PHILCO TROPIC RADIO, MODEL 46-888

SPECIFICATIONS

CABINET	Wood, mahogany finish
CIRCUIT	Eleven-tube superheterodyne
FREQUENCY RANGES	
B'DC'ST (Broadcast)	.54 to 1.7 mc.
SW 1 (Short-wave)	1.5 to 2.6 mc.
SW 2 (Short-wave)	2.3 to 7.3 mc.
SW 3 (Short-wave)	7.2 to 22.0 mc.
31 M (Band-spread)	9.4 to 9.9 mc.
25 M (Band-spread)	11.4 to 12.0 mc.
19 M (Band-spread)	14.8 to 15.6 mc.
16 M (Band-spread)	17.4 to 18.2 mc.
13 M (Band-spread)	21.2 to 21.8 mc.
OPERATING VOLTAGES	115/230 volts, 50—60 cycles A.C.
POWER CONSUMPTION	90 watts
AERIAL	Philco Outdoor Aerial, Part No. 45-1494
INTERMEDIATE FREQUENCY	455 kc.
PHILCO TUBES USED	7C7E (2), 7J7E, 78E, 7A6, 76 (3), 6V6EGT/G (2), 80
PILOT LAMPS	6—8-volt, bayonet base, Part No. 34-2064

ALIGNMENT PROCEDURE

CAUTION: Before turning the radio on, make certain that the voltage-change switch on rear of chassis is correctly set for the line voltage in use. Do not turn radio on without speaker connected, or damage to radio will result.

OUTPUT METER

Connect across speaker voice-coil terminals.

SIGNAL GENERATOR

Connect the ground side of signal generator to the radio chassis, and the output side of the generator to the radio as shown in alignment chart. Set the radio volume control at maximum and adjust the signal-generator output to give a readable deflection on the output meter, using the meter range that best indicates small changes in output. Reduce the signal-generator output as alignment progresses, to maintain the radio output below 1.5 volts on the output meter.

REPLACEMENT PARTS LIST — MODEL 46-888

NOTE: Parts marked with an asterisk (*) are general replacement items and the part numbers may not be identical with those used on factory assemblies. Use only the "SERVICE PART NUMBER" shown in the parts list when ordering replacements.

SECTION 1

Reference No.	Description	Service Part No.
C100	Condenser, .003 mf.	61-0115*
C101	Condenser, .003 mf.	61-0115*
C102	Condenser, electrolytic, 40 mf.	30-2511*
C103	Condenser, .2 mf.	45-3500-3*
C104	Condenser, .5 mf.	61-0133*
C105	Condenser, electrolytic	30-2570-5*
	C105A: condenser, electrolytic 50 mf.	Part of C105
	C105B: condenser, electrolytic, 5 mf.	Part of C105
I100	Lamp, pilot	34-2064E*
L100	Coil, field	Part of LS200
R100	Resistor, 150,000 ohms	66-4153340*
R101	Resistor, 150,000 ohms	66-4153340*
R102	Resistor, 1 meg.	66-5103340*
R103	Resistor, 330,000 ohms	66-4333340*
R104	Resistor, 82,000 ohms	66-3823340*
R105	Resistor, 18,000 ohms	66-3184340*
R106	Resistor, 8,200 ohms	66-2823340*
R107	Resistor, 15,000 ohms	66-3153340*
S100	Switch, power (AC)	Part of R204
S101	Switch, line voltage adjustment	42-1730*
S102	Switch, line voltage selection	42-1569*
S100A(R)	Switch, dial lights	Part of S400G(R)
T100	Transformer, power	32-8270*
W100	Cord, a-c	L-3246

SECTION 2

C200	Condenser, 100 mmf.	60-10105407*
C201	Condenser, .05 mf.	61-0122*
C202	Condenser, 100 mmf.	60-10104407*
C203	Condenser, .006 mf.	45-3500-7*
C204	Condenser, .1 mf.	61-0113*
C205	Condenser, electrolytic, 5 mf.	Part of C105

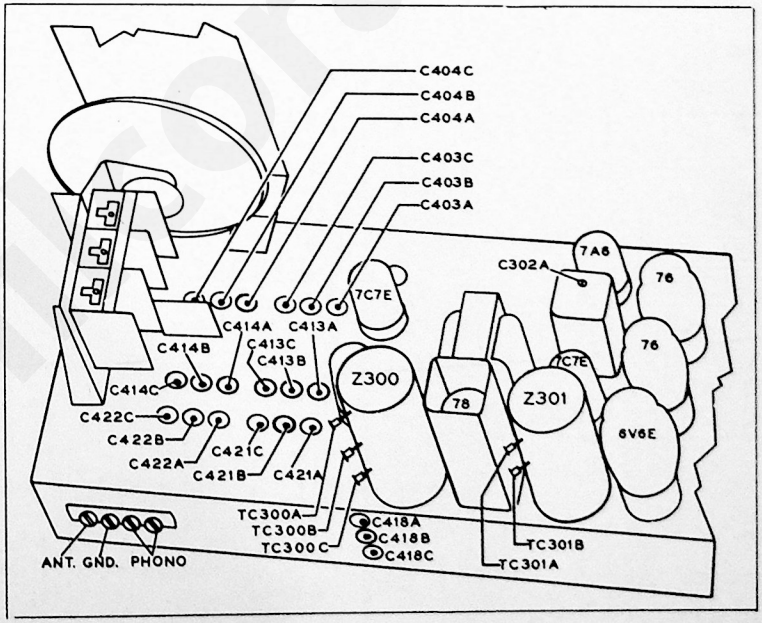
(Parts List continued on last page)

SECTION 2 (Continued)

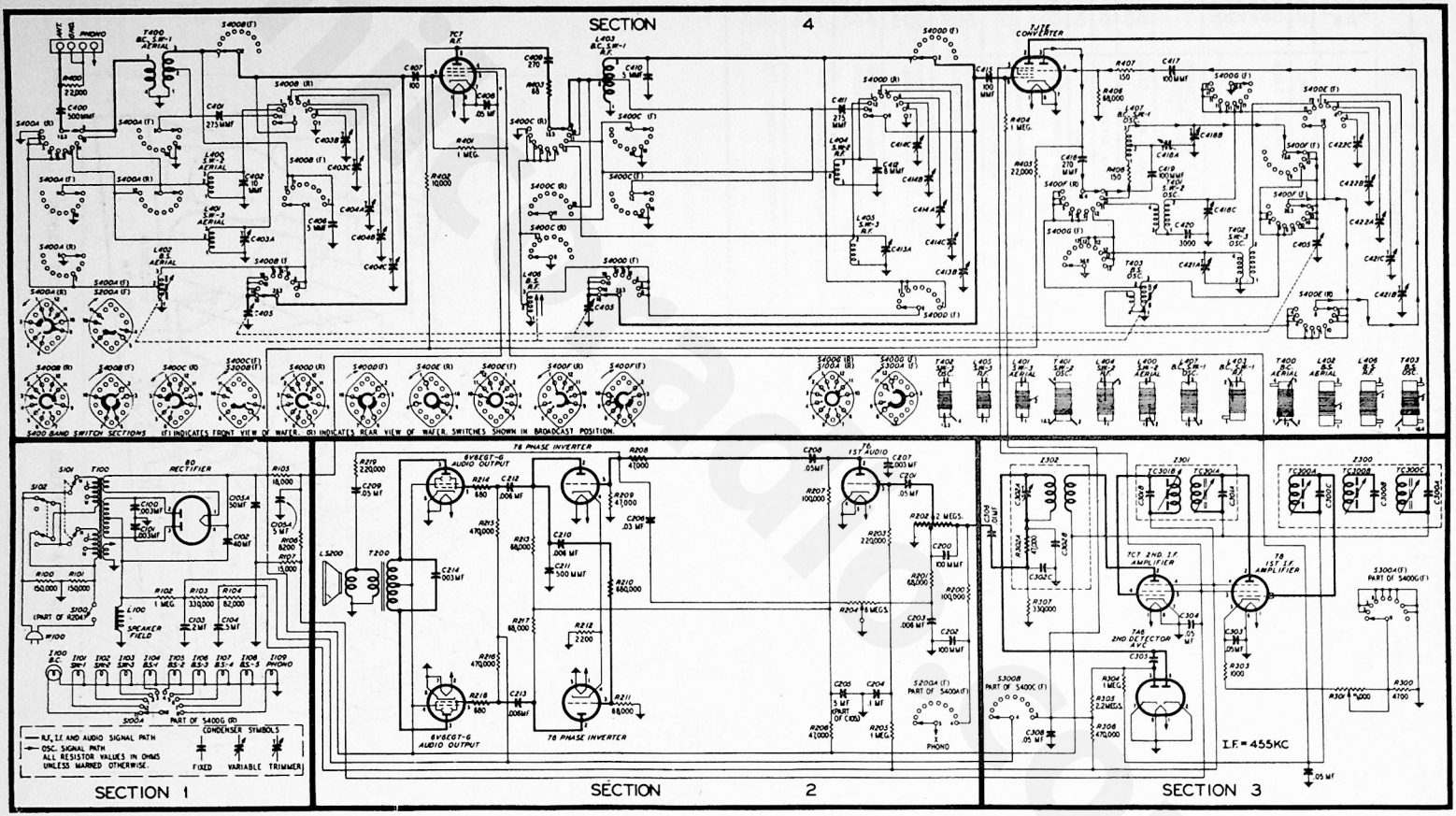
Reference No.	Description	Service Part No.
C206	Condenser, .03 mf.	45-3500-1*
C207	Condenser, .003 mf.	61-0109*
C208	Condenser, .05 mf.	61-0122*
C209	Condenser, .05 mf.	61-0122*
C210	Condenser, .006 mf.	45-3500-7*
C211	Condenser, 500 mmf.	60-10515307*
C212	Condenser, .006 mf.	45-3500-7*
C213	Condenser, .006 mf.	45-3500-7*
C214	Condenser, .003 mf.	61-0115*
LS200	Speaker	36-1459*
R200	Resistor, 100,000 ohms	66-4103340*
R201	Resistor, 68,000 ohms	66-3683340*
R202	Control, volume (2 meg.)	45-5009*
R203	Resistor, 220,000 ohms	66-4223340*
R204	Control, tone (6 meg.)	33-5400*
R205	Resistor, 1 megohm	66-5103340*
R206	Resistor, 47,000 ohms	66-3473340*
R207	Resistor, 100,000 ohms	66-4103340*
R208	Resistor, 47,000 ohms	66-3473340*
R209	Resistor, 47,000 ohms	66-3473340*
R210	Resistor, 680,000 ohms	66-4683340*
R211	Resistor, 68,000 ohms	66-3683340*
R212	Resistor, 2200 ohms	66-2223340*
R213	Resistor, 68,000 ohms	66-3683340*
R214	Resistor, 680 ohms	66-1683340*
R215	Resistor, 470,000 ohms	66-4473340*
R216	Resistor, 470,000 ohms	66-4473340*
R217	Resistor, 68,000 ohms	66-3683340*
R218	Resistor, 680 ohms	66-1683340*
R219	Resistor, 220,000 ohms	66-4223340*
S200A(F)	Switch, phonograph	Part of S400A(F)
T200	Transformer, output	32-7997*

ALIGNMENT CHART

SIGNAL GENERATOR			RECEIVER			
	Connections to Receiver	Dial Setting	Band Switch Setting	Dial Setting	Special Instructions	Adjust Trimmers in Order Listed
1					Turn to fully clockwise position.	TC300B
2	Through .05 mf. condenser to stator of middle section of tuning condenser C405.	455 Kc.	B'DC'ST	C405 fully meshed	Adjust for maximum output. Align *once only* in order given.	C302A TC301A TC301B TC300A TC300C TC300B
3	Through 400 ohm resistor to aerial terminal.	21.0 Mc.	SW3	21.0 Mc.	Adjust for maximum output. Image should be heard with receiver tuned to 20.1 Mc.	C421A
4	Same as step 3.	20.8 Mc.	SW3	20.8 Mc.	Adjust for maximum output. Then repeat step 3.	C413A C403A
5	Same as step 3.	5.8 Mc.	SW2	5.8 Mc.	Adjust for maximum output.	C418A
6					Set to ½ turn from tight.	C418C
7	Through 200 mmf. condenser to aerial terminal.	1520 Kc.	B'DC'ST	1520 Kc.	Adjust for maximum while rocking tuning control.	C418B
8	Same as step 7.	580 Kc.	B'DC'ST	580 Kc.	Adjust for maximum while rocking tuning control. Then repeat step 7.	C418C
9	Through 400 ohm resistor to aerial terminal.	21.5 Mc.	13 M	21.5 Mc.	Adjust C422C to first peak from tight. C414C and C404C for maximum output.	C422C C414C C404C
10	Same as step 9.	17.8 Mc.	16 M	17.8 Mc.	Adjust C422B to first peak from tight. C414B and C404B for maximum output.	C422B C414B C404B
11	Same as step 9.	15.2 Mc.	19 M	15.2 Mc.	Adjust C422A to second peak from tight. C414A and C404A for maximum output.	C422A C414A C404A
12	Same as step 9.	11.7	25 M	11.7	Adjust for maximum output.	C421C C413C C403C
13	Same as step 9.	9.7	31 M	9.7	Adjust for maximum output.	C421B C413B C403B



TOP VIEW OF CHASSIS, SHOWING ALIGNMENT POINTS TP-1319B



PHILCO TROPIC RADIO, MODEL 46-888, COMPLETE SCHEMATIC

TP-1649

REPLACEMENT PARTS LIST—Continued

SECTION 3

Reference No.	Description	Service Part No.
Z300	Transformer, first i-f	32-3982*
	C300A: condenser	Part of Z300
	C300B: condenser	Part of Z300
	C300C: condenser	Part of Z300
Z301	Transformer, second i-f	32-3983*
	C301A: condenser	Part of Z301
	C301B: condenser	Part of Z301
Z302	Transformer, third i-f	32-3984*
	C302A: condenser, trimmer	Part of Z302
	C302B: condenser	Part of Z302
	C302C: condenser	Part of Z302
C303	Condenser, .05 mf.	61-0122*
C304	Condenser, .05 mf.	61-0122*
C305	Condenser, 100 mmf.	60-10105407*
C306	Condenser, .01 mf.	61-0120*
C307	Condenser, .05 mf.	61-0122*
C308	Condenser, .05 mf.	61-0122*
R300	Resistor, 4700 ohms	66-2473340*
R301	Control, sensitivity, 15,000 ohms	33-5401*
R302A	Resistor, 47,000 ohms	Part of Z302
R303	Resistor, 1000 ohms	66-2103340*
R304	Resistor, 1 megohm	66-5103340*
R305	Resistor, 2.2 megohms	66-5223340*
R306	Resistor, 470,000 ohms	66-4473340*
R307	Resistor, 330,000 ohms	66-4333340*
S300A(F)	Switch, bias shorting	Part of S400G(F)
S300B(F)	Switch, phono	Part of S400C(F)

SECTION 4

C400	Condenser, 500 mmf.	60-10515307*
C401	Condenser, 275 mmf.	30-1220-7*
C402	Condenser, 10 mmf.	60-00105407*
C403	Condenser, trimmer, aerial	Part of S400
	C403A: condenser, trimmer, aerial, shortwave 3	Part of C403
	C403B: condenser, trimmer, aerial (bandspread range 1)	Part of C403
	C403C: condenser, trimmer, aerial (bandspread range 2)	Part of C403
C404	Condenser, trimmer, aerial	Part of S400
	C404A: condenser, trimmer, aerial (bandspread range 3)	Part of C404
	C404B: condenser, trimmer, aerial (bandspread range 4)	Part of C404
	C404C: condenser, trimmer, aerial (bandspread range 5)	Part of C404
C405	Condenser, tuning	31-2466
C406	Condenser, 5 mmf.	60-90505007*
C407	Condenser, 100 mmf.	60-10105407*
C408	Condenser, .05 mf.	61-0122*
C409	Condenser, 270 mmf.	60-10245307*
C410	Condenser, 5 mmf.	60-90505007*
C411	Condenser, 275 mmf.	30-1220-7*
C412	Condenser, 8 mmf.	30-1224-13*
C413	Condenser, trimmer, r-f	Part of S400
	C413A: condenser, trimmer, r-f (shortwave 3)	Part of C413
	C413B: condenser, trimmer, r-f (bandspread range 1)	Part of C413
	C413C: condenser, trimmer, r-f (bandspread range 2)	Part of C413
C414	Condenser, trimmer, r-f	Part of S400
	C414A: condenser, trimmer, r-f (bandspread range 3)	Part of C414
	C414B: condenser, trimmer, r-f (bandspread range 4)	Part of C414
	C414C: condenser, trimmer, r-f (bandspread range 5)	Part of C414
C415	Condenser, 100 mmf.	60-10105407*
C416	Condenser, 270 mmf.	60-10245307*
C417	Condenser, 100 mmf.	60-10105407*
C418	Condenser, trimmer, osc.	Part of S400
	C418A: condenser, trimmer, osc. (brdcst. series)	Part of C418
	C418B: condenser, trimmer, osc. (brdcst. shunt)	Part of C418
	C418C: condenser, trimmer, osc. (shortwave 2)	Part of C418
C419	Condenser, 100 mmf.	60-10105407*
C420	Condenser, 3000 mmf.	60-20305304*
C421	Condenser, trimmer, osc.	Part of S400
	C421A: condenser, trimmer, osc. (Shortwave 3)	Part of C421
	C421B: condenser, trimmer, osc. (bandspread range 1)	Part of C421
	C421C: condenser, trimmer, osc. (bandspread range 2)	Part of C421
C422	Condenser, trimmer, osc.	Part of S400
	C422A: condenser, trimmer, osc. (bandspread range 3)	Part of C422
	C422B: condenser, trimmer, osc. (bandspread range 4)	Part of C422
	C422C: condenser, trimmer, osc. (bandspread range 5)	Part of C422

SECTION 4 (Continued)

Reference No.	Description	Service Part No.
L400	Coil, shortwave 2, ant.	32-3679
L401	Coil, shortwave 3, ant.	32-3682
L402	Coil, bandspread, ant.	32-3670
L403	Coil, r-f broadcast, shortwave 1	32-3678
L404	Coil, r-f, shortwave 2	32-3680
L405	Coil, r-f, shortwave 3	32-3683
L406	Coil, r-f, bandspread	32-3671
L407	Coil, osc. broadcast, shortwave 1	32-3663
R400	Resistor, 22,000 ohms	66-3223340*
R401	Resistor, 1 megohm	66-5103340*
R402	Resistor, 10,000 ohms	66-3103340*
R403	Resistor, 68 ohms	66-0683340*
R404	Resistor, 1 megohm	66-5103340*
R405	Resistor, 22,000 ohms	66-3223340*
R406	Resistor, 68,000 ohms	66-3683340*
R407	Resistor, 150 ohms	66-1153340*
R408	Resistor, 150 ohms	66-1153340*
T400	Transformer, ant., brdcst., shortwave 1	32-3677
T401	Transformer, osc., shortwave 2	32-3681
T402	Transformer, osc., shortwave 3	32-3684
T403	Transformer, osc., bandspread	32-3676
*S400	Switch, range	42-1742*
	S400A: wafer, switch (aerial)	Part of S400
	S400B: wafer, switch (aerial)	Part of S400
	S400C: wafer, switch (r-f)	Part of S400
	S400D: wafer, switch (r-f)	Part of S400
	S400E: wafer, switch (oscillator)	Part of S400
	S400F: wafer, switch (oscillator)	Part of S400
	S400G: wafer, switch (oscillator)	Part of S400

MISCELLANEOUS

Base, tube shield 78E tube	28-2725FA5
Bracket and shield assy., tuning cord	76-1518
Screw, mtg. bracket	1W19670FA3
Bracket and pulley assy., tuning cord, chassis	76-1515
Cabinet	10625
Cabinet hardware	
Baffle and cloth assy.	40-6748
Baffle, wood	219023
Back and label assy.	54-7106
Felt feet	W-2190
Grommet, rubber, dial plate	27-4596
Screw, cabinet back	W2076FA9
Clip, mtg. brdcst. and SW-1 coils	28-5002FA1
Coupling assy., tuning condenser	31-2291
Dial scale assy., right hand	76-1537
Dial scale assy., left hand	76-1538
Dial hardware	
Bracket, mtg. right-hand dial	76-1539
Bracket, mtg. left-hand dial	76-1540
Cord kit, pointers and drive (25-foot spool)	45-1460
Clamp, mtg. dials	56-1795FA15
Drum support assy., tuning drum	76-1057FA33
Screw, dial clamp	1W19670FA3
Screw, drum support assy.	1W12513FA3
Screw, dial brackets	1W19672FA3
Pointer	56-2546FCP
Spring, drive cord	28-8751
Spring, tuning drum	28-8913FA3
Tuning drum and shaft assy.	31-2453
Washer, drum support	2W54094
Washer, dial mtg. brackets	2W54094
Grommet mtg. chassis	27-4564
Grommet, mtg. tun. cond.	27-4596
Iron core assy., bandspread coils	76-1281
Knob, volume	54-4218
Knob	54-4249
Pilot lamp	34-2064E
Plug, a-c cord	L-3275
Plug button	1W29311FA33
Shaft, vernier, tuning broadcast, and shortwave 1, 2, 3 bands	31-2654
Shaft, bandspread tuning	76-1713
Rubber disc	27-4272
Shaft assy., worm, bandspread tuning	76-1241
Speed nut, core carrier	56-2151FA5
Screw, speed nut	97-0054FA3
Shield, 78 tube	28-2726
Speaker, hardware	
Cable	41-3713
Bolt, mtg.	W-1695
Nut	1W19988FA3
Plug, speaker cable	27-4418-2
Washer	1W52237FA3
Socket assy., pilot lamps	76-1892
Socket, 4-prong, 80 tube	27-6166
Socket, 5-prong, 76 tube	27-6167
Socket, 6-prong, 78E tubes	27-6168
Socket, Loktal, 7J7E tube	27-6128*
Socket, Loktal, 7C7E, 7A6 tubes	27-6128*
Socket, octal, 6V6EGT/G tubes	27-6058*

* Range switch includes switch, trimmer condensers and bandspread worm shaft and shields.

PRODUCTION CHANGES FOR MODEL 46-888

CODE 121

RUN 1

Electrolytic condenser C105 in this run is Part No. 30-2512 instead of Part No. 30-2570-5*, as listed in the manual.

RUN 2

Electrolytic condenser C105 was changed from Part No. 30-2512 to Part No. 30-2570-5*, as listed in the manual.

RUN 3

A 680,000-ohm resistor, Part No. 66-4683340*, was added, in parallel with the 82,000-ohm resistor, R104.

RUN 4

A 25-mf., 25v condenser, Part No. 45-3001*, was added, in parallel with the 2200-ohm resistor, R212; the connection was made to pin 4 of the 76 tube which is driven from the plate circuit of the 1st audio stage.

CRITICAL LEAD DRESS AND PARTS PLACEMENT FOR MODEL 46-888

1. All wiring from the power transformer, T100, the a-c power switch, S100, the line-voltage-adjustment switch, S101, and the line-voltage-selection switch, S102, should be dressed toward the end of the chassis (down in corner) around the power transformer.

2. The shortwave 3 oscillator transformer, T402, should be dressed away from the range switch, S400.

3. The leads from the output transformer, T200, to the plates of the 6V6E tubes should be dressed toward the rear of the chassis.