QUESTIONS AND ANSWERS

L.W. (Wanganui): I wish to make the "Trans-Tasman Three." Could you give me the details necessary to make my own coils?

A.: The following details would be suitable for coils wound on 1¼in formers: Aerial primary 20 turns, secondary 110 turns (primary wound 1-Sin. below bottom of secondary). Detector coil, primary 60 turns, secondary 110 turns, reaction 35 turns. The primary winding should be put on over the bottom of the secondary, the two windings separated by a layer of Empire cloth or insulation tape. The reaction winding should be spaced about ¼in. below the secondary. Use 30 or 32 d.s.c. wire for all windings.

"MIDGET ONE" (Waikanae): I would like to build the "Midget One," but want to use two .0003 mfd. condensers I have on hand, and also 5-pin plug-in coils. Could you give me the broadcast band and 25 to 31-metre coil details?

A.: Broadcast coil, aerial primary 25 turns, secondary 115 turns, reaction 35 turns. The primary should be wound either above the top end of the secondary or over the bottom end. In the latter case, the two windings should be separated by a layer of Empire cloth or insulation tape. The reaction winding of 35 turns should be put on about ¼in below the secondary. Unless you have a good vernier dial you will find tuning on the short waves very tricky, owing to the comparatively large capacity of the tuning condenser you are using. However, the following coil should give you the coverage you want—aerial primary 3 turns, secondary 4 turns, reaction 3 turns. Put the aerial primary on above the secondary, and the reaction winding below, with a distance of about 1-Sin. to ¼in. separating the windings. Use 32 d.s.c. for the broadcast coil, and any wire heavier than 26 gauge for the short-wave windings.

2. Would I need a shielding can?

A.: No, this will not be necessary.

S.W.E. (Christchurch): I have built a "Comet Superhet Five," but cannot get rid of a bad hum. 3YL comes in on three places on the dial. Would a different I.F. help at all?

A.: There is something radically wrong somewhere, as the hum level should be negligible. Also, you should not get repeat points. 175 k.c. I.F.'s are quite satisfactory, and we do not advise you to change them. It appears as though for a start the set is not correctly aligned, and your best scheme would be to either call in a serviceman or take the set along to a dealer to have this done with an oscillator. Have you tried shorting the grids of the successive stages to earth to see when the hum disappears? In this way you will be able to localise the trouble.

P.R.S. (Auckland): In the article describing the "Air King de Luxe Eight" it is stated that practically 110 m.a. flow through the 1000 ohm field plus the 25 ohm resistor, thus making 1025 ohms. This gives approximately 108 volts bias on the 45's. Is this not too high?

A.: It would be, except for the small voltage drop in the 10,000 ohm decoupling resistor. This is due to the slight current drain taken by the 8 mfd. by-pass electrolytic. In this class of condenser, a leakage current up to 2 mils. is permissible. Your best scheme is to measure the bias actually developed, and if it is too high, increase the decoupling resistor to, say, 50,000 ohms. If the bias is still too high, connect a 100,000 ohm resistor from the negative side of this resistor to earth, thus giving a voltage divider effect. By using different values of resistors any desired bias can be obtained.

"ENQUIRER" (Methven): It would scarcely be practicable to alter your set to give complete all-wave coverage. Your best scheme would be to build one of the short-wave converters described in the May "Radio Times."

J.S. (Thames): The trouble in your receiver most probably lies in the power-pack or the audio transformer. The smoothing choke is most likely the offender, but also you should check over the electrolytics and the by-pass condenser from one side of the mains primary to earth. Another possibility is that the primary winding of the audio transformer is defective. Try momentarily shorting the plate of the driver and that of each 45 to earth. If the trouble lies in either the transformer or the smoothing choke the heavy current will probably open up the break completely.

F.H.S. (Bay of Plenty): You should use the valve types already in your set for replacements. You could not use the Philips Octode because your set has not been designed for it. This valve is a mixer-oscillator, combining the duties of first detector and oscillator in one valve. In your set separate valves are used.

"236A" (Auckland): I have had no previous experience in set building. Could I build an 8-valve superhet, from a kit-set?

A.: If you have a fair technical knowledge you might be able to, but we certainly do not advise you to try. Your best idea is to make a start on a much simpler set which uses parts you could incorporate later in a larger receiver. Of the two sets you name, we would prefer the "Air King" for DX purposes; either of them, however, compares very favourably with commercial models.

L.S.D. (Auckland): Try connecting a 20,000 ohm resistor between the B+ side of the oscillator reaction winding and B+ max. Evidently the AK1 in your converter is oscillating too strongly.

2. I have a "Tiny Tim" but cannot get it to oscillate on the short-wave bands. How can I remedy this?

A.: If it oscillates all right on broadcast, then the strongest possibility is that you are using too large an aerial, and the excessive damping is preventing oscillation. Try connecting a semi-variable midget of .00005 or .0001 mfd. in series with the aerial lead, and adjusting it for best results. Alternatively, attach a 6in. or 8in. length of flex to the aerial terminal and then twist the lead-in around this. You can vary the coupling by twisting or untwisting the flex.

J.L.N. (——): The 227 in your set is evidently the detector. The valve types you are at present using in your set would be best for replacements.

J.M. (Wanganui): The capacity of each section of the condenser gang you have on hand is either .00035 or .000385 mfd., most likely the latter. You have not given the size of the plates.

A.J.S. (Petone): We have a seven-valve superhet and are troubled very much by fading on the Australian stations. The set has been completely overhauled because of the above reasons, but is none the better.

A.: If you experience this trouble only on the Australian stations, then it is very unlikely that the trouble lies in your set at all, but is, due to natural fading. If the trouble lies with the set, however, it could be due to one of dozens of causes. Your best plan would be to return the receiver to the agents for another overhaul.

2. The tone control is out of order, but the serviceman says that this does not

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Information Coupon

(To be used with all requests for information.)

Name of set .....
Model .....
Name .....
Address .....
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Nom de plume .....
To be kept in subsequent inquiries.

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.
(4) Limit three questions unless 1/- is enclosed.
(5) Postal queries limit 3 questions. Enclose stamped and addressed envelope and 1/- fee.