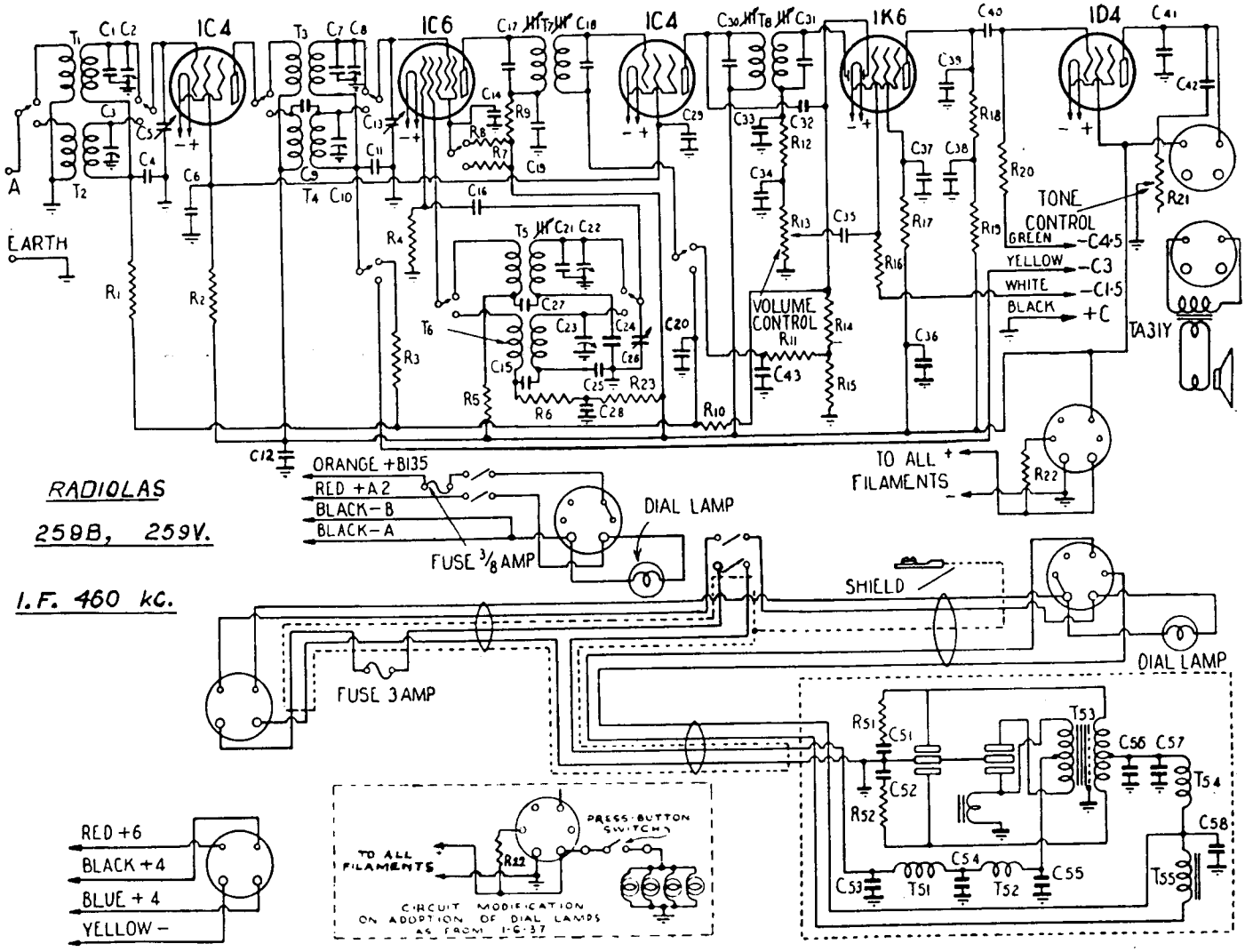
"Radiola" Battery Dual-Wave Console Models 259B and 259V



RADIOLAS 259B, 259V.

I.F. 460 kc.

RADIOLA "259B"

1937 BATTERY-OPERATED CONSOLE

RADIOLA "259V"

1937 VIBRATOR-POWERED CONSOLE

Both use 8-inch, permag. loudspeaker.

These models employ the same basic chassis and are readily interchangeable by use of appropriate power supply cable. Note use of tapped 6-volt battery for "vibrator" operation and retention of tapped bias battery.

COMPONENT VALUES.

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

RESISTORS.

R1, R3, R12—100,000 ohms, ½ W.; **R2**—75,000 ohms, ½ W.; **R4, R8**—60,000 ohms, ½ W.; **R5, R19**—50,000 ohms, ½ W.; **R6, R3**—50,000 ohms, ½ W.; **R7** — 40,000 ohms, ½W.; **R9**—300 ohms, ½ W.; **R10, R11, R16**—1.75 megohms, ½ W.; **R13** (1507)—500,000 ohms, volume control; **R14, R17**—1 megohm, ½ W.; **R15, R20**—500,000 ohms, ½ W.; **R18**—200,000 ohms, ½ W.; **R21** (2762)—100,000 ohms, variable, tone control; **R22** (3270)—5.4 ohms, w.w.; **R51, R52**—50 ohms, ½ W.

CONDENSERS.

C1, C7—6 mmfd. (F), mica, coil trimmer shunts; **C2, C3, C8, C10, C22, C23**—2/20 mmfd., mica, coil trimmers; **C4, C11, C15, C19 C20, C27, C35, C40, C43**—0.05 mfd., paper; **C5, C13, C26** (3450)—sections of 3-gang variable; **C6, C14, C29, C37, C53**—0.1 mfd., paper; **C9**—10 mmfd. (B), mica; **C12, C38, C58**—0.5 mfd., paper; **C16**—50 mmfd. (D), mica; **C17, C18, C30, C31**—115 mmfd. (A), mica, fixed I.F.T. trimmers; **C21**—15 mmfd. (C), mica, B/C. osc. coil trimmer shunt; **C24**—440 mmfd., mica, B/C. padder; **C25**—2,800 mmfd., mica, S/W. padder; **C28, C36, C56**—8 mfd., 500 v., electro; **C32**—700 mmfd., mica; **C33, C34**—100 mmfd. (G), mica; **C39**—200 mmfd. (J), mica; **C41**—2,300 mmfd., mica; **C42**—0.035 mfd., paper; **C51, C52, C57**—0.02 mfd., paper; **C54, C55**—0.25 mfd., paper.

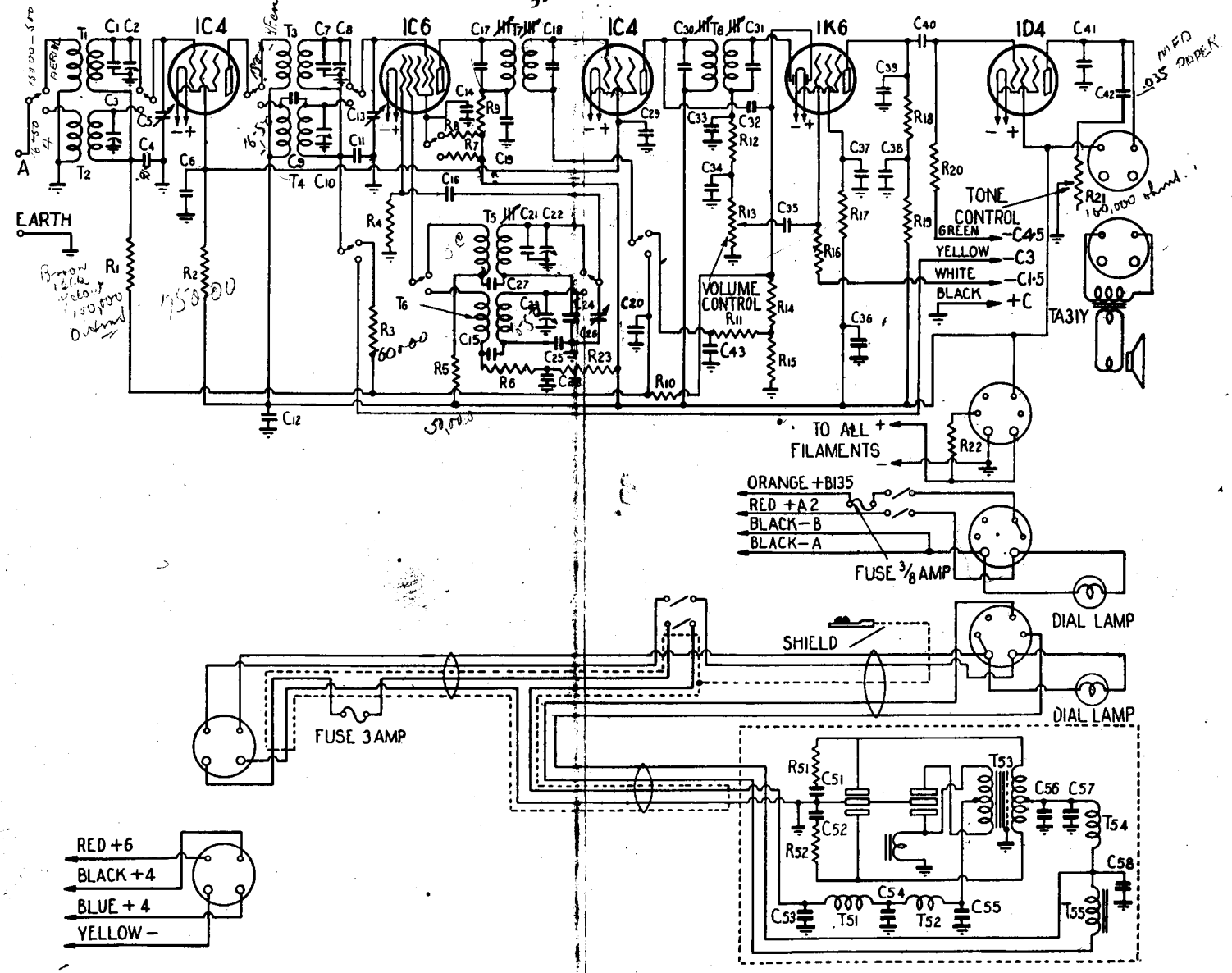
COILS, ETC.

T1, T2 (3402)—B/C. and S/W. aer. coils respectively; **T3, T4** (3404)—B/C. and S/W. R.F. coils respectively; **T5, T6**—B/C. and S/W. osc. coils respectively; **T7** (3243)—460 kC., 1st I.F. transformer; **T8** (3244)—460 kC., 2nd I.F. transformer; **T51** (3149)—low-tension R.F. choke; **T52** (3294)—low-tension R.F. choke; **T53** (3290)—vibrator transformer, 4 v.; **T54** (3303)—high-tension R.F. choke; **T55** (3292)—high-tension smoothing choke.

OPERATING VOLTAGES.

The following measurements were made with a "1,000 ohms per volt" meter, except where otherwise mentioned, and voltages are those appearing between the socket contacts indicated and chassis. The receiver was operating under "no signal" conditions 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 the "S/W." position, the alternative readings being taken with the receiver on "B/C."; all other readings are unaffected by the position of the wave-change switch. The grid bias voltages of the 1K6 and 1D4 were measured at their source and not at the socket contacts of the valves, and the screen voltages to all valves except the 1D4 cannot be measured with the ordinary "1,000 ohms per volt" meter, but are included for the sake of completeness.

(Continued in col. 2, page 309)


IC4
IC6
IC4
1K6
1D4
EARTH
TONE CONTROL
GREEN —C45
YELLOW —C3
WHITE —C1·5
BLACK +C
VOLUME CONTROL
TA31Y
TO ALL + FILAMENTS −
ORANGE +B135
RED +A2
BLACK—B
BLACK—A
FUSE 3/8 AMP
DIAL LAMP
SHIELD
DIAL LAMP
FUSE 3 AMP
RED +6
BLACK +4
BLUE +4
YELLOW —

Code	Part No.	COILS — RECEIVER UNIT
T1	3402	Aerial Coil, 1500-550 K.C.
T2	3402	Aerial Coil, 16-50 Metres
T3	3404	R. F. Coil, 1500-550 K.C.
T4	3404	R.F. Coil, 16-50 Metres
T5	3407	Osc. Coil, 1500-550 K.C.
T6	3407	Osc. Coil, 16-50 Metres
T7	3243	First I.F. Transformer.
T8	3244	Second I.F. Transformer
		COILS — POWER UNIT
T51	3149	R.F. Choke
T52	3294	R.F. Choke
T53	3290	Vibrator Transformer, 4V
T54	3303	R.F. Choke
T55	3292	Smoothing Choke
		RESISTORS — RECEIVER UNIT
R1		100,000 ohms, ⅛ watt
R2		75,000 ohms, ⅛ watt
R3		100,000 ohms, ⅛ watt
R4		60,000 ohms, ⅛ watt
R5		50,000 ohms, ⅛ watt
R6		5,000 ohms, ⅛ watt
R7		40,000 ohms, ⅛ watt
R8		60,000 ohms, ⅛ watt
R9		300 ohms, ⅛ watt
R10		1½ Megohms, ⅛ watt
R11		1½ Megohms, ⅛ watt
R12		100,000 ohms, ⅛ watt
R13	1507	500,000 ohms, Vol. Control
R14		Megohm, ⅛ watt
R15		500,000 ohms, ⅛ watt
R16		1½ Megohms, ⅛ watt
R17		Megohm, ⅛ watt

Code	Part No.	RESISTORS — RECEIVER UNIT
R18		200,000 ohms, ⅛ watt
R19		50,000 ohms, ⅛ watt
R20		500,000 ohms, ⅛ watt
R21	2762	100,000 ohms, Tone Control
R22	3270	5.4 ohms, wire wound
R23		5,000 ohms, ⅛ watt
		RESISTORS — POWER UNIT
R51		50 ohms, ⅛ watt
R52		50 ohms, ⅛ watt
		CONDENSERS — RECEIVER UNIT
C1		6 mmfd. Mica (F)
C2		2-20 mmfd. Air Trimmer
C3		2-20 mmfd. Air Trimmer
C4		.05 mfd. Paper
C5	3450	Variable Condenser
C6		.1 mfd. Paper
C7		6 mmfd. Mica (F)
C8		2-20 mmfd. Air Trimmer
C9		10 mmfd. Mica (B)
C10		2-20 mmfd. Air Trimmer
C11		.05 mfd. Paper
C12		.5 mfd, Paper
C13	3450	Variable Condenser
C14		.1 mfd. Paper
C15		.05 mfd. Paper
C16		50 mmfd. Mica (D)
C17		115 mmfd. Mica (A)
C18		115 mmfd. Mica (A)
C19		05 mfd. Paper
C20		.05 mfd. Paper

Code	No.	CONDENSERS — RECEIVER UNIT
C21		15 mmfd. Mica (C)
C22		2-20 mmfd. Air Trimmer
C23		2-20 mmfd. Air Trimmer
C24		440 mmfd. Mica Padding
C25		2800 mmfd. Padding
C26	3450	Variable Condenser
C27		.05 mfd. Paper
C28		8 mfd. 500 Volt Electrolytic
C29		.1 mfd. Paper
C30		115 mmfd. Mica (A)
C31		115 mmfd. Mica (A)
C32		700 mmfd. Mica
C33		100 mmfd. Mica (G)
C34		100 mmfd. Mica (G)
C35		.05 mfd. Paper
C36		8 mfd. 500V Electrolytic
C37		.1 mfd. Paper
C38		.5 mfd. Paper
C39		200 mmfd. Mica (J)
C40		.05 mfd. Paper
C41		2300 mmfd. Mica
C42		.035 mfd. Paper
C43		.05 mfd. Paper
		CONDENSERS — POWER UNIT
C51		.02 mfd. Paper
C52		.02 mfd. Paper
C53		.1 mfd. Paper
C54		.25 mfd. Paper
C55		.25 mfd. Paper
C56		8 mfd. 500 V Electrolytic
C57		.02 mfd. Paper
C58		.5 mfd. Paper

RADIOLAS 259B AND 259V CIRCUIT DATA

Radiola Models 259B and 259V

Battery Complement (259B)

Accumulator "A" battery	2 volts (.78 amps.)
"B" battery	135 volts
"C" battery	4½ volts bias

Battery Complement (259V)

Accumulator "A" battery	6 volts (1.2 amps.)
"C" battery	4½ volts bias
Tuning Ranges	(A) 1500-550 kilocycles (B) 16-50 metres
Intermediate Frequency	460 kilocycles

VALVES AND CIRCUITS.

15-6 1C4 R.F. Amplifier
Detector-Oscillator
1C4 I.F Amplifier
16-6 1K6 Detector, A.V.C. and Audio Amplifier
15-6 1D4 Output Pentode

3-19-6

SOCKET VOLTAGES.

VALVE	Chassis to Control Grid Volts	Chassis to Screen Grid Volts	Chassis to Plate Volts	Plate Current M.A.	Filament Volts
1C4 R.F. Amplifier ...	0	*50	135	2.0	2.0
1C6 Detector M.W....	0	*45	135	2.0	2.0
S.W. ...	–3	*60	135	2.0	–
Oscillator M.W.	–	–	50	1.5	–
S.W.	–	–	90	3.0	–
1C4 I.F. Amplifier	0	*50	135	2.0	2.0
1K6 Detector	*–1.5	*35	*50	0.25	2.0
1D4 Output Pentode	*–4.5	135	130	6.0	2.0

Measured with no signal input.

16-75

* Cannot be measured with ordinary voltmeter.

RADIOLA MODELS

"259B" & "259V"

(Continued from page 306)

1C4, R.F. Amplifier: Plate, 135 v.; screen, 50 v.; grid, zero. Plate current, 2 mA.

1C6, Frequency Converter: Plate, 135 v.; screen, 45 v. (60 v.); grid, zero (—3 v.); osc. anode grid, 50 v. (90 v.). Plate current, 2 mA.

1C4, 460 kC., I.F. Amplifier: Plate, 135 v.; screen, 50 v.; grid, zero. Plate current, 2 mA.

1K6, Detector, A.V.C. Rectifier, and A.F. Voltage Amplifier: Plate, 50 v.; screen, 35 v.; grid, —1.5 v. Plate current, 0.3 mA.

1D4, Output Pentode: Plate,; 130 v. screen, 135 v.; grid, —4.5 v. Plate current, 6 mA.

"A" battery drain, 0.78 amperes at 2 volts (model 259B), 1.2 amperes at 6 v. (model 259 v.); "B" battery drain, 15 mA. at 135 volts (model 259 B).

ALTERATIONS.

Dial lamps were adopted as from 1/6/'37. Four dial lamps are fitted and these are all illuminated by a push-button switch located on the front of the cabinet. When the pressure is released the dial lamps are turned off, thus conserving battery current. The additions are shown on the diagram.