

MACHINE-PRINTING TELEGRAPHS.

The multiplex machine-printing telegraph apparatus installed in the Dominion continues to give a highly satisfactory service. It is worthy of note that the major alterations in design that have been made in New Zealand to printing telegraph apparatus have aroused the interest of other Administrations operating similar equipment.

An important departure has been made during the year by the installation of teleprinter apparatus at Wellington and New Plymouth. This system, which is of British manufacture, is a printing telegraph system operated from a typewriter-keyboard providing a channel each way working at a speed of sixty-six words per minute. The system is working very satisfactorily. A somewhat similar system, developed by a different company, has been installed at Wellington and Palmerston North, and is operating between those two centres in a satisfactory manner. The operation of the equipment will be carefully observed in order to determine which type is the more suitable for adoption.

A circuit has been devised whereby one operator at Wellington can send simultaneously into the teleprinters at New Plymouth and Palmerston North, and into a Baudot printer on the multiplex set at Wanganui. This circuit is used for the transmission of press traffic to the three stations involved, and has been designed to facilitate staff economies.

CARRIER-CURRENT TELEPHONE SYSTEMS.

The carrier-current system of toll communication, which was introduced into New Zealand telephone practice in September, 1928, by the provision of two single-channel systems between Auckland and Hamilton, has been considerably extended during the year by the installation of systems between the following centres:—

Auckland-Hamilton	..	..	..	One additional single-channel system.
Auckland-Rotorua	..	..	..	One single-channel system.
Hamilton - Palmerston North	..	..	..	One three-channel system.
Palmerston North - Napier	..	..	..	One single-channel system.
Palmerston North - Hawera	..	..	..	"
Wellington - Palmerston North	..	..	..	"
Wellington-Seddon	..	..	..	"
Seddon-Christchurch	..	..	..	"

The Hamilton - Palmerston North three-channel system is being utilized for the time being to provide one high-grade direct telephone circuit between Wellington and Auckland, one between Wellington and Hamilton, and one between Palmerston North and Hamilton. The two first-named circuits are completed by the use of physical circuits between Wellington and Palmerston North, and between Hamilton and Auckland, as required.

It is anticipated that the time is not far distant when two exclusive circuits will be required to carry the traffic between Wellington and Auckland. It will be practicable to meet the demand for this additional circuit immediately it arises by a reallocation of the circuits derived from the Hamilton - Palmerston North system. The location of the terminal equipment associated with this system, at Hamilton and Palmerston North respectively, provides the most flexible and economical arrangement for the handling of telephone traffic between Auckland and Wellington on the one hand and between those cities and the intermediate districts on the other. When the traffic between Auckland and Wellington warrants the installation of a special three-channel system between the two cities it is confidently expected that the traffic from other North Island sources will have increased sufficiently to enable the Department to utilize fully the existing facilities provided by the Hamilton - Palmerston North carrier system.

The Wellington-Seddon single-channel system is operated on the four-wire principle over the Cook Strait continuously loaded telephone-cable. This cable is 46.658 nautical miles long, but in so far as the operation of the carrier system is concerned it is telephonically equivalent to 750 statute miles of open aerial line of the type at present in use for the main trunk circuit between Wellington and Auckland—viz., a line built up of conductors of No. 8 copper wire. By utilizing one of the physical circuits between Seddon and Blenheim the carrier system has provided an additional outlet between Wellington and Blenheim, and this outlet is practically a zero-loss circuit capable of furnishing the same speech-volume as would be obtained over the usual type of short-distance trunk circuit of about thirty miles in length.

The Seddon-Christchurch system was the first long-distance single-channel carrier telephone system to be installed in the Dominion. This system, in conjunction with one of the circuits in the Cook Strait four-core loaded cable, is utilized to provide a high-grade direct trunk circuit between Wellington and Christchurch. The traffic on this section continues to show a steady increase, and the Department is at present considering ways and means of obtaining additional telephone outlets across the Straits so that extra circuits may be provided between Wellington and Christchurch.

The system of long-distance communication will be further extended during the next twelve months so that the Gisborne, New Plymouth, and Invercargill districts will be brought into the full benefits of the continuous long-distance service. It is also proposed to install carrier-current equipment at a number of other important centres in order to establish improved and increased facilities where the traffic has proved sufficient to warrant the expenditure involved in the provision of this apparatus. With that object in view, orders have been placed for the supply of a number of additional carrier systems, which it is expected will arrive in the Dominion during the coming year.