Specifications

TYPE OF CIRCUIT: A.C. operated, Superheterodyne circuit, incorporating two tuning ranges covering standard and short wave broadcasts, automatic volume control, and a pentode audio output circuit. When built into a Type "T" cabinet, the receiver is identified as Code 121. In the Chairside Cabinet, Type "CS", the speaker is removed from the receiver chassis and mounted in the cabinet. The receiver is then identified as Code 124.

POWER SUPPLY:	Voltage	Frequency Cycles	Power Consumption
	115	50 to 60	40 watts

INTERMEDIATE FREQUENCY: 470 K.C.

R.F. TUNING RANGES: 540 to 1720 K.C.
5.7 to 18.0 M.C.

AUDIO OUTPUT: 2 watts

PHILCO TUBES USED: Five: One 6A7, Det. Osc.; One 78, I.F.; One 75, 2nd Det., 1st Audio; One 41, Output, and One 84, Rectifier.

TUNING MECHANISM: 8 to 1 Ratio using Pulley and Cord.

CABINET: Type "T" and "CS"

Alignment of Compensators

EQUIPMENT REQUIRED: (1) Signal Generator, using a fundamental frequency range covering the tuning and intermediate frequencies of the receiver. Philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 36,000 K.C. is the correct instrument for this purpose; (2) Output Meter, Philco Model 026 Circuit Tester incorporates a sensitive output meter and is recommended; (3) Philco Fibre Handle Screw Driver, Part No. 27-7059 and Fibre Wrench, Part No. 3164.

OUTPUT METER: The 026 Output Meter is connected to the plate and cathode terminals of the 41 tube. Adjust the meter to use the (0-30) volt scale and advance the attenuator control of the generator until a readable indication is noted on the output meter after signal is applied.

DIAL CALIBRATION: In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows:

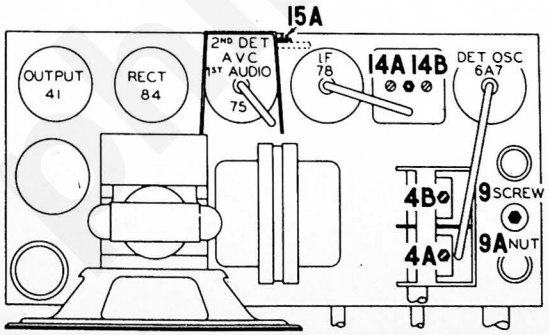

Fig. 2.—Locations of Compensators

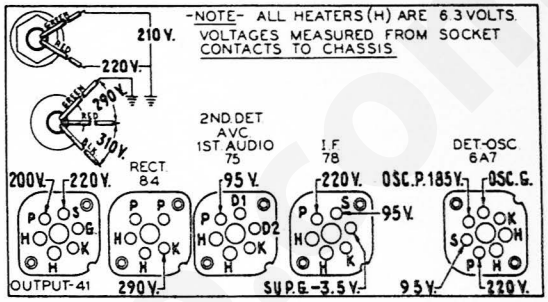

Fig. 1. Socket Voltages, Underside of Chassis View

The Voltages indicated by arrows were measured with a Philco 026 Circuit Tester which contains a sensitive voltmeter. Volume Control at minimum—Tuning condenser set for no signal—line voltage 115 A.C.

1. Turn the tuning condenser to maximum capacity position (plates fully meshed).

2. Holding the tuning condenser in this position, turn the pointer until it is in the position shown in Fig. 3. This is the correct position of pointer at maximum capacity of tuning condenser.

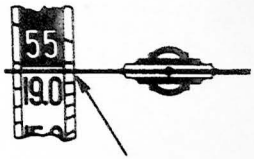

FIG.3—Dial Pointer Calibration

Intermediate Frequency Circuit

Insert the signal generator shielded output lead into the "Med." jack on the panel of the generator. Connect the other end of the output lead through a .1 mfd. condenser to the grid of the 6A7 Det. Osc. tube, and the ground connection of the signal generator to the chassis. Set the Signal Generator and receiver controls, and adjust the I.F. compensators as follows:

1. Set Signal Generator at 470 K.C. Turn "Multiplier" Control to 1000 and the "Attentuator" for maximum output.
2. Turn the receiver dial to 580 K.C.
3. Receiver volume control maximum.
4. Range Switch (Broadcast)
5. Adjust compensators, (15A), (14B), (14A), for maximum output. If the output meter goes off scale when adjusting the compensators, retard the signal generator attenuator.

Radio Frequency Circuit

Tuning Range 5.7 to 18.0 M.C.

1. With one end of the shielded lead of the signal generator output lead in the "Med" jack, connect the other end through a 400 ohm resistor to the white aerial wire (rear of chassis). Connect the signal generator ground to the brown lead or to the chassis of the receiver.

2. Set the controls and adjust the R.F. compensators as follows:

Range Switch Position	Signal Generator and Receiver Dial	R. F. Compensators in Order
Short Wave	18.0 M.C.	(4B)

Tuning Range 530 to 1720 K.C.

1. Remove the 400 ohm resistor from aerial lead and replace with a 100 mmfd. condenser.

2. Set the controls and adjust the R.F. compensators as follows:

Range Switch Position	Signal Generator and Receiver Dial	R. F. Compensators in Order
Broadcast	1550 K.C.	(9), (4A)
	580 K.C.	(9A) Roll tuning condenser
	1550 K.C.	(9), (4A)

Replacement Parts
Model 38-15, Code 121, 124

Schem. No.	Description	Part No.	List Price
1	Ant. Trans. (Range 2)	32-2821	
2	Ant. Trans. (Range 1)	32-2822	
3	Range Switch	42-1366	$0.70
4	Tuning Condenser Assembly	31-2095	4.00
5	Condenser (5 μμf, mica)	30-1097	.20
6	Condenser (.05 μf, tubular)	30-4519	.20
7	Resistor (51000 Ω, ½ W.)	33-351339	.20
8	Osc. Trans. (Range 1 and 2)	32-2823	
9	Compensator	31-6100	.40
10	Condenser (3500 μμf, mica)	30-1094	.40
11	Condenser (250 μμf, mica)	30-1032	.25
12	Resistor (5000 Ω, ½ W.)	33-250339	.20
13	Resistor (10,000 Ω, 1 W.)	33-310439	.20
14	1st. I. F. Trans.	32-2672	2.20
15	2nd. I. F. Trans.	32-2674	1.50
16	Resistor (51,000 Ω, ½ W.)	33-351339	.20
17	Resistor (2 Meg., ½ W.)	33-520339	.20
18	Condenser (.03 μf, tubular)	30-4449	.20
19	Resistor (32,000 Ω, ½ W.)	33-332339	.20
20	Volume Control & Power Switch	33-5230	1.45
21	Condenser (.01 mfd., tubular)	30-4514	.20
22	Resistor (4 meg., ½ W.)	33-540339	.20
23	Condenser (.01 μf, tubular)	30-4514	.20
24	Resistor (190,000 Ω, ½ W.)	33-419339	.20
25	Resistor (490,000 Ω, ½ W.)	33-449339	.20
26	Condenser (250 μμf, mica)	30-1032	.25
27	Condenser (.01 μf, tubular)	30-4169	.20
28	Output Trans. Code 121 (B01 Speaker). Output Trans. Code 124 (S19 Speaker)	32-7861 32-7019	
29	Cone & Voice Coil Assembly, Code 121 (B01 Speaker) Cone & Voice Coil Assembly, Code 124 (S19 Speaker)	36-3981 36-3014	
30	Electrolytic Condenser (2-4 mfd.)	30-2265	
31	Electrolytic Condenser (10-12 μf.)	30-2263	
32	*Speaker Field Code 121 (B01) See Note Speaker Field Assembly, Code 124, (S19 Speaker)	36-3987	
33	Resistor (250 Ω, 1 W.)	33-1259	
34	Resistor (70 Ω)	33-070339	.20
35	Pilot Lamp	34-2064	.20
36	Power Trans. (115 V., 50 to 60 cycle)	32-7826	3.00
37	Condenser (.01-.01 μf, Bakelite) Condenser Code 124, (.01-.01 μf, Bakelite)	3903-DG 3903-0 DG	.30 .30
	Bezel & Glass Assembly (Code 121)	40-6158	1.20
	Bezel & Glass Assembly (Code 124)	40-6264	
	Bezel Clamp	28-5153	.02
	Cable (Power, Code 121)	L2778	.40
	Cable (Power Code 124)	L2985	
	Clip, Small (R. F. Trans.)	28-5002	.02
	Clip, Large (R. F. Trans.)	28-5003	.03
	Dial Assembly	31-2137	

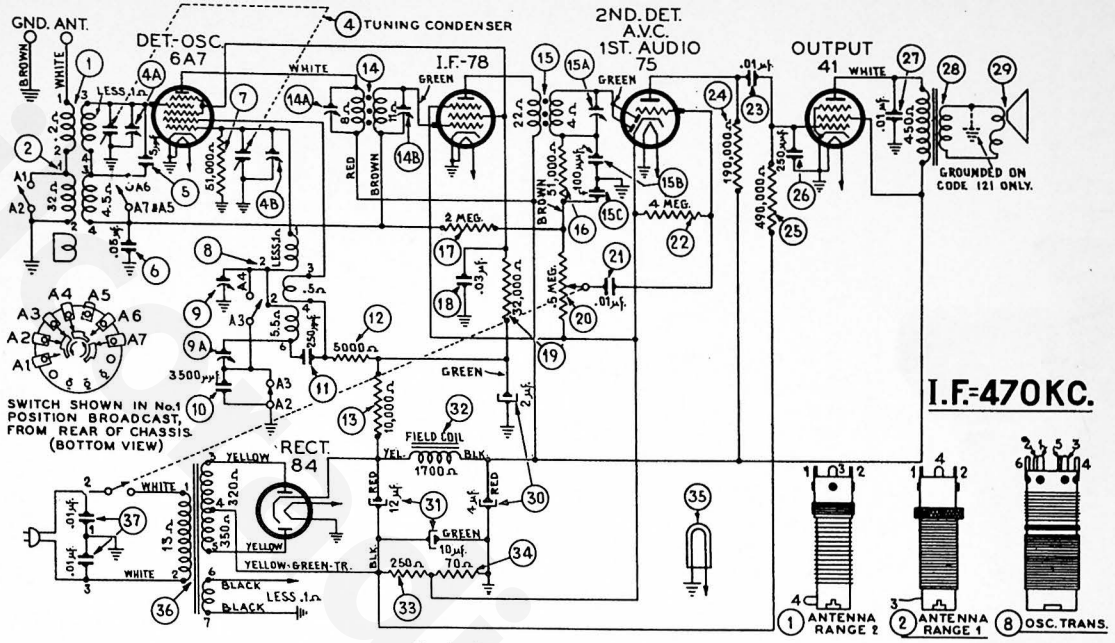

Fig. 4.—Schematic Diagram, Model 38-15

Schem. No.	Description	Part No.	List Price
	Dial Pointer	28-5201	$0.20
	Dial Drive Cord	31-2096	.10
	Dial Drive Shaft	38-9001	
	Knob	27-4604	.10
	Mtg. Rubber (Dial)	27-4150	.01
	Mtg. Rubber (Tuning Condenser)	27-4596	
	Pulley (Tuning Condenser)	31-1283	.30
	Shield (Tube)	28-5059	.05
	Speaker (B01, Code 121)	36-1366	
	Speaker (S19, Code 124)	36-1382	
	Socket Assembly (Pilot Lamp)	38-9041	.35
	Socket (6 Prong)	27-6036	.11
	Socket (7 Prong)	27-6037	.11
	Socket (5 Prong)	27-6035	.11

* Speaker must be replated when field is open or shorted.

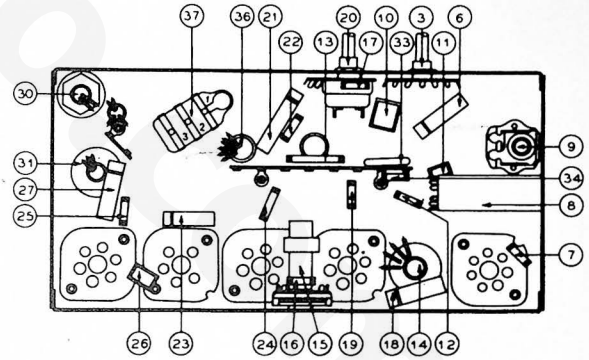

Fig. 5.—Part Locations Underside of Chassis

PHILCO

Philadelphia, Pa.

Printed in U. S. A.