

A.: They are the exact equivalents of 226 and 227. There was no point in doubly reproducing the characteristics.

5. Why are A.C. receivers in the "Guide" and All-Electric confined to one stage of R.F.?

A.: Because more than one stage

makes construction very difficult, and are generally speaking not worth while for the average amateur.

6. Do the grid leads of both R.F. valves have to be wrapped in tinfoil when separate shields are provided for each valve?

A.: It may not be necessary, though this is usually a preventative of hum.

7. In some factory-built sets why are the R.F. and A.F. stages intermixed?

A.: Manufacturers have reasons of their own for doing these things. Undoubtedly it is the best way for the particular circuit they are using.

"INCUBU" (Waitaha) has a battery set which requires a 4-volt "A" supply. He wishes to know if he can use a 6-volt battery broken down through resistance.

A.: Yes, there are two ways of doing this. You can either take a lead from one of the terminals provided and one from the cross bar farthest from this tap, or you can use a series resistance. To calculate the value, find the total "A" consumption of the set in amperes by referring to the valve characteristics, and divide it into two (2).

2. A friend has an H.R. set on which the first condenser tunes very broadly.

A.: This is a characteristic of this particular circuit, and it does not usually indicate a fault. There may, however, be some stray capacity, due to the wiring.

"W.S." (New Plymouth) has built a 4-valve screen-grid short-wave receiver, but cannot get the set to oscillate.

A.: Increase the detector voltage and take off the earth.

2. There seems to be a short circuit. Continuity tests are all right, plate voltages seem O.K., but when one is plugging into the phones there is a chance of a shock.

A.: This is quite in order, and quite normal.

3. If a voltmeter has one tip on the B+ side of the phone jack and the other on the panel, there is a reading of 120 volts. What does this indicate?

A.: A perfectly normal state. Your A+ is connected to the shield, and as far as resistance is concerned the "A" battery may be neglected. A-, which for our purposes can be regarded as A+, is connected to B-, so in effect you are connecting the voltmeter across the "B" supply.

4. Am I likely to burn out the valves with the set in this condition?—No.

5. Is it possible that B- is getting to earth through the "A" battery?

A.: As we have explained, yes.

"POWER-VALVE" (Palmerston North) wants to add a power-valve to a 4-valve set. He is using Philips valves, but is thinking of using an Osram in the last stage.

A.: The two power valves suitable for your set are Philips B509 and Osram P610.

"D.M.B." (Stratford) has seen in an "English" journal that a 4-volt "A" battery can be charged from a car 12-volt battery by changing over at half charge so that the drain from the battery is equalised. He asks:—

1. Is this method likely to injure either the car or wireless battery?

A.: You would have to be very careful in the charging. Keep an hydrometer handy and test the car battery to see that it is not run down too much.

2. Is the enclosed wiring correct?—Yes.

3. Would the change-over at half-charge equalise the current drawn from the car battery?—Yes.

4. Does the car dynamo have to be running before the "A" battery will charge?

A.: No, providing the car battery is fully charged, it will do the job.

"K.O.P." (Carterton) has experienced a puzzling phenomenon. Attached to his set is a battery eliminator and a charger. The cases of these are earthed, and there is no connection between B- and the case. Reception has fallen off un'til now he finds that on removing the earth from the set the signals are again built up to their former strength and tone. He asks why.

A.: On the face, it is a difficult and puzzling phenomenon. We can only offer a theory. The correspondent has said that A- is not earthed, and we presume that in normal cases there is an earth return in the aerial coil. This provides a return for high frequency current but none for the low, for which the A battery must be earthed. The audio frequency is probably earthed through the secondary windings and back into the primary of the eliminator. Furthermore, high-frequency current can get away through the condenser resulting from the proximity of the earthed casing. There is, with the earth removed, a state of unbalance, there being no direct return for audio current. On removing the earth, the balance is somewhat restored. A- or A+, B- and C+, must always be earthed directly, and apart from open or short circuits within the set, the set will then work better with an earth. Frequently, sets using eliminators or A.C. sets do not require an earth. Then, of course, there is the simple explanation, that your earth is in some way connected with the aerial.

"SIMPLICITY" (Wanganui) wants certain questions cleared up with regard to a 2-RF B.D.

1. Is the variable condenser in the aerial designed to dispense with the tickler?

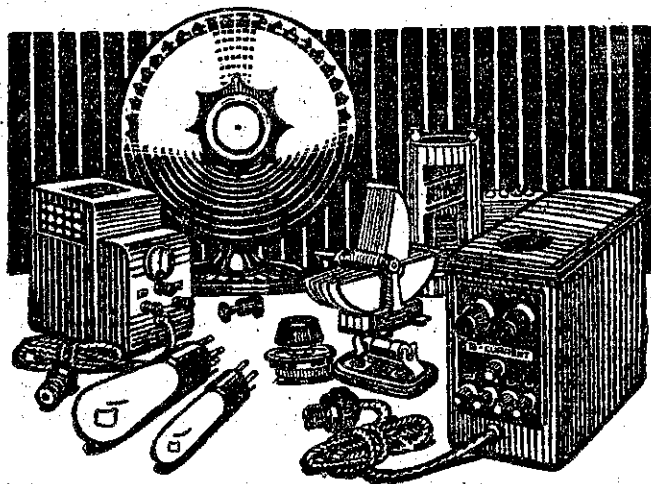
A.: No, it is merely to sharpen tuning. It is not altogether essential.

2. Can I gang the other condensers?

A.: Yes, you can gang as many as convenient other than the reaction condenser. Generally speaking, the first radio should be kept on a separate dial, second radio and detector on another, though the three may be used on the one dial if a balancing condenser is connected across the detector condenser.

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