

I fit a line filter or special type of aerial which would minimise this noise?

A.: The conditions you outline are roughly duplicated by those described in a special article on reducing interference published in the November, 1934, "Radio Times." Whether you would be able to erect a flat top for a special noise-reducing aerial high enough above the noise level to improve reception we cannot say, but if you can, then the installation of a special aerial would be well worth trying. Incidentally, the intermittent noise you can hear at night is evidently from the lift motor.

L. K. (Wellington): While listening-in to American short-wave stations, I have often heard the announcers ask for reports on the transmissions. How does one prepare these reports, and can they also be sent to broadcast stations?

A.: Yes, they can be sent to all stations, and they are generally acknowledged by a verification of reception. Collection of these verifications from stations all over the world forms the very interesting hobby to which the 1500 members of the

N.Z. DX Club devote most of their spare time. Full particulars of this club, by the way, can be obtained from the secretary, Box 1680, Wellington. Regarding the reports, there is a special form prepared for the use of club members which simplifies this task considerably. All that is necessary is to fill in the number of blanks according to the instructions, and then the report is complete.

"GRID" (Riverton): I have a "B" eliminator which, when it is switched on, gives a reading of 10 volts, rapidly falling away to no reading at all. What is wrong?

A.: The most likely cause is a worn out rectifier, though a shorted bleeder resistor or smoothing condenser could also cause the trouble.

"THE KOON" (Gisborne): I have built the "Air Ace Short-waver" without the 2A5 and am using it with 'phones. The volume obtainable is quite good but I think I should get better because I have to keep the reaction potentiometer on full to obtain the volume. What alterations do you suggest to allow more flexibility with this control?

A.: Carefully slide the reaction winding a little closer to the grid winding. If the improvement this effects is not sufficient, then replace the .0001 mfd. by-pass condenser from the plate of the 57 to earth with a .0002 mfd.

2.: I propose adding another 56 and a 59 (leaving the 2A5 out) so that the run of the valves would be 58, 57, 56, 56, 59. What values resistors and condensers should I use to couple the second 56 to the first?

A.: Plate resistor 50,000 ohms, coupling condenser, .01 mfd. and grid resistor .1 meg. Slight variations to the values given will not affect results. Couple the second 56 to the 59 with the same value resistors and condenser as specified for coupling the 56 to the 2A5 in the original model.

3.: Do you think this arrangement would give more volume?

A.: It will give a little more volume than the original arrangement, but probably scarcely sufficient to justify the expense of adding an extra valve in the way you have outlined.

Our correspondent adds: Congratulations for designing such a hum-free set as the "Air Ace." I have used only two 8 mfd. electrolytics in the power supply, but there is absolutely no trace of hum.

"TENDERFOOT" (Whakatane): I have just completed the "Silvotone A.C. Seven" described in the October "Radio Times." Volume was very poor at first and I found that by earthing the cathode of the 56 direct instead of through the 50,000 resistor, volume became very satisfactory. I have compromised on this by replacing the 50,000 ohm resistor with one of 2900 ohms and I have by-passed it with a 25 mfd. condenser.

A.: With your present connection, only one of the output valves is working. By making the alterations you have outlined, the 2A5 which has its grid coupled to the cathode of the 56 driver is not receiving any signal. The circuit used in the audio side of the "Silvotone A.C. Seven" is identical with that developed for one of the most popular kit sets in Australasia today. In rare instances, trouble such as you have outlined has been encountered, and in all cases it has been overcome by providing normal bias for the 56, which is done in the following way: Leave the 2900 ohm resistor and the 25 mfd. by-pass condenser in parallel with it connected to the 56 cathode, but unsolder the other ends of these components from earth and take them instead to one side of the 50,000 ohm resistor you took out of the circuit. The other side of this resistor is earthed. Now disconnect the .5 megohm grid leak of the 56 from earth and connect it to the junction of the 50,000 ohm resistor and the pair of components mentioned earlier. From this junction, also, the grid of one of the 2A5's is fed through a .1 mfd. coupling condenser.

2.: I have a 55 on hand which I would like to add to this set to obtain delayed A.V.C. Could I use this valve for A.V.C. only or would it improve the set to use one of the diode plates as second detector and one for delayed A.V.C.?

A.: You could do either, but if you followed the latter course you would not be able to obtain reaction, and whether you desired this feature or not, we cannot tell. If you wish to use the 55 for separate automatic volume control, then the series of articles on "Modern Automatic Volume Controls" now running in the "Radio Times" would be of great assistance to you.

3.: In the 1934 "Radio Guide," a description is given of an electron-coupled oscillator. In the diagram the leads from the r.f. B. to "B+" is intersected by a cross. What does this indicate and are any of the valves used in my set suitable for this oscillator?

A.: The cross can be disregarded. The 57 could be used in this circuit, with the suppressor grid tied to cathode.

R. G. (Millerton): I have a battery set which uses a 221 valve. Is there a more modern type of replacement I could use?

A.: Yes, you could use a 32, though as the 221 has a 3-volt filament, you will need to include a resistor in the filament circuit of the 32 to drop the voltage to 2. As the 221 takes .06 amp. filament current, a 15 ohm resistor would be required. You could use one-half of a 30 ohm centre-tapped resistor.

"PENTODE" (Otorohanga): Could electron-coupled reaction be used in battery sets?

A.: Yes, the "Elco Three," a 3-valve battery shortwaver described in the June, 1934, "Radio Times," illustrates a suitable method. However, there is now available a type 15 screen-grid indirectly heated cathode type of battery valve which enables electron-coupled reaction circuits as used with a.c. models to be employed for battery sets without modification. A four-valve battery short-waver using this new type valve will be described in the 1935 "Radio Constructor's Guide," to be published in about a week's time.

2.: I built the "Quality Five" as a four-valver with a pentode and its performance is little short of marvellous, considering its limitations. However, I was troubled with bad r.f. instability and all

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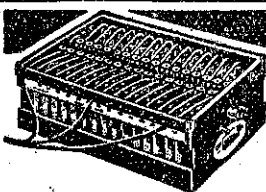
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