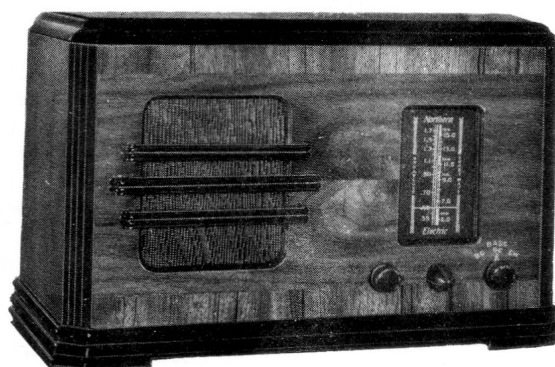


Models 632, 632A

Radio Receivers



Specifications

Frequency Range:

Broadcast—.535 to 1.72 megacycles
Short wave band—5.9 to 15.5 megacycles

I.F.:

470 K.C.

Tubes:

Type	Function
6K8	Converter
6K7	I.F. Amplifier
6H6	2nd Detector, A.V.C.
6K5G	1st A.F. Amplifier
6F6G	Output Amplifier
5Y4G	Rectifier

Power Supply:

Model 632: 105 to 125 volts A.C., 60 cycles
Model 632A: 105 to 125 volts A.C., 25-60 cycles

A.V.C.:

Full A.V.C. control applied on type 6K8 and partial on 6K7.

Controls:

Left—A.C. switch and volume control.
Centre—Tuning control.
Right—Tone control and wave change switch.

Loudspeaker:

Six inch electrodynamic.

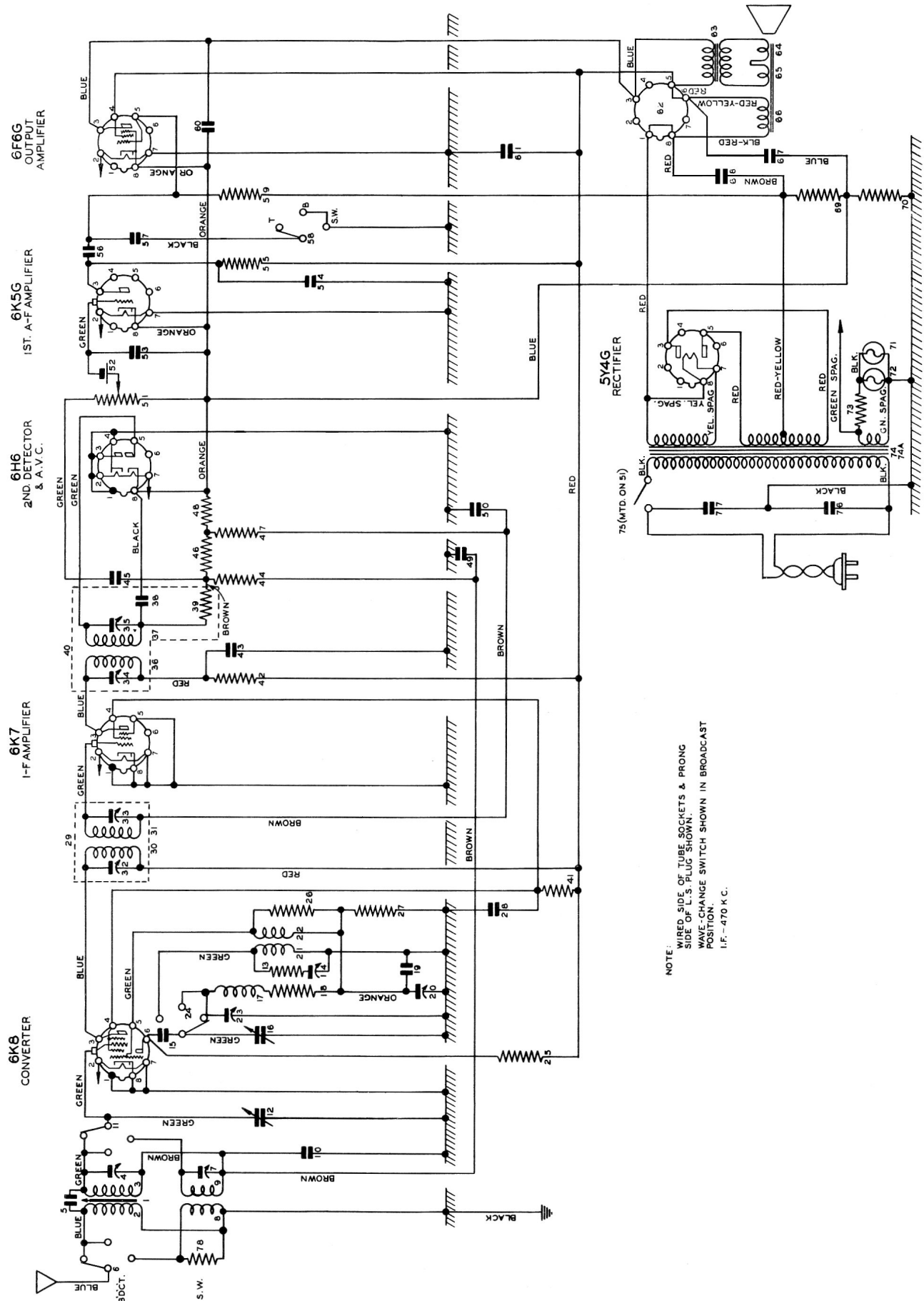
Dial:

Edge-lighted, vertical moving

Cabinet:

Table model.

MODEL 632 RADIO RECEIVER



NOTE:
WIRED SIDE OF TUBE SOCKETS & PRONG
SIDE OF L.S. PLUG SHOWN.
WAVE-CHANGE SWITCH SHOWN IN BROADCAST
POSITION.
I.F. - 470 K.C.

Fig. 2.—Schematic Circuit Diagram of Model 632.

REPLACEMENT PARTS LIST

Item	Description	Part No.	Item	Description	Part No.
1	Iron Core.....	K-3901	13	Resistor, 10 ohms.....	K-2226-61
2	Bdct. Ant. Trans. Pri.....		14	Trimmer Capacitor (13-50 mmf).....	K-3860-3
3	Bdct. Ant. Trans. Sec.....		15	Capacitor, .005 mf, 200 volts	K-2227-4
4	Trimmer Capacitor (3-30 mmf)	K-3860-2	16	Gang Capacitor Sec- tion (13-455 mmf).	Part of K-3777-2
5	Coupling Capacitor— 5 mmf.....	Part of K-3901	17	Bdct. Osc. Coil.....	K-3843
6	Switch Section.....		18	Resistor, 25 ohms.....	K-2226-32
7	Trimmer Capacitor (13-50 mmf).....	K-3860-3	19	Capacitor, 250 mmf. mica...	K-1611-14
8	Short-Wave Ant. Trans. Pri.	K-3844	20	Lag Capacitor Trimmer (40-115 mmf).....	K-3860-4
9	Short-Wave Ant. Trans. Sec.		21	Short-Wave Osc. Coil—Plate Winding.....	K-3845
10	Capacitor, .05 mf, 200 volts.	K-2227-8	22	Short-Wave Osc. Coil—Grid Winding.....	
11	Switch Section.....	Part of K-2464			
12	Gang Capacitor Sec- tion (13-455 mmf).	Part of K-3777-2			
Item	Description	Part No.	Item	Description	Part No.
23	Trimmer Capacitor (3-30 mmf).....	K-3860-2	64	Voice Coil & Diaphragm As- sembly.....	K-4022
24	Switch Section.....	Part of K-2464	65	Humbucking Coil.....	(Not replaceable)
25	Resistor, 20,000 ohms.....	K-2226-8	66	Field Coil.....	
26	Resistor, 2,000 ohms.....	K-2226-14	67	Capacitor Wet Elec. 18 mf. regulating 260 P.V.....	K-3785
27	Resistor, 50,000 ohms.....	K-2226-6	68	Capacitor Wet Elec. 16 mf. 410 P.V.....	K-3784
28	Capacitor, .1 mf, 200 volts..	K-2227-9	69	Resistor, 375 ohms.....	K-2226-68
29	1st I.F. Transformer Assy.— incl. items 30-33.....	K-3772	70	Resistor, 220 ohms.....	K-2226-45
30	1st I.F. Transformer Pri.....	K-3773	71	Dial Lamps, 6.3 volt.....	K-2589-3
31	1st I.F. Transformer Sec.....		72		
32	Trimmer Capacitor (30-130 mmf).....	K-2134-1	73	Resistor, 1.0 ohm.....	K-2252-8
33	Trimmer Capacitor (30-130 mmf).....		74	Power Transformer Assembly (60 cycles).....	K-3700-6
34	Trimmer Capacitor (30-130 mmf).....	K-2932-1	74a	Power Transformer Assembly (25 cycles).....	K-3700-7
35	Trimmer Capacitor (30-130 mmf).....		75	A.C. Switch.....	Part of K-3762
36	2nd I.F. Transformer Pri.....	K-3775	76	Buffer Capacitor, .25 mf, 520 V.....	K-3750
37	2nd I.F. Transformer Sec.....		77	Buffer Capacitor, .25 mf, 520 V.....	
38	Capacitor, mica, 100 mmf...	K-1611-2	78	Resistor, 1000 ohms.....	K-2226-16
39	Resistor, 50,000 ohms.....	K-2226-6			
40	2nd I.F. Transformer Assy.— incl. items 34-39.....	K-3774			
41	Resistor, 20,000 ohms.....	K-2226-8			
42	Resistor, 1,000 ohms.....	K-2226-16			
43	Capacitor, .05 mf, 200 volts.	K-2227-8			
44	Resistor, 2 megohms.....	K-2226-1			
45	Capacitor, .005 mf, 200 volts	K-2227-4			
46	Resistor, 150,000 ohms.....	K-2226-36			
47	Resistor, 2 megohms.....	K-2226-1			
48	Resistor, 350,000 ohms.....	K-2226-53			
49	Capacitor, .05 mf, 200 volts.	K-2227-8			
50	Capacitor, .05 mf, 200 volts.	K-2227-8			
51	Volume Control, 2 meg. (with switch).....	K-3762			
52	Bias Cell, 1.3 volt.....	K-3810			
53	Capacitor, 100 mmf, mica...	K-1611-2			
54	Capacitor, 100 mmf, mica...	K-1611-2			
55	Resistor, .25 megohm.....	K-2226-4			
56	Capacitor, .01 mf, 200 volts.	K-2227-6			
57	Capacitor, .005 mf, 200 volts	K-2227-4			
58	Switch Section.....	Part of K-2464			
59	Resistor, .5 megohm.....	K-2226-3			
60	Capacitor, .005 mf, 200 volts	K-2227-4			
61	Capacitor, .25 mf, 200 volts.	K-2227-10			
62	Loudspeaker Plug.....	K-2678			
63	Output Transformer Assembly	K-3873-1			

MISCELLANEOUS:

Loudspeaker, less output Trans...	K-3776
Tube Sockets.....	K-1924-1
Insulator (single stand-off).....	K-1070-5
Dial Frame Assy.....	K-3792-2
Dial Scale.....	K-3842
Spring (cable).....	K-3790
Dial Backing.....	K-3814-2
Dial Cord (20'').....	K-1929
Reduction Drive Assy.....	K-3870-1
Grid Clips.....	K-3030-2
Clamp for D.E. Caps.....	K-2520-1
Terminals.....	K-2725
Chassis Mounting Bolt.....	K-1122-12
Chassis Mounting Washer.....	K-1725-2
Chassis Mounting Lockwasher...	K-1035-3
Knobs (volume).....	K-2765-2
Knobs (tuning).....	K-3711-2
Knobs (wave change).....	K-2765-9
Felt Washers (knobs).....	K-2491-4
Indicator (dial).....	K-3977
Dial Cover.....	K-3691
Loudspeaker Plug.....	K-2678
Tuning Wrenches (all models)...	K-836
Bias Cell Mounting Clips.....	K-3809

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. A signal generator utilizing harmonics to cover the short-wave band should not be used.

I.F. ALIGNMENT:

- (a) Set the signal generator to 470 kilocycles and connect its output through a 0.1 mf. capacitor to the grid cap of the converter (type 6K8 tube). Set the receiver dial to about 600 kilocycles and turn the wave-change switch to the broadcast position with treble tone.
- (b) Adjust trimmers, items 32, 33, 34 and 35 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—Broadcast Band:

- (a) With the gang all in, check the position of the pointer. The centre of the pointer should be in line with the bottom of the dial scale calibration.

- (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 600 kilocycles and adjust the lag trimmer, item 20, to bring in the signal. Then adjust the iron core, item 1, for maximum sensitivity.
- (d) Set the generator and receiver to 1600 kilocycles and adjust the trimmer, item 23, to bring in the signal, and the trimmer, item 4, for maximum sensitivity.
- (e) Recheck at 600 kilocycles and repeat the process if necessary.

R.F. ALIGNMENT—Short-Wave Band:

- (a) Substitute a 400 ohm carbon resistor for the capacitor in the lead from the signal generator. Turn the wave-change switch to the short-wave position.
- (b) Set the generator and the receiver at 14.5 megacycles, and adjust trimmer, item 14, to bring in the signal.
- (c) Adjust trimmer, item 7, for maximum sensitivity, at the same time rocking the gang.
- (d) Check for image at 13.56 megacycles.

D. C. RESISTANCE OF COILS - OHMS

Item	Description	Ohms
2	Bdct. Antenna Coil Primary.....	24.8
3	Bdct. Antenna Coil Secondary.....	2.57
8	S.W. Antenna Coil Primary.....	.07
9	S.W. Antenna Coil Secondary.....	.03
17	Bdct. Osc. Coil.....	5.75
21	S.W. Osc. Coil—Plate Winding.....	.02
22	S.W. Osc. Coil—Grid Winding.....	.07
30	1st I.F. Transformer Primary.....	12.5
31	1st I.F. Transformer Secondary.....	12.5
36	2nd I.F. Transformer Primary.....	12.5
37	2nd I.F. Transformer Secondary.....	12.5
63	Output Transformer Primary.....	435.0
	Output Transformer Secondary.....	0.5

Item	Description	Ohms
64	Loudspeaker Voice Coil—Impedance at 400 cy. 4 ohms.....	3.4
65	Loudspeaker Humbucking Coil.....	.3
66	Loudspeaker Field Coil.....	2800.0
75	Power Transformer, 60 cycle:	
	Primary.....	9.0
	H.V. Secondary.....	492.0
	Heaters.....	.15
	Rect. Fil.....	.16
75a	Power Transformer, 25 cycle:	
	Primary.....	13.0
	H.V. Secondary.....	716.0
	Heaters.....	.21
	Rect. Fil.....	.22

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 6K8 Converter	2.5 meg.	0	60 cycl. .15 25 cycl. .21	2800①	22,800①	50,000	22,800①	0	0
Type 6K7 I.F. Amplifier	2.35 meg.	0	60 cycl. .15 25 cycl. .21	3800①	22,800①	0	—	0	0
Type 6H6 2nd Detector & A V.C.	—	0	0	0	0	.55 meg.	—	60 cycl. .15 25 cycl. .21	220
Type 6K5G First Audio Amplifier	2 meg.②	—	60 cycl. .15 25 cycl. .21	.25 meg.①	—	—	—	0	220
Type 6F6G Output Amplifier	—	—	60 cycl. .15 25 cycl. .21	3235①	2,800①	.5 meg.	—	0	220
Type 5Y4G Rectifier	—	—	—	60 cycl.840 25 cycl.950	—	60 cycl.840 25 cycl.950	—	60 cycl. .16 25 cycl. .22 ①	0①

These readings were taken with the power off.

① Measured to pin No. 8 of type 5Y4G rectifier.

② This measurement was made from the high end of the volume control, item 51. Note that an ohmmeter should not be connected from the control grid of the type 6K5G 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 seriously.

SOCKET VOLTAGE READINGS

These readings were taken with the gang capacitor all in, wave-change switch on the broadcast band and line voltage of 115 volts. They can be duplicated with any good volt-ohmmeter such as the Weston Model 663 or the Weston Model 772 and a Weston Model 666 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	VOLTAGES					CURRENTS—M.A.		
	Heater (AC)	Plate	Screen	Cathode	Grid	Screen	PLATE	
							Normal Bias	Bias red. 4½ Volts
Type 6K8 Converter	6.3	173①	75	0	—2.6④	6.1	2.6②	2.7
Type 6K7 I.F. Amplifier	6.3	168	75	0	—2.6④	1.5	5.0	5.2
Type 6H6 2nd Detector & A.V.C.	6.3	—	—	—2.6④	—	—	—	—
Type 6K5G 1st Audio Amplifier	6.3	70	—	—2.6④	—⑤	—	.4	.6
Type 6F6G Output Amplifier	6.3	160	171	—2.6④	—12.5③	2.9	15.9	17
Type 5Y4G Rectifier	5.0	—	—	270	—	Plate No. 2 18	18.5	—

① Oscillator Plate Voltage—80.0

② Oscillator Plate Current—5 ma.

③ Measured across resistors, items 69 and 70.

④ Measured across resistor, item 70.

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