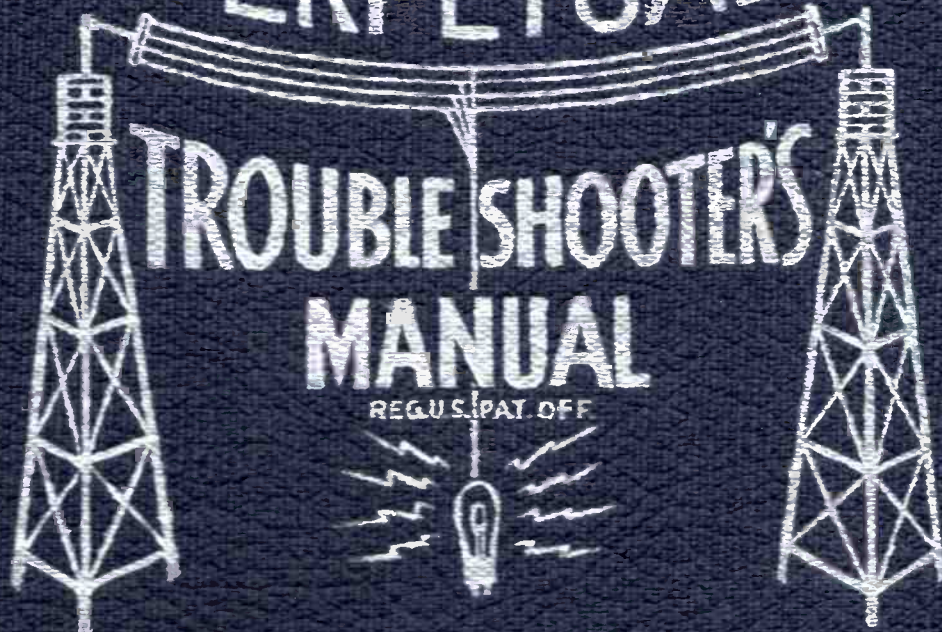


**VOLUME XIV**

**PERPETUAL**



**JOHN F. RIDER**



PHILCO RADIO & TELEVISION CORP.

MODELS 42-842, 42-843, 42-844  
MODELS 42-853, 42-854

CONNECTING ALIGNING INSTRUMENTS

**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. Terminal No. 1 on the rear of the chassis which connects to the speaker is also provided for connecting the audio output meter. If this terminal is used, the lowest scale of the meter should be used when aligning.

**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 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 42-842, 42-843, 42-844

These models may be adjusted when operated by battery or 115 volts A.C.-D.C. power.

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	455 K.C.	540 K.C.	Vol. Max.	26A, 25A, 25B, 15A, 15B	Note A
2	Use Loop on Generator as above	1500 K.C.	1500 K.C.	Vol. Max.	4B, 4A	Roll Tuning Condenser to Max.
3	Use Loop on Generator as above	580 K.C.	580 K.C.	Vol. Max.	7A, Note B	
4	Use Loop on Generator as above	Repeat Operation 2	Repeat Operation 2	Repeat Operation 2	Repeat Operation 2	

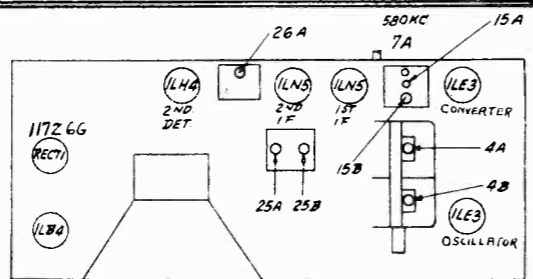


FIG. 1. LOCATIONS OF COMPENSATORS.

**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 540 K.C.

**NOTE B**—Roll tuning condenser as compensator 7A is being adjusted until maximum output is indicated on output meter.

MODELS 42-853, 42-854

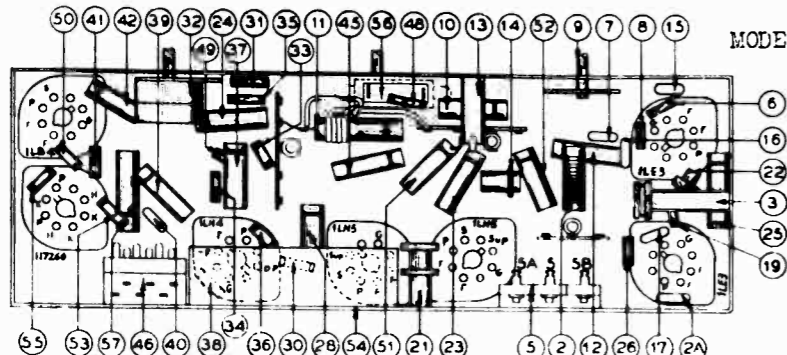
These models may be adjusted when operated by battery or 115 volts A.C.-D.C. power.

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	455 K.C.	540 K.C.	Vol. Max. Band—Broadcast	20A, 20B, 27A, 27B, 29A	Note A
2.	Loop on Generator	15 mc.	15 mc.	Band—S.W.	4B, 4A	Note B
3.	Loop on Generator	1600 K.C.	1600 K.C.	Band—Broadcast	5A	Note C
4.	Loop on Generator	1500 K.C.	1500 K.C.	Band—Broadcast	5	
5.	Loop on Generator	580 K.C.	580 K.C.	Band—Broadcast	5B	Roll Tuning Condenser
	Repeat operation 3					

**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 540 K.C.

**NOTE B:** When adjusting the S. W. oscillator compensator be sure to tune in the fundamental signal (15 mc.) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning the signal generator dial 910 mc. below the fundamental signal which will be 14,090 mc.

**NOTE C:** To adjust the aerial compensator (5) to maximum, first set signal generator to 1500 K.C., then tune in this signal on the radio. The aerial compensator is then adjusted to maximum output.



LOCATION OF PARTS, UNDERSIDE OF CHASSIS

MODELS 42-853, 42-854

MODEL 42-1001(121,122)  
MODELS 42-1012, 42-1013

PHILCO RADIO & TELEVISION CORP.

MODEL 42-1001(121,122) CONNECTING ALIGNING INSTRUMENTS

**AUDIO OUTPUT METER:** If this type of aligning meter is used, connect it to the voice coil terminals of the speaker or from the plate of the 50L6GT tube to "B" (-) negative. Adjust the meter for the 0 to 10 volt scale.

The left terminal on the terminal panel at rear is also provided for connecting the audio output meter. If this terminal is used, the lowest A.C. scale of the meter should be used when aligning.

**VACUUM TUBE VOLTMETER:** To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative (-) terminal of the voltmeter to any point in the circuit where the A. V. C. voltage can be obtained. Connect the positive (+) terminal of the vacuum tube voltmeter to the chassis.

**SIGNAL GENERATOR:** When adjusting the I. F. padders, the high side of the signal generator is connected through a .1 mfd. condenser

to the antenna section of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet.

When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled.

After connecting the aligning instruments adjust the compensators as shown in the tabulation below. Locations are shown on Schematic.

If the indicating meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Setting Dial	Dial Setting	Control Setting	Adjust Compensators in Order	
1	Ant. Section of tuning	455 K.C.	540 K.C. Tuning Cond. Closed	Vol. Max.	12A, 12B, 10A, 10B	Note B
2	Loop see above instructions	1600 K.C.	1600 K.C.	Vol. Max.	{7B, Note C}	Note A
3	Loop see above instructions	1500 K.C.	1500 K.C.	Vol. Max.	{7A, Note D}	

**NOTE A: DIAL POINTER CALIBRATION**—In order to adjust the receiver correctly, the pointer must be adjusted to track properly with the tuning condenser. To do this, turn the tuning condenser to the maximum capacity (plates fully meshed). With the condenser in this position, set the tuning pointer on the first small line stamped in the scale plate on the left side. If adjusted in the cabinet, set the dial pointer to the mark on dial scale below 540 K.C.

**NOTE B**—Before adjusting compensators, turn down (10B) to tight position. Then adjust the compensators for maximum output in the following order: 12A, 12B, 10A and 10B.

**NOTE C**—Turn tuning condenser until dial pointer is on the first small line stamped in the scale plate from right side of chassis. Adjust padder (7B) to maximum at this point. If the radio is adjusted in the cabinet, set dial pointer to 1600 K.C. If adjusted in the cabinet, set the dial pointer to 1600 K.C.

**NOTE D**—Turn tuning condenser until dial pointer is on the second small line stamped in the scale plate from right side of chassis. Adjust padder (7A) to maximum at this point. If adjusted in cabinet, set pointer to 1500 K.C. on dial.

MODELS 42-1012, 42-1013, CODE 121 EXTERNAL AERIAL CONNECTIONS

The built-in aerial system is designed to operate without an outside aerial or ground and to give exceptionally high receiving performance of stations in the standard, shortwave, or FM bands.

To operate the radio in steel reinforced buildings and other shielded locations where signal strength is weak, an external aerial is recommended. Three different types of aerial combinations are available, to improve reception on the standard, shortwave, or FM bands.

**1—For Additional Sensitivity on Frequency Modulation only:**  
\*Philco Dipole Outdoor Aerial, Part No. 45-2926.

The plug at the end of the transmission line is inserted in the socket of the back of the chassis in place of the plug connected to the F. M. loop in the cabinet.

**2—For Additional Sensitivity on ALL ranges:**  
\*Philco Dipole Outdoor Aerial, Part No. 45-2926.  
Philco Aerial Coupler, Part No. 45-1361.

The coupler plugs into the socket at the back of the chassis in place of the plug connected to the F. M. loop. The aerial trans-

mission line then connects to the terminals on the coupler marked "red" and "black." The local-distance switch on the coupler connects or disconnects the outdoor aerial from the standard broadcast and shortwave tuning ranges. The dipole remains connected to the F. M. band regardless of the position of the switch.

**3—For Additional Sensitivity on Standard Broadcast and Shortwave only in Areas where F. M. reception is not available.**

Philco Safety Aerial, Part No. 40-6370.

Philco Aerial Coupler, Part No. 45-1361

Connect the single wire lead-in of the aerial to the "black" terminal on the aerial coupler.

\*Accessories for this aerial are the Philco Aerial Mast Kit, the Philco Reflector Kit and Philco High Efficiency Transmission Line. See Service Bulletin No. 396 on Dipole Aerials.

**NOTE:** When installing the F. M. Philco Outdoor Dipole Aerial, it is very important that the aerial compensating condensers of the standard and shortwave band are repadded.

ELECTRIC PUSH-BUTTON ADJUSTMENTS

The electric push button tuning mechanism consists of ten push buttons. Five push buttons control and select power supply, broadcast, police and shortwave bands and phonograph operation. The remaining five push buttons are used for automatically selecting five standard broadcast stations.

Select five of the most popular stations received in the locality. Insert the station call letters into the spaces above the buttons. The station with the lowest frequency is placed in the second button from the left and the highest frequency is placed in the sixth push button from the left. Each push button is adjusted by two adjusting screws located on the rear of the chassis. Each set of screws is numbered and labeled "Ant.", "Osc." and covers a frequency range as shown in Fig. 5.

Looking at the front of the cabinet, the second button from the left is adjusted by adjusting screws No. 1. The next push button by adjusting screws No. 2, and the remaining push buttons in order.

To adjust the electric push buttons accurately for reception of broadcast stations, a vacuum tube voltmeter such as Philco Models 027 and 028 should be used. In addition, an insulated padding screw driver, Part No. 45-2610, and a Philco Model 070 signal generator are required. With this equipment at hand proceed as follows:

1. Press in "Broadcast" push button.

2. Set up a Model 070 Signal Generator near the receiver and connect a loop aerial (made from a few turns of wire 12 inches in diameter) to the high and ground output jacks of the signal generator. Turn the output controls to maximum and set the modulation control to "MOD. ON"

Connect the negative (-) terminal of the vacuum tube voltmeter to the aligning test socket at the rear of the chassis. Attach the positive (+) terminal of the voltmeter to the chassis.

3. Manually tune in the station to be set up on the first station push button. After doing this set the indicator of the 070 Signal Generator to the frequency of the station being received. As the indicator approaches the frequency of the station a whistle will be heard; leave the indicator at this point.

4. Press "in" the second push button from the left of cabinet. Using the insulated screw driver, turn the No. 1 "Osc." screw until the broadcast station identified by the signal generator is heard; at this point, turn the indicator of the signal generator away from the frequency of the station. Readjust No. 1 "Osc." and "Ant." screws for maximum deflection of the vacuum tube voltmeter pointer.

After setting up the first station the same procedure as outlined above is used for the remaining stations. When these models are set up to receive the sound of a television program tuned in by the special type Philco Television Sets or if it is to be used in conjunction with a Philco Record Player, the lowest frequency push button should be used. To tune in these programs, the same procedure as given for broadcast stations above is used.

Further details for setting up these radios for operation with Philco Television Sets or Record Players are supplied with the instruments.

PHILCO RADIO & TELEVISION CORP.

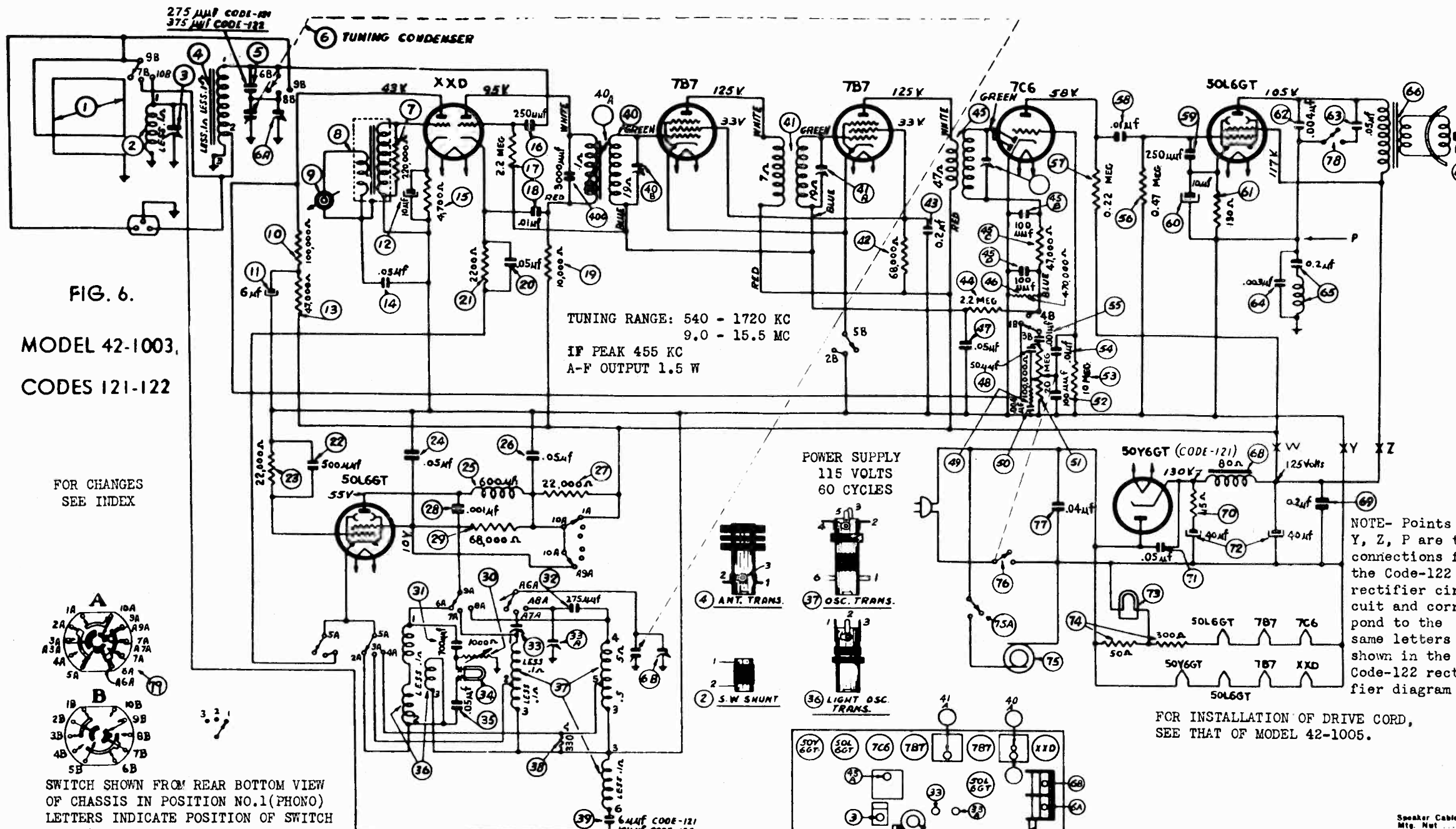
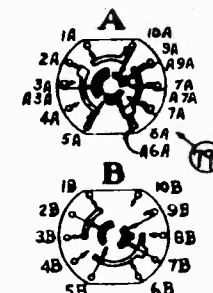
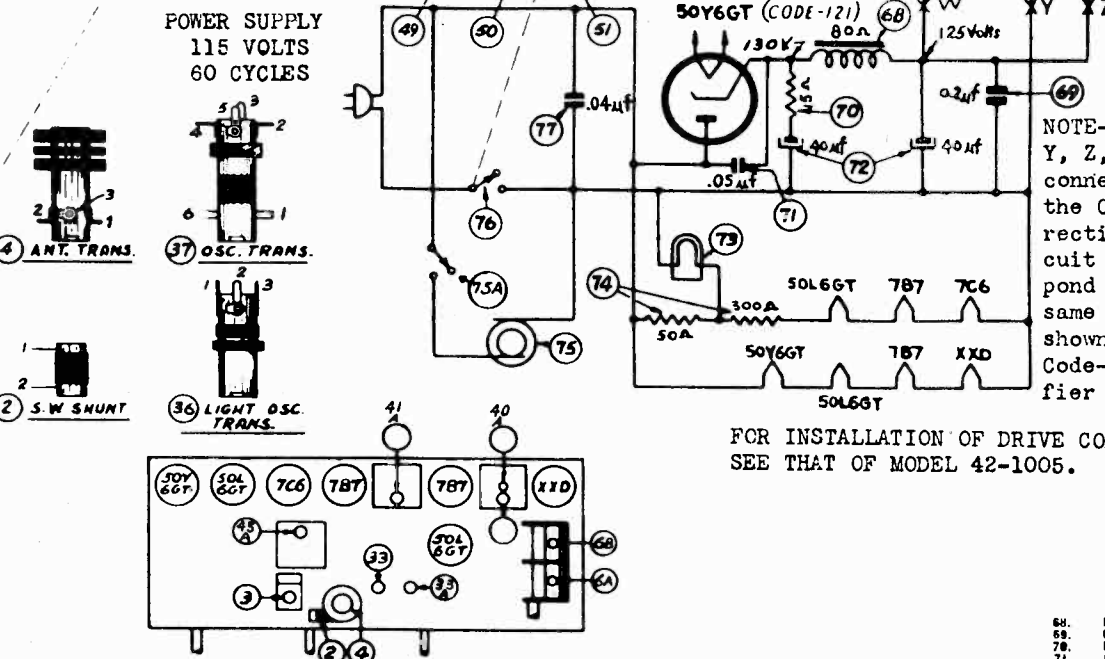


FIG. 6.  
MODEL 42-1003,  
CODES 121-122

FOR CHANGES  
SEE INDEX



SWITCH SHOWN FROM REAR BOTTOM VIEW OF CHASSIS IN POSITION NO.1(PHONO) LETTERS INDICATE POSITION OF SWITCH WAFERS FROM REAR OF CHASSIS.



NOTE- Points W, Y, Z, P are the connections for the Code-122 rectifier circuit and correspond to the same letters as shown in the Code-122 rectifier diagram

FOR INSTALLATION OF DRIVE CORD, SEE THAT OF MODEL 42-1005.

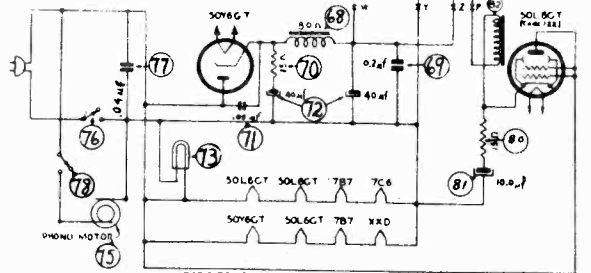


FIG. 2. RECTIFIER CIRCUIT—MODEL 42-1003, CODE 122

Points "C", "P", "W", "Y" correspond to the connections with the same letters in the rectifier circuit for Model 42-1003, Code 121, shown in Fig. 6.

Schem. No.	Description	Part No.	Part No.	Description	Part No.	Description	Part No.
1.	Loop Aerial	76-1330	35-2517	Light Beam Pickup (Complete)	35-2517	51c.	Resistor (47000 ohms) (Part of 45a)
2.	Short Wave Aerial Transformer (Code 121)	W-2071	35-0109	Lock Washer	35-0109	52.	Resistor (47000 ohms) (Part of 45a)
3.	Compensator (S. W. Aerial)	32-3754	34-4070	Rubber Bumper	34-4070	53.	Resistor (47000 ohms) (Part of 45a)
4.	Broadcast Aerial Transformer	32-3661	34-4095	Rubber Mtg. Grammet (two required)	34-4095	54.	Resistor (47000 ohms) (Part of 45a)
5.	Broadcast Aerial Transformer (Code 122)	31-6437	34-4096	Rubber Mtg. Grammet (one required)	34-4096	55.	Resistor (47000 ohms) (Part of 45a)
6.	Compensator (Part of 6)	32-3739	W-628	Nut	W-628	56.	Resistor (47000 ohms) (Part of 45a)
6a.	Compensator (Part of 6)	32-3849	33-410339	Resistor (100,000 ohms, Code 121)	33-410339	57.	Resistor (47000 ohms) (Part of 45a)
7.	Drive Cord	31-2571	33-422339	Resistor (220,000 ohms, Code 122)	33-422339	58.	Resistor (47000 ohms) (Part of 45a)
8.	Drive Shaft Assembly	28-5854	30-2504	Electrolytic Capacitor (6 mfd.)	30-2504	59.	Resistor (47000 ohms) (Part of 45a)
9.	Rubber Grammet	27-4610	36-1346	Electrolytic Capacitor (10 mfd.)	36-1346	60.	Resistor (47000 ohms) (Part of 45a)
10.	Mtg. Nut (Drive Shaft)	28-5583	31-347339	Part of 11	31-347339	61.	Resistor (47000 ohms) (Part of 45a)
11.	Painter	W-1543	30-4519	Resistor (47000 ohms)	30-4519	62.	Resistor (47000 ohms) (Part of 45a)
12.	Mtg. Nut (Tuning Condenser)	33-422339	30-4572	Resistor (250 mfd., 200 volts)	30-4572	63.	Resistor (47000 ohms) (Part of 45a)
13.	Phonograph Input Transformer	12-8163	60-125157	Resistor (250 mfd., 200 volts)	60-125157	64.	Resistor (47000 ohms) (Part of 45a)
14.	Input Cable	11-3366	33-522339	Resistor (2.2 megohms)	33-522339	65.	Resistor (47000 ohms) (Part of 45a)
15.			30-4518	Condenser (.05 mfd., 400 volts)	30-4518	66.	Resistor (47000 ohms) (Part of 45a)
16.			33-310339	Resistor (10,000 ohms)	33-310339	67.	Resistor (47000 ohms) (Part of 45a)
17.			30-4518	Resistor (10,000 ohms)	30-4518	68.	Resistor (47000 ohms) (Part of 45a)
18.			30-4518	Resistor (10,000 ohms)	30-4518	69.	Resistor (47000 ohms) (Part of 45a)
19.			30-4518	Resistor (10,000 ohms)	30-4518	70.	Resistor (47000 ohms) (Part of 45a)
20.			30-4518	Resistor (10,000 ohms)	30-4518	71.	Resistor (47000 ohms) (Part of 45a)
21.			30-4518	Resistor (10,000 ohms)	30-4518	72.	Resistor (47000 ohms) (Part of 45a)
22.			30-4518	Resistor (10,000 ohms)	30-4518	73.	Resistor (47000 ohms) (Part of 45a)
23.			30-4518	Resistor (10,000 ohms)	30-4518	74.	Resistor (47000 ohms) (Part of 45a)
24.			30-4518	Resistor (10,000 ohms)	30-4518	75.	Resistor (47000 ohms) (Part of 45a)
25.			30-4518	Resistor (10,000 ohms)	30-4518	76.	Resistor (47000 ohms) (Part of 45a)
26.			30-4518	Resistor (10,000 ohms)	30-4518	77.	Resistor (47000 ohms) (Part of 45a)
27.			30-4518	Resistor (10,000 ohms)	30-4518	78.	Resistor (47000 ohms) (Part of 45a)
28.			30-4518	Resistor (10,000 ohms)	30-4518	79.	Resistor (47000 ohms) (Part of 45a)
29.			30-4518	Resistor (10,000 ohms)	30-4518	80.	Resistor (47000 ohms) (Part of 45a)
30.			30-4518	Resistor (10,000 ohms)	30-4518	81.	Resistor (47000 ohms) (Part of 45a)
31.			30-4518	Resistor (10,000 ohms)	30-4518	82.	Resistor (47000 ohms) (Part of 45a)
32.			30-4518	Resistor (10,000 ohms)	30-4518	83.	Resistor (47000 ohms) (Part of 45a)
33.			30-4518	Resistor (10,000 ohms)	30-4518	84.	Resistor (47000 ohms) (Part of 45a)
34.			30-4518	Resistor (10,000 ohms)	30-4518	85.	Resistor (47000 ohms) (Part of 45a)
35.			30-4518	Resistor (10,000 ohms)	30-4518	86.	Resistor (47000 ohms) (Part of 45a)
36.			30-4518	Resistor (10,000 ohms)	30-4518	87.	Resistor (47000 ohms) (Part of 45a)
37.			30-4518	Resistor (10,000 ohms)	30-4518	88.	Resistor (47000 ohms) (Part of 45a)
38.			30-4518	Resistor (10,000 ohms)	30-4518	89.	Resistor (47000 ohms) (Part of 45a)
39.			30-4518	Resistor (10,000 ohms)	30-4518	90.	Resistor (47000 ohms) (Part of 45a)
40.			30-4518	Resistor (10,000 ohms)	30-4518	91.	Resistor (47000 ohms) (Part of 45a)
41.			30-4518	Resistor (10,000 ohms)	30-4518	92.	Resistor (47000 ohms) (Part of 45a)
42.			30-4518	Resistor (10,000 ohms)	30-4518	93.	Resistor (47000 ohms) (Part of 45a)
43.			30-4518	Resistor (10,000 ohms)	30-4518	94.	Resistor (47000 ohms) (Part of 45a)
44.			30-4518	Resistor (10,000 ohms)	30-4518	95.	Resistor (47000 ohms) (Part of 45a)
45.			30-4518	Resistor (10,000 ohms)	30-4518	96.	Resistor (47000 ohms) (Part of 45a)
46.			30-4518	Resistor (10,000 ohms)	30-4518	97.	Resistor (47000 ohms) (Part of 45a)
47.			30-4518	Resistor (10,000 ohms)	30-4518	98.	Resistor (47000 ohms) (Part of 45a)
48.			30-4518	Resistor (10,000 ohms)	30-4518	99.	Resistor (47000 ohms) (Part of 45a)
49.			30-4518	Resistor (10,000 ohms)	30-4518	100.	Resistor (47000 ohms) (Part of 45a)
50.			30-4518	Resistor (10,000 ohms)	30-4518	101.	Resistor (47000 ohms) (Part of 45a)
51.			30-4518	Resistor (10,000 ohms)	30-4518	102.	Resistor (47000 ohms) (Part of 45a)
52.			30-4518	Resistor (10,000 ohms)	30-4518	103.	Resistor (47000 ohms) (Part of 45a)
53.			30-4518	Resistor (10,000 ohms)	30-4518	104.	Resistor (47000 ohms) (Part of 45a)
54.			30-4518	Resistor (10,000 ohms)	30-4518	105.	Resistor (47000 ohms) (Part of 45a)
55.			30-4518	Resistor (10,000 ohms)	30-4518	106.	Resistor (47000 ohms) (Part of 45a)
56.			30-4518	Resistor (10,000 ohms)	30-4518	107.	Resistor (47000 ohms) (Part of 45a)
57.			30-4518	Resistor (10,000 ohms)	30-4518	108.	Resistor (47000 ohms) (Part of 45a)
58.			30-4518	Resistor (10,000 ohms)	30-4518	109.	Resistor (47000 ohms) (Part of 45a)
59.			30-4518	Resistor (10,000 ohms)	30-4518	110.	Resistor (47000 ohms) (Part of 45a)
60.			30-4518	Resistor (10,000 ohms)	30-4518	111.	Resistor (47000 ohms) (Part of 45a)
61.			30-4518	Resistor (10,000 ohms)	30-4518	112.	Resistor (47000 ohms) (Part of 45a)
62.			30-4518	Resistor (10,000 ohms)	30-4518	113.	Resistor (47000 ohms) (Part of 45a)
63.			30-4518	Resistor (10,000 ohms)	30-4518	114.	Resistor (47000 ohms) (Part of 45a)
64.			30-4518	Resistor (10,000 ohms)	30-4518	115.	Resistor (47000 ohms) (Part of 45a)
65.			30-4518	Resistor (10,000 ohms)	30-4518	116.	Resistor (47000 ohms) (Part of 45a)
66.			30-4518	Resistor (10,000 ohms)	30-4518	117.	Resistor (47000 ohms) (Part of 45a)
67.			30-4518	Resistor (10,000 ohms)	30-4518	118.	Resistor (47000 ohms) (Part of 45a)
68.			30-4518	Resistor (10,000 ohms)	30-4518	119.	Resistor (47000 ohms) (Part of 45a)
69.			30-4518	Resistor (10,000 ohms)	30-4518	120.	Resistor (47000 ohms) (Part of 45a)
70.			30-4518	Resistor (10,000 ohms)	30-4518	121.	Resistor (47000 ohms) (Part of 45a)
71.			30-4518	Resistor (10,000 ohms)	30-4518	122.	Resistor (47000 ohms) (Part of 45a)
72.			30-4518	Resistor (10,000 ohms)	30-4518	123.	Resistor (47000 ohms) (Part of 45a)
73.			30-4518	Resistor (10,000 ohms)	30-4518	124.	Resistor (47000 ohms) (Part of 45a)
74.			30-4518	Resistor (10,000 ohms)	30-4518	125.	Resistor (47000 ohms) (Part of 45a)
75.			30-4518	Resistor (10,000 ohms)	30-4518	126.	Resistor (47000 ohms) (Part of 45a)
76.			30-4518	Resistor (10,000 ohms)	30-4518	127.	Resistor (47000 ohms) (Part of 45a)
77.			30-4518	Resistor (10,000 ohms)	30-4518	128.	Resistor (47000 ohms) (Part of 45a)
78.			30-4518	Resistor (10,000 ohms)	30-4518	129.	Resistor (47000 ohms) (Part of 45a)
79.			30-4518	Resistor (10,000 ohms)	30-4518	130.	Resistor (47000 ohms) (Part of 45a)
80.			30-4518	Resistor (10,000 ohms)	30-4518	131.	Resistor (47000 ohms) (Part of 45a)
81.			30-4518	Resistor (10,000 ohms)	30-4518	132.	Resistor (47000 ohms) (Part of 45a)
82.			30-4518	Resistor (10,000 ohms)	30-4518	133.	Resistor (47000 ohms) (Part of 45a)
83.			30-4518	Resistor (10,000 ohms)	30-4518	134.	Resistor (47000 ohms) (Part of 45a)
84.			30-4518	Resistor (10,000 ohms)	30-4518	135.	Resistor (47000 ohms) (Part of 45a)
85.			30-4518	Resistor (10,000 ohms)	30-4518	136.	Resistor (47000 ohms) (Part of 45a)
86.			30-4518	Resistor (10,000 ohms)	30-4518	137.	Resistor (47000 ohms) (Part of 45a)
87.			30-4518	Resistor (10,000 ohms)	30-4518	138.	Resistor (47000 ohms) (Part of 45a)
88.			30-4518	Resistor (10,000 ohms)	30-4518	139.	Resistor (47000 ohms) (Part of 45a)
89.			30-4518	Resistor (10,000 ohms)	30-4518	140.	Resistor (47000 ohms) (Part of 45a)
90.			30-4518	Resistor (10,000 ohms)	30-4518	141.	Resistor (47000 ohms) (Part of 45a)
91.			30-4518	Resistor (10,000 ohms)	30-4518	142.	Resistor (47000 ohms) (Part of 45a)
92.			30-4518	Resistor (10,000 ohms)	30-4518	143.	Resistor (47000 ohms) (Part of 45a)
93.			30-4518	Resistor (10,000 ohms)	30-4518	144.	Resistor (47000 ohms) (Part of 45a)
94.			30-4518	Resistor (10,000 ohms)	30-4518	145.	Resistor (47000 ohms) (Part of 45a)
95.			30-4518	Resistor (10,000 ohms)	30-4518	146.	Resistor (47000 ohms) (Part of 45a)
96.			30-4518	Resistor (10,000 ohms)	30-4518	147.	Resistor (47000 ohms) (Part of 45a)
97.			30-4518	Resistor (10,000 ohms)	30-4518	148.	Resistor (47000 ohms) (Part of 45a)
98.			30-4518	Resistor (10,000 ohms)	30-4518	149.	Resistor (47000 ohms) (Part of 45a)
99.			30-4518	Resistor (10,000 ohms)	30-4518	150.	Resistor (47000 ohms) (Part of 45a)
100.			30-4518	Resistor (10,000 ohms)	30-4518	151.	Resistor (47000 ohms) (Part of 45a)
101.			30-4518	Resistor (10,000 ohms)	30-4518	152.	Resistor (47000 ohms) (Part of 45a)
102.			30-4518	Resistor (10,000 ohms)	30-4518	153.	Resistor (47000 ohms) (Part of 45a)
103.			30-4518	Resistor (10,000 ohms)	30-4518	154.	Resistor (47000 ohms) (Part of 45a)
104.			30-4518	Resistor (10,000 ohms)	30-4518	155.	Resistor (47000 ohms) (Part of 45a)
105.			30-4518	Resistor (10,000 ohms)	30-4518	156.	Resistor (47000 ohms) (Part of 45a)
106.			30-4518	Resistor (10,000 ohms)	30-4518	157.	Resistor (47000 ohms) (Part of 45a)
107.			30-4518	Resistor (10,000 ohms)	30-4518	158.	Resistor (47000 ohms) (Part of 45a)
108.			30-4518	Resistor (10,000 ohms)	30-4518	159.	Resistor (47000 ohms) (Part of 45a)
109.			30-4518	Resistor (10,000 ohms)	30-4518	160.	Resistor (47

PHILCO RADIO & TELEVISION CORP.

MODEL 42-1003(121,122)

MODEL 42-1003, CODES 121-122

Model 42-1003, Codes 121-122 are alternating current operated super-heterodyne radio-phonograph combinations. In general, Code 121 and 122 of this model are similar in design with the exception of the number of tubes, speaker types and rectifier circuits. Code 121 consists of a seven-tube chassis using a six-inch permanent magnet dynamic speaker and a single rectifier tube circuit. Code 122 chassis contains eight tubes, a six-inch electrodynamic speaker and two tubes in the rectifier circuit. One tube type 50Y6GT supplies plate voltage for the other tubes and a 50L6GT excites the field coil of the electrodynamic speaker.

PHONOGRAPH SECTION

The phonograph incorporates a self-starting rim drive turntable motor, and a manually operated Philco Photo-Electric reproducer, which operates through the audio system of the radio. The phonograph motor is automatically started when the photo-electric reproducer is lifted from its rest. The motor is designed to operate on 115 volts, 60 cycle, or 115 volts, 50 cycle A.C. power supplies. When operating on 115 volt, 50 cycle current, a special spring collar, Part No. 28-8999 must be placed on the motor drive shaft pulley.

RADIO SECTION

The radio features in this model are a built-in loop aerial; two tuning ranges; two I. F. amplifier tubes; automatic volume control; two position tone control, mounted on the motor board; audio BASS compensation in the volume control circuit; beam power pentode audio output stage and Philco LOKTAL tubes.

TUNING BAND FREQUENCIES: 540 to 1720 K.C. and 9 to 15.5 M.C. INTERMEDIATE FREQUENCY: 455 K.C. AUDIO OUTPUT: 1.5 watts. POWER SUPPLY: 115 volts, 60 cycle A.C.

PHILCO TUBES USED

Code 121 chassis—XXD, R. F. converter and phonograph pre-amplifier; 50L6GT, oscillator; 7B7, 1st I. F. amplifier; 7B7, 2nd I. F. amplifier; 7C6, second detector, first audio; 50L6GT audio output and a 50Y6GT rectifier.

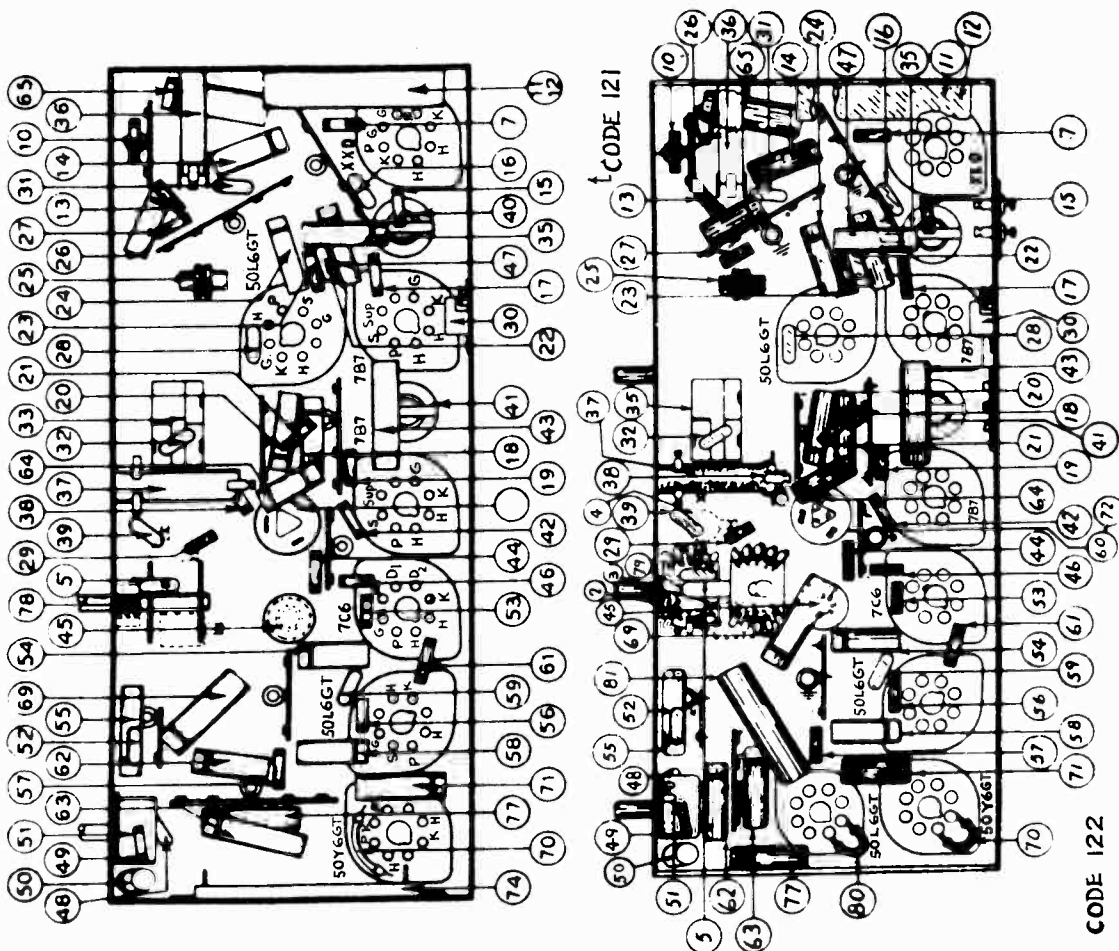
Code 122 chassis—XXD, R. F. converter and phonograph pre-amplifier; 50L6GT, oscillator; 7B7, 1st I. F. amplifier; 7B7, 2nd I. F. amplifier; 7C6, second detector, first audio; 50L6GT audio output; 50Y6GT rectifier 50L6GT rectifier.

EXTERNAL AERIAL CONNECTIONS

The built-in low-impedance loop aerial system of this model is designed to operate without an outside aerial or ground, and to give exceptional receiving performance under average conditions.

To operate the radio, however, in steel reinforced buildings and other shielded locations, where signal strength is weak, the Philco outdoor aerial Part No. 45-2817 is recommended for maximum receiving performance. The outdoor aerial can be easily connected to the radio by inserting the plug attached to the transformer (supplied with the aerial) into the socket provided at the rear of the radio.

FOR PHONOGRAPH REPRODUCER ADJUSTMENTS, SEE MODEL 42-1015



CODE 122

PHILCO RADIO & TELEVISION CORP.

MODEL 42-1004

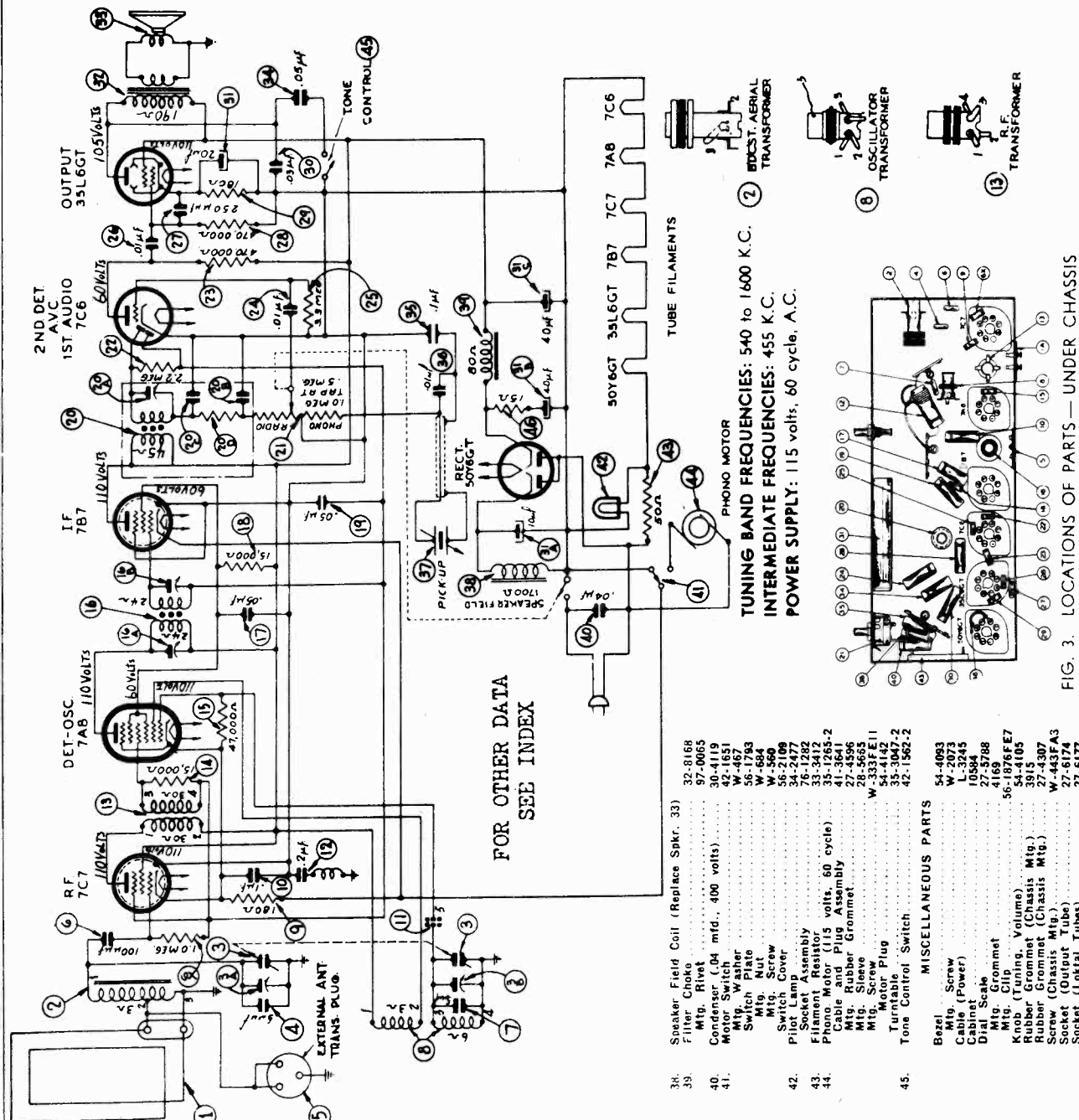


Table with 2 columns: Part No. and Description. Lists various components such as Loop Aerial, Terminal Panel, Mica Condensers, and various resistors and capacitors.

Table with 2 columns: Part No. and Description. Lists miscellaneous parts including Bezel, Cabinet, Dial Scale, and various screws and washers.

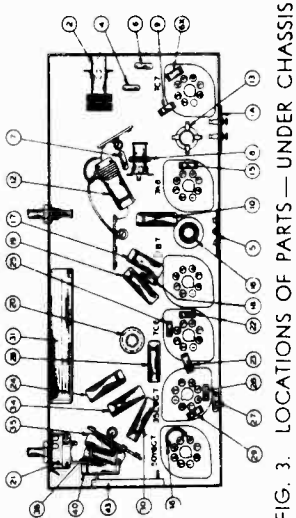


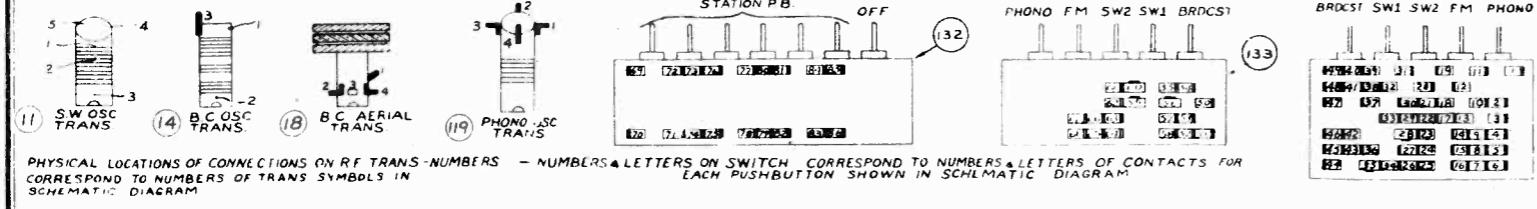
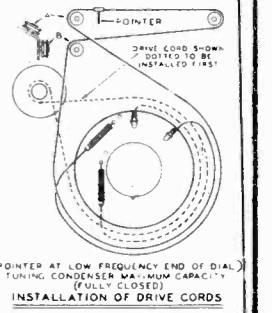
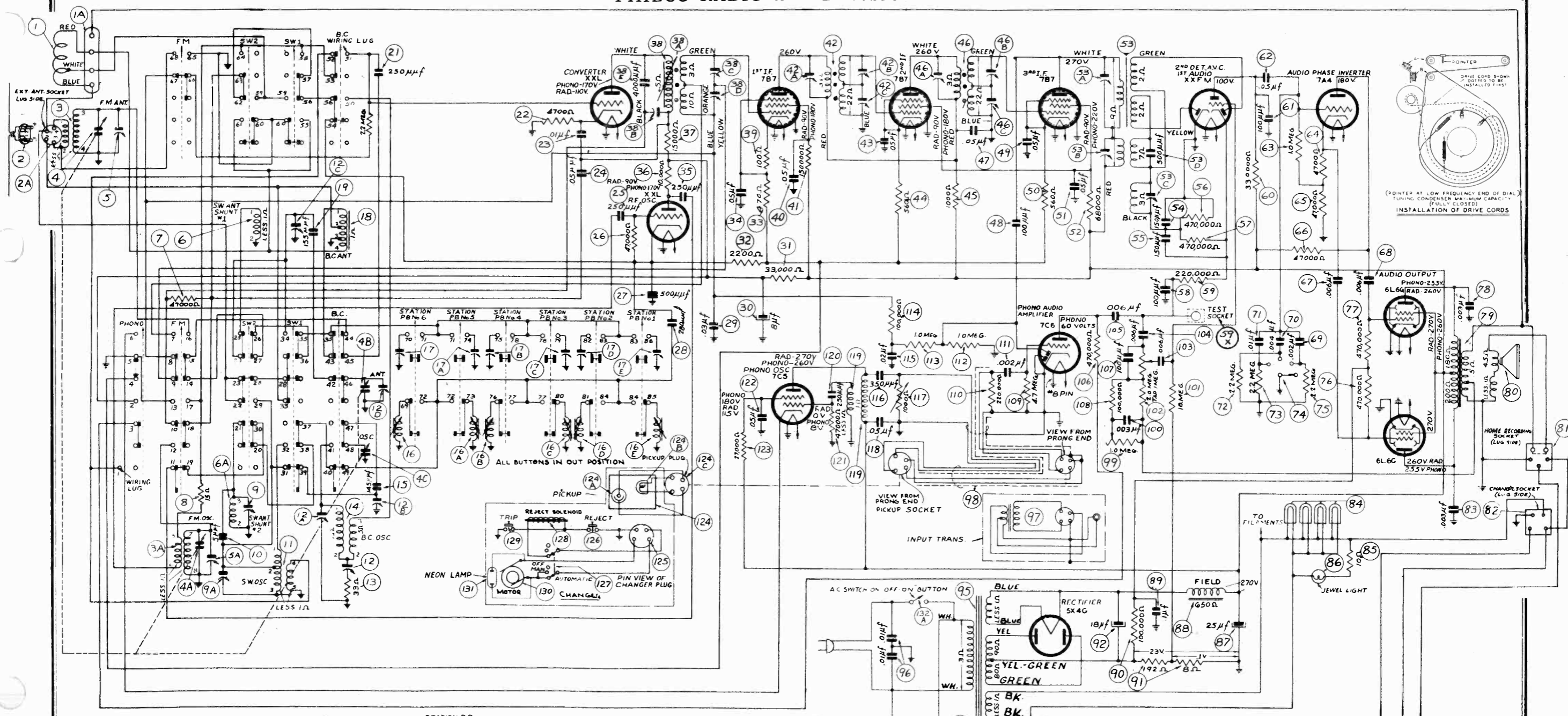
FIG. 3. LOCATIONS OF PARTS — UNDER CHASSIS





PHILCO RADIO & TELEVISION CORP.

MODEL 42-1015



**Tuning Band Frequencies:** Broadcast, 540 to 1720 KC; Shortwave 1, 9 to 12 MC; Shortwave 2, 13.3 to 18 MC; Frequency Modulation 42 to 50 MC.

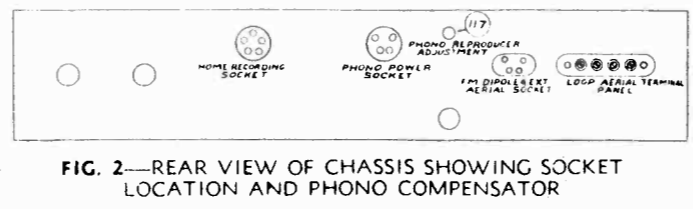
**Intermediate Frequencies:** Standard, 455 KC; F. M., 4.3 MC.

**Audio Output:** 14 watts.

**Power Supply:** 115 volts, 60 cycles AC.

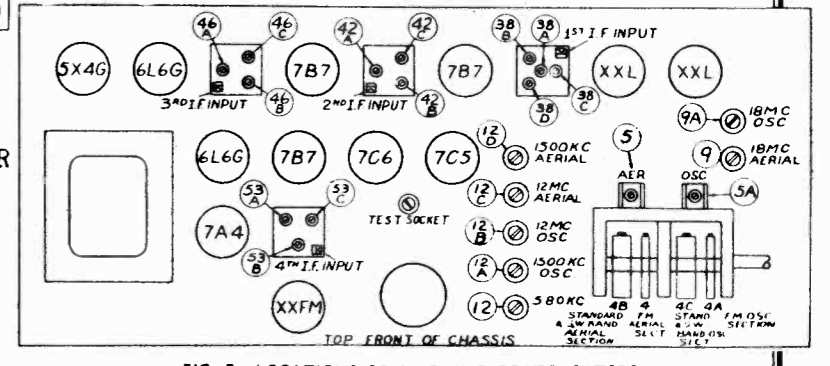
This model can also be operated on 115 volts, 50 cycle current by changing the phonograph motor parts as listed in the parts list.

**Power Consumption:** 145 watts.



FOR RECORD CHANGER DATA, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS".

FOR CHANGES, SEE INDEX





PHILCO RADIO & TELEVISION CORP.

MODEL 42-1015

The radio incorporates the Philco Built-in Super Aerial System for reception of standard and short wave broadcast stations; a Philco F. M. Dipole Aerial for reception of frequency modulation stations; twelve (12) electric push-buttons for automatically tuning six (6) stations in the standard broadcast band...

The phonograph of each model consists of the PHILCO Automatic Record Changer with a stroboscope pitch and tempo control; a dual speed motor that can be adjusted to play not only normal speed records (78 RPM) but also slow speed records (33-1/2 to 39 RPM)...

Parts list table with columns: Sch. No., Description, Part No., Sch. No., Description, Part No., Sch. No., Description, Part No. Includes components like Loop Aerial, Tuning Condenser, Resistor, Capacitor, Transformer, etc.

PHILCO RADIO & TELEVISION CORP.

MODEL 42-1015

ALIGNING R. F. AND I. F. COMPENSATORS EQUIPMENT REQUIRED

- 1. SIGNAL GENERATOR: Covering the frequency of the receiver, such as the Philco Model 970.
2. ALIGNING INDICATOR: Audio Output Meter, Philco Models 927 and 028.
3. TOOLS: Philco Fiber Screw Driver, Part No. 45-2610.

CONNECTING ALIGNING INSTRUMENTS

AUDIO OUTPUT METER: Terminal No. 1 is provided on the loop aerial panel for connecting one lead of the audio output meter to the voice coil of the speaker. The other lead of the meter is connected to the chassis...

SIGNAL GENERATOR: When adjusting the "I. F." padders, the high side of the signal generator is connected through a .1 mfd. condenser to the points indicated in signal generator column "output connections" to receiver in the tabulations below.

After connecting the aligning instruments adjust the compensators in the order shown in the tabulation below. Location of the compensators are shown in Fig. 5. If the output meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

STANDARD AND S. W. BANDS ALIGNING PROCEDURE

Table with columns: Operations In Order, SIGNAL GENERATOR (Output Connections, Dial Setting), RECEIVER (Dial Setting, Control Settings, Adjust Compensators In Order), Special Instructions. Includes operations 1 through 6.

FREQUENCY MODULATION ALIGNING PROCEDURE

Note: The Frequency Modulation Circuits Must Be Adjusted With the Dipole Aerial Connected

F. M. BAND ALIGNING PROCEDURE

Table with columns: Operations In Order, SIGNAL GENERATOR (Output Connections, Dial Setting), RECEIVER (Dial Setting, Control Settings, Adjust Compensators In Order), Special Instructions. Includes operations 1 through 5.

NOTE A.—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows...

NOTE D.—With the signal generator set to 4.3 MC, padder (53C) is adjusted to the point where minimum signal indication is observed on the output meter.

NOTE E.—Turn the signal generator first to approximately 125 KC below 4.3 MC (4.17 MC) and then 125 KC above 4.3 MC (4.42 MC). A signal peak should be observed on the output meter at approximately each of these points...

NOTE B.—When adjusting the low frequency compensator of the broadcast or the aerial padders of the high frequency tuning range, the receiver tuning condenser must be adjusted (rolled) as follows: First, tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output...

NOTE F.—Adjust padders 46B, 46A, 42B, 42A, 38D, 38B for equal signal peaks and equal frequency spacing each side of 4.3 MC.

NOTE G.—The dial scale numbers are listed in tenths of megacycles less the first digit: i. e. 49 MC is 90, 48.5 is 85. Set the tuning dial pointer to 85 on the FM scale. Adjust padder (5A) to the point where minimum signal indication is observed on the output meter.

NOTE C.—Adjust compensators (12B and 9A) to the second signal peak from the closed position (maximum capacity). The aerial compensators (12C and 9) must also be adjusted to maximum on the first signal peak by rolling the tuning condenser. (See Note B.)

NOTE H.—In order to adjust padder (5) the signal generator should be set to either the signal peak approximately 125 KC below 48.5 MC (48.375 MC), or 125 KC above 48.5 MC (48.625 MC). Adjust padder (5) to maximum output reading on either of these peaks. Ax padder 5 is being adjusted roll the tuning condenser as given in Note B.

MISCELLANEOUS PARTS

Table listing miscellaneous parts such as Automatic Record Changer, Bezel, Screw, Cabinet, Control Drum, Washer, etc.

EXTERNAL AERIAL CONNECTIONS

The built-in aerial system is designed to operate without an outside aerial or ground and to give exceptionally high receiving performance of stations in the standard, shortwave, or FM bands.

To operate the radio in steel reinforced buildings and other shielded locations where signal strength is weak, an external aerial is recommended. Three different types of aerial combinations are available...

The coupler plugs into the socket at the back of the chassis in place of the plug connected to the FM loop. The aerial transmission line then connects to the terminals on the coupler marked "red" and "black".

1—For Additional Sensitivity on Frequency Modulation only:

- \*Philco Dipole Outdoor Aerial, Part No. 45-2926.

3—For Additional Sensitivity on Standard Broadcast and Short-wave only in Areas where FM reception is not available.

- Philco Safety Aerial, Part No. 40-6370.
Philco Aerial Coupler, Part No. 76-1361.

The plug at the end of the transmission line is inserted in the socket at the back of the chassis in place of the plug connected to the F. M. loop in the cabinet.

2—For Additional Sensitivity on ALL ranges:

- \*Philco Dipole Outdoor Aerial, Part No. 45-2926.
Philco Aerial Coupler, Part No. 76-1361.

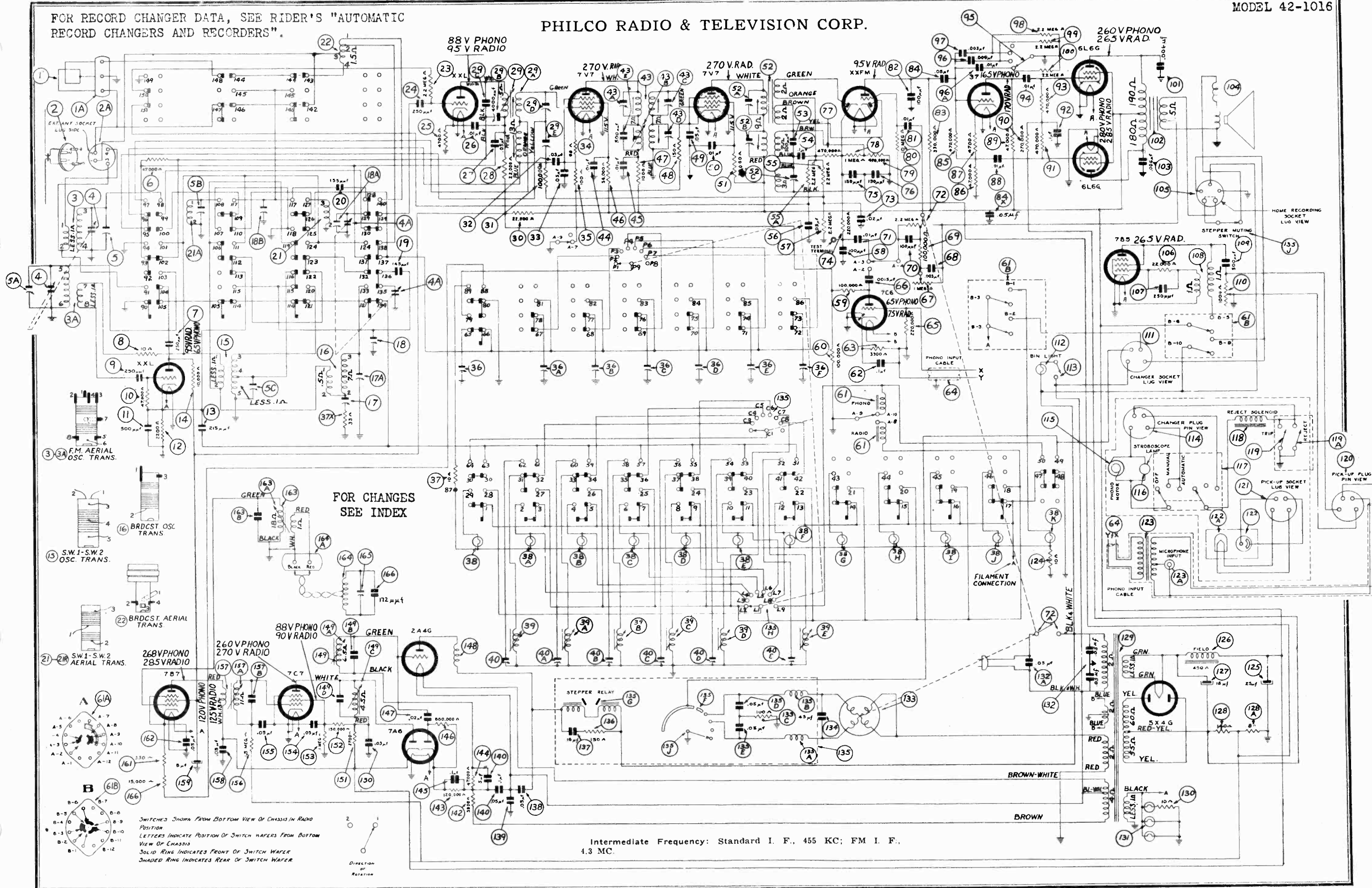
Connect the single wire lead-in of the aerial to the "black" terminal on the aerial coupler.

\*Accessories for this aerial are the Philco Aerial Mast Kit, the Philco Reflector Kit and Philco High Efficiency Transmission Line. See Service Bulletin No. 396 on Dipole Aerials.

NOTE: When installing the FM Philco Outdoor Dipole Aerial, it is very important that the aerial compensating condensers of the standard and shortwave band are repadded.

FOR RECORD CHANGER DATA, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS".

PHILCO RADIO & TELEVISION CORP.



FOR CHANGES SEE INDEX

SWITCHES SHOWN FROM BOTTOM VIEW OF CHASSIS IN RADIO POSITION  
 LETTERS INDICATE POSITION OF SWITCH WAFERS FROM BOTTOM VIEW OF CHASSIS  
 SOLID RING INDICATES FRONT OF SWITCH WAFER  
 SHADED RING INDICATES REAR OF SWITCH WAFER

Intermediate Frequency: Standard I. F., 455 KC; FM I. F., 4.3 MC.

ALIGNING R. F. AND I. F. COMPENSATORS  
EQUIPMENT REQUIRED

1. SIGNAL GENERATOR: Covering the frequency of the receiver, such as the Philco Model 970.
2. ALIGNING INDICATOR: Audio Output Meter, Philco Models 027 and 028. Circuit testers contain a sensitive output meters and are recommended.
3. TOOLS: Philco Fiber Screw Driver, Part No. 15-2610.

CONNECTING ALIGNING INSTRUMENTS

Audio Output Meter: Connect the output meter to the plates of the 6L6G output tubes. The 0 to 30 volt scale of the meter should be used.

Signal Generator: When adjusting the "I. F." padders, the high side of the signal generator is connected through a .1 mfd condenser to the points indicated in the signal generator column "output connections" to receiver in the tabulations below.

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the loop is then placed two or

three feet from the loop in the cabinet and dipole aerial lead. Do not remove the receiving loops from the cabinet. It is necessary when adjusting the padders, that the receiver be left in the cabinet.

After connecting the aligning instruments adjust the compensators in the order shown in the tabulation below. Location of the compensators are shown on the schematic diagram. If the output meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

STANDARD AND S. W. BANDS ALIGNING PROCEDURE

SIGNAL GENERATOR			RECEIVER			
Operations in Order	Output Connections	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	Special Instructions
1	1st I. F. Input Connection	455 KC	580 KC	Vol. max. push-button "IN"	52B	
2	1st I. F. Input Connection	455 KC	580 KC	Brdest. Push-button "IN"	43D, 43B	
3	Aerial Tuning Condenser Lug	455 KC	580 KC	Brdest. Push-button "IN"	29D, 29A	
4	Use loop on generator	1500 KC	1500 KC	Brdest. Push-button "IN"	17A, 18A	Note A
5	Use loop on generator	580 KC	580 KC	Brdest. Push-button "IN"	17	Roll Tuning Condensers Note B
6	Use loop on generator			Readjust as given in Operation 4		
7	Use loop on generator	12 M.C.	12 M.C.	SW-1 Push-button "IN"	18, 18B Note C	Roll Tuning Condenser
8	Use loop on generator	18 M.C.	18 M.C.	SW-2 Push-button "IN"	5C, 5B Note C	Roll Tuning Condenser

FREQUENCY MODULATION ALIGNING PROCEDURE

NOTE: The Frequency Modulation Circuits Must Be Adjusted With the Dipole Aerial Connected.

SIGNAL GENERATOR			RECEIVER			
Operations in Order	Output Connections	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	Special Instructions
1	2nd I. F. F. M. input connection	4.3 MC	580 KC	Vol. max. F. M. push-button "IN"	52C (Note D) 52A (Note D)	
2	1st I. F. F. M. input connection	4.3 MC	580 KC	F. M. push-button "IN"	43C, 43A (Note F)	
3	F. M. aerial tuning condenser lug	4.3 MC	580 KC	F. M. push-button "IN"	29E, 29B (Note F)	
4	Use test loop on generator; place near dipole aerial	48.5 MC	85 (Note G)	F. M. push-button "IN"	5A (Note G) 5 (Note H)	Roll tuning condenser when adjusting 5. See Note B
5	"	48.5 MC	85	F. M. push-button "IN"	5A oscillator	

NOTE A.—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale. See Fig. 11 for cord arrangement.

NOTE B.—When adjusting the low frequency compensator of the broadcast or the aerial padders of the high frequency tuning range, the receiver tuning condenser must be adjusted (rolled) as follows: First, tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

NOTE C.—Adjust compensators (18 and 5C) to the second signal peak from the closed position (maximum

capacity). The aerial compensators (18B and 5B) must also be adjusted to maximum on the first signal peak by rolling the tuning condenser. (See Note B.)

NOTE D.—With the signal generator set to 4.3 MC padder (52C) is adjusted to the point where minimum signal indication is observed on the output meter.

NOTE E.—Turn the signal generator first to approximately 125 KC below 4.3 MC (4.17 MC) and then 125 KC above 4.3 MC (4.42 MC). A signal peak should be observed on the output meter at approximately each of these points (4.17 and 4.42). The two peak signals should be of equal reading on the output meter and equally spaced in frequency each side of 4.3 MC. If the peaks are unequal in amplitude, padder (52A) must be adjusted in the direction necessary to make both peaks equal. This is done by slightly turning padder and then turning signal generator above and below 4.3 to observe peaks. After equal peak readings are obtained set the signal generator to 4.3 MC. The output meter should show zero reading at 4.3 MC. If a signal indication is

observed, readjust padder (52C) until zero reading is obtained on the meter. After this adjustment is made padder No. 52A should be reset for equal peaks as given above.

NOTE F.—Adjust padders 43C, 43A, 29E, and 29B for equal signal peaks and equal frequency spacing each side of 4.3 MC.

NOTE G.—The dial scale numbers are listed in tenths of megacycles less the first digit; i. e., 49 MC is 90, 48.5 is 85. Set the tuning dial pointer to 85 on the F. M. scale. Adjust padder (5A) to the point where minimum signal indication is observed on the output meter.

NOTE H.—In order to adjust padder (5) the signal generator should be set to either the signal peak approximately 125 KC below 48.5 MC (48.375 MC), or 125 KC above 48.5 MC (48.625 MC). Adjust padder (5) to maximum output reading on either of these peak signals. As padder 5 is being adjusted roll the tuning condenser as given in Note B.

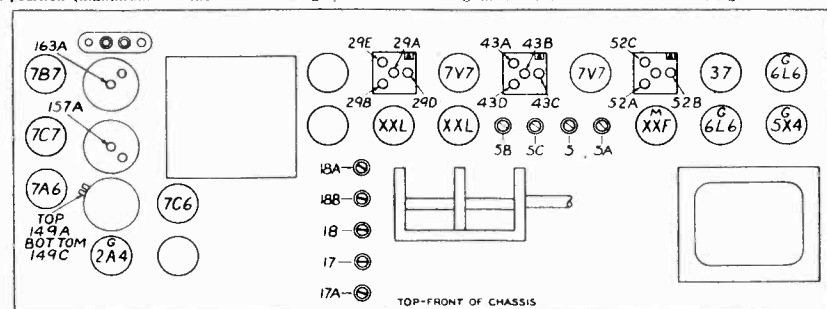


FIG. 9—LOCATIONS OF COMPENSATORS, TOP OF CHASSIS

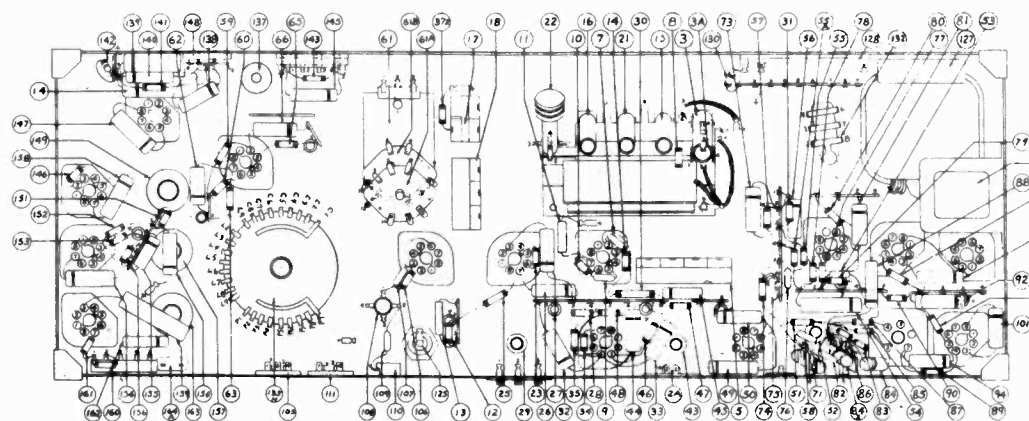


FIG. 2—PART LOCATIONS—UNDER CHASSIS, MODEL 42-1016

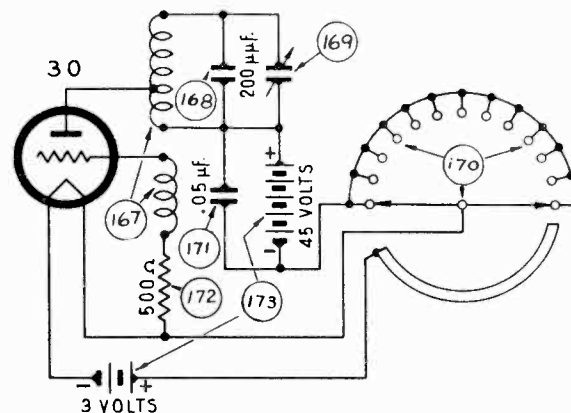


FIG. 3—SCHEMATIC DIAGRAM OF WIRELESS REMOTE CONTROL UNIT

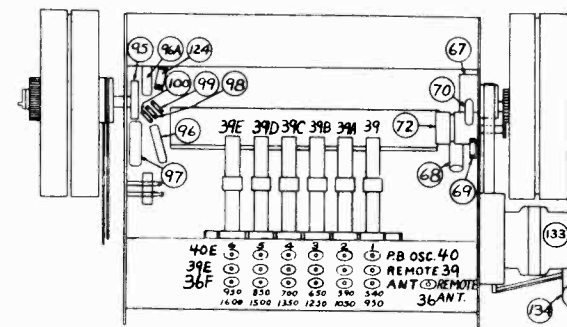


FIG. 4—LOCATIONS OF PARTS, TUNING UNIT

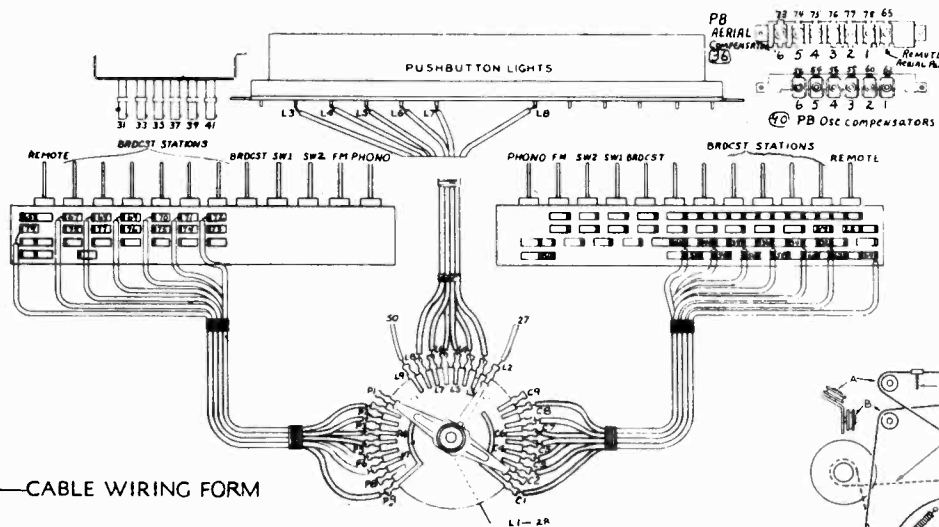


FIG. 7—CABLE WIRING FORM

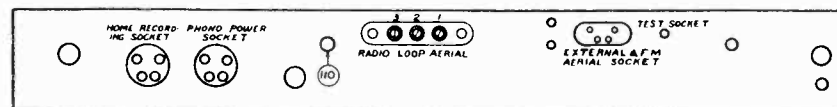


FIG. 10—TERMINAL AND SOCKET LOCATIONS, REAR OF CHASSIS

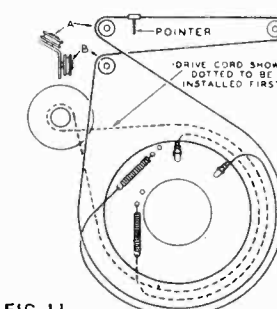


FIG. 11  
(POINTER AT LOW FREQUENCY END OF DIAL)  
TUNING CONDENSER MAXIMUM CAPACITY  
(FULLY CLOSED)  
INSTALLATION OF DRIVE CORDS



MODEL SW-1

PHILCO RADIO & TELEVISION CORP.

MODEL SW-1 — ADJUSTMENTS

All padding adjustments are carefully made at the factory and ordinarily no readjustments are necessary. However, when readjustments are required, the procedure given below must be followed in detail.

**EQUIPMENT** — Fully charged heavy duty storage battery or 6 volt power pack, 077 or i77 Philco Signal Generator, 027 Philco Vacuum tube voltmeter and set test or audio output meter, 45-2610 padding screw driver.

**GENERATOR — VACUUM TUBE VOLTMETER.** The model 027 Vacuum tube voltmeter is an extremely sensitive and accurate test instrument and is recommended for use when aligning and adjusting auto radios. Connect the negative (minus) terminal of the Vacuum Tube Voltmeter to the high side (ungrounded side) of the volume control. Connect the positive (plus) terminal to the housing. Connect the "AC" cord to a 110 volt AC socket. Press the VTVM button and the 10 volt button. Turn the "Set Zero Ohms—VTVM" control clockwise until a click is heard. Allow the tubes to heat up for a few minutes. Short the 150 megs. VTVM terminals and adjust the "Set Zero Ohms—VTVM" control until the meter reads zero on the 0-10 range scale (Green Scale). The needle will deflect from right to left.

**AUDIO OUTPUT METER.** If an audio output meter is used, connect the leads across the voice coil of the speaker. Use the 0-30 volt scale.

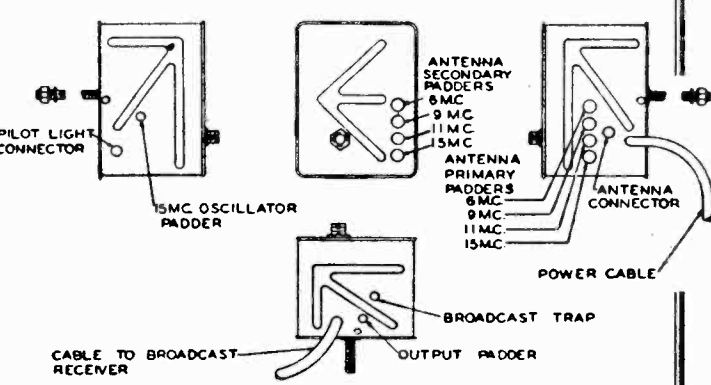
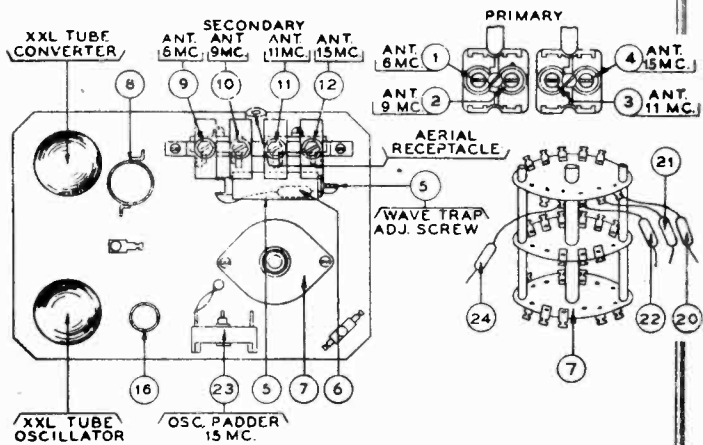
Any Philco Auto Radio that has a Short Wave Tuner receptacle can be used when padding the tuner.

Remove the connector clip and connect the power cable to the tuner receptacle on the radio. Connect the R.F. cable from the tuner to the aerial receptacle in the radio.

With the radio, signal generator and short wave tuner, set up at the prescribed frequency and proper dummy (See note), turn the radio volume control on full and set the signal generator attenuator so that a half scale reading is obtained on the meter. The signal in the speaker should be audible but not loud.

The shielding on the aerial lead should be connected to the (plus) terminal of the signal generator.

WHEN MAKING ADJUSTMENTS TO THE CHRYSLER EXPORT, FORD EXPORT, STUDEBAKER, AND DISTRIBUTOR SHORT WAVE TUNERS, IT IS NECESSARY THAT THE AERIAL LEAD BE CONNECTED TO THE CHOKE, PART NO. 77-0885, WHICH IS PACKED WITH THE RADIO.



OPERATION	SIGNAL GENERATOR FREQUENCY	DUMMY CAPACITY	SPECIAL INSTRUCTIONS AND PADDER ADJUSTMENTS
1	Push in the knob on the tuning control or radio until stations can be tuned in by manual tuning.		
2	1400 K.C.	See Note	Set the tuner to broadcast position, and adjust the manual control to 1400 K.C. Adjust the aerial padder on the radio.
3	6.1 MC	See Note	Set tuner on 6 MC position. Tune in the 6.1 MC signal and adjust the 6 MC primary and secondary padders and the output padder.
4	9.6 MC	See Note	Set tuner on 9 MC position. Tune in the 9.6 MC signal and adjust the 9 MC primary and secondary padders. If two peaks are obtained when adjusting the primary padder use the inner peak.
5	11.8 MC	See Note	Set tuner on 11 MC position. Tune in the 11.8 MC signal and adjust the 11 MC primary and secondary. If two peaks are obtained when adjusting the primary padder use the inner peak.
6	15.225 MC	See Note	Set tuner on 15 MC position — four turns clockwise, and the pointer on the dial to 1375 K.C. Adjust the 15 MC oscillator padder and 15 MC primary and secondary padders. If two peaks are obtained when adjusting the primary and secondary padders, use the outer peak on each.
7	15.1 MC	See Note	Signal should come in approximately 1250 K.C. on dial.
8	15.35 MC	See Note	Signal should come in approximately 1500 on dial.
9	1400 K.C.	See Note	Set tuner on the 6 MC position. Adjust the broadcast trap padder for MINIMUM signal on a strong local station between 1100 and 1500 KC on the dial.

The tuner must have the housing and cover in place.

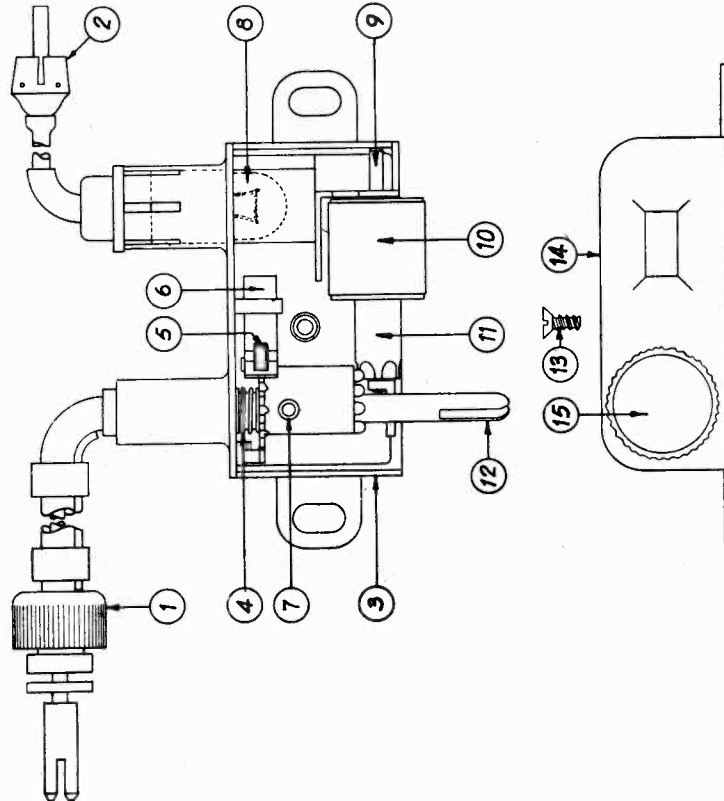
Make all adjustments for maximum reading on the meter unless otherwise specified.

**NOTE:** Connect the aerial lead, Part No. 95-0185, to the aerial choke, Part No. 77-0885, and then connect the choke in the aerial receptacle on the tuner. (DO NOT USE CHOKE ON

PACKARD). Connect an additional capacity in series between the signal generator and aerial lead on the following:  
 For Chrysler Export (SWC-1E)—Use a 25 Mmfd. condenser.  
 For Ford Export (SWF-1E)—Use a 20 Mmfd. condenser.  
 For Packard (SWP-1)—Use 45 Mmfd. condenser. No aerial choke  
 For Studebaker (SWS-1)—Use 35 Mmfd. condenser.  
 For Distributor (SWD-1)—Use 35 Mmfd. condenser.

PHILCO RADIO & TELEVISION CORP.

**CONTROL UNIT FOR SHORT WAVE TUNER IGNITION INTERFERENCE ELIMINATION WHEN USING THE SHORT WAVE TUNER WITH THE 1941 STUDEBAKER AND DISTRIBUTOR AUTO RADIOS**

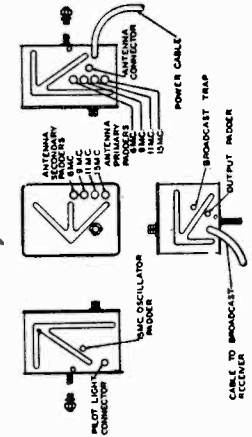


- A new antenna filter choke, Part No. 77-0885, has been added to the Short Wave Tuner to further reduce stubborn cases of ignition interference.
- In early production the Tuners did not have this choke. However, when an installation is made, and motor interference persists, it may be necessary to use this new choke. On Tuners which did not originally have this choke and it is necessary to add this new part, the antenna primary and secondary padders **MUST** be readjusted. The padding procedure is as follows:
1. Connect a 10 mmfd. condenser in series between the signal generator lead and the aerial lead, Part No. 95-0185. Plug the aerial lead into the tuner and set the generator to 1500 K.C. Turn the short wave tuner switch to the broadcast position (extreme counter-clockwise). Tune in the signal and adjust the antenna padder **IN THE RADIO** to maximum.
  2. Turn the tuner switch to the No. 2 position (6 m.c. band). Set the signal generator at 6.1 m.c. and tune in the signal with the tuning control knob. Pad the 6 m.c. primary and secondary padders (see illustration) for maximum response.
  3. Pad the output padder (see illustration) for maximum signal. Do not readjust this padder again.
  4. Turn the short wave switch to the No. 3 position (9 megacycles band) and set the signal generator to 9.6 megacycles. Tune in the signal with the tuning control knob and pad the (9 m.c.) antenna primary and secondary padders (see illustration) for maximum signal.
  5. Turn the short wave switch to the No. 4 position (11 megacycle band) and set the signal generator to 11.8 megacycles. Tune in the signal with the tuning control knob and pad the (11 m.c.) antenna primary and secondary padders (see illustration) for maximum signal.
  6. Turn the short wave switch to the No. 5 position (15 megacycle band) and set the signal generator to 15.225 megacycles. Tune in the signal with the tuning control knob and pad the (15 m.c.) antenna primary and secondary padders (see illustration) for maximum signal.

**NOTE:** When a replacement choke is used, it is not necessary to readjust the padders.

It is rather difficult to perform the above operations with the tuner in the car. Whenever possible the tuner should be removed and repadded on the bench. It does not matter what model radio is used with the tuner to pad it, provided the radio has a power socket.

After the tuner is re-installed in the car, the antenna padders should not be touched. The usual variation of antenna capacities in car installations have no material effect on the sensitivity of the tuner. Simply follow the usual installation instructions supplied with the tuner.



**PARTS LIST**

Description	Part No.	List Price
(1) Complete Control (Distributor) (Crusher Report)	85-0140	\$5.00
(2) Pilot Lamp Assy (Studebaker)	85-0126	5.50
(3) Dial Trim Knob (Studebaker)	85-0141	4.75
(4) Power Mounting Screw (Crusher Report)	85-0139	4.75
(5) Pilot Lamp Assy (Packard)	77-0841	1.25
(6) Headring (Distributor) (Crusher Report)	77-0812	1.50
(7) Headring (Packard)	87-0787	.50
(8) Headring (Distributor) (Crusher Report)	51-1844202	.75
(9) Wheel, Index (Packard)	51-1844203	.75
(10) Wheel, Index (Crusher Report)	51-1844204	.75
(11) Wheel, Index (Packard)	51-1844205	.75
(12) Wheel, Index (Crusher Report)	51-1844206	.75
(13) Spring, Index (Crusher Report)	51-1844207	.01
(14) Spring, Index (Packard)	51-1844208	.01
(15) Spring, Index (Crusher Report)	51-1844209	.01
(16) Spring, Index (Packard)	51-1844210	.01
(17) Set Screws	77-12507	.20
(18) Pilot Lamp	77-12508	.10
(19) Pilot Lamp	51-18507A3	.10
(20) Dial Trim Knob	55-1231	.20
(21) Switch Shaft	55-1232	.20
(22) Switch Shaft	55-1233	.20
(23) Switch Shaft	55-1234	.20
(24) Switch Shaft	55-1235	.20
(25) Switch Shaft	55-1236	.20
(26) Switch Shaft	55-1237	.20
(27) Switch Shaft	55-1238	.20
(28) Switch Shaft	55-1239	.20
(29) Switch Shaft	55-1240	.20
(30) Switch Shaft	55-1241	.20
(31) Switch Shaft	55-1242	.20
(32) Switch Shaft	55-1243	.20
(33) Switch Shaft	55-1244	.20
(34) Switch Shaft	55-1245	.20
(35) Switch Shaft	55-1246	.20
(36) Switch Shaft	55-1247	.20
(37) Switch Shaft	55-1248	.20
(38) Switch Shaft	55-1249	.20
(39) Switch Shaft	55-1250	.20
(40) Switch Shaft	55-1251	.20
(41) Switch Shaft	55-1252	.20
(42) Switch Shaft	55-1253	.20
(43) Switch Shaft	55-1254	.20
(44) Switch Shaft	55-1255	.20
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(266) Switch Shaft	55-1477	.20
(267) Switch Shaft	55-1478	.20
(268) Switch Shaft	55-1479	.20
(269) Switch Shaft	55-1480	.20
(270) Switch Shaft	55-1481	.20
(271) Switch Shaft	55-1482	.20
(272) Switch Shaft	55-1483	.20
(273) Switch Shaft	55-1484	.20

MODEL 41-KR

PHILCO RADIO & TELEVISION CORP.

**SPECIFICATIONS**

Model 41-KR is a combination Radio and Clock. The radio consists of a five tube superheterodyne circuit covering a tuning frequency range from 54 to 1600 K. C.; built-in loop Aerial, Automatic Volume Control; Philco Loktal tubes; and a beam power audio output stage.

**INTERMEDIATE FREQUENCY:** 455 K. C.

**POWER SUPPLY** This Model is designed for operation from a 115 Volt alternating current (A. C.) power supply.

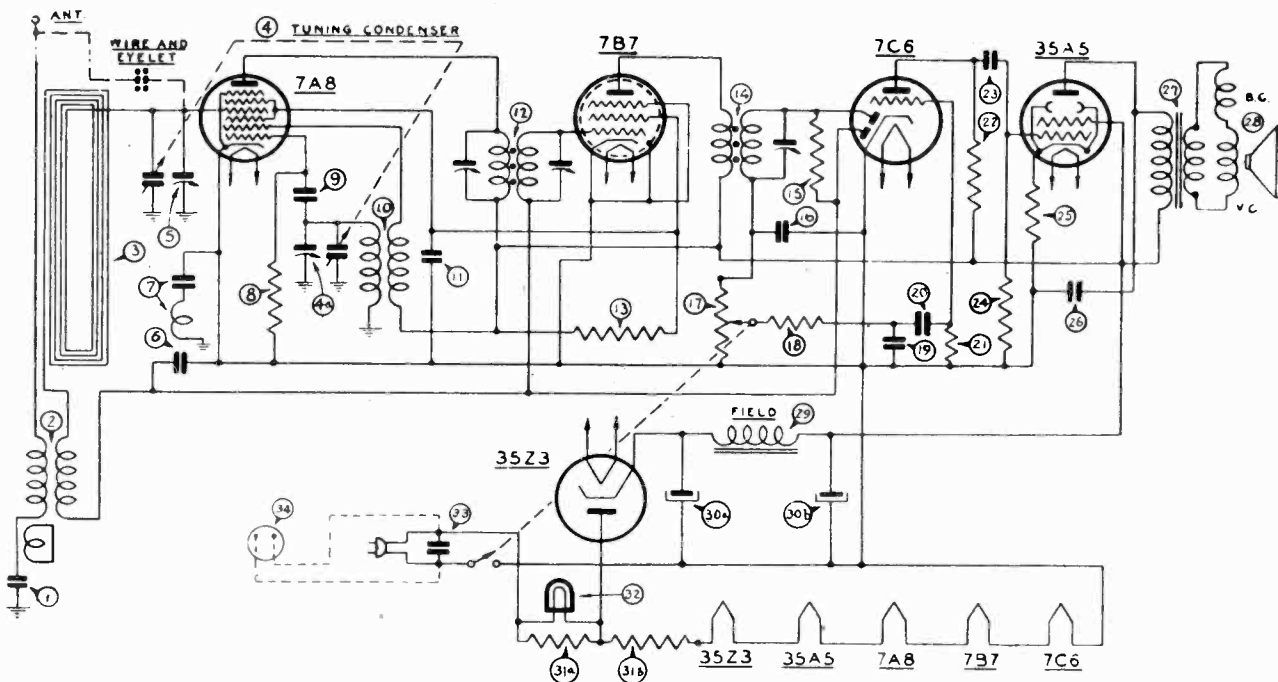
**POWER CONSUMPTION:** 35 Watts.

**PHILCO TUBES USED:** One 7A8, converter; one 7B7, I. F. amplifier; one 7C6, 2nd detector, 1st audio; one 35A5, audio output and one 35Z3, rectifier.

**AERIAL AND GROUND:** To obtain maximum performance in steel reinforced buildings, apartment house and other shielded locations where signal strength is weak, provisions are also provided at the rear of the cabinet for outside aerial.

**ALIGNING PROCEDURE**

THE INSTRUCTIONS FOR ALIGNING THE R-F AND I-F CONDENSERS ARE THE SAME AS THOSE FOR MODEL 42-KR-3.



WIRING DIAGRAM, PHILCO RADIO MODEL 41-KR

**Replacement Parts — Model 41-KR**

SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.
1	Tubular Condenser (.0015 mf., 200 V.)	30-4555S	21	Resistor (4.7 meg., 1/4 watt)	33-547154	34	Clock (115 Volts, 60 Cycle)	45-2804
2	Antenna Transformer	32-3394	22	Resistor (220,000 ohms, 1/4 watt)	33-422154		Clock (115 Volts, 50 Cycle)	45-2803
3	Loop Antenna	32-3435	23	Tubular Condenser (.01 mf., 400 V)	30-4572S	35	Cable	41-3538
4	Tuning Condenser	31-2439	24	Resistor (470,000 ohms, 1/4 watt)	33-447154	<b>MISCELLANEOUS PARTS</b>		
5	Padding Condenser	31-6344	25	Resistor (130 ohms, 1/4 watt)	33-113336	Cabinet	10480A	
6	Tubular Condenser (.1 mf., 200 V.)	30-4499S	26	Tubular Condenser (.04 mf., 400 V.)	30-4119S	Cardboard Back	27-9659	
7	Condenser and Choke Assy.	76-1019	27	Output Transformer		Cable (Power)	L-3199	
8	Resistor (22,000 ohms, 1/4 watt)	33-322154		For Speaker 36-1469-1	32-8047	Clip (Coil Mtg.)	28-5002	
9	Mica Condenser (110 mmf.)	30-1130		For Speaker 36-1469-2	32-8044	Dial Scale	27-5588	
10	Oscillator Transformer	32-3182		For Speaker 36-1469-2	32-8044	Dial Pointer	27-4972	
11	Tubular Condenser (.05 mf., 200 V.)	30-4519S	28	Speaker Cone Assembly	36-1469	Drive Cord	31-2358	
12	1st I. F. Transformer	32-3390		For Speaker 36-1469-9	36-4113	Spring Drive Cord	28-8954	
13	Resistor (22,000 ohms, 1/4 watt)	33-322334		For Speaker 36-1469-1	36-4115	Knob Assembly	54-4004	
14	2nd I. F. Transformer	32-3391		For Speaker 36-1469-2	36-4132	Sockets (Tubes)	27-6157-2	
15	Resistor (2.2 meg., 1/4 watt)	33-522154	29	Field Coil—Part of Speaker No.	36-1469	Socket Assembly (Pilot Lamp)	76-1177	
16	Mica Condenser (250 mmf.)	61-0033	30	Electrolytic Condenser (20-20 mf., 150 V)	30-2382	Tuning Shaft	31-2370	
17	Volume Control (500,000 ohms)	33-5306				<b>MOUNTING PARTS</b>		
18	Resistor (47,000 ohms, 1/4 watt)	33-347154	31	Line Resistor	33-3367	Screw (Clock Mtg.)	W-218	
19	Mica Condenser (250 mmf.)	61-0033	32	Pilot Lamp	34-2068	Screw (Back Mtg.) (8 required)	W-2023	
20	Tubular Condenser (.01 mf., 200 V.)	30-4479S	33	Tubular Condenser (.04 mf., 400 V)	30-4119S	Screw (Back Mtg.) (3 required)	W-2030	

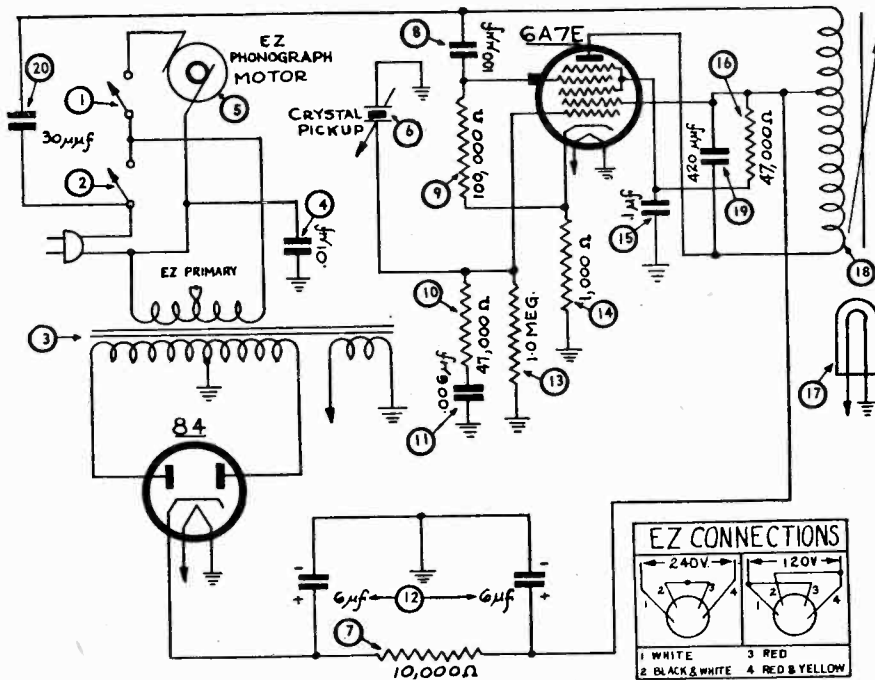
PHILCO RADIO & TELEVISION CORP.

MODEL 41-RP-2 IS THE SAME AS MODEL 41-RP-5 WITH THE EXCEPTION THAT THE LINE TRANSFORMER IS NOT ADJUSTABLE FOR TWO VOLTAGES. SEE SCHEMATIC BELOW. FOR OPERATING AND ADJUSTMENT DATA, SEE MODEL 42-RP-1. ALSO SEE FIG. 3, MODEL 42-RP-2 FOR LOCATION OF ADJUSTMENT SCREW.

**Replacement Parts — Model 41-RP-2 Wireless Record Player**

SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.
1	Motor Switch	42-1557	11	Comp. Condenser (.006 mf., 400 v.)	30-4591		Cabinet	10513A
2	Master Switch	42-1406-2	12	Electrolytic Condenser (6 mf.—6 mf., 150 v.)	30-2388		Bottom Cover	27-9356
3	Power Transformer	32-8043	13	Grid Resistor (1 meg., ½ watt)	33-510154		Rubber Feet	27-4817
4	Line Condenser (.01 mfd., 600 v.)	3903-SG	14	Cathode Bias Resistor (1000 ohms, ½ watt)	33-210154		Screw	W-2177
5	Motor (115 volts, 60 cycles)	35-1222	15	Screen By-Pass (.1 mf., 400 v.)	30-4455		Snap Button	W-1767
	Motor (115 volts, 50 cycles)	35-1250	16	Screen Resistor (47,000 ohms, ½ watt)	33-347154		Switch Plate	56-1383
	Screw	W-89	19	Oscillator Condenser (420 mmf.)	30-1116		Screw	W-560
6	Crystal Pickup and Tone Arm	35-2068	20	Coupling Cond. (30 mmf.)	60-030157		Socket (84 tube)	27-6035
7	Filter Resistor (10,000 ohms, ½ watt)	33-310334					Socket (6A7 tube)	27-6037
8	Oscillator Grid Cond. (100 mmfd.)	60-110157					Turntable (Motor)	35-3044
9	Oscillator Grid Resistor (100,000 ohms, ½ watt)	33-410154					Washer (Chassis)	W-751
10	Comp. Resistor (47,000 ohms, ½ watt)	33-347154						

FOR OPERATING AND ADJUSTMENT DATA, SEE MODEL 42-RP-1. ALSO SEE FIG. 3, MODEL 42-RP-2 FOR LOCATION OF ADJUSTMENT SCREW.



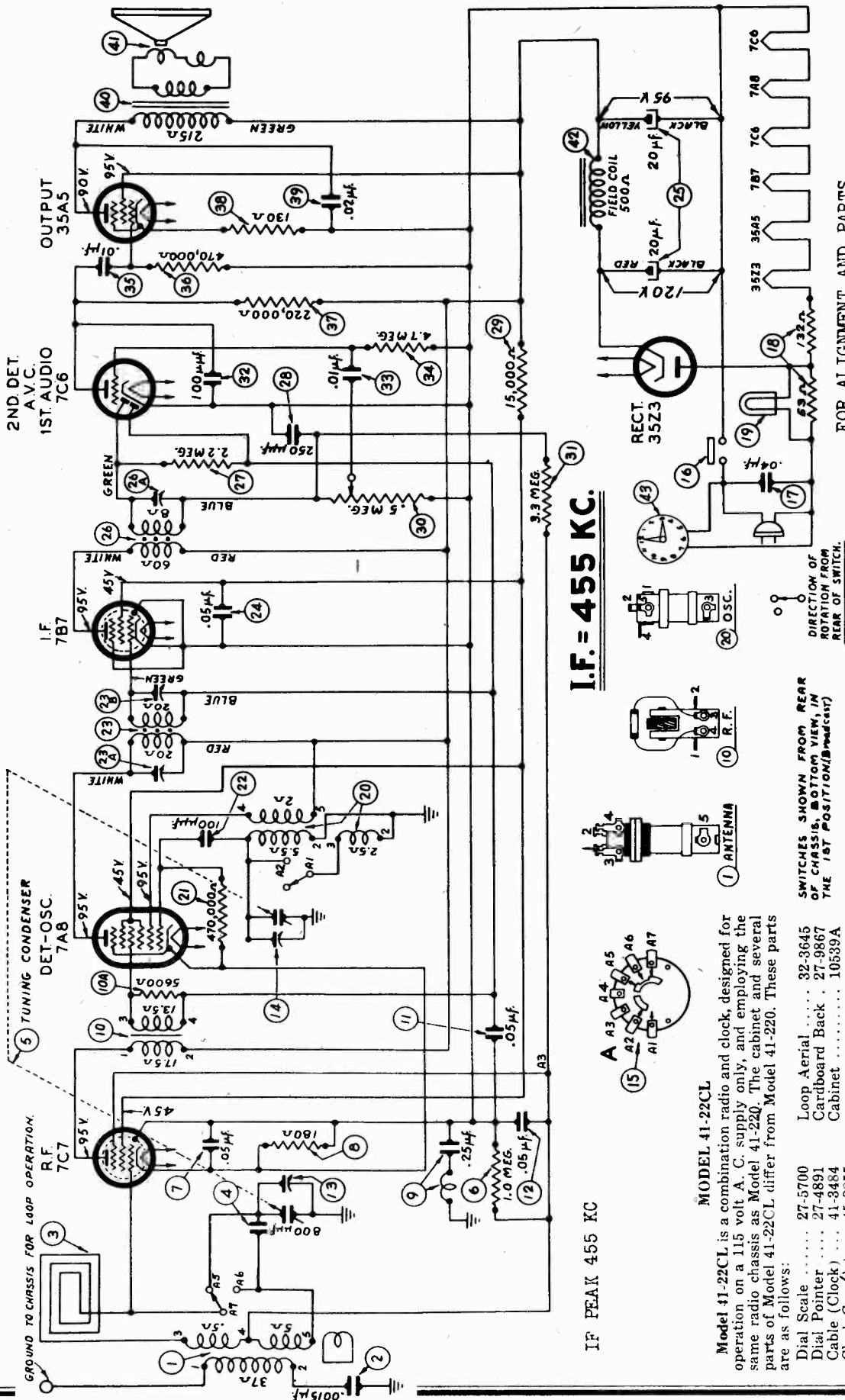
**Replacement Parts — Model 41-RP-5 Wireless Record Player**

SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.
1	Motor Switch	42-1557	12	Electrolytic Condenser (6 mf.—6 mf., 150 V)	30-2388		Cabinet	10476A
2	Master Switch	42-1562	13	Grid Resistor (1 meg., ½ watt)	33-510334		Cable (Power)	L-3298
3	Power Transformer	32-8134	14	Cathode Bias Resistor (1,000 ohms, ½ watt)	33-210334		Clamp (Electro Cond.)	56-1346
4	Line Cond. (.01 mfd., 600 V)	3903-SG	15	Screen By Pass (.1 mfd., 200 V)	30-4499-S		Snap Button	W-1767
5	Motor	35-1226	16	Screen Resistor (47,000 ohms, ½ watt)	33-347334		Switch Plate	56-1383
6	Crystal Pickup & Tone Arm	35-2068	17	Pilot Light (6.8 V., .250 amp.)	34-2064E		Screw	W-560
7	Filter Resistor (10,000 ohms, ½ watt)	33-310334	18	Oscillator Coil	32-3192		Socket (84 tube)	27-6035
8	Oscillator Grid Cond. (100 mmfd.)	60-110157	19	Oscillator Condenser (420 mmf.)	30-1116		Socket (6A7 tube)	27-6037
9	Oscillator Grid Resistor (100,000 ohms, ½ watt)	33-410334	20	Coupling Condenser (30 mmf.)	60-030137		Turntable	35-1217
10	Comp. Resistor (47,000 ohms, ½ watt)	33-347334					Screw Motor Mtg.	W-89
11	Comp. Condenser (.006 mmf., 400 V)	30-4591					Screw (Chassis Mtg.)	W-218
							Washer (Chassis Mtg.)	W-751



MODEL 41-22CL  
MODEL 42-22CL

PHILCO RADIO & TELEVISION CORP.



FOR ALIGNMENT AND PARTS LIST, SEE INDEX

SCHEMATIC DIAGRAM — MODEL 42-22CL

THE D.C. VOLTAGES INDICATED IN THE ABOVE DIAGRAM WERE MEASURED AT THE TUBE SOCKET CONTACTS WITH A 1,000 OHMS PER VOLT. VOLTMETER PHILCO MODEL 027 — LINE VOLTAGE 117 VOLTS A.C. SEE PAGE 4 FOR REPLACEMENT PARTS

MODEL 41-22CL

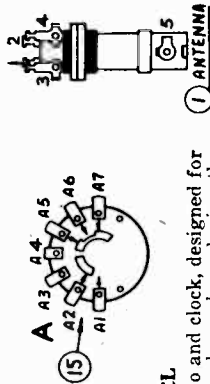
Model 41-22CL is a combination radio and clock, designed for operation on a 115 volt A. C. supply only, and employing the same radio chassis as Model 41-220. The cabinet and several parts of Model 41-22CL differ from Model 41-220. These parts are as follows:

- Dial Scale . . . . . 27-5700
- Loop Aerial . . . . . 32-3645
- Dial Pointer . . . . . 27-4891
- Cardboard Back . . . . . 27-9867
- Cable (Clock) . . . . . 41-3484
- Clock Complete . . . . . 45-2855

With the exception of the above parts, the service information for Model 41-220 applies to Model 41-22CL.

I.F. PEAK 455 KC

I.F. = 455 KC.



SWITCHES SHOWN FROM REAR OF CHASSIS, BOTTOM VIEW, IN THE 1ST POSITION/REARCAST



MODEL 41-722  
MODEL 41-758

PHILCO RADIO & TELEVISION CORP.

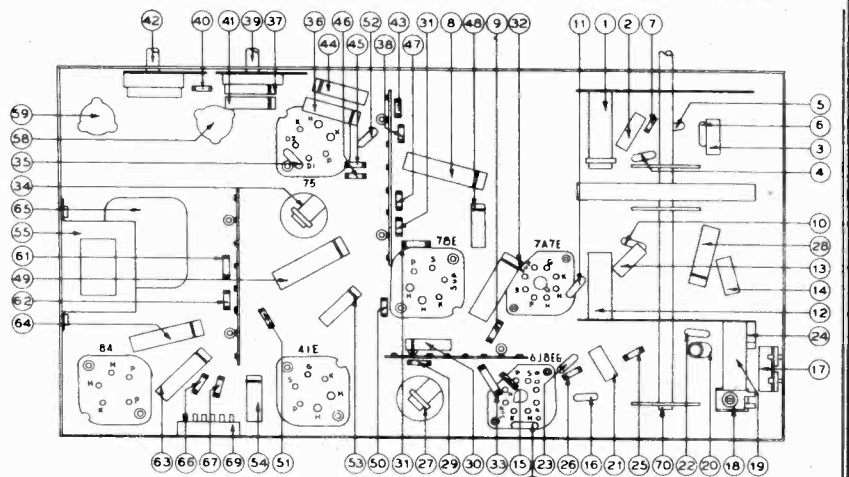
Replacement Parts — Model 41-722

SCHE. No.	DESCRIPTION	PART No.
1	Antenna Transformer (Broadcast)	32-3422
2	Antenna Transformer (S. W. 1)	32-3419
3	Antenna Transformer (S. W. 2)	32-3415
4	Mica Condenser (10 mmfd.)	60-101337
5	Mica Condenser (100 mmfd.)	60-110457
6	Mica Condenser (15 mmfd.)	60-015337
7	Resistor (470,000 ohms, 1/2 watt)	33-447339
8	Tubular Condenser (.05 mfd.)	30-4609
9	Resistor (15,000 ohms, 1/2 watt)	33-315339
10	Mica Condenser (5 mmfd.)	60-005357
11	Mica Condenser (50 mmfd.)	60-125457
12	R. F. Transformer (Broadcast)	32-3417
13	R. F. Transformer (S. W. 1)	32-3420
14	R. F. Transformer (S. W. 2)	32-3416
15	Resistor (22,000 ohms, 1/2 watt)	33-322339
16	Mica Condenser (10 mmfd.)	60-125457
16A	Mica Condenser (5 mmfd.)	60-005357
17	Compensator (2 section)	31-6260
18	Compensator	32-3423
19	Oscillator Transformer (Broadcast)	32-3421
20	Oscillator Transformer (S. W. 1)	32-3421
21	Oscillator Transformer (S. W. 2)	32-3418
22	Mica Condenser (3000 mmfd.)	60-230124
23	Mica Condenser (100 mmfd.)	60-110457
24	Compensator	31-6345
25	Resistor (100 ohms, 1/2 watt)	33-1105339
26	Resistor (68,000 ohms, 1/2 watt)	33-368339
27	1st I. F. Transformer Assembly	32-3429
28	Tubular Condenser (.05 mfd.)	30-4609
29	Resistor (1000 ohms, 1/2 watt)	33-210339
30	Tubular Condenser (.01 mfd.)	30-4572
31	Resistor (33,000 ohms, 1/2 watt)	33-333339
32	Tubular Condenser (.2 mfd.)	30-4587
33	Resistor (22,000 ohms, 1 watt)	33-322439
34	2nd I. F. Transformer Assembly	32-3430
34E	Resistor (47,000 ohms, 1/2 watt)	33-347339
35	Mica Condenser (100 mmfd.)	60-110457
36	Tubular Condenser (.006 mfd.)	30-4591
37	Tubular Condenser (.002 mfd.)	30-4579
38	Resistor (33,000 ohms, 1/2 watt)	33-333339
39	Volume Control (2.0 meg.)	33-5392
40	Resistor (47,000 ohms, 1/2 watt)	33-347339
41	Tubular Condenser (.006 mfd.)	30-4591
42	Tone Control (6.0 meg.)	33-610339
43	Resistor (10.0 meg., 1/2 watt)	33-610339
44	Tubular Condenser (.006 mfd.)	30-4591
45	Resistor (1.2 meg., 1/2 watt)	33-510339
46	Resistor (1.0 meg., 1/2 watt)	33-510339
47	Resistor (470,000 ohms, 1/2 watt)	33-447339
48	Tubular Condenser (.01 mfd.)	30-4587
49	Resistor (470,000 ohms, 1/2 watt)	33-447339
50	Resistor (470,000 ohms, 1/2 watt)	33-447339
51	Resistor (470,000 ohms, 1/2 watt)	33-447339
52	Mica Condenser (100 mmfd.)	60-110457
53	Tubular Condenser (.006 mfd.)	30-4610
54	Tubular Condenser (.006 mfd.)	30-4591
55	Output Transformer	32-8018
56	Cone and Voice Coil Assembly (Speaker Part No. 36-1452-2)	36-4103
57	Field Coil (Replace Spkr. Part No. 36-1452)	36-1452
58	Electrolytic Condenser (15 mfd., 350 V.)	30-2464
59	Electrolytic Condenser (15 mfd., 350 V.)	30-2464
60	Resistor (33,000 ohms, 1/2 watt)	33-333339
61	Resistor (15,000 ohms, 1/2 watt)	33-315339
62	Resistor (1.0 meg., 1/2 watt)	33-510339
63	Tubular Condenser (.003 mfd.)	30-4608

SCHE. No.	DESCRIPTION	PART No.	DESCRIPTION	PART No.
64	Tubular Condenser (.003 mfd.)	30-4608	Knob (Tuning)	27-4330
65	Power Trans. (115-230 V., 50-60 cycles)	32-8108	Knob (Tuning)	27-4862
66	Power Trans. (115 V., 25 cycles)	32-8030	Knob (Volume and Wave Switch)	27-4332
66	Resistor (150,000 ohms, 1/2 watt)	33-415339	Knob (Tone Control)	27-4872
67	Resistor (150,000 ohms, 1/2 watt)	33-415339	Pointer	56-1276
68	Pilot Lamps	34-2061E	Socket (type 80 tube)	27-6044
69	Voltage Change Switch	42-1569	Socket (type 76 tube)	27-6035
70	Wave Switch	42-1564	Socket (type 78E, 42E and 75 tubes)	27-6036
71	Tuning Condenser Assembly	31-2444	Socket (octal, type 6J8EG tube)	27-6058
			Socket (lokal, type 7A7E tube)	27-6131
			Speaker	36-1453
			Spring Clip (Coil Mounting)	28-5002
			Spring (Drive Cord)	28-8751
			Station Card Holder	56-1273
			Rubber Disc (Coupling Assembly)	27-9164
			Tube Shield (7A7E Tube)	56-1566
			Tube Shield	28-2726
			Tube Shield Base	28-2725
			Arm and Hub (Coupling Assembly)	76-1041
			Tuning Drum and Shaft	31-2452
			Vernier Drive	31-2451

MISCELLANEOUS PARTS

DESCRIPTION	PART No.
Cable and Plug (Power Supply)	L-3246
Special Export A. C. Plug	L-1367
Cabinet	10469A
Clip (Coil Mounting)	28-5002
Dial	27-5583
Drive Cord Assembly	31-2458
Knob (Tuning)	27-4330



MODEL 41-722 — PART LOCATIONS, UNDERSIDE OF CHASSIS.

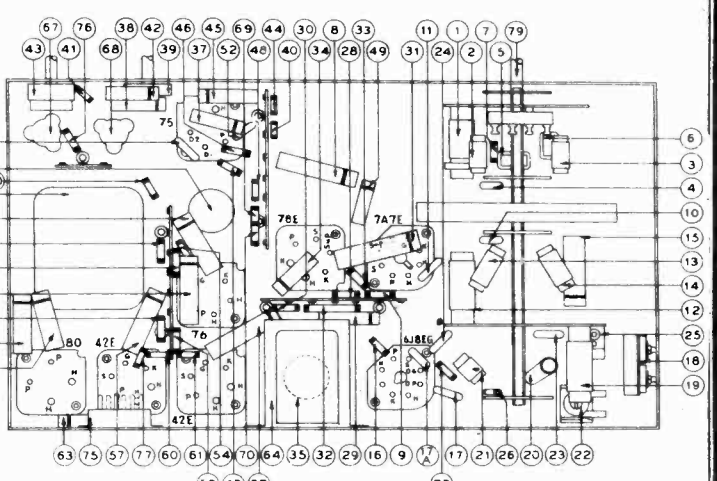
Replacement Parts — Model 41-758

SCHE. No.	DESCRIPTION	PART No.
1	Antenna Transformer (Broadcast)	32-3422
2	Antenna Transformer (S. W. 1)	32-3419
3	Antenna Transformer (S. W. 2)	32-3415
4	Mica Condenser (10 mmfd.)	60-101337
5	Mica Condenser (100 mmfd.)	60-110457
6	Mica Condenser (15 mmfd.)	60-015337
7	Resistor (470,000 ohms, 1/2 watt)	33-447339
9	Resistor (15,000 ohms, 1/2 watt)	33-315339
10	Mica Condenser (5 mmfd.)	60-005357
11	Mica Condenser (50 mmfd.)	60-125457
12	R. F. Transformer (Broadcast)	32-3417
13	R. F. Transformer (S. W. 1)	32-3420
14	R. F. Transformer (S. W. 2)	32-3416
16	Resistor (22,000 ohms, 1/2 watt)	33-322339
17	Mica Condenser (10 mmfd.)	60-125457
18	Compensator (Brdcast. & S. W. 1 Osc.)	31-6287
19	Oscillator Transformer (Broadcast)	32-3421
20	Oscillator Transformer (S. W. 1)	32-3421
21	Oscillator Transformer (Broadcast Tracker)	31-6260
22	Compensator (Broadcast Tracker)	31-6260
23	Mica Condenser (3000 mmfd.)	60-230124
24	Mica Condenser (100 mmfd.)	60-110457
25	Compensator	31-6345
26	Resistor (100 ohms, 1/2 watt)	33-110339
27	Resistor (68,000 ohms, 1/2 watt)	33-368339
28	Resistor (1000 ohms, 1/2 watt)	33-210339
29	Tubular Condenser (.01 mfd.)	30-4572
30	Resistor (33,000 ohms, 1/2 watt)	33-333339
31	Tubular Condenser (.2 mfd.)	30-4587
32	Resistor (15,000 ohms, 1 watt)	33-315439
33	Resistor (330 ohms, 1/2 watt)	33-133336
34	Tubular Condenser (.05 mfd.)	30-4519
35	1st I. F. Transformer Assembly	30-3429
36	2nd I. F. Transformer Assembly	30-2430
37	Tubular Condenser (.006 mfd.)	30-4591
38	Tubular Condenser (.002 mfd.)	30-4579
39	Volume Control (2.0 meg.)	33-5392
40	Resistor (330,000 ohms, 1/2 watt)	33-433339
41	Resistor (47,000 ohms, 1/2 watt)	33-347339
42	Tubular Condenser (.01 mfd.)	30-4581
43	Tone Control (6.0 meg.)	33-5393
44	Resistor (10.0 meg., 1/2 watt)	33-610339
45	Tubular Condenser (.006 mfd.)	30-4591
46	Resistor (2.2 meg., 1/2 watt)	33-522339
47	Resistor (1.0 meg., 1/2 watt)	33-510339
48	Resistor (470,000 ohms, 1/2 watt)	33-447339
49	Tubular Condenser (.01 mfd.)	30-4572
50	Resistor (100,000 ohms, 1/2 watt)	33-410339
51	Mica Condenser (100 mmfd.)	60-110457
52	Mica Condenser (250 mmfd.)	60-125457
53	Tubular Condenser (.006 mfd.)	30-4610
54	Resistor (470,000 ohms, 1/2 watt)	33-447339
55	Resistor (470,000 ohms, 1/2 watt)	33-447339
56	Resistor (27,000 ohms, 1/2 watt)	33-327339
57	Tubular Condenser (.006 mfd.)	30-4610
58	Tubular Condenser (.2 mfd.)	30-4587
59	Resistor (33,000 ohms, 1/2 watt)	33-333339
60	Resistor (470,000 ohms, 1/2 watt)	33-447339
61	Resistor (470,000 ohms, 1/2 watt)	33-447339
62	Tubular Condenser (.006 mfd.)	30-4610
63	Tubular Condenser (.004 mfd.)	30-4578
64	Output Transformer	32-8110
65	Cone and Voice Coil Assembly (Speaker Part No. 36-1453)	36-4104
66	Field Coil (Replace Spkr. Part No. 36-1453)	36-1453

SCHE. No.	DESCRIPTION	PART No.	DESCRIPTION	PART No.
67	Electrolytic Cond. (15 mfd., 450 V.)	30-2465	Knob (Tuning)	27-4862
68	Electrolytic Cond. (40 mfd., 450 V.)	30-2445	Knob (Volume and Wave Switch)	27-4332
69	Resistor (33,000 ohms, 1/2 watt)	33-333339	Knob (Tone Control)	27-4872
70	Resistor (150,000 ohms, 1/2 watt)	33-415339	Pointer	56-1276
71	Resistor (1.0 meg., 1/2 watt)	33-510339	Rubber Bands (Dial Gasket)	27-4867
72	Tubular Condenser (.003 mfd.)	30-4608	Socket (5 prong, type 84 tube)	27-6035
73	Tubular Condenser (.003 mfd.)	30-4608	Socket (6 prong, type 78E, 41E, 75 tubes)	27-6036
74	Power Trans. (115-230 V., 50-60 cycles)	32-8109	Socket (8 prong, octal)	27-6058
75	Voltage Change Switch	42-1569	Socket (lokal)	27-6131
76	Resistor (150,000 ohms, 1/2 watt)	33-415339	Station Card Holder	27-5437
77	Resistor (150,000 ohms, 1/2 watt)	33-415339	Spring (Drive Cord)	28-8751
78	Pilot Lamps	34-2064E	Shield (7A7E tube)	56-1566
79	Wave Switch	42-1564	Tuning Drum and Shaft	36-1452-2
80	Tuning Condenser Assembly	31-2444	Vernier Drive	31-2452
			Speaker	36-1453
			Station Card Holder	31-2452
			Arm and Hub (Coupling Assembly)	76-1041
			Set Screw (Coupling Assembly)	W-2008

MISCELLANEOUS PARTS

DESCRIPTION	PART No.
Cabinet	10457A
Dial	27-5583
Drive Cord Assembly	31-2458
Gasket (Dial Mounting, Rubber Bands)	27-4967



MODEL 41-758 — PART LOCATIONS, UNDERSIDE OF CHASSIS.

PHILCO RADIO & TELEVISION CORP.

MODEL 41-722  
 MODEL 41-745  
 MODEL 41-758  
 MODEL 41-759

**SPECIFICATIONS**

**MODEL 41-722**

**TYPE OF CIRCUIT:** Six (6) tube, A. C. operated super-heterodyne circuit with three tuning ranges covering standard, police and shortwave stations. Other features of design included in this model are: Phonograph connections; tuned R. F. stage; bass compensation; variable tone control; automatic volume control and a pentode audio output stage.

**TUNING RANGES:**  
 540 to 1720 K. C.      2.3 to 7.1 M. C.      7.0 to 22.2 M. C.

**I. F. FREQUENCY:** 455 K. C.

**AUDIO OUTPUT:** 2 watts.

**POWER SUPPLY:** Operates on 115 or 230 volts, 50-60 cycle alternating current. To operate the receiver on either of the above voltages, move the changeover switch on the rear of the chassis to position required.

**MODEL 41-758**

**TYPE OF CIRCUIT:** Eight (8) tube, A. C. operated super-heterodyne circuit with three tuning ranges covering standard, police, and shortwave stations. In addition, other features of design are: Phonograph connections; tuned R. F. stage; bass compensation; variable tone control and a pentode audio output stage.

**TUNING RANGES:**  
 540 to 1720 K. C.      2.3 to 7.1 M. C.      7.0 to 22 M. C.

**I. F. RANGES:** 455 K. C.

**AUDIO OUTPUT:** 6 watts.

**POWER SUPPLY:** Operates on 115 or 230 volts, 50-60 cycle alternating current. To operate the receiver on either of the above voltages, move the changeover switch on the rear of the chassis to the position required.

Operations in Order	SIGNAL GENERATOR			RECEIVER				SPECIAL INSTRUCTIONS
	Leads to Receiver	Dummy Aerial Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators for Maximum Signal		
						Model 41-722	Model 41-758	
1	Grid 6J8EG	.1 mfd.	455 K. C.	580 K. C.	Range Sw. Brdcast. Volume "Max."	27A, 27B, 34A, 34B	35A, 35B, 36A, 36B	
2	Aerial Lead	400 ohms	21 M. C.	21 M. C.	Range Switch "S. W. 2"	24, 70B, 70A	25, 80B, 80A	Note B, C
3	Aerial Lead	400 ohms	6.0 M. C.	6.0 M. C.	Range Switch "S. W. 1"	17A	18A	Roll Gang
4	Aerial Lead	200 mmfd.	1500 K. C.	1500 K. C.	Range Switch "Broadcast"	17	18	Roll Gang
5	Aerial Lead	200 mmfd.	580 K. C.	580 K. C.	Range Switch "Broadcast"	18	22	Roll Gang

**NOTE A** — The "Dummy Antenna" consists of a condenser or resistance connected in series with the signal generator output lead (high side). Use the capacity or resistance as specified in each step of the above procedure.

**NOTE B** — **DIAL CALIBRATION:** In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning

condenser closed (maximum capacity), set the dial pointer on the first mark on the left edge (low frequency end) of the broadcast scale.

**NOTE C** — When adjusting compensator (24) Model 41-722 and (25) Model 41-758 be sure to tune in the fundamental signal (21 M. C.) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning dial 910 K. C. below the fundamental signal, which will be 20.090 M. C.

**MODEL 41-745**

**TYPE OF CIRCUIT:** Seven (7) tube superheterodyne circuit with three tuning ranges and designed for operation entirely from a six volt storage battery. The high voltage D. C. supply is obtained from a synchronous vibrator. Other features incorporated in the model are: preselector tuned R. F. stage; Provision for connecting a phonograph pickup; bass compensation; continuously variable tone control, automatic volume control; and a push-pull audio output stage.

**TUNING RANGES:**  
 540 to 1720 K. C.      2.3 to 7.1 M. C.      7.0 to 22.2 M. C.

**INTERMEDIATE FREQUENCY:** 455 K. C.

**AUDIO OUTPUT:** 2 watts.

**POWER SUPPLY:** 6 Volt storage battery.

**MODEL 41-759**

**TYPE OF CIRCUIT:** Eight (8) tube superheterodyne circuit with three tuning ranges and designed for operation from a 110 or 220 volts A. C. or D. C. power supply. Other features included in the model are: Tuned R. F. stage; provisions for connecting a phonograph pickup; bass compensation; continuously variable tone control; automatic volume control; and a push-pull audio output stage.

**TUNING RANGES:**  
 540 to 1720 K. C.      2.3 to 7.1 M. C.      7.0 to 22 M. C.

**INTERMEDIATE FREQUENCY:** 455 K. C.

**AUDIO OUTPUT:** 3.0 watts at 115 V.      4.5 watts at 230 V.

**POWER SUPPLY:** To operate the receiver on either 110 or 220 volt A. C. or D. C. power circuits, insert the ballast resistor (on rear of chassis) in the position desired. The ballast resistor is marked to indicate the proper socket position for either power circuit.

Operations in Order	SIGNAL GENERATOR			RECEIVER				SPECIAL INSTRUCTIONS
	Leads to Receiver	Dummy Aerial Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators for Maximum Signal		
						Model 41-745	Model 41-759	
1	Grid 6J8EG	.1 mfd.	455 K. C.	580 K. C.	Range Sw. Brdcast. Volume "Max."	34A, 34B, 32A, 32B	42A, 42B, 37A, 37B	
2	Aerial Lead	400 ohms	21 M. C.	21 M. C.	Range Switch "S. W. 2"	29, 77B, 77A	36, 81B, 81A	Note B, C
3	Aerial Lead	400 ohms	6.0 M. C.	6.0 M. C.	Range Switch "S. W. 1"	26A	32A	Roll Gang
4	Aerial Lead	200 mmfd.	1500 K. C.	1500 K. C.	Range Switch "Broadcast"	26	32	Roll Gang
5	Aerial Lead	200 mmfd.	580 K. C.	580 K. C.	Range Switch "Broadcast"	25	31	Roll Gang

**NOTE A** — The "Dummy Antenna" consists of a condenser or resistance connected in series with the signal generator output lead (high side). Use the capacity or resistance as specified in each step of the above procedure.

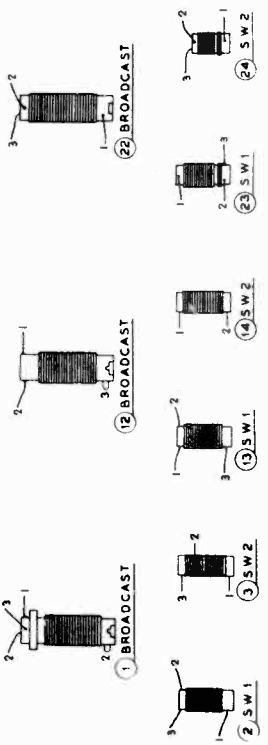
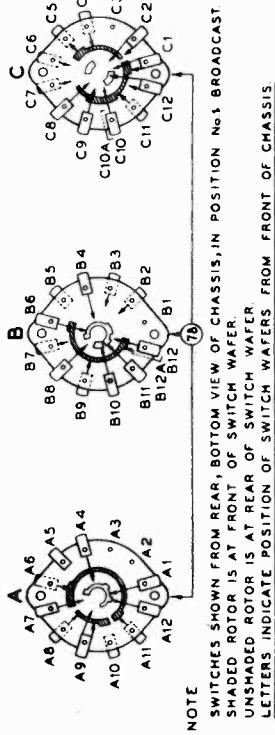
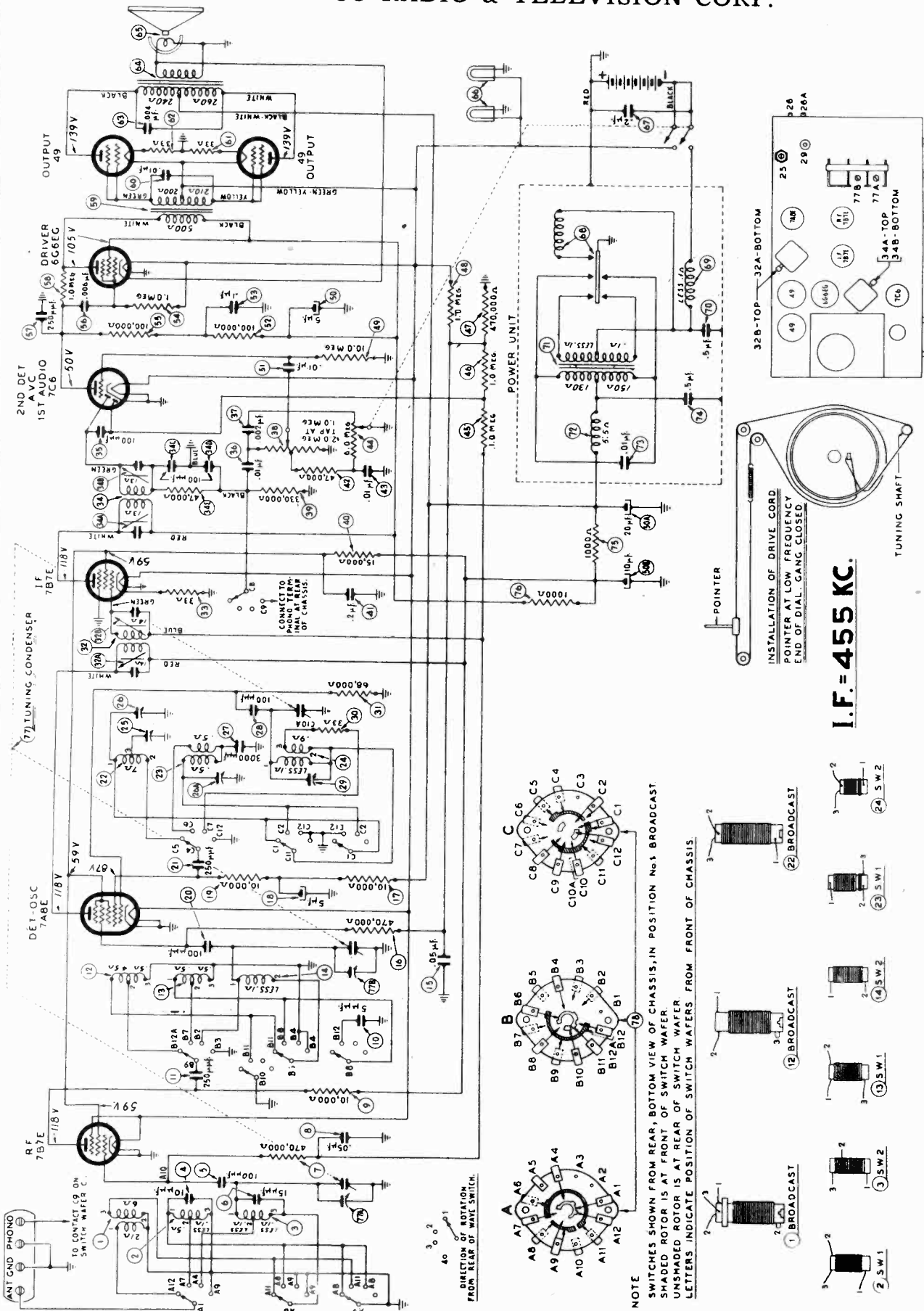
**NOTE B** — **DIAL CALIBRATION:** In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning

condenser closed (maximum capacity), set the dial pointer on the first mark on the left edge (low frequency end) of the broadcast scale.

**NOTE C** — When adjusting compensator (29) Model 41-745 and (36) Model 41-759 be sure to tune in the fundamental signal (21 M. C.) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning dial 910 K. C. below the fundamental signal, which will be 20.090 M. C.

MODEL 41-745

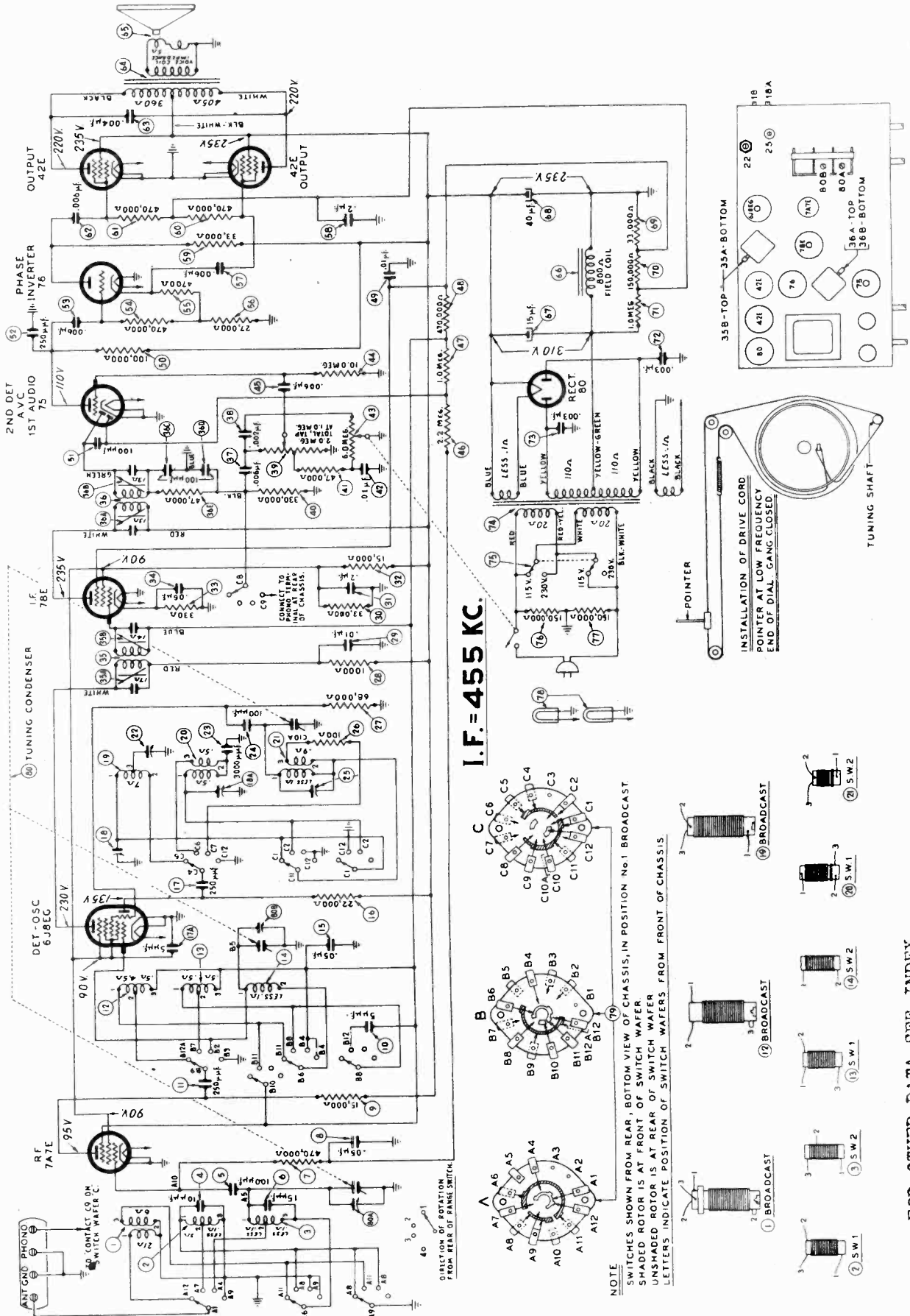
PHILCO RADIO & TELEVISION CORP.



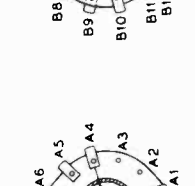
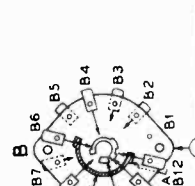
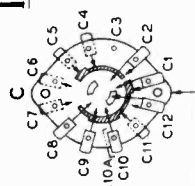
**I.F. = 455 KC.**

SCHEMATIC DIAGRAM MODEL 41-745

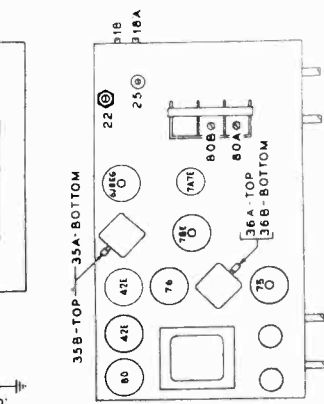
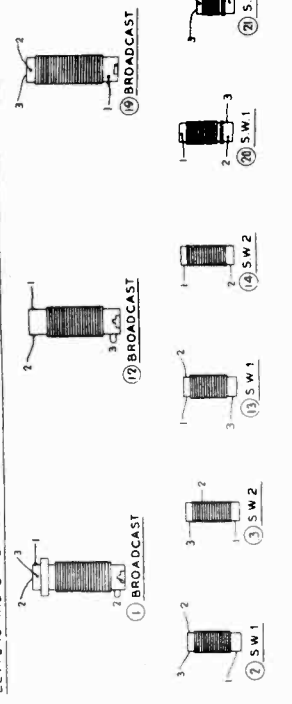
PHILCO RADIO & TELEVISION CORP.



I.F. = 455 KC.



NOTE  
 SWITCHES SHOWN FROM REAR. BOTTOM VIEW OF CHASSIS, IN POSITION No. 1 BROADCAST  
 SHADED ROTOR IS AT FRONT OF SWITCH WAFER  
 UNSHADED ROTOR IS AT REAR OF SWITCH WAFER  
 LETTERS INDICATE POSITION OF SWITCH WAFERS FROM FRONT OF CHASSIS



FOR OTHER DATA, SEE INDEX

SCHEMATIC DIAGRAM MODEL 41-758



MODEL 41-745  
MODEL 41-759

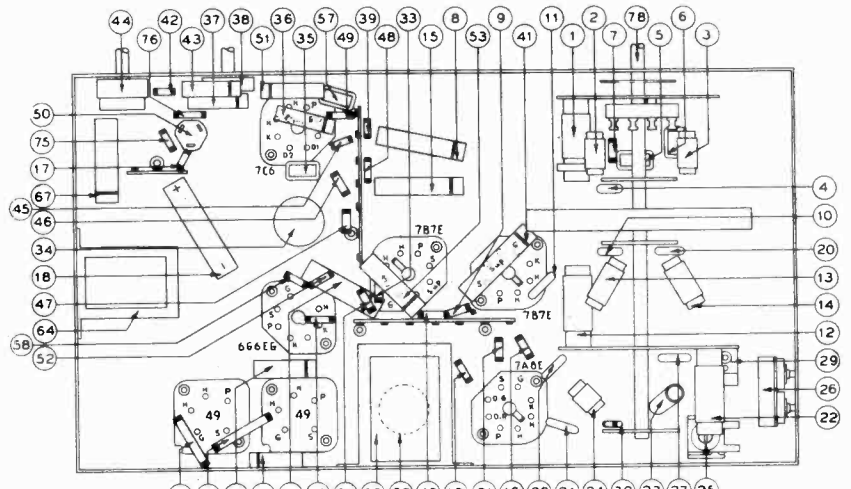
PHILCO RADIO & TELEVISION CORP.

PRODUCTION CHANGES

To improve the sensitivity of the Model 41-759 I. F. circuit, a 68 ohm resistor, Part No. 33-068336 was connected in series with the cathode of the 78E tube and B minus.

Replacement Parts — Model 41-745

SCHE. No.	DESCRIPTION	PART No.
1	Antenna Transformer (Broadcast)	32-3422
2	Antenna Transformer (S. W. 1)	32-3419
3	Antenna Transformer (S. W. 2)	32-3415
4	Mica Condenser (10 mmfd.)	60-010337
5	Mica Condenser (100 mmfd.)	60-110457
6	Mica Condenser (15 mmfd.)	60-015333
7	Resistor (470,000 ohms, 1/2 watt)	33-447339
8	Tubular Condenser (.05 mfd.)	30-4609
9	Resistor (10,000 ohms, 1/2 watt)	33-310339
10	Mica Condenser (5 mmfd.)	60-005357
11	Mica Condenser (250 mmfd.)	60-125457
12	R. F. Transformer (Broadcast)	32-3417
13	R. F. Transformer (S. W. 1)	32-3420
14	R. F. Transformer (S. W. 2)	32-3416
15	Tubular Condenser (.05 mfd.)	30-4609
16	Resistor (470,000 ohms, 1/2 watt)	33-447339
17	Resistor (10,000 ohms, 1/2 watt)	33-310339
18	Electrolytic Condenser (5 mfd., 150 V.)	30-2469
19	Resistor (10,000 ohms, 1/2 watt)	33-310339
20	Mica Condenser (100 mmfd.)	60-110457
21	Mica Condenser (250 mmfd.)	60-125457
22	Oscillator Transformer (Broadcast)	32-3423
23	Oscillator Transformer (S. W. 1)	32-3421
24	Oscillator Transformer (S. W. 2)	32-3441
25	Compensator	31-6287
26	Compensator (2 section)	60-230124
27	Mica Condenser (3000 mmfd.)	60-110457
28	Mica Condenser (100 mmfd.)	33-068339
29	Compensator	31-6345
30	Resistor (33 ohms, 1/2 watt)	33-033339
31	Resistor (68,000 ohms, 1/2 watt)	33-347339
32	1st I. F. Transformer Assembly	32-3442
33	Resistor (33 ohms, 1/2 watt)	33-033339
34	2nd I. F. Transformer Assembly	32-3430
35	Mica Condenser (100 mmfd.)	60-110457
36	Tubular Condenser (.01 mfd.)	30-4572
37	Tubular Condenser (.002 mfd.)	30-4579
38	Volume Control (2.0 meg.)	33-5395
39	Resistor (330,000 ohms, 1/2 watt)	33-433339
40	Resistor (15,000 ohms, 1/2 watt)	33-315339
41	Tubular Condenser (.2 mfd.)	30-4587
42	Resistor (47,000 ohms, 1/2 watt)	33-347339
43	Tubular Condenser (.01 mfd.)	30-4572
44	Tone Control and On-Off Switch	33-510339
45	Resistor (1.0 meg., 1/2 watt)	33-510339
46	Resistor (1.0 meg., 1/2 watt)	33-510339
47	Resistor (470,000 ohms, 1/2 watt)	33-447339
48	Resistor (1.0 meg., 1/2 watt)	33-510339
49	Resistor (10.0 meg., 1/2 watt)	33-610339
50	Electrolytic Cond. (5-1020 mfd., 150 V.)	33-433339
51	Tubular Condenser (.01 mfd.)	30-4572
52	Resistor (100,000 ohms, 1/2 watt)	33-433339
53	Tubular Condenser (.1 mfd.)	30-4586
54	Resistor (1.0 meg., 1/2 watt)	33-510339
55	Resistor (100,000 ohms, 1/2 watt)	33-433339
56	Tubular Condenser (.006 mfd.)	30-4610
57	Mica Condenser (250 mmfd.)	60-125457
58	Resistor (68 ohms, 1/2 watt)	33-068339
59	Driver Transformer	32-8027
60	Tubular Condenser (.01 mfd.)	30-4572
61	Resistor (33 ohms, 1 watt)	33-033436
62	Resistor (33 ohms, 1 watt)	33-033436
63	Tubular Condenser (.004 mfd.)	30-4578

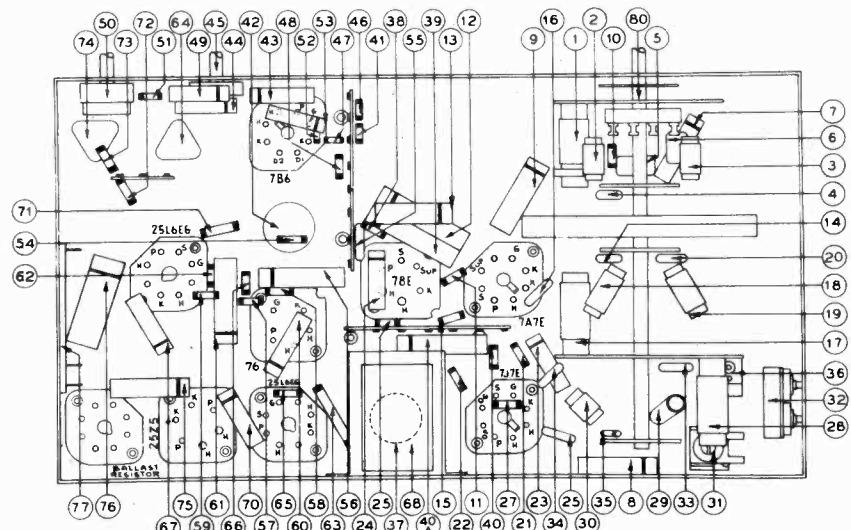


MODEL 41-745 — PART LOCATIONS, UNDERSIDE OF CHASSIS

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.
64	Output Transformer	32-8113	71	Power Transformer	32-7682
65	Cone and Voice Coil Assembly (Speaker Part No. 36-1508)	36-4161	72	"B" Filter Choke	32-2925
66	Pilot Lamps	34-2068E	73	Tubular Condenser (.01 mfd.)	30-4598
67	Tubular Condenser (.2 mfd.)	30-4587	74	Tubular Condenser (.5 mfd.)	30-4296
68	Vibrator	41-3222	75	Resistor (1000 ohms, 1/2 watt)	33-210339
69	"A" Filter Choke	32-1954	76	Resistor (1000 ohms, 1/2 watt)	33-210339
70	Tubular Condenser (.5 mfd.)	30-4296	77	Tuning Condenser Assembly	31-2444
			78	Wave Switch	42-1564

Replacement Parts — Model 41-759

SCHE. No.	DESCRIPTION	PART No.
1	Antenna Transformer (Broadcast)	32-3422
2	Antenna Transformer (S. W. 1)	32-3419
3	Antenna Transformer (S. W. 2)	32-3415
4	Mica Condenser (10 mmfd.)	60-010337
5	Mica Condenser (100 mmfd.)	60-110457
6	Mica Condenser (15 mmfd.)	60-015333
7	Tubular Condenser (.002 mfd.)	30-4579
8	Tubular Condenser (.1 mfd.)	30-4527
9	Resistor (220,000 ohms, 1/2 watt)	33-422339
10	Resistor (22 ohms, 1/2 watt)	33-022339
11	Tubular Condenser (.05 mfd.)	30-4609
12	Tubular Condenser (.1 mfd.)	30-4572
13	Mica Condenser (5 mmfd.)	60-005357
14	Resistor (10,000 ohms, 1/2 watt)	33-310339
15	Mica Condenser (15 mmfd.)	60-015333
16	R. F. Transformer (Broadcast)	32-3417
17	R. F. Transformer (S. W. 1)	32-3420
18	R. F. Transformer (S. W. 2)	32-3416
19	Mica Condenser (100 mmfd.)	60-110457
20	Resistor (220,000 ohms, 1/2 watt)	33-422339
21	Tubular Condenser (.05 mfd.)	30-4518
22	Resistor (4700 ohms, 1/2 watt)	30-4519
23	Resistor (330 ohms, 1/2 watt)	33-133339
24	Mica Condenser (250 mmfd.)	60-125457
25	Resistor (330 ohms, 1/2 watt)	33-133339
26	Oscillator Transformer (Broadcast)	32-3423
27	Oscillator Transformer (S. W. 1)	32-3421
28	Oscillator Transformer (S. W. 2)	32-3441
29	Compensator	31-6287
30	Compensator (2 section)	60-230124
31	Mica Condenser (3000 mmfd.)	60-110457
32	Mica Condenser (100 mmfd.)	33-068339
33	Compensator	31-6345
34	Resistor (68 ohms, 1/2 watt)	33-068339
35	Compensator	31-6345
36	1st I. F. Transformer Assembly	32-3442
37	Resistor (47,000 ohms, 1/2 watt)	33-347339
38	Tubular Condenser (.05 mfd.)	30-4609
39	Resistor (15,000 ohms, 1/2 watt)	33-315339
40	Tubular Condenser (.2 mfd.)	30-4587
40A	Resistor (1.0 meg., 1/2 watt)	33-510339
41	Tubular Condenser (.02 mfd.)	30-4516
42	2nd I. F. Transformer Assembly	32-3430
43	Tubular Condenser (.02 mfd.)	30-4516
44	Volume Control (2.0 meg.)	33-5395
45	Resistor (220,000 ohms, 1/2 watt)	33-422339
46	Resistor (100,000 ohms, 1/2 watt)	33-110339
47	Resistor (470,000 ohms, 1/2 watt)	33-447339
48	Tubular Condenser (.01 mfd.)	30-4572
49	Tone Control and On-Off Switch	33-510339
50	Resistor (47,000 ohms, 1/2 watt)	33-347339
51	Resistor (10.0 meg., 1/2 watt)	33-610339
52	Tubular Condenser (.006 mfd.)	30-4591
53	Resistor (330,000 ohms, 1/2 watt)	33-433339
54	Mica Condenser (250 mmfd.)	60-125457
55	Tubular Condenser (.006 mfd.)	30-4610
56	Resistor (470,000 ohms, 1/2 watt)	33-447339
57	Resistor (4700 ohms, 1/2 watt)	33-247339
58	Resistor (27,000 ohms, 1/2 watt)	33-273339
59	Tubular Condenser (.02 mfd.)	33-110339
60	Tubular Condenser (.006 mfd.)	30-4610
61	Resistor (330,000 ohms, 1/2 watt)	33-433339
62	Resistor (330,000 ohms, 1/2 watt)	33-433339
63	Electrolytic Condenser (20 mfd., 25 V.)	30-2435
64A	Electrolytic Condenser (20 mfd., 150 V.)	30-2435
64B	Electrolytic Condenser (20 mfd., 150 V.)	30-2435
65	Resistor (330,000 ohms, 1/2 watt)	33-433339
66	Resistor (33,000 ohms, 1/2 watt)	33-333339



MODEL 41-759 — PART LOCATIONS, UNDERSIDE OF CHASSIS

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.
67	Tubular Condenser (.01 mfd.)	30-4572	74	Electrolytic Cond. (40 mfd., 350 V.)	30-2466
68	Output Transformer	32-8113	75	Tubular Condenser (.02 mfd.)	30-4599
69	Cone and Voice Coil Assembly (Speaker Part No. 36-1508-3)	36-4161	76	Tubular Condenser (.5 mfd.)	30-4590
70	Pilot Lamps	34-2068E	77	B. C. Resistor (Wirewound)	33-3390
71	Resistor (1000 ohms, 1 watt)	33-210439	78	Pilot Lamp	34-2397
72	Resistor (330 ohms, 1/2 watt)	33-133339	79	Ballast Resistor	33-3391
73	Resistor (2200 ohms, 1 watt)	33-22439	80	Wave Switch	42-1564
			81	Tuning Condenser Assembly	31-2444



MODELS 42-KR-3, 42-KR-5  
MODEL 42-22CL

PHILCO RADIO & TELEVISION CORP.

42-KR-3, 42-KR-5

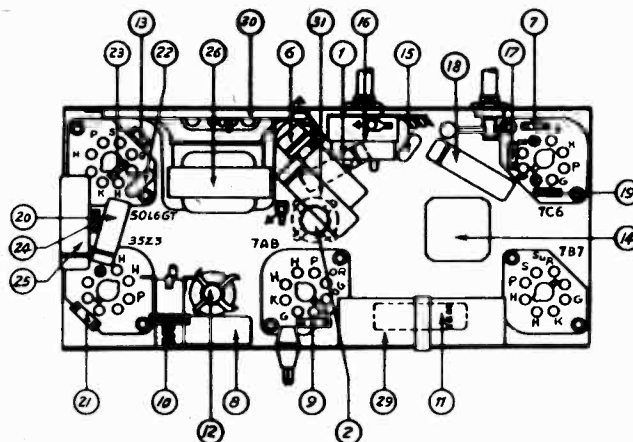
SCHEM. No.	DESCRIPTION	PART No.
1.	Condenser (.0015 mfd., 200 volts)	30-4621
2.	Aerial Transformer	32-3394
3.	Loop Aerial (42-KR-3)	32-3767
	1 1/2' Aerial (42-KR-5)	32-3752
4.	Tuning Condenser	31-2567
	Drive Cord	31-2358
	Drive Shaft	31-2568
	Spring Drive Cord	28-8954
	Spacer (Tuning Cond. Mtg.)	56-1669
5.	Compensator (Aerial)	31-6344
6.	Condenser and Choke Assembly	76-1161
7.	Resistor (4.7 megohms)	33-547339
8.	Condenser (.1 mfd., 200 volts)	01-0104
9.	Resistor (22,000 ohms)	33-322339
10.	Oscillator Transformer	32-3562
11.	Condenser (.05 mfd.)	30-4519
12.	1st I. F. Transformer	32-3390
13.	Resistor (27,000 ohms)	33-327339
14.	2nd I. F. Transformer	32-3391
15.	Condenser (250 mmfd.)	60-125157
16.	Volume Control	33-5456
17.	Resistor (4.7 megohms)	33-547339
18.	Condenser (.01 mfd., 400 volts)	30-4572
19.	Resistor (4.7 megohms)	33-547339
20.	Condenser (.01 mfd., 400 volts)	30-4572
21.	Resistor (470,000 ohms)	33-447339
22.	Mica Condenser (250 mmfd.)	60-125157
23.	Resistor (470,000 ohms)	33-447339
24.	Resistor (130 ohms)	33-113336
25.	Condenser (.02 mfd., 400 volts)	30-4516
26.	Output Transformer	32-8144
27.	Cone Assembly (for Speaker 36-1512-9)	36-4167
28.	Field Coil (replace Speaker 36-1512-9)	30-2382
29A, B.	Electrolytic Condenser (20-20 mfd.)	30-2382
	Clamp	56-1346
30.	Resistor (40-80 ohms)	33-3401
31.	Condenser (.04 mfd., 400 volts)	30-4119
32.	Pilot Lamp	34-2068

SCHEM. No.	DESCRIPTION	PART No.
33.	Cable Clock	41-3538
	Clock (115 volt & 60 cycle)	45-2890
	Clock (115 volt & 50 cycle)	45-2891
	Screw (Clock Mtg.)	W-1837

**MISCELLANEOUS PARTS**

Cabinet 42-KR-3	10564A
Cabinet 42-KR-5	10568A
Cabinet Back 42-KR-3	27-9867
Cabinet Back 42-KR-5	27-9890
Clip (Coil Mtg.)	28-5002
Cord (Power)	L-3199
Disc Feet (Cabinet)	27-4804
Dial Scale (42-KR-3)	27-5733
Dial Scale (42-KR-5)	27-5732

DESCRIPTION	PART No.
Dial Scale (42-KR-3)	27-5733
Dial Pointer	27-4972
Knob (42-KR-3)	54-4004
Knob (42-KR-5)	27-4820
Rubber Grommet (Tuning Cond.)	27-4610
Speaker	36-1512
Socket (Lektal tubes)	27-6157
Socket (Octal)	27-6164
Socket Assembly (Pilot Lamp)	76-1177
Screw (Chassis Mtg.)	W-2030
Screw (Back Mtg.)	W-2076
Screw (Back Mtg.) (42-KR-3)	W-2023
Washer (Chassis Mtg.)	W-410
Washer (Chassis Mtg.)	W-152



LOCATIONS OF PARTS — UNDERSIDE OF CHASSIS

REPLACEMENT PARTS MODELS 42-KR-3, 42-KR-5

MODEL 42-22CL

SCHEM. No.	DESCRIPTION	PART No.
1.	Aerial Transformer	32-3649
2.	Condenser (.0015 mfd., 200 volts)	30-4555
3.	Loop Aerial	32-3645
4.	Mica Condenser (800 mmfd.)	60-180127
5.	Tuning Condenser	31-2492
	Drive Cord	31-2489
	Drive Shaft	31-2370
	Grommet (Mtg. Cond.)	27-4610
	Nut (Mtg. Cond.)	W-1543
	Sleeve (Mtg. Cond.)	28-5583
	Spring (Drive Cord)	28-8954
6.	Resistor (1 megohm)	33-510339
7.	Condenser (.05 mfd., 200 volts)	30-4519
8.	Resistor (180 ohms)	33-118336
9.	Condenser (.25 mfd.) and Choke	76-1226
10.	R. F. Transformer	32-3273
10A.	Resistor (5,600 ohms) part of 10	33-256339
11.	Condenser (.05 mfd., 200 volts)	30-4519
12.	Condenser (.05 mfd., 200 volts)	30-4519
13.	Compensator part of 5	
14.	Compensator part of 5	
15.	Range Switch	42-1505
16.	Off-On Switch part of 30	
17.	Condenser (.04 mfd., 400 volts)	30-4119
18.	Resistor (53-132 ohms)	33-3375
19.	Pilot Lamp	34-2068
20.	Oscillator Transformer	32-3256
21.	Resistor (47,000 ohms)	33-347339
22.	Condenser (100 mmfd.)	60-110157
23.	1st I. F. Transformer	32-3489
24.	Condenser (.05 mfd.)	30-4519
25A.	Electrolytic Cond. (20 mfd., 20 mfd.)	30-2403
25B.	Electrolytic Cond. (20 mfd.) part of 25A	
26.	2nd I. F. Transformer	32-3304
27.	Resistor (2.2 megohms)	33-522154
28.	Mica Condenser (250 mmfd.)	60-125157
29.	Resistor (15,000 ohms)	33-315339
30.	Volume Control	33-5405
	Mtg. Nut	W-2157
31.	Resistor (3.3 megohms)	33-533339

SCHEM. No.	DESCRIPTION	PART No.
32.	Condenser (100 mfd.)	61-0033
33.	Condenser (.01 mfd., 200 volts)	30-4572
34.	Resistor (4.7 megohms)	33-547154
35.	Condenser (.01 mfd., 400 volts)	61-0100
36.	Resistor (470,000 ohms)	33-447339
37.	Resistor (220,000 ohms)	33-422339
38.	Resistor (130 ohms)	33-113336
39.	Condenser (.02 mfd., 400 volts)	30-4516
40.	Output Transformer	32-8144
41.	Cone Assembly (for Speaker 36-1512-9)	36-4167
42.	Field Coil (replace Speaker 36-1512)	
43.	Clock (115 volts, 60 cycles)	45-2855
	Clock (115 volts, 50 cycles)	45-2877
	Screw (Clock Mtg.)	W-1824
	Cable (Clock)	41-3484

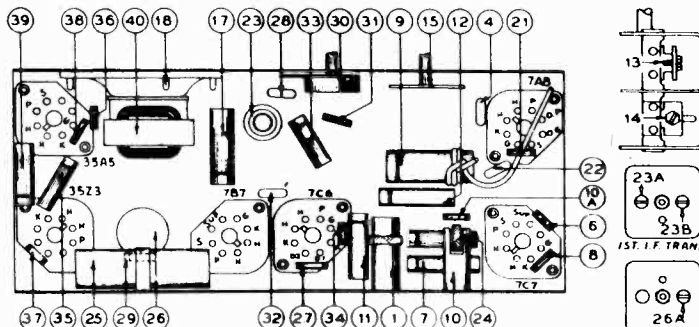
**MISCELLANEOUS PARTS**

Cabinet	10539A
Cardboard Back	27-9867
Screw	W-2023

DESCRIPTION	PART No.
Cord (Power)	L-3199
Dial Scale	27-5691
Dial Pointer	27-4891
Knob (Tuning-Volume)	27-4809
Knob (Range Switch)	54-4005
Socket (Tubes)	27-6159
Socket Assembly (Pilot Lamp)	76-1177

**MOUNTING PARTS**

Clip (R. F. Coil Mounting)	28-5002
Clamp (Electro-Condenser)	56-1346
Pin Nut (Vol. Cent. Drive Shaft Mtg.)	W-2157
Pin Nut (1st & 2nd I. F. Mtg.)	W-1949
Screw (Dial Scale Mounting)	W-605
Screw (Chassis Mtg.)	W-2030
Washer (Chassis Mtg.)	W-410
Screw (Chassis Mtg.)	W-2030
Eyelet (Mtg. Socket)	W-1650



LOCATIONS OF PARTS — UNDERSIDE OF CHASSIS  
MODEL 42-22CL



MODEL 41-KR  
 MODELS 42-KR-3, 42-KR-5  
 MODEL 42-22CL

PHILCO RADIO & TELEVISION CORP.

**SPECIFICATIONS**

**MODELS 42-KR-3, 42-KR-5**

Models KR-3 and KR-5 are five (5) tube superheterodyne compact radios employing a built-in loop aerial. These models are similar with the exception of the cabinet, clock and power supply.

Model KR-5 includes a clock and is designed for operation on 115 volts, 60 cycles A.C. current only. Model KR-3 is designed for operation on a 115 volt, A.C. or D.C. power supply.

In addition each model includes a tuning band from 540 to 1600 K.C.; automatic volume control; beam power pentode audio output stage; PHILCO LOKTAL tubes, and a permanent magnet speaker.

INTERMEDIATE FREQUENCY: 455 K.C.

POWER SUPPLY: 115 Volts, A.C. or D.C.

**MODEL 42-22CL**

Model 42-22CL is a combination Clock and Radio which operates on a 115 volt, 50 or 60 cycle power supply. The radio consists of a six (6) tube superheterodyne circuit with two tuning ranges covering standard, State, and City Police, aircraft and amateur broadcast frequencies; built-in loop aerial system; R. F. stage; beam power audio stage; automatic volume control; and PHILCO LOKTAL tubes.

TUNING BAND FREQUENCIES: 540 to 1600 K.C. and 1.6 to 3.3 M.C.

INTERMEDIATE FREQUENCY: 455 K.C.

AUDIO OUTPUT: 1 Watt.

POWER SUPPLY: The radio will operate on a 115 volt, 50 or 60 cycle power supply. The clock, however, is designed to operate on a single frequency only. The 115 volt, 50 cycle clock and 115 volt, 60 cycle clock are indicated in the replacement parts list.

**OUTSIDE AERIAL AND GROUND**

**AERIAL AND GROUND:** Under ordinary operating conditions the loop aerial is sufficient for reception of stations, and an outside aerial or ground is not required. In some locations, however, such as steel reinforced buildings and other shielded areas, an outside aerial should be used for maximum performance.

For this purpose an outside aerial connection is located on the rear lower left corner of the chassis. Simply remove the lug from under the screw, and attach the aerial lead to the lug. The PHILCO SAFETY AERIAL, Part No. 40-6370, is recommended for these models.

**CONNECTING ALIGNING INSTRUMENTS**

**Audio Output Meter:** If this type of aligning meter is used, connect it to the voice coil terminals of the speaker or from the plate of the output tube to "B" (-) negative. Adjust the meter for the 0 to 10 volt scale.

**Vacuum Tube Voltmeter:** To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative (-) terminal of the voltmeter to any point in the circuit where the A. V. C. voltage can be obtained. Connect the positive (+) terminal of the vacuum tube voltmeter to the chassis.

**Signal Generator:** When adjusting the I. F. padders, the high side of the signal generator is connected through a .1 mfd. condenser to the antenna section of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet. When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled.

After connecting the aligning instruments adjust the compensators as shown in the tabulation below. If the indicating meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations in Order	SIGNAL GENERATOR		RECEIVER		SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Control Setting	Adjust Compensators in Order	
1	Ant. Section of Tuning	455 K.C.	Vol. Max. Range Switch Brdcast.	Models KR-3, KR-5 12A, 12B, 14A	Compensator Locations on Diagram, and Base Note A Note B
2	Loop see above instructions	1600 K.C.	Vol. Max. Range Switch Brdcast.	4A	
3	Loop see above instructions	1500 K.C.	Vol. Max. Range Switch Brdcast.	5	

**NOTE A—DIAL CALIBRATION:** In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the small dot below 550 K.C.

**NOTE B—** The police tuning range of Model 42-22CL is automatically aligned when the broadcast band compensators are adjusted.



MODELS 42-PT-2, 42-PT-4,  
42-PT-7  
MODELS 42-PT-10, 42-321  
MODEL 42-1004

PHILCO RADIO & TELEVISION CORP.

ALIGNMENT FOR MODELS  
42-PT-2, 42-PT-4, 42-PT-7  
42-321, 42-PT-10

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet.

When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the

chassis as when assembled. The aligning points on scale plate should also be used.

After connecting the aligning instruments adjust the compensators as shown in the tabulation below. Compensator locations are shown on the Schematic.

If the indicating meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS	
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order 42-321, -PT-10 42-PT-2, -PT-4, -PT-7		
1	Ant. Section of tuning	455 K. C.	540 K. C. Tuning Cond. Closed	Vol. Max.	18A, 18B, 14A, 14B	13B, 13A, 10A, 10B	Note B
2	Loop see above instructions	1600 K. C.	1600 K. C.	Vol. Max.	(6B, Note C)	(1B, Note C)	Note A
3	Loop see above instructions	1500 K. C.	1500 K. C.	Vol. Max.	(6A, Note D)	(1A, Note D)	

NOTE A: DIAL POINTER CALIBRATION—In order to adjust the receiver correctly, the pointer must be adjusted to track properly with the tuning condenser. To do this, turn the tuning condenser to the maximum capacity (plates fully meshed.) With the condenser in this position, set the tuning pointer on the first small line stamped in the scale plate on the left side.

NOTES FOR MODELS 42-321, -PT-10

NOTE B—Before adjusting compensators, turn down (14B) to tight position. Then adjust the compensators for maximum output in the following order: 18A, 18B, 14A and 14B.

NOTE C—Turn tuning condenser until dial pointer is on the first small line stamped in the scale plate from right side of chassis. Adjust padder (6B) to maximum at this point.

NOTE D—Turn tuning condenser until dial pointer is on the second small line stamped in the scale plate from right side of chassis. Adjust padder (6A) to maximum at this point.

NOTES FOR MODELS 42-PT-2, -PT-4, -PT-7

NOTE B—Before adjusting compensators, turn down (10B) to tight position. Then adjust the compensators for maximum output in the following order: 12A, 12B, 10A and 10B.

NOTE C—When adjusting padder outside of cabinet, turn tuning condenser until dial pointer is on the first small line stamped in the scale plate from right side of chassis. Adjust padder (1B) to maximum at this point.

NOTE D—When adjusting padder outside of cabinet, turn tuning condenser until dial pointer is on the second small line stamped in the scale plate from right side of chassis. Adjust padder (1A) to maximum at this point.

MODEL 42-1004

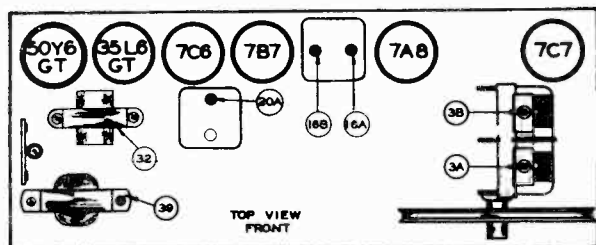


FIG. 1. LOCATIONS OF COMPENSATORS

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet.

When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled. A paper aligning scale, Part No. 27-9985, is also attached to the metal dial plate for adjusting the radio outside of the cabinet. The scale is marked with three lines indicating from left to right—"Dial Calibration Point," "580 K.C." and "1500 K.C." After connecting the aligning instruments adjust the compensators as shown in the tabulation below. Locations of the compensators are shown in fig. 1.

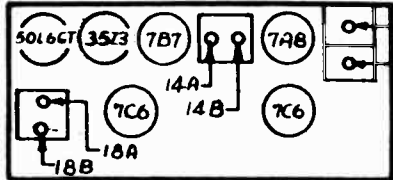
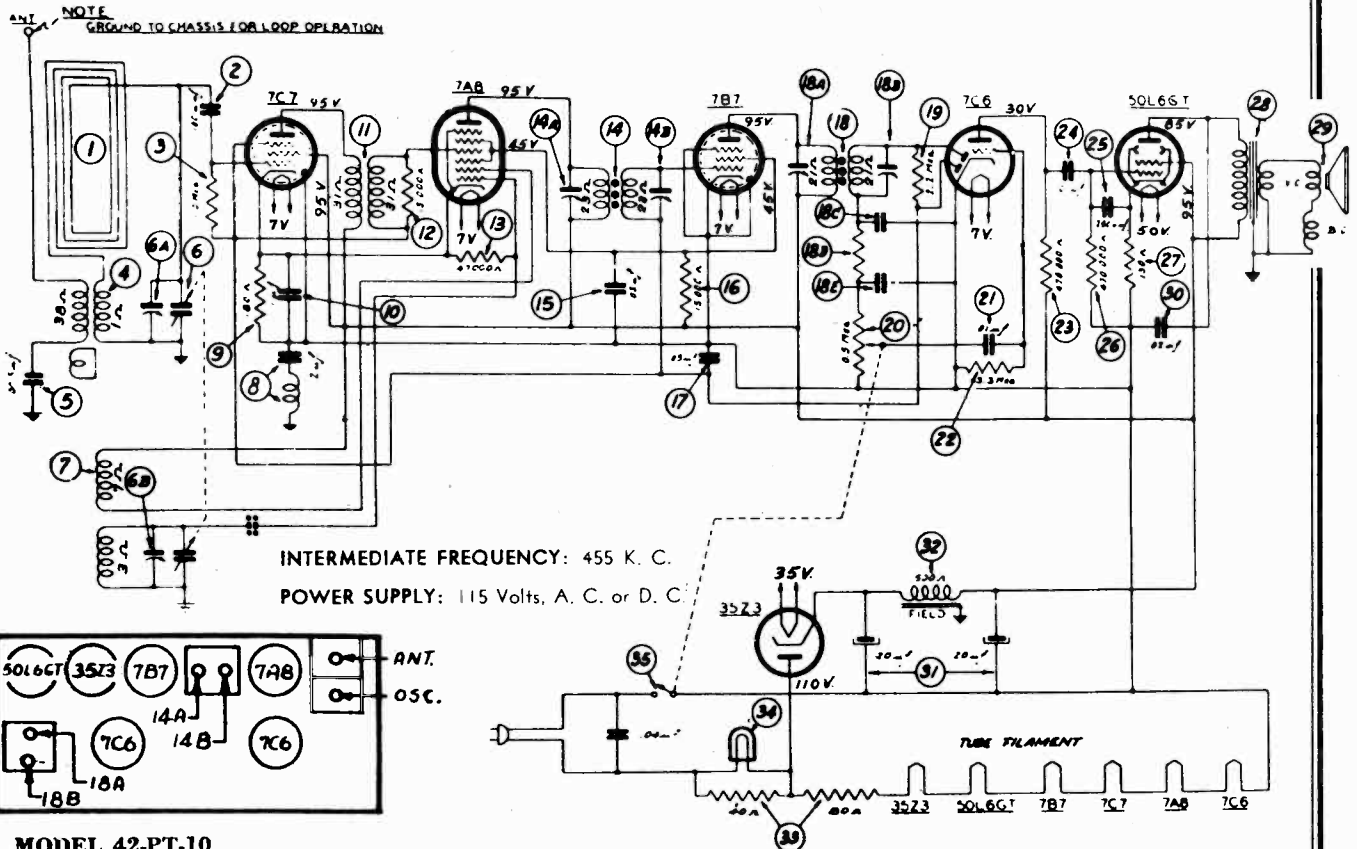
If the indicating meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order	
1	Ant. Section of tuning	455 K.C.	540 K.C. Tuning Cond. Closed	Vol. Max.	20A, 16B, 16A	
2	Loop see above instructions	1600 K.C.	1600 K.C.	Vol. Max.	3B, 3A	Note A

Operations in Order	SIGNAL GENERATOR MODEL 42-1006 CODE 122 RECEIVER					Special Instructions
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order	
1	Ant. Section of tuning	455 K.C.	540 K.C. Tuning Cond. Closed	Vol. Max. Switch-Radio	22A, 21B, 21A	
2	Loop see above instructions	1600 K.C.	1600 K.C.	Vol. Max. Switch-Radio	3B, 3A	Note A

NOTE A:—Dial Calibration: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the small dot below 540 K.C.

PHILCO RADIO & TELEVISION CORP.

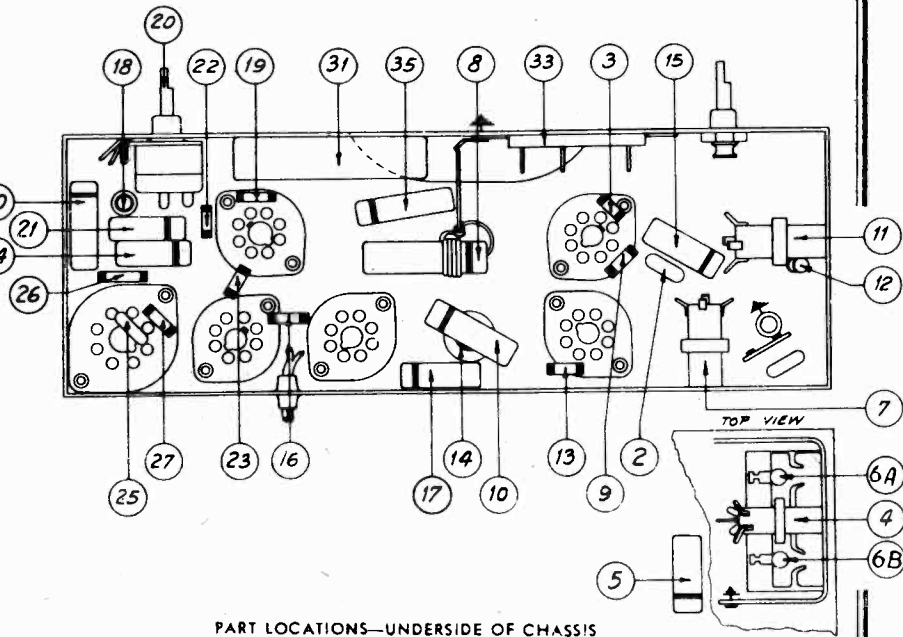


MODEL 42-PT-10

Volume control (20) Part No. 33-5469 list in the Service Bulletin is used on Model 42-321 only. The volume control for Model 42-PT-10 is Part No. 33-5434.

FOR ALIGNMENT SEE INDEX

SCHE. No.	DESCRIPTION	PART No.
1	Loop Aerial (42-321T1)	76-1196
2	Loop Aerial (PT-10) Part of Cabinet.	
3	Mico Condenser (100 mmfd.)	60-110157
4	Resistor (1.0 megohms)	33-510154
5	Aerial Transformer	32-3394
6	Condenser (.0015 mfd., 600 volts)	30-4621
7	Tuning Condenser	31-2527
8	Pointer	56-2076
9	Spring (Drive Cord)	28-8954
10	Shaft Assembly (42-321)	31-2591
11	Shaft Assembly (PT-10)	31-2531
12	Drive Cord	31-2529
13	Oscillator Transformer	32-3613
14	Condenser and Choke Assembly	76-1198
15	Resistor (180 ohms)	33-118336
16	Condenser (.11 mfd., 200 volts)	30-4586
17	R. F. Transformer	32-3595
18	Resistor (15,000 ohms)	33-315339
19	Resistor (47,000 ohms)	33-347339
20	1st I. F. Transformer	32-3614
21	Condenser (.05 mfd., 200 volts)	30-4519
22	Resistor (15,000 ohms)	33-315339
23	Condenser (.05 mfd., 200 volts)	30-4519
24	2nd I. F. Transformer	32-3604
25	Resistor (2.2 megohms)	33-522339
26	Volume Control	33-5469
27	Condenser (.01 mfd., 400 volts)	30-4572
28	Resistor (3.3 megohms)	33-533339
29	Resistor (470,000 ohms)	33-447339
30	Condenser (.01 mfd., 400 volts)	30-4572
31	Mico Condenser (250 mmfd.)	60-125157
32	Resistor (470,000 ohms)	33-447339
33	Resistor (130 ohms)	33-113336
34	Output Trans. (for Speaker 36-1533-9)	32-8154
35	Cone Assembly (for Speaker 36-1533-9)	36-4196
36	Condenser (.02 mfd., 400 volts)	30-4516
37	Electrolytic Condenser (20-20 mfd.)	30-2382
38	Field Coil (Replace Speaker 36-1533-9)	
39	Resistor (Wirewound, 40-80 ohms)	33-3408
40	Pilot Lamp	34-2068
41	Condenser (.04 mfd., 400 volts)	30-4119
MISCELLANEOUS PARTS		
	Cabinet (42-321T)	10568A
	Cabinet (42-321T1)	10568B
	Cabinet (PT-10)	76-1195
	Cardboard Back (PT-10)	27-9817



PART LOCATIONS—UNDERSIDE OF CHASSIS

DESCRIPTION	PART No.	DESCRIPTION	PART No.
Cable (Power)	L-3199	Screw (Chassis Mounting) (42-321)	W-2065
Clip (R. F. Coil Mtg.)	28-5002	Screw (Chassis Mounting) (PT-10)	W-1921
Dial Scale (42-321)	76-1192	Socket (Lokal Tubes)	27-6177
Dial Scale (PT-10)	27-5496	Socket (Output Tube)	27-6174
Knob Assembly (42-321T)	54-4105	Socket Assembly (Pilot Lamp)	76-1177
Knob (42-321T1)	54-4143	Speaker	36-1533-9
Knob (42-PF10)	54-4052	Washer Chassis Mounting	W-410

MODELS 42-RP-1, 42-RP-2

PHILCO RADIO & TELEVISION CORP.

REPLACEMENT PARTS

42-RP-1; 42-RP-2, CODE 121

Schem. No.	Description	Part No.
1.	Condenser (30 mmfd.)	40-030727
2.	Power Switch	42-1582
3.	Off-On Switch (Motor)	42-1655
	Switch Plate	54-1383
	Washer	W-467-FA4
	Screw	W-540-FA4
	Nut	W-484-FA4
4.	Motor (115 volts, 60 cycles)	35-1240
	Turntable	35-3047
	Mfg. Screw	W-87-FA4
5.	Power Cord	L-2778
6.	Condenser (.01 mfd., 200 volt)	3903-56
7.	Power Transformer (115 volts, 60 cycles)	32-8043
8.	Phono Crystal & Tone Arm Complete	35-2479
	Bumper	54-4070
9.	Condenser (100 mmfd.)	44-110157
10.	Resistor (100,000 ohms)	33-410339
11.	Resistor (47,000 ohms)	33-347239
12.	Condenser (.004 mfd., 400 volts)	30-4591
13.	Resistor (1 megohm)	33-510390
14.	Resistor (1,000 ohms)	33-210339
15.	Condenser (.1 mfd., 400 volts)	61-0113
16.	Compensator (Condenser Type—Model 42-RP-1)	Part of 19
17.	Mica Condenser (250 mmfd.—Model RP-1)	30-1038
	Mica Condenser (420 mmfd.—Model RP-2)	30-1114
18.	Resistor (47,000 ohms)	33-347239
19.	Oscillator Transformer (Model RP-1)	32-3218
	Oscillator Transformer (Model RP-2)	32-3192
19a.	Iron Core Compensator (Model RP-2)	Part of 19
	Mfg. Nut	W-139-FA3
20.	Electrolytic Condenser (4.4 mfd.)	30-3208
	Mfg. Clamp	54-134-FA5
21.	Resistor (10,000 ohms)	33-310339
22.	Electrolytic Condenser (6 mfd.)	Part of 20

\*NOTE: The oscillator transformers (19) of the RP-1 and RP-2 differ in construction. The RP-1 transformer is tuned by a capacity type pad and the RP-2 transformer by an Iron Core mounted in the center of the coil.

MISCELLANEOUS PARTS

CABINET (42-RP-1)	10891-A
Rubber Feet	27-4817
Bottom Cover	27-7944
Screw (foot mfg.)	W-2177-FA4
CABINET (42-RP-2)	10892-A
Bottom Cover	27-7947
SNAP BUTTON	W-1747-FC37
SOCKET (81 tube)	27-6035
SOCKET (6A7 tube)	27-6037
Mfg. Eyelet	W-1460
SCREW (CHASSIS MFG.)	W-218-FE11
WASHER (CHASSIS MFG.)	W-781-FA3
NEEDLE KIT	48-6408

SPECIFICATIONS

Models 42-RP-1 and 42-RP-2 are remote wireless record players which can be used in conjunction with any standard broadcast receiver to reproduce phonograph records. In general these models are similar in design, with the exception of the cabinet.

POWER SUPPLY: 115 Volts, 60 Cycle A.C.

PICKUP: Crystal

MOTOR: Rim Drive

TUBES: 6A7; 84

OPERATING:

Place record on turntable and slide "Off-On Switch" (Fig. 3-4) to "On" position; this will be indicated by pilot light in tone arm.

After allowing sufficient time for tubes to warm up, place tone arm on record; this automatically starts motor.

Tune the radio to approximately 540 KC (54 on most dials) at which setting the phonograph signal will be picked up. Volume can be regulated by the radio receiver's volume control in the normal way.

At the end of the record, turn the tone arm to rest position which will automatically turn motor off. It is not necessary to slide "Off-On" Switch to the "Off" position between records.

If interference from broadcasting stations is encountered, the frequency of the unit can be changed to any other frequency between 530 KC and 580 KC by adjusting small screw indicated in Fig. 3 for model 42-RP-2 and Fig. 5, model 42-RP-1. Turning screw clockwise lowers the frequency, counter-clockwise raises the frequency. THIS ADJUSTMENT IS BEST MADE WHILE THE UNIT IS IN OPERATION.

If hum is experienced, it may be necessary to reverse the power plug of the record player, the radio, or both. In most cases it is preferable to use different receptacles for record player and radio.

No definite rule can be established for the relative location of the record player to your radio; individual trial will establish the best location. However, in general, satisfactory operation may be obtained up to a distance of fifty (50) feet, provided local noise conditions are not too severe.

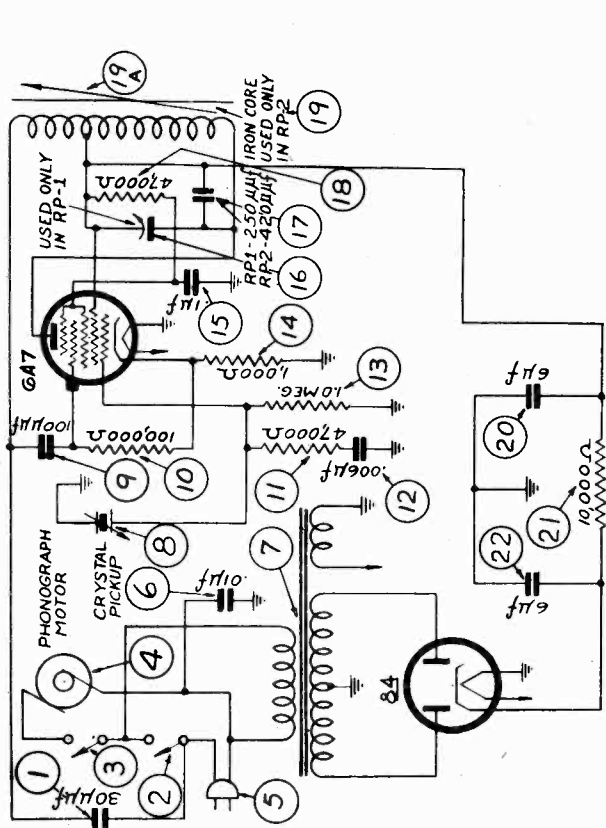


FIG. 1. SCHEMATIC DIAGRAM—MODELS 42-RP-1; 42-RP-2, CODE 121

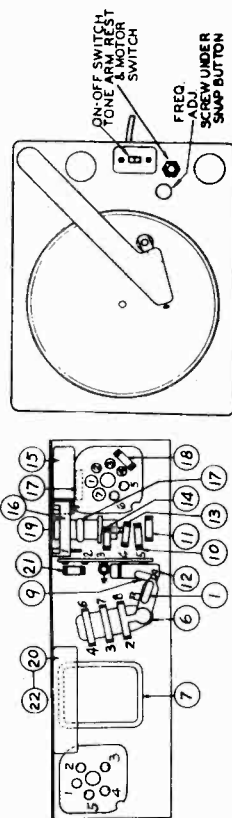


FIG. 3. MODEL 42-RP-2

FIG. 2. PART LOCATIONS—CHASSIS

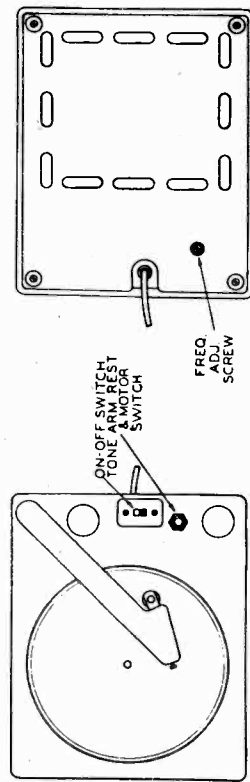
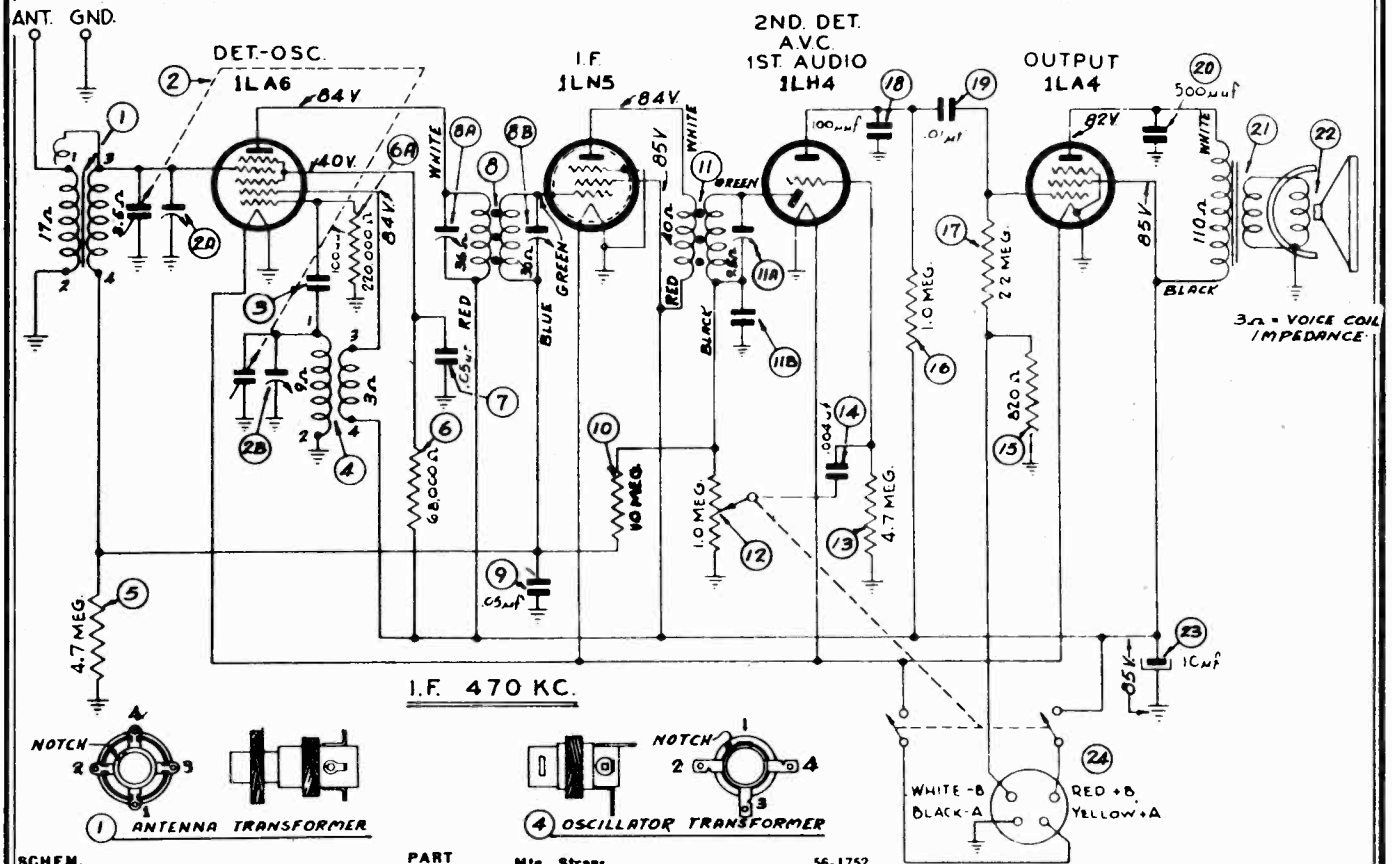


FIG. 5. MODEL 42-RP-1

FIG. 4. MODEL 42-RP-1

PHILCO RADIO & TELEVISION CORP.

MODEL 42-121



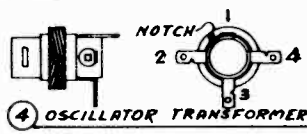
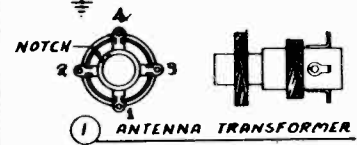
**SCHEM. No. DESCRIPTION**

1.	Antenna Transformer	32-3490
	Clip	28-5002
2.	Tuning Condenser Assembly	31-2485
	Rubber Grammet	27-4610
	Spacer	56-1669
	Spring (Tuning Cond.)	28-8913
	Spring (Pointer Drive)	28-8953
	Pointer (Dial)	56-2159
	Drive Cord (Pointer)	31-2511
	Drive Cord (Tuning Cond.)	31-2516
	Shaft (Tuning)	31-2545
	Drive Drum	76-1176
	Nut (Cond. Mtg.)	W-1543
3.	Mica Condenser (100 mmfd.)	60-110157
4.	Oscillator Transformer	32-3491
5.	Resistor (4.7 meg., 1/2 watt)	33-547339
6.	Resistor (68,000 ohms, 1/2 watt)	33-368339
7.	Tubular Condenser (.05 mfd., 200 v.)	30-4519
8.	1st I. F. Transformer	32-3675
	Pinnut (mounting)	W-1949
9.	Tubular Condenser (.05 mfd., 200 v.)	30-4519
10.	Resistor (10.0 meg., 1/2 watt)	33-610339
11.	2nd I. F. Transformer	32-3199
	Pinnut (mounting)	W-1949
11A.	Compensator	part of 11
11B.	Condenser	part of 11A
12.	Volume Control (1.0 meg.)	33-5441
	Pinnut	W-2157
13.	Resistor (4.7 meg., 1/2 watt)	33-547339
14.	Tubular Condenser (.004 mfd., 400 v.)	30-457H
15.	Resistor (820 ohms, 1/2 watt)	33-182336
16.	Resistor (1.0 meg., 1/2 watt)	33-510339
17.	Resistor (2.2 meg., 1/2 watt)	33-522339
18.	Mica Condenser (100 mmfd.)	60-110157
19.	Tubular Condenser (.01 mfd., 400 v.)	30-4572
20.	Mica Condenser (500 mmfd.)	60-150157
21.	Output Transformer	32-8100
22.	Cone & Voice Coil Assembly	
	(Speaker Part No. 36-1507-1)	36-4158
	(Speaker Part No. 36-1507-3)	36-4165
23.	Electrolytic Cond. (10 mfd., 150 v.)	30-2396
24.	Battery Cable Assembly	41-3505

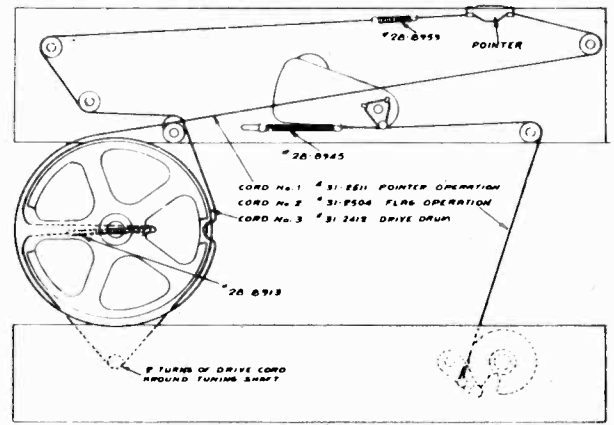
**PART No.**

Mtg. Straps	56-1752
Mtg. Washers	W-152
Mtg. Screw	W-2062
Indicator Plug	W-2232
Indicator	76-1122

**DRIVE CORD** 31-2504  
**CAM ASSEMBLY** 38-9061  
**TRANSFER LEVER** 76-1049

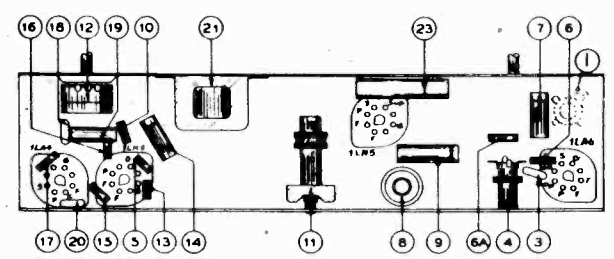


FOR ALIGNMENT SEE INDEX



INSTALLATION OF DRIVE CORDS. POINTER AT LOW FREQUENCY END OF DIAL. GANG CLOSED VIEW SHOWN FROM REAR OF CHASSIS

INSTALLATION OF DRIVE CORDS. MODEL 42-121.



LOCATIONS OF PARTS — UNDERSIDE OF CHASSIS — MODEL 42-121.



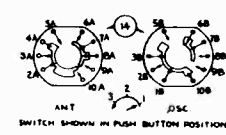
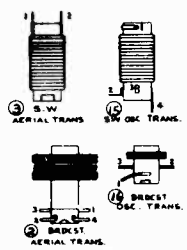
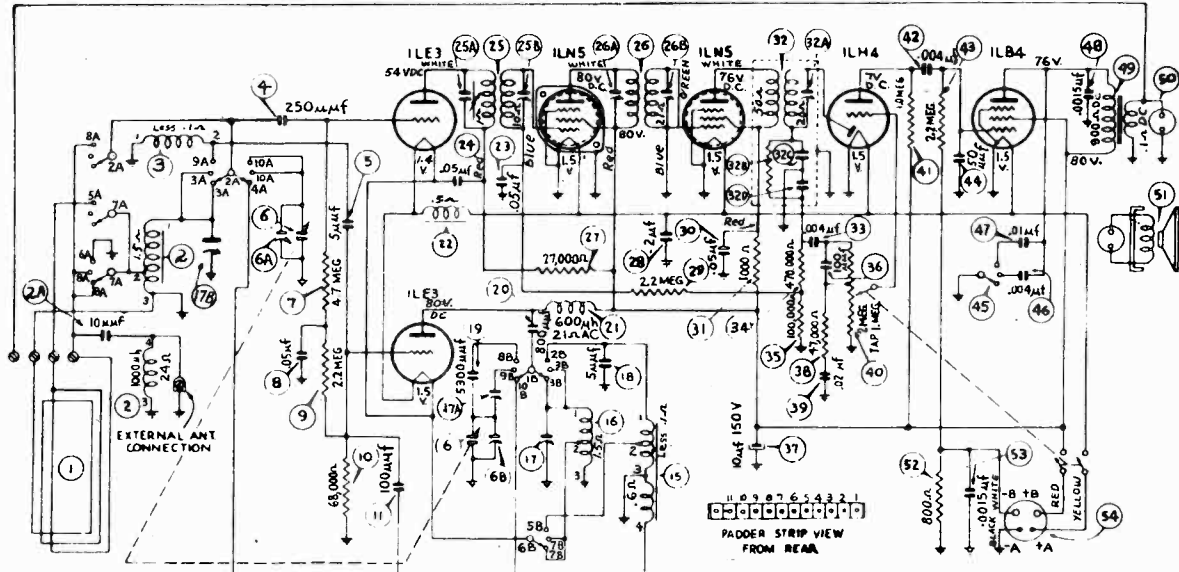






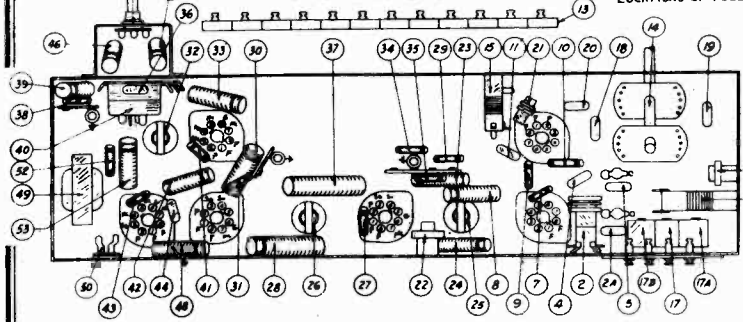
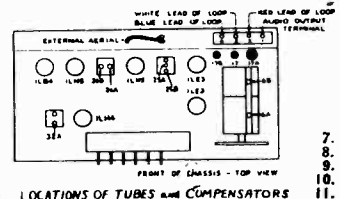
PHILCO RADIO & TELEVISION CORP.

MODEL 42-126

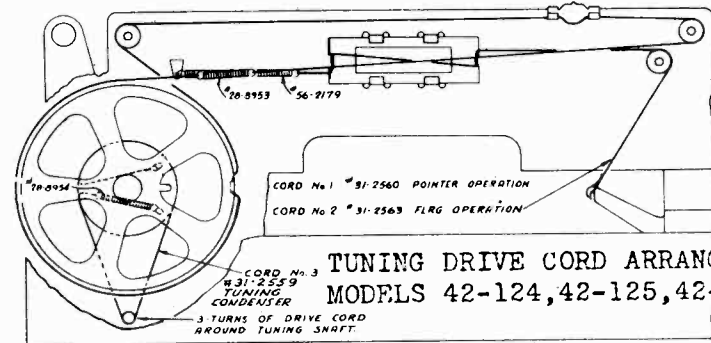


FOR OTHER DATA SEE INDEX

IF PEAK 455 KC



LOCATION OF PARTS, UNDERSIDE OF CHASSIS, MODEL 42-126



TUNING DRIVE CORD ARRANGEMENT MODELS 42-124, 42-125, 42-126

INSTALLATION OF DRIVE CORDS. POINTER AT LOW FREQUENCY END OF DIAL, GANG CLOSED. VIEW SHOWN FROM REAR OF CHASSIS.

To improve the audio power output resistor (52) ohms was changed to 680 ohms 33-168336.

Seam. No.	Description	Part No.
1.	Loop Aerial	76-1282
	Mtg. Screw	W-2071
2.	Aerial Transformer (Broadcast)	32-3731
2A.	Mtg. Clip	28-5002
3.	Mica Condenser (10 mmfd.)	60-010157
	Aerial Transformer (S.W.)	32-3729
	Mtg. Clip	28-5002
4.	Mica Condenser (250 mmfd.)	60-125157
5.	Mica Condenser (5 mmfd.)	60-005157
6.	Tuning Condenser	31-2561
	Drive Shaft	31-2562
	Drive Cord (Cond. Drive)	31-2559
	Drive Cord (Pointer)	31-2560
	Grommet	27-4596
	Grommet	54-4020
	Nut (Mtg. Drive Shaft)	W-2157
	Pulleys (Pointer)	27-4981
	Screw (Mtg. Cond.)	W-523
	Spacer	28-5665
	Spring (Cond. Drive)	28-8984
	Spring (Pointer Drive)	28-8953
	Stud (Pointer Drive)	56-6120
7.	Resistor (4.7 megohms)	33-547339
8.	Condenser (.05 mfd., 200 volts)	30-4519
9.	Resistor (2.2 megohms)	33-522339
10.	Resistor (68,000 ohms)	33-368339
11.	Mica Condenser (100 mmfd.)	60-110157
12.	Push-button Switch	42-1674
	Mtg. Grommet	27-4596
	Mtg. Spacer	28-5665
	Washer	W-151
	Screw	W-523
13.	Push-button Padder Strip	31-6429
	Washer	W-152
	Screw	W-1974
14.	Band Switch	42-1674
15.	Oscillator Transformer (S. W.)	32-3728
16.	Oscillator Transformer (Brcdct.)	32-3730
17.	Compensator (Osc. 1700 K.C.)	31-6430
17A.	Compensator (Osc. 580 K.C.)	part of 17
17B.	Compensator (Osc. 1500 K.C.)	part of 17
	Mtg. Rivets	W-239
18.	Mica Condenser (5 mmfd.)	60-005137
19.	Mica Condenser (5300 mmfd.)	60-253124
20.	Mica Condenser (800 mmfd.)	60-180157
21.	Oscillator Plate Choke	32-3615
22.	Filter Choke	32-3732
23.	Condenser (.05 mfd., 200 volts)	30-4519
24.	Condenser (.05 mfd., 200 volts)	61-0101
25.	1st I. F. Transformer	32-3737
	Mtg. Nut	W-1949
25A.	Primary Compensator	part of 25
25B.	Secondary Compensator	part of 25
26.	2nd I. F. Transformer	32-3621
	Mtg. Nut	W-1949
27.	Resistor (27,000 ohms)	33-327339
28.	Condenser (.2 mfd., 200 volts)	30-4587
29.	Resistor (2.2 megohms)	33-522339
30.	Condenser (.05 mfd., 200 volts)	61-0101
31.	Resistor (1,000 ohms)	33-210336
32.	3rd I. F. Transformer	32-3733
	Mtg. Nut	W-1949
32A.	Secondary Compensator	part of 32
32B.	Resistor (42,000 ohms)	part of 32
32C.	Condenser	part of Compensator 32A
32D.	Condenser	part of Compensator 32A
33.	Condenser (.004 mfd., 600 volts)	30-4623
34.	Resistor (470,000 ohms)	33-437339
35.	Resistor (100,000 ohms)	33-410339
36.	Mica Condenser (100 mmfd.)	60-110157
37.	Electrolytic Condenser (10 mfd.)	30-2396
38.	Resistor (47,000 ohms)	33-347339
39.	Condenser (.02 mfd., 100 volts)	61-0154
40.	Volume Control	33-5452
	Mtg. Nut	W-2157
41.	Resistor (1 megohm)	33-10339
42.	Condenser (.004 mfd., 600 volts)	30-4623
43.	Resistor (2.2 megohms)	33-522339
44.	Mica Condenser (50 mmfd.)	60-050157
45.	Tone Control Switch	42-1676
	Mtg. Nut	W-2157
46.	Condenser (.004 mfd., 200 volts)	61-0108
47.	Condenser (.01 mfd., 400 volts)	61-0100
48.	Condenser (.0015 mfd., 600 volts)	30-4621
49.	Output Transformer	32-8175

MODELS 42-124T, 42-125T  
MODEL 42-126

PHILCO RADIO & TELEVISION CORP.

ALIGNING R. F. AND I. F. COMPENSATORS  
MODELS 42-124, 42-125, 42-126  
EQUIPMENT REQUIRED

**SIGNAL GENERATOR:** Covering the frequency bands of the radio. Philco Model D70 (A.C. operated and covering 170 K.C. to 70 M.C.) or Model 177 signal generator (battery operated and covering 15 K.C. to 3000 M.C.) are recommended.

**VACUUM TUBE VOLTMETER:** To use the vacuum tube voltmeter as an aligning indicator it should be connected to the A.C. circuit as follows:

1. Connect the negative (-) terminal of the vacuum tube voltmeter through a 2 megohm resistor to any point in the circuit where the A.C. voltage may be measured.

2. Connect the positive (+) terminal to the chassis ground terminal.

**AUDIO OUTPUT METER:** If this type of meter is used as an aligning indicator, it should be connected as follows:

Terminal No. 1 on the loop aerial terminal panel at the rear of the chassis - it is provided for connecting one lead of the output meter to the voice coil.

When the other lead of the meter is connected to the chassis, the meter indicates the lower A.C. scale of the meter must be used. (0 to 10 volts.)

CONNECTING ALIGNING INSTRUMENTS

The audio output meter or the audio output meter may be used as an aligning indicator when adjusting the compensators.

**VACUUM TUBE VOLTMETER:** To use the vacuum tube voltmeter as an aligning indicator it should be connected to the A.C. circuit as follows:

1. Connect the negative (-) terminal of the vacuum tube voltmeter through a 2 megohm resistor to any point in the circuit where the A.C. voltage may be measured.

2. Connect the positive (+) terminal to the chassis ground terminal.

**AUDIO OUTPUT METER:** If this type of meter is used as an aligning indicator, it should be connected as follows:

Terminal No. 1 on the loop aerial terminal panel at the rear of the chassis - it is provided for connecting one lead of the output meter to the voice coil.

When the other lead of the meter is connected to the chassis, the meter indicates the lower A.C. scale of the meter must be used. (0 to 10 volts.)

Operation in Order	SIGNAL GENERATOR		RECEIVER	
	Output Connections	Dial Setting	Dial Setting	Control Settings
1	Aerial Tuning Condenser	450 K.C.	500 K.C.	Col. M. V. Band Switch Broadcast
2	Test Loop Aerial	15 M.C.	15 M.C.	Col. M. V. Band Switch S.W.
3	Test Loop Aerial	1700 K.C.	1700 K.C.	Band Switch Broadcast
4	Test Loop Aerial	1500 K.C.	1500 K.C.	Band Switch Broadcast
5	Test Loop Aerial	500 K.C.	500 K.C.	Band Switch Broadcast
6	Test Loop Aerial	1700 K.C.	1700 K.C.	Band Switch Broadcast

**NOTE A—Dial calibration:** Before adjusting the R. F. compensator the dial pointer must be adjusted to track properly with the tuning scale. To adjust the dial pointer proceed as follows: With the tuning condenser in the closed position (maximum capacity) set the pointer to the center of the low frequency scale (below 500 K.C.). Arrangement of the tuning drive cords is shown on this page.

**NOTE B—**When adjusting compensator (43) two signal paths may be obtained on the output meter. One of these paths is the fundamental signal (15 M.C.) and the other the image signal. The compensator should be adjusted to the fundamental signal, 15 M.C. If the compensator is correctly adjusted, the image signal will be observed on the output meter when the dial is set to 15 M.C., and tuning the signal generator dial to 15,000 M.C.

Bulletin No. 390 should be shunted with a 220,000 ohm resistor, such as Philco Part No. 33-422339.

After the oscillator coil has been replaced, it is necessary to repad the receiver according to service instructions. Should any difficulty be experienced in padding the high frequency end of the broadcast band, the lead from the high frequency broadcast padder to the wave switch should be dressed away from the sub-base.

SPECIFICATIONS

MODEL 42-124

**CIRCUIT DESCRIPTION:** Model 42-124 is a six (6) tube battery operated superheterodyne circuit with two tuning bands. The frequency range is 1700 to 150 K.C. 5.7 to 15.5 M.C. Six (6) push buttons for electronically tuning in six stations: low control; pentode audio output stage; two I. F. amplifier stages; high output permanent magnet speaker; loop aerial and provisions for an outside aerial; and a slide dial scale and assembled in a table type cabinet.

**INTERMEDIATE FREQUENCY:** 465 K.C.

**AUDIO OUTPUT:** 100 mW.

**BATTERY REQUIRED:** Philco Type #40D11L.

**BATTERY CURRENT DRAIN:** "A" (Fluorescent) 1.5 Voids, 300 ma. "B" (Fluorescent) 1.5 Voids, 12 ma.

**PHILCO TUBES USED:** 12L6, oscillator; 12L7, converter; 12A6, 1st I. F. amplifier; 12A7, 2nd detector, 1st audio, and a 12BA, audio output.

**CABINET DIMENSIONS:** Height 13 1/2" Width 20 1/2" Depth 10"

MODELS 42-124T, 42-125K

Models 42-124T and 42-125K are similar in design with the exception of the cabinet and loop aerial. Model 42-124T is assembled in a table type cabinet and Model 42-125K is a console cabinet (Floor Model). The loop aerial in Model 42-125K is removable from the front of the cabinet. Circuit Description: Model 42-124T and 42-125K are similar in design with the exception of the frequency range. The frequency range is 1700 to 150 K.C. 5.7 to 15.5 M.C. Six (6) push buttons in the volume control circuit; Automatic Volume Control; Base compensation control; and a slide dial scale and assembled in a table type cabinet.

**INTERMEDIATE FREQUENCY:** 465 K.C.

**AUDIO OUTPUT:** 100 mW.

**BATTERY REQUIRED:** Philco Type #40D11L.

**BATTERY CURRENT DRAIN:** "A" (Fluorescent) 1.5 Voids, 300 ma. "B" (Fluorescent) 1.5 Voids, 12 ma.

**PHILCO TUBES USED:** 12L6, converter; 12L7, 1st I. F. amplifier; 12A6, 1st I. F. amplifier; 12A7, 2nd detector, 1st audio, and a 12BA, audio output.

**CABINET DIMENSIONS:** Height 14 1/2" Width 20 1/2" Depth 10 1/2"

AERIAL AND GROUND

Under ordinary receiving conditions the loop aerial in these models has ample pickup for reception of broadcast stations. Unusual receiving conditions, however, may necessitate the use of an external aerial for maximum performance. When an outdoor aerial is required, the aerial lead-in wire to the chassis should be connected to the terminal panel at the rear of the chassis. Although the aerial lead-in wire to this wire.

A good ground connection is also necessary when using an outdoor aerial. The ground wire can be connected to a water pipe, radiator pipe or a four-foot metal pipe driven into moist earth.

INSTALLING BATTERY IN MODELS 42-124, 42-126

A space is provided underneath the chassis for a battery. When installing the battery, it should be inserted so that the battery socket is in the upper right hand corner, viewing the radio from the rear. Push battery forward gently until it strikes battery retaining blocks.

INSTALLING BATTERY IN MODEL 42-125

Slide battery on and so that it rests on shelf in corner of cabinet opposite loop. Push battery forward until it fits in space between speaker baffle and cabinet side.

SETTING AND OPERATING ELECTRIC PUSH-BUTTONS, MODEL 42-126

The left-hand button, looking at the front of the cabinet, corresponds to the two right-hand padder screws, looking at the rear, and covers the lowest frequency range.

The center button, "BROADCAST" position, has in the station whose call letters are indicated on the button. The right-hand button, "ANTENNA" position, has a knob to "PR" position and one in this station by rotating the No. 2 "OSC" screw. (NOTE: inherent characteristics of these padders may cause some of them to cover a lower range than required to cover the broadcast band. This may cause the radio to howl or flutter when a station button is depressed. To stop this, loosen "OSC" padder corresponding to the depressed station button.)

The "ANT" padder corresponding to the depressed station button should be spaced without touching it. After the "OSC" screw has been adjusted for maximum volume, the corresponding "ANT" screw should be adjusted for maximum. For some stations, it may be necessary to readjust the "OSC" screw after the "ANT" screw has been set. Switching from "BROADCAST" to "PR" will cause the radio to howl or flutter when the correct station tuned in accurately. When the first station is tuned in, the correct station tuned in accurately, the remaining buttons, first tuning in the desired station by means of the "Dial Tuning" control.

**PADDER SCREW** (view from rear)

1	Ant.	1	Ant.
2	Ant.	2	Ant.
3	Ant.	3	Ant.
4	Ant.	4	Ant.
5	Ant.	5	Ant.
6	Ant.	6	Ant.

**BUTTONS** (view from front)

1	Ant.	1	Ant.
2	Ant.	2	Ant.
3	Ant.	3	Ant.
4	Ant.	4	Ant.
5	Ant.	5	Ant.
6	Ant.	6	Ant.

**Freq. Range**

1	500-1000 K.C.
2	650-1100 K.C.
3	800-1200 K.C.
4	950-1300 K.C.
5	1100-1400 K.C.
6	1100-1400 K.C.

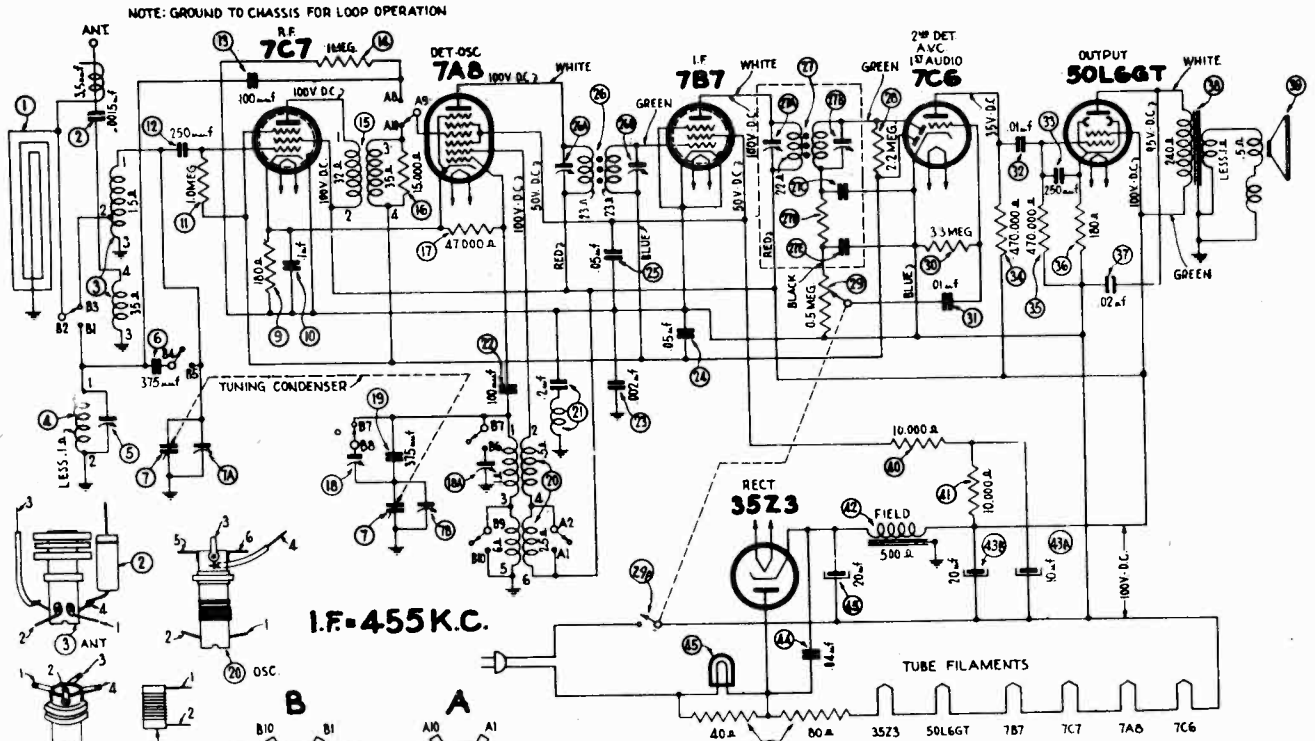
Failure To Operate On Low Frequency End of Broadcast Band  
Models 42-124, 125, 126

Some complaints may be received on the above models that the sets will not operate on the low end of the broadcast band when the "A" battery voltage goes below 1.2 volts.

In some cases the condition can be corrected simply by replacing the oscillator tube. In other cases, however, it will be necessary to change the oscillator coil, using a new coil, Part No. 32-3879. In addition, the grid resistor No. 10 in the wiring diagram of Service

PHILCO RADIO & TELEVISION CORP.

MODEL 42-322



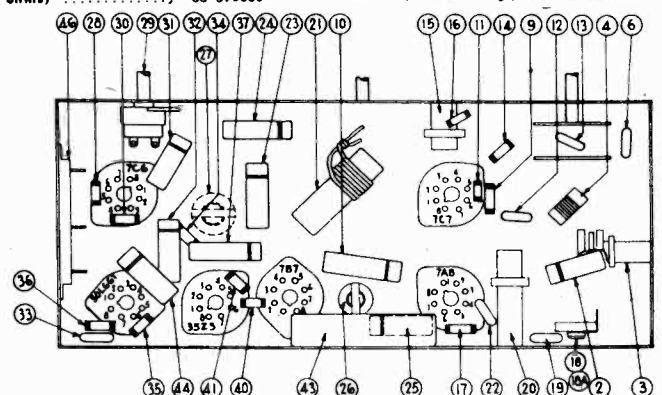
I.F. = 455 K.C.

TUNING BAND FREQUENCIES: 540 to 1720 K.C.  
8.7 to 15.5 M.C.  
POWER SUPPLY: 115 volts, A.C. or D.C.  
POWER CONSUMPTION: 30 watts.

LOCATIONS OF COMPENSATORS

REPLACEMENT PARTS—MODEL 42-322, CODE 121

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1.	Loop Aerial	76-1389	27c.	Condenser	Part of 27a	42.	Field Coil (Replace Speaker 36-1533)	
2.	Mtg. Screw	W-2073	27d.	Resistor (47,000 ohms.)	Part of 27	43.	Electrolytic Condenser (10 mfd.)	30-2530
3.	Condenser (.0015 mfd., 600 volts)	30-4621	28.	Condenser	Part of 27a	43a.	Electrolytic Condenser (20 mfd.)	Part of 43
4.	Broadcast Aerial Transformer	32-3857	29.	Resistor (2.2 megohms)	33-522339	43b.	Mtg. Clip	56-1466
5.	Mica Condenser (.0015 mfd.)	28-5002	30.	Volume Control	W-2157	44.	Condenser (.04 mfd., 400 volts)	30-4118
6.	Short Wave Aerial Transformer	32-3858	31.	Mtg. Nut	33-533339	45.	Dial Lamp	34-2068
7.	Compensator (S.W. Aerial)	20-037511	32.	Resistor (3.3 megohms)	30-4572	46.	Socket Assembly	76-1398
7a.	Tuning Capacitor	31-2605	33.	Condenser (.01 mfd., 400 volts)	30-4572		Filament Resistor (40-80 ohms.)	33-3408
7b.	Compensator (Broadcast Aerial)	Part of 7	34.	Mica Condenser (250 mmfd.)	60-125157	<b>MISCELLANEOUS PARTS</b>		
8.	Compensator (Broadcast Osc.)	Part of 7	35.	Resistor (470,000 ohms)	33-447339			
9.	Drive Cord	31-2604	36.	Resistor (470,000 ohms)	33-447339	Cable (Power)	L-3100	
10.	Spring	28-9000	37.	Resistor (180 ohms)	33-118336	Dial Scale	27-5900	
11.	Drive Shaft	76-1396	38.	Condenser (.02 mfd., 400 volts)	30-4516	Knob Assembly	54-4137	
12.	"C" Washer	28-5990	39.	Output Transformer (For Speaker 36-1533-9)	32-8164	Screw (Chassis Mtg.)	W-2065	
13.	Pointer	56-2076		Speaker	36-1533-9	Socket (LOKAL Tubes)	27-6177	
14.	Rubber Grommet	27-4596		Gene Assembly (For Speaker 36-1533-9)	36-4190	Mtg. Rivet	W-239	
15.	Mtg. Sleeve	28-5665		Resistor (10,000 ohms)	33-310339	Socket (Output Tube)	27-6174	
16.	Mtg. Washer	W-410		Resistor (10,000 ohms)	33-310339	Washer (Chassis Mtg.)	W-410	
17.	Mtg. Screw	W-758						
18.	Mtg. Nut	42-1712						
19.	Mtg. Nut	W-2157						
20.	Resistor (180 ohms.)	33-118336						
21.	Condenser (.1 mfd., 200 volts)	61-0104						
22.	Resistor (1 megohm)	33-510339						
23.	Mica Condenser (250 mmfd.)	60-125157						
24.	Condenser (100 mmfd.)	60-110157						
25.	Resistor (1 megohm)	33-510339						
26.	R. F. Transformer	32-3595						
27.	Mtg. Clip	28-5002						
28.	Resistor (15,000 ohms) Part of 15	33-315339						
29.	Resistor (47,000 ohms)	33-347339						
30.	Compensator (Broadcast Osc., 500 K.C.)	31-6452						
31.	Compensator (S.W. Osc.)	Part of 18						
32.	Mica Condenser (375 mmfd.)	20-037511						
33.	Oscillator Transformer	32-3856						
34.	Mtg. Clip	28-5002						
35.	Condenser (.2 mfd., 400 volts) and R. F. Choke	76-1198						
36.	Mica Condenser (100 mmfd.)	60-110157						
37.	Condenser (.002 mfd., 400 volts)	30-4579						
38.	Condenser (.05 mfd., 200 volts)	30-4519						
39.	Condenser (.03 mfd., 200 volts)	30-4519						
40.	First I. F. Transformer	32-3859						
41.	Mtg. Nut	W-624						
42.	Second I. F. Transformer	32-3860						
43.	Mtg. Nut	W-624						
44.	Primary Compensator	Part of 27						
45.	Secondary Compensator	Part of 27						



LOCATIONS OF PARTS—UNDER CHASSIS—MODEL 42-322

MODEL 42-322  
MODEL 42-350

PHILCO RADIO & TELEVISION CORP.

MODEL 42-322 ALIGNMENT

**Signal Generator:** When adjusting the I. F. padders, the high side of the signal generator is connected through a .1 mfd. condenser to the antenna section of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet. When adjusting the R. F. Compensators in the cabinet, the aligning points on the dial scale are used. If the radio is adjusted outside of the cabinet, the small indentations (lines) on the dial metal background plate mounted on the chassis are used as aligning points. These points progressing from the left end of the scale plate represent frequencies as follows: pointer position with tuning condenser closed, 580 K.C., 9.5 M.C., 1500 K.C., 15 M.C., and the last line 1720 K.C. or 15.5 M.C. When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled.

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order	
1	Lug on the Ant. Section of Tuning	455 K.C.	540 K.C. Tuning Cond. Closed	Vol. Max. Range Switch Brcdst.	27A, 27B 26A, 26B	
2	Loop See Above Instructions	1500 K.C.	1500 K.C.	Vol. Max. Band Switch Brcdst.	7B, 7A	Note A
3	Loop See Above Instructions	580 K.C.	580 K.C.	Vol. Max. Band Switch Brcdst.	(10)	Roll Tuning Condenser
4	Loop See Above Instructions	Repeat Operation 2				
5	Loop See Above Instructions	15 M.C.	15 M.C.	Band Switch S.W.	(18A, 5) Note B	Roll Tuning Condenser When Padding 5

**NOTE A—DIAL POINTER CALIBRATION:** In order to adjust the receiver correctly, the pointer must be adjusted to track properly with the tuning condenser. To do this, turn the tuning condenser to the maximum capacity (plates fully meshed). With the condenser in this position, set the tuning pointer on the first small line stamped in the scale plate on the left side.

**NOTE B—**To accurately adjust the high frequency oscillator compensator to the fundamental instead of the image signal, turn the oscillator compensator (18A) to the maximum capacity position (clockwise). From this position slowly turn the compensator counter-clockwise until a second peak is obtained on the output meter. Adjust the compensator for maximum output at this second peak.

If the above procedure is correctly performed, the image signal will be found (much weaker) by turning the signal generator dial 910 K.C. above the frequency being used on any high frequency range.

The aerial padder (5) must be adjusted to maximum by rolling the tuning condenser. If two signal peaks occur when turning the padder, adjust to maximum output on the first signal peak from the tight position (screw all the way down) of the padder.

-Model L42-350, Code 121

EXTERNAL AERIAL CONNECTIONS

The built-in aerial system is designed to operate without an outside aerial or ground and to give exceptionally high receiving performance of stations in the standard, shortwave, or FM bands.

To operate the radio in steel reinforced buildings and other shielded locations where signal strength is weak, an external aerial is recommended. Three different types of aerial combinations are available, to improve reception on the standard, short-wave, or FM bands.

1—For Additional Sensitivity on Frequency Modulation only:

\*Philco Dipole Outdoor Aerial, Part No. 45-2926.

The plug at the end of the transmission line is inserted in the socket at the back of the chassis in place of the plug connected to the F. M. loop in the cabinet.

2—For Additional Sensitivity on ALL ranges:

\*Philco Dipole Outdoor Aerial, Part No. 45-2926.

Philco Aerial Coupler, Part No. 45-1361.

The coupler plugs into the socket at the back of the chassis in place of the plug connected to the F. M. loop. The aerial transmission line then connects to the terminals on the coupler marked "red" and "black." The local-distance switch on the coupler connects or disconnects the outdoor aerial from the standard broadcast and shortwave tuning ranges. The dipole remains connected to the F. M. band regardless of the position of the switch.

3—For Additional Sensitivity on Standard Broadcast and Shortwave only in Areas where F. M. reception is not available.

Philco Safety Aerial, Part No. 40-6370.

Philco Aerial Coupler, Part No. 45-1361.

Connect the single wire lead in of the aerial to the "black" terminal on the aerial coupler.

\*Accessories for this aerial are: the Philco Aerial Mast Kit, the Philco Reflector Kit and Philco High Efficiency Transmission Line. See Service Bulletin No. 396 on Dipole Aerials.

**NOTE:** When installing the F. M. Philco Outdoor Dipole Aerial, it is very important that the aerial compensating condensers of the standard and shortwave band are repadded.

ELECTRIC PUSH-BUTTON TUNING ADJUSTMENTS

The electric push-button tuning mechanism consists of six (6) push-buttons. Five of the push-buttons are used for selecting standard broadcast stations, and one for the power control (ON-OFF).

Viewing the front of the cabinet from left to right the first push-button is the power control (ON-OFF), the next five push-buttons for tuning standard broadcast stations.

When setting up stations on the push-buttons the lowest frequency station is set up in the second push-button from the left and the remaining stations according to increasing frequency in the next four push-buttons. These push-buttons are adjusted by the padders located on the rear of the chassis.

The frequency ranges covered by the station tuning push-buttons and procedure for adjusting are as follows:

Padders (right to left from rear)	Circuit	Buttons (left to right from front)	Frequency Range
1	Ant.	1	ON-OFF
2	Osc.	2	540 to 980 KC
3	Ant.	3	540 to 980 KC
4	Osc.	4	710 to 1185 KC
5	Ant.	5	850 to 1600 KC
6	Osc.	6	1185 to 1720 KC
7	Ant.		
8	Osc.		
9	Ant.		
10	Osc.		

The second push-button from the left can also be adjusted for reception of the sound channel of a television program received by special Philco television radios. This push-button may also be used in conjunction with a Philco Wireless Record Player.

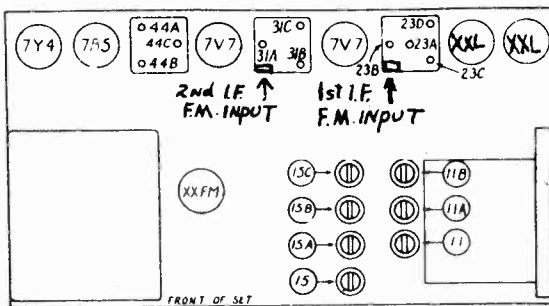
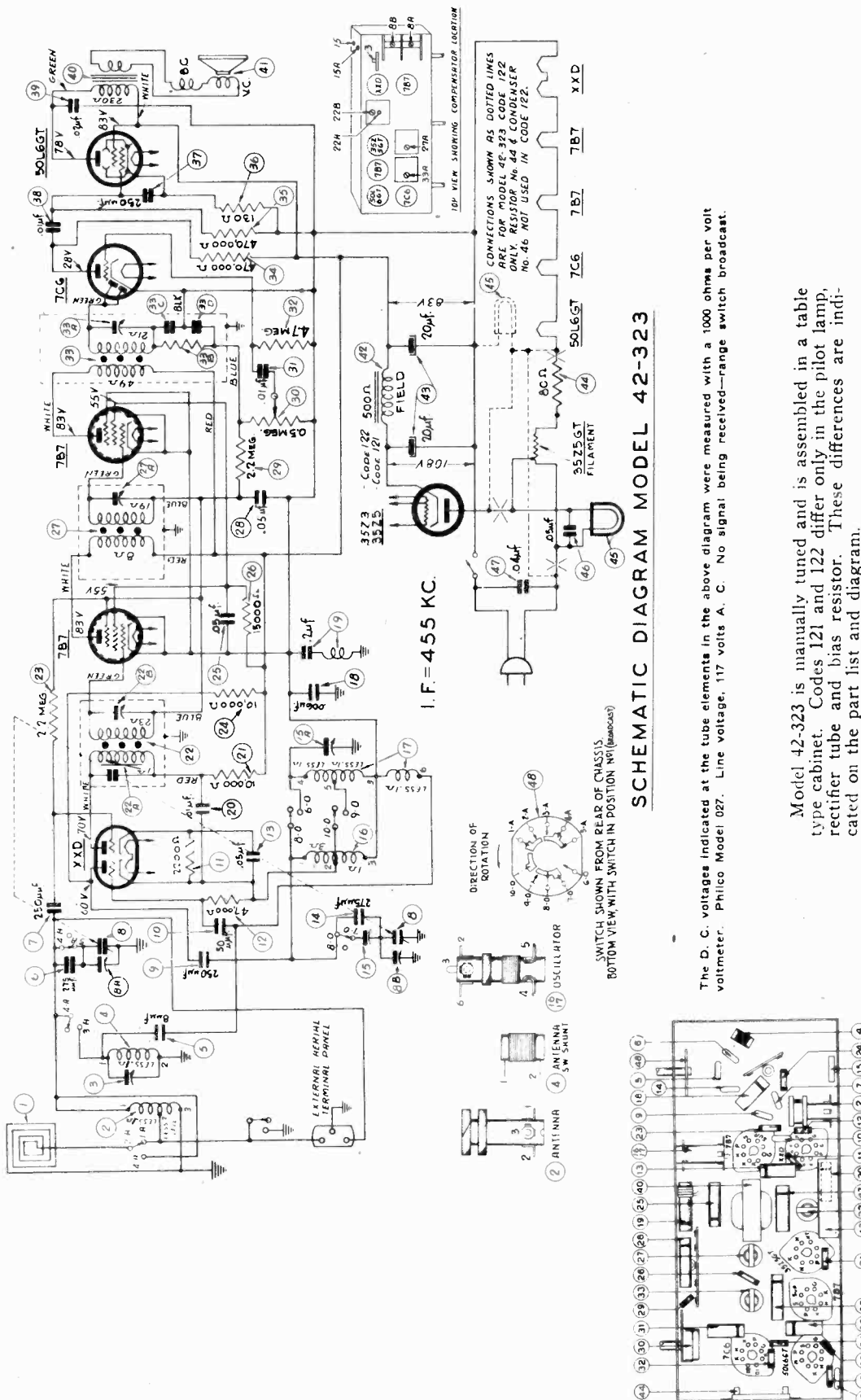


FIG. 1—LOCATIONS OF R. F. AND I. F. COMPENSATORS

# PHILCO RADIO & TELEVISION CORP. MODEL 42-323(121,122)



## SCHEMATIC DIAGRAM MODEL 42-323

Model 42-323 is manually tuned and is assembled in a table type cabinet. Codes 121 and 122 differ only in the pilot lamp, rectifier tube and bias resistor. These differences are indicated on the part list and diagram.

Intermediate Frequency: 455 KC.  
 Tuning Bands: 540 to 1720 KC; 9 to 15.5 MC.  
 Audio Output: 1 watt.  
 Power Supply: 115 volts, A. C. or D. C.

FIG. 1—PART LOCATIONS, UNDERSIDE OF CHASSIS, MODEL 42-323

FOR ALIGNMENT, PARTS LIST, AND OTHER DATA, SEE INDEX



MODEL 42-323  
MODEL 42-327

PHILCO RADIO & TELEVISION CORP.

REPLACEMENT PARTS—Model 42-323

Sch. No.	Description	Part No.	Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	Loop Aerial	76-1279	22B.	Compensator, Part of 22				
	Mtg. Screw	W-2071		Nut	W-1949			
2.	Aerial Transformer (Broadcast)	32-3750	23.	Resistor (2.2 megohms)	33-522339			
	Mtg. Clip	23-5002	24.	Resistor (10,000 ohms)	33-310339			
3.	Compensator (Aerial-S. W.)	31-6426	25.	Condenser (.05 mfd, 200 volts)	30-4519			
4.	Aerial Transformer (S. W.)	32-3751	26.	Resistor (15,000 ohms)	33-315339			
5.	Mica Condenser (8 mmfd)	60-080137	27.	2nd I. F. Transformer	32-3712			
6.	Mica Condenser (275 mmfd)	30-1200		Nut	W-1949			
7.	Mica Condenser (250 mmfd)	60-125157	27A.	Secondary Compensator, Part of 27				
8.	Tuning Condenser	31-2555	28.	Condenser (.05 mfd, 200 volts)	30-4519			
	Drive Cord	31-2553	29.	Resistor (2.2 megohms)	33-522339			
	Drive Shaft	76-1323	30.	Volume Control (.5 megohm)	33-5458			
	"C" Washer	28-5990		Mtg. Nut	W-2157			
	Mtg. Screw (Cond.)	W-758	31.	Condenser (.01 mfd, 400 volts)	30-4572			
	Rubber Grommet (2 required)	27-4596	32.	Resistor (4.7 megohms)	33-547339			
	Rubber Grommet (1 required)	54-4020	33.	3rd I. F. Transformer	32-3713			
	Spring (Drive Cord)	28-8954		Nut	W-1949			
	Sleeve	28-5663	33A.	Secondary Compensator, Part of 33				
	Washer	W-410	33B.	Resistor (47,000 ohms), Part of 33				
9A.	Compensator (Aerial—1500 KC)		33C.	Condenser (100 mmfd), Part of 33A				
	Part of 8		33D.	Condenser (100 mmfd), Part of 33A				
9B.	Compensator (Oscillator—1720 KC)			Resistor (470,000 ohms)	33-447339			
	Part of 8			Resistor (470,000 ohms)	33-447339			
9.	Mica Condenser (250 mmfd)	60-125157		Resistor (130 ohms)	33-113336			
10.	Mica Condenser (50 mmfd)	60-050157		Mica Condenser (250 mmfd)	60-125157			
11.	Resistor (2200 ohms)	33-222339		Condenser (.01 mfd, 400 volts)	30-4572			
12.	Resistor (47,000 ohms)	33-347339		Condenser (.02 mfd, 400 volts)	30-4516			
13.	Condenser (.05 mfd, 200 volts)	30-4519		Output Transformer	32-3173			
14.	Mica Condenser (275 mmfd)	30-1200		Speaker	36-1544-9			
15.	Compensator (Brdcat.— Code 121 880 KC) Code 122	31-6434 31-6453		Cone Assembly (For Speaker 36-1544-9)	36-4190			
15A.	Compensator (S. W.—15 MC)		42.	Field Coil (Replace Speaker 36-1544)				
16.	Oscillator Transformer (Broadcast)	32-3715	43.	Electrolytic Condenser (20, 20 mfd)	30-2503			
17.	Oscillator Transformer (S. W.)			Clamp	56-1466			
	Part of 16		44.	Filament Resistor (Code 121 only)	33-3406			
18.	Condenser (.005 mfd, 400 volts)	30-4591	45.	Pilot Lamp (Code 121)	34-2068			
19.	Condenser (.2 mfd, and R. F. Choke Assembly)	76-1161		(Code 122)	34-2477			
20.	Condenser (.01 mfd, 400 volts)	30-4572	46.	Condenser (.05 mfd, 200 volts)	30-4519			
21.	Resistor (10,000 ohms)	33-310339		(Code 121 only)	30-4119			
22.	1st I. F. Transformer	32-3711	47.	Condenser (.04 mfd, 400 volts)	42-1671			
22A.	Compensator, Part of 22		48.	Band Switch				

Sch. No.	Description	Part No.
	Miscellaneous Parts	
	Cabinet	10565-A
	Cable (Power)	L-3199
	Dial Scale	27-5782
	Dial Pointer	56-2076
	Knob (Tuning, Volume, Band)	54-413
	Socket Assembly (Pilot Lamp)	74-1177
	(Code 121)	
	Socket Assembly (Pilot Lamp)	76-1282
	(Code 122)	
	Socket (Aerial)	27-6145
	Rivet	W-207
	Socket (Loktal Tubes)	27-6177
	Socket (Octal Tubes)	27-6174
	Rivet	W-239
	Screw (Chassis-Mtg.)	W-2080
	Washer (Chassis Mtg.)	W-410

REPLACEMENT PARTS—Model 42-327

Sch. No.	Description	Part No.	Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	Loop Aerial	76-1279	24A.	Compensator Primary of (24)		49.	Condenser (.04 mfd, 400 volts)	30-4119
	Mtg. Screw	W-2071	24B.	Compensator (Part of 24)		50.	Band Switch	42-1668
1A.	External Aerial Socket	27-8146	24C.	Condenser (Part of 24)				
	Rivet	W-207	25.	Resistor (2.2 megohms)	33-522339			
2.	Aerial Transformer (Broadcast)	32-3714	26.	Resistor (10,000 ohms)	33-310339			
	Mtg. Clip	28-5002	27.	Resistor (15,000 ohms)	33-315339			
3.	Compensator (Aerial-S. W.)	31-6426	28.	Condenser (.05 mfd, 200 volts)	30-4519			
4.	Aerial Transformer (S. W.)	32-3715	29.	2nd I. F. Transformer	32-3712			
	Mtg. Clip	28-5002		Mtg. Nut	W-1949			
5.	Mica Condenser (5 mmfd)	60-005137	29A.	Compensator (Part of 29)				
6.	Mica Condenser (275 mmfd)	30-1200	30.	Condenser (.05 mfd, 200 volts)	30-4519			
7.	Mica Condenser (250 mmfd)	60-125157	31.	Resistor (2.2 megohms)	33-522339			
8.	Tuning Condenser	31-2555	32.	Volume Control	33-5448			
	Drive Shaft	76-1278		Mtg. Nut	W-2157			
	"C" Washer	28-5990	33.	Condenser (.01 mfd, 400 volts)	30-4572			
	Drive Cord	31-2553	34.	Resistor (4.7 megohms)	33-547339			
	Rubber Grommet	27-4596	35.	3rd I. F. Transformer	32-3713			
	Rubber Grommet	54-4020	35A.	Compensator (Part of 35)				
	Sleeve	28-5665	35B.	Resistor (Part of 35)				
	Spring (Drive Cord)	28-8954	35C.	Condenser (Part of 35A)				
	Screw	W-758	35D.	Condenser (Part of 35A)				
	Washer	W-410	36.	Resistor (470,000 ohms)	33-447331			
9.	Mica Condenser (250 mmfd)	60-125157	37.	Resistor (470,000 ohms)	33-447339			
10.	Mica Condenser (50 mmfd)	60-050157	38.	Resistor (130 ohms)	33-113336			
11.	Resistor (2200 ohms)	33-222339	39.	Mica Condenser (250 mmfd)	60-125157			
12.	Resistor (47,000 ohms)	33-347339	40.	Condenser (.01 mfd, 400 volts)	30-4572			
13.	Condenser (.05 mfd, 200 volts)	30-4519	41.	Condenser (.02 mfd, 400 volts)	30-4516			
14.	Mica Condenser (275 mmfd)	30-1200	42.	Output Transformer	32-3173			
15.	Compensator (Broadcast—580 KC)	31-6434	43.	Speaker	36-1544-9			
16.	Push-Button Switch	42-1708		Cone Assembly (For Speaker 36-1544-9)	36-4190			
17.	Push-Button Compensator Assembly	31-6424		Electrolytic Condenser (20-30 mfd)	30-2503			
	Mtg. Screw	W-1974		Mtg. Clamp	56-1466			
18.	Oscillator Transformer (Broadcast)	32-3715	44.	Field Coil (Replace Speaker 36-1544)				
	Mtg. Clip	28-5002	45.	Filament Resistor (80 ohms) (Used in Code 121 only)	33-3406			
19.	Oscillator Transformer (S. W.)		46.	Pilot Lamp (6 volts—Code 121)	34-2068			
	(Part of 18)		47.	Socket Assembly (Code 121)	74-1177			
20.	Condenser (.005 mfd, 400 volts)	30-4445		Pilot Lamp (115 volts—Code 122)	34-2477			
21.	Condenser (.2 mfd and R. F. Choke Assembly)	76-1161	48.	Socket Assembly (Code 122)	76-1282			
22.	Resistor (10,000 ohms)	33-310339	49.	Condenser (.05 mfd, 200 volts)	30-4519			
23.	Condenser (.01 mfd, 400 volts)	30-4572		(Used in Code 121 only)				
24.	1st I. F. Transformer	32-3711						
	Mtg. Nut	W-1949						

Sch. No.	Description	Part No.
	Miscellaneous Parts	
	Cable (Power)	L-3199
	Cabinet (Complete)	10661-A
	Dial Scale	27-5754
	Dial Pointer	56-2076
	Escutcheon (Push-Button)	56-2233
	Mtg. Screw	W-2071
	Knob (Tuning, Volume, Tons)	54-4101
	Knob (Push-Button)	54-4125
	Socket (Tubes)	27-6177
	Rivet	W-239
	Screw (Chassis Mtg.)	W-765
	Terminal Panel	33-9679
	Terminal Panel	76-1287
	Tab (ON-OFF)	27-5787
	Tab Cover	40-8880
	Washer (Chassis Mtg.)	W-410

MODEL 42-345  
 MODEL 42-360  
 MODEL 42-365

PHILCO RADIO & TELEVISION CORP.

MODEL 42-323  
 MODEL 42-327  
 MODEL 42-340

**ALIGNING R. F. AND I. F. COMPENSATORS**  
 The following procedure is used for all models.  
**EQUIPMENT REQUIRED**

- SIGNAL GENERATOR:** Covering the frequency range of the receiver, such as Philco Model 070.
- ALIGNING INDICATOR:** Either a vacuum tube voltmeter or an audio output meter may be used as an aligning indicator. Philco Models 027 and 028 circuit testers contain both these meters.
- TOOLS:** Philco Fiber Screw Driver, Part No. 45-2610.

**CONNECTING ALIGNING INSTRUMENTS**

**Audio Output Meter:** If this type of aligning meter is used, connect it to the voice coil terminals of the speaker or from the plate of the 35A5 tube to the chassis. Adjust the meter for the 0 to 10 volt scale.

**Vacuum Tube Voltmeter:** To use the vacuum tube voltmeter as an aligning indicator, make the following connections: Attach the negative (-) terminal of the voltmeter to any point in the circuit where the A. V. C. voltage can be obtained. Connect the positive (+) terminal of the vacuum tube voltmeter to the chassis.

**Signal Generator:** When adjusting the I. F. padders, the high side of the signal generator is connected through a .1 mfd. condenser to the antenna section of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output

terminals; the signal generator is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet.

In order to adjust the radio outside of the cabinet the dial scale should be removed from the cabinet and placed on the dial background plate. The dial scale can be held in position by clips or rubber bands. The loop aerial should also be placed in approximately the same position around or near the chassis as when assembled.

After connecting the aligning instruments adjust the compensators as shown in the tabulation below. Locations of the compensators are shown in the schematic diagram of each model.

If the indicating meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

**PROCEDURE—MODELS 42-323; 42-327; 42-340; 42-360**

Opera- tions Order	SIGNAL GENERATOR			RECEIVER			Special Instruc- tions	
	Output Connec- tions to Radio	Dial Setting	Dial Setting	Control Setting	Adjust Com- pensators in Order	Adjust Compensators in Order		
1	Aerial Section Tuning Con- denser	455 KC	540 KC	Vol. Max. Band Switch Broadcast	22A 24A 15A 25A 22B 24B 15B 25B 27A 29A 18A 29A 33A 35A 32A 37A	42- 323 42- 327 42- 340 42- 360		
2	Loop (See above Instruc- tions)	1720 KC	1720 KC	"	8B 8B 7	14A	Note A	
3	"	1500 KC	1500 KC	"	8A	8A 23	4	
4	"	580 KC	580 KC	"	15	15 23B 4A	Roll Tun- ing Con- denser Note B	
5	Repeat Operation 2							
6	"	15.5 MC	15.5 MC	Band Switch S. W.	15A 15A 3 3	7A 14 23A 12	Note C	

**PROCEDURE—MODELS 42-345; 42-365**

Opera- tions in Order	SIGNAL GENERATOR			RECEIVER			Special Instruc- tions	
	Output Connec- tions to Radio	Dial Setting	Dial Setting	Control Setting	Adjust Com- pensators in Order	Adjust Compensators in Order		
1	Aerial Section Tuning Con- denser	455 KC	540 KC	Vol. Max. Band Switch "Broadcast"	29A 29B 32A 34A	42- 345 42- 365		
2	Loop (See above Instruc- tions)	1720 KC	1720 KC	"	15	6B	Note A	
3	"	1500 KC	1500 KC	"	9	13		
4	"	580 KC	580 KC	"	9B	13A	Roll Tun- ing Con- denser Note B	
5	Repeat Operation 2							
6	"	6.7 MC	6.7 MC	Band Switch "Police"	15A	6A		
7	"	15.5 MC	15.5 MC	Band Switch S. W.	15B Osc. 9A	6 Osc. 4	Note C	

**NOTE A.—**Adjusting Dial Pointer: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the first mark below 540 KC.

**NOTE B.—**When adjusting the low frequency compensator (Broadcast) or the aerial padders of the high frequency tuning range, the receiver tuning condenser must be adjusted (rolled) as follows: First, tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

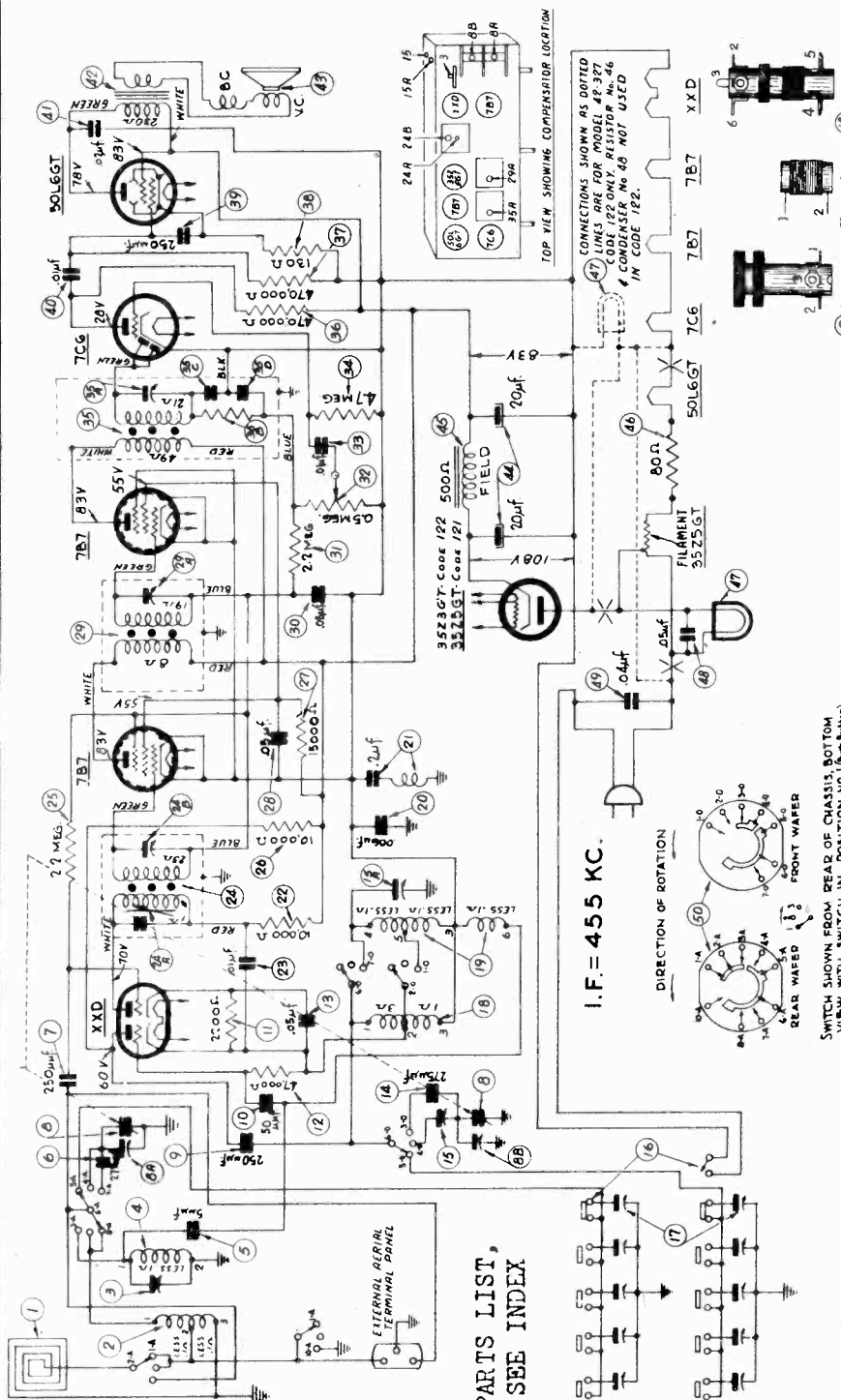
**NOTE C.—**Turn tuning condenser until pointer is on 15.5 MC mark, then adjust oscillator compensator to maximum on the second signal peak from the tight position (compensator closed). The Short Wave Aerial padder should then be "rolled" to maximum on the 15. MC signal. See Note B.

vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

**NOTE C.—**Turn tuning condenser until pointer is on 15.5 MC mark, then adjust oscillator compensator to maximum on the second signal peak from the tight position (compensator closed). The Short Wave Aerial padder should then be "rolled" to maximum on the 15. MC signal. See Note B.

MODEL 42-327(121,122)

PHILCO RADIO & TELEVISION CORP.



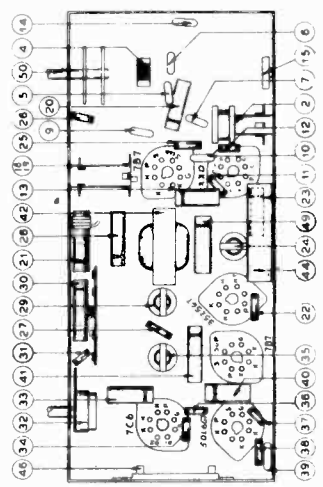
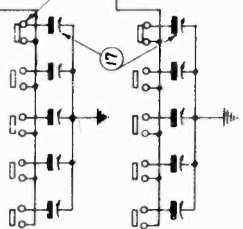
**SCHEMATIC DIAGRAM MODEL 42-327**

The D. C. voltages indicated at the tube elements in the above diagram were measured with a 1000 ohms per volt voltmeter. Philco Model 027. Line voltage, 117 volts A. C. No signal being received—range switch broadcast.

Model 42-327 incorporates electric push-button tuning in addition to manual tuning and is assembled in a table type cabinet. Codes 121 and 122 differ only in the type of pilot lamp, rectifier tube and bias resistor. These differences are indicated on the part list and diagram. The electric push-button tuning mechanism consists of six (6) push-buttons. One push-button is used to control (ON-OFF) the power to the radios. The remaining five (5) push-buttons automatically tune in stations. The procedure for adjusting and operating the push-buttons will be found in the instructions supplied with the radio.

**IF PEAK 455 KC**  
**TUNING BANDS: 540-1720 KC; 9-15.5 MC**  
**POWER SUPPLY: 115 V, AC-DC**  
**AUDIO OUTPUT: 1 WATT**

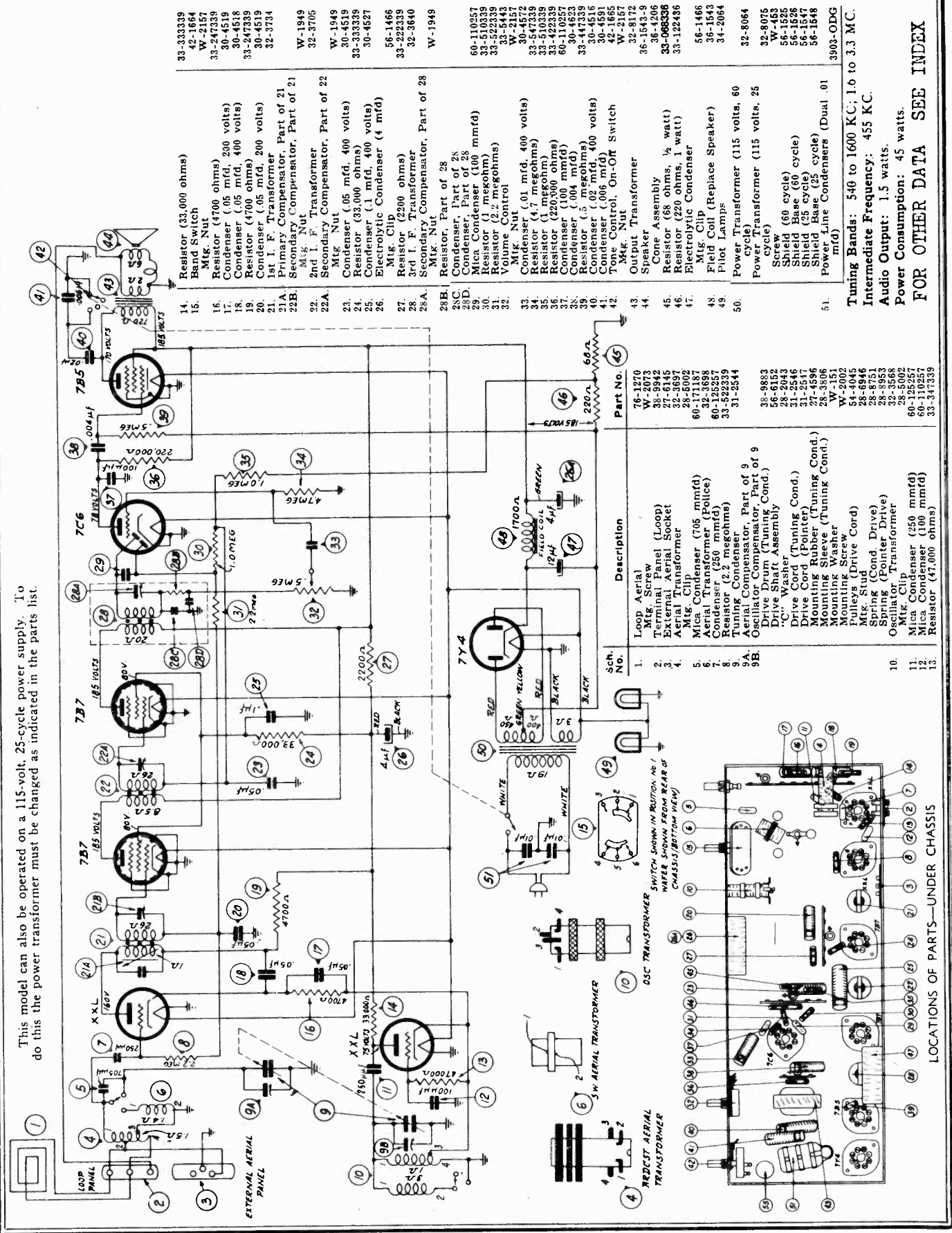
FOR ALIGNMENT, PARTS LIST,  
 AND OTHER DATA, SEE INDEX



-PART LOCATIONS, UNDERSIDE OF CHASSIS, MODEL 42-327

PHILCO RADIO & TELEVISION CORP.

This model can also be operated on a 115-volt, 25-cycle power supply. To do this the power transformer must be changed as indicated in the parts list.



Part No.	Description	Part No.	Description
14.	Resistor (33,000 ohms)	33.	Mica Condenser (.01 mfd, 400 volts)
15.	Band Switch	34.	Resistor (4.7 megohms)
16.	Mtg. Nut	35.	Resistor (1 megohm)
17.	Resistor (4700 ohms)	36.	Resistor (220,000 ohms)
18.	Condenser (.05 mfd, 200 volts)	37.	Condenser (100 mfd)
19.	Resistor (4700 ohms)	38.	Resistor (100 megohms)
20.	Condenser (.05 mfd, 200 volts)	39.	Resistor (5 megohms)
21.	1st I. F. Transformer	40.	Condenser (.02 mfd, 400 volts)
21A.	Primary Compensator, Part of 21	41.	Condenser (.006 mfd)
22.	Mtg. Nut	42.	Tone Control, On-Off Switch
22A.	Secondary Compensator, Part of 21	43.	Output Transformer
23.	Mtg. Nut	44.	Speaker
24.	Resistor (.05 mfd, 400 volts)	45.	Cone Assembly
25.	Condenser (33,000 ohms)	46.	Resistor (68 ohms, 1/2 watt)
26.	Resistor (1 mfd, 400 volts)	47.	Resistor (220 ohms, 1 watt)
27.	Electrolytic Condenser (4 mfd)	48.	Electrolytic Condenser
28.	Mtg. Clip	49.	Mtg. Clip
28A.	Resistor (2200 ohms)	50.	Field Coil (Replace Speaker)
28B.	Resistor, Part of 28	51.	Pilot Lamps
28C.	Condenser, Part of 28		
29.	Mica Condenser (100 mfd)		
30.	Resistor (2.2 megohms)		
31.	Volume Control		
32.	Mtg. Nut		
33.	Condenser (.01 mfd, 400 volts)		
34.	Resistor (4.7 megohms)		
35.	Resistor (1 megohm)		
36.	Resistor (220,000 ohms)		
37.	Condenser (100 mfd)		
38.	Resistor (100 megohms)		
39.	Resistor (5 megohms)		
40.	Condenser (.02 mfd, 400 volts)		
41.	Condenser (.006 mfd)		
42.	Tone Control, On-Off Switch		
43.	Output Transformer		
44.	Speaker		
45.	Cone Assembly		
46.	Resistor (68 ohms, 1/2 watt)		
47.	Resistor (220 ohms, 1 watt)		
48.	Electrolytic Condenser		
49.	Mtg. Clip		
50.	Field Coil (Replace Speaker)		
51.	Pilot Lamps		

Tuning Bands: 540 to 1600 KC; 1.6 to 3.3 MC.  
 Intermediate Frequency: 455 KC.  
 Audio Output: 1.5 watts.  
 Power Consumption: 45 watts.

FOR OTHER DATA SEE INDEX

LOCATIONS OF PARTS—UNDER CHASSIS

MODEL 42-335  
MODEL 42-358

PHILCO RADIO & TELEVISION CORP.

REPLACEMENT PARTS—Model 42-358, Codes 121-122

Sch. No.	Description	Part No.	Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	Loop Aerial	76-1190	26C.	Condenser, Part of 26		38.	Pilot Lamp	34-2477
	Mtg. Sleeve	28-3806	26D.	Condenser, Part of 26			Socket Assembly	76-1282
	Mtg. Sleeve	56-1907	27.	Resistor (470,000 ohms)	33-447339	39.	Condenser (.04 mfd, 400 volt-)	30-4119
	Mtg. Sleeve	56-1545	28.	Resistor (470,000 ohms)	33-447339	40.	Power Switch, Part of 23	
	Mtg. Washer	W-284	29.	Resistor (130 ohms), Code 121	33-113336	41.	Power Cord	1.-3199
	Mtg. Washer	W-151	30.	Resistor (180 ohms), Code 122	33-118336	Parts Used in Code 122 Only		
	Spring Washer	28-4186	31.	Mica Condenser (250 mmfd)	60-125157	42.	Electrolytic Condenser (10-20-20 mfd) (Code 122)	30-2529
1A.	Condenser (.0015 mfd)	30-4621	32.	Condenser (.01 mfd, 400 volts)	30-4572	43.	Field Coil (Replace Speaker 36-1566)	
2.	Aerial Transformer	32-2772	33.	Condenser (.02 mfd, 400 volts)	30-4516	Miscellaneous Parts		
	Mtg. Clip	58-5002	34.	Output Transformer	32-8180		Bezel	54-4090
3.	Tuning Condenser	31-2099		Speaker (Code 121)	36-1488-3		Mtg. Screw	W-2071
3A.	Aerial Compensator (1500 KC), Part of 3			Speaker (Code 122)	36-1566		Cabinet	10543-B
3B.	Oscillator Compensator (1700 KC), Part of 3			Cone Assembly (For Speaker 36-1566)	36-4215		Dial	27-5745
	Drive Pulley	38-9856		Speaker Cable (Code 122)	41-3653		Dial Pointer	56-2159
	Drive Cord	31-2586		Cone Assembly (For Speaker 36-1488-3)	36-4129		Spring Fastener (Dial)	56-6161
	Spring	28-9354		Speaker Cable (Code 121)	41-3448		Knob	54-4089
	Mtg. Screw	W-523		Speaker Socket (Code 121)	27-6115		Socket	27-6174
	Mtg. Spacer	28-5665	35.	Electrolytic Condenser (20-20 mfd) (Code 121)			Socket	27-6177
	Mtg. Grommet (2 required)	27-4596		Mtg. Clamp	30-2515		Mtg. Rivet	W-239
	Mtg. Grommet (1 required)	54-4020	36.	Filter Choke	32-8182		Socket (Speaker)	27-6115
	Tuning Shaft	31-2566	37.	Filament Resistor (50 ohms)	33-3412		Screw (Chassis Mtg.)	W-2030
	Mtg. Nut	W-684					Washer (Chassis Mtg.)	W-410
4.	Compensator (580 KC)	31-6410						
5.	Mica Condenser (250 mmfd)	60-125157						
6.	Mica Condenser (250 mmfd)	60-125157						
7.	Oscillator Transformer	32-3771						
	Mtg. Clip	28-5002						
8.	Mica Condenser (100 mmfd)	60-110157						
9.	Resistor (47,000 ohms)	33-347339						
10.	Resistor (2200 ohms)	33-222339						
11.	Condenser (.05 mfd, 200 volts)	30-4519						
12.	Condenser (.01 mfd, 400 volts)	30-4572						
13.	Resistor (10,000 ohms)	33-310339						
14.	1st I. F. Transformer	32-3773						
14A.	Primary Compensator, Part of 14							
14B.	Secondary Compensator, Part of 14							
14C.	Condenser, Part of 14							
	Mtg. Nut	W-1949						
15.	Resistor (2.2 megohms)	32-522339						
16.	Resistor (10,000 ohms)	33-310339						
17.	Condenser and R. F. Choke	76-1161						
18.	Resistor (15,000 ohms)	33-315339						
19.	Condenser (.05 mfd, 200 volts)	30-4519						
20.	2nd I. F. Transformer	32-3774						
20A.	Secondary Compensator, Part of 20							
21.	Condenser (.05 mfd, 200 volts)	30-4519						
22.	Resistor (2.2 megohms)	33-522339						
23.	Volume Control	33-5464						
	Mtg. Nut	W-2157						
24.	Condenser (.01 mfd, 400 volts)	30-4572						
25.	Resistor (4.7 megohms)	33-547339						
26.	3rd I. F. Transformer	32-3775						
26A.	Secondary Compensator, Part of 26							
26B.	Resistor, Part of 26							

**Aerial Connections:** The built-in loop aerial system is designed to operate without an outside aerial or ground, and to give exceptionally sensitive receiving performance.

In steel reinforced buildings, however, and other shielded locations, where station signal strength is weak, the Philco Safety Aerial, Part No. 40-6370, is recommended. A lug and wire grounded to the rear of the chassis by a screw is provided for attaching the safety aerial. Remove the lug from under the screw and connect the aerial lead.

If an external aerial is not used this lug should be grounded to the chassis by the screw to obtain best performance with the built-in loop. A ground is not required with either type of aerial.

**ALIGNING R. F. AND I. F. COMPENSATORS**

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator and loop is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet. When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled.

After connecting the aligning instruments adjust the compensators as shown in the tabulation below. Locations of the compensators are shown on the schematic diagrams.

If the indicating meter pointer goes off scale when adjusting the compensator, reduce the strength of the signal from the generator.

**PROCEDURE—MODEL 42-335**

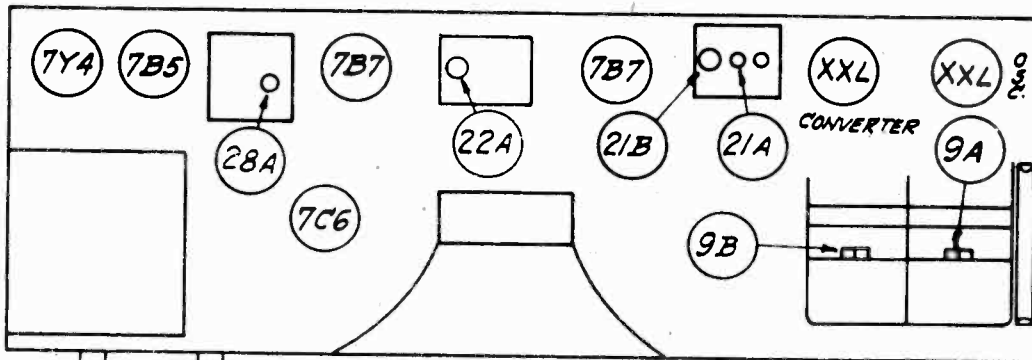
Operations in Order	SIGNAL GENERATOR		RECEIVER		SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	
1	Ant. Section of Tuning Cond.	455 KC	Tuning Cond. Closed	Vol. Max. Range Switch "Brdcast"	28A, 22A, 21A, 21B Note A
2	Loop	1500 KC	1500 KC	Vol. Max. Range Switch "Brdcast"	9B Note B
3	Loop	1500 KC	1500 KC	Vol. Max. Range Switch "Brdcast"	9A

**PROCEDURE—MODEL 42-358**

Operations in Order	SIGNAL GENERATOR		RECEIVER		SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	
1	Ant. Section of Tuning Cond.	455 KC	540 KC	Vol. Max.	14A, 14B, 20A, 26A
2	Loop	1500 KC	1500 KC	Vol. Max.	3B Tuning Condenser Note B
3	Loop	1500 KC	1500 KC	Vol. Max.	3A Tuning Condenser
4	Loop	580 KC	580 KC	Vol. Max.	4 Roll Tuning Condenser
5	Loop		Repeat Operation 2		

NOTE A—Compensator (21A) Model 42-335, must be adjusted before (21B) Model 42-335, and should be done in the following manner: Turn 21B all the way down, then adjust I. F. padders in the order as tabulated once only.

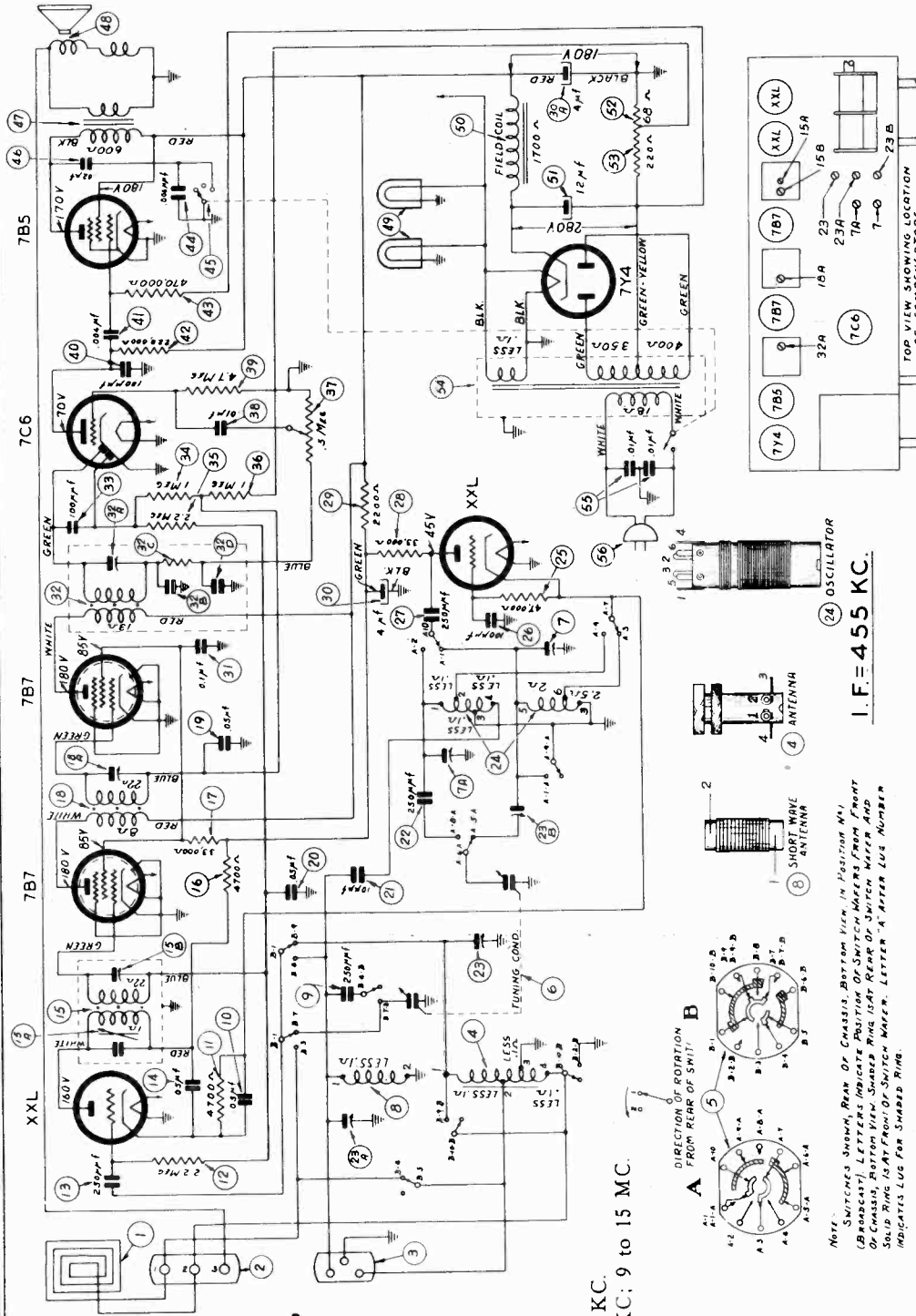
NOTE B—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the index line below 540 KC.



LOCATIONS OF COMPENSATORS, TOP OF CHASSIS

Model 42-335

PHILCO RADIO & TELEVISION CORP.



SCHEMATIC DIAGRAM MODEL 42-340

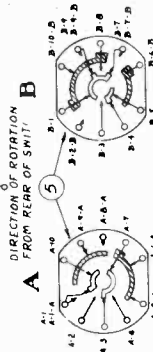
The D. C. voltages indicated at the tube elements in the above diagram were measured with a 1000 ohms per volt voltmeter. Philco Model 027. Line voltage, 117 volts A. C. No signal being received—range switch broadcast.

**POWER SUPPLY: 115 V 60 CYCLES**  
This model can also be operated on 115 volts, 25 cycles by changing the power transformer as indicated in the parts list.

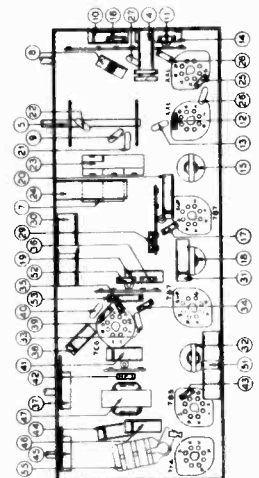
**Circuit Description:** Model 42-340, Code 121, is a seven (7) tube superheterodyne radio with two tuning bands covering Standard, Police and Shortwave broadcast stations and operates on alternating current (A. C.). This model is designed to operate from the Philco low impedance loop aerial which is built in the cabinet. In addition, connections are also provided for an external aerial.

**FOR ALIGNMENT, PARTS LIST, AND OTHER DATA, SEE INDEX**

Intermediate Frequency: 455 KC.  
Tuning Bands: 540 to 1720 KC; 9 to 15 MC.  
Audio Output: 1.5 watts



NOTE: SWITCHES SHOWN, REAR OF CHASSIS, BOTTOM VIEW IN POSITION 'A'. (BROADCAST BAND) INDICATE POSITION OF SWITCH WAFERS FROM FRONT OF CHASSIS. (POLICE AND SHORTWAVE BANDS) INDICATE POSITION OF SWITCH WAFERS AND SOLID RING IS AT FRONT OF SWITCH WAFER. LETTER 'A' AFTER LUG NUMBER INDICATES LUG FOR SHADDED RING.



PART LOCATIONS, UNDERSIDE OF CHASSIS, MODEL 42-340

MODEL 42-340  
MODEL 42-345

PHILCO RADIO & TELEVISION CORP.

EXTERNAL AERIAL CONNECTIONS

MODELS 42-323, 42-327, 42-340, 42-345, 42-360, 42-365

The built-in low-impedance loop aerial system of these models is designed to operate without an outside aerial or ground, and to give exceptional receiving performance under average conditions.

To operate the radio, however, in steel reinforced buildings and other shielded locations, where signal strength is weak, the Philco outdoor aerial part No. 45-2817 is recommended for maximum receiving performance. The outdoor aerial can be easily connected to the radio by inserting the plug attached to the transformer (supplied with the aerial) into the socket provided at the rear of the radio. This aerial can be obtained from your local Philco distributor.

REPLACEMENT PARTS—Model 42-340

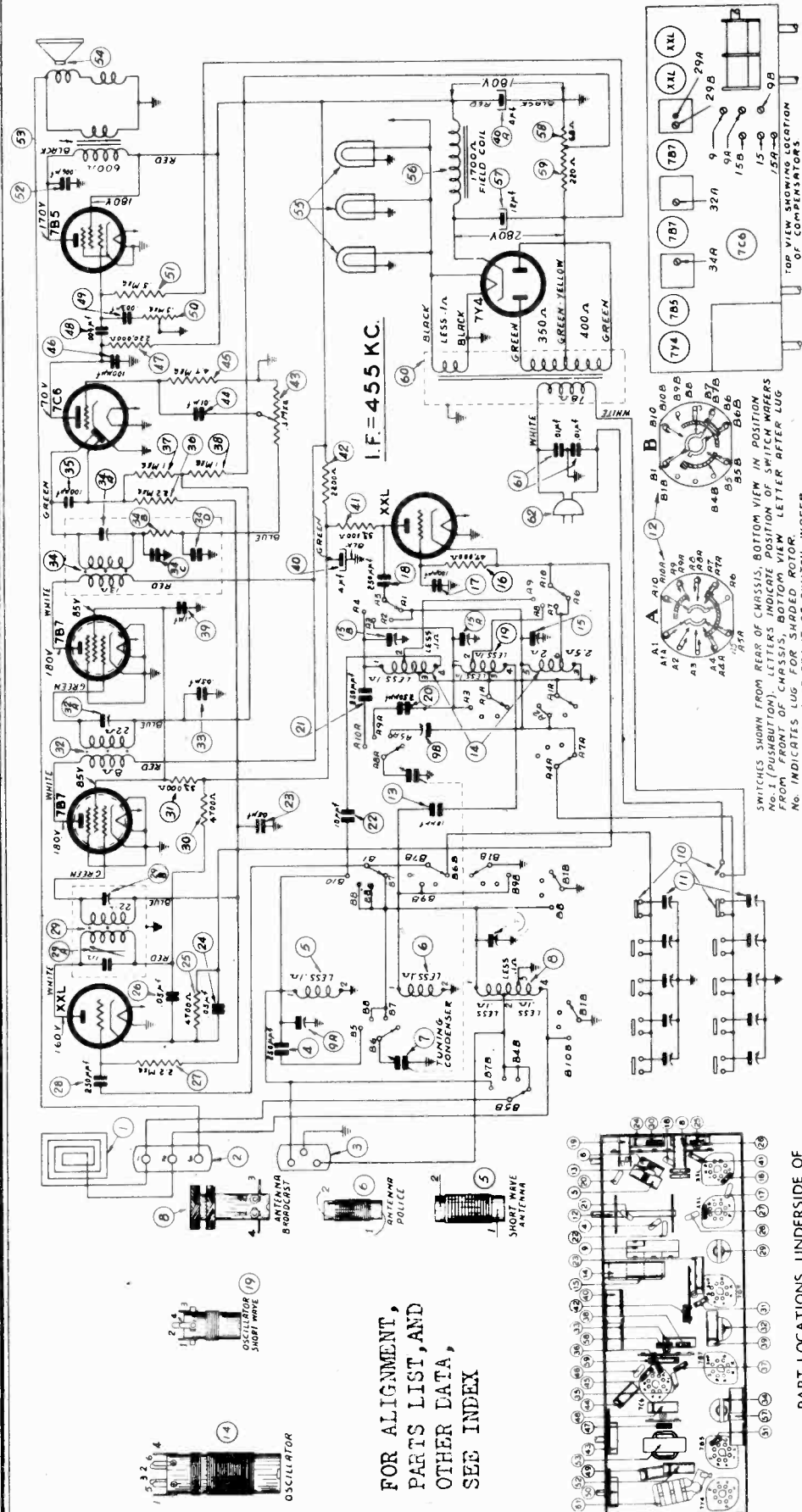
Sch. No.	Description	Part No.	Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	Loop Aerial	76-1270	23B.	Compensator (Oscillator—580 KC)		52.	Resistor (68 ohms)	33-068336
	Mtg. Screw	W-2071		(Part of 23)		53.	Resistor (220 ohms)	33-122436
2.	Loop Terminal Panel	38-9942	24.	Oscillator Transformer	32-8723	54.	Power Transformer (115 volts, 60 cycle)	32-8064
3.	External Aerial Socket	27-6145		Mtg. Clip	28-5003		Shield	56-1626
4.	Aerial Transformer (Broadcast)	32-3724	25.	Resistor (47,000 ohms)	33-847339		Shield Base	56-1626
	Mtg. Clip	28-5002	26.	Mica Condenser (100 mmfd)	60-110257		Mtg. Screw	W-453
5.	Band Switch	42-1672	27.	Mica Condenser (250 mmfd)	20-025011		Power Transformer (115 volts, 25 cycle)	3903-ODG
	Mtg. Nut	W-2157	28.	Resistor (33,000 ohms)	33-333339	55.	Condenser (.01-.01 mfd)	I-3199
6.	Tuning Condenser	31-2558	30.	Electrolytic Condenser (4-4 mfd, 400 volts)	30-2477	Miscellaneous Parts		
	Drive Cord (Pointer)	31-2547	31.	Condenser (.1 mfd, 400 volts)	30-4527			
	Drive Cord (Tuning Cond.)	31-2546	32.	3rd I. F. Transformer	32-3640	Dial Scale	27-5765	
	Drive Shaft	56-6152		Mtg. Nut	W-1949	Dial Pointer	56-2289	
	Mtg. Nut	W-2157	32A.	Secondary Compensator (Part of 32)		Knob Assembly	54-4102	
	Drive Drum (Tuning Cond.)	38-9883	32C.	Resistor (Part of 32)		Sockets	27-6177	
	Mtg. Rubber	27-4596	32D.	Condenser (Part of 32A)		Mtg. Rivets	W-239	
	Mtg. Sleeve	28-3806	33.	Mica Condenser (100 mmfd)	60-110257	Screw (Mtg. Chassis)	W-2030	
	Spring (Tuning Condenser Cord Drive)	28-8751	34.	Resistor (1 megohm)	33-510339	Washer (Mtg. Chassis)	W-410	
	Spring (Pointer Drive Cord)	28-8953	35.	Resistor (2.2 megohms)	33-522339			
7.	Compensator (Broadcast, Aerial)	31-6438	36.	Resistor (1 megohm)	33-510339			
7A.	Compensator (Short Wave—Aerial) (Part of 7)		37.	Volume Control	33-5443			
8.	Aerial Transformer (Short Wave)	32-3725		Mtg. Nut	W-2157			
9.	Mica Condenser (250 mmfd)	20-025011	38.	Condenser (.01 mfd, 400 volts)	30-4572			
10.	Condenser (.05 mfd, 200 volts)	30-4519	39.	Resistor (4.7 megohms)	33-547339			
11.	Resistor (4700 ohms)	33-247339	40.	Mica Condenser (100 mmfd)	60-110257			
12.	Resistor (2.2 megohms)	33-522339	41.	Condenser (.004 mfd, 600 volts)	30-4623			
13.	Mica Condenser (250 mmfd)	60-125257	42.	Resistor (220,000 ohms)	33-422339			
14.	Condenser (.05 mfd, 400 v.)	30-4518	43.	Resistor (470,000 ohms)	33-447339			
15.	1st I. F. Transformer	32-3734	44.	Condenser (.005 mfd, 400 volts)	30-4591			
	Mtg. Nut	W-1949	45.	Tone Control and Power Switch	42-1665			
15A.	Primary Compensator (Part of 15)			Mtg. Nut	W-2157			
15B.	Secondary Compensator (Part of 15)		46.	Condenser (.02 mfd, 400 volts)	30-4516			
15C.	Condenser (Part of 15)		47.	Output Transformer	32-8172			
16.	Resistor (4700 ohms)	33-247339	48.	Speaker	36-1543-9			
17.	Resistor (33,000 ohms)	33-333339		Cone Assembly (For Speaker 36-1543)	36-4206			
18.	2nd I. F. Transformer	32-3705	49.	Pilot Lamps	34-2064			
	Mtg. Nut	W-1949		Socket Assembly	76-1287			
18A.	Secondary Compensator (Part of 18)		50.	Field Coil (Replace Speaker 36-1543)				
19.	Condenser (.05 mfd, 200 volts)	30-4519	51.	Electrolytic Condenser (12 mfd, 400 volts)	30-2409			
20.	Condenser (.05 mfd, 200 volts)	30-4519		Mtg. Clamp	56-1466			
21.	Mica Condenser (10 mmfd)	60-010337						
22.	Mica Condenser (250 mmfd)	20-025011						
23.	Compensator (Oscillator—Broadcast)	31-6428						
23A.	Compensator (Oscillator—S. W.) (Part of 23)							

REPLACEMENT PARTS—Model 42-345

Sch. No.	Description	Part No.	No. Sch.	Description	Part No.	Sch. No.	Description	Part No.
1.	Loop Aerial	76-1303	23.	Condenser (.05 mfd, 200 volts)	30-4519	56.	Field Coil (Replace Speaker)	36-1543
	Mtg. Screw	W-2071	24.	Condenser (.05 mfd, 200 volts)	30-4519	57.	Electrolytic Condenser (12 mfd, 400 volts)	30-2409
2.	Loop Terminal Pane.	38-9942	25.	Resistor (4700 ohms)	33-247339		Resistor (68 ohms)	33-068336
3.	External Aerial Socket	27-6145	26.	Condenser (.05 mfd, 400 volts)	30-4518		Resistor (220 ohms)	33-122436
4.	Silver Mica Condenser (250 mmfd)	20-025011	27.	Resistor (2.2 megohms)	33-522339	58.	Power Transformer (115 volts, 60 cycle)	32-8064
5.	Aerial Transformer (S. W.)	32-3734	28.	Mica Condenser (250 mmfd)	60-125257	59.	Resistor (220 ohms)	33-122436
	Mtg. Clip	28-5002	29.	1st I. F. Transformer	32-3734	60.	Power Transformer (115 volts, 60 cycle)	32-8064
6.	Aerial Transformer (Police)	32-3766		Mtg. Nut	W-1949		Power Transformer (115 volts, 25 cycle)	56-1626
7.	Tuning Condenser	31-2558	29A.	Primary Compensator (Part of 29)			Shield	56-1626
	Drive Shaft	56-6152	29B.	Condenser (Part of 29)			Mtg. Screw	W-453
	Mtg. Screw	W-2157	29C.	Secondary Compensator (Part of 29)		61.	Line Filter Condenser (.01-.01 mfd)	3903-ODG
	Drive Drum	38-9883	30.	Resistor (4700 ohms)	33-247339	62.	Power Cord	I-3199
	Drive Cord (Pointer)	31-2534	31.	Resistor (33,000 ohms)	33-333339	Miscellaneous Parts		
	Spring	28-8953	32.	2nd I. F. Transformer	32-3705			
	Drive Cord (Cond. Drive)	31-2546		Mtg. Nut	W-1949	Dial	27-5769	
	Spring	28-8751	32A.	Secondary Compensator (Part of 32)		Pointer	56-1856	
	Pointer	56-1856	33.	Condenser (.05 mfd, 200 volts)	30-4519	Scutcheon (Push-Buttons)	56-2282	
	Mtg. Screw	W-2002	34.	3rd I. F. Transformer	32-3640	Knob (Tuning, Volume, Tone)	54-4115	
	Mtg. Sleeve	28-3806		Mtg. Nut	W-1949	Knob (Push-Buttons)	54-4106	
	Mtg. Rubber	27-4596	34A.	Secondary Compensator (Part of 34)		Socket (Tubes)	27-6177	
	Mtg. Sleeve	32-3763	34B.	Resistor (Part of 34)		Screw (Chassis Mtg.)	W-2030	
8.	Aerial Transformer (Broadcast)		34C.	Condenser (Part of 34A)		Tab Kit (Push-Buttons)	40-6660	
9.	Compensator (Aerial—Broadcast)		34D.	Condenser (Part of 34A)		Tab Cover	27-5737	
9A.	Compensator (Aerial—S. W.) (Part of 9)		35.	Mica Condenser (100 mmfd)	60-110257	Tab (ON-OFF)	27-5738	
9B.	Oscillator Compensator (580 KC)		36.	Resistor (2.2 megohms)	33-522339	Washer (Chassis Mtg.)	W-410	
	(Part of 9)		37.	Resistor (1 megohm)	33-510339			
10.	Push-Buttons and Power Switch	42-1666	38.	Resistor (1 megohm)	33-510339			
	Mtg. Sleeve (Switch to Cabinet)	28-2258	39.	Condenser (.1 mfd, 400 volts)	30-4527			
	Mtg. Sleeve (P. B. Switch, 3 required)	28-5665	40.	Electrolytic Condenser (4-4 mfd, 400 volts)	30-2477			
	Drive Screw	W-523	40A.	Electrolytic Condenser (4 mfd) (Part of 40)				
	Mtg. Screw	W-2002		Mtg. Clip	56-1466			
11.	Push-Button Compensating Condenser Strip	31-6372	41.	Resistor (33,000 ohms)	33-333339			
12.	Band Switch	42-1664	42.	Resistor (2200 ohms)	33-222339			
	Mtg. Nut	W-2157	43.	Volume Control	33-5443			
13.	Mica Condenser (10 mmfd)	60-010337		Mtg. Nut	W-2157			
14.	Oscillator Transformer (Broadcast—S. W.)		44.	Condenser (.01 mfd, 400 volts)	30-4572			
	Mtg. Clip	32-3762	45.	Resistor (4.7 megohms)	33-547339			
	Compensator (Oscillator—Broadcast)	28-5003	46.	Mica Condenser (100 mmfd)	60-110257			
15.	Compensator (Oscillator—Police)	31-6425	47.	Resistor (220,000 ohms)	33-422339			
15A.	Compensator (Oscillator—Police) (Part of 15)		48.	Condenser (.004 mfd, 600 volts)	30-4623			
15B.	Compensator (Oscillator—S. W.) (Part of 15)		49.	Condenser (.003 mfd, 100 volts)	30-4469			
16.	Resistor (47,000 ohms)	33-347339	50.	Tone Control	33-5450			
17.	Mica Condenser (100 mmfd)	60-110257		Mtg. Nut	W-2157			
18.	Mica Condenser (250 mmfd)	60-125257	51.	Resistor (470,000 ohms)	33-447339			
19.	Oscillator Transformer (Police)	32-3765	52.	Condenser (.006 mfd, 400 volts)	30-4591			
	Mtg. Clip	28-5002	53.	Output Transformer	32-8172			
20.	Mica Condenser (2500 mmfd)	60-225324	54.	Speaker	36-1543-9			
21.	Silver Mica Condenser (250 mmfd)	20-025011		Cone Assembly (For Speaker 36-1543-9)	36-4206			
22.	Mica Condenser (10 mmfd)	60-010337	55.	Pilot Lamps	34-2064			
				Socket Assembly	76-1287			

PHILCO RADIO & TELEVISION CORP.

MODEL 42-345



SCHEMATIC DIAGRAM MODEL 42-345

The D. C. voltages indicated at the tube elements in the above diagram were measured with a 1000 ohms per volt voltmeter; Philco Model 027. Line voltage, 117 volts A. C. No signal being received—range switch broadcast.

MODEL 42-345, CODE 121

**Circuit Description:** Model 42-345, Code 121, is a seven (7) tube superheterodyne radio employing electric push-button tuning for automatically selecting standard broadcast stations and three (3) tuning bands covering Standard, Police, and Short-wave stations. In addition, this model employs the built-in Philco low impedance loop aerial, for reception of stations without an external aerial. Connections are also provided for an external aerial to be used in sections where signal strength is weak, such as steel reinforced buildings and other shielded areas.

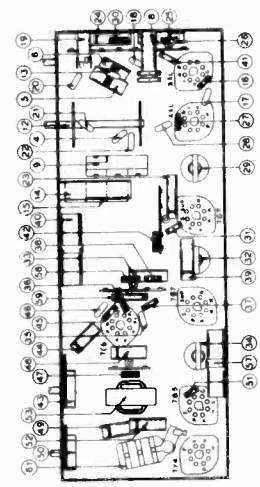
**Intermediate Frequency:** 455 KC.  
**Tuning Bands:** 540 to 1720 KC.; 2.3 to 7 MC.; 9 to 15.5 MC.  
**Audio Output:** 2 watts.

**Power Supply:** 115 volts A. C., 60 cycles. The radio can also be operated on 115 volts, 25 cycle current, by changing the power transformers as indicated in the parts list.

**Electric Push-Button Tuning:** Six (6) electric tuning push-buttons are provided for automatically selecting stations. Five (5) of the push-buttons are used from broadcast stations and one push-button for controlling (ON-OFF) the power supply. The procedure for adjusting the push-buttons will be found in the instructions supplied with the radio.

FOR ALIGNMENT, PARTS LIST, AND OTHER DATA, SEE INDEX

PART LOCATIONS, UNDERSIDE OF CHASSIS, MODEL 42-345





MODEL 42-350

PHILCO RADIO & TELEVISION CORP.

REPLACEMENT PARTS—Model L42-350, Code 121

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1.	Loop Aerial	76-1383	42.	Resistor (2200 ohms)	33-222339		Mtg. Washer	27-7467
	Mtg. Screw	W-2071	43.	Condenser (.01 mfd., 200 volts)	30-4519		Mtg. Nut	W-124
1a.	F.M. Loop Aerial	76-1303	44.	3rd I.F. Transformer	32-3794	74.	Dial and Indicator Lamps	34-2064
	Socket	27-6181	44a.	Primary Compensator (4.3 M.C.)	W-1949	75.	Field Coil (Replace Speaker 36-1548)	
2.	Mica Condenser (250 mmfd.)	60-125257		Part of 44		76.	Electrolytic Condenser (12 mfd., 400 volts)	30-2409
3.	Resistor (2.2 megohms)	33-522339	44b.	Primary Compensator (455 K.C.)			Mtg. Clip	56-1466
4.	Resistor (100,000 ohms)	33-410339		Part of 44		77.	Resistor (27 ohms)	33-027339
5.	Resistor (2700 ohms)	33-227339	44c.	Secondary Compensator (4.3 M.C.)		78.	Resistor (270 ohms)	33-127439
6.	Condenser (.05 mfd., 200 volts)	30-4519	44d.	Mica Condenser (125 mmfd.)			Power Transformer (115 volts, 60 cycle)	32-8183
7.	F.M. Oscillator Transformer	32-3787		Part of 44			Mtg. Screw	W-453
	Mtg. Clip	28-5002	45.	Condenser (.1 mfd.)	30-4586		Shield	56-2285
8.	Resistor (10 ohms)	33-010336	45a.	Mica Condenser (500 mmfd.)	60-150227		Shield Base	56-2286
9.	Short Wave Aerial Transformer	32-3764	46.	Resistor (470,000 ohms)	33-447339		Power Transformer (115 volts, 25 cycles)	32-8210
10.	Broadcast Aerial Transformer	32-3763	47.	Resistor (2.2 megohms)	33-522339		Shield	56-1547
	Mtg. Clip	28-5002	48.	Resistor (100,000 ohms)	33-410339		Shield Base	56-1548
11.	Compensator (Brdst. Band, 580 K.C.)	31-6428	49.	Resistor (2.2 megohms)	33-522339		Power Transformer (115/230 volts, 60 cycle)	32-8211
11a.	Compensator (S.W. Aerial, 15 M.C.)		50.	Resistor (2.2 megohms)	33-522339	80.	Condenser (.01-.01 mfd.)	3903-006
	Part of 11		51.	Condenser (.01 mfd., 400 volts)	30-4572	81.	Band Switch	42-1696
11b.	Compensator (Brdst. Band, 1500 K.C.)		52.	Mica Condenser (100 mmfd.)	60-110257		Mtg. Nut	W-2157
	Part of 11		53.	Resistor (220,000 ohms)	33-422339		<b>MISCELLANEOUS PARTS</b>	
12.	Push-button Switch & A.C. Switch	42-1695	54.	Condenser (.01 mfd., 400 volts)	30-4572		Arm and Link (Band Indicator)	76-1353
12a.	A.C. Switch (Part of 12)		55.	Condenser (.01 mfd., 400 volts)	30-4572		Cable (Power)	L-3199
	Mtg. Sleeve	28-5665	56.	Condenser (.01 mfd., 400 volts)	30-4572		Cabinet (Power)	10562A
	Mtg. Screw	W-323	57.	Condenser (.01 mfd., 400 volts)	30-4572		Dial Scale	27-5736
13.	Push-button Padder Strip	31-6372	58.	Tone Control	33-5471		Dial Pointer	56-1856
	Mtg. Screw	W-1874	59.	Volume Control	33-5470		Escutcheon (Push Buttons)	56-2233
14.	Tuning Condenser	31-2595	60.	Mtg. Nut	W-2157		Mtg. Screw	W-2071
	Drive Cord (Tuning Cond.)	31-2546	61.	Condenser (.01 mfd., 400 volts)	30-4572		Knob Assembly (Vol. Tone, Band)	54-4102
	Spring	28-8751	62.	Mica Condenser (150 mmfd.)	60-115327		Knob Assembly (Push Buttons)	54-4126
	Drive Cord (Pointer)	31-2594	63.	Mica Condenser (150 mmfd.)	60-115327		Mtg. Screw (Chassis)	W-763
	Spring	28-8953	64.	Resistor (1 megohm)	33-510339		Mtg. Washer (Chassis)	W-425
	Mtg. Rubber	27-4596	65.	Resistor (470,000 ohms)	33-447339		Socket Assembly (Indicator Lamps)	76-107H
	Mtg. Sleeve	28-3006	66.	Mica Condenser (100 mmfd.)	60-110257		Socket Assembly (Dial Lamps)	76-1287
	Mtg. Washer	W-151	67.	Condenser (.003 mfd., 1000 volts)	30-4469		Socket (Single Prong)	27-6180
	Mtg. Screw	W-2002	68.	Condenser (.004 mfd., 1000 volts)	30-4623		Socket (Tubes)	27-6177
	Tuning Shaft	56-6156	69.	Resistor (220,000 ohms)	33-422339		Socket (4 Prong F.M. Aerial)	W-239
15.	Tuning Drive Drum	38-5883	70.	Resistor (470,000 ohms)	33-447339		Mtg. Rivets	40-6680
15a.	Compensator (F.M. Osc., 48.5 M.C.)	31-6444	71.	Resistor (10 megohms)	33-610339		Tab Kit	27-577H
	Compensator (Brdst. Osc., 1500 K.C.)		72.	Condenser (.002 mfd., 600 volts)	30-4622		Terminal Panel (Loop)	38-8942
	Part of 15		73.	Output Transformer	32-4172		Wiring Panel (8 lugs)	38-9007
15b.	Compensator (S.W. Osc., 15 M.C.)			Speaker	36-154H		Wiring Panel (5 lugs)	38-9579
	Part of 15			Cone Assembly (for Speaker 38-154H)	36-4206		Mtg. Rivets	W-239
15c.	Compensator (F.M. Aerial, 48.5 M.C.)			Cable	41-3613			
	Part of 15							
16.	Silver Mica Condenser (250 mmfd.)	20-025011						
17.	Mica Condenser (10 mmfd.)	60-010337						
18.	Mica Condenser (250 mmfd.)	20-025011						
19.	Oscillator Transformer (Brdst., S.W.)	32-3798						
	Mtg. Clip	28-5003						
20.	Resistor (47,000 ohms)	33-347339						
21.	Resistor (4700 ohms)	33-247339						
22.	Condenser (.05 mfd., 400 volts)	30-4519						
23.	1st I.F. Transformer	30-4519						
	Mtg. Nut	32-3794						
23a.	Primary Compensator (455 K.C.)	W-1949						
	Part of 23							
23b.	Secondary Compensator (155 K.C.)							
	Part of 23							
23c.	Secondary Compensator (4.3 M.C.)							
	Part of 23							
23d.	Primary Compensator (4.3 M.C.)							
	Part of 23							
23e.	Mica Condenser (4000 mmfd.)	60-240214						
	Part of 23							
24.	Condenser (.05 mfd., 200 volts)	30-4519						
25.	Condenser (.05 mfd., 200 volts)	30-4519						
26.	Resistor (120 ohms)	33-112336						
27.	Resistor (68 ohms)	33-068336						
28.	Condenser (.05 mfd., 400 volts)	30-4519						
29.	Resistor (10,000 ohms)	33-310339						
30.	Condenser (.01 mfd., 400 volts)	30-4572						
31.	2nd I.F. Transformer	32-3798						
	Mtg. Nut	32-3794						
31a.	Primary Compensator (4.3 M.C.)	W-1949						
	Part of 31							
31b.	Secondary Compensator (4.3 M.C.)							
	Part of 31							
31c.	Secondary Compensator (455 K.C.)							
	Part of 31							
31d.	Resistor (47,000 ohms) (Part of 31)	33-347339						
32.	Resistor (150 ohms)	33-115336						
33.	Condenser (.05 mfd., 200 volts)	30-4519						
34.	Resistor (4700 ohms)	33-247339						
35.	Resistor (1000 ohms)	33-210339						
36.	Condenser (.01 mfd., 400 volts)	30-4572						
37.	Mica Condenser (250 mmfd.)	60-125257						
38.	Mica Condenser (100 mmfd.)	60-110257						
39.	Resistor (47,000 ohms)	33-347339						
40.	Electrolytic Condenser (4-4 mfd., 400 volts)	30-2477						
40a.	Electrolytic Condenser (4 mfd., 400 volts) (Part of 40)							
	Mtg. Clip	56-1466						
41.	Resistor (33,000 ohms)	33-333339						

**POWER SUPPLY:** 115 volts, 60 cycles A.C. This model can also be operated on 25-cycle current. To do this it is necessary to replace the power transformer as indicated in the parts list for 25-cycle operation.

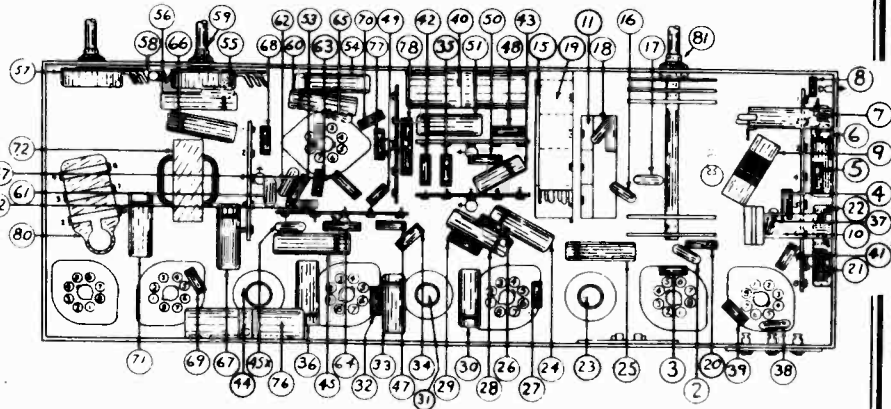


FIG. 4—LOCATIONS OF PARTS—UNDER CHASSIS

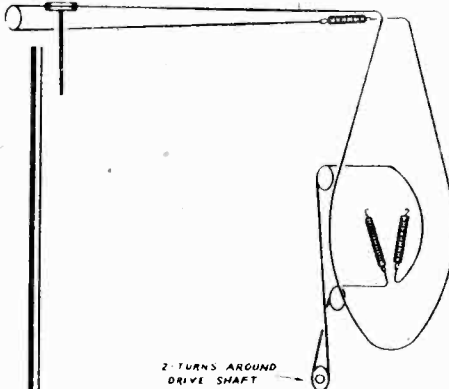


FIG. 3—TUNING DRIVE CORD ARRANGEMENT

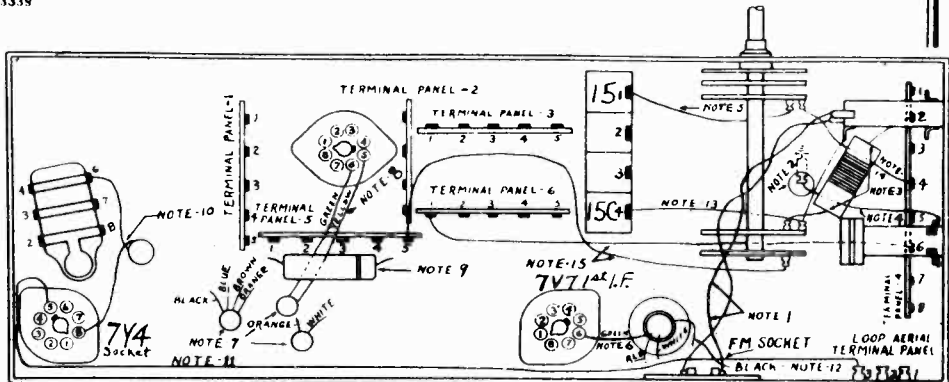


FIG. 5—CRITICAL WIRING AND PART LOCATIONS—UNDER CHASSIS (See Notes 1 to 15.)



MODEL 42-350

## PHILCO RADIO &amp; TELEVISION CORP.

## CONNECTING ALIGNING INSTRUMENTS

**AUDIO OUTPUT METER:** Terminal No. 3 is provided on the loop aerial panel for connecting one lead of the audio output meter to the voice coil of the speaker. The other lead of the meter is connected to the chassis. When using these connections, the lowest A. C. scale of the meter must be used. (0 to 10 volts.) The audio output meter can also be connected between the plate of the output tube and the chassis.

**SIGNAL GENERATOR:** When adjusting the "I. F." padders, the high side of the signal generator is connected through a .1 mfd. condenser to the points indicated in signal generator column "output connections" to receiver in the tabulations below.

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the loop is then placed two or three feet from the loop in the cabinet and dipole aerial lead. Do not remove the receiving loops from the cabinet. It is necessary when adjusting the padders, that the receiver be left in the cabinet.

After connecting the aligning instruments adjust the compensators in the order shown in the tabulation below. Location of the compensators are shown in Fig. 1. If the output meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

## STANDARD AND S. W. BANDS ALIGNING PROCEDURE

Operations In Order	SIGNAL GENERATOR		RECEIVER		Adjust Compensators In Order	Special Instructions	
	Output Connections	Dial Setting	Dial Setting	Control Settings			
1	High side to No. 1 terminal loop panel	455 KC	580 KC	Vol. max. Band Switch "Brdst."	44B, 31C, 23A, 23B		
2	Use loop on generator	1500 KC	1500 KC	"	15A, 11B	Note A	
3	Use loop on generator	580 KC	580 KC	"	11	Roll Tuning Condensers Note B	
4	Use loop on generator	Readjust as given in Operation 2					
5	Use loop on generator	15 MC	15 MC	Band Switch "S.W."	15B, 11A	Note C	

## FREQUENCY MODULATION ALIGNING PROCEDURE

Note: The Frequency Modulation Circuits Must Be Adjusted With the Dipole Aerial Connected

## CRITICAL WIRING LOCATIONS

The following items on this set are critical for location and position. See Figs. 4 and 5, for locations of wires and parts.

- Dipole aerial leads from socket to be twisted and dressed over wave switch directly to F. M. aerial-oscillator transformer No. 7.
- Ground braid from gang to chassis to be wired and soldered on top side of subbase in such a manner so that there is a floating bond between ground and the condenser.
- Short wave aerial transformer (No. 9) to be wired directly between terminal panel 4 and band switch contact C-11-C so that there is a minimum of slack in the wires.
- Wire from broadcast aerial transformer (No. 10) to ground to be dressed under short wave aerial transformer (No. 9).
- Wire from band switch contact B-11 to compensator 15 to be direct and away from switch and other wires.
- Red and white wires from 1st I. F. transformer to be dressed on base and not twisted with other wires from same coil. Green wire to be free of other wires and direct to contact 6 of the 7V7, 1st I. F. tube.
- Wires from 3rd I. F. transformer (44) to be brought out proper holes and not twisted together inside of can.
- Green and yellow wires of 3rd I. F. transformer 44 to run from hole in subbase between terminal panel 5, contacts 2 and 3 and direct to contacts of the XXFM tube 5 and 6. Orange, blue, black and brown leads to be free of other wires and dressed off base.
- Condenser (45) to be dressed off base.
- A.C. switch leads to be twisted.
- Wire from prong 5 of the 7Y4 tube to lug 3 of the loop aerial terminal panel to be dressed between Electrolytic Condenser 76 and Mounting Strap and to rear of chassis across bottom contacts of F. M. socket.
- White, red and black wires of 1st I. F. transformer to be dressed with excess out of coil shield, and towards rear of chassis, and close to base. Black lead to be dressed around and under all leads going to XXL converter tube socket. Orange, yellow, green and blue leads to be dressed with excess out of coil shield and away from the white, red and black leads.
- Wire from band switch contact C-12-C to compensator 15-C to be dressed free of other wires.
- Dress wire from band switch contact B-12 to wiring panel 4, lug 4 with excess toward front of set, under shortwave aerial transformer (9), keeping wire between the terminal panel 4 and wires coming through subbase which connect to F. M. aerial-oscillator transformer (7) and band switch.
- Keep wires from terminal panel No. 5 contact No. 5 to band switch contact D8 and terminal panel No. 6 to terminal panel No. 4 between padder strip and mounting stud of 1st I. F. transformer so that they are kept clear of leads from the 1st I. F. transformer.

## F. M. BAND ALIGNING PROCEDURE

Operations In Order	SIGNAL GENERATOR		RECEIVER		Adjust Compensators In Order	Special Instructions
	Output Connections	Dial Setting	Dial Setting	Control Settings		
1	2nd I. F., F. M. input connection	4.3 MC	580 KC	Vol. max. Band Switch "F.M."	44C (Note D) 44A (Note E)	
2	1st I. F., F. M. input connection	4.3 MC	580 KC	Band Switch "F.M."	31A, 31B (Note F)	
3	High side to No. 1 contact, F. M. socket. Ground to No. 2 contact	4.3 MC	580 KC	Band Switch "F.M."	23D, 23C (Note H)	
4	Use test loop on generator; place near dipole aerial	48.5 MC	85 (Note G)	Band Switch "F.M."	15 (Note G) 15C (Note H)	Roll tuning condenser when adjusting 15C. See Note B.
5	"	48.5 MC	85	Band Switch "F.M."	15 oscillator	

**NOTE A.—DIAL CALIBRATION:** In order to adjust the receiver correctly, the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity) set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale.

**NOTE B.—**When adjusting the low frequency compensator of the broadcast or the aerial padders of the high frequency tuning range; the receiver tuning condenser must be adjusted (rolled) as follows: First, tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

**NOTE C.—**Adjust compensator (15B) to the second signal peak from the closed position (maximum broadcast).

The aerial compensator (11A) must also be adjusted to maximum on the first signal peak by rolling the tuning condenser. (See Note B.)

**NOTE D.—**With the signal generator set to 4.3 MC, padder (44C) is adjusted to the point where minimum signal indication is observed on the output meter.

**NOTE E.—**Turn the signal generator first to approximately 125 KC below 4.3 MC (4.17 MC) and then 125 KC above 4.3 MC (4.42 MC). A signal peak should be observed on the output meter at approximately each of these points (4.17 and 4.42). The two peak signals should be of equal reading on the output meter and equally spaced in frequency each side of 4.3 MC. If the peaks are unequal in amplitude, padder (44A) must be adjusted in the direction necessary to make both peaks equal. This is done by slightly turning padder and then turning signal generator above and below 4.3 to observe peaks. After equal peak readings are obtained, set the signal generator to 4.3 MC. The output meter should show zero reading at 4.3 MC. If a signal indication is observed

readjust padder (44C) until zero reading is obtained on the meter. After this adjustment is made padder No. 44A should be reset for equal peaks as given above.

**NOTE F.—**Adjust padders 31A, 31B, 23C, and 23D for equal signal peaks and equal frequency spacing each side of 4.3 MC.

**NOTE G.—**The dial scale numbers are listed in tenths of megacycles; less the first "digit"; i.e., 49 MC is 90, 48.5 is 85. Set the tuning dial pointer to 90 on the F. M. scale. Adjust padder (15) to the point where minimum signal indication is observed on the output meter.

**NOTE H.—**In order to adjust padder (15C) the signal generator should be set to either the signal peak approximately 125 KC below 49 MC (48.75 MC), or 125 KC above 49 MC (49.125 MC). Adjust padder (15C) to maximum output reading on either of these peak signals. Padder 15C is being adjusted roll the tuning condenser as given in Note B.

SEE INDEX FOR CHANGES

PHILCO RADIO & TELEVISION CORP. MODELS 42-355, 42-390

Frequency Tuning Ranges: 540 to 1720 KC.; 9 to 15 MC. and 42 to 50 MC (F. M.).

I.F. = 455 KC.  
F.M. = 4.3 MC.

41

XXFM

7V7

7V7

XXL

7V7

7V7

XXL

FOR CHANGES  
SEE INDEX

Audio Output: 3 watts.

6X5G

TOP VIEW OF CHASSIS SHOWING LOCATION OF COMPENSATORS.

NUMERICAL LETTERS ON SWITCH CONTACTS CORRESPOND TO NUMBERS & LETTERS ON CONTACTS FOR EACH SUBSTATION SHOWN IN SCHEMATIC DIAGRAM.

ALL PUSHBUTTONS SHOWN IN OUT POSITION.

- \* No. 9 - 230 mHf. MODEL 42-365.
- \* No. 9 - 190 mHf. MODEL 42-390.
- \* No. 11 - 200 mHf. MODEL 42-355.
- \* No. 11 - 185 mHf. MODEL 42-390.

**Power Supply:** 115 volts, 60 cycles A. C.  
 This model can also be operated on 25-cycle current. To do this it is necessary to replace the power transformer as indicated in the parts list for 25-cycle operation. **FIG. 1**—SCHEMATIC DIAGRAM—Models 42-355, 42-390

**Power Consumption:** 70 watts.  
**Intermediate Frequency:** Standard Tuning, 455 KC; F. M. Channel, 4.3 MC.  
**The D. C. voltages indicated at the tube elements in the above diagram were measured with a 1000 ohms per voltmeter. Philco Model 027. Line voltage 117 volts A. C. No signal being received—range switch broadcast.**

MODELS 42-355, 42-390

PHILCO RADIO & TELEVISION CORP.

REPLACEMENT PARTS—Models 42-355, 42-390

Sch. No.	Description	Part No.	Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	F. M. Loop Aerial (Model 42-355)	76-1384	24C.	Push-button Compensator (No. 4 Button) (Part of 24)	63.	Resistor (2.2 megohms)	33-522339	
	F. M. Loop Aerial (Model 42-390)	76-1346	24D.	Push-button Compensator (No. 5 Button) (Part of 24)	64.	Tone Control (Bass)	33-5480	
	Socket (on Chassis-F. M. Loop Aerial)	27-6181	25.	Push-button Oscillator oil (No. 1 P. B.)	65.	Mica Condenser (100 mmfd)	W-2157	
	Mtg. Rivet	W-207	25A.	Push-button Oscillator Coil (No. 2 P. B.)	66.	Condenser (.01 mfd, 400 volts)	60-110157	
3.	Terminal Panel (on Chassis, Loop Aerial)	38-9870	25B.	Push-button Oscillator Coil (No. 3 P. B.)	67.	Condenser (.006 mmfd)	30-4572	
	Mtg. Rivet	W-207	25C.	Push-button Oscillator oil (No. 4 P. B.)	68.	Resistor (68,000 ohms)	30-4591	
4.	Loop Aerial (Brdcst.—S. W.) (Model 42-355)	76-1306	25D.	Push-button Oscillator Coil (No. 5 P. B.)	69.	Resistor (68,000 ohms)	33-368339	
	Mtg. Screw	W-2071	26.	Push-button Switch	70.	Mica Condenser (100 mmfd)	60-110157	
	Loop Aerial (Brdcst.—S. W.) (Model 42-390)	76-1307	26A.	Push-button Power Switch (Part of 26)	71.	Volume Control	33-5477	
	Mtg. Sleeve	28-3806	27.	Mtg. Grommet	72.	Mtg. Nut	W-2157	
	Mtg. Sleeve	56-1845	28.	Mica Condenser (250 mmfd)	73.	Condenser (.05 mfd, 200 volts)	30-4519	
	Spring Washer	28-4186	29.	Resistor (2.2 megohms)	74.	Resistor (10 megohms)	33-610339	
	Screw	W-288	30.	Resistor (2700 ohms)	75.	Condenser (150 mmfd)	60-115137	
	Washer	W-425	31.	Condenser (.05 mfd, 400 volts)	76.	Resistor (470,000 ohms)	33-447339	
	Washer	W-648	32.	Condenser (.05 mfd, 400 volts)	77.	Tone Control (Treble)	30-4572	
5.	Aerial Transformer (Broadcast Band) (Model 42-355)	32-3811	33A.	1st I. F. Transformer	78.	Condenser (.01 mfd, 400 volts)	30-4572	
	Aerial Transformer (Broadcast Band) (Model 42-390)	32-3790	33B.	Primary Compensator (455 KC) (Part of 33)	79.	Condenser (100 mmfd)	60-110157	
	Mtg. Clip	28-5002	33C.	Secondary Compensator (455 KC) (Part of 33)	80.	Condenser (.01 mfd, 400 volts)	30-4572	
6.	Compensator (Broadcast Aerial)	31-6443	33D.	Primary Compensator (F. M. 4.3 MC) (Part of 33)	81.	Resistor (220,000 ohms)	33-422339	
6A.	Compensator (S. W. Aerial)	31-6443	33E.	Secondary Compensator (F. M. 4.3 MC) (Part of 33)	82.	Resistor (1 megohm)	33-510339	
6B.	Compensator (F. M. Aerial)	31-6443	34.	Resistor (4700 ohms)	83.	Resistor (470,000 ohms)	33-447339	
	(Part of 6)		35.	Resistor (.05 mfd, 200 volts)	84.	Condenser (.01 mfd, 400 volts)	30-4572	
6C.	Compensator (F. M. Oscillator)	31-6443	36.	Resistor (100 ohms)	85.	Resistor (3900 ohms)	33-239339	
	(Part of 6)		37.	Resistor (68 ohms)	86.	Condenser (.001 mfd)	30-4601	
6D.	Compensator (S. W. Oscillator)	31-6443	38.	Condenser (.05 mfd, 200 volts)	87.	Output Transformer	22-8120	
	(Part of 6)		39.	Resistor (100,000 ohms)	88.	Speaker (Model 42-355)	36-1519	
6E.	Compensator (Broadcast—Series)	31-6443	40.	Resistor (12,000 ohms)	89.	Speaker (Model 42-390)	36-1552-4	
	(Part of 6)		41.	Condenser (.05 mfd, 400 volts)	90.	Cable (Model 42-355)	41-3541	
6F.	Compensator (Broadcast—Oscillator)	31-6443	42.	Condenser (.01 mfd, 400 volts)	91.	Mtg. Washer	27-7427	
	(Part of 6)		43A.	2nd I. F. Transformer	92.	Mtg. Nut	W-124	
7.	Aerial and Oscillator Transformer (F. M.)	32-3792	43B.	Primary Compensator (F. M. 4.3 MC)		Cone Assembly (For Speaker 36-1519-2)	36-4202	
	Mtg. Clip	28-5002	43C.	Secondary Compensator (F. M. 4.3 MC)		Cone Assembly (For Speaker 36-1519-3)	36-4166	
8.	Tuning Condenser (two sections—Standard & F. M.)	31-2592	43D.	Resistor (47,000 ohms) (Part of 43)		Cone Assembly (For Speaker 36-1519-4)	36-4172	
	Drive Cord (Pointer)	31-2576	44.	Mtg. Nut (I. F. Trans.)		Cone Assembly (For Speaker 36-1552-4)	36-4212	
	Spring (Pointer Drive)	28-8953	45.	Resistor (3300 ohms)		Field Coil (Replace Speaker)		
	Drive Cord (Tuning Cond.)	31-2577	46.	Resistor (150 ohms)		Bias Resistor (12-175 ohms)	33-3416	
	Spring (Drive Cord)	28-8751	47.	Condenser (.05 mfd, 200 volts)		Electrolytic Condenser (18 mfd) Clamp	30-2517	
	Drive Drum (Tuning Cond.)	76-1293	48.	Resistor (2.2 megohms)		Power Transformer (115 volts, 60 cycle) (Model 42-355)	56-1848	
	Mtg. Grommet	27-4596	49.	Resistor (2.2 megohms)		Power Transformer (115 volts, 60 cycle) (Model 42-390)	32-8187	
	Mtg. Sleeve	56-1505	50.	Electrolytic Condenser (8-8 mfd)		Shield	56-1538	
	Mtg. Screw	W-2002	51.	Resistor (4700 ohms)		Mtg. Screw	W-1974	
	Tuning Shaft	56-6152	52.	Resistor (2.2 megohms)		Power Line Filter Condenser (.01 mfd)	3903-ODG	
	"C" Washer (Mtg. Shaft)	28-2043	53.	Resistor (150 ohms)		Pilot Lamps	34-2064	
9.	Silver Mica Condenser (230 mmfd) (Model 42-355)	30-1214	54.	Condenser (.01 mfd, 400 volts)		Mtg. Clip	57-1404	
	Silver Mica Condenser (190 mmfd) (Model 42-390)	20-019017	55A.	3rd I. F. Transformer		Socket Assembly (Dial Lights)	76-1295	
10.	Condenser (Wire and Lug)	20-019017	55B.	Primary Compensator (455 KC) (Part of 55)		Miscellaneous Parts		
11.	Silver Mica Condenser (200 mmfd) (Model 42-355)	30-1213	55C.	Secondary Compensator (F. M. 4.3 MC) (Part of 55)		Bezel (Cabinet)	54-4099	
	Silver Mica Condenser (185 mmfd) (Model 42-390)	20-018511	55D.	Condenser (125 mmfd) (Part of 55)		Mtg. Screw	W-2071	
12.	Resistor (10,000 ohms)	33-310339	56.	Mtg. Nut (I. F. Mtg.)		Cabinet (Model 42-355)	10686A	
13.	Mica Condenser (250 mmfd)	60-125257	57.	Mica Condenser (500 mmfd)		Cabinet (Model 42-390)	10678A	
14.	Silver Mica Condenser (370 mmfd)	30-1110	58.	Resistor (1 mfd, 200 volts)		Cord (Power)	L-3199	
15.	Resistor (10,000 ohms)	33-310339	59.	Resistor (470,000 ohms)		Dial	27-5763	
16.	Resistor (22,000 ohms)	33-322339	60.	Resistor (1 megohm)		Background Plate	27-9903	
17.	Silver Mica Condenser (370 mmfd)	30-1110	61.	Mica Condenser (150 mmfd)		Rubber Corner (Dial Mtg.)	54-4015	
18.	Mica Condenser (500 mmfd)	60-150157	62.	Condenser (.01 mfd, 400 volts)		Spring (Background Plate)	28-8908	
19.	Resistor (10 ohms)	33-010339				Mtg. Clamp (Dial)	56-1517	
20.	Resistor (47,000 ohms)	33-347339				Mtg. Screw	W-1974	
	Mtg. Clip	28-5002				Pointer	56-2331	
21.	S. W. Oscillator Transformer (Model 42-355)	32-3812				Knob (Push-Buttons)	54-4111	
	S. W. Oscillator Transformer (Model 42-390)	32-3793				Spring (P. B. Knobs)	76-1294	
	Mtg. Clip	28-5002				Knob (Tuning, Volume, Tone)	54-4106	
22.	Broadcast Oscillator Transformer	32-3791				Rubber Grommet (Chassis Mtg.)	27-4571	
	Mtg. Clip	28-5002				Screw (Chassis Mtg.)	W-1345	
23.	Resistor (56 ohms)	33-056339				Socket (41 tube)	27-6168	
24.	Push-button Compensator (No. 1 Button)	31-6439				Socket (6 x 5 G)	27-6174	
24A.	Push-button Compensator (No. 2 Button) (Part of 24)	31-6439				Socket (Loktal Tubes)	27-6177	
24B.	Push-button Compensator (No. 3 Button) (Part of 24)	31-6439				Socket (Single Prong-F. M. Test)	27-6180	

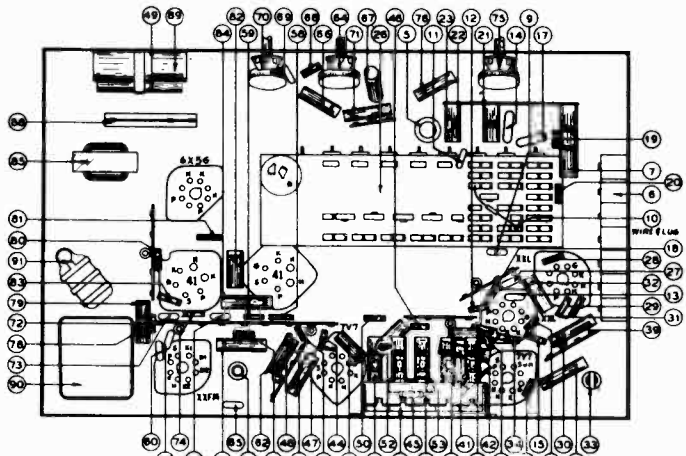


FIG. 2—PART LOCATIONS, UNDERSIDE OF CHASSIS

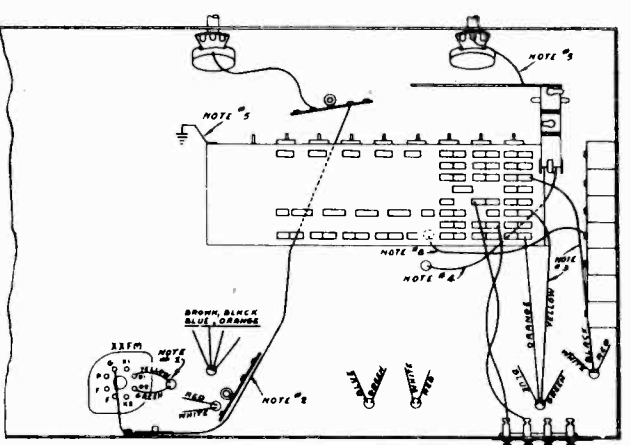


FIG. 3—CRITICAL WIRING LOCATIONS, F. M. ALIGNING

PHILCO RADIO & TELEVISION CORP.

MODELS 42-355, 42-390

ELECTRIC PUSH-BUTTON TUNING ADJUSTMENTS

The automatic tuning mechanism consists of nine (9) push-buttons. Five of the push-buttons are used for selecting standard broadcast stations, one for the power control (ON-OFF); and three for selecting standard tuning, shortwave and F. M. (Frequency Modulation).

Viewing the front of the cabinet from left to right the first push-button is the power control (ON-OFF), the next five push-buttons for tuning standard broadcast stations, and the seventh, eighth and ninth for selecting the tuning ranges—standard, shortwave and F. M., respectively.

When setting up stations on the push-buttons the lowest frequency station is set up in the second push-button from the left and the remaining stations according to increasing frequency in the next four push-buttons. These push-buttons are adjusted by the padders located on the rear of the chassis. The second push-button from the left can also be adjusted for reception of the sound channel of a television program received by special Philco television radios. This push-button may also be used in conjunction with a Philco Wireless Record Player.

The frequency ranges covered by the station tuning push-buttons and procedure for adjusting is as follows:

Padders right to left from rear	Circuit	Buttons left to right from front	Frequency Range
		1	ON-OFF
1	{ Ant. Osc. }	2	540 to 1000 KC
2	{ Ant. Osc. }	3	600 to 1200 KC
3	{ Ant. Osc. }	4	650 to 1300 KC
4	{ Ant. Osc. }	5	850 to 1500 KC
5	{ Ant. Osc. }	6	900 to 1600 KC
		7	Standard Band
		8	Shortwave Band
		9	Frequency Modulation

STANDARD AND S. W. BANDS ALIGNING PROCEDURE

Operations In Order	SIGNAL GENERATOR			RECEIVER		Adjust Compensators In Order	Special Instructions
	Output Connections	Dial Setting	Dial Setting	Control Settings			
1	High side to No. 4 terminal loop panel	455 KC	580 KC	Vol. max. push-button Bdcst. "IN"		55A, 43C, 33B, 33A	
2	Use loop on generator	1500 KC	1500 KC	"		6E, 6	Note A
3	Use loop on generator	580 KC	580 KC	"		6F	Roll Tuning Condensers Note B
4	Use loop on generator	Readjust as given in Operation 2					
5	Use loop on generator	15 MC	15 MC	Push-button S. W. "IN"		6D, 6A	Note C

FREQUENCY MODULATION ALIGNING PROCEDURE

Note: The Frequency Modulation Circuits Must Be Adjusted With the Dipole Aerial Connected.

CRITICAL WIRING LOCATIONS

The following items on these sets are critical for location and position. See Fig. 3 for locations of wires and parts.

- Green lead and yellow lead from third I. F. coil must be short, direct, and symmetrically spaced from sub-base. Adding capacity to the green lead will narrow the discriminator curve, while adding capacity to the yellow lead will widen the discriminator curve.
- The XXFM grid lead must be dressed away from the discriminator coil wiring in 42-355 and 42-390 with the lug provided for that purpose. Failure to do this will result in distortion at low volume control settings.
- The black lead of the 1st I. F. coil must be dressed along the sub-base and away from the yellow and orange leads of the same coil. Proximity of these leads may result in decreased sensitivity at certain points of the broadcast band

because of oscillator harmonics feeding through the 4.3 MC I. F. channel to build up A. V. C. voltage.

- The blue and white and the white leads from the loop terminal panel must have one complete twist. This is necessary to maintain the proper inductance for shortwave operation, and to prevent loose S. W. antenna padding.
- Grounding must be maintained at all original points. Any change in grounding of the R. F. wiring will cause serious mistracking of the F. M. band.
- The brass indicator tabs must not be allowed to touch the sub-base. Any accidental connection from the push-button shafts to ground will cause misalignment of the F. M. band.
- All I. F. coil wires must be brought out of the designated sub-base holes and kept free from wires coming out other holes. This is necessary to maintain the proper 4.3 MC I. F. curves.
- The leads from the small gang sections are part of the F. M. tuned circuits and must be maintained to specified lengths for proper F. M. tracking.

F. M. BAND ALIGNING PROCEDURE

Operations In Order	SIGNAL GENERATOR			RECEIVER		Adjust Compensators In Order	Special Instructions
	Output Connections	Dial Setting	Dial Setting	Control Settings			
1	2nd I. F. F. M. input connection	4.3 MC	580 KC	Vol. max. F. M. push-button "IN"		55C (Note D) 55B (Note E)	
2	1st I. F. F. M. input connection	4.3 MC	580 KC	F. M. push-button "IN"		43A, 43B (Note F)	
3	High side to No. 1 contact, F. M. socket. Ground to No. 2 contact	4.3 MC	580 KC	F. M. push-button "IN"		33C, 33D (Note F)	
4	Use test loop on generator; place near dipole aerial	49 MC	90 (Note G)	F. M. push-button "IN"		6C (Note G) 6B (Note H)	Roll tuning condenser when adjusting 6B. See Note B
5	"	49 MC	90	F. M. push-button "IN"		6C oscillator	

NOTE A.—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale.

NOTE B.—When adjusting the low frequency compensator of the broadcast or the aerial padders of the high frequency tuning range, the receiver tuning condenser must be adjusted (rolled) as follows: First, tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

NOTE C.—Adjust compensator (6D) to the second signal peak from the closed position (maximum ca-

capacity). The aerial compensator (6A) must also be adjusted to maximum on the first signal peak by rolling the tuning condenser. (See Note B.)

NOTE D.—With the signal generator set to 4.3 MC, padder (55C) is adjusted to the point where minimum signal indication is observed on the output meter.

NOTE E.—Turn the signal generator first to approximately 125 KC below 4.3 MC (4.17 MC) and then 125 KC above 4.3 MC (4.42 MC). A signal peak should be observed on the output meter at approximately each of these points (4.17 and 4.42). The two peak signals should be of equal reading on the output meter and equally spaced in frequency each side of 4.3 MC. If the peaks are unequal in amplitude, padder (55B) must be adjusted in the direction necessary to make both peaks equal. This is done by slightly turning padder and then turning signal generator above and below 4.3 to observe peaks. After equal peak readings are obtained, set the signal generator to 4.3 MC. The output meter should show zero reading at

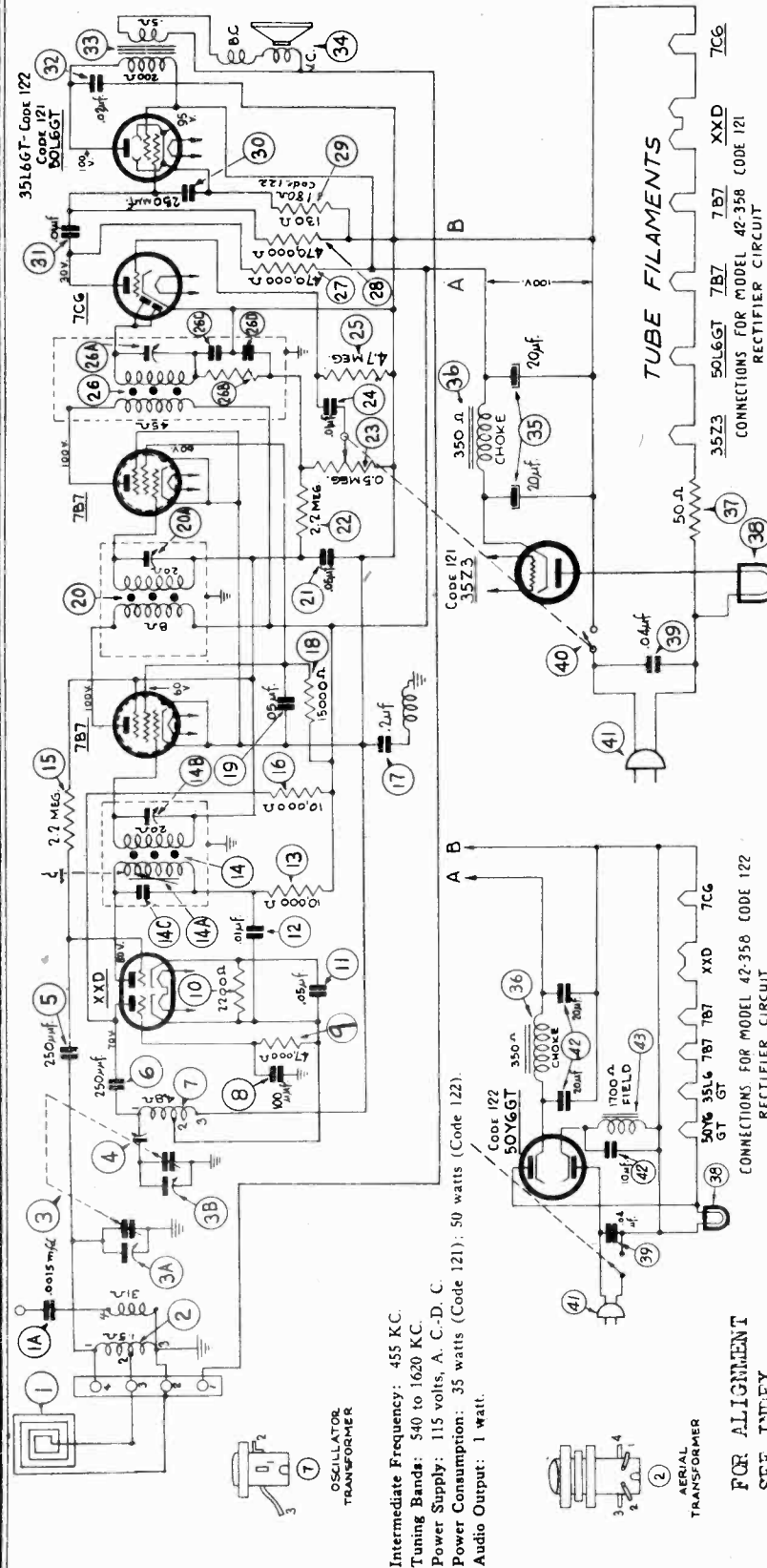
4.3 MC. If a signal indication is observed readjust padder (55C) until zero reading is obtained on the meter. After this adjustment is made padder No. 55B should be reset for equal peaks as given above.

NOTE F.—Adjust padders 43A, 43B, 33C, and 33D for equal signal peaks and equal frequency spacing each side of 4.3 MC.

NOTE G.—The dial scale numbers are listed in cents of megacycles less the first digit: i. e., 49 MC is 90, 48.5 is 85. Set the tuning dial pointer to 90 on the F. M. scale. Adjust padder (6C) to the point where minimum signal indication is observed on the output meter.

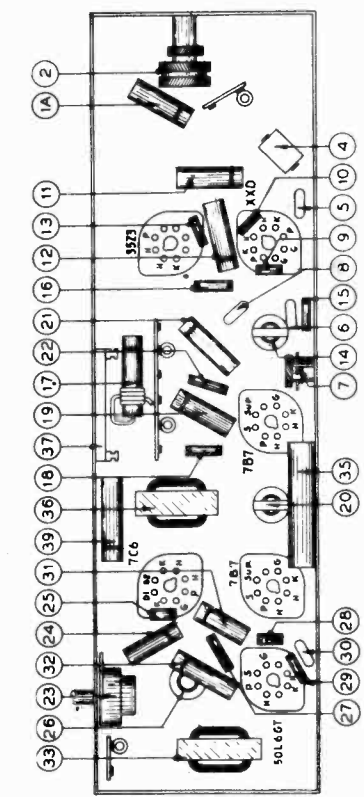
NOTE H.—In order to adjust padder (6B) the signal generator should be set to either the signal peak approximately 125 KC below 49 MC (48.875 MC), or 125 KC above 49 MC (49.125 MC). Adjust padder (6B) to maximum output reading on either of these peak signals. As padder 6B is being adjusted roll the tuning condenser as given in Note B.

MODEL 42-358(121,122) PHILCO RADIO & TELEVISION CORP.



Intermediate Frequency: 455 KC.  
 Tuning Bands: 540 to 1620 KC.  
 Power Supply: 115 volts, A. C.-D. C.  
 Power Consumption: 35 watts (Code 121); 50 watts (Code 122).  
 Audio Output: 1 watt.

FOR ALIGNMENT  
 SEE INDEX

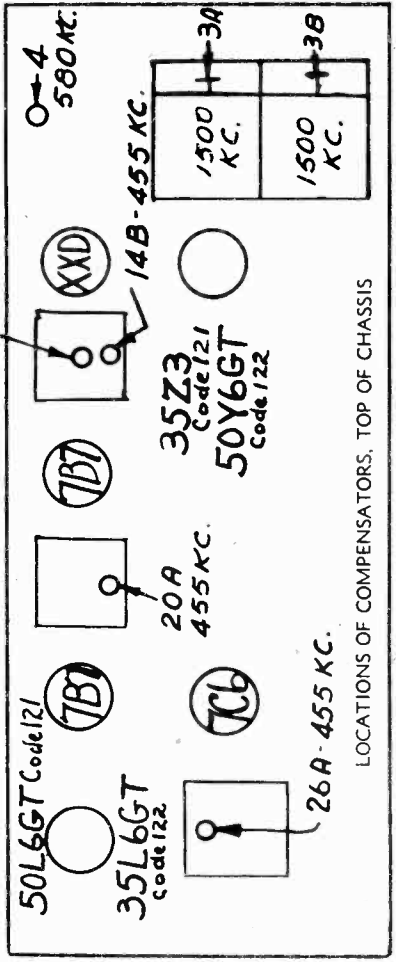


LOCATIONS OF PARTS—UNDER CHASSIS  
 Model 42-358

In general, the features of Code 121 and Code 122 chassis are similar with the exception of the output tubes, rectifier tubes, rectifier circuit and speaker. Code 121 chassis incorporates a 50L6GT, output tube; 35Z3, rectifier tube and permanent magnet dynamic speaker. Code 122 chassis consists of a 35L6GT, output tube; 50Y6GT, rectifier tube and dynamic speaker with a field coil. The circuit differences are indicated on the schematic diagram and parts list.

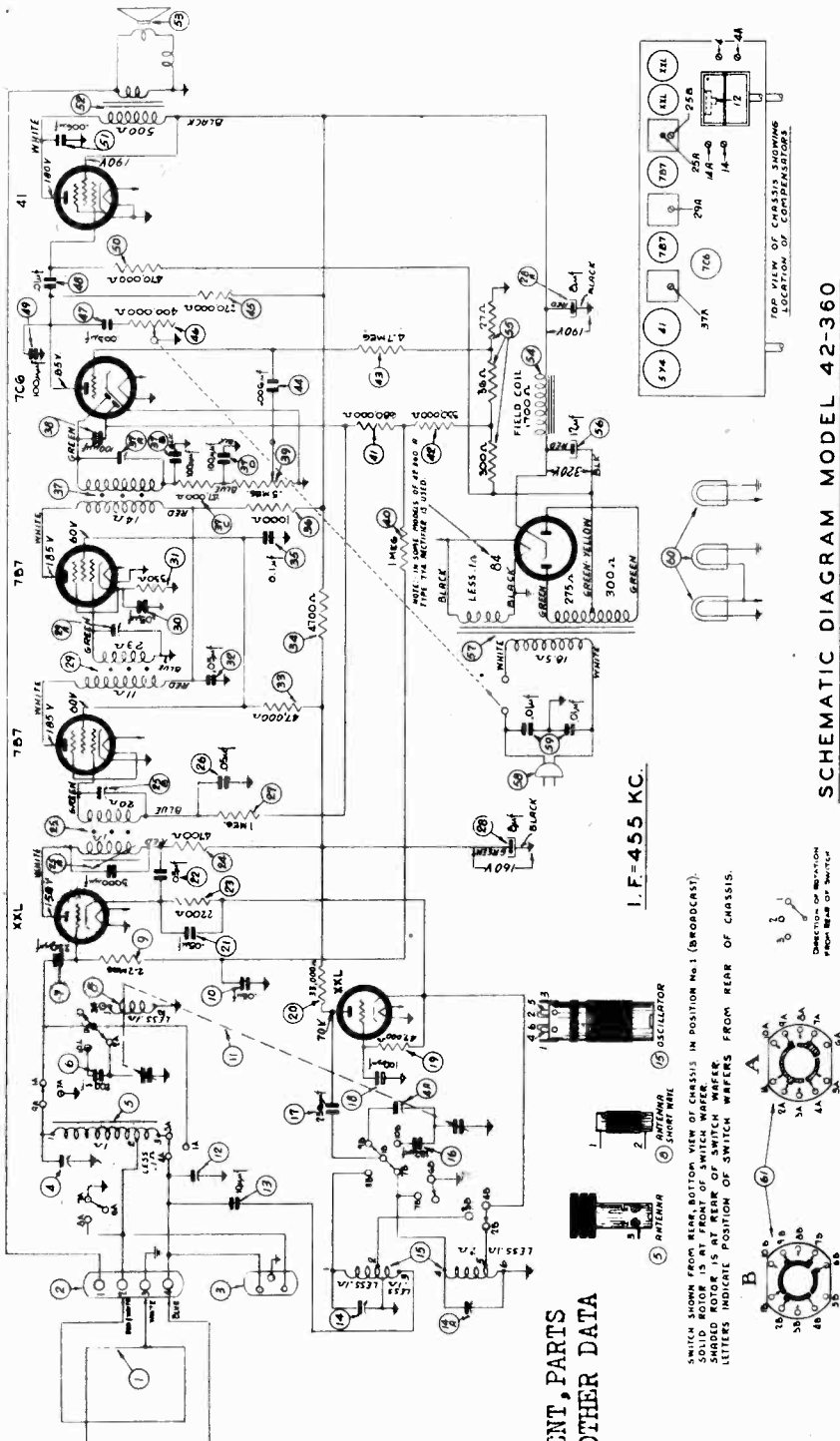
TUBE FILAMENTS  
 35Z3 50L6GT 7B7 7B7 XXD 7C6  
 CONNECTIONS FOR MODEL 42-358 CODE 121  
 RECTIFIER CIRCUIT

The voltages indicated at the tube elements in the above diagram were measured with a 1000 ohms per volt voltmeter. Philco Model 027, line voltage 117 volts, A. C. band switch (broadcast), no station being received.



LOCATIONS OF COMPENSATORS, TOP OF CHASSIS

PHILCO RADIO & TELEVISION CORP.



SCHEMATIC DIAGRAM MODEL 42-360

The D. C. voltages indicated at the tube elements in the above diagram were measured with a 1000 ohms per volt voltmeter. Philco Model 027. Line voltage, 117 volts A. C. No signal being received—range switch broadcast.

Power Supply: 115 volts, 60 cycles A. C.

This model can also be operated on 115 volts, 25 cycle A. C. by changing the power transformer as indicated in the parts list.

MODEL 42-360, CODE 121

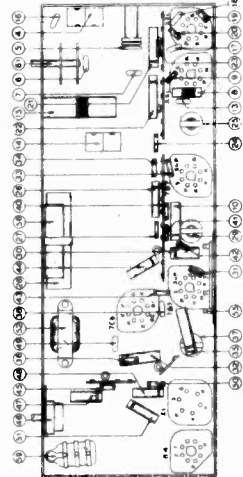
**Circuit Description:** Model 42-360, Code 121, is a seven (7) tube superheterodyne radio with two tuning bands covering Standard, Police and Shortwave broadcast stations and operates on alternating current (A. C.). In addition, this model incorporates a Philco low impedance loop aerial which is built into the cabinet; provisions for an external aerial; Philco LOKTAL tubes, including the XXL noise reducing converter tube; two intermediate frequency stages; continuously variable tone control; automatic volume control; pentode audio output stage and a 10-inch dynamic speaker.

**Intermediate Frequency:** 455 KC.  
**Tuning Band Frequencies:** 540 to 1720 KC; 9 to 15.5 MC.  
**Audio Output:** 2 watts.

FOR ALIGNMENT, PARTS LIST, AND OTHER DATA SEE INDEX

I. F. = 455 KC.

SWITCH SHOWN FROM REAR, BOTTOM VIEW OF CHASSIS IN POSITION NO. 1 (BROADCAST). SHADDED RODS AT REAR OF SWITCH WAFERS. LETTERS INDICATE POSITION OF SWITCH WAFERS FROM REAR OF CHASSIS.



PART LOCATIONS, UNDERSIDE OF CHASSIS. MODEL 42-360



MODEL 42-360  
MODEL 42-365

PHILCO RADIO & TELEV. CORP.

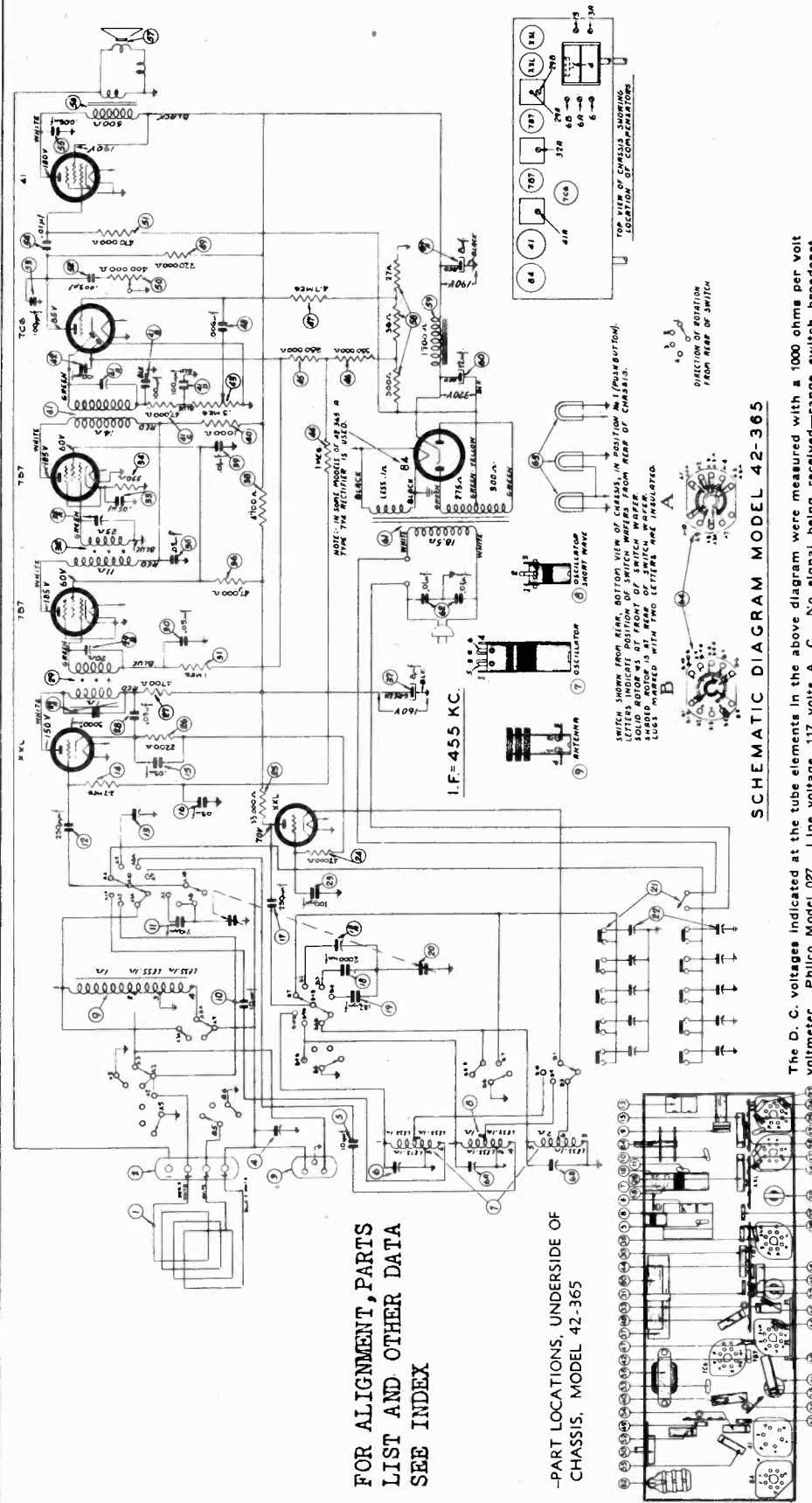
REPLACEMENT PARTS—Model 42-360

Sch. No.	Description	Part No.	Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	Loop Aerial	76-1271	25B.	Secondary Compensator (Part of 25)		57.	Power Transformer (115 volts, 60 cycle)	32-8117
	Spring Washer	28-4188		Mtg. Nut	W-1949		Power Transformer (115 volts, 25 cycle)	L-3199
	Sleeve	28-3806	36.	Condenser (.05 mfd, 200 volts)	30-4519	58.	Filter Condenser (Power Line)	3903-DG
	Sleeve	56-1545	27.	Resistor (1 megohm)	33-510339	59.	Pilot Lamps (Dial)	34-2064
	Screw (Loop Mtg.)	W-288	28.	Electrolytic Condenser (8-8 mfd, 400 volts)	30-2476	60.	Pilot Lamps (Indicator)	34-2068
	Washer (3 required)	W-425	29.	2nd I. F. Transformer	32-3639		Socket Assembly (Pilot Lamp Dial)	76-1316
	Washer (1 required)	W-648	29A.	Secondary Compensator (Part of 29)			Socket Assembly (Indicator Pilot Lamp)	76-1078
2.	Terminal Panel	38-9870		Mtg. Nut	W-1949	61.	Band Switch	42-1673
3.	External Aerial Socket	27-6145		Condenser (.05 mfd, 200 volts)	30-4519		Mtg. Nut	W-2157
	Mtg. Rivet	W-207	30.	Resistor (330 ohms)	33-133336	Miscellaneous Parts		
4.	Compensator (Broadcast Aerial)	31-6365	31.	Resistor (330 ohms)	33-133336			
4A.	Compensator (Oscillator—Brdcat.—580KC) (Part of 4)		32.	Condenser (.05 mfd, 400 volts)	30-4518	Mtg. Screw	W-2071	
	Mtg. Rivet	W-239	33.	Resistor (47,000 ohms)	33-347339	Cabinet	10543-C	
5.	Aerial Transformer (Brdcat. Band)	32-3726	34.	Resistor (4700 ohms)	33-247339	Dial	27-5744	
	Mtg. Clip	28-5002	35.	Condenser (.1 mfd, 400 volts)	30-4527	Pointer	56-1856	
6.	Mica Condenser (200 mmfd)	30-1205	36.	Resistor (1000 ohms)	33-210339	Spring Fastener	56-6127	
7.	Mica Condenser (250 mmfd)	60-125157	37.	3rd I. F. Transformer	32-3640	Knob	54-4105	
8.	Aerial Transformer (S. W. Band)	32-3756	37A.	Secondary Compensator (Part of 37)		Indicator Arm and Link Assembly	54-4105	
	Mtg. Clip	28-5002	37B.	Condenser (100 mmfd) (Part of 37)		Rubber Corners (Chassis)	54-4015	
9.	Resistor (2.2 megohms)	33-522339	37C.	Resistor (47,000 ohms) (Part of 37)		Rubber Grommet (Chassis Mtg.)	27-4571	
10.	Condenser (.05 mfd, 200 volts)	30-4519	37D.	Condenser (100 mmfd) (Part of 37)		Screw (Chassis Mtg.)	W-1345	
11.	Tuning Condenser	31-2481		Mtg. Nut	W-1949	Socket (5 prong)	27-6158	
	Tuning Shaft	56-6141	38.	Condenser (100 mmfd)	60-110157	Socket (LOKTAL TUBES)	27-6177	
	"C" Washer	28-2043	39.	Mtg. Nut	W-2157	Mtg. Rivet	W-239	
	Drive Drum	38-9883	39.	Volume Control	33-5451	Washer (Chassis Mtg.)	28-5114	
	Drive Cord (Pointer)	31-2597	Mtg. Nut		W-2157			
	Drive Cord (Tuning Cond.)	31-2400	40.	Resistor (1 megohm)	33-510339			
	Insulating Bushing	27-9437	41.	Resistor (680,000 ohms)	33-468339			
	Rubber Connector	27-9432	42.	Resistor (330,000 ohms)	33-433339			
	Mtg. Grommet	27-4596	43.	Resistor (4.7 megohms)	33-547339			
	Mtg. Sleeve	28-3806	44.	Condenser (.006 mfd, 400 volts)	30-4591			
	Spring (Cond. Drive Cord)	28-8751	45.	Resistor (220,000 ohms)	33-422339			
	Spring (Pointer Drive Cord)	28-8953	46.	Tone Control	33-5450			
	Screw (Mtg. Cond.)	W-2002	Mtg. Nut	W-2157				
12.	Compensator (S. W. Aerial)	31-6384	47.	Condenser (.003 mfd, 600 volts)	30-4582			
13.	Mica Condenser (10 mmfd)	60-010337	48.	Condenser (.01 mfd, 400 volts)	30-4572			
14.	Compensator (Oscillator—S. W.)	31-6364	49.	Mica Condenser (100 mmfd)	60-110157			
14A.	Compensator (Oscillator—Broadcast) (Part of 14)		50.	Resistor (470,000 ohms)	33-447339			
	Mtg. Rivet	W-239	51.	Condenser (.006 mfd, 400 volts)	30-4591			
15.	Oscillator Transformer	32-3727	52.	Output Transformer	32-8116			
	Mtg. Clip	28-5003	53.	Speaker	36-1513-3 or 36-1513-4			
16.	Mica Condenser (182 mmfd)	30-1208		Cone Assembly (For Speaker 36-1513-3)	36-4164			
17.	Mica Condenser (250 mmfd)	60-125157		Cone Assembly (For Speaker 36-1513-4)	36-4169			
18.	Mica Condenser (100 mmfd)	60-110157		Cable (Speaker)	41-3541			
19.	Resistor (47,000 ohms)	33-347339		Mtg. Nut (Speaker)	W-124			
20.	Resistor (33,000 ohms)	33-333339	54.	Field Coil (Replace Speaker)				
21.	Condenser (.05 mfd, 200 volts)	30-4519	55.	Blas Resistor (27-36-300 ohms)	33-3392			
22.	Condenser (.05 mfd, 400 volts)	30-4518	56.	Electrolytic Condenser (12 mfd, 400 volts)	30-2471			
23.	Resistor (2200 ohms)	33-222339						
24.	Resistor (4700 ohms)	33-247339						
25.	1st I. F. Transformer	32-3465						
25A.	Primary Compensator (Part of 25)	W-1949						

REPLACEMENT PARTS—Model 42-365

Sch. No.	Description	Part No.	Sch. No.	Description	Part No.	Sch. No.	Description	Part No.
1.	Loop Aerial	76-1305	29A.	Primary Compensator (Part of 29)		61.	Power Transformer (115 volts, 60 cycles)	32-8117
	Sleeve (Mtg. Loop)	28-3806	29B.	Secondary Compensator (Part of 29)			Power Transformer (115 volts, 25 cycles)	L-3199
	Sleeve (Mtg. Loop)	56-1545	30.	Condenser (.05 mfd, 200 volts)	30-4519	62.	Power Line Filter Condenser	3903-DG
	Spring Washer	28-4188	31.	Resistor (1 megohm)	33-510339	63.	Pilot Lamp (Dial)	34-2064
	Screw (Loop Mtg.)	W-288	32.	2nd I. F. Transformer	32-3639		Pilot Lamp (Indicator)	34-2068
	Washer (Loop Mtg.)	W-425		Mtg. Nut	W-1949		Socket Assembly (Dial Light)	76-1316
2.	Terminal Panel (Loop Aerial)	38-9870	32A.	Secondary Compensator (Part of 32)			Socket Assembly (Indicator)	76-1078
3.	External Aerial Socket	27-6145	33.	Condenser (.05 mfd, 200 volts)	30-4519		Light Shield	56-2194
	Mtg. Rivet	W-207	34.	Resistor (330 ohms)	33-133336		Band Switch	42-1683
4.	Compensator (S. W. Aerial)	31-6384	35.	Condenser (.05 mfd, 400 volts)	30-4518		Mtg. Nut	W-2157
5.	Mica Condenser (10 mmfd)	60-010337	36.	Resistor (47,000 ohms)	33-347339	Miscellaneous Parts		
6.	Compensator (Oscillator—S. W.)	31-6374	37.	Electrolytic Condenser (8-8 mfd) (Part of 37)	30-2476			
6B.	Compensator (Oscillator—Broadcast) (Part of 6)		37A.	Secondary Compensator (Part of 37)		Cabinet	10563A	
	Mtg. Rivet	W-239		Mtg. Clamp	56-1452	Dial	27-5751	
7.	Oscillator Transformer (Broadcast—S. W.)	32-3756	38.	Resistor (4700 ohms)	33-247339	Pointer	56-1856	
	Mtg. Clip	28-5003	39.	Condenser (.01 mfd, 400 volts)	30-4572	E-cutecheon (Push-Button)	56-2233	
8.	Oscillator Transformer (Police)	32-3757	40.	Resistor (1000 ohms)	33-210339	Mtg. Screw	W-2071	
	Mtg. Clip	28-5002	41.	3rd I. F. Transformer	32-3640	Knob (Tuning, Volume, Tone)	54-4105	
9.	Aerial Transformer	32-3755		Mtg. Nut	W-1949	Knob (Push-Button)	54-4106	
	Mtg. Clip	28-5002	41A.	Secondary Compensator (Part of 41)		Indicator Arm and Link Assembly	76-1272	
10.	Mica Condenser (10 mmfd)	60-010337	41B.	Condenser (100 mmfd) (Part of 41)		Rubber Corner (Chassis)	54-4015	
11.	Silver Mica Condenser (210 mmfd)	30-1210	41C.	Resistor (47,000 ohms) (Part of 41)	33-347339	Rubber Grommet (Chassis Mtg.)	27-4571	
12.	Mica Condenser (250 mmfd)	60-125157	41D.	Condenser (100 mmfd) (Part of 41)		Screw (Chassis Mtg.)	W-1345	
13.	Compensator (Aerial—Broadcast)	31-6401	42.	Mica Condenser (100 mmfd)	60-110157	Socket (5 prong)	27-6158	
13A.	Compensator (Oscillator—580 KC) (Part of 14)		43.	Volume Control	33-5451	Socket (8 prong)	27-6168	
14.	Resistor (2.2 megohms)	33-522339	44.	Mtg. Nut	W-2157	Socket Assembly (Indicator)	76-1272	
15.	Condenser (.05 mfd, 200 volts)	30-4519	45.	Resistor (1 megohm)	33-510339	Light Shield	56-2194	
16.	Condenser (.05 mfd, 400 volts)	30-4518	46.	Resistor (680,000 ohms)	33-468339	Band Switch	42-1683	
17.	Mica Condenser (250 mmfd)	60-125157	47.	Resistor (330,000 ohms)	33-433339	Mtg. Rivets	W-229	
18.	Mica Condenser (2000 mmfd)	60-220324	48.	Resistor (4.7 megohms)	33-547339	Tab Kit 8	40-8660	
19.	Mica Condenser (182 mmfd)	30-1208	49.	Condenser (.006 mfd, 400 volts)	30-4591	Tab (Off-On)	27-5738	
20.	Tuning Condenser	31-2597	50.	Resistor (220,000 ohms)	33-422339	Tab Cover	27-5737	
	Drive Drum	38-9883	51.	Tone Control	33-5450	Washer	28-5114	
	Drive Cord (Pointer)	31-2597	Mtg. Nut	W-2157				
	Drive Cord (Tuning Cond.)	31-2400	52.	Resistor (470,000 ohms)	33-447339			
	Drive Shaft	56-6141	53.	Condenser (.003 mfd, 600 volts)	30-4582			
	"C" Washer	28-2043	54.	Condenser (100 mmfd)	60-110157			
	Insulating Bushing	27-9437	55.	Condenser (.01 mfd, 400 volts)	30-4572			
	Grounding Spring	28-8955	56.	Condenser (.006 mfd, 400 volts)	30-4591			
	Grommet (Mtg. Cond.)	27-4596	57.	Output Transformer	32-8116			
	Rubber Connector (Tuning Cond.)	27-9432	58.	Speaker	36-1513-3 or 36-1513-4			
	Spring (Cond. Drive Cord)	28-8751		Cone Assembly (For Speaker 36-1513-3)	36-4164			
	Spring (Pointer Drive Cord)	28-8953		Cone Assembly (For Speaker 36-1513-4)	36-4169			
	Sleeve (Mtg. Tuning Cond.)	28-3806		Mtg. Nut	W-124			
21.	Push-Button and Power Switch Assembly	42-1687		Cable (Speaker)	41-3541			
	Mtg. Sleeve	28-5665	58.	Blas Resistor (27-36-300 ohms)	33-3392			
	Mtg. Screw	W-523		Mtg. Rivet	W-239			
	Mtg. Grommet	27-4596	59.	Field Coil (Replace Speaker 36-1513)				
22.	Push-Button Compensator Assembly	31-6376	60.	Electrolytic Condenser (12 mfd, 400 volts)	30-2471			
23.	Mica Condenser (100 mmfd)	60-110157		Mtg. Clamp	56-1452			
24.	Resistor (47,000 ohms)	33-347339						
25.	Resistor (33,000 ohms)	33-333339						
26.	Resistor (2200 ohms)	33-222339						
27.	Resistor (4700 ohms)	33-247339						
28.	Condenser (.05 mfd, 400 volts)	30-4518						
29.	1st I. F. Transformer	32-3465						
	Mtg. Nut	W-1949						

# PHILCO RADIO & TELEV. CORP.



FOR ALIGNMENT, PARTS LIST AND OTHER DATA SEE INDEX

-PART LOCATIONS, UNDERSIDE OF CHASSIS, MODEL 42-365

SCHEMATIC DIAGRAM MODEL 42-365

The D. C. voltages indicated at the tube elements in the above diagram were measured with a 1000 ohms per volt voltmeter. Philco Model 027. Line voltage, 117 volts A. C. No signal being received—range switch broadcast.

**MODEL 42-365**

**Circuit Description:** Model 42-365, Code 121, is a seven (7) tube, alternating current (A. C.) operated superheterodyne radio with three tuning bands covering Standard, Police, Amateur and Shortwave broadcast stations and the sound of a television program tuned in by special Philco Television Radios. The radio incorporates six (6) electric push-buttons for automatically selecting five (5) stations in the broadcast band; built-in Philco low impedance loop aerial completely rotatable; provisions for an external aerial; Philco LOKTAL tubes, including the XXL noise reducing converter tube; two intermediate frequency stages; continuously variable tone control; automatic volume control; pentode audio output stage and a dynamic speaker.

**Intermediate Frequency:** 455 KC.

**Tuning Band Frequencies:** 540 to 1720 KC; 2.3 to 6.7 MC; 9 to 15.5 MC.

**Audio Output:** 2 watts.

**Power Supply:** 115 volts, 60 cycle A. C.

This model can also be operated on 115 volts, 25 cycle A. C. by changing the power transformer as indicated in the parts list.

**Electric Push-Button Tuning:** Six (6) electric tuning push-buttons are provided for automatically selecting stations. Five (5) of the push-buttons are used from broadcast stations and one push-button for controlling (ON-OFF) the power supply. The procedure for adjusting the push-buttons will be found in the instructions supplied with the radio.

MODEL 42-380

PHILCO RADIO & TELEV. CORP.

Model 42-380

FOR CHANGES, SEE INDEX

Schem. No.	Description	Part No.			
1.	External Aerial Socket	27-6145	17.	Mica Condenser (185 mmfd.)	30-1197
	Mtg. Rivets	W-207FA5	18.	Push-Button Padder (900 to 1600KC)	31-6439
2.	Loop Aerial	76-1387	18a.	Push-Button Padder (850 to 1600KC)	Part of 18
	Terminal Panel	38-8879	18b.	Push-button Padder (650 to 1300KC)	Part of 18
	Mtg. Rivet	W-207FA5	18c.	Push-button Padder (600 to 1200KC)	Part of 18
	Mtg. Screw	W-288FE11	18d.	Push-button Padder (540 to 1000KC)	Part of 18
	Mtg. Sleeve	28-3806FA3		Mtg. Screw	W-2150
	Mtg. Sleeve	56-1545FA3	19.	Push-button Oscillator Coil (900 to 1600 KC)	32-3779
	Spring Washer	28-4186FA3			
3.	Aerial Transformer	32-3746	19a.	Push-button Oscillator Coil (650 to 1600KC)	32-3779
	Mtg. Clip	28-5002	19b.	Push-button Oscillator Coil (650 to 300 KC)	32-3780
4a.	Compensator (Broadcast Osc.)	31-6433	19c.	Push-button Oscillator Coil (600 to 1200 KC)	32-3780
4b.	Compensator (Broadcast Aerial)		19d.	Push-button Oscillator Coil (540 to 1000 KC)	32-3780
	Part of 4		20.	Electrolytic Condenser (8-8 mfd., 475 volts)	30-2813
4c.	Compensator (S. W. Osc.)		20a.	Electrolytic Condenser (8 mfd., 475 volts)	Part of 20
	Part of 4		21.	Resistor (10,000 ohms)	33-310339
4d.	Compensator (Police Osc.)		22.	Resistor (15,000 ohms)	33-315339
	Part of 4		23.	Resistor (2.2 megohms)	33-822339
4e.	Compensator (Broadcast Osc., 580 KC)		24.	Condenser (.01 mfd., 400 volts)	30-4872
	Part of 4		25.	Condenser (250 mmfd.)	60-125257
5.	Mica Condenser (370 mmfd.)	30-1157	26.	Resistor (4700 ohms)	33-247339
6.	Mica Condenser (500 mmfd.)	60-150157	27.	Condenser (.05 mfd., 400 volts)	30-4518
7.	Resistor (22,000 ohms)	33-322339	28.	Resistor (4700 ohms)	33-247339
8.	Resistor (10,000 ohms)	33-310339	29.	1st I. F. Transformer	32-3742
9.	Mica condenser (370 mmfd.)	30-1157	29a.	Primary Compensator (Iron Core)	Part of 29
10.	Mica condenser (250 mmfd.)	60-125157	29b.	Secondary Compensator	Part of 29
11.	Oscillator transformer (S. W.)	32-3749	29c.	Mica Condenser (3000 mmfd.)	Part of 29
	Mtg. clip	28-5002		Mtg. Nut	W-1949
12.	Mica Condenser (185 mmfd.)	30-1197	30.	Condenser (.05 mfd., 400 volts)	30-4518
13.	Mica condenser (2500 mmfd.)	60-225324	31.	2nd I. F. Transformer	32-3743
14.	Oscillator transformer (Police)	32-3748	31a.	Secondary Compensator	Part of 31
	Mtg. clip	28-5002		Mtg. Nut	W-1949
15.	Oscillator Transformer (Broadcast)	32-3747	32.	Resistor (330 ohms)	33-133336
	Mtg. Clip	28-5002	33.	Condenser (.05 mfd., 400 volts)	30-4518
16.	Tuning Condenser	31-2578	34.	3rd I. F. Transformer	32-3744
	Drive Card (Painter)	31-2576	34a.	Secondary Compensator	Part of 34
	Spring	28-8953	34b.	Mica Condenser (100 mmfd.)	Part of 34a
	Drive Card (Condenser Drive)	31-2577	34c.	Resistor (47,000 ohms)	33-347339
	Spring	28-8751	34d.	Mica Condenser (100 mmfd.)	Part of 34a
	Tuning Drum	76-1293	35.	Resistor (470,000 ohms)	33-447339
	Tuning Shaft	56-6152			
	"C" Washer	28-2043			
	Mtg. Screw	W-2002			
	Mtg. Grommet	27-4596			
	Mtg. Sleeve	56-1505			
			36.	Condenser (.01 mfd., 400 volts)	30-4872
			37.	Mica Condenser (100 mmfd.)	60-110157
			38.	Resistor (68,000 ohms)	33-368339
			39.	Tone Control (Audio Bass)	33-5460
				Mtg. Nut	W-2157
			40.	Condenser (.006 mfd., 400 volts)	30-4591
			41.	Resistor (2.2 megohms)	33-522339
			42.	Resistor (1 megohm)	33-510339
			43.	Volume Control	33-5450
				Mtg. Nut	W-2157FA3
			44.	Mica Condenser (100 mmfd.)	60-110157
			45.	Condenser (.01 mfd., 400 volts)	30-4572
			46.	Resistor (10 megohms)	33-610339
			47.	Condenser (100 mmfd.)	60-110157
			48.	Resistor (220,000 ohms)	33-422339
			49.	Resistor (470,000 ohms)	33-447339
			50.	Resistor (one megohm)	33-510339
			51.	Condenser (.01 mfd., 400 volts)	30-4572
			52.	Condenser (.01 mfd., 400 volts)	30-4572
			53.	Tone Control (Audio Treble)	33-8461
				Mtg. Nut	W-2187
			54.	Condenser (.01 mfd., 400 volts)	30-4572
			55.	Resistor (3900 ohms)	33-298339
			56.	Condenser (.0015 mfd., 600 volts)	30-4821
			57.	Output Transformer	32-8120
			58.	Speaker	36-1514-2 or 36-1814-4
				Cone assembly (for Speaker 36-1514-2)	36-4173
				Cone Assembly (for Speaker 36-1514-4)	36-4170
				Mtg. washer	27-7467
				Mtg. nut	W-124FA3
				Cable	41-3610
			59.	Field coil (Replace speaker, 36-1514)	
			60.	Bias Resistor (15-31-148 ohms)	33-3393
			61.	Electrolytic Condenser (18 mfd., 475 volts)	30-2817
				Mtg. clamps	56-1848
			62.	Power Transformer (115 volts, 60 cycle)	32-8177
				Power Transformer (115 volts, 25 cycle)	30963-ODR
			63.	Line Filter Condenser (.01-.01 mfd.)	42-1681
			64.	Push-button Switch and Power Switch	Part of 64
				Mtg. screw	W-823
			64a.	Power Switch	Part of 64

Operations In order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in order	
1	High side to No. 4 terminal loop panel.	455 K. C.	580 K. C.	Vol. Max. Range Switch "S.W." Positions	34A, 31A 29A, 29B	
2	Use loop on generator	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Broadcast	4, 4B	Note A
3	Use loop on generator	580 K. C.	580 K. C.	Vol. Max. Range Switch Broadcast	4E	Roll Tuning Condensers Note B
4	Use loop on generator	Perform operation No. 2 again				
5	Use loop on generator	6 M. C.	6 M. C.	Range Switch "Police"	4D	
6	Use loop on generator	15 M. C.	15 M. C.	Range Switch "S.W."	4C, 4A	Note C

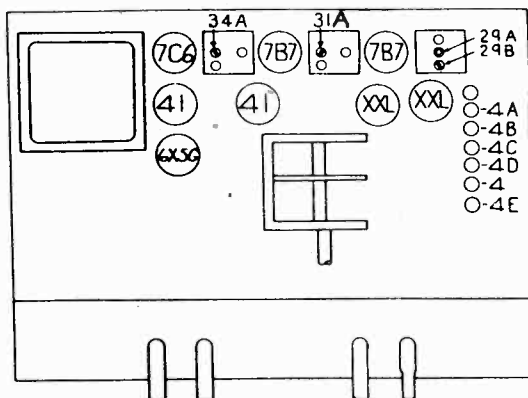
NOTE A—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale. The arrangement of the drive cable in this position is shown in the schematic.

NOTE B—When adjusting the low frequency compensator of Range One (Broadcast) or the aerial padders of the high frequency tuning range; the receiver tuning condenser must be adjusted (rolled) as follows: First tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

NOTE C—To accurately adjust the high frequency oscillator compensator to the fundamental instead of the image signal, turn the oscillator compensator (4C) to the maximum capacity position (clockwise). From this position slowly turn the compensator counter-clockwise until a second peak is obtained on the output meter. Adjust the compensator for maximum output at this second peak.

If the above procedure is correctly performed, the image signal will be found (much weaker) by turning the signal generator dial 910 KC above the frequency being used on any high frequency range.

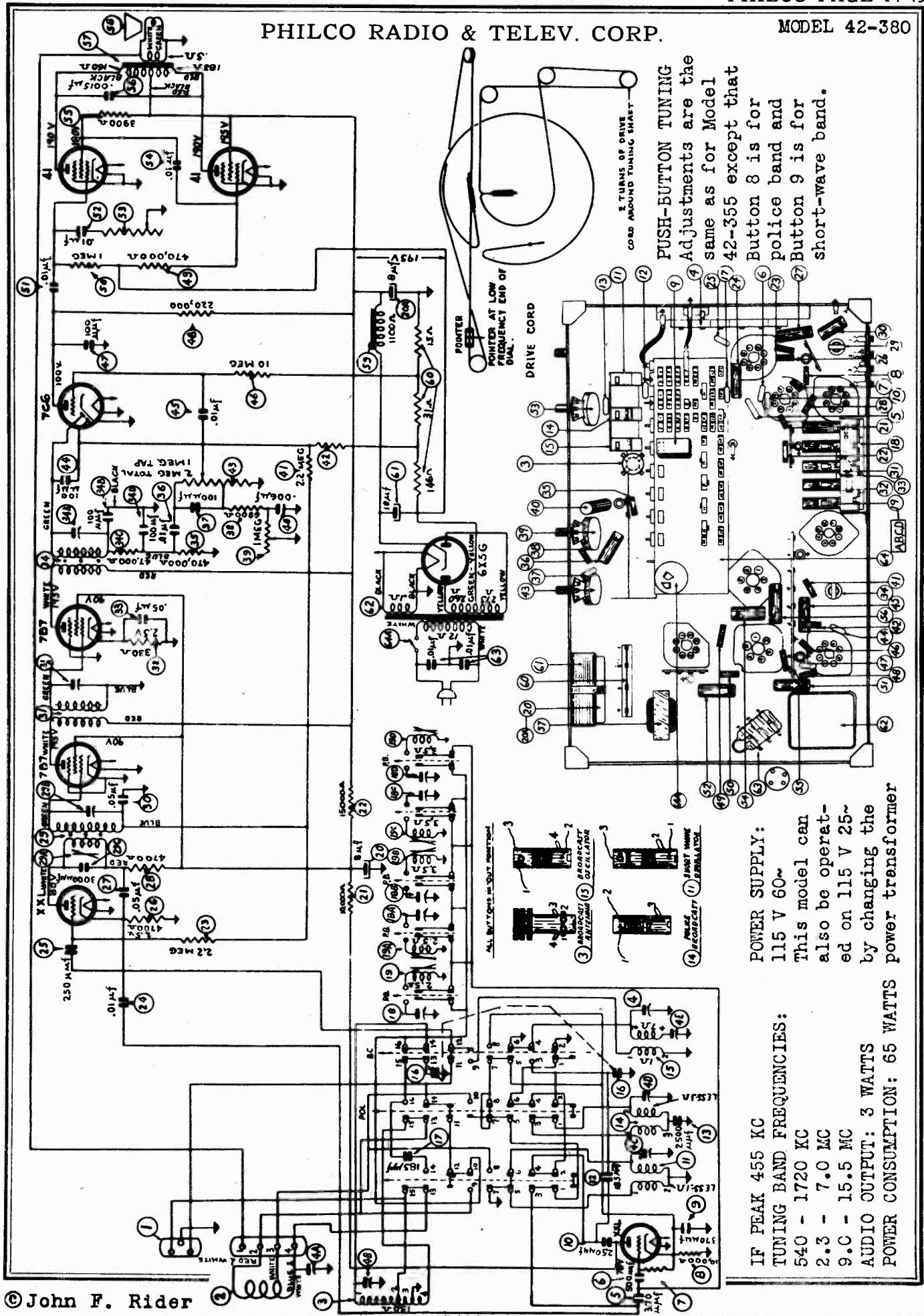
The aerial padder (4A) must be adjusted to maximum by rolling the tuning condenser. If two signal peaks occur when turning the padder, adjust to maximum output on the first signal peak from the tight position (screw all the way down) of the padder.



LOCATIONS OF COMPENSATORS—TOP OF CHASSIS

PHILCO RADIO & TELEV. CORP.

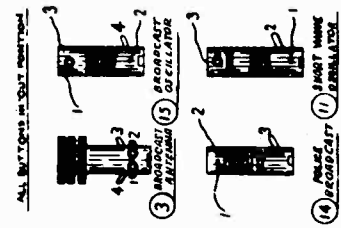
MODEL 42-380



**PUSH-BUTTON TUNING**  
Adjustments are the same as for Model 42-355 except that Button 8 is for police band and Button 9 is for short-wave band.

**POWER SUPPLY:**  
115 V 60~  
This model can also be operated on 115 V 25~ by changing the power transformer

**IF PEAK 455 KC**  
**TUNING BAND FREQUENCIES:**  
540 - 1720 KC  
2.3 - 7.0 MC  
9.0 - 15.5 MC  
**AUDIO OUTPUT: 3 WATTS**  
**POWER CONSUMPTION: 65 WATTS**



MODEL 42-395

PHILCO RADIO & TELEV. CORP.

**ELECTRIC PUSH-BUTTON TUNING ADJUSTMENTS**

The electric push-button tuning mechanism consists of ten (10) push-buttons. Six of the push-buttons are used for selecting standard broadcast stations, one for the power control (ON-OFF) and three (3) for selecting the standard, shortwave and FM tuning bands.

Viewing the front of the cabinet from left to right the first push-button is the power control (ON-OFF); the next six (6) push-buttons for standard broadcast stations, and the eighth, ninth and tenth for selecting the standard, shortwave and FM tuning bands, respectively.

When setting up stations on the push-buttons the lowest frequency station is set up for reception on the second push-button from the left and the remaining stations according to increasing frequency in the next five push-buttons. The push-buttons are adjusted by the padders located on the rear of the chassis. The frequency range covered by each push-button and the procedure for adjusting is listed in the adjacent tabulation. The second push-button from the left can also be adjusted for reception of the sound channel of a television program received by special Philco television radios. This push-button may also be used in conjunction with a Philco wireless Record Player. The procedure for setting up these models is included in the instructions supplied with each model.

**SPECIFICATIONS**

**MODEL 42-395, CODE 121**

Model 42-395, Code 121, is a nine (9) tube A. C. operated super-heterodyne designed for reception of standard, shortwave and frequency modulation broadcast stations, and the sound of a television program tuned in by special Philco television radios. The radio incorporates ten (10) electric push buttons which automatically tune six stations in the standard broadcast band and selects the standard, shortwave and frequency modulation bands; Philco built-in Super Aerial System for standard and shortwave reception; the Philco F M Dipole Aerial for frequency modulation reception; three tuning bands; two intermediate frequency stages; two tone controls (Treble and Bass); push-pull pentode audio output stage driven by a phase inverter audio amplifier stage; Philco Loktal tubes and a fourteen (14) inch electro-dynamic speaker.

**Power Supply:** 115 volts, 60 cycle A. C.

This model can also be operated on 115 volt, 25 cycle or 220 volts, 60 cycle A. C. current. To do this it is necessary to change the power transformers as indicated in the replacement parts list.

**Power Consumption:**

**Intermediate Frequency:** Standard and shortwave bands 455 KC; Frequency Modulation 4.3 MC.

**Tuning Band Frequencies:** 540 to 1720 KC; 9 to 15.5 MC; 42 to 50 MC (FM).

**Audio Output:** 4 watts.

**FOR CHANGES SEE INDEX**

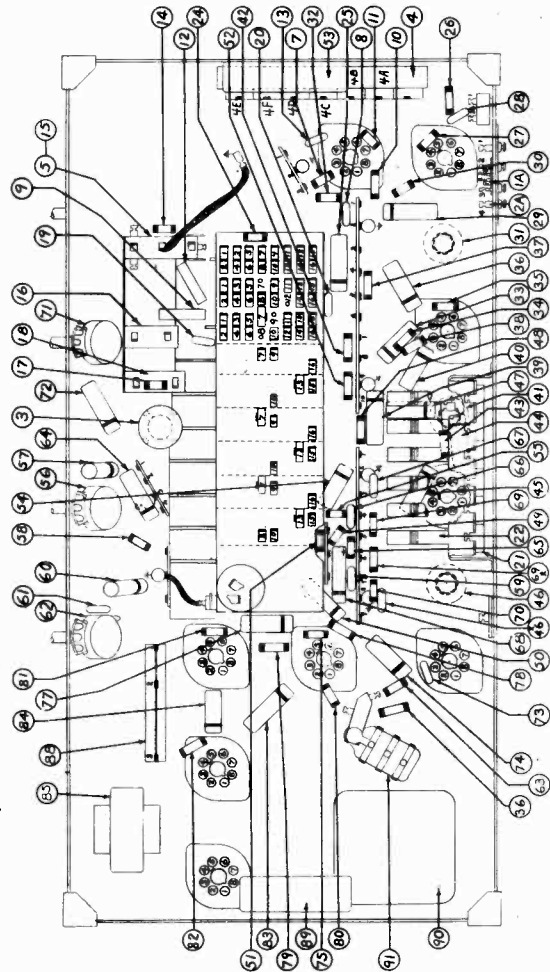


Fig. 2—Locations of Parts—Under Chassis Model 42-395

Padders right to left from rear	Circuit	Buttons left to right from front	Frequency Range
1	Ant. Osc.	1	ON-OFF
2	Ant. Osc.	2	540 to 1000 KC
3	Ant. Osc.	3	600 to 1200 KC
4	Ant. Osc.	4	650 to 1300 KC
5	Ant. Osc.	5	850 to 1500 KC
6	Ant. Osc.	6	900 to 1600 KC
7	Ant. Osc.	7	900 to 1600 KC
8	Ant. Osc.	8	Standard Band
9	Ant. Osc.	9	Shortwave Band
10	Ant. Osc.	10	FM Band



MODEL 42-395

PHILCO RADIO & TELEV. CORP.

STANDARD AND S. W. BANDS ALIGNING PROCEDURE

SIGNAL GENERATOR		RECEIVER		Adjust Compensators In Order	Special Instructions	
Operations In Order	Output Connections	Dial Setting	Dial Setting	Control Settings		
1	High side to No. 4 terminal loop panel	455 KC	580 KC	Vol. max. push-button Bdest. "IN"		
2	Use loop on generator	1500 KC	1500 KC	" " " " " "	Note A	
3	Use loop on generator	580 KC	580 KC	" " " " " "	Roll Tuning Condensers Note B	
4	Use loop on generator	Readjust as given in Operation 2				
5	Use loop on generator	15 MC	15 MC	Push-button S. W. "IN"	Note C	

FREQUENCY MODULATION ALIGNING PROCEDURE

Note: The Frequency Modulation Circuits Must Be Adjusted With the Dipole Aerial Connected.

CRITICAL WIRING LOCATIONS

1. Wire from F. M. oscillator transformer (15) to compensator 4C must be short, also the blue wire from F. M. oscillator transformer (15) to the tuning condenser should be short and away from chassis base.
2. The blue wire from the F. M. oscillator transformer (15) to the loop aerial terminal panel 2A must be short.
3. Wires from lugs 3 and 4 of the loop aerial terminal panel (2A) to the short-wave push button lugs 10 and 13 of the push button switch must have one complete twist only.
4. All wires from the lugs of the F. M. oscillator transformer (15) should be dressed away from the push button switch and the wires of the F. M. aerial transformer (5) which is part of the F. M. oscillator transformer (15).
5. The black wire from the first I. F. transformer (31) to lug 5 of the F. M. push button must be dressed along the chassis and away from the orange and yellow lead of the I. F. transformer.

F. M. BAND ALIGNING PROCEDURE

SIGNAL GENERATOR		RECEIVER		Adjust Compensators In Order	Special Instructions
Operations In Order	Output Connections	Dial Setting	Dial Setting	Control Settings	
1	2nd I. F., F. M. input connection	4.3 MC	580 KC	Vol. max. F. M. push-button "IN"	
2	1st I. F., F. M. input connection	4.3 MC	580 KC	F. M. push-button "IN"	
3	High side to No. 1 contact, F. M. socket. Ground to No. 2 contact	4.3 MC	580 KC	F. M. push-button "IN"	
4	Use test loop on generator: place near dipole aerial	48.5 MC	85 (Note G)	F. M. push-button "IN"	Roll tuning condenser when adjusting 4B. See Note B
5	" " " "	48.5 MC	85	F. M. push-button "IN"	4C oscillator

EXTERNAL AERIAL CONNECTIONS

- 1.—For Additional Sensitivity on Frequency Modulation only:
  - \*Philco Dipole Outdoor Aerial, Part No. 45-2926.
  - The plug at the end of the transmission line is inserted in the socket at the back of the chassis in place of the plug connected to the F. M. loop in the cabinet.
- 2.—For Additional Sensitivity on ALL ranges:
  - \*Philco Dipole Outdoor Aerial, Part No. 45-2926.
  - Philco Aerial Coupler, Part No. 45-1361.
  - The coupler plugs into the socket at the back of the chassis in place of the plug connected to the F. M. loop. The aerial transmission line then connects to the terminals on the coupler marked "red" and "black". The local-distance switch on the coupler connects or disconnects the outdoor aerial from the standard broadcast and short-wave tuning ranges. The dipole remains connected to the F. M. band regardless of the position of the switch.
- 3.—For Additional Sensitivity on Standard Broadcast and Shortwave only in Areas where FM reception is not available:
  - Philco Safety Aerial, Part No. 40-6370.
  - Philco Aerial Coupler, Part No. 45-1361.

NOTE A.—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: Roll the tuning condenser until the index line on the dial points to the extreme left index line at the low frequency end of the broadcast aerial.

NOTE B.—When adjusting the low frequency compensator of the broadcast or the aerial paddlers of the high frequency tuning range, the receiver tuning condenser must be adjusted (rolled) as follows: Roll the tuning condenser until the dial pointer indicates the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. Repeat the procedure of fine-tuning the compensator until varying the procedure of fine-tuning the compensator is continued until maximum output reading is obtained.

NOTE C.—Adjust compensator (4D) to the second slight left of the closed position (maximum capacity). The aerial compensator (4A) must also be adjusted to maximum on the first signal peak by rolling the tuning condenser. (See Note B.)

NOTE D.—With the signal generator set to 4.3 MC, paddler (46C) is adjusted to the point where minimum signal indication is observed on the output meter.

NOTE E.—Turn the signal generator first to approximately 125 KC below 4.3 MC (4.17 MC) and then 125 KC above 4.3 MC (4.42 MC). A signal peak should be observed on the output meter at approximately each of these two frequencies. Roll the tuning condenser until the dial pointer indicates the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. Repeat the procedure of fine-tuning the compensator until varying the procedure of fine-tuning the compensator is continued until maximum output reading is obtained.

NOTE F.—Adjust paddlers 41A, 41B, 31B, and 31D for equal peak and equal frequency spacing each side of 4.3 MC.

NOTE G.—The dial scale numbers are listed in tenths of megacycles less the first digit: i. e., 49 MC is 90, 48.5 is 85, etc. Roll the tuning condenser until the dial pointer indicates the tuning condenser of the receiver for maximum signal indication is observed on the output meter.

NOTE H.—In order to adjust paddler (4B) the signal generator should show peaks on the output meter at 125 KC above 48.5 MC (48.625 MC). Adjust paddler (4B) to maximum output reading on either of these peak signals. As paddler 4B is being adjusted roll the tuning condenser until zero reading is obtained on the meter. After this adjustment is made paddler No. 46A should be reset for equal peaks as given above.

NOTE I.—Adjust paddlers 41A, 41B, 31B, and 31D for equal peak and equal frequency spacing each side of 4.3 MC.

NOTE J.—The dial scale numbers are listed in tenths of megacycles less the first digit: i. e., 49 MC is 90, 48.5 is 85, etc. Roll the tuning condenser until the dial pointer indicates the tuning condenser of the receiver for maximum signal indication is observed on the output meter.

NOTE K.—In order to adjust paddler (4B) the signal generator should show peaks on the output meter at 125 KC above 48.5 MC (48.625 MC). Adjust paddler (4B) to maximum output reading on either of these peak signals. As paddler 4B is being adjusted roll the tuning condenser until zero reading is obtained on the meter. After this adjustment is made paddler No. 46A should be reset for equal peaks as given above.

Connect the single wire lead-in of the aerial to the "black" terminal on the aerial coupler.

\*Accessories for this aerial are the Philco Aerial Mast Kit, the Philco Reflector Kit and Philco High Efficiency Transmission Line. See Service Bulletin No. 396 on Dipole Aerials.

NOTE: When installing the F. M. Philco Outdoor Dipole Aerial, it is very important that the aerial compensating condensers of the standard and shortwave band are repadded.

Audio Output Meter: Terminal No. 1 is provided on the loop aerial panel for connecting one lead of the audio output meter to the voice coil of the speaker. The other lead of the meter is connected to the chassis. When using these connections, the lowest A. C. scale of the meter must be used. (0 to 10 volts.) This audio output meter can also be connected between the plate of the output tube and the chassis.

When aligning the R. F. paddlers a loop is made from a few turns of wire and connected to the signal generator output terminals; the loop is then placed two or three feet from the loop in the cabinet and dipole aerial lead. Do not remove this receiving loops from the cabinet. It is necessary when adjusting the paddlers that the receiver be left in the cabinet.

PHILCO RADIO & TELEV. CORP.

REPLACEMENT PARTS—Model 42-395, Code 121

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Schem. No.	Description	Part No.
1.	F. M. Dipole Aerial (Mounted in Cabinet)	76-1394	22A.	Push-Button Oscillator Transformer (900 to 1600 KC)	32-3779	51.	Resistor (2.2 megohms)	33-522339
1A.	Socket F. M. Dipole Aerial	27-6181	22B.	Push-Button Oscillator Transformer (850 to 1500 KC)	32-3779	52.	Resistor (5000 ohms)	33-256339
2.	Loop Aerial (Broadcast and Shortwave)	76-1395	22C.	Push-Button Oscillator Transformer (650 to 1300 KC)	32-3780	53.	Electrolytic Condenser (8 mfd, 475 volts)	30-2526
	Mtg. Screw	W-288FE11	22D.	Push-Button Oscillator Transformer (900 to 1200 KC)	32-3780	53A.	Electrolytic Condenser (8 mfd, 475 volts) Part of 53	56-1466
	Mtg. Sleeve	56-1545	22E.	Push-Button Oscillator Transformer (540 to 1000 KC)	32-3780	54.	Condenser (.01 mfd, 400 volts)	30-4572
	Mtg. Washer	28-3806				55.	Resistor (2.2 megohm)	33-522339
	Mtg. Washer	28-4186				56.	Base Tone Control	32-5479
	Mtg. Washer	W-425FA3				57.	Condenser (.006 mfd, 400 D. C.)	30-4591
	Mtg. Washer	W-648FA3				58.	Resistor (68000 ohms)	33-368339
2A.	Terminal Panel (Loop Aerial)	38-9870				59.	Mica Condenser (100 mmfd)	60-110157
	Mtg. Rivet	W-207				60.	Condenser (.01 mfd, 400 volts)	30-4572
3.	Broadcast Aerial Transformer	32-3790	23.	Push-Button Switch	42-1705	61.	Mica Condenser (100 mmfd)	60-110157
4.	Mtg. Clip	28-5002		Mtg. Screw	W-523FA3	62.	Volume Control	33-410339
4A.	Compensator (Broadcast Aerial)	31-6443		Mtg. Grommet	27-4596	63.	Resistor (10 megohms)	30-4519
	Compensator (Short Wave Aerial)		24.	Resistor (47000 ohms)	33-347339	64.	Condenser (.05 mfd, 200 volts)	33-422339
4B.	Compensator (F. M. Aerial) Part of 4		25.	Condenser (.05 mfd, 400 volts)	30-4518	65.	Resistor (220000 ohms)	33-422339
4C.	Compensator (F. M. Oscillator) Part of 4		26.	Resistor (2700 ohms)	33-227339	66.	Condenser (150 mmfd)	60-115137
4D.	Compensator (S. W. Oscillator) Part of 4		27.	Resistor (2.2 megohms)	33-522339	67.	Mica Condenser (150 mmfd)	60-115137
4E.	Compensator (Brdcast. Oscillator 580 KC) Part of 4		28.	Mica Condenser (250 mmfd)	60-125257	68.	Condenser (.1 mfd, 200 volts)	30-4586
4F.	Compensator (Brdcast. Oscillator 1500 KC) Part of 4		29.	Condenser (.05 mfd, 400 volts)	30-4518	69.	Resistor (470000 ohms)	33-447339
5.	F. M. Aerial Transformer (Part of 15)	28-5002	30.	Resistor (100000 ohms)	33-410339	69X.	Resistor (1 megohm)	33-447339
6.	Tuning Condenser (F. M. Section)	31-2592	31.	First I. F. Transformer	32-3828	70.	Resistor (470000 ohms)	33-5480
6A.	Tuning Condenser (Brdcast., S. W. Section) Part of 6		31A.	Primary Compensator (iron core) Part of 31	W-2157	71.	Treble Tone Control	33-5480
	Drive Drum	76-1293	31B.	Primary Compensator (4.3 KC) Part of 31		72.	Condenser (.01 mfd, 400 volts)	30-4572
	Drive Cord (Pointer)	31-2576	31C.	Secondary Compensator (455 KC) Part of 31		73.	Mica Condenser (100 mmfd)	60-110157
	Spring	28-8953	31D.	Secondary Compensator (4.3 KC) Part of 31		74.	Condenser (.01 mfd, 400 volts)	30-4572
	Drive Cord (Tuning Cond.)	31-2603	31E.	Condenser (4000 mmfd) Part of 31		75.	Resistor (470000 ohms)	33-447339
	Spring	28-8751	32.	Resistor (4700 ohms)	33-247339	76.	Resistor (220000 ohms)	33-422339
	Drive Shaft	56-6164	33.	Condenser (.05 mfd, 200 volts)	30-4519	77.	Condenser (.01 mfd, 400 volts)	30-4572
	"C" Washer	28-2043	34.	Resistor (100 ohms)	33-110339	78.	Resistor (4700 ohms)	33-247339
	Mtg. Grommet	27-4596	35.	Resistor (68 ohms)	33-068339	79.	Resistor (39000 ohms)	33-339339
	Mtg. Sleeve	56-1505	36.	Condenser (.05 mfd, 200 volts)	30-4519	80.	Resistor (47000 ohms)	33-347339
	Mtg. Screw	W-1351FA3	37.	Resistor (100000 ohms)	33-410339	81.	Resistor (1 megohm)	33-510339
	Pointer (Dial)	56-2331	38.	Resistor (12000 ohms)	33-312339	82.	Resistor (1 megohm)	33-510339
7.	Resistor (10000 ohms)	33-310339	39.	Condenser (.05 mfd, 400 volts)	30-4518	83.	Condenser (.006 mfd, 1000 volts)	30-4317
8.	Mica Condenser (250 mmfd)	60-125257	40.	Condenser (.01 mfd, 400 volts)	30-4572	84.	Condenser (.001 mfd, 1000 volts)	30-4601
9.	Mica Condenser (370 mmfd)	30-1110	41.	Second I. F. Transformer	32-3836	85.	Output Transformer	32-8181
10.	Resistor (10000 ohms)	33-310339		Mtg. Nut	W-2157	86.	Speaker	36-1530
11.	Resistor (22000 ohms)	33-322339	41A.	Primary Compensator (4.3 KC) Part of 41			Cone Assembly (for Speaker 36-1530)	36-4181
12.	Mica Condenser (370 mmfd)	30-1110	41B.	Secondary Compensator (4.3 KC) Part of 41			Cable (Speaker)	41-3610
13.	Mica Condenser (500 mmfd)	60-150257	41C.	Secondary Compensator (455 KC) Part of 41			Mtg. Washer	27-7467
14.	Resistor (10 ohms)	33-010339	41D.	Resistor (47000 ohms) Part of 41	33-347339		Mtg. Nut	W-124FA3
15.	F. M. Oscillator Transformer	32-3792	42.	Resistor (3300 ohms)	33-233339	87.	Field Coil (Replace Speaker 36-1530)	33-3416
16.	Mtg. Clip	28-5002	43.	Resistor (150 ohms)	33-115339	88.	Bias Resistor (12 ohms)	
17.	S. W. Oscillator Transformer	28-5002	44.	Condenser (.05 mfd, 400 volts)	30-4518	88A.	Bias Resistor (175 ohms) Part of 88	30-2517
18.	Resistor (58 ohms)	33-058334	45.	Condenser (.01 mfd, 400 volts)	32-3829	89.	Electrolytic Condenser (18 mfd, 475 volts)	30-2517
19.	Broadcast Oscillator Transformer	32-3791	46.	Third I. F. Transformer	W-2157	90.	Mtg. Clip	56-1466
20.	Mica Condenser (185 mmfd)	20-018511	46A.	Primary Compensator (4.3 KC) Part of 46		91.	Power Transformer (115 volts, 60 cycles)	32-8192
21.	Mica Condenser (185 mmfd)	20-018511	46B.	Primary Compensator (455 KC) Part of 46		92.	Power Transformer (115 volts, 25 cycles)	32-8209
	Push Button Station Padder (900 to 1600 KC)	31-6449	46C.	Secondary Compensator (4.3 KC) Part of 46			Power Line Filter Condenser (.01-.01 mfd)	3903ODG
21A.	Push-Button Station Padder (900 to 1600 KC) Part of 21		46D.	Mica Condenser (125 mmfd) Part of 46	60-150227		Dial Lamps	34-2141
21B.	Push-Button Station Padder (850 to 1500 KC) Part of 21		46X.	Condenser (500 mmfd)	30-4518		Socket Assembly	76-1295
21C.	Push-Button Station Padder (650 to 1300 KC) Part of 21		47.	Condenser (.05 mfd, 400 volts)	30-4518		Miscellaneous Parts—Model 42-395	
21D.	Push-Button Station Padder (600 to 1200 KC) Part of 21		48.	Resistor (1000 ohms)	33-210339		Bezel	54-4128
21E.	Push-Button Station Padder (540 to 1000 KC) Part of 21		49.	Resistor (2.2 megohm)	33-522339		Screw	W-2073FB26
22.	Push-Button Oscillator Transformer (900 to 1600 KC)	32-3779	50.	Condenser (.05 mfd, 200 volts)	30-4519		Cable (Power)	L-3199

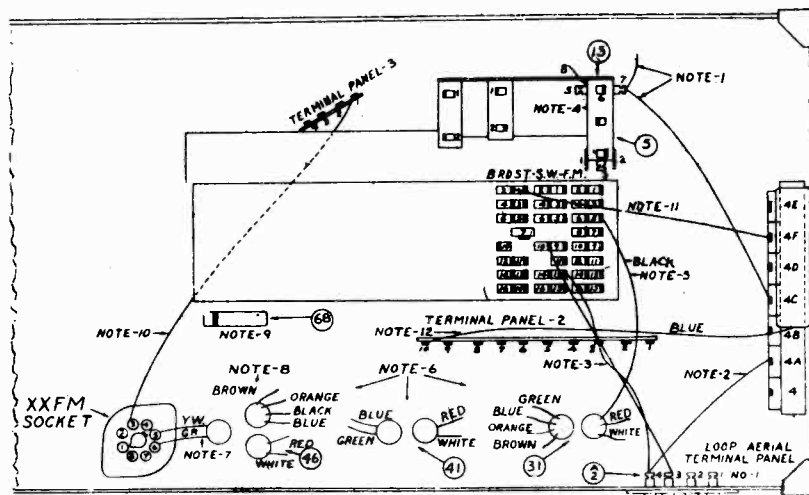


Fig. 3—Critical Wiring Locations—

F. M. Aligning Model 42-395



MODEL 42-400

PHILCO RADIO & TELEV. CORP.

STANDARD AND S. W. BANDS ALIGNING PROCEDURE

Operations in Order	SIGNAL GENERATOR		RECEIVER			Special Instructions
	Output Connections	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	
1	High side to No. 4 terminal loop panel	455 KC	580 KC	Vol. max. push-button Bdst. "IN"	59B, 44C, 41C, 31B, 31E	
2	Use loop on generator	1500 KC	1500 KC	"	1B, 18C	Note A
3	Use loop on generator	580 KC	580 KC	"	18A	Roll Tuning Condensers Note B
4	Use loop on generator	Readjust as given in Operation 2				
5	Use loop on generator	12 MC	12 MC	Push-button S. W. 1.	18B, 18D	Note C
6	Use loop on generator	18 MC	18 MC	Push-button S. W. 2.	15, 15A	Roll Cond. Note C

FREQUENCY MODULATION ALIGNING PROCEDURE

Note: The Frequency Modulation Circuits Must Be Adjusted With the Dipole Aerial Connected.

CRITICAL WIRING LOCATIONS

STANDARD SHORTWAVE AND F. M. ALIGNING

NOTE

- 1—F. M. Aerial wires from F. M. aerial socket 2A to F. M. aerial transformer (3) must be twisted (for shielding). The twisted wires should also be dressed away from the switch and other wiring.
- 2—All wires from F. M. Oscillator transformer (3A) (3A is a part of (3) F. M. aerial transformer) must be dressed away from the F. M. aerial transformer section.

3—Dress yellow wire from 4th I. F. transformer (59) to the diode connection 5 of the XXFM socket down against chassis base. The green lead from the same transformer to connection 6 of the XXF-A socket must be pulled away from the chassis base. (These lead dresses are necessary for proper peak separation when aligning F. M. circuits.)

4—Dress wire from F. M. push-button contact (12) to terminal panel lug 1 around end of P. B. switch next to the underside of the chassis (this dress prevents frequency shift when chassis is mounted in the cabinet).

5—Dress close to the push button switch the wire which connects from contact 12 of the lower switch wafer 97 to contact 64 of the upper switch wafer 97A.

6—Wire from SW2 push-button contact No. 22 to padder 15 must be dressed close to the switch.

F. M. BAND ALIGNING PROCEDURE

Operations in Order	SIGNAL GENERATOR		RECEIVER			Special Instructions
	Output Connections	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	
1	3rd I. F., F. M. input connection	4.3 MC	1400 KC	Vol. max. F. M. push-button "IN"	59C (Note D) 59A (Note E)	
2	2nd I. F., F. M. input connection	4.3 MC	1400 KC	F. M. push-button "IN"	44A, 44B. (Note F)	
6	1st I. F., F. M. input connection	4.3 MC	1400 KC	F. M. push-button "IN"	41A, 41B (Note F)	
3	Ant. Section of F. M. Tuning Cond. and Grd.	4.3 MC	1400 KC	F. M. push-button "IN"	31A, 31C (Note F)	
4	Use test loop on generator; place near dipole aerial	48.5 MC	85 (Note G)	F. M. push-button "IN"	5A (Note G) 5 (Note H)	Roll tuning condenser when adjusting 5B. See Note B.
5	"	48.5 MC	85	F. M. push-button "IN"	5A oscillator	

NOTE A.—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale.

NOTE B.—When adjusting the low frequency compensator of the broadcast or the aerial padders of the high frequency tuning range; the receiver tuning condenser must be adjusted (rolled) as follows: First, tune the compensator for maximum output, then vary the tuning condenser of the receiver for maximum output. Now turn the compensator slightly to the right or left and again vary the receiver tuning condenser for maximum output. This procedure of first setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

NOTE C.—Adjust compensators (15 and 18B) to the second signal peak from the closed position (maximum

capacity). The aerial compensators (15A and 18D) must also be adjusted to maximum on the first signal peak by rolling the tuning condenser. (See Note B.)

NOTE D.—With the signal generator set to 4.3 MC, padder (59C) is adjusted to the point where minimum signal indication is observed on the output meter.

NOTE E.—Turn the signal generator first to approximately 125 KC below 4.3 MC (4.17 MC) and then 125 KC above 4.3 MC (4.42 MC). A signal peak should be observed on the output meter at approximately each of these points (4.17 and 4.42). The two peak signals should be of equal reading on the output meter and equally spaced in frequency each side of 4.3 MC. If the peaks are unequal in amplitude, padder (59A) must be adjusted in the direction necessary to make both peaks equal. This is done by slightly turning padder and then turning signal generator above and below 4.3 to observe peaks. After equal peak readings are obtained, set the signal generator to 4.3 MC. The output meter should show zero reading at 4.3 MC. If a signal indication is observed readjust padder

(59C) until zero reading is obtained on the meter. After this adjustment is made padder No. 59A should be reset for equal peaks as given above.

NOTE F.—Adjust padders 44A, 44B, 41A, 41B, 31A, 31C for equal signal peaks and equal frequency spacing each side of 4.3 MC.

NOTE G.—The dial scale numbers are listed in tenths of megacycles less the first digit; i. e., 49 MC is 90, 48.5 is 85. Set the tuning dial pointer to 90 on the F. M. scale. Adjust padder (5A) to the point where minimum signal indication is observed on the output meter.

NOTE H.—In order to adjust padder (5) the signal generator should be set to either the signal peak approximately 125 KC below 48.5 MC (48.375 MC), or 125 KC above 48.5 MC (48.625 MC). Adjust padder (5) to maximum output reading on either of these peak signals. As padder 5 is being adjusted roll the tuning condenser as given in Note B.

ELECTRIC PUSH-BUTTON TUNING ADJUSTMENTS

The Electric push-button tuning mechanism consists of ten (10) push-buttons. Five of the push-buttons are used for selecting standard broadcast stations, one for the power control (ON-OFF); and four for selecting standard tuning, shortwave and Frequency Modulation brands.

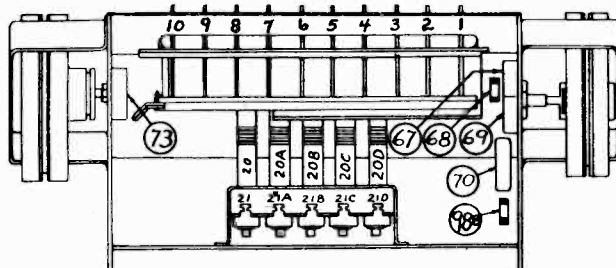
Viewing the front of the cabinet from left to right the first push-button is the power control (ON-OFF), the next five push-buttons for tuning standard broadcast stations, and the seventh, eighth, ninth and tenth for selecting the tuning ranges—standard, shortwave 1, shortwave 2, and F. M., respectively.

When setting up stations on the push-buttons the lowest frequency station is set up in the second push-button from the left and the remaining stations according to increasing frequency in the next four push-buttons. These push-buttons are adjusted by the padders located on the rear of the tuning unit. The second push-button from the left can also be adjusted for reception of the sound

channel of a television program received by special Philco television radios. This push-button may also be used in conjunction with a Philco Wireless Record Player.

The frequency ranges covered by the station tuning push-buttons and procedure for adjusting is as follows:

Padders right to left from rear	Circuit	Buttons left to right from front	Frequency Range
		1	ON-OFF
1	Ant. Osc.	2	540 to 1000 KC
2	Ant. Osc.	3	600 to 1200 KC
3	Ant. Osc.	4	650 to 1300 KC
4	Ant. Osc.	5	850 to 1500 KC
5	Ant. Osc.	6	900 to 1600 KC
		7	Standard Band
		8	Shortwave Band 1
		9	Shortwave Band 2
		10	Frequency Modulation



Locations of Parts—Tuning Unit

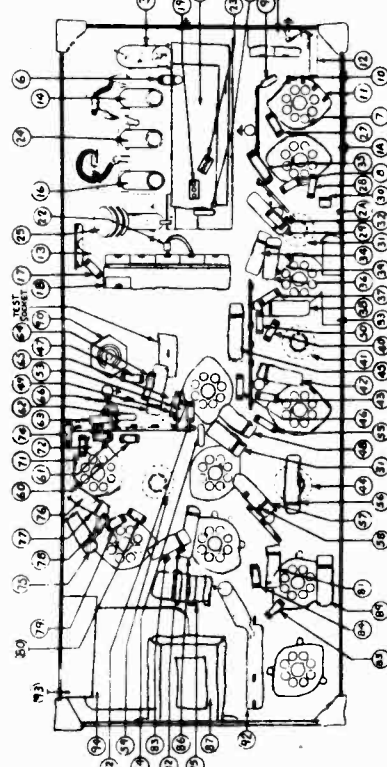


MODEL 42-400

PHILCO RADIO & TELEV. CORP.

REPLACEMENT PARTS—MODEL 42-400

Schematic No.	Description	Part No.	Quantity	Notes
1	Loop Aerial (Standard & S.W. Bands)	75-1203	1	
2	Mica Sleeve	28-3806FA3	1	
3	Spring Washer	56-1545FA3	1	
4	Washer (M.T. Switch)	28-4186FE7	1	
5	Screw	W-28HFE1	1	
6	Washer	W-425FA3	1	
7	Washer	W-648FA3	1	
1A	Terminal Panel (Loop Aerial)	38-9870	1	
2	F.M. Dipole Aerial (Mounted in Cabinet)	76-1394	1	
2A	Socket (F.M. Aerial)	27-6181	1	
3	F.M. Aerial and Oscillator Transformer	32-3823	1	
4	M.T. Clip	28-5902FA3	1	
4A	Tuning Condenser (F.M. Section)	31-2600	1	
5	Tuning Condenser (Standard & S.W. Section)	31-6364	1	
6	Coupling Assembly	31-2291	1	
7	Cable Drum Assembly	31-2316	1	
8	Drive Cord (Tuning)	31-2315	1	
9	Spring	28-8913	1	
10	Pointer	56-2272FCP	1	
11	Rubber Grommet	27-4771	1	
12	Screw (M.T. Condenser)	W-1974FA3	1	
13	Compensator (F.M. Aerial)	31-6364	1	
14	Compensator (F.M. Oscillator) Part of 5	33-010339	1	
15	Resistor (10 ohms)	60-125157	1	
16	Mica Condenser (250 mmfd.)	33-310339	1	
17	Mica Condenser (250 mmfd.)	60-125157	1	
18	Mica Condenser (250 mmfd.)	60-125157	1	
19	Resistor (47,000 ohms)	33-347339	1	
20	Resistor (2200 ohms)	33-222339	1	
21	Mica Condenser (500 mmfd.)	30-1138	1	
22	Mica Condenser (2600 mmfd.)	30-1213	1	
23	Compensator (S.W.-2, Oscillator)	32-3827	1	
24	Compensator (S.W.-2, Aerial) Part of 15	31-6448	1	
25	Broadcast Oscillator Transformer	32-3809	1	
26	M.T. Clip	28-5902	1	
27	Resistor (33 ohms)	33-033336	1	
28	Compensator (Broadcast Oscillator)	31-6451	1	
29	Compensator (Broadcast Oscillator) 500 K.C.	Part of 18	1	
30	Compensator (S.W. 1, Oscillator)	Part of 18	1	
31	Compensator (Broadcast Aerial)	Part of 18	1	
32	Mica Condenser (145 mmfd.)	20-01517	1	
33	Push-button Oscillator Transformer, (900 to 1600 K.C.)	32-3779	1	
34	Push-button Oscillator Transformer, (650 to 1500 K.C.)	32-3779	1	
35	Push-button Oscillator Transformer, (650 to 1300 K.C.)	32-3740	1	
36	Push-button Oscillator Transformer, (600 to 1200 K.C.)	32-3743	1	
37	Push-button Oscillator Transformer, (540 to 1000 K.C.)	32-3743	1	
38	Iron Core	32-3743	1	
39	Clip	56-6100	1	
40	Clip	56-2250	1	
41	Push-button Compensator (900 to 1600 K.C.)	31-6447	1	
42	Push-button Compensator (850 to 1500 K.C.)	31-6447	1	
43	Push-button Compensator (650 to 1300 K.C.)	Part of 21	1	
44	Push-button Compensator (600 to 1200 K.C.)	Part of 21	1	
45	Push-button Compensator (540 to 1000 K.C.)	Part of 21	1	
46	Condenser (1 mmfd., consisting of Wire and Lug)	P. 1 of 21	1	
47	Mica Condenser (155 mmfd.)	20-015517	1	



Schematic No.	Description	Part No.	Quantity	Notes
48	Condenser (.006 mfd., 400 Volts)	32-3824	1	
49	Volume Control	28-5002	1	
50	Resistor (68,000 ohms)	33-368339	1	
51	Audio Bass Control	28-5002	1	
52	Condenser (.006 mfd.)	60-125157	1	
53	Resistor (10 megohms)	33-522339	1	
54	Condenser (.006 mfd., 400 Volts)	30-4518	1	
55	Audio Treble Control	30-4517	1	
56	M.T. Nut	32-3820	1	
57	Condenser (.006 mfd., 400 Volts)	30-4519	1	
58	Mica Condenser (250 mfd.)	60-125157	1	
59	Resistor (.006 mfd., 400 Volts)	33-315339	1	
60	Resistor (4700 ohms)	33-510339	1	
61	Resistor (47,000 ohms)	33-247330	1	
62	Condenser (.006 mfd., 400 Volts)	30-4591	1	
63	Resistor (47,000 ohms)	33-347339	1	
64	Condenser (.006 mfd., 400 Volts)	33-347339	1	
65	Mica Condenser (250 mfd.)	60-125157	1	
66	Resistor (.006 mfd., 400 Volts)	30-4591	1	
67	Resistor (4700 ohms)	33-510339	1	
68	Resistor (47,000 ohms)	33-247330	1	
69	Condenser (.006 mfd., 400 Volts)	30-4591	1	
70	Resistor (47,000 ohms)	33-347339	1	
71	Condenser (.006 mfd., 400 Volts)	33-347339	1	
72	Mica Condenser (250 mfd.)	60-125157	1	
73	Resistor (.006 mfd., 400 Volts)	30-4591	1	
74	Resistor (4700 ohms)	33-510339	1	
75	Resistor (47,000 ohms)	33-247330	1	
76	Condenser (.006 mfd., 400 Volts)	30-4591	1	
77	Resistor (47,000 ohms)	33-347339	1	
78	Condenser (.006 mfd., 400 Volts)	33-447339	1	
79	Resistor (470,000 ohms)	33-447339	1	
80	Resistor (.003 mfd., 1,000 Volts)	30-4469	1	
81	Speaker	32-8197	1	
82	Cone Assembly	36-1515	1	
83	M.T. Washer	36-3173	1	
84	M.T. Nut	27-3450	1	
85	Condenser (.003 mfd., 1,000 Volts)	W-121FA3	1	
86	Electrolytic Condenser (25 mfd., 250 Volts)	30-2531	1	
87	Speaker Field Coil (Replace Speaker 36-1515)	33-3416	1	
88	Bias Resistor (10-165 ohms)	30-2525	1	
89	Electrolytic Condenser (18 mfd., 400 Volts)	36-2525	1	
90	Power Transformer (115 Volt, 60 cycle)	32-3194	1	
91	Power Transformer (115/220 Volt, 60 cycle)	32-3087	1	
92	Conversion Plug (115/220 Volts)	L-3273	1	
93	M.T. Nut	W-317FA3	1	
94	Lockwasher	W-732FE7	1	

MISCELLANEOUS PARTS

40-6585	Base
W-2071FA3	Screw
10580A	Cabinet
L-3199	Cord (Power)
54-4149	Control Drums (Bass and Treble)
54-4150	Control Drum (Volume)
54-4151	Control Drum (Tuning)
56-1336	Shaft Bearing (Control Drums)
56-1338	Spring Washer (Steel)
56-1659	Spring Washer (Steel)
56-1029FA3	Keyed Washer
28-3976	Washer (Steel)
27-5760	Washer (Steel)
56-1034FA3	Dial Scale
W-2922A	Feet Gasket
W-2922B	Clamp
54-4138	Screw
54-4137	Jewel (Cabinet Pilot Lamp)
76-1376	Spring
54-4015	Rubber Corner (Chassis)
3914	Rubber Grommet (Tuning Unit Mtg.)
27-3915	Rubber Grommet (Tuning Unit Mtg.)
W-749FA3	Rubber Grommet (Chassis Mtg.)
W-1345FA3	Screw (Chassis Mtg.)

MISCELLANEOUS PARTS

30-4591	95	Condenser (.01-.01 mfd.)
33-5286	96	Push-button Switch (Tuning Unit)
33-368339		Washer (M.T. Switch)
33-3472		Rubber Grommet
30-4591	96A	Power Switch (Part of 96)
33-610339		Switch Cover
30-4591	97	Push-button Band Switch (Mounted Under Chassis)
33-5176	97A	Push-button Band Switch (Part of 97)
W-2157FA3		Strap-bushings (Connecting Rods)
33-433339		M.T. Screw
30-4591		Rubber Grommet
60-125157	98	Dial and Push-button Lamp
30-4591	98	Socket Assembly (Dial Lights)
33-510339		Socket Assembly (Push-button Lights)
33-247330		Socket Assembly (Cabinet Light)
33-347339	98A	Cabinet Lamp
30-4591	98B	Socket Assembly (Cabinet Light)
33-347339	98B	Resistor (10 ohms)

MISCELLANEOUS PARTS

33-447339	Base
W-2071FA3	Screw
10580A	Cabinet
L-3199	Cord (Power)
54-4149	Control Drums (Bass and Treble)
54-4150	Control Drum (Volume)
54-4151	Control Drum (Tuning)
56-1336	Shaft Bearing (Control Drums)
56-1338	Spring Washer (Steel)
56-1659	Spring Washer (Steel)
56-1029FA3	Keyed Washer
28-3976	Washer (Steel)
27-5760	Washer (Steel)
56-1034FA3	Dial Scale
W-2922A	Feet Gasket
W-2922B	Clamp
54-4138	Screw
54-4137	Jewel (Cabinet Pilot Lamp)
76-1376	Spring
54-4015	Rubber Corner (Chassis)
3914	Rubber Grommet (Tuning Unit Mtg.)
27-3915	Rubber Grommet (Tuning Unit Mtg.)
W-749FA3	Rubber Grommet (Chassis Mtg.)
W-1345FA3	Screw (Chassis Mtg.)

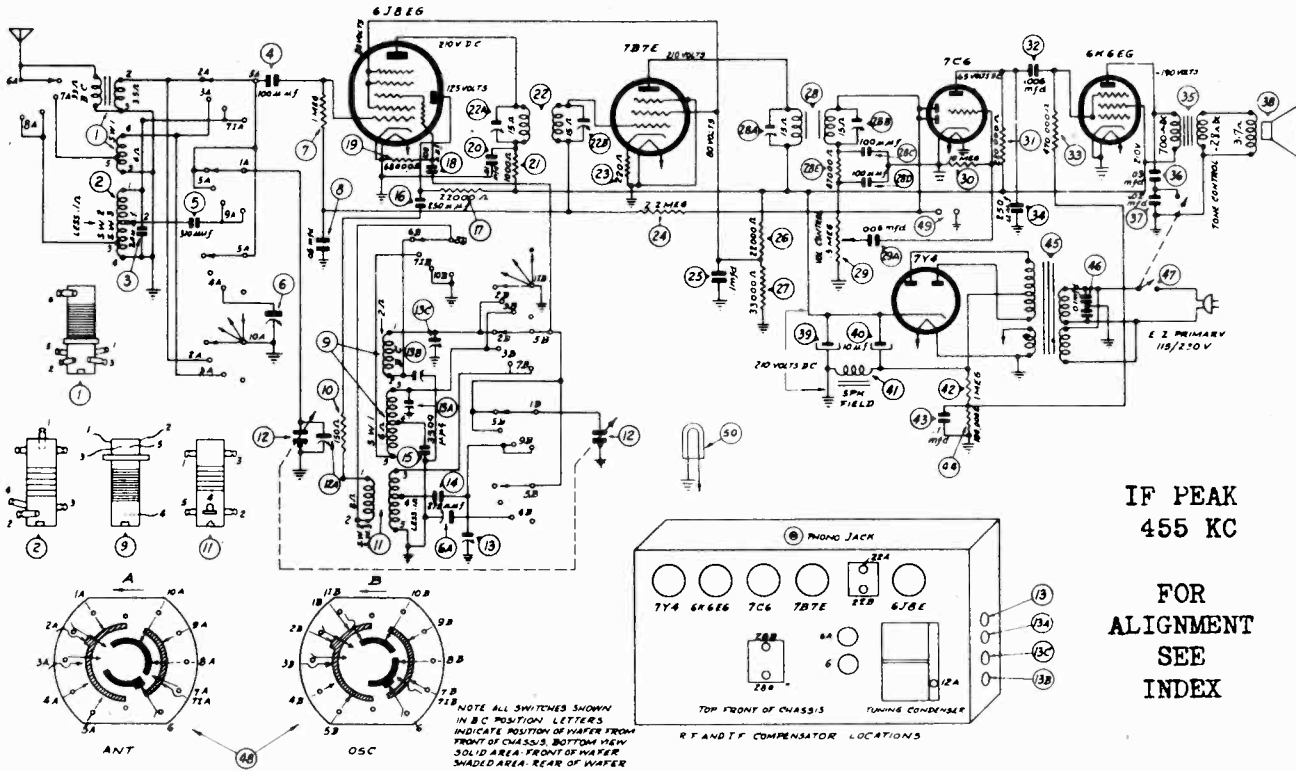
MISCELLANEOUS PARTS

30-4591	95	Condenser (.01-.01 mfd.)
33-5286	96	Push-button Switch (Tuning Unit)
33-368339		Washer (M.T. Switch)
33-3472		Rubber Grommet
30-4591	96A	Power Switch (Part of 96)
33-610339		Switch Cover
30-4591	97	Push-button Band Switch (Mounted Under Chassis)
33-5176	97A	Push-button Band Switch (Part of 97)
W-2157FA3		Strap-bushings (Connecting Rods)
33-433339		M.T. Screw
30-4591		Rubber Grommet
60-125157	98	Dial and Push-button Lamp
30-4591	98	Socket Assembly (Dial Lights)
33-510339		Socket Assembly (Push-button Lights)
33-247330		Socket Assembly (Cabinet Light)
33-347339	98A	Cabinet Lamp
30-4591	98B	Socket Assembly (Cabinet Light)
33-347339	98B	Resistor (10 ohms)



MODEL 42-716

PHILCO RADIO & TELEV. CORP.



IF PEAK  
455 KC

FOR  
ALIGNMENT  
SEE  
INDEX

Replacement Parts — Model 42-716

No. SCHE.	DESCRIPTION	No. PART
1.	Aerial Transformer (Brdest-SW-1)	32-3655
2.	Coil Clip	28-5002
3.	Aerial Transformer (SW-2)	32-3652
4.	Coil Clip	28-5002
5.	Mica Condenser (20 mmfd.)	60-020337
6.	Mica Condenser (100 mmfd.)	60-110457
7.	Mica Condenser (310 mmfd.)	30-1201
8.	Compensator (SW-2 Aerial)	31-6416
9.	Resistor (1 megohm)	33-510339
10.	Condenser (.005 mfd., 200 volts)	30-4609
11.	Oscillator Transformer (Brdest-SW-1)	32-3656
12.	Resistor (150 ohms)	33-115339
12A.	Oscillator Transformer (SW-2)	32-3651
12B.	Tuning Condenser	31-2534
13.	Drive Cord (Tuning Cond.)	31-2542
13A.	Drive Cord (Pointer)	31-2543
13B.	Drive Shaft	56-6123
14.	Spring (Cond. Drive Cord)	27-1468
15.	Spring (Pointer Drive Cord)	28-2043
16.	Mtg. Rubber (Tuning Condenser)	27-9437
17.	Drive Drum	27-9432
18.	Screw (Mtg. Tuning Cond.)	56-1307
19.	Compensator	Part of 12
20.	Compensator	Part of 12
21.	Compensator (21 mc.)	31-6411
22.	Compensator (6 mc.)	Part of 13
23.	Compensator (580 kc.)	Part of 13
24.	Compensator (1500 kc.)	Part of 13
25.	Silver Mica Condenser (275 mmfd.)	30-1200
26.	Mica Condenser (3,500 mmfd.)	60-235224
27.	Mica Condenser (250 mmfd.)	60-125457
28.	Resistor (22,000 ohms)	33-322339
29.	Mica Condenser (100 mmfd.)	60-110457
30.	Resistor (68,000 ohms)	33-366339
31.	Condenser (.01 mfd., 400 volts)	32-4552
32.	Resistor (1,000 ohms)	33-210339
33.	1st I. F. Transformer	32-3653
34.	Nut	W-1949
35.	Resistor (220 ohms)	33-122339
36.	Resistor (2.2 megohms)	33-522339
37.	Condenser (.005 mfd., 200 volts)	30-4586
38.	Resistor (22,000 ohms)	33-322339
39.	Resistor (33,000 ohms)	33-333339
40.	2nd I. F. Transformer	32-3654
41.	Compensator	Part of 28
42.	Compensator	Part of 28
43.	Condenser	Part of 28
44.	Condenser	Part of 28
45.	Resistor	Part of 28
46.	Volume Control	Part of 28
47.	Nut	33-347339
48.	Nut	33-5465
49.	Condenser (.005 mfd., 400 volts)	W-2157
50.	Resistor (10 megohms)	30-4591
51.	Resistor (220,000 ohms)	33-610339
52.	Condenser (.005 mfd., 400 volts)	33-422339
53.	Resistor (470,000 ohms)	30-4610
54.	Mica Condenser (250 mmfd.)	33-447339
55.	Output Transformer	60-125457
56.	Nut	32-8106
57.	Screw	W-95
58.	Condenser (.03 mfd., 400 volts)	W-2121
59.	Condenser (.02 mfd., 400 volts)	30-4517
60.	Condenser (.02 mfd., 400 volts)	30-4516

No. SCHE.	DESCRIPTION	PART No.
38.	Cone Assembly (or Speaker 36-1504.2)	36-4126
39.	Electrolytic Condenser (10 mfd.)	30-2459
40.	Electrolytic Condenser (10 mfd.)	30-2459
41.	Field Coil (replace Speaker 36-1504)	33-510339
42.	Resistor (1 megohm)	30-4586
43.	Condenser (.1 mfd., 200 volts)	33-418339
44.	Resistor (180,000 ohms)	32-8093
45.	Power Transformer (115/220 volt 60 cycle primary)	32-8075
46.	Plug (115 Volts, 25 cycle, primary)	L-3275
47.	Screw	W-1974
48.	Condenser (Dual .01 mfd.)	3909-ODG
49.	Tone Control and OFF-ON Switch	42-1520
50.	Band Switch	42-1658
51.	Nut	W-684
52.	Phonograph Input Socket	27-6149
53.	Rivet	W-207
54.	Pilot Lamp	34-2064E
55.	Cable (Power)	L-3274

MISCELLANEOUS PARTS

DESCRIPTION	PART No.
Cabinet	10478G
Disc Feet	27-4804
Cabinet Back	27-9661
Screw	W-2075
Baffle & Cloth	40-6548
Fasteners	56-6082
Dial Scale	27-5703
Dial Pointer	56-2228
Wt. Straps (Scale)	56-1752
Washer Scale Mtg.	W-152
Screw	W-2062
Knob	27-4332
Shield (Power Transformer)	56-1525
Shield Base (Power Transformer)	56-1526
Socket (7B7E, 7C6, 7Y4 Tubes)	27-6177
Rivet	W-239
Socket (6J8EG, 6K6EG Tubes)	27-6174
Rivet	W-239
Socket Assembly (Pilot Lamp)	76-1115
Speaker	36-1504

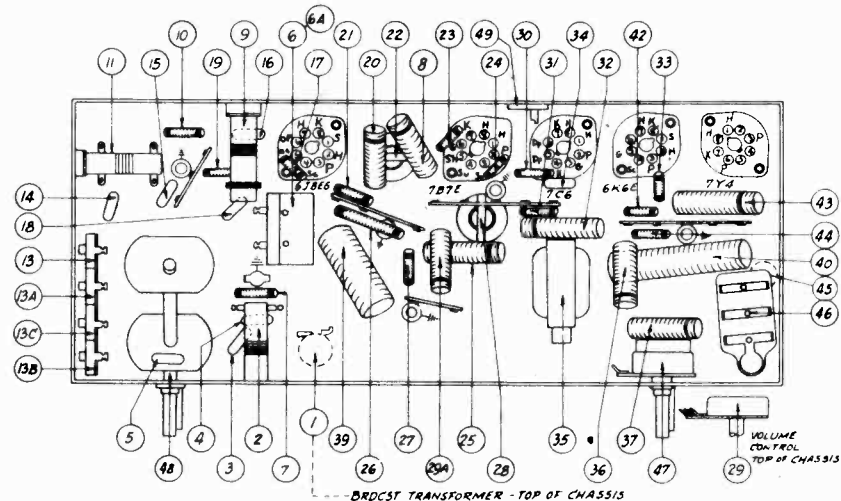
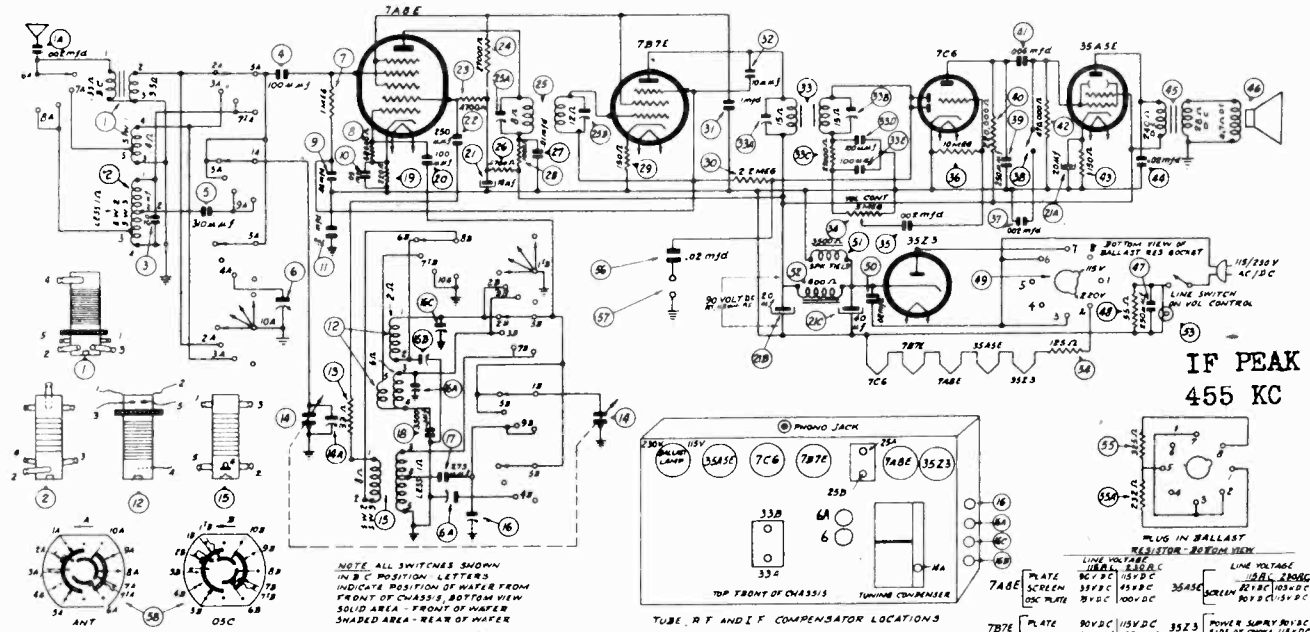


FIG. 1—LOCATIONS OF PARTS — UNDERSIDE OF CHASSIS — MODEL 42-716

PHILCO RADIO & TELEV. CORP.

MODEL 42-717



FOR ALIGNMENT, SEE INDEX

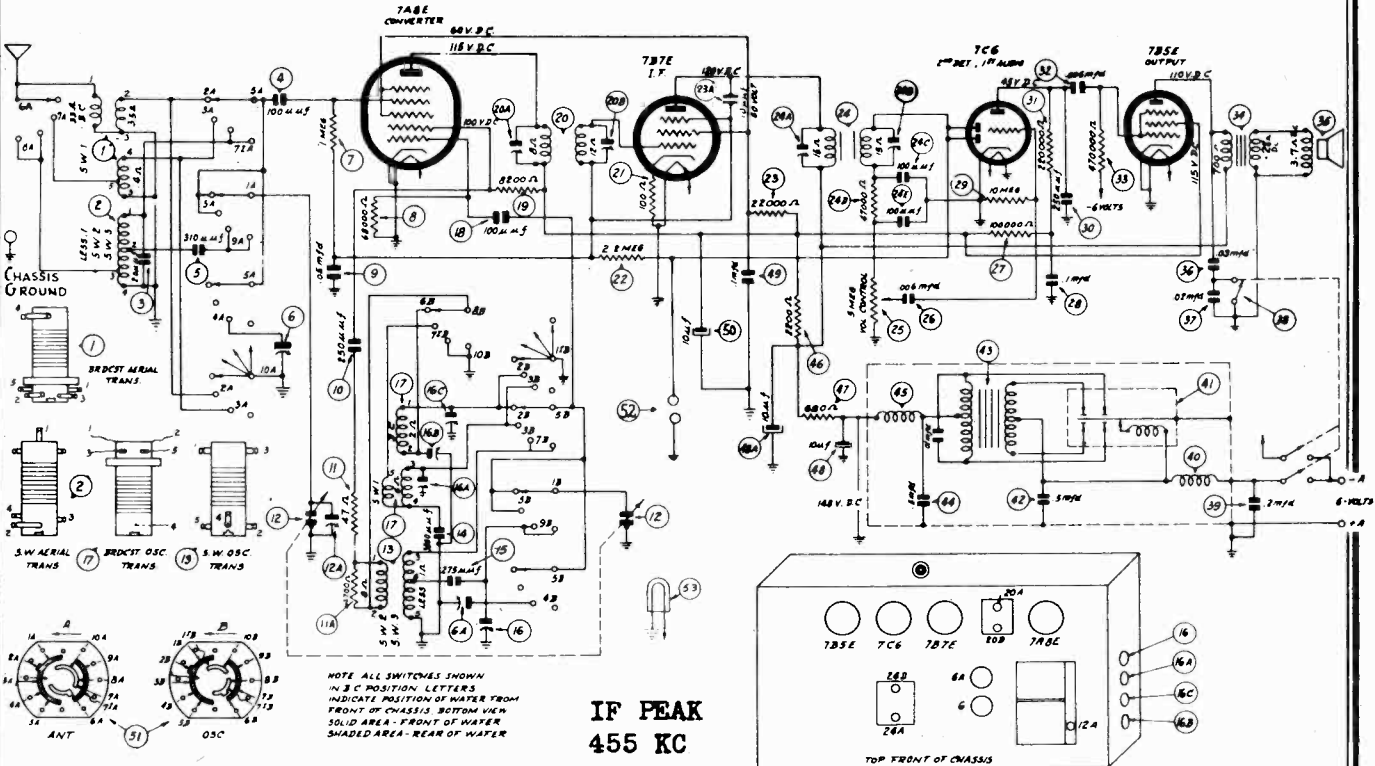
Model 42-717

SCH. No.	DESCRIPTION	PART No.	SCH. No.	DESCRIPTION	PART No.	MISCELLANEOUS PARTS	PART No.
1.	Aerial Transformer (Brdcst. & SW-1)	32-3655	38.	Tone Control Nut	42-1574 W-2157	Cable (Rectifier)	41-3573
2.	Aerial Transformer (SW-2, SW-3)	32-3652	39.	Mica Condenser (250 mmfd.)	60-125457	Cabinet	10478H
3.	Mica Condenser (20 mmfd.)	28-5002	40.	Resistor (220,000 ohms)	33-422335	Disc. Foot	27-4804
4.	Mica Condenser (100 mmfd.)	60-020437	41.	Condenser (.005 mfd., 400 volts)	30-4610	Cabinet Back	27-9661
5.	Mica Condenser (310 mmfd.)	30-1201	42.	Resistor (470,000 ohms)	33-447339	Baffle & Cloth	40-5548
6.	Compensator (SW-2 Aerial)	31-6416	43.	Resistor (150 ohms)	33-115339	Fasteners (Baffle Mtg.)	56-6082
6A.	Compensator (SW-2 Osc.)	part of 6	44.	Condenser (.02 mfd., 600 volts)	30-4599	Screw (Back Mtg.)	W-2076
7.	Resistor (1 megohm)	33-510339	45.	Output Transformer (for Speaker 36-1509-3)	32-8158	Screw (Back Mtg.)	W-2168
8.	Resistor (40,000 ohms)	33-368339	46.	Cone Assembly (for Speaker 36-1509-3)	36-4162	Cord (Power)	L-3274
9.	Condenser (.05, 200 volts)	30-4609	47.	Mica Condenser (250 mmfd.)	60-125457	Plug (Power Cable)	L-3275
10.	Condenser (.05 mfd., 700 volts)	30-4519	48.	Filament Resistor (55 ohms)	33-3397	Dial Scale	27-5703
11.	Condenser (2 mfd., 400 volts)	30-4594	49.	Ballast Resistor (55 ohms)	33-3397	Mtg. Straps	56-1752
12.	Oscillator Transformer (Brdcst. & SW-1)	32-3709	50.	Eyelet (Mtg. Socket)	27-6143	Washers (Scale Mtg.)	W-152
	Mounting Clip	28-5002	51.	Speaker Field Replace Speaker	36-1509	Screw	W-2062
13.	Resistor (33 ohms)	33-033339	52.	Filter Choke	32-7868	Knob	27-4332
14.	Tuning Condenser	31-2534	53.	Nut	W-95	Socket (Loktal Tubes)	27-6177
	Drive Drum	38-94K3	54.	Screw	W-2131	Rivet	W-239
	Drive Cord (Tuning Cond.)	31-2542	55.	Pilot Lamp	34-2068E	Socket Assembly (Pilot Lamp)	76-1051
	Drive Cord (Pointer)	31-2543	55A.	Filament Resistor (125 ohms)	part of 48	Speaker	36-1509
	Drive Shaft	56-6123	56.	Ballast Resistor	33-3389	Screw	W-2150
	Shaft & Rubber Connector	27-9432	57.	Ballast Resistor	33-3389	Terminal Panel (3 lug)	38-9809
	Shaft Bearing	27-9437	58.	Condenser (.02 mfd., 400 volts)	33-4516	Terminal Panel (2 lug)	38-9777
	"C" Washer	28-2043		Phonograph Socket	27-6149	Terminal Panel (5 lug)	38-9929
	Spring (Drive Shaft)	57-1468		Rivet	W-207		
15.	Oscillator Transformer (SW-2, SW-3)	32-3651		Band Switch	42-1658		
	Mounting Clip	28-5002					
16.	Compensator (Osc. 21 mc.)	31-6411					
16A.	Compensator (Osc. 6 mc.)	part of 16					
16B.	Compensator (Osc. 580 kc.)	part of 16					
16C.	Compensator (Osc. 1500 kc.)	part of 16					
17.	Mica Condenser (275 mmfd.)	30-1200					
18.	Mica Condenser (3,500 mmfd.)	60-235224					
19.	Resistor (220 ohms)	33-122334					
20.	Mica Condenser (100 mmfd.)	60-110457					
21.	Electrolytic Condenser (10 mfd.)	30-2506					
21A.	Electrolytic Condenser (20 mfd.)	part of 21					
21B.	Electrolytic Condenser (20 mfd.)	part of 21					
21C.	Electrolytic Condenser (40 mfd.)	part of 21					
22.	Mica Condenser (250 mmfd.)	60-125457					
23.	Resistor (4,700 ohms)	33-247339					
24.	Resistor (27,000 ohms)	33-327339					
25.	1st I. F. Transformer	32-3704					
	Nut	W-1949					
26.	Resistor (4,700 ohms)	33-247339					
27.	Condenser (.01 mfd., 400 volts)	30-4572					
28.	Resistor (1,000 ohms)	33-210339					
29.	Resistor (150 ohms)	33-115339					
30.	Resistor (2.2 megohms)	33-522339					
31.	Condenser (.1 mfd., 200 volts)	30-4586					
32.	Mica Condenser (10 mmfd.)	60-010437					
33.	2nd I. F. Transformer	32-3654					
33A.	Compensator	part of 33					
33B.	Compensator	part of 33					
33C.	Resistor (47,000 ohms)	part of 33					
33D.	Condenser	part of 33					
33E.	Condenser	part of 33					
34.	Volume Control	33-5446					
	Nut	W-2157					
35.	Condenser (.002 mfd., 400 volts)	30-4579					
36.	Resistor (10 megohms)	33-610339					
37.	Condenser (.002 mfd., 400 volts)	30-4579					

LOCATIONS OF PARTS — UNDERSIDE OF CHASSIS — MODEL 42-717

MODEL 42-718

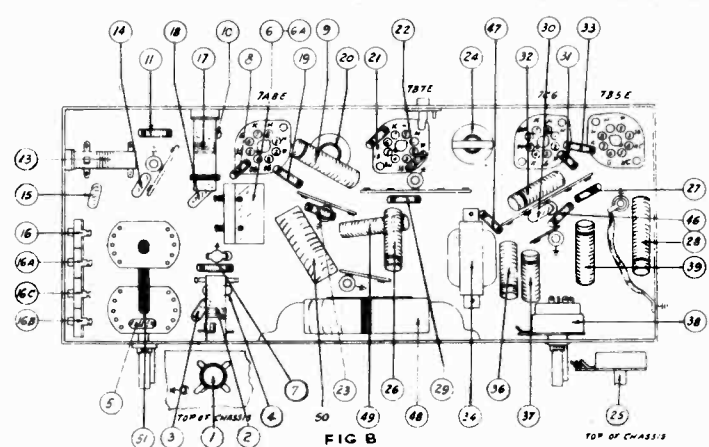
PHILCO RADIO & TELEV. CORP.



FOR CHANGES, SEE INDEX

Replacement Parts — Model 42-718

SCHE. No.	DESCRIPTION	PART No.	SCHE. No.	DESCRIPTION	PART No.	DESCRIPTION	PART No.
1.	Aerial Transformer (Brdcst. & SW-1)	32-3655	34.	Output Transformer	32-8106	Rubber Grommet (set to Cabinet)	27-4506
2.	Aerial Transformer (SW-2, SW-3)	32-3652	35.	Cone Assembly (for Speaker 36-1520-4)	36-4180	Rubber Cushion (Vibrator)	27-4607
3.	Mica Condenser (20 mmfd.)	60-020437	36.	Condenser (.03 mfd., 400 volts)	30-4517	Spacers (Vibrator Mtg.)	28-8065
4.	Mica Condenser (100 mmfd.)	60-110457	37.	Condenser (.02 mfd., 400 volts)	30-4516	<b>MISCELLANEOUS PARTS</b>	
5.	Mica Condenser (310 mmfd.)	20-031017	38.	Tone Control—OFF-ON Switch	42-1600	Cabinet	10478G
6.	Compensator (Aerial 6 mc.)	part of 6	39.	Nut	W-2157	Cabinet Back	27-9661
7.	Resistor (1 megohm)	33-510339	40.	"A" Choke	30-4577	Baffle & Cloth	40-6548
8.	Resistor (68,000 ohms)	33-368339	41.	Vibrator	41-3553	Fasteners	56-6082
9.	Condenser (.05 mfd., 200 volt)	30-4609	42.	Condenser (.5 mfd., 200 volts)	30-4590	Screw	W-2023
10.	Mica Condenser (250 mmfd.)	60-125457	43.	Power Transformer	32-8128	Screw	W-2179
11.	Resistor (47 ohms)	33-047339	44.	Condenser (.5 mfd., 200 volts)	30-4590	Dial Scale	27-5703
11A.	Resistor (4,700 ohms)	33-247339	45.	"B" Choke	33-3522	Mtg. Straps	56-1752
12.	Tuning Condenser	31-2534	46.	Resistor (2,200 ohms)	33-222339	Washer	W-152
	Drive Shaft	56-6123	47.	Resistor (680 ohms)	33-168339	Screw	W-2062
	Drive Shaft Spring	57-1468	48.	Electrolytic Condenser (10 mfd.)	30-2479	Knob	27-4332
	Drive Shaft Bearing	27-9437	48A.	Electrolytic Condenser (10 mfd.)	30-2478	Shield Assembly (Vibrator)	76-1100
	"C" Washer (Drive Shaft)	28-2043	49.	Condenser (.1 mfd., 200 volts)	30-4586	Screw (Vibrator Shield Assembly)	W-1974
	Drive Cord (Tuning Cond.)	31-2542	50.	Electrolytic Condenser (10 mfd.)	30-2478	Socket (Loktal)	27-6177
	Drive Cord (Aerial 6 mc.)	31-2543	51.	Band Switch	42-1658	Rivets	W-239
	Drive Drum (Tuning Cond.)	38-9883	52.	Phonograph Socket	27-8149	Socket (Vibrator)	27-6036
	Pointer (Dial)	56-2228	53.	Pilot Lamp	34-2068E	Mtg. Plate	28-3557
	Rubber Connector (Drive Shaft)	27-9432				Eyelet	W-1650
	Spring (Cond. Drive Cord)	28-8751				Socket Assembly (Pilot Lamp)	76-1115
	Spring (Pointer Drive Cord)	28-8953				Speaker	36-1520
	Sleeve (Mtg. Tuning Cond.)	56-1307				Screw (Speaker Mtg.)	W-2150
	Drive Cord (Tuning Cond. Mtg.)	33-247339				Terminal Panel (3 lug)	38-9778
	Washer (Tuning Cond. Mtg.)	W-151				Terminal Panel (2 lug)	38-9777
13.	Oscillator Transformer (SW-2, SW-3)	32-3651				Terminal Panel (2 lug)	38-9610
	Mica Condenser (3,500 mmfd.)	60-235224				Terminal Panel (5 lug)	38-9929
	Mica Condenser (275 mmfd.)	30-1200				Terminal Panel (2 lug) (Vib. Socket support)	76-1101
14.	Compensator (Osc. 21 mc.)	31-6411					
16A.	Compensator (Osc. 6 mc.)	part of 16					
16B.	Compensator (Osc. 580 kc.)	part of 16					
16C.	Compensator (Osc. 1,500 kc.)	part of 16					
17.	Oscillator Transformer (Brdcst. SW-1)	32-3709					
	Mica Condenser (100 mmfd.)	60-110457					
18.	Resistor (8,200 ohms)	33-282339					
19.	I.F. Transformer	32-3704					
20.	Nuts	W-949					
20A.	Compensator	part of 20					
20B.	Compensator	part of 20					
21.	Resistor (100 ohms)	33-110339					
22.	Resistor (2.2 megohms)	33-522339					
23.	Resistor (22,000 ohms)	33-322339					
23A.	Mica Condensers (10 mmfd.)	60-010437					
24.	2nd I.F. Transformer	32-3721					
	Nut	W-949					
24A.	Compensator	part of 24					
24B.	Compensator	part of 24					
24C.	Condenser	part of 24					
24D.	Resistor (47,000 ohms)	part of 24					
24E.	Condenser	part of 24					
25.	Volume Control	33-5465					
	Nut	W-2157					
26.	Resistor (.006 mfd., 400 volts)	30-4591					
27.	Resistor (100,000 ohms)	33-410339					
28.	Condenser (.1 mfd., 200 volts)	30-4586					
29.	Resistor (10 megohms)	33-610339					
30.	Mica Condenser (250 mmfd.)	60-125457					
31.	Resistor (220,000 ohms)	33-422339					
32.	Condenser (.006 mfd., 100 volts)	30-4610					
33.	Resistor (470,000 ohms)	33-447339					



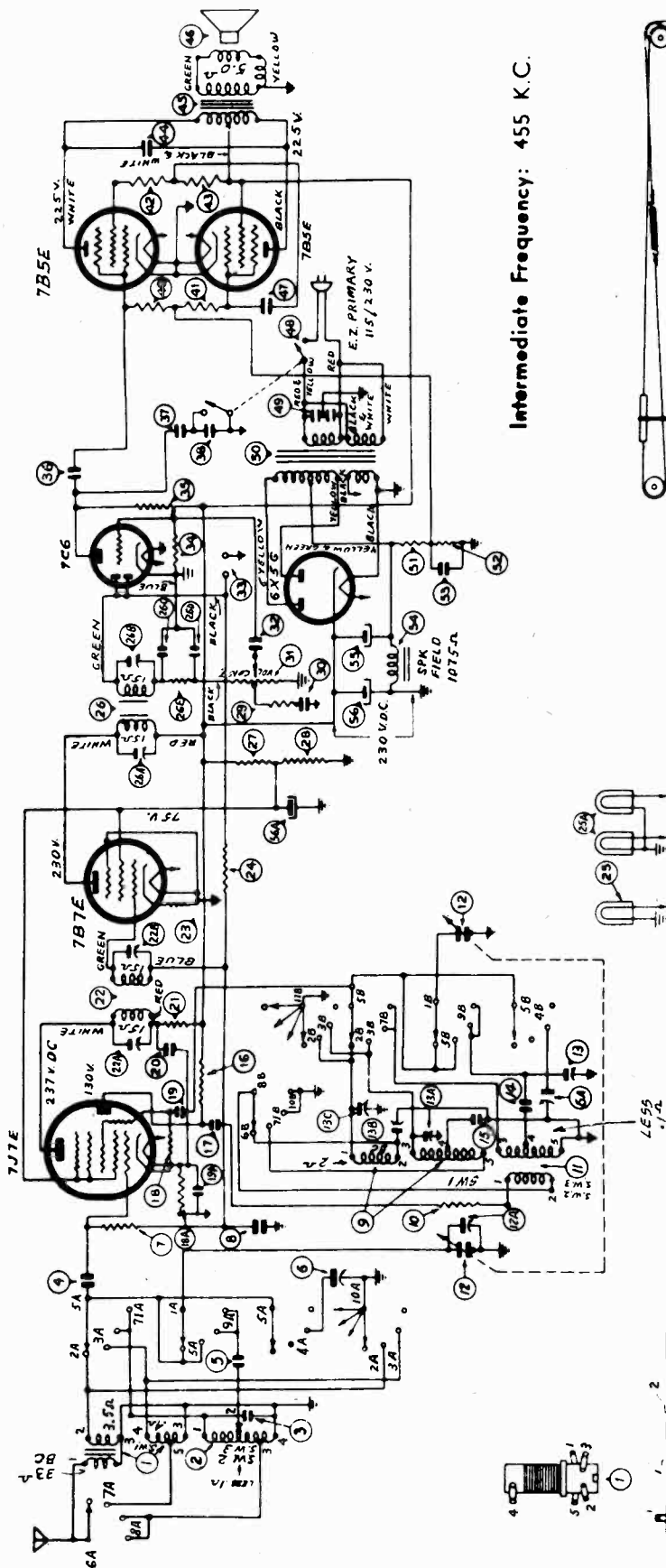
LOCATIONS OF PARTS — UNDERSIDE OF CHASSIS 42-718.



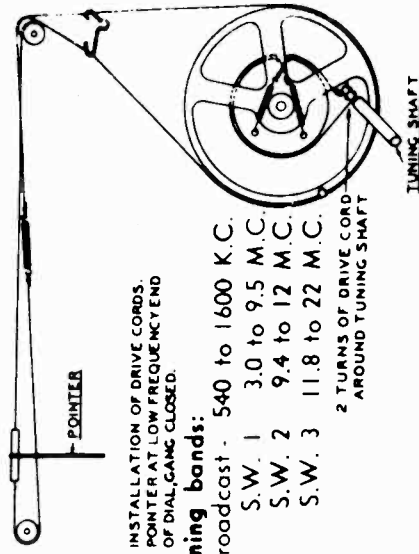


MODEL 42-724

PHILCO RADIO & TELEVISION CORP.



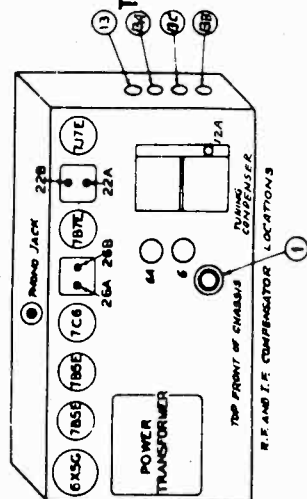
Intermediate Frequency: 455 K.C.



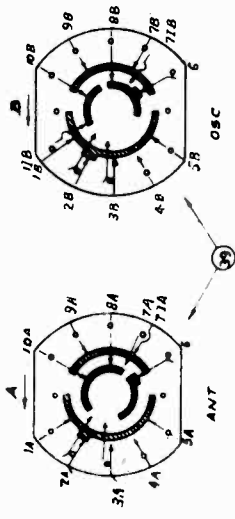
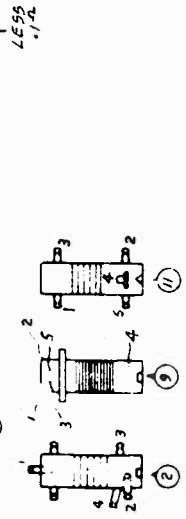
INSTALLATION OF DRIVE CORDS.  
 POINTER AT LOW FREQUENCY END  
 OF DIAL GANG CLOSED.

Tuning bands:  
 Broadcast - 540 to 1600 K.C.  
 S.W. 1 3.0 to 9.5 M.C.  
 S.W. 2 9.4 to 12 M.C.  
 S.W. 3 11.8 to 22 M.C.

2 TURNS OF DRIVE CORD  
 AROUND TUNING SHAFT



INDICATOR LAMP DIAL LAMP



NOTE:- ALL SWITCHES SHOWN IN BC POSITION. LETTERS INDICATE POSITION OF WAFER FROM FRONT OF CHASSIS, BOTTOM VIEW SOLID AREA-FRONT OF WAFER SHADED AREA- REAR OF WAFER

# PHILCO RADIO & TELEVISION CORP.

## MODEL 42-724, CODE 121 — REPLACEMENT PARTS

MODEL 42-724

Schematic No.	Description	Part No.	Schematic No.	Description	Part No.	MISCELLANEOUS PARTS
1	Brdcst & S.W.-1 Aerial Transformer	32-3655	47	Condenser (.006 mfd., 400 volts)	30-4610	Cabinet 10557A
	Mtg. Clip	28-5002	48	Power Switch and Tone Control	42-1698	Back 27-9987
2	Short Wave Aerial Transformer	32-3652		Mtg. Nut	W-2157FA3	Cord (Power) L-3274
	Mtg. Clip	28-5002	49	Power line filter Condenser (.01-.01 mfd.)	3903-0DG	Plug L-3275
3	Mica Condenser (20 mmfd.)	60-020237	50	Power Transformer (115/220 Volts, 60 cycle)	32-8188	Knobs (Tuning, Volume) 54-4105
4	Mica Condenser (100 mmfd.)	60-110457	51	Resistor (1 Megohm)	33-510339	Lever and Link (Dial Indicator) 76-1348
5	Mica Condenser (310 mmfd.)	20-031017	52	Resistor (276,000 ohms)	33-427339	Rubber Washer (Chassis) 27-4307
6	Compensator (Aerial Shortwave 12 M.C.)	31-6416	53	Condenser (.1 mfd., 200 volts)	30-4586	Rubber mtg. (Chassis) 54-4153
6A	Compensator (Oscillator Shortwave 12 M.C.)	Part of 6	54	Speaker Field (Replace Speaker)	36-1551-2	Socket (6X5G tube) 27-6174
7	Resistor (1 megohm)	33-610339	55	Electrolytic Condenser (40 mfd., 350 v)	30-2529	Socket (Loktal) 27-6177
8	Condenser (.05 mfd., 200 volts)	30-4519		Mtg. Clip	56-1456	Mtg. Rivets W-239
9	Brdcst & S.W.-1 Oscillator Transformer	32-3656	56	Electrolytic Condenser (16 mfd., 300 volts)	30-2521	Sleeve (Chassis mtg.) 56-1545
	Mtg. Clip	28-5002	56A	Electrolytic Condenser (5 mfd., 300 volts)	Part of 56	Screw (Chassis mtg.) W-1931FA3
10	Resistor (150 ohms)	33-115339				Washer W-410FA3
11	Short Wave 2, Oscillator Transformer	32-3651				
	Mtg. Clip	24-5002				
12	Tuning Condenser	31-2534				
	Drive Cord (Tuning Cond.)	31-2542				
	Spring	28-8751				
	Drive Cord (Pointer)	31-2473				
	Spring	28-8953				
	Drive Shaft	56-6170				
	Drive Drum	38-9883				
	Spring	57-1468				
	Rubber Connector	27-9432				
	Rear Bearing	27-9437				
	"C" Washer	28-2043				
	Pointer	56-185C				
	Mtg. Screw	97-002H				
	Mtg. Rubber	27-4596				
	Mtg. Sleeve	56-1307				
12A	Compensator (Brdcst Aerial—Part of Tuning Cond.)	31-6411				
13	Compensator (Oscillator—21 M.C.)	31-6411				
13A	Compensator (Oscillator—6 M.C.) Part of 13					
13B	Compensator (Oscillator—580 K.C.) Part of 13					
13C	Compensator (Oscillator—1500 K.C.) Part of 13					
14	Mica Condenser (275 mmfd.)	20-027511				
15	Mica Condenser (3500 mmfd.)	60-235224				
16	Resistor (22,000 ohms)	33-322339				
17	Mica Condenser (250 mmfd.)	60-125457				
18	Resistor (65,000 ohms)	33-368339				
18A	Resistor (100 ohms)	33-110339				
19	Mica Condenser (100 mmfd.)	60-110257				
19A	Condenser (.05 mfd., 200 volts)	30-4519				
20	Condenser (.01 mfd., 400 volts)	30-4572				
21	Resistor (1000 ohms)	33-210339				
22	First I.F. Transformer	32-3813				
22A	Primary Compensator (Part of 22)					
22B	Secondary Compensator (Part of 22)					
	Mtg. Nut	W-1949FA3				
23	Resistor (68 ohms)	33-068339				
24	Resistor (2.2 megohms)	33-522339				
25	Indicator Lamp	34-2064E				
	Socket Assembly	76-1344				
25A	Dial Lamps	34-2064E				
	Socket Assembly	76-1062				
26	Second I.F. Transformer	32-3814				
26A	Primary Compensator (Part of 26)					
26B	Secondary Compensator (Part of 26)					
26C	Condenser (100 mmfd.) Part of 26					
26D	Condenser (100 mmfd.) Part of 26					
26E	Resistor (47,000 ohms) Part of 26					
	Mtg. Nut	33-347339				
27	Resistor (22,000 ohms)	W-1949FA3				
28	Resistor (33,000 ohms)	33-322439				
29	Resistor (10,000 ohms) Part of 31	33-333339				
30	Condenser (.1 mfd., 200 volts)	30-4586				
31	Volume Control (.5 megohm)	33-5475				
	Mtg. Nut	W-2157FA3				
32	Condenser (.006 mfd., 400 volts)	30-4610				
33	Phono Input Jacks	27-6149				
34	Resistor (10 megohms)	33-610339				
35	Resistor (220,000 ohms)	33-422339				
36	Condenser (.006 mfd., 400 volts)	30-4610				
37	Condenser (.004 mfd., 600 volts)	30-4623				
38	Mica Condenser (250 mmfd.)	60-125257				
39	Band Switch	42-1699				
	Mtg. Nut	W-2157FA3				
40	Resistor (470,000 ohms)	33-447339				
41	Resistor (470,000 ohms)	33-447339				
42	Resistor (10,000 ohms)	33-310339				
43	Resistor (6800 ohms)	33-268339				
44	Condenser (.003 mfd., 1500 volts)	30-4608				
45	Output Transformer	32-8189				
	Mtg. Screw	W-630				
46	Speaker	36-1551-2				
	Cone Assembly	36-4207				
	Speaker Cable	41-3535				
	Mtg. Nut	W-124FA3				

Audio output: 3 watts.

**Aerial and Ground:** To obtain maximum operating performance, an aerial with an over-all length of 100 feet should be used. The Philco aerial Part No. 40-6383 is recommended. A good ground connection to a water pipe or any other metal object in moist earth should also be used.

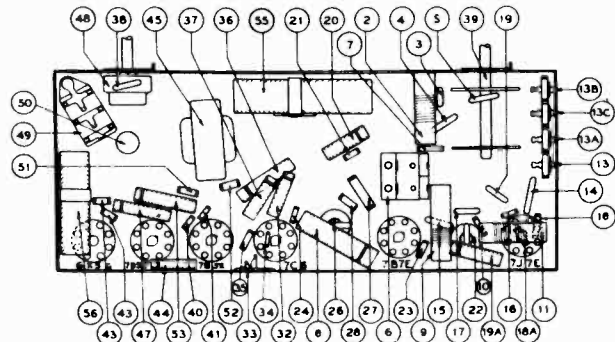
**Power Supply:** Operates on either a 115 or 230 volt, 50 to 60 cycle power supply. To use either of the above voltages change the power transformer primary wiring as indicated on the label at the rear of the chassis.

**Power Consumption:** 50 Watts

**NOTE A—**The "Dummy Aerial" consists of a condenser or resistor connected in series with the signal generator output lead (highside). Use the capacity or resistance as specified in each step of the above procedure.

**NOTE B—Dial Calibration:** In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity) set the dial pointer on the first mark on the left edge (low frequency end) of the broadcast scale.

**NOTE C—**When adjusting the osc. compensators, be sure to tune in the fundamental signal (21 M.C.) (12 M.C.) instead of the image signal. If the compensator is correctly adjusted the image signal will be found by turning the signal generator dial 910 K.C. above the fundamental signal which will be 21.910 M.C. or 12.910 M.C.



Locations of Parts—Under Chassis

Operations In Order	SIGNAL GENERATOR			RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Radio	Dummy Aerial Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators	
1	Lug of aerial tuning cond.	.1 mfd.	455 K.C.	580 K.C.	Band Switch "Brdcst" Volmax	26A, 26B, 22A, 22B	
2	Aerial	400 ohms	21 M.C.	21 M.C.	Band Switch S. W. 3	13, 12A	Note B Note C
3	Aerial	400 ohms	12 M.C.	12 M.C.	Band Switch S. W. 2	6A, 6	Note C
4	Aerial	400 ohms	6 M.C.	6 M.C.	Band Switch S. W. 1	13A,	
5	Aerial	200 mmfd.	1500 K.C.	1500 K.C.	Band Switch "Brdcst"	13C	
6	Aerial	200 mmfd.	580 K.C.	580 K.C.	Band Switch "Brdcst"	13B	Roll tuning condenser
7	Aerial	200 mmf.	1500 K.C.	1500 K.C.	Band Switch "Brdcst"	13C	



PHILCO RADIO & TELEVISION CORP.

CONNECTING ALIGNING INSTRUMENTS

**VACUUM TUBE VOLTMETER:** To use the vacuum tube voltmeter as an aligning indicator it should be connected to the A.V.C. circuit as follows:

- 1—Connect the negative (—) terminal of the vacuum tube voltmeter through a 2 megohm resistor to any point in the circuit where the A.V.C. voltage can be measured.
- 2—Connect the positive (+) terminal to the chassis ground terminal.

**AUDIO OUTPUT METER:** If this type of meter is used as an aligning indicator, it should be connected to the plate terminals of the output tubes. Adjust the meter for the 0 to 30 volt A. C. scale.

After connecting the aligning meter, adjust the compensators in the order as shown in the tabulations below. Locations of the compensators are shown on the schematic diagram.

If the output meter pointer goes off scale when adjusting the padders, reduce the strength of the signal from the generator.

Operations In Order	SIGNAL GENERATOR			RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Radio	Dummy Aerial Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators	
1	Lug of aerial tuning cond.	.1 mfd.	455 KC.	580 KC.	Band Switch "Brdcst" Volmax	41A, 41B, 40A, 40B	
2	Aerial	400 ohms	22 MC.	22 MC.	Band Switch SW 2	19H, 11B, 11A	Note B Note C
3	Aerial	400 ohms	7 MC.	7 MC.	Band Switch SW 1	19G	Roll tuning cond. Note C
4	Aerial	200 mmfd.	1500 KC.	1500 KC.	Band Switch "Brdcst"	19E	Roll tuning cond.
5	Aerial	200 mmfd.	600 KC.	600 KC.	Band Switch "Brdcst"	19F	Roll tuning cond.
6	Aerial	200 mmf.	1500 KC.	1500 KC.	Band Switch "Brdcst"	19E	Roll tuning cond.
7	Aerial	400 ohms	18 MC.	18 MC.	Band Switch 16 & 19 M.	19C, 19A	Note C
8	Aerial	400 ohms	12 MC.	12 MC.	Band Switch 25 to 31 M.	19D, 19B	Note C

**NOTE A**—The "Dummy Aerial" consists of a condenser or resistor connected in series with the signal generator output lead (highside). Use the capacity or resistance as specified in each step of the above procedure.

**NOTE B**—Dial Calibration: In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity) set the dial pointer on the

first mark on the left edge (low frequency end) of the broadcast scale.

**NOTE C**—When adjusting the oscillator compensators, be sure to tune in the fundamental signal instead of the image signal. If the compensator is correctly adjusted the image signal will be found by turning the signal generator dial 910 KC. above the fundamental signal.

REPLACEMENT PARTS  
MODEL 42-730

FOR CHANGES, SEE INDEX

Schematic No.	Description	Part No.	Schematic No.	Description	Part No.	Schematic No.	Description	Part No.
1.	Aerial Transformer (Broadcast)	32-3422	19D.	Compensator (Oscillator—25 to 31 M. Band), Part of 19A		41C.	Condenser (100 mmfd.), Part of 41B	
2.	Aerial Transformer (SW-1)	28-5002FE11	19E.	Compensator (Oscillator—1500 KC.), Part of 19A		41D.	Condenser (100 mmfd.), Part of 41B	
3.	Aerial Transformer (SW-2)	28-5002FE11	19F.	Compensator (Oscillator—600 KC.), Part of 19A		41E.	Resistor (47,000 ohms), Part of 41	W-1949
4.	Mica Condenser (100 mmfd.)	60-110457	19G.	Compensator (Oscillator—SW-1), Part of 19A		42.	Mica Condenser (100 mmfd.)	60-110257
5.	Resistor (470,000 ohms)	33-447339	19H.	Compensator (Oscillator—SW-2), Part of 19A	33-322339	43.	Condenser (.002 mfd., 400 volts)	30-4622
6.	Condenser (.05 mfd., 200 volts)	30-4809	20.	Resistor (22,000 ohms)	33-447339	44.	Condenser (.006 mfd., 400 volts)	30-4591
7.	Mica Condenser (10 mmfd.)	60-010237	21.	Resistor (470,000 ohms)	60-110257	45.	Volume Control	33-5454
8.	Mica Condenser (10 mmfd.)	60-010237	22.	Mica Condenser (100 mmfd.)	33-368339	46.	Resistor (330,000 ohms)	33-433339
9.	Band Switch	42-1677	23.	Resistor (68,000 ohms)	60-125457	47.	Resistor (47,000 ohms)	33-347339
10.	Resistor (15,000 ohms)	33-315339	24.	Mica Condenser (250 mmfd.)	20-008007	48.	Condenser (.006 mfd., 400 volts)	30-4591
11.	Tuning Condenser	31-2549	25.	Oscillator Transformer (SW-2)	32-3735	49.	Tone Control	33-5456
11A.	Compensator (R. F.—SW 2), Part of 11		26.	Mica Condenser (80 mmfd.)	20-037517	50.	Resistor (10 megohms)	33-510339
11B.	Compensator (Aerial—SW 2), Part of 11		27.	Mica Condenser (375 mmfd.)	33-115339	51.	Condenser (.006 mfd., 400 volts)	60-110257
	Drive Cord	31-2575	28.	Mica Condenser (150 ohms)	32-3695	52.	Mica Condenser (100 mmfd.)	30-4610
	Spring	28-8751	29.	Oscillator Transformer (SW-1)	28-5002FE11	53.	Condenser (.006 mfd., 400 volts)	33-510339
	Drum and Hub Assembly	31-2353	30.	Mtg. Clip	60-230124	54.	Resistor (1 megohm)	33-447339
	Mtg. Spacer	56-1307	31.	Mica Condenser (3000 mmfd.)	60-230124	55.	Resistor (470,000 ohms)	33-447339
	Mtg. Screw & Washer	97-0028	32.	Oscillator Transformer (Broadcast)	32-3423	56.	Resistor (470,000 ohms)	33-447339
	Pointer	56-1276FCP	33.	Mtg. Clip	28-5002FE11	57.	Resistor (470,000 ohms)	30-4587
	Tuning Shaft	76-1283	34.	Resistor (1000 ohms)	33-210339	58.	Condenser (.2 mfd., 200 volts)	30-4610
12.	Mica Condenser (100 mmfd.)	60-110457	35.	Condenser (.01 mfd., 400 volts)	30-4572	59.	Condenser (.006 mfd., 400 volts)	33-239339
13.	R. F. Transformer (Broadcast)	32-3417	36.	Resistor (33,000 ohms)	33-333339	60.	Resistor (3900 ohms)	30-4622
14.	Mica Condenser (100 mmfd.)	28-5002FE11	37.	Condenser (.2 mfd., 400 volts)	30-4594	61.	Condenser (.002 mfd., 600 volts)	32-8179
15.	R. F. Transformer (SW-1)	60-110457	38.	Resistor (22,000 ohms, 1 watt)	33-322439	62.	Output Transformer	86-1549-2
16.	Mica Condenser (100 mmfd.)	28-5002FE11	39.	Phonograph Input Socket	27-6149	63.	Speaker	36-4207
17.	R. F. Transformer (SW-2)	32-3692	40.	Condenser (.05 mfd., 200 volts)	30-4609		Cone Assembly (For Speaker 26-1549-2)	W-124
18.	Mica Condenser (375 mmfd.)	28-5002FE11	41.	Resistor (220 ohms)	33-122339		Mtg. Nut (Speaker)	41-3535
19.	Mica Condenser (60 mmfd.)	20-006007	42.	1st I. F. Transformer	32-3896		Speaker Cable	33-447339
19A.	Compensator (Aerial—16 to 19 M. Band)	31-6417	43.	Primary Compensator, Part of 40		64.	Resistor (470,000 ohms)	33-510339
19B.	Compensator (Aerial—25 to 31 M. Band), Part of 19A		44.	Secondary Compensator, Part of 40		65.	Resistor (1 megohm)	33-510339
19C.	Compensator (Oscillator—16 to 19 M. Band), Part of 19A		45.	Mtg. Nut	W-1949	66.	Resistor (15 megohms)	33-515339
			46.	2nd I. F. Transformer	32-3657	67.	Electrolytic Condenser (40 mfd., 350 volts D. C.)	30-2445
			47.	Primary Compensator, Part of 41		68.	Electrolytic Condenser (16 mfd., 250 volts D. C.)	30-2465
			48.	Secondary Compensator, Part of 41			Mtg. Plate	27-9508
						69.	Field Coil (Replace Speaker 36-1549-2)	
						70.	Resistor (47,000 ohms)	33-347339
						71.	Resistor (270,000 ohms)	33-427339
						72.	Resistor (1 megohm)	33-510339
						73.	Condenser (.003 mfd., 1500 volts D. C.)	30-4608
						74.	Condenser (.003 mfd., 1500 volts D. C.)	30-4608
						75.	Power Transformer (115/220 volts, 60 cycle)	32-8178
							Power Transformer (115 volts, 25 cycle)	32-8205
						76.	Power Line Changeover Switch	42-1569
						77.	Band Indicator Lamp	34-2064E
							Socket Assembly	76-1178
							Arm & Link Assembly	76-1352
							Light Housing Assembly	76-1262
						78.	Resistor (150,000 ohms)	33-415359
						79.	Resistor (150,000 ohms)	33-415359
						80.	Dial Pilot Lamp	30-2064E
							Socket Assembly	76-1414

Tuning Band Frequencies:

Broadcast	540 to 1720 kc.
SW 1	2.3 to 7.5 mc.
SW 2	7.0 to 22 mc.
Spread Band 1	9.4 to 12 mc.
Spread Band 2	15.1 to 18 mc.

Intermediate Frequency: 455 kc.

**Power Supply:** Operates on either a 115 or 230 volt, 50 to 60 cycle, A. C. power supply. To use either of the above voltages, change the power transformer primary wiring as indicated on the label at the rear of the chassis and schematic diagram. This model can also be operated on a 115-volt, 25 cycle power supply, by changing the power transformer as indicated in the parts list.

**Power Consumption:** 50 watts.

**Audio Output:** 2.2 watts.

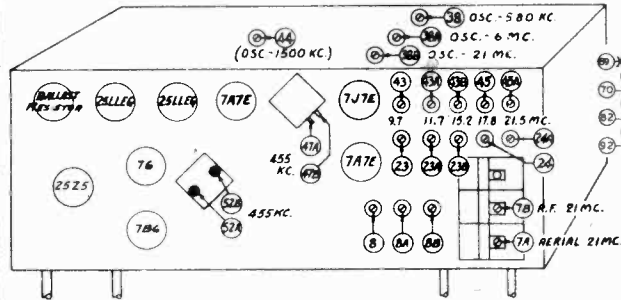


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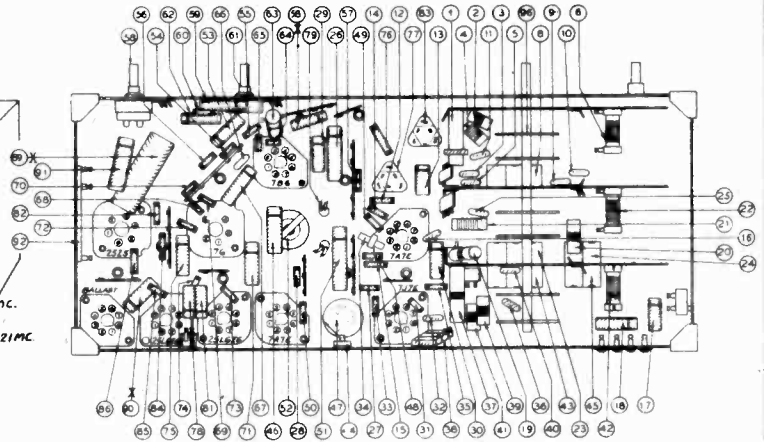
MODEL 42-760

MODEL 42-761

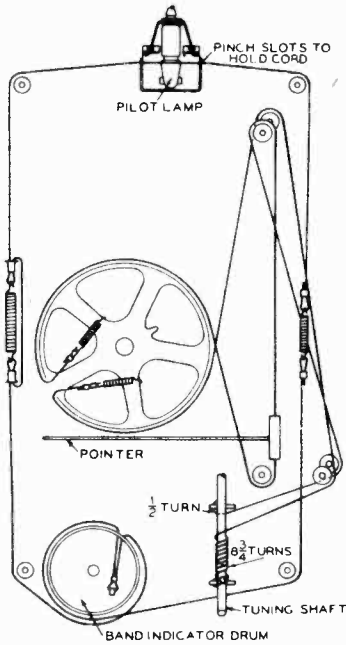
MODEL 42-762



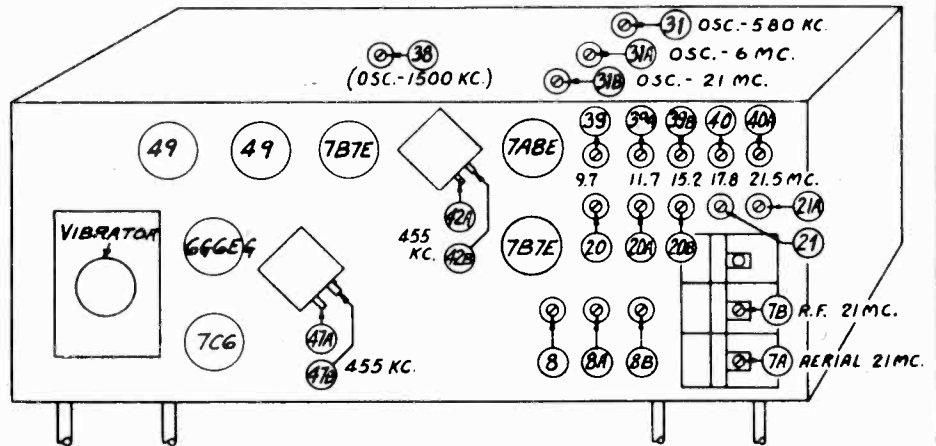
LOCATIONS OF COMPENSATORS—TOP CHASSIS Model 42-761



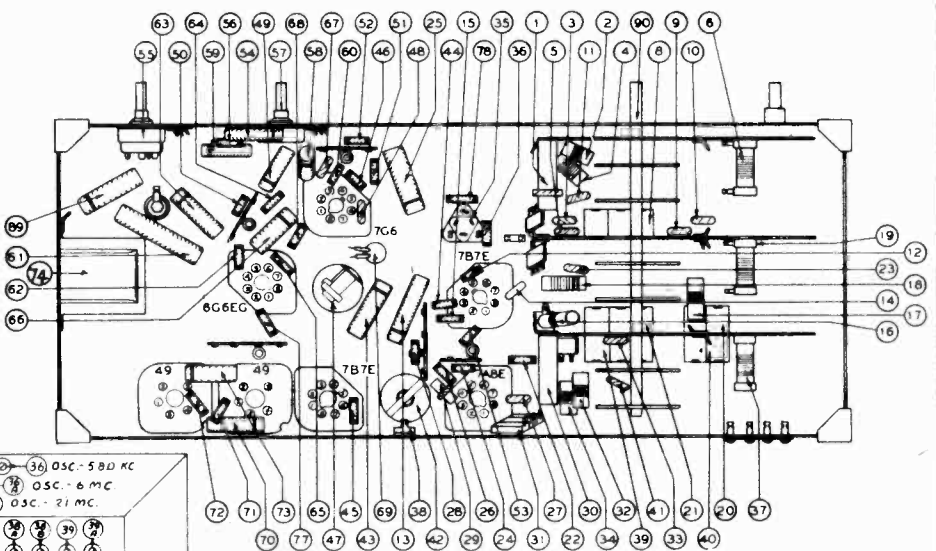
PART LOCATIONS—UNDER CHASSIS, Model 42-761



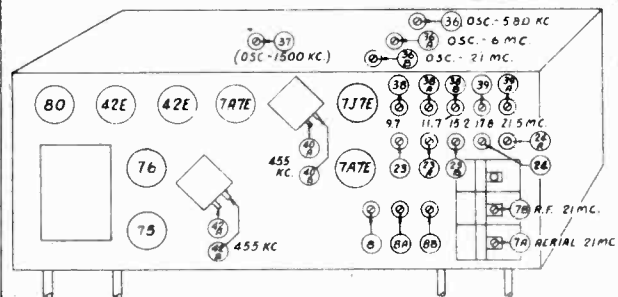
INSTALLING TUNING DRIVE CORD



LOCATIONS OF COMPENSATORS, TOP OF CHASSIS, Model 42-762



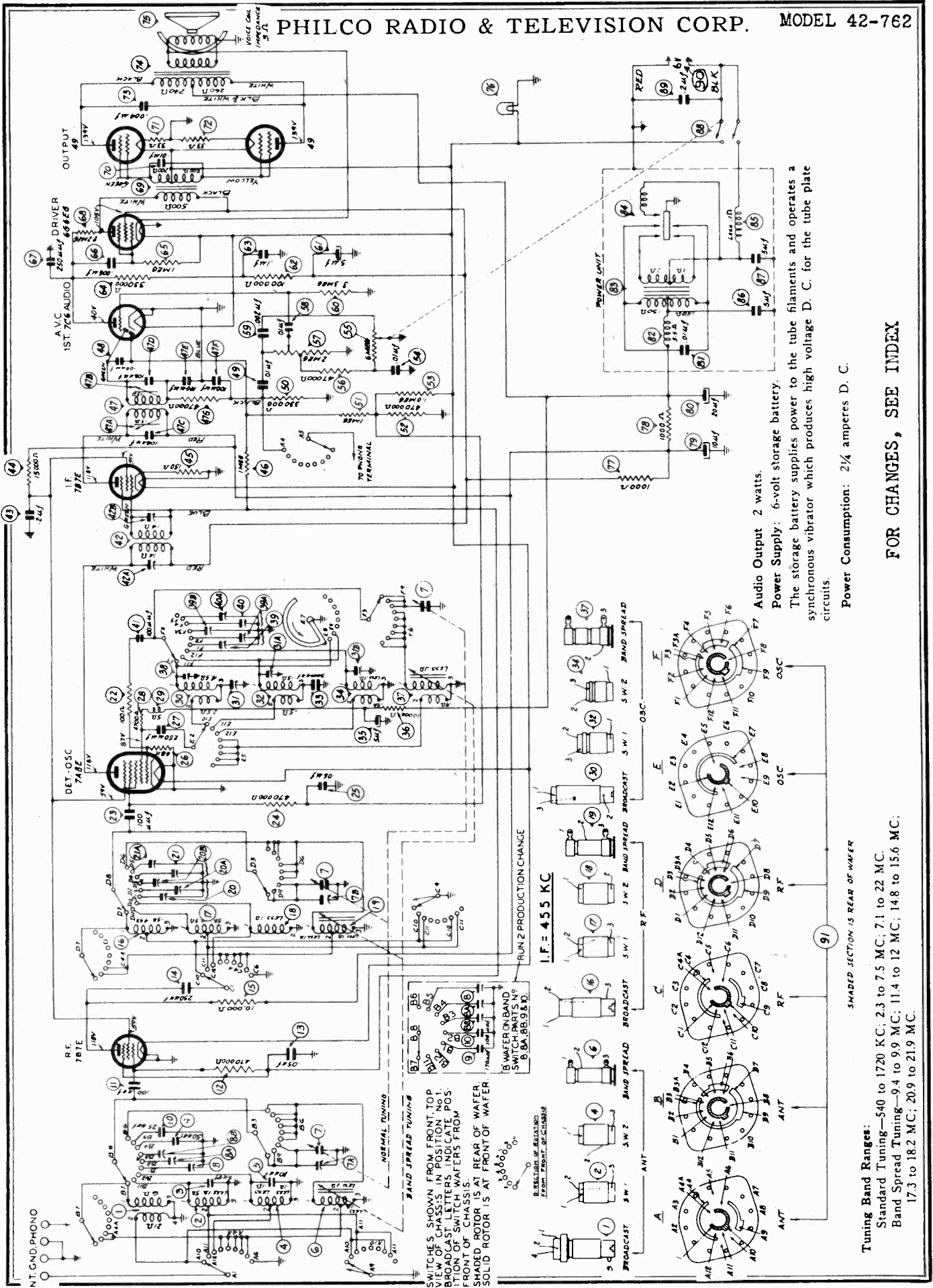
LOCATIONS OF PARTS—UNDER CHASSIS, Model 42-762



LOCATIONS OF COMPENSATOR—TOP CHASSIS Model 42-760



PHILCO RADIO & TELEVISION CORP. MODEL 42-762



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SWITCHES SHOWN FROM FRONT TOP VIEW OF CHASSIS IN POSITION NO. 1. BROADCAST LETTERS INDICATE POSITION OF SWITCH WAFERS FROM FRONT OF CHASSIS. SHADED ROTOR IS AT REAR OF WAFER. SOLID ROTOR IS AT FRONT OF WAFER.

SELECTOR OF RELAY(S) FROM FRONT OF CHASSIS

RUN 2 PRODUCTION CHANGE

I.F. = 455 KC

SHADED SECTION IS REAR OF WAFER

**Tuning Band Ranges:**  
 Standard Tuning—540 to 1720 KC; 2.3 to 7.5 MC; 7.1 to 22 MC.  
 Band Spread Tuning—9.4 to 9.9 MC; 11.4 to 12 MC; 14.8 to 15.6 MC; 17.3 to 18.2 MC; 20.9 to 21.9 MC.

Audio Output 2 watts.

Power Supply: 6-volt storage battery.

The storage battery supplies power to the tube filaments and operates a synchronous vibrator which produces high voltage D. C. for the tube plate circuits.

Power Consumption: 2¼ amperes D. C.

FOR CHANGES, SEE INDEX



MODEL 42-760  
MODEL 42-761

PHILCO RADIO & TELEVISION CORP.

MODEL 42-762

CONNECTING ALIGNING INSTRUMENTS

Vacuum Tube Voltmeter: To use the vacuum tube voltmeter as an aligning indicator, it should be connected to the A. V. C. circuit as follows:

1. Connect the negative (-) terminal of the vacuum tube voltmeter through a 2 megohm resistor to any point in the circuit where the A. V. C. voltage can be measured.
2. Connect the positive (+) terminal to the chassis ground terminal.

Audio Output Meter: If this type of meter is used as an aligning indicator, it should be connected to the plate and screen terminal of the output tube. Adjust the meter for the 0 to 30 volt A. C. scale.

After connecting the aligning meter, adjust the compensators in the order for each model as shown in the tabulation below. Locations of the compensators are shown in Figures 6, 7, 10.

If the output meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

ADJUSTING NORMAL TUNING RANGES

Operations in Order	SIGNAL GENERATOR			RECEIVER					Special Instructions
	Output Connections to Receiver	Dummy Aerial Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators for Maximum Signal Models			
						42-760	42-761	42-762	
1	Grid 747E	.1 mfd	465 KC	580 KC	Range Switch "Broadcast, Volume 'Max'"	42A 42B 40B	52A 52B 47B	47A 47B 42B	
2	Aerial Lead	400 ohms	21 MC	21 MC	Range Switch "S. W. 2"	36B 7B 7A	38B 7B 7A	31B 7B 7A	Notes B, C
3	Aerial Lead	400 ohms	6.0 MC	6.0 MC	Range Switch "S. W. 1"	36A	38A	31A	Roll Gang
4	Aerial Lead	200 mmfd	1500 KC	1500 KC	Range Switch "Broadcast"	37	44	38	Roll Gang
5	Aerial Lead	200 mmfd	580 KC	580 KC	Range Switch "Broadcast"	36	38	31	Roll Gang

ADJUSTING BAND SPREAD TUNING RANGES

Mechanical Adjustments: Before the padders of the band spread tuning ranges are adjusted, the iron cores of the antenna, R. F. and oscillator transformers must be mechanically set as follows:

1. Turn the band spread tuning control to the extreme counterclockwise position (lowest frequency).
2. Adjust location of "OSC" iron cores so that the end of the iron core is flush with the end of the transformer. With the "OSC" iron core in this position the antenna R. F. cores will be correctly located.
3. When installing a new oscillator transformer or core, make sure that the iron core slides freely in the transformer. It is important to do this to eliminate backlash in the tuning mechanism. If adjustment is necessary slightly move transformer in the direction required.

After mechanically setting the transformers and iron cores, adjust the padders as given in the following tabulation:

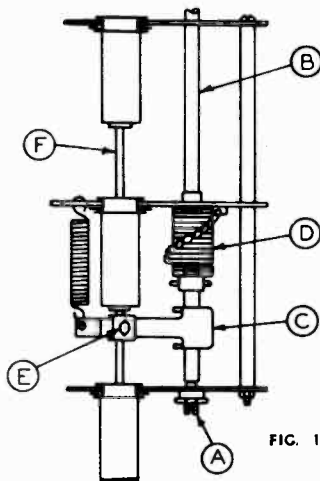


FIG. 1—BAND SPREAD TUNING MECHANISM

MECHANICAL ADJUSTMENTS—BAND SPREAD TUNING MECHANISM

1. ADJUSTMENT OF TUNING SHAFT

- (a) End play can be removed by adjusting the rear bearing No. (A), Fig. (1). Care should be taken when adjusting the screw so that

PROCEDURE FOR PRODUCTION RUN No. 1 CHASSIS

Operations in Order	SIGNAL GENERATOR			RECEIVER					
	Output Connections to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators Models			Special Instructions
						42-760	42-761	42-762	
1	Antenna and Ground	400 ohms	9.7 MC	9.7 MC	Band Selector Position "31M" on Dial	38 23 8 Note E	43 23 8 Note E	39 20 8 Note E	Note B, Note D
2	Antenna and Ground	400 ohms	11.7 MC	11.7 MC	Band Selector Position "25M" on Dial	38A 23A 8A Note E	43A 23A 8A Note E	39A 20A 8A Note E	Note D
3	Antenna and Ground	400 ohms	15.2 MC	15.2 MC	Band Selector Position "19M" on Dial	38B 23B 8B Note E	43B 23B 8B Note E	39B 20B 8B Note E	Note D
4	Antenna and Ground	400 ohms	17.8 MC	17.8 MC	Band Selector Position "16M" on Dial	39 24	45 24	40 21	Note D
5	Antenna and Ground	400 ohms	21.5 MC	21.5 MC	Band Position Selector "13M" on Dial	39A 24A	45A 24A	40A 21A	Note D

PROCEDURE FOR PRODUCTION RUN No. 2 CHASSIS

Operations in Order	SIGNAL GENERATOR			RECEIVER					
	Output Connections to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Settings	Adjust Compensators Models			Special Instructions
						42-760	42-761	42-762	
1	Antenna and Ground	400 ohms	21.5 MC	21.5 MC	Band Selector Position "13M" on Dial	39A 24A	45A 24A	40A 21A	Note B, Note D
2	Antenna and Ground	400 ohms	17.8 MC	17.8 MC	Band Selector Position "16M" on Dial	39 24 8A	45 24 8A	40 21 8A	Note D
3	Antenna and Ground	400 ohms	15.2 MC	15.2 MC	Band Selector Position "19M" on Dial	38B 23B 8B	43B 23B 8B	39B 20B 8B	Note D
4	Antenna and Ground	400 ohms	11.7 MC	11.7 MC	Band Selector Position "25M" on Dial	38A 23A	43A 23A	39A 20A	Note D
5	Antenna and Ground	400 ohms	9.7 MC	9.7 MC	Band Selector Position "31M" on Dial	38 23	43 23	39 20	Note D

NOTE A—The "Dummy Antenna" consists of a condenser or resistance connected in series with the signal generator output lead (high side). Use the capacity or resistance as specified in each step of the above procedure.

NOTE B—In order to adjust the receiver correctly the pointer must be aligned to track the dial properly. To adjust the dial proceed as follows: With the tuning condenser closed (maximum capacity) set the dial pointer on the first marks at the low frequency end of the scales. Make sure that the stop mechanism in the band spread permeability tuner reaches its counterclockwise end of rotation at the same time that the tuning condenser is completely closed.

NOTE C—When adjusting "OSC" compensator be sure to tune in the fundamental signal (21 MC) instead of the image signal. If the compensator is correctly adjusted, the image signal will be found by turning the signal generator dial 910 KC above the fundamental signal, which will be 21,910 MC.

NOTE D—To make sure that the dial reads properly after adjusting the compensators with the signal generator as outlined above, a known station on each band near the adjusting frequency should be tuned in with the spread band tuning control. If the dial reading is incorrect, adjust the oscillator compensators on each band until the stations are heard at the correct points on the dial. After adjusting the oscillator compensators to the correct frequency of the known station, the "antenna" and R. F. compensators should be adjusted to maximum signal.

ALTERNATIVE METHOD—Locate a known station near the center of each spread band and "Zero Beat" the signal generator with it at the time of aligning the band. This makes available a signal of adjustable strength and known frequency. This method will be found to be simpler when conditions make its use possible, because it is much easier to align a receiver to a strong signal.

NOTE E—The band spread compensator aligning procedure for Run 2 chassis differs from Run 1. The two procedures are listed above. Compensators 8, 8A and 8B on chassis marked Run 2 is used to adjust the 21.5, 17.8 and 15.2 MC bands, whereas in Run 1 chassis these compensators are used to adjust the 9.7, 11.7 and 15.2 MC bands. The locations of the padders remain the same as Run 1 chassis shown in Figures 6, 7 and 10.

shaft does not turn too tightly. In making this adjustment, the screw driver can be inserted in the chassis in line with shaft.

2. REMOVING TUNING SHAFT

- (a) Remove tuning knob shaft and coupling.
- (b) Loosen lock nut on rear bearing and remove adjusting screw and ball bearing.
- (c) Remove cotter pin from stop assembly.
- (d) Unscrew carriage as shaft is pulled out through front of R. F. tuner and chassis.
- (e) When installing new shaft (B) adjust positions of stop assembly and carriage, before inserting cotter pin, so that the carriage (C) is approximately 5 turns from the stop assembly (D) with shaft in extreme counterclockwise position from front. The stop assembly is rotated until all washers are in contact. The bottom washer should be located between the stops farthest apart.

3. ADJUSTING BAND SPREAD TUNING CORE ASSEMBLY

- (a) Cores are correctly located when the rear of the oscillator core (blue identification) is flush with the rear of oscillator transformer and the tuning shaft is in extreme counterclockwise position.
- (b) The carriage clamp (E) must not be tightened excessively as this will bend the tuning core rod (F) and cause backlash.

PHILCO RADIO & TELEVISION CORP.

MODEL 42-760  
MODEL 42-761

REPLACEMENT PARTS—Model 42-760

Sch. No.	Description	Part No.
1.	Aerial Transformer (Broadcast)	32-3661
2.	Mfg. Clip	28-5002
3.	Aerial Transformer (Police)	32-3664
4.	Aerial Transformer (5 mfd)	60-00557
5.	Aerial Transformer (Short Wave)	32-3667
6.	Mica Condenser (10 mfd)	60-010337
7.	Band Spread Aerial Transformer	32-3670
	Mfg. Clip	57-0985
	Mfg. Clip	76-1281
	Mfg. Clip	31-2535
7A.	Tuning Condenser	31-2536
7B.	Compensator (S. W.—R. F.)	31-2537
	Part of Cond.	28-5004
	Drive Cord	W-2196
	Spring	W-2008
	Cutter Pin	W-2009
	Drive Drum	76-1244
	Set Screw	W-2008
	Rubber Mtg. Grommet	W-2009
	Tuning Shaft (Inside R. F. Unit)	76-1240
	Shaft Bushing (Threaded)	58-2152
	Carriage (Tuning Cores)	56-2145
	Core Clamp	56-2151
	Screw	97-0054
	Screw	W-2196
8B.	Cutter Pin	76-1245
	Tuning Shaft and Bearing (Out- side Chassis)	W-2252
	Rubber Disc	W-2253
	Mfg. Screw	97-0058
8*	Compensator (31 M.—Aerial)	31-6412
8A.	Compensator (25 M.—R. F. Stage), Part of 8	31-6413
8B.	Compensator (19 M.—R. F. Stage), Part of 8	31-6414
9*	Silver Mica Condenser (50 mmfd)	30-1199
10*	Silver Mica Condenser (25 mmfd)	30-1145
11A.	Mica Condenser (100 mmfd)	60-110457
12.	Resistor (68 ohms)	33-068339
13.	Resistor (470,000 ohms)	33-447339
14.	Resistor (.06 mfd, 200 volts)	30-4609
15.	Mica Condenser (250 mmfd)	60-125157
16.	Resistor (15,000 ohms)	33-315339
17.	Resistor (33,000 ohms)	33-315439
18.	Resistor (2 mfd, 400 volts)	30-4584
19.	R. F. Transformer (Broadcast)	32-3662
	Mfg. Clip	28-5002
20.	R. F. Transformer (Police)	32-3665
21.	R. F. Transformer (Short Wave)	32-3671
22.	Band Spread R. F. Transformer	32-3672
	Mfg. Clip	57-0985
	Mfg. Clip	76-1281
23A.	Compensator (31 M.—R. F. Stage), Part of 23	31-6412
23B.	Compensator (19 M.—R. F. Stage), Part of 23	31-6413
24.	Compensator (15 M.—R. F. Stage)	31-6113
25.	Mica Condenser (100 mmfd)	60-110457
26.	Resistor (470,000 ohms)	33-447339
27.	Mica Condenser (250 mfd)	60-125157
28.	Resistor (22,000 ohms)	33-322339
29.	Resistor (68,000 ohms)	33-368339
30.	Resistor (100 ohms)	33-110339
31.	Mica Condenser (100 mmfd)	60-110457
32.	Oscillator Transformer (Broadcast)	32-3663
	Mfg. Clip	28-5002
33A.	Oscillator Transformer (Police)	32-3666
33B.	Oscillator Transformer (Short Wave)	32-3671
34.	Oscillator Transformer (Band Spread)	32-3672
35.	Mfg. Clip	57-0985

36.	Compensator (580 KC Broadcast)	31-6350
36A.	Compensator (S. W.—1-6 MC), Part of 36	32-8109
36B.	Compensator (S. W.—2-21 MC), Part of 36	32-8031
37.	Osc. Compensator (1500 KC— Broadcast)	42-1569
38.	Osc. Compensator (31 M Band— 9.7 MC)	33-415339
38A.	Osc. Compensator (25 M Band— 11.7 MC), Part of 38	30-1145
38B.	Osc. Compensator (19 M Band—15.2 MC), Part of 38	30-1199
39.	Osc. Compensator (16 M Band— 17.8 MC)	31-6415
39A.	Osc. Compensator (13 M Band— 21.5 MC), Part of 39	32-3659
40.	1st I. F. Transformer	W-1949
40A.	Primary Compensator (Iron Core)	33-058339
40B.	Secondary Compensator (Iron Core)	30-4609
40C.	Condenser, Part of 40	32-3660
40D.	Condenser, Part of 40	32-3661
41.	Resistor (68 ohms)	33-068339
41A.	Resistor (.05 mfd, 200 volts)	30-4609
42.	2nd I. F. Transformer	32-3660
42A.	Primary Compensator (Iron Core)	33-058339
42B.	Secondary Compensator (Iron Core)	30-4609
42C.	Condenser, Part of 42	32-3661
42D.	Condenser, Part of 42	32-3662
42E.	Resistor (47,000 ohms), Part of 42	33-447339
42F.	Condenser (100 mmfd), Part of 42	60-110457
43.	Resistor (330,000 ohms)	33-447339
44.	Mica Condenser (.005 mfd, 400 volts)	30-4591
45.	Mica Condenser (100 mmfd)	60-110457
46.	Resistor (47,000 ohms)	33-347339
47.	Condenser (.01 mfd, 200 volts)	30-4581
48.	Condenser (.002 mfd, 600 volts)	30-4579
49.	Tone Control	33-6439
50.	Volume Control	W-2157
51.	Condenser (.05 mfd, 200 volts)	33-6438
52.	Resistor (470,000 ohms)	W-2157
53.	Resistor (1 megohm)	33-5438
54.	Mica Condenser (100 mmfd)	30-4519
55.	Condenser (.006 mfd, 400 volts)	33-447339
56.	Resistor (470,000 ohms)	60-110457
57.	Resistor (470,000 ohms)	33-447339
58.	Resistor (27,000 ohms)	33-327339
59.	Condenser (.006 mfd, 400 volts)	30-4610
60.	Resistor (10 megohms)	33-10339
61.	Resistor (2.2 megohms)	33-52339
62.	Mica Condenser (250 mmfd)	60-125157
63.	Resistor (33,000 ohms)	33-33339
64.	Resistor (33,000 ohms)	33-447339
65.	Resistor (470,000 ohms)	30-4610
66.	Condenser (.006 mfd, 400 volts)	30-4610
67.	Condenser (2 mfd, 200 volts)	30-4610
68.	Condenser (.004 mfd, 600 volts)	30-4652
69.	Output Transformer	32-8110
70.	Speaker	36-1463-4
71.	Core Assembly (For Speaker coil and fiber spider)	36-1463-4
72.	Electrolytic Condenser (40 mfd, 350 volts)	30-2445
73.	Mfg. Plate	56-1643
74.	Field Coil (Replace Speaker 36-1463)	30-2465
75.	Electrolytic Condenser (15 mfd)	27-9508
76.	Mfg. Plate	31-2537
77.	Insulation Tube	33-33339
78.	Resistor (33,000 ohms)	33-33339
79.	Resistor (150,000 ohms)	33-510339
80.	Condenser (.003 mfd, 1500 volts)	30-4608

81.	Power Transformer (115/230 volts, 60 cycles)	32-8109
82.	Power Transformer (115 volts, 25 cycles)	32-8031
83.	Power Transformer (150,000 ohms)	42-1569
84.	Power Line Cord	33-415339
85.	Band Switch	30-1145
86.	Band Indicator Drum	L-3274
87.	Drive Cord	L-3275
88.	Spring (Left Side)	42-1660
89.	Spring (Right Side)	76-1246
90.	Spring (Tuning Cores)	31-2538
91.	Plot Lamp	28-8529
92.	Socket Assembly	23-8553
93.	Socket	34-2064E
94.	Rod	56-2133
95.	Miscellaneous Parts	
96.	Cabinet	10641A
97.	Mfg. Screw	27-9868
98.	Dial Scale Assembly	W-2076
99.	Dial Pointer	56-2134
100.	Mfg. Screw	W-188
101.	Knobs	27-4572
102.	Socket (76 tube)	27-6005
103.	Socket (75, 42E tubes)	27-6006
104.	Socket (80 tube)	27-6004
105.	Socket (Lokalt-J7E tube)	27-6129
106.	Socket (Lokalt-7A7E tubes)	27-6128-2
107.	Mfg. Screets	W-1600
108.	Tube Shield (A7E tube)	56-1565
109.	Tube Shield Base (7A7E tube)	56-1567
110.	Tube Shield (75 tube)	24-2726
111.	Wire Panel (3 lugs)	38-9778
112.	Wire Panel (4 lugs)	38-9809
113.	Wire Panel (6 lugs)	38-9810
114.	Washer (Chassis Mfg.)	28-5114

115.	Washer (Chassis Mfg.)	28-5114
116.	Washer (Chassis Mfg.)	28-5114
117.	Washer (Chassis Mfg.)	28-5114
118.	Washer (Chassis Mfg.)	28-5114
119.	Washer (Chassis Mfg.)	28-5114
120.	Washer (Chassis Mfg.)	28-5114
121.	Washer (Chassis Mfg.)	28-5114
122.	Washer (Chassis Mfg.)	28-5114
123.	Washer (Chassis Mfg.)	28-5114
124.	Washer (Chassis Mfg.)	28-5114
125.	Washer (Chassis Mfg.)	28-5114
126.	Washer (Chassis Mfg.)	28-5114
127.	Washer (Chassis Mfg.)	28-5114
128.	Washer (Chassis Mfg.)	28-5114
129.	Washer (Chassis Mfg.)	28-5114
130.	Washer (Chassis Mfg.)	28-5114
131.	Washer (Chassis Mfg.)	28-5114
132.	Washer (Chassis Mfg.)	28-5114
133.	Washer (Chassis Mfg.)	28-5114
134.	Washer (Chassis Mfg.)	28-5114
135.	Washer (Chassis Mfg.)	28-5114
136.	Washer (Chassis Mfg.)	28-5114
137.	Washer (Chassis Mfg.)	28-5114
138.	Washer (Chassis Mfg.)	28-5114
139.	Washer (Chassis Mfg.)	28-5114
140.	Washer (Chassis Mfg.)	28-5114
141.	Washer (Chassis Mfg.)	28-5114
142.	Washer (Chassis Mfg.)	28-5114
143.	Washer (Chassis Mfg.)	28-5114
144.	Washer (Chassis Mfg.)	28-5114
145.	Washer (Chassis Mfg.)	28-5114
146.	Washer (Chassis Mfg.)	28-5114
147.	Washer (Chassis Mfg.)	28-5114
148.	Washer (Chassis Mfg.)	28-5114
149.	Washer (Chassis Mfg.)	28-5114
150.	Washer (Chassis Mfg.)	28-5114
151.	Washer (Chassis Mfg.)	28-5114
152.	Washer (Chassis Mfg.)	28-5114
153.	Washer (Chassis Mfg.)	28-5114
154.	Washer (Chassis Mfg.)	28-5114
155.	Washer (Chassis Mfg.)	28-5114
156.	Washer (Chassis Mfg.)	28-5114
157.	Washer (Chassis Mfg.)	28-5114
158.	Washer (Chassis Mfg.)	28-5114
159.	Washer (Chassis Mfg.)	28-5114
160.	Washer (Chassis Mfg.)	28-5114
161.	Washer (Chassis Mfg.)	28-5114
162.	Washer (Chassis Mfg.)	28-5114
163.	Washer (Chassis Mfg.)	28-5114
164.	Washer (Chassis Mfg.)	28-5114
165.	Washer (Chassis Mfg.)	28-5114
166.	Washer (Chassis Mfg.)	28-5114
167.	Washer (Chassis Mfg.)	28-5114
168.	Washer (Chassis Mfg.)	28-5114
169.	Washer (Chassis Mfg.)	28-5114
170.	Washer (Chassis Mfg.)	28-5114
171.	Washer (Chassis Mfg.)	28-5114
172.	Washer (Chassis Mfg.)	28-5114
173.	Washer (Chassis Mfg.)	28-5114
174.	Washer (Chassis Mfg.)	28-5114
175.	Washer (Chassis Mfg.)	28-5114
176.	Washer (Chassis Mfg.)	28-5114
177.	Washer (Chassis Mfg.)	28-5114
178.	Washer (Chassis Mfg.)	28-5114
179.	Washer (Chassis Mfg.)	28-5114
180.	Washer (Chassis Mfg.)	28-5114
181.	Washer (Chassis Mfg.)	28-5114
182.	Washer (Chassis Mfg.)	28-5114
183.	Washer (Chassis Mfg.)	28-5114
184.	Washer (Chassis Mfg.)	28-5114
185.	Washer (Chassis Mfg.)	28-5114
186.	Washer (Chassis Mfg.)	28-5114
187.	Washer (Chassis Mfg.)	28-5114
188.	Washer (Chassis Mfg.)	28-5114
189.	Washer (Chassis Mfg.)	28-5114
190.	Washer (Chassis Mfg.)	28-5114
191.	Washer (Chassis Mfg.)	28-5114
192.	Washer (Chassis Mfg.)	28-5114
193.	Washer (Chassis Mfg.)	28-5114
194.	Washer (Chassis Mfg.)	28-5114
195.	Washer (Chassis Mfg.)	28-5114
196.	Washer (Chassis Mfg.)	28-5114
197.	Washer (Chassis Mfg.)	28-5114
198.	Washer (Chassis Mfg.)	28-5114
199.	Washer (Chassis Mfg.)	28-5114
200.	Washer (Chassis Mfg.)	28-5114

REPLACEMENT PARTS—Model 42-761

Sch. No.	Description	Part No.
1.	Aerial Transformer (Broadcast)	32-3661
2.	Mfg. Clip	28-5002
3.	Aerial Transformer (Police)	32-3664
4.	Aerial Transformer (5 mfd)	60-00557
5.	Aerial Transformer (Short Wave)	32-3667
6.	Mica Condenser (10 mfd)	60-010337
7.	Band Spread Aerial Transformer	32-3670
	Mfg. Clip	57-0985
	Mfg. Clip	76-1281
	Mfg. Clip	31-2535
7A.	Tuning Condenser	31-2536
7B.	Compensator (S. W.—R. F.)	31-2537
	Part of 7	28-5004
	Drive Cord	W-2196
	Spring	W-2008
	Cutter Pin	W-2009
	Drive Drum	76-1244
	Set Screw	W-2008
	Rubber Mtg. Grommet	W-2009
	Tuning Shaft (Inside R. F. Unit)	76-1240
	Shaft Bushing (Threaded)	58-2152
	Carriage (Tuning Cores)	56-2145
	Core Clamp	56-2151
	Screw	97-0054
	Screw	W-2196
8B.	Cutter Pin	76-1245
	Tuning Shaft and Bearing (Out- side Chassis)	W-2252
	Rubber Disc	W-2253
	Mfg. Screw	97-0058
8*	Compensator (31 M.—Aerial)	31-6412
8A.	Compensator (25 M.—R. F. Stage), Part of 8	31-6413
8B.	Compensator (19 M.—R. F. Stage), Part of 8	31-6414
9*	Silver Mica Condenser (50 mmfd)	30-1199
10*	Silver Mica Condenser (25 mmfd)	30-1145
11A.	Mica Condenser (100 mmfd)	60-110457
12.		

MODEL 42-761  
MODEL 42-762

PHILCO RADIO & TELEVISION CORP.

MODELS 42-761 (con't.)

Sh. No.	Description	Part No.
50X	Condenser (.1 mfd, 200 volts)	30-4585
51	Resistor (17,000 ohms)	33-247339
52	Volume Control	33-5442
53	Mfg. Nut	W-2157
54	Condenser (.005 mfd, 400 volts)	30-4518
55	Condenser (.02 mfd, 400 volts)	33-610339
56	Resistor (330,000 ohms)	33-433339
57	Mica Condenser (.250 mfd)	60-125457
58	Resistor (470,000 ohms)	33-447339
59	Resistor (27,000 ohms)	33-327339
60	Resistor (33,000 ohms)	33-333339
61	Resistor (330,000 ohms)	33-433339
62	Resistor (150 ohms, 400 volts)	33-115339
63	Electrolytic Condenser (20 mfd, 25 volts)	30-2455
64	Mfg. Plate	30-2508
65	Insulator Tube	27-5504
66	Resistor (100 ohms, 1 watt)	33-210439
67	Resistor (220 ohms, 2 watt)	33-123339
68	Electrolytic Condenser (20 mfd, 150 volts)	33-123339
69	Electrolytic Condenser (20 mfd, 200 volts)	33-123339
70	Electrolytic Condenser (10 mfd, 200 volts)	33-247339
71	Electrolytic Condenser (10 mfd, 200 volts)	33-247339
72	Electrolytic Condenser (10 mfd, 200 volts)	33-247339
73	Resistor (10 megohms)	30-4572
74	Resistor (10 megohms)	30-4572
75	Resistor (10 megohms)	30-4572
76	Resistor (10 megohms)	30-4572
77	Resistor (10 megohms)	30-4572
78	Condenser (.01 mfd, 400 volts)	30-4572
79	Speaker	36-1567-1
80	Volume Control	30-4542
81	Condenser (.01 mfd, 400 volts)	30-4572
82	Electrolytic Condenser (10 mfd, 25 volts)	30-2455
83	Resistor (100 ohms, 1 watt)	27-5504
84	Resistor (27,000 ohms)	33-327339
85	Resistor (33,000 ohms)	33-333339
86	Resistor (330,000 ohms)	33-433339
87	Resistor (150 ohms, 400 volts)	33-115339
88	Electrolytic Condenser (20 mfd, 25 volts)	30-2455
89	Electrolytic Condenser (20 mfd, 150 volts)	33-210439
90	Electrolytic Condenser (20 mfd, 200 volts)	33-247339
91	Electrolytic Condenser (10 mfd, 200 volts)	33-247339
92	Resistor (10 megohms)	30-4572
93	Resistor (10 megohms)	30-4572
94	Resistor (10 megohms)	30-4572
95	Resistor (10 megohms)	30-4572
96	Resistor (10 megohms)	30-4572
97	Resistor (10 megohms)	30-4572

Sh. No.	Description	Part No.
98	Resistor (10 megohms)	30-4572
99	Resistor (10 megohms)	30-4572
100	Resistor (10 megohms)	30-4572
101	Resistor (10 megohms)	30-4572
102	Resistor (10 megohms)	30-4572
103	Resistor (10 megohms)	30-4572
104	Resistor (10 megohms)	30-4572
105	Resistor (10 megohms)	30-4572
106	Resistor (10 megohms)	30-4572
107	Resistor (10 megohms)	30-4572
108	Resistor (10 megohms)	30-4572
109	Resistor (10 megohms)	30-4572
110	Resistor (10 megohms)	30-4572
111	Resistor (10 megohms)	30-4572
112	Resistor (10 megohms)	30-4572
113	Resistor (10 megohms)	30-4572
114	Resistor (10 megohms)	30-4572
115	Resistor (10 megohms)	30-4572
116	Resistor (10 megohms)	30-4572
117	Resistor (10 megohms)	30-4572
118	Resistor (10 megohms)	30-4572
119	Resistor (10 megohms)	30-4572
120	Resistor (10 megohms)	30-4572
121	Resistor (10 megohms)	30-4572
122	Resistor (10 megohms)	30-4572
123	Resistor (10 megohms)	30-4572
124	Resistor (10 megohms)	30-4572
125	Resistor (10 megohms)	30-4572
126	Resistor (10 megohms)	30-4572
127	Resistor (10 megohms)	30-4572
128	Resistor (10 megohms)	30-4572
129	Resistor (10 megohms)	30-4572
130	Resistor (10 megohms)	30-4572
131	Resistor (10 megohms)	30-4572
132	Resistor (10 megohms)	30-4572
133	Resistor (10 megohms)	30-4572
134	Resistor (10 megohms)	30-4572
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139	Resistor (10 megohms)	30-4572
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145	Resistor (10 megohms)	30-4572
146	Resistor (10 megohms)	30-4572
147	Resistor (10 megohms)	30-4572
148	Resistor (10 megohms)	30-4572
149	Resistor (10 megohms)	30-4572
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151	Resistor (10 megohms)	30-4572
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162	Resistor (10 megohms)	30-4572
163	Resistor (10 megohms)	30-4572
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183	Resistor (10 megohms)	30-4572
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189	Resistor (10 megohms)	30-4572
190	Resistor (10 megohms)	30-4572
191	Resistor (10 megohms)	30-4572
192	Resistor (10 megohms)	30-4572
193	Resistor (10 megohms)	30-4572
194	Resistor (10 megohms)	30-4572
195	Resistor (10 megohms)	30-4572
196	Resistor (10 megohms)	30-4572
197	Resistor (10 megohms)	30-4572
198	Resistor (10 megohms)	30-4572
199	Resistor (10 megohms)	30-4572
200	Resistor (10 megohms)	30-4572

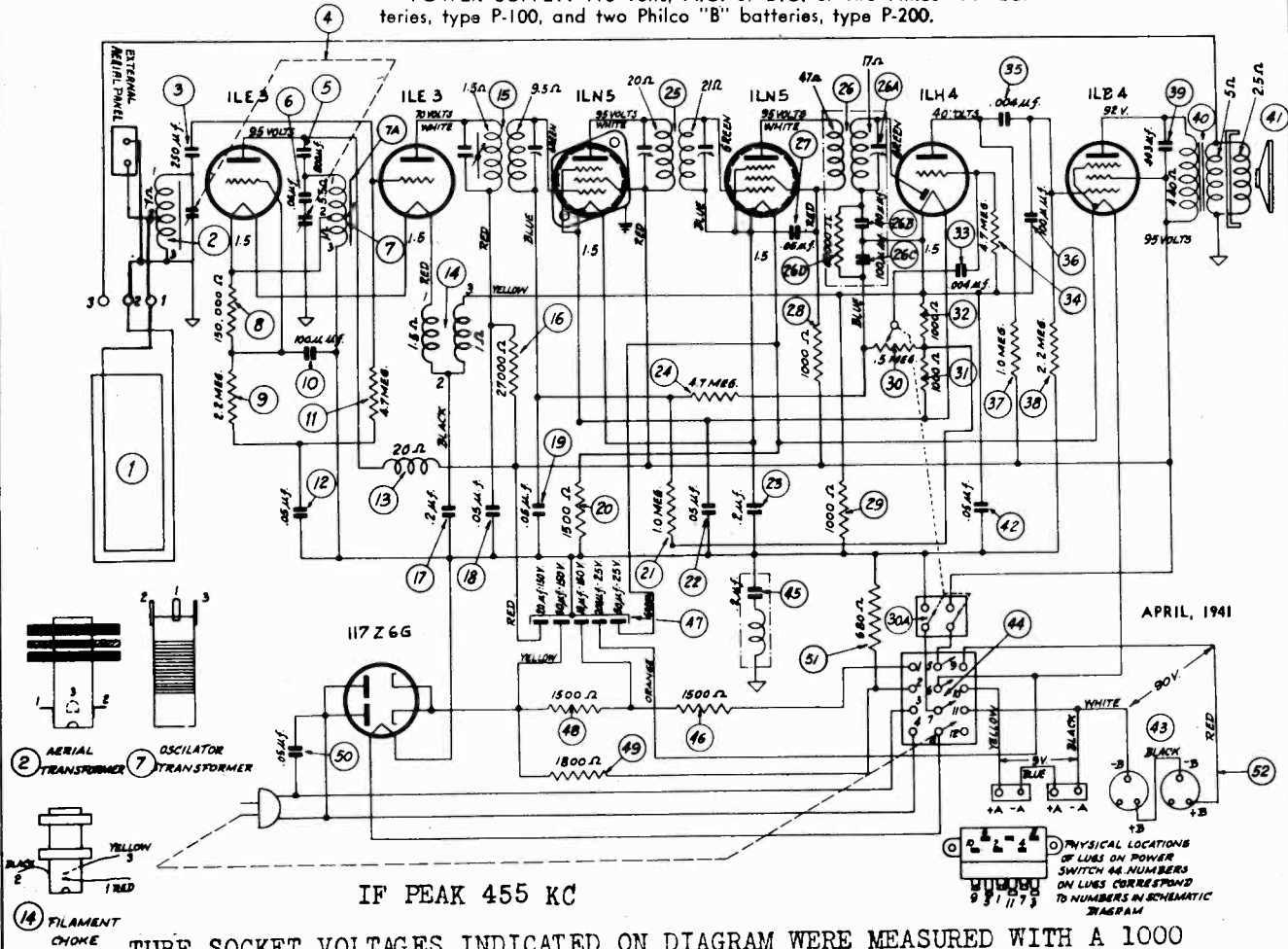
REPLACEMENT PARTS—Model 42-762

Sh. No.	Description	Part No.
1	Aerial Transformer (Broadcast)	32-2602
2	Mix. Clip	28-5054
3	Aerial Transformer (Police)	32-8664
4	Mica Condenser (.5 mfd)	60-005357
5	Mica Condenser (.10 mfd) Wave	60-010337
6	Band Spread Aerial Transformer	32-8670
7	Mix. Clip Assembly	57-0985
7A	Tuning Condenser	16-2281
7B	Compensator (S. W.—Aerial)	31-2550
8	Compensator (S. W.—R. F.)	31-2556
9	Drive Cord	31-2537
10	Spring Pin	31-2537
11	Drive Drum	76-1214
12	Set Screw	W-2008
13	Rubber Mfg. Grommet	27-4594
14	Rubber Mfg. (Washer R. F. Unit)	76-1210
15	Shunt (Tuning Cores)	56-2145
16	Carriage (Tuning Cores)	56-2145
17	Core Clamp	56-2151
18	Screw	37-0054
19	Screw Pin	W-2196
20	Tuning Shaft and Bearing (Outside Chassis)	76-1245
21	Rubber Disc	27-4272
22	Mix. Screw (Condenser)	37-0259
23	Compensator (31 M—Aerial)	31-6412
24	Compensator (25 M—Aerial)	31-6412
25	Compensator (Part of 3 M—Aerial)	31-6412
26	Mica Condenser (50 mfd)	30-1189
27	Mica Condenser (25 mfd)	30-1145
28	Resistor (470,000 ohms)	33-447339
29	Condenser (.05 mfd, 200 volts)	30-4609
30	Mica Condenser (250 mfd)	60-125457
31	Resistor (10,000 ohms)	33-310339
32	Mix. Clip	28-5054
33	R. F. Transformer (Broadcast)	32-3665
34	R. F. Transformer (Police)	32-3665
35	R. F. Transformer (Short Wave)	32-3665
36	R. F. Transformer (Band Spread)	32-3665
37	Mix. Clip	27-0511
38	Core Assembly	76-1231
39	Compensator (31 M Band—R. F.)	31-6412
40	Compensator (25 M Band—R. F.)	31-6412
41	Compensator (19 M Band—R. F.)	31-6412
42	Compensator (16 M Band—R. F.)	31-6412
43	Compensator (13 M Band—R. F.)	31-6412
44	Resistor (10,000 ohms)	33-103239
45	Mica Condenser (100 mfd)	33-103239
46	Resistor (100,000 ohms)	33-103239
47	Resistor (100,000 ohms)	33-103239
48	Resistor (100,000 ohms)	33-103239
49	Resistor (100,000 ohms)	33-103239
50	Resistor (100,000 ohms)	33-103239
51	Resistor (100,000 ohms)	33-103239
52	Resistor (100,000 ohms)	33-103239
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54	Resistor (100,000 ohms)	33-103239
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62	Resistor (100,000 ohms)	33-103239
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64	Resistor (100,000 ohms)	33-103239
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71	Resistor (100,000 ohms)	33-103239
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73	Resistor (100,000 ohms)	33-103239
74	Resistor (100,000 ohms)	33-103239
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76	Resistor (100,000 ohms)	33-103239
77	Resistor (100,000 ohms)	33-103239
78	Resistor (100,000 ohms)	33-103239
79	Resistor (100,000 ohms)	33-103239
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81	Resistor (100,000 ohms)	33-103239
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95	Resistor (100,000 ohms)	33-103239
96	Resistor (100,000 ohms)	33-103239
97	Resistor (100,000 ohms)	33-103239
98	Resistor (100,000 ohms)	33-103239
99	Resistor (100,000 ohms)	33-103239
100	Resistor (100,000 ohms)	33-103239

Sh. No.	Description	Part No.
101	Resistor (100,000 ohms)	33-103239
102	Resistor (100,000 ohms)	33-103239
103	Resistor (100,000 ohms)	33-103239
104	Resistor (100,000 ohms)	33-103239
105	Resistor (100,000 ohms)	33-103239
106	Resistor (100,000 ohms)	33-103239
107	Resistor (100,000 ohms)	33-103239
108	Resistor (100,000 ohms)	33-103239
109	Resistor (100,000 ohms)	33-103239
110	Resistor (100,000 ohms)	33-103239
111	Resistor (100,000 ohms)	33-103239
112	Resistor (100,000 ohms)	33-103239
1		

PHILCO RADIO & TELEVISION CORP. MODELS 42-842, 42-843, 42-844

POWER SUPPLY: 115 volts, A.C. or D.C. or two Philco "A" batteries, type P-100, and two Philco "B" batteries, type P-200.



TUBE SOCKET VOLTAGES INDICATED ON DIAGRAM WERE MEASURED WITH A 1000 OHM PER VOLT METER. POWER SUPPLY 117 V. A.C. WHEN USING DRY BATTERIES, VOLTAGES WILL BE ABOUT 5 VOLTS LESS THAN SHOWN

REPLACEMENT PARTS

SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.	DESCRIPTION	PART No.
1.	Loop Aerial	76-1216	35.	Condenser (.004 mfd., 400 volts)	30-4578	Cabinet (42-842)	10533B
2.	Screw (Loop Mtg.)	W-2071	36.	Mica Condenser (100 mmfd.)	60-110157	Cabinet (42-843)	10537C
3.	Aerial Transformer	28-3622	37.	Resistor (1 megohm)	33-510339	Cabinet (42-844T)	10538A
4.	Clip	28-3002	38.	Resistor (2.2 megohms)	33-522339	Cable (Power)	L-3199
5.	Mica Condenser (250 mmfd.)	60-125157	39.	Condenser (.003 mfd., 1,000 volts)	30-4469	Clamp (Battery)	56-2178
6.	Tuning Condenser	31-2530	40.	Output Transformer	32-8169	Screw (Clamp)	W-527
7.	Rubber Grommet (Mtg.)	27-4596	41.	Cone Assembly (for Speaker 36-1540)	36-4201	Nut (Clamp)	W-2261
8.	Spacers (Mtg.)	28-5665	42.	Condenser (.05 mfd., 200 volts)	30-4519	Dial Pointer	27-5691
9.	Spring (Drive Cord)	28-8882	43.	Battery Plug and Cable	41-3570	Dial Scale	54-4069
10.	Tuning Shaft	56-6132	44.	Automatic Power Change Over Switch	42-1650	Knob	27-4970
11.	"O" Washer	57-0127	45.	Condenser (.2 mfd., 200 volts)	76-1227	Speaker	36-1540
12.	Drive Cord	31-2380	46.	Resistor (1,500 ohms)	33-215339	Socket (Tubes)	27-6151
13.	Mica Condenser (800 mmfd.)	60-180137	47.	Electrolytic Condenser	30-2498	Socket	27-6174
14.	Condenser (.05 mfd., 200 volts)	30-4519		Clamp	33-215339	Grommet (Mtg. Socket)	54-4065
15.	Oscillator Transformer	32-3633	48.	Resistor (1,500 ohms)	33-218339	Adapter Plate	56-2112
16.	Oscillator Transformer	32-3622	49.	Resistor (1,800 ohms)	33-218339	Screw (Chassis Mtg.)	W-2030
17.	Resistor (150,000 ohms)	33-522339	50.	Condenser (.05 mfd., 200 volts)	30-4519	Washer (Chassis Mtg.)	W-410
18.	Resistor (2.2 megohms)	33-522339	51.	Resistor (680 ohms)	33-168339		
19.	Mica Condenser (100 mmfd.)	60-110157	52.	Battery Cable	41-3570		
20.	Resistor (4.7 megohms)	33-547339					
21.	Condenser (.05 mfd., 200 volts)	30-4519					
22.	Oscillator Choke	32-3615					
23.	Filament Choke	32-3632					
24.	1st I. F. Transformer	32-3620					
25.	Pin Nut (Mtg.)	W-1949					
26.	Resistor (27,000 ohms)	33-327339					
27.	Condenser (.2 mfd., 200 volts)	30-4567					
28.	Condenser (.05 mfd., 200 volts)	30-4519					
29.	Condenser (.05 mfd., 200 volts)	30-4519					
30.	Resistor (1,500 ohms)	33-215339					
31.	Resistor (1 megohm)	33-510339					
32.	Condenser (.05 mfd., 200 volts)	30-4519					
33.	Condenser (.2 mfd.)	30-4587					
34.	Resistor (4.7 megohms)	33-547339					
35.	2nd I. F. Transformer	32-3621					
36.	Pin Nut (Mtg.)	W-1949					
37.	Pin Nut (Mtg.)	32-3631					
38.	Condenser (.05 mfd., 200 volts)	W-1949					
39.	Condenser (.05 mfd., 200 volts)	30-4519					
40.	Resistor (1,000 ohms)	33-210339					
41.	Resistor (1,000 ohms)	33-210339					
42.	Volume Control	33-5436					
43.	Pin Nut (Mtg.)	W-2157					
44.	Switch	(Part of 30)					
45.	Resistor (1,000 ohms)	33-210339					
46.	Resistor (1,000 ohms)	33-210339					
47.	Condenser (.004 mfd., 400 volts)	30-4578					
48.	Resistor (4.7 megohms)	33-547339					

FIG. 2. LOCATIONS OF PARTS — UNDERSIDE OF CHASSIS.

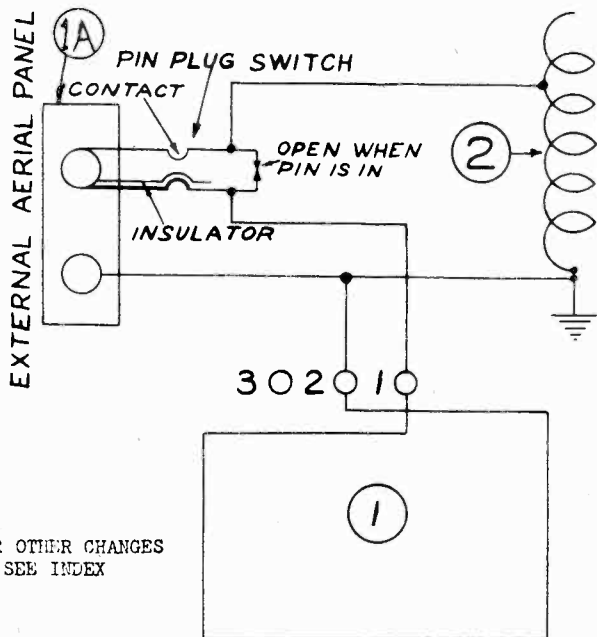
MODEL 42-842(122)  
 MODELS 42-842, 42-843, PHILCO RADIO & TELEVISION CORP.  
 42-844  
 MODELS 42-853, 42-854

**PRODUCTION CHANGES**

Model 42-842, Code 122 is similar to code 121 with the exception of the external aerial input panel, auxiliary plug-in loop aerial, cabinet and several parts. The schematic diagram, aligning instructions and specifications in service bulletin 391 for 42-842, code 121 applies to 42-842, code 122 with the parts and aerial panel change shown below. The Philco auxiliary plug-in loop aerial part No. 45-2935 should be used with this model when an outside aerial is required. This loop aerial is a low impedance type.

**REPLACEMENT PARTS—MODEL 42-842, CODE 122.**

SCHM. No.	DESCRIPTION	PART No.	SCHM. No.	DESCRIPTION	PART No.	SCHM. No.	DESCRIPTION	PART No.	
1.	Loop Aerial Screw (Loop Mtg.)	76-1429 W-2073	50.	Condenser (.05 mfd., 400 volts)	30-451R		Screw	W-453	
1A.	External Loop Terminal Socket	27-6183	51.	Resistor (600 ohms)	33-168339		Washers	W-648	
2.	Aerial Transformer Core	32-3622 28-5002	52.	Battery Cable	41-3570		Dial Pointer	27-4868	
3.	Mica Condenser (250 mmfd.)	60-125157	<b>MISCELLANEOUS PARTS</b>					Knob	27-4970
4.	Tuning Condenser Rubber Grommet (Mtg.) Spacers (Mtg.) Serfing (Drive Cord) Tuning Shaft "C" Washer Drive Cord	31-2530 27-4596 28-3006 28-8892 56-6132 29-5990 31-2310		Cabinet (42-842)	10533D		Speaker	36-1540	
5.	Mica Condenser (800 mmfd.)	60-180137		Cable Power	L-3299		Socket	27-6177	
6.	Condenser (.05 mfd., 200 volts)	30-4519		Clamp (Battery)	56-2178		Grommet (Mtg. Socket)	54-1065	
7.	Oscillator Transformer Iron Core	32-3645 57-2325		Screw (Clamp)	W-527		Adjustor Pin	56-2112	
8.	Resistor (150,000 ohms)	33-415339		Nut (Clamp)	W-2261		Screw (Chassis Mtg.)	W-2030	
9.	Resistor (2.2 megohms)	33-522339		Dial Scale	27-5699		Washer (Chassis Mtg.)	W-410	
10.	Mica Condenser (100 mmfd.)	60-110157					External Low Impedance Loop Aerial	45-2935	
11.	Resistor (4.7 megohms)	33-547339							
12.	Condenser (.05 mfd., 200 volts)	30-4519							
13.	Oscillator Choke	32-3615							
14.	Filament Choke	32-3632							
15.	1st I. F. Transformer Pinout (Mtg.)	32-3620 W-1949							
16.	Resistor (27,000 ohms)	33-327339							
17.	Condenser (.2 mfd.)	30-4507							
18.	Condenser (.05 mfd., 200 volts)	30-4519							
19.	Condenser (.05 mfd., 200 volts)	30-4519							
20.	Resistor (1,500 ohms)	33-215339							
21.	Resistor (1 megohm)	33-510339							
22.	Condenser (.05 mfd., 200 volts)	30-4519							
23.	Condenser (.2 mfd.)	30-4507							
24.	Resistor (4.7 megohms)	33-547339							
25.	2nd I. F. Transformer Pinout (Mtg.)	32-3621 W-1949							
26.	3rd I. F. Transformer Pinout (Mtg.)	32-3631 W-1949							
27.	Condenser (.05 mfd., 200 volts)	30-4519							
28.	Resistor (1,000 ohms)	33-210339							
29.	Resistor (1,000 ohms)	33-210339							
30.	Volume Control Pinout (Mtg.)	33-5136 W-2157							
30A.	Switch	(Part of 30)							
31.	Resistor (1,000 ohms)	33-210339							
32.	Resistor (1,000 ohms)	33-210339							
33.	Condenser (.004 mfd., 400 volts)	30-4576							
34.	Resistor (1.7 megohms)	33-547339							
35.	Condenser (.004 mfd., 400 volts)	30-4576							
36.	Mica Condenser (100 mmfd.)	60-110157							
37.	Resistor (1 megohm)	33-510339							
38.	Resistor (2.2 megohms)	33-522339							
39.	Condenser (.003 mfd., 1,000 volts)	30-4469							
40.	Output Transformer	32-6169							
41.	Cone Assembly (for Speaker 36-1540)	36-4201							
42.	Condenser (.05 mfd., 200 volts)	30-4519							
43.	Battery Plug and Cable	41-3570							
44.	Automatic Power Change Over Switch Spacer	27-1850 57-6174							
45.	Condenser (.2 mfd.) & Choke Assy.	76-1227							
46.	Resistor (1,500 ohms)	33-215339							
47.	Electrolytic Condenser Clamp	30-2498 36-1452							
48.	Resistor (1,500 ohms)	33-215339							
49.	Resistor (1,800 ohms)	33-3424							



FOR OTHER CHANGES  
 SEE INDEX

External Aerial Socket Wiring  
 Model 42-842, Code 122

**Filament Resistor Change in Models 42-842, 843, 844, 853, 854**

In the above listed models, complaints may be received of a complete set of tubes testing weak. Replacement of the tubes restores normal operation for only a short time after which the same condition re-occurs.

The condition is caused by the overheating of the series filament resistor shown as No. 49 in Service Bulletin No. 391 and as No. 56 in Service Bulletin No. 388. When the overheating takes place, the resistor breaks down, its resistance value decreases, thus allowing an increased filament current to the tubes with resulting damage to the filaments.

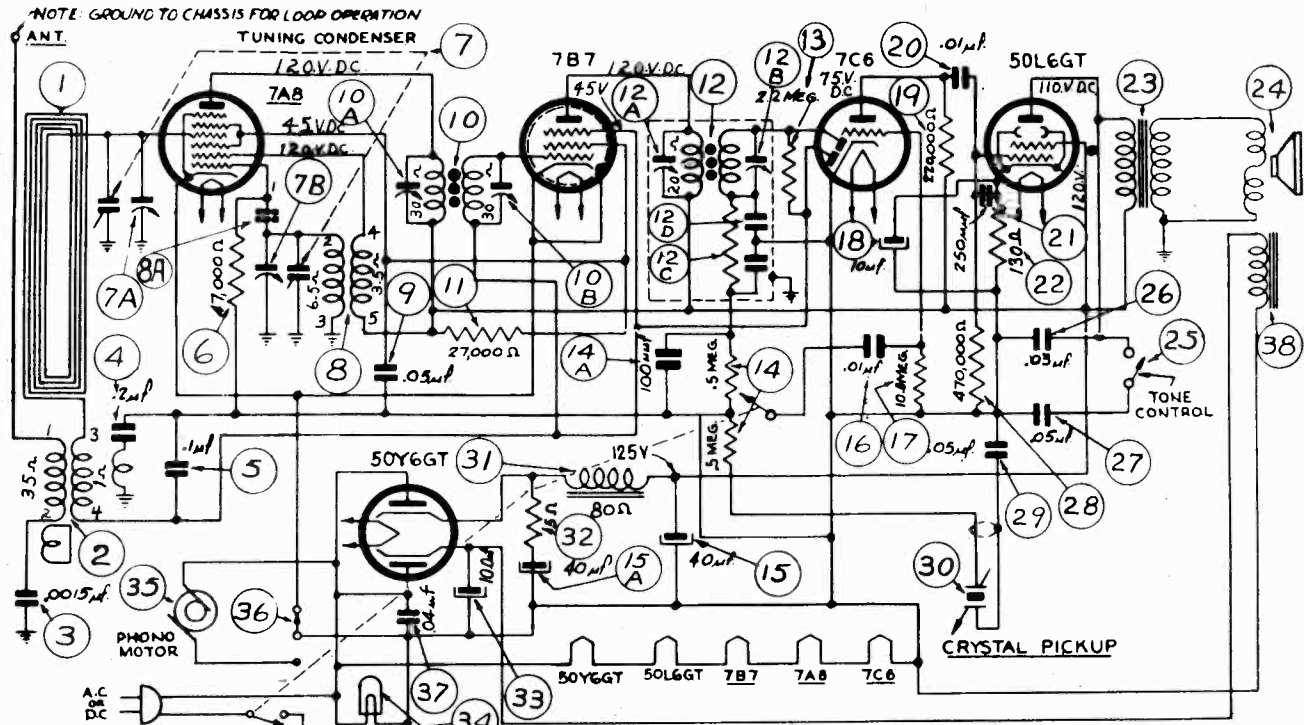
An entirely new replacement resistor is available — Part No. 33-3424. This resistor is considerably longer than the one now in the set and is equipped with a protecting cover. The resistor is mounted vertically over one of the original holes in the chassis with a suitable drive screw. The tab on the cover is soldered to the chassis. The longer leads which are required for the installation and which should be fireproof, and not ordinary rubber covered, are brought down through the large hole in the chassis. The other large hole should be plugged up with a spring button, such as Philco Part No. W2232.

Although the Service Bulletin parts listing calls for resistor No. 33-218339, the number of the resistor which has been used is 33-3410. If a replacement is necessary, however, the new resistor No. 33-3424 should be used.



MODEL 42-1001(122)

PHILCO RADIO & TELEVISION CORP.

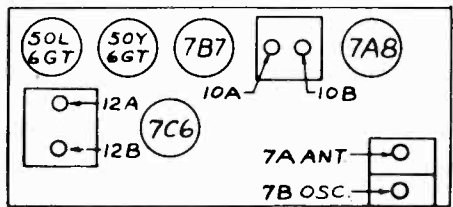


SCHEMATIC DIAGRAM MODEL 42-1001, CODE-122

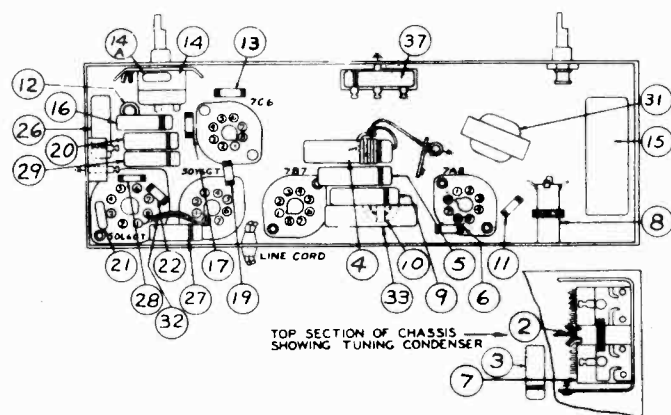
IF PEAK 455 KC

REPLACEMENT PARTS

Schem. No.	Description	Part No.	Schem. No.	Description	Part No.	Description	Part No.
1.	Loop Aerial Washer (Mtg.)	76-1224	31.	Filter Choke	32-816H	Speaker	36-1570
	Screw (Mtg.)	W-152	32.	Resistor (15 ohms)	33-015339	Screw	W-2150
2.	Aerial Transformer	32-3394	33.	Electrocond (10 mfd.)	30-2396	Socket (Loktal)	27-6177
	Clip	28-5002	34.	Pilot Lamp	34-2477	Rivet	W-239
3.	Condenser (.0015 mfd., 200 volts)	30-4621	35.	Phone Motor	35-1265-2	Socket (50L6GT Tube)	27-6174
4.	Condenser (.02 mfd.) & Choke Assy.	76-1161		Turntable	35-3047-2	Socket Assembly (Pilot Lamp)	76-1282
5.	Condenser (.1 mfd., 200 volts)	30-4546		Screw (Mtg.)	W-333	Washer (Chassis Mtg.)	W-410
6.	Resistor (47,000 ohms)	33-347339		Washer	W-151	Screw (Chassis Mtg.)	W-2065
7.	Tuning Cond.	31-2527	36.	Motor Switch	27-4596		
7A.	Aerial Compensator (part of 7)			Switch Insulator	42-1651		
7B.	Oscillator Comp. (part of 7)			Nut	27-9705		
	Rubber Grommet	27-4610		Switch Cover	W-6H1		
	Drive Cord	31-2529		Switch Plate	56-2109		
	Spring (Assy. Drive)	28-8954		Screw	56-1793		
	Drive Shaft	31-2531		Washer	W-560		
	Nut	W-2157		Screw	W-2157		
8.	Oscillator Transformer	32-3562	37.	Condenser (.04 mfd.)	30-4119		
8A.	Wire capacity (part of 8)	24-5002	38.	Speaker field coil (Replace speaker 36-1570)	10535A		
9.	Condenser (.05 mfd., 200 volts)	30-4519		Cabinet	L-3193		
10.	1st I. F. Transformer	32-3603		Cable (Power)	27-5679		
	Nut	W-1919		Dial	56-206H		
10A.	Primary Compensator (part of 10)			Strap (Mtg.)	W-2150		
10B.	Secondary Compensator (part of 10)			Screw	56-2076		
11.	Resistor (27,000 ohms)	33-327339		Dial Pointer	56-2076		
12.	2nd I. F. Transformer	32-3601		Knob (Tuning-Volume)	54-4052		
	Nut	W-1919					
12A.	Primary Compensator (part of 12)						
12B.	Secondary Compensator (part of 12)						
13.	Resistor (2.2 megohms)	33-522339					
14.	Volume Control	33-5437					
	Nut	W-2157					
14A.	Mica Condenser (100 mmfd.)	60-110157					
15.	Electrolytic Condenser (40 mfd., 150 volts; 40 mfd., 150 volts; 10 mfd., 25 volts)	30-2501					
		30-4572					
		33-610339					
16.	Condenser (.01 mfd., 400 volts)	30-4572					
17.	Resistor (10 megohms)	33-610339					
18.	Electrolytic Condenser (10 mfd.) (part of 15)	35-2229					
	Clamp	33-422339					
19.	Resistor (220,000 ohms)	30-4572					
20.	Condenser (.01 mfd., 400 volts)	60-125157					
21.	Mica Condenser (250 mmfd.)	33-113336					
22.	Resistor (130 ohms)	32-8164					
23.	Output Transformer	36-4210					
24.	Cone Assy. (for speaker)	36-4210					
25.	Tone Control Switch	42-1562-2					
	Nut	W-6H1					
	Switch Insulator	27-9705					
	Switch Cover	56-1880					
26.	Condenser (.03 mfd., 400 volts)	30-4517					
27.	Condenser (.05 mfd., 400 volts)	30-4518					
28.	Resistor (470,000 ohms)	33-47339					
29.	Condenser (.05 mfd., 400 volts)	30-4519					
30.	Crystal Pickup Complete	35-2515					
	Pickup Bumper	54-4070					
	Cable (Chassis to Pickup)	41-3571					
	Needle	40-6458					
	Rubber Washer	54-4096					
	Rubber Washer	54-4095					
	Washer	W-891FA4					

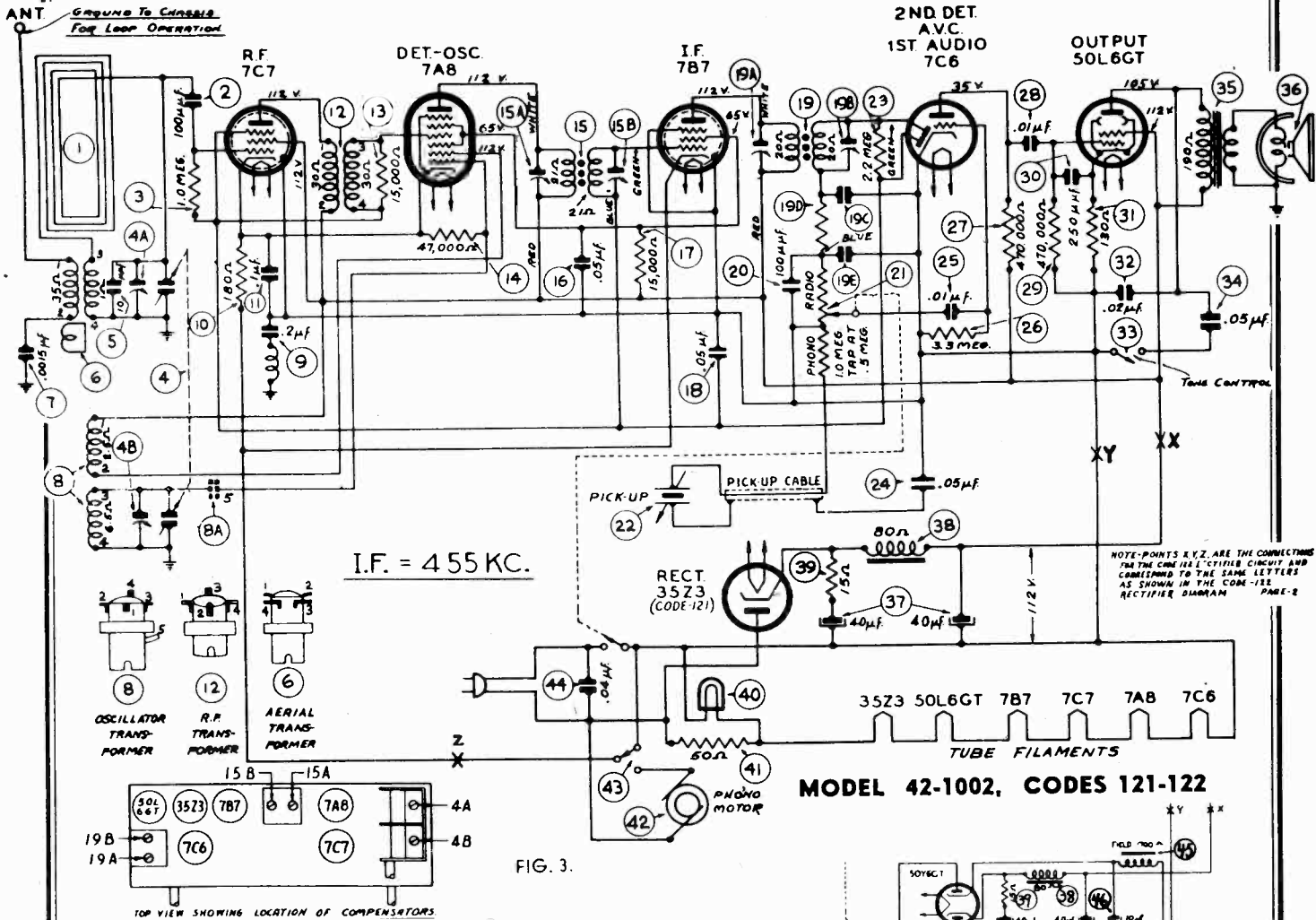


Compensator Locations



Locations of Parts—Under Chassis

PHILCO RADIO & TELEVISION CORP. MODEL 42-1002(121,122)

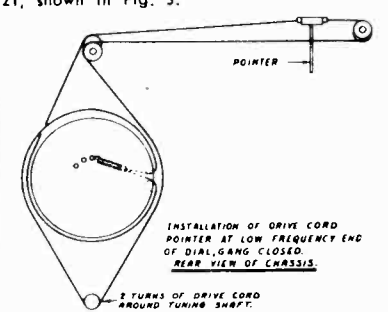
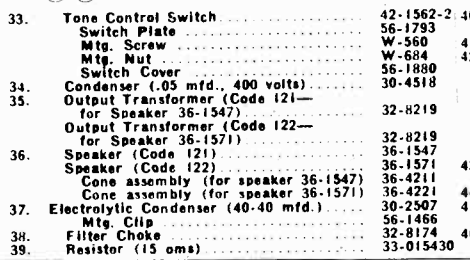
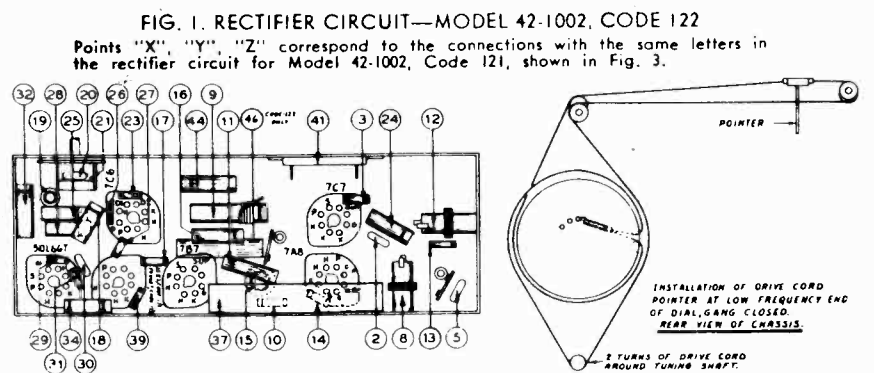


NOTE: POINTS X, Y, Z, ARE THE CONNECTIONS FOR THE COMPLETE RECTIFIER CIRCUIT AND CORRESPOND TO THE SAME LETTERS AS SHOWN IN THE CODE-122 RECTIFIER DIAGRAM PAGE-2

REPLACEMENT PARTS

Schem. No.	Description	Part No.
1.	Loop Aerial Mts. Screw	76-1224
2.	Mica Condenser (100 mmfd.)	60-110157
3.	Resistor (1 megohm)	33-510339
4.	Tuning Condenser	31-25184
	Tuning Shaft	W-684
	Drive Cord	31-2585
	Spring (Drive Cord)	28-8954
	Pointer	56-2076
	Mts. Grommet (Condenser)	27-4610
5.	Mica Condenser (10 mmfd.)	60-010137
6.	Aerial Transformer	32-5002
	Mts. Clip	30-4621
7.	Condenser (.0015 mfd., 500 volts)	32-3613
8.	Oscillator Transformer	28-5002
	Mts. Clip	76-1198
9.	Condensers (.2 mfd. & Choke)	33-118336
10.	Resistor (180 ohms)	61-0104
11.	Condenser (.1 mfd., 200 volts)	32-3595
12.	R. F. Transformer	28-5002
	Mts. Clip	33-315339
13.	Resistor (15000 ohms)	33-347339
14.	Resistor (47000 ohms)	32-3614
15.	1st I. F. Transformer	30-4519
16.	Condenser (.05 mfd., 200 volts)	33-315339
17.	Resistor (15000 ohms)	30-4519
18.	Condenser (.05 mfd., 200 volts)	32-3604
19.	2nd I. F. Transformer	W-624
	Mts. Nut	33-5462
20.	Mica Condenser (100 mmfd.)	60-110157
21.	Volume Control	W-2157
	Mts. Nut	35-2070
22.	Crystal Pickup and Tone Arm Complete	54-4095
	Rubber Bumper	54-4096
	Rubber Mts. Grommet	97-0140
	Rubber Mts. Grommet	W-894
	Lockwasher	W-628
	Washer	41-371
	Nut	33-522339
23.	Resistor (2.2 megohms)	30-4519
24.	Condenser (.05 mfd., 200 volts)	30-4572
25.	Condenser (.01 mfd., 400 volts)	33-533339
26.	Resistor (3.3 megohms)	33-447339
27.	Resistor (47000 ohms)	30-4572
28.	Condenser (.01 mfd., 400 volts)	33-447339
29.	Resistor (47000 ohms)	60-125157
30.	Mica Condenser (250 mmfd.)	33-113336
31.	Resistor (130 ohms)	30-4516
32.	Condenser (.02 mfd., 400 volts)	

FOR CHANGES SEE INDEX





MODEL 42-1002(121,122)  
 MODEL 42-1003(121,122)

PHILCO RADIO & TELEVISION CORP.

**MODEL 42-1002, CODES 121-122**

MODEL 42-1002, Codes 121-122 are six tube alternating current operated superheterodyne radio-phonograph combinations.

In general Codes 121 and 122 of this model are similar in design with the exception of the speakers, rectifier tubes and rectifier circuits. Code 121 contains a six-inch permanent magnet dynamic speaker and a type 3523 rectifier tube. The complete schematic diagram for code 121 is shown. Code 122 chassis incorporates a six-inch electrodynamic speaker and a type 50Y6GT rectifier tube. The rectifier circuit for code 122 is shown.

**RADIO SECTION**

Features of design included in the radio are: Built-in loop aerial; automatic volume control; beam power pentode audio output; two position tone control; Philco LOKTAL tubes; and a Permanent Magnet Speaker.

**TUNING RANGE FREQUENCY:** 540 to 1600 K.C.

**INTERMEDIATE FREQUENCIES:** 455 K.C.

**AUDIO OUTPUT:** 1.5 watts.

**POWER SUPPLY:** 115 volts, 60 cycle A.C.

**SIGNAL GENERATOR:** When adjusting the I. F. padders, the high side of the signal generator is connected through a .1 mfd. condenser to the antenna section of the tuning condenser. Connect the ground or low side of the generator to the chassis.

When aligning the R. F. padders a loop is made from a few turns of wire and connected to the signal generator output terminals; the signal generator is then placed close to the loop of the radio.

The receiver can be adjusted in the cabinet or removed from the cabinet.

**PHONOGRAPH SECTION**

The phonograph consists of a rim drive turntable motor and a manually operated crystal pickup which uses a jewel needle. The phonograph is operated through the audio system of the radio.

The sound output of the radio and phonograph is controlled by a special dual volume control combined in one unit. The "ON-OFF" power switch is also included in the volume control. The phonograph motor is automatically started when the pickup is lifted from its rest and is designed to operate on 115 volts, 60 cycle, or 115 volts, 50 cycle A.C. power supply. When operating on 115 volts, 50 cycle current, a special spring collar, part No. 28-8999 must be placed on the motor driveshaft pulley.

**OUTSIDE AERIAL:** Under ordinary operating conditions, the loop aerial has sufficient pickup for reception, of stations. In some locations, however, such as steel reinforced buildings, and other shielded areas where signal strength is weak, an additional outside aerial should be used. The Philco Safety Aerial, Part No. 40-6370 is recommended for use with this model.

The outside aerial connection consisting of a wire and lug is located on the rear lower left corner of the chassis; remove the lug from under the screw and attach the aerial.

When adjusting the radio outside the cabinet the loop aerial should be placed in approximately the same position around or near the chassis as when assembled.

After connecting the aligning instruments adjust the compensators as shown in the tabulation below. Locations of the compensators are shown on the schematic diagram.

If the indicating meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

**PROCEDURE MODEL 42-1002, CODES 121-122**

Operations In Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators In Order	
1	Tuning Cond. , Stator Plate Lug	455 K. C.	540 K. C. Tuning Cond. Closed	Vol. Max.	19B 19A 15B 15A	Note B
2	Loop see above instructions	1500 K. C.	1500 K. C.	Vol. Max.	4B	Note A
3	Loop see above instructions	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Brdcast.	4A	

**PROCEDURE MODEL 42-1003, CODES 121-122**

1	Tuning Cond. Stator Plate Lug	455 K. C.	540 K. C. Tuning Cond. Closed	Vol. Max. Band Switch Brdcast.	45A 41A 40B 40A	Note C
2	Loop on Generator see above instructions	1500 K. C.	1500 K. C.	Vol. Max. Band Switch Brdcast.	6B, 6A	Note A
3	Loop on Generator see above instructions	580 K. C.	580 K. C.	Vol. Max. Band Switch Brdcast.	33	Roll Tuning Condenser
4	Loop on Generator see above instructions	1500 K. C.	1500 K. C.	Vol. Max. Band Switch Brdcast.	6B	
5	Loop on Generator see above instructions	15 M. C.	15 M. C.	Band Switch "SW"	33A, 3 Note D	

**NOTE A:—DIAL CALIBRATION:** In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To do this, proceed as follows: Turn the tuning condenser to the maximum capacity position (plates fully meshed). With the condenser in this position, set the tuning pointer on the small dot below 540 K. C.

**NOTE B:—**Before adjusting the I. F. compensators, tighten 15A compensator, then adjust compensators in the order as shown once only.

**NOTE C:—**Before adjusting the I. F. compensators, tighten 40B and 40A compensators, then adjust compensators in the order as shown in the adjacent column once only for maximum output.

**NOTE D:—**Turn tuning condenser until pointer is on 15 M. C. mark, then adjust oscillator compensator 33A to maximum on the second signal peak from the tight position (compensator closed).

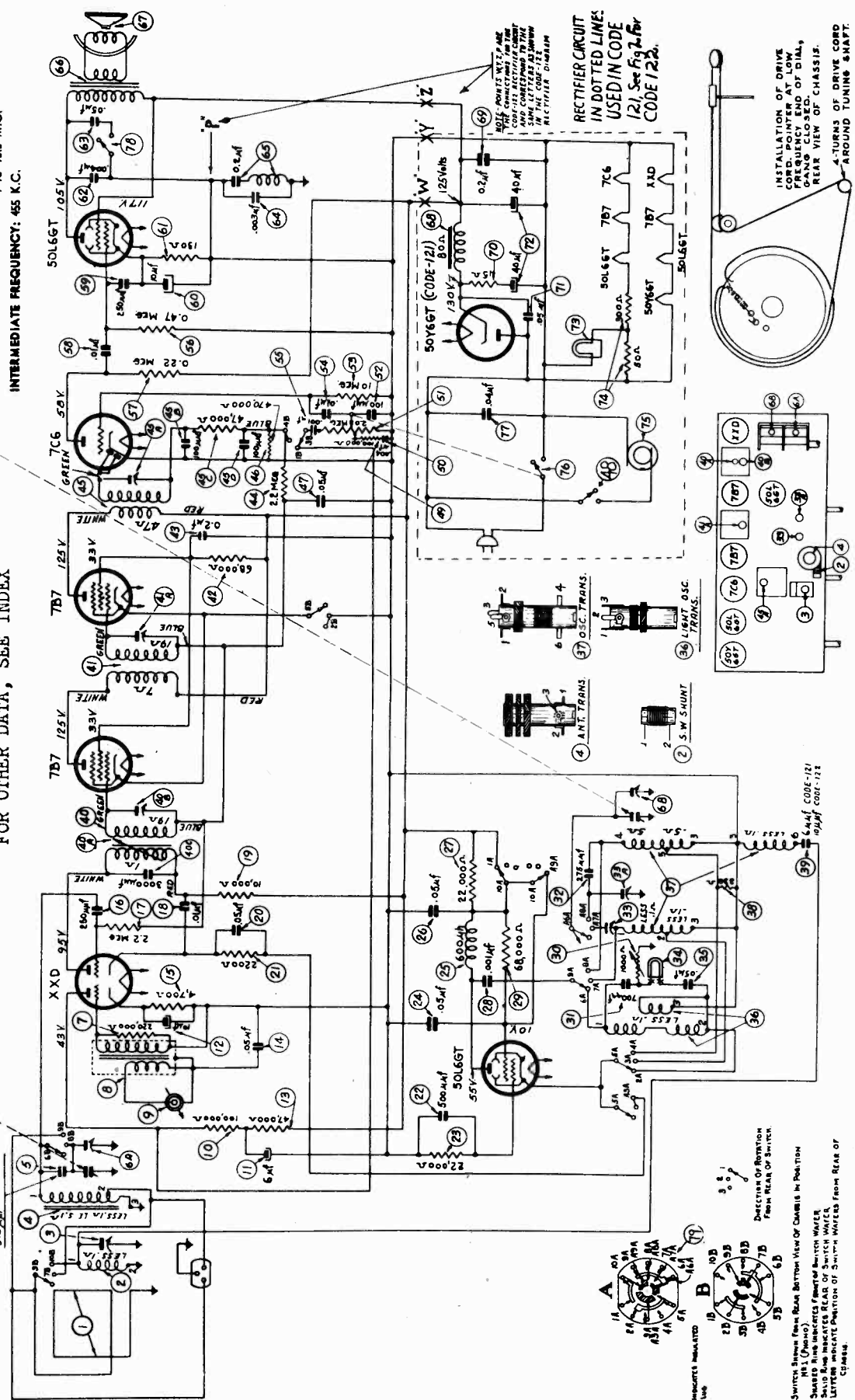
PHILCO RADIO & TELEVISION CORP MODEL 42-1005(121,122)

TUNING BAND FREQUENCIES: 540 to 1720 K.C.  
9 to 15.5 M.C.  
INTERMEDIATE FREQUENCY: 455 K.C.

FOR OTHER DATA, SEE INDEX

6 TUNING CONDENSER

AUDIO OUTPUT: 15 watts  
POWER SUPPLY: 115 volts, 60 cycle A.C.  
375 μmf



RECTIFIER CIRCUIT IN DOTTED LINES USED IN CODE 121. See Fig 2 for CODE 122.

INSTALLATION OF DRIVE CORD POINTER AT LOW FREQUENCY END OF DIAL GANG CLOSED, REAR VIEW OF CHASSIS. 4-TURNS OF DRIVE CORD AROUND TUNING SHAFT.

SCHEMATIC DIAGRAM—MODEL 42-1005—CODE 121-122

Model 42-1005, Code 121 and 122, is an alternating current operated super heterodyne radio receiving type, covering the standard broadcast and shortwave broadcast frequencies, and operating on Code 121 and Code 122. The chassis is in design with the exception of the number of tubes, speaker types and rectifier circuit. Code 121 consists of a seven-tube chassis using a 10-inch permanent magnet dynamic speaker and a single rectifier tube circuit. Code 122 chassis contains eight tubes, a 10-inch electrodynamic speaker and two tubes in the rectifier circuit, one tube, type 50Y6GT, supplies plate voltage for the other tubes and a 50L6GT excites the field coil of the electrodynamic speaker.

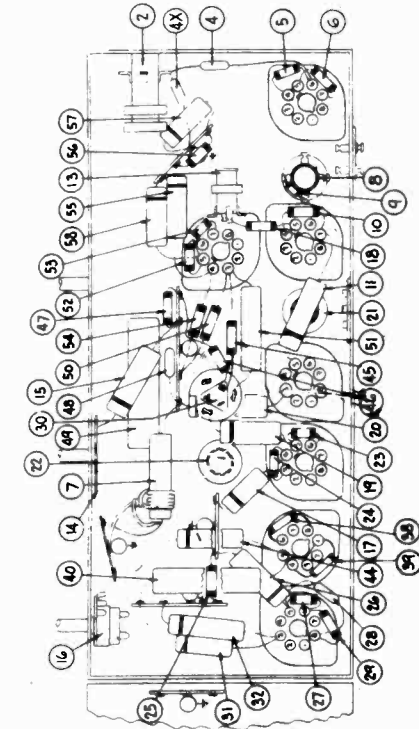
Model 42-1005, Code 121 and 122, is an alternating current operated super heterodyne radio receiving type, covering the standard broadcast and shortwave broadcast frequencies, and operating on Code 121 and Code 122. The chassis is in design with the exception of the number of tubes, speaker types and rectifier circuit. Code 121 consists of a seven-tube chassis using a 10-inch permanent magnet dynamic speaker and a single rectifier tube circuit. Code 122 chassis contains eight tubes, a 10-inch electrodynamic speaker and two tubes in the rectifier circuit, one tube, type 50Y6GT, supplies plate voltage for the other tubes and a 50L6GT excites the field coil of the electrodynamic speaker.





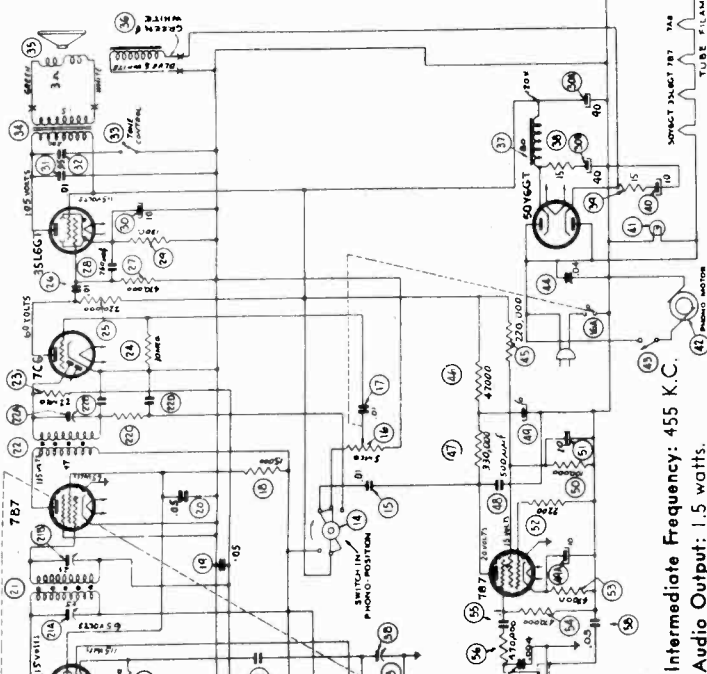
MODEL 42-1006(122)

PHILCO RADIO & TELEVISION CORP.



LOCATIONS OF PARTS — UNDER CHASSIS  
 FOR RECORD CHANGER DATA, SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS".

34	Output Transformer (Mounted on Top of Chassis)	32-8203
	Mtg. Rivet	97-0065
35	Speaker	36-1569
	Cone Assembly	36-4169
	Mtg. Grommet	27-4586
	Mtg. Washer	28-3320
	Mtg. Sleeve	56-2044
	Mtg. Nut	W-124
	Filler Choke (Replace Speaker 36-1569)	41-3657
36	Filter Coil (Mounted on Top of Chassis)	32-8202
37	Mtg. Rivet	97-0065
38	Resistor (15 ohms)	33-015430
39	Resistor (15 ohms)	33-015430
40	Electrolytic Condenser (10 mfd., 150 Volts)	30-2386
41	Pilot Lamp	34-2477
	Socket Assembly	76-1282
42	Motor (15 Volts, 60 cycles)	41-3667
43	Motor Switch	35-2604
44	Resistor (220,000 ohms)	30-4119
45	Resistor (47,000 ohms)	33-422339
46	Resistor (47,000 ohms)	33-347339
47	Resistor (330,000 ohms)	33-433339
48	Mica Condenser (500 mmfd.)	60-150157
49	Electrolytic Condenser (6 mfd.)	30-2533
49A	Electrolytic Condenser (10 mfd.)	Part of 49
50	Insulator Tube	27-9500
51	Resistor (200,000 ohms)	33-418336
52	Electrolytic Condenser (10 mfd., 150 Volts)	30-2386
53	Resistor (2200 ohms)	33-222339
54	Resistor (470,000 ohms)	33-447339
55	Resistor (470,000 ohms)	33-447339
56	Resistor (470,000 ohms)	30-4586
57	Resistor (470,000 ohms)	33-447339
58	Resistor (470,000 ohms)	30-4623
59	Capacitor (0.05 mfd., 200 Volts)	30-3519
	Cable Assembly	76-1285
	Mtg. Nut	41-3668
	Bezels	54-4104
	Mtg. Screw	W-2073FA9
	Cord (Power)	L-3243
	Cabinet	10575A
	Dial Scale	27-3793
	Spring Retainer	27-9965
	Scale (Pilot)	27-9965
	Knob (Vol. Tuning)	54-4105
	Rubber Grommet (Chassis Mtg.)	37-4307
	Rubber Grommet (Chassis Mtg.)	35-1293
	Record Changer	76-1415



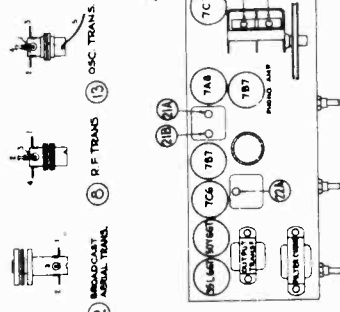
Intermediate Frequency: 455 K.C.  
 Audio Output: 115 volts, 60 cycle A.C.

REPLACEMENT PARTS — MODEL 42-1006, CODE 122

15	Condenser (.01 mfd., 400 Volts)	30-4572
16	Volume Control	33-5469
16A	ON-OFF Switch (Part of 16)	W-2157
17	Mtg. Nut	30-4572
18	Resistor (.01 mfd., 400 Volts)	33-315339
19	Condenser (15,000 ohms)	30-4519
20	Condenser (.05 mfd., 200 Volts)	30-4519
21	Primary Transformer	32-3777
21A	Secondary Compensator (Part of 21)	W-1949
21B	Secondary Compensator (Part of 21)	32-3618
22	Second I. F. Transformer	33-347339
22A	Secondary Compensator (Part of 21)	56-1640
22B	Resistor (47,000 ohms, Part of 22)	33-522339
22C	Resistor (47,000 ohms, Part of 22)	33-610339
22D	Condenser Shield	33-422339
	Mtg. Nut	30-4572
23	Resistor (2.2 megohms)	33-447339
24	Resistor (10 megohms)	60-125157
25	Resistor (220,000 ohms)	33-113336
26	Condenser (.01 mfd., 400 Volts)	30-2509
27	Resistor (470,000 ohms)	30-4572
28	Mica Condenser (250 mmfd.)	30-4572
29	Resistor (130 ohms)	30-4572
30	Electrolytic Condenser (10 mfd., 25 Volts)	30-2509
30A	Electrolytic Condenser (40 mfd., 150 Volts)	Part of 30
30B	Electrolytic Condenser (40 mfd., 150 Volts)	Part of 30
31	Condenser (.01 mfd., 400 Volts)	30-4572
32	Condenser (.05 mfd., 400 Volts)	30-4518
33	Tone Control Switch	42-1562-2
	Switch Cover	56-1880
	Switch Plate	56-1793
	Mtg. Screw	W-560FA4

Schematic No.	Description	Part No.
1	Loop Aerial	76-1368
	Terminal Panel	38-6533
	Rivets	W-207
	Mtg. Sleeve	28-3006FA3
	Spring Washer	28-1108FE7
	Mtg. Screw	W-722
1A	External Aerial Locket	27-6145
2	Broadcast Aerial Transformer	W-207
3	Mtg. Clip	32-3776
3A	Tuning Condenser	28-5002
3B	Aerial Compensator (Part of 3)	31-2587
	Drive Cord	31-2573
	Drive Shaft	28-8953
	Mtg. Nut	31-2571
	Mtg. Grommet	W-684
	Mtg. Sleeve	27-4610
	Mtg. Nut	28-5583
	Pointer	W-1543
	Washer (100 mmfd.)	56-2076
4	Resistor (15,000 ohms)	W-4955
5	Resistor (180 ohms)	60-16195
6	Resistor (2 mfd.) and R. F. Choke	33-547339
7	Mtg. Nut	33-118336
8	Mtg. Clip	76-1161
9	Resistor (15,000 ohms), Part of 8	32-3595
10	Resistor (47,000 ohms), Part of 8	28-5002
11	Condenser (.1 mfd., 200 Volts)	33-315339
12	Condenser (.1 mfd., 200 Volts)	33-347339
13	Occupier Transformer	30-1586
14	Radio-Phone Switch	32-3613
	Mtg. Clip	28-5002
	Mtg. Nut	42-1709
	Mtg. Nut	W-2157

FOR OTHER DATA  
 SEE INDEX



PHILCO RADIO & TELEVISION CORP.

MODELS 42-1012, 42-1013M, 42-1013W

PHONOGRAPH REPRODUCER ADJUSTMENTS

To reproduce the sound from a record, the light beam of the reproducer must be carefully positioned on the light sensitive cell. If the light beam is not carefully set, the sound reproduction will be distorted, weak or, if the light beam is completely on or off the cell, the phonograph will be silent.

If any of these conditions exist, the following adjustment procedure should be made:

NOTE—These adjustments should be made with the power line voltage at 117 volts A. C.

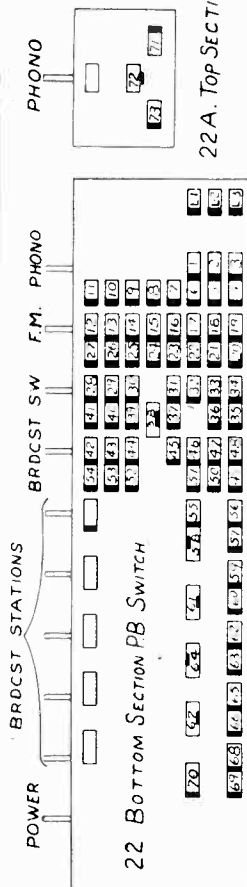


FIG. 1—P. SWITCH, TOP AND BOTTOM SECTIONS

Contact numbers correspond to contact numbers shown on the Schematic Diagram

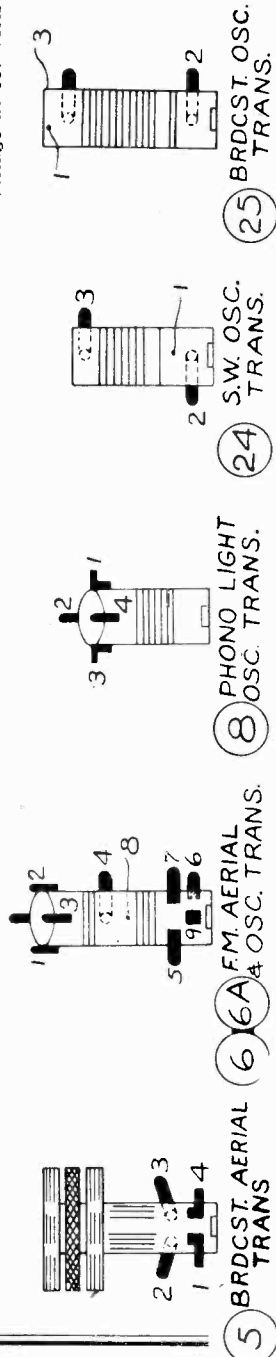


FIG. 2—PHYSICAL LOCATIONS OF CONNECTIONS ON R. F. TRANSFORMERS

Numbers at lugs correspond to numbers on Schematic Diagram at the transformer symbols

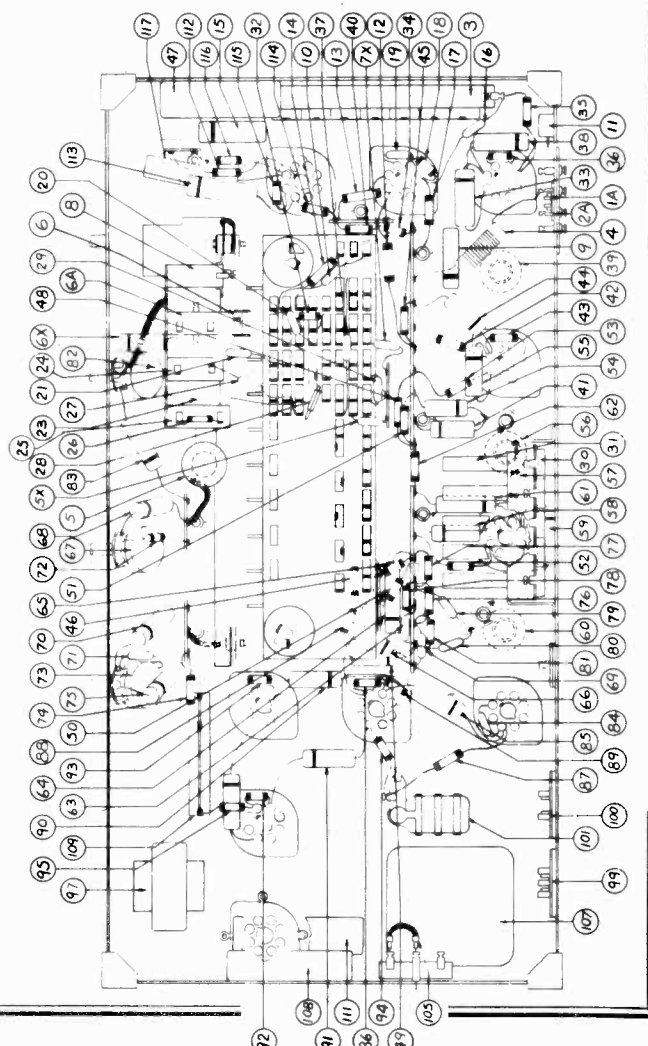


FIG. 3—LOCATIONS OF PARTS—UNDER CHASSIS

A. ADJUSTING WIDTH OF LIGHT BEAM

To make this adjustment push the lamp socket assembly into its holder until a clear image of the lamp filament appears on the light cell. The socket should then be slightly pushed in beyond this point until the rectangular spot of light is 5/32" in width. The socket assembly is now rotated so that the spotlight is vertical.

B. POSITIONING THE LIGHT BEAM

To position the light beam on the light cell, turn the adjusting screw at the lower left side of the reproducer until the spot is half on the cell and half on the metal frame surrounding the cell.

C. ADJUSTING INTENSITY OF LAMP

When shipped from the factory, the lamp of the reproducer is adjusted for best operating efficiency. The intensity of the light from the lamp is adjusted by Compensator No. 11 located on the radio chassis. Under ordinary circumstances, an adjustment will not be necessary. When replacing the reproducer or lamp, however, it may be necessary to readjust the light intensity. In this case the compensator is adjusted as follows:

1. Turn volume control on full and play a record.
2. While the record is playing, turn Compensator 11 in the direction necessary to obtain the best operating point without distortion. By turning the compensator the strength of the pick up output is increased or decreased.

D. INSTALLING NEW LAMP

When installing a new lamp in the socket, there are two positions in which the lamp can be inserted. Ordinarily, either of these positions can be used. In some cases, however, due to the lamp filament being off center, the lamp must be inserted in the position that gives the best centering of the spot of light on the vibrating mirror.

**ELECTRIC PUSH-BUTTON ADJUSTMENTS**

The electric push-button tuning mechanism consists of twelve push-buttons. Six push-buttons control and select power supply, broadcast, shortwave 1, shortwave 2, and frequency modulation bands, and Phonograph Operation. The remaining six push-buttons are used for automatically selecting six standard broadcast stations.

Select six of the most popular stations received in the locality. Insert the station call letters into the spaces above the buttons. The station with the lowest frequency is placed in the second button from the left and the highest frequency is placed in the seventh push-button from the left. Each push-button is adjusted by two adjusting screws located on the rear of the chassis. Each set of screws is numbered and labeled "Ant.", "Osc." and covers a frequency range as shown in Fig. 1.

Looking at the front of the cabinet, the second button from the left is adjusted by adjusting screws No. 1. The next push-button by adjusting screws No. 2, and the remaining push-buttons in order.

To adjust the electric push-buttons accurately for reception of broadcast stations, a vacuum tube voltmeter such as Philco Models 027 and 028 should be used. In addition, an insulated padding screw driver, Part No. 45-2610, and a PHILCO Model 070 Signal Generator are required. With this equipment at hand proceed as follows:

1. Press in "Broadcast" push-button.
2. Set up a Model 070 Signal Generator near the receiver and connect a loop aerial (made from a few turns of wire 12 inches in diameter) to the high and ground output jacks of the signal generator. Turn the output controls to maximum and set the modulation control to "MOD. ON."

Connect the negative (-) terminal of the vacuum tube voltmeter to the aligning test socket on the top centre of the chassis. Attach the positive (+) terminal of the voltmeter to the chassis.

3. Manually tune in the station to be set up on the first station push-button. After doing this set the indicator of the 070 Signal Generator to the frequency of the station being received. As the indicator approaches the frequency of the station a whistle will be heard; leave the indicator at this point.

4. Press "in" the second push-button from the left of cabinet. Using the insulated screw driver, turn the No. 1 "Osc." screw until the broadcast station identified by the signal generator is heard; at this point, turn the indicator of the signal generator away from the frequency of the station. Readjust No. 1 "Osc." and "Ant." screws for maximum deflection of the vacuum tube voltmeter pointer.

After setting up the first station the same procedure as outlined above is used for the remaining stations. When these models are set up to receive the sound of a television program tuned in by the special type Philco Television Sets or if it is to be used in conjunction with a Philco Record Player, the lowest frequency push-button should be used. To tune in these programs, the same procedure as given for broadcast stations above is used.

Further details for setting up these Radios for operation with Philco Television Sets or Record Players are supplied with the instruments.

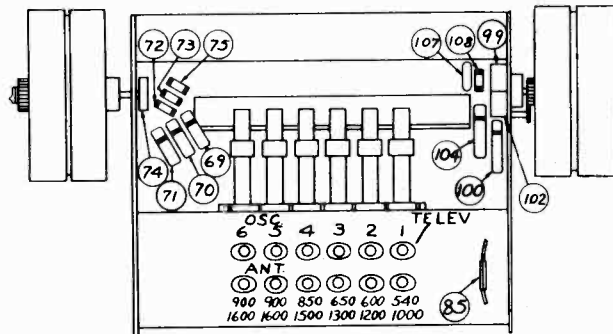


FIG. 1—LOCATIONS OF PARTS AND PUSH BUTTON COMPENSATORS ON TUNING UNIT

**PHONO REPRODUCER ADJUSTMENTS**

MODELS 42-1003, 42-1015

To reproduce the sound from a record, the light beam of the reproducer must be carefully positioned on the light sensitive cell. If the light beam is not carefully set, the sound reproduction will be distorted, weak or, if the light beam is completely on or off the cell, the phonograph will be silent.

If any of these conditions exist, the following adjustment procedure should be made:—

NOTE—These adjustments should be made with the power line voltage at 115 volts AC.

**A. ADJUSTING WIDTH OF LIGHT BEAM**

To make this adjustment push the lamp socket assembly into its holder until a clear image of the lamp filament appears on the light cell. The socket should then be slightly pushed in beyond this point until the rectangular spot of light is 5/32" in width. The socket assembly is now rotated so that the spot of light is vertical.

**B. POSITIONING THE LIGHT BEAM**

To position the light beam on the light cell, turn the adjusting screw at the lower left side of the reproducer until the spot is half on the cell and half on the metal frame surrounding the cell.

**C. ADJUSTING INTENSITY OF LAMP**

When shipped from the factory, the lamp of the reproducer is adjusted for best operating efficiency. The intensity of the light from the lamp is adjusted by Compensator No. 117 located on the rear of the radio chassis. Under ordinary circumstances, an adjustment will not be necessary. When replacing the reproducer or lamp, however, there may be a tendency towards microphonic feedback. In this case the compensator is adjusted as follows:

1. Turn volume control on full and play a record.
2. While the record is playing, turn compensator 117 in the direction necessary to eliminate microphonic feedback. By turning the compensator the strength of the pick-up output is increased or decreased.

**D. INSTALLING NEW LAMP**

When installing a new lamp in the socket, there are two positions in which the lamp can be inserted. Ordinarily, either of these positions can be used. In some cases, however, due to the lamp filament being off center, the lamp must be inserted in the position that gives the best centering of the spot of light on the vibrating mirror.

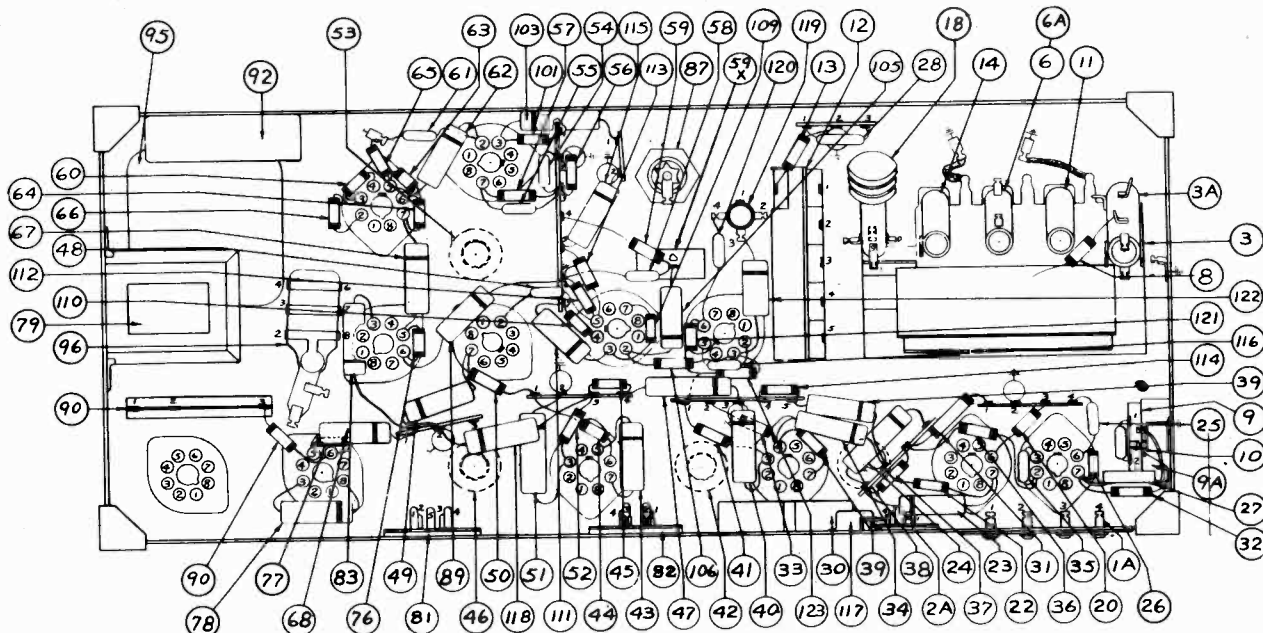


FIG. 3—LOCATIONS OF PARTS—UNDER CHASSIS MODEL 42-1015, CODE 121

PHILCO RADIO & TELEVISION CORP.

MODEL 42-1016

PUSH-BUTTON AND WIRELESS REMOTE CONTROL ADJUSTMENTS

**WIRELESS REMOTE CONTROL AND ELECTRIC PUSH-BUTTON TUNING:** The wireless remote control automatically tunes in six broadcast stations; increases and decreases sound volume; starts and stops record changer; rejects records; changes from radio to phonograph or phonograph to radio; turns the power supply of the radio and phonograph OFF and has a "Silent" position, which silences the sound output without operating volume control. These operations are all controlled from the remote control unit without any connections with the radio.

The control positions on the remote control dial reading right to left around the control are as follows:—"LOUD," "SOFT," SILENT, Station No. 1, Station No. 2, Station No. 3, Station No. 4, Station No. 5, Station No. 6, "PHONO."

The twelve electric push-buttons on the chassis dial operate independently of the wireless remote control. Six of the push-buttons select stations, and six operate the wireless remote control, phonograph, and the standard, shortwave 1, shortwave 2 and FM bands. Viewing the push-buttons from the front of the radio, proceeding left to right: No. 1 button controls "Remote," Nos. 2-3-4-5-6 and 7 broadcast stations, No. 8 "Brdcst" band, No. 9 "SW-1" band, No. 10 "SW-2" band, No. 11, "FM" band and No. 12 phonograph.

The selected broadcast stations can be set up for push-button and remote tuning control operation by adjusting the padders and coils located in back of the push-button assembly. Three adjustments must be made for each broadcast station selected.

The bottom row marked "ANT" is for the antenna padder for remote control operation; the middle row of adjusting screws is for the oscillator coils used in remote control; the top row of adjusting screws is for the oscillator adjustment for push-button tuning. Each set of three padders is numbered from "1 to 6" corresponding to the numbers shown on the push-buttons in figure above.

To set up stations on these models for best reception, a Signal Generator PHILCO Model 070; Vacuum Tube Voltmeter and PHILCO Model 027 or 028 should be used. With this equipment proceed as follows:

1. Select and remove the desired six (6) station call letters from the receiver station tab card. Insert the station tabs in the windows of the bezel on the receiver. Place the lowest frequency station in the second window (No. 1 in diagram) on the left of the bezel, and the remaining station tabs in the windows in the order of increasing broadcast frequency.
2. Remove the tabs of the corresponding six stations from the wireless control call letter card. Insert the LOUD, SOFT and SILENT tabs in the first, second and third spaces, respectively, on the right hand side of the bezel. Insert the tab of the lowest frequency.

ADJUSTING CONTROL FREQUENCY AMPLIFIER

The wireless remote control models are shipped with 5 different control frequencies which range from 350 to 400 K. C. These frequencies are identified by the code number appearing on the serial number ticket and on the rear of the chassis. The code numbers and frequencies are as follows:

Code 5.....355 K. C.	Code 7.....375 K. C.
Code 6.....367 K. C.	Code 8.....383 K. C.
Code 9.....395 K. C.	

The purpose of the different control frequencies is to prevent interaction between two or more wireless remote control models which are on the same floor or exceptionally close together. When several wireless remote control models are to be located close together, it will be necessary to use different control frequencies. These frequencies should be 20 KC apart. For example, if three models are to be operated at the same time and are closely situated, it will be advisable to adjust the control frequency of the first set to 355 KC, the second set to 375 KC, and the third set to 395 KC.

In order to realign or change the control frequency of these models, the following equipment is required:

1. Philco Model 070 signal generator with a loop attached to the output terminal. (A few turns of wire 12 inches in diameter). Vacuum tube voltmeter, Philco Model 027.
2. Philco wireless remote control aligning adapter. Part No. 45-2769.
3. Philco aligning screw driver, Part No. 45-2610.

With this apparatus the control frequency is adjusted as follows:

1. Remove the 2A4G control tube from its socket and replace with the aligning adapter. Connect the red lead of the aligning adapter to the positive terminal of the vacuum tube voltmeter. The black lead of the adapter is connected to the negative terminal of the vacuum tube voltmeter.
2. Connect the high side of the signal generator through a 100-ohm resistor to the "Red" terminal of the remote control secondary

ADJUSTING WIRELESS REMOTE CONTROL UNIT

The wireless remote control unit is now adjusted to the control frequency of the amplifier as follows:

1. Turn off the signal generator, then dial any one of the stations indicated on the remote control unit by pulling the selector to the stop position; release the selector and at the same time press the stop down and hold it in this position.
2. Now bring the wireless remote control unit close to the receiver. Using a padding wrench, Philco Part No. 3164, tune the compensator (169), Fig. 3, located on the bottom of the remote control unit until a maximum voltage reading is indicated on the

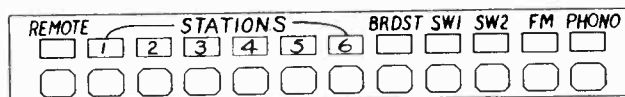


FIG. 1—TAB LOCATIONS

vacuum tube voltmeter. When tuning this compensator, it should be done very slowly so as not to pass over the frequency to which the control amplifier is tuned.

quency station in the fourth space on the right side of the bezel on the remote control unit dial. Transparent tabs are also supplied. These should be placed over each call letter. Place the remaining call letter tabs around the bezel from right to left (counter-clockwise) in the order of increasing frequency.

3. Insert the negative (—) terminal of the vacuum tube voltmeter into the Test socket on the rear of the chassis. Attach the positive (+) terminal to the chassis.
4. Turn volume control and power switch to the "ON" position, and allow the receiver to heat up. Attach a loop consisting of a few turns of wire to the output terminals of the Model 077 Signal Generator. Turn the signal generator power switch to "MOD ON". Press in the "Brdcst" push-button and manually tune in the lowest frequency station desired. This station should be between 540 to 950 K. C. Then tune the signal generator to the frequency of the same station and a beat note will be heard. Leave the signal generator pointer set at this frequency.
5. Press in the "Remote" push-button. Dial the first low frequency station on the remote control unit.
6. Using a padding screw driver adjust No. 1 "OSC Remote" (middle row) until the station identified by the modulated signal of the Signal Generator is tuned to maximum reading on the voltmeter. Next adjust the "No. 1 ANT" padder (bottom row) for maximum indication on the voltmeter.
- Press in the No. 1 station push-button on the radio and adjust No. 1 "P.BUTTON OSC" padder (top row) for maximum output on the same station.
7. Turn the Signal Generator off the station frequency and readjust the No. 1 "OSC P.BUTTON" padder for maximum; then press REMOTE push-button, dial station on Remote Unit and readjust No. 1 "Remote OSC" and No. 1 "ANT" padders for maximum reading with the station signal. This should be done with the volume control of the receiver at low volume.
- Repeat this procedure for each of the remaining stations to be set up. They should be set up in the order of their increasing frequency.
8. After all stations have been set up for push-button and remote control operation, press in the fifth (5) push-button and adjust the "ANT" compensator (36). See Fig. 4.

inductor loop panel. Connect the "grd" of the signal generator to the "Blk" terminal.

3. Apply power to the set and press in the "remote" push button. Turn the generator modulation control to "Mod ON" and turn the attenuator control about one fourth on.
4. The control frequency to which the control amplifier is tuned can now be determined by tuning the signal generator between 350 and 400 KC. When the signal generator is tuned to the control frequency, the vacuum tube voltmeter will show maximum deflection. If this frequency is to be used, leave the signal generator at this point or turn the indicator to any other frequency desired between 350 and 400 KC.
5. After the control frequency has been found or changed, compensators (149A) (149C) are adjusted for maximum indication on the vacuum tube voltmeter.
6. Remove the signal generator output leads and 100-ohm resistor from the terminal panel. Connect the remote secondary inductor loop to the terminal panel.
7. Place the small loop mentioned above into the "high" and "ground" terminals of the signal generator output and place the signal generator near the secondary inductor loop in the bottom of the cabinet. When doing this, do not disturb the setting of the signal generator indicator. The compensators (157A) and (163A) are now adjusted for maximum reading on the vacuum tube voltmeter.
8. Next adjust the secondary inductor loop compensator (165) located in the bottom of the cabinet. This compensator is encased in a cardboard container that is attached to one corner of the loop. Extreme care should be used in adjusting the compensator to the exact point of resonance as the secondary inductor is a very sharply tuned circuit.
9. If the vacuum tube voltmeter pointer goes off scale when adjusting the compensators, turn the attenuator control of the signal generator toward the "off" position.

vacuum tube voltmeter. When tuning this compensator, it should be done very slowly so as not to pass over the frequency to which the control amplifier is tuned.

3. The remote control unit is now moved a short distance from the radio (several feet). Compensator (169) is then readjusted for maximum voltage reading.
4. After making these adjustments, remove the aligning adapter from the socket and replace the 2A4G tube. The wireless remote control unit should now be adjusted to the same frequency as the control frequency in the receiver.



MODEL 42-1016

PHILCO RADIO & TELEVISION CORP.

Audio Output: 20 watts.

Power Supply: 115 volts, 60 cycle A. C.

This model can also be operated on 115 volts, 50 cycle current by changing the phonograph motor parts as given in the parts list.

Power Consumption: 175 watts.

Tuning Band Frequencies: Brdcast, 540 to 1720 KC; SW-1, 9 to 12 MC; SW-2, 14.4 to 18 MC; FM, 42 to 50 MC.

Push-Button and Remote Control Frequencies: 540 to 950 KC; 590 to 1050 KC; 650 to 1250 KC; 700 to 1350 KC; 850 to 1500 KC; 950 to 1600 KC.

OPERATING DISTANCE

When shipped from the factory the wireless remote control circuit is adjusted to control the radio from an average distance that has been found to be satisfactory in most installations. In some special cases, however, where the radio and control are situated near large metal objects or installed in metal shielded areas, it may be necessary to change the control circuit to get adequate remote control (increase sensitivity) from certain distances. In these cases, the value of resistor (160, 15,000 ohms, located underneath the radio chassis, should be changed to a lower value that will give the desired range of control. The resistor, however, should not be lowered in value more than is found necessary for the special installation. If the control range is too sensitive, the resistor should be changed to a higher value (more resistance).

PHONO REPRODUCER ADJUSTMENTS

To reproduce the sound from a record, the light beam of the reproducer must be carefully positioned on the light sensitive cell. If the light beam is not carefully set, the sound reproduction will be distorted, weak or, if the light beam is completely on or off the cell, the phonograph will be silent.

If any of these conditions exist, the following adjustment procedure should be made:—

NOTE—These adjustments should be made with the power line voltage at 118 volts A. C.

A. ADJUSTING WIDTH OF LIGHT BEAM

To make this adjustment push the lamp socket assembly into its holder until a clear image of the lamp filament appears on the light cell. The socket should then be slightly pushed in beyond this point until the rectangular spot of light is 5/32" in width. The socket assembly is now rotated so that the spot of light is vertical.

B. POSITIONING THE LIGHT BEAM

To position the light beam on the light cell, turn the adjusting screw at the lower left side of the reproducer until the spot is half on the cell and half on the metal frame surrounding the cell.

C. ADJUSTING INTENSITY OF LAMP

When shipped from the factory, the lamp of the reproducer is adjusted for best operating efficiency. The intensity of the light from the lamp is adjusted by Compensator No. 23 located on the radio chassis. Under ordinary circumstances, an adjustment will not be necessary. When replacing the reproducer or lamp, however, there may be a tendency towards microphonic feedback. In this case the compensator is adjusted as follows:

1. Turn volume control on full and play a record.
2. While the record is playing, turn compensator 110 in the direction necessary to eliminate microphonic feedback. By turning the compensator the strength of the pick-up output is increased or decreased.

D. INSTALLING NEW LAMP

When installing a new lamp in the socket, there are two positions in which the lamp can be inserted. Ordinarily, either of these positions can be used. In some cases, however, due to the lamp filament being off center, the lamp must be inserted in the position that gives the best centering of the spot of light on the vibrating mirror.

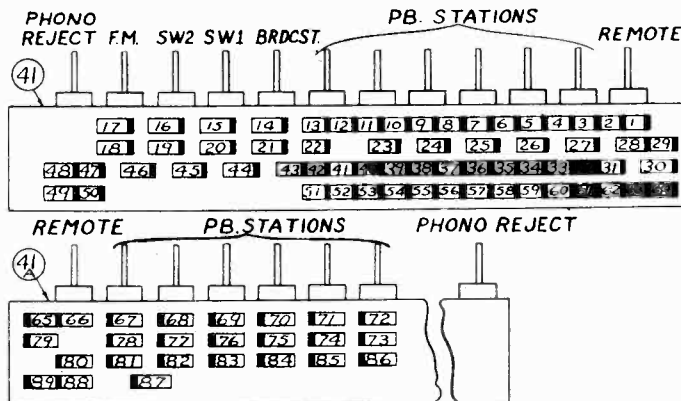


FIG. 5—CONTACT LOCATIONS OF STATIONS AND LIGHTS. P. B. SWITCH—TOP 41, BOTTOM 41A

REPRODUCER JEWEL AND ARM ADJUSTMENTS

Three different tone arms have been used:

- 1—An aluminum arm (Part No. 35-2519).
- 2—A zinc arm (Part No. 35-2519).
- 3—A moulded bakelite arm (Part No. 35-2540).

Since the weight of each kind of arm is different, three counterbalance weights are required. The aluminum arm requires a 1½-ounce weight, the zinc arm a 5-ounce weight and the bakelite a 3-ounce weight. The zinc arm has a yellow paint mark under the tone arm.

Regardless of which tone arm is used, the weight of the tone arm on the record should be 1½ ounces. The correct counterbalance weight must be used and the final adjustment made with the screw on the side of the tone arm swivel assembly. Do not use the incorrect counter balance weight and then adjust for the balance with the spring in the tone arm swivel, since this puts a side thrust on the tone arm spindle and will very likely cause tone arm drag.

Use only a 20 SAE grade oil mixed with 1/3 special Shaler Rislone oil for lubricating the spindle. Other lubricants will cause the spindle assembly to stick, resulting in tone arm drag. Tone arm drag may also be caused by the dress of the leads at the back of the tone arm. They should be dressed towards the turntable spindle at the end of the tone arm.

The tone arm spindle must be absolutely free. Any binding in either direction will cause the light beam to pull off the cell and produce WOW's and distortion. The drag should not exceed ¼ ounce.

Do not, under any circumstances, try to adjust the angle of the jewel. The jewel normally extends 1/32" below the guard. It should be vertical with respect to the surface of the record when viewed from in front of the pick-up head. When viewed from the side, the jewel is at quite an angle to the surface of the record. On 1/3 stack of records, the jewel should be at an angle of approximately 20°. When playing the bottom record, the jewel will be at an angle of approximately 13°. Do not attempt to change this angle. It permits the jewel to track in the groove with a minimum surface noise. Any change from the original setting will affect the frequency response, and if the angle of the jewel is less than given above, it will cause record wear.

Flutter, mistracking and distortion can all be caused by a stiff mirror and jewel assembly. Check the flexibility of this assembly. With the record changer stopped, put a record on the turntable and place the tone arm on the record. Open the peep-hole in the pick-up cover—the light beam should be 5/32" wide and should be half "on" and half "off" the photo-electric cell. Hook the Philco Scale, Part No. 45-2851, under the cover at the nose and pull laterally, first toward the spindle and then away from the spindle. The jewel assembly should be sufficiently flexible to allow the light beam to be pulled completely off the cell and completely on the cell with less than 1 ounce of lateral pull—from ½ ounce to ¾ ounce is the most desirable. Replace the mirror and jewel assembly if more than 1 ounce pull is required.

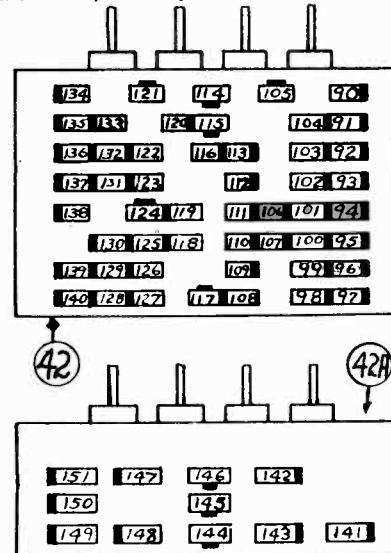


FIG. 6—CONTACT LOCATIONS OF TUNING BAND, P. B. SWITCH—42, BOTTOM; 42A, TOP SECTION

PHILCO RADIO & TELEVISION CORP. MODEL 42-1016

Sch. No.	Description	Part No.							
1.	Loop Aerial (Broadcast and S. W. Bands)	76-1351	41A.	P. B. Switch (Stations and Lights—Bottom Section), Part 41	27-4596	131.	Dial Lamps	34-2064	
	Mtg. Washer	W-181FA3		Mtg. Grommet	28-3806		Cabinet Pilot Lamp	34-2210	
	Mtg. Sleeve	28-3806FA3		Snaps Fasteners	28-3806		Socket Assembly (Dial Lamp)	38-9894	
	Mtg. Screw	W-283E211		P. B. Switch (Tuning Bands—Under Chassis—Bottom Section)	28-4342		Socket Assembly (Dial Lamp)	38-9895	
	Sprink Washer	28-4186FA3	42.	P. B. Switch (Tuning Bands—Under Chassis—Bottom Section)	42-1690		Socket Assembly (Cab. Pilot Lamp)	74-1335	
1A.	Terminal Panel	38-9942	42A.	P. B. Switch (Tuning Bands—Under Chassis—Top Section), Part of 42		132A.	Condenser (.05 mfd. 400 volts) (Condenser (.05 mfd.) (Part of Power Cord)	3615-089G	
2.	Dipole Aerial (F. M. Mounted on Cabinet)	76-1382		Mtg. Grommet	27-4596	133.	Volume Control Motor and Gears Complete	1-3176	
2A.	Socket (F. M. Aerial—On Chassis)	27-6181		Mtg. Nut	27-4596		Drive Belt	35-1237	
3.	F. M. Aerial Transformer	32-3805		Primary Compensator (4.3 KC) (Part of 43)	32-3802	134.	Electrolytic Condenser (45 mfd) Remote Control Stepper Unit Complete	27-9770	
3A.	F. M. Oscillator Transformer (Part of 3) Mtg. Clip	28-5002	43A.	Primary Compensator (4.3 KC) (Part of 43)	W-1949	135.	Mtg. Grommet	30-2499	
4.	F. M. Tuning Condenser	31-2596	43B.	Primary Compensator (Iron Core—455 KC) (Part of 43)			Rubber Cushion (Bottom)	74-1144	
4A.	Broadcaster and S. W. Tuning Condenser (Part of 4)		43C.	Secondary Compensator (4.3 KC) (Part of 43)			Rubber Liner (end-stepper cover)	27-4789	
	Mtg. Grommet	27-4771	43D.	Secondary Compensator (455 KC) (Part of 43)			Rubber Liner (mid-stepper cover)	27-4801	
	Drive Drum (Cable)	38-9736	43E.	Mica Condenser (500 mmfd) (Part of 43)			Rubber Liner (side-stepper cover)	54-4041	
	Drive Cord (Condenser)	31-2315	44.	Condenser (.01 mfd. 400 volts)	30-4572	135A.	R. F. Choke	76-1160	
	Drive Cord (Pointer)	31-2318	45.	Condenser (.01 mfd. 400 volts)	30-4572	135C.	R. F. Choke	32-3274	
	Spring	38-4913	46.	Resistor (1000 ohms)	33-21033A	135D.	Condenser (.05 mfd)	32-3274	
	Pointer	56-2272	47.	Resistor (1000 ohms)	33-21033B	135E.	Contact Wafer	39-9761	
	Bearing (Drive Drum Mtg.)	38-9707	48.	Resistor (150 ohms)	33-11339	135G.	Stepper Relay Coil (Holding Coil)	38-9821	
	Coupling (Condenser)	31-2291	49.	Condenser (.05 mfd. 400 volts)	30-4572	135H.	Stepper Relay (Stepping "Coil")	38-9822	
5.	Compensator (F. M. Aerial)	31-6442	50.	Resistor (3900 ohms)	33-35939		Stepper Rotary Switch	42-1620	
5A.	Part of 5		51.	Resistor (3900 ohms)	33-35939		Insulating Washer	27-7392	
5B.	Compensator (S. W. 2 Aerial)		52.	Third I. F. Transformer	32-3803		Insulating Washer	27-7392	
5C.	Compensator (S. W. 2 Oscillator)		52A.	Primary Compensator (4.3 KC) (Part of 52)	W-1949		Mtg. Stud	28-8992	
6.	Resistor (47,000 ohms)	33-347339	52B.	Primary Compensator (455 KC) (Part of 52)			Mtg. Screw	39-9763	
7.	Mica Condenser (250 mmfd)	60-125157	52C.	Secondary Compensator (4.3 KC) (Part of 52)		135J.	Contact Arm	38-9760	
8.	Resistor (10 ohms)	32-5002	53.	Mica Condenser (500 mmfd) Condenser (.1 mfd. 200 volts)	60-150137		Drive Arm	38-9760	
9.	Mica Condenser (250 mmfd)	60-125157	54.	Resistor (2.2 megohms)	30-4576	138.	Stepper Muting Switch	38-9760	
10.	Resistor (47,000 ohms)	33-347339	55.	Resistor (2.2 megohms)	33-522339		Spark Filter Complete, Consisting of 135A, 135C, 135D, 135E	38-9894	
11.	Silver Mica Condenser (500 mmfd)	30-11338	56.	Condenser (.05 mfd. 200 volts)	30-4519	140.	Resistor (150 ohms)	33-3362	
12.	Resistor (2,200 ohms)	33-222339	57.	Mica Condenser (100 mmfd)	60-110157	141.	Resistor (120,000 ohms)	33-412339	
13.	Silver Mica Condenser (215 mmfd)	30-1215	58.	Resistor (100,000 ohms)	33-110339	142.	Resistor (4700 ohms)	33-347339	
14.	Resistor (10,000 ohms)	33-310339	59.	Phono-Radio Relay	42-1691-6	143.	Resistor (800,000 ohms)	33-4518	
15.	S. W. 1 and S. W. 2 Oscillator Transformer	32-3806	60.	Changerover Switch (Wafer A) Changerover Switch (Wafer B)	42-1720	144.	Resistor (800,000 ohms)	33-468339	
16.	Broadcaster Oscillator Transformer	32-3806	61.	Condenser (.1 mfd. 200 v d.c.)	30-4566	145.	Resistor (270 ohms)	30-4518	
17.	Mtg. Clip	28-5002	62.	Resistor (3300 ohms)	33-233339	146.	Resistor (270 ohms)	30-4518	
17A.	Compensator (Broadcast 500 KC)	31-6385	63.	Condenser (.0015 mfd. 600 volts)	33-422339	147.	Resistor (150,000 ohms)	33-510339	
18.	Part of 17		64.	Resistor (220,000 ohms)	33-422339	148.	Resistor (150,000 ohms)	33-510339	
18A.	Compensator (S. W. 2 Oscillator)	31-8362	65.	Condenser (.0015 mfd. 600 volts)	30-4621	149.	Resistor (150,000 ohms)	33-510339	
18B.	Compensator (Broadcast Aerial 1500 KC), Part of 18		66.	Condenser (.0015 mfd. 600 volts)	30-4621	149B.	Resistor (150,000 ohms)	33-510339	
	Compensator (S. W. 1 Aerial), Part of 18		67.	Resistor (220,000 ohms)	30-4489	149C.	Resistor (150,000 ohms)	33-510339	
	Mtg. Clip	28-5002	68.	Condenser (.0015 mfd. 600 volts)	30-4489	149D.	Resistor (150,000 ohms)	33-510339	
19.	Silver Mica Condenser (145 mmfd)	20-014511	69.	Mica Condenser (100 mmfd)	33-103339	149E.	Resistor (150,000 ohms)	33-510339	
20.	Silver Mica Condenser (155 mmfd)	20-015511	70.	Mica Condenser (100 mmfd)	60-110157	150.	Resistor (150,000 ohms)	33-510339	
21.	S. W. 1 Aerial Transformer	32-3806	71.	Condenser (.01 mfd. 400 volts)	30-4572	151.	Resistor (150,000 ohms)	33-510339	
21A.	S. W. 2 Aerial Transformer, Part of 21		72.	Volume Control	33-5417	152.	Resistor (150,000 ohms)	33-510339	
	Mtg. Clip	28-5002	73.	Drive Pulley	W-2105	153.	Resistor (1 megohm)	30-4518	
22.	Broadcaster Aerial Transformer	32-3807	74.	Condenser (.02 mfd. 200 volts)	30-4584	154.	Condenser (.05 mfd. 400 volts)	30-4518	
	Mtg. Clip	28-5002	75.	Mica Condenser (150 mmfd)	33-422339	155.	Resistor (1.5 megohms)	33-510339	
23.	Resistor (2.2 megohms)	33-522339	76.	Resistor (470,000 ohms)	33-447339	156.	Resistor (1.5 megohms)	33-510339	
24.	Mica Condenser (250 mmfd)	60-125157	77.	Resistor (1 megohm)	33-447339	157.	Resistor (1.5 megohms)	33-510339	
25.	Resistor (4700 ohms)	33-247339	78.	Resistor (470,000 ohms)	33-447339	157A.	Resistor (1.5 megohms)	33-510339	
26.	Condenser (.05 mfd. 400 volts)	30-4518	79.	Resistor (470,000 ohms)	33-447339	157B.	Resistor (1.5 megohms)	33-510339	
27.	Condenser (.05 mfd. 400 volts)	30-4518	80.	Resistor (10 megohms)	33-610339	157C.	Resistor (1.5 megohms)	33-510339	
28.	Resistor (22,000 ohms)	33-222339	81.	Condenser (.01 mfd. 400 volts)	60-110157	157D.	Resistor (1.5 megohms)	33-510339	
29.	First I. F. Transformer	W-1949	82.	Mica Condenser (100 mmfd)	60-110157	157E.	Resistor (1.5 megohms)	33-510339	
29A.	Primary Compensator (Iron Core 455 KC) Part of 29		83.	Resistor (330,000 ohms)	33-433339	157F.	Resistor (1.5 megohms)	33-510339	
29B.	Primary Compensator (4.3 KC) Part of 29		84.	Condenser (.01 mfd. 400 volts)	30-4518	157G.	Resistor (1.5 megohms)	33-510339	
29C.	Condenser (4000 mmfd), Part of 29		85.	Condenser (.05 mfd. 400 volts)	30-4518	157H.	Resistor (1.5 megohms)	33-510339	
29D.	Secondary Compensator (455 KC), Part of 29		86.	Condenser (.05 mfd. 400 volts)	30-4518	157I.	Resistor (1.5 megohms)	33-510339	
29E.	Secondary Compensator (4.3 KC), Part of 29		87.	Resistor (4700 ohms)	33-347339	157J.	Resistor (1.5 megohms)	33-510339	
30.	Resistor (22,000 ohms)	33-222339	88.	Resistor (4700 ohms)	33-347339	157K.	Resistor (1.5 megohms)	33-510339	
31.	Resistor (1000 ohms)	33-410339	89.	Condenser (.01 mfd. 400 volts)	30-4572	157L.	Resistor (1.5 megohms)	33-510339	
32.	Condenser (.03 mfd. 400 volts)	30-4517	90.	Resistor (4700 ohms)	33-347339	157M.	Resistor (1.5 megohms)	33-510339	
33.	Condenser (.05 mfd. 400 volts)	30-4518	91.	Condenser (.01 mfd. 400 volts)	30-4572	157N.	Resistor (1.5 megohms)	33-510339	
34.	Resistor (48,000 ohms)	33-080339	92.	Condenser (.1 mfd. 200 volts)	30-4584	157O.	Resistor (1.5 megohms)	33-510339	
35.	Resistor (100 ohms)	33-110339	93.	Resistor (470,000 ohms)	33-447339	157P.	Resistor (1.5 megohms)	33-510339	
36.	Push-button Compensator ("Ant"—Remote)		94.	Resistor (470,000 ohms)	33-447339	157Q.	Resistor (1.5 megohms)	33-510339	
36A.	Push-button Compensator ("Ant"—540 to 950 KC) (Part of 36)	31-6445	95.	Resistor (470,000 ohms)	33-447339	157R.	Resistor (1.5 megohms)	33-510339	
36B.	Push-button Compensator ("Ant"—50 to 1050 KC) (Part of 36)		96.	Resistor (470,000 ohms)	33-447339	157S.	Resistor (1.5 megohms)	33-510339	
36C.	Push-button Compensator ("Ant"—450 to 1250 KC) (Part of 36)		97.	Resistor (470,000 ohms)	33-447339	157T.	Resistor (1.5 megohms)	33-510339	
36D.	Push-button Compensator ("Ant"—700 to 1350 KC) (Part of 36)		98.	Resistor (470,000 ohms)	33-447339	157U.	Resistor (1.5 megohms)	33-510339	
36E.	Push-button Compensator ("Ant"—850 to 1500 KC) (Part of 36)		99.	Resistor (470,000 ohms)	33-447339	157V.	Resistor (1.5 megohms)	33-510339	
36F.	Push-button Compensator ("Ant"—850 to 1500 KC) (Part of 36)		100.	Resistor (470,000 ohms)	33-447339	157W.	Resistor (1.5 megohms)	33-510339	
36G.	Push-button Compensator ("Ant"—850 to 1600 KC) (Part of 36)		101.	Resistor (470,000 ohms)	33-447339	157X.	Resistor (1.5 megohms)	33-510339	
37X.	Resistor (13 ohms)	33-033339	102.	Resistor (470,000 ohms)	33-447339	157Y.	Resistor (1.5 megohms)	33-510339	
37.	Resistor (10 ohms)	33-010339	103.	Resistor (470,000 ohms)	33-447339	157Z.	Resistor (1.5 megohms)	33-510339	
38.	Pilot Lamp (Remote Push-button)	34-2064	104.	Resistor (470,000 ohms)	33-447339	158.	Resistor (1.5 megohms)	33-510339	
38A.	Pilot Lamp (Push-button—540 to 950 KC)	34-2064	105.	Resistor (470,000 ohms)	33-447339	159.	Resistor (1.5 megohms)	33-510339	
38B.	Pilot Lamp (Push-button—590 to 1050 KC)	34-2064	106.	Resistor (470,000 ohms)	33-447339	160.	Resistor (1.5 megohms)	33-510339	
38C.	Pilot Lamp (Push-button—450 to 1250 KC)	34-2064	107.	Resistor (470,000 ohms)	33-447339	161.	Resistor (1.5 megohms)	33-510339	
38D.	Pilot Lamp (Push-button—700 to 1350 KC)	34-2064	108.	Resistor (470,000 ohms)	33-447339	162.	Resistor (1.5 megohms)	33-510339	
38E.	Pilot Lamp (Push-button—850 to 1500 KC)	34-2064	109.	Resistor (470,000 ohms)	33-447339	163.	Resistor (1.5 megohms)	33-510339	
38F.	Pilot Lamp (Push-button—950 to 1600 KC)	34-2064	110.	Resistor (470,000 ohms)	33-447339	163A.	Resistor (1.5 megohms)	33-510339	
38G.	Pilot Lamp (Push-button) (Broadcast Band)	34-2064	111.	Resistor (470,000 ohms)	33-447339	163B.	Resistor (1.5 megohms)	33-510339	
38H.	Pilot Lamp (Push-button) (S. W. Hand)	34-2064	112.	Resistor (470,000 ohms)	33-447339	163C.	Resistor (1.5 megohms)	33-510339	
38I.	Pilot Lamp (Push-button) (S. W. 2 Band)	34-2064	113.	Resistor (470,000 ohms)	33-447339	163D.	Resistor (1.5 megohms)	33-510339	
38J.	Pilot Lamp (Push-button) (F. M.)	34-2064	114.	Resistor (470,000 ohms)	33-447339	163E.	Resistor (1.5 megohms)	33-510339	
38K.	Push-button (Phono, Reject)	34-2064	115.	Resistor (470,000 ohms)	33-447339	163F.	Resistor (1.5 megohms)	33-510339	
	Pilot Lamp Socket and Housing Assem.	76-1325	116.	Resistor (470,000 ohms)	33-447339	163G.	Resistor (1.5 megohms)	33-510339	
	Insulator	27-9925	117.	Resistor (470,000 ohms)	33-447339	163H.	Resistor (1.5 megohms)	33-510339	
	Mtg. Screw	W-601	118.	Resistor (470,000 ohms)	33-447339	163I.	Resistor (1.5 megohms)	33-510339	
39.	F. B. Remote Oscillator Transformer (540 to 950 KC)	32-3042	119.	Resistor (470,000 ohms)	33-447339	163J.	Resistor (1.5 megohms)	33-510339	
39A.	F. B. Remote Oscillator Transformer (590 to 1050 KC)	32-3042	120.	Resistor (470,000 ohms)	33-447339	163K.	Resistor (1.5 megohms)	33-510339	
39B.	F. B. Remote Oscillator Transformer (650 to 1250 KC)	32-3597	121.	Resistor (470,000 ohms)	33-447339	163L.	Resistor (1.5 megohms)	33-510339	
39C.	F. B. Remote Oscillator Transformer (700 to 1350 KC)	32-3597	122.	Resistor (470,000 ohms)	33-447339	163M.	Resistor (1.5 megohms)	33-510339	
39D.	F. B. Remote Oscillator Transformer (850 to 1500 KC)	32-3041	123.	Resistor (470,000 ohms)	33-447339	163N			

CHANGES, NOTES

PHILCO RADIO & TELEVISION CORP.

MODELS 42-1012, 42-1013, CODE 121

Condenser (5X) 15 mmfd. shown on diagram and not indicated in the parts list is Part No. 60-015157.

Condenser (7X) 10 mmfd. shown on diagram and not indicated in the parts list is Part No. 60-010157.

If the loop aerial (Brdst & S.W.) 3 is removed from the cabinet for replacement or repairs, it should be remounted with the side of the loop having the red or red and white lead toward the rear of the cabinet. This is necessary to increase the stability at the low frequency end of the broadcast band and to reduce whistles.

Beginning with chassis marked run 2, the power transformer (107) was changed from Part No. 32-8204 to 32-8226.

MODEL 42-1015, CODE 121

Beginning with chassis marked run 2, a filter circuit was added to the 6L6G output tubes to reduce hum. This circuit consists of condenser (89) .1 mfd., 200 volts, Part No. 30-4586, and resistor (90), 100,000 ohms, Part No. 33-410154. This change is shown on the schematic diagram in the Service Bulletin. A few early production models do not have this change.

Beginning with run 3 condenser (62) was changed from a .006 mfd., 400 volts, Part No. 30-4591 to .05 mfd., 400 volts, Part No. 40-4518. A few early production models do not have this change.

To avoid coupling the broadcast loop and the set wiring on Model 42-1015, it is necessary that the loop be mounted in the cabinet with the terminal having the red, or red-white lead towards the rear of the cabinet. The loop lead mentioned is connected to #2 terminal on the loop terminal on the rear of the chassis.

MODEL 42-1016, CODE 121

To obtain additional audio bass frequency response the condensers in the treble tone control circuit were changed and parts added. These changes were made on two different production run numbers, Run 3 and Run 4. Chassis with Run 4 change is final. These changes are as follows:

RUN 3 TONE CONTROL CHANGE

Schematic No.	Description	Original Part No.	Run 3 Part No.
(96)	Condenser	(30-4623)	(30-4591)
		(.004 mfd.)	(.006 mfd.)
(96A)	Condenser	(30-4591)	(30-4572)
		(.006 mfd.)	(.01 mfd.)
(97)	Condenser	(30-4622)	(30-4582)
		(.002 mfd.)	(.003 mfd.)

RUN 4 TONE CONTROL CHANGE

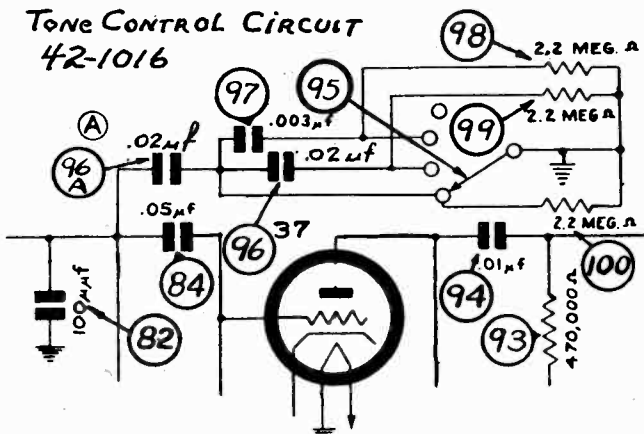
See diagram

Remove (96) condenser, Part No. 30-4591, and replace with a .02 mfd. 400 volt, Part No. 30-4516 condenser.

Remove condenser (96A) .01 mfd., Part No. 30-4572, from its present location and connect a wire from switch contact to terminal panel lug. Change value of 96A to a .02 mfd., 400 volt Part No. 30-4516 condenser and reconnect from the plate contact of the XXFM tube socket to the No. 6 contact of 6L6G tube (Dummy Lug).

Remove the wire from the grid contact of the 37 tube socket which comes from the treble tone control wiring panel. Reconnect this wire to No. 6 contact (Dummy Lug) of the 6L6G tube socket next to the XXFM tube. Connect a 10 mfd., 25 volt condenser Part No. 30-2500 from the cathode of the 7C6 tube to ground.

Tone Control Circuit  
42-1016



SERVICE REPLACEMENT SPINDLE KIT FOR 1942 RECORD CHANGERS

Because of material shortage it is not possible to supply the early type spindle with the large bushing as used on record changer 35-1258. A replacement kit is available making it possible to substitute the spindle and other associated parts as used in the later changers. The following is the installation procedure.

- Remove positioning bracket from cam gear mounting bracket No. 32A and replace screw.
- Remove old spindle assembly.
- Remove two screws that hold No. 32A to U bracket.
- Unhook spring from U bracket to cam lever.
- Remove solenoid bracket and solenoid plunger bracket mounting screws.
- Remove U bracket by drilling out the four rivets that hold it in place at base plate.
- Mount new U bracket to base plate.
- Screw eccentric washer on U bracket.
- Replace screws holding No. 32A to U bracket.
- Replace spring to U bracket and cam lever.
- Mount new spindle assembly, Part No. 318-2839, with pin in slot in U bracket.
- Locate clutch lever fork between washers on spindle assembly.
- Replace solenoid bracket and solenoid core bracket screws.
- Adjust changer for correct performance.

Spindle Kit for Standard Changers (Kit Part No. 45-2963)

- 1 part 218-1400 U Bracket
- 1 part 318-2839 Spindle Assembly
- 1 part 318-2838 Turntable
- 4 part W-136 Rd. Hd. Steel Mach. Screws
- 4 part W-661 Steel Hex. Nuts
- 4 part W-223 Shakeproof Lockwashers
- 1 part 217-1406 Fibre Washer
- 1 part 217-1407 Curved Washer
- 1 part 218-1525 Lockwasher
- 1 part 218-1504 Nut

Spindle Kit for Deluxe Changers (Kit Part No. 45-2964)

- 1 part 218-1400 U Bracket
- 1 part 35-2606 Spindle
- 1 part 35-2611 Turntable
- 1 part 218-1403 Spring
- 1 part 218-1406 Washer
- 1 part 218-1405 Washer
- 1 part 218-1401 Clutch
- 1 part 218-1500 Sleeve
- 1 part 218-1501 Pin
- 4 part W-136 Rd. Hd. Steel Mach. Screws
- 4 part W-661 Steel Hex Nuts
- 4 part W-223 Shakeproof Lockwashers
- 1 part 217-1406 Fibre Washer
- 1 part 217-1407 Curved Washer
- 1 part 218-1525 Lockwasher
- 1 part 218-1504 Nut

PHILCO RADIO & TELEVISION CORP.

MODEL PT-89

**INTERMEDIATE FREQUENCY: 455 K. C.**  
**BATTERY:** Model PT-89 requires one Philco Portable "A" and "B" Pack P-89. To install the battery, slide the latch on the end of the cabinet and open the cabinet.

Observe the arrangement of the pins on the plug of the battery cable and the corresponding holes in the socket of the battery, so you will be sure to insert them correctly.

Insert the plug into the battery socket facing the chassis. Place carboard spacer between battery and chassis. Close cabinet and lock latch.

**PHILCO TUBES USED:** 1-1LC6, 1st Detector and Oscillator; 1-1LN5, I. F. Amplifier; 1-LD6, 2nd Detector, A. F. Amplifier and Automatic Volume Control; and 1-1LB4, Power Output.

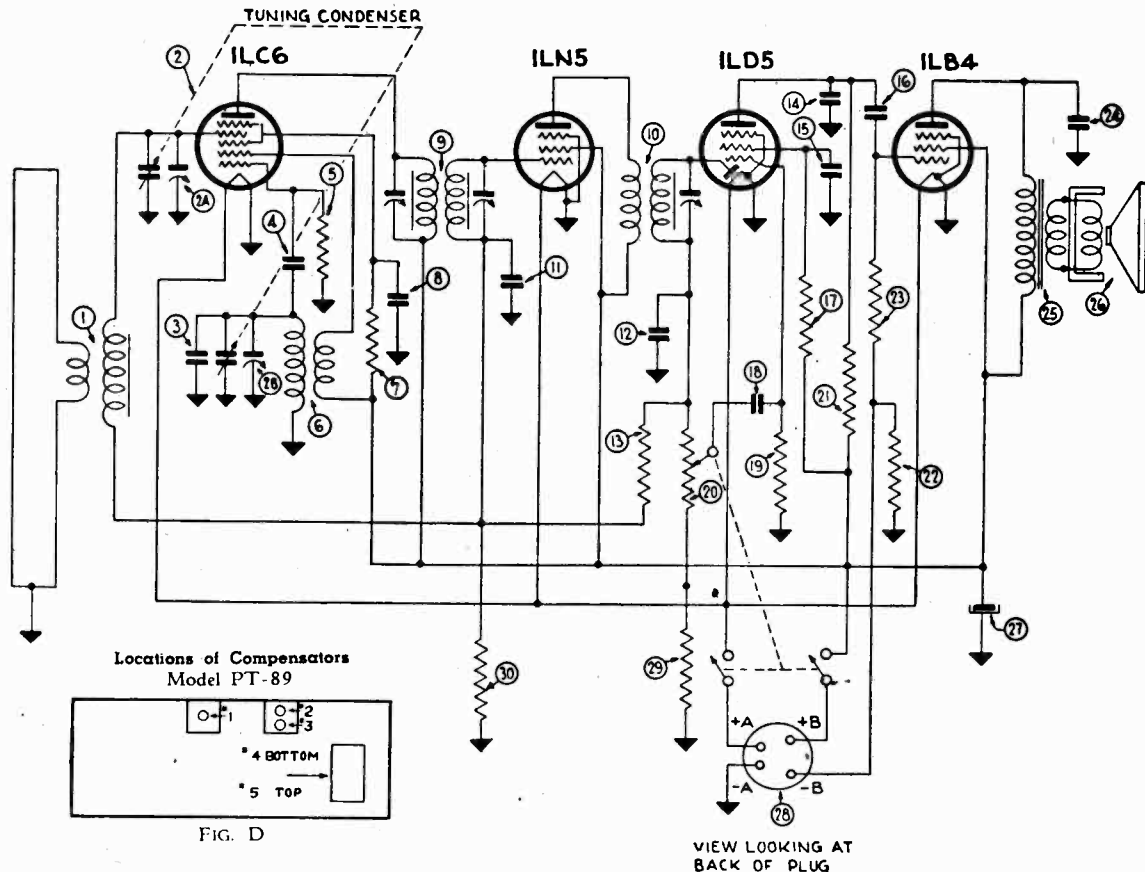


FIG. D

VIEW LOOKING AT BACK OF PLUG

**Replacement Parts — Philco Transitone Model PT-89**

SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.	SCHEM. No.	DESCRIPTION	PART No.
1	Antenna Transformer	32-3458	16	Tubular Condenser (.004 mf., 400 v.)	30-4578	<b>MISCELLANEOUS PARTS</b>		
2	Tuning Condenser	31-2476	17	Resistor (2.2 megs., ¼ watt)	33-522154		Cabinet	10482A
3	Mica Condenser (10 mmf.)	60-010157	18	Tubular Condenser (.004 mf., 400 v.)	30-4578		Clip (Coil Mtg.)	28-5002
4	Mica Condenser (100 mmf.)	60-110157	19	Resistor (4.7 megs., ¼ watt)	33-547154		Clamp (Loop)	56-1809
5	Resistor (220,000 ohms, ¼ watt)	33-422154	20	Volume Control (1 meg.)	33-5410		Knob	27-4997
6	Oscillator Transformer	32-3518	21	Resistor (1 meg., ¼ watt)	33-510154		Knob	27-4999
7	Resistor (33,000 ohms, ¼ watt)	33-333154	22	Resistor (470 ohms, ½ watt)	33-147336		Spring (Battery)	56-1807
8	Tubular Condenser (.01 mf., 400 v.)	30-4572	23	Resistor (4.7 megs., ¼ watt)	33-547154		Socket	27-6138
9	1st I. F. Transformer	32-3472	24	Mica Condenser (2200 mmf.)	60-222154		Washer (Chassis Mtg.)	W-152
10	2nd I. F. Transformer	32-3473	25	Output Transformer	32-8114		Screw (Chassis Mtg.)	W-881
11	Tubular Condenser (.05 mf., 200 v.)	30-4519	26	Speaker	36-1517			
12	Mica Condenser (250 mmf.)	60-125157	27	Cone Assem. (for Spkr. 36-1517-2)	36-4132			
13	Resistor (10 megs., ¼ watt)	33-610154	28	Electrolytic Cond. (10mf., 150v.)	30-2396			
14	Mica Condenser (100 mmf.)	60-110157	29	Battery Cable	41-3545			
15	Tubular Condenser (.05 mf. 200 v.)	30-4519	30	Resistor 6800 ohms, ½ watt	33-268344			
			31	Resistor (4.7 megs., ¼ watt)	33-547154			

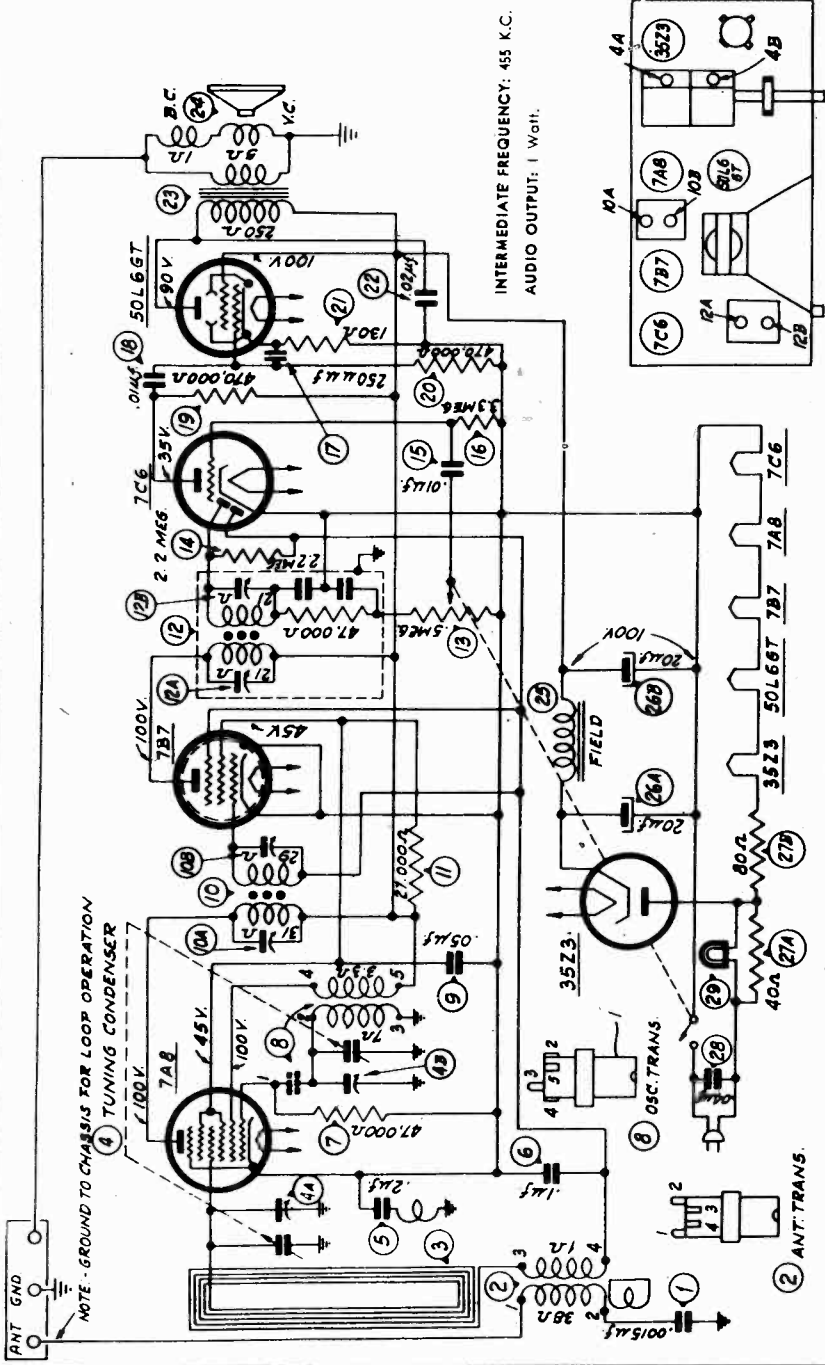
Operations in Order	Signal Generator		Receiver			Special Instruction
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1.	See Paragraph on Signal Generator above	455 K.C.	540 K.C.	Vol. Max.	#1, #2, #3	Note A
2.	Use Loop on Generator as above	1500 K.C.	1500 K.C.	Vol. Max.	#4 Osc. #5 Aerial	

**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.

MODELS PT-91, PT-92, PT-93,  
PT-94, PT-95, PT-96

PHILCO RADIO & TELEVISION CORP.

SCHEM. No.	DESCRIPTION	PART No.
1.	Condenser (.0015 mfd., 200 volts)	30-4621
2.	Aerial Transformer	32-3394
3.	Mfg. Clip	28-5002
4.	Loop Aerial (PT-91 part of Cabinet)	32-3835
	Loop Aerial (PT-92 part of Cabinet)	32-3855
	Loop Aerial (PT-93, PT-95)	31-2539
	Tuning Cond.	31-2539
	Dial Pointer	54-0093
	Mfg. Grommet	27-4610
	Spring (Drive cord)	28-9954
	Tuning Shaft	31-2518
	Mfg. Nut	W-7157
	Drive Cord	31-2541
5.	Condenser (.1 mfd., 200 volts)	74-1161
6.	Resistor (47,000 ohms)	30-4534
7.	Oscillator Transformer	33-47339
8.	Mfg. Clip	28-5002
9.	Condenser (.05 mfd., 200 volts)	32-3673
10.	1st I. F. Transformer	W-624
11.	Mfg. Nut	33-32739
12.	2nd I. F. Transformer	32-3674
13.	Mfg. Nut	W-624
	Volume Control	33-5429
	Nut	W-1949
14.	Resistor (2.2 megohms)	33-52339
15.	Cond. (.01 mfd., 400 volts)	30-4572
16.	Resistor (3.3 megohms)	33-53339
17.	Mica Cond. (250 mmfd.)	60-72157
18.	Cond. (.01 mfd., 400 volts)	30-4572
19.	Resistor (470,000 ohms)	33-44739
20.	Resistor (470,000 ohms)	33-44739
21.	Resistor (130 ohms)	33-11334
22.	Condenser (.02 mfd., 400 volts)	30-4514
23.	Output Transformer	32-8144
24.	Cone Assembly	34-4204
25.	Field Coil (for Speaker 34-1542-9)	
26A.	(Replace Speaker 34-1542)	
26B.	Electrolytic Condenser (20-20 mfd.)	30-2382
27.	Clamp	54-1344
28.	Resistor (40-80 ohms)	33-3408
29.	Cond. (.04 mfd., 400 volts)	30-4119
30.	Fluor Lamp	34-2084
31.	Socket Assembly	76-1280



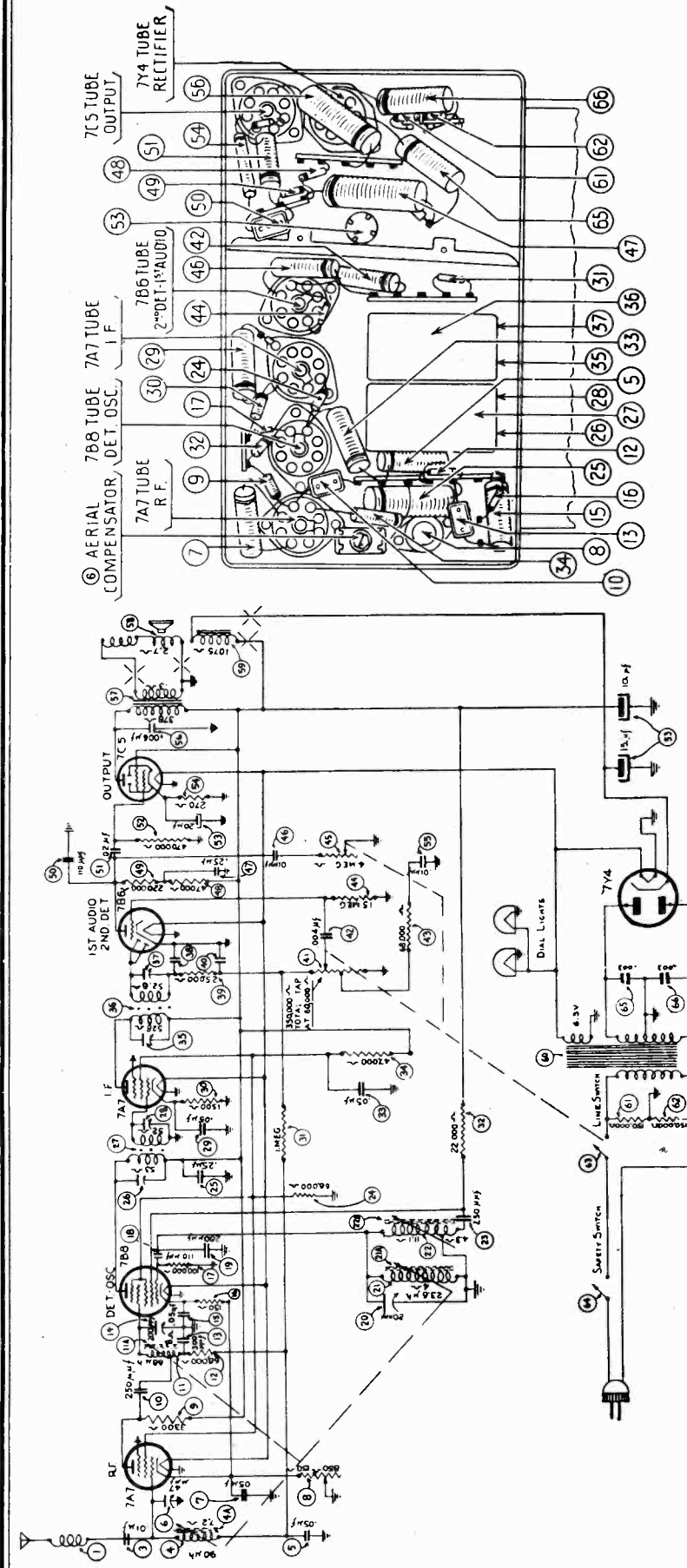
Operations in Order	SIGNAL GENERATOR		RECEIVER		SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Control Setting	Adjust Compensators in Order	
1.	Ant. Section of tuning	465 K.C.	Vol. Max.	12A, 12B, 10A, 10B	Note B
2.	Loop	see above instructions	Vol. Max.	4B	Note A
3.	Loop	see above instructions	Vol. Max.	4A	

NOTE A: DIAL POINTER CALIBRATION — In order to adjust the receiver correctly, the pointer must be adjusted to track properly with the tuning condenser. To do this, turn the tuning condenser to the maximum capacity (plates fully meshed). With the condenser in this position, set the tuning pointer on the small dot below 550 K.C.

Note B — Before adjusting compensators, turn down (10B) to tight position. Then adjust the compensators for maximum output in the following order: 12A, 12B, 10A and 10B.

LOCATIONS OF PARTS — UNDERSIDE OF CHASSIS.

PHILCO RADIO & TELEVISION CORP.



IF PEAK 265 KC

PARTS LIST MODEL A361

No.	Description	Part No.
(1)	Antenna Choke	65-0168
(2)	Condenser (.01 mfd.)	61-0114
(3)	Antenna Transformer	65-0443
(4)	Antenna Transformer Core	57-2534
(5)	Condenser (.05 mfd.)	61-0111
(6)	Antenna Padder	63-0079
(7)	Condenser (.05 mfd.)	61-0111
(8)	Sensitivity Control	67-0025
(9)	Resistor (3300 ohms)	33-233334
(10)	Condenser (250 mmfd.)	60-125157
(11)	R. F. Transformer	65-0444
(11A)	R. F. Transformer Core	57-2534
(12)	Resistor (68,000 ohms)	33-368154
(13)	Condenser (300 mmfd.)	60-130127
(14)	R. F. Padder	63-0080
(15)	Condenser (.05 mfd.)	61-0111
(16)	Resistor (150 ohms)	33-115356
(17)	Resistor (100,000 ohms)	33-410154
(18)	Condenser (110 mmfd.)	60-110157
(19)	Condenser (280 mmfd.)	61-0043
(20)	Oscillator Padder	63-0082
(21)	Oscillator Transformer	65-0463
(21A)	Oscillator Trans. Core	57-2633
(22)	Oscillator Tracking Trans.	65-0441
(22A)	Osc. Tracking Trans. Core	57-2325
(23)	Condenser (250 mmfd.)	60-125157
(24)	Resistor (68,000 ohms)	33-368334
(25)	Condenser (.25 mfd.)	61-0125
(26)	Padder (Pri. 1st I. F. Trans.)	65-0460
(27)	First I. F. Transformer	65-0460
(28)	Padder (Sec. 1st I. F. Trans.)	61-0101
(29)	Resistor (1500 ohms)	33-215334
(30)	Resistor (1 megohm)	33-510154
(31)	Resistor (22,000 ohms)	33-322339
(32)	Condenser (.05 mfd.)	61-0101
(33)	Resistor (47,000 ohms)	33-347434
(34)	Padder (Pri. 2nd I. F. Trans.)	65-0461
(35)	Second I. F. Transformer	65-0461
(36)	Padder (Sec. 2nd I. F. Trans.)	Part of (36)
(37)	Condenser (25,000 ohms)	33-325154
(38)	Resistor (25,000 ohms)	33-325154
(39)	Condenser (150 ohms)	Part of (36)
(40)	Volume Control	67-0060
(41)	Resistor (350,000 ohms)	67-0060
(42)	Condenser (.004 mfd.)	61-0179
(43)	Resistor (68,000 ohms)	33-308154
(44)	Resistor (15 megohms)	33-615154
(45)	Tone Control (4 megohms)	67-0060
(46)	Condenser (.01 mfd.)	61-0176
(47)	Condenser (.25 mfd.)	61-0125
(48)	Resistor (47,000 ohms)	33-347334
(49)	Resistor (220,000 ohms)	33-422334
(50)	Condenser (110 mmfd.)	60-110157
(51)	Resistor (.02 mfd.)	61-0116
(52)	Resistor (470,000 ohms)	33-447154
(53)	Filter Condenser (10-15-20 mfd.)	61-0089
(54)	Resistor (270 ohms)	33-127436
(55)	Condenser (.01 mfd.)	61-0114
(56)	Condenser (.008 mfd.)	61-0115
(57)	Output Transformer	65-0454
(58)	Cone & Voice Coil	91-0240
(59)	Field Coil	Not Replacable
(60)	Power Transformer	32-8035
(61)	Resistor (150,000 ohms)	33-415154
(62)	Resistor (130,000 ohms)	33-415154
(63)	On-Off Switch	Part of (41)
(64)	Safety Switch	85-0152
(65)	Condenser (.003)	61-0115
(66)	Condenser (.003)	61-0115
(67)	Speaker	73-0074
(68)	Speaker Cable	41-3610
(69)	Tube Socket	27-6151
(70)	Tuning & Volume Knob	77-1081
(71)	Knob Backing Ring	57-2813PC33
(72)	Pointer	57-2813PC33
(73)	Pointer, Drive Cord	55-1590
(74)	Condenser (110 mmfd.)	60-110157
(75)	Resistor (280 ohms)	33-127436
(76)	Resistor (55,1589)	55-1589
(77)	Resistor (54,4045)	54-4045
(78)	Resistor (28-6886FA3)	28-6886FA3
(79)	Resistor (56-6120FA3)	56-6120FA3
(80)	Resistor (56-2532)	56-2532
(81)	Resistor (56-2351FA3)	56-2351FA3
(82)	Resistor (L-3199)	L-3199
(83)	Resistor (34-2064)	34-2064
(84)	Resistor (55-1591)	55-1591
(85)	Resistor (57-2783)	57-2783
(86)	Resistor (77-1247)	77-1247
(87)	Resistor (W-124FA3)	W-124FA3
(88)	Resistor (27-7467)	27-7467
(89)	Resistor (W-1345FA3)	W-1345FA3
(90)	Resistor (28-5114FA3)	28-5114FA3
(91)	Resistor (W-684FA3)	W-684FA3
(92)	Resistor (W-1624FE7)	W-1624FE7







MODEL A-801

PHILCO RADIO & TELEVISION CORP.

Description	Part No.
Tone Knob	
White	77-1036
Cream	77-1052
Gray	77-1011
Mottled	77-1054
Nut Cover	
White	77-1057
Cream	77-1053
Gray	77-1012
Mottled	77-1055
Push Button (Off)	
White	77-0973
Cream	77-0976
Gray	77-0974
Mottled	77-0975
Push Button (Dial)	
White	77-0977
Cream	77-0978
Gray	77-0979
Mottled	77-0980
Push Button (Plain)	
White	77-0972
Cream	77-0975
Gray	77-0976
Mottled	77-0978
Core & Key Assembly	
(1, 2, 3, 4, 5)	77-0916
Core & Key Assembly	
(Dial, Off)	77-0923
Wiring Side Cover	57-2186FC64
Tube Side Cover	318-2916
On-Off Switch Cover	76-1343FA3
Padder Cover Plate	57-1692FC64
Dial Lamp Socket	76-1295
Dial Lamp	34-2064
Washer (Set Mtg.)	W117FA3
Nut (Speaker Mtg.)	W-124FA3
Fibre Washer	27-7467
Wing Nut (Tube Slide Cover Mtg.)	97-0142FA26
Antenna	77-1256
Power Transformer Mtg.	
Bracket	36-2333FA3
Tone Drive Cord	
Anchor Spring	57-1701FA38
Color Cup Spring	57-1693
Dial	55-1371
Dial Mounting	
Springs	57-2218FBE11
Diffusion Screen	55-1428
Diffusion Screen	
Bracket	57-2242FA3
Housing Front	57-2211FC64
Bezel Screws	57-2202FA8
Tuning Shaft	97-0213FA40
Loktal Socket	57-2217FA3
Color Cup Assembly	77-0867
Tone Indicator Drum	77-0914

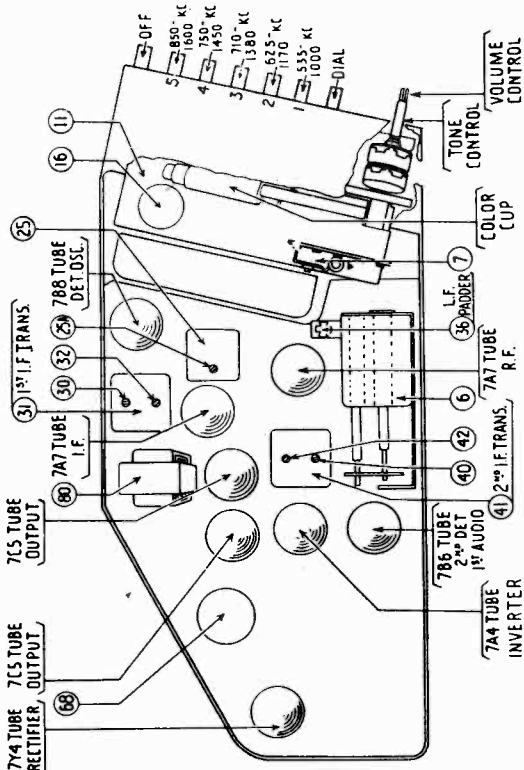
**EQUIPMENT** — 077 or 177 Philco Signal generator, 027 Philco Vacuum tube voltmeter and set tester or audio output meter, 45-2610 Pedding screw driver.

**GENERAL** — **VACUUM TUBE VOLTMETER.** The model 027 Vacuum tube voltmeter is an extremely sensitive and accurate test instrument and is recommended for use when aligning and adjusting radios. Connect the negative (—) terminal of the Vacuum Tube Voltmeter to the high side (ungrounded side) of the volume control. Connect the positive (+) terminal to the radio housing. Connect the "AC" cord to a 110 volt AC socket. Press the VTVM button and the 10 volt button. Turn the "Set Zero Ohms — VTVM" control clockwise until a click is heard. Allow the tubes to heat up for a few minutes. Short the 150 meg. VTVM terminals and adjust the "Set Zero Ohms — VTVM" control until the meter reads zero on the 0-10 range scale (green scale). The needle will deflect from right to left.

**AUDIO OUTPUT METER.** If an audio output meter is used, connect the leads across the voice coil of the speaker. Use the 0-30 volt scale.

With the Radio and signal generator set up for operation at the prescribed frequency, turn the Radio volume control on full and set the signal generator attenuator so that a half scale reading is obtained on the meter. The signal in the speaker should be audible but not loud.

The shielding on the generator output lead must be connected to the Radio housing.



SIGNAL GENERATOR		RECEIVER	
FREQUENCY	CONNECTION	DIAL SETTING	DUMMY CAPACITY
PRESS PUSH BUTTON MARKED "DIAL"			
1			ADJUST PADDER
2	To Ant. Receptacle on Radio	Note 2	.1 Mfd.
3	To Ant. Receptacle on Radio	Note 2	.1 Mfd.
4	To Ant. Receptacle on Radio	1500 K.C.	See Note 1
5	To Ant. Receptacle on Radio	580 K.C.	See Note 1
6	To Ant. Receptacle on Radio	1500 K.C.	See Note 1
7	To Ant. Receptacle on Radio	580 K.C.	See Note 1

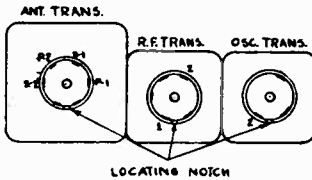
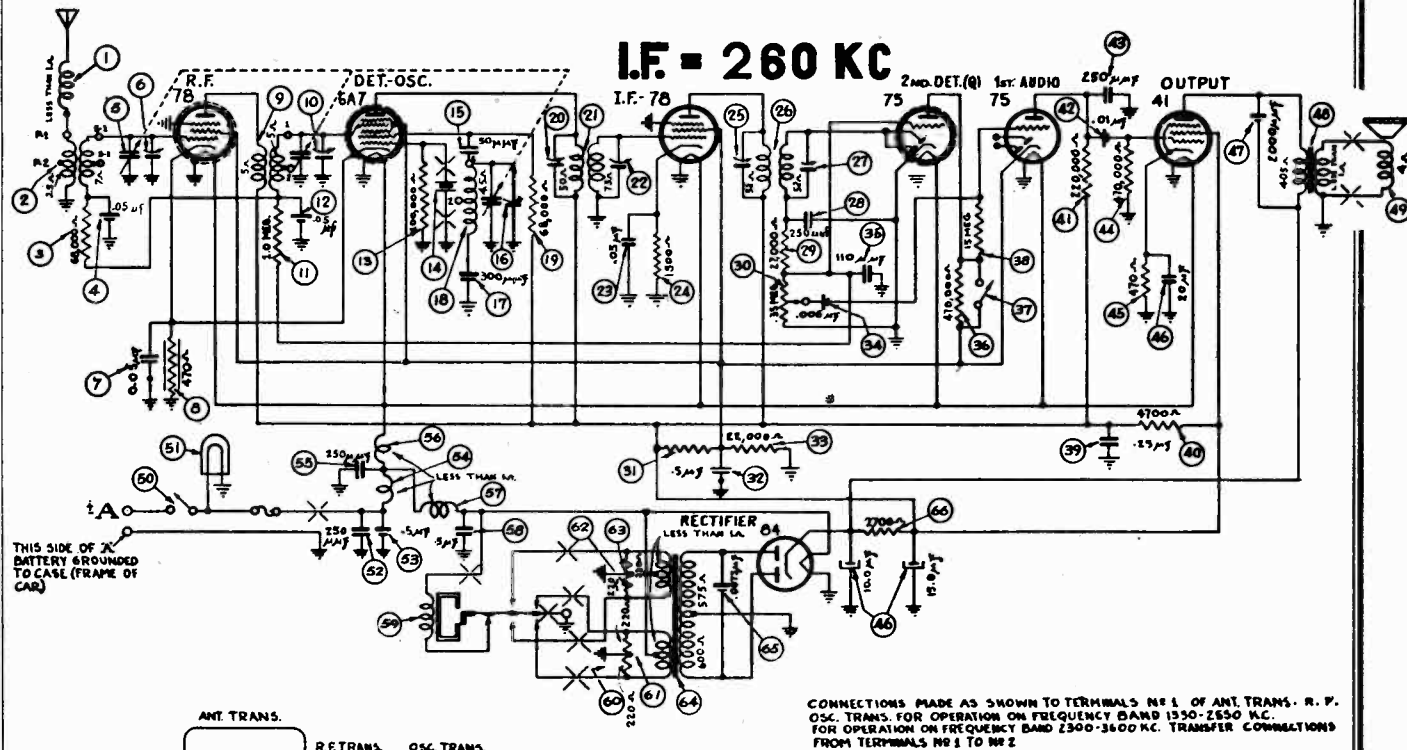
Make all adjustments for maximum reading on the meter.

**NOTE 1** — Connect a 30 mmfd. condenser in series between the signal generator and the output lead.

**NOTE 2** — Turn the tuning control clockwise as far as it will go.

**NOTE 3** — Rock the tuning control while adjusting the low frequency screw. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly for maximum output. Then readjust the screw for maximum output. Repeat this procedure until no further improvement can be obtained.

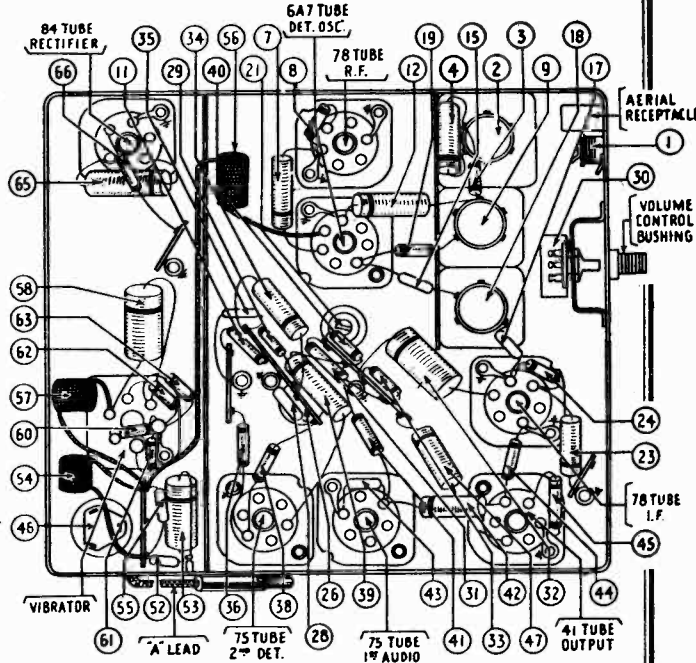
PHILCO RADIO & TELEVISION CORP.



MODEL 822P IS A FIXED-FREQUENCY, CRYSTAL-CONTROLLED RECEIVER COVERING 1550 TO 3500 KC.

PARTS LIST — MODEL 822P

No.	Description	Part No.	No.	Description	Part No.
(1)	Antenna Choke	38-9005	(22)	Padder (Sec. 1st I. F. Trans.)	
(2)	Antenna Transformer	65-0348	(23)	Condenser (.05 Mfd.)	61-0101
(3)	Resistor (68,000 ohms)	33-368154	(24)	Resistor (1500 ohms)	33-215334
(4)	Condenser (.5 Mfd.)	61-0111	(25)	Padder (Pri. 2nd I. F. Trans.)	
(5)	Tuning Condenser	31-2031	(26)	Second I. F. Transformer	32-2027
(6)	Antenna Padder (on Tun. Cond.)		(27)	Padder (Sec. 2nd I. F. Trans.)	
(7)	Condenser (.05 Mfd.)	61-0101	(28)	Condenser (.250 Mmfd.)	60-125157
(8)	Resistor (470 ohms)	33-147336	(29)	Resistor (27,000 ohms)	33-327154
(9)	R. F. Transformer	32-2596	(30)	Volume Control (350,000 ohms)	67-0055
(10)	R. F. Padder (on Tun. Cond.)		(31)	Resistor (47,000 ohms)	33-347434
(11)	Resistor (1,000,000 ohms)	33-510154	(32)	Condenser (.5 Mfd.)	61-0134
(12)	Condenser (.05 Mfd.)	61-0101	(33)	Resistor (22,000 ohms)	33-322334
(13)	Resistor (100,000 ohms)	33-410154	(34)	Condenser (6000 Mmfd.)	61-0103
(14)	Crystal		(35)	Condenser (.110 Mmfd.)	60-111137
	1875 K.C. Crystal	45-2101	(36)	Resistor (470,000 ohms)	33-447334
	Frequencies 1596-1610-1626 K.C.		(37)	"Q" Switch	42-1140
	1908 K.C. Crystal	45-2194	(38)	Resistor (15,000,000 ohms)	33-615154
	Frequencies 1630-1634-1642		(39)	Condenser (.25 Mfd.)	61-0125
	1658-1666 K.C.		(40)	Resistor (4700 ohms)	33-247334
	1953 K.C. Crystal	45-2195	(41)	Resistor (220,000 ohms)	33-422334
	Frequencies 1674-1682-1690		(42)	Condenser (.01 Mfd.)	61-0120
	1698-1706-1712 K.C.		(43)	Condenser (.250 Mmfd.)	60-125157
	2658 K.C. Crystal	45-2196	(44)	Resistor (470,000 ohms)	33-447154
	Frequencies 2382-2390-2406		(45)	Resistor (470 ohms)	33-147436
	2414 K.C.		(46)	Filter Condenser (10-15-20 Mfd.)	61-0089
	2696 K.C. Crystal	45-2197	(47)	Condenser (2000 Mmfd.)	61-0123
	Frequencies 2422-2430-2442		(48)	Output Transformer	32-7831
	2450 K.C.		(49)	Cone and Voice Coil	91-0218
	2734 K.C. Crystal	45-2198	(50)	On-Off Switch	42-1188
	Frequencies 2458-2466-2474		(51)	Pilot Lamp	34-2040
	2482-2490 K.C.		(52)	Condenser (.250 Mmfd.)	60-125157
	3000 K.C. Crystal	45-2230	(53)	Condenser (.5 Mfd.)	61-0106
	Frequency 2726 K.C.		(54)	"A" Choke	32-1844
	2618 K.C. Crystal	45-2231	(55)	Condenser (250 Mmfd.)	60-125157
	Frequencies 2342-2350-2358		(56)	Filament Choke	32-2657
	2366-2374 K.C.		(57)	Vibrator Choke	65-0204
	2578 K.C. Crystal	45-2251	(58)	Condenser (.5 Mfd.)	61-0106
	Frequencies 2310-2318-2326		(59)	Vibrator	41-3300
	2334 K.C.		(60)	Resistor (220 ohms)	33-122334
	2500 K.C. Crystal	45-2863	(61)	Resistor (220 ohms)	33-122334
	Frequency 2238 K.C.		(62)	Resistor (220 ohms)	33-122334
(15)	Condenser (.50 Mmfd.)	60-050137	(63)	Resistor (220 ohms)	33-122334
(16)	Oscillator Padder (on Tun. Cond.)		(64)	Power Transformer	32-7820
(17)	Condenser (300 Mmfd.)	60-130337	(65)	Condenser (.7500 Mmfd.)	61-0127
(18)	Oscillator Transformer	32-2597	(66)	Resistor (2700 ohms)	33-227434
(19)	Resistor (68,000 ohms)	33-368334		Housing	38-8777
(20)	Padder (Pri. 1st I. F. Trans.)			Wiring Slice Cover	38-8768
(21)	First I. F. Transformer	32-2028			



Description	Part No.	Description	Part No.
Volume Knob	27-4208	Tube Side Cover	38-8788
Mounting Plate	28-4650FA3	5 Prong Socket	27-6035
Aerial Lead	41-3191	6 Prong Socket	27-6036
Radio Housing	38-8777	7 Prong Socket	27-6037
Fuse	7227	Speaker Unit	73-0063-3
Fuse Insulator	27-7729	Speaker Clamp	28-3131FA3
Crystal Mtg. Clamp	38-8792	Speaker Mounting Nut	W124FA3
Crystal Mtg. Clamp	38-8792	Speaker Mounting Screw	W1582FA4
Screw	W1974FA3	Grille Assembly	36-3910
Crystal Socket	38-8790	Control	42-5591
Cover Mtg. Screw	W2212FA4	Volume Shaft	28-8620

MODEL 822P

PHILCO RADIO & TELEVISION CORP.

PADDING PROCEDURE — MODEL 822P

The Receivers, when used with the proper crystals, can be adjusted for any specified frequency between 1550 K. C. and 3600 K. C. Different crystals are used to obtain these frequencies. The crystal frequency, however, is no indication of the Receiver frequency adjustment.

FREQ. OF CRYSTAL	RECEIVER FREQ.	PART NO. CRYSTAL
1875 K. C.	1596-1610-1626 K. C.	45-2101
1908 K. C.	1630-1634-1642	
1953 K. C.	1650-1658-1666 K. C.	45-2194
	1674-1683-1690	
2578 K. C.	1698-1706-1712 K. C.	45-2195
2618 K. C.	2310-2318-2326-2334 K. C.	45-2251
2658 K. C.	2342-2350-2358-2366-2374 K. C.	45-2231
	2382-2390-2398	
2696 K. C.	2406-2414 K. C.	45-2196
	2422-2430-2442	
2734 K. C.	2450 K. C.	45-2197
	2458-2466-2474	
3000 K. C.	2482-2490 K. C.	45-2198
3360 K. C.	2726 K. C.	45-2230
	3105 K. C.	45-2496

The I. F. stages can be tuned to any frequency between 242 K. C. and 278 K. C.

The I. F. frequency used in each Receiver is the difference between the frequency of the crystal in the Receiver and the frequency of the transmitter, i.e., the transmitter frequency is 2422 K. C., the crystal used is 2696 K. C., the difference is 274 K. C., which is the frequency to which the I. F. amplifier must be tuned.

The Receiver must be padded while warm and repadded after it has been operated for several hours.

The Receiver "Q" switch must be in the off position, cutting out the carrier relay circuit.

I. F. STAGES — The signal generator must be set exactly to the predetermined frequency and the generator lead connected to the grid cap of the 6A7 detector oscillator tube in series with a 0.5 mfd. condenser. Adjust padders 20, 22, and 27 on the first and second I. F. transformers for maximum reading on the output meter.

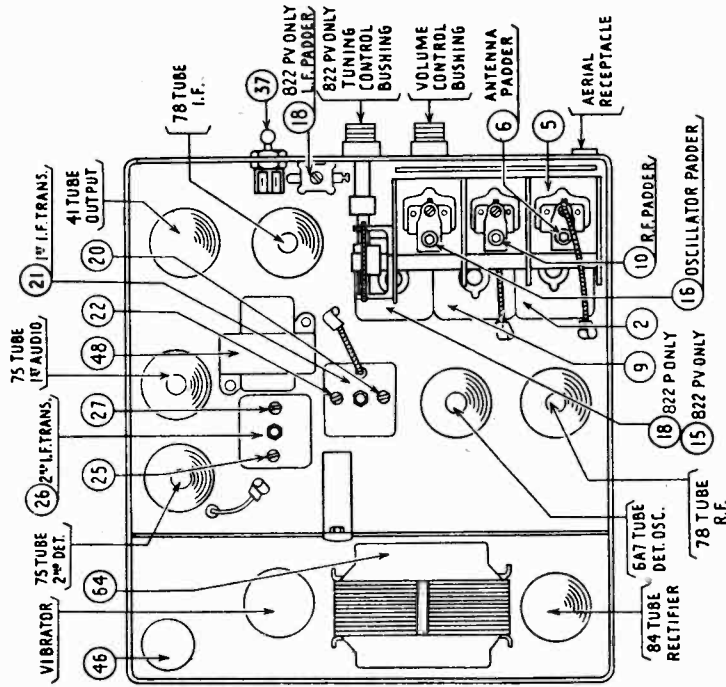
R. F. STAGE — Tune the signal generator to the frequency of the transmitter and connect the output of the signal generator to the grid cap of the R. F. tube in series with a 0.5 mfd. condenser. Turn the tuning condenser to the input frequency and adjust padders 16 and 18 for maximum reading on the output meter. Notice the position of the padders. They should be out as far as possible, yet with sufficient tension to keep them firmly in place. If the padders are too tight, turn the tuning condenser plates in mesh slightly and repad 16 and 18.

If the padders are too loose, turn the tuning condenser plates out of mesh slightly and repad 19 and 21. Repeat these adjustments until the correct padding settings are obtained.

Special attention must be given to the adjustment of the oscillator padder 15, which should be backed off the peak slightly to obtain stable crystal operation.

ANTENNA STAGE — Connect the antenna lead, Part No. 41-3191, to the antenna receptacle on the Receiver in series with a 55 mmfd. condenser and set the signal generator to the frequency of the transmitter. Adjust padders 5, 23, 24 and 29 for maximum reading on the output meter.

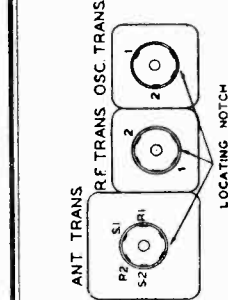
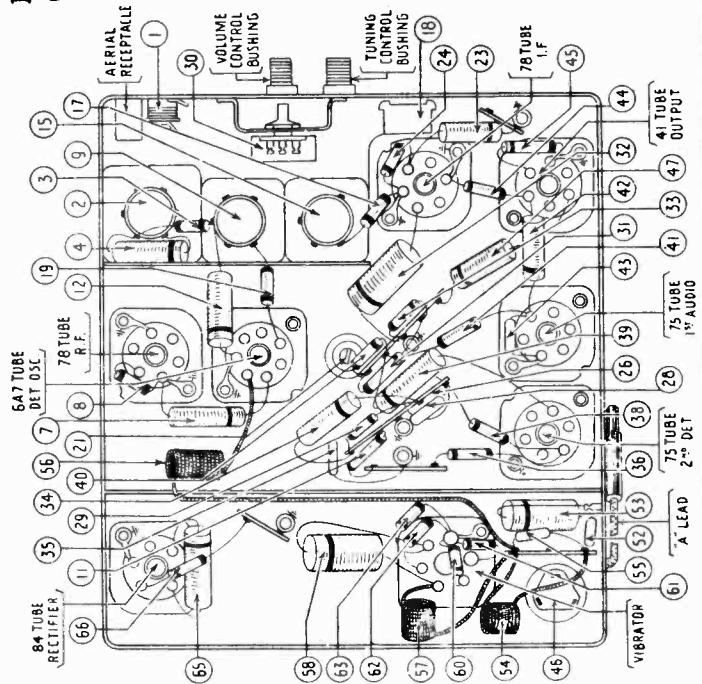
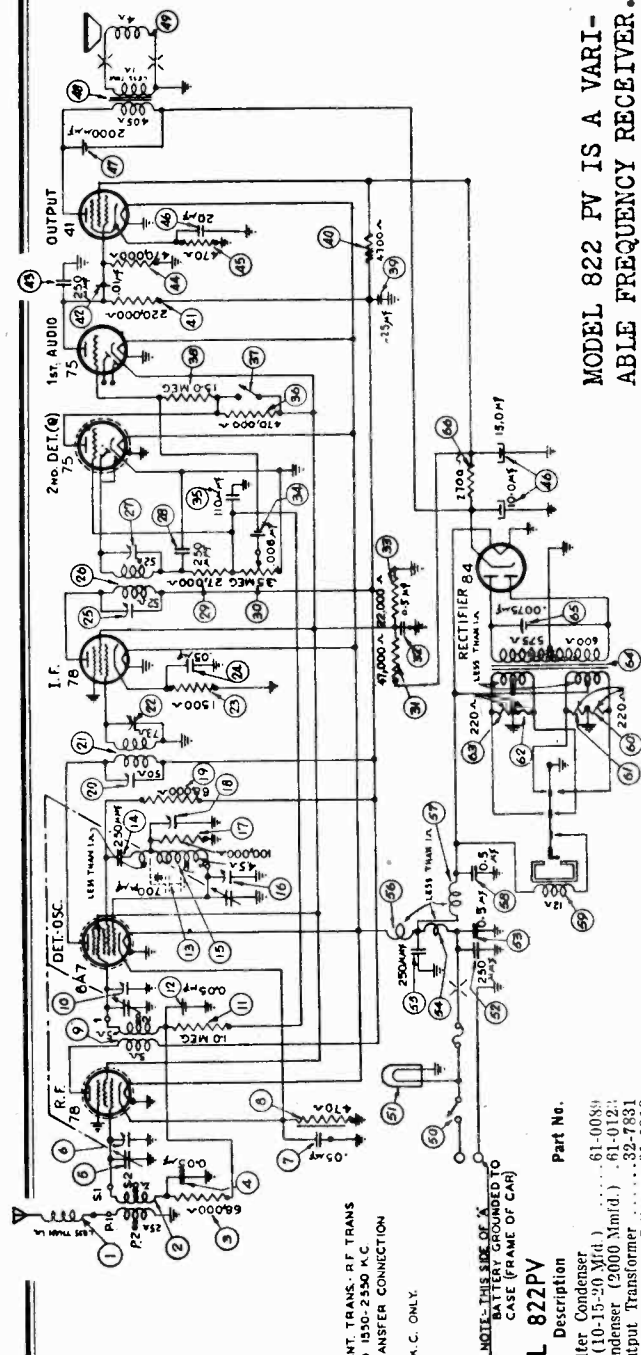
DO NOT OPEN THE CRYSTAL HOLDER. If for any reason whatever it has been opened, the crystal plates should be very carefully cleaned with carbon tetrachloride. After cleaning, the crystal must not be touched by the fingers. Use a clean cloth for handling.



PHILCO RADIO & TELEVISION CORP.

MODEL 822 PV IS A VARIABLE FREQUENCY RECEIVER. IT COVERS EITHER OF TWO RANGES: 1550 TO 2550 KC OR 2300 TO 3600 KC.

IF PEAK 260 KC



CONNECTIONS MADE AS SHOWN TO TERMINALS NO. 1 OF ANT. TRANS. R.F. TRANS. OSC. TRANS. FOR OPERATION ON FREQUENCY BAND 2300-3600 K.C. TRANSFER CONNECTION FROM TERMINALS NO. 1 TO TERMINALS NO. 2 \* THIS COND. REQUIRED FOR FREQUENCY BAND 2300-3600 K.C. ONLY.

NOTE: THIS SIDE OF X BATTERY IS GROUND TO CASE (FRAME OF CAB)

PARTS LIST - MODEL 822PV

Table with 3 columns: No., Description, Part No. containing 45 items such as Antenna Choke, Antenna Transformer, Resistor, Tuning Condenser, etc.

MODEL 522PV

PHILCO RADIO & TELEVISION CORP.

PADDING PROCEDURE — MODEL 822PV

OPERATION	SIGNAL GENERATOR		DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
	FREQUENCY	CONNECTION			
1	*260 K. C.	To Grid of 78 Tube—I. F. Stage	.1 Mfd. Condenser in Series with Generator Lead	No Antenna Connection Turn Tuning Condenser Plates out of mesh as far as they will go	25 - 27
2	*260 K. C.	To Grid of 6A7 Tube	.1 Mfd. Condenser in Series with Generator Lead	No Antenna Connection Turn Tuning Condenser Plates out of mesh as far as they will go	20 - 22 25 - 27
FOR FREQUENCIES BETWEEN 1550 K. C. AND 2550 K. C.					
3	*2550 K. C.	To Grid of 78 Tube—R. F. Stage	.1 Mfd. Condenser in Series with Generator Lead	No Antenna Connection Turn Tuning Condenser Plates out of mesh as far as they will go	16 - 10
4	*1650 K. C.	To Grid of 78 Tube—R. F. Stage	.1 Mfd. Condenser in Series with Generator Lead	No Antenna Connection Turn Tuning Condenser to 1650 K. C.	18 Note 1
5	*2550 K. C.	To Grid of 78 Tube—R. F. Stage	.1 Mfd. Condensar in Series with Generator Lead	No Antenna Connection Turn Tuning Condenser Plates out of mesh as far as they will go	16 - 10
6	*2400 K. C.	Note 2	55 Mmfd. Condenser Note 2	Turn Tuning Condenser to 2400 K. C.	6
FOR FREQUENCIES BETWEEN 2550 K. C. AND 3600 K. C.					
7	*3600 K. C.	To Grid of 78 Tube—R. F. Stage	.1 Mfd. Condenser in Series with Generator Lead	No Antenna Connection Turn Tuning Condenser Plates out of mesh as far as they will go	16 - 10
8	*2400 K. C.	To Grid of 78 Tube—R. F. Stage	.1 Mfd. Condenser in Series with Generator Lead	No Antenna Connection Set Tuning Condenser at 2400 K. C.	18 Note 1
9	*3600 K. C.	To Grid of 78 Tube—R. F. Stage	.1 Mfd. Condenser in Series with Generator Lead	No Antenna Connection Turn Tuning Condenser Plates out of mesh as far as they will go	16 - 10
10	*3400 K. C.	Note 2	55 Mmfd. Condenser Note 2	Set Tuning Condenser at 3400 K. C.	6

Adjust for maximum reading on the output meter.

NOTE 1—Rock the tuning condenser while adjusting the low frequency padder. Tune the condenser to the signal and adjust the padder for maximum output. Rotate the tuning condenser back and forth slightly for maximum output. Then re-adjust the padder for maximum output. Repeat this procedure until no further improvement is noticed.

NOTE 2—Connect the antenna lead, Part No. 41-3191, to the antenna receptacle on the Receiver in series with a 55 mmfd. condenser.

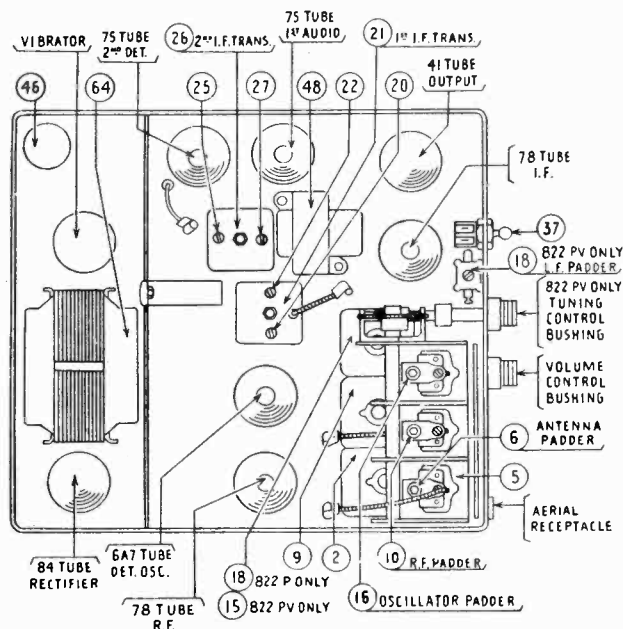
\*The Receiver "Q" switch must be in the off position, cutting out the carrier relay circuit.

**CONDENSER DRIVE** The condenser worm drive gear ratio (Model 822PV) is 16:1. This eliminates practically all back lash and, due to the mechanism used, prevents the tuning condenser from detuning from vibration. This high gear ratio also makes accurate tuning much easier.

In the Model 822P, a self locking worm drive with a gear ratio of 48:1 permits accurate adjustment of the tuning condenser and eliminates the necessity of using any other locking device on the condenser.

**CONTROL UNIT** The control unit for Model 822PV is designed for installation on the bottom flange of the instrument board. It contains the "ON-OFF" switch and the volume and tuning control knobs. The calibrated scale is illuminated. The Model 822P fixed frequency Radio utilizes a single control knob, which is mounted on the instrument board. This controls the "ON-OFF" switch and the volume. No tuning device is required.

**CONTROL SHAFTS, CONNECTIONS** The volume control coupler and (in the case of the 822PV) the tuning control coupler, the "A" battery and the antenna connector, are located on one end of the housing. The shafts are the rapid coupling type with the locking gland nut at the Radio end. The "A" battery and the antenna connections are the quick, detachable, bayonet locking type, with the "A" fuse placed in the "A" lead.



PHILCO RADIO & TELEVISION CORP.

I.F. = 270KC

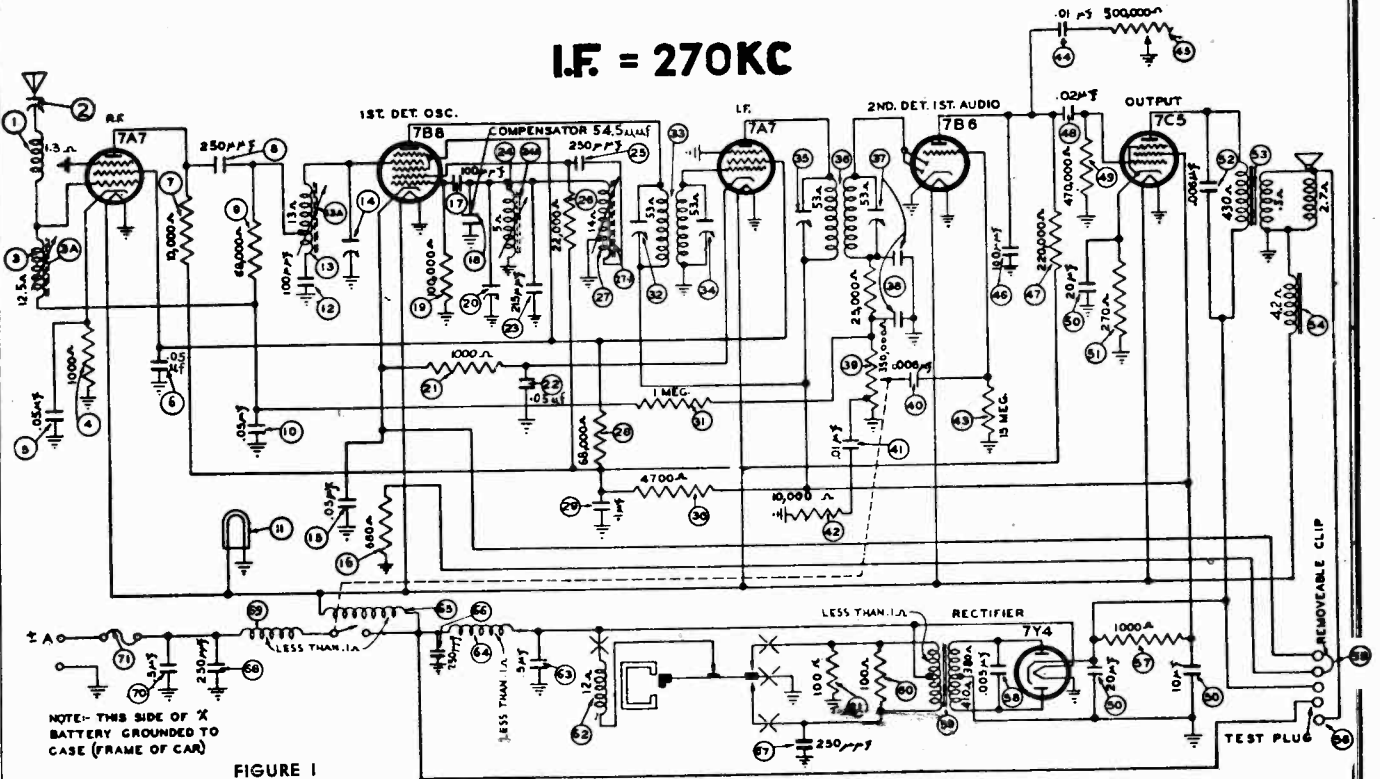


FIGURE 1

PARTS LIST — P-1830

No.	Description	Part No.
(1)	Antenna Choke	65-0378
(2)	Aerial Compensator	63-0054
(3)	Antenna Transformer	65-0349
(3a)	Antenna Transformer	Adjusting Core
(4)	Resistor (1000 ohms)	33-210336
(5)	Condenser (.05 Mfd.)	61-0101
(6)	Condenser (.05 Mfd.)	61-0111
(7)	Resistor (10,000 ohms)	33-310334
(8)	Condenser (.250 Mmfd.)	60-125157
(9)	Resistor (68,000 ohms)	33-368154
(10)	Condenser (.05 Mfd.)	61-0101
(11)	Pilot Lamp	34-2064
(12)	Condenser (.100 Mmfd.)	60-110157
(13)	R. F. Transformer	65-0359
(13a)	R. F. Transformer	Adjusting Core
(14)	R. F. Padder	61-0055
(15)	Condenser (.05 Mfd.)	61-0101
(16)	Resistor (680 ohms)	33-168336
(17)	Condenser (.100 Mmfd.)	60-110157
(18)	Condenser (54.5 Mmfd.)	61-0149
(19)	Resistor (100,000 ohms)	33-410154
(20)	Oscillator Padder	63-0052
(21)	Resistor (1000 ohms)	33-210334
(22)	Condenser (.05 Mfd.)	61-0111
(23)	Condenser (.215 Mmfd.)	61-0148
(24)	Oscillator Transformer	65-0367
(24a)	Oscillator Transformer	Adjusting Core
(25)	Condenser (.250 Mmfd.)	60-125157
(26)	Resistor (22,000 ohms)	33-322334
(27)	Oscillator Tracking Transformer	65-0351
(27a)	Oscillator Tracking Transformer	Adjusting Core
(28)	Resistor (68,000 ohms)	33-368434
(29)	Condenser (.1 Mfd.)	61-0113
(30)	Resistor (4700 ohms)	33-247434
(31)	Resistor (1,000,000 ohms)	33-510154
(32)	Padder (Pri. 1st I. F. Trans.)	65-0352
(33)	First I. F. Transformer	65-0352
(34)	Padder (Sec. 1st I. F. Trans.)	65-0352
(35)	Padder (Pri. 2nd I. F. Trans.)	65-0352
(36)	Second I. F. Transformer	65-0410
(37)	Padder (Sec. 2nd I. F. Trans.)	65-0410
(38)	Resistor (25,000 ohms)	33-325154
(39)	Volume Control (350,000 ohms) & On-Off Switch	67-0047
(40)	Condenser (6000 Mmfd.)	61-0155
(41)	Condenser (.01 Mfd.)	61-0120
(42)	Resistor (10,000 ohms)	33-310154

No.	Description	Part No.
(43)	Resistor (15,000,000 ohms)	33-615154
(44)	Condenser (.01 Mfd.)	61-0120
(45)	Tone Control (500,000 ohms)	67-0048
(46)	Condenser (100 Mmfd.)	60-110157
(47)	Resistor (220,000 ohms)	33-422334
(48)	Condenser (.02 Mfd.)	61-0108
(49)	Resistor (470,000 ohms)	33-447154
(50)	Filter Condenser (10-20-20 Mfd.)	61-0072
(51)	Resistor (270 ohms)	33-127436
(52)	Condenser (6000 Mmfd.)	61-0155
(53)	Output Transformer	65-0431
(54)	Field Coil (Not Replaceable)	
(55)	Test Link	55-1121
(56)	Test Socket	55-1078
(57)	Resistor (1000 ohms)	33-210434
(58)	Condenser (5000 Mmfd.)	61-0153
(59)	Power Transformer	65-0347
(60)	Resistor (100 ohms)	33-110434
(61)	Resistor (100 ohms)	33-110434
(62)	Vibrator	83-0026
(63)	Condenser (.5 Mfd.)	61-0137
(64)	Vibrator Choke	65-0151
(65)	Filament Choke	32-1604
(66)	Condenser (250 Mmfd.)	60-125157
(67)	Condenser (250 Mmfd.)	60-125157
(68)	Condenser (250 Mmfd.)	60-125157
(69)	"A" Choke	32-1644
(70)	Condenser (.5 Mfd.)	61-0137
(71)	Fuse	45-2559
	Speaker Unit	73-0062
	Replacement Cone	91-0166
	Speaker Cable	95-0161
	Speaker Gasket	55-1037
	Rubber Stop	55-1069
	Nut (Speaker Mtg.)	W124FA3
	Screw (Speaker Mtg.)	W1582FC51
	Speaker Cover	77-0862
	Tube Side Cover	57-1554FC51
	Vibrator Pad	55-1073
	Dial	55-1034
	Manual Knob	55-1297
	Manual Knob Sleeve	57-1623
	Push Button Knob Assy.	77-0613
	Volume & Tone Knob	77-0848
	Tuning Unit complete with Coils	77-0865
	Tuning Unit Only	77-0740
	Bezel	77-0854
	Antenna Connector	57-0591FA3
	Housing	77-0662FC51

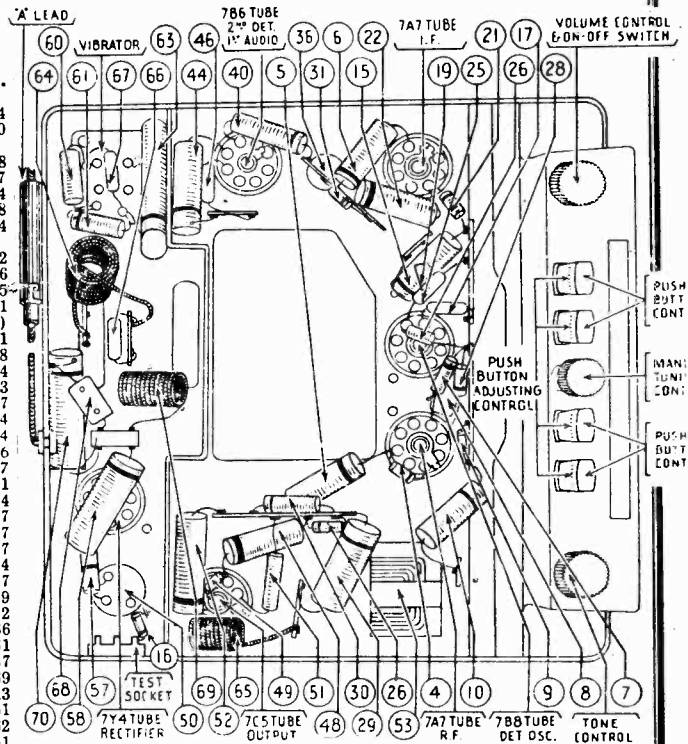


FIGURE 2

Description	Part No.	Description	Part No.
Vibrator Socket	27-6153	R. F. Coil Spring Mtg.	97-0126
Tube Socket	27-6151	Screw	57-1417
Fuse Lead	77-0637	Osc. Coil Stud	57-1649
Interference Condenser	30-4007	Core Draw Bar Spring	57-1650
Generator Condenser	30-4475	Latch Bar Spring	57-1651
Distributor Resistor	33-1196	P. B. Spring	57-1652
Hook Bolt	57-1560FA3	Miter Spring	57-1653
Wing Nut	W895FA3	Pointer Spring	57-1653
R. F. Coil Spring	57-1538	Pointer & Cam Assy	77-0650

MODEL P-1830

PHILCO RADIO & TELEVISION CORP.

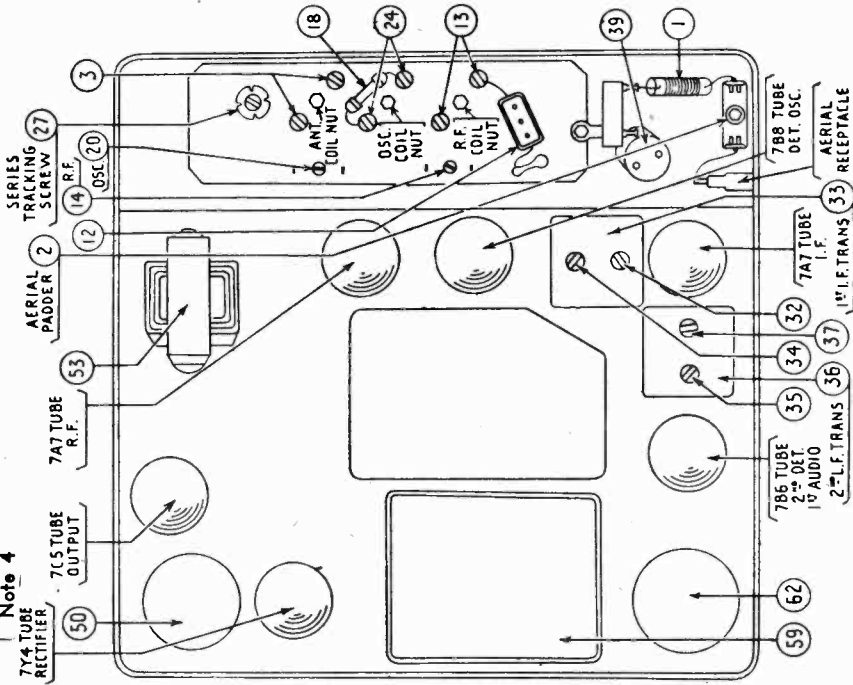
OPERATION	SIGNAL GENERATOR		DUMMY CAPACITY	SPECIAL INSTRUCTIONS
	FREQUENCY	CONNECTION		
1	PUSH IN THE TUNING CONTROL KNOB UNTIL STATIONS CAN BE TUNED IN BY MANUAL TUNING			
2	270 K.C.	To Aerial Receptacle on Radio	See Note 1	Note 2
3	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.
4	1360 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1360 K.C.
5	590 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 590 K.C.
6	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.
7	1360 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1360 K.C.
8	1200 to 1400 K.C.	Note 5	Note 5	Note 5

**AUDIO OUTPUT METER.** If an audio output meter is used, connect the leads across the voice coil of the speaker. Use the 0-30 volt scale.

With the Radio and signal generator set up for operation at the prescribed frequency, turn the Radio volume control on full and set the signal generator attenuator so that a half scale reading is obtained on the meter. The signal in the speaker should be audible but not loud.

The shielding on the generator output lead must be connected to the Radio housing.

FIGURE 3



Make all adjustments for maximum reading on the meter.  
**NOTE 1**—Connect the aerial lead, Part No. 95,0111, to the aerial receptacle in the radio. Connect a 40 Mmfd. Condenser in series between the signal generator and the aerial lead.  
**NOTE 2**—Turn the tuning control clockwise as far as it will go.

**NOTE 3**—Rock the tuning control while adjusting the low frequency screw. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly for maximum output. Then readjust the screw for maximum output. Repeat this procedure until no further improvement is noticed.

**NOTE 4**—When the aerial stage adjustment is made with the Radio installed in the car, the Radio aerial lead must be connected to the car aerial in the usual manner. Connect the signal generator output lead to a wire placed near the car aerial but not connected to it.

**NOTE 5**—When installing the radio in the car, follow the installation instructions carefully. Tune in a weak broadcast signal between 1200 and 1400 Kilocycles on the control scale. Remove the plug button on the end of the radio and adjust the aerial compensator (6) (see Figure 3) for maximum signal.

**INSTRUCTIONS FOR SETTING UP THE AUTOMATIC TUNING BUTTONS**

Turn on the radio and allow it to operate for twenty minutes or longer, if possible.

Press in any automatic button so that it remains engaged. Then tune in the station desired by turning the small wheel in the button. The station can be identified by the pointer, which indicates the frequency of the station in Kilocycles. The automatic buttons may be readjusted to any station within the range of the broadcast band. The automatic buttons may be readjusted to stations in any sequence desired. However, for convenience in remembering stations, it is recommended that the buttons be set up in the same order that the stations appear across the dial.

**CAUTION**—All adjustments must be carefully made so that reception can be received best when remote from the broadcasting station. Careless tuning off to one side even though the signal is heard, will result in distorted reception.

PHILCO RADIO & TELEVISION CORP.

MODEL F-1840

Run No. 4 — A resistor (390 ohms) Part No. 33-139334 has been added in series between the plates of all tubes and the 10 mfd. section of the filter condenser. The resistor is placed ahead of the type 7C5 tube grid.

I.F. = 455KC

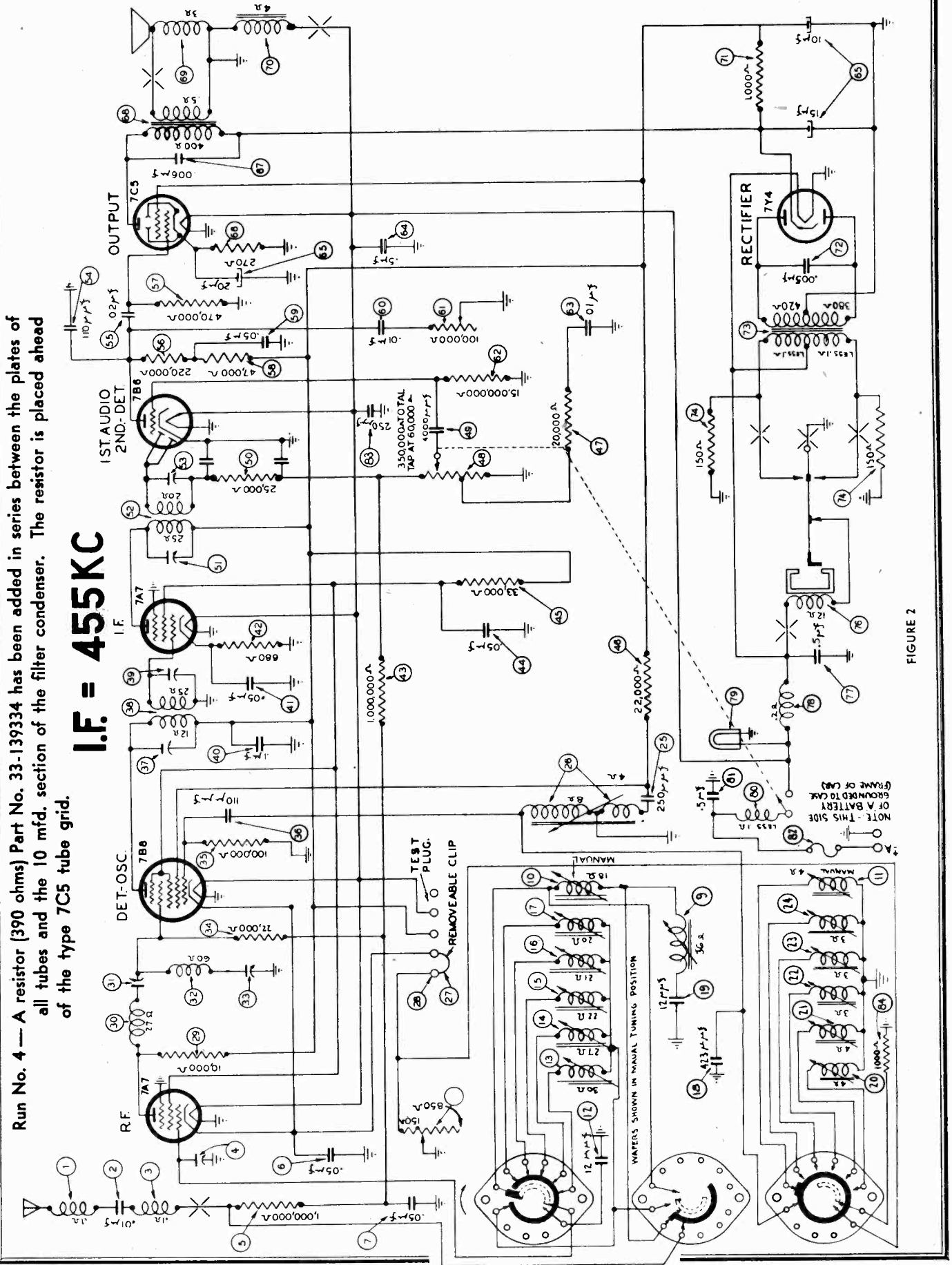


FIGURE 2



MODEL F-1840

PHILCO RADIO & TELEVISION CORP.

Run No. 3 — A ground spring has been added on the sub-base to make contact with the speaker field coil pot, to reduce crackle.

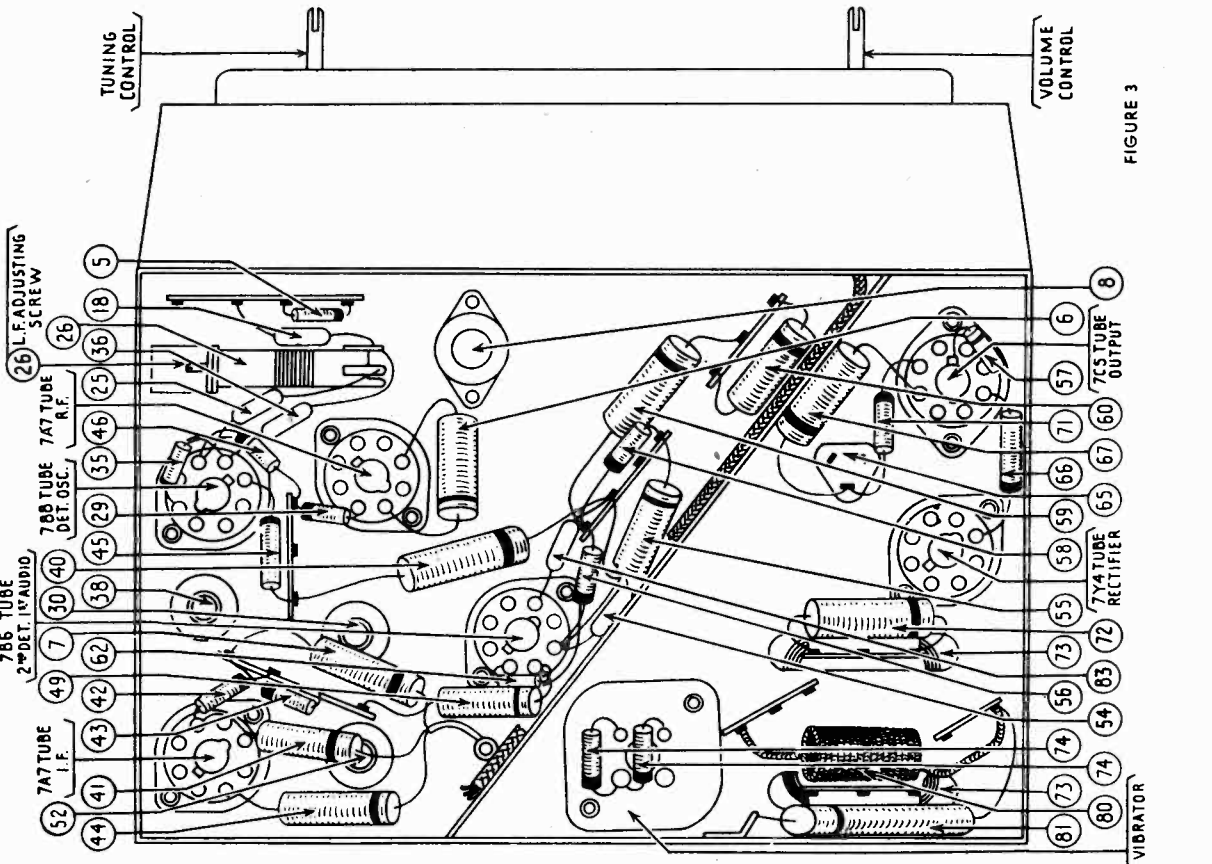


FIGURE 3

PARTS LIST — F-1840

No.	Description	Part No.
1	Antenna Choke	65-0102
2	Condenser (.01 Mfd.)	61-0114
3	Antenna Choke	30-2063
4	Aerial Compensator	63-0063
5	Resistor	33-310154
6	Condenser (.05 Mfd.)	61-0111
7	Condenser (.05 Mfd.)	61-0101
8	Sensitivity Control	67-0025
9	Image Trap Coil	Part of 66
10	Manual Tuning Unit	77-0701
11	Transformer	Part of 66
12	Condenser (.12 Mfd.)	60-012327
13	Push Button Coil Assembly	77-0706
14	Push Button Coil Assembly	Part of 66
15	Push Button Coil Assembly	Part of 66
16	Push Button Coil Assembly	Part of 66
17	Push Button Coil Assembly	Part of 66
18	Push Button Coil Assembly	Part of 66
19	Silver Mica Condenser (.423 Mfd.)	61-0066
20	Condenser (.12 Mfd.)	60-012327
21	Push Button Coil Assembly	Part of 66
22	Push Button Coil Assembly	Part of 66
23	Push Button Coil Assembly	Part of 66
24	Push Button Coil Assembly	Part of 66
25	Push Button Coil Assembly	Part of 66
26	Condenser (.230 Mfd.)	60-123157
27	Oscillator Tracking Coil	65-0388
28	Test Socket Link	57-1121
29	Test Socket	55-1104
30	Resistor (10,000 ohms)	33-310334
31	R. F. Transformer (Pri.)	65-0415
32	Padder	Part of 66
33	R. F. Transformer (Sec.)	Part of 66
34	Padder	Part of 66
35	Resistor (22,000 ohms)	33-322334
36	Resistor (100,000 ohms)	33-410154
37	Condenser (.110 Mfd.)	60-110157
38	Padder (Pri. 1st I. F. Trans.)	Part of 66
39	First I. F. Transformer	65-0386
40	Padder (Sec. 1st I. F. Trans.)	Part of 66
41	Condenser (.1 Mfd.)	61-0113
42	Condenser (.05 Mfd.)	61-0101
43	Resistor (680 ohms)	33-168336
44	Resistor	Part of 66
45	Condenser (.03 Mfd.)	61-0101
46	Resistor (33,000 ohms)	33-333334
47	Resistor (22,000 ohms)	33-322334
48	Resistor (20,000 ohms)	33-320154
49	Volume Control (35,000 ohms) & On-Off Switch	67-0042
50	Condenser (4,000 Mfd.)	61-0128
51	Resistor (25,000 ohms)	33-325154
52	Padder (Pri. 2nd I. F. Trans.)	Part of 66
53	Second I. F. Transformer	65-0387
54	Padder (Sec. 2nd I. F. Trans.)	Part of 66
55	Condenser (.110 Mfd.)	60-110157
56	Resistor (220,000 ohms)	33-422334
57	Resistor (470,000 ohms)	33-447154
58	Resistor (47,000 ohms)	33-347334
59	Condenser (.05 Mfd.)	61-0122
60	Field Coil	Not Replaceable
61	Resistor (1,000 ohms)	33-210434
62	Condenser (.5 Mfd.)	61-0153
63	Power Transformer	65-0347N
64	Resistor (150 ohms)	33-115321
65	Vibrator	88-0024
66	Condenser (.5 Mfd.)	61-0137
67	Vibrator Choke	65-0398
68	Pilot Lamp	34-2064
69	"A" Choke	65-0037
70	Condenser (.5 Mfd.)	61-0137
71	Fuse	45-2559
72	Condenser (250 Mfd.)	60-125157
73	Resistor (1,000 ohms)	33-210334
74	Selector Switch Knob & Spring	318-2376
75	Tuning & Volume Knob	77-0708
76	Rubber Baffle Gasket	35-1154
77	Speaker Cover Screws	W2212FA4
78	Bezel	55-1140
79	Dial	55-1143
80	Bezel Spring	57-1769FA3
81	Tone Knob	57-1772FA3
82	Tone Knob Spring	57-1780FA3
83	Drive Cord	55-1157
84	Drive Cord Spring	57-1425FA3
85	Pointer	57-1704
86	Screws	(Wiring Side Cover) W2212FA4
87	Wiring Side Cover	57-1718FC1
88	Housing Assembly	318-2323C1
89	Speaker Cover	57-1717C1
90	Speaker Unit	73-0094
91	Bolt (Speaker Mtg.)	W1582FA4
92	Lockwasher (Speaker Mtg.)	W291FF7
93	Nut (Speaker Mtg.)	W124FA3
94	Loktal Socket	27-6151
95	Vibrator Socket	27-6153
96	Water Switch	77-0760
97	Hook Bolt	(Radio Mtg.) 97-0094FA3
98	Wing Nut	(Radio Mtg.) 97-0048FA3
99	Gland Nut & Sleeve	77-0450
100	Interference Condenser ("A")	(Voltage Regulator) 61-0162
101	Interference Condenser	(Oil Gauge) (Dist.) 61-0103

PHILCO RADIO & TELEVISION CORP.

MODEL F-1840 — ADJUSTMENTS

All padding adjustments are carefully made at the factory and ordinarily no readjustments are necessary. However when readjustments are required, the procedure given below must be followed in detail.

**AUDIO OUTPUT METER.** If an audio output meter is used, connect the leads across the voice coil of the speaker. Use the 0-30 volt scale.

With the Radio and signal generator set up for operation at the prescribed frequency, turn the Radio volume control on full and set the signal generator attenuator so that a half scale reading is obtained on the meter. The signal in the speaker should be audible but not loud. The shielding on the generator output lead must be connected to the Radio housing.

Make all adjustments for maximum reading on the meter.

**NOTE 1** — Connect the aerial lead Part No. 95-0111, to the aerial receptacle in the radio. Connect a 20 Mmfd. Condenser in series between the signal generator and the aerial lead.

**NOTE 2** — Turn the tuning control clockwise as far as it will go.

**NOTE 3** — Rock the tuning control while adjusting the low frequency screw. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly for maximum output. Then readjust the screw for maximum output. Repeat this procedure until no further improvement is noticed.

**NOTE 4** — When the aerial stage adjustment is made with the Radio installed in the car, the Radio aerial lead must be connected to the car aerial in the usual manner. Connect the signal generator output lead to a wire placed near the car aerial but not connected to it.

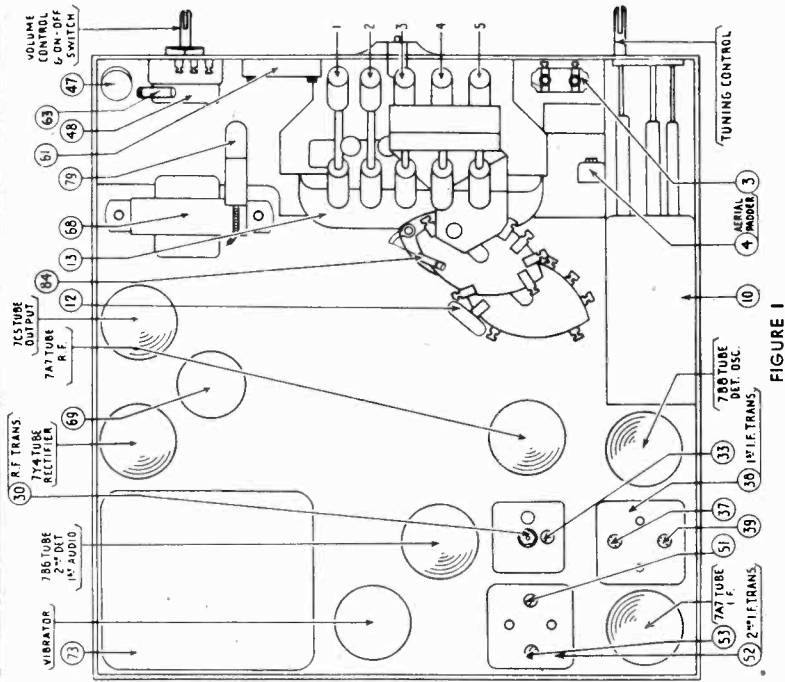
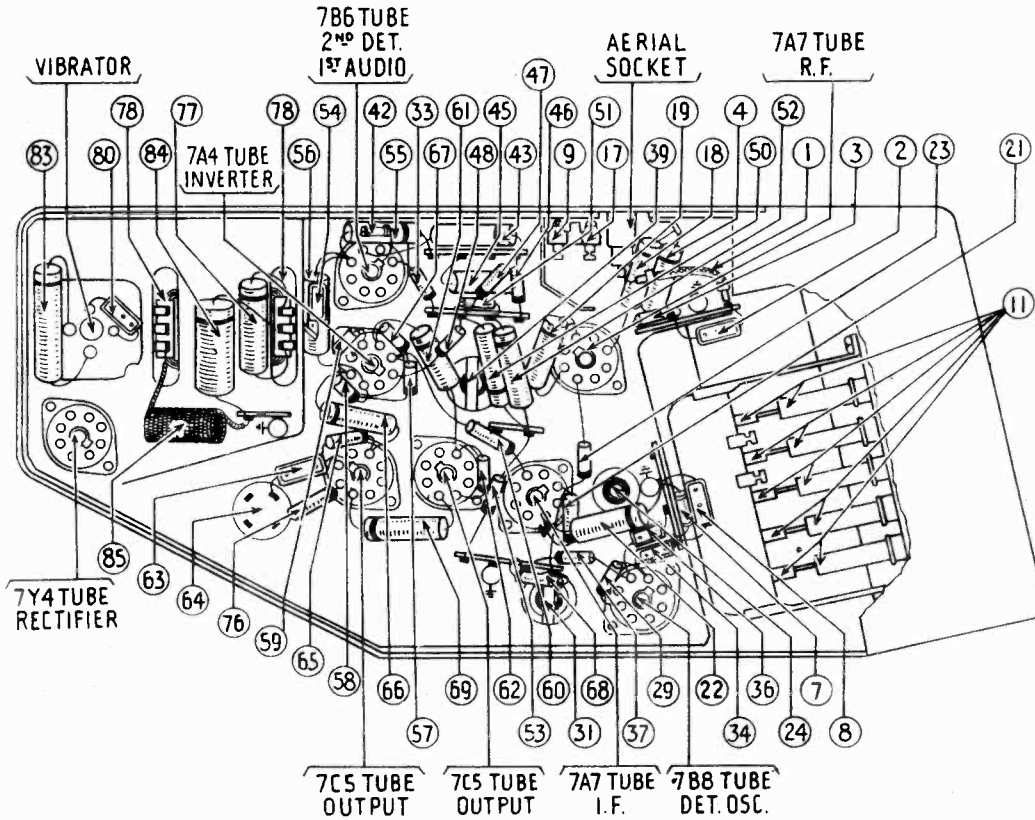


FIGURE 1

OPERATION	SIGNAL GENERATOR CONNECTION		DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
	FREQUENCY	CONNECTION			
1		TURN THE SELECTOR SWITCH KNOB TO "D" SO THAT STATIONS CAN BE TUNED IN BY MANUAL TUNING.			
2	455 K.C.	To Aerial Receptacle on Radio	.1 Mfd.	Note 2	②③④⑤⑥⑦⑧⑨⑩⑪⑫⑬⑭⑮⑯⑰⑱⑲
3	455 K.C.	To Aerial Receptacle on Radio	.1 Mfd.	Note 2	⑲ Min.
4	1360 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1360 K.C.	④ Note 4
5	590 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 590 K.C.	⑲ Note 3
6	1400 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1400 K.C.	④ Note 4
7	590 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 590 K.C.	⑲ Note 3

MODEL C-1908

PHILCO RADIO & TELEVISION CORP.



No.	Description	Part No.	No.	Description	Part No.	No.	Description	Part No.	No.	Description	Part No.
(1)	Antenna Choke	65-0437	(37)	Resistor (22,000 ohms)	33-322334	(84)	Condenser (.5 mfd.)	61-0134		Push Button "On"	
(2)	Condenser (250 mmfd.)	60-125157	(38)	Padder (Pri 2nd I.F. Trans.)	65-0386	(85)	Vibrator Choke	65-0389		DeSoto	77-0976
(3)	Resistor (1,000,000 ohms)	33-510154	(39)	Second I.F. Transformer	65-0386	(86)	Pilot Lamp	34-2064		Push Button "Dial"	
(4)	Condenser (.05 mfd.)	61-0101	(40)	Padder (Sec. 2nd I.F. Trans.)		(88)	Condenser (250 mmfd.)	60-125157		DeSoto	77-0977
(5)	Push Button Switch	85-0127	(41)	Resistor (25,000 ohms)	33-325154	(90)	Condenser (.5 mfd.)	61-0137		Push Button "Plain"	
(6)	Image Padder	63-0069	(42)	Resistor (10,000,000 ohms)	33-610154	(91)	Fuse	45-2550		Chrysler	77-0978
(7)	Condenser (.55 mmfd.)	61-0149	(43)	Volume Control (350,000 ohms)	67-0040	(92)	"A" Choke	32-1644		Push Button "On"	
(8)	Condenser (360 mmfd.)	61-0157	(44)	Inductive Tuning Unit Part of (10)	61-0101		Speaker	73-0067		Chrysler	77-0979
(9)	Antenna Padder (P.B.)	77-0728	(45)	Inductive Tuning Unit Part of (10)	61-0101		Speaker Mtg. Stud	77-0400		Push Button "Dial"	
(10)	Inductive Tuning Unit	77-0962	(46)	Resistor (220,000 ohms)	33-422154		Speaker Mtg. Nut	W124FA3		Chrysler	77-0980
(10a)	Inductive Tuning Unit Part of (10)		(47)	Resistor (1,000,000 ohms)	33-510154		Speaker Mtg. Lockwasher	W291FE7		Tone Knob (chrome)	
(10b)	Inductive Tuning Unit Part of (10)		(48)	Resistor (6800 ohms)	33-268154		Speaker Mtg. Cable & "A" Lead	95-0166		(Mo Par)	57-1682FA8
(11)	Push Button Switch and Coil Assembly	77-0943	(49)	Tone Control (4,000,000 ohms)	Part of (44)		Generator Condenser	61-0156		Tone Knob (plastic)	
(11a)	Push Button Switch and Coil Assembly	Part of (11)	(50)	Condenser (.02 mfd.)	61-0154		Ignition Switch Condenser	61-0177		(Mo Par)	77-1011
(12)	Push Button Switch and Coil Assembly	Part of (11)	(51)	Resistor (4700 ohms)	33-247334		Distributor Resistor	38-9562		Nut Cover (chrome)	
(12a)	Push Button Switch and Coil Assembly	Part of (11)	(52)	Condenser (.05 mfd.)	61-0101		Fuel Gauge Resistor	67-0050		(Mo Par)	57-1683FA8
(13)	Push Button Switch and Coil Assembly	Part of (11)	(53)	Resistor (2200 ohms)	33-222154		Brail	95-0073		Nut Cover (plastic)	
(13a)	Push Button Switch and Coil Assembly	Part of (11)	(54)	Condenser (100 mmfd.)	60-110157		Fuse Holder Clip	57-2202FE7		(Mo Par)	77-1012
(14)	Push Button Switch and Coil Assembly	Part of (11)	(55)	Condenser (.01 mfd.)	61-0120		Pointer	55-1366		Tuning & Volume Knob	77-0948
(14a)	Push Button Switch and Coil Assembly	Part of (11)	(56)	Condenser (4000 mmfd.)	61-0179		Pointer Drive Cord	55-1408		Tone Knob (Plastic)	
(15)	Push Button Switch and Coil Assembly	Part of (11)	(57)	Resistor (250,000 ohms)	33-422154		Tone Drive Cord	55-1409		DeSoto	77-1052
(15a)	Push Button Switch and Coil Assembly	Part of (11)	(58)	Resistor (10,000,000 ohms)	33-610151		Cord Spring	57-1701FA38		Nut Cover (Plastic)	
(16)	On-Off Switch	Part of (5)	(59)	Resistor (27,000 ohms)	33-327434		Dial (Plymouth)	55-1371		DeSoto	77-1053
(17)	Antenna Padder (Manual)	Part of (9)	(60)	Resistor (.01 mfd.)	61-0120		Dial (Dodge)	55-1370		Tone Knob (Plastic)	
(18)	Condenser (.05 mfd.)	61-0101	(61)	Resistor (470,000 ohms)	33-447154		Dial (DeSoto)	55-1369		Chrysler	77-1054
(19)	Condenser (.05 mfd.)	61-0111	(62)	Resistor (330 ohms)	33-133438		Dial (Chrysler)	55-1368		Nut Cover (Plastic)	
(20)	Sensitivity Control (350 ohms)	67-0025	(63)	Filter Condenser (35-10-10-20 mfd.)	61-0150		Dial Mtg. Spring	57-2218FE11		Chrysler	77-1055
(21)	Resistor (880 ohms)	33-168336	(64)	Resistor (470,000 ohms)	33-447154		Diffusing Screen	55-1428		Tone Knob (Plastic)	
(22)	Condenser (.05 mfd.)	61-0101	(65)	Condenser (.01 mfd.)	61-0189		Bracket	57-2242FA3		(Mo Par)	77-1056
(23)	Resistor (15,000 ohms)	33-315334	(66)	Resistor (220,000 ohms)	33-422154		Trim Plate (Dodge)	57-2286FA40		Nut Cover (Plastic)	
(24)	R. F. Transformer Assembly	65-0421	(67)	Resistor (1000 ohms)	33-210438		Screws	97-0215FA40		Dodge	77-1057
(25)	Padder	Part of (24)	(68)	Condenser (6000 mmfd.)	61-0105		Housing Front (Dodge)	57-2211FC70		Push Button Key Assembly (1-2-3-4-5) Plymouth, DeSoto, Chrysler	77-0916
(26)	Trap Coil	Part of (24)	(69)	Output Transformer	65-0383		Bezel (Chrysler, DeSoto, Plymouth) Die Cast	57-2216FA8		Push Button Key Assembly (Dial-Off) Plymouth, DeSoto, Chrysler	77-0923
(27)	Padder	Part of (24)	(70)	Condenser (250 mmfd.)	60-125157		Bezel (Chrysler, DeSoto, Plymouth) Stamped	57-2202FA40		Push Button Key Assembly (Off) Dodge	77-0915
(28)	Resistor (100,000 ohms)	Part of (24)	(71)	Replacement Cone (For 73-0067-2 Spkr.)	91-0164		Bezel (Dodge)	57-2230FA40		Push Button Key Assembly (No. 2) Dodge	77-0917
(29)	Resistor (100,000 ohms)	33-410154	(72)	Replacement Cone (For 73-0067-3 Spkr.)	91-0165		Bezel Screws	97-0213FA40		Push Button Key Assembly (No. 3) Dodge	77-0918
(30)	Padder (Pri 1st I.F. Trans.)			Replacement Cone (For 73-0067-4 Spkr.)	91-0228		Tuning Chart	57-2217FA3		Push Button Key Assembly (No. 4) Dodge	77-0919
(31)	First I.F. Transformer	65-0365		Field Coil	Not Replaceable		Fuse Lead	77-0052		Push Button Key Assembly (No. 5) Dodge	77-0920
(32)	Padder (Sec. 1st I.F. Trans.)		(73)	Condenser (250 mmfd.)	60-125157		Four Prong Socket	27-6044		Push Button Key Assembly (No. 6) Dodge	77-0921
(33)	Resistor (1,000,000 ohms)	33-510154	(74)	Resistor (1000 ohms)	33-210438		Loktal Socket	27-6151		Push Button Key Assembly (Dial) Dodge	77-0922
(34)	Condenser (250 mmfd.)	60-125157	(75)	Condenser (6000 mmfd.)	61-0105		Color Cup Assembly	77-0667		Wiring Side Cover	57-2186FC70
(35)	Oscillator Shunt Coil	65-0370	(76)	Output Transformer	65-0383		Tone Indicator Drum	77-0914		Tube Side Cover	318-2654
(36)	Condenser (250 mmfd.)	60-125157	(77)	Condenser (250 mmfd.)	60-125157		Push Button			Housing (Dodge, Mo Par)	77-0941FC70
			(78)	Resistor (1000 ohms)	33-210438		"Plain" Plymouth	77-0926		DeSoto, Chrysler	77-0941FC70
			(79)	Resistor (5000 mmfd.)	61-0153		Push Button "Off" Plymouth	77-0924		Padder Plate	57-1692FC70
			(80)	Power Transformer	65-0347		Push Button "Dial" Plymouth	77-0925		Wing Nut (Cover Mtg.)	97-0142FA26
			(81)	Resistor (100 ohms)	33-110438		Push Button "Plain" Dodge	77-0972		Bracket (Radio Mtg.)	57-1712FA3
			(82)	Vibrator	83-0026		Push Button "Off" Dodge	77-0973		Nut (Radio Mtc.)	W35FA3
			(83)	Condenser (.5 mfd.)	61-0137		Push Button "Dial" Dodge	77-0974		Front Nut (Radio Mtc.)	97-0091FA3



MODEL C-1908

PHILCO RADIO & TELEVISION CORP.

**GAS GAUGE INTERFERENCE IN 1942 CHRYSLER PRODUCTS CARS**

It is very important when installing the gas gauge filter assembly that the bronze spring at the top of the fuel gauge filter makes good contact with the special contact provided at the top of the fuel gauge. If this bronze spring does not make contact, a terrific amount of gas gauge interference will be encountered.

We have found that by bending this spring slightly so that it will make contact with the special contact on the fuel gauge, the noise will be eliminated.

**DRIFT IN 1942 CHRYSLER MODEL C-1908**

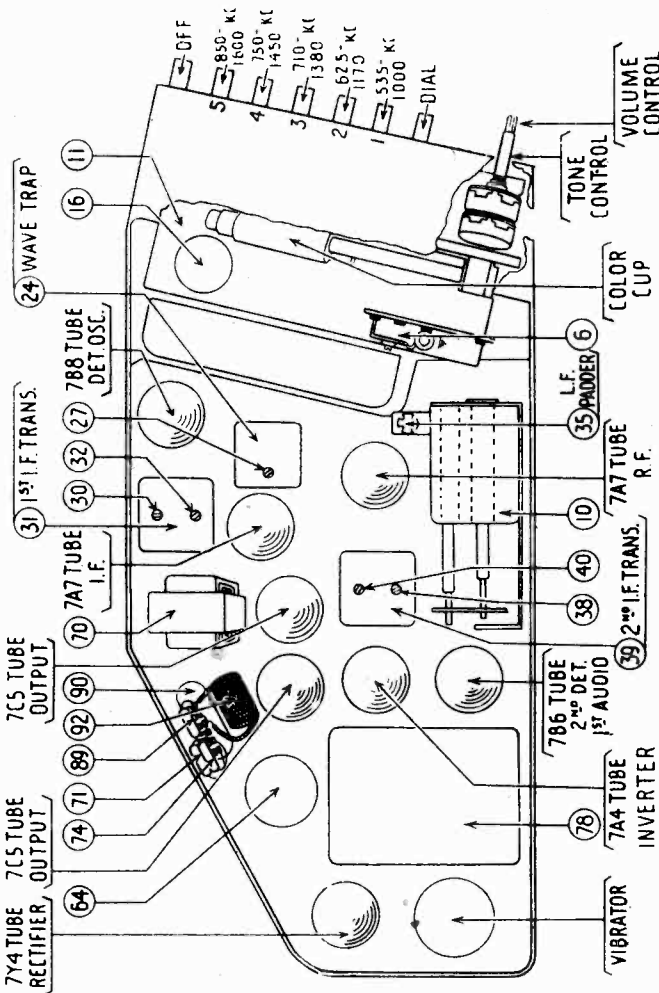
To reduce drift in the push button circuit of the Chrysler-Philco Auto Radio Model C-1908, the ceramic condenser, part No. 61-0149, has been re-located and incorporated with the push button switch and coil assembly, part No. 77-0943. This change in production is run No. 2.

If it is ever necessary to replace the push button switch and coil assembly, be sure this condenser is in the assembly. If this condenser is in the new assembly, the condenser which originally is installed on the panel on the subbase must be removed, otherwise the radio will not track properly.

**PUSH BUTTONS ON CHRYSLER-PHILCO AUTO RADIO MODEL C-1908**

On early production Model C-1908 Chrysler-Philco custom-built radios from serial No. C-0901 to No. C-07425 at Philadelphia, and from serial No. EY-00001 to No. EY-02700 at Sandusky, we have found that under extreme conditions of heat and cold, some shrinkage may occur in the plastic insert of the push button cap, causing the insert to drop off. When this condition occurs, the entire cap should be replaced. The parts affected are:—

- No. 77-0924 push button cap "off"
- No. 77-0925 push button cap "dial"
- No. 77-0926 push button cap "plain"



OPERATION	FREQUENCY	SIGNAL GENERATOR CONNECTION	DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
1	455 K.C.	TO Aerial Receptacle on Radio	.1 Mfd.	NOTE 2	27
2	455 K.C.	To Aerial Receptacle on Radio	.1 Mfd.	NOTE 2	27
3	1500 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1500 K.C.	27 Note 4
4	580 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 580 K.C.	27 Note 3
5	1500 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1500 K.C.	27 Note 4
6	580 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 580 K.C.	27 Note 3

Make all adjustments for maximum reading on the meter.  
**NOTE 1** — Connect the aerial lead, Part No. 95-0111, to the aerial receptacle in the radio. Connect a 25 Mmfd. Condenser in series between the signal generator and the aerial lead.  
**NOTE 2** — Turn the tuning control clockwise as far as it will go.  
**NOTE 3** — Rock the tuning control while adjusting the low frequency screw. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly for maximum output. Then readjust the screw for maximum output. Repeat this procedure until no further improvement is noticed.

**NOTE 4** — When the aerial stage adjustment is made with the Radio installed in the car, the Radio aerial lead must be connected to the car aerial in the usual manner. Connect the signal generator output lead to a wire placed near the car aerial but not connected to it.

PHILCO RADIO & TELEVISION CORP.

AUTO MODELS

**Procedure for Aligning the Inductive Tuning Units for Chrysler Models C1808 and C1908, Ford Models F1840 and F1841, and Studebaker Models S1824 and S1924**

The following is the procedure for aligning the above tuning units after a coil or core has been replaced. The unit should be aligned after it is installed in the Radio.

1. Complete alignment.
  - a. Turn the control knob clockwise as far as it will go.
  - b. Adjust antenna and oscillator cores according to dimensions given in Figures 1, 2 and 3.
  - c. Set up the signal generator, connecting the lead through the proper dummy to the antenna connection. Tune the signal generator to the Radio. The signal should come in between 1570 and 1615 K.C.
  - d. Adjust the antenna padder to this signal.
  - e. Set the signal generator to 900 K.C. and tune the Radio to receive maximum signal at 900 K.C. Adjust the antenna core for maximum signal at 900 K.C.
  - f. Set the signal generator to 1400 K.C. and tune the Radio to 1400 K.C. on the dial. Adjust the antenna padder for maximum signal.
  - g. Repeat e and f until there is no improvement.
  - h. Set the signal generator to 580 K.C. and tune the Radio to 580 K.C. Adjust the oscillator tracking coil core for maximum signal. "Rock" the tuning control while making this adjustment. Tune the control to the signal and adjust the oscillator tracking coil core for maximum signal. Rotate the tuning control back and forth slightly until maximum signal is obtained. Then readjust the oscillator tracking coil core for maximum signal. Repeat this procedure until no further improvement is noticed.
  - i. In case a great adjustment was necessary in h, the adjustment of e, f and h should be repeated. The unit should then be perfectly aligned at 1400 K.C., 900 K.C. and 580 K.C.
  - j. Set the signal generator to 550 K.C. and tune the Radio for maximum signal.
  - k. Peak the generator to image frequency of 550 K.C. (1460 K.C.).
  - l. Adjust the trap core for minimum signal as in 1 or 2 below.
    1. If the unit uses a fixed trap condenser adjust the core.
  - m. Repeat steps e, f and h described above since the wave trap adjustments will affect the alignment at 580, 900 and 1400 K.C.

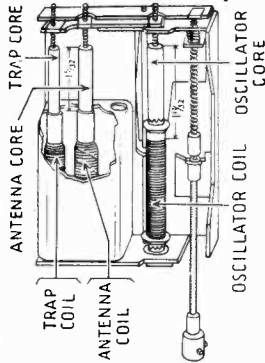


FIGURE 1.—Inductive Tuning Unit for Models C1808, C1908

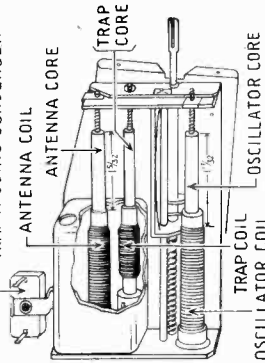


FIGURE 2.—Inductive Tuning Unit for Models F1840, F1841

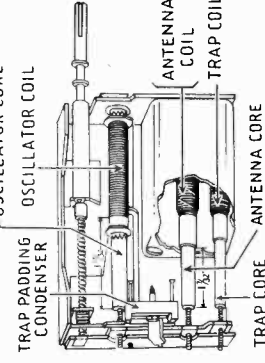


FIGURE 3.—Inductive Tuning Unit for Models S1824, S1924

- n. Set the signal generator at 900 K.C. and tune the Radio for maximum signal. Slide the pointer to the 900 K.C. mark on the dial scale.
2. Alignment when only antenna coil or core is replaced.
  - a. Turn the tuning control knob clockwise as far as it will go.
  - b. Adjust the antenna core according to dimensions given in Figures 1, 2 and 3.
  - c. Tune the signal generator to the Radio and adjust the antenna padder to this signal.
  - d. Set the signal generator to 900 K.C. and tune the Radio to this signal. Adjust the antenna core for maximum output.
  - e. Set the signal generator and Radio to 1400 K.C. and adjust the antenna padder for maximum output.
  - f. Repeat d and e until no further improvement is noticed.
3. Alignment when only oscillator tracking coil or core has been replaced.
  - a. Set the signal generator and Radio to 580 K.C. Adjust the oscillator tracking coil core for maximum signal by the "rocking in" process as described in 1 h.
  - b. Check and adjust the antenna padder at 1400 K.C.
  - c. Repeat step a if necessary.
4. Alignment when trap coil or core has been replaced.
  - a. Follow instructions in 1 j, k, l, m.
5. Proceed as in 1 above when parts in more than one circuit are replaced and when oscillator coil or core is replaced.
 

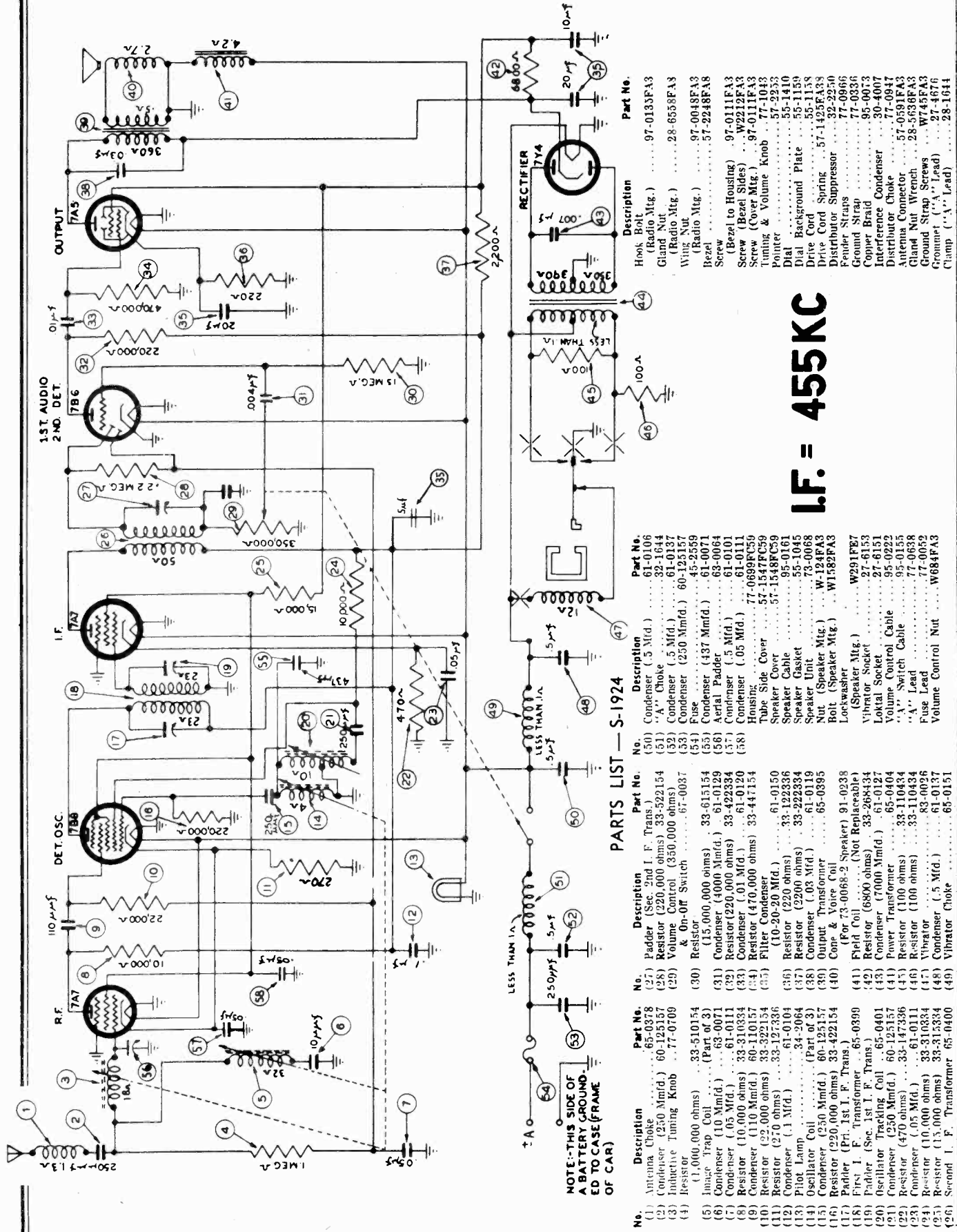
**Note**—When cores are moved in aligning the Receiver or replacing parts, it will be necessary to reseat the core screws to the retaining nuts. Use Philco cement, Part No. 45-2623, for this purpose.

MODEL C-1808	MODEL C-1808*	MODEL C-1908	MODEL F-1840	MODEL F-1841	MODEL S-1824	MODEL S-1924
77-0666	77-0962	77-0962	77-0701	77-0701	77-0709	77-0709
65-0380	65-0449	65-0449	65-0394	65-0394	65-0407	65-0407
65-0439	65-0439	65-0439	65-0392	65-0392	65-0405	65-0405
65-0382	65-0382	65-0382	65-0393	65-0393	65-0406	65-0406
57-1702	57-1702	57-1702	57-1702	57-1702	57-1702	57-1702
57-1703	57-1703	57-1703	57-1703	57-1703	57-1703	57-1703
77-0677	77-0677	77-0677	77-0677	77-0677	77-0677	77-0677
Not Used	Not Used	Not Used	63-0071	63-0071	63-0071	63-0071
77-0767	77-0767	77-0767	77-0766	77-0766	77-0715	77-0715
57-1673	57-1673	57-1673	57-1673	57-1673	57-1673	57-1673
57-1398	57-1398	57-1398	57-1398	57-1398	57-1398	57-1398
57-1868	57-1868	57-1868	Not Used	Not Used	57-1868	57-1868
57-1329	57-1329	57-1329	57-1329	57-1329	57-1329	57-1329
Not Used	Not Used	Not Used	28-2043	28-2043	Not Used	Not Used

\* Latest Production

MODEL S-1924

PHILCO RADIO & TELEVISION CORP.



**PARTS LIST — S-1924**

No.	Description	Part No.	Description	Part No.
(1)	Antenna Choke	65-0278	Hook Bolt (Radio Mtg.)	97-0133FA3
(2)	Condenser (250 Mmfd.)	60-125357	Gland Nut (Radio Mtg.)	28-6558FA3
(3)	Inductive Tuning Knob	77-0709	Wing Nut (Radio Mtg.)	97-0048FA3
(4)	Resistor (1,000,000 ohms)	33-510154	Bezel (Bezel to Housing)	97-0111FA3
(5)	Image Trap Coil (Part of 3)	63-0071	Screw (Bezel Slides)	W2212FA3
(6)	Condenser (10 Mmfd.)	61-0111	Screw (Cover Mtg.)	97-0111FA3
(7)	Condenser (.05 Mfd.)	61-0111	Tuning & Volume Knob	77-1043
(8)	Resistor (10,000 ohms)	33-310334	Pointer	57-2253
(9)	Condenser (110 Mmfd.)	60-110157	Dial Background Plate	55-1410
(10)	Resistor (22,000 ohms)	33-322154	Drive Cord	55-1158
(11)	Resistor (270 ohms)	33-127336	Drive Cord Spring	57-1425FA3
(12)	Condenser (.1 Mfd.)	61-0104	Distributor Suppressor	32-2250
(13)	Pilot Lamp (Part of 3)	34-2064	Feeder Straps	77-0965
(14)	Oscillator Coil (Part of 3)	61-0104	Ground Strap	77-0336
(15)	Condenser (250 Mmfd.)	60-125157	Copper Braid	95-0073
(16)	Resistor (220,000 ohms)	33-422154	Interference Condenser	30-4007
(17)	Padder (Pri. 1st I. F. Trans.)	33-422154	Distributor Choke	77-0947
(18)	First I. F. Transformer	65-0390	Antenna Connector	57-0519FA3
(19)	Farther (Sec. 1st I. F. Trans.)	65-0401	Gland Nut Wrench	28-5636FA3
(20)	Oscillator Tracking Coil	65-0401	Ground Strap Screws	W745FA3
(21)	Condenser (250 Mmfd.)	60-125157	Grommet ("A" Lead)	27-4676
(22)	Resistor (470 ohms)	33-147336	Clamp ("A" Lead)	28-1614
(23)	Condenser (.05 Mfd.)	61-0111		
(24)	Resistor (100 ohms)	33-110434		
(25)	Resistor (10,000 ohms)	33-310334		
(26)	Resistor (15,000 ohms)	33-315334		
(27)	Resistor (220,000 ohms)	33-522154		
(28)	Resistor (220,000 ohms)	33-522154		
(29)	Volume Control (350,000 ohms) & On-Off Switch	67-0037		
(30)	Resistor (15,000,000 ohms)	33-615154		
(31)	Condenser (4000 Mmfd.)	61-0129		
(32)	Resistor (220,000 ohms)	33-422334		
(33)	Condenser (.01 Mfd.)	61-0120		
(34)	Resistor (470,000 ohms)	33-447154		
(35)	Filter Condenser (10-20-20 Mfd.)	61-0150		
(36)	Resistor (220 ohms)	33-122336		
(37)	Resistor (220 ohms)	33-222334		
(38)	Condenser (.03 Mfd.)	61-0119		
(39)	Output Transformer	65-0395		
(40)	Cone & Voice Coil (For 73-0066-2 Speaker)	91-0238		
(41)	Field Coil (Not Removable)	27-6153		
(42)	Resistor (6800 ohms)	33-268134		
(43)	Condenser (7000 Mmfd.)	65-0127		
(44)	Power Transformer	65-0404		
(45)	Resistor (100 ohms)	33-110434		
(46)	Resistor (100 ohms)	33-110434		
(47)	Vibrator	83-0026		
(48)	Condenser (.5 Mfd.)	61-0137		
(49)	Second I. F. Transformer	65-0400		
(50)	Condenser (.5 Mfd.)	61-0106		
(51)	"A" Choke	32-1614		
(52)	Condenser (.5 Mfd.)	61-0137		
(53)	Condenser (250 Mmfd.)	60-125157		
(54)	Fuse	43-2359		
(55)	Condenser (437 Mmfd.)	61-0071		
(56)	Aerial Padder	63-0064		
(57)	Condenser (.5 Mfd.)	61-0101		
(58)	Condenser (.05 Mfd.)	61-0111		
(59)	Resistor (470,000 ohms)	33-447154		
(60)	Resistor (220,000 ohms)	33-522154		
(61)	Resistor (220,000 ohms)	33-522154		
(62)	Resistor (220,000 ohms)	33-522154		
(63)	Resistor (220,000 ohms)	33-522154		
(64)	Resistor (220,000 ohms)	33-522154		
(65)	Resistor (220,000 ohms)	33-522154		
(66)	Resistor (220,000 ohms)	33-522154		
(67)	Resistor (220,000 ohms)	33-522154		
(68)	Resistor (220,000 ohms)	33-522154		
(69)	Resistor (220,000 ohms)	33-522154		
(70)	Resistor (220,000 ohms)	33-522154		
(71)	Resistor (220,000 ohms)	33-522154		
(72)	Resistor (220,000 ohms)	33-522154		
(73)	Resistor (220,000 ohms)	33-522154		
(74)	Resistor (220,000 ohms)	33-522154		
(75)	Resistor (220,000 ohms)	33-522154		
(76)	Resistor (220,000 ohms)	33-522154		
(77)	Resistor (220,000 ohms)	33-522154		
(78)	Resistor (220,000 ohms)	33-522154		
(79)	Resistor (220,000 ohms)	33-522154		
(80)	Resistor (220,000 ohms)	33-522154		
(81)	Resistor (220,000 ohms)	33-522154		
(82)	Resistor (220,000 ohms)	33-522154		
(83)	Resistor (220,000 ohms)	33-522154		
(84)	Resistor (220,000 ohms)	33-522154		
(85)	Resistor (220,000 ohms)	33-522154		
(86)	Resistor (220,000 ohms)	33-522154		
(87)	Resistor (220,000 ohms)	33-522154		
(88)	Resistor (220,000 ohms)	33-522154		
(89)	Resistor (220,000 ohms)	33-522154		
(90)	Resistor (220,000 ohms)	33-522154		
(91)	Resistor (220,000 ohms)	33-522154		
(92)	Resistor (220,000 ohms)	33-522154		
(93)	Resistor (220,000 ohms)	33-522154		
(94)	Resistor (220,000 ohms)	33-522154		
(95)	Resistor (220,000 ohms)	33-522154		
(96)	Resistor (220,000 ohms)	33-522154		
(97)	Resistor (220,000 ohms)	33-522154		
(98)	Resistor (220,000 ohms)	33-522154		
(99)	Resistor (220,000 ohms)	33-522154		
(100)	Resistor (220,000 ohms)	33-522154		

I.F. = 455KC







PHILCO RADIO & TELEVISION CORP.

OPERATION	SIGNAL GENERATOR		DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
	FREQUENCY	CONNECTION			
1	PUSH IN THE TUNING CONTROL KNOB UNTIL STATIONS CAN BE TUNED IN BY MANUAL TUNING				
2	270 K.C.	To Aerial Receptacle on Radio	See Note 1	Note 2	ⓂⓃⓄⓅ
3	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	Ⓜ
4	1360 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1360 K.C.	ⓂⓃ
5	590 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 590 K.C.	ⓂⓃ
6	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	Ⓜ
7	1360 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1360 K.C.	ⓂⓃ
8	1200 to 1400 K.C.	Note 5	Note 5	Note 5	Ⓜ

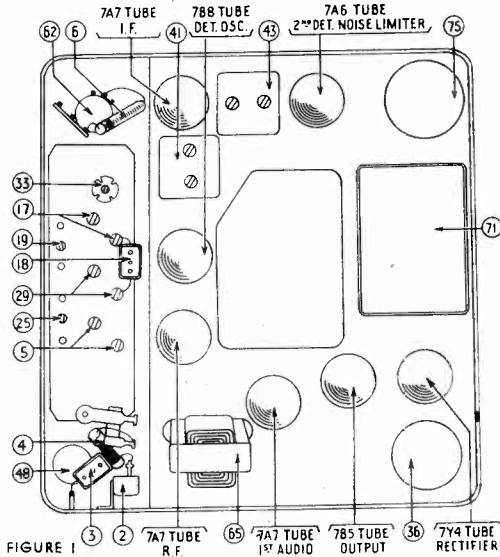


FIGURE 1

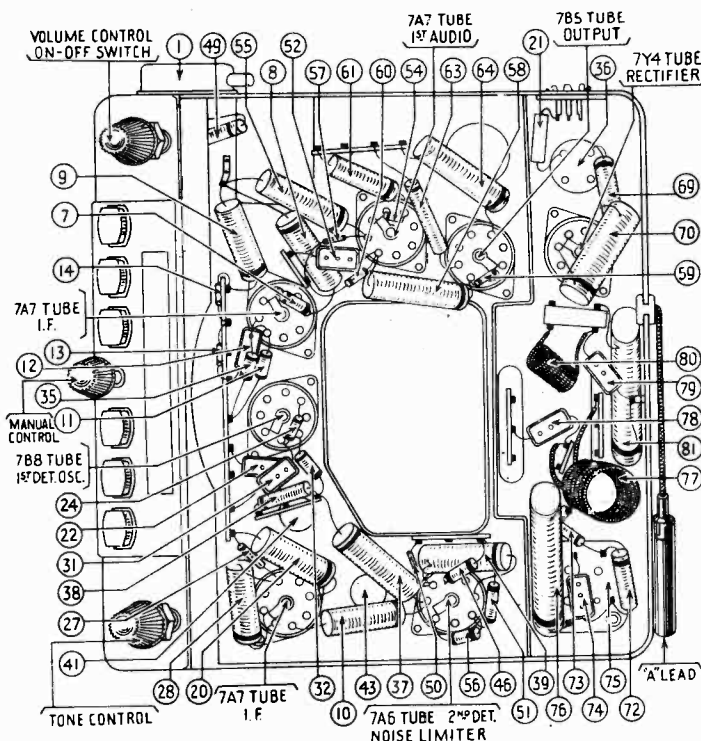


FIGURE 3

Make all adjustments for maximum reading on the meter.

NOTE 1 — Connect the aerial lead, Part No. 95-0111, to the aerial receptacle in the radio. Connect a 35 Mmfd. Condenser in series between the signal generator and the aerial lead.

NOTE 2 — Turn the tuning control clockwise as far as it will go.

NOTE 3 — Rock the tuning control while adjusting the low frequency screw. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly for maximum output. Then readjust the screw for maximum output. Repeat this procedure until no further improvement is noticed.

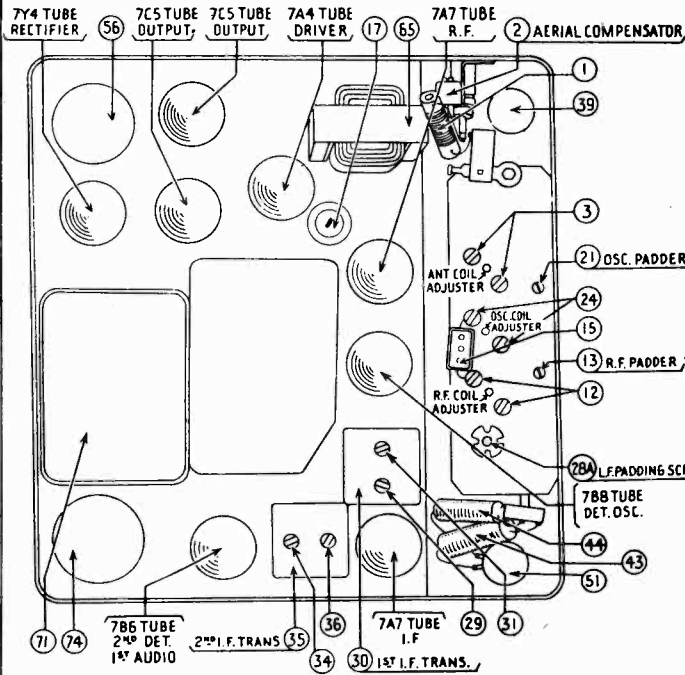
NOTE 4 — When the aerial stage adjustment is made with the Radio installed in the car, the Radio aerial lead must be connected to the car aerial in the usual manner. Connect the signal generator output lead to a wire placed near the car aerial but not connected to it.

NOTE 5 — When installing the radio in the car, follow the installation instructions carefully. Tune in a weak broadcast signal between 1200 and 1400 Kilocycles on the control scale. Remove the plug button on the end of the radio and adjust the aerial compensator Ⓜ (see Figure 1) for maximum signal.

No.	Description	Part No.	No.	Description	Part No.
(1)	Antenna Choke (on Housing)	85-0459	(67)	Jumper Plug	57-1121
(2)	Aerial Padder	65-0053	(68)	Test Socket	55-1387
(3)	Condenser (10 Mmfd.)	60-010137	(69)	Resistor (1000 ohms)	33-210334
(4)	Antenna Choke	85-0428	(70)	Condenser (3000 Mmfd.)	61-01133
(5)	Antenna Transformer	65-0349	(71)	Power Transformer	65-0347
(6)	Antenna Transformer Core	57-1541	(72)	Resistor (100 ohms)	33-110434
(7)	Resistor (1000 ohms)	33-210334	(73)	Resistor (100 ohms)	33-110434
(8)	Condenser (.05 Mfd.)	61-0101	(74)	Condenser (250 Mmfd.)	60-125157
(9)	Condenser (.05 Mfd.)	61-0101	(75)	Vibrator	83-0029
(10)	Condenser (.05 Mfd.)	61-0101	(76)	Condenser (.5 Mfd.)	61-01357
(11)	Resistor (10,000 ohms)	33-310334	(77)	Vibrator Choke	65-0151
(12)	Condenser (250 Mmfd.)	60-125151	(78)	Condenser (250 Mmfd.)	60-125157
(13)	Resistor (68,000 ohms)	33-368334	(79)	Condenser (250 Mmfd.)	60-125157
(14)	Resistor (68,000 ohms)	33-368334	(80)	"A" Choke	33-1944
(15)	Pilot Lamp	34-2084	(81)	Condenser (.5 Mfd.)	61-0137
(16)	R. F. Transformer	57-1541	(82)	Fuse	45-2550
(17)	R. F. Transformer	65-0359	(83)	Padder (Pri. 2nd I. F. Trans.)	57-1039F
(18)	Condenser (100 Mmfd.)	61-110137			
(19)	R. F. Padder	63-0052			
(20)	Condenser (.05 Mfd.)	61-0101			
(21)	Resistor (470 ohms)	33-147336			
(22)	Condenser (100 Mmfd.)	60-110127			
(23)	Condenser (54.5 Mmfd.)	61-01149			
(24)	Resistor (100,000 ohms)	33-110154			
(25)	Oscillator Padder	63-0055			
(26)	Condenser (215 Mmfd.)	61-01148			
(27)	Resistor (150 ohms)	33-113336			
(28)	Condenser (.05 Mfd.)	61-0111			
(29)	Condenser (100 Mmfd.)	61-0109			
(30)	Oscillator Transformer Core	57-1542			
(31)	Condenser (250 Mmfd.)	60-125157			
(32)	Resistor (22,000 ohms)	33-322334			
(33)	Oscillator Tracking Coil	65-0351			
(34)	Oscillator Tracking Coil				
(35)	Core	57-1859			
(36)	Resistor (68,000 ohms)	33-368334			
(37)	Pilot Condenser	61-0150			
(38)	Resistor (4700 ohms)	33-247431			
(39)	Condenser (.1 Mfd.)	61-0104			
(40)	Padder (Pri. 1st I. F. Trans.)				
(41)	First I. F. Transformer	65-0352			
(42)	Padder (Sec. 1st I. F. Trans.)				
(43)	Second I. F. Transformer	65-0448			
(44)	Resistor (27,000 ohms)	33-327154			
(45)	Padder (Sec. 2nd I. F. Trans.)				
(46)	Resistor (100,000 ohms)	33-110334			
(47)	Resistor (6800 ohms)	33-268134			
(48)	Volume Control (100,000 ohms)	67-0036			
(49)	Condenser (.02 Mfd.)	61-0134			
(50)	Resistor (1,000,000 ohms)	33-510154			
(51)	Resistor (820 ohms)	33-182336			
(52)	Condenser (.02 Mfd.)	61-0108			
(53)	Condenser (1000 Mmfd.)	61-0179			
(54)	Resistor (15,000,000 ohms)	33-615134			
(55)	Condenser (.02 Mfd.)	61-0104			
(56)	Resistor (68,000 ohms)	33-368334			
(57)	Resistor (1,000,000 ohms)	33-510154			
(58)	Condenser (.02 Mfd.)	61-0108			
(59)	Resistor (470,000 ohms)	33-447154			
(60)	Resistor (220,000 ohms)	33-422154			
(61)	Condenser (.100 Mmfd.)	61-0179			
(62)	Tone Control (500,000 ohms)	67-0058			
(63)	Resistor (470 ohms)	33-147336			
(64)	Condenser (4000 Mmfd.)	61-0105			
(65)	Output Transformer	65-0364			
(65a)	Replacement Cone (For 73-0033-2 Speaker) 91-0166				

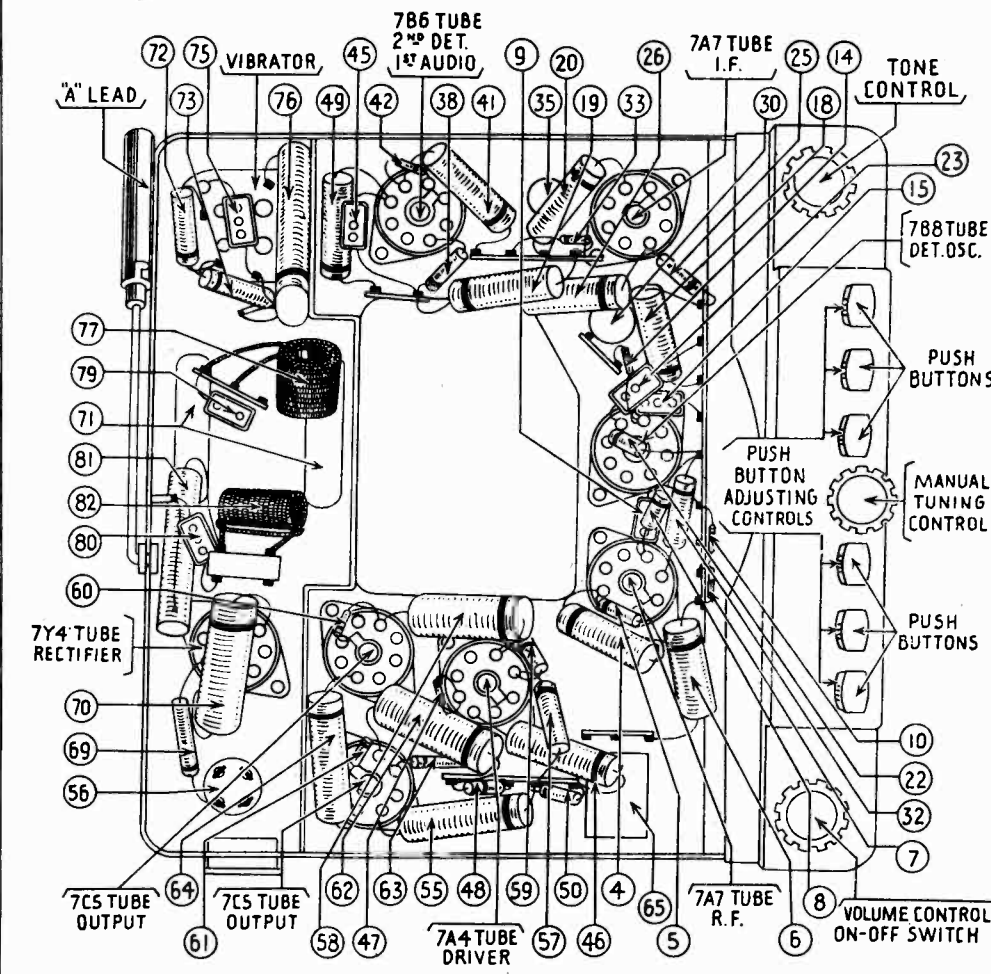
MODEL P-1935

PHILCO RADIO & TELEVISION CORP.



No.	Description	Part No.
(1)	Antenna Choke	65-0378
(2)	Antenna Compensator	63-0053
(3)	Antenna Transformer	65-0349
(3a)	Iron Core	57-1541
(4)	Condenser (.05 Mfd.)	61-0111
(5)	Resistor (680 ohms)	33-188336
(6)	Condenser (.05 Mfd.)	61-0101
(8)	Resistor (68,000 ohms)	33-368154
(9)	Resistor (10,000 ohms)	33-310334
(11)	Condenser (250 Mmfd.)	60-125157
(10)	Resistor (68,000 ohms)	33-368154
(11)	Condenser (100 Mmfd.)	60-110327
(12)	R. F. Transformer	65-0359
(12a)	Iron Core	57-1541
(13)	Padder	63-0052
(14)	Resistor (100,000 ohms)	33-410154
(15)	Condenser (100 Mmfd.)	60-110157
(20)	Resistor (215 Mmfd.)	61-0148
(17)	Sensitivity Control	67-0036
(18)	Condenser (.05 Mfd.)	61-0111
(19)	Condenser 4.05 Mfd.	61-0111
(20)	Condenser (.95 Mfd.)	61-0111
(21)	Padder	63-0055
(22)	Resistor (22,000 ohms)	33-322334
(23)	Condenser (250 Mmfd.)	60-125157
(24)	Oscillator Transformer	65-0350
(24a)	Iron Core	57-1542
(25)	Resistor (150 ohms)	33-115336
(26)	Condenser (.05 Mfd.)	61-0111
(27)	Condenser (54.5 Mmfd.)	61-0149
(28)	Oscillator Tracking Trans.	85-0351
(28a)	Oscillator Tracking Core	57-1542
(29)	Padder (Pri. 1st I. F. Trans.)	65-0352
(30)	First I. F. Transformer	65-0352
(31)	Padder (Sec. 1st I. F. Trans.)	65-0352
(32)	Resistor (27,000 ohms)	33-327434
(33)	Resistor (1,000,000 ohms)	33-510154
(34)	Padder (Pri. 2nd I. F. Trans.)	65-0352

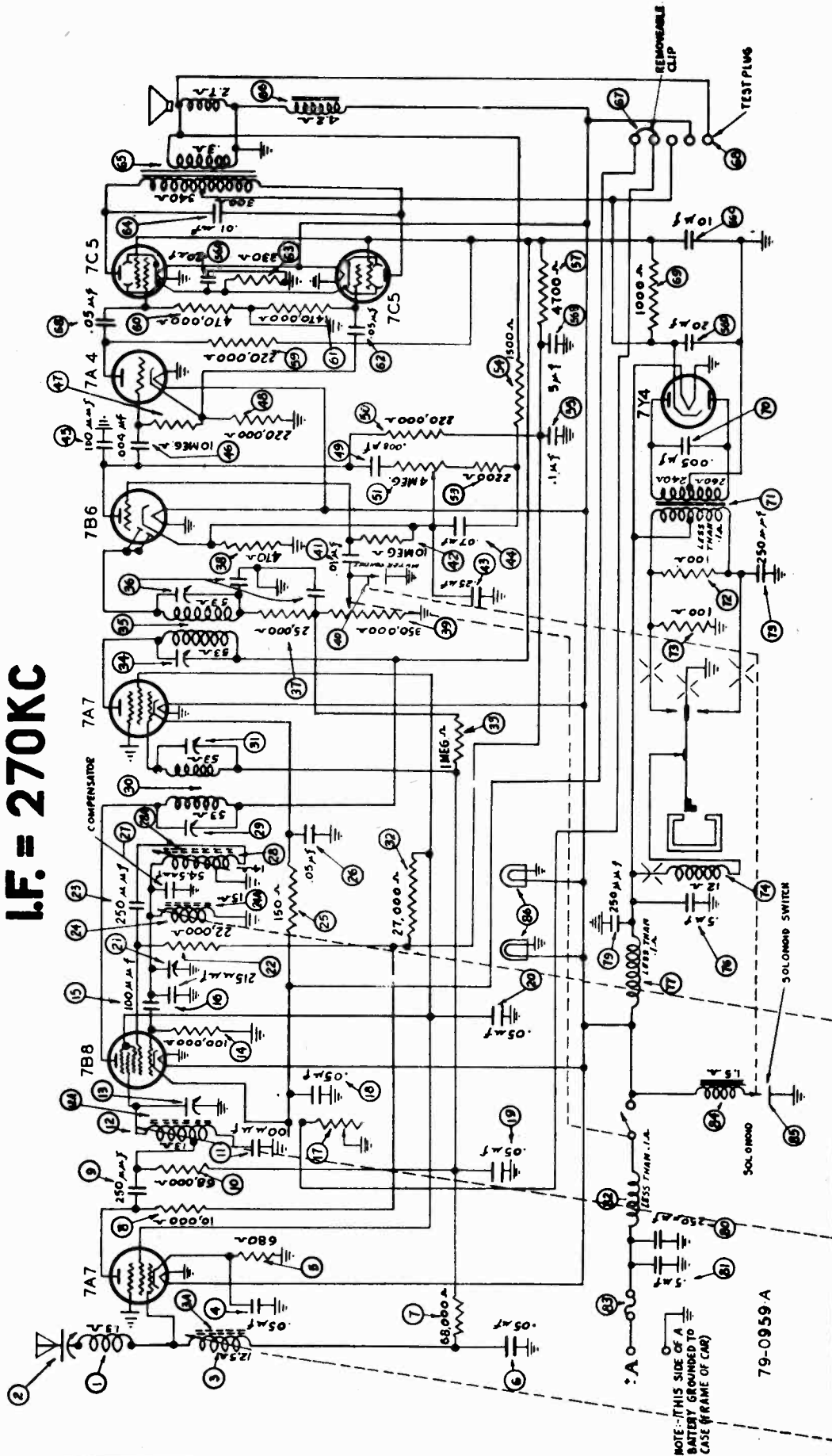
No.	Description	Part No.
(35)	Second I. F. Transformer	65-0410
(38)	Padder (Sec. 2nd I. F. Trans.)	65-0352
(37)	Resistor (25,000 ohms)	33-325154
(38)	Resistor (470 ohms)	33-147336
(39)	Volume Control (350,000 ohms) & On-Off Switch	67-0052
(40)	Muter Switch	85-0125
(41)	Condenser (.01 Mfd.)	61-0176
(42)	Resistor (10,000,000 ohms)	33-610154
(43)	Condenser (.25 Mfd.)	61-0151
(44)	Condenser (.07 Mfd.)	61-0152
(45)	Condenser (100 Mmfd.)	60-110157
(46)	Condenser (4000 Mmfd.)	61-0129
(47)	Resistor (10,000,000 ohms)	33-610154
(48)	Resistor (220,000 ohms)	33-422334
(49)	Condenser (.008 Mfd.)	61-0174
(50)	Resistor (220,000 ohms)	33-122334
(51)	Tone Control (4,000,000 ohms)	67-0051
(53)	Resistor (2200 ohms)	33-222154
(54)	Resistor (1500 ohms)	33-215154
(55)	Condenser (.1 Mfd.)	61-0113
(56)	Condenser (5-10-20-20 Mfd.)	61-0150
(56a)	Condenser (20 Mfd.)	Part of (56)
(58b)	Condenser (5 Mfd.)	Part of (56)
(56c)	Condenser (10 Mfd.)	Part of (56)
(56d)	Condenser (20 Mfd.)	Part of (56)
(57)	Resistor (4700 ohms)	33-247434
(58)	Condenser (.05 Mfd.)	67-0171
(59)	Resistor (220,000 ohms)	33-422334
(60)	Resistor (470,000 ohms)	33-447154
(61)	Resistor (470,000 ohms)	33-447154
(62)	Condenser (.05 Mfd.)	61-0172
(63)	Resistor (330 ohms)	33-133436
(64)	Condenser (.01 Mfd.)	61-0124
(65)	Output Transformer	65-0409
(68)	Field Coil	Not Replaceable
(67)	Jumper Plug	57-1121
(68)	Test Socket	55-1076
(69)	Resistor (1000 ohms)	33-210434
(70)	Condenser (.005 Mfd.)	61-0153
(71)	Power Transformer	65-0358
(72)	Resistor (100 ohms)	33-110434
(73)	Resistor (100 ohms)	33-110434
(74)	Vibrator	83-0026
(75)	Condenser (250 Mmfd.)	60-125157
(76)	Condenser (.5 Mfd.)	61-0137
(77)	Vibrator Choke	65-0151
(79)	Condenser (250 Mmfd.)	60-125157
(80)	Condenser (250 Mmfd.)	60-125157
(81)	Condenser (.5 Mfd.)	61-0137
(82)	"A" Choke	32-1844
(83)	Fuse	45-2559
(84)	Solenoid	65-0360
(85)	Solenoid Switch	Part of 85-0125
(86)	Pilot Lamp	34-2064
	Bezel	57-2182FA8
	Pilot Lamp Shield	57-2208FA3
	Color Disc	55-1353
	Color Disc Retainer	57-1639FA3
	Color Disc Washer	57-1640FA3
	Tuning Switch	77-0899
	Color Screen (Volume Side)	55-1354
	Color Screen (Tone Side)	55-1355
	Dial	55-1350
	Push Button Assembly	77-0988
	Speaker Gasket	55-1351
	Speaker Cable	95-0181
	Background Plate	57-2174PCP
	Pilot Lamp Bracket	57-2193FA3
	Fuse Lead Assembly	77-0887
	Manual Knob Assembly	77-0890
	Volume & Tone Knob	55-1349
	Speaker Unit	73-0066
	Hook Bolt	57-2170FA3
	"A" Lead	57-0623
	Manual Knob Spacer	57-1669
	Manual Knob Sleeve	57-1623
	Manual Knob Spring	57-1628FA3
	Plug Button (Chrome)	W1638FA8
	Plug Button (Nickel)	97-0150FA7
	Grommet ("A" Lead)	27-4678
	Gland Nut	28-6538FA8
	Wing Nut	W895FA3
	Ignition Switch Condenser	30-4007
	Generator Condenser	30-4475
	Distributor Resistor	33-1196
	Ground Strap Assembly (Electromatic Switch)	77-0937
	Ground Clip	57-2238
	Cone & Voice Coil	91-0226
	Vibrator Socket	27-6153
	Tube Socket	27-6151
	Tube Slide Cover	57-1547FC51
	Speaker Side Cover	57-1548FC51
	Housing & Bracket	77-0868FC51
	Pointer & Cam Assy.	77-0902
	Pointer Spring	57-1853
	Muter Spring	57-1652
	Wing Nut (Radio Mtg.)	W895FA3
	Screw (Bezel)	97-0111FA26
	Screw (Speaker Mtg.)	W1582FC51
	Screw (Cover Mtg.)	W2212FA26
	Latch Bar Spring	57-1650
	Push Button Spring	57-1651



PHILCO RADIO & TELEVISION CORP.

MODEL P-1935

I.F. = 270KC



INSTRUCTIONS FOR SETTING UP THE "TUN-O-MATIC" BUTTONS

Turn on the radio and allow it to operate for twenty minutes or longer if possible. Press in any Tun-O-Matic button so that it remains engaged. Then tune in the station desired by turning the small Tun-O-Matic wheel in the button. The station can be identified by the pointer, which indicates the frequency of the station in Kilocycles. The Tun-O-Matic buttons may be readjusted to any station within the range of the broadcast band. The Tun-O-Matic buttons may be readjusted to stations in any sequence desired. However, for convenience in remembering stations, it is recommended that the buttons be set up in the same order that the stations appear across the dial.

**CAUTION** — All adjustments must be carefully made so that reception can be received best when remote from the broadcasting station. Careless tuning off to one side, even though the signal is heard, will result in distorted reception.

MODEL F-1935

PHILCO RADIO & TELEVISION CORP.

2 — ALIGNMENT WHEN ONLY THE ANTENNA COIL OR CORE IS REPLACED

- (a) Set the piano wire end of the core 1/4" from the end of the coil form when the core draw bar is in the extreme "out" position, and solder the wire to the lug.
- (b) Set up the signal generator to 1600 K.C., and adjust the aerial compensator (2) in the radio for maximum signal.
- (c) Adjust the signal generator to 1400 K.C. and set the tuning control at 1400 K.C. Adjust the coil for maximum signal by turning the mounting nut (A) until maximum signal is obtained. In case a peak cannot be obtained, it may be necessary to unsolder the piano wire and move the core slightly, either in or out.
- (d) Repeat (b) and (c).

3 — ALIGNMENT WHEN ONLY THE R.F. TRANSFORMER OR CORE IS REPLACED

- (e) Set the piano wire end of core 1/4" from the end of the coil form when the core draw bar is in the extreme "out" position and solder the wire to the lug.
- (b) Set up the signal generator to 1600 K.C. and adjust padder (1) (see Fig. 1) for maximum signal.
- (c) Adjust the signal generator to 1400 K.C. and set the tuning control at 1400 K.C. Adjust the coil form by turning the mounting nut (B) until maximum signal is obtained. In case a peak cannot be obtained it may be necessary to unsolder the piano wire and move the core slightly, either in or out.
- (d) Repeat (b) and (c).

4 — ALIGNMENT WHEN ONLY THE OSCILLATOR TRACKING COIL OR CORE IS REPLACED

- (a) Set the signal generator to 600 K.C. and the tuning control at 600 K.C. Adjust screw (4) (see Fig. 1) for maximum signal. Rock the tuning control while making this adjustment. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly until maximum output is obtained. Then re-adjust the screw until no further improvement is noticed.
- (b) Check and readjust the aerial compensator (2) in the radio, and padders (1), (2) and (4) as described in 1.

5 — ALIGNMENT WHEN ONLY THE OSCILLATOR COIL OR CORE IS REPLACED

- (a) Set the piano wire end of the core 1/4" from the end of the coil form when the core draw bar is in the extreme "out" position, and solder the wire to the lug.
- (b) Set up the signal generator to 1600 K.C. and adjust padder (3) (see Fig. 1) for maximum signal.
- (c) Follow the same procedure as outlined under "1"—Complete Alignment Procedure.

**AUDIO OUTPUT METER.** If an audio output meter is used, connect the leads across the voice coil of the speaker. Use the 0-30 volt scale.

With the Radio and signal generator set up for operation at the prescribed frequency, turn the Radio volume control on full and set the signal generator attenuator so that a half scale reading is obtained on the meter. The signal in the speaker should be audible but not loud. The shielding on the generator output lead must be connected to the Radio housing.

OPERATION	FREQUENCY	SIGNAL GENERATOR CONNECTION	DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
1		PUSH IN THE TUNING KNOB SO THAT STATIONS CAN BE TUNED IN BY MANUAL TUNING.			
2	270 K.C.	To Aerial Receptacle on Radio	See Note 1	Note 2	⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓ ㉔ ㉕ ㉖ ㉗ ㉘ ㉙ ㉚ ㉛ ㉜ ㉝ ㉞ ㉟ ㊱ ㊲ ㊳ ㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿
3	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	㉞
4	1400 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1400 K.C.	㉟
5	590 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 590 K.C.	㊱
6	1600 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1600 K.C.	㊲
7	1400 K.C.	To Aerial Receptacle on Radio	See Note 1	Set Tuning Control at 1400 K.C.	㊳
8	1200 to 1400 K.C.		Note 5	Note 5	㊴ ㊵ ㊶ ㊷ ㊸ ㊹ ㊺ ㊻ ㊼ ㊽ ㊾ ㊿

NOTE 4 — When the aerial stage adjustment is made with the Radio installed in the car, the Radio aerial lead must be connected to the car aerial in the usual manner. Connect the signal generator output lead to a wire placed near the car aerial but not connected to it.

NOTE 5 — When installing the radio in the car, follow the installation instructions carefully. Tune in a weak broadcast signal between 1200 and 1400 Kilocycles on the control scale. Remove the plug button on the end of the radio and adjust the aerial compensator (2) (see Figure 3) for maximum signal.

③ After a coil or other part of the assembly has been replaced. The unit should be aligned after it is mounted in the radio.

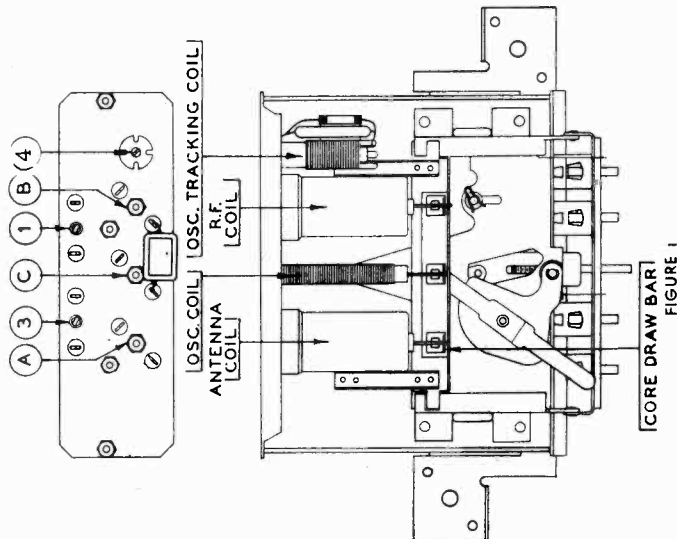
1 — COMPLETE ALIGNMENT PROCEDURE

- (a) Push in the tuning control knob so that stations can be tuned in by manual tuning.
- (b) Turn the tuning control knob clockwise as far as it will go so that the cores will be in the extreme "out" position. Set the signal generator to 1600 K.C. and adjust padder (3) (Fig. 1) for maximum signal.
- (c) Adjust padder (2) aerial compensator in radio and padder (1) (see Fig. 1) for maximum signal.
- (d) Set the signal generator at 1400 K.C. and tune the manual control to 1400 K.C. Adjust the R.F. and antenna coil for maximum signal by turning the mounting nuts (A) and (B).
- (e) Repeat (c) and (d) until no further improvement is noticed.
- (f) Set the signal generator at 600 K.C. and the tuning control at 600 K.C. Adjust the screw (4) (see Fig. 1) for maximum signal. Rock the tuning control when making this adjustment. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly until maximum output is obtained. Then re-adjust the screw until no further improvement is noticed.
- (g) In case a great adjustment was necessary in (f) the adjustments (c) and (d) should be repeated.
- (h) In case the dial calibration is off frequency, it can be corrected by changing the starting position of the oscillator core. This is done by unsoldering the piano wire from the lug and moving the core slightly. A change of 1/64" in the position of the core is equivalent to approximately 20 K.C. on the dial. If the dial reads low, it can be corrected by starting the oscillator core further in the coil form. If it reads high, the core should be pulled out. If this position is changed, it will be necessary to realign the radio as described above.

Make all adjustments for maximum reading on the meter.  
NOTE 1 — Connect the aerial lead, Part No. 95-0111, to the aerial receptacle in the radio. Connect a 40 Mmfd. Condenser in series between the signal generator and the aerial lead.

NOTE 2 — Turn the tuning control clockwise as far as it will go.  
NOTE 3 — Rock the tuning control while adjusting the low frequency screw. Tune the control to the signal and adjust the screw for maximum output. Rotate the tuning control back and forth slightly for maximum output. Then readjust the screw for maximum output. Repeat this procedure until no further improvement is noticed.

The following is the procedure for aligning the Packard tuning unit after a coil or other part of the assembly has been replaced. The unit should be aligned after it is mounted in the radio.





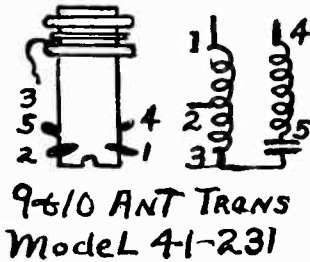


PHILCO RADIO & TELEVISION CORP.

NOTES, CHANGES

**MODEL 41-231**

The physical sketch of aerial transformer 9 and 10 shown on the diagram is incorrect. The correct sketch and diagram with lug locations is shown below.



**MODEL 42-PT-87**

Three types of speakers were used on this model and each require a different cone assembly number. These are as follows:

Speaker	Cone Assembly
36-1521-3	36-4175
36-1556-1	36-4214
36-1577-1	36-4214

When using speaker Part No. 36-1556, condenser (26) .0015 mfd., 400 volts, Part No. 30-4555, is changed to .004 mfd., 600 volts, Part No. 30-4623. Chassis with this change are marked run 2. Chassis with this change also have a .01 mfd., condenser Part No. 30-4572 connected from the plate of the 35Q5GT output tube to the aerial terminal panel on top of chassis. This condenser used as a means of connecting an output meter to the output circuit for test purposes.

When using speaker Part No. 36-1577, condenser (26) .0015 mfd., 400 volts, Part No. 30-4555 is changed to .002 mfd., 600 volts, Part No. 30-4622. Chassis with this change are marked run 3.

**MODEL 42-PT-88**

Three types of speakers were used on this model and each require a different cone assembly number. These are as follows:

Speaker	Cone Assembly
36-1521-3	36-4175
36-1556-1	36-4214
36-1577-1	36-4214

When using speaker Part No. 36-1556, condenser (26) .0015 mfd., 400 volts Part No. 30-4555, is changed to .004 mfd., 600 volts, Part No. 30-4623. Chassis with this change are marked run 2. Chassis with this change also have a .01 mfd., condenser Part No. 30-4572 connected from the plate of the 35Q5GT output tube to the aerial terminal panel on top of chassis. This condenser used as a means of connecting an output meter to the output circuit for test purposes.

When using speaker Part No. 36-1577, condenser (26) .0015 mfd., 400 volts, Part No. 30-4555 is changed to .002 mfd., 600 volts, Part No. 30-4622. Chassis with this change are marked run 3.

**MODELS 42-PT-91, 92, 93, 94, 95**

Condenser and choke assembly (5) Part No. 76-1161 changed to Part No. 76-1418.

Models PT-94 and PT-95 dial pointers changed from Part No. 54-4043 to 54-4148. Model PT-94. Knob changed from Part No. 27-4809 to 54-4137.

Model PT-95 knob changed from Part No. 27-4810 to Part No. 54-4143.

Three types of speakers were used on these models. The speakers Part Nos. are 36-1542-9, 36-1542-3 and 36-1542-2. The cone assemblies for each speaker differ as follows:

Speaker	Cone Assembly
36-1542-9	36-4204
36-1542-3	36-4225
36-1542-2	36-4218

**MODEL 42-327, CODE 121-122**

Cabinet Part No. 10561B is used with Code 122 chassis. The cabinet for Code 121 is Part No. 10561-A as listed in the Service Bulletin. The push-button escutcheon for Code 122 is Part No. 56-2233FCP.

The aerial transformer (2) (Broadcast) on later production chassis was changed from Part No. 32-3714 to 32-3877. Lug wiring on both coils remains the same as shown in the Service Bulletin.

Correction: The rectifier tube is listed as a 35Z3GT. The correct designation is 35Z3.

**MODEL 42-335, CODE 121**

The power transformer for operation on 115 or 230 volt 60 cycle current is Part No. 32-8093.

Tuning shaft changed from Part No. 56-6152FA3 to 56-6193CP. New shaft is coated with fiberblock instead of rubber.

Drive cord changed from Part No. 31-2546 to Part No. 31-2615 when using tuning shaft 56-6193CP.

**MODEL 42-340, Code 121**

The power transformer for operating this model on 115 volts, 25 cycle current is Part No. 32-8075. Shield (power transformer) 56-1547FC40; base (power transformer) 56-1548FA5.

To increase sensitivity aerial transformer (Broadcast) (4) is changed from Part No. 32-3724 to Part No. 32-3871.

For operation on 115 or 230 volt, 60 cycle operation power transformer Part No. 32-8093 is used; conversion plug is L-3275 required.

Tuning shaft changed from Part No. 56-6152FA3 to 56-6193CP.

Drive cord changed from Part No. 31-2546 to Part No. 31-2615 when using tuning shaft Part No. 56-6193CP.

**MODEL 42-345, CODE 121**

To operate this model on 115 volts, 25 cycle current use power transformer Part No. 32-8075.

For operation on 115 or 230 volt, 60 cycle current use power transformer Part No. 32-8093.

Tuning shaft changed from Part No. 56-6152FA3 to Part No. 56-6193CP when using tuning shaft Part No. 56-6193CP.

Drive cord change from Part No. 31-2546 to Part No. 31-2615 when using tuning shaft Part No. 56-6193CP.

**MODEL 42-350, CODE 121**

To improve filtering in the rectifier circuit and prevent flutter on the F.M. band, electrolytic condenser (40) (40A) 4-4 mfd., 400 volts Part No. 30-2477 changed to 4-12 mfd. Part No. 30-2537. The 4 mfd. section is connected to position (40A) and the 12 mfd. section in position (40).

To prevent parasitic oscillation the ground lead of condenser (30) is removed from contact 4 of the 7V7 1st I. F. tube socket and reconnected to contact (8) of the same tube socket.

In the schematic diagram, circled numbers (15A) should be (11), 11B should be (15A) and 11 should be (11B).

Tuning shaft changed from Part No. 56-6156FA3 to 56-6194CP.

Drive cord changed from Part No. 31-2546 to Part No. 31-2615 when using tuning shaft 56-6194CP.

Beginning with chassis marked production run 2, the power transformer seventy-nine was changed from Part No. 32-8183 to Part No. 32-8220.

**MODEL 42-355, CODE 121**

Push-button knob changed from Part No. 54-4111 to 54-4144.

To operate this model on a 115 or 230 volt, 60 cycle power supply power transformer Part No. 32-8212 is required.

To increase sensitivity aerial transformer (5) Part No. 32-3811 is changed to 32-3874.

Tuning shaft changed from Part No. 56-6152FA3 to 56-6193CP.

Beginning with chassis marked run 2, the power transformer (90) was changed from Part No. 32-8187 to 32-8221.



NOTES, CHANGES

PHILCO RADIO & TELEVISION CORP.

**MODEL 42-360, CODE 121**

To operate on 115 volts, 25 cycle A.C. current power transformer Part No. 32-8149 is used.

For operation on a 115 or 220 volt, 60 cycle A.C. power supply, use transformer Part No. 32-8094.

To improve performance aerial transformer (Brdest Band) (5) is changed from Part No. 32-3726 to 32-3863. The lug arrangement for both coils is shown on the schematic diagram. In some later production chassis of Model 42-360 a 7Y4 rectifier tube is used in place of an 84 tube.

**MODEL 42-365, CODE 121**

The pointer drive cord on later production chassis was changed from Part No. 31-2597 to 31-2608. The new cord is shorter than the original one.

To operate this model on 115 volts, 25 cycle A.C. current change power transformer (61) from Part No. 32-8117 to Part No. 32-8149.

For operation on 115 or 230 volt, 60 cycle A.C. power circuits use power transformer 32-8094.

Aerial transformer (9) changed from Part No. 32-3755 to 32-3864 to improve the operating performance of the receiver.

**MODEL 42-380, CODE 121**

To operate this model on 115 volt, 25 cycle A.C. current replace power transformer (62) Part No. 32-8177 with Part No. 32-8195.

For operation on a 220 volt 60 cycle A.C. current power transformer Part No. 32-8212 is required.

In later production models the aerial transformer (3) Part No. 32-3746 was changed to Part No. 32-3869 to increase the sensitivity.

Tuning shaft changed from Part No. 56-6152FA3 to 56-6193CP.

**MODEL 42-390, CODE 121**

To increase the sensitivity the aerial transformer (5) was changed from Part No. 32-3790 to Part No. 32-3870.

Push-button knobs changed from Part No. 54-4111 to 54-4144.

To operate this model on a 115 volt 25 cycle A.C. power supply change the power transformer from Part No. 32-8177 to 32-8195.

For operation on 220 volts, 60 cycle current, power transformer 32-8212 is required.

Tuning shaft changed from Part No. 56-6152FA3 to 56-6193CP.

Beginning with chassis marked run 2, the power transformer (90) Part No. 32-8177 is changed to Part No. 32-8222.

**MODEL 42-395, CODE 121**

A few early production chassis of this model used speaker Part No. 36-1515-4 (cone assembly 36-4181) and speaker Part No. 36-1515-2 (cone assembly 36-4173).

All later production models use speaker Part No. 36-1530 (cone assembly 36-4181) as list in the Service Bulletin.

To operate on 115 volts, 25 cycle current change the power transformer from Part No. 32-8192 to Part No. 32-8209.

For operation on 220 volts, 60 cycle current, use power transformer Part No. 32-8213.

The broadcast aerial transformer (3) Part No. 32-3790 was changed to Part No. 32-3870 on later production chassis to increase the sensitivity.

Tuning shaft changed from Part No. 56-6164 to 56-6195CP.

To improve the I.F. filtering of the plate voltage supply, condenser (47) was changed from .05 mfd. Part No. 30-4518 to .2 mfd. Part No. 30-4594.

**MODEL 42-400, CODE 121**

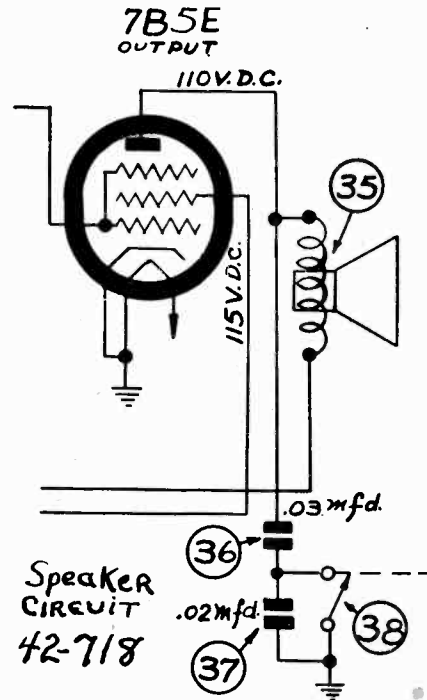
Condenser (59D) which is mounted in the fourth I.F. transformer is Part No. 60-150227. This number is not shown in the parts list.

**MODEL 42-718, CODE 121**

Beginning with run 2, the speaker (35) was changed from Part No. 36-1520-4 to Part No. 36-1576. The new speaker is a permanent type and the wiring is different from that shown on the diagram for speaker Part No. 36-1520-4. The wiring for the new speaker is shown below.

Output transformer (34) Part No. 32-8106 is also removed when the permanent speaker Part No. 36-1576 is installed.

The voice coil in the new speaker takes the place of the output transformer.



**MODEL 42-730, CODE 121**

To prevent moisture from affecting circuits, condensers (44), (48) and (51) changed from Part No. 30-4591 to Part No. 30-4610. Values remain the same.

**MODEL 42-760, CODE 121**

Beginning with chassis marked run 2, the band switch (85) was changed from 42-1660 to 42-1711.

**MODEL 42-761, CODE 121**

Beginning with chassis marked run 4 condenser (13) Part No. 30-4586 .1 mfd., 200 volts changed to .1 mfd., 400 volts Part No. 30-4527.

Correction: Dial scale pointer Part No. should be 56-2134 instead of 56-1234 as shown in the parts list.

**MODEL 42-762, CODE 121**

Beginning with chassis marked run 3, the speaker of this model was changed from permanent magnet type Part No. 36-1508-3 to electro-dynamic type Part No. 36-1568. Speaker cable for the new speaker is Part No. 41-3535.

The voice coil of the electro-dynamic speaker is connected as shown in the Service Bulletin. The field coil of the speaker is connected to the + positive and (-) negative wiring of the 6 volt storage battery.

**MODEL 42-788, CODE 121**

To improve operating conditions in humid climates the part numbers of the following condensers were changed. Values remain the same:

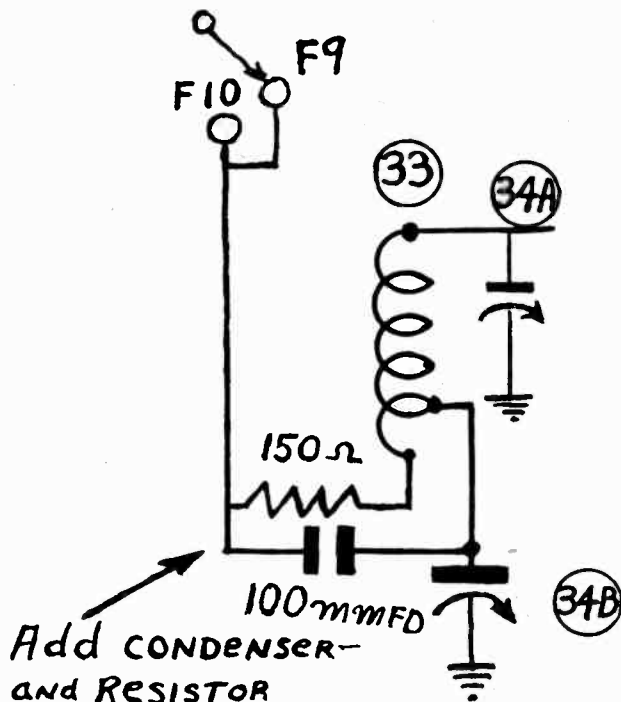
Schematic No.	Description	Original Part No.	New Part No.
54	CONDENSER (.01 mfd.)	30-4572	30-4598
		400 volts	(1000 volts)

Continued on next page

## PHILCO RADIO &amp; TELEVISION CORP.

61 CONDENSER (.006 mfd.)	30-4591	
	400 volts	30-4610
70 CONDENSER (.05 mfd.)	30-4519	30-4609
	200 volts	200 volts
84 CONDENSER (.003 mfd.)	30-4582	30-4608
	(600 volts)	

If trouble is experienced in padding the 22 M.C. normal tuning range (compensator 38A), the installation of a 150 ohm resistor Part No. 33-115339 and a 100 mmfd. condenser will improve the operation. These parts are installed in the circuit as shown in the diagram below.



MODELS 42-842, 42-843, 42-844

To improve the tuning operation of the oscillator circuit the oscillator transformer (7) was changed from Part No. 32-3633 to 32-3685. The iron core for both of these transformers is Part No. 57-2325.

Power cord changed from Part No. L-3199 to L-3299.

Correction: Resistor (49) shown as 33-218339 in the parts list should be changed to 33-3410.

MODELS 42-853, 42-854

Correction, Note B

The second line of this paragraph should read as follows: "adjusted, the image signal will be found by turning the signal generator 910 K.C. above the fundamental signal which will be 15.910 M.C."

MODEL 42-1001, CODE 121

**CONVERTING THE PHONOGRAPH MOTOR FOR  
USE ON 50 CYCLE A.C. LINES**

The motor in this model designed for operation on 60 cycle A.C. lines. The motor will operate satisfactorily on 50 cycle lines. The only change that needs to be made is to change the drive ratio between the motor pulley and the turntable drive pulley. This is accomplished by putting a coil spring, Part No. 28-8999, over the motor drive pulley. Screw it on the drive pulley counterclockwise with the long pig tail at the top. The pig tail can be cut off after the spring has been placed on the pulley.

MODEL 42-1002, CODE 121-122

**CONVERTING THE PHONOGRAPH MOTOR FOR  
USE ON 50 CYCLE A.C. LINES**

Follow instructions as for Model 42-1001

MODEL 42-1003, CODE 121-122

The light beam pick-up (9) of later production Code 122 chassis was changed from a metal tone arm Part No. 35-2517 to a plastic tone arm Part No. 35-2601. The counter-weight when using the plastic tone arm is Part No. 318-2863 (3 oz.). A new rubber bumper is also required Part No. 54-4167.

**CONVERTING THE PHONOGRAPH MOTOR FOR  
USE ON 50 CYCLE A.C. LINES**

Follow instructions as for Model 42-1001

MODEL 42-1004, CODE 121

To improve the operating performance of the rectifier circuit, the wiring of rectifier tube 50Y6GT socket was changed as follows:

Remove the bare wire between contacts 2 and 3. Connect a wire from contact 3 of the socket (see figure 3 in bulletin) to the lug of the filament resistor (43) to which condenser (40) is already attached. This change was incorporated in all chassis marked run 2. Sets prior to run 2 do not have this wiring change.

Beginning with chassis marked run 3 condenser (36) .01 mfd., 400 volts Part No. 30-4572 was changed to .006 mfd., 400 volts Part No. 30-4591. This change was made to improve the tone quality of the phonograph.

Loop Aerial (1) changed from Part No. 76-1368 to Part No. 76-1372.

**CONVERTING THE PHONOGRAPH MOTOR FOR  
USE ON 50 CYCLE A.C. LINES**

Follow instructions as for Model 42-1001

MODEL 42-1005, CODE 121-122

Two types of Photo Electric pickups (9) were used on Code 122 models. One consisted of a metal tone arm Part No. 35-2531 and the other a plastic arm Part No. 35-2602. When using the plastic tone arm a 3 oz. counter weight Part No. 318-2863 must be used in the supporting end of the arm. A new tone arm bumper Part No. 54-4167 is also required.

**CONVERTING THE PHONOGRAPH MOTOR FOR  
USE ON 50 CYCLE A.C. LINES**

Follow instructions as for Model 42-1001

MODEL 42-1006, CODE 122

Condenser (7) changed from Part No. 76-1161 to 76-1227. Values remain the same. Construction change only.

**CONVERTING THE PHONOGRAPH MOTOR FOR  
USE ON 50 CYCLE A.C. LINES**

Follow instructions as for Model 42-1001

NOTES, CHANGES

PHILCO RADIO & TELEVISION CORP.

**MODEL 42-1008, CODE 121-122**  
**42-1009, CODE 121-122**

Production changes 42-1008, 42-1009, Code 121-122.

No. 1. Two types of Phonograph Reproducer Tone arms (90) were used on the Record changer. Tone arm Part No. 35-2518 is made of metal die cast material and Part No. 35-2540 a Plastic material. Since the weight of each tone arm is different, two counter weights are required. The aluminum arm requires a 1½ ounce weight Part No. 218-1420 and the bakelite arm a 3 ounce weight Part No. 218-1531.

**CODE 121**

To improve the performance of the phonograph reproducer light oscillator circuit, the oscillator transformer (16) was changed from Part No. 32-3785 to 32-3866. The wiring lug arrangement as shown in the Service Bulletin applies to both transformers.

**CIRCUIT DIFFERENCES, CODE 121 AND 122**

Production Code 122 of Models 42-1008 and 42-1009 differs from Code 121 in several circuit parts. The service information in Radio Service Bulletin 401 for Code 121 with the exception of these parts apply to Code 122. The circuit changes are as follows:

The phonograph oscillator transformer (16) changes from Part No. 32-3785 to 32-3866.

Condenser (56) .2 mfd. is replaced with a 10 mfd. condenser Part No. 30-2500 in Code 122 chassis.

Resistor (57) 2200 ohms is changed to 3300 ohms Part No. 33-233339.

Power transformer (78) Part No. 32-8129 is changed to Part No. 32-8217.

Transformer Part No. 32-8217 does not have filament winding "A" "A" for the 7C6 oscillator tube as shown in bulletin 401.

In Code 122 the 7C6 phonograph oscillator tube filament is connected to filament winding B of transformer Part No. 32-8217 one connection of the tube filament is grounded.

The phonograph input transformer (91) in Code 122 models is Part No. 32-8215.

The tuning shaft in Code 122 is Part No. 56-6196 FCP.

Tuning shaft drive cord Code 122 is Part No. 31-2614.

**PUSH-BUTTON PADDING PROCEDURES CHANGE**  
**42-1008, CODE 122**

A few models were assembled with the push-button compensator assembly (20) reversed. The padder locations for the push-button is the reverse of that shown

The push-button adjustments on these receivers should be adjusted in accordance with the frequency coverage shown below.

Button Position From Front of Cabinet	Adjust Padder Number (From Rear of Cabinet)	Range Coverage K.C.
1 (Next to On-Off Switch)	1 & 2	1185-1720
2	3 & 4	850-1600
3	5 & 6	710-1185
4	7 & 8	540-980
5	9 & 10	540-980

**MODELS 42-1010, 42-1011, CODE 121**

Beginning with later production of Model 42-1010 and first production of Model 42-1011, a 10 mmfd. condenser Part No. 60-010137 was connected in series with compensator (5B) osc. This condenser improves the padding of compensator (5B) osc. on 15 MC.

Beginning with run 2 chassis of Models 42-1010 and 42-1011 resistor (7) Part No. 33-322339 was changed to 33-333339. This change was made to prevent the phono reproducer light control (17) elements from becoming shorted due to high current.

**HUM REDUCTION**

To reduce hum, electrolytic condenser (32)-(32A) 8-8 mfd., 475 volts Part No. 30-2535 was changed to 8-24 mfd., 475 volts Part No. 30-2538. The 8 mfd. section is connected in the circuit position (32) and the 24 mfd. section in position (32A). Chassis with this change are marked run 4. In some receivers prior to this change an 18 mfd. condenser was connected in parallel with (32A).

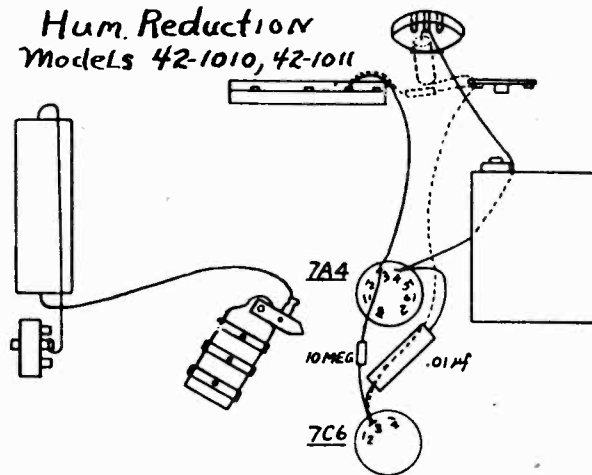
Remove the .01 mfd. condenser, Part No. 30-4572, which is connected to the center tap of the volume control to the terminal on the wiring panel right below it. Also, remove the 10 meg. resistor which is wired to this terminal and to the second terminal of the bias resistor 82.

Remove the wire which formerly connected the resistor and condenser to the #3 terminal of the 7C6 tube socket.

Connect the center terminal of the volume control to the dummy #4 terminal of the 7A4 tube socket. Connect the second terminal of the resistor 82 to the dummy #3 terminal of the 7A4 tube socket. Both of these leads must be dressed close to the sub base. Follow the layout shown in the accompanying diagram.

Connect the .01 mfd. condenser, Part No. 30-4572, from the #3 terminal of the 7C6 tube to the #4 terminal of the 7A4 tube. Connect the 10 meg. resistor from the #3 terminal of the 7C6 tube to the #3 terminal of the 7A4 tube.

In the diagram, the parts and wires indicated by the dotted lines are to be removed. The 10 meg. resistor and the .01 mfd. condensers are shown in their new location. The location of the 18 mfd. condenser and the wiring connections are also shown.



To prevent oscillation a .2 mfd. 400 volts condenser, Part No. 30-4594, was connected in the circuit at the lug of the terminal panel where resistors (33), (39) and (44) are connected. Ground one side of the condenser. Chassis with this change are marked run 3.

The tuning condenser (24) tuning shaft changed from Part No. 56-6168 FA3 to 56-6195 FCP.

Beginning with chassis marked run 5. Mica condenser (16) 375 mmfd. Part No. 20-037517 was changed to 350 mmfd., Part No. 20-035021. This change made to improve oscillator performance.

**Correction diagram**

The connection from contact 13 of the B.C. pushbutton should be connected to the tuning condenser only. The line shown connected to the line which connects contact 11 to the antenna socket should be removed.



MODEL 330

PILOT RADIO CORP.

PHONOGRAPH AND TELEVISION JACKS

On the rear of the chassis is a set of "Pin" jacks. They are intended to be employed for connection with an electrical phonograph, or with the sound outlet of a television receiver.

BAND SPREAD TUNING

The International Short Wave Broadcast Bands have been spread out over the full dial length to make the tuning in of foreign broadcasts as easy and accurate as the local stations on the broadcast band.

SERVICE NOTES

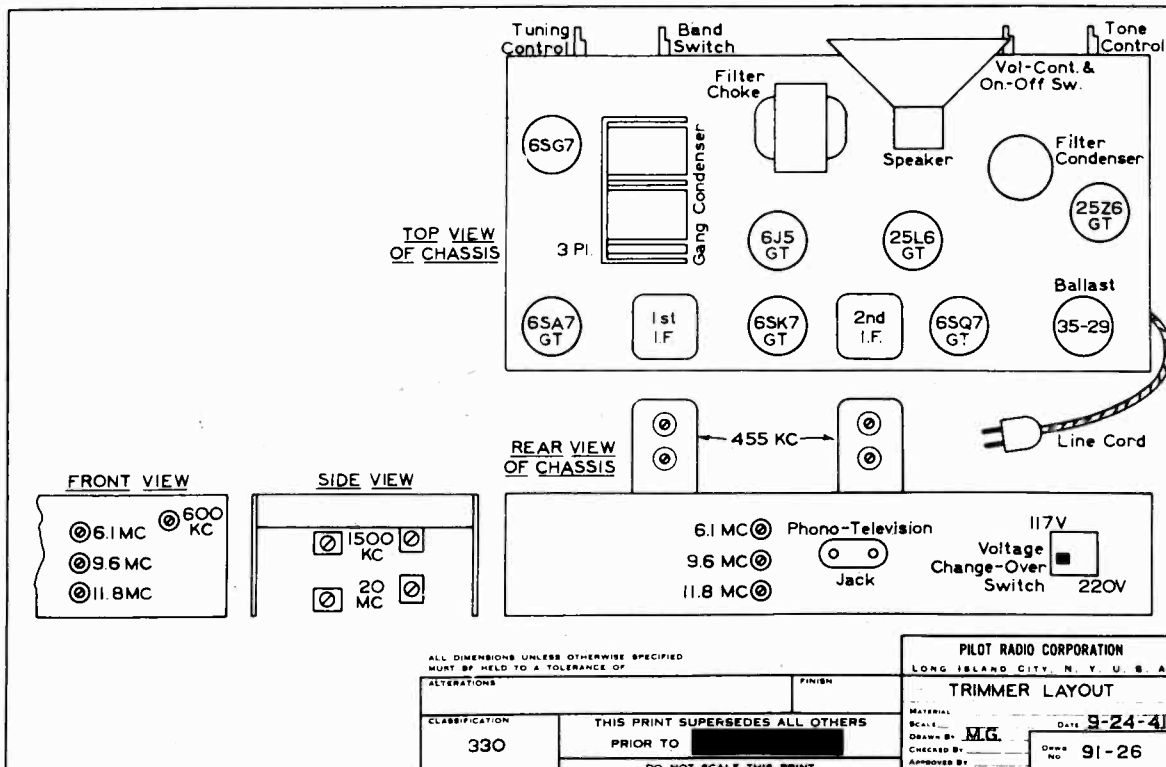
The location of all adjustments used in re-aligning this receiver, and the frequencies at which these adjustments should be made, are shown in the accompanying diagram.

When aligning the I.F. amplifier, the generator must be connected to the grid of the 6SA7 tube through a .1 mfd condenser. When aligning the receiver on the Broadcast Band, connect the generator to the Antenna wire through a .0002 mfd condenser, and on the four short wave bands through a 400 ohm carbon resistor.

In general it is not recommended to re-align the bandspread coils unless it is definitely necessary.

First adjust the oscillator iron core to make the pointer correspond with the calibration mark. Then adjust the antenna iron core for maximum output. The signal generator must be accurate within 5 kc on each band, and the use of a calibrating crystal oscillator is recommended. Otherwise a broadcast signal of known frequency may be used.

In this receiver the oscillator frequency is higher than the signal frequency on the broadcast band and lower on the four other bands.





MODELS 983570,  
7232553

PONTIAC DIV.-GENERAL MOTORS

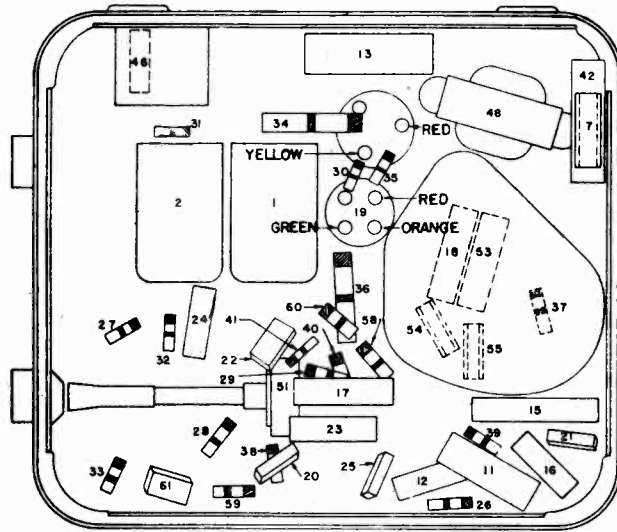
Series Condenser Or Dummy Antenna	Connect To	Signal Generator Frequency	Adjust Screws In Order
.25	Grid 6J7G Tube	262 K.C.	I.F. Coils - A,B, C,D
.0002	Antenna Terminal	1560 K.C.	Center Section Gang H
.0002	Antenna Terminal	1400 K.C.	Outside Sections Gang R
.0002	Antenna Terminal	600 K.C.	E

Repeat 1400 K.C.  
Adjustments.

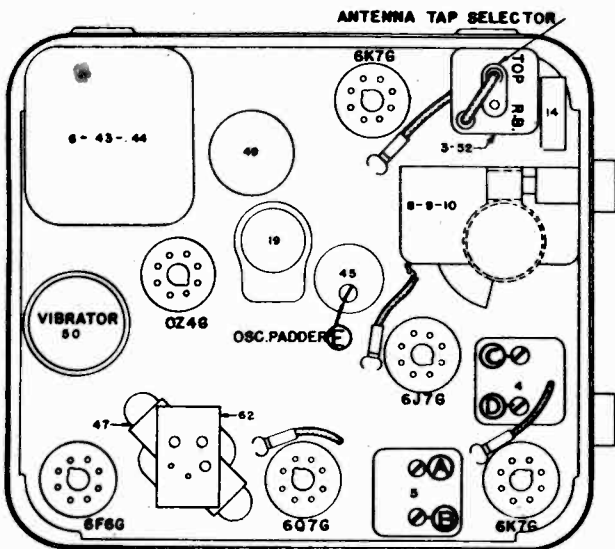
SPECIAL INSTRUCTIONS

Have antenna selector tap in correct  
position for type of antenna used.

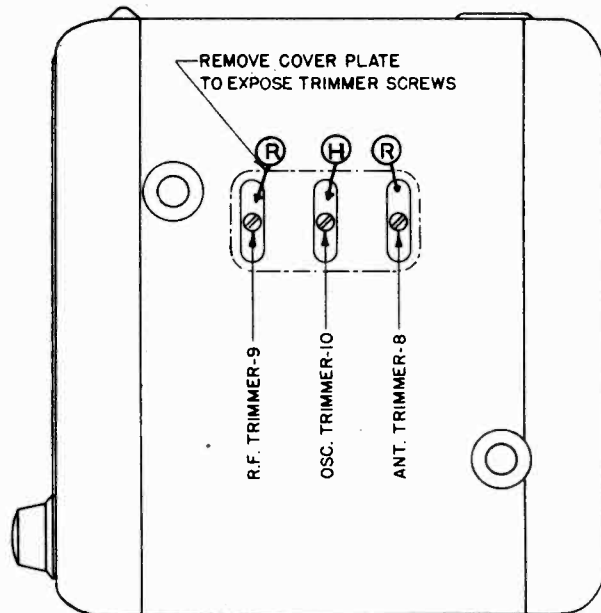
Adjust antenna trimmer (nearest to  
back of set when installed) to match  
car antenna (1400 kc).



PARTS LAYOUT--Bottom View



PARTS LAYOUT--Top View



PARTS LAYOUT--Side View

PONTIAC DIV.-GENERAL MOTORS

MODELS 983570,  
7232553  
MODEL 983680

Pontiac 983680

CHASSIS ELECTRICAL PARTS

Illus. No.	Part No.	Part Name	Description	Illus. No.	Part No.	Part Name	Description
1	1213660	Coil	Ant. Filter Choke	18	7230912	Condenser	Tub. .005 mfd. 800 V.
2	1213661	Coil Assy.	Coil & Core Tuning Assy.	19	1213667	Control	Volume-tone-switch
		Sec. A	Antenna Stage			Sec. A	Volume 350,000 ohm
		Sec. B	R.F. Stage			Sec. B	Off-On Switch
		Sec. C	Oscillator Stage	20	1211003	Resistor	Tone Switch
		Sec. G	Antenna Trimmer	21	1211007	Resistor	Ins. 47,000 ohm $\frac{1}{2}$ W.
		Sec. H	R.F. Trimmer	22	1211164	Resistor	Ins. 2 meg. $\frac{1}{2}$ W.
		Sec. J	Oscillator Padder	23	1211007	Resistor	Ins. 47,000 ohm $\frac{1}{2}$ W.
		Sec. K	Resistor 1 meg. 1/3 W.	25	1211051	Resistor	Ins. 2,700 ohm 1 W.
3	1213662	Coil Assy.	I-F Assy.	26	1213343	Resistor	Ins. 15 meg. $\frac{1}{2}$ W.
		Sec. A	I-F Coils	27	1213846	Resistor	Ins. 270 ohm 1 W.
		Sec. B	Primary Trimmer	28	1209885	Resistor	Ins. 1 meg. $\frac{1}{2}$ W.
		Sec. C	Secondary Trimmer	29	1211163	Resistor	Ins. 150,000 ohm $\frac{1}{2}$ W.
		Sec. D	Resistor 47,000 ohm 1/3 W.	30	1210850	Resistor	Ins. 35,000 ohms $\frac{1}{2}$ W.
4	1213663	Coil	Vibrator Hash Choke	31	1211097	Resistor	Ins. 15,000 ohm $\frac{1}{2}$ W.
5	1212452	Coil	"A" Filter Choke	32	1213668	Speaker	Dynamic 5"
6	1213664	Coil	Filament Choke	33	1213669	Transformer	Output
7	1213665	Condenser	Electrolytic	34	1213670	Transformer	Power
		Sec. A	10 mfd. 450 V.	35	8638	Vibrator	Primary
		Sec. B	5 mfd. 400 V.	36	1207636	Condenser	Molded .0005 mfd.
		Sec. C	20 mfd. 25 V.	37	7230592	Condenser	Tub. .05 mfd. 600 V.
		Sec. D	5 mfd. 350 V.	38	1211154	Resistor	Ins. 5 meg. $\frac{1}{2}$ W.
8	1213666	Condenser	Antenna Filter	39	1211063	Resistor	Ins. 4,500 ohm $\frac{1}{2}$ W.
		Sec. A	.00006 mfd.	40	1208600	Condenser	Tub. .01 mfd. 600 V.
		Sec. B	.00006 mfd.	41	1211107	Resistor	Ins. 45,000 ohm $\frac{1}{2}$ W.
9	1207625	Condenser	Molded .00005 mfd.	42	Incl.in Illus. 46	Choke	Antenna
10	7230592	Condenser	Tub. .05 mfd. 600 V.	43	Incl.in Illus. 46	Condenser	Trimmer
11	1213854	Condenser	Tub. .004 mfd. 1500 V.	44	1208600	Condenser	Tub. .01 mfd. 600 V.
13,14	7240248	Condenser	Tub. .5 mfd. 100 V.	45	1212278	Condenser	Spark Plate
15	1212098	Condenser	Tub. .004 mfd. 800 V.	*46	1213739	Choke Assy.	Antenna Choke
16	1212099	Condenser	Tub. .02 mfd. 600 V.			Sec. A	Choke
17	1212098	Condenser	Tub. .004 mfd. 800 V.			Sec. B	Trimmer

\* In early production sets, the antenna choke and trimmer were two separate parts. Use #1213739 for service replacement.

TUNING CONTROL PARTS

1213682	Button Assy.	Push Button	7238487	Knob	Tone Control
1212233	Cord Assy.	Pointer Dr.(6' Length)	51	Lamp	Pilot Light Mazda #51
1213676	Drum Assy.	Drum & Pinion - Pointer Drive	1213680	Link Assy.	Spacer & Springs
1213678	Gear Assy.	Sector-complete	1213681	Pulley	Wood 7/16 Dia.
1213679	Glass	Dial	7236443	Pulley	Wood 13/32 Dia.
7238288	Knob	Tuning and Volume	1213686	Tuner Assy.	Less Man. Drive & Elec. Parts
504909	Knob	Dummy	1213733	Shaft Assy.	Tuning Shaft & Brkt.

Pontiac 7232553  
983570

CHASSIS ELECTRICAL PARTS

Illus. No.	Service Part No.	Part Name	Description	Illus. No.	Service Part No.	Part Name	Description
1	7232371	Coil Assy.	R-F	32	1210834	Resistor	10,000 ohms $\frac{1}{2}$ W. Ins.
2	7232373	Coil Assy.	Oscillator	33	1211006	Resistor	200 ohms $\frac{1}{2}$ W. Ins.
3	7232519	Coil Assy.	Antenna	34	7231811	Resistor	25,000 ohms 2 W. Ins.
4	7232710	Coil Assy.	1st I-F	35	1211224	Resistor	2,000 ohms $\frac{1}{2}$ W. Ins.
5	7232711	Coil Assy.	2nd I-F	36	7232406	Resistor	35,000 ohms 1 W. Ins.
6	7232382	Choke	"A" Filter	37	1211006	Resistor	200 ohms $\frac{1}{2}$ W. Ins.
7	7232383	Choke	Motor Noise	38	1209885	Resistor	1 megohm $\frac{1}{2}$ W. Ins.
11	7230592	Condenser	.05 mfd. 600 V. Tub.	39	1210117	Resistor	250,000 ohms $\frac{1}{2}$ W. Ins.
12	1212099	Condenser	.02 mfd. 600 V. Tub.	40	1211222	Resistor	600 ohms $\frac{1}{2}$ W. Ins.
13	1212100	Condenser	.5 mfd. 400 V. Tub.	41	7232592	Resistor	600,000 ohms $\frac{1}{2}$ W. Ins.
14	7230592	Condenser	.05 mfd. 600 V. Tub.	42,43	7232390	Condenser	Special .5 mfd. 100 V.
15	7232580	Condenser	Flat .5 mfd. 200 V.	44	7232687	Transformer	Power Inc. Terminal Brkt.
16	1212098	Condenser	.004 mfd. 800 V. Tub.	45	7232386	Condenser	Oscillator Pad
17	1212099	Condenser	.02 mfd. 600 V. Tub.	46	7230936	Coil	Ant. Series Choke
18	7232556	Condenser	.01 mfd. 1200 V. Tub.	47	7232605	Transformer	Audio Output, Less Speaker Socket
19	7232581	Condenser	By-pass Block	48	7232606	Choke	"B" Filter Assy.
		Sec. A	.05 mfd. 400 V.	49	7232668	Condenser	Electrolytic
		Sec. B	.05 mfd. 200 V.	50	8528	Vibrator	Plug-in
		Sec. C	.5 mfd. 200 V.	51	7232384	Control	Volume, 600,000 ohms
20,21	1209055	Condenser	.00025 mfd. Molded	52	1208600	Condenser	.01 mfd. 600 V. Tub.
22	1210275	Condenser	.001 mfd. Molded	53	7232556	Condenser	.01 mfd. 1200 V. Tub.
23	7230912	Condenser	.005 mfd. 800 V. Tub.	54	7232527	Coil	R-F Choke (red)
24	1212097	Condenser	.001 mfd. 800 V. Tub.	55	7232591	Coil	R-F Choke (Slate)
25	1210275	Condenser	.0001 mfd. Molded	56	1211066	Resistor	5000 ohms $\frac{1}{2}$ W. Ins.
26	1210119	Resistor	200,000 ohms $\frac{1}{2}$ W. Ins.	57	1210882	Resistor	20,000 ohms $\frac{1}{2}$ W. Ins.
27	1211009	Resistor	250 ohms $\frac{1}{2}$ W. Ins.	58,59	1209885	Resistor	1 megohm $\frac{1}{2}$ W. Ins.
28	1210116	Resistor	50,000 ohms $\frac{1}{2}$ W. Ins.	60	1211035	Resistor	1,000 ohms $\frac{1}{2}$ W. Ins.
29	1210881	Resistor	60,000 ohms $\frac{1}{2}$ W. Ins.	61	1207625	Condenser	.00005 mfd. Molded
30	1211163	Resistor	150,000 ohms $\frac{1}{2}$ W. Ins.	63	7233185	Speaker	Dynamic 8"
31	1209883	Resistor	100,000 ohms $\frac{1}{2}$ W. Ins.				



MODEL 983617

PONTIAC DIV.-GENERAL MOTORS

SERVICE INFORMATION FOR MODEL 983617 IS IDENTICAL TO MODEL 983569 (SEE VOL.IX INDEX) WITH THE EXCEPTION OF THE FOLLOWING PARTS WHICH REPLACE THE BYPASS BLOCK:

<u>Illus. No.</u>	<u>Part No.</u>	<u>Part Name</u>	<u>Description</u>
14 A	1212100	Condenser	Tubular .5 mfd. 400 V.
14 B	7230592	Condenser	Tubular .05 mfd. 600 V.
14 C	7230592	Condenser	Tubular .05 mfd. 600 V.
14 D	1212099	Condenser	Tubular .02 mfd. 600 V.
14 E	1208600	Condenser	Tubular .01 mfd. 600 V.
14 F	1211536	Condenser	Tubular .15 mfd. 400 V.
14 G	7230592	Condenser	Tubular .05 mfd. 600 V.

THE TUNING CONTROL IS PART NO. 501226 WITH THE EXCEPTION OF THE FOLLOWING PARTS:

<u>Part No.</u>	<u>Part Name</u>	<u>Description</u>
502613	Plate	Control face
503227	Knob assy.	Tuning & volume
502611	Knob	Tone control
502612	Knob	Dummy
177759	Nut	1/4-20 stamped hex

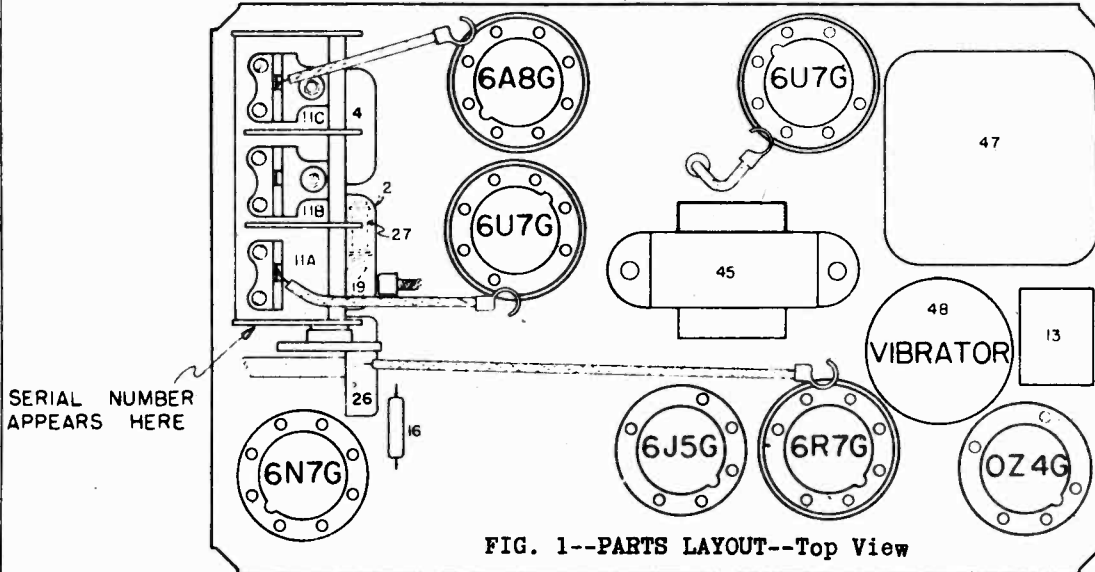


FIG. 1--PARTS LAYOUT--Top View

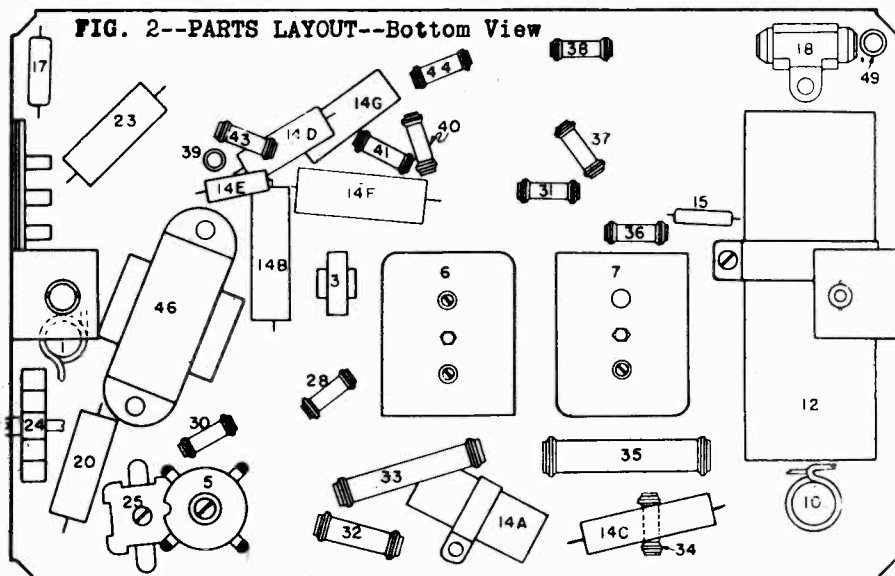
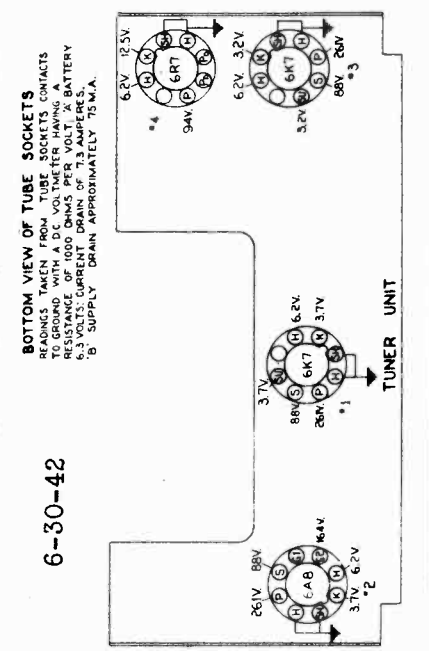
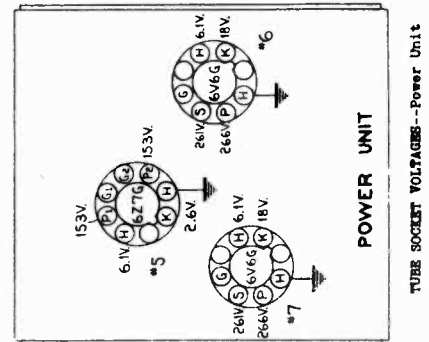
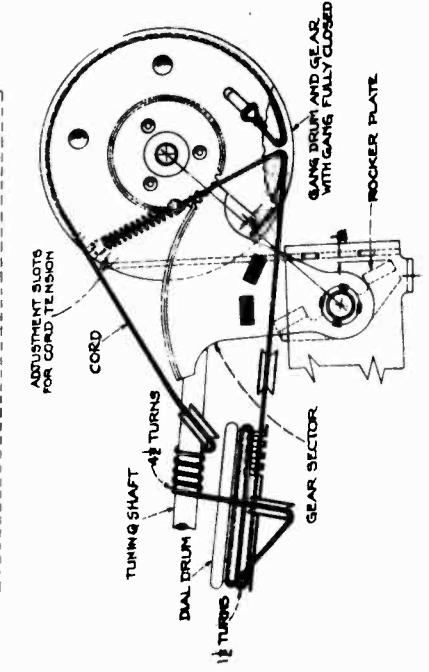
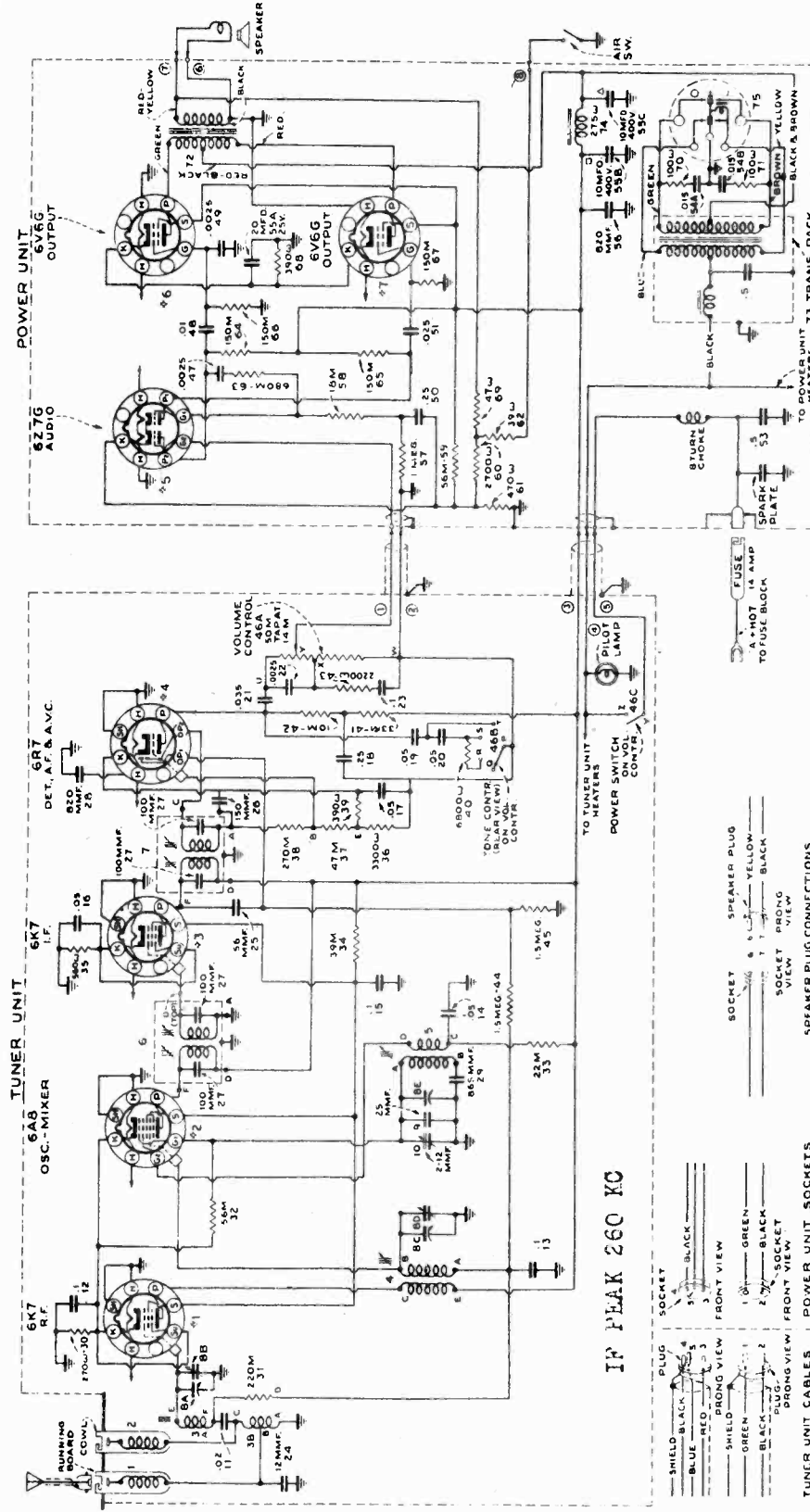


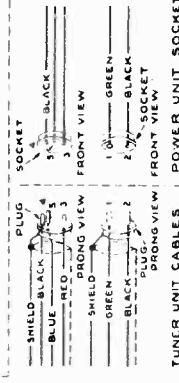
FIG. 2--PARTS LAYOUT--Bottom View

PONTIAC DIV.-GENERAL MOTORS

MODEL 983667



IP PEAK 260 KC



**BOTTOM VIEW OF TUBE SOCKETS**  
RESISTANCE OF 1000 OHMS PER VOLT. \* BATTERY 6.3 VOLTS; CURRENT DRAIN OF 7.3 AMPERES. \* B. SUPPLY DRAIN APPROXIMATELY 75 M.A.

6-30-42

MODEL 983667

PONTIAC DIV.-GENERAL MOTORS

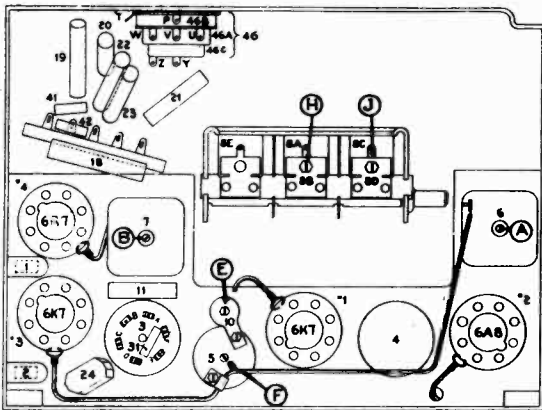
Series Condenser Or Dummy Antenna	Connect To	Signal Generator Frequency	Adjust Screws In Order
.1	Grid 6A8 Tube	260 K.C.	I-F Coils A,B,C,D
.1	Grid 6A8 Tube	1560 K.C.	E
.1	Grid 6A8 Tube	545 K.C.	F
.1	Grid 6A8 Tube	1560 K.C.	E
.0002	RB Antenna Terminal	1400 K.C.	HJ
.0002	RB Antenna Terminal	600 K.C.	F
.0002	RB Antenna Terminal	1400 K.C.	HJ

**SPECIAL INSTRUCTIONS**

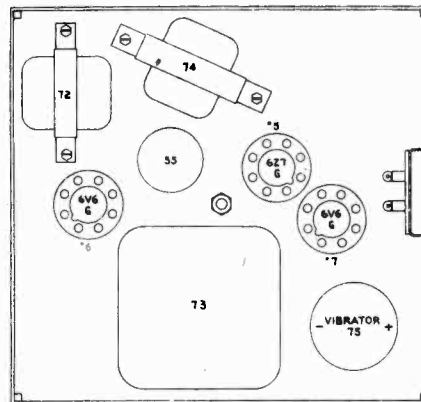
Adjust trimmer 8B to match car antenna (1400 K.C.) with antenna lead plugged into correct position for type antenna used.

**PUSH BUTTON SET-UP**

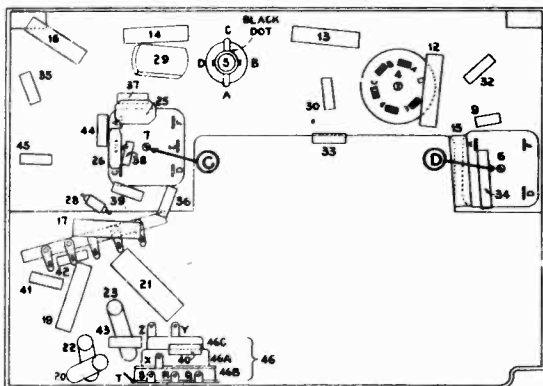
6 Buttons. Loosen button by turning counter-clockwise 1/2 turn. Tune in station desired using manual control Press button all the way in and release slowly. Lock button by turning clockwise.



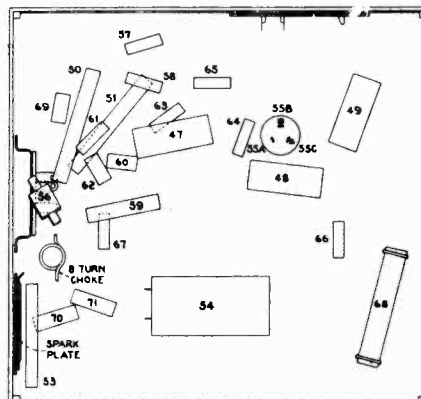
PARTS LAYOUT--I-P UNIT--Top View



PARTS LAYOUT--POWER UNIT--Top View



PARTS LAYOUT--I-P UNIT--Bottom View



PARTS LAYOUT--POWER UNIT--Bottom View

PONTIAC DIV.-GENERAL MOTORS

MODEL 983667

I-P UNIT ELECTRICAL PARTS

Illus. No.	Part No.	Part Name	Description	Illus. No.	Part No.	Part Name	Description
1-2	1213423	Coil Assy.	Ant. Choke	39	1211221	Resistor	Ins. 400 Ohms $\frac{1}{2}$ W.
3	1213486	Coil	Ant. (Less Shield)	40	1211072	Resistor	Ins. 7,000 Ohms $\frac{1}{2}$ W.
4	7235980	Coil	R-F (Less Shield)	41	1210850	Resistor	Ins. 35,000 Ohms $\frac{1}{2}$ W.
5	7235979	Coil Assy.	Oscillator	42	1210834	Resistor	Ins. 10,000 Ohms $\frac{1}{2}$ W.
6	1213467	Coil Assy.	1st I-F	43	1211224	Resistor	Ins. 2,000 Ohms $\frac{1}{2}$ W.
7	1214163	Coil Assy.	2nd I-F	44-45	1211141	Resistor	Ins. 1.5 Meg. $\frac{1}{2}$ W.
8	1213424	Condenser	Var. 3 Gang Tuning	46	1213425	Control	Volume--Tone--Switch
9	7236178	Condenser	Temp. Comp. .000025 Mfd.	47	1211228	Condenser	Tub. .0025 Mfd. 700 V.
10	7235015	Condenser	Oscillator Trimmer	48	1208600	Condenser	Tub. .01 Mfd. 600 V.
11	7236107	Condenser	Tub. .02 Mfd. 300 V.	49	1211228	Condenser	Tub. .0025 Mfd. 700 V.
12-13	1213490	Condenser	Tub. .1 Mfd. 300 V.	50	7231594	Condenser	Tub. .25 Mfd. 400 V.
14	1213492	Condenser	Tub. .05 Mfd. 400 V.	51	1211232	Condenser	Tub. .025 Mfd. 400 V.
15	1213490	Condenser	Tub. .1 Mfd. 300 V.	53	1212100	Condenser	Tub. .5 Mfd. 400 V.
16-17	1213492	Condenser	Tub. .05 Mfd. 400 V.	54	1213460	Condenser	Buffer Dual .015 Mfd. 1000 V.
18	1213494	Condenser	Tub. .25 Mfd. 300 V.	55	1213459	Condenser	Electrolytic
19-20	1213492	Condenser	Tub. .05 Mfd. 400 V.			Sec. A	20 Mfd. 25 V.
21	1211201	Condenser	Tub. .035 Mfd. 400 V.			Sec. B	10 Mfd. 400 V.
22	1211228	Condenser	Tub. .0025 Mfd. 700 V.			Sec. C	10 Mfd. 400 V.
23	1207908	Condenser	Tub. .1 Mfd. 300 V.	56	1213472	Condenser	Mica .00082 Mfd.
24	1213497	Condenser	Molded .000012 Mfd.	57	1209885	Resistor	Ins. 1 Meg. $\frac{1}{2}$ W.
25	1213498	Condenser	Molded .000056 Mfd.	58	1213485	Resistor	Ins. 18,000 Ohms $\frac{1}{2}$ W.
26	1213499	Condenser	Molded .00015 Mfd.	59	1211111	Resistor	Ins. 55,000 Ohms 1 W.
27	1210275	Condenser	(Incl. in 8 & 7)	60	1211049	Resistor	Ins. 2700 Ohms $\frac{1}{2}$ W.
28	1213472	Condenser	Mica .00082 Mfd.	61	1213486	Resistor	Ins. 470 Ohms $\frac{1}{2}$ W.
29	7236139	Condenser	Ceramic .000865 Mfd.	62	1213032	Resistor	Ins. 40 Ohms $\frac{1}{2}$ W.
30	1211009	Resistor	Ins. 250 Ohms $\frac{1}{2}$ W.	63	1213488	Resistor	Ins. 680,000 Ohms $\frac{1}{2}$ W.
31	1210119	Resistor	Ins. 200,000 Ohms $\frac{1}{2}$ W.	64-65	1211163	Resistor	Ins. 150,000 Ohms $\frac{1}{2}$ W.
32	7236248	Resistor	Ins. 56,000 Ohms $\frac{1}{2}$ W.	66-67	1211163	Resistor	Ins. 150,000 Ohms $\frac{1}{2}$ W.
33	1210882	Resistor	Ins. 20,000 Ohms $\frac{1}{2}$ W.	68	7236082	Resistor	Ins. 390 Ohms 2 W.
34	1211108	Resistor	Ins. 40,000 Ohms 1 W.	69	1212288	Resistor	Ins. 50 Ohms $\frac{1}{2}$ W.
35	7233314	Resistor	Ins. 560 Ohms $\frac{1}{2}$ W.	70-71	1211000	Resistor	Ins. 100 Ohms $\frac{1}{2}$ W.
36	1211054	Resistor	Ins. 3,500 Ohms $\frac{1}{2}$ W.	72	1213443	Transformer	Output
37	1211107	Resistor	Ins. 45,000 Ohms $\frac{1}{2}$ W.	73	1213444	Transformer	Vibrator Power
38	1210117	Resistor	Ins. 250,000 Ohms $\frac{1}{2}$ W.	74	1213445	Reactor	"B" Filter
				75	1213446	Vibrator	

POWER UNIT MISCELLANEOUS PARTS

1213447	Socket Assy. Power Cable	1213474	Socket	Octal Tube
1213448	Socket Assy. Audio Cable	1213451	Socket	Speaker
1213449	Case Power Unit	1213453	Socket	Air Switch Lead
1213450	Socket Vibrator			

I-P UNIT MISCELLANEOUS PARTS

1213476	Push Button	1213430	Gear	Sector
	Tuner Unit Complete.	1213433	Plug Button	3/8"
503392	Button Assy. Push Button	1213432	Plug Button	1/2"
503227	Knob Assy. Tuning & Volume	1213434	Plug Button	5/16"
502611	Knob Tone Control	1213437	Shaft Assy. Tuning	
502612	Knob Dummy	503416	Socket Assy. Dial Light	
503369	Escutcheon Face Plate	1213440	Spring	Push Arm Assy.
503419	Cable Assy. Audio	1213441	Spring	Sector Gear
503417	Cable Assy. Power	1213442	Spring	Tuning Drive
1213428	Dial Assy. Calibrated	7236224	Shield	Ant. Coil
1213429	Drum Assy. Drum and Gear	1213427	Case	I-P Unit

SPEAKER PARTS

1213458	Speaker Unit 8" P-M	1213455	Case Assy. Speaker
503421	Cable Assy. Spkr. to Power Unit	1213457	Grille Speaker Screen

INSTALLATION PARTS

Part No.	Part Name	Description	Part No.	Part Name	Description
503368	Brace	I-P Unit--Inst. Panel	177759	Nut	"D" Stamped $\frac{1}{2}$ -20 Hex.
502607	Spacer	I-P Unit--Inst. Panel	1997701	Switch	Volume Levelizer
503389	Bolt	"T" Head; Power Unit Mtg	501458	Lead Assy.	Air Switch
503391	Stud	Speaker Mtg.	1207821	Suppressor	Distributor
503370	Shield	Speaker--Water	1853686	Adapter	Suppressor
503371	Shield Cup	Speaker--Water	1866865	Condenser	Generator
503372	Gasket	Speaker Shield			



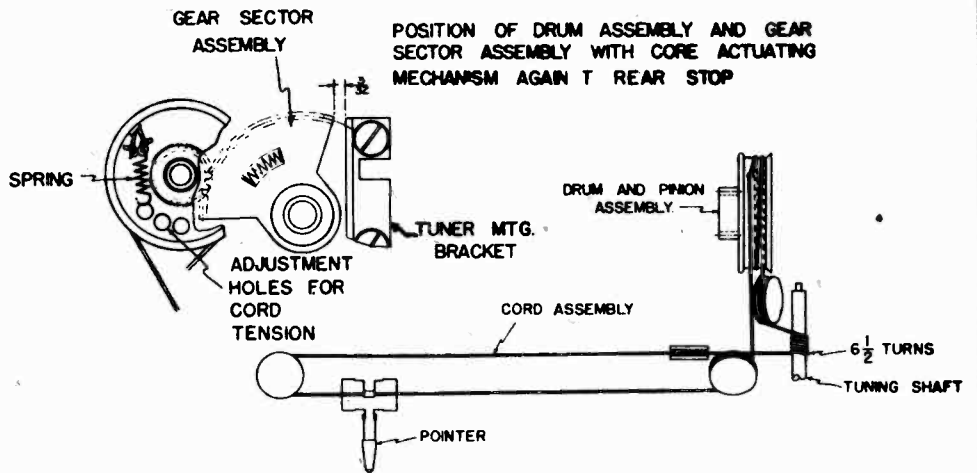
PONTIAC DIV.-GENERAL MOTORS

ALIGNMENT PROCEDURE

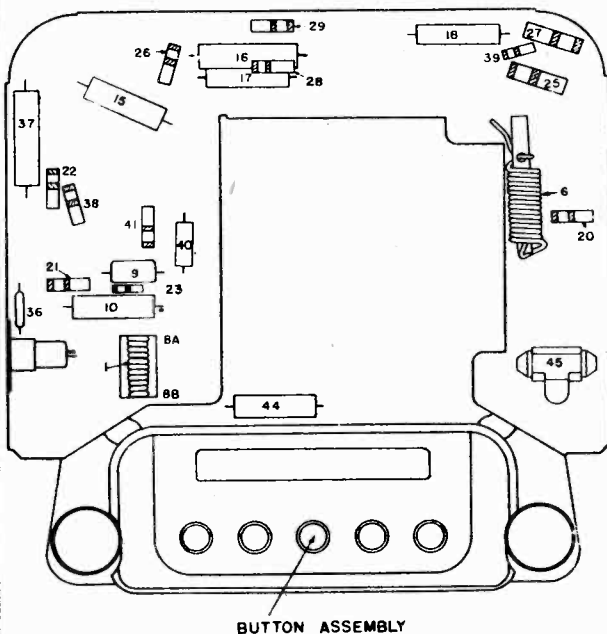
Series Condenser Or Dummy Antenna	Connect To	Signal Generator Frequency	Adjust Screws In Order
.1	X	260 K.C.	A-B
.1	X	1520 K.C.	D
.000065	Antenna Terminal	1400 K.C.	C-E
.000065	Antenna Terminal	260 K.C.	46B Min. Output

SPECIAL INSTRUCTIONS

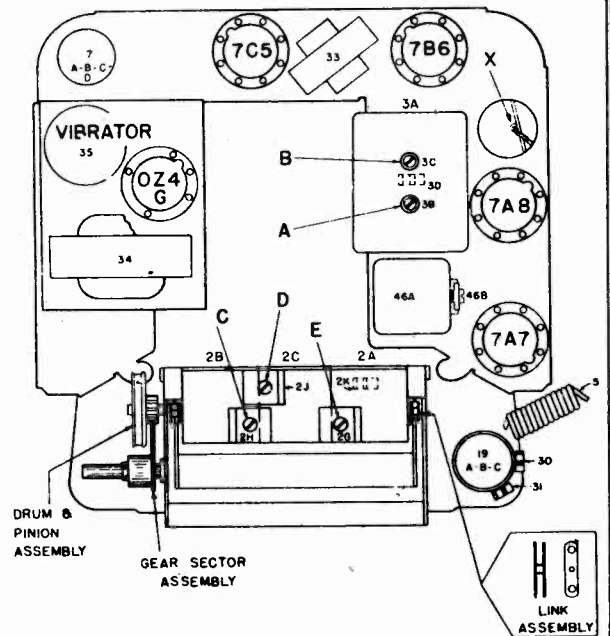
ADJUST TRIMMER E TO MATCH CAR ANTENNA (1400KC) WHEN SET IS INSTALLED.



DIAL POINTER-CORD LAYOUT



PARTS LAYOUT--Bottom View



PARTS LAYOUT--Top View





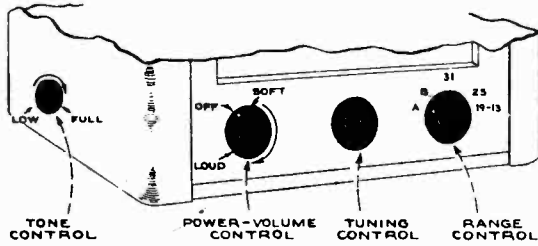


MODEL Q81  
Ch.RC-529A

RCA MFG. CO., INC

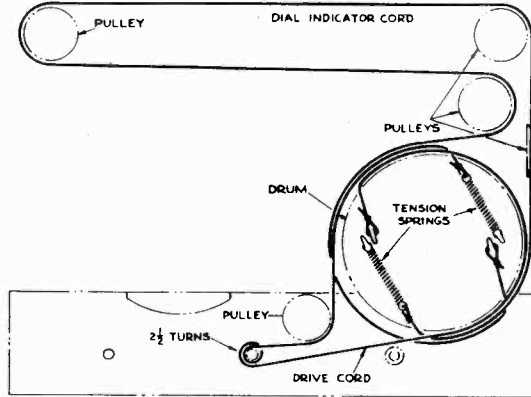
Precautionary Lead Dress.—

1. All oscillator coil leads must be kept apart from each other as well as other leads and parts. No two leads may be less than 1/4 inch apart.
2. Oscillator grid coupling condenser, C17, must bear tightly against switch or other condensers, and the green gang lead must bear against C17 from the other side. Cement with "amberoid."



3. C5 (560 mmf.) must be placed exactly midway between the two (19-13M and 25M) coils; it must be at least 1/4 inch away from any coil leads.
4. C12 (47 mmf.) condenser must be at least 1/4 inch away from all parts and leads.
5. C13 (68 mmf.) condenser must bear against the switch and/or C17, grid coupling condenser and be cemented with "amberoid," or else clear all parts and leads by at least 1/4 inch.

6. Antenna grid coupling condenser must be as far away from all metal parts as possible.
7. Braids between gang and chassis must be so soldered as to be as far away from stator lugs as possible.
8. Both condensers on the front switch lug No. 8 (with green antenna gang lead) must be as far away from metal shields of the switch and all other metal as possible.
9. AVC by-pass condenser (C19) must clear the tuning flywheel by at least 1/4 inch.
10. Make sure the bias cell polarity is correct.

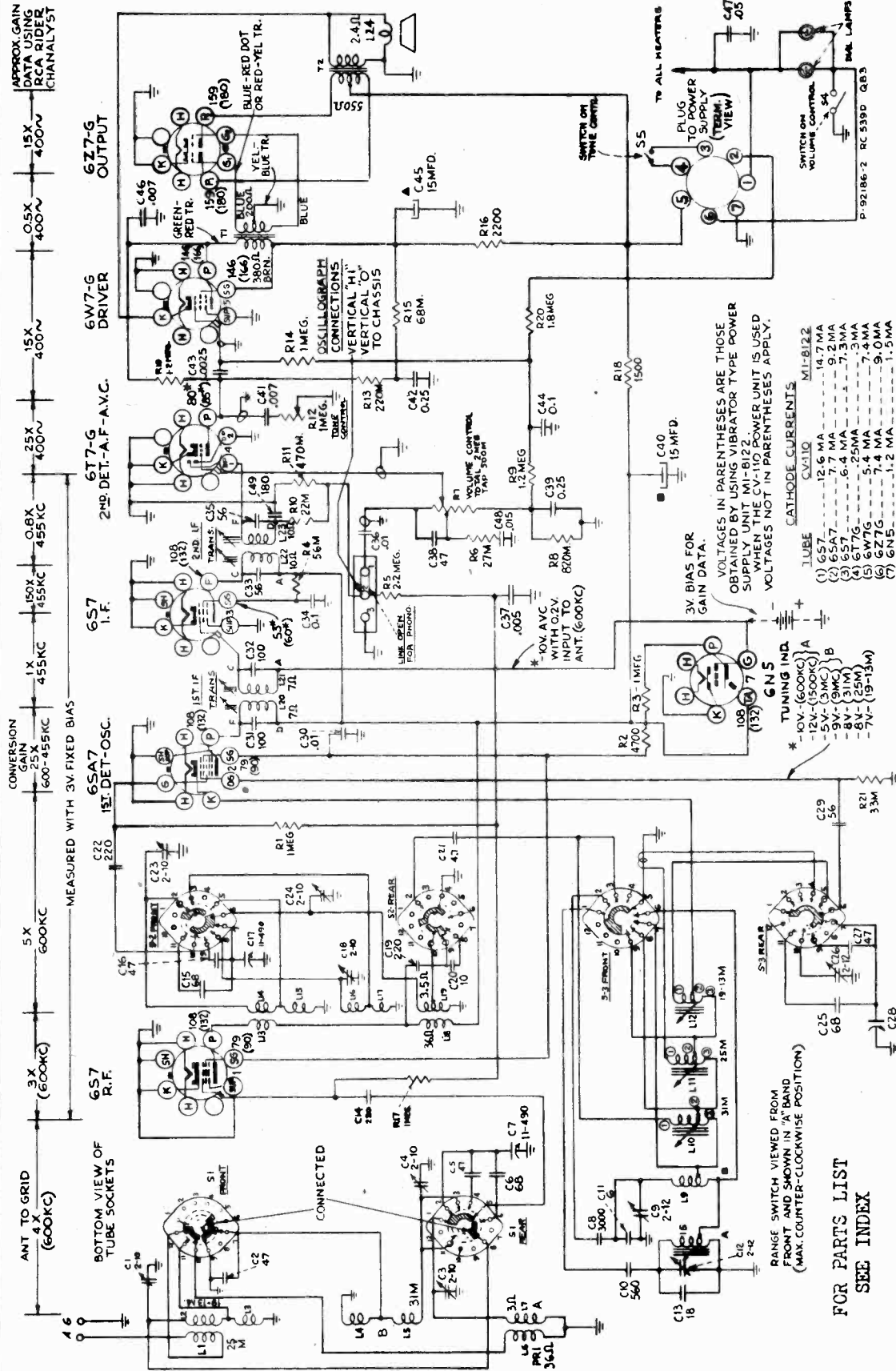


STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
<b>CHASSIS ASSEMBLIES (RC-529A)</b>			30963	Resistor—820,000 ohms, 1/2 watt.	.20
35642	Calibrator—Drive drum calibrator.	.10	13730	Resistor—1 meg., 1/2 watt.	.20
12714	Capacitor—Air trimmer, medium.	.50	30208	Resistor—1.2 meg., 1/2 watt.	.20
34654	Capacitor—Mica trimmer comprising 3 sections of 2.5-10 mmfd.	.60	12679	Resistor—2.2 meg., 1/2 watt.	.20
35646	Capacitor—8 mmfd.	.35	14350	Screw—No. 8-32 square head set screw for drive drum.	.03
36012	Capacitor—15 mmfd.	.35	35637	Shaft—Tuning shaft.	.25
31350	Capacitor—18 mmfd.	.30	35787	Socket—Phono input socket.	.15
35644	Capacitor—47 mmfd., ceramic.	.35	31251	Socket—Drive cord socket.	.25
37329	Capacitor—47 mmfd., silvered mica.	.35	13638	Spring—Drive cord spring.	.08
30949	Capacitor—56 mmfd., mica.	.25	31418	Spring—Pointer cord spring.	.05
12723	Capacitor—56 mmfd., moulded mica.	.35	35640	Support—Drive cord pulley support with one pulley.	.35
35645	Capacitor—68 mmfd., cera.nic.	.35	35639	Support—Drive cord pulley support with two pulleys.	.55
13057	Capacitor—68 mmfd., silvered mica.	.35	35622	Support—Tuning shaft and flywheel support.	.20
30904	Capacitor—100 mmfd., mica.	.25	33397	Switch—Tone switch.	.45
12720	Capacitor—100 mmfd., moulded mica.	.35	35636	Transformer—First I.F. transformer.	1.70
13003	Capacitor—180 mmfd.	.35	35628	Transformer—Second I.F. transformer.	1.85
12694	Capacitor—220 mmfd.	.35	37898	Transformer—Driver transformer.	2.70
31433	Capacitor—560 mmfd.	.35	37924	Transformer—Output transformer.	1.90
35643	Capacitor—3,000 mmfd.	.55	33726	Washer—"C" washer for pulley.	.02
34459	Capacitor—.0025 mfd.	.20	2917	Washer—"C" washer for tuning shaft.	.03
4838	Capacitor—.005 mfd.	.25	<b>POWER SUPPLY ASSEMBLIES</b>		
4937	Capacitor—.01 mfd.	.25	30433	Capacitor—470 mmfd., moulded mica.	.35
32787	Capacitor—.05 mfd. (C19, C27).	.20	30673	Capacitor—470 mmfd., mica.	.25
4886	Capacitor—.05 mfd. (C35).	.20	35573	Capacitor—.008 mfd.	.25
14626	Capacitor—.07 mfd.	.25	4937	Capacitor—.01 mfd.	.25
12484	Capacitor—.025 mfd.	.30	32405	Capacitor—Electrolytic 16 mfd., 350 volts.	.85
37868	Capacitor—.05 mfd.	.40	37834	Case—Power supply case only—less case cover.	1.00
37250	Capacitor—Electrolytic—20 mfd., 250 volts.	.60	14289	Clip—Battery clips.	.30
37867	Capacitor—Electrolytic—30 mfd., 250 volts.	.60	37925	Coil—Choke coil.	.35
31581	Cell—Bias cell.	.25	5140	Fuse—5 Amperes.	.10
35632	Coil—Antenna coil—"A" band.	1.10	34765	Resistor—100 ohms, 1/2 watt.	.20
35631	Coil—Antenna coil—spread band.	.75	6134	Resistor—1,200 ohms, 1 watt.	.22
35623	Coil—Oscillator coil—"A" and "B" bands.	.80	35572	Resistor—2,200 ohms, 1/2 watt.	.20
35624	Coil—Oscillator coil—"19-13 meter" band.	.45	14409	Socket—Female socket for battery cable.	.45
35625	Coil—Oscillator coil—"25 meter" band.	.50	12241	Socket—Vibrator socket.	.30
35626	Coil—Oscillator coil—"31 meter" band.	.45	35544	Transformer—Vibrator transformer.	4.65
35619	Condenser—Variable tuning condenser.	2.80	35543	Vibrator—Plug-in vibrator.	4.00
37833	Control—Volume control and power switch.	2.00	<b>SPEAKER ASSEMBLIES (RL-92-5)</b>		
32634	Cord—Drive cord (approx. 28 inch overall length).	.10	32907	Cap—Dust cap.	.02
34662	Cord—Pointer cord (approx. 54 inch overall length).	.25	38077	Cone—Cone complete with voice coil.	1.25
35788	Core—Adjustable core and stud for "A" and "B" band oscillator coil.	.15	5118	Plug—3-prong male plug for speaker.	.25
31259	Core—Adjustable core and stud for "19-13 meter," "25 meter," and "31 meter" bands oscillator coils.	.15	<b>MISCELLANEOUS ASSEMBLIES</b>		
35627	Drum—Drive drum—less calibrator.	.65	38103	Decalcomania—"On-off" decal.	.05
35638	Flywheel—Tuning shaft flywheel.	1.10	37839	Decalcomania—Range switch decal.	.15
31580	Holder—Bias cell holder.	.15	35392	Decalcomania—Trade mark decal.	.05
5119	Plug—3-contact female plug for speaker cable.	.25	35391	Decalcomania—Tuning decal.	.05
14404	Plug—7-prong male plug for power input cable.	.35	35712	Dial—Glass dial scale.	1.45
35641	Pulley—Drive cord pulley.	.10	37838	Frame—Dial frame complete—less indicator and dial scale.	1.25
35630	Pulley—Drive cord pulley located between the range switch shaft and the tuning shaft.	.10	35648	Indicator—Station selector indicator.	.25
13714	Resistor—5,600 ohms, 1/2 watt.	.20	37837	Knob—Range switch or volume control knob.	.40
30151	Resistor—18,000 ohms, 1 watt.	.22	35650	Knob—Tone switch knob.	.25
13998	Resistor—22,000 ohms, 1 watt.	.20	34489	Knob—Tuning knob.	.30
12454	Resistor—33,000 ohms, 1 watt.	.20	14270	Spring—Retaining spring for knobs.	.05
13734	Resistor—120,000 ohms, 1/2 watt.	.20			
13479	Resistor—390,000 ohms, 1/2 watt.	.20			
30648	Resistor—470,000 ohms, 1/2 watt.	.20			

ALL PRICES ARE SUBJECT TO CHANGE OR WITHDRAWAL WITHOUT NOTICE.

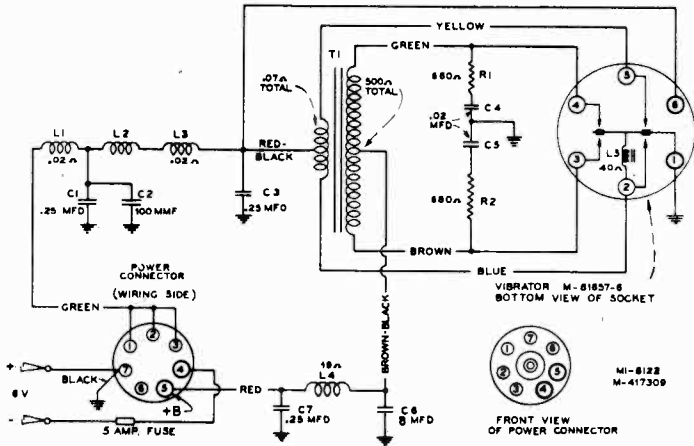
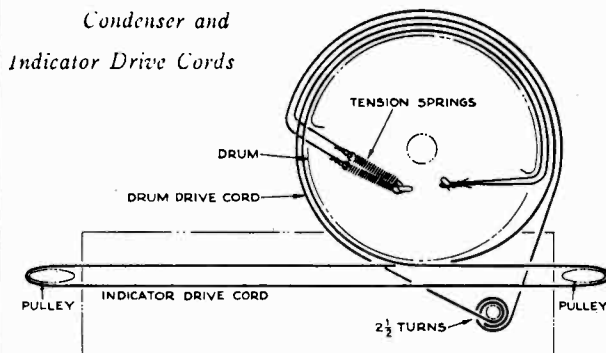
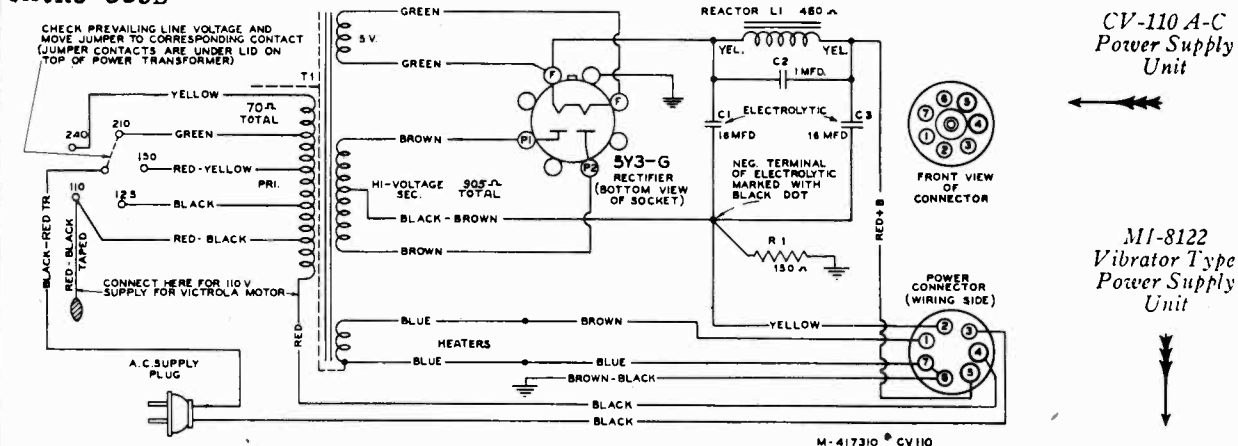
RCA MFG. CO., INC.

MODEL QB3  
Ch. RC-539D

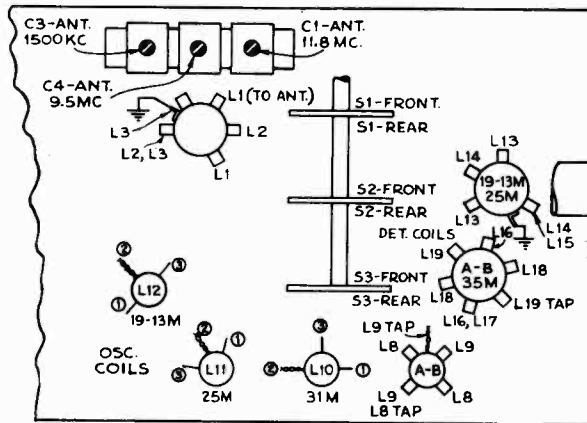


MODEL QB3  
Ch. RC-539D

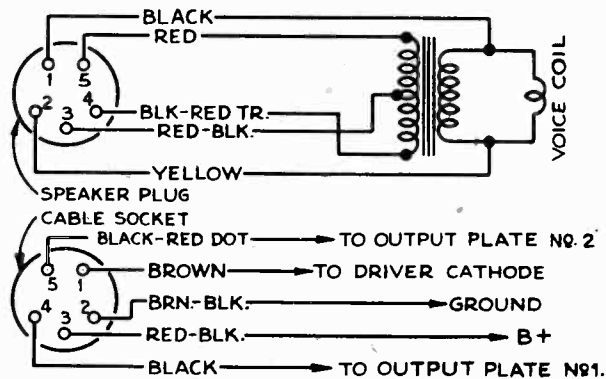
RCA MFG. CO., INC.



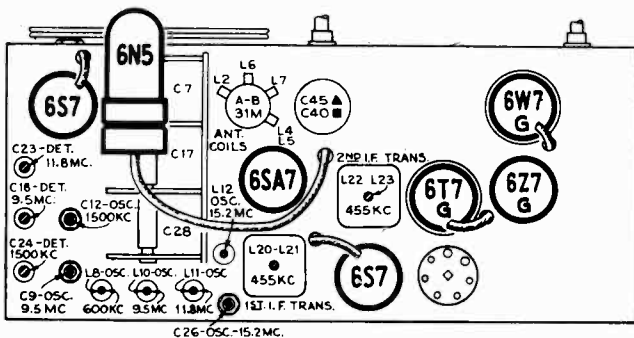
The pilot lights are illuminated by pressing in the volume control knob. (The pilot lights are not controlled by this action when the receiver is operated with the CV-110 A-C power supply unit.)



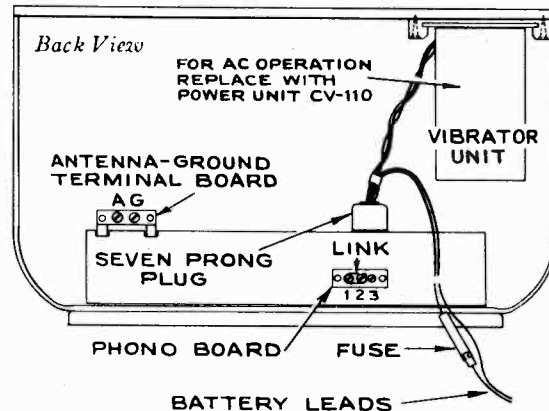
Coil and Trimmer Locations (Bottom View)



Connections and Colors of Loudspeaker and Cable



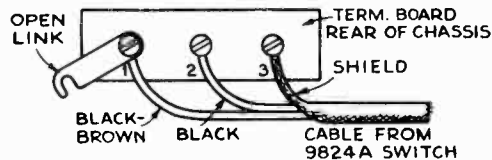
Tube and Trimmer Locations (Top View)



RCA MFG. CO., INC.

MODEL QB 3  
Ch.RC-539D

**Record Player Attachment.**—Terminals are provided on the rear of the chassis for convenient connection to a record player such as the Stock No. 9824A switch may be used to change from radio to record player. The connections of this switch are shown. In the event that a No. 9824A switch is not available, a double-pole double-throw toggle switch may be used.

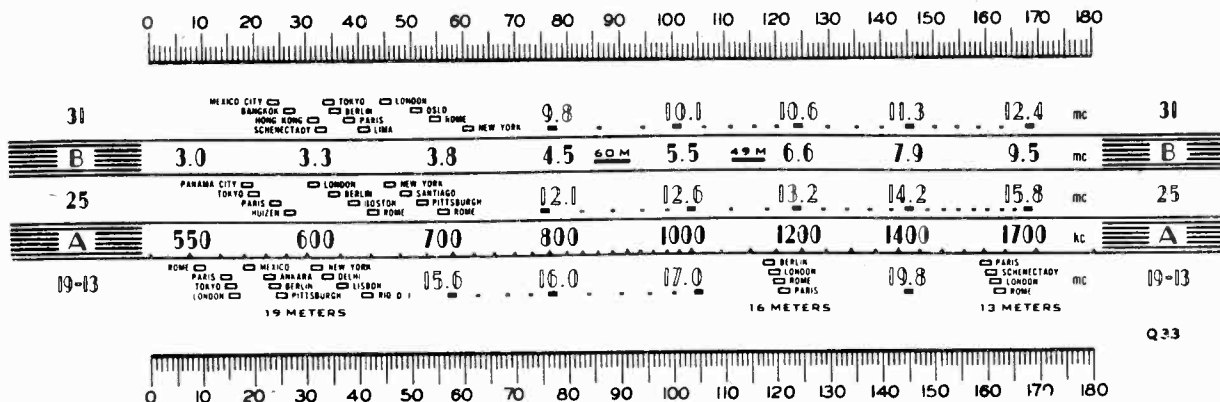


Record Player Connections, Using Stock No. 9824A Switch Controls

**Alignment Procedure**

Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range Switch	Turn Radio Dial to—	Adjust the following for max. peak output
1	6S7 I-F grid in series with .01 mfd.	455 kc	"A" band	Quiet point 600 kc end of dial	L23-L22 2nd I-F transformer
2	6SA7 1st det. grid in series with .01 mfd.				L21-L20 1st I-F transformer
3	Antenna terminal in series with 300 ohms	11.8 mc	25 meter band	11.8 mc (41.5°)	L11 (osc.) C1 (ant.) C23 (det.)
4		15.2 mc		15.2 mc (161.7°)	C26 (osc.)*†
5	Repeat steps 3 and 4 until aligned.				
6	Antenna terminal in series with 300 ohms	16.2 mc	19-13 meter band	15.2 mc (24°)	L12 (osc.)**
7		9.5 mc	31 meter band	9.5 mc (23.3°)	L10 (osc.)** C4 (ant.) C18 (det.)***
8		9.5 mc	"B" band	9.5 mc (168.5°)	C9 (osc.)*
9	Antenna terminal in series with 200 mmfd.	1,500 kc	"A" band	1,500 kc (153°)	C12 (osc.) C3 (ant.) C24 (det.)
10		600 kc		600 kc (30.5°)	L8 (osc.) Rock in
11	Repeat steps 9 and 10.				

\* Use minimum capacity peak if two can be obtained.  
 \*\* Peak at minimum plunger position if two peaks can be obtained.  
 \*\*\* Use maximum capacity peak if two peaks can be obtained.  
 † Check image to determine that C26 has been adjusted to correct peak by tuning receiver to approximately 14.29 mc where a weaker signal should be received.  
 NOTE: Oscillator tracks above signals on all bands.



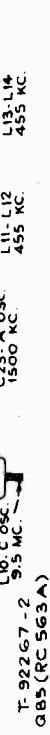
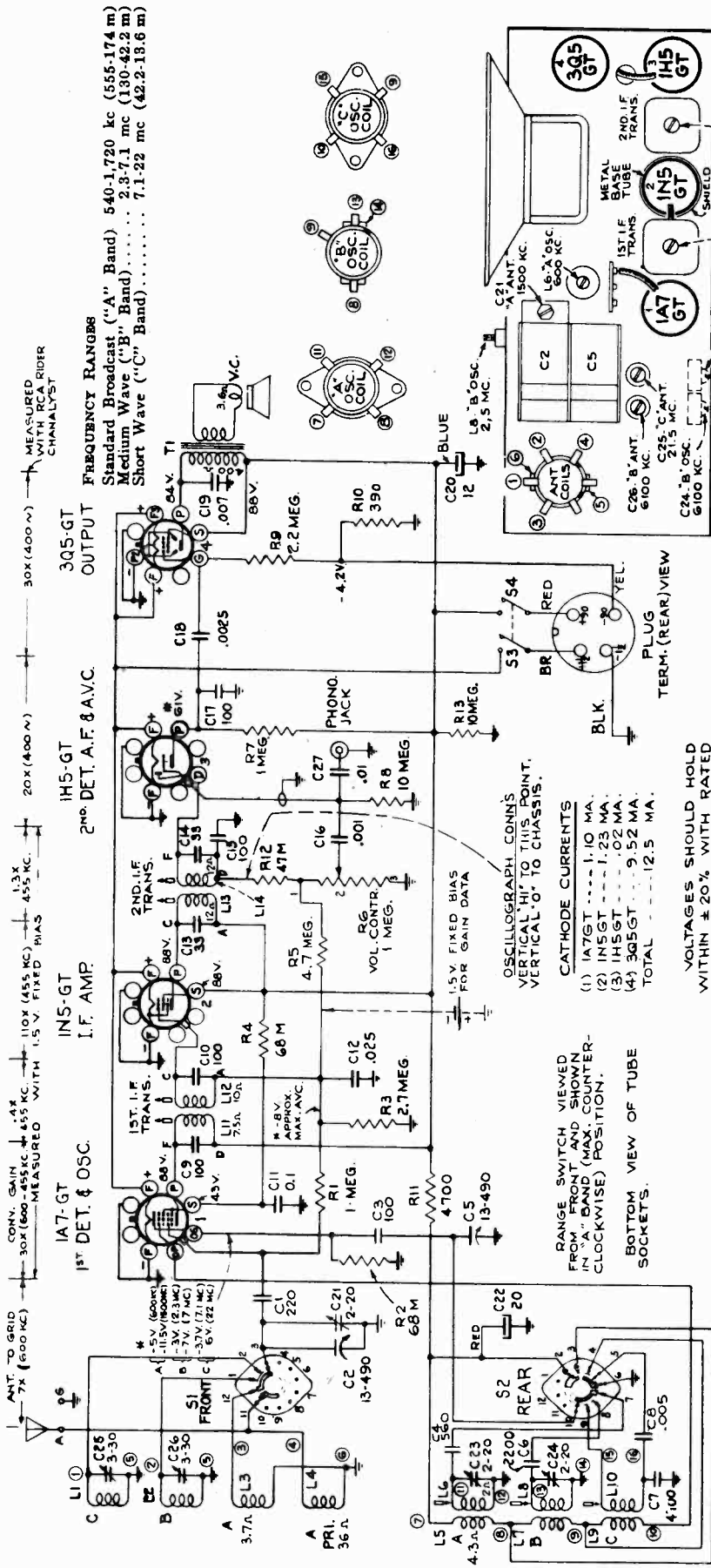
**Calibration Scale**

Reduced Reproduction of Receiver Dial and Corresponding 0-180° Calibration Scales

The corresponding position of the dial indicator for any setting of the calibration scale can be determined by drawing a line from this point on the bottom calibration scale to the same point on the top calibration scale. For example, 30° on the calibration scale corresponds to approximately 600 kc on "A" band, etc. Read instructions under "Alignment Procedure."

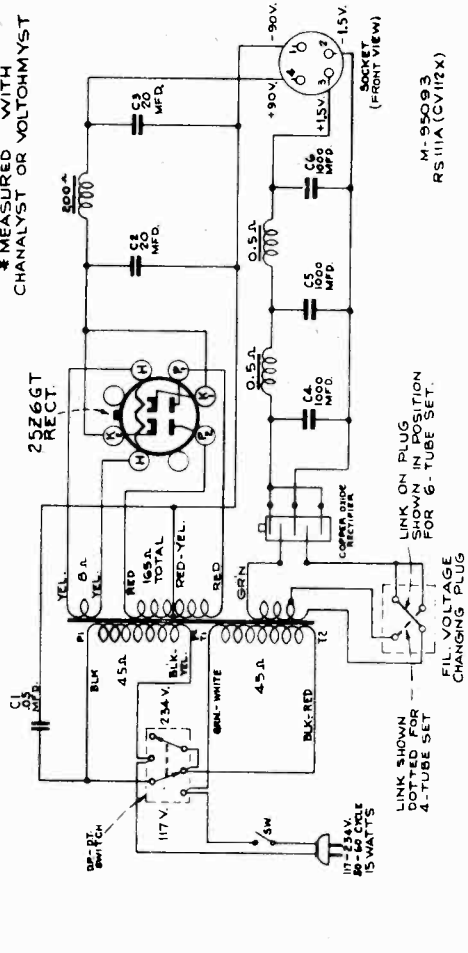
MODEL Q85  
Ch. RC-563A

RCA MFG. CO., INC.



**PHONOGRAPH ATTACHMENT**  
A jack is provided on the rear of chassis for connecting a phonograph attachment into the audio amplifying circuit. The cable from the attachment should be terminated in a Stock No. 31048 plug to fit the jack.

**BATTERY CONNECTIONS**  
A four wire cable with plug is provided for making connection to a plug in 11-90 volt "A", "B", "battery pack such as the Eveready "A", "B", "748 or equivalent.  
When separate batteries are used, an adapter extension cable such as the MI-8128 is necessary and may be purchased from your dealer.



RCA MFG. CO., INC.

MODEL QB5  
Ch. RC-563A

**Calibration Scale.**—The glass tuning dial may be easily removed from the cabinet and temporarily attached to the dial backing plate for quick reference during alignment. The dial backing plate has marks corresponding to alignment frequencies as shown in accompanying sketch. Before alignment, set the dial pointer so that, with the gang in full mesh, the pointer is 1/16-in. to the left of the left-hand mark on the dial backing plate.

**Cathode Ray Alignment** is the preferable method. Connections for the oscillograph are shown in the diagram.

**Output Meter Alignment.**—If this method is used, connect the meter across the voice coil and turn the receiver volume control to maximum.

**Test Oscillator.**—For all alignment operations, connect the low side of the test oscillator to the receiver chassis and keep the output as low as possible to avoid AVC action.

**BATTERIES REQUIRED**

1—1.5 Volt "A" Battery; 2—45 Volt "B" Batteries  
Or : One 1 1/2-90 Volt battery pack.

**BATTERY DRAIN**

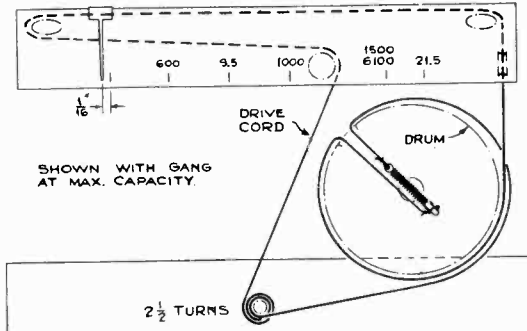
"A" ..... .25 amp.  
"B" ..... 12.50 ma.

**POWER OUTPUT**

Undistorted ..... .20 watt  
Maximum ..... .56 watt

**LOUDSPEAKER (RL-81B-2)**

Type ..... 5-inch permanent-magnet dynamic  
Voice-coil impedance ..... 4 ohms at 400 cycles

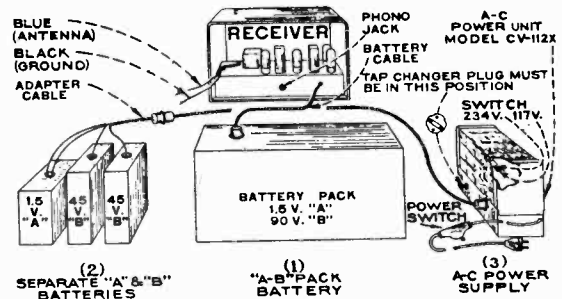


Steps	Connect high side of test osc. to—	Tune test osc. to—	Turn radio dial to—	Adjust following for max. peak output—
1	IF grid cap in series with .01 mfd.	455 kc	"A" Band Quiet Point at High Freq. End	L14 and L13 (2nd IF Trans.)
2	1st det. grid cap in series with .01 mfd.			L12 and L11† (1st IF Trans.)
3	Antenna Lead in series with 200 mmf.	1,500 kc	1,500 kc mark	Peak C23 (osc.) and C21 (ant.)
4		600 kc	600 kc mark	L6 (osc.)
5		Repeat steps 3 and 4.		
6	Antenna Lead in series with 300 ohms	6.1 mc	6.1 mc mark	Peak C24 (osc.)* and C26 (ant.)
7		2.5 mc	600 kc mark	L8 (osc.)**
8		Repeat steps 6 and 7.		
9		9.5 mc	9.5 mc mark	L10 (osc.) Rock Gang
10		21.5 mc	21.5 mc mark	C25 (ant.) Rock Gang

\*Use minimum capacity peak if two peaks can be obtained.

\*\*Rock gang slightly for peak output.

†Do not readjust L14 or L13 when test oscillator is applied to 1A7-GT grid.



**Replacement Parts**

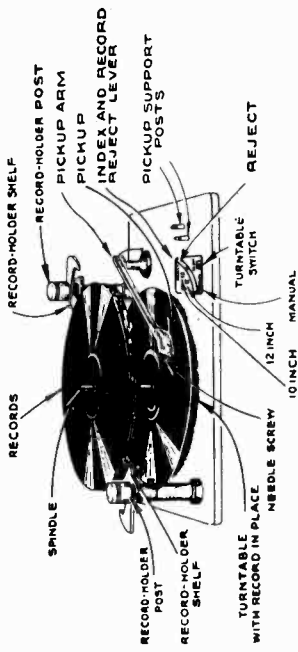
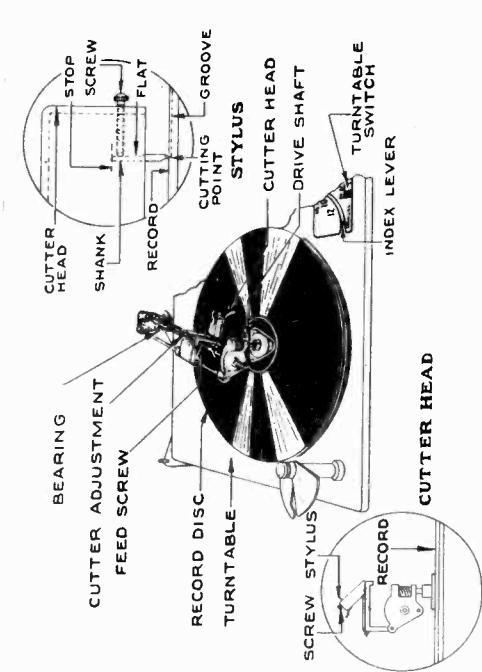
Insist on genuine factory-tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
<b>CHASSIS ASSEMBLIES</b>					
32548	Capacitor—Electrolytic, comprising 1 section of 12 mfd., 150 volts, and 1 section of 20 mfd., 150 volts	.65	30992	Resistor—10 meg., 1/4 watt	.20
32830	Capacitor—Mica trimmer, 2 sections of 2-20 mmfd. each	.40	36897	Shaft—Tuning knob shaft	.20
31292	Capacitor—Mica trimmer comprising 2 sections of 3-30 mmfd.	.40	33742	Socket—Phono input socket	.25
36176	Capacitor—33 mmfd.	.30	31251	Socket—Tube socket	.05
30904	Capacitor—100 mmfd, mica	.25	31418	Spring—Drive cord spring	.01
12720	Capacitor—100 mmfd., moulded	.35	31261	Spring—Retaining spring for "C" band oscillator coil core and stud	1.20
12694	Capacitor—220 mmfd.	.35	38297	Switch—Range switch	1.60
12537	Capacitor—560 mmfd.	.35	38300	Transformer—Audio transformer	1.70
12951	Capacitor—2,200 mmfd.	.55	36536	Transformer—First I.F. transformer	1.60
30304	Capacitor—4,700 mmfd.	.40	36122	Transformer—Second I.F. transformer	.02
37102	Capacitor—.001 mfd.	.25	33726	Washer—"C" washer for tuning shaft	
34459	Capacitor—.0025 mfd.	.20	<b>SPEAKER ASSEMBLIES</b>		
4838	Capacitor—.005 mfd.	.25	(RL81B2)		
5148	Capacitor—.007 mfd.	.20	35570	Cone—Cone complete with voice coil	1.20
4937	Capacitor—.01 mfd.	.25	<b>MISCELLANEOUS ASSEMBLIES</b>		
4870	Capacitor—.025 mfd.	.20	36890	Clamp—Dial clamp—L.H.	.15
4839	Capacitor—.01 mfd.	.30	36891	Clamp—Dial clamp—R.H.	.05
32821	Coil—Antenna coil—"A" band	1.35	36103	Decalcomania—"OFF-Volume" decal	.05
32148	Coil—Oscillator coil—"A" band	.90	35480	Decalcomania—Range switch decal	.75
33784	Coil—Oscillator coil—"B" band	.75	38328	Dial—Glass dial scale	.25
38295	Coil—Oscillator coil—"C" band	.60	36886	Knob—Range switch or volume control knob	.20
38287	Condenser—Variable tuning condenser	2.50	36722	Knob—Tuning knob	.05
38406	Control—Volume control and power switch	1.50	30900	Spring—Retaining spring for knobs	
32634	Cord—Drive cord (approx. 50-in. overall length)	.10	<b>CV-112X AC POWER UNIT</b>		
38296	Core—Adjustable core and stud for "C" band oscillator coil	.20	4886	Capacitor—.05 mfd.—400 volts (C1)	.20
32713	Core—Adjustable core and stud for oscillator coil	.35	30873	Capacitor—Electrolytic, 2 sections 20 mfd., 150 volts	1.35
37068	Indicator—Station selector indicator	.20	36553	C. capacitor—Electrolytic, 1,000 mfd., 3 volts	1.40
38288	Plate—Dial back plate complete with pulleys and bracket—less dial	1.00	36547	Coil—High voltage choke coil—200 ohms	1.75
30568	Plug—1-prong male plug for battery cable	.25	36548	Coil—Low voltage choke coil—marked 1B84	2.00
36230	Pulley—Drive cord pulley	.04	36549	Coil—Low voltage choke coil—marked 1B85	.20
36237	Pulley—Tuning condenser pulley	.25	38353	Plug—2-contact filament voltage changing plug	1.40
30498	Resistor—390 ohms, 1/4 watt	.20	36551	Rectifier—1.5 volt rectifier	.30
30146	Resistor—4,700 ohms, 1/4 watt	.20	36552	Socket—4-contact power output socket	.25
12412	Resistor—47,000 ohms, 1/4 watt	.20	18008	Socket—Tube socket	1.00
13715	Resistor—68,000 ohms, 1/4 watt	.20	36550	Switch—Power cord switch	.35
14138	Resistor—68,000 ohms, 1/4 watt	.20	33491	Switch—Voltage change switch	
13730	Resistor—1 meg., 1/4 watt	.20	38393	Transformer—Power transformer—110-220 volts, 50-60 cycle	5.10
30649	Resistor—2.2 meg., 1/4 watt	.20			
14752	Resistor—2.7 meg., 1/4 watt	.20			
30271	Resistor—4.7 meg., 1/4 watt	.20			

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MODEL QU7  
Ch.RC-551

RCA MFG. CO., INC.

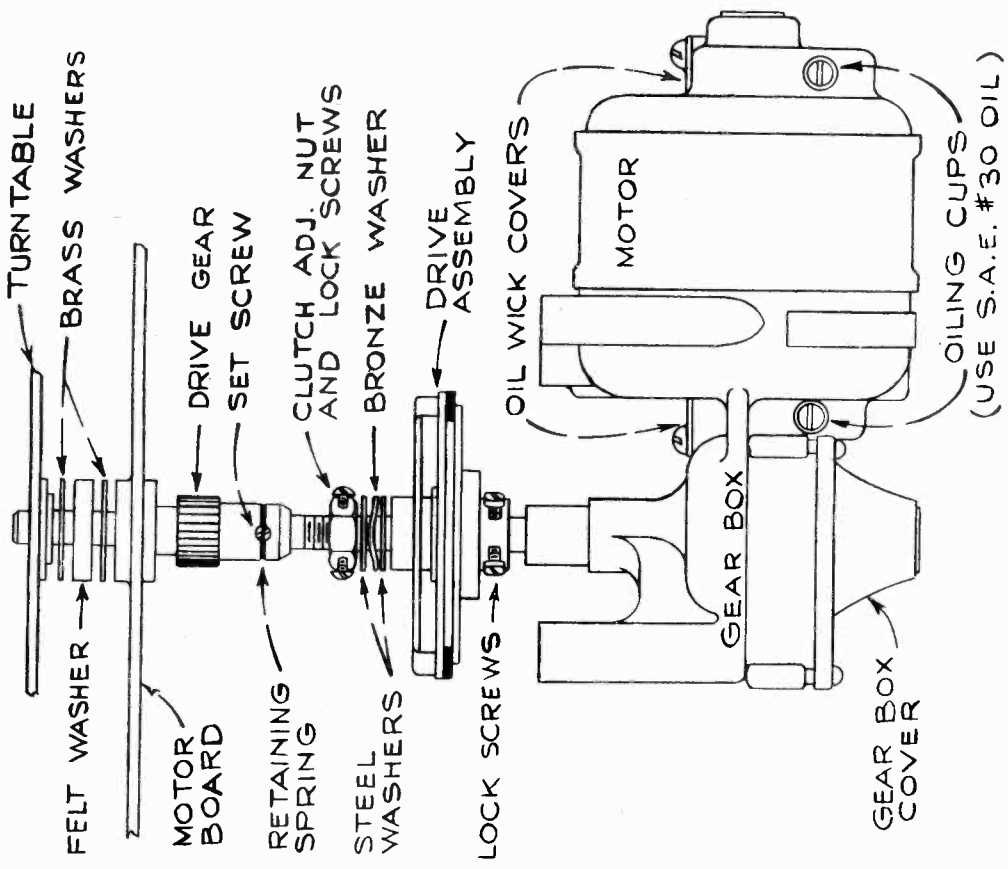


**Automatic Switch Adjustment:**

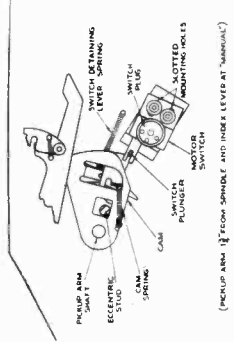
An automatic motor switch is mounted under the motorboard, near the pickup arm shaft. When the index lever is set at its "10-inch" or "12-inch" position, a detaining lever holds the switch plunger in and keeps the motor running. When the index lever is set at its "manual" position, the detaining lever moves aside and the switch plunger is then actuated by a cam on the pickup arm shaft. In "manual" position, when the pickup is on its rest, the switch plunger is out and the motor circuit is open. When the pickup is moved from its rest to the edge of a 12-inch record, the cam pushes the switch plunger in and the motor starts. When the pickup needle reaches a point 1 1/4 inches from the centerline of the turntable spindle, the switch plunger is released by the sharp corner of the cam, thus shutting off the motor. When the pickup is lifted off the record and moved to its rest, the motor starts momentarily.

**ADJUSTMENTS:**

The slotted switch mounting holes permit positioning of the switch so that the plunger will be pushed in by the cam. The eccentric stud on the cam should be turned so that the switch plunger is released by the sharp corner of the cam when the pickup needle is 1 1/4 inches from the centerline of the turntable spindle.



Turntable drive assembly showing friction clutch and flexible coupling.



RCA MFG. CO., INC.

MODEL QU7  
Ch.RC-551

Schematic Diagram of Power Amplifier and Power Supply.

PUBLIC ADDRESS USE

Microphone Type..... RCA Aerodynamic MI-6226D  
Microphone Input Impedance..... 250 ohms  
Output to External Speakers..... 500 ohm line  
No. of External Speakers..... Up to 15  
Power Output..... 45 watts max. SU4G RECT

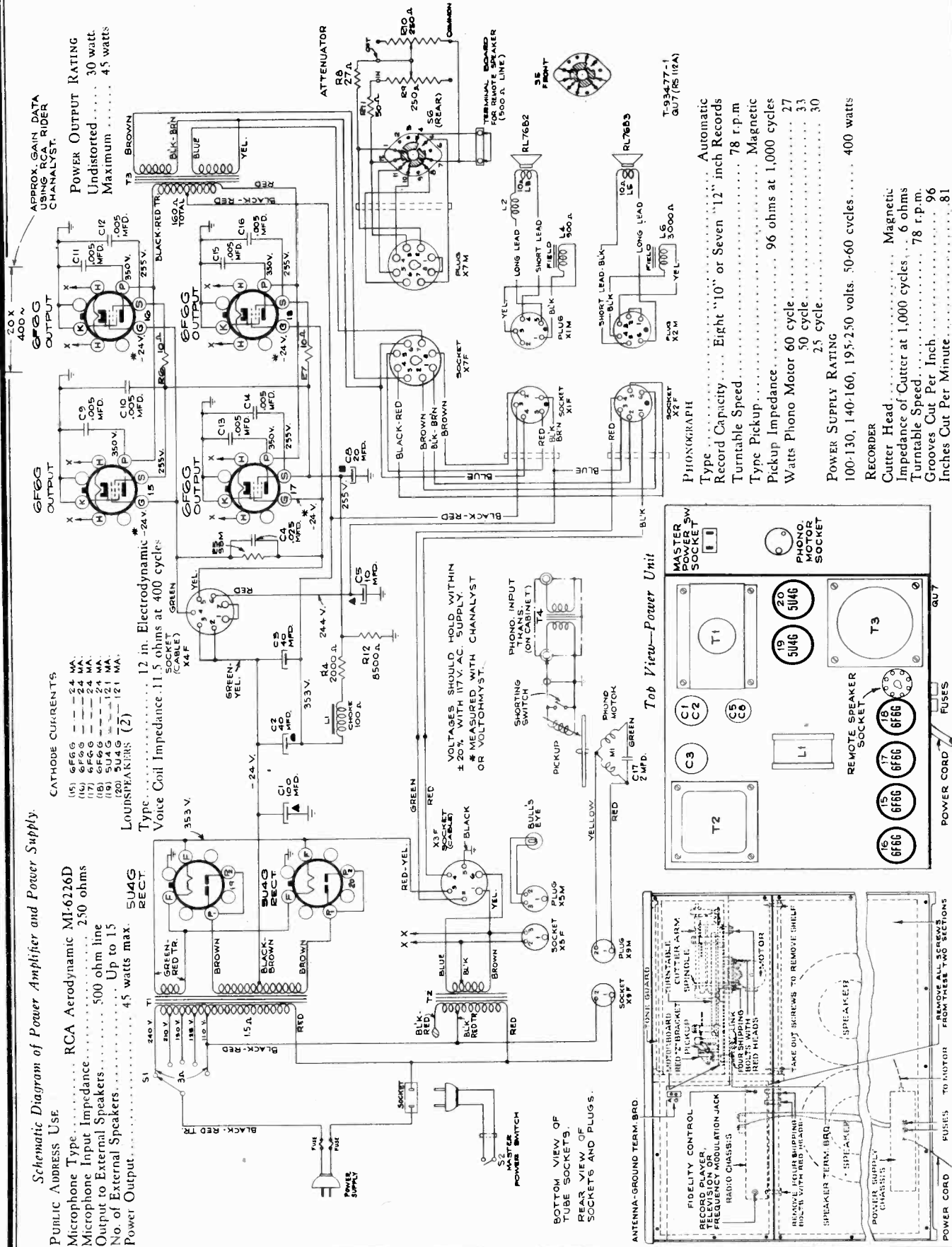
APPROX. GAIN DATA USING RCA RIDER CHANNELYST.

Power Output Rating  
Undistorted..... 30 watt  
Maximum..... 45 watts

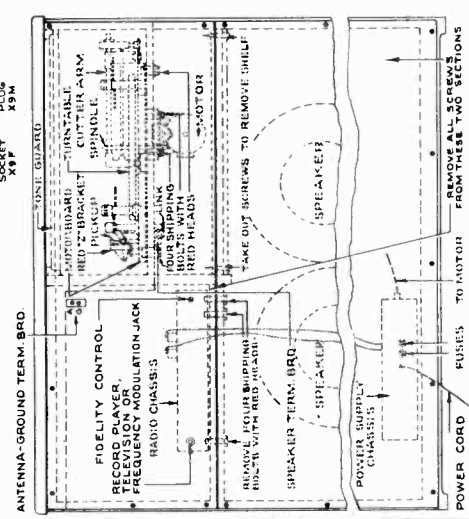
CATHODE CURRENTS

- (15) 6F6G --- 24 MA.
- (17) 6F6G --- 24 MA.
- (18) 6F6G --- 24 MA.
- (19) 5U4G --- 21 MA.
- (20) 5U4G --- 121 MA.

LOUISIANA TUBES (Z)  
Type..... 12 in. Electrodynamic  
Voice Coil Impedance..... 11.5 ohms at 400 cycles



BOTTOM VIEW OF TUBE SOCKETS.  
REAR VIEW OF SOCKETS AND PLUGS.



Top View - Power Unit

- PHONOGRAPH
- Type..... Automatic
  - Record Capacity..... Eight "10" or Seven "12" inch Records
  - Turntable Speed..... 78 r.p.m.
  - Type Pickup..... Magnetic
  - Pickup Impedance..... 96 ohms at 1,000 cycles
  - Watts Phono Motor 60 cycle..... 27
  - 50 cycle..... 33
  - 25 cycle..... 30
- POWER SUPPLY RATING
- 100-130, 140-160, 195-250 volts..... 400 watts
- RECORDER
- Cutter Head..... Magnetic
  - Impedance of Cutter at 1,000 cycles..... 6 ohms
  - Turntable Speed..... 78 r.p.m.
  - Grooves Cut Per Inch..... 96
  - Inches Cut Per Minute..... 81



MODEL QU7  
Ch. RC-551

RCA MFG. CO., INC.

## Operation

The "Power" Switch above the Master Control Indicator controls the power for all functions of this instrument. The Master Control Indicator chooses the type of function desired: the full counter-clockwise position of this switch brings the "Radio position," "Radio Recording," "Microphone Recording," "Repeating Recording," "Microphone Re-Recording," "Public Address," "Tone Control," "Microphone Re-Recording," "Master Control Indicator," as the "Master Control" switch is turned.

### Radio Operation:

Set "Range Power Switch" to "Radio," set "Master Control" to "Radio," set "Range Selector" to band desired, and tune in station desired. Volume is controlled by Volume control on Radio Panel. Adjust Bass and Treble controls as desired. For high fidelity reception of local stations the Treble Tone control should be turned completely clockwise until the fidelity switch functions.

### Phonograph Operation:

**Manual Operation:**—Turn "Power Switch" "ON." Set "Master Control" to "Phonograph." If mechanism is in cycle, wait until cycle is completed. Set Index Lever to "Manual" position. Set "Recording Turntable Switch" to "Off." Place pickup on pickup support posts. Make sure there is a good needle in pickup. Lift the knobs on top of the record shelves and rotate the shelves back, away from the turntable. Push back the vertical lever at left of the rear record post. Place record on turntable. Place pickup on record. Adjust switch on pickup arm, will start turntable motor. Adjust "Volume" and "Tone" Controls for desired reproduction. The turntable should stop when pickup reaches inner groove of record.

**Automatic Operation:**—Turn "Power Switch" "ON." Turn "Master Control" to "Phonograph." If mechanism is in cycle, wait until cycle has been completed. Set pickup on pickup support posts. See that Recording Turntable Switch is "Off." Check to see if a good needle is in pickup head. Push index lever to "manual," lift the knobs on top of the record shell posts and rotate the shelves back, away from the turntable. Push back the vertical lever at left of the rear record post.

Select a series of eight 10-inch records, or seven 12-inch records, and place the first one on the turntable. Swing the record shelves into position and place the remainder of the series of records on the shelves as shown in the illustration. Push the index lever to "10" for a series of 10-inch records, or to "12" for a series of 12-inch records. Lift the pickup and lower it gently on the record, so that the needle point enters the outside groove. The motor switch under pickup arm will start turntable. Adjust the radio-phonograph volume control for the desired volume, and adjust the tone controls for desired reproduction.

Close the lid of the cabinet to eliminate mechanical sound. The whole series of records will play, without further attention, and the last record will repeat until either pickup arm is lifted and record and placed on record support posts, or Power Switch is turned off.

To reject a record being played, or to start the recording cycle in case the record just played does not have the standard eccentric or spiral stopping groove, simply push the index lever to the "reject" position and let go. The pickup will "rise up and swing outward" and the next record will drop down. Upon releasing the index lever, it will automatically return to the "10" position. If playing a series of 12-inch records, the lever should be returned to the "12" position after rejecting a record. Keep the lever in at "manual" when not actually playing records automatically.

To stop the mechanism while a record is being played, push the index lever to "manual," place the pickup on its rest, and turn off the turntable switch.

To stop the mechanism at the completion of a record, first allow the pickup to complete its cycle (the cycle is completed when the pickup comes down on the record). Then push the index lever to "manual," place the pickup on its rest.

To remove a record from the turntable, lift the knobs on top of the record-holder posts, swing the shelves back clear of the records, and push back the vertical lever at left of the rear record post.

### Cycle of Operation

In automatic operation (index lever set to "10" or "12"), when the pickup needle enters the eccentric or spiral groove at the inside of the record, the pickup arm swings in the "down" position, and this motion acts through a friction clutch to mechanism which starts the cycle of the automatic record changer.

1. Lifts up the pickup arm and swings it out clear of the record.
2. Turns the two record-holder posts, each of which has a "knife" and a "shelf". The knives enter between the bottom record and the rest of the stack. Continuing to turn, the knives move from under the bottom record and it drops on top of the "knives".
3. The pickup arm is then moved to correct position and lowered on the record, while—
4. The record-holder posts are turning back to their original positions, so that the records rest on the shelves, and the knives are in correct position to separate the next record from the stack.

The cycle is completed when the "pickup comes down on the record. The pickup arm should not be moved while "in cycle."

**Record-Separating Knives.** 12-inch records are thicker than 10-inch records. To accommodate this difference, the "knife" or record-separating lever on each record post is raised slightly when a 12-inch record presses down against the ball-point screw that projects through a hole in the record-holder shelf on each post. (10-inch records do not rest on these screws, and the knife clearance is then correct for a 10-inch record.)

**"Record Discriminating Lever."** In playing a mixed group of 10-inch and 12-inch records, the index lever is set at "10." When the pickup arm moves out during the cycle of operation, the record discriminating lever (at left of the rear record-holder post) is moved to its forward position, toward the spindle and the correct landing position of the pickup needle for 10-inch records. If the record drops down, it pushes the record discriminating lever back, and sets the correct landing position for the 12-inch record.

### Caution:

1. This instrument is not recommended for playing 10-inch and 12-inch records in mixed sequence.
2. Never use force to start or stop the motor or any part of the record-changing mechanism or pickup arm.
3. Warped or damaged records may cause the mechanism to jam.
4. Warped records may slide on one another when playing, resulting in unsatisfactory reproduction.
5. Do not leave records on the record-holder posts as they may warp, particularly in warm climates. Warped records may be flattened by placing them on a flat surface with a flat heavy article placed on top of them for a few days.
6. Do not leave pickup needle resting on a record or on the turntable. Always place it on the pickup rest.
7. Do not insert a used needle in the pickup, and avoid turning a needle after it has been used.
8. If for any reason the phonograph stalls, turn off the turntable switch and remove the records from the record holder shelves. Start the turntable and allow the pickup arm to complete its cycle.

### Recorder Operation:

**Recorder Set Up:**—Turn "Master Power Switch" "ON." Make sure that Phonograph Mechanism is not in cycle. Place the recording blank on the turntable so that the three holes in the blank are on with the holes in the recording turntable. Place the Recording arm in position, with the hinged mounting spindle in the bearing on the phonograph shelf, and the drive roller in the recording blank and turntable.

The drive head bracket should be locked in position under the catch at the drive end of the recording blank, and place a cutting stylus fully in the cutter head so that the flat side of the stylus is toward the needle screw. While recording, use a fine hair brush to keep the area ahead of the stylus free from chips and threads.

Before making each recording tighten the screw on the front of the cutting head that holds the cutting stylus. Do not use pliers or wrench.

**Radio Recording:**—Tune in desired radio program. Turn "Master Control" to "Radio Recording." Set "Bass Tone Control" fully clockwise and "Treble Tone Control" fully clockwise. Adjust receiver "Volume Control" so that the "Recorder Magic Eye" in the "Master Control Indicator Panel" closes to about 3/4 inch opening at minimum width for normal volume. When the desired program comes on, pull down "Recording Arm" on its catch, move it to opposite end of black about 1/2 inch from "Recorder Magic Eye," both monitor the recording, so that it is possible to hold the necessary recording level during the program. Lift the cutter from the record before it reaches the inner limit of the record, and lock cutter bracket under the cutter catch.

### Microphone Recording:

Set up Recorder. Turn "Master Control" to "Microphone Recording." Set "Microphone Volume Control" to the correct level by testing on some of the sound to be recorded. Set control so that the "Recorder Magic Eye" closes to about a 1/4 inch opening at minimum width for normal volume. The "Microphone Volume Limiter" tube will keep excessively loud sounds to a safe limit. Start turntable. Remove cutter bracket from end and operate with recording. Keep "Bass Tone Control" and "Treble Tone Control" maximum clockwise.

### Re-Recording:

Set up Recorder. Turn "Master Control" to "Radio Recording." Connect an "RCA Victrola Phonograph Attachment," by plugging an adapter plug into the "Television, FM" jack at the rear of the radio chassis. Turn the attachment volume control full "ON." Place the record it is desired to duplicate on the attachment turntable, and play a portion of it, meanwhile adjusting the "Radio Volume Control" to give the correct recording level in the "Recording Magic Eye." After the correct level has been set, proceed with the recording.

### Mixed Radio and Microphone Recording:

Set up for Recording. Set "Master Control" so that both "Radio Recording" and "Microphone Recording" are indicated. Tune in desired radio program. Set "Microphone Volume Control" same as in "Microphone Recording." Proceed with recording.

### Mixed Microphone and Record Recording or Re-Recording:

Set up for Recording, so that both "Radio Recording" and "Microphone Recording" are indicated. Proceed as stated in "Microphone Recording" and "Re-recording."

### Playback:

To play back after recording, remove the drive and recorder arm from the turntable spindle, and place on the pin at the right front of the cabinet. Remove the "Auxiliary Recording Turntable." Proceed as under "Manual" Phonograph operation.

**IMPORTANT:** Before playing the Automatic Phonograph after recording, make sure the Recording Turntable is in position. If Automatic Mechanism jams during cycle for any reason, throw "Master Power Switch" "Off," as the turntable "Motor Switch" will not cut off current to motor, while mechanism is in cycle.

**Acoustic Adaptor:**—An "Acoustic Adaptor" switch located at the right rear corner of the radio chassis can be used to adapt the instrument to different types of locations for phono reproduction, by varying the balance between high and low frequency response as desired.

### Public Address Use:

**Microphone Pickup:**—Turn Power Switch "ON." Turn "Master Control" to Public Address position. If external speakers are connected, turn External Speaker Switch, located at the right hand rear corner of phonograph compartment, clockwise, to put these in operation.

Set "Microphone Volume Control" to give desired Volume "Speaker." If the speakers in the cabinet are too loud and "treble" occurs, the volume on these speakers can be reduced by turning back the "External Speaker Volume Control" located in back of the "External Speaker" switch.

**Radio or Record Program:**—If it is desired to send Radio program, Second programs over the External Speaker, push the "Radio" or "Phonograph" operation, and the "External Speaker" switch is then turned for "External Speaker" operation.

## Record Changer Service Data

Before servicing the automatic record changer, inspect the assembly to see that all levers, parts, gears, springs, etc., are in good order and are correctly assembled.

The changer can be rotated through its change cycle by pushing the index lever to "Reject" and revolving the turntable by hand. Six turntable revolutions are required for one change cycle.

A bind or jam in the mechanism can usually be relieved by rotating the turntable in the reverse direction. The 10- and 12-inch records must be absolutely flat for smooth operation.

A pickup shorting switch, located under the motorboard, operates when the pickup is moved outward to the pickup rest.

The turntable can be removed by tapping smartly on the top of the spindle while pulling upward on opposite sides of the turntable.

Lubrication.—Petrolatum or petroleum jelly should be applied to cam, main gear, spindle pinion gear, lead screw and gears of record posts.

Light machine oil should be used in the tone arm vertical bearing, motor bearing, record post bearings, and all other bearings of various levers and pulleys on underside of motorboard and underneath turntable.

RCA MFG. CO., INC.

MODEL QU7  
Ch.RC-551

MODEL QU7 HAS THE SAME RADIO CHASSIS AS MODEL QU8, THE DATA FOR WHICH WILL BE FOUND IN RIDER'S VOL. XII, PAGES 12-71 to 12-74 and 12-77 and 12-78. THE POWER AMPLIFIER AND POWER SUPPLY ARE DIFFERENT IN MODEL QU7 AND ALSO THE RECORD CHANGER AND THE P-A PORTION OF THE SET. SEE PAGE 430 IN RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS" FOR RECORD CHANGER ADJUSTMENTS AND PAGE 12-79 IN RIDER'S VOL. XII FOR PICKUP DATA. SEE PAGE 12-82 FOR RECORDER DATA.

Public Address

External speakers may be connected to the terminal board located at the rear of the cabinet under the phono compartment. The total impedance of all the speakers connected to the instrument in parallel or series should be approximately 500 ohms.

Speakers recommended for use with this instrument are RCA MI-6320, MI-6319, MI-6249, MI-6233A or MI-6310 Speakers. The MI-6320 Speaker is rated about 10 watts. The MI-6233A Speaker is rated about 4 watts. These are speakers for handling low power in small rooms. For larger auditoriums and larger installations consult your local RCA Commercial Sound Distributor.

For outdoor, high volume applications the RCA MI-6260A (20 watts) or MI-6256 (100 watts) Speakers are recommended. As all these speakers are 15 ohm impedance, a matching transformer will be needed to match them to the 500 ohms output of the instrument (MI-4603 Transformer).

The following tables show the impedances of the speakers listed above:

AVAILABLE IMPEDANCES

MI-12315 Coupling Transformer

(Used in MI-6233A, MI-6249 Permanent-magnet Speakers)

Impedance	Leads
2	Blue—Green with Red tr.
6	Yellow—Green with Red tr.
15	Yellow—Blue
35	Black—Green with Red tr.
60	Black—Blue
225	Black—Red
340	Yellow—Red
430	Red—Green with Red tr.
500	Red—Blue

Note: As shipped from factory, MI-6233 Speakers have red and blue leads connected to terminal board.

AVAILABLE IMPEDANCES

RCA MI-6320, MI-6319 and MI-6310 Permanent-magnet

Dynamic Speakers

Impedance	Leads
2	Blue—Green with Red tr.
6	Blue—Yellow
400	Black—Yellow
500	Black—Blue
1080	Yellow—Black with Red tr.
1250	Blue—Black with Red tr.
2400	Red—Black
4500	Red—Yellow
5000	Red—Blue

Example: To match 2 MI-6233A Speakers to the instrument, connect each of the speakers for 342 ohms impedance as shown in the table above, and then connect the speakers in series.

To match 3 MI-6233 Speakers, connect each speaker for 225 ohms, then connect the three speakers in series.

To match 2 MI-6260A Speakers choose the 225 ohm impedance, and connect the primaries of the transformers in series.

To match 3 MI-6260A Speakers, choose the 1,250 ohm impedance and connect the speakers in parallel.

LOCATING LOUSPEAKERS

When installing loudspeakers, either temporarily or permanently, the installation will be simplified if one considers the loudspeaker to be similar to a search light. The sound waves from the loudspeaker are distributed in much the same manner as light rays from a search light. If a sufficient amount of the sound waves, either direct from the loudspeakers or reflected from hard surfaces, reach the microphone the system will howl. This is technically termed acoustic feedback, because the amplified sound from the loudspeakers is picked up by the microphone and fed back through the amplifier, where it adds to the original sound until a continuous whistle or howl is produced. Directional projectors, such as the 20-watt loudspeaker (MI-6260A) will, to a great extent, prevent howling by directing the sound waves to a restricted area and the amplifier can then be operated at much greater volume. When two speakers are used in an auditorium, hall, etc., the speakers and microphone should be so located that the speakers will be slightly in front of the microphone. Locate one speaker on each side of the microphone and as far from it as possible without destroying the illusion that the sound being heard is actually coming from the individual speaking. The speakers should be pointed in the direction of and at the proper angle to the audience so that as little of the sound waves as possible will be reflected from the side walls and hard surfaces.

It is not recommended that loudspeakers be located in the rear of the auditorium to provide coverage for this area, but rather that directional sound projectors be used, from the front and raised to a sufficient height to be directed into the audience at the rear of the seating area. The horns should be located so that the center of the sound beam will strike the floor at a point slightly more than two-thirds of the length of the room. There are occasions, however, where this is not practical, because of the high reverberation or poor acoustical conditions of the building. In this condition better results can be obtained by using a number of speakers operating at comparatively low volume. In an installation of this type a sufficient number of loudspeakers should be used and so located that the sound will be evenly distributed over the entire area in such a manner that an individual will hear the sound only from the speaker nearest him.

The RCA MI-6292, MI-6294, MI-6233A and MI-6310 loudspeaker housings are tilted downward twenty degrees for correct sound distribution.

MI-6292 and MI-6294 are tilted loudspeaker cabinets for MI-6319, MI-6249 and MI-6320 Speakers respectively.

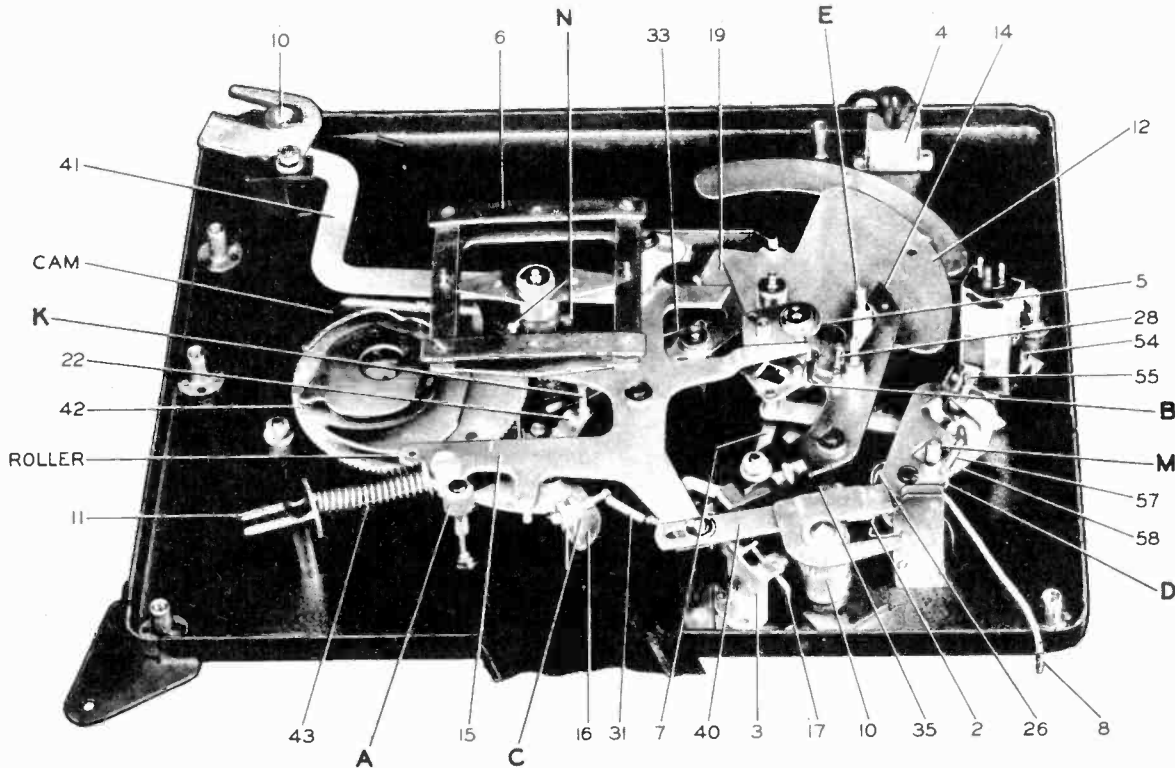
The height of the loudspeaker should be such that the center axis points toward seats about two-thirds of the room length away from the speaker.

In a large room, it may be necessary to use two or more loudspeakers connected in parallel and correctly phased, and located so as not to buck each other.

In an auditorium, RCA auditorium-type loudspeakers of correct type should be used. The auditorium speaker should be centered on the front wall, with its center axis pointing toward seats about two-thirds of the room length away from the speaker. If the speaker cannot be centered laterally on the front wall, it is advisable to use two speakers, one on each side of the proscenium arch. The height of the speaker or speakers should be sufficient to ensure good coverage of all seats, including the balcony.

MODEL QU7  
Ch.RC-551

RCA MFG. CO., INC.



**Names of Mechanism Parts**

- 2 Guide — Pickup-lift-cable guide.
- 3 Bracket — Record-discriminating-lever bracket.
- 4 Switch — Turntable motor switch.
- 5 Clutch — Trip-lever friction clutch.
- 6 Coupling — Flexible coupling.
- 7 Finger — Trip-lever friction finger.
- 8 Cable — Pickup shielded cable.
- 9 Spring — Record-discriminating-lever spring (flat)
- 10 Gear — Record-separator-shaft gear.
- 11 Guide — Main-lever-spring guide.
- 12 Lever — Index lever.
- 14 Lever — Locating lever and pawl.
- 15 Lever — Main lever.
- 16 Lever — Pickup lift-cable lever.
- 17 Lever — Record-discriminating lever and pawl.
- 18 Lever — Record-separator elevating lever.
- 19 Lever — Trip-detaining lever.
- 22 Pawl — Trip pawl.
- 23 Pin — Separator-shaft pin (engages gear).
- 25 Separator — Record-separator knife.
- 26 Spring — Pickup-arm starting spring.
- 27 Shelf — Record-support shelf.
- 28 Spring — Record-discriminating-lever pawl spring, or locating-lever pawl spring.
- 31 Spring — Pickup lift-cable spring.
- 33 Spring — Trip-detaining lever spring.
- 34 Shaft — Record-separator shaft.
- 35 Spring — Locating-lever spring.
- 40 Gear — Short arm and rack gear.
- 41 Gear — Long arm and rack gear.
- 42 Cam — Cam and drive gear assembly.
- 43 Spring — Main-lever spring.
- 54 Switch — Automatic switch.
- 55 Pin — Switch plunger pin.
- 57 Spring — Trip lever cam spring.
- 58 Cam — Trip-lever cam and link.

“C” Pickup Lift-Cable Adjustment.—Regulates height that pickup arm is lifted during record-changing cycle.

“D” Needle Landing Position for 10-inch Records.—The relation between pickup shaft and trip lever “58,” which are fastened by set screws “D,” determines needle landing position for 10-inch records.

“E” Needle Landing Position for 12-inch Records.—Eccentric stud “E” adjusts position of lever “14” which determines landing position for 12-inch records.

“F” Record separator knife adjustment for 10-inch records, adjusts spacing of knife with relation to record shelf so knife will accurately slice in between the bottom 10-inch record and the rest of the stack.

“G” Record separator knife adjustment for 12-inch records, adjusts movement of elevating lever which raises knife to compensate for greater thickness of 12-inch records.

“H” Record support shelf set screws, to adjust record support shelf on each record post, so the shelves move out from under the bottom record at the same instant, permitting record to drop properly.

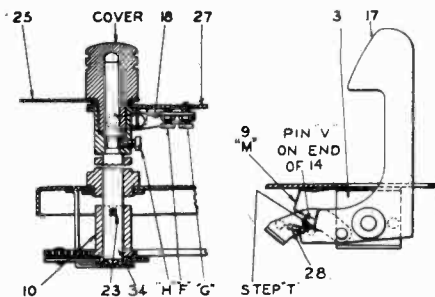
“K” Trip-pawl stop pin, regulates point at which the roller on main lever enters the cam.

“M” Eccentric stud, regulates automatic switch release.

“N” Spindle clutch adjustment.

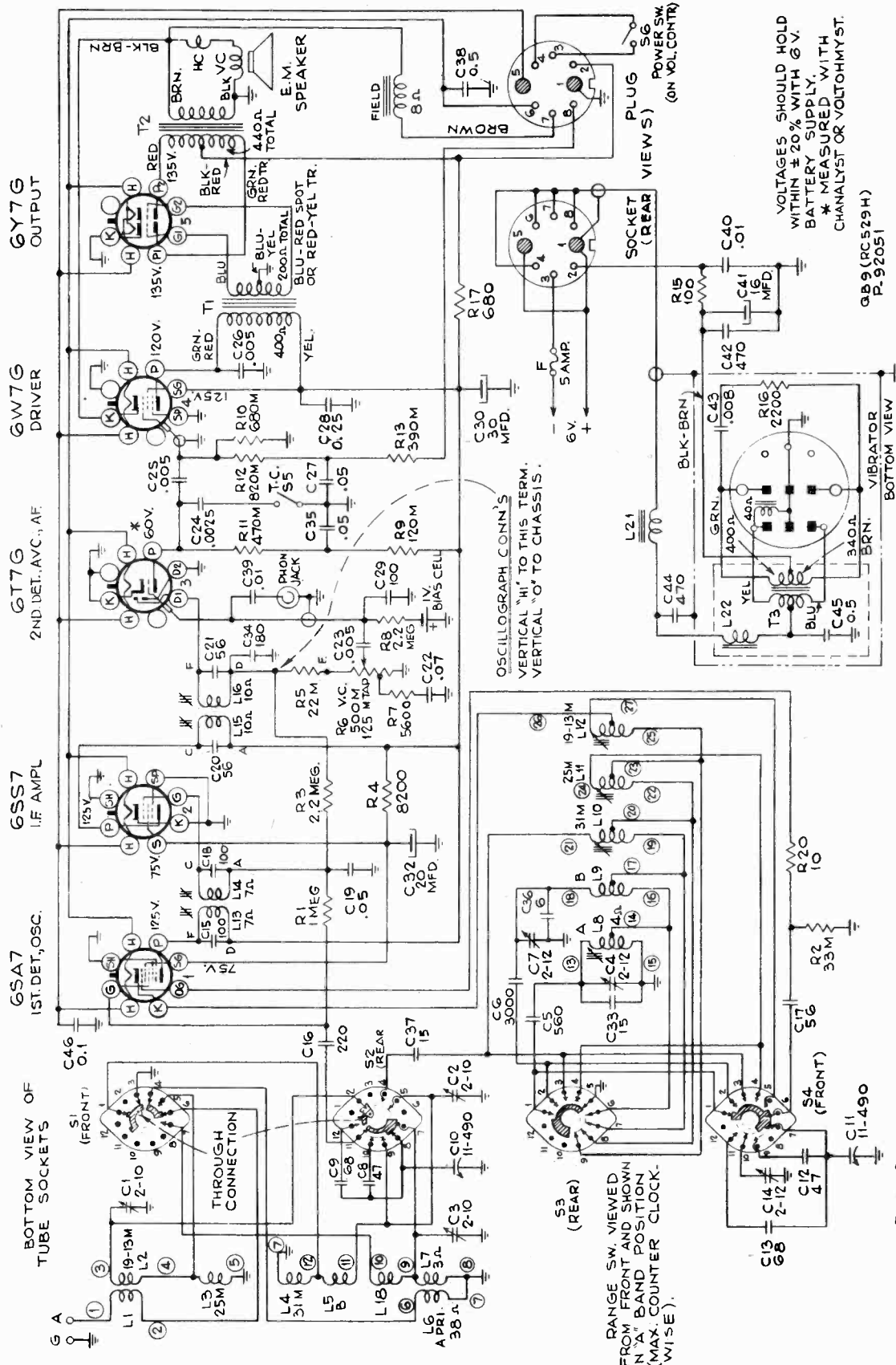
**Names of Mechanism Adjustments**

- “A” Rubber Bumper.—Maintains 1/16-inch clearance between roller (on end of main lever) and cam plate.
- “B” Friction Clutch Adjustment.—Regulates tripping of record-changing cycle when pickup swings in eccentric groove.



RCA MFG. CO., INC.

MODEL QB9  
Ch.RC-529H



VOLTAGES SHOULD HOLD WITHIN ± 20% WITH 6 V. BATTERY SUPPLY. \* MEASURED WITH CHANNELYST OR VOLTOHMYST.

GB9 (RC529H)  
P.92051

FREQUENCY RANGES	INTERMEDIATE FREQUENCY
Standard Broadcast ("A" Band)	540-1,720 kc (555-174 m)
Medium Wave ("B" Band)	2.9-9.5 mc (103-31.5 m)
Short Wave	9.5-11.8 mc (31.5-25.4 m)
Short Wave	11.7-15.2 mc (25.6-19.7 m)
Short Wave	15.1-22.5 mc (19.9-13.3 m)
	455 kc

POWER OUTPUT

Undistorted	1.4 watts
Maximum	2.1 watts

POWER SUPPLY RATINGS

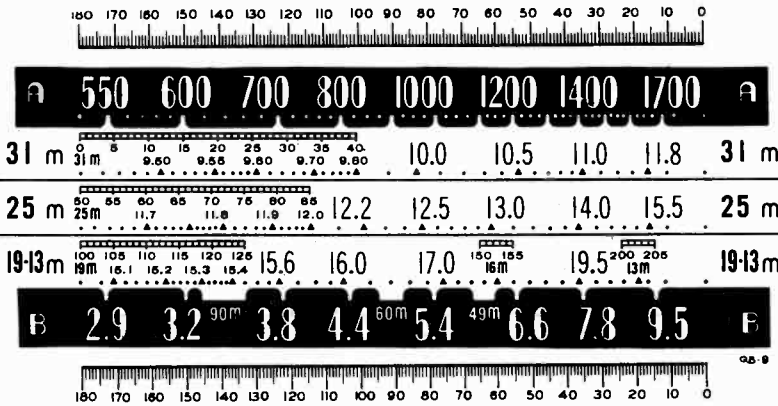
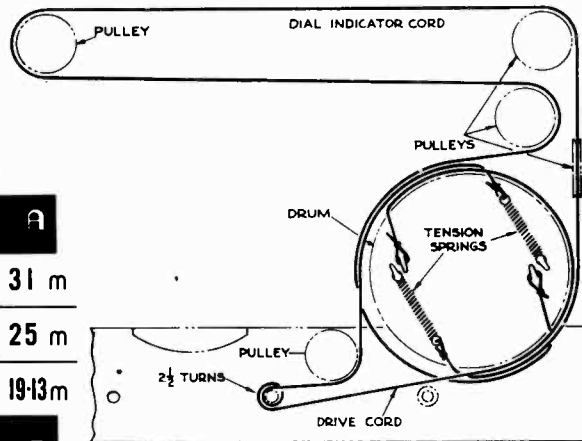
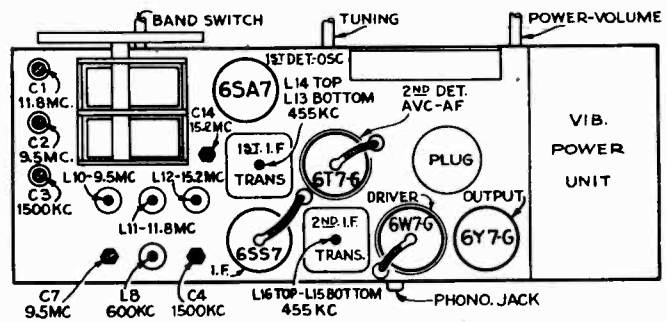
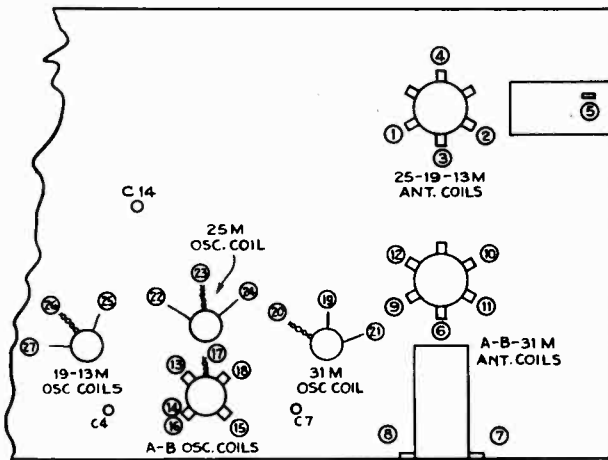
With vibrator power supply unit (RS-115B):	
6.3 volts, total current drain	2.7 amperes

LOUDSPEAKER (RL-79C3)

Type	6-inch, electrodynamic
Voice-coil Impedance at 400 cycles	3.4 ohms

MODEL QB9  
Ch.RC-539H

RCA MFG. CO., INC.



As the first step in r-f alignment, check the position of the drum. The "180°" mark on the drum scale must be vertical and directly over the center of the gang-condenser shaft when the plates are fully meshed. The drum is held to the shaft by means of two set screws, which must be tightened securely when the drum is in the correct position.

To determine the corresponding frequency for any setting of the calibration scales, refer to the accompanying drawing which shows the dial with 0-180° calibration scales drawn at top and bottom.

**Pointer for Calibration Scale.**—Improvise a pointer for the calibration scale by fastening a piece of wire to the gang-condenser frame, and bend the wire so that it points to the "180°" mark on the calibration scale when the plates are fully meshed.

**Dial-Indicator Adjustment.**—After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with indicator at the 540 kc mark, and gang condenser fully meshed. The indicator has a spring clip for attachment to the cable.

**Spread-Band Alignment.**—The most satisfactory method of aligning or checking the spread-band ranges is on actual reception of short-wave stations of known frequency, by adjusting the magnetite-core oscillator coil for each band so that these stations come in at the correct points on the dial.

In exceptional cases, when the set is being serviced in a location where the noise level is high enough to prevent reception of short-wave stations, a test-oscillator may be used for alignment, but an extremely high degree of accuracy is required in the frequency settings of the test-oscillator, as a slight error will produce considerable inaccuracy on the spread-band dials. The frequency settings of the test-oscillator may be checked by one or both of the following methods:

1. Determine the exact dial settings of the test-oscillator (for frequencies at or close to the specified alignment frequencies) by zero-beating the test-oscillator against short-wave stations of known frequency.
2. Use harmonics of the standard-broadcast range of the test-oscillator, first checking the frequency settings on this range by means of a crystal calibrator (RCA Stock No. 9572), or by zero-beating against standard broadcast stations.

When a test oscillator is employed for spread-band alignment, a final check should be made on actual reception of short-wave stations of known frequency, and the magnetite-core oscillator coil for each band should be re-adjusted so that the stations come in at the correct points on the dial.

Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range switch	Turn radio dial to—	Adjust the following for max. peak output
On oscillator-circuit cores and trimmers, if two peaks can be obtained, use the one of minimum inductance or minimum capacity.					
1	1st I-F grid cap. in series with .01 mfd.	455 kc	A	Quiet point near 180°	L15 and L16 2nd I-F transformer
2	1st Det. grid. in series with .01 mfd.				L13 and L14 1st I-F transformer
3		11.8 mc	25M	138.5°	L11 (osc.) C1 (ant.)
4		15.2 mc		17°	C14 (osc.)*
5		Repeat steps 3 and 4.			
6	Ant. lead in series with 300 ohms	15.2 mc	19-13M	156°	L12 (osc.)
7		9.5 mc	31M	156°	L10 (osc.) C2 (ant.)
8		9.5 mc	B	11.5°	C7 (osc.)
9	Ant. lead in series with 200 mmf.	1,500 kc	A	26°	C4 (osc.) C3 (ant.)
10		600 kc		150°	L8 (osc.) (Rock gang)
11	Repeat steps 9 and 10.				

\* Use minimum capacity peak if two can be obtained. Check image to determine that C14 has been adjusted to the correct peak by tuning receiver to approximately 14.29 mc (29°) where a weaker signal should be received.

NOTE: Oscillator tracks above signal on all bands.





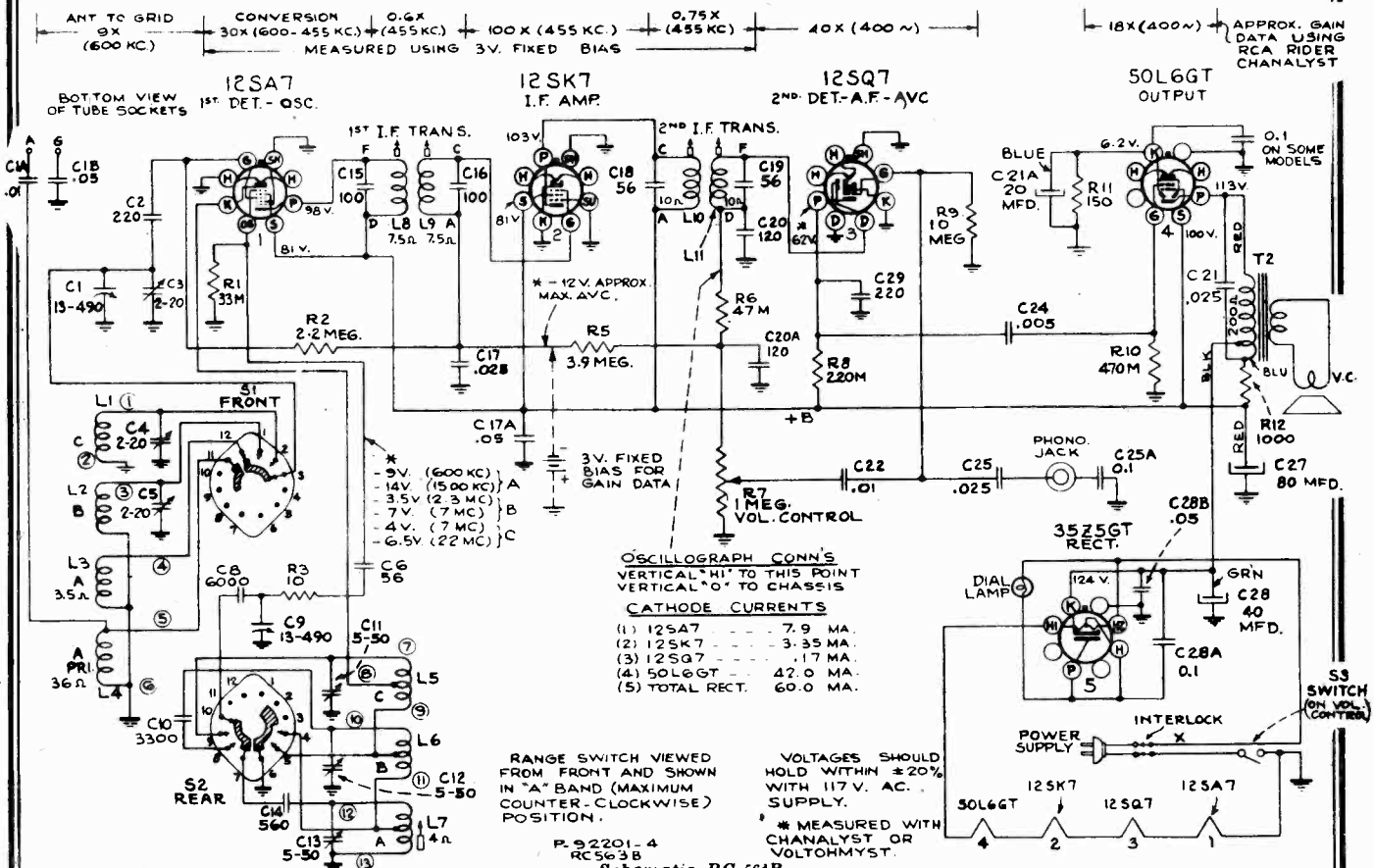




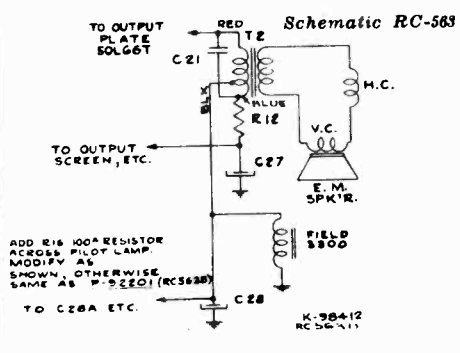
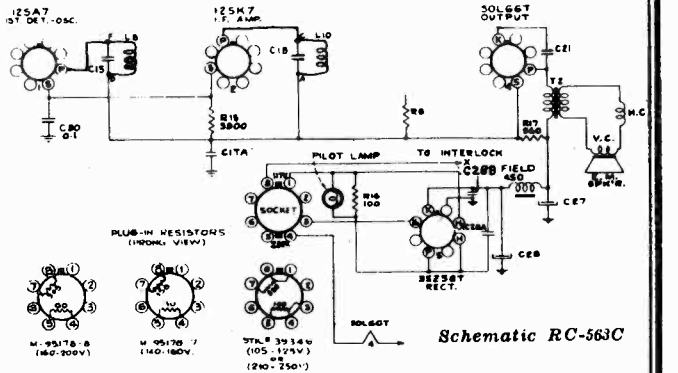
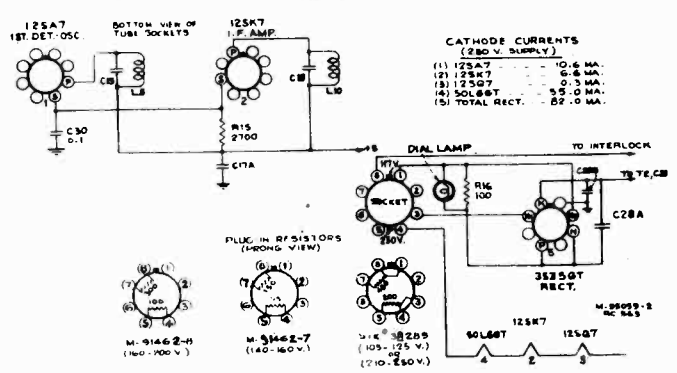
MODEL Q12

Ch. RC-563, RC-563B,  
RC-563C, RC-563D

RCA MFG. CO., INC.



P. 92201-4 RC563B  
Schematic RC-563B



Schematic RC-563D

POWER SUPPLY RATINGS (DC or 40-100 cycles AC)

Chassis	Ballast Resistor	Voltage	Watts
RC-563	Stock No. 38289	105-125	35
RC-563	Stock No. 38289	210-250	70
RC-563	M-91462-7	140-160	46
RC-563	M-91462-8	160-200	55
RC-563B	—	110	35
RC-563C	Stock No. 39346	105-125	37
RC-563C	Stock No. 39346	210-250	85
RC-563C	M-95178-7	140-160	54
RC-563C	M-95178-8	160-200	67
RC-563D	—	110	37

POWER OUTPUT RATINGS

Chassis	Voltage	Maximum
RC-563	117	2.4
RC-563	234	4.1
RC-563B	117	2.2
RC-563C	117	1.6
RC-563C	234	4.1
RC-563D	117	2.2

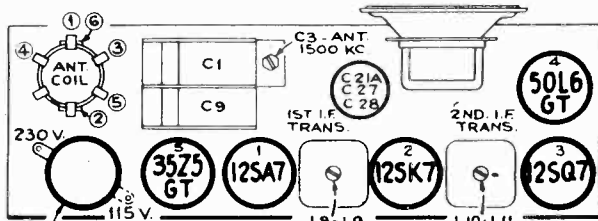
FREQUENCY RANGES  
Standard Broadcast ("A" Band).....540-1,720 kc (555-174 m)  
Medium Wave ("B" Band).....2.3-7.0 mc (130-42.8 m)  
Short Wave ("C" Band).....7.0-22.0 mc (42.8-13.6 m)  
INTERMEDIATE FREQUENCY.....455 kc

LOUDSPEAKERS

Type	RL-81B-2	RL-86A-3	RL-86B-2
V.C. Impedance at 400 cycles	5-inch PM	5-inch PM	5-inch EM
Field Resistance	4 ohms	4 ohms	4 ohms
			3,300 ohms

RCA MFG. CO., INC.

MODEL Q12  
Ch. RC-563, -B, -C, -D



**BALLAST RES.**  
(ON RC563 AND RC563C ONLY)

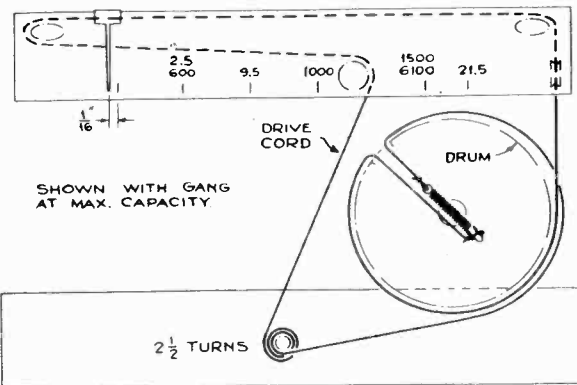
**Pre-Setting Dial.**—With gang condenser in full mesh, the pointer should be 1/16 inch to the left of first mark on dial backing plate.

**Precautionary Lead Dress.**—

Dress 0.01 capacitor from volume control away from power switch.

Yellow cathode lead from 12SA7 socket to oscillator coil must be dressed around coil form.

Yellow lead from band switch to antenna coil must be dressed around coil form.



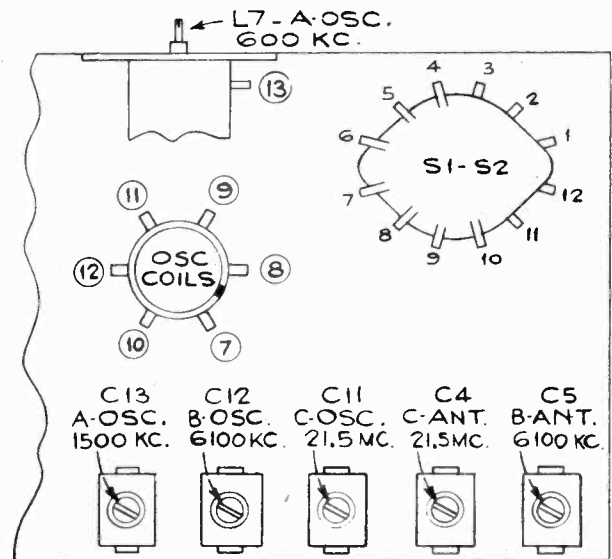
Steps	Range Switch	Connect high side test osc. to—	Tune test osc. to—	Turn radio dial to	Adjust follow- ing for max. peak output
1	"A"	12SK7 I-F grid in series with .01 mfd.	455 kc	"A" band quiet point at high freq. end.	L10, L12 (2nd I-F trans.')
2		12SA7 1st det. grid, in series with .01 mfd.			L9, L8 † (1st I-F trans.)
3	"B"	Antenna lead in series with 200 mmf.	1,500 kc (200 m)	1,500 kc mark (5th mark)	C13, C3
4			600 kc (500 m)	600 kc mark (2nd mark)	L7** Rock gang
5	"C"	Antenna lead in series with 300 ohms	Repeat steps 3 and 4		
6			6.1 mc	6.1 mc mark (5th mark)	C12* (osc.) C5 (ant.)
7			21.5 mc	21.5 mc mark (8th mark)	C11* C4

\* Use minimum capacity peak if two peaks can be obtained.

\*\* Rock gang slightly for peak output.

† Do not readjust L12 or L10 when test oscillator is applied to the 12SA7 Grid.

NOTE: Oscillator tracks above signal on all bands.



BOTTOM VIEW - REAR OF CHASSIS

STOCK NO.	DESCRIPTION	Unit List Price	STOCK NO.	DESCRIPTION	Unit List Price
<b>CHASSIS ASSEMBLIES</b> (RC-563 110/220 AC-DC) (RC-563B 110 AC-DC)					
38289	Ballast—Ballast tube resistor for 220 volts operation	1.75	37068	Indicator—Station selector indicator	.20
36238	Bracket—Dial lamp bracket	.15	37982	Insulator—Phono input socket insulator	.04
38327	Capacitor—Electrolytic, comprising 1 section of 80 mfd., 250 volts, and 1 section of 40 mfd., 250 volts, and 1 section 20 mfd., 25 volts	1.10	38288	Plate—Dial back plate complete with pulleys and bracket—less dial	1.00
38290	Capacitor—Mica trimmer comprising 3 sections of 5-50 mmfd., and 2 sections of 2-20 mmfd.	.85	33825	Plug—2 Prong male plug for power input	.10
12723	Capacitor—56 mmfd., moulded	.35	36230	Pulley—Drive cord pulley	.04
30949	Capacitor—56 mmfd., un moulded	.25	36237	Pulley—Tuning condenser pulley	.25
30904	Capacitor—100 mmfd.	.25	38289	Resistor—Ballast tube resistor for 220 volts operation	1.75
12724	Capacitor—120 mmfd.	.35	13988	Resistor—10 ohms, 1/2 watt	.20
12694	Capacitor—220 mmfd.	.35	35711	Resistor—100 ohms, 4 watt (220/110 AC DC only)	.30
12537	Capacitor—560 mmfd.	.35	30880	Resistor—150 ohms, 1/2 watt	.20
31403	Capacitor—3300 mmfd.	.60	30730	Resistor—2700 ohms, 1/2 watt (220/110 AC DC only)	.20
31405	Capacitor—6000 mmfd.	.75	34766	Resistor—1000 ohms, 1/2 watt	.20
33584	Capacitor—.005 mfd.	.25	12454	Resistor—33,000 ohms, 1/2 watt	.20
4870	Capacitor—.025 mfd.	.20	12412	Resistor—47,000 ohms, 1/2 watt	.20
4858	Capacitor—.01 mfd., 500 volts	.25	14583	Resistor—220,000 ohms, 1/2 watt	.20
4937	Capacitor—.01 mfd., 1000 volts	.25	30648	Resistor—470,000 ohms, 1/2 watt	.20
4886	Capacitor—.05 mfd., 400 volts	.20	12679	Resistor—2.2 meg., 1/2 watt	.20
32786	Capacitor—.01 mfd., 300 volts (220/110 AC DC only)	.25	32809	Resistor—3.9 meg., 1/2 watt	.20
4839	Capacitor—.01 mfd., 400 volts	.30	30992	Resistor—10 meg., 1/2 watt	.20
32821	Coil—Antenna coil	1.35	36897	Shaft—Tuning knob shaft	.10
38292	Coil—Oscillator coil	1.00	34449	Socket—Dial lamp socket	.30
38287	Condenser—Variable tuning condenser	2.50	33742	Socket—Phono input socket	.20
38406	Control—Volume control and power switch	1.50	31251	Socket—Tube socket	.25
32634	Cord—Drive cord (approx. 50-inch overall length)	.10	31418	Spring—Drive cord spring	.06
32713	Core—Adjustable core and stud for oscillator coil	.35	38291	Switch—Range switch	1.10
			36800	Transformer—Audio transformer for models using speaker stamped RL81B2 or RL86B2	1.30
			35636	Transformer—First I.F. transformer	1.70
			35628	Transformer—Second I.F. transformer	1.85
			38289	Tube—Ballast tube resistor for 220 volt operation	1.75
			33726	Washer—"C" washer for tuning shaft	.02

Parts List Continued on next page

MODEL Q11  
MODEL Q12

RCA MFG. CO., INC.

MODEL Q12 (Continued)

STOCK NO.	DESCRIPTION	Unit List Price	STOCK NO.	DESCRIPTION	Unit List Price
	CHASSIS ASSEMBLIES (RC-563C 110/220 AC-DC) (RC-563D 110 AC-DC) Same as Models RC-563 & RC-563B		37612	Speaker—5-inch permanent magnet speaker complete with cone and coil—less output transformer	3.50
	EXCEPT:			SPEAKER ASSEMBLIES (RL-86A-3)	
39346	Ballast—Ballast tube resistor for 110/220 AC-DC Models	1.75	32907	Cap—Dust cap	.02
39346	Resistor—Ballast tube resistor for 110/220 AC-DC Models	1.75	39543	Coil—Field coil—450 ohms	1.20
39346	Tube—Ballast tube resistor for 110/220 AC-DC Models	1.75	35570	Cone—Cone complete with voice coil	1.20
	ADD:			SPEAKER ASSEMBLIES (RL-86B-2)	
30735	Resistor—560 ohms, 1 watt (for 220/110 AC-DC)	.20	32907	Cap—Dust cap	.02
30694	Resistor—3,900 ohms, 1/2 watt (for 220/110 AC-DC)	.20	39348	Coil—Field coil—3,300 ohms	1.50
39345	Transformer—Audio transformer for models using speaker stamped RL86A3	1.35	35570	Cone—Cone complete with voice coil	1.20
	DELETE:			MISCELLANEOUS ASSEMBLIES	
30730	Resistor—2,700 ohms, 1/2 watt (for 220/110 AC-DC)	.20	38293	Back—Cabinet back—less power cord	
	SPEAKER ASSEMBLIES (RL81B2)		36890	Clamp—Dial clamp—L.H.	.15
35570	Cone—Cone complete with voice coil	1.20	36891	Clamp—Dial clamp—R.H.	.15
			32836	Cord—Power cord and plug	1.00
			36103	Decalcomania—"Off-Volume" decal	.05
			35480	Decalcomania—Range switch decal	.05
			38328	Dial—Glass dial scale	.75
			37831	Fastener—Push on fastener for back	.10
			36886	Knob—Range switch or volume control knob	.25
			36722	Knob—Tuning knob	.20
			31480	Lamp—Dial lamp	.20
			30900	Spring—Retaining spring for knobs	.05

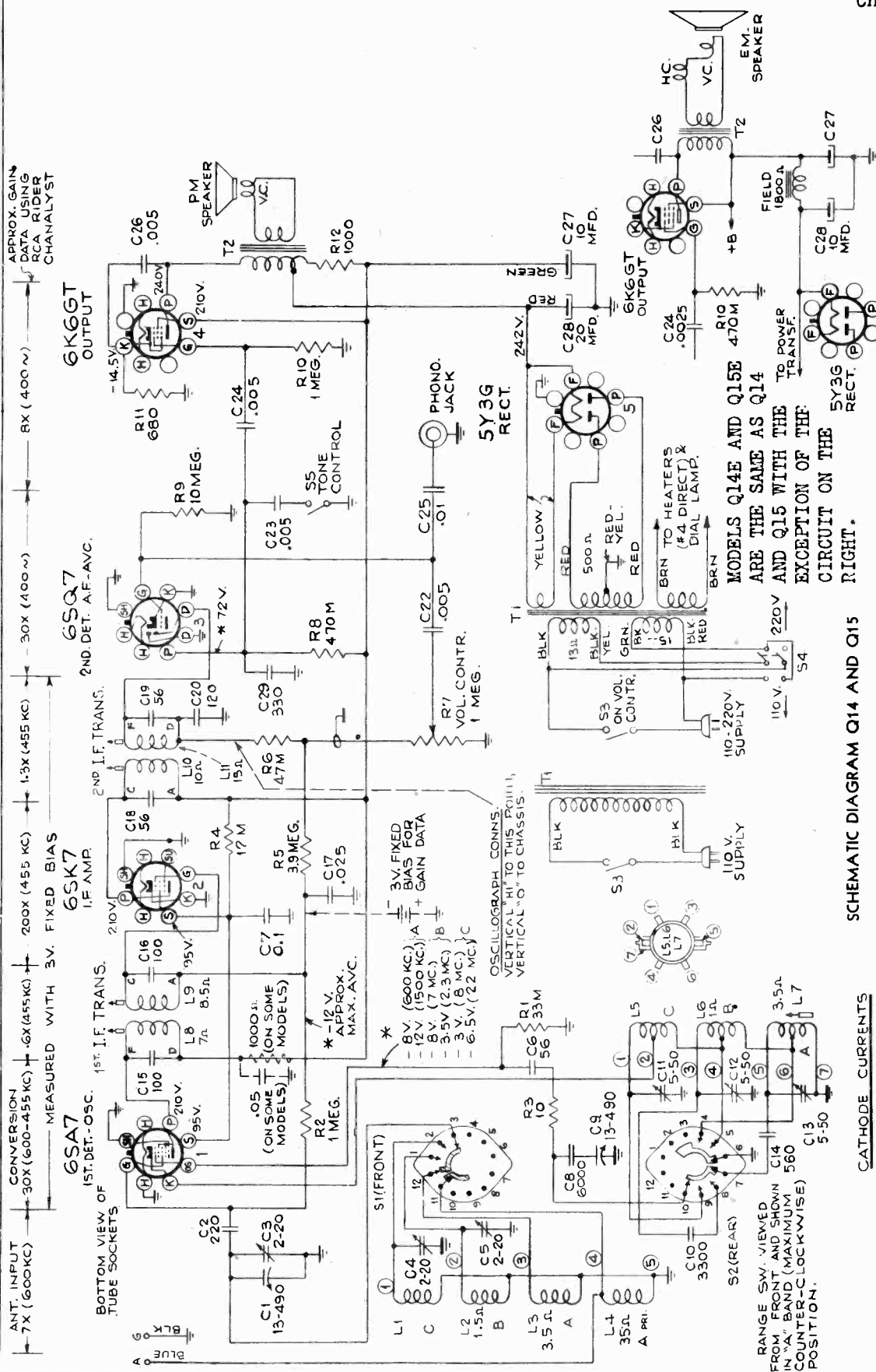
MODEL Q11

STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
	CHASSIS ASSEMBLIES (RC-563-E) (RC-563-F)		14583	Resistor—220,000 ohms, 1/2 watt	.20
			30648	Resistor—470,000 ohms, 1/2 watt	.20
			12679	Resistor—2.2 meg., 1/2 watt	.20
39346	Ballast—Ballast tube resistor for 110/220 AC-DC Models	1.75	32809	Resistor—3.9 meg., 1/2 watt	.20
38327	Capacitor—Electrolytic, comprising 1 section of 80 mfd., 250 volts, and 1 section of 40 mfd., 250 volts, and 1 section of 20 mfd., 25 volts.	1.10	30992	Resistor—10 meg., 1/2 watt	.20
38290	Capacitor—Mica trimmer, comprising 3 sections of 5-50 mmfd., and 2 sections of 2-20 mmfd.	.85	36897	Shaft—Tuning knob shaft	.10
12723	Capacitor—56 mmfd., moulded	.35	33742	Socket—Phono input socket	.20
30949	Capacitor—56 mmfd., unmoulded	.25	31251	Socket—Tube socket	.25
30904	Capacitor—100 mmfd.	.25	31418	Spring—Drive cord spring	.05
12724	Capacitor—120 mmfd.	.35	38291	Switch—Range switch	1.10
12694	Capacitor—220 mmfd.	.35	39345	Transformer—Audio transformer for models using speaker stamped RL-86A-3	1.35
12537	Capacitor—560 mmfd.	.35	36800	Transformer—Audio transformer for models using speaker stamped RL-86B-2	1.30
31403	Capacitor—3,300 mmfd.	.60	35636	Transformer—First I.F. transformer	1.70
31405	Capacitor—8,000 mmfd.	.75	35628	Transformer—Second I.F. transformer	1.85
33584	Capacitor—.005 mfd.	.25	39346	Tube—Ballast tube resistor for 110/220 AC-DC Models	1.75
4870	Capacitor—.025 mfd.	.20	33726	Washer—"C" washer for tuning shaft	.02
4858	Capacitor—.01 mfd., 500 volts	.25		SPEAKER ASSEMBLIES (110/220 AC-DC) (RL-86A-3)	
4937	Capacitor—.01 mfd., 1,000 volts	.25			
4886	Capacitor—.05 mfd., 400 volts	.20	32907	Cap—Dust cap	.02
32786	Capacitor—.01 mfd., 300 volts (220/110 AC-DC only)	.25	35570	Cone—Cone complete with voice coil	1.20
4839	Capacitor—.01 mfd., 400 volts	.30	39543	Coil—Field coil, 450 ohms	1.75
32821	Coil—Antenna coil	1.35		SPEAKER ASSEMBLIES (110 AC-DC) (RL-86B-2)	
38292	Coil—Oscillator coil	1.00			
38287	Condenser—Variable tuning condenser	2.50	32907	Cap—Dust cap	.02
38406	Control—Volume control and power switch	1.50	39348	Coil—Field coil—3,300 ohms	1.50
32634	Cord—Drive cord (approx. 50 inches overall length)	.10	35570	Cone—Cone complete with voice coil	1.20
32713	Core—Adjustable core and stud for oscillator coil	.35		NOTE: If the stamping on speaker in instrument does not agree with above speaker, order replacement parts by referring to model number of instrument, number stamped on speaker and full description of part required.	
37068	Indicator—Station selector indicator	.20		MISCELLANEOUS ASSEMBLIES	
37982	Insulator—Phono input socket insulator	.04	39696	Back—Cabinet back—less power cord and plug	.45
38288	Plate—Dial back plate complete with pulleys and bracket—less dial	1.00	32836	Cord—Power cord and plug	1.00
33825	Plug—2-prong male plug for power input	.10	36103	Decalcomania—"Off-Volume" decal	.05
36230	Pulley—Drive cord pulley	.04	35480	Decalcomania—Range switch decal	.05
36237	Pulley—Tuning condenser pulley	.25	35392	Decalcomania—Trade mark decal	.05
39346	Resistor—Ballast tube resistor for 110/220 AC-DC Models	1.75	39745	Dial—Glass dial scale	1.25
13988	Resistor—10 ohms, 1/2 watt	.20	38334	Knob—Range switch or volume control knob	.25
35711	Resistor—100 ohms, 1/2 watt (220/110 AC-DC)	.30	37256	Knob—Tuning knob	.25
30880	Resistor—150 ohms, 1/2 watt	.20	31390	Mounting—One set chassis mounting screws and washers	.10
30735	Resistor—560 ohms, 1 watt (220/110 AC-DC)	.20	30900	Spring—Retaining spring for knobs	.05
34766	Resistor—1,000 ohms, 1/2 watt	.20			
30694	Resistor—3,900 ohms, 1/2 watt (220/110 AC-DC)	.20			
12454	Resistor—33,000 ohms, 1/2 watt	.20			
12412	Resistor—47,000 ohms, 1/2 watt	.20			

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RCA MFG. CO., INC.

MODELS Q14, Q15  
Ch. RC-566  
MODELS Q14E, Q15E  
Ch. RC-566B



**FREQUENCY RANGES**  
Standard Broadcast ("A" Band) ..... 540-1,720 kc (555-174 m)  
Medium Wave ("B" Band) ..... 2.3-7.0 mc (430-42.9 m)  
Short Wave ("C" Band) ..... 7.0-22.0 mc (42.9-13.6 m)

**INTERMEDIATE FREQUENCY** ..... 465 kc

**PILOT LAMP** ..... Mazda 44

**POWER SUPPLY RATINGS**  
105-125 volts, 50-60 cycles ..... 50 watts  
105-125 volts, 25-60 cycles ..... 50 watts  
105-125, 200-250 volts, 50-60 cycles ..... 50 watts

**MODELS Q14, Q15**  
Speaker No. .... RL-92A2  
Type ..... 6-in. EM  
Field coil resistance ..... 1,800 ohms  
V.C. Impedance at 400 cycles ..... 3.4 ohms

**MODELS Q14E, Q15E**  
Speaker No. .... RL-92A1  
Type ..... 6-in. PM  
Field coil resistance ..... 1,800 ohms  
V.C. Impedance at 400 cycles ..... 3.4 ohms

**POWER OUTPUT**  
Undistorted ..... 1.4 watts  
Maximum ..... 2.3 watts

MODELS Q14, Q15  
Q14E, Q15E

RCA MFG. CO., INC.

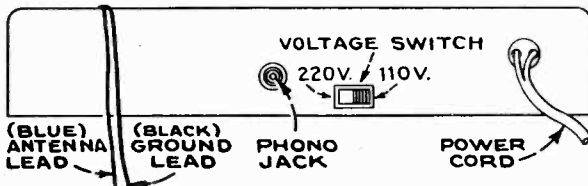
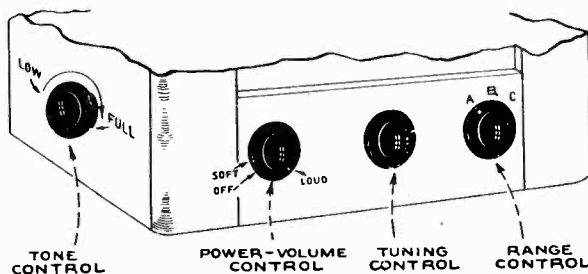
### Alignment Procedure

**Cathode-Ray Alignment** is the preferable method. Connections for the oscillograph are shown in the schematic drawing.

**Output Meter Alignment.**—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

**Test-Oscillator.**—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid a-v-c action.

**Pre-Setting Dial.**—With gang condenser in full mesh, the pointer should be 1/16 inch to the left of first mark on dial backing plate.



Steps	Range Switch	Connect high side test osc. to—	Tune test osc. to—	Turn radio dial to	Adjust following for max. peak output
1	"A"	I-F grid in series with .01 mfd.	455 kc	"A" band quiet point at high freq. end	L10, L11 (2nd I-F trans.)
2		1st det. grid in series with .01 mfd.			L9, L8 † (1st I-F trans.)
3		Antenna lead in series with 200 mmf.	1,500 kc (200 m)	1,500 kc mark (5th mark)	C13, C3
4			800 kc (500 m)	800 kc mark (2nd mark)	L7** Rock gang
5		Repeat steps 3 and 4			
6	"B"	Antenna lead in series with 300 ohms	6.1 mc	6.1 mc mark (5th mark)	C12* (osc.) C5 (ant.)
7	"C"		21.5 mc	21.5 mc mark (6th mark)	C11*, C4

**Precautionary Lead Dress RC566 and 566B.—**

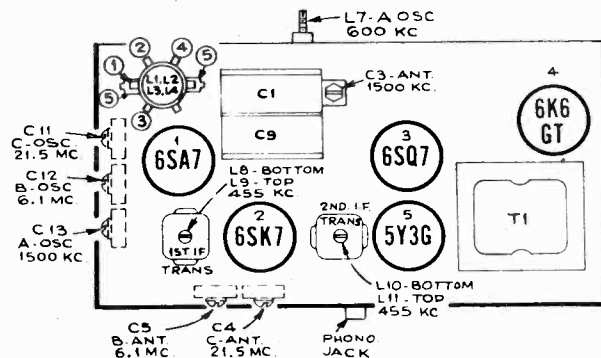
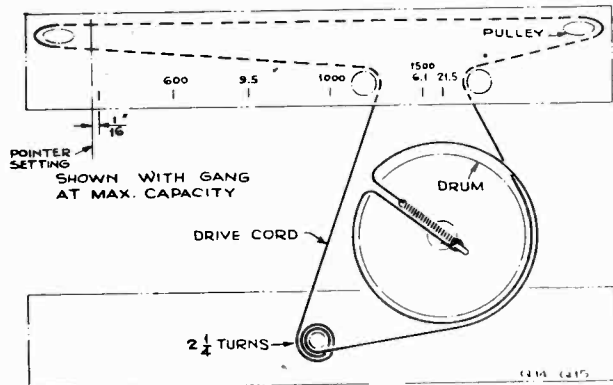
- "B" and "C" band antenna trimmer leads to be dressed away from "B" and "C" band oscillator trimmer leads.
- Excess power transformer leads to be dressed between power trans. bell and rear apron of chassis.
- R9 1st Audio grid lead, dressed down to chassis.
- "B" Band Antenna coil lead to be wired so that it is dressed around "B" band section in a clockwise direction to coil lug in order to obtain proper "B" band tracking.
- "C" band oscillator cathode lead to be dressed around coil in clockwise direction as shown in sample.
- Dress tone control capacitor C23 up and away from A.C. switch leads.
- Dress capacitor C25 from phono. socket to 6SQ7 socket up and away from all parts and leads.
- Keep grid end of R2 (Pin No. 8 of 6SA7) short as possible.
- Dress audio coupling C22 from volume control clear of A.C. wiring.
- Red lead from A.C. switch to power switch to be dressed down against base.
- Drive front gang mounting screw first.

**Precautionary Lead Dress RC566B.—**

Same as RC566 plus the following:

- "C" band oscillator cathode lead must be dressed close to oscillator coil and above all parts as per sample.
- Blue lead from band switch to oscillator coil must be dressed towards back of oscillator coil.
- Excess red Electrolytic lead must be dressed near trans.
- Dress cap. to phono. socket away from 110/220 switch and leads.
- Dress 6,000 mmf. cap (C8) close to band switch.

\* Use minimum capacity peak if two peaks can be obtained.  
\*\* Rock gang slightly for peak output.  
† Do not readjust L11 or L10 when test oscillator is applied to the 6SA7 Grid.  
NOTE: Oscillator tracks above signal on all bands.



STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
	<b>CHASSIS ASSEMBLIES</b>		12723	Capacitor—56 mmfd., moulded.	.35
	Q14, Q15—(RC566)		30949	Capacitor—56 mmfd., unmoulded.	.25
	Q14E, Q15E—(RC566B)		30904	Capacitor—100 mmfd.	.25
35761	Capacitor—Electrolytic, comprising 1 section of 20 mfd., 350 volts, and 1 section of 10 mfd., 350 volts (Q14 and Q15)	.90	12724	Capacitor—120 mmfd.	.35
39195	Capacitor—2 sec., 10 mfd., 450 volts (Q14E and Q15E)	1.00	12694	Capacitor—220 mmfd.	.35
32830	Capacitor—Mica trimmer, comprising 2 sections of 2-20 mmfd. each.	.40	12952	Capacitor—330 mmfd.	.35
32829	Capacitor—Mica trimmer, comprising 3 sections of 5-60 mmfd. each.	.55	12537	Capacitor—560 mmfd.	.60
			31403	Capacitor—3,300 mmfd.	.75
			31405	Capacitor—6,000 mmfd.	.20
			34459	Capacitor—.0025 mfd. (Q14E and Q15E)	.25
			4838	Capacitor—.005 mfd., 1,000 volts.	.25
			33584	Capacitor—.005 mfd., 1,200 volts.	.25
			4858	Capacitor—.01 mfd.	.25

Continued on next page

RCA MFG. CO., INC.

MODELS Q14, Q15,  
Q14E, Q15E  
MODELS 15X, 36X

MODELS Q14, Q15, Q14E, Q15E (Continued)

STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
4870	Capacitor—.025 mfd.	.20	35588	Power Transformer—105-120 volts, 25 cycle (Q14E and Q15E)	6.30
4839	Capacitor—.01 mfd.	.30	32852	Power Transformer—110-220 volts, 50-60 cycle (Q14E and Q15E)	4.50
32821	Coil—Antenna coil—"A," "B," and "C" bands	1.35	32911	Power Transformer—105-120 volts, 50-60 cycle (Q14E and Q15E)	4.10
38292	Coil—Oscillator coil—"A," "B," and "C" bands	1.00	33726	Washer—"C" washer for tuning shaft	.02
38287	Condenser—Variable tuning condenser	2.50		<b>Q14, Q15 SPEAKER ASSEMBLIES—P. M. (RL-92A2)</b>	
33630	Control—Tone control	1.00	31825	Cap—Dust cap	.02
38406	Control—Volume control and power switch	1.50	38392	Cone—Cone complete with voice coil	1.25
34662	Cord—Drive cord (approx. 53 in. overall lgth.)	.25	31567	Plug—3-prong male plug for speaker	.15
32713	Core—Adjustable core and stud for oscillator coil	.35	37984	Transformer—Output transformer	1.75
36237	Drum—Tuning condenser drive drum	.25		<b>Q14E AND Q15E SPEAKER ASSEMBLIES (RL-79C1)</b>	
38331	Indicator—Station selector indicator	.25	31825	Cap—Dust cap	.02
38332	Plate—Dial back plate complete with pulleys—less dial	1.00	38392	Cone—Cone complete with voice coil	1.25
5119	Plug—3-contact female for speaker cable (Q14E and Q15E)	.25	31567	Plug—3-prong male plug for speaker	.15
36230	Pulley—Drive cord pulley	.04	37984	Transformer—Output transformer	1.75
13988	Resistor—10 ohms, 1/2 watt	.20		<b>Q14E AND Q15E SPEAKER ASSEMBLIES (RL-79C1)</b>	
32686	Resistor—880 ohms, 1/2 watt	.22	31825	Cap—Dust cap	.02
30152	Resistor—1,000 ohms, 1 watt (Q14 and Q15)	.22	32903	Coil—Field coil—1,800 ohms	1.25
43765	Resistor—12,000 ohms, 2 watt	.35	38392	Cone—Cone complete with voice coil	1.25
12454	Resistor—33,000 ohms, 1/2 watt	.20	5118	Plug—3 prong male plug for speaker	.25
12412	Resistor—47,000 ohms, 1/2 watt	.20	32905	Transformer—Output transformer	1.35
30648	Resistor—470,000 ohms, 1/2 watt	.20		<b>Note: If the stamping on speaker in instrument does not agree with above speaker number, order replacement parts by referring to model number of instrument, number stamped on speaker, and full description of part required.</b>	
13730	Resistor—1 meg., 1/2 watt	.20		<b>MISCELLANEOUS ASSEMBLIES</b>	
32809	Resistor—3.9 meg., 1/2 watt	.20	38335	Clamp—Dial clamp	.15
30992	Resistor—10 meg., 1/2 watt	.20	36103	Decalcomania—"Off-Volume" decal	.05
38333	Shaft—Tuning knob shaft	.20	35480	Decalcomania—Range switch decal	.05
35772	Shield—Bottom end shield for power transformer (Q14 and Q15)	.30	38336	Dial—Glass dial scale	.85
35709	Shield—Top end shield for power transformer (Q14 and Q15)	.30	35650	Knob—Tone control knob	.25
36932	Socket—Dial lamp socket	.20	37256	Knob—Tuning knob	.25
35787	Socket—Phono input socket	.15	38334	Knob—Volume control or range switch knob	.25
31251	Socket—Tube socket	.25	11891	Lamp—Dial lamp	.17
31418	Spring—Drive cord spring	.05	14270	Spring—Retaining spring for knob, No. 35650	.05
38330	Switch—Range switch	1.15	30900	Spring—Retaining spring for knobs, No. 38334 and No. 37256	.05
32827	Switch—Voltage change switch	.35			
35636	Transformer—First I.F. transformer	1.70			
35628	Transformer—Second I.F. transformer	1.85			
35758	Transformer—Power transformer—105-125 volts, 25 cycle—less end shields (Q14 and Q15)	5.25			
35757	Transformer—Power transformer—105-125 volts 50-60 cycle—less end shields (Q14 and Q15)	2.95			
35759	Transformer—Power transformer—110-220 volts, 50-60 cycle (Q14 and Q15)	4.00			

MODELS 15X, 36X

STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
	<b>CHASSIS ASSEMBLIES (RC-1011)</b>		31418	Spring—Drive cord spring	.05
34506	Capacitor—.0018 mfd.	.25	36228	Switch—Tone switch	.60
14393	Capacitor—.01 mfd.	.30	36232	Transformer—First I.F. transformer	1.50
36248	Capacitor—.02 mfd.	.20	37364	Transformer—Second I.F. transformer	1.35
5196	Capacitor—.035 mfd.	.20	38994	Transformer—Output transformer	1.30
32787	Capacitor—.05 mfd.	.20	33726	Washer—"C" washer for tuning shaft	.02
4839	Capacitor—.01 mfd.	.20		<b>SPEAKER ASSEMBLIES (RL-86B-1)</b>	
37359	Capacitor—Comprising 1 section of .0003 mfd. and 1 section of .005 mfd.	.25	32907	Cap—Dust cap	.02
35348	Capacitor—Electrolytic comprising 1 section of 30 mfd., 150 volts and 1 section of 20 mfd., 150 volts	.95	39448	Coil—Field coil	1.30
39824	Coil—Oscillator coil	.95	39447	Cone—Cone complete with voice coil	1.20
36226	Condenser—Variable tuning condenser	3.00		<b>(RL-86B-4)</b>	
36242	Control—Volume control and power switch	1.50	32907	Cap—Dust cap	.02
34682	Cord—Drive cord (approx. 50-in. overall length)	.25	39448	Coil—Field coil	1.30
36237	Drum—Drive drum	.25	39447	Cone—Cone complete with voice coil	1.20
36236	Indicator—Station selector indicator	.35		<b>NOTE: If the stamping on speaker in instrument does not agree with above speaker number, order replacement parts by referring to model number of instrument, number stamped on speaker, and full description of part required.</b>	
11765	Lamp—Dial lamp	.15		<b>MISCELLANEOUS ASSEMBLIES</b>	
39821	Loop—Antenna loop	1.43	39777	Back—Back cover (36X—2nd Prod.)	.30
36229	Plate—Dial back plate complete with drive cord pulleys	.85	39953	Back—Back cover (15X—2nd Prod.)	.15
36230	Pulley—Drive cord pulley	.04	36890	Clamp—Dial clamp	.15
30189	Resistor—120 ohms, 1/2 watt	.20	36891	Clamp—Dial clamp	.15
30654	Resistor—1,500 ohms, 1/2 watt	.20	39826	Dial—Glass dial scale (36X—2nd Prod.)	2.25
12312	Resistor—3,300 ohms, 1/2 watt	.20	39954	Dial—Glass dial scale (15X—2nd Prod.)	1.25
30492	Resistor—22,000 ohms, 1/2 watt	.20	37831	Fastener—Push fastener for back (15X—2nd Prod.)	.10
14583	Resistor—220,000 ohms, 1/2 watt	.20	36722	Knob—Control knob	.20
30648	Resistor—470,000 ohms, 1/2 watt	.20	30900	Spring—Retaining spring for knobs	.05
12928	Resistor—3.3 megohms, 1/2 watt	.20			
30271	Resistor—4.7 megohms, 1/2 watt	.20			
38785	Resistor—15 megohms, 1/2 watt	.20			
36897	Shaft—Tuning knob shaft	.10			
34449	Socket—Dial lamp socket	.30			
31251	Socket—Tube socket—wafer	.25			
37605	Socket—Tube socket—moulded	.25			

ALL PRICES ARE SUBJECT TO CHANGE OR WITHDRAWAL WITHOUT NOTICE.

MODELS 15X, 36X (2nd Prod.)  
Ch. RC-1011

RCA MFG. CO., INC.

FREQUENCY RANGE..... 540-1,620 kc  
INTERMEDIATE FREQUENCY..... 455 kc  
POWER OUTPUT  
Undistorted..... 0.9 watts  
Maximum..... 1.4 watts

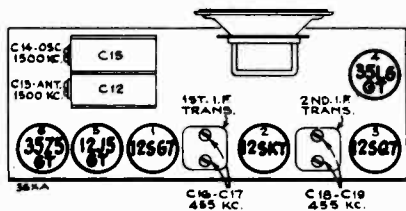
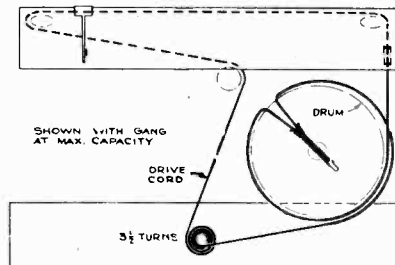
POWER SUPPLY RATING  
105 5 volts, AC, 50 or 60 cycles, or DC..... 30 watts  
PILOT LAMP..... Mazda No. 51, 6-8 volts, 0.2 amp.  
Tuning Drive Ratio..... 16:1

TUBE COMPLEMENT

- (1) RCA-12SG7..... Converter
- (2) RCA-12SK7..... I.F. Amplifier
- (3) RCA-12SQ7..... 2nd Det., A.V.C., and A.F. Amplifier
- (4) RCA-35L6GT..... Power Output
- (5) RCA-12J5GT..... Oscillator
- (6) RCA-35Z5GT..... Rectifier

LOUDSPEAKER (RL-86B-1) (RL-86B-4)  
Type..... 5-inch EM 5-inch EM  
V. C. Impedance..... 3 ohms at 400 cycles. 4 ohms at 400 cycles

CABINET DIMENSIONS Height Width Depth  
15X—2nd Prod. (Mahogany, Plastic) 7 7/8-in. 12-in. 7-in.  
36X—2nd Prod. (Walnut, Wood) 8 11/16-in. 14 1/2-in. 7 1/4-in.

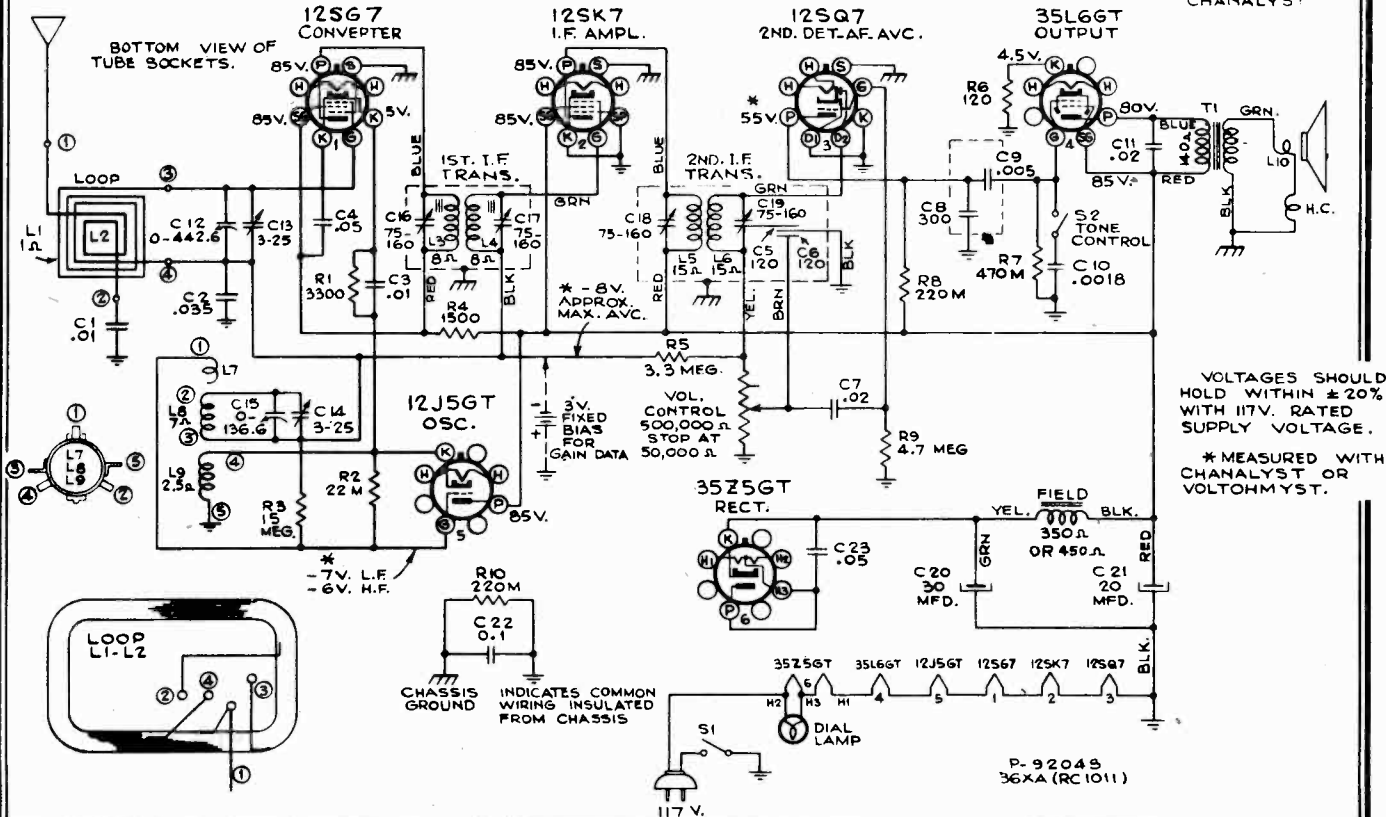
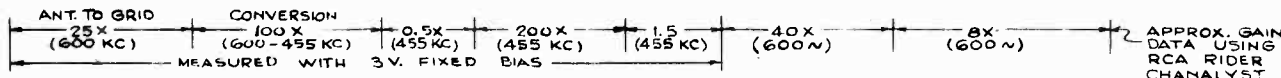


Alignment Procedure

Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output
1	I-F grid, in series with .01 mfd.	455 kc	Quiet point 1,600 kc end of dial	C18 and C19 2nd I-F transformer
2	1st Det. grid in series with .01 mfd.			C16 and C17 1st I-F transformer
3	Ant. terminal in series with 200 mmfd.	1,500 kc	1,500 kc	C14 (osc.) C13 (ant.)
4	Repeat step 3.			

Output Meter Alignment. — If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator. — For all alignment operations, keep the output as low as possible to avoid a-v-c action.

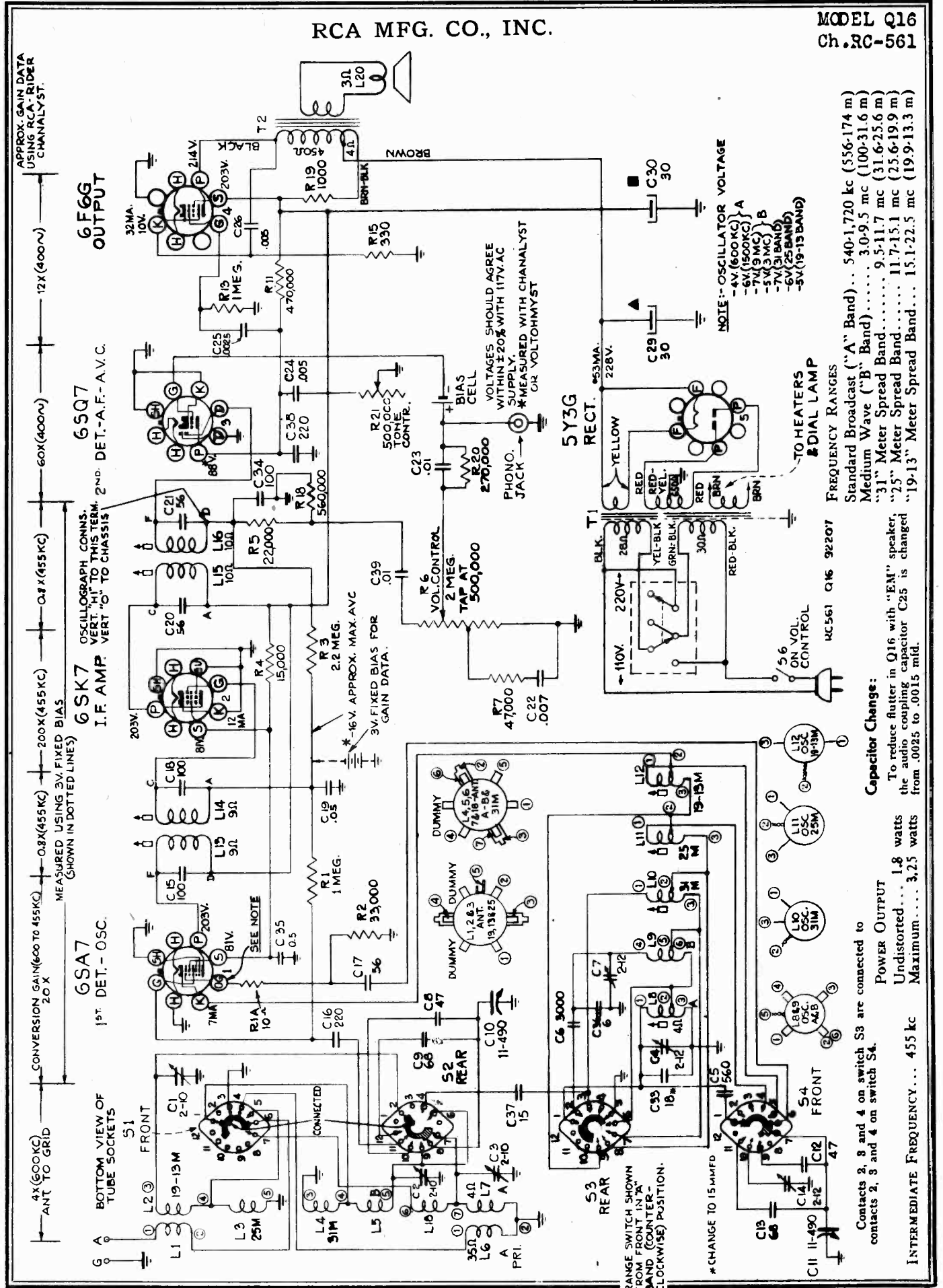


VOLTAGES SHOULD HOLD WITHIN ± 20% WITH 117V. RATED SUPPLY VOLTAGE.

\* MEASURED WITH CHANALYST OR VOLTOHMYST.

RCA MFG. CO., INC.

MODEL Q16  
Ch. RC-561



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**FREQUENCY RANGES**

Standard Broadcast ("A" Band) ...	540-1,720 kc (556-174 m)
Medium Wave ("B" Band) ...	3.0-9.5 mc (100-31.6 m)
"31" Meter Spread Band ...	9.5-11.7 mc (31.6-25.6 m)
"75" Meter Spread Band ...	11.7-15.1 mc (25.6-19.9 m)
"19-13" Meter Spread Band ...	15.1-22.5 mc (19.9-13.3 m)

**Capacitor Change:**  
To reduce flutter in Q16 with "EM" speaker, the audio coupling capacitor C25 is changed from .0025 to .0015 mfd.

**POWER OUTPUT**  
Undistorted... 1.8 watts  
Maximum... 3.25 watts

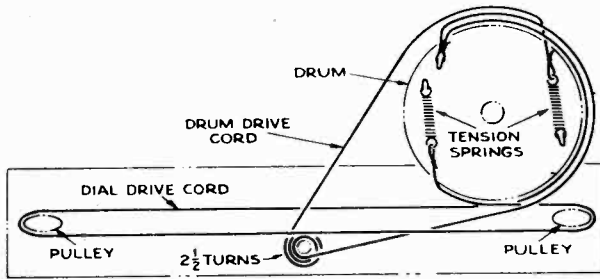
**INTERMEDIATE FREQUENCY... 455 kc**

**CONTACTS:**  
Contacts 2, 8 and 4 on switch S8 are connected to contacts 2, 3 and 4 on switch S4.



MODEL Q16  
Ch. RC-561

RCA MFG. CO., INC.



Dial-Indicator and Drive Mechanism

**Precautionary Lead Dress.—**

1. All leads between antenna coils and switch must be as short as possible, bunched together, and kept away from oscillator coils, leads and switches.
2. All oscillator coil leads must be kept apart from each other and other leads and parts.

**Pointer for Calibration Scale.—**Improvise a pointer for the calibration scale by fastening a piece of wire to the gang-condenser frame; and bend the wire so that it points to the "180°" mark on the calibration scale when the plates are fully meshed.

**Dial-Indicator Adjustment.—**After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with indicator at the 540 kc mark, and gang condenser fully meshed. The indicator has a spring clip for attachment to the cable.

**Spread-Band Alignment.—**The most satisfactory method of aligning or checking the spread-band ranges is on actual reception of short-wave stations of known frequency, by adjusting the magnetite-core oscillator coil for each band so that these stations come in at the correct points on the dial.

In exceptional cases, when the set is being serviced in a location where the noise level is high enough to prevent reception of short-wave stations, a test-oscillator may be used for alignment, but an extremely high degree of accuracy is required in the frequency settings of the test-oscillator, as a slight error will produce considerable inaccuracy on the spread-band dials. The frequency settings of the test-oscillator may be checked by one or both of the following methods:

1. Determine the exact dial settings of the test-oscillator (for frequencies at or close to the specified alignment frequencies) by zero-beating the test-oscillator against short-wave stations of known frequency.
2. Use harmonics of the standard-broadcast range of a test-oscillator, first checking the frequency settings on this range by means of a crystal calibrator (RCA Stock No. 9572), or by zero-beating against standard broadcast stations.

When a test oscillator is employed for spread-band alignment, a final check should be made on actual reception of short-wave stations of known frequency, and the magnetite-core oscillator coil for each band should be re-adjusted so that the stations come in at the correct points on the dial.

Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range switch	Turn radio dial to—	Adjust the following for max. peak output
1	I-F grid in series with .01 mfd.	455 kc	A	Quiet Point at high-frequency end	L15 and L16 2nd I-F Trans.
2	1st Det. grid in series with .01 mfd.				L13 and L14 1st I-F Trans.
3	Ant. lead in series with 300 ohms	11.8 mc	25M	138.5°	L11 (osc.) C1 (ant.)
4		15.2 mc		17°	C14 (osc.)*
5		Repeat steps 3 and 4			
6		* 15.2 mc	19-13M	156°	L12(osc.)**
7	Ant. lead in series with 200 mmf.	9.5 mc	31M	156°	L10 (osc.)** C2 (ant.)
8		9.5 mc	B	11.5°	C7 (osc.)***
9		1,500 kc	A	26°	C4 (osc.) C3 (ant.)
10	600 kc	150°		L8 (osc.) (Rock gang)	
11	Repeat steps 9 and 10				

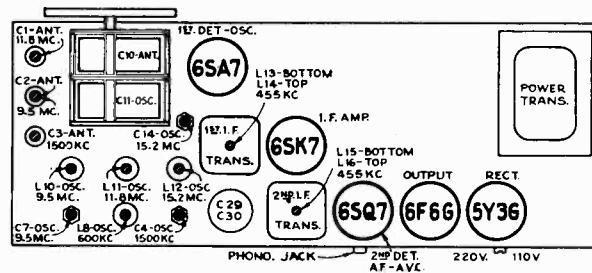
\* Use minimum capacity peak if two can be obtained. Check image to determine that C14 has been adjusted to the correct peak by tuning receiver to approximately 14.29 mc (29°) where a weaker signal should be received.

\*\*Peak at minimum position of plunger if two peaks can be obtained.

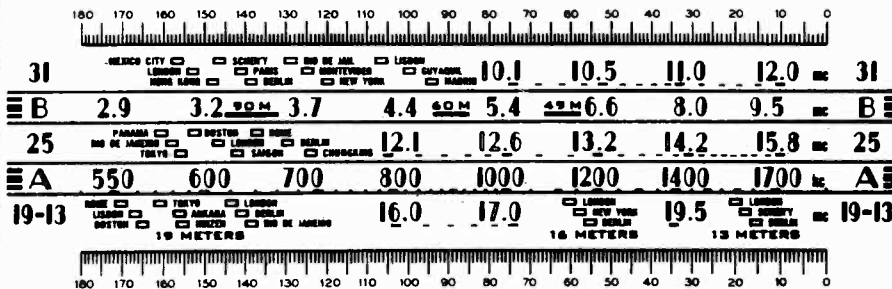
\*\*\*Peak at minimum capacity if two peaks can be obtained.

NOTE: Oscillator tracks above signal on all bands.

**FOR PARTS LIST SEE INDEX**



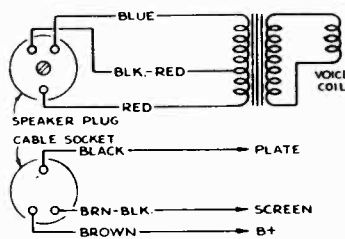
Tube and Trimmer Location



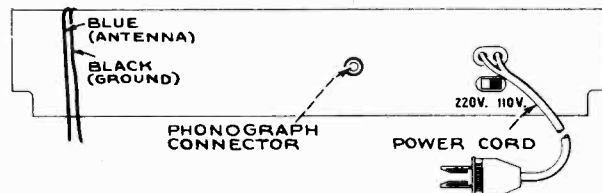
**Calibration Scale**

Reduced Reproduction of Receiver Dial, and Corresponding 0-180° Calibration Scales

The corresponding position of the dial indicator for any setting of the calibration scale can be determined by drawing a line from this point on the bottom calibration scale to the same point on the top calibration scale. For example: 150° on the calibration scale corresponds to approximately 600 kc on "A" band, etc. Read instructions under "Alignment Procedure."



Connections and Colors of Loudspeaker and Cable

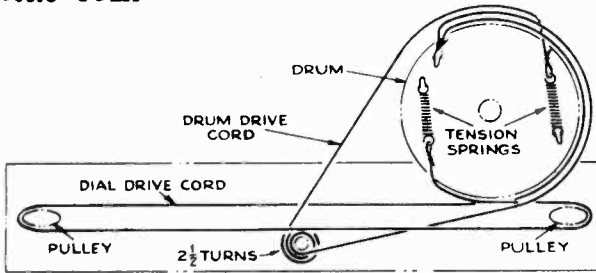


Rear of Chassis



MODEL Q17  
Ch.RC-561A

RCA MFG. CO., INC.



Dial-Indicator and Drive Mechanism

**Precautionary Lead Dress.—**

1. All leads between antenna coils and switch must be as short as possible, bunched together, and kept away from oscillator coils, leads and switches.
2. All oscillator coil leads must be kept apart from each other and other leads and parts.

To determine the corresponding frequency for any setting of the calibration scales, refer to the accompanying drawing which shows the dial with 0-180° calibration scales drawn at top and bottom.

**Pointer for Calibration Scale.**—Improvise a pointer for the calibration scale by fastening a piece of wire to the gang-condenser frame, and bend the wire so that it points to the "180°" mark on the calibration scale when the plates are fully meshed.

**Dial-Indicator Adjustment.**—After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with indicator at the 540 kc mark, and gang condenser fully meshed. The indicator has a spring clip for attachment to the cable.

**Spread-Band Alignment.**—The most satisfactory method of aligning or checking the spread-band ranges is on actual reception of short-wave stations of known frequency, by adjusting the magnetite-core oscillator coil for each band so that these stations come in at the correct points on the dial.

In exceptional cases, when the set is being serviced in a location where the noise level is high enough to prevent reception of short-wave stations, a test-oscillator may be used for alignment, but an extremely high degree of accuracy is required in the frequency settings of the test oscillator, as a slight error will produce considerable inaccuracy on the spread-band dials. The frequency settings of the test-oscillator may be checked by one or both of the following methods:

1. Determine the exact dial settings of the test-oscillator (for frequencies at or close to the specified alignment frequencies) by zero-beating the test-oscillator against short-wave stations of known frequency.
2. Use harmonics of the standard-broadcast range of a test-oscillator, first checking the frequency settings on this range by means of a crystal calibrator (RCA Stock No. 9572), or by zero-beating against standard broadcast stations.

When a test oscillator is employed for spread-band alignment, a final check should be made on actual reception of short-wave stations of known frequency, and the magnetite-core oscillator coil for each band should be re-adjusted so that the stations come in at the correct points on the dial.

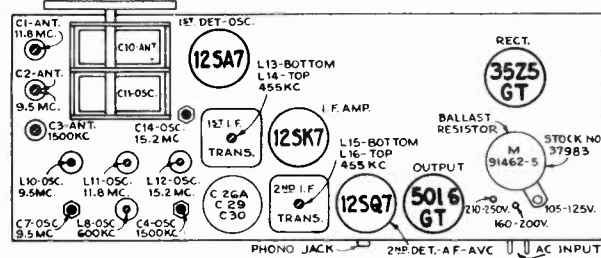
Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range switch	Turn radio dial to—	Adjust the following for max. peak output
1	I-F grid in series with .01 mfd.	455 kc	A	Quiet Point at high-frequency end	L15 and L18 2nd I-F Trans.
2	1st Det. grid in series with .01 mfd.				L13 and L14 1st I-F Trans.
3	Ant. lead in series with 300 ohms	11.8 mc	25M	138.5°	L11 (osc.) C1 (ant.)
4		15.2 mc			17°
5		Repeat steps 3 and 4			
6		15.2 mc	19-13M	156°	L12 (osc.)**
7		9.5 mc	31M	156°	L10 (osc.)** C2 (ant.)
8	9.5 mc	B	11.5°	C7 (osc.)***	
9	Ant. lead in series with 200 mmf.	1,500 kc	A	26°	C4 (osc.) C3 (ant.)
10		600 kc			150°
11		Repeat steps 9 and 10			

\* Use minimum capacity peak if two can be obtained. Check image to determine that C14 has been adjusted to the correct peak by tuning receiver to approximately 14.29 mc (29°) where a weaker signal should be received.

\*\*Peak at minimum position of plunger if two peaks can be obtained.

\*\*\*Peak at minimum capacity if two peaks can be obtained.

NOTE: Oscillator tracks above signal on all bands.

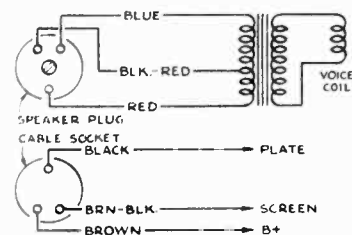
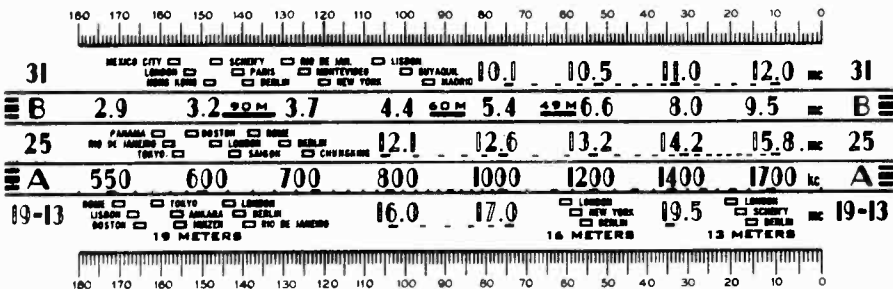


Tube and Trimmer Location

Calibration Scale

Reduced Reproduction of Receiver Dial, and Corresponding 0-180° Calibration Scales

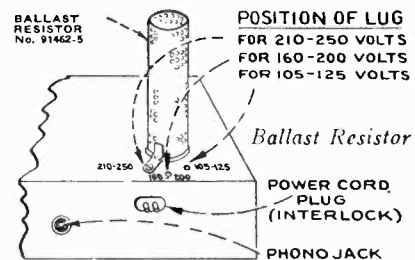
The corresponding position of the dial indicator for any setting of the calibration scale can be determined by drawing a line from this point on the bottom calibration scale to the same point on the top calibration scale. For example: 150° on the calibration scale corresponds to approximately 600 kc on "A" band, etc. Read instructions under "Alignment Procedure."



POWER SUPPLY RATINGS

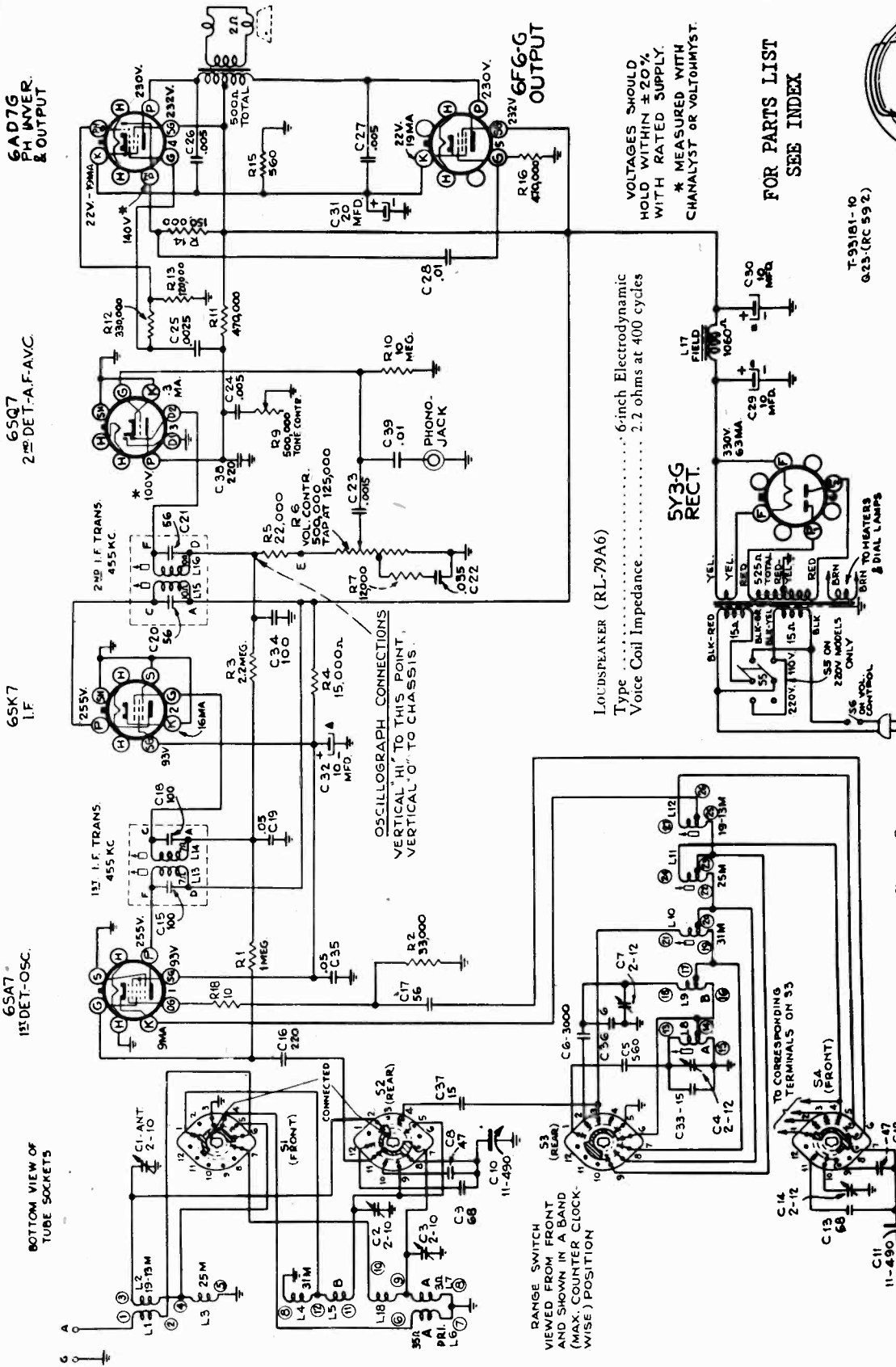
- 105-125 volts A-C 40-100 cycles or D-C. . 35 watts
- 160-200 volts A-C 40-100 cycles or D-C. . 55 watts
- 210-250 volts A-C 40-100 cycles or D-C. . 70 watts

Connections and Colors of Loudspeaker and Cable



RCA MEG. CO., INC.

MODEL Q23  
Ch.RC-592



6AD7G  
PH INVER.  
& OUTPUT

65Q7  
2<sup>ND</sup> DET.-A.F. AVC.

6SK7  
I.F.

6SA7  
1<sup>ST</sup> DET.-OSC.

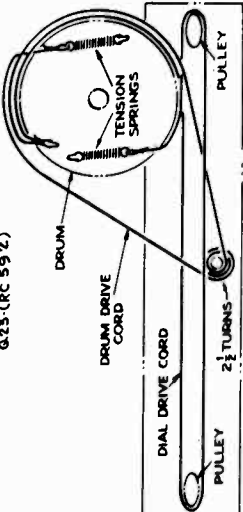
BOTTOM VIEW OF  
TUBE SOCKETS

VOLTAGES SHOULD  
HOLD WITHIN ±20%  
WITH RATED SUPPLY.  
\* MEASURED WITH  
CHANALYST OR VOLTOHMYST.

FOR PARTS LIST  
SEE INDEX

LOUDSPEAKER (RL-79A6)  
Type ..... 6-inch Electrodynamic  
Voice Coil Impedance ..... 2.2 ohms at 400 cycles

5Y3-G  
RECT.

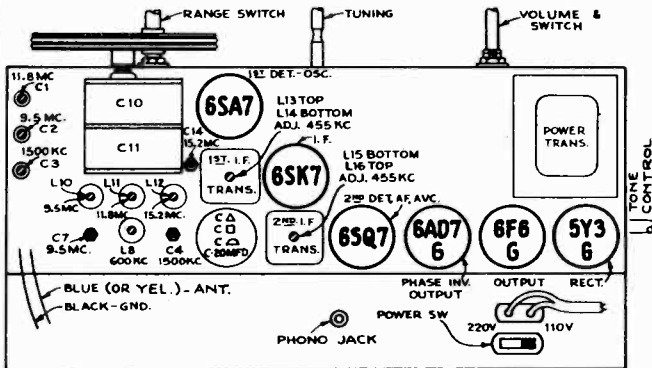
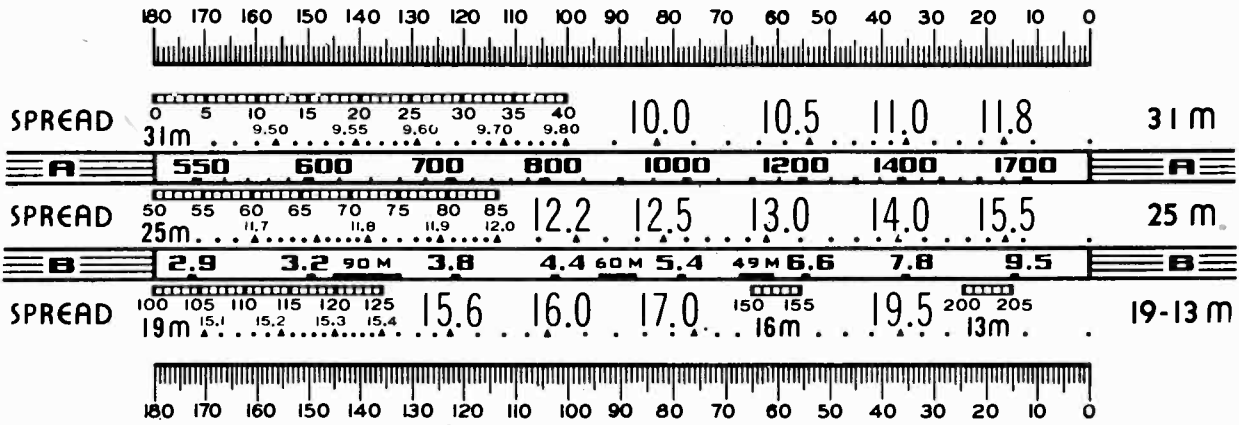


Power Output	Undistorted Maximum	Power Supply Ratings	Symbol	Rating A	Rating B	Rating C	Frequency (cycles)	Watts
3 watts	3.5 watts			105-125	50-60	25-60	50-60	65
				105-125	25-60	50-60	50-60	65

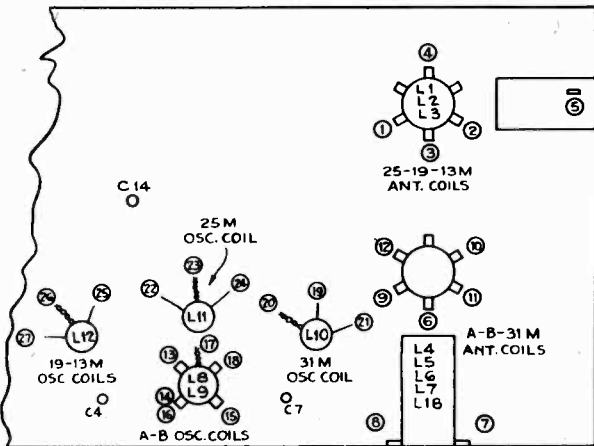
Frequency Ranges	Intermediate Frequency
Standard Broadcast ("A" Band) ... 540-1,720 kc (556-174 m)	455 kc
Medium Wave ("B" Band) ... 3.0-9.5 mc (100-31.6 m)	
"31" Meter Spread Band ... 9.5-11.7 mc (31.6-25.6 m)	
"25" Meter Spread Band ... 11.7-15.1 mc (25.6-19.9 m)	
"19-13" Meter Spread Band ... 15.1-22.5 mc (19.9-13.3 m)	

MODEL Q23  
Ch.RC-592

RCA MFG. CO., INC.



Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range switch	Turn radio dial to—	Adjust the following for max. peak output	
On oscillator-circuit cores and trimmers, if two peaks can be obtained, use the one of minimum inductance or minimum capacity.						
1	1st I-F grid cap. in series with .01 mfd.	455 kc	A	Quiet point near 180°	L15 and L16 2nd I-F transformer	
2	1st Det. grid. in series with .01 mfd.				L13 and L14 1st I-F transformer	
3	Ant. lead in series with 300 ohms	11.8 mc	25M	138.5°	L11 (osc.) C1 (ant.)	
4		15.2 mc		17°	C14 (osc.)*	
5		Repeat steps 3 and 4.				
6		15.2 mc	19-13M	156°	L12 (osc.)	
7		9.5 mc	31M	156°	L10 (osc.) C2 (ant.)	
8	9.5 mc	B	11.5°	C7 (osc.)		
9	Ant. lead in series with 200 mmf.	1,500 kc	A	26°	C4 (osc.) C3 (ant.)	
10		800 kc		150°	L8 (osc.) (Rock gang)	
11	Repeat steps 9 and 10.					



**Test-Oscillator.**—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid a-v-c action.

**Calibration Scale on Indicator-Drive-Cord Drum.**—The tuning dial is fastened in the cabinet and cannot be used for reference during alignment, therefore a calibration scale is attached to the indicator-drive-cord drum which is mounted on the shaft of the gang condenser. The setting of the gang condenser is read on this scale, which is calibrated in degrees. The correct setting of the gang in degrees, for each alignment frequency, is given in the alignment table.

As the first step in r-f alignment, check the position of the drum. The "180°" mark on the drum scale must be vertical and directly over the center of the gang-condenser shaft when the plates are fully meshed. The drum is held to the shaft by means of two set screws, which must be tightened securely when the drum is in the correct position.

To determine the corresponding frequency for any setting of the calibration scales, refer to the accompanying drawing which shows the dial with 0-180° calibration scales drawn at top and bottom.

**Pointer for Calibration Scale.**—Improvise a pointer for the calibration scale by fastening a piece of wire to the gang-condenser frame, and bend the wire so that it points to the "180°" mark on the calibration scale when the plates are fully meshed.

**Dial-Indicator Adjustment.**—After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with indicator at the 540 kc mark, and gang condenser fully meshed. The indicator has a spring clip for attachment to the cable.

\* Use minimum capacity peak if two can be obtained. Check image to determine that C14 has been adjusted to the correct peak by tuning receiver to approximately 14.29 mc (29°) where a weaker signal should be received.

**NOTE:** Oscillator tracks above signal on all bands.

**Spread-Band Alignment.**—The most satisfactory method of aligning or checking the spread-band ranges is on actual reception of short-wave stations of known frequency, by adjusting the magnetite-core oscillator coil for each band so that these stations come in at the correct points on the dial.

In exceptional cases, when the set is being serviced in a location where the noise level is high enough to prevent reception of short-wave stations, a test-oscillator may be used for alignment, but an extremely high degree of accuracy is required in the frequency settings of the test-oscillator, as a slight error will produce considerable inaccuracy on the spread-band dials. The frequency settings of the test-oscillator may be checked by one or both of the following methods:

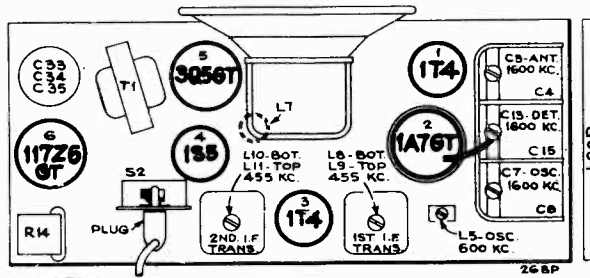
1. Determine the exact dial settings of the test-oscillator (for frequencies at or close to the specified alignment frequencies) by zero-beating the test-oscillator against short-wave stations of known frequency.
2. Use harmonics of the standard-broadcast range of the test-oscillator, first checking the frequency settings on this range by means of a crystal calibrator (RCA Stock No. 9572), or by zero-beating against standard broadcast stations.

When a test oscillator is employed for spread-band alignment, a final check should be made on actual reception of short-wave stations of known frequency, and the magnetite-core oscillator coil for each band should be re-adjusted so that the stations come in at the correct points on the dial.

### Alignment

With gang in full mesh, the pointer should be 1/16-inch to the left of the 550 kc dial mark.

Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1	I-F grid, in series with .01 mfd.	455 kc	Quiet point at 1,600 kc end of dial	L10, L11 (2nd I-F trans.)
2	1st-Det. grid cap, in series with .01 mfd.			L8, L9 (1st I-F trans.)
3	radiated signal at 1,600 kc	1,600 kc	1,600 kc	C7 (osc.) C3 (ant.) C13 (det.)
4	radiated signal 600 kc	600 kc	600 kc	L5 (Rock in)
5	Repeat steps 3 and 4			



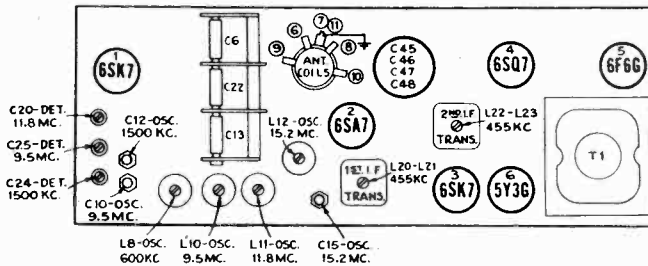
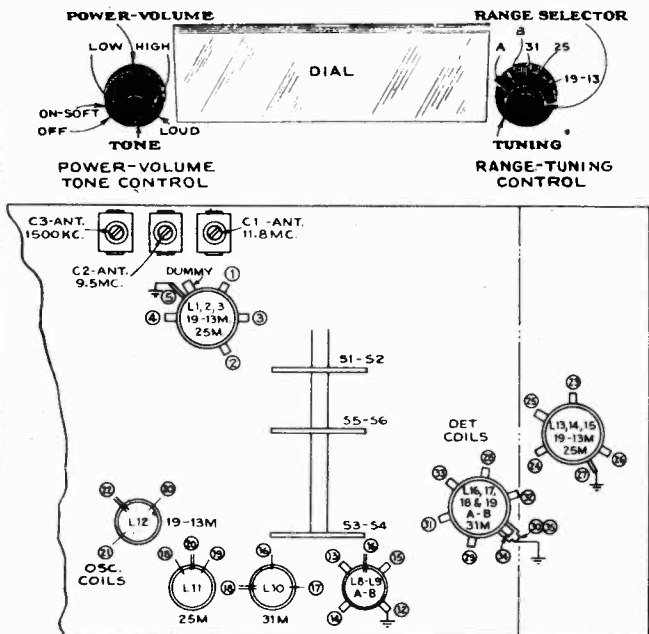






MODEL Q30  
Ch. RC-538B

RCA MFG. CO., INC.



Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range Switch	Turn radio Dial to—	Adjust the following for max. peak output
1	6SK7 I-F grid in series with .01 mfd.			Quiet point near 600 kc (149.5°) end of dial	L23-L22 2nd I-F transformer
2	6SA7 1st det. grid in series with .01 mfd.	455 kc	"A" band		L21-L20 1st I-F transformer
3	Antenna terminal in series with 300 ohms	11.8 mc	25 meter band	11.8 mc (138.5°)	L11 (osc.) C1 (ant.) C20 (det.) Rock in
4		15.2 mc		15.2 mc (18.5°)	C15 (osc.)*†
5	Repeat steps 3 and 4 until aligned.				
6		15.2 mc	19-13 meter band	15.2 mc (156°)	L12 (osc.)**
7	Antenna terminal in series with 300 ohms	9.5 mc	31 meter band	9.5 mc (156°)	L10 (osc.)** C2 (ant.)*** C25 (det.)*** Rock in
8		9.5 mc	"B" band	9.5 mc (11.5°)	C10 (osc.)*
9	Antenna terminal in series with 200 mmfd.	1,500 kc	"A" band	1,500 kc (27°)	C12 (osc.) C3 (ant.) C24 (det.)
10		600 kc		600 kc (149.5°)	L8 (osc.) Rock in
11	Repeat steps 9 and 10.				

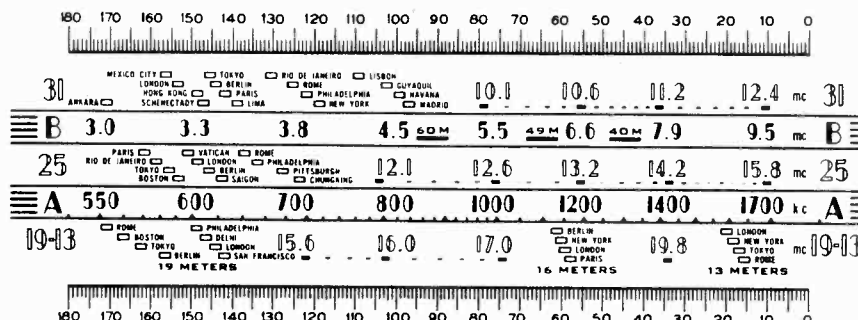
**Precautionary Lead Dress:**

1. Dress green leads from antenna and R-F gang sections away from all metal including chassis shield plates. The spaghetti covered braid in the antenna section should be at least 1/4 inch away from gang.
2. Dress toothpick capacitors and switch leads away from and edge on to shield plates.
3. Closely twist ground lead about 2nd I-F transformer diode lead and dress close to chassis.
4. Dress volume control-arm lead and capacitor close to front apron and away from output tubes by-pass capacitors.
5. 6SQ7 10 megohm grid resistor should have no lead length on the grid side.
6. Dress capacitor high side of volume control toward base and as far as possible from a-c switch.
7. Leads to converter socket should not impede flexible mounting.
8. Converter control grid: clear of any other leads, especially filament leads which must be at least 1/4 inch away. The megohm grid leak must have its body as close to grid as possible.
9. Dress oscillator grid and control grid capacitors apart.
10. Dress all filament and B+ leads close to chassis. Dress speaker leads close to base.
11. Dress phono lead and diode return lead to switch away from power circuits and output tube sockets.
12. Dress power transformer leads between back apron, power transformer and 5Y3 socket.
13. Brown lead from electrolytic to rectifier tube should be well away from I.F. transformer parts.
14. AC leads to switch should be twisted and away from all parts.
15. Capacitor to phono switch and its lead should be away from all other leads.
16. Brown speaker leads should be dressed down and away from 6SQ7 socket.
17. C-38 should be close to chassis and away from all other leads.
18. Shielded lead from I.F. to phono switch should be away from all else.

**Calibration Scale**

Reduced Reproduction of Receiver Dial and Corresponding 0-180° Calibration Scales

The corresponding position of the dial indicator for any setting of the calibration scale can be determined by drawing a line from this point on the bottom calibration scale to the same point on the top calibration scale. For example: 150° on the calibration scale corresponds to approximately 600 kc on "A" band, etc. Read instructions under "Alignment Procedure."

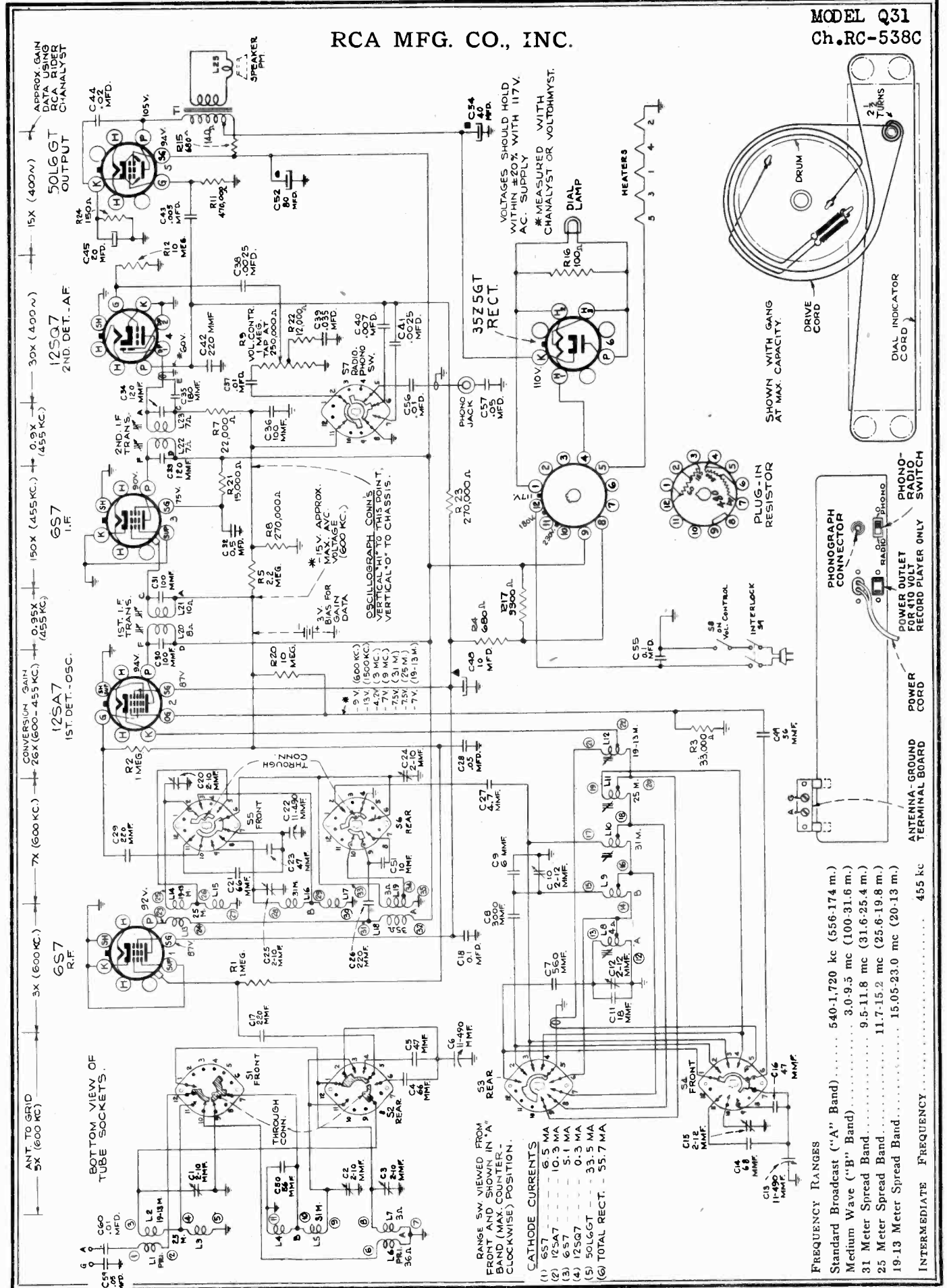


\* Use minimum capacity peak if two can be obtained.  
\*\* Peak at minimum plunger position if two peaks can be obtained.  
\*\*\* Use maximum capacity peak if two peaks can be obtained.  
† Check image to determine that C15 has been adjusted to correct peak by tuning receiver to approximately 14.29 mc where a weaker signal should be received.  
NOTE: Oscillator tracks above signals on all bands.

Pointer for Calibration Scale.—Improvise a pointer for the calibration scale by fastening a piece of wire to the gang-condenser frame, and bend the wire so that it points to the "180°" mark on the calibration scale when the plates are fully meshed.

RCA MFG. CO., INC.

MODEL Q31  
Ch. RC-538C



MODEL Q31  
Ch.RC-538C

RCA MFG. CO., INC.

**POWER SUPPLY RATINGS**

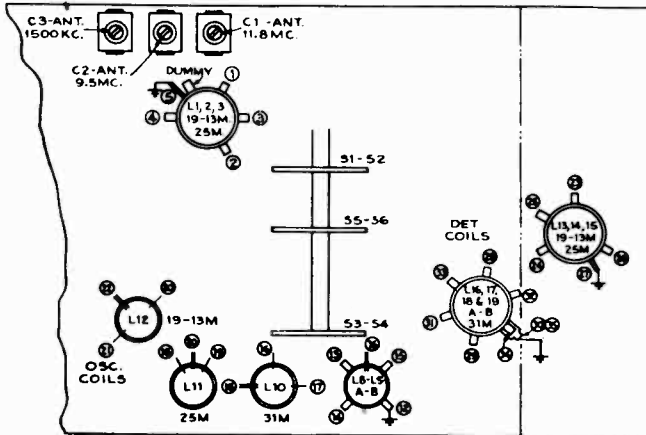
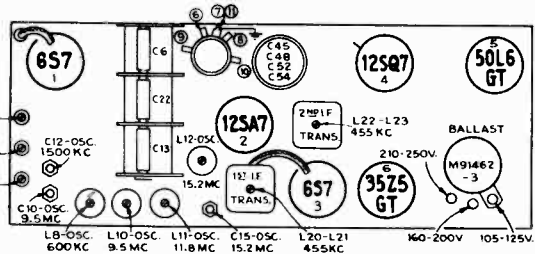
105-125 volts, 40 to 100 cycles AC, or DC..... 31 watts  
160-200 volts, 40 to 100 cycles AC, or DC..... 50 watts  
210-250 volts, 40 to 100 cycles AC, or DC..... 68 watts

**POWER OUTPUT**

Undistorted..... 2.5 watts  
Maximum..... 4.5 watts

**LOUDSPEAKER**

Type..... 9 in. x 6 1/2 in. elliptical permanent magnet dynamic  
V.C. Impedance..... 3.7 ohms at 400 cycles  
Identification Number..... 92196-2



**Precautionary Lead Dress**

Dress the indicated circuit parts as follows:

1. Toothpick condensers in the ant., R. F. circuits and gang leads: away from metal especially shield plates; condensers at right angles to shield plates.
2. Speaker, pilot, and output filament leads: between terminal board and output tube socket and against the base.
3. Leads to converter socket so that they do not impede the flexible mounting.
4. Oscillator grid and control grid condensers (to 6SA7) well apart, but at least 1/2 in. from shield plates.
5. All filament and B+ leads close to chassis.
6. Black lead between the RF trimmer bank and switch: over the short wave RF coil and close to it.
7. Blue plate lead to 2nd I.F. transformer: under the brown and the red leads, and away from first I.F. transformer.
8. 2nd I.F. to diode lead (black): close to chassis and with yellow ground lead twisted about it closely.
9. Volume control high side condenser: close to base.
10. Phono lead and diode return lead to switch: away from power circuits and output tube socket.
11. .05 cond. from phono shield to ground up, under, and against joint of shielded cable.
12. R-12 (10 meg. grid res. on 12SQ7) down against chassis.
13. Yellow lead from switch lug 2 to B lug on 2nd I.F. down against chassis and away from plate and fil. leads.

Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range Switch	Turn radio Dial to—	Adjust the following for max. peak output
1	6S7 I-F grid in series with .01 mfd.	455 kc	"A" band	Quiet point near 800 kc (149.5°) end of dial	L23-L22 2nd I-F transformer
2	12SA7 1st det. grid in series with .01 mfd.				L21-L20 1st I-F transformer
3	Antenna terminal in series with 300 ohms	11.8 mc	25 meter band	11.8 mc (138.5°)	L11 (osc.) C1 (ant.) C20 (det.) Rock in
4		15.2 mc		15.2 mc (18.5°)	C15 (osc.)*†
5	Repeat steps 3 and 4 until aligned.				
6		15.2 mc	19-13 meter band	15.2 mc (156°)	L12 (osc.)**
7	Antenna terminal in series with 300 ohms	9.5 mc	31 meter band	9.5 mc (156°)	L10 (osc.)** C2 (ant.) C25 (det.)*** Rock in
8		9.5 mc	"B" band	9.5 mc (11.5°)	C10 (osc.)*
9	Antenna terminal in series with 200 mmfd.	1,500 kc	"A" band	1,500 kc (27°)	C12 (osc.) C3 (ant.) C24 (det.)
10		600 kc		600 kc (149.5°)	L8 (osc.) Rock in
11	Repeat steps 9 and 10.				

\* Use minimum capacity peak if two can be obtained.

\*\* Peak at minimum plunger position if two peaks can be obtained.

\*\*\* Use maximum capacity peak if two peaks can be obtained.

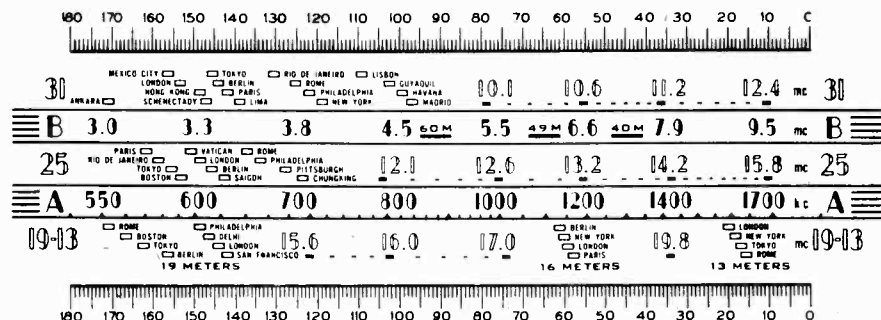
† Check image to determine that C15 has been adjusted to correct peak by tuning receiver to approximately 14.29 mc where a weaker signal should be received.

NOTE: Oscillator tracks above signals on all bands.

**Calibration Scale**

Reduced Reproduction of Receiver Dial and Corresponding 0-180° Calibration Scales

The corresponding position of the dial indicator for any setting of the calibration scale can be determined by drawing a line from this point on the bottom calibration scale to the same point on the top calibration scale. For example: 150° on the calibration scale corresponds to approximately 600 kc on "A" band, etc.

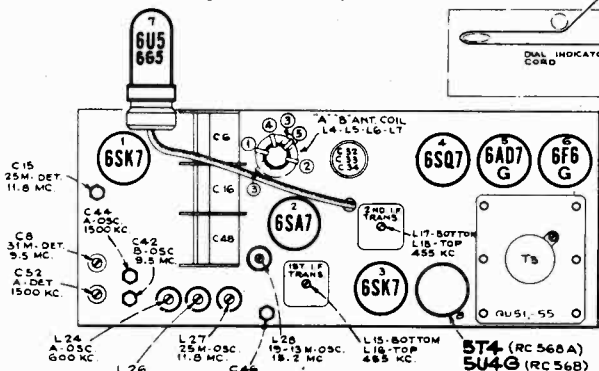
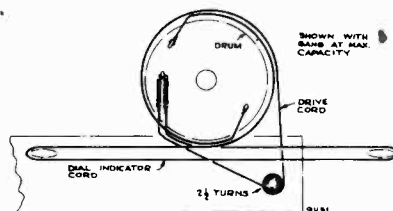
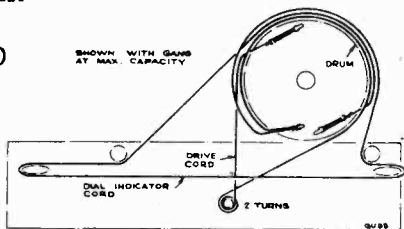




MODELS QU51C, QU51M, QU55  
Ch. RC-568, RC-568A

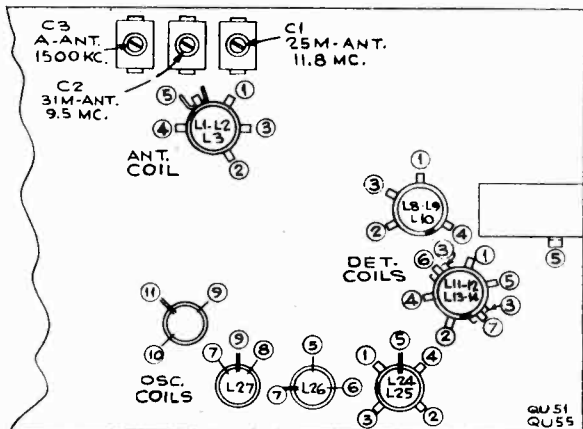
RCA MFG. CO., INC.

FOR RECORD CHANGER  
DATA, SEE RIDER'S  
"AUTOMATIC RECORD  
CHANGERS AND  
RECORDERS".

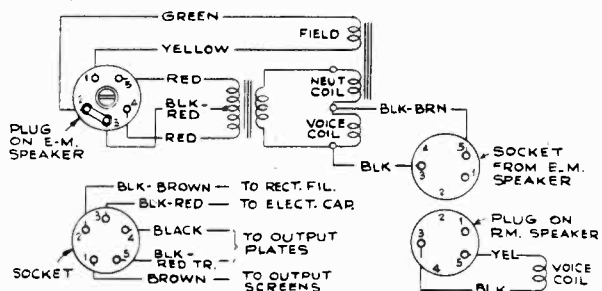


QU55

QU51



COIL AND TRIMMER LOCATIONS  
(BOTTOM VIEW)



Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range Switch	Turn Radio Dial to—	Adjust the following for max. peak output
1	6SK7 I-F grid in series with .01 mfd.	455 kc	"A" band	Quiet point 600 kc end of dial	L18-L17 2nd I-F transformer
2	6SA7 1st det. grid in series with .01 mfd.				L16-L15 1st I-F transformer
3	Antenna terminal in series with 300 ohms	11.8 mc	25 meter band	11.8 mc (138.5°)	L27 (osc.)** C1 (ant.) C15 (det.)***
4		15.2 mc			15.2 mc (18.5°)
5	Repeat steps 3 and 4 until aligned.				
6	Antenna terminal in series with 300 ohms	15.2 mc	19-13 meter band	15.2 mc (156°)	L28 (osc.)**
7		9.5 mc	31 meter band	9.5 mc (156°)	L26 (osc.)** C2 (ant.) C8 (det.)***
8		9.5 mc	"B" band	9.5 mc (11.5°)	C42 (osc.)*
9	Antenna terminal in series with 200 mmfd.	1,500 kc	"A" band	1,500 kc (27°)	C44 (osc.) C3 (ant.) C52 (det.)
10		600 kc		600 kc (149.5°)	L24 (osc.) Rock in
11	Repeat steps 9 and 10.				

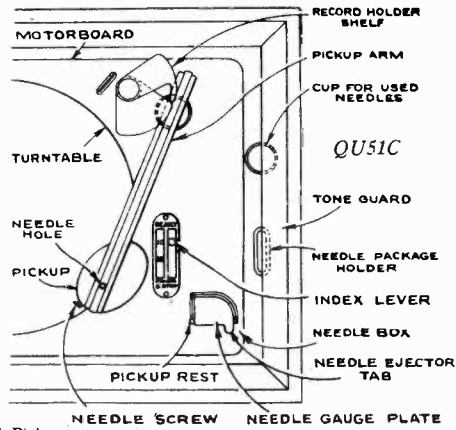
† Check image to determine that C15 has been adjusted to correct peak by tuning receiver to approximately 14.29 mc (29°) where a weaker signal should be received.

\* Use minimum capacity peak if two can be obtained.  
\*\* Peak at minimum plunger position if two peaks can be obtained.  
\*\*\* Use maximum capacity peak if two peaks can be obtained.

NOTE: Oscillator tracks above signals on all bands.

RCA MFG. CO., INC.

MODELS QU51C, QU51M, QU55  
Ch. RC-568, RC-568A



**Crystal Pickup:**

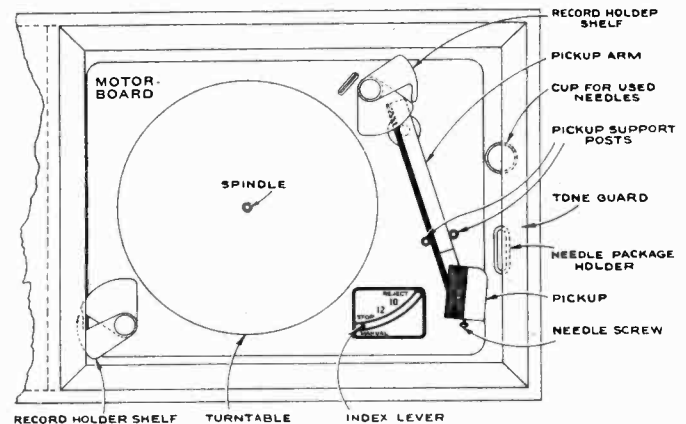
The crystal pickup is sealed in a metal case; if failure occurs, do not attempt to repair the unit, but install a new crystal unit.

**Magnetic Pickup:**

The magnetic pickup used is of an improved design. The horseshoe magnet is rigidly welded to the pole pieces and is irremovable. There is a centering spring attached to the armature to maintain proper adjustment and to provide a limiting effect on the movement of the armature. Service operations which may be necessary on the pickup are as follows:

**Centering Armature.**—Refer to the figure showing the pickup inner structure. The armature is shown in its proper relation to the magnet pole pieces, i. e., exactly centered. Whenever this centering adjustment has been disturbed it will be necessary to remove the pickup mechanism from the tone arm for re-adjustment. Unsolder the two leads from the lugs on the terminal board at the rear of the pickup. Insert a small rod or nail into the armature needle hole and tighten the needle holding screw to hold the rod securely. If the armature clamping screws A and B have not been disturbed, screws C should be loosened which will permit the armature to be moved from side to side, the rod acting as a lever to perform this operation. The proper adjustment is obtained when the armature is brought to the mid position between the pole pieces. Screws C should then be tightened. The armature position should then be central between the pole pieces and at right angles to them. Check to make sure that the armature is not touching the coil. The air gap between the pole pieces and the armature should be kept free from dust, filings, and other foreign material which would obstruct the movement of the pickup armature.

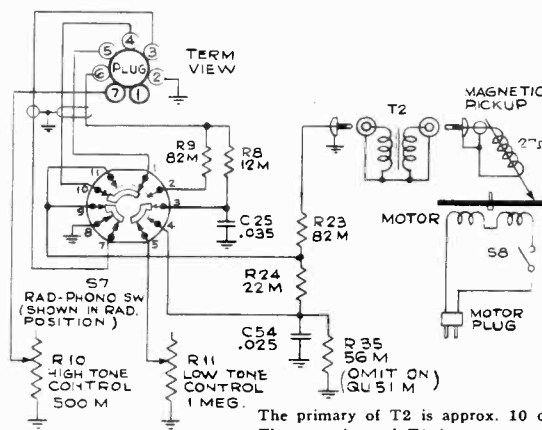
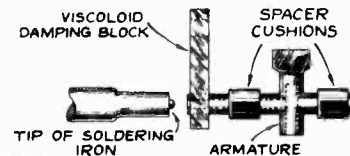
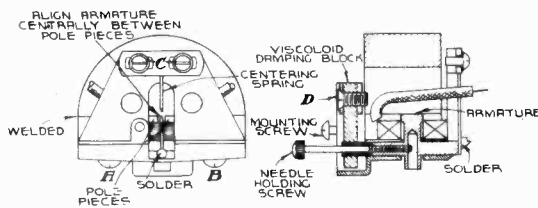
**Replacing Coil.**—Whenever there is defective operation due to an open or shorted pickup coil, this coil should be replaced. Remove the pickup mechanism and terminal board. Remove screws A and B and the magnet assembly. Remove the bakelite coil support (with coil attached) and insert the new coil support assembly in its place, after which replace the magnet assembly and center the armature as described above, then re-assemble the remainder of the unit. Only rosin core solder should be used for soldering the coil leads and pickup leads to the pickup terminal board. This same type of solder should be used when necessary for soldering the centering spring to the armature.



QU51M

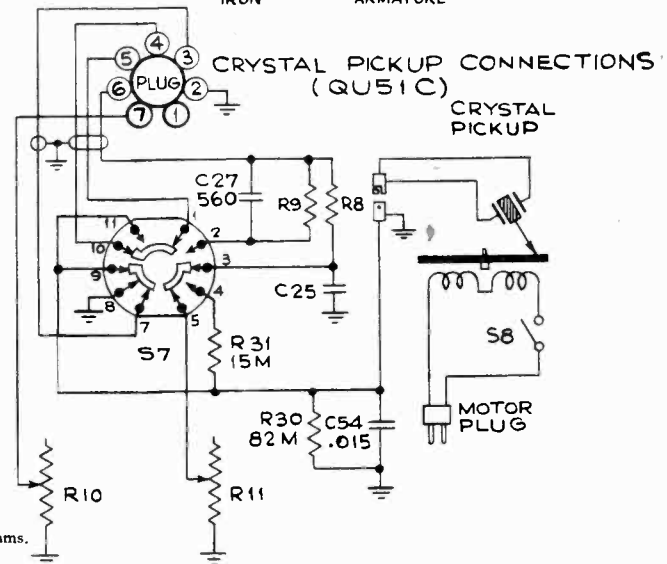
**Magnetizing.**—Loss of magnetization will not usually occur when the pickup has received normal care because the magnet and pole pieces are one unit and the magnetic circuit remains practically closed at all times. When the pickup has been mishandled, subjected to a strong a-c field, jolted, or dropped, there may be an appreciable loss of magnetic strength, in which case it will be necessary to re-magnetize the entire structure. To do this, it will be necessary to first remove the pickup mechanism from the tone arm, and then remove the magnet assembly. Place the magnet assembly on the poles of a standard pickup magnetizer such as the RCA Stock No. 9549 Pickup Magnetizer and charge the magnet in accordance with the instructions accompanying the magnetizer. It is preferable to check the polarity of the pickup magnet and to remagnetize it so that the same polarity is maintained.

**Damping Block.**—The viscoloid damping block which is attached to the front end of the armature shank serves to reduce undesirable resonances and to cause the frequency response to be uniform. Should it be necessary to replace this damping block, the pickup mechanism should be removed from the tone arm. Remove screw D and the damping block from the pickup assembly. Make sure that the shaft of the armature which contacts the viscoloid is clean. Then insert the new damping block so that it occupies the same position as that of the original block, and is in correct vertical alignment with the armature. The hole in the block is somewhat smaller than the diameter of the armature in order to permit a snug fit. With the damping block properly aligned on the armature, screw D with its washer should then be replaced. Heat should be applied to the armature (viscoloid side) so that the damping block will fuse at the point of contact and become rigidly attached to the armature. A special-tip soldering iron, constructed as shown, will be found very useful in performing this operation. The iron should be applied only long enough to slightly melt the block, causing a small bulge on both sides.



The primary of T2 is approx. 10 ohms.  
The secondary of T2 is approx. 4,000 ohms.

MAGNETIC PICKUP CONNECTIONS (QU51M AND QU55)

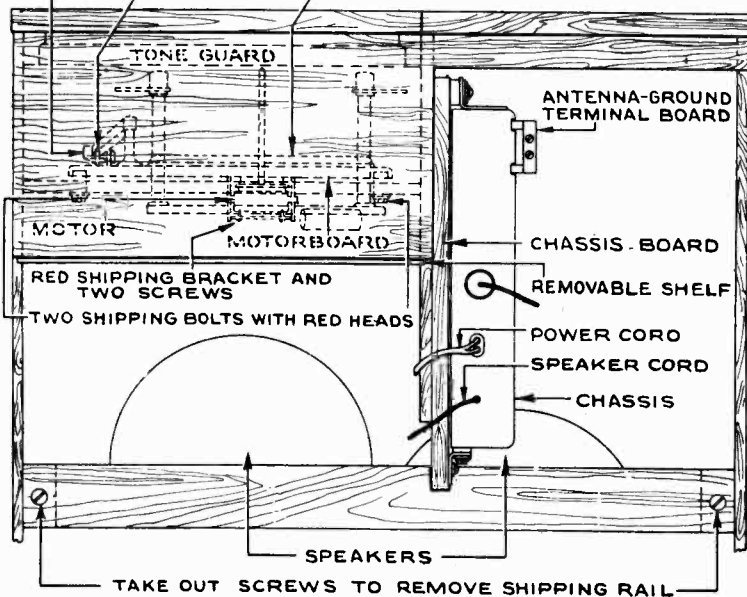


CRYSTAL PICKUP CONNECTIONS (QU51C)

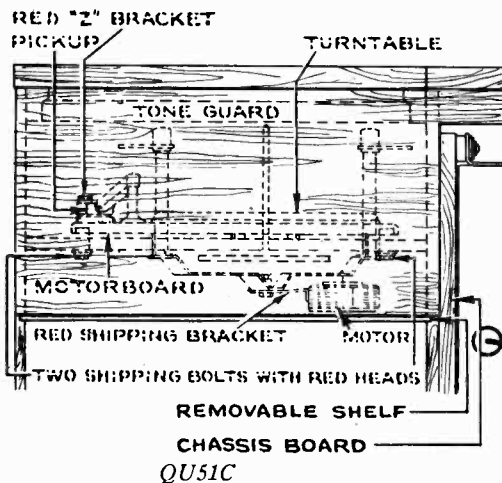
MODELS QU51C, QU51M, QU55  
Ch. RC-568, RC-568A

RCA MFG. CO., INC.

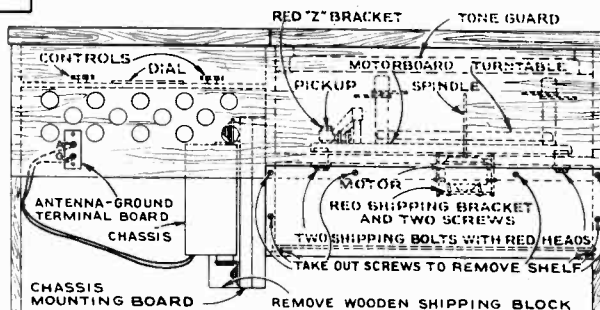
PICKUP PICKUP REST TURNTABLE



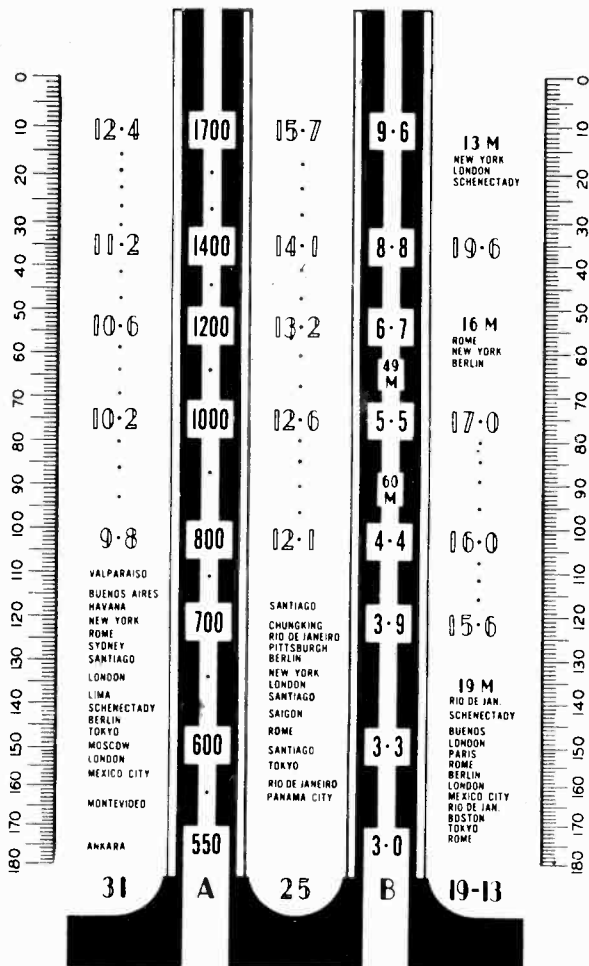
QU51M



QU51C



QU55



**Precautionary Lead Dress:**

- (1) Dress all spread band oscillator coil leads to clear each other by  $\frac{1}{4}$ -inch.
- (2) Dress toothpick condensers and switch leads away from and edge on to shield plates.
- (3) Dress 2nd I.F. transformer lead to diode close to chassis and twist ground lead about it.
- (4) Dress high side and tap condensers on vol. control close to chassis.
- (5) Dress leads to converter socket so that they do not impair flexible mounting.
- (6) Dress oscillator grid condenser and R.F. grid condenser well apart.
- (7) Dress AVC resistor to R.F. converter grid close to lug on socket.
- (8) Dress twisted AC wiring to power switch away from volume control wiring.
- (9) Dress excess power trans. leads between trans. bell and back apron.
- (10) Dress C23 away from front apron.
- (11) Brown lead on 19-25M ant. coil must be dressed over top of coil.
- (12) Dress C24 cap. with short lead to terminal board on rear apron. Power cord leads must be kept away from this section.

**Phasing Loudspeakers**

The two loudspeakers used in Models QU51 and QU55 have their voice coils connected in parallel and must be phased so that both cones will move in the same direction at the same time. If the phasing is incorrect a decided reduction in bass response will be produced. A very simple test for phasing can be made as follows:

1. Turn the instrument on and reduce the volume control setting until no signal is heard.
2. Momentarily connect the leads from a battery (4 to 6 volts) across the voice coils and note whether or not both cones move in the same direction. If they do the phasing is correct.
3. If the cones move in opposite directions the phasing is incorrect and the two voice coil leads going to the RL71A4 (P.M.) speaker should be reversed.

RCA MFG. CO., INC.

MODEL Q30  
MODEL Q31  
MODELS QU51, QU55

STOCK No.	DESCRIPTION	Unit Price	STOCK No.	DESCRIPTION	Unit Price	STOCK No.	DESCRIPTION	Unit Price
31602	Arm-Operating arm between knob shaft and bracket	.25	37053	Board-"Antenna-Ground" board (long bracket)	.20	38611	Barton-Plug button for QU51C only	.10
37891	Bracket-L.H. bracket complete with 2 drive cord pulleys	3.00	37892	Bracket-R.H. bracket complete with 2 drive cord pulleys	.45	38612	Capacitor-.015 mfd., for QU51C only	.20
37896	Bracket-L.H. bracket complete with 2 drive cord pulleys	.45	37897	Bracket-R.H. bracket complete with 2 drive cord pulleys	.45	38613	Capacitor-.025 mfd., for QU51C only	.20
37895	Calibrator-Drive drum calibrator, 3 sections	.25	37898	Calibrator-Drive drum calibrator, 3 sections	.25	38614	Capacitor-.05 mfd., for QU51C only	.20
37898	Capacitor-.01 mfd., mica (C1)	.35	37899	Capacitor-.02 mfd., mica (C2)	.35	38615	Capacitor-.10 mfd., for QU51C only	.20
37900	Capacitor-.03 mfd., mica (C3)	.35	37901	Capacitor-.04 mfd., mica (C4)	.35	38616	Capacitor-.15 mfd., for QU51C only	.20
37902	Capacitor-.05 mfd., mica (C5)	.35	37903	Capacitor-.06 mfd., mica (C6)	.35	38617	Capacitor-.20 mfd., for QU51C only	.20
37904	Capacitor-.07 mfd., mica (C7)	.35	37905	Capacitor-.08 mfd., mica (C8)	.35	38618	Capacitor-.25 mfd., for QU51C only	.20
37906	Capacitor-.10 mfd., mica (C9)	.35	37907	Capacitor-.12 mfd., mica (C10)	.35	38619	Capacitor-.30 mfd., for QU51C only	.20
37908	Capacitor-.15 mfd., mica (C11)	.35	37909	Capacitor-.18 mfd., mica (C12)	.35	38620	Capacitor-.35 mfd., for QU51C only	.20
37910	Capacitor-.20 mfd., mica (C13)	.35	37911	Capacitor-.22 mfd., mica (C14)	.35	38621	Capacitor-.40 mfd., for QU51C only	.20
37912	Capacitor-.25 mfd., mica (C15)	.35	37913	Capacitor-.28 mfd., mica (C16)	.35	38622	Capacitor-.45 mfd., for QU51C only	.20
37914	Capacitor-.30 mfd., mica (C17)	.35	37915	Capacitor-.32 mfd., mica (C18)	.35	38623	Capacitor-.50 mfd., for QU51C only	.20
37916	Capacitor-.35 mfd., mica (C19)	.35	37917	Capacitor-.38 mfd., mica (C20)	.35	38624	Capacitor-.60 mfd., for QU51C only	.20
37918	Capacitor-.40 mfd., mica (C21)	.35	37919	Capacitor-.42 mfd., mica (C22)	.35	38625	Capacitor-.75 mfd., for QU51C only	.20
37920	Capacitor-.45 mfd., mica (C23)	.35	37921	Capacitor-.48 mfd., mica (C24)	.35	38626	Capacitor-1.0 mfd., for QU51C only	.20
37922	Capacitor-.50 mfd., mica (C25)	.35	37923	Capacitor-.55 mfd., mica (C26)	.35	38627	Capacitor-1.5 mfd., for QU51C only	.20
37924	Capacitor-.60 mfd., mica (C27)	.35	37925	Capacitor-.65 mfd., mica (C28)	.35	38628	Capacitor-2.0 mfd., for QU51C only	.20
37926	Capacitor-.70 mfd., mica (C29)	.35	37927	Capacitor-.75 mfd., mica (C30)	.35	38629	Capacitor-3.0 mfd., for QU51C only	.20
37928	Capacitor-.80 mfd., mica (C31)	.35	37929	Capacitor-.85 mfd., mica (C32)	.35	38630	Capacitor-4.0 mfd., for QU51C only	.20
37930	Capacitor-.90 mfd., mica (C33)	.35	37931	Capacitor-.95 mfd., mica (C34)	.35	38631	Capacitor-5.0 mfd., for QU51C only	.20
37932	Capacitor-1.0 mfd., mica (C35)	.35	37933	Capacitor-1.1 mfd., mica (C36)	.35	38632	Capacitor-6.0 mfd., for QU51C only	.20
37934	Capacitor-1.2 mfd., mica (C37)	.35	37935	Capacitor-1.3 mfd., mica (C38)	.35	38633	Capacitor-7.5 mfd., for QU51C only	.20
37936	Capacitor-1.5 mfd., mica (C39)	.35	37937	Capacitor-1.6 mfd., mica (C40)	.35	38634	Capacitor-10.0 mfd., for QU51C only	.20
37938	Capacitor-1.8 mfd., mica (C41)	.35	37939	Capacitor-2.0 mfd., mica (C42)	.35	38635	Capacitor-15.0 mfd., for QU51C only	.20
37940	Capacitor-2.2 mfd., mica (C43)	.35	37941	Capacitor-2.5 mfd., mica (C44)	.35	38636	Capacitor-20.0 mfd., for QU51C only	.20
37942	Capacitor-3.0 mfd., mica (C45)	.35	37943	Capacitor-3.5 mfd., mica (C46)	.35	38637	Capacitor-30.0 mfd., for QU51C only	.20
37944	Capacitor-4.0 mfd., mica (C47)	.35	37945	Capacitor-4.5 mfd., mica (C48)	.35	38638	Capacitor-40.0 mfd., for QU51C only	.20
37946	Capacitor-5.0 mfd., mica (C49)	.35	37947	Capacitor-5.5 mfd., mica (C50)	.35	38639	Capacitor-50.0 mfd., for QU51C only	.20
37948	Capacitor-6.0 mfd., mica (C51)	.35	37949	Capacitor-6.5 mfd., mica (C52)	.35	38640	Capacitor-60.0 mfd., for QU51C only	.20
37950	Capacitor-7.0 mfd., mica (C53)	.35	37951	Capacitor-7.5 mfd., mica (C54)	.35	38641	Capacitor-75.0 mfd., for QU51C only	.20
37952	Capacitor-8.0 mfd., mica (C55)	.35	37953	Capacitor-8.5 mfd., mica (C56)	.35	38642	Capacitor-100.0 mfd., for QU51C only	.20
37954	Capacitor-9.0 mfd., mica (C57)	.35	37955	Capacitor-9.5 mfd., mica (C58)	.35	38643	Capacitor-150.0 mfd., for QU51C only	.20
37956	Capacitor-10.0 mfd., mica (C59)	.35	37957	Capacitor-11.0 mfd., mica (C60)	.35	38644	Capacitor-200.0 mfd., for QU51C only	.20
37958	Capacitor-12.0 mfd., mica (C61)	.35	37959	Capacitor-13.0 mfd., mica (C62)	.35	38645	Capacitor-300.0 mfd., for QU51C only	.20
37960	Capacitor-15.0 mfd., mica (C63)	.35	37961	Capacitor-16.0 mfd., mica (C64)	.35	38646	Capacitor-400.0 mfd., for QU51C only	.20
37962	Capacitor-18.0 mfd., mica (C65)	.35	37963	Capacitor-19.0 mfd., mica (C66)	.35	38647	Capacitor-500.0 mfd., for QU51C only	.20
37964	Capacitor-20.0 mfd., mica (C67)	.35	37965	Capacitor-22.0 mfd., mica (C68)	.35	38648	Capacitor-600.0 mfd., for QU51C only	.20
37966	Capacitor-25.0 mfd., mica (C69)	.35	37967	Capacitor-28.0 mfd., mica (C70)	.35	38649	Capacitor-750.0 mfd., for QU51C only	.20
37968	Capacitor-30.0 mfd., mica (C71)	.35	37969	Capacitor-32.0 mfd., mica (C72)	.35	38650	Capacitor-1000.0 mfd., for QU51C only	.20
37970	Capacitor-35.0 mfd., mica (C73)	.35	37971	Capacitor-38.0 mfd., mica (C74)	.35	38651	Capacitor-1500.0 mfd., for QU51C only	.20
37972	Capacitor-40.0 mfd., mica (C75)	.35	37973	Capacitor-42.0 mfd., mica (C76)	.35	38652	Capacitor-2000.0 mfd., for QU51C only	.20
37974	Capacitor-45.0 mfd., mica (C77)	.35	37975	Capacitor-48.0 mfd., mica (C78)	.35	38653	Capacitor-3000.0 mfd., for QU51C only	.20
37976	Capacitor-50.0 mfd., mica (C79)	.35	37977	Capacitor-55.0 mfd., mica (C80)	.35	38654	Capacitor-4000.0 mfd., for QU51C only	.20
37978	Capacitor-60.0 mfd., mica (C81)	.35	37979	Capacitor-65.0 mfd., mica (C82)	.35	38655	Capacitor-5000.0 mfd., for QU51C only	.20
37980	Capacitor-70.0 mfd., mica (C83)	.35	37981	Capacitor-75.0 mfd., mica (C84)	.35	38656	Capacitor-6000.0 mfd., for QU51C only	.20
37982	Capacitor-80.0 mfd., mica (C85)	.35	37983	Capacitor-85.0 mfd., mica (C86)	.35	38657	Capacitor-7500.0 mfd., for QU51C only	.20
37984	Capacitor-90.0 mfd., mica (C87)	.35	37985	Capacitor-95.0 mfd., mica (C88)	.35	38658	Capacitor-10000.0 mfd., for QU51C only	.20
37986	Capacitor-100.0 mfd., mica (C89)	.35	37987	Capacitor-110.0 mfd., mica (C90)	.35	38659	Capacitor-15000.0 mfd., for QU51C only	.20
37988	Capacitor-120.0 mfd., mica (C91)	.35	37989	Capacitor-125.0 mfd., mica (C92)	.35	38660	Capacitor-20000.0 mfd., for QU51C only	.20
37990	Capacitor-130.0 mfd., mica (C93)	.35	37991	Capacitor-135.0 mfd., mica (C94)	.35	38661	Capacitor-30000.0 mfd., for QU51C only	.20
37992	Capacitor-140.0 mfd., mica (C95)	.35	37993	Capacitor-145.0 mfd., mica (C96)	.35	38662	Capacitor-40000.0 mfd., for QU51C only	.20
37994	Capacitor-150.0 mfd., mica (C97)	.35	37995	Capacitor-155.0 mfd., mica (C98)	.35	38663	Capacitor-50000.0 mfd., for QU51C only	.20
37996	Capacitor-160.0 mfd., mica (C99)	.35	37997	Capacitor-165.0 mfd., mica (C100)	.35	38664	Capacitor-60000.0 mfd., for QU51C only	.20
37998	Capacitor-170.0 mfd., mica (C101)	.35	37999	Capacitor-175.0 mfd., mica (C102)	.35	38665	Capacitor-75000.0 mfd., for QU51C only	.20
38000	Capacitor-180.0 mfd., mica (C103)	.35	38001	Capacitor-185.0 mfd., mica (C104)	.35	38666	Capacitor-100000.0 mfd., for QU51C only	.20
38002	Capacitor-190.0 mfd., mica (C105)	.35	38003	Capacitor-195.0 mfd., mica (C106)	.35	38667	Capacitor-150000.0 mfd., for QU51C only	.20
38004	Capacitor-200.0 mfd., mica (C107)	.35	38005	Capacitor-205.0 mfd., mica (C108)	.35	38668	Capacitor-200000.0 mfd., for QU51C only	.20
38006	Capacitor-210.0 mfd., mica (C109)	.35	38007	Capacitor-215.0 mfd., mica (C110)	.35	38669	Capacitor-300000.0 mfd., for QU51C only	.20
38008	Capacitor-220.0 mfd., mica (C111)	.35	38009	Capacitor-225.0 mfd., mica (C112)	.35	38670	Capacitor-400000.0 mfd., for QU51C only	.20
38010	Capacitor-230.0 mfd., mica (C113)	.35	38011	Capacitor-235.0 mfd., mica (C114)	.35	38671	Capacitor-500000.0 mfd., for QU51C only	.20
38012	Capacitor-240.0 mfd., mica (C115)	.35	38013	Capacitor-245.0 mfd., mica (C116)	.35	38672	Capacitor-600000.0 mfd., for QU51C only	.20
38014	Capacitor-250.0 mfd., mica (C117)	.35	38015	Capacitor-255.0 mfd., mica (C118)	.35	38673	Capacitor-750000.0 mfd., for QU51C only	.20
38016	Capacitor-260.0 mfd., mica (C119)	.35	38017	Capacitor-265.0 mfd., mica (C120)	.35	38674	Capacitor-1000000.0 mfd., for QU51C only	.20
38018	Capacitor-270.0 mfd., mica (C121)	.35	38019	Capacitor-275.0 mfd., mica (C122)	.35	38675	Capacitor-1500000.0 mfd., for QU51C only	.20
38020	Capacitor-280.0 mfd., mica (C123)	.35	38021	Capacitor-285.0 mfd., mica (C124)	.35	38676	Capacitor-2000000.0 mfd., for QU51C only	.20
38022	Capacitor-290.0 mfd., mica (C125)	.35	38023	Capacitor-295.0 mfd., mica (C126)	.35	38677	Capacitor-3000000.0 mfd., for QU51C only	.20
38024	Capacitor-300.0 mfd., mica (C127)	.35	38025	Capacitor-305.0 mfd., mica (C128)	.35	38678	Capacitor-4000000.0 mfd., for QU51C only	.20
38026	Capacitor-310.0 mfd., mica (C129)	.35	38027	Capacitor-315.0 mfd., mica (C130)	.35	38679	Capacitor-5000000.0 mfd., for QU51C only	.20
38028	Capacitor-320.0 mfd., mica (C131)	.35	38029	Capacitor-325.0 mfd., mica (C132)	.35	38680	Capacitor-6000000.0 mfd., for QU51C only	.20
38030	Capacitor-330.0 mfd., mica (C133)	.35	38031	Capacitor-335.0 mfd., mica (C134)	.35	38681	Capacitor-7500000.0 mfd., for QU51C only	.20
38032	Capacitor-340.0 mfd., mica (C135)	.35	38033	Capacitor-345.0 mfd., mica (C136)	.35	38682	Capacitor-10000000.0 mfd., for QU51C only	.20
38034	Capacitor-350.0 mfd., mica (C137)	.35	38035	Capacitor-355.0 mfd., mica (C138)	.35	38683	Capacitor-15000000.0 mfd., for QU51C only	.20
38036	Capacitor-360.0 mfd., mica (C139)	.35	38037	Capacitor-365.0 mfd., mica (C140)	.35	38684	Capacitor-20000000.0 mfd., for QU51C only	.20
38038	Capacitor-370.0 mfd., mica (C141)	.35	38039	Capacitor-375.0 mfd., mica (C142)	.35	38685	Capacitor-30000000.0 mfd., for QU51C only	.20
38040	Capacitor-380.0 mfd., mica (C143)	.35	38041	Capacitor-385.0 mfd., mica (C144)	.35	38686	Capacitor-40000000.0 mfd., for QU51C only	.20
38042	Capacitor-390.0 mfd., mica (C145)	.35	38043	Capacitor-395.0 mfd., mica (C146)	.35	38687	Capacitor-50000000.0 mfd., for QU51C only	.20
38044	Capacitor-400.0 mfd., mica (C147)	.35	38045	Capacitor-405.0 mfd., mica (C148)	.35	38688	Capacitor-60000000.0 mfd., for QU51C only	.20
38046	Capacitor-410.0 mfd., mica (C149)	.35	38047	Capacitor-415.0 mfd., mica (C150)	.35	38689	Capacitor-75000000.0 mfd., for QU51C only	.20
38048	Capacitor-420.0 mfd., mica (C151)	.35	38049	Capacitor-425.0 mfd., mica (C152)	.35	38690	Capacitor-100000000.0 mfd., for QU51C only	.20
38050	Capacitor-430.0 mfd., mica (C153)	.35	38051	Capacitor-435.0 mfd., mica (C154)	.35	38691	Capacitor-150000000.0 mfd., for QU51C only	.20
38052	Capacitor-440.0 mfd., mica (C155)	.35	38053	Capacitor-445.0 mfd., mica (C156)	.35	38692	Capacitor-200000000.0 mfd., for QU51C only	.20
38054	Capacitor-450.0 mfd., mica (C157)	.35	38055	Capacitor-455.0 mfd., mica (C158)	.35	38693	Capacitor-300000000.0 mfd., for QU51C only	.20
38056	Capacitor-460.0 mfd., mica (C159)	.35	38057	Capacitor-465.0 mfd., mica (C160)	.35	38694	Capacitor-400000000.0 mfd., for QU51C only	.20
38058	Capacitor-470.0 mfd., mica (C161)	.35	38059	Capacitor-475.0 mfd., mica (C162)	.35	38695	Capacitor-500000000.0 mfd., for QU51C only	.20
38060	Capacitor-480.0 mfd., mica (C163)	.35	38061	Capacitor-485.0 mfd., mica (C164)	.35	38696	Capacitor-600000000.0 mfd., for QU51C only	.20
38062	Capacitor-490.0 mfd., mica (C165)	.35	38063	Capacitor-495.0 mfd., mica (C166)	.35	38697	Capacitor-750000000.0 mfd., for QU51C only	.20
38064	Capacitor-500.0 mfd., mica (C167)	.35	38065	Capacitor-505.0 mfd., mica (C168)	.35	38698	Capacitor-1000000000.0 mfd., for QU51C only	.20
38066	Capacitor-510.0 mfd., mica (C169)	.35	38067	Capacitor-515.0 mfd., mica (C170)	.35	38699	Capacitor-1500000000.0 mfd., for QU51C only	.20
38068	Capacitor-520.0 mfd., mica (C171)	.35	38069	Capacitor-525.0 mfd., mica (C172)	.35	38700	Capacitor-2000000000.0 mfd., for QU51C only	.20
38070	Capacitor-530.0 mfd., mica (C173)	.35	38071	Capacitor-535.0 mfd., mica (C174)	.35	3		

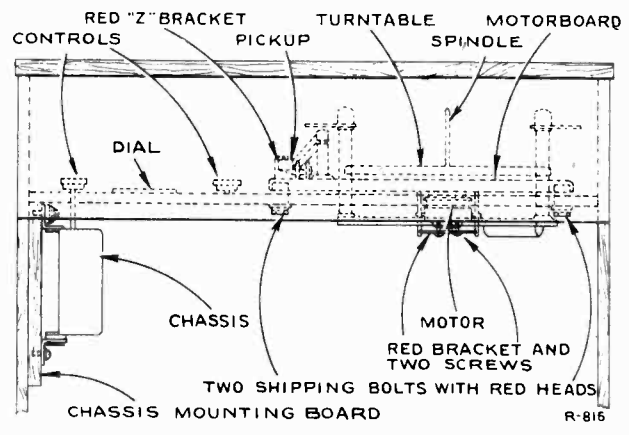


MODELS QU52C, QU52M

RCA MFG. CO., INC.

STOCK No.	DESCRIPTION	Unit List Price
<b>CHASSIS ASSEMBLIES</b>		
	(RC 507L) For Crystal Type Pickup (RC 507N) For Magnetic Type Pickup	
38923	Bracket—L. H. pulley support bracket complete with pulley	.30
38924	Bracket—R. H. pulley support bracket complete with pulley	.50
32556	Cable—Phono input cable (for magnetic type)	.75
36398	Cable—Shielded cable for radio-phono connector	.85
33014	Capacitor—Electrolytic, comprising 3 sections of 10 mfd., 450 volts, and 1 section of 20 mfd., 25 volts	1.90
12714	Capacitor—Air trimmer—medium—2-12 mmfd.	.50
34654	Capacitor—Mica trimmer, comprising 3 sections of 2.5-10 mmfd. each	.60
35846	Capacitor—6 mmfd., ceramic	.35
36012	Capacitor—15 mmfd., ceramic	.35
12896	Capacitor—15 mmfd., moulded mica	.35
35844	Capacitor—47 mmfd., ceramic	.35
13141	Capacitor—47 mmfd., moulded	.35
12723	Capacitor—56 mmfd., moulded	.35
30949	Capacitor—56 mmfd., un moulded	.25
35645	Capacitor—68 mmfd., ceramic	.35
13057	Capacitor—68 mmfd., moulded	.35
12720	Capacitor—100 mmfd., moulded	.35
30904	Capacitor—100 m.mfd., un moulded	.25
12694	Capacitor—220 mmfd.	.35
12537	Capacitor—560 mmfd.	.35
35643	Capacitor—3,000 mmfd.	.55
4838	Capacitor—.005 mfd., 1,000 volts	.25
33584	Capacitor—.005 mfd., 1,200 volts	.25
4937	Capacitor—.01 mfd., 1,000 volts	.25
4870	Capacitor—.025 mfd.	.20
5196	Capacitor—.035 mfd. (for magnetic type)	.20
4886	Capacitor—.05 mfd.	.20
35632	Coil—Antenna coil—"A" band	1.10
35631	Coil—Antenna coil—spread band	.75
35623	Coil—Oscillator coil—"A" and "B" bands	.80
35624	Coil—Oscillator coil—19-13 meter band	.45
35625	Coil—Oscillator coil—25 meter band	.50
35626	Coil—Oscillator coil—31 meter band	.45
35619	Condenser—Variable tuning condenser	2.80
38409	Control—Tone control	1.00
38412	Control—Volume control and power switch	2.00
32634	Cord—Drive cord (approx. 27 in. overall lgth.)	.10
32634	Cord—Pointer cord (approx. 47 in. overall lgth.)	.10
35788	Core—Adjustable core and stud for "A" and "B" band oscillator coil	.15
31259	Core—Adjustable core and stud for "19-13 meter band," "25 meter band," and "31 meter band" oscillator coils	.15
35642	Dial—Drive drum calibrator dial	.10
35627	Drum—Drive drum—less calibrator dial	.55
35638	Flywheel—Tuning shaft flywheel	1.10
30868	Plug—2-contact female plug for motor cable	.35
5040	Plug—4-contact female plug for speaker cable	.30
35630	Pulley—Drive cord pulley—between tuning knob and range switch shafts	.10
30735	Resistor—560 ohms, 1 watt	.22
30436	Resistor—12,000 ohms, 1/2 watt	.20
36714	Resistor—15,000 ohms, 1/2 watt (for crystal type only)	.20
35595	Resistor—15,000 ohms, 3 watt	.35
3219	Resistor—18,000 ohms, 1/2 watt (for magnetic type)	.20
30492	Resistor—22,000 ohms, 1/2 watt	.20
12454	Resistor—33,000 ohms, 1/2 watt	.20
14138	Resistor—68,000 ohms, 1/2 watt (for magnetic type only)	.20
13734	Resistor—120,000 ohms, 1/2 watt	.20
30493	Resistor—150,000 ohms, 1/2 watt	.20
14020	Resistor—150,000 ohms, 1/2 watt (for magnetic type)	.20
30651	Resistor—270,000 ohms, 1/2 watt (for crystal type only)	.20
14983	Resistor—330,000 ohms, 1/2 watt	.20
30648	Resistor—470,000 ohms, 1/2 watt	.20
30648	Resistor—470,000 ohms, 1/2 watt	.20
13730	Resistor—1 meg., 1/2 watt	.20
30649	Resistor—2.2 meg., 1/2 watt	.20
30992	Resistor—10 meg., 1/2 watt	.20
14350	Screw—No. 8-32 sq. head set screw for drive drum	.03
38925	Shaft—Flywheel and tuning knob shaft	.25
31364	Socket—Dial lamp socket	.20
31251	Socket—Tube socket	.25
31418	Spring—Pointer cord or drive cord spring	.05
31261	Spring—Retaining spring for adjustable core and studs	.01
35622	Support—Tuning knob shaft and flywheel support	.20
38927	Switch—Phono switch	1.10
38926	Switch—Range switch	2.50
32827	Switch—Voltage switch	.35
35636	Transformer—First I.F. transformer	1.70
35628	Transformer—Second I.F. transformer	1.85
35588	Transformer—Power transformer—105-120 volts, 25 cycle	6.30
32911	Transformer—Power transformer—105-120 volts, 50-60 cycle	4.10
32852	Transformer—Power transformer—105-130, 140-160, 195-250 volts, 50-60 cycle	4.50

STOCK No.	DESCRIPTION	Unit List Price
<b>SPEAKER ASSEMBLIES</b>		
(RL 70M-1)		
13867	Cap—Dust cap	.03
12079	Coil—Field coil	2.10
11469	Coil—Neutralizing coil	.30
36145	Cone—Cone complete with voice coil	1.35
5039	Plug—4-prong male plug for speaker	.30
37899	Transformer—Output transformer	2.25



FOR OTHER DATA ON PICKUPS, SEE MODELS QU51C, QU51M, AND QU55.

Lubrication.—Petrolatum or petroleum jelly should be applied to cam, main gear, spindle pinion gear, and gears of record posts.

Light machine oil should be used in the tone arm vertical bearing, record post bearings, and all other bearings of various levers and pulleys on underside of motorboard.

Do not allow oil or grease to come in contact with rubber parts of the mechanism.

**Service Hints.—**

Before servicing the automatic record changer, inspect the assembly to see that all levers, parts, gears, springs, etc., are in good order and are correctly assembled.

A bind or jam in the mechanism can usually be relieved by rotating the turntable in the reverse direction.

The changer can be conveniently rotated through its change cycle by pushing the index lever to "Reject" and revolving the turntable by hand. Six turntable revolutions are required for one change cycle.

When a record has been played the pickup moves out, another record is dropped down, and the needle is fed automatically into the starting groove of this record. If the needle fails to enter the starting groove, raise the right-hand side of the cabinet by inserting thin spacers under the feet on that side. If the needle slides over a few grooves, raise the left-hand side of the cabinet in a similar manner.

The 10- and 12-inch records must be absolutely flat for smooth operation.

A pickup shorting switch, located under the motorboard, operates when the pickup is moved outward to the pickup rest.

**Caution.—**

1. This instrument is not recommended for playing 10-inch and 12-inch records in mixed sequence.
2. Never use force to start or stop the motor or any part of the record-changing mechanism or pickup arm.
3. Warped or damaged records may cause the mechanism to jam.
4. Warped records may slide on one another when playing, resulting in unsatisfactory reproduction.
5. Do not leave records on the record-holder posts as they may warp, particularly in warm climates. Warped records may be flattened by placing them on a flat surface with a flat heavy article placed on top of them for a few days.
6. Do not leave pickup needle resting on a record or on the turntable. Always place it on the pickup rest.
7. Do not insert a used needle in the pickup, and avoid turning a needle after it has been used.
8. If for any reason the phonograph stalls, turn off the turntable switch and remove the records from the record holder shelves. Start the turntable and allow the pickup arm to complete its cycle.



MODELS QU52C, Ch. RC-507L;  
QU52M, Ch. RC-507N

RCA MFG. CO., INC.

PHONOGRAPH (Automatic)

CRYSTAL PICKUP (QU52C)

Impedance..... 100,000 ohms at 1,000 c.p.s.  
Average Output... 1.5 volts at 1,000 c.p.s. across 500,000 ohm load

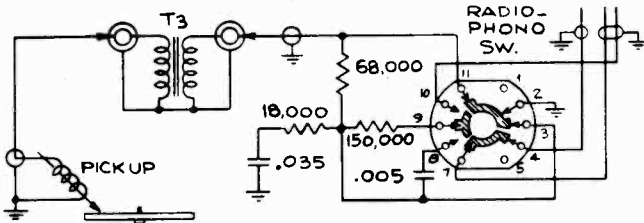
MAGNETIC PICKUP (QU52M)

Impedance..... 96 ohms at 1,000 c.p.s.  
Average Output..... 0.14 volts at 400 c.p.s. across open circuit

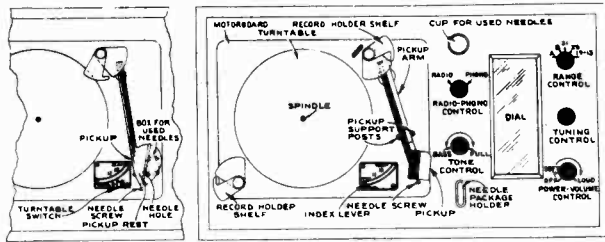
LOUDSPEAKER (RL-70M1)

Type..... 12-inch Electrodynamic  
V-C Impedance at 400 c.p.s..... 2.2 ohms

The QU52M is equipped with a magnetic pickup, the QU52C with a crystal pickup. The output of the crystal pickup is fed into the audio end of the receiver through a switch and compensating circuit. On instruments using a magnetic pickup, a transformer and compensating circuit are used between the pickup and the audio input (see schematic diagram). The transformer has two jacks, the larger one (primary) for input from the pickup and the smaller one (secondary) for output to the compensating circuit. The components of the compensating circuit are mounted externally to the chassis on a terminal board in the cabinet.

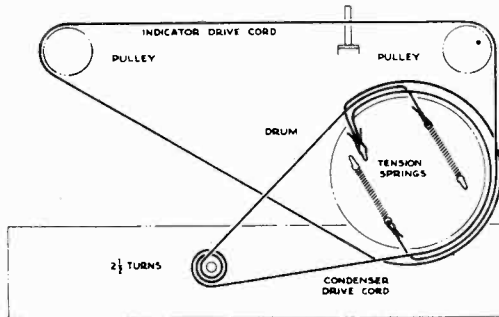


Schematic Showing Magnetic Pickup Connections (QU52M)

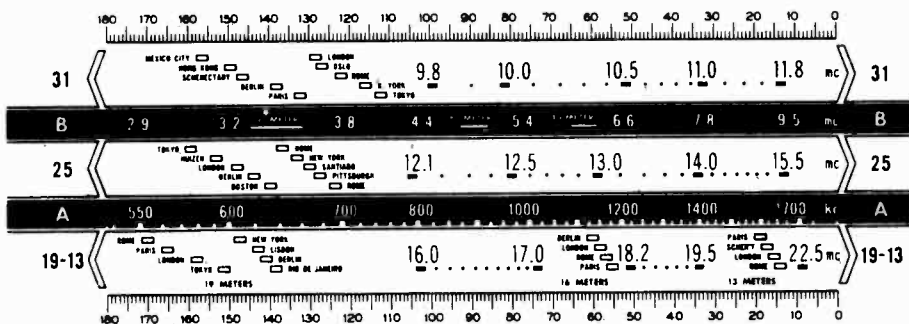


QU52C

QU52M



Dial-Indicator and Drive Mechanism



On actual Dial Scale the markings and calibration are rotated 90°

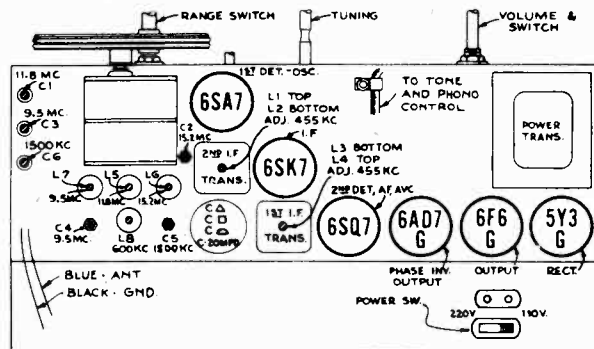
Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range switch	Turn radio dial to—	Adjust the following for max. peak output
1	6SK7 I-F grid in series with .01 mfd.	465 kc	A	Quiet Point near 180°	L3 and L4 2nd I-F Trans.
2	6SA7 1st Det. grid in series with .01 mfd.				L1 and L2 1st I-F Trans.
3	Ant. lead in series with 300 ohms	11.8 mc	25M	138.5°	L5 (osc.) C1 (ant.)
4		15.2 mc		17°	C2 (osc.)*
5		Repeat steps 3 and 4			
6		15.2 mc	19-13M	156°	L6 (osc.)**
7	Ant. lead in series with 200 mmf.	9.5 mc	31M	156°	7 (osc.)** C3 (ant.)
8		9.5 mc	B	11.5°	C4 (osc.)***
9		1,500 kc	A	26°	C5 (osc.) C6 (ant.)
10	800 kc	150°		L8 (osc.) (Rock gang)	
11	Repeat steps 9 and 10				

\* Use minimum capacity peak if two can be obtained. Check image to determine that C2 has been adjusted to the correct peak by tuning receiver to approximately 14.29 mc (29°) where a weaker signal should be received.

\*\* Peak at minimum position of plunger if two peaks can be obtained.

\*\*\* Peak at minimum capacity if two peaks can be obtained.

NOTE: Oscillator tracks above signal on all bands.



Precautionary Lead Dress.—

1. All leads between antenna coils and switch must be as short as possible and kept away from oscillator coil, leads and switches.
2. All oscillator coil leads must be kept apart from each other and other leads and parts.
3. Blue plate lead of 2nd I-F should be dressed under other leads and against chassis.

Loudspeaker.—To center the loudspeaker voice coil, first remove the front dust cover, then loosen the screws holding the spider assembly. Insert three narrow feelers into the air gap, and tighten the spider screws. Remove the feelers and fasten a dust cover in place with loudspeaker cement.

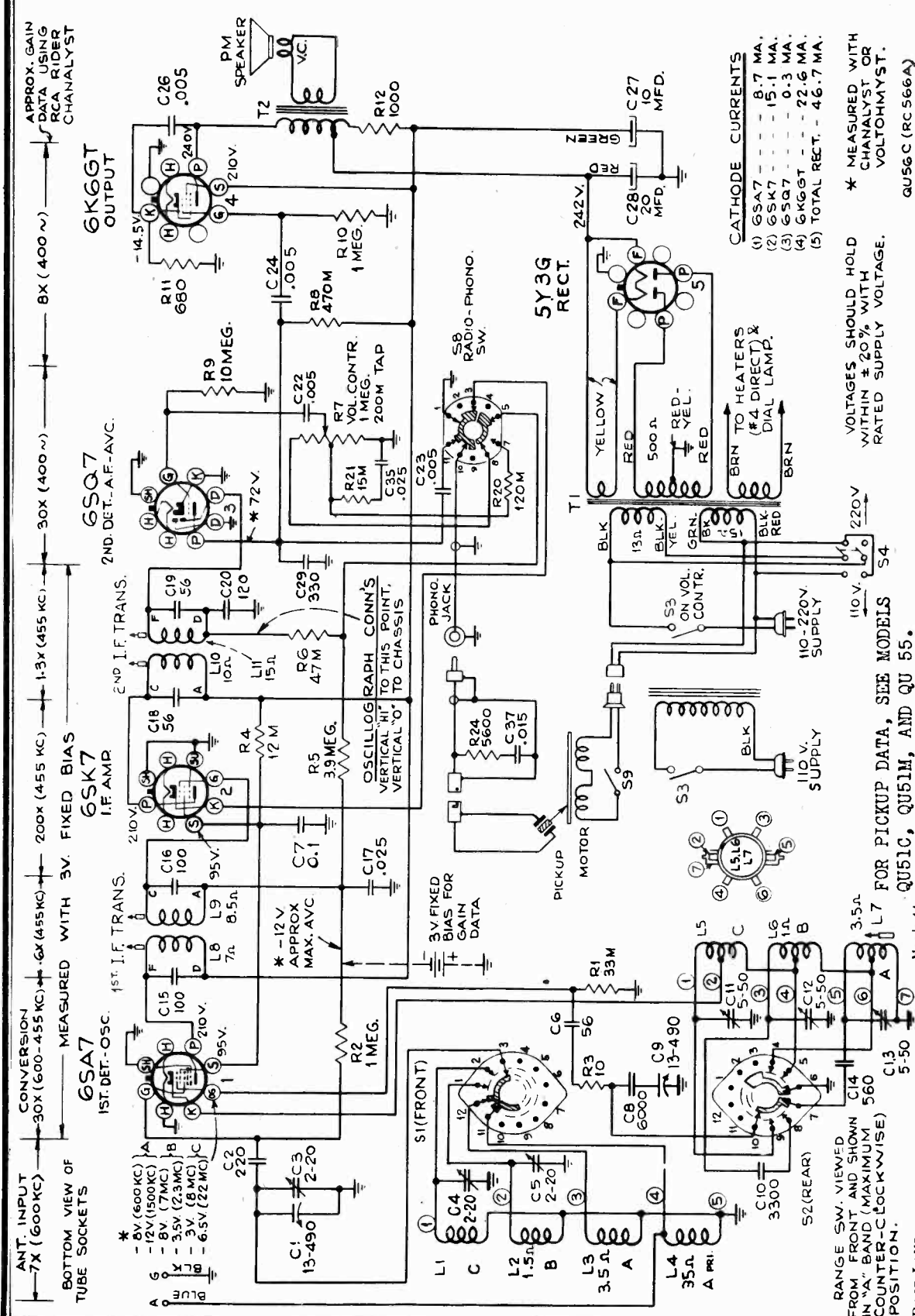
Calibration Scale

Reduced Reproduction of Receiver Dial, and Corresponding 0-180° Calibration Scales

The corresponding position of the dial indicator for any setting of the calibration scale can be determined by drawing a line from this point on the bottom calibration scale to the same point on the top calibration scale. For example: 150° on the calibration scale corresponds to approximately 800 kc on "A" band, etc.

RCA MFG. CO., INC.

MODELS QU56C, QU56M  
Ch. RC-566A



ANT. INPUT  
7X (600 KC)  
BOTTOM VIEW OF  
TUBE SOCKETS

CONVERSION  
30X (600-455 KC) | 6X (455 KC) | 200X (455 KC) | 1.3X (455 KC) | 30X (400 ~) | 8X (400 ~)

APPROX. GAIN  
DATA USING  
RCA RIDER  
CHANALYST

MEASURED WITH 3V. FIXED BIAS  
30X (400 ~) | 8X (400 ~)

APPROX. GAIN  
DATA USING  
RCA RIDER  
CHANALYST

APPROX. GAIN  
DATA USING  
RCA RIDER  
CHANALYST

- CATHODE CURRENTS
- (1) 6SA7 - - - - - 8.7 MA.
  - (2) 6SK7 - - - - - 15.1 MA.
  - (3) 6SQ7 - - - - - 0.3 MA.
  - (4) 6KGGT - - - - - 22.6 MA.
  - (5) TOTAL RECT. - - 46.7 MA.

VOLTAGES SHOULD HOLD  
WITHIN ± 20% WITH  
RATED SUPPLY VOLTAGE.

\* MEASURED WITH  
CHANALYST OR  
VOLTCHMYST.

QU56C (RC566A)

QU56M

QU56C and C  
92196-504

FREQUENCY RANGES

Standard Broadcast ("A" Band)	540-1,780 kc (555-174 m)
Medium Wave ("B" Band)	2.3-7.0 mc (13.9-42.9 m)
Short Wave ("C" Band)	7.0-22.0 mc (42.9-13.6 m)
INTERMEDIATE FREQUENCY	455 kc

POWER SUPPLY RATING

105-125 volts, 50-60 cycles	65 watts
105-125, 210-250 volts, 50-60 cycles	65 watts
105-125 volts, 25 cycles	65 watts

PHONOGRAPH

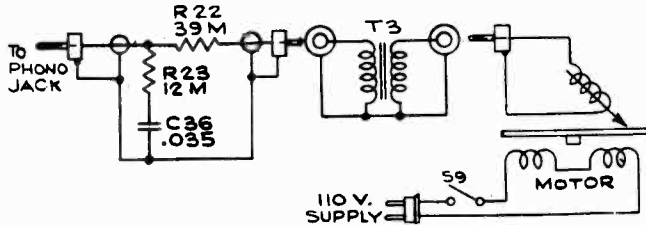
Type of Pickups	QU56C Crystal
Type of Mechanism	QU56M Magnetic
Turntable Speed	Manual 78 r.p.m.

MODELS QU56C, QU56M

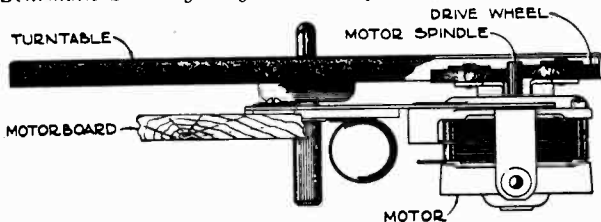
Ch. RC-566A

RCA MFG. CO., INC.

The QU56M is equipped with a magnetic pickup, the QU56C with a crystal pickup. The output of the crystal pickup is fed into the audio end of the receiver through a switch and compensating circuit. On instruments using a magnetic pickup, a transformer and compensating circuit are used between the pickup and the audio input (see schematic diagram). The transformer has two jacks, the larger one (primary) for input from the pickup and the smaller one (secondary) for output to the compensating circuit. The components of the compensating circuit are mounted externally to the chassis on a terminal board in the cabinet.



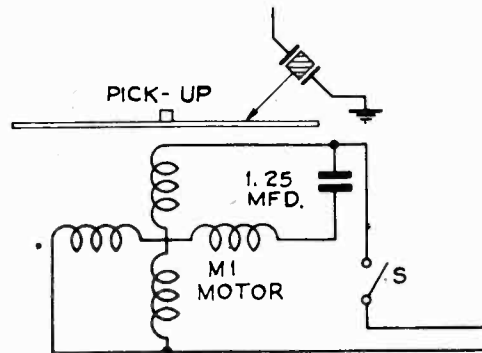
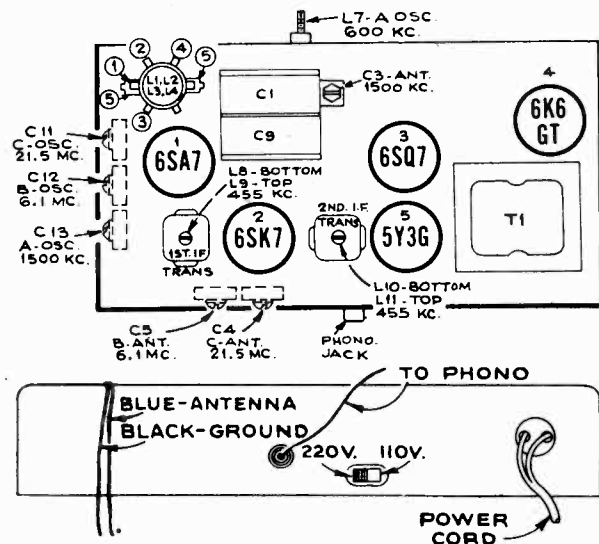
Schematic Showing Magnetic Pickup Connections (QU56M)



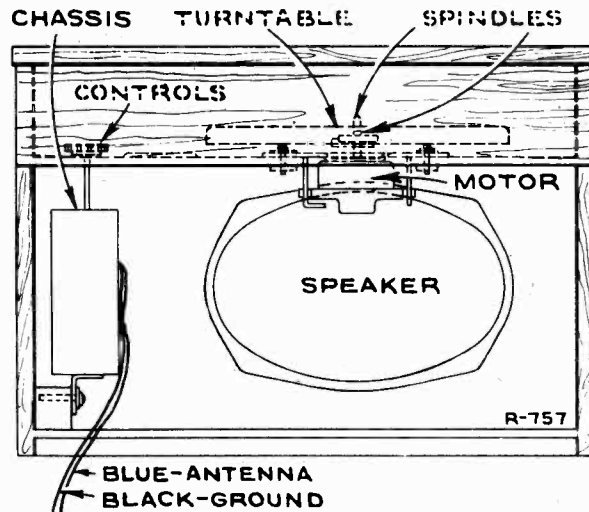
Motor Detail

Precautionary Lead Dress.

1. "B" and "C" band antenna trimmer leads to be dressed away from "B" and "C" band oscillator trimmer leads.
2. Excess power transformer leads to be dressed between power transformer bell and rear apron of chassis.
3. R9 1st Audio grid lead, dressed down to chassis.
4. "B" Band Antenna coil lead to be wired so that it is dressed around "B" band section in a clockwise direction to coil lug in order to obtain proper "B" band tracking.
5. "C" band oscillator cathode lead to be dressed around coil in clockwise direction as shown in sample.
6. Dress tone control capacitor C23 up and away from A.C. switch leads.
7. Dress capacitor C25 from phono. socket to 6SQ7 socket up and away from all parts and leads.
8. Dress audio coupling C22 from volume control clear of A.C. wiring.
9. Red lead from A.C. switch to power switch to be dressed down against base.
10. Drive front gang mounting screw first.
11. Green lead to phono. socket dress up from chassis.
12. Dress A.C. switch leads to side apron.
13. Dress R20, R21 close to front apron.

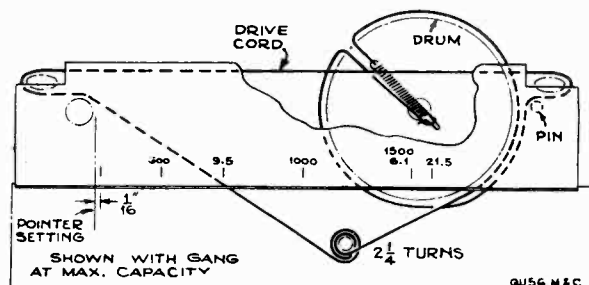


Motor Schematic



Steps	Range Switch	Connect high side test osc. to—	Tune test osc. to—	Turn radio dial to	Adjust following for max. peak output	
1	"A"	I-F grid in series with .01 mfd.	455 kc	"A" band quiet point at high freq. end.	L10, L11 (2nd I-F trans.)	
2		1st det. grid, in series with .01 mfd.			L9, L8† (1st I-F trans.)	
3		Antenna lead in series with 200 mmf.	1,500 kc (200 m)		1,500 kc mark (5th mark)	C13, C3
4			600 kc (500 m)		600 kc mark (2nd mark)	L7** Rock gang
5			Repeat steps 3 and 4.			
6	"B"	Antenna lead in series with 300 ohms	6.1 mc	6.1 mc mark (5th mark)	C12* (osc.) C5 (ant.)	
7	"C"		21.5 mc	21.5 mc mark (6th mark)	C11, * C4	

\* Use minimum capacity peak if two peaks can be obtained.  
 \*\* Rock gang slightly for peak output.  
 † Do not readjust L11 or L10 when test oscillator is applied to the 6SA7 Grid.  
 NOTE: Oscillator tracks above signal on all bands.



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STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
<b>CHASSIS ASSEMBLIES (RC 566-A)</b>			<b>MOTOR ASSEMBLIES</b>		
35761	Capacitor—Electrolytic—comprising 1 section of 20 mfd., 350 volts, and 1 section of 10 mfd., 350 volts.	.90	36986	Arm—Drive wheel or idler wheel support arm.	.70
32830	Capacitor—Mica trimmer—comprising 2 sections of 2-20 mmfd. each.	.40	36988	Armature—Armature complete for 105-125 volts, 50 cycle motor.	6.50
32829	Capacitor—Mica trimmer—comprising 3 sections of 5-60 mmfd. each.	.55	36987	Armature—Armature complete for 105-125 volts, 60 cycle motor.	2.75
12723	Capacitor—56 mmfd., moulded.	.35	36989	Bushing—Motor mounting rubber bushings.	.10
30949	Capacitor—56 mmfd., unmoulded.	.25	36991	Capacitor—Motor capacitor for 105-125 volts, 50 cycle motor.	1.75
30904	Capacitor—100 mmfd.	.25	36990	Capacitor—Motor capacitor for 105-125 volts, 60 cycle motor.	1.50
12724	Capacitor—120 mmfd.	.35	36993	Cover—Bakelite top end shell for 105-125 volts, 50 cycle motor.	.50
12694	Capacitor—220 mmfd.	.35	36992	Cover—Bakelite top end shell for 105-125 volts, 60 cycle.	.50
12952	Capacitor—330 mmfd.	.35	36985	Motor—105-125 volts, 50 cycle motor—less pulleys, capacitor and cradle.	10.00
12537	Capacitor—560 mmfd.	.35	36984	Motor—105-125 volts, 60 cycle motor—less pulleys, capacitor and cradle.	6.00
31403	Capacitor—3,300 mmfd.	.80	36996	Plate—Motor support plate complete with turntable bearing.	1.50
31405	Capacitor—6,000 mmfd.	.75	36997	Spring—Idler arm tension spring.	.08
4838	Capacitor—.005 mfd., 1,000 volts.	.25	36996	Spindle—Turntable spindle.	.50
33584	Capacitor—.005 mfd., 1,200 volts.	.25	36994	Wheel—Rubber tired idler or drive wheel.	.65
4870	Capacitor—.025 mfd.	.20	<b>AUTOMATIC SWITCH ASSEMBLIES</b>		
4839	Capacitor—.01 mfd.	.30	34419	Base—Pickup arm mounting base.	.35
32821	Coil—Antenna coil—"A," "B" and "C" bands	1.35	36772	Cam—Automatic switch cam.	.65
32822	Coil—Oscillator coil—"A," "B" and "C" bands	1.00	36771	Mounting—Pickup arm mounting.	.20
38287	Condenser—Variable tuning condenser.	2.50	36773	Plug—3-prong male plug.	.15
38408	Control—Volume control and power switch.	2.00	35521	Spring—Cam tension spring.	.05
32634	Cord—Drive cord (approx. 42 in. overall lgth.)	.10	36995	Switch—Automatic switch—less cam, base, and shaft.	1.75
32713	Core—Adjustable core and stud for oscillator coil	.35	<b>SPEAKER ASSEMBLIES (92196-504)</b>		
36237	Drum—Tuning condenser drive drum.	.25	37947	Cone—Cone complete with voice coil.	1.75
38331	Indicator—Station selector indicator.	.25	5118	Plug—3-prong male speaker plug.	.25
38432	Plate—Dial back plate complete with pulleys—less dial.	1.25	37948	Transformer—Output transformer.	1.65
30868	Plug—2-contact female plug for motor cable.	.35			
5119	Plug—3-contact female plug for speaker cable.	.25			
31373	Pulley—Drive cord pulley (1/4-in. dia.)	.08			
32289	Pulley—Drive cord pulley (1/8-in. dia.)	.10			
13988	Resistor—10 ohms, 1/2 watt.	.20			
32686	Resistor—680 ohms, 1 watt.	.22			
30152	Resistor—1,000 ohms, 1 watt.	.22			
43765	Resistor—12,000 ohms, 2 watt.	.35			
36714	Resistor—15,000 ohms, 1/2 watt.	.20			
12454	Resistor—33,000 ohms, 1/2 watt.	.20			
12412	Resistor—47,000 ohms, 1/2 watt.	.20			
13734	Resistor—120,000 ohms, 1/2 watt.	.20			
30648	Resistor—470,000 ohms, 1/2 watt.	.20			
13730	Resistor—1 meg., 1/2 watt.	.20			
32809	Resistor—3.9 meg., 1/2 watt.	.20			
30992	Resistor—10 meg., 1/2 watt.	.20			
38433	Shaft—Tuning knob shaft.	.20			
35772	Shield—Bottom end shield for power transformer.	.30			
35709	Shield—Top end shield for power transformer.	.30			
36932	Socket—Dial lamp socket.	.20			
35787	Socket—Phono input socket.	.15			
31251	Socket—Tube socket.	.25			
31418	Spring—Drive cord spring.	.05			
38431	Switch—Range switch.	1.20			
38434	Switch—Tone control switch.	.95			
32827	Switch—Voltage change switch.	.35			
35636	Transformer—First I.F. transformer.	1.70			
35628	Transformer—Second I.F. transformer.	1.85			
35768	Transformer—Power transformer — 105/125 volts, 25 cycle—less end shields.	5.25			
35767	Transformer—Power transformer — 105/125 volts, 50/60 cycle—less end shields.	2.95			
35759	Transformer—Power transformer — 105/125-210/225 volts, 50/60 cycle.	4.00			
33726	Washer—"C" washer for tuning shaft and pulley, No. 31373.	.02			
<b>PICKUP AND ARM ASSEMBLY (CRYSTAL TYPE)</b>					
33591	Arm—Pickup arm shell only.	.50			
38435	Arm—Pivot arm and shaft complete.	.70			
34758	Bushing—Rubber bushing and metal bushing for pivot arm.	.13			
33122	Crystal—Pickup crystal complete.	3.75			
33529	Screw—Needle screw.	.10			
<b>PICKUP AND ARM ASSEMBLY (MAGNETIC TYPE)</b>					
38420	Arm—Pickup arm shell only—less mechanism, support arm, pins and shielded cable.	2.00			
38436	Arm—Pickup support arm complete—less rubber bushings.	1.00			
14291	Armature—Pickup armature assembly.	1.45			
34560	Bushing—Rubber bushing for support arm.	.05			
32636	Cable—Pickup lift cable.	.24			
38216	Cable—Shielded pickup cable.	.50			
38216	Catch—Pickup head catch.	.20			
14672	Coil—Pickup coil.	1.10			
38197	Cover—Insulating cover.	.10			
38421	Head—Pickup head shell only.	2.20			
37291	Mechanism—Pickup mechanism complete.	5.65			
38198	Pin—Pin to attach head to arm (1/4-in. dia.) Pkg. 2.	.06			
38199	Pin—Pin to attach support arm to shell (3/32-in. dia.)	.06			
38196	Screw—Needle screw.	.10			
38217	Screw—Pickup mechanism support screw—Pkg. 2.	.06			
38213	Spring—Needle point weight adjustment spring.	.10			
38214	Stud—Shouldered stud to hold tension spring and head catch.	.06			

ALL PRICES ARE SUBJECT TO CHANGE OR WITHDRAWAL WITHOUT NOTICE.

MODEL VHR212

Ch. RC-574

RCA MFG. CO., INC.

93

31m

10

11

25m

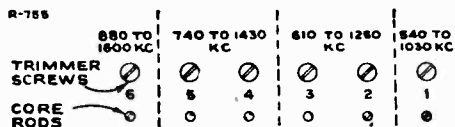
13

14

19m

55 60 70 80 100 120 140 160

The dial scale drawing shown is a full size reproduction. It can be used as a direct substitute for regular dial scale in alignment procedure.



### Push Button Adjustments

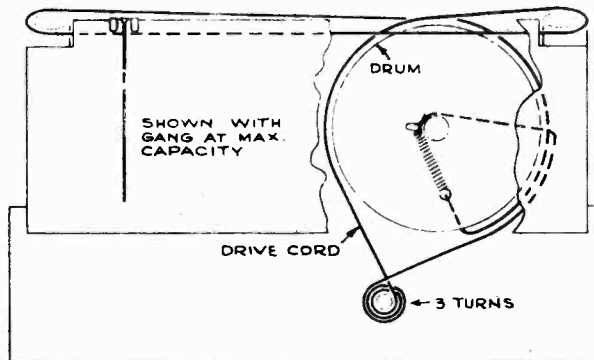
The push buttons connect to separate magnetite-core oscillator coils and separate ant. circuit trimmers which must be adjusted for the desired stations. Use an insulated screwdriver or alignment tool such as RCA Stock No. 31031. Allow about five minutes warm-up period before making adjustments.

The procedure is as follows:

1. Make a list of the desired stations, arranged in order from low to high frequencies.
2. Turn the range switch to the broadcast position and manually tune in the first station on the list.
3. Turn range switch to push-button position and press in the left-hand button.
4. Adjust No. 1 oscillator core to receive the first station. To secure the best adjustment, rotate the Loop Antenna for least pickup, and adjust core for peak output.
5. Adjust No. 1 antenna trimmer capacitor for peak output on the first station.
6. Proceed in the same manner to adjust for the remaining stations.

On the 880 to 1,600 kc push-button, the higher frequency stations may be received with osc. core either in or out (oscillator frequency either 455 kc below or 455 kc above the station frequency). The adjustment with this core in its out position (oscillator frequency 455 kc above the station frequency) is the correct one.

**NOTE:** Clockwise adjustment of cores and trimmers tunes the circuits to lower frequencies.



### Public Address

The microphone, amplifier, and loudspeaker in the Home Recorder forms a public address (PA) system, and may be mixed with the phonograph or radio.

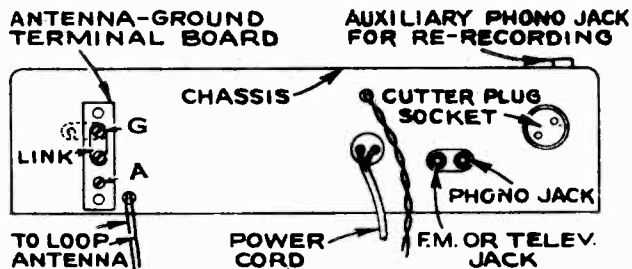
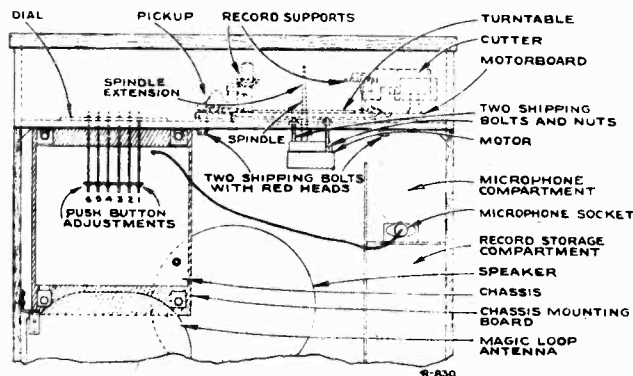
The various combinations are shown in the illustration of the service selector control.

### Television

In areas where Television Broadcasts are available, a Television Attachment will reproduce the picture while the receiver reproduces the sound. The pin plug on the Attachment cord plugs into the jack on the apron of the receiver chassis. For Television operation, turn the Service Selector to "F-M Tel." A proper Television Antenna is essential.

### Frequency Modulation

In areas where Frequency Modulation (F-M) Broadcasts are available, a Frequency Modulation Attachment will permit reception on this newly developed short wave system. The pin plug on the Attachment cord plugs into the jack on the apron of the receiver chassis. For F-M operation, turn the Service Selector to "F-M Tel." A proper antenna is essential.









### Alignment Procedure

**Cathode-Ray Alignment** is the preferable method. Connections for the oscillograph are shown in the schematic diagram.

**Output Meter Alignment.**—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

**Test-Oscillator.**—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid a-v-c action.

**Electronic Voltmeter.**—The electronic voltmeter in the Chanalyst or VoltOhmyst provides an unexcelled output indicator. It should be connected to the AVC bus, and the test-oscillator output adjusted to produce several volts of AVC.

**Calibration Scale.**—The glass tuning dial may be easily removed from the cabinet and temporarily attached to the chassis for quick reference during alignment. In the event that only the chassis is returned for service, and the cabinet with its tuning dial is left in the customer's home, the scale printed in this service note can be used as an accurate and convenient substitute for the regular dial.

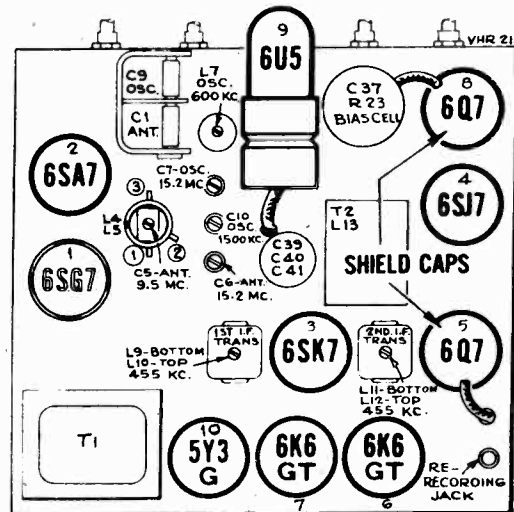
#### Using Tuning Dial.—

1. Remove glass dial from the cabinet.
2. With gang in full mesh, move the dial pointer to a point 1/16 inch to left of reference mark at left hand end of the dial backing plate.
3. Place the glass dial under the pointer so that the extreme left scale graduation coincides with the pointer. Use scotch tape to hold the glass dial in place.

**"C" Band Reception.**—For best reception on "C" band with an outside antenna, adjust the trimmer screw on the RF coil on the chassis. Turn screw carefully with a special screwdriver (RCA Stock No. 31031) while the receiver is tuned to a station in the 31-meter band, and make setting for best reception. If returning to internal antenna, close the link on the center terminal and adjust "C" band antenna trimmer for best reception on 31-meter band.

Steps	Connect test-osc. output to—	Tune test osc. to—	Turn radio dial to—	Adjust the following for maximum peak output—
1	I-F grid in series with .01 mfd.	455 kc	"A" band 540 kc	L11 and L12 (2nd I-F trans.)
2	1st Det. grid in series with .01 mfd.			L9 and L10 (1st I-F trans.)
3	A-Terminal in series with 47 mmfd. (link closed)	15.2 mc	"C" band 15.2 mc	C7 (osc.)* C6 (ant.)
4		9.5 mc	"C" band 9.5 mc	C5 (ant.) (Rock gang)
5	Repeat steps 3 and 4			
6	Green loop lead in series with 200 mmfd. (link closed)	1,500 kc	"A" band 1,500 kc	C10 (osc.)
7		600 kc	"A" band 600 kc	L7 (osc.)
8	Repeat steps 6 and 7			
9	Install and connect chassis in cabinet with antenna link closed. Tune in a radiated oscillator signal at 1,500 kc. and peak the "A" band trimmer C2 (on loop). Rock in L7 for peak output at 600 kc.			

\*Use minimum capacity peak if two peaks can be obtained. Oscillator tracks 455 kc. above signal on all bands.



#### Alternate Glass Tubes

When using a 6SK7-GT glass tube in place of the metal tube 6SK7, a shield (Stock No. 39074) and a clip (Stock No. 39073) are required for shielding purposes. When using a 6SA7-GT glass tube in place of the metal tube 6SA7, a 560 ohm, 1/4 watt resistor (Stock No. 12414) must be added in parallel with C-14 capacitor 2200 mmf. to prevent oscillation with push buttons in out position.

#### Critical Lead Dress:

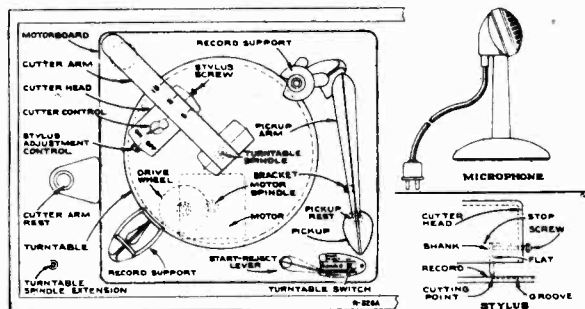
1. Bus from "C" band oscillator trimmer C7 to coil should be dressed away from coil and other leads.
2. Yellow lead from oscillator coil to range switch should be dressed over coil terminals and away from other leads.
3. Red, green, and black oscillator coil leads should be dressed clear of each other and all other leads and parts.
4. "A" band tracking capacitor C13 should be dressed up and away from the coil and tuning shaft.
5. The green and blue push-button leads should be dressed clear of all other leads.
6. The grid leads to gang should be dressed away from all other leads and parts.
7. A.C. cord and motor lead should be dressed up and away from phono. and F.M. jack.
8. All excess power transformer leads should be dressed down towards chassis and back towards transformer.
9. Phono. cable should be dressed up away from tube sockets and service switch.
10. Dress cable from re-recording jack up and against end chassis apron.
11. Yellow lead at terminal No. 5 of 6Q7 amplifier should be dressed up and back towards pin No. 8.
12. Red lead to pin No. 6 of 6Q7 amplifier should be dressed against chassis.
13. Coupling capacitor C11 (120 mmfd.) should be dressed toward end apron.
14. R.F. coupling capacitor C4 (100 mmfd.) should be dressed away from terminal board on end apron.
15. R.F. plate choke should be dressed back and close to end shield away from C11 (120 mmfd.) capacitor.
16. All excess speaker leads should be dressed against chassis under phono. shield plate.
17. All leads and parts to cutter choke should be dressed away from phono. cable.
18. The .01 mfd. C43 capacitor from the plate of the 6Q7 to grid of 6K6GT should be dressed down against chassis.
19. The .0035 mfd. C47, C48 plate by-pass capacitors at 6K6GT sockets should be dressed against chassis.

MODEL VHR212

Ch. RC-574

RCA MFG. CO., INC.

## Recorder Operating Instructions

**Preliminary.—**

1. See that the phonograph pickup is on its rest, the turntable cleared of records, and the "start-reject" lever at "recording."
2. See that a perfect stylus is installed in the cutter head, the stylus holding screw tightened, and the stylus correctly adjusted as outlined under "Recorder Cutting Adjustments."
3. Pull off the spindle extension and place in hole at front left corner of compartment.
4. Place recording disc on the turntable with the spring stud engaged in one of the holes in the disc.
5. Lift the cutter arm well up and place the free end on the turntable spindle, making sure it is properly seated. Move the cutter head along the arm to the 6, 8, or 10 point so that the stylus is about 1/4-inch from the edge of the recording disc.
6. Turn on power-bass control, just past the click of the power switch. Turn treble tone control fully clockwise. Set radio-phonograph volume control to soft, and microphone volume control fully counter-clockwise.

**Radio Recording.—**

1. Tune in the desired radio program.
2. Turn service selector to "Radio Recording," position 2.
3. Turn radio-phonograph volume control so the "Magic Eye" just closes on average passages. Do not turn too high. The "Magic Eye" should flicker throughout the recording. It electrically monitors the recording.
4. Push turntable switch "on."
5. Turn the cutter control "on" (clockwise) to record.
6. During the recording, listen to the loudspeaker, watch the "Magic Eye," and increase or decrease the radio-phonograph volume control if the broadcast level becomes too low or too high.
7. Use a fine hair brush occasionally to keep the area immediately ahead of the stylus free from chips and threads.
8. Before the cutter reaches its inner limit, turn the cutter control "off" (counter-clockwise) and remove the cuttings from the disc.
9. The recording may be "played-back" immediately without moving the cutter arm: Turn the service selector to "Phonograph," position 3; turn the power-bass control fully clockwise; place the pickup sapphire in the outer groove of the disc; and adjust the radio-phonograph volume control.
10. After the playback, lift the cutter arm and place on its rest.

11. If the recording is not satisfactory on playback, check "Recorder Cutting Adjustments."

**Microphone Recording.—**

1. Turn service selector to "Recording," position 4.
2. Turn radio-phonograph volume control to its "off" position to prevent feed-back and "howl."
3. To obtain an approximate setting of the microphone volume control before making a recording, talk into the

microphone (which should be left plugged into its receptacle at all times) and adjust the microphone volume control so the "Magic Eye" closes with medium voice. By talking in a fairly level tone, and by maintaining the same distance between the microphone and lips, the microphone volume control will not require continual readjustment. Never turn the microphone volume control too high or damage to the cutter will result.

4. Start the turntable, place the cutter in position and turn the cutter control "on" (clockwise).

5. Talk into the microphone to make the desired recording, and re-adjust the microphone volume control if required, as indicated by the "Magic Eye."

6. Before the cutter reaches its inner limit, turn the cutter control "off" (counter-clockwise), turn the microphone volume control counter-clockwise and play back the recording as described in "9" above.

**Re-Recording.—**

A record may be re-recorded, or duplicated (that is, a "copy" may be made from an "original") by connecting an RCA Victrola Attachment (record player) to the "auxiliary phono jack" near the rear of the radio chassis. The "original" record is played on the RCA Victrola Attachment, and the "copy" is cut or recorded on the Home Recorder.

The procedure is as follows:

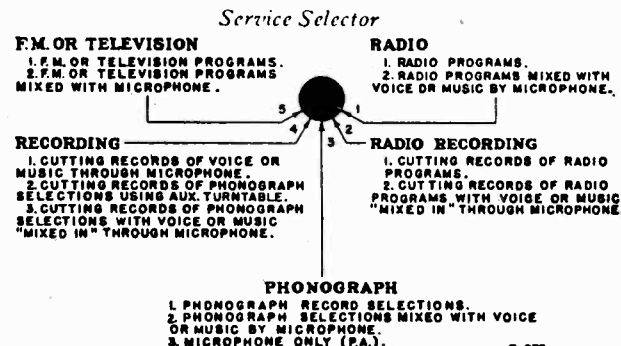
1. Turn the service selector to "Recording," position 4.
2. Connect the RCA Victrola Attachment pickup cable to the jack near the rear of the radio chassis.
3. Place the "original" record on the RCA Victrola Attachment, turn its volume control fully clockwise, and place its pickup on the "original" record.
4. Adjust the radio-phonograph volume control so the "Magic Eye" just closes on average passages, then lift pickup off the RCA Victrola Attachment.
5. Start the recorder by pushing turntable switch "on," placing the cutter in position and turning the cutter control "on."
6. Put the RCA Victrola Attachment pickup arm on the "original" record. The recorder will cut a duplicate of this record, which may be played-back as described previously.

**Mixed Recording.—**

The RCA Home Recorders have complete flexibility for mixed recordings of radio, microphone, and phonograph. The various possible combinations are clearly shown in the illustration of the service selector control.

In mixed recordings, the radio-phonograph volume control regulates the recording level for radio, and for the RCA Victrola Attachment. The microphone volume control regulates the recording level of the microphone only. Do not turn the volume controls too high.

In using the microphone on mixed recordings, or mixed PA, it should be placed as far as possible from the loudspeaker and faced away from the loudspeaker to avoid feedback howl. (An extension cord may be added if necessary.)



RCA MFG. CO., INC.

MODEL VHR212  
Ch. RC-574

## Recorder Cutting Adjustments

### IMPORTANT

The cutting point of the stylus must be in perfect condition in order to make good recordings.

The condition of the stylus point can not be determined by ordinary visual inspection. If the recordings are noisy or poor in quality, first try a new stylus.

The stylus cutting point can be ruined by dropping the cutter on the record, by cutting into the base metal of the recording blank, or by cutting into the paper label on the blank.

Always turn off the cutter control (counter-clockwise), before the stylus reaches the inner limit as it will repeat in the last groove and may wear into the base material, thereby ruining the stylus point.

Be sure the cutter arm is properly seated on the turntable spindle.

Never turn the radio-phono volume control or microphone volume control too high or injury to the cutter will result.

Keep the cutter control at "off" except when actually cutting a record.

To insert or change a stylus, lift the cutter arm, loosen the stylus screw, and insert the stylus as far as it will go in the hole at bottom of cutter head, with the flat on the shank of the stylus toward the screw. Tighten the screw against the flat on the shank. Retighten the screw before making each recording. Do not use pliers or wrench.

To adjust the stylus pressure for the correct depth and width of cut, the best procedure is to cut some "blank" grooves in a recording disc of the type that will be used. The stylus pressure can be regulated, by means of the stylus adjustment control knob on the end of the cutter head, to produce the correct thickness of the hair-like cuttings. The procedure is as follows:

1. See that the phonograph pickup is on its rest, the turntable cleared of records, the "start-reject" lever at "recording," a perfect stylus correctly inserted in the cutter head, and the stylus screw firmly tightened.

2. Pull off the spindle extension and place in hole at front left corner of compartment.

3. Place the blank recording disc on the turntable, with the spring stud that protrudes from the turntable engaged with one of the three holes at inside of the disc. This prevents the disc from slipping during recording.

4. Turn on power-bass control just past the click of the switch. Turn radio-phono volume control to "soft" and microphone volume control fully counter-clockwise.

5. Turn "on" the turntable switch.

6. Lift the cutter arm well up, move it over, and seat it on the turntable spindle; set the cutter head so that the stylus is about  $\frac{1}{4}$  inch from the edge of the recording disc. The graduation marks 6, 8 and 10 on the cutter arm show the position for the center line on the cutter head for commencing to cut records of 6 inches, 8 inches or 10 inches. See that the arm engages properly and is seated down on the turntable spindle.

7. Turn the cutter control on top of the cutter head in a clockwise direction. The stylus will begin to cut, and the cuttings should collect toward the center of the recording disc. If they collect toward the outside, the stylus is not correctly inserted, and must be adjusted by removal and reinsertion. If the threads continue to collect toward the outside, use a new stylus. Turn the cutter control counter-clockwise to stop cutting.

8. Examine the cuttings and the grooves in the disc.

The cuttings should be even, thin, hair-like threads about three-thousandths of an inch across or approximately the diameter of a human hair.

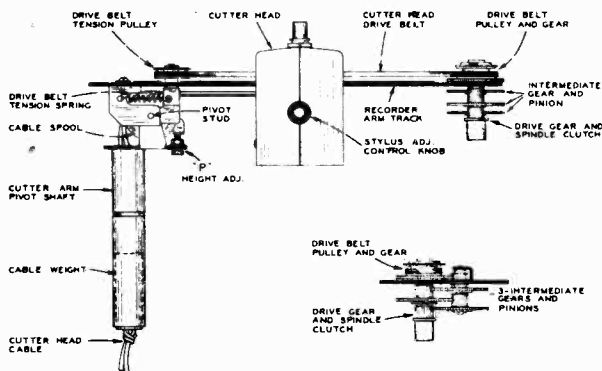
The groove width should almost equal, but not exceed, the distance between grooves. A magnifying glass is helpful in examining the grooves. If the grooves are too shallow, the phonograph pickup sapphire will slide over them on play-back. If the grooves are cut too deep, rumble will be excessive.

After examining the cuttings and the groove width, adjust the cutter pressure as required by means of the stylus adjustment control knob. Turn this counter-clockwise to increase pressure and increase size of cuttings. Turn clockwise to decrease pressure and decrease size of cuttings.

Check the new adjustment by running more blank grooves.

Check the cuttings and groove width each time a new stylus is inserted, and whenever a different type of recording disc is used.

## Recorder Mechanism Data (RMP-110)



Cutter Arm

**Drive:** The cutter head is belt driven from the turntable spindle through the train of gears at the spindle end of the cutter arm. Tension on the drive belt is maintained by a tension pulley at the pivot end of the cutter arm. Two fixed pulleys and one tension pulley guide the cutter head on the recorder arm track.

The cutter arm pivot shaft bearing should be so positioned

with reference to the spindle that the spindle clutch fits easily on the spindle and does not bind as the turntable revolves.

Leads from the cutter crystal pass over a wooden pulley and down through the cutter arm pivot shaft, slack being taken up by a cable weight within the pivot shaft. The knot in the leads below the weight should be enclosed by the cavity in the weight so it will not rub or bind against the sides of the pivot shaft. This knot should be so positioned as to allow full movement of the cutter head without allowing the weight to come entirely out of the pivot shaft. Within the cutter head, the leads in the vicinity of the cutter crystal should be free and floating to prevent reaction on the crystal suspension.

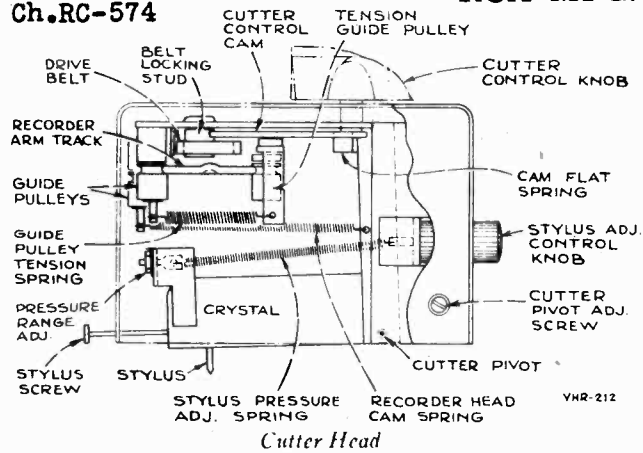
**Cutter Control:** When the cutter control knob is in the "off" position, the cutter control cam, through a lever fastened to the cutter crystal, holds the cutter stylus clear of the recording blank. In the "on" position of the cutter control, the cam allows the cutter crystal and stylus to lower into position for recording and locks the drive belt between the belt locking stud and a lip on the cutter head frame so the cutter head travels with the belt. Correct clamping occurs when the flat cam spring almost touches the bottom of the cam detent. Adjustment of clamping may be accomplished by carefully bending the clamping lip on the cutter frame.

Replace the belt if it shows roughness, wear, or stretching. Keep the belt free of oil, grease, dirt, or other foreign matter.

## MODEL VHR212

RCA MFG. CO., INC.

Ch. RC-574



**Stylus Adjustment Control:** The stylus adjustment control knob increases or decreases the tension of the stylus pressure adjustment spring, thereby opposing to a greater or lesser degree the tension of the recorder head cam spring and the pressure due to the weight of the crystal.

The range of the stylus adjustment control may be adjusted, if necessary, by turning the pressure range adjustment nut. Counter-clockwise increases, clockwise decreases stylus pressure for a given setting of the stylus adjustment control knob.

Correct adjustment of the stylus adjustment control knob for recording is outlined under "Recorder Cutting Adjustments."

**Cutter Pivot Adjustment:** The cutter crystal is supported on cone pivots. Pressure against these pivots is adjusted by the cutter pivot adjustment spreader screw. Correct adjustment is for no play or bind. Adjustment is best accomplished by starting with some play and relaxing the adjusting screw until the play just disappears.

**Recorder Arm Height Adjustment:** Adjust the recorder arm height adjustment screw "P" so that the cutter stylus cannot touch the turntable or the motorboard when the cutter control is on "off" and the recorder arm is suspended freely between the spindle and the cutter arm rest. The screw should not, however, prevent the cutter arm from seating firmly on the spindle. Tighten the locknut after adjustment is made.

**Lubrication:** Lubriplate No. 110 should be used on all gear and pulley studs, pivots, sliding and bearing surfaces of the recorder arm and cutter head. However, do not lubricate: the gear teeth, the wooden pulley bearing, the clamping surface of the belt locking stud, or the recorder arm track.

### "Rumble".—

Any instrument with the sensitivity and tone response of this home recorder is capable of picking up the mechanical vibrations of the motor. However, due to many preventives incorporated in the design of this instrument, rumble will not be recorded if the following precautions are observed:

**Leveling**—See that the instrument is perfectly level.

**Freeness**—Be certain that the motorboard and mechanism is "floating" free from the cabinet. All four mounting springs should be at approximately equal tension.

**Stylus**—Make sure that a perfect stylus is tightly inserted in the cutter head. Because both stylus and retaining screw are of hard steel there is a tendency towards loosening during cutting. Tightness should be checked before each cut.

**Input Level**—Set for sufficient input level so that the "Magic Eye" just closes on average passages.

**Tone Control Settings**—During recording, the power-bass control should be set for maximum lows, just beyond the click of the power switch. The treble tone control setting will depend on the degree of potential rumble present. For extreme cases, it should be set for minimum highs during recording only, in order that the low frequencies in the selection or voice may have a full chance to mask any possible rumble.

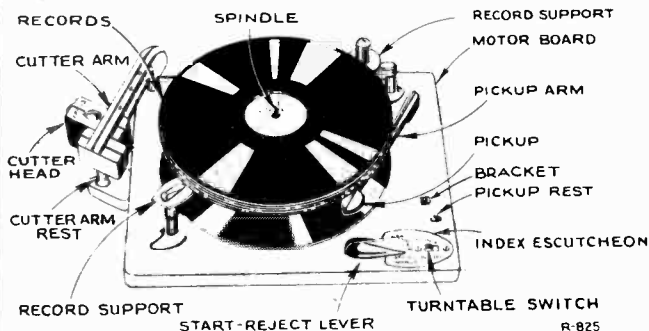
**Depth of Cut**—During recording, the shavings should be directed towards the spindle and prevented from obstructing the cutter path. The thickness of these shavings should be about that of human hair, or approximately .003 inches. An additional check on depth of cut is to inspect the recording under a magnifying glass. The groove width should approach but not exceed the distance between grooves. Depth of cut may be varied by means of the stylus adjustment control knob on the end of the cutter head.

**Turntable Drive**—If rumble persists, inspect the idler wheel (between motor spindle and turntable) for possible runout, flat spots, and scraping against bottom of turntable.

**Recording Discs**—Due to variations in material composition and hardness of different types of discs, the same cutting-pressure adjustment will not give an equal depth of cut on all types. Thus, it may be necessary to change the adjustment previously set for one type of disc, when recording on a different type.

## Automatic Record Changer Data (RP-161)

### Automatic Operation



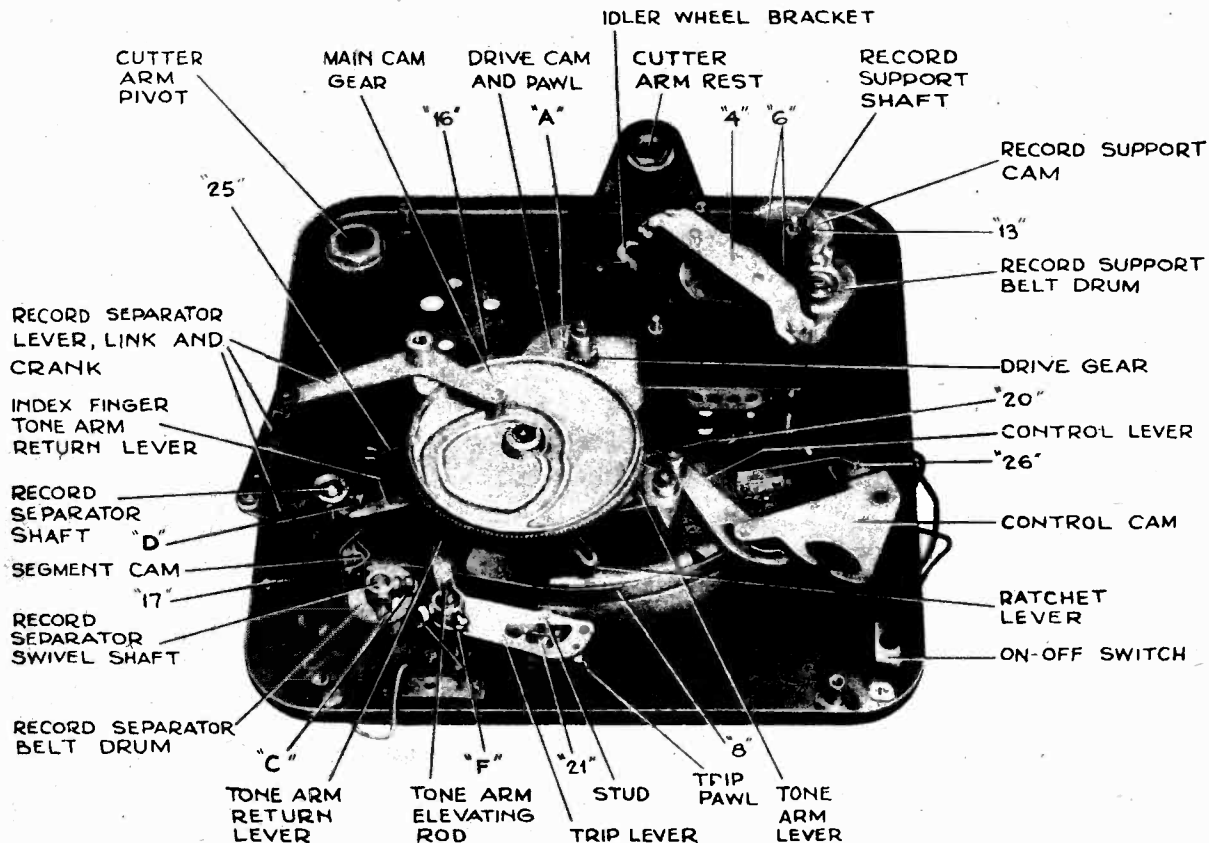
### Manual Operation

1. See that the mechanism is out of cycle, with the pickup on its rest. If not, a "cycle" must be completed.
2. Set the "start-reject" lever at "manual."
3. Place record on turntable and push turntable switch "on."
4. Lift the pickup and set it down on the record.
5. When the record is finished, the pickup will swing in the eccentric groove, or run in the last groove, until the power is shut off.
6. Lift the pickup and place it on its rest.

Before starting automatic operation, see that the mechanism is out of cycle and that the pickup is on its rest. If it is not, start the motor and allow to run until the pickup comes down on its rest. Be sure the turntable spindle extension is in place and properly seated on the spindle.

1. Turn the "record support" in front left-hand corner, to its position for 10-inch or 12-inch records as required. Turning the front record support automatically positions the rear support.
2. Load the records on the supports, with required selections upward, the last record to be played on top. Be sure that the rear record support is pushed down.
3. Push turntable switch "on."
4. Push the "start-reject" lever towards the back to its "start-reject" position, and let go. The first record drops on turntable, and the pickup moves onto the record.
5. When the last record is finished, the pickup moves out and comes down on its rest.
6. To reject a record being played, push the "start-reject" lever to "start-reject," and let go.
7. For automatic operation, each record must have the standard eccentric groove.

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NOTE: Bottom Support Bracket and Bearing Plate Removed

### Function of Principal Levers

#### Trip Lever

When the tone arm swings in the eccentric groove, the trip lever pawl acts on the ratchet lever to start the automatic cycle.

#### Ratchet Lever

Transfers motion from trip lever or control lever to start automatic cycle by allowing drive cam pawl to engage with sprocket of safety clutch.

#### Drive Cam Pawl and Sprocket

(This is the "safety clutch")

Engages turntable spindle to drive gear during cycle (see sketch "A").

#### Drive Gear

Transfers rotation of turntable spindle to main cam and gear when the clutch is engaged.

#### Main Cam and Gear

Has four "tracks" which control horizontal and vertical motion of tone arm, and rotation of record separator knife and shelf. The bushing on this gear governs position of the ratchet lever (see sketch "A").

#### Record Separator Lever Train (Lever-Link-Crank)

Directs motion of separator knife and shelf.

#### Separator Knife

Separates record from stack and supports stack during cycle.

#### Separator Shelf

Supports stack during playing time.

#### Control Cam and Lever

In "recording-manual" position, it disengages the ratchet lever and safety clutch so the mechanism cannot go into cycle.

In "automatic" position, it permits operation of the ratchet lever and safety clutch.

In "start-reject" position, it moves the ratchet lever away from the drive cam pawl, permitting the clutch to engage and thus start the change cycle.

#### Tone Arm Lever

Directs horizontal motion of tone arm.

#### Tone Arm Return Lever

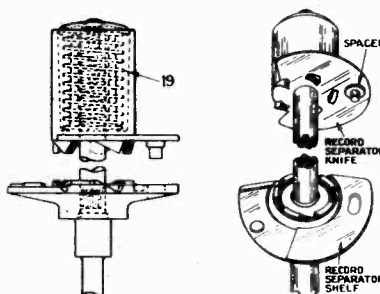
Keeps tone arm moving in with receding tone arm lever and provides proper landing.

#### Tone Arm Elevating Lever

Directs vertical motion of tone arm (see sketch "G").

#### Tone Arm Elevating Rod

Transfers motion of elevating lever to tone arm.



Details of Record Separator

MODEL VHR212  
Ch. RC-574

RCA MFG. CO., INC.

### Cycle of Operation

The changer can be conveniently rotated through the change cycle by pushing the reject button and revolving the turntable by hand. Eight turntable revolutions are required

for one change cycle. Hold idler wheel bracket back so idler wheel is away from turntable to permit easier manual rotation of the turntable.

Function	Explanation
Turn Record Support to 10" or 12" Position as Desired	1. Separator post positions itself by means of belt drive.
Place Records on Posts	1. Separator shaft is pushed down against its spring and carries segment-cam out of path of index finger (see sketch "D").
Turn "Start-Reject" Lever to "Start-Record"	1. Control lever moves in and pushes ratchet lever out of eccentric step on main gear shaft, thus releasing drive cam pawl (see sketch "A"). 2. Drive cam pawl engages cam sprocket and it revolves carrying drive gear with it.
Tone Arm Rises	1. Main cam and gear revolves with drive gear. 2. Stud on tone arm lever rides in top track on main cam and directs movement of the lever. 3. Tone arm elevating lever rides up on ridge on main cam and pushes tone arm up by means of lift rod (see sketch "G").
Tone Arm Moves Out	1. Tone arm lever pushes on trip lever stud. 2. Trip lever moves out, carrying the tone arm out. 3. Tone arm return lever is carried along by trip lever stud, and by stud on main cam top track.
Record Knife Separates Bottom Record from Stack after Gauging Thickness of Record	1. Stud on separator lever follows main cam bottom track and directs the motion of the lever. 2. Through the separator link and crank, the separator lever turns the separator shaft. 3. Knife turns with shaft and strikes edge of bottom record. 4. Separator shaft continues to revolve and teeth on inner circumference of knife ride up on shelf teeth until knife is carried high enough against the action of spring 19 to move in over top of bottom record.
Record Drops to Turntable	1. Separator shaft continues to turn until knife supports stack of records and shelf moves out from under bottom record, which drops to turntable.
Tone Arm Moves In	1. Separator shaft reverses rotation. 2. Tone arm return lever pushes on trip lever stud. 3. Trip lever moves in, carrying the tone arm in.
Tone Arm Lowers Sapphire on to Record	1. Index finger on tone arm return lever moves against separator shaft to insure proper landing position. 2. Tone arm elevating lever rides down on main cam ridge thus lowering the elevating rod and the tone arm. 3. Separator shaft returns knife to original position and allows stack of records to rest on shelf.
Sapphire Moves In to Record Groove Record Begins to Play	1. Ratchet lever rides down into eccentric step on main gear shaft and blocks drive cam pawl, disengaging the pawl from drive cam sprocket. 2. Drive gear and main gear stop. 3. Tone arm lever moves into cam to maintain disengagement.

### Cautions

Before servicing the automatic changer, inspect the assembly to see that all gears, cams, springs, levers, etc., are correctly assembled and in good working order.

1. Never use force to start or stop the motor or any part of the record changing mechanism.

2. Warped or damaged records may cause the mechanism to jam. When jamming occurs, the safety clutch slips, causing a clicking sound.

3. A cracked or chipped record may damage the sapphire.

4. Warped records may slide on one another while playing and result in unsatisfactory reproduction.

5. Do not leave the records on the record posts or on the turntable as they may warp, particularly in warm climates. Warped records may be flattened by placing them on a flat surface with a heavy flat article placed on top of them for a few days.

6. If, for any reason, the mechanism stalls, turn off the turntable switch and remove the records from the posts. Start the turntable by turning the switch on and allow the pickup arm to complete its cycle.

7. Do not tighten copper-plated, cone-pointed screws until final adjustment has been made.

8. When not recording, see that the cutter arm is in its rest position at the left of the turntable, and that the cutter head is pushed towards the front of the arm to give space for 12-inch records to drop onto the turntable.

9. This instrument will not play 10-inch and 12-inch records in mixed sequence.

### Lubrication

The drive motor bearing is lubricated from felt washers at the bottom and top. A light machine oil should be used at these points.

On all bearing surfaces except the motor bearings Houghton Stayput No. 320 should be used. On all other surfaces Lubriplate No. 110 is recommended.

Do not oil the record separator shaft.

It is important that the drive motor spindle and the rubber tire on the idler wheel be kept clean and free from oil, grease, dirt, or any foreign material at all times. Any quick drying naphtha is satisfactory for cleaning these parts.

RCA MFG. CO., INC.

MODEL VHR212

Ch. RC-574

**Quick-Reference Chart for Automatic Record Changer Adjustments**

<p><b>Mechanism jams. General irregularity of operation.</b> <i>(Mechanism Timing)</i></p> <p style="text-align: center;"><b>"A"</b></p>	<p>With the ratchet lever and the pawl on the drive shaft cam in playing position as shown, remove the bottom support bracket. Remove the "C" washer on the main cam shaft and slip the cam down far enough that it can be rotated with respect to the drive gear. Then rotate it until the timing notch is positioned as shown. Put the main gear back in mesh with the drive gear, replace the "C" washer, place the elevating lever on the cam ridge. Make certain the separator lever train is in its correct position and replace the bottom support bracket.</p> <p>Any jam will cause the safety clutch to slip and produce a clicking sound.</p>	
<p><b>Turntable does not turn freely.</b> <i>(Turntable Bottom Bearing Position)</i></p> <p style="text-align: center;"><b>"B"</b></p>	<p>Loosen the bottom bearing screws "B" and position the bottom bearing plate until the turntable revolves freely. Tighten the screws and check by applying a.c. to the turntable motor, allowing it to reach full speed, then pull idler away from turntable and note that the turntable continues to make at least twelve revolutions.</p>	
<p><b>Records strike separator post or fail to stay on record shelf.</b> <i>(Spacing Between Record Posts)</i></p> <p style="text-align: center;"><b>"C"</b></p>	<p>Turn the record support post to the ten-inch position. Loosen set screws "C," hold the separator post against the end of its slot in the motorboard and turn the belt drum to take up any slack in the belt. Tighten the zinc-plated, blunt-nosed screw and check to see that a ten-inch record fits the posts as shown. Then tighten the copper-plated, cone-pointed screw.</p> <p>The twelve-inch position is adjusted after that of the ten-inch, by changing the support post to take the twelve-inch record, and turning the eccentric stop until the edge of the record is halfway up on the record support bevel while the other edge is against the record separator post.</p>	
<p><b>Records do not drop at proper time.</b> <i>(Record Shelf Timing)</i></p> <p style="text-align: center;"><b>"D"</b></p>	<p>Place a ten-inch record on the posts. Loosen the set screws "D" and turn the record separator shaft until the edge of the record-separating knife is one-sixteenth inch away from the edge of the record. The teeth on the inner circumference of the knife should be resting in the bottom of their slots at the time the adjustment is made. Tighten the zinc-plated screw first, run through cycle several times as a check, then tighten the copper-plated screw. Do not tighten set screws "D" enough to distort the housing of the separator shaft spring.</p>	
<p><b>Sapphire does not land at correct point.</b> <i>(Tone Arm Position With Respect To Trip Lever)</i></p> <p><i>Correct dimension from nearest edge of spindle to sapphire: For 10-inch records 4 1/16 inches; for 12-inch records 5 5/8 inches.</i></p> <p style="text-align: center;"><b>"F"</b></p>	<p>Place a ten-inch record on the turntable and rotate the changer through cycle until the sapphire is just ready to land. Make sure that the index finger of the pickup arm return lever is against the record separator shaft and that the tone arm trip lever stud is held firmly against the return lever. Loosen the set screws "F" and move the pickup arm to the correct landing position. See that there is a 1/32 inch clearance between the pickup arm bearing and the set screw collar. Tighten the zinc-plated screw, run the changer through cycle several times as a check, then tighten the copper-plated screw. Do not tighten screws "F" too tightly or the hollow pivot shaft will be distorted.</p> <p>Twelve-inch landing adjustment: Make the ten-inch landing adjustment first. Then check landing on a twelve-inch record and adjust the cam on the tone arm return lever if necessary.</p>	
<p><b>Top of pickup arm strikes stack of records or sapphire fails to clear the records on the turntable.</b> <i>(Pickup Arm Height While In Cycle)</i></p> <p style="text-align: center;"><b>"G"</b></p>	<p>Rotate the changer through cycle until the pickup arm has risen to its maximum height above the turntable but has not begun to move out. At this point adjust the screw "G" until the distance between the turntable and the sapphire is one and three-sixteenth inch. Tighten the locknut.</p>	





RCA MFG. CO., INC.

MODEL VHR212  
Ch. RC-574

**Cabinet Leveling.—**

If the sapphire fails to enter the starting groove, raise the right-hand side of the cabinet by inserting thin spacers under the legs. If the pickup slides over a few grooves, raise the left-hand side of the cabinet.

This changer is designed to operate when the changer and cabinet are level. Always make landing adjustments under these conditions.

**Sapphire Pressure.—**

In these mechanisms, the correct pressure is approximately 2 ounces, measured at the sapphire. Adjust the spring (3) in the tone-arm base if necessary (see sketch "G").

**To Remove Pickup Arm.—**

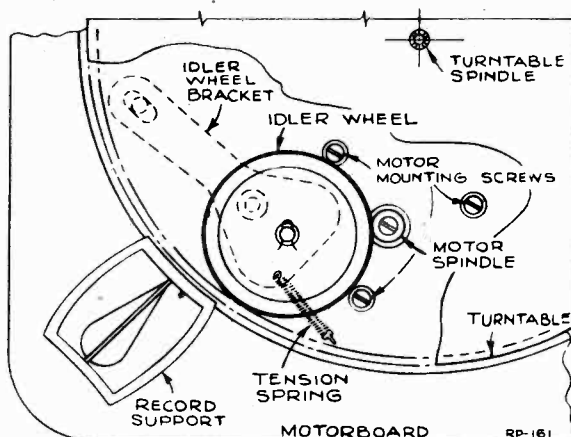
One of the tone arm bearings has a slotted head and can be turned out to facilitate removal of the tone arm. Raise the tone arm and loosen the bearing set screw. Turn the bearing partly out through the hole in the side of the tone arm and lift the arm off.

**To Repeat One Record.—**

When checking for landing and tripping action, it is possible to play one record repeatedly by simply placing a weight on the rear record post. A small pipe nipple that fits over the top of the post is satisfactory.

**To Remove the Turntable.—**

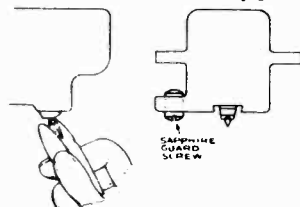
Insert 10-32 screws in the holes on either side of the spindle. Tap lightly on top of the spindle while pulling upward on the screws and turntable.



Turntable Drive

**Replacement of Sapphire**

As an additional precaution against rough handling, the top of the sapphire is dipped in a rubber cement (such as Goodrich "Plasticon") before being inserted in the pickup. To remove the sapphire, grasp it firmly with a pair of tweezers, give it a few turns to loosen the cement and then pull it out. Much easier handling of the sapphire will result if the tweezers are



notched with a file as shown. Naphtha may be used as a thinner should difficulty with the rubber cement be experienced.

Before inserting the new sapphire it should be dipped in the rubber cement previously thinned with naphtha. After insertion clean the point with naphtha if there is any doubt as to the presence of cement.

**Replacement Parts—Model VHR-212**

STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
<b>CHASSIS ASSEMBLIES (RC-574)</b>					
39172	Arm—Adjusting arm for service selector switch	.40	38359	Cup—Oscillator coil mounting cup	.20
36342	Board—"Antenna-Ground" board	.20	38790	Drum—Drive drum	.45
30786	Cap—Rubber cap for tuning tube	.15	31580	Holder—Bias cell holder	.15
37977	Capacitor—Electrolytic—16 mfd., 450 volts	.70	35870	Indicator—Station selector indicator	.20
37888	Capacitor—Electrolytic comprising 1 section of 15 mfd., 400 volts, 1 section of 10 mfd., 400 volts, and 1 section of 40 mfd., 25 volts	1.65	37017	Plate—Dial back plate complete—less pulleys, tuning tube clip, and "Indicator" screen	1.50
38388	Capacitor—Adjustable—50-350 mmfd.	.25	11824	Plug—2 contact female plug for microphone cable—less shell	.34
38801	Capacitor—Mica trimmer comprising 3 sections of 8-80 mmfd. each	.55	30868	Plug—2 contact female plug for motor cable	.35
12723	Capacitor—56 mmfd.	.35	36009	Plug—2 prong male plug for loop cable	.25
12720	Capacitor—100 mmfd., moulded	.35	31572	Plug—3 contact female plug for power switch cable	.15
34699	Capacitor—100 mmfd., unmoulded	.30	32641	Plug—3 prong male plug for selector switch cable	.10
12724	Capacitor—120 mmfd.	.35	5040	Plug—4 contact female plug for speaker cable	.30
14712	Capacitor—180 mmfd.	.30	39153	Plug—4 prong male plug for tone control cable	.15
38858	Capacitor—220 mmfd.	.35	32289	Pulley—Drive cord pulley	.10
12488	Capacitor—270 mmfd.	.35	33514	Receptacle—Phonograph and television socket	.25
12952	Capacitor—330 mmfd.	.35	11565	Resistor—15 ohms, 1/2 watt	.20
38831	Capacitor—630 mmfd.	.45	39380	Resistor—27 ohms, 1 watt	.22
44338	Capacitor—2,200 mmfd.	.50	36692	Resistor—270 ohms, 3 watt	.25
37102	Capacitor—.001 mfd.	.25	12414	Resistor—560 ohms, 1/2 watt	.20
34459	Capacitor—.0025 mfd.	.20	14720	Resistor—1,000 ohms, 1/2 watt	.20
30303	Capacitor—.0035 mfd.	.40	14024	Resistor—2,700 ohms, 1/2 watt	.20
33584	Capacitor—.005 mfd.	.25	30694	Resistor—3,900 ohms, 1/2 watt	.20
4937	Capacitor—.01 mfd.	.25	14250	Resistor—8,200 ohms, 1/2 watt	.20
5186	Capacitor—.035 mfd.	.20	30736	Resistor—22,000 ohms, 1 watt	.22
32787	Capacitor—.05 mfd.	.20	19081	Resistor—22,000 ohms, 2 watt	.25
14626	Capacitor—.07 mfd.	.25	12454	Resistor—33,000 ohms, 1/2 watt	.20
4839	Capacitor—.1 mfd.	.30	12266	Resistor—39,000 ohms, 1/2 watt	.20
12484	Capacitor—.25 mfd.	.30	12412	Resistor—47,000 ohms, 1/2 watt	.20
31581	Cell—Bias cell	.25	30787	Resistor—47,000 ohms, 1 watt	.20
39073	Clip—Tube shield clip	.05	30650	Resistor—58,000 ohms, 1/2 watt	.20
34285	Clip—Tuning tube clip	.25	14138	Resistor—68,000 ohms, 1/2 watt	.20
38788	Coil—Antenna coil—"C" band	.60	14560	Resistor—100,000 ohms, 1/2 watt	.20
37064	Coil—Choke coil	1.10	13734	Resistor—120,000 ohms, 1/2 watt	.20
38829	Coil—Coil and resistor—10,000 ohms	.40	30651	Resistor—270,000 ohms, 1/2 watt	.20
38787	Coil—Oscillator coil	1.00	13479	Resistor—390,000 ohms, 1/2 watt	.20
38800	Condenser—Variable tuning condenser	3.00	30648	Resistor—470,000 ohms, 1/2 watt	.20
38409	Control—Microphone volume control	1.00	12486	Resistor—560,000 ohms, 1/2 watt	.20
39171	Control—Radio volume control and switch	2.00	30582	Resistor—680,000 ohms, 1/2 watt	.20
34662	Cord—Drive cord (approx. 43-in. overall lgth.)	.25	30983	Resistor—820,000 ohms, 1/2 watt	.20
12006	Core—Adjustable core and stud for I.F. transformers	.15	30652	Resistor—1 meg., 1/2 watt	.20
35788	Core—Adjustable core and stud for oscillator coil	.15	12201	Resistor—1.5 meg., 1/2 watt	.20
			11789	Resistor—1.8 meg., 1/2 watt	.20
			30649	Resistor—2.2 meg., 1/2 watt	.20
			37018	Screen—"Indicator" screen	.30
			39175	Screen—Service indicator screen	.40



RCA MFG. CO., INC.

MODELS 520(1st Prod)  
510(3rd Prod)  
Ch.RC-1003D

APPROX. GAIN  
DATA USING  
RCA RIDER  
CHANALYST.

14 X  
400 ~

50L6GT  
OUTPUT

40 X  
400 ~

1 X  
455 KC.  
(455 KC.)  
FIXED BIAS ON AVC. BUS

200 X  
455 KC.  
(455 KC.)

0.6 X  
455 KC.  
(455 KC.)

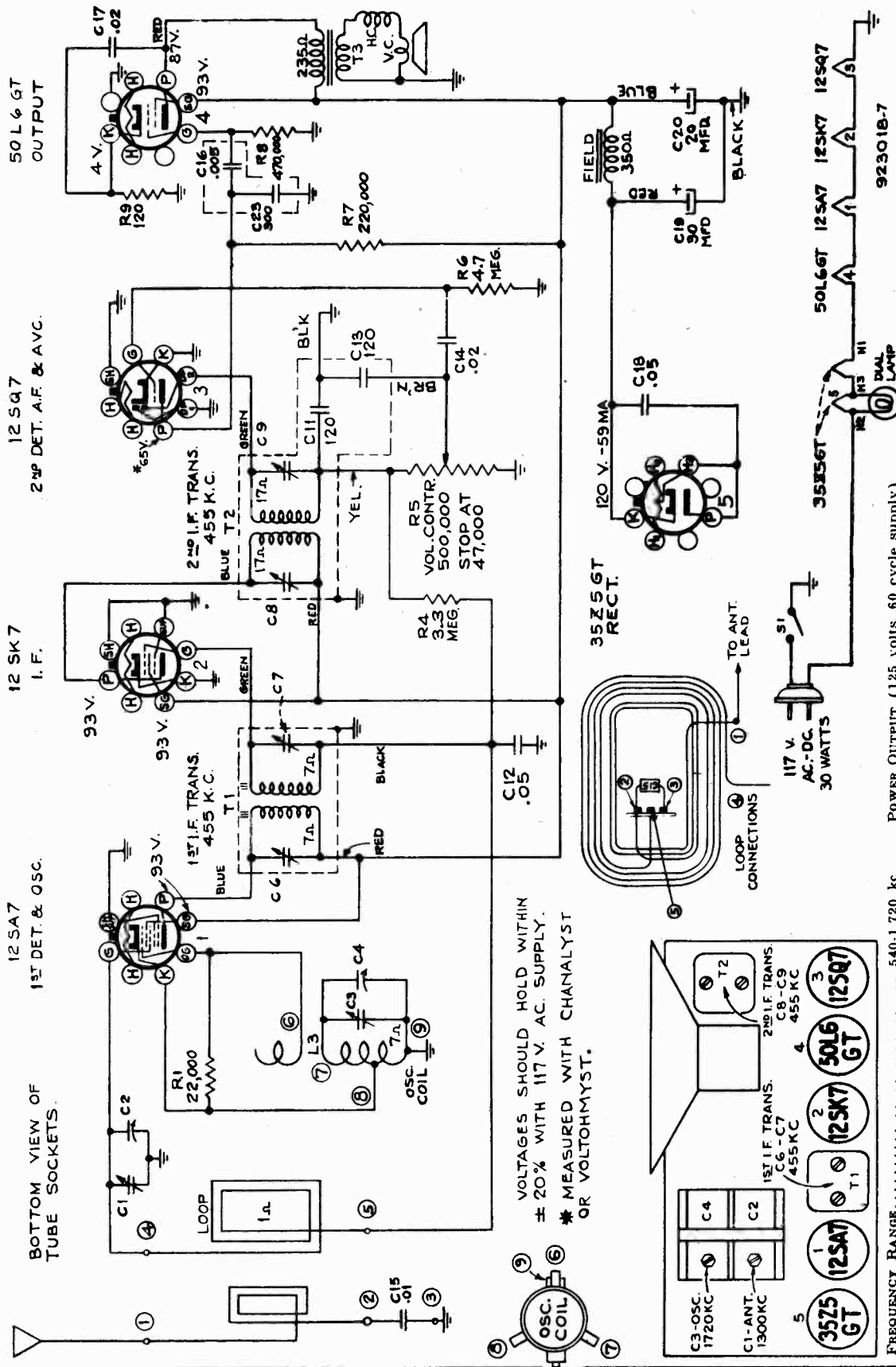
15 X  
600-455 KC.  
(600-455 KC.)  
MEASURED WITH

50 X  
600 KC.  
(600 KC.)  
ANT. TO GRID

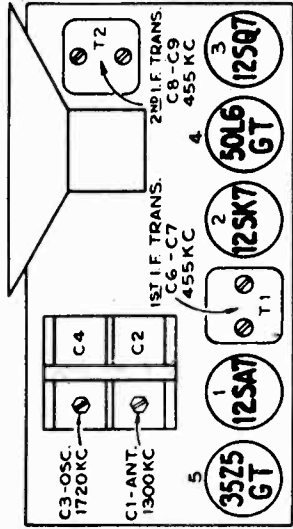
12SK7  
I.F.

12SK7  
2ND DET. A.F. & AVC.

50L6GT  
OUTPUT



VOLTAGES SHOULD HOLD WITHIN  
± 20% WITH 117 V. AC SUPPLY.  
\* MEASURED WITH CHANALYST  
OR VOLTOMYST.



POWER OUTPUT (125 volts, 60 cycle supply)  
Undistorted..... 0.8 watts  
Maximum..... 1.2 watts

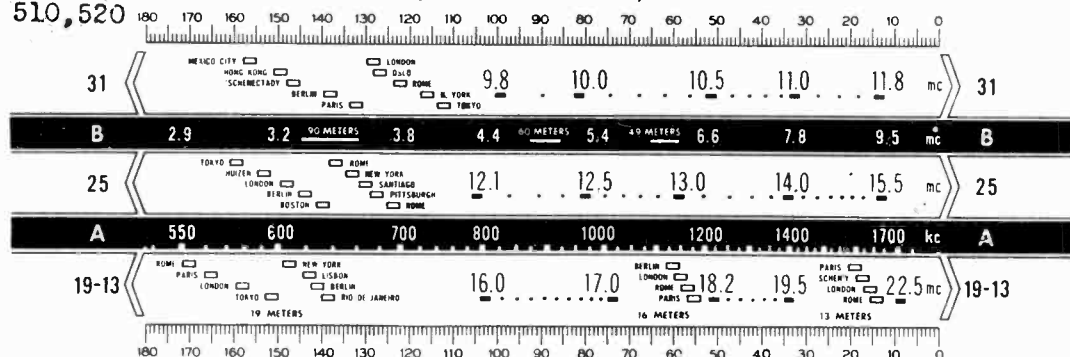
FREQUENCY RANGE..... 540-1,720 kc  
Intermediate Frequency..... 455 kc  
POWER SUPPLY RATINGS  
105-125 volts, direct current, or 50-60 cycles..... 30 watts

LOUDSPEAKER (RL-86-B1 or RL-86-B4) .. 5 inch electro-dynamic

MODEL QB1

RCA MFG. CO., INC.

MODELS 510, 520



MODEL QB1 ALIGNMENT

\* Use minimum capacity peak if two can be obtained. Check image to determine that C14 has been adjusted to the correct peak by tuning receiver to approximately 14.29 mc (29°) where a weaker signal should be received.

NOTE: Oscillator tracks above signal on all bands.

MODEL 510, 520

ALIGNMENT PARTS LIST

Pre-Setting Dial.—With gang condenser in full mesh, the pointer should be adjusted so that it is vertical.

Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output
1	I-F grid, in series with .01 mfd.	455 kc	Quiet point 1,600 kc end of dial	C8, C9 2nd I-F Transformer
2	1st Det. grid in series with .01 mfd.			C6, C7 1st I-F Transformer
3	Ant. terminal in series with 100 mmfd.	1,720 kc	Gang at minimum	C3 (osc.)
4	Radiated signal 1,300 kc		Signal Frequency	C1 (ant.)
5	Repeat steps 3 and 4.			

Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Range switch	Turn radio dial to—	Adjust the following for max. peak output
On oscillator-circuit cores and trimmers, if two peaks can be obtained, use the one of minimum inductance or minimum capacity.					
1	1st I-F grid cap, in series with .01 mfd.	455 kc	A	Quiet point near 180°	L15 and L16 2nd I-F transformer
2	1st Det. grid, in series with .01 mfd.				L13 and L14 1st I-F transformer
3		11.8 mc	25M	138.5°	L11 (osc.) C1 (ant.)
4		15.2 mc			17°
5	Repeat steps 3 and 4.				
6	Ant. lead in series with 300 ohms	15.2 mc	19-13M	156°	L12 (osc.)
7		9.5 mc	31M	156°	L10 (osc.) C2 (ant.)
8		9.5 mc	B	11.5°	C7 (osc.)
9	Ant. lead in series with 200 mmf.	1,500 kc	A	26°	C4 (osc.) C3 (ant.)
10		600 kc			156°
11	Repeat steps 9 and 10.				

STOCK No.	DESCRIPTION	Unit List Price	STOCK No.	DESCRIPTION	Unit List Price
<b>CHASSIS ASSEMBLIES (RC-1003-D)</b>			<b>SPEAKER ASSEMBLIES (RL-86B-1)</b>		
35097	Can—Shield can for 1st I.F. transformer	.30	32907	Cap—Dust cap.	.02
35332	Can—Shield can for 2nd I.F. transformer	.30	39448	Coil—Field coil—350 ohms	1.30
35348	Capacitor—Electrolytic comprising 1 section of 20 mfd., 150 volts, and 1 section of 30 mfd., 150 volts	.95	39447	Cone—Cone complete with voice coil	1.20
37359	Capacitor—Comprising 1 section of .005 mfd., and 1 section of .0003 mfd.	.25	<b>(RL-86B-4)</b>		
4937	Capacitor—.01 mfd.	.25	32907	Cap—Dust cap.	.02
36248	Capacitor—.02 mfd.	.20	39448	Coil—Field coil—350 ohms	1.30
32787	Capacitor—.05 mfd.	.20	39447	Cone—Cone complete with voice coil	1.20
36234	Coil—Oscillator coil	.60	<b>(92379-1)</b>		
37911	Condenser—Variable tuning condenser	2.25	39995	Coil—Field coil—350 ohms	1.50
35344	Control—Volume control and power switch	1.50	39994	Cone—Cone complete with voice coil	1.20
32634	Cord—Drive cord (approx. 16½-in. overall length)	.10	<b>NOTE: If the stamping on speaker in instrument does not agree with above speaker number, order replacement parts by referring to model number of instrument, number stamped on speaker, and full description of part required.</b>		
37991	Dial—Dial scale	.70	<b>MISCELLANEOUS ASSEMBLIES</b>		
36786	Indicator—Station selector indicator	.25	39778	Back—Cabinet back (Radiola 520)	.30
11765	Lamp—Dial lamp	.15	37916	Back—Cabinet back (Radiola 510, 3rd Prod.)	.25
37915	Loop—Antenna loop	1.43	35079	Crystal—Dial scale crystal	.65
35993	Plate—Dial plate—less dial	.25	33317	Fastener—Push fastener to hold back (Radiola 510, 3rd Prod.)	.02
30189	Resistor—120 ohms, ½ watt	.20	35069	Fastener—Push fastener to hold crystal (Radiola 510, 3rd Prod.)	.05
30492	Resistor—22,000 ohms, ½ watt	.20	33006	Feet—Rubber feet—Pkg. of 4	.03
14583	Resistor—220,000 ohms, ½ watt	.20	34428	Knob—Control knob	.20
30648	Resistor—470,000 ohms, ½ watt	.20			
12928	Resistor—3.3 meg., ½ watt	.20			
30271	Resistor—4.7 meg., ½ watt	.20			
38846	Shaft—Tuning knob shaft	.10			
34449	Socket—Dial lamp socket	.30			
31251	Socket—Tube socket	.25			
31418	Spring—Drive cord spring	.05			
35098	Spring—To hold I.F. transformers in shield cans	.08			
36232	Transformer—First I.F. transformer—less shield can	1.50			
37364	Transformer—Second I.F. transformer—less shield can	1.35			
35056	Transformer—Output transformer	1.30			
33726	Washer—"C" washer for tuning shaft	.02			

ALL PRICES ARE SUBJECT TO CHANGE OR WITHDRAWAL WITHOUT NOTICE.



CHANGES, NOTES

RCA MFG. CO., INC.

25X, 34X, 35X

Speakers RL-86-B1, RL-86-B4, 92379-1:

Three different speakers have been used on these models. The replacement parts are listed below:

Stock No.	Description
	(RL-86-B1, RL-86-B4)
32907	Cap—Dust cap
39448	Coil—Field coil—450 ohms.
39447	Cone—Cone complete with voice coil
	(92379-1)
39995	Coil—Field coil—350 ohms.
39994	Cone—Cone complete with voice coil

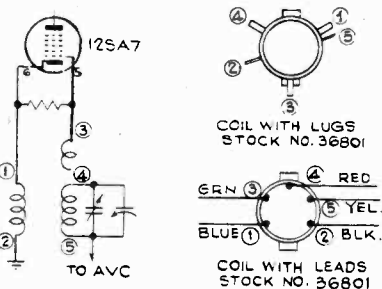
NOTE: If number stamped on your speaker frame does not appear on above list, order part required by description giving number stamped on your speaker and receiver model.

11X1, 35X

Oscillator Coil Connections:

The oscillator coil (Stock No. 36801) drawing, as shown in the service notes of Models 11X1 and 35X, is incorrect.

Two types of Stock No. 36801 coils are in use: One type has terminal lugs, the other has leads. Both types are shown in the accompanying sketch.



Oscillator Coil—Stock No. 36801

36X

Speakers RL-86-B1, RL-86-B4:

Two different speakers have been used on these models. The replacement parts are listed below:

Stock No.	Description
	(RL-86-B1, RL-86-B4)
32907	Cap—Dust cap
39448	Coil—Field coil—450 ohms.
39447	Cone—Cone complete with voice coil

NOTE: If number stamped on your speaker frame does not appear on above list, order part required by description giving number stamped on your speaker and receiver model.

BT-42

Replacement Dial, Pulley, and Shaft:

A complete Dial Assembly (Stock No. 38781) consisting of dial plate, dial scale, pulleys, drive drum, drive cord and spring, shaft, lamp bracket, and terminal strip is available for replacement on the Model BT-42 receiver.

However, the original assembly may be brought up to date by replacing the studs and shaft as follows:

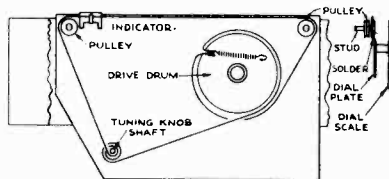
File off the two old studs on the dial plate. Tin, with solder, the surface (between dial and plate) around the stud holes, and insert the new pulley studs with the heads against the plate.

Solder the studs so their heads are flat against the plate and the shanks are at right angles to the plate.

The pulleys can now be slipped over the studs with the bearing surface toward the plate. Apply a drop of oil on each stud.

Thread the drive cord as shown in the drawing.

Stock No.	Description	Unit List Price
38781	Dial assembly complete (New type, including Stock No. 38783 and 34124)	2.50
38783	Pulley (2 pulleys, 2 studs)	.25
34124	Shaft (Shaft and spring washer)	.35



Dial Drive Model BT-42

45X1, 45X2

Cabinet Replacement:

In order to use wooden cabinet Stock Number X912 as an alternate for plastic cabinets Y806 (Model 45X1) or Y807 (Model 45X2), the following is necessary:

- Remove the baffle and grille by removing three screws.
- Separate the grille from the baffle.
- Fasten the grille to the cabinet.
- Remove the two "L" shaped clamps from the wood blocks.
- Insert chassis and fasten by means of two wood screws screwed to blocks.

45X-1, 45X-2

Changes in 2nd Production:

The AVC filter resistor R4 is changed from 2.2 to 3.3 megs. Stock No. 12928.  
The output tube bias resistor, R8, is changed from 150 to 120 ohms, Stock No. 30189.

46X SERIES

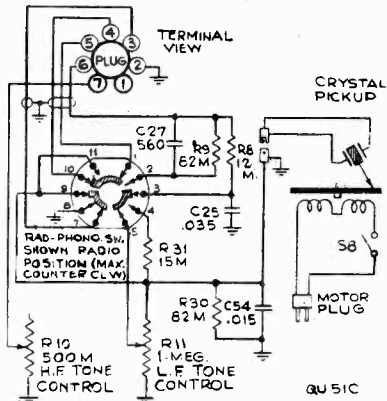
Dial Lamp Burnout:

In Models 46X-1, -2, -3, -11, -12, -13, -21, -23, -24, the dial lamp is Mazda No. 47 (.15 amp.). In case of frequent burnout, Mazda No. 51 (.2 amp.) can be used for replacement.

QU51C

Crystal Pickup Connections:

The schematic "Crystal Pickup Connections (QU51C)" in the QU51C service note is in error in the connections to switch terminals 7, 9, and 11. The correct schematic is shown in the accompanying sketch.



Crystal Pickup Connections, QU51C

QU52C, QU52M

Power Transformer:

Power transformer, Stock No. 32852, is incorrectly described in the Replacement Parts List of the QU52C, QU52M service note. The correct listing is as follows:

Stock No.	Description	Unit List Price
32852	Transformer—Power transformer, 105-125/200-240 volts, 50-60 cycle	4.50

55X

"PM" Speaker 92388-1:

The cone and voice coil for this speaker is Stock No. 39572.

U-123 (TWO BAND TYPE)

Knob Stock Numbers:

In the Service Note for U-123, No. 31855 knob should read "Range-switch or radio-record switch knob," No. 14359 knob should read "tuning knob."

V-100

Phono Compensation Change:

Capacitor C17 across the pickup is changed from .015 to .01 mfd., Stock No. 4937.

V-105

Phono Compensation Change:

C17 and R16, shunted across the pickup are changed from .015 to .01 mfd. (Stock No. 4937), and from 47,000 to 68,000 ohms (Stock No. 13715).

Speaker No. 92322-2:

In some production of V-105, the speaker is stamped 92322-2. The cone and voice coil for this speaker is Stock No. 39536.

V-175

Motorboard Mounting:

In the Replacement Parts, under "Miscellaneous Assemblies," change the Stock No. of mounting spring hardware from 31470 to 39563.

V-175

Low Output and/or Distortion:

Check the following—

- Rectifier tube 25Z6GT (slow in coming up to full plate voltage).
- Output tube 25L6GT (usually accompanied by high hum).
- Bias cell reversed. The negative side should connect to the grid of the 6SQ7. See accompanying sketch of bias-cell polarity.



ALL PRICES ON THIS AND THE FOLLOWING PAGES ARE SUBJECT TO CHANGE WITHOUT NOTICE

RCA MFG. CO., INC.

**Q27**

**Capacitor C33:**

C33 is changed from 18 to 15 mmfd., Stock No. 12896.

**28T**

**C13 Connections Changed:**

In some production, C13, from the plate of the RF tube, is connected to the switch, side of C8 instead of to the grid side of C8.

**C51 Deleted:**

In 2nd production, C51 (22 mmfd.), Stock No. 14021, connected from antenna terminal to chassis, is omitted.

**28X**

**Change in 2nd Production:**

In 1st production, a capacitor C47 is connected from chassis to the junction of R1 and R27 in the RF plate circuit. In 2nd production, C47 is omitted, and terminal 11 on the oscillator coil is connected to the junction of R1 and R27 instead of to the "plus B" bus.

**28X, 28X-5**

**C4 Changed to 47 mmfd:**

The oscillator grid capacitor is changed from 33 to 47 mmfd., Stock No. 13141.

**28X, 28X-5**

**Hum Modulation:**

This form of hum becomes evident when a station's carrier is tuned in, and disappears when the set is tuned between stations. The hum may be present on only a few locals, or on many stations, depending, among other things, on the type and installation of the a-c supply line.

If hum modulation exists, check to see that there is an .05 mfd., 400-volt capacitor connected from the plate of the 25Z6GT rectifier to 'B'. Add this capacitor if necessary. The capacitor acts to by-pass RF signals around the rectifier tube.

**25X, 34X, 35X**

**Electrolytic Capacitor:**

Under "Chassis Assemblies," in the Replacement Parts Lists of the above models, delete Stock No. 36301 Capacitor and add:

Stock No.	Description	Unit List Price
35848	Capacitor—Electrolytic comprising 1 section of 30 mfd., 150 volts (C19-25X; C16-34X, 35X) and 1 section of 20 mfd., 150 volts (C20-25X; C-17-34X, 35X)	.95

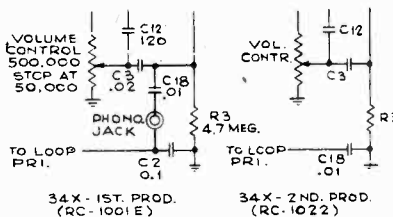
**34X—2ND PROD. (RC-1022)**

**Service Data:**

Model 34X—2nd Production (RC-1022) is similar to the 34X—1st Production (RC-1001-E) except as follows:

The phonograph jack has been omitted in 2nd production as shown in the accompanying sketches.

A different loop is used.



Circuit Changes, 2nd Production 34X

**35X—2ND PROD. (RC-1022-A)**

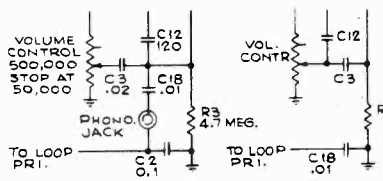
**12X—2ND PROD. (RC-1022-A)**

**Service Data:**

Models 12X—2nd Production and 35X—2nd Production are identical except for cabinet design. The RC-1022-A chassis used in both these receivers is similar to the RC-1001-C chassis used in Model 35X—1st Production, except that the phonograph jack of the 1st Production 35X has been omitted in the RC-1022-A chassis, as shown in the accompanying sketches.

For replacement parts list for both receivers, refer to the Service Notes for 35X (RC-1001-C) with the exception of the following parts used in the 12X—2nd Production and 35X—2nd Production:

Stock No.	Description	Unit List Price
35348	Capacitor — Electrolytic, comprising 1 section of 20 mfd., 150 volts (C17), and 1 section of 30 mfd., 150 volts (C16)	.95
36248	Capacitor—.02 mfd.	.20
34298	Capacitor—.01 mfd.	.30
34662	Cord—Drive cord (approx. 33-in. overall length)	.25
39823	Loop—Antenna loop	1.43
31251	Socket—Tube socket—wafer	.25
37605	Socket—Tube socket—moulded	.25
37364	Transformer—Second I. F. transformer	1.35



Circuit Changes, 2nd Production 12X and 35X

For replacement parts list, refer to the Service Notes for 34X (RC-1001-E) with the exception of the following parts used in the 34X—2nd Production (RC-1022):

Stock No.	Description	Unit List Price
35348	Capacitor—Electrolytic, comprising 1 section of 20 mfd., 150 volts (C17), and 1 section of 30 mfd., 150 volts (C16)	.95
12723	Capacitor—56 mmf.	.35
39628	Capacitor—100 mmf.	.35
36248	Capacitor—.02 mfd.	.20
34298	Capacitor—.01 mfd.	.30
34662	Cord—Drive cord (approx. 33-in. overall length)	.25
35078	Knob—Range switch knob	.15
39822	Loop—Antenna loop	1.70
31251	Socket—Tube socket—wafer	.25
37605	Socket—Tube socket—moulded	.25
37364	Transformer—Second I. F. transformer	1.35

**SPEAKER ASSEMBLIES (RL-86B-1)**

32907	Cap—Dust cap	.02
39448	Coil—Field coil—350 ohms.	1.30
39447	Cone—Cone complete with voice coil	1.20
<b>(RL-86B-4)</b>		
32907	Cap—Dust cap	.02
39448	Coil—Field coil—350 ohms.	1.30
39447	Cone—Cone complete with voice coil	1.20
<b>(92379-1)</b>		
39995	Coil—Field coil—350 ohms.	1.50
39994	Cone—Cone complete with voice coil	1.20

**NOTE:** If the stamping on speaker in instrument does not agree with above speaker number, order replacement parts by referring to model number of instrument number stamped on speaker, and full description of part required.

**SPEAKER ASSEMBLIES (RL-86B-1)**

32907	Cap—Dust cap	.02
39448	Coil—Field coil—350 ohms.	1.30
39447	Cone—Cone complete with voice coil	1.20
<b>(RL-86B-4)</b>		
32907	Cap—Dust cap	.02
39448	Coil—Field coil—350 ohms.	1.30
39447	Cone—Cone complete with voice coil	1.20
<b>(92379-1)</b>		
39995	Coil—Field coil—350 ohms.	1.50
39994	Cone—Cone complete with voice coil	1.20

**NOTE:** If the stamping on speaker in instrument does not agree with above speaker number, order replacement parts by referring to model number of instrument, number stamped on speaker, and full description of parts required.

**MISCELLANEOUS ASSEMBLIES**

37906	Back—Cabinet back (12X—2nd Prod.)	.25
39775	Back—Cabinet back (35X—2nd Prod.)	.30
37362	Clamp—Dial clamp (12X—2nd Prod.)	.20
37363	Dial—Glass dial scale (12X—2nd Prod.)	.75
39780	Dial—Glass dial scale (35X—2nd Prod.)	1.50
37831	Fastener—Push fastener (12X—2nd Prod.)	.10
37907	Handle—Carrying handle (12X—2nd Prod.)	.35
35078	Knob—Volume or tuning knob (12X—2nd Prod.)	.15
36722	Knob—Volume or tuning knob (35X—2nd Prod.)	.20
37909	Mounting—Carrying handle mounting hardware (12X—2nd Prod.)	.10

**29K2 (RC-570-D)**

**With 5-inch "EM" Speaker:**

In 2nd production, the 5-inch speaker is changed from "PM" to "EM," as listed below:

**SPEAKER ASSEMBLIES (RL-86B-5)**

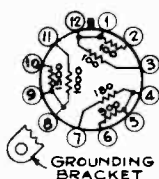
Stock No.	Description
39543	Coil—Field coil—450 ohms
39567	Cone—Cone complete with voice coil
30870	Plug—2-prong male plug for speaker
5118	Plug—3-prong male plug for speaker

**Q31, 5Q66**

**Ballast Resistor Correction:**

In the Service Data for Q31, the resistance between terminals 6 and 7 of the ballast resistor M-91462-3 should be 480 ohms instead of 580 ohms.

In the Service Data for 5Q66, the connections inside the ballast resistor M-91462-1 should be as shown in the accompanying drawing.



PLUG-IN RESISTOR

Ballast M-91462-1 in 5Q66.



**CHANGES, COLOR CODING  
OUTPUT TRANSFORMERS**

**RCA MFG. CO., INC.**

**162, 162A CHANALYST**

**Parts List Changes:**

The parts list of the Chanalyst 162, 162A (Serial numbers 3500-up) should be corrected as follows:

R25 listed as 7.5 megohms should be 8.0 megohms (matched pair). The Stock Number remains 35260.

R26 listed as 2 megohms should be 1.6 megohms (matched pair). The correct Stock Number is 39989.

R27 listed as 400,000 ohms should be 300,000 ohms (matched pair). The Stock Number remains 35258.

**165 JUNIOR VOLTOHMYST**

**Replacement Parts List:**

In some Stock No. 165 Junior VoltOhmysts, R32 is 1,800 ohms instead of the original value of 1,100 ohms, while R34 is 7,500 ohms instead of 7,000 ohms. Should it be necessary to replace these resistors, use the new values in all instruments.

R30, 20,000 ohms, 1/2 watt, is incorrectly listed as 1% matched pair instead of 10% tolerance (correctly shown in the parts list below).

R2, 2 meg., 1/2 watt, 1% matched pair, is incorrectly listed as Stock No. 35259. The correct Stock Number is 39988.

No orders for meters can be accepted without return of the defective meter for exchange or repair.

The following are additions and corrections to the replacement parts list:

Stock No.	Description
14086	Cord—Power cord and plug
4323	Knob—Round knob
34950	Knob—Bar knob
4340	Lamp—Pilot lamp (Mazda type 40)
44288	Meter Case—Case front only for meter number 7090
45934	Meter Case—Case front only for meter number Z-15, 1102A
46533	Probe—Probe only for "AC Ohms" cable
30930	Resistor—1,800 ohms, 1/2 watt, 10% (R32. Originally 1,100 ohms. Replace with 1,800 ohms)

43937	Resistor—7,500 ohms, 1/2 watt, 10% (R34. Originally 7,000 ohms. Replace with 7,500 ohms)
6240	Resistor—20,000 ohms, 1/2 watt, 10% (R30)
39988	Resistor—2 meg., 1/2 watt, 1% matched pair (R2)
31251	Socket—Tube socket
14551	Switch—Toggle switch SPST (S3)

**9890 PHONOGRAPH KIT**

**Part Number of Replacement Sapphire:**

The instructions for the RCA Phonograph Modernization Kit, Stock No. 9890, incorrectly lists the Magic Tone Cell replacement sapphire as Stock No. 38449.

The correct listing should be: Replacement Sapphire for Magic Tone Cell, Stock No. 39863.

**165 JUNIOR VOLTOHMYST**

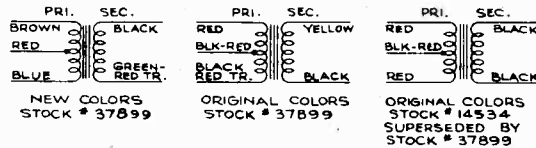
**Meter Needle Off Scale:**

If the meter needle drives violently off scale when no test is being made, remove the cover from the "Ohms Adj." potentiometer R23, insulate the inside of this cover with cambric cloth, fibre paper, or lacquer, and replace. If the trouble persists, do the same to the covers of the "DC Voltage Calibration Adj." potentiometer R22 (be careful not to disturb its adjustment or recalibration with a voltage standard will be necessary), and the "Zero Adj." potentiometer R21.

**STOCK No. 9901C**

**Tube Tester Modernization Kit:**

References to "Ser. Nos. below 1200" and "Ser. Nos. above 1200" on the wiring connection diagram for the 156, 156A Tube Tester Modernization Kit Installation Instructions should read: "Ser. Nos. below 1700" and "Ser. Nos. above 1700." The serial number 1700 is the dividing number of the two productions, not 1200 as shown.



*Original and Alternate Colors on Transformer Stock No. 37899, and Colors on No. 14534, which is Superseded by No. 37899.*

**COLOR CODING OF OUTPUT TRANSFORMERS**

In some production, the color code of leads on the following transformers is changed. When installing, check the drawing number stamped on the transformer and refer below for color code.

ORIGINAL COLORS							
Stock No.	35774	37350	35056	33444	37899	14534	36098
Dwg. No.	94106-1	89681-3	89681-2	83517-3	94193-1	83517-1	94117-1
Pri. Start	Red	Red	Red	Red	Red	Red	Red
Pri. Tap	Black	—	—	Red-Black	Red-Black	Red-Black	—
Pri. Finish	Blue	Blue	Blue	Red	Black-Red Tr.	Red	Red
Sec. Start	Bus	Green-Red Tr.	Black	Black	Yellow	Black	Bus
Sec. Finish	Bus	Brown	Black	Black	Black	Black	Bus
ALTERNATE COLORS							
Stock No.	35774	38994*	35056	33444	37899**		36098
Dwg. No.	94106-2	97610-2	97610-1	97604-2	97604-1		97611-1
Pri. Start	Blue	Blue	Blue	Brown	Brown		Blue
Pri. Tap	Red	—	—	Red	Red		—
Pri. Finish	Red-Black	Red	Red	Blue	Blue		Red
Sec. Start	Bus	Black	Black	Bus	Black		Black
Sec. Finish	Bus	Green-Red Tr.	Green-Red Tr.	Bus	Green-Red Tr.		Black

\* Stock No. 38994 supersedes No. 37350.  
\*\* Stock No. 37899 supersedes No. 14534.

**RP-152, -A, -B, -C, -D, -J**

**Intermittent Start, Slow Speed, or Stalling:**

These conditions may be caused by binding of idler wheel on its mounting stud. Smooth and clean the idler wheel bearing so that it can rotate freely.

**RP-152, -152A**

**Tendency to Stall:**

Some RP-152 and -152A automatic record changer mechanisms in Model VA-15, V-170, V-200, and V-201 use a motor identified by stamping number 91706-1. Slow speed and



*Motor Stamped No. 91706-1  
Used in Some RP-152, -152A  
Automatic Record Changers.*

tendency to stall in this motor may be due to the motor bearings becoming misaligned with respect to the motor spindle.

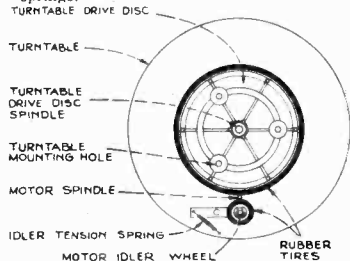
In most cases, the motor spindle may be freed by tapping the stator laminations while the motor is in operation.

For a permanent remedy it is advisable to install an idler wheel assembly to reduce side thrust on the motor bearings. The following parts are required:

Stock No.	Description	Unit List Price
1-36274	Idler wheel	.55
1-36275	Idler wheel arm	.25
2-33726	"C" washer for idler wheel	.02
1-30585	Spring for idler	.06

**Installation Instructions:**

1. Remove one of the two motor support springs.



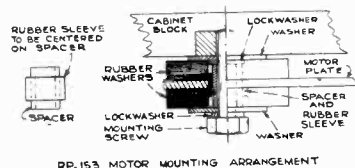
*Arrangement of Idler Wheel Assembly to Improve RP-152, -152A Using Motor 91706-1.*

2. Remove the turntable by removing the screw in the turntable spindle drive gear below the motorboard.
3. Mount the idler wheel by means of a "C" washer on the single end stud of the idler arm.
4. Install the idler assembly in place on the motor board as shown in accompanying sketch and fasten by means of the second "C" washer.
5. Connect the tension spring between the end of the idler arm and the motorboard pin (below motorboard).

**RP-153 (V-301, V-302)**

**Motor Hum:**

Excessive hum may be caused by incorrect assembly of the rubber grommets on the two bolts that fasten the motor-mounting plate to the cabinet. The correct assembly is shown in the sketch. The rubber sleeve must be centered on the metal spacer so that the motor plate can not come in metallic contact with the spacer.



*RP-153 MOTOR MOUNTING ARRANGEMENT  
Excessive Motor Hum will Result in RP-153 if the Rubber Sleeves are not Centered on the Metal Spacers.*

**RP-151**

**Pickup Arm Springs:**

In the Replacement Parts List, Pickup and Arm Assemblies, in the RP-151 Automatic Record Changer service note, the following change and addition should be made:

Stock No.	Description	Unit List Price
38455	Spring—Coil spring (10) for upper pickup pressure adjustment (2 required)	.10
39695	Spring—Flat spring for pickup arm pivot tension	.10

**RP-151, -152, -153, -154, -158, -160, -161, -162**

**Idler Wheel Fiber Washers:**

In order to reduce idler wheel noise, the two metal washers have been replaced by two fiber washers in the Idler Wheel Assembly, Stock No. 36274, for the above record changers. The new fiber washers are Stock No. 39996.

**RP-158, -160, -161, -162**

**Bakelite Alternate Replacement Parts:**

The following shows a comparison of replacement part stock numbers for the above record changers when bakelite parts are used as alternates for regular die-castings:

Description	Stock No. Die-Cast	Stock No. Bakelite
Record Separator Assembly:		
Separator cap	38470	38470
Separator knife	38467	39768
Separator spring (upper)	38468	39769
Separator spring (bottom) (RP-158, -160, -161)	38621	39968
Separator shelf and shaft (RP-158, -160, -161)	38652	39767
Separator shelf and shaft (RP-162)	39035	39770
Main Cam	38641	39760
Record Support and Shaft (Left hand front post) (RP-158, -160, -161)	38645	39762
Record Support Cam (RP-158, -160, -161)	38646*	39763†
Tone Arm Segment Cam (RP-158, -160, -161)	38619*	39764†

\*The die-cast cams 38646 and 38619 require a 10-32 set screw, stock number 32869, to fasten cam to shaft.

†The bakelite cams 39763 and 39764 require a drive pin, stock number 39765, to fasten cam to shaft. (A drive pin is included with 39763 and 39764).

**RP-151, -158, -160, -162**

**Crystals and Sapphires:**

RP	Stock No. of Sapphire and Holder, less nut—	Stock No. of Crystal and Sapphire Assembly—
151	38449	Top, 38453 (Alum. case) Bottom, 38598 (Alum. case)
158	39564	38610
160	38449	38453 (Alum. case) 39550 (Zinc case)
162	39564	38610

**RP-158, RP-160**

**Eccentric Stop, No. 39569:**

In Replacement Parts, add Stock No. 39569 eccentric stop for record separator support.

**RP-158, -160, -162**

**Slow Speed:**

In cases of slow speed, adjust the bottom bearing of turntable spindle to remove binding and to obtain free rotation. Refer to adjustment "B" in Service Data. Check by applying power to the turntable motor, allowing turntable to reach full speed, then pull motor away from turntable drive disc. The turntable should coast for at least twelve revolutions. (In RP-162, disengage motor from turntable by pulling idler away from turntable to observe coast.)

**RP-160**

**Spring for use with Zinc Crystal:**

On RP-160 with aluminum pickup arm, and aluminum-cased crystal, the spring that governs pickup pressure is No. 30585; with zinc pickup arm and aluminum-cased crystal, the spring is No. 39673. When installing a zinc-cased crystal in a zinc arm, cut 1½ turns off the spring, or install a No. 39754 spring.

**RP-162**

**Pickup Pressure:**

The Service Data for RP-162 incorrectly lists the Sapphire pressure as four ounces: The correct pressure is approximately two ounces.

**V-170, V-200, V-201**

**Rumble:**

Rumble is related to motor vibration, combined with high-gain amplifier, and prominent bass response.

The vibration of the motor in these instruments is as low as it can be made: Do not replace it to correct rumble. Rather, reduce the low-frequency response by shunting a 50,000-ohm ¼-watt resistor across the crystal pickup terminals.

**V-205-A**

**Using RP-153 Automatic Mechanism:**

A limited number of V-205 instruments contain the RP-153 record changer. These are labeled V-205-A. Refer to Service Note on RP-153 for service data and replacement parts.

**V-209, -210, -215, -219, -221, -225**

**Use of GT (Glass) Tubes:**

When using the glass equivalent for metal tubes in the above models, the following changes must be made to prevent oscillation with the push-buttons in the "out" position:

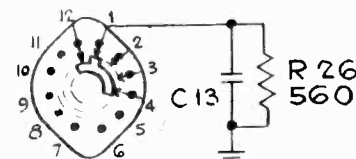
6SA7GT glass tube in place of metal tube 6SA7:

V-209—No changes required.  
V-210—Add resistor R26, 560 ohms, ½ watt (RCA Stock No. 12414) in parallel with C13 capacitor, 2200 mmf., as shown in the accompanying sketch.

V-215, V-219, V-221, V-225—Add resistor R33, 560 ohms, ½ watt (RCA Stock No. 12414) from terminal 9 of switch S4 (Rear) to chassis ground as shown in the accompanying sketch.

6SK7GT glass tube in place of metal tube 6SK7:

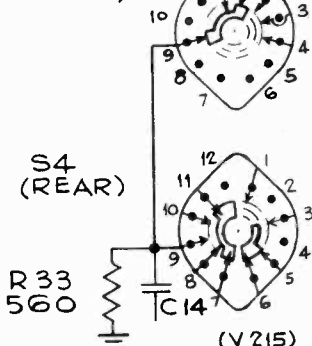
A shield (RCA Stock No. 39074) and a grounding clip (RCA Stock No. 39073) are required for shielding purposes on all models above.



**S4 (REAR) (V210)**

When Using 6SA7GT Glass Tube in Model V-210, add Resistor R26

**S3 (FRONT)**



**S4 (REAR) (V215)**

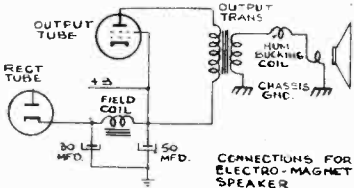
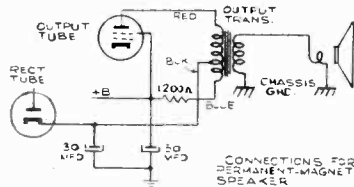
When Using 6SA7GT Glass Tube in Models V-215, V-219, V-221, V-225, add Resistor R33

CHANGES, NOTES

1X, 12X, 14X SERIES

Speaker changed from "PM" to "EM":

First Production of the following models use RL-81-B2 "PM" (permanent-magnet) speaker. In 2nd Production, the speaker is changed to RL-86-A3 "EM" (electro-magnet) speaker. The circuit for each type of speaker is shown in the accompanying diagrams.



Circuit for "PM" and "EM" Speakers in 1X, 12X, and 14X Series.

Replacement Parts for the RL-86-A3 "EM" speaker are as follows:

Model Number	Chassis Number	Cone and Voice Coil No.	Output Transformer No.
1X, 1X2	RC-1003	35570	35056
1AX, 1AX2	RC-1003A	35570	35056
12X, 12X2	RC-1001B	35570	38994
12AX, 12AX2	RC-1001C	35570	38994
14X, 14X2	RC-1001D	35570	38994
14AX, 14AX2	RC-1001E	35570	38994

Unit List Price: No. 35570, \$1.20  
No. 35056, 1.30  
No. 38994, 1.30

The Field Coil for RL-86-A3 Speaker is Stock No. 39543.

1X, 1X2, 1AX, 1AX2, 45X5

Line Bypass Capacitor:

In some production, the .005 mfd. line bypass is connected from plate to cathode on the rectifier tube, instead of from plate to chassis.

1X, 1X2, 1AX, 1AX2

2nd Production:

The tuning-knob shaft and its "C" washer are changed as follows:

1st Prod.	No.	Shaft	"C" Washer
1st Prod.	No. 35343 (1 1/8-in.)	...	No. 34373
2nd Prod.	No. 38846 (1 1/8-in.)	...	No. 33726

Capacitor Changes:

C14 changed from .015 to .02 mfd., No. 36248  
C17 changed from .085 to .02 mfd., No. 36248  
C24 (1AX, 1AX2) changed from .2 to .1 mfd., No. 43763  
R4 changed from 2.2 to 3.3 megs., No. 12028

QB2, QB6

I-F or A-F Transformer Breakdown:

In 2nd production, a 10-megohm, 1/2 watt resistor is connected across the +B circuit electrolytic capacitor to discharge the capacitor when the set is tuned "off." This eliminates any voltage difference (retained by capacitor) between the chassis and I-F and A-F transformer primaries while the set is "off" and therefore reduces transformer breakdown due to electrolysis in humid climates.

CV-112X CONVERTER

AC Power Unit for QB2, QB5, QB6:

The CV-112X is designed to convert Model QB2, QB5, and QB6 from battery to a-c operation. It differs from the CV-112 in that it has a tapped filament winding to provide correct filament voltage with 4, and 5 tube, or 6-tube receivers. A plug, which fits in a socket on the side of the unit, is used to select the correct tap, as shown in accompanying diagram.

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QB3 (RC-539)

C15, 66 mmfd., Stock No. 36072:

In 2nd Production of QB3, C15 is changed to 66 mmfd. (Stock No. 36072, List Price \$3.30) to improve tracking.

QB6 (RC-529D)

Service Data:

Model QB6 is essentially the same as Model QB2, except for the following parts which are used in the QB6:

Stock No.	Description	Unit List Price
37976	Bracket—Tone control support bracket	.25
37999	Dial—Glass dial scale	.75
36103	Decal—Power-volume decal	.05
37839	Decal—Range switch decal	.15
35392	Decal—Trade mark decal	.05
35391	Decal—Tuning decal	.05
37838	Frame—Dial frame complete, less dial and pointer	1.25
35650	Knob—Tone control knob	.25
34861	Knob—Tuning knob	.35
34862	Knob—Vol. control or range switch knob	.35

10X, 2ND PRODUCTION

Chassis No. RC-1001-B:

The 1st production of Model 10X has chassis No. RC-1001, with an "EM" speaker.

In 2nd production, the chassis is No. RC-1001-B, with RL-81B2 "PM" speaker.

The circuit in 2nd production is the same as shown in the Service Note for Model 12X.

For replacement parts, refer to the 10X Service Note, and the following parts which are used in the 2nd production:

Stock No.	Description	Unit List Price
36301	Capacitor—Electrolytic, comprising 1 section of 50 mfd., 150 volts, and 1 section of 30 mfd., 150 volts	1.25
11815	Capacitor—.015 mfd.	.20
30189	Resistor—120 ohms, 1/2 watt	.20
6134	Resistor—1,200 ohms, 1/2 watt	.22
30492	Resistor—22,000 ohms, 1/2 watt	.20
14583	Resistor—220,000 ohms, 1/2 watt	.20
36800	Transformer—Output transformer	1.30
SPEAKER ASSEMBLIES (RL-81B-2)		
35570	Cone—Cone complete with voice coil	1.20
36153	Fastener—Push-on fastener for back	.10
35078	Knob—Volume control or tuning knob	.15

LOCATING INTERFERENCE

With a Model BP-10:

The Model BP-10 "Personal" loop receiver has been used successfully in tracking down the source of electrical interference, and the location of local rectification in stubborn cases of local cross-modulation and hum-modulation.

The directional pattern of the BP-10 is essentially a figure "8," with a sharp minimum at right angles to the plane of the loop.

The small size, light weight, and high sensitivity of this battery-operated receiver makes it ideally suited for this work.

BP-10 AND 15BP

Oscillator Coil Color Code:

The correct color code for the oscillator coil in these models is as follows:  
Lead to oscillator plate..... Blue  
Lead to +B..... Red  
Lead to oscillator grid..... Green  
Lead to chassis..... White

SPEAKER GAUGE No. 39598

For BP-10 Elliptical Speaker:

A special gauge, No. 39598, is now available for centering the voice coil in Model BP-10 with elliptical speaker.

CONE CENTERING GAUGE

For BP-10 Round Speakers:

A cone centering gauge for the BP-10 round speaker (Stock No. 36504, Part No. 84991-501) is now available. The gauge is carried as Stock No. 70003.

The cone centering gauge for the BP-10 elliptical speaker is Stock No. 39598 (see Supplementary Information 6 and 7).



Stock No. 70003—Cone Centering Gauge

12X, 12X2, 12AX, 12AX2

Antenna Coupling Coil:

In 2nd production, the shunt resistor R7 across the primary of the antenna coupling coil is omitted, and the antenna coupling coil is changed from Stock No. 37356 to 37962, list price \$7.75.

14AX, 14AX-2

Changes in 2nd Production:

C3, in grid circuit of 12SQ7, is changed from .015 to .02 mfd., Stock No. 36248.

C5, in 50L6GT plate circuit, is changed from .025 to .02 mfd., Stock No. 36248.

C21, chassis ground to power ground, is changed from .2 to .1 mfd., Stock No. 4839.

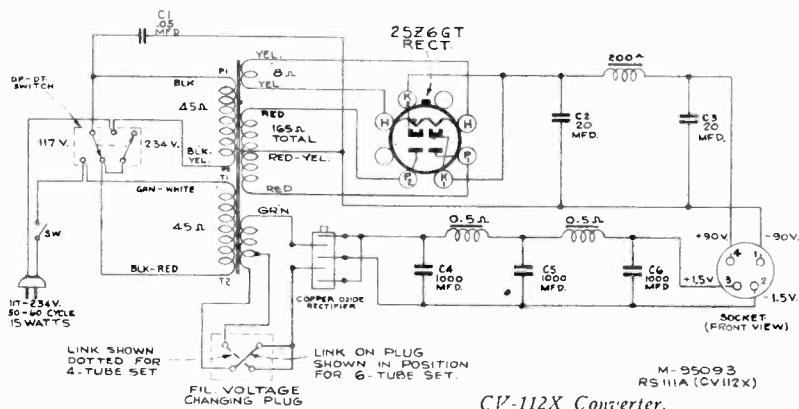
14AX2 (RC-1001E)

Service Data:

The Service Data for Model 14AX applies to Model 14AX2, except for the following parts used in 14AX2:

Stock No.	Description	Unit List Price
36801	Coil—Oscillator coil	.65
37353	Condenser—Variable tuning condenser	2.75
38816	Back—Cabinet back	.25
Y1140	Cabinet	4.50
35071	Knob—Control knob	.15

RL-86-A3 "EM" speaker is used in some production of 14AX2, as specified elsewhere in this supplement.



CV-112X Converter.

RCA MFG. CO., INC.

14BT

Battery Cable Change:

In some 14BT production, the +A wire in the battery cable is black or black with red tracer instead of brown.

14X2 (RC-1001D)

Service Data:

The Service Data for Model 14X applies to Model 14X2, except for the following parts used in 14X2:

Table with columns: Stock No., Description, Unit List Price. Includes items like Back-Cabinet back, Cabinet, Knob-Control knob.

RL-86-A3 "EM" speaker is used in some production of 14X2, as specified elsewhere in this supplement.

15X, 16X-1, -2, -3

Dial Back Plate:

In some production, the dial back plate and pulley assembly is changed from "garnet maroon," Stock No. 36229, to "Black," Stock No. 38767.

Capacitor Changes:

In 2nd Production, the following capacitors are changed:

C5 from 120 to 150 mmfd., Stock No. 12725  
C8 from .015 to .02 mfd., Stock No. 36248  
C9 from 120 to 300 mmfd.

C9 is built in with C10 (.005 mfd.) and the stock number of the dual unit is 37359.

15X, 16X-1, -2, -3, -4, -11, -13, -14

Speakers RL-81-A5, RL-81-B2, 92161-1, 92161-3:

Four different speakers have been used on these models. The replacement parts are listed below:

Table with columns: Stock No., Description, Unit List Price. Includes SPEAKERS STAMPED and SPEAKERS STAMPED sections.

15X, 16X-1, 16X-2

Substitute Speaker:

On 2nd Production of 15X, 16X-1, 16X-2, RL-86-B1 "EM" speaker is used in place of the original RL-81-A5 "PM" speaker.

Replacement parts for the RL-86-B1 speaker are listed below. The alternate circuit arrangements are shown in accompanying diagrams.

Table with columns: Stock No., Description. Includes Cap-Dust cap., Coil-Field coil, Cone-Cone and voice coil.

17K

Dial Frame is Stock No. 38784:

In the Service Data for Model 17K, change the Stock Number of the Dial Frame from 35799 to 38784.

24BT-1

Substitute Speakers:

The following speakers may have been used as a substitute for Speaker RL-85-6 in Model 24BT-1.

Table with columns: Number Stamped on Speaker, Cone and Voice Coil Stk. No., Output Trans. Includes items like 92161-3, 92161-4, 92161-5, etc.

24BT-2, 25BT-2

Speakers RL-85-5, RL-85-6, 92377-1, 92377-3:

Four different speakers have been used on these models. The replacement parts are listed below:

Table with columns: Stock No., Description. Includes Cap-Dust cap., Cone-Cone complete with voice coil, Transformer-Output transformer.

25BT-2, 25BT-3, 25BK

Delete Speaker Plug and Socket:

In Replacement Parts, delete speaker plug No. 36009, and socket No. 14275.

25BK

8-Inch Round Speaker No. 92378-1:

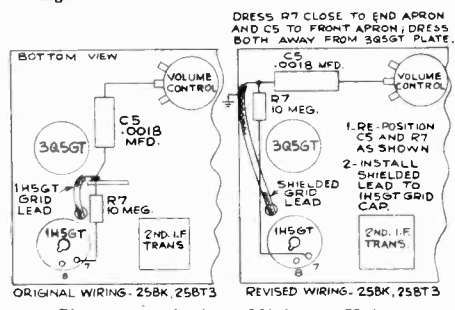
Change the description and identifying number of the speaker in Model 25BK Service Note from 92355-1 (9 1/2-inch elliptical) to 92378-1 (8-inch round).

The cone, Stock No. 39066, applies to No. 92378-1 speaker.

25BK, 25BT3

Reducing Minimum Volume:

When these models are used near strong local stations, the minimum volume may be too high. This can be remedied by re-positioning the 1H5-GT 1st-audio grid capacitor (C5) and grid resistor (R7), and installing a shielded lead to the grid cap of the 1H5-GT tube. These changes are shown in the accompanying drawing.



Changes to Reduce Minimum Volume in 25BK and 25BT3.

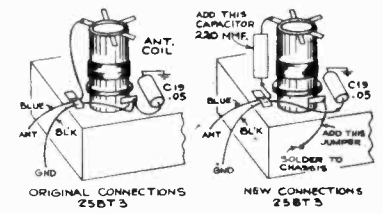
Distortion on Locals:

In Models 25BK and 25BT3, distortion on strong local stations (even with volume control turned low) may be caused by "front-end" overloading due to excessive signal strength. This can be corrected by using a shorter antenna, or by connecting a small capacitor (about 50 mmfd.) in series with the antenna.

25BT3

Hum Modulation with CV-42:

The changes shown in the accompanying sketch are recommended to eliminate hum modulation when using Model 25BT3 with CV-42 "Electrifier." These changes may be made without removing the chassis from the cabinet, and require the addition of only one part, a 220 mmfd. mica molded capacitor.



Circuit Revisions in Model 25BT3 to Eliminate Hum Modulation When Using CV-42 "Electrifier".

25BP

Speakers RL-81-B1, RL-81-B2, 92161-1:

The above speakers were used on the 25BP in addition to those listed in the Service Note. Use Output Transformer Stock No. 39538 with all speakers used in the 25BP, except: when using a speaker stamped RL-81-B1 use Output Transformer Stock No. 38098.

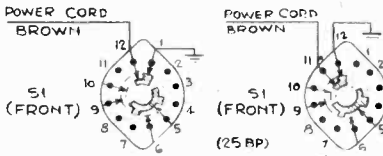
Table with columns: Stock No., Description. Includes Cap-Dust cap., Cone-Cone complete with voice coil.

NOTE: If number stamped on your speaker frame does not appear on above list, order part required by description giving number stamped on your speaker and receiver model.

25BP-2ND PROD. (RC-1020)

Power Switch Change:

In some second production 25BP (RC-1020), the power switch differs from that shown in the Service Note. Connections to clips numbered 12 and 1, on wafers S1-Front, of the switch shown in the Service Note, are to numbers 11 and 12 respectively on the other switch used in this production. All other connections are as shown in the Service Note Schematic.



Two Types Power Switch, Model 25BP-2nd Production

26X-1, -3, -4 Changes in 2nd Production:

In 26X-1 and 26X-3, a 10-mmfd. capacitor, Stock No. 13200, is added in parallel to C24 in the "C" band oscillator circuit.

The Stock No. for C4 (47 mmfd.) oscillator grid capacitor is 13141. The adjustable core on L5 antenna coil is omitted, and this adjustment is therefore omitted in the alignment procedure.

Q27 (RC-507K) Service Data:

Model Q27 is similar to Model Q25 which is described in the Service Note for Models Q22, QK23, and Q25. Replacement parts for Q27 are same as for Q25, with exception of the following parts used in Q27:

Table with columns: CHASSIS ASSEMBLIES (RC-507K), Description, Price. Includes Bracket-Tone control mounting, Control-Tone control, Control-Volume control and power switch, Cord-Drive cord, Resistor-10 ohms, Screw-No. 8-32 sq. head set screw for drive drum, Socket-Phono input socket, Spring-Retaining spring for adjustable cord and studs, Support-L.H. pulley support complete with pulley, Support-R.H. pulley support complete with 3 pulleys, Transformer-Power transformer.

SPEAKER ASSEMBLIES (92311-1)

Table with columns: Description, Price. Includes Coil-Field coil, Cone-Cone complete with voice coil, Plug-4-prong male plug for speaker, Transformer-Output transformer.

**SUBSTITUTE SPEAKERS, CONES**

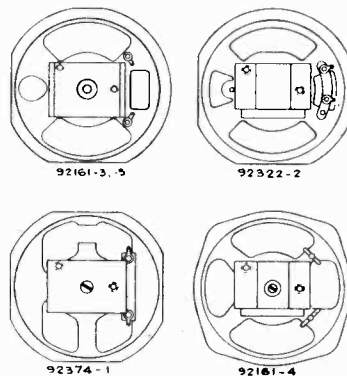
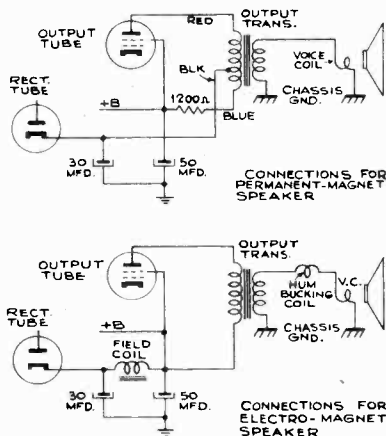
RCA MFG. CO., INC.

**SUBSTITUTE SPEAKERS**

In 1st production of the following models, the speaker is RL-81-B2. In later production, several substitute speakers are used, as listed below.

WHEN ORDERING REPLACEMENT PARTS FOR SPEAKERS, NOTE THE IDENTIFICATION NUMBER STAMPED ON THE SPEAKER FRAME. IF THE NUMBER STAMPED ON THE SPEAKER DOES NOT APPEAR IN THE FOLLOWING LIST, ORDER THE REQUIRED PART BY DESCRIPTION, AND SPECIFY THE IDENTIFYING NUMBER STAMPED ON THE SPEAKER AND THE RECEIVER MODEL NUMBER.

Alternate "EM" and "PM" speaker connections are shown in the accompanying diagrams.



Identifying Sketches of Five "PM" Speakers.

**SUBSTITUTE SPEAKERS**

MODELS	
MODEL NUMBER	CHASSIS NUMBER
1X, 1X-2	RC-1003
1AX, 1AX-2	RC-1003A
6X2	RC-1013
10X (2nd Prod.)	RC-1001B
12X, 12X-2	RC-1001B
12AX, 12AX-2	RC-1001C
14X, 14X-2	RC-1001D
14AX, 14AX-2	RC-1001E
15X	RC-462
16X-1, 16X-2	RC-462A
26X-1	RC-1014
26X-3	RC-1014A
26X-4	RC-1014B

NUMBER STAMPED ON SPEAKER	CONE AND VOICE COIL STOCK No.	FIELD COIL STOCK No.	Output Trans. Stock No. for 1X, 1X-2, 1AX, and 1AX-2	Output Trans. for 6X2, 10X (RC-1001B), 12X, 12X-2, 12AX, 12AX-2, 14X, 14X-2, 14AX, 14AX-2, 15X, 16X-1, 16X-2, 26X-1, 26X-3, 26X-4
RL-86-A3	35570	39543	35056	38994
RL-86-B1	39447	39448	35056	38994
RL-86-B4	39447	39448	35056	38994
92161-3	38352	PM	37912	36800
92161-4	39535	PM	37912	36800
92161-5	38352	PM	37912	36800
92322-2	39536	PM	37912	36800
92374-1	39537	PM	37912	36800

NOTE: The following speakers may have been used as a substitute for the RL-81-B2 speaker in any model which originally called for the RL-81-B2:

Speaker Stamping	Cone No.
92161-3	38352
92161-4	39535
92161-5	38352
92322-2	39536
92374-1	39537

**REPLACEMENT CONES**

**Installation Instructions:**

Certain types of replacement loudspeaker cones are now being supplied with a cup-shaped center suspension fastened to the cone instead of the flat suspension and cup-shaped metal plate which were originally used.

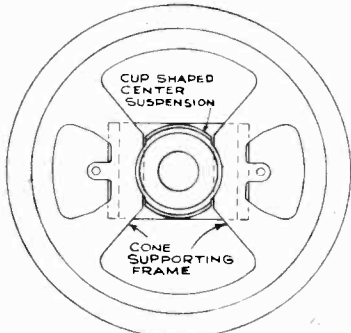
These replacement cones can be used without modification on many types of speakers. However, on certain types, the speaker frame extends in so close to the center pole that it interferes with the cup-shaped center suspension; in such cases it is necessary to cut away two edge sections of the suspension, as follows:

1. Put cone in position in housing and mark

places on suspension cup where edge of cup must be cut away.

2. Lift cone out of housing and cut away edge of cup where marked.
3. Cement cone into position in the usual way, being careful that the entire edge of the cup is securely cemented down, including the edge at the places that were cut away.
4. Leave the centering gauge in position until cement is thoroughly dry.

The accompanying sketch shows how the flat edge of the cup-shaped center suspension is cut away in two places to provide clearance for the cone supporting frame.



The Cup-Shaped Suspension Must be Cut Away to Accommodate the Cone Supporting Frame in Some Speakers.

**REPLACING ELLIPTICAL CONES**

**In Speakers with Cemented Voice-Coil Supports:**

- (a) Remove old cone. Clean housing thoroughly.
- (b) Apply a thick bead of Du Pont household cement to yoke plate where cone centering support will fit.
- (c) Apply a thin coat of Du Pont household cement to housing where cone edge will fit.
- (d) Put cone in position using several thin strips of paper to center voice coil.
- (e) Press cone edge and centering support down in cement and allow to dry.
- (f) After cement is dry remove cone centering strips.
- (g) Solder voice coil leads to proper terminals.
- (h) Cement center dust cap in position.

**STOCK NO. 36077 CONE**

**Replaces Stock No. 35441**

No. 36077 cone replaces No. 35441. The fabric spider of the No. 36077 cone should be cemented to the top pole plate as explained on page 2 of "Supplementary Information No. 4." The metal frame that is used to center the spider on the No. 35441 cone should not be used with the No. 36077 cone.

**STOCK No. 155A CRO**

**Changes; Extending Sweep Range:**

Certain applications may require that the lowest frequency sweep range be extended below 15 cycles. This may be accomplished by increasing the capacity of C-7 until the desired low frequency sweep is obtained.

The Chassis Wiring Diagram, Figure 33, in early 155A CRO instruction books shows connections to D1 and D3 of the 906 tube reversed. D1 should connect to R24, while D3 connects to R25.

The Replacement Parts List for the 155A CRO should be corrected as follows:

**DELETE:**

Stock No.	Description
14561	Resistor — Carbon resistor, 220 ohms, 1/2 watt (R-10)
30654	Resistor — Carbon resistor, 1500 ohms, 1/2 watt (R-18)
4814	Socket—Tube socket, 5-contact (for RCA-884).....

**ADD:**

Stock No.	Description
46705	Capacitor — Electrolytic capacitor, 8 mfd., 450 volts (C16) .....
14086	Cord—Power cord and plug
34766	Resistor — Carbon resistor, 1000 ohms, 1/2 watt (R-18)
31251	Socket—Tube socket, octal (for RCA-884).....

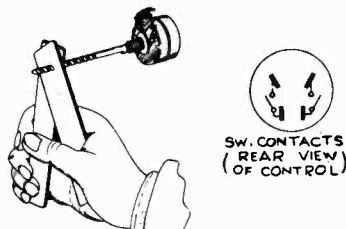
### RCA REPLACEMENT CONTROLS

#### And Shearing Tool No. 38600:

Certain RCA replacement controls have a long notched shaft which can easily be cut to the required length with side cutters, file, or hacksaw, or sheared off at the desired point with two pliers, or with the special RCA shearing tool, Stock No. 38600.

The two pieces of the tool are placed on the shaft, as shown, and then pressed together, thus making a quick clean shear.

Where the original control had a switch, the replacement control has a double-pole, single-throw switch to permit universal application. The arrangement of switch contacts are shown in the sketch.



RCA Stock No. 38600 Shearing Tool to Cut Shafts on RCA Replacement Controls to Required Length.

### LOW OUTPUT ON BATTERY SETS

#### Half of 3Q5GT Filament Open:

Low power output on battery models that use a 3Q5GT output tube may be caused by burn-out of one half of the double filament in this tube. Check for continuity between prongs 2 and 8 and between 8 and 7.

### RCA STATION ALLOCATOR

#### Changing Push-Button Ranges:

In locations where most of the popular "push-button" stations are in the upper half of the broadcast band, the push-button frequency ranges of the Station Allocator can be shifted upward by changing C3 and C4 from 1,200 mfd. to 1,000 mfd. (Stock No. 12635, two required).

The frequency ranges are then as follows:  
 Buttons 1, 2, . . . . . 435 to 890 kc  
 Buttons 3, 4, 5, . . . . . 640 to 1,270 kc  
 Buttons 6, 7, 8, . . . . . 890 to 1,840 kc

#### Neon Modulator Circuit Change:

To compensate for varying neon-lamp characteristics, R7 is changed from 1.5 to 2.2 megs. Stock No. 12679, and C9 is changed from 1,800 mfd. to 1,200 mfd., Stock No. 44337.

### COLOR CODE

#### For Output Transformers:

Changes have recently been made in the color code of RCA output transformers to conform to R.M.A. standards.

	Old Color Code	New Color Code
Primary start . . . . .	red	brown
Primary mid-tap . . . . .	black-red	red
Primary finish . . . . .	red	blue
Secondary start . . . . .	blue, or yel.	black
Secondary finish . . . . .	black	green-red tr. or black

### NO. 9824A RECORD PLAYER SWITCH

#### Loctal Tube Adaptor now Available:

A special adaptor, Stock No. 38945 is now available for quickly and easily connecting the popular No. 9824A record player switch to radio receivers that use a 7B6 or 7C6 loctal 1st-audio tube. The new special adaptor, Stock No. 38945 lists for \$1.50.

### CONNECTING RECORD PLAYER SWITCH

#### To AC-DC Sets with Insulated Chassis:

To avoid hum in connecting a record-player switch to AC-DC sets in which the common negative wiring is insulated from the chassis, the shielding on the record-player switch should be connected, through a .25 mfd. capacitor, to the common negative wiring, not to the chassis.

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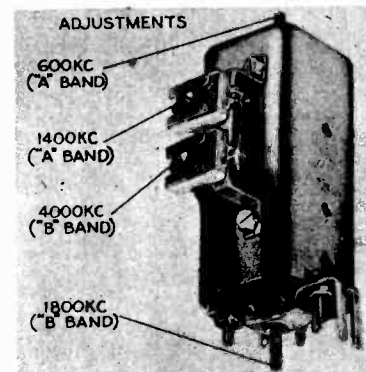
### EXTERNAL ANTENNA COUPLER

#### For Loop Receivers:

The special antenna coupler, Stock No. 9912, for connecting an external antenna to a loop receiver, has low-frequency and high-frequency adjustments on both "A" and "B" bands to ensure adaptability and good performance.

The location of these adjustments, and the approximate alignment frequencies, are shown in the accompanying illustration.

The List Price of the No. 9912 Coupler is \$2.25.

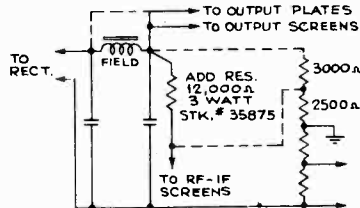


Stock No. 9912 Antenna Coupler.

### BLEEDER RESISTOR No. 34537

#### Used in Models U-45, K-105, V-205, etc.:

If bleeder resistor No. 34537 becomes defective, the set can be repaired, without replacing the bleeder, by changing the circuit as shown in the accompanying diagram.



DOTTED LINES INDICATE ORIGINAL CONNECTIONS - TO BE REMOVED.

In case of Burnout of Bleeder Resistor No. 34537, Repairs can be made by Changing the Circuit as shown above.

This change requires only one part, a 10,000 or 12,000 ohm, 2 or 3 watt resistor (RCA No. 35875).

#### Procedure

- Disconnect leads attached to 8000 and 2500 ohm sections (leave ground connection intact).
- Change output stage plate supply from the filter input (rectifier side of speaker field, + 350 volts) to the filter output (load side of speaker field, + 250 volts). This can be done at the speaker plug. Leave the output stage screen lead connected to this same point.
- Install a 10,000 or 12,000 ohm, 2 or 3 watt resistor (RCA Stock No. 35875) in series between the RF-IF screen supply lead and the filter output; being sure that the existing 16 mfd. capacitor is connected to the screen side of the resistor.

This modification slightly lowers the reserve of power output.

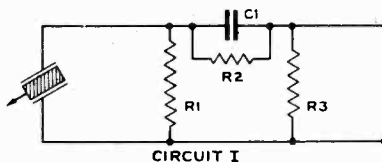
### RCA RESISTOR-TYPE BALLAST TUBES

Marking	Stock No.	Marking	Stock No.
BK-36-C	30284	86892-2	33812
K-36-F	31005	86892-3	33813
BK-42-B	14649	86892-4	33947
BK-49-B	32544	86892-6	34563
BK-55-B	31198	86892-7	34458
BK-61-B	31585	86892-8	34805
K-61-F	31019	86892-9	35000
B-86-A	32109	86892-10	35183
495-K1	38793	86892-11	37847
260-K1	30300	91462-1	35748
495-K1	30599	91462-2	35635
83747-6	31577	91462-3	37891
85277-3	32247	91462-5	37983
85277-4	32850	91462-6	38289
85277-5	32849	95178-10	39346
86892-1	33811	920117-1	88702

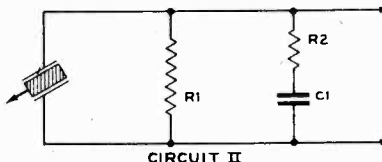
### HUM

#### With 6AD7-G Tube:

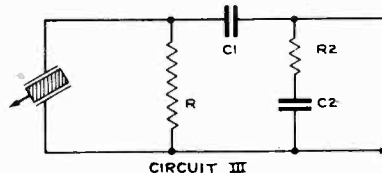
Occasionally a type 6AD7-G tube may have internal leakage which produces hum in the receiver. This leakage may be of such a high value that it is difficult to measure, and such tubes will test OK in a tube checker. When this condition is encountered, the tube should be replaced.



**Circuit I:**  
 Increasing R1 increases low frequency response.  
 Increasing C1 increases high frequency response.  
 Increasing value of R3 with respect to total value of R2 plus R3 increases the output.



**Circuit II:**  
 Increasing R1 increases low frequency response.  
 Increasing R2 increases high frequency response.  
 Decreasing C1 increases output.



**Circuit III:**  
 Increasing R1 increases low frequency response.  
 Increasing R2 increases high frequency response.  
 Increasing value of C1 with respect to total value of C1 plus C2 increases the output.

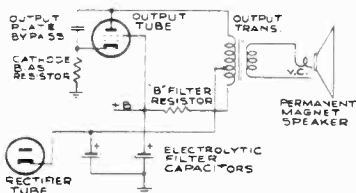
NOTES

**HUM REDUCTION**

**On AC-DC Models with PM Speaker:**

In RCA AC-DC receivers that use a PM (permanent-magnet) speaker, effective hum bucking is obtained through the use of an output transformer with tapped primary. The tap is established at a point where the "ampere turns" of ripple in the direction of the output plate balances the "ampere turns" of ripple in the direction of the screen and other plate circuits.

- High residual hum (at zero volume setting) may be due to incorrect balance, and can usually be remedied by one of the following steps:
- Output tube with off-standard characteristics.
  - Filter capacitor too low capacity, or too high internal resistance.
  - "B" filter resistor not correct value. Measure resistance and change if necessary.
  - Cathode bias resistor of output tube not correct value.
  - If hum persists change the output-tube-plate bypass to rectifier cathode instead of to output-tube cathode.
  - If none of preceding steps reduces the hum to a satisfactory level, replace the output transformer.



*A Tapped Output Transformer is Used for Hum-Bucking in AC-DC Sets Using "PM" Speakers.*

**EXTERNAL ANTENNA COUPLER**

**For Loop Receivers:**

A specially designed antenna coupler, Stock No. 9912 is available for use in connecting an external antenna to a loop receiver. This coupler will prove valuable for installations where it is desirable to eliminate the loop in order to improve the signal noise ratio and increase sensitivity.

The antenna coupler may also be used as a fixed-tuned substitute for any standard loop antenna to aid in aligning loop receivers in a shop. The coupler covers "A" and "B" bands, approximately 550 to 1,750 kc, and 1,750 to 5,000 kc. It has low-frequency and high-frequency adjustments on each band to ensure adaptability and good performance on practically any loop receiver.

The circuit is shown in the accompanying diagram. Installation and adjustment instructions are furnished with the unit.

List Price of No. 9912 is \$2.25.

**SPEAKER PHASING**

**On Dual Speaker Sets:**

On sets with two speakers it is ESSENTIAL that the speaker cones move in and out together. If one cone moves in while the other moves out, the tone will be impaired.

It is necessary to check phasing whenever a new speaker, cone, field coil, or output transformer is installed, or whenever the speaker connections are altered in any way.

There are two general types of dual-speaker sets:

- Two speakers with voice-coils connected in parallel. This type is the easiest to phase. Connect a dry cell (1½ volts) across the secondary of the output transformer and observe, by sight or feel, whether the cones both move in the same direction. If one cone moves in while the other moves out, reverse the external connections to one of the voice coils.

If one speaker is a PM, and the other is an EM, it is preferable to reverse the voice coil connections to the PM speaker to avoid upsetting the hum-bucking action of the EM speaker.

If both speakers are EM, but of different size, reverse the voice coil connections to the smaller one as this will generally have the least effect on hum.

If one or both of the speakers are EM (electro-magnet) it is necessary to have the set in operation (volume control at minimum) to provide field excitation for the EM speaker(s).

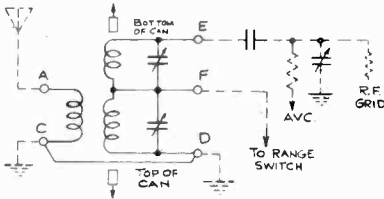
- Two speakers with separate output transformers. In this type of dual-speaker set,

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it is not possible to use the simple battery check for phasing because the voice coils are not connected in parallel.

The recommended method of phasing in this case is as follows:

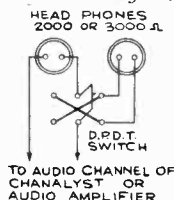
Connect a pair of radio headphones ("2,000 or 3,000 ohm" type) and a double-pole double-throw toggle switch as shown in the accompanying diagram. Connect the two leads to an audio amplifier that has some form of output meter indicator. The audio channel in the chanalyst is ideal for this purpose.



*Circuit of External Antenna Coupler Stock No. 9912*

Hold both phones close in front of one speaker. Feed a 400-cycle modulated signal into the receiver and advance the receiver

**"Phase Checker" Using Headphones.**

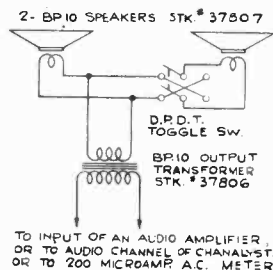


volume control to obtain a reading on the meter. Throw the toggle switch to each position and note the position that gives the greatest output on the meter. Mark this position "in phase." Mark the other position the toggle switch "out of phase."

Place one headphone unit close in front of each of the two speakers, with the 400-cycle signal still fed into the receiver, and with volume control advanced. Move the toggle switch to each position and leave it at the position that gives the greatest output on the meter. Note the switch marking for this position. If it says "in phase," the speakers are correctly phased. If it says "out of phase," the speakers are out of phase and the external connections to the voice coil of one speaker should be reversed. The choice of which speaker to reverse is the same as outlined under (1).

Instead of headphones, it is possible to use two small PM speakers, a D.P.D.T. toggle switch, and an output transformer, connected as shown in the accompanying diagram.

A "phase checker" of this type will prove helpful in any radio shop.



*"Phase Checker" Using Small "PM" Speakers.*

**REPLACEMENT PHONO MOTOR NO. 38567**

**Installation Instructions:**

No. 38567 motor is 60-cycle replacement for Stock No. 31157 and No. 31163 used in Models U-125, U-126, U-128, U-130, U-132, U-134, etc.

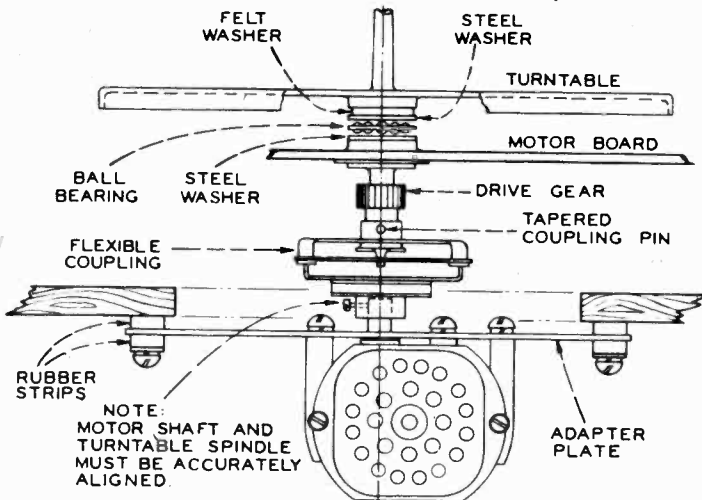
Parts Required	Unit List Price
1—RCA No. 38567 Constant Speed Motor 105-125 V.—60 cycles	\$6.80
1—RCA No. 38568 Thrust Bearing Assembly	0.60
1—RCA No. 38569 Motor Support Plate	0.60
	<b>\$8.00</b>

**INSTALLATION**

- Remove original motor and support plate assembly from instrument.
- Drive out TAPERED COUPLING PIN and lift turntable and spindle assembly from mechanism.
- Install Stock No. 38568 Thrust Bearing assembly; consisting of two ground steel washers, one felt washer and ball bearing, as illustrated. Apply slight amount clean oil to this assembly.
- Attach coupling to spindle with TAPERED PIN.
- Mount motor and support plate, being certain to precisely align turntable spindle and motor shaft. Improper alignment will produce "Wow."
- Mesh the flexible coupling as illustrated—same as original arrangement. If rubber strips are worn or deteriorated, replace them using RCA Stock No. 31147.
- Connect leads same as for original motor.

**GENERAL**

- Motor No. 38567 is a shaded pole-induction type similar to that used on RP-139 record changers. Speed is non-adjustable. Speed tolerance for extreme voltage and load conditions: 77-81 RPM. Replacements: FIELD COIL—No. 32954; Spindle and gear—No. 38597.
- Remove lower steel washer from thrust bearing assembly if turntable tends to be too high, or DRIVE GEAR does not mesh properly.
- If mechanical hum is experienced, check flexible mounting of support plate; loosen if necessary. Cushion-mount motor if adjustment of the plate is ineffective.



*Method of Installing Replacement Phono Motor No. 38567*

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RCA CRYSTAL PICKUP DATA

	Model Number	Arm Stock Number	Arm Fig. No.	Crystal Cartridge Stock No.	Crystal Cartridge Fig. No.		
<b>CRYSTAL CARTRIDGE DRAWING CODE</b>  "A" Top Needle Hole "B" Viscoloid Damper "C" Thick (5/16-in.) Mtg. Hole "D" Thin (7/32-in.) Mtg. Hole "E" Grounded Lug "F" Small Weight "G" Large Weight "H" Large "Cut" Weight "I" 5/8-in. Needle Screw "K" 11/16-in. Needle Screw "L" 13/16-in. Needle Screw "M" 15/16-in. Needle Screw	QU2-C	33906	3	33905	7		
	QU3-C	33906	3	33905	7		
	*QU5	34011	2	33905	7		
	6QU	33125	5	33122	5		
	8QU5-C	34305	2	34307	9		
	U-8	33121	5	33122	5		
	U-9	33591	5	33122	5		
	U-10	33591	5	33122	5		
	*11 QU	31159	1	31156	4		
	*12 QU	31159	1	31156	4		
U-12	33906	3	33905	7			
*VA-15	33906	3	35171	7			
U-20	33906	3	33905	7			
VA-20	9842	4	31050	3			
VA-21	33591	5	33122	5			
*VA-22	33096	3	31156	4			
*U-25	33096	3	33905**	7			
*U-26	33096	3	31156	4			
*U-30	33096	3	31156	4			
*U-40	33906	3	35171	7			
*U-42	33906	3	35171	7			
*U-43	33906	3	35171	7			
*U-44	33906	3	35171	7			
*U-45	33906	3	35171	7			
*U-46	34011	2	33905	7			
O-50	33216	4	33217	6			
U-50	33216	4	33217	6			
R-60	33591	5	33122	5			
R-89	31887	4	31050	3			
R-91	9842	4	31050	3			
R-93-B	9842	4	31050	3			
R-93-C	9842	4	31050	3			
R-93-F	33591	5	33122	5			
R-94-B	31211	4	31050	3			
R-98	33399	1	31156	4			
R-100	33121	5	33122	5			
V-100	33591	5	33122	5			
V-101	33591	5	33122	5			
V-102	36768	3	33905	7			
R-103-S	33591	5	33122	5			
U-104	32227	4	31050	3			
U-106	14818	6	14820	1			
U-107	14818	6	14820	1			
U-109	14818	6	14820	1			
U-111	9842	4	31050	3			
U-112	9842	4	31050	3			
U-115	32137	4	31050	3			
U-119	31468	1	31156	4			
U-121	32137	4	31050	3			
U-122E	31468	1	31156	4			
UY-122E	32016	1	31156	4			
*U-123	32884	1	31156	4			
U-124	31468	1	31156	4			
UY-124	32016	1	31156	4			
*U-125	31159	1	31156	4			
*U-126	31468	1	31156	4			
U-127E	32137	4	31050	3			
*U-128	31159	1	31156	4			
*U-129	33096	1	31156	4			
*U-130	31159	1	31156	4			
*U-132	31159	1	32632	4			
*U-134	31159	1	32632	4			
*RP-139A	33906	3	35171	7			
*RP-139C	34776	1	34710	10			
*RP-145	33906	3	35171	7			
*RP-152	33906	3	35171	7			
*RP-152A	36321	3	35171	7			
*RP-152B	36322	2	37158	11			
*RP-152C	36591	3	35171	7			
*RP-152D	37181	2	33905	7			
*RP-152J	36322	2	37158	11			
*RP-153	36513	2	33905	7			
*V-170	33906	3	35171	7			
*V-200	36321	3	35171	7			
*V-201	36321	3	35171	7			
*VHR-202	36322	2	33905	7			
*V-205	33906	3	37158	11			
*VHR-207	36322	2	33905	7			
*V-300	33906	3	37158	11			
*V-301	36513	2	33905	7			
*V-302	36513	2	33905	7			
*VHR-307	36322	2	33905	7			
*V-405	33906	3	37158	11			
*VHR-407	36322	2	33905	7			
	33586	4	34225	8			
	30707		30708	2			

\*Automatic Record Changers.  
 \*\*Used on 25 cycle model only.



INTERFERENCE NOTES

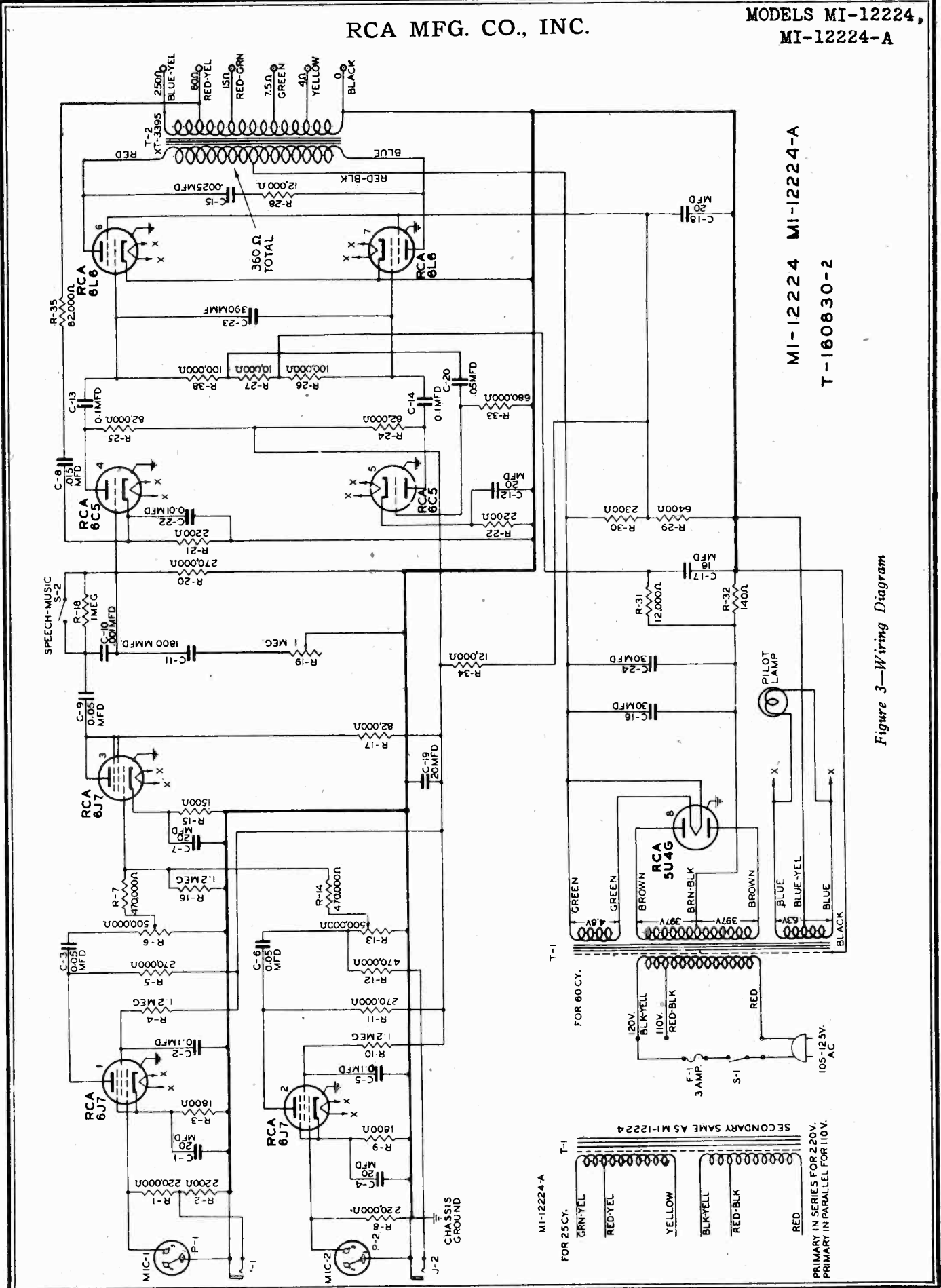
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**ANALYSIS OF RADIO INTERFERENCE PHENOMENA**  
**Character, Cause, Type Receivers Affected, Where Prevalent, and Service Remedies**

Type of Interference	Character of Interference	Cause	Type Receivers Affected	Where Prevalent	Suggested Service Remedies
IMAGE RESPONSE	Heterodyne whistle or second signal when tuned to certain stations	Strong signal at a frequency 2x I.F. above desired station.	Superhet only. (1) With limited number tuned circuits ahead first detector. (2) With low impedance, high frequency resonant antenna primary circuits.	Locality strong BC stations near high end of band. Vicinity 1610-1750 Kc. Police Stations. Vicinity 1700-2000 Kc. amateur band.	(1) Wave trap tuned to interfering station. (2) Band elimination antenna such as RCA Magic Wave. (3) Re-align I.F. (4) Wave trap tuned to station. (5) Wave trap tuned to station second harmonic in mixer grid circuit. (3) Re-align I.F.
HARMONIC OF I-F	Heterodyne whistle when tuning a station having same frequency as a harmonic of the I-F.	Second harmonic of station combines with oscillator fundamental forming a spurious I-F.	Superhet only. Selectivity does not affect.	Vicinity of station operating at twice I-F.	(1) RCA Magic Wave antenna. (2) I-F wave trap. (3) Re-align I-F. (4) Orient loop for minimum.
DIRECT I-F RESPONSE	Non-tunable code with intensity increasing toward low frequency end of band.	Commercial shore-to-ship code signal having frequency in I-F range, reaching input to I-F system.	Superhet only. (1) With limited selectivity ahead of I-F input and relatively high I-F gain. (2) With high impedance, low frequency antenna system.	Coastal areas near location of commercial stations.	(1) Use wave trap on interfering station. (2) Orientation of loop. (3) Re-align loop circuit. (4) Reduce oscillator excitation.
HARMONICS OF OSCILLATOR	Reception of short wave code or broadcast signals at points in standard broadcast band.	Oscillator harmonics combine with short wave signals producing the required I-F. Especially prevalent on loop receivers due to secondary resonances of loop.	Superhet only. (1) With loop antenna. (2) Having oscillator rich in harmonics.	Rurally or where SW signals of proper frequency are intense.	(1) Check by tracking of RF and antenna circuits. (2) Reduce size or effectiveness of antenna. (3) Install wave trap and tune to frequency of one of interfering stations. (4) Shift I-F.
COMBINATION OF I-F	Whistle or second station(s) heard on practically all carriers.	Difference in frequency of two strong stations equal to I-F of receiver; the two stations mixing within receiver to form a constant spurious I-F.	Superhet only; having limited selectivity ahead of first detector.	Metropolitan areas, generally.	(1) Filter power line. (2) Use RCA Magic Wave antenna. (3) Reduce oscillator grid leak. (4) Shift I-F.
HETERODYNE OSCILLATOR RADIATION	Whistle on a particular desired station, disappearing or changing frequency at random.	Radiation of receiver's heterodyne oscillator, due to oscillator strength, unusual coupling, resonant antenna, or transmission via power line.	Superhet only. (1) Without good shielding. (2) Without R-F stage.	Metropolitan areas, generally.	(1) Wave trap in antenna tuned to station causing trouble. (2) Filter power line. (3) Install RCA Magic Wave noise reducing antenna. (4) Shield exposed grid leads and wiring of first stages.
CROSS MODULATION WITHIN RECEIVER	Second station(s) appearing in background when tuned to desired station.	Strong interfering station modulating carrier of desired station within a nonlinear circuit or element of the receiver; or pickup and detection taking place in audio system.	TRF and Superhet. (1) With limited or no selection ahead of first tube. (2) With exposed grid circuits and wiring associated with early tuned stages. (3) Without variable-mu input tubes.	Metropolitan areas. Vicinity of very strong stations.	(1) See that power line and telephone grounds are secure. (2) Ground conduits solidly. (3) Use RCA Magic Wave antenna. (4) Orient loop antenna for minimum interference.
CROSS MODULATION EXTERNAL TO RECEIVER	Second station(s) in background on or between other stations.	Detection within, and re-radiation from as power lines, telephone lines, and other aerial metallic structures.	All types of receivers are affected regardless of selectivity or design.	Vicinity of unusually strong stations, especially where open-wire power lines are prevalent. Generally changes with weather.	(1) Use directive or loop antenna. (2) Reduce sensitivity of set. (3) Reduce bass response.
SAME CHANNEL BEAT	Flutter, waver, or growl heard in background when tuned to desired station.	Second station assigned to same channel, but differing very slightly in carrier frequency.	Receivers with high sensitivity and extended bass response.	In areas remote from a usable assortment of strong stations. Wherever signals of two stations on same channel are comparable in strength.	(1) Suppress adjacent station with sharply tuned wave trap. (2) Re-align receiver carefully. (3) Reduce high-frequency response. (4) Use directive antenna.
ADJACENT CHANNEL BEAT	Steady 10,000 cycle note or whistle.	Adjacent channel carrier beating with carrier to which receiver is tuned.	TRF and Superhet; especially those with limited selectivity and wide range of audio response.	Localities where adjacent channel station is strong compared to desired station.	(1) Precisely re-align receiver to make more selective. (2) Reduce high frequency audio response.
MONKEY CHATTER	Unintelligible modulation superimposed upon desired station, having character of "inverted speech".	Side band of adjacent channel overlapping side band and combining with carrier of desired station. Also caused by harmonics from over-modulation of adjacent station.	TRF and Superhet; having wide band selectivity and audio response.	Localities where adjacent channel station is strong. Also aggravated by extended high frequency response of transmitter.	

RCA MFG. CO., INC.

MODELS MI-12224,  
MI-12224-A



MI-12224 MI-12224-A  
T-160830-2

Figure 3—Wiring Diagram

MODELS MI-12224,  
MI-12224-A

RCA MFG. CO., INC.

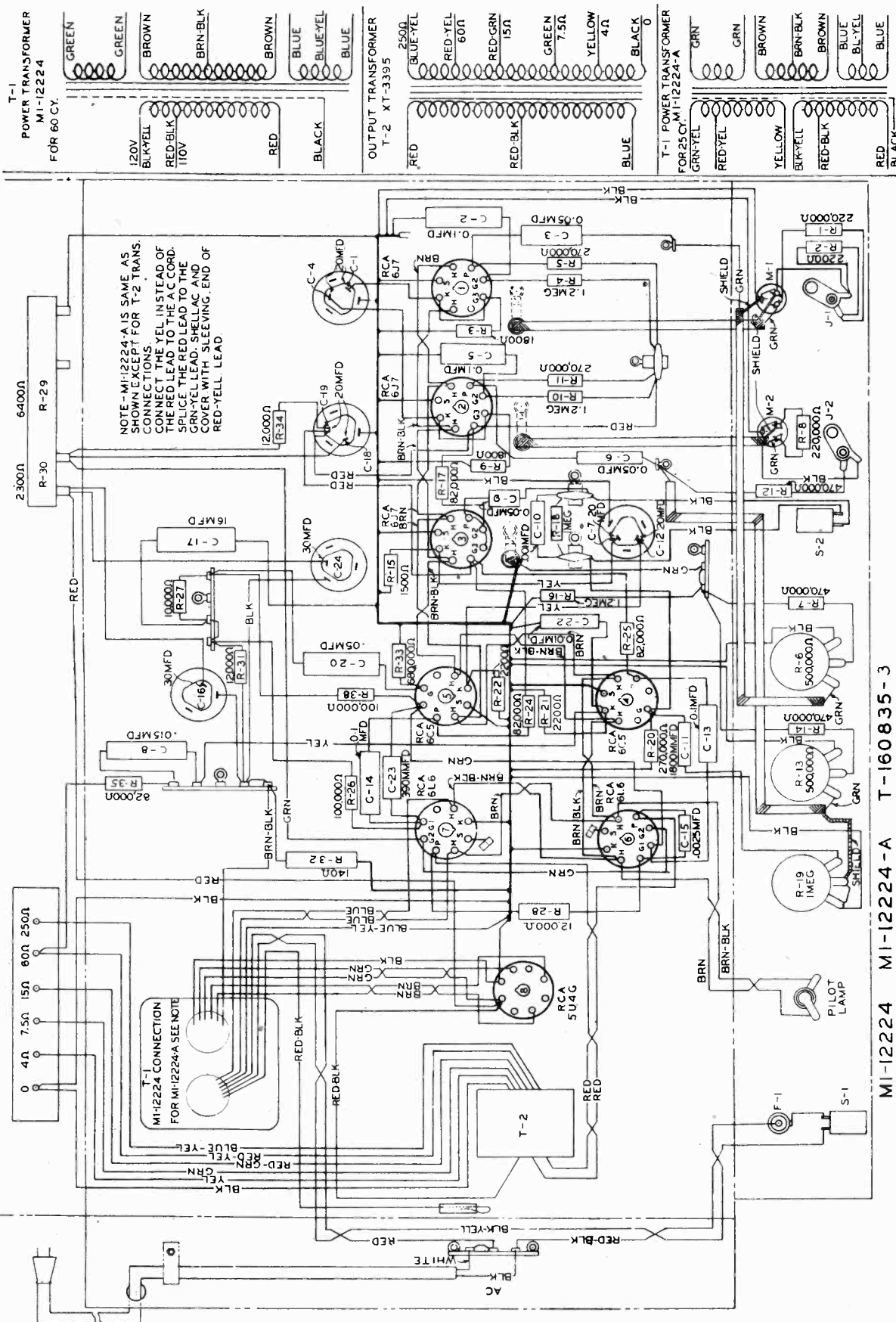


Figure 2—Schematic Diagram

MI-12224 MI-12224-A T-160835-3

MODELS MI-12224,  
MI-12224-A

RCA MFG. CO., INC.

MODELS MI-12224 and MI-12224-A

Radiotron Socket Voltages and Currents

117 AC line; Read on 20,000 ohms per volt voltmeter

Radiotron	Input	Volts to Ground	Plate to Ground	Cathode to Ground	Heater
617	70	33	1.5	0.5	6.3
617	70	33	1.5	0.5	6.3
617	90	33	2.7	1.5	6.3
6C5	100	—	3.7	1.7	6.3
6C5	100	—	3.7	1.7	6.3
6L6's	385	325	26.5	57	6.3
5U4G		430 volts heater to ground			5.1

Operating Instructions

1. Connect the speakers to the amplifier. (See "Audio Output Connections.")
2. Insert the tubes in their respective sockets. (Make certain the tubes are of the type marked on the chassis base.)
3. Plug in the microphone and/or phonograph.
4. Adjust the controls as follows:
  - (a) Set Tone Control for maximum response (full clockwise).
  - (b) Set Volume Controls at minimum (counter-clockwise)
  - (c) Throw Speech-Music switch to Music position.

General Description

The RCA 25-watt amplifiers, Models MI-12224 and MI-12224-A, were designed for use in sound re-enforcing and public address systems in auditoriums, churches, theatres, factories or outside gatherings. The amplifier is complete in one unit and is entirely AC operated. It incorporates two separate input channels for high impedance microphones. Each channel is also provided with a separate phonograph input, channel one for low impedance and channel two for high impedance phonograph. Each channel has a separate volume control which permits mixing of the inputs. A continuously variable high frequency tone control and a Speech-Music switch are provided on the front panel.

In this publication all references made to the MI-12224 amplifier also apply to the MI-12224-A. The difference between the two models being the power line voltage and frequency ratings as noted in the Electrical Specifications.

Electrical and Mechanical Specifications

Application	MI-12224	MI-12224A
Voltage Rating	105-125 volts, 50-60 cycles	105-125/210-250 volts, 25-60 cycles
Power Consumption	165 watts	3 amperes
Fuse Rating	3 amperes	
Source Impedance:		
Microphone (2)	High Impedance	
Phonograph (1)	High Impedance	
Phonograph (1)	Low Impedance	
Input Levels (Maximum):		
Microphone	0.22 volts	
Phonograph (High Impedance)	100 volts	
Phonograph (Low Impedance)	0.31 volts	
Input Levels (Minimum for Rated Output):		
Microphone	0.0055 volts	
Phonograph (High Impedance)	0.5 volts	
Phonograph (Low Impedance)	0.0067 volts	
Load Impedance	4, 7½, 15, 60 or 250 ohms	
Noise Level:		
Two Channels	0.02 watts	
Power Output (7% RMS Harmonic Distortion)	400 cycles	
Maximum	25 watts	
Frequency Response (Normal)	30 watts	
	±3 db, 30 to 7,000 cycles	

5. Plug the AC power cord into the power line outlet.
6. Turn the AC Power Switch to the "On" position and allow sufficient time for tubes to become heated.
7. Advance the Volume Controls for the respective inputs until the desired volume for each is obtained.
8. The fidelity or Tone Control should normally be operated in the full clockwise position for maximum fidelity of tone.
9. For phonograph reproduction, it may be desirable to readjust the fidelity controls to obtain the most pleasing results.
10. Better intelligibility of speech results when the Speech-Music switch is thrown to Speech, reducing the amount of low frequency reproduction.
11. To change or fade from one input to another, turn the undesired input control down (counter-clockwise), and the other input control up (clockwise) until the desired level is obtained.
12. In the event that mixing is desired between a phonograph pickup and a microphone which are both plugged into the same input channel, it will be necessary to have a separate volume control on the phonograph unit.
 

**Note:** Howling and squealing are not faults of the amplifier, but are caused by sound from the loudspeaker reaching the microphone. Each installation will present a different problem, however, the following suggestions may help:

  1. Reduce the amplifier volume.
  2. Adjust fidelity controls.
  3. Change the relative position of speakers and microphone.

SPC. No.	DESCRIPTION
MI-12224 AND MI-12224-A	
25-WATT AMPLIFIER	
43734	Bracket—Pilot lamp bracket
13894	Capacitor—390 mmfd., 400 volts (C-23)
35406	Capacitor—1,000 mmfd., 600 volts (C-10)
35407	Capacitor—1,800 mmfd. (C-11)
30850	Capacitor—0.025 mfd., 1,000 volts (C-15)
4858	Capacitor—.01 mfd., 500 volts (C-22)
11315	Capacitor—.015 mfd., 400 volts (C-8)
30847	Capacitor—.05 mfd., 400 volts (C-2, C-6, C-9, C-20, C-5)
4839	Capacitor—.01 mfd., 400 volts (C-2, C-13, C-14, C-3)
31323	Capacitor—.16 mfd., 150 volts (C-17)
34061	Capacitor—30-20 mfd., 25 volts (C-1, C-4, C-7, C-12)
18530	Capacitor—20-20 mfd., 350 volts (C-18, C-19)
34065	Capacitor—30 mfd., 450 volts (C-16, C-24)
26411	Connector—Mic. connector, female
26412	Connector—Mic. connector, male
35474	Control—Tone control, 1 megohm (R-19)
	Control—Volume control, 500,000 ohms (R-6, R-13)
32098	Cord—Power cord
35610	Foot—Felt foot
10907	Fuse—3 ampere (F-1)
28811	Holder—Fuse holder
23421	Jack—Phono jack (J-1, J-2)
43737	Jewel—Pilot lamp jewel
30075	Knob—Knob and set screw
11891	Lamp—Pilot lamp only
45458	Resistor—140 ohms, 10 watt (R-32)
30654	Resistor—1,500 ohms, ½ watt (R-15)
30930	Resistor—1,800 ohms, ½ watt (R-3, R-9)
34767	Resistor—2,200 ohms, ½ watt (R-2, R-21, R-22)
34606	Resistor—8700 ohms, 50 watt, tap at 2,300 ohms (R-25, R-30)
30778	Resistor—10,000 ohms, ½ watt (R-27)
30436	Resistor—12,000 ohms, ½ watt (R-31)
30866	Resistor—12,000 ohms, 1 watt (R-34)
8073	Resistor—12,000 ohms, 2 watt (R-28)
8064	Resistor—82,000 ohms, ½ watt (R-17, R-24, R-25, R-35)
3252	Resistor—100,000 ohms, ½ watt (R-26, R-38)
14583	Resistor—220,000 ohms, ½ watt (R-1, R-8)
30651	Resistor—270,000 ohms, ½ watt (R-5, R-11, R-30)
30648	Resistor—470,000 ohms ½ watt (R-7, R-12, R-14)
34519	Resistor—680,000 ohms, ½ watt (R-33)
30652	Resistor—1 megohm, ½ watt (R-18)
30162	Resistor—1.2 megohms, ½ watt (R-4, R-10, R-16)
30278	Screw—Thumb screw for cover
31319	Socket—Tube socket
7900	Switch—S.P.S.T. (S-1)
34519	Transformer—Output transformer, XT-3395 (T-2)
45463	Transformer—Power transformer (For MI-12224 only) (T-1)
45464	Transformer—Power transformer (For MI-12224-A only) (T-1)

MODELS MI-12224,  
MI-12224-A

RCA MFG. CO., INC.

To secure greater volume from a room speaker, select connections that will give a lower line impedance for the speaker, so that this speaker will receive more power than the others connected in parallel with it.

To secure lower volume from a room speaker, select connections that will give a higher line impedance for the speaker, so that this speaker will receive less power than the others connected in parallel with it.

TABLE 1  
AVAILABLE IMPEDANCES  
RCA-MI-6233 and MI-6249 Permanent-magnet Speakers

Speakers	Impedance
(MI-12315 Coupling Transformer)	
Voice coil impedance	6 ohms
Blue to green-red tracer	2 ohms
Yellow to green-red tracer	6 ohms
Blue to yellow	15 ohms
Black to green-red tracer	36 ohms
Blue to black	55 ohms
Red to yellow	225 ohms
Red to black	342 ohms
Red to green-red tracer	438 ohms
Red to blue	500 ohms

Note: As shipped from factory, MI-6233 Speakers have red and blue leads connected to terminal board.

TABLE 2  
AVAILABLE IMPEDANCES  
RCA-MI-6310, MI-6319 or MI-6320 Permanent-magnet Dynamic Speakers

Speakers	Impedance
(Using MI-12345 Transformer)	
Blue to green-red tracer	2 ohms
Black to yellow	6 ohms
Black to blue	400 ohms
Yellow to black-red tracer	500 ohms
Blue to black	1,950 ohms
Red to black	2,400 ohms
Red to yellow	4,500 ohms
Red to blue	5,000 ohms

QUANTITY OF SPEAKERS

For hotel rooms, and similar quiet installations, each MI-12224 power amplifier may be used to operate approximately 300 MI-6310 or MI-6233 loudspeakers.

For installations such as schools, where the room noise level may be high, it is advisable to allow one power amplifier for 40 speakers.

RADIO FREQUENCY INTERFERENCE

R-F interference may be experienced when an amplifier is operated in close proximity to a radio transmitter. This interference is usually caused by a high frequency station and may enter the amplifier through many ways. Any external connection to the amplifier, such as input, power or output leads, may be the collecting medium. Inasmuch as the signal frequency, manner of interference, etc., are subject to such variations, it is difficult to recommend a cure for all conditions. In general, however, a suitable means of correcting this difficulty is to by-pass to ground with small condensers, each side of the big troublemaker, it is not possible to specify exact values for the by-passing condenser which will be satisfactory within the range of 50 to 500 mmfd. will be satisfactory.

ELECTRO-DYNAMIC LOUDSPEAKERS

This amplifier is designed for use with permanent-magnet dynamic loudspeakers. If it is supplied with electro-dynamic speakers a separate field supply is required, as no provision has been made in this amplifier to excite speaker fields.

With only one speaker connected to the amplifier, the speaker must have a rating of at least 25 watts in order to handle the maximum output.

If the power is divided between two or more speakers, the required wattage of each speaker is determined by—

Required wattage of each speaker =  $\frac{\text{Number of speakers}}{25}$

If speakers of a certain wattage rating are available, the required number of speakers is determined by—

Required number of speakers =  $\frac{\text{Wattage rating of speaker}}{25}$

2. Matching Speaker Load to Power Amplifier.—To secure the highest efficiency and tone quality, it is necessary to match the speaker load to an identical or closely matched impedance on the tapped secondary of the output transformer in the power amplifier.

For example, if only one 15-ohm speaker, capable of handling 25 watts or more, is to be used, it should be connected to terminals 0 and 15.

When several speakers are to be used, they should preferably be connected in parallel.

The impedance of parallel-connected speakers (each of the same impedance) is equal to—

Total impedance =  $\frac{\text{Number of parallel-connected speakers}}{\text{Impedance of one speaker}}$

Thus, if two 15-ohm speakers are connected, in parallel, the total impedance is 15 divided by 2 or 7.5 ohms. In this case, the speakers are connected to terminals 0 and 7.5 on the power amplifier.

3. Connecting a Quantity of Speakers.—When a quantity of speakers are to be connected to the amplifier, it is desirable to employ permanent-dynamic speakers, such as MI-6310, MI-6319, MI-6320, MI-6320 or MI-6233 speakers are recommended.

With these speakers and coupling transformers, it is possible to select the desired value of impedance for each speaker so that the total impedance of all in parallel will match an available output impedance on the power amplifier. An additional advantage of this arrangement is that the impedance of some of the speakers may be increased or decreased to secure higher or lower volume from these particular speakers to meet the requirements of any installation.

The various line impedances for single speakers that may be secured by different connections on the speaker coupling transformer are tabulated in Table 1 and Table 2.

The method of determining the correct connections for matching is as follows:

Assume that 40 of the MI-6320 loudspeakers are to be used, all connected in parallel to one MI-12224 power amplifier. Refer to Table 2. If the 5,000-ohm taps are used, the total speaker impedance will be 5,000 divided by 40 or 125 ohms. Since there is no output impedance close to 125 ohms, but by using the 2,400-ohm taps on each speaker, the total impedance will be 2,400 divided by 40, or 60 ohms. There is a 60-ohm output impedance tap, and this will furnish a good match. Therefore use the 2,400-ohm tap on each speaker (red to black leads) and connect the total speaker load to the 60-ohm output terminals on the amplifier (terminals 0 and 60).

Leveling Volume in Large and Small Rooms.—With a quantity of speakers connected in parallel, if identical connections are made on the coupling transformer of each speaker, the same amount of power will be delivered to each speaker. Therefore, when the master volume control is adjusted to give satisfactory volume level for an average-size room, it may be found that this volume setting is too low for a large room, and too high for a small room.

To correct this condition, it is necessary to alter the connections to the coupling transformers on the speakers in these rooms:

The "AC" cable on the MI-12224-A Amplifier, as shipped from the factory, is normally connected to the 240-volt transformer leads, and should remain so connected unless it is definitely ascertained that the line voltage does not exceed 230 volts. If the line voltage is known to be between 210 and 230 volts, the "AC" cable should be connected to the 220 volt transformer leads. The color coding of the leads on the power transformer of the MI-12224-A Amplifier is as follows: (See Schematic Diagram.)

Lead Number	Color Code	Connect AC Cable to
1	Red	1 and 5
2	Red-Black	1 and 5
3	Black-Yellow	1 and 5
4	Yellow	1 and 5
5	Red-Yellow	30/50
6	Green-Yellow	50/50

The following connections should be made for the line voltages indicated:

Voltage	Connect Together	Connect AC Cable to
240	3 and 4	1 and 5
220	2 and 4	1 and 5
120	1 and 4; 3 and 6	1 and 4; 3 and 6
110	1 and 4; 2 and 5	1 and 4; 2 and 5

CAUTION: The leads connected together should be soldered and taped securely to prevent short circuits. All unused leads should also be taped.

FUSES

A 3-ampere fuse is provided to protect the amplifier. It is located on the control panel adjacent to the "Power On-Off" switch.

CAUTION—Replacement fuses of the same type and rating should be kept as spare parts. Never replace the fuse with one of higher rating.

AUDIO OUTPUT CONNECTIONS

The amplifier will supply an output of 25 watts to various loudspeaker loads. The output transformer is tapped for load impedance of 250, 60, 15, 7½, 4 ohms and the taps brought out to a marked terminal board on the back of the amplifier in order that the proper loudspeaker impedance may be obtained. The number of speakers that may be used with the amplifier is limited only by the power output of the amplifier. However, in connecting the speakers, care should be taken that the proper impedance is used so that the amplifier has the correct load. This gives the best possible power output for the amplifier.

The following load impedances as indicated in the table below:

Terminal Numbers	Impedance Ohms
4 — 7.5	0.5*
7.5 — 15	1.2*
4 — 15	3.3*
0 — 4	4.0
0 — 7.5	7.5
0 — 15	15
7.5 — 60	26
4 — 60	34
15 — 60	64
15 — 250	170
4 — 250	192
0 — 250	250

\* Use only for light loads, such as for monitoring purposes.

CONNECTING SPEAKERS

1. Wattage Rating of Speakers.—The power output of the MI-12224-A amplifier is 25 watts. With this power, it is evident that the speaker or speakers must have adequate power handling capacity, or damage may result.

Installation and Service Data

AUDIO INPUT CONNECTIONS

All audio input connections are made to the amplifier through the microphone plug for each channel. It is possible to connect two microphones having single conductor shielded cables to the amplifier through terminal No. 3, shield to No. 1 of the plug. Those using double conductor cables, connect high side to terminal No. 3, low side to No. 2, and shield to No. 1.

PHONOGRAPH CONNECTIONS

Phonograph connections are made by means of a standard phone type plug (not furnished with the equipment). The ground lead or shielding on the phonograph cable should be connected to the sleeve of the plug.

(a) "Phono" jack is provided for the connection of any standard magnetic pickup to channel No. 1.

(b) "Phono 2" jack is provided for the connection of any standard crystal pickup, to channel No. 2.

RADIO INPUT CONNECTIONS

A simple method of connecting the output of a radio receiver to an amplifier of low impedance input is shown in Figure 4. It is not necessary to remove the chassis to make these connections and is still possible to use the regular speaker, if so desired.

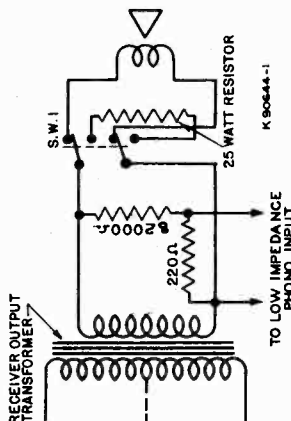


Figure 4—Radio Connections to Amplifier

Connect an 82,000-ohm resistor, stock No. 8064, and a 220-ohm resistor, stock No. 5201, in series across the secondary of the output transformer. The 220-ohm resistor runs the cable to the input receptacle, J-1 of channel No. 1. Connect a double-pole, double-throw switch to the speaker voice coil and a resistor of the same value as the impedance of the speaker voice coil so that when the speaker is disconnected the loading resistor is connected as a substitute for the voice coil load. This switch is optional, however, the resistor should be substituted if the speaker is not used.

The volume of the receiver should then be adjusted to the desired level for best operation of the input channel.

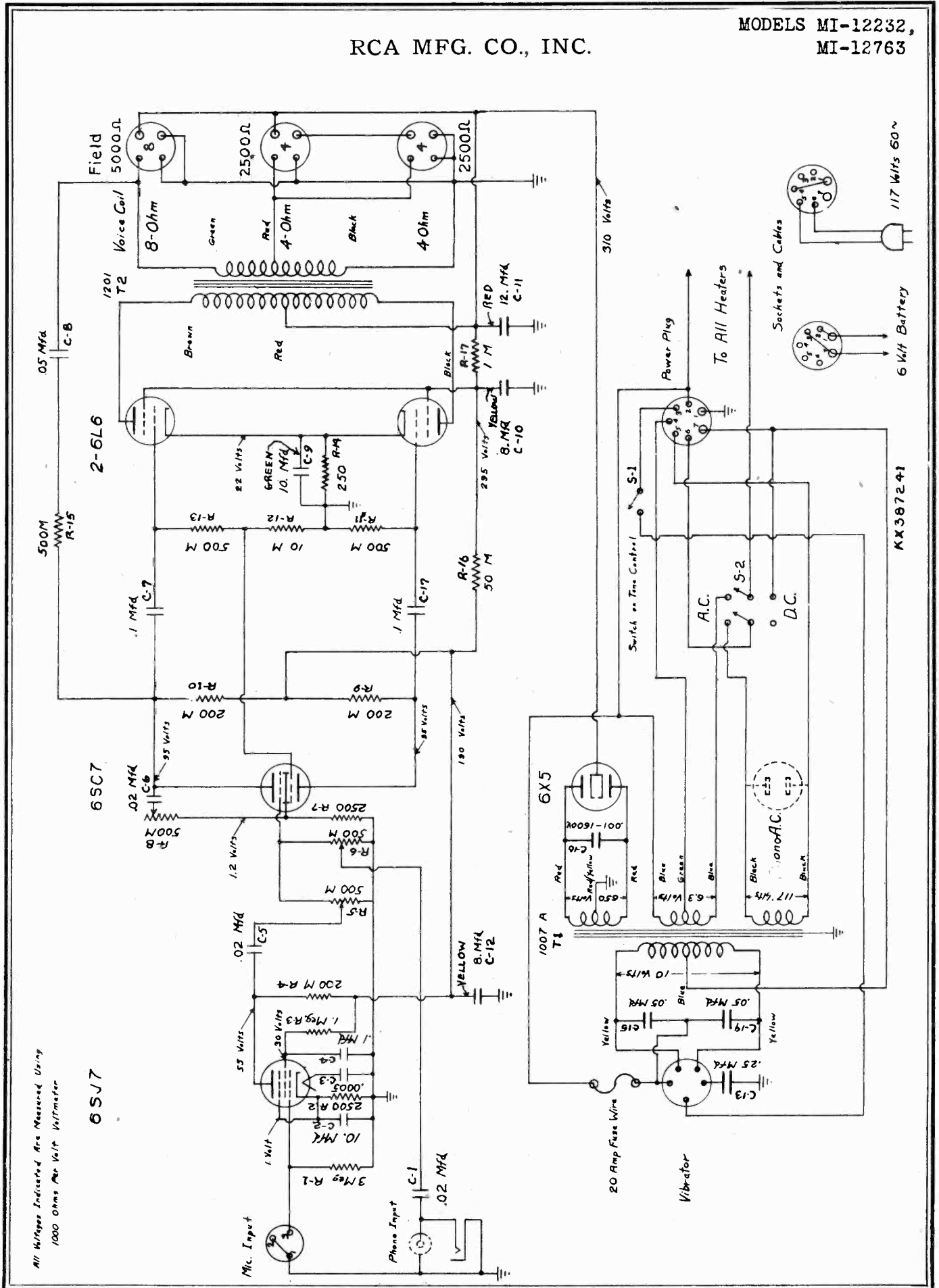
CAUTION—If voice coil is grounded, make sure ground side is connected to ground side of the amplifier input.

POWER CONNECTIONS

Power connections to the amplifier are made by means of the power cord and plug attached. As described herebefore, the MI-12224 amplifier may be operated from an input of 30 to 60 cycles, 105 to 125 volts. The MI-12224-A is designed for operation where the power available may be of the order of 25 to 60 cycles, 105 to 125 volts or 210 to 250 volts.

RCA MFG. CO., INC.

MODELS MI-12232,  
MI-12763



MODELS MI-12232,  
MI-12763

RCA MFG CO., INC.

MI-12232 AMPLIFIER & COVER ONLY  
MI-12763 AMPLIFIER & RECORD PLAYER

Electrical and Mechanical Specifications

<b>Amplifier</b>	Sound Re-enforcement
<b>Application</b>	Permanent or Mobile
<b>Installation</b>	105/125 volts, 50/60 cycles
<b>Voltage Rating AC</b>	6-8 volts DC
<b>DC</b>	80 watts
<b>Power Consumption AC</b>	9.5 amps. operating 3 amps. standby
<b>Fuse DC</b>	20 amperes
<b>Input Impedance Microphone</b>	High Impedance
<b>Phonograph</b>	High Impedance
<b>Load Impedance</b>	60 to 10,000 ohms
<b>Frequency Range C or DC Operation</b>	15 watts
<b>Pre-amplifier Output</b>	0.33 volts
<b>Input Level—Max. permissible Microphone</b>	10.0 volts
<b>Phonograph</b>	0.003 volts
<b>Min. for rated output Microphone</b>	0.33 volts
<b>Phonograph</b>	0.00015 watts
<b>Hum Level—Max. AC Operation (input terminated 40,000 ohms)</b>	0.00038 watts
<b>DC Operation (input terminated 40,000 ohms)</b>	
<b>Record Player Motor</b>	105/125 volts, 60 cycles
<b>Voltage Ratings AC</b>	20 watts
<b>Power Consumption AC</b>	



Figure 1—MI-12763

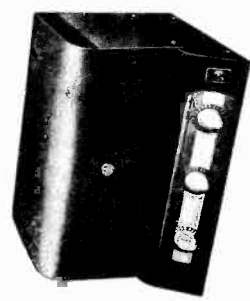


Figure 2—MI-12232

General Description

The MI-12763 Amplifier and Record Player consists of a 15-watt amplifier, together with a turntable and pickup assembly as shown in Figure 1. This equipment can be operated from either a 6-8-volt DC supply or a 110-volt, 60-cycle supply. Two power supply cables are furnished with their associated plugs, one for DC operation and the other for AC operation. It is only necessary to use the proper cable corresponding to the available power supply and throw AC-DC power switch to the corresponding position. See installation instructions. The MI-12232 Amplifier is identical to the MI-12763, except a plain cover is supplied in place of the pickup and turntable.

The MI-12763 Amplifier and Record Player consists of a 15-watt amplifier, together with a turntable and pickup assembly as shown in Figure 1. This equipment can be operated from either a 6-8-volt DC supply or a 110-volt, 60-cycle supply. Two power supply cables are furnished with their associated plugs, one for DC operation and the other for AC operation. It is only necessary to use the proper cable corresponding to the available power supply and throw AC-DC power switch to the corresponding position. See installation instructions. The MI-12232 Amplifier is identical to the MI-12763, except a plain cover is supplied in place of the pickup and turntable.

Installation

**AC OPERATION.**—The MI-12763 Amplifier and Record Player may be used from 105 to 125 AC 60 cycle power. The MI-12232 Amplifier may be used on an AC supply of 50-60 cycles if desired. The power input receptacle to the amplifier is located on the rear of the chassis, and is used for either AC or DC power supplies. Insert the tubes in their respective sockets. Make certain that they are firmly in place. Insert the plugs on the turntable assembly in the receptacles on top of the amplifier chassis. Place the cover over the amplifier chassis and secure in place by the four screws provided.

**Input.**—The audio input connections are made to the chassis through the use of plugs. A standard amphenol microphone plug is used with this equipment. Connect the shield to terminal No. 1 (red dot), the low side to terminal No. 2, and the high side to terminal No. 3. The following microphones are suitable for use with this amplifier: MI-6202, MI-6205, MI-6207, and MI-4036-K. The MI-6202 is recommended for speech use as special compensation is provided to insure maximum intelligibility. When the MI-12232 amplifier is used with an external microphone, use the input jack on the side of the chassis. Turntable, use the plug on the side of the chassis. **CAUTION:** Care should be exercised in keeping the AC power line away from the microphone cable or terminals. Otherwise, a hum may be heard in the loudspeaker(s).

**Output.**—The output receptacles are connected, as it leaves the factory, to match load impedances of 4 or 8 ohms. If one speaker is to be used, it should have an impedance of 4 or 8 ohms. If two speakers are to be used, voice coil connections should be made to the two small prongs of the proper speaker receptacle. Two fifteen (15) ohm speakers should be connected in parallel and placed in the socket marked "8."

**Field Supply.**—If required, these amplifiers can also be used to supply loudspeaker field current. If a single speaker is used, the field should have a resistance between 5,000 and 10,000 ohms. It should be connected across the large prongs of the output receptacle marked "8." Two speakers are to be used, each should have a field resistance of between 2,500 and 5,000 ohms. Connect one across the large prongs of each of the output receptacle marked "4."

**DC OPERATION.**—DC operation is identical to AC operation, except that DC power cable should be inserted into the amplifier power receptacle in place of the AC cord. **IMPORTANT:** When the amplifier is used in an automobile, truck or on any 6-volt battery supply, the clip marked YELLOW on the black battery cable should be connected to the negative side of the battery is grounded. The toggle switch marked "AC-DC," located on the front panel is used as the ON-OFF switch. When the amplifier is connected to a battery (DC) it is "off" when the switch is in the AC position. When connected to an AC 110-volt line the amplifier is "off" when the switch is in the DC position.

**Microphone and Phonograph Controls** should be turned to maximum counterclockwise position. **Tone Control** to the maximum clockwise position. **DC Standby Switch.** When the Tone Control is in the "off" position, in this position the tube filament is turned off, reducing the drain during the time the amplifier is not in actual use. **Phono-Switch.** On the MI-12763 Amplifier the phono-switch is located at the end of the amplifier cover just above the MIC input connection. **Volume and Tone Controls** should be adjusted for the desired levels and tone quality.

Replacement Parts

Insist on genuine factory-tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
46716	Arm—Pickup arm complete with base and cable (MI-12763 only)	46712	Knob—Control knob
46723	Base—Pickup arm base (MI-12763 only)	46718	Plate—Dial plate
46724	Cable—Pickup cable (MI-12763 only)	46719	Fulley—Idle pulley (MI-12763 only)
46725	Capacitor—.001 mfd., 1,600 volts (C1)	46717	Fulley—Motor pulley (MI-12763 only)
46726	Capacitor—.001 mfd., 1,600 volts (C2)	14720	Resistor—1,000 ohms, 1/2 watt (R17)
46727	Capacitor—.02 mfd., 400 volts (C1, C5, C6)	14924	Resistor—2,000 ohms, 1/2 watt (R18)
46728	Capacitor—.05 mfd., 400 volts (C3, C4, C18)	3114	Resistor—50,000 ohms, 1/2 watt (R19)
46729	Capacitor—.01 mfd., 400 volts (C7, C7, C17)	11978	Resistor—200,000 ohms, 1/2 watt (R2, R3, R10)
46730	Capacitor—.10 mfd., 25 volts (C8, C10, C11, C12)	35614	Resistor—3 megohms, 1/2 watt (R1)
46731	Capacitor—Motor capacitor	35615	Socket—Phono C
46732	Connector—AC cord—7 contact female	31319	Socket—Tone socket—5 contact
46733	Connector—Microphone—3 contact female	46702	Socket—Tone socket—5 contact
46734	Connector—Microphone—3 contact female	46703	Spring—Motor pulley tension spring (MI-12763 only)
46735	Connector—Pickup input, female (for MI-12763 only)	46715	Support—Pickup arm support clip (MI-12763 only)
31048	Control—On-off control (MI-12763 only)	46724	Switch—AC-DC switch with plate
31537	Control—Phono motor switch (MI-12763 only)	32875	Switch—Phono motor switch (MI-12763 only)
35473	Control—Microphone and phono, volume control	46732	Transformer—Power transformer (T1)
46740	Cord—500,000 ohms (R5, R6)	46720	Turntable—complete (MI-12763 only)
46721	Crystal—Pickup crystal unit only (MI-12763 only)	46725	Vibrator—complete
32541	Jack—Phono jack		

Operating Instructions

- Speakers should be properly connected to their respective output terminals.
- Microphone connections should be made to the 3-terminal MIC receptacle on the end of the chassis.
- Phonograph connections (externally) are made through the chassis plug to the "Phono" jack on the end of the chassis.
- Power Cord. Connect the proper power cord to the receptacle on the rear of the chassis and to the source of power.
- AC-DC Switch. The AC-DC switch acts as an ON-OFF switch. When the amplifier is connected to an AC source the "off" position is at the DC point. When a DC source of power is used the "off" position is at the AC point.

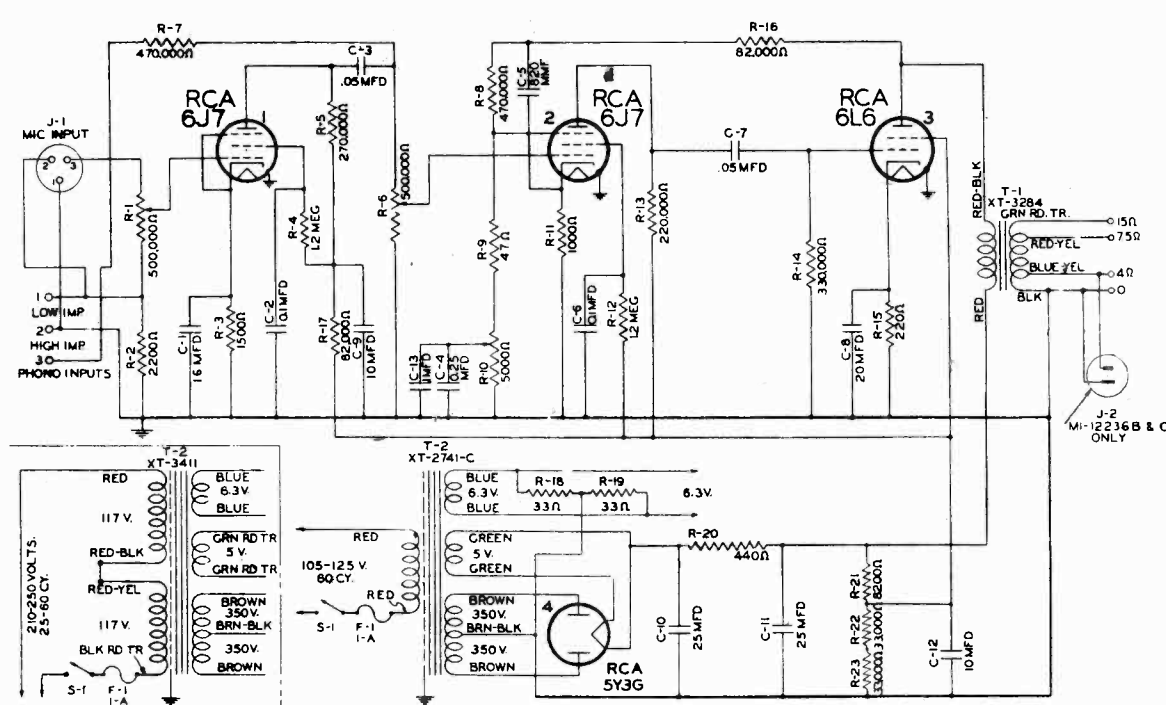
Tube Socket Voltages

115-Volt AC Line, 1,000 Ohms Per Volt Meter.	Plate Volts	Screen Volts	Bias Volts	Heater Volts
RCA-6S17	0.25	55	1.8	6.35
RCA-6S7	4.2	300	2.0	6.35
RCA-6L6	42	300	22	6.35
RCA-6X5	42	300	22	6.35
			310/310	

Total "B" current, 85 ma.

All voltages read to ground except Heater Volts.

RCA MFG. CO., INC.

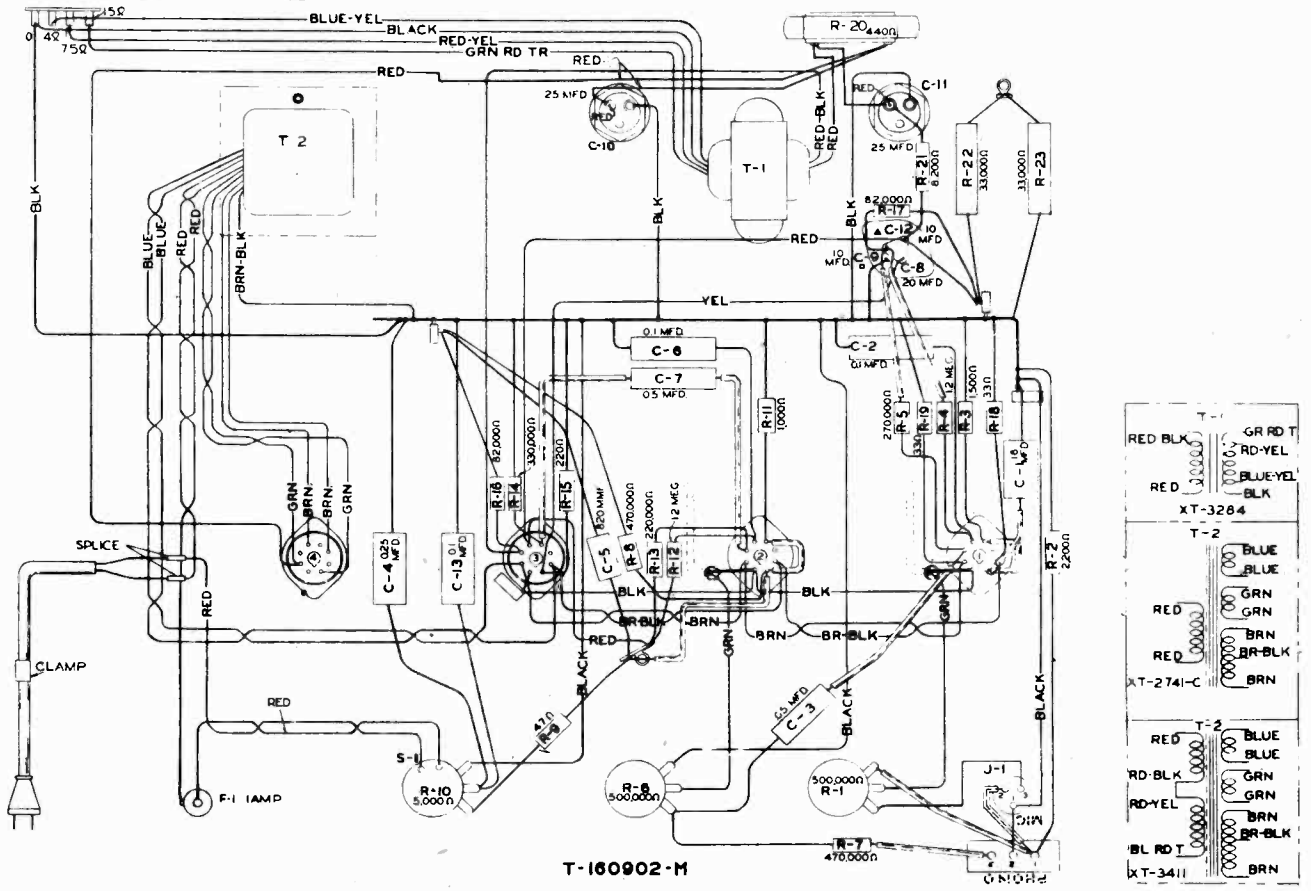


TRANS. T2 FOR  
MODELS MI-12236-A  
AND MI-12237-A

MI-12236 & 37

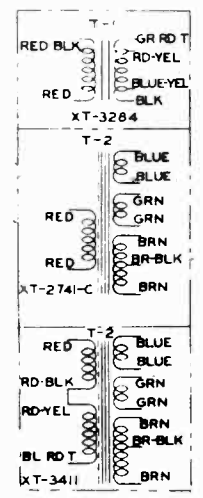
P-170974-M

Schematic Diagram



T-160902-M

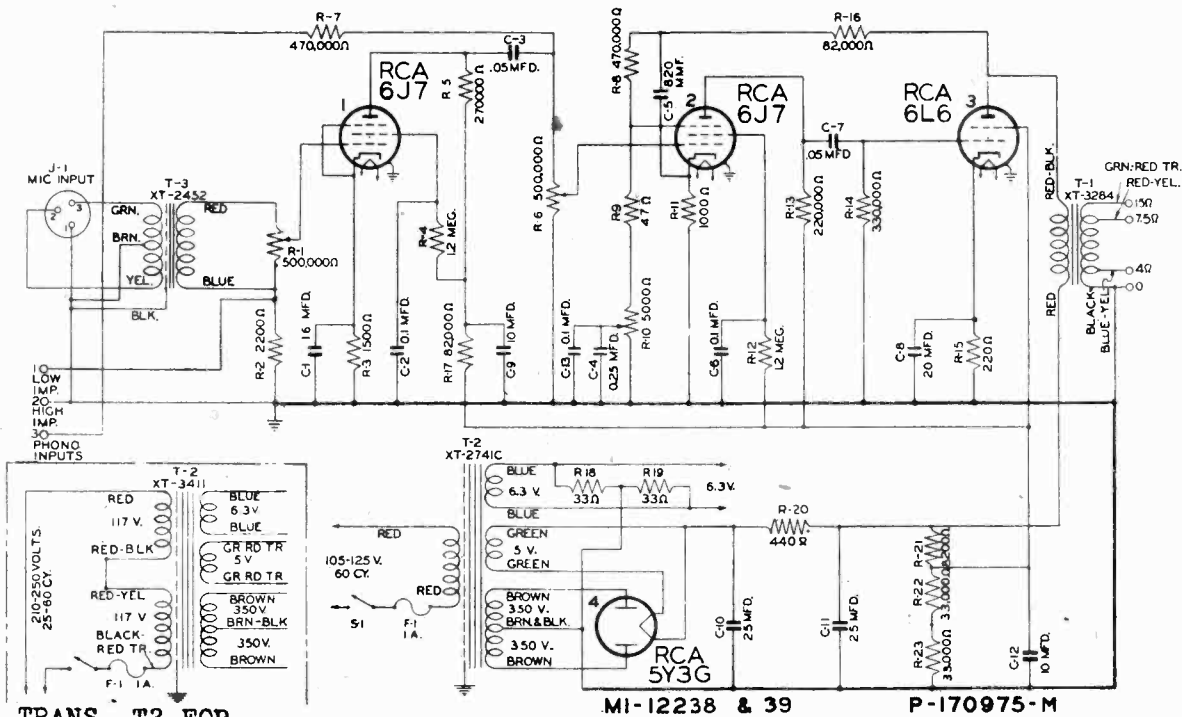
Wiring Diagram





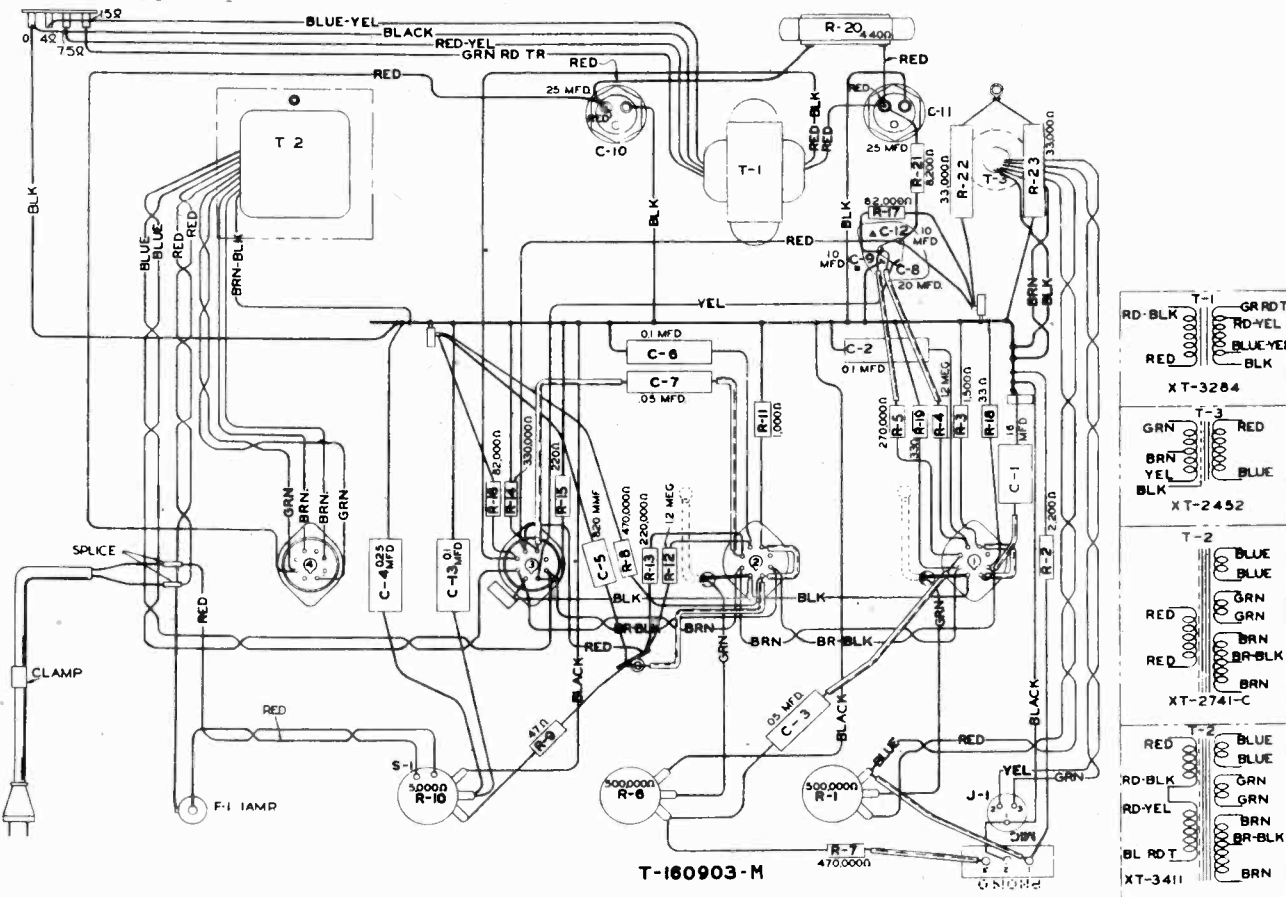
MODELS MI-12238, -A  
MI-12239, -A

RCA MFG. CO., INC.

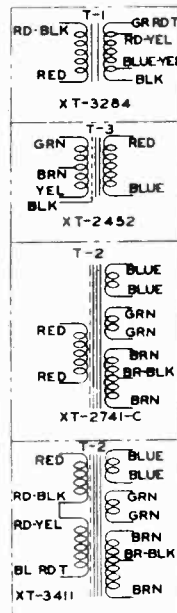


TRANS. T2 FOR  
MODELS MI-12238-A  
AND MI-12239-A

Schematic Diagram



Wiring Diagram



RCA MFG. CO., INC.

MODELS MI-12236, -A  
MI-12237, -A  
MODELS MI-12238, -A  
MI-12239, -A

Tube Socket Voltages

117 VOLT AC LINE—METER 20,000 OHMS PER VOLT

Tube	Plate Volts	Screen Grid Volts	Cathode Volts	Heater Volts
RCA-6J7	77	33	1.1	6.3
RCA-6J7	107	35	1.3	6.3
RCA-4U6	250	250	17	6.3
RCA-313G	350*			4.8

Plate Current M.A.  
7  
1.2  
65  
35\*

\* Each Plate

General Description

The type MI-12236 and MI-12237 amplifier units are designed as general purpose amplifiers for use in sound re-enforcing, public address, and paging systems. Each is completely AC operated, and will accept an output of 6 watts. Each is equipped with a receptacle for high impedance microphone and a terminal board having provisions for two separate phono inputs, one for high impedance and the other a low-impedance pickup. Two separate Volume Controls and a combination Tone Control-Power Switch are provided. The one marked "Volume" is an input control in the grid circuit of the first tube and controls the microphone input level. The other or "Master" volume control operates in the grid circuit of the second stage and controls the overall volume for all inputs.

The type MI-12238 and MI-12239 amplifiers are identical to the above except they include a 250 ohm input transformer.

MI-12237 & MI-12237-A  
MI-12239 & MI-12239-A  
INCLUDING COVER MI-12318-A  
MI-12236 & MI-12236-A  
MI-12238 & MI-12238-A  
WITHOUT PERFORATED COVER

Electrical and Mechanical Specifications

Application: Power Supply (MI-12236, MI-12237, MI-12238 and MI-12239)  
MI-12236-A, MI-12237-A, MI-12238-A and MI-12239-A

Power Consumption: 105/125 volts, 50/60 cycles  
105-125/210-250 volts, 25/60 cycles

Source Impedance: 75 watts  
1.0 amp.

Minimum, 1,000 ohms  
20 ohms  
Magnet Pickup  
Crystal Pickup  
4, 7/8 or 15 ohms

Load Impedance: 2.0 volts  
0.15 volts  
0.35 volts  
20 volts

Power Output (7.5% R.M.S. Harmonic Distortion): 1,000 cycles  
0.0045 volts  
0.0003 volts  
0.0045 volts  
2 volts

Input Levels: ±2 db 70 to 10,000 cycles  
Zero db—output 15-ohm load  
Zero db—0.006 watts, zero ref. level.

Maximum Permissible:  
(1) Microphone (MI-12236 and MI-12237)  
(2) Phonograph (Terminals Nos. 1 and 2)  
(3) Phonograph (Terminal Nos. 3 and 4)

Minimum for Rated Power Output:  
(1) Microphone (MI-12236 and MI-12237)  
(2) Phonograph (Low Impedance)  
(3) Phonograph (High Impedance)

Frequency Response:  
Total Noise Level (Inputs open—output 15-ohm load)

AC Power Connections

A power cord and plug is supplied connected to the amplifier. The plug is of the type which will accept the MI-12236, MI-12237, MI-12238, and MI-12239. These are shipped from the factory connected for 220 volt operation.

Audio Input Connections

Microphone—Microphone connections are made by means of the microphone plug furnished with the equipment. Connections are made to pins No. 1 and No. 2 and pins No. 1 and No. 3 of the plug. Make sure pins No. 1 and No. 2 are not common connected or the low-impedance phono terminals will be shorted when the microphone plug is inserted.

Phonograph—Magnetic Pickup—Phonograph connections, when using a magnetic type pickup, are made to the "PHONO" terminal strip on the front of the amplifier. If single-conductor shielded cable is used, connect the shield to terminal No. 2 and the conductor to terminal No. 1. This connects the pickup directly across the 2,200-ohm series resistor R-2.

Phonograph-Crystal Pickup—To connect a crystal pickup unit to the amplifier use "PHONO" terminals No. 2 and No. 3. A shielded cable, either single or two-conductor, should be used. The shield and ground lead on the phonograph cable should be connected to terminal No. 2 and the conductor to terminal No. 3.

With phonograph inputs, it is important to keep the input signal at a sufficiently low level, to prevent overloading the amplifier. It is necessary to provide a volume control on the phonograph to independently control the phonograph volume and provide mixing between phonograph and microphone input.

Operating Instructions

1. Connect Amplifier to proper power source and insert tubes in their respective sockets.
2. Connect Speakers to Amplifier as specified under Audio Output Connections.
3. Plug in Microphone and/or connect Phonograph to proper input terminals.
4. Turn amplifier ON ("TONE" control knob full clockwise).
5. Turn "MASTER" volume control about three-quarters ON.
6. Turn "VOLUME" control clockwise until the desired Microphone output level is obtained.
7. In the event that mixing is desired between microphone and a phonograph, it will be necessary to add an external volume control in the phonograph circuit. By adjusting this and the Microphone "VOLUME" control, the desired mixing can be obtained.
8. Retard "TONE" control if desired for pleasing reproduction of speech.

Replacement Parts

Insist on genuine factory-tested parts, which are readily identified and may be purchased from authorized dealers.

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
4888	Capacitor—.05 mfd. (C-3, C-7)	35316	Resistor—440 ohms (R-20)
4889	Capacitor—.01 mfd. (C-2, C-6, C-13)	34766	Resistor—1,000 ohms, 1/2 watt (R-11)
1899	Capacitor—.001 mfd. (C-1, C-4, C-5, C-8, C-9, C-12, C-14, C-15)	34967	Resistor—2,500 ohms, 1/2 watt (R-3)
32240	Capacitor—Combining 2 sections of 10 mfd., 450 volts, and 1 section of 20 mfd., 25 volts (C-8, C-9, C-12, C-14, C-15)	14450	Resistor—5,200 ohms, 1/2 watt (R-21)
31323	Control—5,000 ohms, tone control (M-10, M-11)	28744	Resistor—33,000 ohms, 2 watts (R-22, R-23)
31588	Control—25 mfd. (G-10, G-11)	14583	Resistor—20,000 ohms, 1/2 watt (R-17)
39650	Control—250 mfd. (G-5)	30651	Resistor—370,000 ohms, 1/2 watt (R-5)
39651	Control—500,000 ohms, tone control (M-6, M-7)	30764	Resistor—330,000 ohms, 1/2 watt (R-14)
39319	Control—5,000 ohms, tone control (M-10, M-11)	30169	Resistor—1.2 meg. (R-4, R-12)
32096	Control—1 amp. (R-1)	35308	Socket—Tube socket, 9-contact (molded type)
14133	Holder—Tube holder (same type)	34456	Transformer—Output transformer (T-1)
32059	Knob—Control knob	34731	Transformer—Power transformer—105-125/210-250 volts, 25-60 cycles
30075	Knob—Control knob	31380	Transformer—Power transformer—105-125 volts, 50-60 cycles (T-2)
28452	Plate—Capacitor mounting plate	MI-12001	Transformer (T-3) (types MI-12238 and MI-12239 only)
30732	Resistor—23 ohms, 1/2 watt (R-18, R-19)		
5501	Resistor—220 ohms, 2 watts (R-15)		

Audio Output Connections

Wattage Rating of Speakers—With one speaker connected to an amplifier, the speaker must have a power rating at least equivalent to the power output of the amplifier in order to handle the maximum output. If the required wattage of each speaker is more speakers, the required wattage of each speaker is determined as follows:  
Required wattage of each speaker = Total Amplifier Output / Number of Speakers

Impedance of one speaker  
Number of parallel-connected speakers  
Thus, if two 15-ohm speakers are connected in parallel, the total impedance is 15 divided by 2 or 7.5 ohms. In this case, the speakers are connected between the 0 and 7.5 tap on the power amplifier.



RCA MFG. CO., INC.

MODELS MI-4839,  
MI-12233

MI-4839

AMPLIFIER & RECORD PLAYER

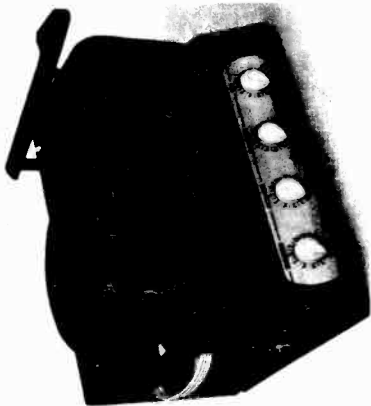


Figure 1—MI-4839

MI-12233

AMPLIFIER & COVER ONLY

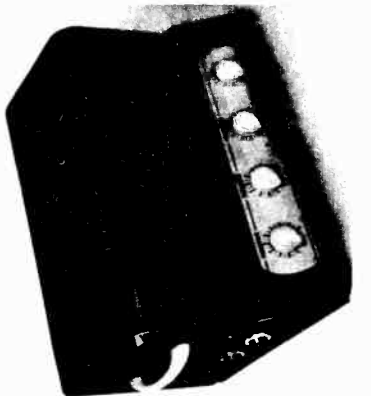


Figure 2—MI-12233

Electrical and Mechanical Specifications

<b>Amplifier</b>		
Application	Sound Reinforcement	
Installation	Permanent or Mobile	
Voltage Rating	105/125 volts, 50/60 cycles	
Power Consumption	130 watts	
Fuse	2 amperes	
Input Impedance	High Impedance	
Frequency Range	4, 8, 15, 196 cycles	
Power Output—(8% Total Harmonic Distortion)	±2 db, 50 to 10,000 cycles	
Input Level—Max. permissible	0.2 volts	
Microphone	100 volts	
Phonograph	0.017 volts	
Phonograph	0.065 volts	
Hum Level—(Input terminated 40,000 ohms)	0.006 watts	
Record Player		
Voltage Ratings	105/125 volts, 60 cycles	
Power Consumption	10 watts	

General Description

The MI-4839 Amplifier and Record Player consists of a 25-watt amplifier, together with a pickup and turntable assembly as shown in Figure 1. This equipment operates from 105/125-volt, 60-cycle supply.

The MI-12233 Amplifier comes complete with plain cover and incorporates the same amplifier unit as is used in the MI-4839 Equipment. It operates from 105/125-volt, 50/60-cycle supply.

Input—There are four input jacks on the amplifier unit: 1 & 2—polarized microphone jacks for high impedance microphone; 3—telephone type jack for external high impedance phonograph input; 4—a pin type, single-

Installation Instructions

The MI-4839 Equipment will operate from 105 to 125 volts AC, 60 cycles. If the MI-12233 Amplifier is to be used, a 105 to 125 volt AC supply of 50-60 cycles may be used, if desired.

Insert the tubes in their respective sockets. Make certain that the pins of the plug are inserted into the receptacles on the underside of the amplifier chassis. Place the cover over the amplifier chassis and secure in place by the four screws provided.

The audio input connections are made to the amplifier through the use of plugs. Standard three-prong Amplifier type receptacles are provided on the side of the amplifier. Connect the shield lead of a two conductor shielded microphone cable to terminal No. 1 (red dot), the low side to terminal No. 2, and the high side to terminal No. 3. Connect the shield lead of a single conductor shielded cable to terminal No. 4. The following microphone phones are suitable for use with this equipment: MI-6202, MI-6205, MI-6207, and MI-4036-K. The MI-6202 is recommended for speech use as special compensation is provided to insure maximum intelligibility. When the MI-12233 amplifier is used with an external microphone, use the input receptacle telephone type jack on the rear of the amplifier. Connect the shield lead of the ground side to screw at a telephone type plug, and the high side to the tip of the plug.

The output terminal board is connected, as it leaves the factory, to give the following standard load impedances: 250/166/157/8 ohms. Other impedances can be obtained by making connections to the terminals as shown in the following table.

Terminals	Impedances
0-4	4 ohms
0-8	8 ohms
15-250	145 ohms
0-166	166 ohms
4-250	192 ohms
0-250	250 ohms

The proper matching impedance for loudspeaker or combination of loudspeakers can be readily selected from this table.

In connecting speakers to the amplifier, make sure that the impedance of the group of speakers is equal to or slightly greater (never less) than the amplifier impedance. If the impedance of the speakers is less than the impedance of 200 ohms impedance across the 250-ohm output terminal of the amplifier. The correct match would be from terminal 4 to 250, giving 192 ohms.

Radiotron Socket Voltages

115-volt line, using 2,000 ohms per volt voltmeter

Radiotron	Volts, Plate to Ground	Volts, Screen to Ground	Volts, Cathode to Ground	Heater Volts
RCA-6SC7	100	0.0	0.0	6.3
RCA-6X7	100	0.0	0.0	6.3
RCA-6N7	145	3.0	3.0	6.3
RCA-6L6	340	21	21	6.3
RCA-5V4G	320 AC	(350 V DC Heater to Gnd.)		5.0

Operating Instructions

1. Insert tubes in their proper sockets.
2. Connect amplifier to proper power source, 115 volts, 50/60 cycles or 115 volts, 60 cycles, if phonograph is to be used.
3. Connect microphone(s) to receptacle(s) on side of amplifier.
4. If external phonograph is to be used, connect the output to a standard telephone-type plug and insert in the jack on the side of the amplifier. The ground lead and/or shield of the phonograph cable should be connected to the sleeve of the plug.
5. Connect loudspeakers to output terminal board (See output connections).
6. Turn MICROPHONE and PHONOGRAPH volume controls full counter clockwise. Turn amplifier ON by turning TONE control clockwise, operating power switch.
7. Warm up approximately one minute for amplifier to allow up.
8. Turn MICROPHONE and/or PHONOGRAPH volume controls clockwise until desired volume level is obtained.
9. Adjust TONE control for desired tone quality.

STOCK No.	DESCRIPTION	STOCK No.	DESCRIPTION
44718	Arm—Pickup arm complete with base and cable (For MI-4839 only)	44713	Plate—Dial plate
44719	Arm—Pickup arm shell (For MI-4839 only)	44714	Pin—Mixer pin (For MI-4839 only)
44720	Arm—Pickup arm shell (For MI-4839 only)	44715	Pin—Mixer pin (For MI-4839 only)
44721	Arm—Pickup arm shell (For MI-4839 only)	44716	Pin—Mixer pin (For MI-4839 only)
44722	Arm—Pickup arm shell (For MI-4839 only)	44717	Pin—Mixer pin (For MI-4839 only)
44723	Arm—Pickup arm shell (For MI-4839 only)	44718	Pin—Mixer pin (For MI-4839 only)
44724	Arm—Pickup arm shell (For MI-4839 only)	44719	Pin—Mixer pin (For MI-4839 only)
44725	Arm—Pickup arm shell (For MI-4839 only)	44720	Pin—Mixer pin (For MI-4839 only)
44726	Arm—Pickup arm shell (For MI-4839 only)	44721	Pin—Mixer pin (For MI-4839 only)
44727	Arm—Pickup arm shell (For MI-4839 only)	44722	Pin—Mixer pin (For MI-4839 only)
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44729	Arm—Pickup arm shell (For MI-4839 only)	44724	Pin—Mixer pin (For MI-4839 only)
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44733	Arm—Pickup arm shell (For MI-4839 only)	44728	Pin—Mixer pin (For MI-4839 only)
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44736	Arm—Pickup arm shell (For MI-4839 only)	44731	Pin—Mixer pin (For MI-4839 only)
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44742	Arm—Pickup arm shell (For MI-4839 only)	44737	Pin—Mixer pin (For MI-4839 only)
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44744	Arm—Pickup arm shell (For MI-4839 only)	44739	Pin—Mixer pin (For MI-4839 only)
44745	Arm—Pickup arm shell (For MI-4839 only)	44740	Pin—Mixer pin (For MI-4839 only)
44746	Arm—Pickup arm shell (For MI-4839 only)	44741	Pin—Mixer pin (For MI-4839 only)
44747	Arm—Pickup arm shell (For MI-4839 only)	44742	Pin—Mixer pin (For MI-4839 only)
44748	Arm—Pickup arm shell (For MI-4839 only)	44743	Pin—Mixer pin (For MI-4839 only)
44749	Arm—Pickup arm shell (For MI-4839 only)	44744	Pin—Mixer pin (For MI-4839 only)
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44751	Arm—Pickup arm shell (For MI-4839 only)	44746	Pin—Mixer pin (For MI-4839 only)
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44756	Arm—Pickup arm shell (For MI-4839 only)	44751	Pin—Mixer pin (For MI-4839 only)
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44761	Arm—Pickup arm shell (For MI-4839 only)	44756	Pin—Mixer pin (For MI-4839 only)
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44763	Arm—Pickup arm shell (For MI-4839 only)	44758	Pin—Mixer pin (For MI-4839 only)
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44777	Arm—Pickup arm shell (For MI-4839 only)	44772	Pin—Mixer pin (For MI-4839 only)
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44787	Arm—Pickup arm shell (For MI-4839 only)	44782	Pin—Mixer pin (For MI-4839 only)
44788	Arm—Pickup arm shell (For MI-4839 only)	44783	Pin—Mixer pin (For MI-4839 only)
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44794	Arm—Pickup arm shell (For MI-4839 only)	44789	Pin—Mixer pin (For MI-4839 only)
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44797	Arm—Pickup arm shell (For MI-4839 only)	44792	Pin—Mixer pin (For MI-4839 only)
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44799	Arm—Pickup arm shell (For MI-4839 only)	44794	Pin—Mixer pin (For MI-4839 only)
44800	Arm—Pickup arm shell (For MI-4839 only)	44795	Pin—Mixer pin (For MI-4839 only)
44801	Arm—Pickup arm shell (For MI-4839 only)	44796	Pin—Mixer pin (For MI-4839 only)
44802	Arm—Pickup arm shell (For MI-4839 only)	44797	Pin—Mixer pin (For MI-4839 only)
44803	Arm—Pickup arm shell (For MI-4839 only)	44798	Pin—Mixer pin (For MI-4839 only)
44804	Arm—Pickup arm shell (For MI-4839 only)	44799	Pin—Mixer pin (For MI-4839 only)
44805	Arm—Pickup arm shell (For MI-4839 only)	44800	Pin—Mixer pin (For MI-4839 only)
44806	Arm—Pickup arm shell (For MI-4839 only)	44801	Pin—Mixer pin (For MI-4839 only)
44807	Arm—Pickup arm shell (For MI-4839 only)	44802	Pin—Mixer pin (For MI-4839 only)
44808	Arm—Pickup arm shell (For MI-4839 only)	44803	Pin—Mixer pin (For MI-4839 only)
44809	Arm—Pickup arm shell (For MI-4839 only)	44804	Pin—Mixer pin (For MI-4839 only)
44810	Arm—Pickup arm shell (For MI-4839 only)	44805	Pin—Mixer pin (For MI-4839 only)
44811	Arm—Pickup arm shell (For MI-4839 only)	44806	Pin—Mixer pin (For MI-4839 only)
44812	Arm—Pickup arm shell (For MI-4839 only)	44807	Pin—Mixer pin (For MI-4839 only)
44813	Arm—Pickup arm shell (For MI-4839 only)	44808	Pin—Mixer pin (For MI-4839 only)
44814	Arm—Pickup arm shell (For MI-4839 only)	44809	Pin—Mixer pin (For MI-4839 only)
44815	Arm—Pickup arm shell (For MI-4839 only)	44810	Pin—Mixer pin (For MI-4839 only)
44816	Arm—Pickup arm shell (For MI-4839 only)	44811	Pin—Mixer pin (For MI-4839 only)
44817	Arm—Pickup arm shell (For MI-4839 only)	44812	Pin—Mixer pin (For MI-4839 only)
44818	Arm—Pickup arm shell (For MI-4839 only)	44813	Pin—Mixer pin (For MI-4839 only)
44819	Arm—Pickup arm shell (For MI-4839 only)	44814	Pin—Mixer pin (For MI-4839 only)
44820	Arm—Pickup arm shell (For MI-4839 only)	44815	Pin—Mixer pin (For MI-4839 only)
44821	Arm—Pickup arm shell (For MI-4839 only)	44816	Pin—Mixer pin (For MI-4839 only)
44822	Arm—Pickup arm shell (For MI-4839 only)	44817	Pin—Mixer pin (For MI-4839 only)
44823	Arm—Pickup arm shell (For MI-4839 only)	44818	Pin—Mixer pin (For MI-4839 only)
44824	Arm—Pickup arm shell (For MI-4839 only)	44819	Pin—Mixer pin (For MI-4839 only)
44825	Arm—Pickup arm shell (For MI-4839 only)	44820	Pin—Mixer pin (For MI-4839 only)
44826	Arm—Pickup arm shell (For MI-4839 only)	44821	Pin—Mixer pin (For MI-4839 only)
44827	Arm—Pickup arm shell (For MI-4839 only)	44822	Pin—Mixer pin (For MI-4839 only)
44828	Arm—Pickup arm shell (For MI-4839 only)	44823	Pin—Mixer pin (For MI-4839 only)
44829	Arm—Pickup arm shell (For MI-4839 only)	44824	Pin—Mixer pin (For MI-4839 only)
44830	Arm—Pickup arm shell (For MI-4839 only)	44825	Pin—Mixer pin (For MI-4839 only)
44831	Arm—Pickup arm shell (For MI-4839 only)	44826	Pin—Mixer pin (For MI-4839 only)
44832	Arm—Pickup arm shell (For MI-4839 only)	44827	Pin—Mixer pin (For MI-4839 only)
44833	Arm—Pickup arm shell (For MI-4839 only)	44828	Pin—Mixer pin (For MI-4839 only)
44834	Arm—Pickup arm shell (For MI-4839 only)	44829	Pin—Mixer pin (For MI-4839 only)
44835	Arm—Pickup arm shell (For MI-4839 only)	44830	Pin—Mixer pin (For MI-4839 only)
44836	Arm—Pickup arm shell (For MI-4839 only)	44831	Pin—Mixer pin (For MI-4839 only)
44837	Arm—Pickup arm shell (For MI-4839 only)	44832	Pin—Mixer pin (For MI-4839 only)
44838	Arm—Pickup arm shell (For MI-4839 only)	44833	Pin—Mixer pin (For MI-4839 only)
44839	Arm—Pickup arm shell (For MI-4839 only)	44834	Pin—Mixer pin (For MI-4839 only)
44840	Arm—Pickup arm shell (For MI-4839 only)	44835	Pin—Mixer pin (For MI-4839 only)
44841	Arm—Pickup arm shell (For MI-4839 only)	44836	Pin—Mixer pin (For MI-4839 only)
44842	Arm—Pickup arm shell (For MI-4839 only)	44837	Pin—Mixer pin (For MI-4839 only)
44843	Arm—Pickup arm shell (For MI-4839 only)	44838	Pin—Mixer pin (For MI-4839 only)
44844	Arm—Pickup arm shell (For MI-4839 only)	44839	Pin—Mixer pin (For MI-4839 only)
44845	Arm—Pickup arm shell (For MI-4839 only)	44840	Pin—Mixer pin (For MI-4839 only)
44846	Arm—Pickup arm shell (For MI-4839 only)	44841	Pin—Mixer pin (For MI-4839 only)

MODEL MI-12354

RCA MFG. CO., INC.

# ALARM SIGNAL GENERATOR

MI-12354

USING TYPE MI-12209 AMPLIFIER

## General Description

The MI-12354 Alarm Signal Generator has been designed primarily as a tone signal source supplying either a constant or warble tone, rich in harmonics for use in conjunction with paging and sound systems in schools, factories, hotels, etc. In small installations, the signal generator can be used to directly drive loudspeakers, provided the total power requirements is not in excess of 10 watts.

In larger installations, the signal generator can be used to drive single or multiple power amplifiers such as MI-12211, MI-12217, MI-4288, MI-12214 or MI-12235, depending upon the number and size of areas to be covered.

The signal generator produces a distinctive penetrating note of either warble or steady type. Toggle switches are provided on the left side of the unit, one for changing from constant to warble tone and the other for changing from a signal generator to a straight driver amplifier which may be used in conjunction with a high impedance microphone or a low impedance phonograph for conveying verbal instructions or music to the areas covered by the system.

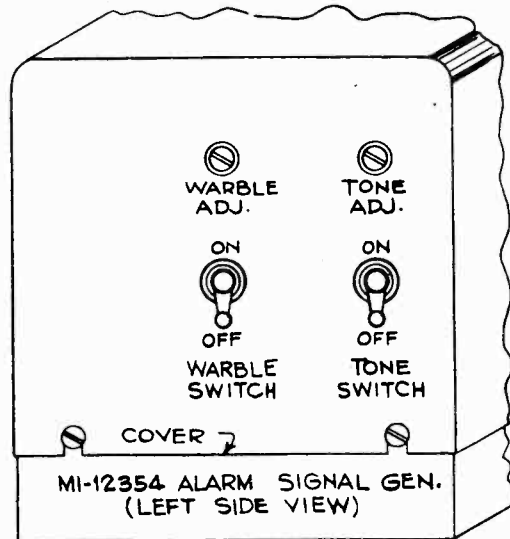


Figure 1

## Operating Instructions

1. Turn amplifier ON-TONE control knob full clockwise.
2. For CONSTANT TONE throw TONE SWITCH to ON, and WARBLE SWITCH to OFF.
3. Advance the MASTER control sufficiently to produce the desired signal level.  
**Note: The VOLUME control has no effect on the level of the signal.**
4. For WARBLE TONE throw both TONE and WARBLE SWITCHES to their ON positions.

5. To stop either TONE it is only necessary to throw the TONE SWITCH to its OFF position.
6. To change from one tone to the other with the TONE SWITCH ON, it is only necessary to throw the WARBLE SWITCH either to ON for WARBLE TONE or to OFF for CONSTANT TONE.
7. For operation using microphone, throw TONE SWITCH to OFF and adjust VOLUME control clockwise until the desired output level is obtained.  
**Note: Both VOLUME and MASTER controls affect the microphone output level.**

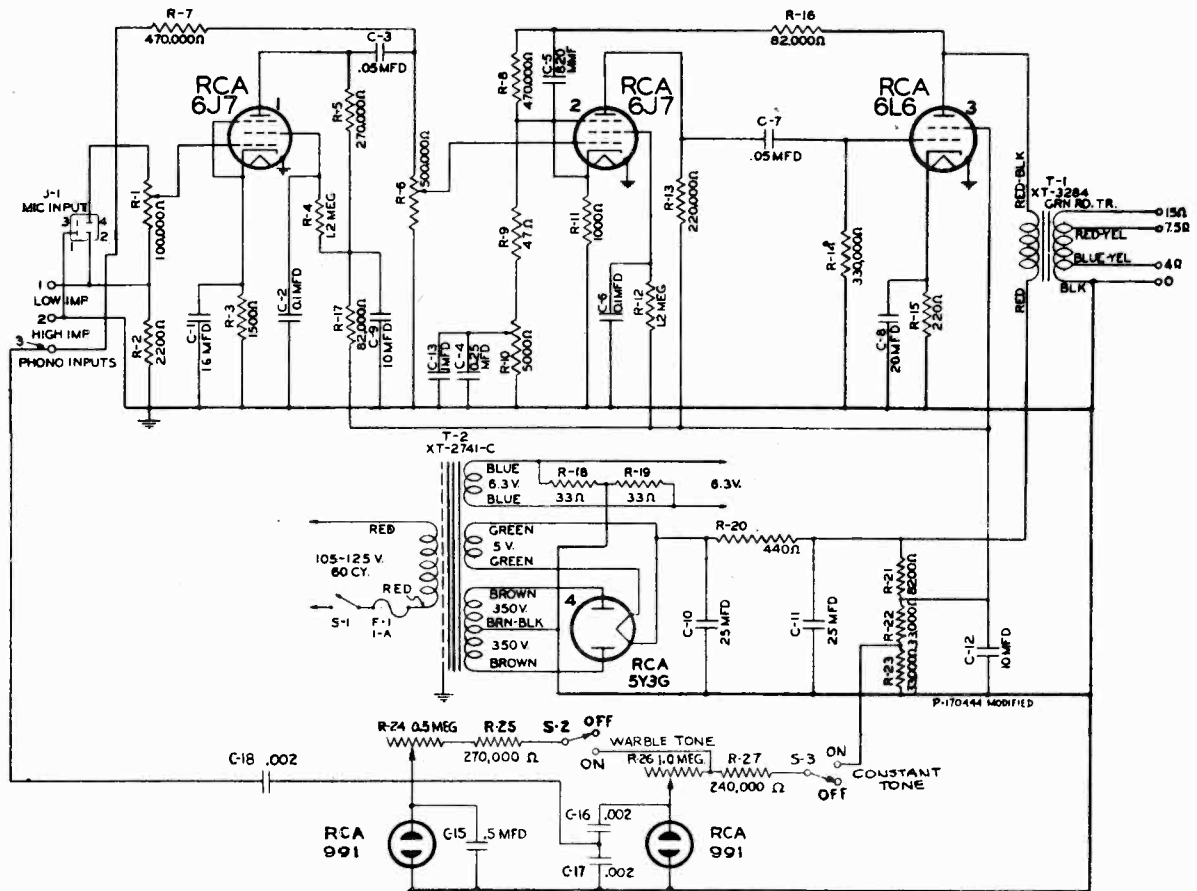
## Electrical and Mechanical Specifications

Power Supply .....	105/125 volts, 50/60 cycles
Power Consumption .....	75 watts
Fuse .....	1.0 ampere
Source Impedance: (As normal amplifier)	
(1) Microphone .....	Minimum 1000 ohms
(2) Phonograph (Low Impedance) .....	Magnetic Pickup
Output Impedance .....	Use as low impedance source
Power Output (Signal) .....	10 watts

## Installation Instructions

1. Connect amplifier to proper source and insert tubes in their respective sockets.
2. Connect the output to the transmission line feeding the power amplifiers located in the areas to be served.  
  
**Note: If a balanced transmission line is used, it will be necessary to remove the ground from the secondary of the output transformer. If grounded center tap is required, a center tap resistor having a total resistance of approximately five times the impedance of the portion of the secondary used, should be connected across the line. The center tap of this resistor may then be grounded.**
3. The frequencies of both the warble and constant tones have been set at the factory for optimum penetration. Should it be desired to change these frequencies, proceed as follows:
  - A. Turn amplifier ON and with TONE SWITCH thrown to ON, and the WARBLE SWITCH thrown to OFF, adjust the TONE ADJUSTMENT potentiometer for the desired constant frequency tone.
  - B. Throw WARBLE SWITCH to the ON position and adjust WARBLE ADJUSTMENT potentiometer to give the desired warble frequency. A period of approximately three times per second produces a very satisfactory warble tone.

RCA MFG. CO., INC.



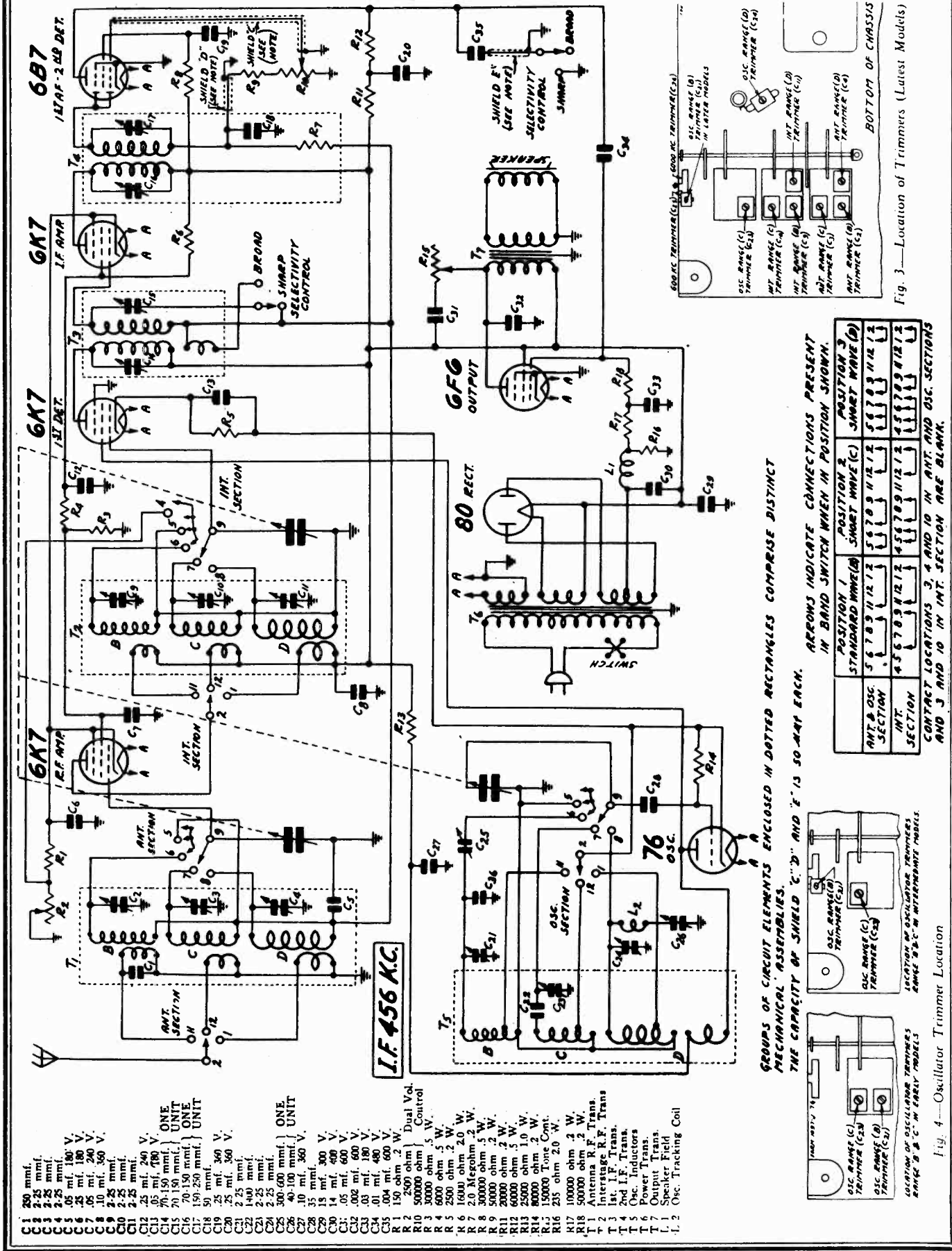
RCA Tube Complement

- RCA-6J7 ..... First Amplifier
- RCA-6J7 ..... Second Amplifier
- RCA-6L6 ..... Power Output
- RCA-5Y3G ..... Rectifier
- RCA-991 ..... Signal Generator
- RCA-991 ..... Warble Generator

STOCK NO.	DESCRIPTION	STOCK NO.	DESCRIPTION
4886	Capacitor—.05 mfd. (C-3, C-7)	30732	Resistor—47 ohms, ½ watt (R-9)
4839	Capacitor—.1 mfd. (C-2, C-6, C-13)	13218	Resistor—220 ohms, 2 watts (R-15)
12484	Capacitor—.25 mfd., 350 volts (C-4)	35316	Resistor—440 ohms (R-20)
32240	Capacitor—Comprising 2 sections of 10 mfd., 400 volts, and 1 section of 20 mfd., 25 volts (C-8, C-9, C-12)	4687	Resistor—1,000 ohms, ½ watt (R-11)
31323	Capacitor—16 mfd., 150 volts (C-1)	30654	Resistor—1,500 ohms, ½ watt (R-3)
31568	Capacitor—25 mfd. (C-10, C-11)	3526	Resistor—2,200 ohms, ½ watt (R-2)
12536	Capacitor—820 mmfd. (C-5)	14250	Resistor—8,200 ohms, ½ watt (R-21)
28157	Capacitor—.05 mfd. (C-15)	12487	Resistor—33,000 ohms, 2 watts (R-22, R-23)
36008	Capacitor—.002 mfd. (C-16, C-17, C-18)	8064	Resistor—82,000 ohms, ½ watt (R-16, R-17)
35319	Control—5,000 ohms, tone control (R-10, S-1)	14583	Resistor—220,000 ohms, ½ watt (R-13)
35318	Control—100,000 ohms, volume control (R-1)	30651	Resistor—270,000 ohms, ½ watt (R-5, R-25)
35317	Control—500,000 ohms, master control (R-6)	30784	Resistor—330,000 ohms, ½ watt (R-14)
44173	Control—.5 meg. (R-24)	30648	Resistor—470,000 ohms, ½ watt (R-7, R-8)
12361	Control—1.0 meg. (R-26)	30162	Resistor—1.2 meg. (R-4, R-12)
16823	Cord—Power cord	14324	Resistor—240,000 ohms, ½ watt (R-27)
14133	Fuse—1 amp. (F-1)	32055	Socket—Microphone plug socket (J-1)
32059	Holder—Fuse holder	35308	Socket—Tube socket, 8 contact, for 6L6, 5Y3G tubes
7960	Knob—Control knob	33084	Socket—Tube socket, 8 contact, for 6J7 tubes
32054	Plug—Microphone plug	23555	Socket—RCA-991 socket
25941	Plug—Power cord plug	7900	Switch—Single pole single throw
30789	Resistor—33 ohms, ½ watt (R-18, R-19)	34456	Transformer—Output transformer (T-1)
		31380	Transformer—Power transformer, 105-125 volts, 50-60 cycles (T-2)



LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.



- C1 250 mmf.
- C2 2-25 mmf.
- C3 2-25 mmf.
- C4 .05 mf. 180 V.
- C5 .05 mf. 180 V.
- C6 .05 mf. 240 V.
- C7 .10 mf. 360 V.
- C8 2-25 mmf.
- C9 2-25 mmf.
- C10 2-25 mmf.
- C11 .25 mf. 240 V.
- C12 .05 mf. 180 V.
- C13 70-150 mmf. } ONE UNIT
- C14 70-150 mmf. } ONE UNIT
- C15 70-150 mmf. } ONE UNIT
- C16 150-250 mmf. } ONE UNIT
- C17 50 mmf.
- C18 25 mf. 360 V.
- C19 25 mf. 360 V.
- C20 2-25 mmf.
- C21 140 mmf.
- C22 2-25 mmf.
- C23 2-25 mmf.
- C24 2-25 mmf.
- C25 40-100 mmf. } ONE UNIT
- C26 40-100 mmf. } ONE UNIT
- C27 35 mmf.
- C28 15 mf. 300 V.
- C29 14 mf. 400 V.
- C30 .05 mf. 600 V.
- C31 .002 mf. 600 V.
- C32 .03 mf. 180 V.
- C33 .01 mf. 480 V.
- C34 .004 mf. 600 V.
- R 1 150 ohm .2 W.
- R 2 2500 ohm } Dual Vol.
- R 3 50000 ohm } Control
- R 4 3000 ohm .5 W.
- R 5 6000 ohm .5 W.
- R 6 1000 ohm .2 W.
- R 7 20 Megohm .5 W.
- R 8 50000 ohm .5 W.
- R 9 5000 ohm .5 W.
- R 10 2000 ohm .2 W.
- R 11 2000 ohm .2 W.
- R 12 25000 ohm .10 W.
- R 13 8000 ohm .2 W.
- R 14 15000 ohm .2 W.
- R 15 15000 ohm .2 W.
- R 16 235 ohm .20 W.
- R 17 10000 ohm .2 W.
- R 18 50000 ohm .2 W.
- T 1 Antenna R.F. Trans.
- T 2 Intergate Trans.
- T 3 1st I.F. Trans.
- T 4 2nd I.F. Trans.
- T 5 Osc. Inductors
- T 6 Power Trans.
- T 7 Output Trans.
- L 1 Speaker Field
- L 2 Osc. Tracking Coil

ARROWS INDICATE CONNECTIONS PRESENT IN BAND SWITCH WHEN IN POSITION SHOWN.

	POSITION 1	POSITION 2	POSITION 3
ANT. & OSC. SECTION	5 6 7 8 9 11 12 13	5 6 7 8 9 11 12 13	5 6 7 8 9 11 12 13
INT. SECTION	4 5 6 7 8 9 11 12 13	4 5 6 7 8 9 11 12 13	4 5 6 7 8 9 11 12 13

CONTACT LOCATIONS 3, 4 AND 10 IN ANT. SECTION AND 3 AND 10 IN INT. SECTION ARE BLANK.

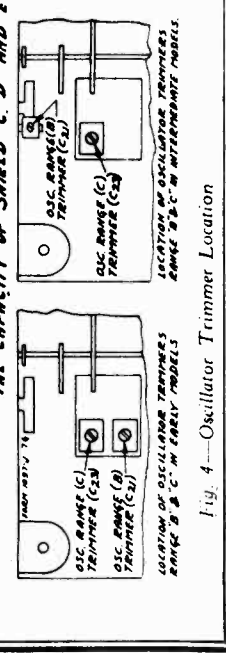


Fig. 4—Oscillator Trimmer Location

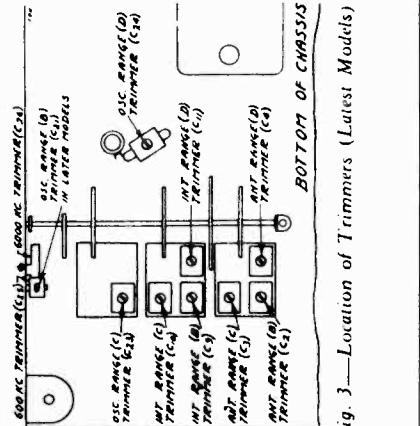


Fig. 3—Location of Trimmers (Latest Models)



MODELS BL1, B15

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

**Circuit**

This model is a three band receiver with a tuning range in each band as shown in the specifications above. Three band coverage is accomplished by means of three sets of R. F. and oscillator coils and a three section triple throw switch.

Referring to the schematic circuit diagram, Fig. 2, T1 and T2 are the antenna and interstage R. F. transformer assemblies and T3 is the oscillator coil assembly. The standard wave, 1st and 2nd short wave coils in each assembly are indicated by the letters B, C and D respectively. The three sections of the band switch are designated in the schematic as the antenna, interstage and oscillator sections.

The band switch completes connections to the coils in use. It also short circuits the R. F. transformer secondary and oscillator coil of lower frequency not in use.

The antenna transformer with tuned secondary feeds into a type 6K7 R. F. amplifier tube. The output of this tube is fed through the interstage R. F. transformer with tuned secondary into another 6K7 tube which functions as the 1st detector.

A separate type 76 tube is employed in the oscillator circuit. Referring to the oscillator assembly T3, Fig. 2, B, C and D refer to the standard wave, 1st short wave and 2nd short wave oscillator coils respectively. The oscillating circuit is always resonant at 456 KC above the frequency to which the R. F. amplifier is tuned.

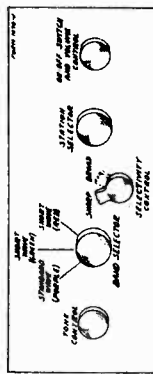


Fig. 1—Arrangement of Controls

The oscillator potential is fed into the cathode circuit of the 6K7 first detector tube. This results in the intermediate or beat frequency of 456 KC being present in the plate circuit of this tube.

One stage of I. F. amplification is employed using a 6K7 tube. The primaries and secondaries of the first and second I. F. transformers are tuned by small trimmer condensers.

**Selectivity Control**—Referring to the 1st I. F. transformer T3 in Fig. 2, it will be noted that there is a coupling winding shown in the illustration below the primary. Refer also to the by-pass arrangement in the pentode plate circuit of the 6B7.

When the selectivity control is in the sharp position the coupling winding is open circuited and the loose coupling which exists between the primary and secondary of this transformer results in high selectivity. High audio frequencies are by-passed to ground through condenser C35.

When the selectivity control is in the broad position,

the coupling winding which is wound under the primary is connected in series with the secondary. This provides overcoupling which results in a greatly widened resonance curve. Passage of a wide range of audio frequencies is thus obtained.

In order to allow passage of the higher audio frequencies in the broad position, the capacity of the by-pass condenser to ground is greatly reduced (C35 and the capacity of shield E in series).

**Dual Volume Control**—A dual manual volume control is employed. In one section the audio voltage applied to the 1st audio section of the 6B7 tube is varied (R10). In the other section the R. F. and I. F. bias is varied (R2). The purpose of the latter section is to reduce the sensitivity of the receiver at low volume settings in order to cut down noise pick-up between stations. The variable section R2 is shorted out through contact No. 4 of the interstage section of the band selector when in the 2nd short wave position.

A type 6B7 duo diode pentode tube functions as the second detector and a one stage audio amplifier. The two diode plates are connected together. AVC voltage is applied through isolating resistors to the control grid circuits of the R. F. and I. F. tubes. The audio voltage developed across volume control resistor R10 is applied through the movable arm to the control grid of the 6B7 tube. Resistance coupling is used between the first audio stage and the output stage which employs a type 6F6 output pentode tube. A type 80 full wave rectifier tube is used in the power unit.

**Alignment and Calibration**

Use a non-metallic screwdriver for the adjustments. The complete procedure is as follows:

**I. F. Adjustment**

Set the signal generator for a signal of 456 KC. Connect the output of the signal generator through a .1 mf. condenser to the grid of the 1st detector. Connect the ground lead of the receiver to the ground post of the signal generator.

Turn the band selector to the Range B position (standard wave band—purple dial color).

Turn the selectivity switch to the sharp position and keep it in this position for all adjustments.

Turn the volume control to the maximum position. Attenuate the signal from the signal generator to prevent the levelling-off action of the A.V.C.

Then adjust the four I.F. trimmers until maximum output is obtained. The adjusting screws for these condensers are reached from the top of the chassis, and the location is shown in Fig. 6.

**Range B Adjustment**

Set the signal generator for 1730 KC. Turn the rotor of the tuning condenser to the full open position. Keep the band selector in the standard wave position.

Connect the antenna lead of the receiver through a 200 mmf. condenser to the output of the signal

generator.

For this and all subsequent adjustments keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.

Adjust the oscillator Range B trimmer (C21) until maximum output is obtained. The location of this trimmer is shown in Figs. 3 and 4.

**1500 KC Adjustment**

Set the signal generator for 1500 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

There is a lever arm in front of the large gear on the tuning condenser shaft by means of which the position of the station pointer may be adjusted. Set the station pointer at the 1500 KC mark on the dial scale by adjusting this lever arm.

Adjust the interstage Range B trimmer (C9) and antenna Range B trimmer (C2) to maximum.

**600 KC Adjustment**

Set the signal generator for 600 KC. Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 600 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

**Range C Alignment**

**5800 KC Adjustment**

Set the signal generator for 5800 KC. Connect the antenna lead of the receiver through a 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band selector to the Range C position (1st short wave band—green dial color).

Adjust the oscillator Range C trimmer (C23) until maximum output is obtained. See Figs. 3 and 4 for location of this trimmer.

**5000 KC Adjustment**

Set the signal generator for 5000 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the interstage Range C trimmer (C10) and antenna Range C trimmer (C3) to maximum. Do not change the setting of the oscillator Range C trimmer.

**Range D Alignment**

**18,300 KC Adjustment**

Set the signal generator for 18,300 KC. Keep the antenna lead of the receiver connected through the 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band selector to the Range D position (2nd short wave band—red dial color).

Adjust the oscillator Range D trimmer (C24) until

maximum output is obtained. See Fig. 3 for location of this trimmer.

**15,000 KC Adjustment**

Set the signal generator for 15,000 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the interstage Range D trimmer (C11) and antenna Range D trimmer (C4) to maximum.

When adjusting the interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.

Then go back and repeat the procedure as given for the 18,300 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

Do not make any further change in the setting of the oscillator Range D trimmer.

**6000 KC Adjustment**

Set the signal generator for 6000 KC. Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

**Tuning-Frequency Range**

B Range . . . . . 535 to 1730 KC  
C Range . . . . . 1715 to 5800 KC  
D Range . . . . . 5750 to 18500 KC

**Sensitivity**

B Range Average . . . . . 0.5 Microvolts Absolute  
C Range Average . . . . . 1.0 Microvolts Absolute  
D Range Average . . . . . 2.0 Microvolts Absolute

Power Consumption - 68 Watts (At 115 volts 60 cycles)

Power Output . . . . . 3 Watts Undistorted

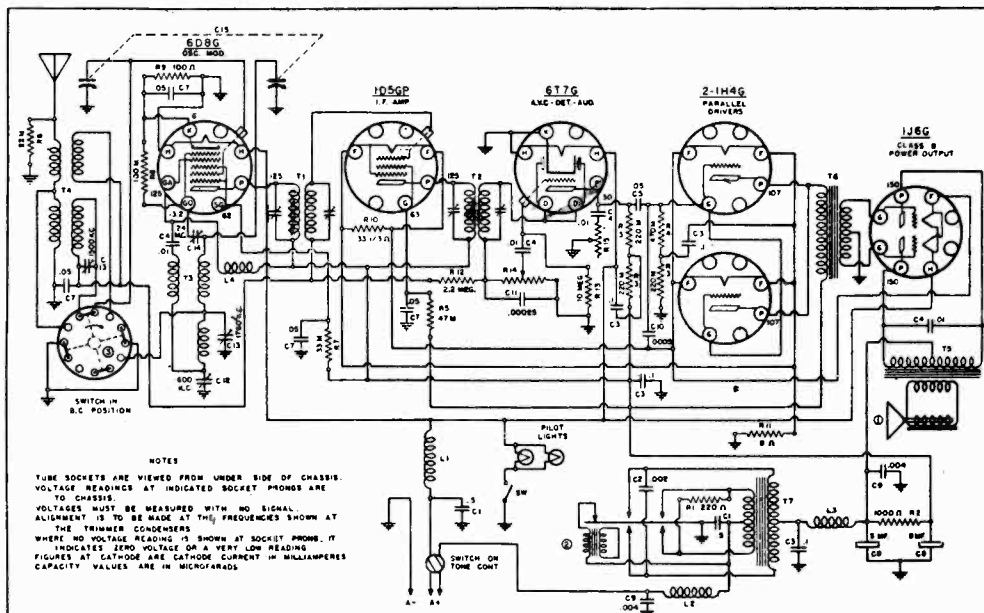
Selectivity - 28 KC Broad at 1000 times Signal (Sharp)

Intermediate Frequency . . . . . 456 KC.

Speaker . . . . . 6" and 8" Dynamic

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

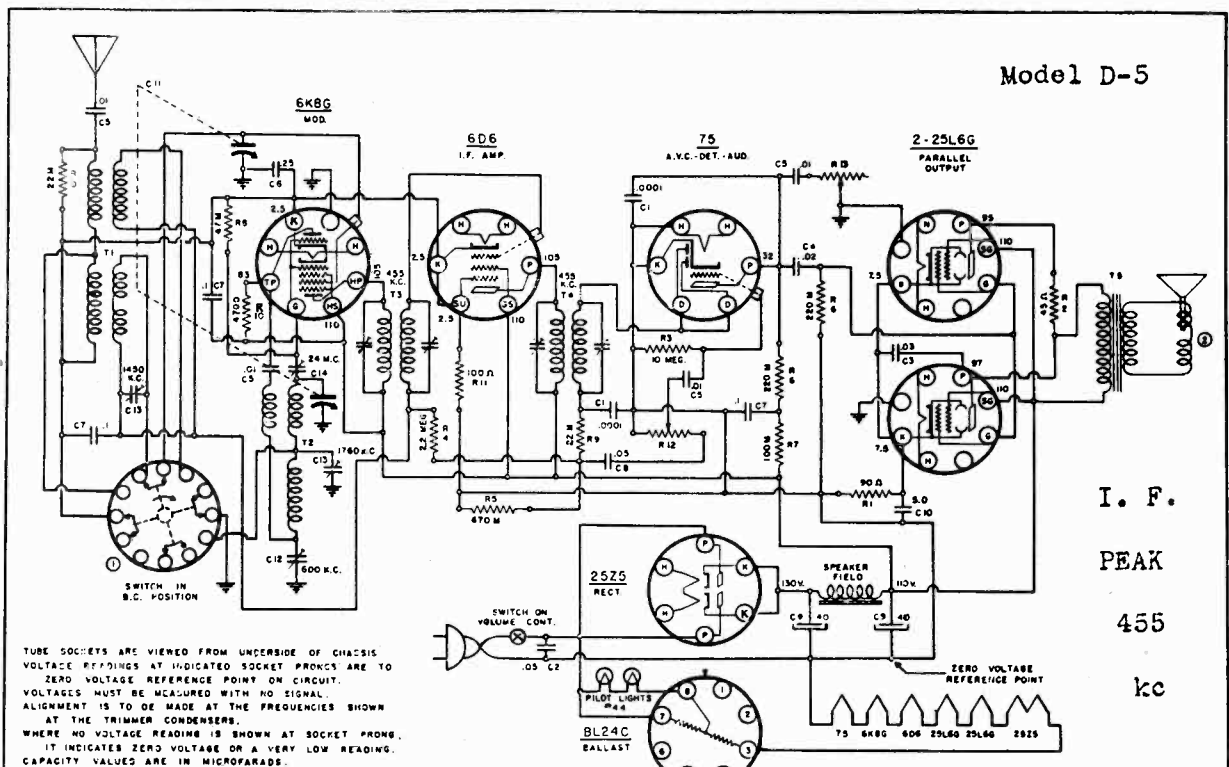
MODEL D3  
MODEL D5



NOTES  
TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS.  
VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO CHASSIS.  
VOLTAGES MUST BE MEASURED WITH NO SIGNAL.  
ALIGNMENT IS TO BE MADE AT THE FREQUENCIES SHOWN AT THE TRIMMER CONDENSERS.  
WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PRONG, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING.  
FIGURES AT CATHODE ARE CATHODE CURRENT IN MILLIAMPERES.  
CAPACITY VALUES ARE IN MICROFARADS.

CODE	PART NO.	DESCRIPTION	CODE	PART NO.	DESCRIPTION	CODE	PART NO.	DESCRIPTION	QBR
R1	60-189	250 OHM 1/2W RESISTOR	C1	18-112	5 MFD 500 V. TUB. CONDENSER	I	19-234	SPEAKER E" P.M.	
R2	60-200	1000 OHM 1/2W	C2	18-114	500K MICA CONDENSER	J	24-103	VIBRATOR	
R3	60-180	250 OHM 1/2W	C3	18-113	500K MICA CONDENSER	K	69-123	WAVE BAND SWITCH	
R4	60-178	470 OHM	C4	18-119	500K MICA CONDENSER	L	33-216	FILAMENT CHOKE	
R5	60-187	150 OHM	C5	18-117	500K MICA CONDENSER	M	33-215	VIBRATOR	
R6	60-185	250 OHM	C6	18-118	500K MICA CONDENSER	N	10-245	OSC. CHOKE (R.F.)	
R7	60-186	250 OHM	C7	18-122	500K MICA CONDENSER	O	10-243	OSC. CHOKE (R.F.)	
R8	60-184	100 OHM	C8	18-123	500K MICA CONDENSER	P	10-242	1ST. I.F. TRANSFORMER	
R9	60-183	100 OHM	C9	18-124	500K MICA CONDENSER	Q	10-241	2ND. I.F. TRANSFORMER	
R10	60-182	50 OHM	C10	18-125	500K MICA CONDENSER	R	10-239	OSCILLATOR	
R11	60-181	50 OHM	C11	18-126	500K MICA CONDENSER	S	10-237	ANTENNA	
R12	60-179	2.2 MEG 1/2W	C12	20-117	300-400 MFD. PADDING CONDENSER	T	60-164	AUDION	
R13	60-183	100 OHM	C13	20-118	5 PLATE TRIMMER	U	60-161	VIBRATOR	
R14	24-116	VOLUME CONTROL 1 MEG.	C14	20-119	5 PLATE TRIMMER				
R15	24-118	TONE CONTROL 1/2 MEG.	C15	20-118	5 PLATE TRIMMER				

Model D-3



NOTES  
TUBE SOCKETS ARE VIEWED FROM UNDERSIDE OF CHASSIS.  
VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO ZERO VOLTAGE REFERENCE POINT ON CIRCUIT.  
VOLTAGES MUST BE MEASURED WITH NO SIGNAL.  
ALIGNMENT IS TO BE MADE AT THE FREQUENCIES SHOWN AT THE TRIMMER CONDENSERS.  
WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PRONG, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING.  
CAPACITY VALUES ARE IN MICROFARADS.

CODE	PART NO.	DESCRIPTION	CODE	PART NO.	DESCRIPTION	CODE	PART NO.	DESCRIPTION	QBR
R1	60-204	30 OHM 1/2W WIRE WOUND RES.	C1	18-127	500K MICA CONDENSER	T1	10-237	ANTENNA TRANSFORMER	
R2	60-187	150 OHM 1/2W	C2	18-127	500K MICA CONDENSER	T2	10-238	OSCILLATOR	
R3	60-193	10 MEG OHM 1/2W CARBON	C3	18-128	500K MICA CONDENSER	T3	10-244	1ST. I.F.	
R4	60-179	2.2 MEG	C4	18-129	500K MICA CONDENSER	T4	10-245	2ND. I.F.	
R5	60-178	470 OHM	C5	18-129	500K MICA CONDENSER	T5	13-245	500 OHM I.F. TRANS. (ON SPEAKER)	
R6	60-180	100 OHM	C6	18-129	500K MICA CONDENSER	T6	10-243	WAVE BAND SWITCH	
R7	60-181	50 OHM	C7	18-129	500K MICA CONDENSER	T7	69-125	VIBRATOR	
R8	60-182	50 OHM	C8	18-129	500K MICA CONDENSER				
R9	60-177	470 OHM	C9	18-129	500K MICA CONDENSER				
R10	60-189	470 OHM	C10	18-129	500K MICA CONDENSER				
R11	60-187	100 OHM	C11	18-129	500K MICA CONDENSER				
R12	24-113	VOLUME CONTROL 1 MEG.	C12	20-117	300-400 MFD. PADDING CONDENSER				
R13	24-118	TONE CONTROL 1/2 MEG.	C13	20-117	300-400 MFD. PADDING CONDENSER				
			C14	20-118	5 PLATE TRIMMER				

Model D-5

MODEL D3  
MODEL D5

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

MODELS D3 and D5

ALIGNMENT PROCEDURE

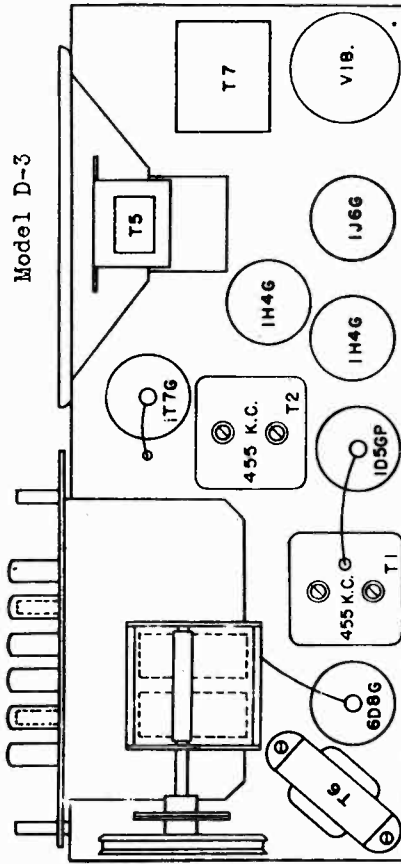
The equipment required for re-aligning this receiver is an output meter and a modulated source of radio frequency (a signal generator or microvoltage). This source of radio frequency must be accurately calibrated in frequency and must have a method of varying the output.

All alignments must be made with the volume control turned full on and with the signal input from the generator reduced to as low a value as possible while still giving a sufficient output to be easily read on the output meter.

Connect the output meter, through a .5 M.F. condenser and a resistance of such a value as to make the total meter resistance approximately 10,000 ohms, to plate of output tube and B+, or a low voltage A. C. meter may be used connected across speaker voice coil. The output meter remains connected during the entire alignment procedure.

Connect the signal generator to the grid cap of the 6D8G tube through a 1 M.F. condenser. Connect the ground of the generator to the ground lead of the receiver. Set the dial to about 1000 K.C., feed in a 455 K.C. signal. Adjust first and second I.F. trimmers for maximum output. Refer to chassis lay-out for location of trimmers.

Turn the dial to the extreme high frequency end. Feed a 1760 K.C. signal to the receiver antenna lead through a .00025 MF mica condenser. Adjust the 1760 K.C. oscillator trimmer until maximum output is shown. Set the generator to 1500 K.C. and tune in this signal on the receiver. Then adjust the 1500 K.C. antenna trimmer to the maximum output. Then impress a 600 K.C. signal into the receiver antenna lead and tune in this signal on the receiver. Adjust oscillator padding condenser to the maximum output. For the alignment of the short wave band open variable condenser to minimum capacity. With an impressed signal of 24 M.C. adjust trimmer designated as C14 in schematic diagram for maximum output. Follow through with this procedure several times in order to obtain the best alignment adjustment possible. This completes the alignment.



The automatic tuning feature of your radio makes it possible to set up 6 favorite American broadcast stations and tune them in quickly with the automatic tuner. Choose stations for push-button operation heard with good volume at all times.

Follow the procedure outlined below, in order to adjust the push-buttons properly:

1. By means of the Station Selector Knob tune in WITH THE RIGHT HAND AS ACCURATELY AS POSSIBLE the station having the lowest frequency—that is, your selected station which is tuned in nearest the right-hand side of the dial.

2. After the station has been tuned in accurately with the right hand, continue to hold it in its exact position firmly, and with the left hand loosen the Push-Button to be set up for that station by unscrewing the Push-Button about one turn to the left (counter-clockwise).

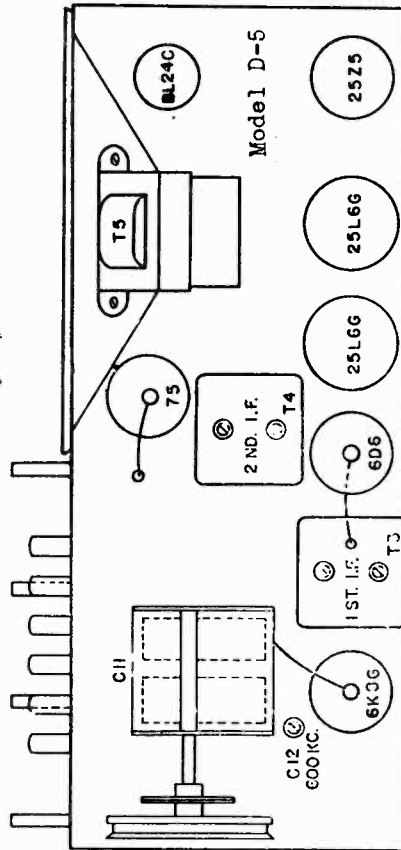
3. Continuing to hold the Station Selector Knob in its exact position, PUSH THE PUSH-BUTTON IN ALL THE WAY with the left hand.

4. After the Push-Button has been depressed all the way, tighten it gently toward the right (clockwise). Release Push-Button slowly and when in normal position grip button and tighten firmly.

The Push-Button tuning system is now correctly set up for your first selected station of lowest frequency and the Call Letter Tab for this station should be at the extreme right of the Call Letter Holder.

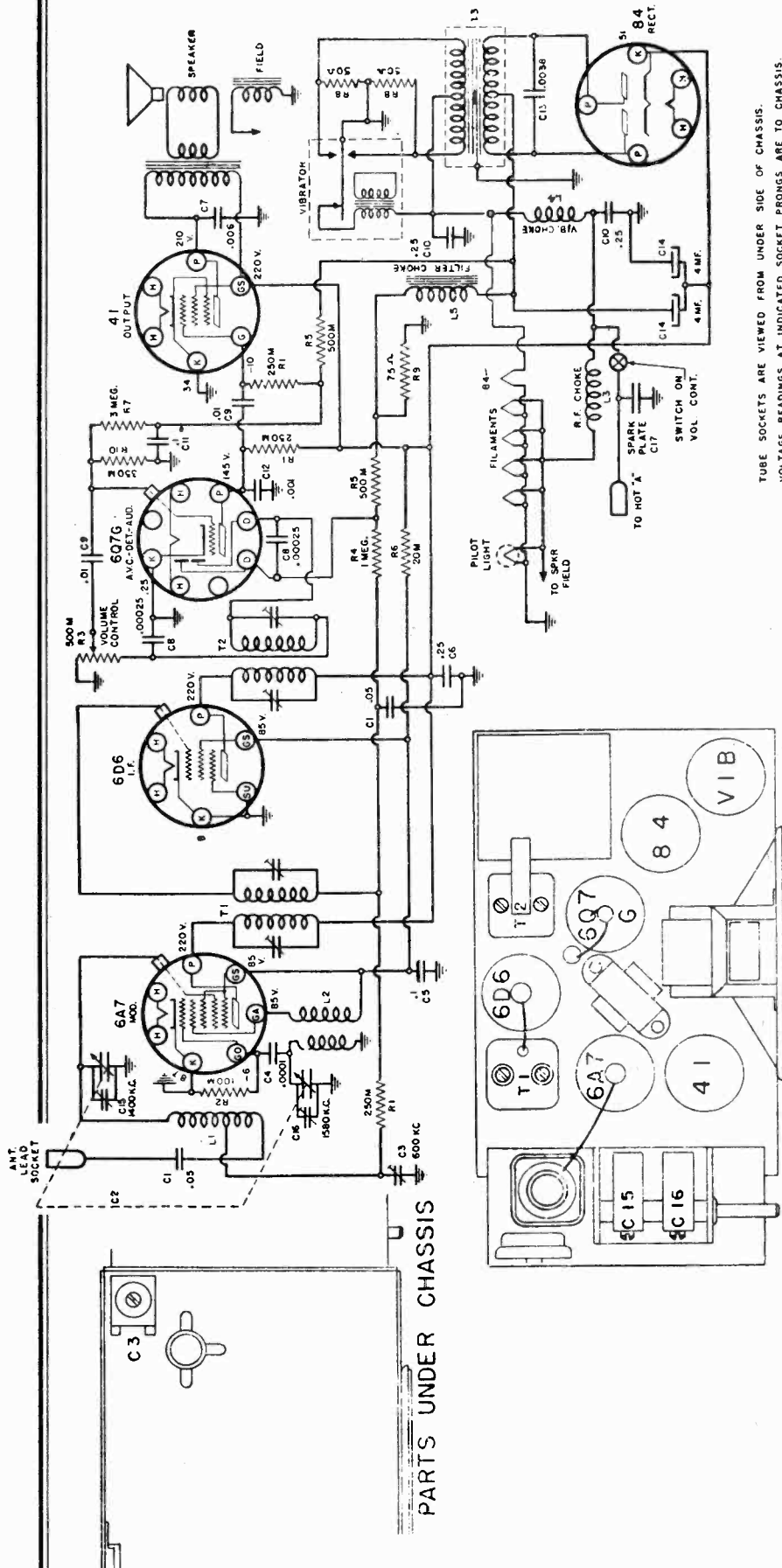
Follow through with this same procedure, setting up the other 5 stations in the order of their frequency—that is, the second station set up will be second lowest in frequency and the third station set up will be third lowest in frequency.

Carefully check each Push-Button for the accuracy of the setting. If, when tuning in any station with its Automatic Push-Button it does not have equal volume or clarity to that obtained with manual tuning, this may indicate the automatic adjustment for that station was not made accurately. Should there be any inaccuracy in any one of the Push-Button adjustments, correction can be made by repeating the above procedure for that button only. Do not reset those Push-Buttons that are accurately adjusted.



# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

MODEL D6



TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS.  
VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO CHASSIS.  
VOLTAGES MUST BE MEASURED WITH NO SIGNAL.  
ALIGNMENT IS TO BE MADE AT THE FREQUENCIES SHOWN AT THE TRIMMER CONDENSERS.  
WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PRONG, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING.  
FIGURES AT CATHODES ARE CATHODE CURRENT IN MILLIAMPERES  
CAPACITY VALUES ARE IN MICROFARADS.

## LOCATIONS OF PARTS ON TOP OF CHASSIS

**PRELIMINARY**  
Output Meter Connections  
Output Meter Reading to Indicate 1 Watt  
Generator Ground Lead Connection  
Dummy Antenna Value to Be in Series with Generator Output  
Generator Modulation  
Position of Volume Control

**Across Loud Speaker Voice Coil**  
Receiver Chassis  
See Chart Below  
See Chart Below  
30%, 400 Cycles  
Fully On

Position of Variable	Generator Frequency	Dummy Antenna	Generator Connection	Trimmer Adjustments (In Order Shown)	Trimmer Function
Closed	456 KC	.1 mfd.	6A7 Grid	T2, T1	I. F. Oscillator
Fully Open	1580 KC	.0002 mfd.	Antenna Conn.	C16	Antenna Trimmer
1400 KC	1400 KC	.0002 mfd.	Antenna Conn.	C15	Antenna Padder
600 KC	600 KC	.0002 mfd.	Antenna Conn.	C3	

The variable condenser should be at 600 k.c. for antenna adjustment.  
The alignment procedure should be repeated in the original order, step by step, to insure greater accuracy. A final adjustment of antenna padder condenser C3 is always made after the receiver is installed in the car, in order to match the car antenna.  
Always keep the output power from the generator at its lowest possible value to prevent the A.V.C. of the receiver from interfering with accurate alignment.

MODEL D6

## LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

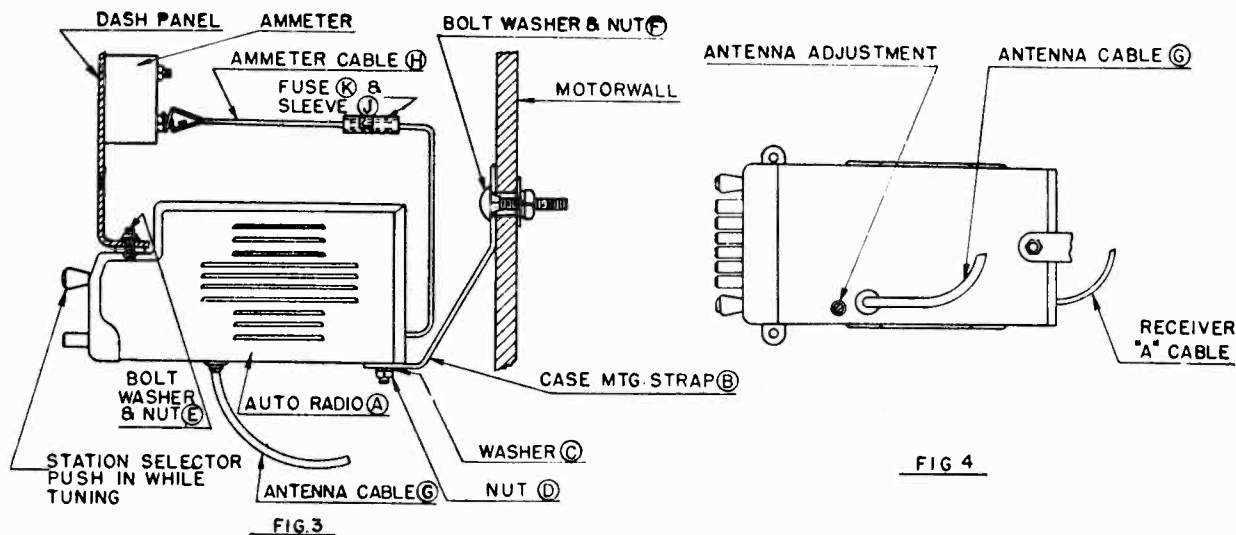


FIG 4

### IMPORTANT: ANTENNA ADJUSTMENT

The antenna adjustment control is located close to the antenna cable receptacle as shown in Figure 4. To make the adjustment first, remove plug button from bottom of case by inserting a screwdriver between case and plug button, then tune in a weak station with full volume at or very close to 600 kilocycles (60) on the dial. Second, insert a small screwdriver into the antenna adjustment screw shown in Figure 4 and turn the screwdriver either to the left or right until the volume of the station is at its maximum point. While adjusting the antenna adjustment screw it is advisable to vary the station selector knob a degree or two to obtain the best adjustment. Now insert plug button into case. The receiver is now balanced and no further radio electrical adjustments are necessary.

### HOW TO ADJUST AND OPERATE THE AUTOMATIC PUSH-BUTTON TUNING

The automatic tuning feature of your radio makes it possible to set up 6 favorite American broadcast stations and tune them in quickly with the Automatic Tuner.

The Automatic Tuner has 6 adjustable Push-Buttons. Each button can be adjusted for one of your favorite stations. **CHOOSE STATIONS FOR PUSH-BUTTON OPERATION HEARD WITH GOOD VOLUME AT ALL TIMES.** It is not necessary to use all six buttons, if it is not desired.

#### INDEX TABS

Cut the call letters of your 6 selected stations from the list supplied (See "N" in Fig. 1) with your receiver and slip them into the Tab Holder FROM THE TOP with the clear celluloid (see "O" in Fig. 1) in front of the call letters to protect them. Arrange the call letters in the Tab Holder from right to left. Have the call letters of the lowest frequency station at the extreme right and work progressively to the left so that the highest frequency call letters will be at the extreme left.

#### SETTING PUSH-BUTTONS

1. By means of the Station Selector Knob, tune in WITH THE RIGHT HAND AS ACCURATELY AS POSSIBLE the station having the lowest frequency—that is, your selected station which is tuned in nearest the right-hand side of the dial.
2. After the station has been tuned in accurately with the right hand, continue to hold it in its exact position firmly, and with the left hand loosen the Push-Button to be set up for that station by unscrewing the Push-Button about one turn to the left (counter-clockwise).
3. Continuing to hold the Station Selector Knob in its exact position, PUSH THE PUSH-BUTTON IN ALL THE WAY with the left hand.
4. After the Push-Button has been depressed all the way, tighten it gently toward the right (clockwise). Release Push-Button slowly and when in normal position grip button and tighten firmly.

The Push-Button tuning system is now correctly set up for your first selected station of lowest frequency and the Call Letter Tab for this station should be at the extreme right of the Call Letter Holder.

Follow through with this same procedure, setting up the other 5 stations in the order of their frequency—that is, the second station set up will be second lowest in frequency and the third station set up will be third lowest in frequency.

Carefully check each Push-Button for the accuracy of its setting. If, when tuning in any station with its Automatic Push-Button it does not have equal volume or clarity to that obtained with manual tuning, this may indicate the automatic adjustment for that station was not made accurately. Should there be any inaccuracy in any one of the Push-Button adjustments, correction can be made by repeating the above procedure for that button only. Do not reset those Push-Buttons that are accurately adjusted.

No further adjustments are necessary to operate your auto radio automatically or manually. To receive any one of your six selected stations for automatic operation, merely push in ALL THE WAY the Button set up for that station.

To receive all other stations in the regular manner, push in the Station Selector Knob and turn it to the frequency of the station desired.

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

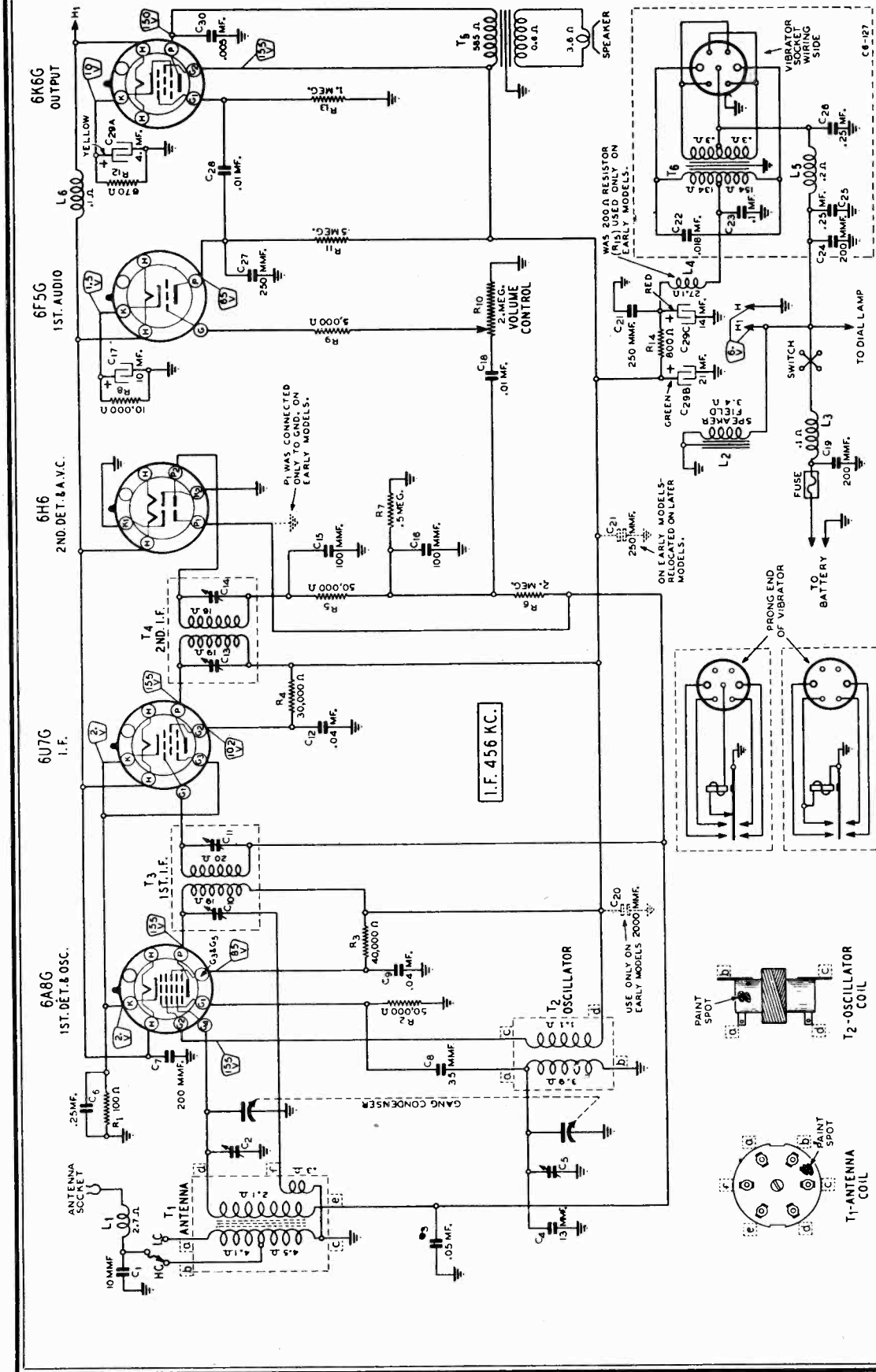


Fig. 1—Schematic Circuit Diagram

Tuning Frequency Range . . . . . 528 to 1550 KC  
 Intermediate Frequency . . . . . 456 KC  
 Speaker . . . . . 6" Dynamic

Power Consumption . . . . . 5.5 Amperes at 6.3 Volts  
 Power Output . . . . . .8 Watt Undistorted  
 Sensitivity . . . . . 10 Microvolts at .5 Watt Output  
 Selectivity . . . . . 42.5 KC Broad at 1000 Times Signal

MODEL BBS

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

**Calibration—Sliding Pointer Models**  
—The pointer assembly is clamped to the drive cord and it is seldom necessary to reset it to obtain proper dial calibration. If re-calibration is required, loosen the clamps with a screw driver, bringing the pointer assembly first down to one end of the dial scale and then down to the other end. Tune in a signal of known frequency near one end of the dial scale. Move the pointer assembly to this frequency on the scale and tighten the clamps with long nose pliers.

**Inserting Vibrator Unit**

**IMPORTANT**—The vibrator unit can be inserted in two ways. The proper method of insertion will depend on which terminal of the car battery is grounded. If the POSITIVE (+) terminal of the car battery is grounded, line up the + mark on the top of the vibrator with the arrow on the chassis base. If the NEGATIVE (-) terminal of the car battery is grounded, line up the - mark on the top of the vibrator with the arrow on the chassis base.

**Antenna Capacity**

**Rotating Pointer Models**—The antenna coil is designed for car antennas with a capacity of 190 mmf. for the HC connection and 80 mmf. for the LC connection. This capacity is the total capacity of the antenna and the shielded lead.

Complete information regarding car antenna installation will be found in the instruction book packed with the radio.

**Sliding Pointer Models**—The information for this type of radio is the same as above except that the HC capacity is 300 mmf. and the LC capacity is 38 mmf.

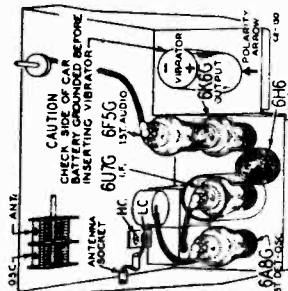


Fig. 4 Location of Tuning Control Shaft

If cut in half (30-inch length), the capacity of the antenna cable is approximately 35 mmf. Connect the antenna wire, in this case, through a 25 mmf. condenser to the antenna post of the signal generator.

**Sliding Pointer Models**—If the antenna is connected at the HC terminal and the 60-inch shielded cable (19 mmf.) is being used, connect the antenna wire, in this case, through a 20 mmf. condenser to the antenna post of the signal generator. If the long cable has been cut to length and is being used, the total capacity of the cable and the series condenser should be 38 to 40 mmf.

**Both Models**—Set the signal generator for 1850 KC. Turn the rotor of the tuning condenser to the full open position. Adjust the trimmer of the oscillator section of the gang condenser until maximum output is obtained. See Fig. 4 for location of this trimmer.

Set the signal generator for 1400 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained. Adjust the trimmer of the antenna section of the gang condenser for maximum output.

**Calibration—Rotating Pointer Models**—To obtain dial scale calibration, tune in an 800 KC signal. Hold the tuning shaft and turn the pointer disc until the pointer is at the correct position when the chassis front cover is put back in place.

bracket. Tune in a signal of known frequency near one end of the dial scale. Move the pointer assembly to this frequency on the dial scale and tighten the clamps with long nose pliers.

**Alignment Procedure**

Remove the bottom and front chassis covers. Directions for removing the bottom cover are in the instruction book.

To remove the front cover, first pull the knobs and buttons off the shafts. Remove the 2 screws at the top and the 2 screws at the sides of the front cover. Press in the sides of the chassis case to release the lugs at the sides of the front cover. Pull outward on the bottom of the front cover and then push the cover up until the lugs at the top are released. Do not remove the back of the chassis case. This back can be taken off of the No. 2 and later issue sets.

Set the signal generator for 455 KC and connect the output of the signal generator to the grid of the 1st Detector. Connect the ground lead of the signal generator to the chassis. Set the volume control at maximum. Attenuate the signal from the signal generator to prevent the leveling off action of the AVC.

Then adjust the 4 I.F. trimmers until maximum output is obtained. These trimmers can be reached through the 4 holes in the back wall of the chassis case. It will be necessary to pull out the fiber insulating sheet a slight amount.

Insert the antenna cable plug in the antenna socket on the chassis.

**Rotating Pointer Models**—If the antenna is connected at the HC terminal and the entire 60-inch shielded cable (70 mmf.) is being used, connect the antenna wire at the other end through a 120 mmf. condenser to the antenna post of the signal generator.

If the antenna is connected at the LC terminal, the antenna cable has been cut as explained in the instruction book.

It is not necessary to remove the dial and drive bracket assembly in order to replace the front cover.

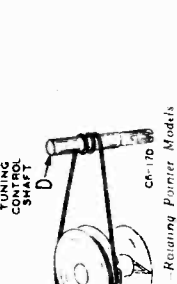


Fig. 2 Replacing Drive Cord—Rotating Pointer Models

The knot with a small loop at one end of the new drive cord. Slide a 1/2 inch length of fabric tubing on the cord. Tie the free end of the drive cord to the tension spring. The distance between knots should be 2 3/4 inches.

Turn the gang condenser to full open position. Place the looped end of the drive cord over the hook on condenser drive drum A—See Fig. 3. Bring the cord up through the slot in the drum rim and wind one-half turn to the rear (from front of chassis) around the drive drum. Pass cord around the pulley B as shown.

Wind one turn clockwise (from front of chassis) around pointer disc pulley C. Loop cord through the slot in the outside rim of the pointer disc pulley as shown. Wind 2 1/2 turns clockwise, progressing from a point midway between the bracket arms toward the chassis, on tuning control shaft D. Bring cord to the left under pointer disc pulley C and around pulley E as shown. Pass cord to top of drive drum A and wind one turn to the rear around the drum rim.

Pass the remaining drive cord and tension spring through the slot in the drum rim. Place free end of spring over the hook on the condenser drive drum.

**Setting Pointer Disc**—Tune in an 800 KC signal. Hold the tuning shaft and turn the pointer disc until the pointer is at the correct position when the chassis front cover is put back in place.

**Drive Cord Replacement—Sliding Pointer Models**

Remove the celluloid dial scale. Open the clamps on the back of the dial pointer in order to remove the old drive cord

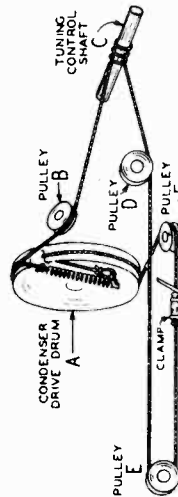


Fig. 3—Replacing Drive Cord—Sliding Pointer Models

Remove the celluloid dial scale. Open the clamps on the back of the dial pointer in order to remove the old drive cord

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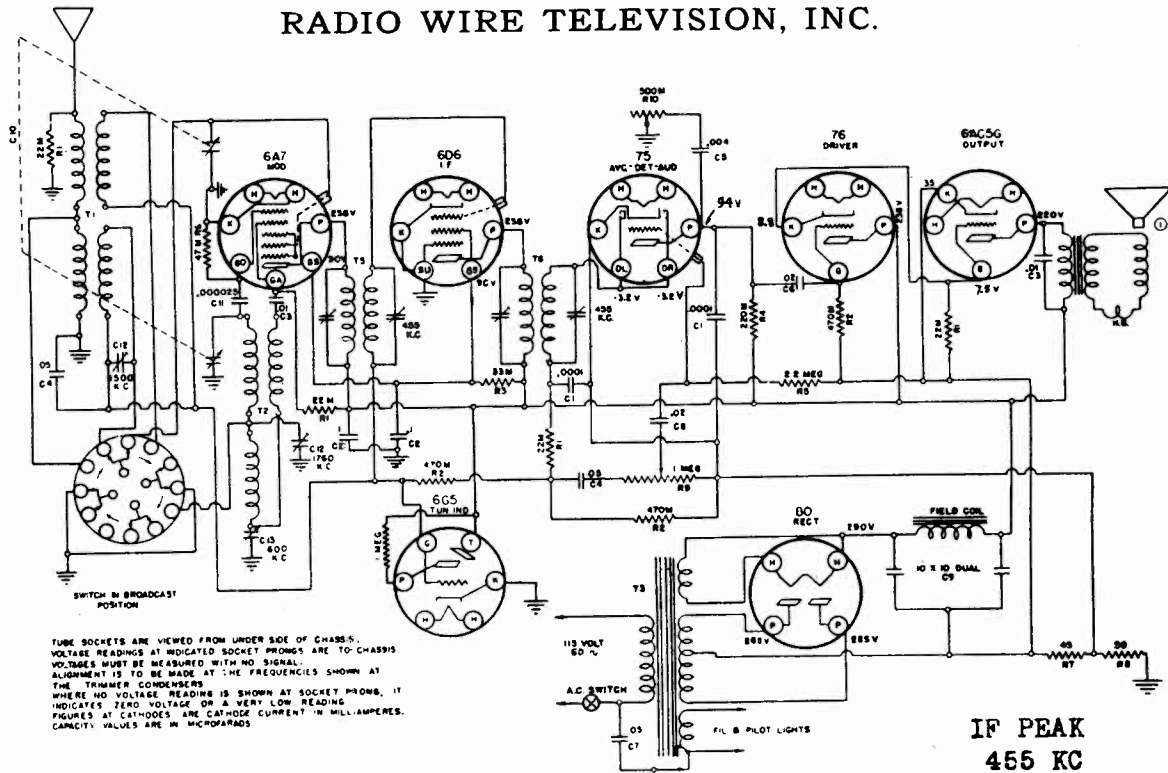
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Remove the celluloid dial scale. Open the clamps on the back of the dial pointer in order to remove the old drive cord

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.



TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS. VOLTAGE READINGS AT INDICATED SOCKET PROMOS ARE TO CHASSIS. VOLTAGES MUST BE MEASURED WITH NO SIGNAL. ALIGNMENT IS TO BE MADE AT THE FREQUENCIES SHOWN AT THE TRIMMER CONDENSERS. WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PROMOS, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING. FIGURES AT CATHODES ARE CATHODE CURRENT IN MILLIAMPERES. CAPACITY VALUES ARE IN MICROFARADS.

IF PEAK  
455 KC

CODE	PART NO.	DESCRIPTION	CODE	PART NO.	DESCRIPTION	CODE	PART NO.	DESCRIPTION
R1	60-185	22 M OHM 1/2 WATT RESISTOR	C1	15-10	100 MMF MICA CONDENSER	C11	15-10	22 M MFC MICA CONDENSER
R2	60-178	870Ω	C2	18-116	5 MFD 400 V TUBULAR CONDENSER	C12	2057	TRIMMERS 3-30 MFD
R3	60-186	33M	C3	18-104	.05 MFD 800 V	C13	20-117	PADDING CONDENSER 300-600 MMFD
R4	60-180	250Ω	C4	18-122	.05 200 V	T1	10-237	ANTENNA COIL
R5	60-179	2.2MEG OHM 1/2 WATT RESISTOR	C5	18-101	.05 MFD 600 V	T2	10-238	OSCILLATOR COIL
R6	60-177	27M OHM 1/2 WATT RESISTOR	C6	18-108	.02 400 V	T3	10-159	POWER TRANSFORMER
R7	60-175	85 1/2 10%	C7	18-107	.02 700 V	T4	10-227	1ST I.F.
R8	60-181	80 10%	C8	18-124	10 X 10 MFD 400 W V ELECTROLYTIC CONDENSER	T5	10-228	2ND I.F.
R9	28-43	1 MEG OHM VOLUME CONTROL & SW	C9	18-224	2 BANG VARIABLE CONDENSER	T6	10-745	SPEAKER
R10	26-118	500M OHM TONE CONTROL	C10	19-733				

### ALIGNMENT PROCEDURE

### PUSH BUTTON ADJUSTMENT

After receiver is installed and antenna and ground properly connected, plug line cord into a convenient outlet. Then turn the volume control to about the center of rotation. This will turn the receiver on and put it in an operating condition. Time must be allowed for the tubes to heat up before stations can be tuned in. This time is approximately one-half minute.

The automatic tuning feature of your radio makes it possible to set up 6 favorite American broadcast stations and tune them in quickly with the automatic tuner. Choose stations for push-button operation heard with good volume at all times.

Cut the call letters of your 6 selected stations from the list supplied with your receiver and slip them into the Tab Holder from the top, with the clear celluloid in front of the call letters to protect them. Arrange the call letters in the Tab Holder from right to left. Have the call letters of the lowest frequency station at the extreme right and work progressively to the left so that the highest frequency call letters will be at the extreme left.

Follow the procedure outlined below, in order to adjust the push-buttons properly:

1. By means of the Station Selector Knob tune in WITH THE RIGHT HAND AS ACCURATELY AS POSSIBLE the station having the lowest frequency—that is, your selected station which is tuned in nearest the right-hand side of the dial.
2. After the station has been tuned in accurately with the right hand, continue to hold it in its exact position firmly, and with the left hand loosen the Push-Button to be set up for that station by unscrewing the Push-Button about one turn to the left (counter-clockwise).
3. Continuing to hold the Station Selector Knob in its exact position, PUSH THE PUSH-BUTTON IN ALL THE WAY with the left hand.
4. After the Push-Button has been depressed all the way, tighten it gently toward the right (clockwise). Release Push-Button slowly and when in normal position grip button and tighten firmly.

The Push-Button tuning system is now correctly set up for your first selected station of lowest frequency and the Call Letter Tab for this station should be at the extreme right of the Call Letter Holders.

Follow through with this same procedure, setting up the other 5 stations in the order of their frequency—that is, the second station set up will be second lowest in frequency and the third station set up will be third lowest in frequency.

Carefully check each Push-Button for the accuracy of the setting. If, when tuning in any station with its Automatic Push-Button it does not have equal volume or clarity to that obtained with manual tuning, this may indicate the automatic adjustment for that station was not made accurately. Should there be any inaccuracy in any one of the Push-Button adjustments, correction can be made by repeating the above procedure for that button only. Do not reset those Push-Buttons that are accurately adjusted.

No further adjustments are necessary to operate your radio automatically or manually. To receive any one of your four selected stations for automatic operation, merely push in ALL THE WAY the Button set up for that station.

The following alignment procedure is for use only by competent service men having the proper equipment. Re-alignment is very seldom needed and is usually only required after some major part has been replaced because of damage to the receiver.

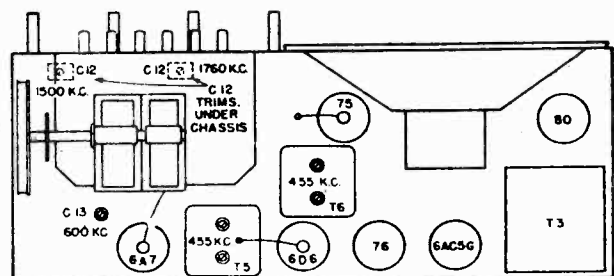
The equipment required for re-aligning this receiver is an output meter and a modulated source of radio frequency (a signal generator or microvolter). This source of radio frequency must be accurately calibrated in frequency and must have a method of varying the output.

All alignments must be made with the volume control turned full on and with the signal input from the generator reduced to as low a value as possible while still giving a sufficient output to be easily read on the output meter.

Connect the output meter, through a .5 M.F. condenser and a resistance of such a value as to make the total meter resistance approximately 7000 ohms, to plate of output tube and B+, or a low voltage A. C. meter may be used connected across speaker voice coil. The output meter remains connected during the entire alignment procedure.

Connect the signal generator to the grid cap of the 6A7 tube through a .1 M.F. condenser. Connect the ground of the generator to the ground lead of the receiver. Set the dial to about 1000 K.C., feed in a 455 K.C. signal. Adjust first and second I.F. trimmers for maximum output. Refer to chassis lay-out for location of trimmers.

Turn the dial to the extreme high frequency end. Feed a 1760 K.C. signal to the receiver antenna lead through a .00025 M.F. mica condenser. Adjust the 1760 KC oscillator trimmer until maximum output is shown. Set the generator to 1500 KC and tune in this signal on the receiver. Then adjust the 1500 KC antenna trimmer to the maximum output. Then impress a 600 KC signal into the receiver antenna lead and tune in this signal on the receiver. Adjust oscillator padding condenser to the maximum output. Follow through with this procedure several times in order to obtain the best alignment adjustment possible. This completes the alignment.





MODEL BB11

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

- Power Consumption - 8.2 Amperes at 6.6 Volts
- Power Output (6.6 Volts) - 8.0 Watts Unclipped
- Sensitivity - 1 Microvolt at .5 Watt Output
- Selectivity - 38 KC Broad at 1000 Times Signal
- Tuning Frequency Range - 540 to 1600 KC
- Intermediate Frequency - 456 KC
- Speaker - 6" Electro-Dynamic

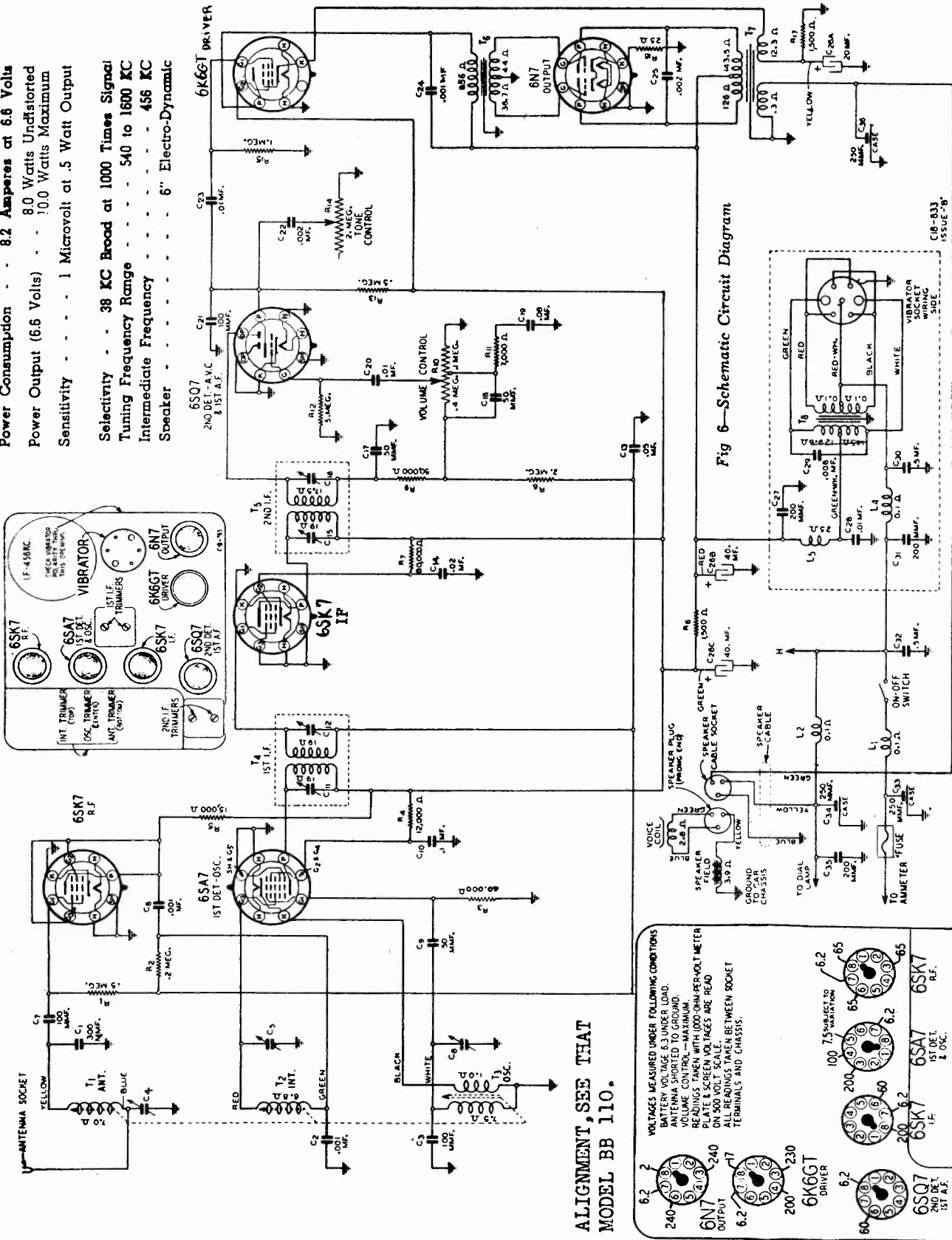


Fig 6—Schematic Circuit Diagram

C.6-833  
ISSUE-B

FOR ALIGNMENT, SEE THAT  
FOR MODEL BB 110.

VOLTAGES MEASURED UNDER FOLLOWING CONDITIONS:  
 .6.5 UNDER LOAD.  
 ANTENNA COILS TO MAXIMUM.  
 VOLUME CONTROL - MAXIMUM.  
 READINGS TAKEN WITH 1000 OHM PRE-SET METER  
 PLATE & SCREEN VOLTAGES ARE READ  
 ON 500 VOLT SCALE.  
 ALL READINGS TAKEN BETWEEN SOCKET  
 TERMINALS AND CHASSIS.



MODEL B13

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.  
Selectivity Control—Sharp Position All Adjustments.  
Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.  
Allow Chassis and Signal Generator to "Heat Up" for Several Minutes.

The following equipment is required for aligning:  
An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.  
Output Indicating Meter — Non-Metallic Slide-Drive.  
Dummy Antennas — .1 mf., 200 mmf., and 400 ohms.

STEP (Follow Order as Given)	BAND SWITCH SETTING	DUMMY ANTENNA	SIGNAL GENERATOR		TRIMMERS ADJUSTED See Illustration	PROCEDURE	
			FREQUENCY SETTING	CONNECTION AT RADIO		INITIAL STEPS	ADJUSTMENT
<b>I. F.</b>							
2nd I.F. Adj.	Range B	.1 mf.	456 KC	Grid of I.F. Tube	2nd I.F. (C29) & (C30)	Turn Rotor to Full Open	Adjust to Maximum Output
1st I.F. Adj.	Range B	.1 mf.	456 KC	Grid of 1st Det.	1st I.F. (C23) & (C24)	Turn Rotor to Full Open	Adjust to Maximum Output
<b>RANGE B</b>							
1830 KC	Range B	200 mmf.	1830 KC	Antenna Lead	Oscillator Range B (C14)	Turn Rotor to Full Open	Adjust to Maximum Output
1500 KC	Range B	200 mmf.	1500 KC	Antenna Lead	1st Ant. Range B (C7) 2nd Ant. Range B (C4)	Turn Rotor to Max. Output Set Indicator to 1500 KC— See Note A	Adjust to Maximum Output
600 KC	Range B	200 mmf.	600 KC	Antenna Lead	600 KC (C12)	Turn Rotor to Max. Output	Adjust to Maximum Output Rock Rotor — See Note B
<b>RANGE C</b>							
6350 KC	Range C	400 Ohm	6350 KC	Antenna Lead	Oscillator Range C (C10)	Turn Rotor to Full Open	Adjust to Maximum Output
6000 KC	Range C	400 Ohm	6000 KC	Antenna Lead	Antenna Range C (C3)	Turn Rotor to Max. Output	Adjust to Maximum Output
2000 KC	Range C	400 Ohm	2000 KC	Antenna Lead	2000 KC (C11)	Turn Rotor to Max. Output	Adjust to Maximum Output Rock Rotor — See Note B
<b>RANGE D</b>							
22,000 KC	Range D	400 Ohm	22,000 KC	Antenna Lead	Oscillator Range D (C9)	Turn Rotor to Full Open	Adjust to Maximum Output
20,000 KC	Range D	400 Ohm	20,000 KC	Antenna Lead	Antenna Range D (C2)	Turn Rotor to Max. Output	Adjust to Maximum Output Rock Rotor — See Note B
7000 KC	Range D	400 Ohm	7000 KC	Antenna Lead	7000 KC (C8)	Turn Rotor to Max. Output	Adjust to Maximum Output Rock Rotor — See Note B

Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

After each range is completed, repeat the procedure as a final check.

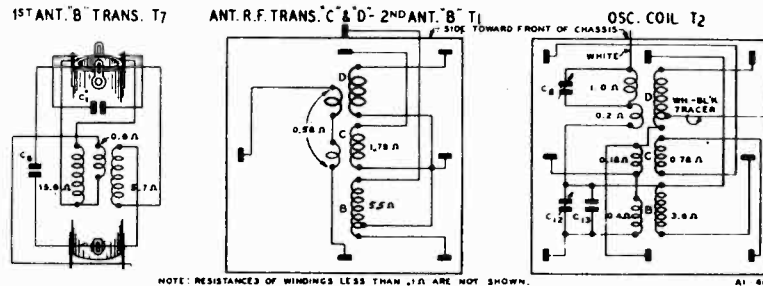
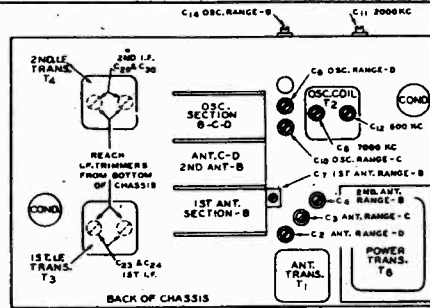
**NOTE A**—In sets using the telephone dial tuning, there will be seen inside the telephone dial button ring an escutcheon plate held in place by four screws. Loosen the 2 screws nearest the pointer. An extension of the pointer will be seen protruding over the edge of this escutcheon plate. Move the pointer to the 1500 KC mark on the dial and then tighten the 2 escutcheon screws. (Do not tighten these screws too much.)

In sets using the moving beam of light indicator, there is a moving light assembly held to the front of the drive drum by means of a screw. Loosen this screw and move the light assembly until the beam is at the 1500 KC mark on the dial. Retighten the screw.

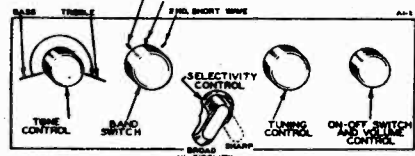
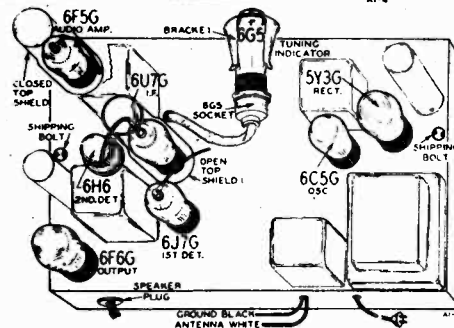
**NOTE B**—Turn the rotor back and forth and adjust the trimmer until the peak of greatest intensity is obtained.

**CAUTION**—When aligning the short wave bands, be sure NOT to adjust at the image frequency. This can be checked as follows: Let us say the signal generator is set for 5000 KC. The signal will then be heard at 5000 KC on the dial of the radio. The image signal, which is much weaker, will be heard at 5000 less 912 KC, or 4088 KC on the dial. It may be necessary to increase the input signal to hear the image.

**NOTICE**—Re-alignment is necessary if glass tubes are replaced by their equivalent in metal tubes, or vice versa, in the R.F. and I.F. stages.



Coil Terminal Arrangement and D.C. Resistance of Windings



117-234 Volt Power Transformers

Some models are equipped with a 117-234 volt 40 to 60 cycle power transformer. Connections as shown in Fig. 2 are completed to a special octal socket mounted on the back panel of the chassis. A plug which goes with this socket may then be inserted for either the 117 volt or 234 volt connection.

If one of these transformers is to be installed in a chassis equipped with a regular transformer, there is a 1 1/8 inch round knockout on the back panel which may be removed to permit installation of the octal socket mentioned above.

Twenty-five Cycle Models

The twenty-five cycle receiver differs from the sixty cycle receiver only in the fact that a different power transformer is used.

The twenty-five cycle receiver can be operated satisfactorily from a sixty cycle power supply. However, the reverse is not true, the sixty cycle receiver cannot be operated from a twenty-five cycle power supply.

VOLTAGES AT SOCKETS

Line Voltage: 117—Volume Control: Maximum  
Readings taken with 1000 Ohm-per-volt meter. Antenna Shorted to Ground  
Position of Band Switch: Standard Wave

TUBE	FUNCTION	VOLTAGE BETWEEN SOCKET PRONG AND GROUND (Unless otherwise indicated)							
		Prong No. 1	Prong No. 2	Prong No. 3	Prong No. 4	Prong No. 5	Prong No. 6	Prong No. 7	Prong No. 8
6J7 6J7G	1st Det.	0	6.1(1)	220	100	7.9	6.1(1)	7.9	
6CS 6CSG	Osc.	0	6.1(1)	140			6.1(1)	0	
6K7 6U7G	I.F.	0	6.1(1)	220	100	2	6.1(1)	2	
6H6	2nd Det.	0	6.1(1)		0		6.1(1)	0	
6F5 6F5G	Audio Amp.	0	6.1(1)		75		6.1(1)	0(2)	
6F6 6F6G	Power	0	6.1(1)	215	220		6.1(1)	0(3)	
5Y3G	Rectifier	0	4.9(4)		610(5)		610(5)	4.9(4)	
6G5	Tuning Indicator	Plate to Ground 20		Target to Ground 220	Cathode to Ground 0		Across Heater & I. A. C.		

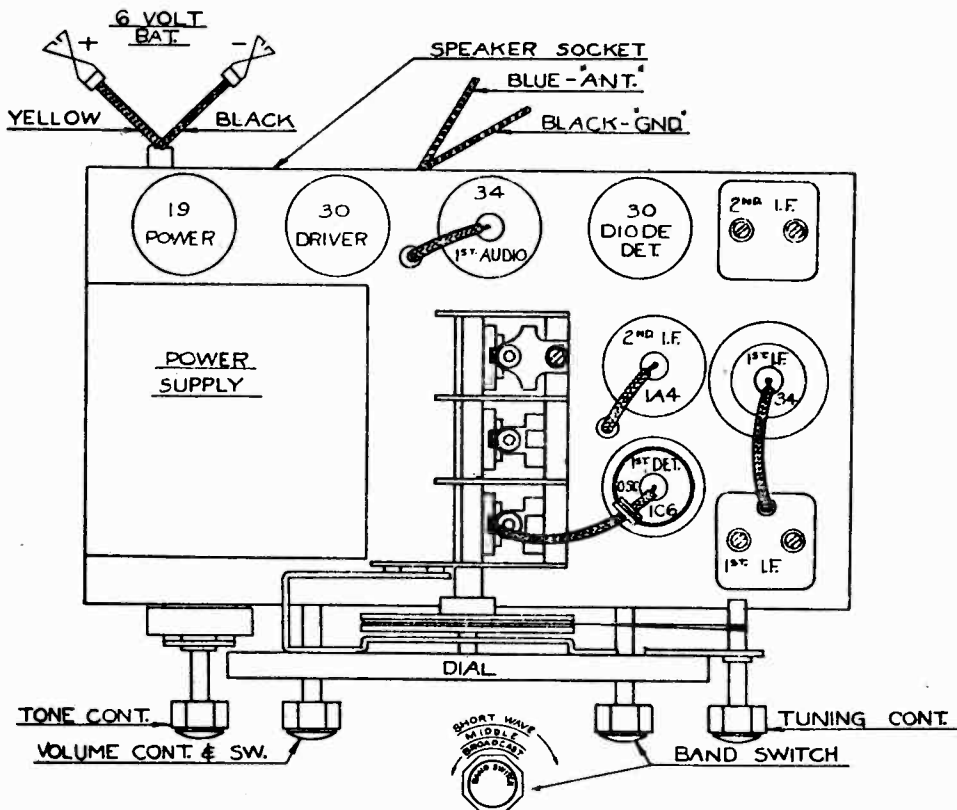
(1) A.C. voltage as read across heater terminals 2 and 7.  
(2) Bias (1.5 volts) as read across resistor R15.  
(3) Bias (14 volts) as read across resistors R15 and R16.  
(4) A.C. voltage as read across filament terminals 2 and 8.  
(5) A.C. voltage as read across terminals 4 and 6.



MODELS D16, D17  
MODEL D15

## LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

The frequency range covered by this receiver is as follows: Broadcast band 537 KC to 1730 KC. Middle wave band 1.8 megacycles to 5.7 megacycles, short wave band 5.7 megacycles to 18.3 megacycles and any of these bands are selected at will by a flip of the band change switch. Extreme left broadcast—Center position—middle band—Extreme right short wave.



Use a test oscillator and connect an output meter from plate to plate of the 19 output tube.

### I. F. Alignment:

Connect the oscillator through a .1 condenser to the grid of the 1C6 tube and set the oscillator to 456 kilocycles. Peak each I. F. stage to resonance as indicated by maximum output on the output meter.

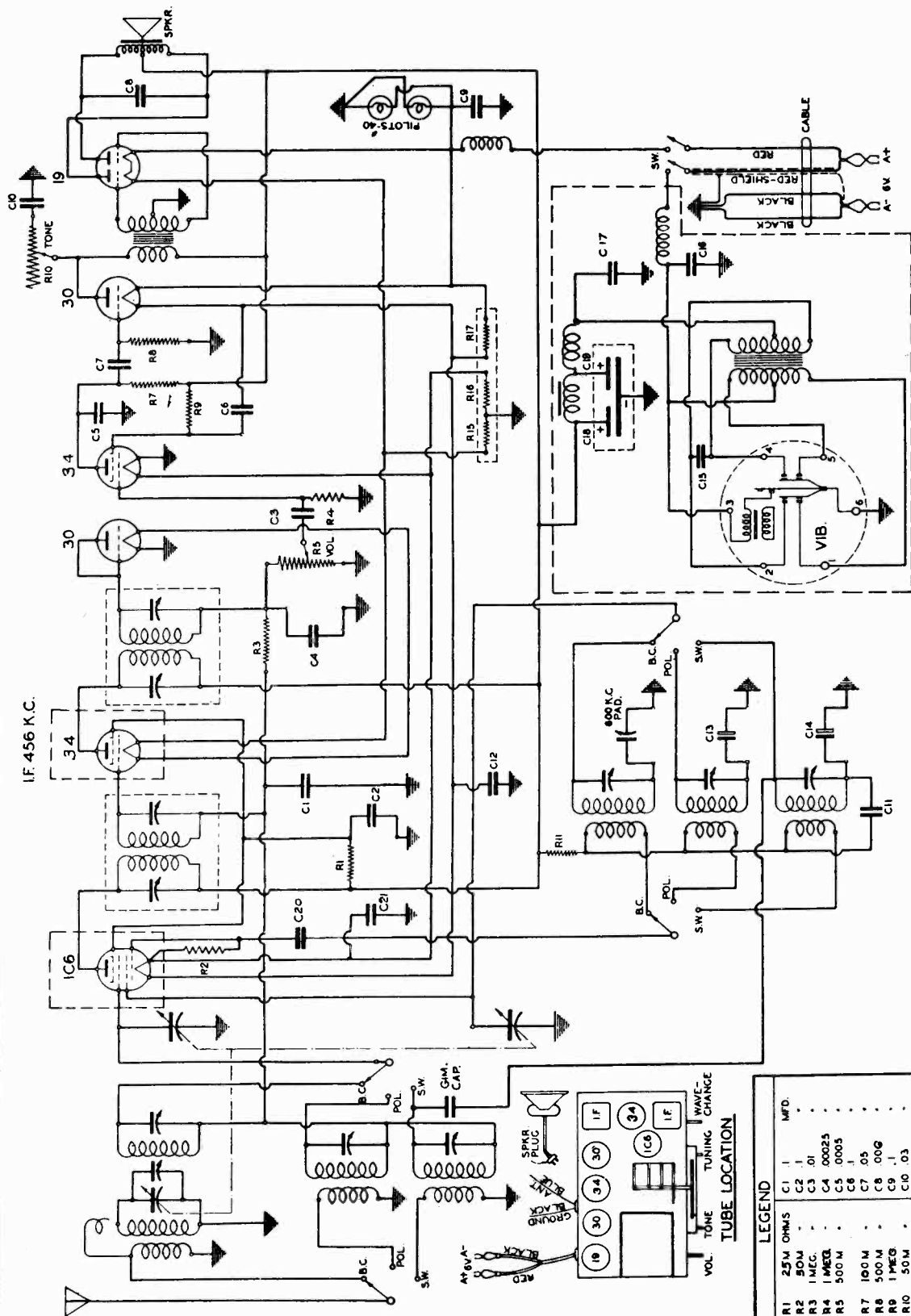
### R. F. Alignment:

With the wave change switch in the broadcast position, set the oscillator to 1700 kilocycles and connect in series with a .00025 condenser to the antenna of the receiver. Rotate the variable condenser to the 1700 setting of the dial and adjust the trimmer condenser of the broadcast oscillator to resonance. This trimmer is located on the right side of the chassis, second position from the front. Reset the test oscillator to 1400 kilocycles and adjust the antenna trimmer located on rear section of variable condenser. Adjust 1st detector trimmer under the chassis across preselector. Now set oscillator to 600 kilocycles and adjust padder located on side of chassis. Check alignment at 1000 kilocycles.

For aligning the police band, set test oscillator to 5 megacycles and switch to the police band position on the set. With the condenser rotated to this frequency setting as indicated on the dial, adjust oscillator trimmer located on the right side of the chassis, first position from the front. Now adjust antenna trimmer located on the front of the chassis, left position, to resonance.

The short wave band is aligned by setting the condenser to 18 megacycles and adjust the oscillator trimmer located on the right side of the chassis, third position from the front to resonance with an 18 megacycle signal from the test oscillator. Turn dial to 16 M. C. Set test oscillator to 16 M. C. and adjust antenna trimmer through right hand hole in front of chassis, rocking variable condenser slightly back and forth to get maximum peak.

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RADIO WIRE TELEVISION, INC.



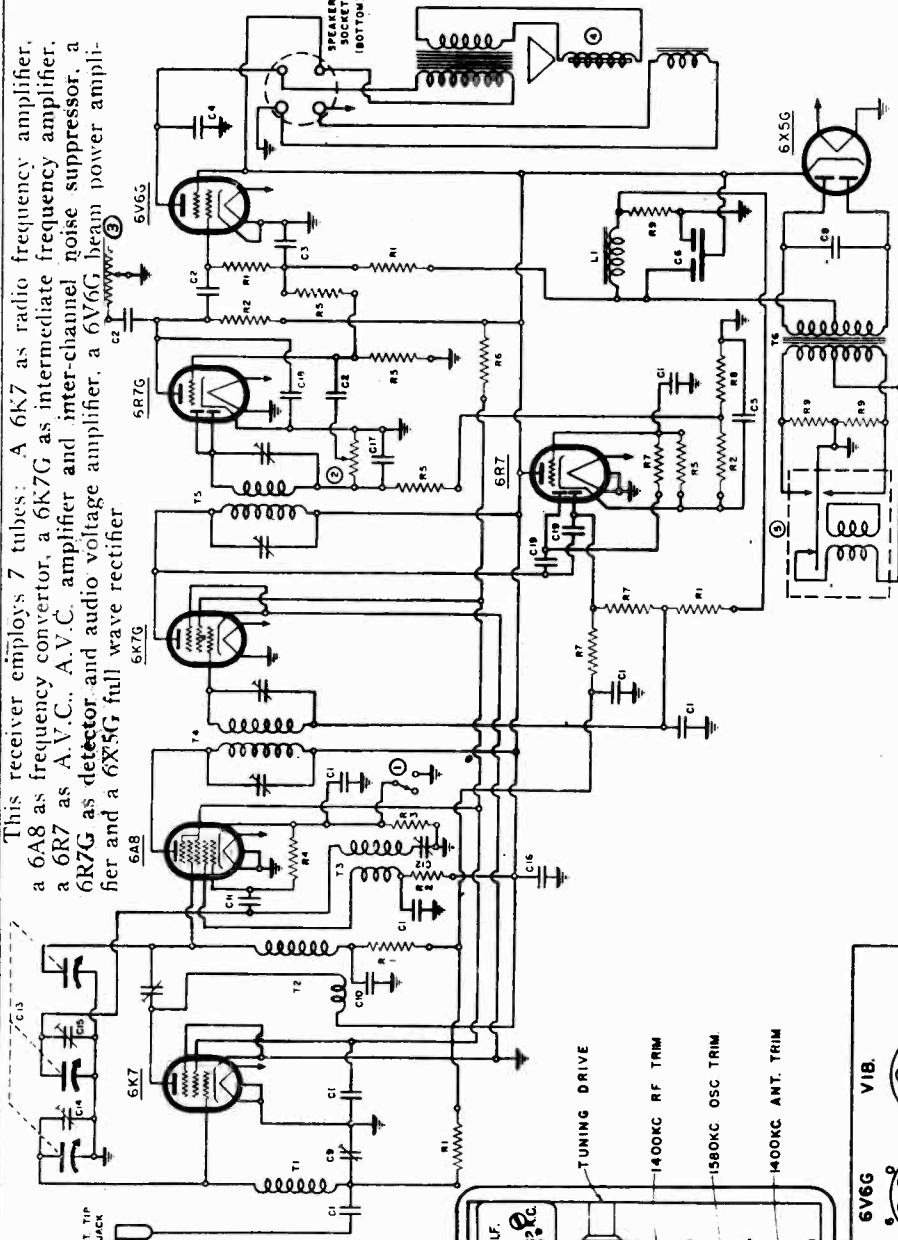
THE ALIGNMENT AND OTHER DATA FOR MODEL D-15 ARE THE SAME AS THOSE OF MODEL D-16 WITH THE EXCEPTION THAT THERE IS NO 1A4 I-F AMPLIFIER IN MODEL D-15.

LEGEND	
R1	25M OHMS
R2	50M
R3	1MEG
R4	1MEG
R5	500M
R7	100M
R8	500M
R9	1MEG
R10	50M
R11	5M
R15	20
R16	333
R17	333
C1	1 MFD
C2	.01
C3	.00025
C4	.0005
C5	.0005
C6	.05
C7	.05
C8	.006
C9	.1
C10	.03
C11	.001
C12	1
C13	.0015
C14	.0027
C15	.01
C16	.5
C17	.01
C18	.5
C19	.0001
C20	.0001

MODEL D18

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

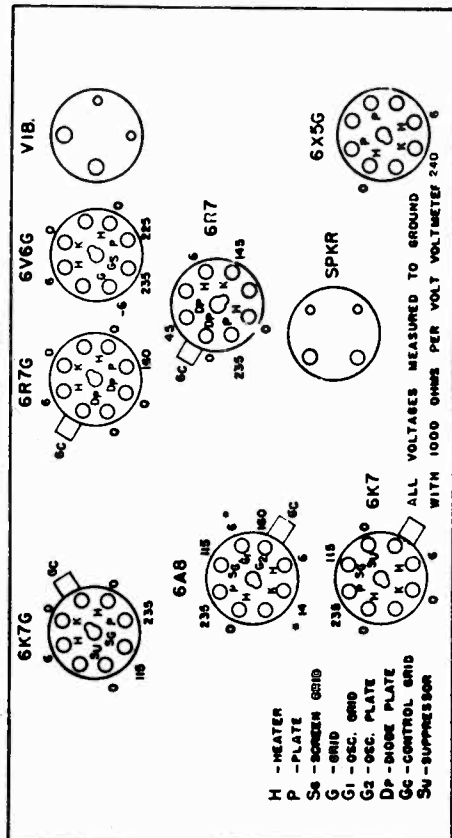
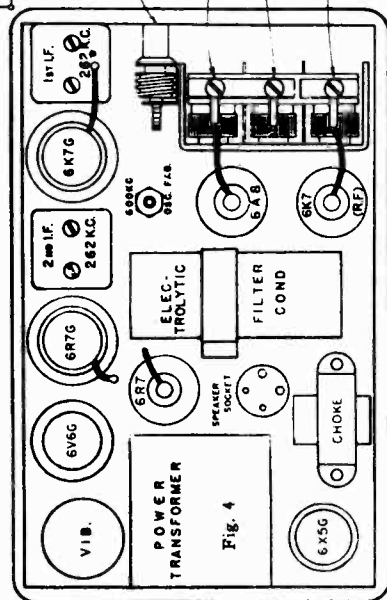
This receiver employs 7 tubes: A 6K7 as radio frequency amplifier, a 6A8 as frequency converter, a 6K7G as intermediate frequency amplifier, a 6R7 as A.V.C., A.V.C. amplifier and inter-channel noise suppressor, a 6R7G as detector and audio voltage amplifier, a 6V6G beam power amplifier and a 6X5G full wave rectifier



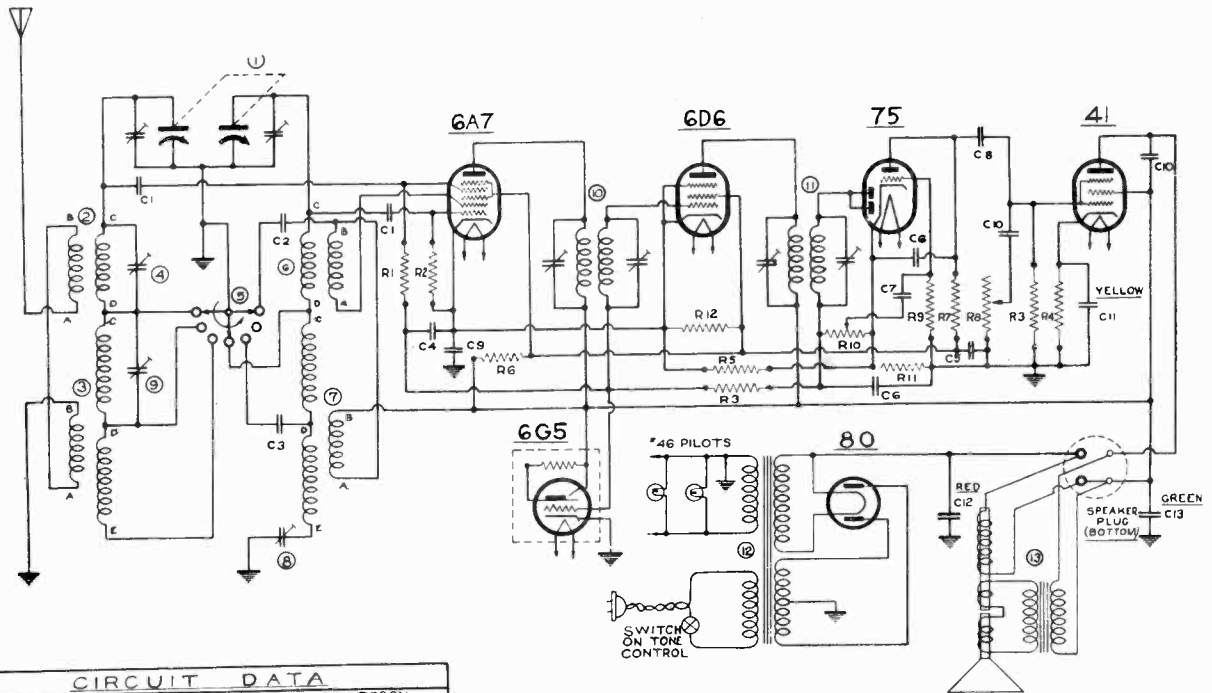
**ALIGNMENT**  
IF Through 0.1 mfd. dummy antenna, adjust trimmers at 262 KC.  
BC Through 0.00025 dummy, adjust osc. trimmer at 1580 KC. Adjust antenna trimmer at 1400 KC. Adjust padder at 600 KC. Adjust antenna compensator at 600 KC. for best sensitivity with signal.

Any type of automobile antenna, such as a roof type, a whip, an under car plate, or insulated running boards may be used as the receiver has an antenna compensating trimmer.

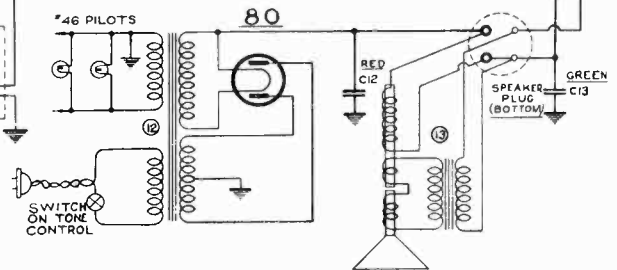
PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
C1	1622 05 MFD. 200V	R1	60-163 250M OHMS 1/2 W. CAR RES.
C2	1607 04 " " 400V	R2	60-164 20 M " " "
C3	1655 3 " " 180V	R3	60-176 1500 " " "
C4	1604 01 " " 600V	R4	60-185 50 M " " "
C5	16-115 1 " " 200V	R5	60-167 1 MEG. " " "
C6	18-281 8.75 " " 350V	R6	60-171 1 W. " " "
C7	16-112 3 " " 200V	R7	60-168 200M " " "
C8	16-112 3 " " 200V	R8	60-174 2000 " " "
C9	20-116 800 MFD. 1600V. PADDER	R9	60-169 50 " " "
C10	18-109 1200 MFD. 1500V. PADDER	T1	10-208 ANTENNA COIL
C11	1901 100 MFD. MICA	T2	10-209 R.F. COIL
C12	20-117 300 MFD. 400V. PADDER	T3	10-210 OSC. COIL
C13	19-126 3 GARD. COND. TRIM. (C4 & C5)	T4	10-211 1ST. I.F. TRANSFORMER
C14	18-116 1 MFD. 400V	T5	10-212 2ND. I.F. TRANSFORMER
C15	18-112 500 MFD. MICA	T6	10-213 3RD. I.F. TRANSFORMER
C16	18-111 500 MFD. MICA	T7	35-303 FILTER CHOK (VIB.)
C17	18-111 500 MFD. MICA	L1	35-303 R.F. CHOK (VIB.)
C18	1804 500 MFD. MICA	L2	35-306 R.F. CHOK (VIB.)
C19	1804 500 MFD. MICA	L3	35-306 R.F. CHOK (VIB.)
C20	991 SPARK PLATE	S1	68-118 SENSITIVITY SWITCH
		S2	24-103 VOLUME CONTROL
		S3	24-114 TONE CONTROL
		S4	79-242 SPEAKER
		S5	34-101 VIBRATOR



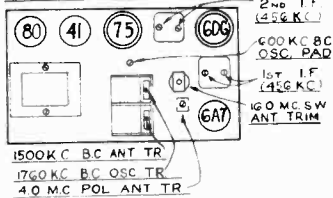
# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.



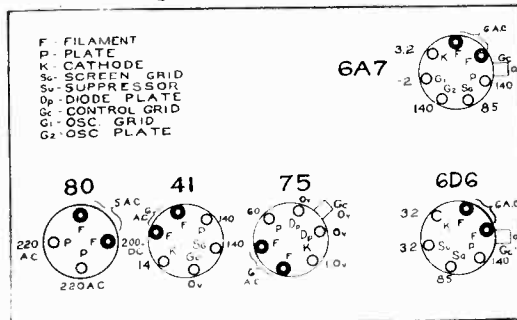
CIRCUIT DATA		CIRCUIT DATA	
PART No.	DESCN	PART No.	DESCN
C1	1501 0001 MFD MICA	R8	26-101 500,000-TONE CONT
C2	1509 0002	R9	6017 1 MEG OHM 1/2 W
C3	15-101 0003 3%	R10	24-101 500,000 VOL CT
C4	1622 0004 200V	R11	6009 50 1/2 W
C5	1607 0005 400V	R12	6117 25,000 1/2 W
C6	1504 00025 MICA	1	19-107 GANG COND.
C7	1603 0001 400V	2	10-128 SW ANT COIL
C8	1603 0001 400V	3	10-129 POL + BC ANT
C9	1614 0002 200V	4	2052 SW ANT TRIMMER
C10	1651 0004 600V	5	69-102 WAVE SWITCH
C11	74 MFD 25V ELE TC	6	10-127 SW OSC COIL
C12	18-102 0008 50V	7	10-128 POL + BC OSC COIL
C13	14 250V	8	20-100 600 KC BC OSC PAD
R1	6020 2 MEG OHM 1/2 W	9	2054 POL ANT TRIMMER
R2	6028 40,000	10	1123 1ST IF
R3	6018 500,000	11	1124 2ND IF
R4	6052 800	12	80-104 POWER TRANSFMR
R5	6011 100	13	SPEAKER
R6	6105 10,000 1/2 W		
R7	6056 200,000 1/2 W		



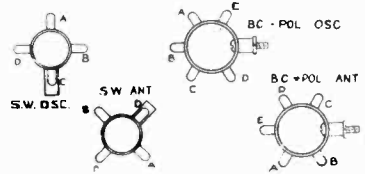
TUBE - TRIMMER LOCATION



SOCKET VOLTAGES



LUG END VIEW OF COILS



DESCRIPTION

This receiver is a 6 tube alternating current operated superheterodyne.

The tubes used are a 6A7 oscillator as modulator, a 6D6 as I.F. amplifier, a 75 as A.V.C. and audio rectifier and audio voltage amplifier, a 41 as power audio amplifier, an 80 as a power rectifier, and a 6G5 as tuning indicator.

This receiver is made to cover 3 tuning bands, the standard broadcast band which ranges from 1760 K. C. to 540 K. C., the middle or police band which has a frequency range of from 5. M. C. to 1.6 M. C. and high frequency or foreign band which is from 19 M. C. to 5. M. C.

ALIGNMENT PROCEDURE

The equipment required for re-aligning this receiver is an output meter and a modulated source of radio frequency (a signal generator or microvilter). This source of radio frequency must be accurately calibrated in frequency and must have a method of varying the output.

All alignments must be made with the volume control turned full on and with the signal input from the generator reduced to as low a value as possible while still giving a sufficient output to be easily read on the output meter.

Connect the output meter, through a .5 M.F. condenser and a resistance of such a value as to make the total meter resistance approximately 7000 ohms, to the 2 small pins of the speaker plug. The output meter remains connected during the entire alignment procedure.

Connect the signal generator to the grid cap of the 6A7 tube through a 1 M.F. condenser. Connect the ground of the generator to the ground lead of the receiver. With the wave switch on broadcast position and the dial set to about 1000 K. C., feed in a 456 K. C. signal. Adjust the trimmers on top of the first and second I.F. transformers until the maximum output is obtained. This aligns the I.F.

Leaving the wave switch on broadcast position turn the dial to the extreme high frequency end. Feed a 1760 K. C. signal to the receiver antenna lead through a .00025 M.F. mica condenser. Adjust the 1760 K.C. broadcast oscillator trimmer for maximum output. Set the generator to 1500 K. C. and tune in this signal on the receiver. Then adjust the 1590 K.C. broadcast antenna trimmer and the 1590 K. C. broadcast pres-selector trimmer for maximum output. Set the generator to 600 K. C. and adjust the 600 K. C. broadcast oscillator pad to maximum output while tuning the receiver back and forth across the signal from the generator. This completes the alignment of the broadcast band.

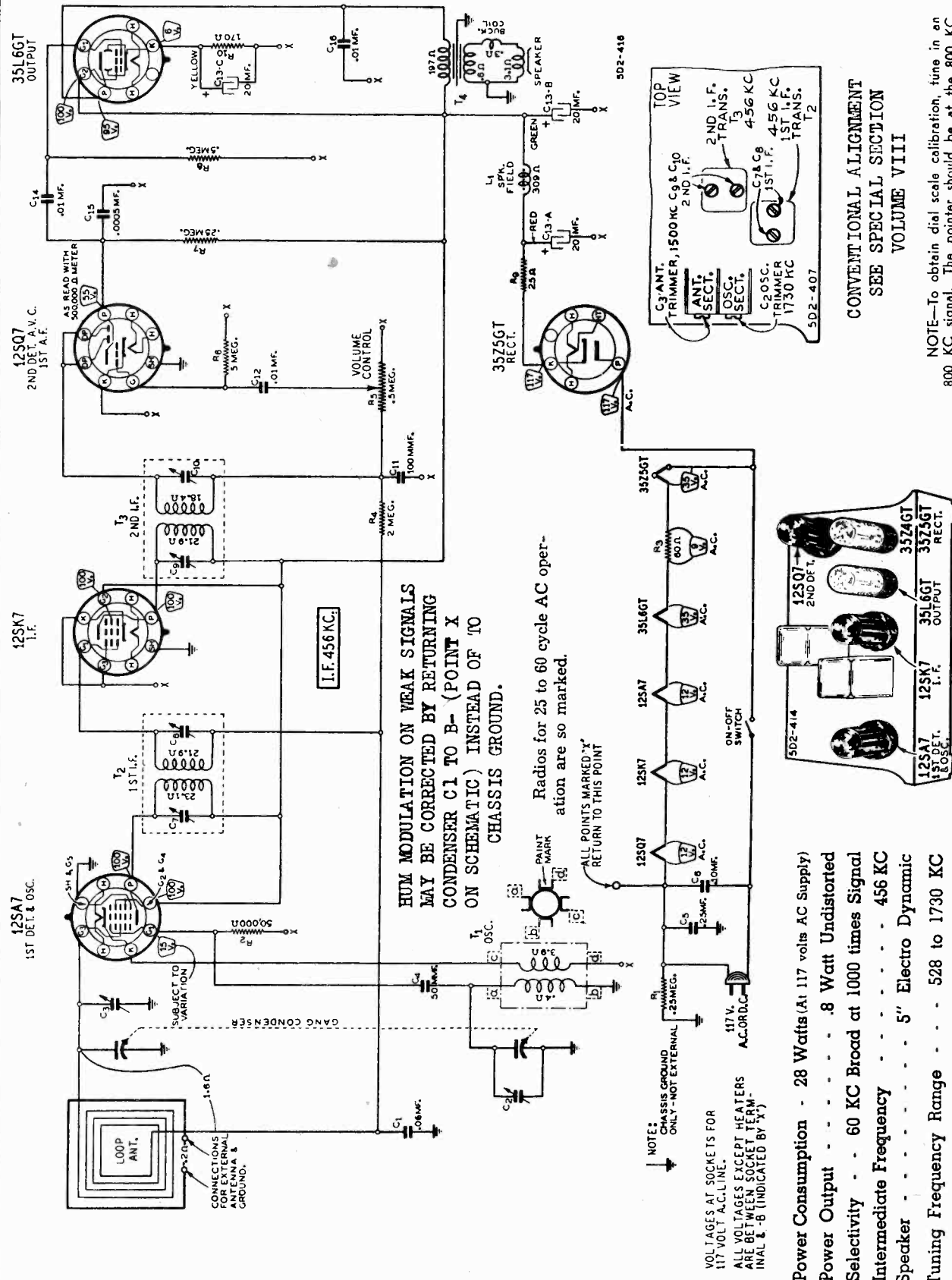
The police band is aligned by feeding 4.0 M.C. signal to the receiver antenna lead through the .00025 condenser. Turn the wave switch to the center position and tune the receiver to this signal. Adjust the 4.0 M.C. police antenna trimmer for best output.

The short wave band is aligned in the same way using a 15 M.C. signal and adjusting the 15 M.C. short wave antenna trimmer after having turned the wave switch to the right hand position.



MODEL BB22

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

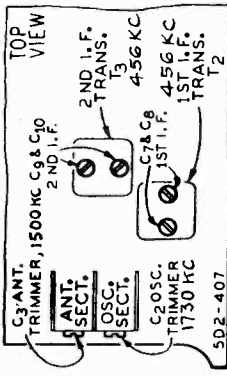


HUM MODULATION ON WEAK SIGNALS  
MAY BE CORRECTED BY RETURNING  
CONDENSER C1 TO B- (POINT X  
ON SCHEMATIC) INSTEAD OF TO  
CHASSIS GROUND.

Radios for 25 to 60 cycle AC operation are so marked.

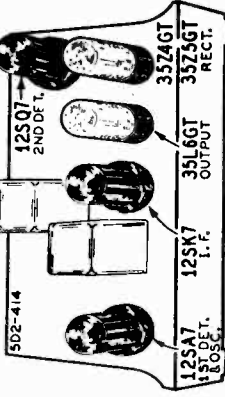
ALL POINTS MARKED 'X'  
RETURN TO THIS POINT

NOTE: CHASSIS GROUND ONLY - NOT EXTERNAL  
VOLTAGES AT SOCKETS FOR 117 VOLT A.C. LINE.  
ALL VOLTAGES EXCEPT HEATERS ARE BETWEEN SOCKET TERMINALS & B (INDICATED BY 'X')



CONVENTIONAL ALIGNMENT  
SEE SPECIAL SECTION  
VOLUME VIII

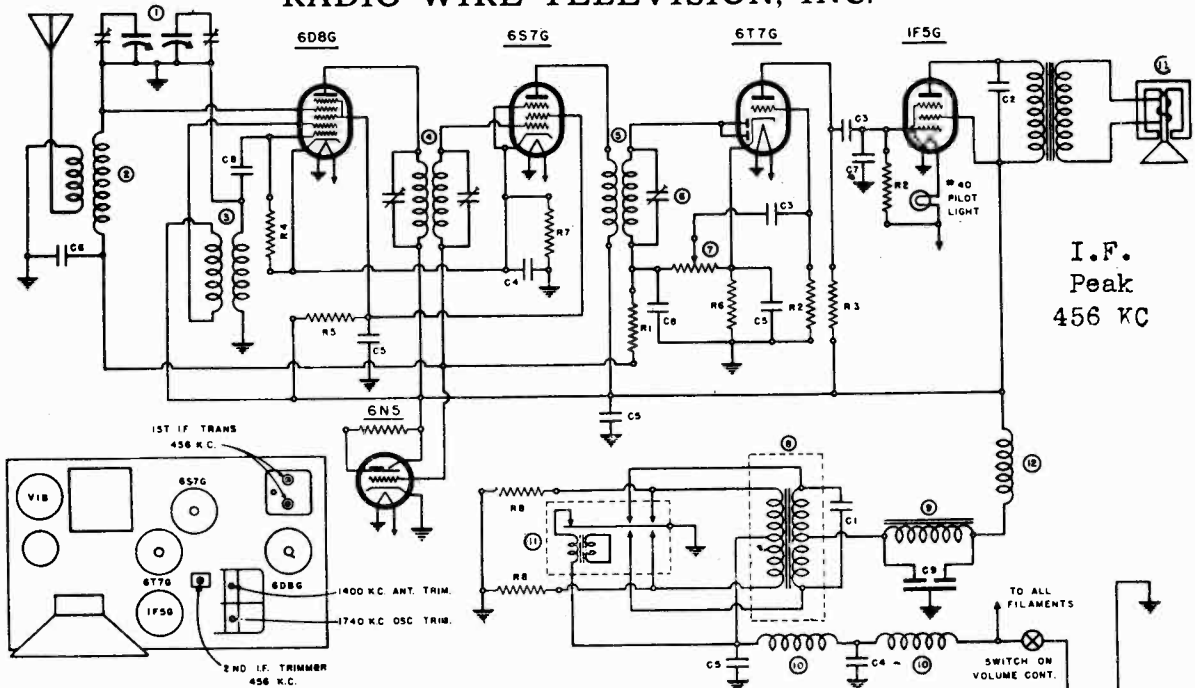
NOTE—To obtain dial scale calibration, tune in an 800 KC signal. The pointer should be at the 800 KC mark on the dial. If it is not, first remove the celluloid crystal by taking out the 4 buttons at the corner. Hold the tuning knob and shift the pointer to the 800 KC mark.



- Power Consumption - 28 Watts (At 117 volts AC Supply)
- Power Output - . . . . . 8 Watt Undistorted
- Selectivity - 60 KC Broad at 1000 times Signal
- Intermediate Frequency - . . . . . 456 KC
- Speaker - . . . . . 5" Electro Dynamic
- Tuning Frequency Range - . . . . . 528 to 1730 KC
- Sensitivity - . . . . . 35 Microvolts per Meter Average  
(For .05 Watt Output)

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

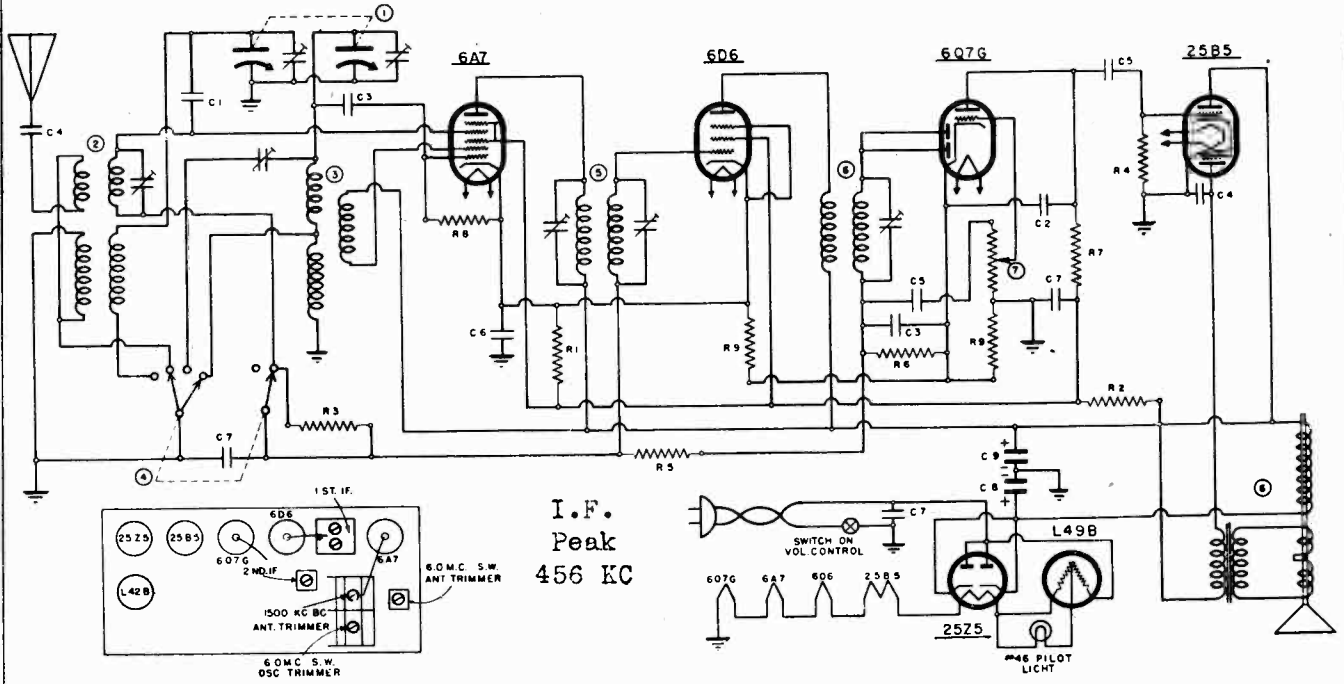
MODEL D22  
MODEL D23



I.F.  
Peak  
456 KC

Model D-22

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
R1 6017	1 MEG OHM 1/3 W CARBON RES.	C1 1612	.008 MFD. 1000V TUB. COND.	1 19-111	2 GANG CONDENSER
R2 6018	500,000 - - - - -	C2 1654	.004 - - - - -	2 10-166	ANT. COIL
R3 6084	250,000 - - - - -	C3 1603	.01 - - - - -	3 10-167	OSC. -
R4 6085	50,000 - - - - -	C4 1614	.25 - - - - -	4 10-194	1ST I.F. TRANSFORMER
R5 6022	15,000 - - - - -	C5 1600	.1 - - - - -	5 10-163	2ND -
R6 6023	10,000 - - - - -	C6 1622	.05 - - - - -	6 20-105	2ND I.F. TRIMMER
R7 6013	300 - - - - -	C7 1504	.00025 - MICA CONDENSER	7 24-106	VOLUME CONTROL
R8 6011	100 - - - - -	C8 1501	.0001 - - - - -	8 80-134	POWER TRANSFORMER
		C9 1645	DUAL 8 - 150V ELECTROLYTIC	9 3307	FILTER CHOKE
				10 33-205	R.F. "A" CHOKE
				11 3407	VIBRATOR
				12 33-204	R.F. "B" CHOKE
				13	SPEAKER



I.F.  
Peak  
456 KC

Model  
D-23

PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
R1 6104	5000 OHM 1/2 WATT CARBON RES.	C1 15-105	.00056 MFD MICA CONDENSER ±3%	1 19-114	2 GANG VARIABLE CONDENSER
R2 60-131	3,000 - - - - -	C2 1504	.00025 - - - - -	2 10-174	ANT. COIL
R3 6020	2 MEG - - - - -	C3 1501	.0001 - - - - -	3 10-178	OSC. COIL
R4 6017	1 M - - - - -	C4 1651	.004 - - - - -	4 69-109	WAVE BAND SWITCH
R5 6018	500,000 - - - - -	C5 1603	.01 - - - - -	5 10-177	1ST I.F. TRANSFORMER
R6 6024	250,000 - - - - -	C6 1614	.25 - - - - -	6 10-163	2ND I.F. TRANSFORMER
R7 6036	200,000 - - - - -	C7 1622	.05 - - - - -	7 24-106	VOL. CONTROL WITH SWITCH
R8 6025	50,000 - - - - -	C8 18-21	- - - - -	8 79-221	DYNAMIC SPEAKER
R9 60098	50 - - - - -	C9 18-21	8 - - - - -		

MODEL D22  
MODEL D23

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

Model D-23

ALIGNMENT PROCEDURE

All alignments must be made with the volume control turned full on and with the signal input from the generator reduced to as low a value as possible while still giving a sufficient output to be easily read on the output meter.

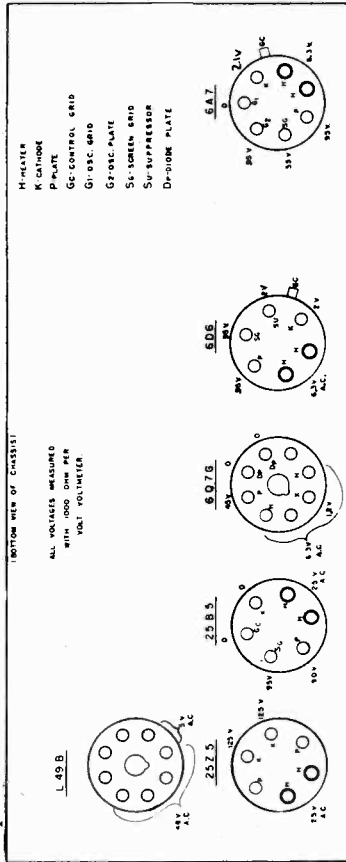
Connect the output meter, through a .5 M.F. condenser and a resistance of such a value as to make the total meter resistance approximately 7000 ohms, to the two small pins of the speaker plug. The output meter remains connected during the entire alignment procedure.

Connect the signal generator to the grid cap of the 6A7 tube through a .1 M.F. condenser. Connect the ground of the generator to the receiver chassis through another .1 M.F. condenser. With the wave switch on broadcast position and the dial set to about 1000 K.C., feed in a 456 K.C. signal. Adjust the trimmers of the first and second I.F. transformers until the maximum output is obtained. This aligns the I.F.

Turn the wave switch to the short wave position and set the dial to 6.0 M.C. Feed a 6.0 M.C. signal to the receiver antenna lead through a .00025 M.F. mica condenser. Tune the 6.0 M.C. Oscillator trimmer to give resonance. Two points may be found where this signal can be heard. The correct setting is the one where the trimmer is screwed the loosest. This may also be checked by turning the dial to about 5.0 M.C. where the signal should again be heard.

Then turn the wave switch to broadcast position and turn the dial to the extreme high frequency end. Feed in a 1720 K.C. signal and adjust the broadcast oscillator trimmer, which is located under the receiver at the wave switch, to resonance. Then set the signal generator to 1500 K.C. and tune in this signal on the receiver. Adjust the 1500 K.C. antenna trimmer for maximum output.

Again turn the wave switch to short wave position and tune in a 6.0 M.C. signal from the generator. Adjust the 6.0 M.C. antenna trimmer to maximum output.



Model D-22

ALIGNMENT PROCEDURE

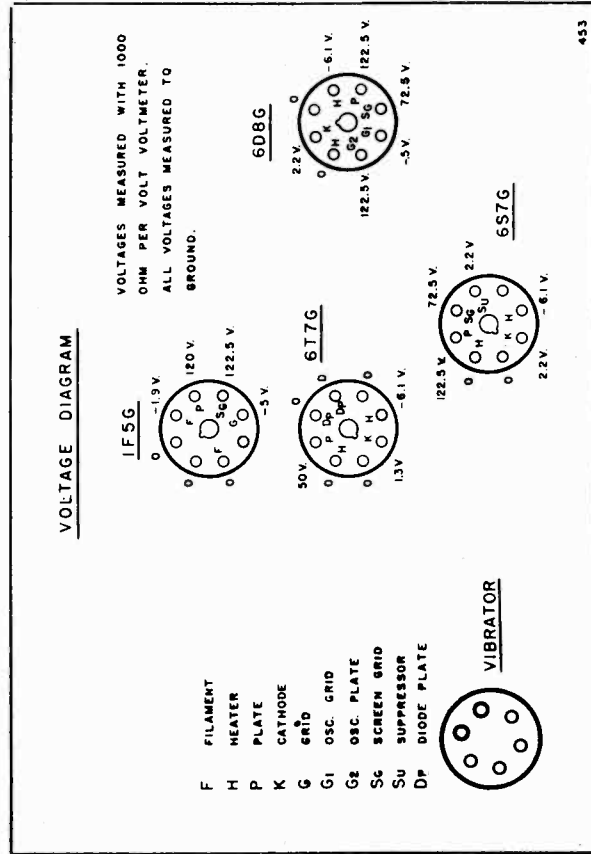
The equipment required for re-aligning this receiver is an output meter and a modulated source of radio frequency (a signal generator or microvolter). This source of radio frequency must be accurately calibrated in frequency and must have a method of varying the output.

All alignments must be made with the volume control turned full on and with the signal input from the generator reduced to as low a value as possible while still giving a sufficient output to be easily read on the output meter.

Connect the output meter, through a .5 M.F. condenser and a resistance of such a value as to make the total meter resistance approximately 10,000 ohms, to the two plate and screen pins of the 1F5G tube.

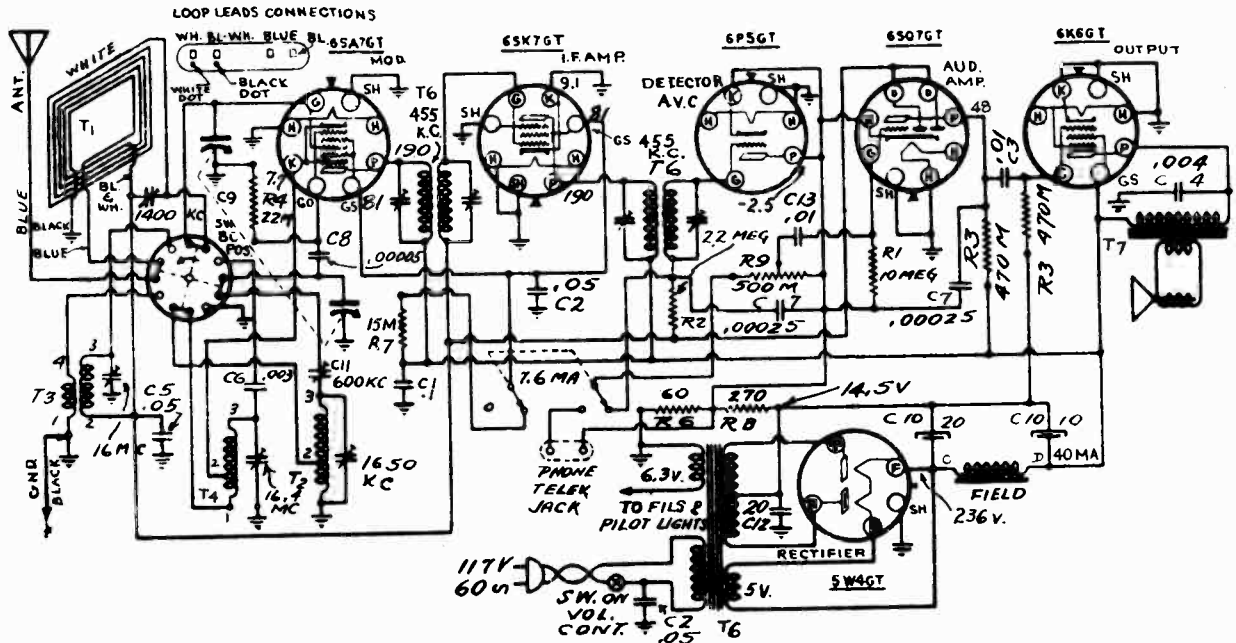
Connect the signal generator to the grid cap of the 6D8G tube through a .1 M.F. condenser. Connect the ground of the generator to the ground lead of the receiver. Set the dial to about 1000 K.C., feed in a 456 K.C. signal. Adjust the first and second I.F. trimmers until the maximum output is obtained. This aligns the I.F.

Turn the dial to the extreme high frequency end. Feed a 1740 K.C. signal to the receiver antenna lead through a .00025 M.F. mica condenser. Adjust the 1740 K.C. oscillator trimmer until maximum output is shown. Set the generator to 1400 K.C. and tune in this signal on the receiver. Then adjust the 1400 K.C. antenna trimmer to maximum output. This completes the alignment.



# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

MODELS D26, S43

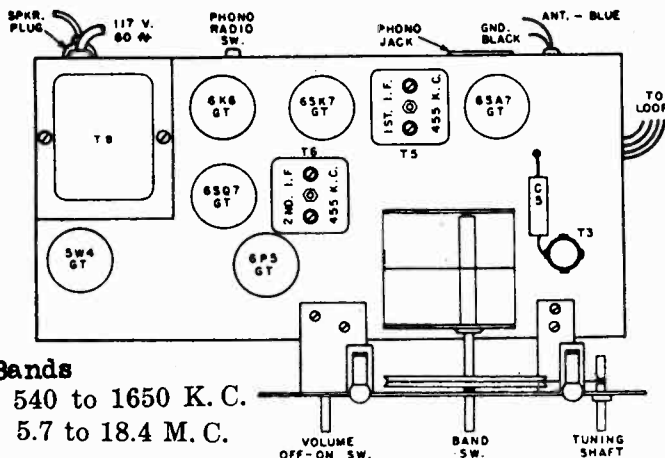


Code	Part No.	Description
C1	16-116	.1 mfd 400 V Tubular Condenser
C2		.05 " " " " " "
C3	16-119	.01 " " " " " "
C4		.004 " " " " " "
C5		.05 " 200 V " " "
C6		.003 " Mica Condenser
C7	1504	.00025 Mfd. Mica Condenser
C8	1503	.00005 " " " " " "
C9	18-156	2 Gang Variable Condenser
C10	10-254	20X10 Mfd. 350 W.V. Electrolytic
C11		Padding Condenser
C12		20 Mfd. 25 V. Electrolytic
C13		.01 " 200 V. Tubular Condenser

R1	60-133	10 Meg. 1/4 W. Resistor
R2	60-179	2.2 " " " " " "
R3		470M Ohm " " " "
R4		22M " " " " " "
R6	60-132	60 " 1/2 " " " "
R7	60-234	15M " 1 W. " " "
R8	60-245	270 " " " " " "
R9	24-144	500 M " Volume Control (Width SW.)

Tube sockets are viewed from underside of chassis; voltage readings at indicated socket prongs are to chassis. Voltages must be measured with no signal. Voltages are measured with 1000 ohm per volt voltmeter. Where no voltage reading is shown at socket prong, it indicates zero voltage or a very low reading. Figures at cathodes are cathode current in milliamperes. Alignment is to be made at the frequency shown at each trimmer condenser. Capacity values are in microfarads.

Code	Part No.	Description
T1		Loop Antenna
T2	10-326	B.C. Oscillator Coil
T3	10-323	S.W. Antenna Coil
T4	10-320	" Oscillator Coil
T5		1st I.F. Transformer
T6	10-312	2nd I.F. Transformer
T7	-----	Output Transformer (on Spkr.)
T8		Power
1	79-278	6 1/2 Inch. Dynamic Speaker
2	69-141	Band Switch
3	69-140	Phono Switch
4	20-127	Trimmer Block
5	20-129	Trimmer (on loop)



CONVENTIONAL ALIGNMENT  
SEE SPECIAL SECTION VOLUME VIII

IF PEAK  
455 KC

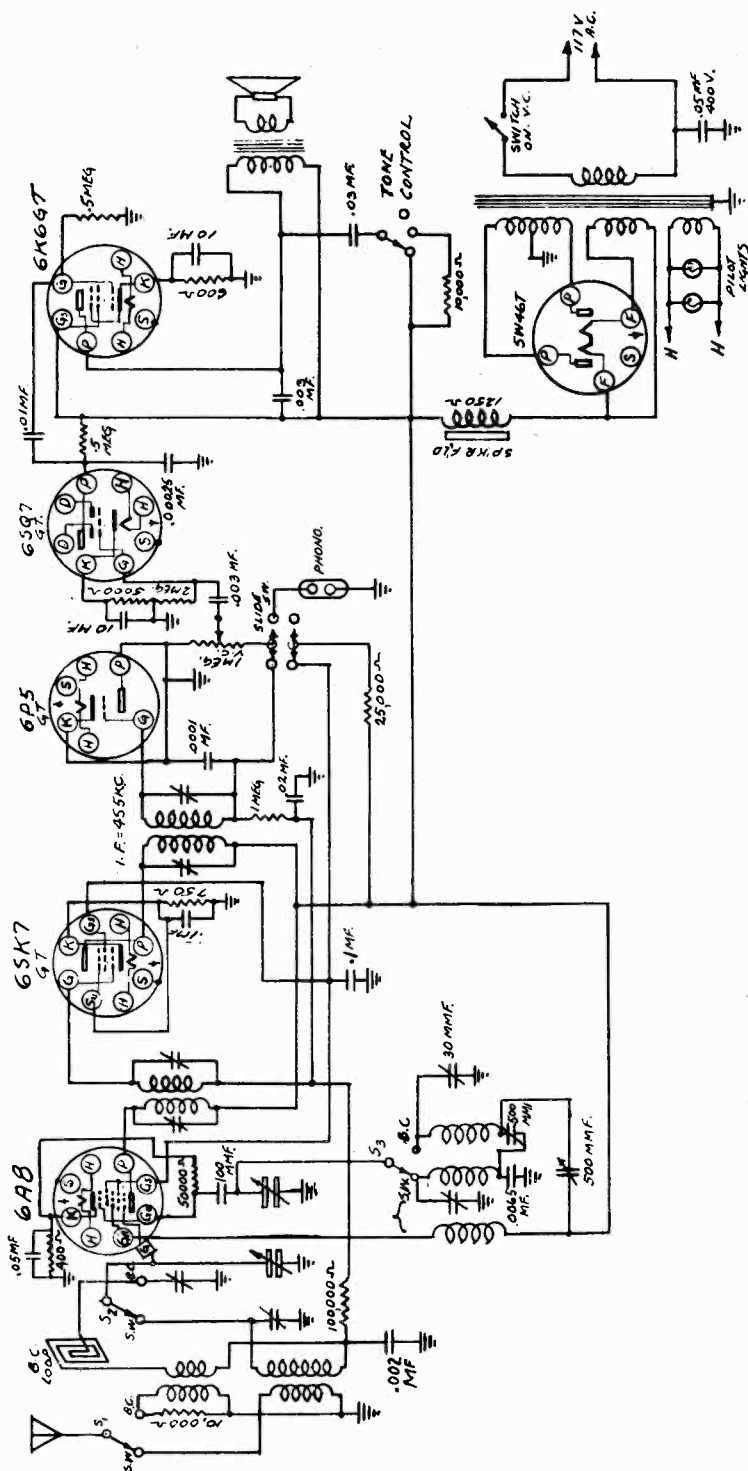
Models D-26 - S-43

Bands  
540 to 1650 K. C.  
5.7 to 18.4 M. C.

MODELS D26, S43G

Late

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

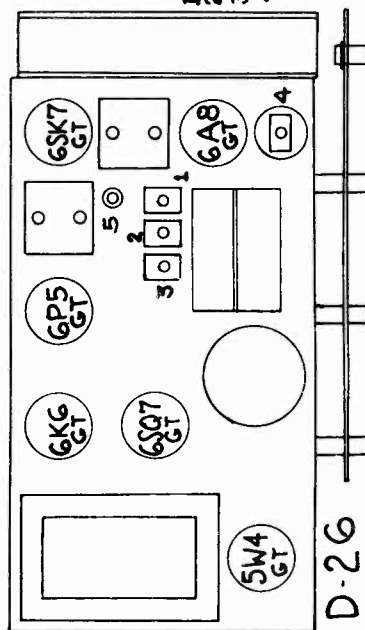


MODEL D-26

The Bands covered are as follows:  
 BROADCAST - 540 KC to 1720 KC,  
 SHORTWAVE 5.85 MC to 18 MC  
 The frequency is indicated directly on the Dial Scale.

- 1-BCAST ANT-1500KC
- 2-BCAST OSC-1720KC
- 3-SHT WVE OSC-18MC
- 4-SHT WVE ANT-15MC
- 5-BCAST PAD-600KC

I.F. 455 K.C.

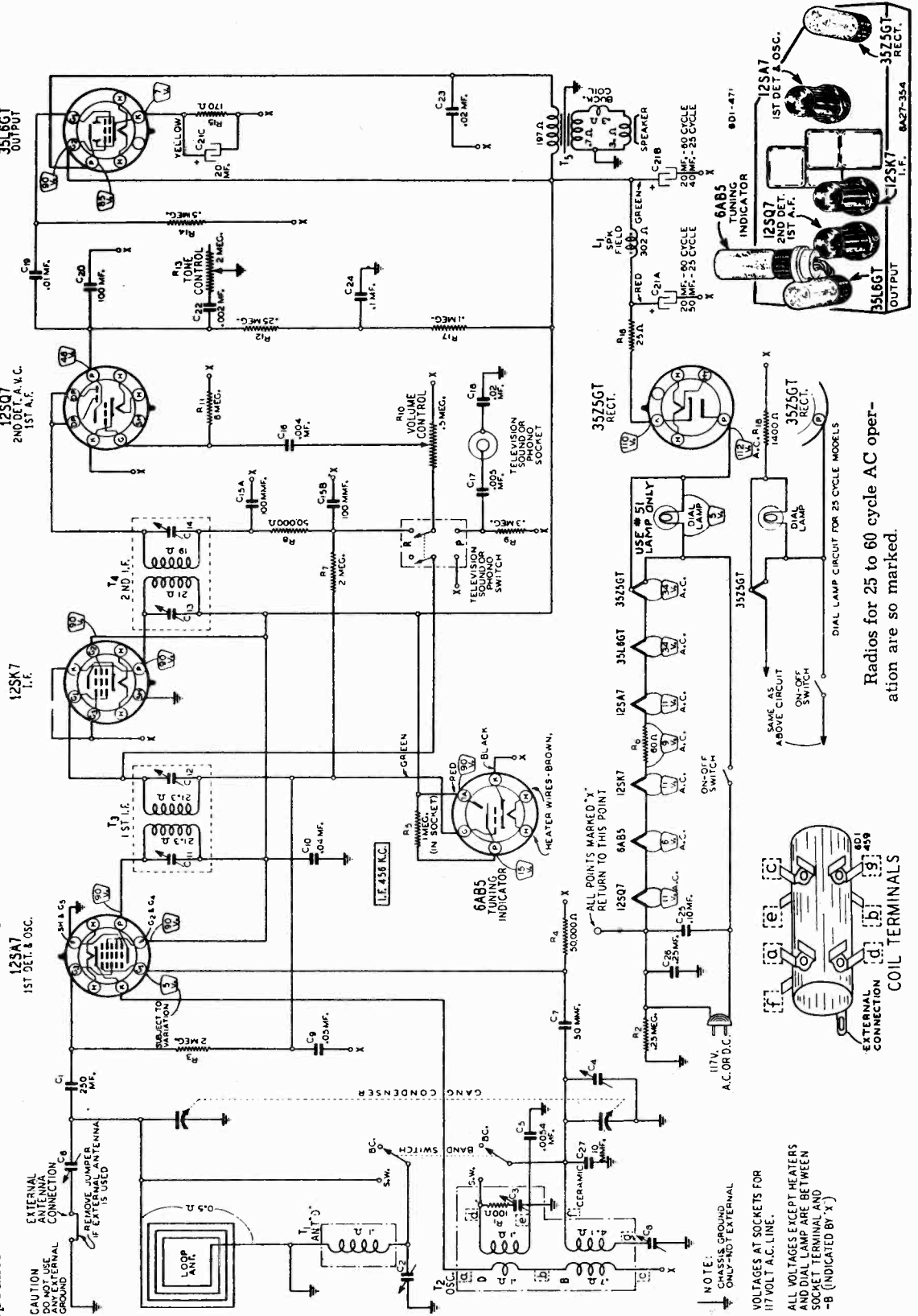


# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC

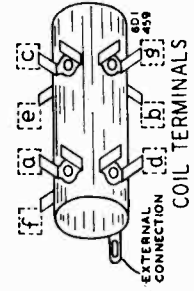
**Tuning Frequency Range**  
 B Range..... 528 to 1600 KC  
 D Range..... 4600 to 12,200 KC  
 Sensitivity (For .05 watt output)  
 B Range..... .35 Microvolts Average  
 D Range..... .30 Microvolts Average

**CAUTION - DO NOT USE A GROUND OF ANY KIND ON THIS RADIO. DO NOT USE A GROUNDED OBJECT, SUCH AS A RADIATOR, FOR AN EXTERNAL ANTENNA.**

**Power Consumption - 28 Watts (At 117 volts AC Supply)**  
 Power Output - - - - - 8 Watt Undistorted  
 - - - - - 1.25 Watts Maximum  
 Selectivity - - - 55 KC Broad at 1000 Times Signal  
 Intermediate Frequency - - - - - 456 KC  
 Speaker - - - - - 5" Electro-Dynamic



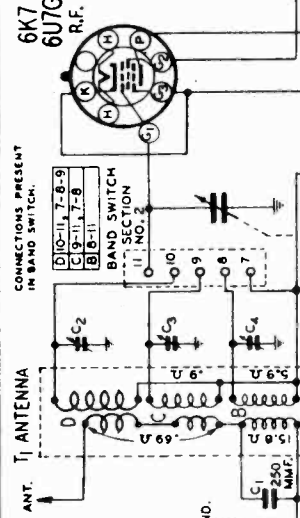
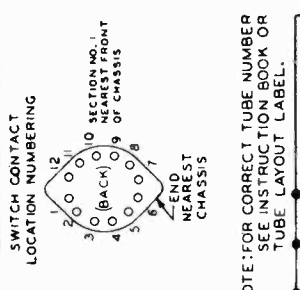
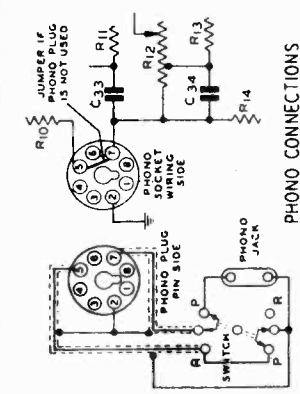
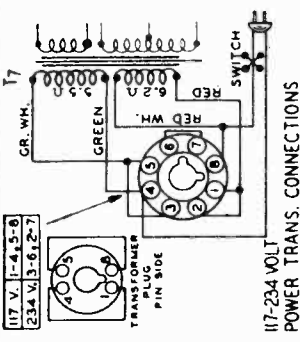
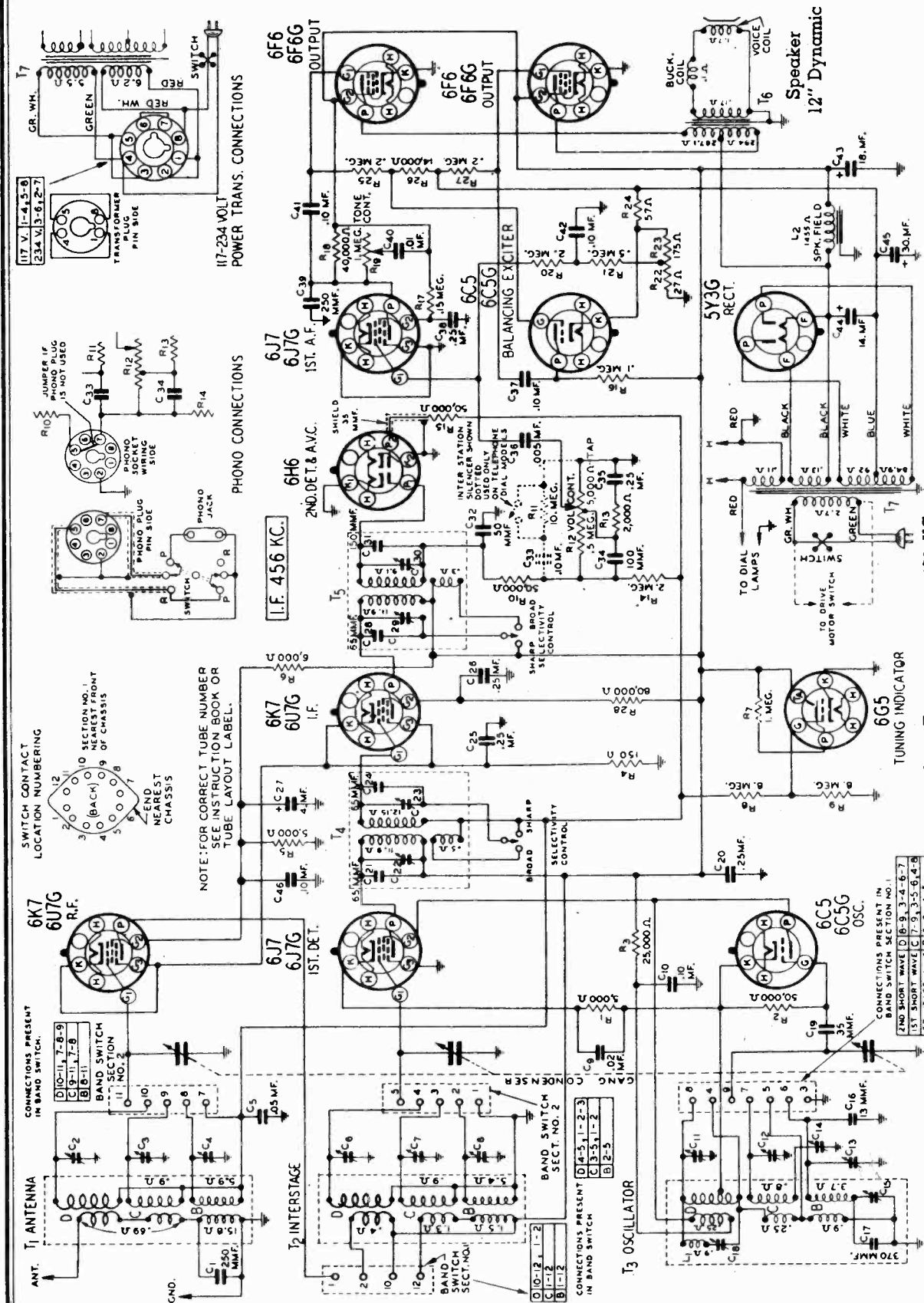
Radios for 25 to 60 cycle AC operation are so marked.



**NOTE:**  
 CHASSIS GROUND ONLY- NOT EXTERNAL  
 VOLTAGES AT SOCKETS FOR 117 VOLT A.C. LINE.  
 ALL VOLTAGES EXCEPT HEATERS AND DIAL LAMP ARE BETWEEN SOCKET TERMINAL AND -B (INDICATED BY 'X')



# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.



**Power Consumption - 100 Watts** (At 117 volts 60 cycles)  
**Power Output** 9.8 Watts Undistorted  
 12 Watts Maximum  
**Selectivity** 27 KC Broad at 1000 times Signal  
 (Sharp)

**Intermediate Frequency** 456 KC.  
**Sensitivity** 1.0 Microvolts Average  
 B Range  
 C Range 1.0 Microvolts Average  
 D Range 2.0 Microvolts Average

**Tuning Frequency Range**  
 B Range 528 to 1830 KC.  
 C Range 1810 to 6350 KC.  
 D Range 6300 to 22000 KC.

**NOTE:** RESISTANCES OF WINDINGS LESS THAN 0.1 Ω ARE NOT SHOWN







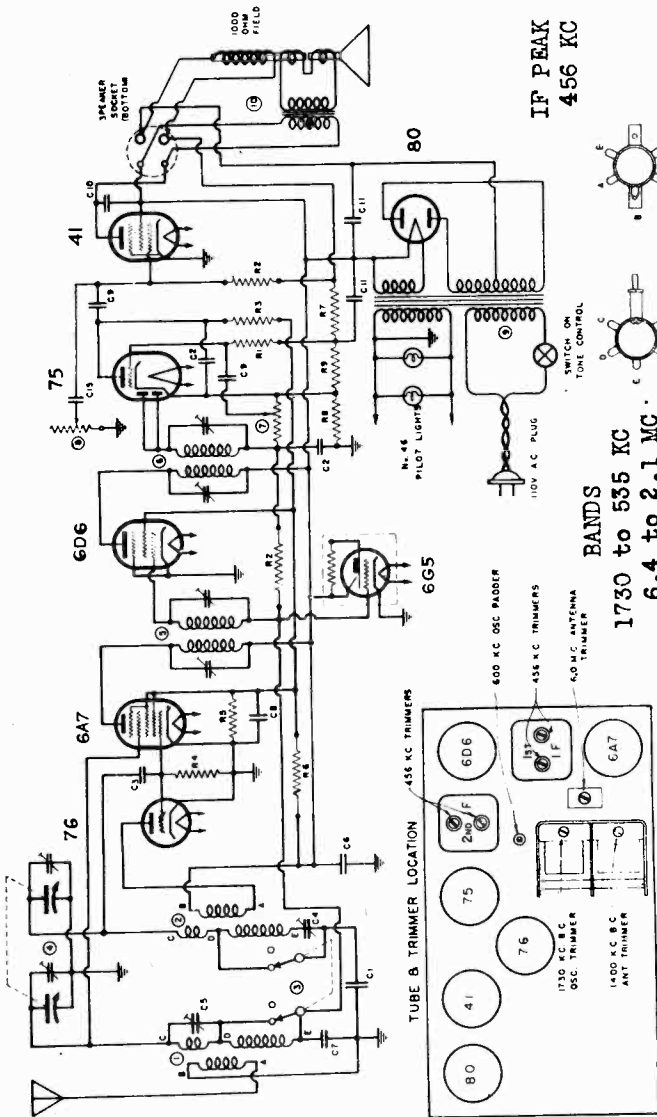
MODEL D34

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

PART NO.	DESCRIPTION	MICA	5%	PART NO.	DESCRIPTION	
G1	15-100	0.048	MFD	R1	6020	2 MEGOHM 1/3 W
CP	1504	.00025		R2	608	.5
C3	1501	.0001		R3	8056	100,000 OHMS
C4	20-100	5C	OSC	R4	6098	40,000
C5	2304	5W	ANTENNA	R5	6117	25,000
C6	1402	1	MFD	R6	6210	10,000
C7	1400	.05		R7	6010	100 OHMS 1/2 W
C8	1400	.05		R8	6010	100 OHMS 1/2 W
C9	1803	.01		R9	60-104	20
C10	1831	.004		C11	8-200	DUAL BAND 450V ELECT.

PART NO.	DESCRIPTION
1	1G1X3 8C 0.5 W ANTENNA COIL
2	0-1-44 OSCILLATOR
3	4822 WAVE SWITCH
4	19-107 2 GANG VARIABLE COND
5	1123 FIRST I.F. TRANSFORMER
6	1124 SECOND I.F. TRANSFORMER
7	24-101 VOLUME CONTROL
8	10-100 100 OHMS 1/2 W
9	8C-100 POWER TRANSFORMER
10	8C-100 SPEAKER

CIRCUIT DIAGRAM  
DRAWN BY *[Signature]* DATE 3-18-37



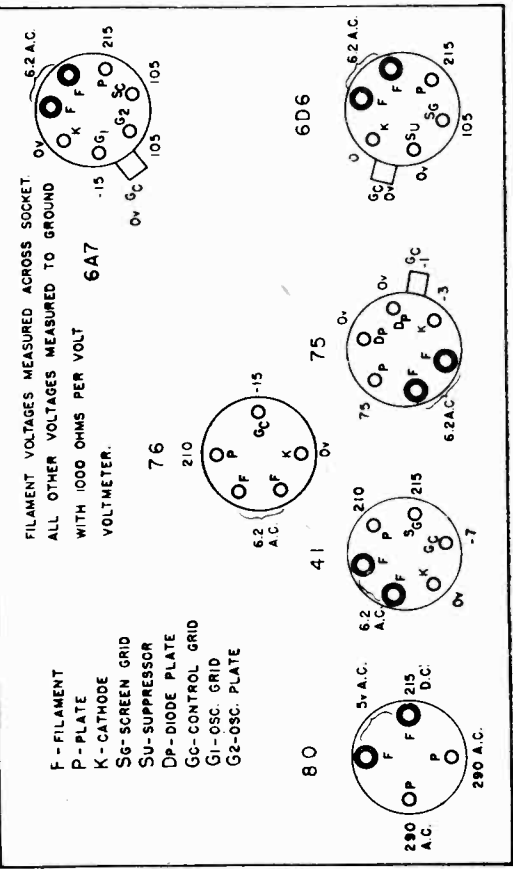
The tubes used are a 76 as oscillator, a 6A7 as modulator, a 6D6 as I. F. amplifier, a 75 as A. V. C. and audio rectifier and audio voltage amplifier, a 41 as power audio amplifier, an 80 as a power rectifier and a 6G5 as tuning indicator.

ALIGNMENT PROCEDURE

Connect the signal generator to the grid cap of the 6A7 tube through a .1 M.F. condenser. Connect the ground of the generator to the ground lead of the receiver. With the wave switch on broadcast position and the dial set to about 1000 K.C., feed in a 456 K.C. signal. Adjust the trimmers on top of the first and second I.F. transformers until the maximum output is obtained. This aligns the I.F.

Leaving the wave switch on broadcast position turn the dial to the extreme high frequency end. Feed a 1730 K.C. signal to the receiver antenna lead through a .00025 M.F. mica condenser. Adjust the 1730 K.C. broadcast oscillator trimmer until maximum output is shown. Set the generator to 1400 K.C. and tune in this signal on the receiver. Then adjust the 1400 K.C. broadcast antenna trimmer to maximum output. Set the generator to 600 K.C. and adjust the 600 K.C. broadcast oscillator pad to maximum output while tuning the receiver back and forth across the signal from the generator. This completes the alignment of the broadcast band.

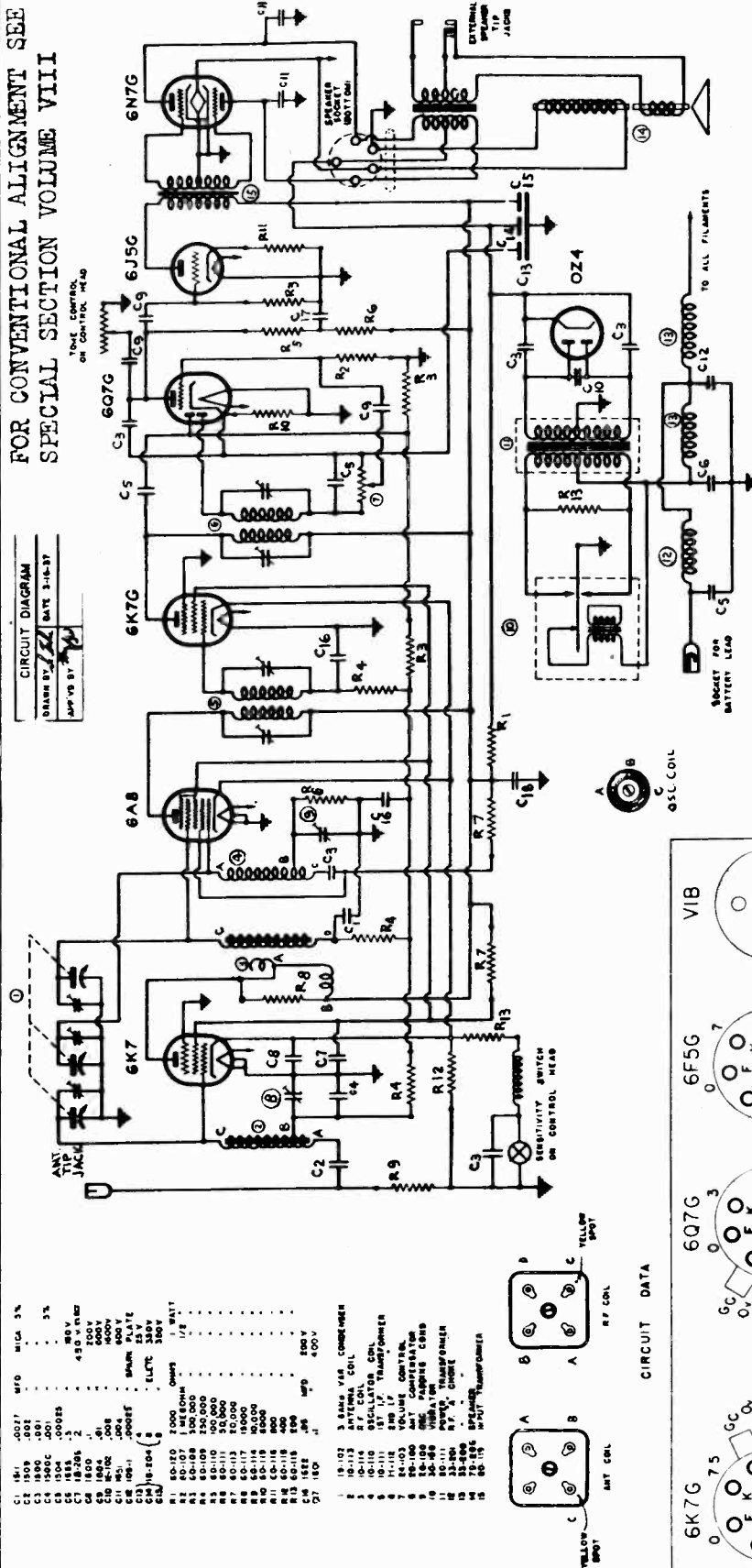
The short wave band is aligned while feeding a 6.0 M.C. signal to the receiver antenna lead through a .00025 M.F. mica condenser. Turn the wave switch to short wave position and tune in the 6.0 M.C. signal. Adjust the 6.0 M.C. short wave trimmer to maximum output.



# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

FOR CONVENTIONAL ALIGNMENT SEE  
SPECIAL SECTION VOLUME VIII

CIRCUIT DIAGRAM  
NAME BY: J.F. RIDER DATE: 3-16-37  
APP'D BY: J.F.R.



COMPONENT	VALUE	WATTAGE
C1	150K	5%
C2	150K	5%
C3	150K	5%
C4	150K	5%
C5	150K	5%
C6	150K	5%
C7	150K	5%
C8	150K	5%
C9	150K	5%
C10	150K	5%
C11	150K	5%
C12	150K	5%
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C375	150K	5%
C376	150K	5%
C377	150K	5%
C378	150K	5%
C379	150K	5%
C380	150K	5%
C381	150K	5%
C382	150K	5%
C383	150K	5%
C384	150K	5%
C385	150K	5%
C386	150K	5%
C387	150K	5%
C388	150K	5%
C389	150K	5%
C390	150K	5%
C391	150K	5%
C392	150K	5%
C393	150K	5%
C394	150K	5%
C395	150K	5%
C396	150K	5%
C397	150K	5%
C398	150K	5%
C399	150K	5%
C400	150K	5%
C401	150K	5%
C402	150K	5%
C403	150K	5%
C404	150K	5%
C405	150K	5%
C406	150K	5%
C407	150K	5%
C408	150K	5%
C409	150K	5%
C410	150K	5%
C411	150K	5%
C412	150K	5%
C413	150K	5%
C414	150K	5%
C415	150K	5%
C416	150K	5%
C417	150K	5%
C418	150K	5%
C419	150K	5%
C420	150K	5%
C421	150K	5%
C422	150K	5%
C423	150K	5%
C424	150K	5%





MODELS CC48,4124

## LAFAYETTE RADIO RADIO WIRE TELEVISION, INC

It is important to remember that in receivers of this kind which are equipped with automatic volume control it is necessary to use the minimum possible signal from the signal generator; otherwise the A.V.C. action will tend to nullify the variations in output as the trimmers are adjusted.

**I.F. Adjustment:** The signal generator is set at 455 kc and is connected through a .5 mmfd condenser to the grid of the first detector (8K8). With the band switch set on "Broadcast", the pointer set at 550 kc and the receiver volume control at its maximum position, the I.F. trimmers are adjusted for maximum output. These trimmers may be found on tops of the I.F. transformer shield cans.

**Band #1 Adjustment:** Turn the dial control knob so that the condenser plates are entirely out of mesh. Set the band switch to band #1. The signal generator should be connected to the short-antenna binding post through the dummy antenna consisting of a 250 mmfd mica condenser and a 400 ohm non-inductive resistor. The oscillator trimmer condenser should be opened to minimum capacity and the signal generator then set to 22.4 megacycles. The oscillator trimmer is then increased in capacity until maximum response is obtained. Two responses are possible and it is important that the high frequency response (oscillator trimmer low capacity) be used. The signal generator is then set to 19 MC and the variable condenser turned until a response is obtained. The pointer should coincide with the 19 MC mark on the dial. The antenna preselector and first detector trimmers are then adjusted in the order named, for maximum output. The variable condenser should be rocked slightly during this last adjustment. The signal generator is now set at 7.6 mc and the signal tuned in on the dial. The padder condenser for this band is adjusted for maximum reading of the output meter while the generator tuning condenser is rocked slightly to right and left. The high frequency adjustment should then be rechecked.

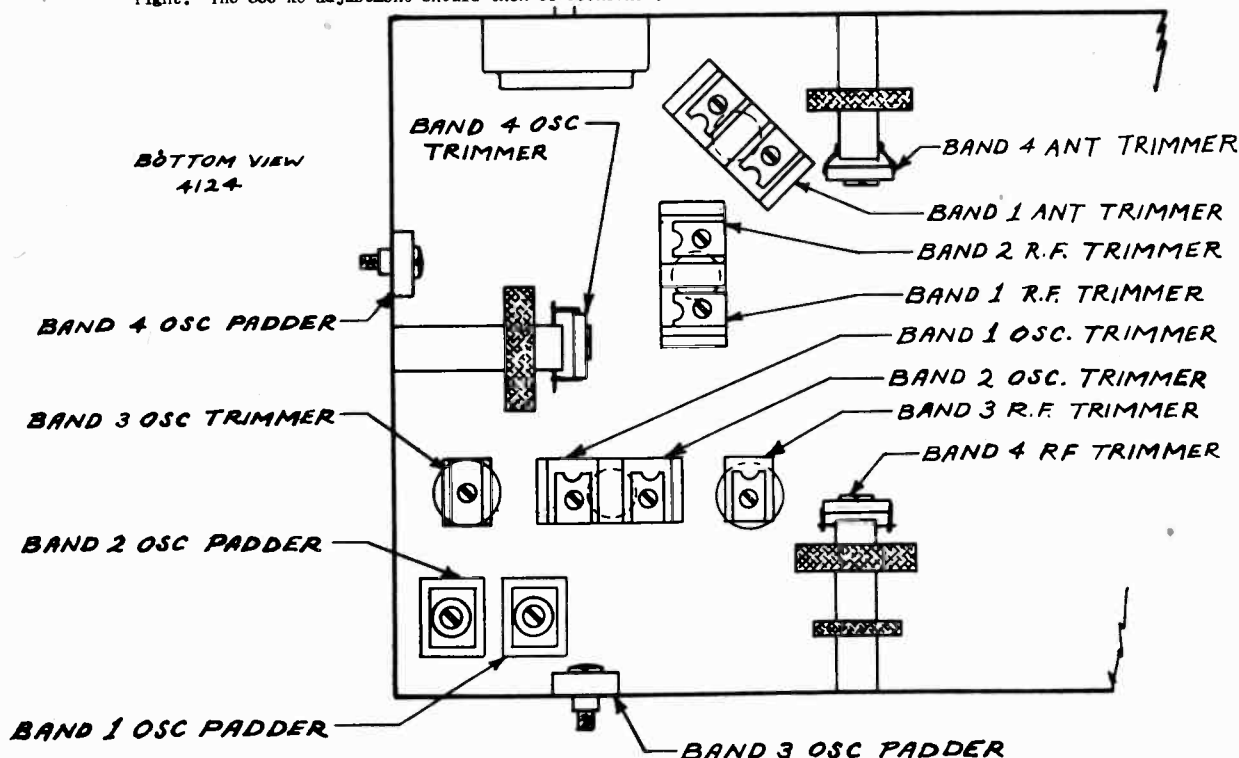
**Band #2:** The band selector switch is set in position for operation on short wave band #2. The variable condenser is opened so that the plates are completely unmeshed and the oscillator trimmer is opened to minimum capacity. The signal generator is set to 7.6 mc and the oscillator trimmer condenser is increased in capacity until a response is heard. Two responses are possible and it is important that the higher frequency response (oscillator trimmer low capacity) be used. Set the signal generator at 7 mc and turn the tuning control until a response is indicated on the output meter. The pointer should now coincide with the 7 mc marker on the dial. The antenna preselector and first detector trimmers are then adjusted in the order named for maximum output. After high frequency adjustments have been made set the signal generator at 2.5 mc and turn the variable gang condenser until a response is observed. Adjust the padding condenser for this band for maximum gain while rocking the tuning condenser slightly to the right and the left. The higher frequency adjustment should then be rechecked.

**Broadcast Band:** The dummy antenna for this band should consist of a 250 mmfd condenser only. The signal generator is set at 1620 kc, the band switch set at broadcast position. The variable condenser should be opened so that the plates are entirely out of mesh. The oscillator trimmer is then adjusted for maximum response on that frequency (1620kc). Set the signal generator at 1500 kc and tune the receiver until a response is indicated. The dial pointer should coincide with the 1500 kc mark on the dial.

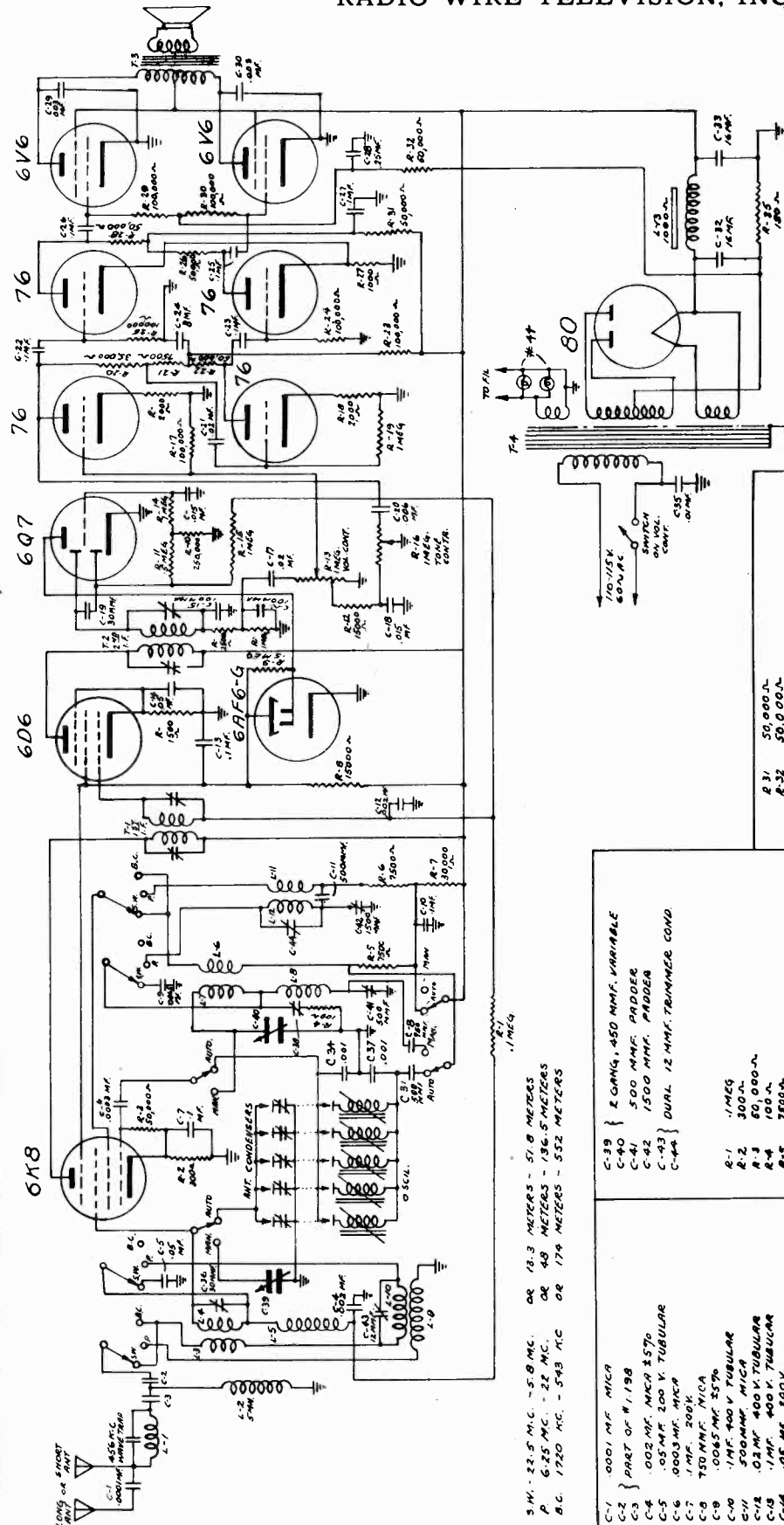
The signal generator is then set at 600 kc and the receiver tuned until a response is indicated. The padder condenser is then adjusted for maximum gain while the tuning gang condenser is rocked slightly to the left and right. The 1500 kc adjustment should then be rechecked.

**Long Wave Band:** The band selector switch is set in position for operation on the long wave band. The receiver and generator are both tuned to 300 kc and the oscillator trimmer is adjusted for maximum response. The antenna and first detector trimmers are adjusted in the order named for maximum output.

The signal generator is then set at 150 kc and the signal is tuned in. The long wave padder condenser is adjusted for maximum response while the gang tuning condenser is rocked slightly to the left and right. The 300 kc adjustment should then be rechecked.



LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.



11 TUBE A.C. RECEIVER  
USED ON C-37  
PARTS BY  
CHECKED Year

- R-31 50,000Ω
- R-32 50,000Ω
- R-33 100Ω
- R-34 100Ω
- R-35 180Ω 3 WATT
- L-1 456 MC TAP COIL # 119B
- L-2 CHOK
- L-3 2 BAND ANT. COIL
- L-4 2 BAND OSC. COIL # 1129
- L-5 POLICE BAND ANT. COIL # 1231
- L-6 POLICE BAND OSC. COIL
- L-7 1000 SPEAKER COIL
- T-1 INPUT I.F. # 1163
- T-2 OUTPUT I.F. # 1164
- T-3 POWER TRANSFORMER ON SPEAKER
- T-4 POWER TRANSFORMER ON 117V. # 9.162

- C-39 2 GANG, 450 MMF. VARIABLE
- C-40 500 MMF. PADDER
- C-41 1500 MMF. PADDER
- C-42 500 MMF. PADDER
- C-43 DUAL 12 MMF. TRIMMER COND.
- C-44
- R-1 .1 MEG
- R-2 300Ω
- R-3 50,000Ω
- R-4 100Ω
- R-5 7500Ω
- R-6 7500Ω
- R-7 30,000Ω
- R-8 50,000Ω
- R-9 500Ω
- R-10 50,000Ω
- R-11 1500Ω
- R-12 50,000Ω
- R-13 1 MEG
- R-14 1 MEG
- R-15 1 MEG
- R-16 100,000Ω
- R-17 100,000Ω
- R-18 2000Ω
- R-19 1 MEG
- R-20 35,000Ω
- R-21 7500Ω
- R-22 100,000Ω
- R-23 100,000Ω
- R-24 100,000Ω
- R-25 50,000Ω
- R-26 50,000Ω
- R-27 1000Ω
- R-28 30,000Ω
- R-29 100,000Ω
- R-30 100,000Ω

- C-1 0.001 MF. MICA
- C-2 PART OF # 119B
- C-3 0.02 MF. MICA # 576
- C-4 .05 MF. 200 V. TUBULAR
- C-5 .0003 MF. MICA
- C-6 .0003 MF. MICA
- C-7 .1 MF. 200V
- C-8 750 MMF. MICA
- C-9 .0065 MF. 576
- C-10 .1 MF. 400 V. TUBULAR
- C-11 500 MMF. MICA
- C-12 .03 MF. 400 V. TUBULAR
- C-13 .1 MF. 400 V. TUBULAR
- C-14 .05 MF. 500V.
- C-15 100 MMF. MICA
- C-16 .02 MF. 200V.
- C-17 .05 MF. 200V.
- C-18 30 MMF. MICA
- C-19 .008 MF. 500V. TUBULAR
- C-20 .02 MF. 400V. TUBULAR
- C-21 .1 MF. 400 V. TUBULAR
- C-22 .1 MF. 400 V. TUBULAR
- C-23 .05 MF. 400 V. TUBULAR
- C-24 .05 MF. 400 V. TUBULAR
- C-25 .1 MF. 400 V. TUBULAR
- C-26 .1 MF. 400 V. TUBULAR
- C-27 .1 MF. 400 V. TUBULAR
- C-28 .05 MF. 300 V.
- C-29 .003 MF. 500 V.
- C-30 .003 MF. 500 V.
- C-31 500 MMF. MICA
- C-32 .15 MF. 450 V. MET. ELECTROLYTIC
- C-33 .01 MF. 500 V. TUBULAR
- C-34 .01 MF. 500 V. TUBULAR
- C-35 30 MMF. TRIMMER
- C-36 .01 MF. MICA
- C-37 .01 MF. MICA
- C-38 12 MMF. TRIMMER

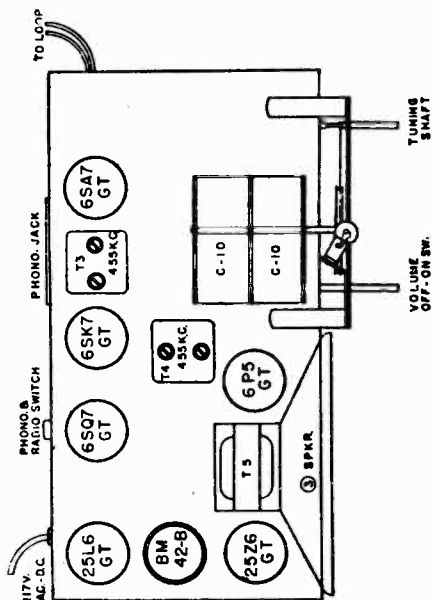
3 W. - 22.5 MC. - 5.8 MC. OR 12.3 METERS - 51.8 METERS  
 P. 6.25 MC. - 22 MC. OR 48 METERS - 136.5 METERS  
 B. 1720 MC. - 545 MC OR 174 METERS - 532 METERS



MODELS D43, D44  
 MODEL D66  
 MODELS D72, D73

LAFAYETTE RADIO  
 RADIO WIRE TELEVISION, INC.

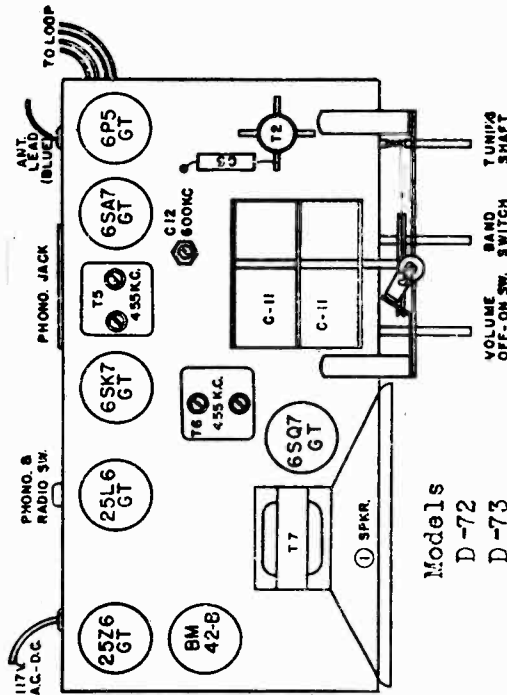
Model D-66



LOCATION OF PARTS ON TOP OF CHASSIS BASE.

For Conventional Alignment see

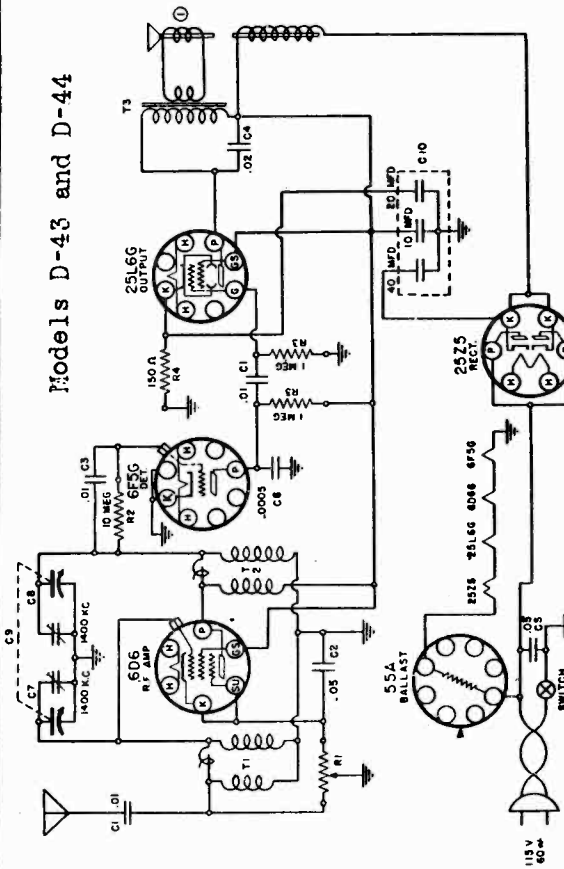
Special Section Volume VIII.



Models  
 D-72  
 D-73

This model has been designed to cover two separate frequency bands, a broadcast band from 540 K. C. to 1650 K. C. and a short wave band from 5.7 to 18.4 M.C.

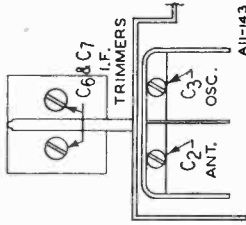
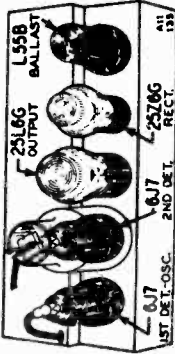
Models D-43 and D-44



LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

**CAUTION**—In any service work on the AC-DC chassis, keep it on a wood or other insulated surface to avoid contacts with ground.

**DC OPERATION**—Filament and ballast tube voltages will be the same as AC (for 117 volt line). The plate and bias voltages will be slightly lower than those shown above. When operated on DC, the rectifier tube acts as a low resistance series resistor with a drop of approximately 6 volts between plate and cathode.

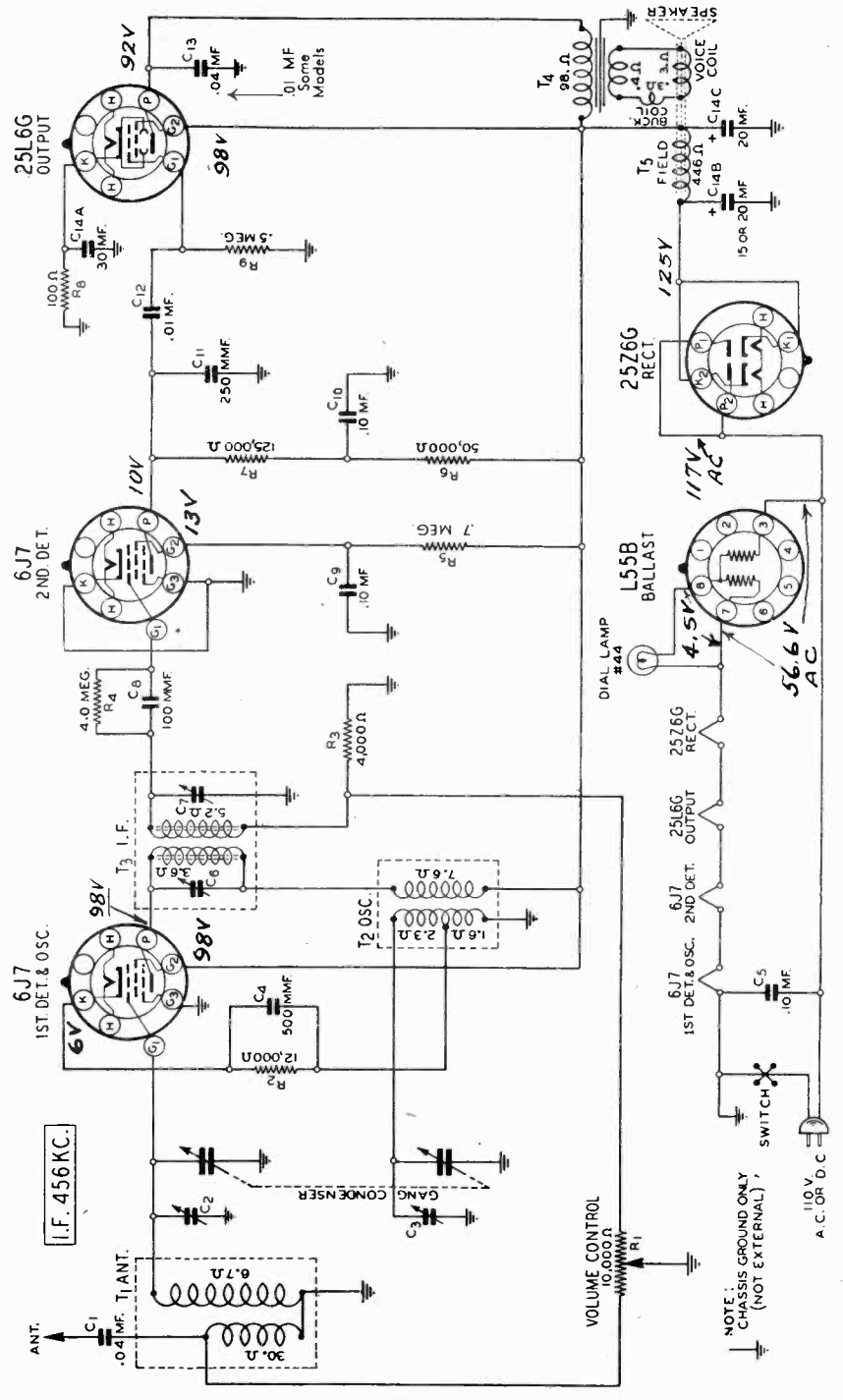


### ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments. Allow Chassis and Signal Generator to "Heat Up" for Several Minutes.			
<b>SIGNAL GENERATOR</b>	<b>DUMMY CONNECTION AT RADIO</b>	<b>CONDENSER SETTING</b>	<b>ADJUST TRIMMERS TO MAXIMUM</b>
456 KC	.1 mf.	Turn rotor to full open	(See Illustration)
1730 KC	200 mmf.	Turn rotor to full open	I.F. (C6) & (C7)
1500 KC	200 mmf.	Turn rotor to max. output	Oscillator (C3)
			Antenna (C2)

The following equipment is required for aligning:  
Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.  
Output Indicating Meter: Non-Metallic Screwdriver.  
Dummy Antennas—.1 mf. and 200 mmf.

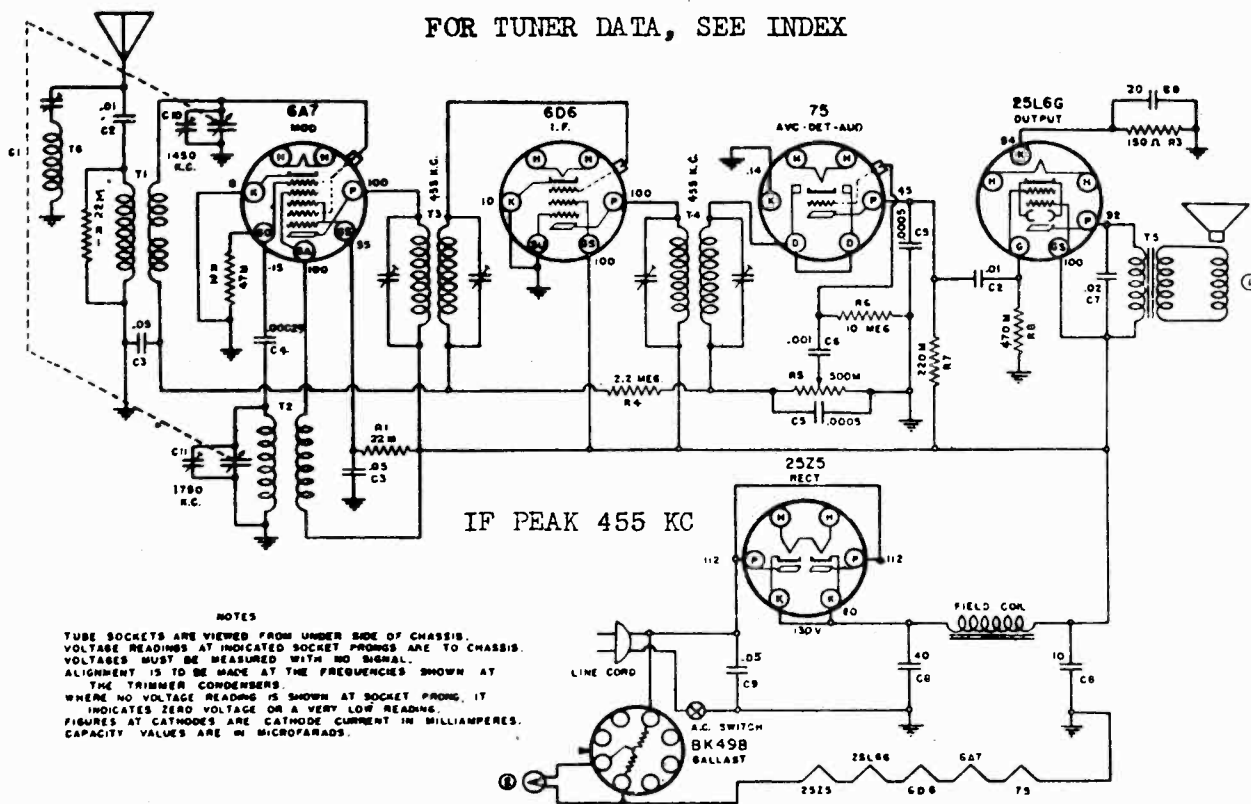
**NOTE**—To obtain dial scale calibration, tune in an 800 KC signal. The pointer should be at the 800 KC mark on the dial. If it is not, loosen the pointer screw, set the pointer at the 800 KC mark and retighten the pointer screw.



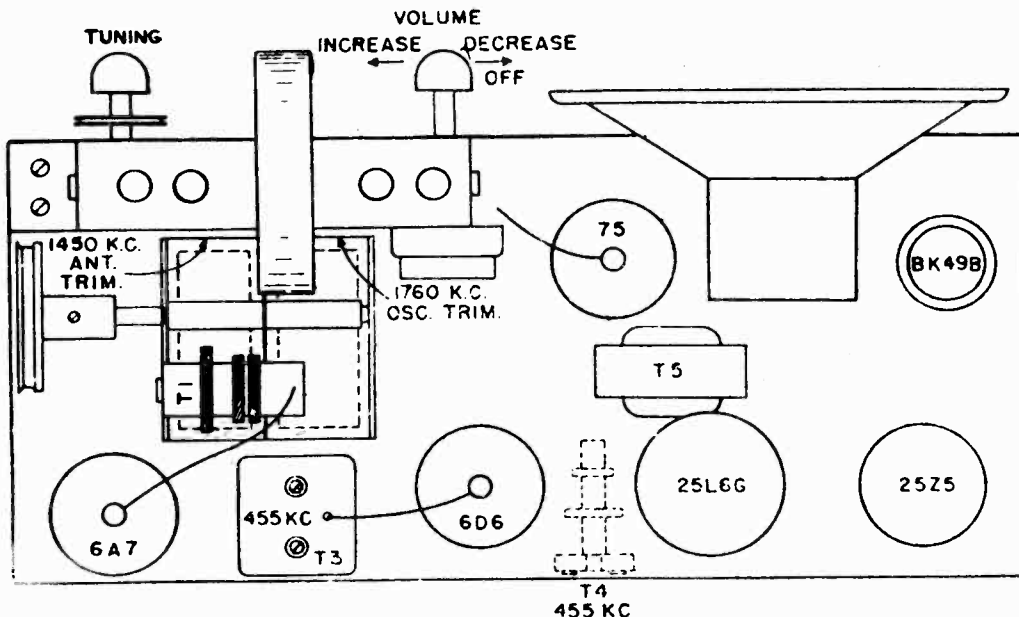
MODELS D58, D59

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

FOR TUNER DATA, SEE INDEX



**NOTES**  
TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS.  
VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO CHASSIS.  
VOLTAGES MUST BE MEASURED WITH NO SIGNAL.  
ALIGNMENT IS TO BE MADE AT THE FREQUENCIES SHOWN AT THE TRIMMER CONDENSERS.  
WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PRONG, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING.  
FIGURES AT CATHODES ARE CATHODE CURRENT IN MILLIAMPERES.  
CAPACITY VALUES ARE IN MICROFARADS.



FOR CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOLUME VIII

### POWER SUPPLY

The receiver is designed for operation from 105-130 volt Alternating Current (A.C.) supply or a 105-130 volt Direct Current (D.C.) supply. Never connect the receiver to any supply having a higher voltage than that specified on the sticker. If you are not sure of the power supply voltage at your home, your Power Company will furnish the information.

When using a D.C. supply allow sufficient time for tubes to warm up (approximately 1½ minutes), and if at that time the receiver does not operate, remove the line cord plug from the socket and reverse. Replace plug in the reverse position and allow tubes to warm up, at which time the receiver will operate.



MODEL B68

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

Alignment and Calibration

A signal generator that will provide an accurately calibrated signal at 456, 1730, 1500, 600, 4800, 4200, 16,000, 15,000 and 6000 KC and an accurately indicating meter are required. It will be practically impossible to align the receiver if unsatisfactory apparatus is used. If a station is tuned in with the selectivity control in the broad position and this control is then turned to the sharp position, the station may disappear. This is not an indication that the receiver is out of alignment.  
Use a non-metallic screwdriver for the adjustments. The complete procedure is as follows:

I. F. Adjustment

Set the signal generator for a signal of 456 KC. Connect the output of the signal generator through a 0.1 mf. condenser to the switch end of condenser C11—see Fig. 7. There is a lead which goes to the lug on top of the center stator section of the tuning condenser—see Fig. 11. The connection can be made at this lug.  
Connect the ground lead of the receiver to the ground post of the signal generator.  
Turn the band selector to the Range B position (standard wave band—purple dial color).  
Turn the selectivity control to the sharp position and keep it in this position for all adjustments.  
Turn the volume control to the maximum position. Attenuate the signal from the signal generator to prevent the levelling-off action of the A.V.C.  
Then adjust the five I.F. trimmers until maximum output is obtained. The adjusting screws for these condensers are reached from the top of the chassis, and the location is shown in Fig. 11.

Range B Alignment

Set the signal generator for 1730 KC.  
Turn the rotor of the tuning condenser to the full open position.  
Keep the band selector in the standard wave position.  
Connect the antenna lead of the receiver through a 200 mmf. condenser to the output of the signal generator.  
For this and all subsequent adjustments keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.  
Adjust the oscillator Range B trimmer (C32) until maximum output is obtained. The location of this trimmer is shown in Fig. 9.

1500 KC Adjustment

Set the signal generator for 1500 KC.  
Turn the rotor of the tuning condenser carefully until maximum output is obtained.  
Loosen the pointer set screw and set the large pointer at the 1500 KC mark on the standard wave band scale. Retighten the set screw.  
Adjust the interstage Range B trimmer (C8) and antenna Range B trimmer (C2) to maximum.  
Do not change the setting of the oscillator Range B trimmer.

1730 KC Adjustment

Set the signal generator for 1730 KC.  
Turn the rotor of the tuning condenser to the full open position.  
Keep the band selector in the standard wave position.  
Connect the antenna lead of the receiver through a 200 mmf. condenser to the output of the signal generator.  
For this and all subsequent adjustments keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.  
Adjust the oscillator Range B trimmer (C32) until maximum output is obtained. The location of this trimmer is shown in Fig. 9.

1500 KC Adjustment

Set the signal generator for 1500 KC.  
Turn the rotor of the tuning condenser carefully until maximum output is obtained.  
Loosen the pointer set screw and set the large pointer at the 1500 KC mark on the standard wave band scale. Retighten the set screw.  
Adjust the interstage Range B trimmer (C8) and antenna Range B trimmer (C2) to maximum.  
Do not change the setting of the oscillator Range B trimmer.

**600 KC Adjustment**  
Set the signal generator for 600 KC.  
Turn the tuning condenser rotor until maximum output is obtained.  
Turn the rotor slowly back and forth at the same time adjusting the 600 KC trimmer until the peak of greatest intensity is obtained. See Fig. 9 for location of this trimmer.  
Be sure to use a non-metallic screwdriver for this adjustment.

**Range C Alignment**  
**4800 KC Adjustment**  
Set the signal generator for 4800 KC.  
Connect the antenna lead of the receiver through a 400 ohm resistor to the output of the signal generator.  
Turn the rotor of the tuning condenser to the full open position.  
Turn the band selector in the Range C position (1st short wave band—green dial color).  
As mentioned above, keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.  
Adjust the oscillator Range C trimmer (C30) until maximum output is obtained. See Fig. 9 for location of this trimmer.

**4200 KC Adjustment**  
Set the signal generator for 4200 KC.  
Turn the rotor of the tuning condenser carefully until maximum output is obtained.  
Adjust the interstage Range C trimmer (C9) and antenna Range C trimmer (C3) to maximum.  
Do not change the setting of the oscillator Range C trimmer.

**16,000 KC Adjustment**  
Set the signal generator for 16,000 KC.  
Keep the antenna lead of the receiver connected through the 400 ohm resistor to the output of the signal generator.  
Turn the rotor of the tuning condenser to the full open position.  
Turn the band selector to the Range D position (2nd short wave band—red dial color).  
As mentioned above, keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent A.V.C. action.  
Adjust the oscillator Range D trimmer (C29) until maximum output is obtained. See Fig. 9 for location of this trimmer.

**6000 KC Adjustment**  
Set the signal generator for 6000 KC.  
Turn the tuning condenser rotor until maximum output is obtained.  
Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 9 for location of this trimmer.

Use a non-metallic screwdriver for this adjustment.

**Testing Batteries**  
If the receiver does not operate satisfactorily test the batteries under load. A high resistance meter is required for the "B" and "C" voltages. If any of the batteries are considerably below their rated voltage, new ones should be used. When the "B" batteries are replaced the "C" batteries should also be replaced. The reason for this is that the "C" drain is such that the "C" batteries are run down in about the same time as the "B" batteries.

**"A" Battery and Regulator**  
This receiver is designed to operate with a 2 volt storage cell, but may be operated with a 3 volt dry "A" battery if used with a voltage regulator. The receiver may also be used with an air cell "A" battery provided a series resistor is used to reduce the voltage to the proper level of 2 volts for the tube filaments. Although the voltage regulator mentioned above can be used, the series resistor is cheaper and is satisfactory as the voltage of one of these batteries drops very little during the useful life of the battery.

**15,000 KC Adjustment**  
Set the signal generator for 15,000 KC.  
Turn the rotor of the tuning condenser carefully until maximum output is obtained.  
Adjust the interstage Range D trimmer (C10) and antenna Range D trimmer (C4) to maximum.  
When adjusting the interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.  
Then go back and repeat the procedure as given for the 16,000 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

**6000 KC Adjustment**  
Set the signal generator for 6000 KC.  
Turn the tuning condenser rotor until maximum output is obtained.  
Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 9 for location of this trimmer.

Use a non-metallic screwdriver for this adjustment.

**Testing Batteries**  
If the receiver does not operate satisfactorily test the batteries under load. A high resistance meter is required for the "B" and "C" voltages. If any of the batteries are considerably below their rated voltage, new ones should be used. When the "B" batteries are replaced the "C" batteries should also be replaced. The reason for this is that the "C" drain is such that the "C" batteries are run down in about the same time as the "B" batteries.

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**15,000 KC Adjustment**  
Set the signal generator for 15,000 KC.  
Turn the rotor of the tuning condenser carefully until maximum output is obtained.  
Adjust the interstage Range D trimmer (C10) and antenna Range D trimmer (C4) to maximum.  
When adjusting the interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.  
Then go back and repeat the procedure as given for the 16,000 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

**6000 KC Adjustment**  
Set the signal generator for 6000 KC.  
Turn the tuning condenser rotor until maximum output is obtained.  
Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 9 for location of this trimmer.

Use a non-metallic screwdriver for this adjustment.

**Testing Batteries**  
If the receiver does not operate satisfactorily test the batteries under load. A high resistance meter is required for the "B" and "C" voltages. If any of the batteries are considerably below their rated voltage, new ones should be used. When the "B" batteries are replaced the "C" batteries should also be replaced. The reason for this is that the "C" drain is such that the "C" batteries are run down in about the same time as the "B" batteries.

**"A" Battery and Regulator**  
This receiver is designed to operate with a 2 volt storage cell, but may be operated with a 3 volt dry "A" battery if used with a voltage regulator. The receiver may also be used with an air cell "A" battery provided a series resistor is used to reduce the voltage to the proper level of 2 volts for the tube filaments. Although the voltage regulator mentioned above can be used, the series resistor is cheaper and is satisfactory as the voltage of one of these batteries drops very little during the useful life of the battery.

**15,000 KC Adjustment**  
Set the signal generator for 15,000 KC.  
Turn the rotor of the tuning condenser carefully until maximum output is obtained.  
Adjust the interstage Range D trimmer (C10) and antenna Range D trimmer (C4) to maximum.  
When adjusting the interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.  
Then go back and repeat the procedure as given for the 16,000 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

**6000 KC Adjustment**  
Set the signal generator for 6000 KC.  
Turn the tuning condenser rotor until maximum output is obtained.  
Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 9 for location of this trimmer.

Use a non-metallic screwdriver for this adjustment.

**Testing Batteries**  
If the receiver does not operate satisfactorily test the batteries under load. A high resistance meter is required for the "B" and "C" voltages. If any of the batteries are considerably below their rated voltage, new ones should be used. When the "B" batteries are replaced the "C" batteries should also be replaced. The reason for this is that the "C" drain is such that the "C" batteries are run down in about the same time as the "B" batteries.

**"A" Battery and Regulator**  
This receiver is designed to operate with a 2 volt storage cell, but may be operated with a 3 volt dry "A" battery if used with a voltage regulator. The receiver may also be used with an air cell "A" battery provided a series resistor is used to reduce the voltage to the proper level of 2 volts for the tube filaments. Although the voltage regulator mentioned above can be used, the series resistor is cheaper and is satisfactory as the voltage of one of these batteries drops very little during the useful life of the battery.

**15,000 KC Adjustment**  
Set the signal generator for 15,000 KC.  
Turn the rotor of the tuning condenser carefully until maximum output is obtained.  
Adjust the interstage Range D trimmer (C10) and antenna Range D trimmer (C4) to maximum.  
When adjusting the interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.  
Then go back and repeat the procedure as given for the 16,000 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

**6000 KC Adjustment**  
Set the signal generator for 6000 KC.  
Turn the tuning condenser rotor until maximum output is obtained.  
Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 9 for location of this trimmer.

Use a non-metallic screwdriver for this adjustment.

**Testing Batteries**  
If the receiver does not operate satisfactorily test the batteries under load. A high resistance meter is required for the "B" and "C" voltages. If any of the batteries are considerably below their rated voltage, new ones should be used. When the "B" batteries are replaced the "C" batteries should also be replaced. The reason for this is that the "C" drain is such that the "C" batteries are run down in about the same time as the "B" batteries.

**"A" Battery and Regulator**  
This receiver is designed to operate with a 2 volt storage cell, but may be operated with a 3 volt dry "A" battery if used with a voltage regulator. The receiver may also be used with an air cell "A" battery provided a series resistor is used to reduce the voltage to the proper level of 2 volts for the tube filaments. Although the voltage regulator mentioned above can be used, the series resistor is cheaper and is satisfactory as the voltage of one of these batteries drops very little during the useful life of the battery.

**15,000 KC Adjustment**  
Set the signal generator for 15,000 KC.  
Turn the rotor of the tuning condenser carefully until maximum output is obtained.  
Adjust the interstage Range D trimmer (C10) and antenna Range D trimmer (C4) to maximum.  
When adjusting the interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.  
Then go back and repeat the procedure as given for the 16,000 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

**6000 KC Adjustment**  
Set the signal generator for 6000 KC.  
Turn the tuning condenser rotor until maximum output is obtained.  
Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 9 for location of this trimmer.

Use a non-metallic screwdriver for this adjustment.

**Testing Batteries**  
If the receiver does not operate satisfactorily test the batteries under load. A high resistance meter is required for the "B" and "C" voltages. If any of the batteries are considerably below their rated voltage, new ones should be used. When the "B" batteries are replaced the "C" batteries should also be replaced. The reason for this is that the "C" drain is such that the "C" batteries are run down in about the same time as the "B" batteries.

**"A" Battery and Regulator**  
This receiver is designed to operate with a 2 volt storage cell, but may be operated with a 3 volt dry "A" battery if used with a voltage regulator. The receiver may also be used with an air cell "A" battery provided a series resistor is used to reduce the voltage to the proper level of 2 volts for the tube filaments. Although the voltage regulator mentioned above can be used, the series resistor is cheaper and is satisfactory as the voltage of one of these batteries drops very little during the useful life of the battery.

**15,000 KC Adjustment**  
Set the signal generator for 15,000 KC.  
Turn the rotor of the tuning condenser carefully until maximum output is obtained.  
Adjust the interstage Range D trimmer (C10) and antenna Range D trimmer (C4) to maximum.  
When adjusting the interstage Range D trimmer, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.  
Then go back and repeat the procedure as given for the 16,000 KC adjustment. If it is found necessary to make any appreciable change in the setting of the oscillator Range D trimmer, the 15,000 KC adjustment must be repeated.

**6000 KC Adjustment**  
Set the signal generator for 6000 KC.  
Turn the tuning condenser rotor until maximum output is obtained.  
Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 9 for location of this trimmer.

D. C. Resistance of Windings  
Refer to Figs. 10 & 2

Following are the D. C. resistances of the various coil windings in the chassis. The values given below will vary slightly in different sets.

Part No.	Item	Code	D. C. Resistance in Ohms
P-9A17	Antenna R. F. Transformer	T1	21.8
	Range B Primary Winding		0.3
	Range C Primary Winding		0.2
	Range D Primary Winding		6.1
	Range C Secondary Winding		1.9
	Range D Secondary Winding		Small
P-9A49	Interstage R. F. Transformer	T3	3.7
	Range B Primary Winding		2.6
	Range C Primary Winding		0.5
	Range D Primary Winding		3.8
	Range C Secondary Winding		1.8
	Range D Secondary Winding		Small
P-9A05	Oscillator Inductor cont'd	T5	1.1
	Range B Plate Coil		1.0
	Range C Plate Coil		0.3
	Range D Plate Coil		0.3
	Red White Tap to White		3.7
	Red White Tap to Ground		0.5
	Green White Tap to Ground		0.7
	Green White Tap to Ground		0.3
P-9A05	Oscillator Inductor cont'd	T5	Small
	Black White Tap to Black		Small
	Black White Tap to Ground		Small
P-9A07	1st I. F. Transformer	T3	8.9
	Primary Winding		8.9
	Coupling Winding		0.3
P-9A08	2nd I. F. Transformer	T4	8.9
	Primary Winding		8.9
	Coupling Winding		0.3
P-9A09	3rd I. F. Transformer	T5	9.9
	Primary Winding		9.9
	Coupling Winding		2.3
P-9A11	Audio Input Transformer	T6	100.0
	Primary Winding		100.0
	Secondary Winding		50.0
P-13A24	Permanent Magnet Dynamic Speaker		50.0
	Speaker Voice Coil		1.6
	Audio Output Transformer		19.2
	Center Tap to Inside		24.3
	Center Tap to Outside		Small
P-9A20	Single Filament Reactor	L1	Small
P-9A21	Double Filament Reactor—Baker Section	L1	Small
P-9A40	500 P.F. Plate Resistor		3.9
P-9A39	High Frequency Oscillator Tuning Coil	L4	1.9

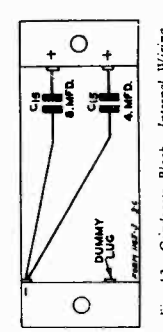
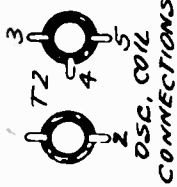
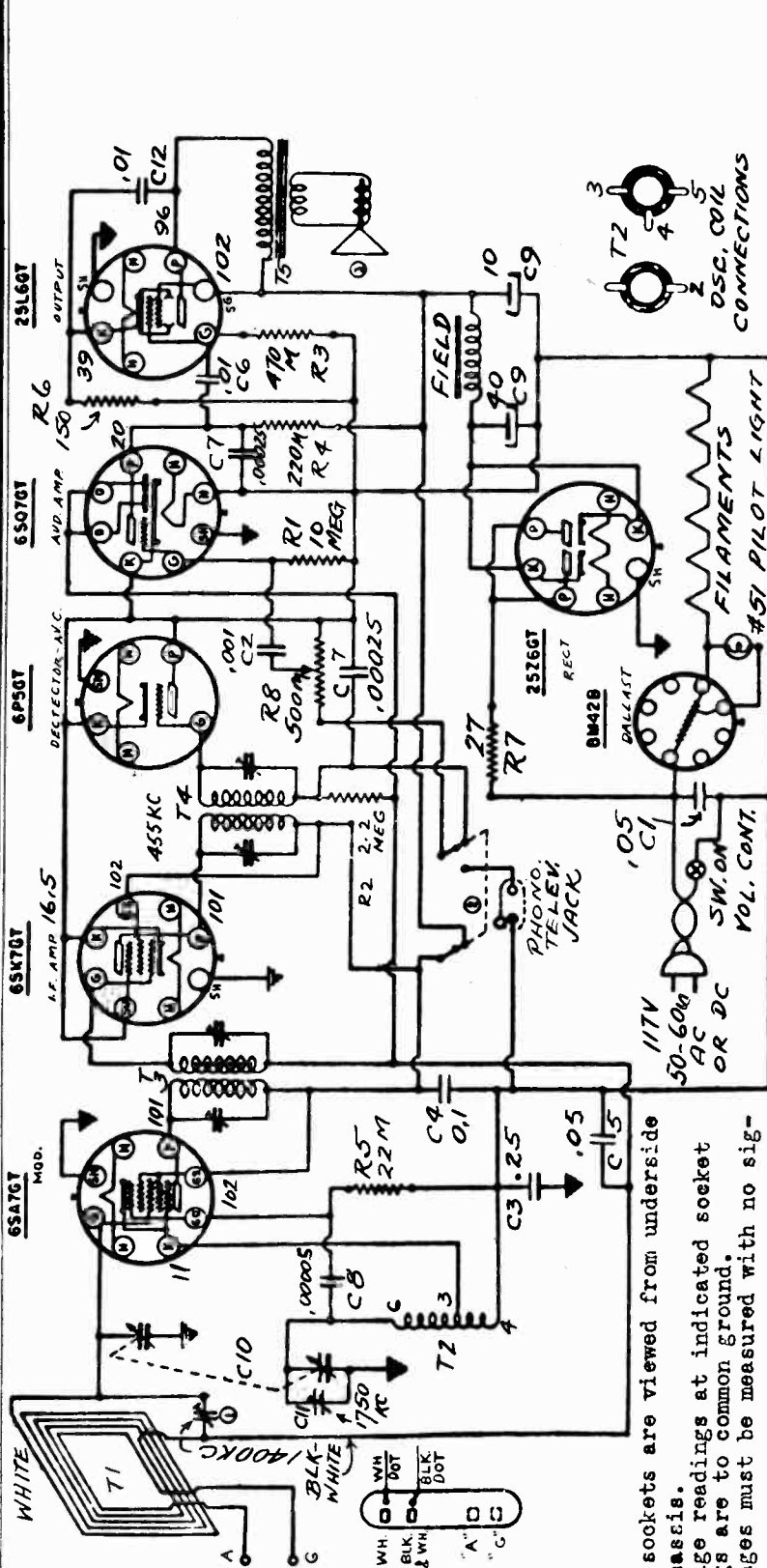


Fig. 12—Condenser Block—Internal Wiring



MODEL D66

## LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

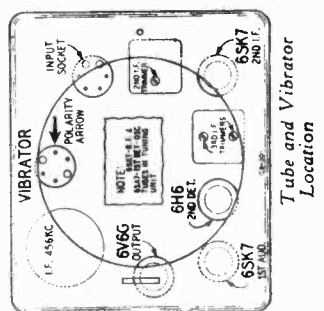
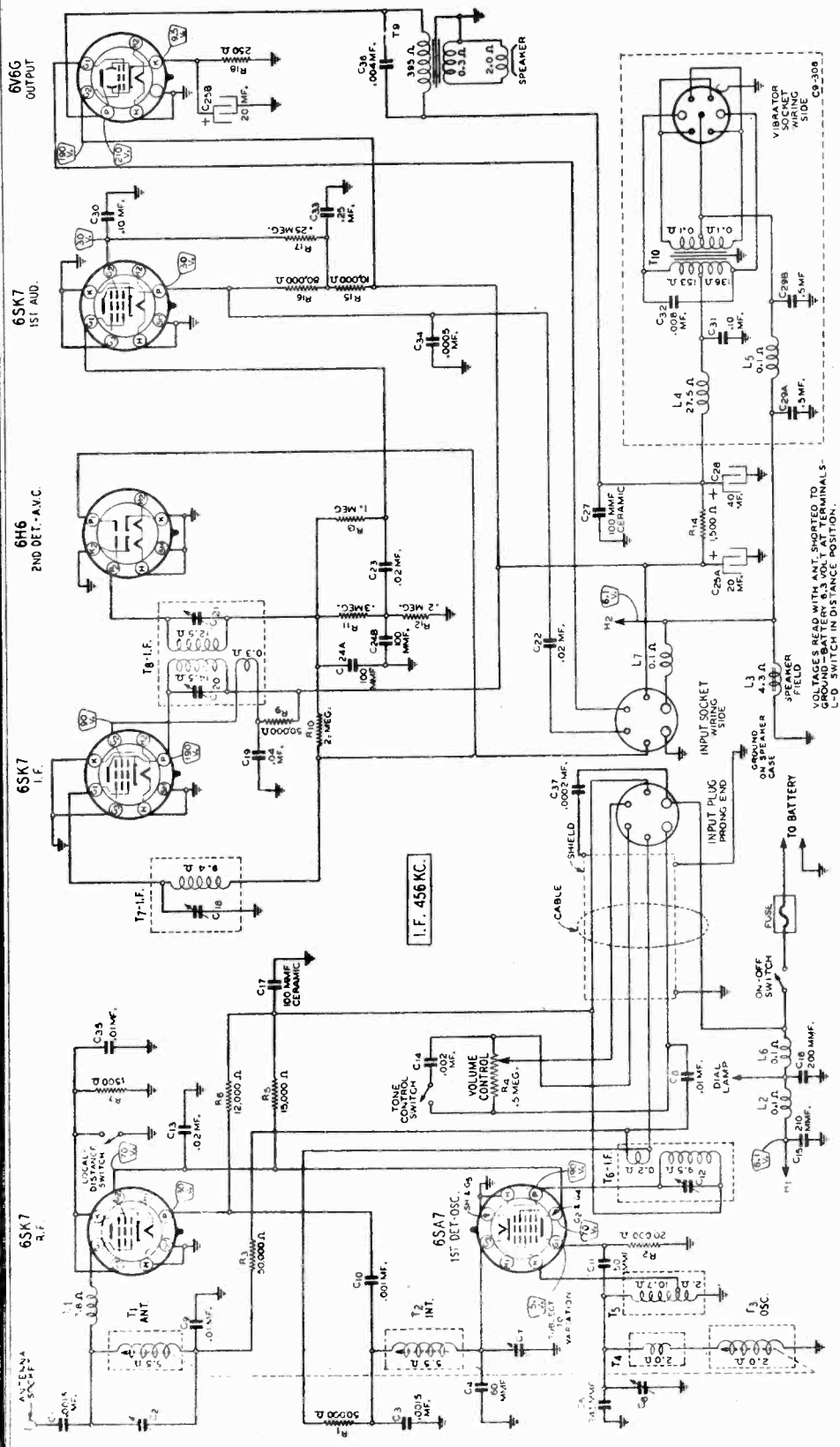


Tube sockets are viewed from underside of chassis.  
Voltage readings at indicated socket prongs are to common ground.  
Voltages must be measured with no signal.

Where no voltage reading is shown at socket prong, it indicates zero voltage or a very low reading.  
Figures at cathodes are cathode current in milliamperes.  
Alignment is to be made at the frequency shown at each trimmer condenser.  
Capacity values are in microfarads.  
Voltages are measured with 1000 ohm per volt voltmeter.

Code Part No.	Description	Code Part No.	Description
C1	.05 mf. 400V. Tubular Cond.	T1	82-10 Loop Antenna
C2	16-124 .001" "	T2	10-311 Oscillator Coil
C3	16-120 .25 " 200V.	T3	10-317 1st I.F. Transformer
C4	.1 " " "	T4	10-312 2nd " "
C5	1622 .05 " " "	T5	----- Output Transformer (on speaker)
C6	16-121 .01 " " "	1	20-129 Trimmer (on loop)
C7	1504 .00025 mf. Mica Condenser	2	69-140 Phono switch
C8	1503 .00005 " " "	3	79-283 8 Inch Dynamic Speaker
C9	40 X 10" 150 W.V. Electrolytic		
C10	2 gang variable condenser		
C12	16-119 .01 mf. 400V. Tubular Cond.		

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.



Tube and Vibrator Location

- Power Consumption - 6.8 Amperes at 6.3 Volts
- Power Output - 3 Watts Undistorted
- Sensitivity - 1.5 Microvolts at .5 Watt Output (L-D Switch in Distance Position)
- Selectivity - 39 KC Broad at 1000 Times Signal
- Tuning Frequency Range - 540 to 1560 KC
- Intermediate Frequency - 456 KC
- Speaker - 6" Electro-Dynamic

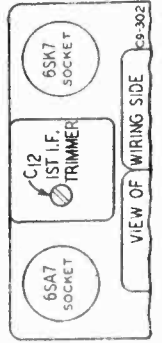


Fig. 6 - Location of 1st I.F. Trimmer in Tuning Unit



MODEL BB68  
MODEL BB69

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

## Antenna

**A shielded antenna cable with baysonet connector plug is required.**  
The plug on the antenna cable is inserted in the socket at the bottom of the tuning unit case as shown in Fig. 1. The wire at the other end of the cable is connected to the antenna.

### HIGH CAPACITY ANTENNA

If this radio is to be installed with a high capacity car antenna (200 mmf total capacity of antenna and shielded cable) an adapter must be used. The adapter is inserted in the socket at the bottom of the tuning unit case. Then the antenna plug is inserted in the adapter.

### LOW CAPACITY ANTENNA

The antenna should be mounted on the same side of the car as the tuning unit.

## Procedure for Setting the Station Buttons

1500 KC end of the dial, until the stop is reached.  
**LOCK THE TUNING MECH.** ANISM by inserting a screwdriver, as shown in Fig. 1, in the locking screw opening and turning the locking screw in a clockwise direction until it is tight.

Insert a celluloid reinforcement tab half-way in the slot at the front of station button No. 1.—See Fig. 3.



Remove the correct station call letter tab for button No. 1 from the sheet supplied by bending the sheet back and forth at the score marks. Place the call letter tab in front of the celluloid reinforcement tab and insert it in slot. Push both tabs all the way in the button slot. Follow the same procedure for inserting the station call letter tabs in any other buttons.

After the stations are set and the mechanism is locked, tune in each of them by depressing the proper button. If any of them does not appear to be properly tuned in after the button has been depressed, reset the station for that button following the procedure outlined above. Changing the setting of one button will not affect the setting of the others.

## Alignment Procedure

Insert the antenna cable plug in the antenna socket on the tuning unit. The total capacity of the antenna cable and dummy antenna should be 60 mmf. If the cable, for example, has a capacity of 25 mmf., use a 35 mmf. condenser for a dummy antenna. Connect the other end of the antenna cable through the dummy antenna capacity to the output of the signal generator.

Set the signal generator for 1560 KC. Turn the tuning knob until the iron cores are as far out of the tuning coils as they will go. Then adjust the oscillator trimmer C6 (Fig. 1) until maximum output is obtained.

Set the signal generator for 1000 KC. Turn the tuning knob until maximum output is obtained. Adjust interstage trimmer C7 and antenna trimmer C2 for maximum output.—See Fig. 1.

TURN THE MANUAL TUNING KNOB CAREFULLY BACK AND FORTH UNTIL THE ABOVE MENTIONED STATION IS ACCURATELY TUNED IN TO THE LOUDEST POINT. This station is now set on button No. 1.

**CAUTION**—Do not touch this button again while the mechanism is unlocked as the setting may be altered.

Next, keep the MANUAL TUNING BUTTON DEPRESSED WITH ONE HAND and with the other hand depress the second station button FIRMLY AND GENTLY. Then proceed to set the second station on your list in the same manner as described above.

Then continue to set any additional stations on your list on the remaining buttons.

After all desired stations have been set, release any station button which is depressed as follows: **KEEP THE MANUAL TUNING BUTTON DEPRESSED WITH ONE HAND** and, with the other hand, push in the OFF button a slight amount—only enough to release any station button which is depressed. Should the OFF button be pushed all the way in to the depressed position, no harm will be done except that the dial will not be illuminated.

Turn the manual tuning knob so that the indicator moves toward the speaker grille and speaker from tuning unit case in accordance with the article under "General Installation Items" in this manual.

Remove the grille and speaker from tuning unit case in accordance with the article under "General Installation Items" in this manual.

Set the signal generator for 456 KC and connect the output of the signal generator through a .05 mf. condenser to the control grid of the 6SA7 1st detector tube (prong No. 8). Connect the ground lead of the signal generator to the tuning unit chassis. Set the volume control at maximum and the Local-Distance switch to the distance position. Attenuate the signal from the signal generator to prevent the leveling off action of the AVC.

Then adjust the 4 I.F. trimmers until maximum output is obtained. Three of the trimmers are in the speaker unit—See Fig. 2. One trimmer is at the top of the tuning unit.—See Fig. 6.

It is better to list the station with the lowest kilocycle number first, the station with the next higher kilocycle number next, and so on.

Depress the manual tuning button AND KEEP IT DEPRESSED DURING THE ENTIRE SETTING OPERATION AS DESCRIBED ABOVE. See Fig. 1 for location of buttons. Turn the manual tuning knob so that the indicator moves toward the 1500 KC end of the dial until the stop is reached.

**UNLOCK THE TUNING MECH.** ANISM by inserting a screwdriver, as shown in Fig. 1, in the locking screw opening at the bottom of the tuning unit. Loosen the locking screw by turning it counter-clockwise as far as it will go.

**TO SET STATIONS ACCURATELY, DO NOT JAR THE RADIO OR BUTTONS WHILE THE MECHANISM IS UNLOCKED.** KEEP THE MANUAL TUNING BUTTON DEPRESSED WITH ONE HAND and with the other hand, depress the first (left hand) station button. Both will remain depressed.

Select the first station from the list you have made and tune in this station.

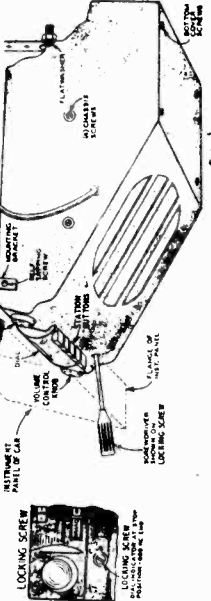


Fig. 1—Details of Mounting Tuning and Speaker Units

MODEL BB68

MODEL BB69

For the door hinge and over-the-roof type antennas, the antenna lead must be shielded the entire distance from the radio to the point where the lead goes through the car body to the outside. In the case of a running board antenna, the antenna lead

shielding must extend all the way to the antenna.

When the antenna cable is connected to an antenna lead coming down the pillar post, the shielded cable should be pushed several inches up into the pillar post.

Fig. 1—Details of Mounting Tuning and Speaker Units

Keep the antenna cable as far away from car wiring as possible and ground the pigtail of the antenna cable shield at the antenna end, otherwise ignition noise may be picked up. The length of the pigtail from the grounding point to the end of the antenna cable should be kept as short as possible, preferably not over one inch.

The total capacity of antenna and shielded cable should be 35 to 60 mmf.

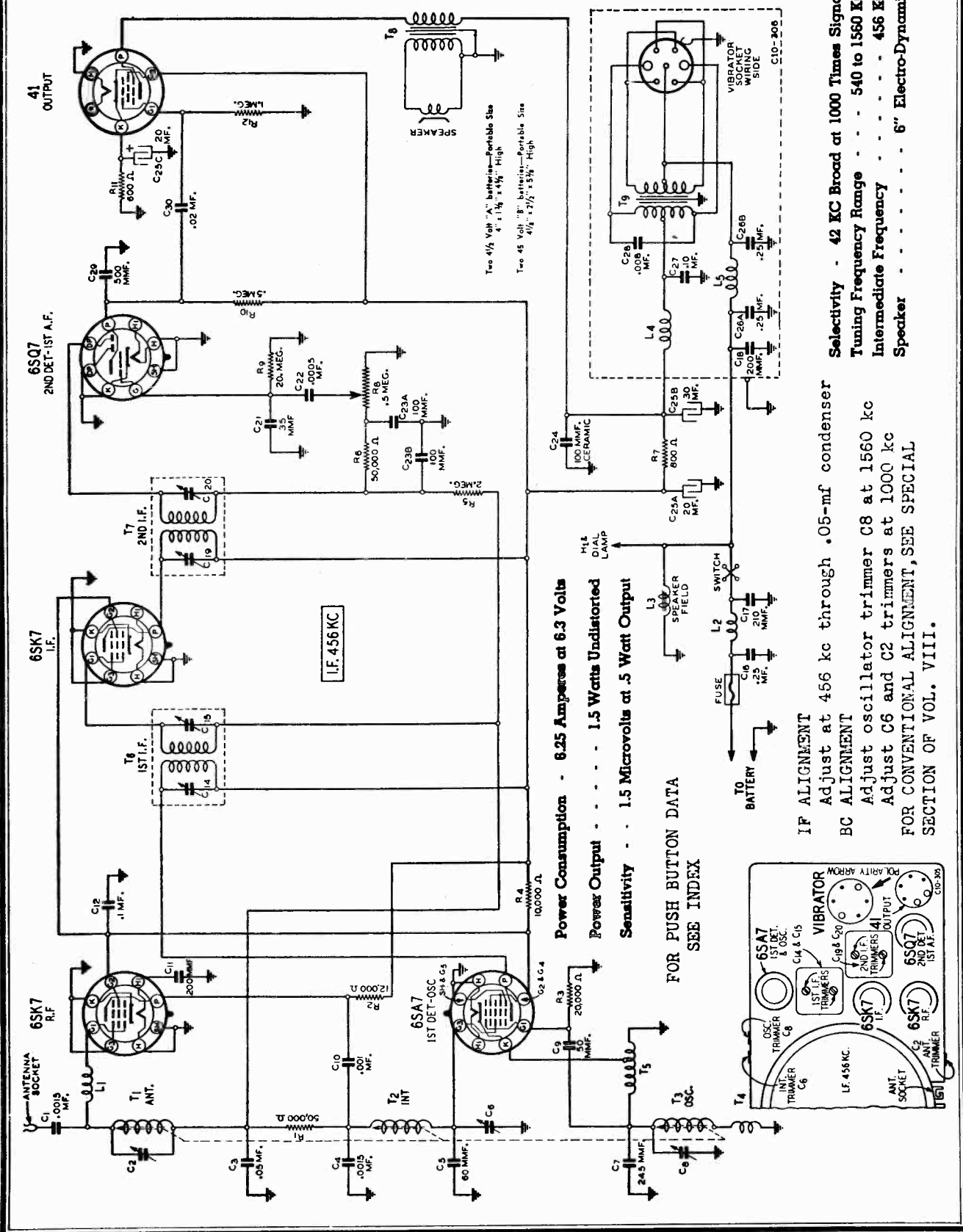
Types of High Capacity Antennas  
— Running board, over-the-roof types which are long and are mounted close to the metal roof of the car; ordinary built in roof antennas (not metal roof).

### ANTENNA CABLE

The total capacity of antenna and shielded cable should be 35 to 60 mmf.

Keep the antenna cable as far away from car wiring as possible and ground the pigtail of the antenna cable shield at the antenna end, otherwise ignition noise may be picked up. The length of the pigtail from the grounding point to the end of the antenna cable should be kept as short as possible, preferably not over one inch.

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

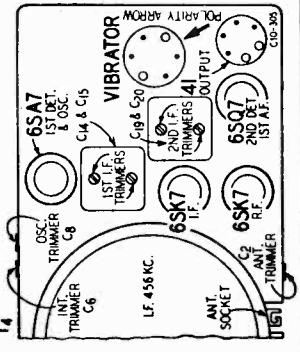


Selectivity - 42 KC Broad at 1000 Times Signal  
Tuning Frequency Range - 540 to 1560 KC  
Intermediate Frequency - 456 KC  
Speaker - 6" Electro-Dynamic

IF ALIGNMENT  
Adjust at 456 kc through .05-mf condenser  
BC ALIGNMENT  
Adjust oscillator trimmer C8 at 1560 kc  
Adjust C6 and C2 trimmers at 1000 kc  
FOR CONVENTIONAL ALIGNMENT, SEE SPECIAL SECTION OF VOL. VIII.

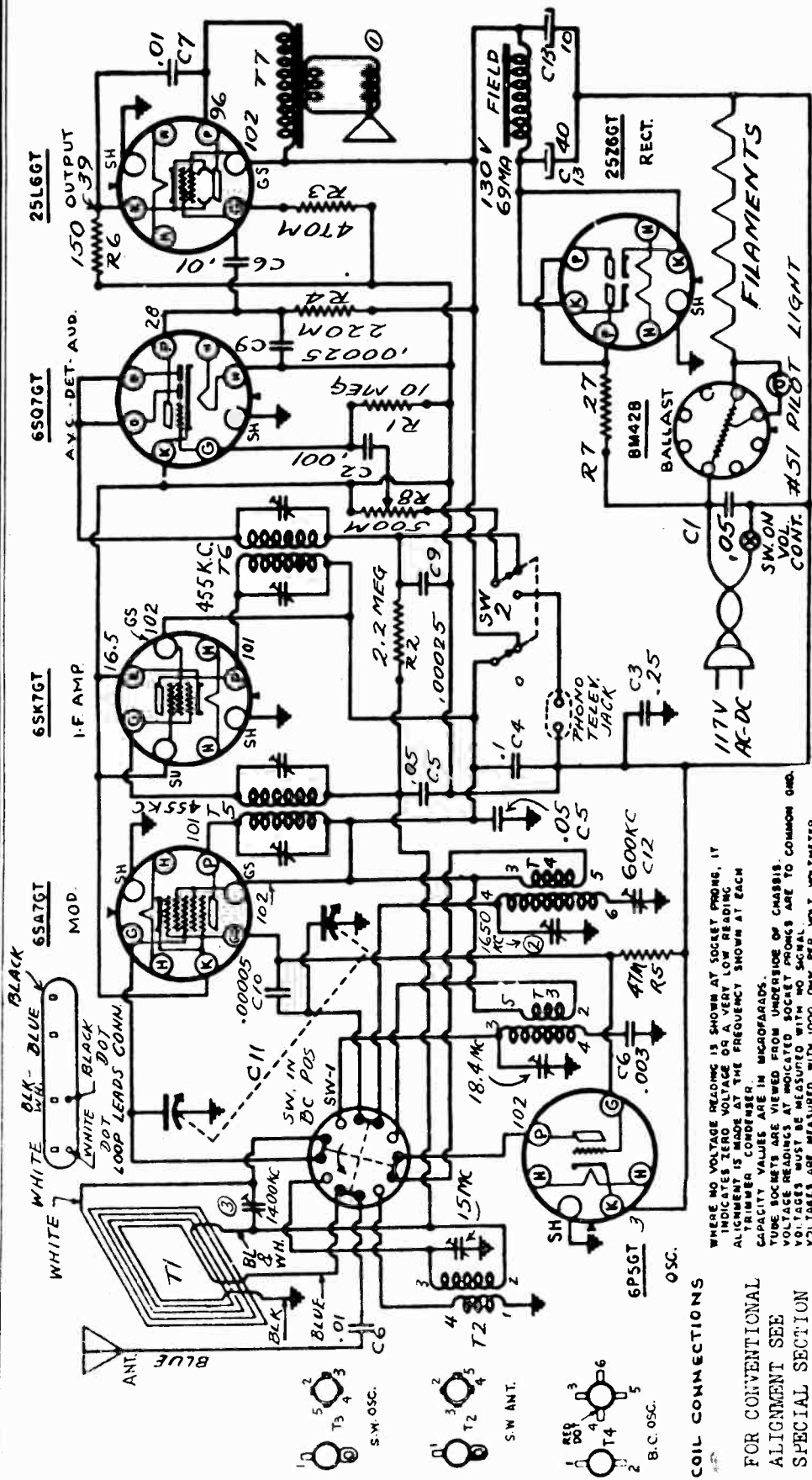
Power Consumption - 6.25 Amperes at 6.3 Volts  
Power Output - 1.5 Watts Undistorted  
Sensitivity - 1.5 Microvolts at .5 Watt Output

FOR PUSH BUTTON DATA  
SEE INDEX



LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

MODELS D72, D73



WHERE NO VOLTAGE READING IS SHOWN AT SOCKET PRONG, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING. ALIGNMENT IS MADE AT THE FREQUENCY SHOWN AT EACH TRIMMER CONDENSER.  
CAPACITY VALUES ARE IN MICROFARADS.  
TUBE SOCKETS ARE VIEWED FROM UNDERSIDE OF CHASSIS.  
VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO COMMON GND.  
VOLTAGE READINGS AT INDICATED SOCKET PRONGS FOR SIGNAL VOLT VOLTMETER.  
VOLTAGES ARE MEASURED WITH 1000 OHM PER DIVISION VOLTMETER.  
FIGURES AT CATHODES ARE CATHODE CURRENT IN MILLIAMPERES.

COIL CONNECTIONS  
FOR CONVENTIONAL ALIGNMENT SEE SPECIAL SECTION VOLUME VIII

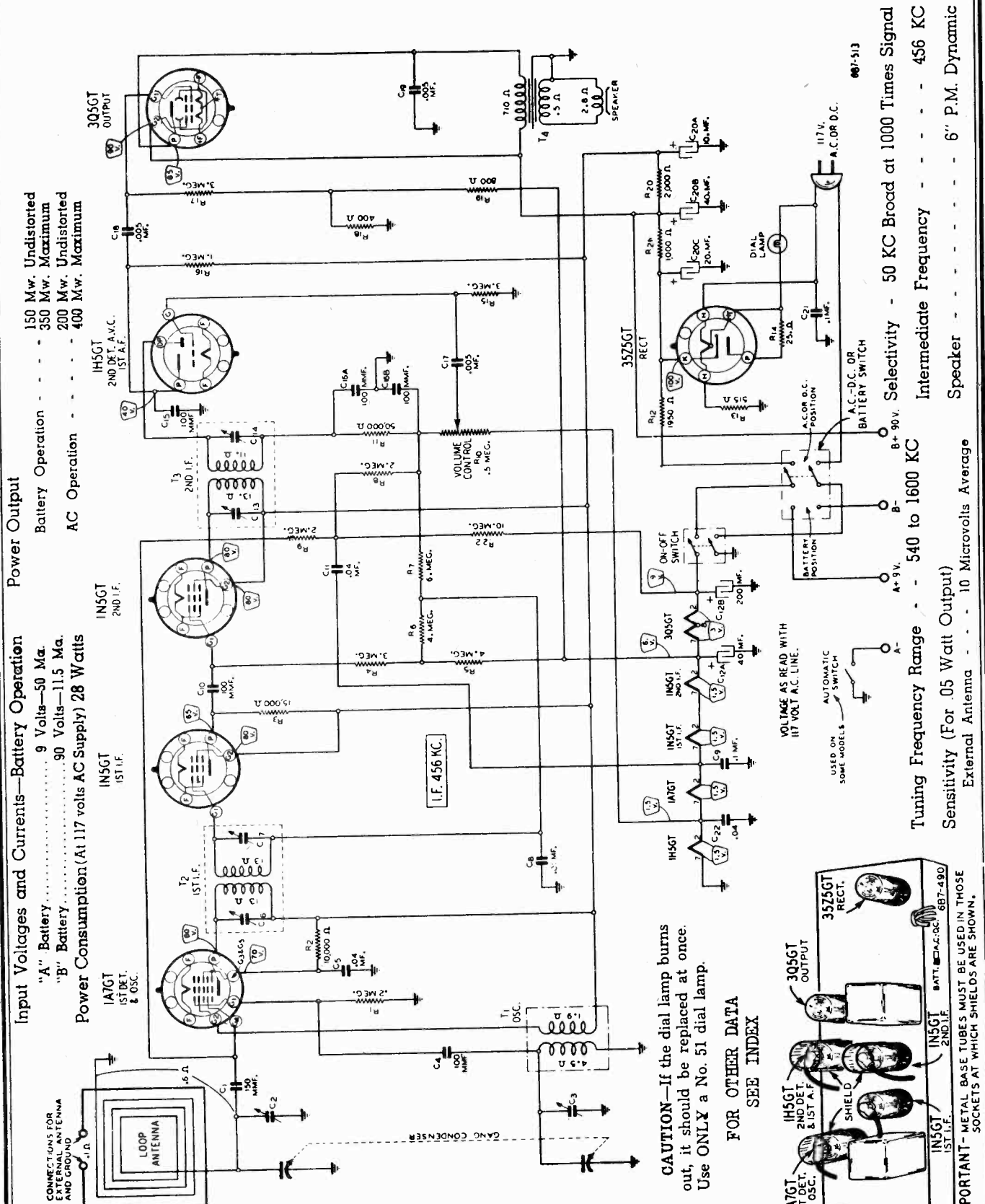
IF PEAK 455 KC

CODE	PART NO	DESCRIPTION
C1	1607	.75 MFD. 400V. TUBULAR CONDENSER
C2	16124	.001
C3	16120	.25
C4	16115	200 V.
C5	16116	.05
C6	16117	.01
C7	16118	.01
C8	16119	.01
C9	16120	.01
C10	16121	.01
C11	16122	.00025 MFD. MICA CONDENSER
C12	16123	.00025
C13	16124	.00025
C14	16125	2 GANG VARIABLE CONDENSER
C15	16126	PADDING CONDENSER
C16	16127	40 X 10 MFD 150 WV ELECTROLYTIC

CODE	PART NO	DESCRIPTION	0-71
T1	82-11	LOOP ANTENNA (B.C.)	
T2	10-325	5 W. ANTENNA COIL	
T3	10-326	5 W. OSCILLATOR COIL	
T4	10-318	B.C. TUNING	
T5	10-317	1 ST. I.F. TRANSFORMER	
T6	10-312	2ND. I.F. TRANSFORMER	
T7	.....	OUTPUT TRANS. (ON SPKR.)	
S1	79-283	5" DYNAMIC SPEAKER	
S2	20-127	TRIMMER BLOCK	
S3	20-129	TRIMMER (ON LOOP)	

CODE	PART NO	DESCRIPTION
R1	60-193	10 MEGOHM 1/4 W. RESISTOR
R2	60-179	7.2
R3	60-178	470M OHM
R4	60-150	220M
R5	60-177	47M
R6	60-104	150
R7	60-230	37
R8	24-146	300M
SW1	69-143	BAND SWITCH
SW2	69-140	PHONO

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.



MODEL BB73

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

**Removing Chassis from Cabinet**

Take out the 2 screws, one at each rear corner of the chassis shelf. On some models, it will be necessary to remove the nut holding the auto-

matic "A" battery switch to the front panel of the radio. Grasp the chassis shelf at each rear corner and edge it away from the cabinet front until the chassis shelf and chassis slide easily out of the cabinet.

To remove the shelf from the

chassis, take out the bolt and the 2 screws at the bottom of the shelf. **CAUTION—When Operated on AC or DC Power.** As the chassis is connected to one side of the line, in any service work, keep the chassis on a wood or other insulated surface to avoid contacts with ground.

**ALIGNMENT PROCEDURE**

Volume Control—Maximum All Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning:

A Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.

Output Indicating Meter—Non-Metallic Screwdriver.

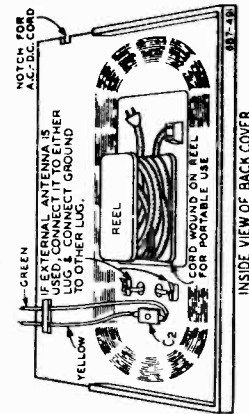
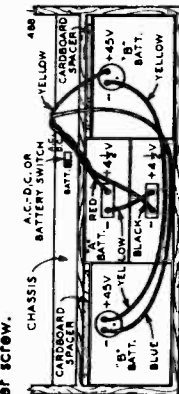
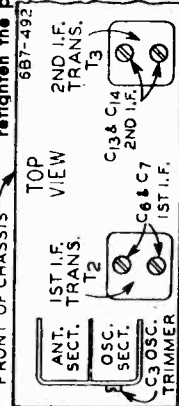
Dummy Antenna—.1 mf.

The chassis may be aligned on either AC-DC or Battery power. If AC-DC power is used, see precaution above about avoiding external grounds. Also do not connect the signal generator to any outside ground as the ground terminal of the generator will be connected to the chassis.

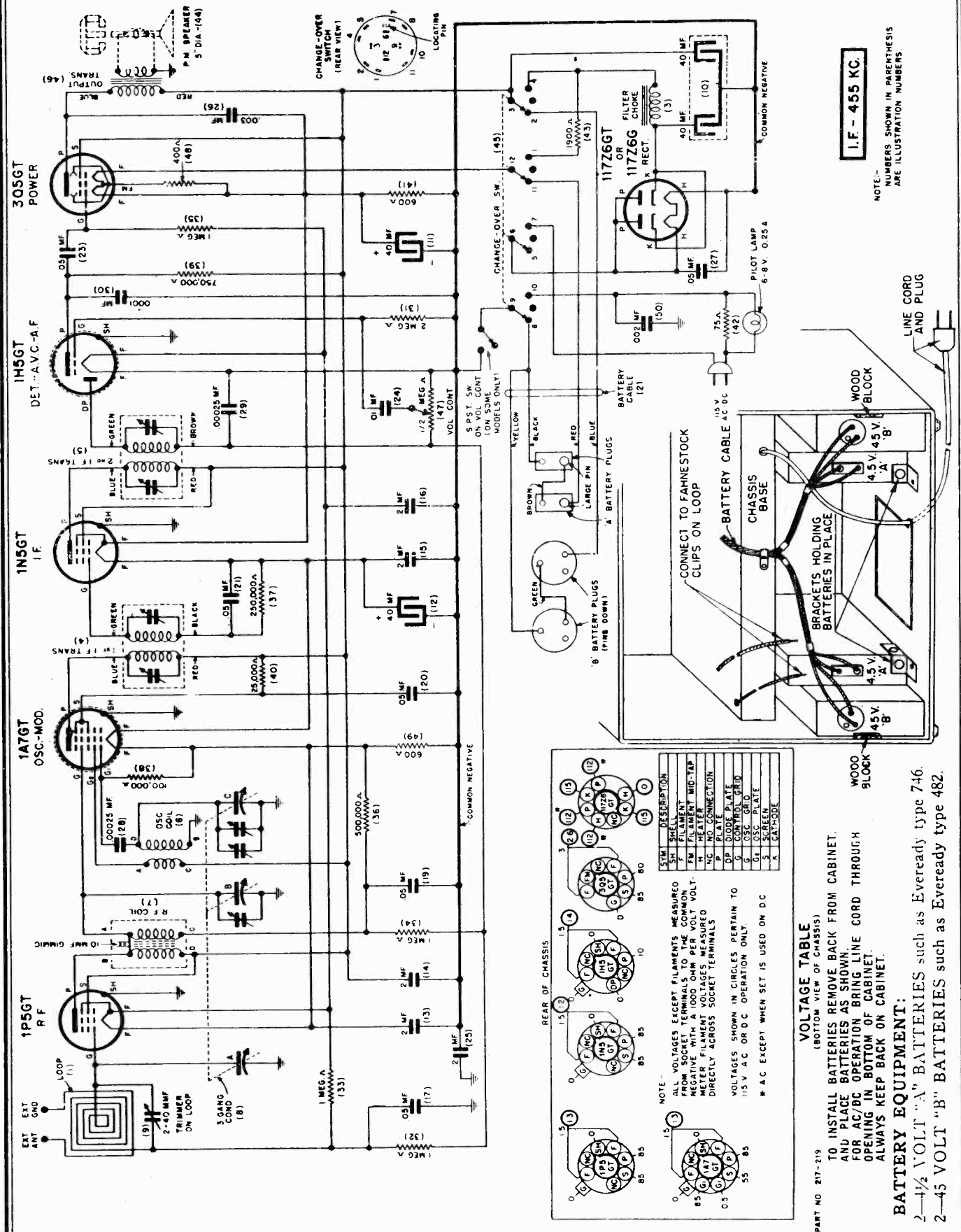
SIGNAL GENERATOR		ADJUST TRIMMERS TO MAXIMUM	
FREQUENCY SETTING	CONNECTION AT RADIO	DUMMY ANTENNA	CONDENSER SETTING
456 KC	Signal Grid of 1st Det. (Top Cap)	.1 mf.	Turn Rotor to full open 1st I.F. (C6) & (C7) 2nd I.F. (C13) & (C14)
1500 KC	Signal Grid of 1st Det.	.1 mf.	Turn Rotor to full open Oscillator (C3)
1500 KC	None—See Note A		Turn Rotor to max. output Antenna (C2)

**NOTE A—**Chassis must be in cabinet. Connect a loop approximately one foot in diameter across the antenna and ground posts of the signal generator. The back of the cabinet must be in place. Place radio approximately 3 feet from loop so as to pick up signal. Radio should not be in proximity to any metal (metal bench, etc.).

**Using Radio Without Batteries—**The radio may be used without batteries when it is operated on AC-DC. If this is done, tape the prongs of the battery plugs to prevent them from accidentally touching each other, and place the plugs and cables in the battery compartment.



# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.



**I.F. - 455 KC.**

NOTE: NUMBERS SHOWN IN PARENTHESIS ARE ILLUSTRATION NUMBERS

TEST POINT	DESCRIPTION
SH	SHIELD
F	FILAMENT
FM	FILAMENT MID-TAP
H	HEATER
NC	NO CONNECTION
OP	OPERATOR
G	CONTROL GRID
OS	OSC GRID
SC	SCREEN
A	CATHODE

NOTE: ALL VOLTAGES EXCEPT FILAMENT MEASURED FROM SOCKET TERMINALS TO THE COMMON NEGATIVE WITH A 1000 OHM PER VOLT METER. FILAMENT VOLTAGES MEASURED DIRECTLY ACROSS SOCKET TERMINALS.

VOLTAGES SHOWN IN CIRCLES PERTAIN TO 115 V A.C. OR D.C. OPERATION ONLY.

\* A.C. EXCEPT WHEN SET IS USED ON D.C.

**VOLTAGE TABLE**  
(BOTTOM VIEW OF CHASSIS)

TO INSTALL BATTERIES REMOVE BACK FROM CABINET. AND PLACE BATTERIES AS SHOWN. FOR AC/DC OPERATION BRING LINE CORD THROUGH OPENING IN BOTTOM OF CABINET. ALWAYS KEEP BACK ON CABINET.

**BATTERY EQUIPMENT:**

2-4½ VOLT "A" BATTERIES such as Eveready type 746.  
2-45 VOLT "B" BATTERIES such as Eveready type 482.

PART NO 217-219

MODEL BB73A

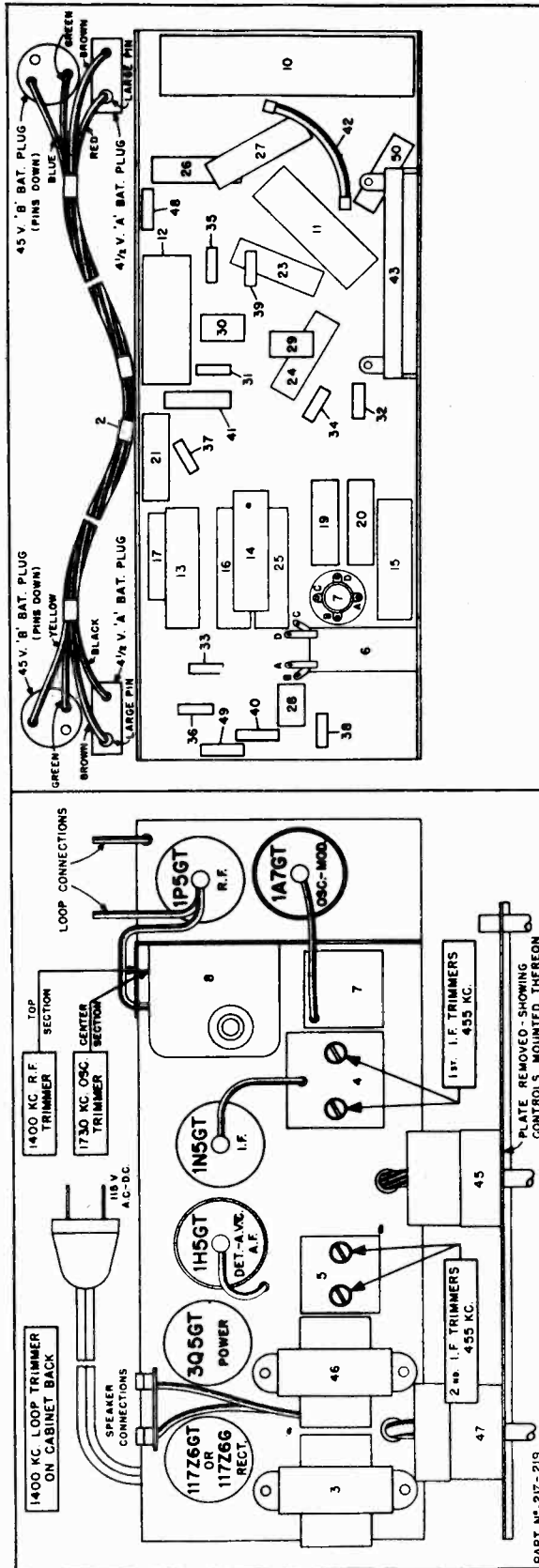
LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

**ALIGNMENT PROCEDURE**

For alignment procedure read tabulations from left to right. If more than one adjustment is required on any one band, make the adjustment marked (1) first, (2) next, (3) third. **IMPORTANT: BEFORE ALIGNING, PLACE LOOP ANTENNA IN THE SAME POSITION IT WILL BE IN WHEN THE SET IS IN THE CABINET.**

When adjusting 1730 kilocycle oscillator trimmer and 1400 kilocycle antenna trimmer, do not connect test oscillator to loop. Couple test oscillator to receiver loop by: (a) Make a loop consisting of five to ten turns of No. 20 size wire wound on a three inch form and attach across output of test oscillator. (b) Place test oscillator near set loop—**BE SURE THAT NEITHER MOVES WHILE ALIGNING.**

TEST OSCILLATOR		Refer to parts layout diagram for location of trimmers mentioned below:	
Place band switch for operation on:	Set receiver dial to:	Adjust test oscillator frequency to:	Use dummy antenna in series with output of test oscillator consisting of:
I. F. alignment use any band position.	Any point where no interfering signal is received.	Exactly 455 K.C.	0.2 Mfd condenser
1730 to 540 K.C. Band	1	Exactly 1730 K.C.	None
	2	Approx. 1400 K.C.	None
		High side to grid cap of 1A7GT tube. Do not remove cap.	
		Use Small Loop to couple test oscillator to receiver loop.	
		Use Small Loop to couple test oscillator to receiver loop.	
		Adjust 1730 K. C. oscillator trimmer for maximum output.	
		Adjust 1400 K.C. loop and R.F. trimmers for maximum output.	

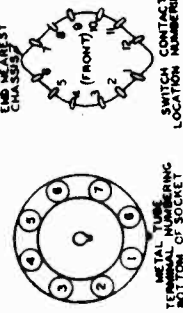


LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

MODEL B87

ARROWS INDICATE CONNECTIONS PRESENT IN BAND SWITCH WHEN IN POSITION SHOWN.

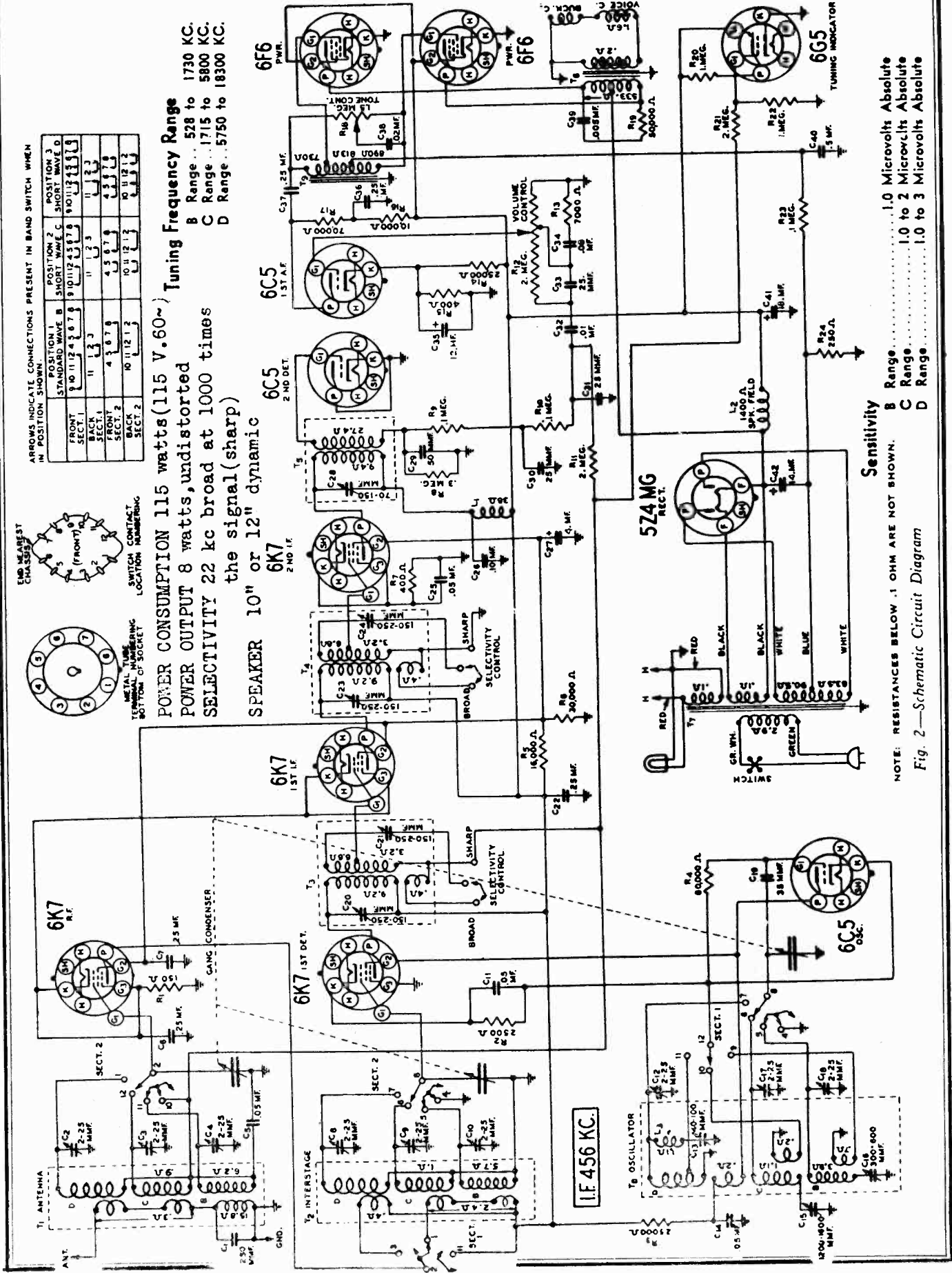
	POSITION 1	POSITION 2	POSITION 3
	STANDARD WAVE	SHORT WAVE C	SHORT WAVE D
FRONT SECT. 1	9 10 11 12 4 3 6 7 8	9 10 11 12 4 5 6 7 8	9 10 11 12 4 5 6 7 8
BACK SECT. 1	11 13 3	11 13 3	11 13 3
FRONT SECT. 2	4 3 8 7 9	4 3 8 7 9	4 3 8 7 9
BACK SECT. 2	10 11 12 1 2	10 11 12 1 3	10 11 12 1 3



**Tuning Frequency Range**  
 B Range... 528 to 1730 KC.  
 C Range... 1715 to 5800 KC.  
 D Range... 5750 to 18300 KC.

**POWER CONSUMPTION** 115 watts (115 V. 60~)  
**POWER OUTPUT** 8 watts, undistorted  
**SELECTIVITY** 22 kc broad at 1000 times the signal (sharp)

**SPEAKER** 10" or 12" dynamic



**Sensitivity**  
 B Range... 1.0 Microvolts Absolute  
 C Range... 1.0 to 2 Microvolts Absolute  
 D Range... 1.0 to 3 Microvolts Absolute

NOTE: RESISTANCES BELOW .1 OHM ARE NOT SHOWN.

Fig. 2—Schematic Circuit Diagram



MODEL B87

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

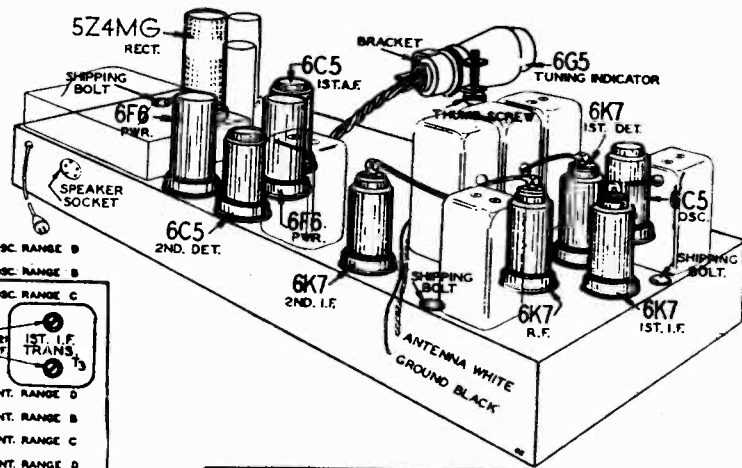


Fig. 6—Location of Tubes

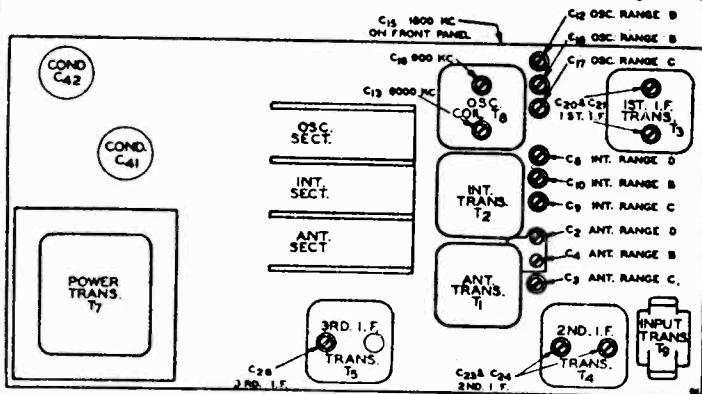


Fig. 7—Location of Trimmers

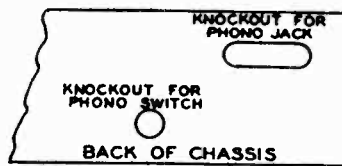


Fig. 8—Location of Phono Knockouts

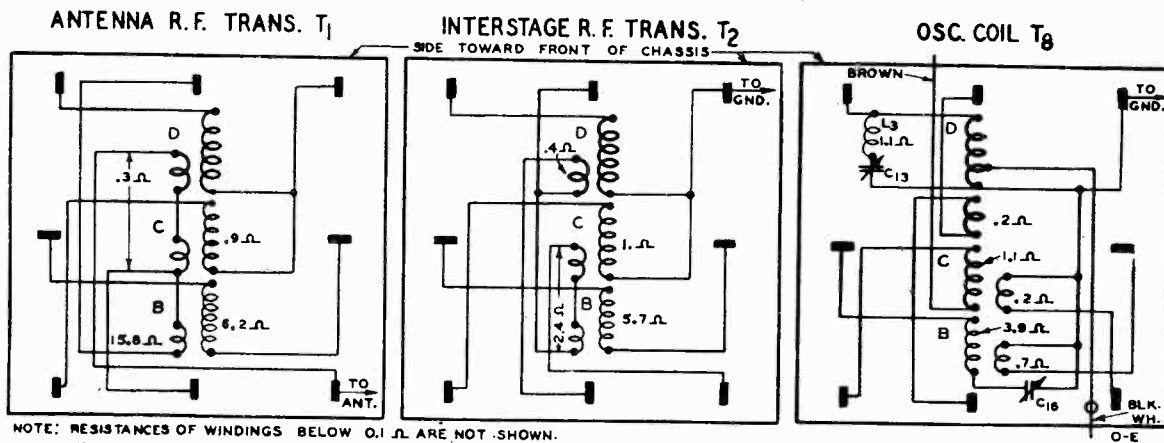


Fig. 4—R. F. and Oscillator Coil Base Terminal Arrangement and D. C. Resistance of Windings

Line Voltage: 115  
Volume Control: Maximum

Antenna Shorted to Ground  
Position of Band Switch: Standard Wave

TUBE	FUNCTION	VOLTAGE BETWEEN SOCKET PRONGS AND GROUND (Unless otherwise indicated)							
		Prong No. 1	Prong No. 2	Prong No. 3	Prong No. 4	Prong No. 5	Prong No. 6	Prong No. 7	Prong No. 8
6K7	R.F.	0	6.1(1)	250	100	2.5	...	6.1(1)	2.5
6K7	1st Det.	0	6.1(1)	250	120	0	...	6.1(1)	9
6C5	Osc.	0	6.1(1)	120	...	...	...	6.1(1)	0
6K7	1st I.F.	0	6.1(1)	250	100	2.5	...	6.1(1)	2.5
6K7	2nd I.F.	0	6.1(1)	250	100	3	...	6.1(1)	3
6C5	2nd Det.	0	6.1(1)	0	...	...	...	6.1(1)	0
6C5	1st A.F.	0	6.1(1)	110	...	...	...	6.1(1)	4.5
6F6	Power Amp.	0	6.1(1)	330	250	25(2)	...	6.1(1)	0
5Z4MG	Rect.	0	4.8(3)	...	640(4)	...	640(4)	...	4.8(3)
6G5	Tuning Indicator	Plate to Ground 20(5)		Target to Ground 250		Cathode to Ground 0		Across Heater 6.1 A.C.	

(1) A.C. voltage as read across heater terminals 2 and 7.  
(2) As read across resistor R24.  
(3) A.C. voltage as read across heater terminals 2 and 8.

(4) A.C. voltage as read across terminals 4 and 6.  
(5) As read with 500,000 ohm meter.

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

condenser C32 is also connected. The terminal strip is located at the back of the volume control. This wire is then connected to the phono switch as shown in Fig. 7. A wire is then connected from the lug on the above mentioned terminal strip to the phono switch, as shown in Fig. 7. Both of the above wires are connected to the switch terminals nearest the chassis base and should be twisted together as far as possible and run as close to the back of the chassis base as possible.

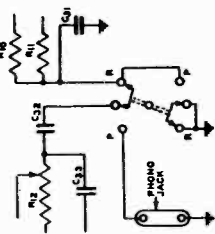


Fig. 7—Phonograph Connections  
as possible and run as close to the back of the chassis base as possible.

The lead to condenser C32, after turning away from the back of the chassis base, should be run close to the 6C5 tube sockets.

Complete the other connections as illustrated in Fig. 7, using the lugs in the chassis base, located near the phono switch and jack, for grounding purposes.

The control grid lead of the 6B6 power tube nearest the back of the chassis should be removed and a longer lead substituted. This lead is run from the volume control to the back of the chassis, along the lower edge and is then brought to the grid terminal by being routed between the speaker socket and the tubular condenser next to it.

If a hum is heard when the phono pickup is touched, reverse the two pickup leads.

## Switch Contact Location Numbering

A standard arrangement for switch contact location numbering has been adopted. This numbering is illustrated in Fig. 2. In contact locations not used, the number applying to that particular location is not employed.

## Voltage Chart

The voltage readings are taken with a voltmeter having a resistance of 1000 ohms per volt.

The standard metal tube socket terminal numbering system (bottom of socket) is shown in Fig. 5. On the schematic circuit diagram, Fig. 2, is a list giving the complete names of the tube elements and the corresponding symbols as used on the sockets on the schematic.

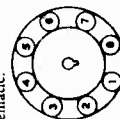


Fig. 5—Metal Tube Terminal numbering (bottom of socket)

Do not change the setting of the oscillator Range D trimmer.

## 6000 KC Adjustment

Set the signal generator for 6000 KC. Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 6000 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

## Trimmer Replacement

If one trimmer of the gang trimmer strip should become defective, it is not necessary to replace the entire strip. A single trimmer P17A36, as shown in the replacement parts list, may be used. Disconnect the lead from the coil side (side not grounded) of the defective trimmer in the strip. This connection is then made to the single trimmer. Connect it to the side of the trimmer not in contact with the adjusting screw. The other side of the single trimmer is then connected to a good ground, using a piece of heavy wire in order to support the trimmer adequately. In replacing a trimmer, be sure to keep both leads as short as possible and keep the ungrounded lead as far from ground as possible.

## Planetary Drive Assembly

The planetary assembly is the unit that is integral with the tuning shaft.

If the nut on the back end of this assembly is too tight, the drive will be jerky and will turn hard in high speed. If this condition exists, back off this nut one or two turns and note the effect.

If this nut is too loose, the drive will slip in slow speed. The remedy in this case, of course, is to tighten the nut.

Should the condenser drive cord slip when the planetary pulley is turning, inspect the tuning condenser, drive drum and gears to see if they are turning properly or if they are being obstructed in some way.

If the drive turns unevenly (rough in spots), this may mean that the planetary assembly is defective or damaged internally and a new unit will be required.

## Phonograph Connections

Phonograph connections can be made as shown in Fig. 7. The parts required are shown in the parts list. Knockouts are provided in the back panel of the chassis for mounting the phono jack and phono switch.—See Fig. 8.

The phono switch must be mounted with one set of terminals nearest the bottom of the chassis base.

The connections are made by opening the diode return circuit at the volume control. This is done by removing the white wire connected to the insulated lug of the terminal strip on which one end of con-

## Range C Alignment

**CAUTION**—When aligning the short wave bands be sure NOT to adjust at the image frequency. This can be checked as follows: Let us say the signal generator is set for 5000 KC. The signal will then be heard at 9000 KC on the dial of the radio. The image signal, which is much weaker, will be heard at 5000 less 912 KC, or 4088 KC. It may be necessary to increase the input signal to hear the image.

## 5800 KC Adjustment

Set the signal generator for 5800 KC. Connect the antenna lead of the receiver through a 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band switch to the Range C position (first short wave band).

Adjust the oscillator Range C trimmer (C17) until maximum output is obtained. See Fig. 3 for location of this trimmer.

## 5000 KC Adjustment

Set the signal generator for 5000 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the interstage Range C trimmer (C9) and antenna Range C trimmer (C3) to maximum. Do not change the setting of the oscillator Range C trimmer.

## 1800 KC Adjustment

Set the signal generator for 1800 KC. Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 1800 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

## Range D Adjustment

### 18,300 KC Adjustment

Set the signal generator for 18,300 KC. Keep the antenna lead of the receiver connected through the 400 ohm resistor to the output of the signal generator.

Turn the rotor of the tuning condenser to the full open position.

Turn the band switch to the Range D position (second short wave band).

Adjust the oscillator Range D trimmer (C13) until maximum output is obtained. See Fig. 3 for location of this trimmer.

### 15,000 KC Adjustment

Set the signal generator for 15,000 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

Adjust the interstage Range D trimmer (C8) and antenna Range D trimmer (C1) to maximum.

When adjusting the interstage and antenna Range D trimmers, it will be necessary at the same time to turn the tuning condenser rotor slowly back and forth until the peak of greatest intensity is obtained.

## I. F. Adjustment

Set the signal generator for a signal of 456 KC. Connect the output of the signal generator through a .1 mf. condenser to the grid of the 1st detector. Connect the ground lead of the receiver to the ground post of the signal generator.

Turn the band switch to the Range B position (standard wave band).

Turn the selectivity control to the sharp position and keep it in this position for all adjustments.

Turn the volume control to the maximum position. Attenuate the signal from the signal generator to prevent the levelling-off action of the AVC.

Then adjust the five I.F. trimmers until maximum output is obtained. The adjusting screws for these condensers are reached from the top of the chassis and the location is shown in Fig. 3.

### Range B Alignment

After the procedure for the alignment of each range, as explained below, is completed, it is advisable to repeat the procedure as a final check.

### 1730 KC Adjustment

Set the signal generator for 1730 KC. Turn the rotor of the tuning condenser to the full open position.

Keep the band switch in the standard wave position. Connect the antenna lead of the receiver through a .200 mf. condenser to the output of the signal generator.

For this and all subsequent adjustments keep the volume control at the maximum position and attenuate the signal from the signal generator to prevent AVC action. Adjust the oscillator Range B trimmer (C18) until maximum output is obtained. The location of this trimmer is shown in Fig. 3.

### 1500 KC Adjustment

Set the signal generator for 1500 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained.

In sets using pointers, loosen the screw of the large pointer and set the pointer at the 1500 KC mark on the standard wave band scale. Re-tighten the screw. In sets using the moving beam of light, there is a moving light assembly held to the front of the drive drum by means of a screw. Loosen this screw and move the light assembly until it is at the 1500 KC mark on the dial. Re-tighten the screw.

Adjust the interstage Range B trimmer (C10) and antenna Range B trimmer (C4) to maximum.

Do not change the setting of the oscillator Range B trimmer.

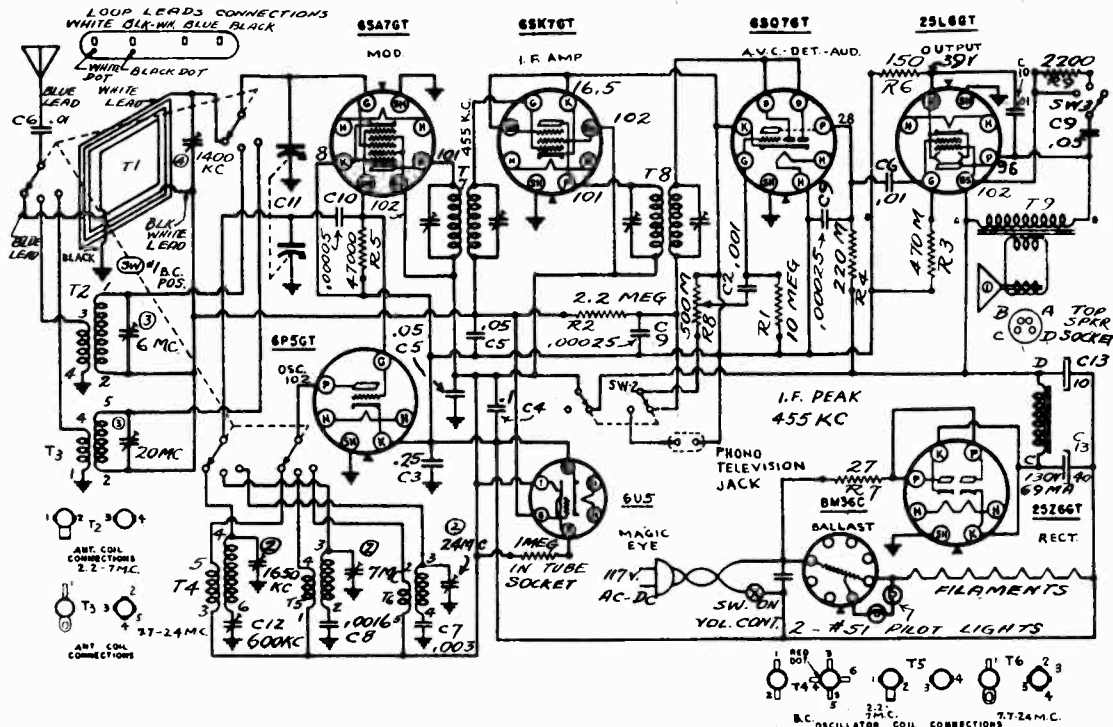
### 600 KC Adjustment

Set the signal generator for 600 KC. Turn the tuning condenser rotor until maximum output is obtained.

Turn the rotor slowly back and forth at the same time adjusting the 600 KC trimmer until the peak of greatest intensity is obtained. See Fig. 3 for location of this trimmer.

MODEL D-33

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

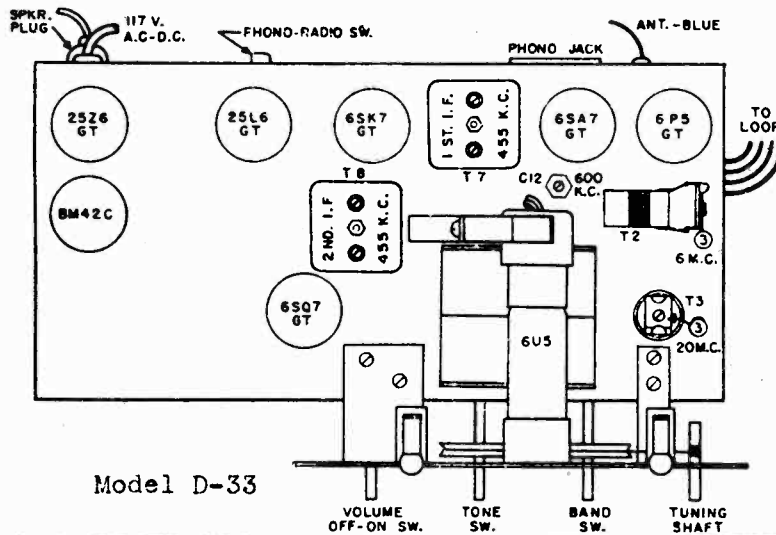


Code	Part No.	Description
C1	1607	.05 Mfd. 400 V Tubular Condenser
C2	16-124	.001
C3	18-120	.25 200 V
C4	16-115	1
C5	1622	.05
C6	16-121	.01
C7	15-118	.003 Mfd. Mica Condenser
C8	15-119	.0015
C9	1504	.00025
C10	1503	.00005
C11	19-156	2 Gang Variable Condenser
C12		Padding Condenser
C13	18-255	40 x 10 Mfd 150 W. V. Electrolytic
C14	16-119	.01 Mfd 400 V. Tubular Condenser
R1	60-193	10 Meg. 1/4 W. Resistor
R2	60-179	2.2
R3	60-178	470M Ohm
R4	60-180	220M
R5	60-177	47M
R6	60-184	150
R7	60-220	27
R8	24-144	500M Volume Control
R9	60-253	2200 1/4 W. Resistor
SW 1	69-142	Band Switch
SW 2	69-140	Phone Switch
SW 3	69-143	Tone Switch

Tube sockets are viewed from underside of chassis. Voltage readings at indicated socket prongs are to common ground. Voltages must be measured with no signal. Voltages are measured with 1000 ohm per volt voltmeter. Figures at cathode are cathode current in milliamperes. Where no voltage readings is shown at socket prongs, it indicates zero voltage or a very low reading. Alignment is made at the frequency shown at each trimmer condenser. Capacity values are in microfarads.

Code	Part No.	Description
T1	82-13	Loop Antenna
T2	10-324	Antenna Coil (2.2 - 7M.C.)
T3	10-322	Antenna Coil (7.7 - 24 M.C.)
T4	10-313	Oscillator Coil (B.C.)
T5	10-327	Oscillator Coil (2.2 - 7 M.C.)
T6	10-329	Oscillator Coil (7.7 - 24 M.C.)
T7	10-517	1st I.F. Transformer
T8	10-512	2nd
T9	-----	Output Transformer (on Spkr.)
1	79-277	6 1/2 Inch. Dynamic Speaker
2		Trimmer Block
3	2052	2 Plate Trimmer
4	20-129	Trimmer (on loop)

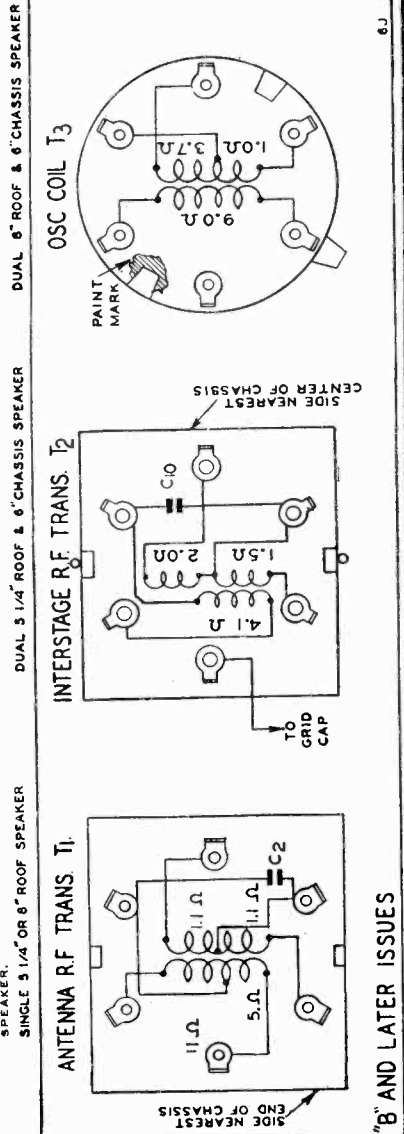
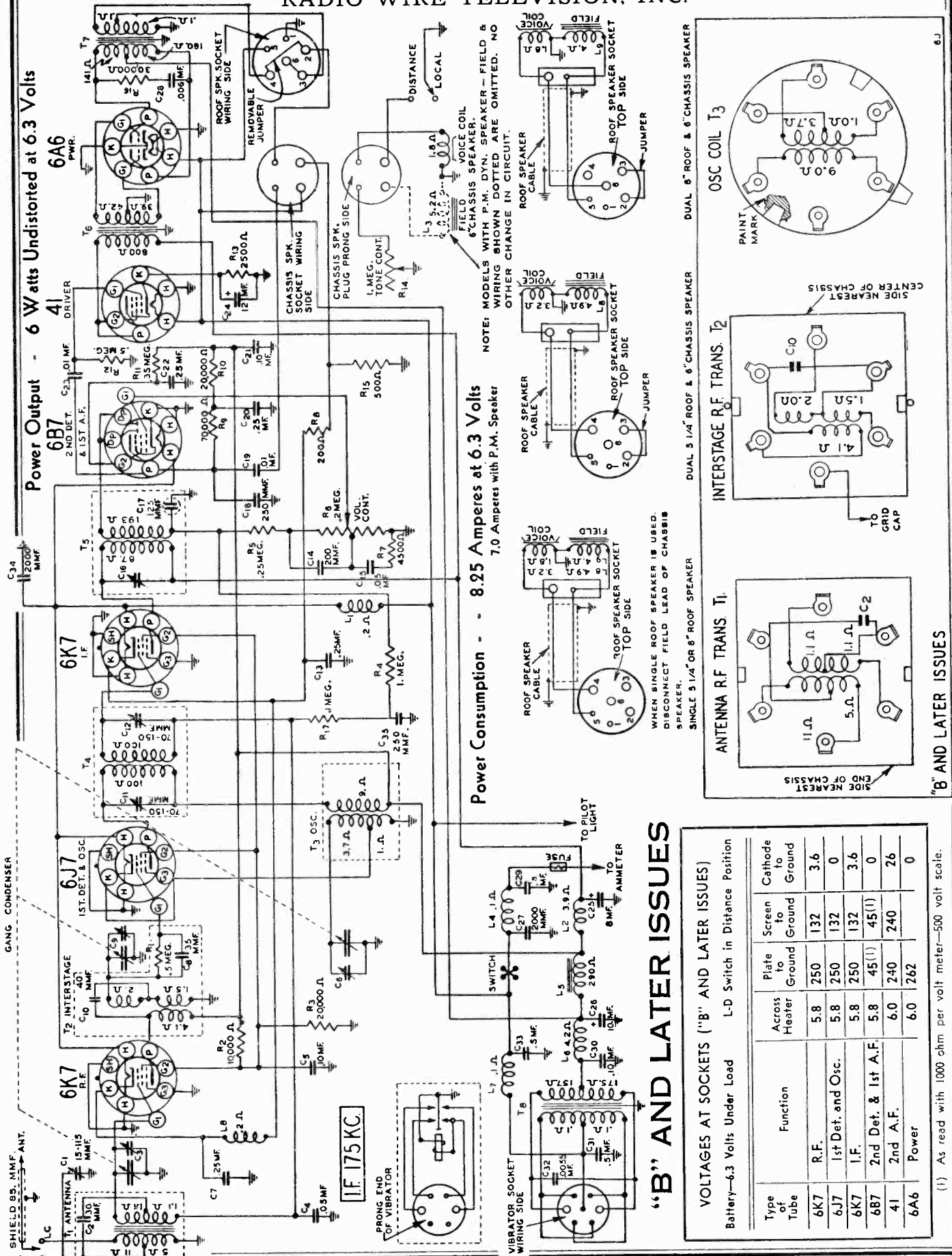
INTERMEDIATE  
PEAK  
FREQUENCY  
455  
KC



Model D-33

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

MODEL B92 Late



## "B" AND LATER ISSUES

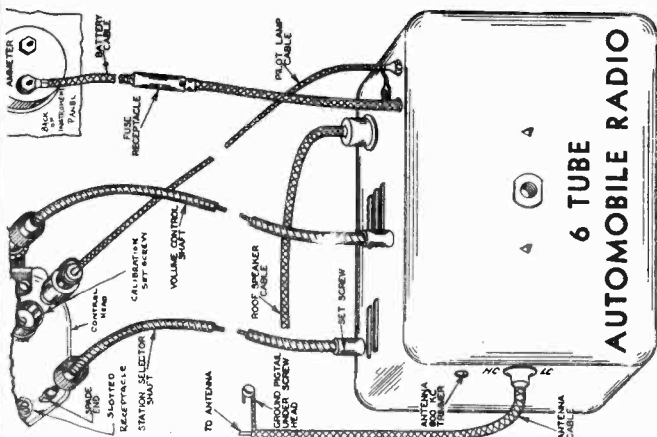
**VOLTAGES AT SOCKETS ("B" AND LATER ISSUES)**  
Battery—6.3 Volts Under Load L-D Switch in Distance Position

Type of Tube	Function	Across Heater	Plate to Ground	Screen to Ground	Cathode to Ground
6K7	R.F.	5.8	250	132	3.6
6J7	1st Det. and Osc.	5.8	250	132	0
6K7	I.F.	5.8	250	132	3.6
6B7	2nd Det. & 1st A.F.	5.8	45(1)	45(1)	0
41	2nd A.F.	6.0	240	240	2.6
6A6	Power	6.0	262		0

(1) As read with 1000 ohm per volt meter—500 volt scale.

MODEL B92 Late

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.



General Installation View

SUPPLEMENTARY REPLACEMENT PARTS

The parts of the "D" issue are the same as those used in earlier issues with the following exceptions:

CHANGES IN LATER MODELS

Later models have changes incorporated in them which are explained below. The models which have these changes may be identified by the issue letter which is a large letter stamped on top of the chassis base. The tube arrangement label on the chassis case cover also shows this issue letter.

When ordering parts, it is important that the issue letter be noted and the correct part number, as shown in the parts list, be specified.

The "D" issue is different from the "B" and "C" issue gang condenser used in the "D" issue radios does not have the cut plate oscillator section. A padding condenser (600 KC) was added in series with the oscillator section of this gang condenser and the oscillator coil. The padding condenser is a part of the 2nd I. F. trimmer unit and is mounted in the 2nd I. F. coil can.

The capacity (C17) shown within a dotted circle in the 2nd I. F. coil assembly on the schematic has been changed to an actual part as shown in the supplementary parts list.

The antenna, R.F. Interstage, oscillator, and 2nd I. F. coil assemblies have been changed and have been given new part numbers as shown in the supplementary parts list.

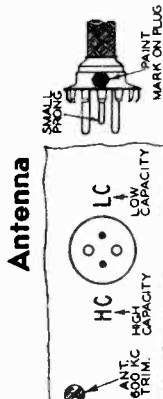
THE FOLLOWING NEW PARTS ARE USED:

No.	Code	Description
9A859	T1	Antenna Transformer and Can Assembly.....
9A861	T2	R. F. Interstage Transformer and Can Assembly.....
9A862	T3	Oscillator Coil and Can Assembly.....
9A858	T5	2nd I. F. Transformer and Can Assembly.....
47X57	C17	100 mmf. Molded Condenser.....
17A79	(C16)	30-100 mmf. 2nd I.F. Trimmer
14A77		900-1300 mmf. Oscillator 600 KC Padder)
		3 Section Gang Condenser Complete with Drive Gears.....

THE FOLLOWING PARTS OF THE SERIES 6J ARE NOT USED ON THE SERIES 6J "D" ISSUE RADIOS:

9A740) or 9A771)	T1	Antenna Transformer and Can Assembly.....
9A741) or 9A765)	T2	R.F. Interstage Transformer and Can Assembly.....
9A742) or 9A772) or 9A744	T3	Oscillator Coil and Can Assembly.....
	T5	2nd I.F. Coil and Can Assembly.....
17A65	C16	30-100 mmf. 2nd I.F. Trimmer.....
14A65		3 Section Gang Condenser Complete with Drive Gears.....

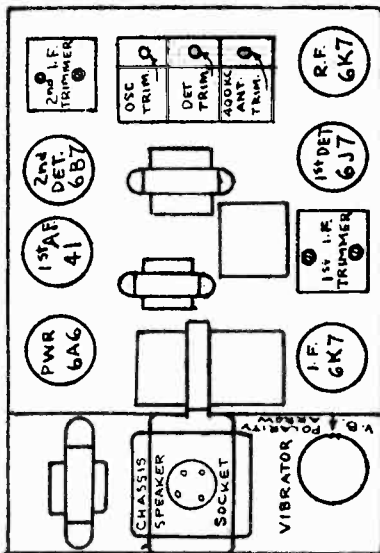
**Adjusting Antenna 600 KC Trimmer**  
Tune in a weak signal at approximately 600 KC with the volume control about three-fourths on. Turn the adjusting screw of the antenna 600 KC trimmer up or down until maximum output is obtained. See Fig. 9 for location of this trimmer.



**Antenna**  
**Fig. 9—Antenna Plug Insertion**  
**IMPORTANT**—The antenna plug can be inserted in two ways depending on whether the antenna is of high or low capacity.

If the total capacity of the antenna and shielded lead is approximately 200 mmf., which would be the case in a running board or ordinary roof antenna (not metal roof), insert the antenna plug with the mark on the HC side—See Fig. 9.

If the total capacity of the antenna and shielded lead is approximately 70 mmf., such as is the case if a "fish pole" antenna is used, insert the antenna plug with the mark on the LC side.



LOCATION OF TUBES AND VIBRATOR.

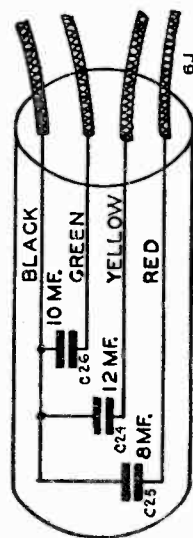
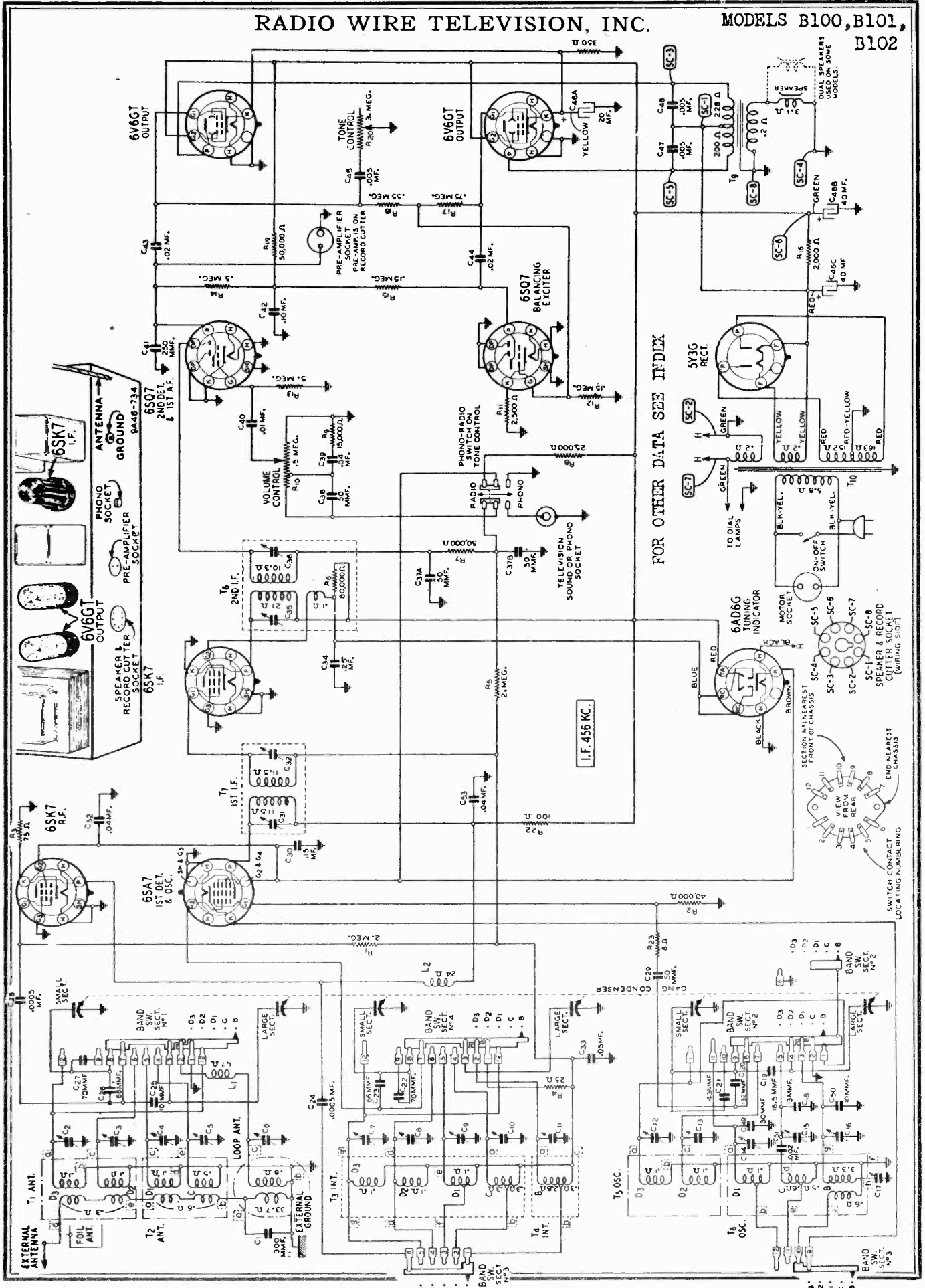


Fig. 6—Electrolytic Condenser Internal Connections

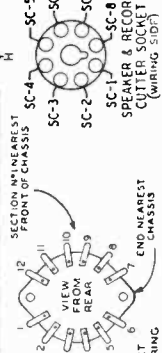
RADIO WIRE TELEVISION, INC.

MODELS B100, B101, B102



FOR OTHER DATA SEE INDEX

I.F. 4.56 KC.



SWITCH CONTACT LOCATING NUMBERING

MODELS B100, B101, B102

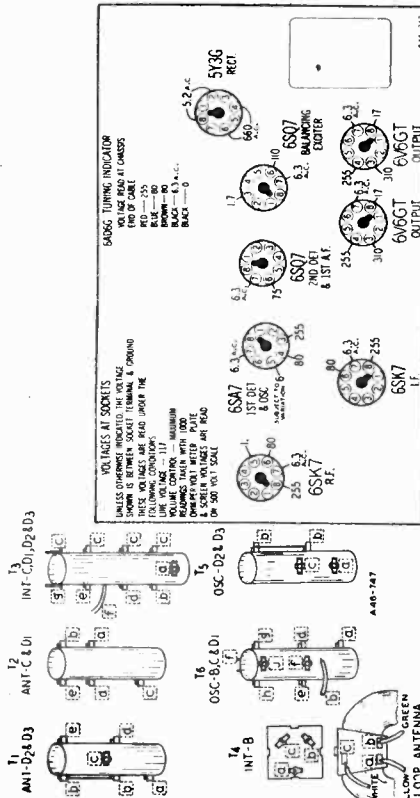
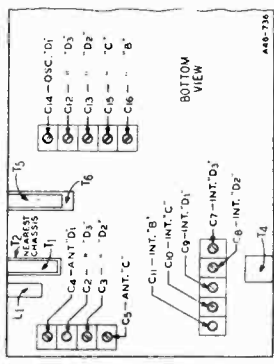
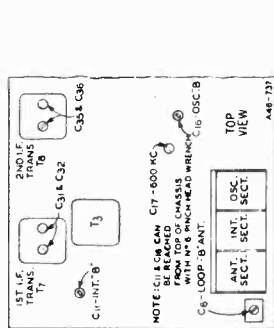
# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

### ALIGNMENT PROCEDURE

The following equipment is required for aligning:  
An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.  
Output Indicating Meter—Non-Metallic Screwdriver.  
Dummy Antennas—1 mf., 100 mmf., and 400 ohms.

SIGNAL GENERATOR FREQUENCY SETTING	DUMMY ANTENNA CONNECTION AT RADIO	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM
I. F. 485 KC	Grid of 1st Def.	.1 mf.	Turn Rotor to Full Open.	1st I.F. (C11) & (C32)
RANGE B 1730 KC	Antenna Lead	100 mmf.	Turn Rotor to Full Open. Turn Rotor to Max. Output. Set Indicator to 1500 KC—See Note A.	2nd I.F. (C35) & (C36)
1500 KC	Antenna Lead	100 mmf.	Turn Rotor to Max. Output.	Ant. Range B (C6)
600 KC	Antenna Lead	100 mmf.	Turn Rotor to Max. Output. See Note B.	800 KC (C17)
RANGE C 7400 KC	Antenna Lead	400 Ohm	Turn Rotor to Full Open.	Oscillator Range C (C15)
7000 KC	Antenna Lead	400 Ohm	Turn Rotor to Max. Output.	Ant. Range C (C5)
RANGE D <sub>1</sub> 17,300 KC	Antenna Lead	400 Ohm	Turn Rotor to Full Open.	Int. Range C (C19)
11,900 KC	Antenna Lead	400 Ohm	Turn Rotor to Max. Output.	Rot. Rotor—See Note B
RANGE D <sub>2</sub> 15,450 KC	Antenna Lead	400 Ohm	Turn Rotor to Full Open.	Oscillator Range D <sub>1</sub> (C14)
15,250 KC	Antenna Lead	400 Ohm	Turn Rotor to Max. Output.	Ant. Range D <sub>1</sub> (C4)
RANGE D <sub>3</sub> 21,800 KC	Antenna Lead	400 Ohm	Turn Rotor to Full Open.	Oscillator Range D <sub>2</sub> (C13)
21,500 KC	Antenna Lead	400 Ohm	Turn Rotor to Max. Output.	Ant. Range D <sub>2</sub> (C3)
LOOP RANGE B 1500 KC	Antenna Lead	100 mmf.	Turn Rotor to Max. Output.	Int. Range D <sub>1</sub> (C7)
				Rot. Rotor—See Note B

Attenuate the signal generator to prevent the leveling-off action of the A.C. on each range is completed, repeat the procedure as a final check.  
NOTE A—If the pointer is not at 1500 KC on the dial, remove the pointer from drive cord. Set pointer at the 1500 KC mark on the dial scale. Attach pointer to drive cord.  
NOTE B—Turn the rotor back and forth and adjust the trimmer until the peak of greatest intensity is obtained.  
NOTE C—If the assembled chassis in cabinet, bands, be sure NOT to adjust at the image frequency. This can be checked at the image signal to hear the image.



## PROCEDURE FOR SETTING THE STATION BUTTONS

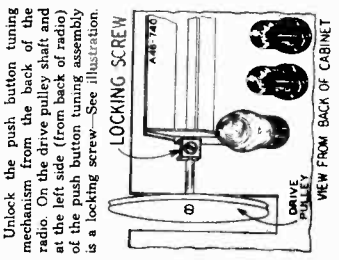
Turn the manual tuning knob until the locking screw can be easily reached with a screwdriver. Using a small handled screwdriver, unlock the mechanism by turning this screw several turns in a counter-clockwise direction. TO SET STATIONS ACCURATELY, DO NOT JAR THE RADIO OR BUTTONS WHILE THE MECHANISM IS UNLOCKED. Select the first station from the list you have prepared, and carefully tune in this station by means of the manual tuning knob, using the tuning eye as a guide. With one hand, hold the manual tuning knob to prevent it from turning and with the other hand, push one of the station buttons shown in the illustration all the way in. It is better to start with the left hand button. Hold this button all the way in. With the other hand, see whether or not this station is still accurately tuned in by moving the tuning knob a slight amount back and forth while holding the button all the way in. Slowly release the button after the station is tuned in. CAUTION—Do not touch this button again while the mechanism is unlocked as the setting may be altered. Carefully tune in the second station on your list. Then hold the tuning knob and push the second button slowly and firmly all the way in. Check for accurate tuning. Proceed in the same manner to set any additional stations on your list on the remaining station buttons.

## SELECTING THE STATIONS TO BE SET

There are 6 buttons on the automatic tuning dial by means of which 6 stations may be set for quick tuning. Make a list of your favorite stations, those which you tune in regularly. There may be any number up to and including 6 in this list. It is better to list the station with the lowest kilocycle number first, the station with the next higher kilocycle number next, and so on. Any button may be used for any station you can receive, although it will be more convenient to set the stations so that the kilocycle numbers increase from left to right.

## SETTING A STATION BUTTON

Unlock the push button tuning mechanism from the back of the radio. On the drive pulley shaft and at the left side (from back of radio) of the push button tuning assembly is a locking screw—See illustration.



After all the stations are set, it will be necessary to lock the mechanism so that the settings will not change. Turn the manual tuning knob until the locking screw can be easily reached with a screwdriver. Then with the SMALL HANDLED screwdriver, turn the locking screw in clockwise direction until it is tight. Tighten the locking screw firmly but not excessively to avoid snapping the threads. If at any time you wish to change the setting of a button from one station to another, repeat the above procedure. Changing the setting of one button will not affect the setting of any of the other buttons. Remove the correct station call letter tab for this button from the sheet supplied by bending the sheet back and forth at the score marks. In Models With Transparent Buttons—Insert a celluloid reinforcement tab half way in the slot at the front of the first station button. Place the call letter tab in front of the celluloid reinforcement tab and insert it in slot. Push both tabs all the way in. Place the reinforcement tab in the station button slot. Follow the same procedure for inserting the call letter tabs in any other buttons. In Models With Brown Opaque Buttons—Press the tab all the way to the bottom of the space provided in the button. Cover the call letter tab with a celluloid tab, pressing this in until it snaps into place.



LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

MODEL BB110

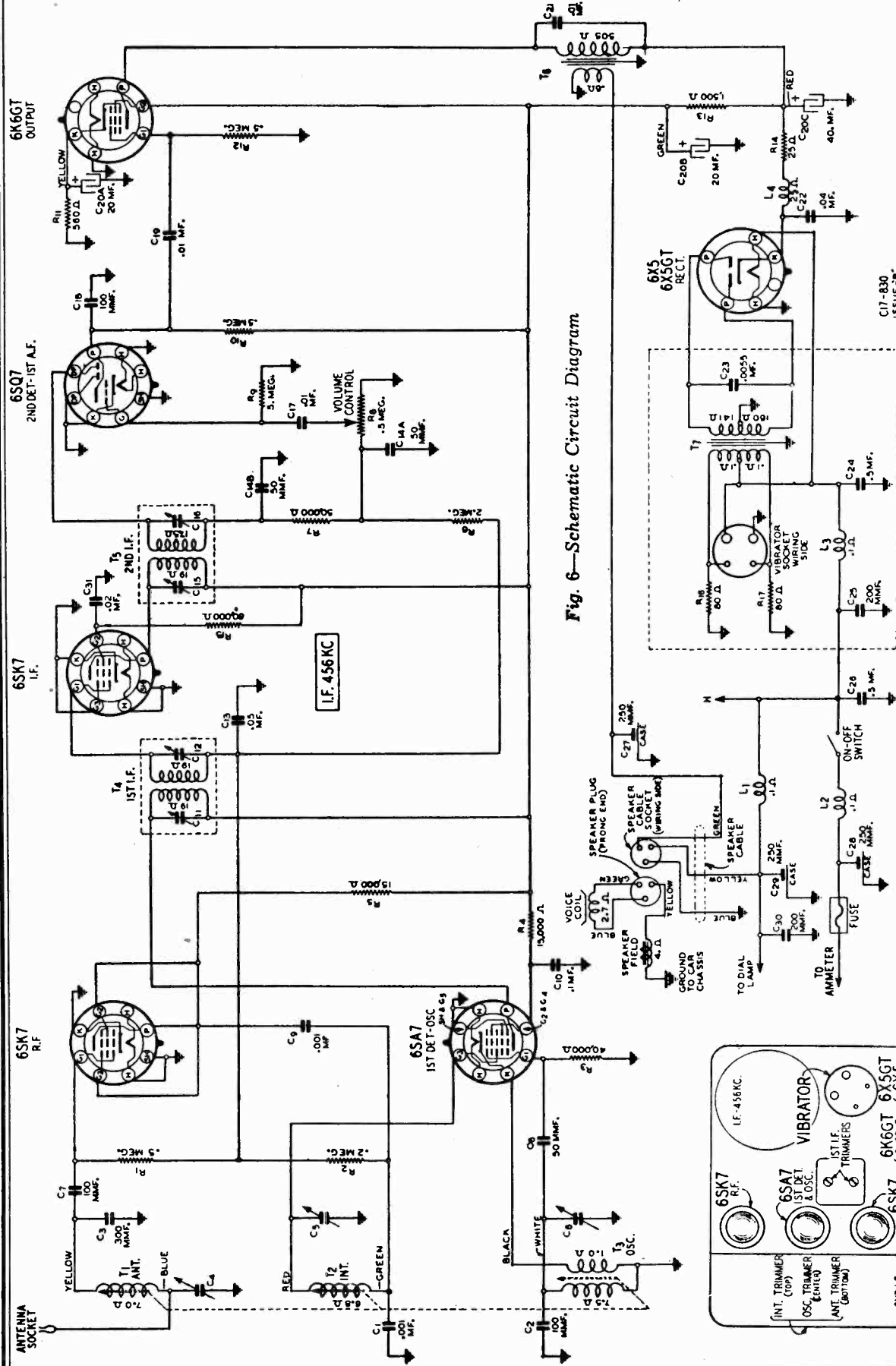


Fig. 6—Schematic Circuit Diagram

**SPECIFICATIONS**

Selectivity	- - 38 KC Broad at 1000 Times Signal	Power Consumption	- - 8.2 Amperes at 6.6 Volts
Tuning Frequency Range	- - - 540 to 1600 KC	Power Output (6.6 Volts)	- - 30 Watts Undistorted
Intermediate Frequency	- - - 456 KC	Sensitivity	- - 1 Microvolt at .5 Watt Output
Speaker	- - - 6" Electro-Dynamic		

C17-830  
ISSUE-B

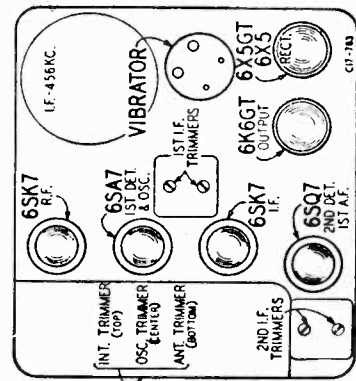


Fig. 4—Location of  
Tubes and Vibrator



MODEL BB11  
MODEL BB110

LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.

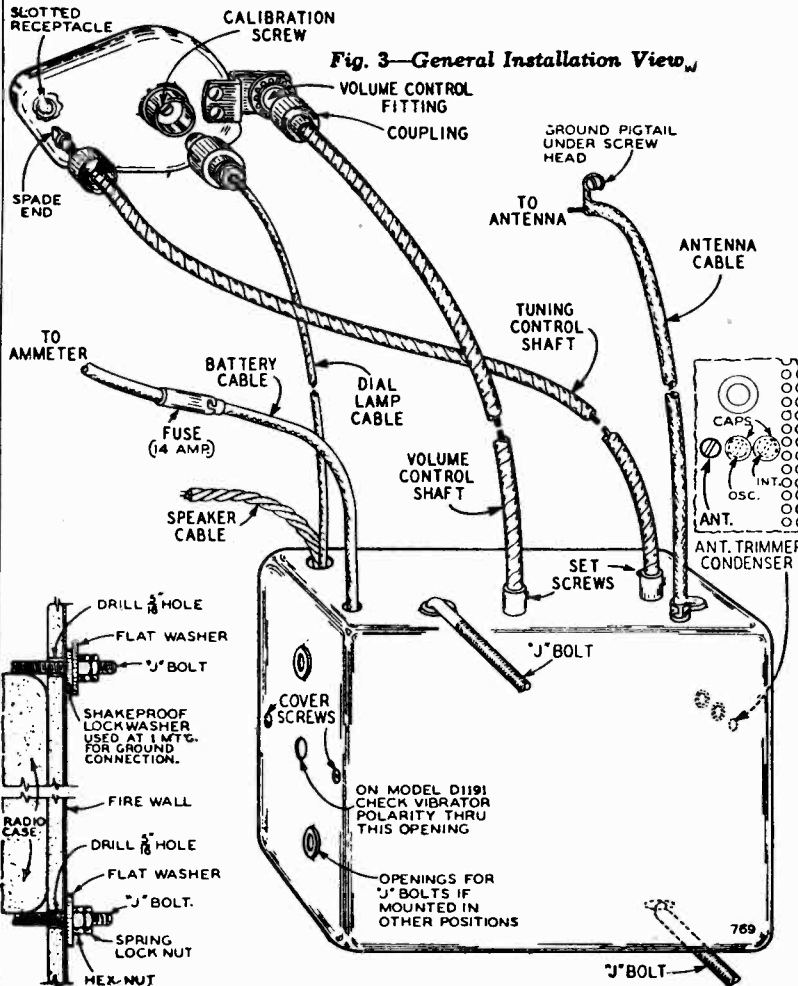
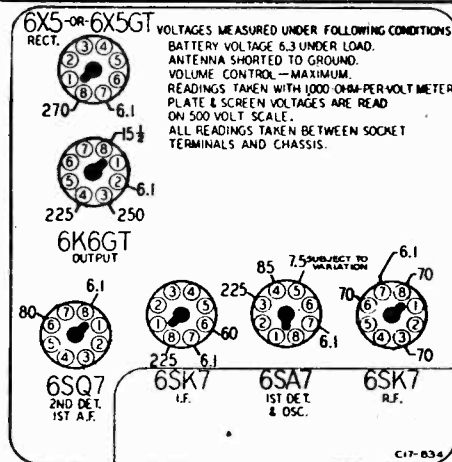
SIGNAL GENERATOR		DUMMY ANTENNA	IRON CORE SETTING	ADJUST TRIMMERS TO MAXIMUM (See Figs. 3 and 4)
FREQUENCY SETTING	CONNECTION AT RADIO			
I.F.	Control Grid (prong No. 8) 6SA7 1st Det. Tube	.05 mf.	Extreme Position out of Coil	1st I.F. (C11) & (C12) 2nd I.F. (C15) & (C16)
456 KC				
OSCILLATOR				
1600 KC	Antenna Cable See Note A	See Note A	Extreme Position out of Coil	Oscillator (C6)
1400 KC ADJUSTMENT				
1400 KC	Antenna Cable	See Note A	Tune to Max. Output with Tuning Knob	Int. (C5) Ant. (C4)

Reassemble Radio—Install in Car—Connect Car Antenna to Radio.

Car Antenna Readjustment—Tune in weak signal near 1400 KC—Readjust Antenna Trimmer C4 for maximum output.

SERIES B CHANGES

To secure improved performance, the following changes are made in issue "B" chassis:  
The oscillator grid resistor is increased from 20,00 ohms to 40,000 ohms. The R.F. plate resistor is decreased from 20,000 ohms to 15,000 ohms. The R.F. screen is disconnected from the modulator screen and connected to the R.F. plate. In the Series 6C18 only, the modulator screen resistor is increased from 10,000 ohms to 12,000 ohms. To permit easier installation, the issue "B" chassis use a socket and plug arrangement for the speaker connection. Issue "A" chassis used pin tips and clips to connect cable to speaker.



CALIBRATION—To calibrate the radio, tune in a station of known frequency. At the back of the control unit is the calibration screw. Remove the dial lamp assembly. Insert a fine bladed screwdriver and turn this screw until the pointer on the dial scale is at the frequency of the station being received.

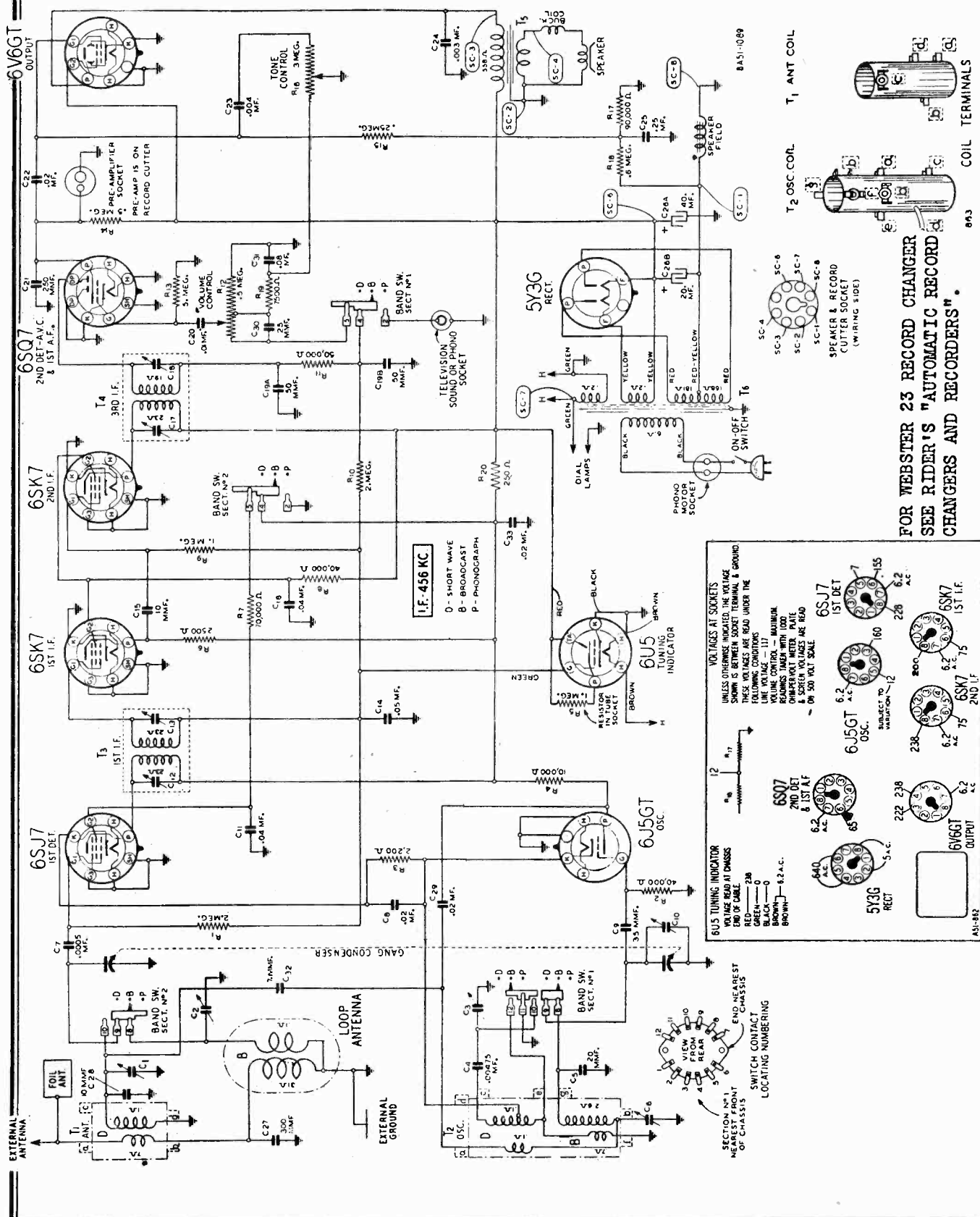
Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC.

After each range is completed, repeat the procedure as a final check.

NOTE A—Insert the antenna cable plug in the antenna socket on the chassis. The total capacity of the antenna cable and dummy antenna should be 60 mmf. If the cable, for example, has a capacity of 30 mmf., use a 30 mmf. condenser for a dummy antenna. Connect the other end of the antenna cable through the dummy antenna capacity to the output of the signal generator.

Alignment Procedure: Vol. Cont. Max. all adj. Connect Radio Chassis to ground post of Sig. Gen. with short heavy lead. Allow chassis and Sig. Gen. to "Heat Up" for few minutes. Following equipment is required for alignment: A sig. Gen. which will provide accurately calibrated sig. at the test frequencies. Output indicating meter—Non-metallic Screwdriver—Dummy antenna—.05mf.

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.



FOR WEBSTER 23 RECORD CHANGER  
SEE RIDER'S "AUTOMATIC RECORD  
CHANGERS AND RECORDERS".

**6U5 TUNING INDICATOR**  
VOLTAGE READ AT DMSSES  
END OF CABLE  
RED - 238  
BLACK - 0  
GREEN - 0  
BROWN - 8.2 A.C.

**6S7 2ND DET & 1ST A.F.**  
6.2 A.C.  
6.2 A.C.  
6.2 A.C.

**6J5GT OSC.**  
6.2 A.C.  
6.2 A.C.  
6.2 A.C.

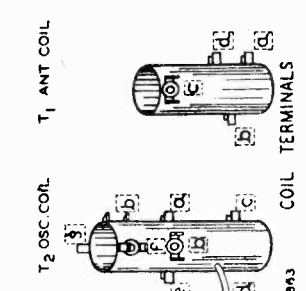
**6SK7 1ST I.F.**  
6.2 A.C.  
6.2 A.C.  
6.2 A.C.

**6S7 1ST I.F.**  
6.2 A.C.  
6.2 A.C.  
6.2 A.C.

**5Y3G RECT.**  
6.2 A.C.  
6.2 A.C.  
6.2 A.C.

**6V6GT OUTPUT**  
6.2 A.C.  
6.2 A.C.  
6.2 A.C.

UNLESS OTHERWISE INDICATED, THE VOLTAGE SHOWN IS BETWEEN SOCKET TERMINAL & GROUND. FOLLOWING CONDITIONS:  
VOLUME CONTROL - MAXIMUM  
READINGS TAKEN WITH 1000 OHM PER VOLT METER PLATE & SCREEN VOLTAGES ARE READ ON 300 VOLT SCALE



MODEL B112

## LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

### ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.  
Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.  
Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning:  
An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.  
Output Indicating Meter—Non-Metallic Screwdriver.  
Dummy Antennas—.1 mf., 100 mmf., and 400 ohms.

	SIGNAL GENERATOR FREQUENCY SETTING	CONNECTION AT RADIO	DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM
I.F.	456 KC	Grid of 1st Det.	.1 mf.	B Range	Turn Rotor to Full Open	1st I.F. (C12) & (C13) 3rd I.F. (C17) & (C18)
RANGE B	1600 KC	Antenna Lead	100 mmf.	B Range	Turn Rotor to Full Open	Oscillator Range B (C10)
	1400 KC	Antenna Lead	100 mmf.	B Range	Turn Rotor to Max. Output Set Indicator to 1400 KC See Note A	Ant. Range B (C2)
	600 KC	Antenna Lead	100 mmf.	B Range	Turn Rotor to Max. Output	600 KC (C6) Rock Rotor—See Note B
RANGE D	18,300 KC	Antenna Lead	400 Ohm	D Range	Turn Rotor to Full Open	Oscillator Range D (C3)
	17,000 KC	Antenna Lead	400 Ohm	D Range	Turn Rotor to Max. Output	Ant. Range D (C1) Rock Rotor—See Note B
LOOP RANGE B	1400 KC	Antenna Lead	100 mmf.	B Range	Turn Rotor to Max. Output	Ant. Range B (C2)

After each range is completed, repeat the procedure as a final check.

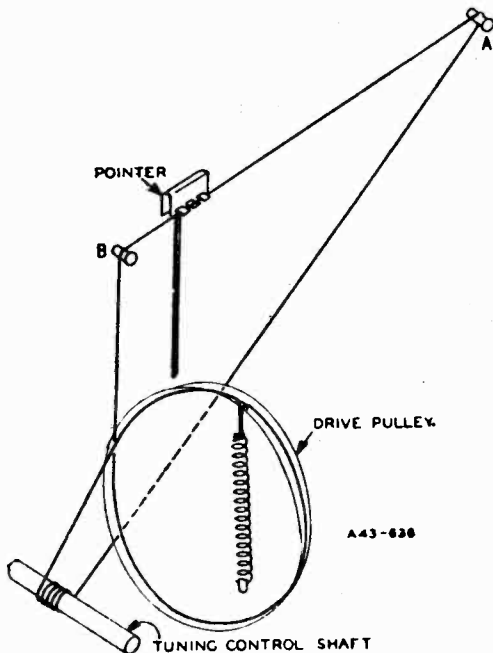
NOTE A—If the pointer is not at 1400 KC on the dial, remove pointer from drive cord. Set pointer at the 1400 KC mark on the dial scale. Attach pointer to drive cord.

NOTE B—Turn the rotor back and forth and adjust the trimmer until the peak of greatest intensity is obtained.

### SPECIFICATIONS

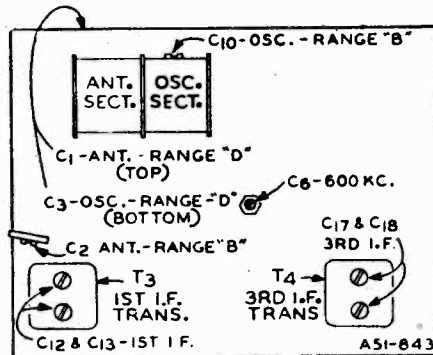
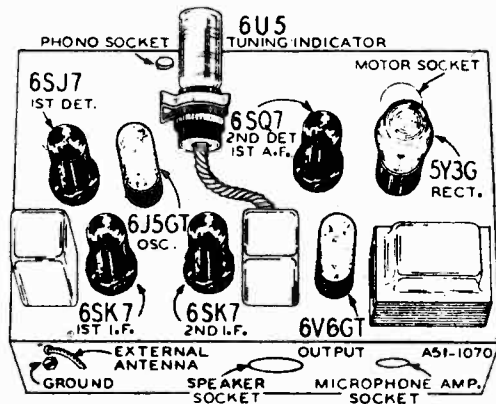
Power Consumption - 60 Watts (At 117 volts 60 cycles)  
80 Watts (Phonograph Operating)  
Power Output - 2.5 Watts Undistorted  
3.5 Watts Maximum  
Selectivity - 40 KC Broad at 1000 times Signal  
Intermediate Frequency - 456 KC  
Speaker - 10" or 12" Electro-Dynamic

Tuning Frequency Range  
B Range - 528 to 1600 KC  
D Range - 5750 to 18300 KC  
Sensitivity—External Antenna—(For .05 Watt output)  
B Range - 2.0 Microvolts Average  
D Range - 4.0 Microvolts Average



### DRIVE CORD REPLACEMENT

Turn gang condenser to full open position — See illustration. Use a new drive cord 42 inches in length.





MODEL FE141

# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

Mixer, First  
Detector-Oscillator

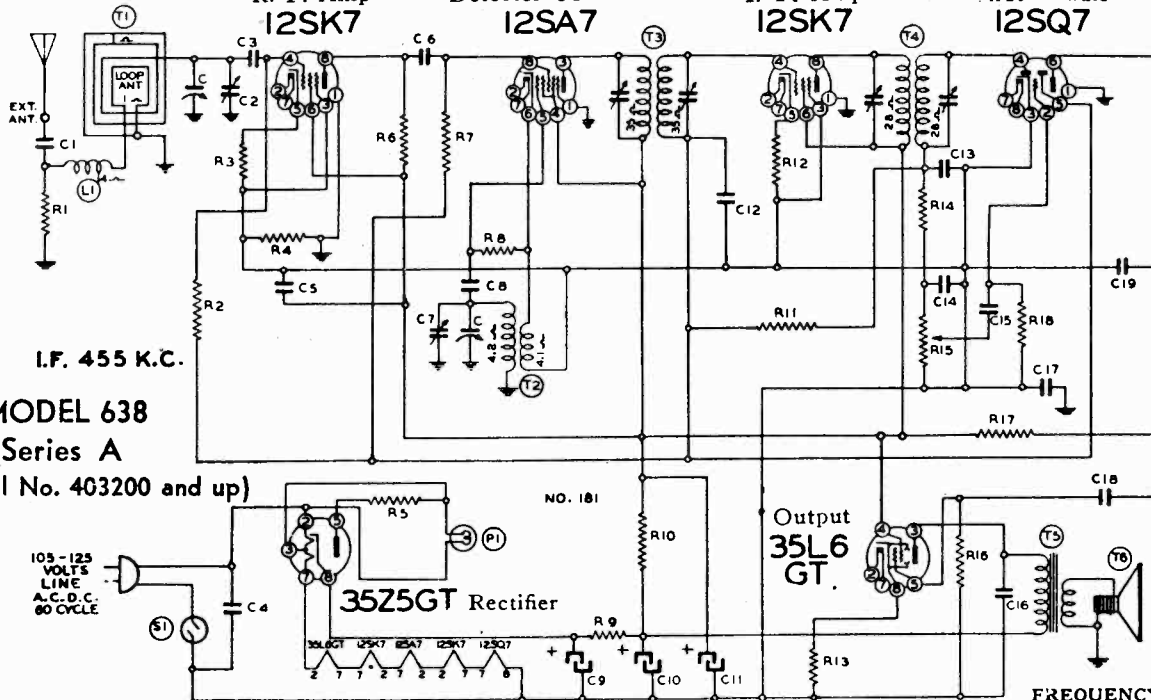
Second Detector, A.V.C.  
First Audio

R. F. Amp  
12SK7

12SA7

I. F. Amp  
12SK7

12SQ7



MODEL 638  
Series A

(Serial No. 403200 and up)

105-125  
VOLTS  
LINE  
A.C. D.C.  
60 CYCLE

4-40

Power Consumption.....

35 Watts

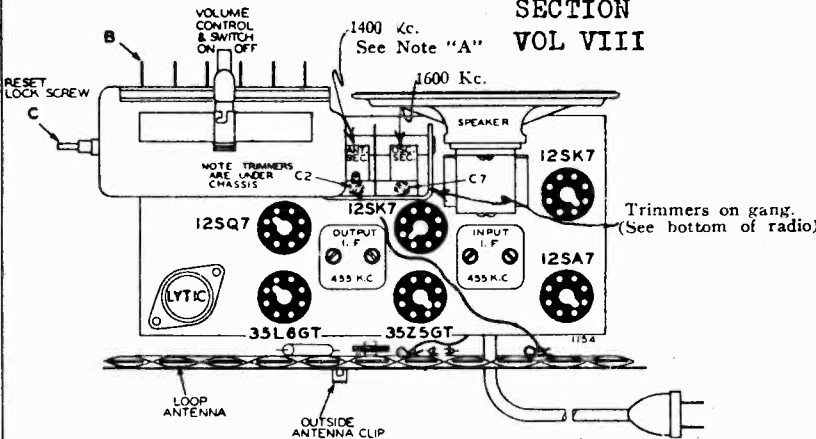
Power Output.....

1 Watt Undistorted, 1.5 Watts Maximum

Code Part  
No. No. Description

FREQUENCY RANGE  
540 to 1600 K.C.

CONVENTIONAL ALIGNMENT, SEE SPECIAL  
SECTION  
VOL VIII



Code No.	Part No.	Description
R1	13018	4M ohm-1/2 w.
R2	13019	1 megohm-1/2 w.
R3	130168	100 ohm-1/2 w.
R4	130100	150M ohm-1/2 w.
R5	130215	25 ohm-1/2 w.
R6	130218	5M ohm-1/2 w.
R7	13020	100M ohm-1/2 w.
R8	13012	50M ohm-1/2 w.
R9	130296	200 ohm-1 w.
R10	130287	1200 ohm-1 w.
R11	130170	3 megohm-1/2 w.
R12	13024	400 ohm-1/2 w.
R13	130166	150 ohm-1/2 w.
R14	13012	.50M, ohm-1/2 w.
R15	101218	1 megohm volume control
R16	1303	500M ohm-1/2 w.
R17	1309	200M ohm-1/2 w.
R18	130257	5 megohm-1/2 w.

CONDENSERS

C	102116	2 gang variable condenser
C1	10025	.002 x 600 v.
C2		B. C. Antenna Trimmer on Gang Con.
C3	1292	.0005 Mica
C4	1001	.1 x 400 v.
C5	1006	.25 x 200 v.
C6	1295	.0001 mica
C7		B. C. Oscillator Trimmer on Gang Con.
C8	1295	.0001 mica
C9	11994	40 mfd. lytic x 150 w. v.
C10	11994	20 mfd. lytic x 150 w. v.
C11	11994	20 mfd. lytic x 150 w. v.
C12	1009	.05 x 200 v.
C13	129161	.0001 mica
C14	129161	.0001 mica
C15	10025	.002 x 600 v.
C16	10026	.02 x 400 v.
C17	100110	.2 x 400 v.
C18	100106	.004 x 600 v.
C19	1295	.0001 mica

C9, C10, C11 are in same unit  
C13, C14 are in same unit

PARTS

T1	111180	Loop Antenna complete
T2	110152	Oscillator Coil
T3	108140H	Input I. F. Coil-455 Kc.
T4	108145	Output I. F. Coil-455 Kc.
T5	105104	Output Transformer
T6	114197	5" P. M. Speaker
L1	12310	Loading Coil
S1		On-off switch on volume control
P1	107249	T47 Pilot light bulb

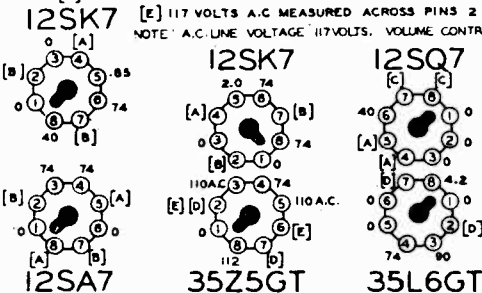
NOTE "A" Lay the output lead from the generator in back of the loop antenna. Turn up the output of the generator, picking up the energy in the loop antenna without any electrical connection from the generator.

BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND B-

- [A] CANNOT BE MEASURED WITH VOLTMETER.
- [B] 12 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.
- [C] 12 VOLTS A.C. MEASURED ACROSS PINS 7 & 6.
- [D] 30 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.
- [E] 117 VOLTS A.C. MEASURED ACROSS PINS 2 & 6.

NOTE: A.C. LINE VOLTAGE 117 VOLTS. VOLUME CONTROL AT MINIMUM



REAR OF CHASSIS

1156



MODEL B195

## LAFAYETTE RADIO RADIO WIRE TELEVISION, INC

### ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

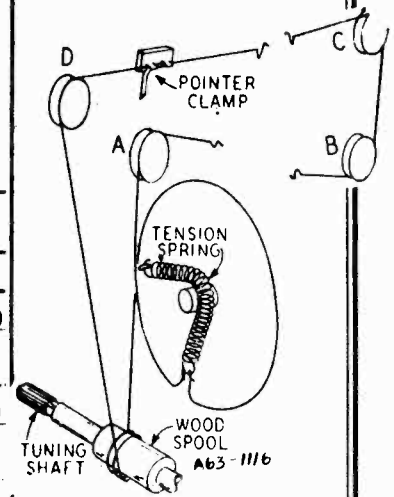
Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning: An all Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.

Output Indicating Meter—Non-Metallic Screw driver.

Dummy Antennas—.1 mf., 100 mmf., and 400 ohms.

SIGNAL GENERATOR		CONNECTION AT RADIO	DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM
FREQUENCY SETTING	I.F.					
456 KC	1st I.F. (C15) & (C14)	Signal Grid of 1st Det.	.1 mf.	B Range	Turn Rotor to Full Open	2nd I.F. (C18) & (C19)
<b>RANGE D</b> 18,300 KC	2nd I.F. (C18) & (C19)	Antenna Lead	400 Ohm	D Range	Turn Rotor to Full Open	Oscillator Range D (C11)
17,000 KC	Ant. Range D (C1)	Antenna Lead	400 Ohm	D Range	Turn Rotor to Max. Output	Inf. Range D (C4)
<b>RANGE B</b> 1610 KC	Inf. Range D (C4)	Antenna Lead	100 mmf.	B Range	Turn Rotor to Full Open	Rock Rotor—See Note B
1400 KC	Oscillator Range B (C13)	Antenna Lead	100 mmf.	B Range	Turn Rotor to Max. Output	Set Indicator to 1400 KC—See Note A
400 KC	Ant. Range B (C2)	Antenna Lead	100 mmf.	B Range	Turn Rotor to Max. Output	Inf. Range B (C6)
<b>LOOP RANGE B</b> 1400 KC	400 KC (C14)	Antenna Lead	100 mmf.	B Range	Turn Rotor to Max. Output	Rock Rotor—See Note B
	Ant. Range B (C2)					



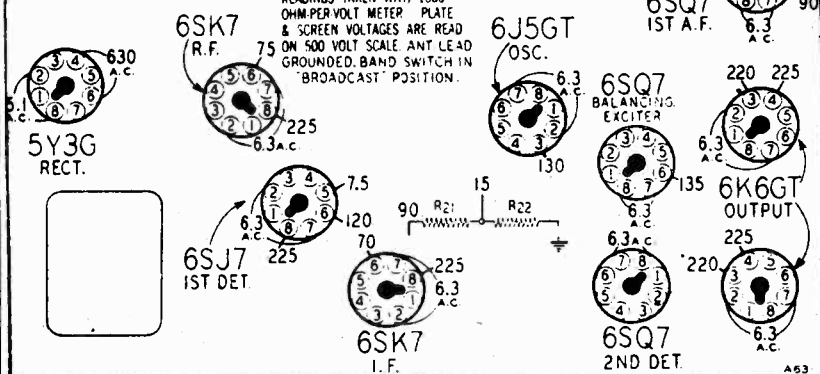
#### 6U5 TUNING INDICATOR

VOLTAGE READ AT CHASSIS END OF CABLE

RED — 225  
BLUE — 20  
BROWN — 6.3 A.C.

#### VOLTAGES AT SOCKETS

UNLESS OTHERWISE INDICATED, THE VOLTAGE SHOWN IS BETWEEN SOCKET TERMINAL & GROUND. THESE VOLTAGES ARE READ UNDER THE FOLLOWING CONDITIONS:  
LINE VOLTAGE 117 A.C.  
VOLUME CONTROL MAXIMUM.  
READINGS TAKEN WITH 1000 OHM PER VOLT METER. PLATE & SCREEN VOLTAGES ARE READ ON 500 VOLT SCALE. ANT LEAD GROUNDED. BAND SWITCH IN "BROADCAST" POSITION.



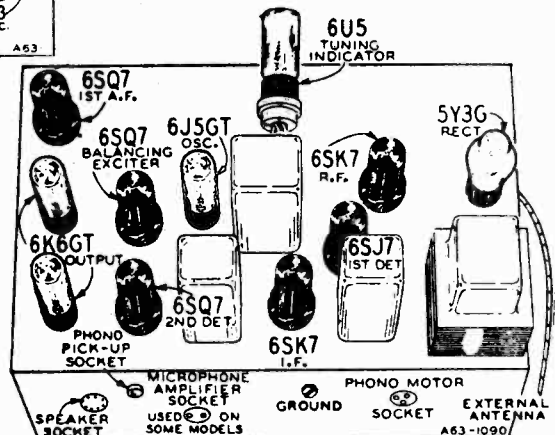
Turn gang condenser to open position. Use new drive cord 55" in length.

Secure one end of tension spring to hook on drive pulley. Bend spring around drive pulley shaft—see illustration. Pass cord through slot in pulley rim. Wind cord 1/4 turn clockwise (from drive pulley end of chassis) around drive pulley. Pass cord around idler pulleys A, B, C and D as in illustration. Then wind cord 2 1/2 turns clockwise (from front of chassis) around tuning shaft spool. These turns should progress away from chassis. Pass cord over top of drive pulley for 3/4 turn clockwise (from drive pulley end of chassis) and through slot in pulley rim. Fasten cord to tension spring—see illustration.

FOR GENERAL RECORD CHANGER DATA SEE RIDER'S "AUTOMATIC RECORD CHANGERS AND RECORDERS"

### SPECIFICATIONS

- Speaker - - - - - 8", 10" or 12" Electro-Dynamic
- Tuning Frequency Range
  - B Range - - - - - 535 to 1610 KC
  - D Range - - - - - 5.35 to 18.3 MC
- Sensitivity—External Antenna—(For 0.5 Watt output)
  - B Range - - - - - 2.0 Microvolts Average
  - D Range - - - - - 4.0 Microvolts Average
- Power Consumption - 85 Watts (At 117 volts 60 cycles)  
105 Watts (Phonograph Operating on Phono-Radio Combinations)
- Power Output - - - - - 4 Watts Undistorted  
5.5 Watts Maximum
- Selectivity - - - 35 KC Broad at 1000 times Signal
- Intermediate Frequency - - - - - 456 KC



#### PROCEDURE FOR SETTING THE STATION BUTTONS

Grasp left-handed nutten at sides (depress adjacent button) and pull it out as far as it will go. A click will be heard. If it is impossible to depress button which is adjacent to button you are setting, rotate tuning knob a few turns. Now lock mechanism by pushing button all the way in until felt to lock into place. Proceed in same manner to set stations on any of remaining buttons. Any button may be used for any station you can receive, although it will be more convenient to set station so that the Kc. numbers will increase from left to right. Changing setting of one button will not affect setting of any others.





MODELS C216, 3120

## LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

Frequency Range

Broadcast Band.....	530-1630 Kilocycles
Second S. W.....	2.1-6.3 Megacycles
First S. W.....	5.8-22.5 Megacycles

ALIGNMENT INSTRUCTIONS

Re-alignment of this receiver should not be attempted unless all other possible causes have been thoroughly investigated. An accurately calibrated signal generator which will cover the necessary wave bands, and an output meter for indicating the effect of adjustments are required.

During the alignment procedure all adjustments should be made under the following conditions:

- 1) Line Voltage as indicated on instruction sheet.
- 2) Volume & Tone control at maximum volume positions.
- 3) Minimum Input from signal generator.

If this procedure is not adhered to, all adjustments will appear very broad. This is due to the action of the automatic volume control.

I.F. Adjustment - The signal generator is set at 455 KC and is connected to the grid of the converter tube (6A8) through a .5 MFD condenser. Be sure to connect a resistor of approximately 25,000 OHMS between the converter grid and ground so that the grid circuit is at ground potential for D.C.

The Input I.F. Transformer trimmers - are both adjusted for maximum output as indicated by the output meter connected across either the voice coil or the primary coil of the loud speaker.

The Output I.F. Transformer trimmers - are adjusted for maximum output as indicated on the output meter. The Input I.F. should now be re-checked for maximum output.

Short Wave Band #1 Adjustment - Set the band switch to the third position which is short wave band #1. Connect the signal generator thru a standard dummy antenna to the antenna and ground leads of the receiver. Set the generator at 19MC turn the condenser until a response is indicated. The pointer should coincide with the 19MC mark on the dial. Adjust the antenna trimmer for the short wave band for maximum output while rocking the condenser gang from left to right.

Short Wave Band #2 - Set the band switch to the second position. Turn the dial control knob to the extreme high frequency end so that the condenser plates are entirely out of mesh. The signal generator is left connected as for band #1. The generator is set at 6.25MC and the Band #2 osc. trimmer is opened until a response is indicated, at the lower capacity setting of the trimmer. Set the generator at 6MC and turn the variable condenser until a response is indicated. The pointer should now coincide with the 6.MC mark on the dial. The antenna trimmer is then adjusted for maximum output while the condenser gang is rocked from right to left. Set the generator at 2.4MC and turn the variable condenser knob until a response is indicated. The padder for this band is now adjusted for maximum output while rocking the condenser gang from left to right. The high frequency adjustments should then be re-checked.

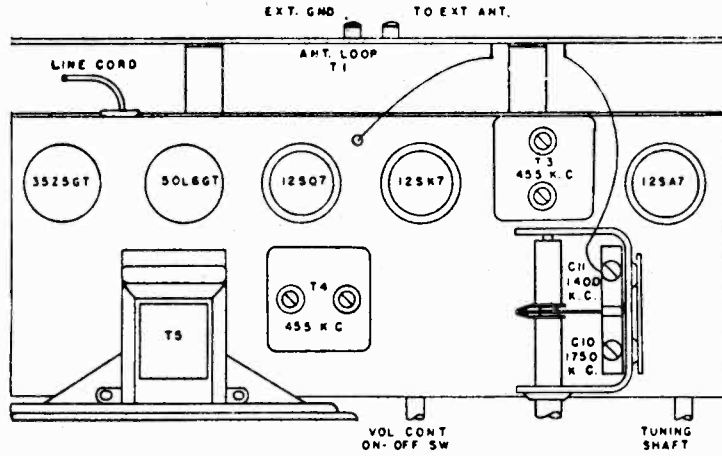
Broadcast Band

It is desirable to align this band on the loop. The signal generator is coupled to the receiver by means of a 2 or 3 turn loop. Set the Band Switch in the Broadcast position and condenser plates completely out of mesh. Set the signal generator at 1600 KC and adjust the broadcast oscillator trimmer until a response is indicated on the output meter. The generator is now set at 1400 KC. Turn the variable condenser until a response is indicated. The dial pointer should now co-incide with the 1400KC mark on the dial. Set the generator at 600KC and turn the variable condenser control until a response is indicated. Adjust the broadcast oscillator padder condenser for maximum response while "rocking" the gang condenser. The high frequency adjustments should now be re-checked.



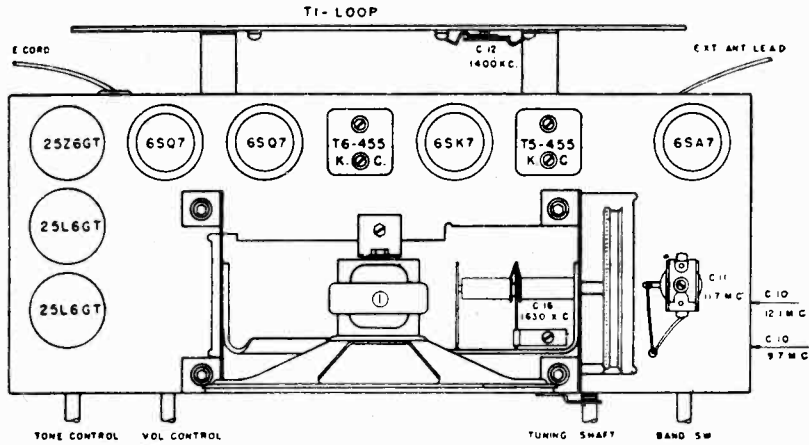
MODEL D247  
 MODEL D251  
 MODELS D294, D314, D315

LAFAYETTE RADIO  
 RADIO WIRE TELEVISION, INC.



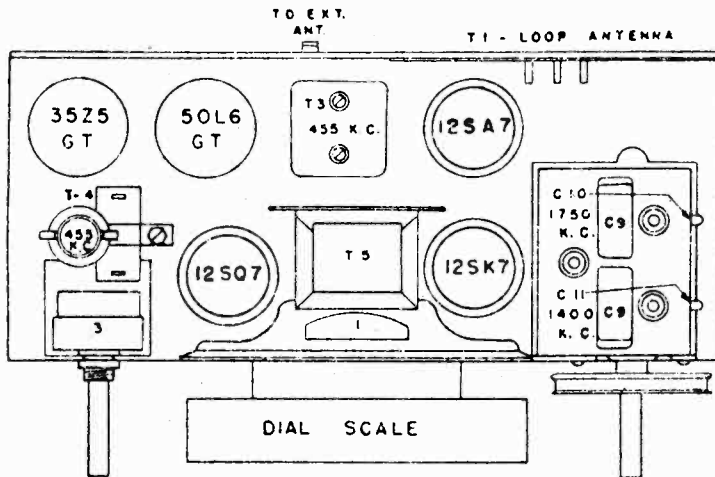
LOCATION OF PARTS ON TOP OF CHASSIS

Model D-247



LOCATION OF PARTS ON TOP OF CHASSIS

Model D-251



LOCATION OF PARTS ON TOP OF CHASSIS

Models D294, D314, -15



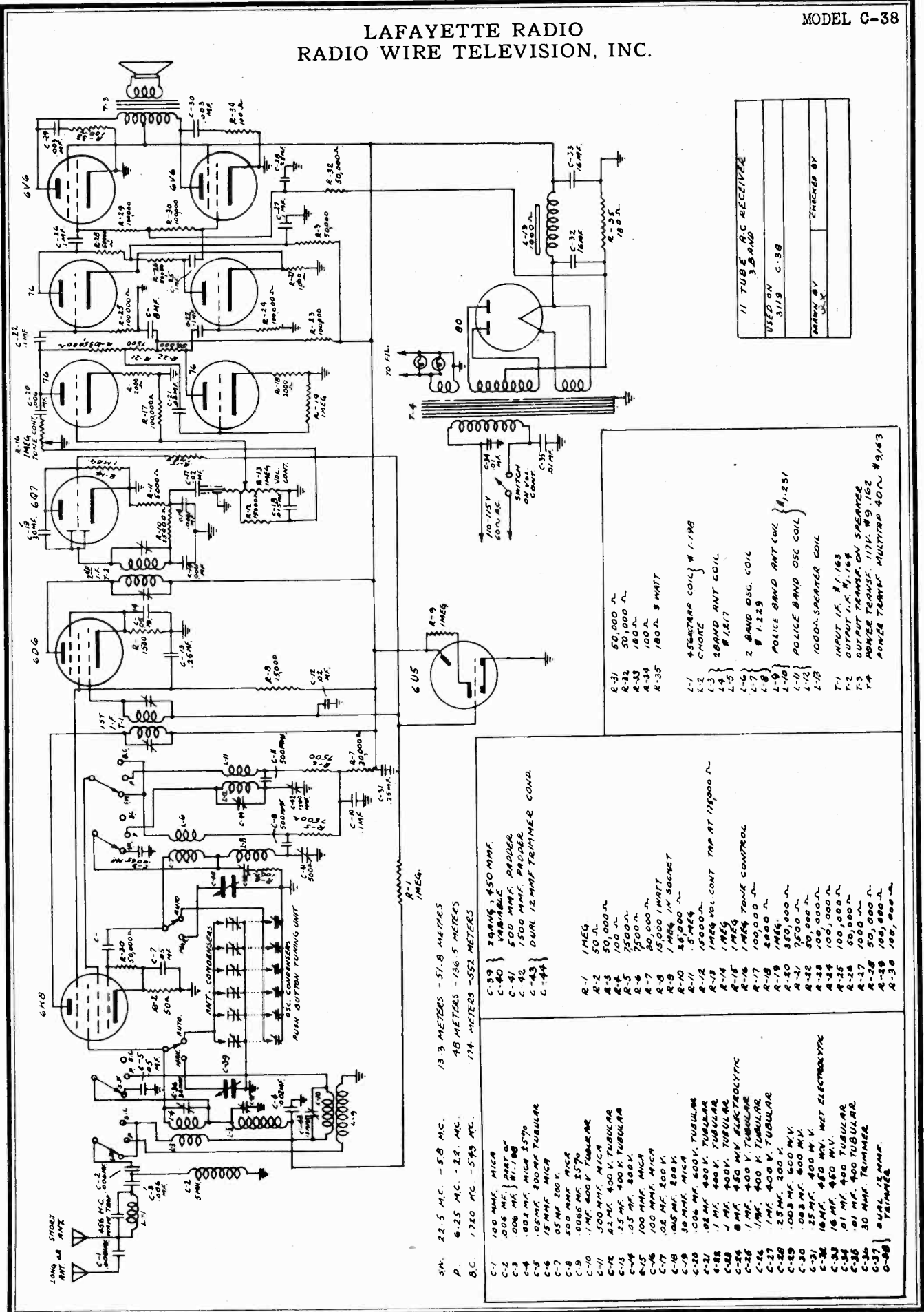






# LAFAYETTE RADIO RADIO WIRE TELEVISION, INC.

MODEL C-38



USED ON	3179	C-38
DESIGNED BY	J.F.R.	
CHECKED BY	J.F.R.	

- R-31 50,000 Ω
- R-32 50,000 Ω
- R-33 100 Ω
- R-34 100 Ω
- R-35 100 Ω 3 WATT
- L-1 RESONANT COIL # 1,198
- L-2 CHOKER
- L-3 2 BAND ANT COIL
- L-4 # 1,229
- L-5 # 1,217
- L-6 2 BAND OSC. COIL
- L-7 # 1,229
- L-8 POLICE BAND ANT COIL # 1,231
- L-9 POLICE BAND OSC COIL
- L-10 1000-SPEAKER COIL
- L-11
- L-12
- T-1 INPUT I.F. # 1,163
- T-2 OUTPUT I.F. # 1,164
- T-3 ADAPTER TRANSF. 117V. # 9,162
- T-4 POWER TRANSF. MULTIP. 40V. # 9,163

- R-1 1 MEG.
- R-2 50 Ω
- R-3 50,000 Ω
- R-4 100 Ω
- R-5 2500 Ω
- R-6 75,000 Ω
- R-7 30,000 Ω
- R-8 15,000 Ω WATT
- R-9 1 MEG. 1/4 SOCKET
- R-10 15,000 Ω
- R-11 5 MEG.
- R-12 15,000 Ω
- R-13 1 MEG. VOL. CONT. TAP AT 175,000 Ω
- R-14 1 MEG.
- R-15 1 MEG. TONE CONTROL
- R-16 1 MEG.
- R-17 100,000 Ω
- R-18 500 Ω
- R-19 500,000 Ω
- R-20 250 Ω
- R-21 50,000 Ω
- R-22 50,000 Ω
- R-23 100,000 Ω
- R-24 100,000 Ω
- R-25 100,000 Ω
- R-26 50,000 Ω
- R-27 100 Ω
- R-28 50,000 Ω
- R-29 100,000 Ω
- R-30 100,000 Ω

- C-1 100 MUF MICA
- C-2 0.05 MF 50V
- C-3 0.05 MF 50V
- C-4 0.05 MF 50V
- C-5 0.05 MF 50V
- C-6 0.05 MF 50V
- C-7 0.05 MF 50V
- C-8 0.05 MF 50V
- C-9 0.05 MF 50V
- C-10 0.05 MF 50V
- C-11 0.05 MF 50V
- C-12 0.05 MF 50V
- C-13 0.05 MF 50V
- C-14 0.05 MF 50V
- C-15 0.05 MF 50V
- C-16 0.05 MF 50V
- C-17 0.05 MF 50V
- C-18 0.05 MF 50V
- C-19 0.05 MF 50V
- C-20 0.05 MF 50V
- C-21 0.05 MF 50V
- C-22 0.05 MF 50V
- C-23 0.05 MF 50V
- C-24 0.05 MF 50V
- C-25 0.05 MF 50V
- C-26 0.05 MF 50V
- C-27 0.05 MF 50V
- C-28 0.05 MF 50V
- C-29 0.05 MF 50V
- C-30 0.05 MF 50V
- C-31 0.05 MF 50V
- C-32 0.05 MF 50V
- C-33 0.05 MF 50V
- C-34 0.05 MF 50V
- C-35 0.05 MF 50V
- C-36 0.05 MF 50V
- C-37 0.05 MF 50V
- C-38 0.05 MF 50V
- C-39 0.05 MF 50V
- C-40 0.05 MF 50V

3M. 22.5 MC. - 8.8 MC.  
 P. 6.25 MC. - 2.2 MC.  
 B.C. 1720 KC - 573 KC.



MODEL C-38

**LAFAYETTE RADIO  
RADIO WIRE TELEVISION, INC.**

**SERVICE INSTRUCTION**

Re alignment of this receiver should not be attempted unless all other possible causes have been thoroughly investigated. An accurately calibrated signal generator which will cover the necessary wave bands, and an output meter for indicating the effect of adjustments are required.

During the alignment procedure all adjustments should be made under the following conditions.

- 1) Volume and Tone control at maximum volume positions.
- 2) Minimum Input from signal generator.
- 3) The change-over switch should be turned to the right or MANUAL position  
If this procedure is not adhered to, all adjustments will appear very broad. This is due to the action of the automatic volume control.

I.F. ADJUSTMENT The signal generator is set at 456 KC and is connected to the grid of the converter tube (6K8) through a .5 MFD condenser. Be sure to connect a resistor of approximately 25,000 ohms between the converter grid and ground so that the grid circuit is at ground potential for D.C.

The band switch should be set at broadcast and the dial set to 550 kc. The Input I.F. transformer trimmers are located at top of chassis on top of I.F. transformer which is between the 6K8 and 6D6 tubes.

Both screws are adjusted for maximum output as indicated by the output meter connected across either the voice coil or the primary coil of the loud speaker.

The output I.F. transformer trimmers are located at top of chassis on top of the I.F. transformer which is behind the 6D6 I.F. tube, adjust the trimmers for maximum output as indicated on the output meter. The Input I.F. should now be re-checked for maximum output.

SHORT-WAVE BAND #1 ADJUSTMENT.

Set the band switch to the extreme right-hand position which is short wave band #1. Turn the dial control knob to the extreme high frequency end so that the condenser plates are entirely out of mesh. The signal generator is connected to the "short-antenna" lead through a dummy antenna consisting of a 250 MMFD condenser and a 400 ohm non-inductive resistor in series. With the generator set at 22.5 MC the short wave oscillator trimmer is opened until a response is heard. The trimmer condenser is then opened further (capacity reduced) until a second response is heard. This response (with trimmer at low capacity) is the correct response to use, the other being the image.

Set the generator at (19MC) turn the condenser until a response is indicated. The pointer should coincide with the 19MC mark on the dial. Adjust the antenna trimmer for the short-wave band (located on the antenna coil, which is under the chassis behind the dial drive shaft) for maximum output while rocking the condenser gang from left to right.

BROADCAST BAND

The dummy antenna for this band consists of only a 250 MMFD Condenser. Set the Band Switch in the Broadcast position and condenser plates completely out of mesh.

Set the signal generator at 1720 KC and adjust the broadcast oscillator trimmer located to the right of the variable condenser. The oscillator is the front trimmer, until a response is indicated on the output meter. The generator is now set at 1500 KC. Turn the variable condenser until a response is indicated. The dial pointer should now coincide with the 1500 KC mark on the dial.

Set the generator at 600 KC and turn the variable condenser control until a response is indicated. Adjust the broadcast oscillator padder condenser (Located behind the variable condenser. The left hand padder screw is the one for broadcast) for maximum response while "rocking" the gang condenser. The high frequency adjustments should now be rechecked.

SHORT WAVE BAND #2

Set the band switch to the middle-position. Turn the dial control knob to the extreme high frequency end so that the condenser plates are entirely out of mesh. The signal generator is left connected as for band #1. The generator is set at 6.25 MC and the band #2 oscillator trimmer is opened until a response is indicated at the lower capacity setting of the trimmer.

Set the generator at 6MC and turn the variable condenser until a response is indicated. The pointer should now coincide with the 6.0 MC mark on the dial. The antenna trimmer is then adjusted for maximum output while the condenser gang is rocked from right to left.

Set the generator at 2.4 MC and turn the variable condenser knob until a response is indicated. The padder for this band, (which is the right-hand padder screw behind the variable condenser) is now adjusted for maximum output while rocking the condenser gang from left to right. The high frequency adjustments should then be rechecked.