

# PHILCO

REG. U.S. PAT. OFF.

## Service Bulletin—No. 164-A

### Model 60

THE PHILCO RADIO MODEL 60 is a five-tube superheterodyne receiver, operating upon alternating current and designed for the reception of standard broadcast, and police, airport and aircraft, and amateur radiophone signals. The frequency range is 530-4000 kilocycles. The intermediate frequency is 460 kilocycles. The power consumption is 60 watts. A Type 6A7 tube is used as a combination first detector and oscillator, a Type 78 for intermediate frequency; a Type 75 as second detector and first A. F.; a Type 42 as second A. F. (output), and a Type 80 as rectifier.

**Table 1—Tube Socket Data\*—A. C. Line Voltage 115 Volts**

Circuit	Det. Osc.	I. F.	2nd Det. and 1st A. F.	2nd A.F. (Output)	Rectifier
Type Tube	6A7	78	75	42	80
Filament Volts—F to F...	6.3	6.3	6.3	6.3	4.8
Plate Volts—P to K.....	250	250	170	240	350
Screen Grid Volts—SG to K (6A7-G3-5 to K).....	85	120	.....	245	.....
Control Grid Volts—CG to K (6A7-G4 to K).....	.18	.18	.15	.18	.....
Cathode Volts—K to F...	3.	3.	0	0	.....

6A7-G1 to K=1.4 volts.  
6A7-G2 to K=180 volts.

\*All the above values were obtained from the underside of the chassis, using test prods and leads with a suitable A. C. voltmeter for filament voltages and a high-resistance multi-range D. C. voltmeter for all other values. The Philco Model 048 All-Purpose Set Tester is highly recommended for this use. Volume control at maximum and station selector at 530 K. C. Readings obtained with a plug-in adaptor will NOT be satisfactory.

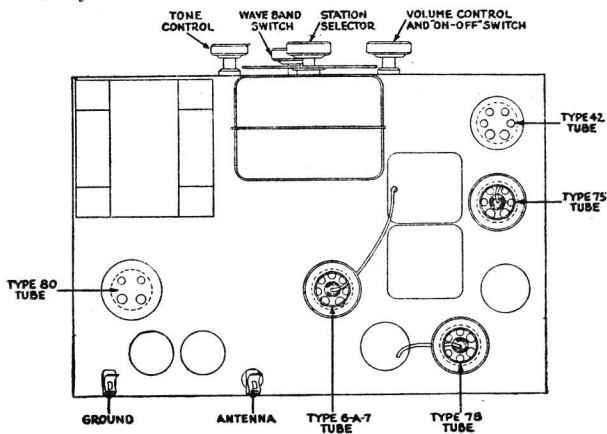


Fig. 1—Top View of Chassis

**Table 2—Power Transformer Data**

Terminal	A. C. Volts	Circuit	Color
1-2	105-125	Primary	White
3-5	6.3	Filament	Black
6-7	5.0	Filament of 80	Blue
8-10	680	Plates of 80	Yellow
4	.....	Center Tap of 3-5	Black-Yellow Tracer
9	.....	Center Tap of 8-10	Yellow-Green Tracer

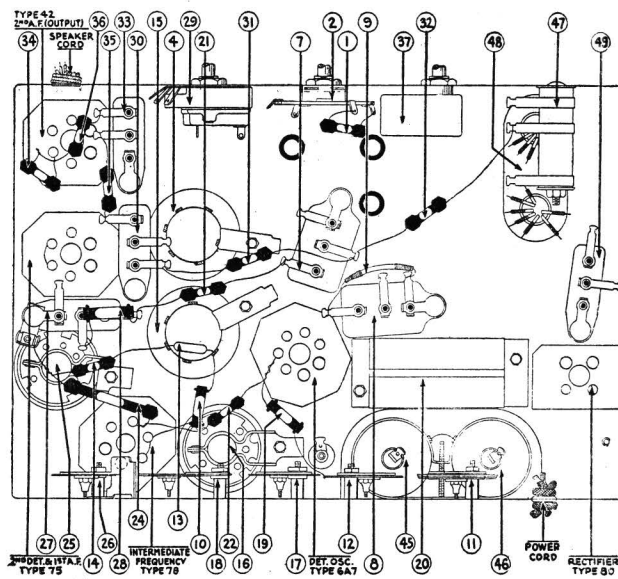


Fig. 2—Bottom View of Chassis Showing Parts

### ADJUSTMENT OF MODEL 60

The receivers are accurately adjusted prior to shipment from the factory. Adjustments of the compensating condensers should *only* be undertaken with proper instructions and equipment available. Your distributor can supply both. The *Philco Model 048 All-Purpose Set Tester* is highly recommended. It contains an accurately calibrated signal generator.

The adjustment of the compensating condensers is similar to that outlined in Service Bulletin No. 120-C.

Location of the several compensating condensers can be learned through reference to Fig. 3 for their electrical location in the receiver, and to Fig. 2 for the physical location of the compensating condensers at the rear of the chassis.

The intermediate frequency compensating condensers first should be adjusted. The intermediate frequency is 460 K. C. These condensers are ⑰, ⑱ and ⑳, accessible from rear of chassis.

Next, the high frequency ⑥ and antenna ⑤ compensating condensers are adjusted. These are mounted upon the tuning condenser assembly ③; ⑤ is nearest front of chassis.

The low frequency compensating condensers are adjusted last. These are ⑩ for Police Band, ⑪ for Broadcast Band, and are at rear of chassis.

The I. F. compensating condensers should be given a final retrimming after these adjustments are completed.



6A7 Socket



78 Socket



75 Socket



42 Socket



80 Socket

Terminal Arrangement of Tube Sockets, Viewed From Under Side of Chassis

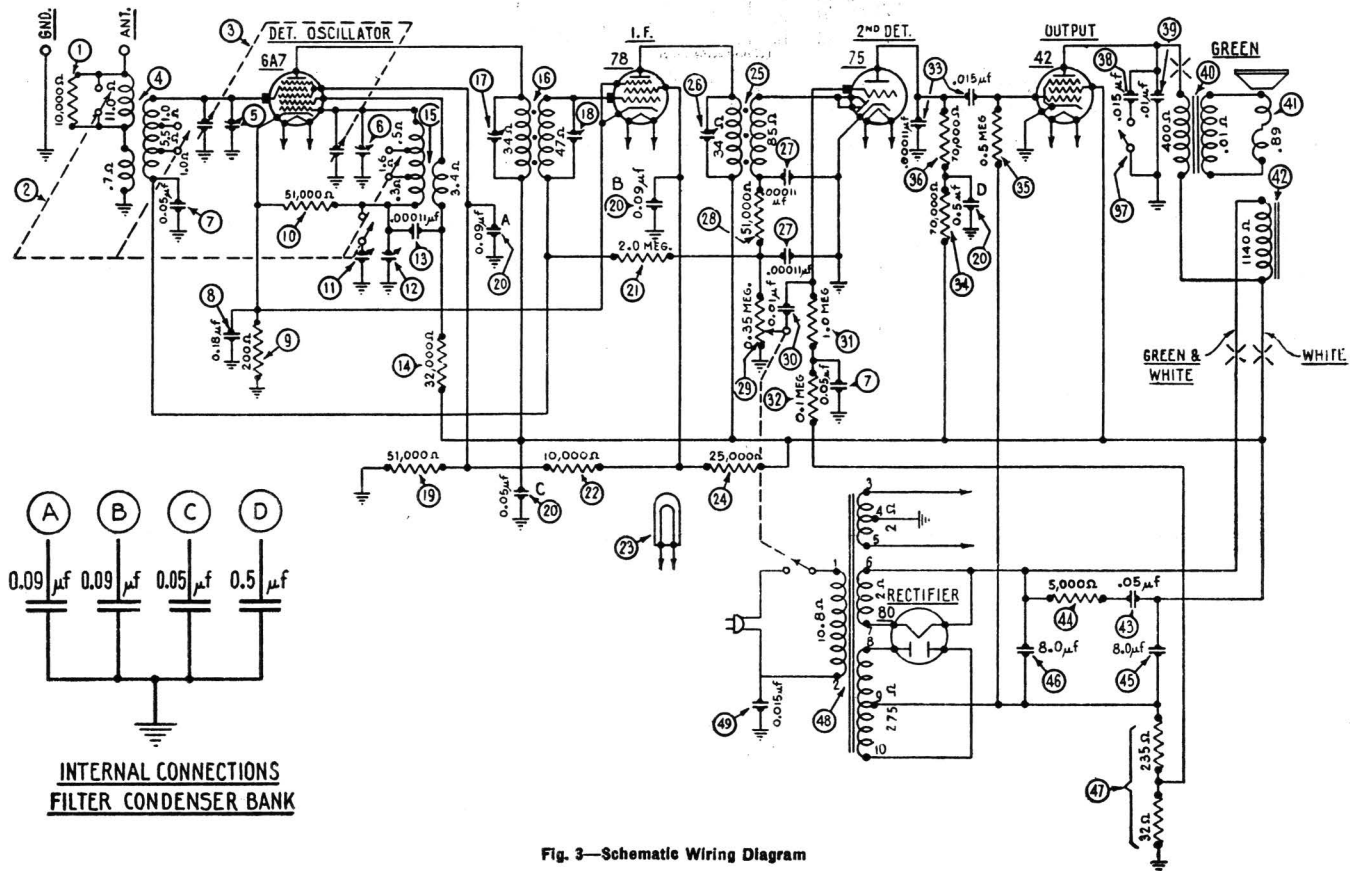


Fig. 3—Schematic Wiring Diagram

NOTE—(20) External connections, Filter Condenser Bank, are:  
 (A) 0.09 mfd. section—White-Black Tracer.  
 (B) 0.09 mfd. section—White-Black Tracer.  
 (C) 0.05 mfd. section—Green.  
 (D) 0.5 mfd. section—Black.

NOTE—(43) Condenser, and (44) Resistor, are NOT included in current production.  
 NOTE—A Fixed Condenser (Green-Orange); Part No. 5878; (.0008 mfd.) is connected across (11) in current production.

Run No. 2 includes an individual filter condenser section, Part No. 6287-B, (.2 mfd.) in addition to Part No. 30-4013 (20) already used. This additional unit is connected between the end terminal of (8) and grounded terminal of (8).

Run No. 3 includes a five-section filter condenser bank (20), Part No. 30-4063, in place of Part No. 30-4013. The additional section included is of .2 mfd. capacity (red and yellow lead) and is connected to the end terminal of (8).

### REPLACEMENT PARTS FOR MODEL 60

No. on Figs.	Description	Part No.	List Price	No. on Figs.	Description	Part No.	List Price
(1)	Resistor (10,000) (Brown-Black-Orange)	4412	.20	(24)	Resistor (25,000) (Red-Green-Orange)	3656	.20
(2)	Wave-Band Switch	42-1001	.....	(26)	Second I. F. Transformer	32-1050	.....
(3)	Tuning Condenser Assembly	31-1006	.....	(28)	Compensating Cond. (2nd, I. F. Primary)	04000-M	.16
(4)	Antenna Transformer	32-1047	.....	(27)	Condenser (Double) (.00011-.00011)	8035-B	.16
(5)	Compensating Condenser (Ant.; H. F.; Part of (3))	.....	.....	(29)	Resistor (51,000) (Green-Brown-Orange)	4518	.20
(6)	Compensating Condenser (Osc.; H. F.; Part of (3))	.....	.....	(30)	Volume Control and "On-Off" Switch	33-5006	.....
(7)	Condenser (Double) (.05-.05)	3615-AJ	.25	(31)	Condenser (.01)	3903-AP	.....
(8)	Condenser (.18)	4989-Z	.....	(32)	Resistor (1.0 meg.) (Brown-Black-Green)	4409	.20
(9)	Resistor (Flexible Wire-Wound) (200) (Red-Black-Brown)	7217	.15	(33)	Resistor (.1 meg.) (White-White-Orange)	4411	.20
(10)	Resistor (51,000) (Green-Brown-Orange)	4518	.20	(34)	Condenser (Double) (.00011-.015)	8035-D	.....
(11)	Compensating Condenser (Osc.; L. F.; Police Band)	04000-S	.25	(35)	Resistor (70,000) (Violet-Black-Orange)	5385	.20
(12)	Compensating Condenser (Osc.; L. F.; Broadcast Band)	04000-S	.25	(36)	Resistor (.5 meg.) (Yellow-White-Yellow)	4517	.20
(13)	Condenser (.00011)	4519	.18	(37)	Resistor (70,000) (Violet-Black-Orange)	5385	.20
(14)	Resistor (32,000) (Orange-Red-Orange)	5279	.20	(38)	Tone Control	30-4008	.....
(15)	Oscillator Transformer	32-1048	.....	(39)	Condenser (Part of (37))—(.015)	.....	.....
(16)	First I. F. Transformer	32-1049	.....	(40)	Condenser (Part of (37))—(.01)	.....	.....
(17)	Compensating Cond. (1st I. F. Primary)	04000-M	.16	(41)	Output Transformer	32-7019	.....
(18)	Compensating Cond. (1st I. F. Secondary)	04000-A	.12	(42)	Voice Coil and Cone Assembly	36-3014	.....
(19)	Resistor (51,000) (Green-Brown-Orange)	4518	.20	(43)	Speaker Field, assembled with Pot (S-7)	36-3037	.....
(20)	Filter Condenser Bank	30-4013	.65	(45)	Condenser (Electrolytic) (8.0)	7558	1.25
(21)	Resistor (2 meg.) (Red-Black-Green)	5872	.20	(46)	Condenser (Electrolytic) (8.0)	7558	1.25
(22)	Resistor (10,000) (Brown-Black-Orange)	4412	.20	(47)	Resistor (Wire-Wound)	7998	.15
(23)	Pilot Lamp (Station Selector)	6608	.12	(48)	Power Transformer (50-60 ~)	8046	3.00
				(49)	Condenser (.015)	3793-W	.16
					Tube Shield	28-1107	.10
					Four-Prong Tube Socket	7544	.06
					Six-Prong Tube Socket	7547	.10
					Seven-Prong Tube Socket	27-6005	.10

USE PHILCO REPLACEMENT PARTS AND TUBES FOR EVERY MAKE RADIO.  
 GET COMPLETE CATALOG FROM YOUR DISTRIBUTOR.

**PHILCO RADIO & TELEVISION CORPORATION**  
 Service Department