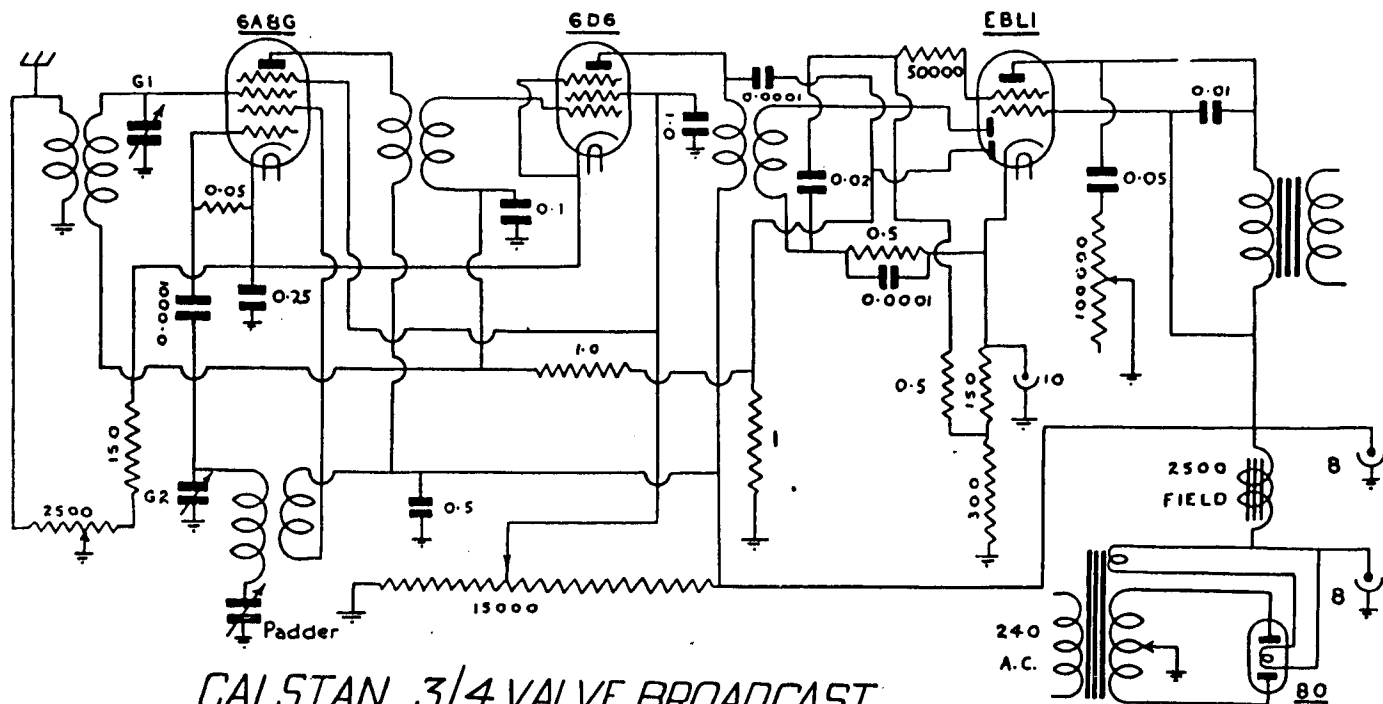# CALSTAN A.C. OPERATED MODEL B4M

CALSTAN 3/4 VALVE BROADCAST

Calstan model "B4M" is a four-valve receiver designed for broadcast coverage and operation from 200-260 v. A.C. mains. This receiver is of the mantel type, and although normally fitted with only two controls (volume and tuning), is sometimes equipped with a continuously-operating tone control, wired across the output valve plate as shown in the diagram. The loudspeaker fitted to this receiver is a 6½-inch diameter unit with a field-coil resistance of 2,500 ohms.

Calstan model "B4M" was originally released late in 1937 but, at that time, instead of the valve complement shown, it was equipped with a type EK2 octode instead of the 6A8G, and an EF5 I.F. amplifier instead of the 6D6. The duo-diode pentode output valve, and type 80 rectifier have always been used. The original circuit was largely as shown, the major point of difference being a variation in screen feed to suit the characteristics of the EK2 (50 v. screen supply instead of 100 v. for the 6A8G).

The circuit arrangement of this receiver is quite straightforward, a single stage of intermediate-frequency amplification (peaked at 458 kC.) being employed and advantage being taken of the high-gain characteristics of the EBL1 pentode section to dispense with the usual A.F. amplifier.

Points to watch in the receiver are the "R.F. type" volume control which alters the converter and I.F. bias at the same time, as it alters the value of aerial input shunting resistance, and the A.V.C. delay system. This last is to ensure that adequate audio signal to fully drive the EBL1 is available before the A.V.C. action commences. In order to achieve this, considerably more voltage than is required for grid bias is developed in the EBL1 cathode circuit, and the grid return is tapped on to an appropriate point. The A.V.C. diode load is, however, returned direct to earth.

The voltages applied to this receiver, with the exception noted above, are quite standard, and there is no need for detailed tabulation. However, care should be taken to see that the volume control is at its maximum setting before attempting to check the operating conditions.