Electrical Specifications

Type Circuit: Superheterodyne, using a vibrator unit operated by a 6 volt storage battery for supplying "B" power to the receiver, and a Class B audio output circuit.

Power Supply: 6 volt storage battery, Philco Type 116R.

Current Drain: 1.5 Amps.

Philco Tubes Used: 6-1D5G, R. F. Amp.; 1C7G, Det. Osc.; 1D5G I. F. Amp.; 1F7G, 2nd Det.—1st Audio A. V. C.; 1H4G, Audio Driver; 1J6G, Output.

Frequency Ranges: Three. Range 1—530 to 1720 K. C.; Range 2—2.3 to 7.4 M. C.; Range 3—7.35 to 22 M. C.

Intermediate Frequency: 470 K. C.

Speakers: KR-17. "B" Cabinet; HR-12. "J" Cabinet.

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator; Philco Model 088 (fundamental frequency 110 to 20000 K. C.) is the correct instrument for this purpose; (2) output meter. **Philco Model 025 Circuit Tester** incorporates an accurate, Sensitive output meter and is recommended; (3) Fibre handle screwdriver (Philco Part No. 27-7059); (4) Special variable condenser (Philco Part No. 45-2325).

DIAL CALIBRATION: Set the tuning condenser at the maximum capacity position. Loosen the set screw of the dial hub and set dial, with the glowing indicator centered between the first and second index lines, at the low frequency end of the broadcast scale. Tighten set screw in this position.

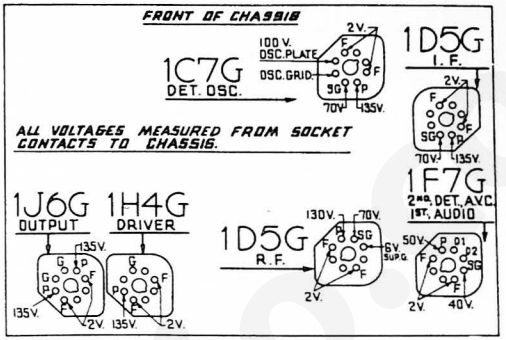

Fig. 1—Socket Voltages and R. F. Compensators

The voltages indicated by arrows were measured with a Philco 025 Circuit Tester which contains a voltmeter having a resistance of 1000 ohms per volt. Volume Control at maximum, Storage Battery fully charged.

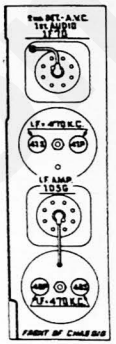

Fig. 2—I. F. Compensators

INTERMEDIATE FREQUENCY CIRCUIT

Frequency 470 K. C.

1. Connect the 088 Signal Generator output lead through a .1 mfd. condenser to the control grid of the 1C7G tube, and the ground connection of the Generator to the chassis. Turn the Volume Control to maximum volume position.

2. Set the range switch in position No. 1 (Broadcast), then rotate the tuning condenser of the receiver to approximately 580 K. C. and adjust the signal generator for 470 K. C.

3. Adjust compensators (41S) 2nd I. F. Sec., (41P) 2nd I. F. Pri., (40S) 1st I. F. Sec., and (40P) 1st I. F. Pri. for maximum reading on the output meter.

RADIO FREQUENCY CIRCUIT

Tuning Range (7.35) to (22.0) M. C.

1. Remove the signal generator output lead from the grid of the 1C7G tube and connect it through the .1 mfd. condenser to terminal No. 1 on aerial input panel and the generator ground lead to terminal No. 3, rear of chassis. Terminals 2 and 3 must be connected by the shorting link provided on the panel.

2. Set the range switch in position No. 3. Turn the receiver and signal generator dials to 18 M. C. Now adjust compensator (24B) by turning the screw (clockwise) to the maximum capacity position, then slowly turning it (counter-clockwise) until a second peak signal is reached on the output meter. The first peak from maximum capacity is the image signal and must not be used. **Note**—In adjusting some receivers only one peak will be observed, therefore, tune the compensator to maximum on this peak. If the above procedure is correctly performed, the image signal will be found at 17.06 M. C. by advancing the signal generator attenuator and turning the receiver dial to this frequency mark on the dial.

3. The antenna and R. F. Compensators (6B) and (20B) are now adjusted by connecting a variable condenser of approximately 350 mmfd., Philco Part No. 45-2325 across the oscillator section of the gang condenser and ground. Leaving the signal generator and receiver dials at 18 M. C., tune the added condenser from the maximum capacity point until the second harmonic of the receiver oscillator beats against the signal from the generator thereby bringing in the signal. The antenna and R. F. compensators (6B) and (20B) are then adjusted for maximum output. Now remove the external condenser and readjust compensator (24B) for maximum output.

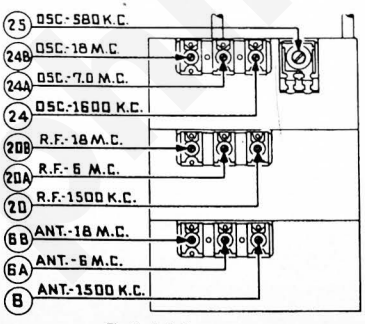

Fig. 3—R. F. Compensators

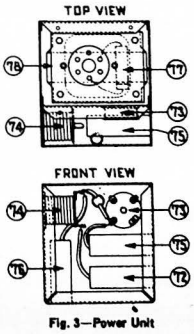

Fig. 3—Power Unit

Tuning Range (2.3) to (7.4) M. C.

1. Set range switch in position 2. Rotate signal generator and receiver dials to 7.0 M. C. Now adjust compensator (24A) for maximum output.

2. Turn the signal generator and receiver dials to 6.0 M. C. and adjust compensators (20A) R. F. and (6A) Ant. for maximum output.

Tuning Range (530) to (1720) K. C.

1. Set range switch in position No. 1 (Broadcast). Rotate the signal generator and receiver dials to 1600 K. C. Now adjust compensators (24) Osc., (20) R. F. and (6) Ant. for maximum output.

2. Rotate the signal generator and receiver dials to 580 K. C. Compensator (25) Osc. series is now adjusted for maximum output as follows:

First tune compensator (25) for maximum output, then vary the tuning condenser of the receiver for maximum output about the 580 K. C. dial mark. Now turn compensator (25) slightly to the right or left and vary the receiver tuning condenser for maximum output. If the out reading increases, turn compensator (25) in the same direction a trifle more, and again vary the tuning condenser for maximum output. If the output decreases, set the compensator in the opposite direction. This procedure of first setting the compensator and then varying the tuning condenser is continued until there is no further gain in output reading.

3. Readjust compensator (24) for maximum output, by turning the signal generator and receiver dials to 1600 K. C.

4. Turn the signal generator and receiver dials to 1500 K. C. and adjust compensators (20) R. F. and (6) Ant. for maximum output.

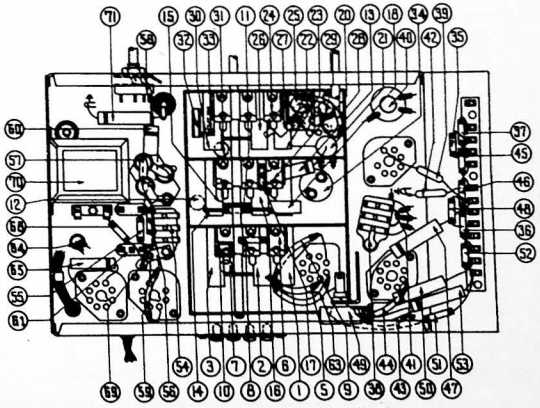

Fig. 4—Parts Locations—Underside of Chassis

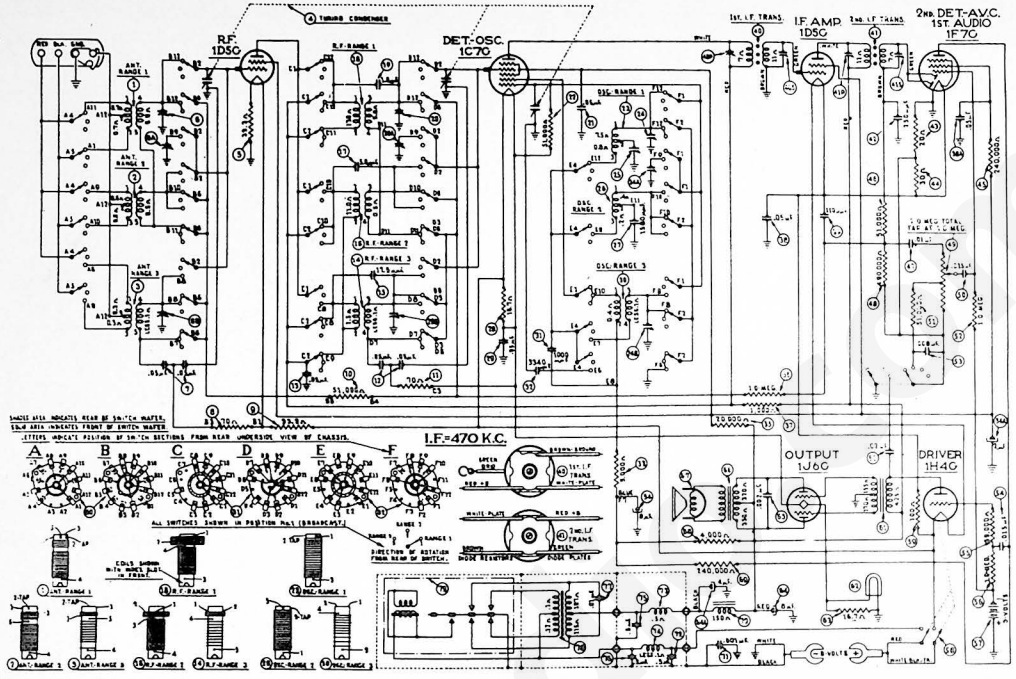

Fig. 5—Schematic Diagram

Replacement Parts—Model 37-624

Schem. No.	Description	Part No.	List Price
1	Antenna Transformer (530-1720 K. C.)	32-2108	$1.60
2	Antenna Transformer (2.3 to 7.4 M. C.)	32-2119	1.20
3	Antenna Transformer (7.35 to 22 M. C.)	32-2109	1.20
4	Tuning Condenser	31-1818	5.00
5	Resistor (33.3 ohm flexible)	33-3233	.20
6	Compensator (three sections)	31-6092	.60
7	Condenser (.05 mfd. dual tubular)	30-4394	.35
8	Resistor (70 ohms, ½ watt)	33-070339	.20
9	Resistor (33.3 flexible)	33-3233	.20
10	Resistor (51000 ohms, ½ watt)	33-351339	.20
11	Resistor (70 ohms, ½ watt)	33-070339	.20
12	Condenser (.05 mfd. dual tubular)	30-4394	.35
13	Condenser (.05 mfd. tubular)	30-4123	.20
14	R. F. Transformer (7.35 to 22 M. C.)	32-2126	.70
15	Condenser (17.5 mmfd. mica)	30-1079	.20
16	R. F. Transformer (2.3 to 7.4 M. C.)	32-2106	.70
17	Condenser (5. mmfd. mica)	30-1077	.20
18	R. F. Transformer (530 to 1720 K. C.)	32-2105	1.00
19	Condenser (1. mmfd. wire and lug twisted)	38-7878	
20	Compensator (three sections)	31-6121	.75
21	Condenser (.05 mfd. tubular)	30-4020	.20
22	Resistor (51000 ohms, ½ watt)	33-351339	.20
23	Oscillator Transformer (530 to 1720)	32-2120	1.00
24	Compensator (three sections)	31-6092	.60
25	Compensator (Osc. Broadcast series)	31-6056	.55
26	Oscillator Transformer (2.3 to 7.4 M. C.)	32-2121	.70
27	Condenser (1580 mmfd.)	31-6138	.40
28	Resistor (16.7 ohm flexible)	33-3298	.20
29	Condenser (.05 mfd. tubular)	30-4020	.20
30	Oscillator Transformer (7.35 to 22 M. C.)	32-2110	.70
31	Condenser (1000 mmfd. tubular)	30-4453	.20
32	Condenser (3340 mmfd. semi-fixed)	31-6137	.60
33	Resistor (5000 ohms, ½ watt)	33-250339	.20
34	Electrolytic Condenser (Blue 8 mfd., Plain 2 mfd.)	30-2171	2.00
35	Resistor (20000 ohms, ½ watt)	33-320339	.20
36	Resistor (1.0 megohm, ½ watt)	33-510339	.20
37	Resistor (1000 ohms, ½ watt)	33-210339	.20
38	Condenser (.05 mfd. dual bakelite)	4989-DG	.40
39	Condenser (110 mmfd. mica)	30-1031	.20
40	1st I. F. Transformer	32-2100	
41	2nd I. F. Transformer	32-2102	
42	Condenser (250 mmfd. mica)	30-1032	.25
43	Resistor (20 ohms flexible)	33-3043	$0.25
44	Resistor (30 ohms flexible)	33-3119	.25
45	Resistor (240000 ohms, ½ watt)	33-424339	.20
46	Resistor (51000 ohms, ½ watt)	33-351339	.20
47	Condenser (.01 mfd. tubular)	30-4124	.25
48	Resistor (490000 ohms, ½ watt)	33-490339	.20
49	Volume Control	33-5166	1.00
50	Condenser (.015 mfd. tubular)	30-4358	.20
51	Resistor (51000 ohms, ½ watt)	33-351339	.20
52	Resistor (1.0 megohms, ½ watt)	33-510339	.20
53	Condenser (.008 mfd. tubular)	30-4112	.20
54	Condenser (.015 mfd. single bakelite)	3793-SU	.35
55	Resistor (99000 ohms, ½ watt)	33-399339	.20
56	Resistor (1.0 megohms, ½ watt)	33-510344	.20
57	Bias Cell	41-8009	.30
58	Power Switch and Tone Control	42-1242	1.00
59	Resistor (100 ohms flexible)	33-3187	
60	Condenser (.02 mfd. tubular)	30-4113	.20
61	Audio Transformer	32-7637	2.00
62	Pilot Lamp	34-2150	.22
63	Resistor (16.7 ohms flexible)	33-3298	.20
64	Electrolytic Condenser (4, 8 mfd.)	30-2160	2.00
65	Condenser (.002 mfd. tubular)	30-4177	
66	Output Transformer KR-17, HR-12	32-7639	1.60
67	Cone Voice Coil KR-17	36-3540	.80
	Cone Voice Coil	36-3557	1.20
68	Resistor (4000 ohms, ½ watt)	33-240339	.20
69	Resistor (240000 ohms, ½ watt)	33-424339	.20
70	Filter Choke	32-7643	1.35
71	Condenser (.001 mfd. tubular)	30-4201	.20
72	Condenser (.5 mfd. metal case)	30-4296	.60
73	B Choke	32-1932	.25
74	A Choke	32-1954	.40
75	Condenser (.5 mfd. metal case)	30-4296	.60
76	Condenser (.5 mfd. metal case)	30-4296	.60
77	Condenser (.01 mfd. tubular)	30-4381	.25
78	Power Transformer	32-7682	2.20
79	Vibrator	41-3222	5.25
80	Range Switch (Ant.)	42-1243	1.20
81	Range Switch (R. F.)	42-1244	1.20
82	Range Switch (Osc.)	42-1246	1.20
	Switch Index Plate and Shaft	42-1173	.50
	Pilot Lamp Assembly	38-7875	.45
	Dial	27-5214	.50
	Hub	28-7187	.12
	Clamp	28-2837	.10
	Set Screw	W-1641	$0.02
	Knob Tuning	27-4330	.10
	Knob Tuning Vernier	27-4331	.10
	Vernier Drive Assembly	31-1871	.75
	Knob Range Switch	27-4326	.10
	Knob Tone and Volume	27-4332	.10
	Mask	27-5198	.30
	Mask Arm and Link Assembly	31-1940	.15
	Shaft Coupling and Set Screw	31-1941	
	Felt Washer	27-8399	Per C .30
	Snap Fastener	28-4279	Per C .75
	Mask Guide and Lamp Support	38-7844	.15
	Indicator Bracket Assembly	38-7912	.30
	Volume Control Shaft	38-8059	
	Retaining Clip	28-4394	.01
	Shaft Spring	28-4117	Per C .40
	Socket 7 Prong	27-6057	.11
	Socket 8 Prong	27-6058	.11
	Tube Shield	28-2726	.10
	Base	28-3898	.03
	Bias Cell Panel Assembly	38-7275	.20
	Battery Cable	41-3204	1.20
	Speaker Cable	41-3207	.30
	A Battery	116-R	
	Mtg. Grommet (R. F. Unit)	27-4317	.04
	Mtg. Sleeve (R. F. Unit)	28-2257	.01
	Mtg. Screw (R. F. Unit)	W-729	Per C .45
	Mtg. Washer (R. F. Unit)	27-7807	Per C .50
	Mtg. Rubber (Tuning Cond.)	27-4325	.02
	Mtg. Plate (R. F. Trans.)	28-3808	.02
	Mtg. Spacer (R. F. Trans.)	27-8228	.01
	Mtg. Screw (R. F. Trans.)	W-1635	Per C .30
	Mtg. Busbing (Chassis)	27-4360	.04
	Mtg. Washer Rubber (Chassis)	5189	
	CABINET PARTS		
	Bezel Frame and Plate Assembly	40-5939	.75
	Gasket	27-8311	.01
	Glass	27-8298	.05
	Ring	28-3967	.35
	Screw	W-1644	Per C .50
	Baffle Silk Assembly B Cabinet	40-5970	
	Baffle Silk Assembly J Cabinet	40-5971	.80
	Bottom Shield Plate J Cabinet	28-3895	.25
	Speaker KR-17 B Cabinet	36-1248	10.00
	Speaker HR-12 J Cabinet	36-1250	11.00

Figures in black type indicate circled figures in Base View.

Prices Subject to Change without Notice

PHILCO RADIO & TELEVISION CORPORATION
Philadelphia, Pa.

October 7th, 1936

Printed in U. S. A.