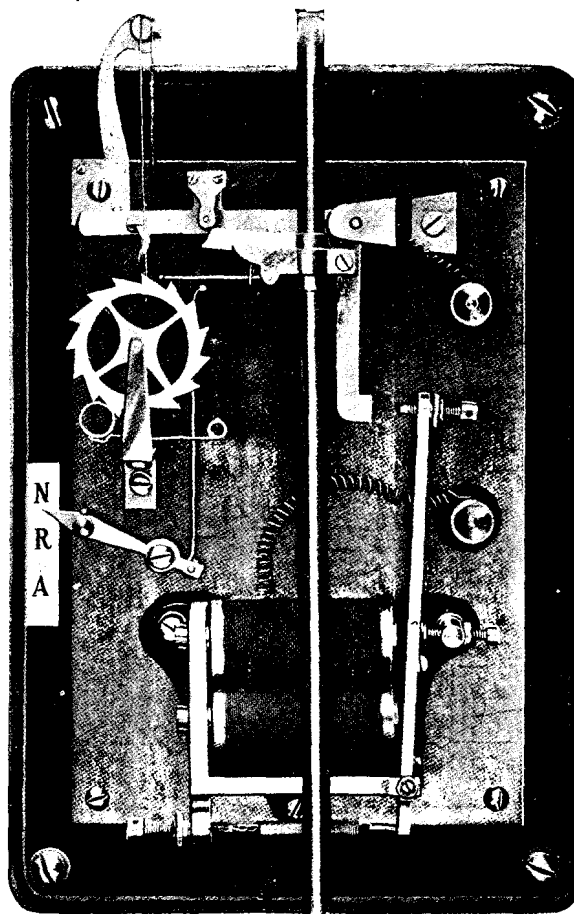


FIG. 2.

Only a few systems now in common use will be referred to here, but first a few simple facts relating to the pendulum will be considered.

The Pendulum.—A simple pendulum consists of a suspended cord or rod, with a bob attached to the free end; the rod is theoretically supposed to be without weight and the mass of the weight itself to be concentrated at its centre. If such a pendulum be set swinging and allowed to come gradually to rest it will be found that though the arc of swing gradually diminishes, the time of each swing, if not too large, remains constant. This important property is sometimes called the pendulum law. Since the theoretical pendulum defined above cannot be realised in practice, it is necessary to know how the practical pendulum differs from it. The shorter a pendulum, the more quickly it swings, and each particle of the solid rod tends to swing in different times; but obviously all must swing together, so that a sort of compromise takes place between the different tendencies, and the whole rod swings as if its material were collected together at one dense spot which is known as the centre of oscillation. Thus a solid pendulum swings as an ideal pendulum would do which was equal in length to the distance between the centres of suspension and oscillation.

The next important thing to note is that the time of swing is governed solely by the length, and not by the weight of the bob, nor the material of which it is composed; a bob might be made of iron, brass or wood, and its weight might be halved or doubled, but provided the length remains constant the time of swing will not alter. A pendulum bob acts like a falling weight, and a little consideration will show that the time bodies take to fall under the action of gravity is independent of the weight; a falling 2-lb. weight is only equivalent to two 1-lb. weights falling side by side.

A pendulum is only isochronous when swinging through very small arcs; the reasons cannot be explained within the compass of

this article, but the fact was well known to the early horologists, and a great step in advance was made when Dr. Hooke invented the anchor escapement, which permitted of the pendulum swinging through quite a small arc. Anchor escapements are to be found in many grandfather clocks at the present day, and it will be noticed that any good seconds pendulum never swings more than two or three degrees on each side of the perpendicular.

In the earliest clock escapements to which the pendulum was applied it was necessary for it to swing through a very large arc before the pallets could release the teeth of the escape wheel, and this large arc of swing greatly impaired the timekeeping.

When very accurate time is required the pendulum must be "compensated" for changes of temperature. All substances expand or contract with an increase or decrease of temperature; a pendulum will therefore increase in length in hot weather and swing more slowly, and the clock it is controlling will lose time, unless means are taken to counteract this tendency.

Advantage is taken of the varying rates of expansion of different substances to accomplish this end, and when a pendulum is so constructed that its time of swing is unaffected by temperature changes it is said to be compensated.

Only a very simple compensation can be described here; it depends upon the different rates of expansion of wood and lead. The "co-efficient of expansion" of lead is nearly six and a half times that of wood, and this being known it is easy to calculate that a cylindrical lead bob of about 13 inches in length will compensate with a wood rod with a total length of about 46 inches. The lead weight rests on a flange and nut on the end of the rod (see Fig. 1), with a rise in temperature the rod will lengthen, and the lead weight is consequently lowered, but the weight itself expands, the expansion taking place in an upward direction, thus maintaining the centre of oscillation (which is about the point c.o. in the figure) at the same distance from the point of suspension as before; the time of swing is therefore unaltered. With a decrease of temperature these actions are reversed, the pendulum rod shortens, and the weight is raised, the lead cylinder contracts, lowering the c.o. just as much as the shortening of the rod had raised it, and again no change will occur in the time of swing.

As the electric clock systems adopted by the Company fall under the heading of Class 2, with an electrically impelled pendulum, this form will be described in greater detail than the other types referred to in this article.

The dials and the pendulum controlling them are all connected in series, and there is only one contact point in the whole system—viz., that on the pendulum, or time-switch, as it is often called, because its function is to switch the current that actuates the dials on and off at certain definite intervals—usually half-minute ones. The Synchronome Company's system may be taken as typical, the installations at Head Office and Salisbury House being on this plan. The action of the pendulum will be made clear with the aid of Figs. 2 and 3. The pendulum rod, P, swings seconds, the bob at the lower end not being shown in the figure; its motion is maintained by the weighted lever moving about the point F, being allowed to fall upon the cam-shaped projection J every 30 seconds. Each time the pendulum swings to the right a light hook B engages with the ratchet wheel and moves it forward one tooth. As the wheel contains fifteen teeth it turns round once every half-minute. The projection D, fixed immovably to the same arbor, is also carried round with it, and in passing under the spring catch K, presses it to the right, thus releasing the weighted lever. The roller R, falls upon the sloping end of the cam J, giving an impulse to the pendulum. The motion of the lever is arrested by the contact on the armature A; the instant this contact is made, a circuit is completed through the magnet M, and all the dials in series with it; the armature A is pulled up, flicking the lever G on to the catch K, again.

The impulse given to the pendulum is sufficiently powerful to keep it swinging freely for the next half-minute when the cycle of operations is repeated. The positions of the cam and lever are so adjusted that the impulse is given through an arc which is bisected by the middle point of the swing; this is of considerable importance, as the impulse causes least disturbance to the free action of the pendulum when so delivered, an advantage not realised in an ordinary clock.

(To be continued.)

CORRESPONDENCE.

THE LOAD LINE.

TO THE EDITOR OF THE NATIONAL TELEPHONE JOURNAL.

In reading Mr. Deane's excellent paper on the above subject, may I trespass on your valuable space with a question?

In the July number does table (c) represent junction values to one exchange, or to all sub-exchanges connected to a main exchange?

If the latter condition, how would you account for the following:—

(a) Exchanges with ten outgoing junctions to one sub-exchange junction, value 2.2.

(b) Additional sub-exchange added also having ten outgoing junctions, junction value for eleven to twenty outgoing junctions, 2.7.

Why should the value of the junctions leading to the first sub-exchange be reduced in value by condition (b) being added?

Leicester.

P. V. SANSOME.

TELEPHONE INSTALLATION FOR THE BRITISH ANTARCTIC EXPEDITION.

TO THE EDITOR OF THE NATIONAL TELEPHONE JOURNAL.

In Mr. Cohen's article in the August JOURNAL it is stated that two of the telephone instruments will be used in connection with observations of the Aurora Borealis.

As the expedition is to the southern hemisphere, might I ask if the meteoric phenomenon to be observed there is not termed the Aurora Australis?

I know very little of the science, but should like to have the ground work of that little as accurate as possible.

Glasgow, Aug. 11.

JNO. A. CRAVEN.

[Aurora Borealis was, of course, a slip of the pen. It is the Aurora Australis, as Mr. Craven suggests, which is observable in the Antarctic.—Ed., "N. T. J."]

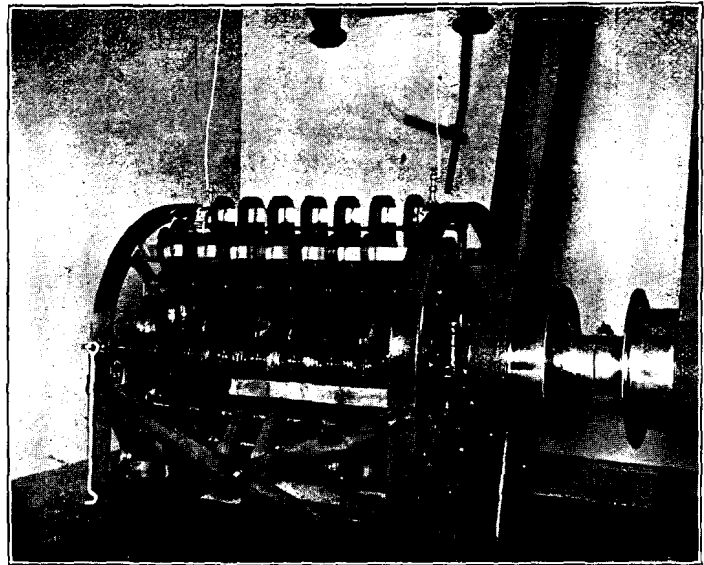
SOUTH FORELAND LIGHTHOUSE.

TO THE EDITOR OF THE NATIONAL TELEPHONE JOURNAL.

The enclosed photograph may be of sufficient interest for the JOURNAL.

It is one of the four dynamos used for lighting the South Foreland Lighthouse, and from its history and construction, is somewhat out of the common, I understand, on good authority, these machines were working in Paris during the siege, and it will be noticed their construction is peculiar, as they are built of batteries of permanent magnets and are driven by belting (through counter shafting overhead) from low pressure, old type, horizontal engines of considerable size.

I, unfortunately could not see the engineer-in-charge at the time of my visit, and the lighthouse keeper was unable to give me much electrical data, but, I understand, the lamps burn at 50 volts, which, from indications about, appears to be transformed down.



The arc lamps are also of an old but very effective type, burning a special carbon which gives a yellowish white, or in sea parlance, a "bright light," this being found in practice to be of greater fog penetrating power than the ordinary violet arc light.

The lantern is a revolving sixteen lens one, giving a flash every two and a half seconds in any direction, and, as it is 300 feet above sea level it is visible at a distance of 20 miles in clear weather.

If any of the staff are visiting Dover—which I may say in passing, is an interesting a place as any to be found in the country, either for a botanist, photographer, or engineer—it would be well worth their while to walk along the cliffs to the lighthouse, about three miles, some of it stiff climbing, especially if the Eastern Cliff route is taken, a magnificent view is to be had all the way, and from the lighthouse tower, a clear day shows the coast from Shakespear Cliff to Ramsgate, and also the French coast, the tower of Cape Grisnez Lighthouse being distinctly visible.

The lighthouse keepers are most obliging men, and will show anyone over during daylight on weekdays.

For a maintenance electrician or engineer, the whole place is a model example, as buildings, machinery, and lamps are kept in perfect condition, from the massive iron lens carrier—riding in its bath of mercury, so lightly poised that it can be moved with one finger—down to the telescope rack, everything is spotless and polished to the highest degree.

As a hint to visitors to any lighthouse or lightship, if you have some good readable books or magazines you do not need again, take them with you and forget them—they will give a lot of pleasure on long winter nights.

Dover, July 19.

J. STUART BEST, Engineer.

LONDON NOTES.

MR. A. R. MACFARLANE, who was recently appointed Local Engineer, Walthamstow, was presented with a set of pipes by his *colleagues* on the electrical staff. Mr. Greenham made the presentation, and referred to the good work which Mr. MacFarlane had accomplished whilst in the Construction and Fitting Department.

THERE have been three wedding presentations recently to members of the Salisbury House staff. Miss L. Harkness, Clerk, Rentals Department, was presented with table linen; Miss E. Emerson, Clerk, Fees Department, with a clock; and Mr. R. Humphrey, Chief Clerk, City Divisional Engineer's office, with an overmantle, together with a gold brooch for Mrs. Humphrey. This year has been quite exceptional for weddings amongst the staff, and one or two others are likely to take place before the end of the year.

THE City contract office has just had an original reason given by a subscriber for not having his number changed to permit of auxiliary working. The number is 1857, and as that was the year of the Indian Mutiny, he could not think of allowing it to be altered. One wonders whether the desire is to lessen the difficulty of remembering the telephone number, or an easy way of arriving at the date of the Mutiny.

MISS G. HEARD, of the Metropolitan Correspondence office, has just obtained a senior certificate for shorthand from the London Chamber of Commerce, and an intermediate certificate from the Society of Arts. Miss Heard is to be congratulated on her double triumph.

THE time for Telephone Society's opening announcements has again come round. As the Company has repeated its generous offer of last year to award five premiums of £7 each, and five of £3 each, for papers read before telephone societies throughout the country, the London Society is setting aside five of its meetings for hearing the papers to be selected by the papers committee from competitors on the Metropolitan staff. It is to be hoped that the response from the staff will be adequate and encouraging. The opening meeting of the session will be in the Great Hall, Salisbury House, on Monday, Oct. 3, when Mr. Eustace Hare, the president, will deliver his presidential address. Mr. Hare's subject, "Papers: their Writers and Audiences," is a very happy one for an opening meeting, and there ought to be a record attendance. Although on such an occasion discussion is not usual, it has wisely been arranged that as full opportunity will be afforded of discussing and criticising the president's views, as is the case with the ordinary papers. As everybody generally knows how to write other people's papers, the discussion ought to possess both interest and animation. In addition to a big meeting on the first night, the committee also appeal for a big membership list. The subscription is only *6d.* for ladies and *1s. 6d.* for gentlemen; the fees therefore cannot keep many back.

THE Operators' Society has also issued its preliminary announcement. In asking for volunteer paper-writers, the committee has introduced a commendable innovation by giving sixteen suggested subjects on which papers might be written. The choice is varied, and several of the topics strike one as being just those on which a great deal could with advantage be said. If the response is at all keen, the society has a good time in front of it.

THE striking effects of the season on the traffic at our exchanges is at no time better exemplified than in the month of August, when everybody is said to be "out of town." The reduction is naturally most evident in the West End, where practically all the large private houses are closed. At one West End exchange, there was a falling off of no less than 36 per cent. in the calling rate, as compared with the previous month, while the average drop for the three largest West End exchanges was 26 per cent. The City also suffers, but not to the same extent, as someone must keep business matters going while the principals are holidaying; one busy City exchange, however, shows a drop of 16.7 per cent., and another has decreased by 12 per cent. Such conditions help to pile up the organisation troubles and victories of the traffic staff.

POST OFFICE INSTITUTION OF ELECTRICAL ENGINEERS.

THE following papers read before the above institution are now on sale at the prices mentioned:

- "Alternating Current Measurements," by A. G. Lee, B.Sc., A.M.I.E.E. 6d.
- "Erection and Maintenance of Post Office Secondary Cells," by W. J. Medlyn 6d.
- "The Loading of Telephone Cable Circuits," by A. W. Martin, A.M.I.E.E. 1s.

Application for copies should be made with remittance to the Engineer-in-Chief, Head Office.

GLASGOW NOTES.

THE Glasgow National Telephone Bowling Club gives indications of becoming a power in the local bowling world. The club's record is a good one, and other results of the two most recent matches do not detract therefrom. The first of these was played on the green of the Pollokshields Club on Aug. 6, when representatives of the Edinburgh staff were defeated by 33 shots. This seems to compensate for the victory obtained by the eastern men in Edinburgh on a former occasion. The second victory was obtained over the Crosshill Victoria Bowling Club in a game of four rinks a side. The Victoria were defeated by thirteen shots, this being one of the very few defeats sustained by them this season.

THE autumn meeting of the Bell Golf Club was held at Carnryne on Aug. 6, when the prize winners were Messrs. D. B. Heberton and J. F. Murray.

All the competitors have pleasant recollections of the golf match between representatives of the Eastern and Western Scottish districts which took place at Hamilton in June, and the return match is being anticipated with pleasure. It has now been arranged that this will take place on Saturday, Sept. 10, at Bathgate, and the home team will no doubt then endeavour to take their revenge.

THE change-over to the new Central Post Office Exchange took place on Aug. 13, and as intercommunication had to be given between National and Post Office subscribers the necessary joint arrangements were made. The transfer was one of some magnitude, some 6,000 subscribers being involved, and the work was carried through successfully.

INVENTORY of plant is in the air, and it is anticipated that in common with the rest of the country an early start will be made with this gigantic undertaking.

WE regret to announce the death of Mr. Thomas Napier, Exchange Inspector in this district. Full details have not yet been received, but his death was very sudden, taking place on Aug. 6, the date on which his annual leave terminated. The sympathy of the staff is with those who now mourn his loss.

RETIREMENT OF MR. THOS. DONALDSON.

AN interesting function took place in the Glasgow district office on the evening of Thursday, Aug. 18, when, on the occasion of his retiring from the Company's service, Mr. Thomas Donaldson, Chief Mechanic, was presented with a purse of sovereigns, and an umbrella for Mrs. Donaldson.

Mr. Valentine made the presentation, and in the course of his remarks referred to Mr. Donaldson's long period of service which was characterised by work well done in a most unobtrusive fashion. He also referred to the large number of telephone men now scattered over the country who served their period of apprenticeship under Mr. Donaldson, and in the name of all the subscribers he expressed the wish that Mr. Donaldson would be long spared to experience the benefits of the Company's Staff Pension Fund, in which he would now participate. A communication from Mr. F. Douglas Watson expressing regret at his absence, and conveying his good wishes was read to the meeting. In a short speech in which he recalled a few incidents of 25 years ago, Mr. Donaldson made suitable acknowledgment.

Mr. Donaldson retires on his having reached the age of 65 years, and he has been connected with the electrical industry practically all his life. As a youth he served six years' apprenticeship as a brass finisher, and shortly after the expiry of his time he entered the employment of Miles & Company, telegraph engineers and contractors, of Edinburgh and Leith, who did a considerable amount of work for the Telegraph Department of the North British Railway Company. After Miles & Company retired from business, he entered the service of the railway company under the late Mr. Edward Gilbert, who some few years thereafter was appointed General Superintendent of Telegraphs to the Imperial Japanese Government. At Mr. Gilbert's request, Mr. Donaldson, along with five others, among whom was Mr. Dane Sinclair, went out to Japan and served in Tokio for a term of three years.

Mr. Donaldson came home about the middle of the year 1879, when he joined the service of the Glasgow and South-Western Railway Company in Glasgow as Mechanic. In January, 1884, he left this service for that of the National Telephone Company, and since then he has occupied the position of Chief Mechanic. The mechanics' shop does not provide much scope perhaps for heroics, but it has a reputation for good work quietly performed, and many now occupying responsible positions in the Company's service must look back with pleasure to the place where they acquired the knack of handling their tools, and will join with us in hoping that Mr. Donaldson will yet have many years in which to enjoy his well-earned leisure.

RATE REFORM IN AUSTRALIA.

THE abolition of the flat rate and substitution of a toll rate in Australia which has been under consideration for a long time will take place on Sept. 1 next. The following details of the new system are taken from the *Brisbane Courier*:—

The Postmaster-General to-day (July 6) announced the Government's policy regarding the telephone system. The flat rate system is to be abolished on Sept. 1 next, and the toll system, with no free calls, is to be substituted. The new rates will be similar to those introduced when Mr. Thomas was Postmaster-General last year, and the operation of which was suspended by Sir John Quick,

who succeeded Mr. Thomas as head of the Post and Telegraph Department. The new scale of charges will be as follows:—

Population of towns.	Radius, with main exchange as centre.	Exclusive service.	Each subscriber on two party service.	Each subscriber on three or more party service.
1 to 10,000 ..	5 miles	£3 0	£2 10	£2 0
10,001 to 100,000 ..	10 miles	3 10	2 15	2 5
100,001 upwards ..	10 miles	4 0	3 0	2 10

As stated, the charges set out are only telephone rentals. Each call originated by a subscriber has to be paid for in addition. The rates for calls are as follows:—

For effective calls not exceeding 2,000 half-yearly, two calls for one penny.

For calls above 2,000 half-yearly, three calls for one penny.

Fractions of a penny will be charged as one penny. No charge will be made to the subscriber for the calls received by him.

At present the flat rate is £9 a year for business people, and £5 a year for private houses. The £9 under the old system would supply the following service:—

2,400 calls at two a penny	£5
Rent	4
Total	£9

The 2,400 calls would average a fraction under eight originating calls a day (excluding Sundays) for the year. There is also the toll scheme called the "Chapman" system, which provides that for certain charges (which are £1 each in excess of those laid down in the Thomas toll system), each subscriber can originate 2,000 calls a year without extra payment. For calls in excess of the number stated toll rates have to be paid. Both the flat rate system and Mr. Chapman's system are to be superseded on Sept. 1. All subscribers will be required to come under the Thomas regulations or surrender their telephones. Any subscribers who decline to come under the new service may by giving a month's notice have their telephone service discontinued, and the rent for the outstanding period of their contract may be refunded to them. Those who do not desire to give up their telephones will not be given any refund, but money they may have paid will be held to their credit, and adjusted with their account for calls at the end of the first six months after the Thomas rates come into force.

STAFF GATHERINGS AND SPORTS.

Liverpool.—National Telephone Swimming Club.—On Aug. 15 Miss Jessie Spiers, Operator, Royal Exchange, Liverpool, swam in the 100 yards ladies' amateur championship held at Weston-super-Mare, and finished third, winning a gold medal. Miss Spiers has won twenty medals, in addition to various prizes obtained in club and open events, and in 1909 came in second in the 100 yards championship of the northern counties.

Mr. J. Kerrigan, of the Engineers' Department, Liverpool, won the first prize (gold hunter watch and gold albert) in the 50 yards open amateur handicap held at the Liverpool Police Sports Gala, Walton Baths, Aug. 11.

A squadron race with six members of South Hill S.C., Liverpool, on July 12, resulted in the National Club losing by about a yard in twelve lengths.

An interesting squadron race took place on July 2 at Seacombe Baths with the Bradford National S.C. Three members swam for each side over a distance of 50 yards. The result was in favour of Liverpool by about eleven seconds.

Norwich.—The East Coast district staff held their annual outing on June 25. The party, numbering close upon 40, journeyed in wagonettes from

Norwich to Wroxham, whence they were conveyed by steam launch to Ranworth, and thence to Horning Ferry, where an excellent tea, under the presidency of Mr. Wigg, found hearty acceptance, and later the visitors rejoined the launch for Wroxham, whence the wagonettes conveyed the party home to Norwich. The customary programme of sports was curtailed owing to the inclement weather, thus leaving several items to be decided at a later date, but the items which reached a concluding stage were as follows:—Bowls: W. J. Pratt, first; T. J. Clark, second; R. J. Ayers, third; and A. Palmer, fourth; 100 yards' flat race (for juniors): T. W. Woods, first; G. P. Jones, second; and W. Parish, third.

Swansea.—The annual outing of the Swansea staff took place on Aug. 13, when some 40 members of all departments spent an enjoyable half-day at Llandilo, Carmarthenshire. Included in the party were Mr. W. H. Crook (Chief Clerk) and Mr. A. G. Bristow (Traffic Manager). Mr. W. E. Gauntlett (District Manager) who had arranged to be present, was unfortunately at the last moment unable to make the journey. Llandilo was reached at 3.30 p.m., the remainder of the afternoon being spent in exploring the beautiful grounds surrounding Dynevor Castle, the residence of Lord Dynevor. An excellent tea was provided at the "Railway Hotel," after which the members of the party, in groups, rambled through the picturesque environs of the town. An impromptu concert was the last item on the programme after which the return journey was commenced. Mr. W. Howells, Contract Officer, acted as secretary.

Hull.—On Aug. 6 a party numbering about 41 of the Hull staff, journeyed to Filey for a half-day's outing. A substantial tea was provided at Foord's Hotel. After tea some of the party indulged in a very pleasant and bracing walk on the cliff top, whilst others watched some sports which were being held

on the promenade. When the time arrived for the homeward journey everyone seemed to have had a most enjoyable time. Another year it is hoped that a larger number of the staff in the district will accompany the outing. Much praise is due to the committee for the excellent manner in which the arrangements were carried out.

Chambers Cup.—On Aug. 13 the Huddersfield staff met the Hull staff in the first round for the above cup, the match resulting in a win for Hull by seven wickets. For the losers Wood 21, and Thornton 17, were the chief scorers. For the winners F. Hunter 31 not out, and W. Sanderson 28, showed the best form with the bat, whilst H. R. Hircoc six wickets for 27, and F. Hunter two for eight, shared the bowling honours. Very noticeable was the fine wicket keeping of T. Pullan for Hull. Full scores, Huddersfield 69, Hull 79 for 3.

Nottingham Factory.—Mr. H. Monro Walker, the Factory Stenographer, achieved distinction in virtually winning an open lawn tennis tournament on Aug. 2, when with the light failing, and the games "evens all," the result was decided on the toss of a coin, Monro losing on the "call."

Pontypridd.—The annual outing of the Pontypridd staff took place on July 2 to Creigiau. The early part of the afternoon was somewhat marred by heavy rains, and a musical programme and inside games were indulged in, but these were quickly followed by brilliant sunshine and blue skies. Sports were arranged with the following results:—100 yards in heats: A. H. Gadd, J. Rudd. 50 yards ladies' race: Miss R. Morgan, Miss Rooser. Long jump: A. H. Gadd. Three legged race: A. H. Gadd and J. Hammond. Needle threading race: J. Hammond, Miss Mallett. 440 yards: J. Bruton. Undress race: J. Bishop. Tug of war: Mr. C. Cook's team. A meat tea was provided, and a photograph of the staff and friends taken, and altogether a very enjoyable afternoon was spent. Among the prizes was a medal (presented by the committee) and designed by Mr. G. Price to represent the Company's call office sign, which was given for the championship of the tug of war. Messrs. J. W. Clark and G. Price were responsible for all arrangements.

Portsmouth.—On July 30 the Portsmouth and district staff had their annual outing to "Beaulieu," leaving Portsmouth Pontoon at two o'clock by a steamer. They proceeded to Lord Montagu's beautiful estate on the borders of New Forest. Games were indulged in, and tea was provided on the green near Bucklers Hard. After tea cricket and walks into the country occupied the time until the return at 7.30 p.m. The Ryde contingent was landed at Ryde, and Portsmouth was reached about ten o'clock after a very pleasant afternoon. Mr. S. J. Smith, District Manager, and Mrs. Smith, accompanied the staff.

Edinburgh.—The staff held another of the series of rambles on Aug. 6. The route was by way of Aberdour to Burntisland. The incidence of holidays and a wet afternoon prevented a large number from joining in it.

EXAMINATION SUCCESSES.

Glasgow.—At the Glasgow and West of Scotland Technical College: Telephony I, D. Brough (elec.) 92 per cent., Jas. Jarvie (elec.) 84 per cent., Robt. C. Love (elec.) 91 per cent., Telephony II, J. Donaldson, jun. (elec.) 96 per cent., Thos. Macindoe (elec.) 96 per cent., W. Stewart (eng.) 93 per cent., J. Y. Hutchison (elec.) 91 per cent., John Bowie (elec.) 90 per cent., G. Edward (traf.) 83 per cent., Telegraphy I, W. Stewart (eng.) 93 per cent., Telegraphy II, T. Pettigrew (elec.) 97 per cent., R. Brough (elec.) 96 per cent., A. S. Duncan (elec.) 94 per cent., Mathematics I, R. Milne (cler.) 96 per cent., A. Chambers (cler.) 95 per cent., Elec. and Mag., R. Milne (cler.) 80 per cent., Elec. and Mag. (Lab.), R. Milne (cler.) 76 per cent., Elec. Eng. I, G. Edwards (traf.) 94 per cent., D. Brough (elec.) 85 per cent., Elec. Eng. (Lab.), G. Edwards (traf.) 77 per cent., D. Brough (elec.) 85 per cent., Elec. Eng. II, J. Y. Hutchison (elec.) 88 per cent., Elec. Eng. III ("B" lectures), A. Rafferty (elec.) 51 per cent., Wires and Fittings, R. S. Graham (eng.) 90 per cent., A. Rafferty (elec.) 98 per cent.

City and Guilds Examinations: Ordinary Grade Telephony, Certificate: First class, J. Y. Hutchison and Jas. Donaldson; second class, A. B. Stark, Murdoch McLean, and Graham, R. C. Love, J. Jarvie and H. C. Sutherland. Honours Telephony, second class, A. H. Brown, Wm. Stewart, M. Peattie, W. A. Bowie and A. S. Colston. Ordinary Telegraphy, first class, Wm. Stewart, D. C. Baillies and J. Y. Hutchison. Honours Telegraphy, first class, J. Forrester, A. S. Duncan and T. Pettigrew.

Sheffield.—Sheffield University, Technical Department: Baker, H., telephony (ordinary), second class. Broomhead, A., mathematics (practical-preparatory), first class. Burgess, A., electrical engineering (second year, laboratory), first class; electrical engineering (second year, lectures), first class; electrical engineering (second year, tutorial), first class; electrical engineering (preliminary), City and Guilds. Glenn, B., mathematics (practical-preparatory), first class; telephony (ordinary), first class; telephony (ordinary), City and Guilds, second class; telegraphy (ordinary), second class. Richardson, H. C., mathematics (practical-preparatory), prize; telephony (ordinary), first class; Smith, F., telephony (honours), first class; telephony (ordinary), City and Guilds, second class. Walker, H., mathematics (practical-preparatory), first class. Webster, F., mathematics (pure, stage 1), first class. Woodhouse, W. T., mathematics (practical-preparatory), first class; telephony (ordinary), prize. Wright, J. W., mathematics (practical, stage 1), first class.

Portsmouth.—Mr. R. J. Parsons, district office, gained second class certificate (City and Guilds) for telephony (ordinary). Also the following inspectors: Mr. S. Wainscot, first class honours, in telephony; Mr. T. Collins, second class honours, in telephony; Mr. H. Hopper, electrical engineering and electric light wiring; and F. Luckham, electrical engineering.

Cardiff.—Cardiff Technical School: G. D. Bateman, second class certificate, practical mathematics, stage III; first class certificate, shorthand (intermediate), also first prize. A. Fradd, first class certificate, practical mathematics, stage II.

Bradford.—City and Guilds of London Institute: Ordinary grade, first class, P. Dilger and H. Shaw; second class, H. Birkby, J. Fitton, F. Swift,



MISS JESSIE SPIERS.

F. Wadsworth and A. E. Wills. Honours grade, first class, F. Bastow, £3 (pewterers) and silver medal, and H. Shaw; second class, H. Birkby.

Belfast.—City and Guilds of London Institute: Honours grade, second class, J. F. McDonald. Ordinary grade, W. S. Keown and W. H. Wood. Teacher, A. R. Pulford, Chief Inspector.

Bristol.—City and Guilds 1910 examination in telephony: Honours grade, first class, J. E. G. Burt, Weston-super-Mare, C. E. Morgan, Weston-super-Mare, and H. W. Read, Bristol. Ordinary grade, first class, F. J. Head, Bristol, and A. E. Sims; second class, J. H. Bannister, Bristol, F. G. Drew, Bristol, and H. W. Woodland, Bristol.

Nottingham.—The following certificates have been obtained in the City and Guilds Telephony Examination, 1910:—Ordinary, first class: F. Hopps. Second class: W. C. Twigg, G. E. Green. Honours, second class: A. W. Barnsdale, G. H. Carrier.

NEWS OF THE STAFF.

Mr. W. T. LEBMING, Local Manager, Ashton-under-Lyne, upon his transfer to a similar position at Bury, in the Bolton district, was presented by the Ashton staff, and colleagues in the S. E. Lancs. district, with a handsome pair of silver flower vases, suitably inscribed. The presentation was made by the District Manager, Mr. A. Pugh, who assured the recipient of the best wishes of the contributors.

Mr. J. BOLTON, Senior Inspector, Kendal, has been promoted to the position of Local Manager at Whitehaven. Mr. Bolton has been in the service since January, 1897, and before going to Kendal was at Warrington and Wigan. On leaving Kendal he was presented by Mr. Weatherburn, Local Manager, on behalf of the staff, with a case of razors, a fountain pen, and a trousers press.

Mr. J. E. G. BURT, Assistant Engineer, Weston-super-Mare centre, Bristol district, has recently obtained the Bachelor of Science Degree (B.Sc.) in Engineering of the University of Bristol. Mr. Burt deserves very hearty congratulations on his success. He is the only member of the Company's staff in the Bristol district to obtain such a distinction. He has also recently obtained the highest possible success in telephony, viz., first class certificate, honours course. In addition to this he has an aggregate of well over 90 per cent. of the full marks for all the Company's Correspondence Courses.

Mr. H. J. HERINK, Chief Inspector, Cambridge, who has resigned the Company's service to take up an appointment with the United River Plate Telephone Company, Limited, Buenos Ayres, was, on leaving, presented with a pocket letter wallet and fountain pen as representing the good wishes of the whole of the staff. The presentation was made by Mr. F. Summarsell, Local Manager.

Mr. H. M. COWLES, Exchange Inspector, Norwich, has been promoted to the position of Chief Inspector, Yarmouth. Before leaving Norwich he was presented with a handsome clock as a token of the appreciation and good wishes of his friends and colleagues of the Norwich staff. The presentation was made by Mr. H. H. Wigg, Local Manager.

Mr. A. J. STROULGER, Instrument Inspector, has been promoted to the position of Exchange Inspector, Norwich.

Mr. C. E. MORGAN, Local Manager, Weston-super-Mare, has also been appointed for the fourth successive year as the Lecturer on Telephony at the Bristol Merchant Venturers' Technical College.

Miss VANNIE JOHNSON, Operator, Henfield, has been transferred to Steyning Exchange.

Miss GLADYS HUNTABLE, Operator, Hove, has been promoted to be Supervisor at Brighton Exchange.

Miss WINIFRED M. HAMMOND, Correspondence Clerk, Brighton, has been transferred to Ipswich in a similar capacity.

Mr. F. WARE, Exchange Inspector, Brighton, has been transferred to Norwich as Test Clerk.

Miss ELSIE CLARKE, Operator at Portslade, has resigned and gone to Canada. She was presented with a travelling bag.

Mr. H. BROWN, Traffic Department Clerk, Birmingham, resigned on July 21, after three years' service, to go to America. He was presented with a Gladstone bag on behalf of the members of the traffic staff by Mr. C. W. Piggott, Traffic Manager.

Mr. J. CARTER, Test Clerk, Midland, has been appointed Clerk to the Traffic Department vice Mr. Brown resigned.

Miss E. HOLLOWAY, Night Operator at Central Exchange, Birmingham, resigned on July 1 after four years' service on account of ill-health.

Mr. H. M. THOMAS, of the Cardiff district office, who was recently transferred to Bristol as Collector, has been presented by the Cardiff district office staff with a silver cigarette case. The presentation was made by Mr. W. H. Kirk, Chief Clerk.

Mr. J. HAMMOND, Faultsman, Pontypridd, has been appointed as Storekeeper in the same centre.

Miss BYROM has been obliged to resign her position as Senior Operator at the Leeds Central Exchange owing to ill-health. She has been in the service for over ten years at Leeds.

Foreman HOOD and Mrs. HOOD, late Caretakers at the Company's Colne Exchange, who left the Company's service and emigrated to Australia principally for reasons of health, were presented with a kit-bag and a brush and comb respectively.

Miss EDITH BLANCHE MAW, who has served twelve years with the Company, has been promoted from Chief Operator to be Clerk-in-Charge, Scarborough.

Mr. DUNCAN D. PROUDFOOT, Instrument Fitter, Scarborough, has been promoted to be Inspector.

Miss GERTRUDE A. CRAMPTON, Operator at Tonbridge Exchange, resigned on July 28. She was presented by the staff with a dressing-table set as a token of esteem.

Miss M. ROWLAND, Operator, Plymouth, resigned from the Plymouth staff on account of ill-health. A picnic was held on July 9, when she was presented

with a gold bangle, which was contributed to by all members of the various departments as a token of regard.

Miss WINIFRED LUCY TURBITT, Operator, Plymouth, was presented with a silver shoe lift and button hook in case on her resigning from the service.

Miss ALICE GRAHAM, Chief Operator, Barrow Exchange, left the Company's service on Aug. 11 to take up a position with a private firm in Carlisle. She entered the Company's service as a half-time Operator in June, 1904, at the Carlisle Exchange, and was promoted to the position of Chief Operator at the Barrow Exchange in October, 1907. The District Manager (Mr. Taylor) presented her with a gold brooch set with pearls and turquoise, and expressed the good wishes of the staff for her future welfare.

Mr. F. W. WATSON, Learner, Swansea, has been promoted to be Sub-Engineer.

Miss M. M. RHODES, of the Manchester district, has been promoted from Operator to be Chief Operator at the Higher Broughton Exchange. Miss Rhodes entered the service in July, 1902.

METROPOLITAN STAFF CHANGES.

Mr. HAROLD BENNETT, Apprentice, has been appointed Engineer on probation.

Mr. W. E. WOODCOCK, Inspector, Bromley, has been appointed Assistant Night Manager.

Mr. L. E. WORTHY, Assistant Engineer, has been transferred from Lee Green to South (Sydenham).

Traffic Department.—Promotions and Transfers:

Miss EDITH TRINGHAM, Senior Supervisor, Paddington, promoted to be Senior Supervisor-in-Charge, Hammersmith.

Miss ROSINA WHITE, Operator, Lee Green, promoted to be Supervisor-in-Charge, Sidcup.

Miss AMELIA TOLLETT, Operator, Westminster, promoted to be Supervisor, Avenue. She was presented by the Westminster staff on leaving that exchange with a silver-backed hand mirror.

Miss ADA FISK, Operator, North, promoted to be Supervisor, Paddington.

Miss MILLICENT KILBURN, Operator, Avenue, promoted to be Supervisor, London Wall.

Miss SYLVIA EARLE, Operator, London Wall, promoted to be Supervisor, Holborn.

Miss ANNIE IDDENDEN, Operator, Holborn, promoted to be Supervisor, Battersea.

Miss ELIZABETH CLANFIELD, Supervisor, transferred to a similar position at Brixton.

Miss ETHEL SOWERBY, Supervisor, School, transferred as Supervisor to Gerrard.

Mr. ERNEST FLOWER promoted from Night Clerk-in-Charge, Gerrard, to Assistant Night Manager.

Mr. WILLIAM NEGUS promoted from Night Clerk-in-Charge, Hop, to a similar position at Gerrard.

Mr. THOMAS CAMPBELL promoted from Night Operator-in-Charge, Holborn, to be Night Clerk-in-Charge, Hop.

Mr. HERBERT FRENCH promoted from Night Operator, Gerrard, to be Night Operator-in-Charge, Holborn.

Miss MINNIE BUTLER, Clerk-in-Charge, North, on being transferred to Kensington, was presented by the operating and maintenance staffs with a handsome pair of silver candlesticks and a pencil case.

Miss FLORENCE WADESON, Operator, East Ham, on leaving the service was presented by her colleagues with a handbag.

Miss MAUD NUTLEY, Operator, East, on her transfer to Hop was given a gold pendant by the staff.

Miss ADA KNAPMAN, Clerk-in-Charge, Brixton, on her recent transfer to North was presented with a handsome amethyst and pearl pendant.

Miss CELIA HOOPER on her promotion from Hammersmith to be Clerk-in-Charge, Brixton, was presented by her former staff with a gold ring.

MARRIAGES.

Miss MABEL MASON, Private Branch Exchange Operator, Bristol, who recently left the service to be married, was presented by her colleagues on the traffic staff with a handsome case of silver spoons.

Miss ANNE DWYER, Operator, Westbury-on-Trym Exchange, who recently left the Company's service to be married, was presented by the traffic staff with a case of silver spoons as a mark of esteem.

Miss MABEL E. E. BAIGENT, Operator, Chippenham Exchange, who recently left to be married, was presented by the staff with a tea service. The subscribers to the Chippenham Exchange also made a voluntary subscription and presented her with a handsome set of cutlery. A letter also accompanied the gift expressing the subscribers' appreciation of the courtesy and consideration she had shown in the discharge of her duties as Chief Operator at the Chippenham Exchange.

Mr. E. W. WILSON, Cost Clerk, Dover, was presented by the East Kent district staff with a case of plated fish servers on the occasion of his marriage.

Miss HESTER BENTLEY, Senior Operator, Bradford, has resigned to be married, after ten years' service. The Bradford operators, as a token of esteem and regard, presented her with a flower stand and silver cake knife.

Mr. F. BASTOW, Test Clerk, Bradford, was presented with a handsome electro-plated flower table centre on the occasion of his marriage.

Mr. J. W. ENTWISTLE, Contract Officer, Bolton, was the recipient of three handsome engravings presented by the Bolton staff on the occasion of his marriage on Aug. 3. Mr. Entwistle is secretary to both the local and north-western province staff transfer committees, by both of which and by the staff generally his services have been much appreciated.

Miss MAY BRIMELOW, Operator, Bolton, left the service on Aug. 11 to be married. Miss Brimelow was presented with a Sheraton mahogany coal box and silver photograph frame by the staff. The presentation took place in the switchroom, and was made by Miss Slater, Clerk-in-Charge.

Mr. J. H. MARTIN, Foreman, Nottingham Factory, was the recipient of a handsome mahogany palm stand from the members of the Factory and Engineer-in-Chief's staffs, on the occasion of his wedding, Mr. C. E. Fenton making the presentation. The Cable and Receiver Departments also made him a present of a set of oak waiters with brush and crumb tray to match.

Miss CISSIE ARNOLD, Operator, Wolverhampton, has resigned to be married. Before leaving she was presented by the staff with a dinner service.

Miss ETHEL THRIFT, Operator, Steyning, on resigning to be married, was presented with a tea service.

Miss GERTRUDE BRISTOW, Operator, Hove, has resigned to be married. She was presented with a dinner service.

Miss MAY HOLLAND, Traffic Clerk, Brighton, on resigning to be married, was presented with a marble clock.

Miss E. MAY DEAKIN, Works Order Clerk, Birmingham district office, left the service on July 23 to be married. She was presented with a silver-backed brush, comb and mirror by the District Manager, Mr. Williamson, on behalf of her colleagues.

Miss E. E. HORNE, Typist, Reading district office, resigned the Company's service to be married, and was presented with a time-piece by the members of the staff.

Miss MARGARET HERBERT, Supervisor, Reading Exchange, left the Company's service on June 2 to be married, and was presented with a tea service.

Mr. J. WALBY, Inspector, Reading, was presented by the staff with a set of cutlery on the occasion of his marriage.

Mr. H. BUTLER, Inspector, Reading, was presented by the members of the staff with a dinner service on the occasion of his marriage to Miss Herbert, Supervisor, Reading Exchange.

Mr. W. JACKSON, Storekeeper, Ashton-under-Lyne, was presented with a marble clock as a token of esteem on the occasion of his recent marriage.

Miss M. GALE, Coil Winder, Nottingham Factory, was the recipient of a handsome fire screen and pair of vases on the occasion of her wedding. Miss E. Clements, Forewoman, making the presentation on behalf of the department.

Miss LAMBERT left the Company's service on June 9 to be married, and has gone to reside at Hanley, Saskatchewan, Canada. She was presented by the staff with a silver-mounted calf leather writing case. Further, she was presented with a handsomely engraved silver Queen Anne tea service, together with a silver-mounted oak tray, by the subscribers to the Knaresbro' Exchange. She set sail for her new home on Aug. 16.

Miss CURRINGTON, Assistant P. O. Fee Clerk, Sheffield, resigned from the Company's service to be married, after nearly six years' service. Before leaving she was presented by the staff with a case of fish knives and forks, Mr. Thyne (Chief Clerk) making the presentation before a good assembly of the staff.

Miss E. LOWE, Supervisor, Leeds Exchange, was presented by the members of the operating staff with a silver fruit stand on the occasion of her leaving to be married. She had been in the Company's service fourteen years.

Miss I. ORMEROD, Operator at Nelson, has resigned to be married.

On the occasion of the marriage of Mr. W. CROMPTON, of the Engineer-in-Chief's office, a presentation was made to him on July 22 by Mr. Watts, on behalf of the staff, of a case of silver spoons and a case of silver knives and forks.

Miss ISABELLA H. BOWIE, Operator at Edinburgh Central Exchange, who left to be married, was presented with a dinner service by her friends there.

Miss WINNIE MORRIS, Operator, Portsmouth, was presented with a salad bowl by the operating staff and many presents from individual friends in the Company on the occasion of her leaving the service to be married. She sailed for Gibraltar on July 22.

Miss ALICE FURLONG HILL, Portsmouth, was presented with a tea service on the occasion of her leaving to be married, after nine years' service.

Miss LEADBETER, Portsmouth, was presented with a cabin trunk on the occasion of her leaving for Canada, where she was married on Aug. 1.

Mr. HERBERT EATON, Draughtsman, Bank Exchange, Liverpool, was on the occasion of his marriage presented by his colleagues with a handsome tea service, three large pictures after Meissonier and Wallace, together with a framed testimonial. The presentation was made by the District Engineer, Mr. C. S. Wolstenholme.

Mr. ERNEST PARKINSON, Senior Clerk, Keighley, was presented with a handsome timepiece by the staff of the Keighley district on the occasion of his marriage. The presentation was made by the Local Manager, Mr. J. Aked.

London Traffic Department.

Miss ALICE CHARD, on leaving Finchley Exchange on account of her approaching marriage, was presented with a silver-plated jam dish.

Miss RUBY DIXON, Operator, Croydon, who resigned on Aug. 4 to be married, was presented with a hand-painted fire screen by the operating staff.

Miss ROSE BETTINSON, who resigned from Gerrard to be married, was presented with a dinner service, the operators in the division giving a flower centre.

Miss MAY HISCOX, Supervisor-in-Charge, Richmond, on leaving to be married, was given a very pretty eider-down quilt by the staff.

Miss DORA PRICHARD, late Senior Operator at Brixton, on leaving to be married, was given a copper kettle on stand by her late colleagues.

The following Operators leaving Westminster to be married received presents from their late colleagues as under:—Miss MINNIE WOODCRAFT, a dessert service; Miss MATILDA HARLAND, a tea service; Miss ELIZABETH JAMES, a cake dish and knife.

Miss FLORENCE RICHER, Supervisor, on leaving Avenue to be married, was presented by the staff with a pair of cut-glass scent bottles, a silver-mounted salts bottle, and silver hat pins.

Miss WINIFRED WEBSTER, Operator at the same exchange, was presented by the staff, on leaving to be married, with a fire screen. Miss Webster was also the recipient of several other gifts, including a brass crumb tray and brush, cheese dish, sardine dish and a watercress dish.

OBITUARY.

We regret to record the death of Miss KATE BLADES, Operator at Lee-on-the-Solent, in the Portsmouth area. She has been ill since Jan. 1 with rheumatism, which was followed by a complication, and after a very painful illness she passed away on Aug. 4. The Company was represented at the funeral by the Clerk-in-Charge, Portsmouth, Miss Yeates. The Portsmouth operators sent a large floral cross, and a wreath was sent by sub-exchange operators and caretakers. Many floral tributes were also sent by subscribers. Miss Blades was very popular amongst her subscribers, and was always a good operator and very attentive to her duties.

We also regret to record the death from an internal malady of Mr. SAMUEL MIDDLETON, Storekeeper, Swansea, at his residence on June 22, after an illness which extended over a year. The deceased was an old servant of the Company, having joined the service at Blackburn in 1881, whence he was transferred to Rochdale in 1887, and thence to Swansea in 1889. He was greatly respected by the whole staff, being a most conscientious worker, and one who was never known to be late. Of the early days of telephone work he had many interesting experiences. The funeral took place on June 25, and was attended by Mr. W. H. Crook (Chief Clerk) and Mr. J. Parvin (Chief Foreman), in addition to some 30 other members of the staff, six of whom carried him to his last resting place. As a mark of esteem a beautiful floral wreath was sent by the staff.

It is with regret we have to announce the death, on July 2, of Miss VIOLET BUTTAR, of the Contract Department, Dundee. Miss Buttar was held in high esteem by all members of the staff in the Dundee and Perth districts, her genial manner endearing her to all who came in touch with her in the course of her duties. A large wreath was subscribed for by the staff as a token of their respect. Messages of condolence and a very handsome wreath were also forwarded from the staff of the Aberdeen district where Miss Buttar was greatly esteemed, having been temporarily connected with that district for a period of six months. Much sympathy is felt for the family. The Company was represented at the funeral by the Contract Manager, Mr. G. G. Tennent.

THE COMPANY'S CORRESPONDENCE CLASSES, 1909-1910.

We give below a list of the members who obtained the first five places in the various courses of the above during the past session:—

"A" COURSE.	Name.	District.	Percentage.
1st place ..	Boyd, R.	Glasgow	99.4
2nd	Pattison, C.	Glasgow	98.9
3rd	Crispin, W.	Met. Engrs. Dept.	98.4
4th	Wright, J. W.	Sheffield	98.4
5th	Carter, A. O.	Exeter	97.4
"B" COURSE.			
1st place ..	Ashcroft, C. G.	Manchester	100.0
"	Davidson, S. J.	Manchester	100.0
3rd	Sim, W.	Exeter	99.4
4th	Taylor, G. H.	Manchester	97.9
5th	Taylor, G. W.	Leicester	97.4
"	Wright, J. W.	Sheffield	97.4
"C" COURSE.			
1st place ..	Bennett, S. Y.	Bristol	100.0
"	Cole, G. T.	Bristol	100.0
"	Hopper, E.	Blackburn	100.0
"	Larnell, T. O'C.	Bristol	100.0
5th	Sleigh, C. G.	Met. Engrs. Dept.	99.2
"	Thornley, H.	Blackburn	99.2
"D" COURSE.			
1st place ..	Taylor, G. H.	Manchester	98.7
2nd	Goulden, W.	Eng-in-Chf's Dept.	97.5
3rd	Magnall, J.	Manchester	96.0
4th	Friday, F. W.	Eng-in-Chf's Dept.	96.2
"	Herink, H. J.	Norwich	96.2
"	Strong, E.	Eng-in-Chf's Dept.	96.2
"M" COURSE.			
1st place ..	Beames, A. W.	Swansea	100.0
"	Chislett, W. W.	Swansea	100.0
"	Jones, Miss E.	Newcastle	100.0
"	Thomas, J. A.	Swansea	100.0
"	Williams, A.	Swansea	100.0
"N" COURSE.			
1st place ..	Coulson, A. J.	Norwich	100.0
"	Doggett, F. A. B.	Norwich	100.0
"	Herink, H. J.	Norwich	100.0
4th	Asplin, A. T.	Norwich	99.6
"	Anderson, J. M.	Glasgow	99.6

GALLANT RESCUE FROM DROWNING.

MR. J. A. HEWITT, of the Solicitors Department Head Office, whilst walking along the Thames Embankment on the afternoon of July 28 last, saw an unfortunate woman throw herself in the river, and without waiting to divest himself of any clothing he dived in and succeeded in holding her up until the arrival of the police boat.

The magistrate of the Bow Police Court warmly commended Mr. Hewitt on his plucky performance, and the police authorities have placed the matter before the Royal Humane Society. It is hoped he will receive the recognition he deserves.