equipment. The interruptions to major telegraph and toll lines, however, were not serious, the circuits being repaired without delay. At Blenheim approximately two hundred subscribers were without service for some hours.

A strong north-west gale which swept the east coast of the South Island on the night of the 18th February caused extensive damage to all the main-line toll circuits on that coast north of Dunedin. Much damage was also done to subscribers' lines in towns in the eastern portion of Canterbury. The breakages of lines were caused mainly by falling trees and branches. At a point approximately twenty miles south of Kaikoura all wires for a distance of more than a mile were broken in this way. The road was impassable at this point, and a deviation across country was necessary. Line gangs were despatched from several towns in the affected areas, and by the afternoon of the 20th February all toll and telegraph circuits were restored. Repairs to subscribers' lines were finally completed on the 24th idem.

POLES AND WIRES.

During the year 23 miles of pole-line and 2,000 miles of wire (including wire in submarine cable) were erected for telegraph and telephone (toll) purposes, while 82 miles of pole-line and 1,299 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 (including wire in submarine cable) in use for telegraph and telephone toll purposes on the 31st March, 1938 and 1939, respectively, were as follows:—

	Year ended 31st March, 1938.	Year ended 31st March, 1939.
Miles of pole-line	12,053*	11,994
Miles of wire	66,889*	67,590

* Revised figures.

FIELD OPERATIONS: MOLE CABLE PLOUGH.

In accordance with the present-day policy of placing telecommunication circuits underground as far as practicable, consideration has been given to ways and means of reducing the cost of laying underground cables, and by the adaptation of the old agricultural implement, the mole drain plough, the Department has evolved an appliance the use of which will result in substantial savings in labour charges on this work.

The plough is drawn by a tractor, and the cable to be buried is coiled on a drum which is mounted on a jinker and towed behind the plough. The cable is fed underground by means of a pipe behind the cutting-blade. The mole, or torpedo, which forces the underground channel for the cable is fitted on the front foot of the cutting-blade.

On one section of work which was completed during the year approximately one mile of twenty-five-pair cable was laid in five hours at an average depth of 20 in. The number of men employed was eight. It is estimated that the same work, if performed manually, would have required the services of fifty-five men for a similar time.

The disturbance of the surface of the ground on cultivated grass areas is so small that no restoration work is necessary after the cable has been laid. In other areas the surface is restored simply by running one wheel of the tractor over the cut.

At present the Department has only three ploughs available for this work, but it is proposed to obtain one for each of the larger engineering districts of the Dominion.

NEW ZEALAND SUBMARINE CABLES.

Cook Strait Telegraph Cables.

Two of the single-core telegraph cables—namely, No. 3 Oterangi Bay–White's Bay cable and No. 4 Lyall Bay–White's Bay cable—are at present out of commission owing to faults which developed in June, 1937, and February, 1938, respectively. In view of the additional facilities that have been established over the coaxial cable and the fact that it will be practicable to increase progressively the number of channels over this cable to meet traffic developments, no action is being taken to repair the faulty cables.

Foveaux Strait Cable.

In January last the Foveaux Strait cable developed a fault which resulted in communication between Bluff and Stewart Island over the cable circuit being totally interrupted. The fault was subsequently found to be due to a break in the cable at a point approximately 1·75 nautical miles from Lee Bay (Stewart Island). In order to restore the cable to good working-order it was found necessary to lay-in a total length of 1·8 nautical miles of cable from Lee Bay outwards. The repair operations, which were undertaken with the aid of a small oyster-boat, were delayed to some extent by bad weather, but the cable was reopened for traffic on the 24th February.

While the cable circuit was unworkable, telegraphic communication between Stewart Island and the mainland was provided via the short-wave radio link established in 1931 between Half-moon Bay and Awarua-Radio to meet emergencies of this nature.