

Models 42-842, 42-843, 42-844

SPECIFICATIONS

Models 42-842, 42-843 and 42-844, are seven (7) tube portable superheterodyne radios operated by batteries or A.C.—D.C. current. These models are similar with the exception of the cabinets.

Features included in each model are: The Philco built-in low impedance loop aerial; tuning band from 540 to 1600 K.C.; two I. F. amplifier stages, beam power pentode audio output stage; Philco Loktal tubes, and a highly sensitive permanent magnet speaker.

PHILCO TUBES USED: 1LE3, converter; 1LE3, oscillator; two, 1LN5, I. F. amplifiers; 1LH4, 2nd detector, 1st audio, A. V. C.; 1LB4, audio output, and a 117Z6G rectifier.

INTERMEDIATE FREQUENCY: 455 K.C.

POWER SUPPLY: 115 volts, A.C. or D.C. or two Philco "A" batteries, type P-100, and two Philco "B" batteries, type P-200.

For portable battery operation wrap the power line cord around its holder clamp on the back of the cabinet and insert the plug end into the socket provided on the chassis.

To operate on 115 volts A.C.—D.C., remove the power line cord plug from the socket on the chassis and insert into a power receptacle.

CABINET DIMENSIONS:	Height	Width	Depth
Model 42-842	10 $\frac{3}{4}$ "	13 $\frac{1}{2}$ "	6 $\frac{1}{4}$ "
Model 42-843	10 $\frac{3}{4}$ "	13 $\frac{1}{2}$ "	7"
Model 42-844	11 $\frac{1}{8}$ "	13 $\frac{3}{8}$ "	7 $\frac{1}{4}$ "

OUTSIDE AERIAL AND GROUND

Under ordinary operating conditions, an outside aerial or ground is not required with these models. In some locations, however, such as steel reinforced buildings, remote camps and other shielded areas where signal strength is weak, an additional aerial should be used. To connect a regular outside aerial connections are provided on the side of the cabinet for inserting a special aerial coupler, Part No. 76-1230.

The PHILCO Auxiliary Plug-in Loop Aerial, Part No. 45-2878, may be also plugged into the outside aerial connections. This type of aerial is ideal for portable use (on trains and in hotels) or semi-permanent installations. Instructions are supplied with the auxiliary aerial for installation.

ALIGNING R. F. AND I. F. COMPENSATORS

The following procedure covers both Models in this Bulletin

EQUIPMENT REQUIRED

1. SIGNAL GENERATOR, such as Philco Model 070 A.C. operated or Model 177 battery operated. These signal generators cover a frequency range required in adjusting these models.
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. These instruments also contain 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

AUDIO OUTPUT METER: If an audio output meter is used, connect it across the plate and screen terminals of the output tubes. Adjust the meters to use the 0 to 10 scale. Terminal No. 1 on the rear of the chassis which connects to the speaker is also provided for connecting the audio output meter. If this terminal is used, the lowest scale of the meter should be used when aligning.

VACUUM TUBE VOLTMETER: If a vacuum tube voltmeter is used as an aligning indicator, the negative (—) terminal is connected to the A. V. C. circuit of the receiver through a 2 megohm resistor. The positive (+) terminal is connected to the chassis or 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 loop tuning condenser stator lug which connects to the grid of the first detector tube. The ground or low side of the signal generator is connected to the chassis of the receiver.

When aligning the R. F. padders of the portable models a loop aerial is made from a few turns of wire and connected to the signal generator output terminals. The signal generator is then placed a few feet from the set. The loop aerial of the receiver should be assembled in the cabinet together with the battery when adjusting the R. F. padders.

MODELS 42-842, 42-843, 42-844

These models may be adjusted when operated by battery or 115 volts A.C.—D.C. power.

Operations In Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1	See Paragraph on Signal Generator above	455 K.C.	540 K.C.	Vol. Max.	26A, 25A, 25B, 15A, 15B	Note A
2	Use Loop on Generator as above	1500 K.C.	1500 K.C.	Vol. Max.	4A, 4A	
3	Use Loop on Generator as above	580 K.C.	580 K.C.	Vol. Max.	7A, Note B	Roll Tuning Condenser to Max.
4	Use Loop on Generator as above	Repeat Operation 2	Repeat Operation 2	Repeat Operation 2		

NOTE A: DIAL CALIBRATION—Before adjusting the R. F. padders the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser in the closed position (maximum capacity), set the dial pointer on the small dot below 540 K.C.

NOTE B—Roll tuning condenser as compensator 7A is being adjusted until maximum output is indicated on output meter.

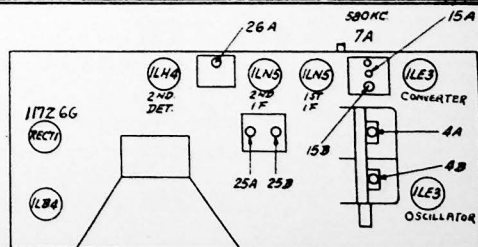
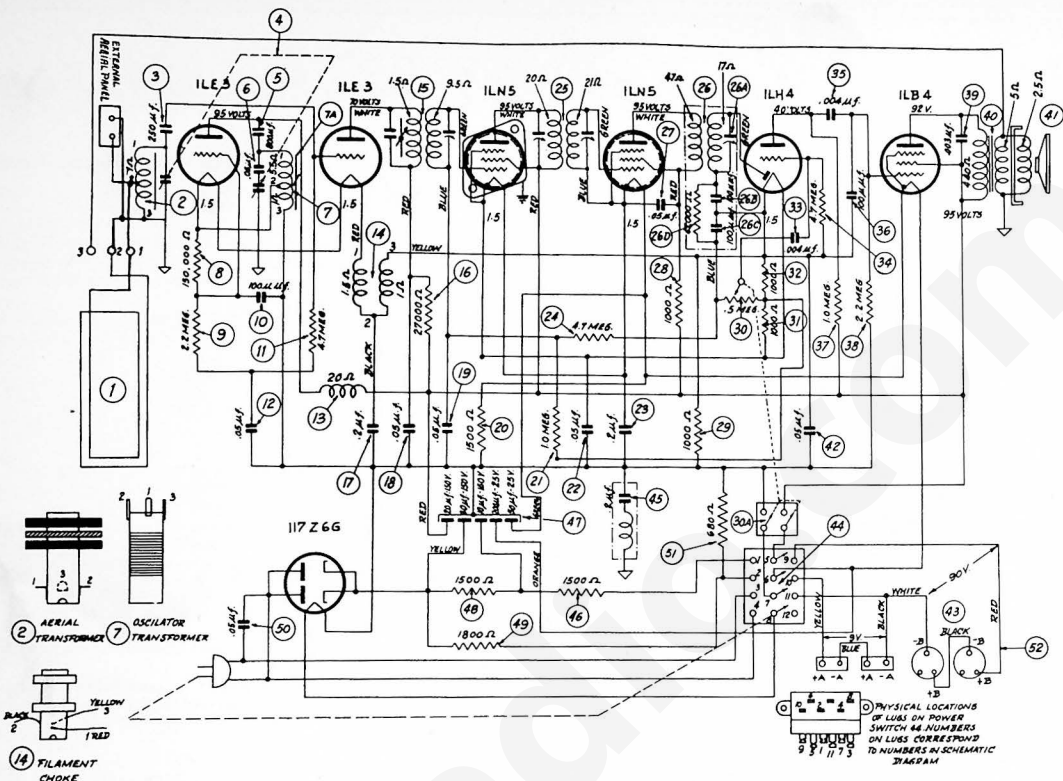


FIG. 1. LOCATIONS OF COMPENSATORS.



THE TUBE SOCKET VOLTAGES INDICATED ON THE DIAGRAM WERE MEASURED WITH A 1,000 OHM PER VOLTMETER, PHILCO MODEL 027, USING A 117 VOLT A.C. POWER SUPPLY WHEN MEASURED USING THE DRY BATTERIES, THE VOLTAGES WILL BE APPROXIMATELY 5 VOLTS LESS THAN SHOWN.

SCHEMATIC DIAGRAM, MODELS 42-842, 42-843, 42-844

REPLACEMENT PARTS

SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.
1.	Loop Aerial	76-1216	35.	Condenser (.004 mfd., 400 volts)	30-4578			
2.	Aerial Transformer	W-2071	36.	Mica Condenser (100 mfd.)	60-110157			
3.	Clip	32-3622	37.	Resistor (1 megohm)	33-510339			
4.	Mica Condenser (250 mfd.)	28-5002	38.	Resistor (2.2 megohms)	33-522339			
		60-125157	39.	Condenser (.003 mfd., 1,000 volts)	30-4469			
5.	Tuning Condenser	31-2530	40.	Output Transformer	32-8169			
	Rubber Grommet (Mtg.)	27-4596	41.	Cone Assembly (for Speaker 36-1540)	35-4201			
	Spacers (Mtg.)	28-5665	42.	Condenser (.05 mfd., 200 volts)	30-4519			
	Spring (Drive Cord)	28-8882	43.	Battery Plug and Cable	41-3570			
	Tuning Shaft	56-6132	44.	Automatic Power Change Over Switch	42-1650			
	"O" Washer	57-0127	45.	Condenser (2 mfd., 200 volts)	76-1227			
	Drive Cord	31-2380	46.	Resistor (1,500 ohms)	33-215339			
5.	Mica Condenser (800 mfd.)	60-180137	47.	Electrolytic Condenser	30-2498			
6.	Condenser (.05 mfd., 200 volts)	30-4519	48.	Clamp	56-1466			
7.	Oscillator Transformer	32-3685	49.	Resistor (1,500 ohms)	33-215339			
7a.	57-2325 is iron core on coil		49.	Resistor (1,800 ohms)	33-3424			
8.	Resistor (50,000 ohms)	33-415339	50.	Condenser (.05 mfd., 200 volts)	30-4519			
9.	Resistor (2.2 megohms)	33-522339	51.	Resistor (680 ohms)	33-168339			
10.	Mica Condenser (100 mfd.)	60-110157	52.	Battery Cable	41-3570			
11.	Resistor (4.7 megohms)	33-547339						
12.	Condenser (.05 mfd., 200 volts)	30-4519						
13.	Oscillator Choke	32-3615						
14.	Filament Choke	32-3632						
15.	1st I. F. Transformer	32-8620						
	Pin Nut (Mtg.)	W-1949						
16.	Resistor (27,000 ohms)	33-327339						
17.	Condenser (.2 mfd., 200 volts)	30-4587						
18.	Condenser (.05 mfd., 200 volts)	30-4519						
19.	Condenser (.05 mfd., 200 volts)	30-4519						
20.	Resistor (1,500 ohms)	33-215339						
21.	Resistor (1 megohm)	33-510339						
22.	Condenser (.05 mfd., 200 volts)	30-4519						
23.	Condenser (.2 mfd., 200 volts)	30-4587						
24.	Resistor (4.7 megohms)	33-547339						
25.	2nd I. F. Transformer	32-8621						
	Pin Nut (Mtg.)	W-1949						
26.	3rd I. F. Transformer	32-3631						
	Pin Nut (Mtg.)	W-1949						
27.	Condenser (.05 mfd., 200 volts)	30-4519						
28.	Resistor (1,000 ohms)	33-210339						
29.	Resistor (1,000 ohms)	33-210339						
30.	Volume Control	W-5436						
	Pin Nut (Mtg.)	W-2157						
30A.	Switch							
31.	Resistor (1,000 ohms) (Part of 30)	33-210339						
32.	Resistor (1,000 ohms)	33-210339						
33.	Condenser (.004 mfd., 400 volts)	30-4578						
34.	Resistor (4.7 megohms)	33-547339						

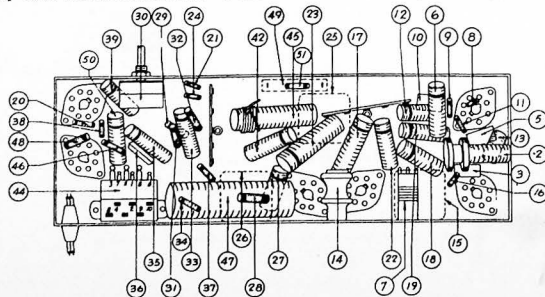


FIG. 2. LOCATIONS OF PARTS — UNDERSIDE OF CHASSIS.