

and Christchurch, and the installation at Wellington and Seddon of repeating-apparatus (amplifiers) for the purpose of extending the range of communication over the new Cook Strait telephone-cable. Since this cable was laid in March last year its use has been confined to conversations between Wellington and the Nelson, Blenheim, Picton, and Seddon Exchanges, but when the new Christchurch-Seddon trunk circuit is completed and the repeating apparatus at Wellington and Seddon is ready for use telephonic communication will be available at any time of the day or night between Christchurch, Blenheim, and Nelson Exchanges on the one hand, and the exchanges in the North Island as far as Napier and Wanganui on the other. In addition, it is expected that subscribers in the Auckland City area will be able, by means of a special trunk circuit which exists between Wellington and Auckland, to communicate with subscribers in the Christchurch, Nelson, and Blenheim areas. It is intended by the use of additional repeating-apparatus at suitable points to extend the range of inter-Island telephone communication, but the extent to which this will be done will depend largely upon technical and other important considerations, not the least important of the latter being the extent to which the public avails itself of the new long-distance circuits. The completion of the Christchurch-Seddon line will also render possible a rearrangement of the existing circuits between Christchurch and Blenheim, which will considerably improve the toll facilities between Christchurch and the exchanges in North Canterbury.

A considerable number of toll lines of less general importance were also erected during the year. These either gave service to communities, which had previously not enjoyed the privileges and conveniences of the telephone, or provided relief between places where traffic congestion had been acute. In addition, a great deal of reconstruction work was carried out during the year both for the purpose of improving the stability and increasing the accommodation of toll lines and for rearranging the circuits so as to increase their earning-power.

The ramifications of extra-high-tension power lines, which now extend to practically every part of the Dominion, and which in many cases parallel for long distances telephone and telegraph circuits, necessitated during the year the conversion of a number of toll lines and telephone circuits to metallic-circuit working in order to eliminate inductive interference from power lines. This, and the provision of additional protective devices to safeguard users of the telephone against injury from electric shocks and to protect departmental apparatus, necessarily adds considerably to the cost of providing telephone service.

A marked improvement in the method of telegraphic communication between Napier and its two most important terminal stations, Auckland and Wellington respectively, was effected during the year by the installation at Napier of machine-printing telegraph apparatus. In addition, facilities were provided at Napier for automatically relaying traffic between Wellington and Auckland, thus affording an alternative multiplex route between those places, which should be of great value when the normal routes are interrupted. The total length of the circuits over which the machine-printing telegraph system is now operated in New Zealand is 2,298 miles, from which are derived 9,192 miles of two-way channels of communication.

In connection with the extension of the local exchange systems, there has been added during the year a total of 10,560 new subscribers, which, although not the largest number added in any one year, nevertheless represented a very substantial increase in the number of subscribers' stations and involved a great deal of new construction and extension work, both in the matter of outside plant and switching equipment. Deferred applications on hand for telephone service on the 31st March totalled 2,286, of which numbers 1,600 are at five large exchanges where a shortage of switching-apparatus is retarding development.

A noteworthy event in the history of automatic-telephone-exchange development in New Zealand was the cutting into service at Hawera on the 29th January of the first all-British automatic exchange installed in the Dominion. Two other all-British automatic exchanges are now in the course of erection, at Dannevirke and Stratford respectively. The number of automatic-telephone stations in New Zealand on the 31st March was 45,364, being 34 per cent. of the total number of departmental connections.

Of the works upon which heavy capital expenditure was incurred during the year the following were the more important.