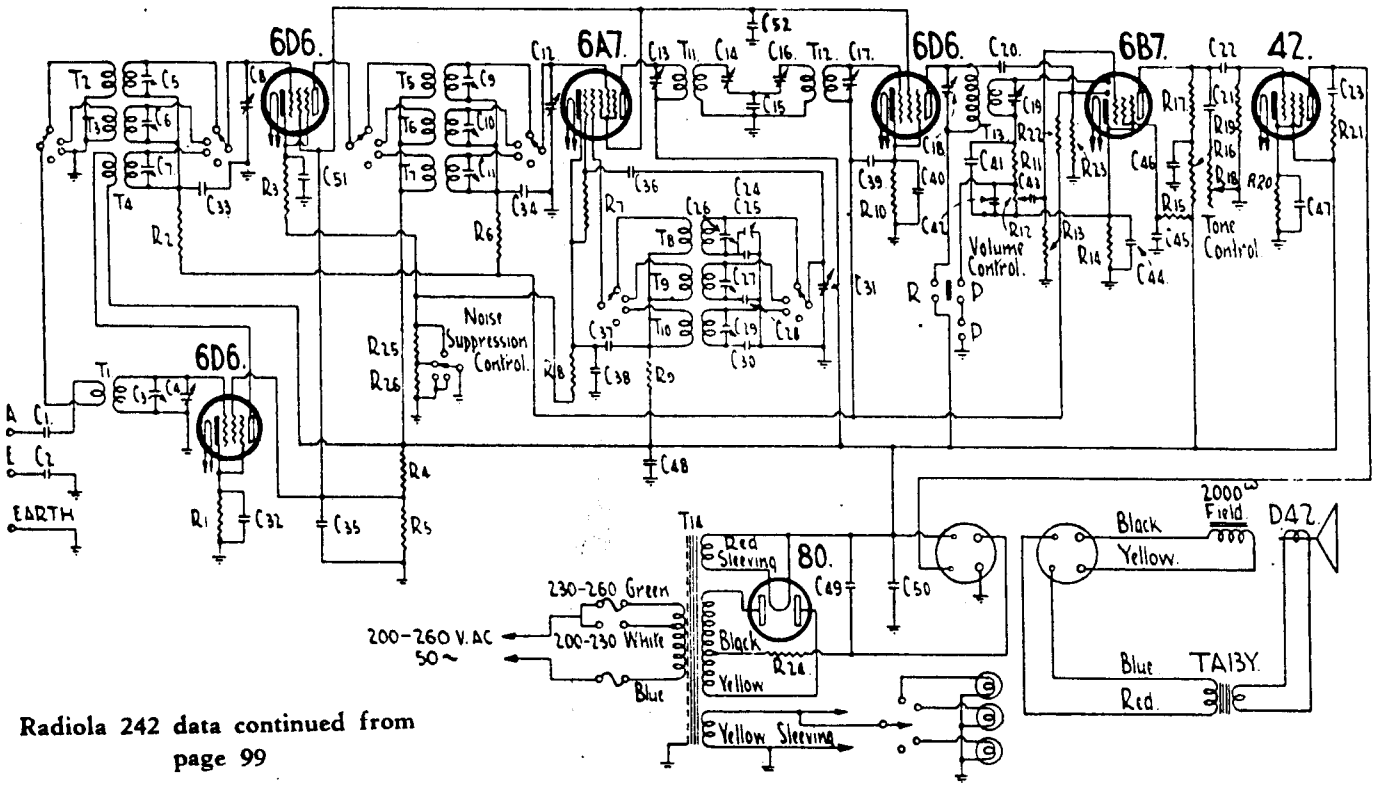
"Radiola" A.C. Triple-Wave Console Model 242



Radiola 242 data continued from page 99

6D6, 16.5—44 m. R.F. Amplifier: Plate, 250 v.; screen, 90 v.; cathode, 2.5 v. Plate current, 7 mA.

6D6, normal R.F. Amplifier: Plate ,250 v.; screen, 90 v.; cathode, 2.5 v. Plate current, 7 mA.

6A7, Frequency Converter: Plate, 250 v.; screen, 90 v.; cathode, 2.5 v.; osc. anode grid, 100 v. Plate current, 2.5 mA.; osc. anode current, 3.5 mA.

6D6, 460 kC. I.F. Amplifier: Plate, 250 v.; screen, 90 v.; cathode, 2.5 v. Plate current, 7 mA.

6B7, Detector, A.V.C. Rectifier, and A.F. Amplifier: Plate, 90 v.; screen, 30 v.; cathode, 2 v. Plate current, 0.8 mA.

42, Output Pentode: Plate, 235 v.; screen, 250 v.; cathode, 15 v. Plate current, 30 mA.

80, Rectifier: 400 v. r.m.s. A.C., each plate. Total output current, 75 mA.

Voltage Drop Across L.S. Field: 150 volts.

COMPONENT VALUES

COILS.

T1—aerial coil, 16.5/44 m.; **T2**—aerial coil, 190/555 m.; **T3**—aerial coil, 35/100 m.; **T4, T7**—R.F. coil, 16.5/44 m.; **T5**—R.F. coil 190/555 m.; **T6**—R.F. coil, 35/100 m.; **T8**—osc. coil, 190/555 m.; **T9**—osc. coil, 35/100 m.; **T10**—osc. coil, 16.5/44 m.; **T11**—1st I.F. trans., 460 kC.; **T12**—2nd I.F. trans., 460 kC.; **T13**—3rd I.F. trans., 460 kC.; **T14**—power trans.

RESISTORS.

R1, R3, R8, R10—300 ohms, ½ W.; **R2, R6, R11**—160,000 ohms, ½ W.; **R4, R5**—11,000 ohms, 3 W.; **R7, R16**—60,000 ohms, ½ W.; **R9, R21**—20,000 ohms, ½ W.; **R12**—250,000 ohms, vol. con.; **R13, R22, R23**—1½ megohms, ½ W.; **R14**—3,000 ohms, 1 W.; **R15**—1 megohm, 1 W.; **R17**—100,000 ohms, 1 W.; **R18**—250,000 ohms, tone control; **R19**—300,000 ohms, ½ W.; **R20**—400 ohms, 1 W.; **R24**—500 ohms, w.w.; **R25**—500 ohms, ½ W.; **R26**—800 ohms, ½ W.

CONDENSERS.

C1, C2—500 mmfd. mica high vtg. test; **C3, C7**—10/50 mmfd. mica trimmers; **C4, C8, C12, C31**—variable; **C5, C6, C9, C10, C11**—5/20 mmfd. mica trimmers; **C13, C14, C16, C17, C18, C19**—10/90 mmfd. I.F. trimmers; **C15**—0.003 mfd. paper tubular; **C20**—700 mmfd. mica; **C21, C23**—0.01 mfd. paper tubular; **C22, C33, C34, C37, C39, C43, C52**—0.05 mfd. paper tubular; **C24**—190/555 m. 10/50 mmfd. pdg. tr.; **C25**—330 mmfd. padding; **C26, C27, C29**—5/20 mmfd. trimmers; **C28**—1,800 mmfd. padding; **C30**—2,300 mmfd. padding; **C32, C35, C38, C45, C51**—0.1 mfd. paper tubular; **C36**—50 mmfd. mica; **C40, C46**—0.25 mfd. paper tubular; **C41, C42**—100 mfd. mica; **C44**—5 mfd. 25 v. electrolytic; **C47**—25 mfd. 25 v. electrolytic; **C48**—0.5 mfd. paper tubular; **C49, C50**—8 mfd. 500 v. electrolytic.

"Radiola" Battery Triple-Wave Model 243

Radiola model "243" is a five-valve receiver designed for triple-wave coverage (16.5—44, 35—100, and 195—555 metres) and operation from battery power supplies. This receiver is of the console type and is fitted with five controls—tone (three positions), volume, tuning, wavechange, and battery-switch (with extra position for dial-lamp control). The loudspeaker employed is a 10-inch unit of the permanent-magnet type. This receiver was marketed during 1935.

Power supply for this receiver is obtained from a 6-volt accumulator ("A") and three series-connected 45 v. dry batteries ("B"). Bias voltages are obtained within the receiver from the drop across series filament and cathode resistors.

Although the valve complement of this receiver is somewhat similar to that employed in Radiola "147" (see page 64, April, 1939, RADIO TECHNICIAN), the arrangement is changed to provide two 460 kC. I.F. stages instead of the R.F. and single I.F. stages of model "147." In addition, a 6-volt heater frequency converter valve is used and circuits are added for coverage of two short-wave bands in addition to the normal broadcast band.

The circuit arrangement is quite straightforward and should present no particular difficulty. Attention should be paid to the fact that independent series resistors are used for the two I.F. amplifier valve filaments, and as these resistors are in the negative leg of their respective filaments, care should be taken during testing to see that an accidental short is not introduced between negative filament and earth. (This might easily occur when checking the wiring or condition of C22, for example.) Another point to note in connection with the I.F. amplifier valves is that although the negative side of their filaments is 4 volts above earth, the effective grid bias is only about 2.5 volts, due to the fact that the diode load resistor is returned to the 6B7 cathode.

OPERATING VOLTAGES

The following measurements were made, under "no signal" conditions, with a "1,000 ohms per volt" meter between chassis and the socket contact indicated:

(Continued on facing page)