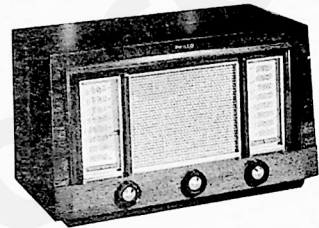


PHILCO RADIO MODEL 53-958

SPECIFICATIONS

CABINET.....	Wood table model
CIRCUIT.....	Six-tube superheterodyne plus selenium rectifier
FREQUENCY RANGES	
Broadcast.....	540—1620 kc.
FM.....	88—108 mc.
AUDIO OUTPUT.....	1 watt
OPERATING VOLTAGE.....	105—125 volts, a.c./d.c.
POWER CONSUMPTION.....	45 watts
ANTENNA.....	Built-in pancake loop for AM; line cord for FM
INTERMEDIATE FREQUENCY	
AM.....	455 kc.
FM.....	9.1 mc.
PHILCO TUBES (6).....	12BA6 r-f ampl., 12AT7 converter, 12BA6 1st i-f ampl., 12AU6 2nd i-f ampl., 19V8 det.-a.v.c.-1st audio, 35C5 output



MODEL 53-958

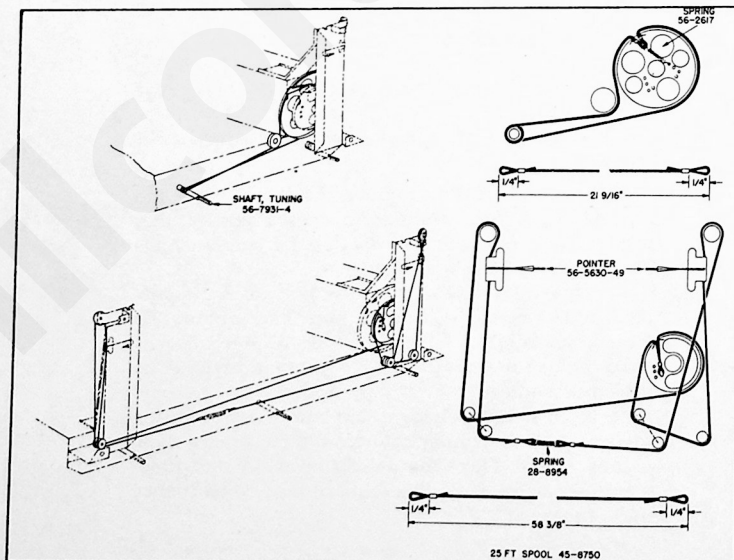


Figure 1. Drive-Cord Installation Details

TP2-2284

AM ALIGNMENT PROCEDURE

GENERAL—Before starting the alignment, allow the radio and the signal generator to warm up for fifteen minutes. Make the alignment with the loop antenna connected to the radio. The AM alignment should be made before the FM alignment is made.

RADIO CONTROLS—Set the volume control to maximum. Set the band switch for broadcast reception. Set the tuning control as indicated in the AM alignment chart.

OUTPUT INDICATOR—Connect the output indicator (an oscilloscope or a 1,000-ohms-per-volt voltmeter) across the voice-coil terminals.

SIGNAL GENERATOR—Use an AM r-f signal generator with modulated output. Connect the generator to the radio, and

set the frequency as indicated in the AM alignment chart.

OUTPUT LEVEL—During the alignment, the signal generator output should be attenuated to hold the output indication below 1 volt.

DIAL POINTER—Before the alignment is started, the dial pointer should be set to coincide with the index mark on the dial pointer rail assembly when the tuning gang is completely closed. See figure 3. (The pointer rail is the metal assembly upon which the pointer rides.)

CAUTION—One side of the a-c line is connected directly to the chassis. Therefore, an isolation transformer should be used when working with this chassis, to prevent injury to personnel or damage to test equipment.

AM ALIGNMENT CHART

STEP	SIGNAL GENERATOR		RADIO		
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	Ground lead to chassis. Output lead through a .1- μ f. condenser to pin 7 (grid) of 12AT7.	455 kc. (modulated)	Set tuning gang so that dial pointer coincides with the 1630-kc. mark. See figure 3.	Adjust for maximum output, in order given in next column.	TC10—2nd AM i-f sec. TC9—2nd AM i-f pri. TC4—1st AM i-f sec. TC3—1st AM i-f pri.
2	Radiating loop. See note below.	1630 kc. (modulated)	Same as step 1.	Adjust for maximum output.	C1C—osc. trimmer
3	Same as step 2.	1520 kc. (modulated)	Set tuning gang so that dial pointer coincides with 1520-kc. mark. See figure 3.	Adjust for maximum output, in order given in next column.	C1B—r-f trimmer C1A—antenna trimmer (high-frequency adjustment)
4	Same as step 2.	580 kc. (modulated)	Set tuning gang so that dial pointer coincides with 580-kc. mark. See figure 3.	Adjust for maximum output. Rock tuning gang while making this adjustment.	TC12—r-f transformer (low-frequency adjustment)
5	Repeat steps 3 and 4 until no further improvement is obtained.				

NOTE: Make up a six-to-eight turn, 6-inch-diameter loop from insulated wire; connect to generator terminals, and place near radio loop antenna. The radio loop antenna must be connected to the radio.

FM ALIGNMENT PROCEDURE

(Using FM Test Equipment)

GENERAL—Before starting the alignment procedure, allow the radio and the test equipment to warm up for fifteen minutes. The AM alignment should be made before the FM alignment is made.

RADIO CONTROLS—Set the volume control to maximum. Set the band switch for FM reception. Set the tuning controls as indicated in the FM alignment chart.

OUTPUT INDICATOR—The first two steps must be performed with the use of an oscilloscope. Connect the ground leads to the radio chassis. Connect the vertical input to the FM test jack, J2, and the horizontal input to the horizontal sweep output of the sweep signal generator. The remaining steps should be performed with the output indicator connected across the voice-coil terminals (either an oscilloscope or a 1000-ohms-per-volt voltmeter).

SWEEP GENERATOR—Use an FM sweep signal generator. Connect the generator to the radio as indicated in the FM alignment chart. Set the frequency and sweep width as indicated in the chart.

DIAL POINTER—Before the alignment is started, the dial pointer should be set to coincide with the index mark on the dial pointer rail assembly when the tuning gang is fully closed. See figure 3.

CAUTION—One side of the a-c line is connected directly to the chassis. Therefore, an isolation transformer should be used when working with the chassis, to prevent injury to personnel or damage to test equipment.

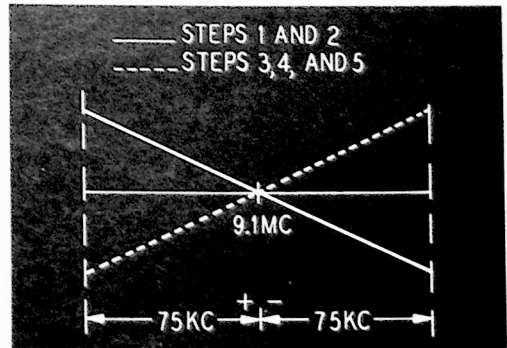


Figure 2. Characteristic Curve of FM Detector

TPI-2111

FM ALIGNMENT CHART

STEP	SIGNAL GENERATOR		RADIO		
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	Connect ground lead to chassis. Connect output lead through a .01- μ f. condenser to control grid (pin 1) of 12AU6 2nd i-f amplifier (test point A). See figure 5.	9.1 mc. (75-kc. deviation)	88 mc. (gang fully meshed).	Adjust TC8 for balance and TC7 for maximum indication (maximum slope) on scope as shown in figure 2.	TC8—detector sec. TC7—detector pri.
2	Connect ground lead to chassis. Connect output lead through a .01- μ f. condenser to FM tuning gang stator lug, junction of C1 and pin 4 of L2 (test point B). See figure 5.	Same as step 1.	Same as step 1.	Adjust in order given in next column, for maximum indication (maximum slope) on scope as shown in figure 2.	TC6—FM 2nd i-f sec. TC5—FM 2nd i-f pri. TC2—FM 1st i-f sec. TC1—FM 1st i-f pri.
3	Connect output lead to lug 2 of TB1, and ground side of generator to lug 1 of TB1 (test point C). See figure 4. See note 1 below.	108.5 mc.	Set tuning gang so that dial pointer coincides with 108.5-mc. mark. See figure 3.	Adjust for maximum indication on output indicator.	C18—FM osc. trimmer
4	Same as step 3.	92 mc.	Set tuning gang so that dial pointer coincides with 92-mc. mark. See figure 3.	Adjust for maximum indication on output indicator. See note 2 below.	L5—FM osc. coil
5	Same as step 3.	105 mc.	Set tuning gang so that dial pointer coincides with 105-mc. mark. See figure 3.	Adjust for maximum indication on output indicator. Rock tuning gang while making this adjustment.	C1D—FM mixer grid (high-frequency adjustment)
6	Same as step 3.	Same as step 5.	Same as step 5.	Adjust for maximum indication on output indicator.	C4—FM r-f grid (high-frequency adjustment)
7	Same as step 3.	92 mc.	Same as step 4.	Adjust for maximum indication on output indicator. See note 3 below.	L2—FM mixer grid (low-frequency adjustment)
8	Same as step 3.	Same as step 7.	Same as step 4.	Adjust for maximum indication on output indicator.	TC11—FM r-f grid (low-frequency adjustment)

NOTE 1: For accurate results, the signal-generator output impedance must be 300 ohms to match the input impedance of TB1. If the signal-generator output impedance is less than 300 ohms, a resistor of the proper value should be used in series with the output lead to make the impedance correct. For example, if the output impedance is 150 ohms, place a 150-ohm resistor in series with the output lead.

NOTE 2: With the conditions given in step 4 (step 6 of alternate procedure), if the oscillator is not tuned for maximum output, it may be necessary to compress or spread the coil turns to give maximum output. (Do not disturb the setting of the tuning gang while making any necessary adjustment.) After the coil is adjusted, repeat steps 3 and 4 (steps 5 and 6 of alternate procedure) until no further improvement is obtained. Then proceed to the next step.

NOTE 3: With the conditions given in step 7 (step 8 of alternate procedure), if the mixer-grid circuit is not tuned for maximum output, it may be necessary to compress or spread the coil turns to give maximum output. (Do not disturb the setting of the tuning gang while making any necessary adjustment.) After the coil is adjusted, repeat steps 5 through 7 (steps 7 and 8 of alternate procedure) until no further improvement is obtained. Then proceed to the next step.

ALTERNATE FM ALIGNMENT CHART

STEP	SIGNAL GENERATOR		RADIO		
	CONNECTION TO RADIO	DIAL SETTING	DIAL SETTING	SPECIAL INSTRUCTIONS	ADJUST
1	Connect ground lead to chassis. Connect output lead through a .01- μ f. condenser to pin 1 (grid) of 12AU6 2nd i-f amplifier (test point A). See figure 5.	9.1 mc. (modulated)	88 mc. (gang fully meshed)	Adjust for balance (zero indication on meter).	TC8-FM det. sec.
2	Same as step 1.	Same as step 1.	Same as step 1.	Adjust for maximum output.	TC7-FM det. pri.
3	Connect ground lead to chassis. Connect output lead through a .01- μ f. condenser to pin 1 (grid) of 12BA6 1st i-f amplifier (test point D). See figure 5.	Same as step 1.	Same as step 1.	Adjust in order given in next column, for maximum output.	TC6-2nd FM i-f sec. TC5-2nd FM i-f pri.
4	Connect ground lead to chassis. Connect output lead through a .01- μ f. condenser to junction of C1 and pin 4 of L2 (test point B). See figure 5.	Same as step 1.	Same as step 1.	Adjust in order given in next column for maximum output.	TC2-1st FM i-f sec. TC1-1st FM i-f pri.
5	Connect ground lead to pin 1 of TB1. Connect output lead to pin 2 of TB1 (test point C). See figure 4. See note 1 of regular FM alignment procedure.	108.5 mc.	Set tuning gang so that dial pointer coincides with 108.5-mc. mark. See figure 3.	Adjust for maximum output.	C18-osc. trimmer
6	Same as step 5.	92 mc.	Set tuning gang so that dial pointer coincides with 92-mc. mark. See figure 3.	Adjust for maximum output. See note 2 of regular FM alignment procedure.	L5-FM osc. coil
7	Same as step 5.	105 mc.	Set tuning gang so that dial pointer coincides with 105-mc. mark. See figure 3.	Adjust in order given in next column, for maximum output.	C1D-FM mixer grid C4-FM r-f grid (high-frequency adjustments)
8	Same as step 5.	92 mc.	Same as step 6.	Adjust for maximum output. See note 3 of regular FM alignment procedure.	L2-FM mixer grid (low-frequency adjustment)
9	Same as step 5.	Same as step 6.	Same as step 6.	Adjust for maximum output.	TC11-FM r-f grid (low-frequency adjustment)

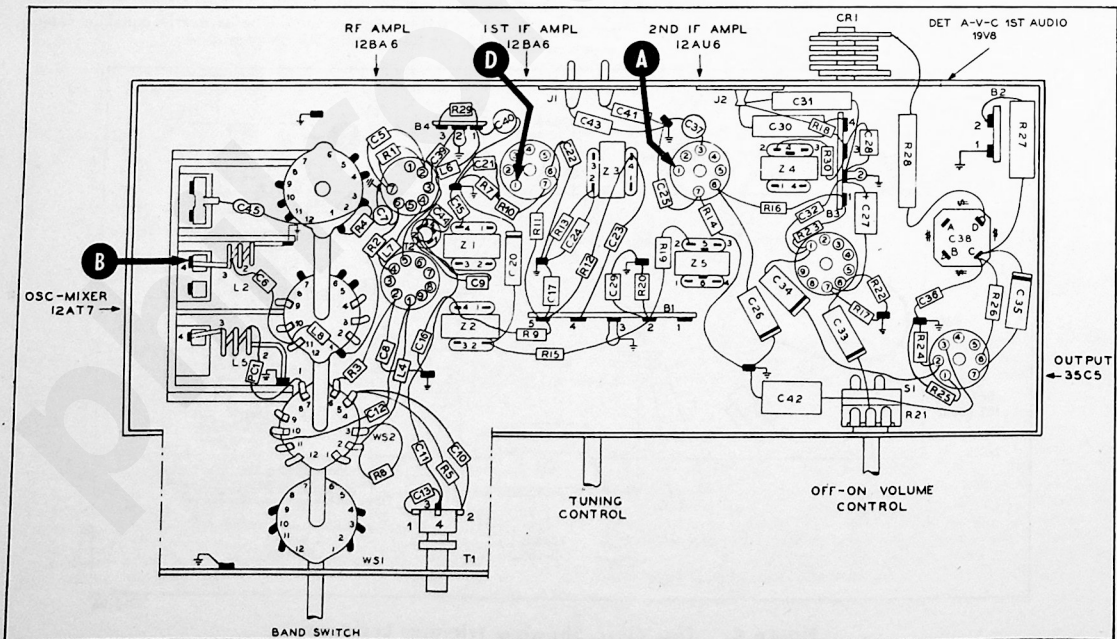


Figure 5. Base View, Showing Parts Placement

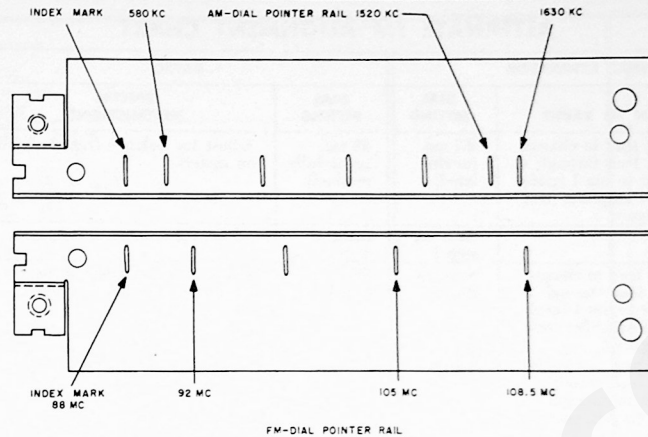


Figure 3. AM and FM Pointer Rails, Showing Alignment Marks

ALTERNATE FM ALIGNMENT PROCEDURE

This alternate procedure is designed to be used where only AM test equipment is available.

GENERAL—Before starting the alignment procedure, allow the radio and signal generator to warm up for fifteen minutes. The AM alignment should be made before the FM alignment is made.

RADIO CONTROLS—Set the volume control to maximum. Set the band switch for FM reception. Set the tuning control as indicated in the chart.

OUTPUT INDICATOR—Use a 20,000-ohms-per-volt voltmeter.

SIGNAL GENERATOR—Use an AM r-f signal generator. Connect the generator to the radio, and set the frequency as indicated in the chart.

DIAL POINTER—Before the alignment is started, the dial pointer should be set to coincide with the index mark on the dial pointer rail assembly when the tuning gang is fully closed. See figure 3.

CAUTION—Refer to the CAUTION given in the regular FM alignment procedure.

In order to perform this alignment it is necessary to place two 100,000-ohm resistors in series between the junction of R17 and C27 (pin 7 of 19V8) and ground. The output meter must be placed between the junction of these two resistors and the FM test jack, J2, for the first step of the alignment, and between the junction of these two resistors and ground for the remaining steps of the alignment with the negative meter lead at the junction of the two resistors. For the first step of the alignment, the meter needle should be set off zero to the first major scale mark by adjusting the meter zero adjust knob. After the first step has been completed, the needle can be set back to the zero mark. The purpose of this adjustment is to enable the serviceman to see a negative indication on the meter.

The output indication for all steps except the first one should be between 5 and 10 volts.

The two series resistors should be as nearly equal in value as possible (at least within 5% of each other).

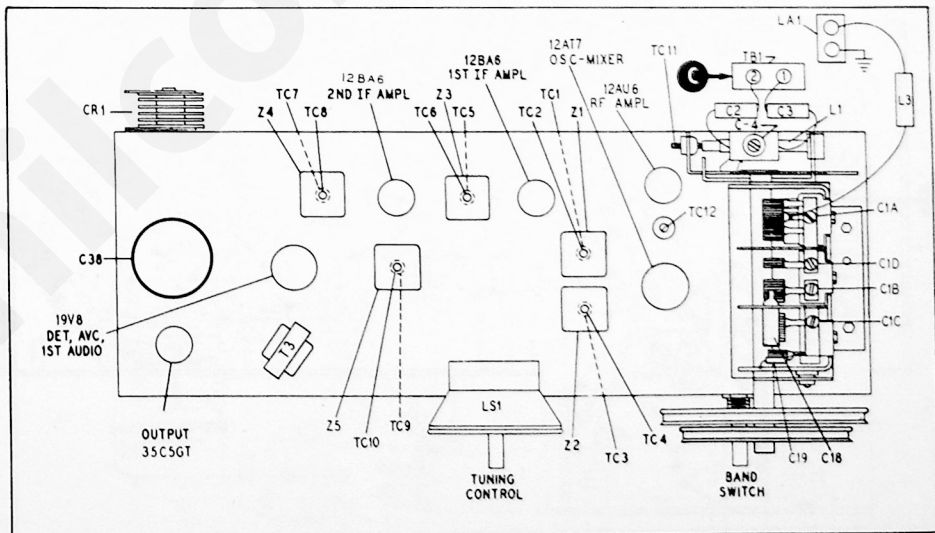
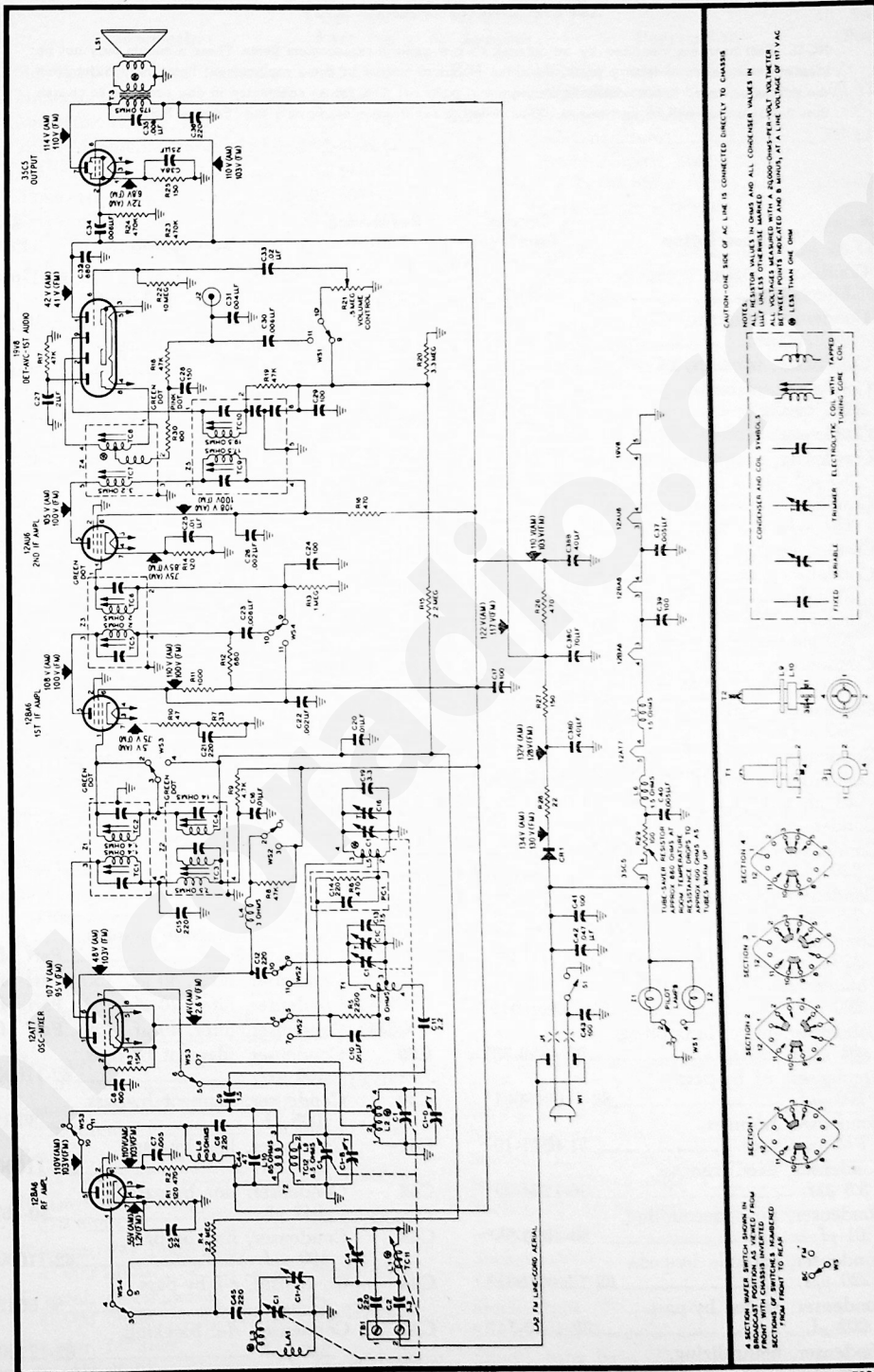
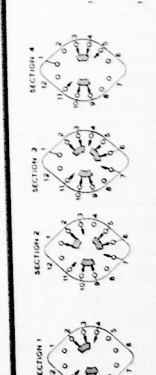
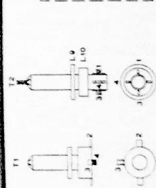
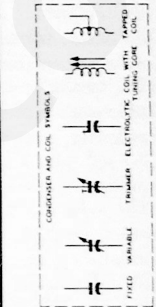


Figure 4. Top View, Showing Trimmer Locations



CAUTION—ONE SIDE OF AC LINE IS CONNECTED DIRECTLY TO CHASSIS

NOTES:
 1. VALUES IN OHMS AND ALL CONDENSER VALUES IN MICROFARADS UNLESS OTHERWISE MARKED.
 2. ALL CONDENSERS MARKED WITH A ZERO-OHMM VALUE ARE TO BE REPLACED WITH A ZERO-OHM RESISTOR.
 3. ALL VALUES ARE IN OHMS UNLESS OTHERWISE MARKED.
 4. LESS THAN ONE OHM



SECTION WATER SWITCH SHOWN IN BROUCCARD CHASSIS INVERTED. SECTIONS OF SWITCHES NUMBERED FROM FRONT TO REAR.

Figure 6. Philco Radio Model 53-958, Schematic Diagram

TP2-2287

REPLACEMENT PARTS LIST

NOTE: Part numbers identified by an asterisk (*) are general replacement items. These numbers may not be identical with those on factory parts. 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 will be unchanged. When ordering replacements, use only the "Service Part No."

Reference Symbol	Description	Service Part No.	Reference Symbol	Description	Service Part No.
C1	Condenser, tuning gang, 5-section	31-2762-2		100 μ f.	62-110001021*
C1A	Condenser, trimmer, BC antenna	Part of C1	C25	Condenser, cathode by-pass, .01 μ f.	30-4650-58*
C1B	Condenser, trimmer, BC r-f	Part of C1	C26	Condenser, screen by-pass, .002 μ f.	30-4650-54*
C1C	Condenser, trimmer, BC oscillator	Part of C1	C27	Condenser, diode load filter, 2 μ f., 50v	
C1D	Condenser, trimmer, FM r-f	Part of C1	C28	Condenser, i-f by-pass, 150 μ f.	62-115001001*
C2	Condenser, antenna isolating, 3.3 μ f.	30-1224-49	C29	Condenser, i-f by-pass, 100 μ f.	62-110001021*
C3	Condenser, antenna isolating, 220 μ f.	62-122001001*	C30	Condenser, d-c blocking, .006 μ f.	30-4650-57*
C4	Condenser, FM antenna trimmer.....	45-3034	C31	Condenser, de-emphasis, .004 μ f.	30-4650-56*
C5	Condenser, cathode by-pass, 22 μ f.		C32	Condenser, plate by-pass, 680 μ f.	62-168001001*
C6	Condenser, d-c blocking, 220 μ f.	62-122001001*	C33	Condenser, audio coupling, .02 μ f.	30-4650-60*
C7	Condenser, screen by-pass, .005 μ f.	30-1238-1*	C34	Condenser, d-c blocking, .006 μ f.	30-4650-57*
C8	Condenser, oscillator grid, 100 μ f.	62-110001021*	C35	Condenser, tone compensation, .006 μ f.	30-4650-57*
C9	Condenser, neutralizing, 1.5 μ f.	30-1221-7	C36	Condenser, plate decoupling, 220 μ f.	62-122001001*
C10	Condenser, cathode by-pass, .01 μ f.	30-4650-58*	C37	Condenser, filament by-pass, .005 μ f.	30-1238-1*
C11	Condenser, neutralizing, 2.2 μ f.	30-1221-4	C38	Condenser, electrolytic, 4-section	
C12	Condenser, d-c blocking, 220 μ f.		C38A	Condenser, cathode by-pass, 25 μ f., 25v	Part of C38
C13	Condenser, fixed trimmer, 7.5 μ f.	30-1224-65	C38B	Condenser, filter, 40 μ f., 150v.....	Part of C38
C14	Condenser, cathode by-pass, 220 μ f.	Part of PC1	C38C	Condenser, filter, 70 μ f., 150v.....	Part of C38
C15	Condenser, r-f by-pass, 220 μ f.	62-122001001*	C38D	Condenser, filter, 40 μ f., 150v.....	Part of C38
C16	Condenser, plate decoupling, .01 μ f.	30-4650-58*	C39	Condenser, filament by-pass, 100 μ f.	62-110001021*
C17	Condenser, r-f by-pass, 100 μ f.	62-110009001*	C40	Condenser, filament by-pass, .005 μ f.	30-1238-1*
C18	Condenser, trimmer, FM oscillator	31-6511-10	C41	Condenser, line by-pass, 100 μ f.	62-110001021*
C19	Condenser, fixed trimmer, 3.3 μ f.	30-1224-30	C42	Condenser, line by-pass, .047 μ f.	30-4650-45*
C20	Condenser, a-v-c decoupling, .01 μ f.	30-4650-58*	C43	Condenser, line by-pass, 100 μ f.	62-110001021*
C21	Condenser, cathode by-pass, 220 μ f.	62-122001001*	C44	Condenser, r-f by-pass, 47 μ f.	60-00475420
C22	Condenser, screen by-pass, .002 μ f.	30-4650-54*	C45	Condenser, d-c blocking, 220 μ f.	62-122001001
C23	Condenser, neutralizing, .006 μ f.	30-4650-57*	CR1	Selenium rectifier, 100 ma., 117v.....	34-8003-1
C24	Condenser, i-f by-pass,		I1	Pilot lamp, BC	34-2805

Reference Symbol	Description	Service Part No.
I2	Pilot lamp, FM	34-2605
J1	Connector, male, a-c	27-6240-5
J2	Connector, female, FM test	27-6180
L1	Coil, FM antenna tuning	32-4532A
L2	Coil, FM r-f	32-4415-2
L3	Choke, r-f	32-4061-3
L4	Choke, r-f, 3.3 μ h.	32-4422-10
L5	Coil, FM oscillator	32-4414-6
L6	Choke, filament, 2.2 μ h.	32-4422-8
L7	Choke, filament, 2.2 μ h.	32-4422-8
L8	Choke, r-f, 3.3 μ h.	32-4422-10
L9	Secondary, r-f transformer	Part of T2
L10	Primary, r-f transformer	Part of T2
LA1	AM loop and support assembly	76-7836-1
LA2	Line-cord aerial, FM	Part of Back Assembly
LS1	Speaker	36-1641-14
PC1	Printed circuit, parasitic suppressor	30-6002
R1	Resistor, cathode bias, 120 ohms	66-1128340°
R2	Resistor, screen decoupling, 470 ohms	66-1478340°
R3	Resistor, grid return, 15,000 ohms	66-3158340°
R4	Resistor, grid return, 2.2 megohms	66-5228340°
R5	Resistor, parasitic suppressor, 2200 ohms	66-2228340°
R6	Resistor, parasitic suppressor, 470 ohms	Part of PC1
R7	Resistor, cathode bias, 33 ohms	66-0338340°
R8	Resistor, plate dropping, 47,000 ohms	66-3478340°
R9	Resistor, plate dropping, 4700 ohms	66-2478340°
R10	Resistor, cathode bias, 47 ohms	66-0478340°
R11	Resistor, screen decoupling, 1000 ohms	66-2108340°
R12	Resistor, plate decoupling, 680 ohms	66-1688340°
R13	Resistor, grid return, 1 megohm	66-5108340°
R14	Resistor, cathode bias, 120 ohms	66-1128340°
R15	Resistor, a-v-c filter, 2.2 megohms	66-5228340°
R16	Resistor, decoupling, 470 ohms	66-1478340°
R17	Resistor, FM diode load, 47,000 ohms	66-3478340°
R18	Resistor, de-emphasis, 47,000 ohms	66-3478340°
R19	Resistor, i-f filter, 47,000 ohms	66-3478340°
R20	Resistor, a-v-c load, 3.3 megohms	66-5338340°

Reference Symbol	Description	Service Part No.
R21	Volume control (with off-on switch) 500,000 ohms	33-5566-44
R22	Resistor, grid return, 10 megohms	66-4478340°
R23	Resistor, plate load, 470,000 ohms	66-6108340°
R24	Resistor, grid return, 470,000 ohms	66-4478340°
R25	Resistor, cathode bias, 150 ohms	66-1158340°
R26	Resistor, filter, 470 ohms, 1 watt	66-1474340°
R27	Resistor, filter, 150 ohms, 2 watts	66-1155360°
R28	Resistor, current limiting, 22 ohms, 2 watts	
R29	Resistor, current limiting	33-1343-3
R30	Resistor, loading, 100 ohms	66-1108340
S1	Switch, off-on	Part of R21
T1	Transformer, AM oscillator	
T2	Transformer, AM r-f	32-4572
T3	Transformer, output	32-8596
W1	Line cord	Part of Back Assembly
WS	Switch, band, 4-wafer	42-1991
Z1	Transformer, FM 1st i-f	32-4518A
Z2	Transformer, AM 1st i-f	32-4516A
Z3	Transformer, FM 2nd i-f	32-4518-1A
Z4	Transformer, FM detector	32-4310-4A
Z5	Transformer, AM 2nd i-f	32-4517A

MISCELLANEOUS

Description	Service Part No.
Cabinet	10950
Cabinet back assembly	76-7991
Clip, pilot lamp	56-354FA3
Dial backplate, R.H.	56-9932
Dial backplate, L.H.	56-9932-1
Dial scale, R.H.	54-5159
Dial scale, L.H.	54-5159-1
Drive cord, 25-foot spool	45-8750
Knob, FM-AM	54-4774-28
Knob, tuning	54-4774-26
Knob, volume-off-on	54-4774-27
Pointer (2)	56-5630-49
Shaft, tuning	56-7931-4
Spring, gang drive	56-2617
Spring, pointer drive	28-8954
Socket, 12BA6 i-f ampl.	27-6265
Socket, 12AU6 i-f ampl.	27-6265
Socket, 12BA6 r-f ampl.	27-6275-1
Socket, 12AT7	27-6203-6
Socket, 19V8	27-6203-6
Socket, 35C5	27-6203-12
Shield, tube (2)	56-5629-3
Shield, tube base (1)	56-3978-1FA3
Shield, tube base (2)	56-5628-1FA3
Socket assembly, pilot lamps (2)	27-6233-21
Spring, hairpin	28-8610

**REVISIONS AND ADDITIONS TO
MODEL 53-958 SERVICE MANUAL**

PARTS LIST ADDITIONS

Description	Service Part No.
Shield, pilot light	54-8888-1
Strap, scale, top	56-4756
Strap, scale, bottom	56-5155

PARTS LIST CORRECTIONS

Reference Symbol	Description	Service Part No.
C5	Condenser, cathode by-pass, 33 $\mu\mu\text{f}$.	62-033009001
C12	Condenser, d-c blocking, 220 $\mu\mu\text{f}$.	62-122001001
C27	Condenser, diode-load filter, 2 μf , 50v	45-3035-4
C38	Condenser, electrolytic, 4-section	45-3041-30
R28	Resistor, current limiting, 22 ohms, 2 watts	33-1355
T1	Transformer, AM oscillator	32-4569-2

PRODUCTION CHANGES

RUN 2

C5 was changed to 47 $\mu\mu\text{f}$, Part No. 62-047009001.
A 100-ohm resistor, Part No. 66-1108340, was added, in series with the FM line-cord antenna.

RUN 3

A copper ground strap was added, to reduce oscillator ground currents.

RUN 4

C44, r-f by-pass condenser, was changed to 33 $\mu\mu\text{f}$, Part No. 62-033009001.

RUN 5

Changes were made in the cabinet back assembly, to increase sensitivity. Replacement part numbers are unchanged.

CRITICAL LEAD DRESS INFORMATION

1. The red lead from the output transformer should be dressed away from R26.
2. The lead from the lug of C38D to lug 2 of B-2 should be dressed away from R28 and R27.
3. R29 should be dressed clear of the chassis, and all leads passing near R29 should be dressed away from it.
4. All leads to the FM air-core coils should be as short as possible.
5. R27 and R28 should be dressed away from the chassis and other components.
6. C12 should be dressed clear of the band switch and switch shaft.
7. R26 should be dressed clear of the chassis.
8. The green lead between L5 and pin 11 of WS2 should be dressed away from WS1.
9. The green lead from C1B to pin 5 of WS3 should be dressed away from both FM air-core coils.
10. C6 should be dressed clear of the pins on WS3.
11. The speaker leads should be dressed on top of the chassis in such a manner that they will clear drive cords and hot tubes.