

sent with the Expedition. The call for volunteers met with prompt response. Four operators and two men with engineering capabilities were chosen. Within a few days these officers were in Wellington ready to join the Expedition. Spare wireless apparatus in the possession of the Department was prepared, and masts, engine plant, and various other equipment required were made or obtained locally with a minimum of delay. It was not found necessary on arrival at Apia to use more than quite a limited portion of the plant that had been despatched, as the officers readily saw that it would be practicable to bring into use some of the apparatus of the large wireless station, which, while it had been much damaged by the former occupants, was not wholly destroyed. Communication with Fiji was soon established, and from the 19th October, 1914, telegrams were accepted for transmission to Samoa. The rate fixed for ordinary, Press, and Government messages was the wireless rate from Suva (Fiji) to Apia (Samoa), in addition to the cable rate from New Zealand to Suva. Communication continued to be carried on through that route for some time while the high-power portions of the apparatus and equipment were being repaired. When the repairs, which took some time, were effected in October it was practicable to communicate direct with the Awanui station in this Dominion, a distance of about 1,500 knots, and the rate has been fixed at 1s. per word for ordinary, Press, and Government messages. This direct communication has been maintained.

Twenty-seven ship stations are registered in New Zealand. Regulations for controlling the use of wireless on British and foreign ships, not registered in New Zealand, while they are within territorial waters were gazetted on the 16th July, 1914, and are now in force.

Observations are still being made at New Zealand stations of atmospheric electrical disturbances which interfere with the reception of signals. The data collected are being communicated to the British Association for the Advancement of Science.

Amended radio-telegraphic regulations came into force on the 10th September, 1914, providing that radio-telegrams to or from ships trading exclusively between ports on the coast of the Dominion of New Zealand, while such ships are voyaging between the Ports of Lyttelton and Wellington from or to any telegraph-office in the Dominion of New Zealand, shall be charged at the rate of 2½d. a word, with a minimum charge of 1s. 3d. for each radio-telegram, equal to a message of six words.

The small number of amateur stations that were in operation on the outbreak of war have been closed from that time.

Permission has been given, subject to suitable control, for the use of wireless apparatus by one or two Defence Corps.

On the initiative of the British Post Office, arrangements have been concluded by which the certificates of competency, signifying that the holders are competent to act as wireless operators on vessels, issued by any of the self-governing countries of the British Empire shall be recognized throughout the Empire.

In November, 1914, arrangements were made to telephone, free of charge to the addressee, any radio-telegram, the address of which included a telephone-number.

Mount Wakefield, the hill on which the Wellington radio-station is situated, like the other hills about the city, has been quite denuded of trees in the years gone by. Efforts are being made on the 30 acres of hillside that are attached to this station to remove that reproach, and to that end extensive tree-planting has been done, and it is hoped that in the course of a few years the trees will afford quite a pleasant relief to the barrenness of landscape that is so marked a feature at present. The trees are rooting well and showing signs of vigorous growth.

TELEPHONE EXCHANGES.

Twelve new exchanges were opened during the year, the number of subscribers increased by 3,808, and the number of connections by 4,846.

The total number of exchanges now is 250, made up of 62 central and 188 sub exchanges.

The total number of connections is 54,261, compared with 49,415 in 1914. They may be classified as follows: Paying direct, 41,294; extensions, 8,001; bureaux, 4,389; service, 577.

New connections numbered 6,969, and those given up 2,691. The increase in connections is 4,846, equal to 9·81 per cent.

In addition there are 267 telephone bureaux not connected with exchanges.

There are 3,029 miles of telephone-exchange lines and 113,479 miles of wire.

The number of telephone-stations at the ten principal telephone exchanges on the 31st March, 1915, was as follows: Auckland, 7,288; Wellington, 6,584; Christchurch, 5,164; Dunedin, 4,572; Gisborne, 1,472; Wanganui, 1,408; Napier, 1,375; Invercargill, 1,364; Hastings, 1,295; Palmerston North, 1,096.

New exchanges were opened in the Auckland District at Birkenhead, Coromandel, Kaikohe, Kawhia, and Walton; in the Wellington District at Hinakura, Kahutara, Glen Oroua, and Norsewood; and in the Canterbury District at Culverden, Dunsandel, and Waiiau.

The conversion of earth-working exchanges to metallic-circuit working is proceeding satisfactorily.

There are 2,063 party-line circuits, with a total of 6,695 subscribers, an increase for the year of 591 and 2,053 respectively.

In June, 1914, the charge for printing additional names or designations in the telephone list in connection with the same number was reduced from 10s. to 5s. for each additional entry.

Motor-lorries fitted for use in connection with cable-hauling, pole-work, &c., and motor-cycles for telegraph and telephone linemen have proved of considerable value.

The work of laying telephone cables underground is proceeding satisfactorily. During the year eighty-five miles of pipes, eight miles of ducts, and forty-eight miles of armoured cable were