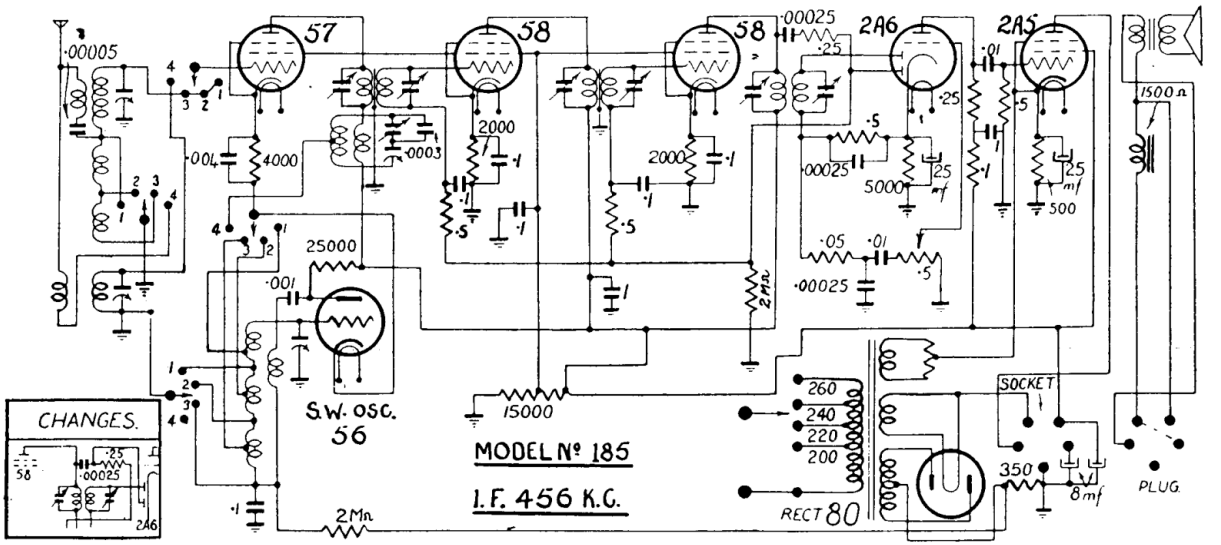
"Tasma" A.C. Operated All-Wave Model 185



Tasma model 185 is a seven-valve receiver designed for "all-wave" coverage (four bands—13/27, 25/50, 48/100 metres, and broadcast) and operation from 200-260 volts A.C. mains. This receiver is of the console type and is fitted with four controls, these being for volume, tuning, wave-change and aerial circuit trimming (on short-wave bands only). The loudspeaker fitted is an eight-inch unit with a field-coil resistance of 1,500 ohms.

The circuit of this receiver differs very appreciably from present-day practice (as far as the signal frequency and oscillator circuits are concerned, at any rate) and should be studied very carefully before any service operations are attempted. Actually, in some respects, the arrangement employed comprises two complete and separate circuits—one for broadcast and the other for short-wave operation. Inspection of the circuit will show that when the wave-change switch band is in position 4 (broadcast), the type 56 oscillator is disconnected from the "mixer" circuit and is, moreover, biased to cut-off by the voltage drop across the 350 ohms resistor in the negative high-tension circuit. (This voltage is applied to 56 grid through 2 meg. resistor and coils in position 4, but is shorted to earth in positions 1, 2 and 3 of wave-change switch). Under these conditions, the cathode of the 57 "mixer" is connected to the tapping on the tuned circuit which is coupled to its plate circuit, and the valve functions as an "autodyne."

On the short-wave bands, the plate tuning circuit of the 57 is left floating, and, instead, the 57 and 56 cathodes are returned to earth via the oscillator over-bias short-circuiting switch, and the tappings on the oscillator grid coils. The 56 thus functions as a Hartley oscillator and is cathode-coupled to the mixer. The remainder of the circuit is quite straightforward and presents no particular difficulties.

OPERATING VOLTAGES.

The following measurements were made, under "no signal" conditions, with a "1,000 ohms per volt" metter between chassis and the socket contact indicated. An exception to this is found in the case of the grid voltage applied to the 56 oscillator on broadcast; this must be measured at the source.

57, Broadcast "Autodyne" and Short-wave "Mixer": Plate, 225 v.; screen, 100 v.; cathode (B.C.), 6 v.; (S.W.) 5 v. Plate current (B.C.), 1.2 mA., (S.W.) 1 mA.

56, Short-wave Oscillator: Plate (B.C.) 210 v., (S.W.) 30 v.; grid (B.C.) 20 v., (S.W.) zero. Plate current (B.C.) 0.1 mA., (S.W.) 5 mA.

58 (two), 456 KC. I.F. Amplifiers: Plate, 225 v.; screen, 100 v.; cathode, 7 v. Plate current (each), 3 mA.

2A6, Detector, A.V.C. Rectifier and A.F. Amplifier: Plate, 110 v.; cathode, 1 v. Plate current, 0.25 mA.

2A5, Output Pentode: Plate, 230 v.; screen, 240 v.; cathode, 14 v. Plate current, 24 mA.