Philco Radio & Television Corp.

	Model: 42-345	**Chassis:**	**Year:** Pre 1945
	Power:	**Circuit:**	**IF:**
	Tubes:		
	Bands:		

Resources
Riders Volume 14 - PHILCO 14-31
Riders Volume 14 - PHILCO 14-36
Riders Volume 14 - PHILCO 14-37

ALIGNING R. F. AND I. F. COMPENSATORS

The following procedure is used for all 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 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 35A5 tube to the chassis. Adjust the meter for the 0 to 10 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.

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 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.

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

In order to adjust the radio outside of the cabinet the dial scale should be removed from the cabinet and placed on the dial background plate. The dial scale can be held in position by clips or rubber bands. The loop aerial should also 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 in the schematic diagram of each model.

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

PROCEDURE—MODELS 42-323; 42-327; 42-340; 42-360

Operations in Order	SIGNAL GENERATOR: Output Connections to Radio	SIGNAL GENERATOR: Dial Setting	RECEIVER: Dial Setting	RECEIVER: Control Setting	RECEIVER: Adjust Compensators in Order — Models 42-323	42-327	42-340	42-360	Special Instructions
1	Aerial Section Tuning Condenser	455 KC	540 KC	Vol. Max. Band Switch Brdcst.	22A 22B 27A 33A	24A 24B 29A 35A	15A 15B 18A 32A	25A 25B 29A 37A	
2	Loop (See above Instructions)	1720 KC	1720 KC	"	8B	8B	7	14A	Note A
3	"	1500 KC	1500 KC	"	8A	8A	23	4	
4	"	580 KC	580 KC	"	15	15	23B	4A	Roll Tuning Condenser Note B
5	Repeat Operation 2								
6	"	15.5 MC	15.5 MC	Band Switch S. W.	15A 3	15A 3	7A 23A	14 12	Note C

PROCEDURE—MODELS 42-345; 42-365

Operations in Order	SIGNAL GENERATOR: Output Connections to Radio	SIGNAL GENERATOR: Dial Setting	RECEIVER: Dial Setting	RECEIVER: Control Setting	RECEIVER: Adjust Compensators in Order — Models 42-345	42-365	Special Instructions
1	Aerial Section Tuning Condenser	455 KC	540 KC	Vol. Max. Band Switch "Brdcst."	29A 29B 32A 34A	29A 29B 32A 41A	
2	Loop (See above Instructions)	1720 KC	1720 KC	"	15	6B	Note A
3	"	1500 KC	1500 KC	"	9	13	
4	"	580 KC	580 KC	"	9B	13A	Roll Tuning Condenser Note B
5	Repeat Operation 2						
6	"	6.7 MC	6.7 MC	Band Switch "Police"	15A	6A	
7	"	15.5 MC	15.5 MC	Band Switch S. W.	15B Osc. 9A Aer.	6 Osc. 4	Note C

NOTE A.—Adjusting Dial Pointer: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceeed 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 first mark below 540 KC.

NOTE B.—When adjusting the low frequency compensator (Broadcast) or the aerial padders of the high frequency tuning range; the receiver tuning condenser must be adjusted (rolled) as follows: First, tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

NOTE C.—Turn tuning condenser until pointer is on 15.5 MC mark, then adjust oscillator compensator to maximum on the second signal peak from the tight position (compensator closed). The Short Wave Aerial padder should then be "rolled" to maximum on the 15 MC signal. See Note B.

MODEL 42-340
MODEL 42-345

PHILCO RADIO & TELEVISION CORP.

EXTERNAL AERIAL CONNECTIONS

MODELS 42-323, 42-327, 42-340, 42-345, 42-360, 42-365

The built-in low-impedance loop aerial system of these models is designed to operate without an outside aerial or ground, and to give exceptional receiving performance under average conditions.

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 for maximum receiving performance. The outdoor aerial can be easily connected to the radio by inserting the plug attached to the transformer (supplied with the aerial) into the socket provided at the rear of the radio. This aerial can be obtained from your local Philco distributor.

REPLACEMENT PARTS—Model 42-340

Sch. No.	Description	Part No.
1.	Loop Aerial	76-1270
	Mtg. Screw	W-2071
2.	Loop Terminal Panel	38-9942
3.	External Aerial Socket	27-6146
4.	Aerial Transformer (Broadcast)	32-3724
	Mtg. Clip	28-5002
5.	Band Switch	42-1672
	Mtg. Nut	W-2157
6.	Tuning Condenser	31-2558
	Drive Cord (Pointer)	31-2547
	Drive Cord (Tuning Cond.)	31-2546
	Drive Shaft	56-6152
	Mtg. Nut	W-2157
	Drive Drum (Tuning Cond.)	38-9883
	Mtg. Rubber	27-4596
	Mtg. Sleeve	28-8806
	Spring (Tuning Condenser Cord Drive)	28-8751
	Spring (Pointer Drive Cord)	28-8953
7.	Compensator (Broadcast, Aerial)	31-6438
7A.	Compensator (Short Wave—Aerial) (Part of 7)	
8.	Aerial Transformer (Short Wave)	32-3725
9.	Mica Condenser (250 mmfd)	20-025011
10.	Condenser (.05 mfd, 200 volts)	30-4519
11.	Resistor (4700 ohms)	33-247339
12.	Resistor (2.2 megohms)	33-522339
13.	Mica Condenser (250 mmfd)	60-125257
14.	Condenser (.05 mfd, 400 v.)	30-4518
15.	1st I. F. Transformer	32-3724
	Mtg. Nut	W-1949
15A.	Primary Compensator (Part of 15)	
15B.	Secondary Compensator (Part of 15)	
15C.	Condenser (Part of 15)	
16.	Resistor (4700 ohms)	33-247339
17.	Resistor (33,000 ohms)	33-333339
18.	2nd I. F. Transformer	32-3705
	Mtg. Nut	W-1949
18A.	Secondary Compensator (Part of 18)	
19.	Condenser (.05 mfd, 200 volts)	30-4519
20.	Condenser (.05 mfd, 200 volts)	30-4519
21.	Mica Condenser (10 mmfd)	60-010337
22.	Mica Condenser (250 mmfd)	20-025011
23.	Compensator (Oscillator Broadcast)	31-6428
23A.	Compensator (Oscillator—S. W.) (Part of 23)	
23B.	Compensator (Oscillator—580 KC) (Part of 23)	
24.	Oscillator Transformer	32-3723
	Mtg. Clip	28-5003
25.	Resistor (47,000 ohms)	33-347339
26.	Mica Condenser (100 mmfd)	60-110257
27.	Mica Condenser (250 mmfd)	20-025011
28.	Resistor (33,000 ohms)	33-333339
30.	Electrolytic Condenser (4-4 mfd, 400 volts)	30-2477
30A.	Electrolytic Condenser (4 mfd) (Part of 30)	
31.	Condenser (.1 mfd, 400 volts)	30-4527
32.	3rd I. F. Transformer	32-3640
	Mtg. Nut	W-1949
32A.	Secondary Compensator (Part of 32)	
32B.	Condenser (Part of 32A)	
32C.	Resistor (Part of 32)	
32D.	Condenser (Part of 32A)	
33.	Mica Condenser (100 mmfd)	60-110257
34.	Resistor (1 megohm)	33-510339
35.	Resistor (2.2 megohms)	33-522339
36.	Resistor (1 megohm)	33-510339
37.	Volume Control	33-5443
	Mtg. Nut	W-2157
38.	Condenser (.01 mfd, 400 volts)	30-4572
39.	Resistor (4.7 megohms)	33-547339
40.	Mica Condenser (100 mmfd)	60-110257
41.	Condenser (.004 mfd, 600 volts)	30-4623
42.	Resistor (220,000 ohms)	33-422339
43.	Resistor (470,000 ohms)	33-447339
44.	Condenser (.006 mfd, 400 volts)	30-4591
45.	Tone Control and Power Switch	42-1665
	Mtg. Nut	W-2157
46.	Condenser (.02 mfd, 400 volts)	30-4516
47.	Output Transformer	32-8172
48.	Speaker	36-1543-9
	Cone Assembly (For Speaker 36-1543)	36-4206
49.	Pilot Lampe	34-2064
	Socket Assembly	76-1287
50.	Field Coil (Replace Speaker 36-1543)	
51.	Electrolytic Condenser (12 mfd, 400 volts)	30-2409
	Mtg. Clamp	56-1466
52.	Resistor (68 ohms)	33-068336
53.	Resistor (220 ohms)	33-122436
54.	Power Transformer (115 volts, 60 cycle)	32-8064
	Shield	56-1525
	Shield Base	56-1526
	Mtg. Screw	W-453
	Power Transformer (115 volts, 25 cycle)	
55.	Condenser (.01-01 mfd)	3903-ODG
56.	Power Cord	L-3199

Miscellaneous Parts

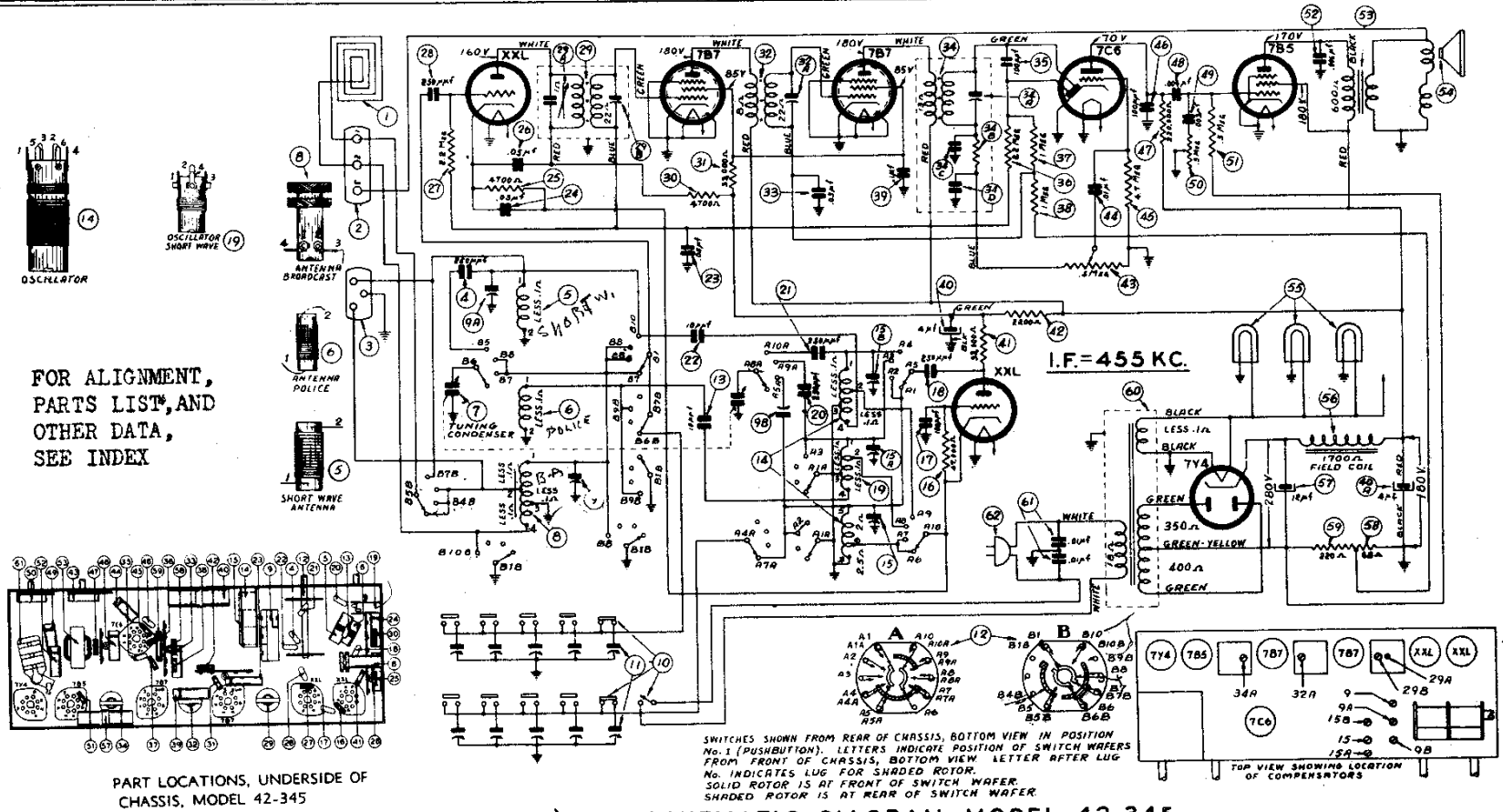
Cabinet	10569-A
Dial Scale	27-5755
Dial Pointer	56-2239
Knob Assembly	54-4102
Sockets	27-6177
Mtg. Rivets	W-239
Screw (Mtg. Chassis)	W-2630
Washer (Mtg. Chassis)	W-410

REPLACEMENT PARTS—Model 42-345

Sch. No.	Description	Part No.
1.	Loop Aerial	76-1303
	Mtg. Screw	W-2071
2.	Loop Terminal Panel	38-9942
3.	External Aerial Socket	27-6145
4.	Silver Mica Condenser (250 mmfd)	20-025011
5.	Aerial Transformer (S. W.)	32-3764
	Mtg. Clip	28-5002
6.	Aerial Transformer (Police)	32-3766
7.	Tuning Condenser	31-2558
	Drive Shaft	56-6152
	Mtg. Screw	W-2157
	Drive Drum	38-9883
	Drive Cord (Pointer)	31-2534
	Spring	28-8953
	Drive Cord (Cond. Drive)	31-2546
	Spring	28-8751
	Pointer	56-1856
	Mtg. Screw	W-2002
	Mtg. Sleeve	28-3806
	Mtg. Rubber	27-4596
8.	Aerial Transformer (Broadcast)	32-3763
9.	Compensator (Aerial—Broadcast)	
9A.	Compensator (Aerial—S. W.) (Part of 9)	
9B.	Oscillator Compensator (580 KC) (Part of 9)	
10.	Push-Buttons and Power Switch	42-1686
	Mtg. Sleeve (Switch to Cabinet)	28-2258
	Mtg. Sleeve (P. B. Switch, 3 required)	28-5665
	Drive Screw	W-523
	Mtg. Screw	W-2002
11.	Push-Button Compensating Condenser Strip	31-6372
12.	Band Switch	42-1684
	Mtg. Nut	W-2157
13.	Mica Condenser (10 mmfd)	60-010337
14.	Oscillator Transformer (Broadcast—S. W.)	32-3762
	Mtg. Clip	28-5003
15.	Compensator (Oscillator—Broadcast)	31-6425
15A.	Compensator (Oscillator—Police) (Part of 15)	
15B.	Compensator (Oscillator—S. W.) (Part of 15)	
16.	Resistor (47,000 ohms)	33-347339
17.	Mica Condenser (100 mmfd)	60-110257
18.	Mica Condenser (250 mmfd)	60-125257
19.	Oscillator Transformer (Police)	32-3765
	Mtg. Clip	28-5002
20.	Mica Condenser (2500 mmfd)	60-225324
21.	Silver Mica Condenser (250 mmfd)	20-025011
22.	Mica Condenser (10 mmfd)	60-010337
23.	Condenser (.05 mfd, 200 volts)	30-4519
24.	Condenser (.05 mfd, 200 volts)	30-4519
25.	Resistor (4700 ohms)	33-247339
26.	Condenser (.05 mfd, 400 volts)	30-4518
27.	Resistor (2.2 megohms)	33-522339
28.	Mica Condenser (250 mmfd)	60-125257
29.	1st I. F. Transformer	32-3734
	Mtg. Nut	W-1949
29A.	Primary Compensator (Part of 29)	
29B.	Condenser (Part of 29)	
29C.	Secondary Compensator (Part of 29)	
30.	Resistor (4700 ohms)	33-247339
31.	Resistor (33,000 ohms)	33-333339
32.	2nd I. F. Transformer	32-3705
	Mtg. Nut	W-1949
32A.	Secondary Compensator (Part of 32)	
33.	Condenser (.05 mfd, 200 volts)	30-4519
34.	3rd I. F. Transformer	32-3640
	Mtg. Nut	W-1949
34A.	Secondary Compensator (Part of 34)	
34B.	Resistor (Part of 34)	
34C.	Condenser (Part of 34A)	
34D.	Condenser (Part of 34A)	
35.	Mica Condenser (100 mmfd)	60-110257
36.	Resistor (2.2 megohms)	33-522339
37.	Resistor (1 megohm)	33-510339
38.	Resistor (1 megohm)	33-510339
39.	Condenser (.1 mfd, 400 volts)	30-4527
40.	Electrolytic Condenser (4-4 mfd, 400 volts)	30-2477
40A.	Electrolytic Condenser (4 mfd) (Part of 40)	
	Mtg. Clip	56-1466
41.	Resistor (33,000 ohms)	33-333339
42.	Resistor (2200 ohms)	33-222339
43.	Volume Control	33-5443
	Mtg. Nut	W-2157
44.	Condenser (.01 mfd, 400 volts)	30-4572
45.	Resistor (4.7 megohms)	33-547339
46.	Mica Condenser (100 mmfd)	60-110257
47.	Resistor (220,000 ohms)	33-422339
48.	Condenser (.004 mfd, 600 volts)	30-4623
49.	Condenser (.003 mfd, 100 volts)	30-4489
50.	Tone Control	33-5450
	Mtg. Nut	W-2157
51.	Resistor (470,000 ohms)	33-447339
52.	Condenser (.006 mfd, 400 volts)	30-4591
53.	Output Transformer	32-8172
54.	Speaker	36-1543-9
	Cone Assembly (For Speaker 36-1543-9)	36-4206
55.	Pilot Lamps	34-2064
	Socket Assembly	76-1287
56.	Field Coil (Replace Speaker)	36-1543
57.	Electrolytic Condenser (12 mfd, 400 volts)	30-2409
58.	Resistor (68 ohms)	33-068336
59.	Resistor (220 ohms)	33-122436
60.	Power Transformer (115 volts, 60 cycle)	32-8064
	Power Transformer (115 volts, 25 cycle)	
	Shield	56-1525
	Shield Base	56-1526
	Mtg. Screw	W-453
61.	Line Filter Condenser (.01-.01 mfd)	3903-ODG
62.	Power Cord	L-3199

Miscellaneous Parts

Cabinet	10570A
Dial	27-6759
Pointer	56-1856
Escutcheon (Push-Buttons)	56-2233
Knob (Tuning, Volume, Tone)	54-4116
Knob (Push-Buttons)	54-4106
Socket (Tubes)	27-6177
Screw (Chassis Mtg.)	W-2030
Tab Kit (Push-Buttons)	40-6660
Tab Cover	27-5727
Tab (ON-OFF)	27-5728
Washer (Chassis Mtg.)	W-410



FOR ALIGNMENT, PARTS LIST, AND OTHER DATA, SEE INDEX

PART LOCATIONS, UNDERSIDE OF CHASSIS, MODEL 42-345

SCHEMATIC DIAGRAM MODEL 42-345

The D. C. 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. No signal being received—range switch broadcast.

Intermediate Frequency: 455 KC.

Tuning Bands: 540 to 1720 KC; 2.3 to 7 MC; 9 to 15.5 MC.

Audio Output: 2 watts.

Power Supply: 115 volts A. C., 60 cycles. The radio can also be operated on 115 volts, 25 cycle current, by changing the power transformers as indicated in the parts list.

Electric Push-Button Tuning: Six (6) electric tuning push-buttons are provided for automatically selecting stations. Five (5) of the push-buttons are used from broadcast stations and one push-button for controlling (ON-OFF) the power supply. The procedure for adjusting the push-buttons will be found in the instructions supplied with the radio.

MODEL 42-345, CODE 121

Circuit Description: Model 42-345, Code 121, is a seven (7) tube superheterodyne radio employing electric push-button tuning for automatically selecting standard broadcast stations and three (3) tuning bands covering Standard, Police, and Short-wave stations. In addition, this model employs the built-in Philco low impedance loop aerial, for reception of stations without an external aerial. Connections are also provided for an external aerial to be used in sections where signal strength is weak, such as steel reinforced buildings and other shielded areas.