

# MODELS 42-321, 42-PT-10, CODE 121

## SPECIFICATIONS

Models 42-321, Code 121 and 42-PT-10 are six (6) tube A. C. or D. C. operated Superheterodyne compact radios employing a built-in loop aerial. In general, these models are similar in design with the exception of the cabinets and loop aeriels.

Other features of design included are—R. F. amplifier stage, a tuning band from 540 to 1600 K. C., Automatic Volume Control; beam power pentode audio output stage and Philco Loktol Tubes.

INTERMEDIATE FREQUENCY: 455 K. C.

POWER SUPPLY: 115 Volts, A. C. or D. C.

PHILCO TUBES USED: 7C7, R. F. stage; 7A8, converter; 7B7, I. F.

Amplifier; 7C6, 2nd detector, A. V. C., 1st audio; 50L6GT beam power audio output and a 35Z3, rectifier.

**AERIAL AND GROUND:** Under ordinary operating conditions an outside aerial or ground is not required. In some locations, however, such as steel reinforced buildings and other shielded areas, an outside aerial should be used for maximum performance. For this purpose an outside aerial connection is located on the rear lower left corner of the chassis. Simply remove the lug from under the screw and attach the aerial lead to the lug.

**THE PHILCO SAFETY AERIAL,** Part No. 40-6370, is especially designed for these radios, and can be obtained from your Philco Distributor.

## ALIGNING R. F. AND I. F. COMPENSATORS

### EQUIPMENT REQUIRED

- SIGNAL GENERATOR:** Covering the frequency range of the receiver, such as Philco Model 070.
- ALIGNING INDICATOR:** Either a vacuum tube voltmeter or an audio output meter may be used as an aligning indicator. Philco Models 027 or 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 50L6GT tube to electrical ground. 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 electrical ground.

**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.

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. The aligning points on scale plate should also be used.

After connecting the aligning instruments adjust the compensators as shown in the tabulation below. Compensator locations are shown on the Schematic.

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

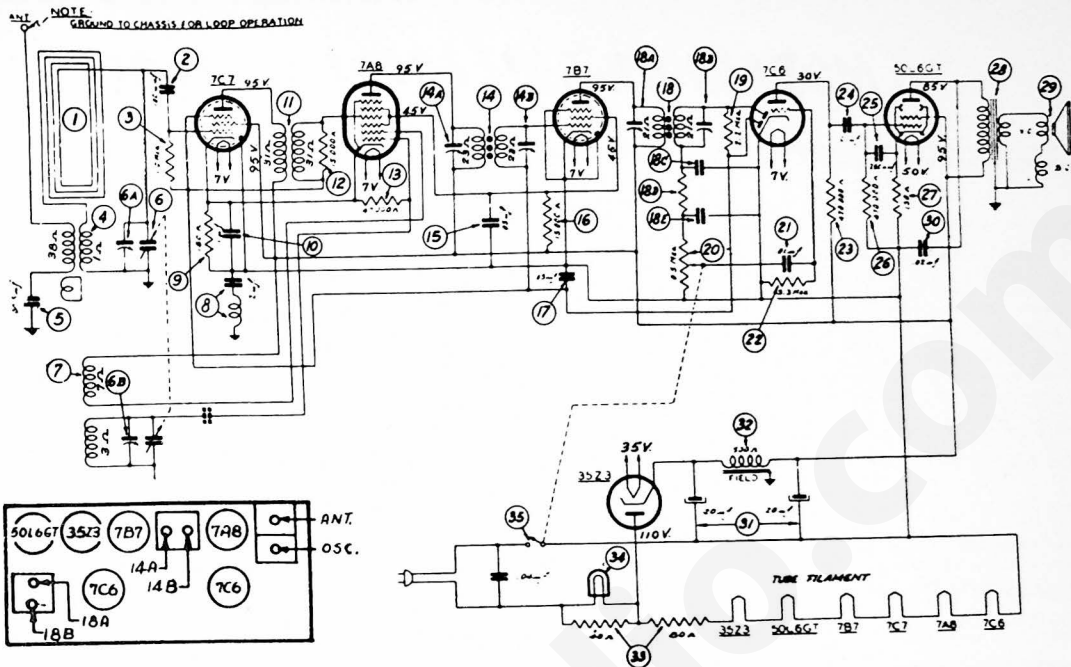
Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order	
1	Ant. Section of tuning	455 K. C.	540 K. C. Tuning Cond. Closed	Vol. Max.	18A, 18B, 14A, 14B	Note B
2	Loop see above instructions	1600 K. C.	1600 K. C.	Vol. Max.	(6B, Note C)	Note A
3	Loop see above instructions	1500 K. C.	1500 K. C.	Vol. Max.	(6A, Note D)	

**NOTE A: DIAL POINTER CALIBRATION**—In order to adjust the receiver correctly, the pointer must be adjusted to track properly with the tuning condenser. To do this, turn the tuning condenser to the maximum capacity (plates fully meshed.) With the condenser in this position, set the tuning pointer on the first small line stamped in the scale plate on the left side.

**NOTE B**—Before adjusting compensators, turn down (14B) to tight position. Then adjust the compensators for maximum output in the following order: 18A, 18B, 14A and 14B.

**NOTE C**—Turn tuning condenser until dial pointer is on the first small line stamped in the scale plate from right side of chassis. Adjust padder (6B) to maximum at this point.

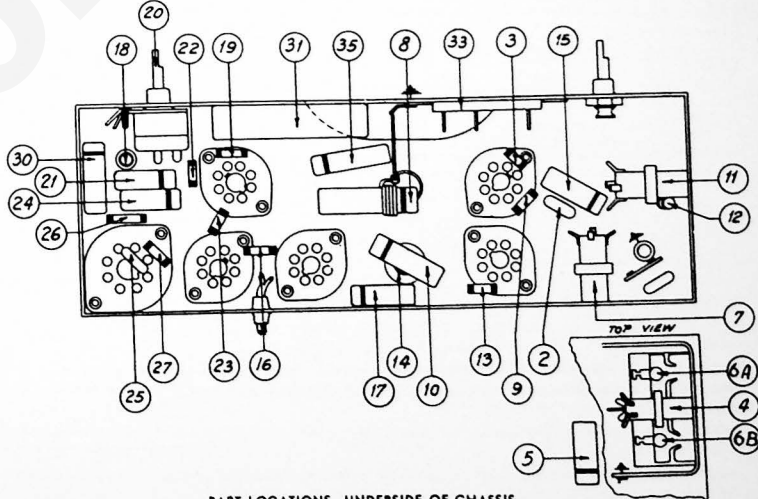
**NOTE D**—Turn tuning condenser until dial pointer is on the second small line stamped in the scale plate from right side of chassis. Adjust padder (6A) to maximum at this point.



SCHEMATIC DIAGRAM—MODEL 42-321, CODE 121.

REPLACEMENT PARTS — MODEL 42-321

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.
1	Loop Aerial (42-321T1)	76-1196		Cable (Power)	L-3199		Screw (Chassis Mounting) (42-321)	W-2065
2	Loop Aerial (PT-10) Part of Cabinet.			Clip (R. F. Coil Mfg.)	28-5002		Screw (Chassis Mounting) (PT-10)	W-1921
3	Mica Condenser (100 mmfd.)	60-110157		Dial Scale (42-321)	27-5757		Socket (Lokal Tubes)	27-4177
4	Resistor (1.0 megohms)	33-510154		Dial Scale (PT-10)	27-5476		Socket (Output Tube)	27-4174
5	Aerial Transformer	32-3394		Knob Assembly (42-321T)	54-4105		Socket Assembly (Pilot Lamp)	76-1177
6	Condenser (1.0015 mfd., 400 volts)	30-4421		Knob (42-321T)	54-4143		Speaker	36-1533-9
7	Tuning Condenser	31-2527		Knob (42-PF10)	54-4052		Washer Chassis Mounting	W-410
8	Pointer	56-2076						
9	Spring (Drive Cord)	28-8954						
10	Shaft Assembly (42-321)	31-2591						
11	Shaft Assembly (PT-10)	31-2531						
12	Drive Cord	31-2529						
13	Oscillator Transformer	32-3613						
14	Condenser and Choke Assembly	76-1198						
15	Resistor (180 ohms)	33-118336						
16	Condenser (.11 mfd., 200 volts)	30-4584						
17	R. F. Transformer	32-3595						
18	Resistor (15,000 ohms)	33-315339						
19	Resistor (47,000 ohms)	33-347339						
20	1st I. F. Transformer	32-3614						
21	Condenser (.05 mfd., 200 volts)	30-4519						
22	Resistor (15,000 ohms)	33-315339						
23	Condenser (.05 mfd., 200 volts)	30-4519						
24	2nd I. F. Transformer	32-3604						
25	Resistor (2.2 megohms)	33-522339						
26	Volume Control	33-5469						
27	Condenser (.01 mfd., 400 volts)	30-2572						
28	Resistor (3.3 megohms)	33-533339						
29	Resistor (470,000 ohms)	33-447339						
30	Condenser (.01 mfd., 400 volts)	30-4572						
31	Mica Condenser (250 mmfd.)	60-125157						
32	Resistor (470,000 ohms)	33-447339						
33	Resistor (130 ohms)	33-113336						
34	Output Trans. (for Speaker 36-1533-9)	32-8164						
35	Cone Assembly (for Speaker 36-1533-9)	36-4190						
	Condenser (.02 mfd., 400 volts)	30-4516						
	Field Coil (Replace Speaker 36-1533-9)	30-2382						
	Resistor (Wirewound, 40-80 ohms)	33-3408						
	Pilot Lamp	34-2068						
	Condenser (.04 mfd., 400 volts)	30-4119						
MISCELLANEOUS PARTS								
	Cabinet (42-321T)	10548A						
	Cabinet (PT-10)	10548B						
	Cabinet (PT-10)	76-1195						
	Cardboard Back (PT-10)	27-9817						



PART LOCATIONS—UNDERSIDE OF CHASSIS