

The Story of Short-Waves

(Continued from page 1.)

types were developed in France during the war, but the valve system of transmission was used only to a very limited extent by experimenters till about 1922.

About this time development was rapid. Amateurs in the United States conversed from coast to coast using 200 metres and below with much lower power and with much greater freedom from interference than did the commercial stations. Signals from American amateurs were being heard in New Zealand, the first New Zealander to receive definitely an American amateur being Mr. Ralph Slade, who then resided in Timaru.

The 200 metre signals from 6KA were heard by him and confirmed by letter from Los Angeles. Other American stations were heard in large numbers by Mr. Frank Bell at his station at Palmerston North, as well as by the writer in Christchurch. The double honour of being the first to hold two-way communication with the United States, and also with England, went to Mr. Bell, the latter achievement taking place on October 18, 1924.

This same day the writer arrived in England with an experimental short-wave transmitter on board s.s. Port Curtis, from which ship two-way communications with Mr. Bell, Mr. Ivan O'Meara, of Gisborne, and other New Zealanders had been conducted during the voyage.

It was with a strange feeling that the writer went to the station of Mr. Cecil Goyder, G2SZ, in London, with which Mr. Bell had been in communication, and on the following morning, when Mr. Goyder again got in touch, spoke back and forth to Mr. Bell in New Zealand with as much ease as if we had been but a short distance apart. This, and all other communications at this time, were conducted in morse code on wavelengths of from 80 to 100 metres. Later, telephony was first transmitted successfully to New Zealand from England by Mr. Gerald Marcuse G2NM, of Caterham in Surrey. International communication between amateurs rapidly became an everyday occurrence as the lower wavelengths of 40, 30 and 20 metres were used.

Interest by Commercial Stations.

It was natural that the attention of commercial interests should be directed to the use of short waves, both for morse communication and for broadcasting over great distances. Many of the larger longwave broadcasting stations in the United States and Europe built experimental short-wave broadcast transmitters, conspicuous among which are the British Broadcasting Corporation's station at Chelmsford, 20 miles from London.

This plant, which uses the call sign G5SW, conducts regularly daily 25-metre transmissions, which are readily heard in New Zealand by owners of shortwave receivers. G5SW relays the programme broadcast by 2LO, London, as well as "Simultaneous" programmes to the other stations transmitted from any one centre in the British Isles. Special events of inter-



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One of New Zealand's foremost radio technicians, who this week contributes a comprehensive article on short-wave. Mr Orbell went to the Antarctic with the Byrd Expedition.

est such as boat races, cricket and Rugby fixtures, special services in St. Paul's or Westminster Abbey, etc., are always broadcast by G5SW specially for reception in the Dominions.

Other European stations have their shortwave transmitters, including the Vatican station in Rome (call sign HVJ), which has recently commenced regular transmissions. This latter is one of the highest-powered shortwave

stations in the world, utilising 50 kilowatts, which, if necessary, can be stepped up to 100 kilowatts. PCJ, in Holland, transmits programmes regularly for Australia and New Zealand. In the United States, the American General Electric Company's shortwave stations are heard with great clarity in New Zealand practically every afternoon. There are many other United States and Canadian broadcasting companies which have realised the possibilities of short waves and have developed their own shortwave equipment.

Even Japan, French Indo-China and Russia have all installed high-powered shortwave stations which are received in New Zealand with great volume. In fact, there is an ever-increasing number of stations too numerous to mention, in all parts of the world, which have installed, or are installing, similar equipment.

Modern Shortwave Receivers.

WHILE shortwave stations have been increasing in numbers and efficiency, developments in receiving apparatus have also been taking place. The advent of the screen-grid valve has rendered possible much greater amplification of the received signal. While the three electrode valve had been suitable for use with long waves it became quite uncontrollable when attempts were made to use it for amplifying shortwave radio frequencies.

Experimenters found, however, that the new valve provided not only a satisfactory solution, but the amplification rose till it was practically equal to that obtainable from powerful long-wave apparatus.

Hitherto the tuning-in of shortwave stations had been somewhat difficult

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