

Model 640A

Radio Receiver



Specifications

Frequency Range:

535 to 1710 K.C.

I.F.:

470 K.C.

Tubes:

Type	Function
6A8	Converter
6K7	I.F. Amplifier
6H6	2nd Detector, A.V.C.
6F5	1st A.F. Amplifier
6F6G	Output
5Y4G	Rectifier

Power Supply:

105 to 125 volts A.C., 25-60 cycles

A.V.C.:

On tubes type 6A8, 6K7

Controls:

Eight push buttons provided for automatic tuning and control, six stations with the seventh and eighth buttons being used for "power off", and "automatic-manual" switching.

Left—Volume control

Centre—Manual tuning control

Right—Tone control

Loudspeaker:

Six inch electrodynamic

Cabinet:

Table model

MODEL 640A RADIO RECEIVER

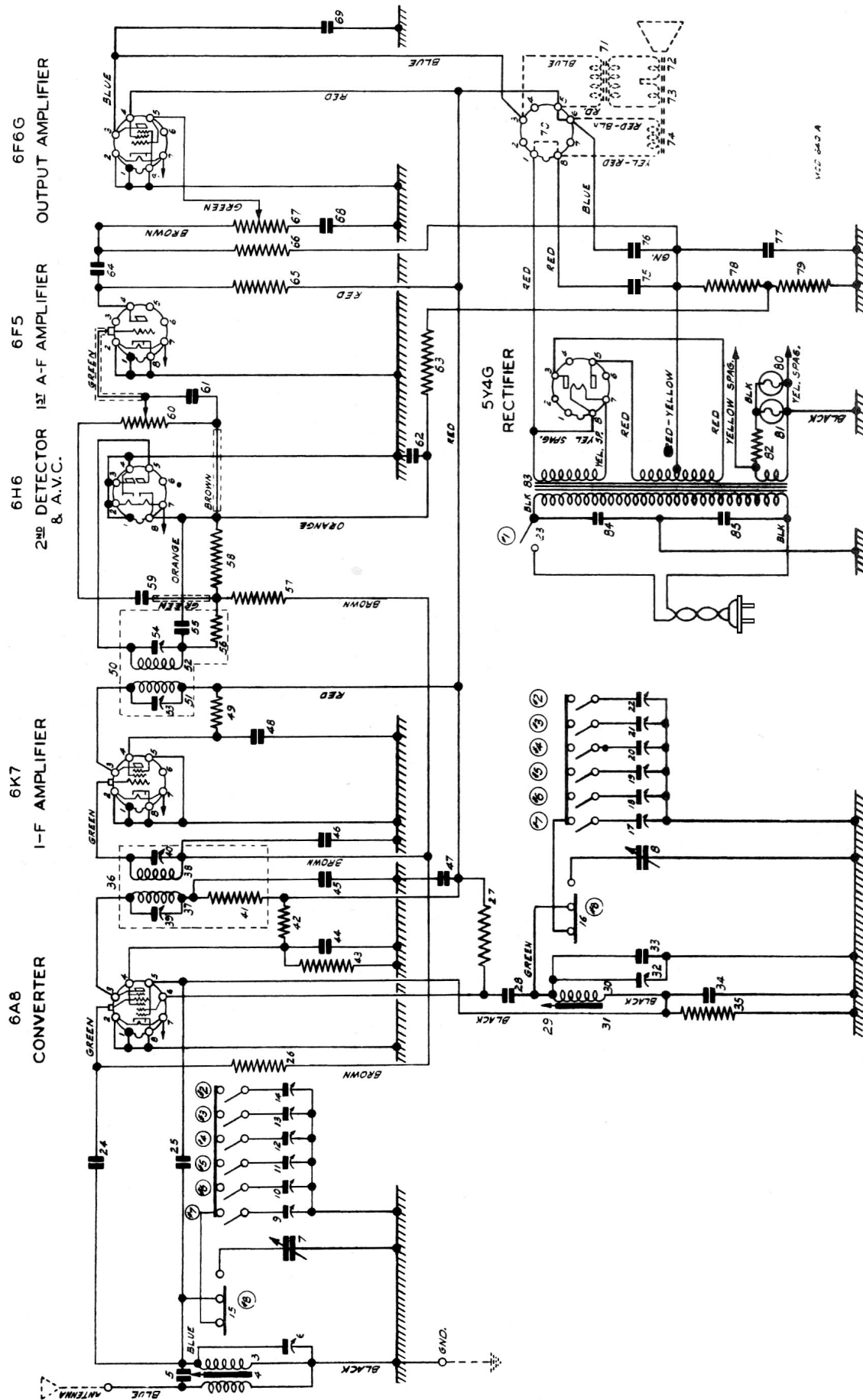


Figure 1.—Schematic Diagram Model 640A.

REPLACEMENT PARTS LIST

Item	Description	Part No.	Item	Description	Part No.
1	Antenna Trans. Assembly (complete).	K-3831-6	62	Capacitor 5 mf. 25 volts elec-trolytic	K-3442-1
2	Antenna Trans. Primary.....		63	Resistor ¼ megohm.....	K-2226-4
3	Antenna Trans. Secondary.....		64	Capacitor .02 mf. 400 volts.....	K-2228-7
4	Antenna Trans. Iron Core.....		65	Resistor ½ megohm.....	K-2226-4
5	Ant. Trans. Coup. Cap. 5 mmf. K-4235-1	K-4439-1	66	Resistor ¼ megohm.....	K-2226-4
6	Trim. Capacitor 1.5-10 mmf.....		67	Tone Control ¼ megohm.....	K-4612-1
7	Ant. Sec. Tuning Cap. 530 mmf. max.		68	Capacitor .002 mf. 400 volt.....	K-2228-2
8	Osc. Sec. Tuning Cap. 530 mmf. max.		69	Capacitor .003 mf. 400 volt.....	K-2228-3
9	Push-button Ant. switch (station No. 6)	K-4450-1	70	Loudspeaker Plug.....	K-2678
10	Push-button Ant. Switch (Station No. 5)		71	Output Transformer.....	K-3873-3
11	Push-button Ant. Switch (Station No. 4)		72	Voice Coil & Diaphragm Assy.....	K-4593
12	Push-button Ant. Switch (Station No. 3)		73	Humbucking Coil { Not re-	K-4592-2
13	Push-button Ant. Switch (Station No. 2)	74	Field Coil..... { placeable }		
14	Push-button Ant. Switch (Station No. 1)	K-4450-1	75	Cap. 20 mf. 450 volts.. }	D.E. K-4470
15	Push-button Ant. Sw. (automatic-manual		76	Cap. 20 mf. 450 volts.. }	
16	Push-button Osc. Sw. (automatic-manual		77	Cap. 20 mf. 25 volts.. }	
17	Push-button Osc. Sw. (Station No. 6)...		K-1870-26	78	Resistor 200 ohms.....
18	Push-button Osc. Sw. (Station No. 5)...	79		Resistor 30 ohms.....	K-2226-73
19	Push-burton Osc. Sw. (Station No. 4)...	80		Dial Lamp 6.3 volts.....	K-2589-3
20	Push-button Osc. Sw. (Station No. 3)...	81		Dial Lamp 6.3 volts.....	K-2589-3
21	Push-button Osc. Sw. (Station No. 2)...	K-2252-17	82	Resistor 1.3 ohms.....	K-2252-17
22	Bush-button Osc. Sw. (Station No. 1)...		83	Power Trans. 25-60 cycles.....	K-3700-11
23	Push-button Power Switch.....		84	Buffer Capacitor .025 mf. 525 volts. }	K-3750
24	Capacitor 1,000 mmf. mica.....		85	Buffer Capacitor .025 mf. 525 volts. }	
25	Capacitor 5 mmf. mica.....	K-4235-1	MISCELLANEOUS:		
26	Resistor 2 megohms.....		Loudspeaker, less Output Trans.....		
27	Resistor 20,000 ohms.....		Sockets, Octal.....		
28	Capacitor 100 mmf. Mica.....		Sockets, Octal (6A8).....		
29	Osc. Coil Assy. (iron core, variable) }	K-4622	A & G Terminal Strip.....		
30	Oscillator Coil Winding.....		Stand-Off Ins.....		
31	Oscillator Coil Iron Core.....		Dial Plate.....		
32	Trimmer Capacitor 3-25 mmf.....		Indicator.....		
33	Capacitor 20 mmf. mica.....	K-1611-29	Pulley Assembly.....		
34	Capacitor 500 mmf.....		Set Screw for Pulley.....		
35	Resistor 50,000 ohms.....		Spring (Dial Cord).....		
36	1st I.F. Trans. Assembly (complete)...		Dial Cord (19" needed: order byfeet)...		
37	1st I.F. Transformer Primary.....	K-4610	Dial Scale.....		
38	1st I.F. transformer Secondary.....		Drive Shaft.....		
39	Trim. Capacitor 30-130 mmf. }		Lamp Sockets.....		
40	Trim. Capacitor 70-170 mmf. }		Grid Clip.....		
41	Resistor 1,000 ohms (Part of Item 36)	K-2226-16	Grid Cap Shield (6F5).....		
42	Resistor 25,000 ohms.....		Station Names.....		
43	Resistor 30,000 ohms.....		Celluloid Discs (for names) (per set of ten)		
44	Capacitor .1 mf. 200 volts.....		Cabinet.....		
45	Capacitor .05 mf. 400 volts.....	K-2227-8	Escutcheon (P.B. Unit).....		
46	Capacitor .05 mf. 200 volts.....		Escutcheon (Dial).....		
47	Capacitor .1 mf. 400 volts.....		Knob—Tuning.....		
48	Capacitor .1 mf. 400 volts.....		Knob—Volume.....		
49	Resistor 1/10 megohm.....	K-2226-5	Knob—Tone Control.....		
50	2nd I.F. Transformer Assy. (complete)		Knob—P.B. Units.....		
51	2nd I.F. Trans. Primary.....		Felt Washers.....		
52	2nd I.F. Trans. Secondary.....		Felt Washers (Tone Control only).....		
53	Trim. Capacitor 30-130 mmf. }	K-2932-1	Light Shield.....		
54	Trim. Capacitor 30-130 mmf. }		English Instruction Folder.....		
55	Capacitor 100 mmf. mica.....		French Instruction Folder.....		
56	Resistor 50,000 ohms (Part of Item 50)		Screws (P.B. Escutcheon) No. 2 x ¼ Rec.		
57	Resistor 2 megohm.....	K-2226-1	Screws (DialE scutcheon) No. 2 x 3/16 Rec.		
58	Resistor ½ megohm.....		Chassis Mounting Screws.....		
59	Capacitor .02 mf. 200 volt.....		Chassis Mounting Washers.....		
60	Volume Control 2 megohm.....		Indicator Mounting Screw.....		
61	Capacitor 100 mmf. mica.....	K-1611-2	Tuning Wrenches.....		

SOCKET VOLTAGE AND CURRENT READINGS

Tube	Position	Grid	Plate	Screen	Cathode	Currents	
						Screen	Plate
Type 6A8	Converter	1 8 (c)	220	{ 155-(a) 85-(b) }	..	5.5	3.4 (e)
Type 6K7	I.F. Amplifier	1.8 (c)	220	75	..	1.3	5.0
Type 6H6	2nd Detector & A.V.C.	..	..	..	..	..	..
Type 6F5	1st A.F. Amp.	1.8 (c)	110	..	..	..	.16
Type 6F6G	Output	12.5 (d)	205	220	..	5.5	32
Type 5Y4G	Rectifier	290 G to one side filament				28 each plate	

Stock chassis model 640A; Line Voltage 115 a.c.; watts 55; Volume Control maximum; tone control treble.

Voltage readings taken at tube socket terminals with tube in position. Readings (voltage) taken with Weston Model 663 using 250 V. scale; 500 V. scale for rectifier V. readings.

- (a) Osc. anode.
- (b) Screen.
- (c) Read across resistor, item 79.
- (d) Read across resistors items 78 and 79.
- (e) Osc. anode 2.7 mils.

SOCKET RESISTANCE READINGS TO GROUND (OHMS)

TUBE	Top Cap Cont. Grid	Pin No. 1 Shell	Pin No. 2 Heater	Pin No. 3 Plate	Pin No. 4 Screen	Pin No. 5	Pin No. 6	Pin No. 7 Heater	Pin No. 8 Cathode
Type 6A8	4.25 meg.	0	0	48000	28000	48000	70000	0.15	0
Type 6K7	3.0	0	0	48000	170000	0	48000(x)	0.15	0
Type 6H6	..	0	0	0	0	850000	800000(x)	0.15	190000
Type 6F5	2.2	0	0	75000(x)	28000(b)	50000(x)	..	0.15	0
Type 6F6G	..	0	0	48500	48000	270000(c)	260000(x)	0.15	0
Type 5Y4G	..	..	..	575	..	575	..	52000	52500

(x) Indicates prong not in circuit of that tube but used merely for contact supports for other parts of circuit.

(a) Volume control maximum; with minimum V.C. read 210000.

(b) Prong No. 4 is plate of this tube.

(c) Tone control in treble position: In base position read 550000.

Pin numbers for sockets correspond to those shown on schematic.

D.C. RESISTANCE OF COILS — (OHMS)

Item	Description	Resistance	Item	Description	Resistance
2	Antenna Transf.—Primary	21.5	—	Output Transformer—Secondary.....	0.35
3	Antenna Transf.—Secondary.....	2.0	72	V.C. (and Diaphragm).....	3.3
30	Oscillator Coil Winding.....	3.5	73	Hum-bucking Coil.....	0.3
37	1st I.F. Primary.....	16.0	74	Field Coil.....	1000.0
38	1st I.F. Secondary.....	12.0		Power Transformer—Primary.....	12.5
51	2nd I.F. Primary.....	16.0		P.T. (high V)—Secondary.....	700.0
52	2nd I.F. Secondary	16.0		P.T. Rectifier Fil.....	.3
71	Output Transformer—Primary.....	500.0		Heaters.....	.15

REALIGNING DETAILS

I.F.:

- (a) Set signal generator to 470 k.c. Connect its output through a 0.1 mf. capacitor to the grid cap of the type 6A8 converter tube. Set receiver dial to about 540 k.c.
- (b) Adjust items 39, 40, 53 and 54 to maximum output.

R.F.:

- (a) Set pointer to come opposite lower left hand mark on dial frame. Gang condenser will be closed.
- (b) Tune receiver to second left-hand mark on dial frame and set signal generator to 600 k.c.
- (c) Adjust oscillator and antenna coil cores, items 31 and 4 respectively, to maximum output.

- (d) Tune receiver to fourth mark on dial frame (right hand) and set signal generator to 1600 k.c.
- (e) Adjust item 32 (on oscillator coil).
- (f) Adjust item 6 (on switch) rocking gang for maximum output.
- (g) Check for 1000 k.c. with dial pointer on third mark from left on dial frame.

PUSH BUTTONS:

- (a) Select station coming within range push button to be used.
- (b) Adjust large screw (through push button assy. opening).
- (c) Adjust small screw found immediately beside large one, to maximum output.