

# Radiola Models 256 and 304

## ELECTRICAL SPECIFICATIONS.

Voltage Rating	.....	200-260 volts
Frequency Rating	.....	50-60 cycles
(Special instruments made for other voltage and frequency ratings).		
Power Consumption	.....	75 watts
Tuning Ranges	.....	(a) 1500-550 kilocycles (b) 35-105 metres. (c) 13-39 metres.
Intermediate Frequency	.....	460 kilocycles

## VALVES AND CIRCUITS.

- 6D6 R.F. Amplifier.
- 6A7 Detector-Oscillator.
- 6D6 I.F. Amplifier.
- 6B7 Detector, A.V.C. and Audio Amplifier.
- 42 Output Pentode.
- 80 Rectifier.

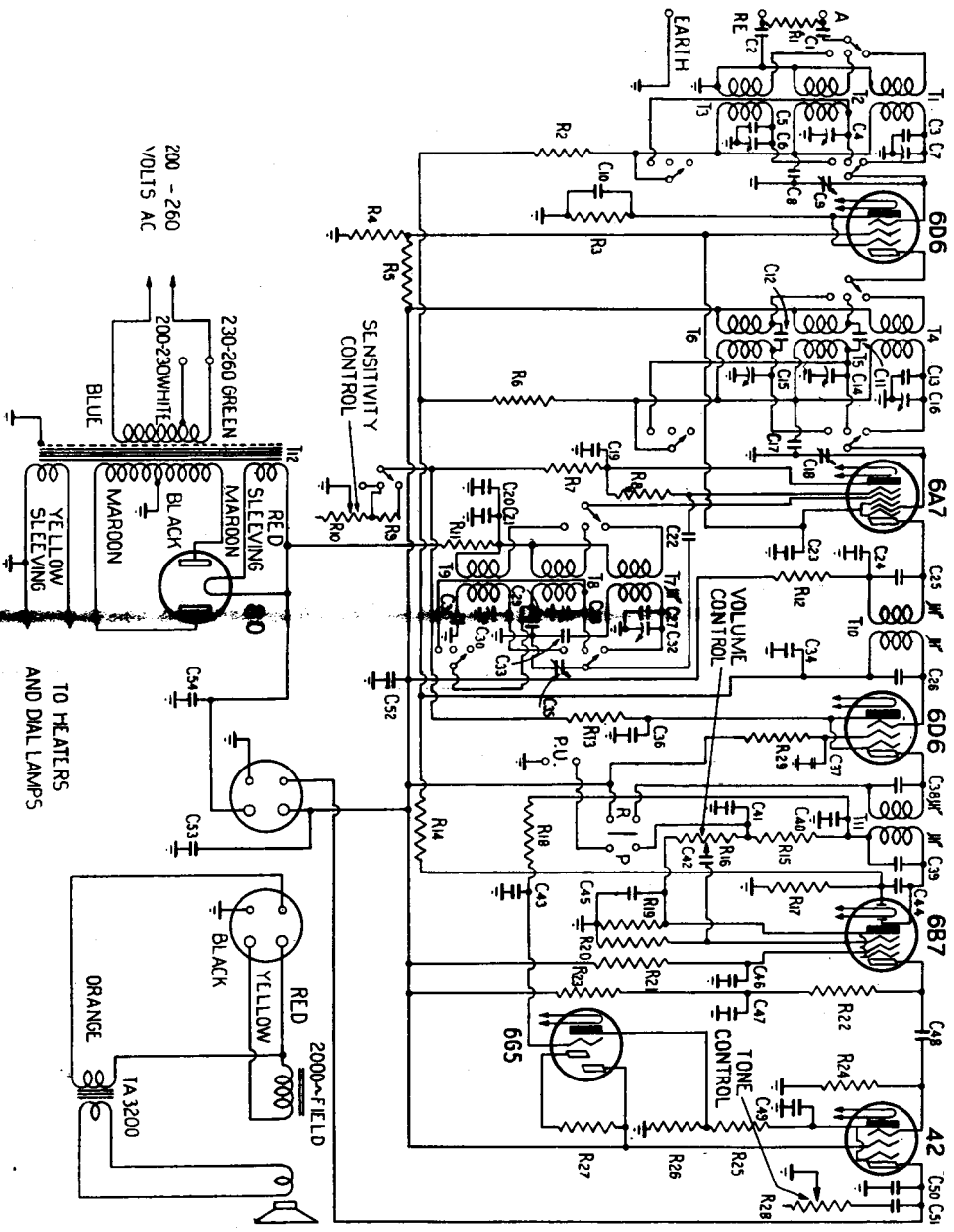
## SOCKET VOLTAGES

VALVE.	Chassis to Cathode Volts.	Chassis to Screen Grid Volts.	Chassis to Plate Volts.	Plate Current M.A.	Heater Volts.
6D6 R.F. Amplifier	..... 3.0	100	250	6.0	6.3
6A7 Detector, M.W.	..... 6.5	100	250	2.0	6.3
S.W., 35-105	..... 3.0	100	250	4.0	—
S.W., 13-39	..... 3.0	100	250	4.0	—
6A7 Oscillator	..... —	—	150	4.0	—
6D6 I.F. Amplifier—					
M.W.	..... 6.5	105	250	2.5	6.3
S.W., 35-105	..... 3.0	85	250	6.0	—
S.W., 13-39	..... 3.0	85	250	6.0	—
6B7 Detector	..... 2.0	*25	*60	0.75	6.3
42 Pentode	..... 14.5	250	235	30.0	6.3
80 Rectifier	..... 680/340 volts, 65 M.A. total current. 5.0				

Voltage across loudspeaker field — 130 volts.

Measured at 240 volts A.C. supply. No signal input. Controls in maximum clockwise position excepting range switch which is set as desired.

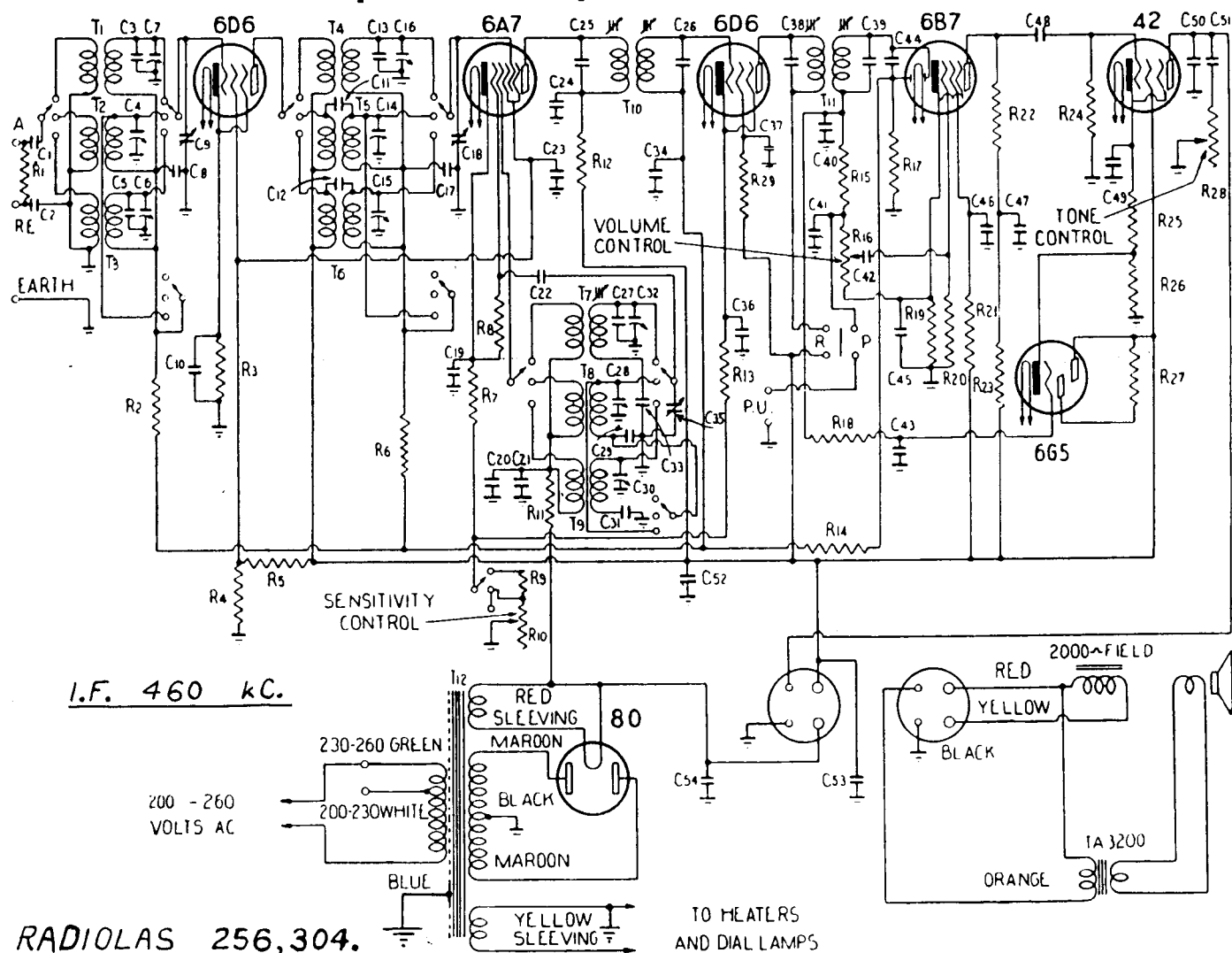
\* Cannot be measured with ordinary voltmeter.



Code	Part No.	COILS	Code	Part No.	RESISTORS	Code	Part No.	CONDENSERS
T1	3563	Aerial Coil, 1500-550 K.C.	R20		500,000 ohms, $\frac{1}{2}$ watt	C24		.05 mfd. Paper
T2	3563	Aerial Coil, 35-105 Metres	R21		1 megohm, 1 watt	C25		115 mmfd. Mica (A)
T3	3568	Aerial Coil, 13-39 Metres	R22		200,000 ohms, $\frac{1}{2}$ watt	C26		115 mmfd. Mica (A)
T4	3565	R.F. Coil, 1500-550 K.C.	R23		50,000 ohms, $\frac{1}{2}$ watt	C27		15 mmfd. Mica (C)
T5	3565	R.F. Coil, 35-105 Metres	R24		300,000 ohms, $\frac{1}{2}$ watt	C28		2-20 mmfd. Air Trimmer
T6	3569	R.F. Coil, 13-39 Metres	R25		400 ohms, 1 watt	C29		2025 mmfd. Mica
T7	3567	Osc. Coil, 1500-550 K.C.	R26		50 ohms, $\frac{1}{2}$ watt	C30		2-10 mmfd. Air Trimmer
T8	3567	Osc. Coil, 35-105 Metres	R27		1 megohm, $\frac{1}{2}$ watt	C31		3400 mmfd. Mica
T9	3570	Osc. Coil, 13-39 Metres	R28	2762	100,000 ohms, Tone Control	C32		2-20 mmfd. Air Trimmer
T10	3243	1st I.F. Transformer	R29		100,000 ohms, 1 watt	C33		440 mmfd. Mica
T11	3244	2nd I.F. Transformer				C34		.05 mfd. Paper
T12	1805A	Power Transformer, 50-60 C.				C35	3399	Variable Condenser
T12	1806A	Power Transformer, 40 C.				C36		.1 mfd. Paper
T12	1807A	Power Transformer, 110 V.				C37		.1 mfd. Paper
					CONDENSERS	C38		115 mmfd. Mica (A)
						C39		115 mmfd. Mica (A)
						C40		100 mmfd. Mica (A)
						C41		100 mmfd. Mica (G)
						C42		.05 mfd. Paper
						C43		.05 mfd. Paper
R1		100,000 ohms, $\frac{1}{2}$ watt	C4		2-20 mmfd. Air Trimmer	C44		700 mmfd. Mica
R2		100,000 ohms, $\frac{1}{2}$ watt	C5		6 mmfd. Mica (F)	C45		5 mfd. 25V. Electrolytic
R3		300 ohms, $\frac{1}{2}$ watt	C6		2-20 mmfd. Air Trimmer	C46		.1 mfd. Paper
R4		11,000 ohms, 3 watt	C7		2-20 mmfd. Air Trimmer	C47		.5 mfd. Paper
R5		11,000 ohms, 3 watt	C8		.05 mfd. Paper	C48		.05 mfd. Paper
R6		100,000 ohms, $\frac{1}{2}$ watt	C9	3399	Variable Condenser	C49		25 mfd. 25V. Electrolytic
R7		300 ohms, $\frac{1}{2}$ watt	C10		.1 mfd. Paper	C50		.005 mfd. Paper
R8		60,000 ohms, $\frac{1}{2}$ watt	C11		6 mmfd. Mica (F)	C51		.035 mfd. Paper
R9		300 ohms, $\frac{1}{2}$ watt	C12		10 mmfd. Mica (B)	C52		.5 mfd. Paper
R10	3410	3,000 ohms, Sens. Control	C13		6 mmfd. Mica (F)	C53		8 mfd. 500V. Electrolytic
R11		50,000 ohms, 1 watt	C14		2-20 mmfd. Air Trimmer	C54		8 mfd. 500V. Electrolytic
R12		300 ohms, $\frac{1}{2}$ watt	C15		2-20 mmfd. Air Trimmer			
R13		600 ohms, $\frac{1}{2}$ watt	C16		2-20 mmfd. Air Trimmer			
R14		$1\frac{1}{2}$ megohms, $\frac{1}{2}$ watt	C17		.05 mfd. Paper			
R15		100,000 ohms, $\frac{1}{2}$ watt	C18	3399	Variable Condenser			
R16	1668	300,000 ohms, Vol. Control	C19		.1 mfd. Paper			
R17		$1\frac{1}{2}$ megohms, $\frac{1}{2}$ watt	C20		.05 mfd. Paper			
R18		$1\frac{1}{2}$ megohms, $\frac{1}{2}$ watt	C21		8 mfd. 500V. Electrolytic			
R19		3,000 ohms, $\frac{1}{2}$ watt	C22		50 mmfd. Mica (D)			
			C23		.1 mfd. Paper			

## RADIOLAS 256 AND 304 CIRCUIT DATA

# "Radiola" A.C. Operated Triple-Wave Models 256 and 304



RADIOLAS 256,304.

## RADIOLA "256" 1937 CONSOLE MODEL

## RADIOLA "304" 1937 RADIOGRAM MODEL

Identical chassis, both use 10-inch, 2,000 ohms field, loudspeakers.

### COMPONENT VALUES.

The numbers in parenthesis following component indices are manufacturer's part numbers.

### RESISTORS.

R1, R2, R6, R15—100,000 ohms,  $\frac{1}{2}$  W.; R3, R7, R9, R12—300 ohms,  $\frac{1}{2}$  W.; R4, R5—11,000 ohms,  $\frac{3}{4}$  W.; R8—60,000 ohms,  $\frac{1}{2}$  W.; R10 (3140)—3,000 ohms, variable, sensitivity control; R11, R23—50,000 ohms,  $\frac{1}{2}$  W.; R13—600 ohms,  $\frac{1}{2}$  W.; R14, R17, R18—1.75 megohms,  $\frac{1}{2}$  W.; R16 (1668)—300,000 ohms volume control; R19—3,000 ohms,  $\frac{1}{2}$  W.; R20—500,000 ohms,  $\frac{1}{2}$  W.; R21—1 megohm, 1 W.; R22—200,000 ohms,  $\frac{1}{2}$  W.; R24—300,000 ohms,  $\frac{1}{2}$  W.; R25—400 ohms, 1 W.; R26—50 ohms,  $\frac{1}{2}$  W.; R27—1 megohm,  $\frac{1}{2}$  W.; R28 (2762)—100,000 ohms, variable, tone control; R29—100,000 ohms, 1 W.

### CONDENSERS.

C1, C2—500 mmfd., high voltage test, mica; C3, C5, C13—6 mmfd. (F), mica, coil trimmer shunts; C4, C6, C7, C14, C15, C16, C28, C32—2/20 mmfd., air dielectric, coil trimmers; C8, C17, C20, C24, C34, C42, C43, C48—0.05 mfd., paper; C9, C18, C35 (3399)—sections of 3-gang variable; C10, C19, C23, C36, C37, C46—0.1 mfd., paper; C11—6 mmfd. (F), mica; C12—10 mmfd. (B), mica; C21, C53, C54—8 mfd., 500 v., electro; C25, C26, C38, C39—115 mmfd. (A), mica, fixed I.F.T. trimmers; C27—15 mmfd. (C), mica, B/C, osc. coil trimmer shunt; C29—2025 mmfd., mica, S/W.1 padder; C30—2/10 mmfd., air dielectric, S/W.2 osc. coil trimmer; C31—3,400 mmfd., mica, S/W.2 padder; C33—440 mmfd., mica, B/C padder; C40, C41—100 mmfd. (G), mica; C44—700 mmfd., mica; C45—5 mfd., 25 v., electro; C47, C52—0.5 mfd., paper; C49—25 mfd., 25 v., electro; C50—0.005 mfd., paper; C51—0.035 mfd., paper.

### COILS, ETC.

T1, T2 (3563)—B/C. and S/W.1 aer. coils respectively; T3 (3568)—S/W.2 aer. coil; T4, T5 (3565)—B/C. and S/W.1 R.F. coils respectively; T6 (3569)—S/W.2 R.F. coil; T7, T8 (3567)—B/C. and S/W.1 osc. coils respectively; T9 (3570)—S/W.2 osc. coil; T10 (3243)—460 kC., 1st I.F. transformer; T11 (3244)—460 kC., 2nd I.F. transformer; T12 (1805A, 1806A, 1807A)—power transformers for 50/60 cycle, 40 cycle, and 110 v. operation respectively.

### OPERATING VOLTAGES.

The following measurements were made with a "1,000 ohms per volt" meter, and voltages are those existing between the socket contact indicated and chassis. The receiver was operating under "no signal" conditions from a 240 v. A.C. supply with all controls turned to their maximum clockwise position, except the wave-change switch which was set as desired. Those readings shown in parenthesis were made with the wave-change switch in both the "S/W.1" and the "S/W.2" positions, whilst the alternative readings were taken with receiver on "B.C."; all other readings are unaffected by the position of the wave-change switch.

6D6, R.F. Amplifier: Plate, 250 v.; screen, 100 v.; cathode, 3 v. Plate current, 6 mA.

6A7, Frequency Converter: Plate, 250 v.; screen, 100 v.; cathode, 6 v. (3 v.); osc. anode grid, 150 v. Plate current, 2 mA. (4 mA.).

6D6, 460 kC., I.F. Amplifier: Plate, 250 v.; screen, 105 v. (85 v.); cathode, 6 v. (3 v.). Plate current, 3 mA. (6 mA.).

6B7, Detector, A.V.C. Rectifier, and A.F. Voltage Amplifier: Plate, 60 v.; screen, 25 v.; cathode, 2 v. Plate current, 8 mA.

42, Output Pentode: Plate, 240 v.; screen, 250 v.; cathode, 15 v. Plate current, 30 mA.

80, Rectifier: A.C. volts per plate, 340 v.; total current, 65 mA.; voltage drop across loudspeaker field, 130 v.