

**PHILCO***Service Manual . . . Model 611***SERVICE BULLETIN**  
**No. 224****For Members of**  
**RADIO MANUFACTURERS SERVICE**  
**A PHILCO SERVICE PLAN****Specifications**

**Type Circuit:** Superheterodyne, with pentode output; built in connections for Philco All-wave aerial; aerial selector built into and operated by wave-band switch.

**Power Supply:** 115 volts, Alternating or Direct Current.

**Tubes Used:** 1 type 6A7, Detector-Oscillator; 1 type 78, I.F.; 1 type 75, 2d Detector and 1st A.F.; 1 type 43 Output; 1 type 25Z5 Rectifier.

**Wave Bands:** Three—(1) Standard (with some Police); (2) Police; (3) Short-wave.

**Coverage of Each Band:** Band 1, 530-1720 K.C.; Band 2, 2300 to 2500 K.C. (2.3-2.5 M.C.); Band 3, 5700-18000 K.C. (5.7 to 18.0 megacycles).

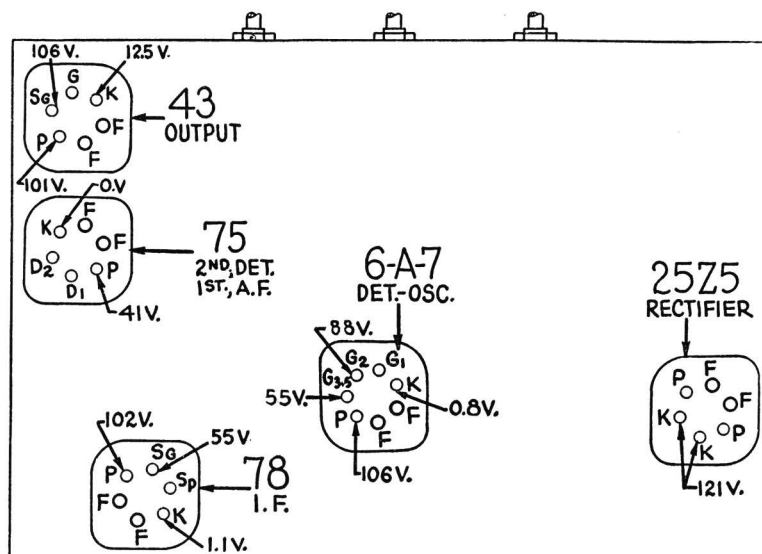
**Tuning Drive:** Dual gear drive, ball bearing. 50 to 1 ratio for slow-speed tuning. 6 to 1 on main drive.

**Tone Control:** 2-position.

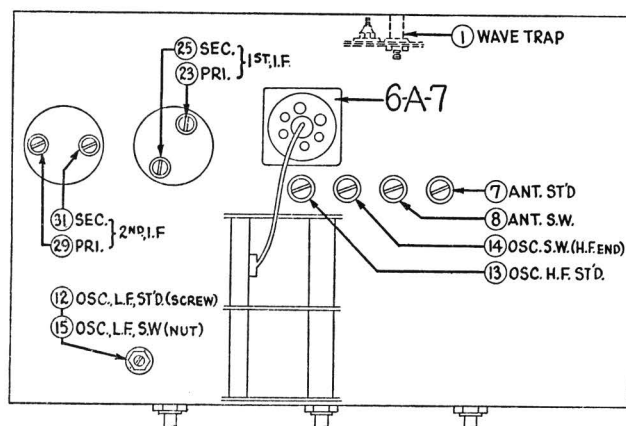
**Intermediate Frequency:** 460 K.C.

**Power Consumption:** 50 watts.

**Speaker:** 611-B (Baby Grand): P-28; 611-F (Console): S-15.

**Tube Socket Voltages**  
**(Measured at 115 volts A.C.)****Fig. 1. Tube Sockets as viewed from bottom.**

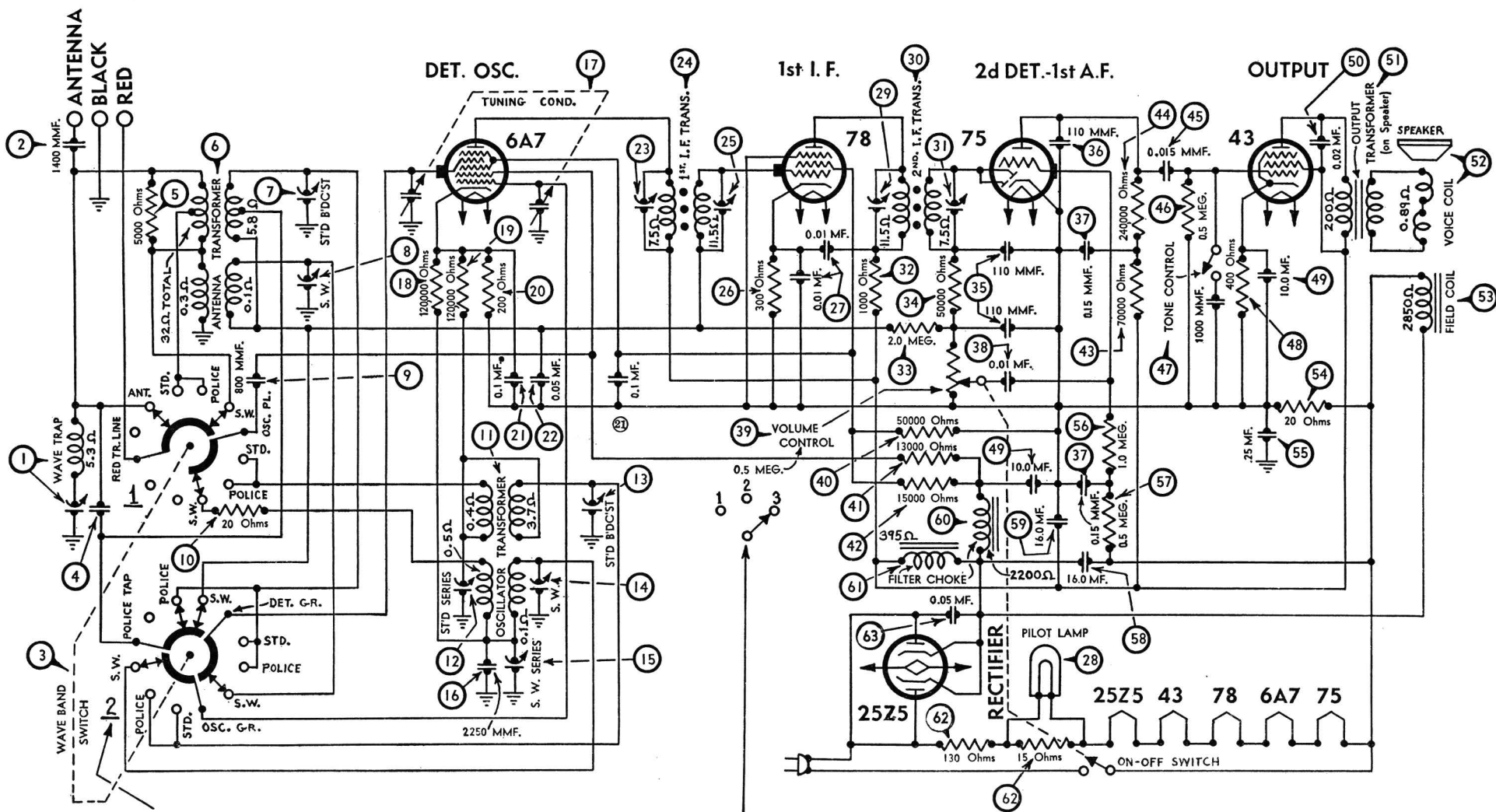
Above voltages were obtained by using a PHILCO type 025 Circuit Tester (or 048A All-purpose Tester), using test prods applied to underside of chassis. Volume control at minimum; dial at 55; waveband switch counter-clockwise (band 1). S-15 Speaker used.

**ADJUSTING COMPENSATING CONDENSERS****Fig. 2. Locations of Compensating Condensers**

The adjustment of the compensating condensers in Model 611 requires a signal generator covering the broadcast and police band, and also one capable of producing a signal at certain frequencies in the short wave band. The Philco Model 088 All-Wave Signal Generator covers these requirements perfectly. An output meter is also required. Philco Model 025 or 012 unit is recommended. The location of all compensating condensers is shown in Fig. 2.

**Adjustment of I. F.**

1. Remove the antenna connection from the receiver. Remove the grid clip from the first detector (type 6A7 tube), and attach the "ANT" output lead from the signal generator to the grid cap of this tube.
2. Connect the output meter to the plate and cathode of the output tube by means of the adapters provided with the "025" or to the two bottom prongs of the speaker plug. Set it at the 0-30 volt range.



Numbers Indicate Relative Positions of Switch Sections as Seen from Front of Chassis

All Switch Sections Shown in Position No. 3

Fig. 3 — Schematic Diagram of Model 611

Note 1: Cathode condenser of 78 tube (lower portion of 27) is .1 mfd. instead of .01 mfd. shown above.  
 Note 2: Condenser 9 is .00025 mfd. instead of .0008 mfd. as shown above.

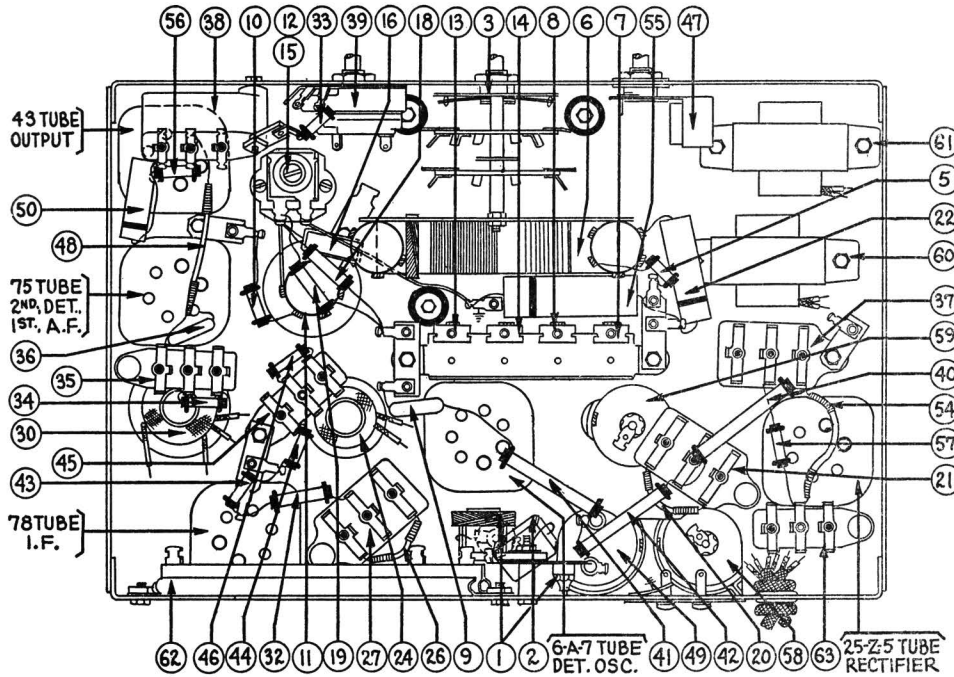


Fig. 4

REPLACEMENT PARTS—MODEL 611

Nos. in Figs. 3 & 4	Description	Part No.	List Price	Nos. in Figs. 3 & 4	Description	Part No.	List Price
①	Wave Trap.....	38-6850	\$1.10	④⑩	Resistor (50000 ohms) (Green, Brown, Orange).....	4237	\$0.20
②	Condenser (.0014 Mfd. Mica).....	7007	.30	④⑪	Resistor (13000 ohms) (Brown, Orange, Orange).....	3766	.20
③	Waveband Switch.....	42-1112	1.10	④⑫	Resistor (15000 ohms) (Brown, Green, Orange).....	5278	.20
④	Condenser—Capacity Obtained by Twisted Wires.....	.....	.....	④⑬	Resistor (70000 ohms) (Violet, Black, Orange).....	33-1115	.20
⑤	Resistor (5000 ohms) (Green, Black, Red).....	33-1001	.20	④⑭	Resistor (240000 ohms) (Red, Yellow, Yellow).....	33-1097	.20
⑥	Antenna Transformer.....	32-1781	1.15	④⑮	Condenser (.015 Mfd. Bakelite Block).....	3793-SU	.35
⑦	Compensating Condenser (Antenna, Standard).....	Part of 31-6047	.50	④⑯	Resistor (.5 Meg.) (Yellow, White, Yellow).....	6097	.20
⑧	Compensating Condenser (Antenna S.W.).....	Part of 31-6047	.50	④⑰	Tone Control.....	30-4345	.50
⑨	Condenser (.00025 Mfd. Mica).....	5858	.25	④⑱	Resistor (400 ohms Flexible) (Yellow, Black, Black).....	33-3016	.20
⑩	Resistor (20 ohms) (Red, Black, Black).....	33-1206	.20	④⑲	Condenser (Electrolytic—10 Mfd., 10 Mfd.).....	30-2125	1.20
⑪	Oscillator Transformer.....	32-1831	1.50	④⑳	Condenser (.02 Mfd. Tubular).....	30-4215	.20
⑫	Compensating Condenser (Osc. L.F. Standard).....	Part of 31-6027	.70	④㉑	Output Transformer.....	32-7395	1.10
⑬	Compensating Condenser (Osc. H.F. Standard).....	Part of 31-6047	.50	④㉒	Cone & Voice Coil Assembly (S-15 Speaker).....	36-3157	.80
⑭	Compensating Condenser (Osc. S.W. H.F. End).....	Part of 31-6047	.50	④㉓	Field Coil & Pot Assembly (S-15 Speaker).....	36-3519	2.80
⑮	Compensating Condenser (Osc. S.W. L.F. End).....	Part of 31-6027	.70	④㉔	Resistor (20 ohms Flexible) (Red, Black, Black).....	33-1206	.20
⑯	Condenser (.00225 Mfd. Mica).....	30-1055	.40	④㉕	Condenser (.25 Mfd. Tubular).....	30-4146	.25
⑰	Tuning Condenser Assembly.....	31-1528	3.75	④㉖	Resistor (1 Meg.) (Brown, Black, Green).....	33-1096	.20
⑱	Resistor (120000 ohms) (Brown, Red, Yellow).....	33-1128	.20	④㉗	Resistor (.5 Meg.) (Yellow, White, Yellow).....	6097	.20
⑲	Resistor (120000 ohms) (Brown, Red, Yellow).....	33-1128	.20	④㉘	Condenser (Electrolytic, 16 Mfd.).....	30-2124	.75
⑳	Resistor (200 ohms Flexible) (Red, Black, Black).....	7217	.20	④㉙	Condenser (Electrolytic, 16 Mfd.).....	30-2124	.75
㉑	Condenser (.1 Mfd. Twin Bakelite Block).....	4989-DG	.40	④㉚	Filter Choke.....	32-7018	1.50
㉒	Condenser (.05 Mfd. Tubular).....	30-4020	.20	④㉛	Filter Choke.....	32-7452	.90
㉓	Compensating Condenser (1st I.F. Primary).....	Part of ㉔	.....	④㉜	Resistor (15 ohms, 130 ohms—Wirewound).....	33-3213	.50
㉔	1st I.F. Transformer.....	32-1671	1.35	④㉝	Condenser (.05 Mfd. Bakelite Block).....	3615-SU	.35
㉕	Compensating Condenser (1st I.F. Secondary).....	Part of ㉔	.....	④㉞	Dial Scale.....	27-5097	.25
㉖	Resistor (300 ohms Flexible) (Orange, Black, Black).....	33-3010	.20	④㉟	Dial Hub and Set Screw Assembly.....	31-1550	.15
㉗	Condenser (.1 Mfd. & .01 Mfd. Bakelite Block).....	4989-FU	.40	④㊱	Dial Spring Clamp.....	28-2837	.10
㉘	Pilot Lamp.....	34-2068	.16	④㊲	Knob (Tone, Volume).....	27-4208	.10
㉙	Compensating Condenser (2d I.F. Primary).....	Part of ㉚	.....	④㊳	Knob (Waveband).....	27-4219	.10
㉚	2d I.F. Transformer.....	32-1672	1.35	④㊴	Knob (Station Selector).....	27-4206	.12
㉛	Compensating Condenser (2d I.F. Secondary).....	Part of ㉚	.....	④㊵	Knob (Fine Tuning).....	27-4207	.10
㉜	Resistor (1000 ohms) (Brown, Black, Red).....	5837	.20	④㊶	Socket (6 Prong).....	27-6036	.11
㉝	Resistor (2 Megs.) (Red, Black, Green).....	33-1025	.20	④㊷	Socket (7 Prong).....	27-6037	.11
㉞	Resistor (50000 ohms) (Green, Brown, Orange).....	6098	.20	④㊸	Bezel.....	28-2928	.35
㉟	Condenser (.00011 Mfd. Twin Bakelite Block).....	8085-DU	.25	④㊹	Bezel Glass.....	27-2887	.60
㊱	Condenser (.00011 Mfd. Mica).....	30-1031	.20	④㊺	Chassis Mtg. Screw.....	W-1496A	1.60 per C
㊲	Condenser (.15 Mfd. Twin Bakelite Block).....	6287-DU	.40	④㊻	Chassis Mtg. Washer.....	27-4198	.01
㊳	Condenser (.01 Mfd. Bakelite Block).....	3903-SU	.25	④㊼	Tube Shield Body.....	28-2726	.10
㊴	Volume Control & On-Off Switch.....	33-5114	1.45	④㊽	Tube Shield Base.....	28-2725	.08

3. Adjust the signal generator to a frequency of 460 K.C. Place the receiver in operation with the dial turned to the low frequency end of the standard broadcast band, wave band switch to extreme left (clockwise), and have the volume control adjusted near its maximum setting. Adjust the signal generator attenuator for approximately half-scale reading of the output meter.

4. The I.F. compensating condensers are located at the tops of the I.F. coil shields and adjusted by turning the two screws in top. Adjust condensers ⑳ and ㉑ (2d I.F. primary and secondary) for maximum reading in the output meter, and then condensers ㉒ and ㉓ (1st I.F. primary and secondary).

#### Adjustment of Wave-Trap

1. Connect the signal generator leads to the antenna and ground terminals of the receiver. Replace the grid clip on the 6A7 grid cap.

2. With the wave-band switch of the receiver still in the extreme left (broadcast position), turn the station selector to 550 K.C.

3. With the signal generator in operation at 460 K.C., adjust the wave-trap ① condenser until a MINIMUM reading is obtained on the output meter. The wave-trap compensator is reached from rear of chassis.

#### Adjustment of High and Low Frequency Compensators

1. With the wave-band switch still at Position No. 1 (broadcast band), set the dial at 1500 K.C. Set the signal generator at 1.5 M. C. and adjust compensators ⑬ and ⑰ for maximum output. These are the oscillator and antenna "H.F. standard" compensators respectively.

2. Tune the receiver and the signal generator to 600 K.C. and adjust compensator ⑱ (screw) for maximum output. This is the oscillator L.F. standard compensator.

3. Turn the wave-band switch to the extreme right (short-wave band) and adjust the station selector to 18.0 megacycles. Set the signal generator at 18.0 megacycles. Now adjust the oscillator S.W., and antenna S.W. compensators for maximum reading in the output meter. These are numbered ⑭ and ⑸ respectively in figure No. 2.

4. Turn the tuning dial to 6.0 M.C., set the signal generator at 6.0 M.C., and adjust condenser ⑲ osc. L.F., (S.W.) (nut) to maximum signal.

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