MODELS
42-335, Code 121; 42-358, Code 121-122

SPECIFICATIONS

MODEL 42-335, CODE 121

Model 42-335 is a seven (7) tube, alternating current operated superheterodyne circuit with two tuning bands. In addition, this model includes: New XXL converter and oscillator tube, which reduces noise and increases sensitivity; two-point tone control; automatic volume control; two I. F. stages; pentode audio stage; low impedance loop aerial and Philco Loktal tubes.

Tuning Bands: 540 to 1600 KC; 1.6 to 3.3 MC.

Intermediate Frequency: 455 KC.

Audio Output: 1.5 watts.

Power Consumption: 45 watts.

This model can also be operated on a 115-volt, 25-cycle power supply. To do this the power transformer must be changed as indicated in the parts list.

Philco Tubes Used: XXL, converter; XXL oscillator; 7B7, 1st I. F. amplifier; 7B7, 2nd I. F. amplifier; 7C6, 2nd detector, 1st audio, A. V. C.; 7B5, audio output; 7Y4, rectifier.

Outside Aerial and Ground: The built-in loop aerial system is designed to operate without an outside aerial or ground and to give exceptionally high receiving performance of stations. To operate the radio, however, in steel reinforced buildings and other shielded locations, where signal strength is weak, the Philco outdoor aerial part No. 45-2817 is recommended. The outdoor aerial can be easily connected to the radio by inserting the plug attached to the aerial transformer unit into the socket provided at the rear of the radio chassis. This aerial can be obtained from your local Philco distributor. A ground connection is not required with either type of installation.

Cabinet Dimensions: Height, 9⅛"; Width, 15-11/16"; Depth, 9⅛".

MODEL 42-358, CODES 121-122

Model 42-358, Codes 121 and 122 are six (6) tube, A. C.-D. C. operated superheterodyne radios with a rotatable loop aerial. In addition, the radio is designed to receive the sound of television programs tuned in by special type Philco television radios.

Other features included are: Philco Loktal tubes; two I. F. stages; automatic volume control; beam power pentode audio output stage; provisions for an outside aerial.

In general, the features of Code 121 and Code 122 chassis are similar with the exception of the output tubes, rectifier tubes, rectifier circuit and speaker. Code 121 chassis incorporates a 50L6GT, output tube; 35Z3, rectifier tube and permanent magnet dynamic speaker. Code 122 chassis consists of a 35L6GT, output tube; 50Y6GT, rectifier tube and dynamic speaker with a field coil. The circuit differences are indicated on the schematic diagram and parts list.

Intermediate Frequency: 455 KC.

Tuning Bands: 540 to 1620 KC.

Power Supply: 115 volts, A. C.-D. C.

Power Consumption: 35 watts (Code 121); 50 watts (Code 122).

Audio Output: 1 watt.

Philco Tubes Used: XXD, oscillator-converter; two 7B7, I. F. amplifiers; 7C6, 2nd detector, 1st audio, A. V. C.; 50L6GT, audio output and a 35Z3, rectifier.

Aerial Connections: The built-in loop aerial system is designed to operate without an outside aerial or ground, and to give exceptionally sensitive receiving performance.

In steel reinforced buildings, however, and other shielded locations, where station signal strength is weak, the Philco Safety Aerial, Part No. 40-6370, is recommended. A lug and wire grounded to the rear of the chassis by a screw is provided for attaching the safety aerial. Remove the lug from under the screw and connect the aerial lead.

If an external aerial is not used this lug should be grounded to the chassis by the screw to obtain best performance with the built-in loop. A ground is not required with either type of aerial.

Cabinet Dimensions: Height, 36¾"; Width, 26⅝"; Depth, 10⅝".

ALIGNING R. F. AND I. F. COMPENSATORS

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 Models 027 and 028 circuit testers contain both these meters.
3. **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 output tube to the chassis. Adjust the meter for the 0 to 10 volt scale.

Vacuum Tube Voltmeter: To use the vaccum 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.

Signal Generator: When adjusting the I. F. padders, the high side of the signal generator is connected through a .1 mfd condenser to the stator plate lug of the antenna section 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 and loop is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet.

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 below. Locations of the compensators are shown on the schematic diagrams.

If the indicating meter pointer goes off scale when adjusting the compensator, reduce the strength of the signal from the generator.

PROCEDURE—MODEL 42-335

Operations In Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators In Order	
1	Ant. Section of Tuning Cond.	455 KC	Tuning Cond. Closed	Vol. Max. Range Switch "Brdcst"	28A, 22A, 21A, 21B	Note A
2	Loop	1500 KC	1500 KC	Vol. Max. Range Switch "Brdcst"	9B	Note B
3	Loop	1500 KC	1500 KC	Vol. Max. Range Switch "Brdcst"	9A	

PROCEDURE—MODEL 42-358

Operations In Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators In Order	
1	Ant. Section of Tuning Cond.	455 KC	540 KC Tuning Cond. Closed	Vol. Max.	14A, 14B, 20A, 26A	
2	Loop See above instructions	1500 KC	1500 KC	Vol. Max.	3B Tuning Condenser	Note B
3	Loop See above instructions	1500 KC	1500 KC	Vol. Max.	3A Tuning Condenser	
4	Loop See above instructions	580 KC	580 KC	Vol. Max.	4	Roll Tuning Condenser
5	Loop See above instructions		Repeat Operation 2			

NOTE A—Compensator (21A) Model 42-335, must be adjusted before (21B) Model 42-335, and should be done in the following manner: Turn 21B all the way down, then adjust I. F. padders in the order as tabulated once only.

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 index line below 540 KC.

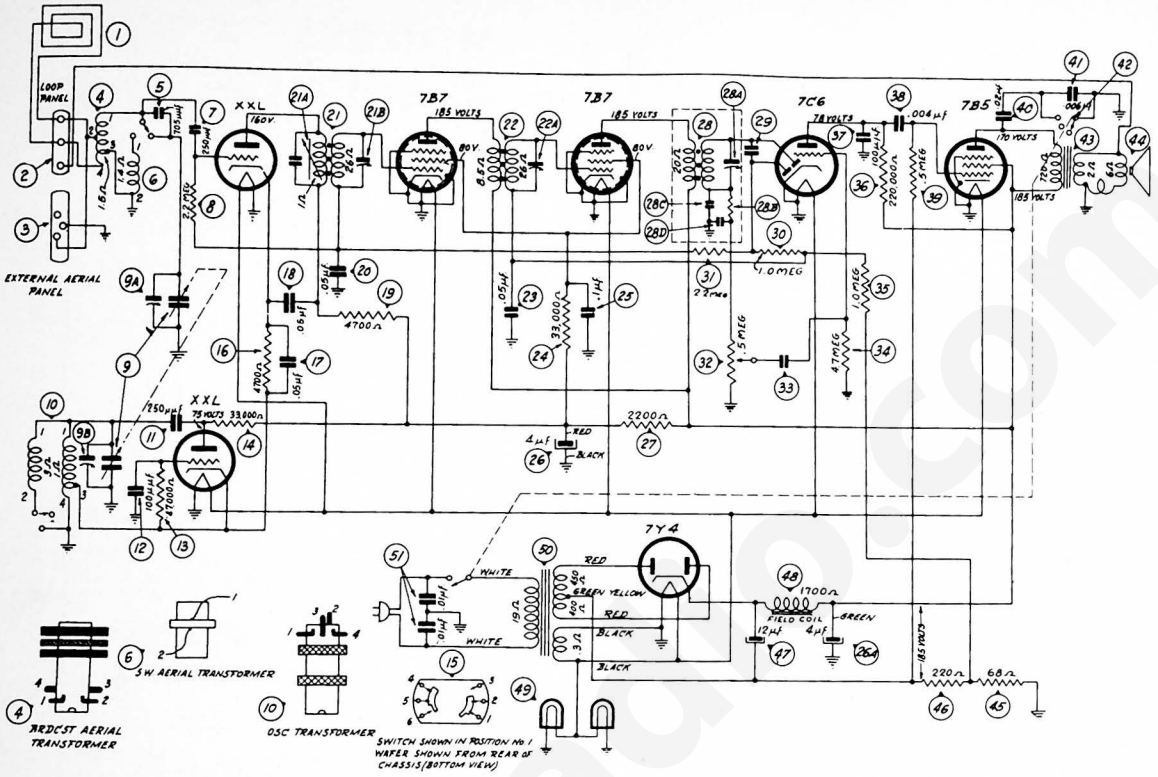

FIG. 1—SCHEMATIC DIAGRAM—Model 42-335, Code 121

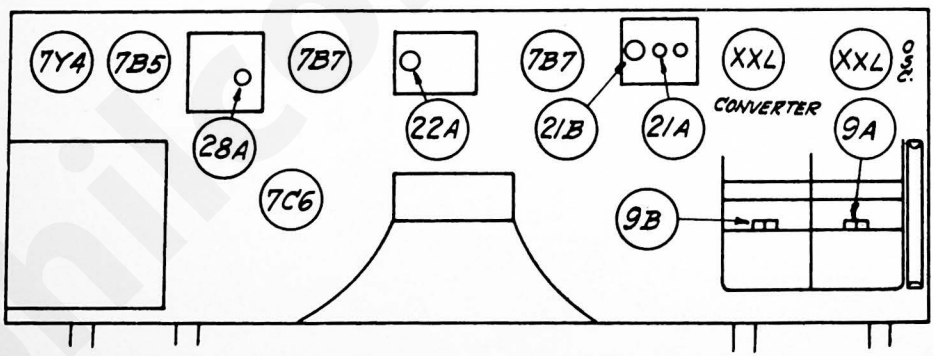

FIG. 2—LOCATIONS OF COMPENSATORS, TOP OF CHASSIS
Model 42-335

The voltages indicated at the tube elements in the above diagram were measured with a 1000 ohms per volt voltmeter. Philco Model 027, line voltage 117 volts, A. C. band switch (broadcast), no station being received.

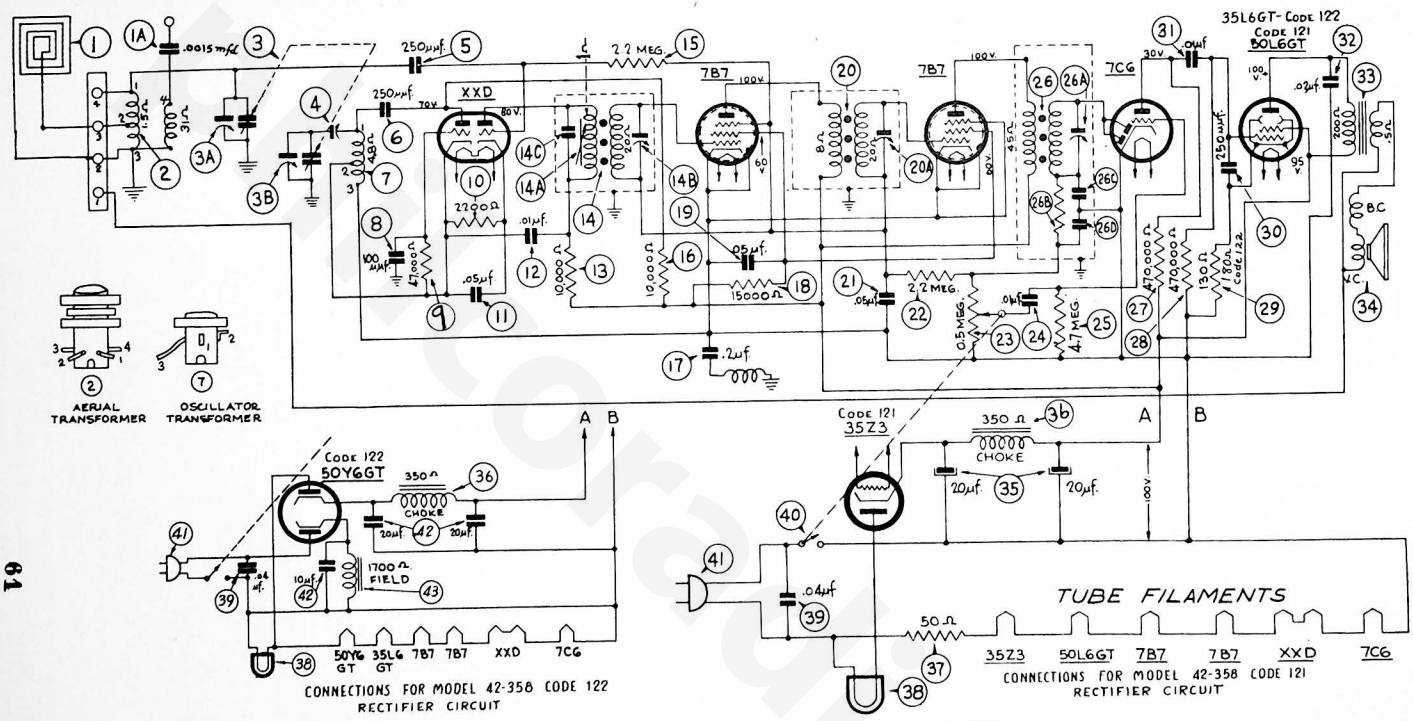

FIG. 3—SCHEMATIC DIAGRAM—Model 42,358, Codes 121-122

The voltages indicated at the tube elements in the above diagram were measured with a 1000 ohms per volt voltmeter. Philco Model 027, line voltage 117 volts, A. C. band switch (broadcast), no station being received.

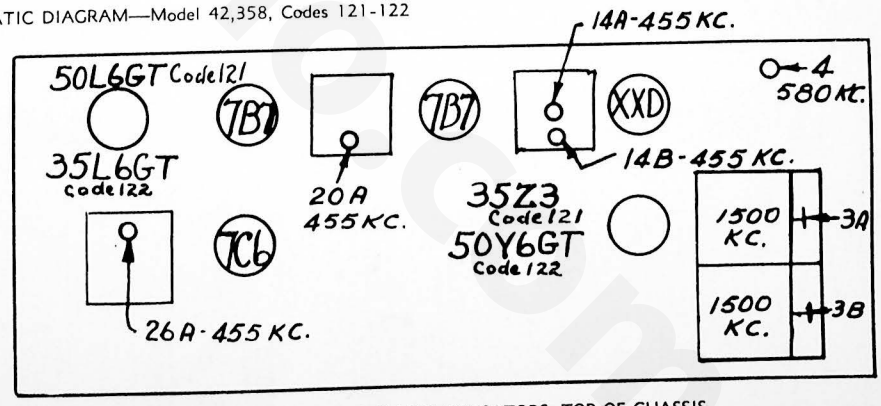

FIG. 4—LOCATIONS OF COMPENSATORS, TOP OF CHASSIS
Model 42-358

REPLACEMENT PARTS—Model 42-335, Code 121

Sch. No.	Description	Part No.
1.	Loop Aerial	76-1270
	Mtg. Screw	W-2073
2.	Terminal Panel (Loop)	38-9942
3.	External Aerial Socket	27-6145
4.	Aerial Transformer	32-3697
	Mtg. Clip	28-5002
5.	Mica Condenser (705 mmfd)	60-117157
6.	Aerial Transformer (Police)	32-3698
7.	Condenser (250 mmfd)	60-125257
8.	Resistor (2.2 megohms)	33-522339
9.	Tuning Condenser	31-2544
9A.	Aerial Compensator, Part of 9	
9B.	Oscillator Compensator, Part of 9	
	Drive Drum (Tuning Cond.)	38-9883
	Drive Shaft Assembly	56-6152
	"C" Washer	28-2043
	Drive Cord (Tuning Cond.)	31-2546
	Drive Cord (Pointer)	31-2547
	Mounting Rubber (Tuning Cond.)	27-4596
	Mounting Sleeve (Tuning Cond.)	28-3806
	Mounting Washer	W-151
	Mounting Screw	W-2002
	Pulleys (Drive Cord)	54-4045
	Mtg. Stud	28-6946
	Spring (Cond. Drive)	28-8751
	Spring (Pointer Drive)	28-8953
10.	Oscillator Transformer	32-3568
	Mtg. Clip	28-5002
11.	Mica Condenser (250 mmfd)	60-125257
12.	Mica Condenser (100 mmfd)	60-110257
13.	Resistor (47,000 ohms)	33-347339
14.	Resistor (33,000 ohms)	33-333339
15.	Band Switch	42-1664
	Mtg. Nut	W-2157
16.	Resistor (4700 ohms)	33-247339
17.	Condenser (.05 mfd, 200 volts)	30-4519
18.	Condenser (.05 mfd, 400 volts)	30-4518
19.	Resistor (4700 ohms)	33-247339
20.	Condenser (.05 mfd, 200 volts)	30-4519
21.	1st I. F. Transformer	32-3734
21A.	Primary Compensator, Part of 21	
22B.	Secondary Compensator, Part of 21	
	Mtg. Nut	W-1949
22.	2nd I. F. Transformer	32-3705
22A.	Secondary Compensator, Part of 22	
	Mtg. Nut	W-1949
23.	Condenser (.05 mfd, 400 volts)	30-4519
24.	Resistor (33,000 ohms)	33-333339
25.	Condenser (.1 mfd, 400 volts)	30-4527
26.	Electrolytic Condenser (4 mfd)	
	Mtg. Clip	56-1466
27.	Resistor (2200 ohms)	33-222339
28.	3rd I. F. Transformer	32-3640
28A.	Secondary Compensator, Part of 28	
	Mtg. Nut	W-1949
28B.	Resistor, Part of 28	
28C.	Condenser, Part of 28	
28D.	Condenser, Part of 28	
29.	Mica Condenser (100 mmfd)	60-110257
30.	Resistor (1 megohm)	33-510339
31.	Resistor (2.2 megohms)	33-522339
32.	Volume Control	33-5443
	Mtg. Nut	W-2157
33.	Condenser (.01 mfd, 400 volts)	30-4572
34.	Resistor (4.7 megohms)	33-547339
35.	Resistor (1 megohm)	33-510339
36.	Resistor (220,000 ohms)	33-422339
37.	Condenser (100 mmfd)	60-110257
38.	Condenser (.004 mfd)	30-4623
39.	Resistor (.5 megohms)	33-447339
40.	Condenser (.02 mfd, 400 volts)	30-4516
41.	Condenser (.006 mfd)	30-4591
42.	Tone Control, On-Off Switch	42-1665
	Mtg. Nut	W-2157
43.	Output Transformer	32-8172
44.	Speaker	36-1543-9
	Cone Assembly	36-4206
45.	Resistor (68 ohms, ½ watt)	33-068336
46.	Resistor (220 ohms, 1 watt)	33-122436
47.	Electrolytic Condenser	
	Mtg. Clip	56-1466
48.	Field Coil (Replace Speaker)	36-1543
49.	Pilot Lamps	34-2064
50.	Power Transformer (115 volts, 60 cycle)	32-8064
	Power Transformer (115 volts, 25 cycle)	32-8075
	Screw	W-453
	Shield (60 cycle)	56-1525
	Shield Base (60 cycle)	56-1526
	Shield (25 cycle)	56-1547
	Shield Base (25 cycle)	56-1548
51.	Power Line Condensers (Dual .01 mfd)	3903-ODG
	Miscellaneous Parts	
	Bezel	54-4093
	Mtg. Screws	W-2073
	Cable (Power)	L-3199
	Cabinet	10546A
	Dial Scale	27-5717
	Dial Pointer	56-2289
	Rubber Grommet	4169
	Mtg. Clip	56-1876
	Knob (Tuning, Volume, Tone, Band)	54-4105
	Socket (Tubes)	27-6177
	Socket Assembly (Pilot Lamp)	76-1062
	Speaker	36-1543
	Terminal Panel (3 lugs)	38-8369
	Terminal Panel (8 lugs)	38-9007
	Terminal Panel (5 lugs)	38-9579

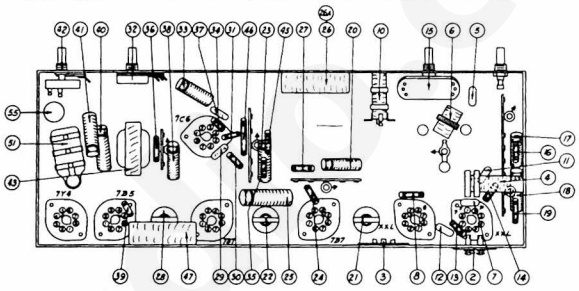

FIG. 5—LOCATIONS OF PARTS—UNDER CHASSIS
Model 42-335

REPLACEMENT PARTS—Model 42-358, Codes 121-122

Sch. No.	Description	Part No.
1.	Loop Aerial	76-1190
	Mtg. Sleeve	28-3806
	Mtg. Sleeve	56-1907
	Mtg. Sleeve	56-1545
	Mtg. Screw	W-288
	Mtg. Washer	W-151
	Spring Washer	28-446
1A.	Condenser (.0015 mfd)	30-4621
2.	Aerial Transformer	32-3772
	Mtg. Clip	28-5002
3.	Tuning Condenser	31-2099
3A.	Aerial Compensator (1500 KC), Part of 3	
3B.	Oscillator Compensator (1700 KC), Part of 3	
	Drive Pulley	38-9856
	Drive Cord	31-2586
	Spring	28-8954
	Mtg. Screw	W-523
	Mtg. Spacer	28-5665
	Mtg. Grommet (2 required)	27-4596
	Mtg. Grommet (1 required)	54-4020
	Tuning Shaft	31-2566
	Mtg. Nut	W-684
4.	Compensator (580 KC)	31-6410
5.	Mica Condenser (250 mmfd)	60-125157
6.	Mica Condenser (250 mmfd)	60-125157
7.	Oscillator Transformer	32-3771
	Mtg. Clip	28-5002
8.	Mica Condenser (100 mmfd)	60-110157
9.	Resistor (47,000 ohms)	33-347339
10.	Resistor (2200 ohms)	33-222339
11.	Condenser (.05 mfd, 200 volts)	30-4519
12.	Condenser (.01 mfd, 400 volts)	30-4572
13.	Resistor (10,000 ohms)	33-310339
14.	1st I. F. Transformer	32-3773
14A.	Primary Compensator, Part of 14	
14B.	Secondary Compensator, Part of 14	
14C.	Condenser, Part of 14	
	Mtg. Nut	W-1949
15.	Resistor (2.2 megohms)	38-522339
16.	Resistor (10,000 ohms)	33-310339
17.	Condenser and R. F. Choke	76-1161
18.	Resistor (15,000 ohms)	33-315339
19.	Condenser (.05 mfd, 200 volts)	30-4519
20.	2nd I. F. Transformer	32-3774
20A.	Secondary Compensator, Part of 20	
21.	Condenser (.05 mfd, 200 volts)	30-4519
22.	Resistor (2.2 megohms)	33-522339
23.	Volume Control	33-5464
	Mtg. Nut	W-2157
24.	Condenser (.01 mfd, 400 volts)	30-4572
25.	Resistor (4.7 megohms)	33-547339
26.	3rd I. F. Transformer	32-3775
26A.	Secondary Compensator, Part of 26	
26B.	Resistor, Part of 26	
26C.	Condenser, Part of 26	
26D.	Condenser, Part of 26	
27.	Resistor (470,000 ohms)	33-447339
28.	Resistor (470,000 ohms)	33-447339
29.	Resistor (130 ohms), Code 121	33-113336
	Resistor (180 ohms), Code 122	33-118336
30.	Mica Condenser (250 mmfd)	60-125157
31.	Condenser (.01 mfd, 400 volts)	30-4572
32.	Condenser (.02 mfd, 400 volts)	30-4516
33.	Output Transformer	32-8180
34.	Speaker (Code 121)	36-1488-3
	Speaker (Code 122)	36-1566
	Cone Assembly (For Speaker 36-1566)	36-4215
	Speaker Cable (Code 122)	41-3663
	Cone Assembly (For Speaker 36-1488-3)	36-4129
	Speaker Cable (Code 121)	41-3448
	Speaker Socket (Code 121)	27-6115
35.	Electrolytic Condenser (20-20 mfd) (Code 121)	30-2515
	Mtg. Clamp	56-1466
36.	Filter Choke	32-8182
37.	Filament Resistor (50 ohms)	33-3412
38.	Pilot Lamp	34-2477
	Socket Assembly	76-1282
39.	Condenser (.04 mfd, 400 volts)	30-4119
40.	Power Switch, Part of 23	
41.	Power Cord	L-3199
	Parts Used in Code 122 Only	
42.	Electrolytic Condenser (10-20-20 mfd) (Code 122)	30-2529
43.	Field Coil (Replace Speaker 36-1566)	
	Miscellaneous Parts	
	Bezel	54-4090
	Mtg. Screw	W-2071
	Cabinet	10543-B
	Dial	27-5745
	Dial Pointer	56-2159
	Spring Fastener (Dial)	56-6161
	Knob	54-4089
	Socket	27-6174
	Socket	27-6177
	Mtg. Rivet	W-239
	Socket (Speaker)	27-6115
	Screw (Chassis Mtg.)	W-2030
	Washer (Chassis Mtg.)	W-410

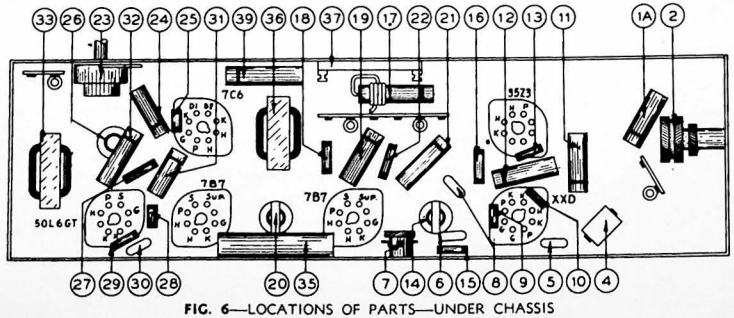

FIG. 6—LOCATIONS OF PARTS—UNDER CHASSIS
Model 42-358