

Models 610, 610A, 611, 611A

Radio Receivers

Specifications

Frequency Range:

Broadcast, Silver Gray—530 to 1650 K.C.
Police-Aviation, Green—1650 to 5050 K.C.
Short Wave, Red—5400 to 16500 K.C.

I.F.:

463 K.C.

Tubes:

Type	Function
6A8	1st Detector and Oscillator
6K7	I.F. Amplifier
6H6	2nd Detector, A.V.C., and automatic noise suppression
6F5	1st A.F. Amplifier
6F6	Output
80	Rectifier

Power Supply:

Models 610, 611: 105 to 125 volts A.C.,
60 cycles
Models 610A, 611A: 105 to 125 volts A.C.,
25-60 cycles

A.V.C.:

On 6A8, 1st Detector and 6K7 I.F. Amplifier.

Controls:

Left—A.C. switch and volume control;
Centre—Vernier type tuning controls;
Right—Tone control and wave change switch.

Cabinets:

Models 610, 610A—Table model
Models 611, 611A—Console model

MODELS 610 AND 611 RADIO RECEIVERS

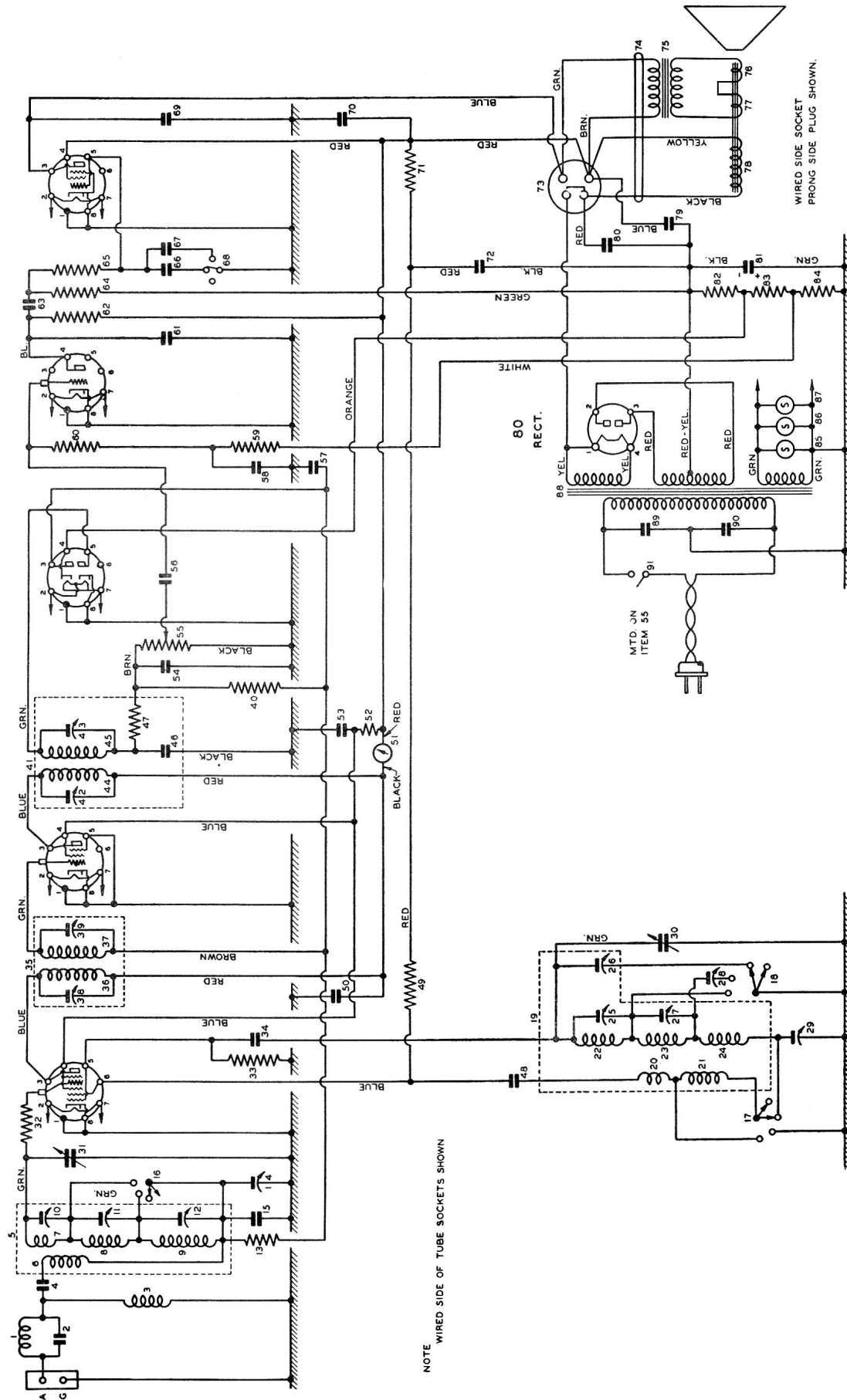
6A8
1ST DET. & OSC.

6K7
I.F. AMPLIFIER
(483 K.C.)

6H6
2ND DETECTOR
A.V.C. & A.N.S.

6F5
1ST A.F.

6F6
OUTPUT



Schematic Diagram—Model 610-611 Receivers.

REPLACEMENT PARTS LIST

Item No.	Description	Part No.	Item No.	Description	Part No.
1	Antenna Trap Coil.....	K-2367	44	I.F. Transf. primary.....	K-2378-2
2	Capacitor; .002 mf; mica.....		45	I.F. Transf. secondary.....	
3	R.F. Choke Coil.....	K-2441	46	Capacitor; 100 mmf; mica.....	K-1611-2
4	Capacitor; .02 mf; 175 volts...	K-2227-7	47	Resistor; 50,000 ohms; ½ watt.	K-2226-6
5	Antenna trans. assy. (includes items 6-12).....	K-2325	48	.002 mf. Capacitor; 350 volts..	K-2228-2
6	Antenna transf. primary.....		49	Resistor; 10,000 ohms; ½ watt.	K-2226-10
7	Antenna transf. S. W. secondary.....		50	Capacitor; .1 mf; 350 volts....	K-2228-9
8	Antenna transf. Police band sec.....		51	Tuning Meter (1500 ohms) (Model 611).....	K-2412
9	Antenna transf. Bdcst. band sec.....		52	Resistor; 40,000 ohms; 1 watt..	K-2363-38
10	Trimmer; 3-30 mmf.....	K-2226-5	53	Capacitor; .1 mf; 350 volts....	K-2228-9
11	Trimmer; 3-30 mmf.....		54	Capacitor; 100 mmf; mica.....	K-1611-2
12	Trimmer; 3-30 mmf.....		55	Volume Control; ½ meg; variable.....	K-2207
13	Resistor; 1/10 meg; ½ watt....		56	Capacitor; .01 mf; 175 volts....	K-2227-6
14	Trimmer; 1500-3000 mmf.....	K-2304-1	57	Capacitor; .1 mf; 175 volts....	K-2227-9
15	Capacitor; 1,500 mmf; mica....	K-1952-5	58	Capacitor; .05 mf; 175 volts....	K-2227-8
16	Wave Change Switch; ant. sect.	K-2369	59	Resistor; ¼ meg; ½ watt.....	K-2226-4
17	Wave Change Switch; osc. plate sect.....		60	Resistor; ¼ watt; 1 meg.....	K-2226-2
18	Wave Change Switch; osc. grid sect.....		61	Capacitor; 100 mmf; mica.....	K-1611-2
19	Osc. Coil Assy. (includes items 20-27).....	K-2333	62	Resistor; ¼ meg; ½ watt.....	K-2226-4
20	Osc. S.W. plate coil.....		63	Capacitor; .01 mf; 350 volts....	K-2228-6
21	Osc. Bdcst. plate coil.....		64	Resistor; ¼ meg; ½ watt.....	K-2226-4
22	Osc. S.W. grid coil.....		65	Resistor; ¼ meg; ½ watt.....	K-2226-4
23	Osc. Pol. grid coil.....		66	Capacitor; 500 mmf; mica.....	K-1952-3
24	Osc. Bdcst. grid coil.....	K-1567-6	67	Capacitor; .001 mf; 350 volts..	K-2228-1
25	Trimmer; 3-30 mmf.....		68	Tone Control Switch.....	K-2373
26	Trimmer; 3-30 mmf.....		69	Capacitor; .005 mf; 350 volts....	K-2228-5
27	Trimmer; 1.5-10 mmf.....		70	Capacitor; .1 mf; 350 volts....	K-2228-9
28	Trimmer (dual) 850-1650 mmf.	K-2324	71	Resistor; 10,000 ohms; ½ watt..	K-2226-10
29	Trimmer (dual) 300-600 mmf.		72	Capacitor; dry elect.; 8 mf; 300 volts.....	K-2404
30	Osc. sect. cap. gang (495 mmf. max.).....		73	Loudspeaker Plug.....	K-2007
31	Ant. sect. cap. gang (495 mmf. max.).....	K-2444-1	74	Loudspeaker Cable.....	—
32	Resistor; 50 ohms; (flex. lead).		75	Output Transformer (Model 610).....	K-2217-2
33	Resistor; 50,000 ohms; ½ watt.		75-A	Output Transformer (Model 611).....	K-2217-3
34	Capacitor; 100 mmf; mica.....	K-1611-2	76	Voice Coil and Diaphragm Asssem. 3.8 ohms; (Model 610).	K-2329
35	Transf. Assem; 1st I.F. (includes items 36-39).....	K-2376	76-A	Voice Coil and Diaphragm Asssem. 4.9 ohms; (Model 611).	K-2331
36	I.F. Transf. primary.....	K-2378-1	77	Hum Bucking Coil.....	—
37	I.F. Transf. secondary.....		78	Field Coil; 1800 ohms; (Model 610).....	Part of K-2328-1 Loudspeaker assem.
38	Capacitor; 25-100 mmf.; var. trimmer.....	K-2073-1	78	Field Coil; 1800 ohms; (Model 611).....	
39	Capacitor; 25-100 mmf; var. trimmer.....		79	Capacitor; 18 mf; 300 volts; reg. wet. elect.....	K-2403
40	Resistor; 2 meg; ½ watt.....	K-2226-1	80	Capacitor; 12 mf; 450 volts; wet. elect.....	K-2402
41	2nd I.F. Transf. Assem. (includes items 42-47).....	K-2382	81	Capacitor; 10 mf; 25 volts; dry elect. (Part of item 72).....	K-2404
42	Capacitor; 25-100 mmf; var. trimmer.....	K-2073-1			
43	Capacitor; 25-100 mmf; var. trimmer.....				

MODELS 610 AND 611 RADIO RECEIVERS

REPLACEMENT PARTS LIST—continued

Item No.	Description	Part No.	Description	Part No.
82	Resistor; 230 ohms; 1 watt. . . .	K-2363-37	Dial Mask—Model 610.	K-2396-1
83	Resistor; 65 ohms; ½ watt. . . .	K-2226-31	Dial Mask—Model 611.	K-2396-2
84	Resistor; 25 ohms; ½ watt. . . .	K-2226-32	Main Indicator Pointer.	K-2394
85	Dial Lamp; 6.3 volt.	K-1024-4	Small Hand Indicator Pointer. . . .	K-2395
86	Dial Lamp; 6.3 volt.	K-1024-4	Pulley Retaining Spring.	K-2321
87	Tuning Meter Lamp; 6.3 volts (Model 611).	K-1024-4	Pulley and Sleeve Assembly for main pointer drive.	K-2400
88	Power Transformer—60 cycle. . .	K-2385-1	Spring Clips.	K-2436
88-A	Power Transformer—25 cycle. . .	K-2385-2	Pulley and Sleeve Assembly for small hand drive.	K-2401
89	Buffer Capacitor; .025 mf; 1100 volts.	K-1750	Fabric Belt.	K-2393
90	Buffer Capacitor; .025 mf; 1100 volts.		Dial Cable.	K-1694-7
91	A.C. Switch (mtd. on item 55). —		Dial Cable mounting screw No. 4-36 x 3/16".	K-1203-1
MISCELLANEOUS:— (Not included in Item Designations.)			Dial Lamp Sockets.	K-1428-5
Sockets, 8 contact, octal base. . . .			Escutcheon Label.	K-2474
Sockets, 4 contact, rectifier.			Pins for mounting Escutcheon Label PP-2453	
Antenna Terminal Strip.			Large Tuning Knobs.	K-2406-1
Loudspeaker Socket.			Small Tuning Knobs.	K-2406-2
Main gang shaft pulleys.			Volume Control, Wave Change Switch, Tone Control, Knobs. . . .	K-2405
Gang rotor shaft pulleys.			Chassis Mounting Screws—Model 610.	K-2503-10
Set Screw for rotor shaft pulley (6/32 x 11/32").			Chassis Mounting Bolts.	K-1725-1
Dial Scale.			Escutcheon with glass cover. . . .	K-2897
Reduction Drive.			Loudspeaker assem. (Model 610). .	K-2328-1
			Loudspeaker assem. (Model 611). .	K-2330

SOCKET VOLTAGE AND CURRENT READINGS

TUBE	Heater A.C. Volts	Plate Volts	Screen Volts	Cathode Volts	Screen Current M.A.	Plate Current M.A.	
						Normal Bias	Bias Red. 4 ½ Volts
6A8 Osc. & 1st Det	6.4x	245x	90	0	3.9	2	6.5
6K7 I.F. Amplifier	6.4	245	90	0	1.0	3.9	7.2
6H6 2nd Det. A.V.C. & A.N.S.	6.4	—	—	Pin No. 4 4.6 Pin No. 8 0	—	—	—
6F5 1st Audio Amplifier	6.4	94	—	0	—	0.47	0.62
6F6 Output	6.4	218	245	0	5.6	30	35
80 Rectifier	5.1	—	—	360	Plate 26.0	26	—

x6.25 on 25 cycle models. xAnode-grid—150 volts.
Power Transformer centre-tap to ground—16 volts.

Anode-grid Current—5.9 ma.

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 should be employed, and an output meter. (Do not use an oscillator that relies on harmonics to cover the short-wave bands.)

I. F. ALIGNMENT:

- (a) Set the signal generator at 463 kc., and connect its output through a 0.1 mf. capacitor to the grid cap of the first detector (type 6A8 tube).
- (b) Adjust trimmers 36, 37, 42, 43 for maximum output.
- (c) Reduce the output from the signal generator to as low a value as will give an output reading, and check the adjustments. All trimmers should peak properly.

R. F. ALIGNMENT—SHORT-WAVE, OR RED BAND:

- (a) Check position of pointer with gang all in. It should be about 1-16 inch below the 1700 kc. end of the police band calibration.
- (b) Couple the signal generator to the first detector grid through a 400 ohm resistor, and connect the ground terminal to ground.
- (c) Set the generator and receiver at 15.0 megacycles. Adjust the oscillator trimmer, item 25, to bring in the signal. (Make sure the correct peak is obtained and not that due to the image with the gang turned out more.)
- (d) Adjust the antenna trimmer, item 10, while rocking the gang back and forth.
- (e) Set the generator at 6.0 megacycles and tune the receiver to it. Adjust lagging capacitor,

item 14 (connected to the antenna coil) for maximum output.

- (f) Recheck at 15.0 megacycles.

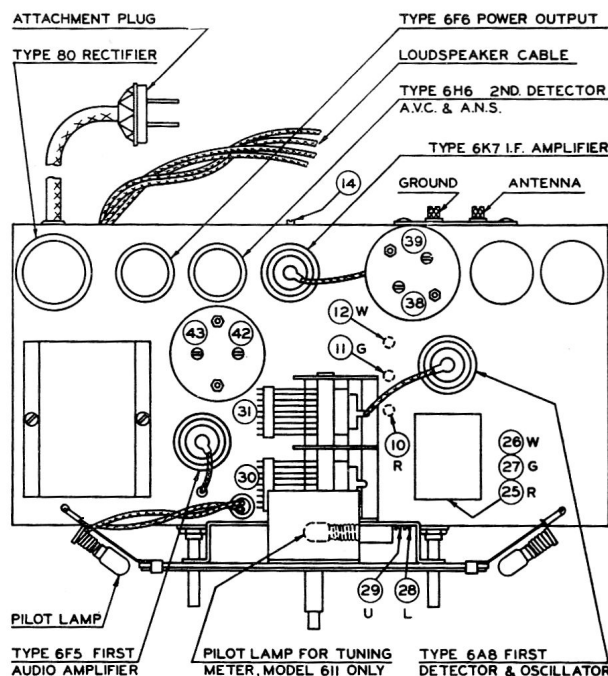
POLICE AND AVIATION, OR GREEN BAND:

- (a) Using the same 400 ohm dummy antenna, set the generator and receiver at 4.8 megacycles. Adjust the oscillator trimmer, item 27, to bring in the signal. (The wrong peak, due to the image, is now that with the gang turned further in than for the correct one.)
- (b) Adjust the antenna trimmer, item 11, for maximum output, while rocking the gang.
- (c) Set the generator at 1.7 megacycles and tune the receiver to it. Adjust trimmer, item 11, for maximum output.
- (d) Recheck at 4.8 megacycles.

BROADCAST, OR SILVER-GRAY BAND:

- (a) Replace the 400 ohm resistor in the generator lead with a 200 mmf. mica capacitor.
- (b) Set the generator at 1400 kilocycles and the receiver at 1.4 megacycles. Adjust oscillator trimmer, item 26, to bring in the signal.
- (c) Adjust the antenna trimmer, item 12, for maximum output.
- (d) Set the generator at 600 kilocycles, and tune the receiver to the signal. Adjust the lagging trimmer, item 29, for maximum output, while rocking the gang.
- (e) Recheck at 1400 kilocycles.

NOTE:—If trimmer, item 26, is changed greatly while adjusting the broadcast band, the oscillator settings at 4.8 and 15.0 megacycles will change slightly. Therefore, these two points should be rechecked after the broadcast band has been aligned.



Chassis Layout showing Aligning Positions