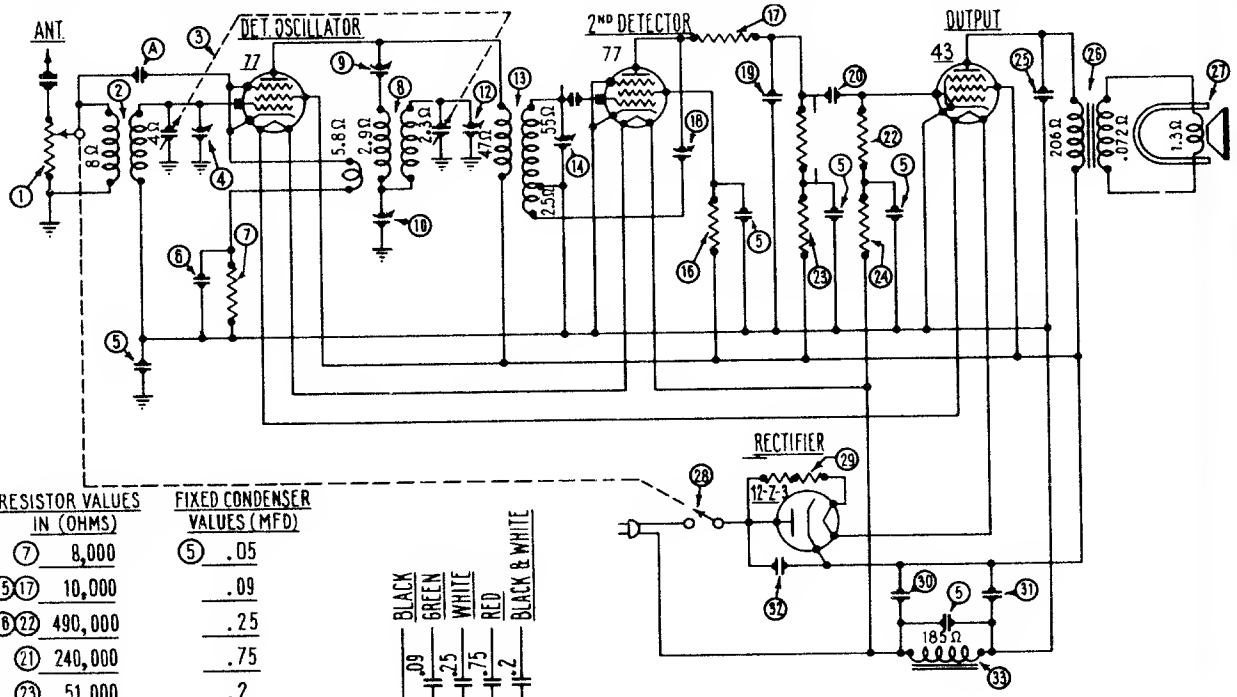
Philco Radio & Television Corp.

	Model: 54	**Chassis:**	**Year:** Pre October 1937
	Power:	**Circuit:**	**IF:**
	Tubes:		
	Bands:		

Resources
Beitmans 1926-38 121
Beitmans 1926-38 122
Riders 3 (III) PHILCO 3-58
Riders 4 (IV) PHILCO 4-36
Riders 7 (VII) PHILCO 7-147
Riders 8 (VIII) PHILCO 8-6

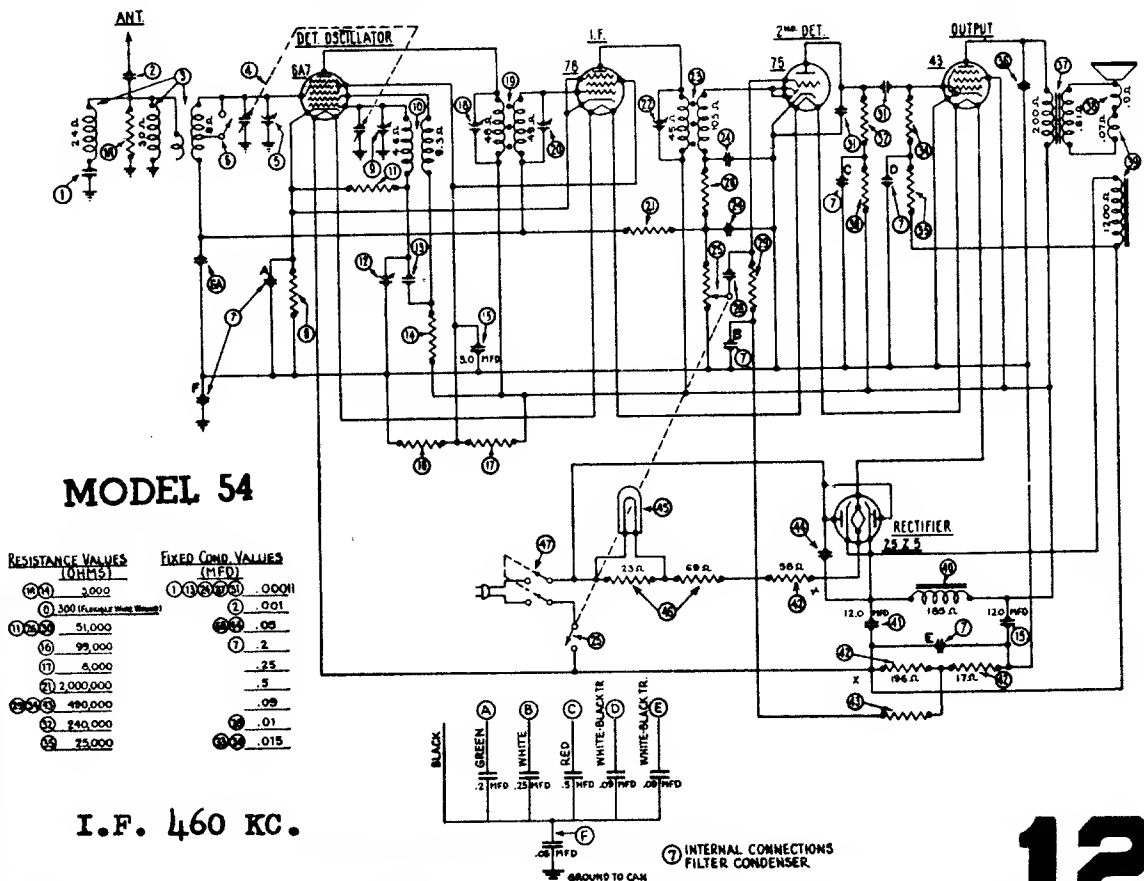


RESISTOR VALUES IN (OHMS)		FIXED CONDENSER VALUES (MFD)	
⑦	8,000	⑤	.05
⑮⑰	10,000		.09
⑯㉒	490,000		.25
㉑	240,000		.75
㉓	51,000		.2
㉔	99,000	⑥	.0014
㉙	216 (TOTAL)	⑪	10.0
		⑲	.00025

⑤ INTERNAL CONNECTIONS

MODEL 53 Philco Radio

I.F. 450 KC.



MODEL 54

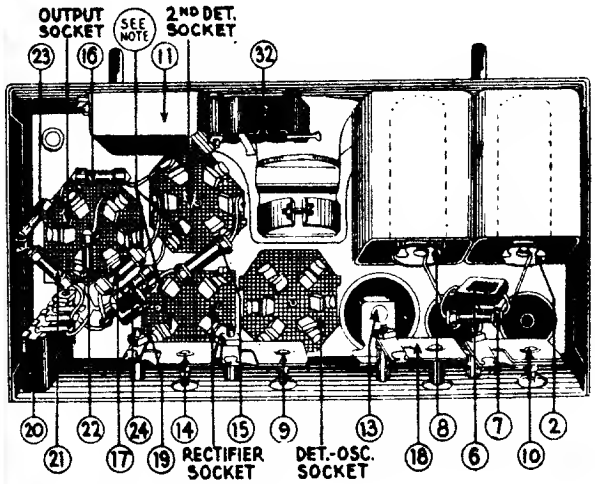
RESISTANCE VALUES (OHMS)		FIXED COND. VALUES (MFD)	
⑭	3,000	①⑬㉖㉗㉘	.0001
⑥	300 (Flexible Wire Wound)	②	.001
⑪㉕㉚	51,000	㉙㉛	.05
⑯	99,000	⑦	.2
⑰	6,000		.25
㉑	2,000,000		.5
㉓㉔㉛	490,000		.09
㉜	240,000	㉚	.01
㉝	25,000	㉞㉟	.015

I.F. 460 KC.

⑦ INTERNAL CONNECTIONS FILTER CONDENSER

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

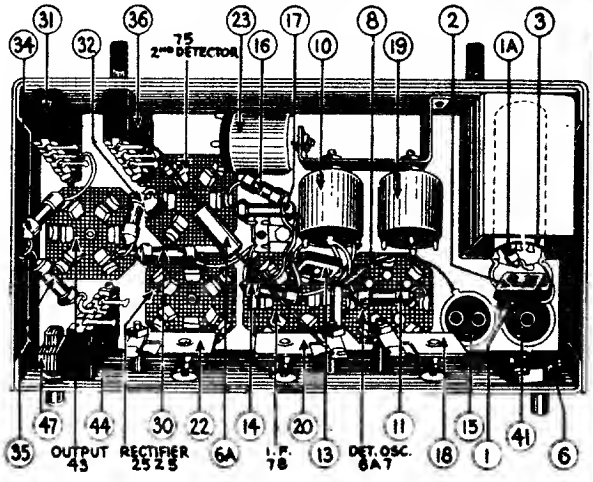
Model 53



No. on Figs. 2, 3 and 4	Description	Part No.
1	Volume Control	33-5001
2	Antenna Transformer	32-1000
3	Tuning Condenser Assembly	31-1000
4	Compensating Condenser (Part of Tuning Condenser Assembly)	
5	Filter Condenser Block (.05-.09-.25-.75-.2 Mfd.)	30-4000
6	Condenser (.0014 Mfd.)	7007
7	Resistor (8,000 ohms) Gray-Black-Red	5838
8	Oscillator Transformer	32-1001
9	Compensating Condenser (I.F. Primary)	04000-A
10	Compensating Cond. (Low Frequency)	04000-S
11	Condenser (10.0 Mfd.)	7440
12	Compensating Condenser (Part of Tuning Condenser Assembly)	
13	I.F. Transformer	32-1002
14	Compensating Cond. (I.F. Secondary)	04000-A
15	Resistor (10,000 ohms) Brown-Black-Orange	4412
16	Resistor (490,000 ohms) Yellow-White-Yellow	4517
17	Resistor (10,000 ohms) Brown-Black-Orange	4412
18	Compensating Condenser (Regeneration)	04000
19	Condenser (.00025 Mfd.)	3082
20	Condenser (.01 Mfd.)	3903-AM
21	Resistor (240,000 ohms) Red-Yellow-Yellow	4410
22	Resistor (490,000 ohms) Yellow-White-Yellow	4517
23	Resistor (51,000 ohms) Green-Brown-Orange	4518
24	Resistor (99,000 ohms) White-White-Orange	4411
25	Condenser (.015 Mfd.)	3793-S
26	Output Transformer	32-7000
27	Voice Coil and Cone Assembly	36-3000
28	A. C. Switch (Part of Volume Control Assembly)	33-5001
29	Resistors (2 Wire Wound-108 ohms each)	33-3000 / 33-3001
30	Electrolytic Condenser (8 Mfd.)	30-2000
31	Electrolytic Condenser (8 Mfd.)	30-2000
32	Condenser (.05 Mfd.)	3615-E
33	Filter Choke	32-7001
	Tube Shield	7172
	Knobs (Both Controls)	03064
	Four Prong Socket	7544

Model 54

(A. C.—D. C.)



No. on Figs.	Description	Part No.
1	Condenser	30-1005
1a	Resistor (Green-Black-Red)	6096
2	Condenser	5215
3	Antenna Transformer Assembly	32-1117
4	Tuning Condenser Assembly	31-1027
5	Compensating Condenser (Part of 4)	
6	Wave Band Switch	42-1027
6a	Condenser	30-4020
7	Filter Condenser (Block)	30-4023
8	Resistor (Flexible)	33-3010
9	Compensating Condenser (High Frequency 1400) Part of 4	
10	Oscillator Coil	32-1118
11	Resistor (Green-Brown-Orange)	4518
12	Compensating Condenser (Low Freq.)	04000-B
13	Condenser	4519
14	Resistor (Green-Black-Red)	5310
15	Electrolytic Condenser (Double)	30-2002
16	Resistor (White-White-Orange)	4411
17	Resistor (Gray-Black-Red)	5838
18	Compensating Cond. (1st I. F. Primary)	04000-A
19	1st I. F. Transformer	32-1115
10	Compensating Condenser (1st I. F. Secondary)	04000-A
21	Resistor (Red-Black-Green)	5872
22	Compensating Cond. (2nd I. F. Primary)	04000-A
23	2nd I. F. Transformer	32-1116
24	Condenser (Double)	8035-G
25	Volume Control and "On-Off" Switch	33-5010
26	Resistor (Green-Brown-Orange)	4518
26	Condenser	3903AM
29	Resistor (Yellow-White-Yellow)	6097
28	Resistor (Green-Brown-Orange)	4518
31	Condenser (Double)	8035-F
32	Resistor (Red-Yellow-Yellow)	4410
34	Resistor (Yellow-White-Yellow)	4517
35	Resistor (Red-Green-Orange)	4516
36	Condenser	3793-Y
37	Output Transformer	32-7020
38	Voice Coil and Cone Assembly	36-3029
39	Field Coil and Pot Assembly	36-3040
40	Filter Choke	32-7036
41	Electrolytic Condenser	30-2001
42	Resistor (Wire Wound)	33-3012
43	Resistor (Yellow-White-Yellow)	6097
44	Condenser	3615-B
45	Pilot Lamp	4567
46	Resistor (Wire Wound)	33-3011
47	Safety Switch	42-1026
	Tube Shield	28-1130
	Six Prong Socket	7547
	Seven Prong Socket	27-6005

MODEL 54
Schematic
Parts List

PHILCO RADIO & TELEVISION CORP.

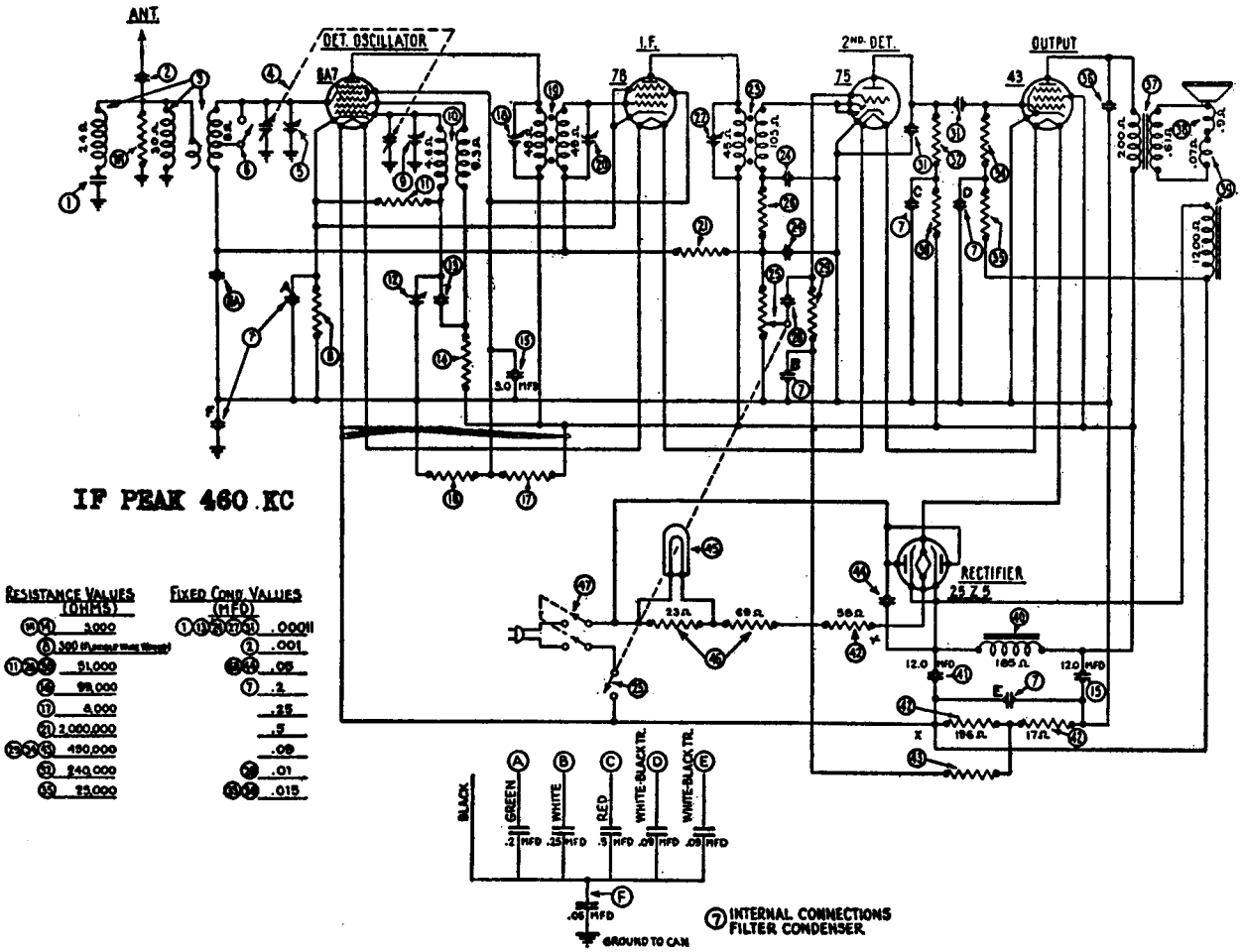


Fig. 3—Schematic Wiring Diagram

REPLACEMENT PARTS FOR MODEL 54

No. on Figs.	Description	Part No.	List Price
1	Condenser	30-1005	.16
1a	Resistor (Green-Black-Red)	6096	.20
2	Condenser	5215	.20
3	Antenna Transformer Assembly	32-1117	1.25
4	Tuning Condenser Assembly	31-1027	1.75
5	Compensating Condenser (Part of 4)	....	....
6	Wave Band Switch	42-1027	.50
6a	Condenser	30-4020	.12
7	Filter Condenser (Block)	30-4023	1.00
8	Resistor (Flexible)	33-3010	.15
9	Compensating Condenser (High Frequency 1400) Part of 4	....	....
10	Oscillator Coil	32-1118	1.00
11	Resistor (Green-Brown-Orange)	4518	.20
12	Compensating Condenser (Low Freq.)	04000-B	.19
13	Condenser	4519	.18
14	Resistor (Green-Black-Red)	5310	.20
15	Electrolytic Condenser (Double)	30-2002	1.00
16	Resistor (White-White-Orange)	4411	.20
17	Resistor (Gray-Black-Red)	5838	.20
18	Compensating Cond. (1st I. F. Primary)	04000-A	.14
19	1st I. F. Transformer	32-1115	.65
20	Compensating Condenser (1st I. F. Secondary)	04000-A	.14
21	Resistor (Red-Black-Green)	5872	.20
22	Compensating Cond. (2nd I. F. Primary)	04000-A	.14
23	2nd I. F. Transformer	32-1116	.75
24	Condenser (Double)	8035-G	.20
25	Volume Control and "On-Off" Switch	33-5010	1.00
26	Resistor (Green-Brown-Orange)	4518	.20
28	Condenser	3903AM	.20
29	Resistor (Yellow-White-Yellow)	6097	.20
30	Resistor (Green-Brown-Orange)	4518	.20
31	Condenser (Double)	8035-F	.18
32	Resistor (Red-Yellow-Yellow)	4410	.20
34	Resistor (Yellow-White-Yellow)	4517	.20
35	Resistor (Red-Green-Orange)	4516	.20
36	Condenser	3793-Y	.16
37	Output Transformer	32-7020	.80
38	Voice Coil and Cone Assembly	36-3029	....
39	Field Coil and Pot Assembly	36-3040	1.60
40	Filter Choke	32-7036	.75
41	Electrolytic Condenser	30-2001	1.25
42	Resistor (Wire Wound)	33-3012	.25
43	Resistor (Yellow-White-Yellow)	6097	.20
44	Condenser	3615-B	.30
45	Pilot Lamp	4567	.11
46	Resistor (Wire Wound)	33-3011	.25
47	Safety Switch	42-1026	1.00
	Tube Shield	28-1130	.10
	Six Prong Socket	7547	.10
	Seven Prong Socket	27-6005	.10
	Tuning Scale	27-5008	.12
	Volume Control Scale	27-5010	.12

MODEL 37
MODEL 43-121
MODEL 54
Changes

PHILCO RADIO & TELEVISION CORP.

Model 37

In Run No. 4, the cathode resistor ⑪ is changed from Part No. 7352 (6,000 ohm) to Part No. 5838 (8,000 ohm).

Model 43-121

The following substitutions of electrolytic condensers are effective with current production:

Position	Code 121
㉗	7556 (6 Mfd.) (remains)
㉘	7556 (6 Mfd.)
㉙	6453 (6 Mfd.)

Model 54

Effective with Run No. 9, fixed condenser ㉛, 3793-Y is replaced by 3793-S, same capacity, .015 mfd. 3793-S is mounted in a new hole and is parallel to chassis.

Present production of this Model carries condenser ㉖ Part number 3903AR instead of 3903AM. There is no difference in the electrical characteristics of these condensers.

In run number 4, two of Part number 31-6004 double compensating condensers supersede Parts number 04000A in locations ⑯, ⑲, and ㉒ one of Part number 31-6004 covers ⑱ and ⑲, the other ㉒, and the additional compensating condenser is used to tune the secondary of the 2nd I. F. transformer ⑳

The correct resistance value of the Speaker Field Coil ㉜ is 2600 ohms.

The extruded washers at top and bottom of voltage divider resistors ㉗ and ㉘ are Part No. 27-7168. These washers are used in some of the later production of this Model.

Second I. F. Transformer ⑳ Part No. 32-1116 is superseded by Part No. 32-1195.

Refer to Figures 1 and 2

The adjustment of the I. F. compensating condensers is first completed. This is followed by the adjustment of the High Frequency and Antenna compensating condensers, and then the Low Frequency compensating condenser. The intermediate frequency is 460 kilocycles, and it is necessary to have an accurately calibrated signal generator for the adjustment. The Philco All Purpose Set Tester Model 048 is ideal.

The adjustment of the High Frequency and Antenna compensating condensers can be accomplished by means of a screw driver through the top grille of the cabinet. The Low Frequency condenser is accessible from rear of cabinet.

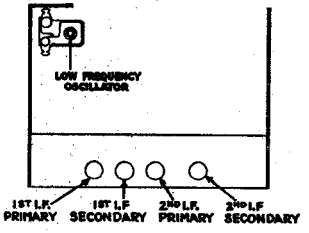


Fig. 1—Back of Model 54 Chassis, showing location of Compensating Condensers.

Model 54

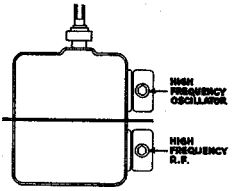


Fig. 2—Tuning Condenser, Model 54 Chassis, showing location of additional Compensating Condensers.

FOR FURTHER INFORMATION ON THESE RECEIVERS, SEE INDEX

PHILCO RADIO & TELEV. CORP.

MODELS 29, 54, 60, 116(121, 122)116X, 610
Changes

CHANGES IN MODELS

Since Publication of Each Service Bulletin

Grouped under each model and arranged according to date . . . All models included . . . August 1st to December 31st, 1935.

The second column on each page gives the "Run Number" of the set at the time of the change (where this information was available from our records). The Run Number is stamped on the top of the chassis with a rubber stamp and is the lefthand number in the rectangle.

The Code Number of the set is given on the chassis name plate or name label (at rear of chassis).

MODEL 29

Approximate Date of Change	Run No.	CHANGES
11-1-35		No. ⑤ on base view of Fig. 4 should be ⑭. No. ⑭ next to ⑤ on base view of Fig. 4 should be ⑤.

MODEL 54

9-1-35	14		
		Old Part No.	New Part
Condenser ⑤		3793-AG	3793-AM
Condenser ⑭		3615-BF	3615-BY
Condenser ⑳		3035-F	3035-T

MODEL 60

10-1-35	11	Tube Shield and Tube Shield Base Nos. 28-2726 and 28-2725 for the 6A7 Tube will no longer be necessary.	
		Old Part No.	New Part No.
Resistor ⑪		5872 (½ watt) 2 meg.	33-1025 (¼ watt)
Resistor ⑳		4409 (½ watt) 1 meg.	33-1096 (¼ watt)
Resistor ㉓		4411 (½ watt) 99,000 ohms	6099 (¼ watt)
Resistor ㉔, ㉕		5385 (½ watt) 70,000 ohms	33-1115 (¼ watt)

MODEL 116 (Code 121 and 122)

8-1-35	..	Adjustment of high frequency end of broadcast band should be made at 1500 K. C. (1.5 M. C. on the Philco 088 scale) instead of 1600 K. C.
	5	There will be an addition of resistor and condenser assembly. Replace Condenser No. 6287DU ㉘ with 6287-ODU. The latter is impregnated with the new high melting point wax.

Remove	No. on Schematic Code 121	No. on Schematic Code 122	Install
80-4336 (.00125 mfd.)	㉘	㉘	33-6978
5837 (1000 ohms)	㉙	㉙	
33-1114 (8000 ohms)	㉚	㉚	
80-1028 (.008 mfd.)	⑰	⑰	7301

9-1-35	9	This change made to eliminate frequency drift.	
		Old Part No.	New Part No.
2nd I. F. Transformer ㉘		32-1734	32-1865
	3	Code 122 only	
		Old Part No.	New Part No.
Condenser ⑱		30-2011	30-2069
Insulator		27-7195	27-7194

MODEL 116 (Code 121 and 122)

Approximate Date of Change	Run No.	CHANGES
11-1-35	.. ..	Code 122 The grid lead from the 6A3 power tube near the front of the chassis is changed to run over to and parallel with the end of the chassis down as far as condenser ⑱ then over to the input transformer. Change made to prevent audio oscillation.

Code 121, Run No. 9 Code 122, Run No. 11

Part	Schematic No.	Removed
Resistor	(Code 121) ⑰ (Code 122) ㉘	6984 (2000 ohms) ½ watt
	10 Code 121 8 Code 122	

Schematic No.	Old Part	New Part
Tuning Condenser Assembly ㉘	31-1606	31-1607
Dial Mask and Hub Assembly	31-1575	29-5136

12-1-35

Code 121, Run No. 12

Code 122, Run No. 10

Input Transformer	㉘	32-7447	32-7057

Change ㉘ Resistor (10,000 ohm) to ㉘a

September Change Notices indicated a change in the 2nd I. F. Transformer ㉘. The Part No. of the new Transformer is 32-1868 and the corresponding Compensating Condenser Part No. is 31-6067.

MODEL 116X and 116B

8-1-35	..	Add bezel frame gasket No. 27-7973. Remove Rubber Bumper No. 27-4150 to prevent microphonics. Remove Bezel Light Guard No. 27-8001 on Codes 121 and 122.

MODEL 610

8-1-35	7	Tube Shield and Tube Shield Base on the 6A7 tube will not be necessary. Remove Part No. 28-2726 and 28-2725.
10-1-35	8	Part No. 6096 (5000 ohms) ⑤ Resistor and Part No. 33-1206 (20 ohms) ⑥ Resistor will not be used. In eliminating Resistor ⑥, shunt a wire across the terminals from which it is disconnected.
11-1-35	..	Reverse numbers ① and ⑧ shown in Figure 3.

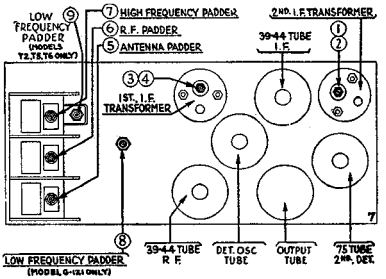
MODELS T2-CT2, T5-CT5
MODELS T3-MT3, RT3, ST3
MODEL 54
Alignment, Trimmers

PHILCO RADIO & TELEV. CORP.

MODEL NOS. T2, T5

Signal Generator Connection	Signal Generator Frequency	Dial Position	Wave Band Switch Position	Trimmer Number	Output Signal
Remove grid clip from det.-osc. tube					
Control grid of det.-osc. tube	260 k.c.	...	...	1[1]	Max.
"	"				
"	"	...	...	2[2]	Max.
"	"	...	...	3[1]	Max.
"	"	...	...	4[2]	Max.
Connect grid clip to det-osc. tube					
Ant.[3, 5]	1600 k.c.	Note 4	...	7	Max.
"	1400 k.c.	140	...	6	Max.
"	"	"	...	5	Max.
"	600 k.c.	60	...	9	Max.*
"	1400 k.c.	140	...	6	Max.
"	"	"	...	5	Max.

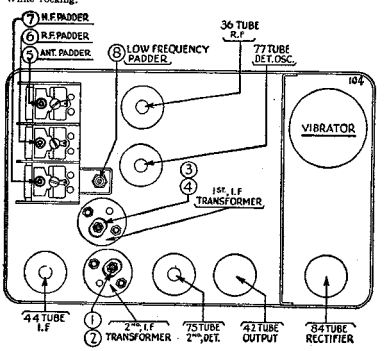
Note 1.—This is a screw adjustment.
Note 2.—This is a nut adjustment.
Note 3.—Through a 150 mmfd. condenser.
Note 4.—Turn the tuning condenser plates wide open. This gives the correct adjustment for 1600 k.c.—180 on the dial scale.
Note 5.—When the antenna-stage adjustment is made with the receiver installed in the car, the receiver must be connected to the car antenna in the usual manner. Connect the signal-generator output to a wire placed near the car antenna but not connected to it.
* While rocking.



MODEL NO. T3

Signal Generator Connection	Signal Generator Frequency	Dial Position	Wave Band Switch Position	Trimmer Number	Output Signal
Remove grid clip from det.-osc. tube					
Control grid of det.-osc. tube	260 k.c.	...	...	1[1]	Max.
"	"				
"	"	...	...	2[2]	Max.
"	"	...	...	3[1]	Max.
"	"	...	...	4[2]	Max.
Connect grid clip to det-osc. tube					
Ant.[3, 5]	1600 k.c.	Note 4	...	7	Max.
"	1400 k.c.	140	...	6	Max.
"	"	"	...	5	Max.
"	600 k.c.	60	...	8	Max.*
"	1400 k.c.	140	...	6	Max.
"	"	"	...	5	Max.

Note 1.—This is a screw adjustment.
Note 2.—This is a nut adjustment.
Note 3.—Through a 150 mmfd. condenser.
Note 4.—Turn the tuning condenser plates wide open. This gives the correct adjustment for 1600 k.c.—160 on the dial scale.
Note 5.—When the antenna-stage adjustment is made with the receiver installed in the car, the receiver must be connected to the car antenna in the usual manner. Connect the signal-generator output to a wire placed near the car antenna but not connected to it.
* While rocking.



MODEL NO. 54

Signal Generator Connection	Signal Generator Frequency	Dial Position	Wave Band Switch Position	Trimmer Number	Output Signal
Remove grid clip from 6A7					
Control grid of 6A7	460 k.c.	55	Broadcast	1	Max.
"	"	"	"		
"	"	"	"	2	Max.
"	"	"	"	3	Max.
"	"	"	"	4	Max.
Connect grid clip to 6A7					
Ant.*	1400 k.c.	140	"	5[1]	Max.
"	"	"	"	6[1]	Max.
"	600 k.c.	60	"	7[2]	Max.**
"	1400 k.c.	140	"	5[1]	Max.

Note 1—Padders (5) and (6) are accessible through the top grille of cabinet.
Note 2—Padder (7) is accessible from rear of cabinet.
* Use a 400-mmf. condenser as dummy antenna.
** While rocking.