

MODELS 41-240 AND 41-245, CODE 121

SPECIFICATIONS

Model 41-240

TYPE OF CIRCUIT: Model 41-240, Code 121, is a seven (7) tube A. C. operated super-heterodyne radio employing the Philco Built-in American and Overseas Aerial system. Provisions are also provided for an outside aerial. The Philco Outdoor aerial, Part No. 45-2817 is especially designed for use with this radio and is recommended for maximum performance. In addition, other features of design are:—two tuning ranges; two I. F. stages; Philco loktal tubes; variable tone control; automatic volume control, and a pentode audio output stage.

TUNING RANGES: 540 to 1720 K. C.; 9 to 12 M. C.
INTERMEDIATE FREQUENCY: 455 K. C.
POWER SUPPLY: 115 volts A. C., 60 cycles. To operate the radio on 115 Volt, 25 cycle current, it will be necessary to change power transformers as indicated in the parts list.
AUDIO OUTPUT: 2 watts.

PHILCO TUBES USED: one XXL, 1st detector; one XXL, oscillator; one 7B7, 1st I. F.; one 7B7, 2nd I. F.; one 7C6, 2nd detector, 1st audio, A. V. C.; one 7B5, audio output and a 7Y4 rectifier.

CABINET DIMENSIONS: Height, 11"; Width, 15 1/4"; Depth, 9 1/4".

Model 41-245

TYPE OF CIRCUIT: Model 41-245, Code 121, is a seven (7) tube A. C. operated super-heterodyne radio with electric push button tuning. In addition, the radio employs the Philco Built-in American and Overseas Aerial system for operation without

ALIGNING R. F. AND I. F. COMPENSATING CONDENSERS

THE FOLLOWING PROCEDURE IS THE SAME FOR BOTH MODELS.

EQUIPMENT REQUIRED

- Signal Generator: Covering the frequency range of the receiver, such as Philco Models 077 or 177.
- Aligning Indicator: Either a vacuum tube voltmeter or an audio output meter may be used as an aligning indicator. Philco Models 027 and 028 Circuit Testers contain both these meters.
- Tools: Philco Fiber Screw Driver, Part No. 45-2610.

CONNECTING ALIGNING INSTRUMENTS

Audio Output Meter: If this type of aligning meter is used, connect it to the voice coil terminals of the speaker or from the plate of the 7B5 tube to the chassis. Adjust the meter for the 0 to 100 volt scale.

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. Connect the positive (+) terminal of the signal generator to the I. F. padders, the high side of the signal generator is connected through a .1 mfd. condenser to the aerial section (stator plates) of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

an outside aerial. Provisions are also provided for an outside aerial for sections where signal strength is weak, such as in steel reinforced buildings and other shielded locations. For installations of this type the Philco 1941 Outdoor Aerial, Part No. 45-2817, is recommended. This aerial can be conveniently connected to the radio by inserting the plug attached to the transformer unit into the socket provided at the rear of the chassis. A ground is not required with either type of installation. Other features of design included in the radio are three tuning ranges; covering standard, police, and shortwave frequencies; two I. F. stages, Philco loktal tubes; variable tone control; automatic volume control; and a pentode audio output stage. Six (6) electric tuning push buttons are provided for automatically selecting stations. Five of the push buttons are used for broadcast stations, and one for turning the power of the set "on" and "off". The procedure for adjusting the push buttons will be found in the instructions supplied with the Radio.

TUNING RANGES: 540 to 1720 K. C.; 9 to 12 M. C.
INTERMEDIATE FREQUENCY: 455 K. C.

POWER SUPPLY: 115 volts A. C., 60 cycles. To operate the radio on 115 volt, 25 cycle current, it is necessary to change the power transformers as indicated in the parts list.

AUDIO OUTPUT: 2 watts.

PHILCO TUBES USED: one XXL, 1st detector; one XXL, oscillator; one 7B7, 1st I. F.; one 7B7, 2nd I. F.; one 7C6, 2nd detector, 1st audio, A. V. C.; one 7B5, audio output and a 7Y4 rectifier.

CABINET DIMENSIONS: Height, 11 1/4"; Width, 15 1/4"; Depth, 9 1/4".

The receiver can be adjusted in the cabinet or removed from the cabinet. If adjustments are made outside the cabinet a Service Tuning Scale, Part No. 45-2821, will be required. This scale is placed underneath the pointer on the metal dial plate.

When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled. After connecting the aligning instruments, adjust the compensators as shown in the tabulation for each model below. Locations of the compensators are shown in the schematic diagram. If the indicating meter pointer goes off scale when adjusting the compensator, reduce the strength of the signal from the generator.

Model 41-240

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	
1	Ant. Section of Tuning Condenser	455 K. C.	Tuning Cond. closed	Vol. Max. Range Switch "Brdcat"	28A, 15A, 14A, 14B	Note A
2	Loop to Radio Loop See Sig. Gen. above	1500 K. C.	1500 K. C.	Vol. Max. Range Switch "Brdcat"	20A, 6	Note B
3	Loop to Radio Loop See Sig. Gen. above	580 K. C.	580 K. C.	Vol. Max. Range Switch "Brdcat"	20	Rock Comp. to "max." Recheck Operation No. 2
4	Loop to Radio Loop See Sig. Gen. above	9.5 M. C.	9.5 M. C.	Range Switch "S. W."	19, 6A	Note C
5	Loop to Radio Loop See Sig. Gen. above	12 M. C.	12 M. C.	Range Switch "S. W."	19, 6A	Note D

Model 41-245

1	Ant. Section of Tuning Condenser	455 K. C.	Tuning Cond. closed	Vol. Max. Range Switch "Brdcat"	33A, 30A, 29A, 29B	Note A
2	Loop to Radio Loop See Sig. Gen. above	1500 K. C.	1500 K. C.	Vol. Max. Range Switch "Brdcat"	17A, 9	Note B
3	Loop to Radio Loop See Sig. Gen. above	580 K. C.	580 K. C.	Vol. Max. Range Switch "Brdcat"	17	Rock Comp. to "max." Recheck Operation No. 2
4	Loop to Radio Loop See Sig. Gen. above	6 M. C.	6 M. C.	Range Switch "Police"	19	Rock Comp. to "max."
5	Loop to Radio Loop See Sig. Gen. above	9.5 M. C.	9.5 M. C.	Range Switch "S. W."	19A, 5	Note C
6	Loop to Radio Loop See Sig. Gen. above	12 M. C.	12 M. C.	Range Switch "S. W."	19A, 5	Note D

NOTE A — Compensator (14A) Model 41-240, and select be adjusted before (14B) Model 41-240, and should be done in the following manner. Turn 14A all the way up, then slowly turn down and adjust the first I. F. peak. Padder 14B is now adjusted to maximum. This procedure applies also to Model 41-245. Padder 29A should be adjusted before 29B.

NOTE B — **DIAL CALIBRATION:** In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the extreme left index line at the low frequency end of the broadcast scale.

NOTE C — Set pointer at 9.5 M. C. and adjust padders (19) Model 240, and (19A) Model 245 to the second peak from tight. Adjust padders (6A) Model 240 and (5A) Model 245 to first peak from tight. (This gives the approximate correct setting of padders for next operation.)

NOTE D — Tune in the 2nd signal peak from the tight position. Padder 19 Model 240, 19A Model 245, then roll padder 6A Model 41-240, 5 Model 41-245, slowly to maximum on the first peak from tight position.

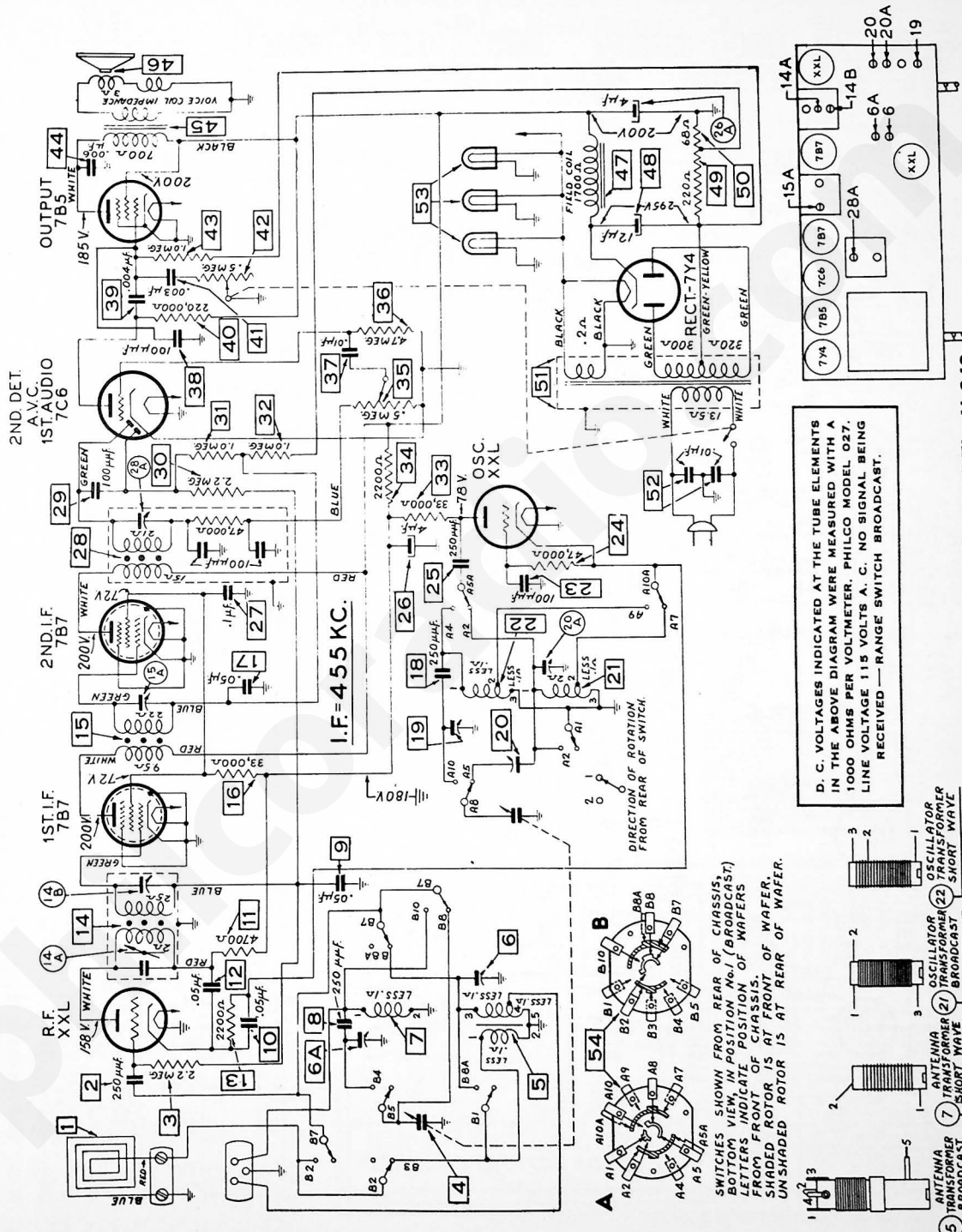
PRODUCTION CHANGES

DIAL SCALE CHANGES

Model 41-240 dial scale changed from Part No. 27-5617 to 27-5653.
 Model 41-245 dial scale changed from Part No. 27-5618 to 27-5654.

Dial pointer on both models changed from Part No. 56-1819 to 56-1856.
 Tab Kit Model 41-245 changed from Part No. 40-6594 to 40-6619. On-Off Tab, 27-5660; Television Tab, 27-5661.

MODEL 41-240, CODE 121 (CONTINUED)

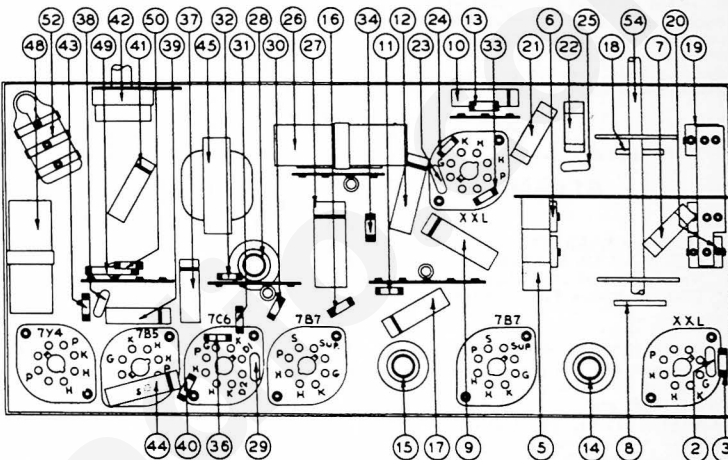


SCHEMATIC DIAGRAM — MODEL 41-240

MODELS 41-240 AND 41-245 (CONTINUED)

Replacement Parts — Model 41-240

SCH. No.	DESCRIPTION	PART No.	SCH. No.	DESCRIPTION	PART No.	SCH. No.	DESCRIPTION	PART No.
1	Loop Aerial	76-1092	1	Indicator Light Bracket	56-1815	1	Socket Assembly (Pilot Light) (2 required)	76-1062
2	Mica Condenser (.250 mfmfd.)	60-125257	2	Indicator Light Shield	56-1816	2	Spring (Condenser Drive)	28-8781
3	Resistor (2.2 megohms)	33-222329	3	Indicator C Washer (Indicator Plate Mtg.)	56-1818	3	Spring (Pointer Drive)	38-8933
4	Tuning Condenser (.05 mfd., 200 volts)	32-4621	4	Indicator Socket Assembly	76-1063	4	Spring (Drive Shaft Mounting)	57-1468
5	Aerial Transformer (Broadcast)	32-3461	5	Indicator Drive Cord (Short)	56-1826	5	Speaker	38-1810
6	Comp. (Aerial Broadcast) Dual Capacity	31-6273	6	Indicator Spring (Indicator Drive Mtg.)	56-8088	6	Tuning Shaft	56-8088
7	Aerial Transformer (S. W.) (Part of 6)	32-3462	7	Indicator Drive Cord (Long)	31-2477	7	Tuning Shaft Insulator	27-9437
8	Mica Condenser (.250 mfmfd.)	60-1179	8	Knob Assembly (Tuning Volume, Etc.)	31-2472	8	Tuning Shaft Rubber Coupling	27-9437
9	Tubular Condenser (.05 mfd., 200 volts)	30-4519	9	Mtg. Clips (Electrolytic Cond.) (2 req.)	56-1466	9	Tuning Shaft "C" Washer	28-2043
10	Tubular Condenser (.05 mfd., 200 volts)	30-4519	10	Mtg. Clips (Electrolytic Cond.) (1 req.)	56-1466	10	Terminal Panel (Loop)	38-8933
11	Resistor (470,000 ohms, 1/2 watt)	33-247339	11	Nut (L. F. Mtg., Tuning Cond. Mtg.)	W-1949	11	Terminal Panel (Aerial)	76-1063
12	Tubular Condenser (.05 mfd., 400 ohms)	30-4518	12	Shield Base (Power Transformer)	56-1525	12	Washer (Chassis Mounting)	W-483
13	Resistor (2200 ohms, 1/2 watt)	33-222329	13	Socket (Tube)	57-1316	13	Screw (Power Transformer Mounting)	W-2067
14	1st I. F. Transformer	32-3463	14	Shield (Tube)	57-1316	14	Screw (Chassis Mounting)	W-2067
15	Resistor (33,000 ohms, 1/2 watt)	33-33339	15			15	Screw (Speed Clip Mounting)	W-2033
16	Tubular Condenser (.05 mfd., 200 volts)	30-4519	16			16		
17	Mica Condenser (.250 mfmfd.)	60-1179	17			17		
18	Compensator (S. W. Osc.)	31-6380	18			18		
19	Compensator Series (Broadcast, Osc.)	31-6352	19			19		
20A	Comp. Shunt (Brdct., Osc.) (Part of 20)	30-3464	20			20		
21	Osc. Transformer (Broadcast)	32-3464	21			21		
22	Mica Condenser (.100 mfmfd.)	60-110257	22			22		
23	Resistor (47,000 ohms, 1/2 watt)	33-247339	23			23		
24	Mica Condenser (.250 mfmfd.)	60-125257	24			24		
25A	Electrolytic Condenser, Dual (4-4 mfd.)	30-4455	25			25		
26A	Electrolytic Condenser (Part of 26)	30-4455	26			26		
27	Tubular Condenser (.1 mfd., 400 volts)	32-3467	27			27		
28	3rd I. F. Transformer	32-3467	28			28		
29	Mica Condenser (.100 mfmfd.)	60-110137	29			29		
30	Resistor (2.2 megohms)	33-52339	30			30		
31	Resistor (1 megohm)	33-510339	31			31		
32	Resistor (200 ohms, 1/2 watt)	33-222329	32			32		
33	Resistor (33,000 ohms)	33-333339	33			33		
34	Resistor (200 ohms, 1/2 watt)	33-222329	34			34		
35	Volume Control (500,000 ohms)	33-5332	35			35		
36	Pinout (4.7 megohms)	W-2157	36			36		
37	Tubular Condenser (.01 mfd., 400 volts)	30-4572	37			37		
38	Mica Condenser (.100 mfmfd.)	60-110137	38			38		
39	Tubular Condenser (.004 mfd., 400 volts)	30-4572	39			39		
40	Resistor (220,000 ohms, 1/2 watt)	33-247339	40			40		
41	Condenser (.003 mfd., 400 volt)	30-4489	41			41		
42	Tone Control	33-222329	42			42		
43	Resistor (1 megohm)	33-510339	43			43		
44	Tubular Condenser (.008 mfd., 400 volts)	30-4681	44			44		
45	Output Transformer	39-8083	45			45		
46	Cone Assembly (for Speaker 38-1810-3)	38-4163	46			46		
47	Field Coil (Replace Speaker 38-1810)	34-2068	47			47		
48	Electrolytic Condenser (12 mfd.)	30-2477	48			48		
49	Resistor (220 ohms, 1 watt)	33-222329	49			49		
50	Resistor (88 ohms, 1/2 watt)	33-068336	50			50		
51	Power Transformer (110 volts, 60 cycle)	32-8075	51			51		
52	Power Transformer (110 volts, 25 cycle)	32-8075	52			52		
53	Bakelite Condenser, Dual (.01 mfd.)	3903-006	53			53		
54	Pilot Lamp	42-1889	54			54		
	Range Switch	W-2157						



MODEL 41-240 — PART LOCATIONS, UNDERSIDE OF CHASSIS

Replacement Parts — Model 41-245

SCH. No.	DESCRIPTION	PART No.	SCH. No.	DESCRIPTION	PART No.	SCH. No.	DESCRIPTION	PART No.
1	Loop Assembly	76-1092	1	Bezel (Dial)	27-4975	1	Drive Drum (Tuning Condenser)	38-8883
2	Mica Condenser (.250 mfmfd., wax)	60-125257	2	Bezel (Push-Button)	27-4983	2	Knob (Tuning Volume)	27-4332
3	Resistor (2.2 megohm, 1/2 watt)	33-222329	3	Knob (Push-Button)	27-4983	3	Mounting Feet (Chassis)	27-4824
4	Resistor (2.2 megohm, 1/2 watt)	33-222329	4	Cable (Power)	18-3199	4	Socket Assembly (Dial Light)	56-1802
5	Compensator (Aerial S. W.)	31-6273	5	Cabinet	10-922A	5	Socket Assembly (Indicator Light)	76-1062
6	Compensator (Aerial S. W.)	31-6273	6	Clip (Mtg., Electrolytic Cond.) (2 req.)	56-1346	6	Socket (Tube)	57-1316
7	Compensator (.05 mfd., 200 volts)	30-4519	7	Clip (Mtg., Electrolytic Cond.) (1 req.)	56-1466	7	Spring (Dial Indicator)	58-1828
8	Compensator (.05 mfd., 200 volts)	30-4519	8	Clip (Mtg., Electrolytic Cond.) (1 req.)	56-1818	8	Spring (Condenser Drive)	57-1468
9	Compensator (Aerial Brdct.) (Part of 5)	33-247339	9	Dial Pointer	56-1468	9	Spring (Pointer Drive)	57-1468
10	Mica Condenser (.250 mfmfd.)	60-1179	10	Dial Scale	56-8088	10	Spring (Drive Shaft Mounting)	57-1468
11	Aerial Transformer (S. W.)	32-3461	11	Dial "C" Washer	28-2043	11	Speaker	38-1810
12	Tuning Condenser	31-2471	12	Drive Cord (Tuning Condenser Drive)	31-2400	12	Screw (Chassis Mounting)	W-2067
13	Tuning Condenser Rubber Connection	28-8665	13	Drive Cord (Short (Indicator)	31-2477	13	Tab Kit	40-8894
14	Tuning Condenser Spacer (Mounting)	28-8665	14	Drive Cord—Short (Indicator)	31-2478	14	Washer (Chassis Mounting)	W-410
15	Aerial Transformer (Broadcast)	32-3461	15			15		
16	Push-Button Padder Strip Complete	31-8372	16			16		
17	Push-Button Switch	42-1878	17			17		
18	Compensator (Broadcast Series)	31-6382	18			18		
19	Oscillator Transformer (Broadcast)	32-3464	19			19		
20	Compensator (Police Shunt)	31-6351	20			20		
21	Resistor (47,000 ohms, 1/2 watt)	33-247339	21			21		
22	Mica Condenser (.100 mfmfd.)	60-110137	22			22		
23	Oscillator Transformer (Police)	32-3469	23			23		
24	Mica Condenser (.3000 mfmfd.)	60-200334	24			24		
25	Oscillator Transformer (S. W.)	30-4519	25			25		
26	Mica Condenser (.280 mfmfd.)	60-1119	26			26		
27	Resistor (2200 ohms, 1/2 watt)	33-222329	27			27		
28	Resistor (.03 mfd., 200 volts)	30-4519	28			28		
29	Resistor (33,000 ohms, 1/2 watt)	33-333339	29			29		
30	1st I. F. Transformer	32-3463	30			30		
31	2nd I. F. Transformer	32-3466	31			31		
32	Condenser (.1 mfd., 400 volts)	30-4485	32			32		
33	3rd I. F. Transformer	32-3467	33			33		
34	Mica Condenser (.100 mfmfd.)	60-110137	34			34		
35	Resistor (2.2 megohms)	33-52339	35			35		
36	Resistor (1 megohm)	33-510339	36			36		
37	Resistor (1 megohm)	33-510339	37			37		
38	Electrolytic Condenser (.4-4 mfd.)	30-4455	38			38		
39A	Electrolytic Condenser (Part of 38)	30-4455	39			39		
40	Resistor (33,000 ohms, 1/2 watt)	33-333339	40			40		
41	Resistor (2200 ohms, 1/2 watt)	33-222329	41			41		
42	Resistor (4.7 megohms, 1/2 watt)	33-547339	42			42		
43	Condenser (.01 mfd., 400 volts)	30-4872	43			43		
44	Mica Condenser (.100 mfmfd.)	60-110137	44			44		
45	Condenser (.004 mfd., 400 volts)	30-4878	45			45		
46	Resistor (220,000 ohms, 1/2 watt)	33-247339	46			46		
47	Condenser (.003 mfd.)	30-4489	47			47		
48	Tone Control	33-222329	48			48		
49	Resistor (1 megohm, 1/2 watt)	33-510339	49			49		
50	Condenser (.008 mfd., 400 volts)	30-4881	50			50		
51	Output Transformer	39-8083	51			51		
52	Cone Assembly (for Speaker 38-1810-4)	38-4168	52			52		
53	Pilot Lamp	42-1889	53			53		
54	Field Coil (Replace Speaker 38-1810)	34-2068	54			54		
55	Resistor (88 ohms, 1 watt)	33-068336	55			55		
56	Resistor (220 ohms, 1 watt)	30-2409	56			56		
57	Electrolytic Cond. (12 mfd., 400 volts)	32-8075	57			57		
58	Power Transformer (110 volts, 60 cycle)	32-8075	58			58		
59	Power Transformer (110 volts, 25 cycle)	32-8075	59			59		
60	Power Transformer Shield	58-1828	60			60		
61	Condenser, Dual (.01 mfd.)	3903-006	61			61		
62	Range Switch	W-2157	62			62		

MODEL 41-245 — PART LOCATIONS, UNDERSIDE OF CHASSIS