

it improve the set to bias the other stages?—Yes, slightly.

"COILS" (Cambridge) asks for particulars for ree-inch coils to cover the shortwave bands.

Band	Secondary	Tickler
Below 10	2-3	3
15/30	4	4
28/45	8	5
42/65	14-2-3	6
60/100	26-2-3	8

"P. J.K." (Lincoln) has made Round the World Two and is surprised because 2ME can be tuned in on four coils.

A.: These are probably the harmonics. The original wave being found on the eight-turn coil.

2. Could you supply particulars of valve base coils to suit a .00015 condenser. Is any alteration necessary

A.: These particulars were published in our "Questions and Answers" page a little over a month ago. Add about 10 per cent. to the number of turns, for a .00015 condenser.

"S.D." (Hikurangi) has taken two leads from a three-valve set under the floor to another room. I find that the speaker at times will not go, and at others is very weak. I separated the wires and the speaker went for a while and is now very quiet again.

A.: It seems that one of the wires is broken, or there is a high resistance joint. Test each wire separately by the phone and cell or speaker and cell method, and if this is all right, tug the wires and try again.

3a. When I tune in 3YA there is a

whistle behind the speech or music. It does not happen on any other station.

A.: It seems as though 3YA is being heterodyned.

3. I was listening to 2FC and I could hear 2YA and yet I can tune in 4QG without interference.

A.: If all three stations are on their allotted wavelengths, which is likely, the phenomenon is puzzling and cannot be explained.

"F.W." (Whaton) has a six-volt generator with an ammeter and cut-out and he wants to charge a four-volt battery.

A.: Place a six-ohm rheostat capable of passing two or three amps. between the negative of the generator and the ammeter and connect this to your battery. Adjust until the charging rate is about 4 amps. If possible, put a voltmeter across to make quite certain the 4 volts are being delivered.

"T.C." (Westport) has a factory-built receiver, the dial of which is graduated from 1-100. He wants to know how he can calibrate it to read metres.

A.: In our issue of January 24 we prepared a report of a receiver in which a calibration curve was given showing the relationship between the two for a similar set. The method of finding the relationship is to plot a graph like the one shown with dial readings along the side and preferably frequencies horizontally and plotting the position of several stations known. The frequencies can be obtained from the 1930 "Guide." Connect these up by a curve. To use this chart find the frequency of the station required, travel along the vertical line running

from this number until the curve is encountered, then go horizontally and the approximate dial reading can be found.

"K.EEN" (Eastbourne), wishing to make "Pentode's" Crystal and Amplifier, has a quantity of lin. standard stampings and asks:

1. How many turns can I use for the primary, secondary, filament and rectifier windings if I am using a 4-volt valve for rectifier and a 2-volt for the power?

A.: Primary: 34 S.W.G., 1850 turns. Secondary: 36 gauge, 1850. Filament: 20 for 2 volts, 37 for 4 volts, 53 for 6 volts.

2. How many turns and what wire shall I use for the choke, using the same stampings?

A.: Wind on 10,000 turns of 36 S.W.G. wire, using a .03 gap. This will give a 100-henry choke.

3. Later on I will construct a dynamic cone speaker. Would the pot magnet eliminate the choke and would this necessitate alterations to the circuit?

A.: The transformer as described will not supply sufficient power for the job. You would need a much more ambitious one.

4. Can volume be controlled properly without detuning?

A.: Yes, put a 500,000 ohm potentiometer between the aerial and the earth terminals.

"UNION" (Pukekohe) encloses a circuit diagram and asks several questions.

1. Do you consider this circuit the best to use a screen grille in this manner?

A.: Yes, it is quite good.

2. Is it efficient for short waves?

A.: It appears to be.

3. What increase of efficiency should I expect from this circuit over that using the ordinary triode?

A.: We can assure you only that you will have more trouble.

2. Does the anode voltage method of controlling reaction compare favourably with the condenser method with regard to general efficiency for short and long waves?

A.: It is more suitable for short wave, but is efficient only when a very good resistance is employed. The "Frost" seems to be one of the very few of the resistances that are suitable.

3. Should I use any form of shielding with the screen grid circuit?

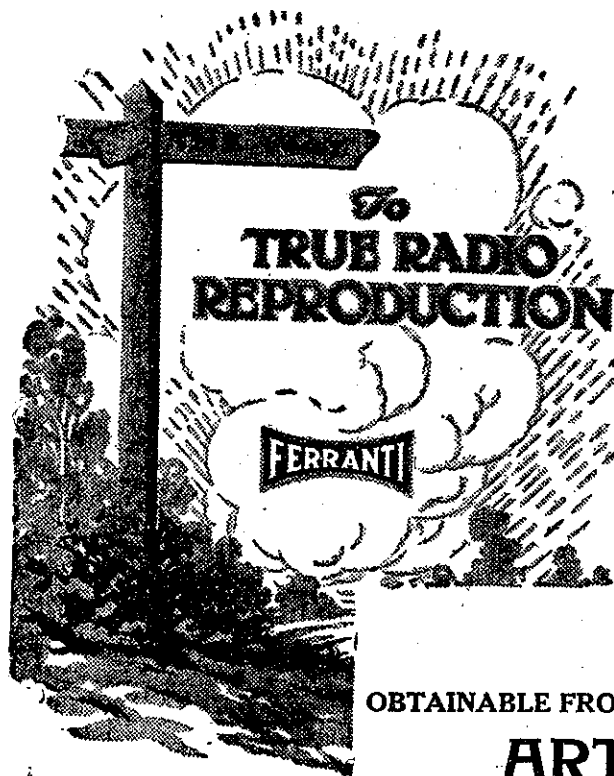
A.: Yes, it should be enclosed in a suitable screening box, e.g., the "Radio Record" standard.

"R.M.D." (Rakala) asks if a power transformer can be employed to step-up 5 volts A.C. provided from a rotary converter from a battery.

A.: Yes, but you would have to add about 10 per cent. to the stated secondary (primary in the original specifications).

2. How long would a battery last working this motor six hours a day.

A.: It depends upon the drain it imposes on the battery, which to a certain extent depends on the load placed on the secondary. It would be necessary to put an ammeter in series with the converter to ascertain how much it will require. If it takes over an amp and a half, it is not worth while.



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