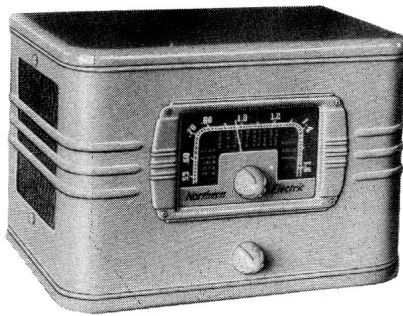


Model 440A

Radio Receiver



MODEL 440A

Specifications

Frequency Range:

535 to 1600 K.C.

Tubes:

Type	Function
6K7	R.F. Amplifier
6J7	Detector
6F6G	Output
5Y4G	Rectifier

Power Supply:

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

Controls:

Upper: Tuning control.

Lower: A.C. switch and volume control.

Loudspeaker:

5 inch electrodynamic.

Cabinet:

Table model.

MODEL 440A RADIO RECEIVER

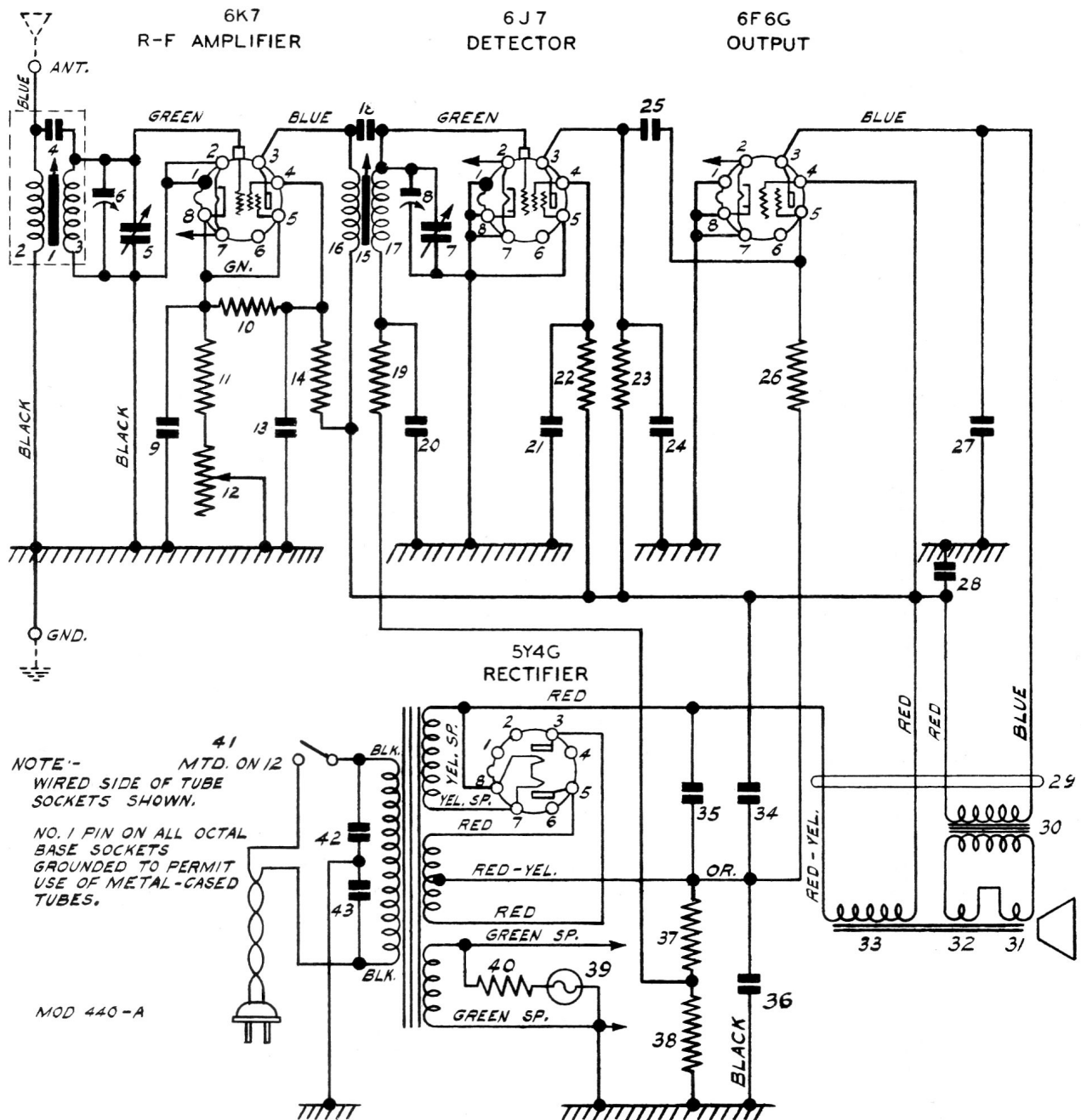


Figure 1. Schematic Circuit Diagram.—Model 440 A

SOCKET VOLTAGE AND CURRENT READINGS

These readings were taken with the capacitor all in, volume control maximum, and line voltage of 115 volts, on a standard production chassis using the Weston Model 663 volt-ohm-milliammeter. The Weston Model 666-1A attachment was used on an analyser for the current readings. When using the analyser attachment, connect a 0.1 mf capacitor from the grid of the tube being tested to the chassis to prevent oscillation.

TUBE	VOLTAGE				CURRENTS—M.A. (PLATE)	
	Heater	Plate	Screen	Cathode	Normal Bias	Bias red. 4½V.
6K7	6.2	180	100	1.2	5.1	8.2
6J7	6.2	55	22	2.4①	.1	.25
6F6G	6.2	170	180	13.5②	12.0	15.5
5YG4	5.0	..	—	220③	27 total both plates	

① Measured across item 38 (75 ohms).

② Measured across Items 37 and 38.

③ (D.C.) Filament to Ground.

SOCKET RESISTANCE READINGS TO GROUND (IN 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
6K7	3.0	0	Below 0.5	130,000	1/10 meg.	110	1.5 (X)	Below 0.5	110
6J7	2.25 meg.	0	Below 0.5	370,000	2.5 meg.	0	115,000(X)	Below 0.5	0
6F6G	—	0	Below 0.5	110,000	110,000	120,000	Open	Below 0.5	0
5Y4G	—	Open	Open	700	Open	700	Open	110,000	110,000

Volume Control max.; Power Off.

Pin numbers for sockets correspond to those shown on schematic.

All readings marked "X" indicate prong not in circuit of that tube but used merely for contact purposes.

D.C. RESISTANCE OF COILS IN OHMS

tem			Item		
2	Antenna Transformer, Primary.....	18.0	32	Hum-bucking Coil	1.5
3	Antenna Transformer, Secondary.....	2.1	33	Field Coil	1600
16	R.F. Trans., Primary.....	52.5		Power Transf., Primary.....	22.0
17	R.F. Trans., Secondary.....	2.0		P.T. High V. Secondary.....	600
30	Output Transf, Primary.....	650		P.T. (Rect.) Filament.....	Below 0.5
30	Output Transf., Secondary.....	.025		Heaters.....	0.3
31	Voice Coil.....	3.5			

MODEL 440A RADIO RECEIVER

GENERAL:—The Model 440-A is an a.c. operated tuned radio frequency receiver using four tubes. It is housed in an antique ivory finished cabinet with a matched moulded dial escutcheon holding a ceramic printed glass dial which is edge-lighted. The five-inch electrodynamic speaker is mounted at one end of the cabinet. The indicator pointer travels approximately 180 degrees over the printed dial scale which forms three sides of a rectangle. The tuning range is 535 to 1600 kilocycles. The a.c. load rating at 115 volts line is 35 watts. The model is capable of operating on either 25 or 60 cycles without circuit change.

CIRCUIT:—(Refer Fig. 1 Schematic Diagram). This T.R.F. circuit uses iron-cored antenna and r.f. transformers. The adjustable cores are items 1 and 15 (See "Realigning Details"). The antenna and r.f. sections of the ganged tuning capacitor are items 5 and 7 with

their trimmers items 6 and 8. Volume control is obtained by item 12 in the cathode circuit of the type 6K7 r.f. amplifier. When the resistance is a maximum the gain is a minimum. The current flowing through item 10, thence through the volume control, maintains a current through the latter so that control action is effective even with the tube's plate current at a very low value.

The detector is of the biased type using a 6J7 tube. Its bias is obtained from the voltage drop across resistor, item 38, being filtered by items 19 and 20. The detector is resistance capacitance coupled to the output amplifier type 6F6G which is, in turn, coupled to the speaker by output transformer, item 30. The 6F6G output tube obtains its bias from the drop across resistors 37 and 38. The rectifier and filter circuits are of the conventional full wave type using a 5Y4G tube.

REALIGNING DETAILS

1. (a) Connect signal generator through 100 mmf. mica capacitor to antenna terminal on receiver.
- (b) Set dial pointer to indented mark on dial frame (left side). This mark indicates point of maximum capacity and must be correctly set.
- (c) Set dial pointer to next mark (slightly above mark indicated in paragraph "B"). This mark corresponds to 600 k.c. position on dial scale.
- (d) Adjust iron cores (items 1 & 15) for maximum output.
2. (a) Set dial pointer to next mark on dial frame. This mark should correspond to 1400 k.c. position on dial scale.
- (b) Adjust gang trimmers (Items 6 & 8) for maximum output. Rock gang while adjusting item 6.
3. (a) Recheck at 600 k.c. and 1000 k.c.

REPLACEMENT PARTS LIST

Item	Description	Part Number
1	Antenna Transformer Iron Core Variable...	K-3692-2
2	Antenna Transformer Primary.....	
3	Antenna Transformer Secondary.....	
4	Antenna Coupling Capacitor, 6 mmf.....	
5	Antenna Sect. Tuning Capacitor, 352.3 mmf. max.....	K-2903-3
6	Antenna Sect. Trimmer Capacitor, 2.5-20 mmf.....	
7	R-F Sect. Tuning Capacitor 352.3 mmf. max.....	K-2227-8
8	R-F Sect. Trimmer Capacitor 2.5-20 mmf.....	
9	Capacitor, .05 mf. 200 volts.....	
10	Resistor, 1/10 megohm.....	
11	Resistor, 100 ohms.....	K-2226-5
12	Volume Control, 1/10 megohm.....	K-2226-24
13	Capacitor .1 mf. 200 volts.....	K-3715-2
14	Resistor, 25,000 ohms.....	K-2227-9
15	R-F Transformer Iron Core Variable.....	K-2226-2
16	R-F Transformer Primary.....	K-2226-7
17	R-F Transformer Secondary.....	
18	Capacitor Coupling, 10 mmf.....	K-3693
19	Resistor, 2 megohms.....	
20	Capacitor .1 mf. 200 volts.....	K-2226-1
21	Capacitor .1 mf. 400 volts.....	K-2227-9
22	Resistor, 2 megohms.....	K-2228-2
23	Resistor, 1/4 megohm.....	K-2226-1
24	Capacitor, 250 mmf. mica.....	K-2226-4
25	Capacitor, .005 mf. 400 volts.....	K-1611-14
26	Resistor, 1 megohm.....	K-2228-5
27	Capacitor, .01 mf. 400 volts.....	K-2226-2
28	Capacitor, .1 mf. 400 volts.....	K-2228-6
29	Loudspeaker Cable.....	K-2228-9
30	Output Transformer Assembly.....	K-3873-2
31	Loudspeaker V.C. & Diaphragm Assy.....	
32	Loudspeaker Humbucking Coil.....	L.S. & O.T. Assy
33	Loudspeaker Field Coil.....	K-4593

Item	Description	Part Number
34	Capacitor, 10 mf.....	K-4541
35	Capacitor, 10 mf.....	
36	Capacitor, 20 mf.....	K-2226-26
37	Resistor, 350 ohms.....	
38	Resistor, 75 ohms.....	K-2226-40
39	Dial Lamp, 6.3 volts.....	K-2589-3
40	Resistor, 2.7 ohms.....	K-2252-2
41	Power Switch mounted on Item 12.....	—
42	Buffer Capacitor .025 mf. 525 volts.....	K-3750
43	Buffer Capacitor, .025 mf. 525 volts.....	

MISCELLANEOUS:—

Loudspeaker, less out. trans.....	K-4592-1
Sockets, octal.....	K-1924-1
Socket for Filter Capacitor.....	K-4509-2
Socket, octal (with ground lug).....	K-1924-2
Ant. and Ground Strip.....	K-3749
Dial Frame.....	K-4508
Lamp Socket.....	K-2835-2
Dial Scale (Glass).....	K-4514
Indicator Pointer Assy.....	K-2968-3
Grid Clips.....	K-3030-2
Double Stand-offs.....	K-1683-1
Knobs.....	K-3711-1
Felt Washers (under knobs).....	K-2491-4
Escutcheon only.....	K-4540-1
Instruction Folder (English).....	K-4518
Felt Feet Chassis Screws.....	K-2954-4
Washers for Chassis Screws.....	K-1206-28
Instruction Folder (French).....	K-4677
Metal Cabinet.....	K-4500
Escutcheon Mounting Screws (No. 2 x 3/8 recessed).....	K-3746-7
Loudspeaker Mounting Screws (No. 8/32 x 1/2 recessed).....	K-4597-13
Tuning Wrenches (all models).....	K-836