

# PHILCO-TROPIC... Model 39-744, Code 121

## Specifications

This Philco-Tropic radio is particularly recommended for locations where super reception of short wave is necessary and where the radio and the cabinet are exposed to extreme conditions.

The receiver is especially constructed to withstand decay, spoilage, and deterioration caused by extreme conditions of humidity, heat, salt air, cold and to stand up under the most severe tropic weather conditions.

The cabinet is treated with a special sealing compound which protects it against moisture and heat.

The chassis is heavily plated, making it impervious to salt air, rust and corrosion.

The various parts, such as coils, condensers, chokes and transformers are treated with special wax that will withstand very high temperatures. In addition the wax is treated with chemicals which repel rodents and insects.

**TYPE CIRCUIT:** Model 39-744, code 121 is a seven (7) tube Battery operated receiver employing a superheterodyne circuit with three tuning ranges for reception of Standard, Police and shortwave Broadcast Stations. Connections are also provided for attaching a high impedance Electric Phonograph pick-up. In addition, other features of design are: Automatic Volume Con-

trol; Continuously Variable Tone Control; Bass Compensation, and special compensators for reducing frequency drift to a minimum.

**POWER SUPPLY:** 6 volt storage battery.

**TUNING RANGES:** 530 to 1720 K.C.; 2.3 to 7.4 M.C.; 7.3 to 22 M.C.

**I. F. FREQUENCY:** 470 K.C.

**PHILCO TUBES:** 6S7EG, R.F. Amplifier; 6D8EG, Converter-Oscillator; 6S7EG, I.F. Amplifier; 6T7EG, Second Detector, First Audio, and A.V.C.; two 49 Pentode Audio Output; 6G6EG, Second Audio.

**AUDIO OUTPUT:** 2.5 watts.

**AERIAL AND GROUND:** To obtain maximum performance from this receiver, the Philco Safety Aerial, Part No. 40-6370 should be used, a good ground connection to the nearest water pipe or any other good ground source.

**CABINET DIMENSIONS:**

	Height	Width	Depth
T	14 $\frac{1}{4}$	20	9 $\frac{1}{2}$
XX	38 $\frac{1}{4}$	27 $\frac{3}{8}$	11

## MODEL 39-744, CODE 121 PRODUCTION CHANGES

Run 2 To prevent Oscillation resistor (60) 15000 ohms, 1 watt, part no. 33-315339 was changed to 20000 ohms, part no. 33-320339.

Run 3 Beginning with Run 3, a resistor 33-370339 7000 ohms, was added across No. 9 R.F. Transformer primary.

To stabilize tuning of broadcast band and prevent regeneration, condensers (62) were removed from the wiring panel and connected directly to the screen terminal of the 6S7G tube.

## Alignment of Compensators

### EQUIPMENT REQUIRED:

- (1) Signal Generator; Philco Model 077 A.C. operated or Model 177 Battery operated.
- (2) Output Meter, Philco Model 027 Circuit Tester.
- (3) Philco Fiber Handle Screw Driver, Part No. 27-7059, and Fiber Wrench, Part No. 3164.

**OUTPUT METER:** The Philco 027 Output Meter is connected to the plate and cathode terminals of one of the type 49 tubes and adjusted for the 0 to 30 V.A.C. scale. After connecting the output meter, adjust the compensators in the order as shown in the tabulation below. Locations of the compensators are shown in Fig. 1. If the output meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations in Order	SIGNAL GENERATOR			RECEIVER			Special Instructions
	Output Connections to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators	
1	6D8EG Grid and Ground	.1 mfd.	470 K.C.	580 K.C.	Vol. Max. Tone-Treble	29B, 29A, 28B, 28A	
2	Ant. and Grd.	200 mmfd.	1500 K.C.	1500 K.C.	Vol. Max. Range Switch Brdcast.	19, 7B, 7A	Note B
3	Ant. and Grd.	200 mmfd.	580 K.C.	580 K.C.	Vol. Max.	20	Roll Gang Repeat Oper-2
4	Ant. and Grd.	400 ohms	6.0 M.C.	6.0 M.C.	Vol. Max. Tone-Treble Range Switch Police	19A	Roll Gang
5	Ant. and Grd.	400 ohms	20 M.C.	20 M.C.	Vol. Max. Tone-Treble Range Switch S. W.	23, 12, 4	Note C

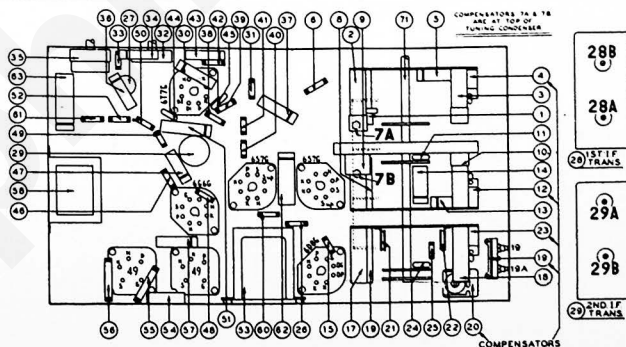


Fig. 1—Part Locations—Underside of Chassis

**NOTE A**—The "Dummy Antenna" consists of a condenser or resistance connected in series with the signal generator output lead (high side). Use the capacity or resistance as specified in each step of the above procedure.

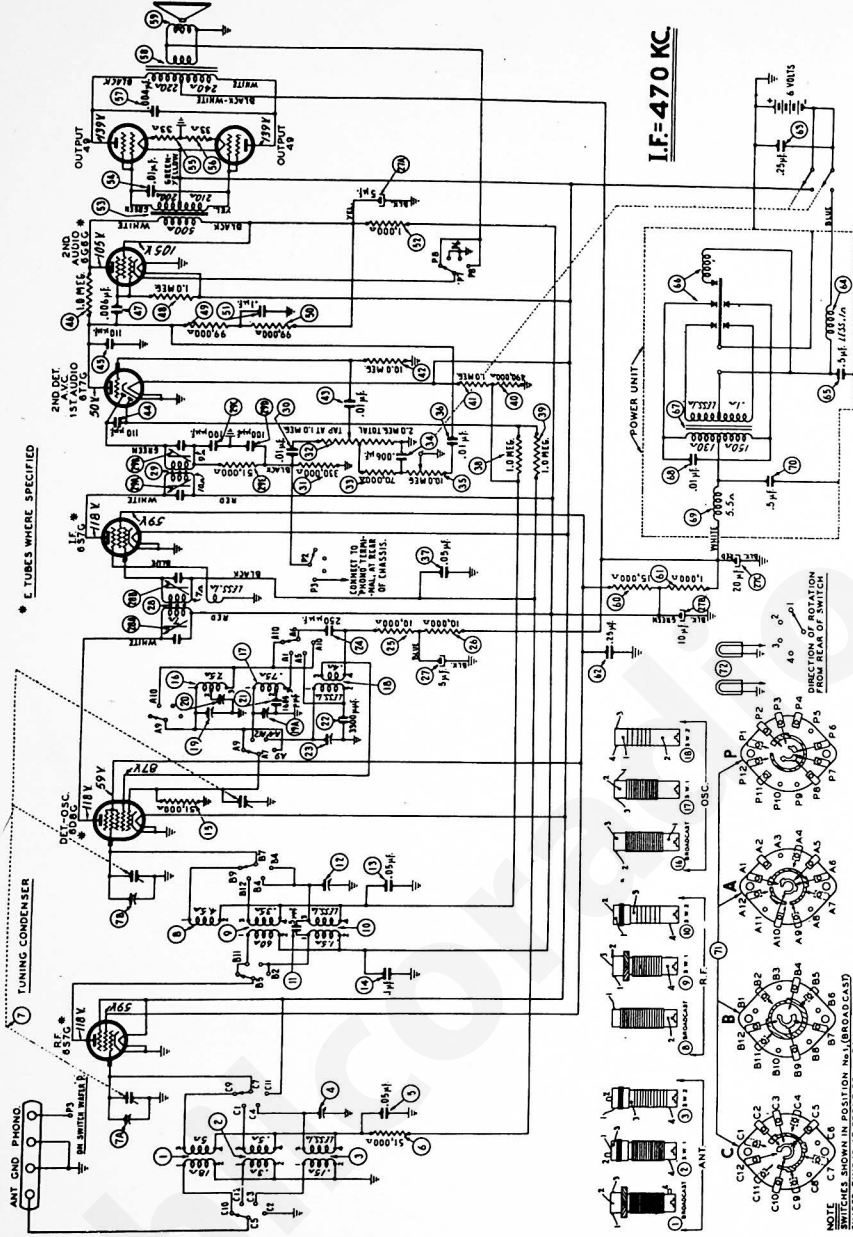
**NOTE B**—Dial Calibration: In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the first mark on the left edge (low frequency end) of the broadcast scale.

**NOTE C**—When adjusting compensator (23) be sure to tune in the fundamental signal (29 M.C.—second signal from tight position of paddler) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning the receiver dial 940 K.C. below the fundamental signal.

# Replacement Parts Model 39-744

No.	Description	Part No.
1	Ant. Trans. (Bracket)	33-1588
2	Ant. Trans. (S.W. 1)	33-3093
3	Ant. Trans. (S.W. 2)	33-2885
4	Compositor	31-6288
5	Tubular Cond. (.05 mfd.)	30-4519
6	Tubular Cond. (10,000 ohms, 1 watt)	31-2335
7	Tuning Cond.	32-2379
8	R.F. Trans. (Bracket)	32-3769
9	R.F. Trans. (S.W. 1)	32-3165
10	R.F. Trans. (S.W. 2)	30-1159
11	Compositor	30-4519
12	Tubular Cond. (.05 mfd.)	30-4586
13	Tubular Cond. (51,000 ohms, 1 watt)	33-351439
14	Resistor (51,000 ohms, 1 watt)	32-2120
15	Occ. Trans. (Bracket)	32-3195
16	Occ. Trans. (S.W. 1)	31-6287
17	Occ. Trans. (S.W. 2)	31-6289
18	Section Compensator	31-6289
19	Semi-fixed Cond. (1805 mmfd.)	31-6282
20	Semi-fixed Cond. (3300 mmfd.)	31-6283
21	Compositor	31-6283
22	Mica Cond. (350 mmfd.)	30-1119
23	Resistor (10,000 ohms, 1 watt)	33-310439
24	Resistor (10,000 ohms, 1 watt)	33-310439
25	Resistor (5 mfd., 50 v.)	30-2374
26	Electrolytic Cond. (5 mfd., 150 v.)	30-2374
27A	Sheet Cond. (10 mfd., 150 v.)	32-3137
27B	Sheet Cond. (20 mfd., 150 v.)	32-3137
28	1st I.F. Trans. Assy.	30-4581
29	2nd I.F. Trans. Assy.	33-433439
30	Tubular Cond. (.01 mfd.)	33-5298
31	Resistor (830,000 ohms, 1 watt)	33-5298
32	Resistor (2.0 meg.)	30-4581
33	Resistor (1.0 meg.)	33-5293
34	Tone Control (10.0 meg.)	30-4581
35	Tone Control (1.0 meg.)	33-5293
36	Tubular Cond. (.05 mfd.)	30-4519
37	Tubular Cond. (.05 mfd.)	33-510439
38	Resistor (1.0 megohm, 1 watt)	33-510439
39	Resistor (1.0 megohm, 1 watt)	33-510439
40	Resistor (1.0 megohm, 1 watt)	33-510439
41	Resistor (1.0 megohm, 1 watt)	33-510439
42	Resistor (1.0 megohm, 1 watt)	30-4581
43	Mica Cond. (110 mfd.)	30-1118
44	Resistor (1.0 megohm, 1 watt)	33-510439
45	Resistor (1.0 megohm, 1 watt)	33-510439
46	Resistor (1.0 megohm, 1 watt)	33-510439
47	Resistor (1.0 megohm, 1 watt)	33-510439
48	Resistor (1.0 megohm, 1 watt)	33-510439
49	Resistor (1.0 megohm, 1 watt)	33-510439
50	Resistor (1.0 megohm, 1 watt)	33-510439
51	Tubular Cond. (.1 mfd.)	33-510439
52	Resistor (1,000 ohms, 1 watt)	33-510439
53	Driver Trans.	33-8027
54	Tubular Cond. (.01 mfd.)	30-4581
55	Resistor (83 ohms, 1 watt, wire-wound)	33-033421
56	Resistor (83 ohms, 1 watt, wire-wound)	30-4578
57	Output Trans.	32-3036
58	Output Trans.	32-3036
59	Cone & Voice Coil Assy. (Saker, 36-1455-3)	36-1107
60	Resistor (15,000 ohms, 1 watt)	33-515439
61	Resistor (1,000 ohms, 1 watt)	33-510439
62	Tubular Cond. (.25 mfd.)	30-6588
63	Tubular Cond. (.25 mfd.)	30-6588
64	"A" Choke (.5 mfd., metal)	32-1934
65	"B" Choke (.5 mfd., metal)	30-4296
66	Choke	31-3222
67	Tubular Cond. (.01 mfd.)	32-1682
68	"B" Choke	32-2925
69	Tubular Cond. (.5 mfd., metal)	30-4296
70	Wave Switch	32-1434
71	Wave Switch	32-1434
72	Fluor Lamp Bulbs	34-2060

\* E TUBES WHERE SPECIFIED



SCHMATIC DIAGRAM MODEL 39-744

Part No.	Description	Part No.
31-6282	Resel (XX Cabinet)	27-4330
31-6283	Cable (Battery)	27-4330
31-6288	Cable (Tuning Unit)	27-4332
31-2331	Cord (Tuning Drive)	33-5155-3
31-2331	Cord (Tone Control)	36-1456-3
28-6998	Drum (Wave Switch)	36-1456-3
28-6998	Drum (Tone Control)	36-1456-3
28-7915	Drum (Wave Switch)	36-1456-3
31-2327	Gasket (Dial Mig.)	28-8945
31-2328	Gasket (Dial Mig.)	27-5437
56-1289	Indicator (Tone & Range)	31-2329
56-1292	Knob (Tuner)	27-4330
56-1292	Knob (Volume)	27-4332
31-2331	Knob (T Cabinet)	33-5155-3
31-2331	Knob (XX Cabinet)	36-1456-3
28-8913	Spring (Tone and Range Ind.)	36-1456-3
28-8945	Station Card	27-5437
27-5437	Station Card	27-5437
31-2329	Yaniter Drive	31-2329
27-4330	Socket (6 prong)	27-4330
27-4332	Socket Assy. (Fluor Lamp)	33-5155-3
33-5155-3	Shield Cabinet (two required)	36-1456-3
36-1456-3	Shield Cap (Round Shield)	36-1456-3
36-1456-3	Shield Cap (Round Shield)	36-1456-3
27-5437	Station Card	27-5437
31-2329	Yaniter Drive	31-2329

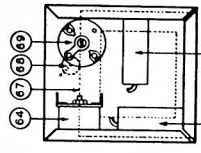


Fig. 2—Part Locations—Power Unit