



Questions and Answers



SUBSCRIBER (Taupiri): There are no particular agents for the components about which you inquire, though no doubt if you sent to Johns, Ltd., Auckland, or Fear and Co., Wellington, they would be able to do something for you. In constructing circuits from overseas journals there is always a certain risk involved, unless specifications are complete, you should not attempt to make them up. Why not make the a.c. short-wave receiver described in the 1931 "Radio Guide"? It is almost the same as the one in the July "Radio News," and all specifications are given. Furthermore, this set has been built up and tested in New Zealand, and we know exactly what it will do.

2. When I put my finger on certain terminals a thud can be heard in the earphones. Is this OK?

A.: In all probability, yes. Of course, it all depends where you put your fingers—we would not try too many places.

J. L.B. (Auckland): What should be the size of the core and the number of primary and secondary turns for a transformer to supply 250 volts plus grid bias for two 245 valves in push-pull with a dynamic speaker having a field coil of 8000 ohms in place of one of the chokes?

A.: You will require a 100 watt transformer having a core 1 1/2 in. x 1 1/2 in. A primary of 1140 turns of 24 enam. wire. As there will be a drop of 480 volts through the choke you will need to construct a primary that delivers 800 volts. To do this you must wind 4500 turns on either side of the centre tap, using 32 gauge wire.

N. C. (Masterton): How can I work out kilocycles, etc.? For instance, a station is listed as 95 m., and my set is a five-valve battery one, with three dials. How could I tune in such a station?

A.: Unless you had special short-wave coils you could not. The ordinary set, of which yours is apparently one, will not tune in below 200 m., without being seriously modified. Your dials are probably

calibrated from 0 to 100, but they may be 0-180, as some are. Now the dial numbers 0-100, or even to 180, have nothing to do with kilocycles or wavelength in metres. They are merely convenient numbers that help you to locate a station. There are two methods of working out the whereabouts of a station when the wavelength or frequency is given. The more accurate is by calibration, but we do not have space to tell you how to do this in the "Radio Record." We shall tell you more about it in the "Radio Log." As a matter of fact, an article appeared in the "Radio Record" of June 5 explaining how calibration was done, but we shall go into the subject more fully in the next "Radio Log." The other plan is to listen-in and note down the settings of as many stations as you can. For instance, Auckland may come in on 40, Wellington on 65, 2FC on 70, 3AR on 82. Now you put those numbers down, and beside them write in their frequency. Now, you look up your chart and you see that 2BL's frequency is 855 kc. So you see that it is somewhere between 1YA and 2YA. As the number corresponds more nearly with that of 1YA you will presume that it is closer to that station and will look in that direction for it. Once having found it, you mark it down with the dial reading and wavelength or frequency, and so you go on and build up your list of stations until you can tell pretty accurately just where a station will be from its frequency. You could do the same by employing metres, that is, the wavelength, but nowadays, nearly all stations, except short-wave ones, are listed by frequency so you will find this probably the easier.

SHORT-WAVE (Wellington): Could you give me the details and diagrams for adding a power valve?

A.: All you do is to take out your last valve and put in a suitable one—say, B605 type, and then suitably bias it. The chances are that at the present time you are using 7 or 9 volts grid bias. Perhaps not that. If you use the B605, or its equivalent, the bias will have to be brought up to 12 or 15, depending upon the B voltage, and at the same time it would be as well to increase the B to something like 135. By so doing you would get far better results. This combination would give you reasonable quality from a dynamic cone or an inductor dynamic speaker.

2. When winding the moving coil I found it necessary to wind the wire in about three layers, using 36 s.w.g. enamelled wire. Is this correct?

A.: Yes, that will be quite satisfactory.

SPARKS (Tauherenikau): I constructed your "Night Hawk" receiver, but cannot get it to oscillate except when the grid terminal is touched.

A.: Your coil seems to be connected correctly, but you could try reversing the connections to the tickler coil, that is, reverse the wires going to "C" and to Fil. 2. If this does not act try a few more turns on the tickler coil.

2. I am using B406 as detector. Is this satisfactory?

A.: Decidedly not. B406 will not oscillate easily. It is a power valve. Use A409 or, better still, A415. Do this before interfering with the coil.

3. Can the "Ranger Two" be used for short-wave, and if so, will you be publishing details?

A.: Yes, the "Ranger Two" can be used for short-wave, and if you construct a set of coils such as used in the "Kes-

tel Three" and couple the aerial such as shown for the s.g. valve, you should get satisfactory results.

SUPER SET (Balclutha): Would you please give me particulars regarding the ground antenna used in America for eliminating static, etc.?

A.: Yes. A trench 100 feet long and about 6 in. or a foot deep is dug. In it run a hosepipe, an old one will do, with the holes plugged up with tape or some other insulating substance. Into this pipe push a wire, preferably enamelled 7/22, like what would be used for an ordinary aerial. Block up the distant end of the pipe and near the wall of your house leave one or two feet of hosepipe protruding. This will serve as a lead-in shield for your underground aerial. You will find the aerial will reduce not only static but also signal strength. However, the Americans seem to think a great deal of it.

G. G. (Gisborne): I have constructed a short-wave set with valve base coils described in the "Radio Guide," 1931. I cannot get the set out of oscillation.

A.: Take a turn or so off the ticklers of the various coils. The tickler coil is usually the cause of oscillation trouble although usually the reverse—the set cannot be made to oscillate. We note that you would appreciate a few articles about looking after your set, and we will keep this in mind, and from time to time supply articles that should meet your needs. If any reader has any suggestions about future articles to help those who are well away from service men, please let us know and we shall do what we can in the way of having them prepared.

A. D.R. (Kaiteri): I have made the "Rejector Two" crystal set, but unless I reduce the volume I cannot separate 2YA and 2ZW. I am using a .00035 condenser. Is this satisfactory?

A.: Yes, a .00035 condenser is satisfactory. We cannot explain why you cannot separate the two stations, and strangely enough we have found that some constructors have been unsuccessful, while others have been perfectly successful in separating the two stations. We can appreciate this difficulty, because we have found that in some places the "Rejector" will work satisfactorily, while in others it is unsatisfactory. Your best plan is to construct a wave-trap such as that described in the same issue of the "Radio Record," and use this in conjunction with the "Rejector." You will find then that you will be able to cut out 2YA without trouble.

H. F.M. (Wellington): I am desirous of building a three-valve all-wave electric radio set. Could you supply me with a diagram?

A.: We suggest your using the circuit of the "Advance" a.c. short-wave receiver described in the "Radio Guide," leaving off the two push-pull stages.

A. MATEUR (Waiorongomai): I am experiencing difficulty in getting my storage battery recharged. I have a shearing machine engine. Is there any arrangement I can fix on to it so that I can recharge my own battery?

A.: Yes; you could use a motor-car generator which you should be able to

pick up from a garage fairly cheaply. We should advise you to write to Messrs. Johns, Ltd., Auckland, as they will possibly be able to help you in this respect. It will take a fair amount of running to charge your battery fully. If you have a car or a lorry it would be possible to change your radio and car battery over when run down a little. You would find, we think, that using the car a great deal in daylight would keep the battery fully charged.

D.X2HB (Hastings): Could the leads to the individual earths of the Pierce earth system be connected to a copper plate which is attached direct to the earth terminal, and would aerial wire be suitable for the lead?

A.: Yes, you could follow all the wires to a copper distributing plate, and you could use aerial wire for the leads to the individual pipes. Your sketch appears to be quite in order.

RED BIRD (Wellington): I have an a.c. receiver which has been operating for 12 months. Are my valves losing their emission?

A.: We refer you to matter concerning valves and their emission which is published elsewhere. No doubt the valves are now well past their pristine glory, and you would probably notice an improvement were they renewed. However, try first renewing the 280 valve, as this supplies the direct current to all the valves and has a big effect upon the efficiency of the set.

2. What make of valves do you recommend?

A.: We regret we cannot recommend specific makes. Two or three makes of valves are recognised as being standard, and we should advise you to use one

CORRESPONDENTS must attach this coupon to all queries sent to the Technical Editor (Box 1032, Wellington). Limit three questions, unless letter is accompanied by 1/- fee.

Name of set

Number of valves

Name

Address

.....

.....

Nom de plume

To be kept in subsequent inquiries.

Date

Please Note:—

(1) Be specific and brief, tabulating, if possible.

(2) Write legibly, and on one side of the paper.

(3) We do not design circuits, but accept suggestions for feature articles.

Solving trouble, as different from advice, is difficult by correspondence and while letters are given every consideration, answers are not necessarily correct—they are only our opinion based on the matter supplied which may be quite inadequate. Intricate and involved specifications cannot be supplied without a specialist's fee.

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