Philco Radio & Television Corp.

	Model: 66	**Chassis:**	**Year:** Pre October 1934
	Power:	**Circuit:**	**IF:**
	Tubes:		
	Bands:		

Resources
Riders Volume 5 - PHILCO 5-31
Riders Volume 5 - PHILCO 5-32
Riders Volume 5 - PHILCO 5-33

PHILCO RADIO & TELEV. CORP.

MODEL 66
Alignment Data
Voltage
Parts List

Model 66

Model 66 is a five-tube superheterodyne radio receiver, capable of receiving either standard broadcasts (and police calls up to 1720 K.C.), or short-wave stations within a frequency range of 5.5 to 16.0 megacycles. The frequency range on standard broadcast is 540-1720 kilocycles.

The tubes used are: Type 6A7 detector-oscillator, type 78 intermediate frequency, type 75 2d detector, type 42 output and type 80 rectifier. The intermediate frequency of the Model 66 is 460 K.C. and the power consumption is 60 watts.

Adjusting Compensating Condensers

The adjustment of the compensating condensers in Model 66 Receiver requires the use of an accurate signal generator such as Philco Model 024, an efficient output meter (Philco Model 012 or Model 025 are recommended), and a suitable fibre hex wrench. Connect the output meter to the plate and cathode prongs of the 42 output tube.

Adjustments are made in the following order:

(1)—I. F. (Intermediate Frequency)—Remove grid clip from cap on 6A7 tube and connect antenna lead from signal generator to cap of tube. Connect ground lead to ground post on set. Turn on set and signal generator; set wave switch of latter to 460 K. C. (the I. F. of Model 66) and dial of set at 540, wave band switch to left. Adjust each of the four I. F. compensating condensers ⑰, ⑲, ㉒ and ㉔ in turn so that maximum reading is obtained in the output meter. If the meter reading goes off scale, adjust the attenuator on the signal generator so as to get a lower reading. These I. F. condensers (visible in Fig. 4) are adjusted by inserting the hex wrench thru the holes in rear of chassis sub-base (except one to extreme left when facing rear of set). Two of the holes are covered by small metal buttons which can be removed temporarily by hand.

(2)—WAVE TRAP—Replace grid clip on cap of 6A7 tube and connect antenna lead from signal generator to antenna post on set. Set signal generator at 460 K. C. and adjust wave trap ① so as to get MINIMUM reading in output meter.

(3)—ANT. and OSC. H. F.—These adjustments ⑦ and ⑪ are located on top of the tuning condenser assembly at right (facing front of set) and adjusted from above. The "ANT" ⑦ is nearest front of set. Set signal generator at 1700 and dial of set at 1700 and adjust these two condensers to get maximum output meter reading.

(4)—OSC. L. F.—This condenser ⑬ is located underneath chassis (see Fig. 4) and is reached from underneath. Set dial of set and signal generator switch at 600, and adjust for maximum reading.

Replacement Parts for Model 66

No. on Figs.	Description	Part No.	List Price
①	Wave Trap	32-5199	$0.30
②	Wave-band Switch	42-1066	.90
③	Resistor (10,000 ohms) (Brown-Black-Orange)	33-1000	.25
④	Antenna Transformer	32-1412	.85
⑤	Condenser (.000015 Mfd.)	30-1630	.35
⑥	Tuning Condenser Assembly	31-1231	3.65
⑦	Compensating Condenser (ANT)	Part of ④	....
⑧	Resistor (200 ohms Flexible) (Red-Black-Brown)	7217	.20
⑨	Condenser (.05 Mfd. Tubular)	30-4020	.35
⑩	Resistor (50,000 ohms) (Green-Green-Orange)	6098	.25
⑪	Compensating Condenser (OSC. HF)	Part of ⑥	....
⑫	Condenser (.003 Mfd. Mica)	30-1028	.60
⑬	Compensating Condenser (Osc. I. F.)	04000-S	.35
⑭	Condenser (.0008 Mfd. Mica)	5878	35
⑮	Resistor (32,000 ohms) (Orange-Red-Orange)	5279	.25
⑯	Oscillator Transformer	32-1413	.60
⑰	Compensating Condenser (1st I. F. Pri.)	04000M	.20
⑱	1st I. F. Transformer	32-1414	1.00
⑲	Compensating Condenser (1st I. F. Secondary)	04000M	.20
⑳	Resistor (400 ohms Flexible)	33-3016	.20
㉑	Condenser (.05 Mfd. Tubular)	30-4020	.35
㉒	Compensating Condenser (2d I. F. Primary)	04000M	.20
㉓	2d I. F Transformer	32-1415	$1.00
㉔	Compensating Condenser (2d I. F. Secondary)	04000J	.20
㉕	Resistor (50,000 ohms) (Green-Brown-Orange)	6098	.25
㉖	Condenser (.0001 Mfd. Twin Bakelite Block)	8035-B	.25
㉗	Condenser (.1 Mfd. Tubular)	30-4170	.35

Tube Socket Voltages—Line Voltage 115

Tube	6A7	78	75	42	80
Circuit	Det. Osc.	I. F.	2d Det.	Output	Rect.
Filament (F-F)	6.3	6.3	6.3	6.3	5.0
Plate (P-K)	260	260	160	*250	340
Screen (SG-K)	85	85	...	260	
Cathode (K-F)	2.1	2.2	0	0	...

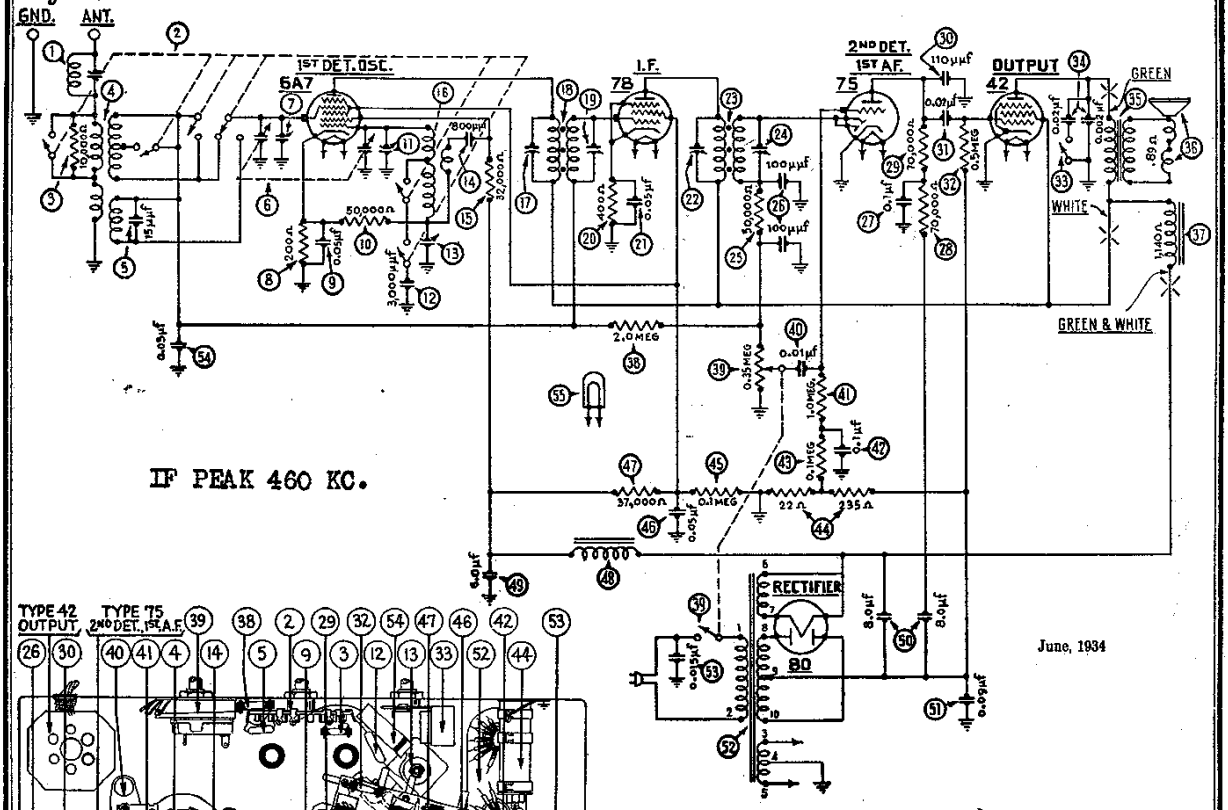
6A7-G1-K: 20; 6A7-G2-K: 130.

The above voltages were obtained by using a high resistance multi-range DC voltmeter, and an AC voltmeter for filaments. Tests made with test prods applied to tube sockets at underside of chassis (see Fig. 1). Volume control at maximum, dial at low frequency end of scale.

No. on Figs.	Description	Part No.	List Price
㉘	Resistor (70,000 ohms) (Violet-Black-Orange)	33-1115	.25
㉙	Resistor (70 000 ohms) (Violet-Black-Orange)	33-1115	.25
㉚	Condenser (.00011 Mfd. Mica)	30-1006	.35
㉛	Condenser (.02 Mfd. Tubular)	30-4113	.30
㉜	Resistor (500,000 ohms) (Yellow-White-Yellow)	6097	.25
㉝	Tone Control	30-4192	.50
㉞	Condensers in Tone Control	Inside ㉝	....
㉟	Output Transformer	32-7019	1.25
㊱	Voice Coil & Cone Assembly (8-12)	36-3014	.60
㊲	Field Coil and Pot. Assembly (8-12)	36-3341	2.75
㊳	Resistor (2 Megohms) (Red-Black-Green)	33-1025	.25
㊴	Volume Control and On-Off Switch	33-5006	1.45
㊵	Condenser (.01 Mfd.) (Bakelite Block)	3903-AB	.25
㊶	Resistor (1 Megohm) (Brown-Black-Green)	33-1096	.25
㊷	Condenser (.1 Mfd.)	30-4122	.35
㊸	Resistor (.1 Meg.) (White-White-Orange)	6099	.25
㊹	Resistor (B C. Wire-wound) (22-235 ohms)	33-3037	.20
㊺	Resistor (.1 Meg.) (White-White-Orange)	6099	$0.25
㊻	Condenser (.05 Mfd. Tubular)	30-4123	.35
㊼	Resistor (37,000 ohms) (Orange-Violet-Orange)	33-1098	.35
㊽	Filter Choke	32-7018	1.50
㊾	Condenser (Electrolytic—6 Mfd.)	30-2021	1.55
㊿	Condenser (Electrolytic—8-8 Mfd.)	30-2028	2.40
(51)	Condenser (.09 Mfd. Bakelite Block)	4989-D	.35
(52)	Power Transformer	8046	3.45
(53)	Condenser (.015 Mfd. Bakelite Block)	3793-W	.35
(54)	Condenser (.05 Mfd. Tubular)	30-4020	.35
(55)	Dial Light	6608	.11
	Four Prong Socket	7544	.10
	Six Prong Socket	7547	.11
	Seven Prong Socket	27-6005	.11
	Tube Shield	28-1107	.10
	Chassis Mounting Screw	W-567	3.00C
	Chassis Mounting Washer (Metal)	W-315	.50C
	Chassis Mounting Washer (Rubber)	5189	.04
	Knob (Large)	27-4051	.10
	Knob (Small)	27-4052	.10
	Dial Assembly	31-1234	.30
	Dial Scale	27-5057	.10
	A. C. Cord and Plug Assembly	'3A	.60

MODEL 66
Schematic
Layouts

PHILCO RADIO & TELEV. CORP.



June, 1934

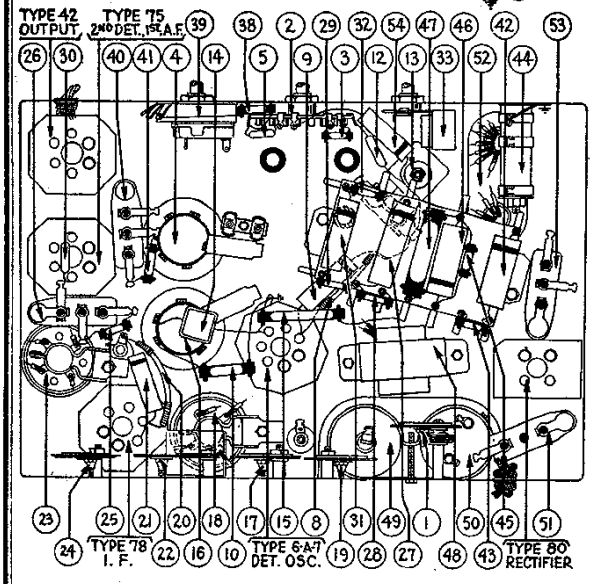


Fig. 4—Base View

Power Transformer Data

Terminals	Volts	Circuit	Color of Leads
1-2	105-125	Primary	White
3-5	6.3	Filaments	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

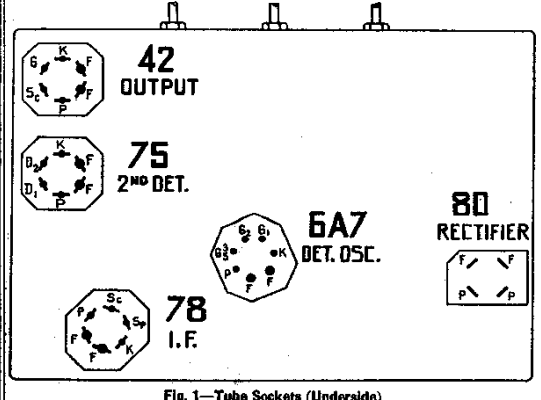


Fig. 1—Tube Sockets (Underside)

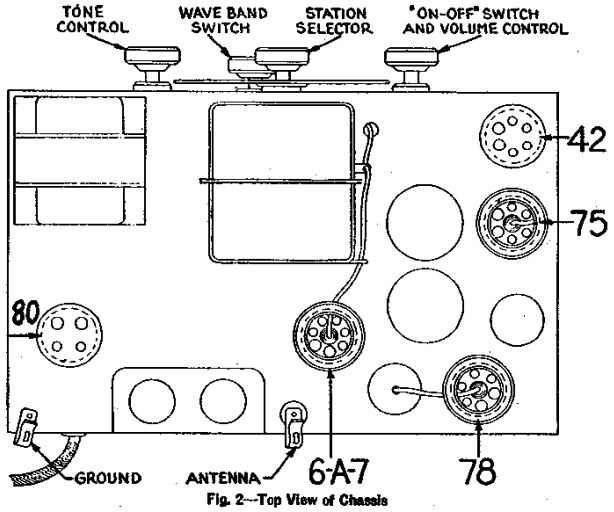


Fig. 2—Top View of Chassis

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Model 49

A change in the Shadowmeter Circuit on this model becomes effective with Run No. 4. This is in order to reduce the current thru the shadowmeter.

Referring to Figure 3 of Service Bulletin No. 199, the lead from the primary of ㉗ (2nd I. F. transformer) is removed from one side of the Shadowmeter ㊷ and connected to the other side. Resistor ㊼, Part No. 5309 is omitted.

In list of tubes for Model 49 (DC), correct to read 2 type 78 instead of 3.

Starting with Run No. 3, Part ㊽ , 3615AX By-Pass Condenser will be replaced with 3615BB. This change facilitates wiring in the factory.

Model 66

Starting with Run No. 9 the following changes in compensating condensers will be made, which will make padding adjustments less critical.

Replace condenser ⑰, 04000M with an 04000J, and condenser ⑲ 04000M with an 04000A.

Connect a mica condenser, Part No. 30-1029 (.00005 mfd.) across ⑲.

Effective July 1st, a new wave trap will be used. Part ① in diagram will be Part No. 38-5994 instead of 38-5199 previously used. The new wave trap uses an improved construction which facilitates mounting.

Starting July 10th, a 70-ohm wire wound resistor Part No. 33-1129 will be added. Connected in series with condenser ⑭ on the oscillator coil side. This will prevent oscillation at extreme high frequency end of the short wave band.

The part number of the Tone Control on Model 66 will be 30-4212 instead of 30-4192 previously used. No change in wiring needed. The new Tone Control gives a slight desirable increase in response to high notes.

Effective August 1st, a 50 Mmfd. Mica Condenser, Part No. 30-1029 was added across the secondary of the 2nd I. F. Transformer. This makes adjustment of the 2nd I. F. Padder smoother and easier.

At the same time a 20,000 Ohm Resistor, Part No. 6650 was added, connected between the arm of the wave-band switch and the grounded junction of ⑧ and ⑨ This corrects any tendency toward oscillation on the high end of the short-wave band.

A 70-Ohm flexible wire-wound resistor is also added, Part No. 33-3027, connected in series between condenser ⑭ and the upper end (on diagram) of the oscillator transformer plate winding.

CURRENT MODELS—IMPROVEMENT IN COMPENSATING CONDENSER

To prevent any tendency to "Frequency Drifting" in current models, a bakelite washer and a metal washer are now being used on top of the Compensating Condenser, in place of the fibre washer previously used.

Part No. of bakelite washer is 27-4109, and of the metal washer (placed on top of bakelite) is W-1331. These two replace the old fibre washer Part No. 3500.