

Coil Data.

"D.G." (Wellington) has asked for the data to make a set of coils on a 3-inch former to cover wave-lengths from 15 to 600 metres.

A.: On page 122 of the 1928-29 edition of the "Radio Listeners' Guide" the data for coils ranging up to 110 metres was given. This was for use with a .0001 variable condenser. To cover the broadcast band a coil comprising about 60 turns space wound secondary with 30 turns primary and 25 tickler, all wound on a 3-inch former, are necessary. The tuning condenser in this case is .0005. The intermediate band, where there is, however, little in the way of broadcasting, could be covered by a coil intermediate in size between the largest of the short wave and the broadcast coils.

The Round-the-World Two.

THREE correspondents this week have written in concerning this receiver. Their queries and their remarks are interesting. "W.C.P." (Wellington) has had difficulty in that all he can get is a "congestion of unearthly rows." He is using 90 volts on the detector and 22½ volts on the amplifier. Here is the trouble, for the connections have been reversed. 22 volts should be applied to the anode of the detector valve and 90 volts to the amplifier. This should cure all his troubles. This correspondent asks: "Just where are the coils placed and where should the clips be placed for different results?"

A.: The coil on the left (the larger coil) is the tapped aerial. Experiment will show which coil to plug in for the different wave-lengths. The aerial is

variable by the clip so that the position giving the best results can be chosen. The small coil to the right is the reaction, and this should be the lowest value which will cause the circuit to oscillate. The amperite for use with 201A valves is No. 1A.

A **NOTHER** correspondent, "E.A.C." (Dunedin), has had very good results, but asks if he might add a screen grid amplifier in order to increase the range?

A.: Yes, it is quite possible and in a week or two "Pentode" will describe how this may be effected.

"R.W.P." (Taupiri), asks for a clear diagram of Round-the-World Two, and asks whether this set is suitable for the broadcast band.

A.: The diagram in the "Radio Record" is as clear as can be made without redrawing, which would involve considerable time. If the correspondent has a bad copy he could obtain another, as there are still a few of these in stock. As to whether the set is suitable for the broadcast band, see "Beginner Corner."

The Two R.F. Browning-Drake.

A **CONSTRUCTOR**, "B-Drake," who wishes to construct the Two R.F. B.D. described in the "Listeners' Guide," states that he finds the instructions for

making the coils insufficient, and asks the following questions:—

1.—When using condenser control reaction, is it necessary to use a centre tapped tickler?

A.: No. The diagram on page 119 of the Guide shows the theoretical diagram for condenser controlled reaction.

2.—Would a .00035 variable condenser do in place of the .00025 condenser used for reaction?—Yes.

3. How many turns are required for the primaries?

A.: These vary according to the valves to be used, for which see "Beginner Corner," "Matching Impedances," Volume 2, No. 42.

4. Should the primary be jumble wound?—Yes.

5. How many turns should be wound on the tickler?

A.: Just sufficient to make the set oscillate, usually about 25.

6. Is the tickler wound on the spool and pushed inside the secondary similar to the primary when using condenser control?

A.: It could be, but the best method is to continue the secondary winding for about 25 turns, taking a tap off at the end of the secondary proper and the other at the end of 25 turns. These are then connected as shown in the diagram previously referred to.

7. Where can I buy sheet aluminium?

It seems to be unobtainable in Dunedin. A.: Johns Limited, Auckland, carry very extensive stocks and cater for the distant constructor who cannot obtain his needs locally.

"Megohm" in a future issue will devote a fully illustrated article dealing extensively with the construction of all types of coils.

An Old-fashioned Cirenit.

"F. D." (Dunedin) forwards a circuit of a detector and two-stage tuner for consideration. He asks if it could be neutralised satisfactorily and whether it would be capable of receiving Auckland during the daytime. He adds: I must state in conclusion that I, being an old enthusiast of some six years, appreciate very much indeed the variety of the topics dwelt in your little magazine, but in particular the constructional articles gain my close attention and have proved very practical.

A.: The circuit is a good one, but it is rather old-fashioned, and would not be as efficient as say the Two R.F. Browning-Drake, or even the Two R.F. Neutrodyne.

"Pentode's" Trickle Charger.

"C.M." (Auckland) has built the trickle charger, which he states appears to act well, but the aluminium does not last, the acid eating it off just at the top of the liquid.

A.: Add a little oil, which will settle as a film on the surface of the electrolyte and prevent the chemical action causing the aluminium to disintegrate.

2. When the charger is on the aluminium shows white in the dark. Is that correct?

A.: Yes, it is due to phosphorescence resulting from the chemical action of the electrolyte and the aluminium.

3. How long should one solution of ammonium phosphate last?

A.: It depends very much upon how much the charger is used, and the particular conditions under which it works. From nine to twelve months may be considered as the average.

4. Could the battery eliminator described by "Megohm," March 23, 1928, be provided with an extra tapping to give an intermediate voltage?

A.: Yes, but see "Pentode's" article this week for all details.

5. What would be the best rectifying valve to use?

Questions and Answers

A.: Any three-electrode valve will be sufficient, say a 201A type in one of the cheaper makes.

An Unneutralised Set.

"W.H.W." (Central Otago) has constructed a 5-valve neutrodyne using commercial coils and good components. Signals are very weak from Wellington and hardly audible from other stations. When more power is switched on the only effect is to make the set oscillate violently.

A.: It would appear that the set is not neutralised. Methods of neutralisation have been described in the "Radio Listeners' Guide" and in previous issues of the "Radio Record," e.g., March 22, Vol. 2, 36. If then the set is unstable 100,000 wire wound resistance in series with each of the grid leads of the R.F. valves add greatly to the stabilisation.

A Shielded Receiver.

WISHING to construct the very latest 5-valve set, "C.D." (Avonside, asks if it would be preferable to build a one-stage R.F. Browning-Drake shielded with push-pull amplification. If the details in each article were followed, he asks, would the set be matched throughout?

A.: There is no necessity to shield a set comprising one triode as R.F. The question remains as to whether the 5-valve two R.F. Browning-Drake is preferable to the 1-valve R.F. with push-pull amplification. The correspondent indicates that what he desires most of all is tone, and this could be best accomplished by a good push-pull amplifier, whereas, the two stage R.F. B.D. would give the greatest amplification of weak signals.

A Question of Aerials.

THE fact that on a one-valve set he can log 2YA and 4YA with considerable volume and yet not receive 1YA and 3YA has puzzled "G.G." (Keri Keri).

A.: This can be explained only by situation, probably, of the aerial. Some districts will receive one station well and yet another cannot be logged, although the two are of equal strength and at equal distance from the receiver. Trees, hills, and geological structure quite frequently cause a trouble of this nature. It cannot be eliminated. Were it not that the correspondent can receive 2YB one would suspect that the tuning coil is too long.

2. The set whistles when tuning in. Is it causing local interference?

A.: Yes, but very little. However, care should be exercised.

3. A friend five miles distant has a two-valve set which will not receive at all. I brought it home and found that on my aerial and earth it went excellently. On returning it, I found it would not go on her aerial and earth system, which I inspected and found in perfect order. On trying it again I received very weak signals.

A.: We doubt the result of the test. Try again, for it would seem that somewhere there is a defect. The earth may not be making good contact. Try shifting it, and, as a last resource, change the direction of the aerial. Direction has

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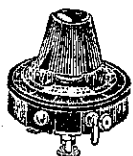
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