

# Model 42-724, Code 121

## SPECIFICATIONS

**Model 42-724, Code 121** is a six tube alternating current operated superheterodyne radio with four (4) tuning bands. In addition this model includes a two point tone control; automatic volume control; push-pull pentode audio output stage; Philco LOKTAL tubes; band indicator; dial light and a six inch electro-dynamic speaker.

**Tuning bands:** Broadcast - 540 to 1600 K.C.;

S.W. 1 3.0 to 9.5 M.C.;

S.W. 2 9.4 to 12 M.C.;

S.W. 3 11.8 to 22 M.C.;

**Intermediate Frequency:** 455 K.C.

**Power Supply:** Operates on either a 115 or 230 volt, 50 to 60 cycle power supply. To use either of the above voltages change the power transformer primary wiring as indicated on the label at the rear of the chassis.  
**Power Consumption:** 50 Watts

**Philco Tubes Used:** 7J7E, converter-oscillator; 7B7E, I.F. Amplifier; 7C6, second detector, A.V.C., first audio; two 7B5E audio output and a 6X5G, rectifier.

**Audio output:** 3 watts.

**Aerial and Ground:** To obtain maximum operating performance, an aerial with an over-all length of 100 feet should be used. The Philco aerial Part No. 40-6383 is recommended. A good ground connection to a water pipe or any other metal object in moist earth should also be used.

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

### EQUIPMENT REQUIRED

**SIGNAL GENERATOR:** Such as Philco Model 070, A.C. operated or Model 177 battery operated. These signal generators cover all frequencies required in aligning these models.

**INDICATING DEVICE:** To obtain maximum signal strength and accurate adjustments of the padders, a vacuum tube voltmeter similar to Philco Models 027

and 028 are recommended. These instruments also contain an audio output meter which may be used as an aligning indicator. The method of connecting either of these instruments is listed below.

**ALIGNING TOOLS:** Fibre handle screw driver, Philco Part No. 45-2610. Service Aligning Scale, Part No. 45-2909.

### CONNECTING ALIGNING INSTRUMENTS

**VACUUM TUBE VOLTMETER:** To use the vacuum tube voltmeter as an aligning indicator it should be connected to the A. V. C. circuit as follows:

1—Connect the negative (—) terminal of the vacuum tube voltmeter through a 2 megohm resistor to any point in the circuit where the A. V. C. voltage can be measured.

2—Connect the positive (+) terminal to the chassis ground terminal.

**AUDIO OUTPUT METER:** If this type of meter is used as an aligning indicator, it should be connected to the plate terminals of the 7B5E tubes. Adjust the meter for the 0 to 30 volt A.C. scale.

After connecting the aligning meter, adjust the compensators in the order as shown in the tabulations below. Locations of the compensators are shown on the schematic diagram.

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

**NOTE:** The dial scale in these models is mounted on the cabinet. For convenience, when aligning the chassis outside of the cabinet, a special service aligning scale, Part No. 45-2909, is available. This service dial scale is attached to the dial background plate. If the radio is aligned in the cabinet, the cabinet dial scale is used.

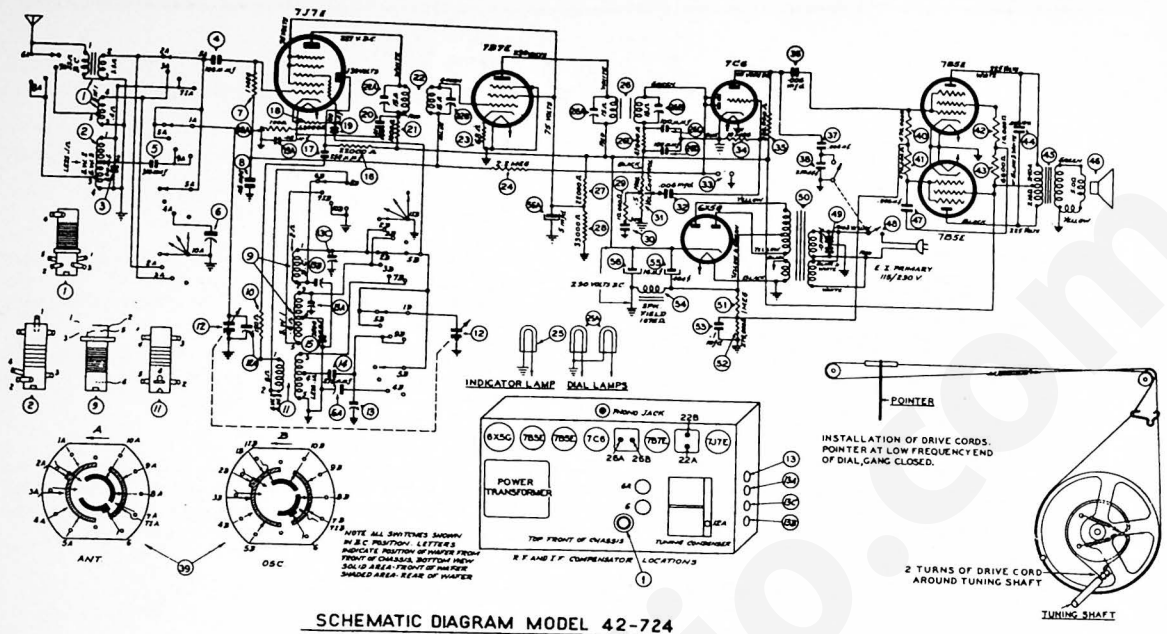
Operations In Order	SIGNAL GENERATOR			RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Radio	Dummy Aerial Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators	
1	Lug of aerial tuning cond.	.1 mfd.	455 K.C.	580 K.C.	Band Switch "Brdcst" Volmax	26A, 26B, 22A, 22B	
2	Aerial	400 ohms	21 M.C.	21 M.C.	Band Switch S. W. 3	13, 12A	Note B Note C
3	Aerial	400 ohms	12 M.C.	12 M.C.	Band Switch S. W. 2	6A, 6	Note C
4	Aerial	400 ohms	6 M.C.	6 M.C.	Band Switch S. W. 1	13A,	
5	Aerial	200 mmfd.	1500 K.C.	1500 K.C.	Band Switch "Brdcst"	13C	
6	Aerial	200 mmfd.	580 K.C.	580 K.C.	Band Switch "Brdcst"	13B	Roll tuning condenser
7	Aerial	200 mmf.	1500 K.C.	1500 K.C.	Band Switch "Brdcst"	13C	

**NOTE A**—The "Dummy Aerial" consists of a condenser or resistor connected in series with the signal generator output lead (highside). Use the capacity or resistance as specified in each step of the above procedure.

**NOTE B**—Dial Calibration: In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity) set

the dial pointer on the first mark on the left edge (low frequency end) of the broadcast scale.

**NOTE C**—When adjusting the osc. compensators, be sure to tune in the fundamental signal (21 M.C.) (12 M.C.) instead of the image signal. If the compensator is correctly adjusted the image signal will be found by turning the signal generator dial 910 K.C. above the fundamental signal which will be 21.910 M.C. or 12.910 M.C.



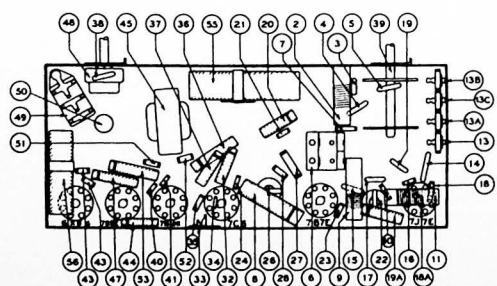
SCHMATIC DIAGRAM MODEL 42-724

Schematic Diagram—Model—42-724, Code 121

The tube element voltages indicated on diagram were measured at socket contacts with a 1,000 ohms per volt meter—Philco Model 027.—Line Voltage 117 A.C.

MODEL 42-724, CODE 121 — REPLACEMENT PARTS

Schematic No.	Description	Part No.	Schematic No.	Description	Part No.	Schematic No.	Description	Part No.
1	Brdcat & S.W.-I Aerial Transformer	32-3655	26C	Condenser (100 mmfd.) Part of 26		47	Condenser (.006 mfd., 400 volts)	30-4610
2	Mtg. Clip	28-5002	26D	Condenser (100 mmfd.) Part of 26		48	Power Switch and Tone Control	42-1698
3	Short Wave Aerial Transformer	32-3652	26E	Resistor (47,000 ohms) Part of 26	33-347339	49	Mtg. Nut	W-2157FA3
4	Mtg. Clip	28-5002		Mtg. Nut	W-1949FA3	50	Power line filter Condenser (.01-.01 mfd., 3000-0046)	33-3322439
5	Mica Condenser (20 mmfd.)	60-102327	27	Resistor (22,000 ohms)	33-322439	51	Power Transformer (115/220 Volts, 60 cycle)	32-8188
6	Mica Condenser (100 mmfd.)	60-110457	28	Resistor (33,000 ohms)	33-333339	52	Resistor (1 Megohm)	33-510339
7	Mica Condenser (310 mmfd.)	20-031017	29	Resistor (10,000 ohms) Part of 31		53	Resistor (270,000 ohms)	33-427339
8	Compensator (Aerial Shortwave 12 M.C.)	31-61416	30	Condenser (1 mfd., 200 volts)	30-4586	54	Condenser (.1 mfd., 200 volts)	30-4586
8A	Compensator (Oscillator Shortwave 12 M.C.) Part of 8	33-610339	31	Volume Control (.5 megohm)	33-5475	54	Speaker Field (Replace Speaker)	36-1551-2
7	Resistor (1 megohm)	33-610339		Mtg. Nut	W-2157FA3	55	Electrolytic Condenser (40 mfd., 350 mfd.)	30-2520
8	Condenser (.05 mfd., 200 volts)	33-115339	32	Condenser (.006 mfd., 400 volts)	27-6149	56	Electrolytic Condenser (16 mfd., 300 volts)	30-2521
9	Brdcat & S.W.-I Oscillator Transformer	32-3656	33	Phono Input Jacks	30-4610	56A	Electrolytic Condenser (5 mfd., 300 volts) Part of 56	
10	Mtg. Clip	28-5002	34	Resistor (10 megohms)	33-610339			
11	Resistor (150 ohms)	31-2534	35	Resistor (220,000 ohms)	33-422339			
11	Short Wave 2. Oscillator Transformer	32-3651	36	Condenser (.006 mfd., 400 volts)	30-4610			
10	Mtg. Clip	28-5002	37	Condenser (.004 mfd., 600 volts)	30-4623			
12	Tuning Condenser	31-2534	38	Mica Condenser (250 mmfd.)	60-125257			
	Drive Cord (Tuning-Cond.)	31-2542	39	Band Switch	42-1699			
	Spring	28-8761		Mtg. Nut	W-2157FA3			
	Drive Cord (Pointer)	31-2473	40	Resistor (470,000 ohms)	33-447339			
	Spring	28-8953	41	Resistor (47,000 ohms)	33-447339			
	Drive Shaft	56-6170	42	Resistor (10,000 ohms)	33-310339			
	Drive Drum	38-9883	43	Resistor (6800 ohms)	33-268339			
	Spring	57-1468	44	Condenser (1,003 mfd., 1500 volts)	30-4608			
	Rubber Connector	27-9432	45	Output Transformer	32-8188			
	Rear Bearing	27-9437		Mtg. Screw	W-630			
	"O" Washer	28-2543	46	Speaker	36-1551-2			
	Pointer	56-1856		Cone Assembly	36-4207			
	Mtg. Screw	97-0028		Speaker Cable	41-3535			
	Mtg. Rubber	27-4596		Mtg. Nut	W-124FA3			
	Mtg. Sleeve	56-1307						
12A	Compensator (Brdcat Aerial—Part of Tuning Cond.)	31-6411						
13	Compensator (Oscillator—21 M.C.)	31-6411						
13A	Compensator (Oscillator—5 M.C.) Part of 13							
13B	Compensator (Oscillator—380 K.C.) Part of 13							
13C	Compensator (Oscillator—1500 K.C.) Part of 13							
14	Mica Condenser (275 mmfd.)	28-927511						
15	Mica Condenser (3500 mmfd.)	60-235224						
16	Resistor (22,000 ohms)	33-322339						
17	Mica Condenser (250 mmfd.)	60-125457						
18	Resistor (68,000 ohms)	33-368339						
18A	Resistor (100 ohms)	33-110339						
19	Mica Condenser (100 mmfd.)	60-110257						
19A	Condenser (.05 mfd., 200 volts)	30-4519						
20	Condenser (.01 mfd., 400 volts)	30-4572						
21	Resistor (1000 ohms)	33-210339						
22	First I.F. Transformer	32-3413						
22A	Primary Compensator (Part of 22)							
22B	Secondary Compensator (Part of 22)							
23	Mtg. Nut	W-1949FA3						
23	Resistor (50 ohms)	33-068339						
24	Resistor (2.2 megohms)	33-522339						
25	Indicator Lamp	34-2064E						
25A	Socket Assembly	76-1344						
25A	Dial Lamps	34-2064E						
25A	Socket Assembly	76-1062						
26	Second I.F. Transformer	32-3814						
26A	Primary Compensator (Part of 26)							
26B	Secondary Compensator (Part of 26)							



Locations of Parts—Under Chassis