

	<i>Cancellations:</i>				Number.	Per Cent.
Line out of order .. .. .	..	..	..	..	1,044	0·29
Unable to wait .. .. .	..	..	..	..	1,444	0·4
Crossed call .. .. .	..	..	..	..	564	0·16
Miscellaneous .. .. .	..	..	..	..	753	0·21
Totals .. .. .	..	..	..	..	<u>3,805</u>	<u>1·06</u>

#### RELAY LINES FOR RADIO BROADCASTING PURPOSES.

With the increasing use by the Radio Broadcasting Co. of New Zealand, Ltd., of programmes received over land lines from distant sources, the provision of suitable lines for temporary use in this connection has become a matter of some importance. The faithful transmission of music, with its comparatively wide frequency-spectrum, requires lines of much greater transmission efficiency than are necessary for ordinary speech. It is gratifying to report that whenever called upon the Department's telephone-lines have given excellent service under such exacting requirements.

#### EXTENSION OF TOLL AND TELEGRAPH FACILITIES.

Not the least important of the Department's engineering operations during the year was the extension of the network of toll and telegraph lines, and the replacement of plant which had become worn out or inadequate for present-day traffic requirements. In almost every part of the country some additional facility was provided for the purpose of relieving congestion of traffic or for giving service to some backblock settlement that had not previously enjoyed the privileges or conveniences of the telephone. In addition, the speech efficiency of toll circuits and the physical condition of the lines were considerably improved by a large amount of reconstruction work, which comprised the re-erection of pole-lines, the replacing or respacing of poles, the strengthening of existing poles, the regulation of wires, the rearranging of transpositions, the substitution of copper for iron wires, and the re-erection of circuits on the twist system.

The cost of the year's operations in effecting improvements and in making extensions to the toll and telegraph facilities throughout the Dominion amounted to £88,998. In addition, an expenditure of £17,586 was involved in renewing or replacing plant and equipment which had become worn out, inadequate, or obsolete.

As indicated elsewhere in this report, traffic-congestion between certain places where there is a large volume of toll traffic was relieved by the superposing of the "carrier current" system over existing circuits without entailing the erection of any additional wire. Between other places, however, for economical and other reasons, this method of relieving traffic-congestion was either impracticable or unwarranted. In such cases rearrangements were made to existing circuits or additional circuits erected.

The various rearrangements of the toll and telegraph lines, and the new circuits erected during the year, are detailed hereunder:—

Traffic-congestion between Maungakarama on the one hand and Whangarei and Waipu on the other was relieved by the erection of a metallic circuit between Maungakarama and the direct line connecting Whangarei and Waipu.

By a rearrangement of circuits and the utilization of a spare pair of wires between Auckland and Waiwera, Matakana was given a direct line to Auckland. The effect of this rearrangement was to relieve congestion at Warkworth and at the same time to give Matakana speedier communication with Auckland.

By dividing at Wellsford the two Helensville-Dargaville metallic circuits, Wellsford was given direct communication with both Helensville and Dargaville. The over-all efficiency of the two metallic circuits referred to was also improved by establishing Wellsford as a switching-station.

The toll facilities from Kaeo to Mangonui, Ohaeawai, and Kaikohe were considerably improved by dividing at Kaeo an existing circuit connecting Mangonui and Ohaeawai.

The Hokianga Heads line, which serves several stations, was appreciably relieved of congestion by converting from earth-working to metallic the section of line between Opononi and a point four miles from Rawene.

The toll facilities at Towai were improved by placing that station across a trunk circuit connecting Whangarei and Kawakawa.

The stations on Waiheke Island were provided with an additional circuit to Auckland. This involved the laying of a new submarine cable (3·766 nautical miles in length) between Maraetai and Awaroa.

Traffic-congestion between Te Aroha and Hamilton was considerably relieved by the erection between those places of a new metallic circuit.

As a result of the reconstruction of the Cambridge-Napier line (to which reference was made in last year's report) a new direct telephone circuit was obtained between Hamilton and Taupo. The extension of the Wairakei circuit to Oruanui also enabled all the small toll stations to be removed from