



Questions and Answers



D. X. (Dunedin): Your condenser would be about a .0003 and you can get particulars of the coils you require in the "Radio Listeners' Guide."

2. What size coil would tune from 15 to 45 metres on valve base coils with the above condensers?

A.: As it stands it is unsuitable. Use a series condenser of .003 and follow the directions recently given in the "Radio Record."

3. Is the following a good valve combination: PM14, PM3, PM4DX, PM4?

A.: Try PM4DX and PM3 interchanged, as PM4DX is usually a good detector.

S. W. (Wadestown): The a.c. short-wave adapter from the "Guide" oscillates noisily and I have tried very many expedients.

A.: Change the 227 valve as detector and try the effect of a .00025 condenser in the aerial. Examine the reaction condenser for possible shorts. Your baseboard is quite O.K.

2. Is 160 volts too high?

A.: Yes, you will have to use a resistance to reduce the voltage to about 50.

3. A report says that an a.c. adapter is at the best of times only a 50-50 job. Is this so?

A.: Yes, short-wave adapters of this type are not as good as a d.c. adapter used as an a.c. set. You should, however, be able to get quite a number of stations on this adapter. Note: we do not undertake to reply to questions of this nature by post.

A. B. (Wellington): My condensers appear to be a little too big for short-wave. What capacity do you advise?

A.: .0001 or .00015.

2. When I turn the moving plates of the reaction condenser halfway in or right in the set howls.

A.: You will get much help if you read the inquiries from time to time on short-wave. Reduce the reaction, for it appears there are too many turns on the coil or the detector voltage is too high, hence the second oscillation.

S. O. (Whangarei): I built an a.c. amplifier, but it hums badly.

A.: It appears that your luminations of the power supply are not tight or there is insufficient insulation between the windings. Use a separate winding for the last stage. Use armour filament winding and earth the shielding. In the absence of the actual circuit it is difficult to see what else can be wrong. You should have used a coupon.

MECHANICIAN (Wellington): What number of turns and gauge of wire should be used on the detector coil to match the impedances of a 224 and a 227?

A.: The number of secondary turns can be obtained from the "Guide." Primary for the 227 should be made as is described for the Loftin-White and will require about the same number of turns as specified.

2. Does the choke coil in the enclosed circuit alter the impedance the valves are working into?

A.: You should have stated the inductance of the choke. There is probably very little alteration. In your circuit direct current would still flow to the windings of the speaker.

3. As valves are very rarely balanced, would 30 ohm potentiometers on either side of the choke coil be of any advantage?

A.: It is very rarely that any difference in the valves exists except in theory, unless the valve is actually at fault or defective.

Note.—You should have been able to obtain most of the particulars for which you ask from the book you have taken the description.

INQUIRER (Wellington): Which of the two-stage audio stage combinations, (a) or (b), gives the greatest amplification actual?

A.: (a) Impedance, 50,000 ohms; G.36 MA/V. 72 2 $\frac{1}{2}$ —1 audio transformer to match valve. (b) Valve 6000 ohms, G. 12 $\frac{1}{2}$ MA/V.2. The steeper the slope the better the valve, so the 2MA/V will be a better slope than the .72 MA/V, and therefore (b) is the better combination.

2. Is there any appreciable gain by using a screen grid detector?

A.: Yes, it allows a greater input to the audio amplifier.

A. H. F. (Wellington): I have built the silk diaphragm speaker, and the tone is tinny and the base harsh and weak. The speaker is built according to the specifications except that the diaphragm could not be pulled back as far as specified.

A.: If as you say everything is according to specification, and there is no tension on the reed (this, by the way, is important), we cannot help you. The speaker has been tried many times, and the laboratory model works excellently.

2. Would a 13in. cone give better tone?

A.: If you have had trouble with the silk diaphragm and cannot rectify, the 13in. cone would be your safest investment.

JUMBO (Otago Central): My set of tuning coils will not cover the whole range. Could you redesign them for me?

A.: All the specifications you require were given in the "Record" a little while back.

Note.—Correspondents would help us a great deal if they would only watch the columns before asking us to design coils. From time to time we give specifications which would suit dozens of subsequent inquiries. A little discrepancy in either the condenser, the size of the former, or the wire, would only alter the tuning bands a very little.

2. Are the connections for my output filter correct?

A.: The return from the speaker should go through the condenser to B+ instead of as you have shown it.

M. L. (Hastings): How does a tone control work?

A.: It is a combination of condensers and resistances.

2. One of my push-pull valves takes one amp. more current than the other. Can I use a resistance in the filament to rectify this?

A.: The difference is too little to have any serious effect. Your suggestion will be quite all right.

3. Would I get better low-tone response if I used shunt plate feed?

A.: Probably not, but your idea about connecting the primary and secondary should be quite O.K. You would have to experiment to see which ends give the best results.

AMATEUR (Dunedin): Can I add regeneration to my present factory-built set?

A.: Yes, but use a .00025 condenser instead of the proposed midget.

A.: Would a super heterodyne short-wave adapter be better than the screen grid set in the 1930 "Guide?"

A.: Theoretically speaking the super heterodyne should be much the better, but probably you would find the short-wave adapter easier.

3. What power valve do you advise in the last stage of the screen grid set?—112A type.

4. Do both condensers in this set have to be double spaced?

A.: It is preferable to have them both spaced.

5. What is the most efficient system of regeneration control for short-wave sets?

A.: Resistance, but there is a considerable amount of variation in the resis-

tances themselves, and one cannot always be sure of getting the best results.

6. Has the a.c. cone dynamic speaker been described yet?

A.: It is some time since "Pentode" has done any work for us, and so the speaker has been held over. We hope to describe it ourselves as soon as our scheme of constructional articles, now settled, has run out.

J. W. F. (Dunedin): Can you give me a circuit for a screen grid valve to be added to a five-valve B.D.?

A.: Use an ordinary transformer coupled circuit, using the aerial coil at present in use, and an interstage trans-

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