

Questions and Answers



Aerial Dimensions.

WHAT should be the height and direction of an aerial to get the best results from all quarters? asks "C.T.G." (Blenheim).

A.: The height should be 40ft., although 30 gives good results. The length should be from 80 to 100 feet long, including the lead-in and ground wire. The direction depends upon the stations you wish to receive. If it is the New Zealand stations an aerial running north and south with a lead-in in the centre; if the Australian stations are preferred, one from north-west to south-east; while the American stations come in well with an aerial running from north-east to south-west.

Crystal and Two-Valve Set.

I WISH to construct the crystal and two-valve amplifier described in "All About the All-Electric," and would like to know how this compares with a three-valve set.

A.: As you live near a broadcasting station, you would find that unless you use a wave-trap the three-valve set would be less efficient than a crystal and two-valve amplifier. If a wave-trap were used, the best results for distance would be obtained from a three-valve set, as a crystal set is rarely of any use for more than the local stations.

A.C. Short-wave Problems.

"D. L.C." (Frankton Junction), who has constructed an A.C. short-wave adaptor, and is not getting the best results, wishes to know the following:—

1. A variable condenser, 0.0014, could not be procured, would a .0001 do instead.

A.: There is very little difference between these two condensers. The tuning will be slightly altered, but not enough to notice.

2. A variable resistance is shown shunted across the tickler. The specification states that this must be 0.8-0.000 ohms. I have been unable to procure one of this value, so am using 0.2-0.000 ohms, but the results are not satisfactory.

A.: We have returned your diagram with an alteration, and for the reaction control a 0.50,000 ohm. resistance should be employed. Smooth reaction cannot be obtained with much less value than this.

3. Could I use a fixed resistance of 6000 ohms. in series with the variable 2000 ohms. in order to bring the two up to 8000?

A.: This arrangement would not give sufficient variation to allow of smooth regeneration control.

4. For the coils I am following the details given in "Radio Listeners' Guide." Are these alright?—"Yes."

Another Short-wave Circuit.

HOW can I alter the adapter described in the "Listeners' Guide" for A.C.2 asks "A.E.A." (Avondale).

A.: Connect the cathode of the valveholder in the adapter to earth where A— is shown in the diagram. Connect this to the grid and cathode prongs of a valve base. The filament wires will run from the valve base directly to the valve, and will in no way be connected to the remainder of the circuit. They should be run in twin-flex. The A.C. plate connections are as shown for D.C. (A diagram of an A.C. valve socket with the connections clearly marked was published on September 20).

2. Can an adapter be prevented from howling? It is commercially made.

A.: This is probably no fault of your receiver. Take the adapter back to the dealer who sold it to you, and ask that it be examined or tried out on another receiver.

3. Could the detector valve be neutralised to prevent it howling?

A.: A plain detector cannot be neutralised, for this process can take place only when one or more stages of high frequency are used.

To get Greater Volume.

I HAVE a screen grid 4-valve receiver, and I wish to get greater volume. Could I add a stage of untuned radio frequency either before the screen grid or following?—"M.L." (Hastings).

A.: The simplest way to improve the sensitivity would be the addition of another audio stage. At present you have the maximum number of transformer coupled stages, so that it would be necessary to use a resistance coupled stage immediately following the detector. Another method would be to use an untuned stage in front of the screen grid valve. This might conveniently be the R.F. booster described in the "Radio Record" some time ago. It is possible that trouble would be incurred by instability.

2. What grid bias would be required for two B405 valves used in push-pull, with 150 volts on the plate.

A.: 18 volts is necessary to bias to the mid-point of the curves.

2. What is the output of these valves used in push-pull?

A.: About 2 watts.

3. Will I get better results if I took the unit out of a commercial speaker and fitted it to a linen diaphragm?

A.: It is most unlikely. We do not advise you to tamper with commercial products.

Building the Browning-Drake.

I PROPOSE to build a battery model Browning-Drake, and before doing so, would like to be cleared up on the following points, asks "B. D. Maximum" (Masterton):—

1. Do you recommend the incorporation of the screen-grid?

A.: No. Many amateurs experience difficulty with this valve, so that if you have not experimented before we should advise you not to start now.

Questions and Answers

READERS of the "Radio Record" who are in difficulties about reception or set construction are invited to write to our "Questions and Answers" department for help. We particularly wish to assist those who know little about radio, as very often there is some very slight trouble which spoils completely one's enjoyment of the programmes.

Correspondents are asked to observe the following courtesies:

1. Write legibly.

2. Make your questions brief and to the point; do not make apologies for writing, and, where possible, tabulate.

3. Do not ask for a reply by post unless a stamped and addressed envelope is enclosed. Even in these circumstances, we reserve the right to answer any question through our columns.

4. Do not ask us to design circuits or send detailed lay-out diagrams; but we can offer advice regarding circuits.

5. Address all technical correspondence: "The Technical Editor, P.O. Box 1032, Wellington."

2. Do you recommend the use of push-pull audio? If so, would two Pentodes give high amplification?

A.: We advise push-pull amplification, but not with two Pentodes. Such an amplifier can give good results, but rarely in the hands of amateurs.

3. Would it be possible to convert this set later to A.C. operation per medium of A.C. harness, A.C. eliminators, or a power pack, and which would you recommend?

A.: Yes, it would be quite simple to convert, as described in "All About the All-Electric." The use of the power pack and rewiring would give the best results.

Phones with an A.C. Set.

EXACTLY how can 'phones be used with an A.C. set? asks "H.D.H." (Nelson).

A.: There are two methods. Remove the 226 valve and put one 'phone tip

into the grid terminal and the other to earth or the metal-work of the receiver. The other method giving slightly louder signals is to connect each tip to the primary of the second audio transformer. This is the side of the transformer nearest the valve.

An Eliminator Problem.

I AM building the "B" eliminator described in the "Radio Listeners' Guide," writes "R.H.H." (Lower Hutt), but do not know the values of each variable output resistance.

A.: You would have to give us more particulars before we could state the exact resistances. Your best plan would be to build up the voltage divider as pictured in "All About the All-Electric," page 46. A fixed voltage divider may be obtained commercially made. To obtain grid bias a potentiometer 0-3000 ohms will give ample bias for any valve.

2. How can I wind the filament to obtain the centre tap?

A.: If you are making up the eliminator as described in the "Listeners' Guide," you will require 31 turns with a tap at 15½ turns. If this arrangement causes humming, put a potentiometer of about 30 ohms across the filament supply and use the sliding contact as a centre tap. The centre point would be that to give minimum hum.

Set Unbalanced.

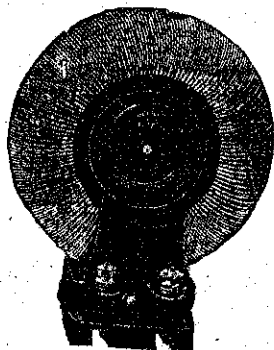
FOR some unknown reason, my factory-built receiver became unbalanced without any apparent reason, writes "L.C." (Waverley). It all happened between switching off one day and switching on the next. When I turned the set up to investigate, I could find nothing shorting, except a flower petal lying between the aerial and C—. After this the set went well again. Could the petal have been the culprit?

A.: In all probability. There was a certain dampness in the petal and a leakage was occurring, resulting in instability. It is possible that a small body such as a blob of solder may have become loose and have short-circuited the neutralising system. This would have slipped out unnoticed.

Audio Instability.

I AM using a 5-valve Neutrodyne with two speakers, writes "B.T." (Green Island). I find the set works well from four valves, but the fifth valve causes the set to howl.

A.: Reverse the connections to the last audio transformer, and if this does not cure the trouble, try a resistance of about ½ megohm across the secondary of the last transformer, or a large by-pass condenser (1 mfd. or more) across the speaker terminals. See that the grid bias is adjusted properly. It is possible that your eliminator will not deliver sufficient current for five valves. If this is the case, it will be necessary to bias the second audio valve, and if the trouble then does not cease, the radio valves will need biasing, for by this method more current is made available for the last valve. You should have stated the make and the size of your eliminator.



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