

by looking at the table in the back of the "Guide."

G.G.S. (Hawera): The "Guide" is not incorrect; you are confusing two different principles, that is all. It would be beyond the scope of "Q. and A." to explain the position more fully. However, in "Questions and Answers in Radio," you will find a good deal about that subject.

H.G. (Hamilton): I have an 8-valve super. het. commercial set, and the earth wire of this is connected to a galvanised pipe by a 15 feet wire. I understand that 9 feet should be the maximum. Is this correct?

A.: The rule is that the shorter the connection to earth the better the earth. However, with these modern sets a little difference such as you describe would make really very little difference in performance.

2. Could you recommend a publication for amateur purposes, dealing with radio set, with explanations from A to Z in understandable language?

A.: The first section of "Radio Questions and Answers" should be exactly

what you want. It describes the functions of every part of a radio set, without technical terms unless they are first fully explained.

IGNAZ (Te Kuiti): Since fitting a pick-up to my electric set I cannot get the stations I could before.

A.: We wish you had given us the circuit you use in connecting up the pick-up. for, although we told you how to do it, yet there are many ways in which it could have been done and we could have shown you perhaps another circuit to try. We wish that correspondents in referring to previous questions in the columns would either state the case fully or cut out the original query and pin it to the letter. It would save us a great amount of trouble.

2. Your idea for transposing the chassis, phonograph and speaker to a separate cabinet will be quite in order. It is advisable to leave the back of the cabinet open.

BLUEY (Napier): We do not know where you could obtain a diagram of the circuit. It is probably an ordinary

neutrodyne type of circuit with resistance-coupled amplification in the last three stages. If that is the case the first three valves are correct, the next quite wrong—it should be R.C.A. 221 or its equivalent; the next would be better, as the detector, and 221 could go in the socket which A615 previously occupied, and 171 is correct in the last stage. You can tell the detector by giving it a smart tap, in which case a fairly loud ring will come through the speaker. The other valves will ring, but not to the same extent.

2. The set has no earth terminal. "B—" goes to "A+." Where can I put the earth wire?

A.: To the "B—" "A+" connection.

WAVELENGTH (P.N.): I have constructed a one-valve set and cannot get it to oscillate, although I have tried taking off a few turns from the tickler.

A.: Instead of taking turns off you should put them on to get a set to oscillate. Reverse the connections to the tickler, that is, interchange the wires that go to the plate of the valve and the fixed plate of the condenser. Reduce the number of turns on the aerial coil to, say, 18, that is, if interfering with the tickler has no effect, and try a different grid-leak, say 3 or 4 megohms in value. Make quite certain that the grid return, that is, the wire that comes from the moving-plate of both condensers, connects with "A+."

PICK-UP (Gore): Your aerial and earth system is not satisfactory. It would be better to place a mast near the house and use an ordinary "T" aerial without the fancy business of running a loop from the distant end through the ground to the set.

VALE: While we cannot say definitely whether your set would give you loud-speaker strength on the New Zealand and Australian stations, yet we have every reason to believe that it would. We made one up, and were able to bring in those stations without any difficulty. As to whether or not it will be light upon batteries will depend entirely upon the type of valves you use. If you use the 221 type or the 230 type in all stages except the last, where you use a medium power valve (not a big one, which will use a lot of current), your batteries will last quite well. It is certainly a trouble-proof set. Furthermore, you can add a stage of s.g. to it and make it very much more powerful than it is at present. Details of this were published in the "Radio Record" a short time back.

McL. (Port Ahuriri): We can design a circuit to fit in with your components. If you could let us have the circuit of the adaptor so much the better. You would, of course, have to send the fee for a reply by post.

BALDY (Ohakune Junction): Is the electric Radiogram in the 1931 "Guide" as good as those published in the "Radio Record"?

A.: Yes, the Radiogram is an excellent set embodying many new features. It would be as well to use a 245 in the last stage if you can get the voltage to operate it satisfactorily.

NOVICE (Christchurch): When the 4½ volts "C" battery is connected the filaments of the valves light even although the filament switch is turned off.

A.: There is undoubtedly a wrong connection with your "C" battery. From what we can make out by comparing your sketch with the circuit, the connection between C—4½ and the by-pass condenser, which apparently is connected to the neutralising condenser, is quite wrong. The leads from the C—s should go direct to the F— terminals of each of the two transformers. They should not go to any other point in the set except in the case of the second transformer, across which is a condenser. One side of the condenser is connected with F— of the transformer. You appear, too, to be shorting out the first "C" battery. We would not advise you to use your set without the "C". If you cannot rectify the

trouble yourself, get someone who can. It should be done.

FREQUENCY COP (Auckland): You have not told us the size of the former. We do not happen to have specifications of all commercially-made apparatus at our finger-tips.

2. I have a pair of phones that are extremely sensitive when tested with the electricity of the body, but when they are connected to my four-valve set I can hardly get any volume through them.

A.: How do you test them with the electricity of your body?—The best method of testing a pair of phones for sensitivity is to take a small battery, say 1½ volts, and connect the terminals across this. If you get a loud healthy click the phones are quite all right. If the click is weak, then there is something wrong with them, as the valves you are using in your set are quite satisfactory.

R.F.C. (Huntly): How many turns must I wind on a short-wave r.f. choke on a glass former 11/16in. diameter?—About 150.

2. How many turns on the same former for an average broadcast receiver r.f. choke?—About 1500.

3. The gauge of your wire is 42 enamel.

ANXIOUS (Khandallah): 2YA spreads itself between 60 and 100 on the dial of my new super-heterodyne set. I have tried both "Knife-edge Rejecter" and "Dual Wavetrap" without success.

A.: In the first place we think there is something wrong with your set. A super-het. of the type you are using should not do this. 2YA should disappear cleanly. As a matter of fact we have tried many modern sets in your neighbourhood, and even when using a very large aerial we can eliminate 2YA in favour of 4YA. A wavetrap should effect an improvement, and we suggest your taking your wavetrap along to a Wellington dealer, say Fear and Co., and asking them to try them out. If they are satisfactory, have another try to adjust them. But your set should not need a wavetrap.

ECONOMIC THREE (Gisborne): Is there any way of rejuvenating a PM.14?—No.

DIAGNOSIS (Taihape): How long will my standard "B" batteries last with a four-valve set using 201A valves?

A.: If the set is operated three to four hours a day, your batteries will last approximately 6 months.

3. Concerning the three-coil tuner mentioned in the "R.R." Sept. 25, page 16, how is this drawn?

A.: The same as is shown in the lower right hand sketch in the diagram, only

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"Television," 1/7.

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