## EXPANSION OF TOLL CIRCUIT NETWORK

On many routes the toll circuits are now being worked to capacity, and additional circuits must be provided to achieve major improvements in service. This involves the erection of additional wire, the reconstruction of pole-line in some cases, or the installation of carrier-telephone equipment—all of which are costly in terms of man-power and materials.

Carrier-telephone equipment enables up to twelve speech channels to be obtained from a single pair of wires, and installation of this equipment has done much to ease the position over the longer distances. This equipment is, however, too costly to be a satisfactory answer to the problem over short distances.

On the Auckland-Hamilton and Wellington – Palmerston North routes all existing physical circuits have been exploited to the full by the use of carrier systems, and further relief can be given only by the provision of underground toll cables, a development which would be necessary in any case co-incident with any railway electrification scheme over these routes. Underground coaxial telephone cables of the modern type are each capable of providing up to one thousand speech circuits.

During the year, sixty-eight additional toll circuits were brought into use. Nineteen were on main routes (including six additional Wellington-Auckland circuits), and the rest on secondary routes. Thirty-nine of the new circuits were provided by means of carrier-telephone systems superimposed on existing wires. The installation of another four three-channel carrier systems is now in hand, and it is proposed to install a further

eight three-channel systems during the forthcoming year.

Carrier-telephone equipment equivalent to fifteen twelve-channel systems is now in course of manufacture, delivery to commence in September, 1950. Six of the systems are to include high-grade programme channels for broadcasting purposes. When these new twelve-channel carrier-telephone systems are brought into commission approximately one hundred and twenty additional long-distance toll circuits will be made available throughout New Zealand.

## LAYING OF SUBMARINE TELEPHONE CABLE TO WAIHEKE ISLAND

In August, 1949, a twenty-five-pair submarine cable, nine miles long, was laid between Waiheke Island and the mainland. This cable was urgently needed to improve the communication facilities with this increasingly popular holiday resort. The work of laying the cable, apart from loading-time, was carried out in two days' operations.

#### TOLL-EXCHANGE EQUIPMENT

In order to provide adequate exchange-operating facilities for handling the ever-mounting number of toll calls a new toll exchange of twenty-two operating positions was installed at Palmerston North, and extensions were provided at Dunedin (ten positions), Invercargill (six positions), Marton (two positions), Oamaru (four positions), and Whangarei (two positions). A new twelve-position toll exchange is now being installed at Blenheim and an extension is being provided at Timaru (five positions). Extensions are about to be installed at Napier (three positions) and at Stratford (two positions).

## PUBLIC CALL OFFICES

At the 31st March there were 1,726 public call offices (coin-in-slot telephones) installed in New Zealand. The total collections for the year amounted to £111,939. (See also Table No. 6 in Appendix.)

# ADVERTISEMENTS IN TELEPHONE DIRECTORIES

Commercial advertisements in telephone directories, which were discontinued during the war, have been progressively reintroduced since 1946. The advertisements are now carried in fifteen of the twenty-one directories. Revenue from this source amounted to £9.178 for the year, against £4,351 for the previous year.