Radio-Awarua.

Traffic.—Traffic handled by Radio-Awarua shows a marked increase over that of the previous year. This is due chiefly to the adoption at this station of short-wave signalling.

Short-wave Working.—Two-way communication for testing purposes was effected nightly in February and March with Burnham-Radio (England).

In June last, nightly communication on short waves was commenced with the two vessels engaged in the Wellington–San Francisco mail-service. This has been well maintained and has provided reliable communication between the Dominion and the steamers during the whole of the trans-Pacific voyages.

As in the previous year a large volume of traffic was exchanged with whaling-ships in the Antarctic. This was transmitted on wave-lengths of from 30 to 35 metres.

New Receiver for Reception of British Official Press News.—In June, 1927, a receiver specially designed for the reception of signals from Rugby, England, was installed. The receiver has special unidirectional properties, enabling greater use to be made of directivity in limiting the incidence of atmospheric interference. Notwithstanding a certain degree of interference from atmospheric disturbances, the number of words of press news received direct from England during the year reached 279,188.

Mast and Aerials.—The 400 ft. steel tower was repainted in March, 1928.

A new aerial permitting transmission on a wider band of short wave-lengths was erected in September, 1927.

Tests to determine the suitability of wave types of antennæ for long-wave reception were carried out during the early part of the year. For this purpose use was made at intervals of the Invercargill–Bluff telephone-lines.

Location of Station.—Although there is comparatively little shipping in the vicinity, the semi-isolated location of this station is justified by the command that the station has of the southern seas, portions of which are screened from the other New Zealand coast stations. The mishap to the whaling-ship "C. A. Larsen" in Paterson's Inlet (Stewart Island) during the latter part of February again demonstrated the suitability of the location for dealing with urgent maritime traffic or distress-signals from ships in southern waters.

Land-line Communication.—To meet the need for a more efficient land-line connection with the Wellington Telegraph-office for the disposal of the British official press news a duplex set has been installed.

Radio-Wellington.

Short-wave Working.—A short-wave transmitting and receiving set has been installed at Radio-Wellington. After exhaustive tests and experiments to determine the wave-lengths most suited to the different hours of the day and night, permanent adjustments were made on the 30th August, from which date a direct short-wave service has been observed with Apia, Samoa. With the exception of a few occasions on which daylight signals were subject to interference from extraneous induction or atmospheric disturbances, the service has been regularly maintained. The night signals have been reliable on all occasions. Consideration is now being given to the installation of a higher-powered transmitter to replace the experimental one. With a higher-powered transmitter it is anticipated that a much greater degree of reliability will be obtained.

Transmission of Press News.—Radio-Wellington has taken over the nightly transmission of the free press news which was previously transmitted by Radio-Awanui on a wave-length of 2,000 metres. The press news is sent simultaneously on wave-lengths of 800 and 53 metres, and is a useful example of dual transmission. The service, which has been satisfactorily performed since its inauguration, permits reception both by ship stations and by the coast stations of the Pacific islands.

Communication with Trans-Pacific Ships.—A nightly short-wave service has also been instituted to and from the mail-steamers plying between Auckland and Vancouver, enabling communication to be maintained throughout the voyages.

Installation of New Receiver.—Reception has been improved by the installation of a specially-designed receiver giving greater flexibility and readier change of wave-lengths.

Erection of Separate Receiving-station.—As the operation of transmitting interferes somewhat with the simultaneous reception of signals, the erection of a separate building to accommodate the receiving-apparatus associated with both the long- and short-wave sets is about to be proceeded with. The building will be situated approximately 200 yards from the existing building at which distance experiments have proved the interference to be negligible. The existing building will thenceforth be utilized as a transmitting-station only.

Kawau Island.

The plant at Kawau Island Radio was completely overhauled in August. The station now has reliable radio communication with Auckland by either telegraph or telephone.

A motor-generator was installed on the 30th August for the purpose of generating the anode-voltage for the valve-transmitter.

RADIO-APIA.

Short-wave Working.—The outstanding development during the year was the adoption of short waves for long-distance working. In addition to the direct service with Wellington, short waves are now employed for all oversea services.

Equipment.—The steel tower and stays have been repainted and the oil-engine overhauled during the year.

The storage battery at present in use is nearing the end of its useful life, and arrangements are being made for its replacement.