

From a quantity of matter collected concerning American telephone practice generally, the following particulars that may be of interest are presented:—

CONSTRUCTION.

Underground Cables; Overhead Distribution.—In the cities cables are laid underground to points of distribution which may be in an alley-way or back street, where overhead wires come into use. This also applies to outskirts of the cities. As a rule, it may be laid down that where more than two or three hundred pairs of wires are required all telephone electrical engineers go underground, if possible, and they consider it cheaper to do so than to maintain overhead lines. The methods of distribution are similar to those used in New Zealand.

BUILDINGS.

The big telephone companies provide in their new buildings liberally for future requirements. There is no standard design, but they all observe certain general principles in laying out their plant. To accommodate an exchange of an ultimate capacity of 10,000 subscribers a building of 150 ft. to 170 ft. long by 45 ft. wide and three stories high is provided. The top story usually accommodates the switchboard. On the second story are located the test-room, main and intermediate distributing-frames, meter-racks, relays, charging plant, and secondary cells. The ground floor can be used for accommodating the operating staff, for the engineers, and the administrative officers generally.

The cost of one exchange in New York—that in Eighteenth Street—for 10,000 lines, was—for site, £16,666; building, £39,580: total, £56,246. Average cost per line, £5 12s. 6d

ACCOMMODATION FOR OPERATING STAFF.

Operators work Eight Hours daily.—The accommodation for the operating staff is always of a very simple character. A rest-room, a reading-room, a dining-room, and refreshment-rooms are always provided. A telephone-operator's work is considered very trying, especially as the day is generally of eight hours' duty, and means are afforded them of recovering from exhaustion by absolute rest or a brief interval under agreeable conditions. In many exchanges a substantial meal is provided free; in others, hot water, milk, and tea; but the management is generally disposed to give the full meal.

SCHOOLS OF INSTRUCTION.

Operators well trained.—In all considerable exchanges there is a school of instruction. This applies also in a measure to England. But, as an example, Chicago may be quoted where a hundred new girls are employed every month, who all undergo tuition for a time on special switchboards fitted for the purpose before they enter on their actual duties. In the Chicago main telephone company there are over three thousand female operators, and their average stay in the service is only three years.

MAINTENANCE AND DEPRECIATION OF TELEPHONE PLANT.

Depreciation 10 per cent.—There is no general agreement as to the amount to be written off under this head; but, taking all the plant into consideration—switchboards, lines, ducts, &c.—a general average of 10 per cent. may be stated as the assumed depreciation.

TRUNK TELEPHONE LINES.

The trunk telephone circuit between New York and Chicago—960 miles—consists of two copper conductors each weighing 435 lb. to the mile.

No heavier conductor than this is used in America for long-distance communication.

Speech improved by using a Relay.—The introduction of a relay called an "exalter"—a recent development—into the circuit considerably improves the speech. This relay is introduced at Pittsburg about the middle of the circuit, and is estimated to increase the speaking-efficiency 30 to 40 per cent. Its presence in or absence from the circuit can be detected with ease when conversing. Speech is possible from New York to Omaha—1,500 miles—but this is not always good.

UNDERGROUND LEAD-COVERED CABLES FOR TRUNK WORKING.

Pupin's Loading Coils.—Underground lead-covered cables with paper-insulated conductors are being used now between New York and Philadelphia, and New York and Newhaven, each distant about ninety-six miles. The use of these underground cables for telephone purposes has been rendered possible by the invention by Pupin of coils known as "Pupin loading-coils," which are inserted at frequent intervals in each pair of wires contained in the cable. These cables contain 100 pairs of wires.

This affords some evidence of the extent of the telephone trunk business between the American cities. The overhead circuits are released for the longer distances.

The rates charged for long-distance communications are nearly double those in England. If the rates in America, however, are high, the service is good, and there is but little delay in getting connections.

Trunk Wires numerous.—Trunk wires are freely provided, and thirty communications per day, as compared with fifty in Great Britain, are considered a full load for one circuit. It follows that many of these circuits are almost idle except during two or three hours of the business day.