



MODELS 407 and 408

SPECIFICATIONS

MODELS 407 and 408 are Five (5) tube Portable A.C.-D.C. or battery operated Superheterodyne radios with a tuning range from 540 to 1600 K.C. In addition these models include: A built-in loop aerial; pentode audio output stage; highly sensitized permanent magnet speaker; and Philco super-efficient Loktal tubes.

PHILCO TUBES USED:

Model 407—1-1LA6E Oscillator Converter, 1-1LN5E I.F. Amplifier, 1-1LH4 2nd Detector, First Audio, A.V.C., 1-1LA4E Audio Output, 1-117Z6G Rectifier.

Model 408—1-1LA6E Oscillator Converter, 1-1LN5E I.F. Amplifier, 1-1LD5E 2nd Detector, First Audio, A.V.C., 1-3Q5EG Audio Output, 117Z6G Rectifier.

INTERMEDIATE FREQUENCY—460 K.C.

POWER SUPPLY—115 Volts A.C. or D.C. and a Philco combination "A-B" battery. Model 407T uses P60A8F4; Model 408T uses P841.

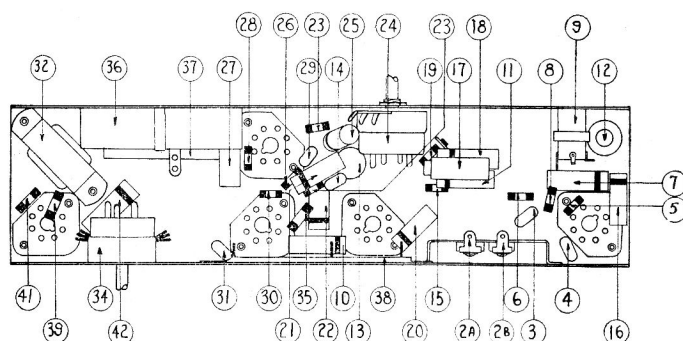
For Portable battery operation, put the power line cord in the cabinet, and turn the switch inside the cabinet to "battery".

To operate on 115 volts A.C. or D.C., insert line cord into power receptacle, and turn switch inside the cabinet to "electric".

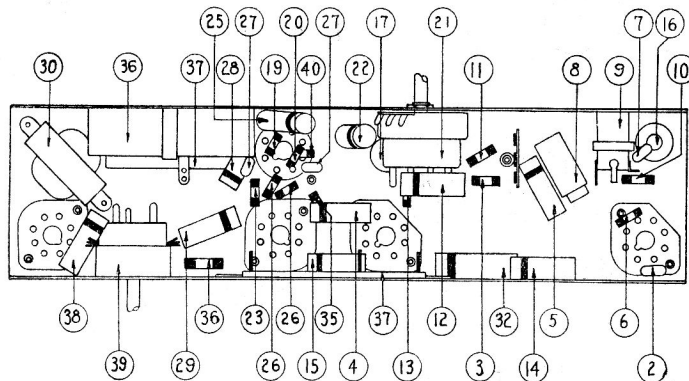
AERIAL AND GROUND

Under ordinary operating conditions, an outside aerial or ground is not required with Models 407 and 408. 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 inside the cabinet. Connect the aerial to the white wire and the ground to the black wire.

Additional outside aerial connections (Jacks) are located on the side of the cabinet. These are provided for the PHILCO Auxiliary Plug-in Loop Aerial, Part No. 45-2808. 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.



PART LOCATIONS FROM UNDERSIDE OF CHASSIS
MODEL 407



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MODEL 408

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 177 battery operated. This signal generator covers a frequency range from 115 to 32,500 K.C.
2. **INDICATING DEVICE**: To obtain maximum signal strength and accurate adjustment of the padders, a vacuum tube voltmeter similar to

Philco Model 028 is recommended. This instrument 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**: Fibre handle screwdriver, Philco Part No. 45-2610.

Connecting Aligning Meters

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.

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 oscillator 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 407 and 408

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	460 K.C.	540 K.C.	Vol. Max.		Note A
2	Use Loop on Generator as above	1500 K.C.	1500 K.C.	Vol. Max.		

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 550 K.C.

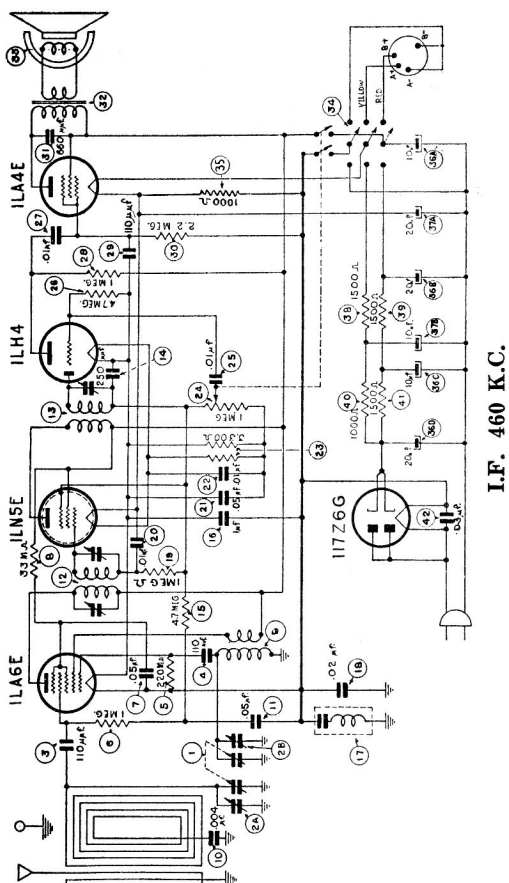
REPLACEMENT PARTS LIST — MODEL 407

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Tuning Condenser	31-2438	31	Mica Condenser (660 mmfd.)	60-166137
2	Compensator	31-2400	32	Output Transformer	32-8100
2B	Compensator (Part of 2A)	31-6346	33	Voice Coil and Cone Assembly	36-4158
3	Mica Condenser (110 mmfd.)	60-111157	34	Switch	22-0001
4	Mica Condenser (110 mmfd.)	60-111157	35	Resistor (1000 ohm, ½ watt)	33-210344
5	Resistor (220,000 ohms, 1/3 watt)	33-422244	36A, 36B, 36C, 36D	Electrolytic Condenser	10-0003
6	Resistor (1 megohm, 1/3 watt)	33-510244	37A, 37B	Electrolytic Condenser	30-2453
7	Tubular Cond. (.05 mfd., 400v)	30-4518	38	Flament Resistor	33-3387
8	Resistor (33,000 ohms, 1/3 watt)	33-338244	39	Resistor (1500 ohms, ½ watt)	33-215344
9	Oscillator Coil	32-3424	40	Flament Resistor (Part of 38)	.....
10	Tubular Condenser (.004 mfd., 400v)	30-4578	41	Resistor (1500 ohms, ½ watt)	33-215344
11	Tubular Cond. (.05 mfd., 400v)	30-4518	42	Tubular Cond. (.03 mfd., 400v)	.....
12	First I.F. Transformer	32-3384			
13	Second I.F. Transformer	32-3266	Socket (Loktal)	.....	27-6137
14	Mica Condenser (250 mmfd.)	60-129517	Tuning Cond. Mounting Bracket	.....	31-2379
15	Resistor (4.7 megohms, 1/3 watt)	33-547244	Tuning Shaft	.....	36-6080
16	Tubular Cond. (.1 mfd., 400 v)	30-4455	Complete Speaker	.....	36-1506
17	Choke and Condenser Assembly	38-9957	Drive Cord	.....	31-2380
18	Tubular Condenser (.02 mfd., 400v)	30-4516	Spring	.....	28-8382
19	Resistor (1 megohm, 1/3 watt)	33-510224	Coil Clip	.....	28-5002
20	Tubular Cond. (.01 mfd., 400v)	30-4572	Elec. Condenser Clamp	.....	56-1466
21	Tubular Cond. (.05 mfd., 200v)	30-4519	Battery Cable	.....	41-3526
22	Tubular Cond. (.01 mfd., 400v)	30-4572	A.C. Cord	.....	03-0001
23	Resistor (3300 ohms, 1/3 watt)	33-233244	Dial and Bracket Assembly	.....	318-2056
24	Volume Control	33-5390	Pointer	.....	27-4368
25	Tubular Cond. (.01 mfd., 400v)	30-4572	Cabinet	.....	10473A
26	Resistor (4.7 megohms, 1/3 watt)	33-547244	Loop Terminal	.....	27-6141
27	Tubular Cond. (.01 mfd., 400v)	30-4572	Fibre Insulator	.....	07-0007
28	Resistor (1 megohm, 1/3 watt)	33-510244	End Plate	.....	56-1652
29	Mica Condenser (110 mmfd.)	60-111157	Knob Assembly	.....	27-4970
30	Resistor (2.2 megohms, 1/3 watt)	33-522244	Knob (Batt.-Elec. Sw.)	.....	27-4332

REPLACEMENT PARTS LIST — MODEL 408

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1	Tuning Condenser	31-2509	31	V.C. and Cone Assembly	36-4175
2	Mica Condenser (250 mmfd.)	30-125157	32	Tubular Condenser (.1 mfd. 400v)	30-4455
3	Resistor (1 megohm, 1/3 watt)	33-510244	33	Electrolytic Condenser	10-0003
4	Tubular Cond. (.05 mfd. 200v)	30-4519	34	Electrolytic Condenser	30-2453
5	Tubular Cond. (.02 mfd. 400v)	30-4516	35	Resistor (1000 ohms, 1/2 watt)	33-210344
6	Resistor (220,000 ohms, 1/3 watt)	33-422244	36	Resistor (3300 ohms, 1/3 watt)	33-293244
7	Mica Cond. (100 mmfd.)	60-110157	37	Filament Resistor (1000, 1500 ohms)	33-4510
8	Choke and Condenser Assembly	38-9957	38	Tubular Cond. (.03 mfd. 400v)	30-5407
9	Oscillator Transformer	32-3424	39	Switch	22-1071
10	Resistor (33,000 ohms, 1/3 watt)	33-338244	40	Resistor (4.7 megohms, 1/3 watt)	33-547244
11	Resistor (1 megohm, 1/3 watt)	33-510244		Socket (Octal)	07-0036
12	Tubular Cond. (.05 mfd. 200v)	30-4519		Socket Adapter	56-2056
13	Resistor (2.2 megohms, 1/3 watt)	33-522244		Socket (Loktal—1 required)	27-6151
14	Tubular Condenser (.05 mfd. 200v)	30-4519		Socket (Loktal—2 required)	27-6159-2
15	Tubular Cond. (.05 mfd. 200v)	30-4519		A.C. Cord	03-0001
16	First I.F. Transformer	32-3384		Pointer	27-4868
17	Second I.F. Transformer	32-3266		Dial	27-5579
18	Mica Condenser (250 mmfd.)	60-125157		Complete Speaker	36-1526-3
19	Resistor (3300 ohms, 1/2 watt)	33-233344		Spring	28-8882
20	Resistor (3300 ohms, 1/2 watt)	33-233344		Bracket (Mounting Tuning Cond.)	31-2379
21	Volume Control	33-5390		Drive Cord	31-2380
22	Tubular Cond. (.004 mfd. 400v)	30-4578		Battery Cable and Plug	41-3592
23	Resistor (4.7 megohm, 1/3 watt)	33-547244		Cond. Clamp	56-1468
24	Resistor (2.2 megohm, 1/3 watt)	33-522244		Dial Bracket	56-1651
25	Tubular Cond. (.05 mfd. 200v)	30-4519		Shaft (Tuning)	56-6080
26	Resistor (2.2 megohm, 1/3 watt)	33-522244		Cabinet	1-0475A
27	Mica Condenser (100 mmfd.)	60-110157		Fibre Insulator	07-0007
28	Tubular Cond. (.004 mfd. 400v)	30-4578		Knob Assembly (1 required)	27-4382
29	Tubular Cond. (.006 mfd. 400v)	30-4529		Knob Assembly (2 required)	27-4970
30	Output Transformer	32-8139			

SCHEMATIC DIAGRAM — MODEL 407



SCHEMATIC DIAGRAM — MODEL 408

