

QUESTIONS AND ANSWERS

S. J.B. (Carterton): The battery model of the "Sky Hawk Shortwave Four," described in the 1935 "Radio Constructor's Guide," is just the set you want. It will out-perform any four-valve short-waver we have yet heard.

S. M.A. (Hawera): My set covers the medium and long waves. Could I substitute short-wave coils for the long-wave ones?

A.: No; to do this the set would have to be completely rebuilt and it would not be worth while. Your best scheme would be to use a shortwave converter such as that to be described in the May "Radio Times."

O. P.R. (Picton): I have a four-valve battery kit-set, and the "B" battery consumption appears to be very heavy. On an average running of three to four hours a day, three heavy-duty "B" batteries last only four months. During the last month reception is poor. How long should these batteries last?

A.: With a set such as yours, from nine to twelve months. You could soon tell which valve is taking excessive current by connecting a milliammeter in the "B+" leads in turn. The total plate drain should not exceed 11 or 12 mills. Also check up on the bias battery and make sure that the bias voltages are correct.

2. I notice that there are three wires joined together and connected to the "B+ 135-volt" terminal. This is not as indicated on the chart. Does it make much difference to the "B" battery consumption?

A.: It depends on the destination of the wires. For instance, if one of them is intended to provide the screen voltages for the r.f. valves, then this would largely explain the excessive current drain; 67½ volts is ample for the screens. Note: The unit you mention would operate quite satisfactorily with your set.

"REACTION" (Christchurch): I wish to build the "Comet Superhet Five" described in the 1935 "Radio Guide." I have on hand a dynamic speaker matched for a single 2A5, but with a 1000-ohm field. What alterations would be necessary to use it in place of the speaker specified?

A.: You could use an extra smoothing choke, but you would find it difficult to accommodate this on the chassis designed for this set. Your best plan would be to get your speaker field rewound to the correct resistance.

"AMATEUR" (Ashburton): You appear to have made a very thorough overhaul of your set, and it is difficult to suggest where the trouble lies. However, you state that you have tried fresh valves in practically every socket. If you can borrow them, it would be well worth while substituting new valves for those you have not yet replaced. Another possible cause of the trouble is a defective valve socket, while still another is that there is a partial or intermittent break in one of the coil windings due to electrolysis. Take the set out of the cabinet, invert it, and then when signals fade away quickly test the plate voltages of the mixer-oscillator and I.F. amplifier. While

without an actual examination of the set it is very difficult to suggest exactly where the trouble lies, the strongest possibility is that it is in the coil kit or speaker.

E. R. (Auckland): The 160-metre and broadcast band coils of the "Viking Shortwaver" should be close wound with 32 gauge enamel or 34 d.s.c. You would find that with wire of an appreciably heavier gauge, you would not be able to accommodate the winding on the former.

W. L.D. (Mayfield): I am building a short-wave set, and intend using a .00025 mfd. condenser for tuning and a .00035 mfd. for reaction. Are these suitable for the circuit I have enclosed?

A.: Both condensers are a little on the large size, and you will have to tune very carefully and use a good slow-motion vernier dial for best results. Suitable coil details are as follow:—

Band.	Pri.	Sec.	React.
20 metre	2	5	3
40 metre	4	10	4
80 metre	5	18	6

Use the 24 gauge d.c.c. you have on hand for the primaries and secondaries, and 32 gauge for the reaction windings. All secondaries can be space-wound.*

W. J.A.C. (Wellington): I have a "B" eliminator on hand which is practically new, so I feel reluctant to dispose of it. Could it be used for the plate supply of a set like the "Eaglet Two" or the short-wave converter described in the 1935 "Radio Guide," if a separate transformer were used for the filaments? The maximum voltage of the eliminator is about 180 volts.

A.: It would do admirably for the purpose; you will find that 180 volts is quite sufficient.

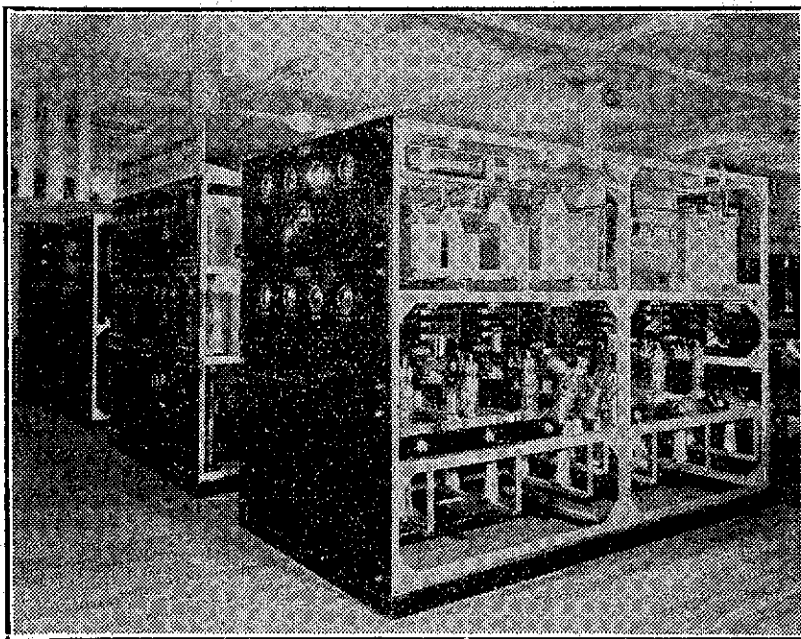
2. How is reaction controlled in the short-wave converter referred to above?

A.: There is no control for the regeneration, as the valve should be constantly oscillating. It serves the purpose of the mixer-oscillator in the ordinary modern broadcast set.

"CURIOUS" (Picton): Try decoupling the supply voltage to the plate circuit of the detector in your short-wave set. To do this connect a resistor of from 10,000 to 20,000 ohms between the B+ lead and the tapping on the eliminator, and then connect a fixed condenser of from 5 mfd. upward from the set side of the resistor to earth. As your tuning condensers are of very small capacity, you will need at least two pairs of coils to give complete coverage of the broadcast band. Details of the first pair of coils are: Primary 25 turns, secondary 170 turns; primary 50 turns, secondary 170 turns, reaction 45 turns. The second pair of coils are wound as follows: Primary 30 turns, secondary 220 turns; primary 60 turns, secondary 220 turns, reaction 50 turns. You have not stated the capacity of the reaction condenser you are using, and so to obtain smooth reaction it may be necessary to do a little experimenting by putting on or taking off a few reaction turns.

"CABELLA" (Marton): You could use your phones as an improvised microphone by removing the grid lead from the 57, which is evidently the second detector in your set, and connecting the phones either between the cap of the valve and the grid lead or the cap and earth.

"ESBE" (Walkino): Evidently one of the valves following the I.F. amplifier in your set is a little "down," and should be replaced.



SAME POWER AS AUCKLAND'S 1YA. The first of the new 10 kilowatt transmitters now being installed by Standard Telephones and Cables (A/sia) Limited at Cumnock, New South Wales, for the Australian Broadcasting Commission. This transmitter will have the same power as the new 1YA, and will be the most powerful in the Commonwealth.