

"Healing" Battery-operated Broadcast Model 46B

HEALING model "46B" is a four-valve receiver designed for "broadcast" coverage and battery operation. It is housed in a console type cabinet and is fitted with an eight inch loud-speaker of the permanent magnet type. Three controls are fitted, these being for volume, tuning and battery switching.

Inspection of the circuit arrangement of this receiver will show that the two-volt valve filaments are arranged in a series-parallel network to permit of operation direct from a 6-volt accumulator. This procedure also permits bias voltages to be obtained internally from the drop across the filament network. Normally, model "46B" is supplied with a 6-volt accumulator as "A" supply, and three 45-volt dry batteries as "B" supply; the design is such, however, that a 6-volt operated vibrator-type high-tension unit may be used instead of the "B" batteries and models of this number will frequently be found equipped in this manner.

Apart from the above, the design of Healing model "46B" is quite straightforward. The battery switch has a third position for dial lamp switching. Two dial lamps are fitted, these being of the 6-volt 0.1A. miniature-screw type. The I.F. used is exactly 455 KC. Finally, care should be taken to see that the receiver is switched off before removing any of the valves from their sockets. This is particularly important in the case of the 1C6 and the 1B5, as the filaments of these two are in parallel and the removal of one will result in a slight overload of the other.

The following measurements were made with a "1,000 ohms per volt" meter between the socket contact indicated and chassis. The receiver was detuned from any signal and new "B" batteries were connected.

1C6, Frequency Converter. Plate, 135 v., screen 50 v., osc. plate 50 v. Note carefully that the oscillator grid leak is returned to the negative side of the filament and that this point is actually 2 volts above earth.

1C4, 455 KC. I.F. Amplifier. Plate, 135 v., screen 50 v. Note that this valve is at the negative end of the filament network and its grid therefore operates at zero bias.

1B5, Detector, A.V.C. Rectifier, and Audio Amplifier. Plate, 60 v. Note

carefully that the detector diode load is connected to the positive side of the filament and that the A.V.C. diode load is connected direct to ground. This last provides an A.V.C. delay of 2 volts and also places a negative bias of 2 volts on the 1C6 control grid, as the filament of the latter is in parallel with that of the 1B5. The 1B5 triode grid leak is also returned to ground, thus providing a bias of -2 volts for the A.F. amplifier.

1D4, Output Pentode. Plate, 125 v., screen 120 v. Note that this valve is at

the positive end of the filament network and, as its grid is returned to ground, receives a bias of -4 volts.

Filament Voltages. The filament voltage of each valve, measured across the socket contacts should be exactly 2 volts. When testing this, make certain that no accidental shorts to chassis take place. High voltage across the 1B5, 1C6 filaments indicates that the 33 ohm resistor is open, while high voltage across the 1C4 filament indicates that the 16.6 ohm resistor is open.

