



Questions and Answers



"ARANUI" (Christchurch) asks several questions concerning the electrification of Pentode's dynamic cone. As this subject will receive attention in the Radio Listeners' Guide, which will be out in May, our correspondent is advised to wait until then.

2: How many milliamps. will my set require using the following valves: UX22, A615, PM6, B605?

A.: About 30 if PM6 and 605 are biased properly, but you should not be using PM6 in the first audio stage. By using PM5X you can cut the current consumption down to 24.

"E.J." (Wellington) can receive Wellington in five places on his dial.

A.: One of these is the original and one the harmonic, the other three are probably reflections.

"J.C." (Blenheim) asks if we can describe the construction of a microphone.

A.: It would be far too intricate for amateur construction. Microphones can be obtained from several radio dealers. Try Hartle and Gray, Auckland.

"LISTENER-IN" (Dannevirke) asks the following questions:—

1. Could the R.F. transformer be in a vertical position if the aerial coil also is vertical?

A.: This subject was dealt with fully in an article, "Inductance Coil Design," by Cathode, published in our issue of November 8, 1929. If the coils are 2 in. in diameter they need be separated by 5 in.

2. If not, what position would the aerial coil have to be in if the R.F. transformer is in a vertical position?—Horizontal.

3. Which is the most sensitive and better loudspeaker—the silk diaphragm or a horn?

A.: A horn is more sensitive, but does not give the same quality as the silk diaphragm.

4. Could a push-pull transformer be employed in a set as an ordinary transformer, if the centre tap were disregarded?—Yes.

5. How many transformers are necessary for a stage of push-pull?

A.: One before and one following.

"L.S." (New Plymouth) asks the following:—

1. Will the impedance (Pilot 390) stand a pair of 603's?—Yes.

2. If not, can I make the choke?

A.: Yes, output impedances have been very fully described in the "Radio Listeners' Guide."

3. What should be the value of the condenser associated with it?

A.: Half to 1 mfd.

4. Would "Pentode's" multimeter be sensitive for an eliminator?

A.: Yes, providing the meter obtained has a resistance of 1000 ohms per volt.

5. Could it be made more sensitive by the addition of a higher value resistance?

A.: No, external resistances only increase the range.

"MAC," (Johnsonville) is building the screen-grid booster and wishes to know:—

1. Can a 4-volt tapping be taken from an accumulator?—Yes.

2. He finds on charging "Meghom's" "B" battery that all the plates go the same colour, but after two days the positive takes on the correct shade. Is this correct?

A.: Yes, it was merely an indication that the plates were forming.

"W.L.P." (Pahiatua) states that he cannot notice any difference when he removes the earth wire.

A.: This is quite a characteristic of a.c. sets. An automatic earth is obtained through the a.c. mains.

"J.T.H." (Hokitika) asks if there is any definite relations between wavelength and set-tuning readings.

A.: Yes, a curve can be constructed in the following manner: Obtain the dial settings of several stations and convert their wavelength in metres to kilocycles. Then plot a graph with suitable units along abscissa and ordinate to accommodate the range desired. Plot the points where the stations come in and join up the curve. As an example see the callibration curve published on page 29 of our issue of January 24.

"ALL - ELECTRIC" (Palmerston North) asks if any improvement will be noticed if he runs his aerial over water.—Other things being equal—No.

"J.H." (Sandingham) asks the following questions:—

1. Would the battery eliminator for small sets described in June 21, 1929, issue, be sufficient to supply a three-valve set using Radiotron valves.

A.: If a half-wave rectifier of the 281 type were used, it would. Alternatively, a power valve could be used as rectifier, say 171.

2. What is the highest B voltage the same will deliver?

A.: This depends on the number of turns put on the secondary. As described by "Pentode" it will supply 180 volts.

3. Using this eliminator, would there be much hum on the higher frequencies, as it is desired to use the eliminator in an all-wave set?

A.: By using a valve as a rectifier, there will be a certain amount of hum.

This can be cut down by using a proper rectifying valve and suitable chokes.

4. Is that issue still obtainable?—Yes.

"AMATEUR" (Dunedin) has made short-wave coils for his Cossor Melody Maker, and cannot get PCJ and American stations, though he can receive Sydney, London, and one American quite clearly.

A.: This may be due to dead-spots. Place a small variable condenser in the aerial—it seems as though dead spots are causing the trouble.

2. Where can I get the latest list of short-wave stations?

A.: One will be published in the 1930 "Radio Listeners' Guide."

3. The coils are supposed to cover the whole wave-band, but the highest I get is 47 metres, and the lowest 19 metres.

A.: If you require a higher wave-band you must make a coil with more turns on it, similarly increasing the primary and the reaction. Similarly, if you require a lower wave-length you will need fewer turns on all coils, but you will have difficulty in tuning down below 19 metres on an all-wave set.

"A.S." (Khandallah) wants to know:—

1: The address of 4ZH, Napier?

A.: C. B. Hansen and Co., Dalton Street.

2: Is it necessary to verify 2YB, New Plymouth?—No.

3: Can indirectly heated valves taking different biases be run off the same filament winding?—Yes.

"H.W.Y." (Herekino) asks concerning "Megohm's" short-wave booster:—

I have 3½ volts grid bias on the first audio and 4½ on the second audio. Is it worth while purchasing 1½ grid bias for the screen grid.

A.: 3½ is too much for the first audio, but 1½ on the screen should improve the booster.

"ELIM." (Auckland) is constructing an eliminator similar to the one in the Radio Listeners' Guide, and wishes to reduce the detector voltage to 20 and asks what must be the maximum value of

resistance. He works it out to be 100,000 ohms, whereas in the Guide it is given as 500,000.

A.: In the Guide 500,000 is given to provide a wide margin of safety. 100,000 will be just enough to reduce to 20, so it will be advisable to get a slightly higher value. If the drain on the valve is less than 2 milliamps, you will need a very much higher resistance than 100,000 ohms, and if you are using 20 volts on the plate, you will require this extra resistance.

2: Would an Eimco-stad 100,000 ohms be suitable?—We recommend a higher value.

3: Would an automatic power-control be all right for use with the eliminator?—Yes.

4: Would a Yaxley Junior potentiometer be suitable for a "C" biased resistance, or is it too flimsy and liable to overheat?

A.: If it is light it will certainly overheat as the "C" bias resistance has to carry the drain of all the valves.

5: Should the case of all the condensers, including the by-pass condenser, be earthed?

A.: They should be on a metal base which is connected to B—and earth.

6: Is there any advantage in placing the R.F. choke in the plate leads of the rectifying valve when the set already has one in?

A.: Not unless there is any hum.

"ALL-WAVER" (Havelock North) asks if it is necessary to have a dealer's license in order to carry on servicing radio sets in the country.

A.: At the present time the position re this inquiry is rather uncertain, owing to the proposal of a new regulation which states that anyone servicing all-electric sets must have a wireman's ticket. This will probably be in force shortly.

2. What is the price of a country dealer's license?

A.: £7 10s., half the cost of a town dealer's license.

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