

the dial the lower the volume control has to be turned.

A.: There appears to be trouble with regeneration. Was it like this always? If so, communicate with the agents who sold you the set, because undoubtedly there is something wrong with it. You say you contacted a serviceman who did nothing for you but charged you £4. We are very sorry to hear this, and wish we could do more for you, but when a serviceman is on the job and cannot help you, we cannot do a great deal by correspondence. Ask him to check up the by-pass condensers in the r.f. stages.

KESTREL III (Metucka): I have recently completed building the "Kestrel Three," but have had trouble with the tuning on some wavelengths. Could you give me full particulars for the coils?

A.: Particulars for the coils were published in a panel with the "Kestrel Three."

2. Will a 3-1 transformer do in place of a 3-2 or 4-1?—Yes.

3. Why are the switches used across the .0001 mfd. condensers?

A.: The switches across the .0001 condensers are used to cut them in and out of the circuit. When the condenser is in the circuit the effective tuning range of the condenser is limited; in other words, its tuning condenser capacity is reduced to about .0001, which is a suitable value for shortwave. When the condenser is cut out of the circuit the condenser is what it was originally intended to be—i.e., .00035, and is ready for broadcast work.

G.C. (Invercargill): Would a dual wavetrap be suitable for eliminating one of the local "B" stations, which blocks out 2NC, Newcastle?

A.: It would be quite satisfactory for absorbing two stations, but would be no better than an ordinary wavetrap for absorbing one. If you do not have success with one particular wavetrap, try the one that was described in the 1931 "Radio Guide," using two formodensers instead of the one formodensers and one fixed con-

denser. This wavetrap has been the most efficient of all we have described.

T.C. (Te Kuiti): I have an all-electric six-valve radio set with a table model speaker. Can I have it converted into a dynamic, as we find reception very poor during the day, although at night it is almost perfect, with plenty of volume?

A.: The speaker has practically no influence over the set performance as far as bringing in stations during the daytime is concerned. You could use a dynamic speaker, preferably one of the inductor dynamics, but it would not improve the strength of your set one iota. It would merely better the tone.

ECONOMIC THREE (Gisborne): Can two .00025 variable condensers be used for the "Kestrel Three"? If so, what would be the numbers of turns on the r.f. and detector coils?

A.: .00025 variable condensers are quite suitable for the "Kestrel Three." You need not alter the number of turns on the detector coils, but you would have to increase the number of turns on the broadcast coils to sec 100 (30 dsc), tickler 40, primary 35, the wire for the two latter coils being 34-35 dsc.

2. Will you supply a few details of the r.f. choke used in the "Record" model of the "Kestrel Three"?

A.: The choke used in that set was an ordinary commercial one.

C.W.S. (Nelson): Would the circuit I enclose be quite suitable for short-wave?

A.: The circuit is quite an orthodox one, and should be quite satisfactory for short-wave work. However, if you want a really satisfactory short-wave set, try the advance a.c. short-wave receiver described in the "Radio Guide." It will give good results. However, the a.c. version of the "Kestrel Three," which you have shown, will be quite satisfactory. Your resistances appear to be quite correct.

2. What is the filament current and amplification factor of C324?

A.: The valve is exactly the same as RCA-224, full particulars of which have been published in the "Radio Guide."

D.R. (P.N.): In my commercially-made receiver, which is about two years old, I am using 223 valves in all stages except the detector and last stage. Can they be improved upon?

A.: No. In an all-electric set you do not have the latitude you have in an ordinary battery set. We should advise you to use the same type of valves throughout, and select a well-known make.

S625 (Invercargill): I intend building the "Radiogram Five" battery model, described in the 1931 "Guide," but before doing so I would like to know the following:—

1. Is S625 suitable for the r.f. stages?

—Yes.

2. Should it be shielded in the same manner as an ordinary upright valve?

A.: No, it must be mounted horizontally with a vertical shield.

3. I have an r.f. choke, the only particulars of which I have is the inductance. This is about 1.5 millihenries. Is this suitable for the choke in the plate circuit of the detector?

A.: Yes, the inductance is rather low, but still it should be fairly satisfactory.

A.I.J. (Ongarue): I have built a "B" battery from torch cells, but have not had complete success, as I cannot get any voltage.

A.: A special type of cell must be used in this battery if complete success is to be had. These are those with a proper covering to the central element. Some have a linen covering, or a linen pack, which holds the manganese dioxide and the central rod. You must use this type (found in most torch cells and in a certain super "B" battery). All the paste must be scraped clear and then these packs placed in sal ammoniac. Use a saturated solution; that is, a solution of sal ammoniac and water that will hold no more sal ammoniac. Place your zincs in this and then connect together the zinc and carbon rods of adjacent cells. The little cap on the carbon rods will provide an excellent means for connecting up the individual cells.

L.H.B. (Kariol): I have an all-wave commercial receiver. On the short-wave lengths I can pick up 2ME, 3ME, and several New Zealand amateurs fairly well, and of distant stations I have had WXSAL, Moscow, London, and two or three unidentified foreign stations, but all very weak and distorted. Should I get more than this? If not, short waves, as a source of entertainment, are rather a failure.

A.: You should be able to hear London in the early morning and Moscow, as well as the American stations, clearly and well. The American stations should, under fairly good conditions, come in at such strength as to provide real entertainment value. If you are not getting this we should suggest that you get in touch with the agent who sold you the set, as it is possible that there is some little fault with it, or that you may not be manipulating it to the best advantage.

2. On the broadcast wavelengths I get the main New Zealand and Australian stations moderately well, although without very much volume on the distant and small stations. I can get KFI very faintly, but no other American or Japanese station. Is there any way of increasing the volume of the distant stations?

A.: We are inclined to think that your condensers are not balanced up correctly, as you do not appear to be getting the results you should. We have tried this set out and have found that it is equal in all respects to the average commercial a.c. receiver, and being such it should give you perfect satisfaction. Just look over your aerial and earth installations and make quite certain that they are good.

3. The valves are SG442, two A415, and two B405. Are these the best for the set?—Certainly.

4. Occasionally the music fades right out, and on tuning the reaction knob over I find the set will not oscillate. A sharp rap on the front panel brings it in immediately at full strength.

A.: This points out clearly that there is something wrong with your set. It is impossible to say what it is from the particulars given. It may be a defective resistance, a bad connection in the set, or a condenser. We do not know and cannot tell without looking at the set itself.

5. The B batteries are of the largest size, and last six or seven months. Do you recommend wet B batteries? How long do these last after each charge?

A.: We would recommend wet B batteries if you had adequate means to charge them, but if you have to send them some distance to be recharged, then we would certainly recommend you to keep to the dry cells which you are now using. You appear to be getting average life from them. The wet B batteries last about two years, and usually require charging every three weeks to a month.

6. Do you recommend "magneto B" supply instead of the B batteries? A battery can be readily charged here by a small water wheel and a six-volt dynamo.

A.: Providing your magneto supply was sufficiently smooth, it would be quite satisfactory, but we are afraid that you would get hum.

"GRID" (Whangarei): I wish to build the "Radiogram Five," and for the current supply I propose to use the B accumulator and the A and B accumulator charger, both of which are described in the 1930 "Guide." If I built the B accumulator, as described, would it supply sufficient current and would the charger be capable of recharging it?

A.: The capacity of the battery will be about 4 mamp hours, so that the charges described in the "Radio Guide" will be quite satisfactory.

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"Perpetual Trouble Shooter's Manual," 1931, by Rider, 24/6. No service man should miss this.

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"Modern Sets, 1931" (2-3-4-Valve Battery and A.C. Sets, L-W Amplifier and special S-W. Set, 1/8 (N.Z. conditions). 1001 Radio Questions and Answers, 1930, "Radio News," 2/9. D.C. to A.C., etc.

"Break-In" (N.Z.), 4d.
"Cameron's Sound Motion Pictures Encyclopedia," 18/6.

"Wireless: The Magic Carpet," 5/- (Technical Editor "Radio Record" says no set owner should be without it.)

"All About the All-Electric," 1/8.

"How to Electrify Your Radio Set" (U.S.A.), 1/9.

"Principles of Radio," by Henney, 22/6.

"Practical Radio Repairing Hints," by Rider, 13/- (Don't miss it.)

"101 Hook-ups" ("Radio News" Staff), 2/6.

"Broadcast Reception" (Theory and Practical), by Pritchard, 11/8.

"Radio Amateur Handbook" (Handy's) 8th edition, 5/3.

"Radio Amateur Call Book" (June, 1931), 5/3.

"A.R.R.L. Log of Amateur Stations," 2/-.

"Radio Log" (N.Z. Sept.), 7d. per copy.

"Theory of Radio Communication," by Filgate, 12/-.

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