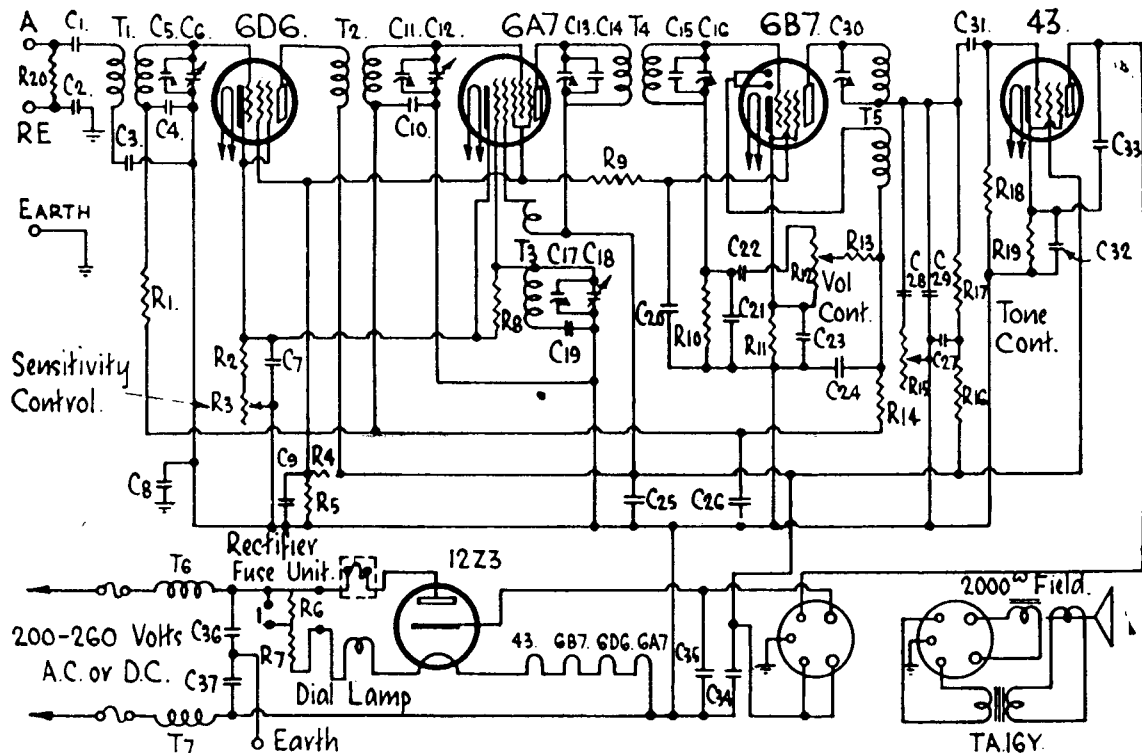


"Radiola" A.C./D.C. Broadcast Model 159



COMPONENT VALUES.

Descriptive matter and operating voltages for this receiver will be found on page 316.

COILS.

T1 (P.N. 1560)—Aerial coil; T2 (P.N. 1564)—R.F. coil; T3 (P.N. 1562)—Osc. coil; T4 (P.N. 2060)—1st I.F. transformer; T5 (P.N. 2063)—2nd I.F. transformer; T6 (P.N. 2191)—Line choke; T7 (P.N. 2191)—Line choke.

RESISTORS.

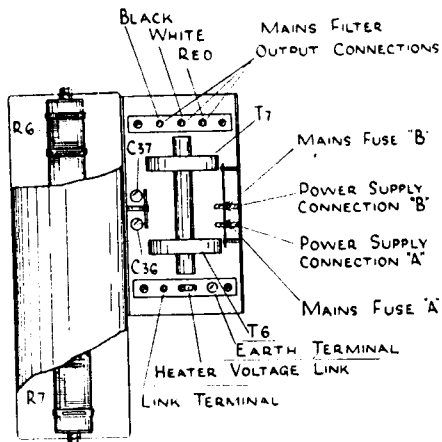
R1, R17, R20—100,000 ohms, 1/3 watt; R2—900 ohms, 1/3 watt; R3 (P.N. 2069)—1,000 ohms sensitivity control; R4—40,000 ohms, 1 watt; R5—20,000 ohms, 1 watt; R6—100 ohms, wire wound; R7—510 ohms, wire wound; R8—60,000 ohms, 1/3 watt; R9, R16—20,000 ohms, 1/3 watt; R10—500,000 ohms, 1/3 watt; R11—2,000 ohms, 1/3 watt; R12 (P.N. 2271)—300,000 ohms volume control; R13, R18—300,000 ohms, 1/3 watt; R14—1½ megohms, 1/3 watt; R15 (P.N. 2271)—300,000 ohms tone control; R19—500 ohms, 1 watt. NOTE: The volume and tone controls in this receiver are of identical construction.

CONDENSERS.

C1, C2—500 mmfd. mica, high voltage test; C3, C4, C8, C10, C26—0.05 mfd. paper; C5, C11, C13, C16, C17, C30—10/50 mmfd. mica trimmers; C6, C12, C18 (P.N. 2059)—sections of three gang variable condenser; C7, C9, C20—0.25 mfd. paper; C14, C15—85 mmfd. mica; C19—1050 mmfd. mica padder; C21, C24—200 mmfd. mica; C22, C28, C31—0.01 mfd. paper; C23—5.0 mfd., 25 v. electro; C25, C36, C37—0.1 mfd. paper; C27—0.5 mfd. paper; C29—700 mmfd. mica; C32—25 mfd., 25 v. electro; C33—0.005 mfd. paper; C34, C35 (P.N. 2325)—8 mfd., 500 v. electros. housed in one container.

"Radiola" Model 159

(Circuit Diagram and Component values for this model will be found on page 315.)



Above is shown mains filter unit 2181 which is used with Radiola 159.

RADIOLA Model "159" is a five-valve broadcast receiver designed for operation from A.C. or D.C. supply mains with voltages between 190 and 260 v. This receiver is housed in an upright console type cabinet and has a horizontal straight-line type dial. Four controls are fitted, these being for tone (continuous); volume; tuning; and sensitivity (continuous). The loudspeaker used in this receiver has a diameter of eight inches and a field resistance of 2,000 ohms.

The circuit arrangement is of the "reflexed" type which employs a 6B7 as combined I.F. amplifier, detector, A.V.C. rectifier, and audio amplifier. Series wiring of all valve heaters is employed, a fixed resistor (R6, R7) providing the necessary voltage drop.

This two-section resistor is housed in a separate filter unit (type 2181), which also houses a line filter system consisting of condensers C36, C37 and R.F. chokes T6, T7. A bridging link is provided inside this unit for adjustment of the receiver to suit various line voltages. With this link open, the two resistors R6, R7 are in circuit and the receiver may be operated on line voltages be-

tween 230 and 260 volts. When the link is closed, R6 is shorted out and the receiver is adjusted for operation on supplies of 190-230 volts. Two fuses are provided inside this filter unit, and another fuse, rated at 0.375 ampere, is fitted to the chassis.

OPERATING VOLTAGES.

The following measurements were taken with a "1,000 ohms per volt" meter between the socket contact indicated and the **black lead of the power cable**. The receiver was operated on a 240 volts A.C. supply with all controls at their maximum (clockwise) position, and de-tuned from any signal.

6D6, R.F. Amplifier: Plate, 150 v.; screen, 40 v.; cathode, 4 v. Plate current, 1.0 mA.

6A7, Frequency Converter: Plate, 150 v.; screen, 40 v.; cathode, 4 v. Plate current, 0.5 mA. Osc. plate voltage, 150 v.; osc. plate current, 2.0 mA.

6B7, Reflexed 175 KC. I.F. Amplifier, Detector, A.V.C. Rectifier, and Audio Amplifier: Plate, 60 v.; screen, 30 v.; cathode, 1.5 v. The plate voltage on this valve cannot be measured satisfactorily with an ordinary voltmeter, and a better indication is provided by the plate current, which should be 1.0 mA.

43, Output Pentode: Plate, 135 v.; screen, 150 v.; cathode, 20 v. Plate current, 30 mA. The heater of this valve operates at 25 volts.

12Z3, Half-wave I.H. Rectifier: Unfiltered output voltage (cathode to negative), 268 volts. Total output current, 45 mA. The heater of this valve operates at 12.6 volts.