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MY BIT ON THE GREAT DEFENSIVE.

BY SAPPER MARLAND.

MUCH has appeared in the British Press since the fateful 21st of March. I have just perused some of the papers which have been sent to me, but none of them have moved me so much as the pen and ink manuscript which tells me the story of the great battle as it has been reflected in the little home where the fate of England is identical with the fate of myself; that is just everybody's experience too. In every house, in every street, there have been the sleepless nights and the keen suspense for the safety of the country as represented by son, or brother or husband somewhere in France; that is where the battle rages in the heart of Humanity. How often have I said aloud before the guns woke me in my tunnel before 5 a.m. on the 21st of March:

"Oh hush your noise ye men of strife,
And hear the Angels sing."

The birds are now singing in the trees as I write in a peaceful orchard; I wonder if they sing the prelude to a greater sweeter song, which men and women will sing ere the leaves fall, for I believe we travail in the last pangs, and we are about to give birth to a new world. You may wonder that it is possible for a soldier to know that it is springtime out here and to enjoy the peacefulness of an orchard. The fact is, after bearing the brunt of the first great onslaught we have now moved into rest, and although the guns can still be heard by night and day, yet here it is as if we were in some sweet spot in England's sunny south.

The first day after we arrived here we had a special parade, and were marched to a field close to our Corps Commander's billet where he addressed us. He said:—

"During the difficult time through which we have just passed the work of the Corps Signal Co. has been wonderful; to me as a layman in these matters it has been miraculous. I have been at the telephone nearly all the time, day and night, and not once have I been out of touch with the Corps on either side of me, and with the Armies behind and with the Divisions in front. I have requested this parade in order to thank you, and to say how much your work is appreciated; you have done it under enormous difficulties. A retreat is always difficult, but though we have retreated we shall still beat the Boche."

You would like to hear how those communications which our General said were so vital were established and maintained. It is no secret because miles of country have now passed into the hands of the enemy* and a long time ago there appeared in the *Daily Mail* quite an elaborate description of the very efficient construction of the telegraph and telephone routes which link up the whole of the British forces in France from North to South and East to West. These well-built permanent routes were carried right close to every front line, the vital junctions and terminals being buried so as to meet the danger of shelling and bombing by aircraft.

The day before the German Push began we were linking up by telephone a division to the Corps in a way that Luton might be joined London. The day after—well, Fritz dropped into our pot-holes used for firewood, and just read our communication methods from A to Z; woke us all up as I have said by shrapnel bursting right overhead at 5 a.m., and high explosives within a breezy distance. A canteen near by at the Road Junction had a direct hit and cigarettes, boots, soup squares, &c., were sent flying in all directions. Soon after breakfast (yes, we had a good breakfast that morning of porridge beside the usual rasher of bacon) our section was split up into several working parties, and with five others I proceeded by motor lorry along the road that was being shelled, past our own very big guns, right up to where it transpired afterwards the enemy had his biggest concentration of troops. We found that our box respirators as well as steel helmets were necessary, and the noise of our guns behind, and the shrapnel overhead was so terrific that at the top of a telegraph pole where I was working it was impossible to hear what was shouted at the bottom. We soon discovered that the route we had been sent to repair was badly damaged, where it passed an observation balloon which had been, and still was the object of German gunfire. We made good some open wires and ran fresh cables when the wires could not be mended. What a hot hour that was! to climb the poles without ladders made one warm, and then to work coolly at the different wires was not easy, for clouds of earth were being shot into the air and the lads down below had to run under a bank to escape the machine gun-fire of a squadron of German planes which came to do what their artillery could not, and then turn their machine guns on the boys under the bank; they failed to fire the balloon all six of them, and it seemed as if it were then just for spite that they fired on the little line under the bank. When I came down from the top of the pole, having put the cables through the boys said they did not envy me up there; but, honestly, I was not alarmed, only for the balloon. Our job finished, we rejoined our lorry, and on the way back it was pitiful to see men, mules and horses struggling or being led back to dressing stations with terrible wounds but able to walk. All one young machine gunner could say was: "This is a blighty one, I know." Several times that day we had to drop into the reserve trenches, and at dusk we had to move back.

So began the retreat: it was far into the night before we halted and slept. Before breakfast next morning we had put through the Corps Commander from his headquarters to the main trench lines and the staff were on the switchboard before the day was very old. The necessary preparations had been carried out beforehand in case it were necessary, which shows the preparedness of at least one branch of the Army. It was on this day that I had a chance of sending off a field postcard and also having a good wash on the banks of the Somme. We were in the middle of the old Somme battlefield, and near at hand there lay a heap of rubble once a church, around which lay German bodies, some buried and some still exposed since the early days of 1917. The horrors and ghastliness of war must be exposed to the full for the sword to perish by the sword, for war to end war. That night we moved again, in the dark we stumbled over tired men on the floor of a hut, once a canteen where on 6 feet by 2 feet of space I stretched and slept soundly. Again next morning we repeated the operations of running cables to Staff Officers' huts, fitting 'phones, bringing leads on junction poles and all the incidental work of signal, and had all ready before the Corps Commander arrived from the previous headquarters. Then came the order to pack kits and load off for a much longer ride. As we left behind the barren Somme area and passed through fields being ploughed and sown with precious corn I wondered if that seed could be destined to yield crops for the German hordes or French farmer. That question is not answered yet although the ground at present is possessed by the enemy. *We halted an hour at a small town and you can imagine better than I can tell the look of interrogation, suspense and growing fear on the faces of the inhabitants as they thought of what our arrival and the two two lines of never-ceasing traffic right back to a big town in the rear which had been bombed badly the night before.

We worked practically all night to fix up a new signal office and early next morning I volunteered with four others to clear contact faults on a main route to a division. We had a glimpse of the splendid work of our

* Nous avons changé tout cela! as Molière says.—[ED., "T. & T. J."]

* This question is now satisfactorily answered.

gunners getting into new positions. After two or three days later we had to move in the early hours of the morning and all the citizens were aroused too. Take a glimpse with me of this little household where we stand on parade *in the street. The door is open—a small lamp burns on the table,* the children have been hurriedly taken from their cots, and dressed, and are now eating their last breakfast before they are put into the perambulator already packed with a few things that cannot be left, and pushed along the busy uphill road that leads away from home. Then in that other house there is a child, a mere baby, lying in the pram, very ill; grandma has requested the lorry to move away yesterday because the noise of the engines woke the sick child. They too must away. The whole town seemed to be astir to escape before the daybreak; the nightly bombing from the air had prepared them, and the glow of fire on the horizon as well as the nearer sound of guns, now warned and urged them. No motor transport for these poor things, although some of the more fortunate ones had packed their horses into the laden farm carts. The story of those roads who can tell? Who can bear to read it without pain or without a tear! I would not harass your feelings with such tragedies *only that I think the ruthlessness, the wickedness, the horror of war should* be understood and revealed till the world shall say we will have war no more.

Here is an old man of advanced years, he brings to mind the old grandpa *of England, who is playing the part of father in daddy's absence.* His younger wife trudges along by his side while tottering under the load of an almost useless wheelbarrow he pushed forward. Read of the Push—the big Push—there it is. The story is not told in the newspapers, not half has ever been told or will be told. I managed to speak to him, but no sooner did I speak than his eyes filled and I came away. I saw him again five hours afterwards, he had pushed only two miles in the interval. Yet that old man with that heavy load had come all the way from A—— about sixteen miles distance. We had just reached our new headquarters and after the necessary work had been done I was left on the line to test, and afterwards had to walk on alone. The number of refugees on the road increased and I could not pass some of them without an attempt at encouragement. I stopped to extricate one mother's wheelbarrow from the military traffic while she looked after the children. They are free of speech these French folk, and she vented her *sorrows on my sympathetic ears. I tried to cheer her up by saying,* "Courage, Madame, vous reviendrez bientot à votre maison," at which she wept, and said, "Jamais, monsieur, ma maison est brutée." I was dumb, what could I say to such a family whose house had been burned, and whose right and lawful protector was at the war or had perhaps died for his country? In the village where later on we were stationed at a farm, shells burst occasionally, and in her terror a young mother with a baby a few days' old could not rest in her feeble condition and would insist on "joining in the push." There is the push of the devilish monster war, even the animals are in danger hourly, the old dame of the farm in whose straw barn we are billeted goes to the door of the cow-shed to see if her cow has yet calved. She would have to abandon it if the order came to evacuate at once. Every time you pass them in the street the villagers interrogate you with the query "Bon nouvelles m'sieur?" so eager are they to hear good news as to whether they are going to be pushed from *hearth and home. It has started to rain and out of the downpoor into the* barn has stepped another mother with a broken pram and a tiny babe wedged in with an enormous weight and a bottle of milk by its side. There is another *sister at the other end, a boy of five walks by her side and grar ma comes* as well. We wipe the rain off the babies with a towel, and make a fire and run to the farm to buy some more milk. Soon baby has some warm milk. We went out to work for several hours and when we came back our refugee family were sharing still our roof (there was nothing beside the roof). Madame of the farm who is paid for the billeting is more concerned for the calving cow than for this hapless family and above all things in the world wants them to push on in case of trouble with the Military Authorities. She may be right, but oh! the pitiless rain and the no less pitiless push! So I could tell story after story of this tragedy of sorrow and weeping. The young mother picked up her babies, the grandmother followed, and off they went again into the rain not knowing where they should lay their heads that night. The tears came, but were dashed away by the brave young mother—the Kaiser pushed and he would push humanity into Hell; but, thank God, his power is limited *and he has nearly reached his limit, for :—*

"Though the cause of evil prosper, yet the cause of truth is strong,
And although she wanders outcast, yet around her crowd and throng,
Troops of beautiful, strong Angels to enshield her from all wrong."

A DAY WITH THE "SIGNALS" IN EAST AFRICA.

By J. Skinner (Brighton).

I did not need awakening at 2 a.m. when our sergeant crept around, to whisper that it was time to get up. Sleep had been difficult during that short night, for the prospect of going off to war in a few hours time is, at least, exciting. It was quite cool—for East Africa—and in the bright moonlight I gathered together my few belongings, making them up into a bundle convenient for the boy to carry upon his head. Shaking off the numerous red ants that were strolling over rifle, bandolier and water-bottle, I girded myself for battle and then joined my companions. Our Signal section was a small one—eleven men and an officer—but we had about 70 native "boys" attached to us as porters, and they certainly required a good deal of supervision. We were in one of the most unhealthy parts of the country, and it was impossible to keep horses and mules alive there long, hence the numerous porters.

Arranging the boys' loads and persuading them to walk "mbili mbili" (two deep) is a slow business, and it was 3.50 a.m. before the column marched quietly out of camp, down the hill covered with bush, and numerous mango, lime and other trees. A strong force of dusky warriors went first, then the Signals, followed by a battalion of a famous white regiment, a machine gun company, and other details. We commenced to lay cable at once, and I was soon busy. The drum of cable was carried on a "barrow" by two boys, and as it was necessary to keep pace with the advancing column, there was no time to spare. We followed the usual method, which is, briefly: One man pays out the cable quickly, taking care that it is placed well off the path and out of the way of the traffic, whilst the others follow behind, tying up the cable at intervals, hanging it over the branches of trees with the aid of a crook-stick, and generally making it secure. Signals are exchanged with the distant end every quarter of an hour.

It was an impressive scene as we crept forward in the moonlight, conversing in whispers, and expecting the storm to burst at any moment. Soon the sun arose—the last sun-rise for many a poor fellow present, alas—and it began to be hot. The scenery was truly beautiful and at every turn some new glory was revealed. Here and there in the creeper woven jungle could be seen gaudy tropical blossoms and brilliantly coloured birds and butterflies, whilst pretty lizards were much in evidence as usual. For some distance we journeyed through the welcome shade of the peaceful woods, stopping at frequent intervals to rest.

At 6.30 a solitary shot rang out, and we all halted. Nothing happened, so we re-commenced our journey, feeling that it would not be long before we "bumped" the enemy. We were right, for at 7.30 a.m., after advancing about 4 miles, heavy rifle fire broke out just ahead, followed by outbursts on our right and left, and we knew then that the serious business of the day *had commenced. Our numerous machine guns came into action,* Stokes guns threw their deadly packets over to the Germans' positions, whilst our faithful aeroplane came and added to the din by dropping bombs. In the *meantime, the Signals were busy sending and receiving messages, connected* with the operations, to and from the columns which were co-operating with us on our right and left. Our office was established on the ground—not the most comfortable position in which to deal with a lot of traffic, by the way.

Hearing my name shouted, I went up to our O.C., who instructed me to proceed to the rear and bring up more cable. It did not feel at all comfortable standing up, owing to the numerous objects that were flying about, and I went off down the path, past the gallant — Fusiliers who were resting, and waiting their turn for a bout with the enemy. I reached our rear, and found my chum, Frank W—— (of TS. F.), in charge of the tribe of natives who had carried our stores and kits. After a chat and a little banter with *the rear-guard, I left with four boys carrying the cable,* little thinking I should never see my friend alive again! On arriving back safely, I was despatched with instructions to deliver an important message to a staff officer. *This gentleman was nowhere to be seen, so I proceeded up to the firing line,* passing through the advanced dressing station.

People at home, reading their morning instalment of war news which is so often couched in flippant and sporting terms, can have but little idea of what really happens on the battlefield. War is an awful business, and the words of the great Scottish national poet, "Man's inhumanity to man makes countless thousands mourn," come home to one with great force on such occasions as these. The sights witnessed in the dressing station cannot be mentioned here, but they are, alas, only too familiar to the soldier!

After disposing of my message, I hurried back, feeling thankful to the kind statistician who had discovered that the number of bullets required *to kill one man was quite considerable.*

Suddenly it came on to rain in true African fashion, and in a short while we were drenched to the skin. The downpour continued for twenty or thirty minutes, *and the firing slackened gradually, until it almost ceased.* Then a lively fusilade, accompanied by the shouts and screams of the porters, broke out behind us, and we knew that the watchful enemy had attacked us in the rear! Things began to look awkward. The Germans, in large numbers, were in a strong position just ahead, and we could not shift them, although all sorts of useful things were thrown at them, and the Fusiliers had made a most gallant bayonet charge. Orders were given for the column to retire, and the narrow track was soon crowded with stretcher bearers, porters, Askaris, Britishers, and the numerous odds and ends that go to make up a column. It must have been trying for the wounded, as the ground was extremely rough in places, and our pace was necessarily slow.

About half a mile down the path a remarkable scene met our eyes. For some distance the ground was strewn with broken and pillaged boxes, cases and kits. Tins of milk and jam had been smashed open and the contents *hastily devoured, whilst pots, pans and dixies were scattered around.* It was the place where I had left my chum in charge of the porters and stores, not more than an hour or two earlier, and my feelings cannot be described, when a moment later I found his dead body in the bush! And he was not alone in death, for others had fallen near at hand. Such was the end of my chum Frank—a man of rare gifts, an accomplished musician and scholar, beloved by all who knew him.

We hurriedly pushed on, and later, when passing through a dense wood, the enemy, with dramatic suddeness, attacked us vigorously, and every man took cover and fired. The niggers, as usual, dropped their loads and bolted, one of them in his haste, bowled me over so effectually, that a Fusilier comrade called to me and asked anxiously if I were hit! We beat off the enemy after 20 minutes' sharp fighting, and resumed our journey, but half an hour later;

when we were in another awkward spot—all trees and bush—the Germans again attacked us. This time, however, we soon shook them off, a liberal application of our machine gun tonic no doubt hastening their departure, and we again recommenced our weary trek.

Just off the path, we came across the dead body of a young Indian lineman. He was kneeling, and had "tapped in" on the cable from which the wire was still connected to his instrument; his hand was still on the key, but he had been shot through the head. Another un-named hero, faithful to the end, from a distant part of Britain's far-flung Empire!

We got back eventually to the place we had left early that morning, tired, dirty, and covered with scratches and bruises, but very thankful to be alive. It had been a warm day in more senses than one, and our little section of eleven had lost two—one killed and one missing. The latter had been cut off from the main body, by an enemy patrol, and after most exciting and trying experiences in the bush—being so close to the enemy at one time that he could hear their conversation—he eventually rejoined us, to our great relief.

Most of my chums had lost all their possessions, save what they "stood up in," when the enemy had raided our rear, but I was fortunate enough to discover my own kit intact, in the bush, where the porter had dropped it in his hurried flight.

When resting in our humble "banda" (native hut) that night we recalled, with grim humour, the fact that certain friends had informed us, months before, that the East African campaign was a pleasure trip, and "a glorified Cook's tour!"

LETTERS FROM PALESTINE.

WE are indebted to Mr. Stirling, Assistant Controller of the London Telephone Service, for the following letters from Second Lieut. W. Williams, which will be of interest to our readers:—

April 3, 1918.

After moving about from one place to another, I have at last settled down with a Section. I intended writing to you earlier, but I thought it advisable to wait until I had found a "home," so that I could give you my address.

Am pleased to say that we arrived safely in Egypt after a very enjoyable trip. We left Southampton on the evening of Feb. 11 and reached Alexandria on Feb. 28. Crossing France was very pleasant, especially *via* the Riviera District, which we went through on a Sunday afternoon. At Cannes and Nice we had quite a reception, crowds cheered us as we passed. We stayed at Nice just a short time, and the people treated us to oranges and bunches of flowers. At the station we were provided with excellent tea. There were roughly 1,000 of us on the train and prior to leaving all joined in hearty cheers for the good folks who had supplied the tea, and afterwards sung some of the favourite songs.

We crossed the Italian frontier on the Sunday night, and then proceeded *via* Faenza along the Adriatic Coast to a certain Southern Port. It was very cold all through Northern Italy, nearly all the mountains being covered with snow.

We were in the same train from midday on the 13th until the morning of the 22nd, so you may guess we did not travel very quickly. Fortunately we were only four in our carriage, and were able to have a stretch at night-time. My companions were very interesting; one had spent the greater part of his time as a tea planter in Ceylon; another was a South African, and the third a Telephone Engineer from the States. All were on their way to join their various regiments out here.

We stopped at certain halting places, where rations were issued. As a rule these stopping places were near a town, where we were able to have a good lunch or dinner.

After three days' rest in the South of Italy, we were put on board one of the large vessels in the harbour. It was a very pleasant sea voyage; the sea was quite calm, and we were not distrubed by submarines. On board we had exellent food, wines and every comfort such as rest cabins and hot sea-baths every morning.

The Signal Base was at Alexandria, and I stayed there ten days to get "seasoned." Our camp was situated by the sea-shore, and as the weather was like an English summer we went sea-bathing every day in a spot called Cleopatra's Pool.

Alexandria is a busy town, with fine buildings, shops, restaurants and clubs. We were hon. members of the best clubs, and had a good time there. Fortunately there was no scarcity of food in the town, and one could have an exellent lunch or dinner at any of the clubs or restaurants at a reasonable price.

When my "rest" was over I was posted to G.H.Q., Signal Co., R.E., and had therefore to move up country. Travelling on the Egyptian State Railway was very speedy and comfortable. After crossing the Suez Canal I changed on to the Military Railway. I had a sleeping berth booked, and when I woke up next morning we were at Gaza—there we had breakfast. I found Headquarters situated in a lovely position on the Plains of Sharon near orange and lemon groves. Our tents were pitched amongst fig, peach and almond trees, and wild flowers were plentiful. Even our tents were lit up with electric light at night so you may guess we were quite comfortable.

After being there a day I was put in charge of an Air Line Section, while the O.C. went on leave to England. This Section was at Haynes Park in 1915, and I knew several of the N.C.O.'s and men. The horses are quite good, and I have a fine chestnut Arab steed as my charger. On my work I spend several hours a day in the saddle, and needless to say I enjoy the roaming life; it is a pleasant change after the exciting times in France.

I have been away from Headquarters over a week, and am now only about 5 miles from the front lines on certain work. My little camp is pitched in a healthy position with the Hills of Judea near. Close by are large orange and lemon groves and fruit trees. Oranges are still very plentiful; fine Jaffa oranges can be bought at 10 for a piastre (2½*d.*) and sometimes cheaper than that.

Fortunately we are well provided with rations; fresh meat, bacon, bread, cheese, vegetables, tea and jam are drawn every day, and we have no need to grumble. I live with my men, and am able to get a few extras from the Canteens a few miles away. One thing I can get and that is fresh butter twice a week from a village near at hand. This village was until recently a flourishing German Colony, but our troops have taken it over together with the cows and dairy, so we all all right.

In the village are certain regiments at rest, and we are treated to jolly good concerts nearly every evening. Football matches are also arranged to keep the troops amused. Unfortunately the evenings are still rather long, and being away from Headquarters, one is glad of any reading matter. We are unable to get newspapers up here, and I have written home for weekly editions to be sent out. The only news we get is the wireless, which of course is rather brief.

On Good Friday I had the good fortune to get into Jerusalem, with two of my friends. Up there I met another officer who was with me at Bedford and Hitchin. After obtaining the necessary permit from the Military Governor we went up by car to the top of the Mount of Olives. It was a clear day, and we had a fine view of the surrounding country, including the Dead Sea, River Jordan, Bethany, Mount Zion, Bethlehem, Garden of Gethsemane, and of the Holy City. Next we entered the City passing on our way the noted Damascus Gate. We went along a narrow street; if I remember rightly it is the "street that is called strait." This was crowded with small shops and stalls, Jews, Greeks and every nationality one can think of. After wandering about for some time we entered the Church of the Holy Sepulchre. Being Good Friday special services were held in the Jewish, Greek and Roman Catholic parts of the Church. In the latter part the music was really beautiful, and we were told by a Priest that it was only sung once a year. After listening to the services for a little while we found our way to the sacred place called Calvary. The spot where the cross rested is clearly marked and around it were crowds of worshippers. Next we were taken by our guide to the Tomb of Nicodemus; this is hewn out of the solid rock.

One can spend a few days in and around Jerusalem inspecting the various interesting places which are to be seen, and if all goes well I hope to get up there again soon.

Around the ancient City walls is built quite a modern Jerusalem with German, Russian, Greek, American, Jewish, &c. Colonies. To the Germans must be given credit for the fine hospices which they have built. I went into two of them and they were well worth the visit. Inside one of them was a fine church or chapel with the figure of Christ one on side and that of the Kaiser on the other!

Near where I am at present are some noted Biblical places. I hope to get into one of them perhaps to-morrow.

May 22, 1918.

Since writing to you on April 3, I have travelled a few miles, and have been on certain work in Jerusalem and district. We left the Plains of Sharon on the 21st ultimo., and have been on the Hills of Judea and in *the* Wilderness since that date. Our last camp on the Plains were in an ideal spot just outside an up-to-date German colony; being near the front the Germans had to clear out, and naturally our folks occupied their houses. Their cattle remained under our care, and we were able to have fresh milk every day, and butter twice a week. After a good time we noticed the difference when we were ordered to the hills.

From our camp to Jerusalem was about 40 miles, up hill the greater part of the way, and it was tedious and slow moving along with our horses, mules and wagons; marching by night we were able to do the journey in fourteen hours.

In Jerusalem we had to erect a fairly heavy, permanent route along the Jericho Road, with a spin to the Mount of Olives, and then continuing the route as far as Jericho, a distance of roughly 20 miles. It has been interesting work, and when we were in Jerusalem we were able to see most of the places of interest. Our route ran near the ancient city walls, by the Garden of Gethsemane, and through the village of Bethany. From the latter place to Jericho—17 miles—we were working through absolutely barren hills and valleys, and had to carry our supply of water from the wadi about 5 miles from our camp.

From the top of the Mount of Olives we had a fine view of the surrounding country, including the Dead Sea, Mount Zion and of the Holy City itself. I went inside the ancient city several times, and visited the noted Church of the Holy Sepulchre, which covers Calvary; this church is very beautiful and well worth a visit. Whilst on a visit to the Mosque of Omar, I met Creed, one of the L.T.S. men; he is out here as a Dispatch Rider.

In Jerusalem I was fortunate in being able to meet my brother-in-law, and I also met him two days ago near Jericho. He is with the Artillery, and has had quite a Cook's tour, having been to France, Salonica, and out here for the last eight months.

As we progressed with the building of the route we had to move our camp a few times, and at present we are stationed just near the house of the Good Samaritan.

During the day-time it has been very hot, and when we were around Jericho and the Plain, the heat was almost unbearable.

Jericho like all the native places is rather a dirty place, and the Turks did not improve it in any way. The place is swarmed with flies, mosquitoes, fleas and various kinds of insects; everywhere we are pestered with flies. From Jericho I rode out to the Dead Sea and on Whit Monday to the River Jordan, where I had an enjoyable swim. There is a fine supply of good water in the river; it is rather dangerous for bathing in places as the main current is fast, being roughly five to six miles per hour.

Now that I have finished my task I shall be moving in a day or two to near Bethlehem to do some more work; air line sections out here are always kept fairly busy.

Being so far away from home we get very little news.

June 29, 1918.

Many thanks for your letter of 14th ult., which arrived a fortnight ago, also for the cigarettes and magazines to hand to-day. At the present time I am rather short of reading matter, and as there is a great scarcity of good cigarettes up this part of the country, I can assure you I appreciate your gifts very much. Moving about from one camp to another, it is a case of being alone with my Section during the evenings, and I find a book or magazine very welcome.

I am glad my letter of April 3 arrived safely, and I have since heard that a few of my letters have turned up after being delayed some weeks.

I wrote again on May 22 giving a brief account of my wanderings around Jerusalem, in the Wilderness, and on the Jericho Plain. Since then I have been in a much cooler place up in the Judean Hills, it is a pleasant change too after the Jordan Valley. During the last few weeks the sun has been scorching up here, but down on the plain it has been 117° to 120° in the shade several days.

From May 25 until the 9th inst. I had my camp pitched near Jerusalem on the Bethlehem Road. During that time I was busy building a route from Jerusalehem to Bethlem, a distance of five miles. Around Bethlehem there are fruit orchards and many vines; apricots were plentiful and we had our share. When the work was finished I took all my men around the Church of the Holy Nativity in Bethlehem; this is a very interesting church, and is built around the sacred spot of the Manger. I also took them into the Holy City, and showed them nearly all the historic places in and around Jerusalem. After my many visits, I think I could easily take a party around, show them the sights, and may be tell them as good a tale as the so-called guides do!

From Bethlehem I was given the job of building a route to Hebron, 23 miles from Jerusalem; this will take me a few weeks. It is interesting work, and I am able to enjoy a few hours in the saddle every day, also a few spins on my motor bicycle. The country is very pleasant, especially near Hebron where there are numerous apricot, almond, fig and peach trees and large vineyards. We have been through a few vineyards already, but unfortunately the grapes will not be ripe for another three weeks. As we progress with the work, it is a case of moving camp, so as to be near the work. I had a fine pitch by Solomon's Pools, and at the present time, I am near a large wadi eight miles from Hebron. Here it is really very pleasant with fine hills and valleys. We are some distance away from anywhere and everybody; it is very healthy and as we have plenty of fresh air, work and good food, there is no cause to grumble. Fortunately we are still well supplied with good food; some days the rations vary, but on the whole they are good. We are also able to buy fresh eggs, tomatoes, cucumbers and fruit every day. Two weeks ago I had a new batman; he has turned out an excellent cook and his four to five-course dinners every evening are all that could be desired. Wines, spirits and bottles of beer we are able to get from the Canteens at reasonable prices. It will no doubt surprise you to know that we get *good* Scotch whisky at 7*s.* per bottle! True, we live in the lap of luxury out here!

The life in France is very different, and after eighteen months out there I appreciate the great change. Several of the boys who went through their course at Bedford with me have unfortunately became casualties; two are prisoners. One of my particular chums was badly gassed on April 4, and when he wrote to me six weeks ago, he was in hospital near his home in Glasgow and not likely to be fit for some time. I shall be interested to know how the office men have fared during the big battles.

TELEGRAPHIC MEMORABILIA.

First place this month is given to the following sadly heroic story translated from "*Le Petite Havre*," of Aug. 11, 1918. It is one little story out of all the heaped up heroism of these last four years, and will be read with mingled pride and grief by all those of our Telegraph Service who knew Sergeant McCurdy in civil life as repeater officer, or elsewhere. The French journal relates as follows:—

"A dramatic scene, in the course of which a member of the British Army, Sergeant McCurdy by name, lost his life, was enacted yesterday morning on the beach. Deceased was bathing when suddenly he was either overcome with fatigue or seized with cramp, and feeling his strength failing called for help. A young man Jean Leyder, son of the Belgian commander, was near the diving post and hearing his cries plunged in and was soon by the side of the victim accompanied by a Belgian lad of 13 named Marsilly. In his account of the incident Leyder said. 'I put out my hand to him and he grasped it. Then commenced the arduous work of getting back. A strong current was against us and five minutes of tension found us very near exhaustion, but no nearer the landing stage. I glanced at the poor man who had already had the courage and presence of mind to stop struggling. He was sublime. Realising that any blind attempts we might make, however good might be our will could only lead to the loss of all three lives, he who felt death coming upon him and could easily have dragged us down with him, shook his head released his hold and sank almost at once, sucked away by the current.'"

The journal continuing asks: "Is not his death as moving and brave as was the courage of the two young men who tried to save him?"

Sergeant McCurdy was well known in Havre where he had many friends among his countrymen and the French. He was a lover of music, was 50 years of age and since the beginning of the war had been attached to "Signals" at Havre. He was an exellent fellow, very sympathetic and much esteemed by his chiefs and colleagues both sides of the Channel.

It is no exaggeration to say that the death of the beloved George Gordon Stroud, Assistant Superintendent of the C.T.O., bore with it a more than usual note of sadness. The courage with which he had met adversity from time to time culminating in the death of his son, Lieut. R. Stroud, in France, the serious wounding of his second son, Lieut. H. Stroud, and it must be frankly admitted the strain of war-time conditions at the office, was perhaps only realised by a few of those who rubbed shoulders with him every day. These perhaps also alone saw how the load was too heavy, the burden too great, and that though his spirit remained unbroken the frailer and more mortal frame bent and then broke beneath the cumulative strain.

The C.T.O. has not been without its list of Military honours. To Sergt. C. Burch, a M.M.; to C. H. McCarthy, Bronze Medal (Italian); to Sergt. H. P. Totterdell, a Meritorious Service Medal; to Lieut. (Acting Captain) Jack Wood, a M.C. Cpl. W. H. P. Warran was mentioned in despatches and has since been gazetted Second Lieutenant. Mr. H. C. Martin has been appointed Second Lieutenant (Administrative) R.A.F., and Mr. W. F. Bevis has received similar rank on the wireless side of the same service. One of ours we regret to write, Mr. H. Beman, has lost his right fore-arm owing to a wound received in the Western fighting, and at the time of going to press there were serious reports of Mr. J. Nettleton's breakdown.

In the Cable Room section we learn that Messrs. Day and Cockhill are on the road to recovering and when last heard of were convalescent in Bombay. "Bill" Bird is suffering from shock, but fortunately is now in England. We shall probably have the pleasure of welcoming back to the supervising ranks Lieut. C. Jenner who is resuming civil life after four years' military service. Second Lieut. M. Doran who has also seen a similar period of service, has been very severely gassed and is in hospital at or near Boulogne but is progressing favourably. He was one of three officers out of thirty who came scathless through a certain action in March last. Despite his many adventures and the deed for which he was decorated a couple of years ago, this appears to be the first time he has been "hit," which occurred during the first drive through the famous "switch" line in the West.

That our French allies and neighbours are always ready to acknowledge the part taken by British troops in the terrible struggle now in its fifth year of existence has always been evident to those who have had the honour and have shared the difficulties of working the Anglo-French circuits. The advances of Haig were no exception when the following was keyed across the wires from Paris:—

"GLOIRE À VOTRE FIÉRE ANGLETERRE QUI A FAIT TEN THOUSANDS PRISONERS VIVE LES ANGLAIS!"

It is quite understandable that an interesting paragraph in the columns of the "T. & T. J." should find its way across the Atlantic and appear in our worthy contemporary, the *Telegraph and Telephone Age* of New York, for example. But oh, why should it find its way yet once more across the herring pond back again into these pages, and under the *aegis* of "*Hic et Ubique*?" See paragraph four under this latter heading in the issue of our own worthy journal for September.

In a book entitled "Telegraphy, Aeronautics and War," by Charles Bright, F.R.S.E., recently published, the author devotes considerable attention to the matter of All-British cables to link the Empire together. Commenting on this theme and the general subject-matter of the volume mentioned, *Electricity* says:—"The present volume might be said to be a companion to his 'Imperial Telegraphic Communication,' published in 1911. In these present days of war the wisdom of All-British cables becomes self-evident, and one can scarcely imagine any future Government daring to raise such questions as 'Will they pay?'" Among the many matters touched upon is the protection of cable termini by fortifications or men-of-war and the laying of cables clear of foreign soil, and adds the following interesting item that, "within four hours after the outbreak of hostilities between this country and Germany we had cut the German Atlantic cables to the Azores, thus breaking off the enemy's communication with the United States, besides pretty well isolating Germany from her colonies as well as from many neutral countries." The author also suggests that the State should own and work Imperial cables, a suggestion which, by the way, was made during one of the discussions of the P.O. T. & T. Society about twelve months ago, but was rather discounted in certain quarters.

A month of two back I was requested by an old friend, and member

of the Service d'Etudes Techniques of the French Telegraph Service, to endeavour to obtain certain biographical particulars of about a baker's dozen of British and other celebrities specially interested in telegraphic and kindred electrical matters. Owing to war conditions several of the ordinary sources of information were closed to the writer, but it is worthy of being placed on record that the officials of the Institute of Electrical Engineers, and the proprietors of our contemporary the *Electrical Review* either put me on the track of or supplied all the information required by my French correspondent. I hope I am not trespassing too far upon our own editorial generosity by utilising these columns as a medium for the acknowledgment of services rendered to our allied friend. The work my correspondent is compiling is on behalf of the French Government and the work has been done despite the "coughing of gentle Berthas"—as he puts it. One fact was elucidated regarding the inventor of the Pupin loading coils which may be of interest. The nationality of Mr. Pupin was in question. He was claimed as French and also as of American origin, but is now unquestionably proved to be of pure Serbian descent although born in Hungary!

Telephonist readers may care to know that, according to the *Telephone Engineer*, the highest telephone system in the world is located at Sonata, Bolivia, in South America. This installation has been completed quite recently for the use of the Inca-oro Mines Company between the various parts of the mines and the town of Yani. The total length of line is just over ten miles and the whole of the installation stands at no less a height than 15,500 feet.

It is understood that the number of Baudot installations now working in India numbers between 50 and 60. The pioneers of this system in our Eastern empire may perhaps be pardoned if a feeling of satisfaction comes over them at times at the excellent fruit of their labours of over a decade ago. It is also understood that the Indian Government has proposed, if it has not already decided, to make trials with keyboard perforators in connexion with Baudot working. Phonic wheels and vibrators to the number of threescore have already been placed, in all probability with Murray.

The publication of the "T. & T. J." as a bi-monthly may at times tend to make some of the references appear somewhat belated. This may be the case when reference is made to Mr. Markin's very practical remarks in the August issue on "High Speed Telegraph Problems." The plea for "ample spare parts and reserve sets," for the "absolute best" as the telegraphic "objective" and the employment of operators for high speed systems of "telegraphists who have served their apprenticeship and gained sufficient experience of telegraph work in general to enable them to deal intelligently with the telegrams passing through their hands," should have the sympathetic support of every practical man and woman. The human element can no more be ignored in modern high speed telegraphy than it can be ignored in engine-driving.

Writing of the recent "unofficial" railway strike one reads these words in a contemporary:—

"If the officers of a union fail to satisfy the majority of the members, the remedy lies with the members themselves, the obvious course being to get new officials. If, however, minorities are to kick over the traces whenever something happens that displeases them, government and good order in trade unionism becomes impossible." That contemporary, as many readers will recognise, is the organ of some thousands of Telegraph and Telephone operators and if it may be permissible to comment upon it, it is a frank recognition of the necessity of discipline in Service organisation, and in the Services themselves. Corporate bargaining is likely to become more and more the rule, and unless everyone is prepared to abide by majority contracts made through recognised leaders, the Government itself would in time be compelled to tear up agreements. It is to the credit of the Service leaders that they have been bold enough to declare their faith in black and white. Nothing but good can come from the affirmation of this principle.

J. J. T.

THE TELEGRAPH SITUATION IN THE UNITED STATES.

The United States Senate on July 13 passed by a vote of 46 to 16 the joint resolution previously passed by the House authorising the President to take over and operate telegraph, telephone, cable and radio lines for the period of the war. The resolution encountered considerable opposition because no hearings had been held to demonstrate its necessity, but it was adopted without amendments.

The resolution reads as follows:—

Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the President during the continuance of the present war is authorised and empowered, whenever he shall deem it necessary for the national security or defence, to supervise or to take possession and assume control of any telegraph, telephone, marine cable, or radio system or systems, or any part thereof, and to operate the same in such manner as may be needful or desirable for the duration of the war, which supervision, possession, control or operation shall not extend beyond the date of the proclamation by the President of the exchange of ratifications of the treaty of peace: Provided, That just compensation shall be made for such supervision, possession, control, or operation, to be determined by the President; and if the amount thereof, so determined by the President, is unsatisfactory to the person entitled to receive the same, such person shall be paid 75 per centum of the amount so determined by the President and shall be entitled to sue the United States to recover such further sum as, added to said 75 per centum, will make up such amount as will be just compensation therefor, in the manner provided for by Section 24, paragraph 20 and Section 145 of the Judicial Code: Provided further, That nothing in this Act shall be construed to amend, repeal, impair or affect existing laws or powers of the States in relation to taxation or the lawful police regulations of the several States, except wherein such laws, powers, or regulations may affect the transmission of Government communications, or the issue of stocks and bonds by such system or systems.

On July 16 President Wilson signed the resolution.

By the terms of a proclamation signed by President Wilson and made public July 23, all of the telegraph and telephone systems in the United States will come under Government control at midnight on July 31 and will thereafter, for the period of the war, be directed by Postmaster-General Albert S. Burleson.

A VISIT TO THE WAR SEALS FOUNDATION.

By V. R.

An extremely interesting afternoon was spent on Saturday, Sept. 14, by 34 members of the L.T.S. in viewing the Mansions of the War Seals Foundation at Walham Green. Miss Heap was present and also Miss Ralph, who has done all the work in connexion with the sale of War Seals in the London Telephone Service.

There may have been some purchasers of War Seals who have doubted whether their modest contributions would ever reach the ultimate object of the Fund, viz.—to provide homes for Disabled Soldiers and Sailors where they may live with their families. Some of us may have thought that the working expenses would swallow up a great portion of the contributions. Any doubts we might have had were dispelled by our visit. The scheme has materialised and not a single penny contributed through the War Seals has been used for working expenses.

While we admired the handsome buildings and the thought that had been given to their construction we all deplored their necessity, and our hearts went out in love and gratitude to the heroes who have given of their best to spare us the horrors of war in our own dear land.

The entrance to the Mansions will be a bower of roses, as a pergola has been built on either side for some distance, and we hope to go to Walham Green again next summer to take a peep at what will be a beautiful sight.

A lift with wide doors, to enable a wheeled chair to enter takes one to the first floor verandah, which extends the whole length of the building and on to which the doors of the flats open. We entered one of these doors and having admired the sitting-room with its delicately tinted walls, tiled window sills and linoleum covered floors, proceeded to the kitchen, where we found it difficult to tear ourselves away from examining the kitchen table (which lifts up and reveals a specially-designed bath) the cupboards and other convenient arrangements. Thence to the two bedrooms, one fitted with wide doors so that the invalid's bed may be wheeled out if necessary.

There was still the Administrative Block to view, and Mr. Roberts, the Secretary of the Fund, had to urge us not to linger. So down we went and across the covered courtyard to the well-equipped bathrooms where all kinds of electrical treatment and special curative baths, &c., will be given. It is a not a hospital, Mr. Roberts assured us, and there will be no waiting, as each man will have his appointed time for treatment.

We were very interested in the drying-room where the washing of the households can be dried in an incredibly short time; and we were delighted with the beautiful common room, where many a pleasant hour will be spent by the tenants and their wives.

There were gifts of invalid chairs from individuals who had lost someone near and dear to them in this terrible war and who gave these chairs for the comfort of the men who had been fortunate enough to survive its horrors.

There was a massage table given by the children of a neighbouring elementary school and gay cushions given by someone who had not much money but who wished to "do her bit."

Mr. Roberts let nothing escape us and at the end of an interesting hour and a half we were entertained to tea at the invitation of Mr. Oswald Stoll, the originator of the scheme.

There was universal regret that he was not present, not only that we might thank him for his kind hospitality but that we might have assured him of a revived interest in the sale of War Seals.

Miss Ralph has still a great number on hand, so will everybody please buy a packet. They are obtainable in most exchanges, but if the local supply is exhausted please apply to Miss Ralph who will be only too pleased to renew the supplies.

[*Note.*—We have been asked to say that if any subscribers in the London Telephone Service have a relative disabled in the War the War Seals Foundation Committee would be prepared to consider his suitability for election.—Ed., "T. & T. J."]

THE TOC-EMMA MAN.

Very little is heard of a branch of our Army which has done, and still does, an immense amount of hard, and at times, dangerous work, as the recent casualty lists testify.

A trench mortar battery of the medium and heavy types of mortar is recruited from the artillery, but having left the fold to serve an ungainly and, to a true gunner, a primitive apology for a gun, which is carried in a G.S. wagon on the march while the *personnel* trudge along on foot, the artillery-man no longer looks on a T.M. man as a real gunner.

Living in trenches, rarely getting a chance for spectacular work, they are as a race apart.

Neither are they loved by the infantryman, who has an instinctive dislike for anyone likely to stir up the Boche guns and get the trenches strafed. So the Toc-Emma man is "nobody's child."

They are an independent unit, living a happy life, taking the gunner's pitying smile and the infantryman's dislike good-humouredly, and doing their bit to get to Berlin.

In a normal sector, the T.M. officer visits battalion H.Q. in the line every day.

Some colonels are mild and peace-loving, but others are regular fire-eaters, and believe in causing Jerry as much annoyance as possible, a policy which has its disadvantages with a vindictive enemy, but is perhaps the best in the long run.

"H'm," grunts the Colonel, "trench mortars, are you? Well, look here, young man, we've been annoyed very much lately by vane-bombs (small German T.M. bombs weighing 4 lbs.). They come from this trench here," pointing on map, "the reference is H 22 d 1.4."

"Righto, sir, I'll put over a few and see if I can shut him up."

He wanders along to the front line where one of his mortars is in position. Close by is a dug-out where the detachment live.

He calls down the entrance.

"Bombardier, I want you to get a dozen bombs prepared; be all ready to fire in half an hour. Is the signaller there? Tell him to come along with me and bring a 'phone; we shan't want much wire. I can see pretty well from that sap, just near the mine-crater; we are going to shut up a "pine-apple.'" (Tommy's name for the granaten-werfer or vane-bomb thrower.)

"Very good, sir. Come along, you fellows."

"The Stuff to Give 'Em."

The officer goes along with the signaller and helps him to reel out the wire. By looking over the parapet here and there, he at length decides on the best place for observing the fire.

While the field telephone is being attached and connexions made, he pulls out a map, a scale and protractor, and measures the necessary range and switch, which are 'phoned to the gun.

Presently a message comes back, "Ready, sir."

"Righto, blaze away."

The signaller sends the order "Fire!" They hear a "pouf."

"There she goes!" One or two infantrymen on sentry duty who had been eyeing the preparations with disfavour, immediately become interested.

All eyes watch the black object travelling rapidly through the air. There is a swish-swish-swish as the bomb falls, a thud, then the explosion. Lumps of earth, pieces of timber, corrugated iron, duckboards and debris are hurled high in the air.

"That's the stuff to give 'em," cries the sentry. "How many more are you going to send over, sir?"

"About a dozen; repeat the last round."

Another bomb is fired, falling outside the trench this time. The range is altered slightly, and several more hit the trench and round about. The infantrymen are enthusiastic. Then everyone ducks suddenly and hugs the duckboard on the bottom of the trench. Whizz-bang! Crash! Bang! For two minutes the storm rages; then stops as suddenly as it had begun—artillery retaliation. They get up, laughing and brushing the mud from their clothes.

No one is hurt, luckily, neither is the gun damaged. The "pineapple" shows no sigh of life. The trench, where it was located, is all battered and smashed in.

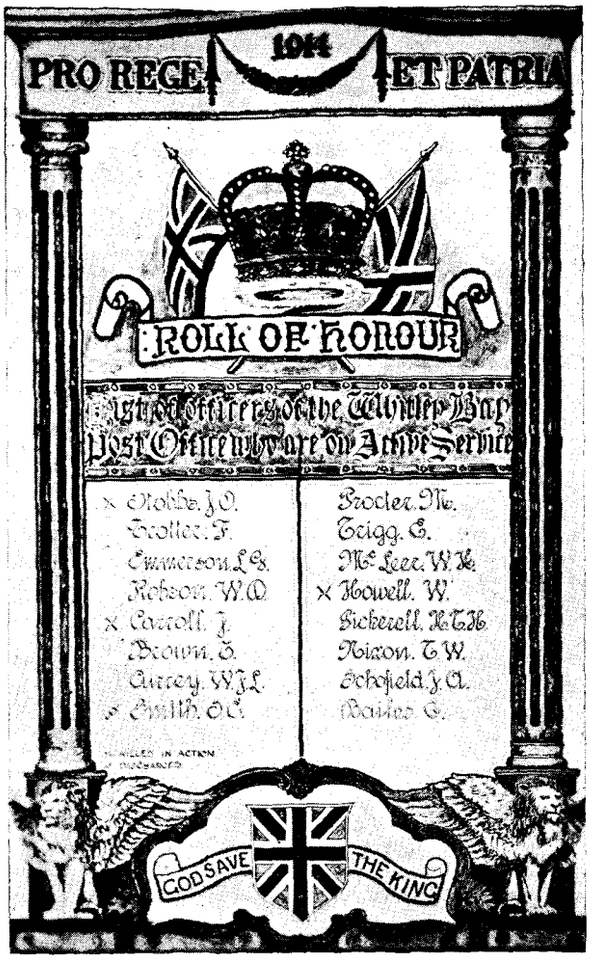
Picking up the telephone and reeling in the wire, the officer and his signaller return. Some camouflage is put over the gun.

"What about some dinner, cookie? Its nearly one o'clock."

The incident is over. It is nothing. The sector is one where "there is nothing to report," but it all helps to win the war.—(G. F. Wear in the *Daily Chronicle*.)

WHITLEY BAY POST OFFICE ROLL OF HONOUR.

An illuminated tablet was unveiled by Alderman Mason, M.P., at Whitley Bay Post Office, on Friday, Aug. 2, 1918. The tablet which now hangs in the Post Office is inscribed with sixteen names of officials who joined the Colours. Three have been killed in action and one discharged. At the outbreak of war in 1914 one clerk and three postmen were mobilised at once for duty and were followed at intervals by two clerks and ten more postmen. In addition to those sixteen out of a permanent staff of nineteen males, thirty-four men who had worked at various times at Christmas time, holiday seasons, and done duty for postmen on sick leave, and telegraph messengers, have joined His Majesty's Service during the last four years. The tablet is the work of Mr. Herbert Newlands, an official of the Newcastle Post Office. The little company present included Mr. Fred W. Kaye (Postmaster), Miss Foreman and staff; Mr. John Chambers, Head Postmaster, Newcastle-on-Tyne; Mr. J. W. Bulmer, Assistant Superintendent, G.P.O., Newcastle-on-Tyne; and others.



Whitley Bay Roll of Honour.

It was originally intended to unveil the tablet indoors, but at the suggestion of Alderman Mason, the latter ceremony, which took only some few minutes, was performed outside the building.

OBITUARY.

Manchester men in all parts of the country will learn with regret of the decease of Mr. J. H. Smith (Clerk on Overseer's Scale, District Manager's Office) at the comparatively early age of 48. Mr. Smith entered the service of the late National Telephone Company in May 1887, but resigned to go into business on his own account in December 1899. He re-entered the service of the Company in March 1903. All his official life was spent in Manchester and his cheery presence will not soon be forgotten by those who have been associated with him. A hard worker, he never spared himself, yet always found time to give a helping hand to those who needed it.

His health had not been good for some time, but he remained on duty until a general breakdown necessitated a complete rest. Unfortunately he became worse and passed away on Aug. 26.

In his early days Mr. Smith was an enthusiastic Rugby football player playing half-back for the now defunct Broughton Club, and on the outbreak of war he identified himself with the Volunteer movement to which he devoted a very large portion of his spare time, first as Secretary of the Sale Rifle Club and afterwards as Platoon Sergeant in the 1st Volunteer Battalion Cheshire Regiment (B Company), where again his services will be greatly missed.

The funeral was attended by the District Manager (Mr J. D. W. Stewart), the Chief Clerk (Mr. A. C. Godfrey) and a large contingent of the staff of the District Office, together with representatives from the Traffic and Engineering Sections. A detachment of Volunteers under Mr. Parmiter also were present, the bearer party being furnished by Sergeants of his own Company and representative Sergeants from "A" Company.

Floral tributes were sent from the Cash Office, Rentals, Fees, Traffic and Contract Divisions and also from the officers, N.C.O.'s and men of his Platoon.

"INDIVIDUALITY" AS APPLIED TO MAN.

BY A. A. ROBERTS (*District Manager, Middlesborough*).

BEFORE introducing this subject it is perhaps as well to explain that the paper is a revised copy of one given by me some time ago at a local debating society, and as it led to a live and interesting discussion I thought it might prove a welcome diversion from the usual weighty articles that appear in the JOURNAL and while it neither bears directly on telegraph or telephone work, yet it does indirectly touch the human side of its business, and although it may savour of "What a good boy am I" style, yet I submit it for what it is worth. It was with some diffidence that I agreed to submit a paper for discussion and it is with greater timidity that I now publish it, for I would explain at the beginning, and as an apology for any seeming indiscretion in it, that I have never attempted or even thought of giving a paper on any social question, and I therefore crave your indulgence.

I found it somewhat difficult to select a subject that would provoke considerable controversy, but eventually the thought came to my mind of the pin pricks that one or other has to bear through life which might easily be avoided and consequently I decided to submit a paper entitled "Individuality," and I have taken the definition of the word as "that which marks off one from another."

In all spheres of life there is a tendency for the strong to oppress the weak, well exemplifying the saying "Man's inhumanity to man makes countless thousands mourn."

The strong, physically or mentally, instead of realising their responsibility for the better equipment they enjoy for waging the battle of life, frequently use their talents consciously and unconsciously in abusing and harassing their less gifted fellows, a course which only tends to create antagonism and confusion and to defeat the object in view.

Take for instance the man in authority who possesses a very passionate nature. If it should happen that his subordinate fails to grasp or appreciate his intentions or orders he immediately resorts to abuse and not infrequently, especially in large workshops, uses disgusting language. Oh! how like the Prussian policy "Right is right," in which it may be taken for granted that the weak have no rights except what the strong choose to give them. Now the cause of this is often attributed to what is termed losing one's temper, and to my mind a person in a paroxysm of rage is irresponsible for his actions—at any rate for the time being—for in his normal senses he would never entertain the idea of indulging in such abuse.

I maintain that better results can be obtained without resorting to abuse for the weaker man is not usually insensible to his own shortcomings and in many cases is striving to overcome them, and if gentler treatment were accorded him it would not only tend to raise the self-respect of such a man but increase *his* respect for the reprimanding person.

It is wonderful the amount of reserve a man has if he will only habitually train himself in the use of it. Patience enables us to choose with discernment and to carry out with clearness and method the actions that reason has counselled us to perform, even though the circumstances would test the patience of a saint.

We do not always know what underlies the mind of the offending party. His apparent laxity may be due to some trouble known only to himself, and I therefore think that we should rather tend to leniency that abuse. Some people might say of the offender: he wants "bucking up." Well the potion may be a remedy in some cases but in the majority I think gentler methods are more likely to prevail.

How easy it is to find faults in others and how blind we are to our own imperfections. In fact most of us would not only be surprised but annoyed if we were told of them, and how necessary therefore is it that we should frequently put ourselves under self-examination and endeavour to realise how we appear in other peoples' imaginations. Which calls to mind the well known lines of Burns:

> "Oh wad some power the giftie gie us
> To see ourselves as others see us."

Then there is the selfish individual who always looks well after No. 1, going short of nothing that will gratify his own appetite or desire, treating subsequent numbers as mere bipeds. The only thing that he would lend would be a deaf ear to anything which may disturb the even tenour of his own existence. He is devoid of sympathy—yet when his own troubles come along, and they surely do at some period of life, he expects the world and his wife to sympathise with him and he is surprised that they do not with the sincerity expected. Can any one wonder? I think not. To my mind he is the most despicable specimen of mankind.

He does not know and cannot realise that some pleasure is to be derived from being truly sympathetic and from translating when possible his sympathy into action.

There have been many people who through individual attention to them in their time of need have been raised from poverty to become commendable members of the community.

Here is a quotation I recently read which puts the case in a nutshell:

> "Sympathy is the first great lesson which man should learn. Unless he learns to feel for things in which he has no personal interest he can achieve nothing generous or noble. (Talfourd.)

The selfish man will ostentatiously sympathise if he knows there is no chance of any monetary obligation, but if there is then he gives the object of his sympathy a very wide berth.

Courtesy at once stamps a man as being broadminded, considerate for the feelings of others, and well bred. It acts like oil to an engine, tending to smooth working, and seems immediately to inspire confidence and respect, and enables us to approach each other without overcautious reserve and further to remove that curious suspicion which is often found lurking in the mind.

The more courtesy is extended the sooner we shall arrive at a better and, shall I say, truer understanding of each other. While it costs nothing to be courteous, it is a valuable asset in any man's character and much can be gained by it. It seems to anticipate the feelings of others and exemplifies the passage:

> Do unto others as you would they should do unto you.

The converse of courtesy is rudeness and I don't think anyone of us would like to be thought of as being positively rude, and although under great provocation it may be necessary at times, yet I am afraid we are often unconsciously rude and we should be less likely to err in this respect if we kept courtesy well in front of our minds. Moreover much is lost by being discourteous.

Tact is another of nature's most valuable gifts, and may be described as skill in managing affairs. It is a wonderful faculty and capable of great development. A man may be exceptionally clever, but without tact he seldom rises to distinction, although he may bery useful when controlled.

Tact is an essential for success in business. It enables us as it were to weigh up a person at first sight and so determines our mode of action.

The cynic is a surly or snarling man, whose opinions must be correct. He is usually a bore in everybody's company and is only tolerated for some ulterior motive. He is so to speak only happy when he is miserable and usually his character is unmistakably seen in his face. His chief aim in life seems to be in making himself objectionable. It has been said that we are a fastidious people, and in a lament on the decay of church-going a vicar complained bitterly that Christianity doesn't seem good enough for the modern young man. But I don't think the modern young man's critical mind is more contemptuous towards Christianity than towards anything else in the universe. He is a cynic, and a cynic is either a young man who knows too little or an old man who knows too much.

Yet the critical mind is by no means a defect. The lower animals don't possess it, consequently the lower animals never progress. Man is the only fault finder in creation. And being dissatisfied with creation he set to work to improve it.

The results are around us. For example, it is estimated that 300 million of the world's population spend their lives in factories.

That indicates a striking advance from the primitive conditions of Eden. By his dogged determination to progress he has succeeded in getting out of a garden into a factory.

The sarcastic individual is usually severe on those whom he knows are intellectually his inferior and inwardly gloats over his extraordinary cleverness. This is hardly a charitable disposition, for if it has any compensation it is the amusement gained at the expense of another.

The snob is a person who apes gentility and considers himself a person of no small consequence. To think oneself somebody is folly while to create a personality is power. He is very easily recognised. If he knows you he will do so, when it is convenient acknowledge you, otherwise he will present the blind eye and pass you by. Thackeray says:

> "You who are ashamed of your poverty, and blush for your calling are a snob, as are you who boast of your pedigree or are proud of your wealth."

How shall we account for the apparent unsociability of Englishmen? It surely isn't from shyness. For instance a stranger arrives in your midst. He stays perhaps months or years, in fact may be your neighbour, seen daily in the streets, travels by the same train, goes to the same church and even belongs to the same club as yourself, and unless he is formally introduced he continues to be a stranger; on the other hand, if he is bold enough to introduce himself, he runs the risk of being snubbed and considered presumptious and further is looked upon with suspicion.

What a farce! for while caution is desirable in selecting acquaintances, don't forget that they can easily be dropped. An undesirable is soon found out, and generally he brings along his own punishment, which to some extent even penetrates his hide-bound nature. Surely this is an unenviable position.

I am afraid we very wrongly prejudge a man. His eyes and ears, nose, or some other part of his anatomy creates an unfavourable impression, and the picture we build up in our minds is often the result of an unjust imagination with no solid foundation, and therefore our first impressions should not blindly determine our attitude; but on the contrary an open unbiassed mind should be preserved, as there are some individuals who do not display all their good qualities on their coat sleeves. They emerge gradually as the occasion demands.

In most cases the character of a man is accurately portrayed in his superficial appearance. The strong man has a strong face, the features of a weak man shows his weakness and in the facial expression of a hooligan, brutality is the characteristic which emerges and dominates all other traits. But there are exceptions to the rule, the villain is not always the Bill Sykes type, but often the silvery-tongued polished rogue.

Our varying temperaments would seem to a great extent to be due to our varying physical development, *i.e.* short, tall, thin, fat, &c. Is it not a conspicuous and undisputed fact that assurance and self-confidence of a man is usually in the inverse ratio to his size?

I recently, however, read the following advertisement:—

"Wanted, big fat men as travellers, tall preferred, to call on provincial men in connexion with a good line. Thin men need not apply." Does this imply that the fat man is more resourceful? Well, I will leave that for you to say.

Many other characteristics of individuals could be described, but I think I have given sufficient for the present, so I leave you to ask yourself, under which categories you come?

The Telegraph and Telephone Journal.

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Editing and Organising Committee - - { Mr. John Lee. / Mr. J. W. Wissenden.

Managing Editor - - Mr. W. H. Gunston.

NOTICES.

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

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NEWS' WIRES.

Everything has changed during the war, but News' wires have changed more than anything else. It is difficult now to remember the days when beautiful long verbatim reports, section by section, page by page, purple patch by purple patch, came through. It is not so difficult to remember the sporting news, the results of races, the bright descriptions, the "anticipations" for next day's racing. It is most difficult of all to remember the cricket items, the score at lunch time, the last service for the evening papers, the excitement even in a prosaic Telegraph Instrument Room when the fast English bowler put out three Australians in succession, for what in those days were generally called "ducks." Life has become very different since then. We are interested in a contest of much more vital importance. The breaking of the switch line has taken the place of the fall of Australian wickets. The rush of American troops has taken the place of the progress of the jockey's gaudy-coloured jacket and in lieu of the long verbatim speeches we have extracts from the German press and descriptions by various war correspondents which really are more wonderful than most of us give them credit for being.

Yes, indeed, the News' wire has changed. Its product has changed. We know something of the increase in the cost of the paper and of the necessary attenuation which all journals have suffered. Even "Glasgow Sugar" is indicative of a short supply both of words and of beetroot. The Stock Exchange reports are brief, bright and brotherly. There are still morning canters, we understand, on Newmarket Heath, but the world is looking farther afield and so the long lists of horses which parade in the morning sunshine leave the reader cold and the hand that works a News' wire is unshaken by excitement when the Earl of So-and-So's chestnut filly, "Gardez-la," of which so much was expected, has not arrived to take part in the great event of the day.

Some day we shall come back to the old, old News' wire. Some day we shall be happy souls with cricket to excite us from Monday to Friday and football on Saturday, and now and again on Sundays some thrilling outstanding events just as they happened on Sundays in the olden time. For we see the dim ray over the horizon of the coming of more commonplace events. Maybe the speeches will come back, if they do not we must bear the permanent loss with equanimity. The country reporter will come into his own again and the shocking disaster to a milk cart and the Harvest Festival at the Parish Church will once again be worthy of full telegraphic description. In the meantime we have the one historic event of all time to hold our attention and for behoof of relief we must be content with the telegraphic descriptions of American base ball. These, after all, bring to the heart of the News' key clerk the dream of the older times. No racing, no cricket, no speeches, but in the wonderful providence by which human things are arranged, for all these things there is recompense —there are still occasional reports of American base ball matches.

HIC ET UBIQUE.

We publish this month, whether in the form of articles or letters, communications from our readers on the Western, Palestine and East African Fronts. We are gratified to learn from occasional letters that keen interest is maintained in the Journal by telegraph and telephone men with the fighting forces and we are especially glad to receive contributions from them. These are necessarily somewhat belated by the time they appear in print, the more so now that the Journal is published every other month. This applies in particular to Mr. Marland's interesting article which describes a retreat long since metamorphosed into brilliant victory. We are glad also of the opportunity of emphasising, what every one should know by now, the valour and resource displayed by members of the signal sections in their hazardous and invaluable work.

Arguing on the principle, doubtless, that good wine needs no bush, *Electrical Industries* finds it curious that we should seize every opportunity of putting in a good word, as they express it, for State control. They imagine that the conversion of the National Telephone Company into a Government Department should have been a convincing demonstration of the benefits, &c., &c. This may be so: but criticism of Governmental ways is often monotonous and not always well instructed, and it is perhaps only human that we should "seize opportunities" to state our case when circumstances present an occasion or when attacks appear to be more than usually beside the mark. *Electrical Industries* thinks to convict us out of our own mouths when it quotes from the extracts from Yates' book reprinted in the Journal relating how the Telegraph Department once got into trouble with the Treasury for its far-reaching schemes. This, however, scarcely seems to us to convict the Post Office of lack of will to serve all sections of the community, and the inexpensive and prompt telegraph service which was available in almost all villages and hamlets before the war was at least a standing proof of what the Department did achieve.

According to the *Board of Trade Journal* the A.B. Stockholmstelefon (formerly Allmanna Telefon) is to be taken over by the Swedish Telegraph Administration, and is thus to be amalgamated with the Rikstelefon (the State Telephone System). The sum to be paid by the Telegraph Administration for the acquisition of the entire telephone lines, plant, apparatus and materials of the A.B. Stockholmstelefon is about 47,000,000 kronor. A preliminary agreement on the above lines has been sanctioned by the Government, but its definitive conclusion depends on the Riksdag. The Stockholm Telephone Company, which has a capital of 18,000,000 kronor, serves Stockhom and the surrounding district. The local

competition between this company and the State Telephone has been very severe, and the amalgamation of the two telephone systems has long been under consideration.

AMERICAN telephone operators, says the *National News*, on the other side of the Atlantic, played a gallant part when the U.S. Army started the attack on St. Mihiel.

There were six operators chosen for work at headquarters, and during the six days following the launching of the offensive on Sept. 12 they stuck to their work, handling an average of 40,000 words a day over the eight lines they operated, and working any hours that were asked of them, day or night.

When they finally did move out of there, it was only to move with the First Army's headquarters to another part of the line, where they arrived in time to do similar yeoman service when the Sept. 26 drive opened on the front north-west of Verdun.

The six girls, while at the front, rough it with the best of the Army, and are subject to all the discomforts and dangers that come with being billeted in the forward area over which the Boche aviators fly when they can.

MR. THEODORE VAIL, the president of the American Telephone and Telegraph Company, announces, according to the *Times'* correspondent, the completion of an eminently satisfactory arrangement with the Government for the war-time control of the telegraph and telephone lines. The allowance made by the Government covers fixed charges and dividends at current rates on outstanding stock, or any which may be issued. The allowance, it is expressly stated, is not to be the basis for a valuation of the properties.

Telephony of Chicago has in a recent number a photograph of six particularly jolly looking land-girls in broad-brimmed hats, smocks and trousers. Underneath is written, "These girls shocked 12 acres of wheat." They would shock nobody and nothing else nowadays, but the same could not have been said in our grandparents' time.

LONDON TELEPHONE AND TELEGRAPH SOCIETY, 1918-19.

THE first meeting of the session was held on Oct. 22 when Mr. R. A. DALZELL, the President, gave an address on "Post-War Problems in Machine Telegraphs and Telephones," which we hope to reprint in full in our next issue.

Mr. JOHN LEE then read his paper on

"Telegraphy as a Handicraft: A Study of Various Types."

It may be that to make work pleasant is to undermine the very foundation of life. At least it is generally assumed that work is a penalty, a burden, a hateful necessity. The sweat of one's brow is a sort of mark of Cain. Had it not been for sorrowful happenings in the early days of our race we might not have had to work at all. But as we have to work there is something to be said for making it as little disagreeable as we can. The psychology of craftsmanship is the art of finding personal joy in work. It covers all manner of enterprises, for the difference between callings—whether they are of lower or higher worth—is purely conventional. To sweep a room is quite as high a calling in essence as to purchase a million pounds' worth of Treasury securities in an office in London. Craftsmanship would point to sweeping the room as the higher calling, that is to say craftsmanship in its narrower sense of being merely physical skill. There is of course a higher sense of craftsmanship the sense in which I am to use the word this evening. It includes not merely physical skill but the intellectual control of that skill, and the whole mental operation of adapting the physical operations to their true end. Bit by bit, therefore, we come to a new conception of work. It is no mere drudgery. It is no mere penalty for a parental mishap, however august and distant that parent may be. It is no mere sudorific symbol, marking the forehead with tear stains of toil. It is not merely pride in accomplishment, but love of the very details of that accomplishment. Such a love is always self-refining, self-improving, self-developing. In this view work is more than the exterior performance of a task. It is the exterior performance of a task plus the interior sense of self-realisation. It is all very well for cynics to laugh at some aspects of this newer development of the conception of work. Mr. Stephen Leacock in his own way points a jest which after all is not very different from the original pronunciation in the Book of Genesis, though expressed in modern American ease. "I know a man," says Mr. Leacock, "who wears very loose boots because he can work better in them, and another who wears only soft shirts because he can work better in a soft shirt. There are plenty of men who would wear dog-harness if they thought they could work more in it. I know another man who walks out into the country every Sunday, not that he likes the country—he would not recognise a bumble bee when he saw it—but he claims that if he walks on Sunday his head is as clear as a bell for work on Monday." This is the apotheosis of work; it carries it too far. At the other end is that conception of work which regards it as a task to be evaded if at all possible. Somewhere in the middle ground lies the truth of which we are in search.

Quite naturally a country which is almost a continent, in writing of the other hemisphere, turns to think of it rather as a continent than as a country. So we read in American journals of saving "Europe" rather than helping France or England or Italy. In the great division of the Morse code into two aspects there is the same national tendency. The code, as we know it, becomes the "Continental" code; the code as our American brethren know it, is the "American" code. The differences between the two are known to us all. The "Continental" code is characterised by its compactness. The letters are all undivided groups of dot and dashes. This was emphasised by the necessary changes to meet the needs of the Creed system. Intelligent as the Creed machine is, it was no use telling it that the signals "II" are the break between the address and the text: the Creed machine insisted on printing it as "II." So the combined signal dash-dot-dot-dot-dash, copied from a truly Continental model, had to be devised. So also the signals for the horizontal break and the diagonal break for fractions had to be devised. The American code, to this day, retains its half spaces and its double dashes. The half space adds a curiously minute psychological strain on the telegraphist, and to us who are not accustomed to it this is one of the fundamental difficulties. Now there is no feature of telegraphy more important than the fact that long usage warps the judgment. We are apt, a little too readily, to suppose that the "Continental" code has triumphed, that the application of printing devices to the Morse code has made the half spaces impossible. Yet the fact remains that we are partial judges. The born American telegraphist uses his code with amazing skill. When fortified with vibroplex or autodot keys it is astonishing to an Easterner with what speed he can work, and with what pride he can hammer out signals which to us are unmusical and unattractive. A further addition is seen on American news wires in the Phillips' code. When "President of the United States" becomes "pous" and the vibroplex key is in use, then we see what a sounder can achieve. It is much as the typewriter can manage to keep pace with it.

Making this admission frankly it is open to question if the "American" code lends itself to craftsmanship as does the "Continental." The roundness of the letters—take "C" and "P" as examples—seems to have a special beauty. It is true I think that this beauty has been revealed by the sounder. Slip writing is an art which belongs largely to the past, but if we had never had the sounder I doubt if we should ever have had the same instinct of craftsmanship in Morse telegraphy. The beautiful sender, as he makes himself known on the sounder, is not the perfect sender as he makes himself known on the slip, though there once was a French telegraphist who put in his will that he should be buried with a specimen of his slip. He was ready, it was said, for all future tests. There is something specially attractive, however, in the comparative looseness of a good "sounder" sender. The characteristic cable style of sending, with its secure dots and its easily fashioned "Q" and "Y," is not exactly Wheatstone when we come to see its symbols on the slip. It is not difficult to explain this. The deeper suggestion of music in rhythmic signallings is very different from the closely symmetrical appearance of sharply fashioned signals on the slip. Moreover there are subtler aspects. Dots and dashes are not uniform in the good "sounder" sender. Dashes are apt to grow longer in sequence: dots are apt also to become longer, and this is more evident as a Morse sender grows older. But this very characteristic of geometrical imperfection is its very music. It is the difference, again, between the music of an interpreter on the pianoforte and of a pianola. There is human character in the very fashioning of the letters. There is soul in them. And this is true craftsmanship. In the Fleet Street of the old days there were senders whom we regarded as downright bad senders whose signals we grew to love. Work would have been dull had it not been for their heavy dots and clipped dashes. We knew and we sorrowed when "Old Tom" left the wire, if only for supper and for that which supper included in those happy old days. Not that this means that to put character into Morse sending of necessity means malformation. There is all the difference in the world between the adapted formation of the soulful musical sender and the true malformation of the inexpert. The former has system and regularity in its irregularity: it has subtle meanings for the ear in its wonderful modifications of the rigidity of "Continental" Morse. The latter is merely malformation struggling, and often struggling in vain, towards formation. The hearer struggles also. He has no sense of companionship or of mutuality. He looks, and looks in vain, for some continuity or system in the difference. At times, especially in the signalling of figures, he gives it up in despair.

This is all from the receiver's point of view. The two codes have their merits herein. From the sender's point of view it is altogether different. Here, I think, the advantage lies altogether with the "Continental" system. We owe to Mr. Newlands the first emphasis on digital ease and freedom in signalling. The picture of his hand on the key has spread over three continents. I doubt if even Mr. Newlands would dare to have his hand photographed on a key in the American fashion. Certainly he did a great work for Indian arms and hands in getting rid of the drop key and the resting elbow on the edge of the table. Making every effort to banish prejudice I doubt, too, if the vibroplex key lends itself to craftsmanship as does the

Morse key. In fact (though this may be the wont and custom to which Ruskin assigns our sense of beauty) I am inclined myself to think that those beautiful keys of the past, before the development of secondary cells, with their soft touch and their exquisite velvety feeling, lent themselves more than any other to craftsmanship in signalling if they were used with proper freedom and reverence of touch. Certainly there is a mystery surrounding the "B" key of a quadruplex. It has prejudices in favour of the "American" code, for it seems to be used in America with a freedom and ease which we cannot rival. All of us know admirable senders who seem unable to do themselves justice on the "B" side. The hard key of to-day lends itself to a different mode of craftsmanship. It is more accurate and precise: it is less loveable. It belongs to the day of scientific precision: it has left Victorian poetry long behind it. Ruskin and William Morris might well be the prophets of the dear old soft keys of the past. Munsterberg and Taylor and the prophets of scientific management are more likely to be the heroes of the Morse key of to-day. Just as the double tapper or the Bell, with their wonderful musical qualities—often shown by five or six dots for H and other little liberties—have largely passed away, so the Morse itself has come a peg nearer to machine accuracy. If we go on we shall be able to put a Creed printer on a hand-worked circuit with every confidence that human dexterity will so carefully fashion the Morse letters that Messrs. Creed, Bille & Co. will produce a machine to turn them into print.

I do not say this slightingly, for a moment. I believe that the influence of printing telegraphs will not banish Morse, but that they will affect Morse craftsmanship is, I think, beyond question. Already I see signs of that influence. It is the difference between a beautiful sentimentalism which just "grow'd" and a careful, studied, yet equally beautiful scientific study of beauty. The next stage in telegraphy will be a conception of craftsmanship which will still use Mr. Newlands' fundamentals, but will build upon those fundamentals a loftier structure. I should not wonder if that new structure included a change in the figure code. It is the blemish on the Morse code of to-day, whether "American" or "Continental." This is proved by the fact that none of us use the figure code in the same mental automatic way as we use the letters. We tremble over them; we count the dots; there is nothing, as we may say, natural about our skill. It is a patient skill, laborious and detailed. In respect of letters certain groupings have become part of our mental framework. We think in Morse. A new psychological study might carry research into this aspect very far indeed, with impressive results. Dr. Jury proposes to detect criminals and to discover geniuses by an inquest into the association of words in their minds. It is a fascinating prospect. We can find evidences of it in our own minds. I spent my life in Liverpool and often I can hear, in my day dreams, a small boy whistling "LV." The old calls arouse deep feelings in us; a long chain of tender association lies behind them. And it is not limited to calls. Our heart beats at the letters "CQ," and the beginning of a run of reversals on the sounder brings to us the vision of "P. A. Gladstone, Verbatim Section T.T., page 46, more to follow." In finer details we can catch the same glorious thread, the very use of "Q"—"CQ," "BQ," "HQ," and the long forgotten "DQ"—are all tributes to the music of "Q." I once heard a very interesting discussion as to whether music as we know it, the scale with its two semitones, was part of the original structure of the human mind. But to us telegraphists, born and bred in it, the Morse code is as fundamental as the musical common chord. How it was invented I know not. Some say it was a hurried device to rival the dominance of the Hughes printer in America. But it has conquered the world, including the indomitable minds of the boy scouts. To this mystic realm we come and it adds spirit to our sense of craftsmanship.

Other adaptations of Morse seem less likely to attract craftsmanship. Yet when we examine them we are amazed. Take the three tapper puncher. It seems a vulgarly simple business—dash on the right, dot on the left, space in the middle. Yet the dear old music comes in again. A kind of an instinct has led several offices to develop a method of punching which encourages the alternative use of the hands. Years ago we used to call this the "cross handed" system. I think it was identified with the Liverpool office, while Manchester, always a famous office for punching, stuck loyally to the system of continuous strokes by the same hand. Psychologically the "cross handed" system is sound. It is the effective operation alternatively of the hemispheres of the brain and it probably produced a sense of relief in the nerve stimuli. But the punching instrument itself was not as delicate or as responsive as the nerve organism, and the consequence was that the "cross hand" system frequently produced imperfect signals. Moreover in certain words the "cross handed" system found itself at a disadvantage. Take the word "Very." What should the puncher do? Should he space after the "V" with the right hand or with the left? In either case he found himself with sequent signals made by the same hand, and this of course was a violation of his fundamental principle. In practice, therefore, I think that on the whole the Manchester principle was on a sounder basis, and at race meetings years ago I used to look with admiration and amazement at men who could make "H" and "5" with the left hand with as much rapidity as with the cross hand system and certainly with more security. I use this argument merely to illustrate that craftsmanship bursts in where we should not expect to find it. I should myself place the so-called three-stick punch on the lowest level of telegraphy from the point of view of craftsmanship, but it is interesting to observe that even on this lowest level there has been an effort, though I think it is an effort of doubtful success, to refine the art. We have the siphon recorder. It is very interesting to watch a telegraphist who has been trained in Morse adapt himself to this instrument. Although only one hand is used it would seem that in essence it would be a bi-manual instrument, but the use of one hand seems to lend itself to an elongation of the right hand signals, which comes, without a shadow of doubt, from the heritage of Morse. The double tapper, or let us call it the "Bell," lends itself amazingly to craftsmanship, whether it is, as I am inclined to think, the fact that this instrument is bi-manual, or whether it is that we associate the receiving instrument with two distinct musical notes, there is something singularly beautiful in its method of telegraphy and something almost uncanny in the fitness of the Morse alphabet, designed purely for long and short signals, to the two distinct notes. I have heard some of our old heroes say that the old double needle was the most attractive instrument of all from the point of view of craftsmanship and if I went far enough back I think I should find that the five needle instrument was even more alluring, but certainly I should say that of the instruments I have ever worked, with one single exception, the "Hughes," the double tapper gives the most mental satisfaction to the signaller, and that is the same thing as to say that it is the most attractive from the point of view of craftsmanship.

But no one who has worked the "Hughes" will ever change his love. Theoretically it is open to all sorts of assaults. The telegraphist may say that he is bound by cadence or a revolution of the chariot. There is something subtly alluring in the effort to get as many letters into the revolution as possible, and that is a delightful feature in a telegraph instrument. There is something positively charming in the sense of rhythm which followed the use of EJOTYINTYDINTYCHOU, so much so that one wished that one could construct a language so as to be suitable for Hughes' combinations. The Siemens-Halske instrument was based, so far as the symbols were concerned, upon such positive or negative impulses as would suit the German language, but with the Hughes one would like to take the other way about and to construct a language which would have words so compounded that there would be four sequent letters between each letter and so that the telegraphing of the language would become almost as fluent as our own thoughts themselves. Somehow or other these combinations come natural as it were. The white and black keys seem almost to ask for them to "lisp in numbers and the numbers came." Alas! the days of the Hughes are over, but the days of reverence for the Hughes will never be over. Rivalry between Hughes and Morse belongs to the earliest days. The story has never been written. Probably in truth it was a financial matter, and American capitalists had to insist on the Morse code being discovered. And now the Morse code seems to be dominant and the Hughes has fallen somewhat into the back-ground, but no lover of the telegraph craft will ever forget the years he spent at it or the seductive beckoning of its capacity for more and more combinations to the signaller to add daily yet one more triumph to his mastery of the keys.

When we come to Baudot we come to controversial territory. I am of the opinion that Baudot is too new in England to permit us to compare it, from the point of view of craftsmanship, with older types; nor is experience in France of much avail, seeing that Morse working in France has not been cultivated as an art to the same pitch as in England or America. But there are *a priori* considerations in respect of Baudot which do enable us to form at least the basis of a judgment. The fact that Baudot is bi-manual seems to be in its favour. It is certainly definitely in its favour from the point of view of psychological study. There is sound reason now for accepting the theory that the simultaneous use of both hemispheres of the brain is less exacting. Whether this is balanced by the deficiencies of periodicity there is as yet insufficient evidence to show. Such evidence as there is does not confirm the earlier impressions that the "cadence," in itself, was a disadvantage. As we have seen in our study of the Hughes, "cadence" can be quite an attractive feature. No one could say, I think, that catching revolutions on the Hughes is exceptionally wearying, I am inclined myself to think that the freedom of Morse, its uni-dexterity (so to speak) giving it a kinship with handwriting, has been one of the prime factors in making us rather suspicious of the Baudot. It is true of course that one of the apparent disadvantages of the Baudot from the craftsmanship point of view lies in its lack of variety of form. The sender cannot indulge in pretty liberties. Character is shown in writing, says everyone, and this is usually a defence of bad writing, or at least it is a defence of specialised handwriting with a personal fountain-pen, that intolerable tyranny, with its penetrating virtues belonging specially to those of the patent non-spillable variety. Character, too, is shown in Morse writing, not necessarily producing bad Morse writing, but writing with marked features. Herein we may say at once that Baudot seems to be at a loss. But are we quite sure that it is a loss? We have seen in respect of the three tapper puncher that the spirit of craftsmanship breaks through the apparent crudity of the system and makes a craftsmanship of its own. It is equally true in respect of Baudot, with its greater finesse and subtler mental operations, that a craftsmanship is being developed. That craftsmanship will always be less evident than Morse craftsmanship, by reason of the restraining limits which are so obvious, but that does not mean that it will be less vital or real than Morse craftsmanship. In a sense of the word which is rather liable to misunderstanding of its essence, it is a feminine craftsmanship, though we should always remember that "feminine" craftsmanship is a psychological description. For example, watchmaking with all its finesse and delicacy has never been of its essence a "feminine" craftsmanship until the days when women were used for the assembly of standardised parts and the same applies to the assembly of bicycles. Baudot has done something more than introduce a fine and delicate craftsmanship. It has affirmed the multiplex principle. The Delaney system, I am afraid, represented the multiplex system as a sort of massacre of the innocents, the innocents being our poor Morse signals, crackling and breaking under our very eyes—or ears. The Morse telegraphist, loving the children of his heart, saw this massacre with (as one may say) streaming eyes, and for this reason the Delaney system was unpopular. But Baudot with its

quietness, its sober disposal of work, its steady duplex-multiplex flow of traffic in both directions, has made the multiplex system into being itself a corporate craftsmanship.

The case for Baudot craftsmanship in itself may not seem to be very strong, but in its relation to telegraphic system on the larger scale it is much stronger. It is a commonplace of the study of industrial development that operations have become more simple and uniform. As one looks over telegraphy to-day there seems to be a new tendency towards variety. We are passing from definite coherent homogeneity to indefinite (may be), incoherent heterogeneity, and Spencerianism comes to the mind forthwith. It is all for gain. I am myself a believer in the type-keyboard form for every reason—craftsmanship among them, as I will try to show—but for all that I think there will be a place for the rest of our life-time for the Baudot five-key system. I think we shall learn more of the psychology of telegraphy when we can study its craftsmanship with a little less of the prejudice of the born-Morse-man and with a greater development of typing by its side, as a constant basis for comparison. It breaks down the tyranny of handwriting, that conception of the right hand as the only really useful and ornamental hand; it breaks down the tyranny of script as the only beautiful method of putting signs on paper, a relict of the skill of the monks, degenerated somewhat by nineteenth century education. It may not prove to be quite so uniform in practice for there are possibilities of varied cadence, and it may be that English minds, which have already done so much for the practical development of duplex Baudot, will do even more for the psychological development of Baudot craftsmanship. In brief it may be that the Baudot method is the truest way of development from Morse signalling to type-keyboard method, and that Baudot craftsmanship is the true intermediate stage between the two. For, from the Morse point of view, there have been such prejudices against the type keyboard both in its signalling and in its writing aspects as to form a serious stumbling-block. Baudot removes the obstacles out of the way.

The application of typing to telegraphy opens up a vista of craftsmanship which offers immense scope for study. The fundamental question of the art of typing itself, as apart from telegraphy, has received curiously little scientific consideration. It has recently been said that some of the crudity of modern journalism is due to crudity in the art of typing. To write one's articles direct on a typewriter calls for so different a method of mental construction compared with writing by pen that we can well understand that a new literary style will develop. But when this is conditioned by clumsiness in the use of the type keyboard, it is evident that the new literary style is being developed against disadvantages. If Sir Arthur Quiller Couch is really anxious about the degeneration in style in the literary contributions of to-day he might be commended to urge stringent legislation whereby everyone who uses a typewriter for journalism shall begin by learning touch typing thoroughly. The Western Union Company has gone very far in this respect and its operators are called upon to type telegrams without being able to see their fingers. Indeed it is worth noticing as a side issue that the tendency of typewriter manufacturers to produce machines with so-called "visible" writing has probably been reactionary. Professor Munsterberg in his book "The Psychology of Industrial Efficiency," maintains that the typewriter of the older type, with invisible writing, was in every way an advantage. The quick movements of the eye from fingers to type are undoubtedly fatiguing, and the true craftsmanship of typing points to a standard of skill which will obviate looking either at fingers or at type. The graceful and easy use of all the eight fingers and the two thumbs, in its aspect of digital or nerve efficiency, must be an advantage, and the craftsmanship of typing will put these varied movements to the best and most balanced use, trusting to touch rather than to sight for the accuracy of each movement and to the sense of span and of distance for the choice of levers.

This is by way of fundamental. The application of this art to telegraphy calls for highly specialised study. To begin with the application to telegraphy is so astonishingly varied. The use of the typewriter for receiving by sound is an art of itself. That art, in England, has not been very successful, largely because the speed of the sounder limits the ease of typing. Slow typing is not pleasant work, and there is a further disadvantage. The typing art uses the syllables, often sub-consciously, but still actually as syllables. The word "imagination" to the skilled typist becomes broken into sections which flow easily—"ation," for example, which is a pretty sequence having a curve shape of its own. But with sounder receiving the writing down of each separate letter is essential and thus the syllabic aid is absent. In America the use of vibroplex keys and of abbreviation has helped in the development of the typewriter for sounder work, and it is fairly certain that if the typewriter is to be used in this way we shall be compelled to raise the speed of transmission for the mere advantage of greater facility in typing. As regards slip-writing we have little reason to be ashamed of our progress. The Creed has modified the demand for the art, but still it is the use of the typewriter which has been most highly developed in England, especially for news writing. The fact that the eyes have to be kept on the slip has in itself encouraged touch typing. Oddly enough it seems at the moment as if the hand-drawing of the slip were more efficient than machine-drawing, being more readily adaptable to keeping the eye on the last word. However, this is a by-way. The fact is that the craftsmanship of typing from slip has triumphed over handwriting, and has done much to bring home the possibilities of development of the typing craft generally for telegraphy.

Certain specialised uses may be mentioned. The "Yetman" is no longer with us. It was a type machine which signalled Morse characters for sounder reading. The typing was conditioned by the time-value of the Morse signals, and thus the syllabic characteristic was lost. It was a machine which had its advantages, but the disadvantage come into bold relief. Typing for Baudot transmission, *i.e.*, typing to cadence, proved similarly disadvantageous, but I am of the opinion that the time is ripe for further study. I do not think that the advantage of the uniform time-value of the signals was recognised. Still the difficulties as they were experienced seemed to indicate that the future lay with free-typing. For all that typing on the perforating instruments, the "Gell" and the "Kleinschmidt," is not quite free. There is an analogy between these instruments and a free typewriter not unlike the analogy between cable or wireless signalling and ordinary Morse signalling. The firmness of the blow in the case of the perforators is the main characteristic and this leads, in craftsmanship, to the separateness of each touch, so that we get a steady continuous run of typing, distinct in characteristic from the syllabic method of ordinary typing with its variety of speeds applied to the syllabic splitting of the words. This syllabic division, be it remembered, is not always obvious. Sometimes it is merely a mental division and the facile fingers go on uninterruptedly without apparent recognition of the separateness of the syllables. But the syllables are there; the curve form is in the mind. It is a division which is of enormous value in the psychology of touch typing. And in the development of typing for the telegraphy of the future it is, I think, a feature which is indispensable, so that we reach the conclusion that to achieve the utmost in the craftsmanship of typing for its adaptation to telegraphy we shall need what is called "free" typing, that is, typing unrestrained by cadence or time values, even if those time values be uniform. To say this, however, is not ruthlessly to discard typing under the conditions which I have mentioned. Typing under non-uniform time-values, such as the variant Morse signals, will not take much of a place in the telegraphy of the future, but typing for Baudot with cadence has yet some position to occupy and closer study may find further possibilities, while it is certain that the more free typing from sound or from slip or on perforating machines for Wheatstone will long be an important factor. None of these is quite "free" in the sense that typing on storing machines (probably perforators) for multiplex working is free and craftsmanship is modified consequently, but in all arts there are modified forms. Handwriting which seems to be quite "free" may be restricted by lines; it may restrict itself by characteristic formations, but yet in its restricted form it is still an art.

We are reaching something therefore of the nature of an eclectic conclusion. We are being led to the opinion that in telegraphy of all kinds there is craftsmanship, and we are led to the further opinion that in what may be regarded as the humbler kinds of telegraphy there is more craftsmanship than appears at first blush. But in respect of each form it needs more study, more intimate consideration of subtleties, a greater sense of pride in detailed accomplishment, a greater realisation of the psychology which lies behind apparently small digital actions. No doubt we shall be impressed by the process of thought in the world outside us, and to that factor I assign the greater interest which we are taking in the typing mode of transmission in its various forms. It is hardly conceivable that telegraph research would have hit upon the type-keyboard as a suitable—as *the* most suitable—transmitting machine, had that keyboard not been available in the world outside telegraphy. It is quite possible, too, that if we had had the evolution of a standardised keyboard for telegraphic purposes only we should have reached an arrangement somewhat different from the arrangement to which we are so accustomed. The sequence of letters in telegraphy generally probably differs somewhat from the sequence in the ordinary written communications of life. The very sharpness and brevity of a telegram probably reacts upon its word construction. Yet in practice we find that the standardised keyboard of the world outside suits us very well, though we have had to modify the arrangement of figures and fractions and by stress of the limitations of the five-unit code we have had to fall back upon double strokes for certain fractions, where ordinary typewriters would fashion them with one stroke. These may seem to be small matters, but they are mentioned in order that it may be indicated how widely embracing is the craftsmanship of telegraphy. We are not setting out to create the art but to perceive the beautiful which is there, to bring it into the common round of our daily work and thereby to widen our vision and to deepen our interest. We seek jewels in what may seem to be the dark, and we seek precious things in the common places.

To do this is a worthy endeavour. I trust we are coming to the period when it will be our delight to be constructive in effort. We have our sorrows and differences—many of them skin deep only. There is a great opportunity for unity of effort in a concentration upon our craftsmanship, in an united search for the beautiful in our work. "Thou afflicted," said the greatest of all prophets," though tossed with tempests and not comforted, I will lay thy stones with fair colours and thy foundations with sapphires." Some may think that all this philosophy is apart from work, that work is drudgery after all. I would point out that in the history of the world each development of work on the grand scale has been accompanied by a development of human thought. The great industrial advance in the time of Solomon was marked by the foundation of the undying literature of the Hebrews; the Athenian age—to which the world will always bear tribute—was the time of commercial extension over the Mediterranean; the sixteenth century was the Augustan age of English literature and then commerce made its greatest advance, and the New World came into being and colonisation became a factor in national endeavour. It is not fanciful, I hope, to see a parallel with telegraphy. If in the revival of commerce after the war telegraphy is, as there is reason to believe, to enter its golden age, then the parallel will be complete if also it enters into its literary and philosophical age. To that end we are considering craftsmanship. The art and skill of the worker were both somewhat overshadowed in the mercantile age. The advance of machinery and the use of machinery for the accomplishment of cheapness attained

an end which left skill and art at a discount. There is no reason why the use of the machine should not go hand in hand with the development of art and craft. Machines may perform functions hitherto performed by the human hand, but in the niceties of exactness, in the production of quantities, in the reproduction of precise designs the machines may become a part of an artistic endeavour on a grand scale, and this may give an encouragement to a new conception of pride of human work and enthusiasm in the skilled art of controlling machines. One of the curiosities of history lies in the fact that the first tribute to the art of the craftsman is to be found in the Roman catacombs. Previous history treated all work as slavery, as the penalty of the drudge, those being the happy human beings who lived apart from the toil of others. The earlier Israelites took no definite share even in the building of the Temple, for work to them from the days of Egypt was the mark of an inferior. Our Christian civilisation, our common heritage, amid the designs which it left on the walls of the Roman catacombs, gave us earnest craftsmen at their work, and proud of being at their work. We may carry forward the true ideals of self-realisation and—if I may use what may seem to be an extreme phrase—self-sanctification in work by the careful consideration of craftsmanship, of art in work, of the truer use of facts which the new science of psychology is constantly revealing, and thus indeed not merely in its product but in its process telegraphy will take its more worthy part in the enterprises of the new world which is to be.

Telegraphy is at a disadvantage as a craft. Its product is ephemeral. The cabinet-maker may produce a box which will last for ever; the dress-maker may produce a dress which will have to outlast the war. But the telegraphists' product may be destroyed at the moment of delivery. With him the process is the craft and not the product. His is the dignity of the effort; the "virtue consisteth in the struggle." None the less it is precious craft. Its very aspect of the non-material, non-visible, emphasises its spiritual value. "I make things," said the singer, "which none can behold; they reverberate in the hearts of men." We make things which as visible objects are of poor account, flimsy of paper, curt of expression, maybe short of beautiful in script, but it is theirs to reverberate in the hearts of men. To take pride in one's craft is not a new thing. It belongs, as I have shown, to earlier days. Various industrial and economic developments have shrouded it, they have given us the passion for cheapness, and a wild eagerness for success in commercial competition at any cost in the reduction of the contribution made by craftsmanship. When King Nebuchadnezzar took the people of Judah captive he made use of the princes and the warriors and the craftsmen. The rest of the people he left to do what they would and he called them comprehensively "the poor of the land." That put the craftsman in his proper place. He stood with the prince and the warrior. Some day we shall come back to Nebuchadnezzar's estimate, but the process must begin with ourselves. Neither the world outside us nor the powers above us will regard our craftsmanship with respect until we ourselves regard it with reverence. The beginning is pride of work, the end is the constant development of our craft that pride in it may grow. And that is to say that there is no end. The craftsmanship of telegraphy is a task for us and for the generations of telegraphists to come, and only in so far as we lay the foundations will they be able to build worthily.

THINGS NOT GENERALLY KNOWN.

John Timbs, the antiquary, wrote a book with this title which once enjoyed considerable popularity. It contained nothing more curious than the following. One of the Things which are Generally Known, however, is the fertility of the American journalists' imagination.

It is not generally known, says an American contemporary, that Premier Lloyd George is in constant communication with Generals Haig and Foch at the front in France by telephone.

This sort of thing at 10, Downing Street, the Premier's office, is a daily occurrence:—

"Get General Foch on the telephone. . . . Who's speaking? Ah, yes—oui, parfaitement, le General Foch! Pushing them back, are you? Excellent! Want anything? Anything I can do? . . . All right! I shall be in Paris on the ——. Yes, Balfour's coming along. We'll have a meeting of the Supreme Council of the Allies. All right. I'll come over to-night. Ça marche! Oui, parfaitement—demain. I'll see you in the morning."

Or maybe it is Field-Marshall Haig, the Premier wants to talk to.

"That you, Haig? This is Lloyd George. How are things? How many prisoners to-day? What about so-and-so? Ah! Excellent! Can you run over and have a talk, or are you too busy with the offensive? Yes, I'll be here this evening. Very good—7 o'clock."

At 7 o'clock General Haig is in London, while all the world thinks he is in France. A few hours, and Haig is back at the front.

The general public cannot telephone to France, but this advantage from a military standpoint can easily be seen.

LONDON TELEPHONE SERVICE NOTES.

The L.T.S. heard with deep regret early in September that Frank Gray, of the Service Section here and of the Civil Service Rifles elsewhere, had been *missing* for some days. After a period of great anxiety for his relatives and friends we hear he is wounded and a prisoner. We trust he will soon recover and that we shall have him with us again before many months are over. (Some of the more optimistic prophets persist that for months one should read weeks—if it prove so in fact we shall rejoice.)

We are busy again this year collecting the wherewithal to send parcels to our boys and girls (I hope these expressions won't be noticed) who are abroad with the naval, military and air forces. The need for a generous response is greater than ever, for the cost of all goodies has gone up and even with much money the difficulties of securing them are not to be ignored. However we have an energetic committee who like Richard Swiveller have worked all the thoroughfares in their respective neighbourhoods, but unlike him they pay cash and do not have to deny themselves the pleasure of passing that way again. They have secured by instalments a goodly store of tobacco and other elusive commodities, and if we do but feed our committee with funds they in turn will feed the carriers of the guns with all sorts of good things. At the time of writing these notes the collection is not complete, but we understand that notwithstanding what we might describe as the political economical situation amongst telephonists at the moment and the many calls for other worthy objects, the response to the L.T.S. Christmas parcel appeal is proving a generous one. In "Central" for instance £8 12*s*. has been collected, which is more than twice last year's contribution with a smaller staff. "City" also has exceeded its good total for 1917 and so it is at many of the exchanges—not to mention the Headquarter's Traffic Branch. Probably "East" will be able to claim a record for the staff there as the result of a collection and the organisation of various functions has remitted £21—a really magnificent response. One can't help wondering what would have happened if the wages award had appeared before the collection was taken. It shows how ready the people at home are to make sacrifices to mark their appreciation of those who have gone to the war.

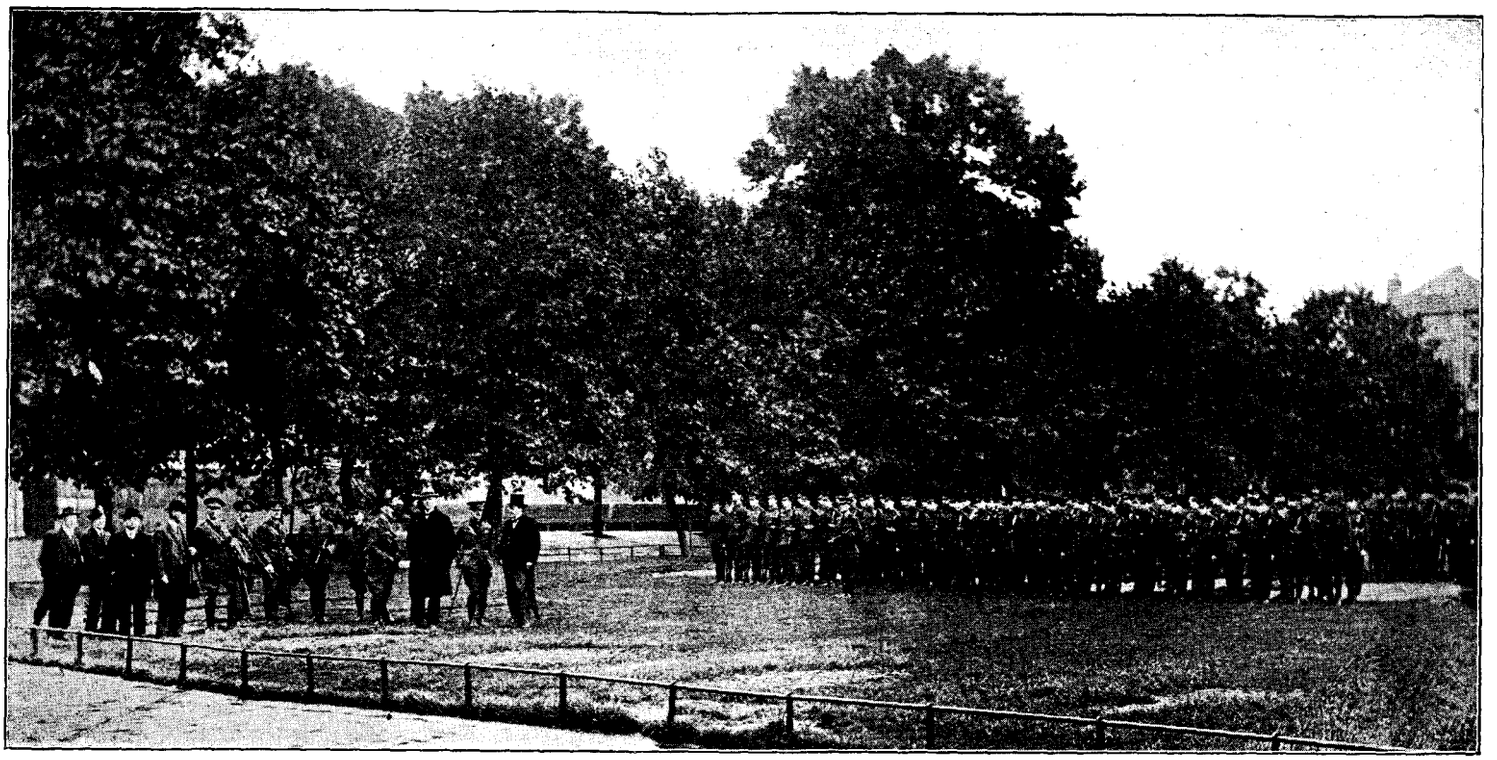
The Telephone Service it is regrettable to state has at all times had an unenviable association with *oaths*, but in earlier days (with possible exceptions which in any case must be nameless) it has been the subscriber who has sworn and the telephonist who has trembled. The month of October has witnessed a strange change, and some assert that for days on end they have listened almost unceasingly to oaths from the mouth of first one telephonist and then another and the supervisors joining in. Well this would be distressing were it not that the oaths now taken are of a sweet savour, being oaths of allegiance—a thing quite distinct from the oath of the subscriber, which is an oath of all grievance or what Shakespeare has described as a "mouth-filling oath."

The London Telephonists' Society is again prospering. The number of its members is not less than last year, a condition which all societies (other than agitation societies whatever they are) find it most difficult to secure. The opening meeting was held in the Dining-Room of the Museum Exchange on Wednesday, Oct. 2, when Miss Hooper, the President of last year, introduced her successor, Mr. W. A. Valentine, who was accorded an enthusiastic welcome by a full house. He read a paper on "Some Post-War Problems," and indicated briefly some of the steps which had already been taken to prepare for the anticipated growth of telephone activity in London. Mr. Pink who followed gave some further details of improved and simplified methods which would come to the aid of the busy telephonist. Miss Baldwin put in a plea for exchange names which could not be confused; but with only five vowels and 70 odd existing exchanges we feel personally that we would rather not attempt the task of finding the new names.

There was subsequently a debate on the subject of the most suitable ages for entry to the telephonists' class, and Miss Hooper urged the desirability of limiting the period between 17 and 22, instead of the previously approved period of 15 to 20, which was supported by Miss Cannard.

It is difficult to say how far the powers that be may have been affected by the arguments brought forward in this debate, but it remains a fact that the limits are now 15 to 25 and *yet there is room*.

The debate was followed up by several other speakers and the meeting was a happy augury for its successors. The second meeting is fixed for Oct. 30 when a paper on "Automatics" is to be read by Mr. Townsend and will be followed by Prize papers from London telephonists serving in the Q.M.A.A.C. So good were the papers received that Mr. Valentine, who had already made himself responsible for a prize of a guinea, has added a second prize of half that amount. It is hoped that one at least of the writers will be present to read her paper.



INSPECTION OF "D" (POST OFFICE) COMPANY, 1st CADET BATTALION, K.R.R. CORPS, BY THE POSTMASTER-GENERAL.

The illustration on this page depicts the inspection of "D" (Post Office) Company, 1st Cadet Battalion, King's Royal Rifle Corps, by the Right Hon. A. H. Illingworth, M.P., H.M. Postmaster-General, on July 25 last on the grounds of the Merchant Taylors School, E.C. 1.

Mr. Illingworth, who was accompanied by Mr. Pike Pease, Assistant Postmaster-General, was received by Major Apperley and Capt. J. E. Thomson (Adjutant) of the 1st Cadet Battalion, King's Royal Rifle Corps. The Company was under the command of Captain W. J. Windrum, Lieut. J. Stuart Jones being second in command. Amongst those present at the inspection were J. Newlands, Esq., C.B.E., C.I.E. (Controller of the Central Telegraph Office), W. A. Valentine, Esq. (Deputy-Controller, London Telephone Service), Lt.-Col. A. C. Booth, R.E. (Assistant Director of Army Signals), and Major A. A. Jayne, D.S.O. M.C., R.E.

The Company, which is about 200 strong and presented a very smart appearance, is raised from boy clerks and boy messengers in the Post Office Service and from sons of officers of the Post Office, and the Cadets are being trained in military drill and in telegraph operating in order that they may qualify for the Royal Engineers Signal Service when they reach military age. The Company was established at the end of January 1918, and already over 50 Cadets have passed into the R.E. Signal Service.

Similar Companies are being raised in the larger Provincial towns.

PERSONALIA.

LONDON TRAFFIC STAFF (*Telephonists*).

Miss M. E. Richards, Telephonist, of London Wall Exchange, has resigned to be married. The staff presented her with a case of silver tea knives.

Miss Effie Hart, of East Exchange, on resigning to be married was presented by the staff with a salad bowl and servers and other useful gifts.

Miss Elsie How, of East, has resigned in view of her approaching marriage. The staff presented her with a biscuit barrel and other gifts.

Miss Florence Bristoll, of Ilford, was presented with a silver cake basket on leaving the Service to be married.

Miss E. M. Pettitt, of Woolwich, has resigned to be married. Her colleagues presented her with a glass salad bowl and servers and numerous other useful gifts.

Miss Edith Mary French, of Gerrard, resigned in view of her approaching marriage and was the recipient of a tea service and other gifts.

Miss Emily Lilian Goldthorp, of Gerrard, on resigning to be married was presented with a tea service and other gifts.

Miss P. A. Winslow, of the Trunk Exchange, resigned on Aug. 17 in view of her approaching marriage. Her colleagues presented her with a silver cake basket and other useful gifts.

Miss M. D. Clifford, of Hop, has resigned to be married. She was the recipient of a glass and silver epergne from her colleagues.

Miss D. Phillips, of Park Exchange, has resigned to be married and was presented with a case of fish knives and forks and other useful gifts.

Miss A. Nicholson of Museum, on resigning to be married was presented with cut glass vases by the staff.

Miss A. Dando, of Victoria, has resigned in view of her approaching marriage and was presented by her colleagues with a silver toast rack and a jam dish.

Miss E. K. Tringham, Assistant Supervisor, Class I, of Hop Exchange, resigned Sept. 9 in view of her approaching marriage and was presented by the staff with a case of silver fish knives and forks, a case of silver spoons, and other useful presents.

Miss B. C. Goodchild, of Museum Exchange, has resigned to be married. Her colleagues presented her with a case of fish knives and forks.

Miss E. A. Upjohn, of Park, has resigned to be married and was presented by the staff with a case of silver fish knives and numerous other gifts.

Miss E. L. Smith, of the Trunk Exchange, resigned Sept. 21 in view of her approaching marriage and was presented with a leather travelling case by her colleagues.

Miss Brabham, of Mayfair, has resigned to be married. Her colleagues presented her with a silver cruet and other gifts.

Miss K. Adkins, a Telephonist, of Mayfair Exchange, who has been serving with the Q.M.A.A.C. since June 14, 1917, has resigned to be married and was presented by her friends in the exchange with a silver jam dish and spoons.

Miss E. M. Watson, of New Cross, on resigning to be married was presented with an inlaid mahogany clock in addition to many other gifts from individual members of the staff.

Miss Q. Smith, of Woolwich, resigned in view of her approaching marriage and was presented with a tea service, fruit bowl and other gifts by the staff.

Miss H. K. Ramsay, of Erith, has resigned to be married. The Traffic and Engineering staffs presented her with a silver sugar scuttle and silver teaspoons, and the night staff with a cake knife and sugar tongs.

Miss G. E. Bird, of City, on resigning for marriage, was presented with a silver cake basket and other gifts by her colleagues. She was also the recipient of a Wedgwood art pot and sweet dish from her old colleagues at London Wall.

Miss M. E. Mason, of Holborn, has resigned to be married. She was the recipient of a clock from her colleagues.

Miss H. Brown, of Holborn, resigned to be married and was presented with a tea service and salad bowl.

Mr. A. W. Cross, Engineer-in-Chief's Office, Metropolitan Power District, was presented with a clock by his colleagues on the occasion of his marriage.

PROVINCIAL STAFF.

Miss K. A. Knight, Kettering Exchange, was presented by her colleagues with a cake stand on her promotion, as Assistant Supervisor, Class II, and transfer to the Northampton Exchange.

TALES FOR TELEPHONISTS.—SUB-TITLE "222."

Somewhere about the year 1917 there was employed in one of the largest Government telephone exchanges in the City of London a young lady of nineteen summers. Her duty was that of a telephonist, and she was technically an "A" operator (*i.e.*, one who directly answers calls from the public). Grace Vernon came of an old and honoured West Country family, and her face and figure had all the distinctive characteristics of a race in which the men had ever been accounted spirited and courageous and the women beautiful. Many a visitor to the exchange had been struck by the aristocratic profile of the young girl, and when the sun shone over the top of the switchboard touching her light brown hair, it gave an effect of golden halo which was almost startling. Only the good telephonist can realise how interesting it is to attend on a telephone switchboard. There is first the sense of intense action, for the work must be done with a rapidity and expertness of which the public have no conception. Then in dealing directly with certain members of the public day by day, even when only a few necessary words are exchanged, a telephonist establishes distinct relations with her subscribers, and if she is a good telephonist, cheerful and helpful to her "subs.," these relations come to form a very pleasant part of her life. She knows her subscribers often far better than if she knew them personally; their moods, their eccentricities and their little irritable weaknesses. And she does not expect to find all her subscribers perfect, but tries to make the best of them all. But though Grace Vernon was all that a good telephonist should be in dealing with her subs., there were certain little glow lamps belonging to particular subscribers which she preferred to answer, because these were associated with a pleasant and kindly voice, or gave some other indication of good feeling, and above all she liked to answer her quiet subscriber "two, double two." Why she liked "two, double two," she could hardly say, the number represented to her a quiet businesslike voice, the voice of someone who always asked for the number required in a deliberate helpful way and always acknowledged the repetition of it with a kindly "Yes, thank you!" Just that and no more. Never once had "222" shown by any word that he had a personal interest in the telephonist who answered him, and yet, no sooner did his signal lamp glow than Grace found herself plugging into the line and answering with a smartness which would have been disconcerting to many subscribers. One nearly always associates some mental picture with those whom one is used to communicate with on the telephone and yet are not known personally. The picture may not be very definite, but sometimes these pictures are very vivid. Quite a definite picture of "222" existed in the mind of Grace Vernon. He was a tall, dark man, very dignified and responsible, but very kind and good, but quite middled aged. And therefore he was someone she could like merely because she did like him. For, of course, Grace Vernon had been brought up strictly with the idea that she should not allow herself to like any *young* man very much without having the definite end in mind.

During the course of her duties Grace had learned a good deal about the business and social habits of her favourite subscriber, she knew that he continually rang up "462" and that "462" very rarely spoke to anyone else but tradespeople, and she had not failed to notice that the lady subscriber at "462" was in very affectionate relationship with her correspondent. The number "462" was on the next position to Grace and the telephonist on that position being rather inexperienced, Grace frequently answered the subscribers' calls on the adjacent board. One morning she saw the lamp signal on "462" light up and in a moment had inserted the plug already in her hand and answered "Number, please." For answer she heard only a groan and one word which she thought was "John." For a moment she did not know what to do, she tries by all means to communicate with the subscriber but could get no reply, although the line was not cleared. Then quickly she resolved on a line of action and rang up "222." The subscriber was astonished to hear the query "Is your name John?" "Yes," he answered, "why do you ask?" "Will you please go to the house of number '462,' someone is ill and wants you urgently." The subscriber rang up later in the day and thanked the telephonist, telling her that the lady at "462" had been very ill and that her prompt action had probably saved her life.

A few days after this Grace's mother received a letter asking that she would be good enough to call and bring her daughter to see a lady in an adjoining square, and regretting that owing to illness it was impossible for her to call on Mrs. Vernon. The letter was signed Elizabeth Cameron.

The request seemed very mysterious, neither Mrs. Vernon nor her daughter knew the lady, but after some little demur they decided to call. They found Mrs. Cameron to be an elderly lady and none other than the subscriber on "462." She explained the circumstances leading to the incident of the telephone call. She had been suddenly seized with a heart attack just when, for a time, she was left alone in her house, and had her son not been recalled by the prompt action of Miss Vernon, she would in all probability have died. But my son must thank you himself, she said, he will be here in a little time.

When John Cameron entered the room he was so extremely unlike her own mental picture of subscriber "222" that Miss Vernon did not at all realise his identity with that abstract number, and his appearance had a remarkable effect on her. Cameron was a tall, athletic looking man of some seven and twenty years, over six feet high and broad in proportion. His hair was light, almost golden in colour, and his eyes were the bluest blue. He came forward with a happy light in his eyes and thanked Miss Vernon for her prompt and timely action. And if one could judge of the appearances of both Cameron and Grace something more than gratitude seemed to be manifested in his manner.

Rumour says that Miss Vernon is likely soon to leave the Service to occupy a position of domestic responsibility.

CORRESPONDENCE.

THE TELEPHONE EXTENSION DURING WAR TIME.

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

Are we in the Telephone Section doing all that can be done in the extension of the Telephone system of this country? From the writer's observation of what is going on I am doubtful on the matter, and if this short letter may lead to some progress it will answer the purpose it is intended for.

At the outset, from a man-power point of view the Engineering side has suffered very considerably by enlistments, Contract Department officers have also been considerably reduced, and again many subscribers and would-be subscribers have had their male staffs so reduced that they are finding the telephone an absolute necessity to carry on their works at all. Fully realising the lack of men I still think that no sufficient use has been made of women workers by the Engineering side. Women workers are now engaged in many occupations, viz., window cleaning (where long ladders are required), shipbuilding and painting of ships, again working on ladders and staging, electric wiring work, motor driving, ploughing, &c., &c. It does seem to me that as the Department has expended a very considerable sum of money in completing development schemes in many large towns, and although interest and depreciation have to be charged on this expenditure no use is being made of the plant. I am satisfied that thousands of subscribsrs' circuits could be joined up throughout the country at a small additional cost if apparatus and line plant, wire, &c., can be obtained, and the necessary labour provided. Are women being used anywhere for line construction? A small gang comprised of one man and three women would (after the women had been trained) be fully capable of joining up these short subscribers' circuits, women could be readily employed for inside wiring and fixing instruments with a result that spare plant would be used and Revenue obtained. Would-be subscribers would get a service and the Department would save a rush of after-war orders.

It is agreed that this course could only be followed where Exchange plant is available. I am satisfied that some effort on our part to assist those who under trying circumstances are trying to keep up the trade of the country would be very much appreciated.

N.O.W.

(We understand that the employment of women on the outdoor engineering staff is already on trial in the North of England. We hope to give our readers some particulars of the experiment next month.—Ed., *T. & T. J.*)

TELEPHONES IN NORWAY AND DENMARK.

Official Statistics are to hand from these countries and show a substantial increase in the number of stations.

Norway	...	(1916-17)	49,680	(State)	(1915-16)	45,780
			45,828	(Private)		42,822
			95,508			88,602

As the figures for the Private Companies are for 1915 and are increasing at the rate of 3,000 a year, and 7,507 private lines connected with the Central Exchange at Christiania must be included, the total number of telephones in Norway was about 109,000.

Denmark.—At March 1918 the total number of telephone subscribers was 172,674 as against 153,820 in 1917. This is probably equivalent to upwards of 190,000 telephone stations.

88,672 belonged to the Copenhagen Telephone Company, 49,102 to the Jutland, 12,004 to the Funen and 11,802 to the South Jutland Companies. Copenhagen had 60,611 subscribers, Aarhus 5,097, Odense 3,801 and Aalborg 3,429.

WHERE TO STAY.

The attention of our Readers is directed to the following list of Boarding and Apartment Houses.

BARMOUTH the Beautiful). "Glencairn"—The most comfortable Private and Residential Hotel in North Wales. Charmingly situated, overlooking bay and mountains. Large lounge. Excellent cuisine Moderate inclusive tariff. Highly recommended.—Mrs. Dennis, Proprietress.

BLACKPOOL, S.S.—"Sunnyside" Board. Estab., 8, St. Chad's Terr. Prom.; mod. terms; liberal table; dinner 6 p.m. Tel. 529. Mrs. E. BROWNE.

BRIGHTON.—Grafton House, Grafton Street, Marine Parade. (Door Sea). Comfortable Board Residence. 10 bedrooms; bath (h.c.) Electric light throughout. Good table. Moderate cycle accommodation.

CLEVEDON (Somt.)—"Ravenswood," beautifully situated on cliffs, overlooking sea and woods; ideal holiday resort; charming walks. All comforts studied. Moderate inclusive terms. Misses Bruce and Hall.

DEAN FOREST, Severn-Wye Valleys.—Beautiful Holiday Home (600 feet up). Spacious house, grounds, bath, billiards, tennis, croquet, motors, magnificent scenery. Vegetarians accommodated. 38*s.* 6*d.* to 45*s.* week.—Photos, prospectus Hallam, Littledean House, Littledean, Glos.

EASTBOURNE.—"The Polytechnic" Boarding House. Recommended by "Polytechnic," Regent St., since 1894. A comfortable holiday home. Liberal table Terms 35*s.* weekly inclusive.—Mrs. Edwards, 109-111, Tideswell Road.

ILKLEY, Yorks.—Marlborough House Hydro, for comfort and rest. Billiards, golf, croquet, tennis, fishing. Own pig, poultry, and vegetable farm. Tariff from Managing Director.

SHANKLIN, I.W.—"Homelands," Arthur's Hill. High-class Board Residence, south aspect. Close to cliffs and sea; tennis. Terms moderate. Personal supervision.—Miss Mark, Proprietress.

TAYNUILT, Oban District.—Forrest Bank Boarding House, own grounds overlooking Loch Etiene. 3 miles Ben Cruachan. Open all the year. Recommended. Terms from 30*s.*— Young.

"EXCHANGE TERMS" ILLUSTRATED

—THE PERMAMENT GLOW—

—TELEPHONE EXCHANGE TERMS ILLUSTRATED—
"O.O.O." "OUT OF ORDER"

MIDLAND TELEPHONE COMPANY, LIMITED.

THE following prospectus issued in 1880 may interest the curious and serve as a document illustrating the early history of telephony. It is followed by a list of 81 subscribers including many well-known Birmingham firms.

THE MIDLAND TELEPHONE COMPANY, LIMITED.

Chief Central Office :—EXCHANGE CHAMBERS, NEW STREET, BIRMINGHAM.
District Office :—5, HIGH STREET, WOLVERHAMPTON.

Directors.

Mr. GEORGE H. CHUBB, 104, New Street, Birmingham; Wolverhampton and Queen Victoria Street, London.
Mr. E. G. CAPON, Union Passage, Birmingham, and Lifford Mills, King's Norton.
Mr. THOMAS IRONMONGER, The Reliance Hemp and Flax Mills, Wolverhampton.
Mr. H. J. T. PIERCY, Broad Street, Engine Works, Birmingham.
(With power to add to their number.)

Managing Director.

Mr. HENRY J. T. PIERCY, Broad Street Engine Works, Birmingham.

Consulting Electrician.

Mr. FRED. ORMISTON (late Engineer and Electrician of The Telephone Company, Limited).

Secretary.

Mr. R. RYDER, 2, Exchange Chambers, New Street, Birmingham.

The above Company, which has been practically established in working order for the past three-quarters of a year, desires to direct attention to the immense advantage of the Telephone, which permits of *instantaneous speaking* communication between distant points, with the least possible effort on the part of both speaker and hearer.

To such perfection are the arrangements brought by this Company that even a whisper can be as distinctly heard the whole length of the line as though the speaker and listener were brought close together. In ordinary communications it is not even necessary to speak close to the instrument, conversation being better heard when the speaker is some distance away from it.

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

A Branch has been established at Wolverhampton, where there are already 18 Subscribers. Arrangements have been made for connecting Birmingham and Wolverhampton together, and the line will very shortly be in course of construction; also for commencing Telephone Exchanges in other district towns.

The Midland Telephone Company, Limited, will place in the office, warehouse, or residence of each subscriber, a Call Bell, with Telephone Instruments of the most simple and improved type, connecting the same by wires with a Central Office. By these means each subscriber can signal the Central Office, where an attendant will respond, and instantly connect the subscriber's wire with that of the person wanted; thus *one continuous line* will be formed, over which conversation can be carried on with perfect ease without any previous knowledge of the instruments being required.

For ease and rapidity of communication between Merchants, Manufacturers, Bankers, Brokers, and business men generally, it will be found of immense value.

The rate of Subscription for connecting and maintaining Telephonic communication, is regulated according to distance and the requirements of each Subscriber.

In addition to the Exchange System, the application of the Telephone for private use is likely to be extensive, the Company will therefore provide Telephonic communication for private purposes, between two or more establishments belonging to the same firm, or between the various departments of one establishment.

The Telephonic Exchange System is not an untried experiment. It is a practical and proved success. In all, except the smallest towns in America it is in general use. In Chicago, for instance, which compares with Manchester in size, the Telephone Exchange has been in operation *thirteen months*, and there are already more than TWELVE HUNDRED subscribers in constant communication.

Should you desire to have communication established from your office or residence, will you kindly communicate with the Secretary of THE MIDLAND TELEPHONE COMPANY, LIMITED, 2, Exchange Chambers, New Street, Birmingham, or care of Mr. THOMAS IRONMONGER, the "Reliance" Hemp and Flax Mills, Wolverhampton.

If the Exchange would be of use to you only in the event of some particular person or firm also being connected with it, perhaps you will kindly state particulars.

October, 1880.

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

MR. DALZELL'S PRESIDENTIAL ADDRESS TO THE LONDON TELEGRAPH AND TELEPHONE SOCIETY—SESSION 1918-19.

I HOPED the opening of this session would find all Nations once again at peace, when we could give our undivided attention to the future development of the Telegraph and Telephone Services of the country, and although that time has not yet arrived we now see more clearly signs of the end of the war and consequently hear much of reconstruction of society and trade. The term "reconstruction" may mean much or little. Let us hope that the efforts about to be made by the country generally, and by the Ministry of Reconstruction in particular, may lead to greater national efficiency and to greater harmony among nations and citizens. We too must take our part in the coming reconstruction and reach forward to that higher social order for which the world is struggling.

You will remember that Mr. Preston in his opening address last year referred to the lead we should give to telephone thought as well as to our responsibilities for shaping telephone action, and in that connexion spoke of economy and the elimination of waste. Let us follow that idea a little further in its application to the use of machinery in telegraphs and telephones, for it is here our reconstruction must develop.

You may have read that the War has revealed that the expenses of production of almost every engineering product vary as between the most and the least efficient establishments, by as much as 50 per cent., due of course to the use, in the one case, of well designed machinery and good organisation; and in the other, of obsolete machinery and obsolete methods. This applies with equal truth to all undertakings, and we must wish the Telegraph and Telephone Services to rank among the most efficient.

It is very clear that only by the increased speed of transport, locomotion and communication, brought about by mechanical and electrical progress, is it possible even to conceive of a League of Nations, which must depend upon the central authorities being in close touch with every outlying section of the organisation.

Civilisation and mechanical and electrical progress advance together not at a uniform speed but by sudden spurts, so that in one decade we may see great development followed by a similar period of apparent inactivity, during which time forces are gathering for a further advance.

We have now reached a time when we should make our greatest forward stride, and it is our duty to use in the interests of this country and its people every means placed within our reach for improving the services which we control. Before the war much had been written about the effect of the introduction of machinery on the worker—its destruction of craftsmanship and individuality. A great deal of such criticism was sound because machinery had been designed without regard to the human beings who were required, not to operate the machines, but to be as it were an integral part of the machine itself, and to carry on hour by hour some rapid, monotonous manipulation which the machine as designed could not accomplish. In the future, the State must see that the machinery which is used relieves the individual of such work as far as may be possible, so that he may undertake work of a higher character, and in so far as telegraphs and telephones are concerned it is our duty to consider traffic problems not only as they affect the maintenance of a rapid service, revenue and annual costs, but also as they affect the staff, the object aimed at being to remove all that proves to be an undue strain on the staff in the execution of their work, so that better results may be attained with less labour. We must also insure greater stability of lines and apparatus, as failure in this respect will cause much unnecessary anxiety, worry and labour in every Instrument Room. The increasing use of underground lines will do much to insure the former, but only fine workmanship and maintenance will insure the latter, and for this we must look to the Engineering Department—and may do so with confidence, yet I frankly confess that I wish our organisation permitted of the joint control of service and maintenance of apparatus, for there is much to be said in favour of the American system under which the officer in charge of an Instrument Room is held responsible for both.

That however is a side issue, and returning to the use of machinery, the first question which must be answered in connexion with the use of machinery is, when is its use justifiable.

In ordinary circumstances a man would hardly be justified in purchasing a typewriter if he has only two or three letters a day to write, or in purchasing an adding machine for his household accounts, nor would the use of a printing telegraph be justified on a circuit over which but few telegrams are transmitted; so that the answer must in a large measure depend upon quantity and costs, but generally where constant and rapid manipulation is required machinery should be used. Then there is the other side to this question. In cases where but few manual or manipulative actions are required hour by hour, as in a small exchange, and consequently work is intermittent, and the operator must of necessity have much unoccupied time in which no useful work can be performed, machinery should be used to free the operator and so obviate the waste of time which such waiting entails. Thus we should use machinery, where possible, to avoid (first) manual labour on constant, rapid, monotonous actions or movements, and (second) to obviate waste of time where work is intermittent and does not allow of other useful work being fitted into the unoccupied periods.

While no general rule can be established to cover the whole field of human activity, the main principles so briefly expounded can be applied with but few exceptions.

We know that long before the war the general principle of the use of machinery both in telegraphs and telephones had been established, and if only moderate progress has been made, this has been due to the want of men, money and material.

First with regards to telegraphs. A Committee was appointed at the end of 1913 to examine the question of the position occupied by the various systems of high speed telegraphy, and, while all telegraphy necessitates the use of electrical apparatus or machinery, only that employed in high speed telegraphy is known as machine telegraphy. The object of such apparatus is not only to get a large number of words per hour transmitted over a circuit, but to avoid the use of the ordinary Morse key and the hand-transcription of telegrams. That Committee reported that the Multiplex system of printing telegraphs for commercial work gave the best results, that the application of type keyboard signalling instruments was desirable on important circuits and should be kept steadily in view in connexion with the less important circuits, and that Creed apparatus, which is not a Multiplex but is a printing system, could be most profitably used for news work.

We now have to give effect to the recommendations of that Committee, but before this can be done with due regard to economy a great deal of preliminary study will be necessary. It is not enough to say that given a certain length of circuit and specified daily and busy hour loads telegraph experts think that such or such a machine is the most suitable. We want to be able to say with certainty that a certain machine is best, because figures prove that it is the most economical, while at the same time it throws no additional burden on the staff. I hope in this connexion we shall not use the term "speeding-up," a term which is usually misunderstood.

So-called high speed telegraphs do not usually necessitate high-speed operating, but actually reduce physical effort. In order to be certain of our

ground we must know for each class of apparatus, the annual costs, which include interest, depreciation and maintenance, and we must know the capacity of the apparatus, its relative stability—a factor of vital importance—the cost of operating and the manipulative effort required to operate a normal speed, and until these factors are known it is impossible to say with certainty how our telegraph system is to be developed with true economy, while relieving the Staff of unnecessary manipulations. I may say that a study on these lines is now in progress and in that study we want all the help we can secure.

It may interest you to know for example the number of movements and the effort required to operate for an hour three classes of apparatus—the Morse key with hand-transcription, the Baudot five-key board with tape printing, and one form of keyboard Multiplex with column printing, all at average speeds of working.

Naturally one telegram of say 2,000 words can be sent in less time than 100 telegrams of 20 words each, so that the output measured in words has to be modified for ordinary work according to the number of words per telegram dealt with. In the following calculations I have taken a single telegram in each case and 5 as the average number of letters per word.

First then with regard to the output of work we may take the loads per operator as follows :—

Morse	800	words per hour.
Baudot	1,200	„ „
Type keyboard	1,600	„ „

Counting the depression of a key as one movement and the release as another the movements necessary to operate at these speeds during one hour are approximately :—

Morse	22,800
Baudot	14,000
Type Keyboard	20,000

and multiplying by the force required to depress the keys on each system, the actual weight applied by the operator in one hour would be, approximately :

Morse	3,000 to 5,000 lbs.
Baudot	800 to 900 lbs.
Type Keyboard	4,000 to 5,000 lbs.

Allowing for the distance through which the force is applied and expressing this in foot lbs., we get

Morse, single current 7½ foot lbs.
Morse, double current 28 foot lbs.
Baudot, 7 foot lbs, and
Type keyboards, 118 foot lbs.

Here, then, we get a side glance at one factor of our problem, but there are many others ; for instance, on Morse and Baudot working, corrections can be obtained with greater ease and rapidity than on keyboard working, while on Morse and keyboard working, the weight of the arm is borne by the operator, and on Baudot the operator rests the arms (an important point) and uses little more than the weight of the fingers to depress the keys.

Turning to the question of the reception of messages on these systems ; on Morse the operator is subject to aural strain and has to write 800 words in the hour ; on Baudot to check and cut the tape into suitable lengths: and gum these on forms and time them, which makes correction easy and is not a difficult or laborious duty) ; and on column printing, to check and cut off the messages as they are completed, and time them. So that in reception, there is hardly any comparison between the Morse and the Baudot and column printing systems, as the last two do not necessitate any aural, muscular or nervous strain comparable with sounder working and hand-transcription.

If then we take into consideration, as we must, both ends of these types of telegraph equipment, we see that the use of Morse, which gives a comparatively low output, entails rapid monotonous physical labour, both in sending and receiving, so that although the alternating forms of work (sending and receiving) break monotony, there is no freedom from strain, the use of Baudot at 1½ times the speed of Morse greatly reduces the rapidity of motion and the strain in sending, while in receiving there is an alternating form of work, which not only breaks monotony, but is free from strain and therefore of the utmost benefit in preventing fatigue, and lastly the use of the keyboard doubles the speed of Morse and while it necessitates greater physical effort, that is largely counter-balanced by the greater freedom of movement, and reception is even easier than on Baudot and counter-balances the additional labour in handling the large number of messages received and the greater eyestrain in checking the messages, while in motion, and forms therefore a good alternating occupation.

Now if the flow of telegraph traffic was reasonably constant or varied from hour to hour with any regularity, the problem of choice of apparatus and distribution of staff would be greatly simplified, but whereas the variation is great, the margin to be allowed for must be broad, and it is here we require statistics. It is all very well for the cynical or the ignorant to say that there are three degrees of lies—lies, damned lies, and statistics—but we shall never be on sure ground until we realise the necessity of statistics. There is no intention to use uncorrelated facts to prove points which have a varied and often complicated element but, as Sir Andrew Ogilvie pointed out to us when speaking of railways, statistics must be prepared in elaborate detail, being grouped or generalised by those in immediate control of the offices, so that it may be possible to consider how to meet individual conditions and in what direction it may be desirable to effect some change in methods.

To continue, on both Baudot and keyboard Multiplex systems it is usual to work the circuits quadruplex duplex, that is to say that one circuit only is used for four channels in each direction, although 5 or 6 channels are actually working on some of our shorter lines, but with 4 channels only, at the speed of 1,200 words per hour per channel, it is obvious that there are but few offices in this country between which a greater capacity is required than that which can be provided by *one* circuit. Indeed in only some half-dozen cases is that so, and in all other cases the difference in speed between Baudot and keyboard working can result in saving operating time only, and just what that saving may be varies in each case ; for instance, take an actual case—Newcastle to London—where the traffic varies in the twelve hours between 8 a.m. and 8 p.m. from 15 to 200 messages in the hour. Only during some 5 hours would it be possible to close a channel if the speed were increased from 1,200 to 1,600 words per hour and it is this saving only, unaccompanied by any commensurate saving in physical effort, which can be set against the much higher annual charges for the more rapid machine. It will therefore be evident that there are many and complex factors to take into consideration in arriving at the true degree of efficiency of machine telegraphs working at varying speeds, and it is important that no factor be overlooked, and to these problems we must turn our earnest attention with the determination that no difficulty will be allowed to stand in the way of the selection and use of the best, that is, the best for the staff and best for the Service.

Now with regard to telephones, we have some experience of automatic or machine systems and see that these have before them immense possibilities. Those possibilities would indeed be great, if the apparatus only freed telephonists from a large part of that rapid manipulative work which, without any alternating form of work, they are called upon to perform. For instance, taking Leeds Exchange, the machinery installed has freed the operators from some 130,000 manipulations per day, apart altogether from repeating the telephone numbers demanded. But here again, before we can progress with certainty we must have definite figures as to annual costs. It is to be hoped that the necessary figures will shortly be forthcoming, and that we may find that advancement along the lines of automatic machine equipment is financially sound. For not only do we hope to see the system extended in Provincial Centres where old exchange equipment has to be replaced and generally adopted for the distribution of calls to records, enquiry and phonogram positions, and for order wire working, but in London also, we hope to see a commencement made in the installing of automatic equipment which will in time take the place of the present manual boards. This must however be a slow process, but the scheme demands early settlement. At the small village exchanges throughout the country the use of automatic machinery should remove many difficulties at present experienced in connexion with the constant night and day attendance which has to be given. So then if the study of cost shows we are on safe ground financially, our pathway will be clear to a vast field for development and improvement.

I have not spoken of tubes, conveyors and distributors for telegrams and tickets, but all these must come under review, and machinery be made to bear an increasing proportion of the burden while the Services expand to meet the full requirements of the community.

SOME EXPERIENCES OF A TELEPHONIST IN FRANCE.

BY NORA E. MITCHELL (*late L.T.S. attached to W.A.A.C.*).

LETTERS from France have now not only ceased to be a novelty, but have become almost a monotony, so that it is exceedingly difficult to find anything new and interesting to talk about which shall also not arouse the wrath of the censor. There has never been a lack of interest in the life of the telephonist in France, but it is nearly impossible to convey a conception of it to those who have never lived it. The longer one lives it, the more firmly does it take hold of one, though its fascination defies analysis. Perhaps it lies in its absolute simplicity. One somehow connects Army life with all sorts of restrictions and red tape. There are a great many restrictions, there is the usual amount of red tape, but one finds it possible to accept both with a shrug, and adapt life to fit them. What is left can only be described as a very care-free existence, compared with the many complexities of present-day civilian life. There are little things that distrustful people, ignorant of army ways, might find annoying—when, for instance, one received half, instead of full pay, and on enquiry, is informed that a kind, fatherly Government had duly placed it to one's credit. The only hitch is that one cannot persuade these French shopkeepers to repose an equal trust, when one displays AB64—which, for the benefit of the uninitiated, is one's pay-book—which, the inscription that one has forty francs to one's credit : the impression they retain most, is that a franc in their hands is worth forty in your pay-book. Then there is the rule which decides that one may wear collars of grey fur, tawny fur, any coloured fur but black or brown ; the only thing left one is to decide correspondingly that neither black nor brown suit one's style of beauty.

It is all a matter of philosophy. No one need seek far for the philosopher's stone while there is an Army. To be just to the "powers that be," there is generally a reason for each of the peculiar rules that govern our lives, though the reason is very obscure at times. It takes some time to accustom one's

self to being a child again; to be in for the night just as you people in London are going to your theatres; to have one's every detail of dress ordered; to confine one's walks to certain limits—"thus far and no farther"—to be marched in file to, and from one's entertainments, much as we were marshalled in our young days.

The law of compensation holds good here as everywhere, for we are left absolutely without responsibility, except for conforming to those rules. Our obedience to Solomon's injunction to "take no thought for the morrow" is less a matter of inward grace and conviction of his rightness, than a tribute to the admirable system under which we are fed, housed, and clothed—but not shod; a most important distinction. It will probably sound paradoxical, but apart from these rules of living, we are much more free than one can ever be in civilian life. The finest friendships, the most unconventional pleasures are possible, and there is no Mrs. Grundy to put two and two together and make of them five. We are just a jolly party of "boys" and "girls," irrespective of age; we play our games together, have our friends to tea, and invite them once a week to our concert or entertainment for the week, and to our dances whenever we care to arrange one. Our camp sports have recently taken place, when a silver cup was competed for by the different companies. It was thought that "B" Company, composed of clerks, signallers and gardeners, would stand a good chance, but we were beaten by "A," orderlies, waitresses, laundresses and cooks. The fight was very keen, as all the competitors had been arising with the lark for weeks previous, to practice long jumps, high jumps, running, tugs of war and throwing the cricket ball. Almost all the sergeant and corporal instructors in the area pressed themselves into the services as coaches, and were very keen on their different protegées. All four companies distinguished themselves in some way or other, and the hundreds of men onlookers were delighted.

I know I yelled like any football cup-tie maniac: I had no idea that sports were so exciting. The day was concluded by a concert given by the camp concert party, with items by the camp orchestra. It was the Waac's day altogether, and there never was such a fever of rehearsals! They commenced with the dawn and the sporting events, and extended into the midnight hour when the concert party were to be heard in their final efforts while the strains from the orchestra floated forth upon the air from another part of the camp. The hockey season has now commenced, and, as our Unit Administrator is a crack player, we are all roused to enthusiastic effort. One dare not be apathetic in this life. Everyone lives most intensely, every minute of the day. We really have not time for bed sometimes, but we sleep most soundly all the same, in spite of various nocturnal interruptions, such as torrents of rain which flood the hut out, an intruder in the shape of one of the many camp cats, or else an earwig losing a precarious foothold on the sloping roof and dropping on to someone's upturned face, much to her horror and the misplaced amusement of her fellows. The camp *personnel* includes a very varied collection of animals, insects and reptiles. We have lost count of the common sort, such as cats and dogs, but among the more unique, are a goat and a hedgehog; perhaps I should use the past tense, for the hedgehog came to an inglorious end, being found one morning on the end of the guard's bayonet, who had mistaken it for a rat during the night.

On our frequent and involuntary retirements to the cave, at the times when it is inadvisable to remain above ground, all the animals accompany us until we must somewhat resemble an underground Noah's Ark. The goat has a trick of walking over us all the time we are there, which is a little disconcerting if one has managed to find a spot a little less like Stonehenge than the rest and compose one's self for slumber. I do not know if I shall render myself liable to being shot at dawn—a most comfortable hour for the experience—if I tell you that our cave is very historic and is supposed to have been used by Napoleon for the secreting of his troops, and also by the aristocrats during the Revolution, from which you may gather some idea of its size. I can give you no idea of its depth, being a mere female and incapable of calculating the details concerning the number of feet which the masculine mind revels in. I only know that one appears to be descending a bottomless pit; I am sure you would be glad of it in London, for we are absolutely safe there from anything but an earthquake.

I think you would all like to hear a little about a French telephone exchange, and here is some first-hand information from your special correspondent at the front. I do not know if any more of my colleagues have been fortunate enough to have the experience of working a French switchboard, but I rather doubt it, as I believe this is the only place in France whose civil exchange is staffed by the English. It is difficult to assign a reason for its being so staffed, unless it is in exchange for facilities of obtaining military calls over the French lines to a greater extent than is allowed at other places. This exchange is ordinarily worked by three British soldiers, and I am only substituting them for their leaves. After five weeks there, I am finding it a little less formidable; even now there are frequently moments when I wish the earth would open and swallow me, but the L.T.S. teaches its members to acquire the quality of pluck—without the camouflage, it is known as "cheek"—which serves one in emergency, in lieu of actual proficiency. I do not know if it was the possession of this vice or virtue which influenced my choice for the position; it certainly was not for anything beyond the most superficial knowledge of the language. The switchboard is in a corner of the Post Office, about the noisiest place that could ever have been chosen, though one does hear of parallel cases in England. It would be bad enough to hear English, in a room where a dozen postmen were continually in and out sorting letters, the telegraph instrument clicking, a puncher going, date stamps being banged with unnecessary vigour, and excitable French people arguing at the counter, but it is infinitely worse to hear French, spoken at the rate of 40 words a minute. Only one person is on duty at a time and none of the P.O. Staff speak English, so "alone one does it" or does not do it, as the case may be. There are only eight subscribers and thirteen junction lines, but one's impression is that the whole of France is terminating on the section in front of one and clamouring for things that sound like nothing on earth. During my first morning, my fevered imagination conjured up visions of the Post Office being stormed to demand the removal of the new "Mademoiselle Anglaise."

Experience has taught me a surprising fact, that the French, while being a more excitable people, do not put themselves out over their telephones nearly as much as we do in England, and only in exceptionally extreme circumstances is "Le Receveur"—the French equivalent to our Supervisor—demanded.

There are no civil subscribers on this exchange, they were all disconnected soon after the outbreak of war. The apparatus is apparently a relic of prehistoric times, and one involuntarily wonders what was Eve's equivalent for "number please." The transmitter dangles from the ceiling and consequently, requires violent and continual chasing, the receiver has to be held to one's ear, and to ring, one has to depress one of twenty buttons and turn a generator.

In case any part of one's anatomy is not in use by that time, there is a key right at the top of the switchboard, which requires holding down when one is using a certain junction on which it is possible to obtain two different places.

The only thing to which I can liken the operating is the one-man band which comes to entertain one's waiting hours outside the theatre, and in which the performer plays or bangs some instrument with every part of him. I have longed for a camera at the moments when both arms and hands, one elbow, one shoulder, and my teeth have been in use.

The French State is sadly neglectful of its duty in educating the subscriber, for he disdains mere numbers and names of bureaux, and asks for things like the "Secretary of the military medical under records at So-and-So." I leave you to guess what it sounds like when delivered like a pistol-shot in French, in one's startled ear. The last desperate resort after altering one's voice as far as the human register will permit in order to hear the awesome request repeated several times, is to learn it off and gabble it at someone else without in the least understanding what it all means, and only praying fervently that one has guessed the route rightly. Of course one soon becomes familiar with the sort of things asked for, and these are the early difficulties.

On reporting to M. le Receveur that the board is out of order, as it frequently is, and that one can neither speak nor hear, he looks vaguely sympathetic and then considers the matter at an end. There is a Call Office, or Cabine Téléphonique as it is called here, in the outer office, and one has perforce, to connect every call to it, and rush in and out, hot and indignant, until the relief, one of the previously-mentioned soldiers, comes on duty and repairs the fault. I have sighed for a good old English engineer, but I think I shall be fully qualified as an engineer myself on my return to the L.T.S.

The winter has quite set in here already, and reminiscences of last year crowd into my mind; when, for instance, the ink froze in our fountain pens and the water in our hot water bottles was found to be solid ice in the morning, having frozen in our beds.

I am afraid fuel will be shorter than ever this winter, but I am also afraid that we shall not feel it as much as you people at home.

We have the most admirable system of "scrounging" by which means, every person in one hut keeps it supplied with necessaries not otherwise obtainable. It is mostly done by various friendships with useful individuals, such as the coalman, but we are not above supplementing the supply on occasion. I even heard of one girl having business in the orderly room and emerging with a huge piece of coal which she stated was alone and unprotected. The habit grows so much that one wonders if we shall belong to the light-fingered fraternity on our return to civilian life, and calmly appropriate anything we see and desire. In can only hope it will be kindly termed "kleptomania" and not a harsher name.

We shall certainly be very different individuals from those who adventured forth in that much maligned corps known as the Waac's, and my additional and concluding hope is that the London Telephone Service will deal kindly and indulgently with our many idiosyncrasies and value us as travelled and experienced members. It will not be so very long before we are restored to the bosoms of our loving exchanges, and while I, for one, shall be glad to come back to my friends, colleagues and superiors, there will be many a sigh in after-life, for the free, happy-go-lucky days we so disgracefully enjoyed during the Great War.

OBITUARY.

We regret to record the death, on Oct. 29, of Miss ETHEL COOPER, Travelling Assistant Supervisor, Class II, District Manager's Office, Chester. Miss Cooper commenced her career in the Telephone Service as a Telephonist under the National Telephone Company in 1898, and was promoted Assistant Supervisor, Class II, in May of this year. She was held in great esteem and respect by the staff and her loss is keenly felt by her colleagues. The deepest sympathy of all is extended to her sorrowing relatives.

We have also to record the death at the early age of 32 of Mr. F. J. FROST, Clerical Assistant in the District Manager's Office, Tunbridge Wells, on Nov. 1 from influenza. Mr. Frost entered the service of the late National Telephone Company as a Clerk in 1902, and remained in the same District throughout. The funeral took place on Nov. 2, several of the staff being present as a token of esteem and respect to their late colleague.

TELEPHONE SWITCHBOARD SIGNALS.

BY W. BLIGHT.

THE question of signalling over telephone circuits is a matter of considerable importance for without a means of signalling a circuit would be of little practical use, and if the signalling is inadequate, unreliable or confused, it will carry less than the possible maximum number of calls and its value as an avenue of traffic may be much reduced. It is not perhaps so generally recognised as it should be that the great practical success of the Central Battery system is due less to its central battery than to the improved system of signalling that it inaugurated. The automatic call was of course an improvement over the manual method of calling, but the chief advantage of the C.B system is in respect of the lamp signals directly associated with the answering and the calling cords, and automatically controlled by the switch-hook at the subscriber's station. This system is frequently described as the double lamp clear system, or again as the double supervisory system. Now these descriptive terms are not very good ones, and it may be opportune to examine critically just what this system affords and whether the greatest possible advantage is taken of it. A great deal of expense is incurred in providing for through signalling on junction circuits, that is to say, in providing equipment to permit of a distant subscriber controlling the calling cord signal before the "A" telephonist in the same way as a subscriber on the same exchange. Frequently in addition to elaborate circuit arrangements involving considerable first cost and maintenance there is transmission loss, and this may be of the first importance. For these reasons it seems desirable to know exactly what is obtained for this expenditure. If we speak of the double lamp clear system we seem to imply that the system fails unless we can ensure that both parties to the conversation can give a signal at its termination to the controlling telephonist. Is this implication warranted? Is it not rather that a certain *supervisory* facility has been lost if the *called* subscriber is unable to control the relative signal, but that in respect of the *clearing* no serious change has occurred, certainly nothing to justify us in speaking of the failure of the system. It may be well to define the terms supervisory and clearing. These functions are not the same and therefore we cannot mean quite the same thing when we speak of the "double lamp *clear* system" and the "double *supervisory* system."

A supervisory signal affords information as to the state of the connexion, but does not call for definite and immediate action.

A clearing signal indicates that the conversation has ceased and the circuit can be freed, and is therefore a definitive signal calling for immediate action.

Now it is perfectly clear that the lamp associated with the calling cord cannot be described as a clearing signal, for this glows before the conversation commences as well as at its termination. Its primary purpose is to inform the telephonist when the called subscriber answers. In magneto working it is necessary for the telephonist to supervise the commencement of the conversation by listening on the line, whereas with the double lamp system she can continue to ring a subscriber while actually listening or speaking on another connexion. Thus the calling cord signal is performing an essentially supervisory function and would best be described as a supervisory signal. On the other hand the signal associated with the answering cord does not appear until the subscriber who initiated the call has finished the conversation and restored the receiver. Cannot we therefore describe this signal as a true clearing signal and act accordingly? It is thought that if these signals are spoken of as clearing and supervisory signals respectively a better conception of their functions will be conjured up. If for instance the signal on the calling cord is known as a supervisory signal we shall not feel satisfied in accepting it as a clearing signal. Frequently where junction signals are not provided it is suggested that the telephonists can clear on their local subscribers' signals, and it is apparently assumed that each of these signals is equally effective. But since at the end where the call originates the subscriber controls the signal on the answering cord and at the other end the called subscriber controls the signal on the calling cord, our definition would suggest that at the originating end an effective clearing signal will be received while at the incoming end the signal will only be useful for supervision. And this is undoubtedly the case. The telephonist who sees that calling cord signal glowing does not know whether the subscriber has completed his conversation or has not yet responded to the call, unless of course she is able to remember that on this particular connexion the subscriber has answered. But that is beside the point for a signal cannot be considered definite if it depends upon previous happenings for its interpretation. Junction circuits to small exchanges are often terminated in the larger exchange on subscribers' equipment, and the signalling arrangements are then similar to those obtaining on subscribers' lines. Consequently no automatic clear is given from the larger to the smaller exchange, and on incoming calls to the latter the telephonist has to depend upon the signal which we have described as supervisory. There is a further incidental disadvantage when the exchange is quite small and without permanent attendance in that the alarm bell, or buzzer, is only connected to the answering cord signals and therefore, in the case mentioned, is not actuated.

Then again there is the case of outgoing junctions to magneto exchanges where the subscribers' instruments have not been modified for automatic signalling and where in consequence the calling cord signal is not controlled by the distant subscriber. It is often opined that this is an unsatisfactory arrangement from the clearing point of view. But is it in respect of the clearing that the disabilities arise? In such a case the calling subscriber will actuate the signal on the answering cord at the termination of the conversation, and thus the signal that we have called the *clearing* signal will appear, but that the signal on the calling cord which we have called the *supervisory* signal remains inoperative. Again does this not represent the true state of affairs? Is it not in respect of the supervision that this arrangement is defective and that the clearing is really satisfactory? Acting upon the assumption that it is the clearing that suffers, arrangements are sometimes made for the calling cord signal to be actuated (*a*) by the magneto subscriber's "ring off" or (*b*) by the withdrawal of the plug at the incoming end, the telephonist there responding to the "ring off" signal. These devices by no means perform the "supervisory" function, are not fundamentally necessary for normal operation (being in the nature of safeguards against the abnormal), increase the complexity of the circuit arrangements and add to the transmission loss. In these circumstances a clear perception of their usefulness leads to their provision only in exceptional circumstances.

If then the two signals on the "A" position cord circuit can be properly described as *clearing* and *supervisory* signals respectively, what would be the result of allowing the Traffic staff to recognise them as such? In the operating rule book, where both lamps are described as supervisory lamps, no differentiation is permitted. The telephonist is required to challenge the connexion and to ask, "Have you finished?" if either of the lamps glow separately. Obviously she must adopt this procedure if it is the lamp on the calling cord that is glowing, but is it necessary if it is the lamp on the answering cord? If this signal can be accepted as a definite clearing signal it is not. But it may be urged that the signal cannot be so accepted because the calling subscriber may have inadvertently given the signal or, although he has finished the conversation that he initiated, he has over hastily replaced the receiver leaving his correspondent with something still unsaid. Immediately such considerations are put forward we pass from the normal to the abnormal, from the region of the regular to the irregular, from that of a constantly necessary requirement to that of a safeguard. And with all questions of safeguards it is necessary to be assured that the safeguards do not introduce disabilities that render their use unprofitable. Before referring to these disabilities mention must be made of an incidental effect of clearing in advance of the reception of the signal on the calling cord. If the called subscriber is connected to an exchange where the subscribers call automatically, the clearance of the connexion before the receiver has been restored will cause the subscriber's calling signal to glow at the home position. This is an obvious disadvantage and the effects of this must be offset against any advantage that might follow from the practice. It must be remembered that such cases occur at present, but as by the existing rules the telephonist is required to wait 10 seconds and then tap off the connexion, this interval extends the period during which the receiver can be restored without giving rise to the false call. It seems probable however that the percentage of false calls in those cases where the called subscriber is capable of giving the signal by restoring the receiver would only increase by a trifling amount. This trouble at present chiefly arises in those cases where the called subscriber is reached through a private branch exchange and the signal is not given until the operator at the P.B.X. removes the plug from the exchange line jack. In such cases the false calls might be expected to show an increase, although even then the loss of the 10 seconds' grace would not in all probability have a very pronounced effect. Perhaps in practice more than the 10 seconds is given, and if this is so it but emphasises the disabilities of the present method, to which reference is made below.

This effect of establishing a call through a private branch exchange switchboard is an incidental result of providing "calling in" facilities which permit of the subscriber at the extension station "flashing in" the P.B.X. operator without disturbing the exchange. As this effect is only incidental and not fundamental, it is quite possible to afford the "calling in" facilities without incurring this disability and thus to place the P.B.X. on the same footing as an ordinary direct line.

How might we expect the service to benefit if the telephonist were instructed to clear upon the reception of the signal on the answering cord? First the operating rules would be simplified, and the telephonist, not being required to wait 10 seconds and then to challenge the connexion, would have no excuse for failing to effect a prompt clear. Would this not be a decided improvement in procedure quite apart from the effects of such action? At present during the busy hour can a telephonist have any concern for those 10 seconds? Does she not rather tap off the connexion as soon as she gets a breathing space? If so, is it worth while insisting upon her tapping the connexion at all? This cannot become an overlapping operation as the simple clearance may. This simplification of procedure will lighten the telephonist's load and should have its influence upon the amount and quality of her service.

But perhaps the more important effect of such a change would be in respect of the more prompt clearance of connexions. It is a platitude that the whole telephone plant can be made to serve its purpose with greater economy if the equipment and circuits used in establishing communication are made available for a second conversation immediately upon the termination of a call. The period during which circuits remain "engaged" after conversation has ceased represents a dead loss, and anything that tends to reduce this period is of first importance. These considerations, at all times of prime concern to those responsible for handling telephone traffic, have greater weight now that trunk lines up to 60 miles in length are frequently worked as junctions from local switchboards.

To recapitulate: it is suggested that if the two lamp signals associated with the "A" position cord circuits are known as the "clearing" and "supervisory" signals respectively, that a better appreciation of their value and function would arise. Secondly, the question is asked: can the telephonist so regard these signals and act in accordance with this definition of

their functions with advantage to the Service? The arguments urged against this procedure are apparently twofold. It is alleged that occasionally a connexion will be prematurely cleared (it should be remembered that this clearance can never take place during actual conversation) and that false calling signals will result. There was a time when, owing to the defects of switching apparatus at subscribers' stations, the former difficulty was a very real one and telephonists could not be permitted to clear upon the reception of the one signal. But those defects have been removed and only the ignoring on the part of the subscriber of very simple rules can bring about the premature operation of the signal on the answering cord. The vast bulk of telephone users have but to obey the admonition that confronts them continually to "replace the receiver only when finished." And if in ignorance one should fail, will not the lesson be more quickly learnt if it has a result that can be readily appreciated?

Referring to the increase in the number of false calling signals, this would appear to be a disadvantage about which no two opinions could be entertained, but even here there is a mitigating circumstance, for these calls appear always at the subscriber's home position and, being noted, steps are no doubt taken to obtain more prompt clearance of the circuit on the part of the subscriber. And if the private branch exchange difficulty be surmounted, doubtless the false calls would become a negligible quantity.

These notes are penned in the hope that some of those who are directly in touch with telephone traffic up and down the country, including those who daily confront the switchboard and handle the traffic or watch its manipulation, will be induced to express their views thereon.

TELEGRAPHIC MEMORABILIA.

A MUCH improved *rendezvous* for the gatherings of the T. and T. Society, in the comfortable and well-lighted hall of the S.S. Union, Old Bailey, contributed not a little to the encouragement of the members and to the success of the opening meeting of the session, not to speak of a fitter setting for the jewel of the evening, a paper by Mr. John Lee on "Telegraphy as a Handicraft."

There was a very definite pause at the close of its witty and sparkling delivery, an evidently well-pleased audience unmistakeably having been deprived of its breath! Mr. J. Newlands, however, soon stepped into the breach, followed by an ever-welcome personality in that of Mr. Moir, these comments being continued with varying shades of opinion. There was little real debate while Mr. Dalzell's opening address undeservedly received but little vocal attention. As not infrequently happens, one or two side issues provoked considerable voicing, especially the remark of one speaker on men in the Service who, "failures" in the Telegraphs, had found their *métier* during the war, and who should, so the speaker appeared to think, have discovered their proper calling without waiting for that unique event. One's own thoughts on this view are very much with the man or woman in our public services who finds too late that such services offer no scope for his or her energies and no opening for individuality until years of the hum-drum have quenched initiative and dulled legitimate ambition. It should not be forgotten either that the door to the Engineering Department was long ago banged to and bolted against the telegraphist, certainly not because the telegraphist had proved himself inefficient as an engineer, as the ranks of the Engineering Department testify to-day. There were scores of telegraphists of both sexes who would have been only too eager to have proved their capacity in some of the new governmental spheres which were opened up at the beginning of the war, but telegraphists were then even as now undeniably in the first line of the indispensables. They were thus by the very importance of their calling prevented from rendering assistance elsewhere and, let us mark this, the more capable and expert the telegraphist, the greater the need for his or her retention. Those who have been through the stress and strain of the last four and a half years will best know that the writer has but feebly expressed the value and self-sacrifice of telegraphists as a class. One is glad and proud of those who when opportunity offered, were able to seize it and to seize it gloriously, to the everlasting credit of the Service, and one is also glad and proud that others less conspicuously but none the less faithfully remained at their posts. The Telegraph Fates have by no means proved unkind to the writer, who is thus able with better grace to place on record this gentle protest against thrusts at the unsuccessful man or woman of our craft who from lack of opportunity has only been able to render obscure service to the State.

Three dates will doubtless be burnt into the minds and memories of those members of the C.T.O. staff who were on duty on Aug. 4, 1914, on Nov. 11, 1918, and on that fair summer morning midway between these when, with the sounds of approaching thuds coming nearer and nearer, men and women and boys and girls waited quietly and without sign of panic, during minutes which seemed ages, for the sickening crash that everyone appeared to realise was the inevitable fate of G.P.O. West. Then the blinding flash, showers of dust and rubbish and splintered glass, the smell of noxious gas and through the haze of it all the sight of roaring flames 20 to 30 feet high pouring up to the skies from a floor only occupied but a miraculously few minutes previously by a busy staff. One recalls how, looking across the blazing gap, through which, as the wind blew the thick smoke-clouds hither and thither, the uninjured clock on the south wall peeped out occasionally, and the scent of charred wood mingled in the nostrils with that of the less agreeable one of burning "insulation." Not less clear in the picture stand out the figures of the firemen, clambering round the edges of the huge gap, down which hung red-hot and twisted girders and up from which spurted fitful jets of steam and increasingly dense clouds of smoke in exchange for deadened flames. Yet greatest, most welcome thrill of all was the news, "All staff safe. No casualties." It was a miraculous and memorable day!

The solemnity of the August date and all it portended has already been placed on record, the bombing of the C.T.O. has naturally been a prohibited subject until now; there yet remains the—well, words fail—date upon which the "Cease Fire" was bugled out across the continents.

What marvel if the pent-up feelings even of a sedate telegraph office broke through the normal bounds of discipline. What wonder if joy found natural vent in song! Who surprised that here and there grief, all too new, found fresh vent at the thought that the joy was too deeply "tinged with pain?" Then the rush of traffic. Mothers, sisters, sweethearts all wiring and cabling to dear ones the news already known. Naval and military dignitaries exchanging congratulations. Government ciphers clamouring as ever for first place, with here and there the unofficial quip squeezed in between them, as in the case of the Rome telegraphist who signalled in between some groups of figures the following couplet:—

"God save England, our great friend
And all the Allied powers."

One suggestion is made for consideration by the Traffic Section, and that is the composition of a few patriotic tunes for similar national joy-days timed to beat in rhythm with the Baudot cadence. None of the allied anthems it appears can be sung simultaneously with transmission by Baudot cadence. "Weel may the keel row" alone appeared to lend itself to the dual operation without loss of line-time!

It is gratifying to learn at first hand how much the British system of handling Telegraph Money Orders is appreciated by our American friends. It appears that the formalities to be observed on the other side of the Atlantic would be considered quite unnecessarily complicated and inquisitorial by our own "backward" population. Said one U.S. operator, "Guess we can't see you for dust over the way you handle these here Money Order telegrams. You go to a Post Office, you write it out and pay down the dollars. Then the gel don't ask no questions but says 'right away.' Gee! It's all over and you're outside in five minutes and all done. Now in the States you make a declaration, then you take it to the sheriff—when you've darn well found him—p'raps he'll sign it. P'raps he just won't. P'raps he'll want Wilson himself to do it, after that you'll prob'ly get it on the wires."

How much of natural poetic exaggeration was behind this compliment to our supposedly slow old country I cannot tell, but undoubtedly the paper money of the U.S. lends itself to considerable scope for the unscrupulous. One of these same operators also expressed himself as simply delighted with the taste of our South Down mutton, describing the joint from which it was cut as, "a fine *ham* of lamb." Unconsciously fine Anglo-Saxon too!

News arrives that Mr. C. Eickoff, an ex-C.T.O. telegraphist, has recently been elected as mayor of a by no means inconsiderable town in British South Africa. Still recalling this free spirit of the earlier Cable Room days, no surprise would be evinced by any of his old friends at the selection, and certainly no hesitation is felt in recording the conviction that the township is itself honoured in the choice.

By the bye no one of the Service papers appears to have recorded that Talaat Pasha, appointed as Grand Vizier at Constanople in 1917, and the chief leader of the Young Turks, was only a very few years ago a telegraph clerk. He was described by the German Press as one of the main pillars of the Turkish Alliance and was undoubtedly a man of more than usual Oriental capacity. He has also been termed by the Press a self-made man. If knowledge of Turkish telegraph methods of a decade or two ago may be utilised as a criterion, one can imagine some of the possible methods adopted in the self-making. It has been known for Turkish counter clerks to accept telegrams for transmission and to tear them up or otherwise destroy a number sufficient to meet the arrears of salary due—pocketing the actual cash received. A system liable to very elastic expansion, and to extraordinary developments of the get-rich-quickly type.

Everyone is talking of reconstruction, with more or less knowledge and with more or less authority, and the Telegraph world is therefore bound to feel something of the surge of the seething waters. Aerial navigation is passing from its war to its peace stage and will doubtless prove a rival to the telegraphs to quite a formidable degree, and that before very long.

This should not by any means develop that type of "all is lost" frame of mind which one already notes in the minds of certain officials. Such are too prone to belittle the future of their craft and instead of inspiring subordinates with confidence, treat telegraphy as a dying industry soon to be superseded by the aeroplane, which in some mystic manner is to flutter round the City, sucking up aerogrammes and distributing them with equal ease throughout the United Kingdom, the Continent and the Empire!

Doubtless the aerial post will very materially tend to quicken up our telegraph system, both inland and foreign, and there is need of acceleration in all truth. What is needed is some inspiring word which shall make possible a return of that old spirit of pride in the Service, a better understanding between administration, controlling and manipulative staffs, a keener appreciation of the value of the services rendered by the latter, and an attempt to believe that all the higher ranks are not antagonistic to the interests of the telegraphist. The future to my mind is full of high hope if prejudices against new machine developments are set aside on the one hand, if the craft is not belittled by thoughtless folk on the other. It is not inspiring to men and women who have spent some years in perfecting themselves in the art of their calling to be told in word and in deed "a copyist can get rid of this traffic. Tie it up in bundles and send it by train or air!" It is also a moot point whether, save in very exceptional circumstances, this principle is an honest one.

LONDON TELEPHONE SERVICE NOTES.

WE have lived through exciting times since the last issue of this JOURNAL. If there be rumours in circulation they cannot be escaped in the Telephone Service and the early days of November were full of rumours, which culminated on Monday, the 11th, with the certain announcement that the Armistice had been signed at 5 o'clock that morning and was to come into force at 11 a.m. By common consent all felt that the event ought to be celebrated in some special fashion and as the hour struck the whole of the G.P.O. South broke out into cheer after cheer. From City, Central, Trunks and all other floors where two or three were together came the voice of thunder, a spontaneous expression of relief after years of repressed feeling. The cheers were taken up outside and before long St. Paul's Churchyard became a sea of shouting, cheering, flag waving enthusiasts. Without waiting for the repeal of D.O.R.A. or any other authority, subscribers by one consent proceeded to illuminate the exchanges—glow followed glow till one wondered if there was a conspiracy in the City for all subscribers to call at the same moment. However even an enthusiastic operating staff on Armistice Day can only answer a certain number of calls, and some glows faded away of their own accord as the caller felt himself or herself impelled to join the throngs in the street without. The exchange staff came back from their luncheon intervals with collections of flags and before the afternoon was well on the switchrooms were gaily decorated. Chief Supervisors who have been regarded as the most staid of individuals were observed to re-enter the building wrapped in Union Jacks, and even a Superintendent was reported to have been seen doing a two-step down Dean's Court with a flag floating over each shoulder. Such times cannot be remembered even by the oldest and it is doubtful if they will be repeated in the lifetime of the youngest.

So close has been the association of the London Telephone Service with the war emergency schemes of all kinds that it is small wonder that the cessation of hostilities should have been hailed with delight. It meant the deliverance from anxiety lest at a critical juncture some important duty should have been overlooked, and many a supervisor breathed after Nov. 11 with a freedom unknown for years.

At the Traffic Officers' meeting held a week later the Controller presided personally and expressed through those present his appreciation of the efforts made by all his staff to carry on the service during years of stress and difficulty. At the unanimous request of the meeting, Mr. Preston forwarded the following message to Colonel Sir Andrew M. Ogilvie, K.B.E., C.B., R.E., Director of Army Signals, Home Defence, Joint Second Secretary to the Post Office :—

"This gathering of Traffic Officers of the London Telephone Service assembled for the first time since the signing of the Armistice tender to you a message of congratulation on the termination of hostilities, and of heartiest pleasure on your restoration to health after your recent illness.

"We further assure you of our desire to assist in every way that lies in our power to increase the scope and usefulness of this Service as an aid to progress in Peace as in War."

The following reply was received :—

"Sir A. M. Ogilvie desires to thank Mr. Preston and the Traffic Officers, London Telephone Service for their kind message on the termination of hostilities and for their expression of pleasure on his recovery from illness, which he has received with much gratification.

"In return, he desires to express his appreciation of the zealous and patriotic spirit displayed by these officers in carrying out the many special duties imposed on them by War conditions, and also to thank them sincerely for their most excellent co-operation in his own special work."

There was a general feeling amongst Telephone Controlling Officers that the work of the Telephonists during these years of special stress culminating in the pressure of the Armistice traffic should be recognised, and it is a pleasure to learn as we go to press that My Lords of the Treasury in response to, or in spite of, those traditions for which they are famous, have granted six days extra leave for Telephonists, Treasurers and other established Civil Servants.

If matters progress at this rate those Post Office classes who have not had the usual privilege holidays (including the King's Birthday) during the last few years may be allowed an hour or two off by way of compensation before the end of 1920.

We referred in our last notes to the Christmas Parcel Fund. It is a pleasure to report that well over £200 was collected, a sum which has made it possible to send an excellent parcel to all those serving abroad.

As ever the staff of the exchanges are busy outside office hours in entertaining wounded soldiers or doing something for their benefit. A sale of work held at "Park" on Saturday, Dec. 7, realised £46 10*s.* and some of the boys are likely to have a real good time early in the New Year as a result. Museum is also issuing invitations for a party early in January, and Central who held a Bazaar in the Rest Room at Carter Lane on Dec. 13 are sending a cheque for £102 5*s.* 6*d.*, the resulting profit, to the St. Dunstan's Hostel. It is certainly a magnificent achievement and one of which Central is justifiably proud.

We are most glad to report that Frank Gray who during the closing days of the fighting was taken prisoner, wounded, is home again. He has now been awarded the Military Cross as well as the Military Medal. He has had experience of practically every phrase of the war on the Western front, and will be heartily welcomed here again when he can be released from military duties.

December has witnessed the departure of the military guard from the exchange building at Carter Lane and with them has gone, with all due respect to the desolate sentry boxes, the pomp and circumstance of war that has cast unwonted lustre on these back thoroughfares.

Nothing of colour remains now except the sound of the St. Paul's choristers practising their Christmas anthems.

Symbolic of the movement towards peace conditions is the fact that already the officer's guard room is being used for interviewing candidates for telephonists' appointments.

The influenza epidemic has been busy amongst us. Several of the exchanges have absentees who will not return and from the office we have lost James Henry Wall.

He joined the National Telephone Company in October 1898. Since 1912 had been employed in the Controller's Office on the Outstanding Accounts Section, and his bright and cheery personality was well known to the majority of the staff, with whom he was a general favourite.

There have been some excellent meetings of the Telephone Societies since our last issue. Mr. John Lee's paper on the "Craft of the Telegraphist" appeared in the November JOURNAL. It was only right that the number which contained "Tales for Telephonists" should also have included a tale for Telegraphists. Whatever other craft may have failed, it is clear that the craft of the Teller of Tales flourishes now as ever, and our only surprise is that with such a prospect as the opportunity of hearing Mr. Lee read a paper the members of the Telephone and Telegraph Society do not turn up in greater force. Those who did turn up on Oct. 21 were amply repaid for any effort it may have represented. In addition to Mr. Lee's paper, Mr. Dalzell gave a most interesting survey of the basis for telegraph statistics.

At the same Society's meeting on Dec. 2 Major Jayne, D.S.O., M.C., R.E., read a paper on "Army Signals" which was much enjoyed. It will be found elsewhere *in this issue.*

The Telephonists' Society continues to set an example to its elder brother in the matter of attendance. The meeting on Oct. 30 had a triple bill including a paper by Mr. H. C. Townsend on "Automatics," illustrated by working models, and two papers by telephonists at present employed in the Signal Service in France. Miss Mitchell whose paper secured the first prize given by Mr. Valentine, is attached when at home to Museum. Her vivid descriptions are well known to readers of this JOURNAL for several of her letters have appeared in these pages. Her paper and that of Miss Ball, who was given a special prize, gave a real insight into the life of the Q.M.A.A.C. in France.

On Dec. 4 the meeting room was again crowded, almost uncomfortably so, when a debate took place between Miss Violet Baldwin and Mr. Horace Dive as to the necessity of red tape in the L.T.S. It is difficult in these matters to say with whom the victory rests, if from this time onwards red tape disappears from the L.T.S. we shall known that Miss Baldwin has a persuasive tongue.

The debate was followed by a paper read by Miss de Cort, a Belgian Telephonist, who has been in England since the early days of the war. A delightful paper, charmingly read, was applauded to the echo and the applause was representative of one Nation's pride in another Nation's honour. Miss de Cort when she returns to her beloved Bruges will carry with her the very warmest of wishes from her sometime English *confrères.* Another prize paper on "Information Desk Working" was read by Miss M. A. Tyler, of City Exchange, and brought a most enjoyable meeting to a close.

THE TELEPHONIST *versus* THE "MECHANICAL GIRL" (AUTOMATIC TELEPHONE EXCHANGE).*

BY H. C. TOWNSEND (*Assistant Traffic Supt., London Telephone Service*).

WE are introducing this subject without any feelings of antagonism towards the automatic switchboard, but with a full appreciation of its wonderful success, and the marvellous ingenuity shown by its inventors. We have in mind, however, that in these rapidly advancing times, the old is being quickly replaced by the new, and automatic switchboards are taking the place of manual switchboards. Also the novelty of a new undertaking often casts a shadow over an old one.

We often notice that it is not until the music of the dead march has ceased and the last traces of the funeral have disappeared, that good words are said about the services rendered by persons who have passed away or things that have ceased to exist. A distinct proof of this forced itself upon our notice a few years ago when the undying fame of a great telephone company, which has passed away, was constantly dinned into the ears of the Postmaster-General. The Postmaster-General stated at the time that he felt like a man who had married a widow, and was constantly hearing about the virtues of her lost husband. I doubt whether such eloquent praises of the late National Telephone Company were heard before Dec. 31, 1911, although you will understand that our imagination is quite equal to the occasion.

In consequence of these facts, it behoves us to sound a note of appreciation concerning the wonderful services rendered with the aid of the manual switchboard. It has been of immense value in many countries of the world, and has satisfied their demands for a number of years. It necessitates the presence of the human element in the form of a trained operating staff, and this fact is of great importance when comparing the working of the manual switchboard with the working of the automatic switchboard. The following instances will illustrate this fact :—

If the transmission on certain circuits which are connected together is not good, and the subscriber advises his telephonist, she can soon change the cords or junctions and thus arrange for a better conversation. It might be said that the automatic switchboard can deal with this if the subscriber makes a fresh call, as he will probably be connected with different circuits. It is, however, well known that during the busy hours, he would have to risk the engaged signal being connected, owing to the possibility of the subscriber's

* A paper read at a meeting of the London Telephonists' Society.

line or the junctions being engaged in the meantime. During the slacker hours of the day, he might be connected with the same circuits again.

The nursing of calls by the telephonists has always been of great value to subscribers, and the automatic switchboard is unable to arrange this. It often happens that a subscriber wishes to make a call while a visitor is present. If the number is engaged, and the telephonist eventually completes the call on her own initiative, the subscriber is saved the annoyance of repeatedly calling for the number himself.

In cases where a system has to deal with a flood of traffic, the operating staff and the manual switchboard are able to cope with it in a far better way than the automatic switchboard. A typical example of this is as follows :—

When certain football matches are being played, numerous calls are made for the number of the telephone on a football ground. The callers wish to know how the game is progressing. On a week-day, when thousands of the usual spectators of the game are at work in the City, thousands of calls are made to this number during an hour or two. A far higher load has therefore to be handled at the exchange concerned than the one which can be coped with in the usual way.

It will be understood that with an automatic system, all the junctions to this exchange would soon be in use, and the majority of them would be connected with the engaged signals. It would therefore be extremely difficult for other callers to obtain any other number on this exchange.

With the manual switchboard we are able to cope with the traffic. The " B " telephonist need not allot junctions for the number of the football club under such circumstances, but can reply to the distant exchanges on the order wire, repeating the number and adding the expression " engaged " or " not answering " as the case may be. The " B " telephonist thus speaks to several distant telephonists at once, and avoids using valuable equipment unnecessarily. With this arrangement, callers for other numbers have no difficulty in obtaining them, and the flood of traffic can be dealt with very satisfactorily.

The breakdown of a large number of junctions usually produces the same effect as a heavy flow of traffic, as the traffic on the remaining junctions is too heavy for all the calls to pass over them. On a manual switchboard the telephonists could enlighten the subscribers by explaining that a breakdown had occurred, and approximately the duration of delays to which their calls will be subjected. The subscriber will then know whether it is advisable to send a telegram or other message.

With an automatic system the subscriber would be very much handicapped, as he would probably have as much difficulty in calling the enquiry officers as he has in calling the number required.

In cases of emergency, the presence of the human element has saved the situation on many occasions. On one occasion a fire occurred at a subscriber's house. He went to the telephone and shouted " Fire " before he thought that the telephonist had time to answer his call. As the place became too hot for him, he immediately left the telephone to run to a fire-post. He was, however, astounded to meet the fire engine, and afterwards to see it stop in front of his house. He found out later on that the telephonist had heard him call " Fire " and had advised the Fire Brigade about it, and and given them his name and address. We will stand by his opinion that the human element is a great boon to subscribers, which they know very little about. We will go further than that, and say that the subscribers will know all about it when the full automatic switchboards take the place of manual switchboards all over the country.

On another occasion, a permanent signal was noticed on a Picture Palace line. It was very late on a Sunday night, but the night telephonist rang on the line in the usual way. He then heard some whispering, and the receiver was replaced. The night telephonist promptly advised the police, who went to the Picture Palace. The police found that the receiver had been knocked off the rest by burglars, apparently by accident, and that they had decamped, leaving their burglary tools behind, and the safe untouched.

On another occasion a signal was received on a line connected with an electric light station. When answering, the telephonist heard an exclamation and a remark by someone in distress. She knew that the manager of the station had a telephone at his residence, and at once rang him up and advised him. We afterwards learnt that a serious accident had occurred at the electric light station, and the manager had arrived in time to avoid a calamity.

Many such illustrations could be given to show the paramount importance of the human element in connexion with telephone calls, especially when considering the subscriber's point of view.

We are naturally very interested in the automatic switchboard, and admire the subtle ways in which difficulties are overcome in dealing with the different varieties of traffic.

We look forward to the automatic switchboard as a means of solving some of the telephone problems of to-day, particularly with reference to staffing and engineering questions. Where a large number of operations have to be made of a similar kind, and have been standardised, the telephonist becomes a mere machine, and it is no credit to her intelligence to ask her to do such work, and it should be done by machinery. We maintain that as soon as any work ceases to require human intelligence and initiative at different times when the work is in progress, that work should be done by machinery, and we generally find that it is carried out in this way.

We might mention that the operation of a local call is a typical example of this class of work, and in some exchanges it seems very desirable that this work should be done by an automatic switchboard. The telephonists' services could then be employed more usefully on other work.

As time goes on, it is absolutely essential that the speed of telephonic communication should steadily increase, as the speed of all other means of communication is steadily increasing. It is a well known fact, that the process of " speeding up " is continually going on. We think that the automatic switchboard has come as a boon to telephonists, and will carry out a great deal of the necessary " speeding up," and also the monotonous part of the work.

To give you an idea of the rapidity of connexion and disconnexion, we made 10 local calls in succession in 80 seconds, which is an average of 8 seconds for each call, excluding a conversation.

The automatic apparatus works even more rapidly than these figures lead us to imagine. The automatic ringing machines ring the subscriber's bell for one second, and then cease ringing it for 3 seconds. It was necessary to wait one, two, or three seconds in some cases before the bell rang after the connexions had been completed.

You will understand that the automatic system has overcome all the phonetic troubles which we are subject to with our manual systems in the way of wrong numbers. For instance, there is no possibility of our obtaining the wrong numbers 294, 394 or 354 when we are calling for 254.

It has been stated that wrong numbers are often received on the automatic system. Telephonists, who operate automatic dials, have constantly complained of wrong numbers being obtained (*i.e.*, being connected with dead levels, dead numbers, dead circuits, &c.), without hearing the ringing on the line. Subscribers also complain.

An experiment has, therefore, been made in order to find out to what extent the apparatus is responsible for these. The label with the figures printed on it was withdrawn from the dial and a similar label was fixed to the revolving plate of the dial. This arrangement slackens the working of the dial slightly as the subscriber cannot see where to place his finger in connexion with the next figure to be dialled, until the revolving plate stops. This appears to be an advantage, as the subscriber may be dialling too rapidly; possibly he dials the next figure before the dial stops or before the automatic apparatus has completed its movements.

The interval between one set of impulses and another set is almost negligible when dialling rapidly. This fact is particularly noticeable when the next figure to be dialled is a small one such as 1, 2 or 3. Each set of impulses must be thrown by means of side switches from one electro-magnet to another during this interval. It is, therefore, thought that the subscriber sometimes dials faster than the apparatus works.

The experiment was made for two days on the incoming junction position of a switchboard dealing with calls received for automatic subscribers. Only four wrong numbers were obtained by the telephonist and the local engineer stated that the dialling was more regular, and the apparatus worked more steadily during this time.

This arrangement overcomes one or two difficulties which have been experienced with the usual marking of the dial.

It is thought that this alteration of the labels is the solution of the wrong number trouble. It apparently makes people dial more slowly and carefully. It is thought, therefore, that this marking might be arranged in connexion with dials used by telephonists or subscribers when complaints of wrong numbers are received. The alteration could be a temporary one, as it results in some inconvenience owing to the dazzling effect of the moving figures. It could cease as soon as the telephonist or the subscriber had learnt the correct rate of dialling and obtained more confidence in the automatic system.

We had previously satisfied ourselves that the majority of wrong numbers complained of were not due to the automatic apparatus. A record had been taken during several weeks by a telephonist stationed at an incoming junction position of a switchboard dealing with calls received for automatic subscribers. Her instructions were as follows :—When an opportunity occurs dial the number very slowly and carefully. Then wait until the called subscriber answers. Then keep a record of O.K. calls and details of wrong numbers. 1912 O.K. calls were thus recorded, and 2 wrong numbers, which were found to be due to faulty connectors.

It is therefore considered that if numbers are dialled correctly and the automatic apparatus is maintained properly, the automatic system does not result in wrong numbers.

You will also understand that the automatic system is practically a secret one, and this fact suggests certain advantages, although we do not place much importance on this point.

Coin box calls, calls for spare numbers, lines out of order, &c., are dealt with at the enquiry positions. Calls for trunks or junction calls are dealt with at special trunk positions. The subscribers dial the figure " O " to obtain these positions.

The principle of the automatic switchboard, with its relays working step by step, is as old as the hills. In the days when the Red Indians were troublesome to settlers, a great military chief entered the Red Indian territory, and negotiated the conditions of a general peace with the chiefs of several tribes. A satisfactory settlement was reached at noon on a certain day, and by means of despatch riders he was able to advise his headquarters of the fact within two days. The Red Indians, by means of relays of smoke fires were able to advise all the tribes scattered over hundreds of miles before sunset on the same day.

Some prejudices against the automatic exchange have always existed, and it has been viewed with suspicion by the traffic staffs all over the world, who have been accustomed to the manual exchange. This is perhaps a natural result of all great changes. Similar prejudices and suspicions arose in connexion with the State control of the telephone system, and we think that a parallel can be drawn between these two important changes of practice. Both the automatic system and the State control of the telephone system in this country have some very old and well founded traditions to face, and will have to live up to the standards which have been set up during the past two decades. In neither case, however, should the glories of the past cast a shadow over the expected glories of the future.

The Telegraph and Telephone Journal.

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Editing and Organising Committee - - { MR. JOHN LEE. / MR. J. W. WISSENDEN.

Managing Editor - - MR. W. H. GUNSTON.

NOTICES.

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

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PEACE—AND PROGRESS.

USUALLY at this time of the year we have associated with our greetings to the readers of the JOURNAL the wish that the new year might see the end of the great war. A year ago we expressed the hope that the conclusion of 1918 might "see the dawn of a satisfactory and lasting peace." This time the wish has been fulfilled in the fullest measure, for who can but look on the Armistice signed in November last as the dawn of Peace? Schemes of national reconstruction are already much in the air and a prodigious rustling of leaves—the leaves of the Press—begins to whisper somewhat loudly of the necessity of early telephone reconstruction. It seems likely that the resumption of full activities this year (which we also foreshadowed last January) will come to pass before many months are gone, and the huge postponed problems of development and expansion will be grappled with. Peace is not yet signed and demobilisation is necessarily only at its beginning, but we are already being charged with using war conditions as though they were but a pretext and not a serious fact. The memory of the public is short and its mood curiously divided. On the one hand it is difficult to realise that the bloodshed and wastage of war has ceased, and wolfish howlings in the Press seem almost to regret the crowded days of bitterness and strife; on the other hand it seems to be expected that all the unnatural conditions built up during four years of the most terrible war in history should disappear as though by an enchanter's wand, and that nothing is more simple than to restore the conditions of 1914 *plus some of the overdue* benefits which normal progress would have brought in its train. Nevertheless war conditions and restrictions are slowly but surely disappearing, and ere long we shall take up the tale of telephone and telegraph progress where we left off in 1914. The next chapters should be full of interest.

About this time we have in the past tried to present our readers with some statistics of the world's telephone development. We shall not endeavour to do so this year; the result would be too much a matter of conjecture. The annual statistics of the *Union Télégraphique* are full of eloquent gaps. "Par suite de circonstances actuelles, aucune indication ne peut être fournie" appears under the heading of Australia, Austria, Belgium, Bulgaria, Brazil, Egypt, France and Algeria, Germany, Great Britain, Greece, Hungary, India, New Zealand, Roumania, Russia, Serbia and many other States.

Who can calculate whether progress, stagnation or retrogression took place in so many States during the war? How many flourishing telephone exchanges have been devastated or reduced to the limits of military requirements in Belgium and Northern France? How many have declined or fallen into disuse in enemy countries in towns where trade is dead and civil activities are suspended. Moreover, little interest attaches to the number of telephones comprised within former boundaries, and who shall say what systems will be comprised in the new Russia, in augmented France and Roumania, in a re-created Poland, and in a Germany which may include parts of Austria and exclude provinces inhabited by non-Germanic races? We know that in the United States of American upwards of 700,000 new stations were added to the telephone system in 1917, but we do not suppose that the total addition for Europe would amount to 100,000 all told, if we exclude the many telephones installed in and behind the battle areas.

We need not therefore enlarge on the tremendous leeway to be made up. It should give ample scope in the coming years for the energies of the most untiring and progressive.

THE TELEPHONE AND TELEGRAPH SOCIETIES.

THROUGH four years of unparalleled difficulty, amid the drawbacks of diminishing membership, diminished interest in all things not appertaining to war, dispersal alike of lecturers and listeners in the great enterprise, and lack of time either to lecture or listen owing to the "pressure of war work" on the part of those who remained, the London Telephone and Telegraph Society has kept its flag flying and carried through an interesting if circumscribed programme. Members attended steadily, undiscouraged by the risk of air-raids, the difficulties of restricted means of transit, or by the gloom of an ill-lighted, early-to-bed Metropolis. We think they were not unrewarded, for if we have described the programme as circumscribed we did not mean circumscribed in the direction of variety. It was limited only in the direction of quantity, and of course there was little opportunity to discuss questions of important developments in our art such as are always toward in times of Peace. Readers of our columns can gauge the infinite variety of the papers given and appreciate their instructiveness, their literary charm and their suggestiveness as the case may be—and often one paper combined all three qualities. The attenuated audiences went not away empty, and their interest and enthusiasm made up for lack of numbers. The programme for the present season had quite properly been framed on a war basis, but we have every reason to expect a fuller one next year, and then our returning comrades,

assisting in the work of reconstruction which lies before us all, will combine with us to make the session one of outstanding importance. These remarks apply equally to the praiseworthy efforts of the Telephonists' Society whose meetings have brought forth many interesting papers which we have been glad to reprint, and to those provincial societies which have carried on during the war.

The present season opened auspiciously enough (on a date when the Armistice was imminent) with addresses by Mr. Dalzell, the new President, and Mr. Lee, and these were followed last month, while we were still in the high mood resulting from recently achieved Victory, by a paper on "Army Signals" by Major Jayne.

In their several ways they were three representative speakers. Mr. Dalzell, although now equally associated with telegraphs, is especially representative of the telephone staff all over the Kingdom. Mr. John Lee has a peculiar and intimate sympathy with telegraph men and their hopes and fears which perhaps no other can express as he, and Major Jayne served, as it were, as the spokesman of that huge number of our colleagues who are serving and have served overseas, and gave us an insight into the life out there which was all the more interesting as coming at first hand. If Mr. Lee's rhapsodies on rhythm, attractive sequences and musical symbols were listened to with keen appreciation chiefly by the initiate, his enthusiastic plea for pride in craftsmanship found a quick response in the generality of his audience.

The work of the skilled telegraphist, be he never so expert an operator, leaves no monument for future ages to admire. Neither, indeed, does that of the singer or musical executant, but these reap abundant and immediate appreciation of their efforts, while the reward of the telegraphist is like that of virtue. But the message Mr. Lee conveyed so successfully was that without pride in our work, pride of craft, life is arid, and the daily round an intolerable longing for the hour of release and escape to more congenial pursuits. Unhappy is the lot of those whose work no feeling for craftsmanship lightens, whether it be of manual dexterity, or that of mental skill in conducting difficult cases, or even the simpler but invaluable craft of doing well plain and useful duties.

HIC ET UBIQUE.

THE Press work and the traffic to the B.E.F. was exceptionally heavy in the Cable Room of the Central Telegraph Office on the historic Nov. 11. Foreign offices, we learn, worked slowly at first owing to national rejoicings. Genoa telegraphed:

"Ici il y a joie folle. Les Anglais, Ecossais, Bersaglieri, Marin anglais, Marin italiens dansent dans la rue au son des hymnes alliés. Ip, ip, ip, hurrrra ! ! "

and then disappeared.

The Ruhleben Exhibition, which will be opened at Central Hall, Westminster, on Jan. 14, will be one of unique interest as Ruhleben was the only camp at which it was possible to establish an Arts and Crafts movement.

The exhibits are the work of British civilian prisoners of war at Ruhleben Camp, and comprise models of ships, machinery, pictures, oil paintings, water-colours, sketches, caricatures, silver-ware, bookbinding and leather-work. A portion of the exhibits are intended as presents to the relatives of the men who made them; others will be offered for sale on behalf of the makers. The remainder of the money, other than that credited to the members themselves, together with the gate money, will be devoted to helping repatriated prisoners of war.

Among other attractions there will be a small scale model of the camp, which has been beautifully carried out by two ex-prisoners.

It is intended to provide a musical entertainment during the afternoons and evenings. The Exhibition will be open from 11 a.m. to 9 p.m. daily, and the charge for admission will be 1*s.* 3*d.* inclusive of amusement tax.

H.M. the Queen is the Patroness, and amongst the Vice-Presidents are Lord Gainford (formerly Postmaster-General) and Mr. A. G. Ferard.

A PROVINCIAL subscriber in filling up his telephone agreement form was not content with supplying his own signature in the proper space but also signed in the space provided for the signature on behalf of the Postmaster-General. The "description of office" of the Postmaster-General's deputy baffled him, so he filled it in: "Closed with sliding window and door."

A CORRESPONDENT in the *Saturday Review* has discovered a remedy for the ills of the Telephone Service. Up-to-date supervisors are required, he says, who understand order and punctuality. He suggests training discharged N.C.O.'s for such important positions!

But then, if another equally drastic and intransigeant correspondent of the *Saturday* had his way, we are uncertain whether there would be any female operators to supervise This gentleman, incensed at the praises of a sentimental Press for "noble" women workers, looks forward to the time when these "female hooligans shall be put in their places." We do not know precisely whether all or only a majority of women workers incur his gentle displeasure. One order at least we are sure of, for he dilates on the satisfaction of being served, pleasantly and civilly, by a male shopman instead of by pert, half-naked, powdered girls. Strange how an additional inch, one little inch, of bare neck constitutes half-nakedness in the censorious mind!

THE following is an extract from a recent Army Order:—

2. Housewife (complete with components) to be in possession of a soldier sentenced to detention.

A soldier, on admission to detention, will be in possession of a housewife, complete with the component articles . . . to enable him to effect immediate repairs to his clothing and necessaries during the period of detention.

Our worst misgivings were only allayed after consulting a comprehensive dictionary, which informed us that a subsidiary meaning of housewife was a pocket sewing outfit.

DEATH OF MR. L. W. ATKIN-BERRY.

THE Service is the poorer for the loss through influenza of Mr. L. W. Atkin-Berry, Private Secretary to the Postmaster-General, at the early age of 32. The eldest son of Mr. and Mrs. W. H. Atkin-Berry, formerly of Sydenham, Leslie Atkin-Berry was educated at Dulwich, and Jesus College, Oxford, and after passing the Class I Examination successfully was appointed to the Secretary's office of the Post Office. The first few years of his all too short service were spent in the Telegraph branch and all who were fortunate enough to have had associations with him will have a happy recollection of his natural gifts which included a lively imagination, a fund of anecdote, and a genius for making friends. As Private Secretary he was a great success.

A lover of boys, Leslie Atkin-Berry was keenly interested in the "G.P.O. Messengers' Institute," and ran a Company of Boy Scouts in Walworth, living amongst them and devoting his time and substance to their welfare. The example of his unselfish life was an inspiration to many while he lived and in his death it will not soon be forgotten.

ARMY SIGNALS.*

BY MAJOR A. A. JAYNE, D.S.O., M.C., A.M.I.E.E., R.E.

IT is not necessary perhaps to explain to you the meaning of the word "Signals," but as there is a popular misunderstanding regarding it I think a few words as to what signals are and what they are not may be helpful.

Army signals are nothing whatever to do with the usual signals displayed at stations and other points on railways. The Signal Service is not confined to visual signalling commonly known as "flag wagging" or to "buzzing"; but it is responsible for all forms of communication from the front line of the fighting forces to the Bases. This statement will dispel the illusion frequently held by otherwise well-informed people that the Royal Engineer

Major A. A. JAYNE.

Signal Service only works on permanent telegraph and telephone lines and in offices: performing work pretty much on the basis of peace conditions in England. The R.E. Signal Service is, in fact, the framework upon which the fighting forces carry out their tasks and without which they would soon cease to exist.

Some of the means by which communication is established by the Royal Engineers Signal Service are as follows:—

Permanent Line (similar to our Home telegraph and telephone lines).
Airline—Bronze, copper or iron wire on light poles.
Larch and fir poles routes—Heavy field routes of more than two wires.
Cable—Light cable (insulated wire) for running along hedges, the ground and sides of trenches, or it may be poled. It can be run off at the rate of three miles an hour from wagons drawn usually by six horses, when it is desired to keep up communication with marching troops.
Armoured cable (usually buried in the ground).
Wireless.
Flags.
Lamps.
Heliographs
Shutters.
Pigeons.
Dogs.
Rockets.
Runners.
Despatch riders (motor-cyclist).
(horse).
(push cycle).
Aeroplane signalling.

Good communication is as necessary to the life of the Army Overseas as it is to the Naval, Military, Air Force and other activities in England to-day.

No battle can be fought and won without good communication, but a battle can very easily be lost without it.

A certain prominent General in France during addresses to staff and regimental officers used to make a point of saying "above all regard your signal officer as your brother." This remark indicates the need for complete liason between the Signal Service and the Units it serves. Indeed without

* Paper to be read before the Telephone and Telegraph Society of London on Dec. 2, 1918.

A BURIED CABLE TEST BOX.

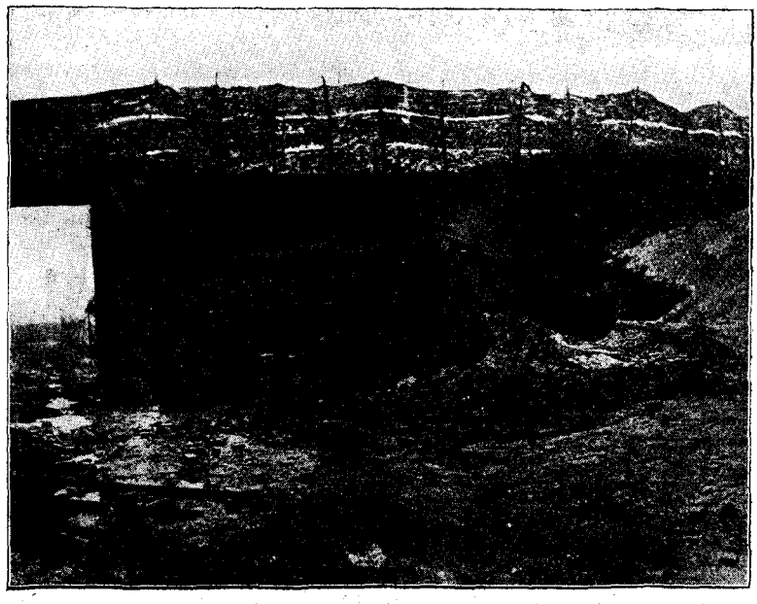
mutual confidence and friendship it is practically impossible for a Signal Officer to carry out his work.

Having seen the beneficial results of this principle in France, I commend its application on a more extended scale than is the case at present to the Home Telegraph and Telephone Service. That is to say, I think the cultivation of more cordial relations between the Post Office and the British public might lead to the problems and difficulties of both sides becoming better understood.

TRAINING IN ENGLAND.

Before glancing at Signals overseas I should like to say a few words on the training of signallers at home.

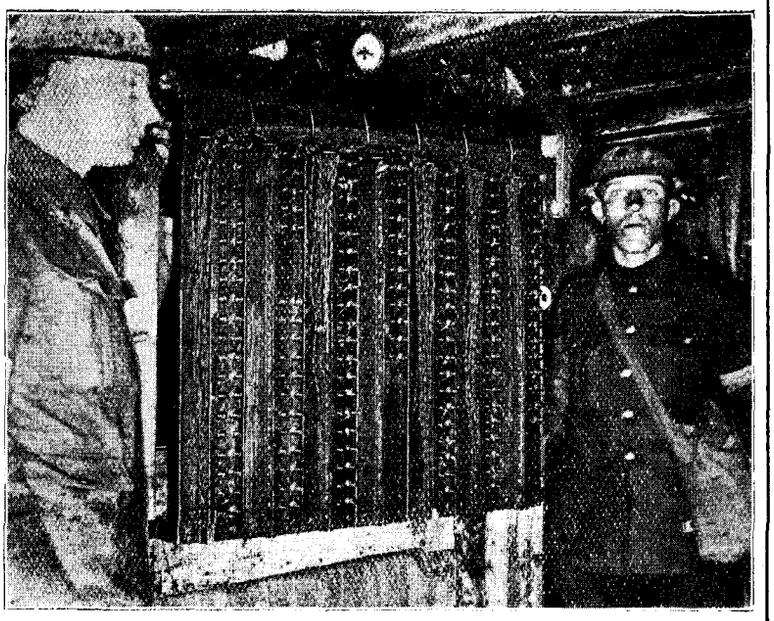
It is, of course, well known that our main source of supply for the Signal Service comes from the British Post Office. But even these expert men have to undergo a fairly lengthy period of training before their skill can be put to the best possible use in the Army. There are methods of doing things in the Army which are peculiar and indispensable to a fighting force and must therefore, be done in a different way from that pertaining to civilian life. Men must learn to use a rifle and to drill so that on a word of command they may easily be transformed in emergencies from an ordinary technical working party to a fighting unit. Even in their technical work squads of men must learn to do their work collectively, quickly, and by habit, and as each man's place in a squad is often different from another's, certain kinds of drill are introduced for specific tasks. It is thus found, *e.g.*, that



EXTERIOR OF AN OBSERVATION POST TELEPHONE EXCHANGE.
Entrance to Exchange known as "Gerrard," the junction of four buried trunk cable routes.

in certain kinds of line building quite considerable distances can be quickly covered which would be impossible under any other form of organisation.

Obviously there had to come a time when the supply of recruits from the Post Office practically ceased and other material had to be obtained. The task of training men whose vocations in life are remote from signal work is a very difficult one, especially as owing to the demands for drafts only the minimum amount of time can be allotted for training. It has always surprised me to see the wonderful results obtained in these circumstances. This particularly applies to the class of men trained as telegraphists and permanent linemen.



INTERIOR OF GERRARD. TEST BOARD.
The Cable is permanently laced up behind the Board. Any cross-connexions necessary are done in front as shown.

There are, however, Signal Service trades which have always been more or less recruited from civilian trades other than the Post Office; and some of them are visual signallers, cable linemen, drivers, farriers, &c.

I propose, very briefly, to explain the organisation of the Signal Service Training Centre.

The "A" Depot is that to which all entrants to the Signal Service report. At this Depot men are trained in foot drill and musketry and fitted out with clothing. According to their qualifications and civilian trades they are then posted to their proper training depots.

"B" Depot	...	Visual signalling.
		Buzzer and Fullerphone
		Trench cables.
		Artillery cable wagon practice.
"C" Depot	...	Instrument repairing.
		Counter clerks.
		Telephone exchange operating.
		Technical courses.
		Telegraphy.
		Wireless telegraph operating.
Biggleswade	...	Permanent linemen
		Wiremen.
		Field linemen.
		Drill with cable wagons.
Haynes Park	...	Officers and cadets school.
		Saddlers.
		Shoeing smiths.
		Wheelers
		Cooks.
		Drivers.
Wellingborough	...	Motor cycle artificers.
		Despatch riders.
Fenny Stratford	...	Wireless electricians and fitters.
		Wireless operating and specialist wireless.

Hitchin is the draft forming depot.

As the work at "C" Depot, telegraphy and telephony, and that at Biggleswade, line work, is likely to be of interest to a Post Office audience, I will give a few details as to the scheme of training.

Dealing with "C" Depot. All men entering the Depot are first of all sent to a small board composed of specialists, and there they are examined very carefully as to their physical and mental fitness to become telegraphists &c.

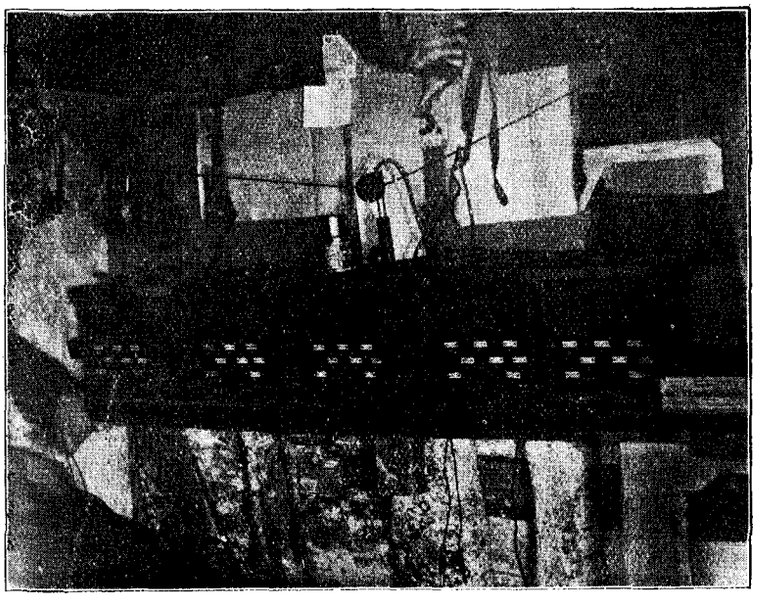
With regard to prospective telegraphists particular attention is paid to their degree of education, handwriting, spelling &c., and as to whether a man has wrists and hands suitable to the work. If he has any telegraphic qualifications at all he is posted to a Company which has a vacancy for that standard. If, after a fair trial, a learner is found to be unsuitable he is tried at another signal trade. This saves times and money and keeps the Service more efficient. Men are tested frequently, weekly or fortnightly, and a record sheet is kept for each man throughout his training.

The training Companies are kept to a fixed establishment as regards the number of men under training and the number of instructors. A number of school houses is allotted to each Company and each house is capable of accommodating either one or two complete platoons. Each platoon is kept as a self-contained unit and as the course of instruction lasts seven months, a man on entry to a Company is posted to a certain platoon or house and stays there until he is passed out to be prepared for draft. The rooms in each house are graded to take men at the various degrees of proficiency. The men in a platoon live in a distinct dwelling-house a short distance from their school house, mess hut, parade ground and recreation field. A typical day's duty for a man during the winter is as follows:—

Reveille—6 a.m.
Company parade and roll-call—6.30 a.m.
Footdrill.
Breakfast—7.15 a.m.
Company parade and inspection—8 a.m.
General parade—8.30 a.m.
School—8.30 to 10.30 a.m.
Break.
School—10.45 to 11.45 a.m.
Physical training—11.45 to 12.45 p.m.
Dinner—1 p.m.
Company parade—1.45 p.m.
School—2 to 4.45 p.m.
Tea—5 p.m.

On one day a week each Company, by means of pushing forward its training hours, is able to finish instruction for the day at 3 p.m., and on this occasion the men are divided according to choice into Rugby, Association, Hockey, Baseball, Cross-country teams, &c., and they are definitely taught to play each game by qualified instructors. This is a very popular afternoon and the men thoroughly enjoy it. There are inter-platoon, inter-company, and inter-depot matches for all sports. To play in the depot team is the blue ribbon of the depot.

Saturday afternoon is set aside for inter-depot matches—the presence of between 1,200 to 1,500 men watching the matches indicates the interest displayed in sport. The hour set aside for physical training is taken by fully qualified physical training instructors and comprises physical exercises and massed drill.



AN UNDERGROUND O. P. TELEPHONE EXCHANGE, known as "Gerrard."

The after-duty hours of men are not neglected. Every evening there are concerts, whist drives, dances, billiards and all other indoor games, lantern lectures and debates. There is a large choral society which is at present practising "Hiawatha," a brass band, string orchestra and a drum and fife band. There is a large National History society which has rambles and a lantern lecture every week, and with this are combined Archeological and Biological studies. Evening classes are held in technical subjects and languages. A dramatic society, glee society and troupes of pierrots are also in strong force. The arts and crafts club and the horticultural society do not complete the list of things the men can join.

There is no question that the regular hours, wholesome food, and properly

supervised games enables a man to become proficient in his training much quicker than would otherwise be the case. In addition to that he becomes a smart, well-set up soldier.

At the end of the seven months allowed for training, a man has to reach this standard:

> Able to send and receive messages at the rate of 30 messages an hour. Read the vibrator at 20 messages an hour. Read punched slip at 15 m.p.h. In addition he must know message procedure, wireless procedure and be able to code and decode quickly in field cipher. If he wishes to be rated as a sapper in the R.E. he must have availed himself of the short technical lectures given every day and of the voluntary practical classes held in the evening. He has to pass a practical test on all instruments in common use.

After a man has passed his seven months' stage he is placed on telegraph circuits for two weeks. The system of circuits in use is a reproduction of those actually in use with the Armies in the field, and include Wheatstone circuits working from the base to G.H.Q. and forward. The messages used are mainly old ones from Overseas and the conditions of work, as far as possible, are the same as those in France—even to having gas alarms. The circuits work between the various houses in the school area. There is a clearing house for the purpose of checking mistakes and bad writing. After men have finished their anti-gas training &c. they are ready for draft.

The foregoing principles are applied to the telephone switchboard training and instrument repairing. Counter clerks for Signal Offices are also trained as a separate class. They register, count, circulate, and check messages and despatches. These men are usually old telegraphists who have become cramped or men, who although of good education, are not able to become expert telegraphists.

With regard to the training in line construction given at Biggleswade the men join a course of preliminary instruction lasting three weeks. This course consists of elementary electricity, electricity and magnetism as applied to simple telegraph and test instruments, light air-line and multi-airline routes. From the mwn who successfully pass this course the permanent linemen are selected and they receive more advanced training for three weeks. This extended course consists of lectures on linemen's test duties and maintenance, line stores and their use, and practice on permanent line construction.

One of the most interesting and important developments in the Signal Service during this war is the construction of from 4 to 12-line routes on what we should call in the Post Office "light" poles, but which in the Army by reason of its comparison with the old light airline pole carrying one or two wires, is called a "heavy" field pole. Given a well trained detachment and of a size corresponding to the number of lines to be erected, a route of this sort can be erected at the rate of one mile per hour or five miles a day and the detachment can do an average day's march in addition. With sufficient detachments of this character the headquarters of a fighting formation should be able to keep in communication with its base at the end of an ordinary day's advance.

A good kind of pole for use say on a 12-wire route, is a larch pole 16 feet long, 3½-inch butt and a 2½-inch tip; 33 inch arms are used and they are secured to the poles by clips and bolts: 40-lb. bronze wire is used where possible. Earth augers afford a quick means of making a pole hole but a grafting tool is generally more useful. Brown porcelain insulators P.O. No. 105 are frequently used.

A two mile route of 8 wires can be constructed by a smart detachment in 1¾ hours including the joining up of leading-in cable; the number of men engaged being 39.

It seems to be a matter for enquiry in the Home Service, in connexion with the development of telephone traffic in country districts, whether a lighter and cheaper form of construction should not be tried.

The type of fir or larch poles used in the Army suitably treated could probably be used in some districts pending sufficient development to justify more permanent routes and where the cost of the present form of construction might even arrest the introduction of the telephone at all.

The use of motor lorries in connexion with the construction and repair of Post Office lines is worth consideration.

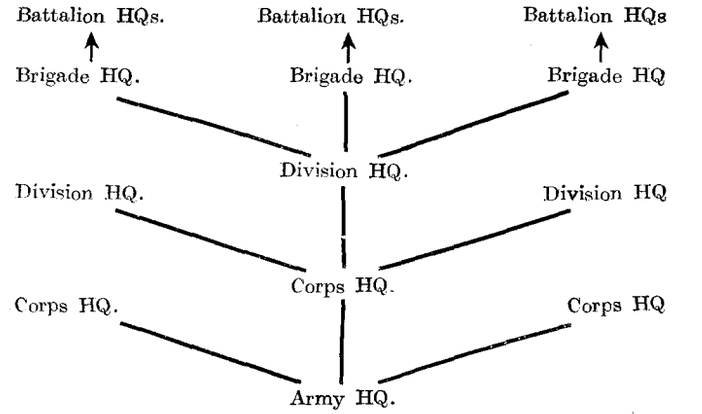
The Signal Service uses them extensively. Properly fitted lorries and light body cars of strong construction have proved to be invaluable.

Many will remember the storm of March 1916, when during a great gale many lines of this country were completely wrecked. The R.E. Signal Service working in conjunction with the Post Office Engineers were able to rush from place to place and remove fallen trees hanging across lines, lift and erect heavy poles by lorry traction, and to join through the lines with a minimum of delay. A light Singer car or motor cycle would allow quick inspection and visites to working parties.

During the storm mentioned one R.E. detachment of 17 men were able to completely restore communication of an east coast area in two and a half days. This would have taken much longer in ordinary circumstances. The lorries can convey stores and men. The men arrive fresh and are able to work until dark. The P.O. men previously had to push their hand cart several miles before commencing work

SIGNALS OVERSEAS.

In view of the fact that the Signal Service exists to provide communication for the fighting troops it follows that it has to adapt itself to all kinds of warfare whether mobile or stationary To see the range to which communications expand one must study the conditions prevailing during trench warfare. The chain of communications will be seen from the following diagram which only shows the main or Command lines. Each formation has its own network of lines to all its units.



The telegraph and telephone lines up to Divisions are of permanent line construction. The Divisional Headquarters usually has an advanced headquarters and it is sometimes possible to have permanent lines as far forward as that; where this is not possible cables suspended on trestle poles are resorted to. At this point the lines are led into the dug-out where the headquarters are to be and connected to test panels. From here forward the lines are buried six feet into the ground to the vicinity of Infantry Brigade Headquarters and Artillery Brigade Headquarters, and then onward to the neighbourhood of Battalion Headquarters. Beyond this point it is not usually desirable to bury lines to connect Battalion Headquarters with their Companies, owing to projectiles of a very heavy character coming over from the hostile lines. The craters made by Trench Mortar Batteries are so wide and deep that buried lines get destroyed very quickly. Such battalion to company lines, &c., are run down communication trenches or over open ground to the front line. They are frequently destroyed, of course, but the shelter afforded by the trenches enable linemen to carry out repairs fairly quickly.

Along buried routes there are test dug-outs about every quarter of a mile. At these points cross connexions are made or connexions put through to neighbouring units. It is the aim of such a route as this to provide main communication for all units in a given sector.

The units to be provided for on such routes are lines to Infantry Brigade and Battalion Headquarters, Artillery Brigade and Battery Headquarters, Heavy Artillery Batteries, Observation Posts for all purposes, Machine Gun Groups, Medical Collecting Stations, S.O.S. lines, &c.

Magneto exchanges and telephones are in use as far as brigades and forward of them, buzzer exchanges. The telegraph apparatus used within 3,000 yards of the front line are Fullerphones.

Now come the additional means of communications. At suitable points in or near the front line efforts are made to fix visual stations, *i.e.*, lamp or shutter stations. It is frequently only possible to signal *back* from the front line because of the enemy being able to read signals sent forward. The visual stations signal back to selected points or through transmitting stations to selected points near Battalion Headquarters where telephonic communication should exist. From Battalion Headquarters to Brigade Headquarters similar stations are also installed. These stations should be manned night and day so that they may be a going concern in the event of the cables being cut by shell fire. The forward visual stations are normally manned by signallers from Battalions. Owing to the casualties in Battalions, Instructional Schools in the Division have to be continually in use training other men to keep them up to strength.

Wireless stations are installed on a similar plan. Pigeons are also regularly released from the trenches to fly back to a loft near Divisional Headquarters. In every Battalion men trained in the handling of pigeons are kept in reserve.

Naturally with an extensive system such as this the task of carrying the communications forward before and immediately after a battle for a limited objective is quite a big task.

As soon as a battle is impending steps have to be taken to bury forward the trunk route, or main artery, to the front line so as to be completed a day or two before the attack actually commences. The burying has to take place at night because the work will often be in full view of the enemy and,

INSTRUMENT REPAIRS SCHOOL.

GAS DRILL.

therefore, exposed to much hostile shooting. The preliminary surveys must, therefore, be very carefully and systematically carried out and every detail organised, so that when the work is actually being done there may be no hitch. It has always to be borne in mind that the lives of the working party, which frequently consists of three or four hundred men, are in one's hands. One of the most important points is the selection or making of a deep dug-out to serve as the cable head.

While this work is in progress the enemy's country has to be surveyed from observation posts and other good places, because arrangements have to be made in advance for communications, not only during the battle, but immediately afterwards. During the battle signallers require to know what routes should be used for cables and down what tracks or trenches runners should pass with messages back to the old front line. Spots for visual or wireless stations to signal back to pre-battle stations, must be chosen as there are many technical points to study if these means of communication are to be successful. Maps and sketches have to be prepared beforehand for circulation and study amongst those concerned. In fact the scheme of communications is, if possible, practised many times before the battle with the troops actually to be engaged, and at the back of the front ground is chosen which resembles the German line to be taken. Imitation trenches, &c., are laid out and signallers with Infantry go through the scheme thoroughly. So well was one battle rehearsed that when we actually got the objectives on the day of the battle one infantryman was heard to remark: "I suppose we shall have to do this again—its bound to be wrong." As soon as the captured line is consolidated the buried main artery is pushed forward to the vicinity of the various new Battalion Headquarters which have been established, and all the pre-battle communications again set up.

There is this to be said for the Signal Service—whether fighting is quiet or active it is always on duty. Upon this service rests the safety of troops and consequently vigilance must never be relaxed in keeping up communications. The last thing one thinks about before going to sleep is "lines," and it is the first thing one thinks about on waking.

It must not be thought that because all these communications are arranged in the fighting line that they are necessarily haphazard and untidy. The contrary is the case. If any neat and clever work is done at all in Signals it is done in the forward areas. Linemen make joints in buried cables, they lead in at test boxes, they wire up testboards and exchanges, as thoroughly as if they were doing the work in Fleet Street. In fact I should have liked very often to compare this work with that done under Peace conditions.

It follows that during a modern battle of the kind I have described, the actual traffic that passes over the lines is enormous. On one occasion in the Divisional Headquarters Signal Offices, 2,222 telegrams were dealt with between zero hour, 3.10 a.m., and 8 p.m. on the first day of the battle, 928 despatches and about 3,000 telephone calls. The numbers were made up by pigeon messages sent back from Infantry in the front lines, wireless, visual, pigeon messages from tanks, and Infantry and Artillery messages sent by ordinary telegraphic means.

The traffic at an Army Headquarters during a battle is also extremely heavy. At one Army Headquarters the number of telegrams on one day reached 15,000. The telephone exchange boards at the same headquarters were four 50-line subscribers' positions—each position being equipped with the complete multiple system.

In the Signal Service the Engineer is his own Traffic Manager or, if you prefer it, the Traffic Manager is also the Engineer. Each Signal Officer in Command of a Signal Company has to fill the dual capacity. It is not my duty this evening to make comparisons between Services but I have long felt that given dual training a combination of the two sides would not only be practicable but advantageous in many ways in the British Post Office. At any rate this may form the subject of discussion.

Again the motor cycle has come into its own during the war. Would not its introduction into the Post Office solve problems in connexion with Interim Delivery Offices at night and on Sundays in London? In certain cases would it not be quicker than tubes, and during breakdowns and periods of congestion in and around busy centres?

In conclusion, I should like to testify before a Post Office audience, to the splendid services rendered during this war by men and women from the Post Office. On active service I have seen a good deal of their work and I have, above all, the greatest respect for the telegraphists, telephonists, permanent linemen and other grades. As regards telegraphists I have never known them to fail to respond to the difficult and often very tedious calls of duty. I have known them to work circuits frequently for more than 24 hours on end in most trying situations and always with cheerfulness and skill. I have often said and, I say it again to-night, that a skilled telegraphist can do almost anything from laying and mending trench cables under heavy shell fire to operating fast speed circuits, and through all the various classes of work a signaller is called upon to perform, when he is put to it.

As to the linemen, particularly the permanent linemen, I cannot adequately express an idea of the magnificent work they have done. Whether under shell fire or the most uncomfortable climatic conditions they have performed their duties in a way that has called forth praise throughout the entire Signal Service.

The value of work done during the war by the Post Office servants, whether as Instructors or in other capacities in England or on service in the field, is incalculable.

Painted by F. P. Martin, Sergt., R.E. *By kind permission of the Artist.*

"THROUGH."

France, 1915.

CORRESPONDENCE.

TELEPHONE EXTENSION DURING WAR TIME.

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

Your correspondent N.O.W. certainly raises a question which has probably occurred to many who are interested in telephone development. Unfortunately he comes forward rather late in the day, but nevertheless there is still much to be done when the reconstruction of our home industries sets in, and a telephone service will be a necessity to the commercial world, especially in the early stages, and it is hoped the Department will be in a position to meet the demand.

If men are not likely to be available, it should not be difficult to obtain the services of women for certain branches of our engineering work, who have been trained in technical and mechanical duties for war purposes for which they will be no longer required. The war has taught us many things, one of which is that there is certain work which can be done as well by women as men, while at the same time it has shown that woman has her limits. However, it is not proposed to enter upon a dissertation of the pros and cons of woman labour, but I am sure if it is found that women are required, the Department will be able to find suitable work for them.

FORWARD.

Gloucester, Nov. 20.

POST WAR TELEPHONE DEVELOPMENT.

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

With the conclusion of hostilities the attention of the public has been diverted to pressing home problems.

In a recent speech the Prime Minister paid stress upon the necessity for improving the "home lines of communication," instancing railways, canal development and transport facilities. The development of the indispensable ancillary service, "the Telephone System," will doubtless receive early and earnest consideration and it can be confidently asserted that with continuing activity on the part of Contract Departments a development can be obtained which will fully satisfy both the general public and the Chambers of Commerce.

A demand for telephone service everywhere exists; it is the mission of the Contract Departments to convert such demands into paying propositions, enabling the Department to establish exchanges which at the outset shall be on a sound financial basis.

Although it may not yet be practicable or expedient to introduce new telephone tariffs, it is suggested that the time is opportune for considering a more generous extension of the free speaking area, with the removal of existing and arbitrary area limitations. One of the main difficulties in developing outlying territory is the application of junction tolls to exchanges located more than two radial miles apart, and the concession which enables subscribers at small exchanges to commute local calls into junction calls has not been of material benefit.

The extension of the junction free area to five radial miles would remove one of the greatest obstacles to sub-exchange development, and would result in the grouping of small exchanges and obtaining true affinity between residential districts and marketing centres.

It may be of interest to mention the experience gained in dealing with a large competitive system, where telephone service was provided at unremunerative tariffs, rendering it necessary to deal with many thousands of subscribers with a view to transferring their services to current tariffs.

The principal difficulty was the application of junction tolls in a large area where such tolls were not previously in force. Although the results of the canvass were regarded as satisfactory, the limitation of free junction areas to two radial miles militated against the full success of the canvass, and had it been possible to have introduced a junction free area of five radial miles, such concession would have resulted in the retention of a much larger number of subscribers. The general attitude of the subscribers in comparing the competitive tariff and free whole area facilities with the current tariff with junction tolls may be summed up in the observation of a subscriber, who stated that "the Department had calmly substituted a plain bun for a currant bun."

Area development is of the greatest importance and, in planning extensions of telephone service to outlying territory it is necessary to consider how outlying villages can best be served, the provision of Rural Party Lines being of material importance. Although the development of Rural Party Lines in this district has been of such a satisfactory and popular nature as to warrant further extensions on the resumption of normal conditions, it is essential that care be taken that such development is not obtained where the provision of a sub-exchange would be justified, the establishment of which would enable Rural Party Lines to be established in the heart of Rural England, *thus removing the telephone isolation which now exists.* The support forthcoming from a merely tentative Rural Party Line canvass may form the nucleus of a sub-exchange, and there is a danger that a too prodigal development of Rural Party Lines from the larger outlying exchanges may result *in narrowing the field for development, leaving many outlying villages* isolated, by reason of mileage difficulties. It is advisable that all Rural Line proposals should be first considered as sub-exchange direct line prospects, and Rural Lines should only be provided in scattered localities *where it would* not be profitable to establish an exchange.

Considerations of space will not permit the question of Contract Department *personnel* and organisation to be more than briefly touched upon, but such question may be summed up in the necessity for the careful selection and training of staff and effective preparation for all schemes for telephone development. It may be fitting to quote as a motto for the Contract Department the wise words of Confucius, who some 2,500 years ago wrote, "*In all* things success depends on previous preparation, and without such previous preparation there is sure to be failure. If what is to be spoken be previously determined there will be no stumbling. If affairs be previously determined there will be no difficulty with them."

F. W. GEORGE,
Contract Manager.

Southampton, Dec. 10, 1918.

PERSONALIA.

LONDON TRAFFIC STAFF (*Telephonists*).

Miss A. K. HASELTON, Assistant Supervisor, Class II, of Battersea, has resigned to be married. She was presented with a silver cake basket, *a case of spoons* and a picture by the staff.

Miss W. M. C. JEPHCOTT, Telephonist-on-Allowance, at Erith, has resigned in view of her approaching marriage. The staff presented her with a Wedgewood salad bowl and servers.

Miss E. HEATH, of Bromley, on resigning to be married was presented with a travelling rug and other useful gifts.

Miss E. HOWELL, of Avenue, resigned to be married on Nov. 19.

Miss W. STANLEY, of Victoria, has resigned to be married and was presented by her colleagues with *a case of tea knives and forks.*

Miss K. PARTRIDGE, of Victoria, has resigned in view of her approaching marriage and was presented with a teapot and dinner service from her colleagues.

Miss A. E. GLADWIN, of Victoria, has resigned in view of her approaching marriage.

Miss E. BECKEY, of Victoria, on resigning to be married was presented with a silver teapot.

Miss C. BURGES, of Victoria, has resigned to be married. Her colleagues presented her with a salad bowl and servers.

Miss F. DOWDING, of Victoria, has resigned to be married and was presented with a pair of silver candlesticks and a cut glass scent bottle.

Miss V. OLIVER, of the Trunk Exchange, resigned to be married on Nov. 16 and was presented by her colleagues with a silver cake basket.

Miss R. C. TOWELL, of the Trunk Exchange, resigned on Nov. 30 in view of her approaching marriage. She was the recipient of a silver cake basket from her colleagues.

Miss R. COLEMAN, of Hop, resigned to be married on Nov. 27, and was presented by the staff with a breakfast service in Doulton ware. From other friends in the exchange she received a crumb brush and tray and other useful gifts.

Miss M. CURD, of Park, resigned to be married on Nov. 29. The staff *presented her with* a cut-glass salad bowl and servers and other gifts.

Miss L. R. COOMER, of Paddington Exchange, has resigned to be married. The exchange staff presented her with a cake stand, and the engineering staff with a salad bowl,

MRS. ELLA WHEELER WILCOX AND THE TELEPHONE.

MR. PRESTON, the Controller of the London Telephone Service, recently received from Mrs. Wilcox, *the well known American* poetess, a letter complaining that the failure to remove a wall telephone which had been left in her apartment prevented her from using a patent folding bath, after she had returned to England from France with the express purpose of enjoying that luxury. She enclosed the following verse :—

I DID NOT COME HOME CLEAN.

This is the song for a woman,
As she crosses the seas of storm,
To the lands afar where bath tubs are—
And water that runs and is warm.
Oh turn on the faucet fully
The hot-hot faucet I mean!
And fill up my tub for a grand old scrub
For I have not come home clean.

I have done my bit for the soldiers,
I have helped wherever I could,
I have lived a life that was moral—
And my thoughts have been high and good.
But no matter where I laboured,
In hospital, hut, or canteen,
Though I tried and tried and wept and cried—
I could not come home clean.

Oh not the tram or the railroad—
And not the French hotel
Not even war-bread, the worst has said
Of woman's part in this hell!
But the old shrill cry for a bath tub
Can tell what that word may mean;
Let the faucets go till they overflow
For I have not come home clean.

Oh, it is not medals of honour—
Or badges for which I yearn;
But I do hope that a box of soap
Will wait me on my return.
And the time I spend in the bathroom
Will not be short I ween:
For in praise and prayer, I will linger there
Until I come forth clean.

These verses are a parody on her poem, "Soldiers, Come Back Clean," which has been recited all over France and to many thousand soldiers, and with which, no doubt, many of our readers are familiar.

Needless to say Mrs. Wilcox's difficulty was soon attended to and, in acknowledging her letter, Mr. Preston asked permission to insert her verses in the JOURNAL and suggested at the same time that perhaps a visit to a telephone exchange would be of interest to her. Mrs. Wilcox visited the Victoria Exchange on Dec. 6 and afterwards forwarded to Mr. Mantle, the Exchange Manager, the following letter :—

The American Women's Club,
41, Hertford Street, W.

My dear Mr. Mantle,—I am sending you the enclosed verses which you may present to the young ladies of the exchange with my compliments. You can use them in the TELEPHONE JOURNAL, should you so wish.

TO THE YOUNG LADIES OF THE TELEPHONE EXCHANGE.

It seemed a garden all ablow
That room, where sat row after row
Of pretty girls, to whom we say
Sometimes in an imperious way
"Hello! Hello!
Please give me number so and so."

And in that wonderful bright room
Each human floweret was in bloom
Carnation—Lily—Violet
Tall Tulip, and shy Mignonette.
Oh, every flower *that grows in grace,*
I saw there in some maiden's face.

Now, when I make my "Hello" call
I see that garden by the wall,
And wonder if Anemone,
Or Rose, or Pansy answers me!
It surely is a fact most strange!
I sought the Telephone Exchange,
But in some way I do not know
I landed in a Flower Show!

The poem was naturally much appreciated by the staff, and we are greatly obliged to Mrs. Wilcox for her kind permission to publish this and the foregoing poem.

WHERE TO STAY.

The attention of our Readers is directed to the following list of Boarding and Apartment Houses.

BARMOUTH the Beautiful). "Glencairn"—The most comfortable Private and Residential Hotel in North Wales. Charmingly situated, overlooking bay and mountains. Large lounge. Excellent cuisine Moderate inclusive tariff. Highly recommended.—Mrs. Dennis, *Proprietress.*

BLACKPOOL, S.S.—"Sunnyside" Board. Estab., 8, St. Chad's Terr. Prom.; mod. terms; liberal table; dinner 6 p.m. Tel. 529. Mrs. E. BROWNE.

BRIGHTON.—Grafton House, Grafton Street, Marine Parade. (Door Sea). Comfortable Board Residence. 10 bedrooms; bath (h.c.) Electric light throughout. Good table. Moderate cycle accommodation.

CLEVEDON (Somt.)—"Ravenswood," beautifully situated on cliffs, overlooking sea and woods; ideal holiday resort; charming walks. All comforts studied. Moderate inclusive terms. Misses Bruce and Hall.

EASTBOURNE.—"The Polytechnic" Boarding House. Recommended by "Polytechnic," Regent St., since 1894. A comfortable holiday home. Liberal table Terms 35*s.* weekly inclusive.—Mrs. Edwards, 109-111, Tideswell Road.

TAYNUILT, Oban District.—Forrest Bank Boarding House, own grounds overlooking Loch Etiene. 3 miles Ben Cruachan. Open all the year. Recommended. Terms from 30*s.*— Young.

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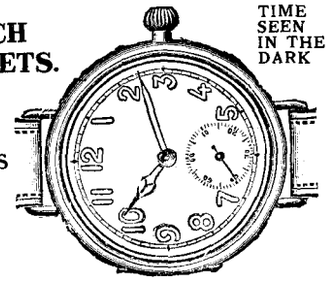

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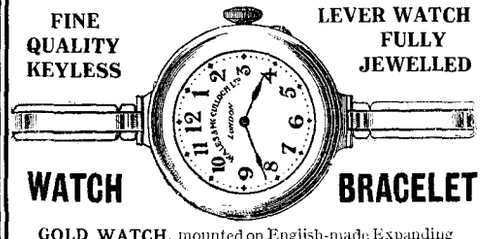

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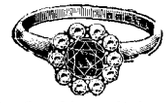

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By the courtesy of The Illustrated Chronicle.]

PRESENTATION OF O.B.E. MEDALS AT NEWCASTLE.

The above picture shows MRS. BINNS and Miss LILIAN STOREY (front row) receiving the O.B.E. Medal; behind are the DUKE of NORTHUMBERLAND, who made the presentation, and the MAYOR, and in the background are the DISTRICT MANAGER and Telephone Staff.

Miss DONOVAN, W.A.A.C. (L.T.S.).

She was awarded the British Empire Medal for her services during a Zeppelin raid prior to joining the Corps.

A LETTER FROM BELGIUM.

SAPPER MARLAND who recently contributed his impressions of the March retreat now writes from Binche, Belgium, of some of his experiences during the movement of the British Army towards the Rhine.

Yesterday by good luck or, to be more precise, by the favour of our officer I enjoyed the privilege of seeing Dinant as well as several other places of natural beauty and historic interest. Our lines of communication are now of enormous length, and every day as the troops move forward into Germany they become longer and longer. But the enemy by the terms of the armistice has to hand over intact all his lines, so what we had to do yesterday was to go forward to places of central importance on the German routes and to make tests and discover their condition. As you may suppose this took us a long way towards Germany, and it so happened into the most beautiful part of Belgium. We travelled altogether a distance of about 125 miles according to my measurements on the map afterwards, in a very fast and comfortable Vauxhall touring car. The exhilaration of the speed (we did close on 50 miles an hour sometimes) was the first pleasure, but this was soon excelled by the grandeur of the scenery. It was indeed magnificent. First we would be speeding along a high road commanding a clear view from between avenues of trees of the river winding below and of the opposite cliffs rising in various coloured verdure high above the stream. The river Meuse is not a narrow stream at this part of its course but wide and bending, clear and slow and reflecting as in a sheet of glass the chalets and cliffs, the slopes and trees which border its whole course. Then presently we would descend by a route which winds and bends by a path as circuitous as the river's course down to a road on a level with the river. Every road of itself has a beauty of its own, for it is quite the rule here on the Continent to make the roads a part of a great scheme of afforestation. So limes, poplar, beech and the graceful silver birch all grow alongside the "routes nationale" and roads of lesser importance, making them into avenues which please the eye, even in the dead season of the year. The whole country side pleases the eye so much that one feels, as one aspect of beauty follows another, each with its own particular charm, that the whole panorama was created for that very reason and no other—just to give pleasure to human minds.

"A thing of beauty is a joy for ever" and here are to be found a rapid succession of beautiful things. You may think that in its winter garb it could not be so impressive as I have made it appear. But the absence of sun and even the gentle falling of rain did not dispel the atmosphere of climax not the climax of the seasons nor the climax of a year, but the mountain peak of a century. The devils of darkness and winter had been in possession of this country of God and after four years of supremacy had been overthrown and driven out. The high speed of the touring car gratified and accorded with the sense of elation that one felt as victors over an unscrupulous and ambitous foe. This feeling was intensified, and the sombre tints of autumn were nullified or at least relieved, by the decorations in every town and village; festoons and arches of triumph had been erected by the liberated inhabitants who expressed their rejoicings and their welcome to the advancing troops by laurels and flowers worked into phrases such as "Honneur aux Vainqueurs," "Gloire aux Anglais." It is more than summer. It is the springtime of the earth. The world has renewed its youth. The Christmas-trees loaded with decorations which paved some roads on either side expressed the childlike mirth which everybody feels, liberated and liberators alike, at the end of the earth's darkest night and blackest winter. At Dinant and Namur there were many signs of the terrific fighting of 1914. Who can forget the name of Namur—that strong fortress of the free which held out so bravely against the increasing forces of the traitorious onslaught of the regardless foe. I have bought some postcard views showing the damage they did by their bombardment of the town, and at the former town which, as you know, was the centre for touring parties before the war, there are many many vacant places where once stood shops and houses in which altogether a total of 800 mothers and sisters, little sons and brothers were ruthlessly killed by the devil of war in their own castles of affection, secure as they once thought themselves against all danger and intrusion. But the traces of ruin and destruction have been removed entirely by the Germans during their occupation—only the vacant spots remain to record their devilish work.

Here and there *en route* are to be seen abandoned lorries and cars, guns and machine guns in great number and a few trains upon the railways. When I hear again the piece of music called "The Ride of the Valkyries" I think I shall always recall this 100-mile ride.

Good-bye for the present, more anon.

DEATH OF MR. W. DICKINSON.

We regret to record the death of Mr. W. DICKINSON, of Northampton, from influenza, whilst recovering from an operation which he had recently undergone. Mr. Dickinson entered the service of the National Telephone Company in the Newcastle district and after a short sojourn in London under Mr. Clay went to Birmingham about 1894 as Chief Clerk in the District Office. Later on he became Local Manager at Northampton. After the transfer he was appointed Assistant District Manager and subsequently became a Chief Inspector (Second Class Engineer) on the Engineering Staff. Mr. Dickinson was a thoroughly reliable and painstaking officer and had personal characteristics which evoked the good will which he himself evinced. His funeral was attended by the District Manager and his staff and by representatives of the Engineering and Operating staffs, all of whom sent wreaths.

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CONTENTS.

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

A PAGE OUT OF LIFE.*

BY MARY H. DE CORT (*Telegraphist, Victoria Exchange*).

"*En Souvenir de mon long scjour a Londres.*"

ADIEU Bruges la Belle! Adieu! These were the words last spoken as we gradually lost sight of our famous Belfry. Yes, and there I was sitting in a tradesman's cart drawn by two thin old black horses, the best the Germans ever left the people. It was bitterly cold and awfully windy. The driver very kindly put some bundles of straw in the cart to make it a little warmer, and we had to think ourselves very lucky. No trams or trains of any description were to be got, and all bridges were blown up by the Boches so as to stop any communication between Bruges and Sluis. After a heart-breaking parting from our beloved parents, we took our courage in both hands, and started our big struggle. Hours and hours we stuck in the shaky old cart. My two sisters were shivering from the cold; both sat there as white as statues—perhaps a few words were exchanged after a long dead silence. Being the youngest of the three, I tried to cheer them up, but it was hopeless. I made efforts to keep a smiling face, although my heart was breaking. After many hours' patience we reached Eecloo. There was the German Kommandantur where we stood begging the German Kommandant a pass for Holland. "Nein! Nein!" were the harsh words which rang in our ears. We did not give up our hope. The following day, after a long restless night, we decided to have another try, and, dressed up as elderly persons, we faced the same Boches again whose words were nothing else but the everlasting "Nein." I really thought it was the only word in his vocabulary. So we kept thinking and asking ourselves what to do. "Let us go home" said one of my sisters, half dead from exhaustion and fright; "No" was our answer, "we must go further, we do not want to stop and live with these enemies at our home."

"Let us remember that a good reputation is the honour of any woman." So we prayed God for help, and he sent us, so to speak, an angel in the form of a policeman. This man was an acquaintance of our driver whom he just met by accident. This person was a Belgian, but Germans having confidence in him made him a detective for spies, and thanks to him a great many people escaped, he being loyal to his country and even risking his life in helping people over the frontier. He knew how to treat these Boches, and he went to see them himself on our behalf. "There is" he said to the Kommandant "a mother breathing her last hours in this world, she is waiting to embrace her children, perhaps for the last time, would you refuse this to a dying mother. Let her family go over and see her if it only were for a few minutes, but do not deprive them from their last parting." This of course, was only an excuse, as we left our dear parents behind in Bruges. Our compatriot knew that our Kommandant was a married man himself with children, and the expression on his face changed for a minute, the look in his eyes became less ferocious, and he grabbed his pen, and wrote the following words "This pass allows three people to go to Holland, they are to return the following day. Come and show them, mother and daughters, here at my office under penalty of 500 marks each and six months' imprisonment.' This was of course only to intimidate us.

At last we had the so-longed-for paper. We had used other passports before, but this one was the last and the most important one. We started again in our same cart. A fresh bundle of straw underneath us and a few pigs the man was carrying from one place to the other, and so we drove for hours until we reached Watervliet. There were German Censors, and everything we had with us had to be opened by them. Always being suspicious about people taking letters over to Holland, they looked through everything very carefully and anyone found with messages with them was liable to be shot. As I was a telephonist in Bruges Telephone Exchange, I had taken my papers for my nomination with me, but prevention is better than cure, and I had sewn them very carefully in the hat I was wearing.

I could write all day and night if I wanted to go into details; the principal thing is that we escaped and, thanks to the policeman who escorted us, we had not too much bother with the sentries. So after a long time we reached the Dutch frontier. Our hearts were beating very fast when we saw the first Dutch uniform, and oh! how we hated the sight of those enemies left behind. Here we could smile. We were free from those Boches, after having lived amongst them. We passed through Yzendyke, Schoondyke, Breskens, Flushing. Every house was full up with refugees who had come a long time before us. We thanked God for small mercies as we took our lodgings in a boat lying in the canal. There we lived for about a month, only three of us in the big boat. We were longing to go over to England, England was our dream! We had to wait several weeks before getting our tickets, and on a very stormy day we had at last a chance of crossing the Channel in a very crowded boat with distressed but hopeful passengers. And we landed in dear old England, the country who helped thousands of my people in their hour of need.

* * * * *

"Number Please?" "Mayfair 4832," is the answer, and I repeat in the same manner, "Mayfair 4832.' I felt lost, I wanted to give the London subscribers the same salutation I used to give my Brugeois. No longer I said "Bruges" and no more I heard people ask for "*Ostende s'il vous plait Mademoiselle?*" It was difficult for me to believe that I was still a telephonist, everything and everybody was absolutely strange to me. After having had my training at Carter Lane School and after having put about 80 codes in my head I was sent to Victoria Telephone Exchange. A lovely building with nice restaurant and a very well-aired large switchroom. Oh dear, what a difference I thought between my little and cosy switchroom at Bruges. How many switchboards and what a number of telephonists! I was quite interested in seeing the electric lamps glow when subscribers rang up. This was an innovation to me as we had a self-restoring switchboard, although Ostende used the little lights. During my first days at this Exchange I really thought some subscribers were joking when asking for Victoria 9600. "Gracious" I said to myself, I will never be able to remember all these names, there being about 7714 subscribers in working order. It was hard for me to swallow this. At Bruges we possessed at most 1,000 subscribers, and through practice we came to know almost everyone of them by name. This was rather nice. When answering calls I used to think "Ah, here is Mrs. Vanden Berghe giving her order to the butcher." "*Numero deux s'il vous plait Marguerite*" went another subscriber. He was my cousin who, doing the coal trade with England, did not give the telephone much rest. "*Monsieur le Comptable*" whom you would call the Accountant, used to say to me, "I wish you had a lot more cousins like him on our Exchange. He certainly kept us from being idle." When going for walks sometimes with my colleague very often we said to one another, "Oh look at 508's little dog." So most of the subscribers we knew and they knew us reciprocally, even better, as there were only 13 or 14 telephonists employed in our whole Exchange. We all did our best to please them in offering them our earnest attention, otherwise subscribers might have said "Oh, that Miss So-and-So is slow," as they knew our voices by heart. Our subscribers always had a kind word for every telephonist and treated us as their helpers. Very seldom a complaint was sent in, and it made us live on good terms with them. We had our set of official expressions, but the few

*Paper read at a meeting of the London Telephonists' Society.

additional words we addressed to them, in the way of politeness, helped very much to set up good relations. Of course London is not Bruges.

A special attraction to me was the Trunk Board. The time simply seemed to fly when operating on there. One had all kinds of variations. "*Voici Arras;* You are through to London, Sir. *Amsterdam* is *daar Mevrouw; Köln ist da, Sprechen Sie bitte. Ziehier Antwerpen Mynheer.*" In one word it was a whole mixture of French, English, Dutch, German and Flemish. I found it extremely interesting, the more calls one had the better, as one was desirous of practising the knowledge acquired at school. I never forget these Germans though, they were far from polite, and frequently tried to use the lines for longer than they paid. After a decent conversation he might have rung and said, "*Ich kan nicht gut hoeren*" in the hope of talking a minute longer, but he certainly forgot that Belgian telephonists were not born yesterday; that made him feel rather sorry for himself I expect. I often think of all this when sitting at the Victoria switchboard, but I cannot dream too long as lamps keep glowing and glowing and my attention is needed on them. Yes, a London telephonist is always busy, practically a thousand calls she has to answer in the day, and the few minutes spare time she so richly deserves are very few. From my own experience about telephony in England and Belgium I must admit that a telephonist has certainly an important role to perform in the community, and I may add that her work is strenuous and tiring.

Thanks to the Victoria Exchange who employed me, I have been able to keep my spirits high until the time of my going back to my beloved family in Bruges will come, and in the name of my parents from whom I have just received the first letter in the four years of separation, I want to give all my gratitude to the officials and all Supervisors who have treated me with every kindness and consideration. So let me bid a hearty farewell to all friends and colleagues.

REVISION OF TOLL CHARGES IN AMERICA.

A BULLETIN issued by the Postmaster-General of the United States on Dec. 13 last makes important changes in the regulations of the Toll telephone service in America, which service corresponds roughly with the Fe Junction and Trunk services in this country. The changes came into force on Jan. 21 last. Under this Instruction the standard basic rates of charge for toll conversations are as follow :—

For distances more than	But not more than	Standard rate.
0 miles.	6 miles.	5 cents.
6 „	12 „	10 „
12 „	18 „	15 „
18 „	24 „	20 „
24 „	32 „	25 „
32 „	40 „	30 „
40 „	48 „	35 „
48 „	56 „	40 „

For each additional eight miles or fraction thereof 5 cents additional. The rates are based on direct radial measurements.

The charges up to a fee of 25 cents cover a period of five minutes conversation, while beyond that fee the unit period is three minutes. Where subscribers desire to extend conversations beyond the initial period, the unit period of extension is five minutes where the fee is 5 cents; three minutes where the fee is 10 cents; two minutes where the fee is 15 or 20 cents and one minute where the fee exceeds 20 cents, the fee payable for an extended period being in proportion to the unit charge. The rates quoted are for "two number" calls, *i.e.*, calls from one specified telephone to another specified telephone. The "two number" system thus becomes the standard method of making toll calls in the United States just as it is the standard method in this country for Junction and Trunk calls.

In America hitherto the great majority of toll calls have been "particular person" calls, that is to say, the calling subscriber nominates a particular person at the other end with whom he wishes to speak, and the call has been treated as non-effective if the attention of that particular person cannot be obtained.

The "particular person" call is not abolished by the new Bulletin but no "particular person" calls are allowed where the fee is less than 20 cents, and persons making such calls must pay a fee approximately 25 per cent. in addition to the scheduled rate. If the person called is not there and no conversation follows a fee of approximately 25 per cent. of the scheduled rate is payable.

Further, persons desiring to make calls to a particular person at a specified time must pay approximately 50 per cent. in addition to the scheduled rate.

Reduced night rates are available between the hours of 8.30 p.m. and 4.30 p.m. Between 8.30 p.m. and midnight the night rate is approximately half the day rate, and between midnight and 4.30 a.m. the night rate is approximately one-fourth the day rate. No night rate, however, is to be less than 25 cents.

The toll rates hitherto in force in the United States have provided primarily for "particular person" calls and the Postmaster-General's endeavours to develop the "two number" system and to reduce the high proportion of "particular person" calls are not being favourably received in some quarters, one journal remarking that "the Postmaster-General threatens to demoralise the long distance service and cause irreparable damage to a public whose business and social relations are built largely upon it." These forebodings are not likely to be realised. It is significant that the Chamber of Commerce in this country, when consulted as to the introduction of "particular person" facilities, showed no particular wish for it.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.

The following appointments have been made to Post Office officials :—

Commanders (C.B.E.).

BENNET HOSKYNS-ABRAHALL, Director, Investigation Branch Secretary's Office, General Post Office.
ARTHUR MELLERSH, Surveyor, General Post Office.
GEORGE MORGAN, I.S.O., Controller, Post Office Stores Department.

Officers (O.B.E.).

Capt. HENRY FRANK BOURDEAUX, Assistant Submarine Superintendent, General Post Office.
HENRY JOY, Assistant Controller, Post Office Savings Bank Department.
JOHN MCLORINAN ROBB, Superintending Engineer, South Midland District, General Post Office.

Members (M.B.E.)

Major JOHN COMPTON, T.D., Postmaster, Folkestone.
GEORGE FREDERICK GREENHAM, Assistant Superintending Engineer, General Post Office.
GEORGE HENSHILWOOD, Post Office Executive Engineer, South-east District.
EDWIN PERCY HEWKIN, Head of Sugar Shipments Section, Commercial Branch, Ministry of Shipping (late Secretary's Office, General Post Office.
ADA LUCY, Post Office Prisoners of War Relief Fund.
DANIEL BENJAMIN SHERIFF SAVILLE, Chief Engineer on Post Office Cable Ship, "Monarch."

[We hope to publish portraits of many of the above officers in our next issue.]

Medals have been awarded to the following Telegraphists, Engineering Staff and others for special services of a high degree of merit in many cases entailing work of a dangerous and trying character :—

BRIGHTON, THOMAS ARTHUR, Inspector, Engineering Dept., G.P.O.
BRINKLEY EDWARD, Skilled Workman, G.P.O.
CAREY, WILLIE FREDERICK, Cable Hand, G.P.O.
COLE, RICHARD HORACE, Cable Hand, G.P.O.
CONRAD, THEODORE, Quartermaster, G.P.O.
FALCONER, DAVID, Skilled Workman, G.P.O.
GARRIOCK, ANDREW GILBERT, Skilled Workman, G.P.O.
HARDING, WILLIAM DENBURY, Inspector, Engineering Dept., G.P.O.
HOOD, HORACE JAMES, Telegraphist.
RAY, ALEXANDER MCMAIR, Sorting Clerk and Telegraphist.
KIDD, ALEXANDER, Skilled Workman, G.P.O.
LAMBERT, WILLIAM, Telegraphist.
O'DONNELL, ALBERT JAMES ETHERINGTON, Telegraphist.
PARK, CHARLES, Skilled Workman, G.P.O.
RATHBONE, WILLY FOX, Inspector, Engineering Dept., G.P.O.
ROBERTSON, VICTOR GRANT SUTTIE, Skilled Workman, G.P.O.
SAMUEL, WILLIAM DAVID BOWEN, Telegraphist.
SHELL, MARGARET LOUISA, Telegraphist.
STEWART, ROBERT TURNER, Inspector, Engineering Dept., G.P.O.
SUTHERLAND, JOHN ALEXANDER, Inspector, Engineering Dept., G.P.O.
TALLIS, BENJAMIN, Skilled Workman, G.P.O.
THOMPSON, HARRY, Inspector, Engineering Dept., G.P.O.
TRINDER, ALFRED HENRY, Sub-Postmaster.
WILLIAMS, JOHN ELIAS, Sorting Clerk and Telegraphist.

Medals have also been awarded to the following Supervisors and Telephonists for displaying great courage and devotion to duty during air raids :—

ANSELL, ELLEN ELIZABETH, Telephonist.
BARBER, VIOLET MAY, Telephonist.
BARTLETT, FANNY CAROLINE JANE, Night Supervisor, Telephones.
BENNETT, JENNIE AMY, Telephonist.

SOME MEDALLISTS OF THE ORDER OF THE BRITISH EMPIRE.

Miss HILDA L. DAVIS. Mrs. A. E. PLUMMER. Mr. J. SKINNER. Miss. E. KALLEND. Miss F. C. J. BARTLETT.
Miss E. E. ANSELL. Miss GERTRUDE JOHNS. Miss F. G. HUTT. Miss V. M. BARBER.

CHESTER, EVELINE, Telephonist.
COLEMAN, KATE ELIZABETH, Telephonist.
DAVIS, HILDA LOUISA, Telephonist.
DAWKINS, MARY ROSE (now Mrs. Oakman), Night Supervisor, Telephones.
GAFFORD, EMILY (Mrs.), Caretaker Operator, Telephones.
GITTINGS, ELSIE PRISCILLA, Telephonist.
GRAY, GRACE LIZZIE (Mrs.), Sub-Postmistress.
HIBBARD, HARRIET MATILDA (Mrs.), Night Supervisor, Telephones.
HONEY, JESSE ROSE, Telephonist.
HOOPER, CELIA KATIE, Supervisor, Telephones.
HUTT, FLORENCE GLADYS, Supervisor, Telephones.
JOHNS, GERTRUDE MAUD MARY, Supervisor, Telephones.
JOHNSON, ALICE NAOMI, Supervisor, Telephones.
KALLEND, EDITH SHARLAND, Telephonist.
OUGHAM, ELIZA JANE (Mrs.), Caretaker Operator, Telephones.
PERRITT, BLANCHE FLORA, Telephonist.
PLUMMER, ALICE ELIZABETH, Night Supervisor, Telephones.
RANDALL, GERTRUDE (now Mrs. Simpson), Supervising Telephonist.
SKINNER, JOSEPH, Night Telephonist.
STEAD, CONSTANCE HILDA ALICE (now Mrs. Smith), Telephonist.
VERNEY, GRACE DOROTHY (Mrs.), Night Supervisor, Telephones.
VINING, DAISY OLIVE, Supervisor, Telephones.
WILDING, EMMA ANN, Supervisor, Telephones.

AUTOMATIC TELEPHONE STAFF'S SOCIAL FUNCTION.

The staff of the Automatic Telephone Manufacturing Company held a successful dance and whist drive at Britannia Rooms, Pier Head, Liverpool, on Friday, Dec. 20. Some 300 guests attending the gathering.

THE TELEPHONE IN THE LAST DAYS OF THE HAPSBURGS.

IN the vivid description of the closing days of Hapsburg sovereignty, given by the special correspondent of the *Daily Telegraph*, the telephone plays a considerable part. The Emperor who had retired with his family, to the castle of Gödöllö near Buda Pest, was persuaded by his Viennese ministers and courtiers that the storm would pass over. Karolyi, who might perhaps have saved the situation, was forgotten, and Count Hadik entrusted with a Ministry which lasted but twenty-four hours.

"It is interesting," says the writer, "to know that practically all the communications between the Imperial residence and the Ministries in Budapest and Vienna were carried on by telephone. A system of telephones had been long before set up which enabled this to be done, as was supposed, in complete secrecy. But the rulers of Austria-Hungary, blind in this as in so much else, failed to discover that the electricians and operators in the telephone service were heart and soul with the Republican movement. Instead of the communications being secret, as the Emperor and his Ministers believed, every conversation passed through a special office prepared by the electricians and was carefully written down in shorthand. Transcripts of the notes so taken were furnished almost hourly to the Republican leaders, so that they were familiar with every plan and move of the Government.

"Some of these conversations are very interesting. For example, on the day he assumed office Count Hadik telephoned to the Archduke Joseph asking him whether anything had been done to combat a revolution, and what steps should be taken to that end. 'Don't ask me,' replied the Archduke, 'I think it is now too late. Leave me out of it, and do what you think fit!

"Then the Military Governor of Budapest telephoned to the Prime Minister, saying he had a list of the revolutionary leaders, and suggesting that they should be arrested. The Minister replied: "Certainly, arrest them at once.' But nothing was done, because the Governor did not care to act without the direct authority of the King. At two o'clock in the morning he telephoned to Schönbrunn, asking permission to speak to the Emperor personally. Count Hunyadi, the Royal Chamberlain, who took the message, replied that his Majesty was asleep, and he dare not wake him. An hour later the Governor, having received alarming news in the meantime,

again rang up the Royal residence, and commanded the Chamberlain to call the King to the telephone. This time there was something in General Lukachick's tone that frightened the easy-going Viennese courtier, and Count Hunyadi went to the Royal bed-chamber and summoned the Emperor."

"The message the Emperor heard, as he stood shivering in his night-clothes with the receiver at his ear, was as follows:—

'Your Majesty, the situation in Budapest is exceedingly grave. The public buildings have been occupied by the revolutionaries, and the soldiers refuse to obey orders. A few are faithful, and nothing but force applied at once can save the situation. I want your Majesty's authority to order the soldiers who remain true to shoot the revolutionary ringleaders. If you don't all is lost.'

"The indecisive Monarch turned to Count Hunyadi, crying, 'What am I to do?' Then without waiting for a reply, he telephoned to General Lukachick: 'No; don't shoot. Wait.' He stood a few moments longer in hesitation, put down the receiver, and went back to bed."

"Half an hour later the Emperor changed his mind, and, rushing to the telephone, asked to be put through to the Hungarian Prime Minister at Budapest, his Majesty's intention being to pass the order for the employment of force through the head of the Government. But matters had been moving in the meantime, and the telephone operator refused to put through the call.

"Count Hunyadi, who was standing by the Emperor's side, took the transmitter, and ordered the telephone girl, in the King's name, to make connexion to Budapest. 'We take our orders now from the Hungarian National Council, and not from Kings or their servants,' was the curt reply. The Court Chamberlain stormed and threatened into the telephone receiver, but the operator remained obdurate."

"Then the Count changed his tone, and said, 'Well, at least, tell me what is happening at Budapest.'"

"'All power is in the hands of the National Council,' was the overwhelming answer.

"Count Hunyadi communicated this ominous statement to his helpless Emperor. A hurried consultation took place between the two men. Then the Empress was summoned, and told the situation of affairs. Without a word, the Empress went to the telephone and asked to be put through to the Royal residence at Gödöllö. In that hour of crisis, in the small hours of the morning, the maternal instincts of the woman came uppermost. It was no longer an Empress thinking of her Crown, but a woman anxious about her children who was speaking. The other woman in the telephone exchange felt a thrill of sympathy and responded to it. The connexion to Gödöllö was made, and the mother, not the Empress, sent the message about her children to Prince René, to which I have already referred, and the little ones were brought in safety to Schönbrunn.

"In that hour the last Hapsburg ceased to reign over Hungary."

The association of the somewhat abrupt amenities of the telephone with the stiff etiquette of the Viennese Court might furnish moralists with instructive parables on the harsh dictates of necessity, and historians with material for dilating on those contrasts wrought by the vicissitudes of royal fortune in which they delight. The telephone is even younger than the New German Empire which it survives. The Holy Roman Empire which endured from the days of Charlemagne to those of the second Francis was shorn of many things in its long and complicated history. It ceased to be Holy and Roman when it lost the sovereignty of Italy; it lost provinces, power and prestige; it became a Disunited States of Germany without cohesion or national spirit; but it never lost its elaborate ceremonial and pomp, and to this stateliness the Court of Vienna, a last relic of the ancient empire, clung, even after it had ceased to sway the destinies of Germany. It was left to the upstart telephone to break down all etiquette and rudely shake the sleep of the last Hapsburg to inform him that his line was at an end and his Kingdom departed. W. H. G.

THE ROWLAND HILL BENEVOLENT FUND.—AN EFFORT DESCRIBED.

It having been resolved to raise a sum of £200 for this deserving Post Office Charity, a meeting of the staff was called and a committee consisting of representatives of all classes (including District Manager's and Sectional Engineer's Staffs) was formed. Notices were exhibited and the staff were addressed, with the result that 191 officers, permanent and temporary, at the Head Office agreed to contribute sums ranging from 6*d.* to 5*s.* each for four successive weeks, and a sum exceeding £41 was thus raised. The Sub-Postmasters and their staffs were asked to contribute and to bring the effort to the notice of the public, and they sent in £69 of which £33 were given by the public.

Many big firms and influential people were called upon either by Mr. Ransley, the District Manager, who worked most enthusiastically, or by the writer and one donation of £10 and several of £5 5*s.* were thus obtained. Altogether a sum of £61 was collected in the City as a result of personal or written appeals. Six enterprising telephonists, led by Miss Dawber, with the ready consent of the Lessee, took a collection at a performance in a local music hall and so obtained £7 10*s.* The culmination of the effort was a grand concert for which nearly 1,000 tickets were sold and which brought in £90.

As a result of a few weeks of interesting and enjoyable work a sum of £238 2*s.* 6*d.* has been sent to this Charity and, considering how the income of the Fund has suffered during the war and the ease with which the money was raised, the writer ventures to urge his brother Postmasters who, as a class, are very charitably disposed, to make an effort to beat the record of the Lincoln Postal District. E. C. PYE.

IMPRESSIONS OF THE TELEGRAPH SUPERVISING OFFICERS' CONFERENCE.

(BY A PROVINCIAL REPRESENTATIVE.)

THE summons to attend a conference to be held in Room 16, First Floor, G.P.O. North, was an event of considerable interest in the somewhat prosaic lives of most of those to whom it came and particularly so to those with no previous acquaintance of the mystic precincts of G.P.O. Headquarters. Perhaps it is true to say that only a few, endowed with extra temerity, would not experience some qualms as to how they would acquit themselves at the seat of the Mighty.

A small contingent, all hailing from a certain Midland County, had the misfortune to arrive ten minutes late at the first sitting. Victims of tardiness in the serving of breakfast, and an imperfect knowledge of the relationship between time and distance in tube locomotion, they entered room 16 to find business in progress. They blushed before the reproving observation of the punctual ones and took their seats with feelings of injured innocence. They could almost imagine they saw the good boys' hands pointed to the chairman in the old "Not me, Sir" way, but deeper shame was in store for them when the genial Chairman in the remotest and most indirect manner advocated the prompt starting of the sittings. This was the "last straw" and it seemed to the unfortunates that they had made a truly unlucky start.

Some dozen members had been requested to prepare papers in advance on the set subjects forming the main agenda and all members had been furnished with typed copies of the papers to be read, and had received an invitation to join the discussions to follow. These papers had been well studied in advance of the sittings and as it was found that the time allotted to the subjects would be all too short, it became necessary to dispense with the actual reading of some of the more lengthy and discursive of them and to get straight on with discussions.

It is not the intention of this sketch to deal with the merits of the papers, the divergence or coincidence of opinion, the marked similarity of the experiences related by the Chiefs of the various offices in many respects or how the whole evidence seemed naturally to divide into two aspects, illustrating differing conditions at the big offices as compared with the lesser ones, nor is it intended to be a report, however meagre, of the proceedings. Suffice it to say, therefore, that the agenda was adroitly designed to cover nearly everything that matters in telegraphic practice, with a keen eye to the problems and contingencies of the future, and who will be so innocent as to suppose that it was mere accident, or unpremeditated humour, to have a paper inevitably leading to the question of decentralising news distribution from the C.T.O., followed by another on "the advantages of direct working in respect to speed and economy." The fixing of the targets, and the subsequent shooting were well done, bulls' eyes being frequent; and the fun was greatly enjoyed.

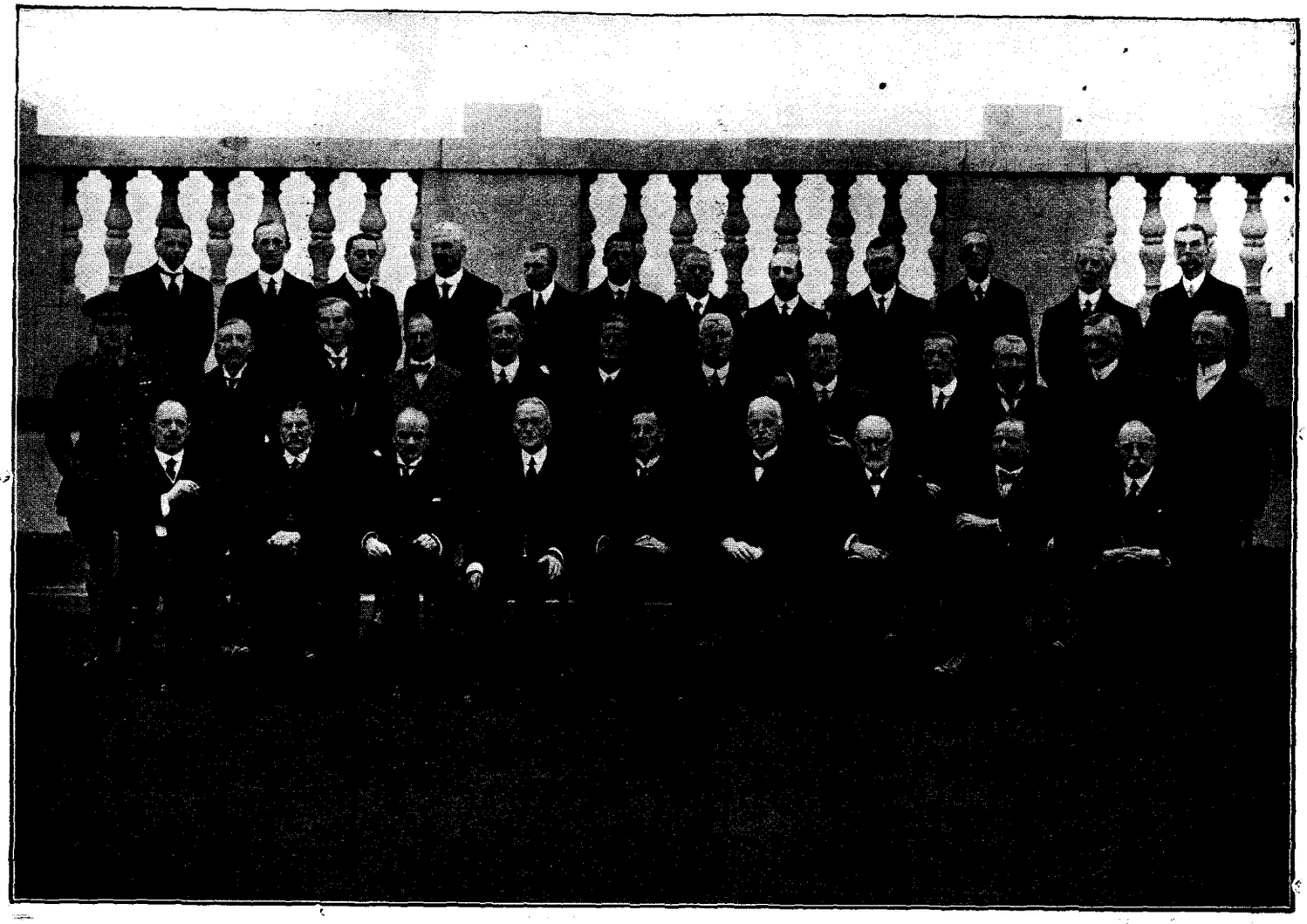
Although the *personnel* of the Conference was representative of every grade of authority in a huge service, from the Superintendents of provincial offices upwards to the Post Office Secretary, the atmosphere was homely. Notwithstanding that the closure had to be applied rather frequently there was tact and consideration in the way it was done and everyone was given a chance of getting in his principal points, if only briefly in some cases.

Looking round the Conference Room the very strong representation of the comparatively new Traffic Section was at once noticeable. Many of its members appeared to hold only a "listening brief" and they seemed to follow the unfolding of the "ins and outs" of telegraphy with interest and diligence. Such of them as were without long Telegraph antecedents must have found it helpful to hear from veterans, who during long lives in the service have become accustomed to exhale the breath of telegraphic knowledge and experience, how things are done. One could not help reflecting upon the circumstance that the utterances of not a few of these old and valued officers were valedictory and that their voices would be heard no more at such conferences: indeed it could be imagined now and again that such speakers were conscious of that feeling and emotion and betrayed it by their tone and gesture.

The Chairman gave an impression of keen watchfulness over every turn of the various debates and an unflagging personal interest in all that was said, but he was noticeably disturbed when the recurring stage of useless repetition was reached by speakers whose written speeches had been forestalled by others that had preceded them, and they had not the ready faculty of adjusting their utterances to the progressiveness of debate and argument. But, again, it must be admitted that the chairman seemed loth to muzzle individuals anxious to finish what they had come to say. There was a general tone of earnestness throughout the proceedings and very little opportunity for light humour. Occasional sallies across the table between the representatives of Dublin and Belfast, Edinburgh and Glasgow, or London and anywhere, would provoke a smile and leave us covertly wishing that the stores of wit which we knew were bubbling but pent up in well-known quarters could be let loose. But it was not to be; the atmosphere was charged with business and we knew that there was no time to play. It was observable too that some of the Headquarters' chiefs who attended at intervals and played the part of courteous listeners did so at some sacrifice, as evidenced by the frequent distractions from outside showing that their presence elsewhere was a matter of some moment.

There was some hard-hitting at times and if some of the papers received caustic treatment because of a little weakness or logic, thinness of argument or imperfect knowledge of all the facts at the hands of better armed critics,

TELEGRAPH SUPERVISING OFFICERS' CONFERENCE.



Back row : Mr. G. T. ARCHIBALD, Mr. G. H. TAYLOR, Mr. A. R. H. CASS, Mr. R. EVANS, Mr. J. H. P. BROWN, Mr. R. P. CRUM, Mr. D. FRASER, Mr. H. W. PENDRY, Mr. D. ROSS, Mr. T. W. FACEY, Mr. A. K. CHARLESWORTH, Mr. E. C. TAYLOR.

Middle row : Major A. A. JAYNE, D.S.O., M.C., Mr. W. FERNYHOUGH, Mr. T. A. PROUT, Mr. T. MACKENZIE, Mr. J. J. KENNY, Mr. J. PERKS, Mr. H. BROWN, Mr. T. W. DUNNING, Mr. W. H. DONALDSON, Mr. C. CLAYTON, Mr. A. POTTS, Mr. C. F. EVANS.

Front : Mr. A. W. EDWARDS, Mr. G. DAWKES, Mr. J. BAILEY, Mr. J. NEWLANDS, C.B.E., C.I.E., Mr. R. A. DALZELL, Mr. J. W. PLACKETT, Mr. T. MORRIS, Mr. W. ARMOUR, Mr. F. A. CARMICHAEL.

more practised and skilled in the controversial arts and equipped with longer memories, the writers could take courage from the indubitable absence of any personal feeling behind the criticisms and could feel that they had derived benefit from their experience.

Only once did a member rise to a point of order, referring to procedure, and the unresponsiveness of the chair and the passiveness of the mover left in our minds the memory of a curious and not undramatic incident.

The Chairman's declaration that he hoped the bringing together of the Superintendents of the large offices would cultivate personal relations between them that could be used for the purpose of settling inter-office problems without the intervention of the Secretary was a most happy suggestion, carrying its own commendation. It should result in better relations and freer informal intercourse, and it is not too much to say that the first fruits could be seen before the conference dispersed. The view was expressed on all hands that similar conferences should be held at fairly frequent intervals and although no definite pronouncement was made, it was gathered from the Chairman's reference to the subject that Supervising Officers' Conference might become a regular feature of the Service.

One could not avoid the thought—and it was voiced by one member—that on the occasions of future conferences it would be well to discourage too much preparation of set speeches. Each subject for discussion must of necessity be presented fully and comprehensively, but once discussion has been set going, the ground shifts and the picture changes, and much is said that is calculated to modify opinions previously formed and reduced to writing. There were several noticeable examples, as I have already hinted, of premeditated speeches being delivered having no analogy to the progress of the discussion and labouring points that had been definitely disposed of. More spontaneity would have conduced to directness, appositeness, conciseness and a better sifting of the wheat from the chaff.

Those who have watched with any interest the growth and spread of the activities of the Traffic Section from the first could scarcely fail to realise at the end of four days of all-embracing deliberations on telegraph questions pure and simple, that the Conference marks a point at which the new branch has grasped the telegraphic nettle and will, in due time, provide the emollient for its stings.

At this time when the world is in the travail of re-birth a Telegraph Conference was opportune, and those who had been privileged to be present could well return home confidently feeling that many dubious things had been made definite, or at least put into line for eventual elucidation, fogs had been dispersed, and decks cleared for action in so many ways that the Conference would leave some marks on the sands of time that would not easily be eradicated by the ebbing and flowing of the waters.

The limits of this sketch preclude detailed reference to the preliminary dinner at the Holborn Restaurant, the visits to the Central Telegraph Office, the Western Union Company's Office and old Threadneedle Street, of which so much could be said if space permitted.

At the Holborn Restaurant not the least appreciable feature was that of being met at the door by a host of those who count for something at Headquarters and the C.T.O., all anxious to extend a welcoming handgrip and smile, and with them a notable sprinkling of the old guard who have done their bit and retired but still retain an interest in old friends, impelling them to turn out on a bad night to search for faces long unseen. During an evening interspersed with music—the more enjoyable because the performers sang for love instead of lucre—many old memories were revived

and the whole-pervading cordiality warmed the hearts of the visitors from the country and rendered the gathering exceedingly happy and memorable.

At the C.T.O. the visitors were courteously chaperoned in parties of five and the occasion must have a vivid place in their thoughts for a long time to come in view of all that such a visit discloses. The conducting officers showed pardonable pride in dwelling upon the things that the C.T.O. has accomplished and the magnitude of the task it grapples with day by day; but these things are only too palpable. Such immensity, vastness and complexity, and all reduced to ordered system by marvellous organisation! It needed no straining to demonstrate why perfect elasticity of staff and plant is almost impossible in the working of the largest telegraph office in the world, and if the lessons of a tour of the galleries are properly learned the harassed controlling officers should get sympathy and patience from the "other end" where there is any tendency to resort to methods of worry and heckle.

At the Western Union Offices the visitors found an establishment far exceeding the preconceived size, with a staff approximating 250 persons operating a daily word traffic equal to 30,000 Post Office messages. They saw every kind of the latest invented high-speed and multiplex apparatus for land and undersea operating and found, in fact, a highly organised office equal in size to some of their own big offices, and it was indeed an eye-opener to the uninitiated, including the writer. The afternoon's tour ended with a look at T.N.S. where, as everywhere, the utmost bonhomie and good fellowship was manifested. Wherever the visitors went there was certain to be an attendant sprite to guide and save them from peril, and the writer has not yet forgotten the pleasingly humorous impression left upon him by the picture of a certain genial and ubiquitous member of the traffic staff wishing "Good night" on the steps of his hotel in a fog at midnight—a gentleman who was conspicuous in his kind attentions and, in the words of a placarded advertisement, "brilliant to the finish."

During an interval the members of the Conference were photographed in a group on the flat roof of the G.P.O. North where at that great altitude a bitter wind blew over the bared heads of the posers and pinched their mostly unovercoated frames. The picture was said to be a success and it was a comforting reflection to those who observed the remarkably vivid effect of three rows of "Post Office Red" noses facing the camera that the art of colour photography is not yet perfected.

This sketch would be incomplete without an acknowledgment of the solicitous and neverfailing efforts of the very capable Conference Secretary to minister to the comforts and convenience of the visitors.

TELEGRAPH SUPERVISING OFFICERS' CONFERENCE.

A CONFERENCE of Telegraph Supervising Officers was held in London at G.P.O., North, on Jan. 14, 15, 16 and 17. Mr. R. A. Dalzell, Chief Inspector of Telegraph and Telephone Traffic, presided, and Colonel Sir A. M. Ogilvie, K.B.E., C.B., and Messrs. E. Raven, C.B., A. G. Leonard, and W. T. Leech, of the Secretary's office attended.

The Traffic Section was represented by the Chairman, Messrs. Harvey-Lowe, Mackenzie, Plackett, Cotterell, Major Jayne, D.S.O., M.C., Stuart-Jones, Pendry, Prout, Crum and Taylor, and G. T. Archibald who acted as Secretary to the Conference.

Messrs. Newlands, Bailey, A. W. Edwards and Ferneyhough represented the C.T.O., and the Provincial Superintendents present were as follows: Aberdeen, D. Fraser; Belfast, W. H. Donaldson; Birmingham, J. Perks; Bradford, C. Clayton; Brighton, C. F. Evans; Bristol, E. C. Taylor; Cardiff, R. Evans; Dublin, J. J. Kenny; Edinburgh, G. Dawkes; Glasgow, W. Armour; Hull, J. H. P. Brown; Leeds, H. Brown; Leicester, D. Ross; Liverpool, T. Morris; Manchester, F. A. Carmichael; Newcastle-on-Tyne, A. Potts; Nottingham, A. R. H. Cass; Plymouth, T. W. Facey; Sheffield, A. K. Charlesworth; Southampton, T. W. Dunning.

The business meetings were preceded by a dinner at the Holborn Restuarant on Monday, Jan. 13, at which Mr. Dalzell occupied the chair and there were present, in addition to the members of the Conference, Mr. J. Settle, Secretary's Office; Messrs. W. H. U. Napier, H. G. Trayfoot, and W. G. Lockyer, Traffic Section; and Messrs. R. Young, W. Webb, "Tony" Walker, A. Bathurst, W. H. Wight, A. Faull, F. W. Miles, G. Adams, C. J. Faunch, and W. F. Clements of the C.T.O.

The toast of "The King" having been duly honoured, a highly enjoyable programme was rendered as follows: Pianoforte selections, Mr. W. F. Clements; Songs, Messrs. J. Newlands, J. Bailey, W. G. Lockyer, A. W. Edwards, A. Bathurst, G. T. Archibald, T. W. Dunning, J. J. Kenny; W. Armour, and C. Clayton. Duet, Messrs. J. Newlands and W. G. Lockyer. Humorous stories, Mr. Walter Hudson. The playing of Mr. Clements at the piano, both in the brilliance of his solo selections and in the sympathetic rendering of the accompaniments was one of the most pleasing features of a very enjoyable entertainment. The company's thanks to the Chairman were suitably expressed by Messrs. E. C. Taylor and W. Armour.

On Tuesday, 14, the delegates assembled at 10.30 a.m., and the morning was spent in visiting the Galleries of the Central Telegraph Office. At 2 p.m. the Conference was opened by the Secretary, Mr. G. E. P. Murray, who welcomed the visitors from provincial centres, expressed the appreciation of headquarters for the satisfactory manner in which the service had been carried on during the war, and asked for the careful consideration by all supervising officers of those important problems which now arose under the title of reconstruction and which, when solved, would result, he hoped, in maintaining the position of the British Telegraph Service in the forefront for efficiency and public utility.

A paper was then read by Mr. A. W. Edwards, Assistant Controller, C.T.O., on "The best methods of overcoming the difficulties likely to be experienced in connexion with demobilisation," and a helpful discussion ensued.

On the succeeding days the topics considered were, "Traffic and Staff Returns," introduced by Mr. T. Morris, Chief Superintendent, Liverpool. "System of News Distribution, the best arrangements for dealing with evening Press work and the making up of Y.Q. News circuits," Mr. F. A. Carmichael, Chief Superintendent, Manchester; "The advantages of direct working in respect to speed and economy," Mr. A. R. H. Cass, Superintendent, Nottingham. "The training and selection of staff for superior appointments," Mr. W. H. Donaldson, Superintendent, Belfast. "The need for reducing noise in Instrument Rooms and for maintaining strict tidiness and cleanliness of equipment," Mr. D. Ross, Superintendent, Leicester.

Other subjects placed on the Agenda by various officers and dealt with without papers were: "The cost of delivery by telephone as compared with delivery by messenger"; "Delays in delivery and their causes"; "Special Staff arrangements at Race Meetings, &c."; "Co-operation between offices concerned before resorting to Casual Wheatstone working"; "Provision of spare parts for printing telegraph apparatus"; "Whether Baudot working should, as far as possible, be confined to Female staff"; and "Whether dirigeur allowances should be attached to duties or made personal to individuals."

At the conclusion of the proceedings on Friday evening a vote of thanks was heartily accorded to the Chairman on the motion of Mr. Morris, Liverpool, seconded by Mr. Taylor, Bristol, and supported by Mr. Newlands, C.T.O.

TELEGRAPHIC MEMORABILIA.

THOSE whose duties during the war have at times led them through many sheets of enquiries and complaints regarding the fate of telegrams, T.M.O.'s, &c., have frequently been amused by the freshness and originality of expression of many of the writers. Cramped handwriting, unconventional spelling and utter disregard of the Model Letter-Writer's instructions, they blurt out their complaints with a frankness and freedom born of a wider, freer life. Says one in concluding his letter ". . . and it just beats me how that Cable Order didn't get me, for the party I wrote to is sure to keep *her* word, and I send you) here a bit of the letter she wrote." Enclosed was a scrap of paper torn from a letter in a woman's handwriting, assuring "Dearest Tom" that she had already put the cable on the wire. Frequently these failures have been the result of military removals, and on urgent occasions, thanks to the prompt action of the Secretary, forms have been traced, rules beneficently over-ruled, and cash paid down with the promptitude of a bank meeting a cheque of a well-known customer.

One Canadian warrior, writing from France, in placing his complaint regarding a certain telegram, stated that he had handed-in the same at a London office! He was asked to specify which of the several hundreds of London offices, and replied:—"I can't say which *number*, but if you go to the Maple Leaf Club and look out of window down the street on to ——— Square, about 100 yards ahead, or it might be more, there you'll see it!" Whether anyone was deputed to go to the aforesaid club, "to look out of window" I cannot say, but with that desire to assist its *clientele*, characteristic of St. Martins-le-Grand, the handing-in office was correctly located.

Interest centres round demobilization naturally enough just now and the presence of an increasing quantity of Khakhi in the C.T.O. leads one to hope that ere long most of this attire will soon be exchanged for civilian suitings. Meanwhile letters from some of "ours" do not lead us to hope that all our absentees will receive their "ticket" at a very early date. From some there comes the information that the telegraphists will be amongst the last to turn their faces homeward from across the Channel. One hears that some have even taken their leave out yonder and have spent a busman's holiday in visiting the battlefields of other than their own units, and this by the friendly, if none too comfortable, aid of the sturdy motor-lorry!

Another signaller writes that the Army have started a small technical library at ———, and as he does not expect to be home for months, he and others have decided to sit for the C. and G. Examination, a branch of which it has been arranged to hold there in May next.

After demobilization comes re-construction and thoughts of the great to-morrows of post-war time. The aeroplane has already assisted the telegraphs with the latter's surplus traffic by carrying public telegrams to the continent, for the first time early in January of this year. The Telephone Repeater, developed during the war, is already installed on the Anglo-French circuits at Dover and on the Inland Trunks at Birmingham, Fenny Stratford and Chatham. Repeaters at London, Leeds, Bristol, and other suitable centres are to follow. It is understood that forked duplex Baudots will not be long delayed, probably without re-transmitters and in a simplified form which will be likely to prove a pleasant surprise for dirigeurs. The success of this phase of machine telegraphy should be assured as the system was tested experimentally in India and by means of re-transmitters has already proved satisfactory on the Londou-Paris Triple Duplex Baudot, two arms of which are forked at Paris on to Milan. There is not likely to be a more servere test than this on any purely British Inland circuit. The next few months is also to see the departure of quite a number of notables from the C.T.O., men and women, who have lingered on during the war

period to do their bit. It is hoped that their much-needed rest and retirement will fully requite such for any personal sacrifice they may have made at a time of national need. Rumours are rife, as to who will be the successors to the vacated thrones—alas for poor human nature—before their official ashes are cold! What is likely to be of more general interest, however, is the whisper that certain modifications of Treasury control are likely to become operative. By this means, Government Departments, may possibly have a more distinctive voice in their own developments although this would not of course mean that they would be without financial control.

The newspapers, comic and serious, have again been butting at the Telegraph Service, which in peace time would certainly have more than deserved these by no means ill-humoured castigations. These criticisms are, however, typical of the ignorance of the general public, and even of some of the technical press regarding the very specialised training necessary for first-class telegraph work, and the very heavy handicap under which the Government Telegraphs has been labouring. It would not be too much to say that no private telegraph company in these islands has been deprived of so large a proportion of its expert telegraphists as the national telegraph service of our country. This does not, however, prevent us enjoying the latest music hall "gag" of the business manager who, upon hearing of a railway accident exclaimed, "That's a horrible nuisance. I shan't get my *telegrams* now!"

On the last day of 1918 Mr. T. P. Mullane, Assistant Superintendent of the Cable Room, retired on pension after more than 40 years of telegraph service, having passed into Government employ at the transfer of the Anglo-French, Belgian, Dutch and German cables to British Government control. He was a quiet unassuming man of ability, of no mean literary capacity and of real knowledge, and leaves a gap not perhaps fully understood by men of a younger and more strenuous generation. That he may find in retirement that real rest and *re*-creation in further scope for his meditative and philosophic activities on men and things is the sincere wish of his late colleagues.

Every C.T.O. member will add his or her congratulations to that of the Engineering Department's officers to Mr. James Fraser, executive engineer, now of Aberdeen, and so well-known among 'Slingo' students, at the award of the 1914 Star for services in France during September and October of that year. Cable Room telegraphists and one or two T.S. specialists will recognise the Undulator circuit installed at that period "when the French Government had to leave Paris hurriedly."

The Star was awarded to Mr. Fraser quite exceptionally as a mark of military appreciation and recognition of civilian services rendered.

It is satisfactory too, to learn that Messrs. Lambert and Samuel of the Inland Section C.T.O. and Miss Shell, loaned to T.S.F., are to receive war honours for services rendered. The two gentlemen mentioned have done excellent work in connexion with Creed working, while Miss Shell modestly declares she doesn't deserve it. Anyway those who have watched her many years of consistent working think otherwise.

A most generous response to the Red Cross appeal was made by the ever generous C.T.O., whose "Our Day" collection reached a sum, including that collected by the Cable Room, well in the neighbourhood of £200.

The much respected Mr. A. Eames, formerly Controller of the Central Telegraphs, paid a flying visit to the office towards the close of last year, but upon being questioned, frankly and swiftly replied that he had no desire to return to the turmoil!

The above two items are admittedly somewhat belated in their appearance in these columns, and should at least have appeared in last issue. Their omission may be traced to the writer and thence in close connexion with the now, it is hoped, moribund epidemic.

Considering that the number of officials employed at the C.T.O. runs into thousands of both sexes, it is gratifying to find that despite the strain and stress of the war, few of the many hundreds of cases of the pest have terminated fatally. Among these, the deaths of Messrs. E. Castelli, Knight and Looker of the Cable Room, and Messrs. P. Scarfe and H. Wright of the Inland Department may be noted with special regret. The health of the two last mentioned had already been undermined by their recent military experiences; Mr. Castelli had never recovered from the effects of the Abyssinian campaign through which he served with the Italian Army many years ago, while all those who had watched Mr. Looker during the last year or two had become convinced of his failing health.

As these lines are penned, the exodus of the Belgian telegraphists from the Cable Room is all but complete, and by the time they appear in print the last half-dozen of our allied friends and helpers will have returned to their native land, there to assist in a re-construction unprecedented in telegraphic history. At the present juncture their absence will be felt very perceptibly. Many of them had acquired the highest standard of excellence in Baudot manipulation and the majority were able Hughists. One and all have expressed the mingled feelings of joy and regret at leaving our hospitable shores. Some return to devastated homes which the remaining years of their official lives will ill-suffice to re-establish, some there are whose relatives have been scattered and whose fate is still unknown, some just managed to escape from the invader with wife and children, while others, so long has the war lasted, are returning with children who will see the land of their fathers for the first time.

Sad is the case of one or two who had grown grey in their country's service, and now in the eventide of life, in the ordinary course of events would have been resting from their labours. Save for the delight at the coming restoration and the hope which that restoration foreshadows for Belgium and for those near and dear to them yet remaining, there is little enough to which to return.

Reviewing the four years' exile of the Belgians into our midst and their return, the curious and reflective are anxious to know what impression the British Telegraphs have left upon our allies. What do they think of our organisation? What of the staff? What of the supervision? What of the discipline? Several Belgians who acted as telegraphists were actually in administrative or supervising positions in their own country, and were on the look out for new ideas and suggestions. The magnitude of the London office amazed them one and all. The catering arrangements struck them as crude, but then the British, rightly or wrongly, are presumed to be naturally weak in this direction! Staff holidays appeared good. Payment for overtime was somewhat of a novelty, although they soon discovered that working seven days per week it became readily possible to have too much of a good thing. On some points they were shy of giving an opinion, fearing to offend. For the multiplex and other types of machine and fast-speed telegraphy, their experts expressed unfeigned admiration, and more than one official has taken back with him added knowledge which may prove very useful in a land severely deprived of telegraph conductors. They appreciated to the full the good comradeship of the staff towards them, and more than one personal invitation has been made for the early peace period. Knowing the weaknesses exhibited during the last three years and more, weaknesses largely inevitable in war-time, it is hoped that our visitors will not accept the late period of national stress as a criterion of the best that can be done by the largest telegraph office in the world. They have seen us doing our simple duty to the State, day by day and night by night. They have been with us in peril, and through all the various crises of the war, and we think they have seen too that, even through days of depression, the hopeful note for Belgium's final emancipation was always dominant and in the blackest hour our hearts have never quailed. They may even recall a grim joke or two of the air-raid nights. The rest we leave to that complete charity which never faileth.

A technical expert from one of the electrical reviews writing recently, after a visit to the Royal Air Force depot at Farnborough, remarks with enthusiasm upon the greatly enhanced value of aerial observation due to wireless telegraphy and upon the immense advance made with the developments of the wireless types of both telegraphy and telephony since the war. These together with the already well-proven fact of telephonic communication between plane and plane, while in flight, will doubtless form yet another field for the more adventurous spirits of our telegraph service in the very near future of the daily aerobus service.

Students of electricity will keenly appreciate the following war-incident which occurred at Jacksonville (Florida) during 1918. It had been arranged by many of the Florida towns to stand to the colours at 6 p.m. each day. The tramway authorities readily agreed and with more patriotic zeal than engineering foresight gave orders to stop all trams on their routes promptly at the indicated hour. This arrangement had to be modified to the extent of arresting the traffic in three groups, viz. at 5.58, 6.00, and 6.02 as, quite naturally, when the original plan was carried out the engines at the power station nearly raced themselves to destruction, and their American engineer to dismissal!

J. J. T.

"MUCH ADO ABOUT NOTHING."

IT is a pity that "Our Miss Luffman" is of so retiring a disposition. It required much insistence to bring her forward to receive the well-merited ovation accorded to her at the close of the performance of "Much Ado About Nothing" by the members of "I. K. Klub" at Cripplegate on Feb. 13, which she had so admirably "stage-managed."

It was agreed by all who witnessed it that this latest production was the best they had yet done. Any apprehension which the members of the club may have felt as to the wisdom of engaging Cripplegate Hall must now be entirely allayed. There is no question as to the unqualified success of the whole entertainment. T. S. has always been full to overflowing with talent of all kinds and it should be inspiring to the younger as it is gratifying to the older members of that unique Fellowship—"TS-ites" past and present—to have such proof positive that the old traditions are so well maintained.

It is an unthankful task to select for special mention any one actor from such a company of "Stars," but the "Leonato" of Miss Tynan in our opinion calls for such mention as a dignified and stately rendering of a fine part, ably supported (in the fourth act) by the spirited acting of Miss Rose Russell as "Antonia." The perverse and provoking Beatrice of Miss N. Nicholls was a very charming compliment to the equally perverse and provoking Benedick of Miss G. Mathieson who played it with all the breeziness and vigour usually associated with her performances. When it is recorded that Miss Dolly Dawe and Miss D. Atterbury were Dogberry and Verges respectively nothing more needs to be said. Laughter and applause followed as a matter of course. Miss Amy Hodgson's Don John inspired such aversion and contempt, as was, of itself spontaneous praise, and the calm serene bearing and speech of Miss Ellen Bentley as Friar Francis, was in admirable contrast to the display of passion that followed the interruption of the marriage scene. The "Hero" of Miss Douthwaite, Claudio of Miss Redding, Don Pedro of Miss Walters, and in fact all the other characters were well played, every part showing evidence of close study and hard work. How it could all be managed under present office conditions is a secret, known only to those who did it.

We must not omit to mention the two pretty dances, nor the effective singing of Miss Edith Gourd as Balthazar.

"Ourselves" also are to be congratulated on the beauty of the costumes, and the delightful colour schemes, which were greatly enhanced by the scenery.

We learn that the financial result was a sum total of £50 for St. Dunstan's.

LONDON TELEPHONE SERVICE NOTES.

WE tender to Mr. Greenham, one of the Assistant Superintending Engineers for London, congratulations on his appointment to a Membership of the Most Excellent Order of the British Empire (Civil side) and to Lieut. W. F. Dobson of the L.T.S. on a similar distinction on the military side. These are certainly instances in which "titles of honour add not to his worth, who is himself an honour to his title."

The same can be said of those ladies and gentlemen of the Supervising and operating classes whose names appear amongst the medallists of the Order. A full list is to be found elsewhere in this issue.

The number of awards to members of the L.T.S. for war services abroad continues to increase, amongst the latest published being a D.C.M. to Mr. G. Buckeridge who has now returned to take up his civil duties. Other members of the Traffic Branch who have recently returned are Captain H. A. Berry and Sergt.-Major Collins of the Civil Service Rifles as well as Messrs. R. T. Gregory, T. A. Beck, F. T. Howe, J. T. North, C. W. Semaine, A. G. D. Cracknell and T. A. Mason. On the Accounts side we are particularly glad to welcome Mr. M. Larkins.

The annual collection on behalf of the Civil Service Life Boat Fund reached £45 8*s.* 4*d.*, an increase of nearly £6 on the previous year's figure. The Secretary of the Fund in acknowledging the contribution says that during 1918 as many as 30 lives were saved by Civil Service Life Boats.

The staff of the City Exchange arranged an excellent concert at the Bishopsgate Institute on Wednesday, Jan. 29, in aid of the War Seal Foundation for Wounded and Disabled Men. The artistes were all members of the L.T.S. or their relatives and their contributions were all very much appreciated —encores were the order of the evening. Successful as the Concert was as a social function it was if possible a greater success financially for the Fund benefited by no less than £45 as a result. The Committee which included the Misses E. Nicholson, G. Fuller, M. Worz, W. Alstin, G. Mynott, with Miss H. Bennett as Hon. Secretary are to be congratulated on their efforts from every point of view. Mr. Roberts, the Secretary of the Fund, was present and gave a short address at an interval in the programme.

The Telephone and Telegraph Society held a meeting on Jan. 20 when two interesting papers were read. The first entitled "Palestine in War Time" was from the pen of Mr. Leon Simon, of the Secretary's Office, and he had some excellent lantern slides by way of illustration. Mr. L. T. Horne who was in the chair introduced the lecturer and cited an instance in which his intimate knowledge of Yiddish had proved of advantage to the Department in the revision of public notices. The lecturer presented pictures of several of the Jewish Settlements in various parts of Palestine and gave an account of the progress made. The subject is evidently one in which Mr. Simon is keenly interested and he did not fail to communicate that interest to his hearers. On the motion of Mr. Valentine a hearty vote of thanks was accorded to him.

Mr. W. S. Austin's paper which followed gave the life history of a Postage Stamp and was succeeded by a discussion. The attendance at the meeting was again very poor and it is to be hoped that the conditions next season will result in a marked improvement in this respect.

The Telephonists' Society postponed their meeting advertised for Jan. 29, and after two subsequent postponements it was finally held on St. Valentine's Day, but postponed meetings are seldom well attended and this proved no exception to the rule. But although the number present was small for one of these meetings the fare was as good as ever. Excellent papers were read by D. M. H. Bott of Western and Miss G. L. Williamson of Dalston. The first paper entitled "A Joyous experience (?) of the Past" dealt with life during air raids and although at first sight one might imagine the query mark misplaced there were incidents recounted which perhaps after all justified its present position—at least that was our impression. Miss Williamson's paper on "The Human Touch" was extremely well written and was much appreciated. We hope it may be possible for both to appear in the JOURNAL. After the papers had been read the Prizes were presented by the President in the absence of Mrs. Valentine who had kindly undertaken that task but was prevented by indisposition. A vote of thanks to Mr. Valentine was passed with acclamation and he was asked to convey to his wife the regrets of the meeting at her absence and the earnest hope that she would soon be quite well again. Spirited recitations were given by Miss J. Hatherley and Mr. J. Hinshelwood and the gathering dispersed after the results of the election for officers had been announced. The President elect is Mr. E. A. Pounds and he is supported by a strong committee so that the Society should have a good session next year. The retiring president is to be congratulated on carrying the Society through what has probably been the *most* difficult session and having that fact notwithstanding secured an increase in membership on the previous year.

Everyone is now looking forward to the final meeting of the session, when Mr. John Lee's telephone phantasy, "The Transformers," will be given at the Cripplegate Institute. A full account of this will appear in our next issue.

OBITUARY.

The Newcastle District Office has sustained a loss by the death of Mr. METCALFE GODDARD who died on Feb. 7, aged 27, after a very short illness.

He had been attached to the Newcastle District as a Clerical Assistant since December 1911. The funeral which was attended by the District Manager on behalf of the staff, who sent a beautiful wreath, took place at Harton Cemetery, South Shields, on Feb. 12.

THE POSITION OF UNEXPECTED HAPPENINGS.*

BY M. A. TYLER (*Telephonist, City Exchange*).

THE Information Desk, as its name implies, is the section of a Telephone Exchange where applicants receive information and advice upon all matters connected with their telephones. Here the subscriber takes his troubles, and many and varied as they are, whether of faulty apparatus, inefficient service, or directory difficulties, he expects (and generally not in vain) to have them cleared away.

Here also exists an interchange of information between supervisors and monitors, which establishes better service for subscribers, and the correction of apparatus and staff troubles.

The monitor who can by comprehensive knowledge, tact and diplomacy cope with this work, has the satisfaction of having poured oil on many troubled waters, made "rough places plain," and conjured up good humour and satisfaction in the place of irritability and annoyance.

There is another section of this desk of explanations, however, which differ in all points from the miscellaneous and complaint work, namely the "pegged number positions." To both monitor and subscriber alike, the work here executed is irritating and unsatisfactory. The subscriber experiences an unexpected, and unpleasant termination to his call; and the monitor has the thankless task of continually giving disappointing advice —of sending a succession of supplicants "empty away."

Perhaps of all present-day workers, the war-time grocer's assistant can most fully sympathise with the luckless monitor, for both know the unpleasant leaden atmosphere created by unavoidable repeated refusals to the demands of the public.

It is the object of this paper to deal with the difficulties of this particular section of Enquiry work, and to find if possible some practical remedies.

It would be well to view the work first from the subscriber's standpoint, as comprehension of his attitude throws much light on the difficulties which the monitor has to surmount.

After passing his call to the telephonist, the subscriber waits expectantly for the number. An interval elapses; then the unexpected happens. He hears a faint voice announcing the name of an Exchange, and querying the number he is wanting. "More delay on this wretched 'phone—that idiot of a girl," and many other like thoughts flit through his brain. He hurls out the number anew, adding remarks peculiar to his temperament, and calculated to answer the double purpose of relieving his feelings, and showing his scorn of the Telephone Service in general.

Then certain official advice is forthcoming, generally more or less unintelligible, but by continual reiteration the fact at last dawns on him that he cannot get on to his number. In any case that which he expected is denied, and he has to take new measures to get into communication with the people required.

His attitude differs in the extreme from that of the subscriber dealt with on the miscellaneous complaints section. He expects a number, not an exchange official. He knows no reason why his call should be intercepted. He resents the repeated query for his number. He is averse to questioning, suspicious of change, and very loth to alter his fixed conviction that, because the number was available in the past, it is still to be had in the present, and must remain so while shown in his directory. The conservatism so characteristic of the British race, its capacity for holding on, and its aversion to the unusual and unproven, all go to build up the wall, against which the monitor on Pegged Numbers finds herself.

Her work would be much easier if she had to deal with a public less sceptical and more adaptable to change.

The troubles of the monitor are principally four-fold. Firstly, difficulty in hearing, secondly in making herself known to the subscriber and eliciting the number required, thirdly in getting him to understand the necessary advice, and fourthly in flashing the telephonist to make registration adjustment and complete the calls.

The faintness of the Pegged Number positions being due to double connexions, is apparently inevitable. Only one acquainted with the intricacies of electrical engineering, would be able to deal thoroughly with this point.

In numerous cases, however, this hearing difficulty proves a serious handicap to the monitor both in the preliminary stages, and throughout the call; and it is exasperating to the subscriber who is ignorant of its cause. The strain of hearing, so continually attendant on this pegged number work, gradually saps the nervous energy of the monitor, and undermines her powers of interest, patience and endurance.

The task of revealing her identity to the subscriber, and persuading him to repeat his number, is that to which the monitor has first to give her attention. She repeats the formula "—— Exchange, what number are you wanting please?" Very often she addresses a blank, because the call originates at a Private Branch Exchange, and the telephonist is not in circuit. This means time wasted and labour lost.

Again, if the subscriber is on the line he does not hear, or comprehend the salutation. The sentence is repeated, and by dint of perseverance and careful listening, at last the number is ascertained. Frequently the subscriber believes himself to be speaking to his usual telephonist, and it is as well she does not hear his opinion of her!

The salutation used in this connexion is extremely important, but will be again referred to when dealing with the standard expressions.

* Paper read at a meeting of the London Telephonists' Society.

We now come to the third stage—that of giving the necessary advice in such a manner that the subscriber accepts the same without demur and is assured of its reliability and correctness.

Here lies the test for the monitor. She will eventually overcome hearing difficulty, she can, by knowledge of his peculiar position, condole with the subscriber who does not understand the delay; but when he will not listen to, or believe the information it is her duty to give, her patience and cheerfulness are taxed to the uttermost. At this juncture it is not to be wondered at if a few uncomplimentary epithets flit through the monitor's brain, but in her case they have no outlet or safety-valve in unrestrained speech.

She finds her stock of expressions inadequate to convey the correct impression to the brain of the subscriber. His thoughts are occupied with his own line of business and are not readily adapted to things telephonic.

For instance, the expression "There is no subscriber working on that number" seems to draw a mental picture of a man in overalls tinkering at something down a hole in the pavement, or mending wires at the extremity of a pole, so often is the answering remark "What do you say ?—someone working on the line ? I will ring up later."

Then frequently the subscriber flatly contradicts the advice, or makes numerous enquiries as to dates and details of the cessation, removal, or change of number, as the case may be. To satisfy such queries in an amicable manner and at the same time to maintain a correct position, officially, and within the prescribed expressions, is for the monitor a task requiring much delicacy and tact.

When this is accomplished she has to terminate the call, by flashing the telephonist and giving her advice as to its ineffective nature, or that it may be diverted to another number. With the co-operation of the telephonist this should be the easiest part of the monitor's work. It is not without its difficulties however.

The flashing of the keys often sets up a noise in the receiver, like a succession of miniature reports, and the voice of the telephonist entering circuit is scarcely perceptible. Sometimes this noise is so acute that it apparently numbs the nerves of the ear, for after its occurrence the difficulty in hearing is noticeably accentuated.

As this flashing bears directly upon the registration of calls, and therefore concerns the interests of both the Service and subscriber, it would be well if engineering steps could be taken to render the manipulation of the keys easier and more effectual.

Having now dealt with the difficulties of the Pegged Number positions, it is time to consider in what manner they can best be lessened or avoided.

As the laws of evolution apply to the Telephone Service in common with all human affairs, one cannot foresee a time when the Pegged Number position can entirely be dispensed with. Therefore, it is necessary to remedy its difficulties as far as possible.

The first and last points, those of hearing and flashing trouble, must be approached from an engineering point of view, and they therefore lie outside the range of this paper.

The two intermediate stages of the work can more thoroughly be discussed as the solution is to be found in the monitor—her attitude and resources. It is most essential that she should be fresh, free from nerve strain, and continuously interested and cheerful. Otherwise she cannot give satisfaction to the subscribers, or convince them that what she says and does is in their interest.

To maintain this attitude for any number of hours on one class of work (and that, one of giving unsatisfactory advice) is most difficult. If the Pegged Number Circuits were divided out on the Miscellaneous positions, and classified as such, each monitor at the desk could take her share in this work. The monotony and consequent fatigue would then be broken. Change is as beneficial as rest, and after dealing with an "A" complaint, or tapping a line for a monitor, a Pegged Number call is much less trying. It is also attended with better results for both Service and subscriber, than one taken after say two hours of continuous Pegged Number work.

Secondly the monitor must have at her disposal expressions that will quickly and clearly indicate the position to the subscriber. At present the information conveyed by some of the expressions seems to be inadequate.

The salutation now used does not inspire confidence, and is too long if it is to be wasted on a blank line, or spoken to uncomprehending ears. The subscriber believes it to be spoken by his telephonist, and concluded that she has forgotten or omitted to connect his number.

On the other hand he has often an astonishing faith in the word "Supervisor," as work on complaints constantly reveals. Whenever telephone ills attack him he flies to the Supervisor as to an antidote. Surely then when he has to be dosed with the unexpected, it were best to let him know he has a Supervisor intercepting his call.

It is a fact that when the salutation "—— Supervisor" is given, the subscriber nearly always gives the information as to the number he is wanting, without any query for it. If he should not do so, the second clause could be added "what number are you wanting please ?" The answer is generally given without hesitation, and also without any additional remark. In most cases if a remark is passed, the subscriber, knowing to whom he is speaking, makes it more in the nature of an appeal. To the monitor this is infinitely better than the constant flow of invectives now received.

The expression used to intimate the cessation of a number, namely "There is no subscriber working on that number now" is, as has before been stated, a general stumbling-block. The first half is passed unheeded, but the last phrase "working on the line" is caught up and misconstrued. Very seldom is the official conception of the word "working," understood by the subscriber who hears it for the first time. Possibly such expressions as "That number is now disconnected," or "The subscriber has given up that telephone" would be more explicit. If in the latter expression the word "that" leads to an inference that the subscriber in question may have another line, it is quite within reason to ask the enquirer to refer to his directory.

For a spare line the advice "There is no subscriber working on that number," also seems inadequate. It is never taken without remark, and often such expressions as "There is no one on that line," or "That is a spare line" have to be resorted to. This is suggested as likely to meet the case —"2470 is a spare number, will you please refer to your directory ?" There should be emphasis on the word "spare." The repetition of the number in this case dispels the doubt of the wrong one having been taken, and conveys to the subscriber the impression that the number about which the monitor is speaking, is undoubtedly the one he called for.

The expression "The line is temporarily out of service is another puzzler to the un-initiated. Often it is taken to mean "out of order," and required further explanation. It is suggested that the following is more convincing "The line is temporarily disconnected, I am sorry I cannot connect you."

The advice given for change of number could not very well be worded in a better way. When this is ignored or questioned it is undeniably the fault of the subscriber who insists on adhering to the old number, culled from bill-heads, note-paper and out of date directories.

For instance, the number of the Enquiry Office at Charing Cross Station has been changed for over a year, yet daily and almost hourly are calls passed for the old number. It seems as if the only way to make the public accept the change, would be to advertise it on the front of 'buses, or on screens at various places of amusement ! We say "Try this, that, and the other dental cream, &c., why not say 'Try Regent 2861 for Charing Cross Enquiry Office ?'"

To sum up the question of "the position of unexpected happenings": —The need of it is manifest, the attitudes and temperaments of subscribers are outside its control, but the efficiency of the monitor and her methods of advice, must be its salvation.

To this end the above suggestions are put forward; for the adequacy of service, satisfaction of subscribers and the interests of the staff, are attainments to which all members of the London Telephone Society aspire.

POST OFFICE HOSPITAL.

A concert arranged by Mr. A. G. Ferard (the 214th of the series and one of the most successful) took place on Jan. 17 and the programme given was of an unusually high order even for these functions. Mr. Gervase Elwes was magnificent in songs by Handel and Roger Quilter and Miss Flora Woodman gave delightful renderings of airs in the classical style. Mr. S. J. Ching played a Etude by Liszt, and after two piquant recitations by Miss Gertrude Tomalin, and the much appreciated glees of the Gresham Singers, a farce by Miss Jennings entitled "The Bath Room Door" was presented. Mr. Cecil Forster as the Young Man, Miss Sylvia Trollope as the Young Lady, Mr. A. G. Ferard as the Elderly Gentleman, Miss Agnes Ferard as the Prima Donna and Miss Hurn as the Charwoman acted with great verve, the chief burden of the performance falling very lightly and happily on the shoulders of Miss Ferard and Mr. Forster. The entertainment concluded by a wonderfully good display of conjuring by Mr. Alan Adair.

A final concert on Jan. 24 organised by Miss G. Lewis was entirely successful, thanks to the singing of Miss Kathleen Sinnott, Miss May Peters, Mr. Joseph Beckett and Mr. Sydney Phelps, no less than to the dancing of Miss Mabel Cruickshank, and the recitations of Miss Eleanor Lewis. Mrs. Bert Clark gave three excellent violin solos, and Mr. H. Coleman a solo on the piano besides undertaking the work of accompanying. Lastly an Artful Dodger appeared in some of his Artful Dodges.

The Hospital was closed on July 3. Resolutions of thanks were passed by the Committee of the Fund to the owners of the house occupied by the Hospital, to Miss F. Awdry, Honorary Superintendent, to Dr. Sinclair and Dr. Kenneth Lund and to Sister Walker and the staff for their valuable services. They also expressed their gratitude to the eminent artists, members of the staff, and friends who have contributed so much to its success during 4½ years.

Our Chicago contemporary, *Telephony*, published recently the following paragraph headed:

"MODEL POLITENESS OF JAPANESE TELEPHONE OPERATORS."

We imagine the reverend gentleman must have been pulling somebody's leg; and we can rest assured that the phrases mentioned will not find their way into the American list of standard expressions.

During his recent visit to Los Angeles, Cal., Bishop Lawrence, of Massachusetts, had occasion to comment on the politeness of the hotel employees there, adding that he supposed it was because they were so used to catering to tourists. He particularly commended our telephone service, but added that when it came to real politeness the telephone system in Japan had the world beat. According to the bishop, a Japanese telephone conversation runs something like this:

"What number does the honorable son of the moon and stars desire ?"

"One, two, three."

Silence. Then the exchange resumes:

"Will the honorable person graciously forgive the inadequacy of the insignificant service and permit this humble slave of the wire to inform him that the never-to-be-sufficiently-censured line is busy."

The Telegraph and Telephone Journal.

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

Editing and Organising Committee - - { MR. JOHN LEE. MR. J. W. WISSENDEN.

Managing Editor - - MR. W. H. GUNSTON.

NOTICES.

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

VOL. V. FEBRUARY-MARCH, 1919. No. 51.

GENERAL POST.

THE coming year—the first of the new era after the Great War—will be one of many changes. We shall lose many of our old and tried colleagues who have given readily of their best during the stress of the last four years and have risen to their country's need at the expense in many cases of a postponement of hardly-earned and much-needed retirement to the rest of private life. Others have joined new departments of State and will not return to their old haunts: To the latter we wish godspeed and every possible success in their new spheres.

The Telegraph and Telephone Services will suffer considerable loss, in addition to the large numbers of Postmasters and others who are due to retire. Among others Mr. H. S. Carey, Second Secretary; Sir William Slingo, Engineer-in-Chief; Mr. John Newlands, Controller Central Telegraph Office, and Mr. J. Bailey, Deputy Controller Central Telegraph Office, will retire; and incidentally, it is a singular testimony to the democratic character of the Post Office in the past that the three last-mentioned officers all began their careers in "seventy" and "seventy-one" as telegraphists. Their ripe experience will be missed and their places will be filled by others who will have still to prove their capacity to deal with the familiar puzzles of the past and yet will have to face the pressing needs of the present year of reconstruction and those vast problems which are seen looming in the future. We, who love the sister technical services, build our hopes on the prospect that the right men will be found to be in the right places and fully capable of meeting all the twists and turns of the road of progress.

The General Post which will follow the many staff changes will not profit us all to the same extent, but we trust that the staff generally will loyally support the new chiefs and that they will at least do nothing to hinder the progress of our arts and crafts.

History has proved that the baton of an Engineer-in-Chief and a Controller of the Central Telegraph Office is in the knapsack of every telegraphist and it is up to the knapsack owner to see that it does not get lost in transit.

LONG DISTANCE TELEPHONY AFTER THE WAR.

Mr. SIMON when reading his paper on "Palestine in War Time" before the Telephone and Telegraph Society of London, apologised for the slight connexion between his subject and those which interested the Society. There was however one passage which struck us very forcibly as we listened to it, and that was the matter-of-fact statement that there was a telephone system at Jerusalem with trunk communication with Jaffa and also with Kantara 300 miles across the desert. This gives much food for thought. Turkey in Europe itself has not long boasted a telephone system. Turkey in Asia was only promised one, Persia has none worthy the name, and so on through the classic regions of Asia. Yet no sooner is Palestine drawn into the vortex of the most unspeakable of wars than telephone systems arise in holy cities and telephone poles blossom in the waste places. We are not of course under the illusion that the Arab and the Jew were provided with the benefits of a commercial telephone service; we are well aware that it was installed for military purposes. But the fact remains that those exchanges and those trunk lines were constructed very rapidly when the needs of war demanded them, and we are wondering how long Baghdad and Bassorah would have had to wait for the telephone if the military authorities had not installed them before the conclusion of Peace.

We are not arguing that a military dictatorship would be the remedy for all telephone ills. Nor do we hold up lines constructed hastily for military purposes as patterns to be adopted for a permanent commercial service. Far from it. The development of the telephone systems of Europe has been in a state of suspense during the war; the projected connexion of this country with Holland was deferred, and long distance telephony generally received a set-back. Yet, speaking without official knowledge, we doubt not that Cologne enjoys a temporary telephonic connexion with London for Military purposes that it did not for practical reasons attain after years of pre-war negociation.

Nevertheless the last four years have not passed without important developments in long distance telephony and the introduction of the thermionic valve or telephone relay for commercial purposes will effect wonders in extending the range of the Anglo-Continental service. We hope to publish in our next issue a paper by Mr. A. B. Hart of the Engineer-in-Chief's office on the subject of these "valves."

We think these phenomena provide an object lesson and point a moral. It is a common observation that millions can be found for war more easily than thousands can be got for much needed developments of the Arts of Peace; but we think Governments have learned their lesson. The needs of the telephone system are great, the will to develop it is strong in the Service, and generous

provision for the Service will effect incalculable good. We look forward with high hopes to an intensive development of the system at home and wide extensions of long distance telephony not merely ancillary to the purposes of war, but rather to promote and facilitate that brotherhood of nations which is the best preventive of war.

HIC ET UBIQUE.

"YESTERDAY," says the *Newcastle Chronicle* of Feb. 12, "a message was got through from a Northern military centre to Cologne in half an hour." This is very interesting; but what follows is still more so:—"In pre-war days the time taken in connecting up between Newcastle and the German town occupied about an hour *if one could get through at all.*" We want to know what was considered by our contemporary a good average time if one couldn't get through at all—as was, of course, the case.

MR. HAVELOCK WILSON, M.P., writing in the *Empire News* of Manchester, talks of men who were in the telephone service when it was a private concern. The average wage, he says, was £4 to £5 a week! "But the State took control. The wages dropped to £3 a week—and the public has got a rotten service."

Need we comment on such facts, such figures and such an inference? We reproduce them more for the amusement than for the instruction of our readers.

MR. E. V. LUCAS in *Land and Water* says: We all, I suppose, have our own idea as to what they are like, whether Gerrard, Central or Pad. There must at one time or other have been photographs in the *Strand Magazine*; but I missed them, and, therefore, decline on a vague vision of machinery and ear-wired ladies. A friend is more definite: "A large building," he describes it, "like Olympus, the roof lost in darkness and pallid women moving about spinning tops and blowing penny trumpets."

I want to understand the whole telephone system. I want to know why sometimes the operator instantly says "Number, please," and why sometimes there is an interval of—well, not hours, but certainly minutes. Where is she meanwhile? I want to know how the operators all get to speak exactly alike. Women can be very imitative, I am aware: the chorus girl's transition from Brixton to the Savoy can be as natural as the passage of dusk to dawn, and a change of accent is usually a part of the phenomenon; but it is astonishing how the operators of the different exchanges resemble each other. They cannot all be one and the same.

But does Mr. Lucas really want to know? When the mystery is solved it ceases to charm; and it is difficult to sport delicately and with wistful humour amidst matter-of-fact problems of which you are in possession of the key.

"Some unusual charges to operating expense," says *Telephony* of Chicago, "were revealed in a recent rate application of a telephone company operating some 600 telephones. The public service commission before which the case was brought naturally excluded all of these items but it stated that there remained many others about which there was serious question.

After scrutinising this list, the necessity for strict compliance with the accounting classifications will be readily apparent to the manager of even the smallest company: The list includes

	Dollars.
Gave Democratic central committee	5.00
Paid Earhart for fixing Ruth's glasses	1.00
Donated to Masonic supper	1.00
Gave Ma	5.00
Check to Sis	10.00
Started 2-cent Christmas fund for Ma and Ruth	9.60
Raid for Harris, F., and A. M. initiation fee	10.00
P. and P. July Juice	3.40
Frank Armstrong, for five pigs	37.73
Big puff in *Star Journal*	10.00
J. F. Reid, pig feed	3.58
Have given Harris and Lola at different times recently	25.00
Loaned Charles Bell	10.00
Carl Bullard, two shoats	40.00

Perhaps an examination of the books of some other small operating telephone companies would reveal similar charges in operating expense. We hope not.

Do not imagine, reader, that we quote this as an argument in favour of State as opposed to private control. We quote it simply as a sidelight on artless and inconsequent business methods. We do not know what a shoat is, and can only make dark guesses at signification of "July juice" in a "dry" country. What we like best is the approximation of the cost of a "big puff" in the *Star Journal* to the price of pig feed.

Ingenious people in the *Express* have been proposing substitutes for two; three and five, numbers notoriously difficult to pronouce clearly on the telephone. One writer comes forward with "tri" and "cinq" but, as an "Operator" points out, the first would be confounded with "Try" and the second with "Thanks." If on the other hand cinq is pronouced "sink" it is liable to confusion with six. Another correspondent is in favour of "deuce," "trey" and "quint," the first two of which, he says, are in common use among card players of all classes. Not all classes, we think, especially as regards "trey." These suggestions remind us, somehow, of the fancy-costumier who reproved a client for calling Henri IV "Henry the Fourth" instead of "angry cat."

The statement that telephone operators sleep or play cards during the night has been officially denied. So far, so good—but now we want to know how some of them employ themselves during the day.

Passing Show, Feb. 15, 1919.

We thought that it was a matter of common knowledge that telephone operators only read novels, do knitting, gossip about their best boys and flirt with subscribers during the day, and that His Majesty's honours and decorations were really prizes for the best specimens of knitting and crochet. What we want to know is why journalists employ their time in cheap jeers at hard working public servants who are not allowed to hit back. Do they really get paid for it?

WE regret the necessity for holding over many interesting articles. The demands on our limited space are very heavy at present, and we have had, since the beginning of demobilisation, a gratifying increase in the number of contributions received, and other indications of a "certain liveliness" in civil activities.

POST OFFICE RELIEF FUND.

We reprint some extracts from letters of thanks received by Mr. Ferard from repatriated prisoners:—

I am sure every prisoner, no matter how long in captivity will never, never forget the Committees who did all in their power to help us. I feel too full for words of thanks. I am sure we owe our lives to you, for the amount of food that was issued by the Germans would never have kept us alive over six months and I think it will be a very hard task for us to try and repay you.

Now that I am once again in dear old "Blighty" I feel I must write a few lines to show my appreciation of the very good work which you and your Committee have carried on so long. I myself would have fared very badly had it not been for your parcels, and I feel sure they were my salvation. Most of the time in Germany I spent working in a salt mine, where I found things to be very rough. The little food given us to do such hard work on was not fit for human beings. So you can imagine how thankful I was when I received such lovely parcels. . . . I am sure I should have returned from Germany a total wreck had it not have been for the kind thoughts of those at home.

Having just returned from Germany, I am writing this letter to try to convey through you to the Post Office Relief Fund my gratitude for the manner in which my food parcels were dispatched to me. I may add that I have been lucky as I only lost six parcels from the Fund during the whole of my captivity. The contents of the parcels were all that could be desired.

Now that I have arrived safely in England after having spent four years in Germany I feel that I must thank you for all the parcels of food that you and all the subscribers to the postal relief fund were so kind to send to me. You can guess that two issues of cabbage and plenty of water per day was not very fattening. Consequently the P.O. parcels were always our main solid food and being varied as they were it was better for us, the contents were always greatly appreciated.

Now that I am once again in Dear Old England I feel it my first duty to write and thank you for the splended assistance that you so regularly afforded me during my four long years of captivity. I cannot put into words my deep feelings of gratitude towards you and all that subscribed so regularly to the Post Office Relief Fund, but I am sure that all other postal servants that were interned would join me in saying that we owe our return to the Fund so splendidly organised by you, which has often been the means of saving us from starvation.

PALESTINE IN WAR TIME.*

BY LEON SIMON.

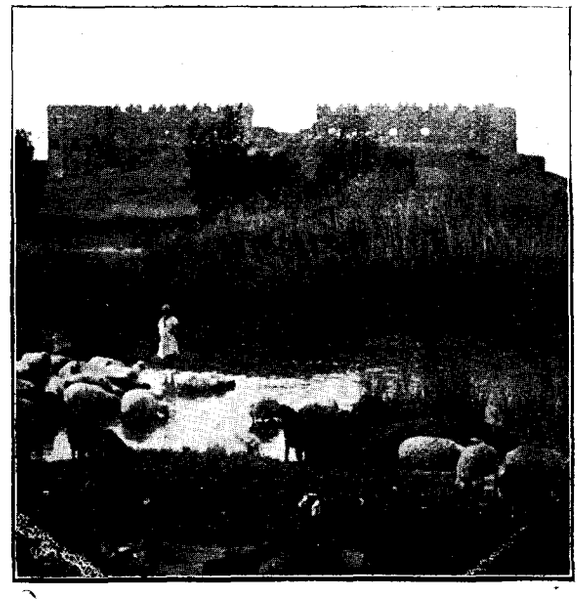
THERE are several grounds on which I feel compelled to ask your indulgence for the paper which I am to present to you this evening. In the first place, my subject has no very obvious relation to the purposes for which your Society exists. My mind is, however, comparatively easy on that point, because when I was first asked to address you on this subject I made it clear that I should have to take you outside the recognised orbit of the Society's interests. But that is not my only ground of apprehension. The title "Palestine in War Time" might be read as promising a good deal more than I am able to fulfil. I went to Palestine in March last with a Zionist Commission, charged by His Majesty's Government with certain definite functions in relation to the Jewish Communities of Palestine. At that time only the southern half of the country was in British occupation, and the activities of my colleagues and myself were naturally restricted to the British part. Within that limited area, again, we were concerned only with the condition and the needs of the Jewish population, and our hands were so full with our own particular work that we had little opportunity for coming into close contact with the life of the country generally. You will see, therefore, that I can scarcely claim to be competent to give you a picture of Palestinian life as a whole. And even if I were competent to do that, I am not sure that I should want to do it. For—and this is the point at which I feel that I must throw myself most completely on your indulgence—my real purpose is not to tell you anything about Palestine in war time, or to give you a historical and descriptive sketch of events that have been, but rather to set you thinking about Palestine in peace time, and to interest you in certain developments which have an important bearing on the future of the country. Hence you may find a certain lack of correspondence between the playbill and the actual performance, and it may be that by the time I have finished there will be heard whispers of a word which has become so fashionable of late—I mean "camouflage." But now, at any rate, you know the whole truth, and, having made that open confession which is said to be good for the soul, I will proceed with the best assurance that I can muster.

I may as well begin, at any rate, by keeping within measurable distance of my subject. Nearly six years ago, when the Great War was still undreamt of, I paid a short visit to Palestine, and I was therefore able on my second visit to observe some of the differences which the war had introduced into the life of the country, and to see how Palestine in war time differed from Palestine in peace time. Perhaps the most striking difference is that of the way by which one enters Palestine. In times gone by the normal approach to Palestine was by sea. You went to Egypt, took ship from Port Said one evening and arrived at Jaffa the next morning. You had quite an enchanting view of Jaffa from the sea—a view of a city clustered on a hill rising almost immediately out of the water, and presenting a very attractive appearance. You soon discovered that this apparently beautiful town was as difficult of access as beautiful things should be to make them worth the winning. The ship anchored at a distance of about two miles from the shore, and you had to be landed in a small rowing boat which the Arab boatmen piloted with extraordinary skill through the dangers of the surf and the half-hidden rocks. That adventure safely accomplished, you found yourself faced with the scarcely less perilous enterprise of getting through the Turkish Customs officials. That enterprise, however, lost its terrors if you were fortunate enough, as I was, to have a local friend to act as your guide. Arrived in Jaffa itself, you soon found that its attractive exterior was very much of a sham. Its streets were narrow and dirty, its roads badly made, its buildings without any special dignity or beauty. You were therefore liable at your first entry into Palestine to be smitten with a sense of disillusionment.

The war has changed all that. British troops in their advance from Egypt laid a railway across the desert which gives Palestine land communication with its neighbour. In future this railway will no doubt carry the great bulk of the tourists and visitors who will flock to Palestine in even greater numbers than they have done hitherto. At the time of my visit civilian passengers were naturally something of a rarity. My colleagues and I left Cairo at half-past six one evening, and reached Kantara, the terminal point of the Egyptian State Railways, on the canal, at about eleven. Thence, after sorting out our luggage and going through various formalities, we were conveyed in two motor vans over the pontoon bridge which had been laid across the canal (for at that time the railway itself did not cross the canal, though I believe it does now). The motors took us in half an hour or so to Kantara East, which is the terminus of the desert railway. There we boarded the train, disposed ourselves on our beds, or rather sofas, and set out through the weird mystery of the Sinai Desert. What the desert is actually like I have no clear idea, for by the time it became light enough to see clearly we were already on the fringe of habitable country. Little bits of green would show themselves here and there, and they became more and more frequent, until at last vegetation seemed entirely to have triumphed over the desert. We breakfasted in a Y.M.C.A. tent near Gaza at about 7 o'clock. Thenceforward the railway took us through an extraordinarily fertile tract of country, rich with corn and barley and figs and apricots and a profusion of wild flowers. When we reached Ludd, the terminus of the railway, the sun was high in the heavens, and we were glad of the refreshing breeze from the west which tempered its heat. From Ludd we travelled to Jaffa by the old Jaffa-Jerusalem line—a narrow-gauge railway which looked absurdly puny and toy-like by comparison with the broad-gauge line by which we had traversed the desert.

It was obvious, both on the day of our entry into Palestine and in the course of our future travels in the country, that the war had made an enormous difference as regards means of transport and communication. Six years ago there was, I suppose, hardly a motor-car in Palestine, and except for the Jaffa-Jerusalem and the Haifa-Damacus railways the country was entirely innocent of up-to-date methods of locomotion. But on my last visit I found that the Jaffa-Jerusalem road, improved beyond all recognition by the efforts of an Egyptian Labour Corps working under the British military administration, was one long procession of heavy motor lorries carrying stores and munitions, and lighter cars carrying passengers. Not only that, but the Ford Car had penetrated into byways which at first sight one would have thought impossible for motor traffic. One of the memorable experiences of war-time Palestine was the feeling of pleasure and surprise that one had after plunging in a Ford Car down into the dry bed of some mountain torrent, and coming up safely on to the opposite bank by what seemed a miracle. Undoubtedly the motor-car has come to Palestine to stay, at any rate until it is ousted by the aeroplane. One interesting device which I should like to mention in connexion with the question of roads and motors is that of a wire matting which is laid in places where the roads or tracks are too sandy for the wheels of a car to get a proper grip. This ingenious

The Well at Risboh-le-Zion ("First in Zion") in Judea, one of the earliest of the Jewish Colonies.



The River Audja, near the Jewish Colony of Petach-Tikvah ("Gate of Hope") in Judea. The ancient Fortress of Antipatris in the background.

* Paper read before the Telephone and Telegraph Society of London on Jan. 20, 1919. The illustrations are reproduced, by kind permission, from lantern slides in the collection of the Rev. I. Raffalovich, of Liverpool.

invention, which provides a first-rate motor road in most unexpected places, must have greatly facilitated the transport work of the military.

I come now to a section which has a real right to your attention—I mean that of postal, telegraphic and telephonic communication. To take the last first, I remember hearing when I was in Jerusalem six years ago that the Turkish Government authorities had some sort of telephone system for official use, but I never saw any trace of it. This time I was more fortunate. There was an official telephone system, with its centre at G.H.Q., embracing Jaffa and Jerusalem and other places. We were able to get a telephone installed at the Headquarters of the Zionist Commission near Jaffa, and thus to be in ready touch with the authorities. I must beware of saying too much about the technical side of the installation, lest I betray the ignorance of the layman; but as each telephone was accompanied by a battery, and as it was necessary to turn a handle in order to call the exchange, I think I may hazard the statement that the system in use was the magneto system. So far as I could make out, there was only one exchange, at G.H.Q., so that if I wanted to speak from our office, which was a mile outside Jaffa, to the Military Governor of Jaffa, the call had to go through G.H.Q., some 10 or 12 miles away. You could often, though not always, get Jerusalem (about 45 miles away) on demand, and the speaking was very good. There were occasionally breakdowns, but they were not frequent or protracted. This telephone system was not confined to Palestine itself. There was trunk communication with Kantara, far away across the desert. On the only occasion when I attempted to speak to Kantara conversation was not possible, but I have heard of others who were more fortunate.

The Jewish Colony of Katra, in Judea.

With the telegraph system I was in less close contact. Naturally one scarcely needed to use it for internal communication when the telephone was at hand, and when there was a despatch rider service which could take a message from Jaffa to Jerusalem in a few hours. Telegraphic communication with Egypt and beyond was very slow, but probably the censorship was responsible for that, rather than any defect in the telegraph system itself.

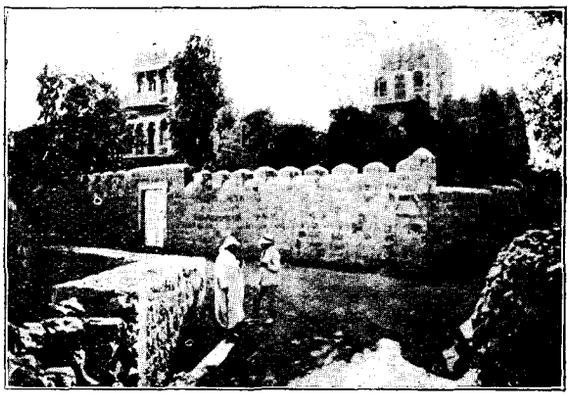
In connexion with postal arrangements I will only mention, as worthy of special record, the stamp which was not a stamp. This was a creation of the Egyptian Expeditionary Force which had the merit of originality. It obviously was a stamp, because it looked like one, and was stuck on a letter like any other stamp. On the other hand, it obviously was not a stamp, because you could not buy it. You handed in your letter over the counter with the appropriate money for postage, and the counter-clerk thereupon stuck one of these stamps on the letter, and presumably saw to it that the letter was properly despatched. The question whether this device is or is not a stamp should, I think, be considered by a special committee of the International Postal Union, reinforced perhaps by a strong contingent of philatelists.

Generally speaking, we found the postal service very efficient. I wish that I could have got behind the scenes and learnt something about the actual organisation of the service: but the work which took me to Palestine was too exacting to permit excursions into other fields.

It will be apparent from what I have said that war conditions did a good deal towards the speeding-up of official life in Palestine by the introduction of modern methods of transport and communication. For my colleagues and myself, who went in a semi-official capacity, these changes were naturally of great importance. They did not, however, affect to any great extent the general life of the country. The telephone and the motor car did not revolutionise the existence of the peasant or the shopkeeper. The telephone he probably never saw at all. The motor car which flew past him on the road must have excited his wonder, and has perhaps begun to widen his horizon, but it is not yet a means of transport of which he can avail himself, and it will be some time yet before its advent seriously affects his way of life or his mentality. The real effects of the war on Palestinian life were of a quite different and much less satisfactory character. Not that anything has happened in Palestine which is even remotely comparable with the havoc wrought by the war in France and Belgium. For a country which was the scene of military operations lasting well over a year, Palestine has suffered surprisingly little in the way of actual devastation. You may see at Jaffa a few buildings damaged by shell fire, and there are villages here and there which have suffered similarly; but probably the whole of the damage in the southern part of the country, of which alone I can speak, would not amount to as much as that caused by a single not very bad air-raid on London. Economically, however, Palestine was very badly hit by the war. So long as the Turks remained in control they showed themselves more expert in requisitioning food and cattle and horses and in cutting down trees than in securing financial stability and organising the distribution of food and other necessaries. The British advance paved the way for an improvement of conditions, but it did not, and could not, immediately produce any marked improvement. Thus when I reached Palestine, some four months after the capture of Jerusalem (Dec. 9, 1917), the situation in some of the towns, and especially in Jerusalem, was appalling. Jerusalem is a city which has always been largely dependent on charity from abroad, and the cutting off of communication with the outside world reduced its population to a terribly abject condition. Disease and starvation were rife, and the mortality was enormous. One of the hardest tasks which the Zionist Commission had to carry out was that of organising proper relief measures for the Jewish population of Jerusalem. A similar work was done for the non-Jewish population by the Syria and Palestine Relief Fund. Shortage of food, difficulties of transport, and scarcity of raw materials, made it very difficult to do more than keep the people from actual starvation. Of course, as the British hold on the country strengthened, and the administration was able to give more time and thought to the needs of the civilian population, the conditions steadily improved. And in the country-side, as distinct from the towns, things were never very bad, and probably the peasantry of Palestine has come through the war better than the peasant populations of most other countries which have been the actual seat of hostilities. It is of course one of the advantages of a comparatively primitive and undeveloped country that it is largely independent of relations with other countries, and that just as the progress of the world at large affects it but little, so it is not severely shaken by an upheaval which overwhelms the whole civilised world. The Palestinian peasant, who cultivates a patch of land for himself or for his absentee landlord by the methods which his ancestors used centuries ago, deriving a meagre subsistence from the work of his hands, and making very little demand on the products of other countries, has been able to continue the even tenour of his way throughout the great war, suffering only in so far as the exactions of his Turkish masters have been rather more severe; and now that the control of the country has passed from the hands of the Turks, and the war is for him over, he has no need of any great scheme of reconstruction. He would be content to go on in the old groove, ploughing and sowing and reaping in his primitive way, carrying his produce to the nearest market on a camel or a donkey, paying his taxes to whoever has a right to demand them, and living as best he can on what remains of his income. If Palestine had no rural population except its native peasantry, or fellaheen, as they are called, it would present no problems that would trouble those who are anxious to build a new and better world on the ruins of the old. But Palestine has, however, a rural population, albeit a small one, of a different character, and it is this population which furnishes for me a bridge between Palestine in war time and Palestine in peace time, between the Palestine of the past and the Palestine of the future. I am referring to the Jewish settlers in Palestine, who, during the last 40 years, have planted in this primitive and backward country a number of agricultural settlements of modern type, in which science and machinery combine with an ideal attachment to the land to produce results undreamt of in the philosophy of the fellaheen. The modern Jewish resettlement of Palestine is a phenomenon which, though its positive achievements are not large as yet, brings the Holy Land into the category of countries with a future, and gives it a peculiar interest at this time of universal reconstruction.

Tel-Aviv ("Hill of Spring"), the Hebrew Garden City, near Jaffa.

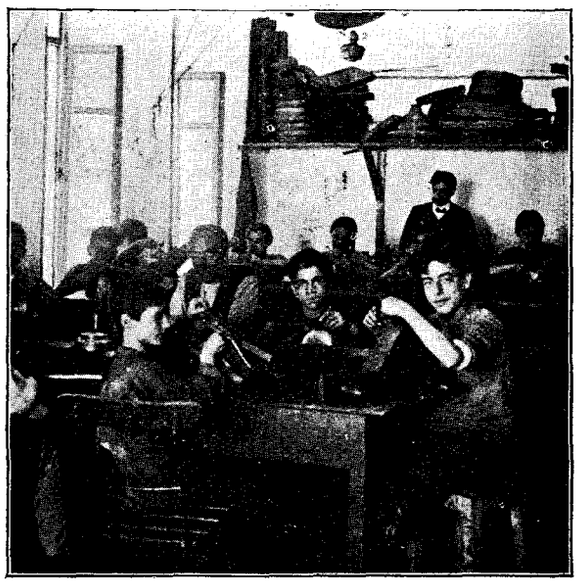
Palestine has always been the land of Jewish hope and aspiration. It has always been remembered by the Jew in his prayers and in his daily life. Jewish attachment to Palestine has taken practical form in many different ways, and sometimes for long periods it has seemed to take no practical form at all, but to express itself solely in a longing for a distant Messianic redemption. It has never ceased, however, to be a real thing, and to be a possible mainspring of energetic and sustained action on the part of large bodies of Jews. In the first half of the last century there grew up a distinct movement on the part of Jews, especially in Eastern Europe, to migrate to Palestine in order to end their days on holy soil. That movement took Jews to the towns of Palestine, which were, and largely remain, Oriental towns in the less pleasant sense of the term; and it was a movement which affected mainly the older people, whose years of productive activity were over and who could not become self-supporting in Palestine. It has led to the growth of seats of Jewish learning in the cities of Palestine, but it has led also to the growth of a pauper population which has come to regard charity as its right, and even to look down on any form of practical work as beneath its dignity. But some decades later the invincible Jewish attachment to Palestine found expression in a movement of a different character. This time it was the younger and the intellectual elements which were affected. The apparent hopelessness of the Jewish outlook in the then reactionary countries of Eastern Europe drove many to the conviction that there was no hope for Jewry except in the re-establishment of Jewish national life in Palestine on the basis of a Jewish agricultural population. Men actuated by this impulse began to purchase land in Palestine and to found small settlements, or colonies, as they are called. After incredible hardships and struggles these colonies have found their feet, and have become the brightest and the most attractive spots in Palestine. They are scattered all up and down the country, on the fertile plain of Sharon, on the hills of Samaria, and in Galilee. They fall broadly into two types, according as they produce wheat, barley and other cereals, or cultivate plantations of vines, oranges and almonds. The distinctive note of these settlements is their progressiveness. They have brought into Palestine the modern plough, the motor pump, the oil engine and other scientific appliances unknown to the country before they came. They have developed co-operative institutions both for working the land and for disposing



The Bezalel School of Arts and Crafts, Jerusalem.

of its produce. They have introduced into Palestine the eucalyptus tree (known to the Arabs as the "Jews' tree") and have thereby made marshy lands fit for cultivation. They have experimented with new products, such as cotton, which give promise of a great future in Palestine. They have had to perform many of the functions which belong to a Government, but which the Turkish administration was too apathetic and inefficient to undertake, such, for instance, as road building. They have organised their communities on modern democratic lines, governing themselves by means of Councils elected by direct and equal franchise, which women have the same opportunity of exercising as men. They have established their own judicial system in the form of a number of Courts of Arbitration, whose decisions, although they had no force to back them, have been universally accepted by Jewish litigants, and which have in some cases been preferred by the Arab peasants to the notoriously corrupt Turkish Courts. And side by side with this rural development there have grown up modern Jewish settlements in and near some of the more important towns of Palestine. Thus, about a mile to the north of Jaffa there is a Jewish suburb called Tel-Aviv ("Hill of Spring") built entirely by Jewish hands, with straight streets, neat houses and gardens, well-kept roads and a properly organised municipal administration, which affords as complete a contrast to the neighbouring town of Jaffa as the Jewish villages with their inviting red-roofed houses afford to the mud huts of the fellaheen.

It is by the contrast which they present to the normal life of the country that the Jewish Colonies in Palestine are most readily appreciated. They are not in themselves, of course, free from defects or imperfections. They have been built up under unfavourable conditions, built up by men who often lacked the necessary means and the necessary knowledge, and had to contend with a Government which, when it did not positively hinder their work, at all events gave it no sort of assistance. The Turkish Government always placed obstacles in the way of the purchase of land by Jews, and there was even a regulation by which no Jew who was not an Ottoman subject was allowed to remain in the country for more than three months. This regulation was fortunately more or less a dead letter, but it is indicative of the anything but helpful spirit in which the Turkish Government regarded Jewish attempts at colonisation in Palestine. Moreover, the Turkish system of taxation and tax-gathering is very oppressive, and is calculated to discourage the development of intensive and scientific agriculture. Created under such conditions, it is no wonder if the Jewish settlements do not always come up to the highest standard by which an observer from the West might judge them. But the point about them is that they do represent an attempt, and on the whole a successful attempt, to introduce modern methods and a progressive spirit in a country which for centuries had remained practically at the same level of culture and civilisation. Left to themselves, the fellaheen of Palestine have not apparently the impulse to develop and to do better than their fathers did. From generation to generation they go on scratching the soil with their light ploughs, threshing and harvesting by means not unlike those employed in biblical times, and maintaining a standard of life which cuts them off entirely from the Western world. The Turkish Government, again, though within the last 40 years it has introduced two or three railways into Palestine, has never shown either the desire or the ability to tackle seriously the problem of developing the country's resources. Without a change of Government and a new population, Palestine might have gone on for centuries more in much the same condition as that in which it has remained for centuries past—a country sparsely populated, with crowded and insanitary towns and villages, without proper drainage or irrigation, incapable of making any contribution to the general stock of human progress, and maintaining contact with the civilised world only because of the attraction which its wealth



The Bezalel School—Metal-work Section.

of historic and religious associations possesses for tourists whose zeal fortifies them to face the inconveniences of impossible hotels and primitive methods of locomotion. No doubt the hand of the West has to some extent made its mark on Palestine during the last half-century. In some of the cities, and especially in Jerusalem, Western philanthropic and religious agencies have established schools and hospitals and hospices and orphanages and so forth. Some German colonists, with the sympathy and support of the German Government behind them, even established two or three agricultural settlements, and built quite a nice modern suburb on the outskirts of the harbour town of Haifa. But all these incursions of modernism into Palestine were exotics. They were carried out under a religious or philanthropic impulse. They were designed to mitigate the inconveniences attending a pilgrimage to Palestine, or to do something for the moral or material welfare of its neglected inhabitants; they were not inspired by any conception of Palestine as a country crying out for redemption and development, crying out to be rescued from the stagnation and squalor of centuries, and restored to a worthy position among the productive countries of the earth. Superimposed on Palestine from without, they are in Palestine rather than of it, and they have not changed, and could never change, the essential features of Palestinian life. That is where the modern Jewish development of Palestine differs from other European interventions, and transcends them to some extent in fulfilment, but even more in promise. Jewish development of Palestine comes from Europe and is European in its methods and its type of organisation. But it has something more behind it than a mere desire to stick European patches on to an Oriental surface. Its motive is neither philanthropy towards the native nor solicitude for the tourist. It aims at nothing less than a radical if gradual transformation of the whole country, a complete change in its character and type of life. It aims at making Palestine ultimately a Jewish country, a country whose civilisation shall be an expression of the living spirit of the Jewish people, just as the civilisation of England is an expression of the English spirit. The 15,000 or

so Jews who have settled on the soil of Palestine during the last generation, and have already created a distinctive type of life and culture within the narrow limits of their tiny settlements, are only an advance guard of a much larger Jewish population, which is one day to give its own tone and character to the whole life of Palestine, so that the visitor to Palestine will find not a primitive Arab country with a few modern patches, but a modern country and a Jewish country, taking its full part in the international commerce of goods and of ideas, and enriching in its own characteristic way the general stream of human progress.

It is from this point of view that the Jewish agricultural and urban settlements attain their real significance. Regarded merely for what they are, as flourishing and well-cultivated villages or garden suburbs, they are certainly worthy of admiration. One can readily understand the feelings of British officers in the recent campaign, who, after passing through a number of squalid villages with the inhabitants of which they had no earthly point of contact, suddenly lighted on a Jewish colony, where they found houses built and furnished more or less like their own, and people who could talk to them in a European language, and to whom books and music and art were as familiar as to themselves. But if that were all, these Jewish settlements might be noted as just an interesting and rather surprising minor feature of Palestinian life, and nothing more. They are in fact a great deal more than that, because they stand for an idea to which they have barely begun to give concrete form. They stand for the idea of the Jewish national rebirth, which can come to fruition only in and through the rebirth of Palestine. When the first Jewish colonists settled on the soil of Palestine some 40 years ago, and maintained their hold in the face of apparently insurmountable obstacles, they were letting loose—perhaps without consciously realising it—a tremendous force of Jewish national idealism, which will not spend itself

General Allenby's Entry into Jerusalem—December 1917.

until it has achieved the revival of Palestine and the revival of the Jewish nation.

The key-note of this revival is the restoration of the Hebrew language to the position of a language of every-day life. In the course of its long exile the Jewish people has adopted all kinds of languages, sometimes taking them ready-made from its neighbours, sometimes creating dialects or jargons of its own. But it has always retained the Hebrew language for purposes of prayer and study, and to a lesser extent for purposes of ordinary intercourse between Jews whose ordinary languages were different. Hebrew has always retained its place at the centre of the Jewish collective consciousness, and a revival of Hebrew is a perfectly natural concomitant of an attempt on the part of that collective consciousness to focus itself and find expression in an organised form of life. Hence among all the achievements of Jewish colonisation in Palestine there is none of which Jews are more justly proud than the revival of Hebrew. The infant who prattles Hebrew at his mother's knee is an even surer indication of the reality of the national rebirth than the oranges and vines and almonds produced on Jewish soil by Jewish labour. The Hebrew schools, elementary, secondary and technical, which have been built up in Palestine by the patient labour of the teachers, are the best guarantee that the life and thought of the future Palestine will derive their distinctive flavour from the character and the ideals of the Hebrew mind. In the Bezalel School of Arts and Crafts at Jerusalem (named after the famous artist of the Tabernacle) there is the beginning of a very interesting artistic experiment—the attempt to create a distinctive Palestinian-Hebrew style, modern in technique, but deriving its inspiration from the Hebrew past and from the scenery of Palestine. In Jerusalem and in Jaffa there are flourishing Schools of Music. The Jerusalem University, of which the foundation stones were laid a few months ago on the Mount of Olives, is intended to be at the same time a powerful educative force for the whole of the Near East and a temple of the Hebrew spirit, in which the mind of the Jew, working in his own environment and his own medium of expression, will attack the problems of human life and thought from a new angle, and give a new expression to the fundamental principles of Hebraism.

At the present moment the fate of Palestine hangs in the balance. It will be for the Peace Conference to decide under what Government Palestine is to be placed and what its boundaries are to be. We Jews expect the Peace Conference to recognise explicitly our historic national title to Palestine. We expect it so to delimit the frontiers of Palestine as to allow us room in which to justify that title by the creation of a Jewish Commonwealth. We expect it also to appoint one of the Powers—and that Power should be Great Britain—to administer Palestine as Trustee for the time being, and to administer it in such a way that Jews shall have access to the land, shall be able to create an independent and progressive agricultural population, and shall have freedom to develop their institutions, their education and their way of life along the lines of self-government. Granted these conditions, we think that we have the strength, as we have the will, to turn the dream of a Jewish Palestine into a reality. As confirmation of our belief, we point to the existing Jewish settlements, to what they have done for the improvement of the land and for the development of a new type of modern Jewish life. We point to those colonists whose miniature national organisation has stood the strain of four years of war, and who have come through that trial with spirit unbroken and with confidence in the future. We know that we have a tremendous task before us, a task such as no nation in history has ever had to attempt. We are a divided people, divided not only geographically and politically, but even more by the disintegrating effects of different environments, which produce such differences of mentality and outlook between groups of Jews in different countries that an observer might well doubt whether there is anything at all that all Jews have in common except the bare fact of a common ancestry. It is no easy thing for a people so situated to bend itself to a single national task, to find enough energy, beyond that absorbed in the persistent problems of what a telephone engineer would call its day-to-day maintenance, for the re-population and reconstruction of a country from which it has been in practice estranged for centuries. But already a new spirit is abroad in Jewry, and despite ages of persecution and generations of assimilation we are ready to set our hands to the plough and to devote the best that is in us to the winning back of our ancient heritage. We shall, no doubt, make mistakes, and progress may not be so rapid as the most optimistic would desire. But with the good will of the world—and who among the good will not wish us well?—we believe that we shall win through, and that humanity, as well as ourselves, will have cause to bless the day on which the opportunity was given us to reunite our national existence with the land of our forefathers.

THE LIFE HISTORY OF A POSTAGE STAMP.*

BY W. S. AUSTIN (*Post Office Stores Department*).

PEOPLE not intimately connected with the Post Office might be excused if they enquired what interest a paper relating to Postage Stamps could be to the members of the Telephone and Telegraph Society.

The answer, of course, is that the great bulk of the telegrams dealt with by the Post Office are prepaid by means of Postage Stamps affixed to the forms. It is true that many telegrams are accepted under special arrangements which permit of the relaxation of the rule regarding the use of Postage Stamps, but, speaking generally, the statement holds good that, in order to get a telegram accepted for transmission, it is necessary for the sender to affix Postage Stamps in prepayment of the charge.

For some years after the transfer of the Telegraphs to the State, Telegraph stamps, as distinct from Postage Stamps, were used for the prepayment of telegrams and I believe that the practice still obtains in some countries.

It must be obvious to anyone acquainted with the work of the Post Office that the difficulties of accounting for the money received in respect of telegrams would be enormous if the simple system of using stamps were not in force.

Postage Stamps are sometimes used in connexion with the Telephone Service when subscribers pay their accounts at Post Offices. If the total amounts received at an office are small the Postmaster affixes Postage Stamps to the back of the prescribed form and cancels them with the date stamp. The form is then sent to the District Manager or the Controller of the London Telephone Service as the case may be.

There are 17 denominations of British Postage Stamps ranging from ½*d.* to 10*s.* The paper required for their manufacture is made under contract and is supplied in two sizes, one for the ½*d.* to 1*s.* denominations and the other, which is of a different quality, for the 2*s.* 6*d*, 5*s.*, and 10*s.* stamps.

The contracts contain stringent stipulations as to the composition of the paper, the sizing, the breaking strain, the uniformity of thickness, the weight per ream, &c. Good quality cotton and linen rags constitute the chief raw material used in the manufacture. The use of wood pulp and exports gross is not permitted.

Officers of the Post Office Stores Department are stationed at the mills to keep a close watch on the operations from the time that the crude pulp flows on to the machine until the finished paper is despatched to the depot where it is stored pending issue to the printers.

The watermark known as the Royal Cipher is produced on the paper when it is in semi-liquid state by means of a cylinder called a Dandy Roll

* Paper read before the Post Office Telephone and Telegraph Society of London on Jan. 20.

which is fixed across the paper machine. This cylinder is studded with projections and the watermark results from the pressure of these projections into the paper.

Having secured the necessary paper the next steps is to obtain the stamps. These are ordered from the printers by means of warrants which are drawn in the Stores Department, and countersigned by the Comptroller and Accountant-General. The warrants specify the denominations of the stamps to be printed, the number of stamps to appear on each sheet, the number of sheets to be produced, and the total face value of the stamps. Each printing warrant is accompanied by another warrant authorising the printers to draw from the Stores Department the requisite number of sheets of paper.

Records are kept in the Stores Department and in the Accountant-General's Department of all the warrants for stamps and paper and of the deliveries made under the warrants.

The printers are required to return to the Stores Department, whether in the shape of stamps, good and bad, or spoilt paper, all the paper issued to them under each warrant. In the event of a shortage occurring the Post Office can impose a penalty under which the printers would pay the face value of the stamps due to be printed on the paper.

The stamps of the value of 1s. and under are produced by the method known as "Surface printing." while the three high denominations are printed by the recess process. For the first-named process, which is quicker, easier, and cheaper than the other, the printing plates have the design slightly projecting, whereas for recess printing the design is slightly sunken. Better stamps are produced by the recess process but, as already stated, the cost is greater and this factor has to be taken into consideration in view of the enormous quantity of stamps used by the Post Office. The two kinds are not printed by the same firm.

As in the case of the paper mill, Government officials are stationed at the printer's works for the purpose of keeping a close watch upon the operations. The stamps are printed in a portion of the works which is separated from the rest of the factory and to which no unauthorised person has access.

The printing contracts stipulate that the inks used for the stamps should be quick-drying, free from lead, not soluble in water, and of such character as to be absolutely secure against the successful removal, without material alteration of the colour of the stamps, of cancelling ink of the kind used by the Post Office for the cancellation of the stamps.

On receipt of the prescribed number of sheets of watermarked paper, the manufacturers of the "surface-printed" stamps take steps to gum the paper.

Here again the contract contains stringent specifications. The gum used must be pure gum arabic and must not contain any deleterious matter. The reason for this is apparent to those of us who generally use the tongue as a means of moistening the gum on stamps.

After the gumming has been performed the paper is plate-glazed. That is to say each sheet is placed between two metal plates and is then passed between rollers where it is subjected to enormous pressure. This operation gives the paper a fine polished printing surface and at the same time it makes the gummed side smooth.

In the case of the "recess-printed" stamps the paper is not plate-glazed and the gumming is done after the printing. The explanation of this difference of treatment lies in the fact that for recess printing the paper is wetted before being placed on the printing press.

The supervision at the printing works begins when the sheets of paper are counted into the printing room where a number of Government officials are stationed. These officers have charge of all the printing plates and issue them to the printers for use. Copies of the warrants drawn on the printers are sent to the officers and these documents constitute the authority for releasing the plates. But even then the printers are not at liberty to do what they choose with the plates. The senior officer sees that the plates are used to print only the number of sheets of stamps specified in each warrant. During meal intervals and at night he locks each machine by means of a bar and padlock and he also takes care to fasten securely the printing room. As the printing from each plate is completed the officers lock up the plates in safes with which they are provided.

As the sheets of newly printed stamps are taken from the printing machines they pass into the possession of the Government Officials by whom they are retained for several days while the ink is drying.

When dry the sheets are once more handed to the printers for the final processes of perforation and examination. The perforation is done on an ingenious machine into which five or six sheets are fed at one time. The sheets are pinned on to a frame which travels forward by short stages and on to which a device fitted with punches descends and perforates the sheets. One whole horizontal line as well as the perpendicular part corresponding to the side of one stamp are punched at each operation.

After being perforated the sheets of stamps are examined by the contractors' employees for the purpose of detecting defects in the printing, &c. The sheets which are found to be satisfactory are then counted several times before being packed in parcels of 2,000 for delivery to the Post Office Stores Department.

On reaching that Department they undergo further counting, once by an officer who ties up each 25 sheets with string and four bundles of 25 sheets into a bundle of 100 and then passes the package to a second officer who checks the counting done by the first one.

This is done to facilitate stock-taking and also the issuing at a later stage.

If the packages are duly found to contain the correct number of sheets they are sealed and initialled by the officers dealing with them and are passed into the main stock where they remain until required for issue to Postmasters &c. In view of the enormous face value of the stamp stock held by the Stores Department it will be readily understood that elaborate precautions are necessary for safeguarding it.

The issue of the stamps is made on the receipt of requisitions from Postmasters, &c. Each morning a large number of requisitions reach the Stores Department and it is the rule to comply with them the same day as far as possible. After being numbered and stamped the requisitions are dealt with by clerks who record the particulars of the items on summaries which also show the value of the stamps sent to each consignee. Each summary is then passed to the issue and packing room where the officers in charge of the safes give out the stamps needed to comply with the requisitions dealt with on the summary. Other officers check the quantity given out and divide it between the various requisitions. The final check against each requisition is made independently by still other officers, so that the risk of making a mistake in a consignment is small.

All the packages of stamps are despatched by registered post, and for that purpose a sorting office staffed by officers of the London Postal Service is associated with the Stamp Section.

At the close of day the issue stock remaining in the office is checked against the balance book, and the Accountant-General is furnished with statements showing, as regards each office, the value of the consignment. This enables him to keep a check upon Postmasters, who of course, are required to show in their Daily Cash Accounts the value of the stamps received from the Stores Department.

At the end of each month the Stores Department forwards to the Comptroller and Accountant-General, by whom it is checked and transmitted to the Comptroller and Auditor-General, a *Consolidated Stock Account.*

The badly printed stamps, to which reference has been made earlier also pass through this account. For obvious reasons such stamps are not issued for sale to the public, but are destroyed under elaborate safeguards.

AERIAL COMMUNICATIONS WITHIN THE BRITISH ISLES.*

By M. C. PINK.

IT has been suggested that in future there may probably be a certain amount of competition between aerial communications and communications by wire, viz., telegraphs and telephones. It may therefore be useful to investigate at the present stage the possibilities of such competition, in order to see whether rivalry between the Services is likely to arise or whether there is any possibility of utilising aerial services in conjunction with telegraphs and telephones for the benefit of the community.

For the purposes of this paper I am proposing to make the somewhat ambitious assumption that aerial posts have already been established in this country by means of the large number of machines available as the result of the satisfactory termination of the war and the large output possible from national factories. It is appreciated that this assumption is dependent upon an admission that aerial communications can, owing to the elimination of any question of line plant and to the possibility of carrying loads to points much more widely distributed than can be the case with a railway system requiring a permanent way, be established on a sound financial basis and in spite of weather considerations. These are points which no doubt aircraft experts will be prepared to demonstrate to the satisfaction of all concerned.

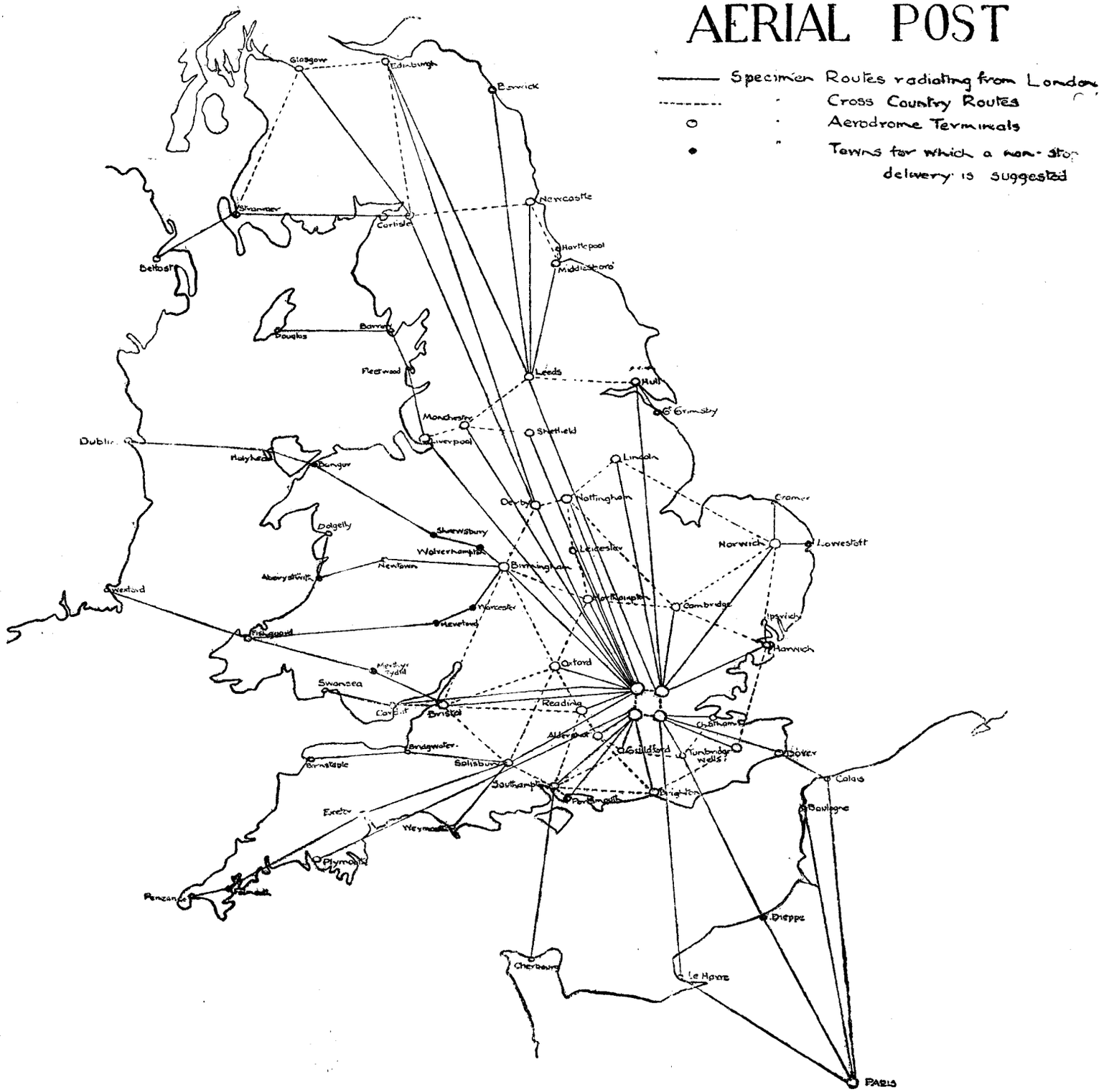
Whether the aerial conveyance of mails would be undertaken by a service directly under the Postmaster-General or the Air Ministry, or whether the routes would be established to Post Office specification by aircraft contractors, need not be discussed in this paper; although it is perhaps desirable to make a passing reference to the obvious advantages which would arise from conditions under which a Minister of Communications would be responsible for roads, railways, waterways, telegraphs, telephones and aerial communication.

We are primarily concerned with the effect of the establishment of such a system on the communications of London. In the accompanying map, which shows in skeleton form the main routes which it might probably be desirable to establish in the first instance for aerial services, it has been assumed that the terminal points for aerial flights to and from London would be concentrated at four aerodromes in the suburbs, in the general directions North West, South West, South East and North East.

So far as the postal aspects of the aerial system are concerned there seems to be little doubt that the system of conveyance by aircraft would easily prove itself in. On the assumption that under all conditions an average flight speed of 80 miles per hour would be maintained in practice, the following table has been compiled for the purpose of comparing the times taken in transit on the main routes by aeroplane and by the fastest available train. The projected passenger routes contemplate a speed of over 120 miles per hour, weather permitting, so the transit times at 120 miles per hour have also been included.

Distant Town.	Time occupied by Aeroplane. 80 miles per hr.		120 miles per hr.		Time occupied by Fast Train.	
	Hrs.	Mins.	Hrs.	Mins.	Hrs.	Mins.
Reading		25		15		45
Oxford		35		23	1	30
Harwich		45		30	2	15
Bristol	1	12		48	2	20
Birmingham	1	10		46	2	40
Liverpool	2	8	1	25	5	15
Newcastle	4	3	3	2	6	—
Edinburgh	4	59	3	40	9	40

* This paper was contributed before the publication of the Report of the Civil Aerial Transport Committee. Some of the points mentioned have been discussed in that report, which is of great interest to all who are concerned with our future systems of communication.



As a result of speeding up postal services and the possibility of establishing express routes, the Telegraph Service would be likely to feel the effect of the establishment of aerial posts and the conveyance of messages by aerial routes as an alternative to their despatch by telegraph. Taking the all-round figure of one hour for the conveyance of a written message from a handing-in station to a terminal aerodrome, 10 minutes for the transfer from motor to aircraft, conveyance on the aerial route at the average speed of 80 miles per hour to the distant terminal aerodrome (in order to make the least favourable conditions for the new competitive route) and adding 30 minutes for distribution from the distant aerodrome to the addressee, we obtain the following time intervals between handing in and delivery of messages from London to specimen provicial areas given in the above table :—

Reading	2 hrs. 5 mins.
Oxford	2 „ 15 „
Harwich	2 „ 25 „
Bristol	2 hrs. 52 mins.
Birmingham	2 „ 50 „
Liverpool	3 „ 48 „
Newcastle	5 „ 43 „
Edinburgh	6 „ 39 „

These times assume that at the departure aerodrome a message just catches a machine which is leaving and that on routes where an intermediate aerodrome is involved, allowance of one hour is made for the stoppage at the intermediate point. It is probable that conveyance of express mails at these speeds would considerably modify the business and social communications, especially on routes which would enable an answer to be given the same day during business hours.

The accompanying table shows the figures for many of the routes given in the map.

AERIAL POST. URGENT SERVICE.

Table showing Transit Times to Representative Provincial Areas. :—

	By Car to Aero-drome. Hrs.	To Carrier. Mins.	Transit over Aerial Route. Miles.	Time 80 m. per hr.	Time 120 m. per hr.	Delivery at distant end.	Total Time taken. 80 m. per hr.	120 m. per hr.
Reading ...	1	10'	30	25'	15'	30'	2.5	1.55
London to—								
Oxford... ...	1	10'	46	35'	23'	30'	2.15	2.3
Northampton...	1	10'	54	40'	27'	30'	2.20	2.7
Cambridge ...	1	10'	43	32'	22'	30'	2.12	2.2
Harwich ...	1	10'	60	45'	30'	30'	2.25	2.10
Tunbridge Wells	1	10'	22	17'	11'	30'	1.57	1.51
Guildford ...	1	10'	20	15'	10'	30'	1.55	1.50
Bristol... ...	1	10'	96	1.12	48'	30'	2.52	2.28
Birmingham ...	1	10'	92	1.10	46'	30'	2.50	2.26
Derby	1	10'	110	1.23	55'	30'	3.3	2.35
Nottingham ...	1	10'	100	1.15	50'	30'	2.55	2.30
Lincoln ...	1	10'	115	1.26	58'	30'	3.6	2.38
Norwich ...	1	10'	90	1.10	45'	30'	2.50	2.25
Dover	1	10'	58	45'	29'	30'	2.25	2.10
Brighton ...	1	10'	42	32'	21'	30'	2.12	2.1
Portsmouth ...	1	10'	60	45'	30'	30'	2.25	2.10
Southampton...	1	10'	65	50'	33'	30'	2.30	2.13
Salisbury ...	1	10'	73	55'	37'	30'	2.35	2.17
Cardiff... ...	1	10'	123	1.32	62'	30'	3.12	2.42
Liverpool ...	1	10'	170	2.8	1.25	30'	3.48	3.5
Manchester ...	1	10'	160	2	1.20	30'	3.40	3
Sheffield ...	1	10'	140	1.45	1.10	30'	3.25	2.50
Leeds	1	10'	165	2.4	1.23	30'	3.44	3.3
Hull	1	10'	150	1.53	1.15	30'	3.33	2.55
Plymouth ...	1	10'	190	2.23	1.35	30'	4.3	3.15
Havre	1	10'	130	1.38	1.5	30'	3.18	2.45
Newcastle ... (*via* Leeds)	1	10'	244	4.3	3.2	30'	5.43	4.42
Edinburgh ... (*via* Leeds)	1	10'	319	4.59	3.40	30'	6.39	5.20
Carlisle ... (*via* Derby)	1	10'	255	4.11	3.8	30'	5.51	4.48
Glasgow ... (*via* Derby & Carlisle)	1	10'	332	6.9	4.46	30'	7.49	6.26
Dublin... ... (*via* Birmingham & Holyhead)	1	10'	280	5.30	4.20	30'	7.10	6
Wexford ... (*via* Bristol & Fishguard)	1	10'	270	5.23	4.15	30'	7.3	5.55
Paris ... ... (*via* Dover & Calais)	1	10'	230	4.53	3.55	30'	6.33	5.35
Cherbourg ... (*via* Southampton)	1	10'	150	2.53	2.15	30'	4.33	3.55

It will be appreciated that these times refer only to messages or letters which are not transmitted at any stage by telegraph or telephone. If there were telegraphic transmission to and from the terminal aerodromes and a class of non-urgent telegrams were introduced which were transmitted by wire to and from the aerodromes and conveyed over the main routes by aircraft together with the ordinary postal services, it is probable that such messages could be conveyed at a very cheap rate, and that there would be a large field for their development in connexion with both commercial and social matters. This system would probably reduce the number of individual handlings of messages passing between distant points and enable the long distance telegraph plant to be reserved entirely for urgent messages which could always pass over the wires with the absolute minimum amount of delay. The feeding Telegraph Service to the air stations would no doubt be on a Morse basis, thus assisting to utilise the Morse experts and facilitating the development of high speed systems on long distance routes without involving redundancy of staff.

But there is a further development which might be considered in conjunction with aerial services. The passage of deferred telegrams passed in the way suggested in the preceding paragraph would cover only the requirements of the public who were prepared to send to a Post Office and pass their message over the counter. It would no doubt be a great convenience if arrangements were made for any telephone subscriber to dictate a message direct to an aerodrome, where it would be written down and handed to the next pilot travelling over the route involved. The message would then be conveyed by aircraft either direct or by aerial stages to an aerodrome reasonably near its destination and would be telephoned from there to the distant subscriber, or, if the addressee were not a telephone subscriber, to the nearest telegraph office for delivery by messsenger to the addressee. The public would probably find that with such a system a good many telephone conversations over the trunk system could be avoided and that as a result they would be able to get through their urgent communications much more speedily.

It is appreciated that these notes are quite sketchy. They gloss over a good many difficulties and they make rather wide assumptions. They may not, however, be considered out of place at the present time and it is possible that some of the suggestions made may bear fruit in due course.

CORRESPONDENCE.

TELEPHONE SWITCHBOARD SIGNALS.

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

Referring to Mr. Blight's article in the January issue on the question of Supervisory Signals, I am in agreement with his suggestion that the lamp associated with the answering plug should be termed a clearing signal, and the calling plug lamp a supervisor signal.

In my opinion the difficulties likely to arise from the operators clearing on the one lamp will be negligible in the case of local calls, while in the case of calls passed *via* other exchanges an improvement is likely to result. The question of the utility of the supervisory lamp under the present day conditions is a very debateable one, and is well worth an exhaustive enquiry.

In view of the increasing amount of short distance trunk control that is being laid upon the "A" operators any help which can be obtained from the use of a supervisory signal is valuable, as with the increase of inter-area lines, connections often pass through four exchanges before reaching the distant subscriber.

The conditions under which the supervisory lamp acts should be uniform however, if the lamp is to be a real help. Under the present-day conditions of mixed magneto and C.B. working, there is a striking lack of uniformity about the supervision on the calling plug, and in Birmingham it is possible to get the following conditions when passing a call to other exchanges within the district.

(1) Calls to another C.B. exchange over an order wire junction. Supervisory lamp glows from the insertion of the plug in junction jack until distant subscriber answers, then glows again when receiver is replaced.

(2) Calls to another C.B. exchange over a ringing junction. Supervisory lamp glows until distant 'B" operator answers, glows again until subscriber answers, then glows again when receiver is replaced.

(3) Calls *via* C.B. exchange order wire junction to magneto exchange where "through signalling" is provided. Supervisory lamp glows until magneto 'B" operator answers, glows again until subscriber replies, and then glows when subscriber replaces receiver.

(4) Calls *via* C.B. exchange ringing junction to magneto exchange where "through signalling" is not provided. Supervisory lamp glows until C.B. "B" operator answers, and glows again until magneto "B" operator answers.

(5) Calls direct to a magneto exchange where "through signalling" is not provided. Supervisory glows until magneto "B" operator answers.

(6) Calls direct to a magneto exchange. Supervisory lamp does not glow at all.

The foregoing are the chief conditions, but numerous other combinations are possible, and where calls are passed from a small C.B. exchange over a small group of ringing junctions to a main C.B. exchange and thence extended to various exchanges, such a diversity of supervisory lamp conditions will obtain that the 'A" operator needs a detailed knowledge of the type of exchange she is calling up if the supervisory lamp is to be of any help at all.

It would appear preferable not to use the supervisory lamp at all for calls over a junction circuit, than to use it under such a diversity of conditions.

H. D. DIPPLE.

Birmingham (Internal) Section, Feb. 17, 1919.

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

I have read with interest Mr. Blight's article on signalling and I quite agree that there is a great deal too much apparatus across the line. When the speaking circuit is through to two subscribers with the signalling relays cut down to the minimum, the resonance (so dear to the old telephone hand) is invariably absent. Compare two circuits, one with all the relays, shunts, &c., cut out, and the other with the signalling relays in position, the difference will supply the reason for reducing these encumberances to the minimum. Signals are of course necessary, but do we not provide supersignals in excess—signals which cater for "freaks" and abnormal occurrences, to the detriment of that good clear speech so essential to long distance junction and trunk working? There is no doubt that the best feature of the C.B. system is the signalling on the cord circuits in local working; add to this the increased cord capacity and you have said all there is to say in its favour. In the case of a C.B. exchange working to magneto, the bad transmission is more marked. The P.B.X. circuits also leave much to be desired. In one diagram it is noticed that a relay is across the line during the whole period of connection actuating a visual signal to indicate the line engaged (the reverse of the ordinary practice which gives the clear when conversation is finished). This must produce a blanketing effect, and added to other shunts on P.B.X. and long junctions, seriously impede transmission.

Personally, from long experience, I think the ideal exchange would be a combination of the low voltage speaking circuits with good cord capacity and the eliminating of the noisy C.B. working, but with the local signalling as at present arranged.

S. J. PHARO,
Traffic Supt.

Preston, Jan. 27, 1919.

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The attention of our Readers is directed to the following list of Boarding and Apartment Houses.

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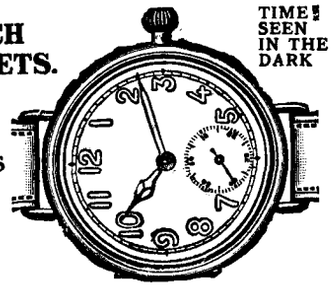

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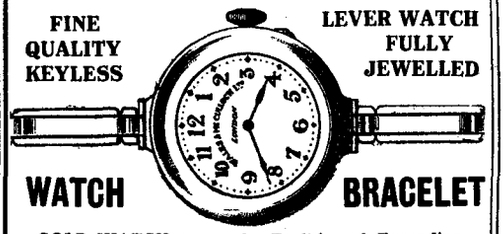

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RETIREMENT OF MR. H. S. CAREY, C.B., JOINT SECOND SECRETARY OF THE POST OFFICE.

As our readers are aware, Mr. H. S. Carey retired on Feb. 28. On Feb. 27 many of his colleagues met at the invitation of Mr. G. E. P. Murray, Sir Andrew Ogilvie and the Assistant Secretaries to wish him a cordial farewell. Mr. Pike-Pease, the Assistant Postmaster-General, paid a well-earned tribute to the abilities and genius of Mr. Carey, which was received with acclamation. Mr. Carey bade farewell to his colleagues in terms which will be long remembered by his hearers. The sorrows of saying goodbye come to us all at some time or another, but the goodbye to a life's work must be a difficult word to pronounce.

PROMOTIONS AND APPOINTMENTS.

OUR readers will be interested in the following recent appointments :—

Mr. E. RAVEN, C.B., to be Joint Second Secretary to the Post Office.

Mr. F. J. BROWN to be Assistant Secretary.

Mr. JOHN LEE to be Controller of the Central Telegraph Office (June 30).

Mr. W. M. SIMPSON to be Postmaster-Surveyor of Liverpool (July 31).

Mr. JOHN SCOTT to be Postmaster-Surveyor of Birmingham June 30).

TELEPHONING FROM THE AIR.

Major-General Henly, Director of Military Aeronautics, seated before an ordinary desk telephone in his office, talked to Lieutenant Lucas, of the Air Service, who was operating a radio-equipped aeroplane in the air. The communication was made at Boling Field. Communications have hitherto passed between pilots in the air and land lines on the field. This conversation, however, was the first official demonstration of a two-way conversation direct between a person using a telephone on a circuit and an aviator in flight. The great degree of efficiency reached makes possible telephonic conversation between New York and San Francisco. By substitution of a transcontinental for a branch line, the element of distance would be practically eliminated, and conversation would be possible between an aeroplane in flight and any point reached by a good telephone circuit. Thus it is now a mere matter of detail to have an aviator in the air at Washington in conversation with a man in his office at San Francisco, 2,000 miles distant.—*Daily Telegraph.*

HULL TELEPHONES.

In order to meet the expenditure on war bonuses, &c., telephone rentals are to be increased. The annual report by the manager (Mr. Holme) states that the gross profit amounts to £18,933, compared with £22,747 last year, a decrease of £3,812, of which £2,400 is accounted for by additional war bonuses, and the balance by a decrease in revenue and increase in maintenance charges. The latter are higher due to increased cost of materials and the laying of a relief cable across the river, necessitated by the number of faulty lines east of the river. During the war there has been a net decrease of 1,500 instruments in service. When the transfer of the system to the Corporation took place it was estimated that there would be a net revenue of £5,300 per annum, after paying the interest and loan charges, and this was realised for the year ended March 31, 1917. The accounts for the year ending March 31, 1919, will show a considerable loss.—*Eastern Morning News.*

BIRMINGHAM.—CHILDREN'S ENTERTAINMENT.

The entertainment of the children attending St. Jude's Day Schools, which building adjoins the Midland Exchange, by the staffs of the District Office and Midland Exchange is a hardy annual. A variety of circumstances combined to prevent the event taking place at Christmas, but this did not detract from the glamour which always accompanies the function. The date ultimately fixed was Feb. 1 when, to the number of about 70, the youngsters were regaled with an excellent tea, which was followed by an impromptu concert, sleight of hand tricks and a Punch and Judy show. Father Christmas visited the scene at the conclusion of the entertainment and toys and oranges were handed to the little guests upon departure.

High place among those who made and carried out the arrangement belongs to Miss Pope who begged, planned, and worked sufficiently hard to merit the success which was undoubtedly achieved.

No record of the proceedings could be satisfactory which did not mention the ubiquitous Traffic Superintendent (Mr. C. W. Piggot). He is familiar with "loads," but they were unfamiliar and heavy loads which he conveyed from the offices to the schools that afternoon, and his genius for marshalling ceremonies was never more strongly in evidence than on the occasion under review.

MULTIPLEX TELEPHONY AND TELEGRAPHY.

A wonderful development in the science of telephony has been announced by Mr. Theodore Vail, the President of the American Telephone & Telegraph Company, in a letter to the Postmaster-General of the United States. Mr. Vail states that, after several years of intense effort, the technical staff of his company have invented and developed a practical system of multiplex telephony and telegraphy. By this new system, five telephone conversations can be carried on over one pair of wires, and each conversation is as good as that provided by the circuit working in the ordinary way. A successful trial of the system has been made between Baltimore and Pittsburgh.

Mr. Vail further states that by combining two telegraph wires into a metallic circuit of the type used for telephone working, and by applying the new apparatus and methods to this metallic circuit, it is possible to transmit forty simultaneous telegraph messages.

It is stated that, from the nature of the apparatus and the methods employed, the system is not practically advantageous on short lines.

Mr. Vail adds in his letters that "it is not too much to characterise this new system as marking an epoch in the development of long-distance telephony and telegraphy.'

We shall await more detailed information with great interest.

PERSONALIA.

LONDON TRAFFIC STAFF (*Telephonists*).

Miss E. MINCHIN, Assistant Supervisor, Class II, of Dalston Exchange, resigned on Jan. 8 to be married, and was presented by the staff with a set of oak trays.

Miss A. BEAN, Assistant Supervisor, Class II, of Streatham Exchange, on resigning to be married was presented with cutlery, a tea service and an illuminated address. She was also the recipient of several other useful gifts from the Brixton Exchange staff and from one of our telephonists in France. During her several years as Supervisor-in-Charge Miss Bean has endeared herself to all, and carries with her the heart-felt wishes of the exchange for every happiness in the future.

Miss H. CLAYTON, Temporary Telephonist, of Hammersmith, resigned to be married Jan. 23.

Miss M. HODGSON, of Paddington, has resigned to be married.

Miss M. E. H. SMITH, of the Trunk Exchange, resigned Jan. 29, in view of her approaching marriage. Her colleagues presented her with a dinner service and other useful presents.

Miss BLAKER, of the Trunk Exchange, has resigned for marriage, and was presented with an epergne and other useful presents from her colleagues.

Miss A. M. COALES, of Dalston, on resigning to be married was presented with a case of knives by the staff.

Miss M. BRINKHURST, of London Wall, was the recipient of a china teapot and hot water jug, also silver spoons, on resigning to be married.

Miss E. M. DAVIS, Temporary Telephonist, of London Wall, resigned to be married on Jan. 17 and was presented with a silver chain bag.

Miss D. RYAN, of London Wall, on resigning to be married was presented with a case of fish knives and forks and other gifts.

Miss A. C. HARMAR, of Hop Exchange, resigned on Jan. 3 in view of her approaching marriage, and was presented by the staff with half a dozen knives.

Miss E. HARVEY, of Museum, has resigned to be married. Her colleagues presented her with fish knives and forks.

Miss L. E. SPICER, Temporary Telephonist, of Museum, on resigning to be married was presented with a salad-bowl and servers and cut glass vases.

Miss J. H. MACKENZIE, of East, has resigned in view of her approaching marriage. She was presented by her colleagues with a biscuit barrel and by other members of the staff with a tea-cosy and table-centre.

RATTLING THE TELEPHONE.

While "the films," says the *Darlington North Star*, and especially those from America, have been responsible for introducing many habits and customs in this country, one is a great disadvantage to the efficient working of a telephone exchange. This practice, that of rattling the bracket of the instrument in the hope of getting quick attention, has the effect of impeding the work of the operator and also delaying what the impatient subscriber desires. Girls in Northern exchanges are complaining of this rapidly-increasing annoyance.

THE FUTURE OF PALESTINE.

Mr. Leon Simon, whose paper on "Palestine in Wartime" is reproduced in this number, gave an interesting lecture about "The Future of Palestine" on the 5th March to the members of the United Wards Club of the City of London. His ready responses to the criticisms of those who took part in the subsequent debate were thoroughly enjoyed by all present.

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REHABILITATING WESTERN ELECTRIC COMPANY'S ANTWERP FACTORY.

AN integral part of the German scheme of world domination was the crippling of industry in the region overrun by the Teutonic invaders. Despite the subjugation of the German military forces, the systematic pillaging of factories in Belgium and Northern France, has created a situation that may enable the Germans, even in the midst of military defeat, to gain in the field of peaceful industry a considerable advantage over their victorious opponents.

Just how great this danger is, still remains a subject for speculation, even among experts, but the story of the reconstruction of the Western Electric Company's allied house in Antwerp shows that it is possible to balk the German scheme just at the point where it seems to have its last chance of success.

The Antwerp house was the first of the company's factories in Europe, and from its establishment, in 1882, to the capture of Antwerp by the Germans in the fall of 1914, played a leading role in the development of the company's European business. It had increased from a small building to a considerable group, and the telephones, switchboards and other electrical apparatus made there could be found in all parts of the world. It might almost have been termed the backbone of the Western Electric Company's international interests, says the *Western Electric News.*

The city of Antwerp was occupied by the German army on October 9, 1914, after a bombardment which had demonstrated the fallacy of the theory that the forts in the outskirts could protect the city indefinitely. In company with a large proportion of the population, those in charge of the Antwerp house made their way to Holland, but five days later, when conditions had become more settled, C. C. Clayton and A. D. Whipple, both Americans, returned to Antwerp. Although there was nothing in the line of their own duties to compel them to do so, they took charge of the factory, and remained there for nearly three years, when the entrance of America into the war made it necessary for them to leave.

Back in 1915, when the *Lusitania* was sunk, the entrance of the United States into the war seemed likely to those in Antwerp, and Mr. Clayton decided that it would be an excellent plan to conceal the records and other valuable papers from the Germans. He and Mr. Brodahl, the factory engineer, who since has died, went through the files in the offices of Messrs. Minor, Christoffel, Wright and Delville, the men who had been in active charge of affairs, and removed everything that might be of profit to the Germans. These papers were carried across the street to a room in one of the older buildings, where experimental work had been in progress. This room had always been kept locked, so it was possible to work with less fear of detection.

Seven or eight zinc boxes, about three feet long, eighteen inches wide, and fifteen inches deep, were then filled with the papers, and various other articles of value, among them ten pounds of platinum and some silver coins that the company had been experimenting with in order to make coins for the Belgian government. The dies from which the coins were to be made, and which belonged to the Belgian government, also were put in the boxes.

It took all one Sunday to pack the boxes, which then were made air-tight.

On the following Sunday a section of the floor was carefully removed, a deep hole dug, and the boxes were buried. The earth was concealed and the section of floor relaid in such fashion that it was practically impossible to tell that it ever had been removed. This part of the job was done so successfully that when, a week or two later, Mr. Clayton brought Mr. Whipple over, the latter was unable to find the place where the floor had been taken up, although he was told that it was somewhere in the room in which he was standing. Mr. Clayton prepared two maps, which he succeeded in getting out of Belgium with him, so that even if something happened to him, it still would be possible to find the buried treasure.

Even before Messrs. Clayton and Brodahl buried the records, they took the first step in another phase of the reconstruction process. Anticipating what later proved to be a fact—that the Germans would carry off most of the machinery—they drew up a list of all the machinery in the Antwerp factory, and smuggled it out of Belgium. This list was in six sections, written on extremely thin paper, that could be folded into an almost infinitesimal compass. These lists were sent to America, where it was found that most of the needed equipment could be replaced from Hawthorne's surplus stock, and arrangements were made long ago to ship the machinery as soon as it was discovered how much would be required.

All this, of course, went on while the war was still in progress, and the Germans were taking machinery from almost every factory in Belgium and Northern France, and transporting it to Germany.

For the last three months of the war the factory was in active use by the Germans for the purpose of repairing field telephones and work of a kindred character. Not all of the buildings were so used, however, and the idle portions were filled with furniture and some of the machinery removed from the rooms the Germans occupied.

The phrase, "some of the machinery," is used advisedly, because the Germans carried off most of it to Germany. The new turbine unit installed not long before the war began was ripped from its concrete base. The remainder of the old power plant is still in place, however. It consists of two vertical compound engines, with Western Electric generators and one horizontal engine. Three of the four boilers are in good condition, except that the automatic stoker on one of the boilers is among the missing. There was precious little machinery of value to the Germans overlooked by them. All stock of raw material, including lumber, have disappeared.

Now for what is left. The buildings themselves are in even better condition than was anticipated. Practically all the electric light wiring is intact. The records, platinum and tools buried by Messrs. Clayton and Brodahl were found undisturbed and unharmed by their sojourn of three years underground.

The haste with which the Germans left caused a sort of involuntary exchange of machinery, because much of that which they had brought from Germany and installed for the Signal Corps repair work, was left behind. Some of it was all packed and crated, ready for its journey home. Considerable stocks of war material, such as field cables, portable sets, magneto apparatus, switchboards, batteries, condensers, &c., also were abandoned.

Part of the disorder in which the buildings were found was due to the fact that the Germans had used them for sleeping quarters. Nearly all of the private offices, including that of the manager, were turned into dormitories, and in some cases bunks were built one on top of the other.

The unwelcome visitors made themselves right at home in every sense of the word.

Now for the future. How long is it going to take to prove to the Germans that their attempt to cripple the business for years to come was as useless as their attempt to whip the world? It takes two things to run an establishment like the Antwerp factory—machines and men. The survey of the machinery situation, made while the war was still raging, already has been

mentioned, so it is almost superfluous to add that even now the machines are on their way to Antwerp and some of them probably installed. Ten cartloads left Hawthorne some time ago, and so important was the shipment considered that Herbert C. Hoover gave permission to include them in the cargo of one of the steamers of the Belgian Relief Commission.

As the machines are so much useless metal without men to run them, and the executive forces to direct the work, the reconstruction of the organisation has not been overlooked. After the fall of Antwerp, the executives of the factory were assigned to other posts in the company's organisation. Some stayed in Holland, others went to Paris and London, and a fair-sized delegation came to the United States. Now most of them are hurrying back from Hawthorne and New York, from London and Paris. It is reunion time in Antwerp now.

Of course, a big proportion of the Belgians employed went at once into the Belgian army, and many of that gallant body of fighters will never return. The Belgian government is doing all that it can to accelerate the rehabilitation of industry by releasing at an early date the "keymen," as they are called—men such as foremen, who are essential to the industries in which they were engaged before the outbreak of hostilities. The other workmen also are coming back as fast as they are discharged from the army, and it is estimated that approximately 60 per cent. of the former employees will return. There were about 2,300 of them in the old days.

Within six months the Antwerp factory will be running on a considerable scale, is the prophecy made at this time by the company's executives.—(*Telephone Engineer*, Chicago.)

THE COMBINATION OF EDINBURGH TRUNK AND EDINBURGH CENTRAL EXCHANGES.

AFTER a gradual transfer of trunk lines from the Edinburgh Trunk Exchange to the Edinburgh Central Exchange, extending over a considerable period, the former exchange was closed on Jan. 12. Originally Edinburgh Trunk Exchange had 25 trunk positions, a distributing position, and two local positions, and now, at the Central Exchange, there are but 5 purely trunk signalling positions, and 5 positions on which bothway and incoming trunk lines, working on a junction basis, are terminated. All the outgoing trunk lines, save those now working on the 5 trunk signalling positions, are equipped as junctions and all the originated calls which pass over these lines are controlled by the "A" telephonists at the Central and other exchanges. This is indeed a revolution. It has not only effected economy in staff, representing about £1,500 a year, but it has greatly improved the trunk service. Edinburgh Central is now the largest completely combined exchange in the country, and it offers a striking object lesson in what can be done. The change has not appreciably affected the standard of local service, for the trunk lines, which are equipped as junctions, have been brought to the Central in small groups, and the Central Staff has been allowed to adapt itself to the new conditions in a gradual way. With the last stage in the transfer, the bringing over of the long distance lines, it has been necessary to employ a number of telephonists on local work who have only had short periods of training, but these telephonists are falling into their work as easily as could be expected, and they will soon be efficient in local operating.

One of the satisfactory features of the gradual transfer has been that it has not been necessary to dispense with the services of any of the temporary staff employed, in order to avoid redundancy, and there is every reason to hope that it may be possible to appoint most of them ultimately. This is not an unimportant matter, for it is not profitable for the Department to train staff, and then to dispense with them; and then, it is highly undesirable that any additional people should be thrown on the Labour market just now. Thus the policy adopted has proved at once economical, and socially advantageous. This satisfactory result entailed foresight as well as the most economical use of the staff for some time before the combination, and the whole Edinburgh Traffic Staff assisted towards its realisation. It meant at times hard work for all, but everyone helped, and the high standard of service always given at Edinburgh is, generally, well maintained. It would, of course, have been easier to have kept the staff up to its normal standard, but this would have meant redundancy of force when the combination was completed, and, inevitably, the services of a number of people would have had to be dispensed with whose chances of new employment would have been remote, in view of the present situation in the Labour world.

It is not pretended that the concentration of all the lines in one exchange has not created difficulties, but these difficulties are really traffic problems of great interest, and they are being met, and solved, as they arise. Nor is it possible to ignore the fact that the maintenance of a service of junction quality on trunk lines will not give concern in the future, but if new lines are provided, with reasonable liberality, there will be little reason to apprehend any embarrassing consequences from the equipment of trunk lines as junctions. Doubtless the time may come when it will be necessary to resort to "Special Control" on some of the groups much oftener than is required at present, but adequate facilities for such control exist, and there is little to fear. The principle that whenever the delay on a group reaches 10 minutes there should be "special" control of the traffic on that group, until the delay is eliminated, is regularly practised, and it must be said that this frees the "A" telephonists from the incubus of struggling to complete calls over temporarily congested routes. But "special control" brings its problems, too, for when a call which originates at another multiple exchange has to be passed to the "special" position, it is sometimes difficult, when the turn of the call comes, to get in touch with the telephonist at the originating exchange, who should control it. This difficulty is engaging attention, however, and it will be probably best overcome by utilising Information Desks as the intermediary between the telephonists. Simultaneously with the combination of the exchanges the zone system in Scotland was modified, and Glasgow is now the only actual zone centre in Scotland, although Edinburgh still acts as a subsidiary zone centre. Thus all calls which pass through Glasgow Trunk Exchange are controlled there, while all calls from other parts of Scotland, except those effected over lines equipped as junctions, are controlled at Edinburgh. The zone system, as it was originally designed, served a great purpose, but the time has come for its modification, and it can hardly be said that the modification has not been advantageous. But time must be saved on the long distance lines, and towards that end zone working, or subsidiary zone working, will continue to be an important part of the handling of long distance traffic, until the trunk line facilities are considerably augmented. The work of combining the Edinburgh Trunk and Central Exchanges has been a most interesting traffic development, and those who fully appreciate what such an undertaking means in organisation, will best realise what traffic work really is, and, perhaps, how little its importance is yet generally understood. The day of the Traffic Officer is coming, however, and when that day comes it will be fully realised that Traffic science is the dominant feature in telephone as well as telegraph development. The truth is that only by a fuller co-operation and sympathy between the Engineering and Traffic Staffs can the ideals of Telephone and Telegraph pioneers be adequately realised. That need was always a great one, but it is now greater than ever, for the future of industry, and commerce, and general social advancement, in our country becomes more and more dependent on efficient means of communication. There is, then, plenty of work to do in the near future, and if the Post Office is wise in its day and generation, it will recognise that everything possible must be done to maintain enthusiasm for progress among the Engineering and Traffic officers.

R. G. D.

THEORY AND PRACTICE IN TELEGRAPHY.

By R. BAXTER.

WHICH of the two mentioned factors at the heading of this article is the most important? The writer would desire to treat the subject from a non-technical point of view, and in a few cursory sentences endeavour to furnish that light and shade upon it which used upon a line drawing or sketch lends to the finished picture all the detail of life, be it active or passive. Let the opinion of my readers supply the direct answer to the question asked.

It has been my good fortune to see something of both theory and practice, and, as I learned the practical side of telegraphy first, I will treat that side of the subject first.

An old time, or perhaps I should say "Old Company" telegraphist (and a good one to boot) never failed to impress upon me that he was not good at theory, but that he could perform the practical with any man. He has just retired from service and, from a practical telegraph standpoint, honour is due to him. He could with ease signal 40 words a minute in his heyday and read more, aye, even signals produced by a transmitter at its fast-sounding limit. Here was practice personified, yet when one looks round a busy instrument room, what variety one sees which affects practice in general. Standard qualifications and the heights reached by the artist in telegraphy are widely separated, yet what is it so often happens in our daily practice? Not infrequently we have at the opposite ends of a line a "qualified telegraphist" and skilled artist.

During the years of the war I venture to submit this has been a great cause of dissatisfaction, worry, congestion of traffic, and delay.

The strong flier has so often had his wings clipped, as it were, by circumstances beyond his control that he has gradually been forced into a position where delight in his art has ceased for lack of scope for his skill.

Again, how large a part temperament plays in the matter of practice. At times we find the erratic highly-strung personage working with one of indolent slovenly operating style, and the result is anything but harmonious. One can almost see a challenge expressed by look though not in telegraph signals, viz.: "Waken up," to which a retort might follow, "Work amicably, man."

The question arises how far can theory ever hope to produce generally that harmony so evident in the musical rhythm of the staccato dot and well-measured dash so well known to the real artistic telegraphist, but so difficult to describe.

When the round of circumstances brings two skilled operators together, one at each end of a line, how the messages fly. The effort is minimum, the result maximum. One wonders if it were not possible to teach this secret practice alone in our telegraph schools to the ousting of all other styles.

It would, I suppose, be possible only as far as it is possible in other schools to teach all to produce the same handwriting.

It appears then to the writer that there are certain characteristics possessed by certain young people, here and there, which go to the making of a real artistic telegraphist. These may be endowments of nature and may be far separated from brain power.

Bad practical telegraphists have been met with who possessed certificated evidence of technical knowledge (I shall not say technical skill).

It is therefore thought that the practical side of telegraphy demands certain natural aptitude, close observation of good methods (by good I mean methods productive of quick disposal of telegrams) and patience.

Once learned, telegraphy is not difficult to practise and really becomes as easy to the majority as the use of the mother tongue, but we may be doing some good by asking those of our readers who are in the early years of their practice carefully to observe that unostentatious, quick, artist in telegraphy who requires no supervision, who at a busy circuit keeps the traffic well in

hand, and is ever ready to lend that helping hand to younger people or give that word of counsel so often needed.

The old days of the Telegraph World produced many such, and it is to be hoped that the present day methods have not totally obscured their shadow. How did such men view the theoretical side of the subject one may ask ?

My opinion is that the skilled artist in telegraphy unconsciously, if not consciously, revelled in the theoretic.

Without theory it would be impossible to know accurately what staff and apparatus connected with telegraphy are required.

The words "staff" and "apparatus" include a very great variety of matters to be examined.

"Staff" includes the compass contained within the limits of temporary girl messenger, unskilled workmen, Chief Telegraph Traffic Inspector and Engineer-in-Chief, indeed a very wide field.

The involution required in considering this field theoretically is as great as the intertwining of each individual great and small is like the wheels of a huge clock. Each must correctly perform the allotted task or the machine will fail, but in the performance of the task, as we ascend the scale, we find that the higher one goes each person above the one beneath is not only concerned in performing his own duty but is responsible for producing the laws upon which the lower scale officer acts.

The sifting of matter for the correct production of the laws of harmony in the Telegraph machine is then no ordinary duty. Routine, which is the lot of the lower classes, disappears bit by bit as one passes higher.

And in the matter of apparatus what a huge and complex variety of inventions, careful thinking, experimenting, construction, fitting and fixing is required before one can sit down at the apparatus to carry on practical telegraphy. The business of producing and fixing apparatus involves a very great amount of practical work.

Therefore, good readers do not depend entirely upon practice in your telegraphic art but attempt to invade the realms of theory. You will enjoy the practice the better for theoretic knowledge. It is not sufficient to be practical; learn to reason, too.

The difficulties (frequently magnified) surrounding technical examinations and the gaining of certificates will be made easier by theorising, and there will be increased interest in the daily round and common task.

THE SUPERANNUATED MAN.

TO-DAY I "signed off" for the last time. I suppose I ought to have felt pleased at putting off my harness, but I confess I did not feel very hilarious. On the contrary, if the truth must be admitted, like Sir Hugh, the Welsh parson, I had "a great dispositions to cry." After almost a life-time spent in even an uncongenial occupation, one cannot give it up, or be given up by it, without feeling (to quote Sir Hugh once more) "how melancholies I am." I remember well my first introduction to the "Department," forty-eight and a half years ago, as I entered, with a beating heart and a blushing countenance, the tiny apartment which in those early days served as the Instrument Room. I was but a child, and to my romantic imagination it seemed as though I had strayed into some enchanter's cave of mystery. For a youth of my tender age I was fairly well read, yet I knew next to nothing of the wonders of electricity, and so when I saw needles wagging, and heard armatures clicking without any visible operator I felt that

"This is no mortal business, nor no sound
That the earth owns."

But familiarity had with me its usual effect in producing indifference—though not contempt: I had too much sense for that—and so the feeling of awe and curiosity soon wore off. But of all the long succeeding years of servitude—to parody poor Slender's words respecting his relations to "Sweet Anne Page"—I might say that "if there was no great love at the beginning, yet it pleased heaven to decrease it upon better acquaintance." But "time and use redress all grievances," or at least mitigate their sting, and so the years rolled on; and though I could not say like Bardolph "it is a life that I desired," I remained faithfully doing my duty according to my lights, giving my employers full measure of my time and my slender abilities, but through it all wistfully looking forward to the time when I should be able to carry out many cherished, if apparently Quixotic plans.

And now that I am free from the cares and constraints of official life, what a halcyon existence is in prospect for me! Nothing to do! Nothing to worry about! Never again, when in the middle of an interesting passage in a favourite author shall I have to close the book with a sigh, and get me to the treadmill. Never more will fagged brain and pre-occupied mind prevent me from communing with those beloved friends, my books—those ever-constant companions, those ever-patient teachers, who never sulk at neglect, or scowl at dulness. Never more will aching legs and troubled feet keep me from enjoying the pleasures of a country walk—the thousand sweet sights and sounds: the bonny hedge flowers, the gay plumage of the birds and their careless joyous warblings, the drowsy hum of the beetle as he "winds his small but sullen horn": and the sweet, refreshing breeze.

And so, now I shall have leisure, leisure to be as busy (or as idle) as I choose, leisure to devote myself to all those studies and pursuits which hitherto have been held up waiting a convenient season. Now I shall be able to work at my *magnum opus*, that wonderful history which is to revolutionise and confound the prevailing canons of historical criticism; and at that thrilling romance, "The Duncombes," for which the circulating libraries are impatiently waiting; or at that marvellous effort of poetic genius, my long-dormant epic, "The Wellingtoniad." There's occupation for a lifetime, let alone for the short span left to the Superannuated Man! Nothing to do, quotha! Nay, I am setting myself more tasks than, I fear, will ever see completion; perhaps more than will ever advance beyond the plan. But what then? Is the time spent over the planning, time lost? Does the architect whose plans are rejected, or perhaps never submitted, lose the experience gained in working at his designs? Are not the unwritten poems, the unpainted pictures, the unspoken orations, the real masterpieces? It will be an item on the credit side of my account if I only succeed in keeping my body active, and my mind alert, even if the more ambitious plans I have sketched above never reach maturity.

Now I hope that no one will pity me on having passed the age which Acts of Parliament have declared in their wisdom to be fatal to efficiency in His Majesty's Civil Service. I shall not quarrel with the conclusion, even if I question the truth of the premise (for many a good argument is based on a fallacy), anymore than a prisoner would object to being set free because he knew that he deserved confinement. The Jacobites did not acknowledge King George as King *de jure*, but they were perfectly ready to take advantage of his royal prerogative of mercy when exercised in their favour. While I do not admit the impeachment of the Department that I am too old for further service, I am quite willing to sink logic and accept release, whatever the grounds on which it may be offered. "For this relief much thanks!" When is a man old? This is not a conundrum, gentle reader, but a question seriously asked ever since the first white hair made its appearance on the head of the first man. And the answer to the question does not concern itself with years: Roger Bacon called himself an old man at fifty-three; "Old John of Gaunt, time-honoured Lancaster" was only fifty-nine when he died; Spenser calls the Earl of Leicester an old man, though he was then not fifty; Admiral Coligny was called "very old," though he was only fifty-three when he was murdered; Sir Walter Scott calls himself "a grey old man" at fifty-five. On the other hand, Methuselah must have been a tender juvenile when he celebrated his first centenary; Cicero applied the term *adolescens* to himself when forty-four years of age; Cato thought himself young enough at eighty to learn a new language; that ever-green statesman, Lord Palmerston, was over seventy when he entered upon his first Premiership; and Mr. Gladstone was eighty-three when he took office for the last time. And sprightly young fellows in their grand climacteric are still bestowing upon the world their genial wisdom, and shaming the youth of their day by their energy and spirit.

But after all, a man is just as old as he feels. Some men never seem to have passed through the adolescent stage: nature seems to have promoted them from infancy to middle age *per saltum*; if I may so express myself they were always old when they were young. Others seem to have grown no older since you first saw them in the days of the Consul Plancus; their step is perhaps, not quite so springy as formerly; they may complain of occasional twinges of rheumatism; grey hairs are discernible on their heads, but their optimism and enthusiasm are as boyish as ever; they have as keen an interest in the affairs of life as when they were young; and if they have lost some illusions, they still retain unconquerable hope. These are the men to whom children instinctively confide their little joys and sorrows, their hopes and fears, their fancies and day-dreams, and to whom young men turn for advice and encouragement, both seeing in them, perhaps, something of their own ingenuousness and simplicity.

I love the society of young men. I love their bright and hopeful outlook on life, their openmindedness and impressionableness, their candour and veracity, their indignation at wrong and injustice, their generous championship of unpopular, or lost, causes. I am good-naturedly amused at their self-consciousness and self-importance (was it not a young man who said, "The time is out of joint;—O cursed spite! That ever I was born to set it right!" ?), at the contest between their pride and their humility, their "cheek" and their modesty, their self-confidence and their diffidence; at the lighthearted, airy way they sweep aside objections to their theories, and solve problems which have tasked the wisest minds of all ages. Nothing daunts *adolescens*. *Senex* may "doubt" and "fear," but his young friend is "sans peur" as he is "sans reproche"; he is cock-sure about everything. Blessings on you, my dear young friends. Blessings on your open countenances, on your cheery laughter, your gentleness and courtesy, your chivalrous scorn of the base and mean! What a world this would be without the young people! With nothing to qualify or mitigate the cynicism and selfishness of us greybeards! Nothing to remind us of our own lost youth, of our own spent enthusiasms!

And now I have joined the ranks of the Young and Evergreen, for is it not universally acknowledged that the Superannuated Man possesses the secret of Perpetual Youth? Everyone knows that "time writes no wrinkles on the brazen brow of the Annuitant and the Pensioner. Every month, or every quarter, as the case may be, year after year with unfailing regularity they present themselves with their "warrants." Other men, not safeguarded by magic "warrants" pass off the scene in the ordinary course of nature but the pensioner possesses a charmed existence. Men may come, and men may go, but he goes on for ever." It is said that no one ever saw a dead donkey. I don't know whether that be so or not, but a dead annuitant must be almost as rare a sight. Reader, how many have you seen in your time?—And yet, however long we may hold out, however stout and stubborn we may be, we shall have to give in at last and go the way of all flesh. But Nature is very kind, she lets us down very gently; little by little, step by step, a cord slipped here, a pin loosened there, and our tents are gradually, leisurely taken down and folded up. Day by day our steps become slower and more uncertain, our senses duller, our enjoyment of life less keen; one by one the friends of our youth drop off, the old familiar faces are seen no more, we look out on a world of strangers, on a world which knows us not, and regards us not. We are reminded by many subtle signs that we are in the way, that there is no place for us here, that we have outstayed our welcome. And so when one day a "warrant" comes—far other than that to which we have been accustomed—we eagerly, gladly stretch out our tired hands to grasp it, and we look into the kind face of the Messenger as of a friend who is to conduct us into the presence of the Great Postmaster Emeritus.

THE MOST EXCELLENT ORDER OF THE BRITISH EMPIRE.

Photo by ELLIOTT & FRY.
MR. B. HOSKYNS-ABRAHALL, C.B.E.

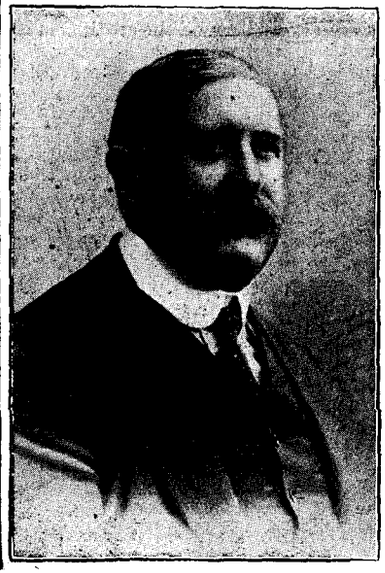

Photo by W. DAVEY & SONS.
MR. A. MELLERSH, C.B.E.

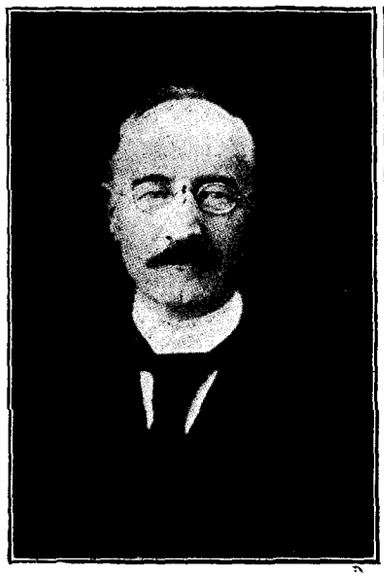

Photo by WALTON ADAMS & SONS.
MR. J. McL. ROBB, O.B.E.

MR. G. F GREENHAM, M.B.E

Post-Scriptum (a year hence).—I have had a year's experience of a life of ease and freedom. Has the prospect with which the year opened been realised? Have things worked out as they seemed to promise? Ah! reader, is our forecast of the future ever realised? We are so constituted by a wise and merciful Providence that we are always in aim and aspiration far beyond our attainment. Go as far as we will on the road of our achievements, the goal is still ahead of us. The traveller sees the distant hills all lighted up with the glory of the noonday sun, and he presses on, only to find the alluring vision recede as he approaches. The cyclist always thinks the other side of the road the better. "Man never is, but always to be blest." And so, if I have to confess that my day-dreams and plans have not come to fruition, that I have not done all that I set myself to attempt, I may console myself with the reflection that my case is not a singular one, that I am but illustrating a law of nature—pointing a moral, if not adorning a tale. Dissatisfaction with the present, and constant aiming after the unattainable is the foundation of all civilisation, the incentive to all progress. You ask after the *magnum opus*, patient reader? Alas! it is still unwritten. The Duncombes" will not be out this year, and as for the Wellingtoniad, it shall be published, I solemnly swear—at the Greek Kalends. But has my year of release from office cares been altogether fruitless? By no means; if I have not done as much as I wished, or promised, I have not been idle: "something attempted, something done" has been the tale for every day.

PADDINGTON POOR CHILDREN'S TEA.

The yearly treat given to the poor children of the Paddington District by the staff of the Paddington Exchange was held on Saturday, March 15. Nearly 400 children were present and quickly made the piles of good things provided for them disappear. The preparations for this great event are well shared by the Engineering staff, both in cutting up food and preparing the stage for the play. The pre-war jam sandwich was so well patronised that it was a work of art to see that each child had his or her share. How delightfully candid some of the children are! After the body of the hall had been comfortably filled a boy entered and was told to go into the gallery. He evidently thought that the gallery was specially set apart for girls and replied, "What! me with the gels!" Apparently his dignity was touched and he went up the stairs most reluctantly.

The helpers were anxious that each child should have a good tea and pressed the cakes and buns on the little ones. One helper thinking that a shy looking little girl had not had much tea, pressed her to put a piece of cake into her pocket. Unabashed the little one answered, "But I have, Miss," and showed a handkerchief, thoughtfully provided by the staff, full of cake and buns to be enjoyed afterwards.

The tea is not the least of their enjoyment, for they look forward each year to the play which is their after tea entertainment. This year "Cinderella" was produced and they thoroughly enjoyed every word of it. The fairies always come in for a very big share of admiration, for no play in the children's eyes would be complete without fairies.

Even to them as to all of us, all good things must come to an end, and as the children left the hall some of our good friends handed a bag with fruit, sweets, a bun and a golden penny to each, so that all their good things did not end when they left the hall.

We must not forget to mention the Mandoline and Banjo Troupe of six men, kindly brought by Mr. Rae, our Storekeeper, which entertained the children for about 20 minutes with music and songs, in which the children readily took up the choruses and so assisted to entertain themselves.

A. E. KNAPMAN.

TELEGRAPHIC MEMORABILIA.

THE Post Office generally and the Telegraphs and Telephones particularly have been under a perfect fire of criticism by the public press of late. This in itself is perhaps a tribute to the efficiency of the service in the days long ago before the war. Especially has the international telegraph system come in for scathing comments which, from an outsider's point of view, may appear wholly justified, and evidently received the approbation of the majority of merchants, shippers and traders. Without any wish to be disrespectful to the "fourth estate," it is patent to everyone in the service that the lay press possesses but very little real knowledge of the difficulties of international telegraphy, or for the matter of that even of our own inland system. During a recent interruption of one of the trunk underground routes, a journalist expressed the most genuine surprise that anything could go wrong with an underground line. Even a *technical* journal writes as though poles could be erected, lines renewed, submarine cables repaired and relaid, and not only the arrears of five years maintenance overtaken but future developments of both telegraph and telephone placed before a waiting public as a *fait accompli* in a few months. The same writer himself suggests one to one and a half years as the limit for the full realisation of this re-construction scheme and yet gives every evidence of impatience in half-a-dozen paragraphs, and that before as many months have been placed between ourselves and the armistice. It appears to be overlooked that could all the material itself be provided there would at this very moment still remain the lack of adequate man-power. Telegraphy is a highly skilled calling and nothing in its history has proved the truth of this statement better than these four years of war. Submarine telegraph cable-splicing out at sea needs more than ordinary skill (it needed something more than skill in war-time to mend a cable in the English Channel what time the naval escort kept eyes and ears alert for alien tin-fish!) while the grappling for broken ends and the laying of new lengths demands a very special knowledge of the sea, its currents, ocean-beds and depths, which only years of practical experience can teach. The wear and tear and ravages of four years and more of the most diabolical sea warfare have not left unimpaired the efficiency of the submarine cable system of this country. The special repairing craft, too, are necessarily limited in number, and—may it now be said?—more limited now than in 1914. On land thousands of pounds worth of telegraph and telephone material have been linked together round our island home, so that we might live with a greater sense of security than any one of the belligerents, except the last

entrant into the conflict, and that we might have fair warning of "the peril that flieth by night." This surely should count for something on the credit side of a public department.

If the Telegraph and Telephone Services have become somewhat disorganised it is, fundamentally, because they have diverted material, energy, skill, bone, brain, muscle, and not a little courage —probably in greater proportion than any other branches of the public service—to the protection of the populace of this island, and have probably received an equally greater proportion of ill-merited criticism because the return to normal conditions was not reached by the time the Peace Conference met. Such a condition would have been logically impossible even had it not been so physically. If one wrote in a mere spirit of retaliation, one might ask certain sections of the press how far they themselves had assisted the national cause by restraint from utilising the wires for items of the most trivial interest, while railing at Government Departments for alleged similar waste.

Particularising for the moment on Anglo-Continental telegraphy one is all too conscious that it is not even as yet anything approaching that which it should be, but the critics of this section of the Service appear to ignore the continued military needs, which account for much of the dearth of wires actually available for public traffic to the continent. With a lack of imagination, supposed to be the special failing of Government officials, they forget that the devastated areas in both France and Belgium include the utter destruction of thousands of miles of valuable lines, together with all the accessories so necessary to their erection, working, and maintenance. One reads paragraphs in the press on the question of "The disposal of the German submarine cables," but the editors of this same press apparently fail to realise that this question is undeniably linked up with enemy action in relation to the cables of other European nations.

The prospect of peace, and the Peace Conference itself, have brought not less but more traffic on to the lines. The disorganisation of pre-war telegraphic routes throughout Europe has also added very materially to the diversion of certain traffic via England, and incidentally entailed an increased and disproportionate amount of Service correspondence of a type unknown, possibly at any other telegraphic centre in the world. Demobilisation activities have been well reflected, a demobilisation which still includes Australian, Canadian and U.S.A. forces, each with its particular centre and system. From every part of the world has come the cry of congested cable lines. Nevertheless it is the poor old British Post Office which receives the major portion of the kicks, chiefly on account of the action of forces far beyond its own control.

So much on the side of the defence. However unjust many of the criticisms of the public may be, this will doubtless have no effect upon the plans and purposes of the future, which should have as their ultimate goal a NO DELAY service.

In fact, both for Inland and foreign service, one feels impelled to repeat continually that if we are to hold our heads high in the Telegraph world again it must be with this one aim in view.

There appears to be excellent ground for hoping that the T. and T. Journal will soon revert to its monthly issues and one will really believe that more normal times are at last being reached when that hope has been realised. It is no secret too that interest is growing afresh in the pages of this production, certainly not wholly on the Telegraph side, which should, however, have plenty to say for itself in the near future. Telegraphy is not dead, and not even dying. I have seen splendid specimens recently of cable printing on a Government-owned submarine cable X miles in length. Cable telegraphy has beaten wireless telegraphy over and over again during the war. It has beaten it again and again since the armistice, and it should at all times beat the aeroplane. If not, then something is wrong that should not be difficult of amendment.

Historic telegraph dates to be remembered.—On April 4, 1919, Commercial telegrams in English and French were accepted for certain parts of German territory for the first time since another fourth day, that of August, 1914, and on April 15, 1919, the first direct telegraphic communication with a German civil telegraph office since the opening of hostilities was re-opened for this same type of traffic, a line between London and Cologne being released by the military for a few hours daily. The day after, April 16, direct communication by a circuitous route was re-established between the Metropolis and Antwerp, and two days later between the Belgian capital and St. Martin's-le-Grand.

H.M. the King of the Belgians has been graciously pleased to create Mr. A. Tapley and Mr. H. F. Vandermeulen, Chevaliers "de l'ordre de la Couronne," in recognition of the constant and generous help given to Belgium in the course of the war." So runs a communication accompanying the insignia of the order forwarded to the above-named retired officers, a compliment which is accepted by both the recipients as a tribute to the hospitality and kindness of the Cable Room staff of both sexes.

Mr. E. G. Forster, yet another of the old Submarine Telegraph Company's staff—a fast disappearing number, has retired from the service of the Government upon reaching the age-limit. A passionate lover of artistic gardening and music, what better wish could follow him than that both he and his partner may live long to enjoy these two ennobling hobbies.

The satisfaction which Mr. Ferard must naturally feel at the success which has followed that excellent organisation, the Post Office Relief Fund, will doubtless adequately compensate the Hon. Sec. for the time and energy spent in its various activities throughout the war period. As one who has had the privilege of considerable first-hand acquaintance with quite a number of the cases assisted, the writer can testify to the sympathetic treatment which has been accorded to every case. Red tape methods have been conspicuous by their absence, and where the routine of military and other regulations has appeared to linger, the powers behind the Fund have repeatedly found short and efficient cuts to happy solutions of difficulties which individuals, unaided, could not possibly have reached. The Fund has not waited for applications, but has searched out unobtrusively and tactfully case after case. It has helped relatives, at times considerably removed by consanguinity, assisted with rent, granted loans (interest free), given gratuities, paid rent to tide over periods of stress, voted maternity grants, assisted with the education of orphans up to the point of financing the travelling expenses to and from school, and it has even been arranged that this latter assistance shall be continued until such children are well advanced in their teens. Those left behind have also been assisted to remunerative employment, prisoners of war have been kept regularly provided with parcels, and where returned men have needed medical assistance, more than one case could be cited of effective official intervention of the departmental medical officer. Whole-heartedly, indeed, has *service* been given, as well as funds, and if it be permissible to mention one particular corner of the Fund's activities, no local secretary could have rendered more tenderly sympathetic assistance then Mr. Woods of the C.T.O.

Mr. A. B. Hart closed the 1918-19 session of the T. and T. Society, on March 3, by opening one of the veritable glades of fairyland in his lecture on Telephone Repeaters. The promptitude with which the business portion of the meeting was disposed of was an excellent token of the eagerness of the assembly to settle down to listen to the lecturer. The study of radio-activity is in itself most fascinating, and that of the part which the "degredation" of matter plays in modern invention by means of the action of the electrons is not less so. Step by step the lecturer showed the developments of the thermionic valve, the form in which the latest telephone repeater has been developed, and traced, how a University Research department of mathematicians had discovered the laws which govern thermo-electro activity and had even decided the weight of a single electron, which turns the scale at the minute figure of 61×10^{-28} grammes never varying in any circumstances whatever as opposed to any other known condition of matter. It was a delightful paper delightfully delivered, but why, oh why, my dear Mr. Hart, did you upset the theories of our student days and tell us that we were all misled? After all those nice little diagrams so neatly drawn in those much treasured "Slingo" notebooks at home, with tiny little arrows pointing their feathered ends to the zinc and their business ends to the copper plate of the cell *inside the liquid*, it was sad to learn that, really, yes really—they should all be turned the other way! J. J. T.

"THE TRANSFORMERS."

Mr. C. W. CORNWELL (Mr. N. G. Near). Miss M. CLAYTON. Miss C. K. HOOPER. Miss A. E. KNAPMAN. Mr. E. A. POUNDS.

Miss R. POORE (Miss B. Position). Miss P. M. POTTER (Miss Ann Cillary). Miss H. HUBY (A Janitor). Miss I. HUBY (A Janitor). Miss M. M. LAMPLUGH (Miss Permanent Glow).

Miss F. WOOD (Miss A. Monitor). Miss E. RULE (Miss Long Distance). Mr. A. KINGDON NOAKES (The Director-in-Chief). Miss I. HATHERLY (Miss F. O'Nogram). Miss A. PRICE (Miss A. Welfare).

THE TRANSFORMERS.

A TELEPHONIC FANTASY IN THREE ACTS. BY JOHN LEE.

Caste.

Miss Ann Cillary	Miss Potter.
Miss B. Position	Miss Poore.
Miss Permanent Glow ...	Miss Lamplugh.
Miss A. Monitor	Miss Wood.
Miss Long Distance	Miss Rule.
Miss F. O'Nogram	Miss Hatherly.
Miss A. Welfare	Miss Price.
Janitors	Miss H. Huby and Miss I. Huby.
Director-in-Chief	Mr. A. K. Noakes.
Mr. N. G. Near	Mr. Cornwell.

This Fantasy was produced on Feb. 26 and 27 by the London Telephonists' Society and received with enthusiasm by a crowded house each night. In fact, in response to numerous requests the performances will be repeated at the Cripplegate Institute on May 21 and 22 next. The proceeds will be divided between St. Dunstan's and the War Seals Foundation. The production showed the Telephonists' Society in a new light—we might indeed add that its members flashed signals of unexpected brightness and of strange colourings not recognised on switchboards. The acting indeed reached a high level of excellence all round, and it would be invidious to single out any of the chief characters for special praise where all were so good. The piece itself lifted the veil upon the mysteries of switchrooms and their adjuncts such as they Never Were, as they Might Be and as they Must Be, and afforded the author scope developing views of idealism and of satire of which he took full advantage. The scene opens with the reading of a proclamation enforcing the conscription of all women betwen 17 and 21 for 2 years' service as telephone operators "for their training and well-being in kindliness of speech, in clearness of utterance and in control of mind and temper," and we follow with interest through the three acts the fortunes of Miss Permanent Glow and her undercurrent of protest against the course of super-civilisation which she has to undergo. Her revolt finds the usual and natural solution which we will leave our readers to guess at or to see for themselves. Act II is the apotheosis of the Director-in-Chief who has brought the manual service to such a pitch of perfection that the rest of the country, wallowing in unlimited automatic service, looks with envy towards London, which still enjoys the kindly helpfulness, the sympathetic attention and intuitive understanding of the soft-voiced operator. But the too perfect harmony of the exchange becomes monotonous and the intrusion of a young engineer has a disastrous result on the overtrained ladies. Mr. Lee's hits on the subject of standard expressions, rising inflections and other technicalities of the profession appealed prodigiously to the audience. Allegories are notoriously difficult to handle in dramatic form, but with the frequent quips which enliven this fantasy and the human touch which is applied to it in due season, the piece is very effective.

TELEGRAPH RATES IN AMERICA.

THE ADVANCE DUE TO INCREASED WAGES.

AN increase of 20 per cent. in domestic telegraph rates, effective April 1, says *Telephony*, was announced on March 29 by Postmaster-General Burleson.

The increase was agreed upon at a meeting of the United States Telegraph and Telephone Administration and was made necessary, Mr. Burleson's announcement said, to meet "the increased cost of operation, occasioned by wage increases, now in effect, made during the past year." Mr. Burleson added that the advance would be "barely sufficient" for this purpose.

The order affects both government and commercial messages, but it was announced that there would be no increase in special press rates for newspapers or in charges for special wires leased by press associations and newspapers. Under the order, however, commercial and government-leased wires will be charged for at an advance of 20 per cent. over existing rates, whether such wires be furnished by a telegraph or a telephone system under government control.

Mr. Burleson's order follows:—

"The following schedule of domestic commercial telegraph rates shall be effective from April 1, 1919, and continue until otherwise ordered:

"Present Rate.—25 cents, 2 cents for each additional word; 30 cents, 2 cents; 35 cents, 2 cents; 40 cents, 3 cents; 50 cents, 3 cents; 60 cents, 4 cents; 75 cents, 5 cents; $1, 7 cents.

"New Rate.—30 cents, 2.5 cents for each additional word; 36 cents, 2.5 cents; 42 cents, 2.5 cents; 48 cents, 3.5 cents; 60 cents, 3.5 cents; 72 cents, 5 cents; 90 cents, 6 cents; $1.20, 8.5 cents.

"Day letters and night letters shall be computed as at present, but charged for on the basis of the above rates. Night messages will be charged for at an increase of 20 per centum over existing night message rates.

"Commercial and government-leased wires shall be charged for at an advance of 20 per centum over existing leased wire rates, whether such wires be furnished by a telegraph or a telephone system under government control.

"The telegraph rates for domestic United States government telegrams are increased 20 per centum over the present government rate.

"The rate increases herein ordered are made necessary by the increased cost of operation occasioned by wage increases now in effect made during the past year and barely sufficient for the purpose."

Mr. Burleson's order was issued by the department without comment other than the explanation that the increase would not affect press rates and charges on wires leased by newspapers and press associations.

Increased wages for employees of all departments of telegraph systems under federal control, except employees at "non-functional" offices and messengers, became effective last Dec. 1. Employees in service more than a year and a half received an increase of 10 per cent., and those employees less than a year and a half, 5 per cent.

CHEATING THE TELEPHONE.

ONE of the reasons given by the Post Office Department (says the *Telephone Engineer*, Chicago, with reference to an innovation in American trunk toll practice) for establishing the "station to station" rule in long distance telephone payment is the crafty villainy of mankind. After Jan. 21 when the operator tries to get a particular person in a distant place on the wire the toll will have to be paid if a connexion is made with the place where the particular person is supposed to be, even if the person can't be found. In the New York *Sun* it is explained:—

"Designing persons employ codes to defraud the Government of revenue in that when calls are made, although the person called is said not to be there, words of explanation given of his absence are a code answering all the purposes of the call, but costing nothing."

For instance, Mr. Jefferson Davis Maguffin of Heehaw, S.C., leaves home and goes to Washington to look for a Government job, telling his wife to call him up at the Fourteen Points Hotel, on Pennsylvania Avenue, at 6 p.m., on Oct. 1. At 5 p.m. of that date Mr. Maguffin enters the hotel and says to the telephone operator: "If anybody calls me up, say that I'll be back at 9 o'clock." Then he goes out and takes care not to return to the hotel until well after 6 o'clock. Mrs. Maguffin, on calling up from Heehaw at 6, is told that Mr. M. will return at 9. She then takes up the code book which Maguffin has left with her, turns to No. 9 and reads the following:——

"Everything is going fine. There's a job here for every good Southern Democrat and it's only a question whether I'm going to get $15,000 or $20,000 a year. That depends on how much income tax Mr. Kitchin will be able to squeeze out of the North. Don't worry about this telephone arrangement; the money comes out of the Government's pocket, and that means, the rich pay."

If 10 o'clock had been the word, Mrs. Maguffin upon looking up No. 10 in the code would have discovered that her spouse wishes to say he expected to stay a whole week: "Mail me my other shirt."

Of course this crime against the telephone coffers is not confined to one region. In fact, it is supposed to have been invented by a scheming Northerner, a commuter. Tired of spending a quarter every afternoon to tell his wife on what train he would arrive he directed her not to answer the telephone bell between 5 and 6 p.m., but to note the time at which it rang and then consult a card he had hung up in the kitchen and which read as follows:—

"A ring at 5.10 means that I'll be home on the 6.23; have a rhubarb pie for dinner.

"A ring at 5.20: same as above, except make it pumpkin.

"A ring at 5.30 means have Gus bring my raincoat to meet the 6.46.

"A ring at 5.55 means that I am bringing a friend home to dinner on the 7.02. He is sober."

Is it a wonder that the Post Office Department wishes to shut off the ingenious devils who have made toll operators push the plugs patiently but in vain?

OLDHAM POST OFFICE MESSENGERS' ANNUAL INSPECTION.

Mr. Richardson, Postmaster, in addressing the messengers said he hoped that the Post Office would some day accept such boys as apprentices, and that an arrangement would be arrived at which would allow, say, five hours work, and three hours school attendance. He complimented the winners of the prizes and said their appearance was very clean and smart. An essay competition had recently been arranged, and Mr. Richardson spoke very highly of the work of the three prize winners.

The prizes were as follows:—For drill and general good conduct: 1, Boy Messenger T. Neil; 2, Boy Messenger H. Taylor; 3, Boy Messenger T. Kenworthy. Essay Competition:—1, H. Markham, girl messenger; 2, H. Taylor, boy messenger; 3, A Kay, girl messenger.

Mr. Blanchard said Boy Messenger T. Neil had gained high marks at the recent competitive examination, which, in ordinary circumstances would have given him promotion to a Learnership, but owing to the limited number of vacancies available at present a much higher standard had been fixed by Headquarters.

Mr. Shortridge also made a few remarks, and the proceedings terminated with three cheers for the acting inspector of messengers, Mr. Botteley, who takes a personal interest in the welfare of the messengers generally.

PORTSMOUTH.

One of the finest celebrations ever held in Portsmouth, to welcome the home-coming of men of all grades connected with the Post Office who had demobilised after varying periods in connexion with the Great War, took place in the Town Hall on Tuesday evening, May 6. The proceedings which took the form of a Dinner, Concert, Dance and Whist Drive, were presided over by the genial Postmaster (F. Spencer, Esq.) who was ably supported by the Surveyor, S.W. District, and his staff, the Medical Officer, and the principal Controlling Officers connected with the Office. His Worship the Mayor, who had very kindly granted the use of the Hall for the occasion, was also present and met with a great reception. The tables were laid for 229 persons, of whom about 170 were guests, and the toast of the King given by the Postmaster, was a signal for the whole assembly to join in the singing of the National Anthem. Selections of music were rendered on the great organ whilst the guests were assembling, as well as during the dinner. Following the dinner a concert, which was of a high order, was given to the men and their friends, after which the whist drive and dance occupied the attention of a large number of the company, and at the close, about 2 a.m., the excellency of the entire proceedings, at which upwards of 900 persons had been present, was proclaimed by each and all. Great credit is due to those officers who worked so assiduously to secure one of the greatest successes in the annals of Portsmouth. It is proposed to hold a second function as soon as the remaining members of the staff have arrived home.

The
Telegraph and Telephone Journal.

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Editing and Organising Committee - - { MR. JOHN LEE. MR. J. W. WISSENDEN.

Managing Editor - - MR. W. H. GUNSTON.

NOTICES.

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

VOL. V. APRIL-MAY, 1919. No. 52.

TARIFFS AND COSTS.

ONE of the most important questions with which all public utility services are faced at present in almost every civilised country is the adjustment of tariffs to meet the increased costs of material and labour. We have seen that railway, tramway and omnibus undertakings, gas and electric light corporations have been forced to raise their tariffs so as to avoid an actual loss to the shareholders or the ratepayer. The same difficulty will arise, indeed has already arisen, as regards the telegraph and telephone services. The wages for construction, maintenance and operating are considerably higher than they were in 1914; and, so far as can be foreseen, there is little likelihood of substantial reduction in the near future. The cost of material has enormously increased and the effect is felt not only when purchasing electrical plant, but also when providing the building fabric or arranging for the lighting, heating, cleansing, painting and general upkeep of the building. The price to-day of copper and lead will afford some indication of the cost of cable and electrical plant generally, if it is at the same time borne in mind that each process of manufacture is more expensive than formerly because of the higher wages of the labour employed. We need not, however, press this point, as it is abundantly clear to us all in our everyday life, whether we are purchasing a mouse trap or a mansion, a pound of paint or a pint of petrol.

There is, however, one addition to the expense, which despite the War Loan campaign may not be so fully realised as the alterations in the price of material and labour, that is the cost of money. Money is dear and the borrower is obliged to pay a higher percentage for all money raised. This annual increase in cost where the capital expenditure is measured in millions is a serious burden on any growing undertaking.

So far as the telephone service is concerned, the pre-war tariffs are still in force, the only exceptions being a small increase in trunk fees and in the obsolete flat rate tariff in the Provinces and an increase from £17 to £20 in the unlimited service rate in London. A surcharge has been and is being collected on each new installation; but this does not of course cover the increased cost of maintenance and operating. What is to be done? Is the service to be run at a loss? The Government have answered this question in the past by saying that the telephone service should pay its way and provide a small balance to meet contingencies. On this basis a new tariff was about to be introduced in 1914, but that tariff was based upon pre-war costs and would not meet the expenses of the present day.

The telegraph service has been conducted at a loss for many years. Parliament decided with no uncertain voice to adopt a sixpenny telegram as a benefit to the commercial community and has given facilities to the press at much less than their cost. The charge for a telegram of 12 words has been raised to 9*d.* and other alterations have been made; but a permanent adjustment will be required to meet the increased cost if the service is to pay its way.

"BRITISH SURPRISED, SAYS CASSON."

WE take our text from a headline in the *Telephone Engineer*, of Chicago, which, of course, is not responsible for the facts or figures of Mr. Casson quoted in their March issue. We may suggest that the British will be surprised, not in the manner the author suggests, but by the extravagances in which the "expert" can at times indulge. We have met with Mr. Casson before; we have met with other experts in figures relating to telephonic statistics. They are all at liberty to choose and exhibit what imaginative, unrelated and uninstructive figures they please from the combinations of cyphers of which our arithmetical notation is composed; and who shall say that they do not enjoy that freedom to the full? Mr. Casson, we understand, is the author of a "History of the Telephone," but whether the interesting assemblage of statements and figures quoted by the *Telephone Engineer* is from that book or not is uncertain. If it is, we imagine the author has taken a hint from Lucian on how True History should be written. The satirist gives full scope to imagination, and his history is relieved from all dulness of pedantic adherence to fact. The quotation begins: "There has been absolute government telephones (*sic*) in Great Britain since 1911," and concludes by referring to the 11-year record of public ownership." We make it seven and a fraction. Then he informs us that the rates (in London?) have been almost doubled "under government ownership." The increase, as our readers know, was introduced as a war measure. The £17 rate was raised to £20 and the measured rate was not disturbed; but in each case an initial surcharge was levied on new connexions. Further on we are told that "in 1913 there were 51,043 complaints in London alone from irritated telephone users." Without enquiring into the accuracy of this statement, but simply accepting it as it stands, we shall find that this implies that 1 subscriber in 5 made one complaint a year. A previous paragraph claimed that of 1,000 London subscribers circularised 880 had stated that the

management had proved to be a failure. This percentage when compared with the previous one seems to show internal incohesion, if nothing worse. Elsewhere we learn that there are 500 fewer telephones in London to-day than in 1914. The actual figures are: 1914, 267,769; 1918, 286,054; and if there had been a slight decrease during the four years and more of war which absorbed so much of the energy of the Nation what would it have proved with regard to state or private ownership? Absolutely nothing. There are other statements which we could not traverse without giving them space and treating them with a respect which they do not merit. We are told for instance, that "telephone managers report to postal clerks," but we forbear inflicting on our readers a treatise on staff organisation. Besides, the word "manager" is vague; we are told that the best of them before the war received only £250 a year! There are figures on the present "value" of the telephone plant; there are statistics of the inadequate number of the staff; there is the old story of the loss on the telegraphs. Why go further? Mr. Casson is writing with an eye on the "postalisation" of the telephone in America. This is entirely a matter of internal economy for the Americans; but we do not think the citizens of the States will receive much enlightenment on the subject from Mr. Casson's True History of the Seven (sometimes known as Eleven) Years of Government Ownership of Telephones in Great Britain in Peace and War.

HIC ET UBIQUE.

WE regret that we are unable to give our readers the text of Mr. Hart's paper on valve amplifiers. His lecture was largely extempore and he has not found time to prepare it for the press. We hope to produce it in the next issue.

WE hope to revert to the monthly issue of the JOURNAL in September next. As demobilisation increases, we anticipate an increase in the number of our readers who are rapidly taking up their old work and renewing their old interests.

WE learn from *Telephony* that the abolition of the flat rate business lines and the commuted trunk line service in Chicago has been recommended by a sub-committee of the city council. Only 10,000 out of the company's 500,000 subscribers would be affected. The report describes the service of these favoured subscribers as discriminatory against other classes, only those who were subscribers before 1913 enjoying the privilege. They pay about 1 cent a call against 2 to 5 cents paid by others. The commuted trunk charge is 1 dollar a day and the flat rate $125 a year. In future it is proposed that the $125 will cover only 500 calls a month, all calls above that number being charged for at 2 cents each. As an alternative, the flat rate subscriber may change over to the measured rate.

Another issue of *Telephony* (Chicago) points out what appears to be a discrepancy in the American Telephone Statistics. The United States Census of Telephones gives the total number of instruments at the end of 1917 as 11,713,228 of which 7,326,862 belonged to the Bell system and 4,386,366 to the Independent systems. The Bell report for 1918 gives an estimated total of upwards of 12,000,000, comprising 7,201,757 Bell stations and 4,802,568. This would appear to represent a substantial decrease in the Bell, and an increase of 416,202 in the Independent stations. *Telephony*, which is by no means unfavourable to Independent interests, thinks this increase improbable and remarks that the conclusion is forced that the Bell gives the Independents credit for more stations than does the official statistical bureau.

THE growth of the telephone systems in the cities of the Pacific coast is extraordinary. The returns of the Pacific Telephone & Telegraph Co. show that at the end of 1918 there were 133,885 stations in San Francisco, 121,937 in Los Angelos, 63,402 in Seattle, and 55,429 in Portland (Oregon). For a place of the size of Los Angelos (we believe the telephone area contains upwards of 350,000 inhabitants—but it is a rapidly-growing place) 120,000 telephones is a surprising number. Probably London, Berlin and Stockholm are the only cities in Europe which exceed this number.

"MARKING-TIME" IN THE EAST.

By G. W. J. PRAAT (*Superintendent of Telegraph and Telephone Traffic, Ceylon Post Office*).

WHEN Peace is signed and the dark clouds of the past five years have dispersed, the several Committees which have worked silently yet steadfastly framing programmes for the future welfare of the Empire will unfold their plans for our edification. Unprecedented conditions necessitated exceptional and speedy measures. Many of these "war-measures" will lapse automatically on a mere change in circumstances; others will be thrown overboard as unnecessarily cumbersome. On the other hand many are short cuts on the road to progress, and no measure found necessary or desirable during the war should be discarded without carefully considering its possible effect on the reconstructed service.

The measures adopted in Great Britain are of course common knowledge to the majority of readers, and the information which has been published from time to time, whether in the form of special articles or in papers read before one or other of the Societies has been of inestimable value and help to others engaged in similar work farther afield. It is probable, however, that the steps taken during the war to maintain efficient services in the widely scattered Colonies of the Empire are less well known. The object of this article, therefore, is to relate some of the difficulties encountered in Ceylon and to show how they were surmounted with the hope that it may induce others across the seas to record their experiences. In this connection it must be remembered that whatever is prescribed as standard practice in Great Britain will assuredly find its way ultimately to the Crown Colonies, though it may be modified to meet local conditions, and for this reason alone there is justification for advocating a more general interchange of colonial experience and ideas through the medium of this Journal.

It is not proposed in this article to touch upon postal matters but to deal mainly with a few of the difficulties attributed to a scarcity of stationery, and of telegraph and telephone materials. Shortage of paper was responsible for considerable inconvenience and gave rise to much anxiety. There are no paper mills in Ceylon: the whole of the paper required for the Island is obtained from England, with the exception of a little brown paper which formerly was imported from Belgium.

Far more drastic measures were necessary than merely reducing the blank margin on foolscap. These included typing letters on both sides of the paper with single line spacing; using quarter sheets instead of half sheets where practicable; using the back of obsolete forms for B and C forms; writing on both sides of service message forms; writing non-delivery reports on the back of C forms and not on separate service message forms; writing the replies to service messages on the back of the enquiry forms instead of on separate forms. Foolscap and larger size envelopes are used four times by dividing the face and reverse each into two clearly marked sections by means of a vertical line and closing the envelope each time by a gummed slip; another plan adopted for ordinary correspondence between the Head Office and the larger provincial offices and which increases the life of an envelope ten-fold is to use gummed labels bearing a printed address, fixing a fresh one across the flap each time the envelope is used. Many specially printed forms were revised: the possibility of curtailing

CEYLON TELEGRAPHS.

(E) *Address :* *No.* Post Office B 112 (L 1)

TELEGRAM.

(F)

Class Prefix	Code	Service Instructions	Words	*Office Stamp*
Handed in at	H. M.			
Received here: From .. / At .. H. M. / By ..		Sent to at by		
		Charges to pay .. .. Rs. c.		

(D)

(C)

(B)

This form must accompany any inquiry respecting this Telegram.

Fig. 2.

the size of the form and printing on both sides was constantly borne in mind. Unimportant papers due for destruction, if blank on one side or only slightly printed upon, were sent to the Government Printer to be made up into envelopes. Telephone Directories were printed every six months instead of quarterly; they are no longer distributed in large official envelopes, but obsolete forms cut to a suitable size are used as wrappers: no entry is allowed to exceed a single line while extensions are shown in double columns: tenders are invited for advertising space in the Directories.

An innovation of considerable importance on account of its departure from at one time world-established practice was the abolition of telegram envelopes, except for press messages. A small paper band measuring $2\frac{1}{8} \times 2$—Fig. 1—was introduced.

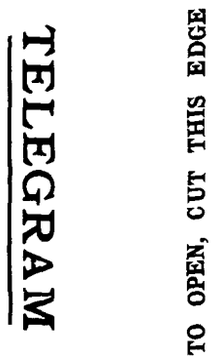


Fig. 1.

Message forms are folded in a particular manner and secured at the side by one of these bands, and, as a precaution against tampering with the message a date stamp impression is placed partly on the band and partly on the form. These paper bands effect a saving of $1\frac{1}{2}$ million envelopes a year and from actual experience there is no reason whatever for reverting to envelopes. Economies were also effected in the number of envelopes required for press messages. Except for a few hours prior to the time laid down for going to press, messages are delivered in batches in one envelope. *Furthermore, the envelopes are not addressed on the front but they* are secured on the back by means of a printed label bearing the name and address of the newspaper. On receipt of these envelopes at the Editorial offices they are opened by raising the flap; the empty envelopes are preserved and they are returned in bundles to the delivery office for further use. Printed labels are cheaper then envelopes.

The next revolutionary idea was two-fold in character; *first* the office copy of received messages was dispensed with, and secondly the introduction of an entirely new C form which when properly folded and secured by one of the paper bands—Fig. 1—utilised the address written by the receiving telegraphist, with obvious advantages, and at the same time safeguarded the contents of the telegram from the inquisitively inclined. A copy of the form used on ordinary circuits is reproduced—see Fig. 2.

Another form slightly modified is used at circuits provided with typing facilities. This combined form and envelope must be folded in a particular manner and the following instructions were issued: "Fold the form lengthwise at B, and again at C. The form so folded will now reach the black line D. Fold the form once more, but backwards this time so that the upper portion of the form bearing the address is on top. Then double the form at E, when the printed portion "Ceylon Telegraphs—Telegram" will appear at the back, and the written address on the front. Secure at F with a paper band so that the word "telegram" appears on the address side, and the message is ready for delivery." Additional instructions were of course necessary to deal satisfactorily with messages received for abbreviated addresses, Reply Paid, and certain other classes of traffic, but there was no insurmountable difficulty: all that was necessary was a suitable class prefix. Incidentally the work at the sending-out table has been facilitated, and the absence of C forms to check, results in some economy in staff. A further advantage is that the same form is used for transit messages.

Formerly it was the practice to keep a "local" record of all messages signalled from Colombo to Madras over the Baudot circuit. In 1916 the local record was dispensed with as an experiment with a view to determining whether certain "extras" received at Madras were due to faulty keyboard manipulation at Colombo or to line variations. The multilations ceased, and there was some reason for believing that the presence of a "local" record militated against good sending for the reason that the signaller relied too much on his own tape and failed to make a firm depression of the keys. A few months later "local" records

were dispensed with entirely; the life of the existing stock of tape was doubled in consequence and an anxious period bridged over.

In 1917 typing direct from sound was in vogue at 14 offices in the Island, but owing to increasing difficulty in obtaining new machines and spare parts for maintenance it was decided to gradually withdraw typewriters from the smaller offices in order to secure the requisite number of machines in working order at the larger offices. It is doubtful if the practice of typing at sounder circuits will be resumed at offices from which typewriters have been withdrawn except to meet exceptional local circumstances, *e.g.*, where a large proportion of the traffic is in foreign languages, or in code or cypher. No higher loads are obtained on circuits provided with typing facilities. This is primarily due to the fact that abbreviations in signalling are not allowed, and a reasonably fast writer finds no difficulty in keeping pace with a good sender. There are, however, fewer R.Q.s on circuits where typing is performed, but an investigation showed that errors were more frequent in messages typed, and it is doubtful if this result is not due to disinclination on the part of the receiver to stop typing for the purpose of calling for a repetition when he is in doubt. The evidence was not conclusive, and any Administration contemplating an extension of the practice of typing at sounder circuits would be well advised to examine this theory more closely. The only real advantage obtained from this method of working, apart from the consideration of telegraphists' cramp, is the legibility of the message delivered to the addressee, and rather than resort to the expense of providing and maintaining typewriters and training signallers to operate them it would be wiser and more economical to attach greater importance to clear handwriting at the entrance examinations. These remarks do not apply so forcibly to the Home Service as to the Colonies with locally recruited signallers.

Telephone development has been practically at a standstill for the past four years. The service has passed through many vicissitudes; at one time there was no telephone instruments; at another time no switches; for a long period the shortage of battery materials cast a shadow of the possibility of having to close down the system entirely till fresh supplies arrived, but this drastic action was fortunately averted. For practically the whole period of the War the Department was handicapped by a shortage of spare switchboard equipment with no possibility of obtaining new sections of the main switchboard. Several means were adopted to ease the situation and minimise inconvenience inevitable where business houses cannot obtain telephone facilities while their competitors are more fortunately placed. A 300-line section of an old switchboard, scrapped many years ago, was renovated and overhauled, and about 240 of the earliest applicants, some on the "waiting list" 2 years, were given a satisfactory service over transfer circuits to the main switchboard. In a few cases permission was given for two firms to be served by one exchange line by means of an extension circuit—there are no "party-lines" in Ceylon—but only where the traffic was light, and to discourage this arrangement each subscriber was charged as for a direct exchange line. In some instances subscribers were allowed to provide their own instrument or switch, the apparatus being subsequently purchased by the Department at standard rates.

It would be incorrect to suppose that all these difficulties have now vanished. Far from it. Cessation of hostilities has been thought by the public an opportune moment for pressing one's demands, whereas development of the sister services is dependent upon funds granted by the Legislative Council which is influenced by the financial condition of the Island, and, as Kipling says, "that is another story."

HULL CORPORATION TELEPHONES.

We understood from the public press thattheHull Corporation Telephone Committee have decided that all future extensions shall be made by means of automatic equipment and that certain of their unlimited service lines shall be converted to the new system as quickly as possible. It is stated that the calling dials will be fixed to the existing telephones in the latter case.

We shall watch this experiment of piece-meal conversion with interest.

LONDON TELEPHONE SERVICE NOTES.

The return of the warriors continues and the male remnant, which for some time past had been confined to two tables in the Queen Victoria Street Dining Club, strengthened each day, has now captured line after line of tables and seems like to establish itself in the centre of the room, if the onrush is not stayed. Possibly, however, the numerous transfers to lucrative posts in other Government Departments, of which rumour speaks so insistently, may do something to thin the ranks again—possibly not! In any case we take this opportunity of extending to Mr. McMillan and those others of our confreres who have already passed to the permanent staff elsewhere our congratulations on their increased financial resources and our commiseration on their removal from that atmosphere of peace and goodwill which reigns in the L.T.S. We can imagine them quoting from "The Passing of a Soul," written by the L.T.S. laureate, Mr. F. W. Negus, formerly Assistant to the Night Superintendent and now attached to the Victoria Traffic office. Certain of the lines seem peculiarly suitable for address by these transferred officers to their former beloved Department. For example—

"The dreams I had of you, dear one
Are sacred to this day!
* * *
I loved you dear when all was bright,
I love you still though heaven's in sight,
Oh! would that I could stay with thee.
* * *
But take my hand and *push* me through
Those gates of gold, just me *from* you."

(We are a little uncertain of the italicised words.)

The original poem we may mention was printed and sold in aid of the War Seal Foundation. This Foundation seems to appeal especially to the staff of the L.T.S., for many entertainments have been organised in aid of its funds. Following the lead of the City Exchange, Central arranged a Concert at the Cripplegate Institute for Wednesday, the 26th March and raised nearly £50 for the Fund. The Concert was excellent and the sketch with which it finished was admirably acted, the whole function being a most pronounced success. The Trunk Exchange which has always claimed to be the premier Telephone Exchange of Britain—only natural modesty substituted Britain for the World—also entered the lists in the matter of charity organisation—and arranged a Bazaar for Friday, April 4. It was hoped to raise £200 to be divided between St. Dunstan's Hostel and the War Seal Foundation, but so assiduously did everyone in the Trunk Exchange work and so generously did the L.T.S. staff as a whole support them that the final result shows a net profit of between £475 and £500—a result which, while it exceeded the fondest expectations of the Bazaar Committee, did not exceed what was deserved by the effort expended. The gathering itself proved a most happy one—a little crowded, perhaps, at times—and the pleasure of those present was greatly added to by the charm of Mr. and Mrs. Pike Pease, who stayed for a long time and set a good example in buying. Mrs. Pike Pease formally declared the Bazaar open and was presented with a bouquet by a wee mite of two, who was blissfully unconscious of the responsibilities of her office. Miss Beaumont may well be proud of her staff and of the Committee, whose untiring Secretary, Miss Buttfield, achieved so notable a success. We hope the Trunk Exchange will repeat the experiment.

An experiment of a somewhat different character was undertaken by the Mayfair Staff on Monday, March 24, when at St. Mary's Hall, Bryanstone Square, they entertained fifty of the blinded boys from St. Dunstan's. A good deal of courage was required for the undertaking, but the form of entertainment—a dance, made a special appeal to the guests, and they one and all expressed themselves enthusiastically on the pleasures of the evening.. Dancing is tiring and even exhausting, but these effects were banished by a sit-down supper, which was of a quality even beyond the Mayfair lunches which have a reputation throughout the L.T.S. What more could be said? The Mayfair folk were lucky in having Mr. Pounds to act as M.C.

The staffs of the Exchanges have all backed Miss Heap in her work for the Queen Mary Needlework Guild, and a recital of the number and variety of garments sent from the L.T.S. would prove as bewildering as a Peg Count Summary, but everyone will rejoice to know that this work has been recognised by the inclusion of Miss Heap's name in a list published by the War Office on March 4 of those brought to the notice of the Secretary of State for War for valuable services rendered in connection with the establishment and maintenance of Societies, Organisations and Institutions for the benefit of the Military Forces.

The Telephone and Telegraph Society held its last meeting of the Session on March 3, when Mr. A. B. Hart gave a fascinating lecture on the thermionic valve. Mr. Hart is an enthusiast on this subject, which is peculiarly his own, and he made abstruse technicalities easy of understanding to the layman in a manner which suggests a special gift of the gods and one which they don't often part with to technical experts. We are deeply obliged to Mr. Hart and to the gods. The meeting had also to pass the accounts for the year and to elect officers for the next session. It was proposed with all due solemnity that the new Chairman should be the new Controller of the Central Telegraph Office. Of course, no one breathed the magic name of Mr. John Lee, although the evening papers in the hands of some of those present announced his appointment to the post, for discipline is discipline even outside the C.T.O., and until the issue of the P.O. Circular on the following day the appointment could not be *officially* known. All the members of the T. & T. Society will look forward with the greatest pleasure to a Session under the Chairmanship of one who has taken so keen an interest in its meetings in the past.

As it happens the final meeting of the London Telephonists' Society was also very directly associated with Mr. Lee, for it took the form of a presentation of his Telephone Phantasy "The Transformers," written specially for the Telephonists' Society. An account with a photograph of the performers will be found elsewhere, so that it is not necessary in these Notes to make further comment except to say that the play was given to full houses on both February 26 and 27, and that everyone who heard it most thoroughly enjoyed it. The play will be given again on May 21 and 22, in the Cripplegate Institute, and the proceeds divided between St. Dunstan's and the War Seal Foundation. We would strongly advise any of our readers who have not already seen it to make a point of booking tickets, which can be obtained of any members of the Committee of the London Telephonists' Society.

If it should chance in future issues that our readers detect a new freedom of expression in these Notes and a departure from accepted official diction so dear to the heart of the present writer, will they please understand that the cause is to be found not in a change of heart but in a change of hand, and to the new scribe of the L.T.S. we send greeting.

PROMOTION.

BY A PROVINCIAL SUPERVISING OFFICER.

AMONGST the many post-war questions which will demand serious consideration in the Telegraph Service, that of promotion will apparently not be the least. During the War, as most of us are aware, many supervising and other higher appointments have been allowed to remain unfilled or have been retained by officers who have reached the normal age of retirement.

Before very long, however, when the settlement of Peace allows of a return to normal conditions, the selection of gentlemen to fill these posts will be made and, for the time being, there will be a plethora of promotion.

If in each case, the Departmental rule is observed that the officer selected is the one considered to possess the best qualifications, irrespective of seniority, the dissatisfaction, which at present is expressed only comparatively feebly, may, by its cumulative effect, become much more definite.

From the frequent references which are made to the "Pass-Over" in various quarters, such as the Service Journals, it would seem that there is still a certain amount of prejudice against any promotion which does not agree with the principle of qualified seniority. The conclusions which are reached upon this question are naturally influenced by the point of view from which it is approached. If it is considered that the Telegraph Department has reached its climax of development, promotion by qualified seniority would have a good deal in its favour; but if on the other hand it is admitted that the service has not yet reached that ideal condition it is desirable, nay, imperative, that the organising and controlling positions should be administered by the very best qualified officers available, in which case seniority, perforce, is bound to become a secondary consideration. The fact remains, however, that promotion is looked upon by many as a natural reward for long and faithful service. This would be the proper view only if the man with the longest service were always one of the man best qualified for advancement; but the keenest advocate of promotion by qualified seniority must in fairness admit that the senior officer is not always one of the most capable. In these circumstances we may ask ourselves what is the primary object of promotion; is it simply to provide an avenue of progress into which men will normally move after reaching the maximum of their present class; or is the main object to obtain officers capable of administering and controlling wisely Departmental affairs and keeping abreast with, or even ahead of the present-day needs and developments of the Service? If the latter, then the best officers available will not be too well-qualified and nothing less will suffice.

The dissatisfaction caused by the advancement of a comparatively junior officer may be due to:—

(1) A suspicion of favouritism.

(2) Natural resentment of the officer of longer service in being passed over.

This dissatisfaction, it is suggested, might be minimised by extending the system of promotion from one office to another. Apart from that result the proposal would be found to possess other material advantages as regards the interests of the Staff, the Department and of the individual also.

Examining the proposal in the light of point No. (1), we see that favouritism would be well-nigh impossible for the reason that the individual selected would have no friends to ignore any of his shortcomings or, through interested motives, to help him to perform his new duties satisfactorily. His new superiors would assess his merits with an open mind and would have no inclination to hesitate to report unfavourably upon the transferred officer. The officer who recommended his promotion being fully alive to these facts and also being jealous of his own reputation would be doubly careful that his recommendation was above reproach.

With regard to point No. (2) the feelings of the senior officers towards the newly promoted man would probably in most cases, be more cordial if he were transferred from some other office than if one of their own juniors (however accomplished he might be) had been given the position. Respect and esteem would be shown more freely to such a man, than to one of their own colleagues who had possibly for years been referred to by them as Tom, Dick or Harry, or even by some less dignified title. "Familiarity breeds contempt" would not in such cases obtain.

A strong argument from the staff point of view also is that the newly promoted officer would commence his labours with an entirely open mind, free from prejudice or bias regarding the merits of each individual under his authority. There would be no personal friendships or animosities to hamper his impartial treatment of the staff, no knowledge of local reputations would interfere with his judgment and, in short, he would be bound to treat every man as he found him. In these circumstances it is quite possible that the black sheep of the flock (most offices have one or more), would be provided with the necessary stimulus to enable him to make a fresh start with happier results than might have obtained had the incentive been lacking. This is thought to be a most important point.

The advantage to the Department would be a gain in the efficiency of administration of each office for, whereas under present conditions an office is administered on more or less parochial or insular lines, the introducing of "foreigners" would result in the employment of broader and more enlightened methods, due to the fresh ideas brought from other offices by the men who had been promoted. In this way a spirit of progress would, it is thought, find its way into the local administrations which in a large number of cases is lacking to-day.

The individual, too, would find an advantage in taking up his promotion at a new office. It cannot be realised how difficult is the position of the man who has been promoted over the heads of his own office fellows. The exercise of the greatest amount of discretion is necessary in order to maintain a proper state of efficiency and, at the same time, obtain the goodwill of the rank and file. It may be objected that many good men would not be prepared to leave their native town even for the sake of promotion. To any such men it would appear that staying at home was of more importance than promotion and naturally they would, having been given the option, choose the course which they preferred. It is needless to observe that those men could not reasonably feel aggrieved if someone not of a stay-at-home character received the promotion refused by them.

In order to carry out this idea in practice it would be desirable to arrange the offices in order of classification and allow promotion from one office to another only within each group or those immediately adjacent. Obviously it would not be wise in many cases to transfer a man on promotion at one step from a very small office to a very large office or *vice versa*. When a vacancy occurred it would be necessary for a recommendation to be made by the office in the group whose next turn it was to recommend and in this way promotion would be fairly distributed between the offices, each getting a share of promotion whether the vacancies occurred at that office or not.

How often we hear of stagnation of promotion at certain offices whilst we find that at neighbouring towns quite a different state of affairs exists. By the proposed arrangement the evil of stagnation of promotion would be reduced and rendered less pronounced by reason of its equal distribution.

The problems which are waiting to be faced in the future will demand a much greater amount of mutual respect between the various classes than we have been used to hitherto. The new spirit of co-operation between

employers and employed from which great things may be expected in the commercial world will without doubt be felt also in our service and for this reason it is essential that the men who are chosen for promotion should be men of sufficient character, not merely to be able to perform the routine work connected with their positions, but also to be capable of bringing to bear those higher qualities of leadership, tact, discretion and sympathy, which alone can ensure a satisfactory future for the great public department with which we are connected.

PHONOGRAM PHONOLOGY.

A PHONOGRAM is a telegram which has been telephoned to a Post Office instead of having been handed over the counter. Hence its distinctive and synthetic appellation. The phonogram forms a perennial subject for official scribes; and, although it remains in itself a prosy thing of a utilitarian age, yet has it called forth discussions wherein the dialetics have been subtle and the disputants have invoked the aids even of the classical poets. One of the most difficult problems to settle in connection with the writing down of telegrams to dictation over a telephone circuit arises out of the similarity of many of the elementary sounds when letters of the alphabet are named. Thus, B and V, D and T have auricular effects that can scarcely be distinguished; and although F and S do not perplex the ear unusually when ordinarily spoken, yet do these two letters produce absolute confusion when dictated over the telephone. When F is spoken into the transmitter, the receiver reproduces it as S—at least so far as the auditory senses can discern.

Now the Post Office telephonist gets over these difficulties in phonology by using analogy—so-called. But nobody could guess what analogy means in a "message room." It works out something like this: An operator wishes to spell, say, the word "Ffrith"—very reasonably—in order to avoid misunderstanding and future trouble, and so she proceeds thus: "F, for Frederick, twice; R, for Robert; I, for Isaac; T, for Thomas; H, for Harry." Before commencing to spell a long word, she usually takes a deep breath, gets through the ordeal by analogy with one exhalation and a curious concatenation of strange sounds, and heaves a sigh of relief when it is all over.

If analogy could be regarded as the only possible method of surmounting the telephonic difficulties arising out of the similarity of sounds associated with certain letters of the alphabet, nothing more could be said. But at least one other method has been attempted; in fact they manage this matter better in France in the way they have in the army.

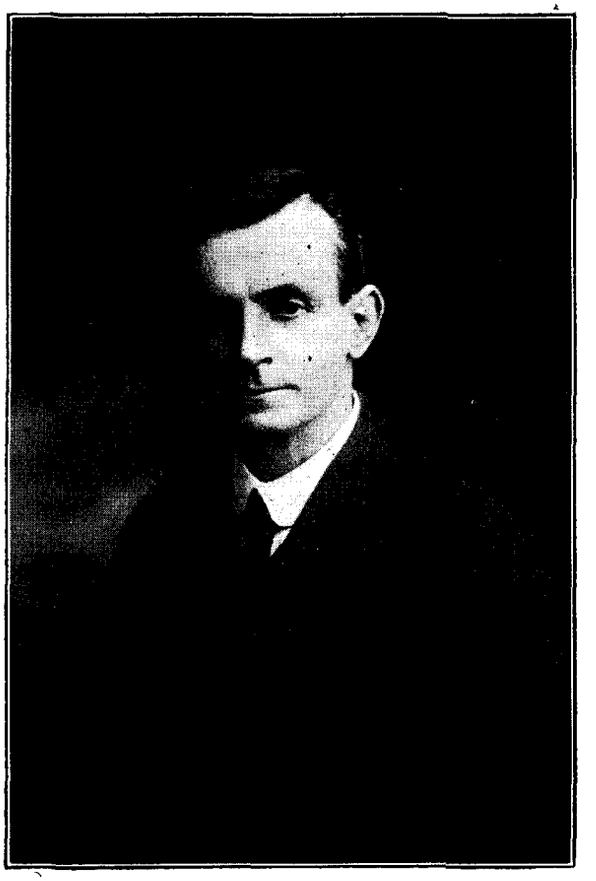
Supposing a Signaller, dictating a message over his field telephone, had occasion to spell the word "Queant," he certainly would not spell it by analogy. If he did attempt it, he might conceivably get as far as "U, for uncle," when the man at the other end would be sure to adopt such facial expressions and to retaliate with such language as would immediately transform him into an animated specimen of the Bairnsfather type. But the dictating Signaller would spell the word as follows: "Quook, U, E, Ack, N, Toc," and the receiving Signaller would write down the word correctly, without any difficulty in the distinguishing of sounds, and with quite as much speed as if the letters had been named in the ordinary way.

Here the possibility suggests itself that the army's little way may seem to some people to be more confusing than analogy. In these days, however, when the special nomenclature of the "Signals," as applied to the alphabet, has been glanced at, if not actually explained, by every journalist who finds his themes in the army, it is hard to believe that anyone exists who does not understand the Signaller's spelling as given in the previous paragraph. In case, however, that there may be a few individuals whose Shavian aloofness has precluded them from living in the time present, it may just be as well to set forth the soldier's phonetics for certain letters of the alphabet. These letters with their special names are as follows:—

A	= Ack.	P	= Pip.
B	= Beer.	Q	= Quook.
D	= Don.	S	= Esses.
M	= Emma.	T	= Toc.
		V	= Vic.

There may not be many things in its own sphere which the Department could learn from the Army. But here it would seem is one. Why does not the Post Office adopt the foregoing or some other set of special phonetics for the alphabet, to be used in connection with the dictation of telegrams over telephone circuits? Surely no one will uphold analogy as the ideal or the only solution of the difficulties encountered in telephonic dictation. It cannot be gainsaid that analogy is cumbersome—so cumbersome and wasteful of time that it is frequently neglected where it ought to be used, and, caught in the universal race against time, given, when it is used, with a slurred speed which is positively bewildering.

Think of the mental efforts, too, which are involved when analogy is in progress. An operator wishes to spell, say, the name of the village, Matfen. She commences "M, for Mary." The party at the other end of the circuit has to think, firstly, of the word "Mary," secondly, that its initial letter is "M," and, thirdly, that "M" is the letter which the operator wishes to be written down or checked, as the case may be. The chances are that, with a zealous telephonist going at her busy-hour, best speed, she will be well advanced with the remainder of the word before the mental process associated with "M" has completely evolved at the other end of the circuit. Should the unfortunate party at the distant end also happen to have, as Lord Byron had, "a passion for the name of Mary," there would still be mixed up with



Mr. JOHN LEE, who becomes Controller of the Central Telegraph Office on July 1, 1919.

the business in hand another mental effort—one of elimination. He would have to look beyond the mind picture of the fair form divine before deciding to proceed with the telegram; and if the inevitable substitution of S for F has occurred; one more regret may be added to that long list which fills the average official life.

Opposed to the involved mental processes inseparable from analogy stands, in antithetical simplicity, the phonetics used in the Army. These phonetics are not difficult to learn or to remember; and the mental effort required to write the letter "P" when in dictation it is called "Pip" cannot be regarded as in the least involved. In fact, so easy is the process that in a very short time it would become as automatic as if the letter were named in the ordinary way; that is to say, the action of the mind would be altogether sub-conscious. Perhaps, though, an exception should be made in the case of the word "beer." The grey matter of the normal Englishman would pass through a series of queer agitations before he arrived at the conclusion that the word referred to the second letter of the alphabet.

It may be argued that while a special code of alphabetical phonetics might be serviceable between two Post Office telephonists, it would be useless between a telephonist and a member of the public. But could not subscribers who dictate phonograms daily be easily educated in the system suggested? Apparently the task would be little or no more difficult of accomplishment than was the introduction of analogy. Even yet, when analogy is casually produced to an unsophisticated member of the business community, any little telegraphic confusion that may exist has a tendency to become worse confounded. Indeed, the hope is surely not too exaggerated that, in those happy days to come, when education is to be writ in block capitals in the scheme of life, and when telephones will be as common in this country as in America—according to the cinematograph—the hope that a small corner in the business youth's curriculum could be relegated to the subject: "Alphabetical phonetics for the dictation of messages by telephone—the Post Office practice." If the chief obstacle in the way of abolition of analogy be the public's lack of knowledge, the difficulty is gratuitously assumed and unnecessarily magnified, and is one, although it would no doubt be noticeable in the primal stages of transition from one system to another, that could be almost wholly avoided by the judicious circulation of a small brochure drawn up with as little as half the persuasiveness that is used by a war-time pamphleteer.

Of course, the exceptional case will always be with us—the case for which neither analogy nor special phonetics will be suitable, and for which the phonogram operator will have to vary her methods to suit those of the subscriber. There once was an instance of exceptional strain produced by a thorough-going Yankee endeavouring to dictate a cablegram. The unlucky operator persevered in the unequal struggle until beads of perspiration appeared on his brow. He felt very much inclined to request the dictator to keep his nasal organ well in front of the transmitter, but the thought of a

complaint from an old baronial hall and written on notepaper emblazoned with a coronet kept him in check; for then-a-days a complaint—especially if written on hand-made paper—was a thing which every member of the staff had good reason to regard with carefully-disciplined respect. When matters appeared to be reaching a hopeless climax, the butler relieved his lord and master, and the reception of the cablegram was successfully negotiated. In promulgating rules, however, the exception ought to be neglected; it certainly ought not to stand in the way of the passing hence of analogy.

The army's idea of special phonetics for the alphabet may not be the best attainable; it may not be so comprehensive as is necessary, but it is at least an ingenious attempt to solve a difficult problem, and is worthy of emulation and, if possible, improvement. Let the brains of the Department tackle the subject in its application to phonograms, and the system of analogy, which is wasteful of time and energy, and is as variable as the variety of people who have to use it, will soon be consigned to the limbo of schemes that have served their purpose and their time.

IDLER.

INTERVIEWS WITH OFFICIAL CELEBRITIES.

I.

THE APPARATUS AND SUB-STATION SUPERINTENDENT.

CONSIDERABLE difficulty attended our efforts to secure an interview with the Apparatus and Sub-Station Superintendent. That blend of persuasiveness and tact for which, as an interviewer, we are justly famed, at last, however, achieved the desired result. For fully ten minutes the Apparatus and Sub-Station Superintendent took no notice of our presence. During such period we availed ourselves of the opportunity of examining his office furniture.

The furniture requires no special description. The table, arm-chair, etc., were of the types proper to be supplied to an official of such standing. What arrested the eye of the visitor was the remarkable amount of engineering apparatus strewn promiscuously round the room.

A large piece of telephone cable stood in front of the Chief. On his left, on a small side table, were several groups of battery cells, while immediately in front of him, on the floor, was a dummy switch section. On the right his blotting-pad were two small coils of wire, in his inkstand lay a watch receiver, while at various other points of the room there were pieces of pole, specimens of house bells, fire-alarm posts, and lengths of tarred rope.

The multiple switchboard already mentioned effectively barred access to the Chief's table from the front, while a number of Call Office signs equally effectively closed one of the side passages. The performance of a series of curvilineal movements brought the visitor within reasonable speaking distance of the Chief, but the exercise of care to avoid butting into a sub-section or kicking over a battery cell was necessary.

We have known telephone men not directly connected with the technical or engineering sides of telephony to keep prominently in their rooms pieces of apparatus such as slices of cable and coils of wire. This invariably creates a good effect on visitors and stamps the exhibiting official as a man of technical qualifications. There are exceptions, of course. Sometimes he may possess little technical knowledge, but as probably most of his visitors know less there is little danger of his being found out.

Our brief survey of the room was interrupted by the Chief ultimately looking up from his desk, on which his gaze had been fixed for several minutes in indication of deep meditation, and uttering these words, "What is it"? Notice the form which the question took. It was not the commonplace but definite "What can I do for you" nor the equally banal "What do you want" with a slight emphasis on the pronoun. The question was non-committal in the highest degree. We consider that this form of interrogation stamped the Apparatus and Sub-Station Superintendent, or the A.S.S.S., as he was popularly known amongst his subordinates, as a master of diplomatic phraseology, one could meet and overcome, in their own field and with their own weapons, the Secretariat, the Accountants, and other forces against whom or which officials of his class have to contend.

We explained our mission. We wished to convey some idea of his personality and methods to an interested world.

"What," we asked, "was his first act of importance on being appointed to his present position?"

The A.S.S.S. replied promptly that his first act was to place matters on a businesslike footing.

Exactly what he meant by a businesslike footing we did not venture to enquire, nor did we ask what steps he took to place matters on such a footing, nor whether he had to encounter opposition before succeeding in placing matters on such a footing. It was sufficient that he did so, and there seemed no more to be said.

A further question elicited the fact that when he took over the reins the system was in a more or less chaotic position. We may remark parenthetically that this is always the case. It may be taken as an axiom that any man, appointed to any position, invariably finds affairs, as left by any predecessor, no matter how able that predecessor may have been, in a more or less chaotic condition.

"In connection with your reforms, did the question of cost not arise," we enquired. "No," he replied, "money was easy at the time. It became difficult later on—had I not embraced the opportunity then ——." He paused—the pause spoke volumes. We trembled to think of the position in which matters would have been had the A.S.S.S. not taken the psychological moment to embrace the opportunity. Apart from the fact that we have always found money to be more or less difficult, we reflected, too, rather sadly on the many opportunities we had missed, all that we had failed to embrace in the less mature period of our career.

An interruption came with the entry of one of the staff to seek advice about an urgent and, as it appeared from the size of the official papers which he carried, a complicated case. The A.S.S.S. rapidly scanned the last line of the concluding endorsement and then delivered himself as follows: "Mr. Smith, master all the details of this case, consider it well, and then—do the best you can." Such helpful counsel endeared him to his staff and stamped him to be the man he was. He was evidently ever ready to consider, to assist, to advise. The clerk murmured a few incoherent words, no doubt expressive of his grateful thanks, and left the room with feelings obviously too deep for words.

The sympathy which the A.S.S.S. showed at all times, and his readiness and willingness to give help and counsel, afforded, we gathered, much gratification to his large and important staff. One of them told us that it made official life worth while. The other one said that he was more like a friend than a chief.

There is no reason, we may remark in parenthesis, why a chief should not be on friendly terms with his subordinates. The difficulty lies generally with the subordinates, not with himself, except perhaps at first. We add the saving clause because the average chief, on his appointment, is at first difficult to get on with because he usually thinks he is like Napoleon or Northcliffe. So long as he thinks he is like Napoleon or Northcliffe nothing can be done with him.

It is possible that at this time he is making himself a nuisance to his family as well. Probably in his attitude towards his wife, there is a touch of command which is distasteful to her. It is, we know, not an uncommon belief that many women like to be domineered over and dictated to by strong masterful men. We do not share that belief. With the exception of the official typist we have never met a woman to whom we could dictate. Such women may exist. We are entitled to express doubt. As, however, we are a bachelor our opinion on such a point will carry no great weight.

Fortunately the Napoleonic period in the case of the average chief does not last long. Its length is usually a fortnight, though in extreme cases it has been known to last 6, 7, and even 8 weeks. When the fever—a venial one, after all—has passed, the Chief is anxious to be on friendly terms with his subordinates. He is not, however, met half way. Their response is not encouraging. They generally assume a distant and coldly correct official attitude towards him.

Such was not the case, we are glad to state, with the subject of our interview. His *savoir-faire* and *bonhomie*, to say nothing of his *savoir-vivre*, nor to mention his *camaraderie*, soon broke down any barrier which official conventionality and reserve might have raised. The result was, as we could plainly see, that the happiest relationship existed between him and his staff.

That the A.S.S.S. could be firm—adamantine, indeed, when a question of principle was at stake—was shown in connection with the introduction of the now well-known system of reference codes, the code chosen to apply to himself being A.S.^{3}. The proposal did not go through without opposition, but the A.S.S.S. stood firm and ultimately gained the day. Even after its adoption there was a disposition in some quarters to belittle, if not to throw ridicule upon, the scheme. One colleague who, considering his length of service, ought to have known better, remarked that he had always regarded it as impossible for the chief to be squared but it no appeared that he had gone further and allowed himself to be cubed.

The reform was productive of considerable economy. As showing the possibilities underlying the scheme, the cardinal principles of which have now been generally accepted, it may be stated that it has been estimated that the saving in ink each year, through the mere substitution of the code A.S.1 for the lengthy designation, amounts to .5252, more or less, of the cubic contents of an inkpot of the regulation official size.

When the figure indicative of the extent of the economy was ascertained a proposal was at once set on foot to acknowledge in some way the services of the A.S.S.S. to the Department and we understand that it is more than likely that he may be thanked in the name of the Chief Assistant Secretary to the Principal Private Secretary to the Financial Secretary.

We left the A.S.S.S. with feelings impossible to depict in words. We felt profoundly different. Precisely what impression we produced upon the A.S.S.S. we do not know, but we have no doubt whatever as to the effect he had on us.

* * * * *

A journalistic colleague to whom we sent an account of the interview said that it seemed rather inconclusive. He was good enough to add that in his opinion it was chiefly designed to afford opportunity for the expression of various opinions of our own on matters not directly connected with the subject of the interview. He considered, moreover, that the official interviewed should have occupied a more prominent place in the picture. Such criticism appeared to us somewhat undeserved. It is true that little is recorded of the statements of the A.S.S.S. during the interview. He said little, but, after all, do we not gain insight into his character by what he did not say than by what he said? This is frequently the case with outstanding personalities. Need we say more? We have confidence in our readers, in their soundness and maturity of judgment. We are content, therefore, to leave it to them to say whether or not sufficient light has been thrown on the character and methods of the A.S.S.S. to enable them to form their own opinion.

C. W. M.

WHERE TO STAY.

The attention of our Readers is directed to the following list of Boarding and Apartment Houses.

(BARMOUTH the Beautiful). **"Glencairn"**—The most comfortable Private and Residential Hotel in North Wales. Charmingly situated overlooking bay and mountains. Large lounge. Excellent cuisine Moderate inclusive tariff. Highly recommended.—Mrs. Dennis, Proprietress.

BOURNEMOUTH (Chine House).—18, 19, 20, Undercliff, Boscombe, Boarding Establishment. Beautiful situation facing sea; every comfort.—Terms from 50*s*.

BRIGHTON.—Grafton House, Grafton Street, Marine Parade. (Door Sea). Comfortable Board Residence. 10 bedrooms; bath (h.c.) Electric light throughout. Good table. Moderate cycle accommodation.

CLEVEDON (Somt.)—"Ravenswood," beautifully situated on cliffs, overlooking sea and woods; ideal holiday resort; charming walks. All comforts studied. Moderate inclusive terms. Misses Bruce and Hall.

EASTBOURNE.—"The Polytechnic" Boarding House. Recommended by "Polytechnic," Regent St., since 1894. A comfortable holiday home. Liberal table Terms 35*s*. weekly inclusive.—Mrs. Edwards, 109-111, Tideswell Road.

TORQUAY.—"Ubeda," Crown Hill Park. Comfortable home-like Board-Residence; pleasant situation; own garden produce. Mrs. Smith.—Terms from 35*s*.

THE POLITE LETTER WRITER.

DILIGENT readers of the JOURNAL—by whom we mean that sympathetic class who not merely read but *peruse* it in the literal sense of the word—will have observed in our columns from time to time some curious and entertaining examples of the epistolary art. It is often rashly asserted that this art is dead. We are sure that Postmasters and District Managers could tell a different tale. And by a strange touch of irony it is the telephone which is blamed—along with the telegraph—for the destruction of the art of letter writing. It is no paradox to assert the contrary. The telephone calls forth examples of the grateful, the sarcastic, the mendacious, the mildly jocose and the exuberantly humorous letter. It is one of the sorrows of the civil servant that official etiquette precludes the answering of these communications in a like spirit. Even the mendacious must be tactfully replied to in such sort that his susceptibilities are spared and his lack of veracity is not set down to malice. "Some misapprehension would appear to exist" is a phrase without much sting for the pachydermatous.

The following letter was received by the Ministry of Munitions from a firm which, by an error in typing, had been asked to perform the impossible :—

Dear Sirs,

During this great War we have done many things that aforetime we had considered almost impossible.

We have turned our ploughshares into swords; made night into day; made bricks without straws; turned water into wine; and ale into compound for the refreshing of labour.

We have resurrected, Lazarus-like, machine tools and taught them to rise and sing. We have imported proud Americans. We have salvaged destitute Belgians.

We have gathered in and utilised Barbers, Circus Proprietors, Evangelists, Aboriginals from the Antipodes, and some of "the Best People."

We have made women into mechanics, and mechanics into supermen such as may be found at the Ministry of Munitions. We have diluted our labour, both male and female, until we have worked of the combined sex, and of neither sex.

We have praised God, honoured the King, and straffed their common enemies. But we stand to-day hopelessly cast down before your suggestion that we should cut 2-inch Module pitch Aeroplane Engine Gear with a 2½-inch Module Cutter—Ichabod.

Yours in a chastened spirit.

Not without the feelings of an exile from the realms of epigram could one sit down and draft an official explanation to the effect that "owing to a typist's error," &c., &c.

A telephone subscriber who joined the Forces early in the War wrote as follows :—

I cannot understand your letter at all. However, I have no doubt that your present position as Manager must be the result of being able to write such effusive letters. I hereby give you notice to remove all my machines when my agreement expires which I believe is about June. In the interests of the country I should really suggest your destroying the "box of tricks" I have now indoors. Fortunately I was a past master in the art of swearing before it arrived, but you might refix it in the house of some poor innocent soul who was pure in all his thoughts and ways, as I am quite sure it would corrupt anybody's morals. I have accepted a commission in the Army. I don't for a minute expect you want to do me a good turn but if you should, I should be extremely grateful if you could reserve the number **2**, as I hope to carry on my business again *when* the war is over, provided of course, that I come back. I must admit I do not regret parting with my phone as I do some other things, but I do regret to think I shall have no more dealings with your lineman with the auburn hair, who has always treated me the very best and has been the one "ray of sunlight" in my somewhat dismal career as a telephone subscriber. Kindly acknowledge receipt *re* notice.

He was informed in official language that every endeavour would be made to respect his wishes respecting the retention of his number, but we do not imagine that opportunity was afforded to the auburn-haired lineman to reciprocate his kindly memories of him.

Instances could be multiplied. Letters brief, brotherly, breezy, erudite, illiterate, appealing and abusive—whether received by Secretary or Sub-postmaster—all come to the same mill; and the replies are ground out in exceeding fine English, plain as wholesome bread, or as buns, devoid of the spices of the East and with currants marvellously small and sparse.

PERSONALIA.

LONDON TRAFFIC STAFF (*Telephonists*).

Miss W. D. GROVE, Telephonist, of the Trunk Exchange, has resigned in view of her approaching marriage.

Miss E. W. BROOKE, Telephonist, of Park Exchange, on resigning to be married was the recipient of a case of fish knives and forks and numerous other gifts.

Miss A. E. BROWN, Telephonist, of Holborn Exchange, has resigned on account of her marriage.

Miss BOWSHER, Telephonist, of Holborn Exchange, has resigned to be married and was presented with a five o'clock tea cloth.

Miss E. L. BOYCE, Telephonist, of Dalston Exchange, was presented with a salad bowl and servers on resigning to be married.

Miss TOOLEY, Telephonist, of London Wall Exchange, has resigned in view of her approaching marriage and was presented with a tea-service from the staff, a china teapot and other gifts by the telephonists and supervisor of her section. Some of her colleagues also presented her with a cruet, bedspread and vases.

Miss A. E. REED, Telephonist, of New Cross, has resigned in view of her approaching marriage and was presented by her colleagues with a silver and china fruit stand.

Miss M. R. KETLEY, Temporary Telephonist, of New Cross Exchange, on resigning to be married was the recipient of a case of tea knives from the staff.

Miss I. V. DAVY, Telephonist, of Victoria Exchange, has resigned to be married and was presented with a silver-topped scent bottle.

Miss MCCLARY, Telephonist, of Victoria Exchange, has resigned in view of her marriage and was presented by her colleagues with a silver cake basket and a set of fish knives and forks.

Miss H. R. HUBY, Telephonist, of Victoria Exchange, has resigned in view of her approaching marriage.

Miss M. R. W. PIKE, Telephonist, of Victoria Exchange, resigned to be married.

Miss I. M. GIBBONS, Supervisor, of Victoria Exchange, resigned to be married and was presented with a silver cake basket.

WESTERN ELECTRIC COMPANY.

The many friends of Mr. H. M. Pease, who has for a number of years carried out the duties of Assistant Manager and Sales Manager of the Western Electric Co., Ltd., Cable and Telephone Manufacturers of North Woolwich, will be pleased to hear that he has now been appointed Managing Director.

CONCERT IN AID OF ROWLAND HILL MEMORIAL AND BENEVOLENT FUND AT GUILDFORD.

An effort on behalf of this Fund has been made at Guildford. An evening concert was held in the Borough Hall on the 4th inst., when the Guildford Male Voice Quartette and Concert Party, mainly composed of Post Office Officials, who have given over thirty concerts to Wounded Soldiers in the neighbourhood during the past eighteen months, assisted by other artists, provided the programme. The concert which was organised by members of the local Post Office and District Manager's staffs, with the Postmaster, Mr. J. Thompson, as Chairman of Committee, was thoroughly enjoyed by a full audience, including the District Manager, Mr. B. J. Barnes, and the Sectional Engineer, Mr. J. H. Haynes. The proceeds from the concert amounted to £37 4*s*. 5*d*. and with other subscriptions a sum of £46 10*s*. 5*d*. has been forwarded to the Treasurer of the Fund.

CORRESPONDENCE.

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

Sir,—In your February-March issue the writer of "Hic et Ubique" comments on the somewhat unconventional schedule of expenses of an Illinois Telephone Company. One of the items of expenditure, *i.e.*, "Carl Bullard, two shoats, 40 dollars" puzzles the writer who intimates his ignorance of the meaning of the word "shoat"

It may interest the writer to know that a shoat is a young pig.

"JEFF PETERS."

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

THE DEVELOPMENT OF PRINTING TELEGRAPHS IN THE UNITED KINGDOM.

THE release of large numbers of skilled telegraphists for active service with His Majesty's Forces was greatly assisted by the extension of machine telegraph systems upon the inland routes of the United Kingdom.

Temporary typing assistants were quickly trained touse the keyboard perforators—Gell and Kleinschmidt—for Wheatstone-Creed working, which, especially in the first year of the war period by the opportune increase of Creed receivers and printers, enabled the extreme pressure of those days to be met.

For ordinary commercial traffic, however, there has been a greater increase in the quantity of multiplex apparatus, and during the last three years most of the following installations have been erected.

The equipments are all duplexed, being principally quadruple with 22-segment distributors.

BAUDOT INSTALLATIONS

London—Birmingham (2)	Liverpool—Manchester
London—Liverpool (2)	London—Edinburgh
London—Glasgow (2)	London—Grimsby
London—Brighton	London—Leeds
London—Bristol	London—Plymouth
London—Southampton	London—Manchester
London—Newcastle-on-Tyne	London—Sheffield
London—Cardiff	London—Nottingham
London—Manchester	Glasgow—Edinburgh
London—Hull	London—Dublin

One of the reasons hitherto advanced in support of the employment of the automatic method of transmission, *i.e.*, keyboard perforator tape and transmitter, has been the facility with which an unskilled force could be trained to deal with telegrams. Owing, no doubt, largely to war conditions the only form of multiplex printing transmission obtainable was the five-key sender—the general form of Baudot manipulation—and the degree of proficiency quickly attained by most of the temporary unskilled assistants in signalling on this direct working instrument has exceeded anticipations. With about 100 hours practice—in some cases less—they have been able to send at a fair rate while they have been used on the receiving side of an "arm" almost from the beginning of their engagement.

After a few months' experience the work of the temporary assistants upon the Baudot instrument has been highly satisfactory—an example of their progress and efficiency is supplied by the following extract from an ordinary return of traffic handled by a Baudot quadruple duplex circuit:—

"Return of forwarded and received traffic during the daily hours of 10 a.m. to 2 p.m. for the period Jan. 6 to 25, 1919:—

Staff.—Temporary Assistants whose experience in Telegraph Work ranged from a minimum period of 4 months to a maximum period of 8 months.

Summary of hourly Traffic forwarded—

50 and over	90 occasions
60 and over	41 occasions
70 and over	12 occasions
80 and over	4 occasions

Summary of hourly Traffic received—

50 and over	60 occasions
60 and over	14 occasions
70 and over	1 occasion

F R

Highest hour's work 426 telegrams (254 + 172)

F R

Highest hour's work on a single Arm 148 telegrams (80+68)."

The growth of the Baudot in the United Kingdom revived the consideration of the re-arrangement of its code to suit the needs of the English language. As is well known several of the signs to be found on the type-wheel of the standard French equipments are required only for the traffic passing over international routes, or upon the internal lines of French speaking countries. Consequently the Baudot installations of the British inland circuits could with advantage utilise the signals of such characters to print signs commonly used in English commercial telegrams.

The opportunity was also taken to revise the primary and secondary characters of the other printing systems in order, as far as possible, to establish uniformity.

For telegraph purposes it had already been decided that the standard typewriter keyboard should have amongst its secondaries half-size numerals ^{1}, ^{2}, and the combined signs $^{1}/_{2}$, $^{3}/_{4}$, $^{5}/_{8}$, $^{7}/_{8}$, and $^{9}/_{8}$, so that stock quotations and trade fractions having the usual odd figure numerators could be formed by using fewer keys and at the same time produce a clearer idea of the required fraction.

For example, one key movement and line signal may be saved in printing $^{3}/4$, $^{7}/8$, $^{5}/16$ and by the aid of the two small numerals $^{13}/16$ or $^{29}/32$.

The original Baudot signs removed from the type-wheel to make way for this improved telegraph numeration were :—

o H F & ! ; ,

Figure (...) shows how the signalling code or alphabet has been re-arranged.

Hitherto it has been the practice on the Baudot system to signal the code time as 2^{m}45 but in future the full stop will be used as 2.45 and, to help through the transitional period during which

Letters	Figures	KEYS V	IV		I	II	III	Letters	Figures	KEYS V	IV		I	II	III
A	1				●			P	P	●	●		●	●	●
B	8		●				●	Q	/	●	●		●		●
C	9		●		●		●	R	–	●	●				●
D	0		●		●	●	●	S	⅞	●					●
E	2					●		T	2	●			●		●
F	⅝		●			●	●	U	4				●		●
G	7		●			●		V	'	●			●	●	●
H	¼		●		●	●		W	?	●				●	●
I	⅜					●	●	X	⅘	●				●	
J	6		●		●			Y	3						●
K	(	●	●		●			Z	:	●			●	●	
L	=	●	●		●	●		–	.	●			●		
M	)	●	●			●		✱	✱	●	●		(Erasure)		
N	£	●	●			●	●	Figure shift & space			●				
O	5				●	●	●	Letter shift & space		●					
/	½				●	●									

BAUDOT SIGNALLING CODE OR ALPHABET as arranged for the British Post Office.

the staff may unconsciously revert to the old signal, the small figure ¹ was allocated to the " position. The inadvertent printing of the small numeral will give rise to no misunderstanding. For a similar reason the dash or hyphen desired for the letter shift was placed in the position formerly occupied by '. Other changes are £ for N°, the oblique stroke / for É which will enable A/C, B/L, C/O, etc., to be formed without the present double spacing.

It has been the general rule to form per-cent. with O stroke O and this will be continued ; since however the deletion of the % sign would introduce difficulty owing to its employment also as a " stop " signal the letter P is engraved in both the letter and figure positions. It is however proposed to fill the figure space with a plus sign. H.W.P.

THE DISTRIBUTION OF TELEPHONE STATIONS IN THE NEW EUROPE.

THE accompanying statement represents an attempt to give an estimate of the present position of the development of the telephone in Europe, more especially in those states whose boundaries will be re-drawn in accordance with the proposed terms of Peace.

No telephone statistics have been furnished by the larger countries to the Post Office or to the *Bureau International* since the outbreak of War, although four of the chief telephone using states (viz., Sweden, Denmark, Norway and Switzerland) have sent their annual reports to this office, and figures relating to other states have appeared in the annual summaries of the Bureau. Comparative stagnation of telephone development in the combatant countries may, in general, be assumed, the losses owing to civil inactivity being probably compensated by a gain in stations due to military and munition requirements and other activities concomitant with war. These two factors render the estimated figures less conjectural than might be expected, although the condition of the telephone system in the north of France, in Belgium and in Serbia must necessarily be adversely affected by enemy occupation and by the destruction wrought by actual fighting. The telephones in the areas affected, however, form but a small proportion of the total for Europe and the following explanatory notes will, it is thought, shew that the total arrived at is substantially accurate.

It should be mentioned that in estimates of population no allowance has been made for the wastage of War. As the census in most cases is comparatively old, a compensating factor will probably be found in the normal increase of population since the last census. Here again it is obvious that some countries have been more heavily afflicted than others.

DISTRIBUTION OF TELEPHONE STATIONS IN THE NEW EUROPE.

	Estimated Population (New boundaries) Millions.	No. of Telephones in *old* States at dates given. 1 January	Estimated total Telephones (New boundaries) January, 1919.	Ratio of Inhabitants to Telephones
1. Denmark	2.8	177,983 (1917)	217,000	13
2. Sweden	5.5	347,664 (1918)	387,000	14
3. Norway	2.4	106,241 (1917)	118,000	20
4. Switzerland	3.8	124,192 (1919)	124,192	31
5. Iceland	(86,500)	1,581 (1917)	2,000	43
6. Germany (less Alsace-Lorraine, Posen, West Prussia and part of Silesia) ...	57.	1,421,000 (1914)	1,271,000	45
7. Netherlands ...	6.5	116,287 (1917)	140,000	46
8. Great Britain ...	45.	840,718 (1919)†	854,000*	53
9 Luxemburg	(259,800)	4,459 (1917)	4,800	54
10. Finland	3.	35,200 (1911)	40,000	75
11. Austria (less Galicia, Bohemia, Moravia, &c., part of Tyrol, Carniola, Dalmatia and Istria)	8.	170,000 (1915)	93,000	86
12. France (plus Alsace-Lorraine)	42.	310,000 (1914)	335,000	123
13. Poland (Poland proper, Posen, W. Prussia, parts of Silesia and Galicia)	23.		166,000	140
14. Hungary (less Transylvania, Croatia, and Slovak counties)	11.	70,000 (1914)	61,000	180
15. Czeko - Slovakia (Bohemia, Moravia and Slovak counties of Hungary) ...	11.5		54,000	213
16. Italy (incl. Dalmatia, Istria and part of Tyrol)	36.	102,859 (1917)	114,000	316
17. Spain	20.	49,086 (1917)	60,000	333
18. Roumania (plus Transylvania)	10.	20,327 (1915)	25,000	400
19. Russia (less Finland and Poland) ...	122.	363,200 (1916)	300,000	407
20. Portugal	6.	7,800 (1914)	10,000	600
21. Turkey in Europe (present boundaries)	2.7		4,000	675
22. Serbia (and Jugo Slavia)	8.	3,600 (1913)	9,600	833
23. Bulgaria	5.5	4,344 (1915)	4,500	1,222
24. Greece	5.	1,970 (1913)	2,000	2,500
25. Belgium	7.5	51,009 (1914)		
Europe ...	440.	—	4,382,000	—
		(With allowance for Belgium)	4,400,000	100

† P.O. System only.

* Including systems of Hull Corporation and the States of Guernsey, about, 13300.

(1, 2, 3 and 4) Recent official figures having been obtained from Sweden, Denmark, Norway and Switzerland, and their annual increase of stations being fairly constant, the totals given for 1919 may be taken as an accurate round figure.

(6) Germany. The German statistics do not shew the total stations for each province. It has therefore been necessary to calculate the stations for Alsace Lorraine, Posen, W. Prussia and

Polish Silesia by considering their telephone development as proportionate to the rest of the Empire. As, however, it is unlikely that the eastern provinces are as highly developed as the average German state, the figure of 169,000 computed by this method for the lost provinces has been placed at a round figure of 150,000, leaving Germany with a total of 1,271,000 as against 1,421,000 in 1914. The inclusion of Upper Silesia (which is unsettled) would make the total at least 1,300,000.

(7) The rate of increase in the Netherlands has been fairly uniform and it is safe to add 12,000 per year to the official figure for 1917 making the present total 140,000.

(8) Great Britain. Official figures.

(9) The same remarks apply as to the Netherlands.

(10) Finland. The Russian statistics for 1915 give only the figures for Finland relating to 1911—viz., 35,200. It may be taken that total before the War was 40,000 and is still thereabouts.

(11) Austria. Deduction has been made in respect of the whole of the telephone stations in Bohemia, Moravia, Dalmatia, Carniola and the Coast lands, Galicia, and about a third of those in the Tyrol. Official figures for these provinces for 1910 were available and have been increased proportionately to present development.

(12) France. The computed figure for Alsace Lorraine (35,000) has been added to the 1914 figures. But as the telephone system in the departments of Nord, Aisne, Marne, &c. (which comprised nearly one-tenth of the total for France), has doubtless suffered severely during the War, a deduction of 10,000 of their 30,000 telephones has been made, making the total for France :—

Telephones in 1914...	310,000
Alsace-Lorraine	35,000
	345,000
Less 10,000 in War Area	335,000

(13) Poland. The total has been made up from the 115,000 telephones in the German provinces : 6,000 (being the larger half) of the telephones in Galicia, and a total of 45,000 computed for Poland proper. Warsaw had 32,000 and Lodz nearly 5,000 stations before the War. The question of Upper Silesia is still unsettled, and the City of Danzig has only been included in the figures for Poland for the sake of convenience. The inclusion or exclusion of the stations for these places makes a difference of some 40,000 in the Polish total.

(14) Hungary. The official number of stations in Transylvania, Croatia, &c., and the Slovak counties of Hungary proper in 1910 have been deducted from the total, after being increased in proportion to the recent development of the country.

(15) Czeko Slovakia. The estimate includes the telephones deducted from the Austrian total in respect of Bohemia, Moravia, &c., and from Hungary in respect of the Slovak counties.

(16) Italy had 103,000 telephones in 1917 but her progress is usually slow and she may now possess 105,000 ; 9,000 have been computed for the added Austrian provinces, making a total of 114,000.

(17) The progress of Spain from 1913-1917 had been from 34,000, 37,000, 42,000, to 49,000. There are probably now 60,000 telephones in the country.

(18) Roumania. A slight diminution of the figure of 20,327 for 1915 has been assumed. The addition of upwards of 5,000 in respect of Transylvania gives an estimated total of 25,000.

(19) Russia. In Russia in Europe excluding Finland there were 363,200 telephones in 1916 ; 45,000 have been deducted in respect of Poland, and owing to the disturbed state of the country a round figure of 300,000 has been estimated. It may well be much less.

(20) Portugal. The development of Portugal is slow and steady. The pre-war figure of 7,800 has therefore been advanced to 10,000.

(21) Turkey in Europe. There were about 4,000 telephones in Constantinople when the war broke out. No addition or decrease has been assumed.

(22) Serbia. Figures for Bosnia, Croatia, &c., have been added to the total number of telephones (3,600) which existed in Serbia in 1913. It is impossible to estimate how many of that 3,600 are *in situ*.

(23) and (24) Bulgaria and Greece. The telephone development of these countries is without importance. A small increase has been assumed.

(25) Belgium. The number of telephones is very difficult to estimate. There were 51,000 before the War and information is not yet available of the number dismantled by the Germans.

The question of the accuracy of the estimates in the statement may be thus summarised :—

Accurate.—(Based on recent official figures.)—Great Britain, Sweden, Denmark, Norway, Switzerland, Netherlands, Italy, Spain, Luxemburg, Iceland	2,007,000
Probably Accurate.—(Official pre-war figures.)—No increase allowed for since 1914 and no decrease for cessation of civil activities.)—Germany, France, Austria, Hungary ...	1,760,000
Nearly Accurate.—Poland, Czeko-Slovakia, Finland, Portugal, Bulgaria, Greece ...	276,000
Doubtful.—Russia, Roumania, Servia, Turkey	339,000
	4,382,000
Doubtful also is Belgium, say 20,000... ...	4,400,000

It should be borne in mind that in the countries where the chief internal disturbances or German depredations have occurred, the development of the telephone is chiefly in the large towns. Extensive ravages might be made in numerous medium-sized towns in Russia, and only a few thousand telephones be destroyed. The same would apply to Hungary. It is thought that in the total of nearly 4½ million telephones, the discrepancy between the estimated and actual figures would be two or three hundred thousand at most spread over some eight or nine states, and even these might be counter-balanced by unexpected developments in some of the combatant states.

It will not escape attention that about three-quarters of the telephones of Europe are in states which are ethnically classed as Teutonic, (although, of course, rather on the basis of their language than of their race). Great Britain and Germany alone account for over 2,000,000 ; Scandinavia, Holland, Switzerland and Austria for over another million. The Latin States (France, Italy, Spain, Portugal and Roumania) muster just over half a million between them, and the Slavs, Finns, Greeks, Turks and Magyars the remaining half million. W.H.G.

DEMONSTRATION OF FIELD WIRELESS TELEPHONY AND DIRECTION FINDING BY THE MARCONI SYSTEM.

ON May 28 at the invitation of Marconi's Wireless Telegraph Company, Limited, we visited their works at Chelmsford and attended a most interesting demonstration of field wireless telephony and direction finding by wireless. On arrival at the Chelmsford works we had wireless speech with Broomfield where a combined telephone and telegraph station had been erected, and found the experience altogether satisfactory, the articulation being clearer than on the ordinary telephone and the absence of distortion very noticeable. We were informed that the whole station at Broomfield could be erected in 10 minutes by six men. The steel masts were 30 feet in height, supporting a single horizontal aerial, and the "earth" consisted of metal gauze laid on the

ground. Power is provided by a high frequency ½-kilowatt alternator, driven by an air-cooled petrol engine such as is used on a motor-cycle. This current is transformed up from 100 to 10,000 volts. The speaker uses an ordinary microphone with switch, which he changes from one position to another, according to whether he is speaking or listening. As he speaks the changing current in the microphone affects the high voltage current in the aerial and thus sends out electric waves which, at the receiving station, act on the thermionic receiver consisting of a series of three electrode valves, thereby reproducing speech in the listener's headgear telephone. Communication was obtained between this installation and that at Marconi House, London, to which reference will be made later.

After an inspection of the Marconi works, which was full of interest, luncheon was served, in the course of which we learned that a motor-omnibus would take us in the direction of Colchester. and at a point unknown a demonstration of direction-finding would be given. The motor-bus was fitted with a complete receving set and during the journey the passengers both inside and out were entertained by gramophone selections, transmitted by wireless from Chelmsford, and were also able to listen to conversations taking place between Chelmsford and London and elsewhere. The ride was an enjoyable one in all respects, the weather being perfect and the surroundings of the pleasantest. There was something impressive in the contrast between the landscape through which the old Roman road runs and the motor-bus equipped with its ultra-modern appliances for gathering up, as it were distant speech and music from the air. The quiet Essex villages and the English highway seemed ancient and immutable; but the omnibus with its cosmopolitan company of British and foreign journalists and engineers was eloquent of the spirit of change and progress. The gramophone hearings—though clear and excellent—were not compulsory, and those who preferred to do so could listen to the song of the birds.

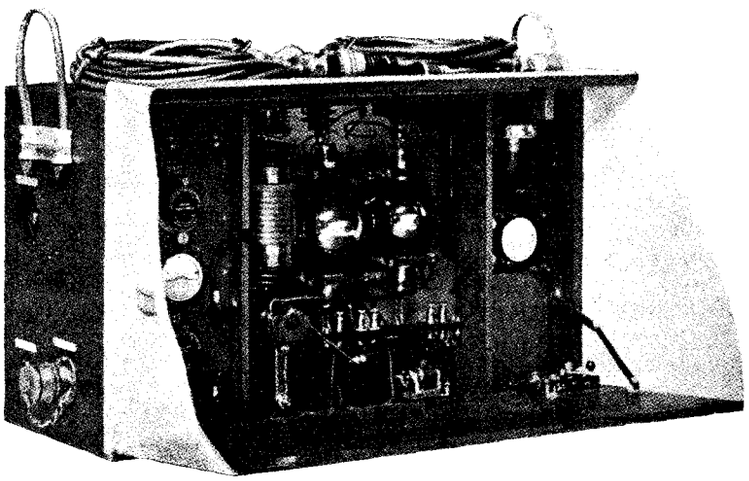

Fig. 1.

We were preceded on our journey by a lorry containing a portable wireless station which was travelling with sealed orders to an unknown destination where the apparatus was to be erected. This proved to be in a lane not far from Colchester, and on the arrival of our omnibus we found the masts and aerials *in situ* and the apparatus ready for speech. As, however, we were somewhat in advance of the time arranged for the demonstration, we had an opportunity of listening to conversations taking place between Chelmsford and London, and could hear with great distinctness, Sir Joseph Ward, the premier of New Zealand, talking from Marconi House to Mr. Hendriksen, a Norwegian journalist, at Broomfield. Danish and Italian journalists in our party then spoke in their own languages from the field station just erected to their *confrères* at Broomfield with satisfactory results. Fig. 1 shows the transmitter box containing the transmitting valves, high frequency transmitting circuits, microphone, &c., and Fig. 2 the receiver box containing receiving circuits, high frequency amplifier, telephones and power transformer. They are of a portable character, and together with the mast gear, stays, aerials, earth-nets, engines, generators and battery, can, for military transport purposes, all be carried by four horses.

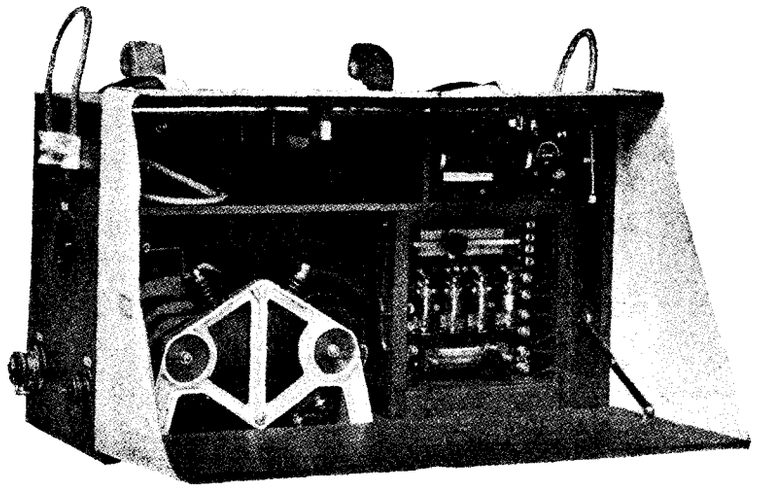

Fig. 2.

The direction-finders at Braintree and Maldon then got to work, and they succeeded in ascertaining from our signals the location on the map of the field station to which the motor-bus had journeyed. The result was notified to the Broomfield station by wireless telephony and communicated in the same manner to the field station. Their calculations proved to be correct within a few hundred yards. although the direction finding stations were over twenty miles distant. The value of such a system to ships at sea or aircraft in flight, when they have difficulty in obtaining their positions, can easily be imagined. A run to Colchester station on the motor-bus concluded a most enjoyable and instructive demonstration.

TELEGRAPHIC MEMORABILIA.

LISTENING to a discussion on "war prices" recently someone of the small assembly threw down the gauntlet, with a confident ring in his voice, "Can you mention any one blessed thing that hasn't gone up?" The apparently unchallengeable query was answered by a quiet voice which suggested "Foreign telegrams." There was a further exchange of experiences and ideas which does not concern this column, but this fact is worthy of note and perhaps may be accounted unto the various British, allied and neutral governments as a certain portion of righteousness. True, registered addresses have been very largely abolished, involving a certain increase in the number of words, but the rate per word has on the whole remained at its pre-war figure. The recent Anglo-German increase of 50 per cent. has been partly due to military and other considerations, which may or may not foreshadow a *post bellum* increase all round. Be this as it may, the fact remains that though your bread and your beer have cost you more, your telegrams abroad have refused to develop the war time virus. At least the State has not become a profiteer on the foreign telegraph side. On the other hand, indeed despite reduced communications, over-charged lines, political, military, propagandist and economic claims certain facilities have even been given to the anxious enquiries of our soldiers' relatives and friends. That this latter service at times should have proved irregular, even unreliable, is an admitted but not a surprising fact. When it is considered that the Anglo-Saxon armies alone have numbered well over ten million men and women flung all over the globe, when it is considered that many of the lines which carried these messages were subject to constant enemy interruption both on sea and on land and when it is also borne in

mind that not a few telegraphists both in the army and out of it have taken no mean risks and suffered no mean losses, even to the supreme penalty, that messages of this type should get through to their destinations, frequently in the battle line itself, then one may be pardoned for feeling just a wee bit proud of one's craft, in khaki and out of it.

The retirements of the last few weeks have fallen upon the C.T.O. like autumn leaves and will doubtless be dealt with specially elsewhere as will also the filling-up of the vacancies thus created. It is extremely difficult to mention certain names and to be compelled to omit others, but I will take but two as representative of the two sexes of G.P.O. West, namely, Miss S. E. Briault, the chief of the female staff and Mr. R. Doree, Assistant Superintendent 1. The former retires it is pleasing to note with every prospect of a long and happy retirement, humanly speaking, before her—a future which she richly deserves. As a member of the Post Office Relief Fund local committee, she rendered very helpful service and guidance, counselling in delicate cases—she will not mind the simile—with almost motherly tenderness.

Mr. Doree, " Bob " as he was affectionately known to all, left the office for the last time with by no means that robustness of health with which his host of well-wishers would, an they could, have endowed him, but they were totally unprepared for the tragedy of his death after a comparatively brief indisposition. Not for many a day has the sense of personal loss pervaded the office as in the passing of Robert Doree. It is no exaggeration to say that his life was a sweet aroma, and as his life, so his translation. He passed peacefully away in his sleep.

" God's finger touch'd him and he slept."

A further sign that we are passing into more peaceful waters is the closing down of the C.T.O. War Clothing Fund which, founded in August, 1914, at the suggestion of Mrs. Hobhouse under the auspices of Miss Lynch continued from 1915 to its finale with Miss Briault as successor. Over one thousand pounds were collected in the office, and as showing the diversity of the fund's activities, the following items may be aptly quoted :—

In kind :—Articles for Hospitals and Camps, 4134 ; Parcels for Prisoners, 850 ; Sandbags for France, 200 ; and in hard cash, Cloth ing and Socks for Soldiers in France £10 ; Distress cases in Serbia, £10 ; Wounded in Dardanelles, £20 ; St. Dunstan's Hostel, £50 ; London and Metropolitan Hospitals, £15 ; Y.M.C.A. and Church Army Huts, £25 ; Workshops for Disabled Soldiers, £15 ; Queen Mary's Needlework Guild, £100.

Very helpful assistance was rendered from first to last by the C.E.S. which freely lent its very able organisation to the temporary society.

The day of the Whitley Committee is upon us and the question is freely asked *Cui bono* ? One swallow does not make a spring but facts are stubborn things and I wish it were permissible to publish the entire contents of a letter containing the experiences of an employer whose normal staff numbers in round figures two thousand men and women.

One or two items may prove helpful and may not encroach too severely upon the rather precious space of our journal. At the outset, " Let it be said at once that Whitley Committees are not a specific for the cure in a single night of all the disorders and ailments of industrial life. Those who expect such magic results will be disappointed."

The matters dealt with besides what may be called terms of employment include, " arrangements for recording time of arrival, grace allowance, rules for late comers, works discipline suggestions."

My correspondent deprecates anything approaching mere bargaining and states that although they met with serious difficulties, one of these was to get both sides to remember that they were working for mutual good and he adds :—" The old school on both sides of the Committee found it difficult to believe that anything good could arise from the other side."

Mistakes may be and will be made from time to time, urges my informant, but after a while, he suggests, both sides of a Whitley Committee, like a Board of Directors supporting a business arrangement which has proved anything but profitable, " will cheerfully shoulder the loss and will never dream of repudiating its representatives."

Yet another step towards the restoration of Anglo-Continental telegraphic communications has been made by the acceptance of telegrams for any part of Germany if concerning matters regarding food-stuffs. If not infringing the divulgence regulations, it may be recorded that one of the first telegrams of this type to be forwarded was " Do you still deal in sausage-skins ? "

Birds are whispering that one of the fruits of the residence of the Belgian telegraphists in the metropolis will be an Anglo-Belgian Alliance of a very permanent character. May it be " Roses, roses, all the way."

J. J. T.

POST OFFICE SPECIAL CONSTABULARY.

WITHIN a few days of the outbreak of War, in view of possible disturbances of public order and sabotage, Post Office servants in London were invited by the Postmaster-General to enrol themselves as Special Constables for the protection of Post Office property. Many volunteers came forward and were enrolled in the City of London and Metropolitan Police Reserves.

As Military Guards were placed around the most important and vulnerable buildings, it was not found necessary to give these Special Constables regular duties at the outset. In May, 1915, however, when the Zeppelin menace began to become a reality, the Postmaster-General was asked to take such special steps as might be practicable to minimise risk of serious fires to Post Office property from aerial bombs. Arrangements were, therefore, made for nightly attendances by Squads of Special Constables at the principal Postal and Telegraph buildings and at nearly all the Telephone Exchanges in the London Area. The Special Constables were carefully instructed in the use of fire-fighting appliances and in the topography of the buildings.

At a later date, when air raids became frequent and a public demand arose for all buildings of a fairly substantial character to be made available as air raid shelters, the Special Constables had a good deal of work to perform in marshalling and controlling refugees.

Post Office buildings were for the most part undamaged by aerial attack, but in July, 1917, when the Central Telegraph Office was bombed, the Special Constables who were standing by in readiness helped to keep the fire from assuming serious dimensions pending the arrival of the London Fire Brigade. On other occasions the Special Constables stood by with fire hoses ready to prevent the fire spreading to Post Office property from conflagrations in close proximity. During the earlier raids and threats of raids before public warnings were instituted, the knowledge that Special Constables were stationed on the look-out to give warning, etc., was a source of comfort to the staff, and even after the Public Warning system was established the presence of the Constables was of considerable moral support, especially at the smaller Telephone Exchanges where small Female Staffs were carrying on important work under very trying conditions.

On June 14 1919, the Post Office Special Constables had the honour, in company with the London Special Constabulary in general and in the presence of a vast concourse of fellow citizens, of marching past the King and Queen at Buckingham Palace and of receiving the congratulations of His Majesty, who placed on record that " with steadfastness and courage you carried out the obligations you undertook " and thanked the Force for important and responsible " duty well done " carried out at the " sacrifice of their often scanty leisure."

REVIEWS.

The Principles of Electric Wave Telegraphy and Telephony. J. A. Fleming, M.A.,D.Sc.,F.R.S. 4th Edition (revised), published by Longmans, Green & Co., London, 42/- net.

This important volume is a revision of the 3rd Edition published in December 1916. In order to economise space and paper, the size of type has been somewhat reduced, and the volume, although containing some new matter, is slightly smaller in bulk. The print however remains very clear, and, as in previous editions, the diagrams and photographs are admirably reproduced. The author states that his aim has been " to deal with principles rather than give the fullest possible account of actual apparatus." Nevertheless he hopes " that the present treatise will in its revised form serve to give a comprehensive view of the subject particularly on its scientific side, and that part of it which is concerned with quantitative measurements and underlying theory."

In pre-war days Dr. Fleming's treatise undoubtedly fulfilled his aim as stated above ; but the matter which he has thought it advisable to add hardly seems commensurate with the immense advance that Wireless Telegraphy has made in the last five years. The first two parts of the treatise, viz : those on Electric Oscillations and Electric Waves, contain that full mathematical treatment of high frequency electrical phenomena, including the important chapters on " Resonance and Damping " and " Stationary Waves on Wires," which the reviewer has nowhere seen equalled in any work in the English Language. These two parts make Dr. Fleming's work essential to all interested in the theoretical development of Wireless Telegraphy.

The third part of the book, which is devoted mainly to a description of the apparatus, plant and methods actually used in Wireless Telegraphy, appears to be more valuable on the historical than the practical side, except for the important chapter on " Radiotelegraphic Transmission " which was added to the third Edition. This chapter contains an interesting discussion of the function of the earth in wireless transmission, and of the various hypotheses which have been suggested to account for the bending of long electrical waves round the earth's surface. It also contains much interesting information as to " atmospherics," and the variation of signal strength by day and night and at different seasons of the year.

On the recent developments of Wireless Telegraphy, Dr. Fleming's book is distinctly disappointing. Full descriptions are included of the large Marconi spark sets at Carnarvon and Clifden, although the experience of recent years has shown that undamped or continuous waves have an immense superiority over damped for long distance work. In all probability the last long distance spark station has now been erected ; and all future work of this nature will be carried out by continuous waves. Indeed the reviewer had understood that the synchronous disc set which Dr. Fleming describes was no longer in use at Carnarvon, having been superseded by the so-called " timed-spark " method of interrupted continuous waves described on page 92.

A small Poulsen arc set of old design is illustrated and described in Chapter I and the author promises to return to the subject in Chapter VIII (Radiotelegraphic Stations). No descriptions of a modern arc station can, however, be found in this chapter, and this although the Federal Radiotelegraph Company of America have had for some years a successful service between two arc stations at San Francisco and Honolulu ; and although high power arc stations have been working during the war between France and America, and innumerable successful arc installations of medium power are working in all parts of the world.

If any one system can be said to hold the field of long distance working at the present moment it is the arc system ; and it is much to be regretted that a volume claiming to treat Wireless Telegraphy so fully as the one under review should omit a description of a modern high power arc station and a discussion of the various problems connected therewith—such as the suppression of the " spacing " wave, and the factors determining the most efficient wave for radiation by an arc of particular design.

A low power 2 k.w. Alexanderson high frequency alternator is described on page 9 and the author remarks " Mr. Alexanderson stated in 1915 that a similar machine was being built for an output of 50 k.w. at a frequency of 50,000." Dr. Fleming however appears to be unaware of the fact that large machines of this type have since been built and are working satisfactorily.

The work of M. Latour is dismissed in a few lines, although high power machines designed by him are also working with success. In short the author leaves the reader with the impression that any system of transmission other than the Marconi spark system is merely in a laboratory stage of development. This impression is not lessened by the inclusion on page 582 of a highly coloured account from the " Wireless World "—the Marconi Magazine—for July 1914 of the course of a message handed in in London for transmission from Carnarvon to New York. It should be remembered that the war prevented the opening of this service and the description quoted was merely intended to show what it was hoped some day might be accomplished. After Dr. Fleming's earlier chapters have been mastered, it is something like bathos for the student to read that " the message is conveyed across the Atlantic in the form of a stream of closely sequent electric wave trains interrupted in accordance with the Morse Code, so as to spell out the message letter by letter " ; that "each train is composed of 50 or more waves 4 or 5 miles in length, built up into trains 250 miles long or so, the waves tailing away in amplitude " ; and that " these flit (*sic*) over the ocean in groups of trains longer or shorter as the Morse Code requires a dash or a dot."

The success of continuous wave working has undoubtedly been due to improved receiving brought about by developments in the three-electrode valve. Although the heterodyne method of reception is explained in Chapter VII par. 21, the use of the three-electrode valve in this connexion is not made clear. Nor indeed, considering the space given to apparatus whose interest is merely historical, such as the metal filings coherer, and the Poulsen tikker, is the space given to the three-electrode valve at all adequate. After giving two diagrams of its use as a detector, the reader is referred for further details to a " special book on the subject by the author entitled ' The thermionic Valve in Radiotelegraphy and Telephony.' " When one remembers that by the use of several three-electrode valves in series good signals can be obtained by day on a wire frame a few feet in diameter, from small stations over a thousand miles distant ; and that in addition this small frame is extremely directional, the importance of the new methods of reception to the future development of wireless is at once seen. It is indeed going to revolutionise duplex working. But the present volume has nothing to say about frame reception. Again, the use of the valve as a transmitter is inadequately treated, and in the description of portable sets the small valve transmitting sets which were so largely used in field station and aeroplane work are neglected.

Another problem, and perhaps the most important problem in practical wireless to-day, namely the elimination of atmospherics, also receives scant treatment. The opposed crystal method of the Marconi Company is described, but this method is much out of favour in practice, both with engineers and operators. No mention is made of the recent work of Pupin or Weagant on this subject, although their attempts, whether entirely successful or not, certainly open up new fields of research in this direction. Atmospherics at present are the greatest handicap of Wireless Telegraphy and on the solution of this problem rests the future of wireless as a real competitor with cables for long distance working. Dr. Fleming in Chapter VIII par. 8 states that " there is abundant evidence that the cost of wireless is less than that of cables." The evidence is not quoted, and in its absence the statement cannot be accepted. But even if it is correct, wireless can be no real substitute for cables so long as there is interference by atmospherics—interference which in some tropical regions makes working impossible for days at a time.

To quote from the preface " no one at present can hope to make great additions to it (Radiotelegraphy) who has not a very firm grasp of the electrical principles and facts which lie at its root, as well as broad acquaintance with what has been invented or discovered." This volume adequately fulfils the first desideratum, but as regards the second it leaves the reader with little information concerning the most recent developments. O.F.B.

Magnetism and Electricity for Home Study. By H. E. Penrose. London: The Wireless Press, Limited. 5s. nett.—We congratulate Mr. Penrose on the ease and simplicity with which he has expounded, through 50 progressive lessons, the laws of magnetism and electricity for home study. Like Mr. Fisk, who writes the introduction, those who have been through the mill will realise to the full the advantages to be gained from the unorthodox and attractive way in which the present publication is prepared. Mr. Penrose's success as a teacher is undoubtedly due to the faculty he obviously possesses of learning from his pupils the difficulties which present themselves to the uninitiated and their proper remedies. We have met few books which represent more fully our view of the proper form of presenting instruction robbed of all that robe of mystery which some technical men are prone to wrap round their science, either because that course is the easier for them to adopt or because they prefer the post of magicians.

We recommend this publication to our readers as being a readable, instructive and easily understandable course.

The Practical Telephone Handbook. By J. Poole, A.M.I.E.E. Published by Sir Isaac Pitman & Sons. 725 p.p. *12s. 6d.* net.—We welcome the sixth edition of this standard work. Mr. Poole's well-known hand-book requires very little recommendation from us to telephone men, to whom most of it has long been familiar. But we may remind them that this latest edition is so much increased in bulk that it contains twice the amount of text given in the original edition and nearly 200 more illustrations. It has moreover been largely re-written, and the developments of the telephonic art have necessitated the inclusion of chapters dealing fully with Private branch exchange work, common battery signalling, multiplex telephony, transmission, the telephonic relay and military service telephones. It will be seen from these headings that no pains have been spared to bring the work fully up to date. Mr. Poole has pressed into his service the aid of experts inside and outside the Post Office, such as Messrs. Cruickshank, Thompson, Shepherd, Jenkins, Napier, Shea, Barker, Taylor and Bryant, who deal amply with the subjects in which they have specialised. Whilst the practical details of line construction, localisation of faults, traffic and developments studies are fully treated, special attention is also given to such developments as are at present engaging the attention of engineers, *e.g.* valve relays, wireless telephony and multiplex telephony. In fact, the book has its starting point at the first principles of electricty and magnetism and reaches by progressive stages all the latest phases of modern telephone practice We may add that the 585 illustrations and diagrams are particularly clear and well printed.

STATE AND MUNICIPAL ENTERPRISE.

WE reprint an extract from an article by Mr. E. G. Harman, C.B. in *The Nineteenth Century and After* (June), relating to the working of the Telephone system by the State. We make some comments upon it in our leading article.

"The results of the Post Office Telephone business, trunk and exchange, during the four years 1912-13 to 1915-16, the latest year for which accounts are available at the time of writing, have been as follows. In the year 1912-13 there was a surplus, which was contributed to the Exchequer, of £303,000; in 1913-14, the last year before the war, a surplus of £239,000; but since the outbreak of war a deficit has developed, which is explained by difficulties and increased charges connected with war conditions. The deficit for 1914-15 was £111,000, and for 1915-16, £118,117. I propose, however, to disregard these war years and to take for purposes of the comparison which I am about to make the last year before the war, namely 1913-14. I also propose to confine the comparison to the exchange business, as the main loss has been on the trunk business, which is not comparable with the business of the late company. On the exchange business the results have been as follows: For 1912-13 a surplus of £318,291; for 1913-14 a surplus of £395,664; for 1914-15 a surplus of £143,103, and for 1915-16 a deficit of £6,457.

The outstanding Telephone debt of the Post Office at the present time is about 23½ millions. The Post Office are under the obligation to redeem this debt. This is done by the issue to them of capital by the National Debt Commissioners in the form of terminable annuities, the annual charge on which includes interest and the instalment of principal. As these annuities are for short terms of about fifteen years, the debt is being rapidly liquidated as it arises. There are also Exchequer bonds which are being similarly redeemed. But in comparing the financial position of the Post Office with that of the late company it would not be fair to exclude the redemption charge, because the rate at which the Post Office have been able to find their capital is lower than that paid by the Company, the reason, of course, being that in the former case it is raised on the credit of the State, in the latter it was charged on the more precarious security of the undertaking. To make a true comparison it is evident that the Post Office must be charged with the same rate of interest as that paid by the Company. Moreover if there was no obligation to redeem debt it would be necessary to have a capital reserve fund, so I propose to disregard this item. In point of fact it is not provided for in the published accounts under the head of "interest" but it is presumably included under the provision for the replacement of the plant when worn out ("depreciation").

Taking the accounts for the year 1913-14, Post Office Telegraphs and Telephones, H. C. No. 111 of 1915, the total capital liability of the Post Office Telephones, trunk and exchange, exclusive of about 2 millions transferred to the Land and Buildings Account, was 24¾ millions (including the 12½ millions purchase money), of which 18 millions is on account of the exchange system, the balance being for trunk. Let it be assumed that this figure (18 millions) represents the commercial capital of the exchange system, and that the Post Office has been put in the place of the late Company with its capital similarly and proportionately distributed, and bearing similar rates of interest, and that it had to pay a similar royalty on its gross receipts. The position of the Company in 1911 was as follows. Its issued share capital was £7,500,000, composed of £2,525,000 preference shares and preferred stock at 6 per cent., £1,250,000 preference shares at 5 per cent., and deferred stock amounting to £3,725,000, on which a dividend of 6 per cent. was paid. There were also debentures amounting to £3,672,000 bearing interest at an average rate of 3¾ per cent.; making a total loan and share capital of about 11 millions. The reserve fund was latterly about 5 millions. On a proportional basis of this distribution of capital the interest and dividend charge to the Post Office on a capital of 18 millions would come to about £940,000, or, say, £900,000, to make allowance for interest on advanced subscriptions in hand, the amount of which I do not know. If in lieu of the interest actually paid by the Post Office, that is, on the outstanding Exchequer loans and advances, there was substituted this charge in the account of the expenditure of the exchange system, and a royalty of £518,972 (10 per cent. on the receipts) were included, the expenditure would come out at £5,706,462, against an ncome of £5,189,725, thus showing a deficiency of £516,737, being approximately the amount of the supposed royalty. In the above calculation of the interest charge I have estimated a 6 per cent. dividend on the deferred ordinary at £360,000, and 6 per cent. interest on the preference shares and stock at £300,000. It thus appears that the Post Office, in the year in question, could have paid nothing on the deferred ordinary stock, and 2¾ per cent. on the preference, with a carry-forward of £5,763. On the other hand by including (as is presumed) in the amount set aside for depreciation, the provision applicable to redemption, the depreciation fund is probably on a firmer basis than was that of the Company. The Post Office are thus making very ample provision for the future.

In drawing this comparison there are several things which have to be taken into account. In the first place, when the staff of the National Telephone Company was taken over by the State, all salaries were raised and provision was made for pensions. The cost of this probably largely exceeded the amount of the royalty paid by the Company. It appears also from notes in these accounts that the amounts which are being set aside for depreciation and for the pension liability are considerably in excess of current requirements, and the latter of these items is under consideration. If it should subsequently be found that the provision under these two heads is excessive, the comparison would prove more favourable to the Post Office. The capital, also, under State management, is probably considerably larger than it would have been under Company management, even when allowance is made for the wider area covered by the Post Office. But, as I have already remarked, this is commonly seen in State or municipally managed enterprise, where capital admits of being raised without regard to its commercial results.

It would of course be quite unjust to attempt to judge the results of Post Office management by any comparison of this kind based on figures without taking into account the foregoing considerations and the very different conditions under which a Public Department works from those which surround a commercial undertaking. For those conditions the Post Office are in no way responsible. But the fact that such allowances have to be made is in itself a condemnation, from a financial point of view, of State enterprise, and they are the measure of the disadvantage under which it is conducted.

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Editing and Organising Committee - - { MR. JOHN LEE. MR. J. W. WISSENDEN. MR. J. J. TYRRELL.

Managing Editor - - MR. W. H. GUNSTON.

NOTICES.

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

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THE POST OFFICE TELEPHONE SERVICE.

IN the June number of *The Nineteenth Century*, Mr. E. G. Harman, C.B. (sometime a Principal Clerk in the Treasury), criticises the Accounts of the Telephone business from the point of view of State and Municipal Enterprise, and arrives at the conclusion that the decision to determine the lease of the National Telephone Company has not proved a good bargain for the taxpayer and that the remedy is in future to leave such businesses in private hands. We should like in the first instance to express our gratitude to Mr. Harman for his obvious endeavours to be strictly fair. These are perhaps somewhat discounted by a postcript, which he has introduced apparently as an afterthought, calling attention to the Statement of Accounts for the year ended March 31 1918, after having previously expressed his intention to disregard the war years and base his arguments on the pre-war figures for exchange business. We also wish to maintain an open mind as regards the general question of State versus Private Control.

Mr. Harman states that, in order to make a true comparison, the difference between the National Telephone Company's published Accounts and those of the Post Office should be eliminated, and in order to make this comparison, he considers that the Post Office should be charged interest on the 18 millions which he takes as the value of the exchange business at the rate of £940,000 allowing £40,000 for the interest on advance subscriptions in hand, the amount of which he did not know. The interest quoted by Mr. Harman is 5.22 per cent. on the total capital outlay, including that for the year under review, and the correct estimate would be £841,800, less £49,752 interest on total prepaid subscriptions for six months at the same rate, if interest is only charged at the average rate paid by the National Telephone Company over a period of 17 years, i.e. 4.88 per cent., and the interest on the expenditure during the year £1,592,149 (say £1,500,000) is only charged at half-rate, as it is spread over the whole year. The difference between £900,000 and £792,048 (£107,952) would materially reduce the alleged deficiency of £516,737 which is arrived at by assuming that the Post Office is chargeable with royalty at the rate of 10 per cent. on the gross receipts—receipts which include royalties from other undertakings and revenue on which no royalty would be payable. As regards the question of royalty, Mr. Harman assumes that it would be absorbed by the rise in salaries and the provision for pensions, an assumption which is approximately correct; but he ignores the fact that, in the opinion of those concerned, the Company would itself have been obliged to raise its salaries and to make provision for pensions in the near future if the business had not been transferred to the State.

Mr. Harman has assumed that the general items of expenditure shewn in the Company's balance sheets and in the commercial accounts are otherwise comparable. This is not so. Apart from units of expenditure being placed under different headings, which is of course immaterial so far as the total is concerned, the Post Office charges all salaries to Revenue Account (as they are bound to do, because they are voted Monies) whereas the National Telephone Company debited a proportion of its salaries to capital account as the staff were engaged on construction work. He also quotes a figure of £6,457 as the deficit for 1915-16 which is given in the account from which he quotes as £19,093; but as he bases no argument on the inaccurate figure no harm is done.

As the figures given in our contemporary have been widely quoted, we think it necessary to make these corrections and to point out, as we have done before, that the telephone business is highly technical and that comparisons drawn between different systems or different phases of the same system must properly be made on a theoretically correct foundation. The usual method is to compare the expense of the systems, using the telephone station as a unit. If that system be applied to the total expenses of the years 1910 and 1911 under the National Telephone Company and to 1912-13 and 1913-14 under the Post Office, it will be found that there was a decrease of cost in 1913-14 as compared with 1911 of approximately 6.35 per cent. These are of course pre-war figures and the war conditions have affected the cost of material and labour to such an extraordinary extent that no later comparison with the National Telephone Company's finance is practicable.

HIC ET UBIQUE.

WE offer our congratulations to the Secretary upon whom a Knight Commandership of the Bath has been conferred in recognition of his services in the Post Office during a period in which the work in the Secretary's office has been heavier, perhaps, than in any period within living memory. We understand that he will take the title of Sir Evelyn Murray, to avoid confusion with his father, Sir George Murray, K.C.B., who was Secretary of the Post Office, 1899-1903.

As most of our readers will probably have learned from the Post Office Circular, Sir William Slingo is succeeded by Mr. W. Noble as Engineer in Chief, and Major T. F. Purvis, O.B.E. becomes an Assistant Engineer in Chief. We understand that Mr. W. M. France is returning from Nottingham to take charge of the Telephone Section of the Engineer-in-Chief's office.

A DISTINGUISHED figure in the person of Mr. A. B. Walkley, the Assistant Secretary in Charge of Telegraphs, left the Post Office under the age limit on the 30 June. Mr. Walkley's writings are well known and appreciated by a much wider circle than that of our readers, who have, however, had the advantages of one or two original contributions from his pen. At the time of going to press, his successor had not been appointed. Mr. A. G. Leonard, the Principal Clerk of the Telegraph Branch retired at the same time, and his ripe experience, as well as his cheery and emphatic personality, will be greatly missed.

AMONGST the new appointments in the Central Telegraph Office are those of Mr. A. E. Edwards, to be Deputy Controller, and Messrs. W. J. Bond and W. Ferneyhough, to be Assistant Controllers. Mr. Jas. Bailey has received the I.S.O. on his retirement. We congratulate them all.

WE regret that in publishing the portrait of Mr. John Lee, the new Controller of the C.T.O., the acknowledgement due to the photographers, Messrs. Abernethy, of Belfast, was omitted owing to a printer's oversight.

WE are sorry again to disappoint our readers in the publication of the paper on valve amplifiers by Mr. A. B. Hart, who has been too hard pressed to prepare it for publication. We still hope to produce it in our next issue.

APROPOS of the article we publish on the Distribution of Telephones in Europe, we extract the following paragraph from the last issue of the *Telegraph and Telephone Age* relative to Belgium.

When the Germans destroyed the telephone system of the country, they calculated that it would take two years to restore it. The two chief central exchanges at Brussels were entirely removed, and the third was destroyed. The heads were cut off 50 underground cables, each made up of from 200 to 400 wires, while separate wires were cut in several places in such a way as to make them especially difficult to repair. Equipment was torn down and removed; one of the big "multiples" was entirely destroyed. The whole telephone installation will have to be rebuilt; the work is going on.

Exchanges in other towns have suffered the same fate. The wires in private houses have been cut, and in many cases the instruments have been removed. The same conditions prevail at the Central Telegraph Office. The great switchboard serving as an exchange for the whole of the country was stripped. The main instrument room was left empty. At the end of March there was no cable communication with England, except by way of Holland and France. There was only one wire working between the French frontier and Paris. It was four and a half months before the Germans succeeded in discovering, although it had been laid by Siemens, how the Belgians had managed to keep the underground telephone line from Antwerp working for days after the occupation.

THE TELEPHONE TO ITS IRATE RENTER.

As I stand at thine elbow beside thee
Dost thou deem me a friend or a foe?
Do I aid thee when troubles betide thee?
Do I lighten life's burden, or no?
If for one day the service is "rotten"
(To borrow a term thou hast taught)
Shall my benefits all be forgotten
And counted as naught?

When Freddy lay sick of a fever
And Mabel was down with the mumps
And thy spouse's good sense seemed to leave her
And thyself wast afflicted with "jumps,"
Did I wake the night owl—or the Doctor?
Did I summon a Nurse—or a ghost?
She came: and your gratitude shocked her—
Ye kissed her almost!

But never my praises ye chanted
Though priceless the minutes I saved!
My merits are taken for granted;
My failures on marble engraved.

When thou wouldst not go home to thy dinner
How oft have I borne to thy wife
Every subterfuge dear to the sinner
Enamoured of "life"?

Dost thou reck, when the counsel of Jobling
Beguiled thee to plunge and invest
And thou fearedst thy "Rubbers" were wobbling.
For all did not go for the best,
And thy broker didst hourly importune
For the favouring moment to sell,
Who then saved thy face—and thy fortune?
I think I could tell.

But when aught is amiss, and "Wrong number"
Is given, I hear thy deep curse
And thou vowest telephonists slumber
Or knit, or read novels, or worse.
If they tell thee "Engaged," thou art furious
And bang'st the receiver about
With an unphilosophical, curious,
But obstinate doubt!

But thou, art thou blameless, O railer?
Was it never thy lot to confuse,
In thy haste, taxidermist and tailor,
Or mistake double-three for two two's?
And thou claimest connexion instanter,
Forgetting how others have raged
When, due to thy frivolous banter,
Thy line was engaged!

I can bear with thy sharp irritation
When thou fail'st to obtain thy desire
And thy oaths and thy fierce objurgation
Whose heat would short-circuit a wire;
But I gird at thy shameless pretences
That I have debauched thee, O Droll!
And am that whence proceed the offences—
A snag for the soul!

But now in the Press thou hast clamoured
(A Press which is fertile in "stunts"
And of habits of Hate still enamoured
And of Truth—as purveyed from two Fronts)
Which in paragraphs futile but fervent,
Less framed to instruct than be rude,
Still damns the effete Civil Servant
And all of his brood!

Thou believest them, doubtless, for "*Crede Experto*"—they surely must know
When they say that the State is both greedy
And slothful, and hidebound and slow;
That proposed reconstruction is hollow;
That Illingworth foldeth his hands
While his flappers are flirting, or follow
The lure of Jazz-bands;

That all Telephone systems exotic
Indigenous systems outshine
(This judgment is not patriotic
But follows the recognised line),
For one kind of glory hath Sweden
Another is known in the States—
In the one, perfect service makes Eden
In t'other, low rates!

Combine these perfections, and make us
O Stuntifex, seven times blest,
That our sins telephonic forsake us
And our eyes turn no more to the West!
But thou, my subscriber, wilt wonder
Who pays. Love will find out a way
When the Super-stunt voices all thunder
"Let Germany pay!"

W. H. GUNSTON.

LONDON TELEPHONE SERVICE NOTES.

ONE of the most important events since our last issue was the discussion of a paper devoted to Automatic Telephony by Mr. L. A. Laidlaw and W. H. Grinsted at a meeting of members of the Institution of Electrical Engineers, on May 15th. The audience was a large one and it was clear that the subject of development of the telephone service in this country and especially in London, is regarded as of considerable importance by the Electrical world and the telephone using public. The occasion afforded a valuable opportunity for acquainting an important body of telephone users of the difficulties existing in the conversion of the manual system to machine switching in a large city. Very few who have studied the possibilities of Automatic Telephony fail to be converted to the principle of future development on those lines: nevertheless, it is neither accurate nor fair to conclude that a reasonable and satisfactory service cannot be given under a manual system. Many of the operations in manual switching are no doubt largely of a routine nature and lend themselves to certain classes of error through the presence of the human factor which the substitution of mechanical apparatus might avoid. It must, however, be remembered that the human element is not eliminated altogether in any automatic system since the subscriber is called upon to perform essential functions, yet is not, like the telephonist, a specialist in the matter. The intelligence of the trained telephonist must count for something in favour of the manual system. One of our daily contemporaries headed a paragraph referring to Mr. Laidlaw's paper with the words "Quicker Telephone Calls," as if that were the primary object to be achieved. Greater speed in operation could be attained under the manual system by cutting out much of the intelligent part of the operator's work. This possibility was revealed to the writer by a representative of a Telephone Administration from one of our Western Colonies who explained that their telephonists carried out no supervision of calls and in fact were not provided with facilities for so doing. They demanded "Number"—the word "please" was sacrificed for the sake of speed—and simply set up the connexion with the required subscriber. The calling subscriber was able to hear whether ringing current was going out to the required number but in the event of failure or of no reply had no alternative but to break down the connexion and make another attempt. The speed of answer was two seconds! The system produced conditions differing very little from those which obtain with machine switching, and it is interesting to note that a considerable percentage of complaints from London subscribers at the present time refers to lack of supervision of their calls by the operators. Another aspect of the competition between manual and machine telephoning is introduced in those countries where operating costs are low. Some of our readers will probably express surprise to learn that in some countries telephone operators are paid at rates considerably below those paid by the British Post Office. In discussing this point with a representative of the Japanese Telephone Administration it was ascertained that in Japan telephonists receive about 30/- per month. There is thus a stage where the greater cost of an automatic installation is not counter-balanced by the saving of operating charges, and it was stated by one of the speakers on Mr. Laidlaw's paper that at least one such case has arisen and that the manual system gained the day.

It is variously estimated that from ten to twenty years must elapse before a full automatic system could be built up for London, so that a considerable transition period is inevitable, and it is during that period that so many difficulties present themselves. On this point Mr. Laidlaw makes a suggestion of particular interest. A change in the present system of subscribers' numbers is unavoidable and the suggestion is that all subscribers' numbers should be converted to a five figure series and work as such through the transition period. From the point of view of the general service there are strong objections to five figure numbers. There would obviously result an increase in the number of errors due to the phonetic similarity between certain numerals and also errors due to the transposition of digits and the general drag on the whole process of operating would have a very detrimental effect on the service. Members of the public may accept from their medical advisers a pill which makes them worse before they are better, but there is little hope that they would have the same patience with and confidence in the Telephone service even should such a course be advocated.

* * * * * * *

Free Heart, that singest to-day
Like a bird on the first green spray,
Wilt thou go forth to the world,
Where the hawk hath his wing unfurled
To follow, perhaps, thy way?
Where the tamer, thine own will bind
And, to make thee sing will blind,
While the little hip grows for the free behind?
Heart, wilt thou go?
—No, no!
Free hearts are better so.

So wrote E. B. Browning, which reminds us that the heart whose expressions we have been accustomed to read under this heading these five years gone, has declined to go forth to the world any more and to face editorial tamers. As he passes on the mantle to another we express to him our hearty appreciation of the pleasure his notes have afforded us.

The proceeds of the Trunk Exchange Bazaar have now been handed over to the funds which it was designed to benefit. £230 has gone to St. Dunstan's Hostel and a similar amount to the War Seal Foundation, while the balance of £19 15s. 7d. has been forwarded to the Hospital Saturday Fund. The staff may well be proud of raising so large a sum at a function lasting only five hours. They express the intention of repeating the effort—when a few more pay days have rolled by. It is rumoured that the promoters are seeking a technical officer on the new traffic establishment who can construct a curve showing the intervals which must elapse between such functions, for to be up to date they must have something automatic about them if it is only regularity. On at least one of the Headquarters functional sections one can see much squared paper and many slide rules. Alas, for us, if they achieve success. !

Holborn and Mayfair Exchanges each held dances during May for the men of St. Dunstan's.

Victoria Exchange organised a bazaar in their rest room on April 4th, and raised the creditable sum of £50 which has been forwarded to the War Seals Foundation, being another contribution from the London Exchanges to that charity.

The Hospital Saturday Fund is another favourite of the London Exchange staffs and in aid of that Fund Kensington Exchange held a very successful fancy dress dance. The gratifying financial result was a balance of £20 which went to the Fund. This was Kensington's first social event and they intend that it shall not be the last. They aim at a larger *hall* and a bigger *haul* next time and from details of the splendid array of costumes there will no doubt be a great demand for tickets. The first prize went to Miss Elsie Gillett, who represented "Cleopatra". Miss Kelly—attired as a Persian Dancer—was awarded the second prize. The gentleman's prize was carried off by Mr. G. Braby, who impersonated Mr. George Robey. Mr. J. E. Collins was an excellent M.C. and utilising the knowledge gained on active service marshalled the dancers into lines and squares with true military precision.

Regent Exchange held a most successful fancy dress dance and also a whist drive, the proceeds of which were given to the Military Hospital (spinal cases) at Gifford House, Roehampton. The staff have also contributed flowers and books to the same Hospital.

Hampstead turned their attention to a Whist Drive and were thus enabled to send £2 to the "Home for Incurable Children."

The night staff are demonstrating the advantages of night duty by having an outing to Brighton. The Assistant Traffic Superintendents were represented, others were no doubt detained

owing to the occasion coinciding with the date of the Traffic Officers' monthly meeting.

A pleasing little ceremony took place at Headquarters on May 3rd, when on behalf of the Exchange Traffic Staffs, Mr. Edmonds presented Mr. E. A. Pounds with a silver kettle and stand and a a case of silver tea knives in commemoration of his silver wedding. Apparently the superstition prevalent in certain provincial Exchange Areas concerning gifts of knives is not shared by the staff of the London Telephone Area, for after the fourth performance of "The Transformers" on the 22nd May, Mr. Pounds, under whose direction the fantasy has been *produced*, was the recipient of a present of stainless knives from the performers and co-workers. The decision to repeat the play on May 21st and 22nd was fully justified by the size of the audience on each occasion and in addition to the social success achieved, sums of 12 guineas each have been forwarded to the War Seals Foundation and St. Dunstan's Hostel. Mr. John Lee, responded to persistent calls for the author and as is his usual wont on these semi-official social occasions made a happy little speech. By the time these notes appear in print, Mr. Lee will have taken up his new duties as Controller of the Central Telegraph Office, and in a pleasing reference to that event expressed the hope that the future relations between the Telegraphs and Telephones in London would tend to be closer and if possible more cordial. That wish we heartily reciprocate and trust that the occasion will be of the variety which takes substantive form. As a former Deputy Chief Inspector of Telegraph and Telephone Traffic he has knowledge both of the telegraphist and the telephonist and, although our colleagues in the telegraphs will be entitled to claim the lion's share of his sympathy, we are led to hope that Mr. Lee will maintain his affection for the sister service.

We offer hearty good wishes to Mr. Newlands into whose chair Mr. Lee ascends. Sir Wm. Slingo is another who within the past few weeks has passed to well earned retirement and we hope that both will enjoy full measure of peace and happiness in the evening of life. Mr. W. Noble succeeds Sir William as Engineer in Chief and to him we send cordial greetings.

SYRIA AND SOUTH TURKEY,

CHRISTMAS, 1918.

By CAPTAIN I. G. E. PHILLIPS, Traffic Branch, London Telephone Service (*late Administrative Commandant, Aleppo, Syria*).

The following experiences happened after General Allenby's wonderful drive which resulted in such an entire defeat and capture of the Turkish armies.

The City of Aleppo, which was my Headquarters, is an important commercial centre—both for Asia Minor, Palestine and Egypt—also a railway junction. Unfortunately at the time of its capture, nearly all rolling-stock and other material was destroyed. There are two good stations—the Damascus (or French) Station for connexions to Damascus and the South, and the Baghdad Station for the North. Aleppo controls the money market of the district. The population of the city is largely composed of Syrians, Turks, French, several Jewish families, Hedjaz and some Germans.

It was the Headquarters of the German commander of the Turkish army—General Liman von Sanders—and was the centre for all German enterprises in connexion with the Turkish army during the war.

The house I occupied had formerly been the German Signal Headquarters.

The Citadel of Aleppo is a rather curious and interesting piece of architecture. Built on a huge mound surrounded by a moat, it is practically inaccessible except for a small stone entrance leading over the moat, which at times of siege was knocked away with a battering ram.

To my mind, the Bazaars of the city are quainter and more interesting than those of Damascus. They extend for some miles and are very narrow and extremely dirty. The latter condition must be taken for granted when speaking of anywhere in Palestine, Syria or Turkey.

Commodities are arranged in sections in the Bazaars. There are the Scent, Spice, Shoe, Vegetable, Fur, Carpet, Brass Bazaars, and others too numerous to mention, where one goes from stall to stall, eventually obtaining the article at the first price asked. Speaking generally, Aleppo, if the sanitary conditions were better, would be a very tolerable city, having quite wide streets, several very good buildings, and the country round is very rich. The water supply, entering the town from the neighbouring hills, is extremely good, and yet Aleppo is noted for its *impure* water; the reason being that there is surface drainage and no proper water conduits, consequently the two sometimes get somewhat mixed. A Health Department is the greatest need of the place. When I was first appointed Commandant of Aleppo very few English troops were in the city, and my most important work was the relief of the Armenians.

Aleppo being in British occupation, my task was not hampered by any restrictions, as regards interference, but there was urgent need of help at a city called Aintab over the borders of Turkey in Asia, about 100 miles North of Aleppo, so I made my way there as soon as I could. It must be understood that when Turkey gave in we advanced to a few miles north of Aleppo. Consequently, when I went to Aintab, I was in Turkish territory with a Turkish Governor in occupation. However, it was the order of the British Government that the destitute and homeless were to be relieved and saved from starvation as far as possible, so I commenced a hard and somewhat hazardous task.

There is no railway at Aintab. I therefore had to make the journey by "Ford" car, no larger car being able to go over the terrible roads, except some "Rolls-Royce" armoured patrols. Having journeyed from Port Said by sea to Tripoli on the Syrian coast and from there to the towns of Homs and Hama by motor-lorry, spending many nights on the road in bitter cold weather, this was not my first experience of road travelling in these parts. Nothing can possibly be compared with a long journey by car over Turkish main roads. Intense cold; roads almost impassable in places, where "nothing but a 'Ford' or a camel" could possibly journey; chances of attack by Kurds; tyre trouble, &c.; all these made the journeys far from pleasant. Great credit must be paid to the little "Fords" and their Australian drivers. The really wonderful things that they have done are beyond reckoning. On one occasion when a "big-end" broke owing to lack of oil—as two cars generally travel together—my car towed this one for the remaining 27 miles uphill into Aintab, with our *only* one piece of rope, in one and a-half hours, which is exceedingly good going when one has seen the track—I won't call it a road!

On arrival at Aintab I had to take up my temporary residence with Dr. Merrill, the American Missionary and head of the Central Turkey College, where I spent a very pleasant time. I was in his house in the American College, surrounded by a high wall—in case of trouble!

Dr. Merrill is a good and clever man, who has done and is doing very fine work there. Entirely isolated from all his friends and relatives, his wife and children being in New York, leading a very secluded life in which his work takes up his whole time, he is the means of relieving and lessening a great deal of human suffering in that district.

I was helped in my work by Dr. Merrill very considerably, for when I came to the city as representative of the British Government I was a stranger. My first thoughts were of a hospital; for, as may be imagined where dire poverty prevails, especially in the East, sickness is always on the increase. The climate is extremely trying, sometimes being very cold and wet for months; very different from the heat of Egypt. Difficulties presented themselves immediately. All British and French buildings had been taken over by the Turks and two Armenian orphanages had been closed. Consequently, to open these, application had to be made to the

Turkish Governor, who, in turn, had to apply to Constantinople. His position was not an enviable one, it not being exactly clear whose orders he was to obey. It is obvious whose he did obey. Our friend will have cause to remember the O.C. troops and myself; I think we graced him with our presence nearly every morning, or *vice versa*. He was quite a good fellow. I obtained all I asked for, for eventually I had two hospitals, an orphanage, four churches and numbers of large houses and Khans (inns) opened—places previously taken from the Armenians.

A certain high official vowed to the head of the Armenian community in Aintab that never would the bells of the Churches ring again! On January 24, about the time of the Armenian Christmas Day, I opened and arranged a service in the first Church. The bells did ring! There were 4,600 Armenians in attendance. During the following weeks the remaining three churches were opened. They were in a wretched condition, in most cases only the walls left standing, with the woodwork and even galleries taken away.

Five schools employing 60 teachers and containing 1,400 children were opened within a month.

It was interesting to notice how the Armenians began to come out of their houses and walk about quite freely again. Some of the men had kept to their houses continuously for over four years. An order came for the release of about 1,500 women and girls who had been employed as servants in Turkish homes. The Turkish police at once got busy; consequently I was overwhelmed with homeless females turned out of their temporary refuges, with most of their relatives dead, nowhere to go, nothing to eat, and no money. I immediately had to organise a Rescue Department, and make houses into hostels. Houses were not easy to find, especially whole ones, with walls and roofs.

The women were put to work at some looms and spinning wheels and given food and shelter. This was a heavy drag upon my resources for the starving and destitute, but it had to be done.

It has occurred to me that the servant trouble in England could be greatly relieved if several hundreds of these people could be brought over here. They make excellent workers, and could easily be spared. I am speaking of the females only when I talk of work.

When getting together men to work on the roads I had no difficulty in obtaining the men, but to make them work was another matter. My Labour Bureau was always busy getting work for women, but the men in most cases refused to do manual labour or would not work for the pay offered. When any road-making or similar work came along, everyone was either a professor or school teacher.

There are no telephones in Aintab, except, of course, the Signal Service. The Turkish Governor certainly has a telephone on his desk, of a pattern I have never before seen. I don't think it s connected with anything or anyone, although he used to speak through it occasionally.

There is a civilian exchange in Aleppo, not exactly a Traffic Superintendent's dream of perfection, but it works. . . . One turns a magneto and waits, not always indefinitely. Later the bell rings. You answer, state your requirements, asking for one of the few subscribers in the town by name. Sometimes one is successful —generally speaking, one isn't.

The Military Exchange is extremely good. The Signal Service had two large boards. Improvements were being made daily. A great amount of captured material was made use of. The subscribers' office instruments were the Ericcson Table Pattern magneto sets, and the service was good. Baghdad Station had a P.B.X., as had the Cavalry Headquarters, and afterwards, on arrival, the Desert Corps were supplied with a board at Baron's Hotel. Aleppo had communication to Aintab by air line, also by a wireless set on a motor-lorry at the Aintab end. All "Priority" messages were sent on the "Radio." There were two lines through to Damascus, one to Katma Junction, one to Killis. These were light pole routes. Turkish lines were utilised to a great extent.

Where no telegraphic communication existed, messages were taken by despatch riders, who used to wait for the cars at certain cross-roads.

Attempts were made to get to Morash, another Turkish city N.W. of Aintab, but the roads, up to the time of my departure, were so bad that this had not been done.

I have been 35 miles out on the Morash road, but had to return. Since that time improvements have been made, and I believe British troops are now in occupation there.

I remember on one occasion the arrest of five seditionists—really bad men—who were sent down to Aleppo to be disposed of. It was arranged this way: one prisoner sat in front of the car next to the driver with a soldier at the back holding a rifle near his man in case of trouble. The Intelligence kept us well informed of these people, who were very troublesome.

The Armoured Car Section, which bore the brunt of the fighting in the capture of Aleppo and district, were kept well in practice at Aintab, where they were often called to chase Kurd robbers who had perpetrated outrages on the roads. These were armed and always put up a fight. On one occasion, after four of them, mounted, had robbed and nearly murdered an Armenian school-teacher, an officer and two privates chased them in a light "Ford" car with a machine gun. The officer and man had to abandon the car on the road and chase these robbers over the hills on foot, eventually killing one and wounding two.

At Aintab I had published a paper in connection with the relief work, called *The Guide*. It was a two-page affair, printed on one side in Arabo-Turkish, and the other in Armenian. In this paper any notices appertaining to relief work were shown. Some of the British war telegrams were also published, giving interesting news to the people, as, except for occasional telegrams from Constantinople, which were well "*censored*" by the Turkish authorities, no outside news came to Aintab for *over four years*.

Dr. Merrill, Dr. Mary Hamilton, and Miss Troubridge, American missionaries in the city, had received no communication by post from *February*, 1915, until *January*, 1919. No paper was printed during the whole course of the war. *The Guide* was appreciated, and was sold for a nominal sum of two mettaliks (Turkish) to pay expenses, and circulated in Aintab, Birijik, Morash, Muslimi, Kaima, Killis, Aleppo, Homs, Hama and Damascus.

A curious and pathetic incident occurred on the day of the re-opening of the first Armenian church in Aintab. It must be understood that the Armenian nation was scattered over the whole of Turkey and part of Syria and other places. Many families were completely lost. Some were parted and never met again. In this case, a woman found her child in the church after three years, the child having been rescued and put into an orphanage.

Many similar cases happened in connection with the repatriation. A young man came to my office in Aleppo, asking if he could be sent down to Damascus to get work, as he had lost all his family In the queue outside, waiting to be registered by the Labour Bureau. was his mother, whom he thought to be dead. He and his mother were given a spinning wheel loom and a small shop and remained in Aleppo.

Since the occupation of Aleppo by the British many improve_ments have been made.

A very fine racecourse with grand stand had been built and was to be opened for the first Military Meeting a few days after my departure for England. This racecourse will be run on proper lines, the betting being on the Totalisator system, and should compare favourably with those of Alexandria and Cairo.

The only sport at Aintab that we could manage was an occasional football match and tent-pegging by the Indian Cavalry. Rations were not very plentiful; sometimes a fortnight passed before a car arrived from Aleppo. Hyena and jackal shooting at night was a weird business, necessitating extreme silence; one fired when a pair of eyes were seen in the darkness.

I went with a party on a bear hunt north of Tripoli, which was interesting enough as far as the scenery was concerned, being amongst the snow mountains, but we, unfortunately only saw one bear once, and he quickly retired on seeing several human beings armed with rifles and haversacks of ammunition—(and rum and sandwiches).

The Lebanon and Anti-Lebanon mountains hold the snow all the year round, as does also the Taurus Range near Aintab. There is considered to be good sport, jackal hyena and silver fox. If one is more modest and doesn't want to get too cold, there are the mongrel dogs of the district, which seem to be slain in their hundreds and yet are always as numerous as ever. Next to the Kurds they are the biggest thieves in the world.

My homeward journey was extremely interesting though somewhat uncomfortable, taking over two weeks from Aleppo to Egypt, and another two from Egypt to England.

INTERVIEWS WITH OFFICIAL CELEBRITIES.

II.—THE TRAFFIC EXPERT.

IT was during the forenoon of the last day of the year that we left Euston for the large and important industrial city of Liverham. The depression due to the extortionate demand from the Railway Company for a third class return ticket gradually gave was, as we neared our destination, to pleasure at the thought of the forcoming interview with that Gamaliel of officialdom—the Traffic Expert. To sit at the feet of such an one, even for the short period usually accorded to an official interview, was an experience which we would not readily miss and one which would richly compensate for any outlay on our part.

Formerly the Headquarters of the Traffic Expert were at Birchester, and the removal to Liverham was a direct outcome of the conditions arising from the War. At first sight there seemed no real reason for the change, but the necessity for action of some sort was impressed upon the Traffic Expert. Other Departments were doing something, increasing staff, reducing staff, moving staff from one room to another and moving them back again after a fair trial, making new arrangements for the circulation of paper, issuing instructions for the strictest limitations to be observed in the supply of blotting paper to officers below the rank of Assistant Clerk, and generally doing everything that was possible to promote movement and unrest.

Considerable and acute rivalry exists between Birchester and Liverham and the removal of the Traffic Headquarters caused, therefore, considerable excitement in the former city. It was felt by the citizens that the change was in the nature of a slur on their city and that it behoved them to take action in the matter. Articles appeared in prominent positions in the local press calling for action. The local Member of Parliament, who was enjoying a quiet holiday at Blackpool, telegraphed to say that he saw no reason why action should not be taken. Finally, a largely attended meeting at the Corn Exchange, presided over by the Mayor, passed with acclamation a resolution affirming their intention to take action. The meeting was on the point of breaking up, content to think that action was to be taken—the Mayor, indeed, had left the platform—when someone pointed out that, as it was not quite clear precisely what action could be taken, it might be as well for the resolution to be more definite in its terms. It was then decided to appoint a Deputation to wait upon the Traffic Expert.

In due course the Deputation waited upon the Traffic Expert and the Traffic Expert rose nobly and officially to the occasion. With that exquisite blend of persuasiveness and tact, which he and Lloyd George alone possess in the proper proportions, he explained, courteously though firmly, the position, taking as his text that something had to be done.

It is true that some of the comments made by the members of the Deputation on the Traffic Expert's explanation were of a dry, not to say caustic, nature. It is true that the leader of the Deputation said that, although the statement to which they had listened did not take them very far, it might be regarded as unsatisfactory so far as it took them. It is regrettably true that another member, evidently of a facetious turn of mind, said that the difference between the Traffic Expert's statement and the curate's egg was, that the latter was good in parts. It is true that a third speaker mentioned that, if he were at any time required to give his candid opinion of the Traffic Expert's statement, he would prefer, on the whole, that his (the speaker's) wife's mother should not be present, a remark chiefly noteworthy on account of the touching reference to one belonging to a class to the members of which affection and respect are, unhappily, not too frequently shown.

It could hardly be stated by any stretch of official imagination that the Deputation withdrew satisfied, and more might, indeed, have been heard of the matter had it not happened that a week or two later the local football team reached, after two drawn games, the third round of the Cup, and in the general excitement the removal of the Traffic Expert's Headquarters to Liverham was forgotten.

The Traffic Expert's features and general appearance are so well known that it is unnecessary for us to attempt to describe them. It is sufficient to say that, on the day of our interview with him, he wore a black morning coat, striped cashmere trousers, a light coloured waistcoat, a black knitted tie, a knitted brow, and a high-tension expression.

"You see this Curve," he said, impressively, after we had taken our seat. We glanced at the graphic representation of statistics, a complicated array of squares, figures and lines. "It shows what we intend to do with applicants for Watch Receivers." We instantly felt that we would not exchange for the gold of the Indies our lot for that of an applicant for a Watch Receiver.

The Traffic Expert went on to say that it was proposed to apply steady and progressive discouragement, not only to new applicants for Watch Receivers, but to existing subscribers possessing such apparatus, with the result that, on March 31 2004, the ratio of Watch Receivers to subscribers would be as .001 to unity. "In other words," he continued, observing that we had utterly failed to grasp the significance of the figures, "each business subscriber will possess one-thousandth part of a Watch Receiver."

The Traffic Expert paused at this stage and looked at us evidently expecting some remark indicating at least partial understanding of the position. We brought, by a powerful effort, all our mental resources to bear on the situation. "What about the married woman," we said. We had not failed to observe that the Traffic Expert's statement had not included the married woman. Had the married woman been thrown aside—ignored? Had she been trampled upon? The public would insist on knowing her fate. We felt that it was high time to put in a word for the married woman.

"The married woman," said the Traffic Expert, somewhat puzzled. "Do you mean the married woman as a business subscriber?" "No," we replied firmly, "we mean the married woman in her proper sphere, in her home." "You mean as a householder in her own right," he said. "Not necessarily," we replied, "we mean the married woman with or without a separate estate." "We cannot differentiate," the Traffic Expert said, coldly, "she comes within the category of the private house subscriber, for whom we have a separate curve; the private house subscriber embraces the married woman."

We relinquished the subject at this stage. There seemed no advantage in pursuing it further. We had done our best for the married woman. We could do no more. We felt, moreover, that the position in which we had left her might be regarded by some as not altogether unsatisfactory.

It has been said that a curve is that which shows in a complicated way something which can usually be expressed in a simpler fashion. We saw a curve recently which purported to give the

RECIPIENTS OF THE MEDAL OF THE ORDER OF THE BRITISH EMPIRE.

MISS EVELINE CHESTER. MRS. H. M. HIBBERD. MISS ROSYE OAKMAN.

exchange lines connected with a certain exchange at the present time, at the end of five years, and at the end of ten years. An elaborate array of lines, figures, and enclosures conveyed the information desired, although it might have been thought by some that a simple and effective method would have been to show the figures in tabular form thus :—

Existing	2,500
At the end of five years	3,500
At the end of ten years	5,000

We mentioned in some fear and trembling our doubts with regard to curves. These doubts were soon swept away. The Traffic Expert said that the differences between the curve figures and the actual results gave rise to much interesting and fruitful discussion, while the preparation of the curves had a markedly beneficial effect on the mental development of the staff devoted to the work. No such intellectual development could be expected if figures were shown in other ways. This argument seemed to us entirely convincing and our respect for curves increased considerably at one bound.

After brief references to some minor subjects such as the quality of the service, the overloading of positions, and the necessity for the peg count, we referred just before our departure to the recent removal of the Traffic Expert's Headquarters to Liverham. We pointed out that Liverham was not an easy place to visit. The only good train left London at the absurdly early hour of 10.30 a.m. a circumstance which rendered a visit from any self-respecting member of the London Headquarters Staff out of the question. The Traffic Expert said that he had not allowed this factor to escape his attention when considering the question of removal. Just for one brief moment there came over his usually immobile face, a slight, almost imperceptible, variation of expression. Could it be—on reflection we decided that it could not. We may add that his expression when we parted had resumed its wonted immobility. He looked us straight in the face in the style laid down by Smile's Self Help and advocated by Pelmanism.

The essence of successful interviewing lies in giving the opinions of the individual interviewed not on a variety of subjects but on one or two subjects only, leaving the public to judge from these opinions what lines he would probably take in other matters. In accordance with this principle we have given publicity to the Traffic Expert's views on a strictly limited number of subjects, and it will be an easy matter for the public, by a simple process of deductive reasoning, to arrive at his probable views on the Land Question ; Should Mr. Smillie be made a Duke ; Pothead Baths for Linemen ; Should Supervisors be Suppressed ; The Superfluity of Private Secretaries ; The Proposed Annihilation of Auditors ; and a Shorter Day for Higher Division Clerks.

C. W. M.

[The first article of this series appeared in the April-May issue.]

PRESENTATION TO MR. A. MELLERSH, C.B.E., SURVEYOR, NORTH EASTERN DISTRICT.

A meeting of the Postmasters of the North Eastern District was held at the Station Hotel, York, on the 31st May, to say good-bye to Mr. Mellersh on his retirement from the Service, and to present him with a walnut canteen of cutlery to which past and present Postmasters of the District had subscribed.

The Postmasters of Hull, Darlington, Middlesbrough, Durham, Scarborough, Lincoln, West Hartlepool, North Shields, Ripon, Bishop Auckland, Beverley, Morpeth, Saltburn, Berwick-on-Tweed, Thirsk, Blyth, Whitby, Hexham were present, together with Messrs. Gayes and Hall of the Surveyor's staff.

Letters and telegrams from officers who were unable to be present, couched in most kindly terms and containing eloquent testimony to Mr. Mellersh's great popularity, having been read, Mr. Shawfield made the presentation and said that he felt unable to do justice to the occasion. Mr. Mellersh had been known to all of them as a personal friend and benefactor who realised that Postmasters had not only duties to perform but difficulties to encounter. Mt. Mellersh's visits had always been looked forward to with pleasure and he felt that all would agree with him when he said that it was with a feeling almost approaching to bereavement that they now regarded his retirement. He wished to congratulate Mr. Mellersh on the honour of the C.B.E. lately bestowed upon him by the King. He asked Mr. Mellersh to accept the canteen of cutlery with the assurance that they all felt that no testimonial could adequately express the feelings of gratitude which animated the Postmasters of the district.

Mr. J. W. Burchby next spoke and alluded to the fact that Mr. Mellersh had invariably shown every Postmaster the greatest courtesy and consideration, and that his visits had always been sources of pleasure and profit.

For many years Mr. Mellersh had played the leading character in this district on what he might term the Post Office stage, but now the curtain was about to be rung down and he would play his part no more. They could sympathise with Mr. Mellersh's feelings on such an occasion but they all felt certain that new pleasures and interests would soon occupy his leisure and in a short time they hoped he would wonder however he managed to endure the cares and anxieties of his position so long.

WHERE TO STAY.

The attention of our Readers is directed to the following list of Boarding and Apartment Houses.

BARMOUTH the Beautiful). "Glencairn"—The most comfortable Private and Residential Hotel in North Wales. Charmingly situated overlooking bay and mountains. Large lounge. Excellent cuisine Moderate inclusive tariff. Highly recommended.—Mrs. Dennis, Proprietress.

BOURNEMOUTH (Chine House).—18, 19, 20, Undercliff, Boscombe, Boarding Establishment. Beautiful situation facing sea; every comfort.—Terms from 50*s*.

BRIGHTON.—"Ferndale" Boarding Establishment. A comfortable holiday home; liberal table; piano; 1 min. sea, Palace Pier; terms from 35*s*.; 6*s*. per day.

BRIGHTON.—Grafton House, Grafton Street, Marine Parade. (Door Sea). Comfortable Board Residence. 10 bedrooms; bath (h.c.) Electric light throughout. Good table. Moderate cycle accommodation.

CLEVEDON (Somt.)—"Ravenswood," beautifully situated on cliffs, overlooking sea and woods; ideal holiday resort; charming walks. All comforts studied. Moderate inclusive terms. Misses Bruce and Hall.

EASTBOURNE.—"The Polytechnic" Boarding House. Recommended by "Polytechnic," Regent St., since 1894. A comfortable holiday home. Liberal table Terms 35*s*. weekly inclusive.—Mrs. Edwards, 109-111, Tideswell Road.

TORQUAY.—"Ubeda," Crown Hill Park. Comfortable home-like Board-Residence; pleasant situation; own garden produce. Mrs. Smith.—Terms from 35*s*.

Mr. Snowball alluded to Mr. Mellersh's well known kindness and courtesy and Mr. Tonkinson gave expression to the feeling so general on the part of the Postmasters of the smaller offices, that in Mr. Mellersh they had had a Surveyor whose official visits were always a help and a pleasure, that he was always approachable and ready to give sound advice and listen to their difficulties and troubles. He had shewn that it was possible to be essentially human and yet strictly official.

Mr. Wilkins Smith made allusion to the many acts of personal kindness which he had received at Mr. Mellersh's hands.

Mr. Pye, who presided, said that one outstanding feature in regard to Mr. Mellersh was his broad-minded ways. He thought in view of the great changes impending there would be great difficulties to contend with, and that Mr. Mellersh would probably have cause to think that he was well out of them.

Mr. Mellersh in feeling terms expressed his thanks for all the kind things that had been said. It was with mingled feelings that he came there that afternoon, and although it gave him the greatest pleasure to meet them, on the other hand there was an inevitable feeling of sadness in saying good-bye to so many friends. He had been connected with the district since 1880. In that long period he had seen many Postmasters come and many go. He felt very deeply in regard to the kind things said about him by the many friends he had made, and he hoped he had not made one enemy. He was about to lay down the cares of office and could say he had never willingly hurt a single individual. His official life had been marked by many important events. The introduction of Telephony, the transfer to the state of the Telephones, Wireless Telegraphy, Motor Transport and the greatest war ever known. He wished to thank them all for their loyal assistance throughout his career, and also for their attendance there that afternoon, and for their handsome gift. Their generosity touched him to the quick. He would always have them in his mind. He was about to disappear from old scenes of activity with regret in spite of the difficulties which the future might have. He wished them all good-bye, long life to those about to retire, and prosperity and promotion to those remaining in the Service.

Musical honours were then accorded to Mr. Mellersh and the party then had tea together. The arrangements were very satisfactory and credit is due to the Committee for their work and particularly to the energy of Mr. Tolbrook, the Secretary, to whom trouble seemed of no account.

"M.I.P.O." RAMBLERS.

At a recent staff meeting convened by W. A. Frame, Assistant Traffic Superintendent, presided over by Mr. Wyard, the Postmaster of Middlesbrough, it was decided to form a "Rambler's Society," for providing general amusement and recreation throughout the year. The Society to be composed of Middlesbrough Postal, Telegraph and Telephone Staff. The first "Outing" was held on Whit Monday, at Middleton-One-Row near Darlington, a very picturesque resort. It may be safely asserted that within a very short distance of smoky Middlesbrough some of the most beautiful scenery in England is to be found. The first meeting augured well for the Society's future success. The company numbered about 70. Dr. and Mrs. Steavenson's kindness, in allowing the Society to have the use of their lawn and fields for lunch, tea and sports, attributed in no small measure to a very happy day spent in brilliant sunshine. At lunch, the President (Mr. Alan Roberts, District Manager), impressed upon the sports competitors the need for securing as many prizes as possible, as the chief winner was to be the receipent of a large "Check" generously given by the Hon. Secretary (W. A. Frame). This turned out to be a large piece of check cloth—which was received with much amusement. After tea and the distribution of prizes, dancing on the lawn was indulged in and the day was finished with three cheers for the Doctor and his wife and the singing of "God Save the King."

PERSONALIA.

LONDON TRAFFIC STAFF.

Miss C. BROWN, Assistant Supervisor, Class II, of Western Exchange, has resigned in view of her approaching marriage. The supervisors presented her with a rose bowl and the staff with a case of fish knives.

Miss A. R. TILLER, Assistant Supervisor, Class II, of Gerrard Exchange, resigned to be married on May 9, and was presented by her colleagues with a table-cover, duchesse-set, cruet, table knives and a table cloth.

Miss G. E. DAWE, of Dalston, resigned to be married on May 30, and was presented with a salad bowl and servers.

Miss S. L. HENRY, of Dalston, on resigning to be married, was presented with a set of oak trays.

Miss M. E. F. BURGESS, of Victoria, has resigned on account of her approaching marriage. She was the recipient of a silver lunch dish and egg stand and a salad bowl from her colleagues.

Miss WOOLNOUGH, of Victoria, on resigning to be married, was presented by her colleagues with a silver cruet and a half breakfast and tea service.

Miss FILLMORE, of Victoria, on resigning to be married, was the recipient of a fire screen from her colleagues.

Miss E. LEADER, of Avenue, has resigned in view of her approaching marriage.

Miss A. I. EAST, of Avenue, resigned to be married on May 21.

Miss R. WYTON, a temporary officer of Paddington, has resigned to be married.

Miss G. H. A. FRESHWATER, of the Trunk Exchange, resigned on May 14, in view of her approaching marriage, and was presented by her colleagues with a silver cake basket.

Miss HITCHCOCK, of the Trunk Exchange, resigned on May 3, to be married.

Miss DE CORT, of Victoria, resigned April 26, to return to her home in Bruges. She was presented with a gold bracelet by the staff at Victoria and other members of the London Telephone Service.

We are pleased to hear that she has arrived safely, and the family are once more united after nearly four years separation.

Miss GLAZER, Assistant Supervisor, Class II, of Victoria, resigned on April 4. She was presented with a silver bag and a gold brooch by the supervising and clerical staff.

Miss B. E. GRAY, Assistant Supervisor, Class II, of Museum Exchange, has resigned in view of her approaching marriage, and was presented by her colleagues with a case of silver tea knives.

Miss E. ELLIOTT, Assistant Supervisor, Class II, of Hornsey, has resigned to be married, and was presented with a silver cake stand and other useful presents.

Miss SKINNER, Telephonist of Holborn Exchange, on resigning to be married, was presented with a bedspread, brush and crumb tray, and bread board and knife.

Miss STARNES, Temporary Telephonist of Battersea Exchange, has resigned to be married.

Miss L. F. SPENCER, Telephonist of Kensington Exchange, has resigned to be married, and was presented by her colleagues with a biscuit barrel and other gifts.

Miss C. M. GAGE, Telephonist, of Kensington, was presented with silver fish knives and forks and numerous other gifts, on resigning in order to be married.

Miss B. PEVERIL, Telephonist, of Kensington, on resigning to be married was the recipient of cutlery and other useful presents.

Miss M. BATEMAN, Temporary Telephonist, of Kensington Exchange, has resigned to be married, and was presented with silver tea spoons.

Miss A. SAYER, Assistant Supervisor, Class I, of Avenue Exchange, was presented with a tea service and other useful presents, on resigning to be married.

Miss G. E. MARKS, Telephonist, of Avenue Exchange, has resigned in view of her approaching marriage.

Miss F. M. DAVIES, Telephonist, of Avenue, has resigned to be married.

Miss E. A. TILLEY, Telephonist, of New Cross, has resigned in view of her approaching marriage and was presented with a linen tea cloth and tray cloth.

Miss C. B. C. BIDDLE, Telephonist, of Woolwich Arsenal, P.B.X., on resigning to be married was the recipient of a silver mounted sugar dredger and preserve jar.

Miss R. DAVIS, Telephonist, of Victoria Exchange, has resigned to be married.

Miss O. K. FILMORE, Telephonist, of Victoria Exchange, has resigned in view of her approaching marriage.

PROVINCIAL

Miss A. M. SPIERS, Clerical Assistant, in the District Manager's Office Tunbridge Wells, resigned on April 14, to be married. The staff presented her with a set of carvers.

The District Manager's Office staff, Aberdeen, are mourning the loss of a valued colleague in the death of Mr. ROBERT PATERSON, Male Clerical Assistant, who passed away on May 26 last. Mr. Paterson had been in failing health for some time and was obliged to resign his appointment in September last, so that the end was not unexpected. He acted for some years as distributor and correspondent for this Journal for the District. An accurate and painstaking worker, and a most obliging and likeable personality, it will be long before Mr. Paterson is forgotten by the staff.

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

MARSEILLES SEMI-AUTOMATIC TELEPHONE EXCHANGE.

WE have received the following particulars of the Marseilles Semi-Automatic Exchange, which was installed by the Western Electric Company.

In this system the switching operations are done by automatic machinery, consisting of power-driven line finders, selectors and registers, together with their associated sequence switches and relays; but the subscribers' equipment, i.e., instruments, private branch exchanges, or switchboard, remains essentially the same as for C.B. manual working, that is, no automatic calling devices are fitted at the subscribers' stations.

In France generally and in Marseilles entirely, the subscribers' apparatus is the property of the subscribers, and consequently, there are many types of instruments ill-adapted for full automatic working. The semi-automatic system therefore offered an alternative which avoided the replacement of subscribers' apparatus. It also avoided a drastic change in the subscribers' method of making calls by automatic selection of a disengaged operator at the exchange, and that operator and not the subscriber has control of the automatic selecting and connecting equipment.

The calling dials of the full automatic systems are therefore replaced in the semi-automatic system by a number of exchange operating positions, each fitted with one key set and two registers.

The equipment of the Marseilles Exchange is as follows:—

Capacity ... ...Lines	20,000
Equipment of main exchange	7,000
Equipment of 4 satellite exchanges (not yet in operation)...	550
Number of subscribers' lines connected	6,600
Semi-automatic operators' tables, each fitted with one key set, two registers, and twenty-one connecting circuits	25
1st line-finder circuits	93
Connecting circuits (2nd line-finders and 1st group selectors)	540
Second selectors	585
Final selectors	700

The trunk traffic is handled on a manual switchboard equipped with 19 positions. The trunk lines are handled on the usual manual basis, with the exception that the connexion of the subscribers is performed by the automatic equipment.

The method of operating local calls is as follows:—

The subscriber calling Central removes the receiver from the hook. This operation actuates his line relay, and then a pilot relay common to a group of first line finders. All free line finders in that group rotate to hunt and find the calling line. The first line finder passing over the terminals of the calling line picks it up, thereby imposing the "engaged" signal on the subscribers' line, and a group of second line finders rotate in a similar way in search for the first line finder. The first one to pass over the terminal of the calling first line finder picks it up, making it busy to all other finders and stops all the other free line finders unless they are made to rotate by another call. The second line finder connects the calling line with its particular operator's table, where a green lamp lights. (The total operation, rather lengthy to explain, takes place in less than a second.) When once the green or calling lamp lights, the connecting circuit by means of a sequence switch (which is termed a register finder) hunts a free operator and register. That is, although the call may be on a given position, it may be served by either the "home" operator, or her left or right neighbours.

Each connecting circuit line thus has access to three operators or six registers, and each calling line to ten operators or twenty registers.

The register finder, which is a sequence switch (on the principle of the Baudot distributor, but of entirely different construction), rotates until both a free operator and register are found. Connexion with a register causes the calling lamp to *flicker*, thus indicating to the operator that a subscriber has been connected with her telephone head set, and a slight click or tone is heard in her receiver. The operator, upon receiving the calling click or tone says "number please," when the subscriber gives his desired number.

The total operation referred to is what is known as the "answering time" for which an average of 3.5 seconds is aimed at. The deviations from the average are, however, sometimes large, either above or below; thus in slack periods it is shorter, sometimes one or two seconds, whereas in busy periods it is sometimes as much as ten or more seconds. Every endeavour is however made to keep the answering time at a minimum, even when the operators are working at the rate of 500-600 calls per hour.

The key set is arranged as follows in four rows, although at Marseilles, there is a fifth row for special purposes.

1000's	100's	10's	Units
0	0	0	0
(1)	1	1	1
2	2	2	(2)
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	(7)	7
8	(8)	8	8
9	9	9	9

If a subscriber called No. 1872, the operator would press the buttons corresponding to the numbers in brackets in the order of the rows from left to right.

The depressed buttons remain locked until the number is properly set up on the register, i.e., a fraction of a second. Immediately the number is registered the key set is released and is free to work on the other register.

The selection then starts, and the corresponding 1000's register lamp lights. When the 1000's group is selected the 1000's lamp goes out, and the 100's lights, and so on, until the entire selection is completed about 6 seconds from the time the last digit key is depressed. The 1000's selection takes place on the first selector. The 100's selection on the second selector. The ten's and units selections on the final selector. Each connecting circuit is provided with 4 lamps :—

1—A green or calling lamp.
2—A white or supervisory lamp—a calling subscriber.
3—A white or supervisory lamp—a called subscriber.
4—A red or progress lamp.

The green lamp lights when the calling line is taken by the connecting circuit, flickers when picked up by the operator and register circuit, and is extinguished when the operator depresses the last digit key. When the key set is released, the red or progress lamp flickers and continues to do so until the selection is completed. When the selection is completed the red or progress lamp ceases to *flicker*, but remains alight *steadily* until the called subscriber *answers*, when it goes out. Thus during conversation between 2 subscribers, *no* switchboard lamps are visible. When the *calling* subscriber hangs up his telephone, his corresponding supervisory lamp referred to before as No, 2 lights. When the *called* subscriber hangs up, his corresponding supervisory lamp referred to before as No. 3 lights.

When both white supervisory lamps light, the conversation is completed, and the operator has only to push the corresponding combined listening and release key backwards to release both subscribers.

The listening part of the combined key is used only when a subscriber flashes, i.e., works his switch hook up and down during a conversation in order to summon an operator.

The number of "busies" recorded between 9 a.m. and noon, and 3 p.m. and 5 p.m. is high. This is partly due to the fact that there are over 10,000 stations connected with 6,000 exchange lines.

The number of "no replies" is also high, especially during Bourse hours, and is thought to be due to the large number of one-man businesses.

Comparisons as regards the subscribers' time of answering cannot consistently be made in Marseilles for some time to come as the subscribers have been accustomed for years to a slow magneto system and are as yet unused to the rapid system which is now placed at their disposal. Apparently they are slow to get out of their antiquated methods, and the result is slow answering by the subscribers themselves, known as "subscribers' drag." There are, however, signs of improvement in this direction and time will no doubt as elsewhere mend this fault.

The percentage of faults is shown approximately in the following statistics of recent observation tests :—

Effective connections	2,776	= 59%
Number of "line engaged" or "busies" ...	975	= 20.5%
Number of "no replies"	457	= 10%
Number of false calls (equivalent to permanent signals or glows in C.B.)	329	= 6.5%
Number of errors including operators' equipment	23	= .5%
Miscellaneous irregularities, subs. hanging up before connection completed, calls not progressing through switches owing to traffic congestion particularly in the extra busy "hundreds." ...	161	= 3.5%
	4,721	= 100%

As regards maintenance the system has only been working since April 19, and it is yet too early to make comparisons. It is hoped, however, that for the maintenance of the inside plant a staff of 8 mechanics (including the satellites) will be sufficient, such maintenance not including the testing of outside lines and instruments from the testing desk.

THE MUDDLE OF THE TELEPHONES.

By F. A. MACQUISTIN, M.P.

(*From the Evening News of July 17*).

WHEN I resided in Glasgow the telephone system was in the hands of the National Telephone Company. That company never had a decent chance, because it was crabbed and hindered in every way by the Post Office. Yet I had a good telephone in my flat for 25*s.* per annum, with, I think, unlimited calls. It was what was called a "party wire," but it was good and quick, though someone else could overhear what you said.

Think of it ! Twenty-five shillings, and yet the company paid a huge royalty to the country.

The telephones have been nationalised, and how heavy is the cost of a telephone, and how little is the efficiency ! It won't do, as Mr. Illingworth attempted when I asked him to retrocede the telephone to a commercial concern, to blame the war. Telephones were impossible, dear, and inefficient before the war. They have been "nationalised," and are and have been ruined from that moment.

Oh ! Mr. Smillie, will you not leave the miners and take over the nationalised telephones, and make them as efficient and cheap as you say you will make the coal mines, and we will let you nationalise anything ? Get me my 25*s.* telephone back, or even one for £2 10*s.*, and let the telephone be in every home, as it should be.

Telephones are good and cheap in every country but ours. Nationalisation, I say, has ruined them. Let us denationalise !

An offer.

I will undertake to reduce rates to 50 per cent. of their present figure, to give an efficient service, and to pay reasonable and moderate dividends on the capital embarked if only the Government will hand over the system on the terms on which they took it from the National Telephone Company, and at the same time give wayleave powers without compensation except on proof of damage.

The present lymphatic and indifferent staff would waken like Rip Van Winkles and serve with zeal and efficiency a private company once the dead weight of Government had fallen like a millstone from their necks. Efficiency would get its reward instead of stupidity and severity, and what is more important, every working man who can buy a bicycle would be able to afford a telephone.

In the name of the people I ask the Government to deliver the telephones back so that they may be made to serve the public. There is an efficient committee sitting on London traffic, which is, I admit, in private hands, but of doubtful British origin. Could it not be asked to inquire into the telephones ?

But really inquiry is not needed. Everyone but Mr. Illingworth and his somnolent staff know that the system is costly and inefficient, and that it is beyond the power of any Government to put it right in any other way than by delivering it over to the revitalising force of individual enterprise.

(We comment upon this article in our editorial columns),

A FORTNIGHT IN THE PARIS C.T.O.

By H. BOOKER.

THE proposal came from the French Administration. There was to be an exchange of six officers between TSF and Paris, and in due course six of us met at Victoria. The interval of two or three days was filled up in fulfilling the requirements of the laws affecting aliens; but with the good graces of the Foreign Office we obtained our passports without difficulty. These documents charged all whom it might concern in the name of His Britannic Majesty's Government to give us all the protection of which we might stand in need. It is not certain that any of us felt flattered by the effigies of ourselves pasted at the foot of the forms; but there seems to be an understanding among the travelling public that the bearers of the passports should not be over-concerned about the resemblance. Some of us learned for the first time the true colour of our eyes and the shape of other features. Being men we had to call in the assistance of the ladies in these trivial details, and discovered that they had known the truth all the time. It is what every woman knows.

However, we got on the road, and arrived in Paris in time to see her rejoice over the signing of the Peace Treaty with Germany. That was on June 28, and the duration of our mission permitted us to see her do honour to Allied arms on July 14.

While we were on the outward journey, we passed a party of six Paris dirigeurs travelling to London on a similar mission.

On June 30, Colonel Waley Cohen, who was then Chief of British Signals in Paris, kindly conducted us to the Paris Central Telegraph Office and introduced us to M. Tallendeau, the estimable Chef du Bureau. Whatever misgivings we may have had in taking up our rôle in the Baudot metropolis, they disappeared from the moment of our arrival under the charm of manner of M. Tallendeau, and in the Galleries where, for the next fortnight, we were to perform our duties we were made to feel as much at home as in our own office.

The object of our visit was not clearly defined. As it turned out, we were pretty free to make our own programme; but we learned later on how on the other side the idea of the exchange had taken shape.

The male telegraphist in Paris has been performing night duty every fourth day, and has then been at the office for 21 hours with only a three-hours' break. After the Armistice he began to look for a reduction in the frequency of night work; but the cables continued to be heavily pressed, and there were no signs of relief. M. Pasquet of the French Secretariat sympathised with him. But how could it be helped? What was to be done?

After a discussion between the staff representatives and M. Pasquet, importance was attached to the exchange of six men between the chief offices in London and Paris, and their mission was to see whether any measures could be taken which would facilitate a return to a more tolerable situation, both from the point of view of the public and the staff. So far so good. The French Delegation was formed by the Administration, and that is where a hitch occurred. The staff, who had been concerned in the difficulties, desired to have a voice in the composition of the Delegation, and consequently changes were made. This incident is mentioned because it is significant and symptomatic of the trend of things over there. There was another incident of which we were witnesses. It lasted two days. But that is another story.

The Paris Central Office has been modernised internally. The telegraph rooms have been practically rebuilt during the past decade, and there are spacious halls on the second and fourth floors. There are smaller rooms more recently opened to meet the growing requirements of the telegraph service. The superficial area of the instrument rooms totals 3,500 square metres.

The latest addition, where the odour of new paint still assails the nostrils, and the whirl of new apparatus greets the ear, is "Salle F," and here are accommodated seven Baudot circuits worked with Mayence, Strassburg, Metz and Mulhouse. These are names to set one thinking; but already the work is going forward, and one does not discuss the blunders of the diplomats and "La Revanche."

In the same room there is space for more new apparatus for communications along the same routes to more distant places. . .

These side rooms, however, are away from the principal Galleries, where the main current of the traffic circulates. The architect of telegraph structures needs to have a glimpse of prophetic vision. Future generations of traffic managers are bound to lay it to his charge if he does not provide conveniently for expansion, and place the heart of the circulatory system somewhere near the centre.

Paris itself is served by a pneumatic tube system with several centres. There is one at the Central Office; another at the Bourse; and there are others. Tube delivery reaches to the confines of the city. Each delivery office is known under a particular number (the Central for example is No. 44, and the Bourse is No. 98), and these numbers are entered by the circulators in front of the addresses of telegrams, which are circulated from centre to centre, and thence to the delivery office. The tubes are also used for the transmission

The British Party
Messrs. SIMES, ANNIBLE, BOOKER, BROWN, COASE & ROEBUCK.

of letters paid for at express rates. In the Central Office there is an Intercommunication Switch: and offices in Paris communicate with each other direct by telegraph, and so avoid the delays of tubing. The fortifications of the municipality, the fosses which have circumscribed the city, are to disappear, and Paris is about to spread out. One wonders what form she will take as she reaches towards the woods that surround her.

Paris is the home, the mother-city, of Baudot telegraphs. It was there that M. Baudot laboured with all the enthusiasm of an apostle; and he has communicated to some of his disciples something of his own passion. It was in the latter part of 1897 that he came to London—it was a missionary enterprise—and supervised the setting up of an installation in TSF, the first in this country. France has made his work her own. Baudot apparatus is now utilised with all the principal offices, and is supplanting the Hughes instruments, which were formerly in extensive use.

In the Paris Central Office there are about 175 Hughes circuits, 200 Morse and Sounder circuits, and a hundred or more installations of Baudot apparatus working with French offices and places abroad. There are double, triple, quadruple and sextuple Baudots—altogether about 370 working channels on that system, with a number of sets in reserve. In the next few months 14 more Baudot circuits with 47 sectors will be opened, and 5 Hughes will be displaced.

A simple division of the Baudot figures leads one to the general conclusion that there can be very few duplex circuits. And that is the fact. Except on the lines to London there is

practically no duplexing, and on those wires the pressure of War conditions has brought into existence three duplex triple circuits.

To the mind of the British telegraph official it is curious that in France, where lines run to a length of 500 miles, there has been no practice of duplex. It is possible that the change from a régime of Hughes working to multiplex Baudot has given a sufficient increase of accommodation for the normal growth of traffic, and that in the course of time more duplex circuits will be established.

During the War the system of wires in Northern France has of course been considerably disturbed; and the main lines which run along the fringe of the battle area are still frequently interrupted by the operations of working parties. But the French are unfortunate in their underground conductors. The construction is understood to be old and unreliable. Indeed, the operating staff seemed to regard underground wires as necessarily and by nature a rather precarious means of communication. Such opinion did violence to our experience; and it did us good, before we left Paris, to meet the members of the French Delegation, who had just returned from London, and hear them speak so well of the air-spaced cables they had examined on this side of the Channel.

The French Party.
Messrs. BARDOL, BUISSON, COMBES, GENIN, SOJILLARD, MERCY (Chef de la Délégation) AND CHARROSIN, TSF.

In the Central Office the Test Room is known as the Rosace. The etymology of the word is interesting. The lines and instrument leads were formerly terminated round the circumference of a large circular aperture, and the arrangement had to the eye of fancy a distant, very distant resemblance to the symbolical rose or a cathedral rose window. Hence the name; but the old system has given place to modern test panels and wiring, and only the name remains to remind one of the obsolete order.

On the whole, those who have been in touch with the Baudot circuits radiating from London will meet with few novelties in the installations at the Paris Central Office.

There are of course the Baudot repeaters in the circuits from London to places beyond Paris. The latest type—the 1909 pattern—is a pretty and compact piece of mechanism, no larger than the hand when the fingers are expanded, and combines the five receiving magnets of the Baudot receiver with the five keys of an automatic keyboard. The electro-magnets and their appendices embody the principle of the "Rapide" traducteur. When any one of the armatures is attracted, a lever, which banks against the appendix, falls slightly forward under the action of a spiral spring, carrying with it a contact spring, which plays between marking and spacing contacts. The signals are thus repeated automatically through a distributor to the line; and a local cadence-current restores the retransmitter to a position of rest until the next working current is received.

We also saw a pretty device for regulating the speed of a direct motor-driven governor. In connexion with the main driving axle, a revolving cam brought into circuit a resistance lamp to absorb the power that would otherwise have driven the mechanism too rapidly, and the glow of the lamp pulsed and throbbed as it performed its work.

The fully trained Dirigeur is an important *fonctionnaire*. The Baudot is his special charge. He is specially trained, and, when he is trained, he is specialised. His duties are not only specialised, but he is allocated to particular installations month after month, and he becomes a specialist. He is the ultimate expression of specialisation; and, in an auspicious hour at a special dinner one evening, he was undisguisedly amused when we looked upon him as an actual human being.

For the whole of the office there are about 145 Dirigeurs, including some 40 in reserve; and, on the average, each Dirigeur on the active list has charge, during his spell of duty, of two installations with not more than eight channels. On the technical side he is responsible for the good working order of his installations, even to the replacing of broken springs and the adjustments of the type-wheels; and on the traffic side he serves the senders with batches of messages for transmission.

The Dirigeur in France has some good literature for his instruction. It is complete to a description of the smallest essential detail; and when a Frenchman takes seriously to the pen he uses his language well and does not as a rule fail to make himself clear.

Close to the office there is an official library. We went through the courtyard, and, mounting the stairs to the Bibliothèque, the noise of Paris died away to a distant murmur. The collection contains already 40,000 volumes, and it is still growing in size. It is essentially a library for the student; and an erotic youth or maiden would seek in vain for an inflammatory yellow-back. The reading-room and lending library are open from 9 a.m. to 6 p.m. Works in various languages on Magnetism and Electricity, Telegraphy, Telephony, Chemistry, Mechanics, Mathematics, Jurisprudence, Languages, History, etc., are available, and two volumes may be borrowed on application. It is certainly a most attractive retreat.

There is a staff of altogether about 2,000 officers at the Paris Central Office, and generally speaking the duties are arranged in two "brigades," working in daily alternation. One day they do duty from 7 a.m. to 11 a.m., and 6 p.m. to 9 p.m.; and the next day they do duty from 11 a.m. to 6 p.m.

Night duty is performed by some of the 11 a.m. to 6 p.m. staff, who return at 9 p.m. and remain for the night. During the war the turn for night work has come round every fourth day, and it is far from being popular.

The brigade system is part of the constitution of things in the office. It has been in operation for decades, and still has an unchallengeable vitality. It enables the staff to lunch and dine at home or anywhere they please—except at the office where there are neither meals nor meal reliefs. It was a matter for discussion among us as to whether any ordinary Britisher could hold out over the 11 to 6 duty. Decidedly there are risks; but the French have provided a canteen for light refreshment, and our own party, who often fasted for three hours or so, found the sustenance of an invigorating quality. The operators at Paris, to break their fast or the monotony of a tedious occupation, repair to the same locality or smoke a cigarette in the corridor. Indulgences of that kind are also in the order of things there, and, so long as the privilege is not abused, no comment is made by the supervising staff.

Approximately one half of the staff is composed of women, married and single. My lord and my lady are in the same brigade. The idyll of wedded bliss is not broken for the one or the other, and the business of matrimony and the romance of business are carried on side by side. The question of woman and labour is, however, acutely controversial, and those who have some acquaintance with writings as diverse as those of Ruskin and Olive Schreiner, Geddes and Thompson and Havelock Ellis, will agree that the subject cannot be broached in an incidental paragraph.

The exchange of visits had a social side which was no less important than the official. In the international service the brusque and officious imperative has to be softened into a polite and courteous request, and it does good to get into direct personal relationship

and establish an *entente cordiale*. We were strangers; but the French from the first came out all the way to meet us in friendship and comradeship. It was a memorable evening that we spent on July 11, in a café in the Quartier Militaire. M. Ducourneau, the Secretary of the staff association at the Central Office, invited us to dine with a party of "comrades," and we numbered thirty at the table. The dinner was truly French, and was therefore unsurpassable. It lasted, like French dinners do, without intermission from tea-time to late supper. Dish followed dish, and glasses and goblets were in great array. It was all as sparkling as their own champagne, and the ladies of the company gave it grace and charm. Then followed song and chorus, revealing M. M. Ducourneau and Genicis as veritable artistes.

M. Ducourneau in a pleasing speech told us briefly how the exchange had come about, and the store they set upon it in order to find ways of returning to a condition of things in which they would be able to work close up with the traffic by day, and so suppress excessive night duty. We also desired the same end, and expressed the hope that the exchange of visits would draw closer together the bonds that unite our two offices, our two administrations, and our two countries.

A TELEGRAPHIST'S IMPRESSIONS OF PARIS.

BY MILDRED SMITH (*T.S.*)

I SUPPOSE I really must begin at the beginning, but I've seen so much and received so many wonderful impressions since the memorable morning of June 28, that I almost feel that the earlier ones are buried so deeply, that they will not easily come to the surface again.

We started very early in the morning—a little too early to be ideal, or so we thought then—but by the time we reached Paris, we almost all wished we could have started earlier and so arrived earlier.

The first part—London to Folkestone—was exceedingly comfortable and equally uneventful. On arrival at Folkestone, those of us who had not previously made a continental trip, were quickly interested in heaps of unaccustomed things. The boat was very crowded, but we all found deck chairs, and placed them in the cosiest corner we could find. The weather was fine though dull, and we looked for a smooth, quiet crossing. It certainly was smooth, but as soon as we left harbour, the wind began to blow very keenly and it proved very cold in mid channel. We were honoured by having General Joffre on board, and managed to see him quite closely. We were greeted on reaching Boulogne Harbour by a perfect tornado of screams by every siren that was ever made, making the biggest noise it ever could, in every key that was ever thought of. It was deafening. We liked to think it was in honour of our arrival to take over Paris signal office, but in politeness to our distinguished fellow-traveller, we yielded the palm to him.

After a lengthy wait on the boat in a terrific crush, we all found ourselves on the harbour station with 40 minutes to spare before the departure of our train. Lunch—with which we had provided ourselves—was the next order of the day—sitting on our hand luggage, with an audience of French men, women and boys. My first language embarrassment occurred then. An old French woman came up to me and hurled such a lengthy speech at me, at such a terrific speed that I was completely bewildered. It was too bad, so soon after arrival in a strange land. After much confusion I gathered she thought I was a friend of hers, or if not the friend I must be a sister, my face was so like. I assured her in a very halting mixture of French and English, that she was mistaken, and was more than relieved when she left me to my lunch.

We left Boulogne at 2.30 in the company of a French flying officer. He made himself very agreeable, and finding it was our first visit to the gay city, gave us several very useful hints and insisted on lending us numerous French newspapers, which we had in politeness to accept but of which we could understand very little. At first the countryside looked so very English and homelike, we could scarcely believe we were really on the continent, but later on, right through the Somme district, especially round Amiens we saw unmistakable evidences of the war. The worst of all was to be shown the big hospital at Etaples which suffered so badly by air raids and the vast cemetery attached—all graves of our poor wounded Tommies.

We had a real traveller's tea *en route*. The train was so different from ours. Although there was a corridor, there was no communication with the restaurant car and when we stopped at Abbeville there was a regular scrimmage and stampede up the platform. There we had to stay, long after we had finished tea till we proceeded to the next stop at Amiens. The rolls and butter were delightful—but the tea!!! Being a devotee of the cup that cheers, and foreseeing many days in France my heart sank, though I am glad to say it has recovered since we arrived in Paris.

Almost our first impression when we reached the Gare du Nord, was a crowd of familar faces—Old T.S. men from the signal office, come to meet us and help us with our bags. There was one very amusing incident on the station. A Frenchman seeing us altogether waiting to get off the platform, exclaimed, "Ah! une chorus de ballet!" Our Supt. answered, "No!—a sunday school."

We made our first tour of Paris in army lorries—passing one of the spots where a shell from Big Bertha had fallen. Even from such a point of disadvantage, we fell in love with Paris at first sight. It looked like an enchanted city. We've nothing like it at home. The populace were very excited, it being the day Peace was signed, but were remarkably orderly.

There are now great preparations for the big Peace celebrations on July 14. That is the Day of Days for Paris—the day of the yearly national fête—the day of the great victory march—the day when troops will march under the Arc de Triumph and not round it, for the first time since the Germans marched out of Paris in 1871, when the French, almost at the last moment, obstructed the passage under the Arc and their victors had to march round. The street decoration and illumination is most lavish. Every bit is part of a big artistic scheme, not haphazard like so much of ours. The French do seem to know what will look just right. One of the crowning touches of genius in the scheme of things is in the Champs Elysee, where on either side of a circus a huge heap of captured German guns is piled, towering high above the heads of the crowd, with a glowing gilded ironical chanticleer crowing on the summit.

Paris is essentially light hearted and gay. It is all out for pleasure, and this day is to be a climax even for Paris.

The finest thing we've seen in all Paris yet, is the Tomb of Napoleon—a worthy monument to so great a man. It is really necessary to be in France to realise how green she keeps the memory of her two greatest—Napoleon and Jeanne d'Arc. They are everywhere. We've been to Notre Dame and Sacré Coeur, the oldest and newest of the many wonderful churches. We've seen the Madeleine and the Louvre—We've seen the Tuileries—We've seen Paris spread out like a map from the top of the Arc de Triomph, and revelled in the artistic loveliness of the arrangements of streets and avenues—We've made a tour of the Boulevards and cafés at night—We've been to Versailles—all places which have always been just names and now are living realities, and hundreds of other things which have gone to the making of history. We've seen the stairway up which the German delegates passed to sign the doom of their hideous military tyranny—We've seen the Hall of Mirrors just as the Peace Conference left it—We've seen even the pens and ink used.

It's wonderful!

This is a trip which is going to live in our minds for ever and in which we shall always be proud to have taken our part.

TELEGRAPHIC MEMORABILIA.

THE C.T.O., despite its shortage of staff, somehow or other managed to squeeze out a number of *dirigeurs*, *dirigeuses*, and male and female telegraphists for service at the Peace Conference in Paris, aided by others of equal dexterity from certain provincial centres. Though deprived of the unique opportunity of participating in the Home festivities of the Great Peace, they were able to participate in some of the artistic, picturesque and equally unique proceedings of the French capital, celebrations which marked for posterity a great historical milestone along the tragic highway of the last five years.

Saturday, June 28, was the date of the departure of this, possibly the largest Special Staff which has even been sent out by the Post Office under civilian ægis. Not only was the Telegraph Department well represented, but our friends from the Telephones were also in robust numerical strength.

By a happy and unexpected coincidence a sextette of dirigeurs from T.S. Foreign (alias the Cable Room) also left London on the same date, and by the same train, also with Paris as its destination. This mission was also unique in the telegraph history of the British telegraphs. Quite unexpectedly six Baudot dirigeurs had been chosen and requested to spend a fortnight at the Paris Bureau Télégraphique in the Rue Grenelle, changing over with six French officials of similar rank and calibre. The two parties must have passed one another somewhere on the route. The object of these dual visits was an exchange of experiencies in working the Anglo-French lines from opposite points of view to those normally taken. Nothing but good, it would appear, could possibly result from this opportunity of seeing ourselves as others see us. The results of these visits may not be immediate but, ultimate benefit to Anglo-continental telegraphy should be twice assured.

The social experiences of the British "six" will it is anticipated appear in the present number of this journal, and from one of the most able, if not the most widely known pens in the Telegraph service. The reports of the business side? Are they not recorded in the sacred archives of the Registry under Regd. No. 600,000,001 or similar number, and with this somewhat vague reference we will leave them.

A full account of a small dinner given by the C.R. staff to the French delegates has already dealt most adequately with that very successful function in the pages of the *Telegraph Record*. As one of the well-satisfied guests—socially, musically, gastronomically and on the score of right down British heartiness, the writer can testify to the fact that our allies returned to their native land with one prejudice at least removed, i.e., that we are a phlegmatic people. The fact that a City policeman, whilst on duty too,—should join in the singing of the "Marseillaise," with which English telegraphist friends were serenading the visitors, struck the Parisians as yet another token of the amiability of official London!

Everyone who came in contact with these representatives was impressed by the thoroughness of their technical training, though sobered to learn of the educational facilities at the disposal of the Paris telegraphist for improving his or her knowledge of their craft. A description of magnified and descriptively coloured diagrams, of well-equipped class-rooms, well supplied with apparatus for workshop and laboratory practice, compared all too favourably with the "facilities" afforded elsewhere at least for the comfort of British pride. There is no use blinking the fact. French, Dutch, Belgian, Swiss, and German methods are considerably in advance of our own in this respect. It is hoped, however, that we have passed the stage at which telegraphy is considered as capable of being adequately and profitably dealt with by "anybody," or at which telegraphists are "too well-educated for their job" (*sic*).

Cheer up gentle reader! There are other points upon which we score heavily and these—? Are they not also written in the Book of the Chronicles under Registered chapters as already camouflaged above? One thing should be placed on record. It is not recorded elsewhere, but it nevertheless stands as an undying asset. It is the grit of the British telegraphist. Despite all the drawbacks of lack of technical apparatus so closely allied to the best of technical training, there are those who have yet been able to acquire as high a standard of efficiency as the best of the French trained officers of the same class. Though no plea for our own system, it can nevertheless be confidently placed on record that the best of continental experts can be met by men from this side of the Channel of equally high standard.

Long before this scribble is converted into more readable print we shall have reached that happy date when, to parody,

"The Censors and their scribes depart,"

and once more the cables may splutter and rattle, and vibrate out their jargon of codes and cyphers without being questioned as regards their writer's exact meaning. We shall miss the khaki uniforms, the red and the green tabs, and one or two breasts heavily weighted with the medals of other campaigns than that of which we are now witnessing the closing chapters. Some of us have realised how bravely certain of these "dug-outs," as we jokingly called them at times, have stood up against the sweeping away of life's sole pride and ambition by the loss of a son or sons, blown to unrecognisable pieces or crushed to a pulped mass. Good-bye ponderous reference books! Good-bye dear old souls who used them. Back to the countryside, your golf, your heather, your hunting and your fishing. Not for us is it to judge the value of your work. It may be stubble; it may be pure gold. At least we do know that some of you would rather have gone out Yonder than have been fated to be cooped up struggling with business phrases and terms which were more abhorred than your *Via Latina*, more puzzling than Euclid's enigmas of more youthful days.

We also know that those of you who have had the widest experience of the staff loaned to you have not been slow to acknowledge and to appreciate to the utmost the value of fully fledged telegraphists' experience and knowledge, their adaptability and their initiative.

We cannot honestly say we are sorry to see you go, but while appreciating friendships made and kindly thoughts and experiences exchanged we have to admit that we have long longed for this day of fuller liberty. From the first we recognised the necessity of your presence. You will not blame us if we rejoice that that stern necessity is now fading into the past, and yet, truly can we say we are glad that we have met. Good-bye-e-e-e!

The difficulties of telegraph and telephone maintenance as experienced in our own country are varied and curious enough, but the lines across the great Salt Lake Desert present some unique and troublesome features worthy of record.

This desert is an old lake bottom, filled with mud to a registered depth of four hundred feet. The salt bed itself measures about eight miles wide by twenty-five miles long, and at places reaches a depth of eight feet.

Telegraph lines and transcontinental telephone lines both cross this desert, as does also the Western Pacific Railroad. The winds that sweep through these wires carry tons of salt and salt-impregnated moisture, so that the insulators become choked with the incrustation. It is said that the telegraph companies actually take down their insulators periodically, washing each one separately, although the process must be most laborious. The telephone company, however, utilises a steam generating plant carried on a light frame with wide metal wheels. This is hauled from section to section by a Ford car, but so soft is the mud in places that planks are always necessary to prevent the whole apparatus from sinking. As each pole is reached jets of steam are made to play upon the insulators for several minutes, a method which appears to have proved highly effective, the insulation steadily rising with the cleansing of each pole.

Complaints are made in the technical press that in the case of the Hawker and also in the Alcock and Brown Trans-Atlantic flights there was an unfortunate failure of the wireless apparatus which, one expert at least declares, should have been preventable. A matter worthy of note and worthy of expert discussion.

The dinner to Sir William Slingo was well-worthy of the occasion of the retirement from the public service of so esteemed a personality as the ex-Engineer-in-Chief. Having laboured so assiduously through the war and having served the British telegraph service for practically half a century one imagines the sigh of relief with which an officer holding his unique record would step down into the quietude of private life. Not so! Accordingly to the P.O.E.E. Journal the teacher of our youthful days is shortly repairing to the United States in connexion with proposals for submarine cable work there! Doubtless his varied experience of similar work at home has made him sought after by a nation which is always on the look out for the best article. The same authority states that:—"During the war Sir William undertook as personal work, the provision of the numerous submarine cables required for naval and military purposes, including the cutting of enemy cables and the provision of *new* telegraph and telephone cables between England, France, Russia and Canada."

It was a fitting sequel to the retirement of Sir William that he should be succeeded by another ex-telegraphist in the person of Mr. William Noble—and another "William" by the way. Mr. Noble commenced his career in the Aberdeen Post Office in 1877, and like his predecessor was for some years a technical lecturer.

Yet another item of interest from the same source announces that Mr. A. J. Stubbs, Assistant Engineer-in-Chief has been appointed a member of the Executive Committee of the Decimal Association. Incidentally this reference points to the fact that the metric system has some of the most earnest sponsors in the service, who like Gompers of the American Federation of Labour "firmly believes that this system offers a return to simplicity; . . . is winning its way entirely on its merits, just as it should, because it is easy to learn, to work with, and best suited for practical purposes."

On the last day of July there retired on his sixtieth birthday one of the most distinct personalities that ever graced the floors of the C.T.O. or did honour to a Service by membership. No tongue or pen could be more withering in its flagellation of hypocrisy or injustice, yet no tenderer words ever passed the lips of woman when the balm of tender sympathy and loving kindness were needed. First in the ranks in his craft as a telegraphist his competency followed him up through his sojourn in "the Street" into the supervising ranks, where it is safe to say he was beloved by all those who had to work with him, and under him. Some of us recall his unexcelled writings over the signature of "Cynicus," for, entering the service in Dundee and from thence proceeding to

Edinburgh before finally transferring to London in 1882, he had imbibed some of the best traditions of the Scottish educational facilities. A discussion on English and Scottish history with Adam Gordon as arbitrator (?) was always a feast of the intellectual gods.

The Post Office Circular of July 29, revealed to the British public one of the "Hush" circuits of the Great War, the Imperial cable between this country and Halifax, Nova Scotia. Few realise, even those inside the Service, how great an exploit was the laying of even the ends of an ocean cable of these dimensions during a period when "U" boats were somewhere near their prime.

The Great Northern Telegraph Company, it is announced has declared a dividend of over 20 per cent. Not so bad for a dying industry!

The number of notables of the Telegraph and sister Departments and services who have retired lately brings home to the mind the galaxy of talent which the Post Office has fostered and developed. The fact too that so many of these have commenced low down in the ranks is itself no small tribute to the past policy of keeping open the door to the practical man. The engineer with a purely academic knowledge of telegraphy is not likely to go far before he becomes an object of pity to many a *practical* observer much beneath him in rank and status. Only that type of engineer who can "Key" and "read" with the facility of an old hand, who can come to a circuit and "balance" with the familiarity of one to whom "duplex" is an old friend, brings with him that atmosphere of confidence in any new experiment, which is half the battle of success.

There are signs, I think, that recruitment is likely to be continued along these lines. Academic qualifications too are not likely to be neglected, for never was there greater need for the study of science and mathematics in all their united ramifications, and that too in direct connexion with telegraphy and telephony.

If then we part with the galaxy of talent so directly in touch with the earlier days of our craft with something of a sigh, it should hearten us to know that behind this departing group of setting stars, there are, rising and ready to rise, other promising lights in the Post Office firmament akin in brilliancy and differing no one whit in the high quality of their spectra.

Space must somehow be spared to mark the event of a Peace Thanksgiving Service representative of the C.T.O., which was held in the Lecture Hall of the S.S.U., Old Bailey, on July 23. It seemed fitting that the staff of a public building which had been so unmistakably a legitimate target for enemy air-craft throughout the war should publicly express their thanks for the several miraculous escapes. On one occasion they were saved from a nameless holocaust by a couple of minutes. *Deo gratias!* J. J. T.

MR. J. W. PLACKETT.

MR. J. W. PLACKETT.

At the end of August Mr. J. W. Plackett leaves us. He is an outstanding figure in the history of British Telegraphy. He is the last remaining pre-transfer man. As the transfer of the telegraphs took place nearly 50 years ago Mr. Plackett is indeed in the truest sense an outstanding figure. He has been an Inspecting Telegraphist on the Survey Establishment; he has been Controller of Telegraphs in Edinburgh; Traffic Manager, Telegraphs at Headquarters; and then Postmaster of Bradford, from which post he ought to have retired last year but the exigencies of the service demanded his retention and so for a year he has returned to his own enthusiasm and has given most valuable assistance to the Traffic Section. His width of outlook, his knowledge of telegraphy in all its aspects, his genial helpfulness have all frankly and readily been placed not only at the service of the Post Office but at the service of his fellow officials. No worthier compliment could be paid to him than this and no greater appreciation would be asked.

RETIREMENT OF MR. C. G. WRIGHT.

A number of friends and late colleagues of Mr. C. G. Wright met at Holloway Factory on Wednesday, June 18, to bid him an official farewell and to present him with a case of stainless cutlery, a case of fish knives and forks, and an illuminated Autograph Album on his retirement from the Post Office Stores Department.

Mr. W. H. Allen, O.B.E., Controller, presided and on making the presentation briefly sketched Mr. Wright's official career in the National Telephone Company up to the time of its transfer to the Post Office, and remarked that during the comparatively short period of seven years which had been spent in the Post Office, Mr. Wright had endeared himself to all with whom he came in contact. Mr. Allen spoke of him as "our friend and late colleague" and no words could have been more appropriate. In the tributes that were subsequently paid to Mr. Wright by officers representing the workshops, the Technical and Clerical staffs, the prevailing note was appreciation of his disinterested helpfulness. Mr. Sparkes, Vice-Controller, spoke of Mr. Wright's valuable work since 1912, of his readiness to place himself unreservedly at the disposal of the Department, of his genial qualities and of his wide sympathy and sane counsel. Few, however, know better than the writer how disinterestedly and wholeheartedly he came to the assistance of anybody willing to accept his wide experience. Mr. Wright came to Holloway Factory at a time when work was very heavy and labour problems needed to be handled with great tact. He did not spare himself and frequently came to office when, owing to indifferent health, he should have been at home, and one was conscious that he came simply to help those who were in difficult circumstances. He succeeded unconsciously in making himself not only a true colleague but a friend to all with whom he worked.

Mr. Gall, Mr. Poole, Mr. Fenton, Mr. Macadie and Mr. Chester represented colleagues in the National Telephone Company, and numerous District Managers have enthusiastically supported the testimonial. Mr. Gall and Mr. Fenton bore testimony to the respect in which Mr. Wright was held throughout the National Telephone Company, particularly in Edinburgh and Glasgow where he was resident for many years.

For a long period before the transfer, Mr. Wright was on travelling duties, and from all parts of the Kingdom from which letters have been received revealing the esteem in which he was held everywhere. May he enjoy a long and happy retirement.

THE TELEPHONE SERVICE AND THE PRESS.

The following letter addressed by a telephone subscriber to the Editor of the *Evening News*, had not appeared in that newspaper up to the time of our going to press:—

Aug. 22, 1919.

Dear Sir,

Referring to the correspondence which is now being published with regard to the Telephone Service, I feel sure you wish to hear that which is good, as well as that which is bad.

I have been a subscriber on various exchanges for some 22 years and have transacted, with the aid of a competent staff, a vast amount of business by means of the telephone. I have, however, paid great attention to the manner in which the 'phones are handled at my end and in the total result I must in fairness say that the service, taken on the whole, even during the war, has been absolutely satisfactory.

At the present time, I have 4 lines under my control with various extensions, &c., and although incoming calls are usually made for one number, the exchange have in my case to connect those callers to other numbers, which makes their work the more exacting. Very few faults have arisen, in my experience, but when they have occurred, a courteous supervisor has always done her best, usually with success, to put matters right.

I believe that if deeper enquiry were made it would be found that the operators, whose task must be somewhat nerve-wracking, should not be accused, usually without a tittle of evidence, of inattention to their work. I have good reason to believe that the discipline to which they submit precludes anything but constant attention to their very trying work.

Anyhow, it must be most disheartening to those concerned to read nothing but bitter complaints despite their endeavours to give us the best possible service with the material and facilities at their disposal. No doubt in some areas and upon some exchanges there is room for immense improvement, and the object of this letter is not to retard in the slightest the justifiable efforts which are being made in various quarters to bring about a much more efficient service generally, but to say a word for the telephone staff generally and to emphasise that probably quite 33 per cent. of the trouble created is caused through inexperienced users of the telephone or by those who are negligent enough to leave off receivers, use instruments roughly, or fail to address operators in a decent manner.

The number of calls dealt with here must average about 1,000 per week, and many of those who ring me up have gone out of their way to inform me that they very seldom have any difficulty in getting through promptly. Some have said that the Park Exchange seem to handle calls more satisfactorily than certain other exchanges, for which there is no doubt a very simple and good reason.—I am, dear sir, yours faithfully,

PARK 141.

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Editing and Organising Committee - - MR. JOHN LEE. MR. J. J. TYRRELL. MR. J. W. WISSENDEN. MR. W. A. VALENTINE.

Managing Editor - - MR. W. H. GUNSTON.

NOTICES.

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

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THE PRESS CAMPAIGN.

WE were recently charged by a contemporary with "virtuous complacence." Whilst admitting the soft impeachment that we try, in the main, to be virtuous according to our lights, we contend that our complacency consists in nothing more questionable than the desire to present whatever merits and extenuating conditions may exist in our case ; and some of these we think are discernible without a microscope by all except the irreconcilable opponents of nationalisation in all shapes and forms. Other contemporaries have chidden us because we have defended ourselves when attacked, and have suggested that the excellence of state service ought to be so obvious and self evident that it is superfluous in us ever to refer to them. We are thus blamed whether we are complacent or not complacent. It will hardly be held in these days, especially by a section of the press whose existence is a life long orgy of advertisement, that good wine needs no bush. One must cover the largest possible hoardings with the most striking representations of bushes and continually remind an easy-going and easily persuaded public that one's wine is positively the best. But this procedure is difficult for a public department whose bushes are limited by tradition and taste to modest dimensions. Hence public departments are easier of attack than a public company, and not only can such attacks usefully veil a political thrust, but also charges can be made which if made on a private individual would result in damages for libel. But we are by no means complacent, and we believe that no one connected with the Post Office is complacent, concerning the condition of the telephone service after four years of war, four years during which one great interest subserved all others, and during which it was held to be a virtue to limit activity to war needs and to spare every man possible for the Forces. It is in vain to point out that that four years of arrested development cannot be overtaken in a few months ; the Post Office is merely charged with lack of prevision. It is equally vain to point to the extraordinary condition of the female labour market or to an unusual rise in the marriage rate and their inevitable effect on the staffing of the exchanges. It is at once said that the telephonists could have been offered illimitable inducements to stay ; it might have been suggested that the Post Office should have forbidden the banns. We might rejoin that even if salaries of efficient operators and supervisors had been raised, more showy and less exacting duties might have been preferred by a large number of girls ; although we can confidently say that those who were stationed in the raided areas could not have performed more heroic or more important work anywhere. What large employers of women are without their difficulties ? Exactly the same causes as in England have disorganized the exchanges of the Company-owned telephone systems of America and deteriorated the service.

We have carefully read several of a series of long articles on the shortcomings of the service (some of them illustrated by comic pictures curiously lacking in subtlety), and the principal charges we find preferred against the Post Office are lack of prevision, lack of experts, leisurely rate of providing plant, and old fashioned official views which regard the telephone as a luxury. On the lack of prevision in providing operating staff we have already touched. As regards the lack of experts and the alleged deterioration of the service since it was acquired from the National Telephone Co. it may be mentioned that all but a few of that company's experts are still among the staff of the service. It would doubtless be gratifying to that considerable number of our readers who are old National men to learn how dearly that regime was loved by the public and they will recall with sardonic amusement the furious press onslaughts which they also had to sustain in the past. If we refer to the programme for spending three millions on development in one year sketched by the Postmaster General in his speech on the budget as a sign of progress not altogether leisurely, we shall probably be taunted again with our fatal complacency—or with waste of public money. More than this could and would have been spent but for the delay and difficulty in getting material and engineers, and the Post Office can hardly be blamed for delays in demobilisation. The view that the telephone is a luxury is certainly old fashioned but decidedly not official. Intensive development of the telephone in residential districts is obtained chiefly neither by low rates nor good service but by education in the telephone habit—or in other words by vigorous canvassing campaigns which would have been out of the question during the War. It may be induced in a secondary degree by extremely low unremunerative rates, or by lack of other means of communication—a condition which does not obtain in England. As soon as some of the uncompleted orders, the necessary legacies of war time, are cleared off it will be possible to begin a canvassing campaign, and Great Britain's leeway in telephone development will gradually be abated, not by magic but by progressive and hard-working endeavour.

NATIONALISATION.

WE publish in another column an extraordinary article by Mr. F. A. Macquistin, M.P., which appeared in the *Evening News* of July 17. Whatever may or may not be the merits of Nationalisation we think its cause is ill served by the writer. Indeed we can only imagine, if we may venture to borrow Mr. Macquistin's exuberant diction, that the "stupidity and severity" of the article is solely designed to excite "lymphatic and indifferent" readers. It is of course merely bluff and bluff which we should be pleased to see "called" if it were not that the service would suffer.

Mr. Macquistin's argument apparently is:—I had a telephone for 25*s*. The company giving it paid heavy royalty and therefore must have made a profit on the deal. Therefore £2 10*s*. 0*d*. p.a., for unlimited Service would make a fortune for a private firm. Let us examine the facts. The National Telephone Co. were in competition with the Corporation of Glasgow and they introduced the 25*s*. rate merely as a competition-cutting rate. They never did and never could have claimed that they made a profit on it. On the contrary the Telephone's Co.'s Glasgow system was financed by the profits made elsewhere at higher rates. The rates of the Glasgow Corporation were exceedingly low; but they charged £5 5*s*. 0*d*. for an unlimited service and they were only able to do so at the expense of their wages bill. As Mr. Herbert Samuel pointed out to a Deputation from a conference of Local Authorities and others, organised by the Glasgow Corporation and held in London on February 27 1911, half the operators at Glasgow received wages of 9*s*. a week or less and 246 out of 302 received a wage of 12*s*. a week or less. Even with this economy of wages, if they may be dignified by that name, the plant was sold by the Corporation of Glasgow to the Post Office, after five years, was valued by the Post Office at £258,000, but was ultimately purchased by the Post Office at £305,000. The Corporation had to find out of its general fund £16,000 to make good the loss they had suffered on five years' working and the Post Office had to spend £100,000 to provide a really adequate plant. Mr. Macquistin is welcome to these figures if they will help him to justify a rate of half that charged by the Corporation of Glasgow.

Again, the National Telephone Co. with a practical monopoly of the paying part of telephone business, i.e., that in populous towns, paid an average dividend of 4.88 per cent. Presumably in Mr. Macquistin's opinion they did so on a self-denying ordinance, for of course their rates throughout the country were much above those which Mr. Macquistin says he would be willing to adopt, and he could not regard 4.88 per cent. on the capital outlay as a fortune for a private firm in these days of high profits.

The only general increases in rates which have occurred during the period of war have been an increase of 20 per cent. in the provinces and 17 per cent. in London applicable only to subscribers at the unlimited service rates, i.e., to large users who often overload their lines to the detriment of the general service and thus obtain a service at less than cost price.

Mr. Macquistin may be prepared to build such castles in the air with reckless expenditure of imaginary capital; but if he were to convert his hot air into solid fact, he would undoubtedly find that the British investor is not prepared to find financial backing for schemes bolstered up by airy persiflage and not supported by any thing which will afford reasonable prospects of dividends. Perhaps, however, we are placing too much importance on the published statement. Even the man in the street is aware that partisans on a question of public interest like Nationalisation are prone to manipulate their facts to fit their arguments.

HIC ET UBIQUE.

THIS issue completes our fifth volume. With the October number we revert to the monthly issue of the JOURNAL which was only departed from as a temporary expedient in the last year of the Great War. With a large number of old readers resuming their former avocations and with interest in telegraphic and telephonic problems heightened by schemes of post-war re-construction, we look for an increased circulation during the coming year.

THE new rates which came into operation in Chicago on June 16 provide for the abolition of the flat rate, and involve an average increase of 20 to 25 per cent. on present rates for all classes of service. Business houses will pay $4 a month including 80 calls, or in other words £10 a year for 960 calls. Residences are allowed 75 messages a month for $3.75 (direct lines), or 55 messages for $2.75 (two-party lines). Additional calls above those included in the subscription a recharged for on a sliding scale from 2½ to 5 cents each. For the party lines all excess calls are charged at 4 cents.

A PARAGRAPH in the *Telephone Engineer* of Chicago says that since these rates were introduced, the residence calls have fallen off 40 per cent. and the city calls 10 per cent. It is thought that subscribers have not gauged the full effect of the new rates, and are using the telephone more cautiously.

WANTED—AN IDEAL!

(Mr. ILLINGWORTH quoted the following passage to the House of Commons from an article in *The Times* entitled "America revisited."

"It is with mixed emotions that the English visitor arriving in America finds that the New York telephone service is a good deal worse than that of London. Limitation is tempered with a certain grim satisfaction. For more than twenty years we have had to submit with such equanimity as we could to the jeers of the American in England on our telephone service."

He added that he had seen an article over a column long in a Boston paper which said that they wished they could have as good a service in New York as we were having in London.)

Disgruntled Subscriber, loquitur:

Rend not my heart, my garments, rather, tear—
(Those war-time garments I can ill afford)!
Rend not my heart—the last ideal spare
To which I fondly cling! Take back the word
Which ranks the Perfect Service of the West
Beneath the Not-too-perfect! Baleful thought,
To postulate as Better than the Best
That which to deem the Worst I'm daily taught!
Quench not that star by which the critic's bark
Steers its erratic courses through the dark.

Starved of ideals, the soul must surely die.
Reft of a goal, our fitful aim falls wide.
Where shall we fix our eyes in ecstasy
And point our shafts, when rashly set aside
We find at once our lodestar and our mark?
Turn we to Trondjem? or St. Joseph, Mo.?
Guernsey? Madrid? They've not the sacred spark—
The magic of Manhattan's rush and go!
O give me back New York—for who can brook
On his own service as the Best to look?

W.H.G.

PRESENTATION TO MR. JOHN NEWLANDS.

A VERY pleasant function took place in the Controller's Room of the Central Telegraph Office on the afternoon of Tuesday, July 15, when a goodly number of the Controlling and Supervising officials met together to take an affectionate farewell of their late Chief, Mr. J. Newlands, C.B.E., C.I.E., and to ask his acceptance of a silver tea and coffee service as a mark of their esteem and regard.

Tea having been served and the Deputy Controller, Mr. A. W. Edwards, having read letters and telegrams from absent colleagues expressing regret at their inability to be present, the Controller, Mr. John Lee, in asking Mr. Newlands to accept the gift referred to the relationship between the present generation and that which was passing away. He believed that we were running the danger of respecting the past rather too little, and thought that we were inclined to use words like "Reconstruction" with an emphasis on the first syllable, which would seem to indicate that there had been nothing in the past worthy of retention. The whole of telegraph history had been built upon solid foundations; all through that history each generation had just gone a little step further than that which had preceded it, and Mr. Lee expressed the opinion that they would do wisely in setting their faces at that important moment in the history of telegraphy towards the tremendous work which had been accomplished by their immediate predecessors. It was a tragedy for so many of the ablest men to see at the end of their service the results of those four or five terrible years of destruction of human life, of property, and to see also the destruction of ideals. Mr. Newlands had been a prominent figure in the history of telegraphy. He had always catered for efficiency and rapidity of service, and it must have been hard for him to serve the final years of his official life in seeing the quality of the telegraph service suffer, the better to pay for the protection of our country. Mr. Newlands had always been a champion of the C.T.O. He had always been loyal to his staff and he had stood up for them in circumstances of which they had known nothing.

Mr. Lee said that in asking him, who was at the best an outsider, to make this presentation to one who had been with them during such trying times, they were conferring upon him a most singular honour. He felt joy in the fact that the particular type of present chosen was one in which Mrs. Newlands would take a prominent part, and which would serve to recall to her mind the staff with whom her husband has so long been associated.

Mr. Newlands (who was received with acclamation and who spoke with considerable emotion) said: There were occasions in life when one was tempted to think one was likely to lose the power of speech. He did not think it had got quite that length with him but it caused him to feel difficulty in expressing what was in his mind at the moment. The occasion was one in which it was difficult adequately to express what one thought, and he experienced the embarrassment which was general in such cases.

Mr. Newlands went on to say that when he left the Post Office on June 7, he had completed over 49 years' service. He had throughout been impressed with a serious sense of duty. There was a certain type of Scotchman who looked upon all his work in a serious manner and he belonged to that class. Duty was, and always would be, a serious business with him, and though sometimes perhaps he may have seemed to them to have overlooked things, such was not the case. To-day he temporarily returned, but he was emancipated from that sense of duty. For the past month it had seemed to him a kind of annual leave, and yesterday when in his garden he realised that his leave was over he thought that he was absent on an insufficient plea. He left the office and all the staff with the deepest regret. He had loved his work and had always fought for the C.T.O. He loved the place for its size, its complexity, its enormous traffic, its huge staff, comprising men and women, boys and girls. When he took his place as Controller he was sure that it was not a one-man job. It was impossible for the Controller to administer such an office without the aid and co-operation of all concerned. He had always received the best possible services from the Controlling and Supervising Staff, be it from the male or female side, and a better clerical staff no man ever had. The C.T.O. needed highly efficient organization. It had been built up by successive Controllers and Controlling and Supervising Officers until it was a highly efficient office. During the four or five years they had been in a sense battered to the ground. They knew what was the cause and could hardly yet realise that the war was happily ended. They could rejoice that all had done their very best to carry on the duties against almost overwhelming difficulties, for it should not be overlooked that the C.T.O. had served all the Government Departments, the Foreign Office, the War Office, Admiralty, and all the mushroom departments, and he held that it was the Government's bounden duty to make due and proper recognition of the services rendered.

While in the C.T.O. he had been fully conscious of the vast amount of talented powers which were concentrated upon and exercised by the controlling and supervising officers of both classes. He had found them all a most competent, genial, kindly body of workers. They were always at their best when the difficulties were greatest, and that applied to the entire staff.

In conclusion Mr. Newlands said that what had been given to him that day would be a continual reminder of the kindly thought which had been extended to him when he left the C.T.O. His wife and himself thanked all from the bottom of their hearts.

EXPANSION OF THE BRITISH TELEPHONE SYSTEM, 1915-1918.

In an article on the geographical distribution of the telephone in this country which appeared in these columns in June, 1915, I shewed the progress which had been made in extending the system to country villages in the years 1912, 1913 and 1914. Altogether 453 exchanges were opened in those three years, although the year 1912 was devoted rather to the closing of duplicate National Exchanges and the transferring of others to Post Office premises than to opening new ones. Our readers will not expect to read of a like development during four years of War, yet it is interesting and perhaps surprising to note that 176 new exchanges were opened in small country places during that period, viz.: 95 in 1915; 13 in 1916; 9 in 1917; and 59 in 1918; or 96 in England and Wales, 10 in Scotland and 70 in Ireland. The respectable figure for 1915 is probably due to the completion of schemes which were mostly well under way when the war broke out, and the total for 1918 is due to a certain telephonic activity in the West of Ireland; for of course the work of developing new ground was not pursued in times when the expansion of existing exchanges was almost limited to the utilisation of spare plant and to orders connected with war work.

It was remarked before that the telephone system reached every county in England and Scotland with the exception of the Orkneys and Sutherlandshire, which are still without an exchange; and in Ireland with the exception of Mayo, Leitrim, Longford, and Roscommon. The service has now been extended to Longford, and as Athlone is partly in Roscommon it cannot be said that that county is entirely without the telephone.

The counties in which the largest number of exchanges were opened in the period under review were Yorkshire with 9, Cork and Limerick 8 each, Essex 7, West Meath 6, Kent, Lincoln, Lancashire, Dorset, Kerry, Cavan and Tipperary 5 each.

ENGLAND AND WALES.

Anglesey.—1915, Trearddur Bay.
Bedford.—1915, Toddington, Turvey.
Berks.—1915, Inkpen, Spencer's Wood; 1916, Tilehurst.
Bucks.—1915, Langley, Turville Heath.
Cambridge.—1915, Swavesey; 1918, Stretham.
Carmarthen.—1915, Langharne, Llangadock.
Carnarvon.—1915, Clynnogfawr, Penrhynside.
Cornwall.—1915, St. Day, Gunnislake.
Cumberland.—1915, Grange (Keswick); 1917, Hayton.
Cheshire.—1915, Great Saughall.
Derby.—1917, Hazlewood.
Devon.—1915, Thurlstone (Kingsbridge), Chagford, Moretonhampstead.
Dorset.—1915, Cranborne, Gillingham, Witchampton.
Essex.—1915, Hatfield Peveril, Roydon; 1916 Ardleigh, Boreham, Dedham.
Hants.—1915, Bentley, Sway, Herriard, Fordingbridge, Crondall, Itchen Abbas; 1917, Woolston.
Hereford.—1915, Belmont (Hereford); 1916, Eardisland.
Hertford.—1915, Hockliffe.
Kent.—1915, Barham, Chevening, Crockham Hill, Four Oaks (Edenbridge), Littlebourne
Lancashire.—1915, Chatburn, Coppull, Grappenhall, Mawdesley, Rufford.
Leicester.—1917, East Norton.
Lincoln.—1915, Fulbeck, Kirton Lindsey; 1917, Edenham; 1918, Barrow-on-Humber, Goxhill.
Merioneth.—1915, Aberangell; 1918, Trawsfynydd.
Norfolk.—1915, Middleton (King's Lynn), Reepham, Winterton; 1918, Garboldisham.
Northants.—1915, Cogenhoe.
Notts.—1915, Warsop, Edwinstowe; 1917, Colston Bassett.
Shropshire.—1916, Ackleton; 1917, Alberbury; 1918, Aston-on-Clun, Pontesbury.
Somerset.—1915, Temple Cloud (nr. Bristol).
Stafford.—1915, Bloxwich, Heath Hayes, Oakamoor, Weeford.

Suffolk.—1915, Brandon, Clare ; 1916, Burnt Fen.
Surrey.—1915, Shere (replacing Gomshall), Hascombe, Capel.
Sussex.—1915, Petworth, Pulborough, Pevensey, Westfield.
Westmoreland.—1915, Kirkby Lonsdale.
Wiltshire.—1918, Codford.
Yorkshire.—1915, Birstwith (Leeds), Collingham Bridge (Leeds), Copgrove, Cudworth, Fulford, Sherburn ; 1918 Barningham, Bishop Monkton, Hatfield.

SCOTLAND.

Argyll.—1915, Ardentinny.
Ayr.—1916, Rankinstown.
Berwick.—1915, Ayton.
Dumfries.—1915, Gretna.
Edinburgh.—1915, Mid Calder.
Forfar.—1918, Monikie.
Kirkcudbright.—1915, Creeton, Kirkpatrick Durham.
Perth.—1915, Bankfoot, Ballinluig.

IRELAND.

Antrim.—1915, Templepatrick ; 1918, Broughshane.
Cavan.—1917, Ballyhaize ; 1918, Shercock, Stradone, Arva, Killeshandra.
Clare.—1918, Broadford (Ennis), O'Callaghan's Mills (Ennis), Tulla, Kilkishen.
Cork.—1915, Castlemartyr, Castletownroche ; 1916, Mitchelstown ; 1918, Milford, Ballinhassig, Liscarrol, Ballincurrig, Freemount Innishannon, Killavullen, Rathcormac.
Donegal.—1915, Letterkenney.
Down.—1918, Rosstrevor.
Dublin.—1915, Shankhill, Drumcondra.
Galway.—1918, Ahascragh, Mount Bellew.
Kerry.—1916, Castleisland, Listowel ; 1918, Lixnaw, Causeway, Abbeydorney.
King's County.—1915, Birr.
Limerick.—1915, Ballingarry, Newcastle West, Rathkeale ; 1918, Ballysimon, Cahercoolish, Kilteely, Broadford (Charleville), Drumcollogher.
Longford.—1915, Longford ; 1918, Ballymahon.
Londonderry.—1918 Cloughmills.
Louth.—1917, Duleek.
Meath.—1918, Slane, Moynalty.
Monaghan.—1915, Castleblayney, Ballybay.
Sligo.—1918, Rosses Point, Strandhill, Beltra, Drumcliffe.
Tipperary.—1915, Cashel ; 1916, Ardfinnan, Roscrea ; 1918, Ballymacarberry, Newcastle.
Waterford.—1918, Tallow, Ballyduff, Kilmanahan.
West Meath.—1918, Multyfarnham, Ballymore, Ballinacargy, Killucan, Kinnegad.

W. H. G.

LONDON TELEPHONE SERVICE NOTES.

"THERE is perhaps no profession, however useful, no pursuit, however meritorious, which can escape the petty attacks of vulgar minds." Readers of Dickens will recognise this quotation from that author's description of "The Tuggs's at Ramsgate." Mr. Joseph Tuggs was a grocer. Whether that calling came under the classification of profession or pursuit is not clear. There can be no doubt, however, that telephony in its various branches constitutes a highly-skilled profession, at any rate from the point of view of those engaged in it, although some members of the public may prefer to call it a pursuit—of *right* numbers. Nevertheless, it is apparent that the "vulgar mind" still exists and carries on its petty attacks as it did nearly 100 years ago, but with greater zest, more self-satisfaction, and less compunction. What an achievement to record! The telephone was not invented until 1876 (Graham Bell) and no great literary effort is needed to describe its development during the comparatively short period of 38 years prior to the War, since when development for commercial purposes has been arrested. It is the results of this interruption of progress which constitute so largely the difficulties of the Telephone Administration at the present time. These difficulties have, however, given the aforesaid Mind the opportunity to attack the Administration and the staff, whether legitimately or for ulterior motives we are at liberty to have a personal opinion. In the House of Commons on the occasion of the Civil Service estimates the Postmaster General took the opportunity to reply to some of his critics. The subject generally will no doubt be dealt with elsewhere in this Journal, but a few extracts from the debate will be of particular interest to the readers of this column :—

"The Telephone Service has been the subject of a certain amount of criticism lately, though whether it has all been directed against the Telephone Service or whether it has been for other motives I am not prepared to say."

"By transferring to the Post Office the undertaking has benefited by the extinction of the royalties, amounting to £350,000, paid by the Company, this is more than set off by the addition of wages and pensions, which in round figures amount to £400,000 a year."

"The War Bonus began in 1915-16 with a very modest sum of £177,000. In 1918-19 this had increased to £1,440,000 per annum and this year it amounts to £2,500,000, or more than the wages paid when the Telephone Service was first taken over by the State."

"The reason why the telephones have been run at a loss in this country is the direct result of the War in increasing the cost which has not been transferred to the public as has been done in practically every other business or public utility undertaking."

"The present rates in New York are a little above the London rates for small users, but for large users they are considerably higher."

"I am having schemes (revision of tariff) prepared which I am considering, and when these are ready I propose to come to the House and ask for a select Committee to examine them and advise upon them."

"The average daily number of calls about the time of the Armistice in London was somewhere between 900,000 and 1,000,000 per day, and this has increased to now over 1,250,000 per day."

"I am sure that the telephone system in this country and in London compares very favourably with that in any other of the belligerent countries."

"Recruiting is not assisted by the Press and public ridiculing and abusing the telephone operators, charging the girls with yawning and talking together, and reading novels instead of attending to their duties. I wish some Hon. Members not conversant with the inside of these exchanges would come and see them. Some Hon. Members have done so, and they have been astonished at the activity shown. The operators have no time while they are on duty for reading novels, or sewing, or knitting, or conversing, or anything else. They are continually on the go. I hope as things improve the strain will be less on the girls, but how soon I do not know. On the other hand, the language used by some of the subscribers over the telephone to the girls is such as to make them reply. I should like Hon. Members to know that there is a human being at each end of the telephone. They have their irritation, and their troubles and annoyances, just the same as the impatient creature who is trying to call out a number. The best assistance really that can be given—and it is not a big thing to ask—is more patience and forbearance under difficult circumstances, and to try and make the work of the telephone operator more congenial, and if they do that, I am sure they will get a better supply of people, and the subscribers will be more genial as well as the operators." (Mr. Illingworth).

"We complain of the telephones, and so on, but after all, a little courtesy and human kindness at our end of the 'phone would enable the work to be performed with not merely greater efficiency but with an increasing kindliness between the operator and the person at the business end of the telephone, so to speak. We find in our own daily life that a little quiet, kindly word to the operator brings almost an instant response, and it would be greatly to the credit of our English race if we exercise a little more courtesy, gentleness, tolerance, and decent human kindness when we are trying to transmit a message. I am sure that would have the effect of sweetening the relations. We hear awful language sometimes. If a man were heard coming out with that kind of language in his own home his wife and children would be horrified, and it is really due to us, as representing the nation, to enforce the lesson that the right hon. Gentleman wishes to instil, that we ought to be tolerant, and kindly, and human when we are trying to transmit these messages, and think that there is a human being at the other end of the telephone." (Mr. Walsh).

"We know that all men are not gentlemen and also that a lot of the telephone operators are not ladies." (Lt. Com. Astbury).

"There are even some members of this House who know how to talk over the telephone in a very haughty manner." (Mr. Wignall).

"With regard to the arrangements for air raid warnings, probably the Committee will have some knowledge of the work which was done and also of the recognition by His Majesty of the splendid bravery shown by many of the girls employed in the Telephone Service. These are the same girls about whom there has been complaint made to-day." (Mr. Pike Pease).

"I would appeal to every employé of the Telephone Service and every other part of the Post Office service to show that splendid spirit of patriotism shown at the beginning of the War. If everyone tried to put in the best they could at this very critical time there might be a very great change so far as the Department is concerned, and every one knows who has any knowledge of business that it is on that that the interest of this country depends to a very large extent." (Mr. Pike Pease).

ORDER OF THE BRITISH EMPIRE.

MR. E. P. HEWKIN, M.B.E.

There is a very strong impression that not a little of the newspaper agitation against the Telephone Service is conducted by the opponents of nationalisation. Be that as it may, London's natural modesty will not allow it to assert a similar claim to that of R.G.D. in the May issue of this Journal, viz., "The high standard of service always given at Edinburgh is generally well maintained." There are reasons for the depreciation in the quality of the service in London, but instead of dwelling on them we are concentrating attention on restoring the high standard of service London used to give. The task is not an easy one, hence the appeal of the Assistant Postmaster General quoted in the last extract.

* * *

Of the voluntary organisations which stood behind the fighting forces during the War, Queen Mary's Needlework Guild occupied a prominent place, and under the direction of Miss Heap the staff of the Exchanges in London worked handsomely for the Guild. In recognition of this work Miss Heap was invited to the Royal Garden Party held at Buckingham Palace, at which were present representatives of all the organisations, paid and voluntary, which the War called into being. Miss Heap holds the badge of the Guild with a bar for each year of the War. Mr. Arrowsmith also was present at the Garden Party as a representative of the Post Office detachments of the Metropolitan Special Constabulary in which he held the rank of Inspector.

* * *

While the country generally was giving itself over to Peace celebrations the Exchanges in London organised feasts, concerts and social evenings amongst themselves. Some had teas, high of course, others dinners and a few suppers. Music and dancing was the complement of each. In most cases the repast was prepared by the official refreshment clubs and right well did they acquit themselves. Owing to the large number of staff in the building the greatest task fell on the club at the G.P.O. South where teas were arranged. The fare comprised fruit, cream, real butter, cakes and pastries at 1*s.* per head, which included a chance in a draw for 1 of 12 War Savings Certificates. Needless to say it was very popular and not less than 1,250 sat down to it. One wonders where Mrs. Twyford obtained all the goodies necessary for so large a family; 40 lbs. of cream was one item. Everybody was loud in praise of Mrs. Twyford, who made the occasion such an entire success. Music and singing was provided for each batch that sat down to tea, and with dancing was continued until 9 p.m. The Secretary of the Post Office, Sir Evelyn Murray, was present with the Controller during the afternoon. The dining room was very tastefully decorated and so were the three switchrooms in the building. Never has the gray old building been more gay, and those who participated will never forget the Peace celebrations at the G.P.O. South.

270 sat down to a 7 course dinner served by the official club at Gerrard and Regent. Museum held a supper and dance in which 150 participated, while Holborn arranged a high tea. Other Exchanges celebrated the occasion in like manner.

* * *

In the midst of the season of Peace activities Lee Green Exchange remembered the needs of the War Seals Foundation and as the result of a whist drive raised £21 for that charity.

An appeal on behalf of the Children's Country Holiday Fund has again been made this year and the staff of the London Telephone Service has subscribed the splendid sum of £66. The last collection which was made in 1914, resulted in a sum of £27. Generosity has always been a feature of the London Exchange staffs and notwithstanding the decrease in the purchasing power of money the claims of charity still meet with a ready response.

* * *

The annual distribution of prizes in connexion with the Educational Classes for the Girl Probationers of the London Telephone Service took place on June 26. The prizes were presented by Mr. Preston, who expressed his gratification at the excellent results obtained by the girls in the recent examination for Sorting Assistants. He urged them to adopt the Boy Scouts motto "Be Prepared," and encouraged them to persevere in their studies, in order that they might be ready to grasp life's opportunities. He pointed out that as future Civil Servants, the responsibility rested with them of maintaining the ideals and high standard of efficiency of the Service.

Miss Liddiard emphasised the need for a high ideal in life and congratulated the girls on their good general progress while attending the classes.

* *

Ladysmith, Shamrock and Thistle were the christian names of a recent applicant for the post of telephonist in London.

* * *

A subscriber who wishes to avoid disappointment to his correspondents has printed on his notepaper "Please don't tinkle the wires from 1-2 p.m. (Luncheon Hour), before 8 a.m. or after 6 p.m.

MEDALLISTS OF THE ORDER OF THE BRITISH EMPIRE.

MISS ROSYE OAKMAN

MRS. H. M. HIBBERD.

It is regretted that the names under these portraits became transposed in the printing in our last issue.

INTERVIEWS WITH OFFICIAL CELEBRITIES.

III. THE CONTRACT MANAGER.

Why is the Contract Manager invariably a stout, well-favoured individual, with a jovial and hail-fellow-well-met manner, a man obviously at peace with his fellows, a man whom Falstaff would have claimed as brother? Why, on the other hand, is the Traffic Manager a lean man, a high-thinking and problem-resolving man, a curve-working man, a ruminating man, a man with no time and inclination for the ordinary amenities of life, a Cassandra in manner and temperament? What is the reason for the marked difference in appearance and manner between the Contract man and the Traffic man? The principal reason for the difference is that the Contract man deals with the hopeful, while the Traffic man deals with the more or less disillusioned. The applicant for a telephone comes to the Contract man charged with hopefulness. He has heard much of the telephone and its usefulness in business and private life. He expects much from it. He hopes to save time and money by using it. His air of hope has its effect on the Contract man.

Continual contact with such hopeful individuals brightens and sweetens the Contract man's life, a life which otherwise would tend to greyness and monotony. His outlook on life is helped. He looks at it through rose-coloured spectacles. At peace with the world, he sleeps well, his appetite is good, his step is jaunty, and his bearing confident.

The Traffic man, on the other hand, deals with the subscriber when disillusion has supervened. The telephone has not fulfilled expectations. It acts strangely, sometimes at times when right and proper action is most required. The subscriber becomes disappointed, soured, irritable. He begins to complain, and it is then that he comes into touch with the Traffic man.

The Traffic man puts up an able and usually successful defence, but the attacks and continual contact with disillusioned subscribers have their effect on him. Always explaining and defending, he tends to become apologetic in manner. He loses self-assertiveness and pugnacity and adopts a temporizing attitude towards life and its problems generally. He ages and becomes careless of his appearance.

It was while waiting in the room of the Contract Manager of the large and important industrial city of Liverham that we gave way to these musings, which were finally interrupted when the door was flung open and the Contract Manager entered, charged with energy and enterprise.

"Ha, my dear chap," he cried, as he seized our hand and wrung it fervently—perhaps too fervently—"I am delighted to see you! To what do I owe this pleasure?" We may remark, in parenthesis, that it was this affability, this bonhomie, so to speak, this camaraderie, as it were, which made him so popular, not only with the telephone public, but with his staff.

We explained our purpose. Hardly had we finished when the Contract Manager slapped us heartily on the back—perhaps too heartily. "Certainly, dear old fellow, delighted to oblige a Journal so influential and widely read as the one you represent. The present position and its difficulties—why not, why not?"

"Of course," he began, poking us in the ribs, "you know all about the scarcity of plant. Formerly telephones were as plentiful as M.B.E's, now they are as difficult to find as the sea at Southend." He laughed heartily and paused for some response, but the double simile did not appeal to us. There seemed no relationship between its separate parts, and we did not care for the reflection on a well-known and popular watering place which had given refuge to so many poor and deserving Civil Servants.

"Yes," he continued, "these plant difficulties are playing the deuce with us—and the surcharges—by no means popular. But what can I do? What can you do?" He dipped his pen in the ink and playfully threw some in our direction. "What can we do? Nothing, my dear fellow, absolutely nothing!" Saying which, he tapped us on the head with a large rolled-up Exchange Area Map. We must confess that at this stage we felt inclined to do something. We were beginning to resent these taps, blows, pushes, and pleasantries.

"Of course," he continued, "our present plant and staff difficulties are leading to a large number of complaints from people who cannot get telephones. I wouldn't mind if the complaints came to me direct. It is the indirect way in which so many of them come that I object to."

"But," we said, "does it matter how they come so long as they do come?"

"Matter!" he replied, "Certainly it matters if my time and that of my overburdened staff are taken up in telling private secretaries, and other high officials to whom these people write, why we cannot provide telephones."

"What remedy would you propose?" we asked.

"The thing would right itself" the Contract Manager replied, "if some strong and courageous official would set the fashion by telling the man who writes to him that he has handed his letter to the Contract Manager, the proper person to deal with it. It requires a good deal of courage to do this. You see, the average official is flattered when an appeal is made to him; or if he's not flattered, he doesn't like to convey the idea to his correspondent that he can't or won't do something for him. All these cases should be left entirely to me," he said emphatically.

These somewhat revolutionary statements were not entirely to our taste. "What," we asked, "is the use of a friend at Court if one cannot appeal to them?" This remark drew from the Contract Manager language of so much vigour and emphasis that we were glad to take an early opportunity of relinquishing the subject.

We discussed other subjects, such as the intricacies of Private Branch Exchange Rates, the effect of the present telephone restrictions on the duration of life of the average business man, and the failure of the monthly return. On the latter subject the Contract Manager was particularly emphatic. "The monthly return," he said, "fails to achieve anything. In the days of the National Telephone Company there was something to be said for it. Rivalry existed between the various districts and the local people had a fairly free hand. It paid them to be enterprising. The publication month by month of the results in the various districts acted as a stimulus to enterprise and activity. Nowadays, no Contract Manager knows what the other Contract Managers are doing."

There seemed to us some truth in these remarks. Contract Managers are hardly aware that colleagues in other districts exist, and even if disposed to rivalry they have little scope for initiative. The improvements introduced by the Department since the National Telephone Company's system was absorbed have left the Contract Manager with little elbow-room. He has sunk from an administrative to an executive official. *Sic transit gloria mundi* The Contract Manager, as we used to know him, is no more.

While not professing entire agreement with the Contract Manager's vigorously-expressed views, we left him feeling that we had met one who differed appreciably from the typical official personality. Unconventional, direct in speech, without regard for the artificiality and rounded periods of official phraseology, generous in sentiment, open in manner, the Contract Manager is surely the most human of all officials. Despite our own long official experience there was still something within us which responded to his breezy and open-hearted welcome. We felt different when we left him. Had we ever before been addressed by a responsible official as "dear old chap?" We cannot remember, but we think not. Had we ever in the course of an official interview been tapped on the shoulders, punched in the ribs, slapped on the back? The answer is surely and definitely in the negative.

We have been a Government Official for so many years that we sometimes forget what we were in our pre-official life. Dimly we seem to remember that we had something akin to heartiness of manner, that we greeted warmly, that we expressed ourselves with force, if not with elegance, on questions of the day. Now our attitude towards everything is non-committal. Our expres-

sions are non-committal, our opinions are non-committal. We may be said to belong to the "non-coms." Aggressiveness, pugnacity, directness of speech, courage of expression, all these things which make for individuality have left us.

Courage is the great thing lacking. The experienced Government servant rarely expresses views unflinchingly and courageously. Rarely does he fight stoutly a losing battle. Rarely, indeed, is he indiscreet enough to allow himself to be drawn into a losing battle. Sometimes he expresses himself in what seems to be a courageous manner. Depend upon it that in such a case he has already ascertained that his superiors agree with him. He sees around him faulty administration, unnecessary supervision, cumbersome practice. In his official youth, when he possessed courage, he did not see these things clearly. Now that he sees them clearly he lacks the courage to condemn.

It may seem strange that our interview with such a cheerful and optimistic individual as the Contract Manager should have culminated on such a pessimistic note, in an ending as dismal as the finish of any one of Austen Chamberlain's recent speeches on National Finance. On reflection we are not surprised. Contact with the cheerful invariably tends towards melancholy. Association with the melancholy leads, if not to actual cheerfulness, at least to contentment with one's own lot. The moral is plain. Seek the society of Traffic Managers, Auditors, and Superintending Engineers. Shun Contract Managers. C. W. M.

(Previous articles of this series appeared in the April-May and June-July issues.)

PERSONALIA.

LONDON TRAFFIC STAFF (*Telephonists*).

Miss SELDON, Assistant Supervisor, Class II, Victoria Exchange, resigned in view of her approaching marriage, and was presented by the staff with a silver cake basket and other useful gifts.

Miss A. L. WATKINSON, Assistant Supervisor, Class II, East Exchange, on resigning to be married, was presented with a salad bowl and servers, and a biscuit barrel.

Miss A. G. HYETT, Telephonist, of Romford Exchange, has resigned to be married and was the recipient of a syphon holder and jam dish, from the exchange staff, and a butter dish from the Post Office staff.

Miss R. M. PARROTT, Telephonist, of Victoria, resigned in view of her approaching marriage and was presented with a case of fish knives.

Miss AYRESS, Telephonist, of Victoria, on resigning to be married, was presented with a teapot and stand.

Miss FRETTON, Telephonist, of Victoria Exchange, has resigned on account of her marriage and was the recipient of a case of tea knives.

Miss HEAPHY, Telephonist, of Victoria Exchange, has resigned in view of her approaching marriage, and was presented by her colleagues with an ebony brush and comb with her initials inscribed in silver.

Miss E. M. CURTIS, Telephonist, of Streatham, on resigning to be married was the recipient of a travelling case from the staff.

Miss T. M. GOLDSPINK, Assistant Supervisor, Class II, of Museum Exchange, was presented with cutlery when she resigned in view of her approaching marriage.

Miss SAINTEY, Telephonist, of the Trunk Exchange, has resigned to be married, and was presented by her colleagues with a tea service.

Miss CUTTS, Telephonist, of the Trunk Exchange, on resigning to be married was presented with a silver cake basket.

Miss WRAY, Telephonist, of the Trunk Exchange, has resigned on account of her marriage, and was the recipient of a dinner service from her colleagues.

Miss L. PHILLIPS, Telephonist, of London Wall has resigned to be married.

Miss D. E. HUNT, Telephonist, of London Wall Exchange, has resigned to be married.

Miss P. M. CANT, Telephonist, of London Wall, has resigned on account of her approaching marriage.

Miss D. M. WEBB, Telephonist, of Finchley Exchange, on resigning to be married was the recipient of a set of tea knives, cake knife and other gifts from her colleagues.

Miss M. SOMERVILLE, Telephonist, of Lee Green, has resigned in view of her approaching marriage, and was presented with a pair of silver vases.

Miss PIPER, Telephonist, of Gerrard, has resigned in view of her approaching marriage, and was presented with a cake basket, jam dish and other gift; from her colleagues and the Engineering staff.

Miss SMALLRIDGE, Telephonist, of Gerrard, on resigning to be married was presented with a tea service.

Miss STAINES, Telephonist, of Regent Exchange, has resigned to be married.

Miss E. M. SPALL, Telephonist, of Regent Exchange, has resigned in view of approaching marriage.

Miss J. COOK, Assistant Supervisor, Class II, of Paddington, has resigned to be married. The exchange staff presented her with a dinner service.

Miss L. V. M. BELCHER, Temporary Telephonist, of Paddington, has resigned in view of her approaching marriage.

Miss E. CURTIS, of Streatham, has resigned to be married, and was the recipient of a travelling case.

Miss G. MALLETT, of Streatham, was presented with a dinner service and vases from the staff on resigning in view of her marriage.

Miss E. K. PAYNE, of Streatham, on resigning to be married was presented with half a dinner service and cheese dish by her colleagues.

Miss C. WILBY, of Regent, has resigned in view of her approaching marriage and was presented by the staff with a case of tea knives and forks, and with a pair of mounted vases, by her colleagues in the clerical room.

Miss WRAY, of the Trunk Exchange, has resigned to be married, and was presented by the staff with a dinner service.

Miss EVERSON, of the Trunk Exchange, has resigned in view of her approaching marriage, and was presented with cutlery by her colleagues.

Miss L. M. LEVERSUCH, of Kensington, has resigned in view of her marriage, and was presented by members of the staff with cutlery and other useful gifts.

Miss B. HUGHES, of Hop Exchange, on resigning to be married was presented with a tea service from her colleagues.

Miss D. GOULD, of Hop, has resigned in view of her approaching marriage, and was presented with a tea service by the staff.

Miss M. BAILEY, of Hop, has resigned to be married, and was presented with a tea service by her colleagues.

Miss UPSHER, of Victoria, has resigned in view of her approaching marriage, and was the recipient of a silver teapot.

Miss DAVENPORT, of Victoria, on resigning for marriage, was presented with a silver cake stand by members of the staff.

Miss M. P. BALLS, of Victoria, has resigned in view of her approaching marriage, and was presented with a pair of silver serviette rings.

Miss GIDDINS, of Victoria, on resigning to be married was the recipient of a five o'clock tea cloth.

Miss W. E. STIFF, Telephonist, of Kensington, has resigned in view of her approaching marriage, and was the recipient of a salad bowl and cruet.

Miss BROWN, Telephonist, of Kensington Exchange, on resigning to be married, was presented with a black satin cushion and other gifts.

Miss D. DORMAN, Telephonist, of Kensington Exchange, was presented with silver tea spoons from her colleagues, when she resigned for marriage.

Miss H. Z. NORRIS, Telephonist, of Avenue, has resigned to be married.

Miss E. MAY, Assistant Supervisor, Class II, Red Hill Exchange, has resigned to be married, and was presented with a case of fish knives and forks and servers.

Miss SELDON, a Public Box Exchange Supervisor, attached to Victoria Exchange, has resigned in view of her approaching marriage, and was presented by her colleagues with a silver cake basket. The telephonists at the Public Box Exchange also presented her with a cruet, pickle jar and two silver vases.

Miss TRITTON, a Public Box Exchange Telephonist, attached to Victoria Exchange, has resigned to be married, and was presented with a case of tea knives.

Miss PARROTT, a Public Box Exchange Telephonist, attached to Victoria Exchange, resigned to be married and was presented with a case of tea knives.

Miss J. R. OSBORN, Supervisor at the Treasury Public Box Exchange, on being transferred, temporarily, to Paris, was the recipient of a writing case from the staff.

Misses CHIVERS and HODDER, Telephonists, at Victoria Exchange, also had the good fortune to be chosen for Paris. Several of their colleagues assembled at Victoria Station on June 28, the day of the departure to Paris, and gave them a hearty send off.

An informal tea-party on July 29 brought together past and present members of the Lee Green staff to bid farewell to Miss J. H. STEVENS, who has resigned for marriage. She was presented with a case of fish-eaters and a Doulton vase from the Traffic staff and a case of carvers from the Engineering staff. There were also numerous other gifts. Miss Stevens was associated with the National Telephone Company's old Lee Green Exchange, and has about 20 years' service to her credit.

PROVINCIAL STAFF.

Miss BATES, Assistant Supervisor, Class II, has been superannuated from the 14th instant on account of ill-health.

Miss MORRIS and Miss LINDLEY, Telephonists, have been promoted to rank of Assistant Supervisors, Class II.

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WHERE TO STAY.

The attention of our Readers is directed to the following list of Boarding and Apartment Houses.

BARMOUTH the Beautiful). "Glencairn"—The most comfortable Private and Residential Hotel in North Wales. Charmingly situated overlooking bay and mountains. Large lounge. Excellent cuisine Moderate inclusive tariff. Highly recommended.—Mrs. Dennis, Proprietress.

BRIGHTON.—"Ferndale" Boarding Establishment. A comfortable holiday home; liberal table; piano; 1 min. sea, Palace Pier; terms from 35s.; 6s. per day.

BRIGHTON.—Grafton House, Grafton Street, Marine Parade. (Door Sea). Comfortable Board Residence. 10 bedrooms; bath (h.c.) Electric light throughout. Good table. Moderate cycle accommodation.

CLEVEDON (Somt.)—"Ravenswood," beautifully situated on cliffs, overlooking sea and woods; ideal holiday resort; charming walks. All comforts studied. Moderate inclusive terms. Misses Bruce and Hall.

EASTBOURNE.—"The Polytechnic" Boarding House. Recommended by "Polytechnic," Regent St., since 1894. A comfortable holiday home. Liberal table Terms 35*s*. weekly inclusive.—Mrs. Edwards, 109-111, Tideswell Road.

TORQUAY.—"Ubeda," Crown Hill Park. Comfortable home-like Board-Residence; pleasant situation; own garden produce. Mrs Smith.—Terms from 35*s*.

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THE BAUDOT.

BY J. J. T.

WITHOUT discussion the Baudot Multiplex Type-Printing Telegraph system may be described as one of the most successful of machine telegraph systems. Its use in almost all civilised

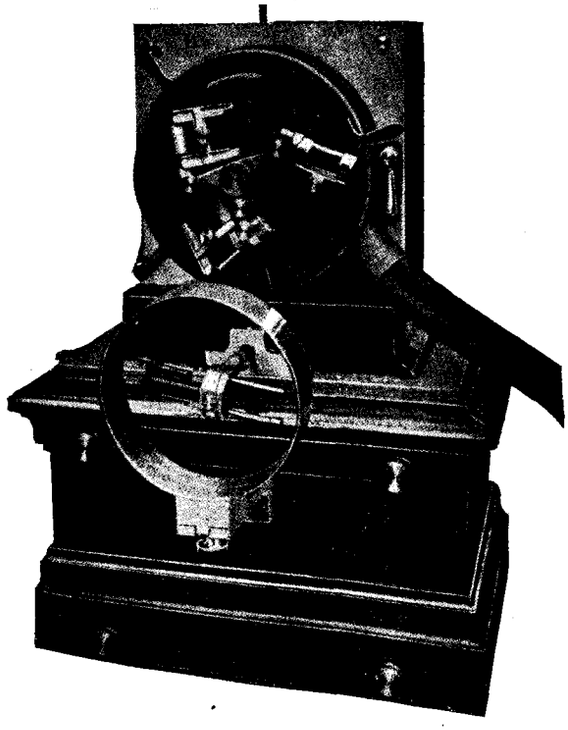

FIG. 1.
Baudot Distributor, double (2 transmissions).
Single plate for simplex working.

countries and its adaptability to all types of telegraph traffic is sufficient proof of this claim, while its extended and extending use in our own country would alone justify some detailed description in these pages. The system is by no means a new one as modern developments go. Over thirty years ago the writer watched the first attempt to adapt the system to Anglo-French submarine cable circuits, an attempt which at that time proved a failure. Some years afterwards and subsequent to the transfer of the cables from private to Government control, the inventor himself again visited London and from the present Cable Room in the C.T.O., and with improved apparatus justified his own optimism. Since that date, at first slowly and then, gaining momentum, more swiftly, the system has spread itself over the British Isles. But for the war there is little doubt but that most of our principal towns

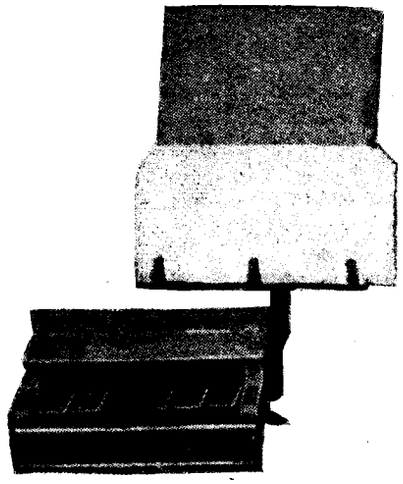

FIG. 2.

Baudot Keyboard (hammer cadence).

and cities by this time would have been interlaced by its agency. In principle both mechanically and electrically it is simplicity itself. In its developments it is of course more complicated, when one considers the various adaptations to varying needs, especially the variations in type as utilised on the continent, and more especially in France the home of the system.

There is very little literature in English on the subject, Booth, Crotch and Pendry being practically the only advocates who have dared to spend time and money in describing Baudot apparatus. If the writer prove able to amplify the information already given by the above experts, thanks will alone be due to the opportunity afforded by the hospitality of this JOURNAL.

The Baudot system is pre-eminently a line economiser. In the first case it utilises the *five* unit code as against the Morse which is practically an *eight* unit one. In the second case it utilises the line only for that exact period of time necessary for the transmission of these five pulsations. The *rate* of transmission as with any other telegraph system depends upon the nature of the line. In one word the KR. Let us take one of the simplest types of Baudot, that utilised on a long and difficult circuit the speed of which is comparatively low and which we should work by means of a two-channel Baudot ie., Baudot Double Simplex. Once master of this simple type it is not too much to advise the reader to anticipate that he, or she, should have no difficulty whatever in following out every succeeding type of Baudot extant.

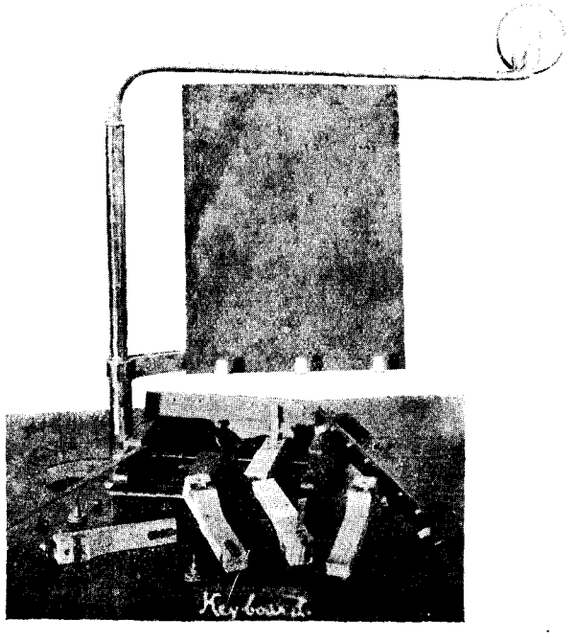

FIG. 3.

Baudot Keyboard (telephone cadence), showing four keys and front contact, plate dismantled; back plate and No. 2 key *in situ*.

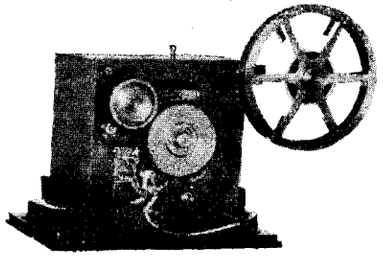

FIG. 4.

Baudot receiver (Traducteur) in position for working in base plate.

The chief organs of the system are, the Distributor Fig. 1, the Keyboard Figs. 2 or 3, and the Receiver, Fig. 4. The latter is sometimes known in this country as the "Trad," an abbreviation of the generic French name *traducteur*, a name which I venture to think it would have been preferable to have retained. As will be seen later on, this piece of apparatus, owing to the necessities of International Regulations also serves the purpose of giving a record of the outgoing signals, besides which it is really descriptive, in that it denotes the actual function, i.e., the "translation of the electrical signals into mechanical action." However, so far as the British application of the term is concerned it is doubtless correct, as it is now almost solely utilised as a receiver on inland circuits, and having changed its name when it became wedded to the Post Office Rate Book, for better or for worse, it will now be referred to as the "Receiver."

The signalling of any one letter or sign necessitates the transmission of five currents in varying combination. Thus to signal the letter P five marking currents are transmitted; with the letter T alternate marking and spacing, thus: + − + − +, and so on, see Fig. 5 which gives all the combinations necessary for international working. Modifications of certain of the signs may be arranged for by agreement for the local work of any particular administration, but internationally such modifications are fixed by the periodical conventions.

The code diagram, Fig. 5, is arranged in the same order as the keys on the keyboard, that is numbers 1, 2 and 3 to the right and numbers 4 and 5 to the left of a small wooden block, see Fig. 2, which represents a keyboard of one of the latest patterns of British design and manufacture.

The permutations are made by the fingers of the right, *or* left hand or by both depressing one or more keys simultaneously. This depression of the keys is performed rhythmically to the time of a cadence, the utility of which will be understood as we proceed.

5	4	Let:	Fig:	1	2	3
		A	1	●		
		É	&	●	●	
		E	2		●	
		I	½		●	●
		O	5	●	●	●
		U	4	●		●
		Y	3			●
	●	B	8			●
	●	C	9	●		●
	●	D	0	●	●	●
	●	F	¼		●	●
	●	G	7		●	
	●	H	⅛	●	●	
	●	J	6	●		
●	●	K	(	●		
●	●	L	=	●	●	
●	●	M	)		●	
●	●	N	№.		●	●
●	●	P	%	●	●	●
●	●	Q	/	●		●
●	●	R	—			●
●		S	;			●
●		T	!	●		●
●		V	'	●	●	●
●		W	?		●	●
●		X	,		●	
●		Z	:	●	●	
●		¢	.	●		
●	●	✕	✕			
	●	□	Fig			
●		□	Let:			

FIG. 5.

Baudot Alphabet, figures and signs arranged according to position of keyboard keys.

Each individual key is practically a simple form of double current key, (Fig. 6), and each is joined to one of the segments of a segmented ring which forms the second of six concentric metallic rings of what is known as the distributor (Fig. 1.) These rings are numbered from the outermost to the centre and are completely insulated from one another. Over them rotate three pairs of metallic brushes which make separate electrical connexion between, respectively, rings Nos. I and IV, Nos. II and V, and Nos. III and