

There are various kinds of service given. For "commuted service" a subscriber pays 1 dollar, or 4s. 2d., a day, and speaks as frequently as he cares to. If he has other trunks he pays for their use £5 a year and 1d. for every outgoing call. The result is that subscribers keep their "commuted service" trunk as full as possible, and do as little as they can on the others.

There is an unlimited flat rate of 125 dollars, or £26 10s. 10d., a year. Of these only about forty lines per position are allotted, and only one subscriber on each line. Another service is 60 dollars, or £12 10s., a year. 1,200 calls are given on one line; over 1,200 and up to 3,600 are charged 1½d. each, and over 3,600, 1d. each.

Subscribers can contract for 7,200 calls a year. The company will give a switchboard and an extra trunk free, and for every 6,000 calls they give an extra trunk free; or, having contracted for 7,200 calls, subscribers can have "commuted" trunks at 4s. 2d. a day and pay 1d. for each call. Sometimes an operator is allotted only twelve lines where there are "commuted" trunks, as many stations may be sending work in over them. The calling-rate per station varies from 10.3 to 3.5.

On the A and B positions and the local exchanges 200 girls are working at one time. The total number of operators and clerks of various kinds is 410, including those working on the express and toll boards. There are sixty positions for flat rate, twenty-six for measured service, and many for coin-collecting. Some coin positions are equipped so that the money can be refunded if the connection asked for is busy. At other positions the operator first gets the required subscriber and then requests that the money be deposited. This is known as the "nickel on request" method.

Private-branch exchanges remove their operators at certain hours, and these differ. There is a small special detached board on which buttons are arranged. Pressing a button puts on a tone test on the jacks of the trunks to the private-branch exchange, so that the operator on testing knows what to advise the calling party.

Cords are tested once a week, at night, but it is considered that the cords are continually under test in use as the girls are required to supervise. They must not listen-in needlessly, but they are expected to see that parties get through to each other. Generally there are seventeen pairs of cords. Ringing is on the front cord only. There is only one key for listening and ringing. Order-wires, supervisory lamps, and meter-keys, as usual, are fitted on the positions on which these are necessary. A feature in all these large exchanges that are close to the factory is that they can equip their boards for just the kind of service they find demand for. It takes comparatively short time to get supplied.

The "information" equipment is a flat switchboard with jacks, cords, &c. Women can stand on either side. There are about twelve positions, and seven were being worked at the time of my visit. The jacks and lamps are multiplied so that any girl can attend to any call to save delay. The information is mostly got from the amended directory. The work is particularly trying towards the end of a directory period—there are so many changes. The directory is published every four months. This board cannot be called a good arrangement. It is intended to devise some better method.

There are small clocks in many places along the face of the A sections high up for operators to advise subscribers after a certain lapse of time that a subscriber called for does not answer. The management recognizes this method is not of much use, however, as girls are too busy to give this work much attention. It is done as far as possible.

Some subscribers are not given "toll" or "long-distance" service. To distinguish them special marks are placed on the opals of their calling-lamp. Any demand for "toll" coming on any such line is at once noticed by the operator and is declined or referred to a monitor. Other classes of service, such as measured, one, two, four party, and nickel services are indicated by marks on the opals of the lamps.

A lot of apparatus, such as relays, retardation coils and resistances, is placed at the back of the switchboard. This is found convenient, as where the several portions of apparatus are far apart much time is lost in testing and finding faults.

The "long-distance" work is done by the American Telephone and Telegraph Company. The sections require about a hundred operators to look after them. There is a "record" position in the room above, to which all requests for "long-distance" are transferred for ticket purposes. All tickets go by air-carriers to a distributing-centre, and are there examined and passed away to their respective positions. When the tickets are finally dealt with by the operators they are returned through air carriers to a special sorting-point, where any inquiries about charges are dealt with. "Long-distance" work is not subject to much delay. Most conversations are dealt with within ten minutes, the greater proportion in less.

If a demand comes over a long-distance line for connection to another long-distance line, as there are eight miles of underground wire from this building to a "long-distance" office at Morell Park on the outskirts, which would necessitate sixteen miles of underground cable being spoken through, to the marked detriment of speech, the operator merely presses a button: this gives a signal at the other office. The operator there plugs in, takes up, and completes the call clear of all cable. This is done in some other cities also.

Outgoing "long-distance" calls originate on tickets. The operator gets the required "long-distance" office and the person required there, and seeks the calling subscriber through the B operator.

As the work slackens they can close up sections until at night they have only three operators on duty.

There are two metallic circuits to New York. All wires are of 435 lb. per mile copper. The circuits are fitted with loading-coils and are phantom—i.e., a third telephone circuit is got over the top of the other two. These wires are also composited so that the telegraph can be worked on each wire at the same time as the circuits are being spoken over.

One of these wires is used for arranging for conversations on the telephone circuits. The charge is £1 0s. 10d. for three minutes—distance 950 miles. There are sixty pairs of wires to South Bend,