

After the gale on the 2nd February, nearly all the poles on the recently erected east line were found to have a lean and had to be straightened and rammed. The existing west line was undamaged.

The telephone-line was very badly damaged during February's gale and had to be practically reconstructed. In addition, the Summit telephone-hut was blown over and wrecked.

All dry joints on the telephone-line were soldered and the Summit and Ruahine telephone-huts were wired down.

Poles replaced : 2 transmission-line and 10 telephone-line.

Poles broken : 2 telephone-line.

Woodville-Mangamairi-Masterton.—The special maintenance gang completed the overhaul of this line during the year. A large number of poles were replaced, refitted, or had other maintenance carried out on them. The Manawatu and Waingawa River towers were strengthened, and the earth wire was removed from Masterton Substation northwards.

Little damage was done on this line by the gale on the 2nd February. One main-line pole was blown nearly over, and had to be straightened, otherwise the line was undamaged.

Poles replaced : 19 transmission-line and 11 telephone-line.

Poles broken : 1 telephone-pole.

Woodville-Dannevirke-Waipawa-Napier.—The special maintenance gang has nearly completed the overhaul of this line, a small amount of work remaining to be done in the vicinity of Dannevirke. River-protection work was carried out at the Avoca River. The removal of earth wire on this line has been completed with the exception of that on the north side of Waipawa, which has been left to operate the wind-gauge. Bracing has been completed on all towers on this section, and non-standard insulator strings converted to standard strings.

No damage was experienced during the gale of the 2nd February.

During the storm of the 2nd February many trees were blown across the telephone-line, cross-arms and conductors being broken.

Poles replaced : 46 transmission-line and 2 telephone-line.

Poles dismantled : 1 telephone-line.

New poles erected : 2 transmission-line.

Napier-Tuai Duplicate Line.—Both lines have been overhauled, and earth resistance at all towers reduced to 10 ohms.

During the overhaul of the east line a large number of broken cable strands were found in clamps, especially at weighted positions. The position seemed so serious that, during the overhaul of the west line, a very detailed examination was made and the results analysed. Although there were more breaks at suspension positions, the percentage of breaks was greatest for weighted positions, no breaks being found at strain towers. Check tests of the tension were made showing that the line was slightly over-tensioned.

Following the detailed results from the west line, comprehensive tests were carried out with two objects in view—namely, to determine the effect of festoon dampers, and to determine as nearly as possible the exact nature of vibrations at weighted positions. An experimental span was fitted up on which vibrations of any desired frequency could be produced by means of a mechanical device. The results of these tests have been analysed, and consideration is now being given to the problem of overcoming the effect of vibration at the clamps.

(ii) 50 kv.

Stratford-New Plymouth.—After the gale in February, twenty-seven poles, two of which were blown nearly over, had to be straightened and rammed.

Tuai-Gisborne.—Pole 385 was removed, due to ground slipping, and, following trouble due to contacts between the telephone-wire and one phase of the transmission-line during a high wind, a span breaker was put in between poles 28 and 29, and the telephone-wires were lowered between poles 33 and 34. Another interruption was due to an opossum coming into contact with the main line.

An outage of eighteen hours occurred following the gale on the 2nd February. Subsequent investigations support the theory that the outage was due to a broken insulator on the 50 kv. air-break switch at Gisborne. At the time, however, considerable difficulty was experienced in patrolling the line in an attempt to discover the cause of the outage due to the stormy conditions and lack of telephone communication. The line suffered no damage, however, and power was restored after the Poverty Bay Power Board had carried out temporary repairs to its system.

On the telephone-line fuses were blown at Tuai, Ruakituri, Hangaroa, and Gisborne, due to induced current in the telephone-line. Near Hangaroa the conductors were cut by a sheet of iron blown against the line by the gale.

Poles dismantled : 1 transmission-line.

New poles erected : 1 telephone-line.

Tuai-Wairoa.—An interruption of fourteen hours was caused by a pole breaking during the gale of the 2nd February, otherwise the line gave satisfactory operation during the year.

Poles replaced : 3 transmission-line.

Poles broken : 1 transmission-line.

(iii) 11 kv.

No trouble was experienced on 11 kv. lines during the year, the only interruption due to trouble on these lines being caused by a piece of hoop-iron which came into contact with the Hutt Valley feeders. A number of poles on these feeders had to be straightened after the storm on the 2nd February.