

RADIO-APIA AND RADIO-RAROTONGA.

In January last a direct-coupled semi-Diesel engine and charging generator were installed at Radio-Apia to replace the plant disabled by an accident in February, 1923.

A system of broadcasting meteorological forecasts and hurricane warnings throughout the Southern Pacific has been developed during the year by the Naval Department, and is now in operation. Radio-Apia receives meteorological reports daily from Tonga, Tahiti, Rarotonga, Fiji, Norfolk Island, New Hebrides, and New Zealand. These reports are correlated with the observations made at the Apia Observatory, and a forecast is broadcasted twice daily during the hurricane season, and once daily during the non-hurricane season.

An independent rotary discharger was installed during the year at Rarotonga with a view to increasing the transmitting efficiency of that station.

COOK ISLANDS.

Investigations have been continued during the year on behalf of the Cook Islands Department with a view to providing suitable wireless apparatus for installation at outlying islands in the Cook Group. In this connection two $\frac{1}{2}$ kilowatt radio-stations will shortly be erected at Aitutaki and Mangaia to act as feeder stations into Radio-Rarotonga. A radio-telephone station is proposed for Niue Island as a feeder into Radio-Apia.

PRIVATE STATIONS.

The Radio-telegraph Regulations for Amateur, Experimental, and Broadcasting Stations, gazetted in January, 1923, have proved an effective means of regulating the operation of private radio-stations. Already 2,900 amateur receiving-station licenses have been issued. Assistant Radio Inspectors were appointed during the year in the Auckland and Wellington districts.

The reduction of mutual interference between "listeners-in," due to reaction effects causing radiation from the receiving antennæ, presents considerable difficulties, of which, judging by the reports received, this country possesses no monopoly. A very considerable relief has been obtained by the prohibition by regulation of certain well-known types of receiving circuits which strongly energize the antenna system. It is recognized that practically any valve circuit may be caused to oscillate and to communicate a portion of its energy to the radiating member of the system, and for this reason complete immunity from interference of this kind is impossible. It is considered, however, that the nearest approach to immunity will be achieved by forbidding the use of those types in which radiation is inherent and in which reaction is not under convenient control. The reduction of mutual interference then becomes, in a large measure, the responsibility of "listeners-in" and of the amateur associations which represent them. The Department will, if necessary, take strong legal measures against persons found to be disregarding regulations designed to reduce the evil effects of interference.

During the year several broadcasting stations of comparatively small power have been erected and operated by private enterprise with a considerable measure of success, but through lack of funds and other causes the development of this class of station has been retarded.

TELEPHONE-EXCHANGE SERVICE.

RATING SYSTEM.

A comprehensive revision of the telephone rating system was undertaken early in the year, and on the 17th September last regulations were gazetted prescribing new rates and conditions under which telephone service should be furnished. The new rates became operative on the 1st October. The Department's action in submitting its original proposals to the various Chambers of Commerce and other organizations throughout the country was approved of on all sides, and the discussions that ensued—affording as they did opportunity for difficulties to be explained and differences of opinion adjusted—contributed largely to the generous manner in which the new rates were received by those who were eventually called upon to pay higher charges.

The chief object of the new rating system was to provide a more equitable scale of charges; and this was accomplished by increasing the rates for business stations and reducing, as far as possible, the rates for residential stations in suburban and rural areas. At the same time an attempt was made to obtain by way of revenue an amount sufficient to provide for annual charges in the shape of maintenance, depreciation, and interest, and thus relieve to some extent the general taxpayer.

The chief features of the new rating system are:—

- (1.) The granting of an unlimited number of calls for a fixed rental: a prominent feature of the old system, and a factor which has contributed largely to the popularity and development of the telephone system in New Zealand.
- (2.) The dividing of the exchanges into four classes according to their size, and providing for each class of exchange a separate schedule of charges. Formerly the exchanges were classified under the headings of (a) continuous attendance, and (b) non-continuous attendance.
- (3.) Defining for each exchange a zone or base-rate area within which the respective classes of service are furnished on a flat-rate basis.
- (4.) An increase in the previous ratio of charges between business and residential stations.
- (5.) Extended hours of attendance at country exchanges.
- (6.) Extension of the party-line system at all (except Class 1) exchanges to provide for as many as ten stations being connected with the same circuit, the annual rentals varying from £3 upwards.