

A.: Either by constructing a graph, which is a more or less cumbersome business, or by approximation. By the latter method the settings of several stations are noted, and if a new and unknown station is logged the wavelength can be worked out from the station's setting in comparison with nearby stations. Thus, if you tune in a station half-way between 2BL on 350 metres, and 4QG in 395 metres, you can be certain that wavelength is about 372 metres.

6. What can I do to improve the distance-getting ability of my set, which is not as good as it should be?

A.: Rectify the fault referred to in question 1.

7. Can I do anything to reduce the static noise?

A.: Ordinary static you can do nothing to reduce, but we suspect in your case noise is arising because of the trouble previously referred to.

BEGINNER (Port Chalmers).—I am using a three-valve battery set 13 miles from Dunedin. My aerial is 20ft. high, and total length of 100ft. Would a higher aerial improve distant reception?

A.: Yes, increase the height to 40ft. if possible.

2. Would a shorter aerial sharpen the tuning of 2YA and yet not affect distant reception?

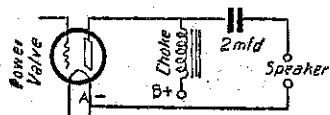
A.: No. Distant reception would be weakened. Why not incorporate a wavetrap?

G. L. (Auckland).—What is a good output filter circuit incorporating a transformer if necessary?

A.: A low-frequency; choke the speaker terminal with a 2-mfd. in one of the speaker leads. Otherwise use a special output transformer.

2. Could the B.D. Four be made more efficient?

A.: Yes, the "Outspan Five," using two stages of s.g., is much more sensitive.



Output Filter Connections

3. Can the coil of the wavetrap described by "A.A.H." be wound on a low-loss former?—Yes.

4. Could you tell me of a good grid bias voltage control for my set, and how is it connected?

A.: The taps on an ordinary grid bias battery give fine enough adjustment. C+ is connected to A—, and C— to GB on the transformer.

5. Is it an improvement to use a condenser in series with the earth?—No.

6. What ratio transformer should I use?—A.: 3½-1.

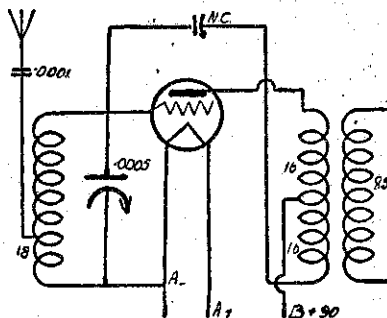
7. I have been advised to use a variable condenser in the aerial. What capacity should this be, and can a wavetrap be used with it as well?

A.: About .0003mfd. A form condenser is much cheaper, and answers the purpose quite well. It can be used in a wavetrap such as that to be described in the 1931 "Radio Guide," which will be published on March 25.

8. Should I use bright or dull emitter valves? Of what type should they be?

A.: Bright emitters have gone out some years ago. Use an r.f. det. i.f. and power, type valve.

9. Are soldered joints more efficient if bound with insulation tape?



Split primary neutralization.

A.: No, not at all, but if exposed to the atmosphere corrosion is prevented.

10. Should I use single strand or flex Glazette for wiring?—Single.

11. How is the primary and secondary wound on a spider-web former?

A.: By winding primary and secondary continuous and then cutting the wire to separate them.

12. What type of neutraliser is best used in a B.D. circuit?

A.: Split primary, but then it is not the B.D.

13. What resistance should the rheostats for the B.D. Four have?

A.: It depends, of course, on the voltage and amperage of your filament supply, and on the voltage and the drain of the valves used. 30 ohms. is quite a usual value.

J. H. (Wellington).—Has an a.c. 10-valve set, and cannot bring in America.

A.: This is probably due to your locality.

2. Do you recommend any other valves for this set?

A.: A set of R.C.A. valves should give you better results.

J. M. H. (Dunedin).—I have a 2-valve B.D. and a gramophone amplifier.

Can I put the output from the set through the latter?

A.: If your two-valver is an r.f. det.—yes. If not, you are liable to get motor-boating.

2. Should the two be connected, as shown in the accompanying diagram?—Yes.

3. At present I am not using the r.f.c. Will this be necessary when using the amplifier?—Yes.

4. Can I incorporate differential reaction in this circuit? If so, is the diagram correct?—Yes.

5. I'm not sure whether the lay-out of my set is correct or not. Where can I secure an efficient lay-out?

A.: See the lay-out for the diff. 3, but omit the a.f. stage.

W. A. P. (Halcombe).—Has a 7-valve a.c. commercial set using an aerial 76ft. long and 35ft. high, with a galvanised iron pipe driven 5ft. in the ground for an earth. He receives several American very faintly, and desires to know how he can improve volume.

A.: Is your earth lead short, and the ground surrounding the pipe damp? Your aerial may be shielded and not properly insulated. If you have had your valves over a year get them tested.

J. B. (Auckland).—Why do I get better results from a 45-volt battery block after 2½ years' use than from an eliminator?

A.: This is probably due to the lack of by-passing in your set. Try a .005 condenser from "B+" to earth. Exactly what do you mean by better results? Is the signal strength from the eliminator less than from the batteries or is it less silent?

2. My set is 2½ years old, but gives good results. Could I expect better results from a modern three-valve set such as you describe in the "Record"?

A.: When people are getting results we are loath to advise them to change to another circuit. In our opinion the "Differential Three" has been the best set of its size yet described, but if you are a little unfortunate and could not get it to go properly you would be disappointed because you had changed. This we do not want you to be.

3. Can you tell me where to get a diagram of a booster suitable for my set?

A.: We do not advise the use of boosters of any description. They are decidedly a very unsatisfactory and poor compromise. Far the better plan would be to build another stage to your set such as we have described.

"N. Z." (Penrose).—I have a five-valve neutrodyne, which sets up a scratchy noise when tuned to a station. I have to tune it out slightly to get decent music. What causes this?

A.: It sounds as though the grid bias is not adequate, or the set may be going into oscillation. Furthermore, your valves may be deteriorating, or your batteries may be low.

2. How many turns would I need on the coils to match condensers with 15 plates?

A.: Use a tenth more than those specified for the .00035 condensers mentioned in the "Record."

3. What is the capacity of the Lassen differential condensers?

A.: They probably manufacture several. .0002 is about the average.

4. Have you any back numbers of the "R.R." dated December 20?

A.: A few.

"DINK" (Helensville).—Could you supply me with a circuit for a two-valve short-wave set?

A.: Your best plan would be to make a battery adapter for your present set. One has been described in the "1930 Guide," and it should cost no more than £5 complete.

"SPEAKER" (Whangarei).—Would you explain the full meaning of kilocycles attached to stations?

A.: An explanation has been made very fully in the "Radio Guide." Every station transmits an electro-magnetic wave which goes out on a definite number of times in a second. The number of times the peak of this wave leaves the transmitting station is known as the frequency. Thus from 2YA there are 720 waves every second. If now, the distance (Concluded on page 31.)

RADIO DIRECTORY

What to Buy and Where

CITIES

ACE and HAMMARLUND SETS, Johns, Ltd.
WESTINGHOUSE Rectifiers Chancery Street, Auckland.

BURGESS RADIO BATTERIES, All Radio Dealers.

LOFTIN-WHITE AMPLIFIERS Stewart Hardware Ltd.,
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