"Radiola" 32-volt Dual-Wave Model 254

Alongside is shown tne complete circuit diagram for 32-volt Radiola 254. The mechanical layouts of the filter units (enclosed in the broken lines) are shown in the diagrams on page 319.

Ton EARTH. Cac Vol. In Cont (35 R7.> Cĸŧ †C57 Sensitivity Control **TA37** GDG GB7. GDG GA7 Pilot Lamps

GA7. C24. C25. C26

6DGC29C30 C31C32, GB7.

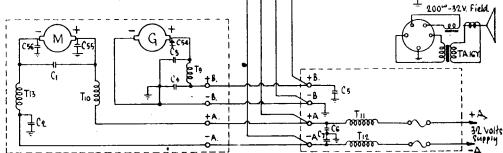
Radiola model "254" is a fivevalve receiver designed for dualwave coverage and operation from 32-volt D.C. lighting plants. This receiver is of the console type and is fitted with five controls, these being for tone (continuous), volume, tuning (with automatic, reverse-type, vernier), wave-change, and sensitivity (continuous). The loudspeaker employed is a 10-inch unit, with a field-coil resistance of 200 ohms; the field of this speaker

is wired in parallel with the filament network. Conversion of the low-tension supply to high-tension is effected by means of a motor-generator set which is housed in the base of the cabinet.

The circuit arangement of this receiver is fairly straightforward and requires no particular description. However, the power supply system will be unfamiliar to many and particular attention should be paid to the arrangement. To simplify matters in this respect, sketch layouts of the motor-generator base-plate and line-filter (A.W.A. type 2488) are given on page 319. In connection with these. it should be noted that condensers C54. C55, and C56 are located inside the motor-generator frame. Finally, careful attention should be paid to the fact that neither side of the 32 volt wiring in the receiver, filter, or M.G. set is directly earthed; this is to avoid trouble due to the varying polarity and indifferent nature of the earthing systems usually employed on 32-volt lighting plants.

OPERATING VOLTAGES

The following measurements were made, under "no signal" conditions, with a "1,000 ohms per volts" meter between chassis and the socket contact indicated. The receiver was operated on a 32-volt



COMPONENT VALUES

COILS.

T2 (P.N. 2358)—aerial coil assembly; T1, T2 (P.N. 2358)—aerial coil assembly; T3, T4 (P.N. 2359)—R.F. coil assembly; T5, T6 (P.N. 2360)—osc. coil assembly; T7 (P.N. 2078)—lst 1.F. trans., 460 KC.; T8 (P.N. 2079)—2nd 1.F. trans., 460 KC.; T9—R.F. choke in H.T. supply lead; T10, T13—line filter chokes in M.G. input circuit; T11, T12—line filter chokes in 32-volt supply; TA37 (P.N. 2089)—A.F. choke for ripple filtration.

RESISTORS.

control: R14, R15, R19—13 megohms, 1/3 W. R16—2,000 ohms, 1/3 W.; R17 (P.N. 1668)—

300,000 ohms, volume control: R20—1 megohm, 1 W.: R23 (P.N. 1668)—300,000 ohms, tone control: R24—300,000 ohms, 1/3 W.; R25, R26—500 ohms, 1 W.

CONDENSERS.

CONDENSERS.

C1, C2, C5, C40, C44—0.5 mfd., paper: C3, C33—700 mmfd., mica: C4, C6, C7, C8, C9, C16, C28, C38—0.1 mfd., paper: C10, C13, C47—10 mmfd., mica: C11, C14, C18, C20, C24, C27, C29, C32, C48, C49—10/50 mmfd., mica trimmers: C12, C17, C35, C42, C46, C50, C54, C55, C56, C57—0.05 mfd., paper: C15, C23, C51 (P.N. 1754)—sections of 3-ganag variable: C19—2,800 mmfd., mica, short-wave padder: C21, C22 (P.N. 1153)—10/50 mmfd., mica trimmer and 390 mmfd. mica shunt for broadcast padding: C55, C26, C30, C31, C52—50 mmfd., mica: C34, C36—200 mmfd., mica: C37—5 mfd., 25 v., electro: C39—25 mfd., 25 v., electro: C39—25 mfd., paper: C43—0.005 mfd., paper: C43—0.005 mfd., paper: C43—0.005 mfd., paper: C45, C53 (P.N. 1871) mfd., 25 v., electro; C41—0.01 mfd., paper; C43—0.005 mfd., paper; C45, C53 (P.N. 1871)
—8 mfd., 500 v., electros, housed in one container.

D.C. supply and the sensitivity control was adjusted to its maximum setting.

6D6, R.F. Amplifier: Plate, 175 v.; screen, 70 v.; cathode, 2.5 v. Plate current, 4 mA.

6A7, Frequency Converter: Plate, 175 v.; screen, 70 v.; cathode, (B.C.) 3 v.. (S.W.) 2 v.; osc. anode grid, 125 v. Plate current, (B.C.) 1.5 mA., (S.W.) 2 mA.; osc. anode current, 2.5 mA.

6D6, 460 KC. I.F. Amplifier: Plate, 175 v.; screen, 70 v.; cathode, 2.5 v. Plate current, 4 mA.

6B7, Detector, A.V.C. Rectifier, and A.F. Amplifier: Plate, 75 v.; screen, 20 v.; cathode, 1 v. Plate current, 0.75 mA.

43, Output Pentode: Plate, 135 v.: screen, 140 v.; cathode, 18 v. Plate current, 31 mA.

Voltage Drop across L.S. field, 32 volts.

"Radiola" 254 Filter Systems

(Circuit Diagram and Descriptive Matter will be found on page 321.)

