

QUESTIONS: ANSWERS

FRANK KEE

The Technical Editor will, through these columns, be pleased to help readers experiencing trouble with their sets. Queries are limited to three—for more than this a shilling fee is charged, and a similar fee is payable for queries answered by post. Supplying layouts, circuits and solutions of intricate theoretical problems is beyond the scope of this service.

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Address all queries, The Technical Editor, Box 1032, Wellington.

SAILOR (Ashhurst).—I am using an aerial 40 feet high and 60 feet in length. I get KFI faintly. Would it be better if I increased the length to 150 feet, and allowed 25 feet to pass over an iron roof?

A.: The higher and longer your aerial the better it is for DX. Passing it over a roof will cause certain losses by absorption, but we think even then the results will be better than with the more or less small aerial you now have.

2. I am using single flex for the lower 20 feet of the lead-in from the aerial. Is this satisfactory?—Yes.

W. I. (Wairoa).—I have a super heterodyne receiver, and wish to use a shortwave adapter. Which of those shown in the "Guide" would be most suitable?

A.: The a.c. super het. would be the best, but the coupling of this to a super heterodyne receiver is a rather ticklish problem. It is usually advisable to couple to the first of the intermediate stages rather than go straight into the aerial terminal. Our experience has been that home-constructed apparatus does not usually work at all well when used with modern commercial apparatus, and results are sometimes very disappointing. The adapter should cost about £10 or £11. We suggest you write Mack's Radio, Wellington. He is a specialist in short-wave, and will tell you all you want to know.

130A (Otago).—On moving the tuning dial, especially on stations above 1YA, loud bumps are heard in the receiver.

A.: It seems as though your condenser vanes are touching at intervals.

2. Can I add a tone control with little alteration to my set?

A.: Yes; quite easily. Determine the grid terminals of each of the two power valves, and slip a metal connection under each. Carry these out and take one to a 50,000 ohms resistance and the other to a .006 condenser. Connect the condenser and resistance together, and there you have your tone control. You must make quite certain that the leads do not touch the metal parts of the set.

3. Can multi-mu valves be used to replace present screen-grid ones?

A.: They could, but in order to get the fullest efficiency from the valves they should have their own circuit. However, the screen-grid valves are really quite efficient, and we think you would be disappointed if you used multi-mu valves in your circuit.

BROADCAST (Auckland).—I cannot turn up the volume control of my set, because of a crackling noise which is practically continuous.

A.: Take off your aerial and then try turning up the set. If the crackling noise comes in with almost equal intensity, then there is something wrong within the set, probably a defective resistance, and you should communicate with the agent who sold you the set. If, however, the crackling does not appear when the aerial is off, it is evident that it is due to outside interference over which you have no

control. The problem of outside interference is one that is to receive the attention of the new Radio Board.

PAT (Cambridge).—Could I charge my 100 volts "B" accumulator with a 4-volt 60-amp accumulator?

A.: No; you cannot charge one accumulator from another unless you want to inflict damage. You could charge it from a 4-volt charger by breaking up the 100 volts "B" accumulator into 4 volts sections.

EHMJ (Mangaweka): You do not connect the centre tap of the a.f. 8C transformer to a resistance to earth, but direct to earth. However, between the centre tap of the filament resistance and earth is a 1500 ohms resistance.

2. Is it possible to run 245's with an a.c. 2½-volt filament, the rest of the set being battery?—Yes.

3. What must be the value of the centre tapped resistance across the filament lead?

A.: Anything between 20 and 50 ohms.

4. Where do I connect "A—" and "B—"?

A.: To earth; that is, to a point common with the centre tap of a.f. 3C and the resistance from the centre tap of resistance "C."

C. M. (Lower Hutt): I have condensers with 11 plates each. Would those be suitable for the "Radiogram Five"? If so, what would be the coil specifications?

A.: They would be rather too small in the "Radiogram Five." However, if you want to try them wind the secondary coils with 30 gauge d.s.c. wire, using 90 to 100 turns. The primary should consist of from 40 to 50 turns of 34 gauge wire, while the reaction coil will be approximately 60 turns of the same gauge.

W. H. (Gisborne): I have built the "Night Hawk Two," using the "Kestrel" method of aerial coupling and grid return. Gradually insensitivity has set in, until now the coils are almost useless. I thought the batteries were at fault, so I took a couple from another set, but there was very little improvement in the short-waver. I changed the grid-leak, but no better.

A.: We think the trouble is with the batteries. What have you done about the "A" battery? Although it may be an accumulator and freshly charged, yet an internal short may be taking place and the voltage rapidly dropping. Test your batteries with the meter while they are actually connected with the set. You can probably borrow a meter from your local dealer to do the job. Have your valves tested. Take off the earth, and examine the earth connection and the earth to make quite certain that they are all right. Try a smaller condenser in series with the aerial.

2. Can the coils have any inherent defect?—No.

T. W. (Petone): My "Ranger Two" is insensitive. I am using the wrong value of coils and condensers, the latter

being .00035. Could you give me the number of turns for these coils?

A.: Using a coil designed for a .0005 with a .00035 condenser will not diminish the sensitivity of the receiver as a whole; rather it will throw the tuning range

slightly out of gear. For a .00035 you want about 10 turns more on the secondary than for a .0005. Insensitivity of your set will probably be due to a defective valve. Are the values of your condensers

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- Blue Prints—"Batteryless Neutrodyne," "Selective Crystal Set, Two Stages Audio," "6-Valve Neutrodyne, One Transformer and Two Resistance-coupled Audio Stages," "8-Valve Browning-Drake," "7-Valve Super Het," 1/6 each.
- "Scott's Radio Handbook," 6th edition, 1/8.
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- "Theory of Radio Communication," by Filgate, 12/-.
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OUR LOCAL AGENTS:

Auckland: F. R. Jeffreys, 466 Queen St.
 Palmerston North: Radio Supplies & Service Co. (E. E. Borham), 245 Main St.
 Penzance: Tomkinson & Gifford.
 Nelson: Keith Walker, Baird's Buildings.
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