



Models 49, 52

SPECIFICATIONS

MODEL 49

TYPE OF CIRCUIT: Model 49 is a five tube alternating-current superheterodyne receiver. It incorporates such features of design as: Four tuning ranges as listed below; five Philco high-efficiency tubes; automatic volume control; two position tone control; and a pentode audio circuit.

TUNING RANGES: 540-1600 K.C.
5.8-8.0 M.C.
9.36-12 M.C.
15-18 M.C.

INTERMEDIATE FREQUENCY: 460 K.C.

POWER SUPPLY: 115 Volts A.C.—25 cycle
115 Volts A.C.—60 cycle

AUDIO OUTPUT: 1.8 Watts

PHILCO TUBES USED: 6J8EG—Converter
7B7E—I.F.
7C6—2nd detector A.V.C. 1st audio
6K6EG—Output
7Y4—Rectifier

CABINET DIMENSIONS:
Height 10 $\frac{1}{8}$ ", Width 14 $\frac{1}{2}$ ", Depth 8 $\frac{5}{8}$ ".

MODEL 52

TYPE OF CIRCUIT: Model 52 is a five tube alternating current superheterodyne receiver. It is equipped with six electric tuning push-buttons. Pressing the left hand button turns the receiver off. Pressing any other button turns the receiver on. The other five buttons are used for five favourite broadcast stations. It has the four tuning ranges as listed below; five PHILCO high-efficiency tubes; automatic volume control; two position tone control; and a pentode audio circuit.

TUNING RANGES: 540-1600 K.C.
5.8-8.0 M.C.
9.36-12 M.C.
15-18 M.C.

INTERMEDIATE FREQUENCY: 460 K.C.

POWER SUPPLY: 115 Volts A.C.—25 cycle
115 Volts A.C.—60 cycle

AUDIO OUTPUT: 1.8 Watts

PHILCO TUBES USED: 6J8EG Converter; 7B7E I.F.; 7C6 2nd Det. 1st Audio A.V.C.; 6K6EG Output; 7Y4 Rectifier.

CABINET DIMENSIONS:
Height 37 $\frac{1}{4}$ ", Width 25", Depth 10 $\frac{1}{2}$ ".

PROCEDURE FOR SETTING AND OPERATING THE ELECTRIC PUSH BUTTON TUNING (MODEL 52 ONLY)

The automatic tuning mechanism of this model consists of six (6) electric tuning push buttons, five (5) of the push buttons are used for selecting broadcast stations, and one as the power control (Off switch).

Select five of your favorite nearby broadcast stations and

remove their call letters from the station call letter tab sheets supplied. Place each call letter tab in the tab space above each button which includes the frequencies of the desired stations. The frequency range of the buttons and corresponding padders is as follows:

Padders (right to left from rear)	Circuit	Buttons (left to right from front)	Frequency Range
—	—	1	Off Switch
1	Ant }	2	540 to 980 kilocycles
2	Osc }	3	540 to 980 kilocycles
3	Ant }	4	710 to 1185 kilocycles
4	Osc }	5	850 to 1600 kilocycles
5	Ant }	6	1185 to 1720 kilocycles
6	Osc }		
7	Ant }		
8	Osc }		
9	Ant }		
10	Osc }		

The second button from the left looking at the front of the cabinet corresponds to the two right-hand padder screws looking at the rear and covers the lowest frequency range.

With the "Tuning Range Selector" in broadcast position, tune in the station whose call letters appear above the second button. Then depressing the second button, tune in this station by rotating the No. 2 "OSC" screw (next to the right end of the unit looking at the rear of the chassis). (NOTE: Inherent characteristics of these padders may cause some of them to cover a lower range than required to cover the broadcast band. This may cause the radio to howl or flutter when a station button is depressed. To correct this, loosen the "ANT" padder corresponding to the depressed station button.) Turn the "OSC" screw slowly and listen carefully or the station may be passed without noticing it. After the "OSC" screw

has been adjusted for maximum volume, the corresponding "ANT" screw should be adjusted for maximum. For some stations, it may be necessary to readjust the "OSC" screw after the "ANT" screw has been set. Switching the "Tuning Range Selector" from broadcast position to the automatic push button position will enable you to make sure you have the correct station tuned in. When the first station has been set, the same procedure should be followed for the remaining buttons, first tuning in the desired station by means of the Station Selector.

To tune the set with the "Push Buttons", turn "Tuning Range Selector" to push button position and press in the button which corresponds to the call letters of the desired station. The volume of the program may be controlled with the manual volume control.

ALIGNMENT OF R.F. AND I.F. COMPENSATORS

The following procedure is the same for both models:

EQUIPMENT REQUIRED

1. **Signal Generator:** Covering the frequency range of the receiver, such as Philco Model 070.
2. **Aligning Indicator:** Either a vacuum tube voltmeter or an audio output meter may be used as an aligning indicator. Philco Model 028 circuit tester contains both these meters.
3. **Tools:** Philco Fibre Screw Driver, Part No. 45-2610.

CONNECTING ALIGNING INSTRUMENTS

Vacuum Tube Voltmeter: To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative (—) terminal of the voltmeter to any point in the circuit where the A.V.C. voltage can be obtained. Connect the positive (+) terminal of the vacuum tube voltmeter to the chassis.

Audio Output Meter: Terminal No. 1 is provided on the loop aerial panel for connecting one lead of the audio output meter to the voice coil of the speaker. The other lead of the meter is connected to the chassis. When using these connections, the lowest A.C. scale of the meter must be used. (0 to 10 volts).

The audio output meter can also be connected between the plate of the output tube and the ground of the chassis.

Signal Generator: When adjusting the "I.F." padders, the

high side of the signal generator is connected through a .1 mfd. condenser to the antenna section of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning R.F. padders connect a 200 mmfd. condenser in series with signal generator and antenna lead of receiver. Connect ground lead of generator to ground lead of receiver. When the receiver is aligned outside of the cabinet, remove the dial scale from the cabinet and place underneath the pointer on the metal dial plate.

After connecting the aligning instruments, adjust the compensators as shown in the tabulation below. Locations of the compensators are shown in the chassis layout diagrams on this page. If the indicating meter pointer goes off scale when adjusting the compensator, reduce the strength of the signal from the generator.

MODEL 49

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	OUTPUT CONNECTIONS TO RECEIVER	DIAL SETTING	DIAL SETTING	CONTROL SETTINGS	ADJUST COMPENSATORS IN ORDER	
1	Antenna Section of Tuning Condenser	460	580	Volume Max. Wave Switch "Bdct"	35B, 35A, 26B, 26A	Note B
2	Antenna Lead	18 M.C.	18 M.C.	Volume Max. Wave Switch "Sw3"	23	Note A, B
3	Antenna Lead	12 M.C.	12 M.C.	Volume Max. Wave Switch "Sw2"	24, 7,	Note A, B
4	Antenna Lead	8 M.C.	8 M.C.	Volume Max. Wave Switch "Sw1"	25, 8,	Note A, B
5	Antenna Lead	1400 K.C.	1400 K.C.	Volume Max. Wave Switch "Bdct"	55	Note B
6	Antenna Lead	600 K.C.	600 K.C.	Volume Max. Wave Switch "Bdct"	13	Roll Gang, Note B

NOTE A—Use a Dummy Antenna of 400 Ohms.

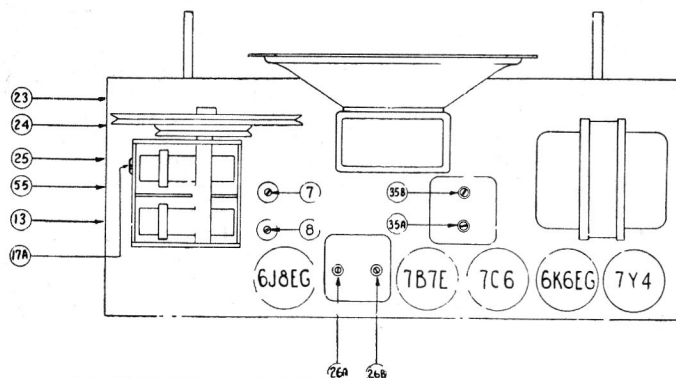
NOTE B—Check Calibration on all Bands.

MODEL 52

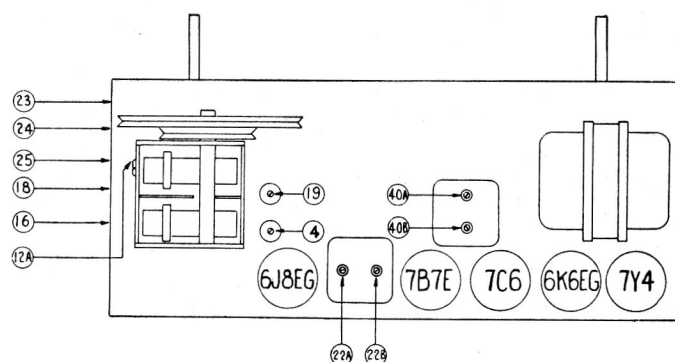
Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	OUTPUT CONNECTIONS TO RECEIVER	DIAL SETTING	DIAL SETTING	CONTROL SETTINGS	ADJUST COMPENSATORS IN ORDER	
1	Antenna Section of Tuning Condenser	460	580	Volume Max. Wave Switch "Bdct"	40B, 40A, 22B, 22A	Note B
2	Antenna Lead	18 M.C.	18 M.C.	Volume Max. Wave Switch "Sw3"	23	Note A, B
3	Antenna Lead	12 M.C.	12 M.C.	Volume Max. Wave Switch "Sw2"	24, 19,	Note A, B
4	Antenna Lead	8 M.C.	8 M.C.	Volume Max. Wave Switch "Sw1"	25, 4,	Note A, B
5	Antenna Lead	1400 K.C.	1400 K.C.	Volume Max. Wave Switch "Bdct."	18	Note B
6	Antenna Lead	600 K.C.	600 K.C.	Volume Max. Wave Switch "Bdct."	16	Roll Gang, Note B

NOTE A—Use a Dummy Antenna of 400 Ohms.

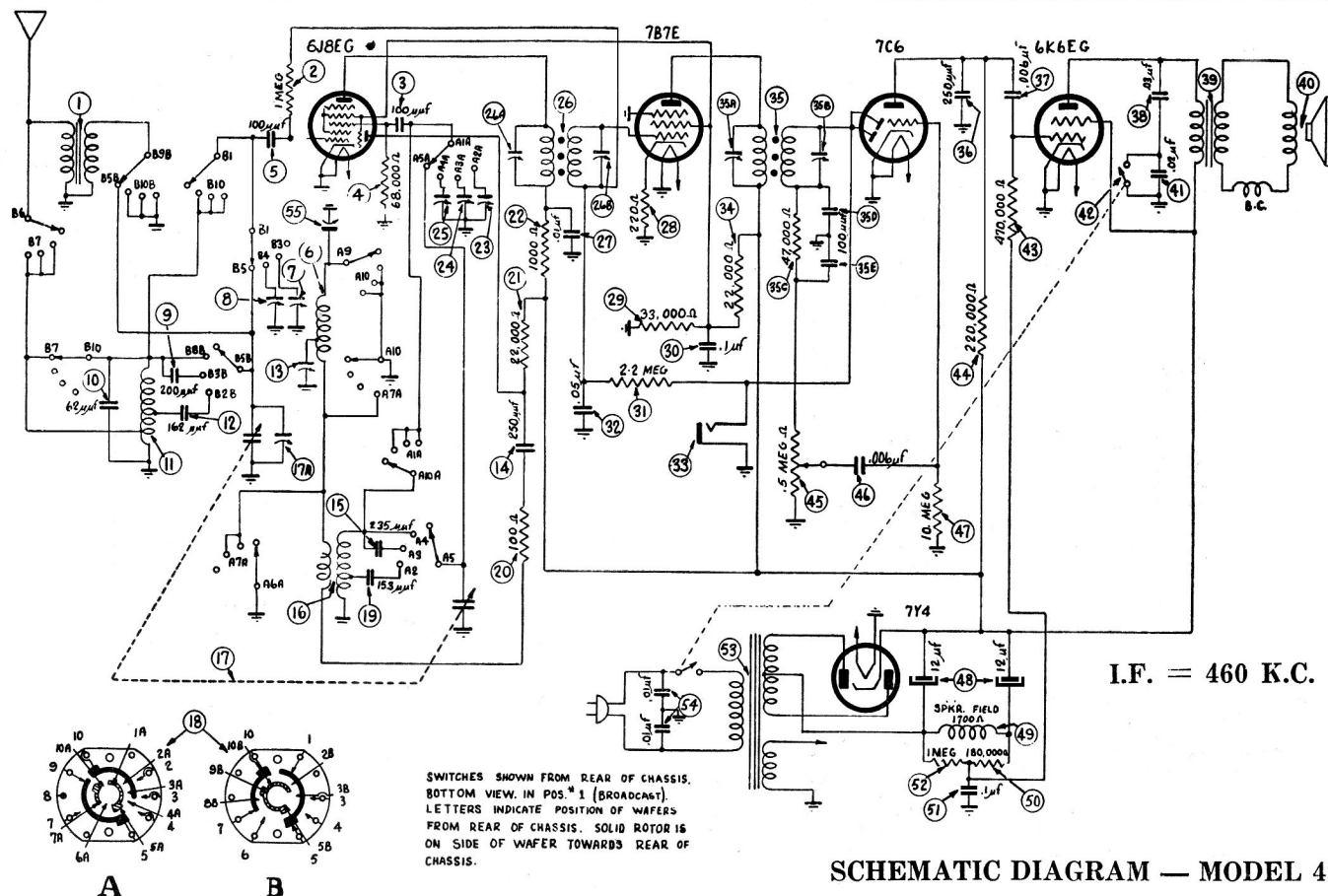
NOTE B—Check Calibration on all Bands.



LOCATION OF COMPENSATORS — MODEL 49



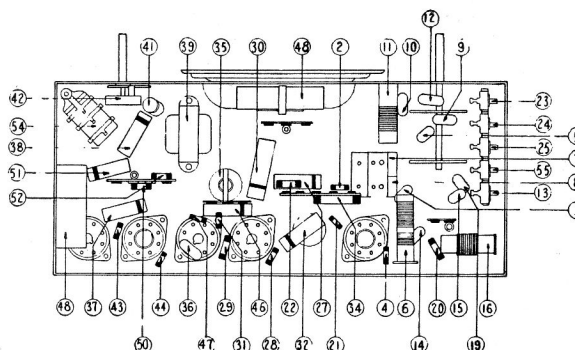
LOCATION OF COMPENSATORS — MODEL 52

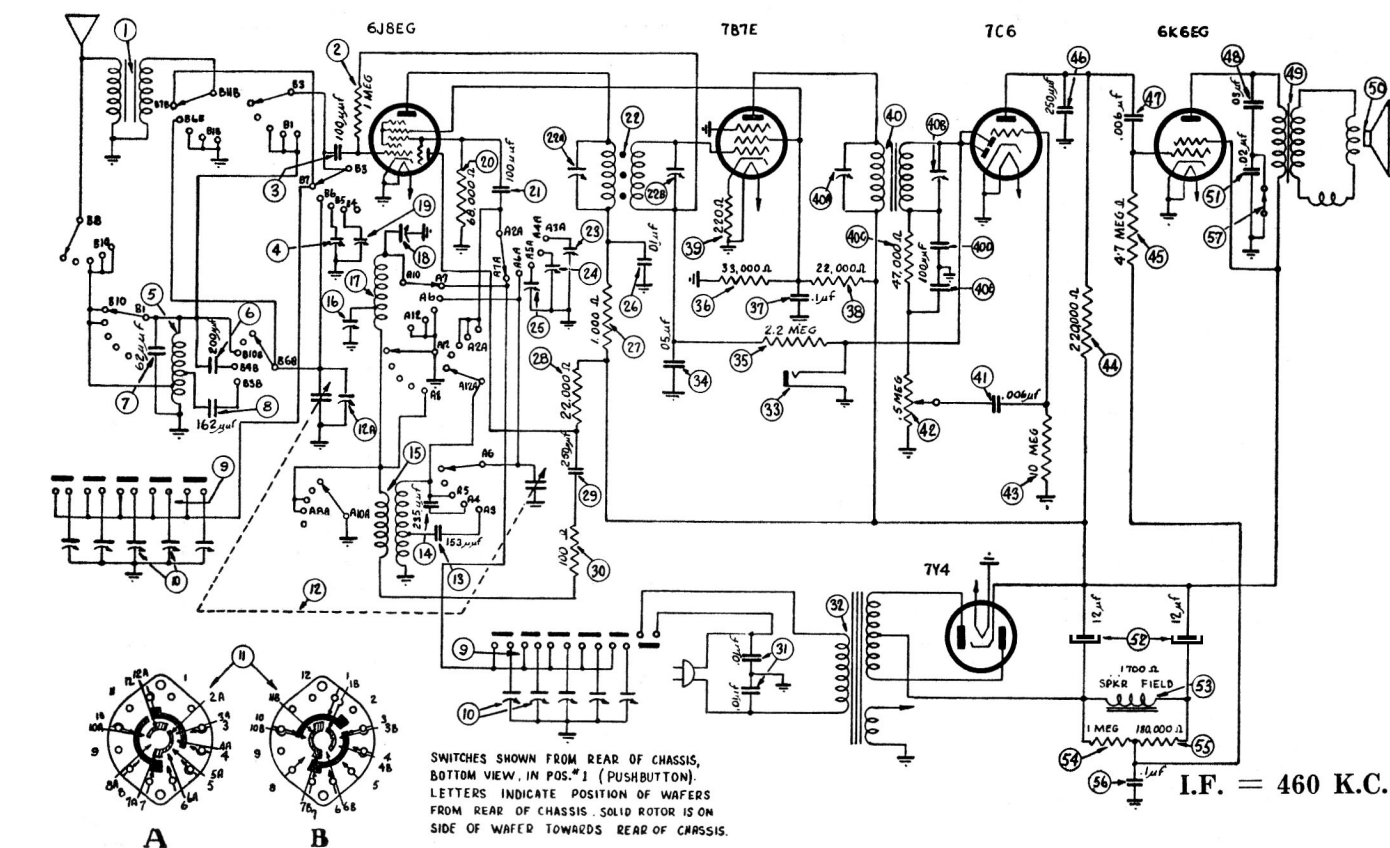


SCHEMATIC DIAGRAM — MODEL 49

REPLACEMENT PARTS LIST — MODEL 49

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Broadcast Antenna Coil	32-3703	45	Volume Control (.5 meg.)	33-5332		Spring (Pointer)	28-8953
2	Resistor (1 meg, 1/2 watt)	33-510254	46	Tubular Cond. (.006 mfd, 400v)	30-4591		Drive Cord (Tuning Condenser)	31-2542
3	Mica Condenser (100 mmfd.)	60-110357	47	Resistor (10 meg, 1/2 watt)	33-610254		Drive Cord (Pointer)	31-2543
4	Resistor (68,000 ohms, 1/2 watt)	33-368254	48	Electrolytic Cond. (12 mfd.)	30-2409		Cone and Voice Coil Assembly	36-4126
5	Mica Condenser (100 mmfd.)	60-110357	49	Speaker Field (for Speaker 36-1504)	32-9574		Drive Drum Assembly	38-9883
6	Broadcast Oscillator Coil	32-3423	50	Resistor (180,000 ohms, 1/2 watt)	33-418334		Pointer	56-1276FCP
7	12 M.C. Ant. Padder	31-6423	51	Tubular Cond. (.1 mfd., 200v)	30-4586		Elect. Mounting Clip	56-1466
8	8 M.C. Ant. Padder (Part of 7)	30-1205	52	Resistor (1 meg, 1/2 watt)	33-510334		Coil Bracket	56-1634
9	Silver Mica Cond. (200 mmfd.)	30-1207	53	Power Transformer, 60 cycle	32-8055		Dial Plate Bracket	56-1773
10	Silver Mica Cond. (62 mmfd.)	32-3702		25 cycle	32-8076		Tuning Condenser Bracket	56-1803
11	Short Wave Antenna Coil	30-1178	54	Line Buffer Cond. (.01 mfd.-.01 mfd.)	3903-ODG		Drive Shaft (Tun. Cond.)	56-6123
12	Silver Mica Cond. (162 mmfd.)	31-6422	55	1500 K.C. Osc. Padder (Part of 13)			Hairpin Spring (Tun. Cond.)	57-1468
13	600 K.C. Osc. Padder	60-125157		A.C. Cord	03-0016		Dial Back Plate	76-1251
14	Mica Condenser (250 mmfd.)	30-1206		Loktal Socket	27-6151		Dial Scale	07-0061
15	Silver Mica Cond. (235 mmfd.)	32-3701		Octal Socket	27-6174		Knob	27-4332
16	Short Wave Osc. Coil	31-2534		Coil Clip	28-5002		Rubber Band (Scale Mounting)	54-4025
17	Tuning Condenser	42-1666		Spring (Tuning Condenser)	28-8751		Scale Strap	56-1752
18	Wave Switch	30-1204						
19	Silver Mica Cond. (153 mmfd.)	33-110354						
20	Resistor (100 ohms, 1/2 watt)	33-322254						
21	Resistor (22,000 ohms, 1/2 watt)	33-210354						
22	Resistor (1,000 ohms, 1/2 watt)	32-3653						
23	18 M.C. Osc. Padder (Part of 13)	30-4572						
24	12 M.C. Osc. Padder (Part of 13)	33-122334						
25	8 M.C. Osc. Padder (Part of 13)	33-333354						
26	1st I.F. Transformer	30-4586						
26A	Padder, Primary (Part of 26)	33-522254						
26B	Padder, Secondary (Part of 26)	30-4519						
27	Tubular Cond. (.01 mfd, 400v)	30-4516						
28	Resistor (220 ohms, 1/2 watt)	42-1520						
29	Resistor (33,000 ohms, 1/2 watt)	33-447254						
30	Tubular Cond. (.1 mfd, 200v)	33-422254						
31	Resistor (2.2 meg, 1/2 watt)	32-8063						
32	Tubular Cond. (.05 mfd, 200v)	36-1504						
33	Phono Jack	30-4516						
34	Resistor (22,000 ohms, 1 watt)	30-4517						
35	2nd I.F. Transformer	32-3654						
35A	Padder, Primary (Part of 35)	60-125157						
35B	Padder, Secondary (Part of 35)	30-4591						
35C	Resistor (47,000 ohms, 1/2 w) (Part of 35)	30-4517						
35D	Mica Cond. (100 mmfd.) (Part of 35)	32-8063						
35E	Mica Cond. (100 mmfd.) (Part of 35)	36-1504						
36	Mica Condenser (250 mmfd.)	30-4516						
37	Tubular Cond. (.006 mfd, 400v)	42-1520						
38	Tubular Cond. (.03 mfd, 400v)	33-447254						
39	Output Transformer	33-422254						
40	Speaker	33-422254						
41	Tubular Cond. (.02 mfd, 400v)							
42	Tone Control and A.C. Switch							
43	Resistor (470,000 ohms, 1/2 watt)							
44	Resistor (220,000 ohms, 1/2 watt)							

Parts Locations — Underside of Chassis
MODEL 49



SCHEMATIC DIAGRAM — MODEL 52

REPLACEMENT PARTS LIST — MODEL 52

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Broadcast Antenna Coil	32-3703	41	Tubular Cond. (.006 mfd, 400v)	30-4591		Loktal Socket	27-6151
2	Resistor (1 meg, 1/2 watt)	33-510254	42	Volume Control (.5 meg.)	33-5465		Octal Socket	27-6174
3	Mica Condenser (100 mmfd.)	60-110357	43	Resistor (10 meg, 1/2 watt)	33-610254		Spring (Tuning Condenser)	28-8751
4	8 M.C. Antenna Padder	31-6423	44	Resistor (220,000 ohms, 1/2 watt)	33-422254		Spring (Pointer)	28-8953
5	Short Wave Antenna Coil	32-3702	45	Resistor (4.7 meg, 1/2 watt)	33-447254		Drive Cord (Pointer)	31-2473
6	Silver Mica Cond. (200 mmfd.)	30-1205	46	Mica Condenser (250 mmfd.)	60-125157		Drive Cord (Tuning Condenser)	31-2542
7	Silver Mica Cond. (62 mmfd.)	30-1207	47	Tubular Cond. (.006 mfd, 400v)	30-4591		Cone and Voice Coil Assembly	25-0034
8	Silver Mica Cond. (162 mmfd.)	30-1178	48	Tub. Condenser (.03 mfd, 400v)	30-4516		Drive Drum Assembly	38-9883
9	Push Button Switch	22-0003	49	Output Transformer	12-0073		Pointer	56-2278FCP
10	Push Button Padders	31-6372	50	Speaker	16-0008		Elect. Mounting Clip	56-1466
11	Wave Switch	42-1667	51	Tubular Cond. (.02 mfd., 400v)	30-4516		Coil Bracket	56-1634
12	Tuning Condenser	31-2534	52	Electrolytic Condenser (12 mfd.)	30-2409		Dial Plate Bracket	56-1773
12A	1500 K.C., Ant. Padder (Part of 12)		53	Speaker Field (Part of 50)			Tuning Condenser Bracket	56-1803FA3
13	Silver Mica Cond. (153 mmfd.)	30-1204	54	Resistor (1 meg, 1/2 watt)	33-510334		Drive Shaft (Tun. Cond.)	56-6123FA3
14	Silver Mica Cond. (235 mmfd.)	30-1206	55	Resistor (180,000 ohms, 1/2 watt)	33-418334		Hairpin Spring (Tun. Cond.)	57-1468
15	Short Wave Oscillator Coil	32-3701	56	Tubular Cond. (.1 mfd, 200v)	30-4586		Scale Back Plate	76-1267
16	600 K.C. Osc. Padder	31-6422	57	Tone Control	42-1574		Dial Scale	07-0061
17	Broadcast Oscillator Coil	32-3423		A.C. Cord	03-0017		Knob	27-4332
18	1500 K.C. Osc. Padder (Part of 16)			Speaker Cable	03-0035		P.B. Knob	27-4824
19	12 M.C. Antenna Padder (Part of 4)			Speaker Cable Plug	27-4420		Dial Mounting Strap	56-1752
20	Resistor (68,000 ohms, 1/2 watt)	33-368254						
21	Mica Condenser (100 mmfd.)	60-110357						
22	1st I.F. Transformer	32-3653						
22A	Padder, Primary (Part of 22)							
22B	Padder, Secondary (Part of 22)							
23	18 M.C. Osc. Padder (Part of 13)							
24	12 M.C. Osc. Padder (Part of 16)							
25	8 M.C. Osc. Padder (Part of 16)							
26	Tubular Cond. (.01 mfd, 400v)	30-4572						
27	Resistor (1,000 ohms, 1/2 watt)	33-210354						
28	Resistor (22,000 ohms, 1/2 watt)	33-322254						
29	Mica Condenser (250 mmfd.)	60-125157						
30	Resistor (100 ohms, 1/2 watt)	33-110354						
31	Line Buffer Cond. (.01-.01 mfd.)	3903-ODG						
32	Power Transformer—25 cycle	32-8076						
	—60 cycle	32-8055						
33	Phono Jack	27-6149						
34	Tubular Cond. (.05 mfd, 200v)	30-4519						
35	Resistor (2.2 meg, 1/2 watt)	33-522254						
36	Resistor (33,000 ohms, 1/2 watt)	33-333354						
37	Tubular Cond. (.1 mfd, 200v)	30-4586						
38	Resistor (22,000 ohms, 1 watt)	33-322454						
39	Resistor (220 ohms, 1/2 watt)	33-122334						
40	2nd I.F. Transformer	32-3654						
40A	Padder, Primary (Part of 40)							
40B	Padder, Secondary (Part of 40)							
40C	Resistor (47,000 ohms, 1/2 w) (Part of 40)							
40D	Mica Cond. (100 mmfd.) (Part of 40)							
40E	Mica Cond. (100 mmfd.) (Part of 40)							

Parts Locations — Underside of Chassis
MODEL 52