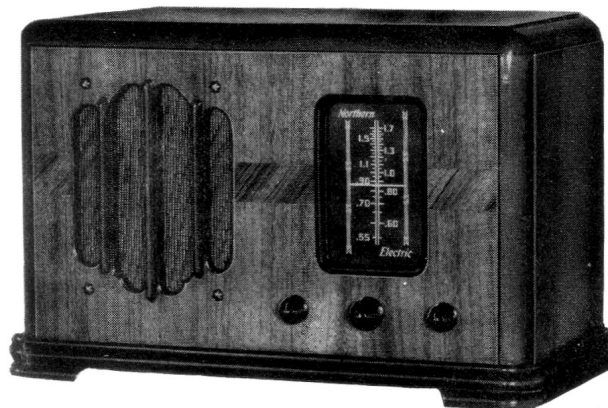


Model 630, 630A

Radio Receiver



Specifications

Frequency Range:

.535 to 1.72 megacycles

I.F.:

470 K.C.

Tubes:

Type	Function
6A8	Converter
6K7	I.F. Amplifier
6H6	2nd Detector, A.V.C.
6K5G	1st A.F. Amplifier
6F6G	Output Amplifier
5Y4G	Rectifier

Power Supply:

Model 630: 105 to 125 volts A.C., 60 cycles
Model 630A: 105 to 125 volts A.C., 25-60 cycles.

A.V.C.:

Full control applied to type 6A8, partial control applied to type 6K7.

Controls:

Left—Power switch and volume control.
Centre—Tuning control.
Right—Tone control.

Loudspeaker:

Six inch electrodynamic speaker.

Dial:

Edge lighted, vertical moving.

Cabinet:

Table model.

REALIGNING INSTRUCTIONS

To secure full advantage of the performance characteristics of this receiver, any realignment necessary should be carried out carefully. A reliable test oscillator or signal generator and also an output meter should be employed.

I.F. ALIGNMENT:

- (a) Set the signal generator to 470 kilocycles. Connect its output through a 0.1 mf. capacitor to the grid cap of the first detector, type 6A8, and set the receiver dial to about 600 kilocycles.
- (b) Adjust trimmers 20, 21, 25 and 26 for maximum output.
- (c) Reduce the output from the generator to as low a value as will give an output reading and check the adjustments. All trimmers should peak properly.

R.F. ALIGNMENT:

- (a) With the gang all in, check the position of the pointer. The upper edge of it should line up with the end of the calibration line. The pointer can be easily adjusted by loosening the set-screws on the large pulley.
- (b) Couple the signal generator to the antenna (blue) lead through a 100 mmf. mica capacitor. Connect the ground (black) lead to ground.
- (c) Set the generator and receiver to 1600 kilocycles. Adjust trimmer, item 10, to bring in the signal, and then adjust trimmer, item 6, for maximum sensitivity.
- (d) Set the generator and receiver to 600 kilocycles. Adjust trimmer, item 14, to bring in the signal. Adjust the iron core, item 1, for maximum sensitivity.
- (e) Recheck at 1600 kc. and readjust if necessary.

D.C. RESISTANCE OF COILS — OHMS

Item	Description	Resistance	Item	Description	Resistance
2	Antenna Transformer Primary	25	62	Power Transformer Primary (60 cycles)	9
3	Antenna Transformer Secondary	3.6		Power Transformer Primary (25 cycles).	13
12	Oscillator Coil Plate Winding	6		Power Transformer H.V. Secondary (60 cycles)	492
13	Oscillator Coil Grid Winding	2.5		Power Transformer H.V. Secondary (25 cycles)	716
22	1st I.F. Transformer Primary	12.5		Power Transformer Rect. (5 volts), 60 cycles	.16
23	1st I.F. Transformer Secondary	12.5		Power Transformer Rect. (5 volts), 25 cycles	.22
27	2nd I.F. Transformer Primary	12.5		Power Transformer Heaters (6.3 volts), 60 cycles	.15
28	2nd I.F. Transformer Secondary	12.5		Power Transformer Heaters (6.3 volts), 25 cycles	.21
51	Output Transformer Primary	435			
	Output Transformer Secondary	0.5			
52	Loudspeaker Voice Coil—Impedance 4 Ohms at 400 cycles	3.4			
	Loudspeaker Hum Buck Coil	.3			
53	Loudspeaker Field Coil	2800			

MODEL 630 RADIO RECEIVER

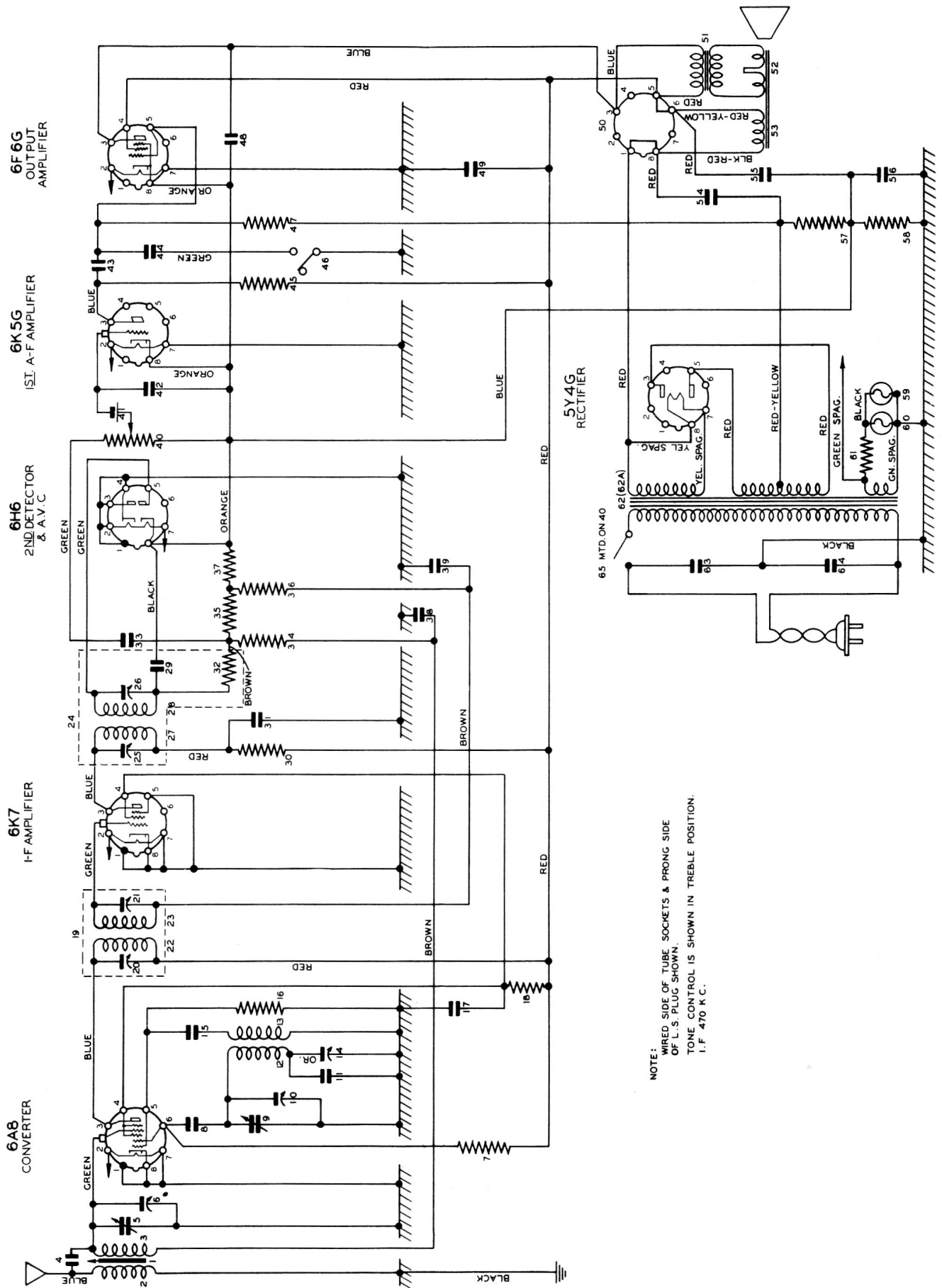


Fig. 3.—Schematic Circuit Diagram of Model 630.

SOCKET VOLTAGE READINGS

These readings were taken with the gang capacitor all in, and line voltage of 115 volts. Voltage readings can be duplicated using any good voltmeter having a resistance of 1000 ohms per volt, such as the Weston Model 663 Volt-Ohmmeter or the Weston Model 772 having a resistance of 20,000 ohms per volt. Current readings can be duplicated with the Weston Model 556 Analyzer and a Model 666-1A Socket Selector. When taking readings with the selector attachment, connect a 0.1 mf. capacitor from the grid of the tube in the selector to the chassis, to prevent oscillation.

TUBE TYPE AND FUNCTION	VOLTAGES					CURRENTS		
						Screen	PLATE	
	Heater (A.C.)	Plate	Screen	Cathode	Grid		Normal Bias	Bias Red. 4½ V.
6A8 Converter	6.3	174 ^①	85	0	—3 ^③	4	1.2 ^②	2.3
6K7 I.F. Amplifier	6.3	168	85	0	—3 ^③	1.7	7.1	7.5
6H6 2nd Detector & A.V.C.	6.3	—	—	—3	—	—	—	—
6K5G 1st A.F. Amplifier	6.3	75	—	—3	— ^⑤	—	.4	.5
6F6G Output Amplifier	6.3	165	174	—3	—13 ^④	2.8	17.3	18.3
5Y4G Rectifier	5.0	—	—	290	—	Plate No. 2 17	18	—

① Anode Grid Voltage 122

③ Measured across resistor 58

⑤ Do not attempt to measure this voltage with a voltmeter since the resultant load on the bias cell might damage it seriously.

② Anode Grid Current 3.25 ma. ④ Measured across resistors 57 & 58

SOCKET RESISTANCE READINGS TO GROUND — OHMS

TUBE	TOP CAP (Cont. Grid)	P N 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 Converter	2.5 meg.	0	60 cyc. .15 25 cyc. .21	2,800*	22,800*	50,000	22,800*	0	0
Type 6K7 I.F. Amplifier	2.35 meg.	0	60 cyc. .15 25 cyc. .21	3,800*	22,800*	0	—	0	0
Type 6H6 2nd Detector & A.V.C.	—	0	0	0	0	.55 meg.	—	60 cyc. .15 25 cyc. .21	220
Type 6K5G 1st A.F. Amplifier	2 meg.†	—	60 cyc. .15 25 cyc. .21	25 meg.*	—	—	—	0	220
Type 6F6G Output Amplifier	0.5 meg.	—	60 cyc. .15 25 cyc. .21	3,235*	2,800*	.5 meg.	—	0	220
Type 5Y4G Rectifier	—	—	—	60 cyc. 845 25 cyc. 945	—	60 cyc. 845 25 cyc. 945	—	60 cyc. .16* 25 cyc. .22*	0*

These readings were taken with the power off.

* Measured to Pin No. 8 of type 5Y4G rectifier tube.

† This measurement was made from the high side of the volume control, item 40. Note that an ohmmeter should not be connected from the type 6K5G control grid to ground since the reading would be erroneous due to the bias cell voltage and since the resultant load on the bias cell would damage it at least temporarily.

Heater readings were obtained without tubes in sockets.

REPLACEMENT PARTS LIST

Item	Description	Part No.
1	Inductance Trimmer.....	K-3770
2	Antenna Trans. Primary.....	
3	Antenna Trans. Secondary....	
4	Capacitor, 5 mmf.....	
5	Ant. Sect. Tuning Capacitor (441.7 mmf. maximum)....	K-3777-1
6	Trimmer Capacitor (2.5-20 mmf).....	
7	Resistor, 20,000 ohms.....	K-2226-8
8	Capacitor .005 mf. 175 volts..	K-2227-4
9	Osc. Sect. Tuning Capacitor (441.7 mmf. maximum)....	K-3777-1
10	Trimmer Cap. 2.5-30 mmf....	
11	Capacitor, 250 mmf. mica....	K-1611-14
12	Osc. Coil, plate winding.....	K-3771
13	Osc. Coil, grid winding.....	
14	Trimmer Capacitor, 40-120 mmf.....	K-3860-4
15	Capacitor, 100 mmf. mica....	K-1611-2
16	Resistor, 50,000 ohms.....	K-2226-6
17	Capacitor, .1 mf, 175 volts..	K-2227-9
18	Resistor, 20,000 ohms.....	K-2226-8
19	1st I.F. Trans. Assy. (includes items 20-23).....	K-3772
20	Capacitor, trimmer, 30-130 mmf.....	K-2134-1
21	Capacitor, trimmer, 30-130 mmf.....	
22	1st I.F. Trans. Primary.....	K-3773
23	1st I.F. Trans. Secondary....	
24	2nd I.F. Trans. Assy. (in- cludes items 25-32).....	K-3774
25	Capacitors, trimmer, 30-130 mmf.....	K-2134-1
26	Capacitors, trimmer, 30-130 mmf.....	
27	2nd I.F. Trans. Primary.....	K-3775
28	2nd I.F. Trans. Secondary....	
29	Capacitor, 100 mmf, mica....	K-1611-2
30	Resistor, 1000 ohms.....	K-2226-16
31	Capacitor, .05 mf.....	K-2227-8
32	Resistor, 50,000 ohms.....	K-2226-6
33	Capacitor, .005 mf, 175 volts..	K-2227-4
34	Resistor, 2 meg.....	K-2226-1
35	Resistor, 150,000 ohms.....	K-2226-36
36	Resistor, 2 meg.....	K-2226-1
37	Resistor, 350,000 ohms.....	K-2226-53
38	Capacitor, .05 mf, 175 volts..	K-2227-8
39	Capacitor, .05 mf, 175 volts..	K-2227-8
40	2 meg. Volume Control (with switch).....	K-3762

Item	Description	Part No.
41	Bias Cell, 1.3 volt.....	K-3810
42	Capacitor, 100 mmf, mica....	K-1611-2
43	Capacitor, .01 mf, 175 volts..	K-2227-6
44	Capacitor, .005 mf, 175 volts..	K-2227-4
45	Resistor, 250,000 ohms.....	K-2226-4
46	Tone Control Switch.....	K-3815
47	Resistor, 500,000 ohms.....	K-2226-3
48	Capacitor, .005 mf, 175 volts..	K-2227-4
49	Capacitor, 0.25 mf, 175 volts..	K-2227-10
50	Loudspeaker Plug.....	K-2678
51	Output Transformer Assy....	K-3873-1
52	Voice Coil & Diaphragm Assy.....	K-4022
53	Field Coil (not replaceable)..	—
54	Electrolytic Capacitor, 16 mf. 410 volts (wet).....	K-3784
55	Electrolytic Capacitor, 18 mf. 270 volts (wet reg.).....	K-3785
56	Capacitor .1 mf, 175 volts....	K-2227-9
57	Resistor, 375 ohms.....	K-2226-68
58	Resistor, 220 ohms.....	K-2226-45
59	Dial Lamp, 6.3 volt.....	K-2589-3
60	Dial Lamp, 6.3 volt.....	
61	Resistor, 1.0 ohm.....	K-2252-8
62	Power Trans. Assy.—60 cycles	K-3700-4
62a	Power Trans. Assy.—25 cycles	K-3700-5
63	Capacitor, .025 mf, 520 volts..	K-3750
64	Capacitor, .025 mf, 520 volts..	
65	A.C. Switch (Mounted on item 40).....	

MISCELLANEOUS:

Loudspeaker, less output trans- former.....	K-3776
Sockets.....	K-1924-1
Dial Frame Assy.....	K-3792-1
Dial Scale.....	K-3769
Indicator Assy.....	K-3964
Dial Spring.....	K-3790
Drive Assy.....	K-3870-1
Grid Clip.....	K-3030-2
Bias Cell Mounting Clips.....	K-3809
Chassis Mounting Bolts.....	K-1122-12
Chassis Mounting Washers.....	K-1725-2
Chassis Mounting Lockwashers..	K-1035-3
Knob for Tuning.....	K-3711-2
Knobs (volume and tone).....	K-3711-3
Felt Washers.....	K-2491-4
Dial Cover.....	K-3691
Tuning Wrench (all models).....	K-836