

MODELS

42-760 Code 121 **42-761** Code 121 **42-762** Code 121

Production Runs 1 and 2

SPECIFICATIONS—MODEL 42-760, CODE 121

Model 42-760 is an alternating current (A. C.) operated band spread superheterodyne radio, employing eight (8) tubes and eight (8) tuning scales. Three Standard Tuning Scales are mounted on the left side of the grille. These scales cover the radio spectrum from 540 kilocycles to 22 megacycles. Five Spread Band Scales on the right side of the grille are designed to spread the short wave frequencies more than 20 times further apart than the standard tuning scales.

The Standard Tuning Scales are tuned by a variable condenser and the Spread Band Tuning Scales are tuned to stations by a three-gang permeability tuner.

Each tuning band scale is printed on an individual glass section which is separately illuminated when in use. The scales are selected by a "Band" switch. Additional features of design included in this model are: Tuned "R. F." stage; variable tone control, which adjusts Bass and Treble audio frequencies; automatic volume control; Bass audio frequency compensation in the volume control circuit; permeability tuned I. F. transformers; push-pull pentode audio output stage; band indication by a moving dial light, balanced

field electrodynamic "8" inch speaker and provision for attaching a phonograph reproducer.

Tuning Band Ranges:

Standard Tuning—540 to 1720 KC; 2.3 to 7.3 MC; 7.2 to 22 MC.

Spread Band Tuning—9.4 to 9.9 MC; 11.4 to 12 MC; 14.8 to 15.6 MC; 17.3 to 18.2 MC; and 20.9 to 21.9 MC.

Intermediate Frequency: 455 KC.

Power Supply: 115 and 230 volts, 50 to 60 cycles A. C.

Power Consumption: 90 watts.

Audio Output: 6 watts.

Philco Tubes: 7A7E, R. F. stage; 7J7E, converter; 7A7E, I. F. amplifier; 75, second detector—first audio; 76, audio driver; two 42E, audio output and an 80 rectifier.

Cabinet Dimensions: Height, 14-9/16"; Width, 20-9/16"; Depth, 9 3/4".

SPECIFICATIONS—MODEL 42-761, CODE 121

Model 42-761 is an alternating current (A. C.) or direct current (D. C.) operated, band spread, superheterodyne radio, employing eight (8) tubes and eight (8) tuning scales. Three Standard Tuning Scales are mounted on the left side of the dial. These scales cover the radio spectrum from 540 kilocycles to 22 megacycles. Five Band Spread Scales on the right side of the dial are designed to spread the short wave frequencies more than 20 times further apart than the Standard Tuning Scales.

The Standard Tuning Scales are tuned by a variable condenser and the Band Spread Tuning Scales are tuned by a three-gang permeability tuner. Each tuning band scale is printed on an individual glass section which is separately illuminated when in use. The scales are selected by a "Band Switch."

In addition, this model includes a tuned "R. F." stage; continuously variable tone control which varies the audio frequencies from Treble to Bass; automatic volume control; Bass audio frequency compensation in the volume control circuit; permeability tuned I. F. transformers; push-pull beam power pentode audio output stage; band indication by a movable dial light; permanent magnet dynamic speaker and provisions for attaching a phonograph reproducer.

Tuning Band Ranges:

Standard Tuning—540 to 1720 KC; 2.3 to 7.5 MC; 7.1 to 22 MC.

Band Spread Tuning—9.4 to 9.9 MC; 11.4 to 12 MC; 14.8 to 15.6 MC; 17.3 to 18.2 MC; 20.9 to 21.9 MC.

Intermediate Frequency: 455 KC.

Audio Output: 3.6 audio watts (115-volt line).

5.3 audio watts (230-volt line).

Power Supply: 115 or 230 volts A. C.-D. C.

Power Consumption: 60 watts, 115 volts.
120 watts, 230 volts.

To operate the radio on either 115 volts or 230 volts A. C.-D. C. power circuits, insert the ballast resistor (on chassis) in the voltage position desired. The ballast resistor socket is marked to indicate the proper position for either power circuit.

Philco Tubes: 7A7E, R. F. amplifier; 7J7E, converter; 7A7E, I. F. amplifier; 7B6, second detector, first audio; 76, phase inverter; two 25 L6EG, audio output; 25Z5, rectifier.

Cabinet Dimensions: Height, 14-9/16"; Width, 20-9/16"; Depth, 9 3/4".

SPECIFICATIONS—MODEL 42-762, CODE 121

Model 42-762 is a 6-volt, battery-operated, band spread superheterodyne radio, employing seven (7) tubes and eight (8) tuning scales. Three Standard Tuning Scales are mounted on the left side of the dial. These scales cover the radio spectrum from 540 kilocycles to 22 megacycles. Five Band Spread Scales on the right side of the dial are designed to spread the short wave frequencies more than 20 times further apart than the Standard Tuning Scales.

The Standard Tuning Scales are tuned by a variable condenser and the Band Spread Tuning Scales are tuned by a three-gang permeability tuner. Each tuning scale is printed on an individual glass section, which is separately illuminated when in use. The scales are selected by a "Band Switch."

In addition, this model includes: A tuned R. F. stage; continuously variable tone control, which varies the audio frequencies from Treble to Bass; automatic volume control; Bass audio frequency compensation in the volume control circuit; permeability tuned I. F. transformers; push-pull pentode audio output stage; band indication by a movable dial light; permanent magnet dynamic speaker and provisions for attaching a phonograph reproducer.

Tuning Band Ranges:

Standard Tuning—540 to 1720 KC; 2.3 to 7.5 MC; 7.1 to 22 MC.

Band Spread Tuning—9.4 to 9.9 MC; 11.4 to 12 MC; 14.8 to 15.6 MC; 17.3 to 18.2 MC; 20.9 to 21.9 MC.

Intermediate Frequency: 455 KC.

Audio Output 2 watts.

Power Supply: 6-volt storage battery.

The storage battery supplies power to the tube filaments and operates a synchronous vibrator which produces high voltage D. C. for the tube plate circuits.

Power Consumption: 2 3/4 amperes D. C.

Philco Tubes Used: 7B7E, R. F. amplifier; 7A8E, converter; 7B7E, I. F. amplifier; 7C6, second detector—first audio; 6G6EG, phase inverter; two 49, audio output.

Cabinet Dimensions: Height, 14-9/16"; Width, 20-9/16"; Depth, 9 3/4".

AERIAL AND GROUND

A standard "L" type aerial such as Philco part no. 40-6383 is recommended to obtain maximum receiving performance from these models. A good ground connection to a water pipe or any other metal object in moist earth is also required.

MECHANICAL ADJUSTMENTS—BAND SPREAD TUNING MECHANISM

1. ADJUSTMENT OF TUNING SHAFT

End play can be removed by adjusting the rear bearing No. (A). Fig. (1). Care should be taken when adjusting the screw so that shaft does not turn too tightly. In making this adjustment, the screw driver can be inserted in the chassis in line with shaft.

2. REMOVING TUNING SHAFT

- Remove tuning knob shaft and coupling.
- Loosen lock nut on rear bearing and remove adjusting screw and ball bearing.
- Remove cotter pin from stop assembly.
- Unscrew carriage as shaft is pulled out through front of R. F. tuner and chassis.
- When installing new shaft (B) adjust positions of stop assembly and carriage, before inserting cotter pin, so that the carriage (C) is approximately 5 turns from the stop assembly (D) with shaft in extreme counterclockwise position from front. The stop assembly is rotated until all washers are in contact. The bottom washer should be located between the stops farthest apart.

3. ADJUSTING BAND SPREAD TUNING CORE ASSEMBLY

- Cores are correctly located when the rear of the oscillator core (blue identification) is flush with the rear of oscillator transformer and the tuning shaft is in extreme counterclockwise position.
- The carriage clamp (E) must not be tightened excessively as this will bend the tuning core rod (F) and cause backlash.

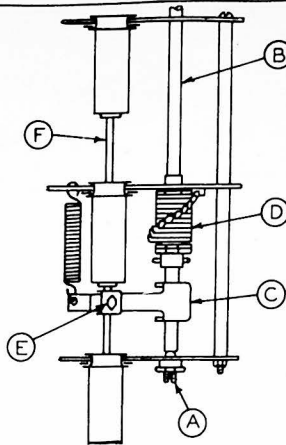


FIG. 1—BAND SPREAD TUNING MECHANISM

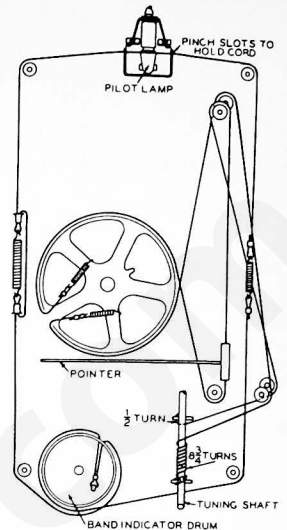


FIG. 2—INSTALLING TUNING DRIVE CORD

REPLACEMENT PARTS—Model 42-760

Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	Aerial Transformer (Broadcast)	32-3661	29.	Resistor (68,000 ohms)	33-368339
	Mtg. Clip	28-5002	30.	Resistor (100 ohms)	33-110339
2.	Aerial Transformer (Police)	32-3664	31.	Mica Condenser (100 mmfd)	60-110457
3.	Mica Condenser (5 mmfd)	60-005357	32.	Oscillator Transformer (Broadcast)	32-3663
4.	Aerial Transformer (Short Wave)	32-3667		Mtg. Clip	28-5002
5.	Mica Condenser (10 mmfd)	60-010337	33.	Oscillator Transformer (Police)	32-3665
6.	Band Spread Aerial Transformer	32-3670	33A.	Condenser (3000 mmfd)	60-230124
	Mtg. Clip	57-0985	34.	Oscillator Transformer (Short Wave)	32-3669
	Core Assembly	76-1281	35.	Oscillator Transformer (Band Spread)	32-3672
7.	Tuning Condenser	31-2535		Mtg. Clip	57-0985
7A.	Compensator (S. W. 2—Aerial)			Core Assembly	76-1281
	Part of Cond.			Compensator (580 KC Broadcast)	31-6350
7B.	Compensator (S. W.—R. F.)		36.	Compensator (S. W. 1—6 MC), Part of 36	
	Part of Cond.		36A.	Compensator (S. W. 2—21 MC), Part of 36	
	Drive Cord	31-2536	36B.	Compensator (S. W. 2—21 MC), Part of 36	
	Drive Cord	31-2537	37.	Osc. Compensator (1500 KC—Broadcast)	31-6308
	Spring	28-8954	38.	Osc. Compensator (31 M Band—17.4 MC)	31-6414
	Cotter Pin	W-2196	38A.	Osc. Compensator (25 M Band—11.7 MC), Part of 38	
	Drive Drum	76-1244	38B.	Compensator (19 M Band—15.2 MC), Part of 38	
	Set Screw	W-2008	39.	Osc. Compensator (16 M Band—17.4 MC)	
	Rubber Mtg. Grommet	27-4695	39A.	Osc. Compensator (13 M Band—21.5 MC), Part of 39	31-6415
	Tuning Shaft (Inside R. F. Unit)	76-1240	40.	1st I. F. Transformer	32-3659
	Shaft Bushing (Threaded)	56-2162		Mtg. Nut	W-1949
	Carriage (Tuning Cores)	56-2145	40A.	Primary Compensator (Iron Core)	
	Core Clamp	56-2151	40B.	Secondary Compensator (Iron Core)	
	Screw	97-0064	40C.	Condenser, Part of 40	
	Cotter Pin	W-2196	40D.	Condenser, Part of 40	
	Tuning Shaft and Bearing (Outside Chassis)	76-1245	41.	Resistor (68 ohms)	33-068339
	Rubber Disc	27-4272	41A.	Condenser (.05 mfd, 200 volts)	30-4609
	Mtg. Screw (Condenser)	W-2259			
	Mtg. Screw (Compensator)	97-0028			
8.*	Compensator (31 M Aerial)	31-6412			
8A.	Compensator (25 M Aerial), Part of 8				
8B.	Compensator (19 M Aerial), Part of 8				
9.*	Silver Mica Condenser (50 mmfd)	30-1199			
10.*	Silver Mica Condenser (25 mmfd)	30-1145			
11.	Mica Condenser (100 mmfd)	60-110457			
11A.	Resistor (68 ohms)	33-068339			
12.	Resistor (470,000 ohms)	33-447339			
13.	Condenser (.05 mfd, 200 volts)	30-4609			
14.	Mica Condenser (250 mmfd)	60-125457			
15.	Resistor (18,000 ohms)	33-315339			
16.	Resistor (15,000 ohms)	33-315439			
17.	Resistor (33,000 ohms)	33-332339			
18.	Condenser (.2 mfd, 400 volts)	30-4694			
19.	R. F. Transformer (Broadcast)	32-3662			
	Mtg. Clip	28-5002			
20.	R. F. Transformer (Police)	32-3665			
21.	R. F. Transformer (Short Wave)	32-3668			
22.	Band Spread R. F. Transformer	32-3671			
	Mtg. Clip	57-0985			
	Core Assembly	76-1281			
23.	Compensator (31 M—R. F. Stage)	31-6412			
23A.	Compensator (25 M—R. F. Stage), Part of 23				
23B.	Compensator (19 M—R. F. Stage), Part of 23				
24.	Compensator (16 M—R. F. Stage)	31-6413			
24A.	Compensator (13 M—R. F.), Part of 24				
25.	Mica Condenser (100 M mfd)	60-110457			
26.	Resistor (470,000 ohms)	33-447339			
27.	Mica Condenser (50 M mfd)	60-125457			
28.	Resistor (22,000 ohms)	33-322339			

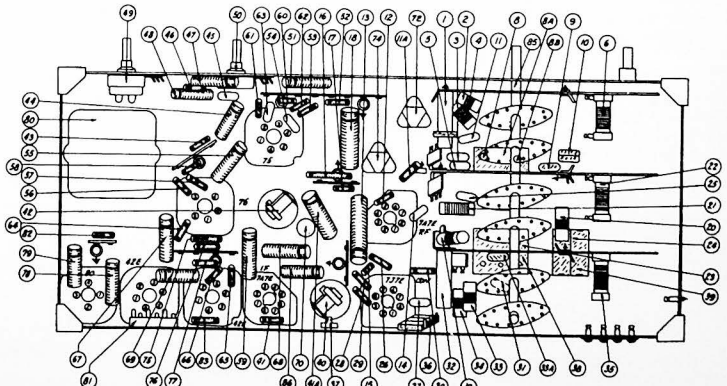


FIG. 3—PART LOCATIONS—UNDER CHASSIS, Model 42-760

Sch. No.	Description	Part No.
63.	Mica Condenser (250 mmfd)	60-125457
64.	Resistor (33,000 ohms)	33-333339
65.	Resistor (470,000 ohms)	33-447339
66.	Resistor (470,000 ohms)	33-447339
67.	Condenser (.005 mfd, 400 volts)	30-4610
68.	Condenser (.2 mfd, 200 volts)	30-4587
69.	Condenser (.004 mfd, 600 volts)	30-4623
70.	Output Transformer	32-8110
71.	Speaker	36-1453-4
	Cone Assembly (For Speaker 36-1453-4, with 3/4-inch voice coil and fiber spider)	36-4191
	Speaker Cable	41-3535
72.	Electrolytic Condenser (40 mfd, 350 volts)	30-2445
	Mtg. Plate	56-1643
73.	Field Coil (Replace Speaker 36-1453)	30-2465
74.	Electrolytic Condenser (15 mfd)	30-2465
	Mtg. Plate	27-9508
	Resistor (33,000 ohms)	33-333339
75.	Resistor (150,000 ohms)	33-416339
76.	Resistor (1 megohm)	33-510339
77.	Condenser (.003 mfd, 1500 volts)	30-4608
78.	Condenser (.003 mfd, 1500 volts)	30-4608
79.	Power Transformer (115/230 volts, 60 cycles)	32-8109
80.	Power Transformer (115 volts, 25 cycles)	32-8031
81.	Power Transformer Voltage Selector Switch	42-1569
	This Switch is not used on 115 volts, 25 cycle model	
82.	Resistor (150,000 ohms)	33-415339
83.	Resistor (150,000 ohms)	33-415339
84.	Power Line Cord	L-3274
	Power Plug	L-3276
85.	Band Switch	42-1660
	Band Indicator Drum	76-1246
	Drive Cord	31-2538
	Spring (Left Side)	28-8929
	Spring (Right Side)	28-8953
86.	Condenser (.01 mfd, 400 volts)	30-4572
87.	Pilot Lamp	34-2064E
	Socket Assembly	76-1236
	Rod	56-2133

Miscellaneous Parts		
Cabinet		10541A
Cabinet Back		27-9568
Mtg. Screw		W-2076
Dial Scale Assembly		76-1237
Dial Pointer		56-2134
Mtg. Screw		W-188
Knobs		27-4332
Rubber Washer (Chassis Mt.)		27-4571
Socket (76 tube)		27-6035
Socket (75 42E tubes)		27-6036
Socket (80 tube)		27-6044
Socket (Loktal-7J7E tube)		27-6129
Socket (Loktal-7A7E tube)		27-6158-2
Mtg. Dyellets		W-1650
Screw (Chassis Mtg.)		W-1345
Tube Shield (7A7E tube)		56-1566
Tube Shield Base (7A7E tube)		56-1567
Tube Shield (75 tube)		28-2726
Tube Shield Base (75 tube)		28-2725
Wire Panel (3 lugs)		38-9778
Wire Panel (4 lugs)		38-9809
Wire Panel (2 lugs)		38-9810
Wire Panel (3 lugs)		38-9817
Washer (Chassis Mtg.)		28-5114

* Beginning with production chassis marked Run 2 the wiring location of Compensators 8A, 8B, and 8C on the "B" wafer of the band switch was changed as shown in the boxed diagram on the schematic diagram. The part number of the compensator changes from No. 31-6412 to 31-6450. The wiring locations and part numbers of Condensers 9 and 10 also change as indicated in the sketch. Condenser No. 9 changes from part No. 30-1199, 50 mmfd, to No. 20-010417, 104 mmfd. Condenser 10 changes from part No. 30-1145, 25 mmfd, to 20-017017, 170 mmfd.

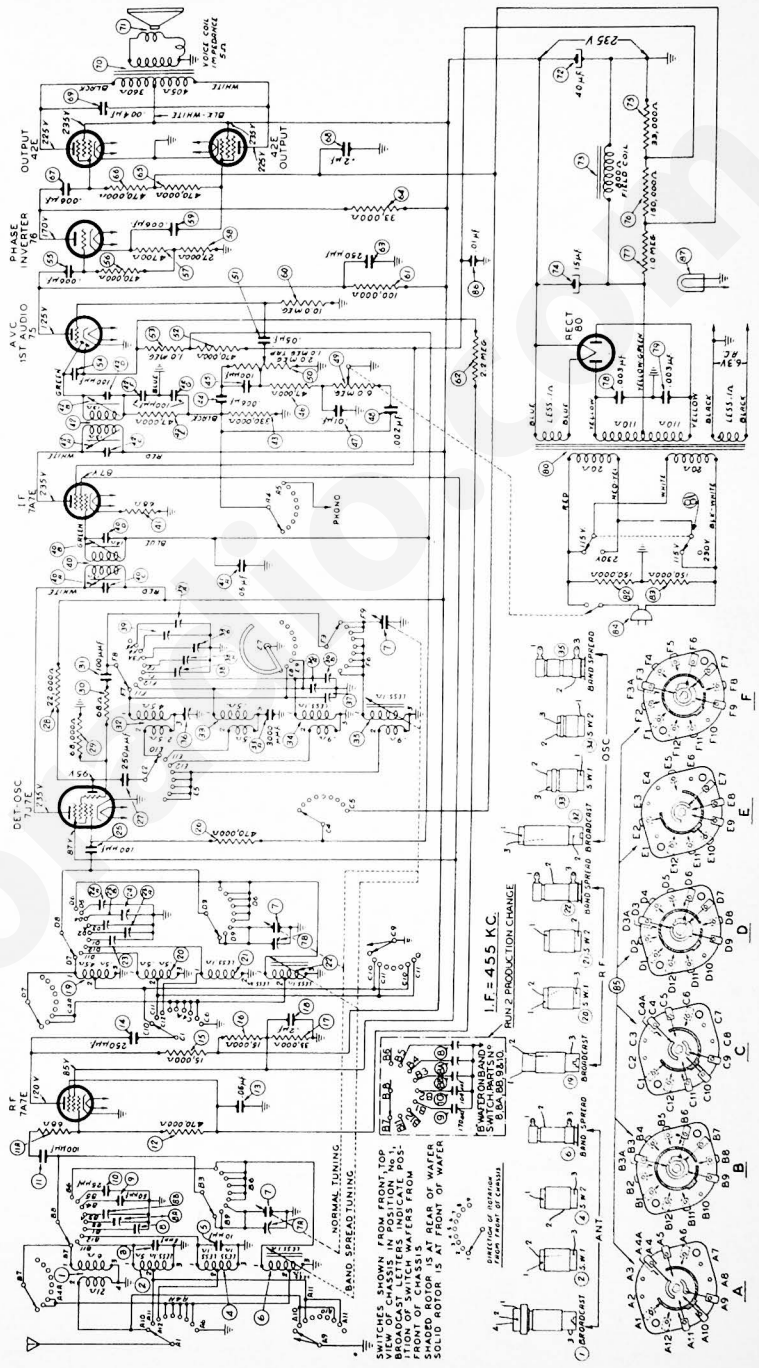


FIG. 4—SCHEMATIC DIAGRAM—Model 42-760, Code 121

The voltages indicated at the tube elements above 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.

REPLACEMENT PARTS—Model 42-761

Sch. No.	Description	Part No.	Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	Aerial Transformer (Broadcast)	32-3661	43A.	Oscillator Compensator (25 M Band —11.7 MC), Part of 43		81.	Condenser (.01 mfd, 400 volts)	30-4572
2.	Aerial Transformer (Police)	28-5002	43B.	Oscillator Compensator (19 M Band —15.2 MC), Part of 43		82.	Resistor (4700 ohms)	33-247339
3.	Mica Condenser (5 mmfd)	60-000357	44.	Osc. Compensator (1500 KC—Broadcast)	31-6308	84.	Insulator Tube	27-9506
4.	Aerial Transformer (Short Wave)	32-3667	45.	Oscillator Compensator (16 M Band —17.8 MC)	31-6415	85.	Resistor (1000 ohms, 1 watt)	33-210439
5.	Mica Condenser (10 mmfd)	60-010337	45A.	Oscillator Compensator (13 M Band —21.5 MC), Part of 45		86.	Resistor (220 ohms, 2 watt)	33-125336
6.	Band Spread Aerial Transformer	60-010337	46.	Condenser (.15 mfd, 200 volts)	30-4587	87.	Electrolytic Condenser (20 mfd, 150 volts), Part of 77	33-210439
7.	Mtg. Clip	76-1281	47.	1st I. F. Transformer	32-3859	88.	Electrolytic Condenser (20 mfd, 150 volts), Part of 77	33-210439
7A.	Tuning Compensator	31-2535	47A.	Primary Compensator (Iron Core), Part of 47	W-1949	89.	Electrolytic Condenser (40 mfd, 200 volts), Part of 83	30-4516
7B.	Compensator (S. W.—Aerial), Part of 7		47B.	Secondary Compensator (Iron Core), Part of 47		89X.	Electrolytic Condenser (16 mfd, 50 volts)	30-2506
7C.	Compensator (S. W.—R. F.), Part of 7		47C.	Condenser (60 mmfd), Part of 47		90.	Socket (Ballast Resistor)	27-6127
	Drive Cord	31-2536	47D.	Condenser (108 mmfd), Part of 47		90X.	Condenser (.02 mfd, 400 volts)	30-4516
	Drive Cord	31-2537	48.	Resistor (15,000 ohms)	33-315339	91.	Resistor (150 volts), Part of 77	33-247339
	Spring	28-8954	49.	Resistor (47,000 ohms)	33-347339	92.	Resistor (28 ohms)	33-3411
	Drive Drum	76-1244	50.	Resistor (150 ohms)	33-115339	93.	Resistor (1020 ohms)	33-3411
	Set Screw	W-2008	51.	Condenser (.05 mfd, 200 volts)	30-4609	94.	Part of 82	
	Rubber Mtg. Grommet	27-4596	52.	2nd I. F. Transformer	32-3858	94.	Pilot Lamp	34-2397E
	Tuning Shaft (Inside R. F. Unit)	76-1240	52A.	Mtg. Nut	W-1949	95.	Socket Assembly	76-1247
	Shaft Bushing (Threaded)	56-2122	52B.	Primary Compensator, Part of 52		95.	Power Switch, Part of 58	56-2133
	Core Clamp	56-2145	52C.	Secondary Compensator, Part of 52		96.	Ballast Resistor (115/230-volt operation)	
	Core Clamp	56-2151	52D.	Resistor (47,000 ohms), Part of 52		97.	Band Switch Assembly	33-3391
	Screw	97-0054	52E.	Condenser (100 mmfd), Part of 52			Band Indicator Drum	42-1711
	Cotter Pin	W-2196	52F.	Resistor (220,000 ohms)	30-4516		Drive Cord	76-1246
	Tuning Shaft and Bearing Outside Chassis)	76-1245	53.	Resistor (2.2 megohms)	33-422339		Spring (Left Side)	31-2538
	Rubber Disc	27-4272	54.	Resistor (100,000 ohms)	33-522339		Spring (Right Side)	28-8936
	Mtg. Screw	W-2258	55.	Resistor (100,000 ohms)	33-410339			28-8933
	Mtg. Screw (Condenser)	97-0028	56.	Resistor (1 megohm)	33-51339			
8.*	Compensator (31 M—Aerial)	31-6412	57.	Tone Control	33-5439			
8A.	Compensator (25 M—Aerial), Part of 8		58.	Mtg. Nut	W-2157			
8B.	Compensator (19 M—Aerial), Part of 8		58X.	Condenser (.1 mfd, 200 volts)	30-4586			
9.*	Silver Mica Condenser (50 mmfd)	30-1199	59.	Condenser (0.01 mfd, 400 volts)	30-4572			
10.*	Silver Mica Condenser (25 mmfd)	30-1145	60.	Resistor (47,000 ohms)	33-247339			
11.	Mica Condenser (100 mmfd)	60-119457	61.	Volume Control	33-5442			
12.	Resistor (220,000 ohms)	33-422339	62.	Mtg. Nut	W-2157			
13.	Condenser (.1 mfd, 200 volts)	30-4586	63.	Condenser (.002 mfd, 400 volts)	30-4516			
14.	Resistor (22 ohms)	33-02339	64.	Resistor (10 megohms)	33-610339			
15.	Resistor (10,000 ohms)	33-310339	65.	Resistor (330,000 ohms)	33-447339			
16.	Mica Condenser (250 mmfd)	60-125457	66.	Mica Condenser (250 mmfd)	60-125457			
17.	Condenser (.002 mfd, 400 volts)	30-4579	67.	Condenser (.005 mfd, 400 volts)	30-4610			
18.	R. F. Transformer (Broadcast)	32-3662	68.	Resistor (4700 ohms)	33-247339			
19.	R. F. Transformer (Police)	32-3665	69.	Resistor (4700 ohms)	33-247339			
20.	R. F. Transformer (Short Wave)	32-3668	70.	Resistor (27,000 ohms)	33-327339			
21.	R. F. Transformer (Band Spread)	32-3671	71.	Condenser (.01 mfd, 400 volts)	30-4572			
22.	Mtg. Core Assembly	76-1281	72.	Resistor (33,000 ohms)	33-33339			
23.	Compensator (31 M Band—R. F. Stage)	31-6412	73.	Resistor (330,000 ohms)	33-43339			
23A.	Compensator (25 M Band—R. F. Stage), Part of 23		74.	Resistor (330,000 ohms)	33-43339			
23B.	Compensator (19 M Band—R. F. Stage), Part of 23		75.	Condenser (.005 mfd, 400 volts)	30-4610			
24.	Compensator (16 M—R. F. Stage)	31-6413	76.	Resistor (150 ohms)	33-115436			
24A.	Compensator (13 M—R. F. Stage), Part of 24		77.	Electrolytic Condenser (20 mfd, 25 volts)	30-2435			
25.	Mica Condenser (100 mmfd)	60-110457		Mtg. Plate	27-9508			
26.	Condenser (.05 mfd, 200 volts)	30-4509	78.	Insulator Tube	27-9508			
27.	Resistor (220,000 ohms)	33-422339	79.	Condenser (.01 mfd, 400 volts)	30-4572			
28.	Resistor (330 ohms)	33-133339	80.	Output Transformer	32-3170			
29.	Condenser (.05 mfd, 200 volts)	30-4519		Speaker	36-15674			
30.	Condenser (.05 mfd, 200 volts)	30-4519		Core Assembly	30-4213			
31.	Resistor (68,000 ohms)	33-368339		Cable	41-3664			
32.	Mica Condenser (250 mmfd)	60-125457						
33.	Resistor (4700 ohms)	33-247339						
34.	Oscillator Choke Coil	32-3367						
35.	Resistor (22 ohms)	33-02339						
36.	Mica Condenser (100 mmfd)	60-110457						
37.	Oscillator Transformer (Broadcast)	32-3863						
38.	Oscillator Transformer (Broadcast)	28-5002						
38A.	Oscillator Compensator (S. W.—6 MC), Part of 38	31-6350						
38B.	Oscillator Compensator (S. W.—21 M MC), Part of 38							
39.	Oscillator Transformer (Police)	32-3666						
40.	Mica Condenser (3000 mmfd)	60-230124						
41.	Oscillator Transformer (Short Wave)	32-3669						
42.	Oscillator Transformer (Band Spread)	32-3672						
43.	Oscillator Compensator (31 M Band—9.7 MC)	76-1281						

* Beginning with production chassis marked Run 2 the wiring location of Compensators 8, 8A, and 8B on the "B" wafer of the band switch was changed as shown in the boxed diagram on the schematic diagram. The part number of the compensator changes from No. 31-6412 to 31-6410. The wiring locations and part numbers of Condensers 9 and 10 also change as indicated in the sketch. Condenser No. 9 changes from part No. 30-1199, 80 mmfd., to No. 20-010417, 104 mmfd. Condenser 10 changes from part No. 30-1145, 25 mmfd., to 20-017017, 170 mmfd.

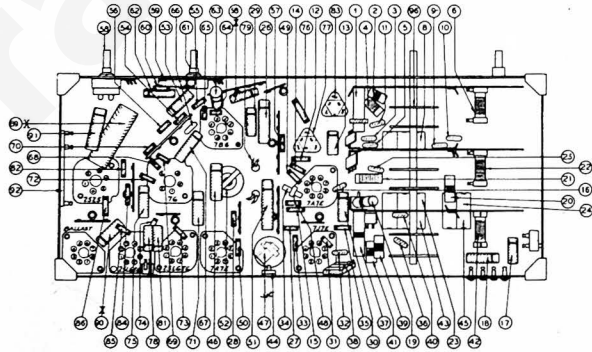


FIG. 5—PART LOCATIONS—UNDER CHASSIS, Model 42

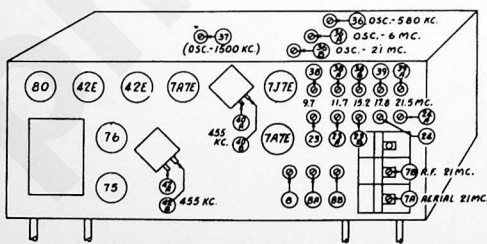


FIG. 6—LOCATIONS OF COMPENSATORS—TOP CHASSIS Model 42-760

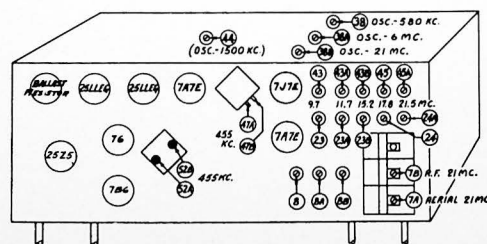


FIG. 7—LOCATIONS OF COMPENSATORS—TOP CHASSIS Model 42-761

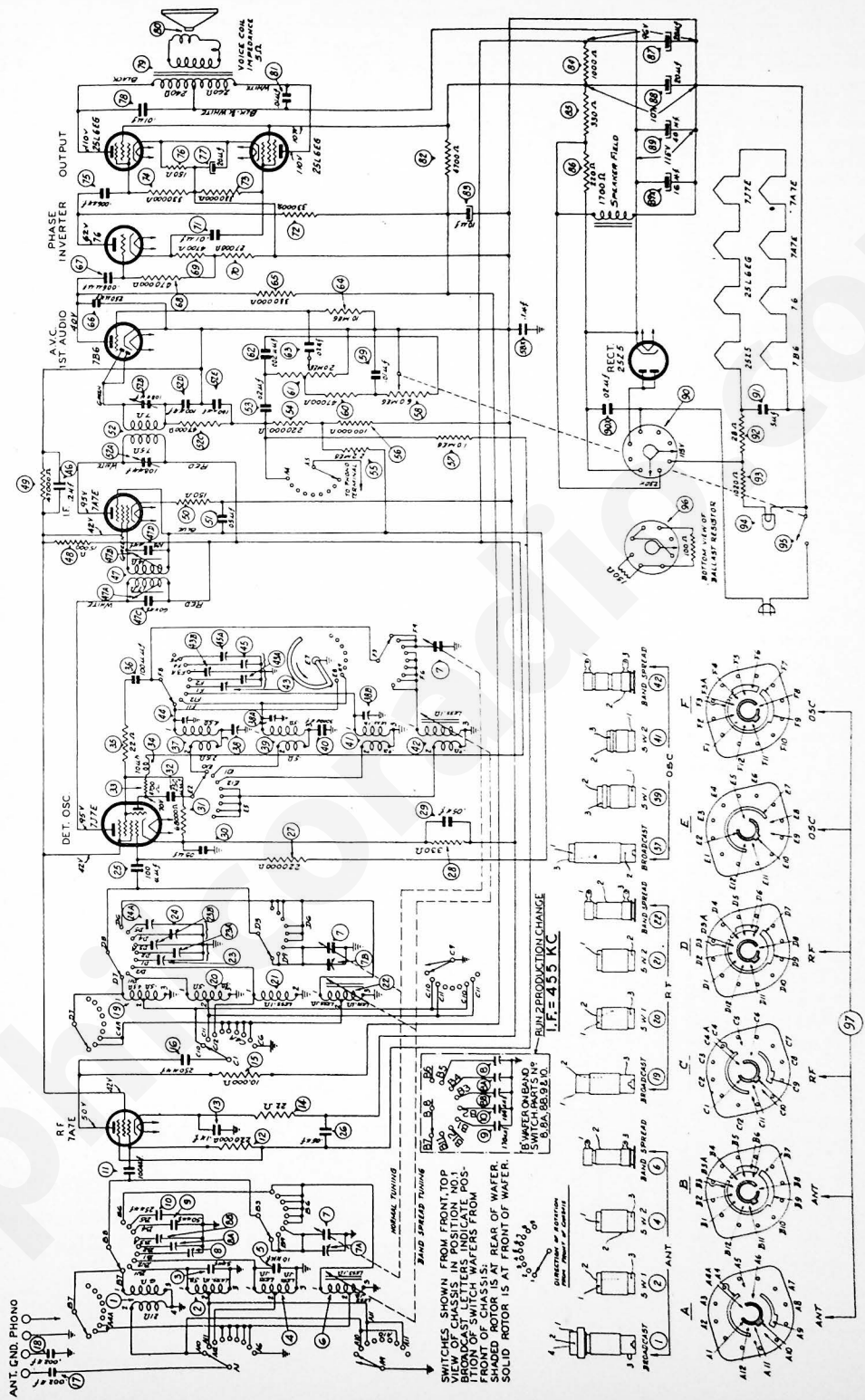


FIG. 8—SCHEMATIC DIAGRAM, Model 42-761

The voltages indicated at the tube elements above were measured with a 1,000 ohms per volt voltmeter. Philco Model 027, line voltage 117 volts, A. C. band switch (broadcast). No station being received.

REPLACEMENT PARTS—Model 42-762

Sch. No.	Description	Part No.	Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	Aerial Transformer (Broadcast)	32-3661	58.	Condenser (.01 mfd, 400 volts)	30-4572	91.	Band Switch Assembly	42-1711
2.	Aerial Transformer (Police)	28-5002	59.	Condenser (.002 mfd, 400 volts)	30-4579		Band Indicator Drum	76-1246
3.	Mica Condenser (5 mmfd)	32-3654	60.	Resistor (2.3 megohms)	33-533339		Drive Cord	31-2538
4.	Aerial Transformer (Short Wave)	60-006357	61.	Electrolytic Condenser (5 mfd, 150 volts)	30-2469		Spring (left side)	28-5936
5.	Mica Condenser (10 mmfd)	32-3667	62.	Resistor (100,000 ohms)	33-410339		Spring (right side)	28-5933
6.	Band Spread Aerial Transformer	60-010337	63.	Condenser (1 mfd, 200 volts)	30-4586		Miscellaneous Parts	
7.	Mtg. Clip	57-0985	64.	Resistor (330,000 ohms)	33-433339		Cabinet	10641A
7A.	Iron Core Assembly	76-1281	65.	Resistor (1 megohm)	33-510339		Back (Cabinet)	27-8968
7B.	Tuning Condenser	31-2636	66.	Condenser (.008 mfd, 400 volts)	30-4510		Mtg. Screw	W-2076
7A.	Compensator (S. W.—Aerial), Part of 7	31-6412	67.	Mica Condenser (250 mmfd)	60-125457		Dial Scale Assembly	76-1237
7B.	Compensator (S. W.—R. F.), Part of 7	31-2536	68.	Resistor (2.2 megohm)	33-522339		Dial Pointer	66-2134
	Drive Cord	31-2537	69.	Audio Impedance Transformer	32-8397		Dial Clamp	66-2137
	Drive Cord	31-2537	70.	Condenser (.01 mfd, 400 volts)	30-4572		Mtg. Screw	W-323
	Spring	28-8954	71.	Resistor (33 ohms)	33-033436		Knob	27-4322
	Cotter Pin	W-2196	72.	Resistor (33 ohms)	33-033436		Rubber Washer (Chassis Mtg.)	27-4571
	Drive Drum	76-1244	73.	Condenser (.004 mfd, 400 volts)	30-4578		Rubber Corner (Chassis Mtg.)	27-4564
	Set Screw	W-2008	74.	Output Transformer	32-8113		Rubber Washer (Vibrator Mtg., 3)	
	Rubber Mtg. Grommet	27-4596	75.	Speaker	36-1508-3		Rubber Washer (Vibrator Mtg., 6 required)	3914
	Tuning Shaft (Inside R. F. Unit)	76-1140		Cone Assembly (for Speaker 36-1508-3)	36-4161		Shield (7B7E tube)	27-4307
	Shaft Bushing (Threaded)	66-2152	76.	Pilot Lamp	34-2068E		Shield Clip	56-1567
	Carriage (Tuning Cores)	56-2145		Socket Assembly	76-1236		Screw (Chassis Mtg.)	W-1345
	Core Clamp	56-2151		Mtg. Rod	56-2133		Socket (49 tubes)	27-6035
	Screw	37-0054		Speed Nut	W-2263		Socket (Vibrator)	27-8038
	Cotter Pin	W-2196	77.	Resistor (1000 ohms)	33-210339		Socket (6GE6 tube)	27-8026
	Tuning Shaft and Bearing (Outside Chassis)	76-1245	78.	Resistor (1000 ohms)	33-210339		Socket (Lokaltal 7A5E)	27-6129
	Rubber Disc	27-4272	79.	Electrolytic Condenser (10 mfd., Part of 35)	33-210339		Socket (Lokaltal 7B7E-7C6 tubes)	27-6158-2
	Mtg. Screw	W-2269	80.	Electrolytic Condenser (20 mfd., Part of 35)			Mtg. Eyelet	W-1650
	Mtg. Screw (Condenser)	31-6412	81.	Condenser (.01 mfd, 1000 volts)	30-4598		Spacer (Vibrator Unit)	28-8306
8A.	Compensator (31 M—Aerial), Part of 8	31-6412	82.	"E" Choke	32-2925		Washer (Chassis Mtg.)	28-5114
8A.	Compensator (25 M—Aerial), Part of 8	31-6412	83.	Power Transformer	32-7682			
8B.	Compensator (19 M—Aerial), Part of 8	31-6412	84.	Vibrator	41-3222			
9.	Mica Condenser (50 mmfd)	30-1199		Rubber Cushion	38-8022			
10.	Mica Condenser (25 mmfd)	30-1145		"A" Choke	32-1954			
11.	Mica Condenser (100 mmfd)	60-110457	85.	Condenser (.5 mfd, 200 volts)	30-4296			
12.	Resistor (470,000 ohms)	33-447339	86.	Condenser (.5 mfd, 200 volts)	30-4296			
13.	Condenser (.05 mfd, 200 volts)	30-4609	87.	Power Switch, Part of 55	30-4296			
14.	Mica Condenser (250 mmfd)	60-110457	89.	Condenser (.2 mfd, 400 volts)	30-4594			
15.	Resistor (10,000 ohms)	33-310339	90.	Battery Cable	41-3540			
16.	R. F. Transformer (Broadcast)	32-3662						
17.	Mtg. Clip	28-5002						
17.	R. F. Transformer (Police)	32-3665						
17.	R. F. Transformer (Short Wave)	32-3668						
19.	R. F. Transformer (Band Spread)	32-3671						
	Mtg. Clip	57-0985						
20.	Core Assembly	76-1281						
20.	Compensator (31 M Band—R. F. Stage)	31-6412						
20A.	Compensator (25 M Band—R. F. Stage), Part of 20							
20B.	Compensator (19 M Band—R. F. Stage), Part of 20							
21.	Compensator (10 M Band—R. F. Stage)	31-6413						
21A.	Compensator (13 M Band—R. F. Stage), Part of 21							
22.	Resistor (100 ohms)	33-110339						
23.	Mica Condenser (100 mmfd)	60-110457						
24.	Resistor (470,000 ohms)	33-447339						
25.	Condenser (.05 mfd, 200 volts)	30-4609						
26.	Resistor (68,000 ohms)	33-368339						
27.	Mica Condenser (250 mmfd)	60-125457						
28.	Resistor (4,700 ohms)	33-247339						
29.	Oscillator Choke Coil	32-3367						
30.	Oscillator Transformer (Broadcast)	28-5002						
	Mtg. Clip	57-0985						
31.	Osc. Compensator (580 KC Broadcast)	31-6350						
31A.	Osc. Compensator (S. W. 1—6 MC), Part of 31							
	Osc. Compensator (S. W. 2—21 MC), Part of 31							
32.	Oscillator Transformer (Police)	32-3666						
33.	Mica Condenser (250 mmfd)	60-250124						
34.	Osc. Transformer (Short Wave)	32-3669						
35.	Electrolytic Condenser (5 mfd)	30-2468						
	Mtg. Plate	56-1543						
36.	Resistor (10,000 ohms)	33-310339						
37.	Osc. Transformer (Band Spread)	32-3672						
	Mtg. Clip	57-0985						
	Iron Core Assembly	76-1281						
38.	Osc. Compensator (1500 KC Broadcast)	31-6308						
39.	Osc. Compensator (31 M Band—9.7 MC)	31-6414						
39A.	Osc. Compensator (25 M Band—11.7 MC), Part of 39							
39B.	Osc. Compensator (19 M Band—16.2 MC), Part of 39							
40.	Osc. Compensator (16 M Band—17.8 MC)							
40A.	Osc. Compensator (13 M Band—21.5 MC), Part of 40	31-6415						
41.	Mica Condenser (100 mmfd)	60-110457						
42.	1st I. F. Transformer	32-3710						
43.	Condenser (.2 mfd, 200 volts)	30-4587						
44.	Resistor (15,000 ohms)	33-315339						
45.	Resistor (150 ohms)	33-115338						
46.	Resistor (1 megohm)	33-510339						
47.	2nd I. F. Transformer	32-3660						
47A.	Primary Compensator (Iron Core), Part of 47							
47B.	Secondary Compensator (Iron Core), Part of 47							
47C.	Condenser (108 mmfd), Part of 47							
47D.	Condenser (108 mmfd), Part of 47							
47E.	Condenser (100 mmfd), Part of 47							
47F.	Condenser (100 mmfd), Part of 47							
47G.	Resistor (47,000 ohms), Part of 47							
48.	Mica Condenser (100 mmfd)	60-110457						
49.	Condenser (.01 mfd, 400 volts)	30-4572						
50.	Resistor (250,000 ohms)	33-510339						
51.	Resistor (1 megohm)	33-510339						
52.	Resistor (470,000 ohms)	33-447339						
53.	Resistor (megohm)	33-510339						
54.	Condenser (.01 mfd, 400 volts)	30-4572						
	Tone Control	33-5445						
	Mtg. Nut	W-2167						
55.	Resistor (47,000 ohms)	33-347339						
57.	Volume Control	33-4438						
	Mtg. Nut	W-2167						

* Beginning with production chassis marked Run 2 the wiring location of Compensators 8, 8A, and 8B on the "B" waffer of the band switch was changed as shown in the boxed diagram on the schematic diagram. The part number of the compensator changes from No. 31-6412 to 31-6450. The wiring locations and part numbers of Condensers 9 and 10 also change as indicated in the sketch. Condenser No. 9 changes from part No. 30-1199, 50 mmfd, to No. 20-010417, 104 mmfd. Condenser 10 changes from part No. 30-1145, 25 mmfd, to 20-010717, 170 mmfd.

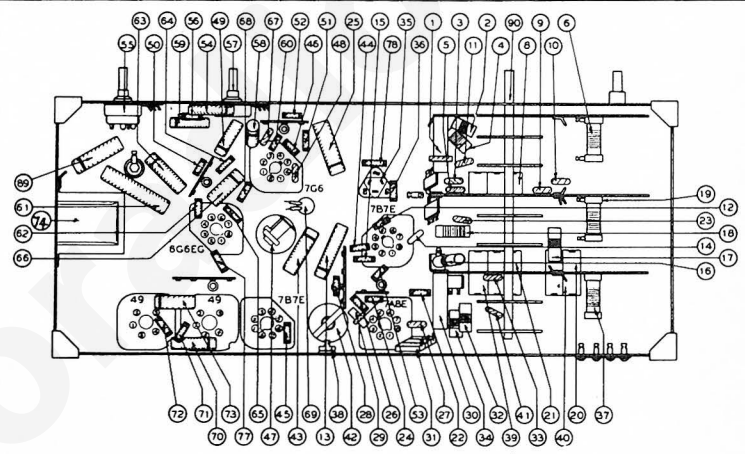


FIG. 9—LOCATIONS OF PARTS—UNDER CHASSIS, Model 42-762

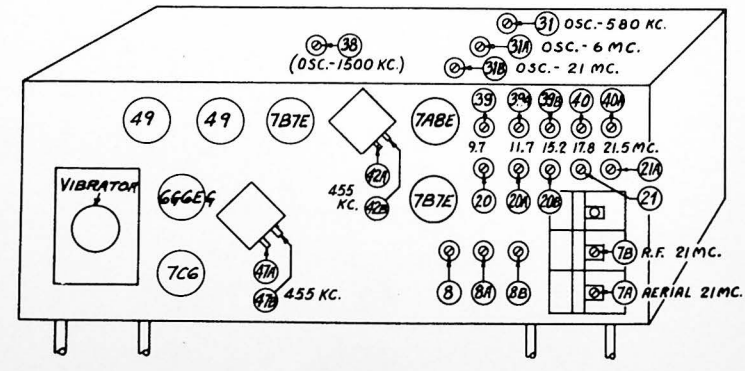


FIG. 10—LOCATIONS OF COMPENSATORS, TOP OF CHASSIS, Model 42-762

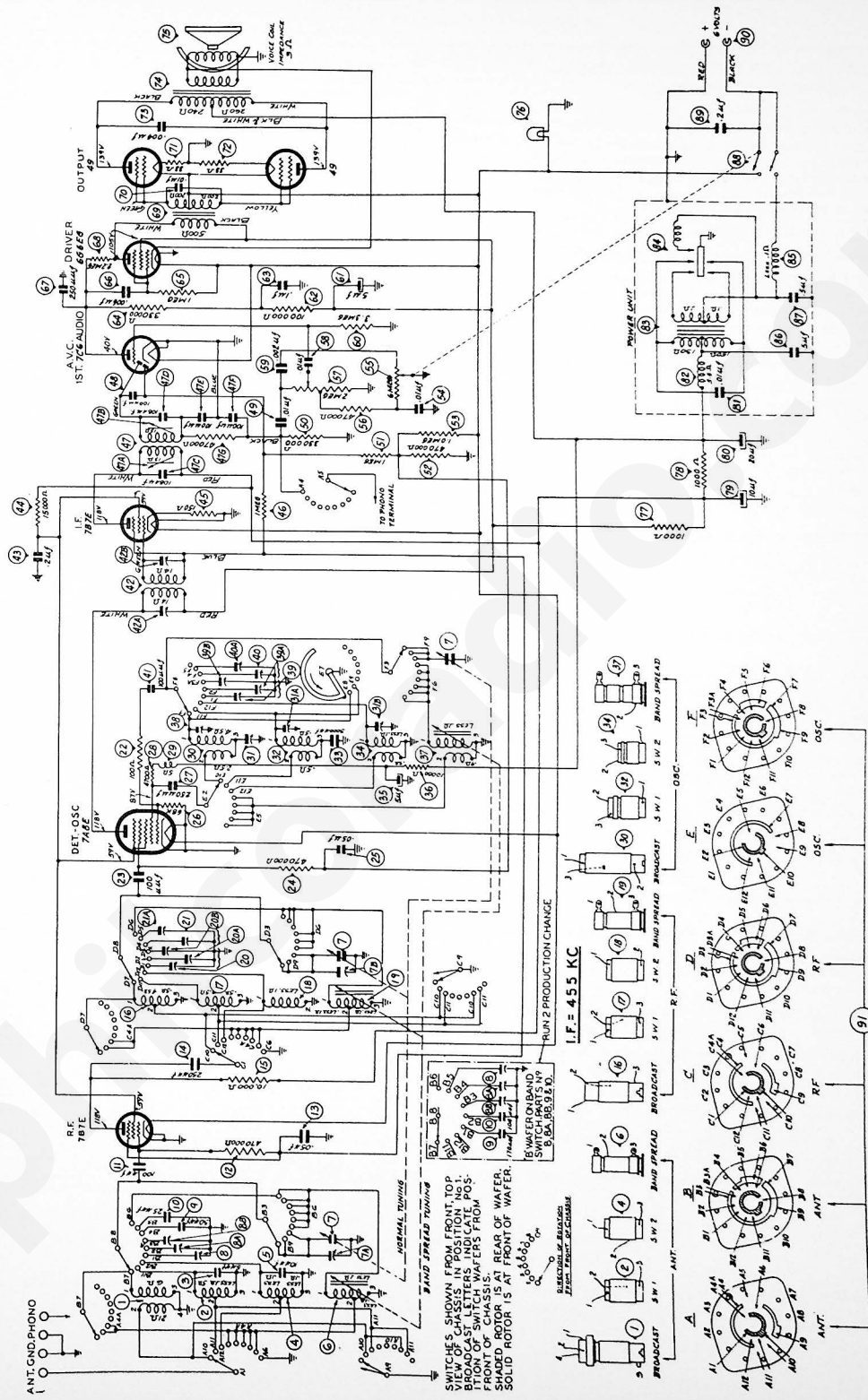


FIG. 11—SCHEMATIC DIAGRAM, Model 42-762

The voltages indicated at the tube elements above were measured with a 1000 ohms per volt voltmeter, Philco Model 627. 6-volt storage battery fully charged, band switch (broadcast). No station being received.

ALIGNING R. F. AND I. F. COMPENSATORS EQUIPMENT REQUIRED

1. Signal Generator, such as Philco Model 070, A. C. operated. This signal generator covers the frequencies required in adjusting the radios.
2. Indicating Device: To obtain maximum signal strength and accurate adjustment of the padders a vacuum tube voltmeter similar to Philco Models 027 and 028 is recommended. The signal generator also contains an audio output meter which may be used as an indicating device. The method of connecting either of these instruments is listed below.
3. Aligning Tools: Fiber handle screwdriver, Philco Part No. 45-2610.

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 and screen terminal of the output tube. Adjust the meter for the 0 to 30 volt A. C. scale.

After connecting the aligning meter, adjust the compensators in the order for each model as shown in the tabulation below. Locations of the compensators are shown in Figures 6, 7, 10.

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

ADJUSTING NORMAL TUNING RANGES

Operations In Order	SIGNAL GENERATOR				RECEIVER				Special Instruc- tions
	Output Con- nec- tions to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators for Maxi- mum Signal			
						42- 760	42- 761	42- 762	
1	Grid 747E	1 mfd	455 KC	580 KC	Range Switch Broadcast Volume "Max"	42A 42B 40A 40B	52A 52B 47A 47B	47A 47B 42A 42B	
2	Aerial Lead	400 ohms	21 MC	21 MC	Range Switch "S. W. 2"	36B 7B 7A	38B 7B 7A	31B 7B 7A	Notes B, C
3	Aerial Lead	400 ohms	6.0 MC	6.0 MC	Range Switch "S. W. 1"	36A	38A	31A	Roll Gang
4	Aerial Lead	200 mmfd	1500 KC	1500 KC	Range Switch "Broad- cast"	37	44	38	Roll Gang
5	Aerial Lead	200 mmfd	580 KC	580 KC	Range Switch "Broad- cast"	36	38	31	Roll Gang

ADJUSTING BAND SPREAD TUNING RANGES

Mechanical Adjustments: Before the padders of the band spread tuning ranges are adjusted, the iron cores of the antenna, R. F. and oscillator transformers must be mechanically set as follows:

1. Turn the band spread tuning control to the extreme counterclockwise position (lowest frequency).
2. Adjust location of "OSC" iron cores so that the end of the iron core is flush with the end of the transformer. With the "OSC" iron core in this position the antenna R. F. cores will be correctly located.
3. When installing a new oscillator transformer or core, make sure that the iron core slides freely in the transformer. It is important to do this to eliminate backlash in the tuning mechanism. If adjustment is necessary slightly move transformer in the direction required.

After mechanically setting the transformers and iron cores, adjust the padders as given in the following tabulation:

PROCEDURE FOR PRODUCTION RUN No. 1 CHASSIS

Opera- tions In Order	SIGNAL GENERATOR				RECEIVER				
	Output Con- nec- tions to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators Models			Special Instruc- tions
						42- 760	42- 761	42- 762	
1	Antenna and Ground	400 ohms	9.7 MC	9.7 MC	Band Selector Position "31M" on Dial	38 8 Note E	43 8 Note E	39 20 8 Note E	Note B, Note D
2	Antenna and Ground	400 ohms	11.7 MC	11.7 MC	Band Selector Position "25M" on Dial	38A 38A E	43A 38A E	39A 20A 8A E	Note D
3	Antenna and Ground	400 ohms	15.2 MC	15.2 MC	Band Selector Position "19M" on Dial	38E 23E E	43E 23E E	39E 20E 8E E	Note D
4	Antenna and Ground	400 ohms	17.5 MC	17.8 MC	Band Selector Position "14M" on Dial	39 24	45 24	40 21	Note D
5	Antenna and Ground	400 ohms	21.5 MC	21.5 MC	Band Selector Position "13M" on Dial	39A 24A	45A 24A	40A 21A	Note D

PROCEDURE FOR PRODUCTION RUN No. 2 CHASSIS

Opera- tions In Order	SIGNAL GENERATOR				RECEIVER				
	Output Con- nec- tions to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators Models			Special Instruc- tions
						42- 760	42- 761	42- 762	
1	Antenna and Ground	400 ohms	21.5 MC	21.5 MC	Band Selector Position "13M" on Dial	39A 24A 8	45A 24A 8	40A 21A 8	Note B, Note D
2	Antenna and Ground	400 ohms	17.8 MC	17.8 MC	Band Selector Position "16M" on Dial	39 24 3A	45 24 3A	40 21 8A	Note D
3	Antenna and Ground	400 ohms	15.2 MC	15.2 MC	Band Selector Position "19M" on Dial	38B 23B E	43B 23B E	39B 20B 8B E	Note D
4	Antenna and Ground	400 ohms	11.7 MC	11.7 MC	Band Selector Position "24M" on Dial	38A 23A E	43A 23A E	39A 20A	Note D
5	Antenna and Ground	400 ohms	9.7 MC	9.7 MC	Band Selector Position "31M" on Dial	38 23	43 23	39 20	Note D

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

NOTE B—In order to adjust the receiver correctly the pointer must be aligned to track the dial properly. To adjust the dial proceed as follows: With the tuning condenser closed (maximum capacity) set the dial pointer on the first marks at the low frequency end of the scales. Make sure that the stop mechanism in the band spread permeability tuner reaches its counterclockwise end of rotation at the same time that the tuning condenser is completely closed.

NOTE C—When adjusting "OSC" compensator be sure to tune in the fundamental signal (21 MC) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning the signal generator dial 510 KC above the fundamental signal, which will be 21.910 MC.

NOTE D—To make sure that the dial reads properly after adjusting the compensators with the signal generator as outlined above, a known station on each band near the adjusting frequency should be tuned in with the spread band tuning control. If the dial reading is incorrect, adjust the oscillator compensators on each band until the stations are heard at the correct points on the dial. After adjusting the oscillator compensators to the correct frequency of the known station, the "antenna" and R. F. compensators should be adjusted to maximum signal.

ALTERNATIVE METHOD—Locate a known station near the center of each spread band and "Zero Beat" the signal generator with it at the time of aligning the band. This makes available a signal of adjustable strength and known frequency. This method will be found to be simpler when conditions make its use possible, because it is much easier to align a receiver to a strong signal.

NOTE E—The band spread compensator aligning procedure for Run 2 chassis differs from Run 1. The two procedures are listed above. Compensators 8, 8A and 8B on chassis marked Run 2 is used to adjust the 21.5, 17.8 and 15.2 MC bands, whereas in Run 1 chassis these compensators are used to adjust the 9.7, 11.7 and 15.2 MC bands. The locations of the padders remain the same as Run 1 chassis shown in Figures 6, 7 and 10.