Models 500, 501, 500A, 501A

Radio Receivers

Specifications

Frequency Range:

Broadcast—Green: 538 to 1750 K.C.
Short-Wave—Red: 5.85 to 16.6 megacycles.

I.F.:

463 K.C.

Tubes:

Type	Function
6A7	1st Detector and Oscillator
6D6	1st I.F. Amplifier
75	2nd Detector, A.V.C., 1st A.F. Amplifier
42	Power Output, (2nd A.F. Amplifier)
80	Power Rectifier

Power Supply:

Models 500, 501: 105 to 125 volts, 60 cycles.
Models 500A, 501A: 105 to 125 volts, 25 cycles.

A.V.C.:

On 6A7, 1st Detector and 6DC, 1st I.F.

Controls:

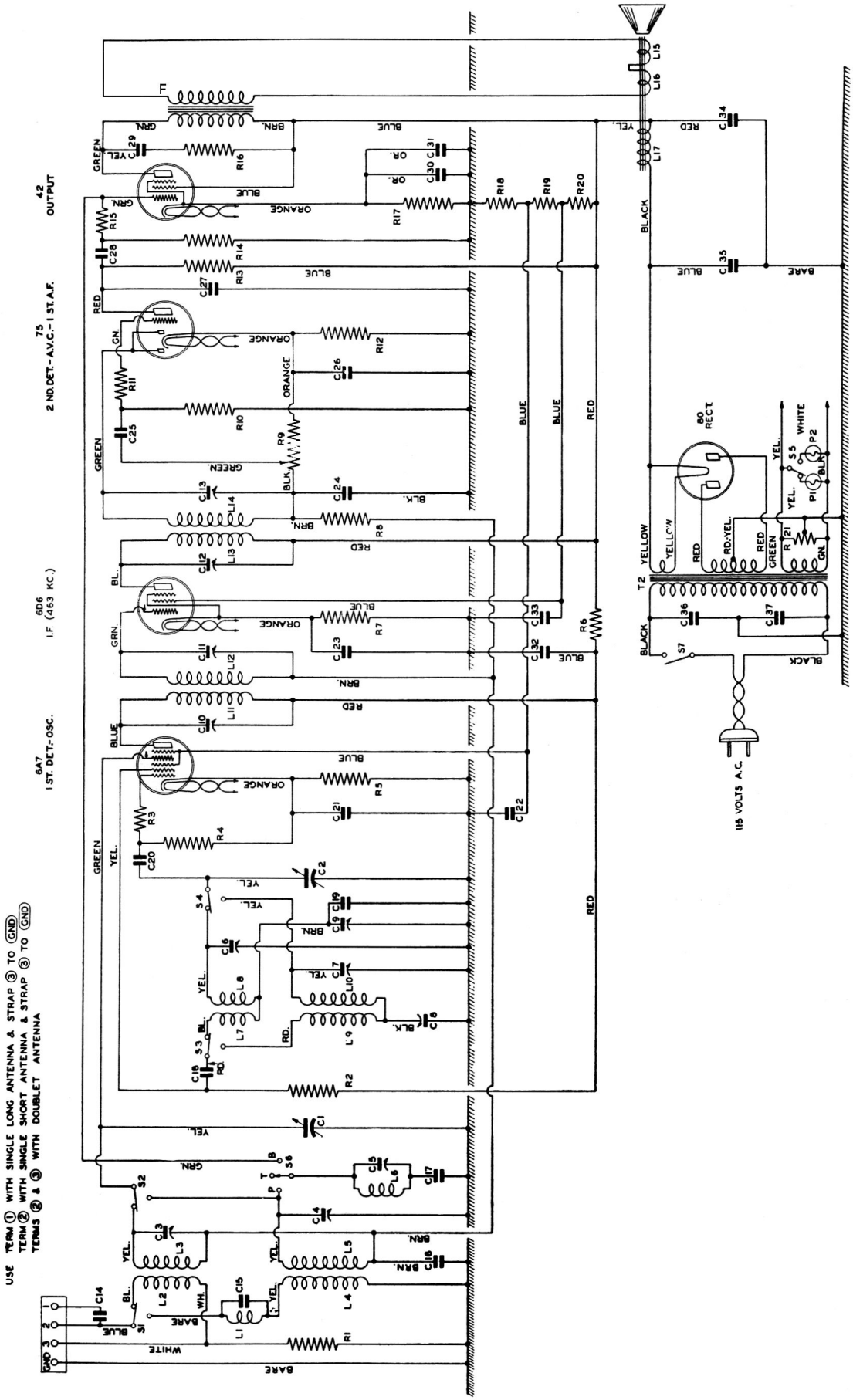
Left—A.C. switch and volume control.
Centre Upper—Tuning control.
Centre Lower—Tone control and police switch
Right—Wave change switch.

Loudspeakers:

500, 500A—Six inch electrodynamic speaker.
501, 501A—8 inch electrodynamic speaker.

Cabinets:

500, 500A: Table type.
501, 501A: Console type.



Schematic Diagram Models 500-501 Receiver.

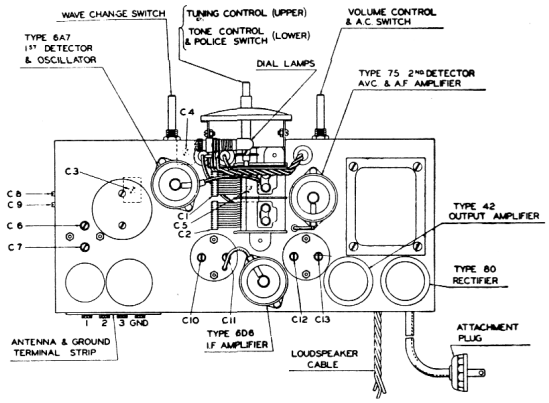
REPLACEMENT PARTS LIST

Schematic Designation	Description	Part Number
CAPACITORS:		
C-1, C-2	Two gang variable 454 mmf. max.	K-1635-1
C-3	Trimmer single; 10-55 mmf.	K-1458-3
C-4	Trimmer single; 1.5-10 mmf.	K-1458-4
C-5	Trimmer single; 10-55 mmf.	K-1458-3
C-6, C-7	Trimmer, dual; 5-25 mmf.	K-1515-3
C-8	Trimmer, dual; 300-600 mmf	K-1567-1
C-9	Trimmer, dual; 1100-2000 mmf	
C-10, C-11	Trimmer, dual; 30-100 mmf.	K-1600-1
C-12, C-13	Trimmer, dual; 35-130 mmf.	K-1600-2
C-14	100 mmf; mica	K-1611-2
C-15	500 mmf; mica; ±5%	K-1611-7
C-16	.05 mf; 175 volts	K-2227-8
C-17	.001 mf; 350 volts	K-2228-1
C-18	.02 mf; 350 volts	K-2228-7
C-19	2500 mmf; mica	K-1952-7
C-20	100 mmf; mica	K-1611-2
C-21	.05 mf; 175 volts	K-2227-8
C-22	.05 mf; 175 volts	K-2227-8
C-23	.05 mf; 175 volts	K-2227-8
C-24	100 mmf; mica	K-2228-8
C-25	.005 mf; 350 volts	K-2227-8
C-26	.5 mf; 175 volts	K-2227-8
C-27	100 mmf; mica	K-1611-2
C-28	.005 mf; 350 volts	K-2228-8
C-29	.02 mf; 175 volts	K-2227-7
C-30	.05 mf; 175 volts	K-2227-8
C-31	10 mf; 25 volts (dry elect.)	K-1637
C-32	8 mf; 450 volts; (dry elect.)	
C-33	.05 mf; 175 volts	K-2227-8
C-34	8.0 mf; 475 volts (dry elect.)	K-1638
C-35	8.0 mf; 525 volts (dry elect)	
C-36	.025 mf; 520 volts (A.C. Test)	K-1750
C-37	.025 mf; 520 volts (A.C. Test)	
RESISTORS:		
R-1	1/10 meg; ½ watt	K-2226-5
R-2	20,000 ohms; 1 watt	K-2363-10
R-3	100 ohms; ½ watt	K-2363-24
R-4	50,000 ohms; ½ watt	K-2363-6
R-5	450 ohms; ½ watt	K-2363-43
R-6	1000 ohms; ½ watt	K-2363-16
R-7	300 ohms; ½ watt	K-2363-20
R-8	1 meg; ½ watt	K-2363-2
R-9	½ meg; variable volume control	K-1649-1
R-10	1 meg; 1 watt	K-2363-31
R-11	1/10 meg; ½ watt	K-2226-5
R-12	5000 ohms; ½ watt	K-2226-12
R-13	¼ meg; ½ watt	K-2226-4
R-14	¼ meg; ½ watt	K-2226-4
R-15	¼ meg; ½ watt	K-2226-4
R-16	15,000 ohms; 1 watt	K-2363-20
RESISTORS:—continued		
R-17	470 ohms	K-1636
R-18	12,000 ohms	
R-19	1,800 ohms	
R-20	11,200 ohms	
	Tapped Divider	
R-21	50 ohms Centre-Tap	K-1025-2
COILS:—		
L-1	Antenna trap coil	K-1639
L-2	Ant. R.F. transformer primary (S.W.)	K-1640
L-3	Ant. R. F. transformer secondary (S.W.)	
L-4	Ant. R.F. Transformer primary (stnd. bdcst)	
L-5	Ant. R.F. transformer secondary (stnd. bdcst.)	
L-6	Police Band Coil	K-1642
L-7	S.W. oscillator plate	K-1643
L-8	S.W. oscillator grid	
L-9	Broadcast oscillator plate	
L-10	Broadcast oscillator grid	
L-11	1st I.F. transformer primary	K-1668-1
L-12	1st I.F. transformer secondary	
L-13	2nd I.F. transformer primary	K-1669-1
L-14	2nd I.F. transformer secondary	
L-15	Voice coil (and diaphragm assembly) (2 ohms) (Model 500 only)	K-1786-1
L-15	Voice coil (and diaphragm assembly) (2 ohms) (Model 501 only)	K-1791-1
L-16	Hum bucking coil (Model 500)	K-1912-1
L-16	Hum bucking coil (Model 501)	K-1793-1
L-17	Field Coil (1800 ohms) (Model 500)	K-1787-1
L-17	Field coil (1800 ohms) (Model 501)	K-1792-1
MISCELLANEOUS:—		
T-1	Output transformer (Model 500)	K-1785-1
T-1	Output transformer (Model 501)	K-1794-1
T-2	Power transformer—60 cycles	K-1249-7
T-2	Power transformer—25 cycles	K-1652-1
S-1 S-5	Wave change Switch	K-1647
S-6	Police and tone control switch	K-1648-1
S-7	On-off switch (part of volume control)	K-1649-1
P-1	Dial light bulbs (6 volt)	K-1024-2
P-2	Antenna Terminal Strip	K-1761-1
—	Dial light bracket assembly	K-1675-1
—	Gasket (for dial)	107254
—	Cover (for dial indicator)	CV-9521

REPLACEMENT PARTS LIST—continued

	Description	Part Number
	MISCELLANEOUS:—continued	
—	Shield (dial)	K-1699-2
—	Dial scale	K-1666-1
—	Indicator (dial)	K-1674-1
—	Screw for dial indicator	K-1667
—	Reduction drive assembly (on tuning capacitor)	K-1948
—	Set screw for pulley (No. 8/32) (per doz.)	K-1521-3
—	Dial drive cable (9 in.)	K-1694-1
—	Thumbscrews	100172
—	Loudspeaker cable (Model 500)	K-1773-1
—	Loudspeaker cable (Model 501)	K-1773-2
—	Knob for all switches and volume control	K-1278-6
—	Knob for tuning (base)	K-1278-1
—	Knob for tuning (vernier) (Push-on)	K-1278-2
—	Set screw for K-1278-1 (per doz.)	K-1521-5
—	Tube socket (four contact) (rectifier)	K-1194-2
—	Tube socket (six contact—medium)	K-1221-4
—	Tube socket (six contact—small)	K-1194-5
—	Tube socket (seven contact)	K-1221-5
—	Tube shield	CV-954
—	Tube shield base	BE-955
—	Grid clips	K-1747
—	Screws for chassis mounting (Model 500)	K-1033-10
—	Screw for chassis mounting (Model 501)	K-1033-9
—	Rubber bushings (chassis mounting)	No. 107397
—	Tuning wrench	K-836
—	Replacement tube for K-836	K-836-A
—	Sleeve (Dial)	SH-953
—	Pulleys (Dial)	K-1727
—	Shield (Dial)	K-1897
—	Dial Bracket and Ring Assy.	K-1698-4

REALIGNING INSTRUCTIONS



Chassis Layout showing Aligning Positions.

1. I.F. ADJUSTMENT:—
   - (*a*) Set signal generator to 463 K.C. and connect output through an 0.1 mfd. condenser to the grid cap of the 1st detector (type 6-A-7).
   - (*b*) Adjust C-10, C-11, C-12 and C-13 for maximum output.
   - (*c*) Reduce the output from the oscillator to as low a value as will give an output reading and check the adjustments. All trimmers should peak properly.

2. BROADCAST BAND:—
   - (*a*) Connect signal generator to antenna terminal number 2, through a 200 mmf. (0.0002 mf.) mica condenser. Ground terminals 3 and GND.
   - (*b*) Set signal generator and receiver for 600 K.C., and adjust lag condenser C-8, at the same time slowly rocking the tuning condenser back and forth until the point of maximum sensitivity is obtained.
   - (*c*) Set signal generator and receiver to 1600 K.C., and adjust C-7 and C-4 for maximum output.

3. POLICE BAND:—
   - (*a*) With signal generator still connected as above, set generator to 2400 K.C., set receiver to 1474 K.C., and turn police switch all the way in a counter-clockwise direction.
   - (*b*) Adjust C-5 for maximum output.

4. SHORT-WAVE BAND:—
   - (*a*) Connect signal generator to terminal number 2 through a 400-ohm resistor (not wire wound).
   - (*b*) Set signal generator and receiver to 6.4 megacycles.
   - (*c*) Align C-9 for maximum output, at the same time slowly rocking the tuning condenser back and forth until maximum sensitivity is obtained.
   - (*d*) Set signal generator and receiver to 15 megacycles and align C-6 for maximum output.
   - (*e*) Adjust C-3, at the same time rocking the gang slowly back and forth, until maximum sensitivity is obtained.

VOLTAGE AND CURRENT READINGS

These readings were made on a production Model 501 chassis with tone control treble, volume control maximum, wave-change switch in broadcast position and the gang capacitor closed. Voltage readings may be duplicated with a Weston Model 663 Volt-Ohmmeter, or any other good voltmeter having a resistance of 1000 ohms per volt.

Current readings may be duplicated on any good analyzer, such as the Weston Model 566 Analyzer used with the Model 666—1-A Adapter. Line voltage 115 volts.

Tube	Heater Volts A.C.	Plate Volts	Screen Volts	Cathode to Ground	Screen Current M.A.	Plate Current	
						Normal Bias	Bias Red. 4.5 volts
6-A-7 (1)	6.3	243	88.5	3.8	2.7	3.6	5.8
6-D-6	6.3	246	105.	3.6	2.5	9.6	12.2
75	6.3	98 (4)	—	.9 (3)	—	0.3	.68
42	6.3	237	247	(2)	4.7	26.	30.
80	5.0	—	—	378	—	29.	—

(1) Anode grid voltage 170
Current 3.6 MA

(2) Bias 15.3 volts measured across R-17

(3) On 2.5 volt range

(4) On 250 volt range.

NOTE.—When taking current readings with the analyzer attachment, a .1 mfd. condenser should be connected between the grid lead of the tube being tested and ground, at the set, to prevent oscillation.