

Questions and Answers



"B" Eliminator Problems.

HOW is one to earth the core of a transformer when only outside strips can be connected to the earthing terminal, the remainder of the laminations are separated from one another? asks "J.W.C." (Napier).

A.: It will be quite sufficient to earth only the outside strips in the manner suggested.

2. On bolting up the core the outside strips have buckled up. Should this be so?

A.: Put a heavier piece of steel or other clamping material across these to prevent buckling.

3. Is a resistance of .00 watts necessary for the output resistance? It appears to be that 6 or 7 would be sufficient.

A.: With an output voltage of 200 a 10 watt dissipation would be necessary to allow passage of 50 milliamperes.

4. What is the value of the grid bias for PM254 so as to bias them when in push-pull to the middle of the curve?

A.: Biasing should be to the left of the mid point of the curve, and this value would be 22½ volts.

5. What is the impedance of Philips PCJJ speaker?

A.: Impedance varies with frequency: at 50 cycles corresponding to a low note, the impedance is 2000 ohms.

Charging with Leclanche Cells.

IN our issue of September 6 we replied to a correspondent who had omitted both name and nom-de-plume, by stating that "2 volt cells could not be economically recharged with Leclanche cells." Further to this, a correspondent, C. A. Pope, 406 Townsend Street, Hastings, wishes to communicate with the inquirer re some charging cells he has for disposal.

Varying Capacity.

WISHING to adapt the Round-the-World Two to the broadcast band, "D.McW." (Westport) suggests placing a .0003 fixed condenser so that it may be switched in series with a .0005 to reduce its capacity to .0002 at will. He asks if this will work.

A.: It should work quite well as a compromise, but would not, of course, be as efficient on a short wave as a .0002 variable condenser. However, for an all-wave set the idea is quite a good one.

A Tuned Anode Booster.

COULD the 435 type of valve be used in an R.F. booster? asks "Back-blocks" (Glen Murray).

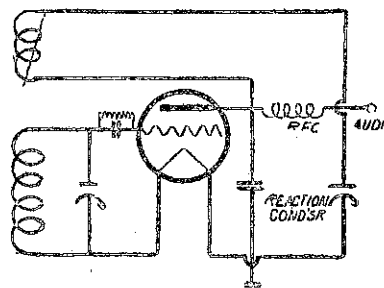
A.: Yes. A diagram will be published which illustrates the point and answers your other questions.

"Pentode's" Crystal and Valve.

"J.O." (Auckland) asks the following questions:—

1. Would you publish a circuit of this receiver incorporating the combination moving coil and condenser control reaction?

A.: The diagram will suggest the combination.



2. How can a double grid valve with a plate voltage of only 22½ possibly give the low notes?

A.: It cannot.

3. Which will be the best type of speaker to use with a single valve with 90 volts on the plate?

A.: Usually a medium size, but you should try out if possible different types. A sensitive cone would give you the best results.

4. Is it not undesirable to earth both the primary and the secondary of the transformer?

A.: It is desirable to do so, unless results prove otherwise.

5. Is a 3/1 transformer sufficient for the set?

A.: Yes, but a higher ratio would give higher amplification.

Improving the Audio.

"RADIO FIEND" (Halcombe) asks the improvement of his audio stages:

1. Could I connect two power valves in parallel and the last stage of audio?

A.: Yes. With improvement, but push-pull would be much better.

2. Would it be worth the trouble of installing?

A.: No. Much better to carry out the first suggestion.

3. Could a screen grid valve be used in a one-valve set?

A.: Not without seriously complicating the circuit; even then it is doubtful if it would be a success.

4. How can a 7-wire cable be connected so as to give four separate tapplings for grid bias?

A.: It cannot—three are the most it can take, unless the number of "B+" tapplings are sacrificed. Three different bias tapplings are surely unnecessary in an average set.

Neutralisation Trouble.

WHEN trying to turn on the volume signals become suddenly weak, states "J.F." (Napier). I have a good aerial and earth.

A.: It appears as though the set is not neutralised properly, though there may be other causes that could be detected only by inspection.

The Tetrode Amplifier.

I HAVE constructed the Tetrode Amplifier described in the "Listeners' Guide." Would this be suitable for a 2-valve amplifier? asks "G.B.C." (Auckland).

A.: Yes, it should be quite a good circuit. If more volume is required, construct the tetrode set with reaction described a couple of months ago.

Carrier Waves Only.

I CAN get the carrier waves of about 8 stations, states "C.Q." (Auckland). but I am unable to get them at any strength. My set comprises detector and audio, and when I place my finger on the grid terminal of the detector valve, a howl results. I have altered the grid leak to no avail.

A.: The fact that a howl results when the grid is touched indicates that the audio side of the set is in perfect working order. Examine carefully the aerial circuit for loose terminals, and dirty or poor contacts. See our reply to a correspondent in last week's "Questions and Answers."

2. When I turn the dial on the reaction condenser with the aerial disconnected a howl results. What is the cause of this?

A.: When the aerial is disconnected the load is moved from the grid circuit, and howl results.

Interfering Morse Station.

I HAVE been troubled for the last week or so with an interfering morse station on about 1000 kilocycles. It is so close that it is impossible to hear any station on the broadcast band except 2YA.—Newtown.

A.: Probably H.M.S. Dunedin, and if so this trouble will have ceased by now. If still continuing communicate again and steps will be taken to have the trouble rectified.

Fading on a Crystal.

I HAVE an all-wave crystal set, writes "AU-Wave" (Dunedin), and to-night, Dunedin's silent night, I am listening to 2YA, but very bad fading makes listening difficult. Can anything be done?

A.: You are getting excellent results for a crystal set, and at that distance, fading will be accentuated. We take for granted that you have examined very carefully for loose or dirty connections in both antenna and earth circuits.

A Suitable Portable.

CAN you recommend the Rotorua portable as described in the "Radio Record" as a set for the summer months?

V3

PERFECTED PENTONE VALVES BY MULLARD

THE VALVE WITH THE TWO-VALVE PUNCH

The New Mullard A.C. Valves will fit any American Electric Set and improve results.

The new Mullard Pentone is a power output valve that does the work of two ordinary L.F. stages. It enables you to increase enormously the volume from your receiver without any alteration to the existing wiring. Moreover, by dispensing with one stage of L.F. amplification the use of the Mullard P.M. Pentone results in a remarkable increase in purity.

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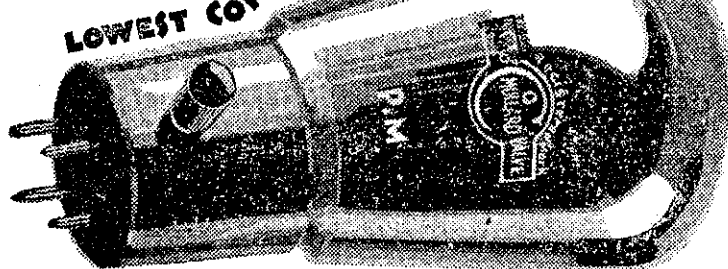
In consequence the Mullard Pentone is capable of delivering a huge output of pure undistorted volume and has an enormous amplification factor—in the case of the Mullard 4 volt Pentone P.M.24 the amplification factor is 62. The mutual conductance of the Mullard P.M. 24 is 2.3 mA/V as compared with 1 mA/V or less for a super-power valve of the 3 electrode type.

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