

may not be disorganized in the event of partial or total interruption of this important line of communication. Telephonically, the efficiency of ordinary telegraph cables of the type and length in use across Cook Strait is very low, and falls off considerably as the frequency range of transmission is extended—a feature which presented technical difficulties of some magnitude when it came to the matter of designing suitable systems to provide for the simultaneous operation of telegraph and telephone channels over the same cables. Notwithstanding these difficulties, however, it can now be stated that the Department has succeeded in the development of equipment that will provide for the establishment, at reasonable cost, by way of these single-core cables, of the required number of additional telephone channels. The provision of four channels by way of the single-core cables will enable the Department, without unduly restricting the facilities available for the handling of telegraph traffic, to tide over any period during which the telephone cable may be temporarily out of commission.

EXTENSION OF TELEGRAPH AND TOLL SYSTEMS.

With a view to keeping at a minimum expenditure on new works, and at the same time effecting essential or desirable improvements in the telegraph and toll services, the Department again concentrated on improving existing facilities wherever practicable. This was accomplished in some cases by rearranging lines and in others by undertaking general reconstruction work. In a few cases requirements could not be met except by the erection of new lines.

The following are the places between which the efficiency of existing circuits was improved, or between which new circuits were erected:—

Auckland Engineering District: Kaitaia–Herekino, Kawakawa–Ohaeawai, Ohaeawai–Okaihau, Ohaeawai–Waimate North, Waimate North–Kerikeri, Kiripaka–Ngunguru–Matapouri, Waiuku–Manukau Heads, Hamilton–Morrinsville, Hamilton–Otorohanga, Raglan–Te Akau, Tauranga–Te Puke, Raglan–Kawhia, Pirongia–Hauturu Junction, Whakatane–Taneatua, Taneatua–Waimana, Owhango–Raurimu, Kaukapakapa–Glorit, Tauranga–Mount Maunganui, Auckland–Whitford, Auckland–Waiheke, Henderson–Karekare, Howick–Auckland.

Wellington Engineering District: Gisborne–Tokomaru Bay, Waipawa–Hastings, Waipawa–Dannevirke, Palmerston North–Marton, Marton–Wanganui, Gisborne–Tolaga Bay, New Plymouth–Opunake, Opunake–Hawera, Okato–Opunake, Wellington–Upper Hutt, Wellington–Eastbourne, Wellington–Wainuiomata, Blenheim–Picton.

Christchurch Engineering District: Conway–Kaikoura, Greymouth–Runanga, Hororata–Lake Coleridge, Christchurch–Pigeon Bay, Fairlie–Hermitage, Ashburton–Timaru.

Dunedin Engineering District: Albert Town–Hawea Flat, Cromwell–Pembroke, Ranfurly–Hyde, Balclutha–Kaka Point, Winton–Dipton West, Winton–Dipton–Caroline–Lumsden.

In addition to the foregoing, 367 miles of toll- and telegraph-pole line were reconstructed during the year. This work involved the replacement of 1,357 miles of wire.

Other improvements to the plant and equipment used in connection with the toll and telegraph services included the following:—

The installation of amplifying apparatus on the toll board in the telephone-exchange at Auckland.

The installation of Creed teleprinter apparatus at Napier, Hastings, Gisborne, and Wellington, and the installation of Morse telegraph apparatus at Napier.

The installation of the universal battery system at Napier.

Provision of new lead-in toll- and telegraph-lines at Napier, Hastings, Gisborne, Blenheim, Seddon, Upper Moutere, New Plymouth, Stratford, Taihape, and Ohakune.

The installation of new telegraph test-boards at Nelson and Dunback.

The conversion of Paekakariki to a testing-station.

The installation of dry rectifiers at Wellington and Ohakune for charging the batteries associated with the carrier-current equipment.

The installation of “Demand” system on the toll-boards in the telephone-exchanges at Wellington, Gisborne, and Dannevirke.

The replata of the battery at Wellington-Radio.

The provision of facilities for toll-dialling between Waipu and Auckland, Waipu and Whangarei, Auckland and Whangarei, Dargaville and Whangarei, Kaikohe and Whangarei, Kawakawa and Whangarei, Maungakarama and Whangarei, Whakapara and Whangarei, Hikurangi and Whangarei, Upper Hutt and Wellington, Rongotea and Palmerston North, and Levin and Palmerston North.

POLES AND WIRE.

During the year 83 miles of pole-line and 1,391 miles of wire were erected for telegraph and telephone (toll) purposes, while 154 miles of pole-line and 846 miles of wire were dismantled, or, in localities where no longer required by the Department, sold to settlers for use as private telephone-lines.

The lengths of pole-line and wire in use for telegraph and telephone toll purposes on the 31st March, 1932 and 1933, respectively, were as follow:—

	Pole-line and Wire.				Year ended	Year ended
					31st March, 1932.	31st March, 1933.
Miles of pole-line 12,486*	12,415
Miles of wire 63,676*	64,221

* Revised figures.