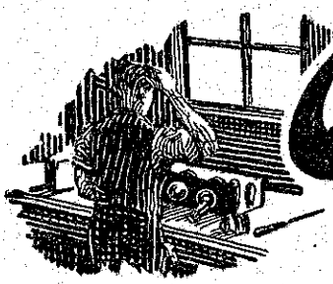


Questions and Answers

G.G. (Chch.): My commercial set will receive Australian stations from 250 to 350 metres much stronger and clearer than those on the higher wavelengths.

A.: There is nothing wrong—the design of the set is responsible.

2: What size variable condenser is required for the wavetrap described in the issue of January 9, by A.A.H.?—.0005 mfd.

"RADIO" (Onehunga): My set will not work with a grid bias battery, and reception is very rough without one.

A.: Are you sure you placed it correctly? It should be connected between the appropriate terminal on the transformer (GB—) and A—. The valve you are using in the last stage will require approximately 4½ volts grid bias.

"NOT SURE" (Hunterville): I am using an eliminator supplying my last valve, a PM254, with 150 volts. What bias voltage is necessary?—22.5 volts.

2. Can I draw this from my eliminator?

A.: No, not without seriously reducing the "B" voltage.

3. How is this voltage drawn?

A.: From a grid-bias battery, which is not expensive and which will last you a year or more.

"CURIOUS" (Cambridge): I have a five-valve commercial a.c. neutrodyne. My results, using an efficient aerial and earth, are not very good. Would it be possible without much alteration to incorporate a screen-grid valve?

A.: No, it would be impracticable.

2. Could you suggest any method of increasing its sensitivity.

A.: No. Perhaps it is not working efficiently. Communicate with your dealer.

"LIGHT" (Christchurch): I rewound the primary of my L.W. transformer as you directed. It was not burnt out, but when I tapped the last stalloy strip in, it cut through the thin fibre and severed several turns of wire. I had it tested by direct voltage. It delivers 450 volts and the following: Rectifier filament, 5.8 volts; four other filaments, 2.9 volts. Is this too high?

A.: No, it will be quite all right when the load is on.

2. Is it absolutely necessary to use an output transformer with a Blue Spot speaker?

A.: You would certainly be taking a risk in omitting it.

F.C. (Auckland) desires to know certain coil specifications.

A.: See the tables which are published this week.

F.J.P. (Blenheim): Where could I obtain a full lay-out and wiring plans for a two-valve differential set similar to the one valver published recently?

A.: This week complete specifications and a full description, with photographs, are published.

2. What would it cost?

A.: Approximately £7, including valves and batteries.

"AMATEUR" (Nelson): I have a five-valve commercial battery set, but it will bring in only 2YA on the loudspeaker. My batteries are comparatively new, but my valves are of fair age.

A.: Replace the latter, as the fault in all probability lies here.

2. What would be the correct valve combination?

A.: Four 221 or 201A valves and a 112A type power valve.

L.G. (Taupiri): In the "Radio Trouble Finder" there is a circuit of a five-valve a.c. receiver. Would this be suitable for short-wave reception?—Yes.

2. Could you give me the particulars of the components?

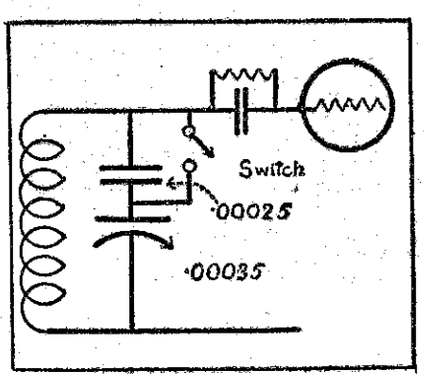
A.: No, it would take too much time to work them out accurately, but a better set will appear in the 1931 "Guide."

D.F. (Pukekohe): I am constructing a Daniell cell charger for a four-volt accumulator, and would like to know how much of the sulphuric acid solution must be placed in each pot before the distilled water is poured in.

A.: Mix both beforehand, taking care to add the acid to the water, and not the reverse. Pour enough in each pot to cover the zinc.

Shortwaves With Broadcast Condenser

THE arrangement shown in the accompanying diagram permits the use of .00035 standard condenser, and by shorting switch permits doubling range of coil wave-length. For instance, switch open. Coil range, 150-350 metres. Switch closed, 190-550 metres, same coil.



"RADIO" (New Plymouth): I have built the 1930 "Guide" short-wave receiver, but have not had much success with it. I have rebuilt it three times in the hope of locating the fault, but without success. Some nights I can get two or three 'phone stations and a few Morse, but they are all very weak. Can you suggest anything that may be causing the trouble?

A.: No, your particulars are rather vague as regards fault symptoms. We would suggest that you take the set to an expert for overhaul.

2. Do you know of a better circuit?—No.

3. Should this receiver put up a better performance than this?—Yes, much.

4. Will there be a new s.w. receiver described in the 1931 "Guide"?

A.: Yes; a four-valve a.c. receiver, using screen-grid radio frequency detector.

"X.Y.Z." (Lower Hutt): Would like some short-wave coil specifications.

A.: See the tables published in this week's issue.

2. I cannot get my set to oscillate. I am using a 7 megohm grid-leak.

A.: Try a smaller value—say a 4 megohm, and if your coils do not agree with the published specifications, rewind them.

E.F.B. (South Dunedin): I am building the B.D. Four from the "Guide" and would like you to answer the following questions:—

1. Would an A225 be suitable as an r.f. valve?—Neutralisation may be difficult.

2. What is the purpose of the 2 "C—" terminals?

A.: The two audio valves each take different grid-bias.

3. What "C" voltage would be required, using a 90 volts B battery?

A.: The first stage requires 3, but we cannot tell you what the last valve will require unless we know what type it is.

4. I have a transformer on which the terminals are not indicated. How can I ascertain which is which?

A.: Use a pair of 'phones in series with a dry cell, and you can pick out the two pairs. The pair giving the strongest click is the primary. It does not matter much which is B+ and which P.

5. Is there any practical method of determining which of two transformers has the higher ratio?

A.: You could place each in turn in the audio stage of a two-valve set and determine which gave the greater volume. This, of course, would be the higher ratio.

6. What is the most suitable wire to use in wiring up the B.D. Four?—Glazite.

7. Would formers with walls 1-8in. thick be suitable for the coils?—Yes.

"GAINING EXPERIENCE" (Queenstown): My set has lately developed a howl and will only cease when the reaction condenser is turned into oscillation point. I had to reduce the plate voltage on the screen-grid valve to prevent it, but this also reduces the efficiency. What is the cause of the howling?

A.: It is probably due to feed back from the s.g. valve. This and its associated coils should be shielded. Slip a shield can, preferably an aluminium one, over the coil, and if this does not prevent the trouble, try a cocoa tin over the valve as well.

"BROWING" (Pleasant Point): When will you describe the two-stage B.D.?

A.: It will appear in our issue dated February 20, 1931. The set has now

CORRESPONDENTS must attach this coupon to all queries sent to the Technical Editor (Box 1032, Wellington). Questions arriving without it are likely to go astray or be delayed.

Name of set .....

Number of Vales .....

Name .....

Address .....

.....

.....

Nom de plume .....

To be kept in subsequent inquiries.

Date .....

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, but accept suggestions for feature articles.

Solving trouble, as different from advice, is difficult by correspondence and while letters are given every consideration, answers are not necessarily correct—they are only our opinion based on the matter supplied, which may be quite inadequate. Intricate and involved specifications cannot be supplied without a specialist's fee.