

The Crystal Corner

Full Wave Circuit

I HAVE constructed your "full-wave" crystal set described in the "Radio Record" of December 14, 1928, and I must say that I am more than pleased with the results. The circuit was adhered to with two exceptions, as follows:—In place of the two fixed detectors I employed two complete carborundum units with potentiometers and small dry cells. The earth and aerial terminals were placed on a strip at the back. Ebony was used for the front panel—an excellent material and very easy to drill out and shape.

Three miles from 2YA, using an 80ft. aerial and an earth consisting of three 1½ in. water pipes driven down about 3ft. 6in. into rock and clay, reception on the speaker is of sufficient volume to be comfortably heard in a large room, particularly during night transmission. Connected to a two-stage amplifier and a speaker attached to a good gramophone, the tone and volume are amazing, and the condensers have to be turned down (almost closed) for restful reception. In fact, the volume is so great that I frequently disconnect my earth wire altogether, open the condensers about ten degrees and turn my detectors up about one quarter of their travel. The volume is still good and of remarkable purity.

Some weeks ago I transported the set complete with amplifier to a place about twenty miles away from 2YA, connected up to a good aerial and earth, used a large cone speaker (which belongs to a five-valve set) and received the station at as great or greater volume than at the shorter distance. A very satisfying performance.

Housed in a polished blackwood cabinet, which I constructed for it, the set has all the appearance of a three-valve outfit and is a source of endless pleasure to all who hear it. The two detectors appear to be evenly matched, as volume is increased by both dials being turned to read the same. Variations in volume can also be obtained by turning the dials in opposition to one another, that is, opening one and closing the other condenser. The purity of tone remains the same until the variation is more than half the range, when a slight blurring is noticed. Again expressing my appreciation of an excellent circuit.—William J. McKeon (Wellington South).

Another Success.

IN the issue of the "Radio Record" of December 14, 1928, you gave particulars of construction of a two-crystal set. I have carefully followed the directions and the completed set gives quite 75 per cent. increase in volume.

In my set two catwhiskers are used in preference to semi-permanent or permanent detectors. My experience has been that the former gives best results for the distance we are from 2YA, viz., 15 miles. Two dry cells are coupled to a bar amplifier. The results over my old single crystal set, which also used the bar amplifier, is as stated above. A low range of hills intervenes between us and 2YA. Length of aerial 100ft., height 35ft. The earth wire is divided into four branches. This feature, also a suggestion from the "Radio Record," has improved reception considerably.—A. P. Godber (Silverstream).

The "Six Sixty" Products

Reviewed by "Observer"

IN England the "660" products have a wide renown, but to the present they have not been introduced in New Zealand. In endeavouring to secure a New Zealand agency, the Australian agents, Segal and Co., Limited, have submitted to us for test and report samples of their valves and speakers.

Of the valves, three types were forwarded, HF 4075, P410, and SP 425. These are high frequency, power and super-power valves. They have been tested under working conditions, and compared with the generally accepted standards, and found in every case to equal them in performance.

HF 4075 is a high frequency or detector working at 4 volts, and drawing .075 of an ampere. It was found to compare favourably with valves customarily used. There was no tendency for microphonic reaction. As a single-stage amplifier to handle the output as such as a crystal set, it proved highly satisfactory. Normally the valve is of DC operation, but in one stage worked perfectly on AC.

P410 is a power valve of the 112A type. Four volts are required on the filament, 150 on the plate, and 1 ampere for the filament consumption. The valve will handle considerable output without distortion and impart a sweet tone without reducing volume.

S.P.425 is a power valve requiring 4 volts filament, 150 volts plate, and .25 amperes filament consumption. As a power valve for a 6-valve receiver operated in the Wellington district, it was found to handle perfectly the output from 2YA without any trace of distortion or suppression of either low or high frequency. There was not any suggestion of harshness, and it was found on more distant stations that volume was only imperceptibly reduced.

The "660" speaker is of the smaller cone type, standing about 12 inches high, and is artistically finished in dark brown. It was found to be capable of handling a medium output without distortion, and thus compares quite favourably with the generally accepted standard for small cone speakers.

To Overcome Dead Spots

THE endeavour to increase the field area of a powerful station by operating two synchronised transmitters on the same wave-length and programme, to cover the "dead spots" which attend reception in any modern city area, has led to the licensing of a supplemental three- to five-kilowatt transmitter for KYW, Chicago. This is owned by the Westinghouse Company, which has operated WBZ at Springfield, Mass., and WBZA at Boston for three years on this plan; and is evidently satisfied with the general results obtained. WGN has also been authorised to use a one-kilowatt transmitter to supplement its present 15-kw. station near Elgin, Ill., covering the Chicago territory.

News Items

JEWELLERS in America report a recent increase in trouble from magnetised watches. In many cases this can be traced to the strong magnetic field of an electro-dynamic speaker. This trouble may eventually require the use of a magnetic screen around the speaker. Of course a watch can readily be demagnetised by placing it inside a coil through which an alternating current is passing, but it is liable to be remagnetised when again exposed.

HERE are some English schoolboy "howlers": "Talligraphy is Morse but radio is listening-in to music and other sounds." "An accumulator is a heavy sheet of lead soaked in acid and they charge 1 and 6 to charge it." "A dry cell is in a flashlamp with two brass strips and several volts." "Telephony is two sorts, wireless and ordinary. Ordinary costs twopence but wireless many £s and then perhaps you hear nil." "Hertz invented sparks but Marconi went to New South Wales and flew a balloon, thus bridging the Atlantic with a faint S.O.S."

THE American Academy of Arts and Letters is to award a gold medal for good diction by a radio announcer. "This," says a writer in the London "Popular Wireless," "is, I presume, intended as an encouragement of 'talkies.' In this connection I

should like to draw to the notice of the Academy the claims of the Prince of Wales, who, by speaking to the microphone for a few minutes, succeeded in collaring £55,000 for the miners within a few hours. If it is true that 'money talks,' then our Prince has the diction which should please an American academy."

AN interesting power plant has recently been assembled in Australia, consisting of a four-cylinder Fordson tractor engine, direct coupled to a 250-volt 500 cycle alternator and a double current 240-volt D.C. 160-volt, 60-cycle generator, the whole being mounted on a heavy girder bedplate. Special features comprise the fitting of impulsator ignition and a governor, the first for easy starting and the last-mentioned for consistent speed under varying loads. A starting motor is fitted in order that the engine may be started at a distance by means of a switch from the operating table at the wireless station, another switch being provided to stop the engine when required. The object of the plant is to generate power for operating the wireless transmitters at coastal radio stations. Power units of this description have already been fitted at the coastal radio stations at Thursday Island, Brisbane, and Suva—at the last-mentioned station duplicate power equipment is installed. These power units are shortly to be installed at the coastal radio stations at Broome and at Darwin.

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