

that when it is raining, the leakage is momentarily earthed. As the set goes into oscillation the noise is considerably increased, and more so as the high frequencies are approached, hence the roar. Disconnect the aerial if the noise ceases, connect the aerial up again, and tune the set to its loudest roar. Then switch on every electric switch in the house except that of the set. If there is a defective switch the roar will cease when the switch is cut off. If you locate the defective switch an electrician will fix it up for you.

2. Will a set using two 112A's satisfactorily work a dynamic speaker?

A.: No, you will need at least 171's.

LIGHT (Christchurch): Yes, your connections are quite in order. The resistance R3 would be 5000 ohms if you connected it from the point you have shown. You could use 3000 if it were taken from the centre point of a power valve filament.

LAMBDA (Wellington): What is the correct bias resistance for two 171A's in push-pull with 180 volts on the plate?—2000 ohms.

2. The residual hum in the push-pull stage is quite audible in the loudspeaker. Can you suggest a remedy?

A.: Only the use of a potentiometer across the a.c. filament supply and adjusted for minimum hum.

3. What value of resistance for volume control should be used in the push-pull stage?

A.: A volume control should be connected as is shown in the recent descriptions of the Loftin-White. Value should be about 200,000 ohms.

4. Would you comment on my diagram for screen grid detection on shortwave.

A.: Connect the screen to 90 volts and by-pass it with a quarter of a megohm to earth, but we do not advise the use of such a circuit. It would be advisable to spend money and time on 245's in the audio stages instead of screen grid detection.

5. Do you think a vertical aerial such as in the enclosed sketch would be any value for shortwave?

A.: For experimental shortwave transmission it would be interesting but very little can better a 70 to 100ft. straight aerial, except two such aerials in opposite directions.

6. What do you think of my rectifying system?

A.: We do not like the aluminium and lead rectifiers, and the Government dislike them to the extent that they prohibit their use.

A.S.H. (Auckland): Do you know who happens to be the agent for Mohawk sets?

A.: We regret we do not. If any reader happens to know we shall forward the address on to you.

"OVERTONE" (South Island): Is the audio amplifier of my set inferior to the Loftin White and could it be incorporated in the set?

A.: A little, yes, but unless you have a very true ear for music, particularly in the upper registers, you will not appreciate the difference. It could not practically be incorporated in your set. It is superior on the reproduction of records provided a good pickup and good speaker is used.

2. What is meant by the super exact balancing of all parts giving true clear tone?

A.: It means that the impedances are carefully matched and this is done in every good set.

3. Is it an illusion that tone sounds better to me through my receiver than on any others?

A.: While we would not go so far as to say that the tone of your set is any better than that of any other good model receiver, we would add that it is a long way in advance of many.

4. The L.W. I understand amplifies up to 10,000 cycles in a straight line. I was told that this was of no use, since the New Zealand stations do not broadcast above 6000.

A.: Quite so, hence the practical limitations of the L.W. If frequencies above 6000 are put out blasting takes place.

5. Would the L.W. give more music per note on records or broadcast reception?

A.: If you are looking for the over-tone and want real brilliant upper reproduction then the L.W. is the amplifier you are looking for. Record reproduction is really splendid. True, it is a tone to which one must be educated before it can be properly enjoyed.

E.W.D. (Invercargill): I constructed a kit set, but I cannot make the r.f. stages oscillate. I wound 70 turns of d.s.c. wire on a 2in. former.

A.: It is as well for your neighbours that you cannot make your r.f. stages oscillate. The detector is the oscillating valve and the r.f. must be perfectly stable before good reception is possible. You do not state the gauge of wire used in winding your coil so we cannot tell you if you have enough turns or not; 70 is the correct number for 26 d.s.c. wire. Try increasing the detector voltage.

2. How can I stop the speaker from rattling?

A.: By slackening the diaphragm, but in doing this you will make it more or less insensitive. Speakers of this nature will not handle a great deal of volume without distorting.

3. I have left out the by-pass condensers because I am running on batteries.

A.: They would be better in because they tend to stabilise the set.

"SHORT" (Temuka): When tuning short-wave coils the set reacts at a certain point, depending on the frequency, and then goes out of oscillation.

A.: Oscillating on short-wave takes place in a manner something like this; but examine your reaction condenser and see that it is quite in order and try a new grid-leak. If necessary, a grid condenser.

"CROMDALF" (Otago): I have plenty of room for a multi-aerial system. What do you advise?

A.: Try two Beverage aerials, one running north-west to Australian stations and the other north-east to the American. Such an aerial was fully described in the "Radio Record" a little while back. Arrange a switching device so that you can have either one at will. If you want to use the ordinary type aerials, run them in the same directions and for local reception one in line with either 3 or 1XA, whichever comes in the best, and about 20 feet from the ground.

J.E.B. (New Brighton): Does my receiver contain two r.f., one detector and three audio?

A.: As far as we know, yes.

2. What valve do you recommend for each stage?

A.: For all but the last stage, UX 201A's or 221's and a power valve of the 171A type in the last socket.

B.S.D. (Wanganui): Only one filament of the resistance lamp in the A and B charger in the 1930 "Guide" glows.

A.: You appear to have it connected up incorrectly. The 16 volts should each go to the extremes of the resistance such as you have shown diagrammatically in sketch B. From what you say it appears that the terminals on your valve have been wrongly marked. Use the valve in the position it appears to go best. A cross over like this, although unusual, is not impossible.

D.M.M. (Dunedin): Would less than 6ft. between a double aerial be satisfactory?

A.: It is unlikely that less than 6ft. would be any improvement over the single wire aerial.

2. What is the cause of motor-beating and bubbling in trying for distant stations?

A.: It is probably due to the detector valve or the grid-leak. Try another.

3. Is a pentode valve suitable in my set?

A.: Rather than a pentode we would advise one of the new type of high gain power valves, such as B406, which, by the way, is a four-volt valve.

"PICK-UP" (Auckland): When I turn the volume control of Loftin-White full on the set whistles.

A.: You do not state at what volume, relatively speaking, the set overloads. We presume you have tried reversing the connections and using a different pick-up. Furthermore, another screen-grid valve may help. Are you using the resistances described in the most recent description of the L.W.?

2. When I attempt to work the amplifier after a crystal set the output howls badly.

A.: For local station use the amplifier should be preceded by a tuned coil such as shown in the recent series.

"PEANUT" (Christchurch): Where can I obtain a circuit and specifications for an a.c. short-wave adapter to use with a screen-grid detector on my set?

A.: A super-het. would probably be quite in order, though if you used R, the W. Two plugged into a gramophone jack you would be much more certain of results. A suitable circuit for the gramophone jack will be described in the 1931 "Guide."

"WAIKATO" (Taupiri): I have made certain alterations in the H.R. a.c. set described in the 1930 "Guide." I want to use this for short-wave a.c.

A.: We think a much better plan would be to wait until the 1931 "Guide" and make the special a.c. set that will be described therein.

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BROWNING DRAKE SPECIALISTS	F. J. W. Fear & Co.
	63 Willis Street, Wellington.
BURGESS RADIO BATTERIES,	All Radio Dealers.
KING RADIO RECEIVERS	F. J. W. Fear & Co.,
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SUPER WASP KITS, GILFILLAN, KELLOGG and AT-	138-140 Queen St., Auckland.
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