

PHILCO-TROPIC RADIO MODEL 48-862

SPECIFICATIONS

CABINET	Wood, walnut finish
CIRCUIT	Seven-tube superheterodyne
FREQUENCY RANGES	
B'DC'ST (Broadcast)54-1.75 mc.
SW 1 (Short Wave)	2.3-7.3 mc.
SW 2 (Short Wave)	7.0-22 mc.
31 M (Band Spread)	9.4-9.9 mc.
25 M (Band Spread)	11.4-12.0 mc.
19 M (Band Spread)	14.8-15.6 mc.
16 M (Band Spread)	17.3-18.2 mc.
13 M (Band Spread)	20.9-21.9 mc.
POWER INPUT	3 amperes at 6.3 volts, d.c.
INTERMEDIATE FREQUENCY	455 kc.
PHILCO TUBES (7)	7B7(2), 7J7, 7C6, 6G6G, 49(2)

ALIGNMENT PROCEDURE

SET THE VOLUME CONTROL TO MAXIMUM.

DIAL POINTER—Turn the tuning condensers to the full-mesh position. Adjust the pointer to the index mark, located below ".54".

OUTPUT METER—Connect across the speaker voice-coil terminals.

SIGNAL GENERATOR—Connect the ground lead to the radio chassis, and connect the output lead as indicated in the chart. Use modulated output.

OUTPUT LEVEL—During alignment, adjust the signal-generator output to maintain the output-meter indication below 1.5 volts.

MODEL 48-862

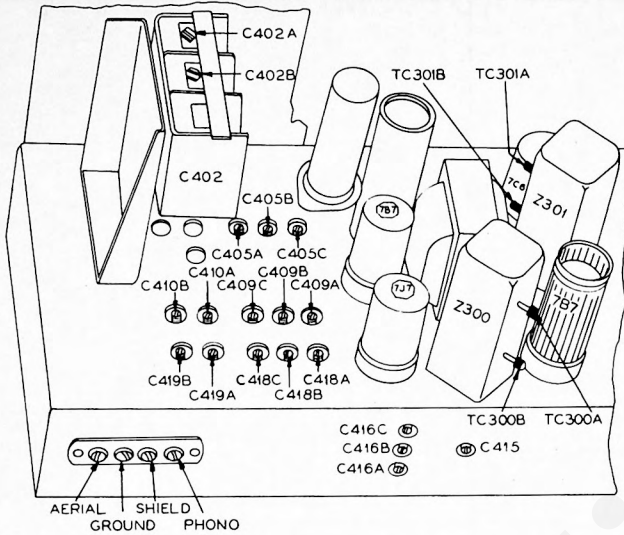


Figure 1. Top View, Showing Trimmer Locations

ALIGNMENT CHART

STEP	SIGNAL GENERATOR		RADIO			ADJUST
	CONNECTIONS TO RADIO	DIAL SETTING	BAND-SWITCH SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	
1	Through .05-mf. condenser to stator of C402 (center section of tuning condenser).	455 kc.	B'DC'ST	C402 fully meshed.	Adjust trimmers, in order given, for maximum output; then repeat.	TC301B TC301A TC300B TC300A
2	Through 400-ohm resistor to aerial terminal.	21.0 mc.	SW 2	21.0 mc.	Adjust to first peak from loose (out) position. Image should be heard with radio tuned to 20.1 mc.	C416C
3	Same as step 2.	21.0 mc.	SW 2	21.0 mc.	Adjust for maximum output. Repeat adjustment of C416C, C402B, and C402A.	C402B* C402A*
4	Same as step 2.	5.8 mc.	SW 1	5.8 mc.	Adjust to first peak from loose (out) position.	C416B*
5					Set 1/2 turn from tight.	C416A
6	Through 200-mmf. condenser to aerial terminal.	1500 kc.	B'DC'ST	1500 kc.	Adjust for maximum output.	C415*
7	Same as step 6.	580 kc.	B'DC'ST	580 kc.	Adjust for maximum output. Repeat steps 6, 7, and 8.	C416A*
8	Through 400-ohm resistor to aerial terminal.	21.5 mc.	13 M	21.5 mc.	Adjust C419B to first peak from loose (out) position. Adjust C410B and C405C for maximum output. Repeat.	C419B C410B* C405C*
9	Same as step 8.	17.8 mc.	16 M	17.8 mc.	Adjust C419A to first peak from loose (out) position. Adjust C410A and C405B for maximum output. Repeat.	C419A C410A* C405B*
10	Same as step 8.	15.2 mc.	19 M	15.2 mc.	Adjust C418C to first peak from loose (out) position. Adjust C409C and C405A for maximum output. Repeat adjustment of C409C and C405A.	C418C C409C* C405A*
11	Same as step 8.	11.7 mc.	25 M	11.7 mc.	Adjust C418B to first peak from loose (out) position. Adjust C409B for maximum output.	C418B C409B*
12	Same as step 8.	9.7 mc.	31 M	9.7 mc.	Adjust C418A to first peak from loose (out) position. Adjust C409A for maximum output.	C418A C409A*

* Adjust for maximum while rocking tuning control.

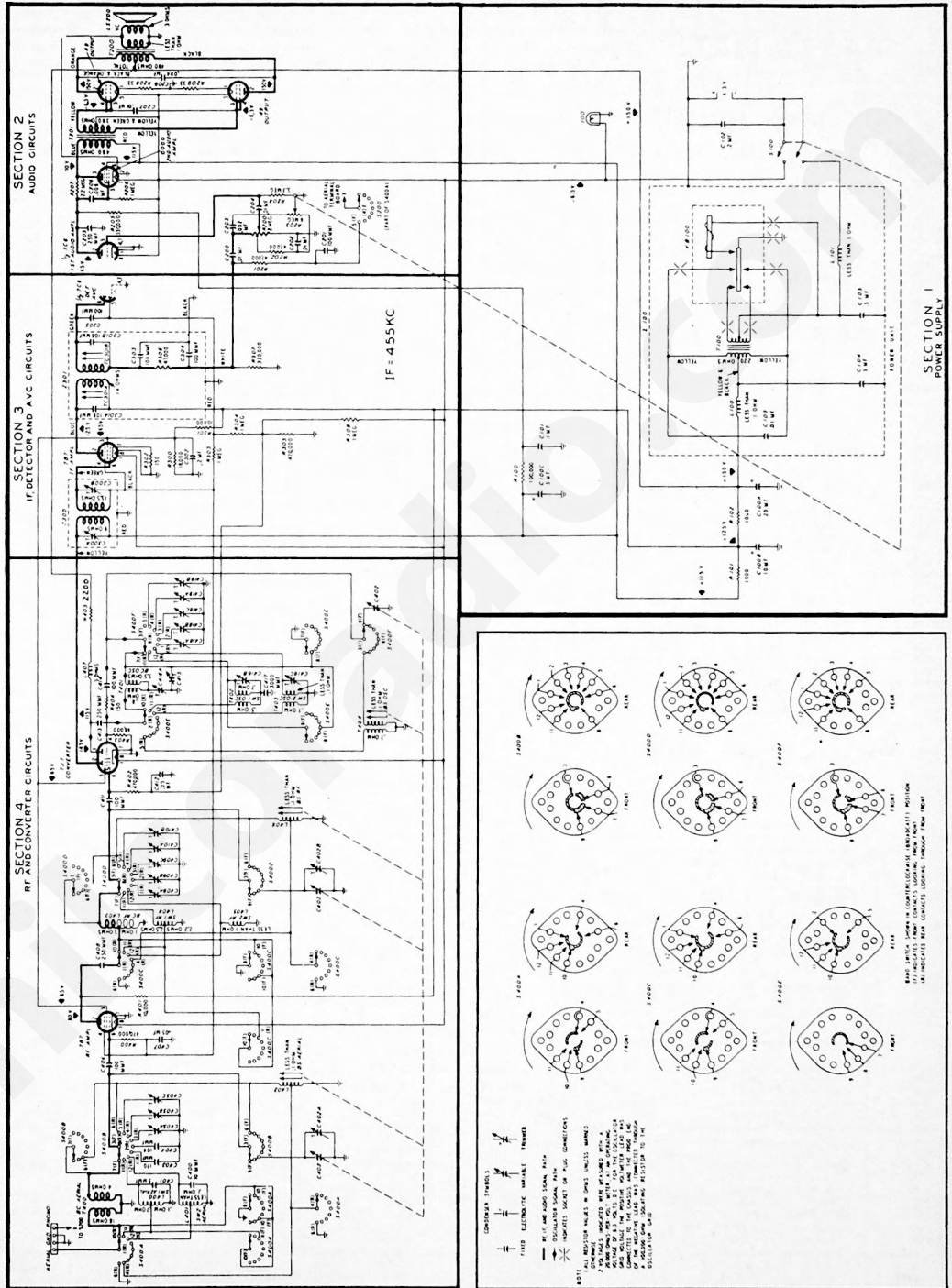


Figure 2. Philco-Tropic Radio Model 48-862, Sectionalized Schematic Diagram

REPLACEMENT PARTS LIST

NOTE

Part numbers marked with an asterisk (*) are general replacement items. These numbers may not be identical with those on factory assemblies; also, the electrical values of some replacement items may differ from the values indicated in the schematic diagram and parts list. The values substituted in any case are so chosen that the operation of the radio will be either unchanged or improved. When ordering replacements, use only the "Service Part No."

SECTION 1—POWER SUPPLY

SECTION 4 (Continued)

Reference Symbol	Description	Service Part No.
C100	Condenser, electrolytic, 3-section	Part of C100
C100A	Condenser, filter, 20 mf.	Part of C100
C100B	Condenser, filter, 10 mf.	Part of C100
C100C	Condenser, filter, 5 mf.	Part of C100
C101	Condenser, filter, .1 mf.	61-0113*
C102	Condenser, by-pass, 2 mf.	45-3500-3*
C103	Condenser, buffer, .01 mf. (part of Z100)	30-4296
C104	Condenser, filter, 5 mf. (part of Z100)	66-2103340
C105	Condenser, by-pass, 5 mf. (part of Z-00)	30-4296
I100	Lamp, pilot	34-2068E
L100	Choke, "A" filter (part of Z100)	32-1954
L101	Choke, "B" filter (part of Z100)	32-2925
R100	Resistor, filter, 100,000 ohms	66-4103340
R101	Resistor, filter, 1000 ohms	66-2103340
R102	Resistor, filter, 1000 ohms	66-2103340
S100	Switch, on-off	Part of R203
T100	Transformer, power (part of Z100)	32-7682
VB100	Vibrator (part of Z100)	

SECTION 2—AUDIO CIRCUITS

C200	Condenser, d-c blocking, .01 mf.	61-0124*
C201	Condenser, r-f by-pass, 100 mmf.	60-10105407*
C202	Condenser, tone control, .01 mf.	61-0124*
C203	Condenser, tone compensation, .002 mf.	61-0062*
C204	Condenser, d-c blocking, .01 mf.	61-0124*
C205	Condenser, r-f by-pass, 250 mmf.	
C206	Condenser, d-c blocking, .006 mf.	45-3500-7*
C207	Condenser, tone compensation, .01 mf.	61-0124*
C208	Condenser, tone compensation, .004 mf.	61-0179
LS200	Speaker	36-1508
R200	Volume control, 2 megohms	45-5009*
R201	Resistor, decoupling, 47,000 ohms	66-3473340*
R202	Resistor, tone compensation, 47,000 ohms	66-3473340*
R203	Tone control, 6 megohms	33-5393*
R204	Resistor, grid return, 3.3 megohms	66-5333340*
R205	Resistor, plate load, 330,000 ohms	66-4333340*
R206	Resistor, d-c blocking, .01 mf.	66-5103340*
R207	Resistor, inverse feedback, 2.2 megohms	66-5223340*
R208	Resistor, filament dropping, 33 ohms	66-0333340*
R209	Resistor, filament dropping, 33 ohms	66-0333340*
S200	Switch, radio-phonograph	Part of S400A
T200	Transformer, output	32-8113
T201	Transformer, driver	32-8027

SECTION 3—I-F, DETECTOR, AND A-V-C CIRCUITS

C300A	Condenser, trimmer	Part of Z300
C300B	Condenser, trimmer	Part of Z300
C301A	Condenser, fixed trimmer	Part of Z301
C301B	Condenser, fixed trimmer	Part of Z301
C302	Condenser, screen by-pass	45-3500-3*
C303	Condenser, filter, 100 mmf. (part of Z301)	60-10105407*
C304	Condenser, filter, 100 mmf. (part of Z301)	60-10105407*
C305	Condenser, d-c blocking, 100 mmf.	60-10105407*
R300	Resistor, screen voltage divider, 18,000 ohms	66-3183340*
R301	Resistor, screen voltage divider, 10,000 ohms	66-3103340*
R302	Resistor, cathode bias, 150 ohms	66-1153340*
R303	Resistor, a-v-c filter, 1 megohm	66-5103340*
R304	Resistor, a-v-c load, 1 megohm	66-5103340*
R305	Resistor, a-v-c load, 47,000 ohms	
R306	Resistor, filter, 47,000 ohms (part of Z301)	66-3473340*
R307	Resistor, r-f filter, 330,000 ohms	
R308	Resistor, voltage divider, 1 megohm	
Z300	Transformer, 1st i-f, including C300A and C300B	
Z301	Transformer, 2nd i-f, including C301A, C301B, C303, C304, and R305	32-3981

SECTION 4—R-F AND CONVERTER CIRCUITS

C400	Condenser, fixed trimmer, 10 mmf.	
C401	Condenser, fixed trimmer, 5 mmf.	
C402	Condenser, tuning gang	31-2535
C402A	Condenser, trimmer	Part of C402
C402B	Condenser, trimmer	Part of C402
C403	Condenser, fixed trimmer, 170 mmf.	30-1220-2
C404	Condenser, fixed trimmer, 104 mmf.	30-1220
C405	Condenser, trimmer, 3-section	31-6450
C405A	Condenser, trimmer	Part of C405
C405B	Condenser, trimmer	Part of C405
C405C	Condenser, trimmer	Part of C405
C406	Condenser, coupling, 100 mmf.	60-10105407
C407	Condenser, by-pass, .05 mf.	61-0122*
C408	Condenser, coupling, 250 mmf.	60-10245307*
C409	Condenser, trimmer, 3-section	31-6412
C409A	Condenser, trimmer	Part of C409
C409B	Condenser, trimmer	Part of C409
C409C	Condenser, trimmer	Part of C409
C410	Condenser, trimmer, 2-section	31-6413
C410A	Condenser, trimmer	Part of C410
C410B	Condenser, trimmer	Part of C410
C411	Condenser, coupling, 100 mmf.	60-10105407
C412	Condenser, by-pass, .05 mf.	61-0122*

Reference Symbol	Description	Service Part No.
C413	Condenser, d-c blocking, 250 mmf.	60-10245307*
C414	Condenser, coupling, 100 mmf.	60-10105407*
C415	Condenser, trimmer	31-6308
C416	Condenser, trimmer, 3-section	31-6350
C416A	Condenser, trimmer	Part of C416
C416B	Condenser, trimmer	Part of C416
C416C	Condenser, trimmer	Part of C416
C417	Condenser, fixed trimmer, 3000 mmf.	60-20035304*
C418	Condenser, trimmer, 3-section	31-6414
C418A	Condenser, trimmer	Part of C418
C418B	Condenser, trimmer	Part of C418
C418C	Condenser, trimmer	Part of C418
C419	Condenser, trimmer, 2-section	31-6415
C419A	Condenser, trimmer	Part of C419
C419B	Condenser, trimmer	Part of C419
L400	Coil, aerial, SW 1	32-3664
L401	Coil, aerial, SW 2	32-3667
L402	Coil, aerial, band spread	32-3670
L403	Coil, r-f, BDCST	32-3662
L404	Coil, r-f, SW 1	32-3665
L405	Coil, r-f, SW 2	32-3668
L406	Coil, r-f, band spread	32-3671
L407	Choke, r-f	32-3367
R400	Resistor, grid return, 470,000 ohms	66-4473340*
R401	Resistor, plate load, 10,000 ohms	66-3103340
R402	Resistor, grid return, 470,000 ohms	66-4473340*
R403	Resistor, grid return, 68,000 ohms	66-3683340*
R404	Resistor, parasitic suppressor, 150 ohms	66-1153340*
R405	Resistor, plate load, ohms	
S400	Switch, band, 6-wafer	42-1741
S400A	Switch water	Part of S400
S400B	Switch water	Part of S400
S400C	Switch water	Part of S400
S400D	Switch water	Part of S400
S400E	Switch water	Part of S400
S400F	Switch water	Part of S400
T400	Transformer, aerial, BDCST	32-3661
T401	Transformer, oscillator, BDCST	32-3663
T402	Transformer, oscillator, SW 1	32-3666
T403	Transformer, oscillator, SW 2	32-3669
T404	Transformer, oscillator, band spread	32-3672

MISCELLANEOUS

Description	Service Part No.
Cabinet Hardware	
Back	54-7078
Baffle, wood	16500
Baffle-and-cloth assembly	40-8742
Cabinet, complete	10625
Foat, felt	W-2190
Screw, baffle mounting	1W25200
Screw, cabinet back	W2076FA9
Chassis-Mounting Hardware	
Bolt-and-washer assembly, mounting	56-6190FA3
Bracket-and-lug assembly, tuning condenser	
Clip, coil mounting	28-5002E7
Corner, rubber	27-4554
Dial-Scale Hardware	
Carriage-and-spring assembly, pilot light	76-1512
Clamp, dial	56-2137FA15
Dial-plate rivet assembly	76-1511
Dial-scale assembly	76-1510
Drive cord,	
Drive shaft and bearing	76-1712
Drum assembly, tuning	76-1244FA33
Drum assembly, band indicator	76-1246FA33
Pointer	56-2540FCP
Rod, pilot-light carrier	56-2133
Screw, dial-assembly mounting	1W19672FA3
Screw and lock washer, dial clamp	1W19670FA3
Spring, indicator	56-2980
Spring, indicator	56-2981
Spring, indicator	28-8954
Knob	54-4242
Lamp assembly, pilot	76-1247
Parts-Mounting Hardware	
Eyelet, brass, socket mounting	2W35702
Grommel, rubber, gang mounting	W7-436
Panel, aerial	38-9744
Socket, 5-prong	27-6167
Socket, 8-prong	27-6058*
Socket, loktal	
Speaker Hardware	
Bolt, speaker mounting	W2123
Cable	
Nut, speaker mounting	1W19988FA3
Vibrator-Unit Hardware	
Cable, battery	41-3540
Washer, rubber, vibrator-unit mounting	3914

REVISIONS TO 48-862 SERVICE MANUAL

**Reference
Symbol**

Description

**Service
Part No.**

Parts List Corrections

C100	Condenser, electrolytic, 3-section	45-3004
C103	Condenser, buffer, .01 mf. (part of Z100)	61-0124
VB100	Vibrator (part of Z100)	38-9910
C205	Condenser, r-f by-pass, 250 mmf.	60-10245307*
R305	Resistor, a-v-c load, 47,000 ohms	66-3473340*
R307	Resistor, r-f filter, 330,000 ohms	66-4333340*
R308	Resistor, voltage divider, 1 megohm	66-5103340*
Z300	Transformer, 1st i-f, including C300A and C300B	65-0319
C400	Condenser, fixed trimmer, 10 mmf.	60-00105407
C401	Condenser, fixed trimmer, 5 mmf.	60-90505007
R405	Resistor, plate load, 2200 ohms	66-2223340
	Bracket-and-lug assembly, tuning condenser	76-1518
	Drive cord (25-ft. spool)	45-8760
	Socket, Loktal	27-6128
	Cable, speaker	41-3714

PRODUCTION CHANGES

Main Chassis, Run 2

R301, Resistor, screen voltage divider, 10,000 ohms, was changed to 3300 ohms, Part No. 66-2338340*.

R302, Resistor, cathode bias, 150 ohms, was changed to 33 ohms, Part No. 66-0338340*.

The wiring of the filter circuit and B+ supply leads was changed according to the diagram below.

Main Chassis, Run 3

C100A filter-condenser section was changed to wire in parallel with C100B. A 15-mf., 200v, self-mounting tubular condenser, Part No. 30-2575-11, was added, where C100A was formerly connected (junction of R102 and L100 to ground).

R-F Chassis, Run 2

C401 was removed.

R404, Resistor, parasitic suppressor, 150 ohms, was changed to 100 ohms, Part No. 66-1108340*.

