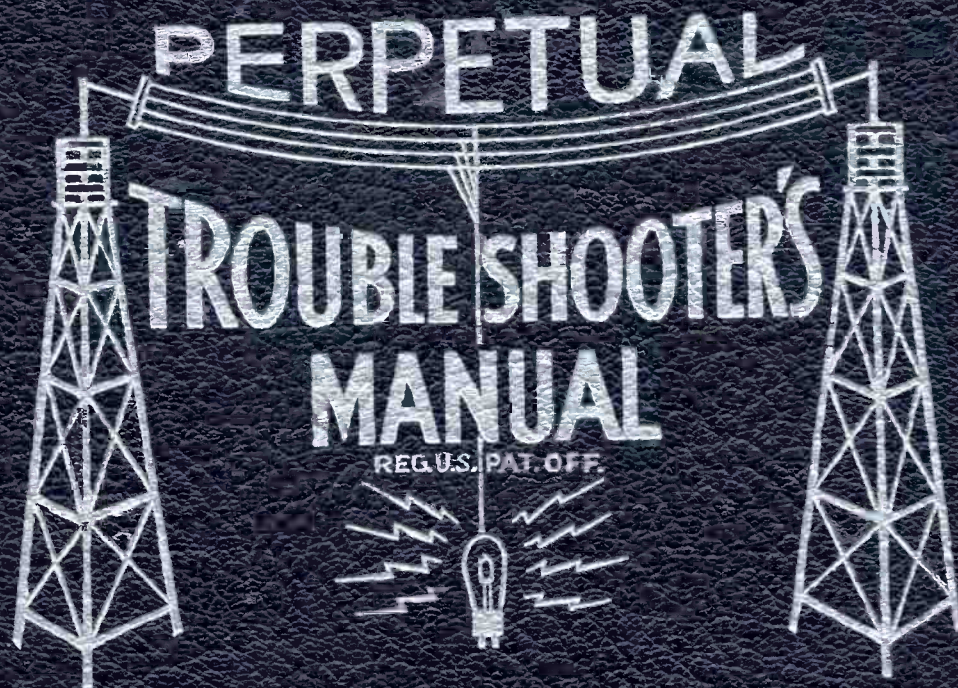


**VOLUME VII**



**JOHN F. RIDER**

**PERPETUAL**  
**TROUBLE SHOOTER'S MANUAL**

Reg. U.S. Pat. Off.

**VOLUME VII**

by

**JOHN F. RIDER**

**Published by**

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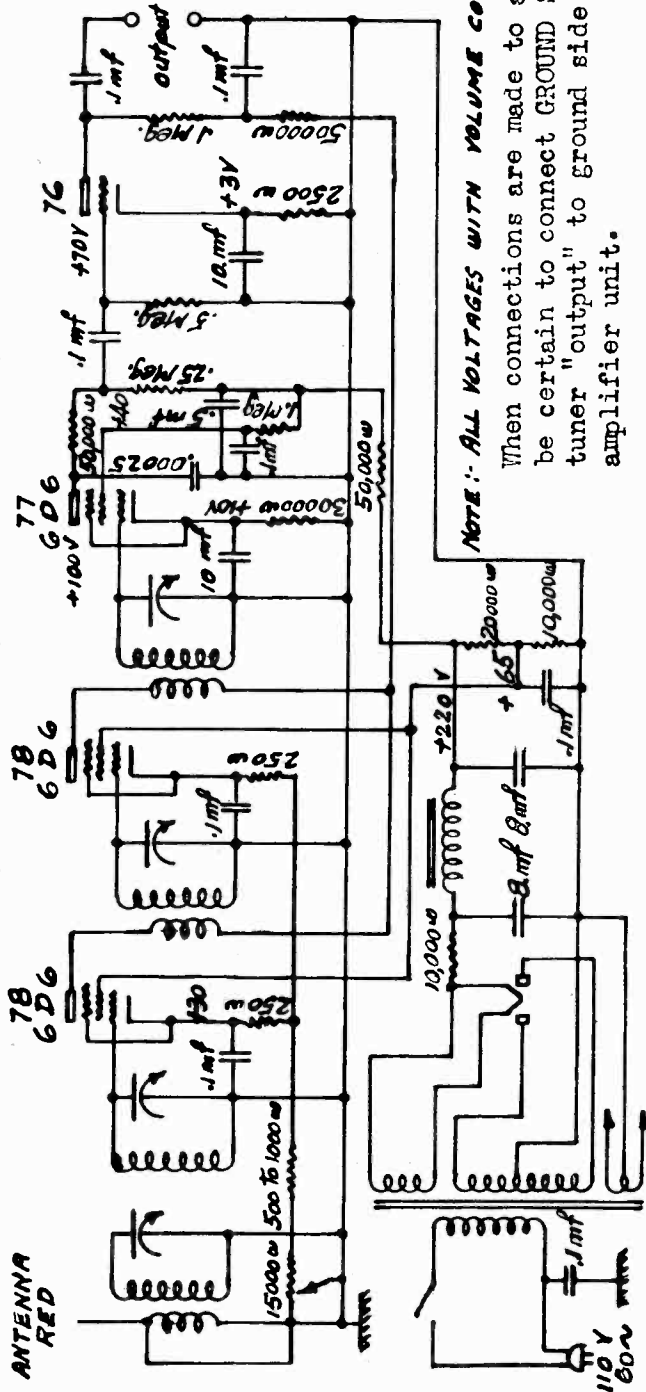
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Printed in U.S.A.

ACRATEST PRODUCTS

**MODEL 194**  
Schematic, Voltage  
Alignment

**MODEL 194 P. A. TUNER**



**NOTE: ALL VOLTAGES WITH VOLUME CONTROL FULL ON.**  
When connections are made to amplifiers, be certain to connect GROUND SIDE of the tuner "output" to ground side of the amplifier unit.

If the tube to line transformer is used, it should be placed a short distance away from the receiver and the proper method of orientation be employed to insure the minimum hum pickup between any power transformers either in the receiver or the amplifier.

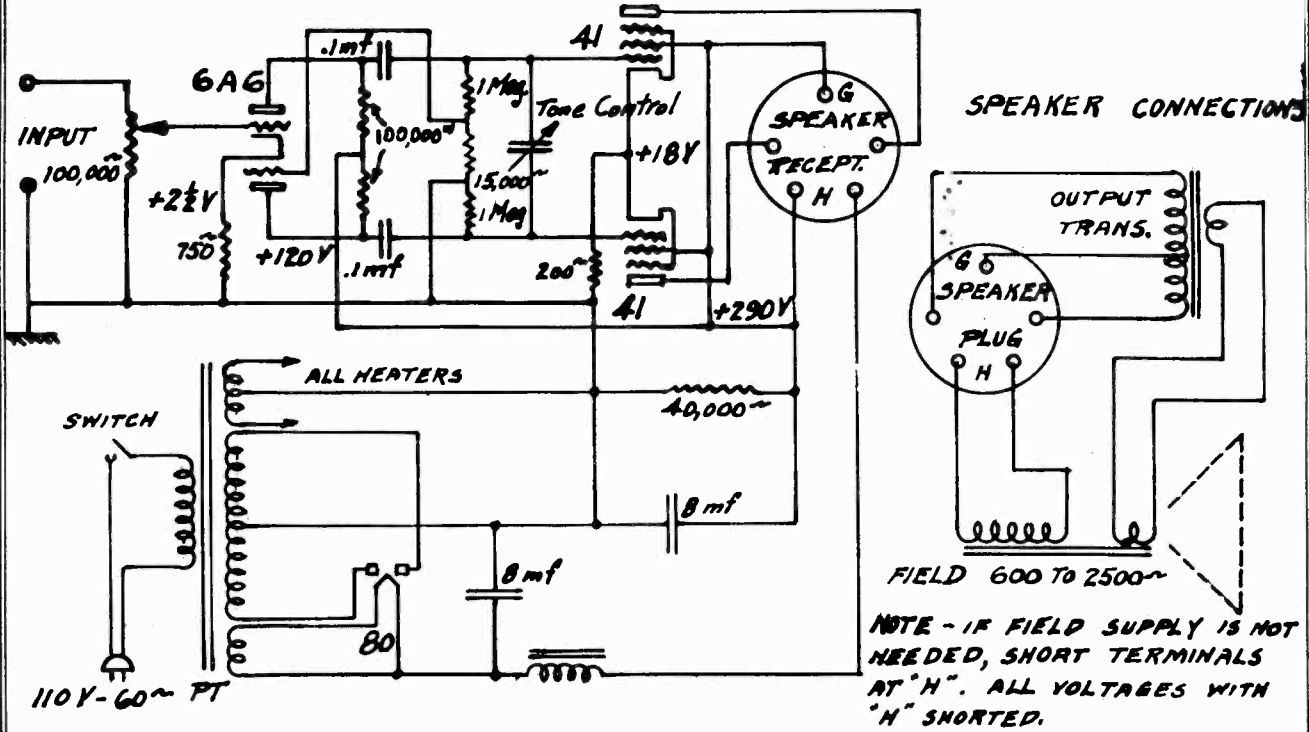
If it becomes necessary to readjust the setting of the tuning condenser compensators; follow this procedure:

- (1) Place receiver in operating condition.
- (2) Connect local oscillator to antenna and ground terminals.
- (3) Set tuning dial on receiver to "8" on the dial.
- (4) Set oscillator to 1500 K.C.
- (5) Adjust all four trimmers for maximum reading on output meter.
- (6) Keep power from oscillator at a very low level to assure accurate tuning.
- (7) Check at lower frequencies if desired but as the receiver has been designed and the coils and condensers are matched so that "8" on the dial is 1500 K.C., these adjustments should be sufficient for all channels unless the receiver has been damaged.

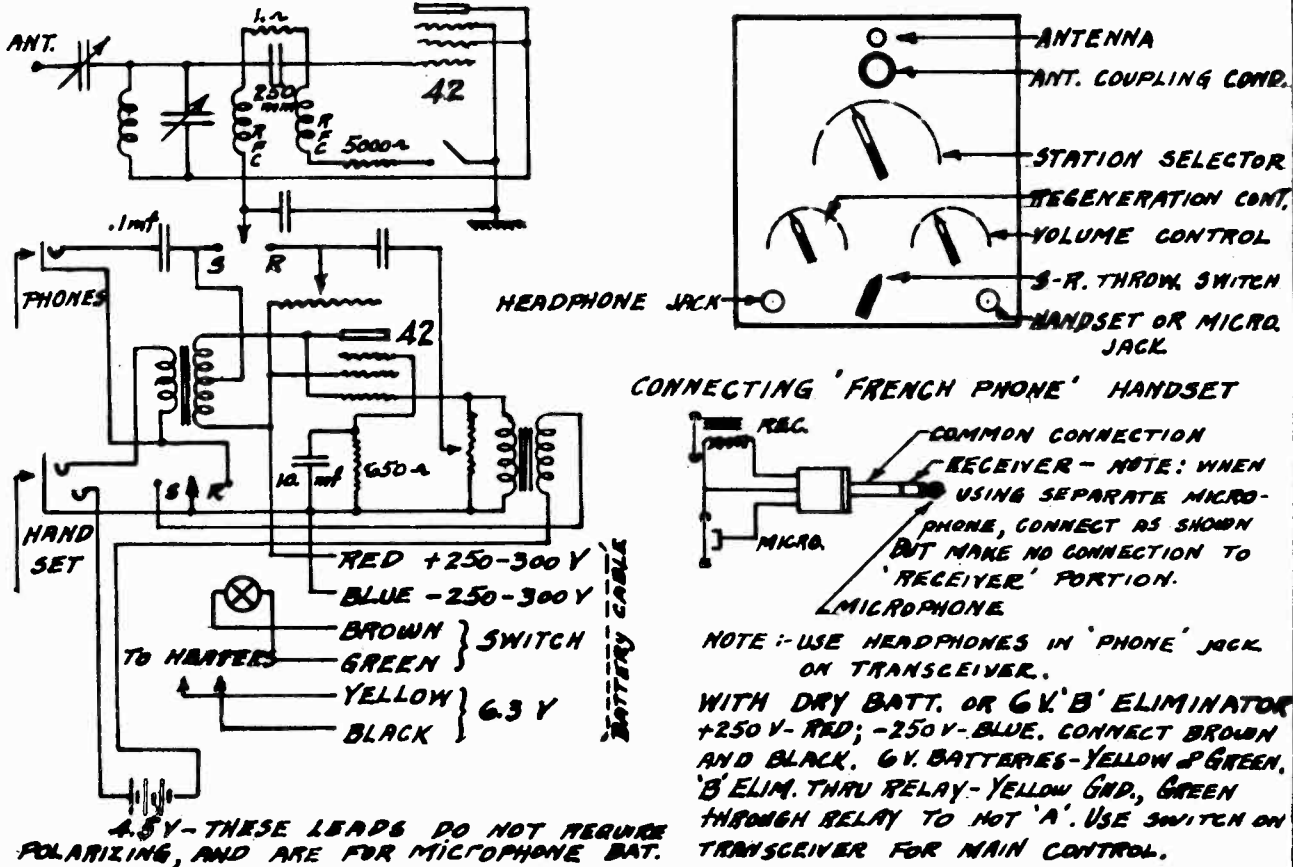
MODEL 200  
MODEL 202  
Schematics  
Notes

ACRASTEST PRODUCTS

MODEL 200 AMPLIFIER



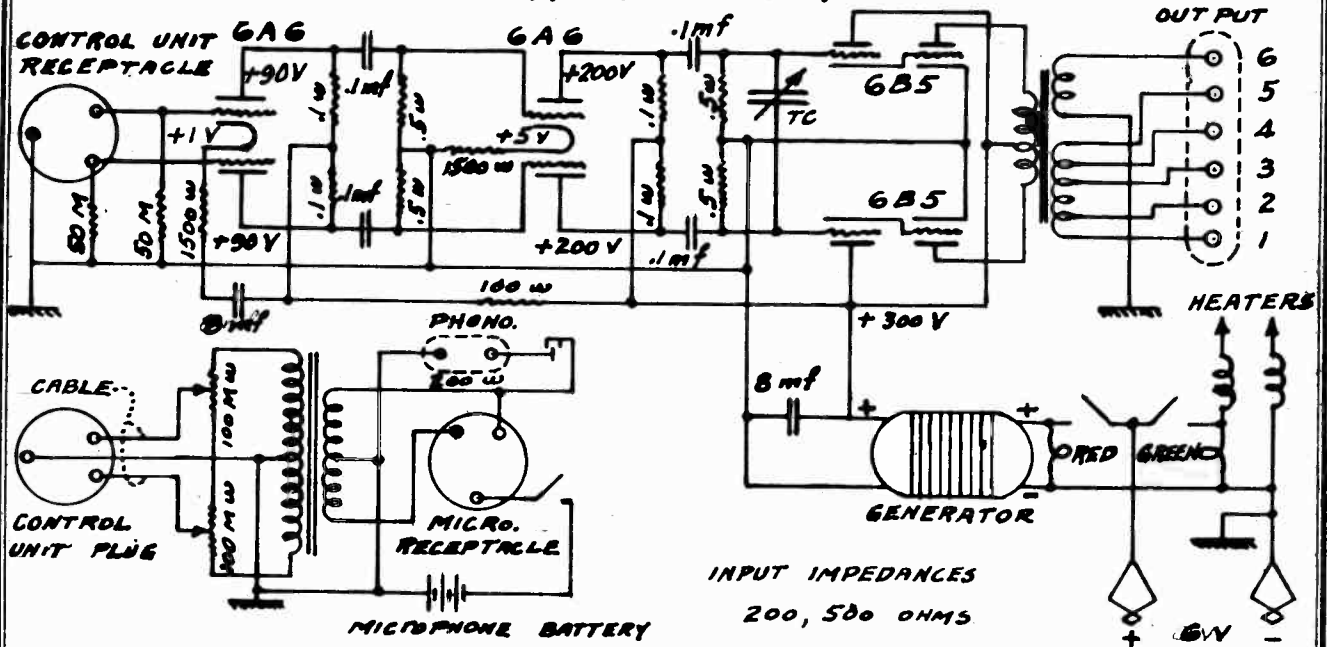
MODEL 202 5 METER TRANSCEIVER



ACRATEST PRODUCTS

MODEL 47  
MODEL 85  
Schematics  
Notes

MODEL 47 AMPLIFIER



NOTE: Before attempting to use this amplifier, check the polarity of the car storage battery. If car frame or chassis is minus (-) it is safe to operate amplifier as is.

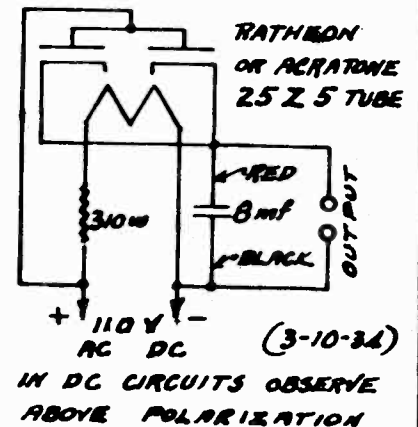
If frame or chassis is positive, remove bottom plate of amplifier look for slate colored wire with tag and change its connection as indicated on tag.

Be sure that the polarity of the generator input is correct. There is a knot in the positive battery feed wire.

The following output impedances are available. Note that terminal No. 1 is grounded to the chassis. The chassis is also B-.

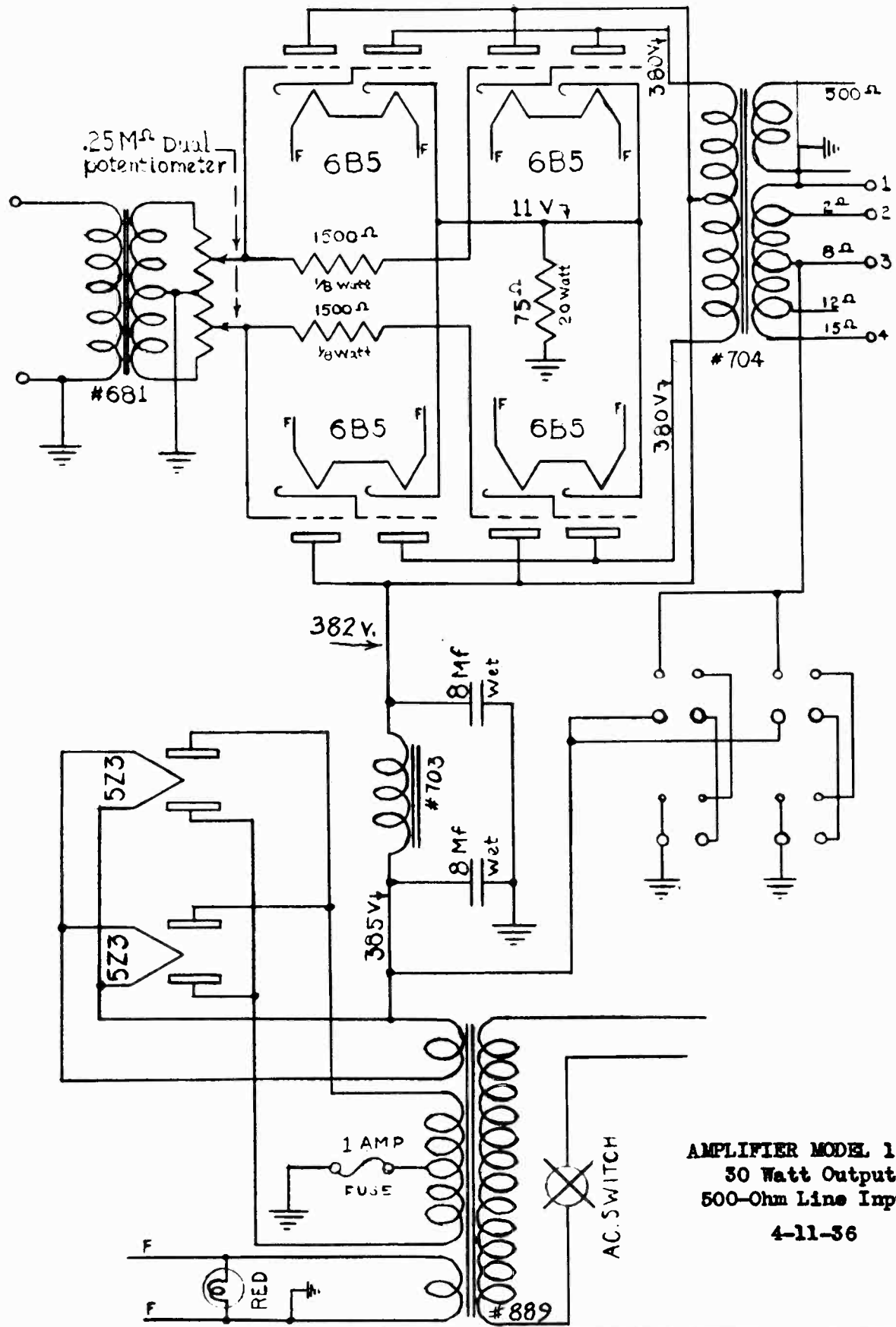
Between Terminals	1 and 2	- 2 ohms
"	" 4 and 5	- 3 ohms
"	" 3 and 4	- 4 ohms
"	" 2 and 3	- 6 ohms
"	" 3 and 5	- 7 ohms
"	" 1 and 3	- 8 ohms
"	" 2 and 4	- 10 ohms
"	" 1 and 4	- 12 ohms
"	" 2 and 5	- 13 ohms
"	" 1 and 5	- 15 ohms
"	" 1 and 6	- 500 ohms

MODEL 85 EXCITER



MODEL 1900  
Schematic

ACRA TEST PRODUCTS

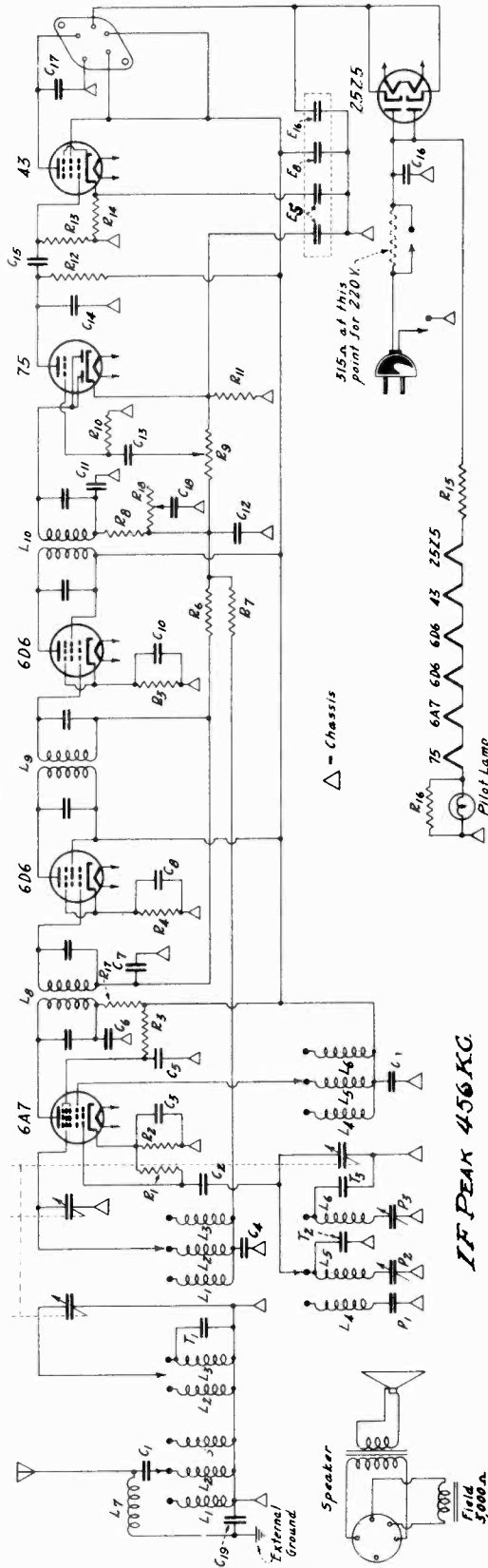


**AMPLIFIER MODEL 1900**  
30 Watt Output  
500-Ohm Line Input  
4-11-56

AIR KING PRODUCTS CORP.

MODEL Knave  
Schematic  
Notes

MODEL "KNAVE"



IF PEAK 456 KC.

INSTRUCTIONS MODEL "KNAVE" AC-DC SUPERHETERODYNE RECEIVER

**ANTENNA AND GROUND** An antenna from 50 to 100 feet long is recommended. A good ground wire is absolutely essential on this receiver.

**POWER SUPPLY.** This receiver is designed to operate from the 110-125 v. lines normally, or 215-240 v. AC or DC lines if the receiver has a change over connector on back of chassis.

**LOCATION OF CONTROLS.** The knob on the tone control, the knob on the lower right is the volume control and on-off switch, and the knob directly below the selector knob is the band switch.

**OPERATION.** To receive stations from 140 to 350 kilocycles, turn wave band switch to the extreme right position and turn set on by rotating volume control knob to the right. Turn station selector knob to secure desired stations. When tuning in a station, set tuning control carefully to maximum station volume, then adjust volume to desired level with volume control knob. For stations from 1700 to 540 kilocycles, turn band switch knob to center position, and for stations between 15 and 52 meters turn switch to extreme left position.

- E 5 - 5 mfd. 25 v.
- E 8 - 8 mfd. 150 v.
- E 16 - 16 mfd. 150 v.

- L 1 - S.W. ant.
- L 2 - B.C. preselector
- L 3 - L.W. preselector
- L 4 - S.W. oscillator
- L 5 - B.C. oscillator
- L 6 - L.C. oscillator
- L 7 - 456 K.C. trap
- L 8 - input I.F.
- L 9 - int. I.F.
- L 10 - output I.F.

- P 1 - .003 mica
- P 2 - 260-500 padder
- P 3 - 100-200 padder
- C 1 - .0005 mica
- C 2 - .0001 mica
- C 3 - .1 - 200 v.
- C 4 - .05 - 400 v.
- C 5 - .1 - 200 v.
- C 6 - .1 - 200 v.
- C 7 - .05 - 400 v.
- C 8 - .1 - 200 v.
- C 9 - .1 - 200 v.
- C 10 - .1 - 200 v.
- C 11 - .00025 - mica
- C 12 - .000255 - mica
- C 13 - .02 - 400 v.
- C 14 - .00025 - mica
- C 15 - .02 - 400 v.
- C 16 - .05 - 400 v.
- C 17 - .005 - 400 v.
- C 18 - .005 - 400 v.
- C 19 - .05 - 400 v.

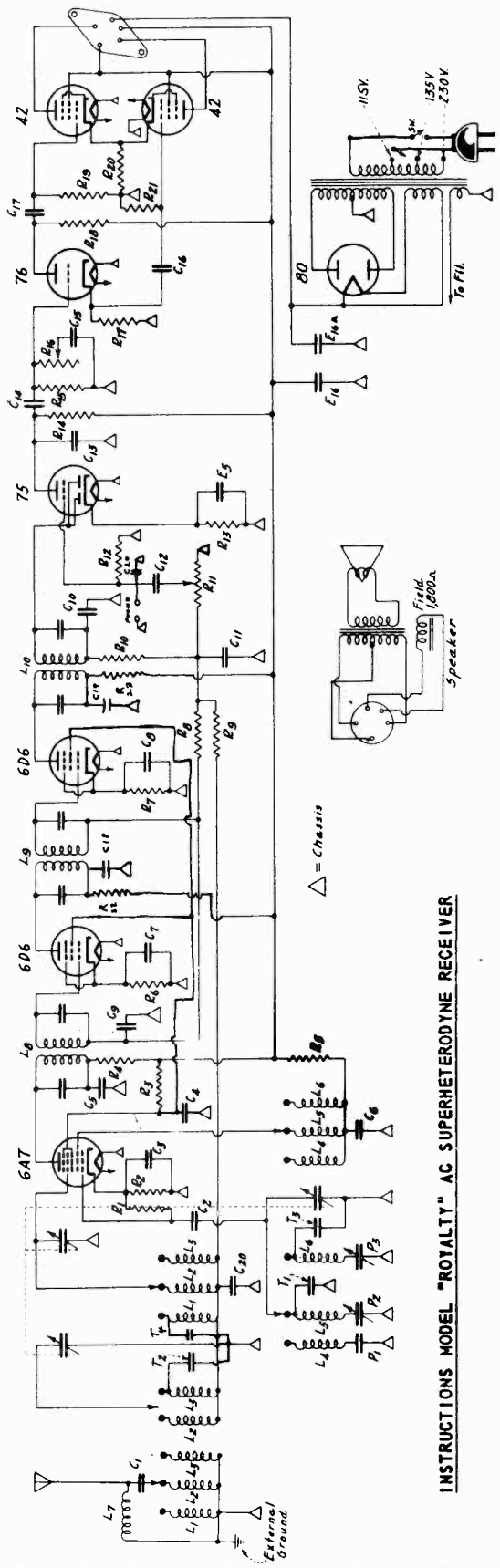
- R 1 - 35,000 ohm
- R 2 - 300 "
- R 3 - 35,000 "
- R 4 - 1,100 "
- R 5 - 1,100 "
- R 6 - 750,000 "
- R 7 - 750,000 "
- R 8 - 60,000 "
- R 9 - 500,000 " vol.cont.
- R 10 - 750,000 "
- R 11 - 7,500 "
- R 12 - 500,000 "
- R 13 - 500,000 "
- R 14 - 650 "
- R 15 - 143 " 30 w.
- R 16 - 20 " 2 w.
- R 17 - 7,500 "
- R 18 - 500,000 " tone cont.
- T 1 - 3-30 mmfd.
- T 2 - 3-30 mmfd.
- T 3 - 10-50 mmfd.



**MODEL Royalty**  
Schematic  
Notes

**AIR KING PRODUCTS CORP.**

**MODEL "ROYALTY"**



**ANTENNA AND GROUND CONNECTIONS.** An antenna from 50 to 100 feet long is recommended. A good ground wire is absolutely essential on this receiver.

**POWER SUPPLY.** This receiver is designed to operate from the 115-135 or 220 A.C. 50 cycle lines. The voltage change is accomplished by removing the cover from the power transformer and connecting the flexible lead to the desired voltage terminal.

**LOCATION OF CONTROLS.** The knob on the lower left is the on-off lower right is the band switch and volume control. The knob on the left knob is the tone control.

**OPERATION.** To receive stations from 140 to 350 kilocycles, turn wave band switch to the extreme right position and turn set on by rotating volume control knob to the right. Turn station selector knob to secure desired stations. When tuning in a station, set tuning control carefully to maximum station volume, then adjust volume to desired level with volume control knob. For stations from 1700 to 540 kilocycles, turn band switch knob to center position, and for stations between 15 and 52 meters turn switch to extreme left position.

- L 1 - S.W. ant.
- L 2 - B.C. preselector
- L 3 - L.W. preselector
- L 4 - S.W. oscillator
- L 5 - B.C. oscillator
- L 6 - L.C. oscillator
- L 7 - 456 K.C. trap
- L 8 - input I.F. 456 K.C.
- L 9 - int. I.F. 456 K.C.
- L 10 - output I.F. 456 K.C.

35,000 ohm

40,000 "

7,500 "

20,000 "

1,100 "

1,100 "

750,000 "

750,000 "

60,000 "

500,000 vol. cont.

1,000,000 ohm

4,500 "

500,000 "

300,000 "

500,000 tone cont.

60,000 ohm

60,000 "

500,000 "

500,000 "

7,500 "

3-30 mmfd.

3-30 mmfd.

10-50 mmfd.

3-50 mmfd.

5 mfd. 25 V.

16 mfd. 350 V.

16A-16 mfd. 450 V.

**IF PEAK 456 KC.**

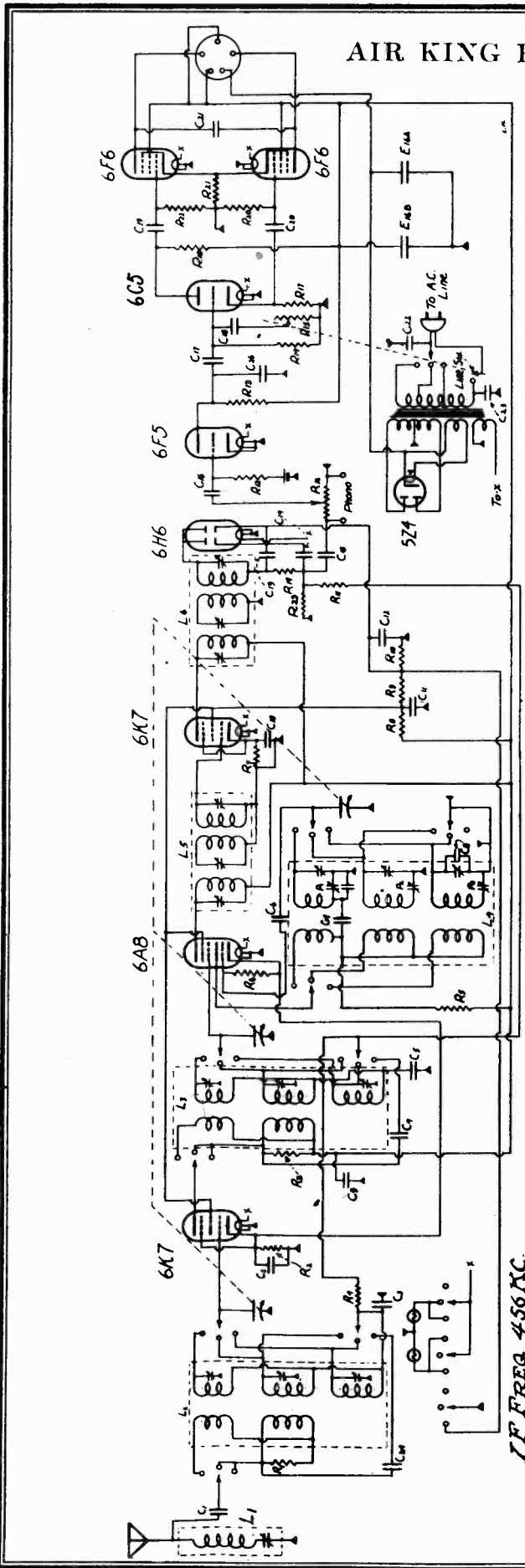
- P 1 - .004 mica
- P 2 - 260-500 padder
- P 3 - 100-200 padder

- C 1 - .0005 mica
- C 2 - .0001 mica
- C 3 - .1 - 200 V.
- C 4 - .25 - 200 V.
- C 5 - .05 - 400 V.
- C 6 - .05 - 400 V.
- C 7 - .1 - 200 V.
- C 8 - .1 - 200 V.
- C 9 - .02 - 400 V.
- C 10 - .00025 - mica
- C 11 - .00025 - mica
- C 12 - .02 - 400 V.
- C 13 - .00025 - mica
- C 14 - .02 - 400 V.
- C 15 - .005 - 400 V.
- C 16 - .02 - 400 V.
- C 17 - .02 - 400 V.
- C 18 - .05 - 400 V.
- C 19 - .05 - 400 V.
- C 20 - .0001 - mica

**INSTRUCTIONS MODEL "ROYALTY" AC SUPERHETERODYNE RECEIVER**

AIR KING PRODUCTS CORP.

MODELS 213, King Schematic, Notes



IF FREQ 456 KC.

R 1	15,000 ohms	1/4 w.
R 2	200	
R 3	25,000	
R 4	50,000	
R 5	20,000	1/2 w.
R 6	50,000	1/4 w.
R 7	400,000	3 w.
R 8	10,000	3 w.
R 9	15,000	1 w.
R 10	1,000,000	1/4 w.
R 11	1,000,000	
R 12	1,000,000	
R 13	800,000	
R 14	800,000	
R 15	500,000	tone cont.
R 16	500,000	vol. cont.
R 17	50,000	1/4 w.
R 18	40,000	
R 19	40,000	
R 20	400,000	
R 21	500,000	2 w.
R 22	500,000	
R 23	500,000	
P 1	.005	max.
P 2	.0005	max.
P 3	.00015	max.

C 1	.005	500 v.
C 2	.05	400 v.
C 3	.05	mica
C 4	.0005	400 v.
C 5	.05	400 v.
C 6	.000085	mica
C 7	.05	400 v.
C 8	.00002	mica
C 9	.02	400 v.
C 10	.1	200 v.
C 11	.1	200 v.
C 12	.1	200 v.
C 13	.0001	mica
C 14	.0001	mica
C 15	.02	400 v.
C 16	.02	400 v.
C 17	.02	400 v.
C 18	.02	400 v.
C 19	.02	400 v.
C 20	.02	400 v.
C 21	.0025	500 v.
C 22	.05	400 v.
C 23	.05	400 v.
C 24	.008	mica
C 25	.008	mica
C 26	.0001	mica
M 1A	16 mfd.	450 v.
M 1B	16 mfd.	350 v.

INSTRUCTIONS MODEL 213 9T AC 3 BAND SUPERHETERODYNE RECEIVER

**ANTENNA AND GROUND CONNECTIONS**  
An antenna from 50 to 100 feet long is recommended. A good ground wire is absolutely essential on this receiver.

**POWER SUPPLY.**  
This receiver is designed to operate from the 115-135 or 220 A.C. cycle lines. The voltage change is accomplished by removing the cover from the power transformer and connecting the fixable lead to the desired voltage terminal.

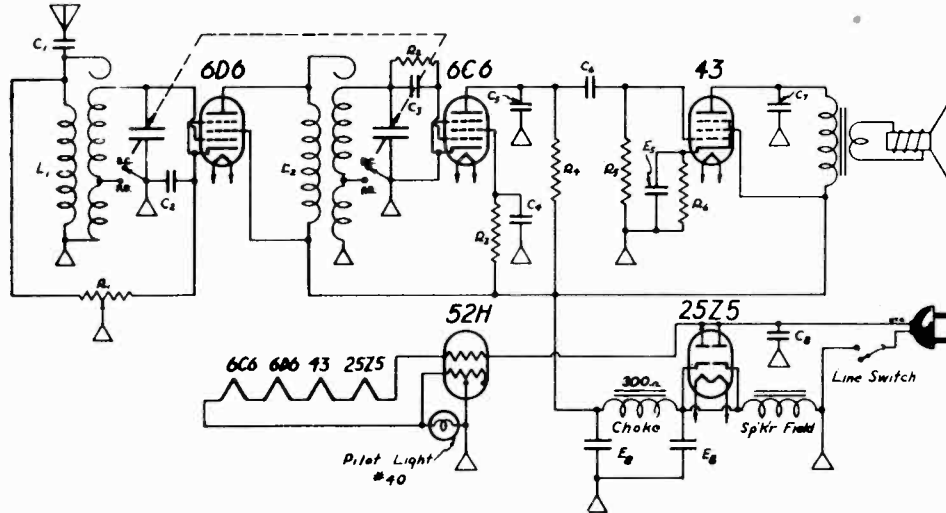
**LOCATION OF CONTROLS.**  
The knob on the extreme left is the on-off switch and tone control. The knob on the extreme right is the interchannel noise suppressor switch. The other lower knobs are wave change switch and volume control.

**OPERATION.**  
Turn station selector knob to secure desired station. When tuning in a station, control carefully to maximum station volume, then adjust volume to desired level with volume control knob. When the knob on extreme right is turned clockwise, the noise suppressor functions. This control is only effective on high wave stations.

**MODEL Dynamic 2-Range**  
**MODEL Magnetic, 10, 21**  
**22, 41, 42**  
**Schematics**

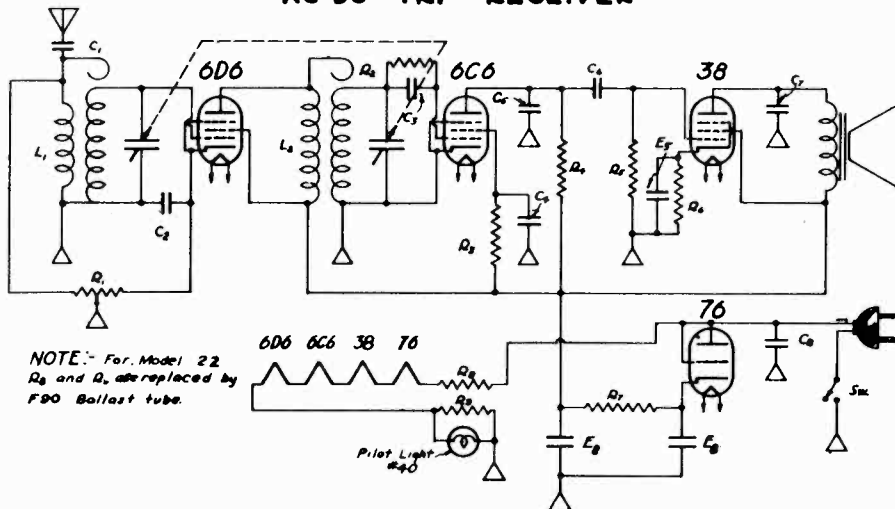
**AIR KING PRODUCTS CORP.**

**MODEL DYNAMIC 2 RANGE**  
**AC-DC TRF RECEIVER 80-560 MTRS**



R1 - 25,000 ohm volume control	C1 - .005 - 400 V.	R8 - 5 mfd. - 25 V.
R2 - 3,000,000 " 1/4 watt	C2 - .1 - 200 V.	R9 - 8 mfd. - 150 V.
R3 - 6,000,000 " 1/4 "	C3 - .005 - 400 V.	R10 - 8 mfd. - 150 V.
R4 - 1,000,000 " 1/4 "	C4 - .1 - 200 V.	
R5 - 750,000 " 1/4 "	C5 - .0001 - MICA	L1 - Combination - Ant. Coil
R6 - 650 " 1 "	C6 - .02 - 400 V.	L2 - Combination - R.F. Coil
	C7 - .005 - 400 V.	
	C8 - .02 - 400 V.	

**MODEL MAGNETIC NUMBERS 10, 21, 22, 41, 42**  
**AC-DC TRF RECEIVER**

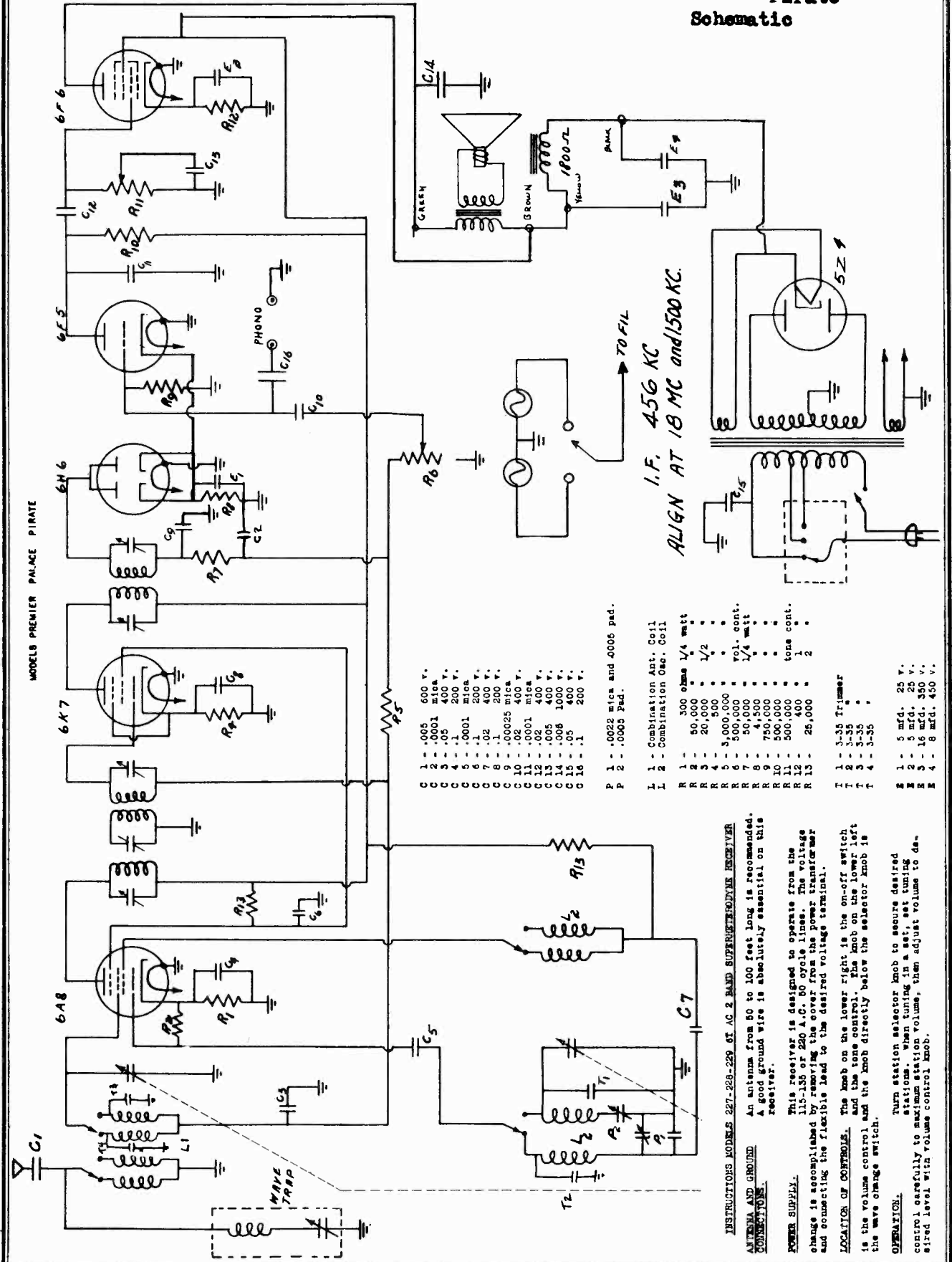


**NOTE:** For Model 22  
 R3 and R4, are replaced by  
 F20 Ballast tube.

R1 - 25,000 ohm vol. cont.	R8 - 8 mfd. - 25V.	C1 - .005 - 400 V.
R2 - 3,000,000 " 1/4 watt.	R9 - 8 mfd. - 150 V.	C2 - .1 - 200 V.
R3 - 4,000,000 " 1/4 watt.	R10 - 8 mfd. - 150 V.	C3 - .005 - 400 V.
R4 - 1,000,000 " 1/4 "		C4 - .1 - 200 V.
R5 - 750,000 " 1/4 "	L1 - Antenna Coil.	C5 - .0001 - mica
R6 - 1,000 " 1/4 "	L2 - R. F. Coil	C6 - .02 - 400 V.
R7 - 800 " 1 "		C7 - .005 - 400 V.
R8 - 875 " in line cord		C8 - .02 - 400 V.
R9 - 25 " 2 watt		

AIR KING PRODUCTS CORP.

MODELS 227, 228, 229  
Premier, Palace,  
Pirate  
Schematic



MODELS PREMIER PALACE PIRATE

- C 1 - .005 500 V.
- C 2 - .0001 mica
- C 3 - .05 400 V.
- C 4 - .1 200 V.
- C 5 - .001 mica
- C 6 - .02 400 V.
- C 7 - .02 400 V.
- C 8 - .1 200 V.
- C 9 - .00025 mica
- C 10 - .02 400 V.
- C 11 - .0001 mica
- C 12 - .02 400 V.
- C 13 - .005 400 V.
- C 14 - .008 1000 V.
- C 15 - .05 400 V.
- C 16 - .1 200 V.

- P 1 - .0022 mica and .0005 pad.
- P 2 - .0005 Pad.

- I 1 - Combination Ant. Coil
- I 2 - Combination Oap. Coil

- R 1 - 300 ohms 1/4 watt
- R 2 - 50,000 "
- R 3 - 20,000 "
- R 4 - 500 "
- R 5 - 3,000,000 "
- R 6 - 500,000 vol. cont.
- R 7 - 50,000 "
- R 8 - 4,500 "
- R 9 - 750,000 "
- R 10 - 500,000 "
- R 11 - 500,000 "
- R 12 - 25,000 "
- R 13 - 25,000 "

- T 1 - 3-35 trimmer
- T 2 - 3-35 "
- T 3 - 3-35 "
- T 4 - 3-35 "

- E 1 - 5 mfd. 25 v.
- E 2 - 5 mfd. 25 v.
- E 3 - 15 mfd. 350 v.
- E 4 - 8 mfd. 450 v.

I.F. 456 KC  
ALIGN AT 18 MC and 1500 KC.

**INSTRUCTIONS MODELS 227-228-229 6F6 AC 2 BAND SUPERHETERODYNE RECEIVER.**  
**ANTENNA AND GROUND CONNECTIONS**  
An antenna from 80 to 100 feet long is recommended. A good ground wire is absolutely essential on this receiver.

**POWER SUPPLY.**  
This receiver is designed to operate from the 115-135 or 240 A.C. 60 cycle lines. The voltage change is accomplished by removing the cover from the power transformer and connecting the flexible lead to the desired voltage terminal.

**LOCATION OF CONTROLS.**  
The knob on the lower right is the on-off switch. The volume control knob on the lower left is the volume control and the knob directly below the selector knob is the wave change switch.

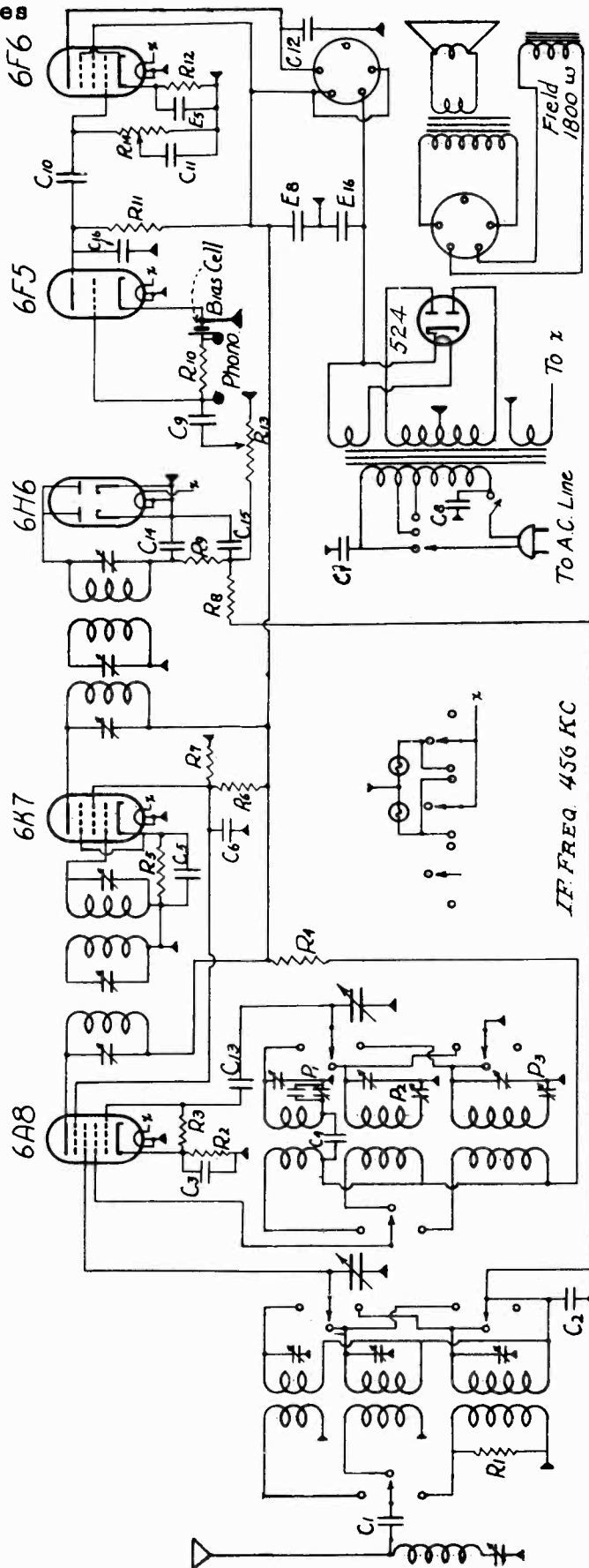
**OPERATION.**  
Turn station selector knob to secure desired stations. When tuning in a set, set tuning control carefully to maximum station volume, then adjust volume to desired level with volume control knob.

MODELS 209, Prince  
Schematic

AIR KING PRODUCTS CORP.

Notes

MODEL "PRINCE"



- |      |             |            |      |         |        |
|------|-------------|------------|------|---------|--------|
| R 1  | 15,000 ohms | 1/4 w.     | C 1  | .005    | 600 v. |
| R 2  | 300 "       | "          | C 2  | .05     | 400 v. |
| R 3  | 50,000 "    | "          | C 3  | .1      | 200 v. |
| R 4  | 20,000 "    | 1/2 w.     | C 4  | .02     | 400 v. |
| R 5  | 400 "       | 1/4 w.     | C 5  | .1      | 200 v. |
| R 6  | 25,000 "    | 2 w.       | C 6  | .1      | 200 v. |
| R 7  | 40,000 "    | 1/2 w.     | C 7  | .05     | 400 v. |
| R 8  | 1,000,000 " | 1/4 w.     | C 8  | .05     | 400 v. |
| R 9  | 60,000 "    | "          | C 9  | .02     | 400 v. |
| R 10 | 1,000,000 " | "          | C 10 | .02     | 400 v. |
| R 11 | 500,000 "   | "          | C 11 | .005    | 600 v. |
| R 12 | 400 "       | 1 w.       | C 12 | .005    | 600 v. |
| R 13 | 500,000 "   | vol. cont. | C 13 | .000095 | mica   |
| R 14 | 500,000 "   | tone cont. | C 14 | .0001   | mica   |
| P 1  | .0027 max.  | "          | C 15 | .0001   | mica   |
| P 2  | .0005 max.  | "          | C 16 | .0001   | mica   |
| P 3  | .00015 max. | "          |      |         |        |
| E 5  | 5 mfd.      | 35 v.      |      |         |        |
| E 8  | 8 mfd.      | 400 v.     |      |         |        |
| E 16 | 16 mfd.     | 450 v.     |      |         |        |

INSTRUCTIONS MODEL 209 6T AC 3 BAND SUPERHETERODYNE RECEIVER

**ANTENNA AND GROUND CONNECTIONS.**  
An antenna from 50 to 100 feet long is recommended. A good ground wire is absolutely essential on this receiver.

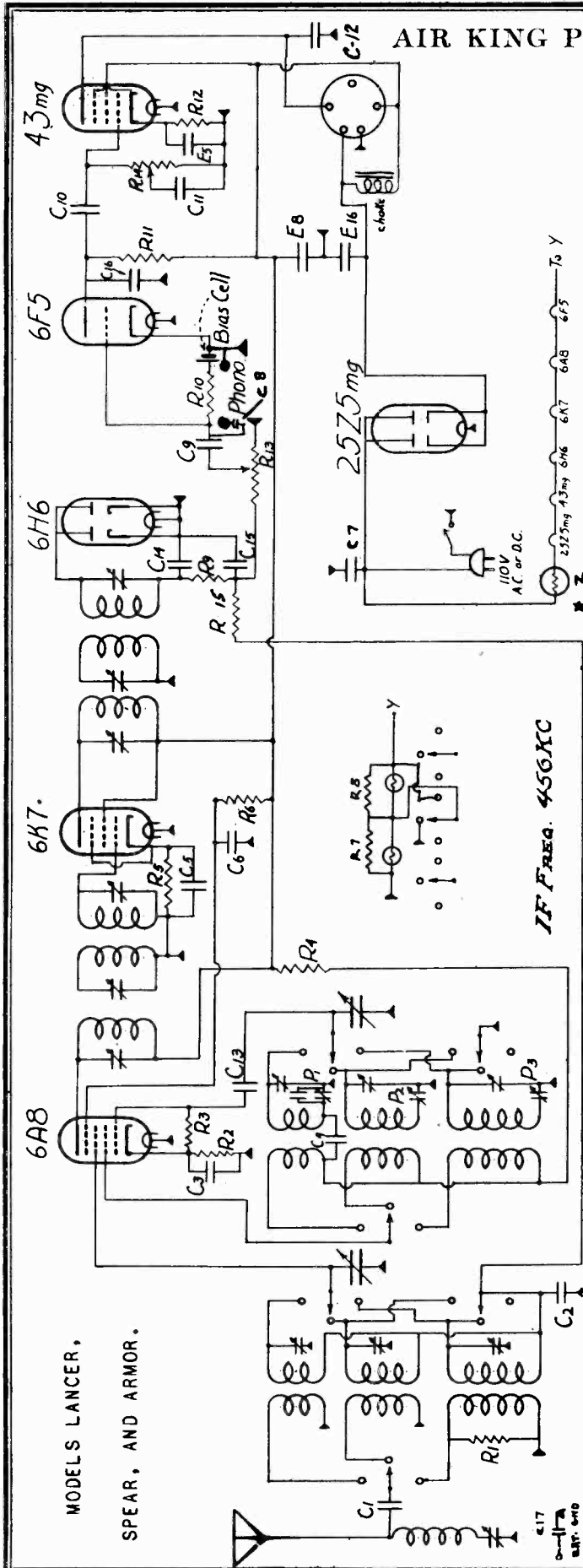
**POWER SUPPLY.**  
This receiver is designed to operate from the 115-135 or 220 A.C. 50 cycle lines. The voltage change is accomplished by removing the cover from the power transformer and connecting the flexible lead to the desired voltage terminal.

**LOCATION OF CONTROLS.**  
The knob on the lower right is the on-off switch and the tone control. The knob on the lower left is the volume control and the knob directly below the selector knob is the wave change switch.

**OPERATION.**  
Turn station selector knob to secure desired stations. When tuning in a set, set tuning control carefully to maximum station volume, then adjust volume to desired level with volume control knob.

AIR KING PRODUCTS CORP.

MODELS 211, 224, 225,  
Lancer, Spear,  
Armor Superhet  
Schematic, Notes



INSTRUCTIONS MODELS 211, 224, 225 6T AC/DC 3 BAND 456 K.C. SUPERHETERODYNE

**ANTENNA AND GROUND CONNECTIONS.**  
An antenna from 50 to 100 feet long is recommended. A good ground wire is absolutely essential on this receiver.

**POWER SUPPLY.**  
This receiver is designed to operate from A.C. or D.C. lines. On A.C. it will operate on the 50 or 60 cycle mfd. electrolytic in parallel with E8.

**LOCATION OF CONTROLS.**  
The knob on the lower right is the on-off switch and the tone control. The knob on the lower left is the volume control and the knob directly below the selector knob is the wave change switch.

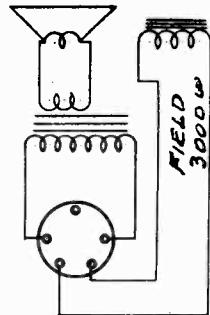
**OPERATION.**  
Turn station selector knob to secure desired stations. When tuning in the set, set tuning control carefully to maximum station volume, then adjust level with volume control knob.

R 1	15,000 ohms	- 1/4 w.
R 2	200 "	" "
R 3	50,000 "	" "
R 4	1,000 "	" "
R 5	400 "	" - vol. cont.
R 6	25,000 "	" - tone cont.
R 7	25 "	" - 2 w.
R 8	25 "	" "
R 9	60,000 "	" - 1/4 w.
R 10	1,000,000 "	" "
R 11	500,000 "	" "
R 12	650 "	" - 1 w.
R 13	500,000 "	" - vol. cont.
R 14	500,000 "	" - tone cont.
R 15	1,000,000 "	" - 1/4 w.

C 1	.005	- 600 v.
C 2	.05	- 400 v.
C 3	.1	- 200 v.
C 4	.02	- 400 v.
C 5	.1	- 200 v.
C 6	.1	- 200 v.
C 7	.05	- 400 v.
C 8	.1	- 200 v.
C 9	.02	- 400 v.
C 10	.02	- 400 v.
C 11	.005	- 600 v.
C 12	.005	- 600 v.
C 13	.00085	- mica
C 14	.0001	- mica
C 15	.0001	- mica
C 16	.0001	- mica
C 17	.05	- 400 v.

P 1	.0027	max.
P 2	.0005	max.
P 3	.00015	max.

E 5	10 mfd.	- 35 v.
E 8	12 mfd.	- 400 v.
E 16	24 mfd.	- 450 v.



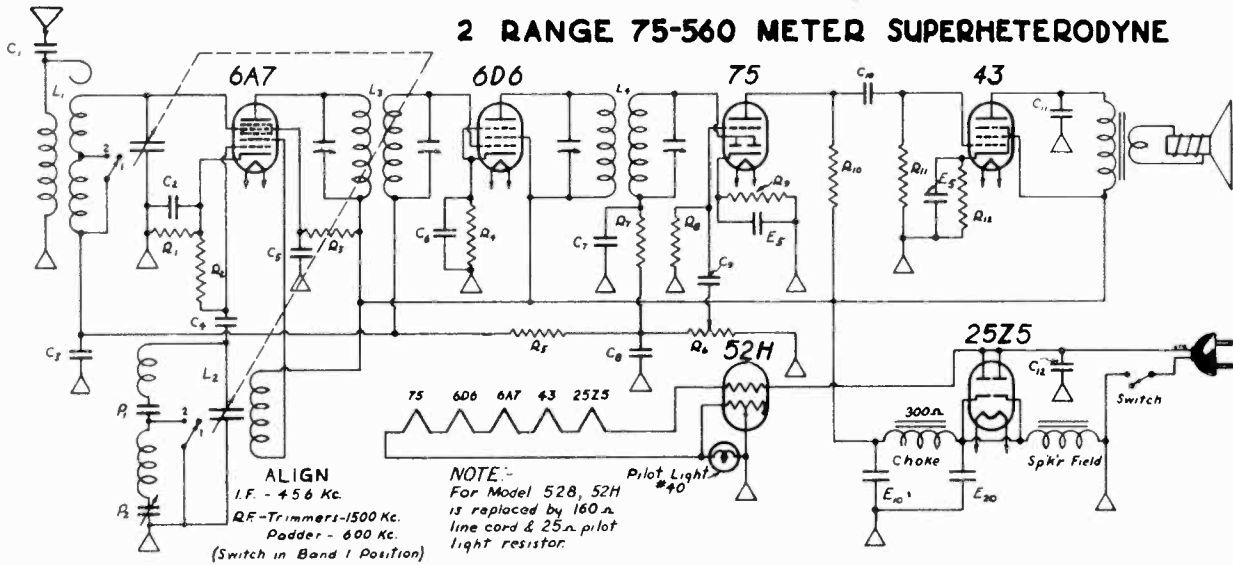
\* Resistor marked "Z" is either ballast tube or 160 ohm resistor cord.

MODELS 27,28A  
 MODELS 47,48,57,58  
 Schematics

AIR KING PRODUCTS CORP.

MODELS 27,28A

2 RANGE 75-560 METER SUPERHETERODYNE



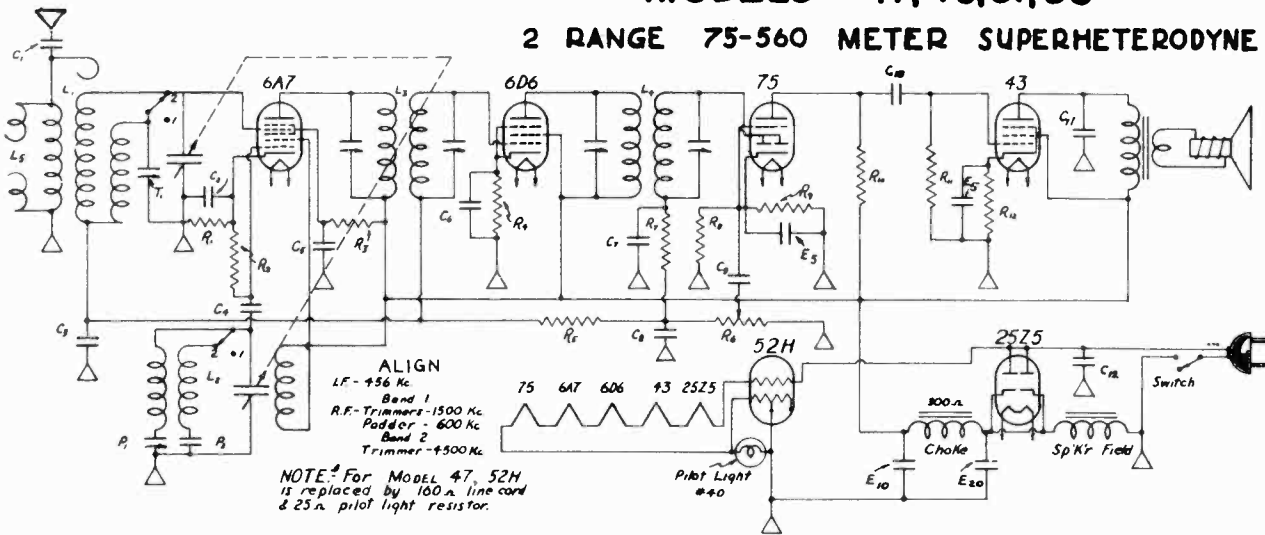
ALIGN  
 I.F. - 456 Kc.  
 R.F. Trimmers - 1500 Kc.  
 Podder - 600 Kc.  
 (Switch in Band 1 Position)

NOTE:  
 For Model 528, 52H  
 is replaced by 160n.  
 line cord & 25n. pilot  
 light resistor.

- |                               |  |                     |                      |
|-------------------------------|--|---------------------|----------------------|
| R 1 - 250 ohm 1/2 watt.       | L 1 - Comb. Polioe Band & B'do'at Ant. Coil. | C 1 - .005 - 600 V. | C 7 - .0001- mica    |
| R 2 - 50,000 " 1/2 watt.      | L 2 - Comb. Polioe Band & B'do'at Osc. Coil. | C 2 - .1 - 200 V.   | C 8 - .0001- mica    |
| R 3 - 58,000 " 1/2 watt.      | L 3 - 456 K.C. I.F.                          | C 3 - .05 - 400 V.  | C 9 - .02 - 400 V.   |
| R 4 - 500 " 1/2 watt.         | L 4 - 456 KC. I.F.                           | C 4 - .0001- mica.  | C 10 - .02 - 400 V.  |
| R 5 - 5,000,000 " 1/2 watt.   | F 1 - .002 mica                              | C 5 - .1 - 200 V.   | C 11 - .006 - 400 V. |
| R 6 - 500,000 " vol. control. | P 2 - 500 muf. max.                          | C 6 - .1 - 200 V.   | C 12 - .05 - 400 V.  |
| R 7 - 50,000 " 1/2 watt.      | E 20 - 20 mfd. - 180 V.                      |                     |                      |
| R 8 - 750,000 " 1/2 watt.     | E 10 - 10 mfd. - 180 V.                      |                     |                      |
| R 9 - 4,500 " 1/2 watt.       | E 5 - 5 mfd. - 25 V.                         |                     |                      |
| R 10 - 500,000 " 1/2 watt.    | E 8 - 5 mfd. - 25 V.                         |                     |                      |
| R 11 - 750,000 " 1/2 watt.    |  |                     |                      |
| R 12 - 680 " 1 watt.          |  |                     |                      |

MODELS 47,48,57,58

2 RANGE 75-560 METER SUPERHETERODYNE

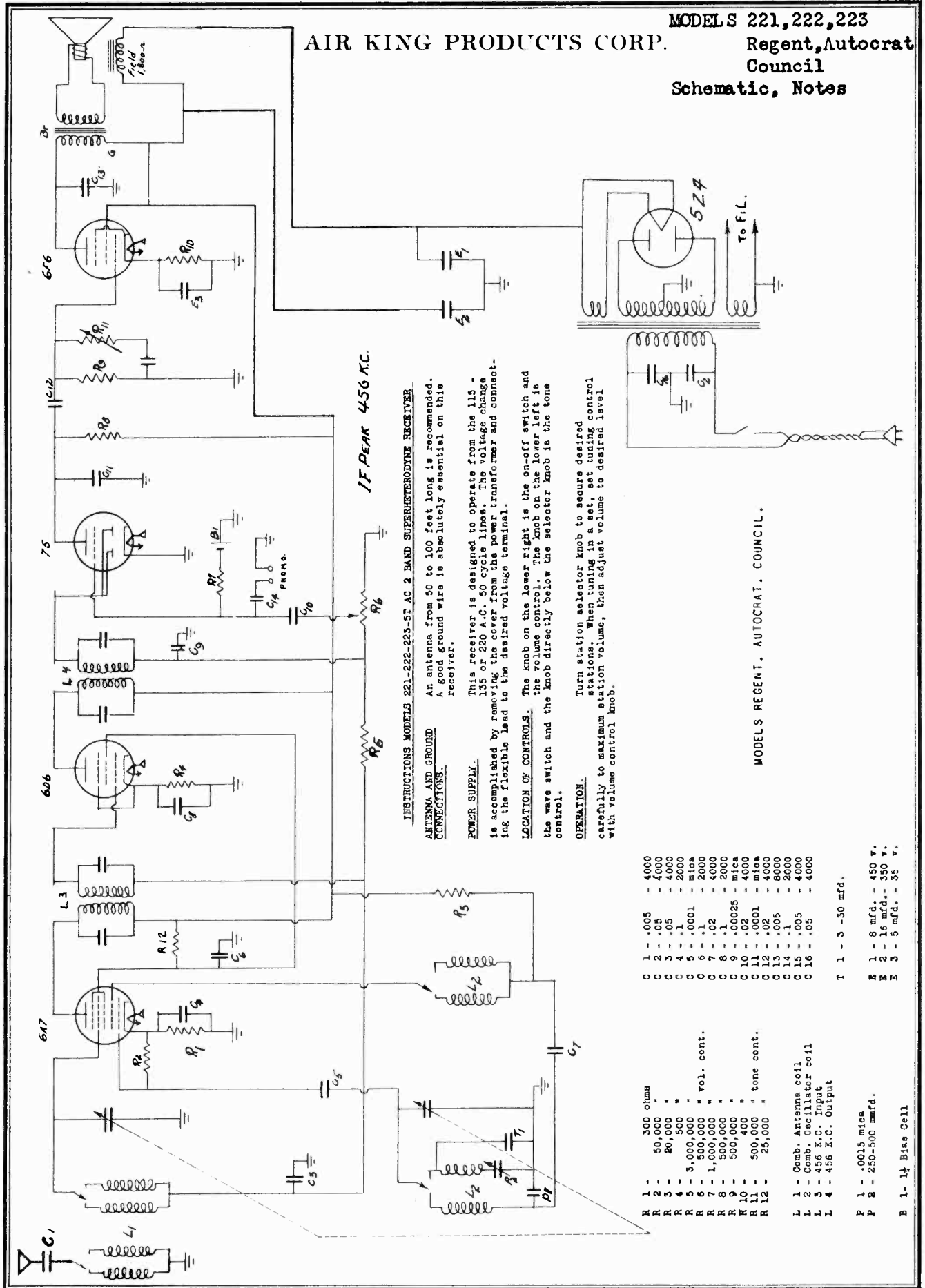


ALIGN  
 I.F. - 456 Kc.  
 Band 1  
 R.F. Trimmers - 1500 Kc.  
 Podder - 600 Kc.  
 Band 2  
 Trimmer - 4500 Kc.  
 NOTE: For MODEL 47, 52H  
 is replaced by 160n.  
 line cord & 25n. pilot  
 light resistor.

- |                               |  |                      |
|-------------------------------|--|----------------------|
| R 1 - 300 ohm 1/2 watt        | L 1 - Comb. Polioe Band & B'do'at Ant. Coil. | C 1 - .006 - 600 V   |
| R 2 - 35,000 " 1/2 watt       | L 2 - Comb. Polioe Band & B'do'at Osc. Coil. | C 2 - .05 - 400 V.   |
| R 3 - 35,000 " 1/2 watt       | L 3 - 456 KD I. F.                           | C 3 - .05 - 400 V.   |
| R 4 - 700 " 1/2 watt          | L 4 - 456 KC I. F.                           | C 4 - .0001- mica    |
| R 5 - 3,000,000 " 1/2 watt    | L 5 - 456 KC Wave Trap.                      | C 5 - .1 - 200 V.    |
| R 6 - 500,000 " Vol. Control. | T 1 - 3-35 muf. trimmer.                     | C 6 - .1 - 200 V.    |
| R 7 - 50,000 " 1/2 watt       | P 1 - 500 muf. max.                          | C 7 - .0001- mica    |
| R 8 - 750,000 " 1/2 watt      | P 2 - .0006 mfd.                             | C 8 - .0001- mica    |
| R 9 - 4,500 " 1/2 watt        | E 20 - 20 mfd. 180 V.                        | C 9 - .02 - 400 V.   |
| R 10 - 500,000 " 1/2 watt     | E 10 - 10 mfd. 180 V.                        | C 10 - .02 - 400 V.  |
| R 11 - 750,000 " 1/2 watt     | E 5 - 5 mfd. 25 V.                           | C 11 - .008 - 400 V. |
| R 12 - 680 " 1 watt           | E 8 - 5 mfd. 25 V.                           | C 12 - .05 - 400 V.  |

AIR KING PRODUCTS CORP.

MODELS 221, 222, 223  
Regent, Autocrat  
Council  
Schematic, Notes



INSTRUCTIONS MODELS 221-222-223-5T AC 2 BAND SUPERHETERODYNE RECEIVER

**ANTENNA AND GROUND CONNECTIONS.**  
An antenna from 50 to 100 feet long is recommended. A good ground wire is absolutely essential on this receiver.

**POWER SUPPLY.**  
This receiver is designed to operate from the 115 - 135 or 220 A.C. 50 cycle lines. The voltage change is accomplished by removing the cover from the power transformer and connecting the flexible lead to the desired voltage terminal.

**LOCATION OF CONTROLS.**  
The knob on the lower right is the on-off switch and the volume control. The knob on the lower left is the wave switch and the knob directly below the selector knob is the tone control.

**OPERATION.**  
Turn station selector knob to secure desired stations. When tuning in a set, set tuning control carefully to maximum station volume, then adjust volume to desired level with volume control knob.

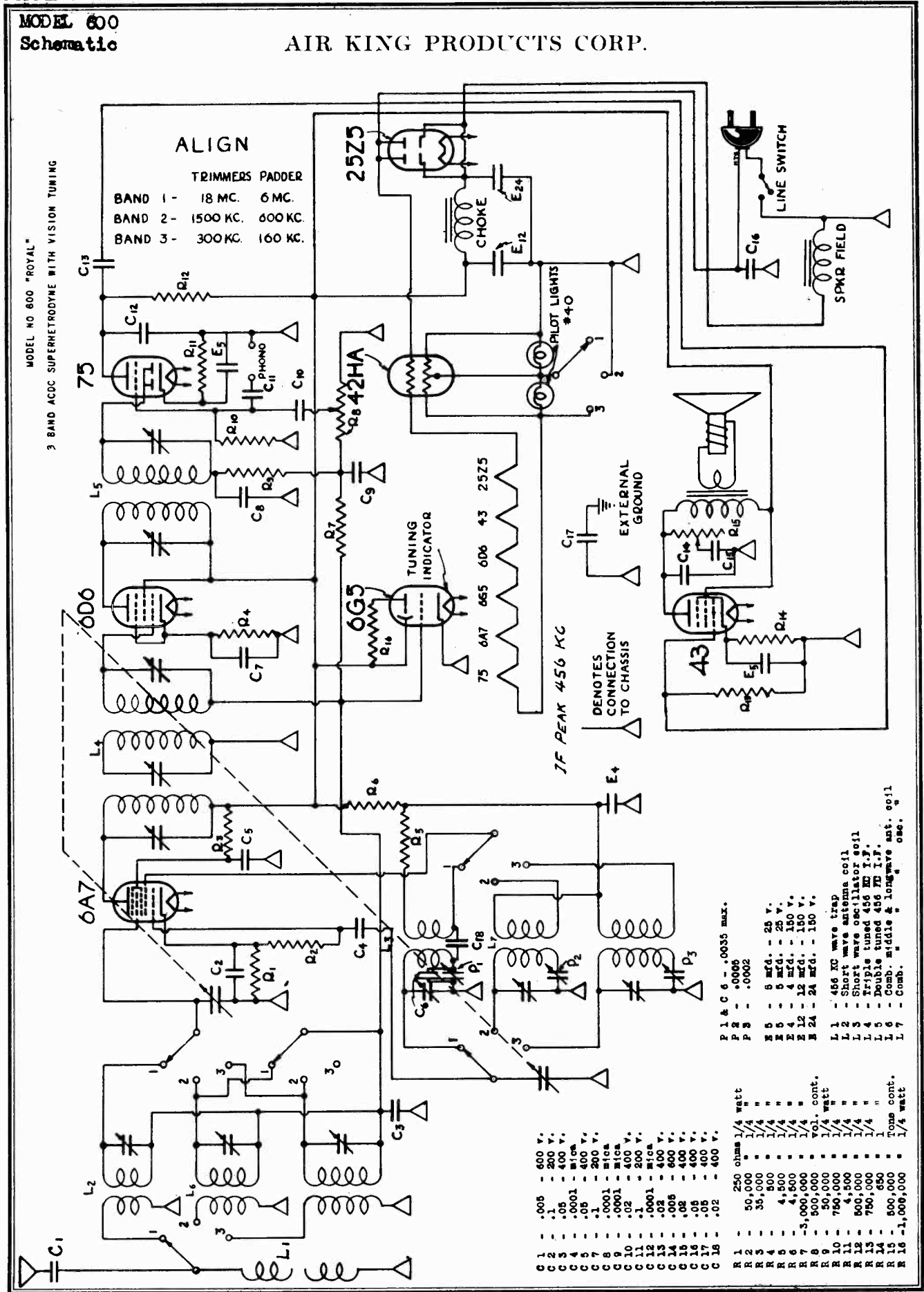
MODELS REGENT. AUTOCRAT. COUNCIL.

- |        |                       |        |              |       |                  |
|--------|-----------------------|--------|--------------|-------|------------------|
| R 1 -  | 300 ohms              | C 11 - | .0001 - mica | T 1 - | 5 - 30 mfd.      |
| R 2 -  | 50,000 "              | C 12 - | .02 - 4000   | E 1 - | 8 mfd. - 450 v.  |
| R 3 -  | 20,000 "              | C 13 - | .005 - 2000  | E 2 - | 16 mfd. - 350 v. |
| R 4 -  | 500 "                 | C 14 - | .1 - 2000    | E 3 - | 5 mfd. - 35 v.   |
| R 5 -  | 3,000,000 "           | C 15 - | .0025 - 2000 |       |                  |
| R 6 -  | 500,000 "             | C 16 - | .05 - 4000   |       |                  |
| R 7 -  | 1,000,000 "           |        |              |       |                  |
| R 8 -  | 500,000 "             |        |              |       |                  |
| R 9 -  | 500,000 "             |        |              |       |                  |
| R 10 - | 400 "                 |        |              |       |                  |
| R 11 - | 500,000 "             |        |              |       |                  |
| R 12 - | 25,000 "              |        |              |       |                  |
| L 1 -  | Comb. Antenna coil    |        |              |       |                  |
| L 2 -  | Comb. Oscillator coil |        |              |       |                  |
| L 3 -  | 456 K.C. Input        |        |              |       |                  |
| L 4 -  | 456 K.C. Output       |        |              |       |                  |
| P 1 -  | .0015 mica            |        |              |       |                  |
| P 2 -  | 250-500 mmfd.         |        |              |       |                  |
| B 1 -  | 1-1/2 Biss Cell       |        |              |       |                  |



MODEL 600  
Schematic

AIR KING PRODUCTS CORP.



**ALIGN**

TRIMMERS PADDER		
BAND 1 -	18 MC.	6 MC.
BAND 2 -	1500 KC.	600 KC.
BAND 3 -	300 KC.	160 KC.

MODEL NO 600 "ROYAL"  
3 BAND ACDC SUPERHETRODYNE WITH VISION TUNING

C 1	.005	600 V.
C 2	.1	200 V.
C 3	.05	400 V.
C 4	.0001	mica
C 5	.05	400 V.
C 6	.1	200 V.
C 7	.0001	mica
C 8	.0001	mica
C 9	.02	400 V.
C 10	.1	200 V.
C 11	.0001	mica
C 12	.02	400 V.
C 13	.005	600 V.
C 14	.02	400 V.
C 15	.05	400 V.
C 16	.05	400 V.
C 17	.02	400 V.
C 18	.02	400 V.

R 1	250 ohms	1/4 watt
R 2	50,000	1/4 "
R 3	35,000	1/4 "
R 4	500	1/4 "
R 5	4,500	1/4 "
R 6	4,500	1/4 "
R 7	5,000,000	vol. cont.
R 8	500,000	1/4 watt
R 9	50,000	1/4 "
R 10	750,000	1/4 "
R 11	4,500	1/4 "
R 12	500,000	1/4 "
R 13	750,000	1/4 "
R 14	650	1 "
R 15	500,000	Tone cont.
R 16	1,000,000	1/4 watt

P 1 & C 6 - .0035 max.  
P 2 - .0005  
P 3 - .0002

E 5 - 5 mfd. - 25 V.  
E 6 - 5 mfd. - 25 V.  
E 4 - 4 mfd. - 150 V.  
E 12 - 12 mfd. - 150 V.  
E 2A - 2A mfd. - 150 V.

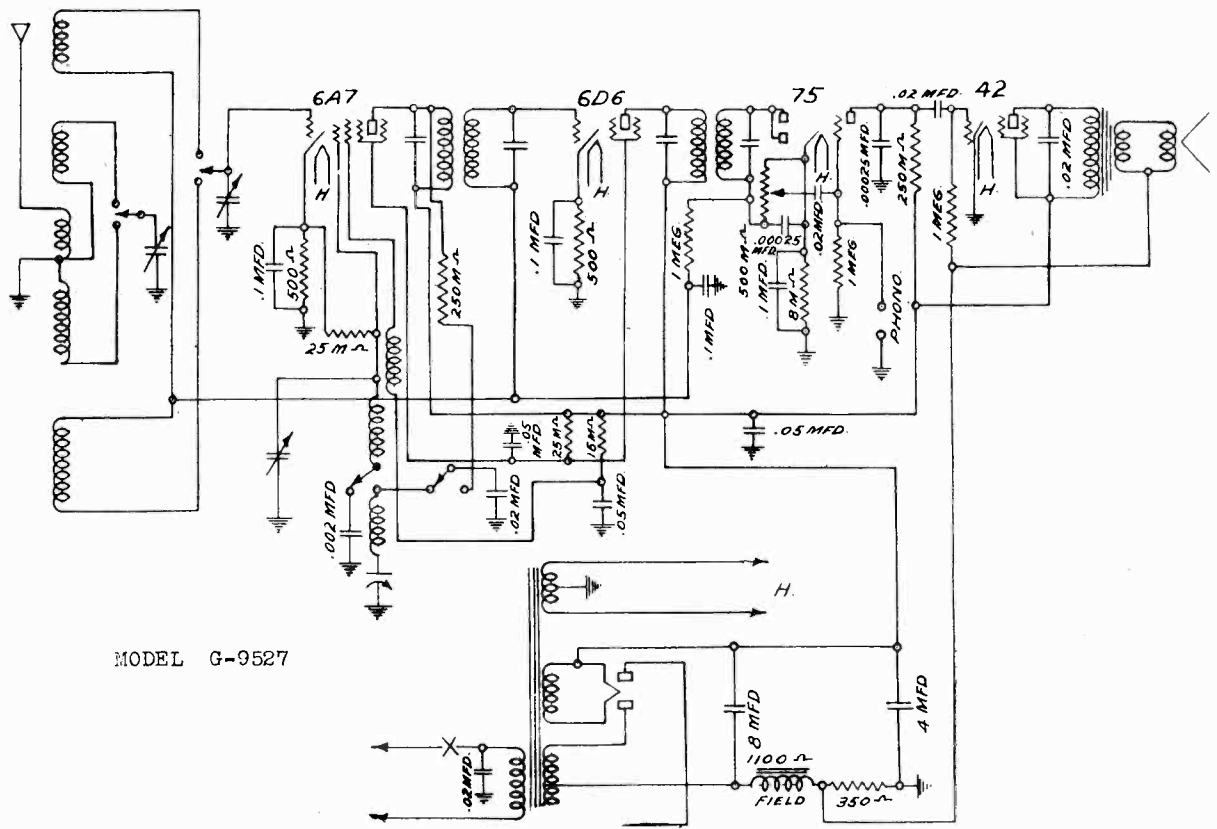
L 1 - 456 KC wave trap  
L 2 - Short wave antenna coil  
L 3 - Short wave oscillator coil  
L 4 - Triple tuned 456 KC I.F.  
L 5 - Double tuned 456 KC I.F.  
L 6 - Comb. middle & longwave ant. coil  
L 7 - Comb. " " " " " "

IF PEAK 456 KC  
DENOTES CONNECTION TO CHASSIS

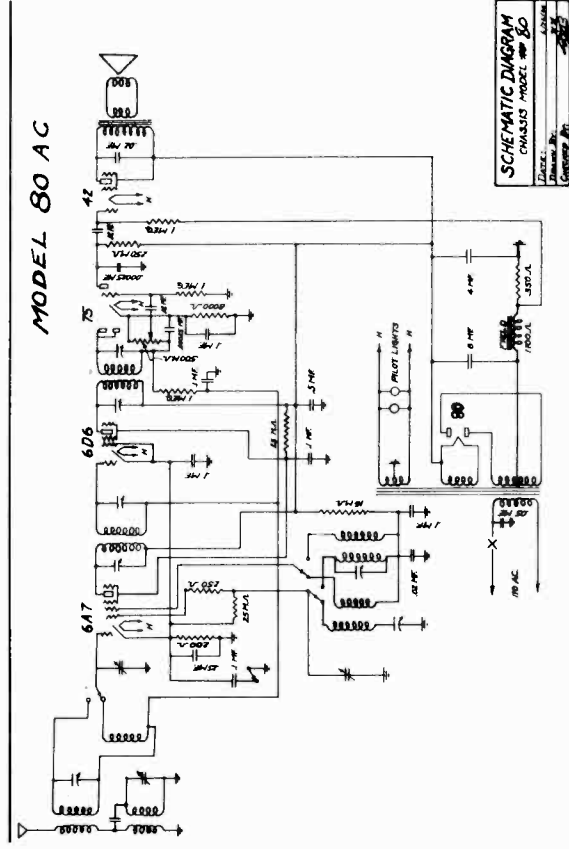
ALLIED RADIO CORP.

MODEL 80-AC  
MODEL G-9527  
Schematics

PART NO.	DESCRIPTION	MODEL 80 AC	LIST PRICE
701	FILTER CONDENSER		2.40 EACH
702	.1 BY-PASS CONDENSER		.14
703	.05		.14
704	.02		.14
705	.25		.18
706	.5		.35
707	.00025		.20
708	1-WATT RESISTOR		.20
709	MISCELLANEOUS RESISTORS (SPECIFY VALUES) (SEE DIAGRAM)		.20
710	350 OHM POWER RESISTOR		.30
711	VOLUME CONTROL		1.25
718	SHORT WAVE AND BROADCAST SWITCH		.75
719	OSCILLATOR COIL 456 KC		.90
720	CORD AND PLUG		.50
723	POWER TRANSFORMER		4.25
738	3-GANG CONDENSER		4.50
739	1ST I F TRANSFORMER		2.10
740	2ND I F TRANSFORMER		2.10
741	PRE SELECTOR COIL		1.25
745	PILOT LAMP		.25
749	TRIMMER		.20
751	KNOB (LARGE)		.20
751-A	KNOB		.15
754	PILOT LIGHT SOCKET		.15
758	SPEAKER		6.00
758-A	SPIDER AND VOICE COIL		.40
758-B	6" DIAPHRAM		.30
762	S. W. OSCILLATOR COIL		.60
763	ANTENNA S. W. OSCILLATOR COIL		.60
767	DIAL DRIVE DISC		.50
768	CELLULOIDE DRIVE DISC		.60
777	DIAL POINTER		.12
778	CONVEX DIAL CRYSTAL		.30



MODEL G-9527



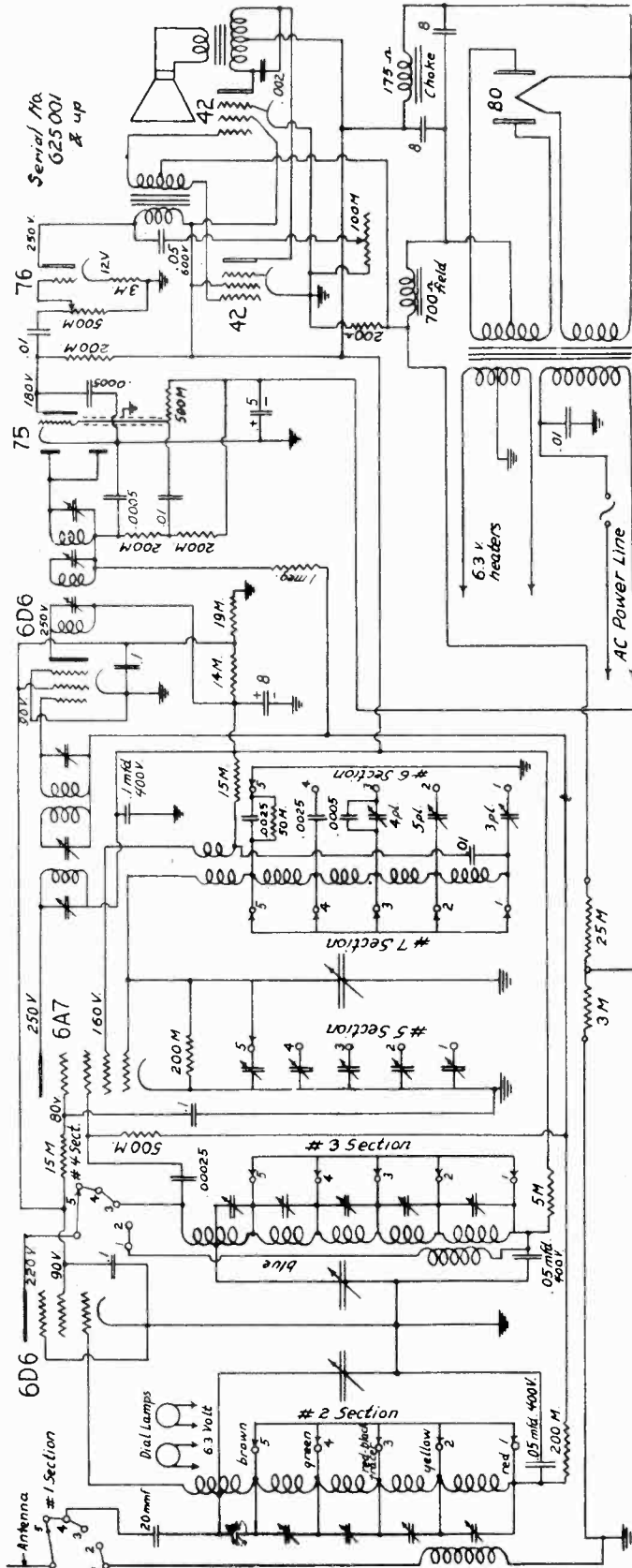
MODEL 80 AC

SCHEMATIC DIAGRAM  
CHASSIS MODEL 80  
Drawn By: [Signature]  
Checked By: [Signature]

MODELS G-9575-  
G-9605 incl.  
Schematic, Notes

ALLIED RADIO CORP.

I.F. PEAK 456 K.C.



ALL WAVE SUPERHETERODYNE

OPERATING INSTRUCTIONS

**CAUTION:** Do not attempt to operate on current other than that noted on the instrument.

**INSTALLATION:** A good aerial, 25 to 50 feet long, well away from surrounding metal structures and power lines, is essential for best results. Any of the new ALL-WAVE antennas is recommended. Power line interference, especially in short-wave reception, can be eliminated by installing a good ground connection (water pipe or equivalent) will also contribute to quieter reception.

**SERVICE NOTES:** If the radio fails to operate when unpacked, or stops working after a few days, proceed as follows: (1) Have the tubes checked. (2) Remove the chassis from the cabinet and check for loose connections. Do not return the receiver unless you have made the above tests. This set was shipped, carefully inspected.

The intermediate stages are carefully phased to 456 KC. Should rebasing be necessary, attach the output lead from a 456 KC test oscillator to the grid cap of the 6A7 tube; keep the signal to a very low audible value and carefully adjust the three trimmer screws, two in the top and one in the bottom of each of the two tall cans, to loudest volume. If an

output meter is available, it should be used across the two outside black leads at the speaker transformer. An all-wave oscillator having a range from 150 KC to 20 MC will be necessary to replace the frequency bands. The oscillator output is attached to the aerial lead of the set and the oscillator output kept always at a low audible level. The aerial coil trimmers are reached through a series of five (5) coils from the front of the set. The parallel trimmers are seen on the under side of the set when the front of it is raised and are located along side the band switch, #1 being the one nearest the back of chassis and #5 nearest the front. The dual porcelain trimmers at back of chassis are series padders, the left hand for band #2 and the right band one for band #1. The series padder for band #3 is the single trimmer at the center of the chassis. Each band is trimmed first at the minimum end of its range, band #5 being first, #4 second, then #3, etc. Bands 3, 2, and 1 are also tracked near their maximum ranges, or with the tuning condenser turned well in, by adjusting that series padder belonging to the particular band being used, location of which is given above.

**NOTE:** Should it be necessary to write us for parts or information, always give the serial number of the set as stamped on the back of the chassis.



**MODEL G-9615**  
**Alignment, Parts**  
**Voltage**

**ALLIED RADIO CORP.**

**SERVICE NOTES**  
**for the**  
**32 VOLT DIRECT CURRENT**  
**FIVE TUBE SUPERHETERODYNE RECEIVER**

**ALIGNMENT PROCEDURE:** For properly aligning either the intermediate transformer or the gang condenser, it is necessary that an accurately calibrated oscillator be used with some type of output measuring device.

**INTERMEDIATE ALIGNMENT:**

1. Connect the high side of the oscillator output to the control grid of the 6A7 tube leaving the grid cap disconnected. Connect the ground side of the oscillator to the receiver ground lead.
2. Set the test oscillator frequency to 465 kilocycles (this must be accurate).
3. Align the first intermediate transformer by turning one of the trimmer screws up and down until maximum reading is obtained on the output meter and then adjust the other trimmer screw of the same transformer for maximum sensitivity.
4. Adjust the second intermediate transformer in the same manner.

**NOTE:** Two type intermediate transformer trimmers have been used in this receiver. One type has two parallel holes in the top of the shield, one for each trimmer. The other type has a brass hex nut for adjusting one trimmer, the other intermediate trimmer being adjusted with the trimmer screw located inside of the brass hex nut. Regardless of which type trimmer is used, the procedure is the same.

**TO ALIGN THE VARIABLE CONDENSER:** It is important when aligning to follow the procedure carefully, otherwise the receiver will lack sensitivity and the dial calibration will be incorrect.

1. Connect the high output side of the oscillator to the green receiver antenna lead and the ground to the black ground lead.
2. Set the test oscillator frequency and adjust the receiver dial to exactly 1720 kilocycles. BRING IN THIS 1720 KILOCYCLE SIGNAL BY ADJUSTING THE TRIMMER CONDENSER LOCATED ON TOP OF THE OSCILLATOR SECTION (front section) OF THE GANG CONDENSER.
3. Tune the receiver to approximately 600 kilocycles and adjust the test oscillator to this frequency.

While rocking the variable condenser slightly to the right and left adjust the 600 kilocycle padding condenser, which is located on and accessible through the hole provided in the right hand side of the chassis, for maximum sensitivity.

This completes the alignment procedure. It is recommended that all of the adjustments be gone over again. Generally, it will be found that improved results can be obtained if this is done.

**VOLTAGE TABLE**

Line Voltage : 32 Volts  
 Volume Control : Full On

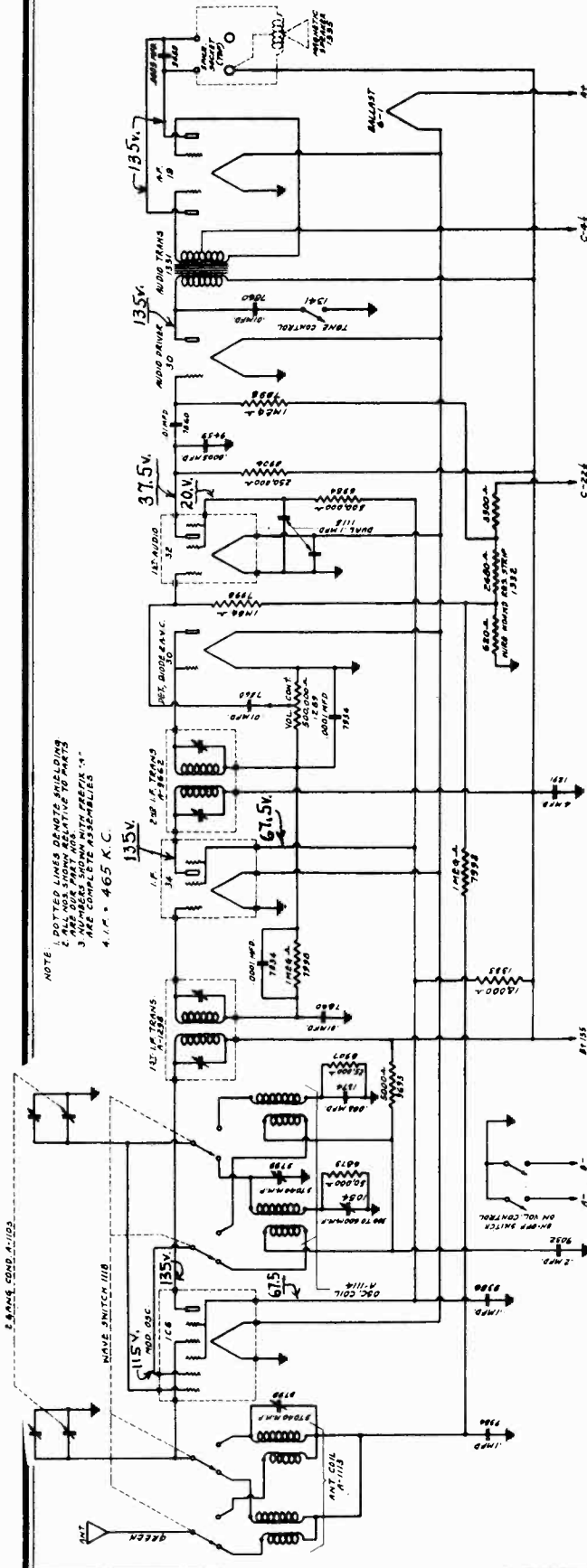
TUBES	FILAMENT	PLATE	SCREEN	GRID NO. 2	GRID NO. 3 & 5	CATHODE
6A7 Oscillator & 1st Detector	6.4	195	93	123	93	4
6D6 I. F.	6.4	195				3.5
75 2nd Detector Diode & AVC	6.4	110#				1.5
38 Output	6.4	187	195			18.5
84 Rectifier	6.4	450 ea plate				300 D. C.

# Triode Plate comparative voltage only.  
 Read all voltages from socket to set ground.  
 NOTE: Metal chassis is NOT ground.

PART NUMBER	LIST PRICE	PART NUMBER	LIST PRICE
1316 Antenna Coil	\$ .98	9386 .1 Mfd. 200 Volt Condenser	\$ .19
1317 Oscillator Coil	.95	9203 .1 Mfd. 400 Volt Condenser	.21
1298 1st I. F. Transformer	2.05	7860 .01 Mfd. 400 Volt Condenser	.17
1288 2nd I. F. Transformer	2.10	9546 .01 Mfd. 600 Volt Condenser	.18
1103 Gang Condenser	3.95	8961 .05 Mfd. 400 Volt Condenser	.18
1276 R. F. "A" Choke	.25	7862 .004 Mfd. 400 Volt Condenser	.17
1380 Tuning Dial	.28	1148 .5 Mfd. 200 Volt Condenser	.55
9023 6.3 Volt .15 Ampere Pilot Light	.39	1115 2 x .1 Mfd. 200 Volt Condenser	.35
1054 Padding Condenser	.55	9766 .03 Mfd. 400 Volt Condenser	.19
1322 Volume Control	.88	1179 Large Knob	.15
1382 Tone Control & Off and On Switch	1.21	9759 Small Knob	.14
1361 Tube Shield	.15	7998 1 Meg Ohm 1/3 Watt Resistor	.19
1260 4 Mfd. Wet Electrolytic Condenser	1.02	6984 500,000 Ohm 1/3 Watt Resistor	.19
1258 8 Mfd. Wet Electrolytic Condenser	1.16	8000 100,000 Ohm 1/3 Watt Resistor	.19
9328 2 x 5 Mfd. Dry Electrolytic Condenser	1.15	6879 50,000 Ohm 1/3 Watt Resistor	.19
1377 Power Transformer	3.63	9089 500 Ohm 1/3 Watt Resistor	.19
1381 32 Volt Vibrator	5.50	1152 400 Ohm 1/3 Watt Resistor	.19
1548 Fuse Block Receptacle	.25	9460 3,000 Ohm 1/3 Watt Resistor	.19
1549 2 Ampere Fuse	.08	1384 1,500 Ohm 1/2 Watt Resistor	.19
7934 .0001 Mfd. Moulded Condenser	.21	1336 20,000 Ohm 1/2 Watt Resistor	.19
9458 .00025 Mfd. Moulded Condenser	.21	1385 15,000 Ohm 1 Watt Resistor	.22
9459 .0005 Mfd. Moulded Condenser	.21		

ALLIED RADIO CORP.

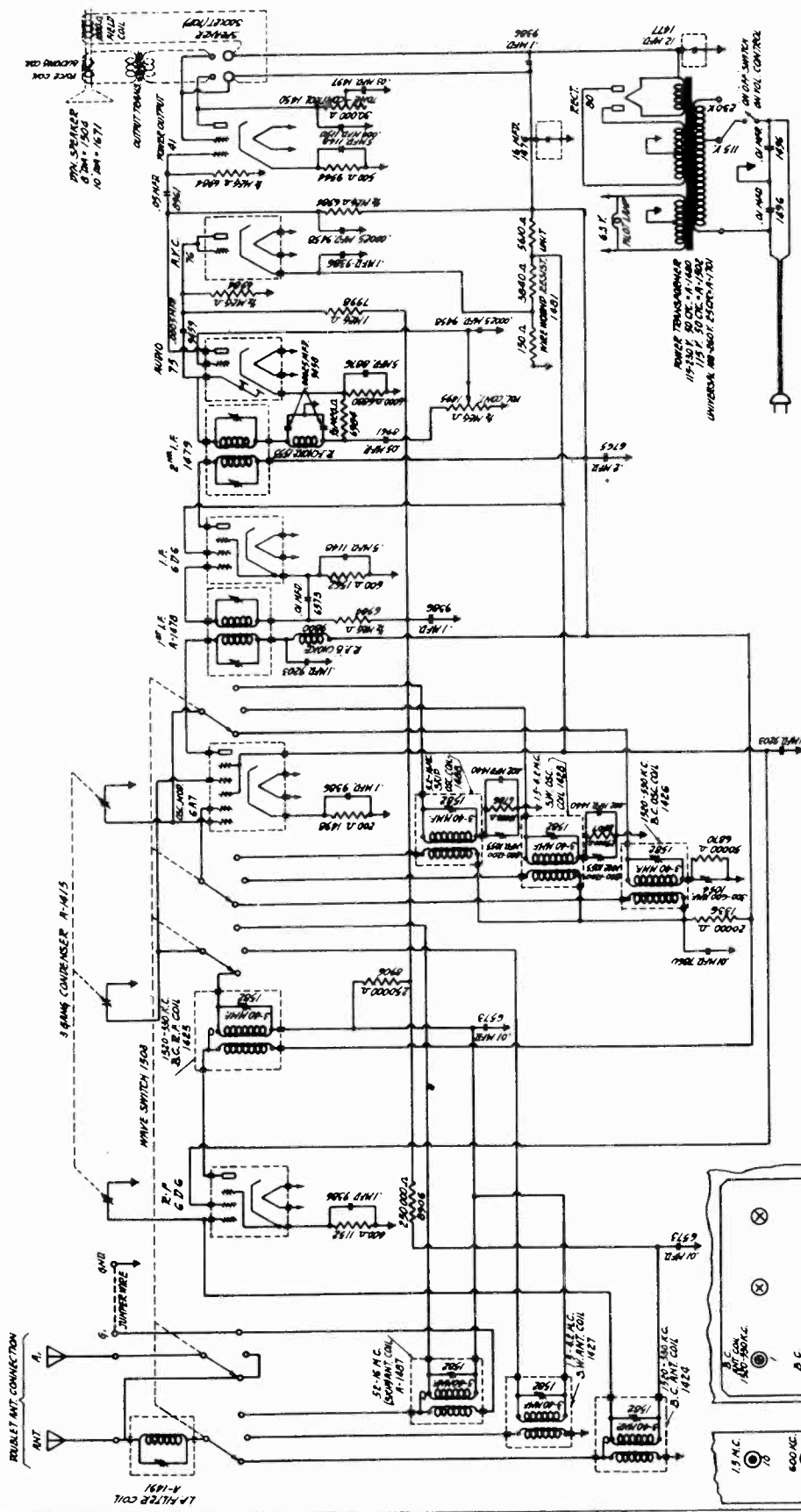
MODELS G-9617, 9619, 9621, 9623, 9625, 9627  
Schematic, Voltage, Alignment, Parts List



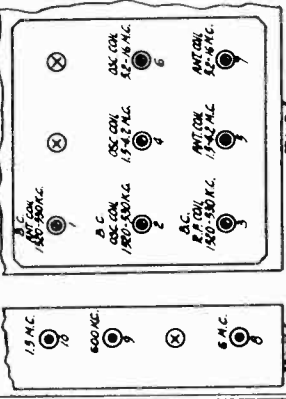
- NOTE:** Two type intermediate transformer trimmers have been used in this receiver. One type has two parallel holes in the top of the shield, one for each trimmer. The other type has a brass hex nut for adjusting one trimmer, the other intermediate trimmer being adjusted with the trimmer screw located inside of the brass hex nut. Regardless of which type trimmer is used the procedure is the same.
- TO ALIGN THE VARIABLE CONDENSER:** It is important when aligning to follow the procedure carefully, otherwise the receiver will lack sensitivity and the dial calibration will be incorrect.
1. Connect the high output side of the oscillator to the receiver antenna lead and the ground to the chassis.
  2. Place the band selector switch for operation on the short wave band, tune the receiver to exactly 15 megacycles on the dial and set the test oscillator frequency to exactly 15 megacycles. THEN TUNE IN THE 15 MEGACYCLE SIGNAL BY ADJUSTING THE TRIMMER MOUNTED ON TOP OF THE OSCILLATOR SECTION OF THE GANG CONDENSER TO MAXIMUM OUTPUT.
  - Looking at the front of the receiver the oscillator section is the rear section of the gang condenser.
  3. Set the band selector switch for operation on the broadcast band, adjust the test oscillator frequency to 1400 kilocycles and set the receiver dial to exactly 1400 kilocycles. NEXT, BRING IN THE 1400 KILOCYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING THE TRIMMER LOCATED UNDERNEATH AND NEAR THE CENTER FRONT OF THE CHASSIS.
  4. After making this adjustment tune the dial to 1720 kilocycles and set the oscillator frequency to 1720 kilocycles. If the 1720 kilocycle signal cannot be received reduce the 1400 kilocycle trimmer capacity until the 1720 kilocycle signal is brought in.
  5. Next, set the receiver dial and test oscillator to exactly 1400 kilocycles, and adjust the trimmer located on the front section of the gang condenser for maximum sensitivity.
  6. Leave the band selector switch for operation on the broadcast band, tune the receiver and set the oscillator to approximately 400 kilocycles. Then adjust the 600 kilocycle padding condenser, which is located on and accessible through the small hole in the front of the chassis, for maximum sensitivity. As this adjustment is quite critical it is necessary to rock the condenser slightly to the right and left to find the point of greatest sensitivity.
  7. Place the band selector switch for operation on the short wave band, adjust the test oscillator frequency to exactly 15 megacycles and set the receiver dial to 15 megacycles. Turn the receiver on its back with the dial up and adjust the trimmer, which is mounted on the top of the coil underneath and near the right hand side of the chassis, for maximum output. Be sure to rock the condenser slightly to the right and left when making this adjustment.
- | PART NUMBER                                 | LIST PRICE |
|---|------------|
| 1113 Antenna Coil                           | \$1.45     |
| 1114 Oscillator Coil                        | 1.45       |
| 1298 1st I. F. Transformer                  | 2.05       |
| 9662 2nd I. F. Transformer                  | 2.05       |
| 1331 4 MVA. Wet Electrolytic Condenser      | 1.40       |
| 1115 Dual .1 Mfd. 200 Volt Condenser        | .85        |
| 7840 .01 Mfd. 400 Volt Condenser            | .35        |
| 9032 .2 Mfd. 200 Volt Condenser             | .23        |
| 9439 .0005 Mfd. Mica Mould Condenser        | .21        |
| 7454 .0001 Mfd. Mica Mould Condenser        | .21        |
| 1374 .003 Mfd. Mica Mould Condenser         | .21        |
| 1352 Wire Wound Resistor Strip              | .36        |
| 7998 1 Meg Ohm 1/5 Watt Resistor            | .19        |
| 6984 500,000 Ohm 1/5 Watt Resistor          | .19        |
| 5906 250,000 Ohm 1/5 Watt Resistor          | .19        |
| 6979 50,000 Ohm 1/5 Watt Resistor           | .19        |
| 1353 18,000 Ohm 1/2 Watt Resistor           | .19        |
| 9607 5,000 Ohm 1/5 Watt Resistor            | .19        |
| 9607 25,000 Ohm 1/5 Watt Resistor           | .19        |
| 1292 6 Conductor Battery Cable              | .68        |
| 1299 Volume Control with D. P. S. T. Switch | 1.24       |
| 1341 Tone Control Switch                    | .40        |
| 1370 One Color Tuning Dial                  | .30        |
| 1358 Two Color Tuning Dial                  | .35        |
| 1183 Two Gang Condenser                     | 3.93       |
| 1361 Tube Shield                            | .15        |
| 9988 Tube Shield                            | .11        |
| 1053 Padding Condenser                      | .50        |
| 1054 Padding Condenser                      | .55        |
| 9799 Trimmer Condenser                      | .15        |
| 4-1 Voltage Regulator Tube                  | 3.00       |
| 1179 Knob, Large                            | .15        |
| 1160 Knob, Small with Dot                   | .17        |
| 9758 Knob, Small                            | .14        |

**MODELS G-9643, 9645**  
Schematic

ALLIED RADIO CORP.



NOTE  
 1. DOTTED LINES DENOTE SHIELDING  
 2. ALL RES. CHIP PARTS ARE TO BE MADE  
 3. NUMBERS SHOWING WITH PREFIX 'A'  
 ARE COMPLETE ASSEMBLIES  
 4. I.P. - 465 A.C.



## ALLIED RADIO CORP.

SERVICE NOTES  
for the  
SEVEN TUBE AC OPERATED  
THREE BAND SUPERHETERODYNE RECEIVER  
1520-530 KILOCYCLES  
1.5-4.2 MEGACYCLES  
5.4-16 MEGACYCLES

Realignment of this receiver should never be necessary unless one of the oscillator, antenna, or RF coils has been replaced and then only the frequency band in which the coil is used will require realignment. Lack of sensitivity, selectivity, and poor tone quality may be due to any one or a combination of causes such as weak or defective tubes or speaker, inadequate or excessively long antenna, open or grounded bias resistor, bypass condenser, etc. Under no circumstances should realignment be attempted until all other possible sources of trouble have been first thoroughly investigated and have definitely proven not to be the cause. If an IF tube is replaced it is advisable to realign the IF amplifier particularly if the replacement tube is made by a different manufacturer than the one in the receiver.

**NOTE:** NEVER LIFT THE RECEIVER BY GRASPING THE CATACOMB SHIELD, TO DO SO MAY MOVE THE SHIELD THEREBY DETUNING THE RECEIVER.

ALIGNMENT PROCEDURE:

It is important when aligning to carefully follow the procedure in the order given, otherwise the receiver will lack sensitivity and the dial calibration will be incorrect. IT IS IMPERATIVE THAT AN ACCURATELY CALIBRATED OSCILLATOR BE USED WITH SOME TYPE OF OUTPUT MEASURING DEVICE.

INTERMEDIATE ALIGNMENT:

1. Connect the high side of the oscillator output to the control grid of the 6A7 tube, leaving the grid cap disconnected. Connect the ground side of the oscillator to the receiver chassis.
2. Set the test oscillator frequency to 465 kilocycles. (This must be accurate).
3. Align the first intermediate transformer by turning one of the trimmer screws up and down (increasing and decreasing capacity) until maximum reading is obtained on the output meter, after which adjust the other trimmer screw of the same transformer for maximum sensitivity.
4. Adjust the other intermediate transformer in the same manner.

**NOTE:** Two type intermediate transformer trimmers have been used in this receiver. One type has two parallel holes in the top of the shield, one for each trimmer. The other type has a brass hex nut for adjusting one trimmer, the other intermediate trimmer being adjusted with the trimmer screw located inside of the brass hex nut. Regardless of which type trimmer is used, the procedure is the same.

TO ALIGN THE VARIABLE CONDENSER:

Adjustment of the Trimmer Condensers, located inside of and accessible through the holes found in the top of the catacomb shield (mounted on top and in the left hand front corner of the receiver) will be referred to by numbers as indicated on the circuit diagram showing the relative location of these trimmers.

1. Connect the high output side of the test oscillator to the receiver antenna post through a 250 MMFD (.00025 MFD) condenser and the ground to the set ground post.
2. Place the band selector switch for operation on the 1520 to 530 kilocycle (broadcast) band. Tune the receiver to exactly 1400 kilocycles on the dial and set the test oscillator frequency to exactly 1400 kilocycles. THEN BRING IN THE 1400 KILOCYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING THE TRIMMER MARKED NO. 2 ON CATACOMB DIAGRAM, after which adjust No. 1 and No. 3 trimmers in the order named for maximum sensitivity.
3. Leave the band selector switch for operation on the broadcast band (1520 to 530 kilocycles) and tune the receiver and set the oscillator to approximately 600 kilocycles. Then adjust the 600 kilocycle padding condenser No. 9 which is located on and accessible through the hole in the left hand side of the chassis for maximum sensitivity. As this adjustment is quite critical, it is necessary to rock the variable condenser slightly to the right and to the left to find the point of greatest sensitivity.
4. Recheck the alignment at 1400 kilocycles as the 600 kilocycle adjustment may have changed the alignment at 1400 kilocycles.
5. Place the band selector switch for operation on the 1.5 to 4.2 megacycle band and set the test oscillator frequency and tune the receiver dial to exactly 3.8 megacycles. THEN TUNE IN THIS 3.8 MEGACYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING CATACOMB TRIMMER NO. 4, next adjust trimmer No. 5 for maximum sensitivity.
6. With the band selector switch in the same position (1.5 to 4.2 megacycle band) tune the receiver dial and set the oscillator frequency to approximately 1.7 megacycles and then while rocking the variable condenser slightly to the right and left, adjust the 1.7 megacycle trimmer No. 10 (located on the left hand side of the chassis) for maximum sensitivity.
7. Recheck 3.8 megacycle adjustments.
8. Adjust the band selector switch for operation on the 5.2 to 16 megacycle band and tune the receiver dial and set the oscillator frequency to exactly 15 megacycles. When adjusting catacomb trimmer No. 6 two peaks (the fundamental and the image peak) will be noticed. CARE MUST BE TAKEN SO THAT THE FUNDAMENTAL PEAK AND NOT THE IMAGE PEAK IS USED FOR ALIGNING THE RECEIVER AT 15 MEGACYCLES. First back off catacomb trimmer No. 6 to minimum capacity, next screw down the trimmer (add capacity) until the first peak which is the fundamental and the one you are to use is tuned in. If the trimmer is screwed down beyond the point where this first peak is received the incorrect image peak will be tuned in. When the first peak has been located adjust catacomb trimmer No. 6 to BRING IN THE 15 MEGACYCLE SIGNAL TO MAXIMUM OUTPUT. After completing this adjustment always check to see if the proper peak has been used. To do this leave the test oscillator frequency at 15 megacycles and increase the output of the test oscillator, then tune the receiver dial to approximately 14 megacycles. Vary the receiver dial slightly to the right and left of 14 megacycles and if the fundamental peak was used in aligning at 15 megacycles the test oscillator signal will be heard at approximately 14 megacycles on the set dial. If it is not possible to receive the signal then the fundamental peak was not used and the 15 megacycle adjustment of trimmer No. 6 must be gone over and properly adjusted. After correctly completing catacomb trimmer No. 6 adjustment adjust catacomb trimmer No. 7 to maximum sensitivity. Should two peaks be noticed with this trimmer always adjust trimmer No. 7 to the one that requires the most capacity to tune in.



**MODELS G-9643, 9645**  
**Alignment, Part 2**  
**Voltage, Parts List**

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9. Leave the band selector switch for operation on 5.4 to 16 megacycle band, set the oscillator frequency and tune the receiver dial to approximately 6 megacycles. While rocking the variable condenser slightly to the right and left, adjust the 6 megacycle trimmer No. 8 (located on the left hand side of the chassis) for maximum sensitivity.

10. Recheck 15 megacycle adjustments.

11. Some code and aircraft signals are broadcast on a frequency exactly the same or near the IF frequency of the receiver. To eliminate interference from these signals a 465 kilocycle filter (mounted in the coil shield located underneath and towards the front of the chassis) is incorporated in the set. To adjust, set the oscillator frequency (with oscillator output connected to set antenna and ground) TO EXACTLY 465 KILOCYCLES turn the receiver on and adjust the trimmer located on and accessible through the top of the filter shield for MINIMUM 465 KILOCYCLE SIGNAL.

This completes the alignment and it is recommended that all of the adjustments be gone over again. Generally it will be found that improved results can be obtained if this is done. Assuming that all tubes and component parts of the set are okeh, extreme inaccuracies in the dial calibration, low sensitivity, and poor selectivity are indications that the alignment procedure has not been followed. Should these conditions be apparent, proceed to realign, starting at the IF alignment and carefully follow each step in the order given.

VOLTAGE TABLE

Line voltage : 115 Volt 60 Cycle  
 Volume Control : Full on  
 Wave Band : Broadcast

TUBE	FIL.	PLATE	SCREEN	CATHODE	GRID NO. 1	GRID NO. 2	GRID NO. 3 and 5
6A7 Oscillator & 1st Detector	6.2	250	94	2.5	4.5	175	94
6D6 Radio Frequency	6.2	250	94	3.4			
6D6 Intermediate Frequency	6.2	250	94	3.2			
75 2nd Detector & 1st Audio	6.2	70#		1.2			
76 Automatic Volume Control	6.2			3.4			
41 Output	6.2	250	94	15			
8Q Rectifier	4.9		80 M. A.	Total Drain			

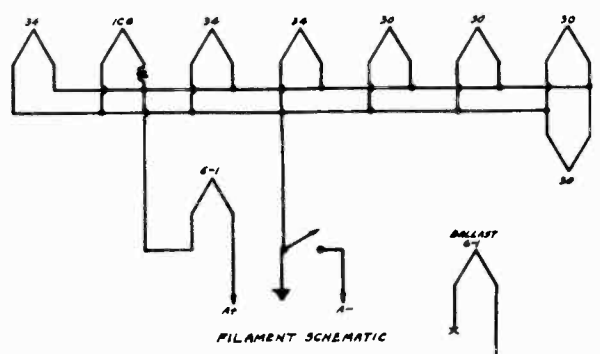
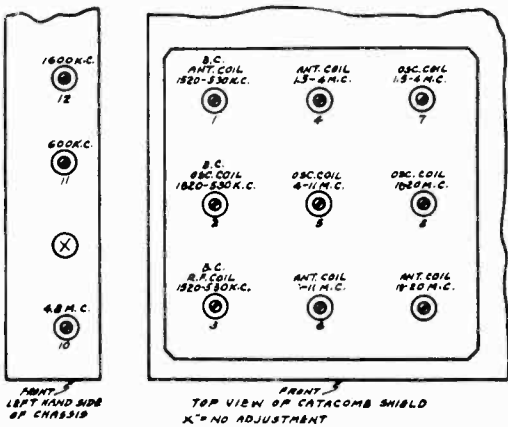
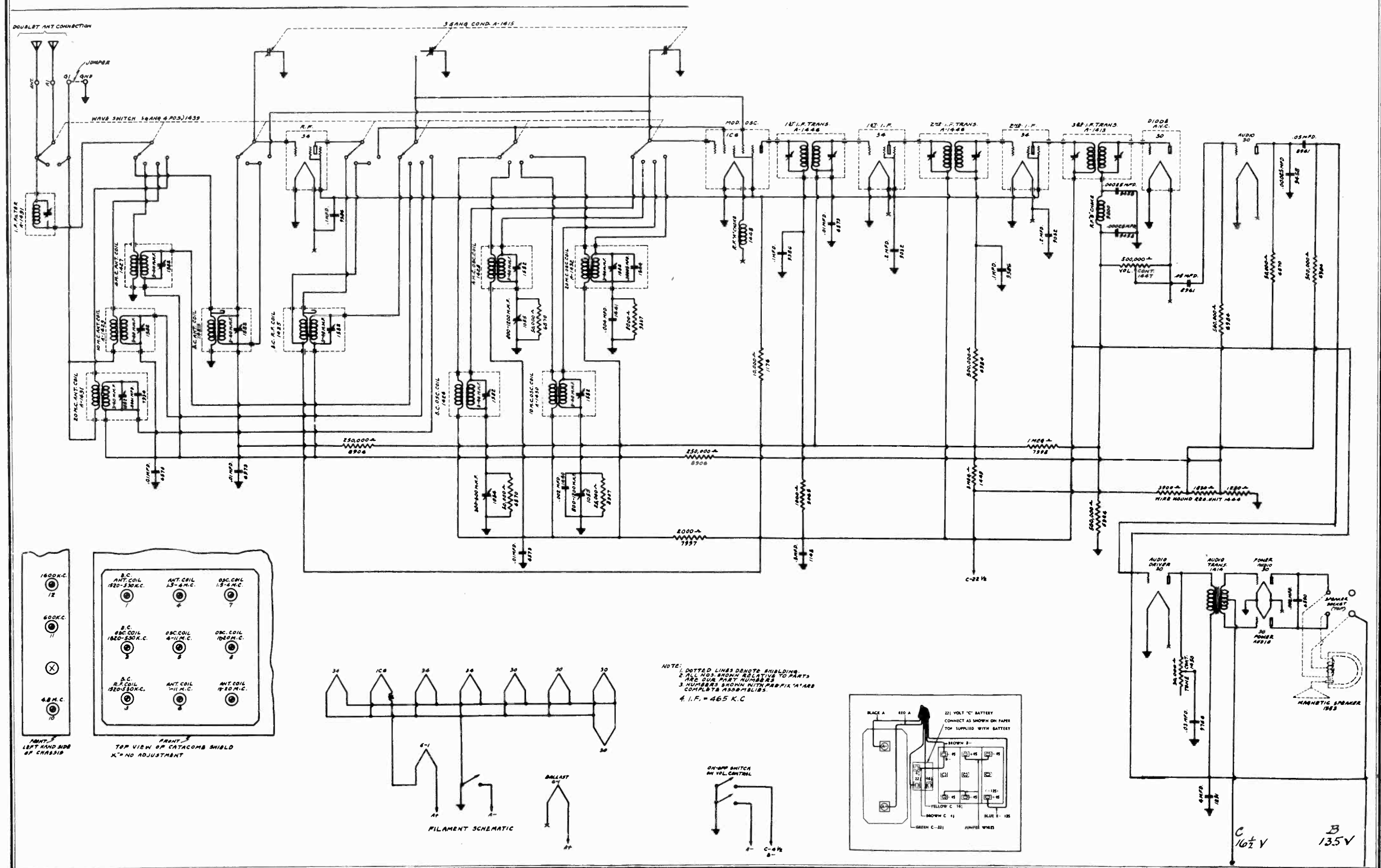
#- Triode Plate

Read all voltages from socket to chassis with 1,000 ohm per volt meter.

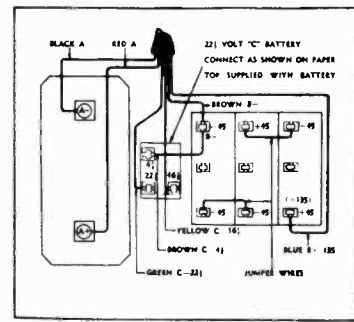
PART NUMBER	LIST PRICE	PART NUMBER	LIST PRICE
1478 First I. F. Transformer	\$2.10	6765 .2 Mfd. 400 Volt Condenser	\$.26
1479 Second I. F. Transformer	2.10	9386 .1 Mfd. 200 Volt Condenser	.19
1424 Antenna Coil for 1520-530 K.C. Band	.90	1148 .5 Mfd. 200 Volt Condenser	.55
1426 Oscillator Coil for 1520-530 K.C. Band	.75	9203 .1 Mfd. 400 Volt Condenser	.20
1425 R. F. Coil for 1520-530 K. C. Band	.95	6573 .01 Mfd. 200 Volt Condenser	.17
1427 Antenna Coil for 1.5-4.2 M. C. Band	.55	7998 1 Meg Ohm 1/3 Watt Resistor	.19
1428 Oscillator Coil for 1.5-4.2 M. C. Band	.55	6984 500,000 Ohm 1/3 Watt Resistor	.19
1487 Antenna Coil for 5.4-16 M. C. Band	.70	6880 6,000 Ohm 1/3 Watt Resistor	.19
1488 Oscillator Coil for 5.4-16 M.C. Band	.75	1498 200 Ohm 1/3 watt Resistor	.19
1435 Nine Cell Gtacom Comb Coil Shield	1.50	1152 400 Ohm 1/3 Watt Resistor	.19
1503 Wave Switch 3 gang 3 positions	2.25	9544 500 Ohm 1 Watt Resistor	.22
9799 Trimmer Condenser	.15	1363 600 Ohm 1/3 Watt Resistor	.19
1054 Padding Condenser	.55	1701 Power Transformer (Universal)	9.25
1055 Trimmer Condenser	.55	1502 Power Transformer 115 Volt 50-60 Cycle	5.25
1491 I. F. Filter Assembly	1.50	1480 Power Transformer 115-230 Volt 50-60 Cycle	6.75
9800 R. F. "B" Choke	.22	1481 Vitreous Resistor Strip	1.10
1415 Three Gang Condenser	4.50	1504 8" Dynamic Speaker	9.50
1505 Two Speed Planetary Drive	1.10	1671 10" Dynamic Speaker	12.00
1511 Tuning Dial with Glass	2.50	1738 Large Bakelite Tuning Knob (Bottom Sec.)	.25
1476 16 Mfd. Wet Electrolytic Condenser	1.40	1739 Bakelite Tone Control & Top Section	
1477 12 Mfd. Wet Electrolytic Condenser	1.25	tuning control knob	.22
8876 5 Mfd. Dry Electrolytic Condenser	.77	1794 Bakelite Band Selector Knob	.25
9458 .00025 Mfd. Moulded Condenser	.21	1740 Bakelite Volume Control Knob	.22
9459 .0005 Mfd. Moulded Condenser	.21	1567 Large Wood Tuning Knob (Bottom Section)	.30
1496 .01 Mfd. 600 Volt Condenser	.18	1568 Small Wood Tuning Knob (Top Section)	.25
8961 .05 Mfd. 400 Volt Condenser	.18	1570 Wood Band Selector Knob	.30
7862 .004 Mfd. 600 Volt Condenser	.17	1569 Wood volume Control Knob	.25
1497 .03 Mfd. 600 Volt Condenser	.19	1571 Wood Tone Control Knob	.25

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MODEL G-9629, 9631, 9633, 9635, 9637, 9639 Schematic



NOTE:  
 1. DOTTED LINES DENOTE SHIELDING  
 2. ALL NOS. SHOWN RELATIVE TO PARTS ARE DUAL PART NUMBERS  
 3. NUMBERS SHOWN WITH PREFIX 'A' ARE COMPLETE ASSEMBLIES  
 4. I.F. = 465 K.C.



C 16 1/2 V  
 B 135 V

ALLIED RADIO CORP.

MODEL G-9629,9631,9633  
9635,9637,9639  
Alignment, Part 1

SERVICE NOTES  
for the  
TEN TUBE BATTERY OPERATED  
FOUR BAND SUPERHETERODYNE RECEIVER  
1520-535 KILOCYCLES  
1.5 -4.2 MEGACYCLES  
4 -11 MEGACYCLES  
10 -20 MEGACYCLES

Realignment of this receiver should never be necessary unless one of the oscillator, antenna or RF coils has been replaced and then only the frequency band in which that coil is used will require realignment. Lack of sensitivity, selectivity, and poor tone quality may be due to any one or a combination of causes such as weak or defective tubes or speaker, inadequate or excessively long antenna, open or grounded bias resistor, bypass condenser, etc. Under no circumstances should realignment be attempted until all other possible sources of trouble have been first thoroughly investigated and have been definitely proven not to be the cause. If an IF tube is replaced it is advisable to realign the IF amplifier particularly if the replacement tube is one of a different manufacture than the one in the receiver.

**NOTE:** NEVER LIFT THE RECEIVER BY GRASPING THE CATACOMB SHIELD, TO DO SO MAY MOVE THE SHIELD THEREBY DETUNING THE RECEIVER.

**ALIGNMENT PROCEDURE:** It is important when aligning to carefully follow the procedure in the order given, otherwise the receiver will lack sensitivity and the dial calibration will be incorrect. IT IS IMPERATIVE THAT AN ACCURATELY CALIBRATED OSCILLATOR BE USED WITH SOME TYPE OF OUTPUT MEASURING DEVICE.

**INTERMEDIATE ALIGNMENT:**

1. Connect the high side of the oscillator output to the control grid of the 1C6 tube, leaving the grid cap disconnected. Connect the ground side of the oscillator to the receiver ground post.
2. Set the test oscillator frequency to 465 kilocycles. (This must be accurate).
3. Align the first intermediate transformer by turning one of the trimmer screws up and down (increasing and decreasing capacity) until maximum reading is obtained on the output meter, after which adjust the other trimmer screw of the same transformer for maximum sensitivity.
4. Adjust the other intermediate transformers in the same manner.

**NOTE:** Two type intermediate transformer trimmers have been used in this receiver. One type has two parallel holes in the top of the shield, one for each trimmer. The other type has a brass hex nut for adjusting one trimmer, the other intermediate trimmer being adjusted with the trimmer screw located inside of the brass hex nut. Regardless of which type trimmer is used, the procedure is the same.

**TO ALIGN THE VARIABLE CONDENSER:**

Adjustment of the trimmer condensers, located inside of and accessible through the holes found in the top of the catacomb (mounted on top and in the left hand front corner of the receiver) will be referred to by numbers as indicated on the circuit diagram showing the relative location of these trimmers.

1. Connect the high output side of the oscillator through a 250 mmfd. (.00025 Mfd.) to the receiver antenna post and the ground to the ground post.
2. Place the band selector switch for operation on the 1520 to 535 kilocycle band (broadcast), tune the receiver to exactly 1400 kilocycles on the dial and set the test oscillator frequency to exactly 1400 kilocycles. THEN BRING IN THE 1400 KILOCYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING TRIMMER MARKED NO. 2 ON CATACOMB DIAGRAM, after which adjust No. 1 and No. 3 trimmers in the order named for maximum sensitivity.
3. Leave the band selector switch for operation on the broadcast band (1520-535 kilocycles) and tune the receiver and set the test oscillator to approximately 600 kilocycles. Then while rocking the condenser slightly to the right and left adjust the 600 kilocycle padding condenser No. 11, which is located on and accessible through the hole provided on the left hand side of the chassis, for maximum sensitivity.
4. Recheck the alignment at 1400 kilocycles as the 600 kilocycle adjustment may have changed the alignment at 1400 kilocycles.
5. Place the band selector switch for operation on the 1.5 to 4.2 megacycle band and set the test oscillator frequency and tune the receiver dial to EXACTLY 3.8 MEGACYCLES. THEN TUNE IN THIS 3.8 MEGACYCLE SIGNAL TO MAXIMUM OUTPUT BY ADJUSTING CATACOMB TRIMMER NO. 7. Next adjust catacomb trimmer No. 4 for maximum sensitivity.
6. With the band selector switch in the same position (1.5-4.2 megacycle band) tune the receiver dial and set the oscillator frequency to approximately 1600 kilocycles, and then while rocking the variable condenser slightly to the right and left adjust the 1600 kilocycle trimmer No. 12 located on the left hand side of the chassis for maximum sensitivity.
7. Recheck 3.8 megacycle adjustments.
8. Adjust the band selector switch for operation on the 4 to 11 megacycle band and tune the receiver dial and set the oscillator frequency to exactly 10.5 megacycles. When adjusting catacomb trimmer No. 5 two peaks (the fundamental and the image peak) will be noticed. CARE MUST BE TAKEN SO THAT THE FUNDAMENTAL PEAK AND NOT THE IMAGE PEAK IS USED FOR ALIGNING THE RECEIVER AT 10.5 MEGACYCLES. First back off catacomb trimmer No. 5 to minimum capacity, next screw down the trimmer (add capacity) until the first peak which is the fundamental and the one you are to use is tuned in. If the trimmer is screwed down beyond the point where this first peak is received the incorrect image peak will be tuned in. When the first peak has been located adjust catacomb trimmer No. 5 to BRING IN THE 10.5 MEGACYCLE SIGNAL TO MAXIMUM OUTPUT After completing this adjustment always check to see if the proper peak has been used. To do this leave the test oscillator frequency at 10.5 megacycles, increase its output, and tune the receiver dial to approximately 9.5 megacycles. Vary the receiver dial slightly to the right and left of 9.5 megacycles and if the fundamental peak was used in aligning at 10.5 megacycles the test oscillator signal will be heard at approximately 9.5 megacycles on set dial. If it is not possible to receive the signal then the fundamental peak was not used and the 10.5 megacycle adjustment of trimmer No. 5 must be gone over and properly adjusted. After correctly completing catacomb trimmer No. 5 adjustment adjust catacomb trimmer No. 6 for maximum sensitivity. Should two peaks be noticed with this trimmer always adjust trimmer No. 6 to the one that requires the most capacity.

MODEL S G-9629,9631,9633  
9635,9637,9639

ALLIED RADIO CORP.

Alignment, Part 2  
Voltage, Parts List

9. With the band selector switch adjusted for operation on the same band (4-11 megacycles) set the test oscillator frequency and tune the receiver dial to approximately 4.8 megacycles. Then while rocking the variable condenser slightly to the right and left adjust the 4.8 megacycle trimmer No. 10, located on the left hand side of the chassis for maximum sensitivity.

10. Recheck the 10.5 megacycle adjustment.

11. Adjust the band selector switch for operation on the 10 to 20 megacycle band, tune the receiver dial and set the oscillator frequency to exactly 19 megacycles. When adjusting catacomb trimmer No. 8 two peaks (the fundamental and the image peak) will be noticed. CARE MUST BE TAKEN SO THAT THE FUNDAMENTAL PEAK AND NOT THE IMAGE PEAK IS USED FOR ALIGNING THE RECEIVER AT 19 MEGACYCLES. First back off catacomb trimmer No. 8 to minimum capacity, next screw down the trimmer (add capacity) until the first peak which is the fundamental and the one you are to use is tuned in. If the trimmer is screwed down beyond the point where this first peak is received the incorrect image peak will be tuned in. When the first peak has been located adjust catacomb trimmer No. 8 to BRING IN THE 19 MEGACYCLE SIGNAL TO MAXIMUM OUTPUT. After completing this adjustment always check to see if the proper peak has been used. To do this leave the test oscillator frequency at 19 megacycles, increase its output, and tune the receiver dial to approximately 18 megacycles. Vary the receiver dial slightly to the right and left of 18 megacycles and if the fundamental peak was used in aligning at 19 megacycles the test oscillator signal will be heard at approximately 18 megacycles on set dial. If it is not possible to receive the signal then the fundamental peak was used and the 19 megacycle adjustment of trimmer No. 8 must be gone over and properly adjusted. After correctly completing catacomb trimmer No. 8 adjustment adjust catacomb trimmer No. 9 for maximum sensitivity. Should two peaks be noticed with this trimmer always adjust trimmer No. 9 to the one that requires the most capacity.

12. Some code and aircraft signals are broadcast on a frequency exactly the same or near the IF frequency of the receiver. To eliminate interference from these signals a 465 kilocycle filter (mounted in the coil shield located underneath and towards the front of the chassis) is incorporated in the set. To adjust, set the oscillator frequency (with oscillator output connected to set antenna and ground) TO EXACTLY 465 KILOCYCLES, turn the receiver on and adjust the trimmer located on and accessible through the top of the filter shield for MINIMUM 465 KILOCYCLE SIGNAL.

This completes the alignment and it is recommended that all of the adjustments be gone over again. Generally it will be found that improved results can be obtained if this is done. Assuming that all tubes and component parts of the set are o.k., then extreme inaccuracies in the dial calibration, low sensitivity, and poor selectivity are indications that the alignment procedure has not been followed. Should these conditions be apparent, proceed to realign starting at the IF alignment and carefully follow each step in the order given.

VOLTAGE TABLE

"A" Battery - 3 Volt Dry Cell  
"B" Battery - 3 45 Volt "B" Battery  
"C" Battery - 1 2 1/2 Volt "C" Battery

TUBE	FILAMENT	PLATE	SCREEN	GRID NO. 2	GRID NO. 3 & 5	CONTROL GRID
106 Oscillator & 1st Detector	1.9	135		135	75	3.5
34 Radio Frequency	1.9	135	75			
34 1st Intermediate Frequency	1.9	135	75			
34 2nd Intermediate Frequency	1.9	135	75			
30 2nd Detector & AVC	1.9					
30 1st Audio	1.9	60#	(Total "A" Drain 600 M.A.)			
30 Audio Driver	1.9	125	(Total "B" Drain 23 M. A. with no signal)			
30 Output	1.9	125				
30 Output	1.9	125				

# Comparative voltage only. Read all voltages from socket to chassis with 1,000 ohm per volt meter. When making voltage checks use batteries that deliver full voltage with the receiver turned on.

PART NUMBER	LIST PRICE	PART NUMBER	LIST PRICE
1446 First and Second I. F. Transformer	\$2.05	1447 Volume Control with D.P.S.T. Switch	\$1.26
1413 Third I. F. Transformer	2.10	1450 Tone Control	.83
1424 Antenna Coil for 1520-535 K. C. Band	.90	9458 .00025 Mfd. Moulded Condenser	.21
1425 R. F. Coil for 1520-535 K. C. Band	.98	1544 .0005 Mfd. Moulded Condenser	.19
1426 Oscillator Coil for 1520-535 K. C. Band	.72	9766 .03 Mfd. 400 Volt Condenser	.19
1427 Antenna Coil for 1.5-4.2 M. C. Band	.60	9032 .2 Mfd. 200 Volt Condenser	.23
1428 Oscillator Coil for 1.5-4.2 M. C. Band	.60	9386 .1 Mfd. 200 Volt Condenser	.19
1429 Antenna Coil for 4-11 M. C. Band	.77	8961 .05 Mfd. 400 Volt Condenser	.18
1430 Oscillator Coil for 4-11 M. C. Band	.80	6590 .002 Mfd. 400 Volt Condenser	.17
1431 Antenna Coil for 10-20 M. C. Band	.73	1146 .5 Mfd. 200 Volt Condenser	.44
1432 Oscillator Coil for 10-20 M. C. Band	.72	1449 3 Meg Ohm 1/3 Watt Resistor	.19
1433 9 Cell Catacomb Coil Shield	1.50	7998 1 Meg Ohm 1/3 Watt Resistor	.19
1439 Four Gang Four Position Wave Switch	3.10	6984 500,000 Ohm 1/3 Watt Resistor	.19
9799 Trimmer Condenser	.15	9065 1,000 Ohm 1/3 Watt Resistor	.19
1054 Trimmer Condenser	.55	1176 10,000 Ohm 1/2 Watt Resistor	.19
1055 Trimmer Condenser	.55	6-1 Voltage Regulator Tube	3.00
1415 Three Gang Condenser	4.40	1420 Antenna and Ground Connector Strip	.24
1453 Single Speed Dial & Drive	2.75	1353 8" Magnetic Speaker	7.00
1505 Two Speed Planetary Drive only	1.10	1508 Tuning Knob (Bottom Section)#	.30
1510 Dial Mechanism & glass for Two Speed Planetary Drive	2.75	1509 Tuning Knob (Top Section)#	.25
1491 I. F. Filter Assembly	1.50	1500 Volume Control and Band Selector Knob with indicator line#	.30
1448 R. F. "A" Choke	.45	1565 Tone Control Knob#	.27
9800 R. F. "B" Choke	.54		
1451 Seven Conductor Battery Cable	.80	1794 Volume and Band Selector Knob with indicator line##	.25
1291 4 Mfd. Wet Electrolytic Condenser	.85	1740 Tuning Control Knob##	.22
1444 Resistor Strip	1.10	1739 Tone Control Knob##	.22
1414 Audio Transformer	2.20		

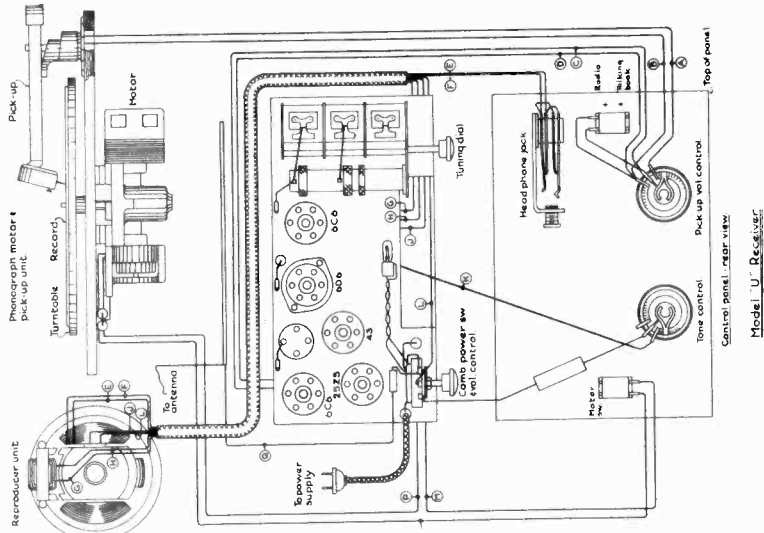
# For two speed planetary drive only, specify if wooden or bakelite knobs are desired.  
## For single speed drive only, specify if wooden or bakelite knobs are desired.



MODEL X  
MODEL U  
MODEL 30

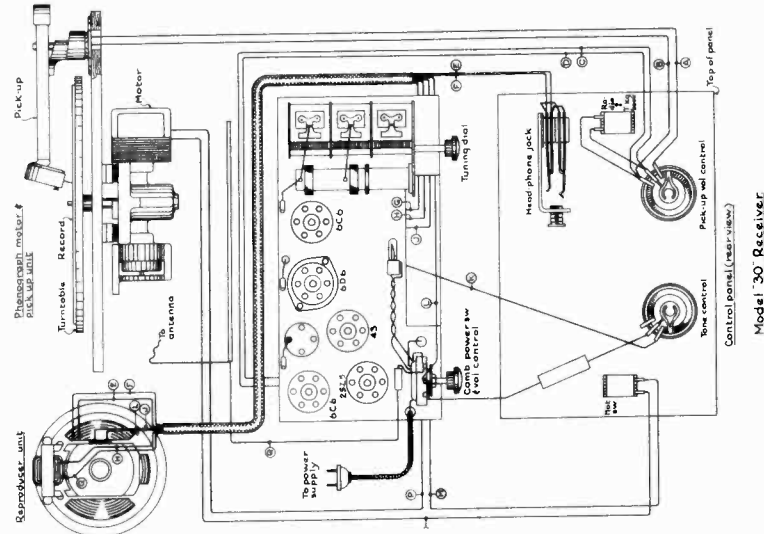
AMERICAN FOUNDATION FOR BLIND, INC.

Chassis Wiring



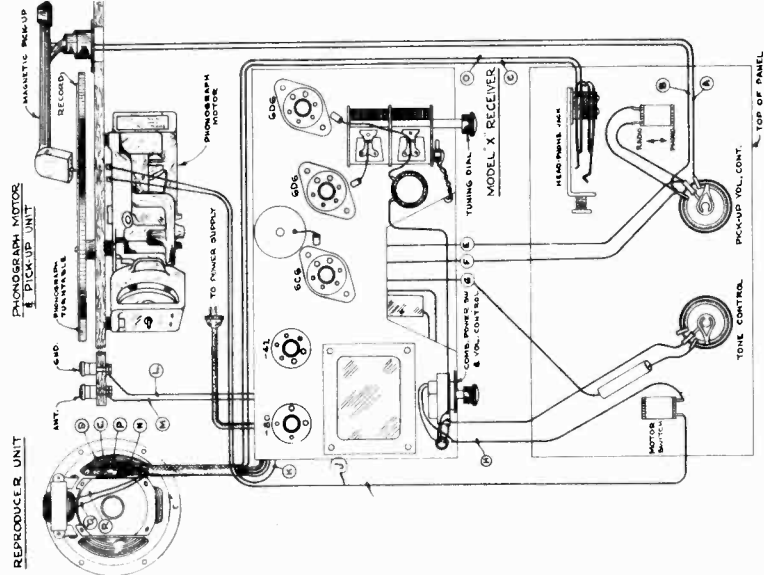
NOTE:  
1. For operating instructions on this radio and reproducing unit see detailed "Instruction Sheet" for Model U equipment.  
2. For actual connections of wires with code designation (A) to (G) refer to schematic wiring diagram.

OPERATING INSTRUCTIONS - MODEL U RADIO  
CAUTION: Single phase alternating current, less than 100 volts, 60 cycles single phase alternating current or direct current.  
INSTALLATION: An outdoor antenna approx. 20 feet long located away from power lines and above nearby steel buildings will give best results. A good ground connection will help to reduce interfering power noise.



NOTE:  
1. For operating instructions on this radio and reproducing unit see detailed "Instruction Sheet" for Model 30 equipment.  
2. For actual connections of wires with code designation (A) to (G) refer to schematic wiring diagram.

OPERATING INSTRUCTIONS - MODEL 30 RADIO  
CAUTION: Single phase alternating current, less than 100 volts, 60 cycles single phase alternating current.  
INSTALLATION: An outdoor antenna approx. 20 feet long located away from power lines and above nearby steel buildings will give best results. A good ground connection will help to reduce interfering power noise.



NOTE:  
1. For operating instructions on this radio and reproducing unit see detailed "Instruction Sheet" for Model X equipment.  
2. For actual connections of wires with code designation (A) to (G) refer to schematic wiring diagram.

CAUTION: Do not attempt to operate on current other than 100 volt, 60 cycle, single phase alternating current.



**MODEL F-516**  
**Socket, Trimmers**  
**Voltage, Alignment**

AMRAD CORP.

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	G	P2	K
6D6	Osc.-Mod.	6.3	210	120	0	28	—	31
6B5	I. F. Amp.	6.3	210	120	3	0	—	8.5
6B5	Output	6.3	200	—	—	0	—	8.0
80	Rectifier	4.9	280	—	—	0	210	—

Measured on 117.5 Volt—60 Cycle Line.  
 Power Consumption Approximately 48 Watts.  
 Power Output Approximately 2.5 Watts.

Fig. 3—Bottom View—Model F-516

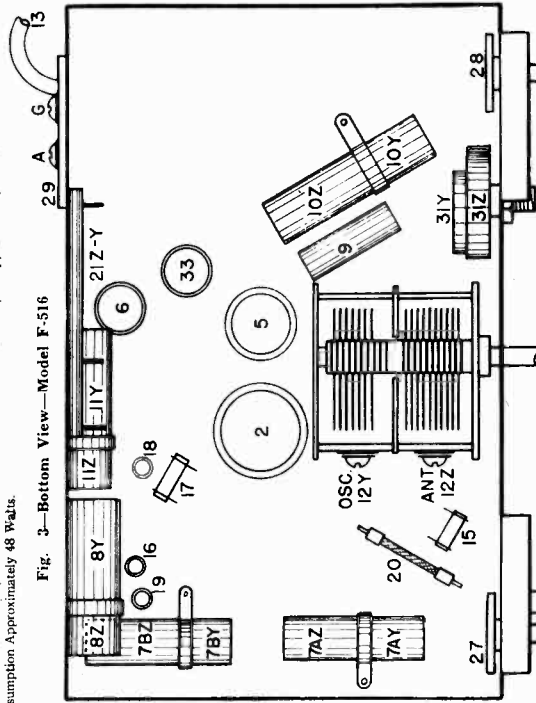
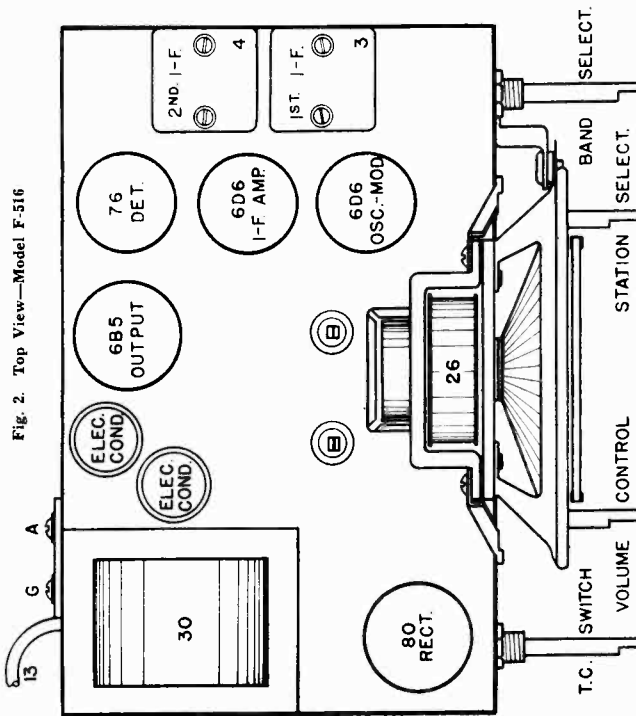


Fig. 2. Top View—Model F-516



**SPECIFICATIONS**

This model radio is a five-tube superheterodyne receiver, designed for operation on an ALTERNATING CURRENT power supply. It is available with either of the following types of power transformers, 110 volt—60 cycles, 110 volt—25 cycles or 220 volt—25 cycles.

It is a two band receiver, tuning from approximately 540 to 1570 kilocycles in the American Broadcast Band and from 1570 to 4000 kilocycles in the Police and Amateur Band.

The tubes used are 6D6 Oscillator-Modulator, 6D6 I. F. Amplifier, 76 Detector, 6B5 Output and type 80 Rectifier.

**SOCKET VOLTAGES**

The tube socket voltages are measured from the socket contacts to the chassis with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and no signal input. Readings may vary plus or minus 10% of values given. Filament readings are taken with a low range A. C. voltmeter.

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to P1 and the other terminal to P2 of the 6B5 output tube. Looking at the bottom of the tube with the filament prongs toward you P1 will be the first prong to the left of the filaments and P2 will be next to P1. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. series condenser to the top cap of the 6D6 I. F. tube, leaving the tube's grid clip in place. KEEP THE GENERATOR LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.  
 (b) Connect the ground lead of the signal generator to the chassis frame or ground terminal of the receiver.

**ALIGNMENT PROCEDURE**

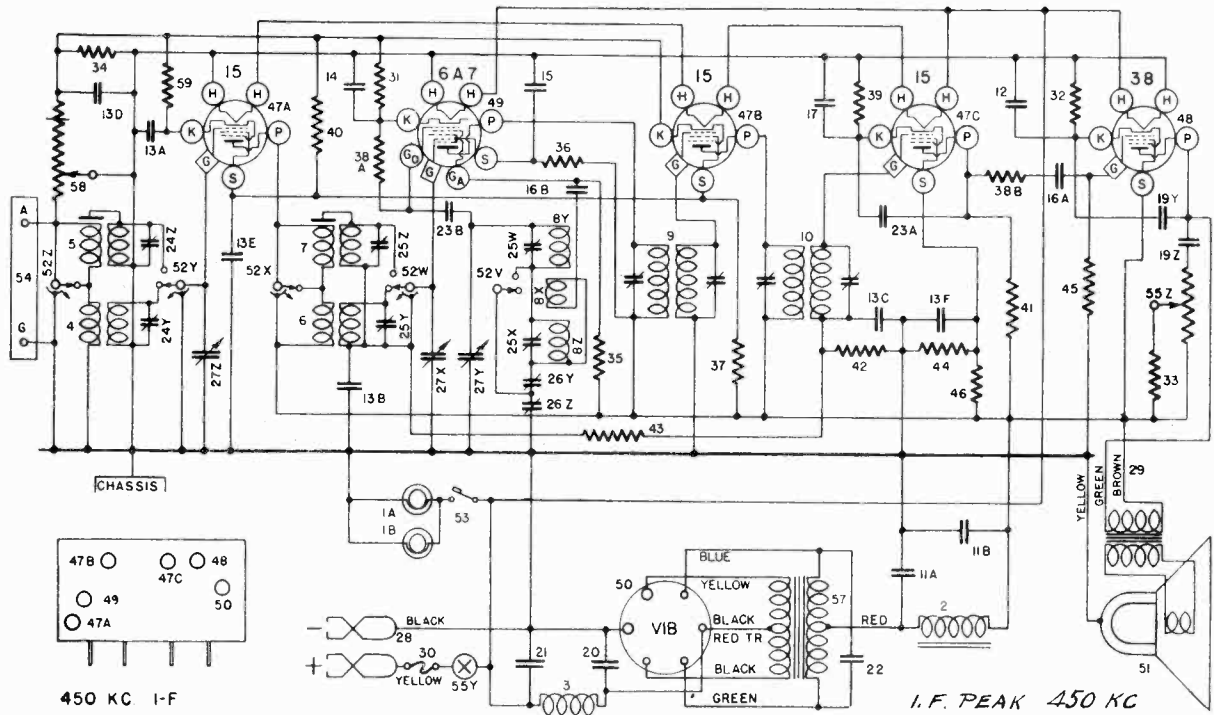
- Set the signal generator to 450 kilocycles.
- Rotate the receiver tuning condenser until the rotor plates are completely out of mesh.
- Turn the hand selector switch to the right hand position. (Short Wave Band).
- Turn the volume control of the receiver on full.
- With the signal generator set to the lowest usable output level adjust the I. F. trimmer condensers located on top of the 2nd I. F. transformers, Fig. 2, for maximum output.
- Remove the signal generator lead from the 6D6 I. F. tube and connect it to the top cap of the 6D6 Osc.-Mod. tube, leaving the tube's grid clip in place.
- Adjust the trimmer condensers located on top of the 1st I. F. transformer for maximum output. DO NOT RETURN THE 2ND I. F. TRANSFORMER.
- Aligning R. F. Circuits.
  - Turn the hand selector switch to the left hand position. (Broadcast Band).
  - Leave the receiver tuning condenser rotor plates completely out of mesh.
- Connect the output lead from the signal generator through a .00025 mfd. series condenser to the antenna terminal of the receiver.
- Set the signal generator to approximately 1570 kilocycles.
- Adjust the trimmer on the "Osc." section of the tuning condenser gang for maximum output. (Fig. 3).
- Set the signal generator to 1400 kilocycles.
- Tune in the 1400 kilocycle signal with the station selector for maximum output.

**NOTE:** Do not disturb the setting of the "Osc." trimmer as this is adjusted at 1570 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.  
 (b) Adjust the trimmer on the "Ant." section of the tuning condenser gang for maximum output.  
**NOTE:** There are no adjustments on this receiver for the Police Band.

AMRAD CORP.

MODEL F-546  
Schematic  
Parts

FIG. 1. WIRING DIAGRAM OF MODEL F-546



PARTS LIST—MODEL F-546

Item No.	Part No.	Description	Item No.	Part No.	Description
1AB	W -37922	Dial Bulb	W	-33310A	Fuse Cover
	G3 -37965	Dial Light Socket Assembly	W	-34223	Fuse Cover Insulator
2	G27 -24628	Filter Choke	W	-4072	Thumb Screw (Cover)
3	G16 -28067	R-F Filter Choke	W	-21964	Resistor 165 Ohm 1/2W. Flexible
4	G114 -32000	Ant Coil-B-C-B	32	W -21452	Resistor 1100 Ohm 1/2W. Flexible
5	G115 -32000	Ant Coil-H-F-B	33	W -27503	Resistor 1400 Ohm 1/2W. Flexible
6	G81 -32001	R-F Coil-B-C-B	34	W -23013	Resistor 2000 Ohm 1/2W. Flexible
7	G82 -32001	R-F Coil-H-F-B	35	W -37485	Resistor 15,000 Ohm 1/2W. Car.
8	G104 -32002	Double Osc. Coil.	36	W -33390	Resistor 30,000 Ohm 1/2W. Car.
9	G109 -32004	1st I-F Assembly	37	W -37472	Resistor 50,000 Ohm 1/2W. Car.
10	G110 -32004	2nd I-F Assembly	38A	W -21237A	Resistor 60,000 Ohm 1/2W. Car.
11A	W -36057	Condenser 40 Mfd. 300 V. Electrolytic	38B	W -21237A	Resistor 60,000 Ohm 1/2W. Car.
11B	W -36057	Condenser 40 Mfd. 300 V. Electrolytic	39	W -36761	Resistor 40,000 Ohm 1/2W. INS.
12	W -41195	Condenser 12 Mfd. 25 V. Electrolytic	40	W -23403	Resistor 150,000 Ohm 1/2W. Car.
13A	W -35936	Condenser .05 Mfd. 200 V.	41	W -35930	Resistor 200,000 Ohm 1/2W. INS.
13E	W -35936	Condenser .05 Mfd. 200 V.	42	W -23785	Resistor 500,000 Ohm 1/2W. Car.
14	W -32380	Condenser .05 Mfd. 200 V.	43	W -21454	Resistor 1 Megohm 1/2W. Car.
15	W -30488	Condenser .02 Mfd. 400 V.	44	W -35602	Resistor 1 Megohm 1/2W. Ins.
16A	W -34647	Condenser .006 Mfd. 400 V.	45	W -37245	Resistor 1.5 Megohm 1/2W. Car.
16B	W -34647	Condenser .006 Mfd. 400 V.	46	W -36688	Resistor 3 Megohm 1/2W. Ins.
17	W -34712	Condenser .25 Mfd. 160 V.	47A	G88 -28807	Socket Type 15
18	W -24049B	Condenser .1 Mfd. 200 V.	47B	G88 -28807	Socket Type 15
19Z	W -25537A	Condenser .03 Mfd. 400 V.	47C	G88 -28807	Socket Type 15
19Y	W -25537A	Condenser .03 Mfd. 400 V.	48	G15 -28807	Socket Type 38
20	W -37174	Condenser 5 Mfd. 160 V.	49	G47 -28807	Socket Type 6A7
21	W -37190	Condenser 02 Mfd. 160 V.	50	G92 -28807	Socket Type V11.
22	W -37214	Condenser .001 Mfd. 1000 V.	W	-27981A	Tube Shield Base
23A	G2 -34002	Condenser .0001 Mfd. (Molded)	W	-40911	Tube Shield
23B	G2 -34002	Condenser .0001 Mfd. (Molded)	51	331J-3	Speaker Spec. R-6000 D-1 (Table)
24	W -37986	2 Section Shunt Trimmer Condenser		-41434	Cone Assembly for Above Speaker
25	W -41247	4 Section Shunt Trimmer Condenser		-41454	Output Transformer for Above Speaker
26	W -41288	2 Section Osc. Series Trimmer		-41458	Mtg. Ring (Cardboard) for Above Cone
27	G23 -33001	3 Section Var. Tuning Condenser		-43-PJ-3	Speaker Spec. R-8000 B-3 (Console)
	C -41669	Dial (Glass) Calibrated		-41452	Cone Assembly for Above Cone
	B -41599	Pointer Disc		-41459	Mtg. Ring (Cardboard) for Above Spkr
	W -40486	Pointer Disc Screw	52	B -41253A	Band Selector Switch
	W -41314B	Shaft Assembly (Sprocket etc.)	53	W -41068A	Dial Light Switch
	B -41316	Support Bracket (Bearing)	54	G10 -26719	Ant. & Grd. Terminal Assembly
	B -41315A	Sprocket Assembly (Driver)	55Z	W -32908	Tone Control
	W -40909	Spring Washer (Shaft)	55Y	W -32908	On-off Switch
	W -31940A	Snap Spring (Shaft)	56	W -37216	Vibrator
	W -41317A	Lower glass Support Bracket	57	G11 -32769	Power Transformer
	W -41318A	Upper glass Support Bracket R-H	58	W -41252	Volume Control (10,000 Ohm)
	W -41319A	Upper glass Support Bracket L-H	59	W -35467	Resistor 220 Ohm 1/2W. Flexible
	W -41320A	Drive Chain		-34903	Battery clip W (+) (Pos.)
	W -41743	Chain Take up Spring		-34904	Battery Clip W (-) (Neg.)
28	MG25 -37103	Battery Cable Assembly	B	-41514	Escutcheon
29	G9 -35696	Speaker Cable	W	-28760B	Escutcheon Pin
30	W -37624	Fuse (4 Amp.)	W	-41221	Upper Knob (1) Dial Light
	G2 -33339	Fuse Panel Assembly	W	-41222	Lower Knob (1) Station Select.
			W	-41366A	Knob (1) Band Select.
			W	-41224	Knob (2) V. C. & T. C.



**MODEL F-546**  
**Socket, Trimmers**  
**Voltage, Alignment**

AMRAD CORP.

Fig. 3. Bottom View—

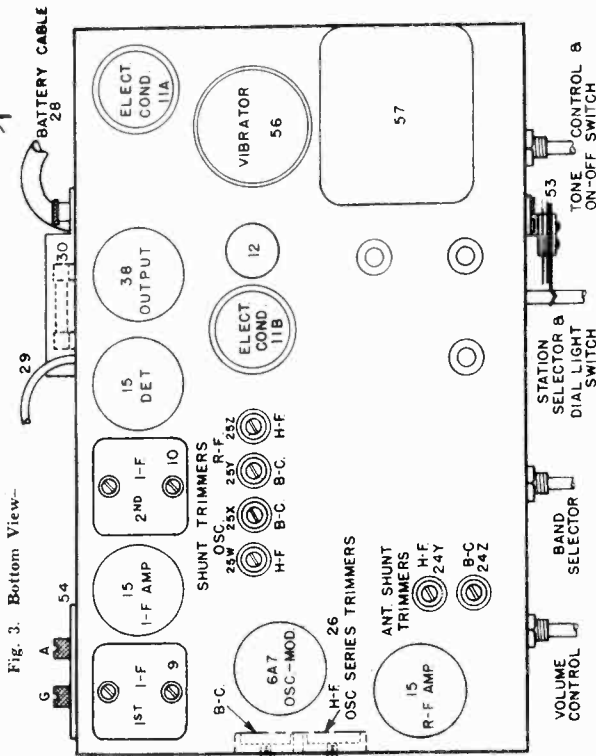
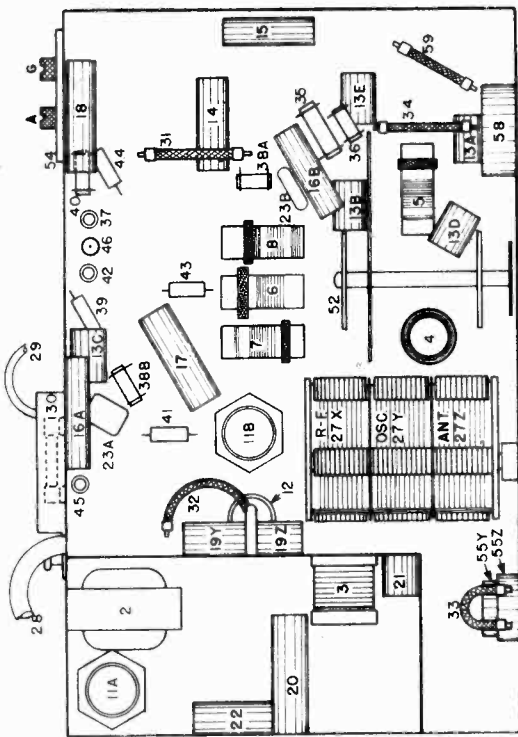


Fig. 2. Top View—



**TUBE SOCKET VOLTAGE READINGS**

Tube	P	H	S	K	G <sub>1</sub>	G <sub>2</sub>
15	180	2.0	96	2.6	—	—
6A7	180	6.0	84	3.8	130	Mg
15	180	2.0	84	2.8	—	—
38	170	6.0	180	1.3	—	—

Power consumption approximately 2.2 amperes at 6.0 volts.  
 Power Output approximately 7 watt.

**SPECIFICATIONS**

The Amrad Model F-546 is a five-tube superheterodyne receiver designed for operation from a six-volt storage battery. It contains a completely shielded, built-in GREEN 540-1730 Kilocycles RED 2.3-7.0 Megacycles vibrator.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the chassis. Voltage readings should be taken with a 1000 ohm per volt, 250 volt power supply unit which employs a self-rectifying type vibrator.

The tuning range of the receiver is from 540 to 7000 kilocycles and is divided into two bands as follows: (American Broadcast Band) (High Frequency Band)

voltmeter (except filaments) with the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

**SIGNAL INPUT FREQUENCIES**

American Broadcast Band	Shunt Alignment	Series Alignment
(GREEN)	1400 Kc	600 Kc
High Frequency Band	8000 Kc	2500 Kc

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 38 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

- (a) Connect the output signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.
- (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- (c) Turn the band selector switch to the right (High Frequency Band).
- (d) Set the signal generator to 450 kilocycles.
- (e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.
- (f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR FREQUENCY WHICH WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A.1") terminal of the receiver through a .00025 mfd. condenser.

Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

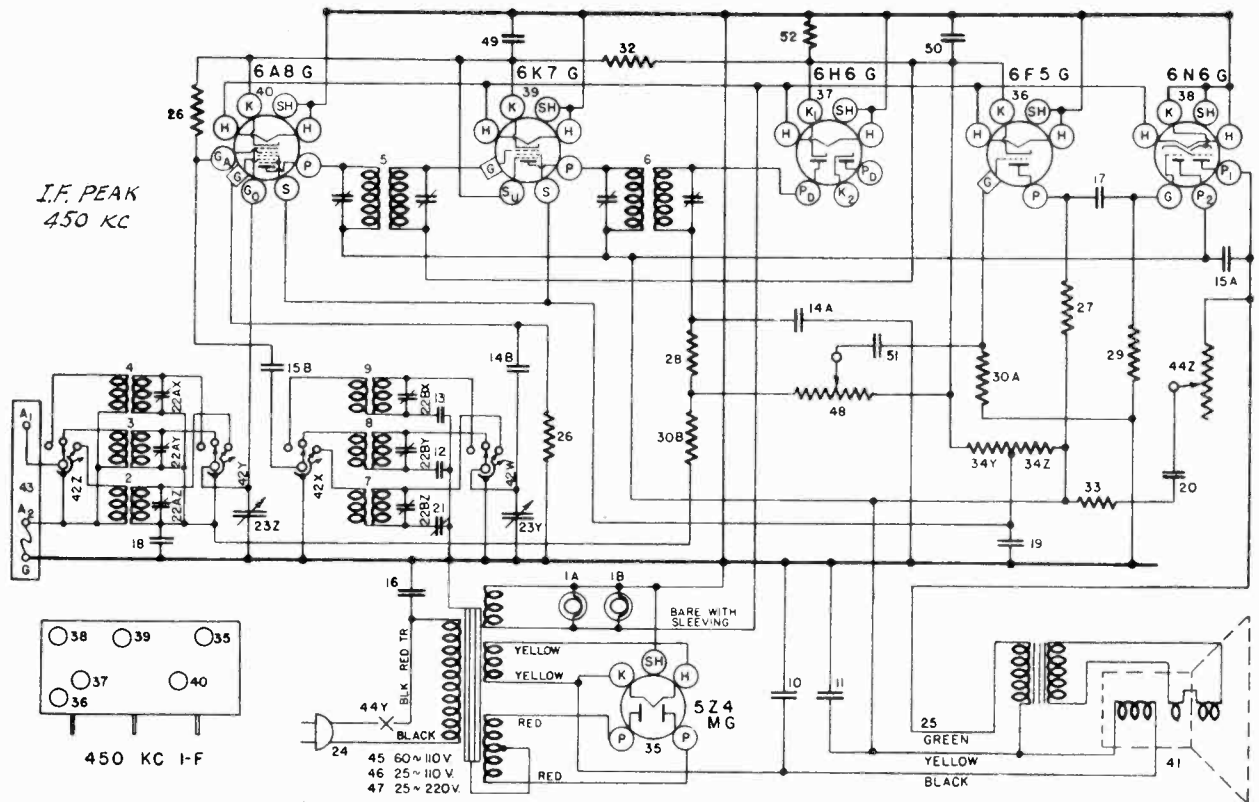
Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal generator for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. NOTE: When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune in the signal at both the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To adjust the "series" trimmers set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

AMRAD CORP.

MODEL F-616  
Schematic  
Parts

FIG. 1. WIRING DIAGRAM OF MODEL F-616



PARTS LIST—MODEL F-616

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description		
1A	W	-37922	Bulb Dial Light	32	W	-21964	Resistor 165 Ohm, 1/4 W.
1B	W	-37922	Bulb Dial Light	33	W	-27503	Resistor 1400 Ohm, 1/4 W.
	G3	-37965	Dial Light Socket Assembly	34Z	W	-32301	Candohm 10,000 Ohm
2	G104	-32000	Ant. Coil B. C. B.	34Y	W	-32301	Candohm 15,000 Ohm
3	G103	-32000	Ant. Coil Pol. B.	35	G166	-36400	Socket 5Z4
4	G105	-32000	Ant. Coil H. F. B.	36	G158	-36400	Socket 6F5
5	G99	-32004	1st I-F Assembly	37	G155	-36400	Socket 6H6
6	G100	-32004	2nd I-F Assembly	38	G165	-36400	Socket 6N6
7	G91	-32002	Osc. Coil B. C. B.	39	G151	-36400	Socket 6K7
8	G92	-32002	Osc. Coil Pol. B.	40	G156	-36400	Socket 6A8
9	G93	-32002	Osc. Coil H. F. B.	W	-40911		Tube Shield
10	W	-36055	Condenser 35 Mfd. 400 V.	W	-27981A		Tube Shield Base
11	W	-36057	Condenser 40 Mfd. 300 V.	41	-40971		Speaker Spec. 332-BJ-3
12	G7	-34007	Condenser 1750Mmfd. Pol. Osc. Series	42Z			
13	G8	-34007	Condenser 1350Mmfd. H.-F. Osc. Series	42W			
14A	G2	-34002	Condenser 0.0001 Mfd.	43	G27	-26719	Ant & Grd. Terminal Board
14B	G2	-34002	Condenser 0.0001 Mfd.	44Z			Tone Control (100,000 Ohm)
15A	W	-35139	Condenser 0.004 Mfd. 400 V.	44Y			On-Off Switch
15B	W	-35139	Condenser 0.004 Mfd. 400 V.	45	G12	-28500	Power Transformer 60 Cy. 110 V.
16	W	-30805	Condenser 0.01 Mfd. 400 V.	46	G13	-28500	Power Transformer 25 Cy. 110 V.
17	W	-30488	Condenser 0.02 Mfd. 400 V.	47	G14	-28500	Power Transformer 25 Cy. 220 V.
18	W	-35936	Condenser 0.05 Mfd. 200 V.	48			Volume Control (1 Meg.)
19	W	-24049B	Condenser 0.1 Mfd. 200 V.	49	W	-29910A	Condenser 0.25 Mfd. 200 V.
20	W	-22688	Condenser 0.1 Mfd. 400 V.	50	W	-28621	Condenser 0.02 Mfd. 200 V.
21	W	-40769	Condenser B-C Osc. Series Trimmer	51	W	-35758	Condenser 0.008 Mfd. 400 V.
22AZ				52	W	-25357	Resistor 75 Ohms, 1/4 W.
22AX				MG27	-41510		Dial Drive Assembly Complete
22BZ					-41597		Drive Unit only
22BX				C	-41540		Glass Dial, Calibrated
23Z	G21	-33001	2 Section Var. Tuning Cond. Gang.		-41596		Pointer Disc
23Y	B	-33906A	Power Cord & Plug		-41582		Drive Cable
24	G3	-35696	Speaker Cable		-41584		Drive Coupling Unit
25					-41587		Pointer Mtg. Screw
26				B	-41929		Escutcheon
27				D	-30		Escutcheon Mtg. Screw
28				W	-37339		Knob (3)
29				W	-40192B		Knob (1)
30A				W	36117		Rubber Mtg. Foot
30B							
31							

**MODEL F-616**  
**Socket, Trimmers**  
**Voltage, Alignment**

AMRAD CORP.

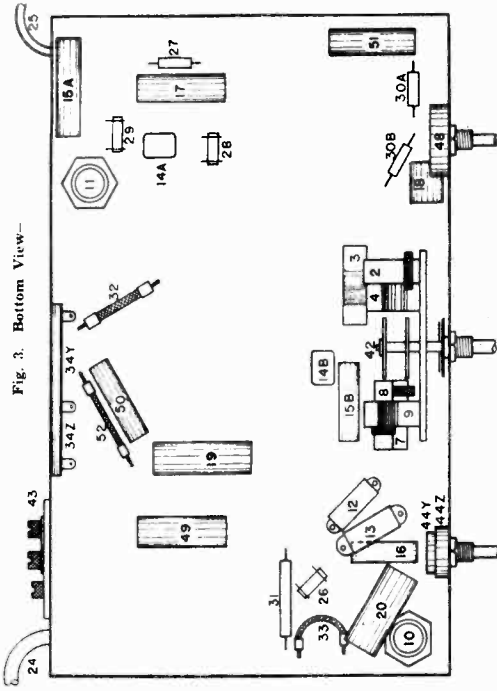


Fig. 3. Bottom View—

**MODEL F-616**

June, 1936

octal bases. If glass tubes are replaced with metal tubes or metal tubes are replaced with glass tubes it will be necessary to completely realign the circuits of the receiver.

It is a three band receiver and the dial is divided into three sections as follows:

**GREEN** 540-1800 Kilocycles (American Broadcast Band)  
**WHITE** 8-10 Megacycles (Police and Amateurs)  
**RED** 8-18.8 Megacycles (High Frequency Bands)

**SPECIFICATIONS**

The Amrad Radio Model F-616 is a six-tube superheterodyne receiver designed to operate on an ALTERNATING CURRENT power supply. It is designed to use either metal tubes or the equivalent glass tubes with

ever in operating condition and no signal input. The filament voltages should be measured with an accurate low range A-C voltmeter. (Approximately 0.10 volts). Readings may vary plus or minus 10% of values given.

**SOCKET VOLTAGES**

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500 volt D.C. voltmeter (except filaments) with the re-

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	Su	S	G	K	Go	Ga
638-G	Osc. Modulator	6.3	240	—	95	0	4.5	-5 to -30	115
6K7-G	I-F Amplifier	6.3	240	—	95	4.5	0	—	—
6B7-G	Diode Detector	6.3	0	—	—	0	0	—	—
6B5-G	A-F Amplifier	6.3	150	—	—	0	1.5	—	—
5Z4-VG	Rectifier	4.9	310	240	—	—	0	—	—

MEASURED ON 117.5 VOLT-50 CYCLE POWER SUPPLY.  
 POWER CONSUMPTION APPROXIMATELY 80 WATTS.  
 POWER OUTPUT APPROXIMATELY 4 WATTS.

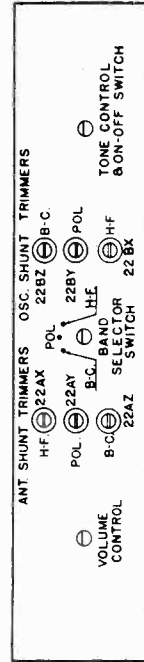


Fig. 4. Front View—Model F-616

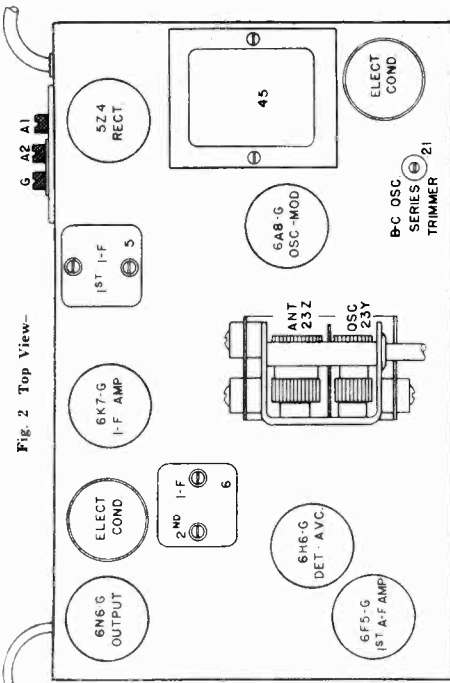


Fig. 2. Top View—

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect the output meter to the two plates of the 6N6 Output Tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning I-F Amplifier to 450 Kilocycles.**

(1) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(2) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(3) Turn the band selector switch to the High Frequency Band.

(4) Set the signal generator to 450 kilocycles.

(5) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(6) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

(7) Check operations (5) and (6) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.** When aligning the R-F Amplifier, the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the GREEN and WHITE bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (GREEN band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc." and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" trimmers. **DO NOT READJUST THE "OSC." TRIMMER.**

**NOTE:** When shunt aligning the WHITE and RED bands care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

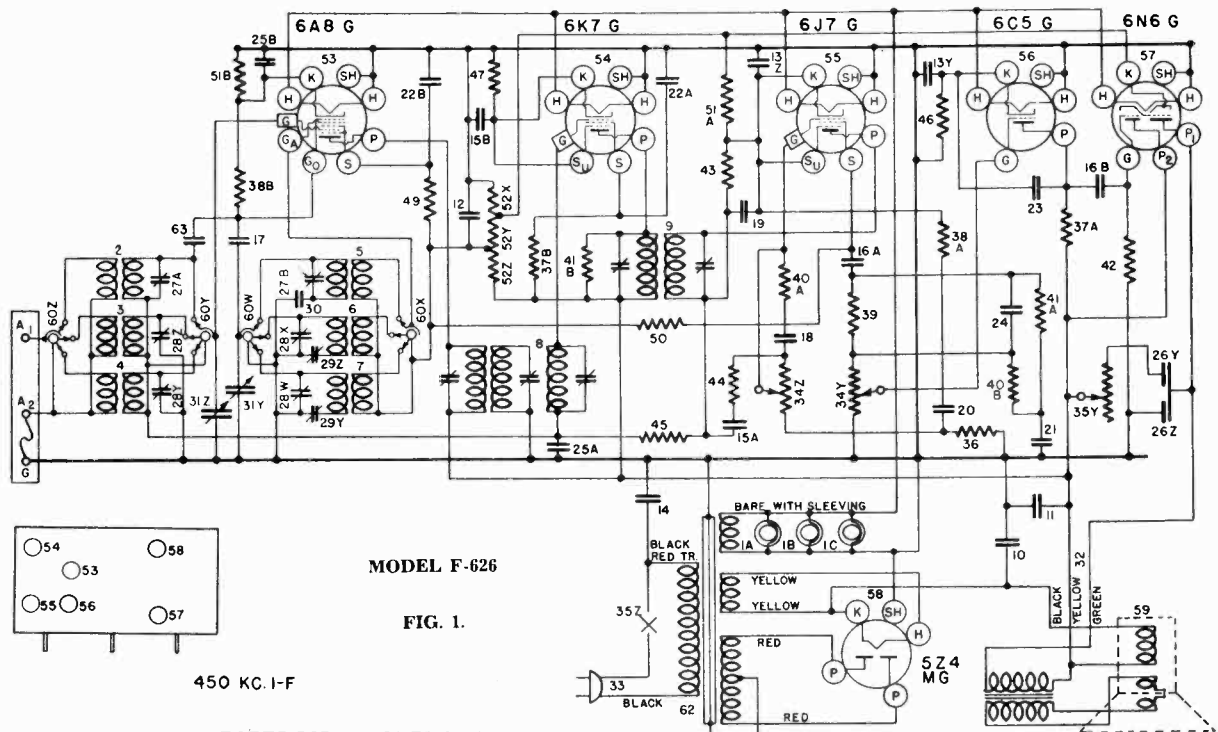
(b) To align the series trimmer (Item 21, Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

Series Alignment	Shunt Alignment
(GREEN) 1700 Kilocycles	600 Kilocycles
(WHITE) 6000 Kilocycles	1700 Kilocycles
(RED) 18000 Kilocycles	18000 Kilocycles

AMRAD CORP.

MODEL F-626  
Schematic  
Parts



MODEL F-626

FIG. 1.

450 KC. I-F

PARTS LIST—MODEL F-626

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	W -37922	Bulb, Dial Light	38B	-36761	Resistor, 40,000 Ohm, 1/4 W., Insul.
1A	W -37922	Bulb, Dial Light	39	-21454	Resistor, 1 Megohm, 1/4 W.
1B	W -37922	Bulb, Dial Light	40A	-34020	Resistor, 250,000 Ohm, 1/4 W.
1C	W -37922	Bulb, Indicator Light	40B	-34020	Resistor, 250,000 Ohm, 1/4 W.
2	G92 -32000	Coil, Ant. 6000-18000 Kc.	41A	-37590	Resistor, 750,000 Ohm, 1/4 W.
3	G90 -32000	Coil, Ant. 1800-6000 Kc.	41B	-37590	Resistor, 750,000 Ohm, 1/4 W.
4	G91 -32000	Coil, Ant. 540-18000 Kc.	42	-36322	Resistor, 500,000 Ohm, 1/4 W.
5	G84 -32002	Coil, Osc. 6000-18000 Kc.	43	-33344	Resistor, 400,000 Ohm, 1/4 W.
6	G83 -32002	Coil, Osc. 1800-6000 Kc.	44	-23403	Resistor, 150,000 Ohm, 1/4 W.
7	G82 -32002	Coil, Osc. 540-1800 Kc.	45	-37245	Resistor, 1.5 Megohm, 1/4 W.
8	G101 -32004	Coil, 1st I-F Assm.	46	-21876	Resistor, 10,000 Ohm, 1/4 W.
9	G102 -32004	Coil, 2nd I-F Assm.	47	W -22514	Resistor, 750 Ohm, 1/2 W., Flex.
10	W -36055	Condenser, 35 mfd., 400 V.	49	-22931	Resistor, 15,000 Ohm, 1/4 W.
11	W -36057	Condenser, 40 mfd., 300 V.	50	-21875	Resistor, 100,000 Ohm, 1/4 W.
12	W -40325	Condenser, 50 mfd., 150 V.	51A	W -28106	Resistor, 500 Ohm, 1/4 W. Flex.
13Z	W -37778	Condenser, 12 mfd., 25 V.	51B	W -28106	Resistor, 500 Ohm, 1/4 W. Flex.
13Y	W -37778	Condenser, 12 mfd., 25 V.	52Z	W -28106	Resistor, 10,000 Ohm
14	W -30805	Condenser, 0.1 mfd., 400 V.	52Y	-37829A	Resistor, 25,000 Ohm Candohm
15A	W -36541	Condenser, 0.2 mfd., 160 V.	52X		Resistor, 60 Ohm
15B	W -36541	Condenser, .02 mfd., 160 V.	53	G156-36400	Socket 6A8
16A	W -32780B	Condenser, .05 mfd., 400 V.	54	G151-36400	Socket 6K7
16B	W -32780B	Condenser, .05 mfd., 400 V.	55	G157-36400	Socket 6J7
17	G1 -34002	Condenser, .00025 mfd., (molded)	56	G152-36400	Socket 6C5
18	G6 -34002	Condenser, .00025 mfd., (molded)	57	G165-36400	Socket 6N6
19	G2 -34002	Condenser, .0001 mfd., (molded)	58	G154-36400	Socket 5Z4
20	W -30323	Condenser, .01 mfd., 200 V.	59	532-CJ-3"M"	Speaker Special 1-D-235
21	W -37988	Condenser, .017 mfd., 200 V.		-40100	Cone Assembly for 532-CJ-3"M"
22A	W -23142	Condenser, .02 mfd., 400 V.		-40406	Field Coil for 532-CJ-3"M"
22B	W -23142	Condenser, .02 mfd., 400 V.		-40412	Output Trans. for 532-CJ-3"M"
23	W -27540	Condenser, .0005 mfd., 400 V.	60	B -37906D	Switch, 2 Sec. Band Selector
24	G5 -34002	Condenser, .00005 mfd., (molded)	61	G27 -26719	Terminal Board, Ant. & Grand.
25A	W -35936	Condenser, .05 mfd., 200 V.	62	G15 -28500	Transformer, Power 110-60 Cy.
25B	W -35936	Condenser, .05 mfd., 200 V.		G16 -28500	Transformer, Power 110-25 Cy.
26Z	W -31052	Condenser, .004 mfd., 400 V.		G17 -28500	Transformer, Power 220-25 Cy.
26Y	W -31052	Condenser, .05 mfd., 400 V.	W -27981A		Base, Tube Shield
27A	W -37954	Condenser, H-F Ant. Shunt Trim.	W -40531		Belt, Drive
27B	W -37954	Condenser, H-F Ant. Shunt Trim.	W -22334		Cable, Indicator Control
28Z		Condenser, Pol. Ant. Shunt Trim.	W -40537		Coupling, Flexible Drive
28Y		Condenser, Pol. Osc. Shunt Trim.	MG39	-41522	Dial Assembly Complete
28X	W -37822A	Condenser, B-C Ant. Shunt Trim.	W -41532		Escutcheon, Cabinet
28W		Condenser, B-C Osc. Shunt Trim.	W -41525		Face, Calibrated Glass Dial
29Z	G31 -33006	Condenser, Pol. Osc. Series Trim.	W -42063		Gasket, Escutcheon Felt
29Y	G31 -33006	Condenser, B-C Osc. Series Trim.	W -42056		Hand, Long
30	G17 -34000	Condenser, .0053 mfd., H-F Osc.	W -42057		Hand, Short
31Z	G19 -33001	Condenser, Var. Tuning Gang	W -37339		Knob, 3 required
31Y	G19 -33001	Condenser, Var. Tuning Gang	W -40192B		Knob, 1 required
32	G4 -35696	Cable, Speaker	B -41232		Lens, Dial
33	B -33906A	Cable & Plug, Power Supply	W -37909		Pulley, Indicator Cable
34Z	W -37907	Vol. Cont., 1st A-F Control, 3 Meg.	W -40911		Shield, Tube
34Y	W -37908	Control, Tone	W -40670		Shield, Dial Light
35Z	W -37908	Switch, On-Off	W -37965		Socket, Indicator & Dial Light
36	-21455	Resistor, 300,000 Ohm, 1/4 W.	G3	-41656	Spring, Dial Lens Retaining
37A	-5469A	Resistor, 100,000 Ohm, 1 W.	W -42062		Paper Backing for Dial
37B	-5469A	Resistor, 100,000 Ohm, 1 W.	W -40486		Hand Mtg. Screw
38A	-36761	Resistor, 40,000 Ohm, 1/4 W., Insul.	D -30		Escutcheon Mtg. Screw

**MODEL F-626**  
**Socket, Trimmers**  
**Voltage, Alignment**

AMRAD CORP.

**MODEL F-626**

June, 1936

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	P <sub>1</sub>	S	Su	G	K	Ca	Ga
6A8-G	Osc-Modulator	6.3	263	—	100	—	0	0	0	140
6K7-G	I-F Amplifier	6.3	265	—	120	—	0	0	0	—
6A7-C	2nd I-F Amplifier	6.3	140	—	2.0	—	0	0	0	—
6A7-C	2nd A-F Amplifier	6.3	140	—	2.0	—	0	0	0	—
6N6-G	Rectifier	6.3	270	255	—	—	0	0	0	—
5Z4-MG	Rectifier	6.3	270	255	—	—	0	0	0	—

POWER SUPPLY: 115 VOLT, 60 CYCLES, 70 WATT SUPPLY.  
 POWER CONSUMPTION APPROXIMATELY 78 WATTS.  
 POWER OUTPUT APPROXIMATELY 3 WATTS.

**SHUNT TRIMMERS**

Ant	Osc	High-Frequency
27A	27B	28X
28Y	28Z	28W

Fig. 4. Front View—

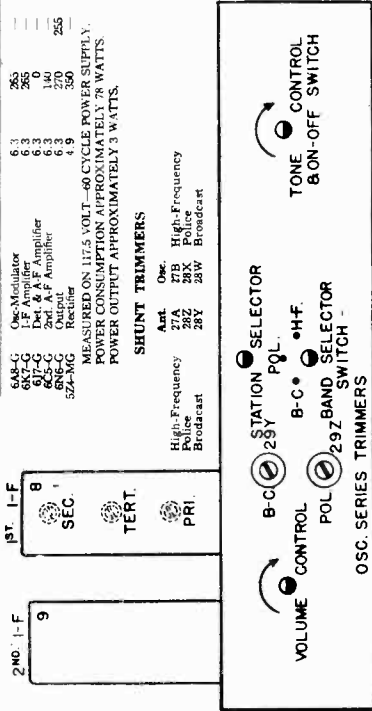


Fig. 2. Top View—

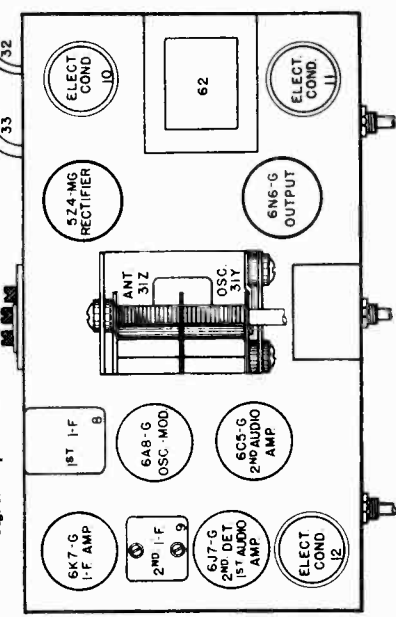
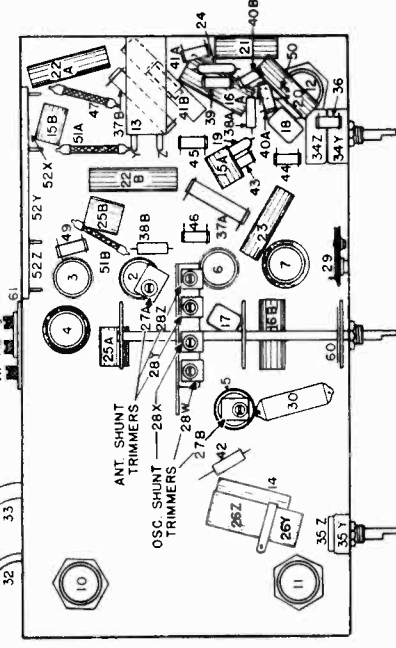


Fig. 3. Bottom View—



**SPECIFICATIONS**

The Amrad Model F-626 radio is a six-tube superheterodyne receiver designed for operation in an ALTERNATE BAND CURRENT. It is available with either of the following types of power transformers: 110 volt—60 cycles, 110 volt—25 cycles or 220 volt—25 cycles.

540 1800 Kilocycles (Police and Amateurs)  
 GREEN 1800-6000 Kilocycles (High Frequency Band)  
 WHITE 5800-18500 Kilocycles (RED)

**SOCKET VOLTAGES**

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500 volt D.C. voltmeter (except filaments) with the receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A.C. voltmeter (Approximately 0.10 volts). Reading may vary plus or minus 10% of values given.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. If it is definitely known that readjustment is necessary the circuits may be most accurately aligned with the aid of an oscilloscope. However, if an oscilloscope is not available a good alignment may be obtained by means of a signal generator and an output meter. The following procedure is carefully observed.

**CONNECTING OUTPUT METR**

Connect the two terminals of the output meter to the two plates of the 6N6 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (1 mid. or larger not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

- Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEADS AS FAR AWAY AS POSSIBLE FROM THE GRID LEADS OF THE OTHER GREEN GRID TUBES.
- Turn the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- Set the signal generator to 450 kilocycles.
- Adjust the trimmer condensers located on top of the 2nd I-F transformer for maximum output (Fig. 2).

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

- Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place.
- Close the middle trimmer (Tert. Fig. 4) on the 1st I-F transformer so that it is moderately tight. (Do not force adjusting screw).
- Adjust the top trimmer on the 1st I-F transformer for maximum output.
- Adjust the bottom trimmer on the 1st I-F transformer for maximum output.
- Transfer the signal generator output lead from the 6A8 tube to the "Ant" terminal of the receiver and the

increase the output of the signal generator if necessary. (1) Check the adjustment of the bottom trimmer of the TOP TRIMMER. DO NOT READJUST THE TOP TRIMMER.

(k) Adjust the middle trimmer of the 1st I-F transformer by opening condenser until maximum output is obtained. DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.

**2. Aligning R-F Amplifier.**

When aligning the R-F Amplifier, the output lead of the signal generator should be connected to the "ANT." terminal of the receiver. For the GREEN and WHITE bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shut aligned and then series aligned where provision is made for series alignment (GREEN and WHITE bands). The band selector switch should be set for band being aligned and the trimmer should be adjusted so that the meter will be set to the frequency indicated (e) for each adjustment.

(a) Adjust the "OSC." and "ANT." shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned in with maximum output and then check the adjustments of the "ANT" trimmers. DO NOT READJUST the "OSC." TRIMMER.

**NOTE:** When shut aligning the WHITE and RED bands care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental frequency. To check this, try to tune in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned in at both positions but much stronger at the correct position.

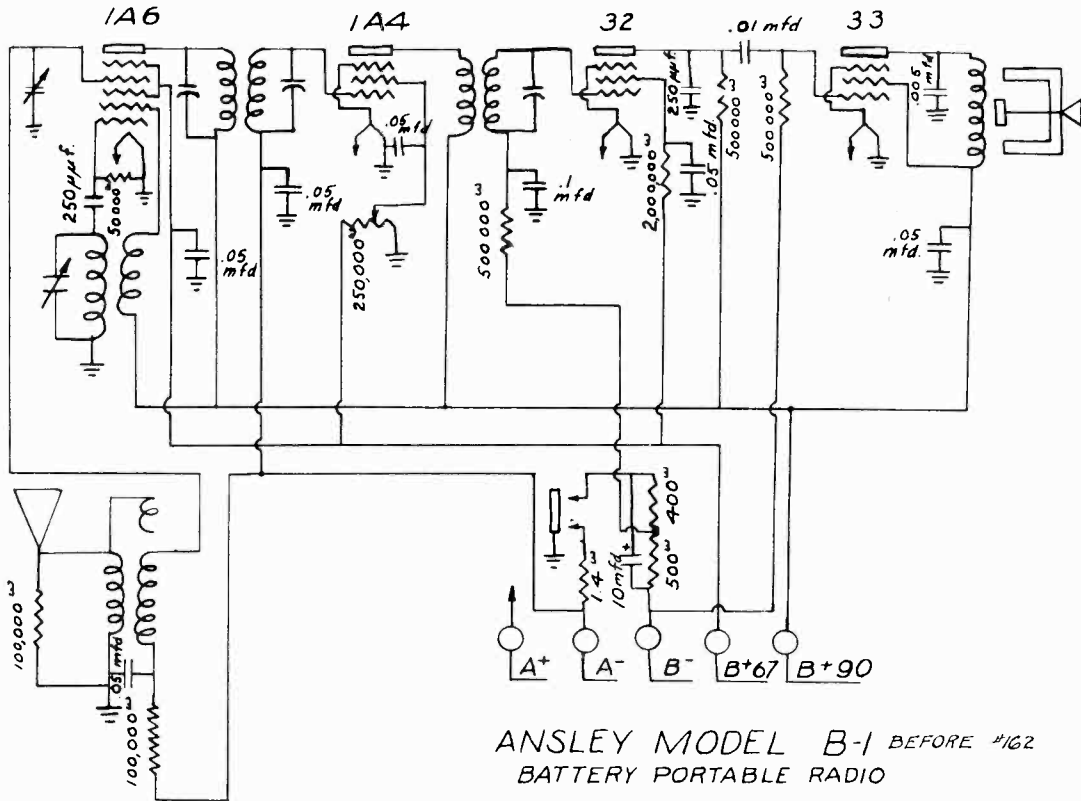
(b) To align the series trimmers (29Y, 29Z, Fig. 4) set the signal generator output lead with the station selector on maximum output. To obtain the best adjustment for each series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

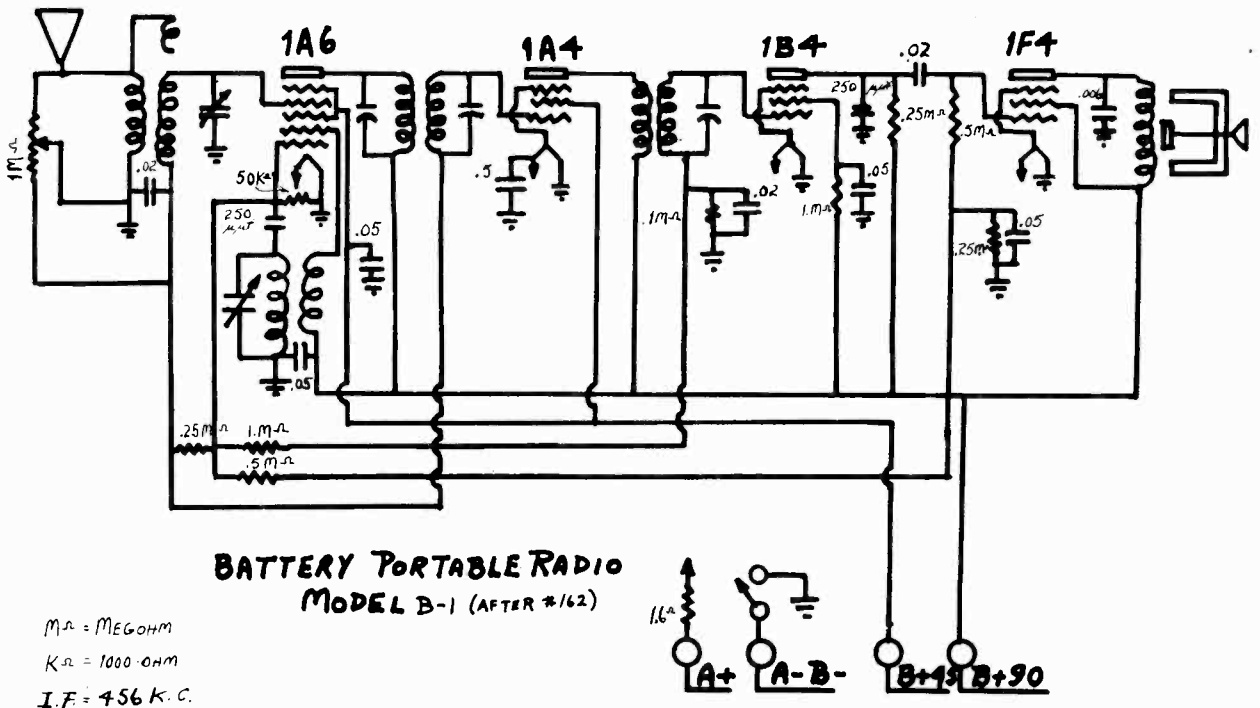
Shunt Alignment	Series Alignment
American Broadcast Band (GREEN)	1800 Kilocycles
Police Band (WHITE)	5800 Kilocycles
High-Frequency Band (RED)	18000 Kilocycles

ANSLEY RADIO LABORATORIES

MODEL B-1  
Early, Late  
Schematics

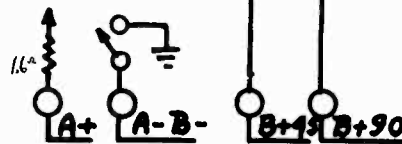


ANSLEY MODEL B-1 BEFORE #162  
BATTERY PORTABLE RADIO



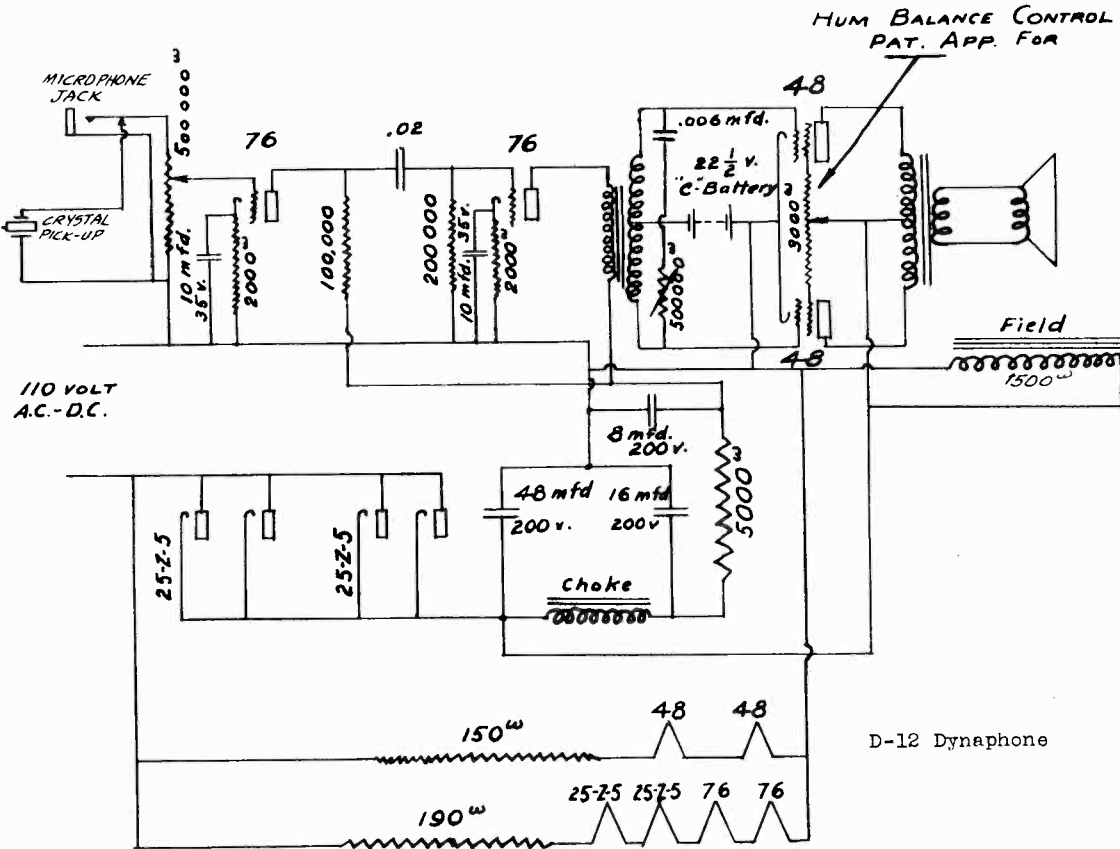
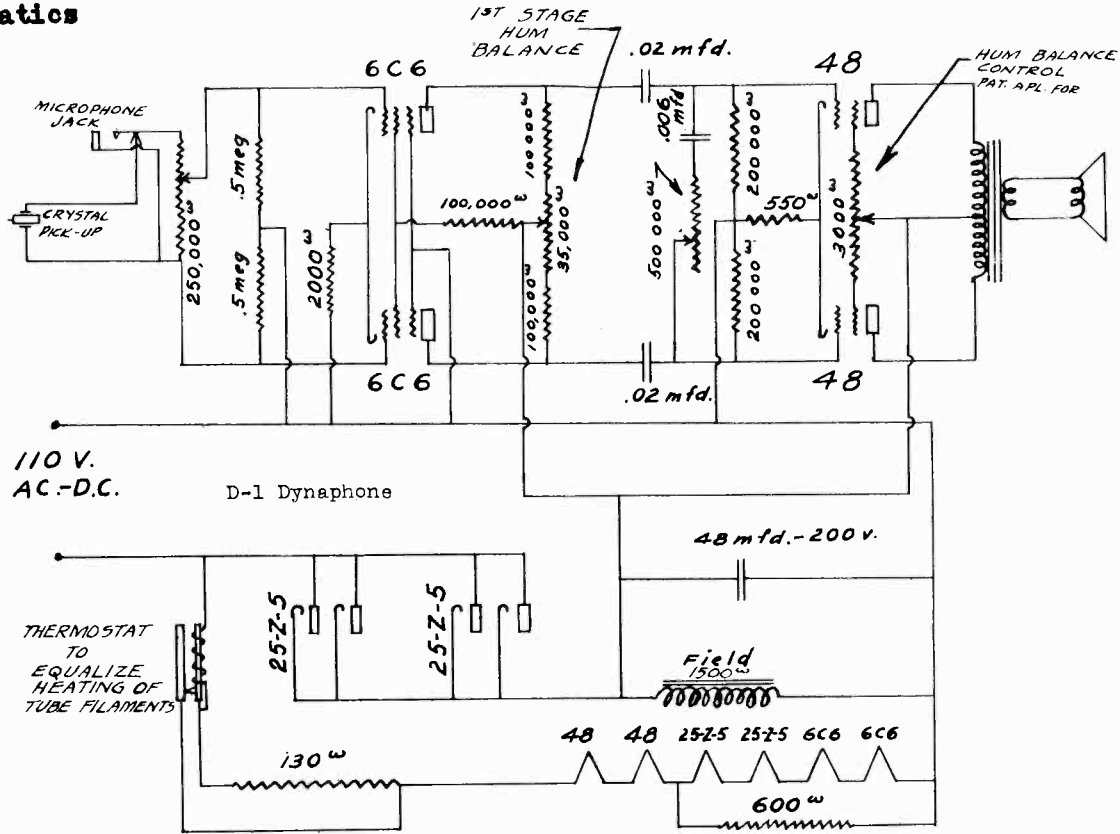
BATTERY PORTABLE RADIO  
MODEL B-1 (AFTER #162)

MΩ = MEGOHM  
KΩ = 1000 OHM  
I.F. = 456 K.C.



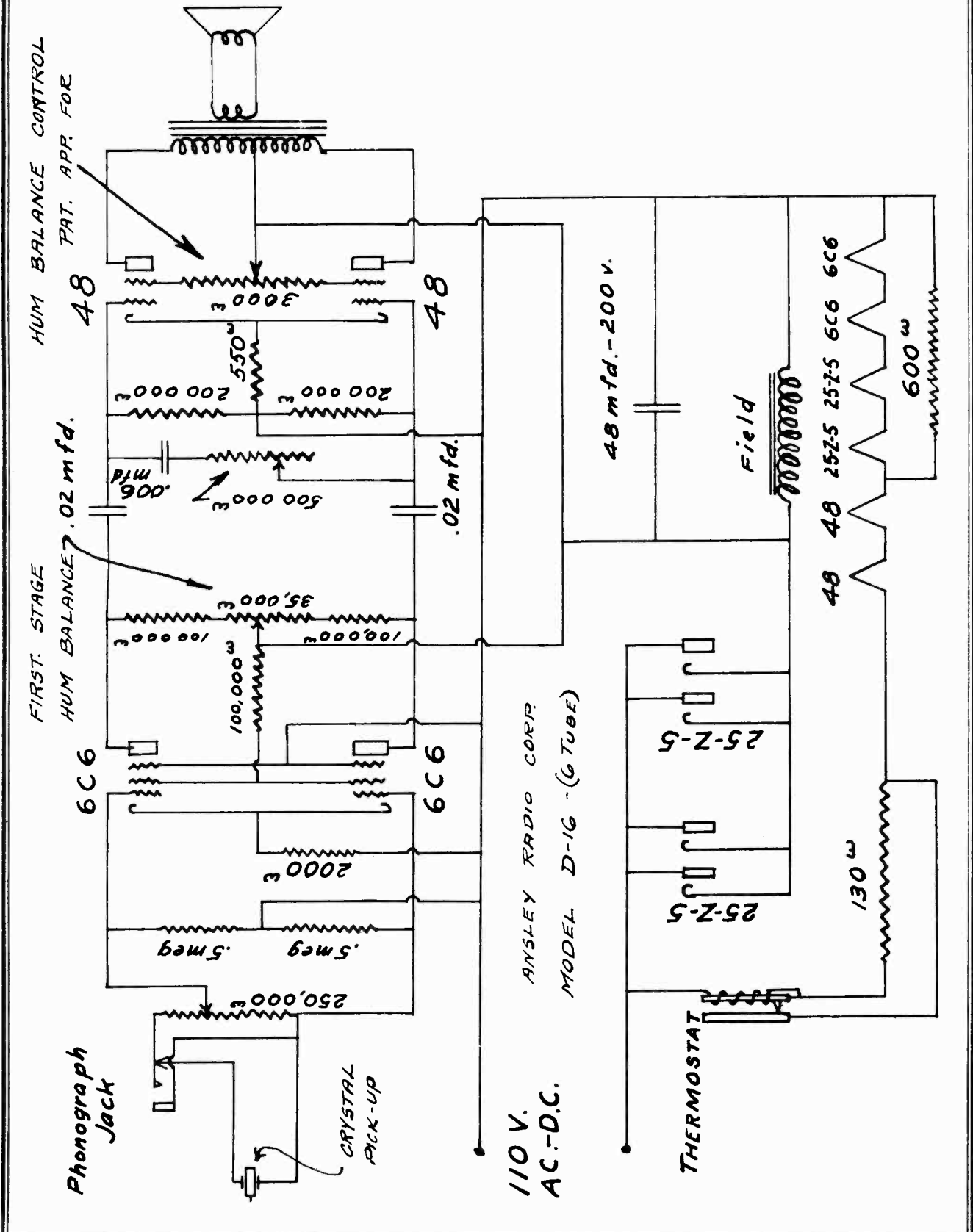
MODEL D-1  
MODEL D-12  
Dynaphones  
Schematics

ANSLEY RADIO LABORATORIES



ANSLEY RADIO LABORATORIES

MODEL D-16  
Schematic







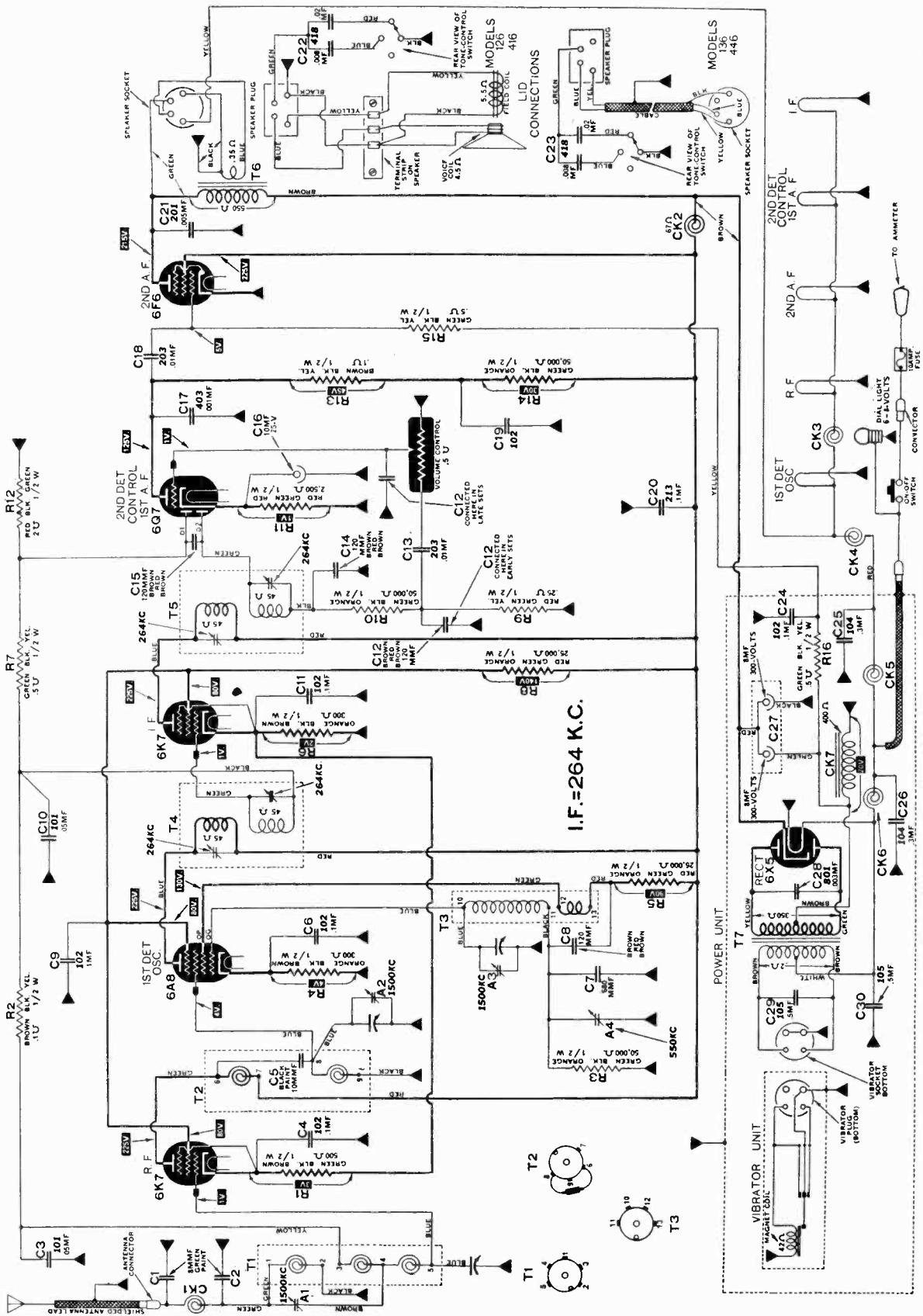




ATWATER KENT MFG. CO.

MODEL 8 126, 136,  
416, 446  
Schematic

DIAGRAM OF MODELS 126, 136, 416 and 446  
Models 126 and 136 Have Glass Tubes with Suffix "G" Added to Type Numbers

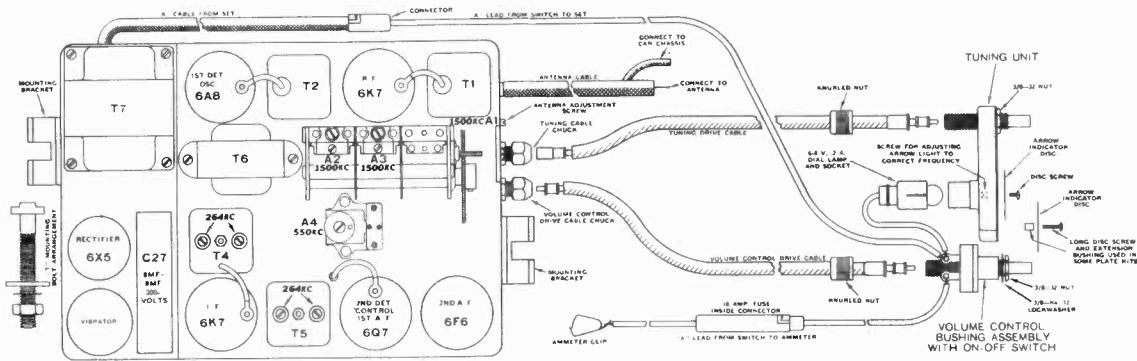


**MODELS 126, 136, 416,  
446, 556**  
**Socket, Trimmers, Parts**  
**Chassis, Alignment**

**ATWATER KENT MFG. CO.**

MODELS 126, 136, 416, 446 and 556

IMPORTANT: Models 126, 136 and 556 Have Glass Tubes, with Suffix "G" Added to Type Numbers

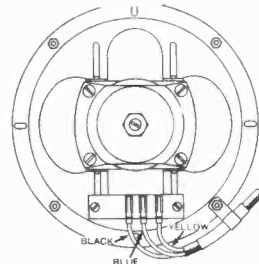


**TRIMMER CONDENSERS**

Trimmers are precisely adjusted at the factory, and readjustment is never required except in the normal course of servicing. The following technical data is therefore intended only for the use of radio service experts who have the equipment and experience for this work.

**CONNECTIONS OF**

**AUXILIARY SPEAKER CABLE**



**GENERAL**

When adjusting trimmers, keep the radio volume control and tone control turned full clockwise.

Use an Atwater Kent No. 42590 I.F. coupling unit to couple the signal generator while aligning I.F. trimmers. The coupling unit may be purchased through any Atwater Kent distributor.

In order to keep below the AVC level, it is necessary to use the weakest possible output from a signal generator that will give a reading on a sensitive output meter.

**I.F. TRIMMERS**

Turn variable condenser full out of mesh.

Connect signal generator (264 KC) to cap of I.F. tube by means of No. 42590 coupling unit. Peak two trimmers on top of T5.

Connect signal generator to cap of 1st-detector tube and peak two trimmers on top of T4.

**DIAL ADJUSTMENT**

With variable condenser fully meshed, the arrow indicator should be adjusted (by means of screw in center of dial lamp opening at rear of tuning unit) to the mark beyond the 510 KC end of dial.

**R.F. TRIMMERS**

Connect signal generator (1500 KC) to antenna and chassis, using a 200 MMF fixed condenser in series with the antenna lead. With dial at 1500 KC, peak A3 (oscillator), A2 (1st-detector) and A1 (antenna). Use first peak as A3 is secured from a loose position.

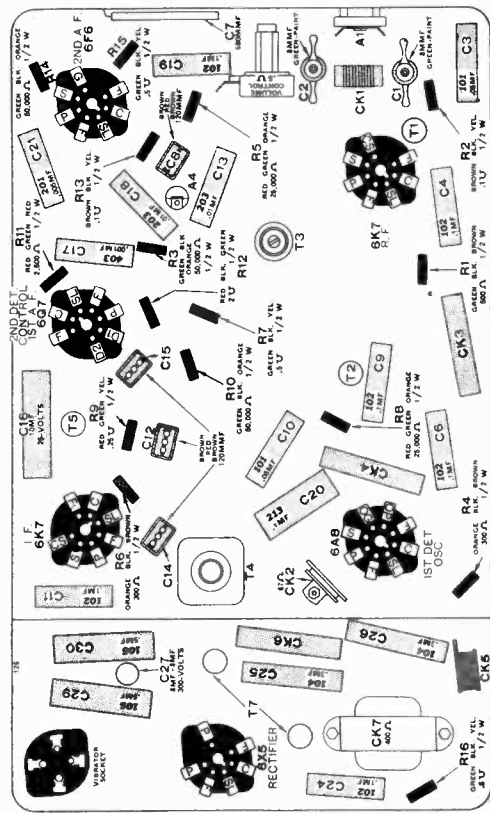
With signal generator at 510 KC, peak tracking condenser A4 while rotating tuning control slightly around the 510 KC mark.

Repeat adjustments at 1500 and 510 KC if necessary.

**PARTS LIST MODELS 126, 136, 416, 446 and 556**

32104	Set container with volume	T4	50030	No. 1 I.F. Trans.	29687	120 MMF
29298	Station selector chock	T5	50050	No. 2 I.F. Trans.	C16	25379 10 MF. 25 V
26036	Inner plate	T6	25379	10 MF. 25 V (556)	C18A	25379 10 MF. 25 V (556)
29226	Chock nut	T7	32134	Output Trans. (126, 136,	C27	32136 8-8 MF 300 V
32119	Ground clip (edge of set)		416, 446)	Power Trans. (126, 136,	C23	32273 8.8 MF 300 V (556)
32128	Ground clip (edge of set)		416, 446)	Power Trans. (556)	C28	50210 .003 MF 800 V (801)
32108	Snap buttons (2 used)					
32142	Snap buttons (8 used)					
32144	T-head mounting bolt					
24465	Lockwasher					
32171	Mounting nut					
32172	Cable and socket from chas-					
48990	Vis to lid cover assembly					
32187	Var. cond mounting clips					
32189	No. 1 I.F.T. shield					
32190	No. 2 I.F.T. shield					
32191	Oscillator trans. shield					
32211	Clips on R.F. I.F. shields.					
32109	Clips on Osc shield					
32102	VOL. CONTROL S. MEG.					
45970	SWITCH					
32182	Tone control nut					
32168	Tube shield (half)					
32169	Holding ring for the above					
32286	Tube shield clip on base					
30058	Universal 8 prong					
32114	Vibrator socket					
29037	Speaker socket					
	<b>TRANSFORMERS</b>					
T1	50050 No. 1 R.F. Trans.					
T2	50070 No. 2 R.F. Trans.					
T3	50080 Oscillator Trans.					

**MODELS 126, 136, 416 and 446**



Model 556 is similar except for differences in the Power Unit and the 2nd A-F bias circuit

ATWATER KENT MFG. CO.

**MODELS 126, 136, 416  
446, 556  
Installation Data**

**Remote and Header Type  
SPEAKER COMBINATIONS  
FOR  
ATWATER KENT AUTO RADIO**

**MODELS 126, 416 and 556**

Models 126, 416 and 556 have a self-contained speaker in lid. One additional speaker may be used with these models. The additional speaker may be one of the following three types:—

- (1) HF (header type) for 1936 Ford only. The HF speaker has cable "A" packed with it.
- (2) S6 (6½" diameter)\*.
- (3) S8 (8½" diameter)\*.

**MODELS 136 and 446**

Models 136 and 446, which do not have a self-contained speaker, may be used with either one or two speakers. If only one speaker is to be used, with Models 136 and 446, there is choice of:—

- (1) HF (header type) for 1936 Ford only.
- (2) S6 (6½" diameter).
- (3) S8 (8½" diameter).

No extra cables are required to connect one of these speakers to Models 136 and 446. If two speakers are to be used with Models 136 and 446, the following combinations are available:—

- (1) S6 and HF speakers\* (1936 Ford only).
- (2) S8 and HF speakers\* (1936 Ford only).
- (3) S6 and S8 speakers\*.

\*The combinations of speakers marked above and in illustrations at right with star require auxiliary cable No. 50230. When necessary, additional double-conductor shielded cable (No. 32284) may be used to lengthen the auxiliary cable No. 50230. Specify the desired length of extra cable. See page 4 for connections.

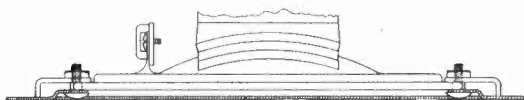
**INSTALLING HEADER TYPE SPEAKER  
"HF" IN 1936 FORD**

The type "HF" dynamic speaker is designed to fit in the header strip (above windshield) in 1936 Ford cars. The header has a cut-out space for this purpose.

Two small mounting brackets are provided for quickly fastening the speaker, and a shielded two-wire cable, with plug at one end, and three tip contacts at the other end, is supplied for quick, easy connection.

Procedure:

- 1. Remove header. Take off paper cover from speaker opening in the header.
- 2. Fasten speaker to header with two brackets as shown in illustration.

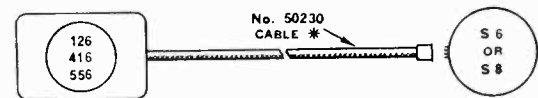
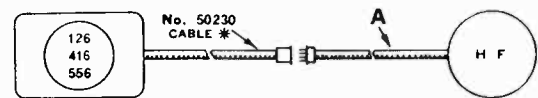


- 3. Tie the tip-end of cable to lower end of string that car manufacturer has provided in right-hand front column. Pull cable gently up through the column.

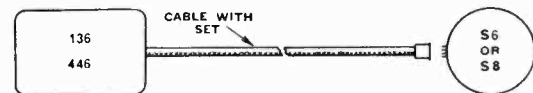
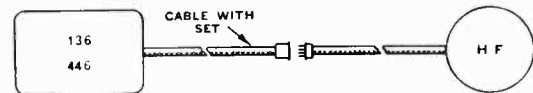
4. Insert cable tips in terminal strip, with cable leads corresponding to colors on terminals in speaker. Fasten cable to cone housing by means of clamp.

5. Replace header, pulling slack cable down column.

6. The correct connections for the header speaker in various combinations are shown on this page.

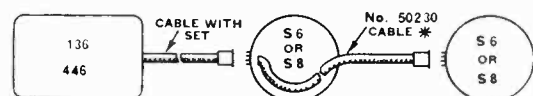
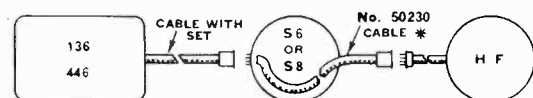


Models 126, 416 and 556, with self-contained speaker, may be used with one additional speaker, HF, S6 or S8, as shown above.



Models 136 and 446 may be used with one speaker, HF, S6 or S8, as shown above, or with a combination of two speakers as shown below.

See page 4 for connections.



General Notes

ATWATER KENT MFG. CO.

BATTERY DRAIN AND OTHER VALUABLE DATA

ATWATER KENT BATTERY-OPERATED MODELS

MODEL NUMBER	CABINET	SPEAKER TYPE	SPEAKER NUMBER	FREQUENCY RANGE	YEAR	"A" BATTERY		"B" BATTERY		"C" BATTERY	TUBES	DIAL LAMP	I. F. (KC)
						VOLTS	AMPS.	VOLTS	MILS.				
67	Table	Dynamic	F7	Broadcast	1929	6	2.2	180	30	45	3-222, 2-112A, 2-171A	1-6 volt, .15 amp., No. 16099	T.R.F.
67C	Console	Dynamic	F7C										
70Q	Console	Inductor	J	Broadcast	1930	6	2.2	180	30	45	3-222, 2-112A, 2-171A	1-6 volt, .15 amp., No. 16099	T.R.F.
76Q	Console	Inductor	J										
82Q	Compact	P. M. D.**	18400	Broadcast	1931	2	.62	135	25	15	4-32, 2-30, 1-33	None	130
84Q	Compact	P. M. D.	18400										
85Q	Console	P. M. D.	19900										
228Q	Compact	P. M. D.	18400	Broadcast	1932	2	.62	135	25	15	4-32, 2-30, 1-33	None	130
558Q	Compact	P. M. D.	31700										
469Q	Console	P. M. D.	31500	Broadcast	1932	2	.54	180	30	15	3-34, 2-32, 4-30	110 volt, ¼ watt, Neon, No. 23832	130
387	Compact	P. M. D.	31700										
427Q	Console	P. M. D.	36400	Broadcast and Police	1933	2	.42	135	24	12	2-34, 1-1A6, 1-32, 3-30	1-60 mil., 2 volt,† No. 26721	264
165Q	Compact	Magnetic	37170	Broadcast and Police	1934	2	.5(165Q)	135	20	7½	1-1A6, 1-34, 1-32, 1-30, 1-19	1-60 mil., 2 volt,†† No. 26721	264
525Q	Console	Magnetic	39200										
465Q	Compact	Magnetic	*42900	540-4800 KC, 5.3-16 MC	1934	2	.62	135	22	7½	1-1C6, 1-34, 1-32, 1-30, 1-19	1-60 mil., 2 volt, No. 26721	264
655Q	Console	Magnetic	*43200										
768Q	Compact	Magnetic	43100	540-22,500 KC	1934	2	.6	180	25	None	1-1C6, 2-34, 1-32, 4-30	1-60 mil., 2 volt, No. 26721	472½
978Q	Console	Magnetic	43200										
625Q	Compact	Magnetic	46700	540-4800 KC, 5.3-16 MC	1934	2	.62	135	22	7½	1-1C6, 1-34, 1-32, 1-30, 1-19	1-60 mil., 2 volt, No. 26721	264
385Q	Console	Magnetic	46800										
415Q	Compact	Magnetic	48500	540-1712 KC	1935	2	.62	135	22	22½	1-1C6, 1-34, 1-32, 1-33, 1-30	1-60 mil., 2 volt, No. 26721	450
285Q	Console	Magnetic	49900										
237Q	Compact	Magnetic	50700	540-18,000 KC	1935-36	6	2.1	None	—	None	1-1C6, 2-34, 1-1B5, 1-30, 1-19, 1-6Z4	2-60 mil., 2 volt, No. 26721	472½
467Q	Console	Magnetic	50800										
657Q	Compact	Magnetic	50700	540-18,000 KC	1935-36	2	.6	180	30	None	1-1C6, 2-34, 1-1B5, 3-30	2-60 mil., 2 volt, No. 26721	472½
747Q	Console	Magnetic	50800										
515Q	Compact	Magnetic	55500	540-1712 KC, 5.4-18 MC	1936	2	.62	135	25	22½	1-1C6, 2-1A4, 1-1B5, 1-33	1-60 mil., 2 volt, No. 26721	450
485Q	Console	Magnetic	55600										

"B" current is dependent on actual "B" voltage, incoming signal strength, volume level, and other factors. The values given above are high averages, not maximum.  
 \* In late 465Q, speaker is 48700. In late 655Q, speaker is 46800.  
 \*\* Abbreviation "P. M. D." indicates a permanent-magnet dynamic speaker.  
 † Late sets only.  
 †† 526Q only.

IMPORTANT DATA FOR ATWATER KENT AUTO RADIO

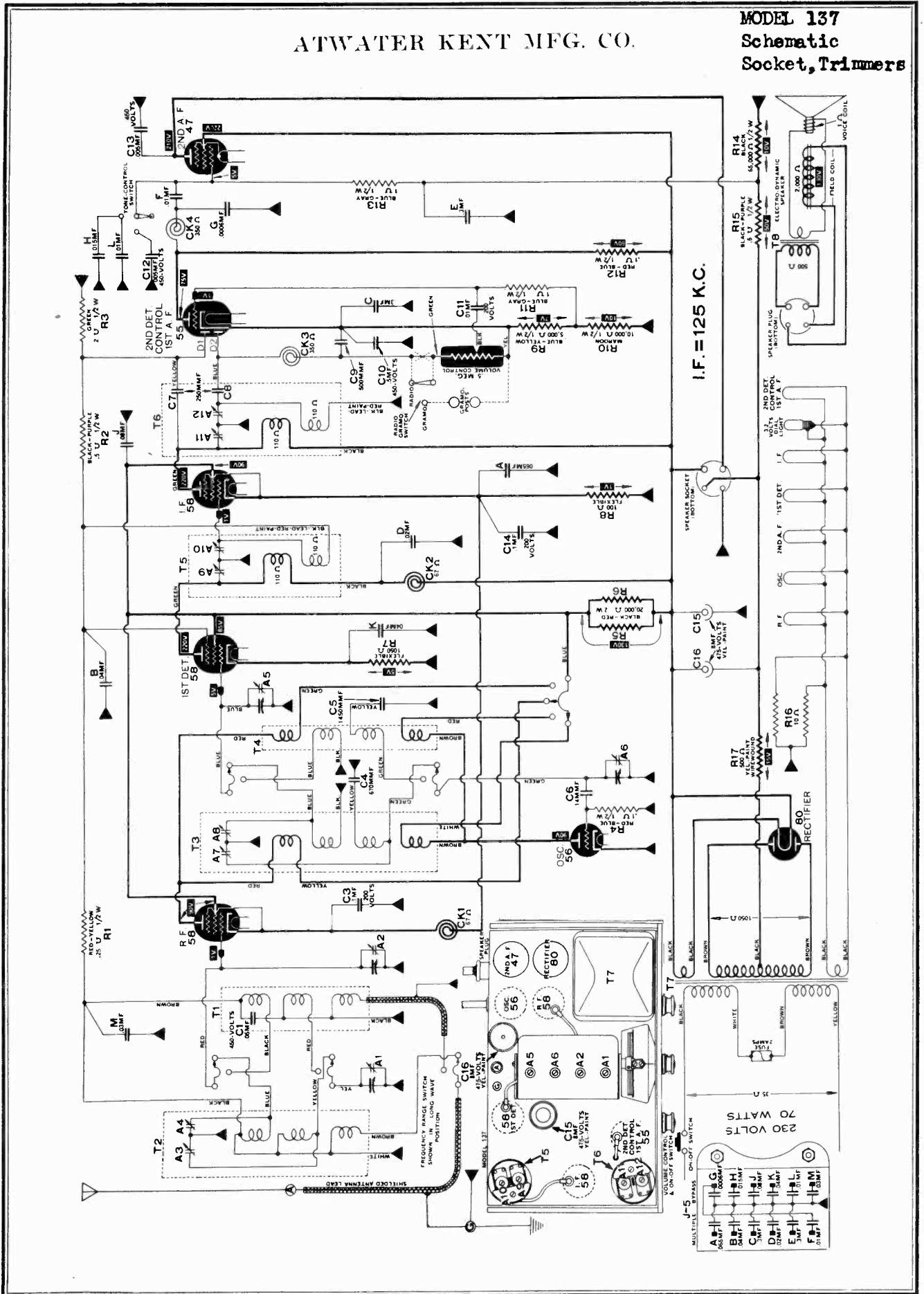
(1931 to 1936 Inclusive)

MODEL	YEAR	"A" BATTERY VOLTS AMPS.	"B" BATTERY VOLTS MILS.	"C" BATTERY VOLTS	TUBES	DIAL LAMP	SPEAKER CONE No.	I.F. (KC)	DESCRIPTION
81	1931	6 4	135 25	30	3-36, 2-37, 2-38	MAZDA 50 (clear) AK#21407	21161	TRF	Model 81 has 3 units: Receiver-and-battery container, speaker, remote control. Models 81B and 81C have separate containers for the chassis and the "B" batteries. "C" batteries are mounted in the chassis container in 81B and 81C.
81B									
81C									
91	1932	6 4	135 30	30	3-36, 3-37, 2-38	MAZDA 50 (clear) AK#21407	21161	260	Same unit arrangement as 81, 81B and 81C.
91B									
91C									
636	1933	6 5¼	DYNAMOTOR No. 30860	..	2-39, 1-36, 1-85, 2-41	MAZDA 50 (clear) AK#21407	21161	262½	Model 636 has 3 units: Chassis with controls, speaker, dynamotor. Model 756 has 3 units: Chassis with dynamotor, speaker, remote control. 756B has 4 units: Chassis, dynamotor, remote control, speaker.
756									
756B									
424	1933	6 4	SYNCHRONOUS VIBRATOR No. 25595	..	1-77, 1-44, 1-75, 1-41	MAZDA 50 (clear) AK#21407	25604 (424) 25603 (534)	264 450	Model 424 is one complete unit. Model 534 is one unit, but with remote control.
534									
816	1934	6 5	SYNCHRONOUS VIBRATOR No. 26863	..	2-39 (6D6 in late), 1-6A7, 1-85, 2-41	MAZDA 40 (green) AK#16099	26826 (816) 26826 (926) 26822 (936)	264	Models 816 and 926 have chassis, speaker and power unit in one container, and separate remote control. Model 936 has 3 units: Chassis, speaker, remote control.
926	1934	6 6	GENEMOTOR No. 26734	..	2-39 (6D6 in late), 1-6A7, 1-85, 2-41	MAZDA 40 (green) AK#16099	26826 (816) 26826 (926) 26822 (936)	264	Models 816 and 926 have chassis, speaker and power unit in one container, and separate remote control. Model 936 has 3 units: Chassis, speaker, remote control.
936	1934	6 6	GENEMOTOR No. 26734	..	2-39 (6D6 in late), 1-6A7, 1-85, 2-41	MAZDA 40 (green) AK#16099	26826 (816) 26826 (926) 26822 (936)	264	Models 816 and 926 have chassis, speaker and power unit in one container, and separate remote control. Model 936 has 3 units: Chassis, speaker, remote control.
666	1934	6 6	VIBRATOR No. 27005	..	2-6D6, 1-6A7, 1-85, 1-41, 1-6Z4	MAZDA 40 (green) AK#16099	26826	264	Model 666 has 2 units: Chassis with speaker, and remote control.
776	1935	6 6	VIBRATOR No. 27005	..	2-6D6, 1-6A7, 1-85, 1-41, 1-6Z4	MAZDA 40 (green) AK#16099	26826	264	Model 776 has 2 units: Chassis with speaker, and remote control.
126	1936	6 6.8*	VIBRATOR No. 32138	..	Models 126, 136, 556 (glass tubes): 2-6K7G, 1-6A8G, 1-6Q7G, 1-6F6G, 1-6X5G	MAZDA 51 (clear) AK#28299	30096 (126) 30096 (416) 30096 (556) 30096 (56) 26822 (58)	264	Models 126, 416 and 556 are single unit sets, with remote control. 126 and 416 have tone control and chrom speaker grille. Models 136 and 446 have external speaker. These five models may be used with additional speaker, 56, 58 or HF (header type for 1936 Ford).
136									
416									
446									
556									
556									

\*Add 1 amp. if additional speaker is used.

# ATWATER KENT MFG. CO.

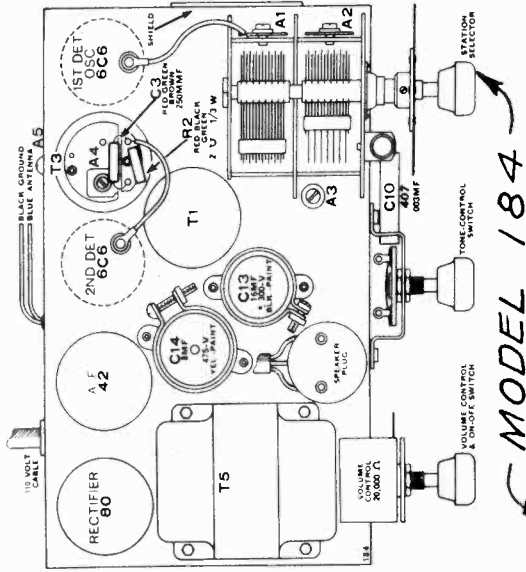
## MODEL 137 Schematic Socket, Trimmers



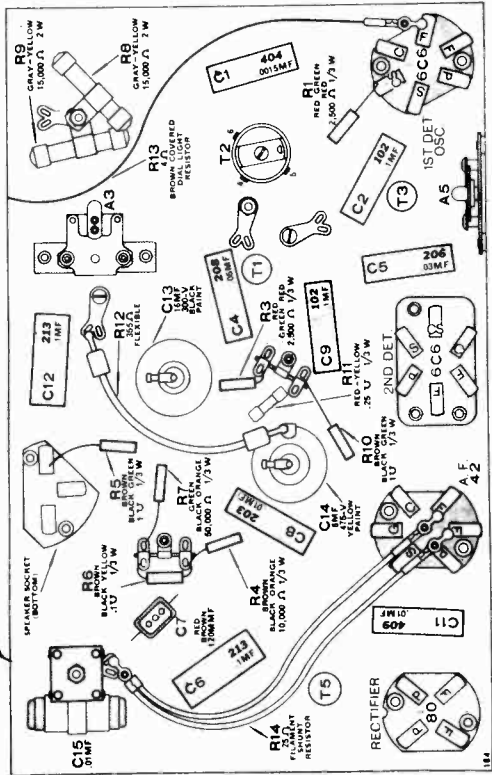


MODEL 137  
Chassis  
MODEL 184  
Socket, Trimmers  
Chassis

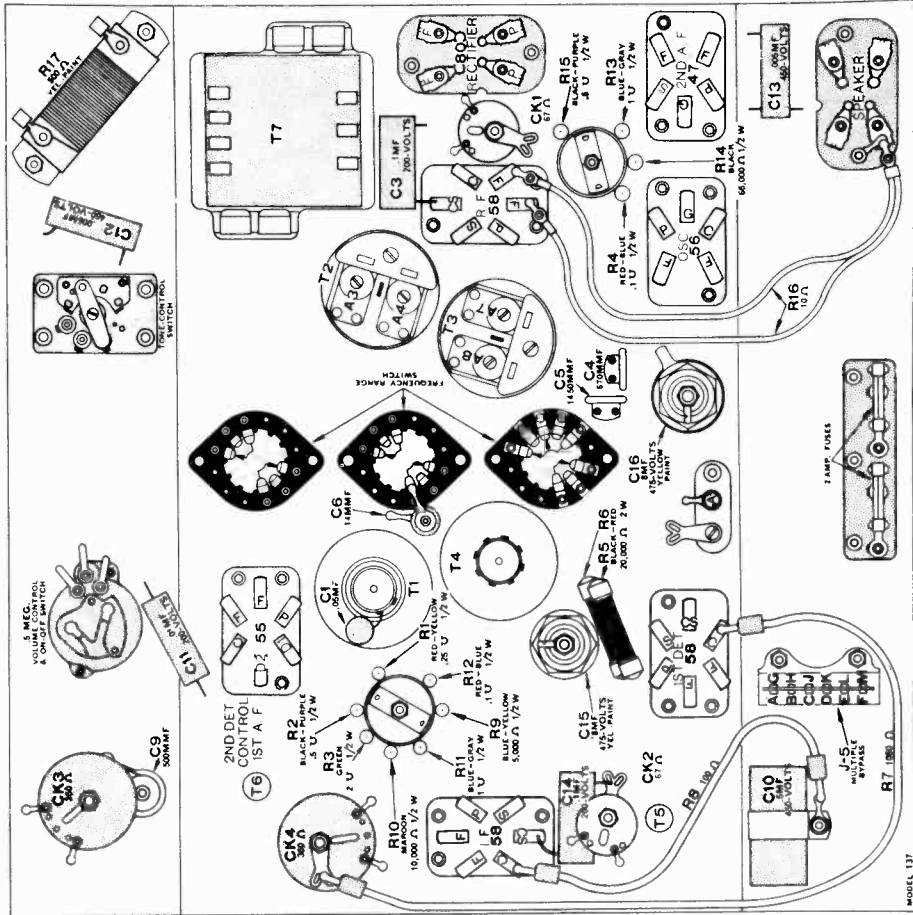
ATWATER KENT MFG. CO.



MODEL 184



MODEL 137



ATWATER KENT MFG. CO.

MODEL 137  
 MODELS E-145, E-145X  
 MODEL 168  
 Parts Lists

MODEL 137

(European Compact)

- 24101 Cabinet with escutcheon
- 23361 Cloth screen
- 23448 Escutcheon

- 30090 Dial plate and bracket
- 23453 Dial plate
- 13404 Dial lamp

- 22804 Dial knob
- 22052 Volume control knob
- 22052 Tone control knob
- 23278 Range switch knob

- 23228 Volume control
- 20730 Tone control switch
- 22297 Shaft and blade for tone control switch
- 24008 Range switch

TRANSFORMERS

- T1 24008 (Group, includes T1 and T4)
- T2 23293 Long wave RF transformer
- T3 23351 Long wave oscillator transformer
- T4 24008 (Group, includes T1 and T4)
- T6 23356 No. 1 I.F.T., less trimmers
- T6 22059 No. 2 I.F.T., less trimmers
- T7 22470 Power transformer
- T8 19687 Output transformer, with strap

CONDENSERS

- 28040 Tone control condenser
- 22538 8MF, 475 V. electrolytic
- 24250 Multiple bypass (J5)

RESISTORS

- R7 16320 1050 ohms, flexible
- R8 20040 100 ohms, flexible
- R17 27930 500 ohms, flexible

CHOXES

- 19210 RF choke (small)
- 17390 IF choke (large)

TRIMMERS

- 30110 Double trimmer, long wave transformers
- 24760 Double trimmer, I.F.T.

SHIELDS

- 23452 Shield for T1 and T4
- 21877 Shield for T5 and T6
- 23452 Shield for T2 and T3
- 22683 Tube shield
- 23743 Auxiliary tube shield

VARIABLE CONDENSER

- 24011 Variable condenser
- 18809 Dial knob shaft
- 17961 Dial rubber and bushing
- 20119 Trimmer mica
- 20149 Dial gear

SOCKETS

- 22733 Socket for '55 or '58
- 22734 Socket for '47 or '56
- 22698 Rectifier socket
- 21336 Speaker socket
- 24013 Fuse socket

MISCELLANEOUS

- 23997 Phono switch
- 18554 Line fuse
- 23789 Instruction sheet, F-1036
- 23397 Shipping container
- 137 SPEAKER NO. 17300

- 19465 Diaphragm
- 18670 Field coil
- 19697 Output transformer, with strap
- 19487 Cable and plug assembly

MODELS E145, E145X

(EUROPEAN COMPACT)

For parts not listed below, refer to Model 145

- 27432 Variable condenser assembly.....
- 28426 Dial plate
- 39760 Range switch
- 28294 Instruction sheet F-1205

TRANSFORMERS

- 42050 No. 1 R.F.T. Broadcast range
- 42060 No. 1 R.F.T. Long wave and short wave.
- 41970 Oscillator transformer, broadcast range
- 41960 Oscillator transformer, long wave
- 28626 No. 1 I.F.T.
- 28627 No. 2 I.F.T.
- 28621 Output transformer
- 28566 Power transformer (S305)
- 40140 Choke in No. 2 I.F.T.

CONDENSERS

- 28031 8 MF, 475 V., electrolytic
- 25579 10 MF, 25V., electrolytic
- 42530 920 MF
- 53190 420 MF

TRIMMERS

- 33430 Double RF trimmer
- 32890 Double I.F. trimmer (No. 1 I.F.T.)
- 41850 Trimmer for No. 2 I.F.T.
- 33630 Base trimmer (rear of chassis)
- 31870 Base trimmer
- 42240 Base trimmer (blue lead)

SHIELDS

- 25056 I.F.T. shield
- 27543 R.F.T. shield
- 28612 Shield for long wave oscillator
- 27761 Shield for broadcast oscillator

MODEL 168

(European Console)

TRIMMERS

- A3,4 32310 Double R.F. trimmer
- A5,6 32310 Double R.F. trimmer
- A9,10 27860 Double I.F. trimmer
- ALL,12 24760 Double I.F. trimmer

- 168 SPEAKER NO. 28800
- 20737 Diaphragm
- 21260 Field coil
- 21693 Output transformer (T9)

- 24934 Range switch
- 23228 Volume control
- 25418 Silencing potentiometer and phono switch
- 24540 Tone control switch
- 22297 Shaft and blade for above
- 23031 Variable condenser
- 22697 Dial gear
- 22578 Shaft bracket
- 22692 Shaft
- 22667 Dial rubber and bushing
- 24928 Phono switch on back of silencing potentiometer
- 24938 Range switch dial assembly

TRANSFORMERS

- T1 23928 No. 1 long wave, less trimmers
- T2 32130 No. 1 Broadcast
- T3 25079 No. 2 long wave, less trimmers
- T4 32120 No. 2 broadcast
- T5 23356 No. 1 I.F.T. less trimmers
- T6 22059 No. 2 I.F.T. less trimmers
- T7 30920 Input transformer
- T8 32240 Power transformer
- T9 21693 Output transformer

CONDENSERS

- C2 31180 680 MF.
- C3 32160 1450 MF.
- C4,5 27650 8 MF.
- C6, 17440 500 MF.
- C7 21540 Tone control condenser (B-11)
- C8 22538 8MF, 475 V., electrolytic
- C9 28620 .7 MF (K5)
- C10 22538 8 MF., 475 V. electrolytic
- C11, 30240 250 MF.
- 12 23250 .01 Line bypass
- C13 32140 Multiple bypass (J-12)

RESISTORS

- R5 16320 1050 ohms, flexible
- R6 20040 100 ohms, flexible
- R10 24450 6400 ohms, flexible
- R12 16320 1050 ohms, flexible
- R14 17077 10 ohms, flexible
- R15 25950 200 ohms, flexible
- R17 31960 1 ohm, flexible

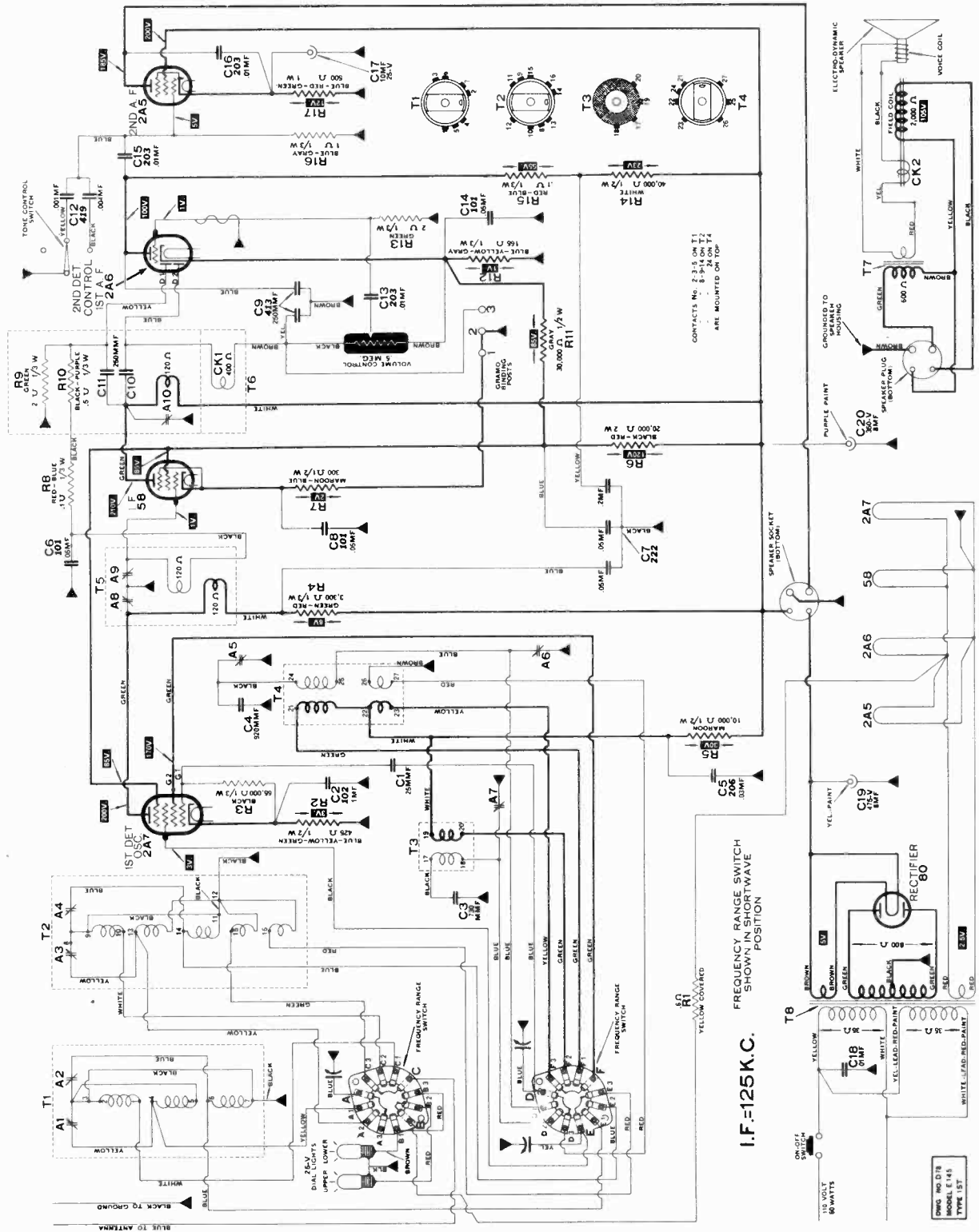
CHOXES

- CK1,2 19210 R.F. choke
- CK3 26970 Filter choke unit



ATWATER KENT MFG. CO.

MODEL E-146  
Schematic



September 25, 1935.

In some early models, C4 is 420 MMF, No. 39190

**MODELS 184, 184-X  
MODELS 200, 317, 337  
MODELS 206D, 376D  
MODELS E206, E206X Parts Lists**

**ATWATER KENT MFG. CO.**

**MODELS E208, E208X,  
E248, E248X  
MODELS P216, P216X,  
P336, P336X**

MODELS 184, 184X

- 27435 Var. condenser
- 27935 Dial plate assem.
- 27587 Vol. control, 20,000 ohm
- 46020 Dial light socket
- 29335 Tube shield (1st det.) with cap
- 27631 Tube shield (2nd det.)
- 29848 Lamp, 6.3-V.
- 42840 Tone control switch
- 28094 Tuning shaft
- 28095 Trimmer mica
- 29804 Inst. sheet, F-1274
- 47260 Shipping container

TRANSFORMERS

- T1 45970 No. 1 R.F.T.
- T2 46010 Oscillator trans.
- T3 27486 No. 1 I.F.T.
- T4 21672 Output trans.
- T5 45840 Power trans. (110-V. 60-C.), S-334
- 47040 Power transformer (220-V., 60C.) S-345

RESISTORS

- RL2 20050 355 ohm, flexible
- RL3 45880 4 ohm, flexible
- RL4 45860 25 ohm, flexible

CONDENSERS

- C3 29835 250 MMF. 450-V.
- C7 29532 120 MMF. 450-V.
- C13 27583 16 MF, 300-V.
- C14 28031 8 MF, 475-V.
- C15 23250 .01 MF, 450-V.

TRIMMERS

- A3 45940 1st det. plate
- A4 36570 I. F. grid
- A5 45940 Sensitivity trimmer
- 29776 Grooved trimmer screw
- 29775 Trimmer screw retaining spring wire

SOCKETS

- 25196 3-prong, speaker socket
- 24492 4-prong, rectifier socket
- 24494 6-prong

MODELS 200, 317, and 337

- 29426 Variable condenser
  - 42750 Tone control switch assembly
  - 29101 Shaft and blade for above
  - 28954 Range switch
  - 28961 Volume control, .5 megohm
- ELECTROLYTICS
- C18 27592 Triple electrolytic (4-450-V., 8-450-V., 10-25-V.)
  - C20 28031 8 MF., 475-V.

TRANSFORMERS

- T1 44990 No. 1 R.F.T.
- T2 45010 No. 2 R.F.T.
- T3 45020 Oscillator trans.
- T4 47780 No. 1 I.F.T.
- T5 47790 No. 2 I.F.T.
- T6 45810 Power transformer (S-335)
- T7 21672 Output transformer

TRIMMERS

- 44570 Double R.F. trimmer
- 29728 Double I.F. trimmer
- 39630 (A6) broadcast tracking

SOCKETS

- 21336 Speaker socket
- 30058 Universal 8-prong socket

RESISTORS

- R18 46150 2 ohm, dial light resistor
- R19 45860 25 ohm, filament shunt

- 30046 Cabinet with screen (337 only)
- 29985 Gasket and screen (337 only)
- 29759 Escutcheon and crystal

MODELS 206D and 376D

- 27425 Volume control
- 39620 Tone control switch
- 40780 Range switch
- 30034 Cabinet and screen (206D)
- 28749 Shipping container (206D)
- 28751 Shipping container (376D)
- 27954 Instruction sheet

- 27432 Variable condenser
- 27685 Dial (206D)
- 28536 Dial (376D)
- 28299 Dial lamp 6-8 volts

TRANSFORMERS

- 41750 No. 1 R.F.T., with trimmers
- 41760 No. 2 R.F.T., with trimmers
- 41770 Oscillator transformer
- 28527 No. 1 I.F.T. complete
- 28528 No. 2 I.F.T.
- 41860 Input audio transformer
- 41620 Output transformer

CHOKE

- 28587 Filter choke
- 24323 Choke cover

CONDENSERS

- 27598 3700 MMF
- 35640 50 MMF
- 40380 2200 MMF
- 41580 340 MMF
- 28403 Electrolytic, 8MF, 125V.

RESISTORS

- 35820 12 ohm flexible
- 19820 48 ohm flexible
- 31830 250 ohm flexible
- 20520 670 ohm flexible

TRIMMERS

- 42270 A6
- 39630 Rear of chassis (A5)
- 38890 A7
- 39430 Double R.F. trimmer

SOCKETS

- 21337 5 prong socket
- 24494 6 prong socket
- 26111 7 prong socket

206D SPEAKER NO. 43500

- 19465 Diaphragm
- 35310 Field coil
- 41620 Output transformer
- 28424 Cable and plug

376D SPEAKER NO. 43600

- 20737 Diaphragm
- 35310 Field coil
- 41620 Output transformer
- 22994 Cable and plug

MODELS E206 and E206X

(EUROPEAN COMPACT)

For parts not listed below, refer to Model 206

- 28293 Instruction sheet F-1204
- 42080 Range switch

TRANSFORMERS

- 42010 No. 1 R.F.T.
- 41980 No. 2 R.F.T.
- 41990 Oscillator transformer
- 28527 No. 1 I.F.T.
- 28528 No. 2 I.F.T.
- 21672 Output transformer
- 28702 Power transformer

TRIMMERS

- 39430 Double R.F. trimmer
- 39630 Rear of chassis
- 42230 Front base
- 38890 Base trimmer

SHIELDS

- 28563 R.F.T. shield
- 27781 Oscillator shield

MODELS E208, E208X, E248, and E248X

(European compact and console)

For parts not listed below, refer to Models E808, E848.

- 31973 Instruction sheet F-1332
- 48680 Shipping container (E208)
- 49810 Shipping container (E248)

- 46820 Tone control switch
- 30059 Front panel assembly

TUNING PARTS

Same as Model 328, 649, etc.

SOCKETS

- 21337 Speaker socket
- 30058 Universal 8-prong socket

TRANSFORMERS

- T1 46860 No. 1 R.F.T., broadcast and short wave
- T2 46880 No. 1 R.F.T., long wave
- T3 46860 No. 2 R.F.T., broadcast and short wave
- T4 46890 No. 2 R.F.T., long wave
- T5 46870 Oscillator, broadcast and short wave
- T6 46910 Oscillator, long wave
- T7 49780 No. 1 I.F.T.
- T8 49790 No. 2 I.F.T.
- T9 44730 No. 3 I.F.T.
- T10 45590 Input audio transformer
- T11 46330 Power transformer
- T12 21370 Output transformer

CONDENSERS

- 27583 16 MF, 300 V., electrolytic
- 29691 16 MF, 475 V., electrolytic
- 26379 10 MF, 25 V., electrolytic

TRIMMERS

- 28943 (A3)
- 38770 (A9, 10)
- 44570 Double R.F. trimmer
- 29823 Double I.F. trimmer

E206 SPEAKER NO. 52500  
E248 SPEAKER NO. 50100

MODELS P216, P216X, P336, P336X

- 30047 Cabinet with screen (P336).....
- 29983 Screen and gasket (P336)

TUNING PARTS

Same as Models 317 and 337 with exception of dial plate No. 29971 (P216) and 29757 (P336).

- 28961 Volume control
- 28954 Range switch
- 42750 Tone control switch
- 29101 Shaft and blade

- 45170 Dial lamp socket
- 29848 Dial lamp 6.3 V., bayonet base
- 31006 Base cover (P216)
- 47390 Shipping container (P216)

TRANSFORMERS

- T1 44990 No. 1 R.F.T.
- T2 45010 No. 2 R.F.T.
- T3 45020 Oscillator transformer
- T4 45250 No. 1 I.F.T.
- T5 45260 No. 2 I.F.T.
- T6 21672 Output transformer
- T7 49630 Power transformer

CONDENSERS

- 28031 8 MF., 475 V., electrolytic
- 27592 4-8-10 MF. electrolytic

TRIMMERS

- 44570 Double R.F. trimmer
- 29728 Double I.F. trimmer
- 39630 Tracking trimmer (A6)
- 28843 Oscillator (A5)

SOCKETS

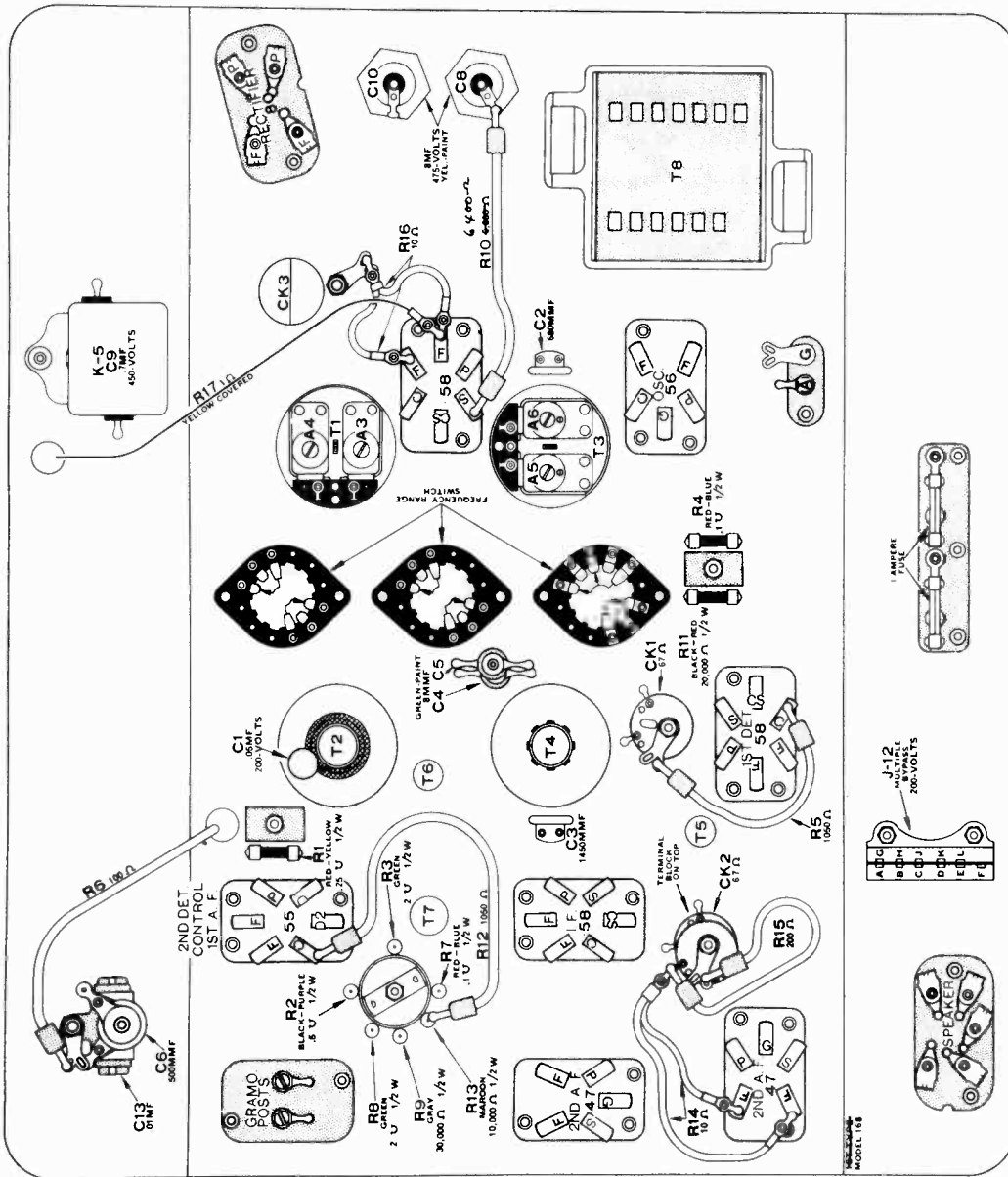
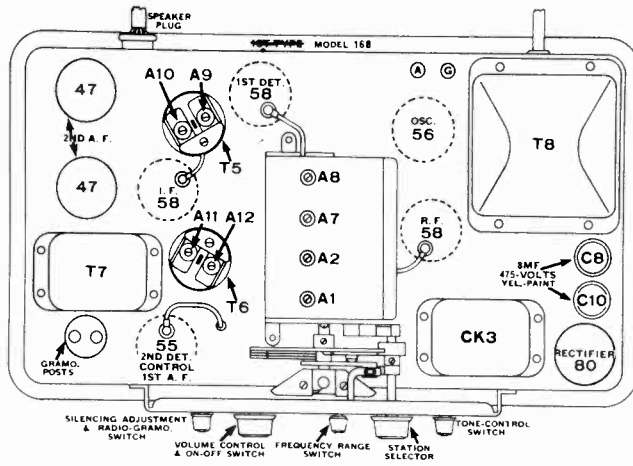
- 24492 4 prong
- 24494 6 prong
- 26111 7 prong
- 21336 Speaker socket

P336 SPEAKER NO. 41900  
P216 SPEAKER NO. 41800



**MODEL 168**  
**Socket, Trimmers**  
**Chassis**

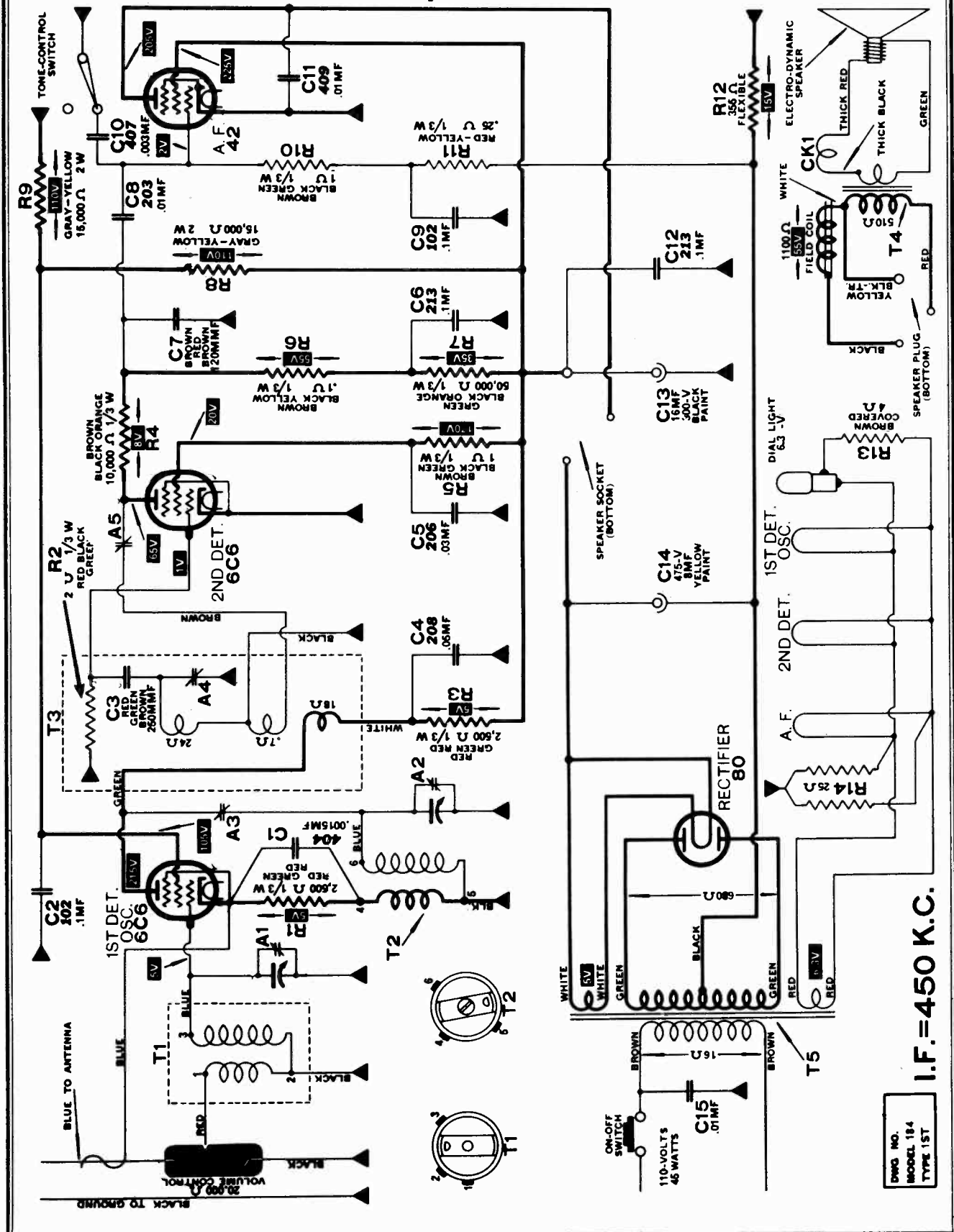
ATWATER KENT MFG. CO.



ATWATER KENT MFG. CO.

Model 184, 110 v. 60 cycles  
 Model 184X, 220 v. 60 "

MODELS 184, 184X  
 Schematic



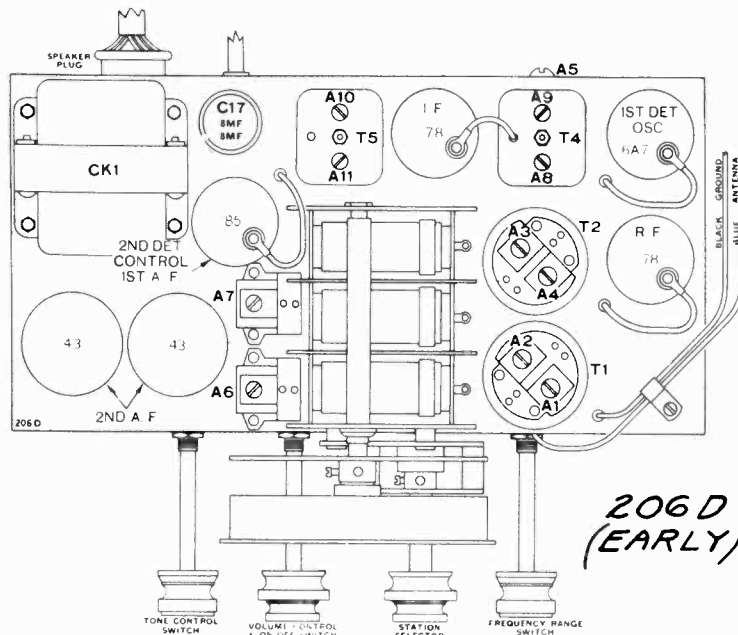
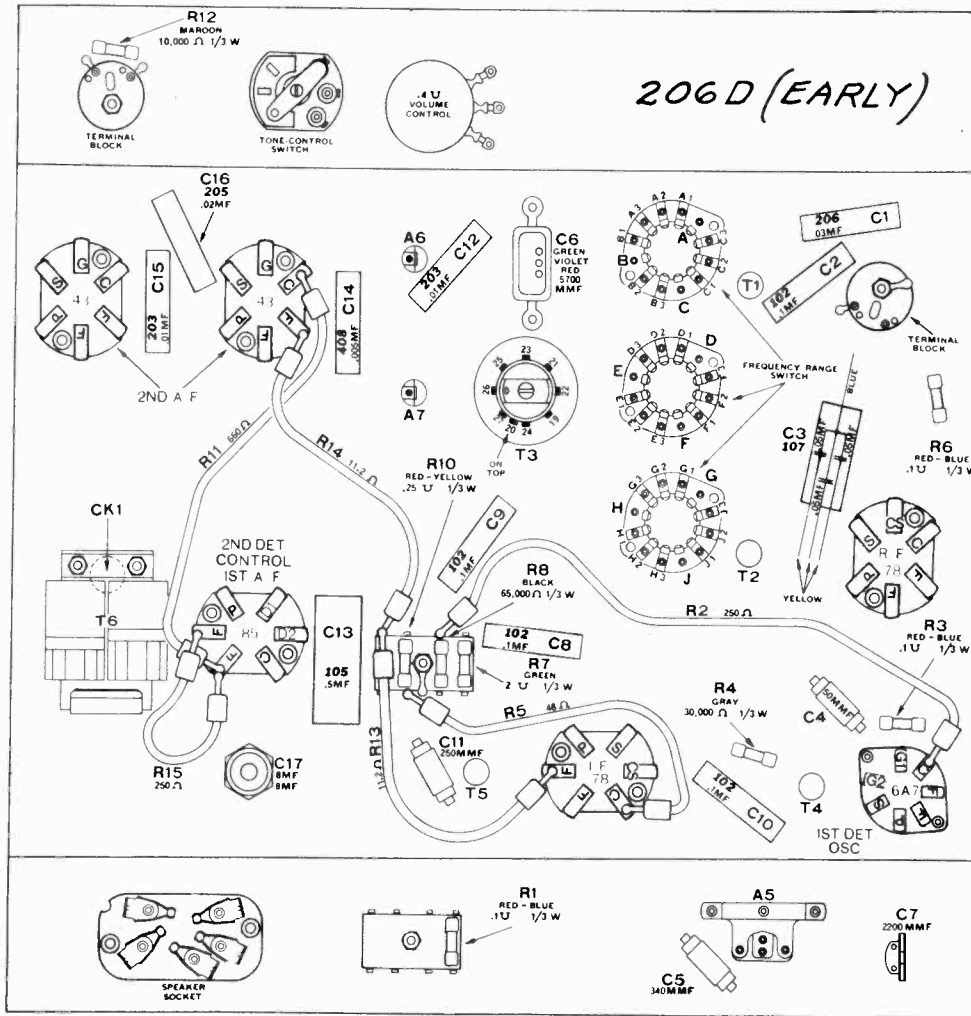
I.F. = 450 K.C.

DWG NO. MODEL 184 TYPE 1ST



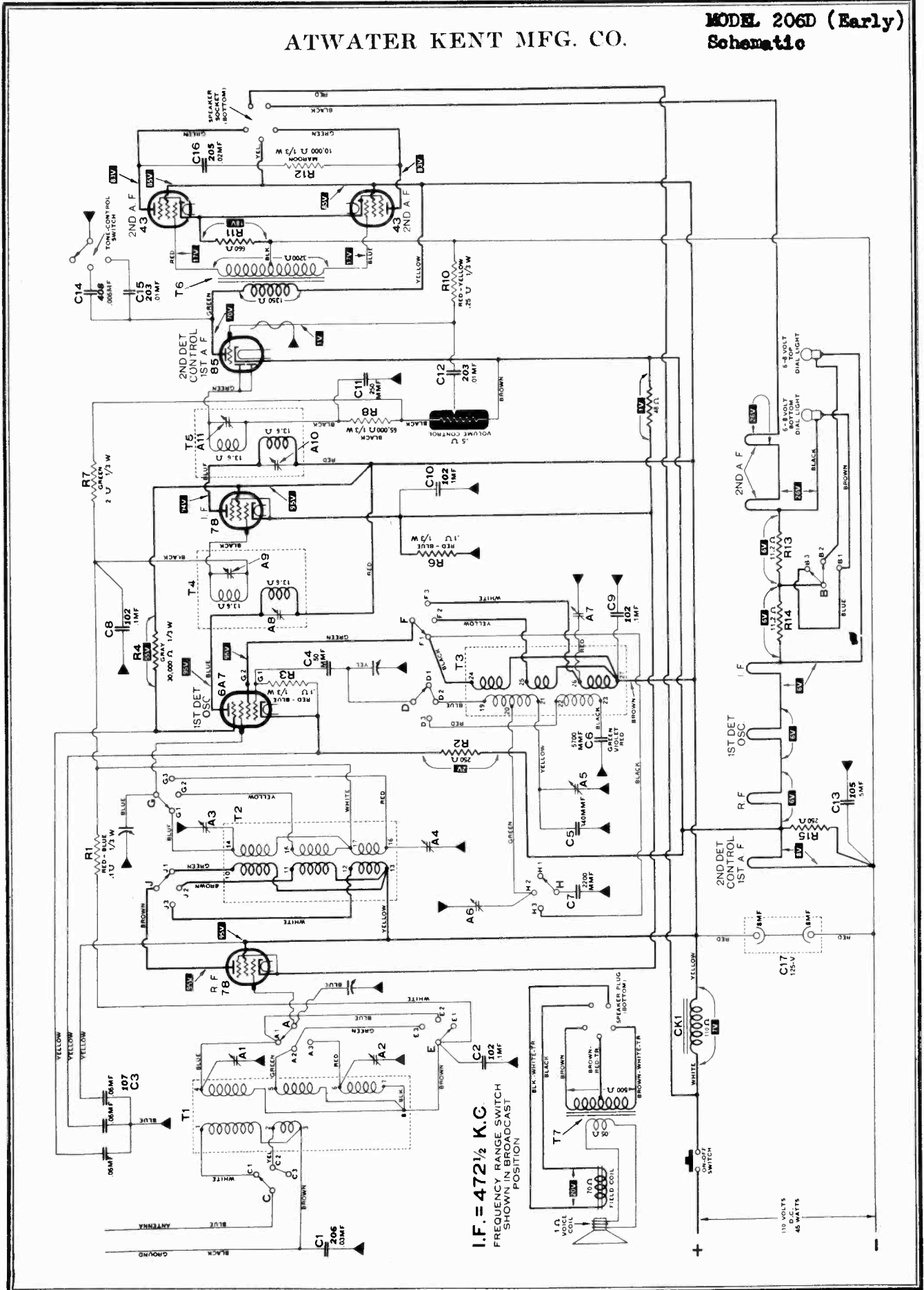
**MODEL 206D (Early)**  
**Socket, Trimmers**  
**Chassis**

ATWATER KENT MFG. CO.



# ATWATER KENT MFG. CO.

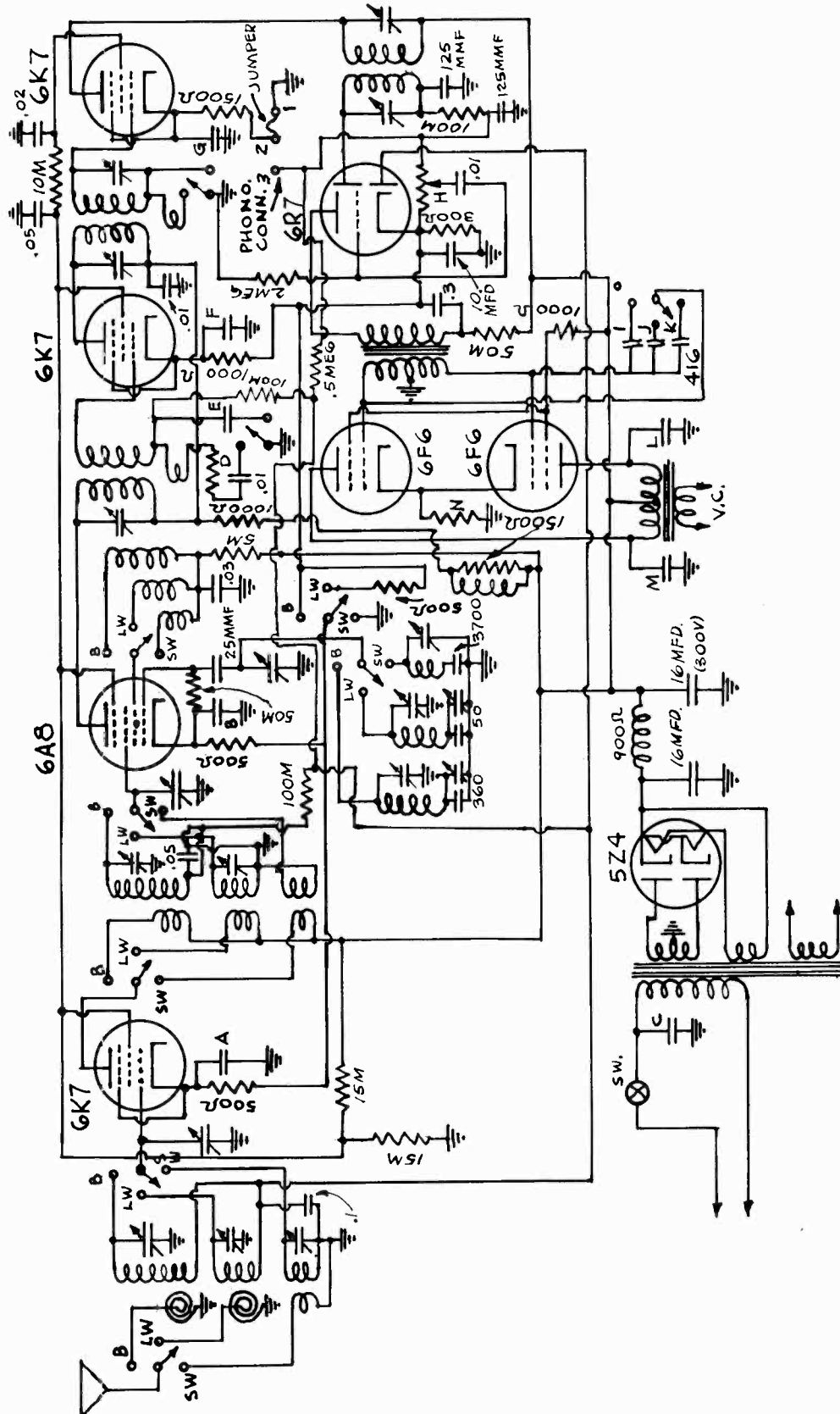
## MODEL 206D (Early) Schematic





ATWATER KENT MFG. CO.

MODEL E-208  
Schematic



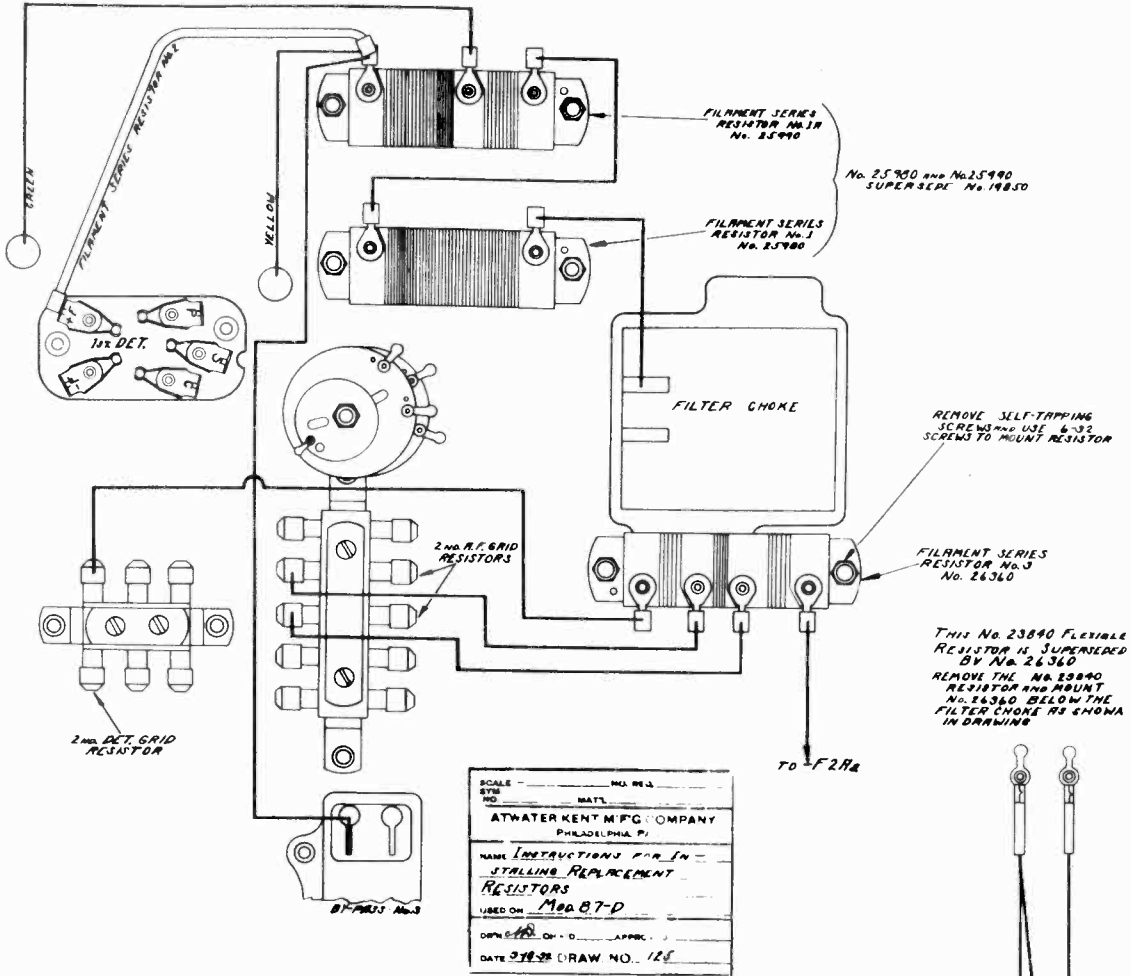
**MODEL 87-D**

Change  
**MODELS 217, 427, 667,  
 708, 808, 808A**  
 Changes

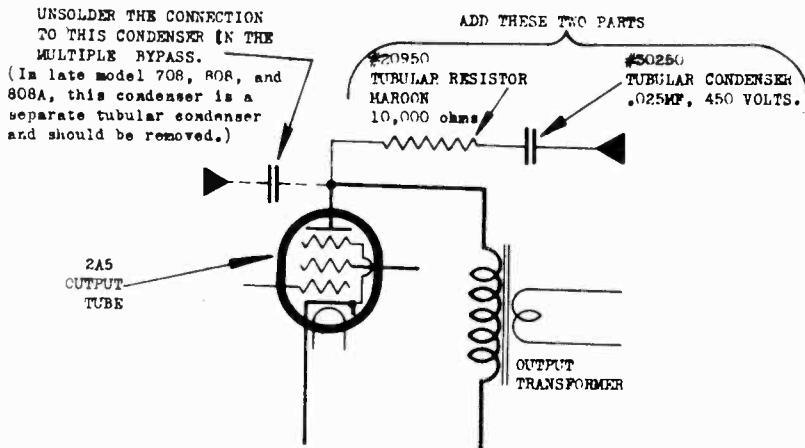
**ATWATER KENT MFG. CO.**

**MODEL 87-D**

INSTRUCTIONS FOR INSTALLING No. 26360 RESISTOR IN PLACE OF No. 23890  
 AND  
 INSTRUCTIONS FOR INSTALLING No. 25980 & No. 25990 IN PLACE OF No. 19850



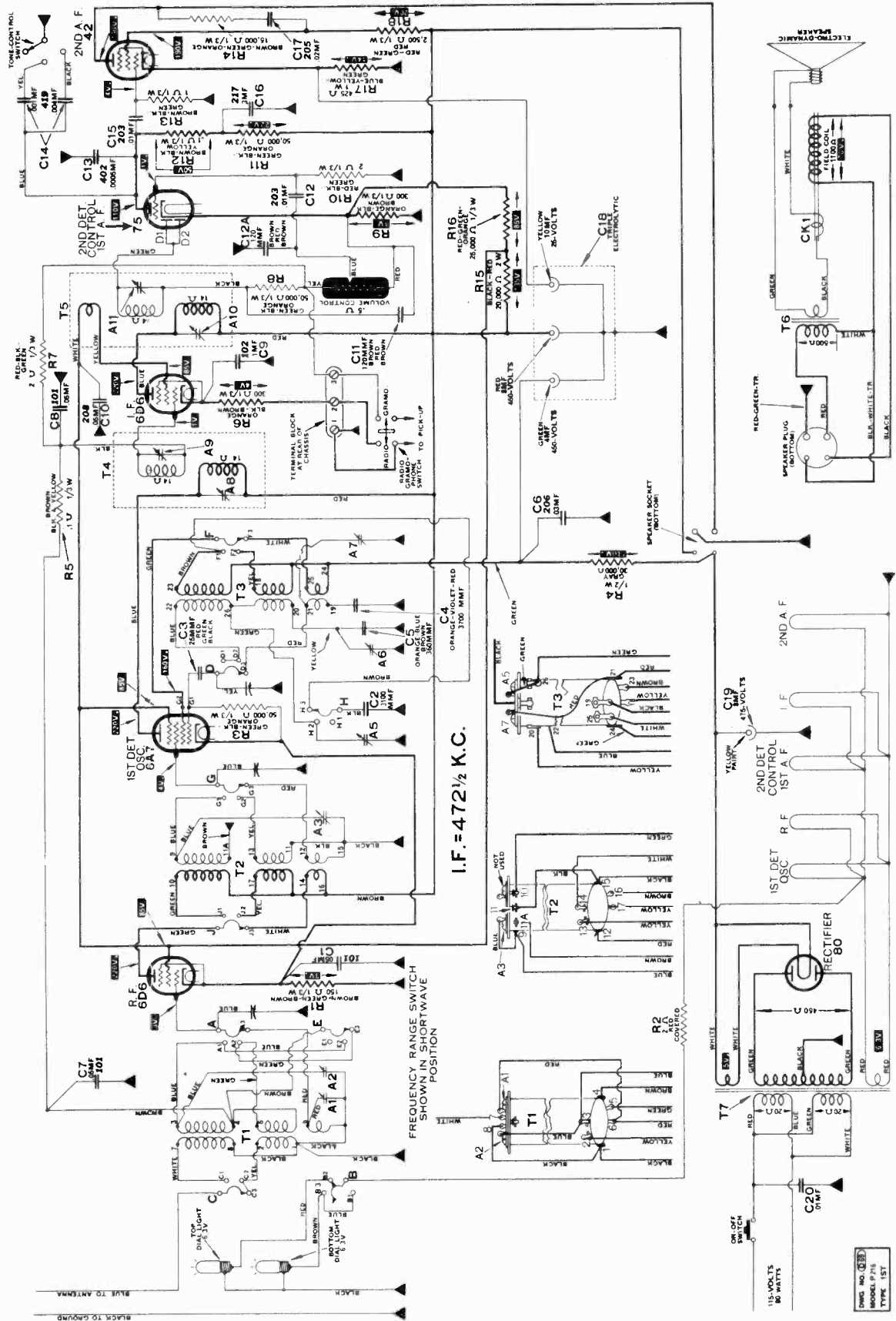
IMPROVING TONE QUALITY IN MODELS 217, 427, 667, 708, 808, and 808A



To improve the tone quality of Models 217, 427, 667, 808, 808A, and 708, remove the connection to the original quality condenser on the plate of the 2A5 output tube, and add a #20950 10,000 ohm resistor and a #30250 tubular condenser (.025MF) as shown above.

ATWATER KENT MFG. CO.

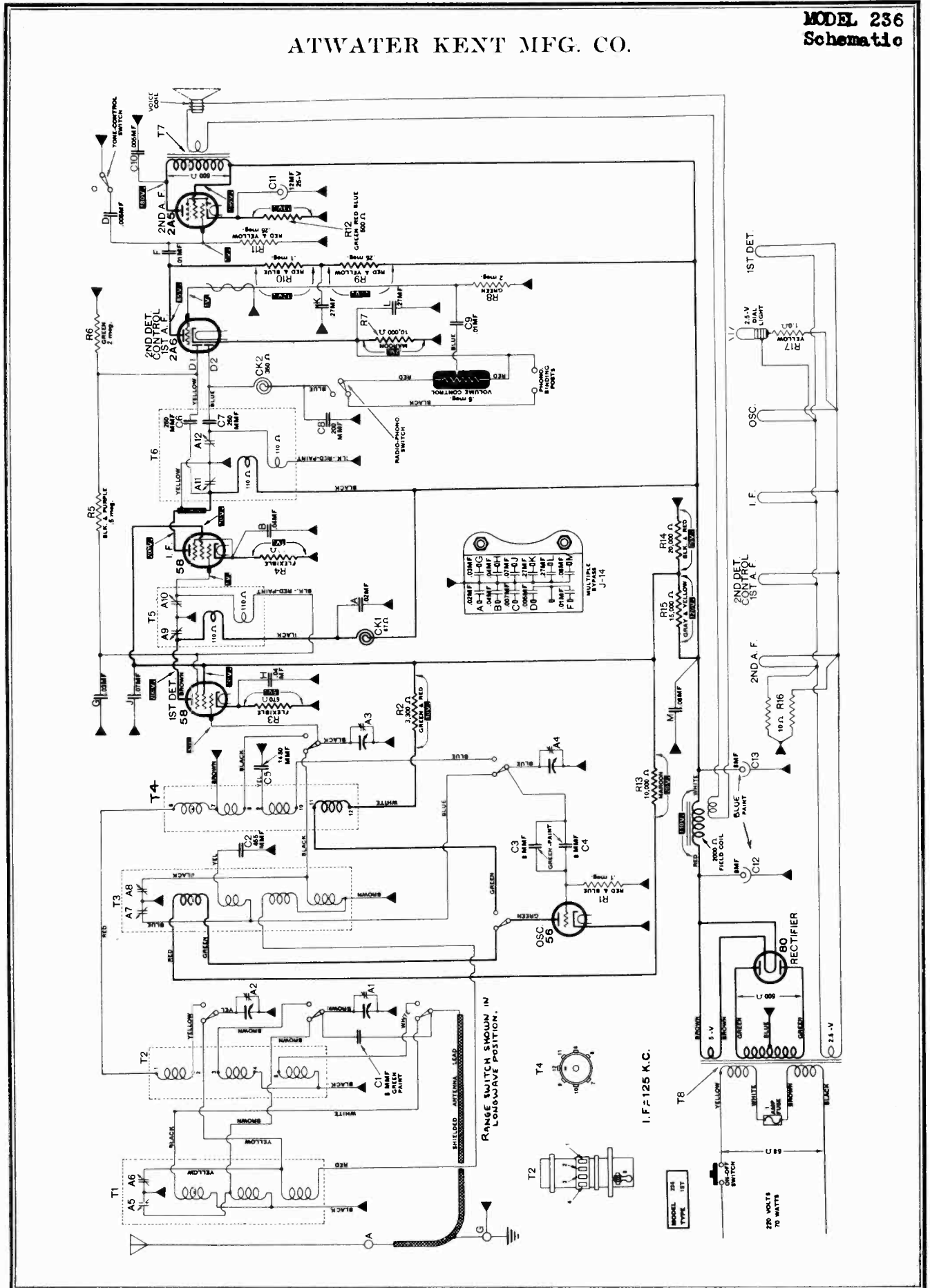
MODEL S P216, P356  
Schematic



August 2, 1935.



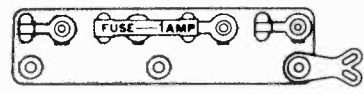
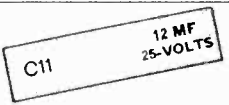
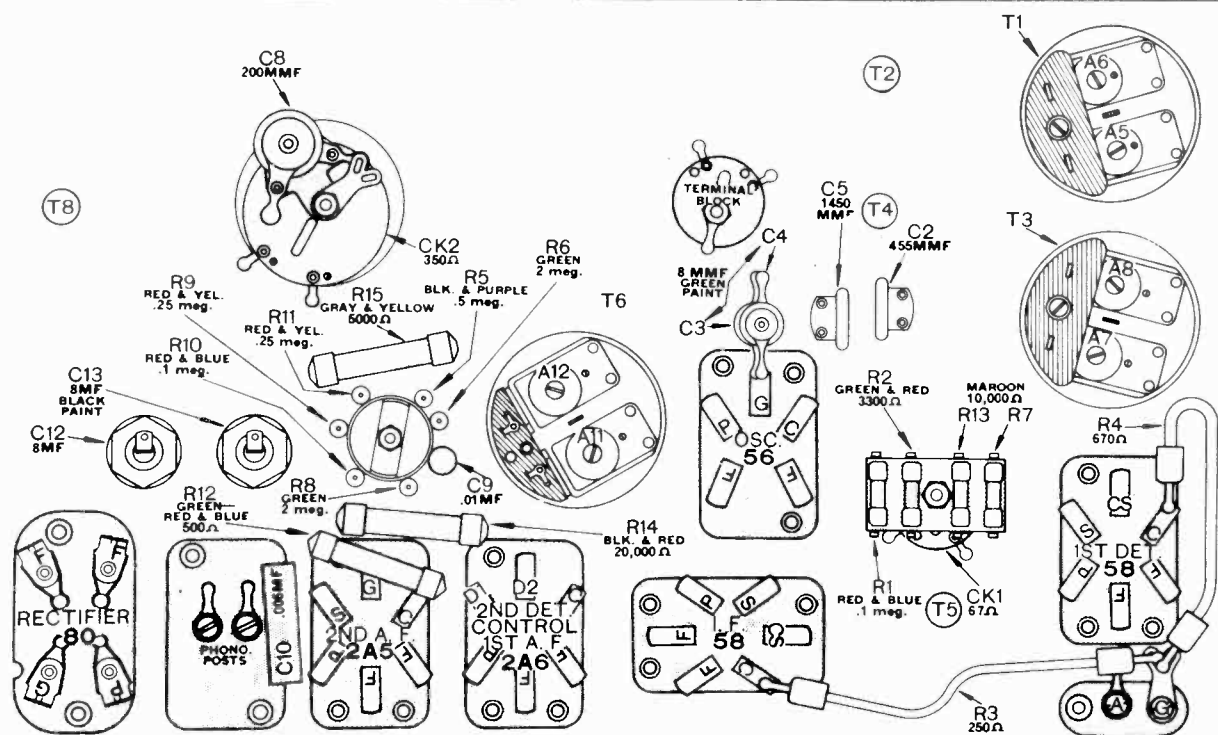
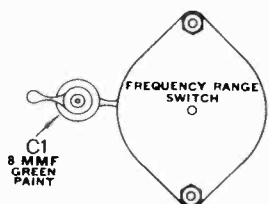
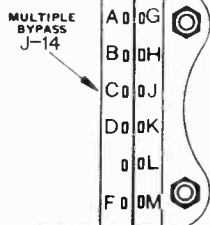
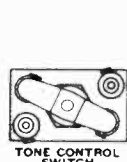
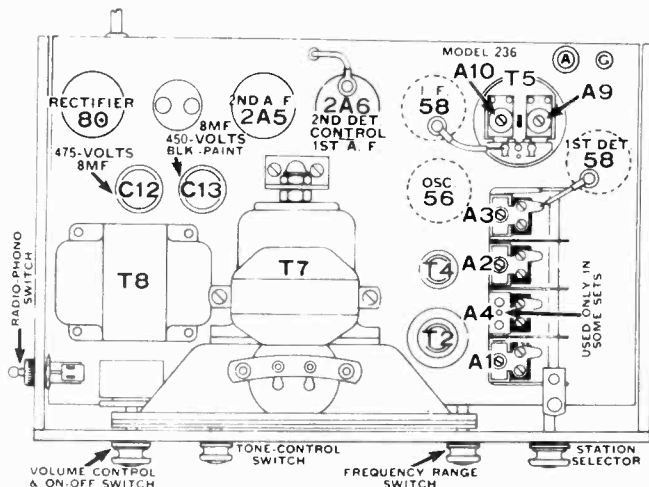
ATWATER KENT MFG. CO.





**MODEL 236**  
**Socket, Trimmers**  
**Chassis**

ATWATER KENT MFG. CO.





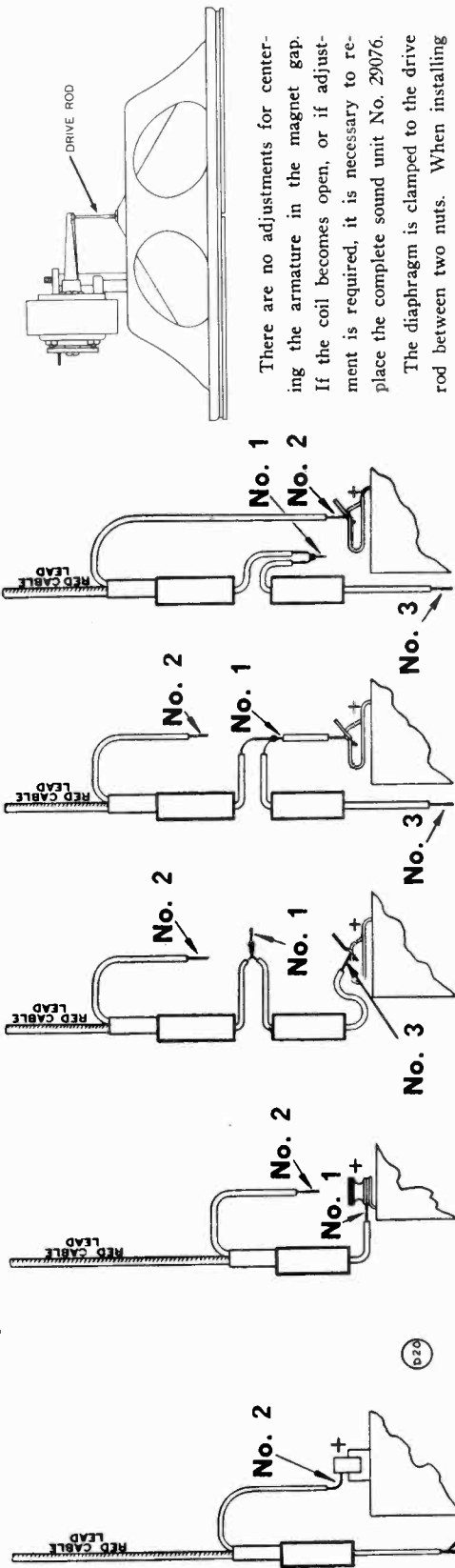


ATWATER KENT MFG. CO.

**MODELS 237Q, 467Q**  
**Installation Notes**  
**Dry Cell Data**  
**Speaker Adjustments**

**USING 2-VOLT AIR CELL, 2-VOLT STORAGE CELL  
 OR 3-VOLT DRY "A" BATTERIES**

**SPEAKER ADJUSTMENT**



There are no adjustments for centering the armature in the magnet gap. If the coil becomes open, or if adjustment is required, it is necessary to replace the complete sound unit No. 29076. The diaphragm is clamped to the drive rod between two nuts. When installing a new diaphragm or unit turn the rear nut back on the drive rod, fasten the diaphragm or unit to cone housing, and turn rear nut forward until it touches apex of diaphragm. Put the front nut on drive rod and fasten securely.

Connections when battery is fresh  
 Connections after 300 hours' use  
 Connections after 600 hours' use

**2-VOLT AIR CELL**  
 Connect No. 1 as shown. do not use No. 2

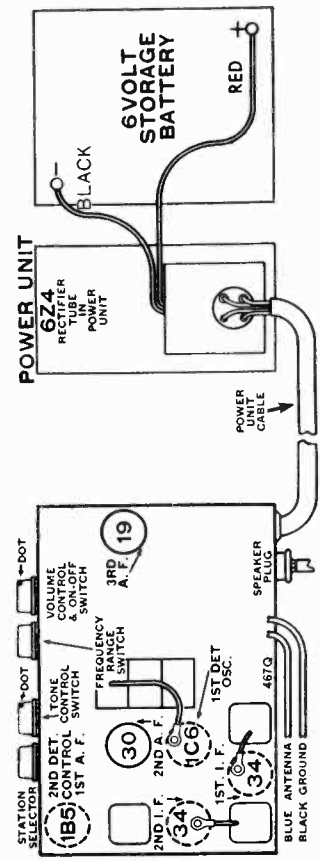
**2-VOLT STORAGE CELL**  
 Connect No. 2 as shown. do not use No. 1

**3-VOLT DRY "A" BATTERY**  
 It is necessary to connect an extra resistor as shown when using a 3-volt dry "A" battery. This resistor is available through Atwater Kent distributors.

The extra resistor required when using a 3-volt dry "A" battery is Atwater Kent part No. 40340, 1.03 ohms.

**IMPORTANT INSTALLATION NOTES FOR  
 MODELS 237Q AND 467Q**

Do not lengthen the leads from the power unit to the storage battery, as this will cause excessive hum. The spring clips must make good contact to the storage battery terminals. File and clean the battery terminals when necessary to ensure good contact. Connections between the chassis, power unit, and storage battery are shown above. Keep the antenna lead-in as far as possible from the power unit, power-unit cable, and storage battery.



March 25, 1936

**MODELS 285Q, 415Q**  
**MODELS 237Q, 467Q**  
**MODELS 657Q, 747Q**  
**MODELS 485Q, 515Q**  
**Parts Lists**

**ATWATER KENT MFG. CO.**

**MODELS 285Q AND 415Q**  
 3004 Cabinet with screen (415Q)  
 29431 Screen (415Q)  
 29432 Tube shield (1C6, 1B5)  
 29433 Coil shield (T2, 3)  
 29434 I. F. T. shield (T4, 5, 6)  
 31553 Cable and plug (chassis to power unit)  
 31654 Cable plug only  
 31655 Instruction sheet, F-1276  
 48790 Shipping container (467Q)  
 48810 Shipping container (467Q)  
 31006 Base cover (467Q only)

**TRANSFORMERS**  
 T1 47460 Broadcast pre-selector  
 T2 47470 Oscillator transformer  
 T3 47480 No. 1 I. F. T.  
 T4 48610 No. 2 I. F. T.  
 T5 48620 No. 3 I. F. T.  
 T6 46630 No. 3 I. F. T.  
 T7 47840 Audio input transformer  
 T8 48480 Power transformer (S-375)

**ELECTROLYTICS**  
 C2 29529 8 MF, 200-V.  
 C22 31551 50 and 10 MF, 200-V.  
 C26 31552 10 and 10 MF, 200-V.

**RESISTORS**  
 R16 31546 63 Ω, blue-orange-black  
 R18 31547 15 Ω, brown-green-black  
 R20 31548 15 Ω, brown-green-black  
 R21 31547 15 Ω, brown-green-black  
 R22 31545 7 Ω, black-violet-black  
 R24 31548 30 Ω, orange-black-black

**TRIMMERS**  
 44570 Double R. F. trimmer  
 29823 Double I. F. trimmer  
 39630 Broadcast tracking trimmer (A4)

**SOCKETS**  
 26985 6Z4 socket  
 24482 Vibrator socket  
 21336 Power supply socket  
 24482 4-prong tube socket  
 24494 6-prong tube socket (1C6, 1B5)  
 21336 Speaker socket  
 18449 Fuse socket

**CHOKES**  
 CK1 36630 Filament choke  
 CK2 31587 R. F. choke  
 CK3 36610 R. F. choke  
 CK4 31573 A. F. choke

**POWER UNIT**  
 48590 Power unit complete with tube  
 31568 Power unit container lid  
 26994 Power unit auxiliary container  
 48290 Power unit assembly  
 31554 Vibrator  
 26946 "A" terminal clip  
 26946 Power trans. mounting bracket  
 23774 3-amp. fuse

**657Q AND 237Q SPEAKER**  
 No. 507(N)  
 29076\* Sound unit complete  
 31231 Drive rod  
 31232 Cable and plug asm.  
 31853 Tube shield, F-1322 (515Q)  
 29669 Shipping container (485Q)  
 49460 Shipping container (485Q)

**TUNING PARTS**  
 29417 Shaft  
 30042 Plate assembly  
 17961 Dial rubber  
 21692 Tuning gear  
 31875 Dial and holder, with bushing  
 31818 Dial holder

**MODELS 237Q AND 467Q**  
 30046 Cabinet with screen (237Q)  
 29983 Gasket and screen (237Q only)  
 29959 Escutcheon and crystal  
 29669 Shipping container (485Q)  
 42750 Tone control switch assembly  
 29101 Shaft and blade for above  
 29896 Range switch  
 31349 Variable condenser assembly  
 29529 Dial light socket assembly  
 29529 Dial light (485Q only)  
 31713 Dial plate (657Q only)  
 31714 Dial plate (747Q only)  
 31606 Dial plate holder  
 22683 Tube shield (1B5, 1C6)  
 15213 Tube shield (T2, 3)  
 29547 Coil shield (T4, 5, 6)  
 49246 Shipping container (747Q)  
 49250 Shipping container (747Q)  
 31703 Instruction sheet, F-1312  
 27695 Battery cable tag, F-1155  
 31006 Base plate (747Q)

**TRANSFORMERS**  
 T1 47460 Broadcast pre-selector  
 T2 49210 1st detector  
 T3 47480 Oscillator  
 T4 48610 No. 1 I. F. T.  
 T5 48620 No. 2 I. F. T.  
 T6 46630 No. 3 I. F. T.  
 T7 47840 Audio input trans.

**TRIMMERS**  
 44570 Double R. F. trimmer  
 29823 Double I. F. trimmer  
 39630 Broadcast tracking trimmer (A4)

**SOCKETS**  
 26985 6Z4 socket  
 24482 Vibrator socket  
 21336 Power supply socket  
 24482 4-prong tube socket  
 24494 6-prong tube socket (1C6, 1B5)  
 21336 Speaker socket  
 18449 Fuse socket

**CHOKES**  
 CK1 36630 Filament choke  
 CK2 31587 R. F. choke  
 CK3 36610 R. F. choke  
 CK4 31573 A. F. choke

**POWER UNIT**  
 48590 Power unit complete with tube  
 31568 Power unit container lid  
 26994 Power unit auxiliary container  
 48290 Power unit assembly  
 31554 Vibrator  
 26946 "A" terminal clip  
 26946 Power trans. mounting bracket  
 23774 3-amp. fuse

**657Q AND 237Q SPEAKER**  
 No. 507(N)  
 29076\* Sound unit complete  
 31231 Drive rod  
 31232 Cable and plug asm.  
 31853 Tube shield, F-1322 (515Q)  
 29669 Shipping container (485Q)  
 49460 Shipping container (485Q)

**TUNING PARTS**  
 29417 Shaft  
 30042 Plate assembly  
 17961 Dial rubber  
 21692 Tuning gear  
 31875 Dial and holder, with bushing  
 31818 Dial holder

**MODELS 657Q AND 747Q**  
 30046 Cabinet with screen (657Q)  
 29983 Gasket and screen (657Q only)  
 29959 Escutcheon and crystal  
 31734 Volume control, 5 U  
 42750 Tone control switch assembly  
 29101 Shaft and blade for above  
 29896 Range switch  
 31349 Variable condenser assembly  
 29529 Dial light socket assembly  
 29529 Dial light (485Q only)  
 31713 Dial plate (657Q only)  
 31714 Dial plate (747Q only)  
 31606 Dial plate holder  
 22683 Tube shield (1B5, 1C6)  
 15213 Tube shield (T2, 3)  
 29547 Coil shield (T4, 5, 6)  
 49246 Shipping container (747Q)  
 49250 Shipping container (747Q)  
 31703 Instruction sheet, F-1312  
 27695 Battery cable tag, F-1155  
 31006 Base plate (747Q)

**TRANSFORMERS**  
 T1 47460 Broadcast pre-selector  
 T2 49210 1st detector  
 T3 47480 Oscillator  
 T4 48610 No. 1 I. F. T.  
 T5 48620 No. 2 I. F. T.  
 T6 46630 No. 3 I. F. T.  
 T7 47840 Audio input trans.

**TRIMMERS**  
 44570 Double R. F. trimmer  
 29823 Double I. F. trimmer  
 39630 Broadcast tracking trimmer (A4)

**SOCKETS**  
 26985 6Z4 socket  
 24482 Vibrator socket  
 21336 Power supply socket  
 24482 4-prong tube socket  
 24494 6-prong tube socket (1C6, 1B5)  
 21336 Speaker socket  
 18449 Fuse socket

**CHOKES**  
 CK1 36630 Filament choke  
 CK2 31587 R. F. choke  
 CK3 36610 R. F. choke  
 CK4 31573 A. F. choke

**POWER UNIT**  
 48590 Power unit complete with tube  
 31568 Power unit container lid  
 26994 Power unit auxiliary container  
 48290 Power unit assembly  
 31554 Vibrator  
 26946 "A" terminal clip  
 26946 Power trans. mounting bracket  
 23774 3-amp. fuse

**657Q AND 237Q SPEAKER**  
 No. 507(N)  
 29076\* Sound unit complete  
 31231 Drive rod  
 31232 Cable and plug asm.  
 31853 Tube shield, F-1322 (515Q)  
 29669 Shipping container (485Q)  
 49460 Shipping container (485Q)

**TUNING PARTS**  
 29417 Shaft  
 30042 Plate assembly  
 17961 Dial rubber  
 21692 Tuning gear  
 31875 Dial and holder, with bushing  
 31818 Dial holder

**MODELS 485Q, 515Q**  
 30084 Cabinet with screen (515Q)  
 31622 Gasket and screen asm.  
 29759 Escutcheon and crystal  
 31768 Var. condenser  
 42370 Vol. control, 5 U  
 42370 Range switch  
 31851 Range switch  
 31865 Battery cable (515Q)  
 31866 Battery cable (485Q)  
 31401 Tube shield (halves) (1A4)  
 31402 Tube shield cap  
 31093 Shipping container (485Q)  
 29619 I. F. T. shield above  
 31857 Battery cable tag, F-1326  
 22683 Tube shield (1C6)  
 31859 "C" battery plug, 5-prong  
 31858 "B" battery plug, 3-prong  
 31871 Dial spacer (red rubber, 4 used)  
 31859 Dial gasket  
 31814 Dial only  
 31819 Light shield ring  
 31864 Reflector only  
 49522 Snap eyelets  
 49522 Shipping container  
 26721 Pilot lamp, 2-V., 60 mills.

**TRANSFORMERS**  
 T1 49530 No. 1 R. F. transformer  
 T2 49570 Oscillator transformer  
 T3 49550 No. 1 I. F. transformer  
 T4 49550 No. 2 I. F. transformer  
 T5 49530 No. 3 I. F. transformer  
 T6 49330 Wave trap assembly

**RESISTORS**  
 R17 47120 25 Ω (515Q)  
 R17 47210 43 Ω (485Q)  
 R17 40340 1.03 Ω, wire wound, for use with a 3-V. "A" battery

**CONDENSERS**  
 C4 29588 360 MMF  
 C5 29603 30 MMF  
 C11, 13 29687 120 MMF  
 C15 29606 25 MMF  
 C20 29529 8 MF, 200-V.  
 C20 29529 8 MF, 475-V., No. 28031 in some sets.)

**TRIMMERS**  
 44570 Double R. F. trimmer  
 29823 Double I. F. trimmer  
 39630 Broadcast tracking trimmer (A4)

**ELECTROLYTICS**  
 31552 10 MF and 10 MF, 200-V.

**MODELS 237Q, 467Q, 657Q, AND 747Q**  
 28956 Dial pointer screw  
 28957 Gear frame (rubber tired)  
 27332 Small gear (rubber tired)  
 27333 Dial pointer holder  
 28959 Tuning gear  
 27696 Screw for above  
 29758 Dial pointer

**RESISTORS**  
 R26 47120 25 Ω (in 657Q)  
 R26 47120 25 Ω (in 747Q)  
 R26 40340 1.03 Ω, wire wound, for use with a 3-V. "A" battery

**SOCKETS**  
 24492 4-prong socket (1C6, 1B5)  
 21336 Speaker socket

**CHOKES**  
 CK1 36630 48-turn choke

**TRIMMERS**  
 A1 31845 On wave trap  
 A2 28843 Front of chassis  
 A3 39630 Rear of chassis  
 T3 29623 Or T3, T4, T5

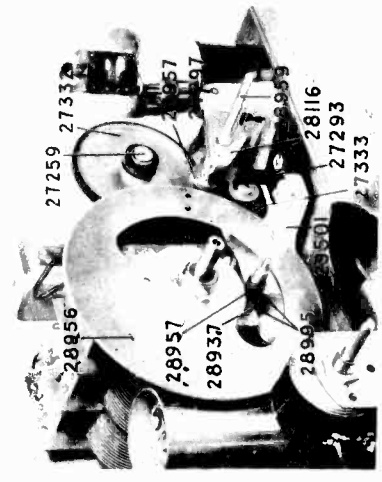
**SOCKETS**  
 21336 Speaker  
 24494 6-prong  
 24492 4-prong

**CHOKES**  
 CK1 36630 Filament choke

**BATTERY CABLES**  
 485Q SPEAKER No. 55600  
 515Q SPEAKER No. 55500  
 29076\* Sound unit  
 31914 Cable and plug asm. (515Q)  
 15076 Cable and plug asm. (485Q)  
 15076 Plug only  
 19469 Segment  
 \* Parts for this unit are not sold separately.

**SPEAKERS**  
 Refer to list under Models 237Q and 467Q.

**TUNING MECHANISM**  
**MODELS 237Q, 467Q, 657Q, AND 747Q**



**RESISTORS**  
 R26 47120 25 Ω (in 657Q)  
 R26 47120 25 Ω (in 747Q)  
 R26 40340 1.03 Ω, wire wound, for use with a 3-V. "A" battery

**SOCKETS**  
 24492 4-prong socket (1C6, 1B5)  
 21336 Speaker socket

**CHOKES**  
 CK1 36630 48-turn choke

**TRIMMERS**  
 A1 31845 On wave trap  
 A2 28843 Front of chassis  
 A3 39630 Rear of chassis  
 T3 29623 Or T3, T4, T5

**SOCKETS**  
 21336 Speaker  
 24494 6-prong  
 24492 4-prong

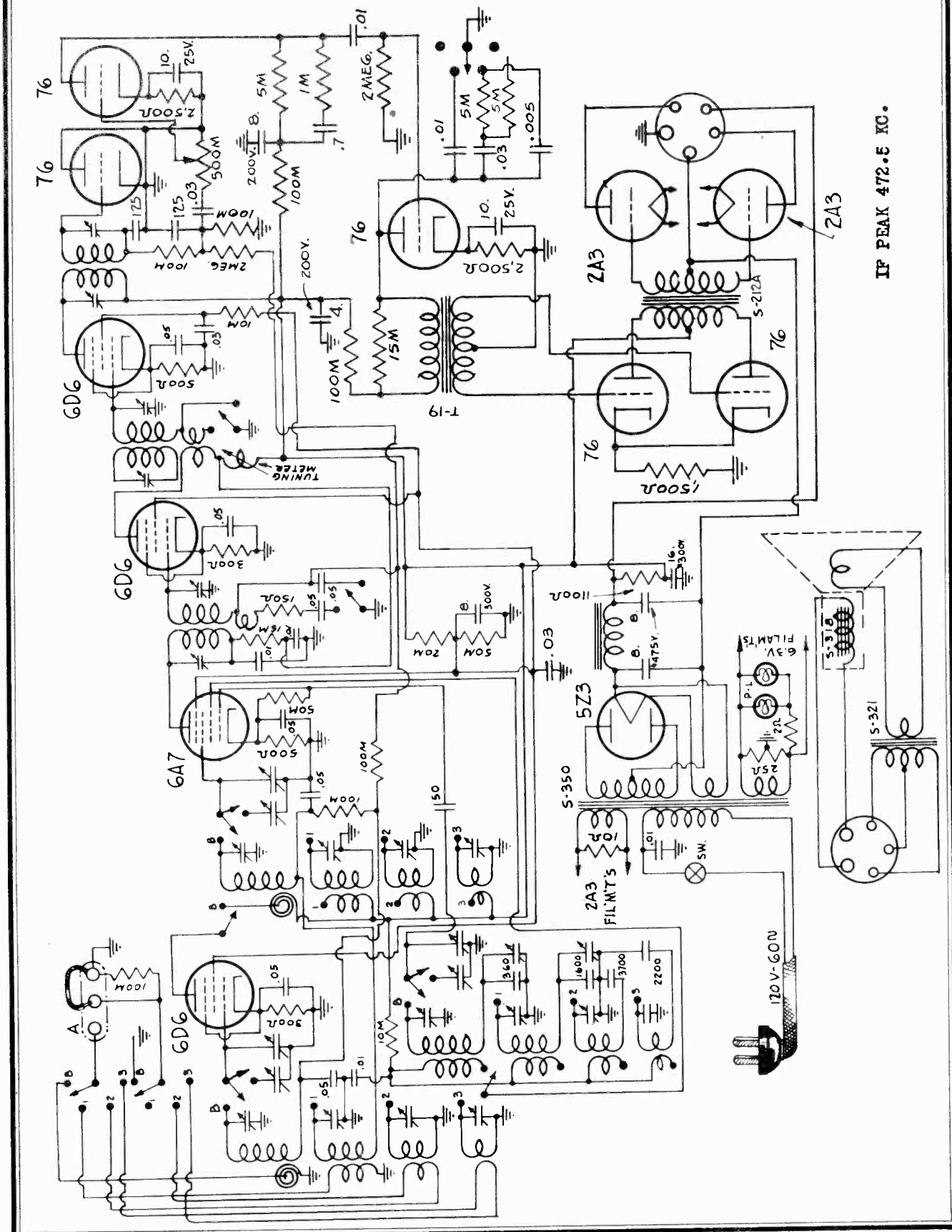
**CHOKES**  
 CK1 36630 Filament choke

**BATTERY CABLES**  
 485Q SPEAKER No. 55600  
 515Q SPEAKER No. 55500  
 29076\* Sound unit  
 31914 Cable and plug asm. (515Q)  
 15076 Cable and plug asm. (485Q)  
 15076 Plug only  
 19469 Segment  
 \* Parts for this unit are not sold separately.

**SPEAKERS**  
 Refer to list under Models 237Q and 467Q.

ATWATER KENT MFG. CO.

MODEL 312  
Schematic



IF PEAK 472.5 KC.

**MODELS 328, P328, P328X  
MODELS 412, P412, E412  
MODELS 447, 447X  
MODELS 710, 810  
Parts Lists**

**ATWATER KENT MFG. CO.**

TRANSFORMERS FOR

MODELS 312, E312, 412, E412, 710, and 810

Diagram Code Number	Name	MODEL 312 P312	MODEL E312 E412	MODEL 412 P412	MODEL E412 E412	MODEL 710 P710	MODEL 810 P810
T1	R.F., broadcast and 4.6 to 12.2 MC.....	45740	45740	45740	45740	45740	45740
T2	R.F., police and 12 to 18 MC.....	45770	.....	45770	.....	45770	45770
T2	R.F., long wave and 12 to 18 MC.....	46750	.....	46750	.....	.....	.....
T3	1st-det., broadcast and 4.6 to 12.2 MC.....	45750	45750	45750	45750	45750	45750
T4	1st-det., police and 12 to 18 MC.....	45780	.....	45780	.....	45780	45780
T4	1st-det., long wave and 12 to 18 MC.....	46760	.....	46760	.....	.....	.....
T5	Oscillator, broadcast and 4.6 to 12.2 MC.....	45760	45760	45760	45760	45760	45760
T6	Oscillator, police and 12 to 18 MC.....	45790	.....	45790	.....	45790	45790
T6	Oscillator, long wave and 12 to 18 MC.....	46770	.....	46770	.....	.....	.....
T7	No. 1 I.F.T.....	45640	45640	45640	45640	45640	47880
T8	No. 2 I.F.T.....	45650	45650	45650	45650	45650	47890
T9	No. 3 I.F.T.....	45660	45660	45660	45660	45660	45660
T10	Audio transformer unit.....	46280	46280	47640	47640	46620	48770
T11	Power transformer, 110 volts.....	45960	.....	47850	.....	48190	48740
T11	Power transformer, 115-230 volts.....	45960	45960	47850	47850	48190	48740
T12	Output transformer.....	46740	46740	46740	46740	44460	48760

TRIMMERS

- 39140 Strip of four trimmers
- 38770 Tracking trimmer (C)
- 44570 Double R.F. trimmer
- 29823 Double I.F. trimmer

SOCKETS

- 30058 Universal 8 prong
- 24492 4 prong
- 21337 Speaker socket

SHIELDS

- 29647 Shield for T1, T3
- 29648 Shield for T2, T4
- 27336 Shield for T5, T6
- 29619 I.F.T. shield

412 SPEAKER NO. 48900

- 35080 Field coil
- 46740 Output transformer
- 26243 Diaphragm

TUNING PARTS

The tuning parts are same as in Model 810

CONDENSERS

- 27583 16 MF, 300 V., electrolytic
- 29691 16 MF, 475 V., electrolytic
- 25384 8 MF, 300 V., electrolytic
- 29962 4-8 MF, 200 V., electrolytic

FILTER CHOKE

- 46290 Filter choke

MODEL 328

- 29567 Variable condenser
- 29618 Volume control, .5 megohm
- 29409 Selectivity switch
- 30048 Tone control switch
- 28908 Shaft and blade for above
- 47340 Range switch
- 25689 Shadow meter complete
- 30055 Front panel assembly
- 31288 Escutocheon
- 29573 Dial plate only
- 29848 Lamp, 6.3-V., bayonet base
- 27254 Dial pointer
- 31613 Grid lead and cap
- 29547 Coil shield (T1, 2)
- 29548 Osc. trans. shield (T3)
- 29619 I. F. T. shield (T4, 5, 6)
- 31183 Instruction sheet, F-1289
- 48890 Shipping container

SOCKETS

- 21336 Speaker socket
- 30058 Universal socket for metal tubes

ELECTROLYTICS

- C23 27592 Triple electrolytic (early sets, 4 MF, 450-V.; 8 MF, 450-V.; 10 MF, 25-V.)
- 31702 Triple electrolytic (late sets), 4 MF, 200-V.; 8 MF, 100-V.; 8 MF, 25-V.
- C27 29691 16 MF, 475-V.
- C29 28031 8 MF, 475-V. (late sets)

For parts not listed below, refer to Model 318

MODELS 447 and 447X

- 28026 Cabinet, less screen.....
- 27904 Screen and gasket.....
- 27863 Shipping container
- 28224 Front panel assembly

CONDENSERS

- 27584 4 MF, 300 V. electrolytic
- 28031 8 MF, 475 V., electrolytic
- 25379 10 MF, 25 V., electrolytic
- 27598 3700 MMF.
- 27599 5700 MMF.

MODELS P328 and P328X

Model P328 is same as standard Model 328 except that it has phono terminals and a universal power transformer No. 49860

RESISTORS

- R24 46150 2 ohms, flexible
- R25 45860 25 ohms, flexible

TRANSFORMERS

- T1 44390 No. 1 R. F. T.
- T2 44410 No. 2 R. F. T.
- T3 44420 Oscillator transformer
- T4 47720 No. 1 I. F. T.
- T5 47730 No. 2 I. F. T.
- T6 47740 No. 3 I. F. T.
- T7 47770 Power trans., early (S-337)
- 46980 Power trans., late (S-361)
- T8 21672 Output trans. (for 41800 speaker)
- 49010 Output trans. (for 54100 speaker)

TRIMMERS

- 29823 Double I. F. trimmer on T4 and T5
- 29543 Double I. F. trimmer on T6
- 44570 Double R. F. trimmer on T1, T2, and T3
- 38770 Broadcast tracking condenser (A6)

MODELS 412, P412 and E412

- 27321 Volume control.....
- 48340 Tone control switch
- 29409 Selectivity switch
- 47950 Range switch
- 29429 Variable condenser
- 29476 Dial and frame (412, P412)
- 31212 Dial and frame (E412)
- 29475 Dial (412, P412)
- 29844 Dial (E412)
- 31287 Escutocheon
- 25689 Shadow tuning meter
- 47940 Reflector
- 28945 Knob, without dot
- 28947 Knob, with dot
- 28349 Phono terminal card
- 31188 Instruction folder F-1293 (412)
- 31407 Instruction folder F-1304 (P412)
- 48930 Shipping container (412)
- 48940 Shipping container (E412)

TRANSFORMERS

- 21672 Output transformer
- 28567 Power transformer (447X)
- 25221 Power transformer (447)

MISCELLANEOUS

- 21336 Speaker socket
- 29106 Tone control switch

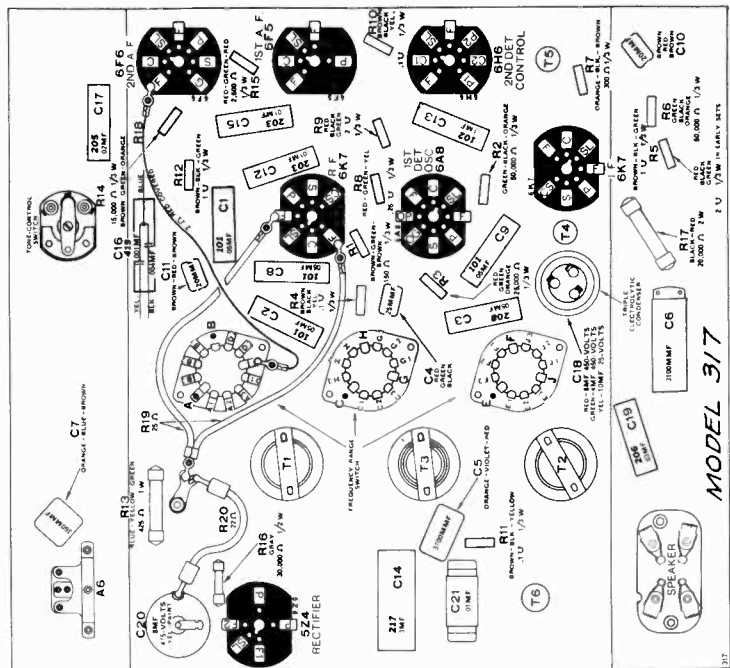
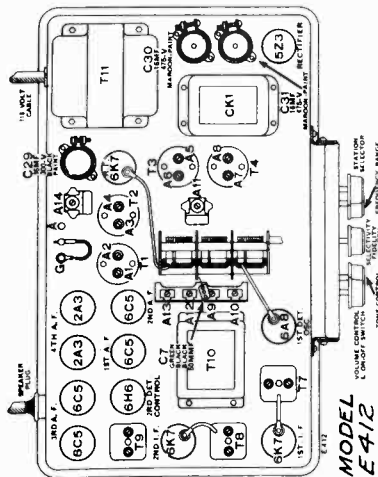
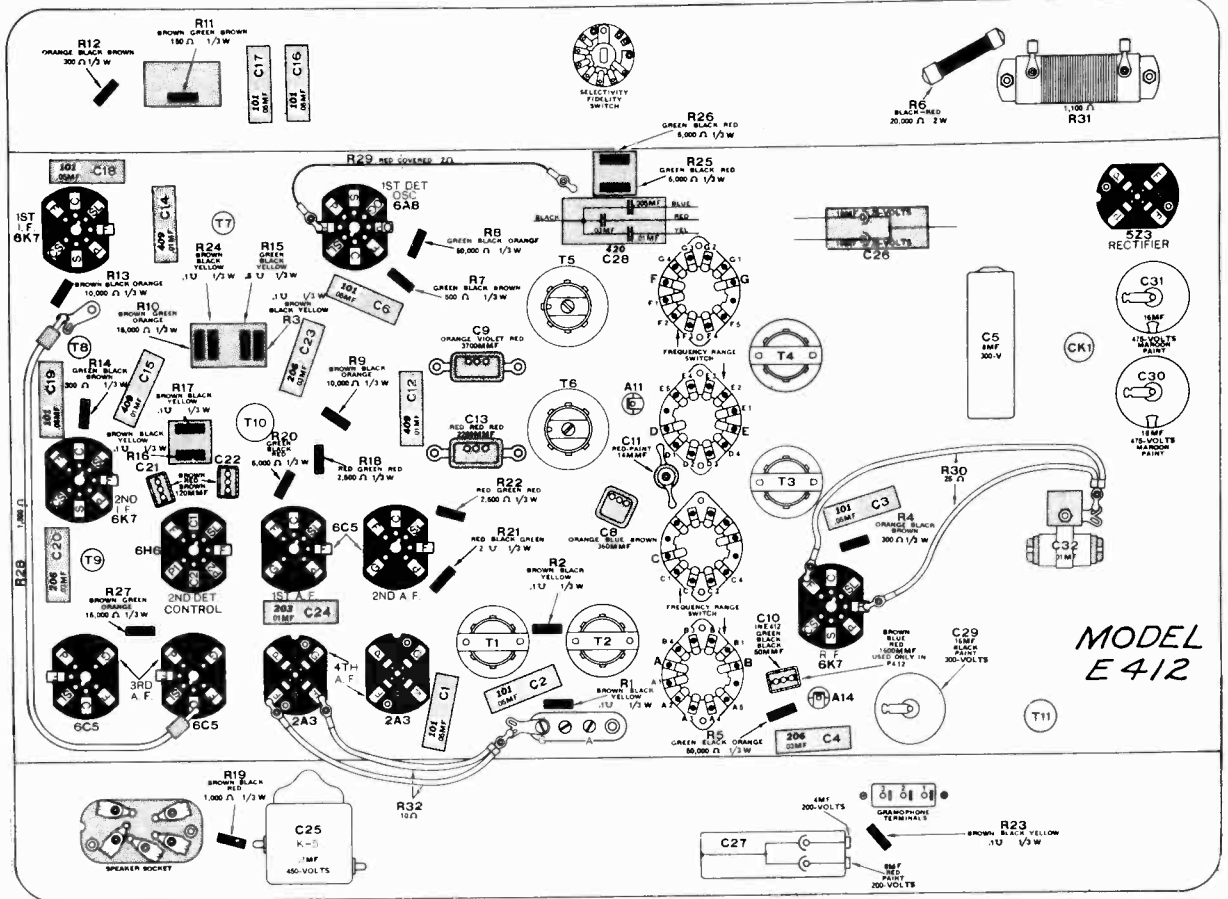
447 SPEAKER NO. 41700

- 21260 Field coil
- 19465 Diaphragm
- 19487 Cable and plug
- 21672 Output transformer

447-39040 - S245A - 25221  
447X-41590 - S297A - 28567

# ATWATER KENT MFG. CO.

## MODEL 317 MODEL E412 Socket, Trimmers Chassis





**MODELS 225, 435**

**MODEL 236**

**MODEL 255**

**MODELS 312, E312**

**ATWATER KENT MFG. CO.**

MODELS 225 AND 435

In the early type 225 and 435, the short-wave range is to 7.5 MC. In the late type, the short-wave range is extended to 12.6 MC.

- 30051 Cabinet with screen (225)
- 31622 Screen (225)
- 29783 Escutcheon and crystal assem.
- 31768 Var. cond. assem. (in late sets)
- 29675 Var. cond. assem. (in early sets)
- 29516 Plate under var. cond.
- 29482 Vol. control, .5
- 29676 Range switch
- 45370 Tone control switch
- 45820 Pilot light socket assem.
- 29848 Lamp, 6.3-V., bayonet base
- 31401 Tube shield (in halves), 2 used
- 31402 Tube cap (black)
- 31047 Base cover
- 29999 Dial plate (435, early)
- 31511 Dial plate (225, early)
- 31754 Dial plate (435, late)
- 31753 Dial plate (225, late)
- 29913 Dial plate holder
- 29619 I.F.T. shield
- 31306 Inst. sheet, F-1300 (early)
- 31773 Inst. sheet, F-1315 (late)
- 47280 Shipping container, 435 only
- 48950 Shipping container, 225 only

TUNING MECHANISM, MODELS 225, 435

- 30042 Front and back plate assem.
- 27692 Tuning gear
- 17961 Tuning rubber
- 27947 Dial pointer holder
- 27522 Pointer
- 27535 Pointer screw
- 29417 Tuning shaft

TRANSFORMERS

- T1 47760 No. 1 R.F.T. (early)
- T1 49160 No. 1 R.F.T. (late)
- T2 44840 Oscillator trans. (early)
- T2 49170 Oscillator trans. (late)
- T3 47750 No. 1 I.F.T.
- T4 44950 No. 2 I.F.T.
- T5 45810 Power transformer (110-V., 60-C. S-335)
- T6 21672 Output transformer

RESISTORS

- R18 45880 4 ohm, dial light resistor
- R19 45860 25 ohm, filament shunt

CONDENSERS

- C2 27599 5700 MMF., 450-V.
- C3 29589 360 MMF., 450-V.
- C3A 29687 120 MMF., 450-V.
- C16 27583 16 MF., 300-V., electrolytic
- C17 23394 8 MF., 475-V., electrolytic
- C18 23250 .01 MF., 450-V.

TRIMMERS

- A2 29708 Oscillator, front of chassis
- A3 39630 Tracking, rear of chassis
- A4,5 29543 Double I.F. on T3
- A6,7 29823 Double I.F. on T4

SOCKETS

- 30058 Universal 8-prong socket
- 21336 Speaker socket
- 24492 4-prong (80)
- 24494 6-prong (75)

MODEL 236

(European Compact)

- 26558 Cabinet, complete.....
- 25785 Cloth screen.....
- 19527 Cabinet feet.....
- 25691 Escutcheon
- 25614 Name plate
- 25736 Knob, tuning and volume
- 25611 Knob, tone and range
- 23281 Knob set screw
- 25295 Instruction card, F-1066
- 24079 Volume control, .5 meg.
- 24052 Volume control mounting bracket
- 20093 Volume control mounting nut
- 30560 Tone control switch complete
- 24207 Shaft and blade for above

- 23997 Phono switch
- 25822 Phono switch name plate
- 25823 Phono switch mounting nut
- 25571 Range switch
- 21497 Range switch mounting nut

TRANSFORMERS

- T1 25772 No. 1 long wave transformer
- T2 33590 No. 1 broadcast transformer
- T3 25773 No. 2 long wave transformer
- T4 33610 No. 2 broadcast transformer
- T5 25771 No. 1 I.F.T.
- T6 25769 No. 2 I.F.T.
- T7 21672 Output transformer
- T8 25591 Power transformer

CONDENSERS

- C1, 3,4 27650 8 MMF., 500 Volts
- C2 34070 455 MMF.
- C5 32160 1450 MMF.
- C8 21160 200 MMF.
- C11 25379 10 MF., 25 V.
- C12,13 26381 8 MF., 450 V.
- 33060 Multiple bypass (J-14)
- 25589 Variable condenser assembly

RESISTORS

- R3 20520 670 ohms, flexible
- R4 21420 250 ohms, flexible
- R16 17077 10 ohms, flexible
- R17 31860 1 ohm, flexible

CHOKES

- CK1 19210
- CK2 17390

TRIMMERS

- A5,6 33110 Double trimmer
- A7,8 30110 Double trimmer
- A9,10 24760 Double trimmer
- All,12 27860 Double trimmer

MISCELLANEOUS

- 25552 Dial light socket
- 15404 Dial lamp, 2.5 volts
- 25091 Dial knob shaft bracket
- 17961 Dial rubber and bushing
- 24055 Dial knob shaft
- 25545 Dial gear
- 25551 Dial plate
- 24323 Power transformer cover
- 25136 Fuse, 1 amp.

SOCKETS

- 22733 6 prong
- 22734 5 prong
- 22689 4 prong

SHIELDS

- 23452 Shield for T1,3,6
- 21877 Shield for T5
- 25556 Shield for T2,4

236 SPEAKER NO. 36300

- 18870 Field coil, 2000 ohms.
- 21672 Output transformer, T7
- 19465 Diaphragm
- 23657 Small choke

MODEL 255

- 30116 Cabinet with screen.....
- 32436 Screen and gasket.....
- 32464 Knob (with dot)
- 32465 Knob (without dot)
- 32398 Volume control.
- 32399 Range and tone control switch
- 31768 Variable condenser
- 31401 Tube shield (half)
- 31402 Tube shield cap
- 32403 Base cover
- 32004 Shield for T3
- 32005 Shield for T4
- 28349 Phono terminal strip
- 50540 Shipping container

TRANSFORMERS

- T1 49310 R.F.T.
- T2 49320 Oscillator transformer
- T3 50430 No. 1 I.F.T., less shield
- T4 50440 No. 2 I.F.T. less shield
- T5 45810 Power transformer
- T6 30117 Output transformer
- T7 50450 Wave trap assembly

CONDENSERS

- C3 29589 360 MMF
- C16 27583 16 MF., 300 V.
- C17 22538 8 MF., 475 V.

RESISTORS

- R18 49370 4 Ohms

TRIMMERS

- A2 28843 Front of chassis
- A3 39630 Rear of chassis

SOCKETS

- 30058 Universal 8 prong
- 24492 4 prong
- 24494 6 prong
- 21336 Speaker socket

255 SPEAKER NO. 50390

- 32404 Speaker, less cable
- 30119 Field coil
- 30117 Output transformer
- 30121 Cone head assembly

MODELS 312 and E312

- 27321 Volume control.....
- 39150 Tone control switch
- 28151 Shaft and blade for above
- 29409 Selectivity switch
- 46090 Range switch
- 29429 Variable condenser

TUNING PARTS

Same as Model 810

CONDENSERS

- 27583 16 MF., 300 V., electrolytic
- 28031 8 MF., 475 V., electrolytic
- 29982 4-8 MF., 200 V., electrolytic
- 25384 8 MF., 300 V., electrolytic
- 29961 16 MF., 475 V., electrolytic

FILTER CHOKE

- 46290 Filter choke

TRIMMERS

- 39140 Strip of four trimmers
- 38770 Tracking trimmer (2)
- 44570 Double R.F. trimmer
- 29823 Double I.F. trimmer

SOCKETS

- 24492 4 prong
- 24493 5 prong
- 24494 6 prong
- 26111 7 prong
- 21337 Speaker socket

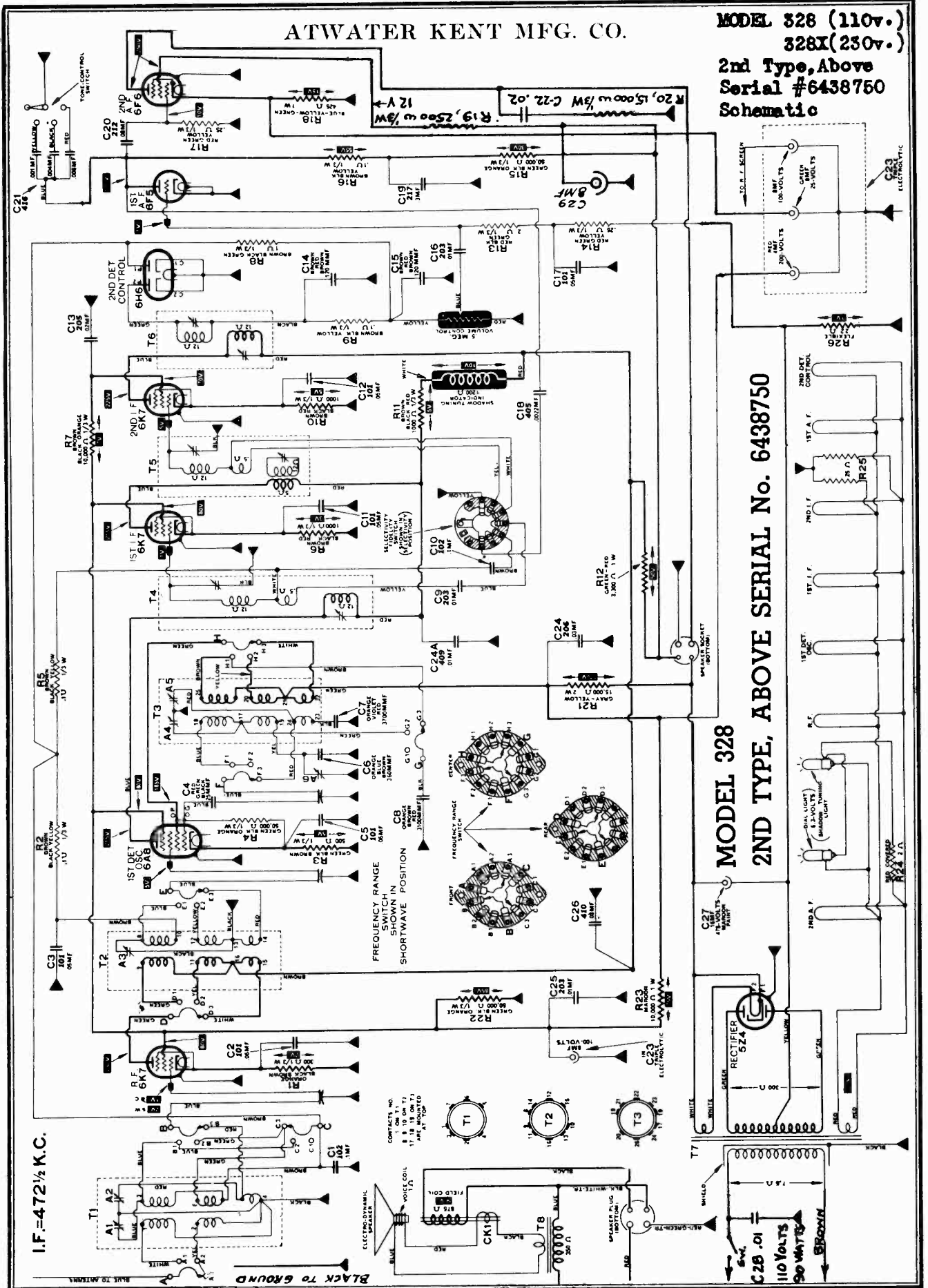
SHIELDS

- 22683 Tube shield
- 23743 Auxiliary tube shield
- 29547 Shield for T1, T3
- 29548 Shield for T2, T4
- 27335 Shield for T5, T6
- 29619 I.F.T. shield
- 312 SPEAKER NO. 48900
- 35080 Field coil
- 46740 Output transformer
- 26243 Diaphragm

ATWATER KENT MFG. CO.

MODEL 328 (110v.)  
328X(230v.)

2nd Type, Above  
Serial #6438750  
Schematic

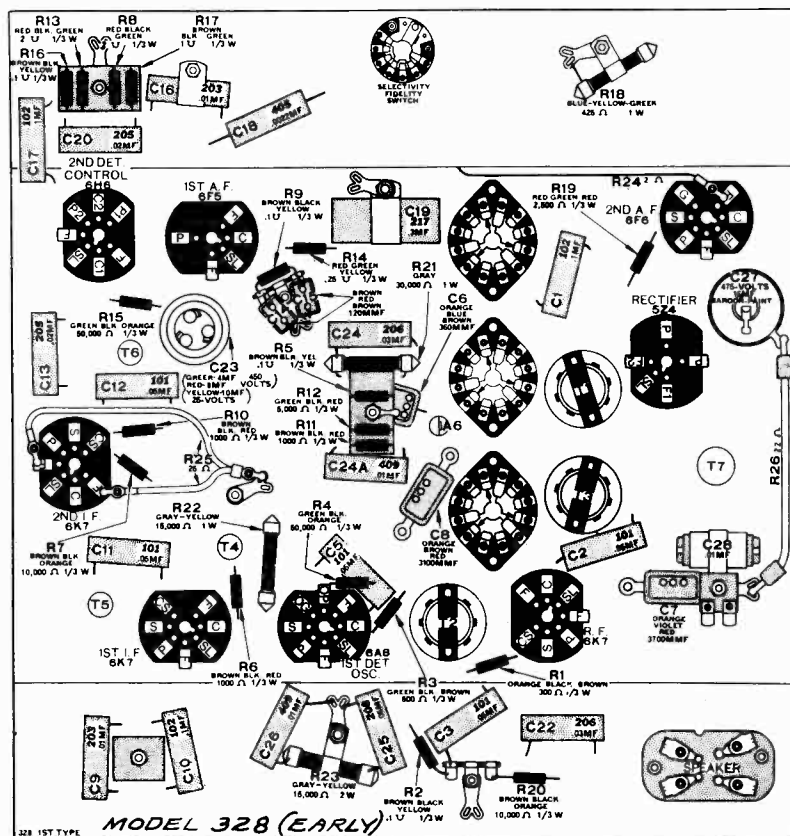
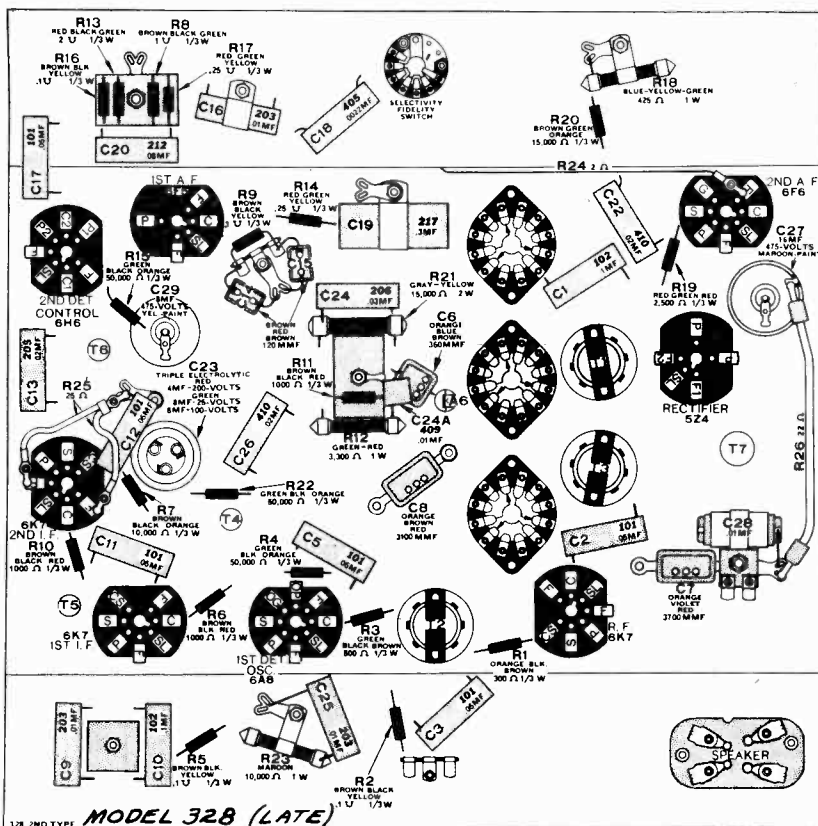


I.F. = 472½ K.C.

MODEL 328  
2ND TYPE, ABOVE SERIAL No. 6438750

MODEL 328, Early  
and Late  
Chassis Layouts

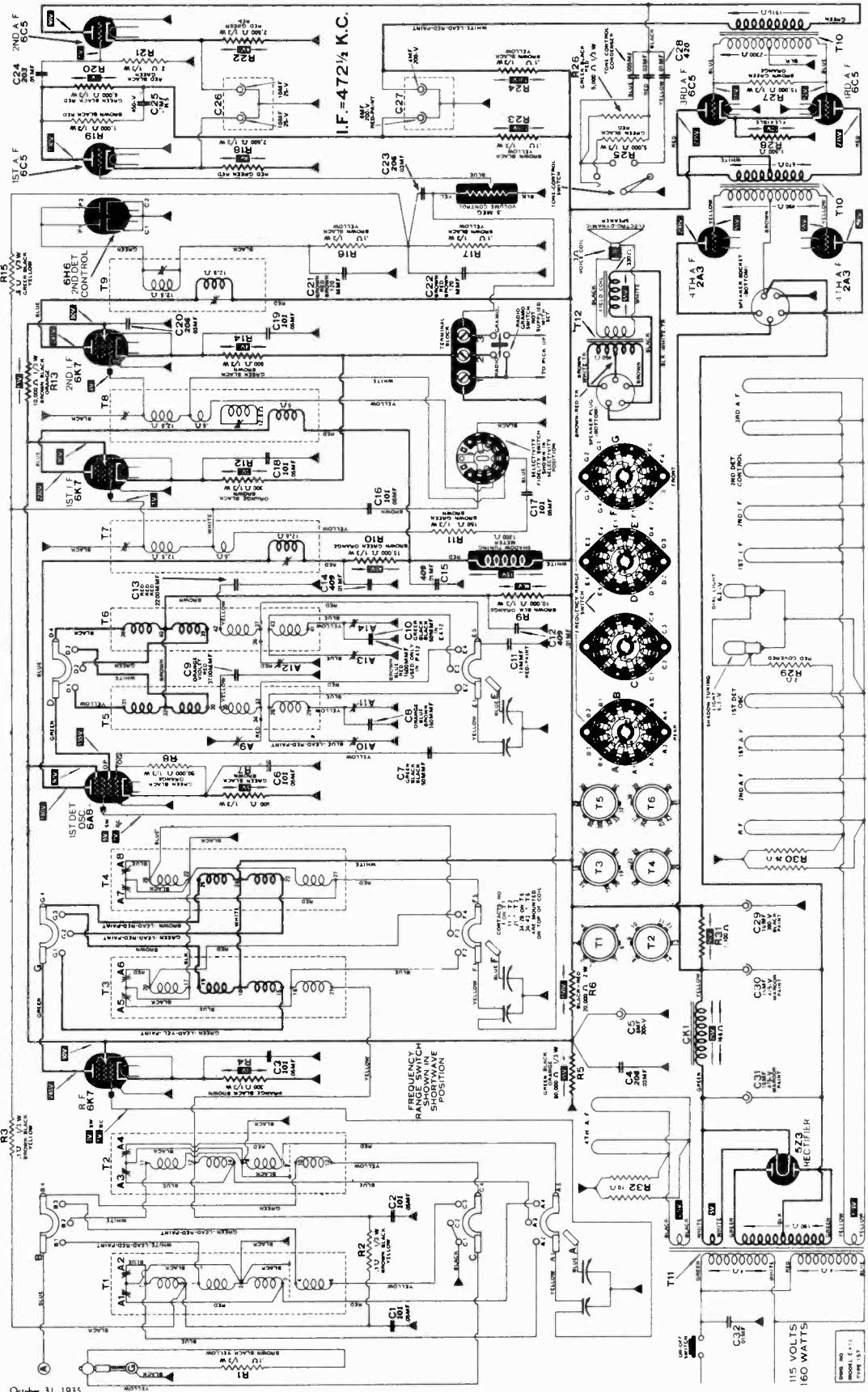
ATWATER KENT MFG. CO.



ATWATER KENT MFG. CO.

MODELS P412, E412  
P412X, E412X  
Schematic

P412, E412 110 volts  
P412X, E412X 230 volts

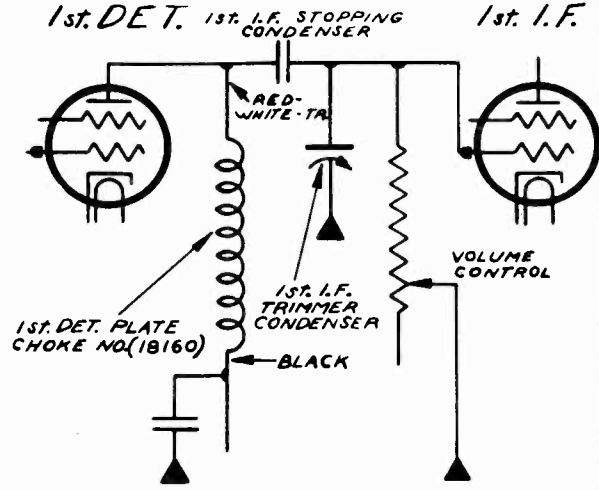
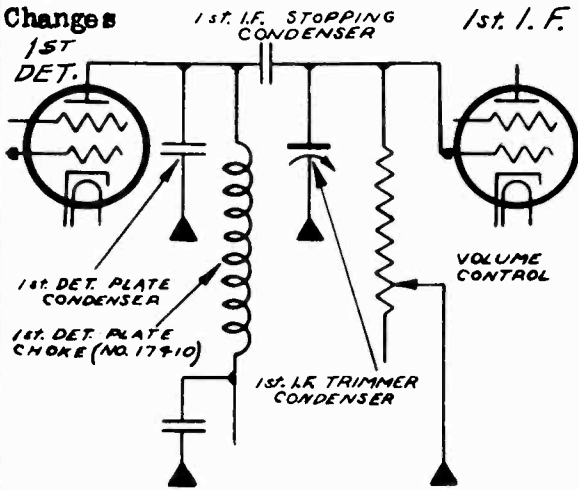


October 31, 1935

MODELS 424, 534  
CHASSIS H-1

ATWATER KENT MFG. CO.

Changes



Original Connections in Type H-1 Chassis  
(Below Serial #5,855,201)

Changes in Type H-1 Chassis  
To Increase Sensitivity

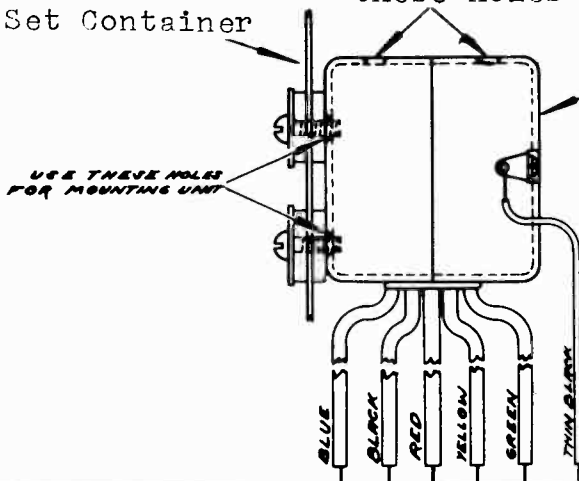
CHANGE IN H-1 CIRCUIT TO SECURE GREATER SENSITIVITY

By making a slight change in the circuit of type H-1 Chassis, it is possible to secure considerably greater sensitivity. This change may be made in less than one-half hour, and only two small parts are required (one No. 18160 choke, and one No. 18272 adjusting disc). The procedure is as follows:-

1. Remove the bottom plate and locate the 1st-detector plate choke (part No. 17410). This choke is oval shaped and has two contacts, one at each end. The choke is mounted at the rear of the oscillator tube socket which is at the front center of set (UX-227). There are two small fixed condensers mounted on top of this choke, all three parts being held by one bolt. Of these two fixed condensers, the one toward the front of the set is the 1st-1.F. stopping condenser (Part No. 17440); The other fixed condenser is the 1st-detector plate condenser (Part No. 17470).
2. Tag the 1st-1.F. stopping condenser, No. 17440, as this part is to be used again.
3. Unsolder the leads to these three parts and remove them from the set. It will be found that there are two brass washers and a nut on the mounting bolt between the choke and the chassis. Remove the nut and one washer. Leave the other washer on the bolt.
4. Screw a No. 18272 aluminum adjusting disc all the way down on the mounting bolt. Slip a lock washer down on top of the disc and then screw on a No. 8188 nut.
5. With its two leads facing out, put a No. 18160 choke on the mounting bolt. Then put the No. 17440 1st- 1.F. stopping condenser back in its original position.
6. Connect as shown in the right hand diagram.
7. Put the set in operation with the volume control turned on full.
8. Adjust the 1st-1.F. trimmer condenser (on top, at the front center of chassis) to a point just below the position at which the 1.F. amplifier begins to oscillate. (The bottom plate must be in place while making this adjustment of the 1st-1.F. trimmer condenser.)

Do not use  
these holes

Set Container



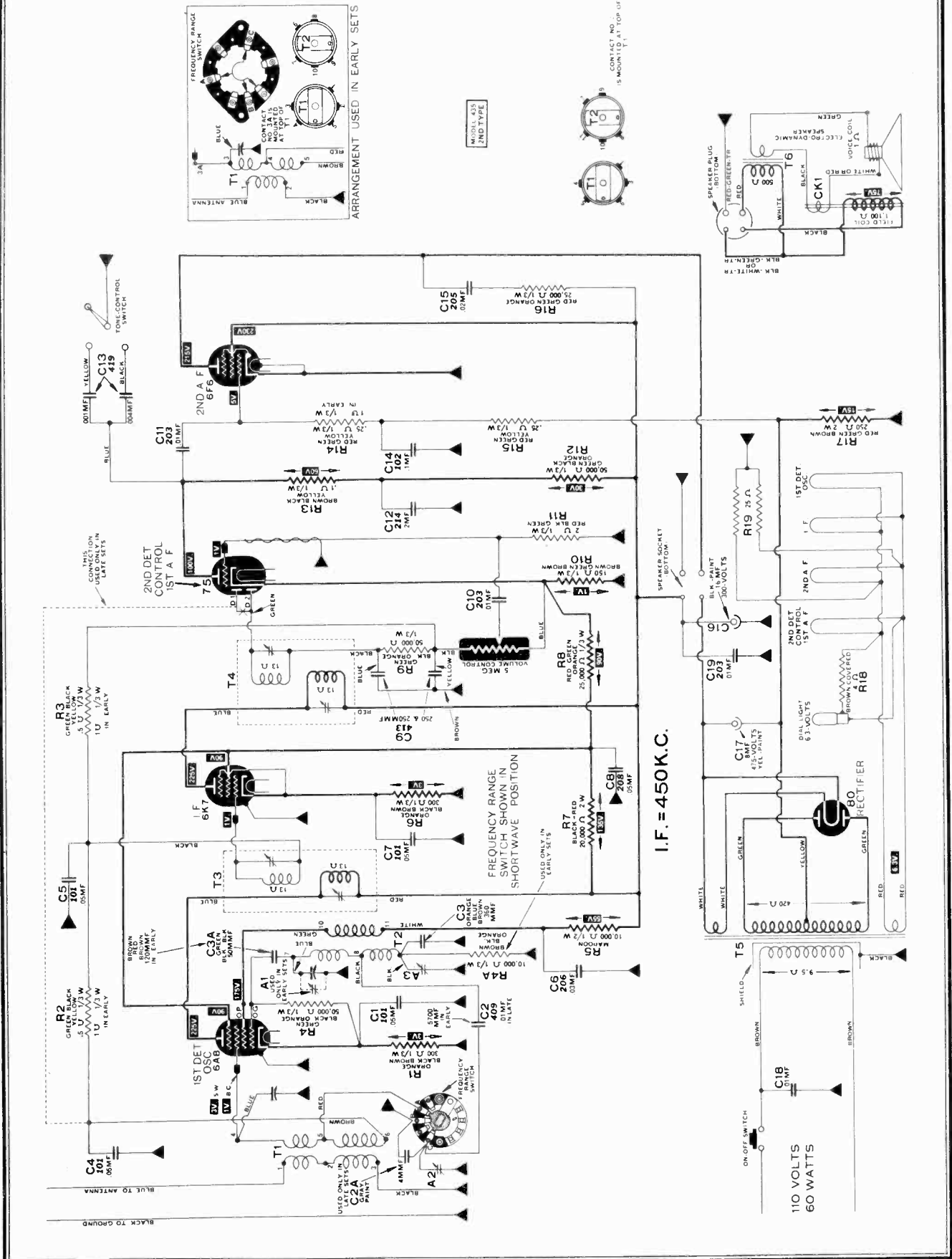
Inverter & Synchronous  
Rectifier

Model 424 & 534  
Mounting #25595 Inverter  
& Synchronous Rectifier

11/7/33

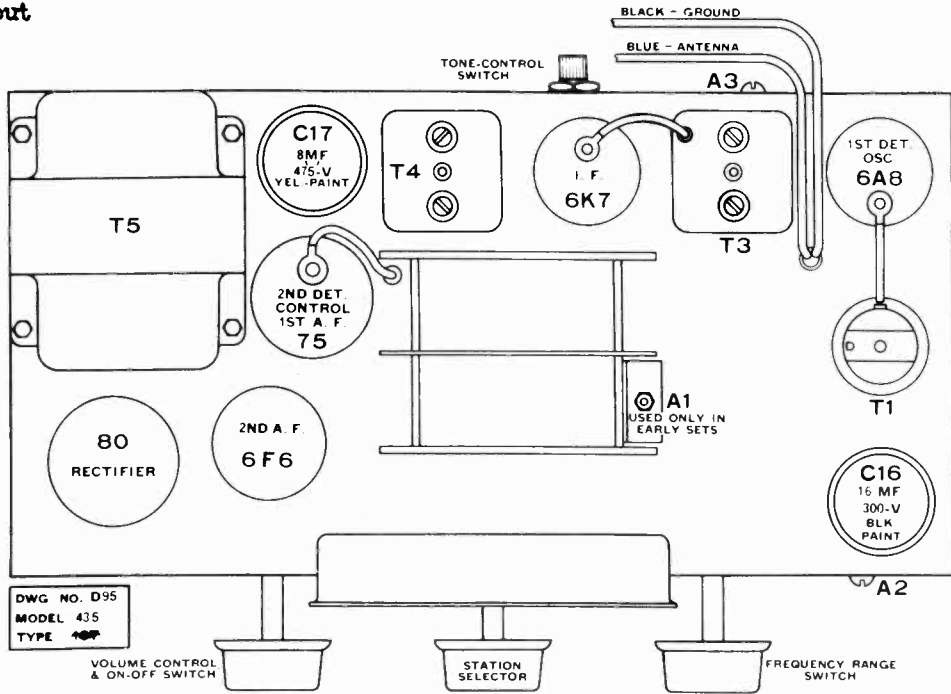
ATWATER KENT MFG. CO.

MODEL 435, 2nd Type Schematic

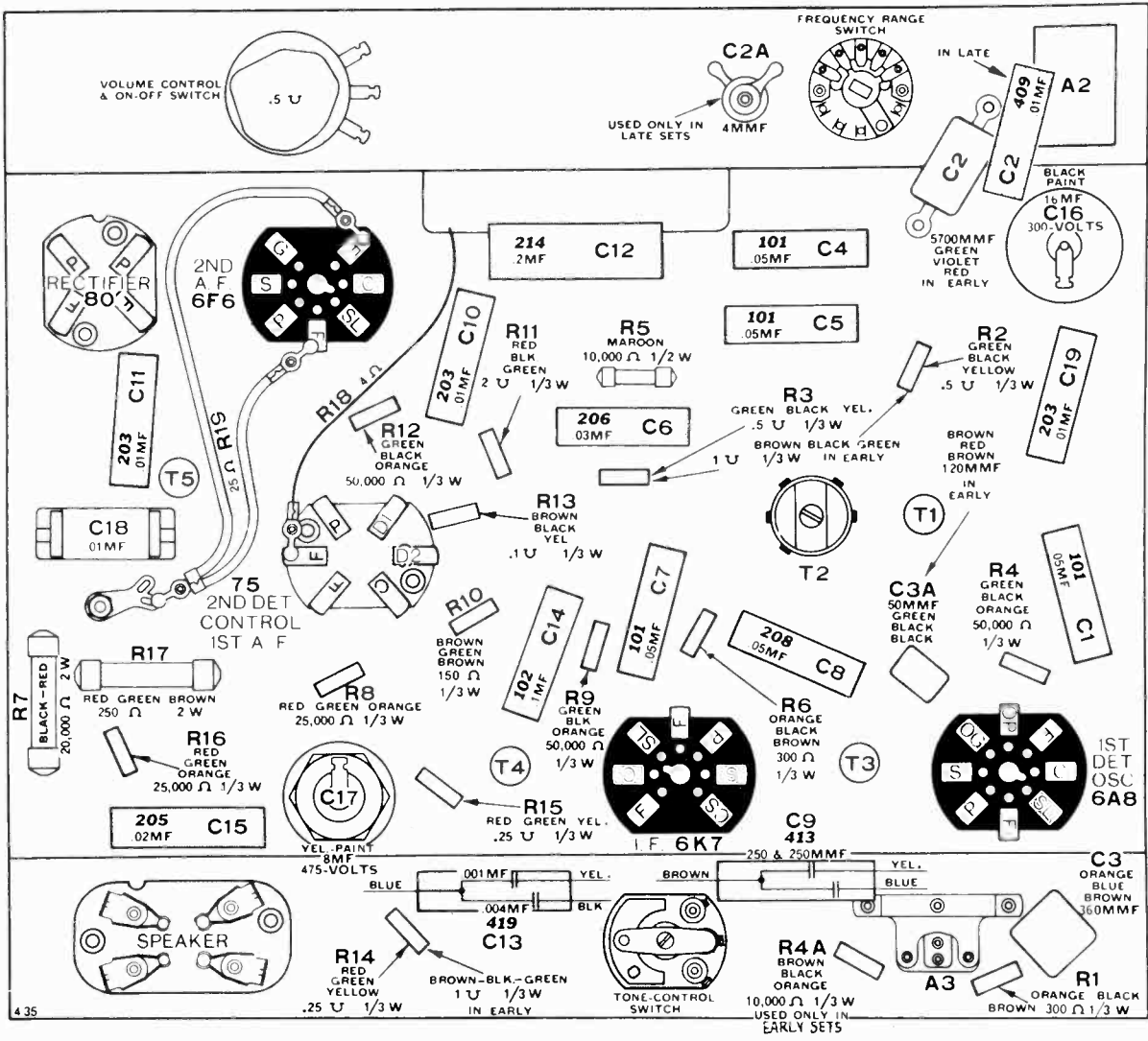


**MODEL 435, 2nd Type**  
**Socket, Trimmers**  
**Chassis Layout**

ATWATER KENT MFG. CO.

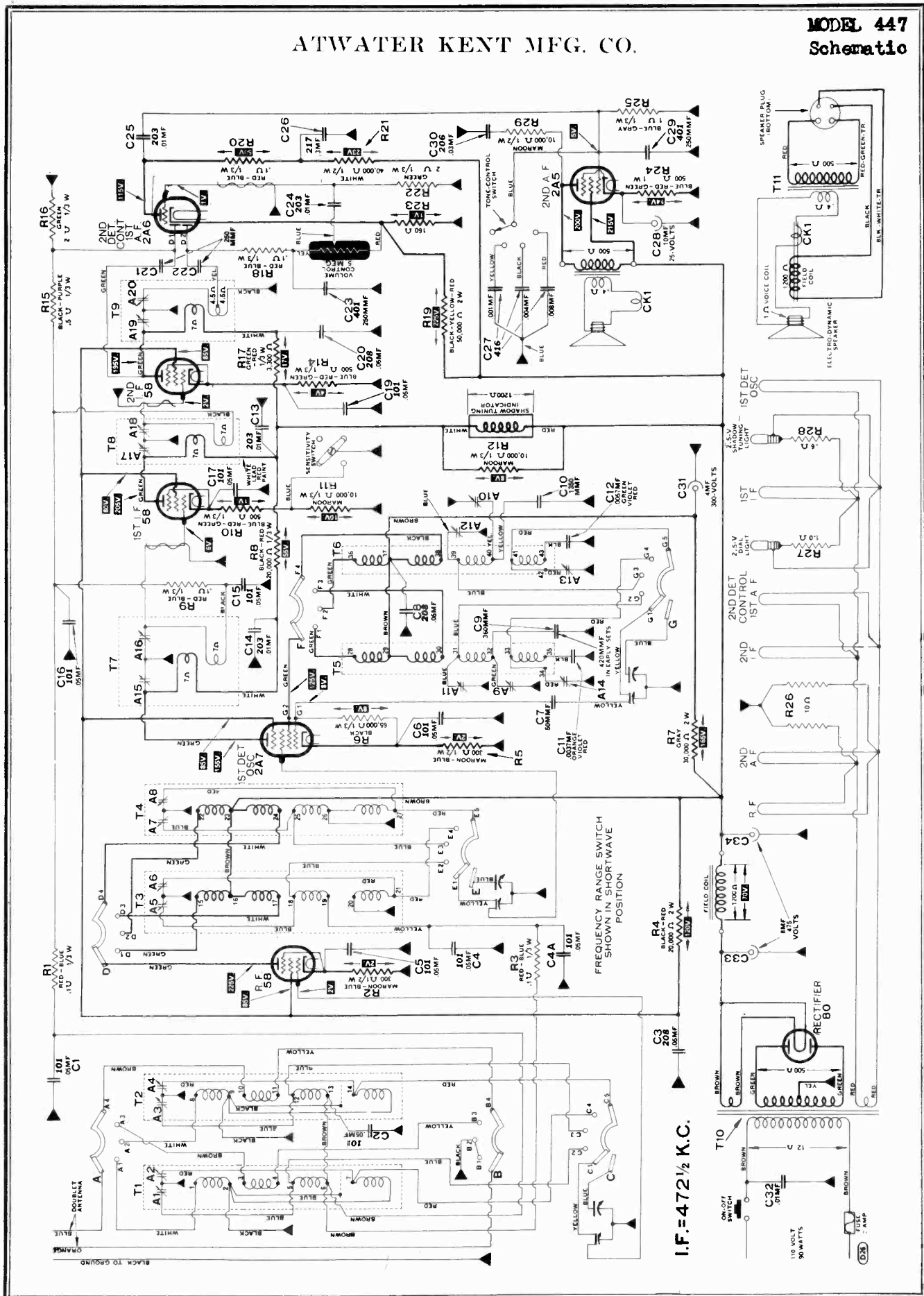


DWG NO. D95  
 MODEL 435  
 TYPE 435



# ATWATER KENT MFG. CO.

## MODEL 447 Schematic

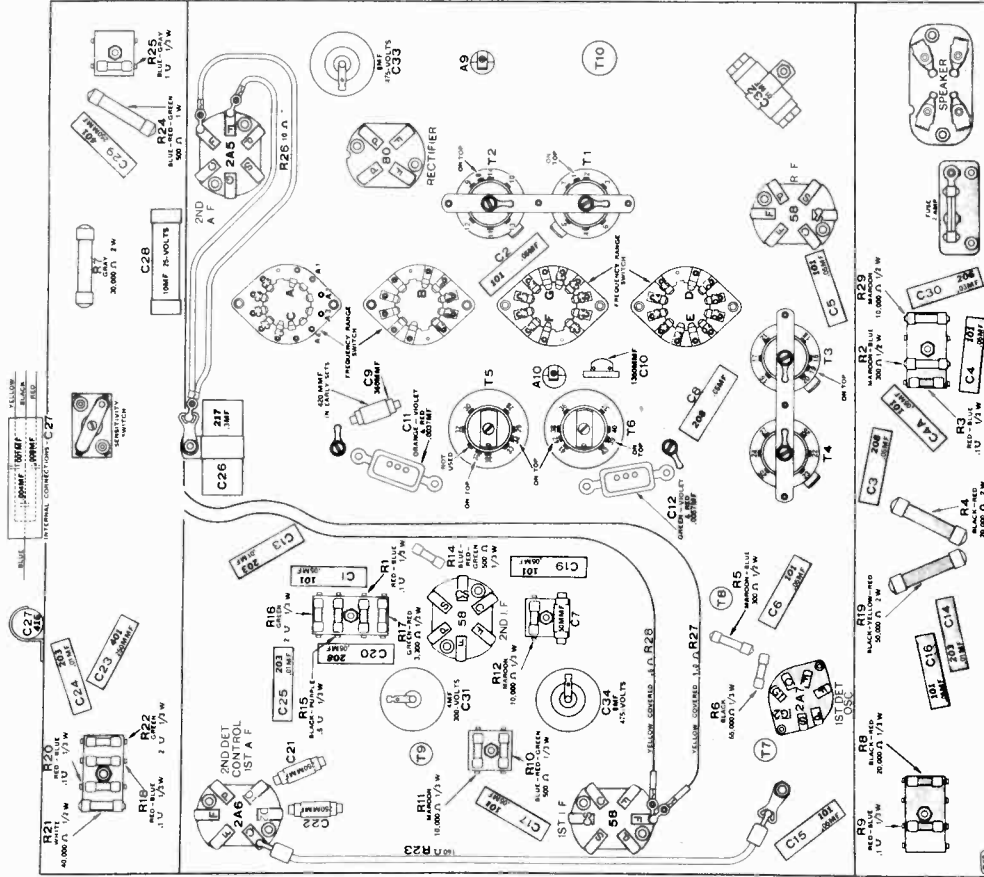




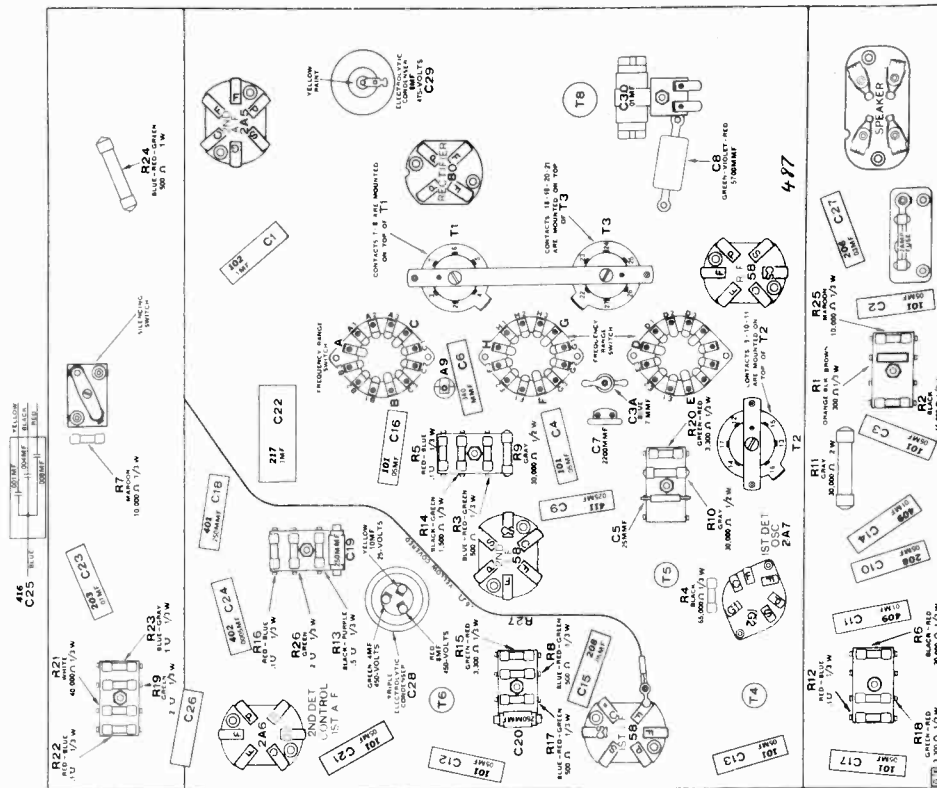
MODEL 447  
MODEL 487  
Chassis Layouts

ATWATER KENT MFG. CO

MODEL 447



MODEL 487

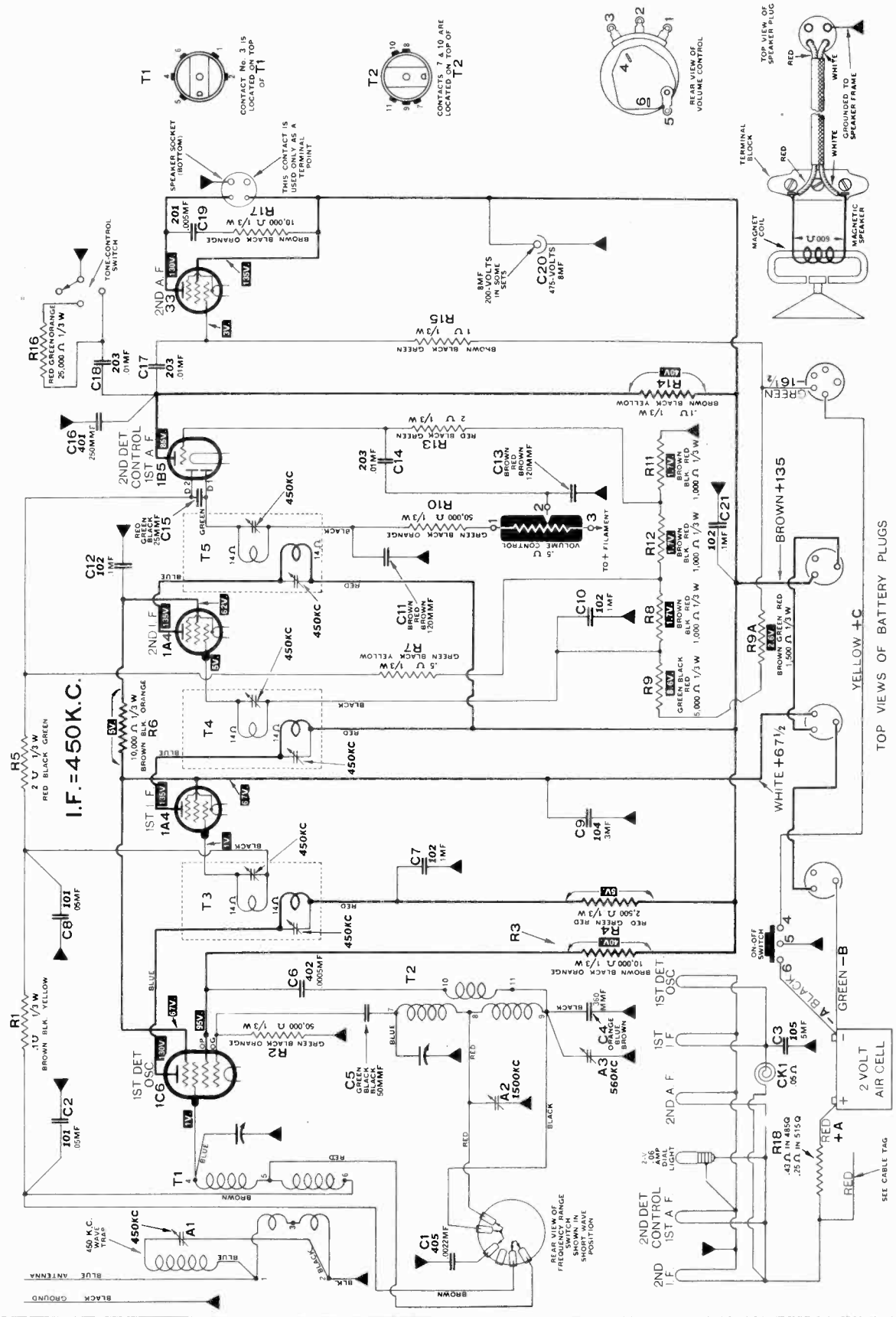


ATWATER KENT MFG. CO.

MODEL 485Q, 515Q  
Schematic

MODELS 485Q AND 515Q

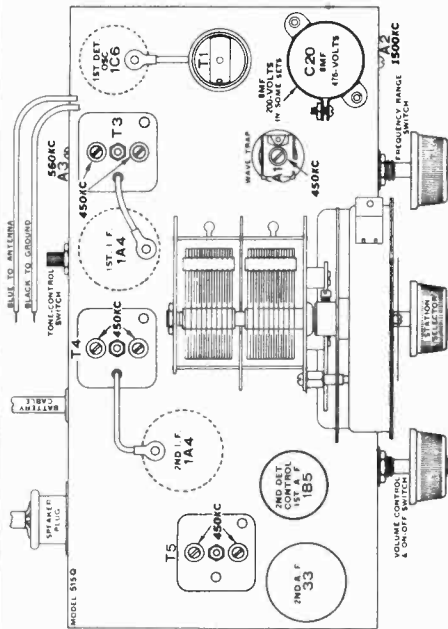
I.F. = 450K.C.



The I. F. is 472 1/2 KC in some of these sets as specified on label at rear of chassis. The I. F. transformers, trimmers, etc., are exactly the same for 450 or 472 1/2 KC. March 25, 1936.

**MODEL 485Q, 515Q**  
**Socket, Trimmers**  
**Chassis, Alignment**

ATWATER KENT MFG. CO.



**R. F. TRIMMERS**

In location where severe electrical interference is present, it is necessary, when aligning R. F. trimmers, to connect a 40,000-ohm resistor in series with a .02 M. F. condenser from the grid cap of the 1st-I. F. tube to chassis. This reduces the I. F. sensitivity and permits use of a stronger output from the signal generator to over-ride the local noise level without bringing the AVC into action.

**Short-wave Range**

No trimmers on this range.

**Broadcast Range**

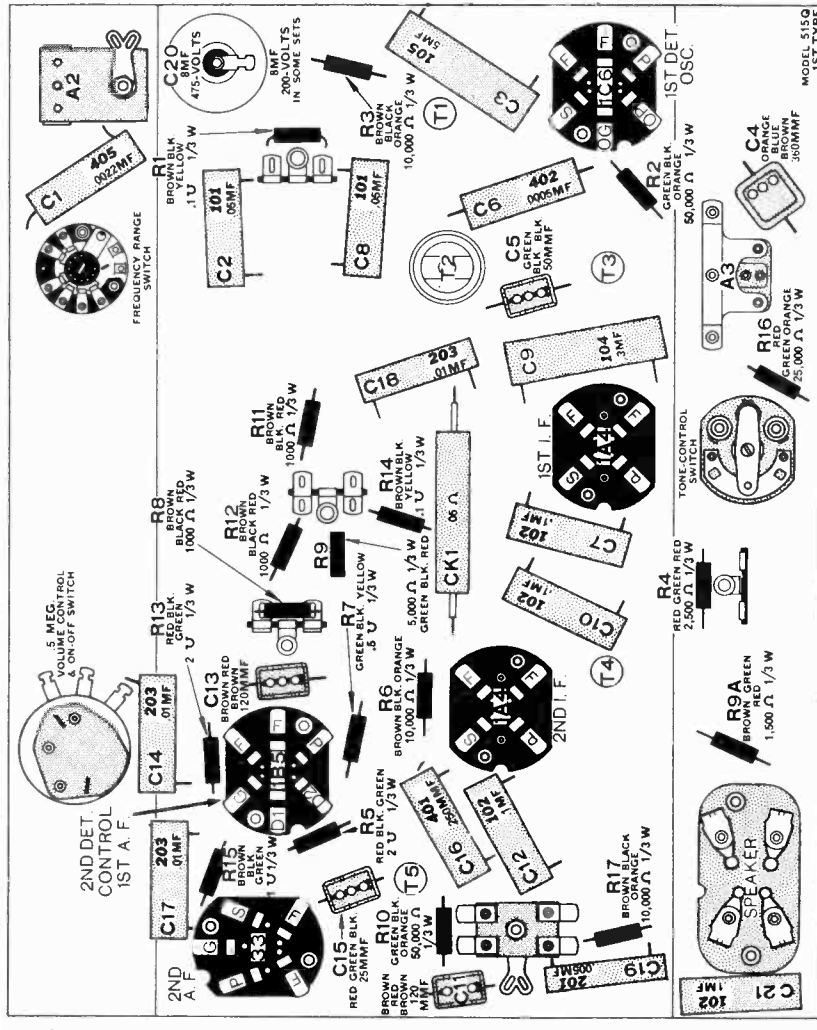
Connect signal generator to antenna and ground of set, using a 250 MMF condenser in series with the antenna lead. With signal generator and dial at 1500 KC, peak the broadcast oscillator trimmer A2. Use the first peak as A2 is screwed in from a loose position. Tune generator to 560 KC and peak broadcast tracking trimmer A3 while rocking variable condenser one division around the 560 KC mark. Repeat adjustments at 1500 and at 560 KC if necessary.

**I. F. Trap**

Feed 450 KC signal into antenna and ground of set, using a .00025 MFD condenser in series with the antenna lead. Adjust A1 trap trimmer for minimum response.

**I. F. is 472½ KC in Some of These Models**

In some Models 485Q and 515Q sets, the I. F. is 472½ KC as indicated by label on rear of chassis. With these models, all adjustments mentioned above for 450 KC should be made at 472½ KC.



**MODELS 485Q AND 515Q**

**I. F. TRIMMERS**

Connect signal generator (450 KC) to 2nd-I. F. grid cap by means of No. 42590 coupling unit. Peak two trimmers on top of T5 (3rd I. F. transformer).

Connect signal generator to cap of 1st-I. F. tube and peak two trimmers on top of T4 (2nd I. F. transformer).

Connect signal generator to cap of 1st-detector tube and peak two trimmers on top of T3 (1st I. F. transformer).

**DIAL POINTER ADJUSTMENT**

With the variable condenser fully meshed, the arrow-indicator disc should be set at 540-KC.

A1—Trap trimmer, 450 KC.

A2—Broadcast oscillator, 1500 KC.

A3—Broadcast tracking, 560 KC.

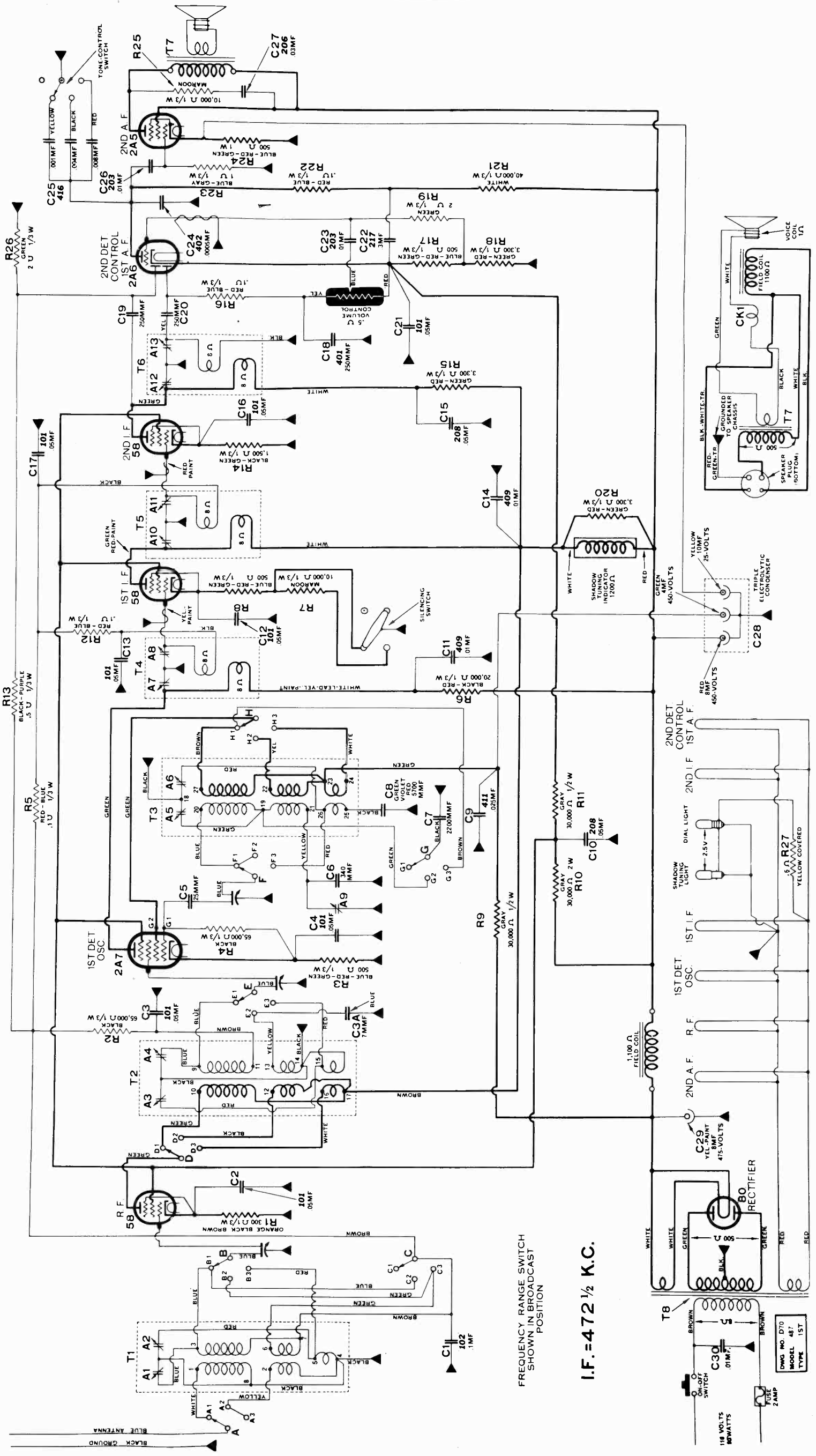
There are six I. F. trimmers, two on top of each I. F. transformer

(T3, 4 and 5).

These are peaked at 450 KC.

ATWATER KENT MFG. CO.

MODEL 487 Schematic



FREQUENCY RANGE SWITCH SHOWN IN BROADCAST POSITION

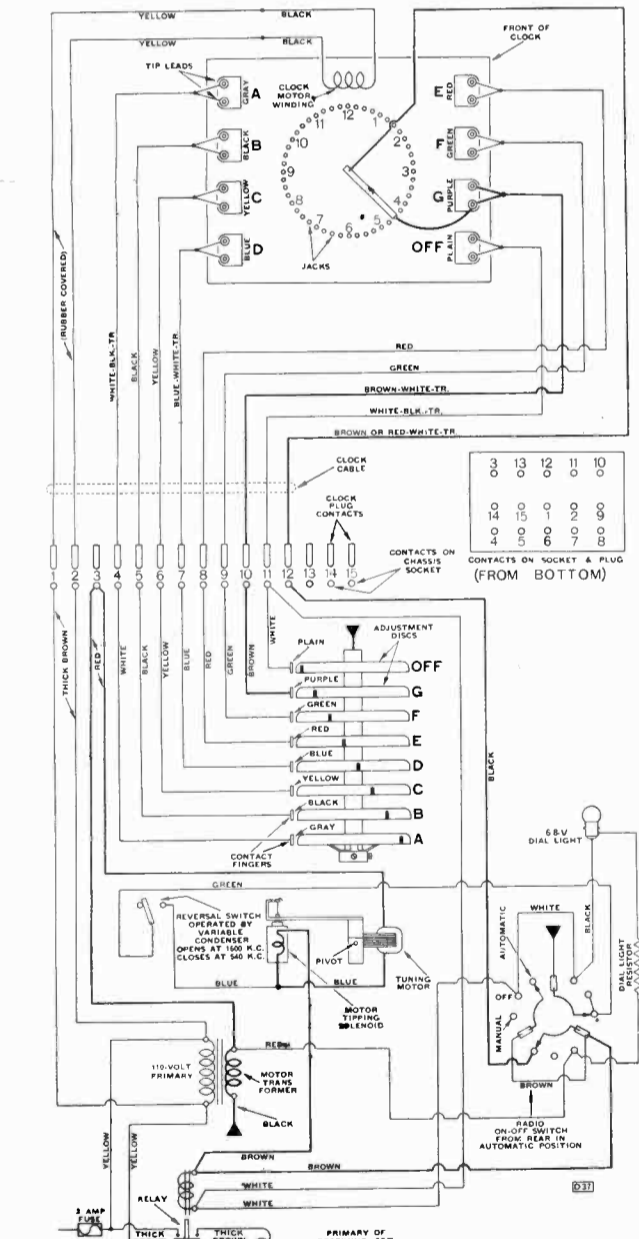
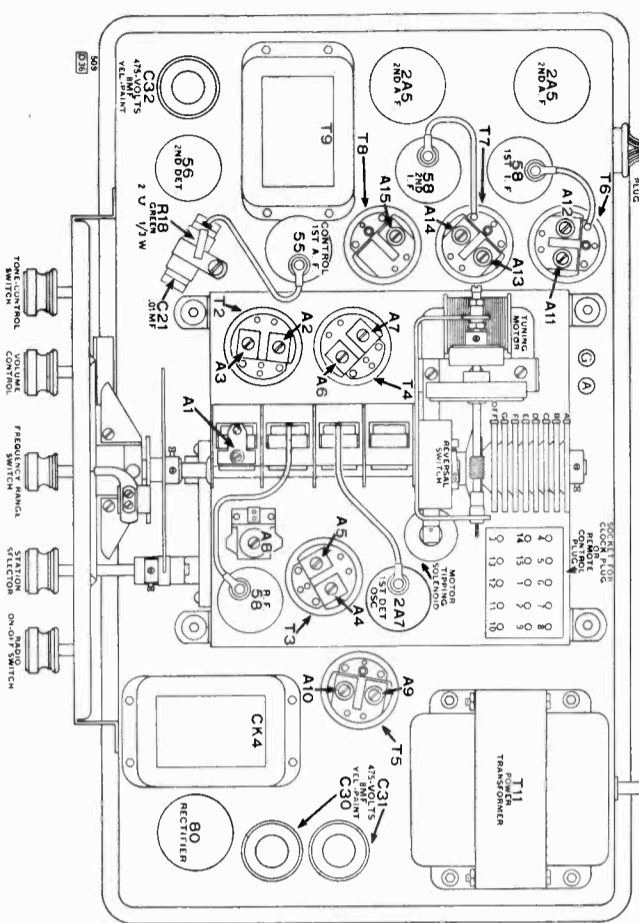
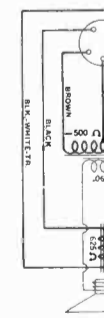
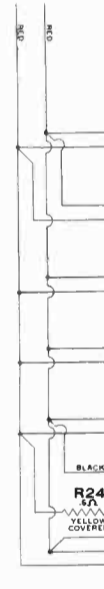
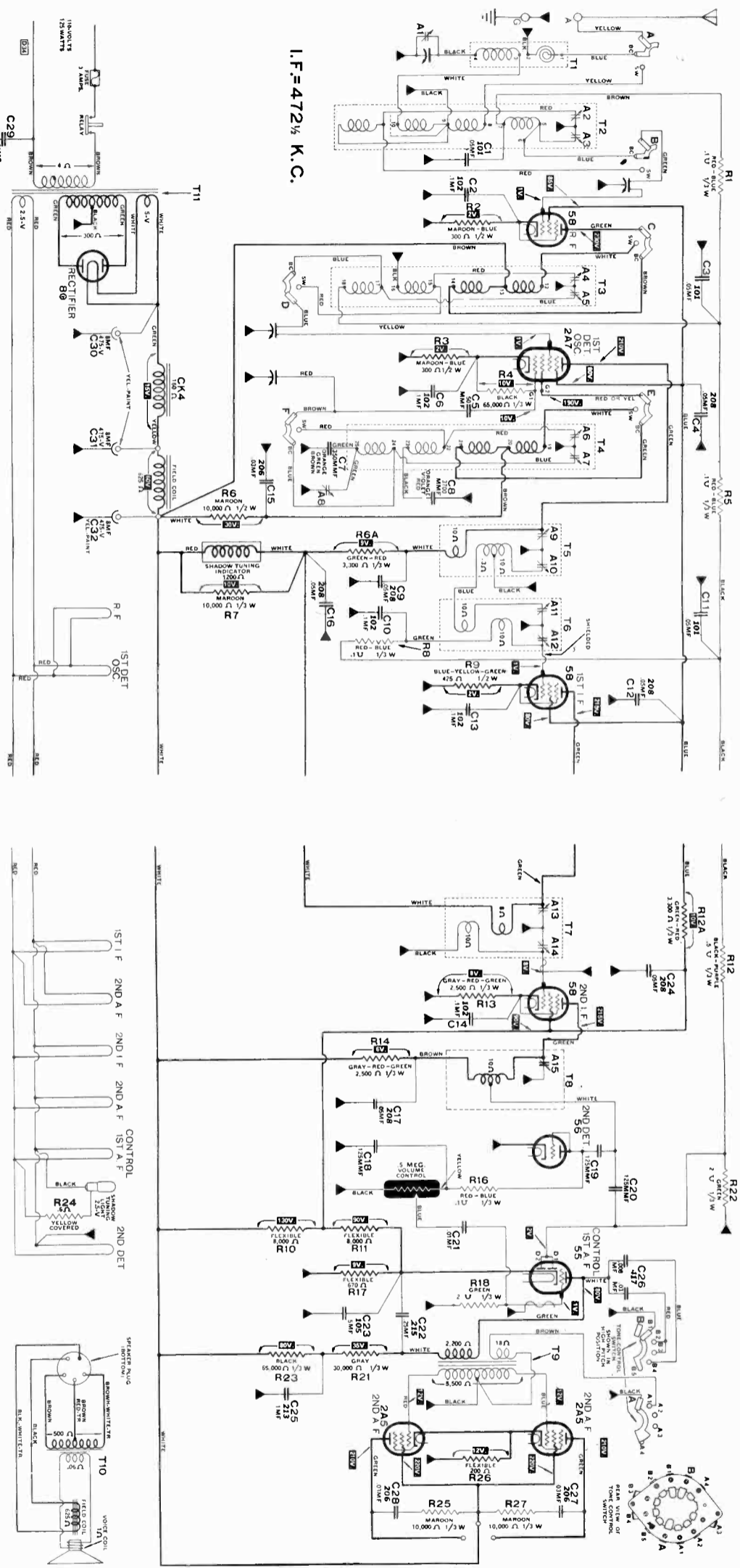
I.F. = 472 1/2 K.C.

DWG. NO. D70  
MODEL 487  
TYPE 1ST

MODEL 609  
Schematic  
Socket, Trimmers

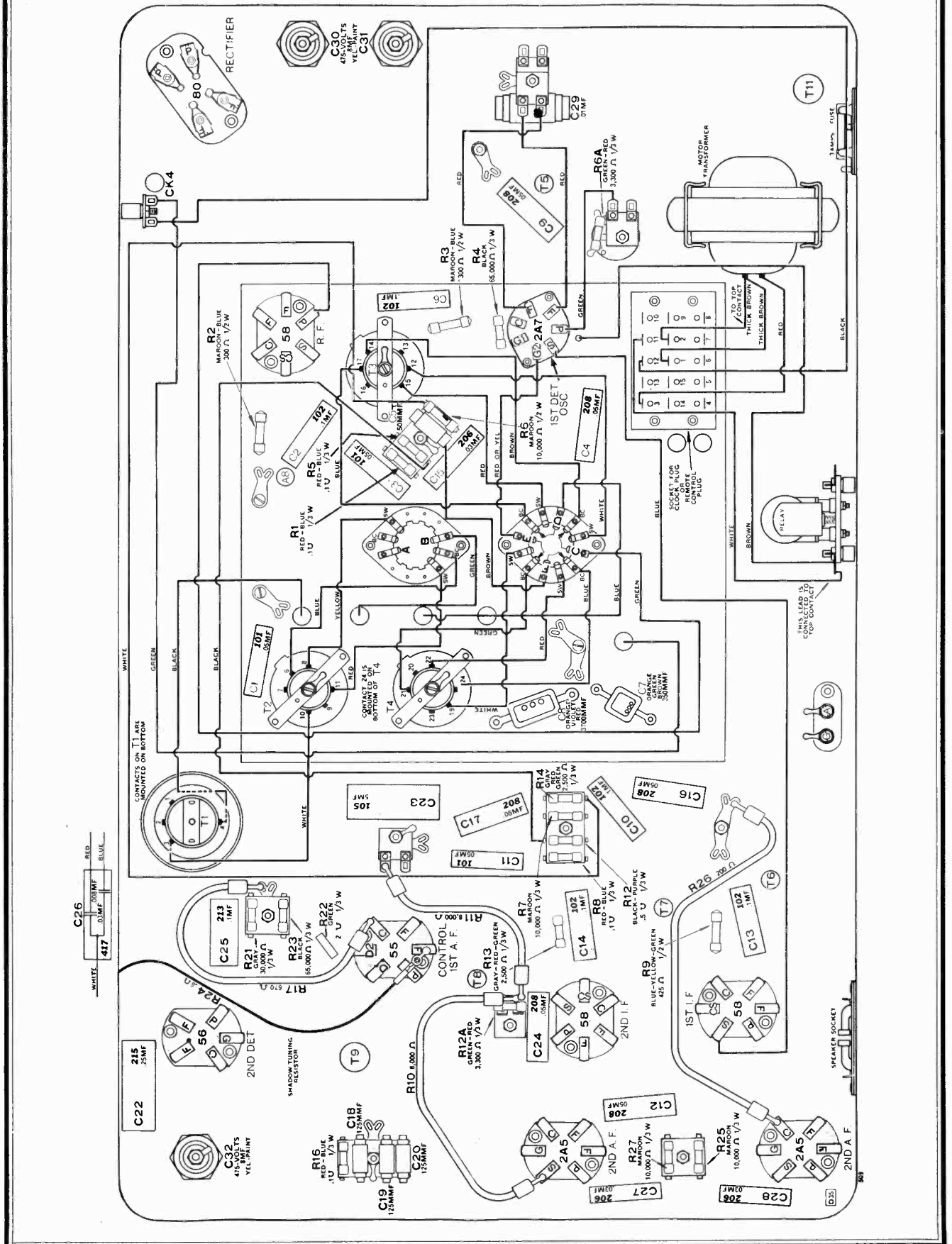
ALWATER KENT MFG. CO.

I.F. = 472 1/2 K.C.



ATWATER KENT MFG. CO.

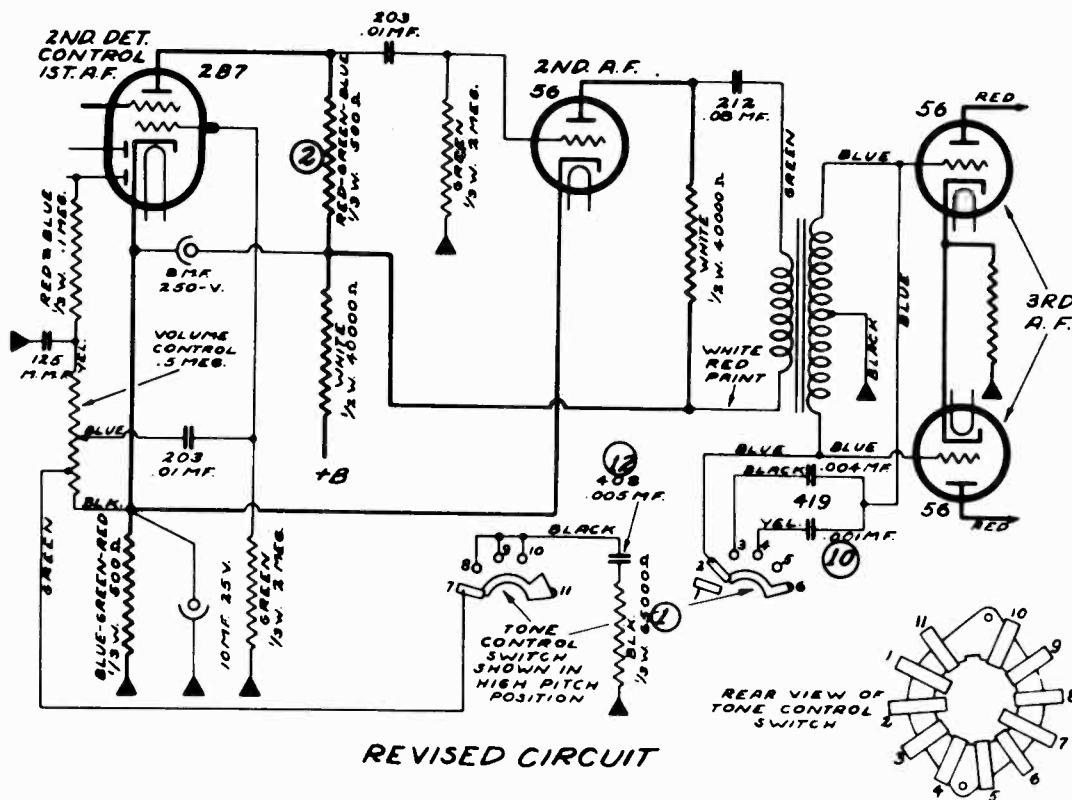
MODEL 509  
Chassis Wiring



**MODEL 511**  
Changes

ATWATER KENT MFG. CO.

**CHANGE IN MODEL 511 AUDIO TO REDUCE HUM**



**REVISED CIRCUIT**

- A. Remove resistors 1, 2, 3 and 4. Save resistor 4 for use in the revised circuit.
- B. Remove condensers 5, 6, 7 and 8.
- C. Remove choke 11.
- D. Add one tubular condenser No. 39650 (code No. 419) and change the wiring of the tone control circuit as shown in the revised circuit. Mount the 419 condenser on the front of the chassis between the front panel and the chassis by means of a No. 28826 clamp. Use the screw that fastens the tubular-resistor mounting strip on the front flange of the chassis, to fasten the clamp for the 419 condenser.
- E. Connect a 500-ohm tubular resistor (No. 39790) in the plate of the 2B7 as shown in the revised circuit.

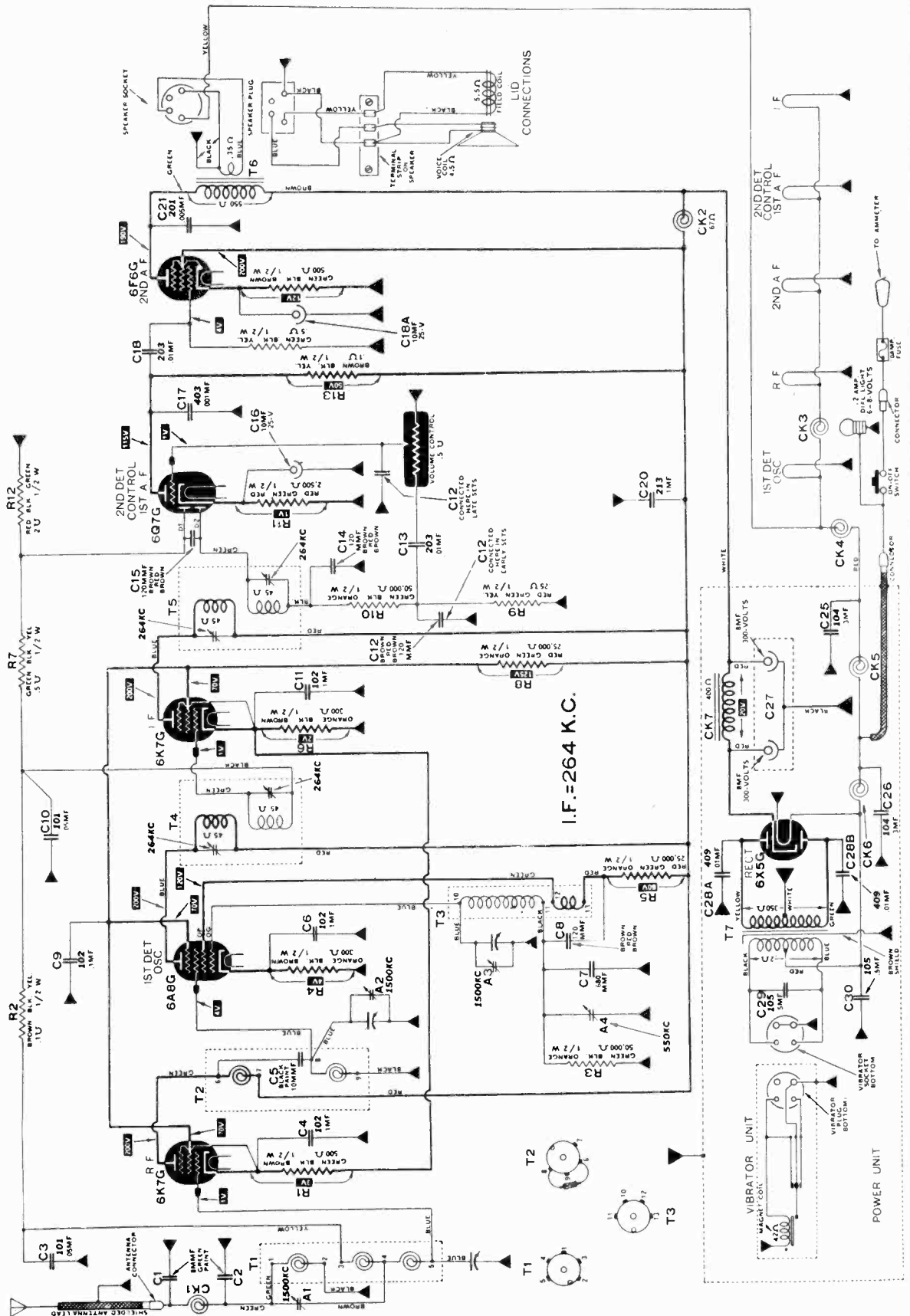
**MATERIAL REQUIRED**

- 1 No. 39650 tubular condenser (419).
- 1 No. 28826 clamp for condenser.
- 1 No. 39790 500-ohm 1/3 watt tubular resistor.

ATWATER KENT MFG. CO.

MODEL 556  
Schematic

DIAGRAM OF MODEL 556

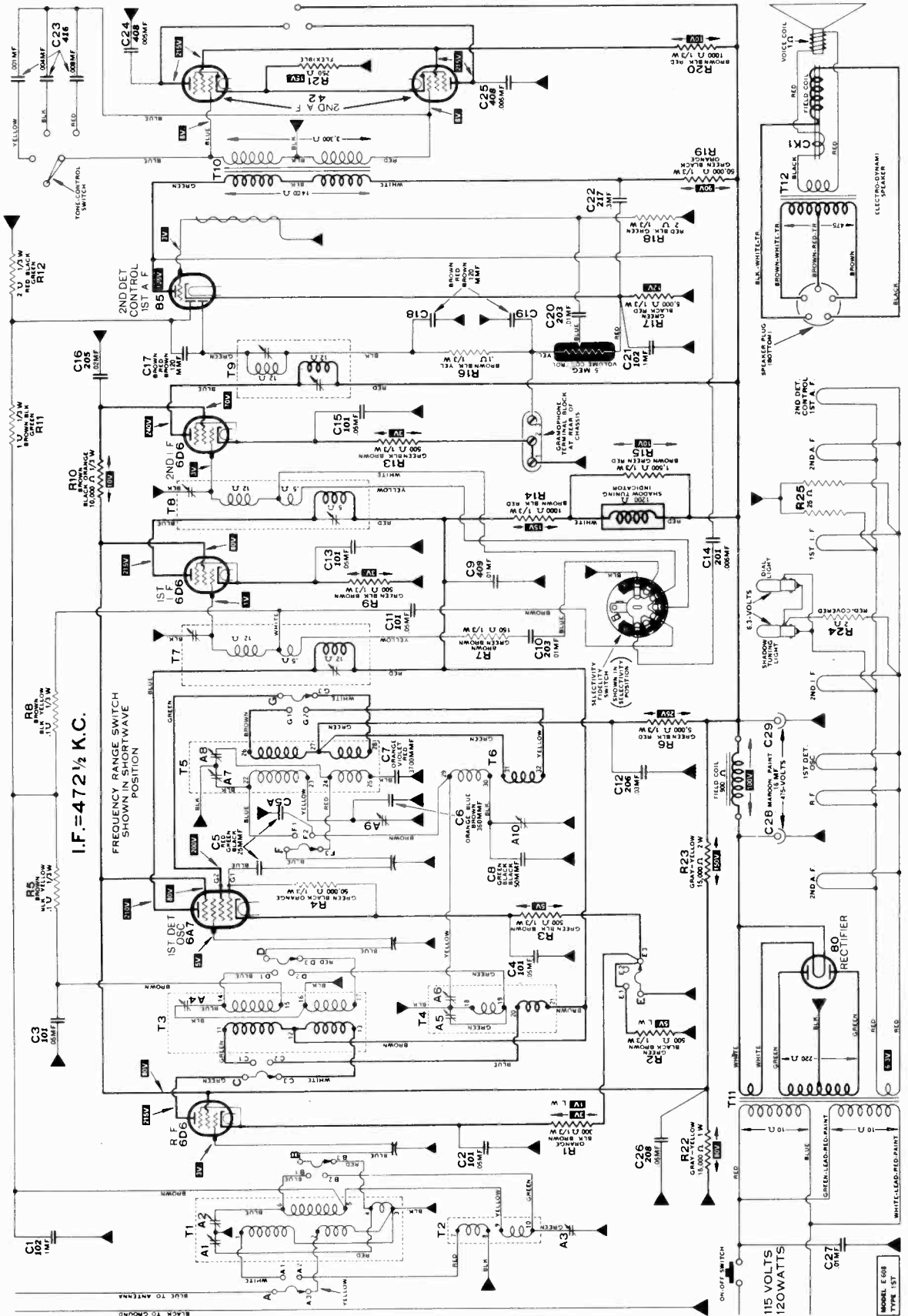






# ATWATER KENT MFG. CO.

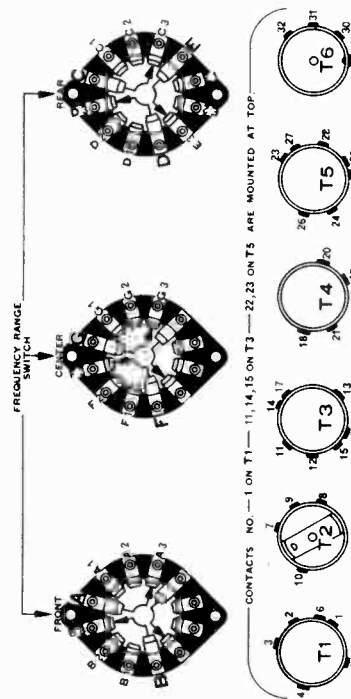
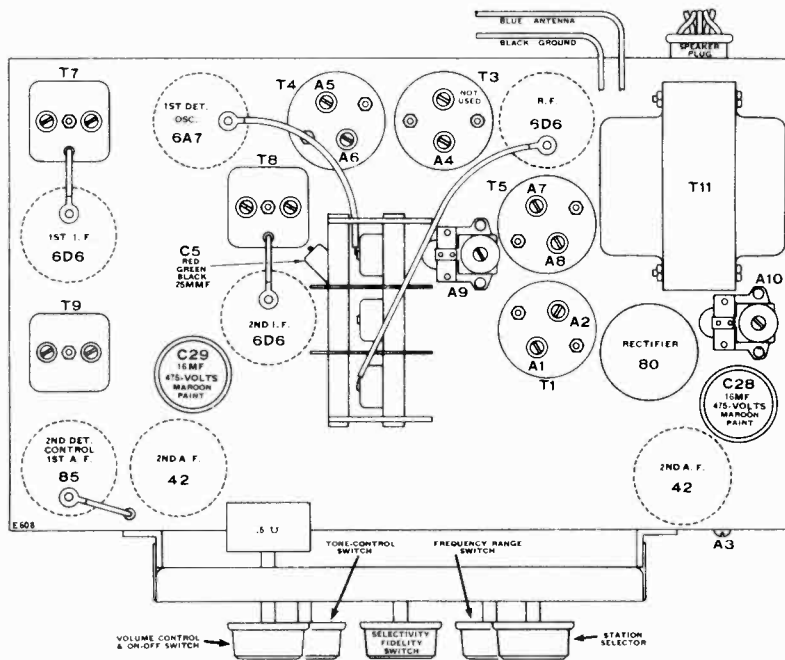
## MODEL S B608, B648 Schematic



August 30, 1935.

**MODEL S E608, E648**  
**Socket, Trimmers**  
**Alignment**

ATWATER KENT MFG. CO.



**ADJUSTING TRIMMER CONDENSERS**

Turn volume on full, turn tone control to "high", and turn switch to "selectivity." Use the weakest possible signal that will give a reading on a sensitive output meter.

**I. F. TRIMMERS.**

Connect I. F. test oscillator (472½ KC) to 2nd-I. F. grid by means of the regular I. F. coupling unit No. 42590. Peak two trimmers on top of T9.

Connect I. F. oscillator to 1st-I. F. grid. Peak two trimmers on T8.

Connect I. F. oscillator to 1st-detector grid. Peak two trimmers on T7.

**DIAL POINTER ADJUSTMENT.**

If the dial gear and indicator have not been tampered with, leave them alone; but if they have been changed in any way, reset as follows:

1. Loosen the two set screws which hold pointer gear on condenser shaft.
2. Turn condenser to minimum.
3. See illustration (Fig. 1). Place straight-edge gauge in vertical position with the long flat face against the front mounting plate of the variable condenser as shown. Turn the condenser until the front edge of the rotor spacing bar just touches the straight edge. Hold the condenser in this position and move the pointer arm so the pointer is at 1562 KC, after which tighten the set screws to hold the dial gear securely.
4. Loosen the screws which hold the pointer to the pointer arm, and adjust the pointer so that when the condenser is completely meshed, the pointer is at 535 KC.

Recheck at 1562 KC and repeat procedure 3 and 4, if necessary.

Recheck at 1562 KC and repeat procedure 3 and 4, if necessary.

August 30, 1935.

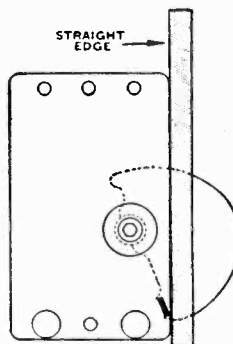


Fig. 1

This illustration shows the correct position of the variable condenser rotor for a dial-pointer setting of 1562 KC. The straight edge is held firmly against the front mounting plate of the variable condenser and the rotor is turned so the spacing bar (shown at lower edge of rotor) is just touching the straight edge. The straight edge is a strip of bakelite or hard rubber ¼" thick, ⅝" wide, and 6" long. The ⅝" side is held against the mounting plate.

**R. F. TRIMMERS.**

Connect an R. F. test oscillator to the antenna and ground terminals of set. Use the weakest possible oscillator signal that will give a reading on the output meter. Loosen the trimmer screws for the frequency range or ranges that are to be adjusted.

*Short-wave range.* Oscillator at 18 MC, dial pointer at 18 MC, peak A8 and A1.

*Medium-wave range.* Oscillator at 1500 KC, dial pointer at 1500 KC, peak A7, A4 and A2. Tune oscillator to 560 KC, turn dial to 560 KC, and peak A9. Repeat adjustment on A7 at 1500 KC, and A9 at 560 KC, if necessary.

*Long-wave range.* Oscillator at 405 KC, dial pointer at 405 KC, peak A6, A5 and A3. Tune oscillator to 160 KC, turn dial to 160 KC, and peak A10. Repeat adjustments on A6 at 405 KC and A10 at 160 KC, if necessary.

ATWATER KENT MFG. CO.

MODELS 649, P649  
Chassis, Parts

MODELS 649 AND 649-RP

- 29367 Variable condenser assembly
- 27832 Base cover
- 30048 Tone control switch assembly
- 28908 Shaft and blade for above
- 47340 Range switch
- 29409 Selectivity switch
- 27321 Volume control, .5 megohm
- 25889 Shadow meter complete
- 30053 Front panel assembly
- 31222 Escutocheon
- 29373 Dial plate only
- 29848 Lamp, 6.3-V., bayonet base
- 27284 Dial pointer
- 29547 Coil shield (T1, 2)
- 29548 Oscillator trans. shield (T3)
- 29619 I. F. T. shield (T4, 5, 6)
- 28349 Phono. terminal card
- 31183 Instruction sheet, F-1289
- 48040 Shipping container (649)
- 49050 Shipping container (649 RP)

ELECTROLYTICS

- C23 25379 10 MF, 25-V.
- C28, 29 29691 16 MF, 475-V.

TRANSFORMERS

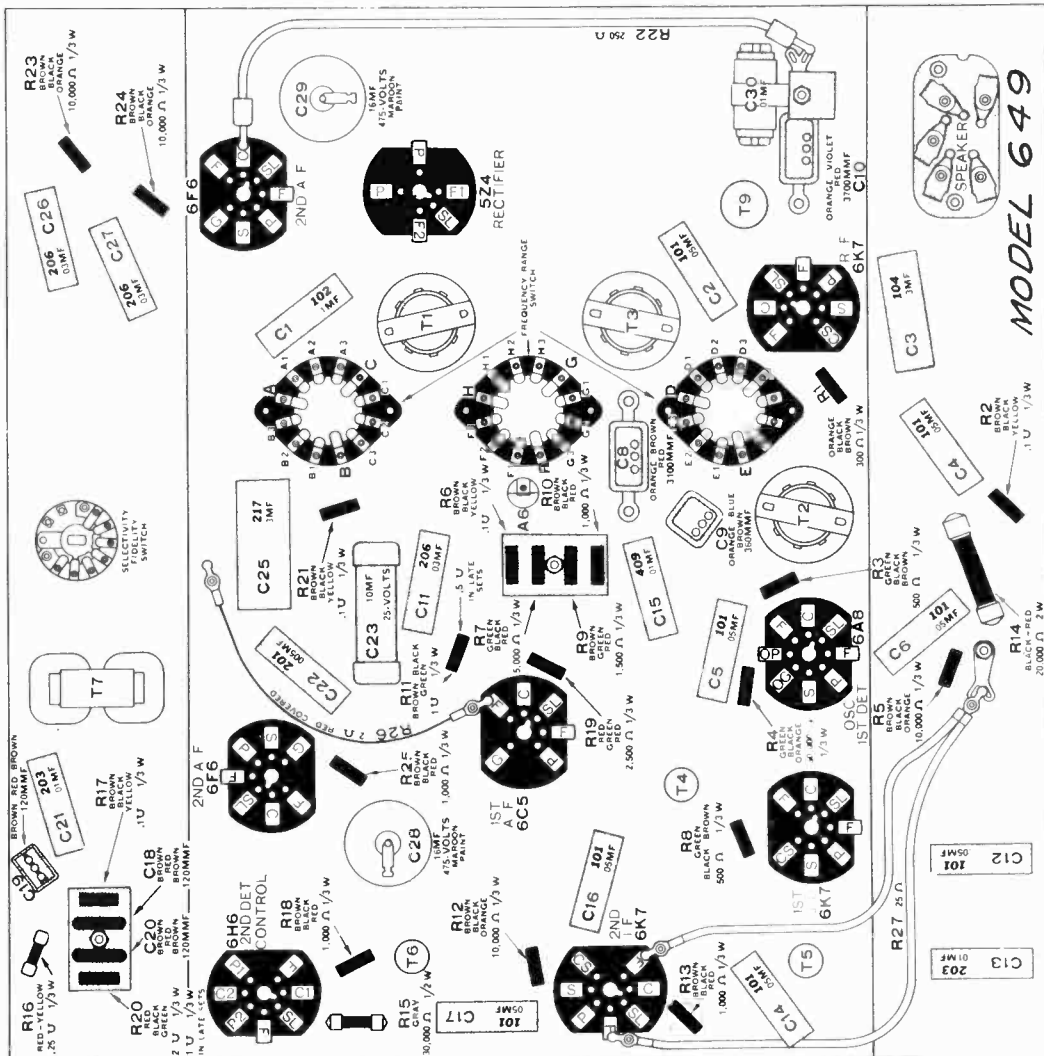
- T1 44390 No. 1 R. F. T.
- T2 44410 No. 2 R. F. T.
- T3 44420 Oscillator transformer
- T4 47720 No. 1 I. F. T.
- T5 47730 No. 2 I. F. T.
- T6 47740 No. 3 I. F. T.
- T7 45590 Input transformer
- T8 21370 Output transformer
- T9 46270 Power transformer (6340)

TRIMMERS

- 29823 Double I. F. trimmer on T4 and T5
- 29543 Double I. F. trimmer on T6
- 44570 Double R. F. trimmer
- 38770 Broadcast tracking trimmer (A6)

RESISTORS

- R22 21420 250 ohms, flexible
- R26 46150 2 ohms, flexible
- R27 45860 25 ohms, flexible
- 21337 Speaker socket
- 30058 Universal 8-prong



MODEL P649

Model P649 is same as standard Model 649, except for phono terminals and a universal power transformer No. 46330.

**MODELS 487, 487X  
MODEL 509  
MODELS 535, 725,  
P725, P725X**

**ATWATER KENT MFG. CO.**

**MODELS E608, E608X,  
E648, E648X  
MODEL 648  
Parts Lists**

MODELS 487 AND 487X

CHOKES

SHIELDS

- 29159 Range switch.....
- 43380 Tone control switch
- 38740 Sensitivity switch
- 27628 Shaft and blade for above
- 27321 Volume control
- 25689 Shadow tuning indicator
- 29158 Variable condenser assembly
- 30031 Front panel assembly
- 29205 Escutcheon
- 29185 Dial plate
- 29213 Dial frame and plate

- 42970 Filter choke
- 509 SPEAKER NO. 46800
- 20737 Diaphragm
- 34630 Field coil
- 21370 Output transformer
- 20657 Cable and plug
- 18682 Plug only

- 27335 Shield for T6
- 29619 I.F.T. shield
- 29547 Shield for T1, T3
- 29548 Shield for T5, T4

TRIMMERS

- 44570 Double R.F. trimmer
- 29823 Double I.F. trimmer
- 38770 Trimmers A5 and A10
- 28845 Trimmer A5

MODELS 535, 725, P725, and P725X

For parts not listed below, refer to Models 225 and 435

C28, C29, 29691 16 MF, 475 V.

TUNING PARTS

Same as Model 318

- TRANSFORMERS
- T1 43320 No. 1 R.F.T., with trimmers
  - T2 43350 No. 2 R.F.T., with trimmers
  - T3 43540 Oscillator transformer, with trimmers
  - T4 29198 No. 1 I.F.T., less trimmers
  - T5 29202 No. 2 I.F.T., less trimmers
  - T6 29203 No. 3 I.F.T., less trimmers
  - T7 21672 Output transformer
  - T8 25521 Power transformer (487)
  - 28567 Power transformer (487X)

- 30084 Cabinet with screen (725).....
- 31622 Screen and gasket (725).....
- 29759 Escutcheon and crystal.....
- 31768 Variable condenser assembly
- 29482 Volume control, .5 meg
- 29678 Range switch
- 32036 Knob, red and yellow dots
- 45370 Tone control switch
- 28349 Phono terminal card
- 31842 Instruction sheet, F-1318
- 49490 Shipping container, 535
- 49480 Shipping container, 725

- CONDENSERS
- 28031 8 MF., 475 V., electrolytic
  - 27592 4-8-10 MF.
  - 34680 2200 MMF.
  - 27599 5700 MMF.

TUNING PARTS

Same as Models 485Q, 515Q, except dial lamp which is No. 29848

- TRIMMERS
- 39430 Double R.F. trimmer
  - 32880 Double I.F. trimmer
  - 39420 Tracking trimmer (A9)

- TRANSFORMERS
- T1 49310 R.F. transformer
  - T2 49320 Oscillator transformer
  - T3 47750 No. 1 I.F.T.
  - T4 44950 No. 2 I.F.T.
  - T5 45810 Power transformer (535 and 725)
  - 48220 Power transformer (P725, P725X)
  - T6 21672 Output transformer
  - 49350 Wave trap assembly

SOCKETS

- 24492 4 prong
- 24494 6 prong
- 26111 7 prong
- 21337 Speaker socket

- SHIELDS
- 25056 I.F.T. shield
  - 27935 R.F.T. shield
  - 22683 Tube shield
  - 23743 Auxiliary shield

MISCELLANEOUS

- 29881 Instruction folder F1282
- 28946 Knob without dot
- 28947 Knob with dot
- 29848 Dial lamp 6.3 volts, bayonet base

- SOCKETS
- 24492 4 prong
  - 24494 6 prong
  - 26111 7 prong
  - 18449 Fuse socket

E608 SPEAKER No. 52500

- 23657 Small choke
- 45270 Field coil
- 19465 Diaphragm
- 21370 Output transformer

E648 SPEAKER No. 50100

- MISCELLANEOUS
- 29187 Instruction folder, F-1233
  - 28455 Shipping container
  - 28946 Knob (without dot)
  - 28947 Knob (with dot)
  - 28063 Knob spring

- TRIMMERS
- A1 31845 Wave trap trimmer
  - A2 28845 Front of chassis
  - A3 39630 Rear of chassis
  - 29543 Double I.F. Trimmer

MODEL 648

Model 648 is similar to Model 649, but with glass tubes.

- 29367 Variable condenser
- 29618 Volume control
- 30048 Tone control switch
- 28908 Shaft and blade
- 29159 Range switch
- 29409 Selectivity switch

- 30086 Front panel assembly
- 29407 Dial plate and holder
- 29373 Dial plate only
- 29848 Dial lamp 6.3 V., bayonet base
- 27254 Dial pointer
- 28946 Knob without dot
- 28947 Knob with dot
- 29412 Instruction sheet F-1245

TUNING PARTS

Same as Model 649, etc.

TRANSFORMERS

- T1 44390 No. 1 R.F.T.
- T2 44410 No. 2 R.F.T.
- T3 44420 Oscillator transformer
- T4 44710 No. 1 I.F.T.
- T5 44720 No. 2 I.F.T.
- T6 44730 No. 3 I.F.T.
- T7 46580 Audio input transformer
- T8 21370 Output transformer
- T9 46270 Power transformer

CONDENSERS

- 29691 16 MF, 475 V., electrolytic
- 25379 10 MF, 25 V., electrolytic

TRIMMERS

- 29823 Double I.F. trimmer
- 44570 Double R.F. trimmer
- 38770 Tracking trimmer
- 648 SPEAKER No. 50100

- 46270 Field coil
- 21370 Output transformer
- 20737 Diaphragm

MODEL 509

For parts not listed below, refer to Model 511

- 27675 Range switch.....
- 29144 Volume control

- 30082 Front panel assembly
- 29108 Escutcheon
- 27837 Dial plate
- 28299 Dial lamp

- 28946 Knob, 1 used
- 28947 Knob, 4 used
- 28063 Knob spring
- 29031 Set of decals for knobs
- 29063 Customer instruction folder F-1224
- 29084 Dealer instruction folder F-1225

- 29081 Base cover
- 21337 Speaker socket

TRANSFORMERS

- 40310 Tuning motor transformer (also used in Model 511)
- 42960 Audio transformer
- 42990 Power transformer
- 21370 Output transformer

Same as Models 649, etc.

TUNING PARTS

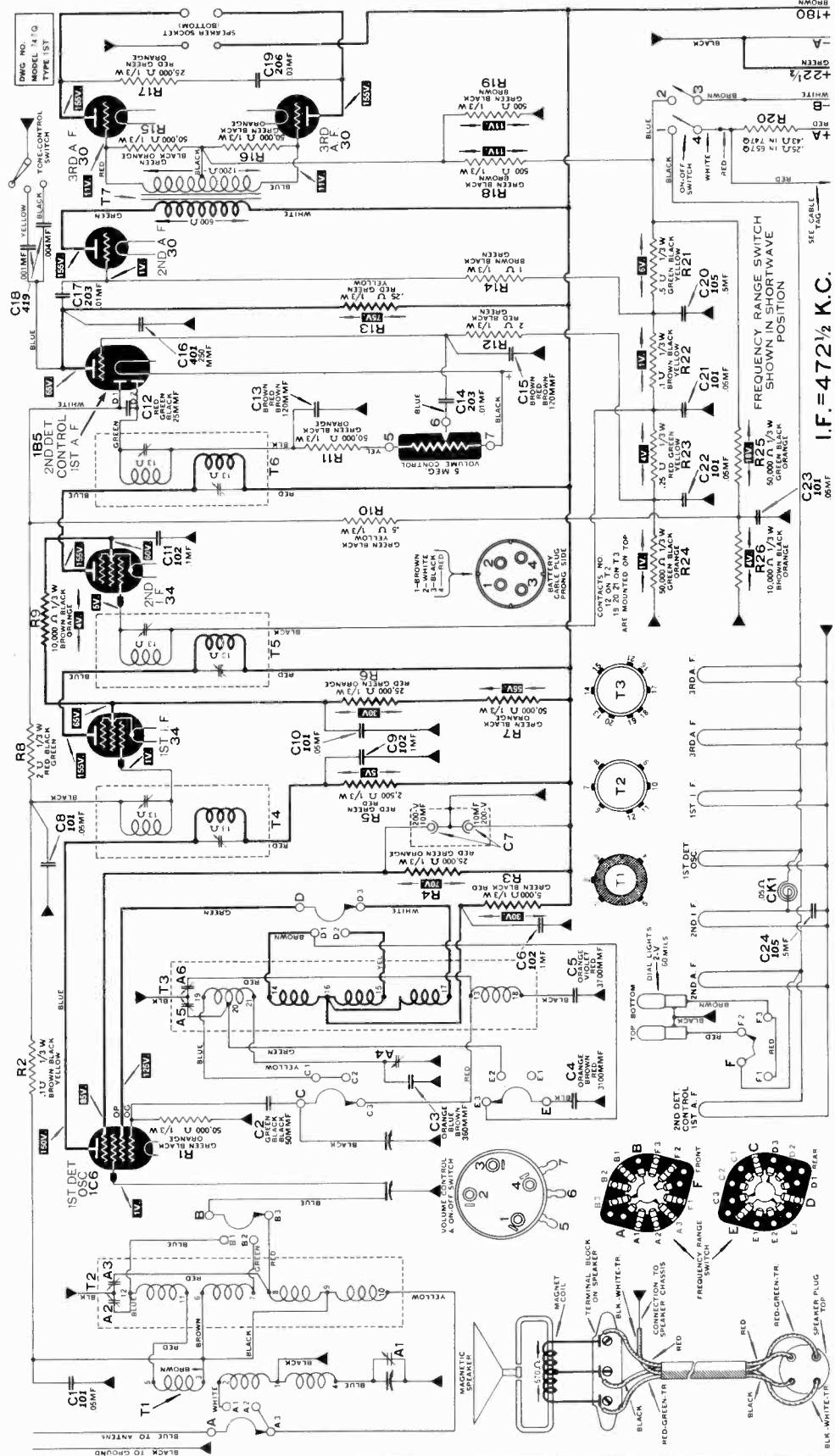
TRANSFORMERS

- T1 46850 No. 1 R.F.T., broadcast and short wave
- T2 46880 No. 1 R.F.T., long wave
- T3 46860 No. 2 R.F.T., broadcast and short wave
- T4 46890 No. 2 R.F.T., long wave
- T5 46870 Oscillator, broadcast and short wave
- T6 46910 Oscillator, long wave
- T7 44710 No. 1 I.F.T.
- T8 44720 No. 2 I.F.T.
- T9 44730 No. 3 I.F.T.
- T10 46580 Audio input transformer
- T11 46330 Power transformer
- T12 21370 Output transformer

ATWATER KENT MFG. CO.

MODELS 657Q, 747Q  
Schematic

MODELS 657Q AND 747Q



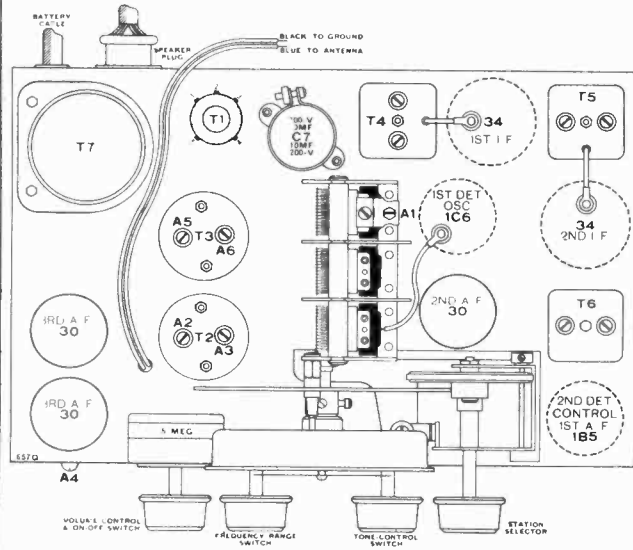
**MODELS 657Q, 747Q**  
**Socket, Trimmers**  
**Chassis, Alignment**

ATWATER KENT MFG. CO.

**MODELS 657Q, 747Q**

- A1—Pre-selector, 1500 KC.
- A2—1st-detector, 1500 KC.
- A3—1st-detector, 18 MC.
- A4—Oscillator tracking, 560 KC.
- A5—Broadcast oscillator, 1500 KC.
- A6—Short-wave oscillator, 18 MC.

There are six I. F. trimmers, two on top of each I. F. transformer (T4, 5 and 6). These are peaked 472½ KC.



**I. F. TRIMMERS**

Connect signal generator (472½ KC) to 2nd-I. F. grid cap by means of No. 42590 coupling unit. Peak two trimmers on top of T6 (3rd I. F. transformer).

Connect signal generator to cap of 1st-I. F. tube and peak two trimmers on top of T5 (2nd I. F. transformer).

Connect signal generator to cap of 1st-detector tube and peak two trimmers on top of T4 (1st I. F. transformer).

**DIAL POINTER ADJUSTMENT**

With the variable condenser fully meshed, the dial pointer should be set at 535 KC.

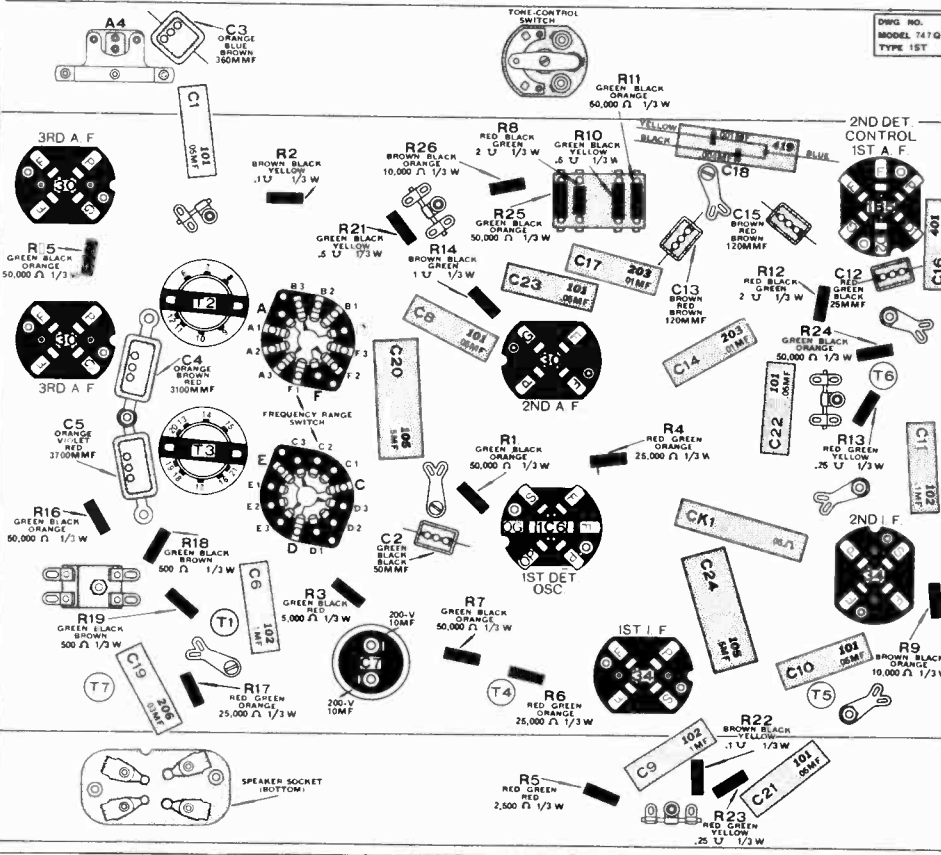
**R. F. TRIMMERS**

Connect signal generator to antenna and ground terminals of set. Loosen R. F. trimmer screws.

In location where severe electrical interference is present, it is necessary, when aligning R. F. trimmers, to connect a 40,000-ohm resistor in series with a .02 M. F. condenser from the grid cap of the 1st-I. F. tube to chassis. This reduces the I. F. sensitivity and permits use of a stronger output from the signal generator to over-ride the local noise level without bringing the AVC into action.

**BROADCAST RANGE**

Connect signal generator to antenna and ground of set, using a 250 MMF condenser in series with the antenna lead. With signal generator and dial at 1500 KC, peak the broadcast trimmers A5, A2 and A1 (oscillator, detector, and antenna). Use the first peak as A5 is screwed in from a loose position. Tune generator to 560 KC and peak broadcast tracking trimmer A4 while rocking variable condenser one division around the 560 KC mark. Repeat adjustments at 1500 and at 560 KC if necessary.



**SHORT-WAVE RANGE**

Connect a 400-ohm resistor in series with the generator pick-up lead at the antenna terminal of set. With signal generator and dial at 18 MC peak the short-wave oscillator trimmer A6, using the first peak as this trimmer is screwed down from a loose position.

Check to determine that A6 has been adjusted to the correct point by tuning in the double spot at 17.05 MC. The signal generator should be left at 18 MC while making this check.

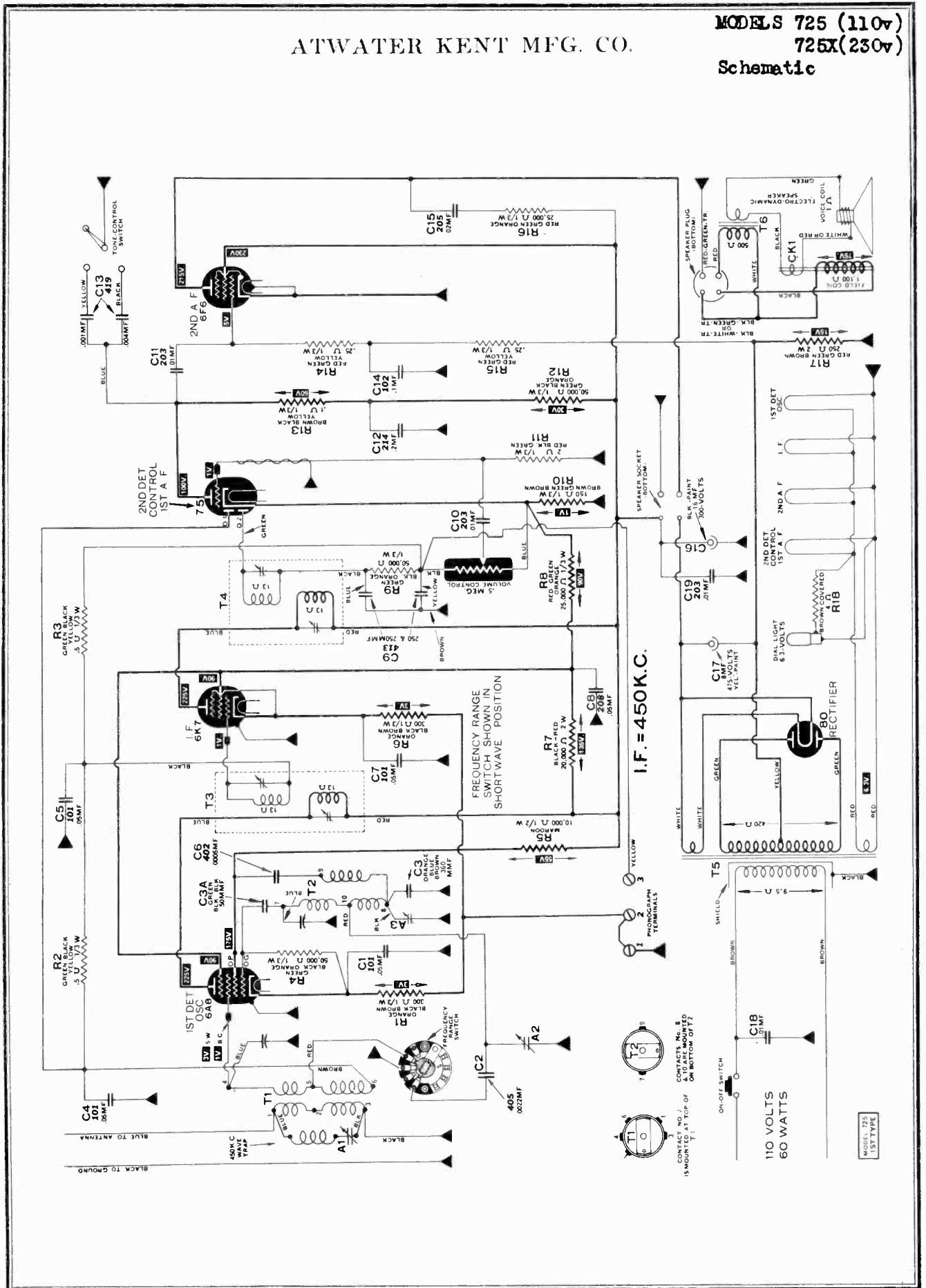
Retune the set to 18 MC and while slowly rocking the variable condenser, peak the short-wave detector trimmer A3. A better method of setting A3 is to connect a 400 MMF vernier-type variable condenser across the oscillator section of the gang condenser (after setting A6) and increase the capacity of this extra condenser until the 18 MC signal is again heard. Then peak A3. This method avoids inter-locking between the detector tuned circuit and the oscillator tuned circuit.

**POLICE RANGE**

No trimmers on this range.

ATWATER KENT MFG. CO.

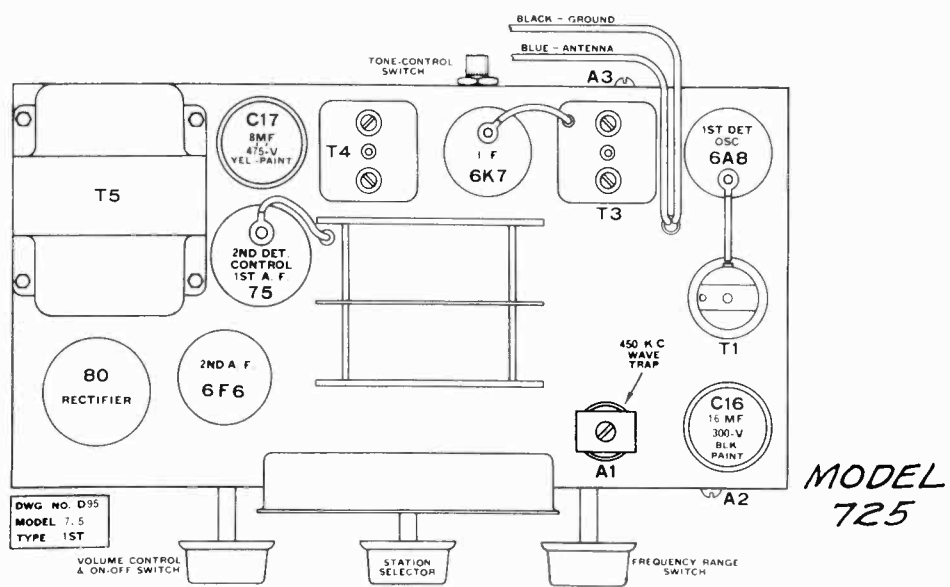
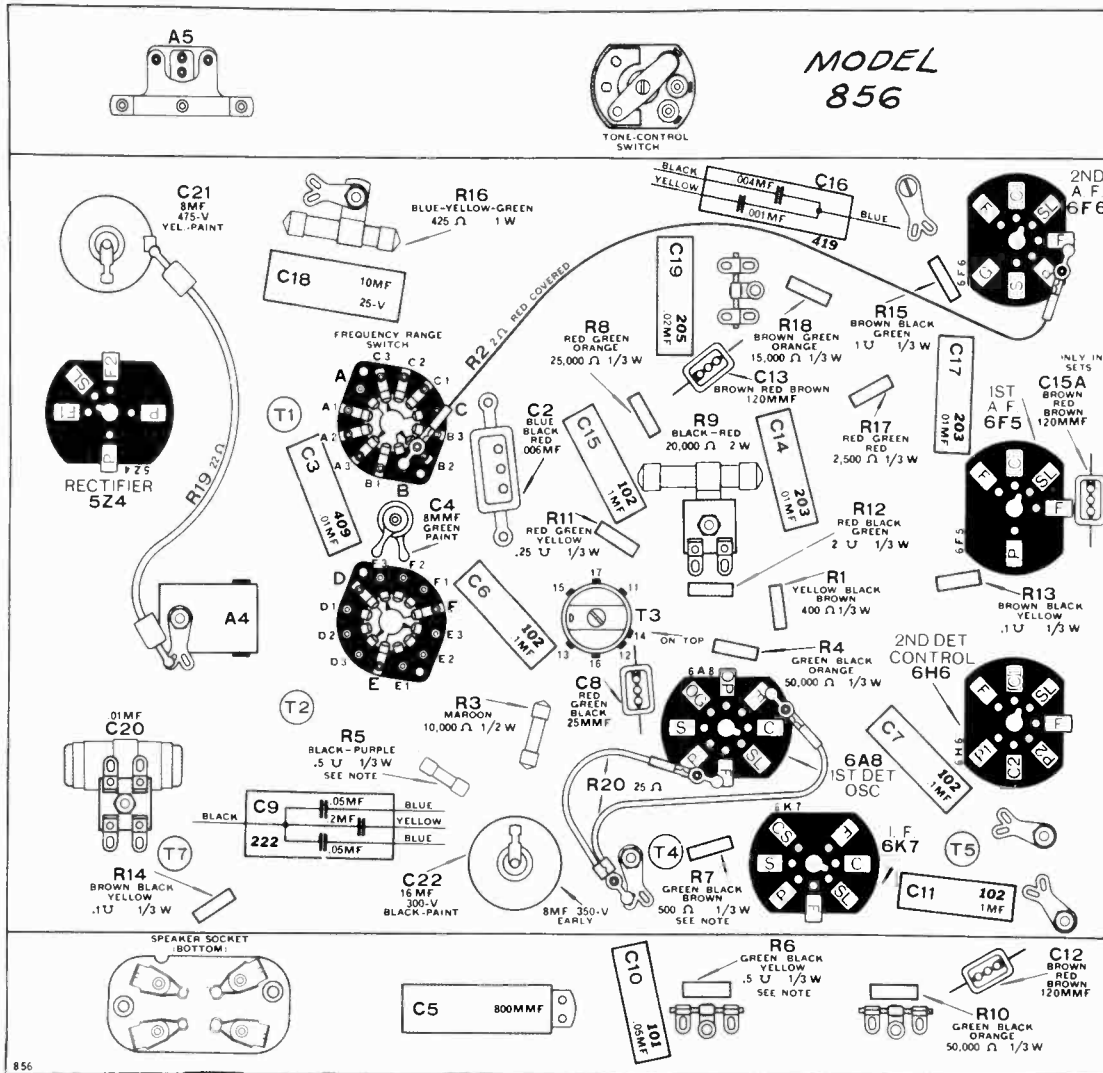
MODELS 725 (110)  
725X(230X)  
Schematic





**MODEL 725**  
**Socket, Trimmers**  
**MODEL 856**  
**Chassis Layout**

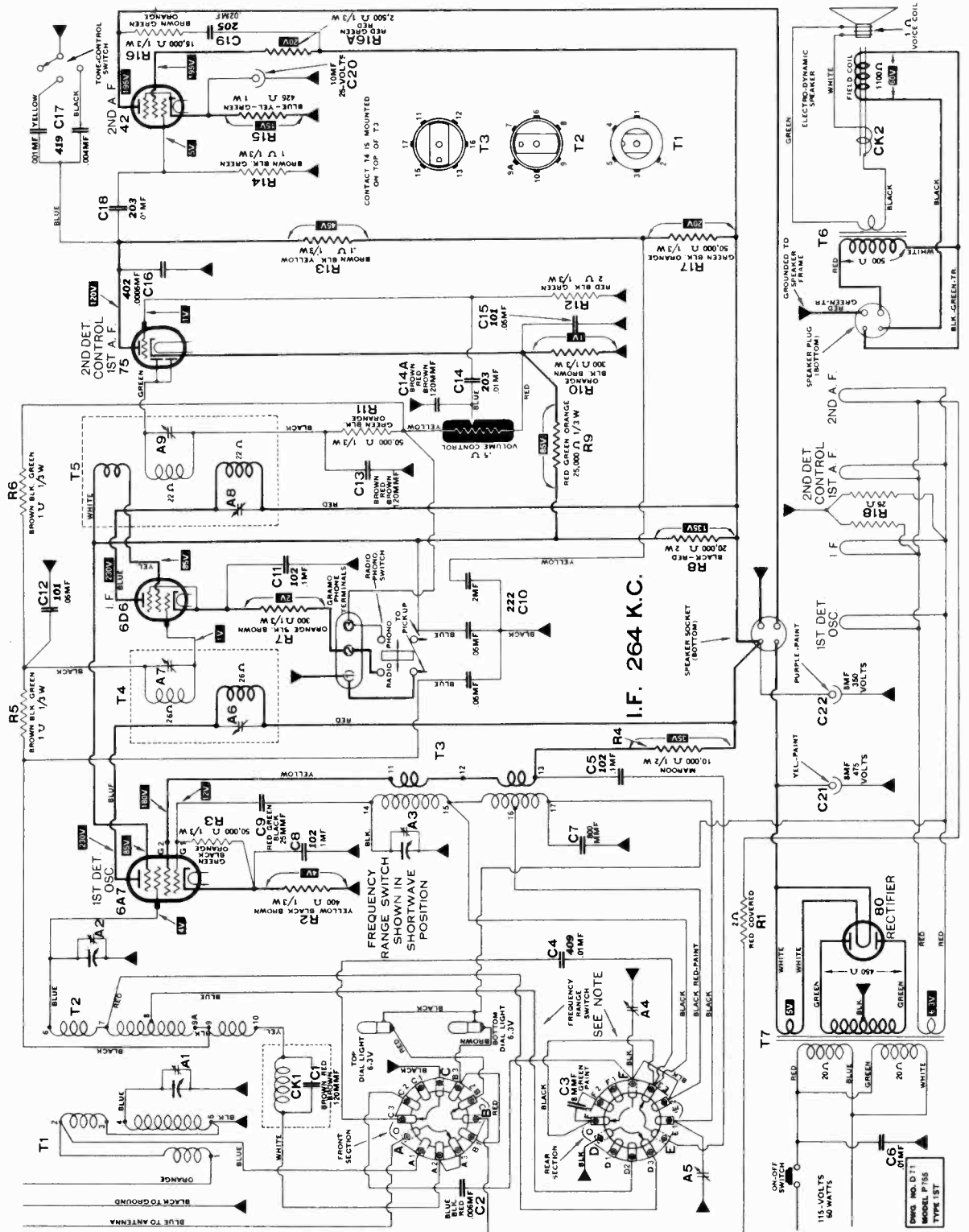
ATWATER KENT MFG. CO.



DWG NO. D95  
 MODEL 7.5  
 TYPE 1ST

# ATWATER KENT MFG. CO.

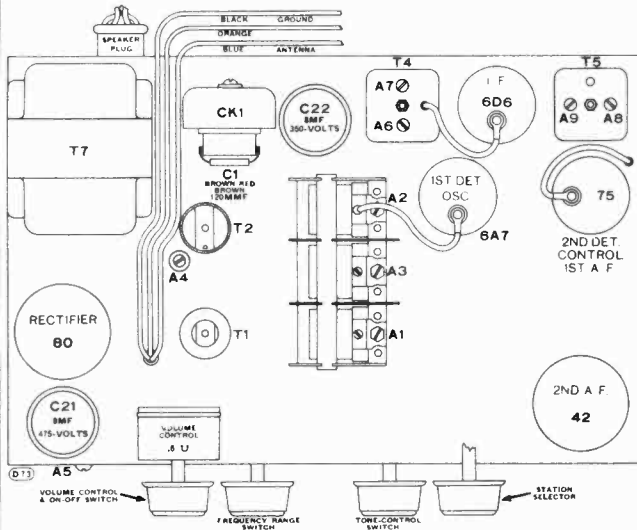
## MODELS P755, P875 Schematic



August 2, 1935.

**MODELS P755, P875**  
**Socket, Trimmers**  
**Chassis, Alignment**

ATWATER KENT MFG. CO.



**ADJUSTING TRIMMER CONDENSERS**

**I. F. TRIMMERS.**

Connect I. F. test oscillator (264 KC) to I. F. tube by means of regular I. F. coupling unit. Peak A9, A8. Connect I. F. oscillator to 1st-detector tube and peak A7, A6.

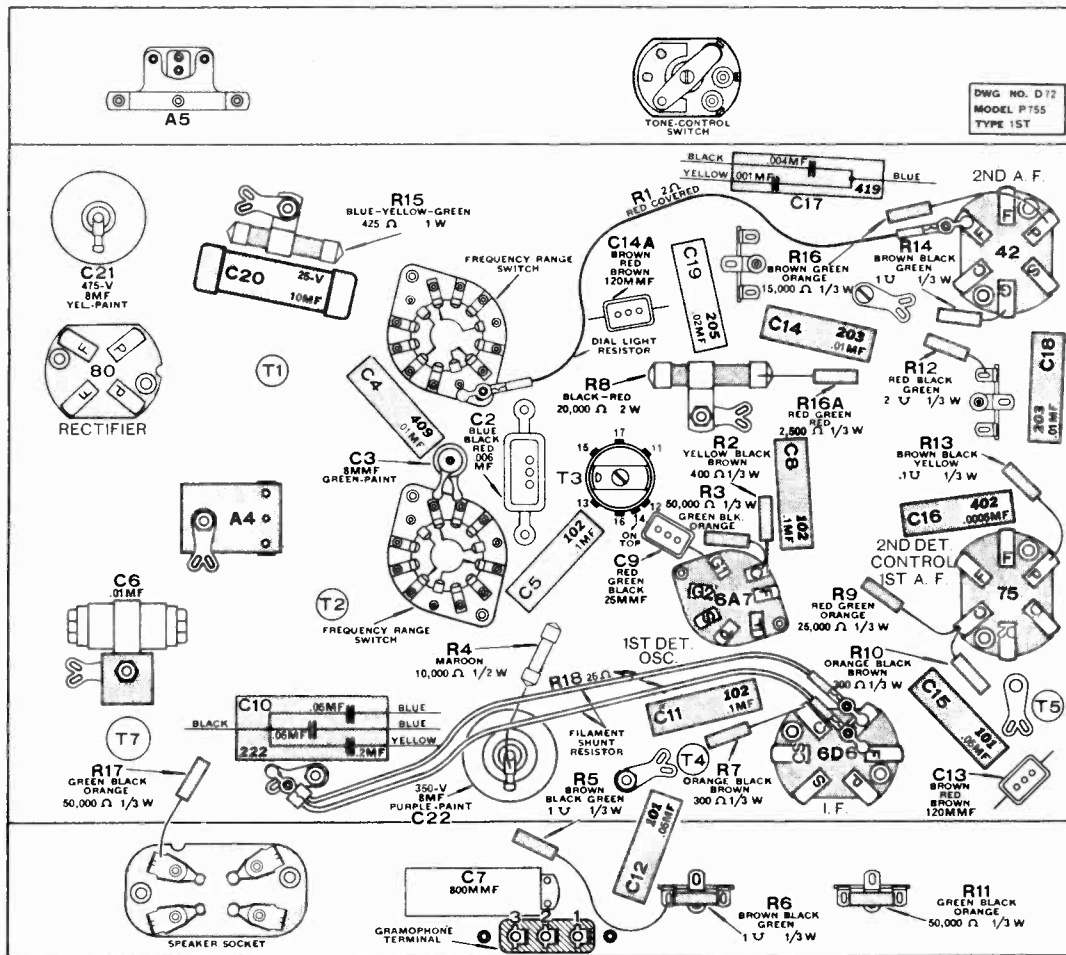
**DIAL POINTER ADJUSTMENT.**

With rotor of variable condenser fully meshed, dial indicator should be at 535 KC.

**R. F. TRIMMERS.**

Connect an R. F. oscillator to antenna and ground of set. *Short-wave range.* With oscillator and dial at 15 MC, peak A3. Use the first point on the trimmer, as it is screwed in from a loose or minimum-capacity position.

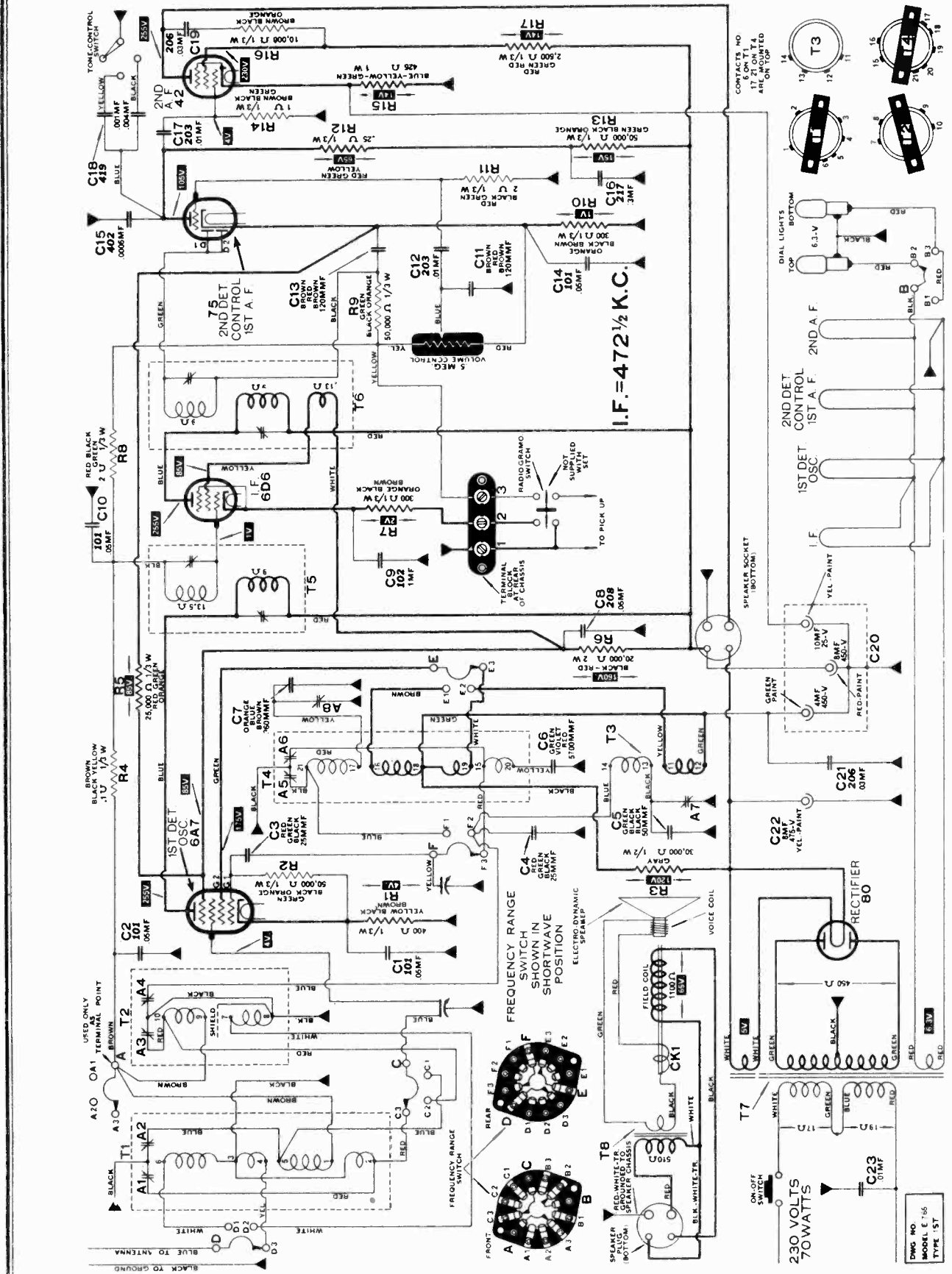
*Police range.* No trimmers on this range. *Broadcast range.* With oscillator and dial at 1500 KC, peak A4, A2 and A1. With oscillator and dial at 560 KC, peak A5.



August 2, 1935.

# ATWATER KENT MFG. CO.

## MODEL E-765 Schematic



September 25, 1935

**MODEL E-765**  
**Socket, Trimmers**  
**Chassis, Alignment**

ATWATER KENT MFG. CO.

**ADJUSTING TRIMMER CONDENSERS**

Turn volume control full on, turn tone control to "high," and use the weakest possible signal that will give a reading on a sensitive output meter.

**I. F. TRIMMERS.**

Connect an I. F. test oscillator (472½ KC) to the I. F. grid by means of the regular I. F. coupling unit No. 42590. Peak

the two trimmers on top of T6. Connect I. F. oscillator to 1st-detector grid and peak the two trimmers on T5.

**DIAL POINTER ADJUSTMENT.**

With the variable condenser fully meshed, the dial pointer should be set at 538 KC.

**R. F. TRIMMERS.**

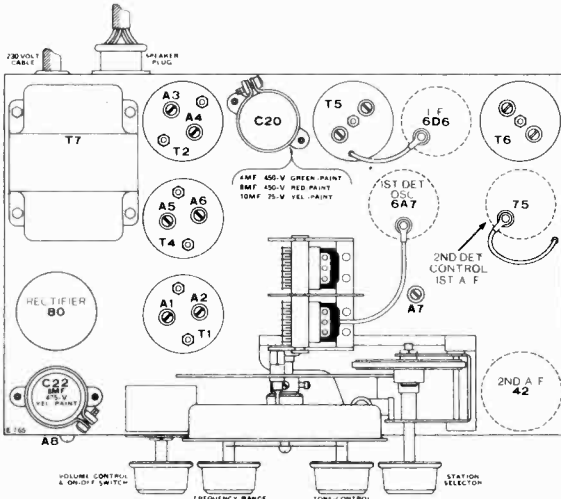
Connect an R. F. test oscillator to the antenna and ground leads of set. Loosen the trimmer screws for the range or ranges that are to be adjusted.

*Short-wave range.* Oscillator and dial at 18 MC, peak A6 and A1.

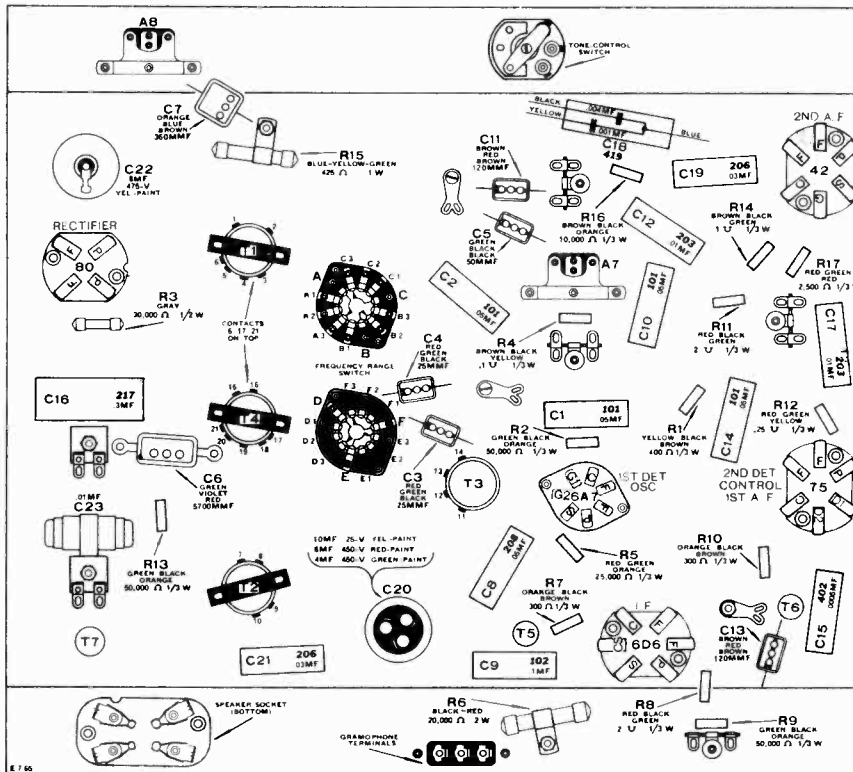
*Long-wave range.* Oscillator and dial at 405 KC, peak A4 and A3. Oscillator and dial at 160 KC, peak A7.

*Medium-wave range.* Oscillator and dial at 1500 KC, peak A5 and A2. Oscillator and dial at 540 KC, peak A8.

- A1—1st-detector, 18 MC.
- A2—1st-detector, 1500 KC.
- A3—1st-detector, 405 KC.
- A4—Oscillator, 405 KC.
- A5—Oscillator, 1500 KC.
- A6—Oscillator, 18 MC.
- A7—Tracking, 160 KC.
- A8—Tracking, 540 KC.



There are four I. F. trimmers, two on top of each I. F. transformer (T5 and T6). These are adjusted at 472½ KC.



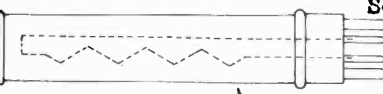
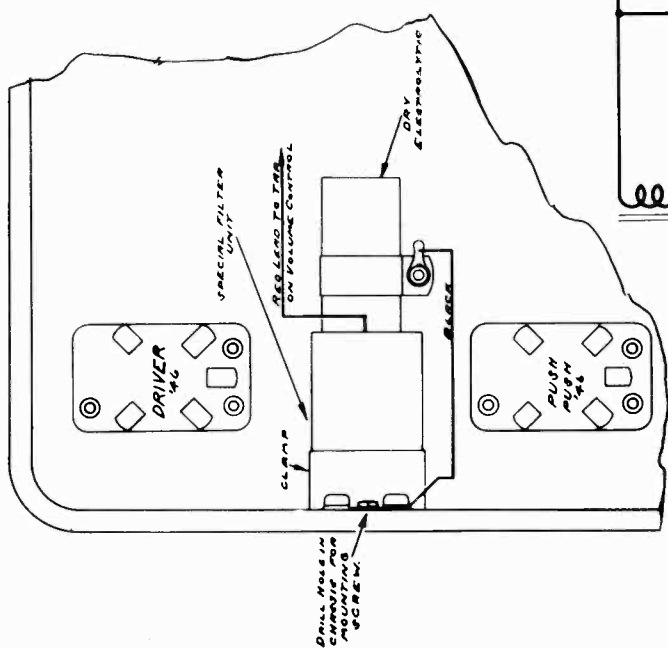
September 25, 1935.

ATWATER KENT MFG. CO.

MODEL 812  
Change  
Booster Amplifier  
Schematic

Allow 50-2000 Ohm Phones  
to give load equivalent to  
one JB speaker

SCALE	AS REC
ATWATER KENT MFG COMPANY PHILADELPHIA PA	
DESIGNATION PER MOUNT-	
ING SPECIAL FILTER UNIT-	
IN MODEL 812	
USE IN	UNIT
DATE	APPROVED
BY E.S.	DATE
BY E.S.	DRAW. NO.



FOR DESCRIPTION OF THIS  
BOOSTER SEE BLUEPRINT  
NO. 157

TOTAL NUMBER OF TYPE JB SPEAKERS	USE TAPS ON AUDIO OUTPUT TRANSFORMER
15	2 2 3
10	3 2 4
5	1 2 5
4	4 2 5
3	1 2 4
2	2 2 5
1	1 2 5

ATWATER KENT MFG COMPANY PHILADELPHIA PA
NAME SCHEMATIC SUBBORN OF BOOSTER AMPLIFIER-MA 17400
USED ON 110V-60CYCLE SUPPLY
APPROVED
DATE
DRAW. NO. 157

**MODEL P710**  
**MODELS P755, P755X**  
**P875, P875X**

**ATWATER KENT MFG. CO.**

**MODELS E765, E765X**  
**MODEL 810**  
**MODELS 856, 976**  
**Speaker Data, Parts Lists**

MODEL P710  
 27321 Volume control .....  
 29409 Selectivity switch  
 46450 Range switch  
 39150 Tone control switch  
 28157 Shaft and blade  
 29429 Variable condenser  
 29476 Dial plate and frame  
 29488 Instruction folder F-1256

TUNING PARTS

Tuning parts are same as for Model 810

CONDENSERS

28031 8 MF, 475 V., electrolytic  
 27583 16 MF, 300 V., electrolytic  
 25384 8 MF, 300 V., electrolytic  
 29954 10-10 MF, 25 V., electrolytic  
 27598 3700 MMF  
 29605 2200 MMF  
 29504 1600 MMF

FILTER CHOKE

46610 Filter choke

TRIMMERS

39140 Strip of four trimmers  
 38770 Tracking trimmer (2)  
 44570 Double R.F. trimmer  
 29823 Double I.F. trimmer

SOCKETS

21337 Speaker socket  
 24492 4 prong  
 24493 5 prong  
 24494 6 prong  
 26111 7 prong

SHIELDS

22683 Tube shield  
 25743 Auxiliary tube shield  
 29547 Shield for T1, T3  
 29548 Shield for T2, T4  
 27355 Shield for T5, T6  
 29619 I.F.T. shield

710 SPEAKER No. 46800

26243 Diaphragm  
 44440 Field coil  
 44460 Output transformer

MODELS P755, P755X, P875, and P875X

30047 Cabinet with screen (P755).....  
 29982 Screen and gasket (P755).....  
 29759 Escutcheon and crystal  
 28946 Knob without dot  
 28947 Knob with dot  
 28965 Knob spring  
 29425 Instruction sheet F-1257  
 29425 Variable condenser  
 29848 Dial lamp 6.3 V., bayonet base

TUNING PARTS

Same as Models 856, 976 with exception of dial plate which is No. 29559 in Model P755, and No. 29976 in Model P875.

42750 Tone control switch  
 29101 Shaft and blade for above  
 28986 Range switch  
 28961 Volume control

TRANSFORMERS

T1 43060 No. 1 R.F.T.  
 T2 43070 No. 2 R.F.T.  
 T3 43080 Oscillator transformer  
 T4 45420 No. 1 I.F.T. complete  
 T5 45430 No. 2 I.F.T. complete  
 T6 21672 Output transformer  
 T7 49630 Power transformer  
 41020 Wave trap assembly

CONDENSERS

28031 8 MF, 475 V., electrolytic  
 27583 16 MF, 300 V., electrolytic  
 25379 10 MF, 25 V., electrolytic

TRIMMERS

29119 Double I.F. trimmer (T4)  
 29543 Double I.F. trimmer (T5)  
 39650 Tracking trimmer (A5)  
 28843 Oscillator trimmer (A4)

SOCKETS

24492 4 prong  
 24494 6 prong  
 21356 Speaker socket  
 26111 7 prong

P 755 SPEAKER NO. 41900  
 P 875 SPEAKER NO. 41800

MODELS E765 and E765X

50047 Cabinet with screen.....  
 29982 Screen and gasket  
 29759 Escutcheon and crystal  
 28946 Knob, without dot  
 28947 Knob, with dot  
 29877 Instruction sheet F-1279  
 31107 Dial plate  
 29845 Variable condenser  
 28961 Volume control  
 20093 Volume control nut  
 42750 Tone control switch  
 29101 Shaft and blade  
 45170 Dial lamp socket  
 29848 Dial lamp 6.3 V bayonet base  
 46520 Range switch

TUNING PARTS

Same as Models 856, 976, etc.

TRANSFORMERS

T1 47140 R.F.T. broadcast and short wave  
 T2 47180 R.F.T., long wave  
 T3 47170 Osc. trans., long wave  
 T4 47150 Osc. trans., B.C. and S.W.  
 T5 45250 No. 1 I.F.T.  
 T6 45260 No. 2 I.F.T.  
 T7 49630 Power transformer  
 T8 21672 Output transformer

CONDENSERS

28051 8 MF, 475 V., electrolytic  
 27592 4-8 MF, 450 V., 10 MF, 25 V.

SOCKETS

24492 4 prong  
 24494 6 prong  
 26111 7 prong  
 21356 Speaker socket

TRIMMERS

39650 (A7 and A8)  
 44570 Double R.F. trimmer  
 29728 Double I.F. trimmer

E765 SPEAKER NO. 41900

25657 Small choke  
 21672 Output transformer  
 19465 Diaphragm  
 12860 Field Coil  
 28545 Cable and plug  
 15079 Plug

MODEL 810

31608 Volume control, .5 megohm  
 29429 Variable condenser assembly  
 29428 Range switch  
 29409 Selectivity switch  
 48820 Tone control switch  
 29101 Shaft and blade for above  
 25698 Shadow meter complete  
 30054 Front panel assembly  
 31221 Escutcheon  
 29476 Dial plate  
 29848 Lamp, 6.3-V., bayonet base  
 27254 Dial pointer  
 29547 Coil shield (T1, 3)  
 29548 Coil shield (T2, 4)  
 27355 Coil shield (T5, 6)  
 29619 I. F. T. shield (T7, 8, 9)  
 31188-2 Instruction folder, F-1293-2  
 49020 Shipping container

CHOKES

CK1 48760 Filter choke

TRIMMERS

29643 Double I. F. trimmer on T7 and T9  
 29823 Double I. F. trimmer on T8  
 44570 Double R. F. trimmer  
 39140 Oscillator trimmers (strip of four), A10, 11, 13 and 14  
 38770 A9, A12 (broadcast and police tracking)

ELECTROLYTICS

C28 29984 10 MF, 10 MF, 25-V.  
 C29 27583 16 MF, 300-V.  
 C30 28031 8 MF, 475-V.  
 C31 28031 8 MF, 475-V.  
 C33 25384 8 MF, 300-V.

RESISTORS

R21 21420 250 ohms, flexible  
 R25 45860 25 ohms, flexible  
 R26 46150 2 ohms, dial light resistor

SOCKETS

21337 Speaker socket  
 30068 Universal 8-prong socket

LINE PLUG AND FUSES

Late type Atwater Kent metal-tube sets use a double-fused 110 volt plug. The fuse rating depends on the current drain of the set. Always replace with a fuse of the original value. The part numbers of the plug and different fuses are given below:-

30085 Fuse type plug, less fuses.....  
 25136 Fuse, 1 amp.....  
 32085 Fuse, 1 1/2 amps.....  
 18534 Fuse, 2 amps.....  
 25774 Fuse, 3 amps.....  
 21406 Fuse, 10 amps (auto sets).....

BROWN MOLDED PUSH-ON KNOBS

28946 Knob (without dot).....  
 28947 Knob (with dot).....  
 32036 Knob (red and yellow dots).....  
 32042 Knob (red, green, yellow dots)..  
 28063 Knob spring.....

MODELS 856 AND 976

50047 Cabinet with screen (856)  
 29143 Gasket and screen (856)  
 29789 Escutcheon and crystal assem.  
 28961 Vol. control, 5 segohm  
 42750 Tone control switch  
 29101 Shaft and blade for the above  
 29425 Var. cond. assem.  
 28986 Range switch  
 29183 I.F.T. shield  
 31648 Dial holder  
 31281 Dial plate (856)  
 31282 Dial plate (976)  
 48930 Pilot light socket assem.  
 29848 Lamp, 6.3-V., bayonet base (clear)  
 31006 Base cover (976)  
 31513 Grid cap with lead  
 31285 Instruction sheet, F-1298  
 48920 Shipping container (976)  
 48870 Shipping container (856)

TRANSFORMERS

T1 43060 No. 1 R.F.T.  
 T2 43070 No. 2 R.F.T.  
 T3 43080 Oscillator transformer  
 T4 48230 No. 1 I.F.T.  
 T5 48240 No. 2 I.F.T.  
 T6 21672 Output transformer  
 T7 45810 Power transformer (S-535)

RESISTORS

R2 46150 2 ohm, flexible  
 R19 16840 22 ohm, flexible  
 R20 45860 25 ohm, flexible

CONDENSERS

C1 29532 120 MMF., 450-V.  
 C2 25055 .006 MF., 450-V.  
 C4 25661 8 MMF., 500-V.  
 C5 25050 800 MMF., 100-V.  
 C8 29606 25 MMF. 450-V.  
 C12 29532 120 MMF., 450-V.  
 C13 29532 120 MMF., 450-V.  
 C18 25379 10 MF., 25-V., electrolytic  
 C20 23250 .01 MF., 450-V.  
 C21 28031 8 MF., 475-V., electrolytic  
 C22 27585 8 MF., 350-V., electrolytic  
 In late sets, C22 is 16 MF., 300-V., No. 27583.

TRIMMERS

A4 28843 Top of chassis  
 A5 39650 Front of chassis  
 A6,7 29119 Double I.F. on T4  
 A8,9 29543 Double I.F. on T5

SOCKETS

21356 4-prong (speaker)  
 30058 Universal socket (8 prong)

CHOKES

CK1 41020 Wave trap assembly  
 CK2 25525 Small choke (976)  
 25657 Small choke (856)

856 SPEAKER NO. 41900  
 976 SPEAKER NO. 41800

MODEL NUMBER	SPKR PART NO. COMPLETE	FIELD COIL	DIAPHRAGM	OUTPUT TRANS.	SMALL CHOKE PLUG	CABLE & PLUG
184.....	55600	21280	19465	21672	23657	16079
300, 317, early 328; 435, 555, 676, 717, 976.....	41800	21260	20737	21672	25525	18482
255.....	35404	50119	30121	30117	50118	18482

\*The serial number of the change in speakers on Model 528 is approximately No. 6483750.





**32-Volt D.C. Sets  
Installation Data**

ATWATER KENT MFG. CO.

**INSTRUCTIONS FOR INSTALLATION OF  
32-VOLT D. C. RECEIVERS**

The power unit may be placed at some distance from the set if desired. Under certain conditions this will be found an advantage in reducing hum and back-ground noise.

**ANTENNA**

An outside antenna is best, and we suggest a single wire (continuous if possible) between 50 and 100 feet total length, including lead-in. The antenna should be as high as possible.

Run the antenna at right angles to the power line from the lighting plant to the house. Erect the antenna and lead-in away from the lighting plant.

The antenna lead-in must be short and direct, and it must be kept away from the ground and from the power line. Do not use a shielded lead-in.

Connect the antenna lead-in to the blue wire at rear of chassis.

**IMPORTANT**

FOR MAXIMUM EFFICIENCY ON ALL WAVES, use the Atwater Kent Type "D" No. 28076 doublet antenna kit and the Atwater Kent Model "DT" No. 28083 doublet transformer. These parts have been designed especially for this receiver. Complete installation instructions are furnished with the kit.

The orange lead at rear of chassis is to be used only if the antenna is extra long. In this case, connect the orange lead (together with black lead) to ground. If the antenna is average length, do not use the orange lead and make certain that the end of this lead is covered with the rubber tubing.

**GROUND**

A ground is required and should be made by running a wire from the back lead at rear of chassis to the nearest water pipe or radiator, using a ground clamp to provide good contact to the pipe. Keep ground lead short.

**LIGHTING PLANT INTERFERENCE**

When the charging generator is running, a certain amount of electrical interference or noise may be picked up by the radio receiver. This originates in

the ignition system of the lighting plant, and at the brushes of the lighting plant generator.

This interference can be eliminated by placing a spark-plug suppressor (No. 21143) on the engine-end of the lead from the high-tension coil. If this does not entirely correct the trouble, connect an Atwater Kent generator condenser No. 38270 from each brush of the generator to the generator frame.

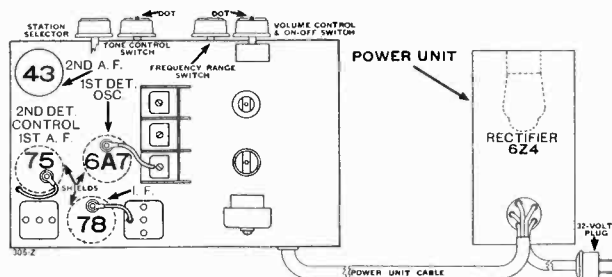
Plants having more than one cylinder should have a suppressor on each spark plug and also a distributor-type suppressor (No. 21144) on the high-tension lead to the distributor cap.

Practically all ignition interference is eliminated by use of the suppressors and condensers as specified above. However, if there is still some electrical interference

present after these parts have been correctly installed, in many cases this can be reduced and often entirely eliminated by employing one or more of the following methods:

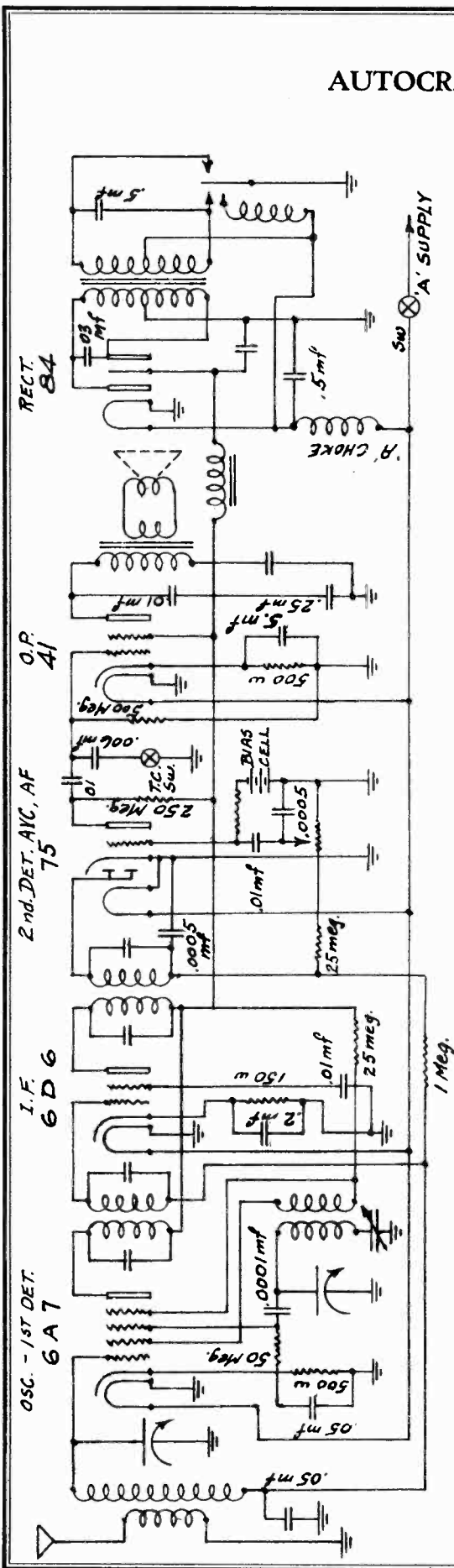
(It is important to make all listening sets for ignition interference with the radio volume control full on, and with the lighting-plant generator in operation.)

1. Replace all leaky or old high-tension cables.
2. Make certain that all high-tension leads make good contact with their terminals. Soldered joints are preferable.
3. Reduce the gap between the rotor electrode and the distributor electrodes to a minimum by peening the rotor electrodes. If this is not feasible add solder to the end of the rotor electrode or to the distributor contacts.
4. Check the spacing of the spark-plug electrodes. In general, small gaps reduce interference.
5. Check the condition of the low-tension interrupter contacts. If necessary, file or replace the points.
6. Check for defective suppressors. The correct resistance is approximately 15,000 ohms.
7. Remove spark "boosters" on ignition coil or spark plugs.

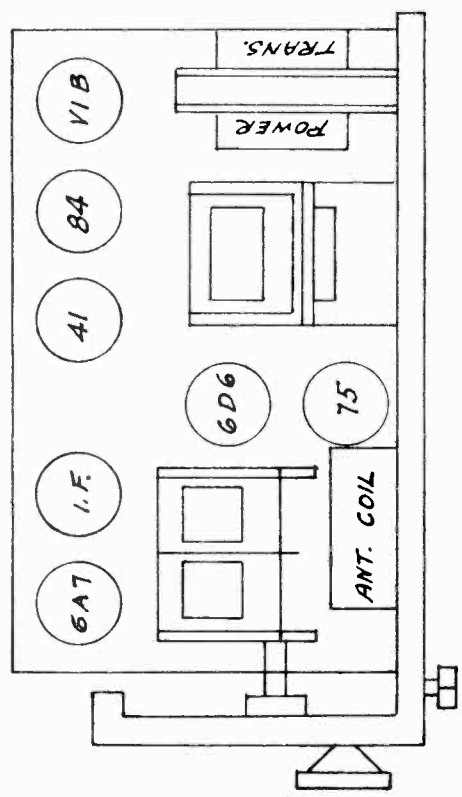


MODEL 505  
Schematic  
Socket

AUTOCRAT RADIO CORP.



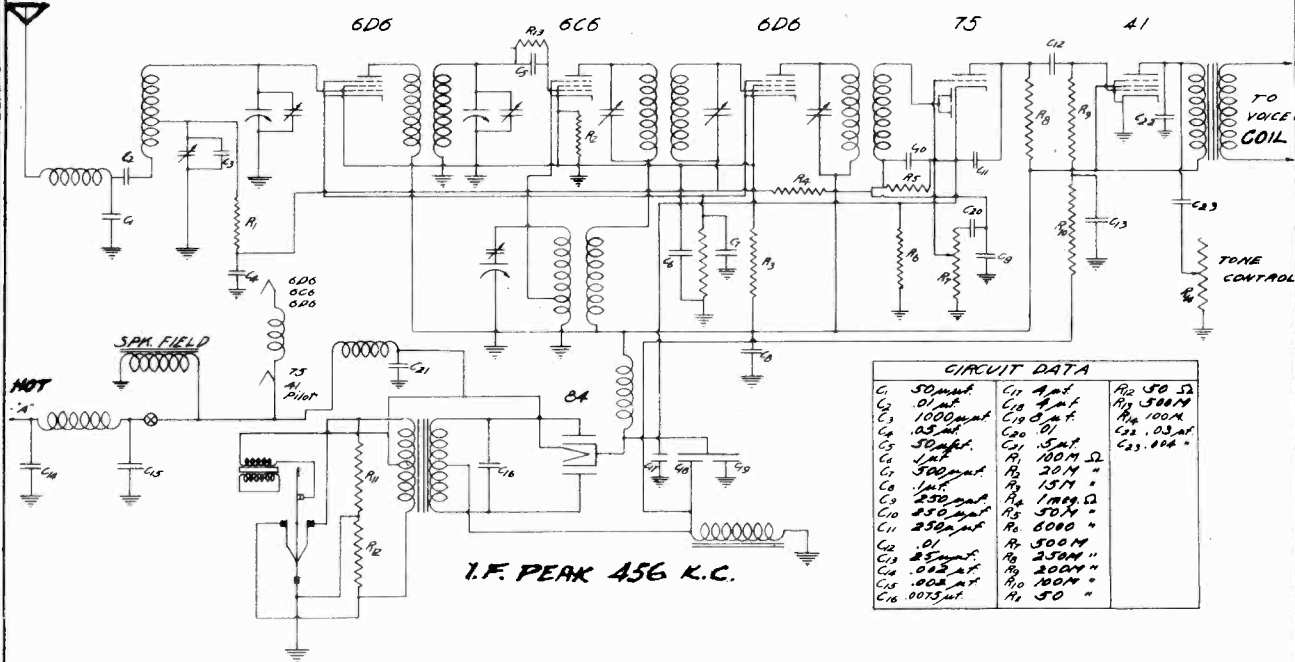
- 505A Variable Condenser
- 505B Volume Control with sw.
- 505C Tone control
- 505D Speaker
- 505E Electrolytic condenser
- 505F3 1st i-f. and osc. coil
- 505F4 2nd i-f. coil
- 505F6 Antenna coil
- 505H Power Transformer
- 505J Dial
- 505N "B" Choke
- 505N1 "A" Choke
- 505V Vibrator
- 505Y Bias cell



I.F. PEAK 456 KC.

MODELS 518, 618  
 MODEL 406  
 Schematics, Socket

AUTOCRAT RADIO CORP.



**CIRCUIT DATA**

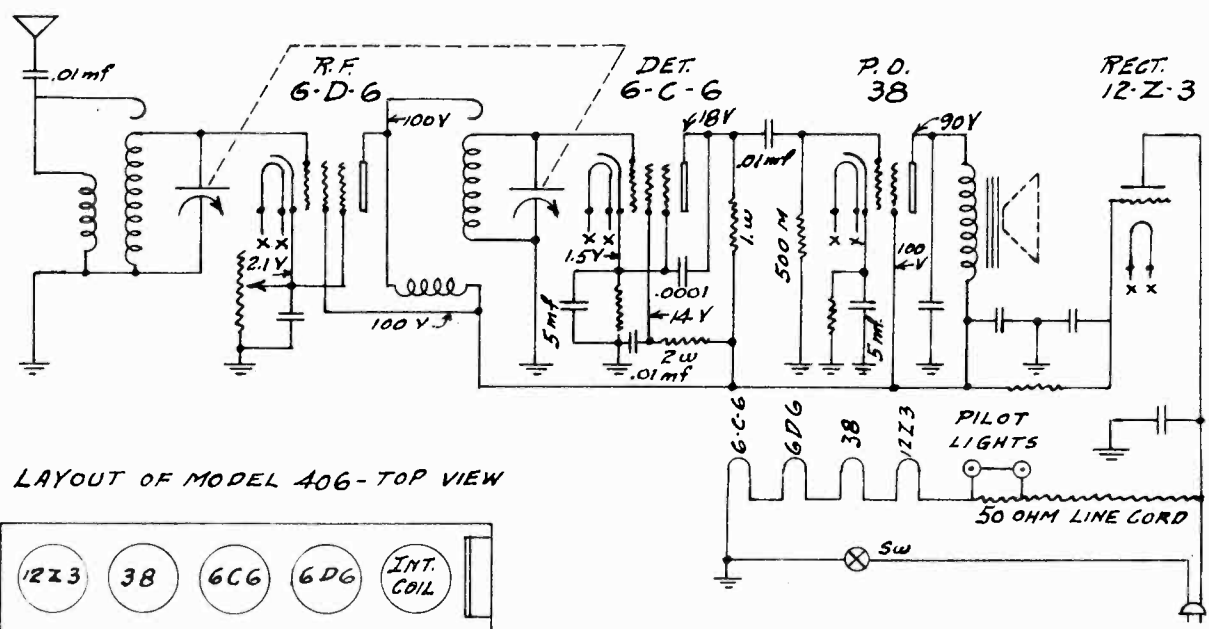
C <sub>1</sub> 50µmf	C <sub>11</sub> 4µf	R <sub>12</sub> 50 Ω
C <sub>2</sub> .01µf	C <sub>12</sub> 4µf	R <sub>13</sub> 500Ω
C <sub>3</sub> 1000µmf	C <sub>13</sub> 3µf	R <sub>14</sub> 100Ω
C <sub>4</sub> .05µf	C <sub>14</sub> .01	C <sub>22</sub> .03µf
C <sub>5</sub> 50µmf	C <sub>15</sub> .5µf	C <sub>23</sub> .004"
C <sub>6</sub> 1µf	R <sub>1</sub> 100M Ω	
C <sub>7</sub> 500µmf	R <sub>2</sub> 20M "	
C <sub>8</sub> 1µf	R <sub>3</sub> 15M "	
C <sub>9</sub> 250µmf	R <sub>4</sub> 1000 Ω	
C <sub>10</sub> 250µmf	R <sub>5</sub> 50M "	
C <sub>11</sub> 250µmf	R <sub>6</sub> 6000 "	
C <sub>12</sub> .01	R <sub>7</sub> 500M "	
C <sub>13</sub> 25µmf	R <sub>8</sub> 250M "	
C <sub>14</sub> .002µf	R <sub>9</sub> 200M "	
C <sub>15</sub> .002µf	R <sub>10</sub> 100M "	
C <sub>16</sub> .0015µf	R <sub>11</sub> 50 "	

I.F. PEAK 456 K.C.

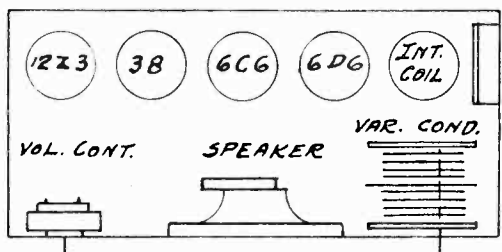
MODEL 518 is the same as Model 618, with 2-gang condenser.  
 Tubes: 6A7, 6D6, 75, 41, and 84

6 Tube Auto Radio  
 Model 618

MODEL 406



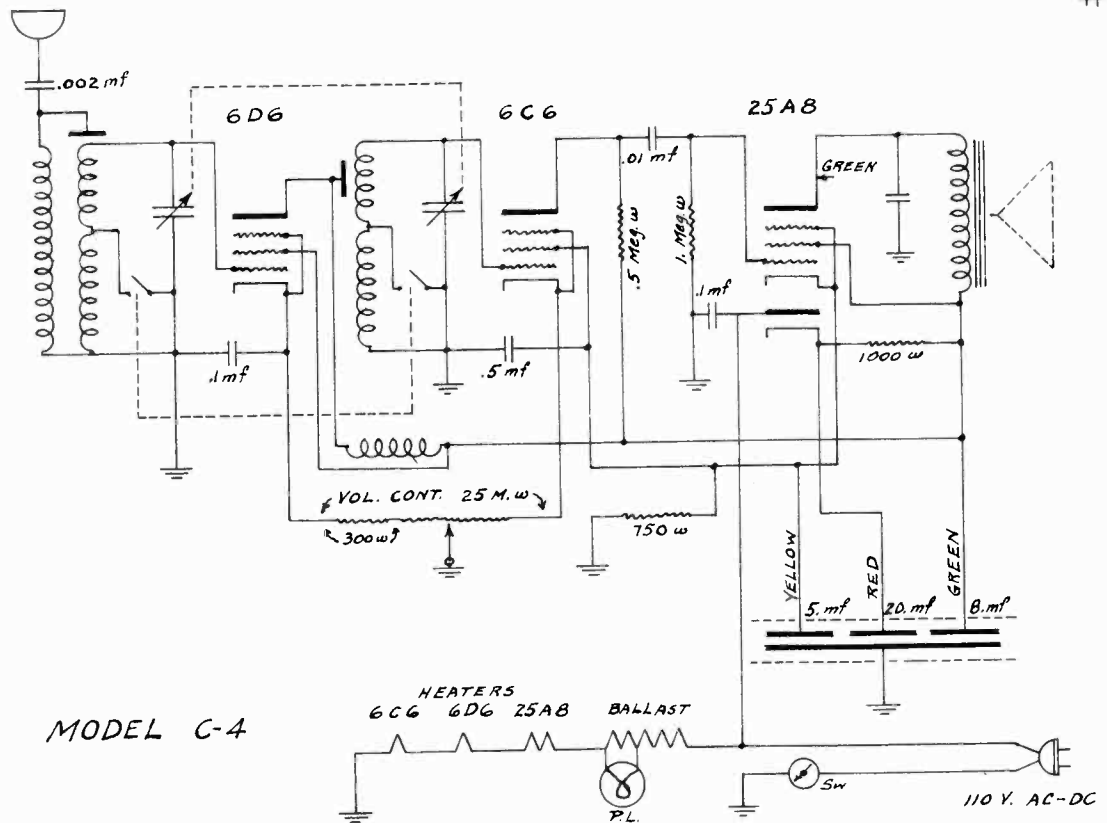
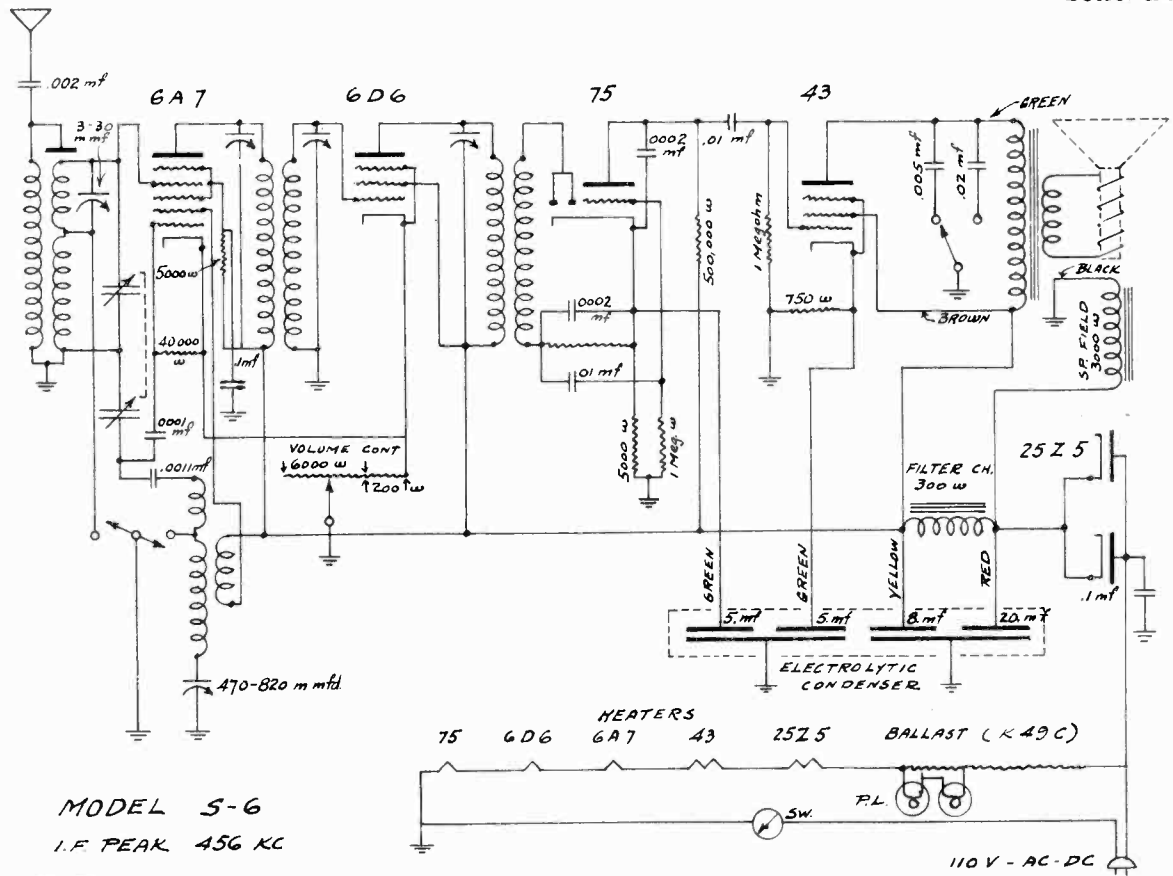
LAYOUT OF MODEL 406 - TOP VIEW



NOTE -  
 UNDER NO CIRCUMSTANCES SHOULD THE  
 CHASSIS BE CONNECTED TO A GROUND,  
 INASMUCH AS A GROUND IS UNNECESSARY.

AUTOMATIC RADIO MFG. CO., INC.

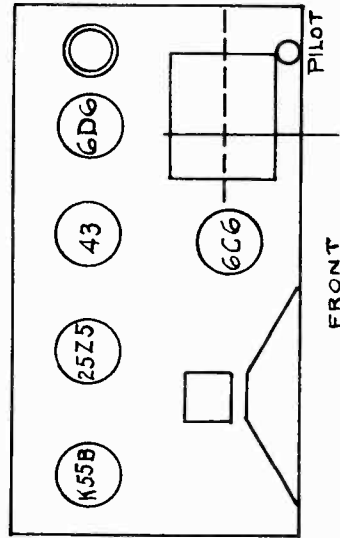
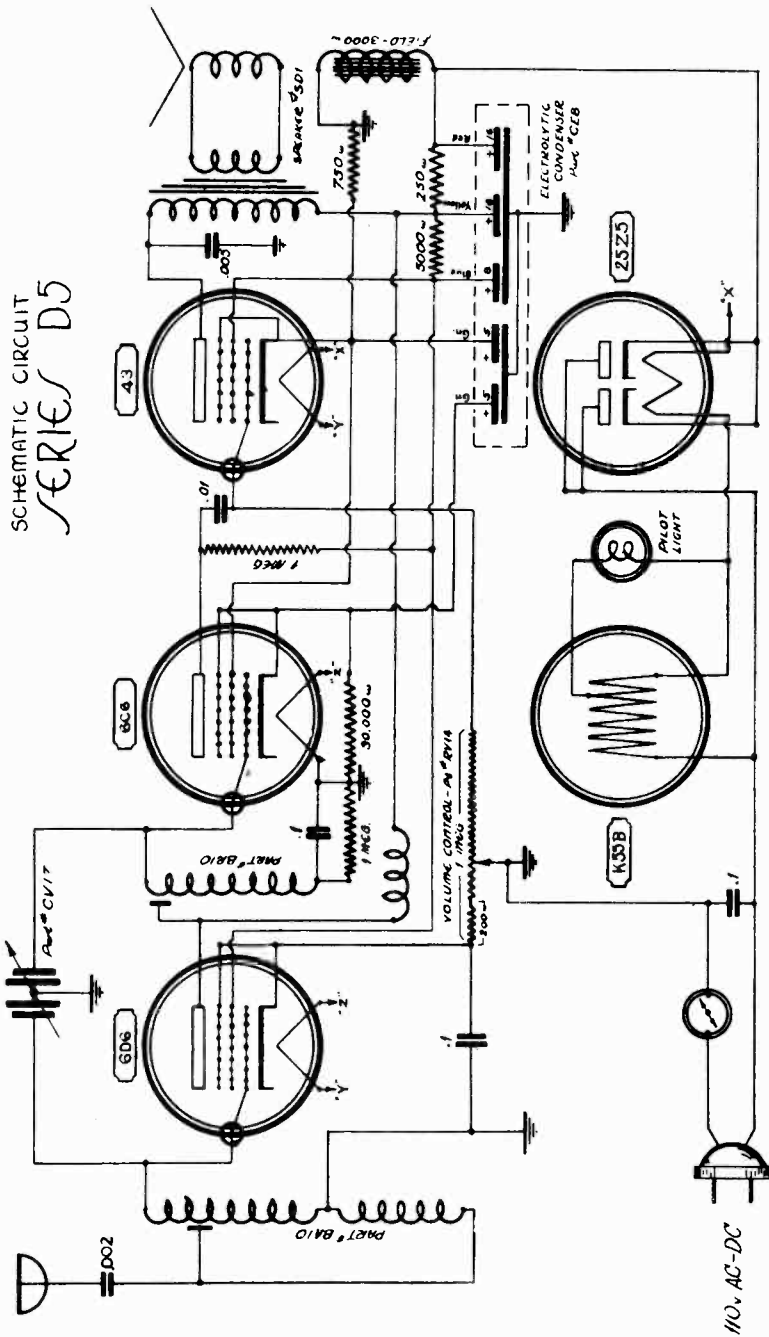
MODEL C-4  
MODEL S-6  
Schematics



**MODEL D-5**  
**Schematic**  
**Socket**

**AUTOMATIC RADIO MFG. CO., INC.**

SCHEMATIC CIRCUIT  
 SERIES D5

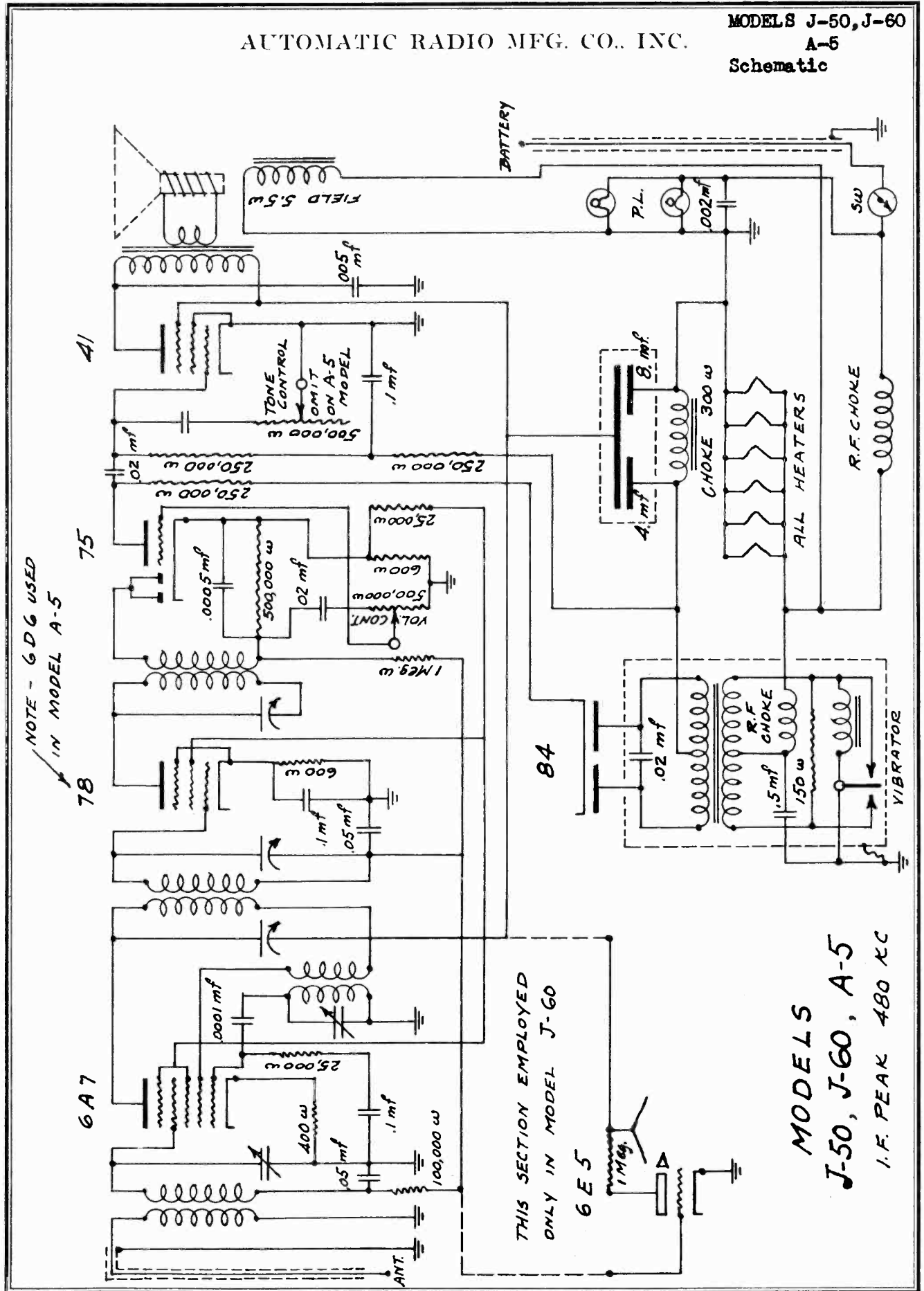


AUTOMATIC RADIO MFG. CO., INC.

MODELS J-50, J-60

A-5

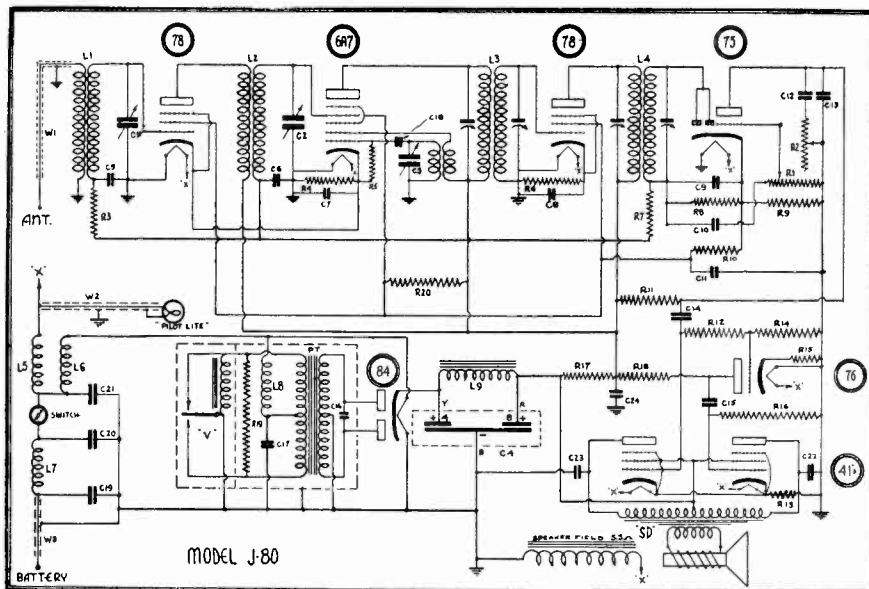
Schematic



**MODEL J-80**  
Schematic, Parts  
Alignment

**AUTOMATIC RADIO MFG. CO., INC.**

**MODEL J-80 AUTO RADIO**



**ALIGNMENT PROCEDURE**

**I. F. Alignment.** Connect a signal generator set at 456kc to the 6A7 input and connect an output meter to the speaker output. Using a weak signal tune the two I. F. condensers on the composite coil and the two I. F. condensers on the output I. F. coil for maximum response.

Connect the signal generator set at 1400kc to the antenna lead using a dummy antenna of 150 mmf. Tune the set by means of the dial to 1400kc position. Adjust oscillator trimmer for this frequency. Then trim RF stage and antenna stage for maximum response. Repeating the alignment may result in improved sensitivity.

**REPLACEMENT PARTS AND PRICE LIST**

All orders for replacement parts must indicate both the Serial Number and Model Number of the Chassis in addition to the part number and description of the unit desired.

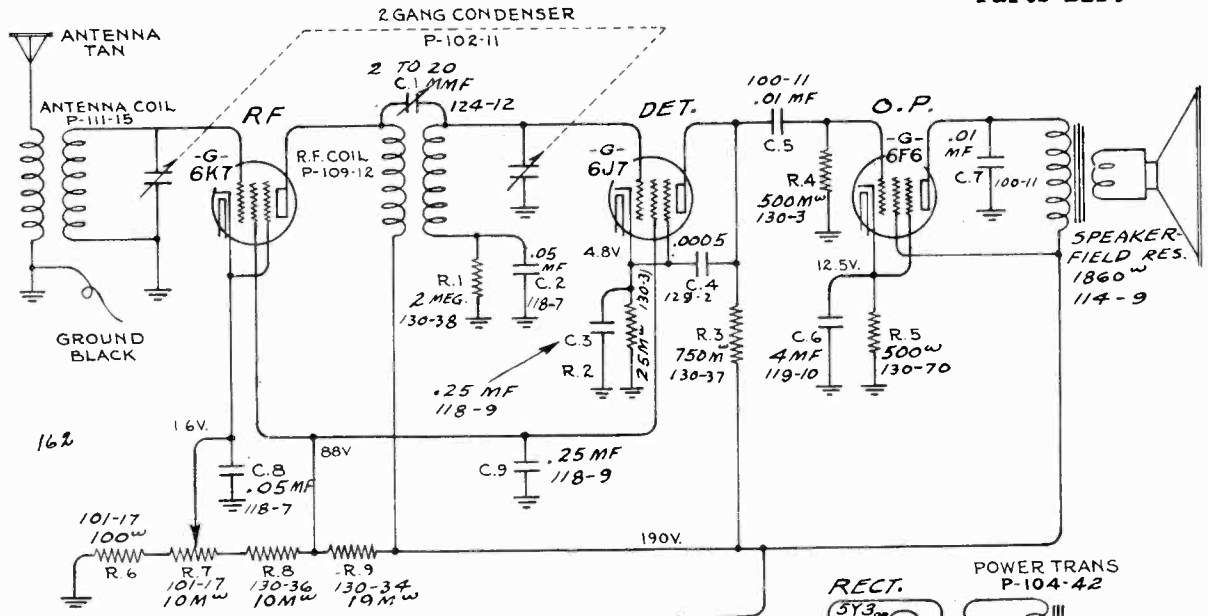
ASD14	SD	Speaker	\$3.30
APT3	PT	Power Transformer	2.10
AF4	L9	"B" Filter Choke	.45
ACV15	C1-C2-C3	3 section Rotary Variable Condenser	2.50
AV2	V	Vibrator	2.50
ACE10	C4	Dual Electrolytic Condenser Block	1.45
ABA4	L1	Antenna Coil	.75
AB14	L2	Interstage Coil	.75
AI03	L3	Composite 1F and Oscillator Coil	.90
AI3	L4	Output 1F Coil	.90
ARV15	R1	Tone Control	.45
ARV16	R2	Volume Control and Switch	.65
AF5	L5-L6-L7-L8	R.F. Filter Choke	.15
RF151A	R19	Resistor 150 ohm 1/4 Watt	.07
RF42C	R13	" 400 " 1/4 "	.15
RF62A	R4-R9	" 600 " 1/4 "	.07
RF13A	R6-R17	" 1,000 " 1/4 "	.07
RF53A	R15	" 5,000 " 1/4 "	.07
RF24B	R20	" 20,000 " 1/2 "	.10
RF34A	R5	" 30,000 " 1/4 "	.07
RF54A	R10	" 50,000 " 1/4 "	.07
RF753A	R14	" 75,000 " 1/4 "	.07
RF15A	R11-R18	" 100,000 " 1/4 "	.07
RF55A	R3-R8-R12-R16	" 500,000 " 1/4 "	.07
RF16A	R7	" 1 Megohm 1/4 "	.07
CF256	C12-C22-C23	Condenser .005 Mfd 600 volt	.12
CF121	C16	" .02 " 1000 "	.25
CF152	C10-C14-C15-C5-C6	" .05 " 200 "	.12
CF012	C7-C8-C11-C24	" .1 " 200 "	.12
CF052	C17-C21	" .5 " 200 "	.20
CF31M	C18	" .0001 " Mica	.10
CF35M	C9-C13	" .0005 " "	.10
CF22M	C19-C20	" .002 " "	.14
W1	W1	Shielded Antenna Cable	.25
W2	W2	Shielded Pilot Light Cable	.35
W3	W3	Shielded Battery Cable	.25
DXC4		Remote Control Cable	.70
DX4		Remote Control Head	2.25

Date Issued: May 15, 1936

BELMONT RADIO CORP.

MODEL 401, Series B  
Schematic, Socket  
Voltage, Alignment  
Parts List

MODEL 401B



ALIGNING INSTRUCTIONS

1. With an external oscillator set at 1720 kilocycles connected to the grid of the type 6K7 R. F. tube (cap at top of tube) and with the variable condenser at its minimum capacity position, plates entirely out of mesh, adjust trimmer on R. F. coil (accessible from the under side of the chassis) to resonance.
2. Re-set external oscillator to 1400 kilocycles and connect in series with a 50 mmfd. condenser, to the tan antenna lead and black ground lead and adjust the antenna trimmer (front section of variable condenser—see illustration) to resonance. When making this adjustment, rock the condenser back and forth with the selector knob while adjusting the trimmer until maximum output is obtained.
3. Bend plates of antenna, front section of condenser, to resonance with external oscillator set at 1200, 1000, 800, 600 kilocycles. Output should be fairly uniform over the entire band, dropping off slightly at the higher frequencies.

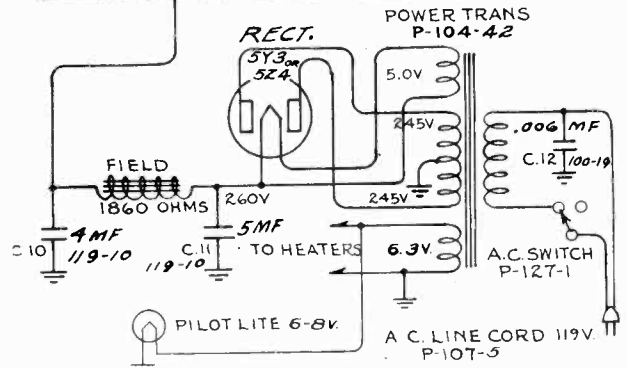
Regular Transformer supplied is for 105-125 volts 60 cycle alternating current. For voltages in excess of 125, a special transformer or line resistor is required, also for 25 cycle current. Universal transformers are not available for this model.

Voltages taken from different points of circuit to chassis are measured with volume control full on. all-tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagram.

All voltages are to be measured with 119 volts on the primary of the power transformer.

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

Excessive hum, stuttering, low volume and a reduction in all D.C. voltages is usually caused by a shorted electrolytic condenser, open by-pass condensers frequently cause oscillation and distorted tone.

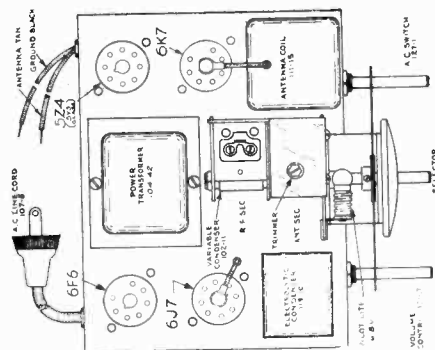


PARTS LIST

MODEL 401—SERIES B

When ordering parts, always specify part and model number as well as serial number of chassis.

Part No.	Description	List Price
101-17	Volume Control—Less Switch	\$1.00 ea.
102-11	Two Gang Variable Condenser	2.50 ea.
104-12	Power Transformer	2.50 ea.
107-6	Line Cord and Plug	.50 ea.
109-12	R.F. Coil Complete	1.25 ea.
111-15	Antenna Coil Complete	1.00 ea.
112-9	Dial Bracket Drive Complete	.65 ea.
112-15	Dial Crystal	.12 ea.
112-16	Pointer	.12 ea.
112-19	Drive Disc Assembly Complete	.40 ea.
112-37	Bakelite Escutcheon	.50 ea.
112-59	Dial Scale	.20 ea.
112-61	Pilot Light Clip	.10 ea.
	Unless Otherwise Listed, All Single Section Tubular Paper By-Pass Condensers	.25 ea.
114-9	Five Inch Speaker	4.00 ea.
115-15	Shield Can	.12 ea.
115-22	Tube Shield	.15 ea.
115-26	Gang Condenser Shield	.10 ea.
116-1	2.5 Volt Pilot Light	.10 ea.
119-10	Electrolytic Condenser	2.00 ea.
127-1	Line Switch	.35 ea.
131-2	Bakelite Knob	.15 ea.
	All Carbon Resistors	.20 ea.
	All Sockets	.20 ea.
	Midget Cabinet	5.00 ea.
	Unless Otherwise Listed, All Molded Mica Condensers	.25 ea.
	Unless Otherwise Listed, All Dual Section Tubular Paper By-Pass Condensers	.50 ea.
112-66	Bakelite Glass Retain'g Escutcheon with Glass	.60 ea.

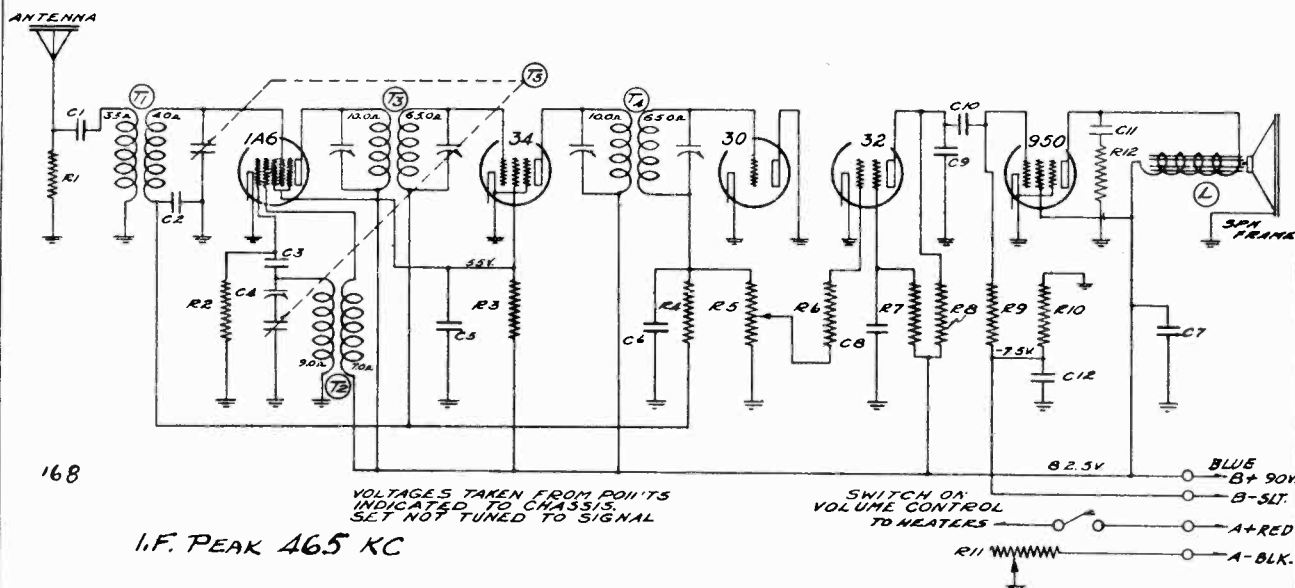




**MODEL 522**

**Schematic, Voltage  
Socket, Trimmers  
Alignment, Parts**

**BELMONT RADIO CORP.**



168

I.F. PEAK 465 KC

No.	Part No.	Description
<b>RESISTORS</b>		
R1	130-17	10M Ohm - 1/4 Watt - 20% - 20 Volt - Carbon
R2	130-52	50M Ohm - 1/4 Watt - 20% - 10 Volt - Carbon
R3	130-17	10M Ohm - 1/4 Watt - 20% - 20 Volt - Carbon
R4	130-38	2 Meg Ohm - 1/2 Watt - 20% - 100 Volt - Carbon
R5	101-43	1 Meg Ohm Volume Control and Switch
R6	130-52	50M Ohm - 1/4 Watt - 20% - 10 Volt - Carbon
R7	130-19	1 Meg Ohm - 1/4 Watt - 20% - 100 Volt - Carbon

R8	130-9	200M Ohm - 1/4 Watt - 20% - 20 Volt - Carbon
R9	130-19	1 Meg Ohm - 1/4 Watt - 20% - 100 Volt - Carbon
R10	130-93	450 Ohm - 1/4 Watt - 10% - 10 Volt - Carbon
R11	101-44	4.75 Ohms - Rheostat
R12	130-52	50M Ohm - 1/4 Watt - 20% - 10 Volt - Carbon

C6	129-5	.0001 Mica - MT - 20%
C7	100-6	.25 x 200 Volt
C8	100-9	.05 x 200 Volt - 25%
C9	129-2	.0005 Mica - MT - 20%
C10	100-11	.01 x 400 Volt - 25%
C11	100-11	.01 x 400 Volt - 25%
C12	119-22	10.0 Mfd. x 25 Volts - Working Voltage

<b>CONDENSERS</b>		
C1	100-11	.01 x 400 Volt - 25%
C2	100-22	.05 x 200 Volt - 25%
C3	129-12	.00025 Mica - MT - 20%
C4	124-14	Series Pad
C5	100-9	.05 x 200 Volt - 25%

<b>PARTS</b>	
T1	111-46 Antenna Coil
T2	110-36 Oscillator Coil
T3	108-67 Input I.F. Coil 465 K.C.
T4	108-68 Output I.F. Coil 465 K.C.
T5	102-29 Two Gang Condenser
L	114-19 Six Inch Magnetic Speaker

**ALIGNING I.F. TRANSFORMERS: (465 K.C.)**

1. With volume control full on and with variable condenser at its minimum capacity position, plates entirely out of mesh, and with external oscillator set at 465 K.C. connected in series with a .1 mfd. condenser, to the grid of the 1A6 tube (cap at top of tube), adjust I.F. transformers, parts number 108-67 and 108-68, to resonance. Both of these transformers have two (2) adjustments each, they are accessible from the tops of the cans (for location see top view).

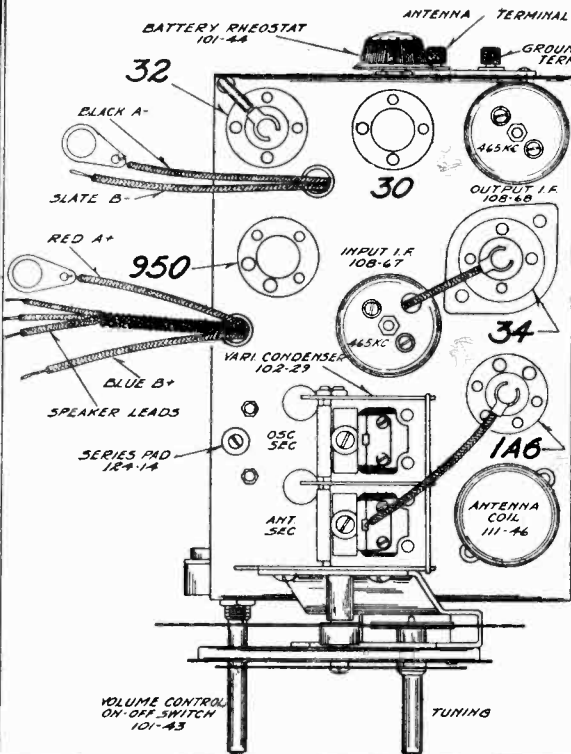
Use as a resonance indicator an output meter connected across the outside terminals of the speaker or by means of an adapter to the plate and screen of the type 950 output tube. Maximum deflection of the volt meter indicates resonance.

Use only enough signal to get a readily readable output.

A low range output meter or the low scale of a multi-range meter should be used.

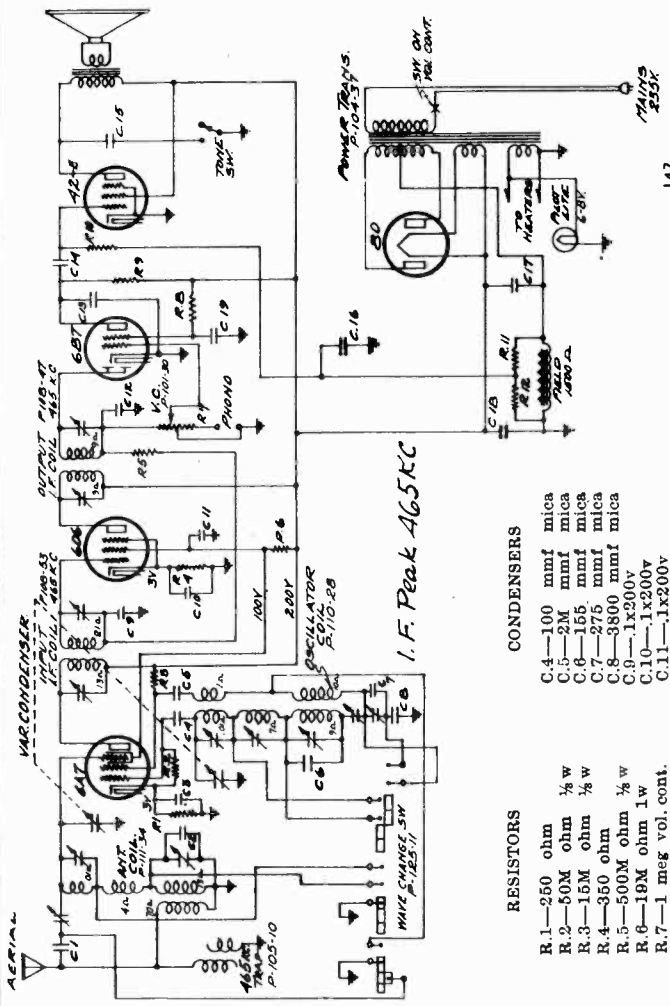
**BROADCAST BAND ALIGNMENT:**

1. Set external oscillator to 1720 K.C. and connect it in series with a 200 mmfd. condenser to the antenna and ground posts.
  - (a) With variable condenser in its minimum capacity position, plates entirely out of mesh, adjust oscillator trimmer (rear section of variable condenser) to resonance.
  - (b) Re-set external oscillator to 1400 K.C. Rotate variable condenser, pick up signal and adjust antenna trimmer (front section of variable condenser) to resonance.
  - (c) Re-set external oscillator to 600 K.C., move dial pointer to 600 K.C., and adjust series pad, part number 124-14 (see top view), to resonance. While making this adjustment, slowly rock variable condenser to and fro until maximum output is obtained.
  - (d) Check for sensitivity at 1400, 1000, 600 K.C. DO NOT BEND PLATES.



BELMONT RADIO CORP.

**MODEL 556 (Export)**  
Schematic, Socket  
Trimmers



**CONDENSERS**

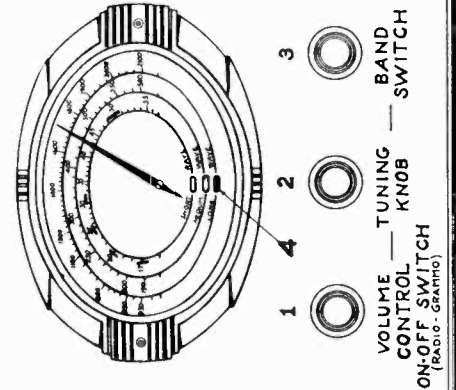
- C.4—100 mmf mica
- C.5—2M mmf mica
- C.8—155 mmf mica
- C.7—275 mmf mica
- C.8—8800 mmf mica
- C.9—1x200v
- C.10—1x200v
- C.11—1x200v
- C.12—250 mmf mica
- C.13—250 mmf mica
- C.14—.02x400v
- C.15—.025x400v
- C.16—1x200v
- C.17—8.0x350v
- C.18—8.0x300v
- C.19—1x200v

**RESISTORS**

- R.1—250 ohm 1/2 w
- R.2—80M ohm 1/2 w
- R.3—15M ohm 1/2 w
- R.4—350 ohm
- R.5—500M ohm 1/2 w
- R.6—18M ohm 1w
- R.7—1 meg vol. cont.
- R.8—1 meg 1/2 w
- R.9—250M ohm 1/2 w
- R.10—500M ohm 1/2 w
- R.11—800M ohm 1/2 w
- R.12—201M ohm 1/2 w
- C.1—20 mmf mica
- C.2—35 mmf mica
- C.3—1x200v

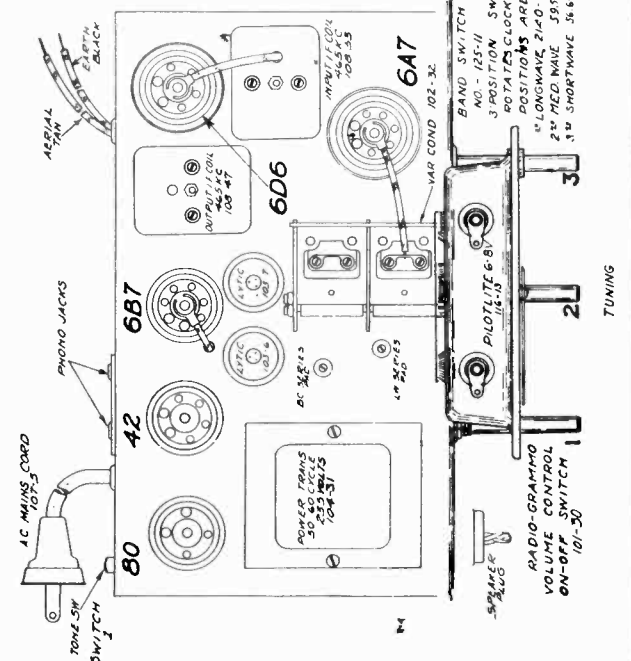
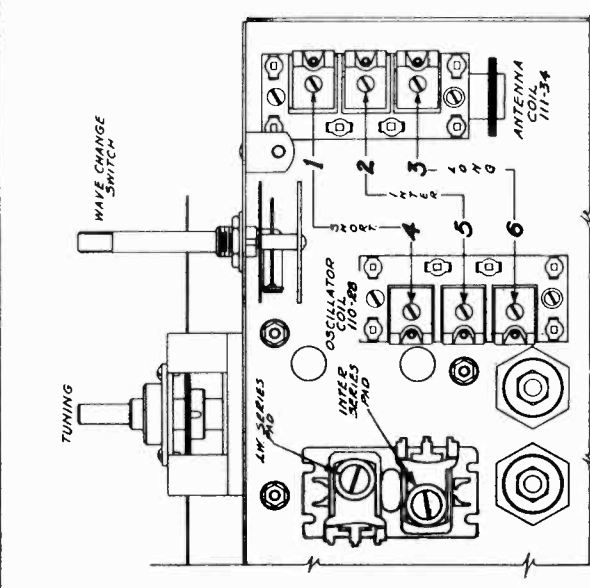
NOTE:

C.9 & C.11 in one unit P-118-1  
C.10 & C.19 in one unit P-118-1  
Voltages taken from points indicated to chassis ground  
Vol. control on full.  
Numbers prefixed by letter "P" are part Nos.



**Model 556**

THIS MODEL IS FOR EXPORT.



**MODEL 556 (Export)**  
**Alignment, Parts**

**BELMONT RADIO CORP.**

**Belmont Model 556 5-Tube A. C. 3-Band**  
**Superheterodyne Receiver**  
**200-260 Volts 50-60 Cycles Alternating Current**

(THIS MODEL IS FOR EXPORT ONLY)

DESCRIPTION
<b>Tubes:</b>
The Tube complement of this chassis is as follows:
1 Type 6A7—pentagrid converter.
1 Type 6D6—remote cut-off pentode as I.F. amplifier.
1 Type 6B7—duplex diode pentode as diode detector, A.V.C. and A.F.
1 Type 42E—pentode output tube.
1 Type 80—high vacuum rectifier.

Volts taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a voltmeter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on circuit diagram.

All voltages are measured with 235 volts 50-100 cycles on the primary of the power transformer.

Resistance of coils and transformer windings are indicated in ohms on schematic circuit diagram.

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 125, 150, 220 and 250 volts (see illustrations) and also sometimes equipped with 25 cycle transformers with 105-115 volt or 235 volt primaries, not universal.

Should the receiver be equipped with a special transformer, connect primary tap on voltage terminal which corresponds as nearly as possible to the actual line voltage. If an exact agreement cannot be secured, suitable allowances of other measured voltages must be made.

**ALIGNING INSTRUCTIONS—SERIES A**

Description of various dummy antennas used and referred to in these instructions:

1. I.F. Dummy—Consists of a .1 mfd. condenser connected in series with the external oscillator.
2. Broadcast Dummy—Consists of a 200 nmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.
3. Intermediate and Short Wave Dummy—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

**Resonance Indicator:**

Use as a resonance indicator an output meter connected across the primary of the speaker input transformer, or by means of an adapter between the plate and screen terminals of the type 42E output tube. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range volt meter should be used.

**TEST FREQUENCIES**

Wave Length Meters	Frequency Kilocycles
Long Wave	
2000	150
923	325
I.F.	645.1
500	465
Broadcast	
300	1000
214.3	1400
Short Wave	
50.0	6000
16.7	18000

**ALIGNMENT:**

No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltages, defective tubes, condensers and resistors. In order to properly align this chassis, an oscillator (generator) is absolutely necessary. No aligning adjustments should be attempted with the chassis in the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the three bolts by which it is fastened and the speaker plug which you will find on the front flange of the chassis panel.

**ALIGNING I. F. TRANSFORMERS:**

1. With volume control full on, the extreme right of its rotation, and with wave changing switch in the broadcast position, center of its rotation, and with variable condenser at its minimum capacity position, plates entirely out of mesh, adjust the I.F. transformers (two adjustments at the top of parts number 108-47 and 108-53—see top view)

- (a) Connect external oscillator which has been adjusted to 645.1 meters in series with I.F. dummy antenna, to the control grid cap of the type 6D6 tube and chassis ground. Adjust output I.F. transformer, part number 108-47, to resonance.

- (b) Move generator output clip from grid of 6D6 to grid cap of 6A7 tube and align input I.F. transformer, part number 108-53.

- (c) With generator connected to grid of type 6A7 tube, re-adjust output I.F. transformer, part number 108-47, to resonance.

**BROADCAST BAND ALIGNMENT:**

(188-595 meters)

1. With wave changing switch in the broadcast position, center of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with broadcast dummy antenna to an antenna and black ground leads and make the following adjustments:

- (a) With external oscillator set at 187.5 meters, adjust oscillator trimmer to resonance, for location of this adjustment, number 5, see diagram.

- (b) Re-set external oscillator to 214.3 meters, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. For location of this adjustment, number 2, see diagram.

- (c) Re-set external oscillator to 500 meters and adjust series pad to resonance, rotate condenser and move dial pointer to 500 meters by gently rocking condenser to and fro. Pick up oscillator signal while adjusting series pad to resonance, maximum deflection on an output meter. This adjustment is accessible from the top of the chassis and is located between variable condenser and power transformer, rear hole see top view—part number 124-19.

- (d) Check for tracking and sensitivity at 300 meters.

**SHORT WAVE BAND ALIGNMENT:**

(16.5-56.6 meters)

1. Set wave changing switch to short wave position, extreme right of its rotation, set dial pointer to 16.7 meters.

- (a) With external oscillator adjusted to 16.7 meters and connected in series with short wave dummy antenna to an antenna and black ground leads, adjust the oscillator short wave trimmer until generator signal is picked up. For location of this adjustment, number 4, see diagram.

- (b) Adjust short wave antenna trimmer to resonance. For location of this adjustment, number 1, see diagram.

- (c) Re-set external oscillator to 50 meters, rotate condenser, move dial pointer to 50 meters, and check for tracking and sensitivity. Do not bend plates. Note: It is extremely necessary in making all of the above adjustments that the fundamental signal of the oscillator be tuned in and not the image frequency, which will fall at a higher wave length.

**LONG WAVE BAND ALIGNMENT:**

(925-2140 Meters)

1. With wave changing switch in long wave position (extreme left of its rotation) and with variable condenser in its minimum capacity position (plates entirely out of mesh), make the following adjustments:

- (a) With external oscillator set at 923 meters and connected in series with "Dummy 2" to the tan antenna lead, adjust rear trimmer of oscillator coil (adjustment No. 6, see diagram) until oscillator signal is picked up.

- (b) Adjust rear trimmer of antenna coil to resonance with oscillator (adjustment No. 3, see diagram).

- (c) Re-set external oscillator to 2000 meters and rotate variable condenser (move pointer) and pick up oscillator signal, adjust L.W. pad (front adjustment accessible from top of chassis and located between variable condenser and power transformer) to resonance. While making this adjustment, slowly rock variable condenser to and fro until maximum output is obtained.

**SERVICE NOTES:**

To check for open by-pass condensers, shunt each condenser with another of similar capacity and of the same voltage rating, which is known to be good, until the defective unit is located. Open by-pass condensers frequently cause oscillation and distorted tone. Defective and shorted electrolytic filter condensers cause excessive hum, motor-boating, low volume and a reduction in all D.C. voltages. Open or shorted electrolytic and by-pass condensers (across bias resistor of type 42E tube) will cause low volume and distorted tone.

Should the planetary vernier dial drive mechanism fail to function properly, it will probably be found to be due to a cracked or broken compression spring. The drive may be disassembled to replace the compression spring (part number 112-31) by removing the two screws which fasten it to the dial bracket. Before re-assembling all parts should be carefully cleaned and a small amount of vaseline applied to the ball bearings. All other dial parts are hardened and should cause no trouble.

**Tuning Range**

16.5 — 56.6 meters  
188 — 595 meters  
925 — 2140 meters

**REPAIR PARTS LIST.**

Part No.	DESCRIPTION
<b>CONDENSERS</b>	
100-19	.005 x 600 Volt Tubular
100-20	1 x 200 Volt Tubular
100-26	.02 x 400 Volt Tubular
100-27	.026 x 400 Volt Tubular
103-6	8 Mfd. x 350 Volt Electrolytic
103-7	8 Mfd. x 300 Volt Electrolytic
118-1	1 x 1 x 200 Volt Dual Tubular
129-3	.000025 Mica—Type MT—20%
129-5	.0001 Mica—Type MT—20%
129-6	.002 Mica—Type MW—20%
129-12	.00025 Mica—Type MT—20%
129-29	.0038 Mica—Type MW—5 1/4%
129-33	.000215 Mica—Type MT—5%
129-35	.000035 Mica—Type MT—10%
129-46	.000165 Mica—Type MT—5%
<b>RESISTORS</b>	
130-3	500M Ohm—1/4 Watt—50 Volt—20% Carbon
130-8	201M Ohm—1/4 Watt—50 Volt—10% Carbon
130-11	250M Ohm—1/4 Watt—50 Volt—20% Carbon
130-19	1M Ohm—1/4 Watt—50 Volt—20% Carbon
130-32	250 Ohm—1/4 Watt—10 Volt—20% Carbon
130-34	19M Ohm—1 Watt—100 Volt—20% Carbon
130-40	800M Ohm—1/4 Watt—50 Volt—10% Carbon
130-62	50M Ohm—1/4 Watt—50 Volt—20% Carbon
130-73	15M Ohm—1/4 Watt—50 Volt—20% Carbon
130-74	350 Ohm—1/4 Watt—10 Volt—20% Wire Wound
<b>COILS</b>	
105-10	Wave Trap Coil Complete
108-47	Output I.F. Transformer Complete with Can
108-53	Input I.F. Transformer Complete with Can
110-28	Oscillator Coil Complete
111-34	Antenna Coil Complete
<b>TRANSFORMERS</b>	
104-31	50/60 Cycle—235 Volt Primary
104-37	40 Cycle—235 Volt Primary
104-38	25 Cycle—235 Volt Primary
104-39	Universal—40 Cycle Primary
104-40	Universal—25 Cycle Primary
<b>SPEAKER</b>	
114-15	Six Inch Dynamic Speaker
<b>MISCELLANEOUS</b>	
101-30	Volume Control and Switch
105-32	Two Gang Variable Condenser
107-6	Line Cord & Plug
Part No. Description	
110-22	Tube Shield
124-19	J-64D Dual Padder
125-11	Band Switch
143-1	Tone Switch
171-2	Phono-Jack Assembly
128-15	Wood Knob (with Spring) (1)
128-41	Wood Knob (Set Screw) (2)
<b>DIAL PARTS LIST</b>	
<b>ASSEMBLIES</b>	
117-41	Drive Bracket including: 1—No. 117-19—Tuning Shaft Bushing
117-66	Switch Disc and Link Assembly, including: 1—No. 117-12—Switch Arm 1—No. 117-35—Bushings with Screws 1—No. 117-40B—Switch Link 3—No. 131-25—Spring Washers 3—No. 162-5—Rivets 1—No. 112-144—Switch Disc—Inc. Red Tape
<b>DIAL PARTS ONLY</b>	
112-125	Drive Belt
112-143	Oval Kachutcheon complete with Celluloid Crystal
112-166	Dial Scale complete
112-147	Tuning Shaft
112-151	Pointer complete with Screw
112-156	Pilot Light Assembly
116-13	6.5 Volt T-51 Pilot Light
117-20A	Tuning Shaft Pulley
117-38	Stud, for take-up Spring
117-39	Pulley, for take-up Spring
120-14	Take-up Spring
134-9	Horse Shoe Washer
124-40	Rubber Grommet

All resistors and mica condensers are RMA color coded—specify value and/or resistor or condenser (per schematic diagram) and model number.

Mica condensers are coded with an additional dot indicating tolerance

Tolerance Percent	Color of Dot
5 1/4 %	White
5 %	Green
10 %	Blue
15 %	Yellow
20 %	Red
More than 20 %	None

When ordering condensers, specify part number, model and/or capacitor (per schematic diagram) and model number.

When ordering parts, always specify part and model number as well as serial number of chassis.

WHEN ORDERING SPEAKER PARTS, CONES, FIELD COILS, OUTPUT TRANSFORMERS, SPECIFY PART NUMBER OF SPEAKER AND MAKE

BELMONT RADIO CORP.

MODEL 566  
Schematic, Socket  
Trimmers, Parts

**I. F. PEAK 465 KC**  
**MODEL 566**

**CONDENSERS**

C1	129-3	.0002 Mica—0"—20%
C2	129-49	.00009 Mica—0"—5%
C3	100-9	.05x200 Volt
C4	100-8	.25x200 Volt
C5	129-21	.0002 Mica—.MT"—0"—20%
C6	100-1	.1 x400 Volt 50%—10%
C7	100-33	.1 x200 Volt 50%—10%
C8	100-9	.05x200 Volt 25%—25%
C9	100-1-B	.1 x400 Volt 50%—10%
C10	129-12	.00025 Mica—.MT"—0"—20%
C11	100-9	.05 x200 Volt 25%—25%
C12	129-5	.0001 Mica—.MT"—0"—20%
C13	116-15	.05 x400 Volt
C14	116-15	.007x800 Volt
C15	100-33	.1x200 Volt 50%—10%
C16	119-20	8.0 Mfd. Electrolytic Conden. set—350 Working Volts
C17	119-20	4.0 Mfd. Electrolytic Conden. set—350 Working Volts
C18	100-36	.01x1400 Volt—10%
C19	100-35	.5 x 200 Volt 50%—10%
C20	100-35	.5 x 200 Volt 50%—10%
C21	100-33	.1 x 200 Volt 50%—10%
C22	124-17	Single Padder J-4-S

NOTE: C-13 and C-14 in one unit—part number 116-15.

**RESISTORS**

R1	130-20	100M Ohm— $\frac{1}{4}$ Watt—20%
R2	130-79	50 Volt—Carbon
R3	130-94	60M Ohm— $\frac{1}{4}$ Watt—10%
R4	130-23	2M Ohm— $\frac{1}{4}$ Watt—20%
R5	130-42	20M Ohm— $\frac{1}{4}$ Watt—20%
R6	130-68	1 Meg Ohm— $\frac{1}{4}$ Watt—10%
R7	130-79	400 Ohm— $\frac{1}{4}$ Watt—10%
R8	101-41	500M Ohm—Volume Control and Switch
R9	130-106	50M Ohm— $\frac{1}{4}$ Watt—10%
R10	130-101	600 Ohm— $\frac{1}{4}$ Watt—10%
R11	130-68	1 Meg Ohm— $\frac{1}{4}$ Watt—10%
R12	130-95	12M Ohm— $\frac{1}{4}$ Watt—10%
R13	130-3	500M Ohm— $\frac{1}{4}$ Watt—20%
R14	130-5	300M Ohm— $\frac{1}{4}$ Watt—20%
R15	130-45	250M Ohm— $\frac{1}{4}$ Watt—20%
R16	130-84	200 Ohm— $\frac{1}{4}$ Watt—20%

**PARTS**

T1	111-48	Antenna Filter Coil Assembly
T2	111-47	Antenna Coil Assembly
T3	108-69	Input I.F. Coil—465 K.C.
T4	102-27	Two Gang Variable Conden. set
T5	108-70	Output I.F. Coil—465 K.C.
T6	105-22	Output Transformer
T7	110-37	Oscillator Coil Assembly
T8	104-51	Power Transformer
L1	105-23	Filter Choke
L2	105-19	"A" Choke
L3	105-25	"A" Filter Assembly
L4	105-24	"A" Choke
L5	114-34	5 $\frac{1}{4}$ " Speaker (Field resistance 4 ohms)

V Vibrator  
STEERING POST MOUNTING  
MOUNTING STRAP 146-12  
MOUNTING BRACKET 6A-6  
VOLUME SHAFT  
SELECTOR SHAFT  
REMOTE HEAD COMPLETE  
NOTE—MTC STRAP HAS 4 HOLES EACH HAVING A DIMENSION OF 1.5" IN DIAMETER OF STEERING POST.

## MODEL 566

## Alignment, Notes

## BELMONT RADIO CORP.

## CONNECTIONS TO BATTERY:

The battery cable, number 152-2, (red wire with fuse receptacle at one end and terminal lug at other end) must be connected to battery terminal of ammeter. At the same time connect ammeter capacitor, number 148-3, to battery terminal of ammeter, other end of condenser to any convenient grounded screw on back of instrument panel. The insulation above is slipped over fuse when fuse is placed in receptacle, before connecting to short battery cable from receiver.

When connected properly, the discharge due to current drawn by the receiver should not indicate on the ammeter. This is important, since if improperly connected, as shown by the deflection of ammeter, additional motor interference may be encountered.

## GENERATOR INTERFERENCE:

Remove the generator output mounting screw and fasten the condenser (148-1) bracket on the generator output mounting lug. Replace the output mounting screw and tighten down securely. Connect the condenser lead to the battery terminal of the output. The generator condenser is absolutely necessary as it is used to eliminate a high pitched whining noise which would otherwise be heard as the motor is accelerated.

## ANTENNA CONNECTION:

The antenna is connected to the receiver by means of the antenna cable. The antenna wire is the angle black wire projecting from the end of the cable. Splice this wire to the roof antenna lead and ground the pig-tail shielding as close to the corner post of the car as possible.

On open and convertible models where underlug strap or plate antennas are used it may be necessary to ground the exhaust pipe and muffler to the frame at both ends with heavy copper braid.

Aerials suitable for open and convertible cars can be purchased from your dealer. They should be mounted as far to the rear of the car as possible and on the side opposite to the tail light wiring.

## DIAL ADJUSTMENT:

Tune set to some station of a known frequency (between 800 and 1200 K.C.) hold selector knob, then with a screw driver adjust the slotted screw on the back of the control head, and in that way adjust the dial pointer to the correct frequency setting.

## CHECK FOR MOTOR NOISE (Chassis Pickup):

After the above instructions have been followed, with the hood clamped down to prevent radiation and motor running, the receiver should be turned on and the dial turned off a station, with volume control at maximum. If motor noise is objectionable the next step is to determine whether the interference is originating through chassis pickup or from the antenna.

To check for chassis pickup, disconnect the antenna from the antenna cable and ground the antenna lead to shield of coil. Chassis pickup is due to the electrical noise radiated or fed back through the frame of the car into the receiver or through the storage battery to the receiver.

It may be necessary when chassis pickup is present to ground the choke and gas throttle rods securely to the firewall at the point which they enter the drivers compartment.

Chassis pickup can be reduced by reducing the gap between contacts and the rotating arm in the distributor head. To do this apply solder to the end of the rotor arm. Replace the rotor in the distributor and turn the engine over slowly with the crank in order to clean the contact points. The rotor should not brush or wipe the contacts inside the distributor cap, but should just clear them. As an additional precaution check the breaker points. They should be thoroughly cleaned and adjusted or new points installed if they are badly worn. In stubborn cases a good grade mica .002 to .008 condenser connected across the breaker points will reduce interference. The ignition system of a car must be kept in good condition and leaky cracked high tension wires and bad spark plugs should be replaced. In many cars the low tension battery leads, etc., are grouped together with the high tension wires. These leads will very often pick up motor noise and feed it into the receiver through the battery circuit. In cases such as these it will be necessary to separate the low tension from the high tension wires and run them through another hole if they run from the engine compartment up to the instrument panel. This condition, as explained previously, is particularly true on the V-8 Ford as the battery and primary leads run through a special tube which also houses the high tension leads. Shield and ground these leads.

**NOTE**—Where ignition coils are mounted in motor compartments a 5 mfd cond (148-1 or 148-3) connected between primary coil terminal and receiver mounting bolt will often reduce motor noise.

Accessories such as lighters, electric motor beaters, horns, light switches, automatic relays, electrical gauges such as oil, water and gas are often a source of interference. In these cases the procedure is to try a condenser from ground to various accessories until the interference is eliminated, then install the condensers in those places permanently. Spark intensifiers should not be used.

## ANTENNA PICK UP:

Now connect the antenna to the receiver and test for motor noise pick-up, it is entirely probable that if any noise is present it will be very slight and only noticeable between stations. No absolute rule for complete motor noise elimination can be specified inasmuch as many times two cars of the same make present entirely different problems and require bonding or shielding at different points. If motor noise is objectionable, it is due to the interference being radiated or picked up through the antenna system. Motor noise can be radiated into the drivers compartment through the drivers body due to the fact that in the majority of cars the floor is wood. This can be remedied by covering the entire floor board with copper screen grounded in several places to the frame of the car. This condition is only true in cars which have roof antennas. Under-slung antennas, either of the strap or plate type, will very often pick up motor noise if mounted too far forward on the frame of the car, the noise naturally being picked up due to the close proximity of the antenna to the engine.

It is recommended that if an under-slung antenna is used, that it be mounted as far towards the rear of the car as possible and preferably on the side of the car opposite to the tail light wiring. Naturally the performance of any radio depends on the effectiveness of the antenna. The later model cars are coming through with very good antennas, already installed and no trouble should be experienced from this angle with of course an occasional exception. Many of the older cars on the market today have a wire network in the roof which is nothing more than ordinary chicken wire. This wire network acts as a support to the roof and is in the majority of cases grounded to the body of the car at the point at which the roof meets the sides of the body. Ser-

vise men frequently tack antennas to the underside of the top material in these cars, this is not satisfactory. There are but two things to do. Either an under-slung (plate or strap) antenna must be used or the wire network must be cut from all grounds to the car. If this is done this network will in itself make a very good antenna, but it will be necessary to cut the wire network back for a distance of at least three inches from all sides of the car.

When running the lead-in up the corner post of the car to the roof antenna ground it every few inches to the frame of the body of the car. If this is not possible insulate it, otherwise scratchy noises will result.

**STEEL TOP OR TURRET TOP CARS** do not contain built-in roof antennas. In cars of this type an under-slung, strap or plate, antenna must be used.

If after all standard methods to reduce motor noise, as outlined above, have been tried and trouble still persists, carefully check the following: the dome light is usually the greatest source of antenna pick-up interference. First check the dome light by disconnecting the dome light connection on the back of the dash and grounding the wire (for location of this wire see car wiring diagram). If this eliminates the interference it indicates clearly that motor noise is being picked up by the dome light wire and radiated into the antenna. A small R.F. choke connected in series with the dome light wire and by-passed to ground at the dome light side of the choke with a 5 or 1 mfd. condenser, will eliminate this source of interference. Wheel or brake noise is probably the most peculiar type of interference and is due to accumulated static charges. This type of interference is only noticeable while the car is in motion and could very easily be confused with ignition interference. Check for this with car running at a good speed, turn the ignition switch off and if the interference continues it is due to either wheel static or a loose electrical connection. To overcome the wheel static condition, use graphite grease in the wheel bearings or insert grounding springs in the hub caps. In the case of external brakes, it is necessary to ground the brake bands to the frame of the car.

Loose connections are a frequent cause of interference. Make certain that light bulb contacts are clean and that they fit tight in their sockets. That all battery cable connections are tight and well grounded. Secondary high tension leads at the distributor cap or the coil very often work loose and a sparking contact results. Make certain that clips on all high tension wires are clean and bright and are pressed firmly into the receptacles on the distributor cap and the ignition coil.

Ignition noise should, if possible, be checked in a location that is free from electrical disturbances such as power lines, electrical equipment, neon signs, street car and elevated lines. This receiver is a very sensitive instrument and will pick up over its antenna system electrical disturbances in its immediate vicinity.

## ALIGNING INSTRUCTIONS:

All of the adjustments have been very carefully set with signal generators at the factory and require no further adjustment, unless it becomes necessary to replace a coil or transformer or if the adjustments have been tampered with in the field. Under no circumstances attempt any adjustments without first making certain that adjustment is necessary and only after voltage tubes and condensers have been checked and found to be normal. To properly re-align this receiver, a test oscillator, as well as an output meter, must be used.

## DUMMY ANTENNAS:

The dummy antennas referred to in the following instructions are:

"I.F. Dummy" —A 1 mfd. condenser connected in series with the test oscillator output lead.

"Broadcast Dummy"—A 175 mmfd. condenser connected in series with the output lead of the test oscillator.

## RESONANCE INDICATOR:

Use as a resonance indicator an output meter connected across the primary of the speaker input transformer, or by means of an adapter between the plate and the screen of the type 41 output tube. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range meter should be used.

## I.F. ALIGNMENT

1. With variable condenser in its minimum capacity position (plates entirely out of mesh) and with volume control full on, connect test oscillator set at 466 K.C. in series with I.F. dummy antenna, to grid of 6K7 tube.
2. Adjust trimmer condensers of output I.F. transformer (No. 108-70) to resonance with oscillator.
3. Move test oscillator connection to grid of 6AB tube and adjust trimmer condensers of input I.F. transformer (No. 108-60) to resonance with oscillator, again going over trimmers of output I.F. transformer (No. 108-70). See top view for location of these transformers. There are two adjustments on each and they are accessible from the top of the transformer shield and should be adjusted with an insulated screw driver.

## BROADCAST ALIGNMENT

1. With variable condenser in its minimum capacity position, connect test oscillator set at 1500 K.C. in series with broadcast dummy to the antenna lead of the receiver.
2. Adjust oscillator trimmer of variable condenser to resonance. (This adjustment is rear section of gang—see top view.)
3. Shift test oscillator to 1400 K.C. and pick up signal by rotating condenser and adjust antenna trimmer to resonance—see top view.
4. Re-set test oscillator to 800 K.C. and rotate variable condenser to 800 K.C. Adjust series pad, rocking gang condenser to and fro, at the same time adjusting series pad for maximum gain. This adjustment is accessible from the top of chassis—see top view.
5. Go back and check 1400 K.C. If adjustment is made here, check 800 K.C. again.
6. Check for sensitivity at 1000 K.C. by setting test oscillator to this frequency and picking up the signal by rotating variable condenser. UNDER NO CIRCUMSTANCES BEND PLATES OF VARIABLE CONDENSER SECTIONS TO CORRECT TRACKING.

## MODEL 566

## NO SPARK PLUG SUPPRESSORS ARE REQUIRED

## MOTOR NOISE SUPPRESSION:

The ignition system of every automobile generates high frequency electrical disturbances which interfere to some extent with the operation of the radio receiver. This disturbance arises from the ignition coil, the distributor and associated wiring. It must either be suppressed at its origin or must be prevented from feeding into the input of the radio receiver through the common storage battery. By proper shielding and by-passing these disturbances are prevented from entering the receiver. The first essential procedure towards minimizing this disturbance is to disconnect the high tension lead to the distributor and insert a distributor suppressor, part number 168-2, as indicated in illustration.

Note: For Ford V-8's, no distributor suppressor is used.

For cap type distributors, exchange standard type 168-2 for a special cable type suppressor, part 168-3, from your dealer.

In cars where the ignition coil is located on the back side of the instrument panel it is often necessary to use an additional capacitor, part number 148-3, obtainable from your dealer. It must be installed from the battery side of the ignition coil to the closest ground on the instrument panel.

Shield leads are very important. Where coils are mounted either on the instrument panel or in the driver's compartment, it is necessary to shield the high tension lead from the coil to the distributor.

This can be done by covering the lead first with flexible loom and then with shielded braid, grounding one side of the braid to the instrument panel and the other to a point on the motor block closest to the distributor. This lead should be run as nearly as possible directly from the coil to the distributor, even if it is necessary to drill an extra hole in the fire wall. It may even be necessary in some stubborn cases to move the coil from the driver's compartment and mount it on the motor block as close as possible to the distributor. The new primary wire should be No. 14 shielded low tension cable. Do not run wires close to the high tension leads and make certain that shields are well grounded. Make certain that the instrument panel has a ground connection to the frame of the car.

For Ford V-8's, it is necessary to remove from the high tension housing attached to the left bank of 4 cylinders the master cable containing the generator wire (yellow wire with black tracer) and the red low tension wire connecting ignition coil to the ignition switch.

These two wires must be removed from high tension housing and shielded. Shielding must be grounded at both ends. A capacitor must be connected between the primary of the ignition coil and ground. Your dealer can supply a special type capacitor for this purpose (part No. 148-6).

Cars with floating power must have the motor bonded to the bulkhead and again to the frame to provide a direct path for the high frequency interference developed in the ignition system. No copper braid will be necessary. SMALL DIAMETER WIRE WILL NOT DO. Bond flexible shaft leads, such as free wheeling, choke wires, etc., which pick up motor noise and radiate it into the car. Free shielding cables should be grounded at the point at which they go through the fire wall of the car. In extreme cases it has been found necessary to ground the steering column.

Great care of design has been given the Model 566 to minimize motor noise pick-up. Three sources of motor noise pick-up are antenna pick-up, "A" line pick-up, and chassis pick-up.

Chassis pick-up is reduced to an absolute minimum by completely insulating the inner chassis from the outer case and grounded at carefully selected points to outer case so as to get minimum impedance drops induced by eddy currents around the R.F. end of the chassis. The "A" line pick-up was eliminated by a carefully designed low pass filter which is completely shielded in a can of its own.

Antenna pick-up was reduced to a minimum by removing all capacity coupling in the antenna stage and this is further augmented by a low pass filter which discriminates against all frequencies outside the broadcast band.

A further precaution that was taken against motor noise is the insulated couplings used on the end of the volume control shaft and variable condenser shaft. This completely kills any motor noise loop that would have been caused by the grounding of the flexible control cables through variable condenser.

## SERVICE NOTES:

Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagram.

In order to prevent signal from acting upon A.V.C. and affecting accuracy of voltage measurements, aerial and ground leads should be short circuited while making measurements.

All voltages are to be measured with 6.3 volts input to receiver. Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagram.

To check for open by-pass condensers, shut each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

Failure to operate, noisy or weak reception is usually due to defective tubes, the tubes making poor contact with sockets or grid clips making poor contact with the caps of the tubes. Tubes may be checked very easily by replacing with other tubes which are known to be good. If fuse blows out frequently and insulating sleeves has been properly placed over fuse, the trouble is probably in the vibrator, it should be replaced. Do not attempt to make any adjustments on the vibrators.

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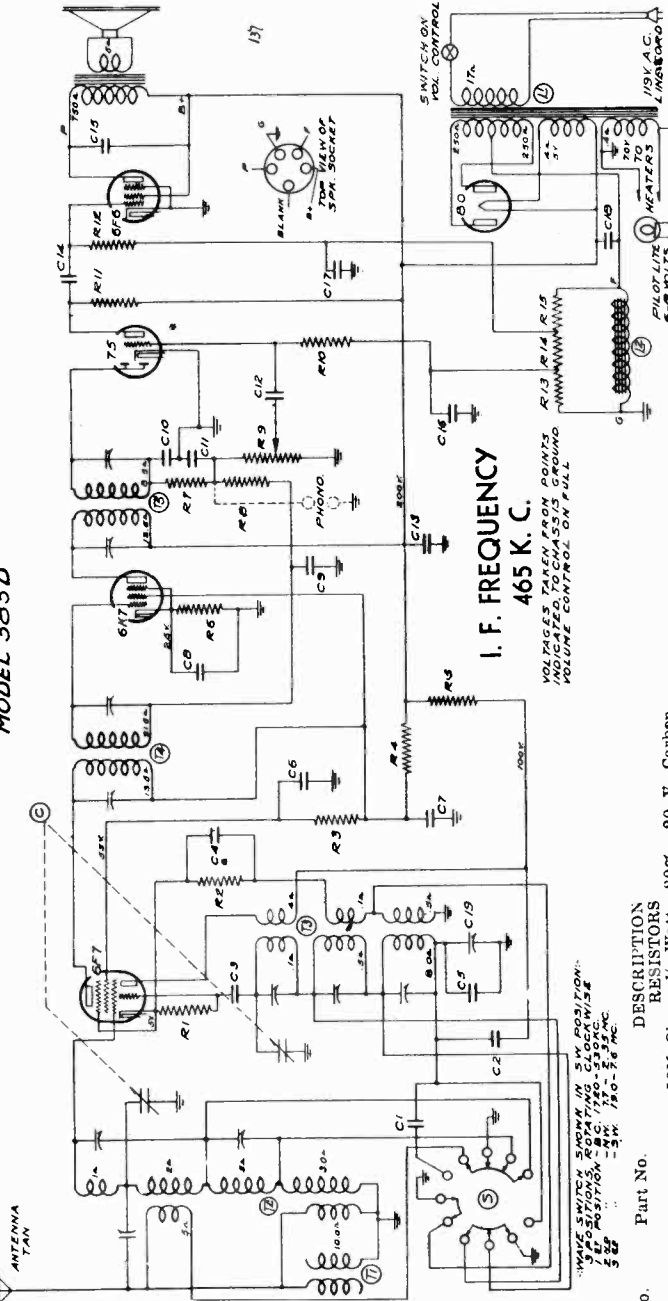
MODEL 585, Series D  
Schematic  
Trimmers  
Parts List

- T1. 105-10
- T2. 111-27
- T3. 110-22
- T4. 108-38A
- T5. 108-40
- C. 102-12
- S. 125-6
- L1. 104-14A
- L1. 104-18
- L2. 114-11
- L1. 104-17
- L1. 104-41

MISCELLANEOUS

- Antenna Choke Coil
- Antenna Coil
- Oscillator Coil
- Input I.F. Transformer
- Output I.F. Transformer
- Two Gang Variable Cond.
- Wave Change Switch
- Power Transformer 50/60 Cycle
- Power Transformer 25 Cycle
- Speaker—Field Resistance 1350 Ohms
- Power Trans. Universal 50/60 Cycle
- Power Trans. Universal 25 Cycle.

MODEL 585D



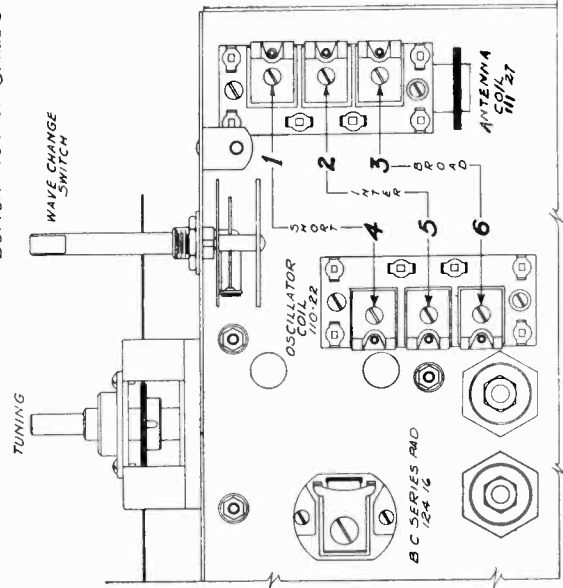
I. F. FREQUENCY  
465 K. C.

VOLTAGES TAKEN FROM POINTS INDICATED TO CHASSIS GROUND VOLUME CONTROL ON FULL

DESCRIPTIONS

- | Part No.                | DESCRIPTIONS                      |
|-------------------------|-----------------------------------|
| 50M                     | Ohm—1/4 Watt—20%—20 V. Carbon     |
| 70M                     | Ohm—1/4 Watt—20%—20 V. Carbon     |
| 100M                    | Ohm—1/4 Watt—20%—50 V. Carbon     |
| 25M                     | Ohm—1/4 Watt—20%—150 V. Carbon    |
| 20M                     | Ohm—1/4 Watt—20%—100 V. Carbon    |
| 250                     | Ohm—1/4 Watt—20%—10 V. Wire Wound |
| 50M                     | Ohm—1/4 Watt—20%—20 V. Carbon     |
| 500M                    | Ohm—1/4 Watt—20%—100 V. Carbon    |
| 500M                    | Ohm Volume Control                |
| 1 meg                   | Ohm—1/4 Watt—10%—100 V. Carbon    |
| 250M                    | Ohm—1/4 Watt—10%—100 V. Carbon    |
| 15M                     | Ohm—1/4 Watt—10%—20 V. Carbon     |
| 180M                    | Ohm—1/4 Watt—10%—100 V. Carbon    |
| 800M                    | Ohm—1/4 Watt—10%—100 V. Carbon    |
| CONDENSERS              |                                   |
| .002                    | Mica—MW—5%                        |
| 1 x 120 V.              | —25%                              |
| .0001                   | Mica—MT—20%                       |
| 1 x 200 V.              | —25%                              |
| .00038                  | —MT—5%                            |
| 1 x 200 V.              | —Dual Plus 50%: Minus 10%         |
| 1 x 200 V.              | —Dual Plus 50%: Minus 10%         |
| 1 x 200 V.              | —Dual Plus 50%: Minus 10%         |
| 1 x 200 V.              | —Dual Plus 50%: Minus 10%         |
| .000125                 | Mica MT—20%                       |
| .000125                 | Mica MT—20%                       |
| .06 x 200 V.            | —25%                              |
| .8 mid. x 300 V.        | Electrolytic                      |
| .01 x 400 V.            | —25%                              |
| .006 x 600 V.           | —25%                              |
| 1 x 200 V.              | —Dual Plus 50%: Minus 10%         |
| 1 x 200 V.              | —Dual Plus 50%: Minus 10%         |
| .8 mid. x 350 V.        | Electrolytic                      |
| B. C. Series Pad J-3-S. |                                   |

BOTTOM VIEW OF CHASSIS



TUNING RANGE—  
Standard Broadcast Band  
530-1720 Kilocycles.  
Intermediate Band  
2350-7700 Kilocycles.  
Short Wave Band  
7.6-19.0 Megacycles.

**MODEL 585, Series D  
Alignment, Parts**

**BELMONT RADIO CORP.**

**MODEL 585 - Series D  
5-Tube 3-Band Superheterodyne with AVC**

(c) Re-set external oscillator to 600 kilocycles and adjust series pad to resonance, rotate condenser and move dial pointer to 600 kilocycles by gently rocking condenser to and fro. Pick up oscillator signal while adjusting series pad to resonance, maximum deflection on an output meter. This adjustment is accessible from the top of the chassis and is located between variable condenser and power transformer, see top view—part number 124-16.

(d) Check tracing and sensitivity at 1000 kilocycles. 25 Cycle Chassis differ only from 60 cycle chassis in that part number 104-18 transformer is used in place of 50/60 cycle transformer, part number 104-14.

**Short Wave Band Alignment—  
(7.6 - 19.0 Megacycles)**

1. This band is aligned after the I.F. adjustments have been completed. Set wave changing switch to wave position, extreme right of its rotation, set dial pointer to 18 wave position, extreme right. With external oscillator adjusted to 18 megacycles, and connected in series with short wave dummy antenna to tan antenna and black ground leads, adjust the oscillator short

wave trimmer until generator signal is picked up. For location of this adjustment, number 4, see diagram.

(b) Adjust short wave antenna trimmer to resonance. For location of this adjustment, number 1, see diagram.

(c) Re-set external oscillator to 9 megacycles, rotate condenser, move dial pointer to 9 megacycles, and check for tracking and sensitivity. Do not bend plates. NOTE: It is extremely necessary to make all of the above adjustments, that the fundamental signal of the oscillator be tuned in and not the image frequency, which will fall below the fundamental.

**Intermediate Band Alignment—  
(2.35 - 7.7 Megacycles)**

1. With wave changing switch in center position, and with dial pointer at 2.35 megacycles, make the following adjustments:

(a) With external oscillator at 2.35 megacycles and connected in series with short wave dummy antenna, as on short wave adjustments, adjust trimmer of oscillator to resonance, number 110-22 until 7 megacycle signal is picked up. For location of this adjustment, number 5, see diagram.

(b) Adjust antenna trimmer to resonance, adjustment number 2, see diagram.

(c) Re-set external oscillator to 2.5 megacycles (2500 kilocycles), rotate variable condenser, move pointer, pick up oscillator signal and check for tracking and sensitivity. NOTE: It is extremely necessary in making all of the above adjustments to make the fundamental signal of the oscillator be tuned in and not the image frequency, which will fall below the fundamental.

**LIST OF REPAIR PARTS - MODEL 585 (SERIES A - B - C - D)**

Part No.	Description	Price	Quantity
100-11	100-11	1.00	1
100-12	100-12	1.00	1
100-13	100-13	1.00	1
100-14	100-14	1.00	1
100-15	100-15	1.00	1
100-16	100-16	1.00	1
100-17	100-17	1.00	1
100-18	100-18	1.00	1
100-19	100-19	1.00	1
100-20	100-20	1.00	1
100-21	100-21	1.00	1
100-22	100-22	1.00	1
100-23	100-23	1.00	1
100-24	100-24	1.00	1
100-25	100-25	1.00	1
100-26	100-26	1.00	1
100-27	100-27	1.00	1
100-28	100-28	1.00	1
100-29	100-29	1.00	1
100-30	100-30	1.00	1
100-31	100-31	1.00	1
100-32	100-32	1.00	1
100-33	100-33	1.00	1
100-34	100-34	1.00	1
100-35	100-35	1.00	1
100-36	100-36	1.00	1
100-37	100-37	1.00	1
100-38	100-38	1.00	1
100-39	100-39	1.00	1
100-40	100-40	1.00	1
100-41	100-41	1.00	1
100-42	100-42	1.00	1
100-43	100-43	1.00	1
100-44	100-44	1.00	1
100-45	100-45	1.00	1
100-46	100-46	1.00	1
100-47	100-47	1.00	1
100-48	100-48	1.00	1
100-49	100-49	1.00	1
100-50	100-50	1.00	1
100-51	100-51	1.00	1
100-52	100-52	1.00	1
100-53	100-53	1.00	1
100-54	100-54	1.00	1
100-55	100-55	1.00	1
100-56	100-56	1.00	1
100-57	100-57	1.00	1
100-58	100-58	1.00	1
100-59	100-59	1.00	1
100-60	100-60	1.00	1
100-61	100-61	1.00	1
100-62	100-62	1.00	1
100-63	100-63	1.00	1
100-64	100-64	1.00	1
100-65	100-65	1.00	1
100-66	100-66	1.00	1
100-67	100-67	1.00	1
100-68	100-68	1.00	1
100-69	100-69	1.00	1
100-70	100-70	1.00	1
100-71	100-71	1.00	1
100-72	100-72	1.00	1
100-73	100-73	1.00	1
100-74	100-74	1.00	1
100-75	100-75	1.00	1
100-76	100-76	1.00	1
100-77	100-77	1.00	1
100-78	100-78	1.00	1
100-79	100-79	1.00	1
100-80	100-80	1.00	1
100-81	100-81	1.00	1
100-82	100-82	1.00	1
100-83	100-83	1.00	1
100-84	100-84	1.00	1
100-85	100-85	1.00	1
100-86	100-86	1.00	1
100-87	100-87	1.00	1
100-88	100-88	1.00	1
100-89	100-89	1.00	1
100-90	100-90	1.00	1
100-91	100-91	1.00	1
100-92	100-92	1.00	1
100-93	100-93	1.00	1
100-94	100-94	1.00	1
100-95	100-95	1.00	1
100-96	100-96	1.00	1
100-97	100-97	1.00	1
100-98	100-98	1.00	1
100-99	100-99	1.00	1
100-100	100-100	1.00	1

All resistors are 1/2 W. unless otherwise specified. All capacitors are .01 MFD. unless otherwise specified. All capacitors are .01 MFD. unless otherwise specified. All capacitors are .01 MFD. unless otherwise specified.

**DESCRIPTION**

The Tube complement of this chassis is as follows:  
 1 Type 6F7—triode pentode as oscillator and first detector.  
 1 Type 6K7—remote cut-off pentode as I.F. amplifier.  
 1 Type 75—duplex diode triode as diode detector, A.V.C. and A.F.  
 1 Type 6F8—pentode output tube.  
 1 Type 80—high vacuum rectifier.  
 Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 125, 150, 220 and 250 volts (see instructions) and also sometimes equipped with 25 cycle transformers with 108-115 volt or 220 volt primaries, not universal.

**SERVICE NOTES**  
 Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagrams.  
**IN ORDER TO PREVENT SIGNAL FROM ACTING UPON THE DETECTOR, THE FOLLOWING PRECAUTIONS SHOULD BE OBSERVED:**  
 1. REMOVE ALL SIGNALS FROM THE DETECTOR AND GROUND LEADS SHOULD BE SHORT CIRCUITED WHILE MAKING MEASUREMENTS.  
 All voltages are to be measured, with 119 volts on the primary of the power transformer.  
 Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagrams.  
 To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

**ALIGNING INSTRUCTIONS**

No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltages, defective tubes, condensers and resistors. In order to properly align this chassis, an oscillator (generator) is absolutely necessary. No aligning adjustments should be attempted with the chassis in the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the three joints by which it is fastened to the speaker plug which you will find on the front baffle of the chassis panel.

**Aligning I. F. Transformers**

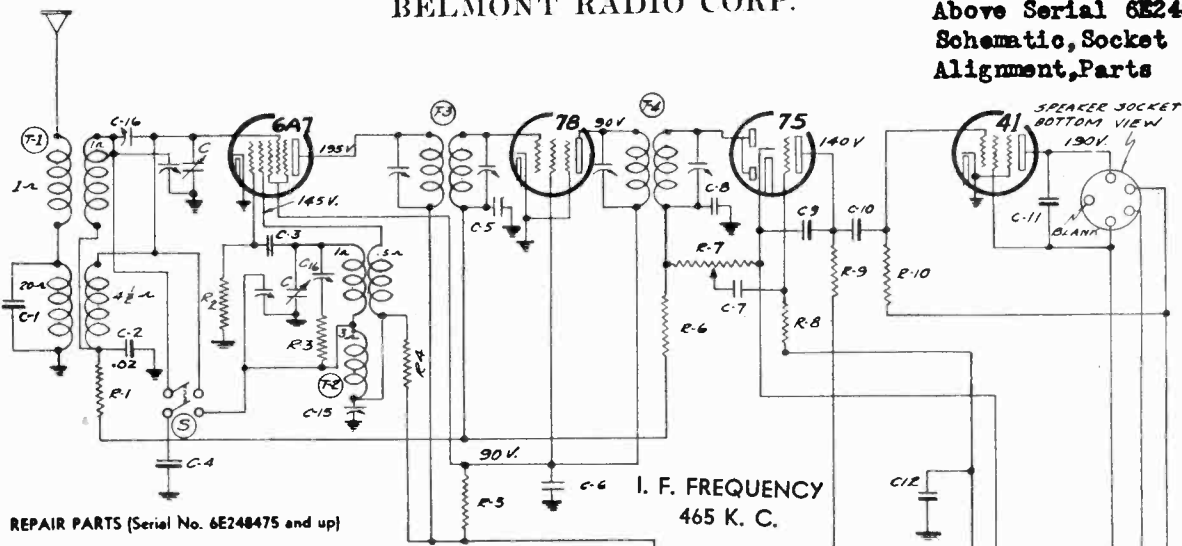
1. With volume control full on, the extreme right of its rotation, and with wave changing switch in the broadcast position, extreme left of its rotation, and with variable condenser at its minimum capacity position, plates entirely out of mesh, adjust the I.F. transformers (two adjustments at the top of parts number 108-38 and 108-40—see top view).  
 (a) Connect external oscillator which has been adjusted to 465 kilocycles in series with I.F. dummy antenna, to the control grid cap of the type 6K7 tube and chassis ground. Adjust output I.F. transformer, part number 108-40, to resonance.  
 (b) Move generator output clip from grid of 6K7 to grid cap of type 6F7 tube and align input I.F. transformer, part number 108-38.  
 (c) With generator connected to grid of type 6F7 tube, readjust output I.F. transformer, part number 108-40, to resonance.

**Broadcast Band Alignment—  
(540 - 1720 Kilocycles)**

1. With wave changing switch in the broadcast position, extreme left of its rotation, and with genz condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator, in series with dummy antenna, to the control grid of the type 6F7 tube and make the following adjustments:  
 (a) With external oscillator set at 1720 kilocycles, adjust oscillator trimmer to resonance, for location of this adjustment, number 6, see diagram.  
 (b) Re-set external oscillator to 1400 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance. For location of this adjustment, number 3, see diagram.

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**MODEL 586, Series A**  
**Above Serial 6E248475**  
**Schematic, Socket**  
**Alignment, Parts**



REPAIR PARTS (Serial No. 6E248475 and up)

Part No.	Schematic Reference	Description
100-6	C-12	25 x250 Volt Tubular Without Bracket
100-9	C-5	35 x250 Volt Tubular
100-11	C-10	50 x400 Volt Tubular
100-19	C-11	50 x400 Volt Tubular
100-20	C-2	50 x400 Volt Tubular
103-4	C-13	.02 x400 Volt Electrolytic
103-7	C-14	8 Mfd. x 150 Volt Electrolytic
120-5	C-9	1000 Mho - Type W-20%
120-12	C-8	5000 Mho - Type W-20%
120-41	C-4	5000 Mho - Type W-20%
120-42	C-3	10000 Mho - Type W-10%
120-43	C-1	10000 Mho - Type W-10%
<b>RESISTORS</b>		
100-20	R-11	220 Ohm (R-11), 33 Ohm (R-12), 50
100-12	R-13	50M Ohm (R-13), Metal Grid Resistor
130-12	R-2	50M Ohm (1/2 Watt)-20% - 20 V.-Carbon
130-20	R-9	100M Ohm (1/2 Watt)-20% - 50 V.-Carbon
130-21	R-4	2M Ohm (1/2 Watt)-20% - 10 V.-Carbon
130-27	R-5	10M Ohm (1 Watt)-20% - 100 V.-Carbon
130-100	R-10	150M Ohm (1/2 Watt)-20% - 50 V.-Carbon
130-110	R-6	1.5M Ohm (1/10 Watt)-20% - 100 V.-Carbon
130-111	R-7	100M Ohm (1/10 Watt)-20% - 50 V.-Carbon
130-112	R-8	10M Ohm (1/10 Watt)-20% - 10 V.-Carbon
130-113	R-7	2 Meg Ohm (1/10 Watt)-20% - 100 V.-Carbon

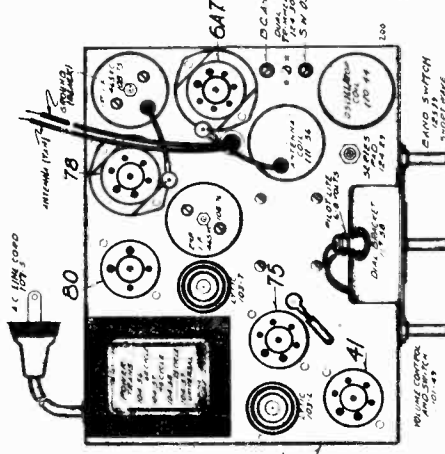


FIG. 1—TOP VIEW

**NOTE:** Make certain that the fundamental 6.6 megacycles signal has been tuned in and not the image frequency, noting that the image appears when the tuning knob is moved to approximately 5.7 megacycles.

**BROADCAST BAND OSCILLATOR ADJUSTMENT:**

- With band switch in the broadcast position, extreme left of its rotation, and with the gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 1" to grid cap of the 6A7 tube, make the following adjustment:
  - Set external oscillator to 1720 K.C. and adjust broadcast oscillator trimmer to resonance. This adjustment is the trimmer mounted on the front section of the variable gang condenser.

**BROADCAST BAND ANTENNA ADJUSTMENT:**

- With the band switch still in the broadcast position, move the external oscillator from the grid cap of the 6A7 tube to the tan antenna lead and black ground lead, in series with "Dummy 2" and make the following adjustments:
  - Set external oscillator to 1550 K.C., rotate variable gang condenser and pick up signal. Adjust broadcast antenna trimmer to resonance. This adjustment is marked "B.C. Ant." (See top view of chassis, Fig. 1, for location of this adjustment)
  - Re-set external oscillator to 600 K.C. and adjust broadcast series pad to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until, by adjusting series pad, maximum output is attained. This adjustment is located on the top of the chassis directly in front of the antenna coil. (See top view of chassis, Fig. 1).
  - Repeat adjustments "a" and "b" until sensitivity is at its maximum.

**ALIGNING I.F. TRANSFORMERS: (465 K.C.):**

- Part No. 108-76 Output I.F. Transformer
  - Part No. 108-75 Input I.F. Transformer
- These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on (the extreme right of its rotation), the hand changing switch in the broadcast position, (extreme left of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

- Connect external oscillator set at 465 kilocycles, in series with "Dummy 1" to the control grid cap of the type 78 tube, and adjust the output I.F. transformer (No. 108-76) to resonance
- With "Dummy 1" still connected, move oscillator output clip from grid of 78 to grid cap to 6A7 and adjust input I.F. transformer (No. 108-75) to resonance.
- With oscillator still connected to 6A7, readjust output I.F. transformer (108-76) if necessary.

**DUMMY ANTENNAS:**

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1," "Dummy 2," and "Dummy 3."

- Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.
- Dummy 2: (Broadcast)—Consists of a 200 mmfd condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.
- Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

**SHORT WAVE BAND ANTENNA ADJUSTMENT:**

- With the band switch in the short wave position, and with external oscillator connected in series with "Dummy 3," to the tan antenna lead and black ground lead, make following adjustment:
  - Set external oscillator to 6 megacycles and adjust the short-wave antenna trimmer to resonance. This adjustment is the trimmer mounted on the rear section of the variable gang condenser.

**BROADCAST AND SHORT WAVE BAND ALIGNMENT**

**Broadcast Band:**—535 to 1720 Kilocycles.  
**Short Wave Band:**—2280 to 6000 Kilocycles.  
**Important:**—These adjustments must be made in the following order:

**SHORT WAVE OSCILLATOR ADJUSTMENT:**

- With band switch in the short wave band position, extreme right of its rotation, and with the gang condenser in its minimum capacity position, plates entirely out of mesh, and with the external oscillator connected in series with "Dummy 1" to grid cap of the 6A7 tube, make the following adjustment:
  - Set external oscillator to 6.6 megacycles and adjust short wave oscillator trimmer to resonance. This adjustment is marked "S.W. Osc." (see top view of chassis, Fig. 1, for location of this adjustment).



**MODEL 601, Series A & B**  
**Schematic, Socket, Parts**  
**Alignment, Notes**

**BELMONT RADIO CORP.**

**ALIGNING I.F. TRANSFORMERS: (465 K.C.):**

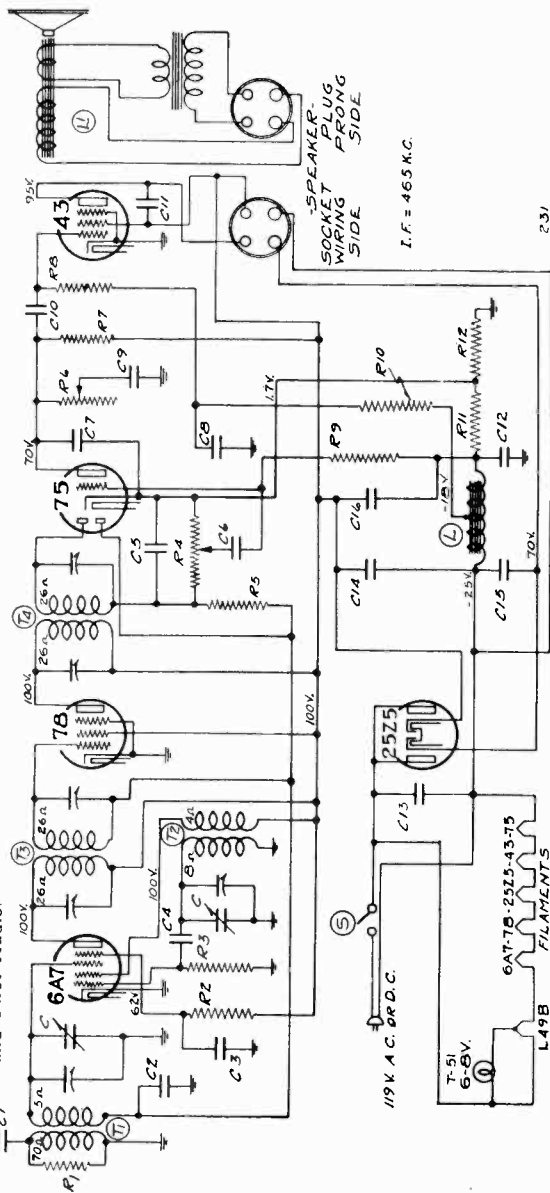
- Part No. 108-83 Output I.F. Transformer
- Part No. 108-82 Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

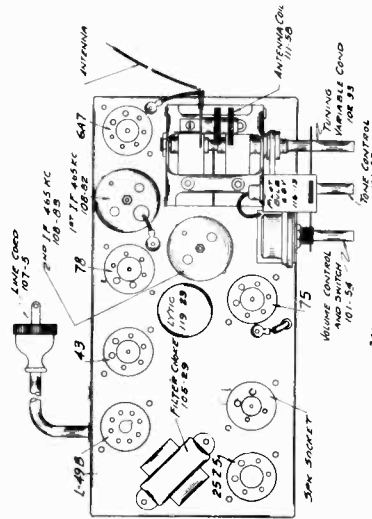
1. With volume control full on (the extreme right of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:
  - (a) Connect external oscillator set at 465 kilocycles, in series with .1 mfd. condenser, to the control grid cap of the type 78 tube, and adjust the output I.F. transformer (No. 108-83) to resonance.
  - (b) Move oscillator output clip from grid of 78 grid cap of 6A7 and adjust input I.F. transformer (No. 108-82) to resonance.
  - (c) With oscillator still connected to 6A7, readjust output I.F. transformer (108-83) if necessary.

**R.F. ALIGNMENT: (535-1720 K.C.)**

1. Unsolder the antenna wire from its terminal on the antenna coil and with gang condenser in its minimum capacity position, plates entirely out of mesh, connect an external oscillator in series with a 50 mmf. condenser to the antenna terminal on the antenna coil and chassis ground and make the following adjustments:
  - (a) With external oscillator set at 1720 kilocycles, adjust oscillator trimmer (rear of gang condenser).
  - (b) Re-set external oscillator to 1550 kilocycles, rotate condenser, pick up oscillator signal and adjust antenna trimmer to resonance (front section of gang condenser).
  - (c) Check sensitivity at 600 and 1000 kilocycles.



**MODEL 601—SERIES A**



**FIG. 2—TOP VIEW**

- Type 43 Pentode Output Amplifier
- Type 25Z5 High Vacuum Rectifier.
- Type L49B Ballast Tube.

- Type 6A7 Pentagrid Mixer, First Detector-oscillator
- Type 78 Remote Cut-Off Pentode, I.F. Amplifier (465 K.C.)
- Type 75 Duplex Diode Triode Second Detector, A.V.C. and First Audio.

**CONDENSERS**

C1	100-25	.002	x600 Volt—25%
C2	100-22	.05	x200 Volt—25%
C3	100-22	.05	x200 Volt—25%
C4	129-12	.00025	Mica—MT—20%
C5	129-12	.00025	Mica—MT—20%
C6	100-11	.01	x400 Volt—20%
C7	129-2	.0005	Mica—MT—20%
C8	100-20	.1	x200 Volt—25%
C9	100-11	.01	x400 Volt—25%
C10	100-11	.01	x400 Volt—25%
C11	100-15	.002	x600 Volt—25%
C12	100-6	.25	x200 Volt—20%
C13	100-39	.1	x400 Volt—20%
C14	119-25	16 mid.	x100 Volt—Working Voltage
C15	119-25	5 mid.	x100 Volt—Working Voltage
C16	119-25	8 mid.	x100 Volt—Working Voltage

NOTE: C14, C15, and C16 in one unit—No. 119-25

**RESISTORS**

R1	130-12	50M	Ohm—½W—20%—Carbon
R2	130-21	20M	Ohm—½W—20%—Carbon
R3	130-12	50M	Ohm—½W—20%—Carbon
R4	101-54	1 meg	Ohm—Volume Control
R5	130-119	3 meg	Ohm—Volume Control
R6	101-55	1 meg	Ohm—Tone Control
R7	130-120	100M	Ohm—½W—20%—Carbon
R8	130-120	200M	Ohm—½W—20%—Carbon
R9	130-38	200M	Ohm—½W—20%—Carbon
R10	130-9	200M	Ohm—Mixer Strip
R11	106-28	35	Ohm—Mixer Strip
R12	106-28	50	Ohm—Mixer Strip

NOTE: R11 and R12 in one unit—No. 106-28.

**TUNING RANGE—**

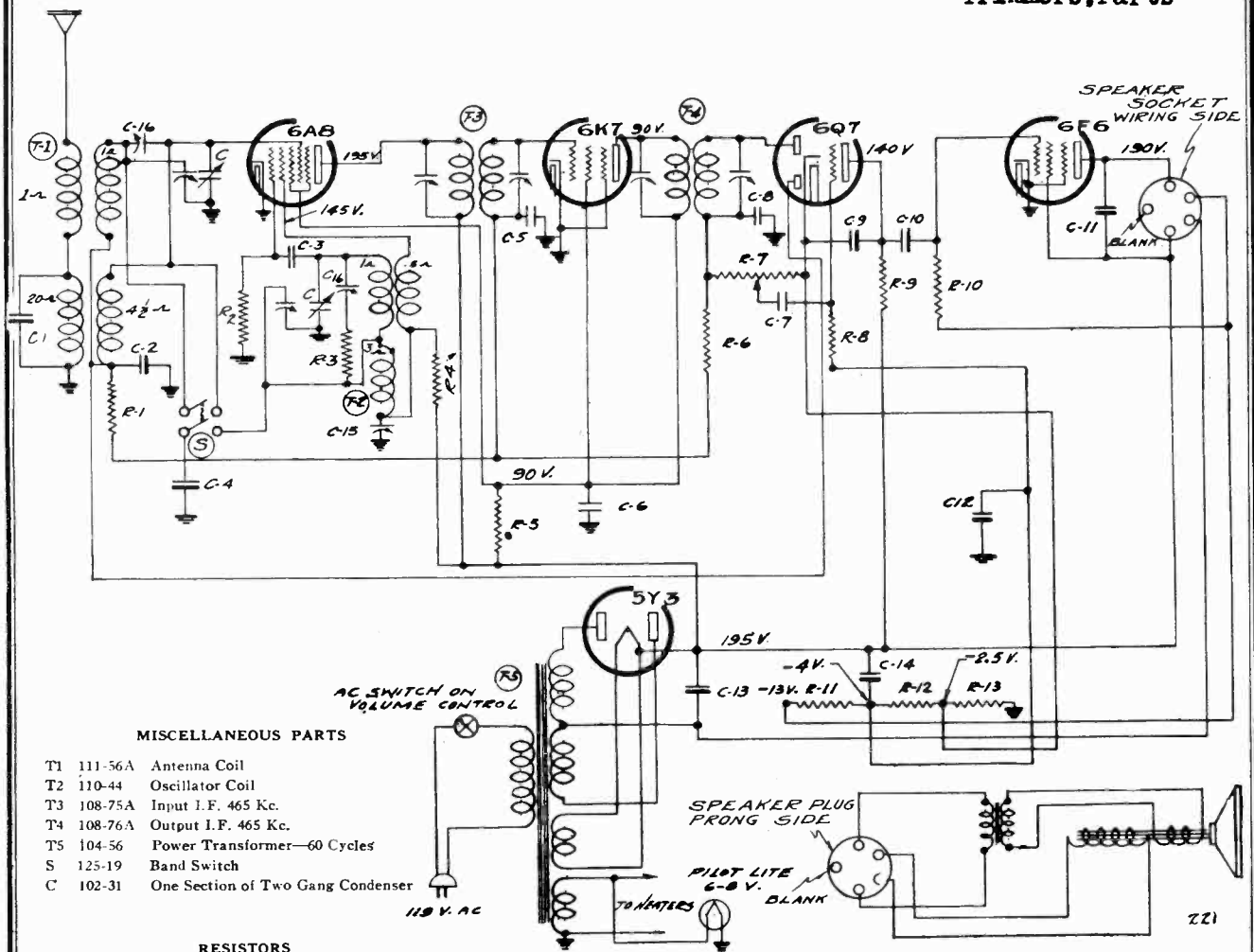
Standard Broadcast Band  
 535-1720 Kilocycles

**MODEL 601—SERIES B is the same as Series A, except for the following changes:—**

- 1 - The C15 condenser was eliminated.
- 2 - The C14 condenser was replaced by a C15 (Part #119-29) 30 mfd. capacity, and the C16 was replaced by a C14 (Part #119-29) 5 mfd. capacity.

BELMONT RADIO CORP.

MODEL 587, Series A  
Schematic, Socket  
Trimmers, Parts



MISCELLANEOUS PARTS

- T1 111-56A Antenna Coil
- T2 110-44 Oscillator Coil
- T3 108-75A Input I.F. 465 Kc.
- T4 108-76A Output I.F. 465 Kc.
- T5 104-56 Power Transformer—60 Cycles
- S 125-19 Band Switch
- C 102-31 One Section of Two Gang Condenser

RESISTORS

- | No. | Part No. | Description                     |
|-----|----------|---------------------------------|
| R1  | 130-111  | 100M Ohms 1/10W—20%—50V Carbon  |
| R2  | 130-12   | 50M Ohms 1/3 W—20%—20V Carbon   |
| R3  | 130-112  | 100 Ohms 1/10W—20%—10V Carbon   |
| R4  | 130-22   | 5M Ohms 1/3 W—20%—10V Carbon    |
| R5  | 130-77   | 10M Ohms 1 W—20%—100V Carbon    |
| R6  | 130-110  | 1 meg Ohm 1/10W—10%—100V Carbon |
| R7  | 101-49   | 1 meg Ohm Volume Control        |
| R8  | 130-113  | 2 meg Ohm 1/10W—20%—100V Carbon |
| R9  | 130-20   | 100M Ohms 1/3W—20%—50V Carbon   |
| R10 | 130-100  | 150M Ohms 1/3W—20%—50V Carbon   |
| R11 | 106-26   | 220 Ohms                        |
| R12 | 106-26   | 33 Ohms                         |
| R13 | 106-26   | 52 Ohms                         |

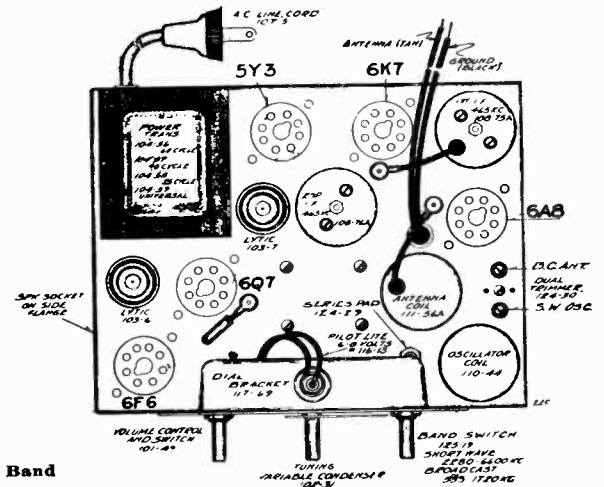
NOTE: R11, R12, and R13 in one unit—106-26

CONDENSERS

- |     |        |  |
|-----|--------|--|
| C1  | 129-63 | .0004 Mica—W—10%                               |
| C2  | 100-26 | .02 x 400 Volt—25%                             |
| C3  | 129-62 | .00003 Mica—0—10%                              |
| C4  | 129-61 | .0017 Mica—W—2 1/2 %                           |
| C5  | 100-9  | .05 x 200 Volt—25%                             |
| C6  | 100-6  | .25 x 200 Volt—25%                             |
| C7  | 100-11 | .01 x 400 Volt—25%                             |
| C8  | 129-12 | .00025 Mica—0—20%                              |
| C9  | 129-12 | .00025 Mica—0—20%                              |
| C10 | 100-11 | .01 x 400 Volt—25%                             |
| C11 | 100-19 | .006 x 600 Volt—25%                            |
| C12 | 100-6  | .25 x 200 Volt—25%                             |
| C13 | 103-6  | 8 mfd. x 350 Volt Electrolytic                 |
| C14 | 103-7  | 8 mfd. x 300 Volt Electrolytic                 |
| C15 | 124-29 | Adjustable condenser 390 mmf. working capacity |
| C16 | 124-30 | Adjustable Dual Condenser                      |

I. F. FREQUENCY  
465 K. C.

MODEL 587—SERIES A



TUNING RANGE—  
Standard Broadcast Band  
535-1720 Kilocycles.  
Short Wave Band  
2290-6600 Kilocycles

FIG. 1—TOP VIEW

# MODEL 587, Series A Alignment

## BELMONT RADIO CORP.

### MODEL 587 - Series A

#### 5-TUBE

#### 2-Band A. C. Superheterodyne Receiver

#### TUBES:

The tube complement of this chassis consists of the following tubes.

The type and function of each tube is as follows:

- 1—Type 6A8 Pentagrid Mixer, First Detector-oscillator
- 1—Type 6K7 Remote Cut-Off Pentode, I. F. Amplifier (465 K.C.)
- 1—Type 6Q7-G Duplex Diode-Triode Second Detector, A.V.C. and First Audio.
- 1—Type 6F6-G Pentode Output Amplifier.
- 1—Type 5Y3 High Vacuum Rectifier.

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 125, 150, 220 and 250 volts (see parts list) and also sometimes equipped with 25 cycle transformers with 105-115 volt or 220 volt primaries, not universals.

#### SERVICE NOTES:

Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt.

All voltages as indicated on diagram are measured with 119 volts on the primary of the power transformer.

Resistances of coil windings are indicated in ohms on the schematic circuit diagram.

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good; until the defective unit is located.

Excessive hum, stuttering, low volume and a reduction in all D.C. voltages is usually caused by a shorted electrolytic condenser; open by-pass condensers frequently cause oscillation and distorted tone.

#### ALIGNING INSTRUCTIONS:

**CAUTION:**—No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltages, defective tubes, condensers and resistors. In order to properly align this chassis, an oscillator (generator) is absolutely necessary. No aligning adjustments should be attempted with the chassis in the cabinet. Remove the knobs and the four bolts which are used to fasten the chassis.

#### RESONANCE INDICATOR:

Use as a resonance indicator an output meter connected across the primary of the speaker input transformer, or by means of an adaptor between the plate and screen terminals of the type 6F6-G output tube. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range meter should be used.

#### DUMMY ANTENNAS:

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1," "Dummy 2," and "Dummy 3."

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

#### ALIGNING I.F. TRANSFORMERS: (465 K.C.):

Part No. 108-76A Output I.F. Transformer

Part No. 108-75A Input I.F. Transformer.

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

(a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1" to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-76A) to resonance.

(b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap to 6A8 and adjust input I.F. transformer (No. 108-75A) to resonance.

(c) With oscillator still connected to 6A8, readjust output I.F. transformer (108-76A) if necessary.

#### BROADCAST AND SHORT WAVE BAND ALIGNMENT

Broadcast Band—535 to 1720 Kilocycles.

Short Wave Band—2280 to 6600 Kilocycles.

**Important:**—These adjustments must be made in the following order:

#### SHORT WAVE OSCILLATOR ADJUSTMENT:

1. With band switch in the short wave band position, extreme right of its rotation, and with the gang condenser in its minimum capacity position, plates entirely out of mesh, and with the external oscillator connected in series with "Dummy 1" to grid cap of the 6A8 tube, make the following adjustment:

(a) Set external oscillator to 6.6 megacycles and adjust short wave oscillator trimmer to resonance. This adjustment is marked "S.W. Osc." (see top view of chassis, Fig. 1, for location of this adjustment).

**NOTE:** Make certain that the fundamental 6.6 megacycles signal has been tuned in and not the image frequency, noting that the image appears when the tuning knob is moved to approximately 5.7 megacycles.

#### BROADCAST BAND OSCILLATOR ADJUSTMENT:

1. With band switch in the broadcast position, extreme left of its rotation, and with the gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 1" to grid cap of the 6A8 tube, make the following adjustment:

(a) Set external oscillator to 1720 K.C. and adjust broadcast oscillator trimmer to resonance. This adjustment is the trimmer mounted on the front section of the variable gang condenser.

#### BROADCAST BAND ANTENNA ADJUSTMENT:

1. With the band switch still in the broadcast position, move the external oscillator from the grid cap of the 6A8 tube to the tan antenna lead and black ground lead, in series with "Dummy 2" and make the following adjustments:

(a) Set external oscillator to 1550 K.C., rotate variable gang condenser and pick up signal. Adjust broadcast antenna trimmer to resonance. This adjustment is marked "B.C. Ant." (See top view of chassis, Fig. 1, for location of this adjustment.)

(b) Re-set external oscillator to 600 K.C. and adjust broadcast series pad to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until, by adjusting series pad, maximum output is attained. This adjustment is located on the top of the chassis directly in front of the antenna coil. (See top view of chassis, Fig. 1).

(c) Repeat adjustments "a" and "b" until sensitivity is at its maximum.

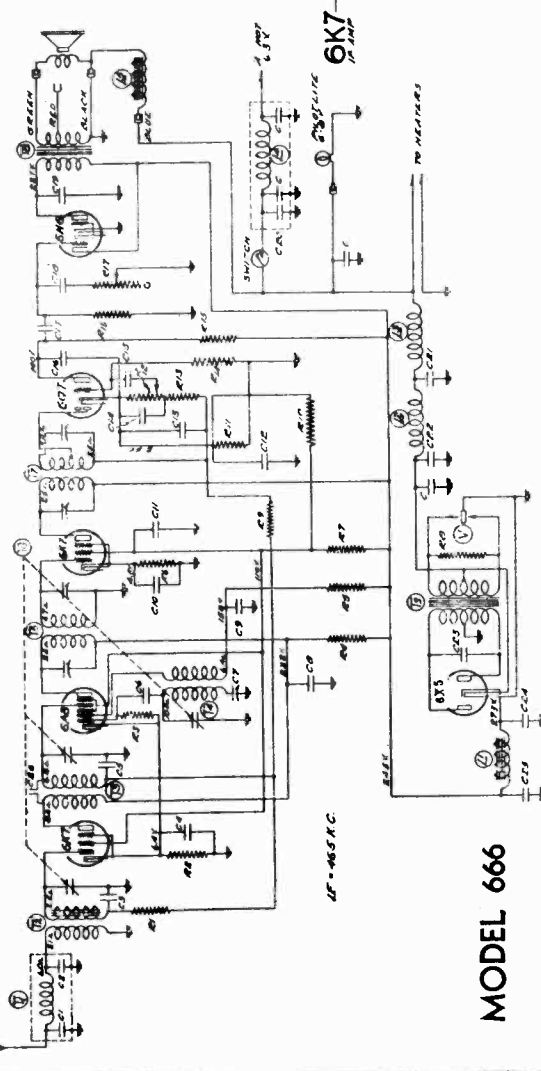
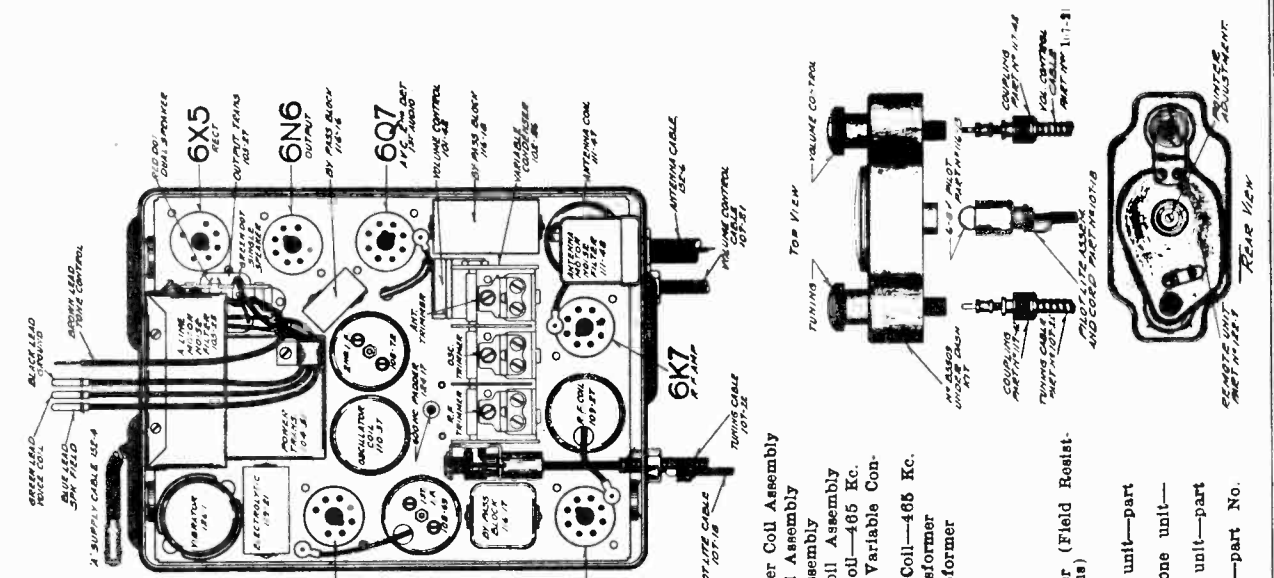
#### SHORT WAVE BAND ANTENNA ADJUSTMENT:

1. With the band switch in the short wave position, and with external oscillator connected in series with "Dummy 3" to the tan antenna lead and black ground lead, make following adjustment:

(a) Set external oscillator to 6 megacycles and adjust short-wave antenna trimmer to resonance. This adjustment is the trimmer mounted on the rear section of the variable gang condenser.

BELMONT RADIO CORP.

MODEL 666  
Schematic, Socket  
Trimmers, Parts

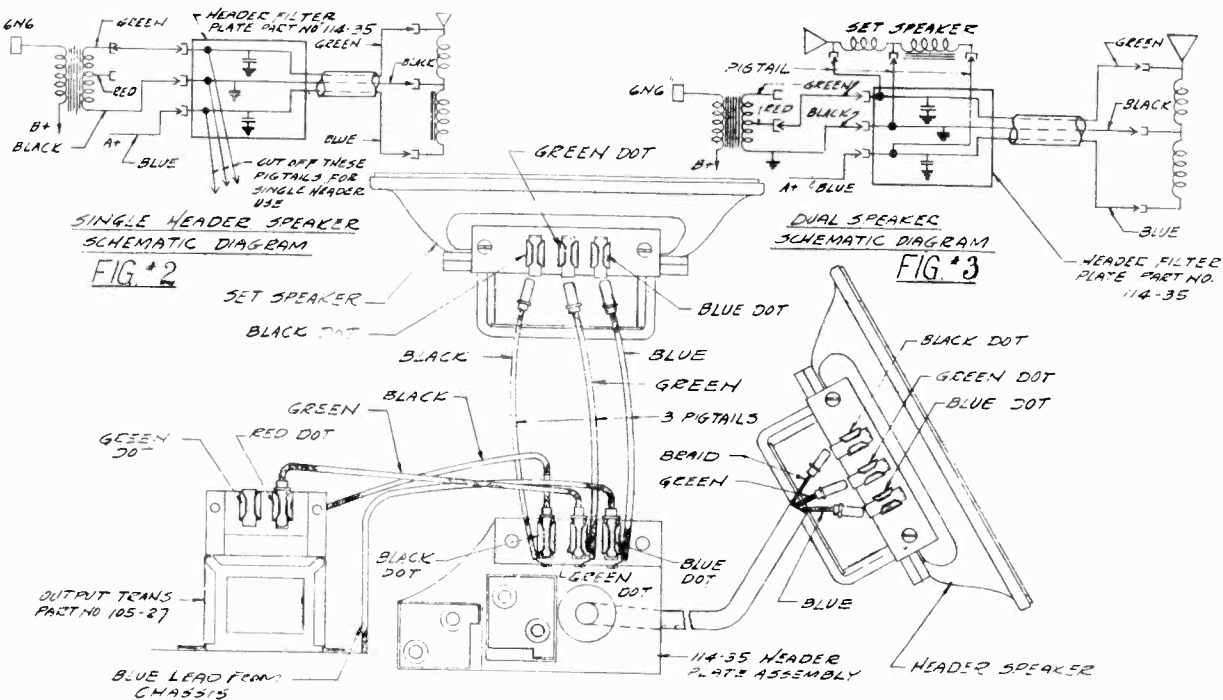


MODEL 666

No.	Part No.	Description
R1	130-20	100M Ohm - 1/4 Watt
R2	130-99	20% - 50 Volt - Carbon
R3	130-94	300 Ohm - 1/4 Watt - 20%
R4	130-98	10 Volt - Carbon
R5	130-42	50M Ohm - 1/4 Watt - 20%
R6	130-70	20M Ohm - 1/4 Watt - 20%
R7	130-95	500 Ohm - 1/4 Watt - 10%
R8	130-97	12M Ohm - 1.2 Watt - 10%
R9	130-3	200 Ohm - 1/4 Watt - 10%
R10	130-108	500M Ohm - 1/4 Watt - 20%
R11	130-107	40M Ohm - 1/4 Watt - 10%
R12	101-42	800 Ohm - 1/4 Watt - 10%
R13	130-22	50M Ohm - Volume Control and Switch
R14	130-08	1 Meg Ohm - 1/4 Watt - 10%
R15	130-9	200M Ohm - 1/4 Watt - 20%
R16	130-3	500M Ohm - 1/4 Watt - 20%
R17	101-45	1 Meg Ohm - Tone Control
C1	129-3	Spark Plate
C2	129-49	.00002 Mica - "O" - 20%
C3	118-18	.00008 Mica - "O" - 5%
C4	116-18	.05 x 200 Volt
C5	116-17	.05 x 200 Volt
C6	129-21	.0002 Mica - MT - "O" - 20%
C7	124-17	Single Padder J-4-S
C8	116-17	1 x 400 Volt
C9	116-18	1 x 400 Volt
C10	116-17	1 x 200 Volt
C11	118-17	1 x 200 Volt
C12	116-16	.05 x 200 Volt
C13	129-5	.0001 Mica - MT - "O" - 20%
C14	129-2	.0005 Mica - MT - "O" - 20%
C15	116-18	.02 x 200 Volt
C16	129-5	.0001 Mica - MT - "O" - 20%
C17	116-16	.05 x 400 Volt
C18	100-37	.008 x 600 Volt - 10%
C19	116-16	.01 x 800 Volt
C20	100-35	.5 x 200 Volt - 50% - 10%
C21	100-35	.5 x 200 Volt - 50% - 10%
C22	100-35	.5 x 200 Volt - 50% - 10%
C23	100-36	.01 x 1400 Volt - 10%
C24	119-21	8.0 mfd Lytic Cond. 350 Working Volts
C25	119-31	4.0 mfd Lytic Cond. 350 Working Volts
C26		5.0 mmi. Gimmick
T1	111-48	Antenna Filter Coil Assembly
T2	111-47	Antenna Coil Assembly
T3	109-27	R.F. Coil Assembly
T4	110-37	Oscillator Coil Assembly
T5	108-69	Input I.F. Coil—465 Kc.
T6	102-26	Three Gang Variable Condenser
T7	108-72	Output I.F. Coil—465 Kc.
T8	105-27	Output Transformer
T9	104-51	Power Transformer
L1	105-23	Filter Choke
L2	105-19	"A" Choke
L3	105-24	"A" Choke
L4	105-28	"A" Choke
L5	114-34	5 1/2" Speaker (Field Resist. since—4 Ohms)
V	128-1	Vibrator

BELMONT RADIO CORP.

MODEL 666  
Alignment, Notes



**NO SPARK PLUG SUPPRESSORS ARE REQUIRED**

**DESCRIPTION:**

Model No. 666 is a six-tube superheterodyne receiver having a tuning range of 530 K.C. to 1550 K.C., operates from a 6.0 volt storage battery and uses the automotive type 6.3 volt tubes. The "B" supply is obtained from a vibrator with a tube rectifier.

The I.F. frequency used is 165 K.C., the R.F. end of the receiver consisting of a high gain iron core antenna coil which gives high signal to noise ratio and an R.F. stage especially designed to give high image rejection and high I.F. attenuation. The I.F. transformers are designed to give high gain and selectivity and yet to have a broad nose for ease of tuning and hi-fidelity response. They are of the air core type and wound with solid wire to give minimum drift and variation of gain due to climatic changes.

The receiver is so designed that it may be used as either a single or two unit installation. Taps are provided on the output transformer to a pin jack terminal board, a red dot distinguishing dual speaker tap and green dot for single speaker operation.

For complete details see illustration and Header speaker data chart.

Dash kits for the remote control head are available for 1936 cars drilled for dash plates.

This receiver has been carefully designed to facilitate servicing, the top and bottom covers are both removable and are fastened in place by spring clips, self tapping screws and trimout buttons.

All adjustments are accessible and any part replaceable without removing the chassis from the case.

**TUBE COMPLEMENT**

- 1—Type No. 6K7—Remote Cut-off Pentode as an R.F. Amplifier
- 1—Type No. 6A8—Pentagrid Converter (composite first detector and oscillator)
- 1—Type No. 6K7—Remote Cut-off Pentode as an I.F. Amplifier (465 K.C.)
- 1—Type No. 6Q7—Duplex Diode Triode Second Detector, A.V.C. and First Audio
- 1—Type No. 6N6—Twin Triode Output Amplifier
- 1—Type No. 6X5—High Vacuum Rectifier

The tube complement consists of the latest "Metal-Glass" tubes which are interchangeable with metal tubes.

Cars with floating power must have the motor bonded to the bulkhead and again to the frame to provide a direct path for the high frequency interference developed in the ignition system. 5/8" copper braid will be necessary, SMALL DIAMETER WIRE WILL NOT DO. Bond flexible shaft leads, such as free wheeling, choke wires, etc., which pick up motor noise and reradiate it into the car. Free wheeling cables should be grounded at the point at which they go through the fire wall of the car. In extreme cases it has been found necessary to ground the steering column.

**I.F. ALIGNMENT**

1. With variable condenser in its minimum capacity position (plates entirely out of mesh) and with volume control full on, connect test oscillator set at 465 K.C. in series with I.F. dummy antenna, to grid of 6K7 I.F. tube.
2. Adjust trimmer condensers of output I.F. transformer No. 108-72 to resonance with oscillator.
3. Move test oscillator connection to grid of 6A8 tube and adjust trimmer condensers of input I.F. transformer No. 108-69 to resonance with oscillator. See top view for location of these transformers. There are two adjustments on each and they are accessible from the top of the transformer shield and should be adjusted with an insulated screw driver.

**BROADCAST ALIGNMENT**

1. With variable condenser in its minimum capacity position, connect test oscillator set at 1550 K.C. in series with broadcast dummy to the antenna lead of receiver.
2. Adjust oscillator trimmer of variable condenser to resonance. (This adjustment is on the middle section of the three-gang condenser—see top view).
3. Shift test oscillator to 1400 K.C. and pick up signal by rotating condenser and adjust R.F. and antenna trimmers to resonance (see top view).
4. Re-set test oscillator to 600 K.C. and rotate variable condenser to 600 KC. Adjust series pad rocking gang condenser to and fro at the same time adjusting series pad for maximum gain. This adjustment is accessible from the top of chassis (see top view).
5. Go back and check 1400 K.C. If adjustment is made here, check 600 K.C. again.
6. Check for sensitivity at 1000 K.C. by setting test oscillator to this frequency and picking up the signal by rotating variable condenser. Under no circumstances bend plates of variable condenser sections to correct tracking.

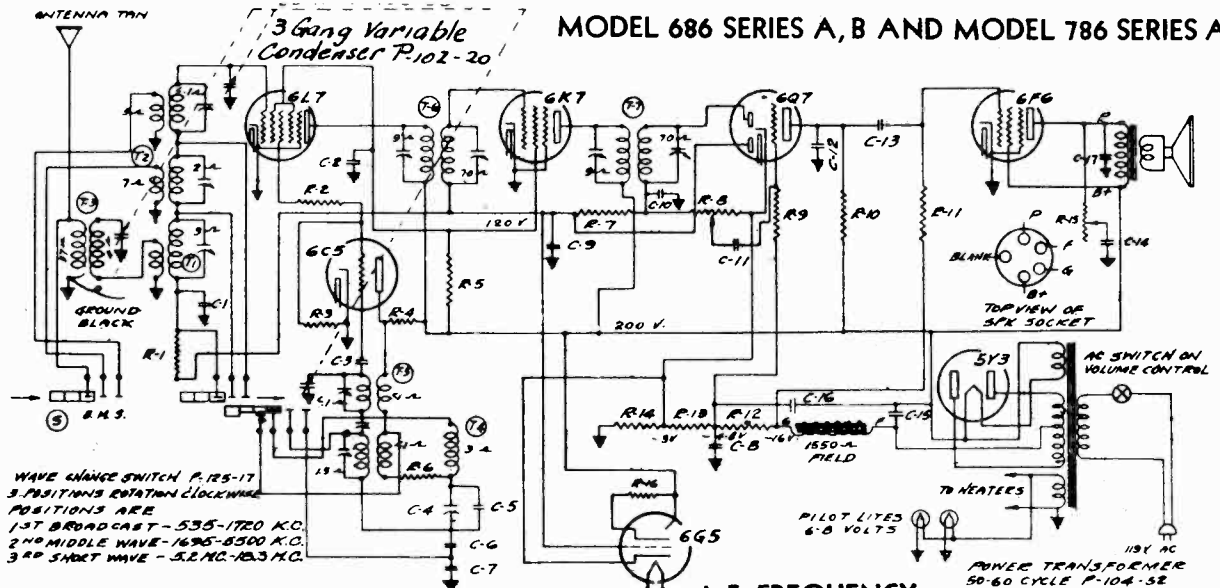
Make certain that the instrument panel has a ground connection to the frame of the car.

NOTE—Where ignition coils are mounted in motor compartments a .5 mfd cond (148-1 or 148-3) connected between primary coil terminal and receiver mounting bolt will often reduce motor noise.

BELMONT RADIO CORP.

MODEL S 685, Series A  
686, Series A & B  
786, Series A  
Schematic, Socket, Trimmers

MODEL 686 SERIES A, B AND MODEL 786 SERIES A



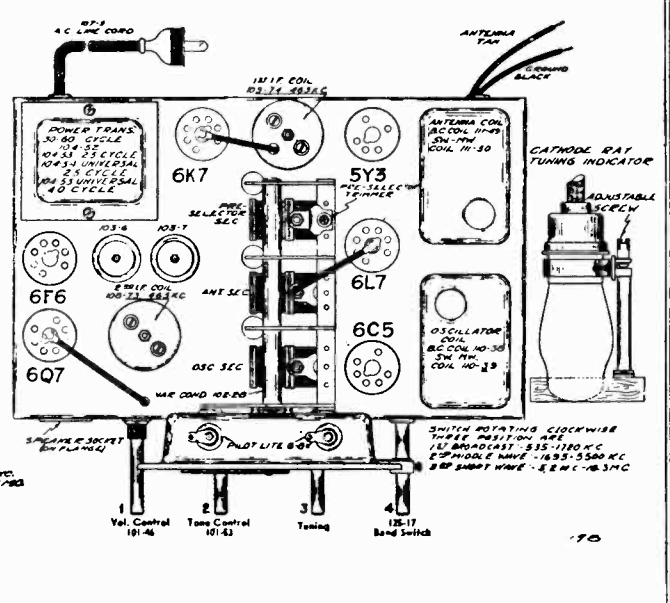
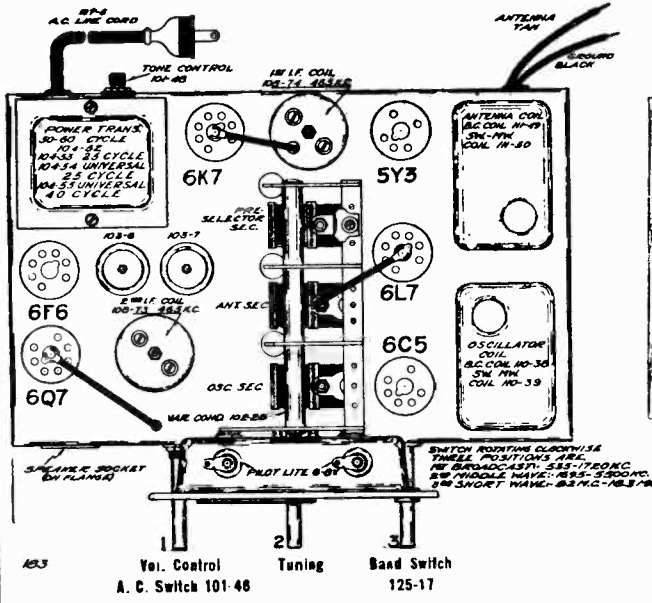
WAVE CHANGE SWITCH P.125-17  
3 POSITIONS ROTATION CLOCKWISE  
POSITIONS ARE  
1ST BROADCAST - 535-1720 K.C.  
2ND MIDDLE WAVE - 1695-8500 K.C.  
3RD SHORT WAVE - 5.2 MC - 18.3 MC.

I. F. FREQUENCY  
465 K. C.

POWER TRANSFORMER  
50-60 CYCLE P.104-52  
25 CYCLE P.104-53  
UNIVERSAL 25 CYCLE  
P.104-54  
UNIVERSAL 40 CYCLE  
P.104-55

See Note on next page for Model 685, Series A

No.	Part No.	Description	R11	130-102	500M Ohm—1/4 Watt—10%—50 Volt—Carbon	C11	100-11	.01	x 400 Volt—25%	
RESISTORS										
R1	130-20	100M Ohm—1/4 Watt—20%—50 Volt—Carbon	R12	106-26	220 Ohm	C12	129-2	.0005	Mica (MT-0)—20%	
R2	130-105	150 Ohm—1/4 Watt—20%—10 Volt—Carbon	R13		32 Ohm	C13	100-11	.01	x 400 Volt—25%	
R3	130-12	50M Ohm—1/4 Watt—20%—10 Volt—Carbon	R14		52 Ohm	C14	100-27	.025	x 600 Volt—25%	
R4	130-104	9M Ohm—1 Watt—20%—100 Volt—Carbon	R15	101-53	50M Ohm—Tone Control	C15	103-8	8 Mfd. x 350 Volt Electrolytic		
R5	130-104	9M Ohm—1 Watt—20%—100 Volt—Carbon	R16	130-110	1 Meg Ohm—1/10 Watt—10%—100 Volt—Carbon	C16	103-7	8 Mfd. x 300 Volt Electrolytic		
R6	130-27	50 Ohm—1/4 Watt—20%—3 Volt—Carbon	CONDENSERS				C17	100-25	.002	x 600 Volt—20%
R7	130-19	1 Meg Ohm—1/4 Watt—20%—100 Volt—Carbon	C1	100-22	.05	x 200 Volt—25%	PARTS			
R8	101-48	1 Meg Ohm—Volume Control	C2	100-20	.1	x 200 Volt—25%	T1	111-49	Broadcast Antenna Coil	
R9	130-4	3 Meg Ohm—1/4 Watt—20%—100 Volt—Carbon	C3	129-30	.00005	Mica (MT-0)—20%	T2	111-50	S.W.—M.W. Antenna Coil	
R10	130-103	100M Ohm—1/4 Watt—20%—50 Volt—Carbon	C4	124-28	Series Pad (80-225)	T3	111-51	B.C.—Pre-Selector Coil Assem.		
			C5	129-56	.00055	Mica (MT-0)—10%	T4	110-38	B.C. Oscillator Coil	
			C6	129-55	.0034	Mica (MW-W)—2 1/2%	T5	110-39	S.W.—M.W. Oscillator Coil	
			C7	129-54	.003	Mica (MW-W)—2 1/2%	T6	108-74	Input I.F.—465 K.C.	
			C8	100-20	.1	x 200 Volt—25%	T7	108-73	Output I.F.—465 K.C.	
			C9	100-22	.05	x 200 Volt—25%	S	125-17	Band Switch	
			C10	129-12	.00025	Mica (MT-0)—20%				



MODEL 686 SERIES A

MODELS 686 SERIES B AND 786 SERIES A

**MODELS 685, Series A  
686, Series A & B  
786, Series A**

**BELMONT RADIO CORP.**

**Alignment, Notes**

**Model 685 Series A Model 686 Series A & B  
Model 786 Series A**

**BROADCAST BAND ALIGNMENT:**

- 535 to 1720 Kilocycles.
- With band changing switch in the broadcast position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to tan antenna lead and black ground lead, make following adjustments:
    - Set external oscillator to 1720 K.C. and adjust broadcast oscillator trimmer to resonance (adjustment number 1; see bottom view of coil assembly, Fig. 3.)
    - Re-set external oscillator to 1550 K.C. rotate variable gang condenser and plates slightly. Adjust broadcast antenna lead and external oscillator trimmer to resonance. (Adjustment number 4) which is mounted on the top of the rear section of the three gang variable tuning condenser to resonance. (See top view of chassis, Fig. 1, for location of this adjustment.)
    - Re-set external oscillator to 600 K.C., and adjust broadcast series pad to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series lead maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 3.)
    - Repeat adjustments "a" and "b" until sensitivity check for tracking and sensitivity at 1000 kilocycles. Under no circumstances bend plates of variable condenser sections to correct tracking.

**SHORT WAVE BAND ALIGNMENT:**

- 5.2 to 18.3 Megacycles.
- With band changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:
    - Move dial pointer to 17 megacycles and adjust short wave oscillator (Adjustment number 3) and short wave antenna (Adjustment number 6) to resonance.
    - Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check sensitivity.
    - Re-set external oscillator and check set at 13.1 megacycles and 5.3 megacycles for band coverage.
- NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. An example of this is an image of a fundamental 18.3 megacycle signal appears near 17.4 megacycles.

**MIDDLE WAVE BAND ALIGNMENT:**

- 1695 to 5500 Kilocycles.
- With band changing switch in the middle wave position, center of its rotation, and with external oscillator set at 5000 kilocycles and connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:
    - Move dial pointer to 5000 kilocycles and adjust middle wave oscillator (Adjustment number 2) and middle wave antenna (Adjustment number 5) to resonance.
    - Re-set external oscillator to 1800 kilocycles and pick up signal by rotating variable condenser and check sensitivity.
    - Re-set external oscillator and check set at 5400 kilocycles and 1700 kilocycles for band coverage.

All voltages as indicated on diagram are measured with 119 volts on the primary of the power transformer.

Resistances of coil windings are indicated in ohms or the schematic circuit diagram.

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

Excessive hum, stuttering, low volume and a reduction in all D.C. voltages is usually caused by a shorted electrolytic condenser; open by-pass condensers frequently cause oscillation and distorted tone.

**ALIGNING INSTRUCTIONS:**

CAUTION—No aligning adjustments should be attempted without first thoroughly checking over all other possible causes such as poor installations, open ground connections, low line voltages, defective tube condensers and resistors. In order to properly align this chassis, an oscillator (generator) is absolutely necessary. No aligning adjustments should be attempted with the chassis in the cabinet. Remove the knobs and the four bolts which are used to fasten the chassis.

All adjustments should be made with a non-metallic screw driver.

**DUMMY ANTENNAS:**

The following dummy antennas are used in aligning and are referred to in the following alignment instructions as "Dummy 1," "Dummy 2," and "Dummy 3."

Dummy 1: (I.F.)—Consists of a 1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mufd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Middle and Short Wave)—Consists of a 1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

**RESONANCE INDICATOR:**

Use as a resonance indicator an output meter connected across the primary of the speaker apparatus or by means of an appropriate test tube. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range meter should be used.

**ALIGNING I.F. TRANSFORMERS; (465 K.C.):**

Part No. 108-73 Output I.F. Transformer.  
Part No. 108-74 Input I.F. Transformer.

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on (the extreme right of its rotation), the band changing switch in the broadcast position, (extreme left of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

- Connect external oscillator set at 465 kilocycles, in series with "Dummy 1," to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-73) to resonance.
- With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap to 6L7 to resonance.
- With oscillator still connected to 6L7, readjust output I.F. transformer (108-73) if necessary.

**ALIGNMENT PROCEDURE**

The following adjustments to be made after the I.F.'s have been aligned as explained above.

**DESCRIPTION**

Model 686 is a six tube A.C. all wave superheterodyne receiver. It has a tuning range of 535 K.C. to 18.3 megacycles in three bands, and is characterized by its exceptional stability, and by a sensitivity both high and uniform, with high signal to noise ratio on all bands. The I.F. frequency used is 465 K.C., which in conjunction with the present circuit, gives high image and I.F. attenuation (free from whistles and telegraphic interference).

A separate oscillator, effective automatic volume control, broad nose sharp skirt selectivity and a very oval arplane dial, are a few of the outstanding features of this model.

**NOTE:**

Model 686 series "A" chassis are equipped with a tone control (No. 101-48) which is mounted on the rear flange of the chassis and has three controls on the front of the chassis, namely, "Volume Control and Switch," "Tuning Control," and "Band Switch."

Model 686 series "B" chassis differs only from series "A" in that the tone control is removed from the rear flange of the chassis and mounted on the front. Series "B" chassis has four controls, namely, "Volume Control and Switch," "Tone Control," "Tuning Control," and "Band Switch."

Model 786 series "A" chassis is the same as model 686 series "B" except that the "Cathode-Ray Tuning Indicator" has been added.

Model 685 is the same chassis as model 686 series "A" except that it has no tone control and the tube complement consists of two metal and four glass tubes. The alignment procedure is the same for all models, and the circuit diagram differs only in that the tone control and cathode-ray tuning indicator is omitted on the model 685, and the cathode-ray tuning indicator only is omitted on the model 686. The tube complement of the model 685 differs, however, circuit constants and values of resistors and condensers are the same in all models.

Transformers are available, and chassis are sometimes equipped with universal transformers for operation on 25, 220 and 250 volts (see instructions), and also sometimes equipped with 25 cycle transformers with 105-115 volt or 220 volt primaries, not universal.

**TUBE COMPLEMENT**

The tube complement of the model 686 and model 786 consists of the latest "Metal-Glass" tubes which are interchangeable with metal tubes. They are as follows:

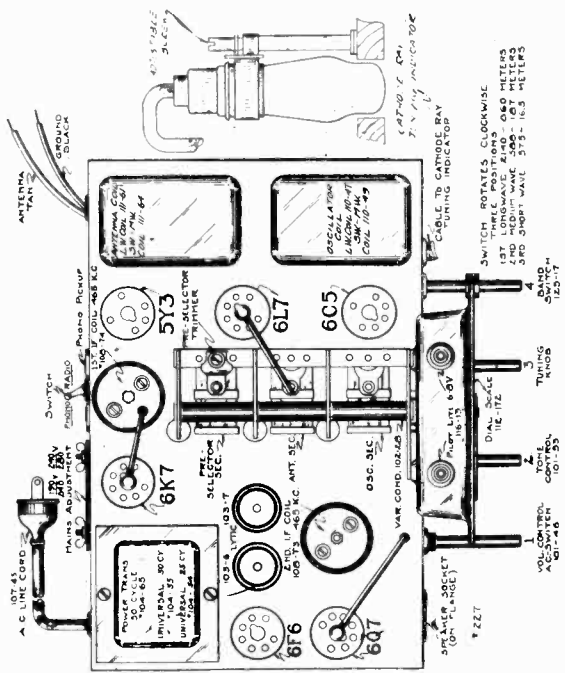
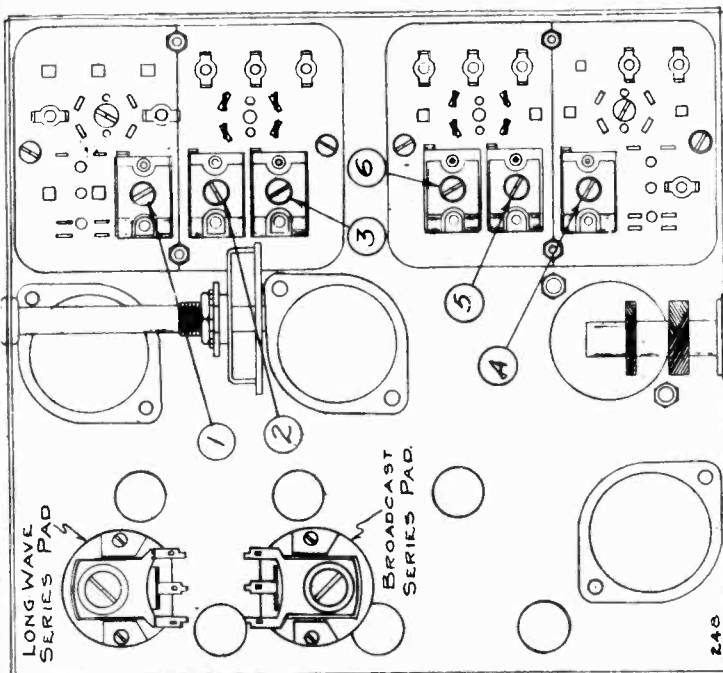
- 1-Type 6L7 Pentagrid Mixer, First Detector.
  - 1-Type 6C5 Oscillator.
  - 1-Type 6K7 Remote Cut-off Pentode, I.F. Amplifier (465 K.C.).
  - 1-Type 6Q7 Duplex Diode Triode Second Detector, A.V.C. and First Audio.
  - 1-Type 6F6 Pentode Output Amplifier.
  - 1-Type 5Y3 or 5W4 High Vacuum Rectifier (Note: 5Y3 a minible "Metal-Glass" only.)
  - 1-Type 6G5 Cathode-Ray Tuning Indicator (Note: 6G5 available in all glass only, and only with model 786.)
- The tube complement of the model 685 is as follows:
- 1-Type 6L7 Pentagrid Mixer, First Detector.
  - 1-Type 6C5 Oscillator.
  - 1-Type 6K7G Remote Cut-off Pentode, I.F. Amplifier (465 K.C.).
  - 1-Type 6Q7G Duplex Diode Triode Second Detector, A.V.C. and First Audio.
  - 1-Type 6F6G Pentode Output Amplifier.
  - 1-Type 5Y3 High Vacuum Rectifier.

**SERVICE NOTES:**

Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt.

BELMONT RADIO CORP.

MODEL 746, Series A  
Schematic, Socket  
Trimmers, Voltage



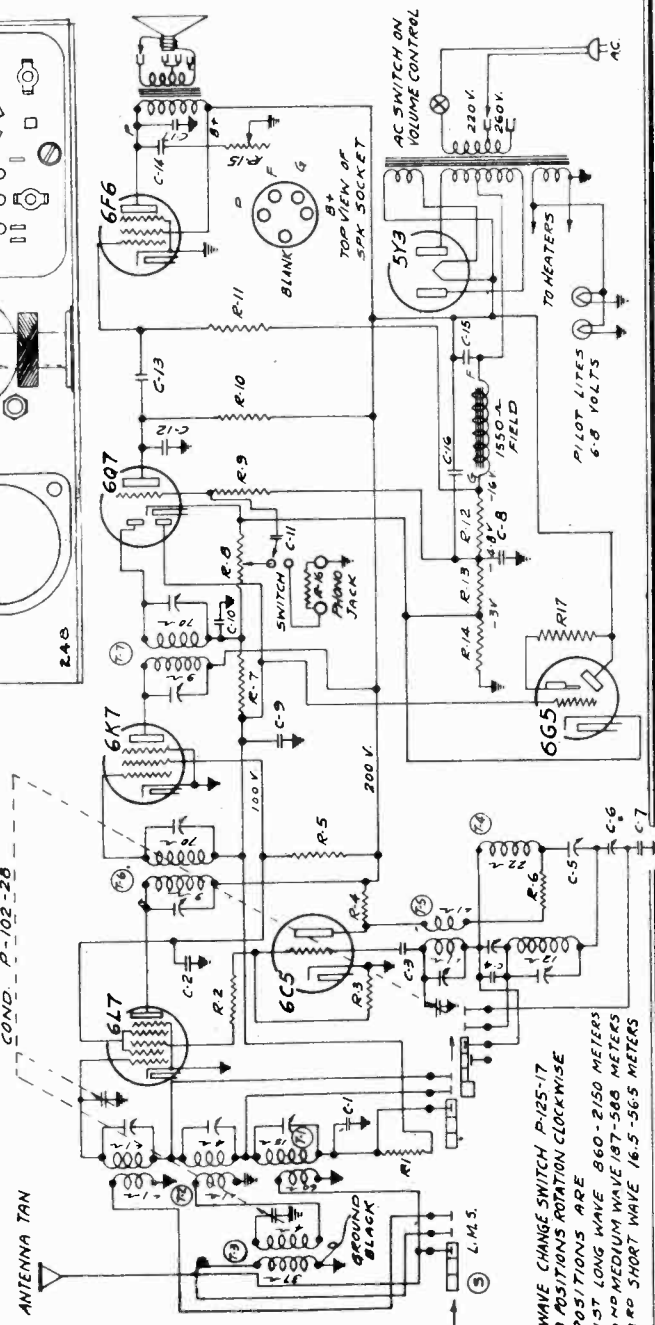
TOP VIEW—FIG. 1

MODEL 746 SERIES A  
I. F. FREQUENCY  
465 K. C. (645.1 Meters)

- TUNING RANGE—**
- Long Wave Band  
500-2150 Meters
  - 350-140 Kilocycles
  - Medium Wave Band  
187-588 Meters
  - 1000-510 Kilocycles
  - Short Wave Band  
16.5-56.5 Meters
  - 18.2-5.3 Megacycles

- POWER TRANSFORMER**
- 50-CYCLE 250-260 V. PEI  
P-104-65
  - UNIVERSAL 25-CYCLE  
P-104-54
  - UNIVERSAL 50 CYCLE  
P-104-55

3 GANG VARIABLE  
COND. P-102-28



- WAVE CHANGE SWITCH P-125-17**
- 9 POSITIONS ROTATION CLOCKWISE POSITIONS ARE
- 1ST LONG WAVE 860-2150 METERS
  - 2ND MEDIUM WAVE 187-588 METERS
  - 3RD SHORT WAVE 16.5-56.5 METERS



MODEL 746, Series A Alignment, Parts

BELMONT RADIO CORP.

Model 746 - Series A

7-Tube Including Cathode-Ray Tuning Indicator 3-Band A. C. Superheterodyne Receiver 190-280 Volts 50 Cycles A. C.

POWER SUPPLY:

This receiver is normally supplied with a transformer for operation on 50 cycles (may be higher in frequency, not lower) and with a primary designed for operation on 190-280 volts.

Mains transformer is provided with two taps, one for voltages 190-240 volts another for voltages 240-280 volts. These taps are accessible upon removing plate fastened with two wing nuts to back of chassis.

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 25 and 50 cycles and with primary taps for 108, 127, 150, 225 and 260 volts (see illustrations).

Should the receiver be equipped with a special transformer, connect primary tap on voltage terminal which corresponds as nearly as possible to the actual mains voltage.

SERVICE NOTES

Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagram.

IN ORDER TO PREVENT SIGNAL FROM ACTING UPON AVC AND AFFECTING ACCURACY OF VOLTAGE MEASUREMENTS, AERIAL AND GROUND LEADS SHOULD BE SHORT CIRCUITED WHILE MAKING MEASUREMENTS.

All voltages are to be measured with 220 volts on the primary of the power transformer.

With special transformers select primary tap nearest to actual mains voltage at time voltage measurements are to be made.

Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagrams.

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

Excessive hum, stuttering, low volume and a reduction in all D.C. voltages is usually caused by a shorted electrolytic condenser, open by-pass condensers frequently cause oscillation and distorted tone.

ALIGNING INSTRUCTIONS Dummy Antennas

The following dummy antennas are used in aligning the receiver, and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1 (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast and long wave)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

TEST FREQUENCIES USED

Table with columns for Kilocycles and Meters, and rows for I. F., Long Wave, Broadcast, and Short Wave.

Resonance Indicator:

Use as a resonance indicator an output meter connected across the primary of the speaker input transformer, or by means of an adapter between the plate and screen terminals of the type 6P6 output tube. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range meter should be used.

CAUTION:

No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltages, defective tubes, condensers and resistors. In order to properly align this chassis, an oscillator (generator) is absolutely necessary. No aligning adjustments should be attempted with the chassis in the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the four bolts by which it is fastened.

ALIGNING I.F. TRANSFORMERS (465 K.C.) (645.1 Meters)

Part No. 108-73 Output I.F. Transformer. Part No. 108-74 Input I.F. Transformer. These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

- 1. With volume control full on (the extreme right of its rotation), the band changing switch in the broadcast position, (center of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments: (a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1" to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-73) to resonance.

ALIGNMENT PROCEDURE

The following adjustments to be made after the I.F.'s have been aligned as explained above.

SHORT WAVE BAND ALIGNMENT:

16.5 Meters (18.2 Mc.) to 56.5 Meters (5.3 Mc.) With band changing switch in the short wave position, extreme right of its rotation, and with the gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

- (a) Set external oscillator to 16.5 meters (18.2 Mc.) and adjust short wave oscillator trimmer (adjustment number 3, see Fig. 2) to resonance. (b) Re-set external oscillator to 17.6 meters (17.0 Mc.) and pick up signal by rotating gang condenser. Adjust short wave antenna trimmer (adjustment number 6) to resonance. (c) Re-set external oscillator to 50 meters (6.0 Mc.) and check for sensitivity.

NOTE: It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. An example of this is an image of a fundamental 18.3 megacycle signal appears near 17.4 megacycles.

MEDIUM OR BROADCAST BAND ALIGNMENT: 588 Meters (510 K.C.) to 187 Meters (1600 K.C.)

With band changing switch in the medium wave position, center of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to tan antenna lead and black ground lead, make following adjustments:

- (a) Set external oscillator to 187 meters (1600 K.C.) and adjust medium wave oscillator trimmer to resonance (adjustment number 2; see bottom view of coil assembly, Fig. 2.) (b) Re-set external oscillator to 214 meters (1400 K.C.), rotate variable gang condenser and pick up signal. Adjust medium wave antenna trimmer (Adjustment number 5) to resonance; also adjust preselector trimmer which is mounted on the top of the rear section of the three gang variable tuning condenser to resonance. (See top view of chassis, Fig. 1, for location of this adjustment.) (c) Re-set external oscillator to 500 meters (600 K.C.), and adjust medium wave series pad to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 2.) (d) Repeat adjustments "a" and "b" until sensitivity is at its maximum. (e) Check for tracking and sensitivity at 300 meters (1000 K.C.) Under no circumstances bend plates of variable condenser sections to correct tracking.

IMPORTANT: This band must be completely rechecked after the long wave band has been adjusted.

LONG WAVE BAND ALIGNMENT: 860 Meters (350 K.C.) to 2150 Meters (140 K.C.)

With band changing switch in the long wave position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to tan antenna lead and black ground lead, make following adjustments:

- (a) Set external oscillator to 860 meters (350 K.C.), and adjust long wave oscillator trimmer to resonance (adjustment number 1; see bottom view of coil assembly, Fig. 2.) (b) Re-set external oscillator to 925 meters (325 K.C.), rotate variable gang condenser and pick up signal. Adjust long wave antenna trimmer (Adjustment number 4) to resonance. (c) Re-set external oscillator to 2000 meters (150 K.C.), and adjust long wave series pad to resonance by rotating condenser to approximately 2000 meters, rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 2.) (d) Repeat adjustments "a" and "b" until sensitivity is at its maximum.

IMPORTANT: This band must be completely rechecked after the medium wave band has been rechecked.

LIST OF REPAIR PARTS

Table with columns for Part No., Description, Circuit Diagram Reference, and lists for CONDENSERS, RESISTORS, COILS, SOCKETS, DIAL PARTS LIST, ASSEMBLIES, DIAL PARTS ONLY, SPEAKER, TRANSFORMERS, and MISCELLANEOUS.

CATHODE RAY TUNING INDICATOR PARTS

Table with columns for Part No., Description, and lists for Cable and Socket Assembly, Metal Oval Escutcheon, Holder and Clamp, Meg. Ohm-1/10 Watt-100-100 Volt Carbon, and Mica condensers.

Table with columns for Tolerance Percent, Color of Dip, and lists for 1%, 5%, 10%, 15%, 20%, and More than 20%.

When ordering condensers, specify part number, model and/or capacitor (per schematic diagram) and model number.

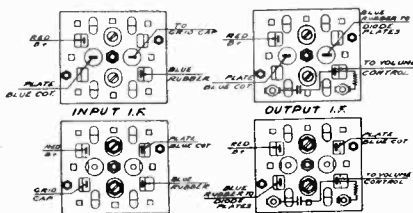
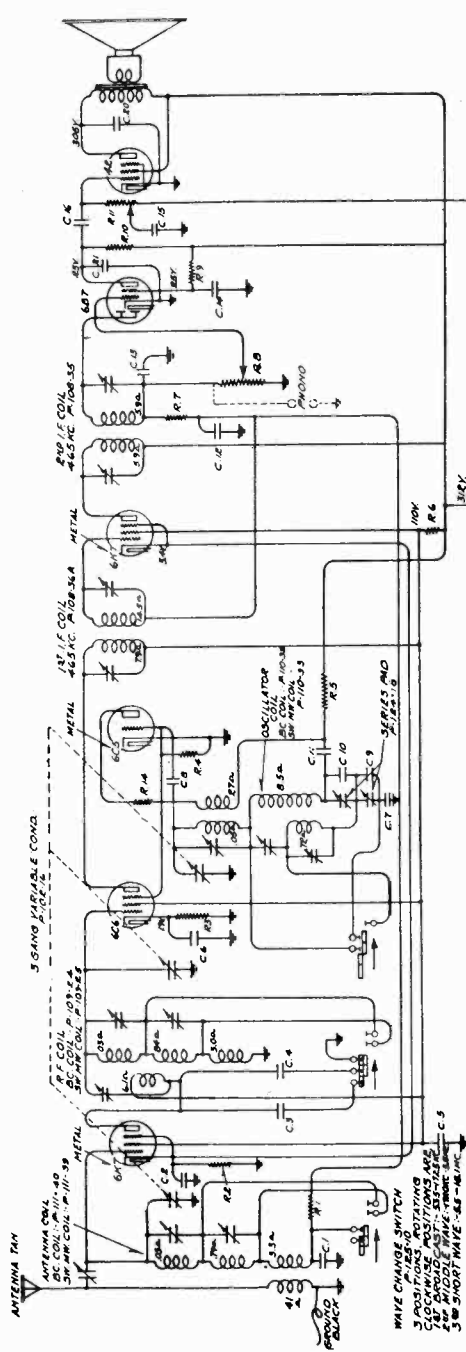
When ordering parts, always specify part and model number as well as serial number of chassis.

WHEN ORDERING SPEAKER PARTS: CONES, FIELD COILS, OUTPUT TRANSFORMERS, SPECIFY PART NUMBER OF SPEAKER AND MAKE.

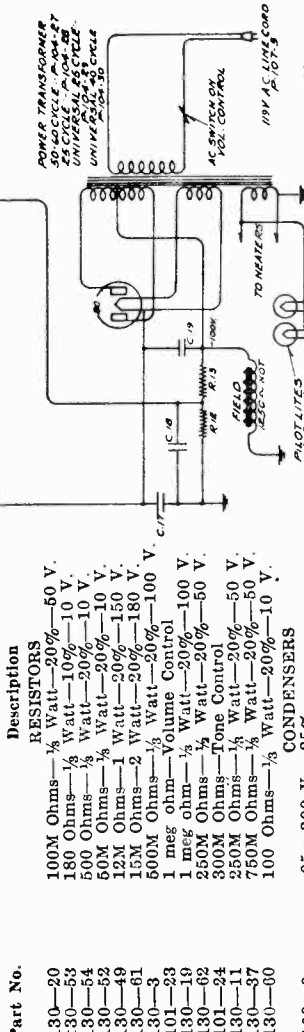
BELMONT RADIO CORP.

MODEL 777, Series C  
Schematic, Voltage  
Changes, Parts

MODEL 777-C



The two upper sketches show connections for the General Mfg. Co. transformers and the lower pair are those of the Meissner Mfg. Co., both types being used in Series A, B, and C.



POWER TRANSFORMER  
50 CYCLE, 100-27  
UNIVERSAL RES CYCLE  
UNIVERSAL RES CYCLE  
UNIVERSAL RES CYCLE

Voltages taken from points indicated to chassis ground. Set not tuned to strong signal.

MISCELLANEOUS

111-40 B.C. Coil  
111-39 S.W.-M.W. Coil  
109-24 R.F. Coil  
100-25 B.C. Coil  
110-32 S.W. M.W. Coil  
110-33 S.W. M.W. Coil  
108-36A Input I.F. Coil 465 Kc.  
108-35 Output I.F. Coil 465 Kc.  
125-10 Dual Series Pad  
114-13 Wave change switch  
114-27 Speaker 6 in. Field 1250 ohms  
104-27 Power Transformer 50-60 Cycle  
104-28 Power Transformer 25 Cycle  
104-29 Power Transformer 25 Cycle Universal  
104-30 Power Transformer 40 Cycle Universal

**RESISTORS**

100M Ohms—1/8 Watt—20%—50 V.
180 Ohms—1/8 Watt—10%—10 V.
500 Ohms—1/8 Watt—20%—10 V.
60M Ohms—1/8 Watt—20%—10 V.
12M Ohms—1 Watt—20%—150 V.
15M Ohms—2 Watt—20%—180 V.
500M Ohms—1/8 Watt—20%—100 V.
1 meg ohm—Volume Control
250M Ohms—1/8 Watt—20%—100 V.
300M Ohms—1/8 Watt—20%—50 V.
250M Ohms—1/4 Watt—20%—50 V.
750M Ohms—1/8 Watt—20%—50 V.
100 Ohms—1/8 Watt—20%—10 V.

**CONDENSERS**

.05 x 200 V.—25%
.25 x 200 V.—25%
.0014 Mica—MW—20%
.0002 Mica—MT—20%
.25 x 400 V.—25%
1 x 200 V.—25%
.0038 Mica—MW—2 1/4 %
.0012 Mica—MW—5%
.00064 Mica—MT—5%
.05 x 400 V.—25%
.00003 Mica—MT—30%
.01 x 400 V.—25%
.05 x 490 V.—25%
16 mfd. x 350 V. Electrolytic
.25 x 200 V.—20%
14 mfd. x 400 V.
.006 x 600 V.—25%
.0001 Mica—MT—20%

C.14, C.18, in Dual Unit.  
P-118-12  
Numbers prefixed by letter "P" are Part Nos.

Voltages taken from points indicated to chassis ground. Set not tuned to strong signal.

only difference being in the way they are connected. The accompanying drawing shows the way each transformer is connected. The i.f. peak is 465 kc.

The resistor, R-5, has been changed from 19,000 ohms to 12,000 ohms and condenser C-9 has been changed from 0.0014 mf. to 0.0012 mf. A trimmer condenser has been shunted across the oscillator coil, having 2 resistance of 0.72 ohm, as it was in the Series A model, but not in the Series B. The frequencies covered by the three bands have been revised; they are now: Broadcast, 535 to 1725 kc.; Middle Wave, 1720 kc. to 5.5 mc., and Short Wave, 5.5 to 18.0 mc.

The chassis layout for the Series C is the same as that shown on Belmont page 6-30 for the Series B, with the following exceptions: 6K7 tubes are used instead of the 6D6 tubes and the 76 is replaced by a 6C5.

The alignment data is the same as that given on page 6-31 of Rider's Volume VI.

Two types of i.f. transformers are used in the production of Model 777 Series A, B, and C. The operation and performance of these coils are identical, the

**MODELS 777, Series A, B, C**  
**Socket, Trimmers, Notes**  
**MODEL 770, Series A**  
**Notes**

**BELMONT RADIO CORP.**

**DESCRIPTION**

**MODEL 777, SERIES C**

The tube complement of this chassis is as follows:

- 1—Type 6K7—remote cut-off pentode R.F. amplifier.
- 1—Type 6C6—pentode first detector.
- 1—Type 6C5—oscillator.
- 1—Type 6K7—remote cut-off pentode I.F. amplifier
- 1—Type 6B7—duplex diode triode second detector, A.V.C. and audio.

- 1—Type 42—pentode output.
- 1—Type 80—high vacuum rectifier.

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 125, 150, 220 and 250 volts (see instructions) and also sometimes equipped with 25 cycle transformers with 105-115 volt or 220 volt primaries, not universals.

**I. F. Freq. 465 Kilocycles**

**INTERMITTENT HUM**

**MODEL 777 SERIES B-C AND 770 SERIES A**

In a few isolated cases, difficulty has been experienced with intermittent hum. This hum usually appears only after the receiver has been allowed to operate for some time and temporarily disappears upon snapping the line switch off and on. This difficulty is generally due to the opening up of the common lead of the dual condenser (1—25—220 V.—part No. 118—12), at the point of attachment of the lead to the condenser foil.

This condenser is indicated as C-18 and C-14 on the circuit diagram, C-14 being the 1 mfd. x 200 V. screen bypass of the 6B7, while C-18 is a .25 mfd. x 200 V. unit acting as a hum filter for the bias voltage of the type 42 tube. Examination of the circuit will show that when this occurs, the entire hum voltage of the filter is impressed on the screen of the type 6B7 tube. When the above difficulty occurs, it is generally advisable to replace the entire unit by two separate units of identical capacity and voltage rating as the components of the original unit.

**SCINTILLATION NOISE DURING WARM-UP OF TUBES**

**MODEL 777 SERIES B-C AND MODEL 770 SERIES A**

When a model 777 or model 770 receiver is first turned on, a frying noise will generally be noted. This noise continues until the tubes warm-up and the receiver begins to draw current. It is created by scintillation of the electrolytic filter condensers. During the time the tubes are warming up, they draw no current from the rectifier causing the voltage across the first condenser to exceed the scintillating voltage of the electrolytic condenser. The condensers used however are of the regulating type and are purposely designed in such a manner that during the heating period of the tubes, the condensers draw considerable leakage current, thereby loading the rectifier and preventing excessive voltage on other circuit components. The condensers are designed to withstand this temporary overload without detrimental effect on the life of the electrolytic or the receiver. **DO NOT THEREFORE REPLACE CONDENSERS BECAUSE OF THIS SCINTILLATION NOISE. RATHER CONSIDER IT AS A SIGN OF NORMAL OPERATION.**

**I.F. TRANSFORMERS**

**MODEL 777 SERIES A-B-C**

Two types of I.F. transformers were used in the production of Model 777 Series A-B-C. The operation and performance of these coils are identical, the only difference being in the manner in which they are connected. Following are drawings of both types of I.F. transformers showing connections for input and output I.F. transformers.

**For drawings, see previous page**  
**Aligning procedure same as for Series B.**

**SERVICE NOTES**

Voltages taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagrams

**IN ORDER TO PREVENT SIGNAL FROM ACTING UPON AVC AND AFFECTING ACCURACY OF VOLTAGE MEASUREMENTS, AERIAL AND GROUND LEADS SHOULD BE SHORT CIRCUITED WHILE MAKING MEASUREMENTS.**

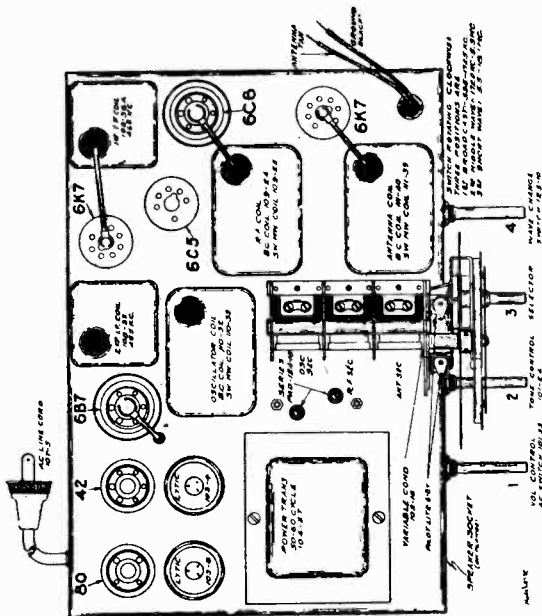
All voltages are to be measured with 119 volts on the primary of the power transformer.

Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagrams.

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

Excessive hum, stuttering, low volume and a reduction in all D.C. voltages is usually caused by a shorted electrolytic condenser, open by-pass condensers frequently cause oscillation and distorted tone.

**Top View Model 777, Series C**

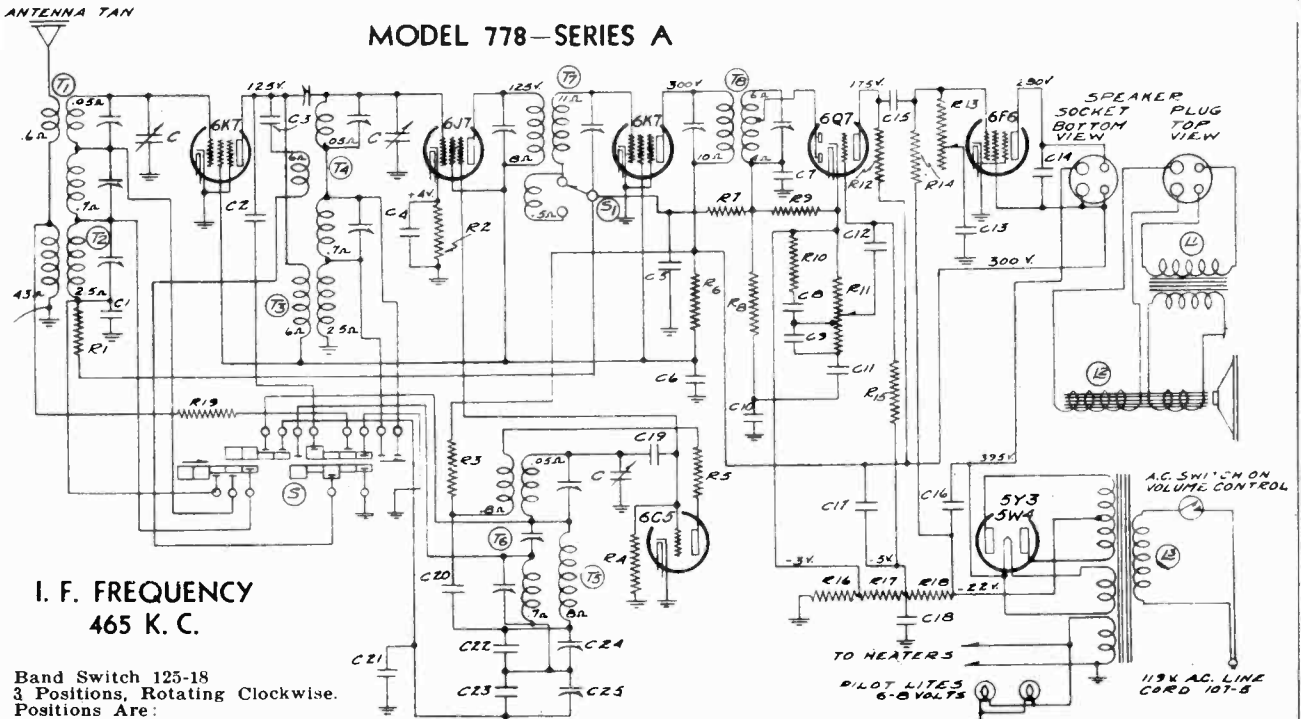


**ALIGNING INSTRUCTIONS—Aligning procedure same as for Series B.**

BELMONT RADIO CORP.

MODEL 778, Series A  
Schematic, Socket  
Trimmers, Parts

MODEL 778—SERIES A



I. F. FREQUENCY  
465 K. C.

Band Switch 125-18  
3 Positions, Rotating Clockwise.  
Positions Are:  
1st Broadcast:—535-1720 K.C.  
2nd Middle Wave:—1690-5300 K.C.  
3rd Short Wave:—5.2-18.1 M.C.

RESISTORS

No.	Part No.	Description
R1	130-20	100M ohms—1/3 Watt—20%—50 Volt—Carbon
R2	130-43	2500 ohms—1/3 Watt—20%—20 Volt—Carbon
R3	130-77	10M ohms—1 Watt—20%—100 Volt—Carbon
R4	130-12	50M ohms—1/3 Watt—20%—20 Volt—Carbon
R5	130-60	100 ohms—1/3 Watt—20%—10 Volt—Carbon
R6	130-88	10M ohms—2 Watt—20%—Wire Wound
R7	130-3	500M ohms—1/3 Watt—20%—100 Volt—Carbon
R8	130-20	100M ohms—1/3 Watt—20%—50 Volt—Carbon
R9	130-11	250M ohms—1/3 Watt—20%—50 Volt—Carbon
R10	130-22	5000 ohms—1/3 Watt—20%—10 Volt—Carbon
R11	101-47	1 meg ohm—(Volume Control with A.C. Switch)
R12	130-20	100M ohms—1/3 Watt—20%—50 Volt—Carbon
R13	101-38	100M ohms—(Tone Control with Fidelity Switch)

R14	130-3	500M ohms—1/3 Watt—20%—100 Volt—Carbon
R15	136F-38	2 meg ohm—1/3 Watt—20%—100 Volt—Carbon
R16	106-27	38 ohms—10% Muter Resistor
R17	106-27	28 ohms—10% Muter Resistor
R18	106-27	220 ohms—10% Muter Resistor
R19	130-27	50 ohms—1/3 Watt—20%—Carbon

Note: R16, R17, R18 in one unit—part No. 106-27

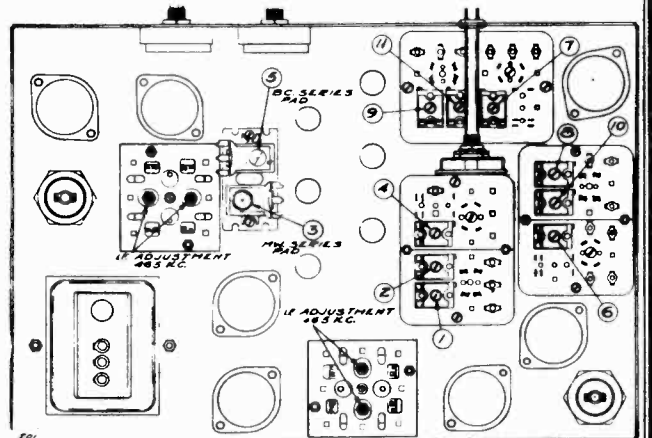
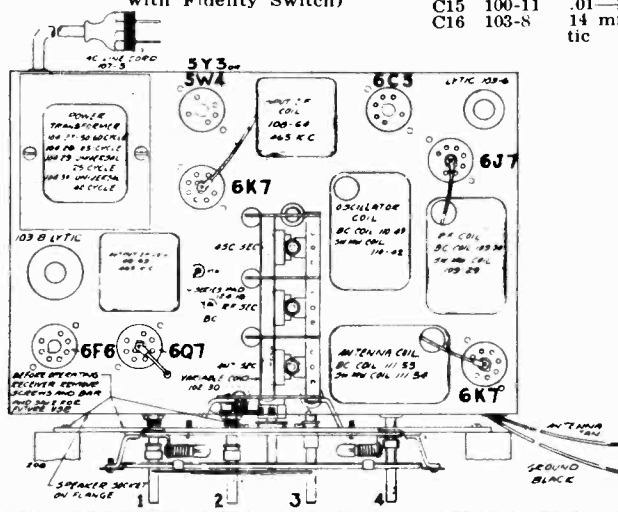
CONDENSERS		
C	102-30	One Section of three gang variable condenser.
C1	100-9	.05—200 Volt—25%
C2	129-59	.0003 Mica—MT—0—5%
C3	129-39	.00005 Mica—MT—0—20%
C4	100-9	.05—200 Volt—25%
C5	100-9	.05—200 Volt—25%
C6	100-24B	.25—400 Volt—20%
C7	129-5	.0001 Mica—MT—0—20%
C8	100-9	.05—200 Volt—25%
C9	129-2	.0005 Mica—MT—0—20%
C10	129-60	.00015 Mica—MT—0—20%
C11	100-9	.05—200 Volt—25%
C12	100-11	.01—400 Volt—25%
C13	101-26	.02—400 Volt—25%
C14	100-32	.0005—1000 Volt—20%
C15	100-11	.01—400 Volt—25%
C16	103-8	14 mfd.—400 Volt Electrolytic

C17	103-6	8 mfd.—350 Volt Electrolytic
C18	100-6B	.25—200 Volt—20%
C19	129-31	.00025 Mica—MT—0—15%
C20	100-13	.05—400 Volt—25%
C21	129-54	.003 Mica—MW—W—2 1/2%
C22	129-57	.0005 Mica—MT—0—5%
C23	129-58	.0021 Mica—MW—W—5%
C24	124-18	Padder, 175 mmf. working capacity.
C25	124-18	Padder, 300 mmf. working capacity.

Note: C24, C25 in one unit—part No. 124-18.

PARTS

T1	111-54	M.W. and S.W. Antenna Coil Assem.
T2	111-55	Broadcast Ant. Coil Assem.
T3	109-30	Broadcast R.F. Coil Assem.
T4	109-29	M.W. and S.W. R.F. Coil Assem.
T5	110-43	Broadcast Osc. Coil Assem.
T6	110-42	M.W. and S.W. Osc. Coil Assem.
T7	108-64	Input I.F. Coil—465 Kc.
T8	108-63	Output I.F. Coil—465 Kc.
L1		Output Trans. (on speaker).
L2	114-36	3" Speaker (Field Resistance 1250 Ohms)
L3	104-27	Power Transformer (50-60 Cycle)
S	125-18	Band Switch
S1	101-38	Fidelity Switch on Tone Control



**MODEL 778, Series A**  
**Alignment, Notes**

**BELMONT RADIO CORP.**

- (a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1", to the control grid cap of the type 6K7 tube, located between the two I.F. transformers, and adjust the output I.F. transformer (108-63) to resonance.
- (b) With "Dummy 1" still connected, move oscillator output clip from grid of 6K7 to grid cap to 6J7 and adjust input I.F. transformer (108-64) to resonance.
- (c) With oscillator still connected to 6J7, re-adjust output I.F. transformer if necessary.

**ALIGNMENT PROCEDURE**

The following adjustments to be made after the I.F.'s have been aligned as explained above

**BROADCAST BAND ALIGNMENT:**

- 1. With wave changing switch in the broadcast position, extreme left of its rotation, and with external oscillator, set at 600 kilocycles and connected in series with "Dummy 2", to the fan antenna and black ground lead, make the following adjustments:
  - (a) Adjust broadcast series pad (adjustment number 5) to resonance with oscillator. Keep set in tune with oscillator by slowly rocking to and fro the variable condenser until maximum output is obtained. Note: This adjustment is accessible from the top of the chassis and is located between the variable condenser and the 108-63 output I.F. transformer. See top view, Fig. 3.
  - (b) Re-set external oscillator to 1400 K.C. move dial pointer to 1400 K.C. and adjust oscillator (adjustment number 4), R.F. (adjustment number 6) and antenna (adjustment number 7) to resonance. See bottom view for location of these adjustments, Fig. 1.
  - (c) Repeat adjustments "a" and "b" until sensitivity is at its maximum.

**NOTE: IT IS EXTREMELY NECESSARY IN MAKING ALL OF THESE ADJUSTMENTS THAT THE FUNDAMENTAL OSCILLATOR SIGNAL BE TUNED IN AND NOT THE IMAGE FREQUENCY WHICH WILL FALL BELOW THE FUNDAMENTAL.**

**SHORT WAVE BAND ALIGNMENT:**

- 1. With wave changing switch in the short wave position, extreme right of its rotation, and with external oscillator set at 17 megacycles and connected in series with "Dummy 3" to the fan antenna and black ground lead, make the following adjustments:
    - (a) Move dial pointer to 17 megacycles and adjust short wave oscillator (adjustment number 1), short wave R.F. (adjustment number 8) and short wave antenna (adjustment number 9) to resonance.
    - (b) Re-set external oscillator to 6 megacycles and pick up signal by rotating variable condenser and check for sensitivity.
- INTERMEDIATE BAND ALIGNMENT:**
- 1. With wave changing switch in the intermediate wave position, center of its rotation, and with external oscillator set at 1800 K.C. and connected in series with "Dummy 3" to the fan antenna and black ground lead, make the following adjustments:
    - (a) Rotate variable condenser to approximately 1800 K.C. tune in oscillator signal and adjust S.W. series pad (adjustment number 3) (see top view) to resonance. Slowly rock condenser to and fro while making this adjustment to be sure maximum output is obtained.
    - (b) Set external oscillator at 5 M.C. rotate condenser, pick up signal and adjust intermediate wave R.F. (adjustment number 10), intermediate wave antenna (adjustment number 11) and intermediate wave oscillator (adjustment number 2) to resonance.
    - (c) Re-check broadcast alignment and if it is found necessary to re-adjust either R.F. or antenna trimmer, repeat the 17 M.C. short wave and 5 M.C. intermediate wave adjustments.

**NEVER ATTEMPT TO REPLACE FUSE WITHOUT FIRST DISCONNECTING POWER. NEVER REPLACE WITH FUSE OTHER THAN 2 AMPERE RATING.**

Volts taken from different points of circuit to chassis are measured with volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagram.

**IN ORDER TO PREVENT SIGNAL FROM ACTING UPON AVC AND AFFECTING ACCURACY OF VOLTAGE MEASUREMENTS, AERIAL AND GROUND LEADS SHOULD BE SHORT CIRCUITED WHILE MAKING MEASUREMENTS.**

All voltages are to be measured with 110 volts on the primary of the power transformer.

Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagrams.

To check for open by-pass condensers, short each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located. Excessive hum, stuttering, low volume and a reduction in all D.C. voltages is usually caused by a shorted electrolytic condenser, open by-pass condensers frequently cause oscillation and distorted tone.

**ALIGNING INSTRUCTIONS**

**Dummy Antennas**

The following dummy antennas are used in aligning, and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a 1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Intermediate and Short Wave)—Consists of a 1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

**Resonance Indicator:**

Use as a resonance indicator an output meter connected across the primary of the speaker input transformer or by means of an adapter between the plate and screen terminals of the type 6F6 output tube. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range meter should be used.

**CAUTION:**

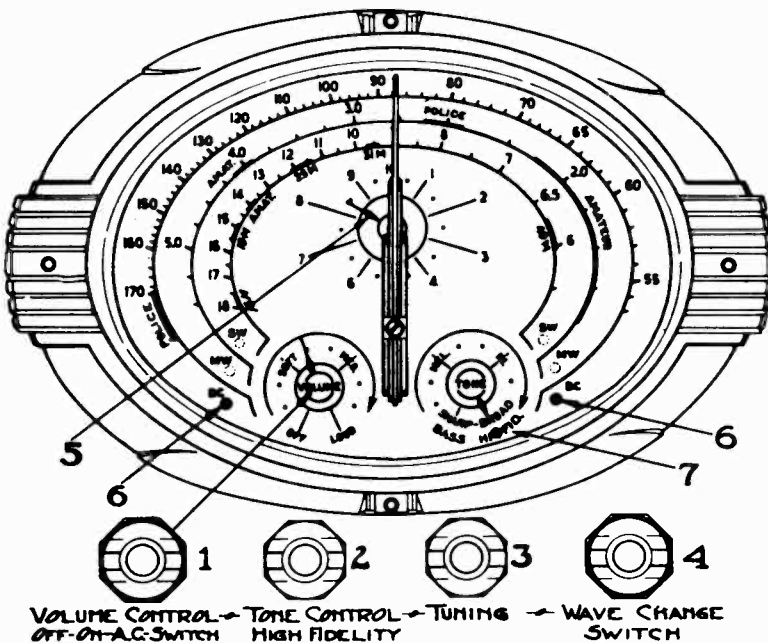
No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltages, defective tubes, condensers and resistors. In order to properly align this chassis, an oscillator (generator) is absolutely necessary. No aligning adjustments should be attempted with the chassis in the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the four bolts by which it is fastened.

**ALIGNING I.F. TRANSFORMERS (465 K.C.)**

Part No. 108-63 Output I.F. Transformer  
Part No. 108-64 Input I.F. Transformer

These I.F. transformers have two adjustments, both of which are accessible from the underside of chassis (see bottom view).

- 1. With volume control full on, (the extreme right of its rotation), the wave changing switch in the broadcast position (extreme left of its rotation), the tone control on "Hi," part of the sharp position (as much right rotation as possible without overloading the Hi Fidelity switch) and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:



**DESCRIPTION**

The tube complement of this chassis is as follows:

- 1—Type 6K7 Remote cut-off pentode R.F. amplifier
  - 1—Type 6J7—pentode first detector.
  - 1—Type 6C5 Oscillator
  - 1—Type 6K7 Remote cut-off pentode I.F. amplifier (465 K.C.) audio
  - 1—Type 6Q7 duplex diode pentode second detector, A.V.C. and audio
  - 1—Type 6F6—pentode output amplifier.
  - 1—Type 5Y3 or 5W4—high vacuum rectifier.
- Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 125, 150, 220 and 250 volts (see instructions) and also sometimes equipped with 25 cycle transformers with 105-115 volt or 220 volt primaries, not universal.

**SERVICE NOTES**

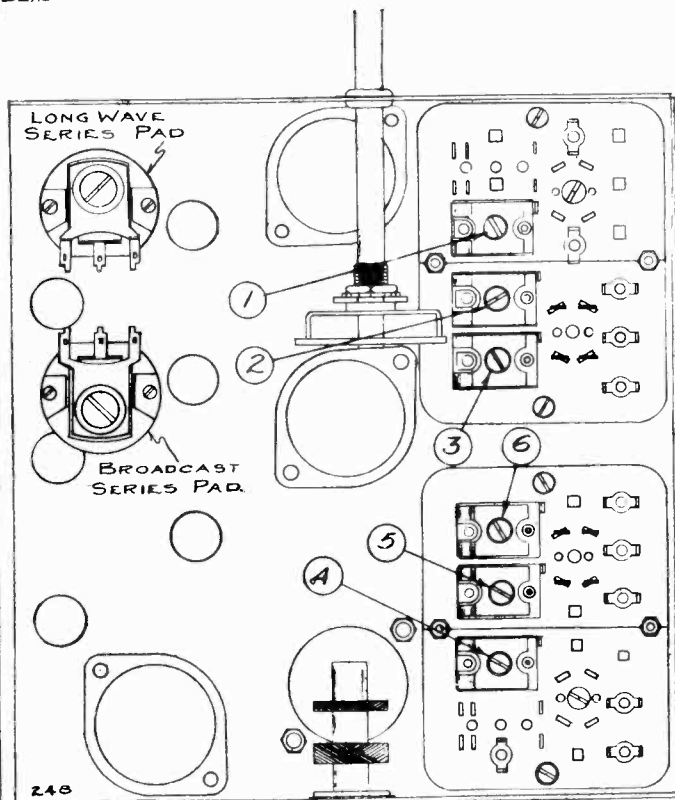
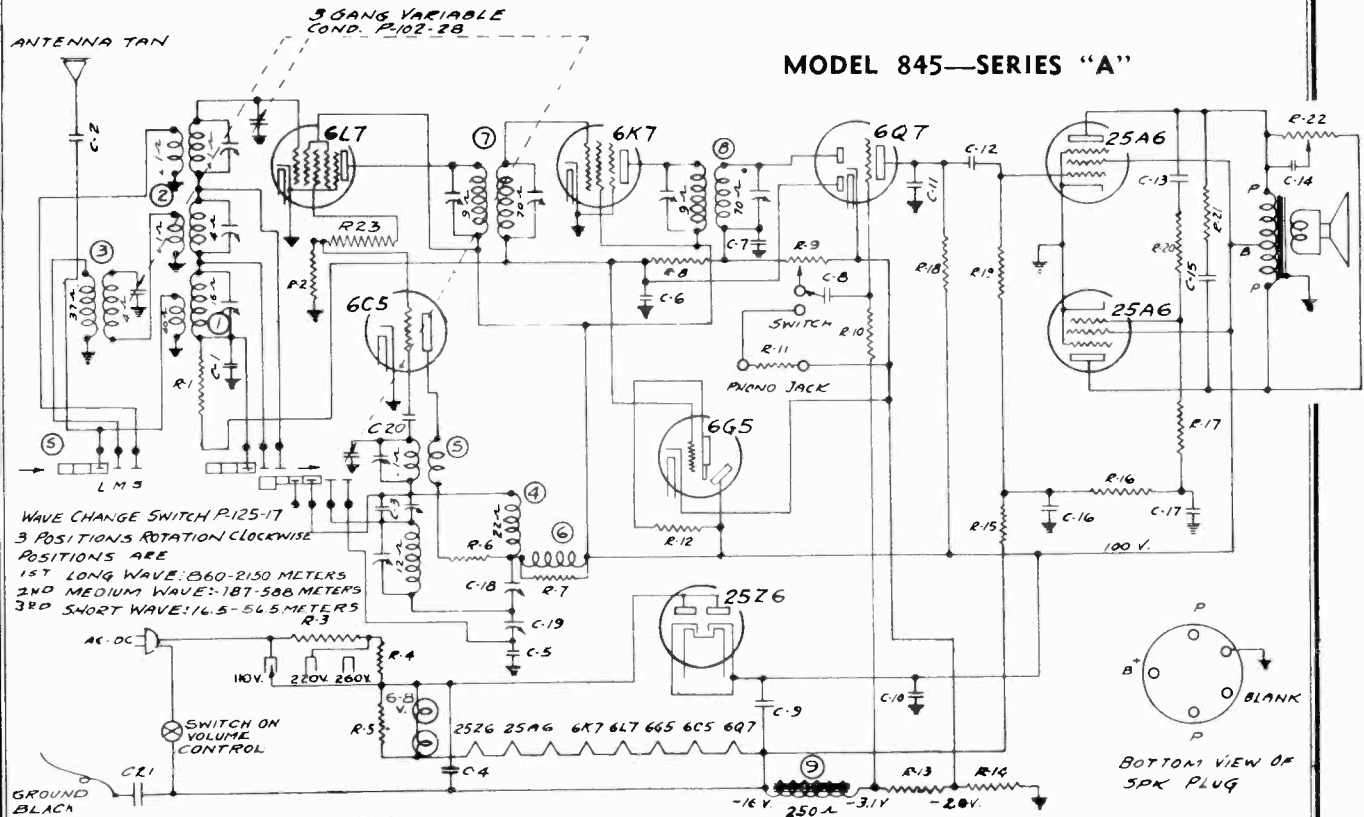
**NOTE:** Chassis with serial numbers from 6C229300 to 6D242726 were equipped with a fuse in the primary circuit of the power transformer and supplied with a type 5Z4 rectifier tube.

This fuse is made accessible for replacement by removing fuse cover located on back flange of chassis; replace only with a 2 ampere fuse. If replacement fuse blows out, check tubes, (particularly 5Z4 rectifier) circuit, repair or replace defective tubes or parts.

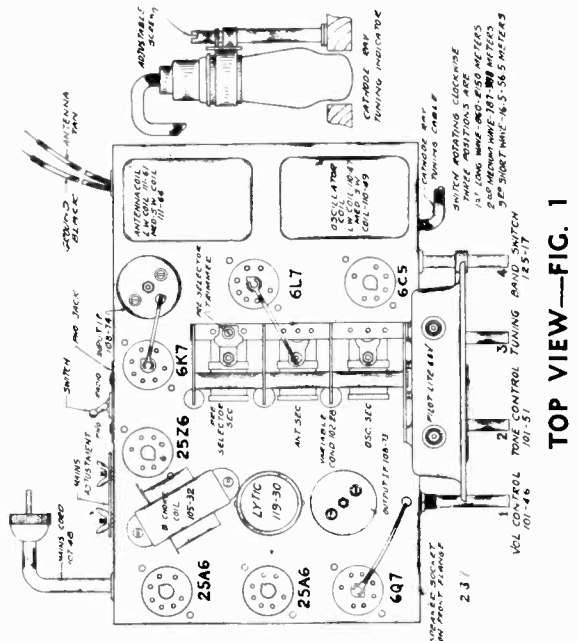
**MODEL 778 - Series A**  
**7-Tube A. C. All Wave**  
**3-Band High Fidelity Superheterodyne Receiver**

BELMONT RADIO CORP.

MODEL 845, Series A  
Schematic, Socket  
Trimmers



I. F. FREQUENCY  
465 K. C. (645 1 Meters)



Form 8017 3M H.36

**MODEL 845, Series A  
Alignment, Notes, Parts**

**BELMONT RADIO CORP.**

**Model 845 - Series A**

**8-Tube Including Cathode-Ray Tuning Indicator  
3-Band A. C.-D. C. Superheterodyne Receiver  
110-920-260 Volts A. C. (Any Cycles) or D. C.**

**TUBES:**

The tube complement of this chassis consists of the latest metal type tubes, which are interchangeable with "metal-glass" types, or glass tubes with metal bases.

The type and function of each tube is as follows:

- 1—Type 6L7 Pentagrid Mixer, First Detector.
  - 1—Type 6C5 Oscillator.
  - 1—Type 6K7 Remote Cut-Off Pentode, I. F. Amplifier (465 K.C.)
  - 1—Type 6Q7 Duplex Diode Triode Second Detector, A.V.C. and First Audio.
  - 2—Type 25A6 Output Pentodes in Push Pull.
  - 1—Type 25Z6 High Vacuum Rectifier.
  - 1—Type 6G5 Cathode-Ray Tuning Indicator.
- (Note—6G5 available in all glass only.)

**POWER SUPPLY:**

This receiver is supplied for operation on 110-220-260 volts A.C. (any cycle) or D.C.

Three taps are provided for mains voltages. These taps are accessible upon removing the plate fastened with two wing nuts to back of chassis.

Set the tap at the voltage supplied by the local power company.

This is important.

**NOTE:**

If set does not operate in one minute on Direct Current reverse plug in receptacle.

**SERVICE NOTES**

Voltages taken from different points of circuit to chassis are measured with Volume control full on, all tubes in their sockets and speaker connected, with a volt meter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagram.

**IN ORDER TO PREVENT SIGNAL FROM ACTING UPON AVC AND AFFECTING ACCURACY OF VOLTAGE MEASUREMENTS, AERIAL AND GROUND LEADS SHOULD BE SHORT CIRCUITED WHILE MAKING MEASUREMENTS.**

All voltages as indicated on diagram are measured with 119 volt A.C. or D.C. mains.

With special mains voltages select tap nearest to actual mains voltage at time voltage measurements are to be made.

Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagrams.

To check for open by-pass condensers, shunt each condenser with another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located.

Excessive hum, stuttering, low volume and a reduction in all D.C. voltages is usually caused by a shorted electrolytic condenser, open by-pass condensers frequently cause oscillation and distorted tone.

**ALIGNING INSTRUCTIONS**

**Dummy Antennas**

The following dummy antennas are used in aligning the receiver, and are referred to in the following alignment instructions as "Dummy 1", "Dummy 2", and "Dummy 3".

Dummy 1: (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator.

Dummy 2: (Broadcast and long wave)—Consists of a 200 mfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator.

**TEST FREQUENCIES USED**

	Kilocycles	Meters
I. F.	465	645.1
Long Wave	150	2000
	350	860
	325	925
Broadcast	600	500
	1400	214
	1600	187
	6800	50.0
Short Wave	17000	17.6
	18200	16.5

**Resonance Indicator:**

Use as a resonance indicator an output meter connected across the primary of the speaker input transformer or by means of an adapter between the plate and cathode terminals of the 5 prong speaker socket. Maximum deflection of the meter indicates resonance. Use only enough signal to get a readily readable output. A low range output meter or the low scale of a multi-range meter should be used.

**CAUTION:**

No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltages, defective tubes, condensers and resistors. In order to properly align this chassis, an oscillator (generator) is absolutely necessary. No aligning adjustments should be attempted with the chassis in the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the four bolts by which it is fastened.

**ALIGNING I.F. TRANSFORMERS  
(465 K.C.) (645.1 Meters)**

Part No. 108-73 Output I.F. Transformer.  
Part No. 108-74 Input I.F. Transformer.

These I.F. transformers have two adjustments, both of which are accessible from the top of chassis (see top view).

1. With volume control full on (the extreme right of its rotation), the band changing switch in the broadcast position, (center of its rotation), and with the variable condenser set to approximately 1400 kilocycles, make the following adjustments:

(a) Connect external oscillator set at 465 kilocycles, in series with "Dummy 1," to the control grid cap of the type 6K7 tube, and adjust the output I.F. transformer (No. 108-73) to resonance.

(b) With "Dummy 1" still connected, move oscillator output clip from grid pin 6K7 to grid pin 6L7 and adjust input I.F. transformer (No. 108-74) to resonance.

(c) With oscillator still connected to 6L7, readjust output I.F. transformer (108-73) if necessary.

**ALIGNMENT PROCEDURE**

The following adjustments to be made after the I.F.'s have been aligned as explained above.

**SHORT WAVE BAND ALIGNMENT:  
16.5 Meters (18.2 Mc.) to 56.5 Meters (5.3 Mc.)**

1. With band changing switch in the short wave position, extreme right of its rotation, and with the gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 3" to the tan antenna and black ground lead, make the following adjustments:

(a) Set external oscillator to 16.5 meters (18.2 Mc.) and adjust short wave oscillator trimmer (adjustment number 3, see Fig. 2) to resonance.

(b) Re-set external oscillator to 17.6 meters (17.0 Mc.) and pick up signal by rotating gang condenser. Adjust short wave antenna trimmer (adjustment number 6) to resonance.

(c) Re-set external oscillator to 50 meters (6.0 Mc.) and check for sensitivity.

**NOTE:** It is extremely necessary in making all of these adjustments that the fundamental oscillator signal be tuned in and not the image frequency which will fall below the fundamental. An example of this is an image of a fundamental 18.3 megacycle signal appears near 17.4 megacycles.

**MEDIUM OR BROADCAST BAND ALIGNMENT:  
588 Meters (510 K.C.) to 187 Meters (1600 K.C.)**

1. With band changing switch in the medium wave position, center of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to tan antenna lead and black ground lead, make following adjustments:

(a) Set external oscillator to 187 meters (1600 K.C.) and adjust medium wave oscillator trimmer to resonance (adjustment number 2; see bottom view of coil assembly, Fig. 2.)

(b) Re-set external oscillator to 214 meters (1400 K.C.), rotate variable gang condenser and pick up signal. Adjust medium wave antenna trimmer (Adjustment number 5) to resonance; also adjust preselector trimmer which is mounted on the top of the rear section of the three gang variable tuning condenser to resonance. (See top view of chassis, Fig. 1, for location of this adjustment.)

(c) Re-set external oscillator to 500 meters (600 K.C.), and adjust medium wave series pad to resonance by rotating condenser to approximately 600 K.C., rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 2.)

(d) Repeat adjustments "a" and "b" until sensitivity is at its maximum.

(e) Check for tracking and sensitivity at 300 meters (1000 K.C.) Under no circumstances bend plates of variable condenser sections to correct tracking.

**IMPORTANT:** This band must be completely rechecked after the long wave band has been adjusted.

**LONG WAVE BAND ALIGNMENT:  
860 Meters (350 K.C.) to 2150 Meters (140 K.C.)**

1. With band changing switch in the long wave position, extreme left of its rotation, and with gang condenser in its minimum capacity position, plates entirely out of mesh, and with external oscillator connected in series with "Dummy 2" to tan antenna lead and black ground lead, make following adjustments:

(a) Set external oscillator to 860 meters (350 K.C.) and adjust long wave oscillator trimmer to resonance (adjustment number 1; see bottom view of coil assembly, Fig. 2.)

- (b) Re-set external oscillator to 925 meters (325 K.C.), rotate variable gang condenser and pick up signal. Adjust long wave antenna trimmer (Adjustment number 4) to resonance.
- (c) Re-set external oscillator to 2000 meters (150 K.C.), and adjust long wave series pad to resonance by rotating condenser to approximately 2000 meters, rocking it slowly to and fro until by adjusting series pad maximum output is attained. This adjustment is located on the bottom of the chassis directly under the variable gang condenser. (See bottom view of chassis, Fig. 2.)
- (d) Repeat adjustments "a" and "b" until sensitivity is at its maximum.

**IMPORTANT:** This band must be completely rechecked after the medium wave band has been rechecked.

**LIST OF REPAIR PARTS**

Serial No. 6H374800 and up

Part No.	Description	Circuit Diagram Reference
<b>CONDENSERS</b>		
100-11	.01 x 400 Volt Tubular	C2, C8, C12, C13, C14
100-20	.1 x 200 Volt Tubular	C17
100-22	.05 x 200 Volt Tubular	C1
100-26	.02 x 400 Volt Tubular	C6
100-36	.01 x 1400 Volt Tubular (bare leads)	C21
100-39	.1 x 400 Volt Tubular (with bracket)	C4
100-43	.25 x 200 Volt Tubular (with bracket)	C16
100-44	.003 x 600 Volt Tubular	C15
199-30	Dual 26 mfd. Electrolytic Filter	C9, C10
129-12	.00025 Mica—Type MT—20%	C7, C11
129-39	.00005 Mica—Type MT—20%	C20
129-54	.003 Mica—Type MW—2 1/2%	C5
129-67	.00004 Mica—Type MT—10%	C3
<b>RESISTORS</b>		
106-30	100 ohm (R4), 40 ohm (R5) Metal Clad	R4, R5
130-4	3 Megohm—1/3W—20%—100V Carbon	R8, R10
130-11	250 M ohm—1/3W—20%—50V Carbon	R15, R16
130-12	1 M ohm—1/3W—20%—20V Carbon	R2, R7
130-17	.5 M ohm—1/3W—20%—20V Carbon	R21
130-20	100 M ohm—1/3W—10%—50V Carbon	R1, R11
130-27	50 ohm—1/3W—20%—3V Carbon	R6, R14
130-56	100 ohm—1/3W—20%—10V Carbon	R23
130-66	75 M ohm—1/3W—10%—50V Carbon	R17
130-100	150 M ohm—1/3W—20%—50V Carbon	R18
130-102	500 M ohm—1/3W—10%—50V Carbon	R19, R20
130-110	1 Megohm—1/10W—10%—100V Carbon	R12
130-128	20 ohm—1/3W—20%—10V Carbon	R13
<b>COILS</b>		
108-73	Output I.F. Coil Assembly complete with can	8
108-88	Input I.F. Coil Assembly complete with can	7
110-42	Oscillator Choke coil	6
110-47	Long Wave Oscillator Coil Assembly, less can	4
110-49	Broadcast and Short Wave Oscillator Coil Assembly, less can	5
111-61	Long Wave Antenna Coil Assembly, less can	1
111-62	Antenna Preselector Coil Assembly	3
111-64	Broadcast and Short Wave Antenna Coil Assembly, less can	2
<b>SOCKETS</b>		
121-8	Five Prong Socket—Marked "Spkr"	
121-12	Seven Prong Socket—Marked "6K7"	
121-17	Six Prong Socket—Marked "6C5"	
121-18	Seven Prong Socket—Marked "6L7"	
121-26	Seven Prong Socket—Marked "6Q7"	
121-31	Seven Prong Socket—Marked "25Z6"	
121-32	Seven Prong Socket—Marked "25A6"	
<b>SPEAKER</b>		
114-49	Six Inch Permanent Magnet Dynamic	
<b>MISCELLANEOUS</b>		
101-46	Volume Control and Switch (1 megohm)	R9
101-51	Tone Control (300 M. ohm)	R22
102-28	Three Gang Variable Condenser	
105-32	250 ohm Filter Choke	
107-48	250 ohm Special Line Cord	R3
112-169	Phono-Radio Indicator Plate	
115-35	Antenna, Oscillator Shield	
115-54	Mains Cover Plate	
121-30	Three Prong Socket Assembly for Mains	
124-31	J. S. Long Wave Series Pad—300 mmf	C18
124-32	J. S. Broadcast Series Pad—565 mmf	C19
125-17	Band Switch	S
125-22	Phono-Radio Toggle Switch	
125-51	Small Wood Knob (with spring)	
133-24	Wing Nut for Mains Cover Plate (115-54)	
171-2	Phono Jack Assembly	
<b>CATHODE RAY TUNING INDICATOR PARTS</b>		
187-49	Cable and Socket Assembly	
112-158	Metal Oval Escutcheon	
147-57	Holder and Clamp	
180-110	1 Meg. Ohm—1/10 Watt—10%—100 Volt Carbon	
<b>DIAL PARTS LIST</b>		
<b>ASSEMBLIES</b>		
117-41	Drive Bracket including:	
	1—No. 117-18—Tuning Shaft Bushing	
117-66	Switch Disc and Link Assembly, including:	
	1—No. 117-12 —Switch Arm	
	1—No. 117-26 —Bushings with Screws	
	1—No. 117-40B—Switch Link	
	3—No. 131-26 —Spring Washers	
	3—No. 162-5 —Rivets	
	1—No. 112-144 —Switch Disc, Inc. Red Tape	
<b>DIAL PARTS ONLY</b>		
112-125	Drive Belt	
112-143	Oval Escutcheon complete with Celluloid Crystal	
112-172	Dial Scale comp. with Fastener, Pointer Disc. & Screw	
112-147	Tuning Shaft	
112-151	Pointer complete with Screw	
112-156	Pilot Light Assembly	
116-13	4.8 Volt T-61 Pilot Light	
117-20A	Tuning Shaft Pulley	
117-38	Stud, for take-up Spring	
117-49	Pulley, for take-up Spring	
120-14	Take-up Spring	
134-4	Horse Shoe Washer	
134-6	Rubber Grommet	





MODEL 1070, Series A & B Alignment, Notes, Parts

BELMONT RADIO CORP.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-00 100 Ohm, 130-01 100 Ohm, 130-02 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-03 100 Ohm, 130-04 100 Ohm, 130-05 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-06 100 Ohm, 130-07 100 Ohm, 130-08 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-09 100 Ohm, 130-10 100 Ohm, 130-11 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-12 100 Ohm, 130-13 100 Ohm, 130-14 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-15 100 Ohm, 130-16 100 Ohm, 130-17 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-18 100 Ohm, 130-19 100 Ohm, 130-20 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-21 100 Ohm, 130-22 100 Ohm, 130-23 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-24 100 Ohm, 130-25 100 Ohm, 130-26 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-27 100 Ohm, 130-28 100 Ohm, 130-29 100 Ohm, etc.

DIAL PARTS LIST

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-30 100 Ohm, 130-31 100 Ohm, 130-32 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-33 100 Ohm, 130-34 100 Ohm, 130-35 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-36 100 Ohm, 130-37 100 Ohm, 130-38 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-39 100 Ohm, 130-40 100 Ohm, 130-41 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-42 100 Ohm, 130-43 100 Ohm, 130-44 100 Ohm, etc.

Table with 3 columns: Part No., Description, and Quantity. Includes parts like 130-45 100 Ohm, 130-46 100 Ohm, 130-47 100 Ohm, etc.

NOTE: IT IS EXTREMELY NECESSARY IN MAKING ALL OF THESE ADJUSTMENTS THAT THE FUNDAMENTAL OSCILLATOR SIGNAL BE TUNED IN A SHORT INTERVAL OF FREQUENCY WHICH WILL PALE THE MAIN TUNING.

SHORT WAVE BAND ALIGNMENT: 1. With wave changing switch in the short wave position, examine the oscillator signal with external antenna...

INTERMEDIATE BAND ALIGNMENT: 1. With wave changing switch in the intermediate wave position, center of its rotation, and with external oscillator set at 1800 K.C. and connected in series with "Dummy 3" to the antenna and black ground lead...

REPAIR PARTS LIST—MODEL 1070—SERIES A: 1. L X 400 Volt Tubular Condensers: C7, C19, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100.

REPAIR PARTS LIST—MODEL 1070—SERIES B: 1. L X 400 Volt Tubular Condensers: C7, C19, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100.

DESCRIPTION: 1. L X 400 Volt Tubular Condensers: C7, C19, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100.

another condenser of the same capacity and voltage rating, which is known to be good, until the defective unit is located. Excessive hum, stuttering, low volume and a reduction in all D.C. voltages is usually caused by a shorted electrolytic condenser, open by-pass condensers, frequently cause oscillation and abnormal line conditions by a fuse in the primary circuit.

This fuse is made accessible for replacement by removing fuse cover located on back flange of chassis. Replace only with a 2 ampere fuse. If replacement fuse blows out, check tubes, (particularly 354 rectifier) circuit, repair or replace defective tubes or parts.

NEVER ATTEMPT TO REPLACE FUSE WITHOUT FIRST DISCONNECTING POWER. NEVER REPLACE WITH FUSE OTHER THAN 2 AMPERE RATING. NOTE: Chassis with serial numbers from 3K194300 to 5K195497 have the fuse mounted on the underside of the chassis. It is necessary to remove the chassis from the cabinet to replace the fuse.

ALIGNING INSTRUCTIONS: Dummy Antennas: The following dummy antennas are used in aligning, and are referred to as "Dummy 1", "Dummy 2" and "Dummy 3".

Dummy 1 (I.F.)—Consists of a .1 mfd. condenser connected in series with the external oscillator. Dummy 2: (Broadcast)—Consists of a 200 mmfd. condenser and a 20 ohm resistor connected in series with each other and in series with the external oscillator.

Dummy 3: (Intermediate and Short Wave)—Consists of a .1 mfd. condenser and a 400 ohm resistor connected in series with each other and in series with the external oscillator. Resonance Indicator: Use as a resonance indicator an output meter connected across the primary of the speaker input transformer or by means of an external speaker socket.

CAUTION: No aligning adjustments should be attempted without first thoroughly checking over all other possible causes of trouble, such as poor installations, open or grounded antenna systems, low line voltages, defective tubes, condenser and resistor in order of assembly, etc. No aligning adjustments should be attempted until the chassis in the cabinet. To remove the knobs, pull them off and to take the chassis out of the cabinet, remove the four bolts by which it is fastened.

ALIGNING I.F. TRANSFORMERS (465 K.C.): Part No. 108-55 Input I.F. Transformer: These I.F. transformers have two adjustments, both of which are accessible from the underside of chassis (see bottom view).

ALIGNMENT PROCEDURE: The following adjustments are to be made after the I.F.'s have been aligned as explained above. BROADCAST BAND ALIGNMENT: 1. With wave changing switch in the broadcast position, extreme cycles and connected in series with "Dummy 2" to the antenna and black ground lead, make the following adjustments:

10-Tube A. C. All Wave High Fidelity Supheterodyne Receiver with Cathode Ray Tuning Indicator

MODEL 1070 - Series B

NOTE—Operation of Cathode-Ray Tuning Indicator: Due to unsatisfactory indication of the cathode-ray tuning indicator on weak signals in some territories, a change was made in the circuit to correct this condition and still allow the tube to operate correctly on a strong signal.

Returning to the circuit diagram, resistors R26, R27 and R28 are connected in series to the green wire from the cathode-ray tuning indicator as shown. The dotted line on the circuit diagram indicates the manner in which the green wire for the cathode-ray tuning indicator cable was formerly connected, before resistors R26, R27 and condenser C32 were added.

1—Type 6G5 Cathode ray tuning indicator.

Form 1006 2M 936

MODEL 1070 - Series A

DESCRIPTION: The tube complement of this chassis is as follows: 1—Type 6L7 Remote cut-off pentode R.F. amplifier 1—Type 6X4 Full-wave rectifier 1—Type 6G5 Oscillator 1—Type 6R7 Remote cut-off pentode I.F. amplifier (465 K.C.) 1—Type 6B5 First audio amplifier 1—Type 6C3 First audio amplifier 1—Type 6C4 Second audio amplifier 1—Type 6E6 Class A10 Output pentodes in push-pull 1—Type 5Z4 High-vacuum rectifier

Transformers are available and chassis are sometimes equipped with universal transformers for operation on 40 and 60 cycles and with primary taps for 108, 126, 136, 220 and 250 volts (see instructions for details). The chassis carries 100 universal transformers with 108-115 volt or 220 volt primaries, 100 universals.

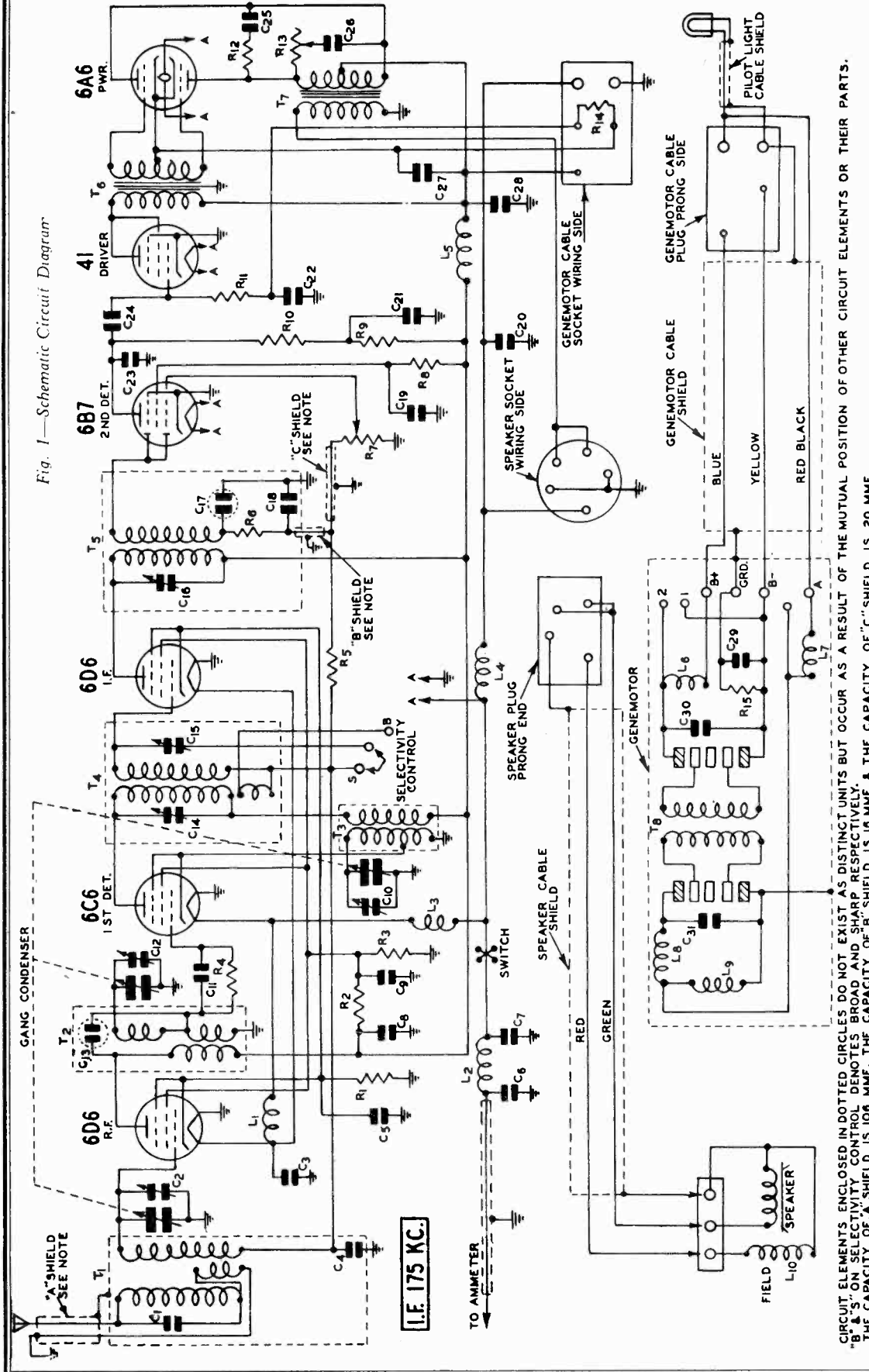
SERVICE NOTES: Voltages taken from different points of circuit to chassis are given in the circuit diagram. All voltages are to be measured with the power transformer and speaker connected with a volt meter having a resistance of 1000 ohms per volt. These voltages are clearly indicated on the circuit diagrams of Series A.

IN ORDER TO PREVENT SIGNAL FROM ACTING UPON AVC AND AFFECTING ACCURACY OF VOLTAGE MEASUREMENTS, SIGNAL AND VOLTAGE MEASUREMENTS SHOULD BE TAKEN AT THE POINTS INDICATED BY THE ARROWS. All voltages are to be measured with 119 volts on the primary of the power transformer. Resistances of coils and transformer windings are indicated in ohms on schematic circuit diagrams. To check for open by-pass condensers, short each condenser with

**MODEL 60**  
**Schematic**

**CADILLAC**

Fig. 1—Schematic Circuit Diagram



- C1 500 mmf. C21 .25 mf. 360 V. C30 .10 mf. 360 V.  
 C2 Gang Trimmer C22 .10 mf. 180 V. C31 .50 mf. 180 V.  
 C3 2000 mmf. C23 250 mmf. C32 .01 mf. 360 V.  
 C4 .05 mf. 180 V. C24 .01 mf. 360 V. C33 .01 mf. 360 V.  
 C5 .10 mf. 180 V. C25 .01 mf. 600 V. C34 .04 mf. 600 V.  
 C6 2000 mmf. C26 70-150 mmf. C35 8.0 mf. 450 V. } Electro-  
 C7 .50 mf. 180 V. C27 100 mmf. C36 8.0 mf. 450 V. } lyte  
 C8 .10 mf. 360 V. C28 8.0 mf. 450 V. C37 8.0 mf. 450 V. }  
 C9 .10 mf. 180 V. C29 .25 mf. 360 V. C38 8.0 mf. 450 V. }  
 C10 Gang Trimmer C30 .50 mf. 180 V. C39 .10 mf. 180 V. }
- R1 260 ohm .2 W. R8 25000 ohm .5 W. R11 50000 ohm .5 W.  
 R2 17000 ohm 1.0 W. R9 20000 ohm .2 W. R12 15000 ohm 1.0 W.  
 R3 20000 ohm .5 W. R10 50000 ohm .5 W. R13 15000 ohm 1.0 W.  
 R4 50000 ohm .2 W. R11 50000 ohm .5 W. R14 10000 ohm .2 W.  
 R5 1.0 Megohm .2 W. R12 15000 ohm 1.0 W. R15 900 ohm 1.5 W.  
 R6 50000 ohm .2 W. R13 15000 ohm 1.0 W. R16 10000 ohm .2 W.  
 R7 50000 ohm .2 W. R14 10000 ohm .2 W. R17 900 ohm 1.5 W.  
 R8 25000 ohm .5 W. R15 900 ohm 1.5 W. R18 900 ohm 1.5 W.
- L1 50000 ohm .2 W. L2 .50 mf. 180 V.  
 L2 .50 mf. 180 V. L3 .50 mf. 180 V.  
 L3 .50 mf. 180 V. L4 .50 mf. 180 V.  
 L4 .50 mf. 180 V. L5 .50 mf. 180 V.  
 L5 .50 mf. 180 V. L6 .50 mf. 180 V.  
 L6 .50 mf. 180 V. L7 .50 mf. 180 V.  
 L7 .50 mf. 180 V. L8 .50 mf. 180 V.  
 L8 .50 mf. 180 V. L9 .50 mf. 180 V.  
 L9 .50 mf. 180 V. L10 .50 mf. 180 V.
- T1 Antenna R. F. Trans. L2 "A" Reactor  
 T2 Oscillator R. F. Trans. L3 "A" Reactor  
 T3 1st I. F. Trans. L4 "A" Reactor  
 T4 2nd I. F. Trans. L5 "A" Reactor  
 T5 Input Trans. L6 "B" Reactor  
 T6 Output Trans. L7 "A" Reactor  
 T7 Armature Windings L8 Series Field Winding  
 T8 Shunt Field Windings L9 Shunt Field Winding  
 L10 "A" Reactor L10 Shunt Field 4.0 Ohms

DEC. 1935

**MODEL 6-Q**  
**Voltage, Resistances**  
**Socket, Trimmers**  
**Transformer Data**

**CADILLAC**

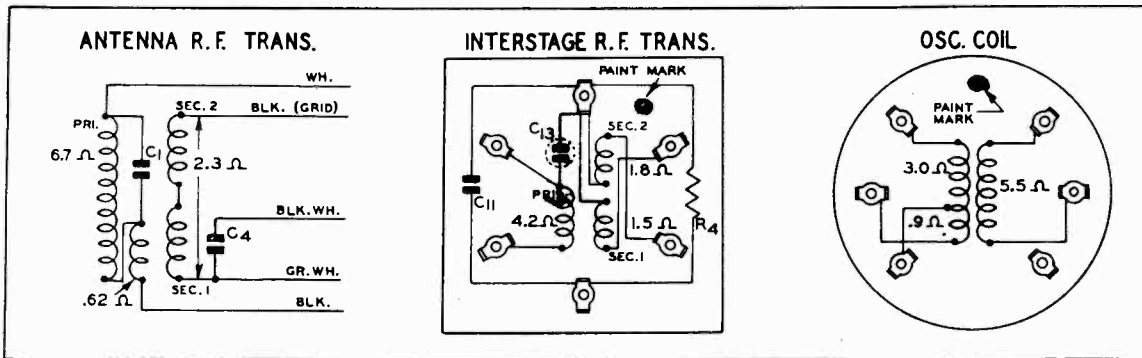


Fig. 2—R. F. and Oscillator Coil Base Terminal Arrangement and D. C. Resistance of Windings

**D. C. Resistance of Windings**

Following are the D. C. resistances of the various windings in the chassis. The values given below will vary slightly in different sets.

Part No.	Winding	Code	D. C. Resistance in Ohms
P-9A463	Antenna R.F. Transformer	T1	
	Primary Winding		6.7
	Coupling Winding		.62
P-9A464	Interstage R.F. Transformer	T2	
	Primary Winding		4.2
	Secondary No. 1		1.5
P-9A465	Oscillator Coils	T3	
	Grid Coil		3.0
	Plate Coil		5.5
P-9A466	1st I.F. Transformer	T4	
	Primary Winding		61.5
	Secondary Winding		60.0
P-9A467	2nd I.F. Transformer	T5	
	Primary Winding		48.15
	Secondary Winding		48.10
P-50X29	Input Transformer	T6	
	Primary Winding		1300.0
	Secondary Winding		
	Center Tap to Inside		60.8
	Center Tap to Outside		68.0

Part No.	Winding	Code	D. C. Resistance in Ohms
P-51X39	Output Transformer	T7	
	Primary Winding		115.0
	Center Tap to Inside		129.0
	Center Tap to Outside		
	Secondary Winding		.14
P-9A473	"A" Reactor	L1	Small
P-9A471	"A" Reactor	L2	Small
P-9A468	"A" Reactor	L3	0.2
	"B" Reactor	L5	4.4
P-9A472	"A" Reactor	L4	Small
P-9A470	"B" Reactor	L6	4.2
P-9A469	"A" Reactor	L7	Small
P-12A228	Dynamic Speaker		
	Speaker Field	L10	4.0
	Speaker Voice Coil		1.5

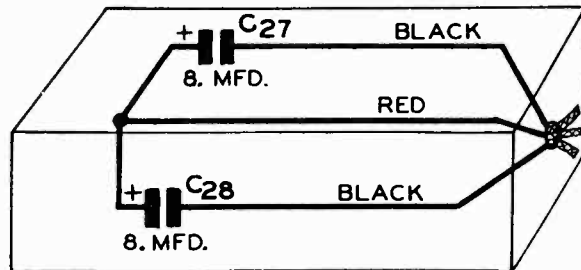


Fig. 3—Condenser Block—Internal Wiring

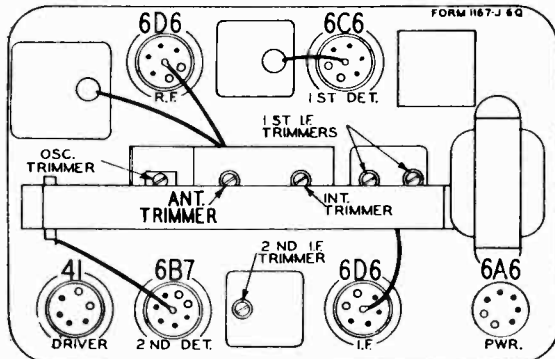


Fig. 4—Location of Tubes and Trimmers

**Genemotor Assembly**

The genemotor assembly contains all of the parts shown within the dotted lines in Fig. 1. We do not recommend that the genemotor itself be serviced in the field. The filter unit associated with the genemotor may be checked and any defective parts re-

**VOLTAGES AT SOCKETS**

Antenna Disconnected Battery 6 Volts Under Load

Type of Tube	Function	Across Heater	Plate to Ground	Screen to Ground	Cathode to Ground	Cathode Current M. A.
6D6	R. F.	5.6	235	110	4.5	6.9
6C6	1st Det. and Osc.	5.6	235	110	0	2.8
6D6	I. F.	5.6	235	110	4.5	6.9
6B7	2nd Det. & 1st A. F.	5.7	55(1)	45(1)	0	3.2
41	Driver	5.7	225	225	-32(2)	7.0
6A6	Output	5.7	225		-32	23.0

Speaker Field - - - 1.4 Amp. Genemotor - - - 4.8 Amp.  
 Chassis - - - - - 2.65 Amp. Pilot Lamp - - - - 0.15 Amp.

(1) Measured on 500 Volt Scale (1000 ohms per volt).  
 (2) Grid bias - Measured at genemotor cable socket.

paired or replaced. However, if the genemotor itself is at fault, it should be sent back to the factory for repair.

MODEL 6-Q  
Circuit Data, Parts Alignment

CADILLAC

TRANSFORMERS AND COILS

Table with columns: New Part No., Description, Code. Lists components like Antenna, R.F. Transformer, and Ignition Transformer.

RESISTORS

Table with columns: New Part No., Resistance, Wattage, Type. Lists various resistor values and types like Carbon, Manganin, and Wirewound.

CONDENSERS

Table with columns: New Part No., Capacity, Voltage, Type. Lists capacitor values and types like Mica, Paper, and Electrolytic.

GENERAL ITEMS

Table with columns: New Part No., Description, Code. Lists miscellaneous parts like mounting screws, nuts, and washers.

NOTICE—A change has been made in our parts numbering system. Old numbers are used in new receivers...

There is a large letter on the chassis which identifies the set as a major part change. When ordering parts please be sure to mention the series number and this large letter...

MISCELLANEOUS

Table with columns: New Part No., Old Part No., Description. Lists various components like sockets, switches, and trimmers.

GENEMOTOR AND PARTS

Table with columns: New Part No., Description, Code. Lists generator components like brushes, commutator, and field coils.

INSTALLATION ITEMS

Table with columns: New Part No., Description, Code. Lists items for mounting and cable assembly.

SPEAKER ASSEMBLIES

Table with columns: New Part No., Description, Code. Lists various speaker models and their specifications.

SPECIFICATIONS

Table listing specifications: Power Consumption (9.0 Amperes at 6 Volts), Tuning Frequency Range (530 to 1650 KC), Intermediate Frequency (175 KC), Speaker (8 or 10 Inch Dynamic).

Circuit

The primary and secondary of this transformer results in high selectivity.

When the expander is in the broad position, the coupling winding which is wound under the primary is connected in series with the secondary...

A 6B7 duo diode-pentode tube functions as a diode 2nd detector, A.V.C. tube and a one stage audio amplifier. A.V.C. voltage is applied to the control grid circuits of the 6D6 R.F. and I.F. tubes.

Resistance coupling is used between the 1st audio stage and the driver stage which employs a 4I tube. The latter is transformer coupled to the output stage which uses a 6A6 tube.

Current for the receiver is obtained from the car storage battery. A genemotor supplies the high voltage required for the plate and screen circuits.

Alignment Procedure

Adjust the trimmer of the oscillator section of the three grid condenser until maximum output is obtained—see Fig. 4 for location of this trimmer.

1400 KC. Adjustment

Set the signal generator for 1400 KC. Turn the rotor of the tuning condenser carefully until maximum output is obtained. Adjust the interstage and antenna trimmers for maximum output—see Fig. 4.

Adjusting Antenna Trimmer

After the receiver is installed and the car antenna is connected it will be necessary to adjust the antenna trimmer. Tune in a weak signal between 1200 and 1400 KC. with the volume control about three-fourths on.

1650 KC. Adjustment

Set the signal generator for 1650 KC. Turn the rotor of the tuning condenser to the full open position. Connect the shielded antenna lead from the chassis through a 110 mmf. condenser to the antenna post of the signal generator.



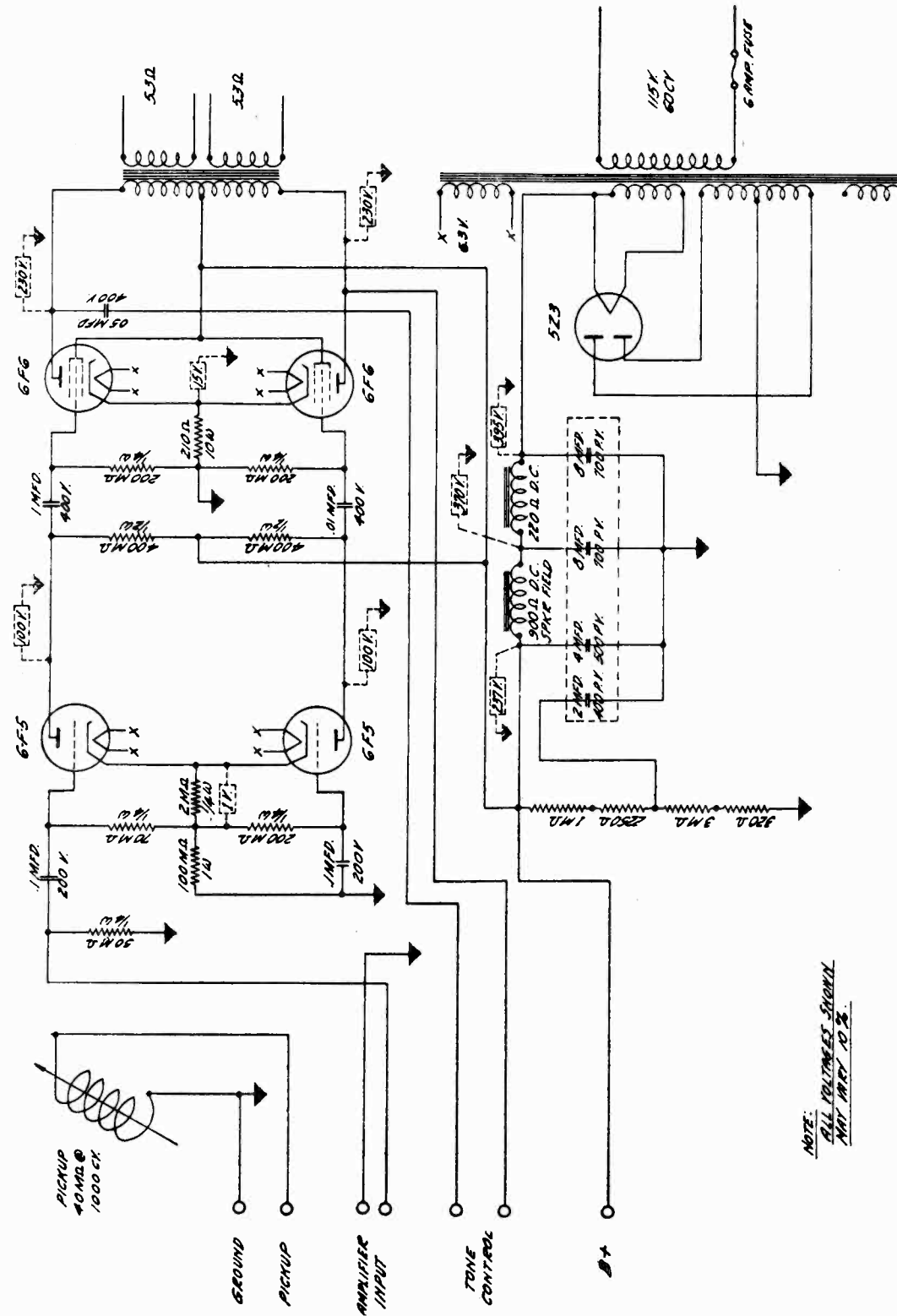


**MODEL 203**  
**Amplifier and**  
**Power Pack**  
**Schematic**

CAPEHART CORPORATION

W-870  
 NOVEMBER 27-35

AMPLIFIER • 203 • MODEL

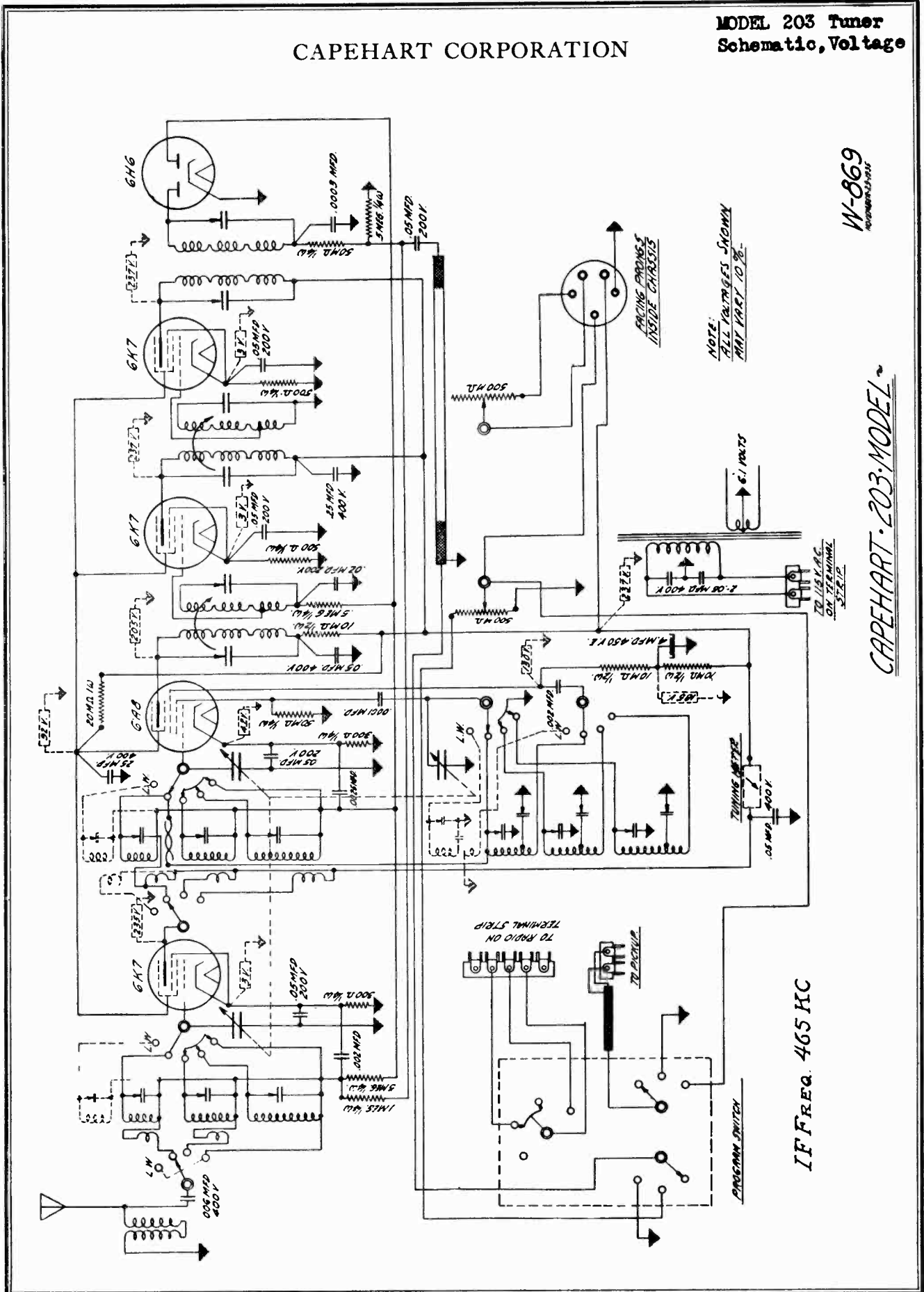


NOTE:  
 ALL VOLTAGES SHOWN  
 MAY VARY 10%.

CAPEHART CORPORATION

MODEL 203 Tuner  
Schematic, Voltage

W-869  
REWORKED UNIT



NOTE:  
ALL VOLTAGES SHOWN  
ARE TO GND.  
MINI TAP TO 10%.

FACING PAGES  
INSIDE CHASSIS

IF FREQ. 465 KC

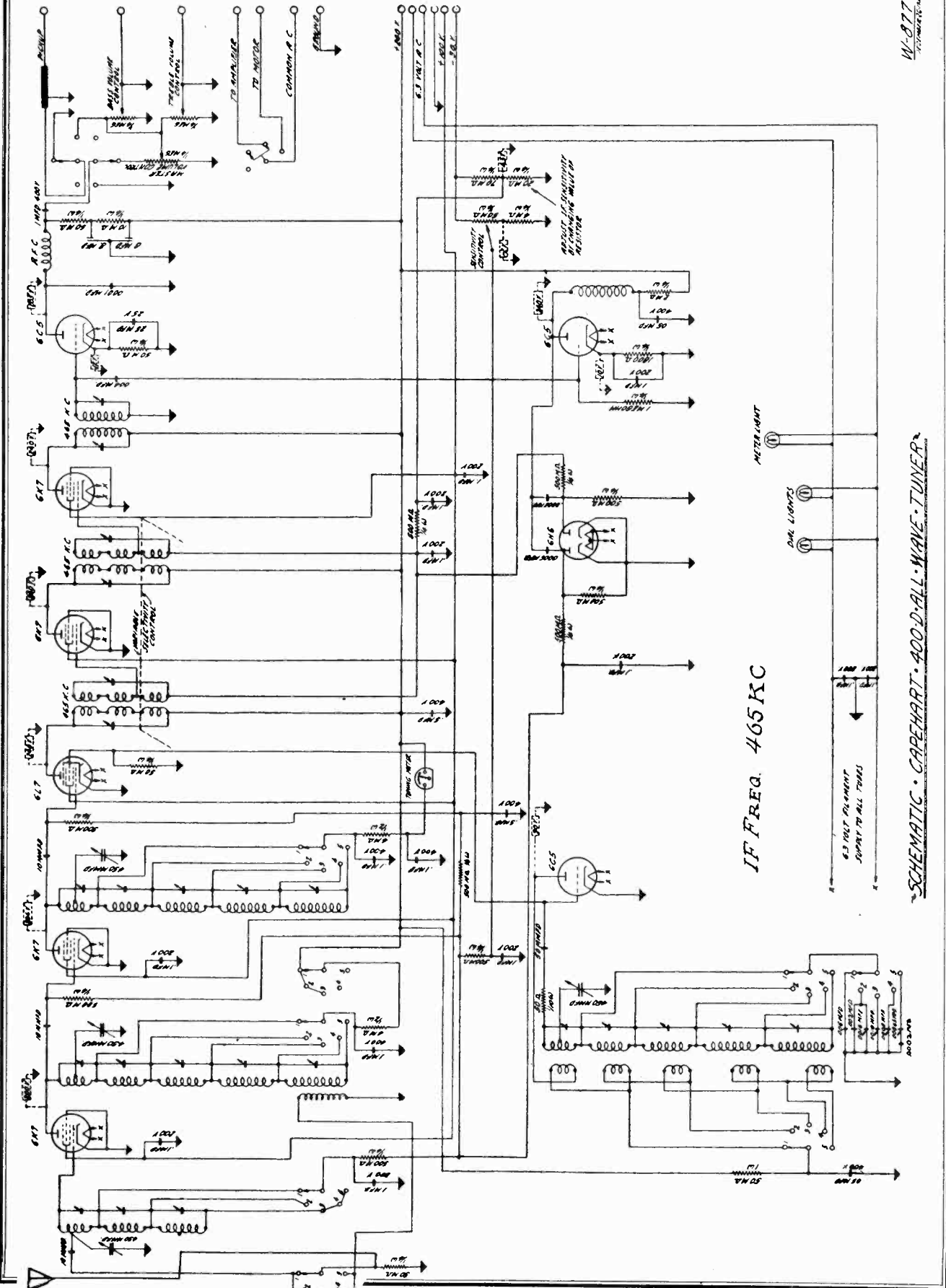
CAPEHART-203-MODEL



MODEL 400-D Tuner  
Schematic, Voltage

CAPEHART CORPORATION

W-877  
CUSTOMER USE ONLY



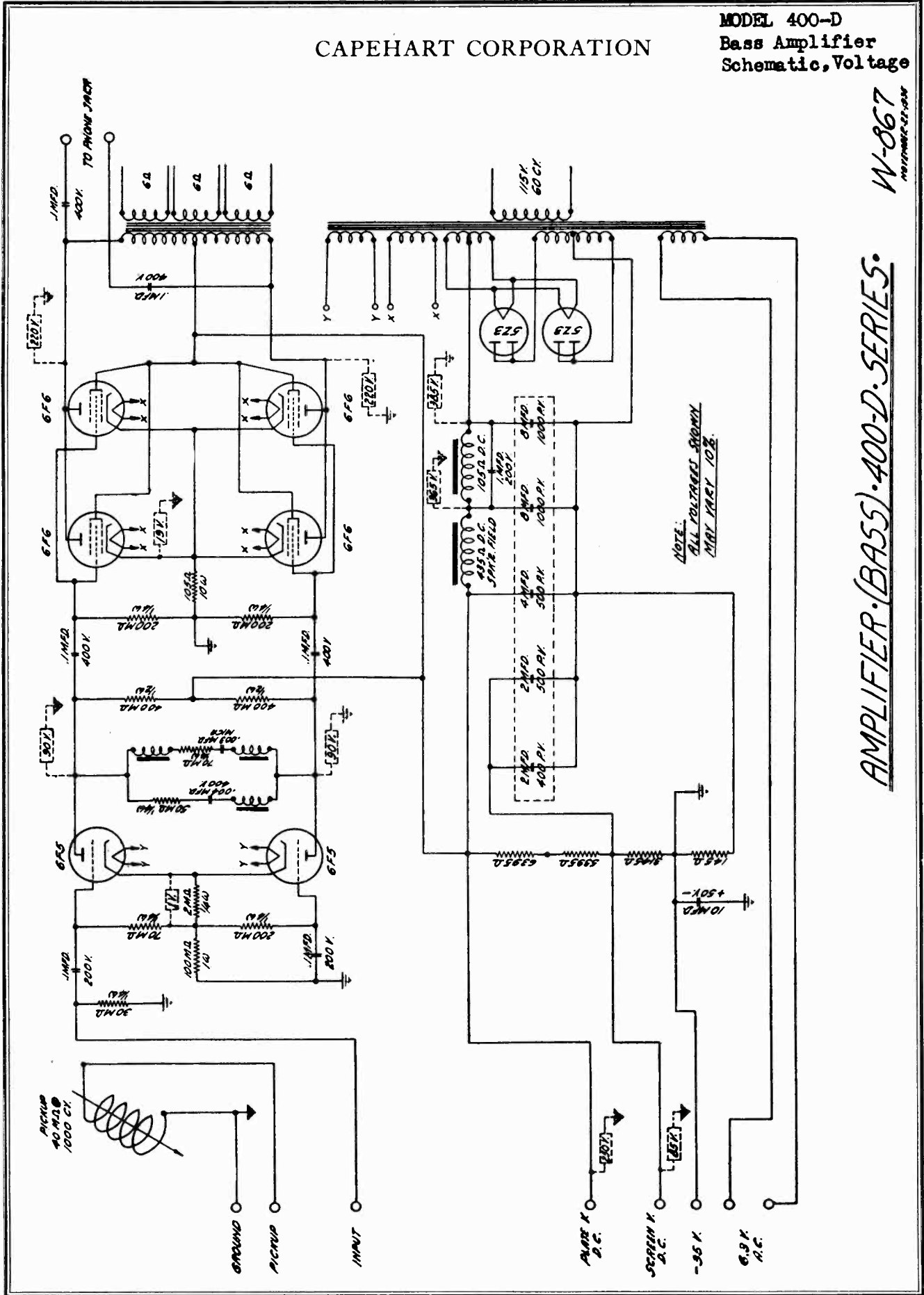
SCHEMATIC • CAPEHART • 400-D • ALL-WAVE • TUNER

# CAPEHART CORPORATION

MODEL 400-D  
Bass Amplifier  
Schematic, Voltage

W-867  
REVISED 12-1-54

AMPLIFIER (BASS) 400-D SERIES

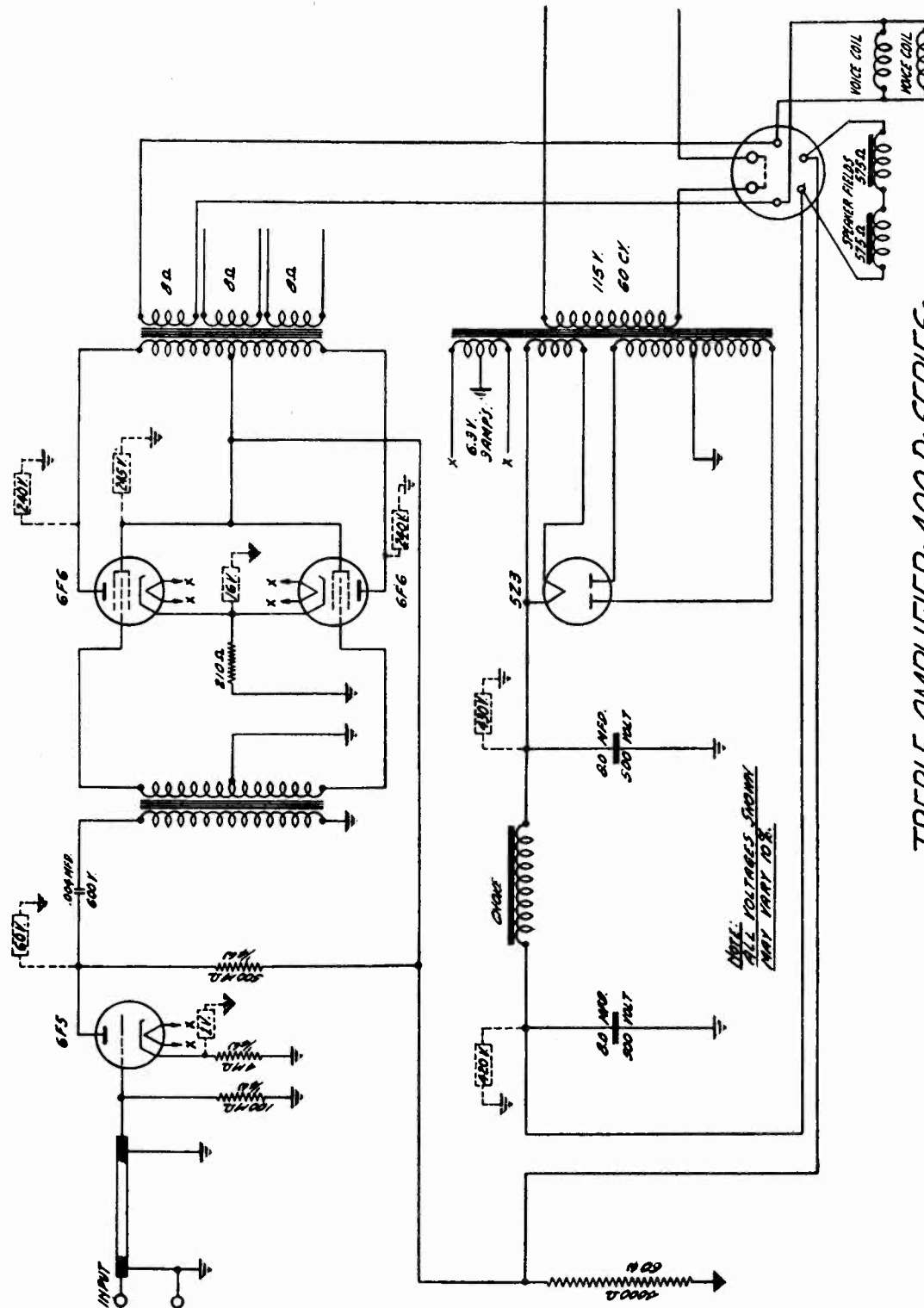


MODEL 400-D  
Treble Amplifier  
Schematic, Voltage

CAPEHART CORPORATION

W-868  
NOVEMBER 1938

TREBLE-AMPLIFIER-400-D-SERIES



CASE ELECTRIC CORP.

MODEL 601  
Chassis 16 SM  
Alignment  
Trimmers

MODEL 601 CHASSIS 16 SM

TUBE COMPLEMENT

- 1 Type 6D6 RP Amplifier
- 1 Type 6A7 First Detector and Converter
- 1 Type 6K7 IF Amplifier
- 1 Type 75 Second Detector AVC and AF Amplifier
- 1 Type 6F6 Amplifier
- 1 Type 80 Rectifier

Sockets are marked for the proper tubes.

ALIGNMENT PROCEDURE

Correct alignment is of extreme importance in all wave receivers. The receivers are properly aligned at the factory with precision equipment and realignment should not be attempted by the service technician until all other causes of faulty operation are corrected.

In order to properly realign the receiver the following equipment is necessary:

1. A signal generator which will provide an accurately calibrated signal at any frequency from 262 kilocycles to 18 megacycles. The generator should have adjustable signal output.
2. An output audio voltmeter of the low voltage type to be connected across the moving coil of the speaker. This should be capable of providing a readable deflection for relatively low output levels to avoid the effects of overload.
3. An insulated or non-metallic screw driver for the adjustment of trimmers.

IP ALIGNMENT 262.5 KC

1. Connect the output meter (low scale) across the loud speaker voice coil. Turn the wave band switch (outside of tuning knob) to its left hand or counter-clockwise position. This brings the red indicator for broadcast band to the top. Turn the volume control to its maximum position.
2. Connect the test oscillator ground to chassis and the "hot" lead from the test oscillator to the grid of the 6L7 converter tube through a series .1 Mfd. condenser. Set test oscillator to 262.5 kc.
3. Adjust IP alignment screws C13, C14, (see illustration below) of second IP transformer, T2, adjacent to rectifier tube (type 80) to maximum output, reducing output of test oscillator to keep the meter reading on scale as alignment proceeds.
4. Adjust alignment screws C11, C12, of first IP transformer, T1, (directly behind tuning condenser) to maximum output as described above.
5. Readjust these trimmers for accurate alignment. Always use the lowest possible output from the test oscillator to preclude the possibility of automatic volume control action confusing proper adjustment.

ADJUSTMENT OF WAVE TRAP

Connect test oscillator to antenna and ground terminals of the receiver using a .00025 Mfd. condenser in series with the antenna terminal. With oscillator set at 262.5 kc adjust antenna trap alignment screw C4, for minimum signal increasing output of test oscillator as a minimum is reached.

RF ALIGNMENT (Broadcast "A" or "Red" Band)

1. With test oscillator connecting antenna post through .00025 Mfd. as above set signal generator to 1400 kc.
2. Set dial scale, hour and minute hands, to 6 o'clock when gang condenser is fully meshed at maximum capacitance.
3. Set dial to calibration mark 1400 kc using hour hand to indicate frequency (no further attention need be paid to position of minute hand which is used merely for convenience in logging stations by "TIME"). Adjust broadcast oscillator trimmer condenser C16, for maximum output meter reading. If it is found that two peaks occur within the range of the trimmer action use the one in which the trimmer is in its lowest capacitance or counter-clockwise position.
4. Adjust detector input trimmer C8, to a maximum.
5. Adjust the Antenna stage trimmer C5, to a maximum.
6. Set test oscillator to 600 kc and tune in the signal, then adjust broadcast oscillator padder C19, for maximum output. This padder is mounted under the chassis at the side of the RF "deck." Rock the condenser back and forth a degree or two in order to obtain proper maximum.

7. Repeat the 1400 kc adjustments described under 3, 4, 5, for greater accuracy. The output of the test oscillator should always be kept at the lowest output which will allow sufficient meter swing since this assures greater accuracy of adjustment.

Short Wave "B" or "Green" Band

1. Turn the wave band switch to the "B" or "Green" position. Leave the oscillator connected as above but with its output set to 6000 kc and the .00025 Mfd. condenser replaced by a 400 Ohm resistor. Set dial scale to 6 mc on the green or middle band, adjust "B" band oscillator trimmer condenser C16, for maximum output observing as before that the proper point occurs at the minimum or counter-clockwise position of the screw if two points are found.
2. Adjust detector input "B" band trimmer condenser C9, to a maximum while rocking the tuning condenser slightly for maximum response.
3. Adjust Antenna stage "B" band trimmer C6, for maximum output.
4. Set the test oscillator to 2000 kc and tune in the signal. Adjust "B" band oscillator trimmer condenser C18 for maximum output while rocking tuning condenser as described above.
5. Repeat operations 1, 2, and 3 to assure precise alignment.

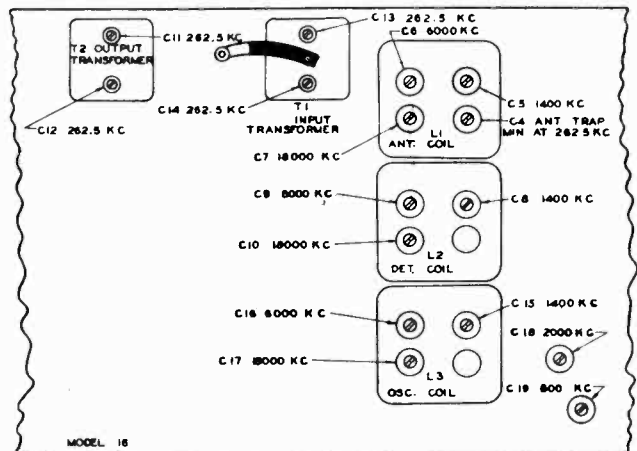
Short Wave "C" or "Yellow" Band

1. With test oscillator connected same as for "B" band and set to 18000 kc (18 mc) set dial scale to 18 mc on inner or yellow band.
2. Adjust "C" band oscillator trimming condenser C17, for maximum response. Use lower capacity or counter-clockwise response point.
3. Adjust "C" band detector input trimmer C10, to a maximum, "rocking" tuning adjustment to obtain greatest output.
4. Adjust antenna "C" band trimmer C7, for maximum response.

\*The adjustment of the detector input trimmers on the "B" and "C" bands by the procedure outlined above is advisable as contrasted with the usual method of trimming without rocking the tuning adjustment because slight couplings through the tube circuits tend to disturb the oscillator frequency as the detector is tuned. This procedure should be followed on any type of all wave receiver.

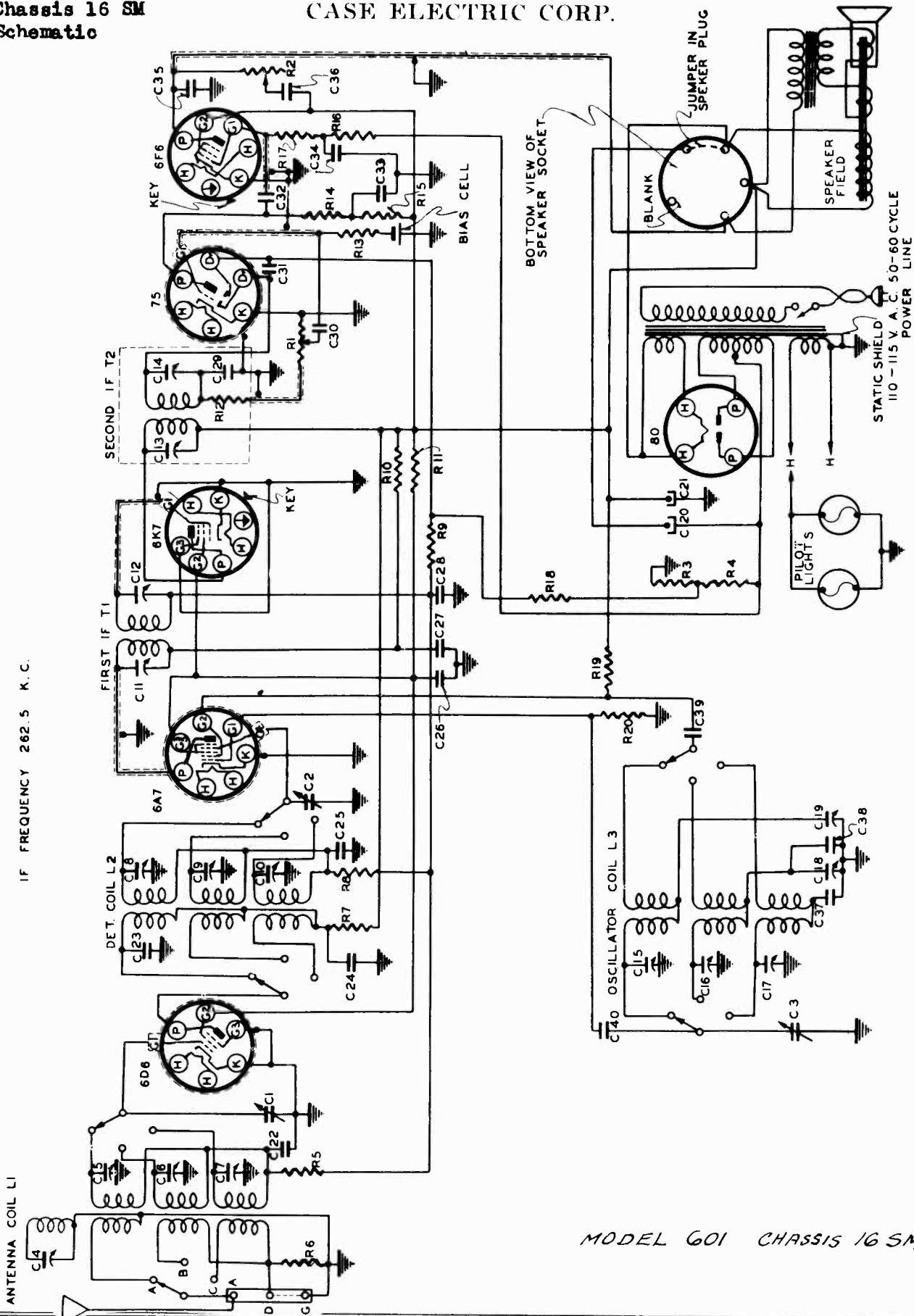
See Case Page 7-16, for Dial Drive notes.

In checking the circuit with a continuity or ohmmeter it is wise to follow the schematic diagram in an orderly fashion starting at the antenna and ground connections and proceeding to the speaker circuits.



MODEL 601  
Chassis 16 SM  
Schematic

CASE ELECTRIC CORP.



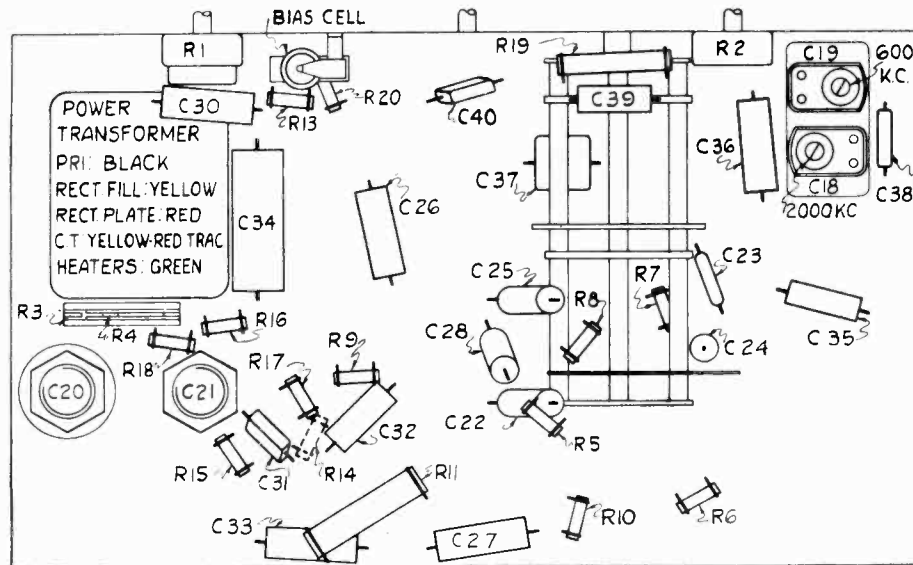
CASE ELECTRIC CORP.

MODEL 601  
Chassis 16 SM  
Voltage, Parts  
Chassis

MODEL 601  
CHASSIS 16 SM

REPLACEMENT PARTS AND PRICE LIST

C4 C5 C6 C7 L1	A15016	Belt Drive	.21		A15066	Pulley Idler Assembly	.10
C8 C9 C10 L2	B15045	Bezel	.94	R3 R4	A15072	Planetary Assembly	.46
C17 C15 C16 L3	15410	Book Instruction	.13	R20	A15358	Resistor Candohm	.23
	15070	Clip Grid (Glass tube)	.01	R5 R8 R15 R16	15511	Resistor Carbon 50,000 1/4 watt	.08
	15071	Clip Grid (Metal Tube)	.01	R14 R17	15512	Resistor Carbon 250M 1/4 watt	.08
	15330	Clutch Assembly	.26	R6	15515	Resistor Carbon 100M 1/4 watt	.08
	15271	Coil Antenna in Shield Sold in	3.53	R9 R13 R18	15520	Resistor Carbon 500M 1/4 watt	.08
	15272	Coil Detector in Shield sets	3.44	R6	15523	Resistor Carbon 200M 1/4 watt	.08
	15423	Coil Oscillator in Shield of 3	2.75	R7 R10	15542	Resistor Carbon 1000 1/4 watt	.06
	A15069	Cord Attachment	.35	R11	15502	Resistor Carbon 15M 2 watt	.16
C1 C2 C3	D15078	Condenser Variable	5.21	R19	15501	Resistor Carbon 25M 1 watt	.11
C18 C19	A15259	Condenser Variable Padder	1.06		B15041	Retaining Spring for Bezel	.18
C21	A15237-2	Cond. Electrolytic 10 Mfd 300V	.80		B15043	Retaining Ring for Glass	.16
C20	A15313	Cond. Electrolytic 16 Mfd 400V	1.07		A15020	Shaft Drive	.15
C23 C29	15906	Cond. Mica 100 Mmfd	.11		15095	Shield Goat Tube (Long)	.12
	15911	Cond. Mica 4500 Mmfd	.37		15094	Shield Goat Tube (Short)	.11
C40	15916	Cond. Mica 100 Mmfd	.11		15416	Shielded 1st IF Plate Lead	.09
C38	15921	Cond. Mica 1250 Mmfd	.19		15417	Shielded 6P6 Plate Lead	.11
C31	15919	Cond. Mica 50 Mmfd	.11		15418	Shielded 6P6 Grid Lead	.13
C34	15751	Cond. Tubular .25 Mfd 200V	.18		15420	Shielded Vol. & 75 Grid Lead	.29
C22 C25 C28 C30	15752	Cond. Tubular .05 Mfd 200V	.12		A15053	Socket Dial Lamp (Left Hand)	.11
C32 C35	15753	Cond. Tubular .002 Mfd 600V	.11		A15054	Socket Dial Lamp (Right Hand)	.11
C24 C27	15756	Cond. Tubular .05 Mfd 400V	.12		15062	Socket speaker	.10
C26 C33	15757	Cond. Tubular .1 Mfd 400V	.14		15063	Socket 80	.09
C39	15754	Condenser Tubular .01 Mfd 400V	.11		15064	Socket 42	.11
C56	15768	Condenser Tubular .03 Mfd 600V	.16		15179	Socket 6A7	.11
R2	A15116	Control Tone	.70		15066	Socket 6K7	.14
R1	A15113	Control Volume	.89		15068	Socket 6D6	.11
	A15031	Doublet Terminal	.13		15084	Socket 6F6	.14
	15327	Dial & Paper Strip CASE	1.96	C11 C12 T1	A15033	Spacer Brass (For Chassis Rubber)	.02
	15328	Dial & Paper Strip RADIOVOGUE	1.96	C13 C14 T2	15406	Speaker 6"	5.27
	B15044	Glass Convex	.25		A15017	Spring Tension	.02
	A15037	Knob Drive	.14		C15256	Switch Range	2.14
	A15098	Knob Switch	.23		15123	Switch Range Pulley & String	.65
	A15039	Knob Volume & Tone	.15		B15208-4	Transformer Input IF	1.42
	15089	Lamp Dial 6.3 V Baynet Type	.19		B15209-4	Transformer Output IF	1.63
	15129	Lamp Dial Assembly	.68		15361	Transformer Power 60 cycle 110V	4.75
	A15082	Lug Ground Electrolytic	.01		B15390	Transformer Power 25 cycle 110V	7.55
	A15032	Mounting Chassis Rubbers	.03		1950	Washer Felt (Small Knob)	.01
	B15262	Paper Dial Backing	.03		1951	Washer Felt (switch Knob)	.01
	A15023	Pointer (Minute)	.04		A2111	Washer Extruding Fibre	.02
	A15024	Pointer (Tuning)	.04		A2103	Washer Plain fibre	.01
					A2300	Washer Rubber RF Panel	.02



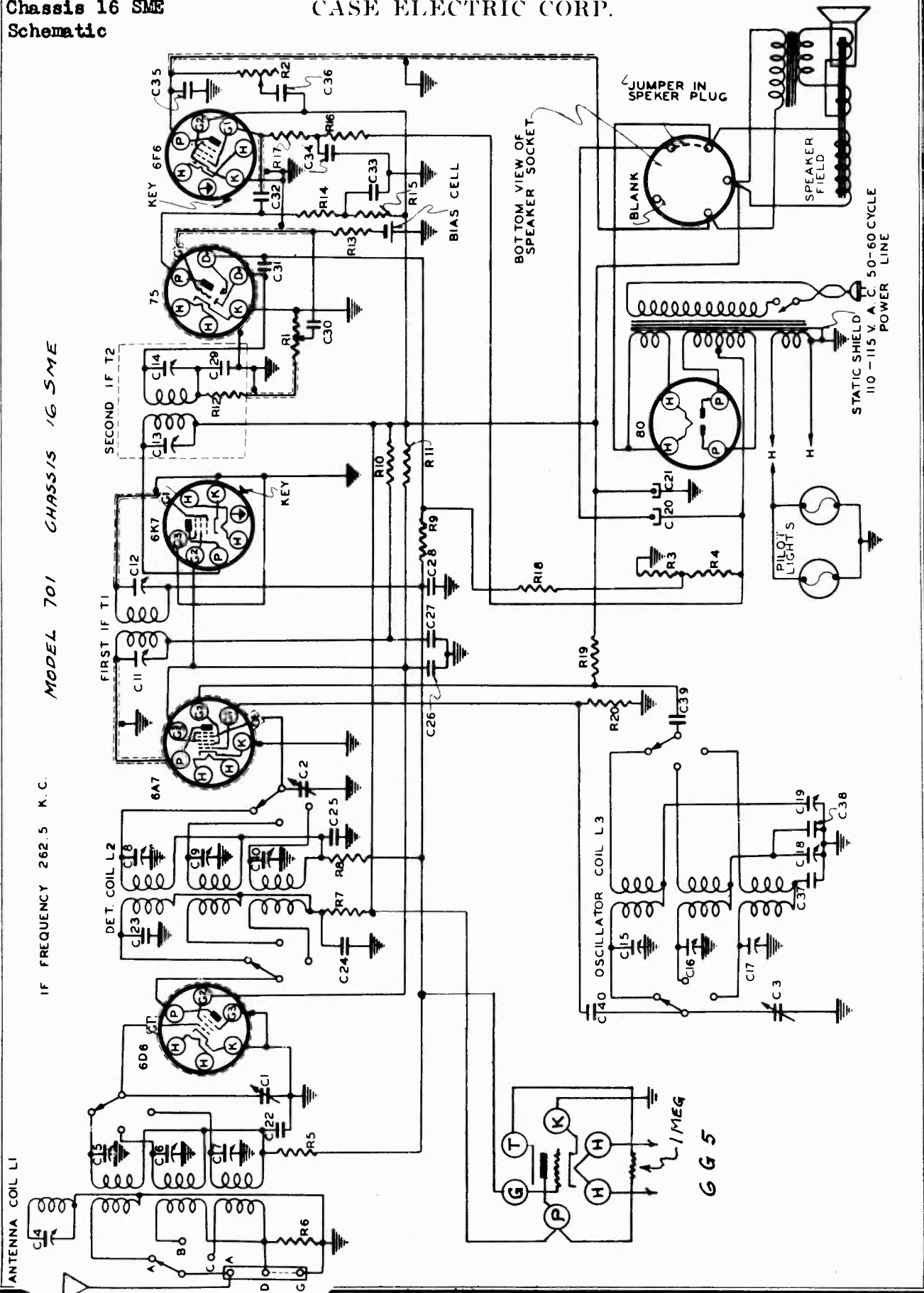
VOLTAGE CHART

Measurements from elements to chassis-1000 Ohms per Volt Meter Line Voltage-115V AC.  
 RF negative grid bias 5.0 Volts  
 6P6 negative grid bias 20.0 Volts  
 AC-RMS each plate of rectifier to center tap 350.0 Volts  
 Total current drain 82 Ma. E--drop across speaker field 86.0 Volts

POSITION	TUBE	E <sub>f</sub>	E <sub>k</sub>	E <sub>g</sub> SCREEN	E <sub>g</sub> SUPPRESSOR	E <sub>p</sub> TRIODE	E <sub>p</sub> PENTODE
Oscillator	6A7	6.3	0.0		0.0	170.0	
RF Amplifier	6D6	6.3	0.0	125.0	0.0		265.0
1st Detector	6A7	6.3	0.0	125.0	0.0		265.0
IF Amplifier	6K7	6.3	0.0	125.0	0.0		265.0
2nd Detector AVC-AF Amplifier	75	6.3	0.0		0.0	90.0	
Amplifier	6F6	6.3	0.0	260.0	0.0		250.0
Rectifier	80	5.0			0.0		

MODEL 701  
Chassis 16 SME  
Schematic

CASE ELECTRIC CORP.



CASE ELECTRIC CORP.

**MODEL 701**  
**Chassis 16 SME**  
**Alignment, Trimmers**

**TUBE COMPLEMENT**

- 1 Type 6D6 RF Amplifier
- 1 Type 6A7 First Detector and Converter
- 1 Type 6K7 IF Amplifier
- 1 Type 75 Second Detector AVC and AF Amplifier
- 1 Type 6P6 Amplifier
- 1 Type 80 Rectifier

Sockets are marked for the proper tubes.

**ALIGNMENT PROCEDURE**

Correct alignment is of extreme importance in all wave receivers. The receivers are properly aligned at the factory with precision equipment and realignment should not be attempted by the service technician until all other causes of faulty operation are corrected.

In order to properly realign the receiver the following equipment is necessary:

1. A signal generator which will provide an accurately calibrated signal at any frequency from 262 kilocycles to 18 megacycles. The generator should have adjustable signal output.
2. An output audio voltmeter of the low voltage type to be connected across the moving coil of the speaker. This should be capable of providing a readable deflection for relatively low output levels to avoid the effects of overload.
3. An insulated or non-metallic screw driver for the adjustment of trimmers.

**IF ALIGNMENT 262.5 KC**

1. Connect the output meter (low scale) across the loud speaker voice coil. Turn the wave band switch (outside of tuning knob) to its left hand or counter-clockwise position. This brings the red indicator for broadcast band to the top. Turn the volume control to its maximum position.
2. Connect the test oscillator ground to chassis and the "hot" lead from the test oscillator to the grid of the 6I7 converter tube through a series .1 Mfd. condenser. Set test oscillator to 262.5 kc.
3. Adjust IF alignment screws C13, C14, (see illustration below) of second IF transformer, T2, adjacent to rectifier tube (type 80) to maximum output, reducing output of test oscillator to keep the meter reading on scale as alignment proceeds.
4. Adjust alignment screws C11, C12, of first IF transformer, T1, (directly behind tuning condenser) to maximum output as described above.
5. Readjust these trimmers for accurate alignment. Always use the lowest possible output from the test oscillator to preclude the possibility of automatic volume control action confusing proper adjustment.

**ADJUSTMENT OF WAVE TRAP**

Connect test oscillator to antenna and ground terminals of the receiver using a .00025 Mfd. condenser in series with the antenna terminal. With oscillator set at 262.5 kc adjust antenna trap alignment screw C4, for minimum signal increasing output of test oscillator as a minimum is reached.

**RF ALIGNMENT (Broadcast "A" or "Red" Band)**

1. With test oscillator connecting antenna post through .00025 Mfd. as above set signal generator to 1400 kc.
2. Set dial scale, hour and minute hands, to 6 o'clock when gang condenser is fully meshed at maximum capacitance.
3. Set dial to calibration mark 1400 kc using hour hand to indicate frequency (no further attention need be paid to position of minute hand which is used merely for convenience in logging stations by "TIME"). Adjust broadcast oscillator trimmer condenser C15, for maximum output meter reading. If it is found that two peaks occur within the range of the trimmer action use the one in which the trimmer is in its lowest capacitance or counter-clockwise position.
4. Adjust detector input trimmer C8, to a maximum.
5. Adjust the antenna stage trimmer C5, to a maximum.
6. Set test oscillator to 600 kc and tune in the signal, then adjust broadcast oscillator padder C19, for maximum output. This padder is mounted under the chassis at the side of the RF "deck." Rock the condenser back and forth a degree or two in order to obtain proper maximum.

**MODEL 701 CHASSIS 16 SME**

7. Repeat the 1400 kc adjustments described under 3, 4, 5, for greater accuracy. The output of the test oscillator should always be kept at the lowest output which will allow sufficient meter swing since this assures greater accuracy of adjustment.

**Short Wave "B" or "Green" Band**

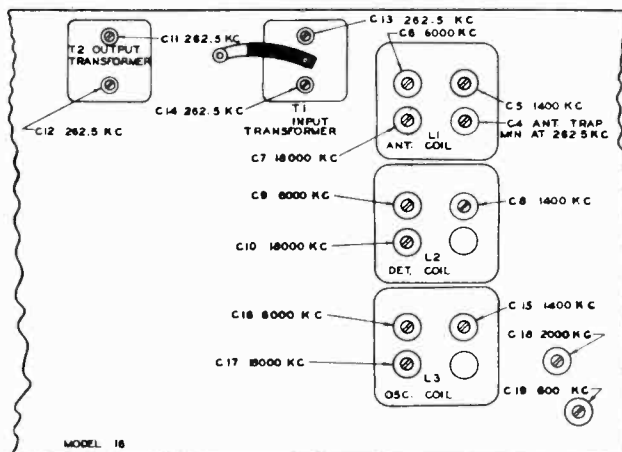
1. Turn the wave band switch to the "B" or "Green" position. Leave the oscillator connected as above but with its output set to 6000 kc and the .00025 Mfd. condenser replaced by a 400 Ohm resistor. Set dial scale to 6 mc on the green or middle band, adjust "B" band oscillator trimmer condenser C16, for maximum output observing as before that the proper point occurs at the minimum or counter-clockwise position of the screw if two points are found.
2. Adjust detector input "B" band trimmer condenser C9, to a maximum while rocking the tuning condenser slightly for maximum response.
3. Adjust Antenna stage "B" band trimmer C6, for maximum output.
4. Set the test oscillator to 2000 kc and tune in the signal. Adjust "B" band oscillator padder condenser C18 for maximum output while rocking tuning condenser as described above.
5. Repeat operations 1, 2, and 3 to assure precise alignment.

**Short Wave "C" or "Yellow" Band**

1. With test oscillator connected same as for "B" band and set to 18000 kc (18 mc) set dial scale to 18 mc on inner or yellow band.
2. Adjust "C" band oscillator trimming condenser C17, for maximum response. Use lower capacity or counter-clockwise response point.
3. Adjust "C" band detector input trimmer C10, to a maximum, "rocking" tuning adjustment to obtain greatest output.
4. Adjust antenna "C" band trimmer C7, for maximum response.

\*The adjustment of the detector input trimmers on the "B" and "C" bands by the procedure outlined above is advisable as contrasted with the usual method of trimming without rocking the tuning adjustment because slight couplings through the tube circuits tend to disturb the oscillator frequency as the detector is tuned. This procedure should be followed on any type of all wave receiver.

In checking the circuit with a continuity or ohmmeter it is wise to follow the schematic diagram in an orderly fashion starting at the antenna and ground connections and proceeding to the speaker circuits.



See Case Page 7-16, for Dial Drive notes.



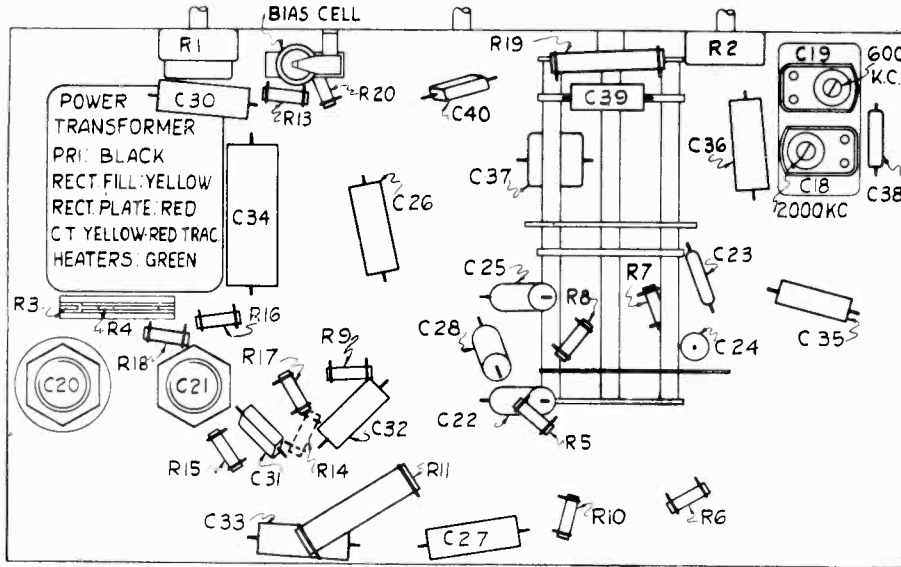
**MODEL 701**  
**Chassis 16 SME**  
**Voltage, Parts**  
**Chassis**

**CASE ELECTRIC CORP.**

**MODEL 701**  
**CHASSIS 16 SME**

REPLACEMENT PARTS AND PRICE LIST

A15016	Belt Drive	.21	A15066	Pulley Idler Assembly	.10
B15045	Bezel	.94	A15072	Planetary Assembly	.46
15410	Book Instruction	.13	A15358	Resistor Candohm	.23
15070	Clip Grid (Glass Tube)	.01	15511	Resistor Carbon 50,000 1/4 Watt	.08
15071	Clip Grid (Metal Tube)	.01	15512	Resistor Carbon 250W 1/4 Watt	.08
15330	Clutch Assembly	.26	15515	Resistor Carbon 100M 1/4 Watt	.08
C4 C5 C6 C7 L1	Coil Antenna in Shield Sold in	3.53	15520	Resistor Carbon 500M 1/4 Watt	.06
C8 C9 C10 L2	Coil Detector in Shield sets	3.44	15523	Resistor Carbon 200M 1/4 Watt	.08
C17 C15 C16 L3	Coil Oscillator in Shield of 3	2.75	15542	Resistor Carbon 1000 1/4 Watt	.06
C1 C2 C3	Cord Attachment	.35	15502	Resistor Carbon 16W 2 Watt	.16
C18 C19	D15076 Condenser Variable	5.21	15601	Resistor Carbon 25M 1 Watt	.11
C21	A15259 Condenser Variable Padder	1.06	B15041	Retaining Spring for Bezel	.18
C20	A15237-2 Cond. Electrolytic 10 Mfd 300V	.80	B15043	Retaining Ring for Glass	.16
C23 C29	A15313 Cond. Electrolytic 16 Mfd 400V	1.07	A15020	Shaft Drive	.15
C37	15906 Cond. Mica 100 Mmfd	.11	15095	Shield Goat Tube (Long)	.12
C40	15911 Cond. Mica 4500 Mmfd	.37	15094	Shield Goat Tube (Short)	.11
C38	15918 Cond. Mica 100 Mmfd	.11	15416	Shielded 1st IF Plate Lead	.09
C31	15921 Cond. Mica 1250 Mmfd	.19	15417	Shielded 6F6 Plate Lead	.11
C34	15919 Cond. Mica 50 Mmfd	.11	15418	Shielded 6F6 Grid Lead	.13
C22 C25 C28 C30	15751 Cond. Tubular .25 Mfd 200V	.18	15420	Shielded Vol. & 75 Grid Lead	.29
C32 C35	15752 Cond. Tubular .05 Mfd 200V	.12	A15053	Socket Dial Lamp (Left Hand)	.11
C24 C27	15753 Cond. Tubular .002 Mfd 600V	.11	A15054	Socket Dial Lamp (Right Hand)	.11
C26 C33	15756 Cond. Tubular .05 Mfd 400V	.12	15062	Socket Speaker	.10
C39	15757 Cond. Tubular .1 Mfd 400V	.14	15063	Socket 80	.09
R2	15754 Condenser Tubular .01 Mfd 400V	.11	15064	Socket 42	.11
R1	15768 Condenser Tubular .03 Mfd 600V	.16	15179	Socket 6A7	.14
	A15116 Control Tone	.70	15066	Socket 6K7	.11
	A15113 Control Volume	.89	15068	Socket 6D6	.14
	A15031 Doublet Terminal	.13	15084	Socket 6F6	.14
	15327 Dial & Paper Strip CASE	1.96	A15033	Spacer Brass (For Chassis Rubber)	.02
	15328 Dial & Paper Strip RADIOVOGUE	1.96	15406	Speaker 6"	5.27
	B15044 Glass Convex	.25	A15017	Spring Tension	.02
	A15037 Knob Drive	.14	C15256	Switch Range	2.14
	A15098 Knob Switch	.23	15123	Switch Range Pulley & String	.65
	A15039 Knob Volume & Tone	.15	B15208-4	Transformer Input IF	1.42
	15089 Lamp Dial 6.3 V Baynet Type	.19	B15209-4	Transformer Output IF	1.63
	15129 Lamp Dial Assembly	.68	15361	Transformer Power 60 cycle 110V	4.75
	A15082 Lug Ground Electrolytic	.01	B15390	Transformer Power 25 cycle 110V	7.55
	A15032 Mounting Chassis Rubbers	.03	1950	Washer Felt (Small Knob)	.01
	B15262 Paper Dial Backing	.03	1951	Washer Felt (Switch Knob)	.01
	A15023 Pointer (Minute)	.04	A2111	Washer Extruding Fibre	.02
	A15024 Pointer (Tuning)	.04	A2103	Washer Plain Fibre	.01
			A2300	Washer Rubber RF Panel	.02



VOLTAGE CHART

Measurements from elements to chassis-1000 Ohms per Volt Meter Line Voltage-115v AC.  
 RF negative grid bias 5.0 Volts  
 6F6 negative grid bias 20.0 Volts  
 AC-RMS each plate of rectifier to center tap 350.0 Volts  
 Total current drain 82 Ma. E-drop across speaker field 86.0 Volts

POSITION	TUBE	E <sub>f</sub>	E <sub>k</sub>	E <sub>g</sub> SCREEN	E <sub>g</sub> SUPPRESSOR	E <sub>p</sub> TRIODE	E <sub>p</sub> PENTODE
Oscillator	6A7	6.3	0.0	0.0		170.0	
RF Amplifier	6D6	6.3	0.0	125.0	0.0		265.0
1st Detector	6A7	6.3	0.0	125.0	0.0		265.0
IF Amplifier	6K7	6.3	0.0	125.0	0.0		265.0
2nd Detector AVC-AF Amplifier	75	6.3	0.0	0.0		90.0	
Amplifier	6F6	6.3	0.0	260.0	0.0		250.0
Rectifier	80	5.0		0.0			

CASE ELECTRIC CORP.

MODELS 801,802  
Chassis 27 SME  
Alignment, Trimmers

TUBE COMPLEMENT

- 1 Type 6K7 RF Amplifier
- 1 Type 76 Oscillator
- 1 Type 6L7 First detector and Converter
- 1 Type 6D6 IF amplifier
- 1 Type 75 Second Detector AVC and AF Amplifier
- 1 Type 42 Amplifier
- 1 Type 80 Rectifier

Sockets are marked for the proper tubes.

ALIGNMENT PROCEDURE

Correct alignment is of extreme importance in all wave receivers. The receivers are properly aligned at the factory with precision equipment and realignment should not be attempted by the service technician until all other causes of faulty operation are corrected.

In order to properly realign the receiver the following equipment is necessary:

1. A signal generator which will provide an accurately calibrated signal at any frequency from 262 kilocycles to 18 megacycles. The generator should have adjustable signal output.
2. An output audio voltmeter of the low voltage type to be connected across the moving coil of the speaker. This should be capable of providing a readable deflection for relatively low output levels to avoid the effects of overload.
3. An insulated or non-metallic screw driver for the adjustment of trimmers.

IF ALIGNMENT 262.5 KC

1. Connect the output meter (low scale) across the loud speaker voice coil. Turn the wave band switch (outside of tuning knob) to its left hand or counter-clockwise position. This brings the red indicator for broadcast band to the top. Turn the volume control to its maximum position.
2. Connect the test oscillator ground to chassis and the "hot" lead from the test oscillator to the grid of the 6L7 converter tube through a series .1 Mfd. condenser. Set test oscillator to 262.5 kc.
3. Adjust IF alignment screws C11, C12, (see illustration below) of second IF transformer, T2, adjacent to rectifier tube (type 80) to maximum output, reducing output of test oscillator to keep the meter reading on scale as alignment proceeds.
4. Adjust alignment screws C13, C14, of first IF transformer, T1, (directly behind tuning condenser) to maximum output as described above.
5. Readjust these trimmers for accurate alignment. Always use the lowest possible output from the test oscillator to preclude the possibility of automatic volume control action confusing proper adjustment.

ADJUSTMENT OF WAVE TRAP

Connect test oscillator to antenna and ground terminals of the receiver using a .00025 Mfd. condenser in series with the antenna terminal. With oscillator set at 262.5 kc adjust antenna trap alignment screw C4, for minimum signal increasing output of test oscillator as a minimum is reached.

RF ALIGNMENT (Broadcast "A" or "Red" Band)

1. With test oscillator connecting antenna post through .00025 Mfd. as above set signal generator to 1400 kc.
2. Set dial scale, hour and minute hands, to 6 o'clock when gang condenser is fully meshed at maximum capacitance.
3. Set dial to calibration mark 1400 kc using hour hand to indicate frequency (no further attention need be paid to position of minute hand which is used merely for convenience in logging stations by "TIME"). Adjust broadcast oscillator trimmer condenser C17, for maximum output meter reading. If it is found that two peaks occur within the range of the trimmer action use the one in which the trimmer is in its lowest capacitance or counter-clockwise position.
4. Adjust detector input trimmer C8, to a maximum.
5. Adjust the Antenna stage trimmer C5, to a maximum.
6. Set test oscillator to 800 kc and tune in the signal, then adjust broadcast oscillator padder C16, for maximum output. This padder is mounted under the chassis at the side of the "deck." Rock the condenser back and forth a degree or two in order to obtain proper maximum.

MODELS 801-802 CHASSIS 27SME

7. Repeat the 1400 kc adjustments described under 3, 4, 5, for greater accuracy. The output of the test oscillator should always be kept at the lowest output which will allow sufficient meter swing since this assures greater accuracy of adjustment.

Short Wave "B" or "Green" Band

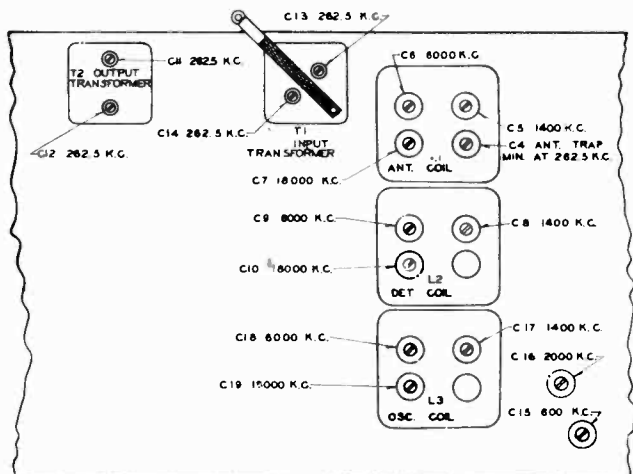
1. Turn the wave band switch to the "B" or "Green" position. Leave the oscillator connected as above but with its output set to 6000 kc and the .00025 Mfd. condenser replaced by a 400 ohm resistor. Set dial scale to 6 mc on the green or middle band, adjust "B" band oscillator trimmer condenser C18, for maximum output observing as before that the proper point occurs at the minimum or counter-clockwise position of the screw if two points are found.
2. Adjust detector input "B" band trimmer condenser C9, to a maximum while rocking the tuning condenser slightly for maximum response.
3. Adjust Antenna stage "B" band trimmer C6, for maximum output.
4. Set the test oscillator to 2000 kc and tune in the signal. Adjust "B" band oscillator padder condenser C16 for maximum output while rocking tuning condenser as described above.
5. Repeat operations 1, 2, and 3 to assure precise alignment.

Short Wave "C" or "Yellow" Band

1. With test oscillator connected same as for "B" band and set to 18000 kc (18 mc) set dial scale to 18 mc on inner or yellow band.
2. Adjust "C" band oscillator trimming condenser C19, for maximum response. Use lower capacity or counter-clockwise response point.
3. Adjust "C" band detector input trimmer C10, to a maximum, "rocking" tuning adjustment to obtain greatest output.
4. Adjust antenna "C" band trimmer C7, for maximum response.

\*The adjustment of the detector input trimmers on the "B" and "C" bands by the procedure outlined above is advisable as contrasted with the usual method of trimming without rocking the tuning adjustment because slight couplings through the tube circuits tend to disturb the oscillator frequency as the detector is tuned. This procedure should be followed on any type of all wave receiver.

In checking the circuit with a continuity or ohmmeter it is wise to follow the schematic diagram in an orderly fashion starting at the antenna and ground connections and proceeding to the speaker circuits.

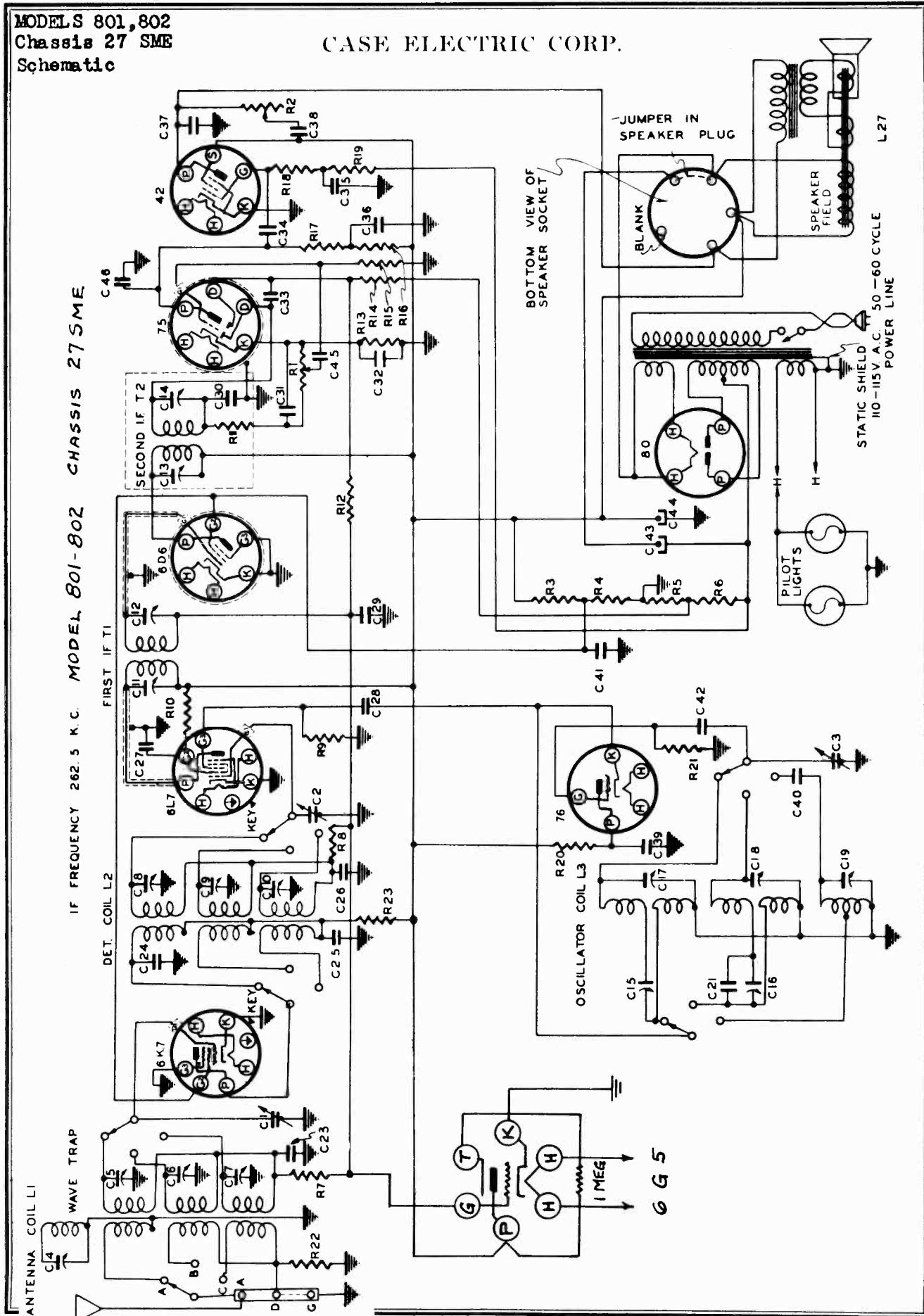


See Case Page 7-16, for Dial Drive notes

CASE ELECTRIC CORP.

MODELS 801,802  
Chassis 27 SME  
Schematic

IF FREQUENCY 262.5 K.C. MODEL 801-802 CHASSIS 27 SME



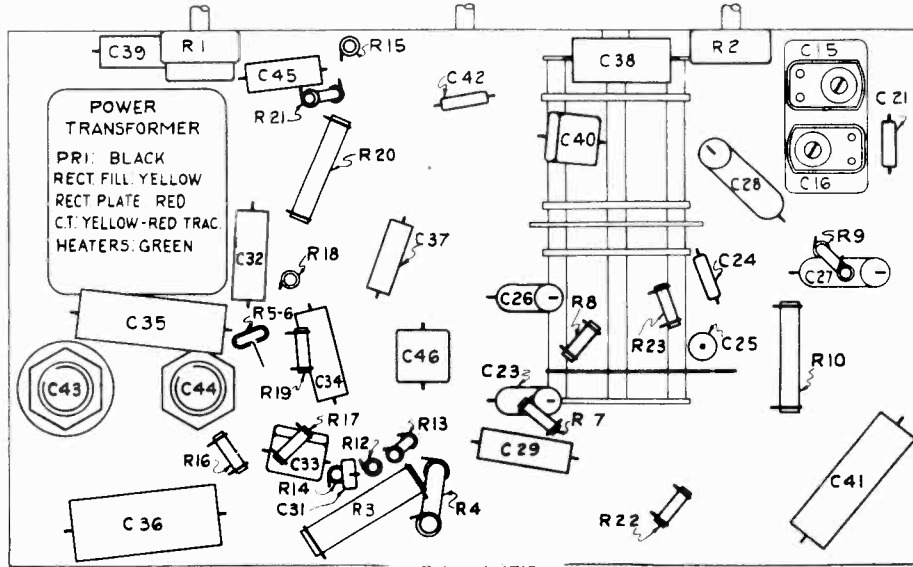
CASE ELECTRIC CORP.

MODELS 801,802  
Chassis 27 SME  
Voltage, Parts  
Chassis

MODELS 801-802  
CHASSIS 27 SME

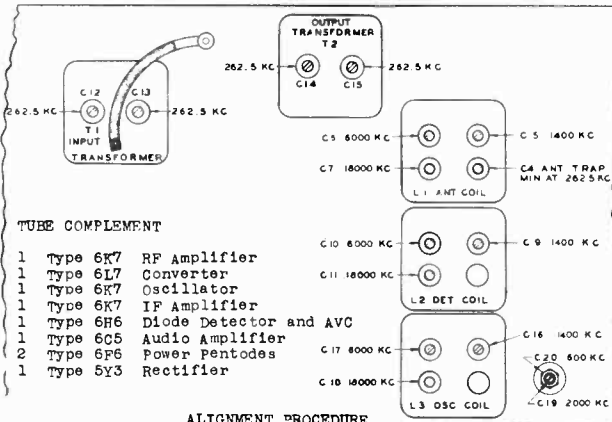
REPLACEMENT PARTS AND PRICE LIST

C4 C5 C6 C7 L1	A15016	Belt Drive	.21	R9	15511	Resistor Carbon 50M 1/4W	.08
C8 C9 C10 L2	B15045	Bezel	.94	R7 R8 R16 R19	15515	Resistor Carbon 100M 1/4W	.08
C17 C18 C19 L3	15441	Book Instruction	.12	R14 R15	15517	Resistor Carbon 1 meg. 1/4W	.08
	15070	Clip Grid (Glass Type)	.01	R15	15530	Resistor Carbon 2500 1/4W	.07
	15071	Clip Grid (Metal Type)	.01	R5	15535	Resistor Carbon 13M 2W	.17
	15330	Clutch Assembly	.26	R22	15523	Resistor Carbon 200M 1/4W	.08
	16271	Coil Antenna & Shield	3.53	R10	15524	Resistor Carbon 50M 1W	.09
	16272	Coil Detector & Shield	3.44	R17 R18	15512	Resistor Carbon 250M 1/4W	.08
	15270	Coil Oscillator & Shield sets	2.75	R4	15526	Resistor Carbon 10M 1W	.09
	A15069	Cord Attachment	.35	R12	15520	Resistor Carbon 500M 1/4W	.08
C44	A15237-2	Cond. Electrolytic 10 Mfd 300V	.80	R21	15529	Resistor Carbon 25M 1/4W	.08
C43 (25 Cycle)	A15427	Cond. Electrolytic 16 Mfd 300V	.96	R23	15542	Resistor Carbon 1M 1/4W	.08
C43 (60 Cycle)	A15313	Cond. Electrolytic 16 Mfd 400V	1.07		B15043	Retaining Ring for Glass	.16
C24	15906	Cond. mica 100 Mmfd	1.07		B15041	Retaining Spring for Bezel	.18
C30 C31 C42 C46	15918	Cond. Mica 100 Mmfd	.11		A15020	Shaft Drive	.15
C21	15927	Cond. Mica 1500 Mmfd	.20		15095	Shield Goat (Long)	.12
C33	15923	Cond. Mica 50 Mmfd	.12		15094	Shield Goat (Short)	.11
C40	15911	Cond. Mica 4500 Mmfd	.37		15388	Shield Plate Lead (Long)	.15
C35 C41	15750	Cond. Tubular .25 Mfd 400V	.19		15387	Shield Plate Lead (Short)	.10
C23 C26 C29 C32	15752	Cond. Tubular .05 Mfd 200V	.12		15404	Shield Volume Control Lead	.32
C37	15753	Cond. Tubular .002 Mfd 600V	.11		15092	Socket 75	.11
C25 C27 C28	15756	Cond. Tubular .05 Mfd 400V	.12		A15053	Socket Dial Lamp L. H.	.11
C39	15757	Cond. Tubular .1 Mfd 400V	.14		A15054	Socket Dial Lamp R. H.	.11
C34 C45	15760	Cond. Tubular .02 Mfd 400V	.12		15066	Socket 6K7	.14
C36	15762	Cond. Tubular .5 Mfd 400V	.28		15063	Socket 80	.09
C38	15768	Cond. Tubular .05 Mfd 600V	.16		15064	Socket 42	.11
C1 C2 C3	D15076	Cond. Variable	5.21		15065	Socket 76	.10
C15 C16	A15357	Cond. Variable Padder	.72		15068	Socket 6P6	.11
R2	A15116	Control Tone 0-150M Ohms	.70		15087	Socket 6L7	.12
R1	A15368	Control Volume 0-200M Ohms	.89		A15033	Spacer Brass (For Chassis Rubber)	.04
	15327	Dial & Paper Strip CASE	1.96		C15367	Speaker 10"	7.04
	15328	Dial & Paper Strip RADIOVOGUE	1.96		B15406	Speaker 6"	5.27
	B15044	Glass Convex	.25		A15017	Spring Tension	.02
	A15037	Knob Drive	.14		C15256	Switch Range	2.14
	A15098	Knob Switch	.23		15123	Switch Range Pulley & String	.65
	A15039	Knob Volume & Tone	.15		A15031	Terminal Doublet	.15
	15089	Lamp Dial 6.3 V. Baynet Type	.19	C11 C12 T1	B15208-4	Transformer Input IF	1.42
	15129	Lamp Dial Assembly	.68	C13 C14 T2	B15209-4	Transformer Output IF	1.63
	A15082	Lug Ground Electrolytic	.01		15361	Transformer Power 60 Cycle 110V	4.75
	A15032	Mounting Chassis Rubber	.03		15390	Transformer Power 25 Cycle 110V	7.55
	A15072	Planetary Assembly	.46		B15264	Trimmer R P (4 Gang)	.76
	A15023	Pointer (Minute)	.04		B15060	Trimmer R F	.64
	A15024	Pointer (Tuning)	.04		1950	Washer Felt (Small Knob)	.01
	A15006	Pulley Idler Assembly	.10		1951	Washer Felt (Switch Knob)	.01
R5 R6	A15358	Resistor Candohm 182-61 Ohms	.23		A2111	Washer Extruding Fibre	.02
R20	15501	Resistor Carbon 25M 1W	.11		A2103	Washer Plain Fibre	.01
R11	15510	Resistor Carbon 20M 1/4W	.08		A2300	Washer Rubber R F Panel	.02



Measurements from elements to chassis-1000 Ohms per Volt Meter Line Voltage-115 V. AC.  
 RF negative grid bias 5.0 Volts  
 6P6 negative grid bias 20.0 Volts  
 AC-RMS each plate of rectifier to center tap 350.0 Volts  
 Total current drain 82 Ma. E-drop across speaker field 86.0 Volts

POSITION	TUBE	E <sub>f</sub>	E <sub>k</sub>	E <sub>g</sub>	SCREEN	E <sub>g</sub>	SUPPRESSOR	E <sub>p</sub>	TRIODE	E <sub>p</sub>	PENTODE
Oscillator	76	6.3	0.0			0.0		100.0			
RF Amplifier	6K7	6.3	0.0	105.0		0.0				260.0	
1st Detector	6L7	6.3	0.0	100.0		0.0				260.0	
IP Amplifier	6D6	6.3	0.0	105.0		0.0				260.0	
2nd Detector AVC-AP Amp.	75	6.3	1.0			0.0		80.0			
Amplifier	42	6.3	0.0	260.0		0.0				250.0	
Rectifier	80	5.0				0.0					

**MODEL 1001****Chassis 19 RSME****Trimmers, Alignment****CASE ELECTRIC CORP.****MODEL 1001 CHASSIS 19 RSME**

Correct alignment is of extreme importance in all wave receivers. The receivers are properly aligned at the factory with precision equipment and realignment should not be attempted by the service technician until all other causes of faulty operation are corrected.

In order to properly realign the receiver the following equipment is necessary:

1. A signal generator which will provide an accurately calibrated signal at any frequency from 262 kilocycles to 18 megacycles. The generator should have adjustable signal output.
2. An output audio voltmeter of the low voltage type to be connected across the moving coil of the speaker. This should be capable of providing a readable deflection for relatively low output levels to avoid the effects of overload.
3. An insulated or non-metallic screw driver for the adjustment of trimmers.

**IF ALIGNMENT 262.5 KC**

1. Connect the output meter (low scale) across the loud speaker voice coil. Turn the wave band switch (outside of tuning knob) to its left-hand or counter-clockwise position. This brings the red indicator for broadcast band to the top. Turn the volume control to its maximum position.

2. Turn the Variable Selectivity (center bottom knob) to the left or sharpest position. Put tone control on brilliant or clockwise position. With Selectivity Control held all the way to the left or counter-clockwise loosen set screws of collars, which actuate Variable Selectivity coupling and rotate until the drive cables are drawn out as far as possible without forcing. Tighten set screws in the collars. This adjustment assures maximum selectivity and should be checked before IF alignment is done.

3. Connect the test oscillator ground to chassis and the "hot" lead from the test oscillator to the grid of the 6L7 converter tube through a series .1 Mfd condenser. Set test oscillator to 262.5 kc.

4. With Variable Selectivity Control in sharpest position adjust IF alignment screws, C14, C15, of output transformer, (directly behind tuning condenser) to maximum output reducing output of test oscillator to keep the meter reading on scale as alignment proceeds.

5. Adjust alignment screws, C12, C13, of input transformer T1, (adjacent to electrolytic condenser) to maximum output as described above.

6. Readjust all four alignment screws to insure accurate alignment. Always use the lowest possible output from the test oscillator to preclude the possibility of automatic volume control action confusing proper adjustment.

**ADJUSTMENT OF WAVE TRAP**

Connect test oscillator to antenna and ground terminals of the receiver using a .00025 Mfd condenser in series with the antenna terminal. With oscillator set at 262.5 kc adjust antenna trap alignment screw C4, for minimum signal increasing output of test oscillator as a minimum is reached.

**RF ALIGNMENT (Broadcast "A" or "Red" Band)**

1. With test oscillator connecting antenna post through .00025 Mfd as above set signal generator to 1400 kc.

2. Set dial scale, hour and minute hands, to 6 o'clock when gang condenser is fully meshed at maximum capacitance.

3. Set dial to calibration mark 1400 kc using hour hand to indicate frequency (no further attention need be paid to position of minute hand which is used merely for convenience in logging stations by "TIME"). Adjust broadcast oscillator trimmer condenser C16, for maximum output meter reading. If it is found that two peaks occur within the range of the trimmer action use the one in which the trimmer is in its lowest capacitance or counter-clockwise position.

4. Adjust detector input trimmer C9, to a maximum.

In some receivers C9, is a separate trimmer located on the range switch shield under the chassis rather than in the top of the coil can. In these models C8, is a 100 Mmf fixed Mica Condenser instead of the variable trimmer shown on the diagram.

5. Adjust the Antenna stage trimmer C5, to a maximum.

6. Set test oscillator to 600 kc and tune in the signal, then adjust broadcast oscillator padder C20, for maximum output. This padder is mounted under the chassis at the side of the RF "deck." This adjustment is the outer nut of the concentric type padding condenser. Rock the condenser back and forth a degree or two in order to obtain proper maximum.

7. Repeat the 1400 kc adjustments described under 3, 4, 5, for greater accuracy. The output of the test oscillator should always be kept at the lowest output which will allow sufficient meter swing since this assures greater accuracy of adjustment.

**Short Wave "B" or "Green" Band**

1. Turn the wave band switch to the "B" or "Green" position. Leave the oscillator connected as above but with its output set to 6000 kc and the .00025 Mfd condenser replaced by a 400 Ohm resistor. Set dial scale to 6 mc on the green or middle band, adjust "B" band oscillator trimmer condenser C17, for maximum output observing as before that the proper point occurs at the minimum or counter-clockwise position of the screw if two points are found.

2. Adjust detector input "B" band trimmer condenser C10, to a maximum while rocking the tuning condenser slightly for maximum response.

3. Adjust Antenna stage "B" band trimmer C6, for maximum output.

4. Set the test oscillator to 2000 kc and tune in the signal. Adjust "B" band oscillator padder condenser C19 for maximum output while rocking tuning condenser as described above. This adjustment is the inner screw of the concentric type padding condenser.

5. Repeat operations 1, 2, and 3 to assure precise alignment.

**Short Wave "C" or "Yellow" Band**

1. With test oscillator connected same as for "B" band and set to 18000 kc (18 mc) set dial scale to 18 mc on inner or yellow band.

2. Adjust "C" band oscillator trimming condenser C18, for maximum response. Use lower capacity or counter-clockwise response point.

3. Adjust "C" band detector input trimmer C11, to a maximum, "rocking" tuning adjustment to obtain greatest output.

4. Adjust antenna "C" band trimmer C7, for maximum response.

\*The adjustment of the detector input trimmers on the "B" and "C" bands by the procedure outlined above is advisable as contrasted with the usual method of trimming without rocking the tuning adjustment because slight couplings through the tube circuits tend to disturb the oscillator frequency as the detector is tuned. This procedure should be followed on any type of all wave receiver.

Part of the production of Model 19 incorporated certain circuit alterations which are shown in the insert enclosed by dotted lines on the circuit diagram of Page three. The parts placement diagram on Page two is a composite drawing showing the position of parts for both types of receivers. Parts dotted on this diagram refer to those shown in the insert of the schematic diagram. Circuit elements C31 and R17 are not used when dotted connections are employed.

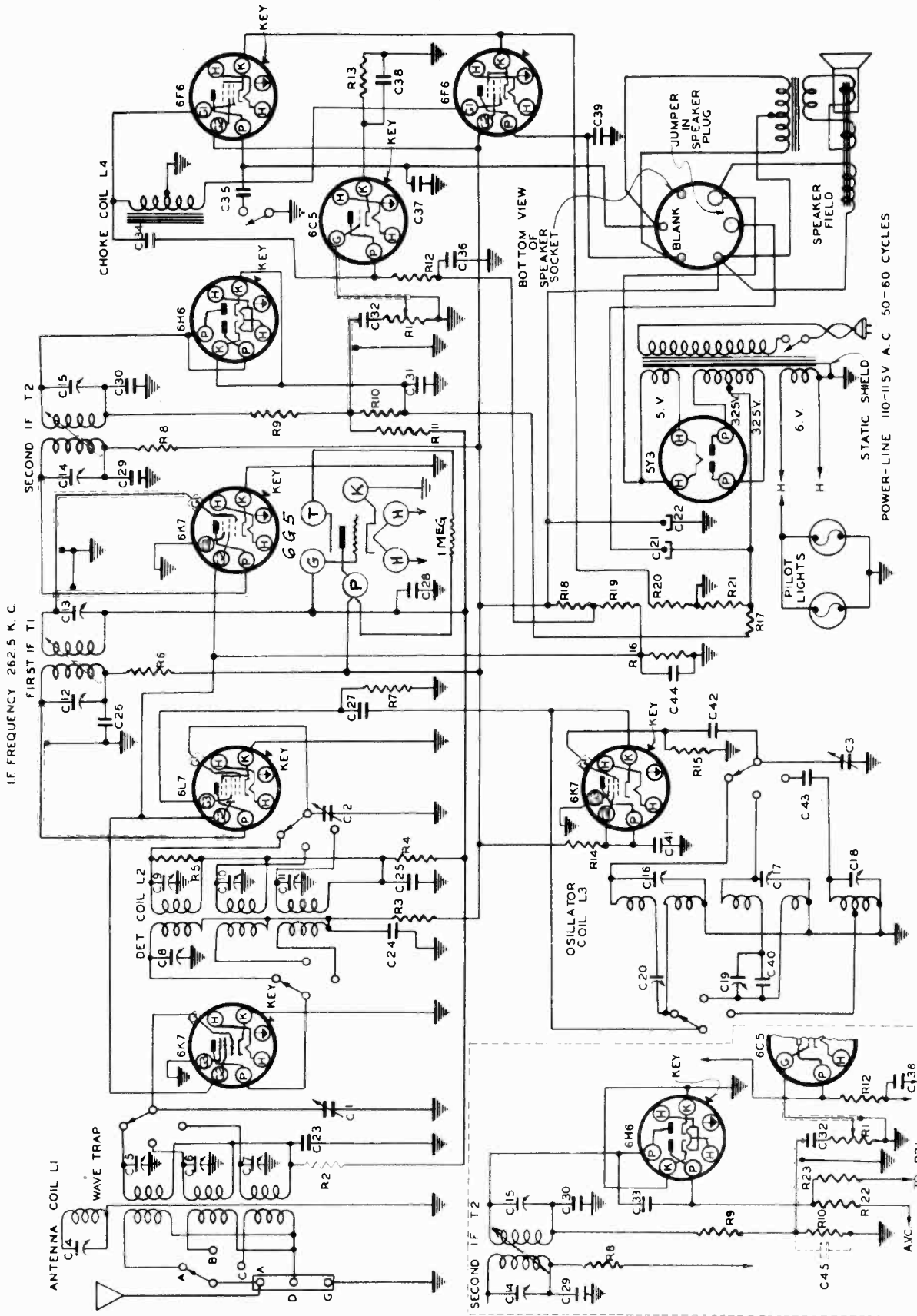
When the variable selectivity control is in "tune" or narrow position certain 6K7 IF tubes may exhibit a tendency toward regeneration or instability due to control grid to plate capacity coupling. This may be "neutralized" by using several turns of twisted hook-up wire connected between the plate of the IF tube and blank lug of the RF socket which is used as a tie point for the AVC return. This is shown on the parts placement diagram.

Excessive hum in this model has been found to be due to defective 6H6 and 6C5 tubes. Replace each tube in turn with a tube known to be normal in this respect.

In checking the circuit with a continuity or ohmmeter it is wise to follow the schematic diagram in orderly fashion starting at the antenna and ground connections and proceeding to the speaker circuits.

CASE ELECTRIC CORP.

MODEL 1001  
Chassis 19 RSME  
Schematic



MODEL 1001 - 19 RSME

**MODEL 1001**  
**Chassis 19 RSME**  
**Voltage, Parts**  
**Chassis**

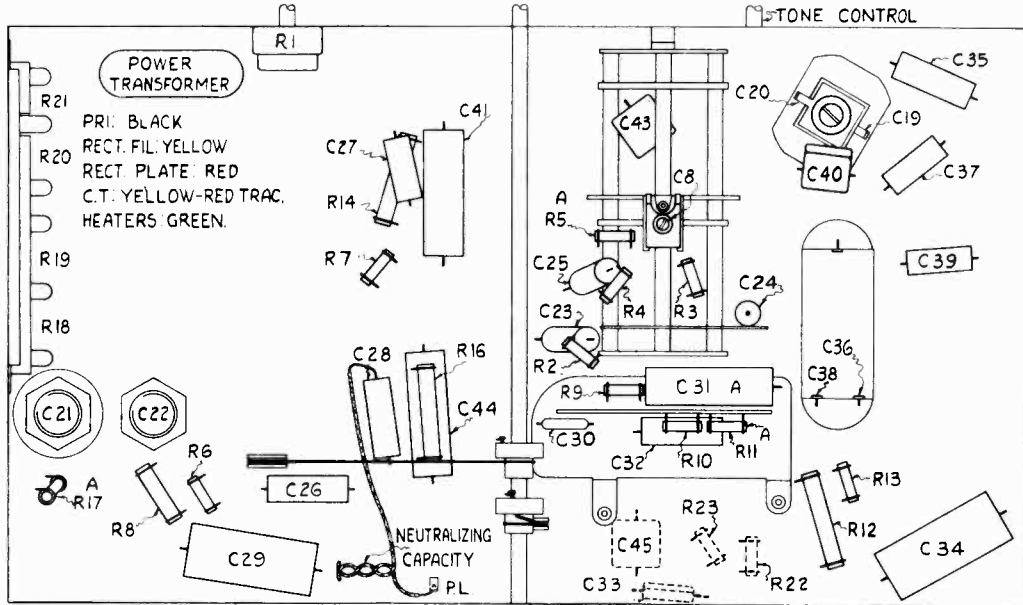
**CASE ELECTRIC CORP.**

MODEL 1001

REPLACEMENT PARTS & PRICE LIST

CHASSIS 19 RSME

A15016	Belt Drive	.21	R12	15501	Resistor Carbon 25M 1 Watt	.11
B15046	Bezel	.94	R23 R11	15517	Resistor Carbon 1 Meg. 1/4 Watt	.06
15428	Book Instruction	.08	R9	15510	Resistor Carbon 20M 1/4 Watt	.08
B15238	Choke Audio	1.07	R7	15511	Resistor Carbon 50M 1/4 Watt	.08
15071	Clip Grid (Metal Tube)	.01	R15 R5 R4 R2	15515	Resistor Carbon 100M 1/4 Watt	.08
15330	Clutch Assembly	.26	R17 R10	15523	Resistor Carbon 200M 1/4 Watt	.08
A15089	Cord Attachment	.36	R14	15544	Resistor Carbon 15M 1 Watt	.09
D15076	Condenser Variable	5.21	R22	15503	Resistor Carbon 600M 1/4 Watt	.06
C1 C2 C3	A15258	Cond. Electrolytic 4 Mfd 25V	R8	15541	Resistor Carbon 5000 1/4 Watt	.06
C36		4 Mfd 350v	R6 R3	15542	Resistor Carbon 1000 1/4 Watt	.06
C38	A15237	Cond. Electrolytic 10 Mfd 300V	R13	15543	Resistor Carbon 1000 1/4 Watt	.07
C22	A15236	Cond. Electrolytic 25 Mfd 375V	R16	15545	Resistor Carbon 30M 1 Watt	.06
C43	15911	Cond. Mica 4500 Mmfd		B15041	Retaining Spring for Bezel	.18
C30 C33 C42	15918	Cond. Mica 100 Mmfd		B15043	Retaining Ring Glass	.16
C40	15921	Cond. Mica 1250 Mmfd		A15020	Shaft Drive	.15
C46	15926	Cond. Mica 200 Mmfd		15284	Shielded Antenna Lead Assembly	.15
C34	15750	Cond. Tubular .25 Mfd 400V		15283	Shielded Volume Control Lead	.20
C44 C41 C31	15751	Cond. Tubular .25 Mfd 200V		A15053	Socket Dial Lamp (Left Hand)	.11
C23 C25 C28 C32	15752	Cond. Tubular .06 Mfd 200V		A15054	Socket Dial Lamp (Right Hand)	.11
C39 C37	15753	Cond. Tubular .002 Mfd 600V		15066	Socket 6K7	.14
C35	15755	Cond. Tubular .06 Mfd 600V		15083	Socket 6C5	.14
C24 C26	15756	Cond. Tubular .05 Mfd 400V		15084	Socket 6F6	.14
C29	15762	Cond. Tubular .5 Mfd 400V		15086	Socket 6H6	.14
C27	15760	Cond. Tubular .02 Mfd 400V		15087	Socket 6L7	.14
C19 C20	A15259	Cond. Variable Padder		15099	Socket 5Y3	.14
C16 C17 C18 I3	15270	Coil Oscillator in Shield	Sold	15248	Socket Speaker 6-prong	.11
C4 C5 C6 C7 I1	15271	Coil Antenna in Shield	matched	A15033	Spacer Brass (For Chassis Rubber)	.02
C8 C9 C10 C11 I2	15272	Coil Detector in Shield	sets	C15340	Speaker 10"	7.46
R1	A15253	Control Volume	.89	C15359	Speaker 12"	9.79
	15327	Dial & Paper Strip CASE	1.96	A15017	Spring Tension	.02
	15328	Dial & Paper Strip RADIOVOGUE	1.96	C15376	Switch Range	2.52
	B15044	Glass Convex	.25	A15158	Switch Tone Control	.54
	A15037	Knob Drive	.14	15123	Switch Range Pulley & String	.65
	A15098	Knob Switch	.23	15278	Transformer Input Variable IF	3.49
	A15039	Knob Volume and Tone	.15	15279	Transformer Output Variable IF	3.16
	A15036	Knob Pointer	.18	A15227	Transformer Power 60 Cycle 110V	5.86
	15129	Lamp Dial Assembly	.68	15265	Transformer Power 25 Cycle 110V	8.53
	15089	Lamp Dial 6.3 V Baynet Type	.19	15060	Trimmer RF 3-gang	.64
	A15082	Lug Ground Electrolytic	.01	15284	Trimmer RF 4-gang	.76
	A15032	Mounting Chassis Rubber	.03	A15031	Terminal Doublet	.13
	A15023	Pointer (Minute)	.04	A2300	Washer Rubber RF Panel	.02
	A15024	Pointer (Tuning)	.04	A2103	Washer Plain Fibre	.01
	A15006	Pulley Idler Assembly	.10	A2111	Washer Extruded Fibre	.02
	A15072	Planetary Assembly	.46	1950	Washer Felt (small knob)	.01
R21 R20 R19 R18	A15226	Resistor candohm 5000-5M-230-44	.68	1951	Washer Felt (small switch)	.01
			C12 C13 T1			
			C14 C15 T2			



Measurements from elements to chassis-1000 Ohms per Volt Meter Line Voltage-115v. AC.  
 RF negative grid bias 5.0 volts  
 6F6 negative bias 18.0 volts  
 AC-RMS each plate of rectifier to center tap 325.0 volts  
 Total current drain 110 Ma. E - drop across speaker field 50.0 volts

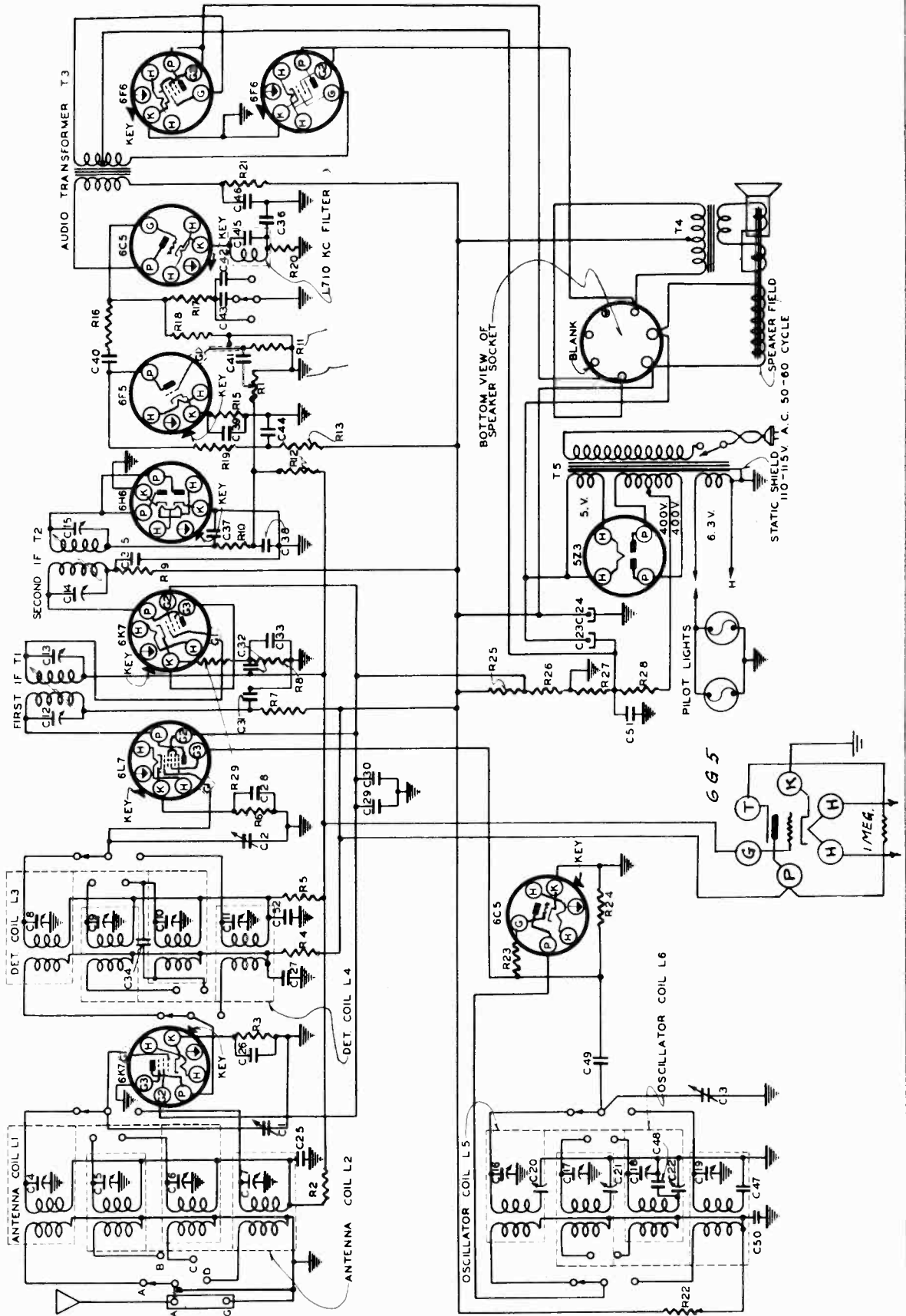
POSITION	TUBE	E <sub>r</sub>	E <sub>k</sub>	E <sub>g</sub> SCREEN	E <sub>g</sub> SUPPRESSOR	E <sub>p</sub> TRIODE	E <sub>p</sub> PENTODE
RF Amplifier	6K7	6.3	0.0	125.0	0		260.0
Converter	6L7	6.3	0.0	125.0	0		260.0
Oscillator	6K7	6.3	0.0	190.0	0		190.0
IF Amplifier	6K7	6.3	0.8	125.0	.8		230.0
Diode Detector and AVC	6H6	6.3					
Audio Amplifier	6C5	6.3	2.6			100.0	
Power pentode	6F6's	6.3	16.5	260.0	0		255.0
Rectifier	5Y3	5.2	320.0		0		

CASE ELECTRIC CORP.

MODELS 1101, 1102  
Chassis 110 RSME  
Schematic

MODELS 1101-1102  
CHASSIS 110 RSME

I.F. 265.5 KC





**MODELS 1101, 1102**  
**Chassis 110 RSME**  
**Trimmers, Alignment**

**CASE ELECTRIC CORP.**

**TUBE COMPLEMENT**

**MODELS 1101-1102**

- 1 Type 6K7 RF Amplifier
- 1 Type 6C5 Oscillator
- 1 Type 6L7 Converter
- 1 Type 6K7 IF Amplifier
- 1 Type 6H6 Diode Detector & AVC Rectifier
- 1 Type 6F5 First Audio Amplifier
- 1 Type 6C5 Driver Amplifier
- 2 Type 6F6 Class A-B--push pull output
- 1 Type 5Z3 Rectifier

**CHASSIS 110 RSME**

Sockets are marked for the proper tubes.

**ALIGNMENT PROCEDURE**

Correct alignment is of extreme importance in all wave receivers. The receivers are properly aligned at the factory with precision equipment and realignment should not be attempted by the service technician until all other causes of faulty operation are corrected.

In order to properly realign the receiver the following equipment is necessary:

1. A signal generator which will provide an accurately calibrated signal at any frequency from 262 kilocycles to 18 megacycles. The generator should have adjustable signal output.
2. An output audio voltmeter of the low voltage type to be connected across the moving coil of the speaker. This should be capable of providing a readable deflection for relatively low output levels to avoid the effects of overload.
3. An insulated or non-metallic screw driver for the adjustment of trimmers.

**IF ALIGNMENT 262.5 KC**

1. Connect the output meter (low scale) across the loud speaker voice coil. Turn the wave band switch (outside of tuning knob) to its left-hand or counter-clockwise position. This brings the red indicator for broadcast band to the top. Turn the volume control to its maximum position.
2. Turn the Variable Selectivity (center bottom knob) to the left or sharpest position. Put tone control on brilliant or clockwise position. With Selectivity Control held all the way to the left or counter-clockwise loosen set screws of collars, which actuate Variable selectivity coupling and rotate until the drive cables are drawn out as far as possible without forcing. Tighten set screws in the collars. This adjustment assures maximum selectivity and should be checked before IF Alignment is done.
3. Connect the test oscillator ground to chassis and the "hot" lead from the test oscillator to the grid of the 6L7 converter tube through a series .1 Mfd condenser. Set test oscillator to 262.5 kc.
4. With Variable Selectivity Control in sharpest position adjust IF alignment screws, C14, C15, of output transformer, (directly behind tuning condenser) to maximum output reducing output of test oscillator to keep the meter reading on scale as alignment proceeds.
5. Adjust alignment screws, C12, C13, of input transformer T1, (adjacent to electrolytic condenser) to maximum output as described above.
6. Readjust all four alignment screws to insure accurate alignment. Always use the lowest possible output from the test oscillator to preclude the possibility of automatic volume control action confusing proper adjustment.

**RF ALIGNMENT (Broadcast "A" or "Red" Band)**

1. With test oscillator connecting antenna post through .00025 Mfd. as above set signal generator to 1400 kc.
2. Set dial scale, hour and minute hands, to 6 o'clock when gang condenser is fully meshed at maximum capacitance.
3. Set dial to calibration mark 1400 kc using hour hand to indicate frequency (no further attention need be paid to position of minute hand which is used merely for convenience in logging stations by "TUNE"). Adjust broadcast oscillator trimmer condenser C16, for maximum output meter reading. If it is found that two peaks occur within the range of the trimmer action use the one in which the trimmer is in its lowest capacitance or counter-clockwise position.
4. Adjust detector input trimmer C8, to a maximum.
5. Adjust the antenna stage trimmer C4, to a maximum.
6. Set test oscillator to 600 kc and tune in the signal, then adjust broadcast oscillator padder C20, for maximum output. This padder is mounted under the chassis at the front of receiver. Rock the condenser back and forth a degree or two in order to obtain proper maximum.
7. Repeat the 1400 kc adjustments described under 3, 4, 5, for greater accuracy. The output of the test oscillator should always be kept at the lowest output which will allow sufficient meter swing since this assures greater accuracy of adjustment.

**Short Wave "B" or "Green" Band**

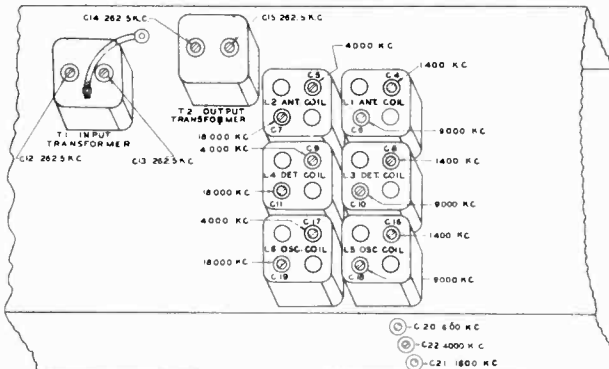
1. Turn the wave band switch to the "B" or "green" position. Leave the oscillator connected as above but with its output set to 4000 kc and the .00025 Mfd. Condenser replaced by a 400 Ohm resistor. Set dial scale to 4 mc on the green band, adjust "B" band oscillator trimmer condenser C17, for maximum output observing as before that the proper point occurs at the minimum or counter-clockwise position of the screw if two points are found.
2. Adjust detector input "B" band trimmer condenser C9, to a maximum while rocking the tuning condenser slightly for maximum response.
3. Adjust antenna stage "B" band trimmer C5, for maximum output.
4. Set the test oscillator to 1600 kc and tune in the signal. Adjust "B" band oscillator padder condenser C21, for maximum output while rocking tuning condenser as described above.
5. Repeat operations 1, 2, 3, to assure precise alignment.

**Short Wave "C" or "Yellow" Band**

1. With test oscillator connected same as for "B" band and set to 9000 kc (9 mc) set dial scale to 9 mc on yellow band.
2. Adjust "C" band oscillator trimming condenser C18, for maximum response. Use lower capacity or counter-clockwise response point.
3. Adjust "C" band detector input trimmer C10, to a maximum, "rocking" tuning adjustment to obtain greatest output.
4. Adjust antenna "C" band trimmer C6, for maximum response.
5. Set test oscillator to 4000 kc (4 mc) and tune in the signal. Adjust "C" band padder condenser C22, for maximum output while rocking tuning condenser as described above.
6. Repeat operations 1, 2, 3, 4, to assure precise alignment.

**Short Wave "D" or "Blue" Band**

1. With test oscillator connected as for "B" and "C" bands and set to 18000 kc (18 mc) set dial scale to 18 mc on blue band.
2. Adjust "D" band oscillator trimmer C19, for maximum response. Use lower capacity or counter-clockwise response point.
3. Adjust "D" band detector input trimmer C11, to a maximum, "rocking" tuning adjustment to obtain greatest output.
4. Adjust "D" band antenna trimmer C7, for maximum response.
5. Repeat operations 1, 2, 3, 4, to assure precise alignment.



In checking the circuit with a continuity or ohmmeter it is wise to follow the schematic diagram in orderly fashion starting at the antenna and ground connections and proceeding to the speaker circuits.

In checking circuits connected to the electrolytic condensers it is necessary to observe the polarity of the leads of the continuity meter. Use the meter with the positive test terminal on the anode or plus side of the circuit. If the reverse connection is used the electrolytic condenser will become conductive and show a false low resistance reading.

The 10 kc Interchannel Beat Filter L7-C45 is a complete assembly in which the coil inductance is individually adjusted to tune with the condenser. In the event that either part should require replacement it will be necessary to order the complete assembly.

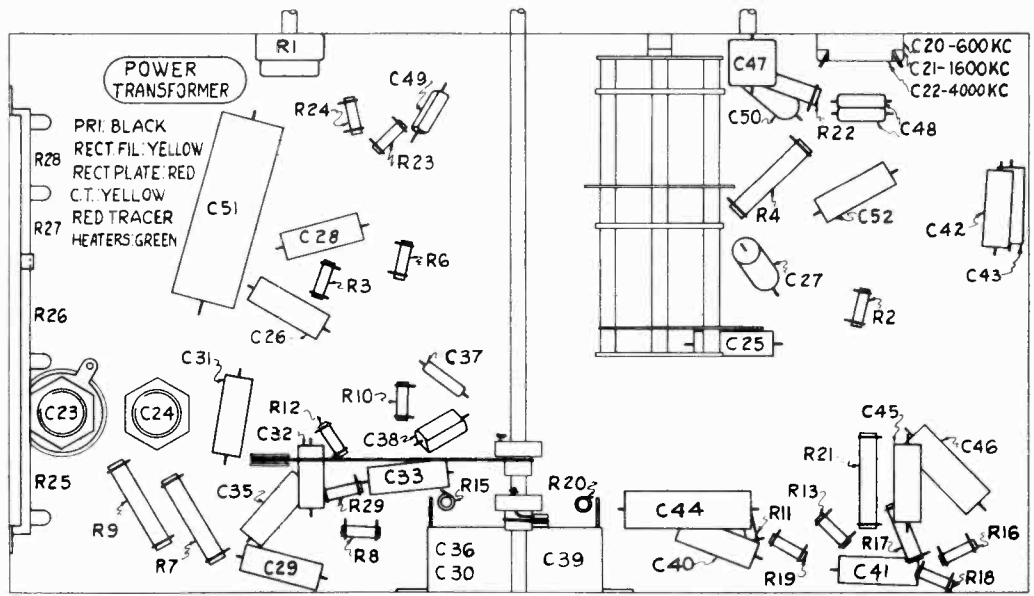
Excessive hum in this model has been found to be due to defective 6H6 and 6C5 tubes. Replace each tube in turn with one known to be normal.

# CASE ELECTRIC CORP.

**MODELS 1101, 1102**  
**Chassis 110 RSME**  
**Voltage, Parts**  
**Chassis**

REPLACEMENT PARTS AND PRICE LIST

A15016	Belt Drive	.21	R25 R26 R27 R28	A15298	Resistor Candohm 150-320-4M-6M	1.00
B15045	Bezel	.94	R13 R24 R10	15511	Resistor Carbon 50M 1/4 watt	.08
15428	Book Instruction	.08	R5 R2	15515	Resistor Carbon 100M 1/4 watt	.08
15071	Clip Grid (Metal Tube)	.01	R12 R11	15517	Resistor Carbon 1 Meg. 1/4 watt	.06
15330	Clutch Assembly	.26	R19 R18 R16	15523	Resistor Carbon 200M 1/4 watt	.08
A15069	Cord Attachment	.35	R22	15525	Resistor Carbon 35M 1 watt	.10
C1 C2 C3	Cond. Variable	5.21	R4 R21 R9	15526	Resistor Carbon 10M 1/4 watt	.09
C20 C21 C22	Cond. Variable Padder	1.07	R17	15529	Resistor Carbon 25M 1/4 watt	.06
C51	Cond. Dry Electrolytic	1.92	R8 R3	15534	Resistor Carbon 230 Ohm 1/4 watt	.10
C36 C39 C30	Cond. Dry Electrolytic	1.30	R29 R23	15536	Resistor Carbon 100 Ohm 1/4 watt	.07
C23	Cond. Wet Electrolytic	1.21	R15	15539	Resistor Carbon 400 Ohm 1/4 watt	.10
C24	Cond. Wet Electrolytic	.97	R6	15543	Resistor Carbon 1000 Ohm 1/4 watt	.07
C49 C37 C38	Cond. Mica 100 Mmfd	.11	R7	15546	Resistor Carbon 40M 1 watt	.09
C47	Cond. Mica 1915 Mmfd	.27	R20	15547	Resistor Carbon 1500 Ohm 1/4 watt	.07
C48	Cond. Mica 2500 Mmfd	.25		B15041	Retaining Spring for Bezel	.18
C34	Cond. Mica 20 Mmfd	.12		B15043	Retaining Ring Glass	.16
C52 C41 C43	Cond. Tubular .05 Mfd 200v	.12		A15020	Shaft Drive	.15
C32 C25	Cond. Tubular .05 Mfd 400v	.12		15351	Shield Antenna Lead	.17
C40	Cond. Tubular .05 Mfd 400v	.12		15317	Shield Grid Lead	.13
C46 C35 C33 C31	Cond. Tubular .1 Mfd 400v	.14		15350	Shielded Switch Lead	.16
C29 C28 C27 C50	Cond. Tubular .1 Mfd 400v	.14		15349	Shielded V.C. Lead	.32
C42	Cond. Tubular .02 Mfd 400v	.12		A15063	Socket Dial Lamp (Left Hand)	.11
C26	Cond. Tubular .1 Mfd 200v	.12		A15064	Socket Dial Lamp (Right Hand)	.11
C44	Cond. Tubular .5 Mfd 400v	.28		15066	Socket 6K7	.14
C45	Cond. Tubular .06 Mfd 200v	.12		15083	Socket 6C5	.14
C4 C6 L1	Coil 1 & 3 Band Ant. in Shield	3.00		15084	Socket 6P6	.14
C5 C7 L2	Coil 2 & 4 Band Ant. in Shield	3.21		15085	Socket 6P5	.14
C8 C10 L3	Coil 1 & 3 Band Det. in Shield	3.58		15086	Socket 6H6	.14
C9 C11 L4	Coil 2 & 4 Band Det. in Shield	2.87		15087	Socket 6L7	.14
C16 C18 L5	Coil 1 & 3 Band Osc. in Shield	2.66		15181	Socket 5Z3	.09
C17 C19 L6	Coil 2 & 4 Band Osc. in Shield	2.77		15088	Socket Speaker	.11
L7	Control Volume	.95		A15033	Spacer Brass (for Chassis Rubber)	.02
A15025	Filter 10 kc Assembly	.52		C1512	Speaker 12"	9.79
A15251	Dial & Paper Strip CASE	2.08		A15017	Spring Tension	.02
15353	Dial & Paper Strip RADIOVOGUE	2.08		C15058	Switch Range	2.19
15438	Glass convex	.25		A15026	Switch Tone Control	.42
B15044	Knob Drive	.14		15123	Switch Range Pulley & String	.65
A15036	Knob Pointer	.16		B15052	Transformer Audio	2.24
A15038	Knob Switch (4 Band)	.24		15278	Transformer Input Variable IF	3.49
A15039	Knob Volume & Tone	.15		15279	Transformer Output Variable IF	3.16
15089	Lamp Dial 6.3 V. Baynet Type	.19		C15051	Transformer Power 60 cycles 110V	6.06
15129	Lamp Dial Assembly	.68		B15059	Trimmer RF 2 Gang	.52
A15082	Lug Ground Electrolytic	.01		B15060	Trimmer RF 3 Gang	.64
A15032	Mounting Chassis Rubber	.03		A15114	Antenna & Ground Terminal	.09
A15023	Pointer (Minute)	.04		A2300	Washer Rubber RF Panel	.02
A15024	Pointer (Tuning)	.04		A2103	Washer Plain Fibre	.01
A15006	Pulley Idler Assembly	.10		A2111	Washer Extruded Fibre	.02
A15072	Planetary Assembly	.46		1950	Washer Felt (Small Knob)	.01
				1951	Washer Felt (Switch Knob)	.01



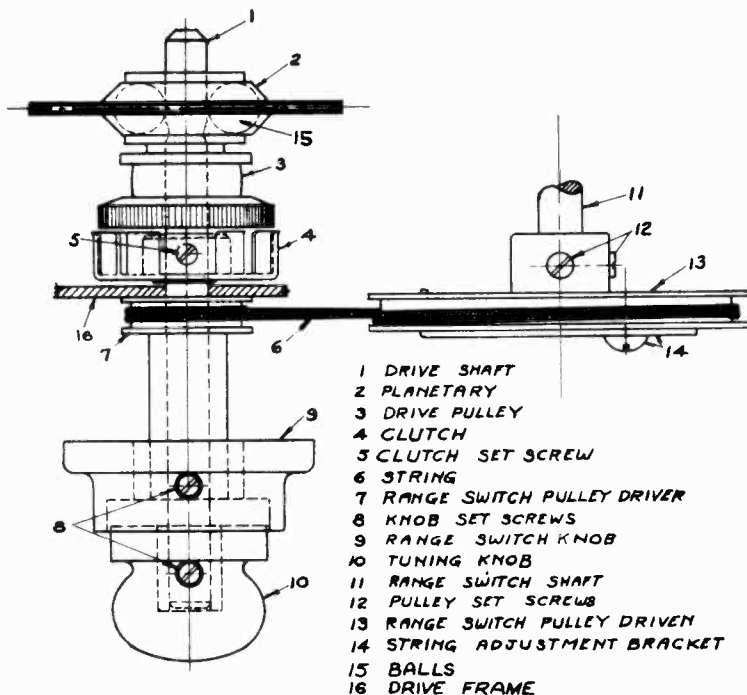
Measurements from elements to Chassis-1000 Ohms per Volt Meter Line Voltage-115 v. AC.  
 AC-RMS each plate of rectifier to center tap 400 Volts.  
 Total current drain 200 Ma. B--drop across speaker field 53 Volts.

POSITION	TUBE	E <sub>f</sub>	E <sub>k</sub>	E <sub>g</sub> SCREEN	E <sub>g</sub> SUPPRESSOR	E <sub>p</sub> TRIODE	E <sub>p</sub> PENTODE
RF Amplifier	6K7	6.3	2.5	110	2.5		215
Oscillator	6C6	6.3					100
Converter	6L7	6.3	5	110			215
IF Amplifier	6K7	6.3	3	110			235
Diode Detector & AVC Rectifier	6H6	6.3					
1st Audio Amplifier	6P6	6.3	1.5				110
Driver Amplifier	6C6	6.3	8.5				235
Class A-B--Push Pull Output	6P6		32			310	
Rectifier	5Z3	5					400

**MODELS**  
**1101-1102**  
**CHASSIS**  
**110 RSME**

Planetary Drive  
Assembly, Notes

CASE ELECTRIC CORP.



- 1 DRIVE SHAFT
- 2 PLANETARY
- 3 DRIVE PULLEY
- 4 CLUTCH
- 5 CLUTCH SET SCREW
- 6 STRING
- 7 RANGE SWITCH PULLEY DRIVER
- 8 KNOB SET SCREWS
- 9 RANGE SWITCH KNOB
- 10 TUNING KNOB
- 11 RANGE SWITCH SHAFT
- 12 PULLEY SET SCREW
- 13 RANGE SWITCH PULLEY DRIVER
- 14 STRING ADJUSTMENT BRACKET
- 15 BALLS
- 16 DRIVE FRAME

THE DUAL SPEED PLANETARY DRIVE

## SERVICE NOTES

In order to make the tuning of short wave broadcast easier, a dual speed drive is provided, giving a ratio of 96 to 1 with the knob, No. 10, in the "OUT" position which is exceptionally good for short wave tuning, a ratio of 16 to 1 is provided with the knob, No. 10, pushed "IN," used for standard broadcast tuning. You can use this drive knob in the position you like best.

The mechanism of this drive is of the planetary type, using ball bearings, No. 15, housed between cantilever type spring housing, No. 2. When the drive knob, No. 10, is in "OUT" position, the balls, No. 15, operate direct on the drive shaft, No. 1, which gives a reduction in speed on the pointers. When the drive knob, No. 10, is at "IN" position the balls, No. 15, clear the drive shaft, No. 1, and a clutch, No. 4, contacts drive pulley, No. 3, and gives a direct drive on shaft, No. 1.

If drive should ever slip on the "IN" position you will likely find that set screws, No. 5, have become loose in clutch, No. 5. To reset clutch place shaft, No. 1, at "OUT" position. You can tell when it is at "OUT" position by the feel as just after the ball, No. 15, comes up the incline on the shaft, No. 1, it will locate in a very shallow groove on the shaft, No. 1, see that the clutch, No. 4, is against frame, No. 16, and then tighten set screws, No. 5, securely.

If the band switch knob, No. 9, appears to have excessive backlash, you will generally find that it was forced when the switch was at end of its rotation and the set screws, No. 12, are broken loose, tighten these screws and if backlash still appears, loosen screw and adjust bracket and screw, No. 14.

When placing knobs, No. 9 and No. 10, on shafts, be sure knob, No. 9, clears cabinet approximately  $\frac{3}{64}$  and tighten set screw, No. 8, securely. With shaft, No. 1, at the "IN" position place knob No. 10, on shaft No. 1, until it stops against knob No. 9, then pull to the front  $\frac{3}{64}$  inch and tighten set screw No. 8, securely.

CASE ELECTRIC CORPORATION--MARION, INDIANA-

In the event of failure of the receiver, time may often be saved by making a few preliminary checks before removal of the chassis and speaker from the cabinet.

1. Check the antenna and ground connections both at the receiver and also at all points where joints have been made. Noisy operation can often be traced to faults in antenna and ground installation especially when the receiver has been connected to an old antenna.

2. Check the tubes. If a reliable tube checking instrument is not at hand, secure a set of known good tubes and interchange the tubes in the receiver, one at a time, until the defective tube is located. Low sensitivity can often be traced to gas or grid current in an RF, first detector or IP tube. Hum is often due to heater-cathode shorts in any one of the tubes.

If the above checks do not disclose the reason for failure of the receiver remove the chassis and speaker from the cabinet and check the supply voltages as indicated on the chart. To assist in the location of the various tube prongs, the schematic diagram tube symbols have been so drawn as to represent the socket as viewed from the bottom of the chassis.

Hum, motorboating, low volume and low voltage may be due to shorted or defective electrolytic condensers.

Open bypass condensers often cause oscillation or distorted tone. To check for this condition, shunt each condenser with another of similar capacity and of the same voltage rating until the defective unit is located.

Shorted bypass condensers cause low voltage or weak reception. Remove suspected unit and replace by one of correct capacity and rating.

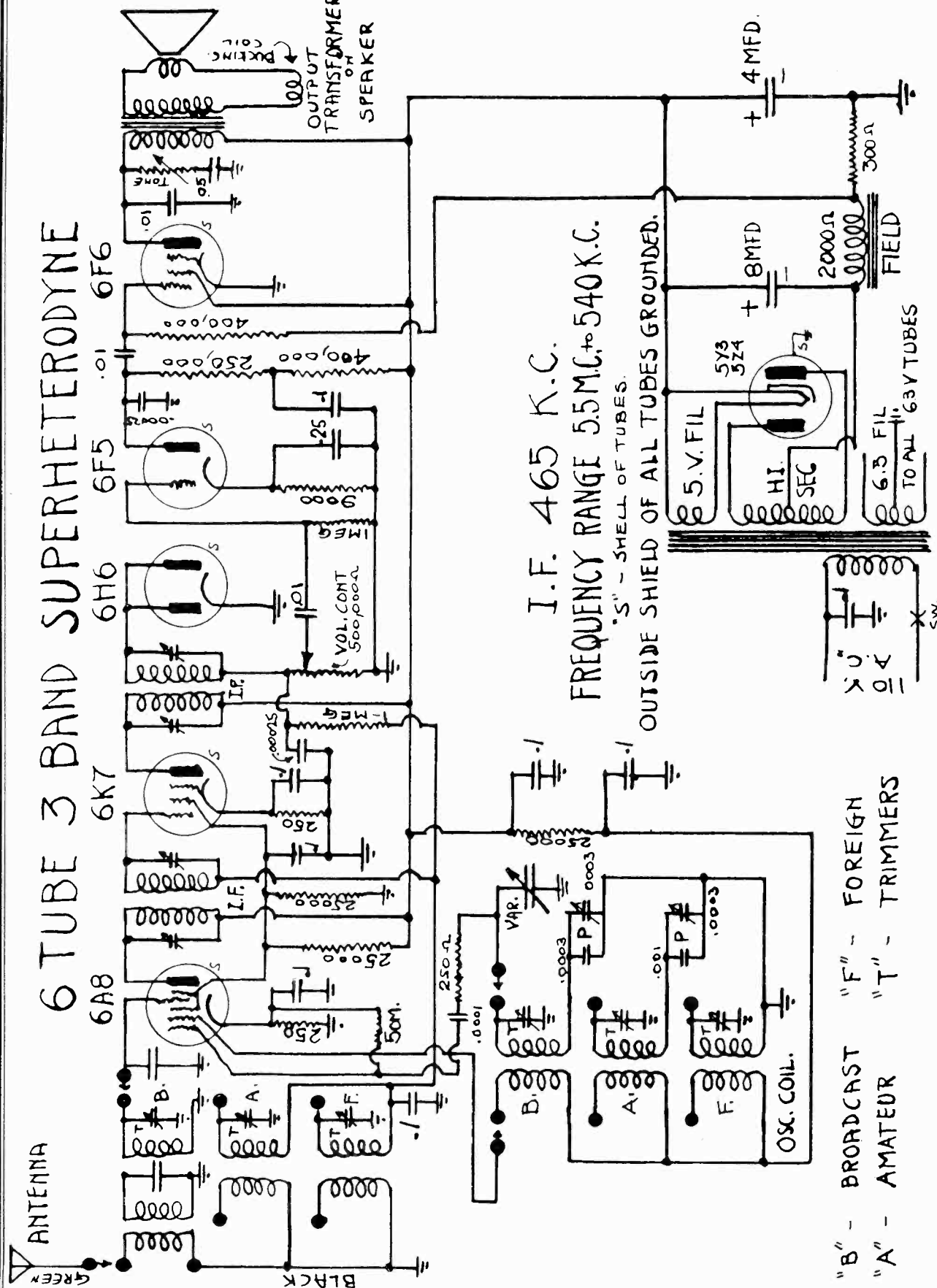
In checking circuits connected to the electrolytic condensers it is necessary to observe the polarity of the leads of the continuity meter. Use the meter with the positive test terminal on the anode or plus side of the circuit. If the reverse connection is used the electrolytic condenser will become conductive and show a false low resistance reading.



MODEL 6-Tube, 3-Band  
Schematic

CHAMPION RADIO

6 TUBE 3 BAND SUPERHETERODYNE



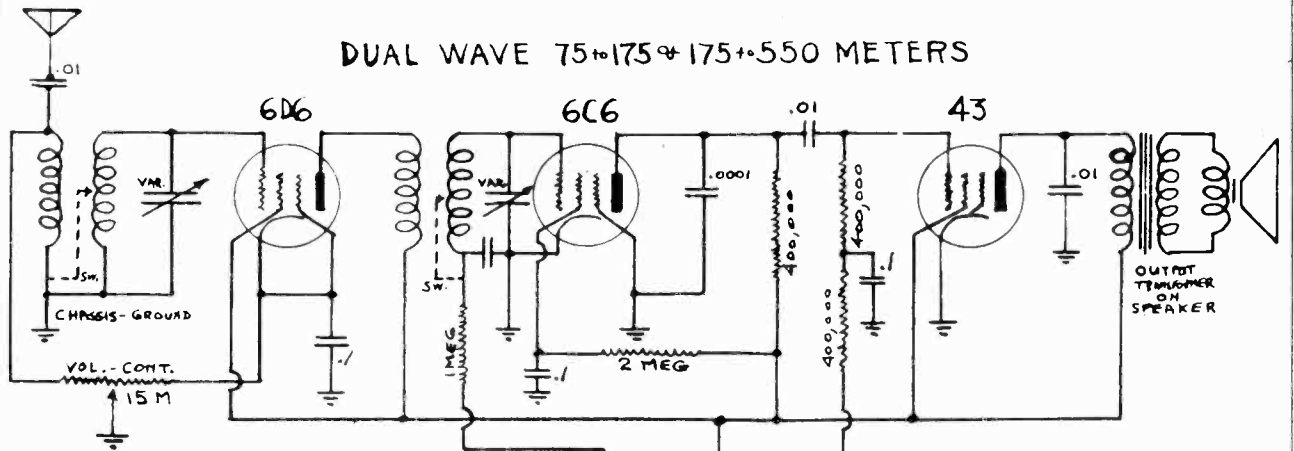
I.F. 465 K.C.  
FREQUENCY RANGE 55 M.C. to 540 K.C.  
\*S\* - SHELL OF TUBES.  
OUTSIDE SHIELD OF ALL TUBES GROUNDED.

"B" - BROADCAST  
"A" - AMATEUR  
"F" - FOREIGN  
"T" - TRIMMERS

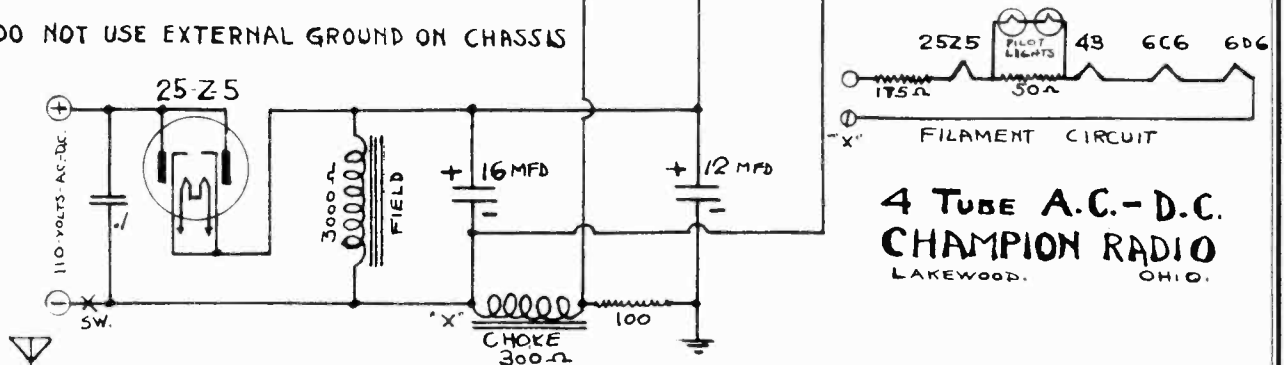
# CHAMPION RADIO

MODEL 4-Tube, AC-DC  
 MODEL 42  
 Schematics

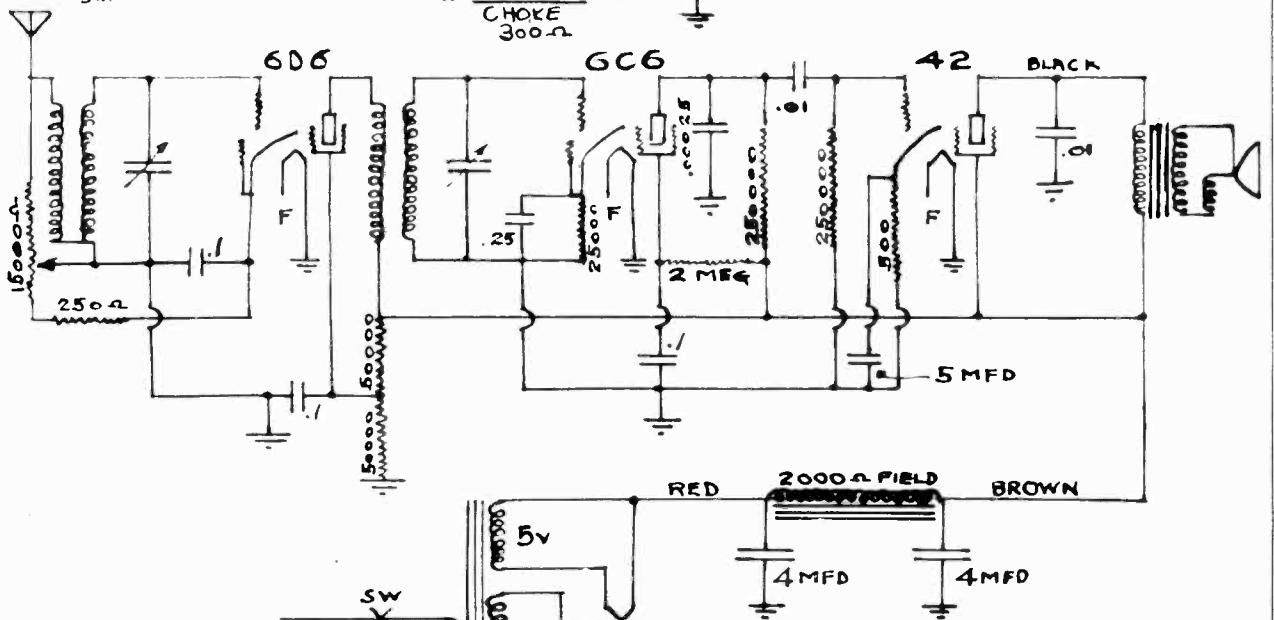
DUAL WAVE 75 to 175 & 175 to 550 METERS



DO NOT USE EXTERNAL GROUND ON CHASSIS



4 TUBE A.C.-D.C.  
 CHAMPION RADIO  
 LAKEWOOD, OHIO.



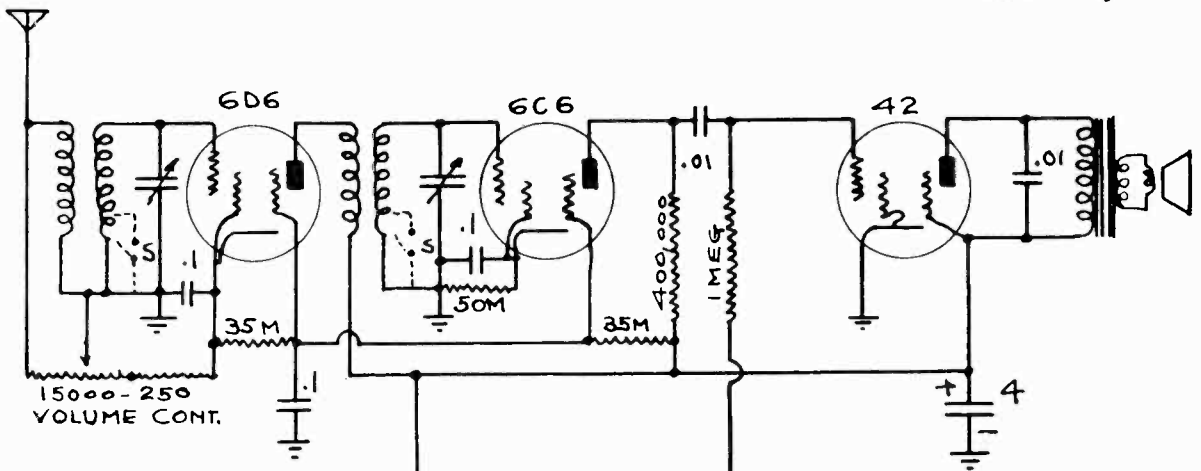
NOTE  
 EARLY MODELS  
 USED 58, 57 AND 2A5  
 TUBES IN PLACE OF  
 6D6, 6C6, AND 42  
 THE ONLY DIFFERENCE  
 A 2 1/2 VOLT FILAMENT TRANSFORMER WAS USED

CHAMPION RADIO  
 MODEL 42



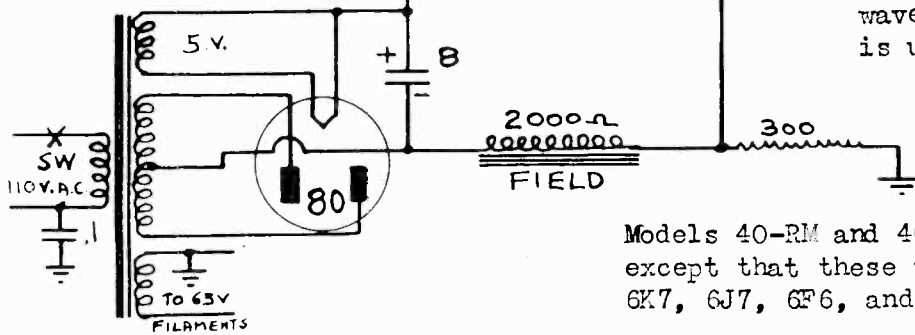
CHAMPION RADIO

MODELS 40-R, 40-DW  
40-RM, 40-DWM  
MODEL 52  
Schematics, Notes

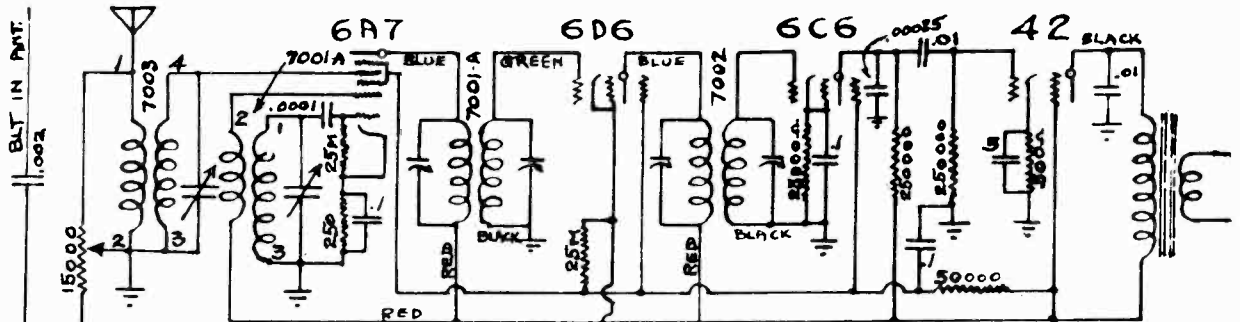


Models 40-R and 40-DW

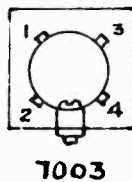
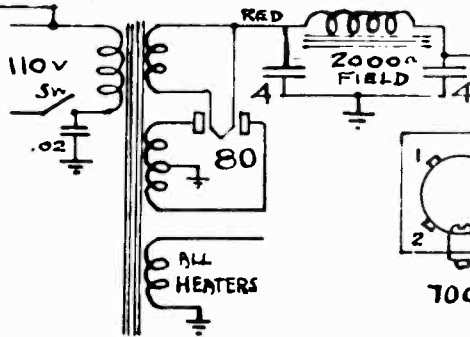
NOTE Model 40-DW is short wave when Switch S is used.



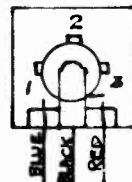
Models 40-RM and 40-DWM are similar except that these tubes are used: 6K7, 6J7, 6F6, and 5Z4.



CHAMPION RADIO.  
MODEL 52 456 KC.



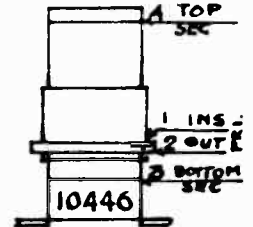
7003



7001A



7002



10446

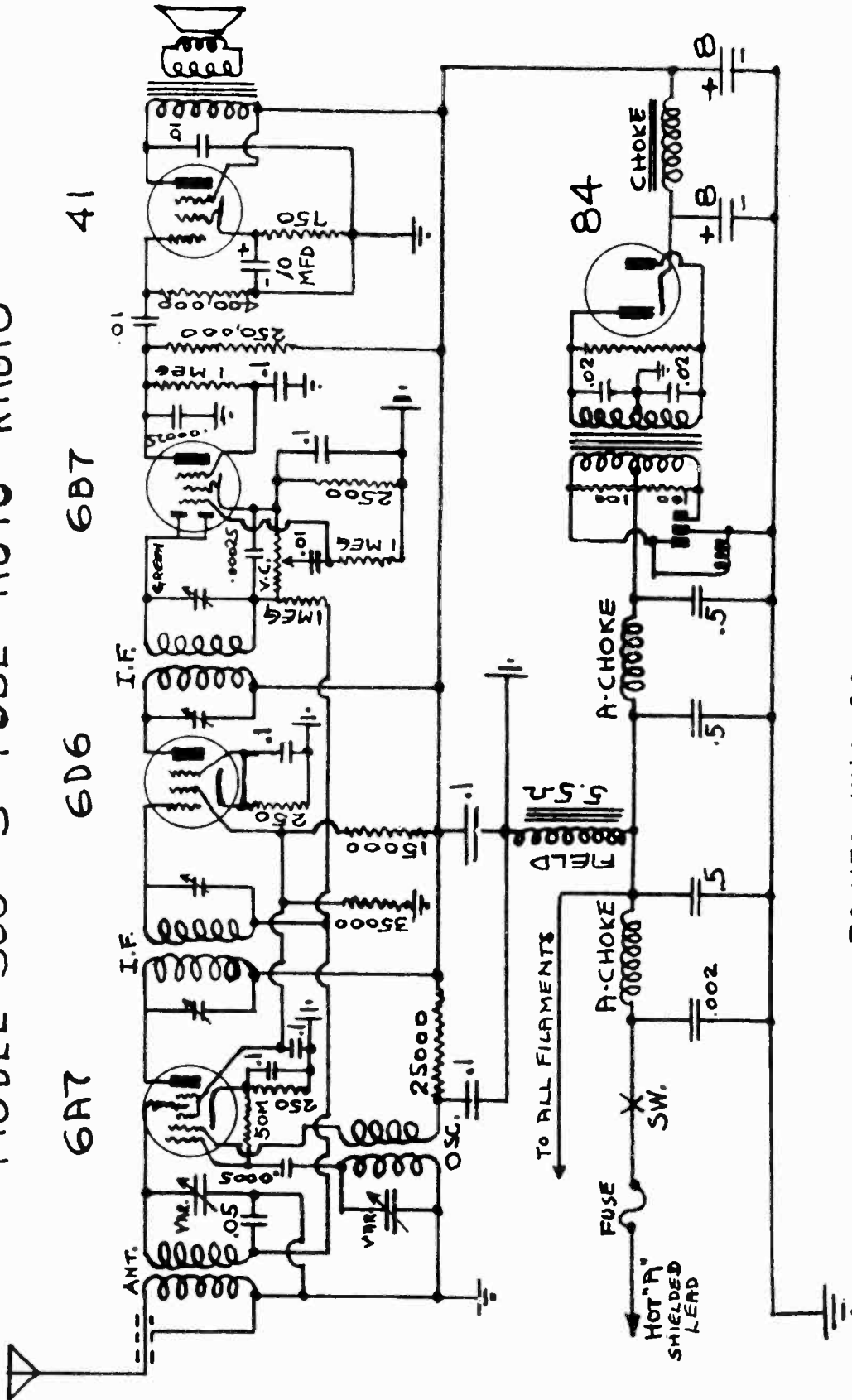
NOTE - Early models used 2.5-volt transformer and 2A7, 58, 57, and 2A5 tubes. Where unshielded antenna coil is used, No. 10446 replaces No. 7003.



MODEL 500  
Schematic

CHAMPION RADIO

MODEL 500 - 5 TUBE AUTO RADIO



POWER UNIT COMPLETELY SHIELDED

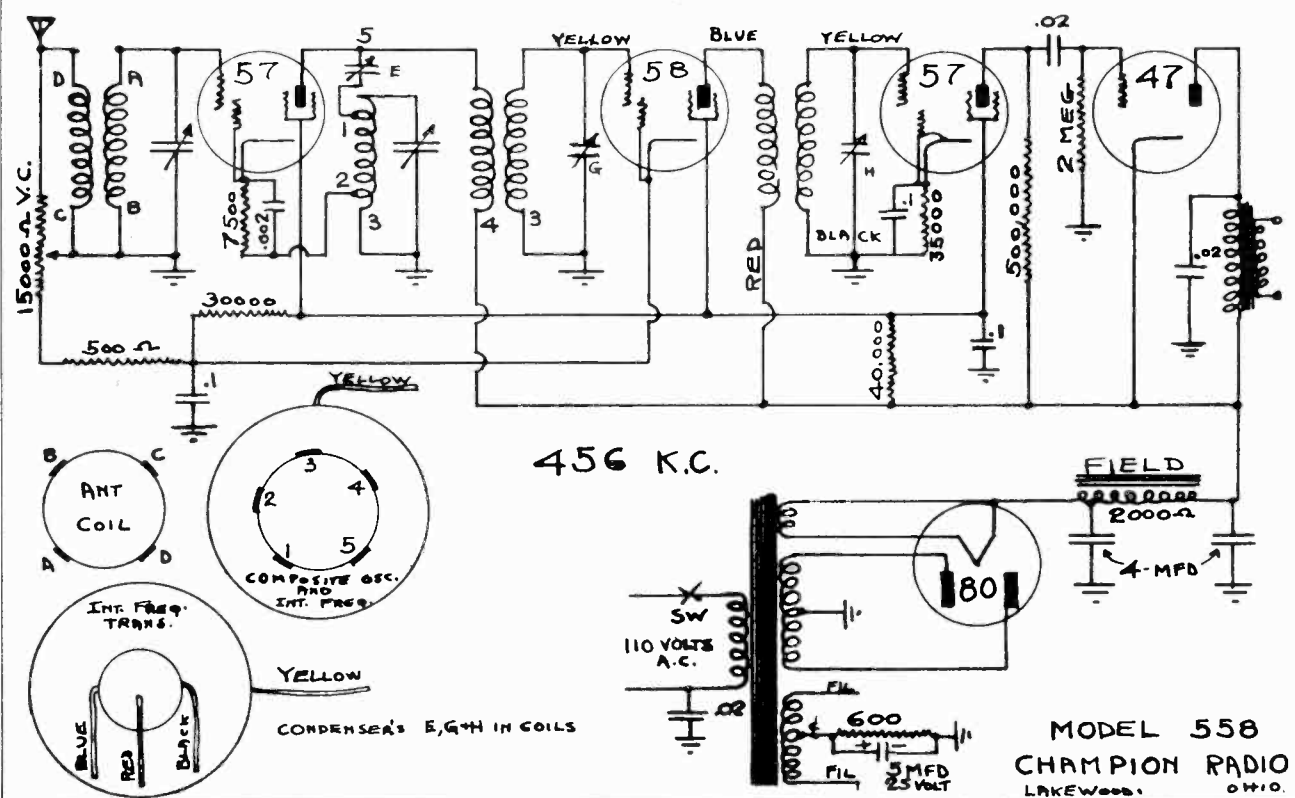
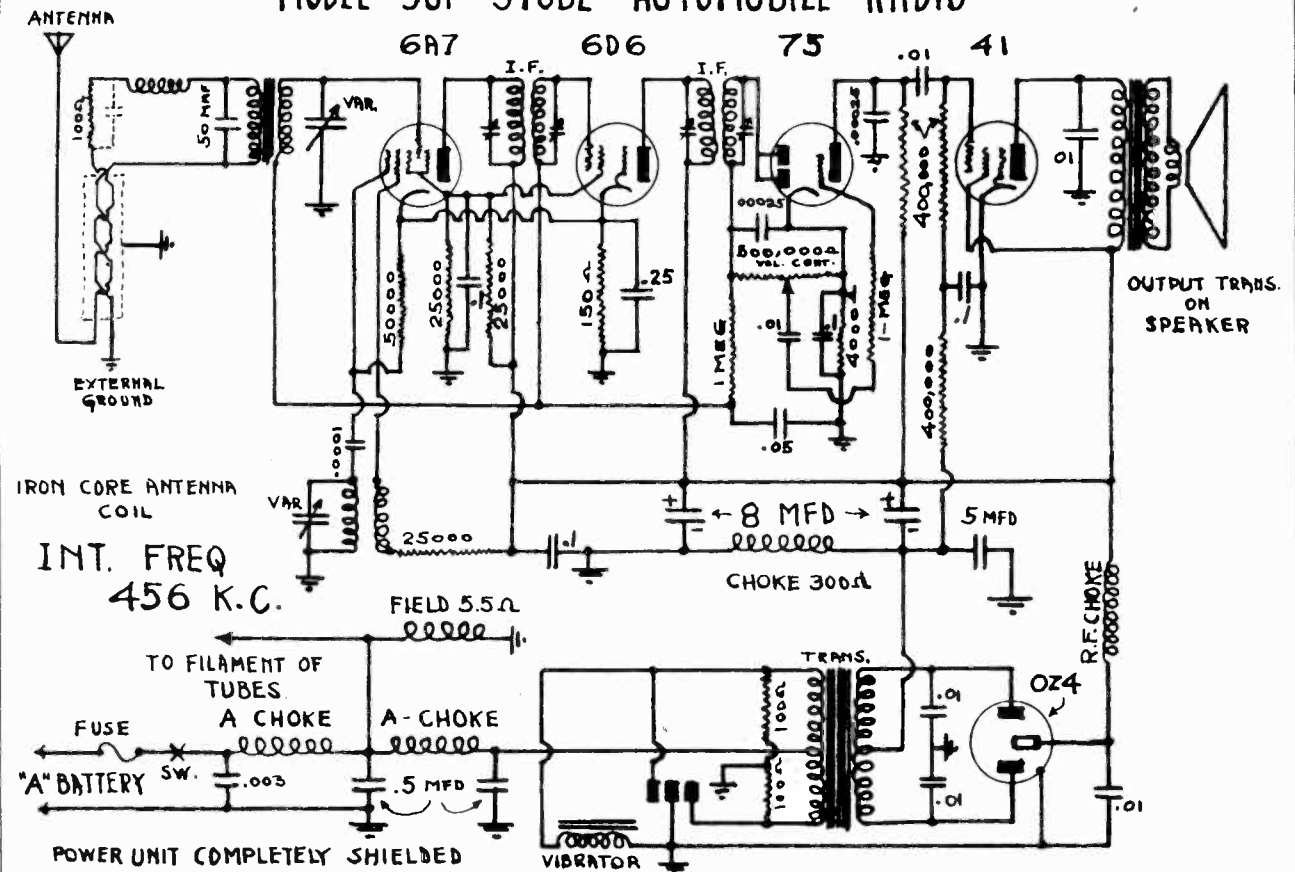
INT. FREQ. 456 K.C.

NOTE: Early models used a 75 tube in place of 6B7 second detector.

CHAMPION RADIO

MODEL 501  
MODEL 558  
Schematics

MODEL 501-5TUBE AUTOMOBILE RADIO

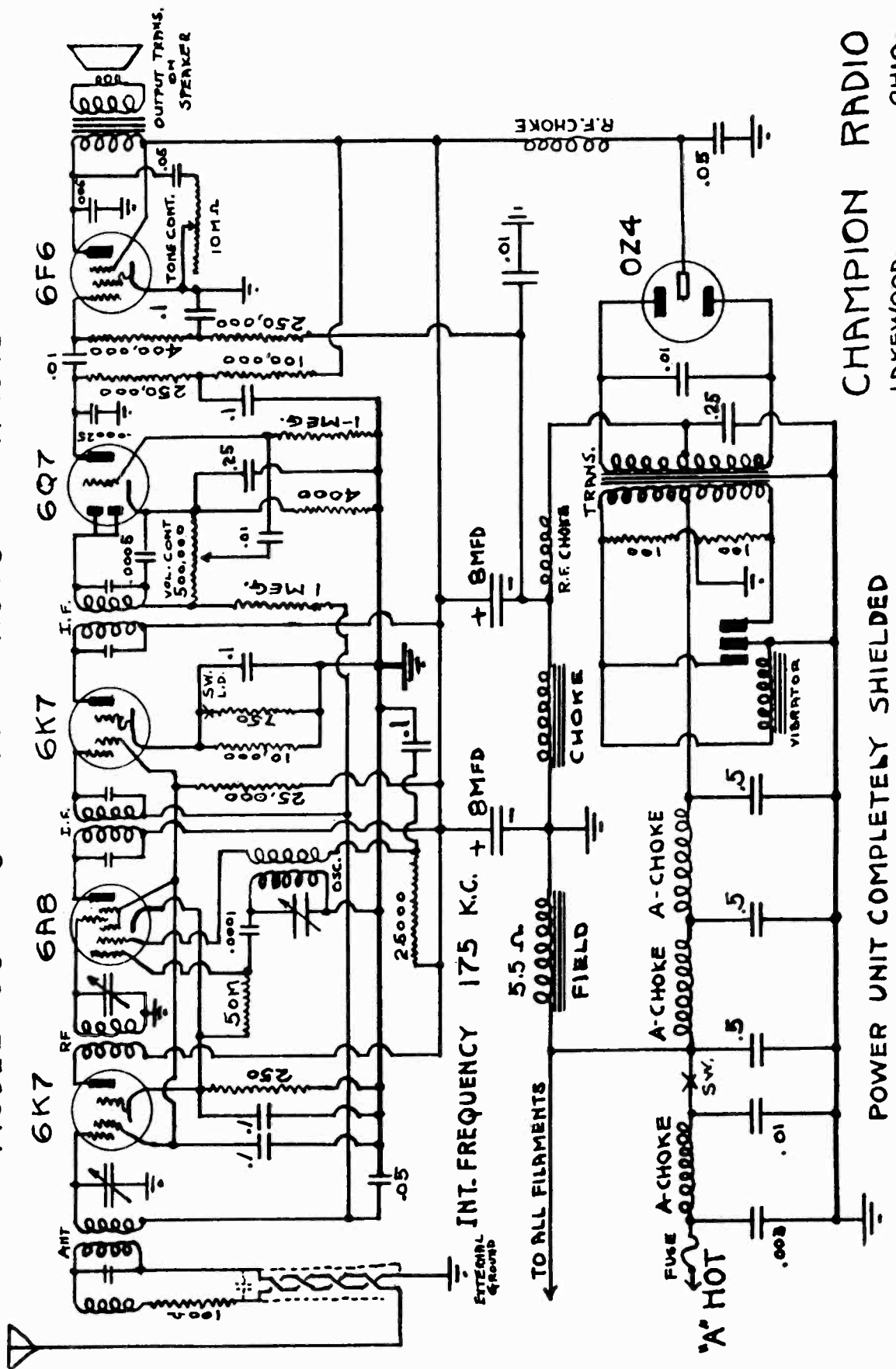




CHAMPION RADIO

MODEL 601  
Schematic

MODEL 601 6 TUBE AUTO RADIO

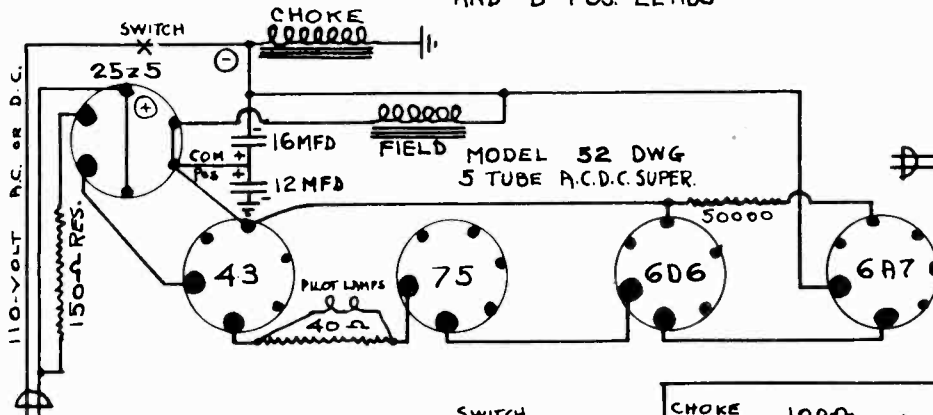


CHAMPION RADIO  
LAKEWOOD, OHIO.

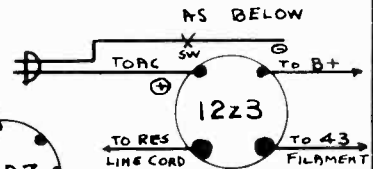
**Coil Connections  
Data**

**CHAMPION RADIO**

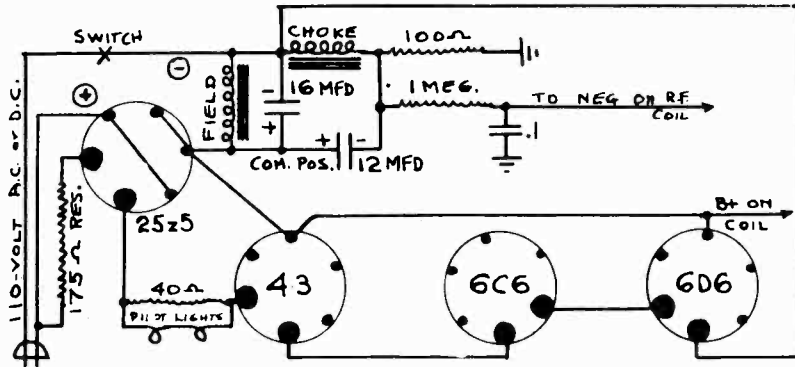
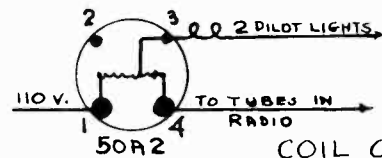
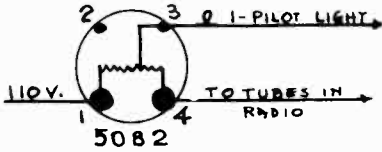
FILAMENT WIRING OF MODELS 52-DWG & 41-PG A.C.D.C.  
ALSO SHOWING FILTER CONNECTIONS  
AND 'B' POS. LEADS



NOTE: EARLY MODELS  
USED 12Z3 TUBE INSTEAD  
OF 25Z5 TUBE. WIRED  
AS BELOW

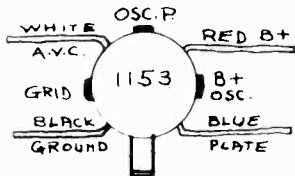


NOTE: WHERE BALLAST TUBES  
ARE USED IN PLACE OF LINE CORD  
RESISTOR SEE SOCKET BELOW

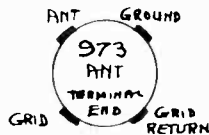


MODEL 41-PG. 4 TUBE A.C.D.C.

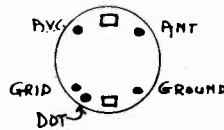
**COIL CONNECTIONS OF VARIOUS TYPES USED**



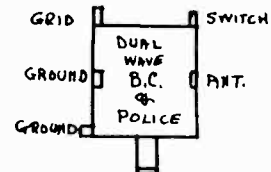
175 K.C. COMPOSITE



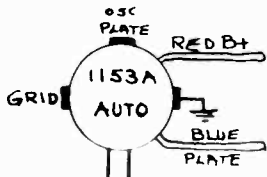
SUPER. ANT.



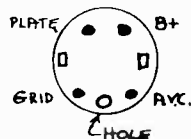
AUTO ANT



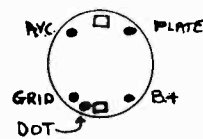
ANT6



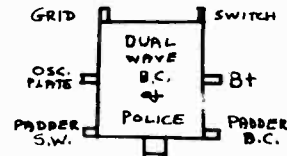
456 K.C. COMPOSITE



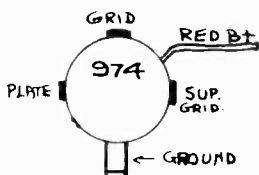
AUTO R.F.



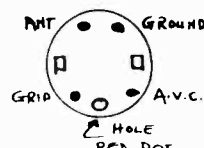
AUTO R.F.



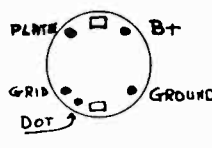
OSC. 456 K.C.



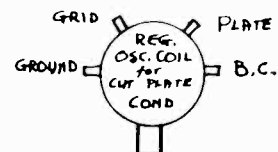
456 K.C. COMPOSITE



AUTO ANT



AUTO OSC. 175 K.C.

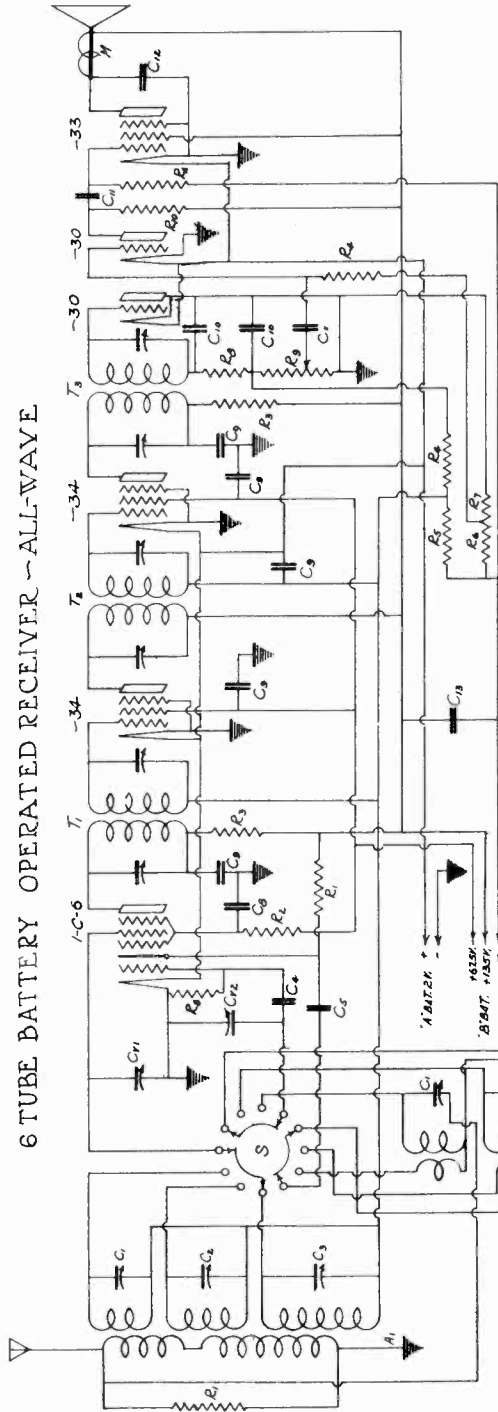


456 OSC B.C.

CLIMAX RADIO & TELEV. CO., INC.

MODEL 4-Tube Batt.  
MODEL 6-Tube Batt.  
Schematics

6 TUBE BATTERY OPERATED RECEIVER - ALL-WAVE



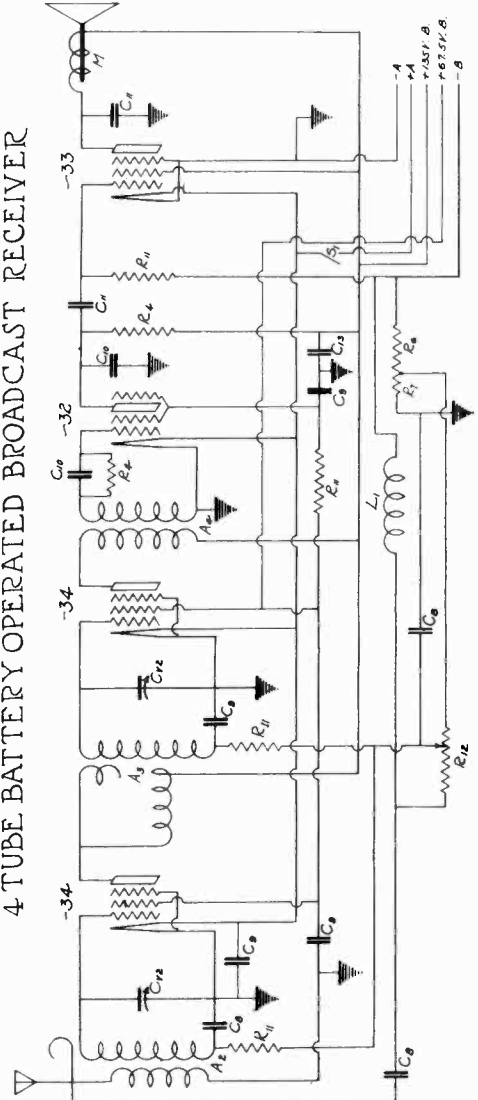
DESCRIPTION

LEGEND PART NO.	DESCRIPTION
R1 1072	10,000 WATT RESISTOR
R2 1080	5,000 WATT RESISTOR
R3 1039	2,500 WATT RESISTOR
R4 1082	1 MEG OHM 1/2 WATT RESISTOR
R5 1074	6 MEG OHM 1/2 WATT RESISTOR
R6 1102	400-100 OHM TAPERED RESISTOR
R7 1071	50,000 OHM 1/2 WATT RESISTOR
R8 1057	500,000 OHM VOLUME CONTROL

DESCRIPTION

LEGEND PART NO.	DESCRIPTION
C1-C3	3001 Triple Tapper 3-30 mhos each Section
C11-C12	The Gano Variable Cond. - 420 pfd. 5 x H
C4	1091 .0001 MFD. MICA CONDENSER
C5	1093 .001 MFD. MICA CONDENSER
C6	1094 .002 MFD. MICA CONDENSER
C7	1095 5 PLATE PAPER CONDENSER
C8	1090 .1 MFD.-200K. TUBULAR CONDENSER
C9	1085 .25 MFD.-200K. TUBULAR CONDENSER
C10	1090 .0005 MFD. MICA COND.
C11	1092 .01 MFD.-400K. TUBULAR CONDENSER
C12	1079 .005 MFD.-400K. TUBULAR CONDENSER
C13	2037 10 MFD.-200K. ELECTROLYTIC CONDENSER
T1-T2	509 High Gain I.F. Transformers (A50 E.C.)
A1	601 Broadcast Antenna Coil
A2	602 Broadcast Intermediate Coil
A3	603 Switched Untuned Intermediate Coil
L1	Antenna Inducting Choke

4 TUBE BATTERY OPERATED BROADCAST RECEIVER



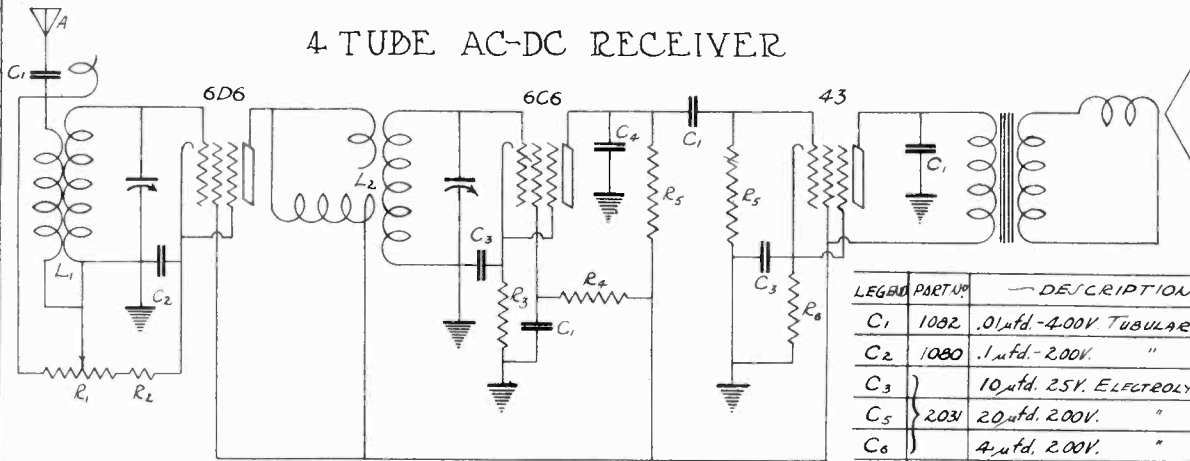
DESCRIPTION

LEGEND PART NO.	DESCRIPTION
R9	1103 100,000 OHM 1/2 WATT RESISTOR
A1	500 Three Band Antenna Coil
O1	502 Three Band Oscillator Coil
S1	713 Selector Switch (3 Pole - 3 Position)
T1	510 Diode Coupled I.F. Transformer
R10	1081 500,000 WATT RESISTOR
R12	1000 10,000 WATT RESISTOR
C14-C15	1007 The Gano Variable Condenser
S1	715 BATTERY SWITCH

MODEL 4-Tube AC-DC  
 MODEL 5-Tube AC-DC  
 Schematics

CLIMAX RADIO & TELEV. CO., INC.

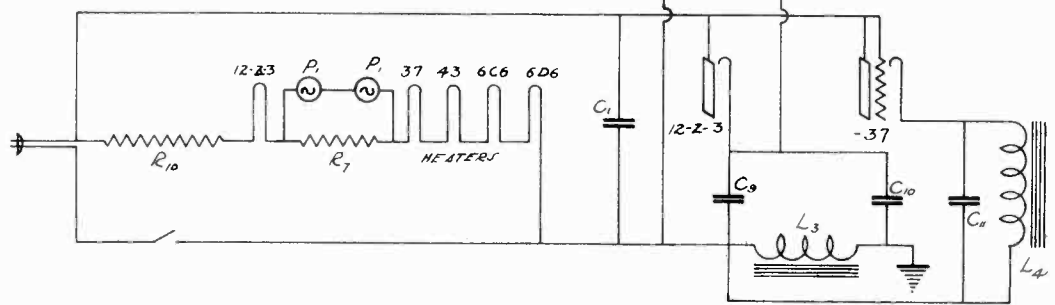
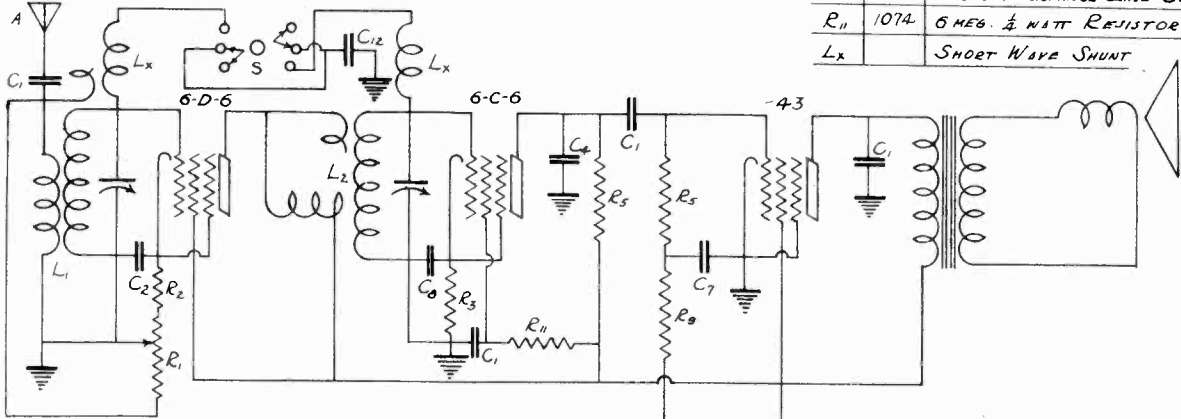
4 TUBE AC-DC RECEIVER



LEGBD	PART NO.	DESCRIPTION
C1	1082	.01μfd.-400V. TUBULAR COND.
C2	1080	.1μfd.-200V. " "
C3	2031	10μfd. 25V. ELECTROLYTIC COND.
C5		20μfd. 200V. " "
C6	1079	4μfd. 200V. " "
R1		1050
R2	1063	25,000 W ½ WATT RESISTOR
R4	1073	3 MEGOHM ½ WATT RESISTOR
R5	1061	½ " " " "
R6	1069	800 W ½ WATT RESISTOR
R7	1078	40 W 5 WATT RESISTOR
R8	1079	175 W RESISTANCE LINE CORD
L1	1029	HIGH IMPEDANCE ANTENNA COIL
L2	1030	" " INTERSTAGE "
L3	750	400 W FILTER CHOKER
C8-9-10-11	2027	10μfd.-25V.; 12-40μfd. 200V. EL. CON.
C4	1090	250μfd. MICA CONDENSER
C7	1095	.25μfd.-200V. TUBULAR COND.
R9	1088	250,000 W ½ WATT RESISTOR
R10	1065	150 W RESISTANCE LINE CORD
R11	1074	6 MEG. ½ WATT RESISTOR
Lx		SHORT WAVE SHUNT

NOTE — ABOVE CIRCUIT FOR 4-TUBE RECEIVER WITH PILOT LIGHTS. IN 5-TUBE MODEL R8 IS REPLACED BY TYPE 50-X-300 TUBE IF PILOT LIGHTS ARE OMITTED, R7 IS OMITTED AND R8 IS 215 W.

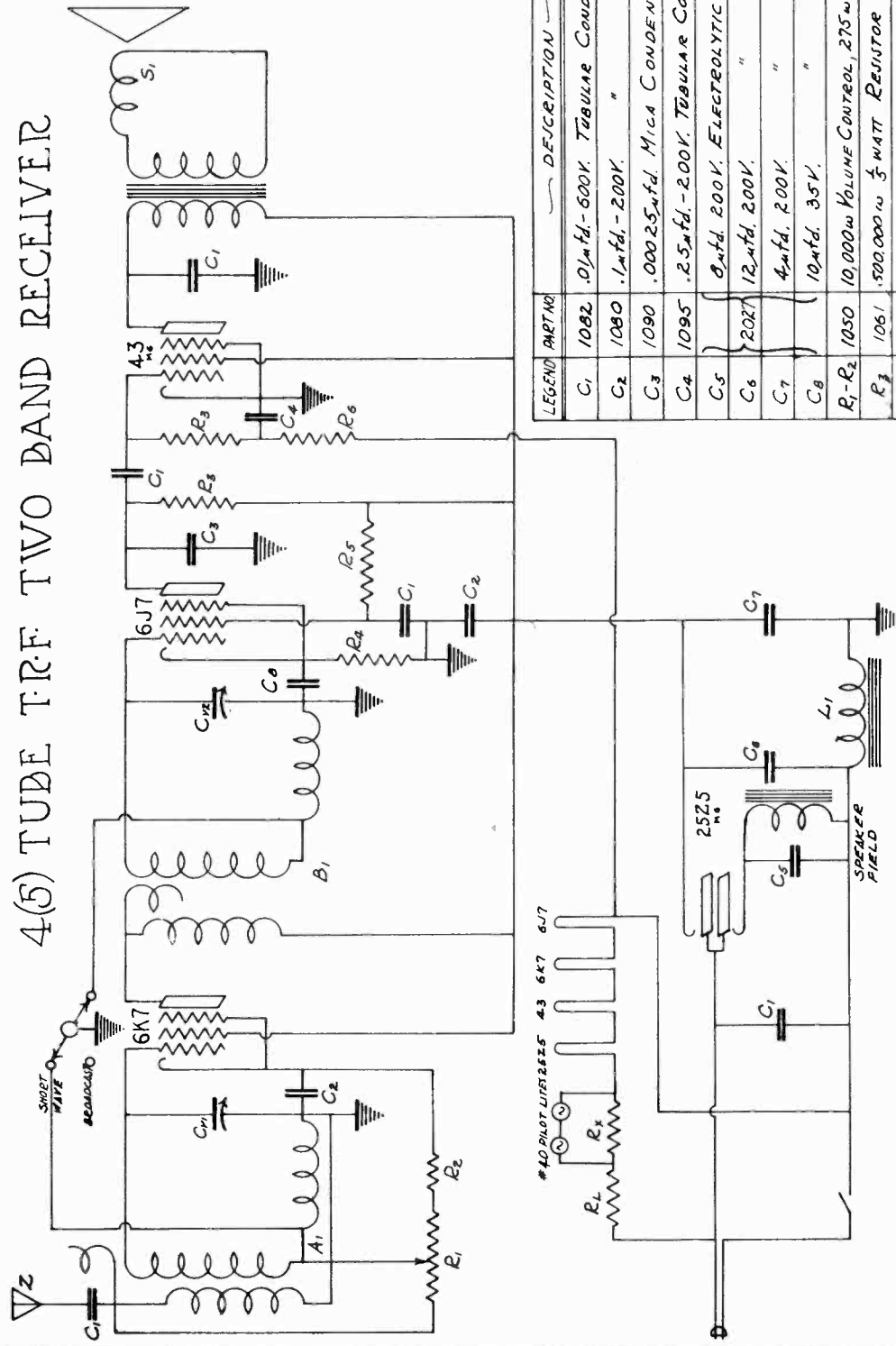
5 TUBE AC-DC RECEIVER



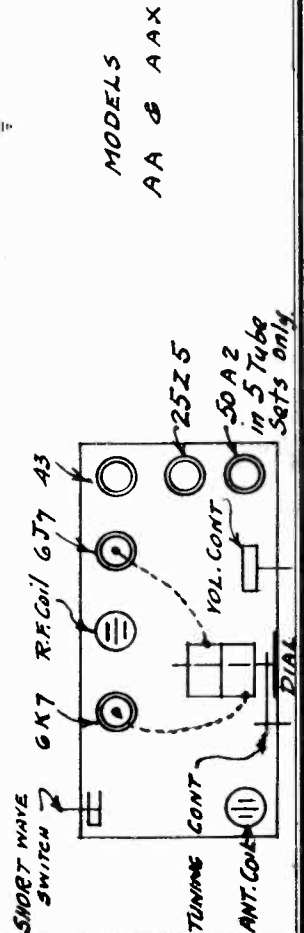
CLIMAX RADIO & TELEV. CO., INC.

MODEL AA  
MODEL AAX  
Schematic  
Socket

4(5) TUBE TRF TWO BAND RECEIVER



LEGEND	PART NO.	DESCRIPTION
C <sub>1</sub>	1082	.01μfd. - 600V. TUBULAR CONDENSER
C <sub>2</sub>	1080	.1μfd. - 200V. "
C <sub>3</sub>	1090	.00025μfd. MICA CONDENSER
C <sub>4</sub>	1095	.25μfd. - 200V. TUBULAR CONDENSER
C <sub>5</sub>	2027	8μfd. 200V. ELECTROLYTIC CONDENSER
C <sub>6</sub>		12μfd. 200V. "
C <sub>7</sub>	C <sub>8</sub>	4μfd. 200V. "
C <sub>8</sub>		10μfd. 35V. "
R <sub>1</sub> -R <sub>2</sub>	1050	10,000Ω VOLU. CONTROL, 275Ω R.H. MIN.
R <sub>3</sub>	1061	500,000Ω ½ WATT RESISTOR
R <sub>4</sub>	1063	25,000Ω ½ WATT "
R <sub>5</sub>	1073	3 MEGOHM ½ WATT "
R <sub>6</sub>	1068	250,000Ω ½ WATT "
R <sub>L</sub>	1067	150Ω RESISTANCE LINE CORD
S <sub>1</sub>	1009	5" DYNAMIC SPEAKER - 2500Ω FIELD.
L <sub>1</sub>	750	FILTER CHOKE - 10 MY. - 400 W. - 40 MA.
X	716	SHORT WAVE SWITCH
Z		INDOOR ANTENNA



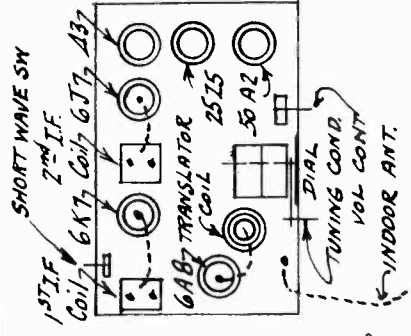
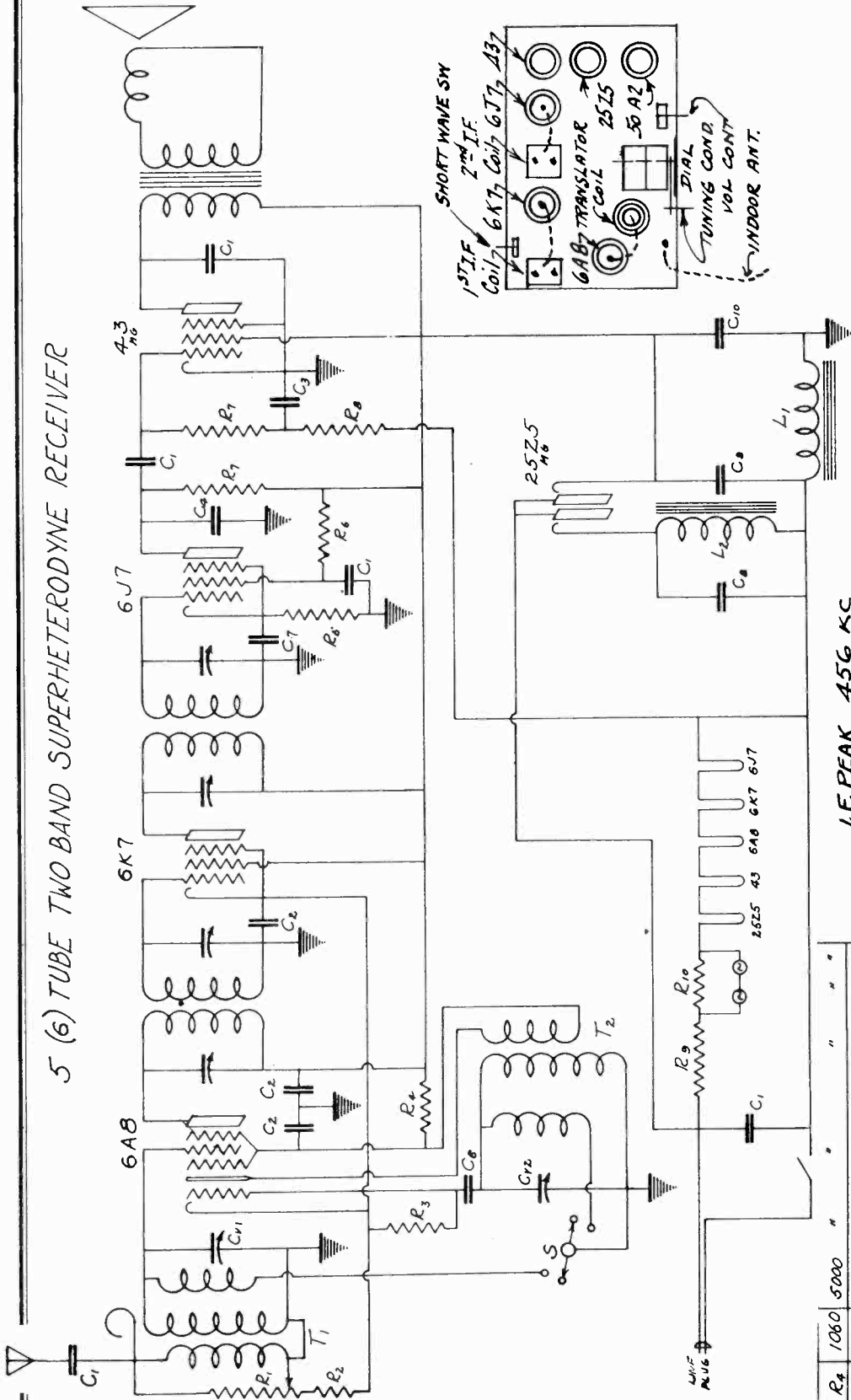
MODELS  
AA & AAX



MODELS AB, ABX  
Early  
Schematic, Socket

CLIMAX RADIO & TELEV. CO., INC.

5 (6) TUBE TWO BAND SUPERHETERODYNE RECEIVER



Note - R<sub>9</sub> & R<sub>10</sub> are replaced by a 50A2 tube in 6 TUBE RECV.

MODELS AB & ABX

I.F. PEAK 456 KC

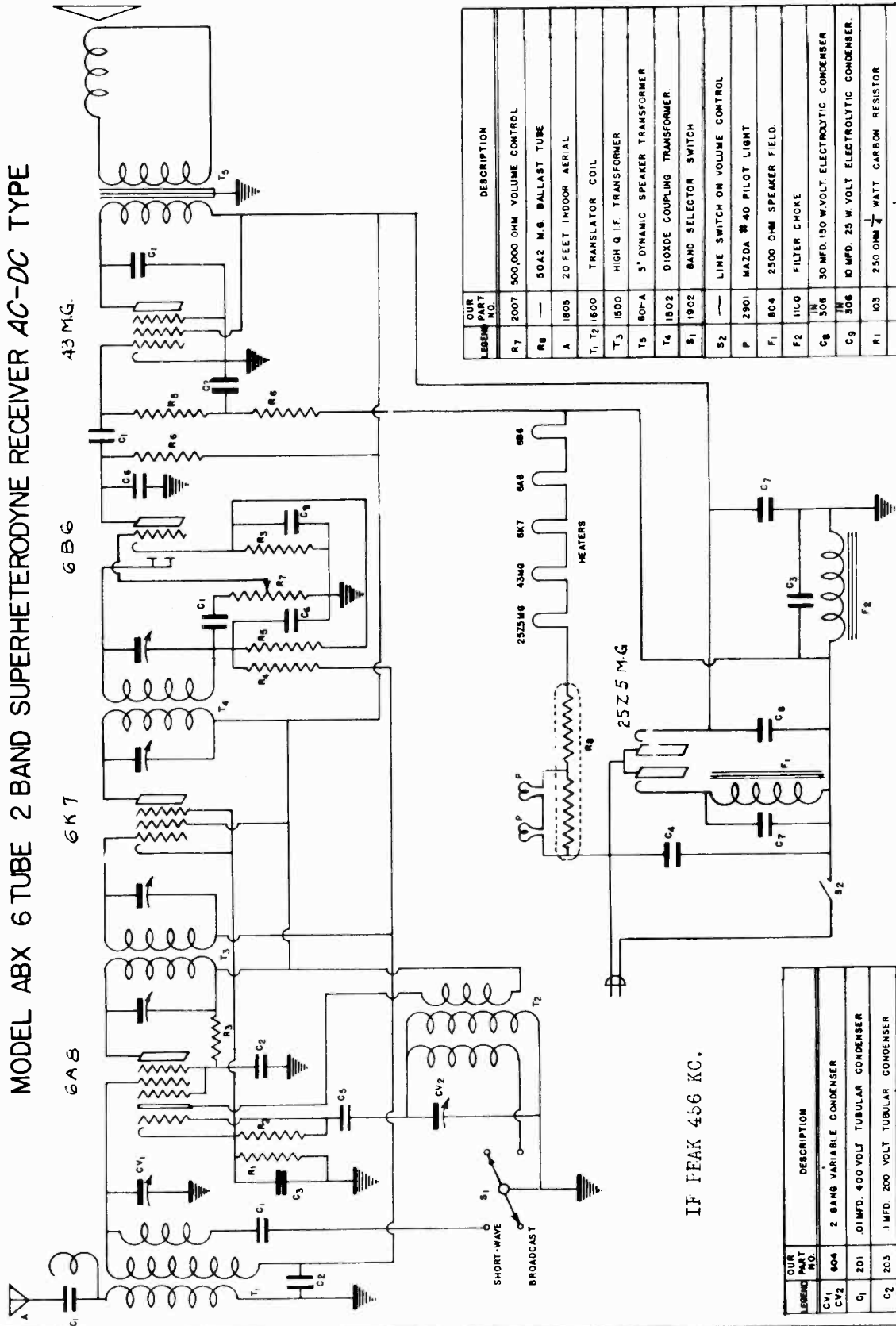
C <sub>1</sub>	1082	.01 mfd. 400V. TUBULAR CONDENSER
C <sub>2</sub>	1080	.1 mfd. 200V. "
C <sub>3</sub>	1095	.25 mfd. 200V. "
C <sub>4</sub>	1080	.00025 mfd. MICA CONDENSER
C <sub>5</sub>	1091	.0001 mfd. "
C <sub>6</sub>	1071	50,000 OHM CARBON RESISTOR 1/2WAT
C <sub>7</sub>	1027	5 mfd. 25V. BUFD. - 12 mfd. - 4 mfd. - 200V.
R <sub>1-2</sub>	1059	10,000 OHM VOLUME CONTROL, 250W P.H.
R <sub>3</sub>	1071	50,000 OHM CARBON RESISTOR 1/2WAT

R <sub>4</sub>	1060	5000 "	"	"	"
R <sub>5</sub>	1063	25,000 "	"	"	"
R <sub>6</sub>	1073	3 MEGOHM "	"	"	"
R <sub>7</sub>	1061	1/2 "	"	"	"
R <sub>8</sub>	1063	250,000 OHM "	"	"	"
R <sub>9</sub>	1029	10 OHM RESISTOR CORD	"	"	"
R <sub>10</sub>	1078	40 OHM CORDOHM RESISTOR	"	"	"
T <sub>1-2</sub>	471	TRANSFORMER COIL	"	"	"
S	759	SHORT WAVE SWITCH	"	"	"
L <sub>1</sub>	750	400 OHM, 10MA, 40 MA. FILTER CHOKER	"	"	"

CLIMAX RADIO & TELEV. CO., INC.

MODEL ABX, Late Schematic

MODEL ABX 6 TUBE 2 BAND SUPERHETERODYNE RECEIVER AC-DC TYPE



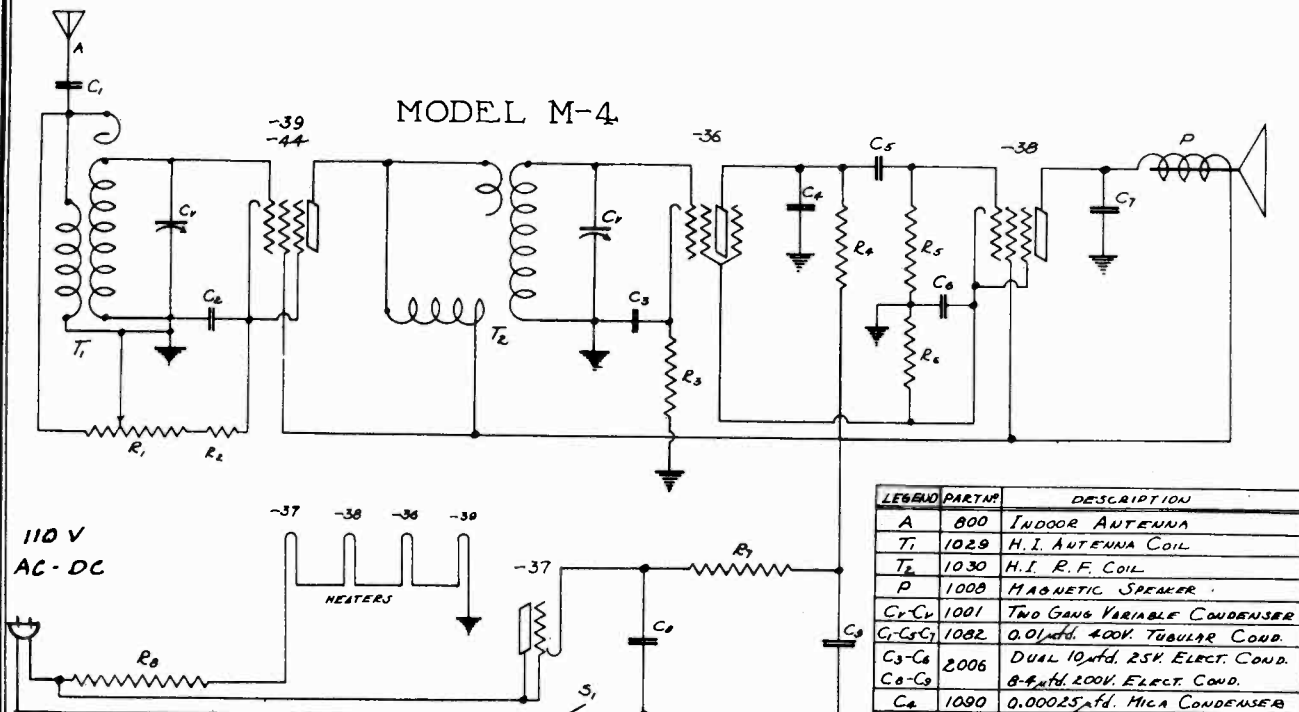
OUR LEGEND PART NO.	DESCRIPTION
R7	500,000 OHM VOLUME CONTROL
R8	5042 M.G. BALLAST TUBE
A	20 FEET INDOOR AERIAL
T1, T2	1600 TRANSULATOR COIL
T3	1500 HIGH Q I.F. TRANSFORMER
T5	5" DYNAMIC SPEAKER TRANSFORMER
T4	1802 DIODE COUPLING TRANSFORMER
S1	1902 BAND SELECTOR SWITCH
S2	LINE SWITCH ON VOLUME CONTROL
P	2901 MAZDA #40 PILOT LIGHT
F1	804 2500 OHM SPEAKER FIELD.
F2	11C0 FILTER CHOKE
C8	30 MFD. 150 W.VOLT. ELECTROLYTIC CONDENSER
C9	10 MFD. 25 W. VOLT. ELECTROLYTIC CONDENSER
R1	103 250 OHM 1/2 WATT CARBON RESISTOR
R2	113 50,000 OHM 1/2 WATT CARBON RESISTOR
R3	108 5000 OHM 1/2 WATT CARBON RESISTOR
R4	119 1 MEGOHM 1/2 WATT CARBON RESISTOR
R5	117 1/2 MEGOHM 1/2 WATT CARBON RESISTOR
R6	116 1/2 MEGOHM 1/2 WATT CARBON RESISTOR

OUR LEGEND PART NO.	DESCRIPTION
CV1	804 2 BAND VARIABLE CONDENSER
CV2	201 .01MFD. 400 VOLT. TUBULAR CONDENSER
C1	203 1 MFD. 200 VOLT. TUBULAR CONDENSER
C2	204 .25 MFD. 200 VOLT. TUBULAR CONDENSER
C3	206 .05MFD. 400 VOLT. TUBULAR CONDENSER
C4	400 0001 MFD. MICA CONDENSER
C5	401 00025 MFD. MICA CONDENSER
C6	308 4 MFD. 150 W. VOLT. ELECTROLYTIC CONDENSER

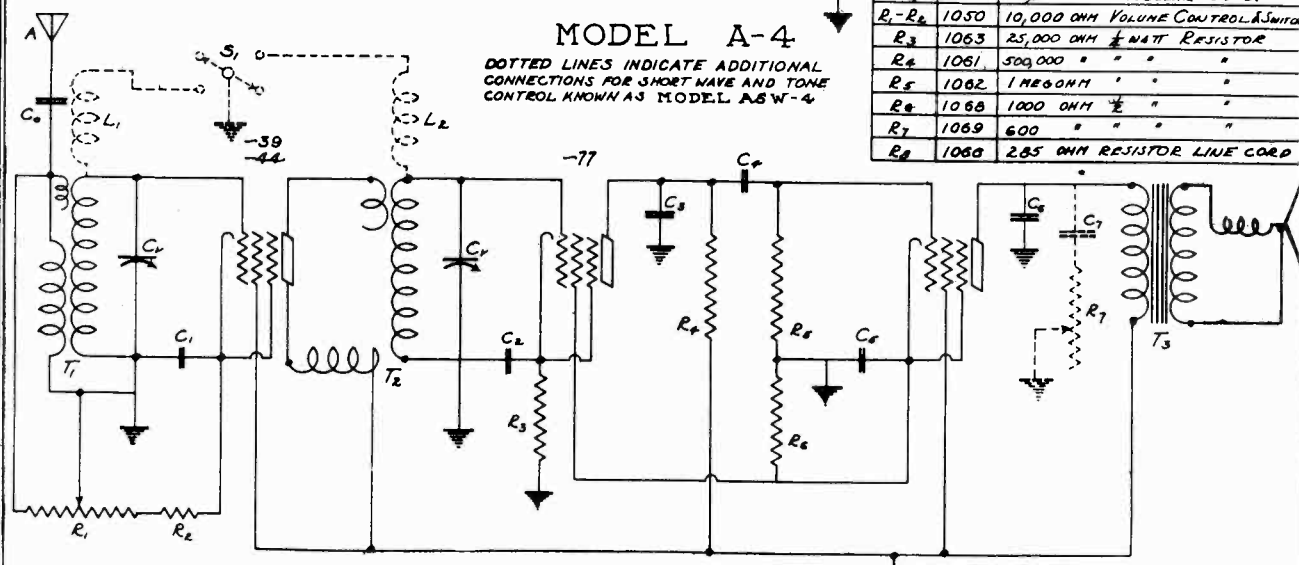
IF PEAK 456 KC.

MODEL A-4  
MODEL M-4  
Schematics

CLIMAX RADIO & TELEV. CO., INC.



LEGEND	PART NO.	DESCRIPTION
A	800	INDOOR ANTENNA
T <sub>1</sub>	1029	H. I. ANTENNA COIL
T <sub>2</sub>	1030	H. I. R. F. COIL
P	1009	MAGNETIC SPEAKER
C <sub>1</sub> -C <sub>7</sub>	1001	TWO GANG VARIABLE CONDENSER
C <sub>1</sub> -C <sub>3</sub> -C <sub>7</sub>	1082	0.01 μfd. 400V. TUBULAR COND.
C <sub>3</sub> -C <sub>6</sub>	2006	DUAL 10 μfd. 25V. ELECT. COND.
C <sub>6</sub> -C <sub>9</sub>		8-8 μfd. 200V. ELECT. COND.
C <sub>4</sub>	1090	0.00025 μfd. MICA CONDENSER
C <sub>4</sub>	1080	0.1 μfd. 200V. TUBULAR COND.
R <sub>1</sub> -R <sub>2</sub>	1050	10,000 OHM VOLUME CONTROL & SWITCH
R <sub>3</sub>	1063	25,000 OHM 1/2 WATT RESISTOR
R <sub>4</sub>	1061	500,000 " " " " " "
R <sub>5</sub>	1062	1 MEGOHM " " " " " "
R <sub>6</sub>	1066	1000 OHM 1/2 " " " " " "
R <sub>7</sub>	1069	600 " " " " " " " "
R <sub>8</sub>	1060	2.85 OHM RESISTOR LINE CORD



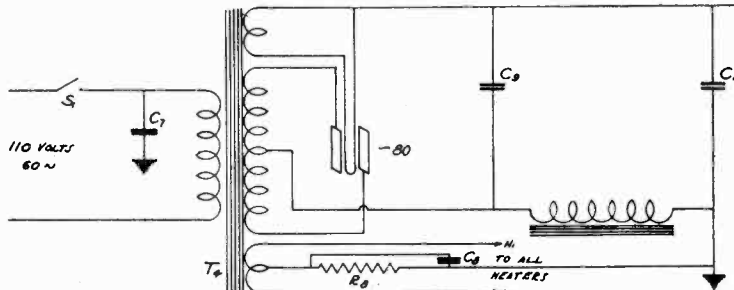
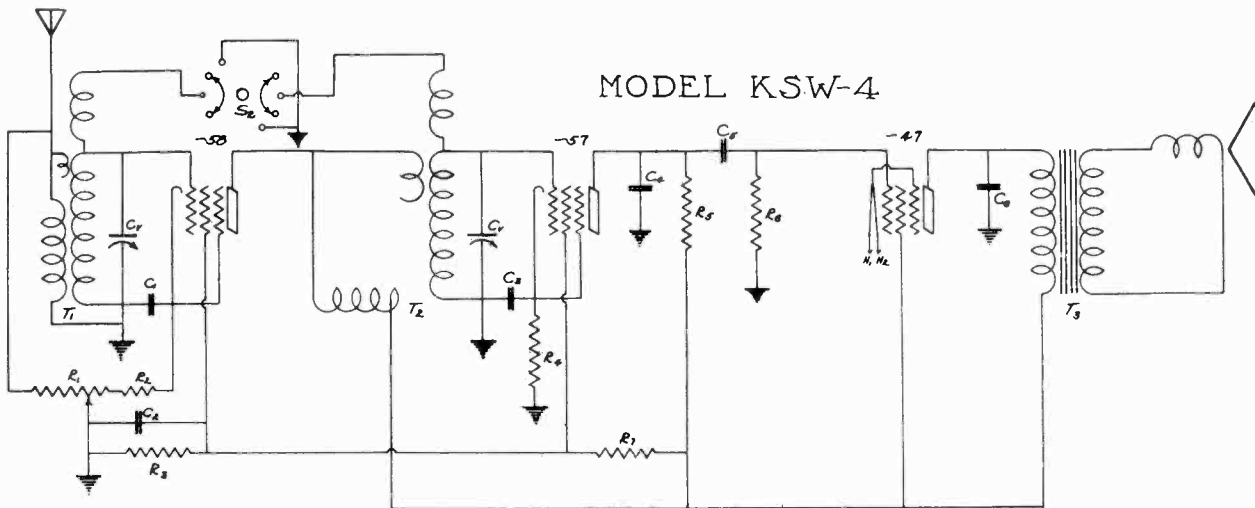
LEGEND	PART NO.	DESCRIPTION	WATT. PRICE
A	800	INDOOR ANTENNA	0.40
T <sub>1</sub>	1029	ANTENNA COIL	0.45
T <sub>2</sub>	1030	R. F. INTERSTAGE COIL	0.45
T <sub>3</sub>	1009-A	SPEAKER TRANSFORMER	0.65
L <sub>3</sub>	750	FILTER CHOKES	0.80
C <sub>1</sub> -C <sub>9</sub>	1082	0.01 μfd. 400V. TUBULAR COND.	0.10
C <sub>6</sub> -C <sub>9</sub>	1082	" " " " " " " "	0.10
C <sub>2</sub>	1090	250 μfd. MICA CONDENSER	0.15
C <sub>1</sub>	1080	0.1 μfd. 200V. TUBULAR COND.	0.10
C <sub>1</sub> -C <sub>7</sub>	1000	TWO GANG VARIABLE COND.	1.80
C <sub>2</sub> -C <sub>5</sub>	2005	DUAL 10 μfd. 35V. EL. COND.	0.80
C <sub>6</sub> -C <sub>9</sub>	2004	20-4 μfd. 200V. EL. COND.	1.20
R <sub>1</sub> -R <sub>4</sub>	1050	VOLUME CONTROL & SWITCH	0.80

LEGEND	PART NO.	DESCRIPTION	WATT. PRICE
S <sub>1</sub>	1051	SELECTOR SWITCH ON TONE CONTROL	1.00
L <sub>1</sub> -L <sub>2</sub>	1031	SHORT WAVE SHUNTS	0.15
	1009	DYNAMIC SPEAKER	3.80
C <sub>7</sub>	1083	0.05 μfd. 400V. TUBULAR COND.	0.10
S <sub>2</sub>		AC SWITCH ON VOLUME CONTROL	

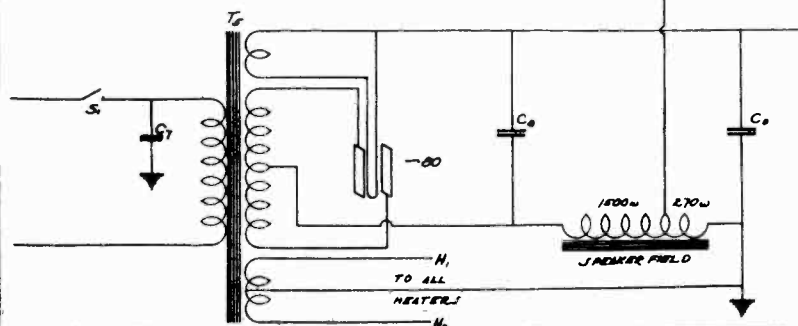
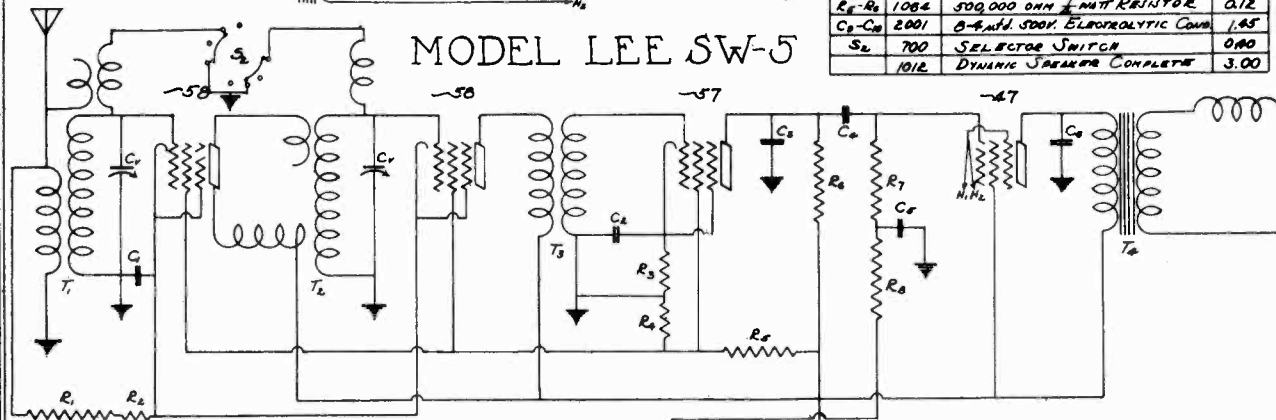
R <sub>3</sub>	1063	25,000 OHM 1/2 WATT RESISTOR	0.12
R <sub>4</sub>	1062	1 MEGOHM 1/2 WATT " " " "	0.12
R <sub>5</sub>	1061	1/2 " " " " " " " "	0.12
R <sub>6</sub>	1069	600 OHM 1/2 " " " " " "	0.15
R <sub>7</sub>	1057	50,000 OHM TONE CONTROL	1.00
R <sub>8</sub>	1087	2.00 OHM LINE CORD & PLUG	0.85

CLIMAX RADIO & TELEV. CO., INC.

MODEL KSW-4  
MODEL Lee SW-5  
Schematics



LEGEND	PART NO.	DESCRIPTION	PRICE
T <sub>1</sub>	1027	ANTENNA COIL WITH SHUNT	0.60
T <sub>2</sub>	1028	R.F. COIL WITH SHUNT	0.80
T <sub>3</sub>	1012-A	SPEAKER TRANSFORMER	0.80
T <sub>4</sub>	691	POWER TRANSFORMER	2.20
C <sub>1</sub> -C <sub>2</sub>	1000	TWO BAND VARIABLE CONDENSER	1.80
C <sub>3</sub> -C <sub>4</sub>	1080	0.1 μfd. - 200V. TUBULAR COND.	0.10
C <sub>5</sub> -C <sub>6</sub>	1080	" " " " " "	0.10
C <sub>7</sub> -C <sub>8</sub>	1082	0.01 μfd. - 400V. " " "	0.10
C <sub>9</sub>	1080	0.00025 μfd. MICA CONDENSER	0.15
R <sub>1</sub> -R <sub>2</sub>	1050	VOLUME CONTROL WITH A.C. SWITCH	0.90
R <sub>3</sub> -R <sub>4</sub>	1080	50,000 OHM 1/2WATT RESISTOR	0.15
R <sub>5</sub> -R <sub>6</sub>	1084	500,000 OHM 1/2WATT RESISTOR	0.12
C <sub>9</sub> -C <sub>10</sub>	2001	8-μfd. 500V. ELECTROLYTIC COND.	1.45
S <sub>2</sub>	700	SELECTOR SWITCH	0.40
	1012	DYNAMIC SPEAKER COMPLETE	3.00

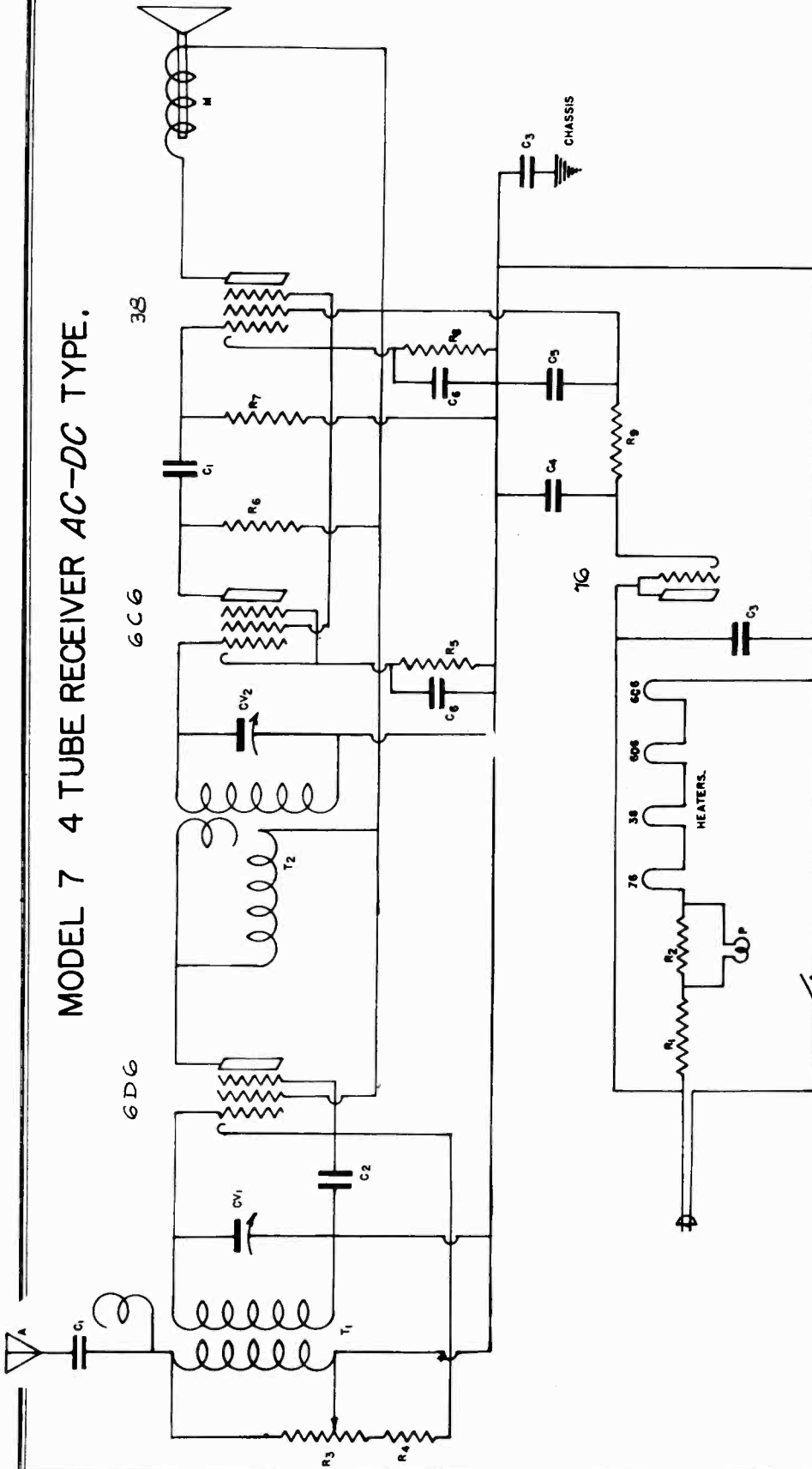


LEGEND	PART NO.	DESCRIPTION	PRICE
T <sub>1</sub>	1024	LITZ ANTENNA COIL WITH SHUNT	1.40
T <sub>2</sub>	1025	LITZ R.F. COIL WITH SHUNT	1.40
T <sub>3</sub>	1026	SHIELDED UNTUNED R.F. TRAMP	0.55
T <sub>4</sub>	1012-A	SPEAKER TRANSFORMER	0.80
T <sub>5</sub>	691	POWER TRANSFORMER	2.20
R <sub>1</sub> -R <sub>2</sub>	1050	VOLUME CONTROL & AC SWITCH	0.90
S <sub>2</sub>	700	BAND SELECTOR SWITCH	0.40
R <sub>3</sub> -R <sub>4</sub>	1080	50,000 OHM 1/2WATT RESISTOR	0.15
R <sub>5</sub> -R <sub>6</sub>	1084	500,000 OHM 1/2WATT RESISTOR	0.12
C <sub>1</sub> -C <sub>2</sub>	1000	TWO BAND VARIABLE CONDENSER	1.80
C <sub>3</sub> -C <sub>4</sub>	1080	0.1 μfd. 200VOLT TUBULAR COND.	0.10
C <sub>5</sub>	1080	" " " " " "	0.10
C <sub>6</sub> -C <sub>7</sub>	1082	0.01 μfd. 400 " " "	0.10
C <sub>8</sub>	1080	250 μfd. MICA CONDENSER	0.15
C <sub>9</sub> -C <sub>10</sub>	2001	8-μfd. 500V. ELECTROLYTIC COND.	1.45
S <sub>1</sub>		AC SWITCH ON VOLUME CONTROL	
	1013	6" DYNAMIC SPEAKER	3.30

MODEL 7  
Schematic

CLIMAX RADIO & TELEV. CO., INC.

MODEL 7 4 TUBE RECEIVER AC-DC TYPE.



OUR LEGEND PART NO.	DESCRIPTION
R1	280 OHM LINE CORD AND PLUG.
R2	100 OHM 1 WATT CARBON RESISTOR.
R3-R4	10,000 OHM VOLUME CONTROL (275 OHM MIN.)
R5	25,000 OHM 1/4 WATT CARBON RESISTOR
R6	1 MEGOHM 1/4 WATT CARBON RESISTOR.
R7	1/2 MEGOHM 1/4 WATT CARBON RESISTOR.
R8	2,000 OHM 1/4 WATT CARBON RESISTOR
C1	.01 MFD., 400 VOLT TUBULAR CONDENSER

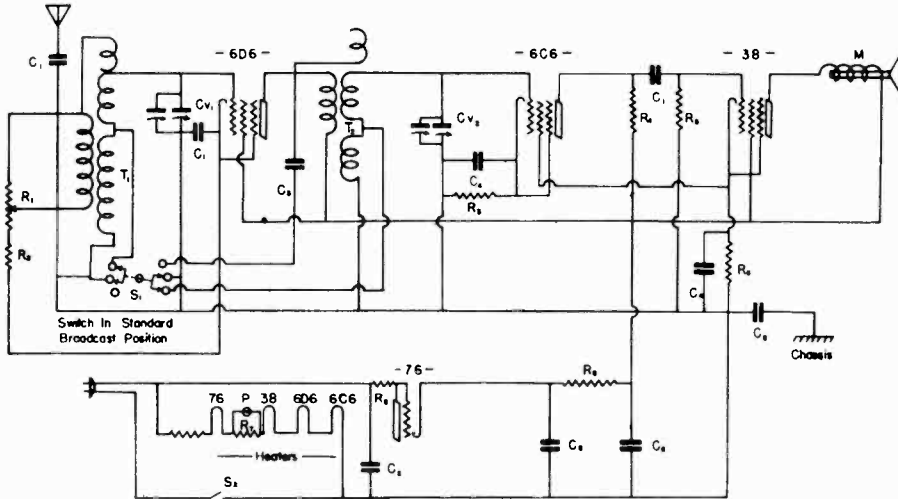
OUR LEGEND PART NO.	DESCRIPTION
C2	.05 MFD. 400 VOLT TUBULAR CONDENSER.
C3	1 MFD. 800 VOLT TUBULAR CONDENSER
C4	14 MFD. 150 VOLT WKG. ELECTROLYTIC CONDENSER.
C5	8 MFD. 150 VOLT WKG. ELECTROLYTIC CONDENSER
C6	10 MFD. 150 VOLT WKG. ELECTROLYTIC CONDENSER
CV1	TWO GANG VARIABLE CONDENSER.
CV2	MAZDA 9-46 PILOT LIGHT
P	LIME SWITCH ON VOLUME CONTROL
S	---

OUR LEGEND PART NO.	DESCRIPTION
M	MAGNETIC SPEAKER 5" DIAM.
A	20 FEET INDOOR AERIAL
T1	ANTENNA TRANSFORMER
T2	INTERSTAGE R.F. TRANSFORMER
R9	2000 OHM 1/4 WATT CARBON RESISTOR

CLIMAX RADIO & TELEV. CO., INC.

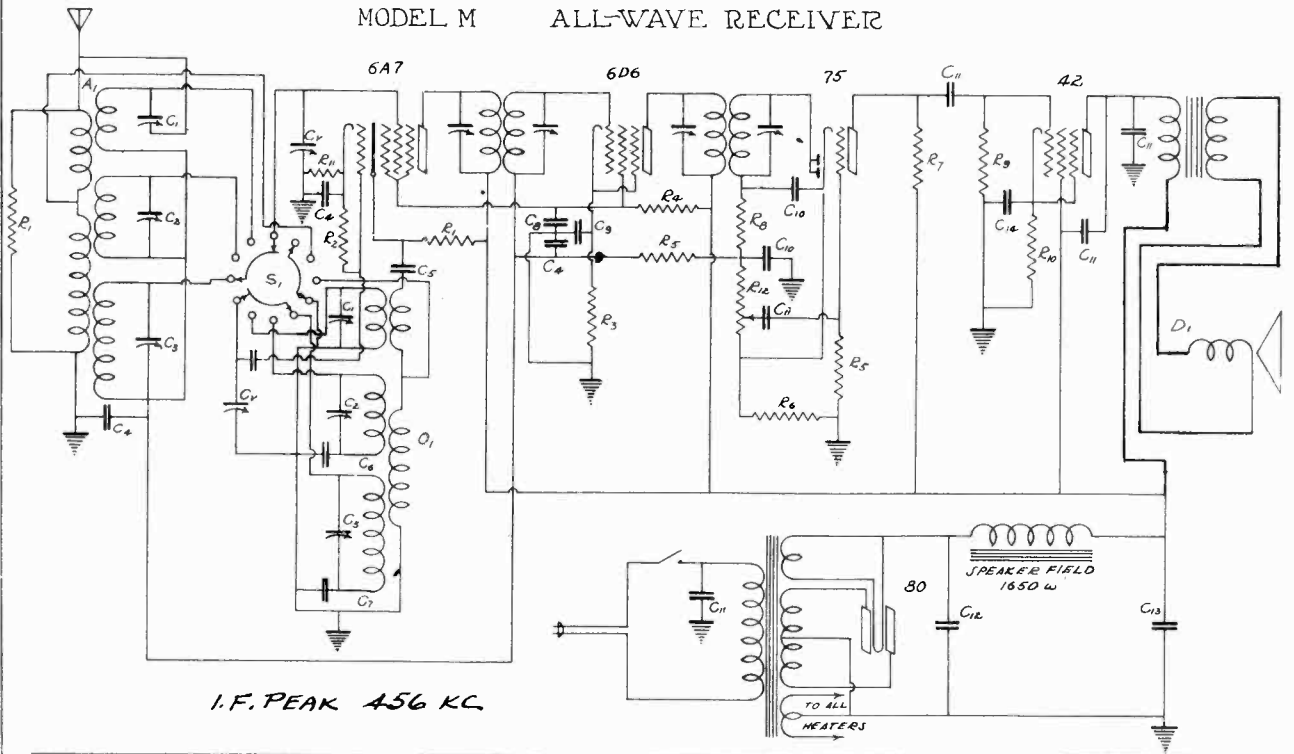
MODEL 7-B  
MODEL M  
Schematics

MODEL 7B TWO BAND RECEIVER - AC DC TYPE



LEGEND	PART NO.	DESCRIPTION
C <sub>1</sub>	211	0.1 mfd. 400 Volt Tubular Condenser
C <sub>2</sub>	203	1 mfd. 200 Volt Tubular Condenser
C <sub>3</sub>	405	0.0004 mfd. Mica Condenser
C <sub>4</sub>	3F3	5 mfd. 25 W.V. Electrolytic Condenser
C <sub>5</sub>	313	14 mfd. 150 W.V. Electrolytic Condenser
C <sub>6</sub>	313	8 mfd. 150 W.V. Electrolytic Condenser
C <sub>v1</sub> , C <sub>v2</sub>	610	Two Gang Variable Condensers
L	1806	280 Ohm Line Cord
M	900	5 BC Magnetic Speaker
P	2902	Mazda 46 Pilot Light
R <sub>1</sub> , R <sub>2</sub>	2010	10,000 Ohm Volume Control With 275 Ohm Minimum
R <sub>3</sub>	111	25,000 Ohm 1/2 Watt Carbon Resistor
R <sub>4</sub>	119	1 Megohm 1/2 Watt Carbon Resistor
R <sub>5</sub>	117	1/2 Megohm 1/2 Watt Carbon Resistor
R <sub>7</sub>	132	100 Ohm 1 Watt Wire Wound Resistor
R <sub>8</sub>	134	2,000 Ohm 1/2 Watt Carbon Resistor
S <sub>1</sub>	1909	2 Pole 2 Position Selector Switch
R <sub>9</sub>	135	420 Ohms 1 Watt Wire Wound Resistor
T <sub>1</sub>	120B	BC And Longwave Ant. Coil
T <sub>2</sub>	1307	BC And Longwave R.F. Coil

MODEL M ALL-WAVE RECEIVER



LEGEND	PART NO.	DESCRIPTION
R <sub>1</sub>	1072	10,000 w 1/2 WATT RESISTOR
R <sub>2</sub>	1071	50,000 w " " "
R <sub>3</sub>	1068	150 w " " "
R <sub>4</sub>	1063A	25,000 w 1 WATT RESISTOR
R <sub>5</sub>	1062	1 MEGOHM 1/2 WATT RESISTOR
R <sub>6</sub>	1069	4,500 w 1/2 WATT RESISTOR
R <sub>7</sub>	1066	250,000 w 1/2 WATT RESISTOR
R <sub>8</sub>	063	25,000 w " " "
R <sub>9</sub>	1061	500,000 w " " "
R <sub>10</sub>	1090	450 w 1 WATT RESISTOR

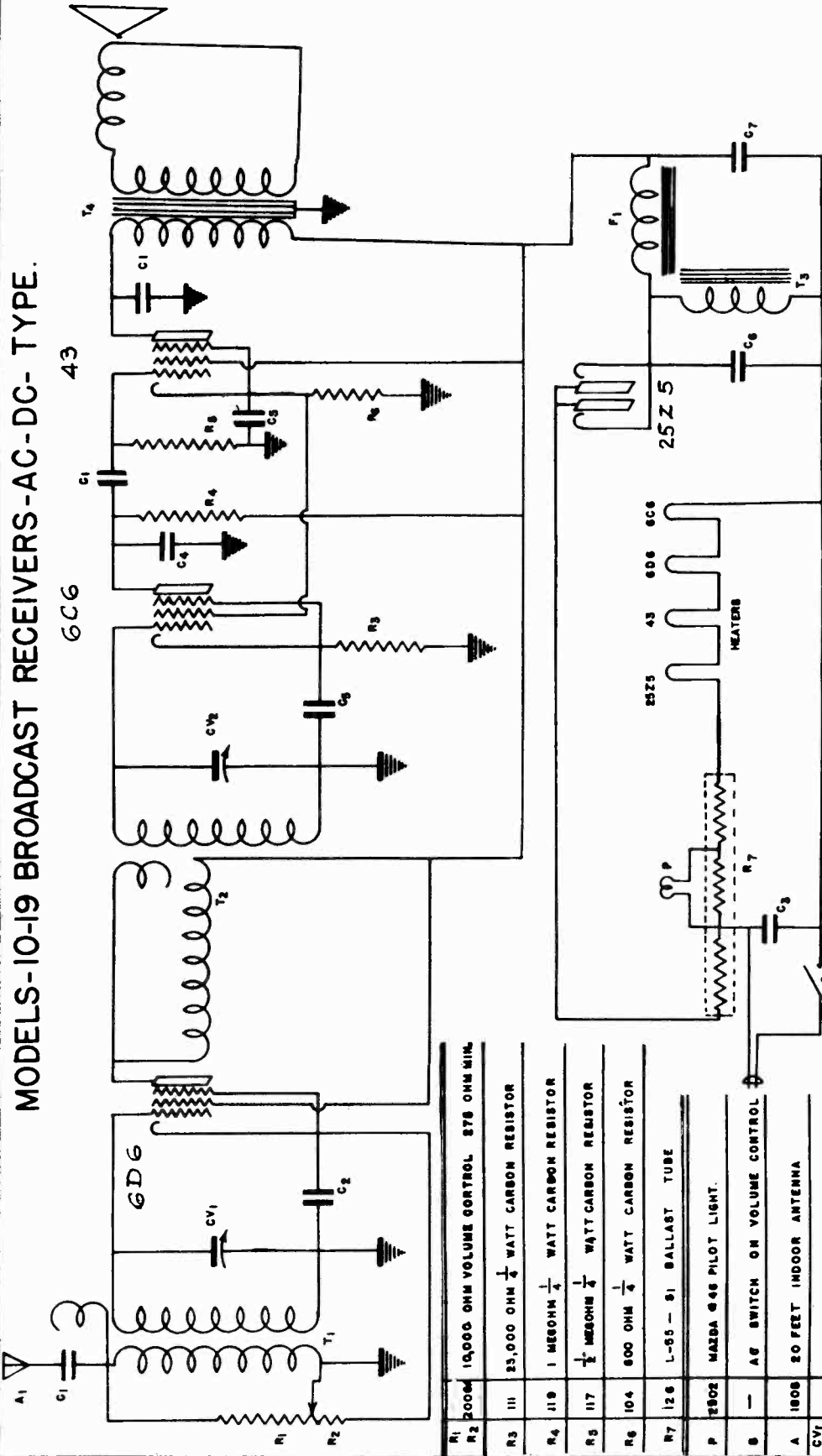
LEGEND	PART NO.	DESCRIPTION
R <sub>11</sub>	1067	250 w 1/2 WATT RESISTOR
R <sub>12</sub>	1057	500,000 w VOLUME CONTROL & A.C. SWITCH ATTACHED
C <sub>1</sub>		TUNING TRIMMER, MIN.
C <sub>2</sub>	3001	CAPACITY EACH SECTION = 5μmfd. - MAXIMUM 30μmfd.
C <sub>3</sub>		
C <sub>4</sub>	1000	0.1 mfd. 200V. TUBULAR COND.
C <sub>5</sub>	1093	100μmfd. MICA CONDENSER
C <sub>6</sub>	1094	100μmfd. 2.5% MICA CONDENSER
C <sub>7</sub>	1095	5 PLATE BIASING COND.
C <sub>8</sub>	1085	0.1 mfd. 400V. TUB. COND.

LEGEND	PART NO.	DESCRIPTION
C <sub>9</sub>	1008	2 GANG VAR. COND. (420μmfd.)
C <sub>10</sub>	1080	250μmfd. MICA CONDENSER
C <sub>11</sub>	1082	0.1 mfd. 400V. TUBULAR COND.
C <sub>12</sub>		0.1 mfd. 500V. ELECT. COND.
C <sub>13</sub>	2016	4μmfd. " " "
C <sub>14</sub>		10μmfd. 35V. " " "
A <sub>1</sub>	500	ALL-WAVE ANTENNA COIL
O <sub>1</sub>	501	ALL-WAVE OSCILLATOR COIL
D <sub>1</sub>	1013	6" DYNAMIC SPEAKER
S <sub>1</sub>	712	BAND SELECTOR SWITCH

MODELS 10-19 Incl.  
Schematic

CLIMAX RADIO & TELEV. CO., INC.

MODELS-10-19 BROADCAST RECEIVERS-AC-DC- TYPE.

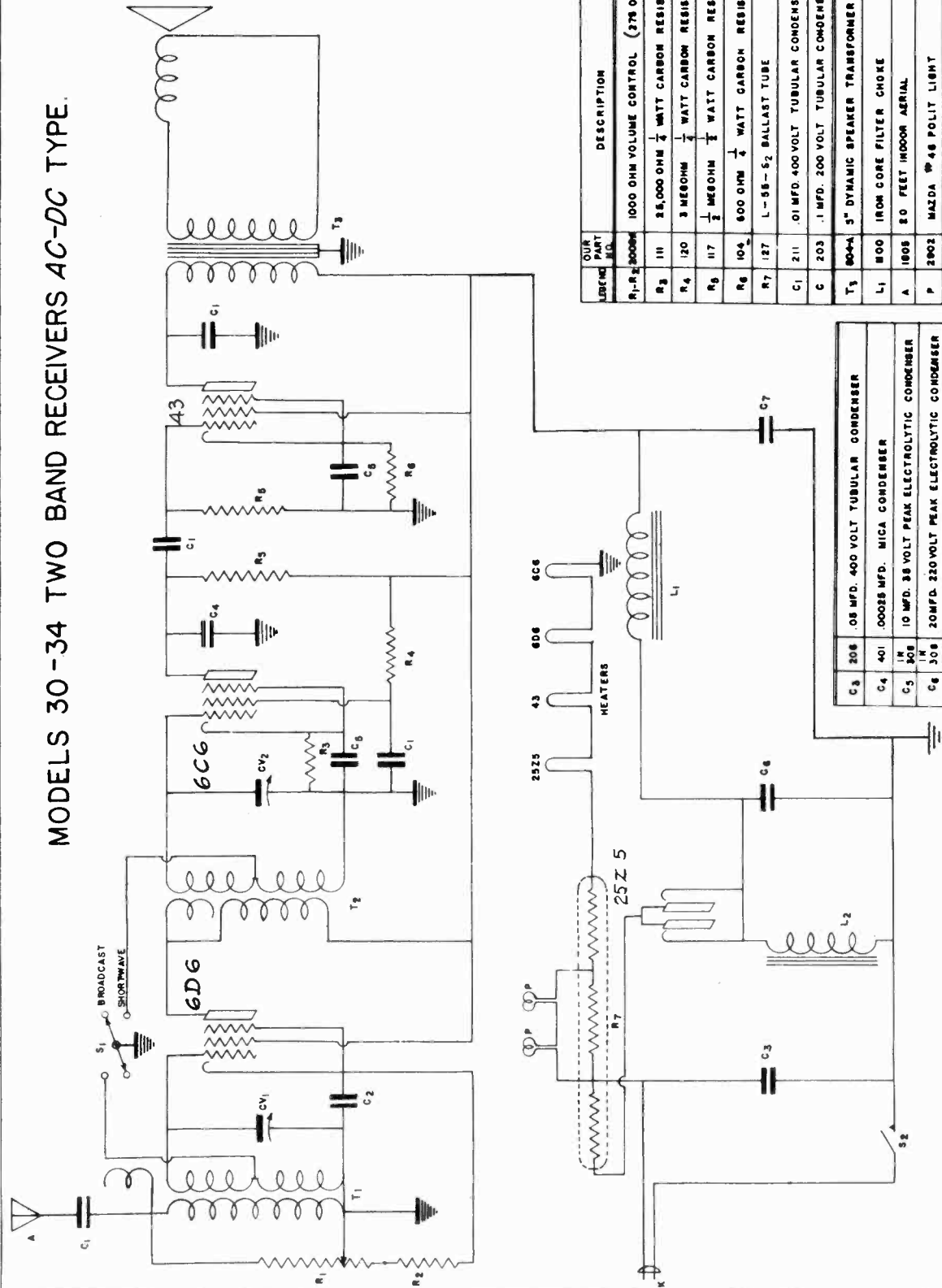


R1	200M	10,000 OHM VOLUME CONTROL	875 OHM MIN.
R2	111	25,000 OHM 1/4 WATT CARBON RESISTOR	
R3	119	1 MEGOHM 1/4 WATT CARBON RESISTOR	
R4	117	1/2 MEGOHM 1/4 WATT CARBON RESISTOR	
R5	104	500 OHM 1/4 WATT CARBON RESISTOR	
R6	126	L-65 - 51 BALLAST TUBE	
P	2502	MAZDA 648 PILOT LIGHT.	
S	-	AC SWITCH ON VOLUME CONTROL	
A	1808	20 FEET INDOOR ANTENNA	
CV1	607	TWO GANG VARIABLE CONDENSER	
CY2	607	TWO GANG VARIABLE CONDENSER	
G1	20M4	.01 MFD. 400 VOLT TUBULAR CONDENSER	
G2	203	.1 MFD. 200 VOLT TUBULAR CONDENSER	
G3	206	.05 MFD. 400 VOLT TUBULAR CONDENSER	
G4	401	.00055 MFD. MICA CONDENSER	
C5	309	5 MFD. 55 VOLT ELECTROLYTIC CONDENSER	
C6	309	14 MFD. 200 VOLT ELECTROLYTIC CONDENSER	
C7	309	8 MFD. 200 VOLT ELECTROLYTIC CONDENSER	
T1	1204	ANTENNA TRANSFORMER	
T2	1304	INTERSTAGE R.F. TRANSFORMER	
T3	1100	CHOKER COIL	
T4	803	5" DYNAMIC SPEAKER TRANSFORMER	
F1	803	2300 OHM SPEAKER FIELD	

CLIMAX RADIO & TELEV. CO., INC.

MODELS 30-34 Incl.  
Schematic

MODELS 30-34 TWO BAND RECEIVERS AC-DC TYPE.



LINE NO.	QTS PART NO.	DESCRIPTION
R1-R2	3000M	1000 OHM VOLUME CONTROL (275 OHM MIN.)
R3	111	25,000 OHM 1/4 WATT CARBON RESISTOR
R4	120	2 MEGOHM 1/4 WATT CARBON RESISTOR
R5	117	1/2 MEGOHM 1/4 WATT CARBON RESISTOR
R6	104	500 OHM 1/4 WATT CARBON RESISTOR
R7	127	L-55-52 BALLAST TUBE
C1	211	.01 MFD. 400 VOLT TUBULAR CONDENSER
C	203	.1 MFD. 200 VOLT TUBULAR CONDENSER
T3	80-4	5" DYNAMIC SPEAKER TRANSFORMER
L1	M00	IRON CORE FILTER CHOKE
A	1805	20 FEET INDOOR AERIAL
P	2902	MAZDA #48 POLIT LIGHT
S1	1903	BAND SELECTOR SWITCH
S	—	LINE SWITCH ON VOLUME CONTROL
CV1	801	TWO GANG VARIABLE CONDENSER
CV2	—	RUBBER COVERED LINE CORD

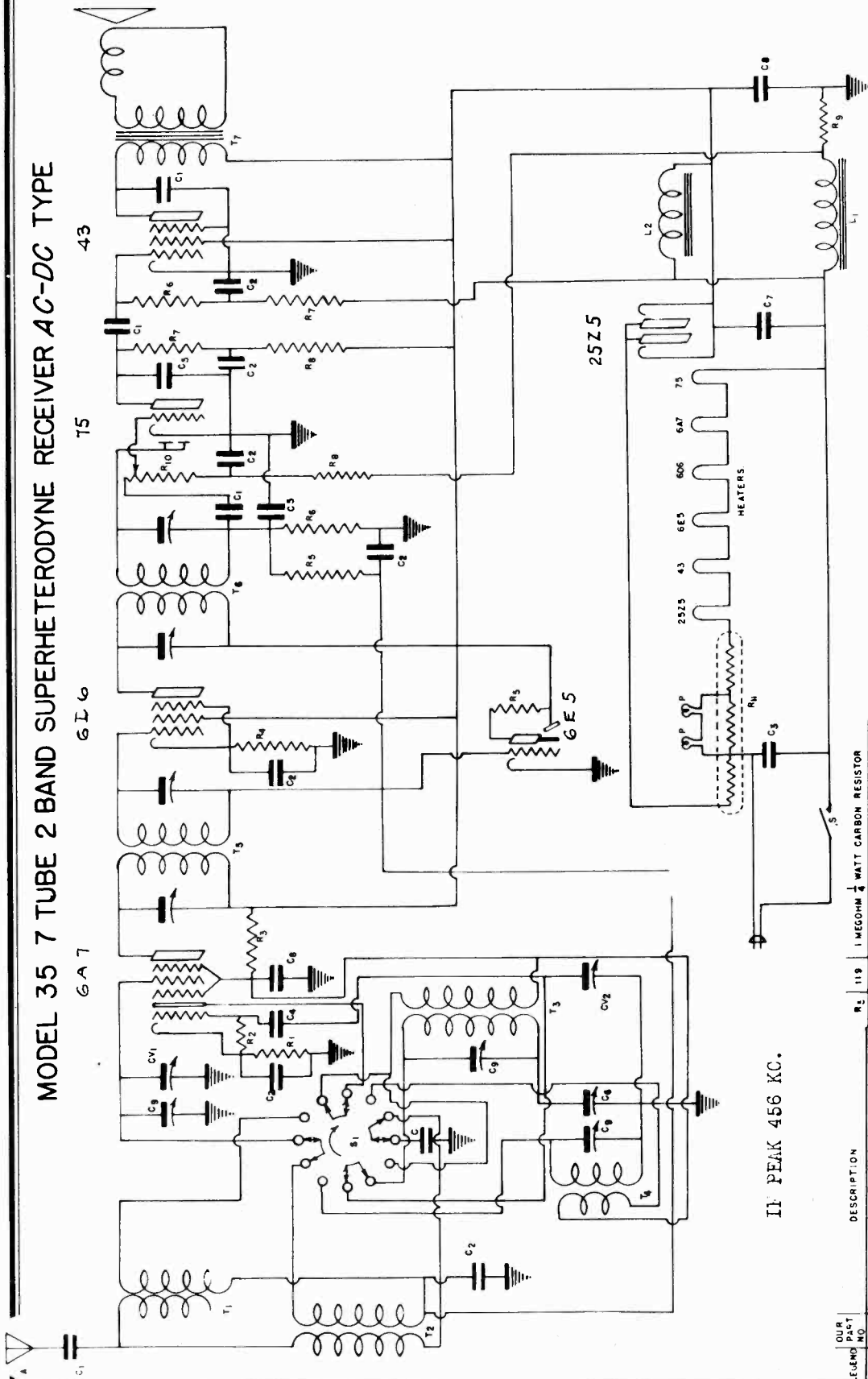
C3	206	.05 MFD. 400 VOLT TUBULAR CONDENSER
C4	401	.00025 MFD. MICA CONDENSER
C5	1M	10 MFD. 35 VOLT PEAK ELECTROLYTIC CONDENSER
C6	308	20 MFD. 220 VOLT PEAK ELECTROLYTIC CONDENSER
C7	308	10 MFD. 220 VOLT PEAK ELECTROLYTIC CONDENSER
T1	1205	TWO BAND ANTENNA TRANSFORMER
T2	1308	TWO BAND INTERSTAGE TRANSFORMER
L2	804	SPEAKER FIELD (2500 OHM)



MODEL 35  
Schematic

CLIMAX RADIO & TELEV. CO., INC.

MODEL 35 7 TUBE 2 BAND SUPERHETERODYNE RECEIVER AC-DC TYPE



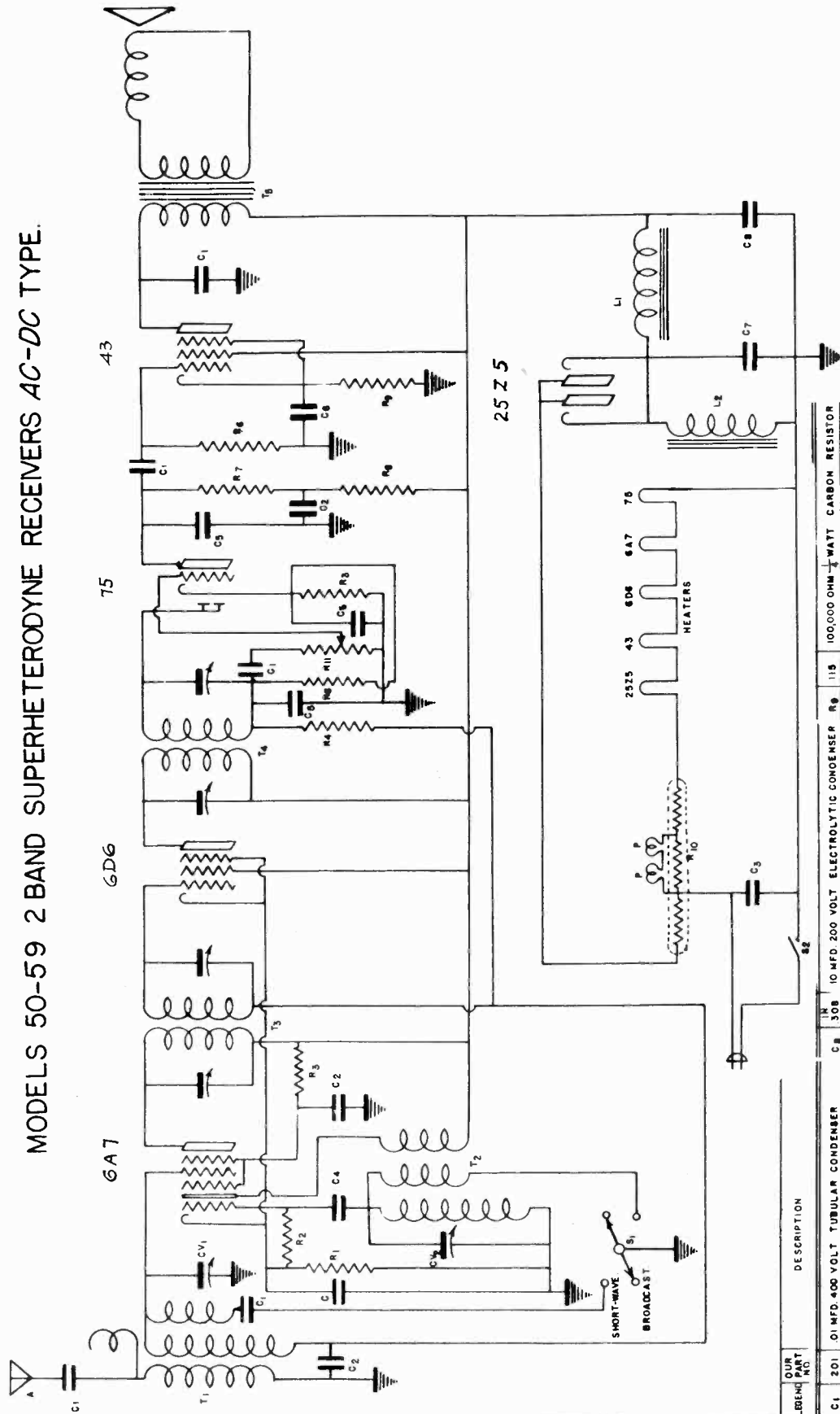
IF PEAK 456 KC.

OUR LEGEND PART NO.	DESCRIPTION	R <sub>1</sub> 119	R <sub>2</sub> 117	C <sub>V1</sub> 118	C <sub>V2</sub> 119	T <sub>1-2</sub> 1803	T <sub>3-7</sub> 1803
C <sub>1</sub> 311	20 MFD. 220 VOLT PEAK ELECTROLYTIC CONDENSER	R <sub>6</sub> 117	R <sub>7</sub> 116	C <sub>1</sub> 118	C <sub>2</sub> 119	T <sub>1</sub> 1803	T <sub>2</sub> 1803
C <sub>2</sub> 312	10 MFD. 280 VOLT PEAK ELECTROLYTIC CONDENSER	R <sub>8</sub> 115	R <sub>9</sub> 130	C <sub>3</sub> 120	C <sub>4</sub> 121	T <sub>3</sub> 1500	T <sub>4</sub> 1500
C <sub>3</sub> 1803	30 MMFD. CONDENSER	R <sub>10</sub> 114	R <sub>11</sub> 127	C <sub>5</sub> 122	C <sub>6</sub> 123	T <sub>5</sub> 1500	T <sub>6</sub> 1500
R <sub>1</sub> 103	250 OHM WATT CARBON RESISTOR	R <sub>12</sub> 113	R <sub>13</sub> 127	C <sub>7</sub> 124	C <sub>8</sub> 125	T <sub>7</sub> 80-A	T <sub>8</sub> 80-A
R <sub>2</sub> 113	50,000 OHM 1/4 WATT CARBON RESISTOR	R <sub>14</sub> 112	R <sub>15</sub> 127	C <sub>9</sub> 126	C <sub>10</sub> 127	L <sub>1</sub> 1100	L <sub>2</sub> 1100
R <sub>3</sub> 108	3000 OHM 1/4 WATT CARBON RESISTOR	S <sub>1</sub> 1908	S <sub>2</sub> 1908	C <sub>11</sub> 128	C <sub>12</sub> 129	P 2902	P 2902

CLIMAX RADIO & TELEV. CO., INC.

MODELS 50-59 Incl.  
Schematic

MODELS 50-59 2 BAND SUPERHETERODYNE RECEIVERS AC-DC TYPE.



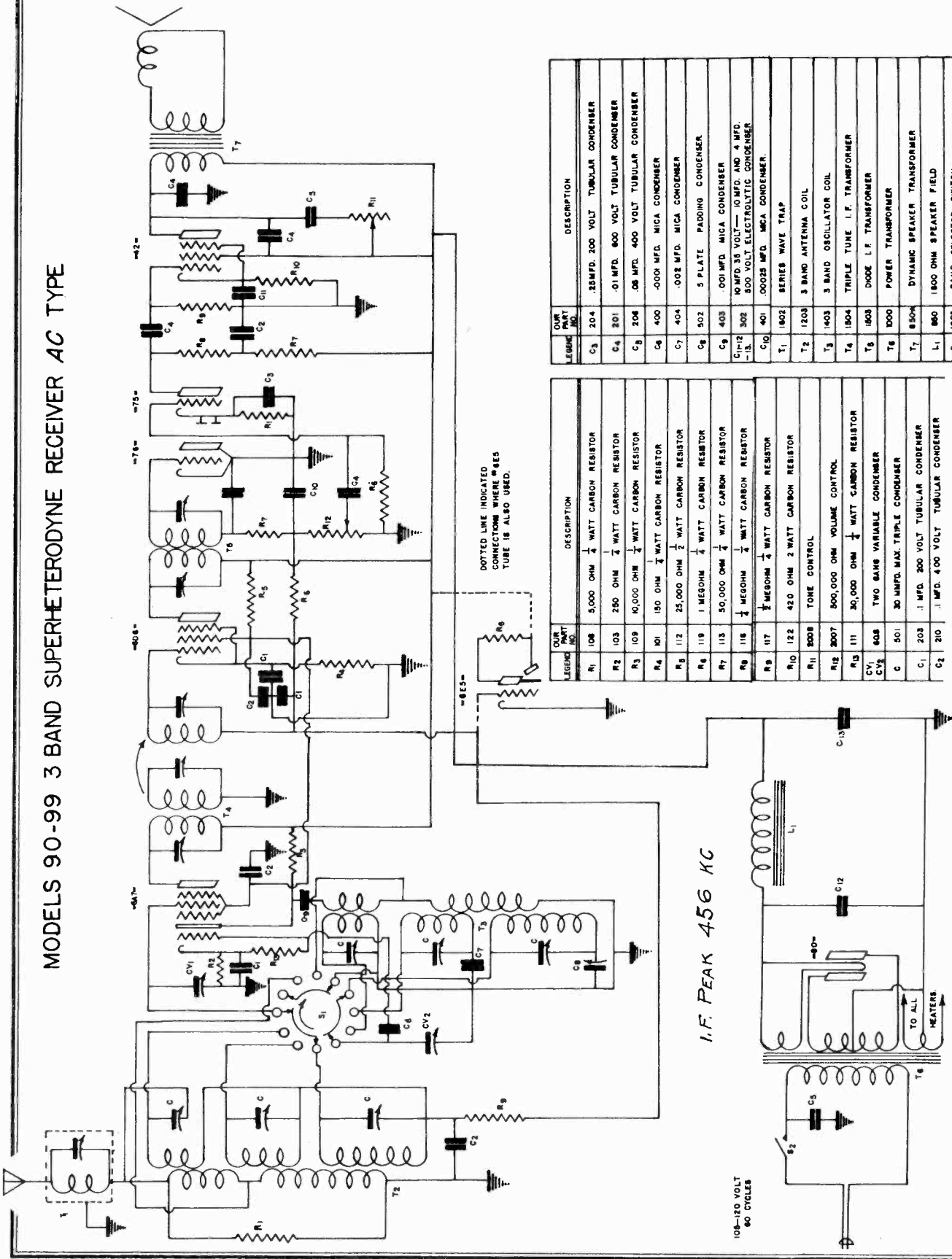
OUR LEADER PART NO.	DESCRIPTION	IN	DESCRIPTION	IN
C1	.01 MFD. 400 VOLT TUBULAR CONDENSER	C8	10 MFD. 200 VOLT ELECTROLYTIC CONDENSER	R9
C2	.1 MFD. 200 VOLT TUBULAR CONDENSER	R2	50,000 OHM 1/2 WATT CARBON RESISTOR	R9
C3	.25 MFD. 200 VOLT TUBULAR CONDENSER	R1	250 OHM 1/2 WATT CARBON RESISTOR	R10
C4	.0001 MFD. MICA CONDENSER	R3	5,000 OHM 1/2 WATT CARBON RESISTOR	S1
C5	.00025 MFD. MICA CONDENSER	R4	1 MEG OHM 1/2 WATT CARBON RESISTOR	S2
C6	.05 MFD. 400 VOLT TUBULAR CONDENSER	R6	1/2 MEG OHM 1/2 WATT CARBON RESISTOR	A
C7	10 MFD. 35 VOLT PEAK ELECTROLYTIC CONDENSER	R11	2 MEG OHM VOLUME CONTROL	T1-T2
C8	20 MFD. 220 VOLT PEAK ELECTROLYTIC CONDENSER	R7	250,000 OHM 1/2 WATT CARBON RESISTOR	T3
L1	25Z5	R8	100,000 OHM 1/2 WATT CARBON RESISTOR	T4
L2	6A7	R9	600 OHM 1/2 WATT CARBON RESISTOR	T6
L3	6D6	R10	L-55-S2 BALLAST TUBE	L1
L4	25Z5	R11	HEATERS	L2
L5	6A7	S1	BAND SELECTOR SWITCH	P
L6	6D6	S2	LINE SWITCH ON VOLUME CONTROL	
L7	25Z5	A	20 FEET INDOOR AERIAL	
L8	6A7	T1-T2	TRANSLATOR COIL (ONE UNIT)	
L9	6D6	T3	HIGH Q I.F. TRANSFORMER	
L10	25Z5	T4	1500	
L11	6A7		1802	
L12	6D6		1801	
L13	25Z5		1800	
L14	6A7		1801	
L15	6D6		1802	
L16	25Z5		1801	
L17	6A7		1802	
L18	6D6		1801	
L19	25Z5		1802	
L20	6A7		1801	
L21	6D6		1802	
L22	25Z5		1801	
L23	6A7		1802	
L24	6D6		1801	
L25	25Z5		1802	
L26	6A7		1801	
L27	6D6		1802	
L28	25Z5		1801	
L29	6A7		1802	
L30	6D6		1801	
L31	25Z5		1802	
L32	6A7		1801	
L33	6D6		1802	
L34	25Z5		1801	
L35	6A7		1802	
L36	6D6		1801	
L37	25Z5		1802	
L38	6A7		1801	
L39	6D6		1802	
L40	25Z5		1801	
L41	6A7		1802	
L42	6D6		1801	
L43	25Z5		1802	
L44	6A7		1801	
L45	6D6		1802	
L46	25Z5		1801	
L47	6A7		1802	
L48	6D6		1801	
L49	25Z5		1802	
L50	6A7		1801	
L51	6D6		1802	
L52	25Z5		1801	
L53	6A7		1802	
L54	6D6		1801	
L55	25Z5		1802	
L56	6A7		1801	
L57	6D6		1802	
L58	25Z5		1801	
L59	6A7		1802	
L60	6D6		1801	
L61	25Z5		1802	
L62	6A7		1801	
L63	6D6		1802	
L64	25Z5		1801	
L65	6A7		1802	
L66	6D6		1801	
L67	25Z5		1802	
L68	6A7		1801	
L69	6D6		1802	
L70	25Z5		1801	
L71	6A7		1802	
L72	6D6		1801	
L73	25Z5		1802	
L74	6A7		1801	
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L76	25Z5		1801	
L77	6A7		1802	
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L90	6D6		1801	
L91	25Z5		1802	
L92	6A7		1801	
L93	6D6		1802	
L94	25Z5		1801	
L95	6A7		1802	
L96	6D6		1801	
L97	25Z5		1802	
L98	6A7		1801	
L99	6D6		1802	
L100	25Z5		1801	

IF PEAK 456 KC.

MODELS 90-93 Incl.  
Schematic

CLIMAX RADIO & TELEV. CO., INC.

MODELS 90-99 3 BAND SUPERHETERODYNE RECEIVER AC TYPE



DOTTED LINE INDICATED  
CONNECTOR WHERE 9A5  
TUBE IS ALSO USED.

I.F. PEAK 456 KC

100-120 VOLT  
80 CYCLES

40V

TO ALL  
HEATERS

LEGEND	QWT PART NO.	DESCRIPTION
C3	204	25MFD. 200 VOLT TUBULAR CONDENSER
C4	201	0.1MFD. 600 VOLT TUBULAR CONDENSER
C5	206	0.08 MFD. 400 VOLT TUBULAR CONDENSER
C6	400	.0005 MFD. MICA CONDENSER
C7	404	.002 MFD. MICA CONDENSER
C8	902	5 PLATE PADDING CONDENSER
C9	403	.001 MFD. MICA CONDENSER
C10	302	10MFD. 35 VOLT—10MFD. AND 4 MFD. —1.5.
C11	401	.00025 MFD. MICA CONDENSER
T1	1802	SERIES WAVE TRAP
T2	1203	3 BAND ANTENNA COIL
T3	1403	3 BAND OSCILLATOR COIL
T4	1804	TRIPLE TUNE I.F. TRANSFORMER
T5	1603	DIODE I.F. TRANSFORMER
T6	800	POWER TRANSFORMER
T7	850A	DYNAMIC SPEAKER TRANSFORMER
L1	180	1800 OHM SPEAKER FIELD
S1	1800	BAND SELECTOR SWITCH

LEGEND	QWT PART NO.	DESCRIPTION
R1	106	5,000 OHM 1/2 WATT CARBON RESISTOR
R2	103	250 OHM 1/2 WATT CARBON RESISTOR
R3	109	10,000 OHM 1/2 WATT CARBON RESISTOR
R4	101	150 OHM 1/2 WATT CARBON RESISTOR
R5	112	25,000 OHM 1/2 WATT CARBON RESISTOR
R6	119	1 MEGOHM 1/2 WATT CARBON RESISTOR
R7	113	50,000 OHM 1/2 WATT CARBON RESISTOR
R8	116	1 MEGOHM 1/2 WATT CARBON RESISTOR
R9	117	1/2 MEGOHM 1/2 WATT CARBON RESISTOR
R10	122	420 OHM 2 WATT CARBON RESISTOR
R11	800B	TRIPLE TUNE I.F. TRANSFORMER
R12	2007	500,000 OHM VOLUME CONTROL
R13	111	30,000 OHM 1/2 WATT CARBON RESISTOR
CV1	805	TWO BAND VARIABLE CONDENSER
CV2	501	30 MFD. MAX. TRIPLE CONDENSER
C1	203	.1 MFD. 200 VOLT TUBULAR CONDENSER
C2	210	.1 MFD. 400 VOLT TUBULAR CONDENSER

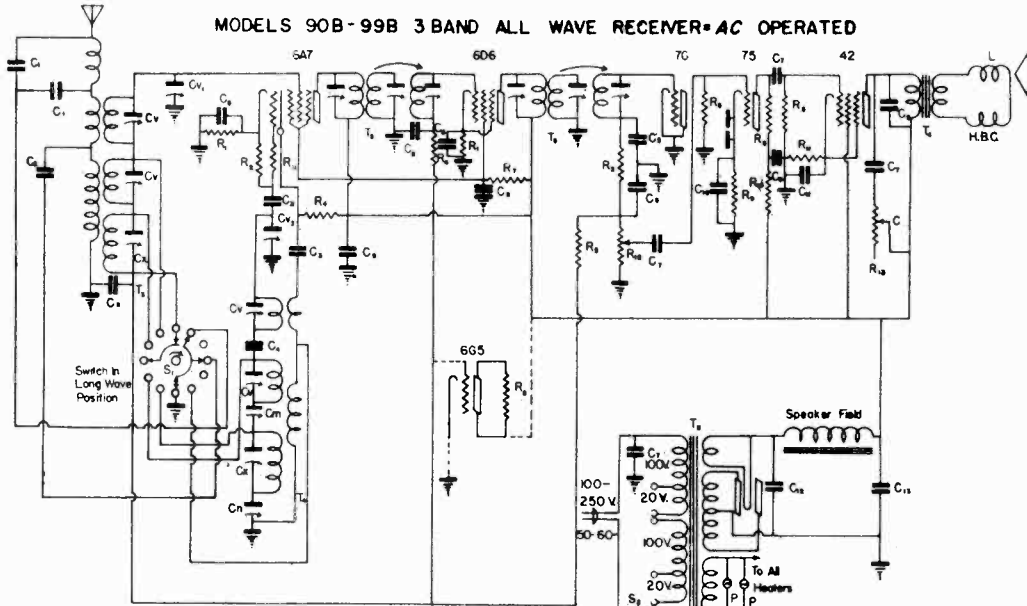
CLIMAX RADIO & TELEV. CO., INC.

MODELS 90-B - 99-B

MODEL 66

Schematics

MODELS 90B-99B 3 BAND ALL WAVE RECEIVER-AC OPERATED



I.F. PEAK 456 KC

Connections Shown For 230-250 V.

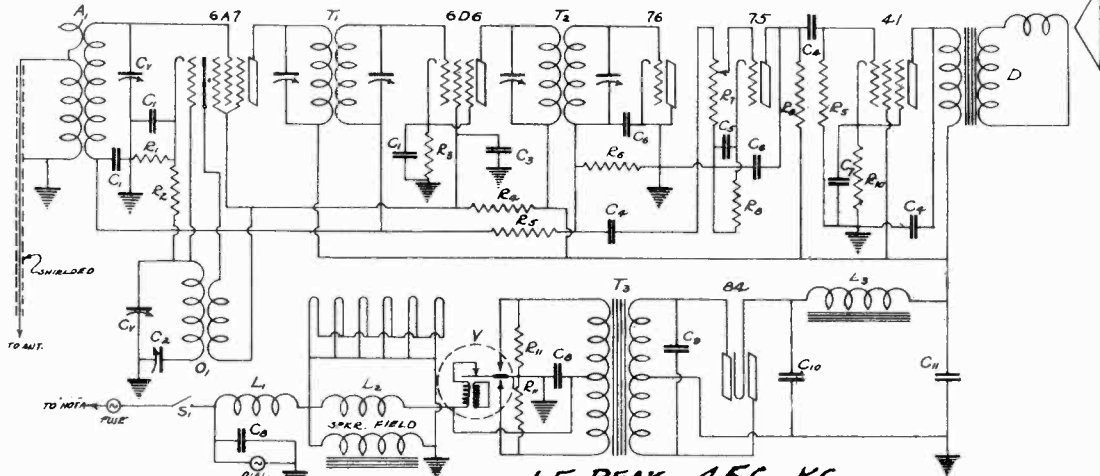
PART#	DESCRIPTION
C1	.0005 mfd. Mica Condenser
C2	.0001 mfd. Mica Condenser
C3	.001 mfd. Mica Condenser
C4	.006 mfd. Mica Condenser
C5	.0025 mfd. Mica Condenser
C6	200 V. Tubular Condenser
C7	400 V. Tubular Condenser
C8	400 V. Tubular Condenser
C9	1 mfd. 400 V. Tubular Condenser
C10	25 mfd. 200 V. Tubular Condenser
C11	10 mfd. 25 WV. Electrolytic Condenser

PART#	DESCRIPTION
C12	10 mfd. 450 WV. Electrolytic Condenser
C13	5 mfd. 350 V. Electrolytic Condenser
C14	3-30MM.FD. Trimmer Condenser
C15	30-30MM.FD. Trimmer Condenser
C16	600 MM.FD. Trimmer Condenser
C17	300 MM.FD. Trimmer Condenser
C18	2 Ganga Variable Condenser
R1	440 Ohms 1/2 Watt Carbon Resistor
R2	50,000 Ohms 1/2 Watt Carbon Resistor
R3	150 Ohms 1/2 Watt Carbon Resistor
R4	108,000 Ohms 1/2 Watt Carbon Resistor

PART#	DESCRIPTION
R5	250,000 Ohms 1/2 Watt Carbon Resistor
R6	500,000 Ohms 1/2 Watt Carbon Resistor
R7	25,000 Ohms 1/2 Watt Carbon Resistor
R8	One Megohm 1/2 Watt Carbon Resistor
R9	108,000 Ohms 1/2 Watt Carbon Resistor
R10	100,000 Ohms 1/2 Watt Carbon Resistor
R11	420 Ohms 1 Watt Wire Wound Resistor
R12	500,000 Ohms Volume Control
R13	With A.C. Switch
R14	250,000 Ohms Tone Control
R15	250 Ohms 1/2 Watt Carbon Resistor

PART#	DESCRIPTION
T1	150T Low Pass Filter Inductance
T2	207 Long Wave 3 Band Ant. Coil
T3	140I Long Wave 3 Band Osc. Coil
T4	150C Triode Tuned High Gain IF Transformer
T5	150S Triode Tuned Diode Coupling IF Transformer
T6	300A Dynamic Speaker Out Put Transformer
T7	100S 100-250 Volt, 50-60- Universal Type Power Transformer
L	850 6 1/2" Dynamic Speaker
P	2500 "45 Pilot Light

MODEL 66 SIX TUBE SUPER-HETERODYNE AUTOMOTIVE RECEIVER



I.F. PEAK 456 KC

LEGEND	PART#	DESCRIPTION
Cv	390	Grounded 200. Pwr. Cond.
C1	1000	1/4 mfd. 200V. TUB. COND.
C2	1005	5/16 mfd. Mica Var. Cond.
C3	1005	1/4 mfd. 400V. TUB. COND.
C4	1002	1/4 mfd. 400V. TUB. COND.
C5	2051	5/16 mfd. 35V. ELECT. COND.
C6	1080	250 mfd. MICA COND.
C7	1085	25.5 mfd. 200 V. TUB. COND.
C8	1081	5/16 mfd. 200V. TUB. COND.

LEGEND	PART#	DESCRIPTION
C9	1050	10 mfd. 1000 V. TUB. COND.
C10	2051	5/16 mfd. 350V. ELECT. COND.
C11	2051	5/16 mfd. 350V. ELECT. COND.
R1	1067	250 W. 1/2 WATT RESISTOR
R2	1071	50,000 W. 1/2 WATT RESISTOR
R3	1069	150 W. 1/2 WATT RESISTOR
R4	1072-A	10,000 W. 1/2 WATT RESISTOR
R5	1062	1 MEG. 1/2 WATT RESISTOR
R6	1081	1 MEG. 1/2 WATT RESISTOR

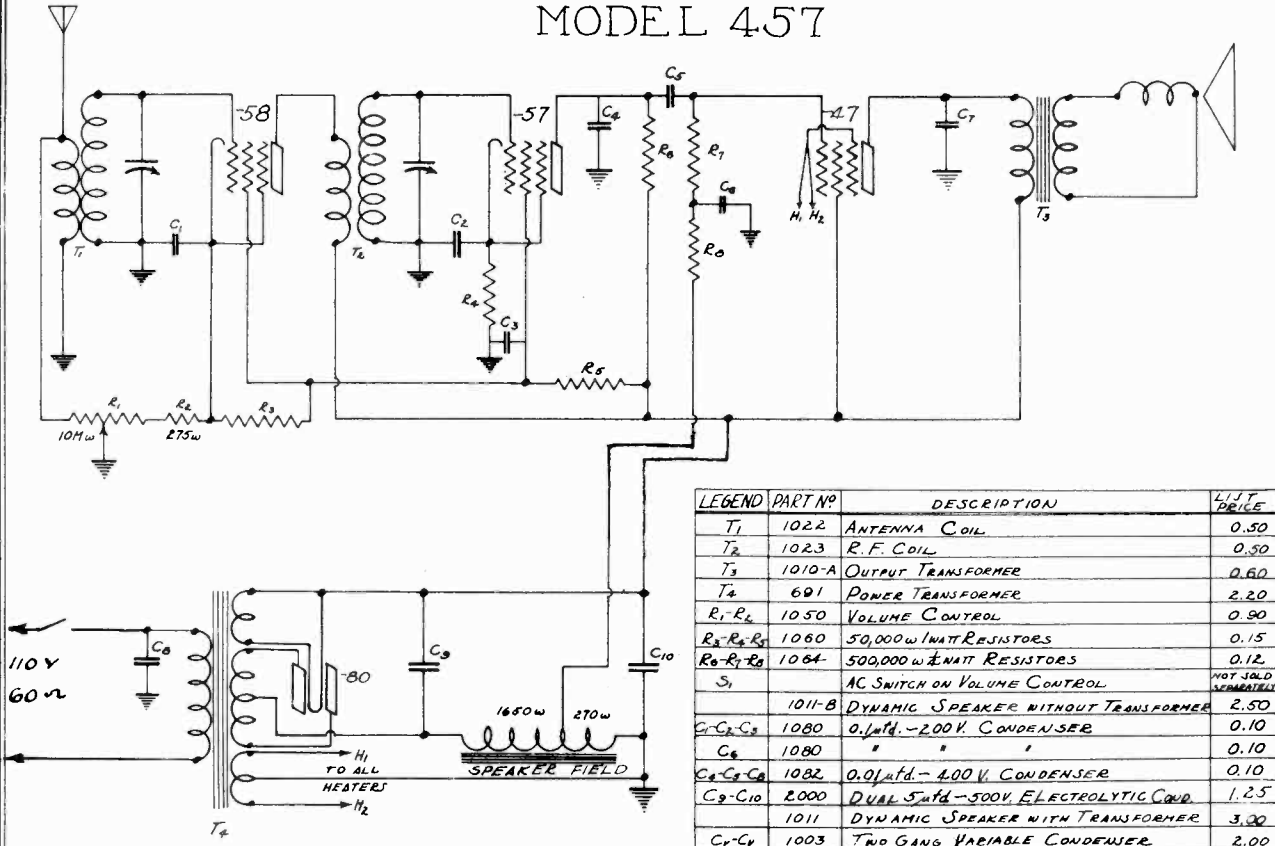
LEGEND	PART#	DESCRIPTION
R7	1049	500,000 W. VOL. CONTROL
R8	1069	4,500 W. 1/2 WATT RESISTOR
R9	1000	1 MEG. 1/2 WATT RESISTOR
R10	1069A	600W. 1/2 WATT RESISTOR
R11	1001A	50 W. 1/2 WATT RESISTOR
A1	305	SHIELDED AUTOMOTIVE COIL
O1	306	SHIELDED OSC. COIL
T1	507	250 I.F. TRANSFORMER B
T2	508	1/2 I.F. TRANSFORMER

LEGEND	PART#	DESCRIPTION
T3	601	BUFFER TRANSFORMER
D	1020	DYNAMIC SPEAKER
V	801	PLUG-IN VIBRATOR
L1	509	R.F. A. COIL
L2	509	REARER CONTROL WINDING
S1		DIAL LAMP
L3	107	10 AMPERE FUSE

MODEL 457  
MODEL 557  
Schematics

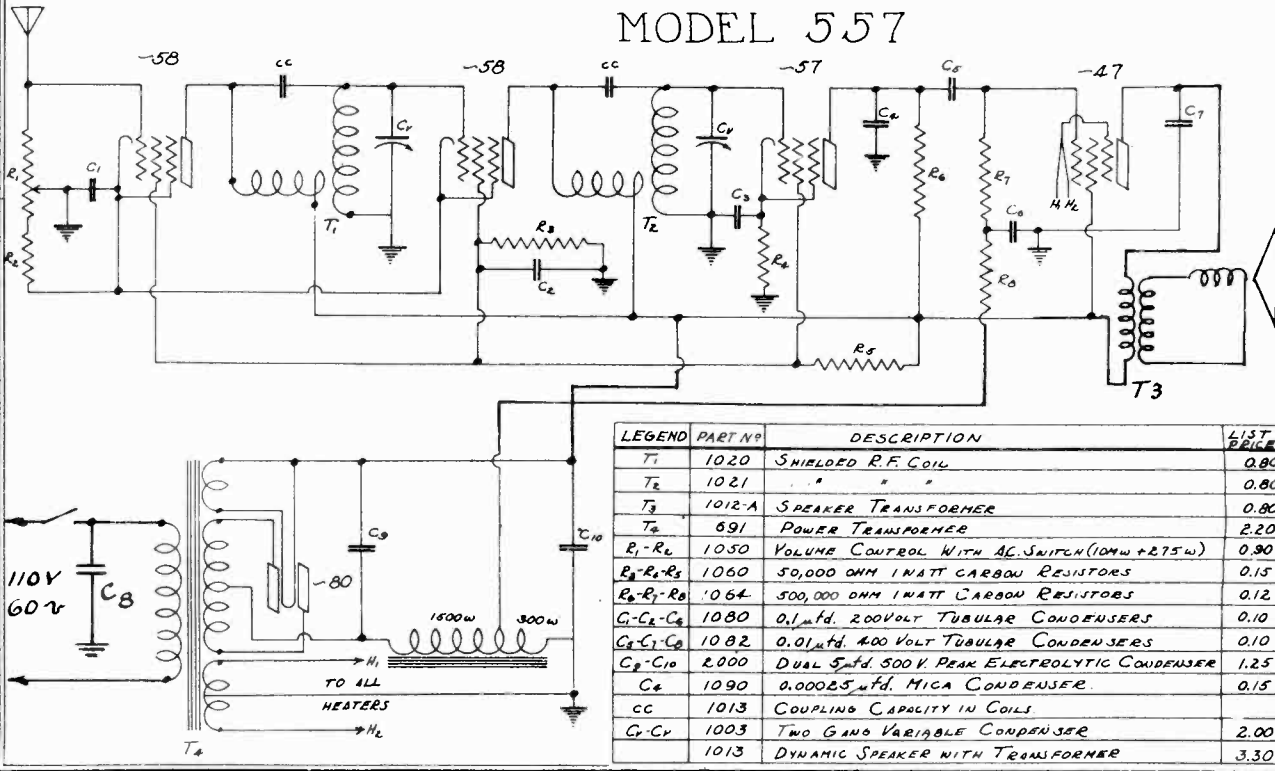
CLIMAX RADIO & TELEV. CO., INC.

MODEL 457



LEGEND	PART NO.	DESCRIPTION	LIST PRICE
	T <sub>1</sub>	1022 ANTENNA COIL	0.50
	T <sub>2</sub>	1023 R.F. COIL	0.50
	T <sub>3</sub>	1010-A OUTPUT TRANSFORMER	0.60
	T <sub>4</sub>	691 POWER TRANSFORMER	2.20
	R <sub>1</sub> -R <sub>4</sub>	1050 VOLUME CONTROL	0.90
	R <sub>5</sub> -R <sub>6</sub> -R <sub>7</sub>	1060 50,000 OHM 1/4WATT RESISTORS	0.15
	R <sub>8</sub> -R <sub>9</sub> -R <sub>10</sub>	1064 500,000 OHM 1/4WATT RESISTORS	0.12
	S <sub>1</sub>	AC SWITCH ON VOLUME CONTROL	NOT SOLD SEPARATELY
		1011-B DYNAMIC SPEAKER WITHOUT TRANSFORMER	2.50
	C <sub>1</sub> -C <sub>2</sub> -C <sub>3</sub>	1080 0.1μfd. -200V. CONDENSER	0.10
	C <sub>4</sub>	1080 " " " "	0.10
	C <sub>5</sub> -C <sub>6</sub> -C <sub>7</sub>	1082 0.01μfd. -400 V. CONDENSER	0.10
	C <sub>8</sub> -C <sub>10</sub>	2000 DUAL 5μfd. -500V. ELECTROLYTIC COND.	1.25
		1011 DYNAMIC SPEAKER WITH TRANSFORMER	3.30
	C <sub>1</sub> -C <sub>11</sub>	1003 TWO GANG VARIABLE CONDENSER	2.00

MODEL 557

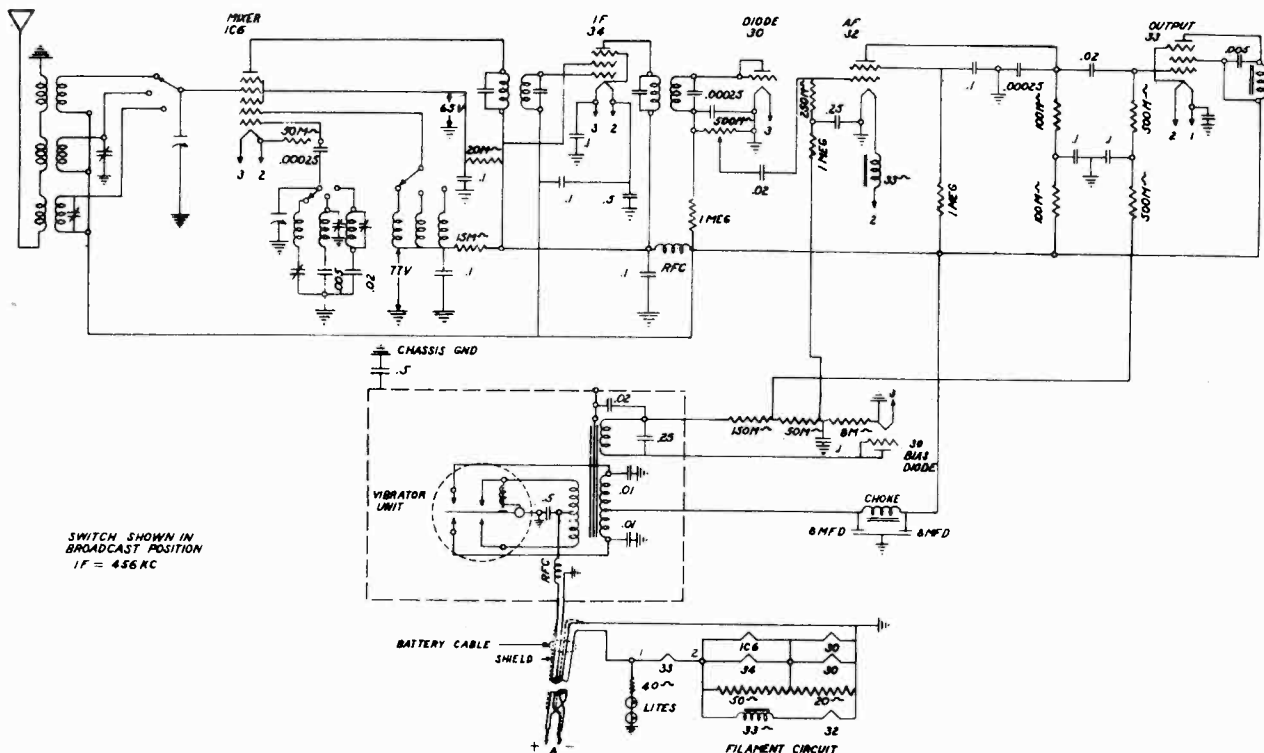


LEGEND	PART NO.	DESCRIPTION	LIST PRICE
	T <sub>1</sub>	1020 SHIELDED R.F. COIL	0.80
	T <sub>2</sub>	1021 " " " "	0.80
	T <sub>3</sub>	1012-A SPEAKER TRANSFORMER	0.80
	T <sub>4</sub>	691 POWER TRANSFORMER	2.20
	R <sub>1</sub> -R <sub>4</sub>	1050 VOLUME CONTROL WITH AC SWITCH (100W + 275W)	0.90
	R <sub>5</sub> -R <sub>6</sub> -R <sub>7</sub>	1060 50,000 OHM 1/4WATT CARBON RESISTORS	0.15
	R <sub>8</sub> -R <sub>9</sub> -R <sub>10</sub>	1064 500,000 OHM 1/4WATT CARBON RESISTORS	0.12
	C <sub>1</sub> -C <sub>2</sub> -C <sub>3</sub>	1080 0.1μfd. 200VOLT TUBULAR CONDENSERS	0.10
	C <sub>4</sub> -C <sub>5</sub> -C <sub>6</sub>	1082 0.01μfd. 400 VOLT TUBULAR CONDENSERS	0.10
	C <sub>7</sub> -C <sub>10</sub>	2000 DUAL 5μfd. 500 V. PEAK ELECTROLYTIC CONDENSER	1.25
	C <sub>11</sub>	1090 0.00025μfd. MICA CONDENSER	0.15
	CC	1013 COUPLING CAPACITY IN COILS	
	C <sub>1</sub> -C <sub>11</sub>	1003 TWO GANG VARIABLE CONDENSER	2.00
		1013 DYNAMIC SPEAKER WITH TRANSFORMER	3.30



**MODELS X-641, X-741**  
**Schematic, Alignment**

CONTINENTAL RADIO &amp; TELEV. CO.

**ALIGNMENT DATA**

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 3000 and 10,000 K. C. and an output meter to be connected across the speaker terminals.

If possible all alignment should be made with the volume control on maximum and the test oscillator output as low as possible, to prevent the AVC from operating and giving false readings.

**I.F. ALIGNMENT** Adjust the test oscillator to 1400 K.C. and connect the output to the antenna wire through a .0001 mfd. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 K.C. and adjust the rear gang condenser trimmer to peak. This adjusts the receiver on scale. Then adjust the front or R.F. trimmer to peak.

Next rest the dial pointer on the receiver and test oscillator to 600 K.C. Slowly increase or decrease the oscillator padding condenser, and at the same time continuously tuning back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment seems a little complicated but is the easiest way to adjust the oscillator to the R.F. section. The padding condenser is located on the left hand end of the chassis.

Return to 1400 K.C. and again go over the adjustment at that frequency to be sure they have not been thrown out of adjustment.

**SHORT WAVE BANDS**

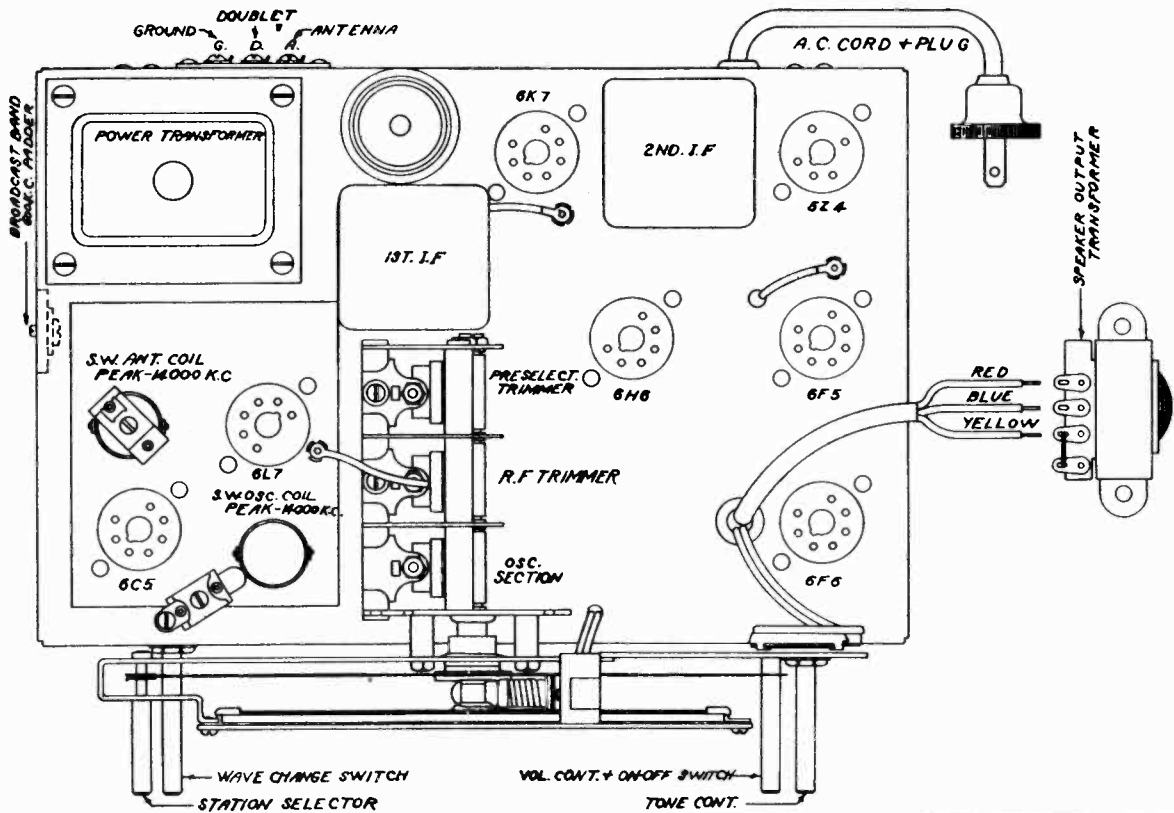
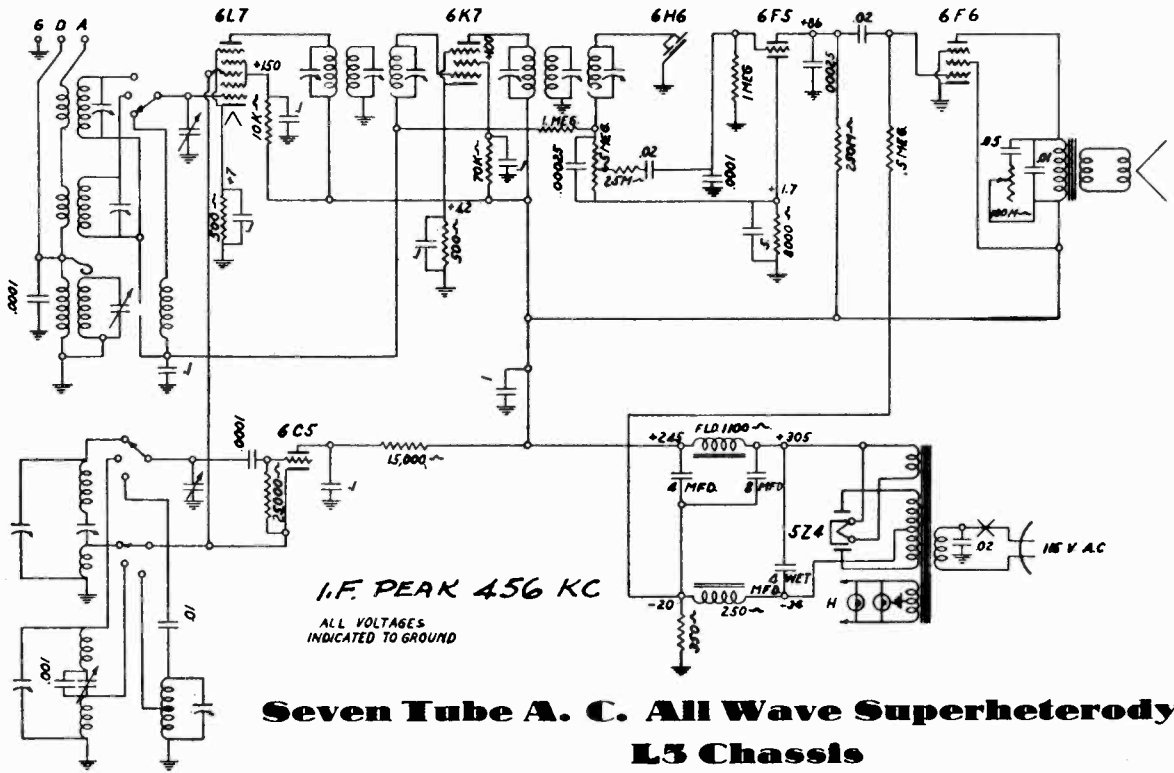
The foreign band of 19 to 49 meters can be adjusted by the two trimmers on the short wave coil located next to the gang condenser. Set the test oscillator to 10 megacycles or 31 meters.

The police and aviation band can be adjusted from a signal set at 3,000 K.C. or 300 on the dial. The oscillator trimmer is located underneath the chassis and the R.F. trimmer is between the 6A7 tube and the wave change switch.

The gang condenser trimmers are not to be used for alignment of either of the short wave bands.

# CONTINENTAL RADIO

MODEL L-6  
Schematic, Voltage  
Socket, Trimmers





**MODEL L-5**  
**Alignment**  
**Parts**

**CONTINENTAL RADIO**

**L5**

**PARTS LIST**

Part No.	Description
G730	Police Band Antenna Coil
G731	Police Band Oscillator Coil
P176	A.C. Cord & Plug
P170	350 Ohm Resistor
P279	500 Ohm $\frac{1}{2}$ Watt Resistor
P188	8,000 Ohm $\frac{1}{2}$ Watt Resistor
P673	19,000 Ohm $\frac{1}{2}$ Watt Resistor
P758	15,000 Ohm $\frac{1}{2}$ Watt Resistor
P681	70,000 Ohm $\frac{1}{2}$ Watt Resistor
P682	70,000 Ohm $\frac{1}{2}$ Watt Resistor
P139	250,000 Ohm $\frac{1}{2}$ Watt Resistor
P137	250,000 Ohm $\frac{1}{2}$ Watt Resistor
P182	1 Megohm $\frac{1}{2}$ Watt Resistor
P480	.001 Mica Condenser
P147	.0025 Mica Condenser
P335	.01 Mfd. 400 Volt Condenser
P160	Elect. Condenser
P670	3 Gang Condenser
P617	Padding Condenser
P678	Pre Selector Coil
P657	1st I.F. Transformer
P658	Oscillator Coil
P659	Detector Transformer
P182	Output Transformer
P485	Choke
P659	Wave Change Switch
P659	Volume Control & "On-Off" Switch
P661	Tone Control
G728	Short Wave Antenna Coil
P128	.02 Mfd. 400 Volt Condenser
P148	.05 Mfd. 400 Volt Condenser
P334	.05 Mfd. 400 Volt Condenser
P142	.1 Mfd. 200 Volt Condenser
P276	.1 Mfd. 400 Volt Condenser
P474	.4 Mfd. 430 Volt Condenser
P672	.001 Mica Condenser
P678	.0012 Mfd. 200 Volt Condenser
P249	12" Speaker
P733	12" Speaker
P683	12" Speaker Cone & Voice Coil Assembly
P688	12" Dynamic Speaker
P684	Dial Glass
P684	Dial & Bezel—Complete
P124	Pilot Light

The oscillator trimmer is mounted on the oscillator coil, which is located underneath the chassis. The oscillator coil is wound with enamel wire and is mounted to the front edge of the chassis. After this has been carefully done, the next step is to adjust the antenna trimmer to peak. The antenna trimmer is attached to the antenna coil; also mounted underneath the chassis and wound with enamel wire. The antenna coil is located nearest the power transformer. Now reset the dial pointer and the test oscillator to 1800 KC in preparation for adjusting the police band padding condenser. This padding condenser is mounted on the underside of the chassis, directly underneath the gang condenser. Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment seems a little complicated, but is the easiest way to correctly adjust the oscillator to the R.F. or antenna section.

Return to 4000 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made to 1800 KC. If it is found that in returning to 4000 KC the pointer is accurately on scale, the only readjustment that should be made (in this check) is the trimmer on the enamel wire antenna coil located underneath the chassis near the power transformer. If the pointer is found out of scale, it may be corrected and put on scale by readjustment of the oscillator trimmer. Alignment of the pointer can only be corrected by adjustment of the oscillator trimmer. **Important:** There are only three trimmer adjustments necessary for the Police Band. Do not attempt any adjustment of the gang condenser trimmers in aligning the Police Band, otherwise, the Broadcast Band will be thrown out of alignment.

**SERVICE DATA FOR ALL BANDS**

It is suspected that the oscillator has stopped but is doubtful due to the presence of the usual amount of noise level. It is suggested that the oscillator plate voltage be checked. An approximate normal minimum oscillating voltage for the plate of the 6C5 (oscillator tube) at 115 volt line potential is as follows:

Broadcast Band	600 KC	124 Volts
	1400 KC	108 Volts
	6000 KC	137 Volts
	14000 KC	140 Volts
	1700 KC	128 Volts
	4000 KC	110 Volts

Another way of ascertaining whether the tube is oscillating is to ground the grid of the 6C5. If oscillating properly, grounding the grid will cause an appreciable drop in oscillator voltage. Provisions have been made in this receiver for all types of antennas. Use a standard outside antenna of at least 50 feet including lead-in. Connect to antenna post marked "A."

**REGULAR ANTENNA**

In remote locations that are far away from powerful broadcasting stations, a longer antenna may be used for increased receiving range. Antennas as long as 150 to 200 feet may be employed in "dead spots." (Longer antennas increase sensitivity and decrease selectivity slightly.)

**Seven Tube A. C. All Wave Superheterodyne**

This receiver is designed to operate over three tuning ranges: the broadcast range which extends from 540 to 1700 Kilocycles (KC) (175 to 530 meters), Police and Aviation Band which extends from 1700 to 5000 Kilocycles (KC) (52 to 175 Meters) and the International Short Wave Band which extends from 5800 to 15,200 Kilocycles (KC) (18.5 to 52 meters). This latter range is the one which includes the four internationally assigned bands—the 19, 25, 31 and 49 meter bands.

This receiver is designed to operate from a power supply main of 110-120 volts, 60 cycle alternating current (A.C.). **Never plug into a DC outlet.**

**ALIGNMENT DATA AND SERVICING**

**GENERAL DATA**

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 450, 600, 1400, 1800, 4000, 6000, and 14,000 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignment should be made with the volume control on maximum and the test oscillator output as low as possible, to prevent the AVC from operating and giving false readings.

**CORRECT ALIGNMENT PROCEDURE**

The intermediate frequency (I.F.) stage should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast Band should always be the next procedure; after which, either or both of the Short Wave Bands may be aligned.

**I.F. ALIGNMENT**

Adjust the test oscillator to 456 KC and connect to the grid of the first detector tubes (6L7) through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all six I.F. trimmers to peak or maximum reading on the output meter.

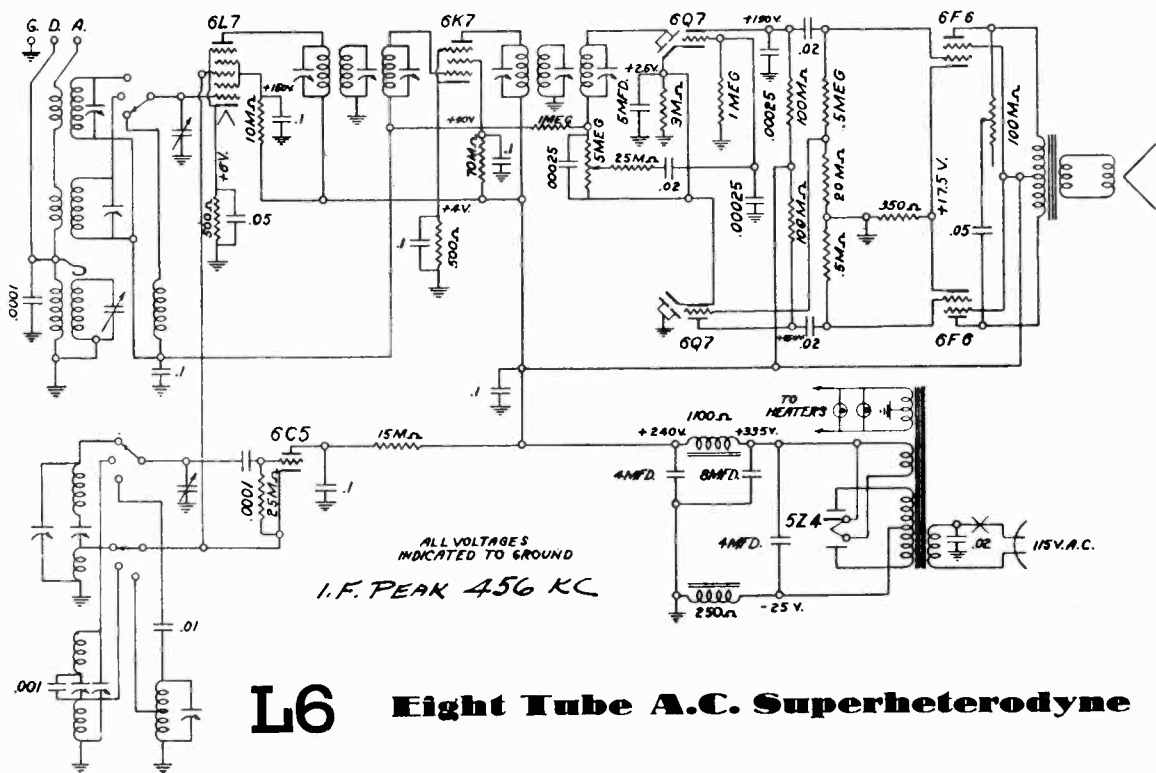
**BROADCAST BAND ALIGNMENT**

Adjust the oscillator to 1400 KC and connect the output to the antenna post marked "A" through a .001 mfd. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 KC and adjust the oscillator trimmer to peak. This trimmer is mounted on the oscillator coil and is located directly under the bottom of the chassis. (This adjustment must be made from the trimmers of the gang condenser to peak. The center gang section tunes the R.F. or grid coil of the 6L7 tube and the rear condenser section tunes the pre-selector stage circuit.)

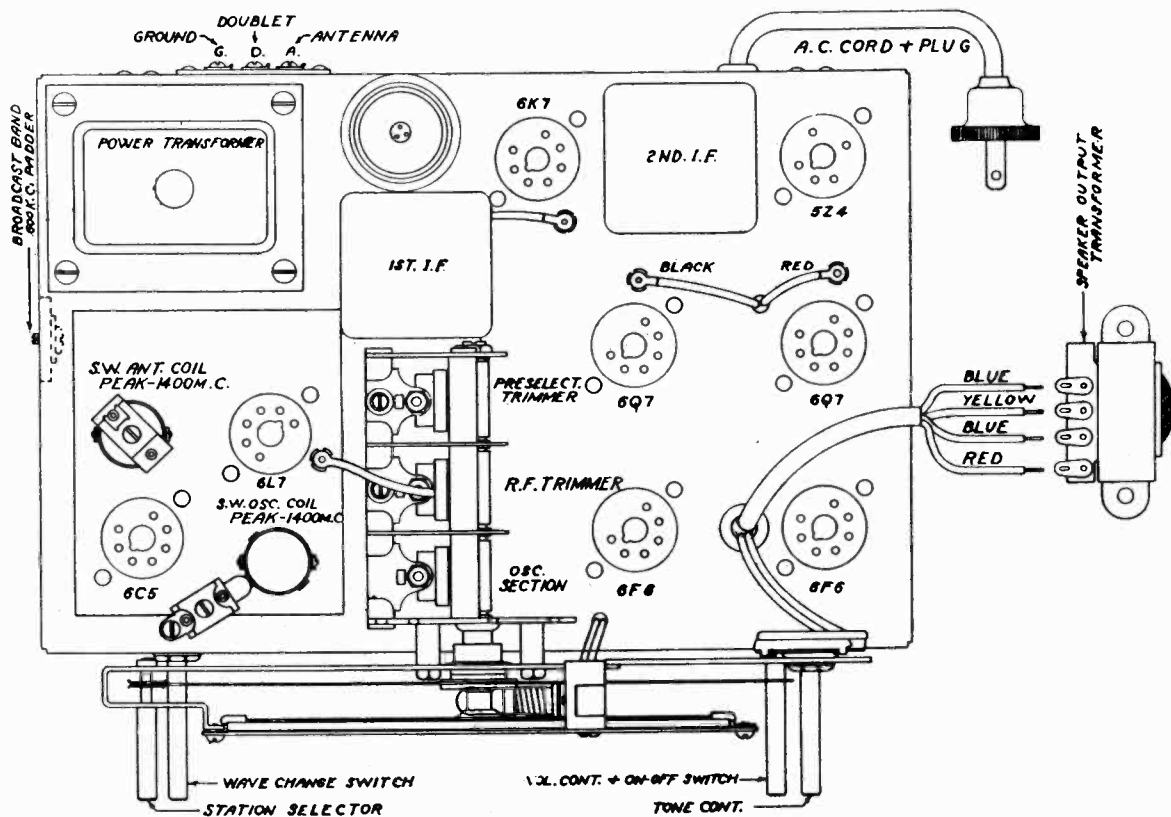
Next, re-set the dial pointer on the receiver and the test oscillator to 600 KC. Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment seems a little complicated but is the easiest way to adjust the oscillator to the pre-selector or R.F. section. The padding condenser is located in the left end of the chassis. Return to 1400 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made to 600 KC.

MODEL L-6  
Schematic, Voltage  
Socket, Trimmers

# CONTINENTAL RADIO



## L6 Eight Tube A.C. Superheterodyne



MODEL L-6  
Alignment  
Parts

CONTINENTAL RADIO

L6

PARTS LIST

Part No.	Description
P176	A.C. Card & Plug
P179	350 Ohm Resistor
P180	500 Ohm 1/4 Watt Resistor
P186	15,000 Ohm 1/4 Watt Resistor
P187	10,000 Ohm 1/4 Watt Resistor
P188	15,000 Ohm 1/4 Watt Resistor
P189	100,000 Ohm 1/4 Watt Resistor
P190	500,000 Ohm 1/4 Watt Resistor
P191	1,000,000 Ohm 1/4 Watt Resistor
P192	1 Mica Condenser
P193	0.01 Mica Condenser
P194	0.001 Mica Condenser
P195	0.00025 Mica Condenser
P196	Elect. Condenser
P197	Padding Condenser
P198	Pre-selector Coil
P199	1st I.F. Transformer
P200	2nd I.F. Transformer
P201	Oscillator Coil
P202	Support Transformer
P203	Choke
P204	Wave Transformer
P205	Wave Change Switch
P206	Short Wave Antenna Coil
P207	Short Wave Oscillator Coil
P208	Police Band Antenna Coil
P209	Police Band Oscillator Coil
P210	Tone Control
P211	Volume Control & Switch
P212	02 Mid. 400 Volt Condenser
P213	03 Mid. 200 Volt Condenser
P214	01 Mid. 200 Volt Condenser
P215	-10% +10%
P216	03 Mid. 400 Volt Condenser
P217	01 Mid. 200 Volt Condenser
P218	04 Mid. 400 Volt Condenser
P219	05 Mid. 400 Volt Condenser
P220	06 Mid. 400 Volt Condenser
P221	07 Mid. 400 Volt Condenser
P222	08 Mid. 400 Volt Condenser
P223	09 Mid. 400 Volt Condenser
P224	10 Mid. 400 Volt Condenser
P225	11 Speaker Fluid Coil
P226	12 Speaker Case & Assembly
P227	13 Dynamic Speaker
P228	Dial Glass
P229	Knob
P230	Pilot Light
P231	Complete

coil, which is located underneath the chassis. The oscillator coil is wound with enamel wire and is mounted to the front edge of the chassis. After this has been carefully done, the next step is to adjust the antenna trimmer to peak. The antenna trimmer is attached to the antenna coil, also mounted underneath the chassis and wound with enamel wire. The antenna coil is located nearest the power transformer. Now reset the dial pointer and the test oscillator to 1800 KC in preparation for adjusting the police band padding condenser. This padding condenser is mounted on the underside of the chassis, directly underneath the gang condenser. Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment seems a little complicated, but is the easiest way to correctly adjust the oscillator to the R.F. or antenna section.

Return to 4000 KC and again go over the adjustments at this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 1800 KC. If it is found that in returning to 4000 KC the pointer is accurately on scale, the only readjustment that should be made (in this check) is the trimmer on the enamel wire antenna coil located underneath the chassis near the power transformer. If the pointer is found off scale, it may be corrected and put on scale by readjustment of the oscillator trimmer. Alignment of the pointer can only be corrected by adjustment of the oscillator trimmer.

**Important:** There are only three trimmer adjustments necessary for the Police Band. Do not attempt any adjustment of the gang condenser trimmers in alignment of the Police Band; otherwise, the Broadcast Band will be thrown out of alignment.

SERVICE DATA FOR ALL BANDS

If it is suspected that the oscillator has stopped but is doubtful due to the presence of the usual amount of noise level, it is suggested that the oscillator plate voltage be checked. An approximate normal minimum oscillating voltage for the plate of the 6C5 (oscillator tube) at 115 volt line potential is as follows:

Broadcast Band	125 Volts
Foreign Band	1400 KC 100 Volts
	6000 KC 135 Volts
	14000 KC 140 Volts
Police Band	1700 KC 135 Volts
	4000 KC 110 Volts

Another way of ascertaining whether the tube is oscillating is to ground the grid of the 6C5. If oscillating properly, grounding the grid will cause an appreciable drop in oscillator voltage.

ANTENNA

Provisions have been made in this receiver for all types of antennas.

REGULAR ANTENNA

Use a standard outside antenna of at least 50 feet including lead-in. Connect to antenna post marked "A."

In remote locations that are far away from powerful broadcasting stations a longer antenna may be useful for increased receiving range. Antennas as long as 150 to 200 feet may be employed in "dead spots." (Longer antennas increase sensitivity and decrease selectivity slightly.)

Eight Tube A.C. All Wave Superheterodyne

This receiver is designed to operate over three tuning ranges. The broadcast range which extends from 540 to 1700 Kilocycles (KC) (175 to 550 meters), Police and Aviation Band which extends from 1700 to 5000 Kilocycles (KC) (52 to 175 Meters) and the International Short Wave Band which extends from 3800 to 15,400 Kilocycles (KC) (18.5 to 52 meters). This short wave range is the one which includes the four internationally assigned bands—the 19, 25, 31 and 49 meter bands.

This receiver is designed to operate from a power supply main of 110-120 volts, 60 cycle alternating current (AC). **Never plug into a DC outlet.**

If it is found that in returning to 1400 KC the pointer is accurately on scale, the only readjustments that should be made (in this check) are the center and rear trimmers of the gang condenser. If the pointer is found off scale, it may be corrected and put on scale by readjustment of the oscillator trimmer. Alignment of the pointer can only be corrected by adjustment of the oscillator trimmer.

This completes the correct sequence of operations in properly aligning the receiver for the Broadcast Band, and **must always be done before** attempting to align the Short Wave Bands.

FOREIGN BAND

The Foreign Band of 19 to 49 meters can be adjusted by the two trimmers located on the top of the chassis. The R.F. trimmer is located directly on top of the R.F. or Antenna coil and the oscillator trimmer is mounted on the chassis near the front of the oscillator coil. Set the test oscillator to 14,000 KC. In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with the .0001 mid. condenser on the output lead of the test oscillator. This resistor is used with the test oscillator only on the Short Wave Bands and should not be used for Broadcast Band alignment. The next operation is to adjust the R.F. and oscillator trimmers for peak at 14,000 KC and as the inherent design of the circuit has been expressly engineered for simplicity in servicing, no other adjustments are necessary for aligning this band.

**Note:** In order to prevent alignment on the image frequency, it is suggested that alignment be started with the antenna coil trimmer screwed down tightly. To check this adjustment, readjust the pointer to 13100 KC where the image frequency should be found. If properly aligned, the image frequency will be found to be weaker. If, however, the signal at 13100 KC is found to be stronger than the signal at 14000 KC, it signifies that alignment was incorrectly made on the image frequency.

**Important:** Do not attempt any adjustment of the gang condenser trimmers in aligning the Foreign Band as this will throw the Broadcast Band out of alignment.

POLICE BAND

In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with a .0001 mid. condenser on the output lead of the test oscillator. This resistor is used with the test oscillator only on the Short Wave Bands and should not be used for Broadcast Band alignment. Set the receiver pointer to 4000 KC (also test oscillator) and adjust the oscillator circuit trimmer to peak. The oscillator trimmer is mounted on the oscillator

ALIGNMENT DATA AND SERVICING

**GENERAL DATA**  
The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 1800, 4000, 6000, and 14,000 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignment should be made with the volume control on maximum and the test oscillator output as low as possible, to prevent the AVC from operating and giving false readings.

**CORRECT ALIGNMENT PROCEDURE**  
The intermediate frequency (I.F.) stage should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast Band should always be the next procedure; after which, either or both of the Short Wave Bands may be aligned.

**I.F. ALIGNMENT**  
Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tubes (6L7) through a .05 or 1 mid. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all six I.F. trimmers to peak or maximum reading on the output meter.

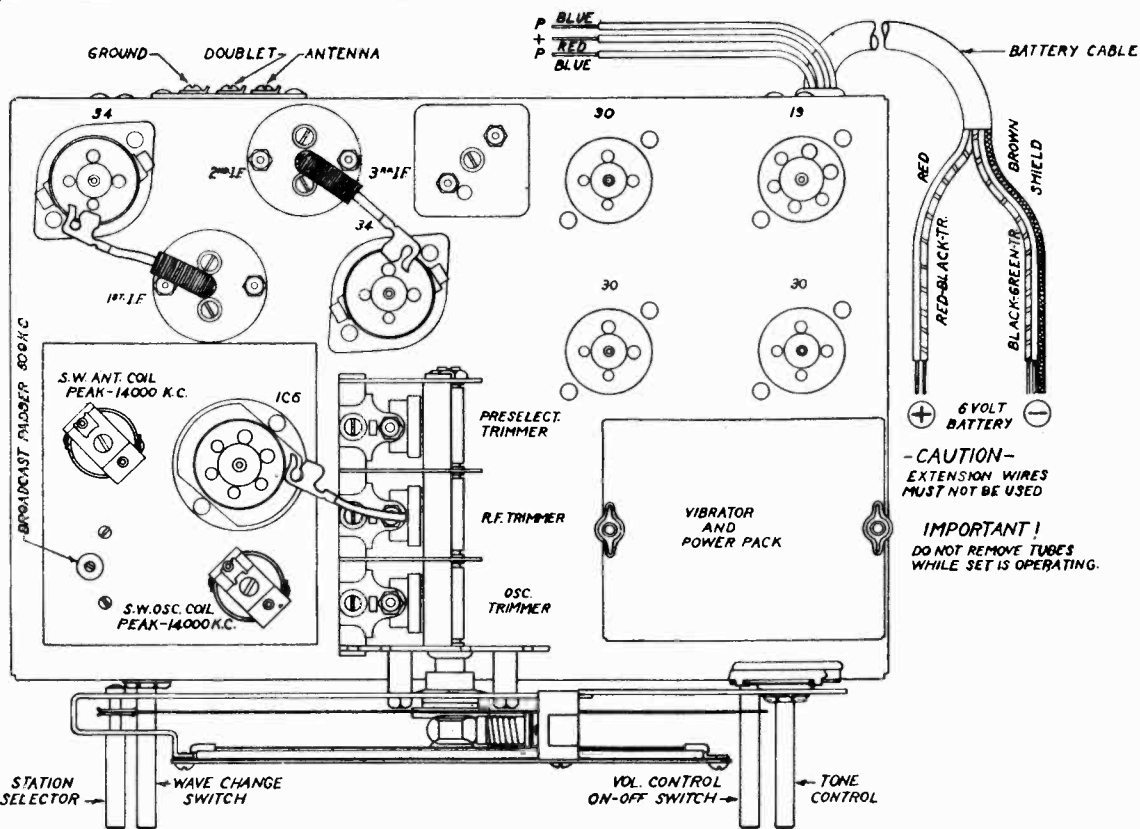
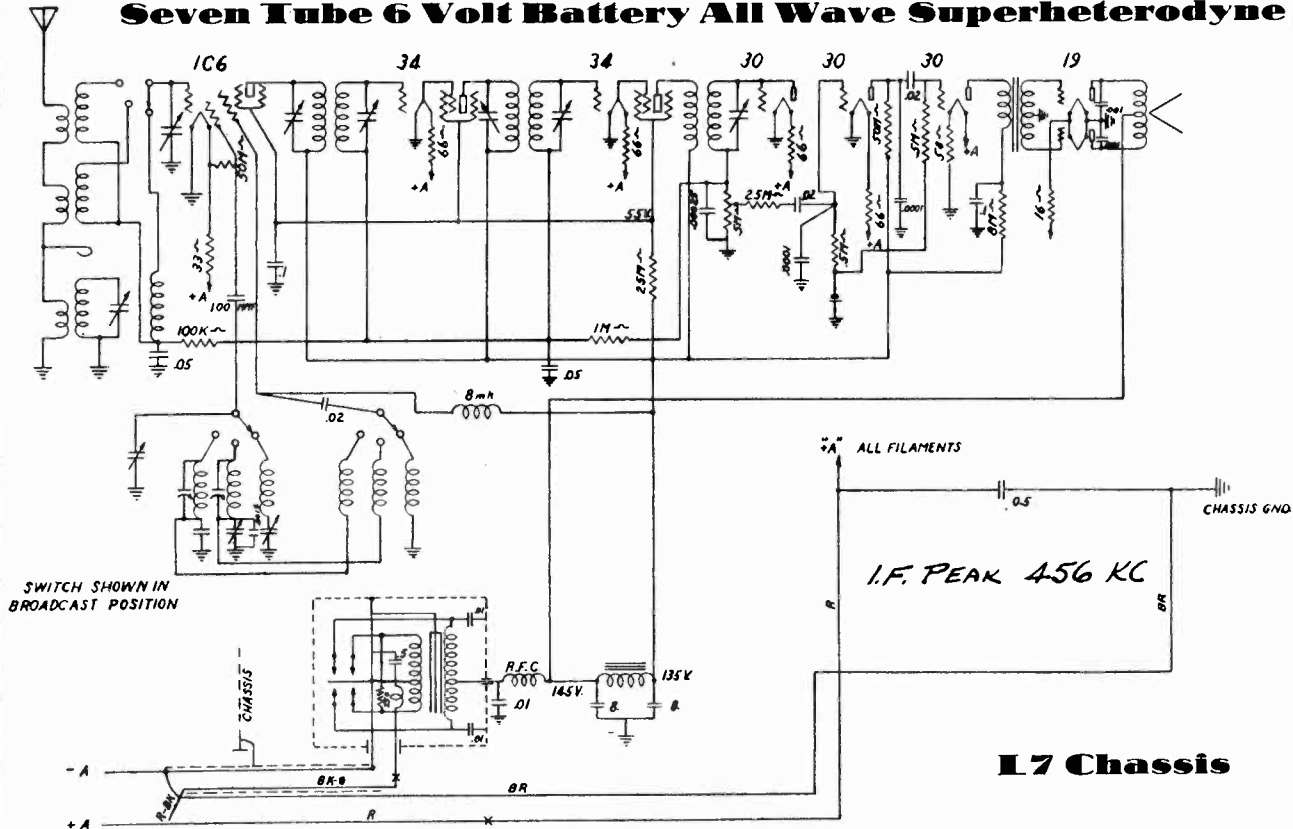
**BROADCAST BAND ALIGNMENT**  
Adjust the oscillator to 1400 KC and connect the output to the antenna post marked "A," through a .0001 mid. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 KC and adjust the oscillator trimmer to peak. This trimmer is mounted on the oscillator coil and is located directly under the 6C5 socket. (This adjustment must be made from the bottom of the chassis.) After this has been carefully done, the next step is to adjust the center and rear trimmers of the gang condenser to peak. The center gang section tunes the R.F. or grid coil of the 6L7 tube and the rear condenser section tunes the pre-selector stage circuit.

Next, re-set the dial pointer on the receiver and the test oscillator to 600 KC. Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment seems a little complicated but is the easiest way to adjust the oscillator to the pre-selector or R.F. section. The padding condenser is located in the left end of the chassis. Return to 1400 KC and again go over the adjustments at this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 KC.

# CONTINENTAL RADIO

**MODEL L-7**  
Schematic, Voltage  
Socket, Trimmers

## Seven Tube 6 Volt Battery All Wave Superheterodyne



**MODEL L-7  
Alignment  
Parts**

**CONTINENTAL RADIO**

**L7**

**SERVICE DATA FOR ALL BANDS**

It is suspected that the oscillator has stopped, but it is doubtful due to the presence of the usual amount of noise level. It is suggested that the oscillator plate voltage be checked. To ascertain whether the tube is oscillating, ground the oscillator grid of the IC6 (short stator and rotor plates of oscillator section on gang condenser). If oscillating properly, grounding the grid will cause an appreciable drop in oscillator voltage.

**BATTERY SELECTION**

This receiver is designed to operate entirely from a 6 volt storage battery. It will operate from any storage battery having a capacity ranging from 90 to 175 ampere hours. It is suggested, for the sake of greatest economy, that the largest possible capacity battery be used. The following is a schedule giving the number of hours of service on a single charge from batteries of standard capacities. A fully charged battery will provide satisfactory power for the periods specified before requiring additional charge.

80 Ampere Hour Capacity provides 50 to 53 hours use  
100 Ampere Hour Capacity provides 55 to 60 hours use  
120 Ampere Hour Capacity provides 60 to 65 hours use  
150 Ampere Hour Capacity provides 65 to 70 hours use  
170 Ampere Hour Capacity provides 80 to 100 hours use.

**Note:** The above tabulation is rated very conservatively and in most cases, with new or correctly rated batteries in good condition, many additional hours of service can be obtained from each charge. If, for any reason, the proper hours of service are not obtained, it will be due to the use of an old battery whose condition and rating are no longer up to standard. If a brand new battery fails to give the required hours of service, it is due to the battery being wrongly rated, or defective.

**BATTERY CONNECTIONS**

At the rear of the receiver there will be found extending from the left end of the chassis, the battery connecting cable. Observation will show that 5 wires are brought out from the braided cable. The red and red with black tracer wires are joined together and should both be securely fastened to the positive (+) terminal of the 6 volt storage battery. The other 3 wires which are brown, black with green tracer and black with white tracer are also joined together and should be securely connected to the negative (-) post of the battery.

**WINDCHARGERS**

There are many types of windchargers now on the market which may be used to advantage for greater economy of receiver operation. Such chargers will pay for themselves over a period of time, by saving the expense of buying the battery, reducing the inconvenience of taking the battery to the charging station, non-operation of the receiver during the charging period.

**IMPORTANT NOTE:** The battery must never be charged while set in operation. If a windcharger is used, it should always be disconnected from the battery when the receiver is being used. An inexpensive simple pole switch can be used for disconnecting the windcharger from the battery. This will increase the life of the battery and prevent additional expense to the receiver. This precaution applies also to gasoline power chargers.

**Seven Tube 6 Volt Battery All Wave Superheterodyne**

This receiver is designed to operate over three tuning ranges: the broadcast range which extends from 540 to 1700 Kilocycles (KC) (175 to 550 meters), Police and Aviation Band which extends from 1700 to 5000 Kilocycles (KC) (52 to 175 Meters) and the International Short Wave Band which extends from 5800 to 15,200 Kilocycles (KC) (18.5 to 52 meters). This latter range is the one which includes the four internationally assigned bands—the 19, 25, 31 and 49 meter bands.

**ALIGNMENT DATA AND SERVICING**

**GENERAL DATA**

The alignment of this receiver is made by means of a test oscillator which will operate at frequencies of 455, 600, 1400, 1800, 4000, 6000, and 14,000 KC and an output meter which is to be connected across the primary or secondary of the output transformer. If possible, all alignments should be made with the volume control on maximum, and the secondary output as low as possible, to prevent the AVC from operating and giving false readings.

**CORRECT ALIGNMENT PROCEDURE**

The intermediate frequency (I.F.) stages should be aligned properly as the first step. After the I.F. transformers have been properly aligned, the Broadcast Band should always be aligned first, either by which, either or both of the Short Wave Bands may be aligned.

**I.F. ALIGNMENT**

Adjust the test oscillator to 455 KC and connect the output to the grid of the first detector tube (IC6) through a .05 or .1 mid. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all I.F. transformers in this order, starting with the transformer nearest the type 30 diode detector. In this receiver, there will be consequently three I.F. transformers. Next adjust the center tap of the I.F. transformer, which has two trimmers (double tuned) for maximum output; then adjust the two trimmers on the input I.F. transformer (double tuned) for peak.

**BROADCAST BAND ALIGNMENT**

Adjust the oscillator to 1400 KC and connect the output to the grid of the first detector through a .001 mid. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 KC and adjust the front gang condenser (oscillator circuit) to peak. After this has been carefully done, the next step is to adjust the center trimmer of the RF or grid coil (IC6). The center trimmer condenser section tunes the receiver and the test oscillator to 600 KC. Slowly increase the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the R.F. section. The padding condenser is on the left hand side of the chassis, near the extreme front left corner. Return to 1400 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 KC. This completes the correct sequence of operations in properly aligning the receiver for the Broadcast Band, and must always be done before attempting to align the Short Wave Bands.

**FOREIGN BAND ALIGNMENT**

The Foreign Band of 19 to 49 meters can be adjusted by the two trimmers on the antenna wave coils located on the top of the chassis. In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with the .001 mid. condenser on the output lead of the test oscillator. Set the receiver pointer to 14,000 KC (also test oscillator). The oscillator coil is located alongside the oscillator section of the tuning condenser.

(front section of gang), and the antenna or R.F. is the other coil adjusted for peak at 14,000 KC (also test oscillator). The antenna coil as the inherent design of the circuit has been expressly developed for simplicity in servicing, no other adjustments are necessary for aligning this band.

**Note:** Always start this procedure by having the oscillator coil trimmer loose (out all the way), and the antenna coil trimmer fully tight (in all the way); otherwise it is possible to make a false alignment on the image frequency. In order to prevent alignment check to make certain that the signal is 14,000 KC. The frequency should be found. If properly aligned, the image frequency will be found to be weaker. If, however, the signal at 14,000 KC is found to be stronger than the signal at 14,000 KC, it signifies that alignment was incorrectly made on the image frequency.

**IMPORTANT:** Do not attempt any adjustment of the gang condenser trimmer on the Foreign Band as this will throw the Broadcast Band out of alignment.

**POLICE BAND**

In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with a .001 mid. condenser on the output lead of the test oscillator. The antenna coil is adjusted for peak at 14,000 KC. The wave bands and should not be used for Broadcast Band alignment. Set the receiver pointer to 4000 KC (also test oscillator) and adjust the oscillator circuit trimmer to peak. The oscillator trimmer is mounted on the oscillator coil, which is located underneath the chassis. The oscillator coil is wound with enamel wire and is fixed to the front edge of the chassis. This coil can be identified by the two windings. After this has been done, the next step is to adjust the antenna trimmer to peak. The antenna trimmer is attached to the antenna coil, also mounted underneath the chassis and wound with enamel wire. The antenna coil is mounted at right angles to the oscillator coil and is nearest to the rear of the chassis.

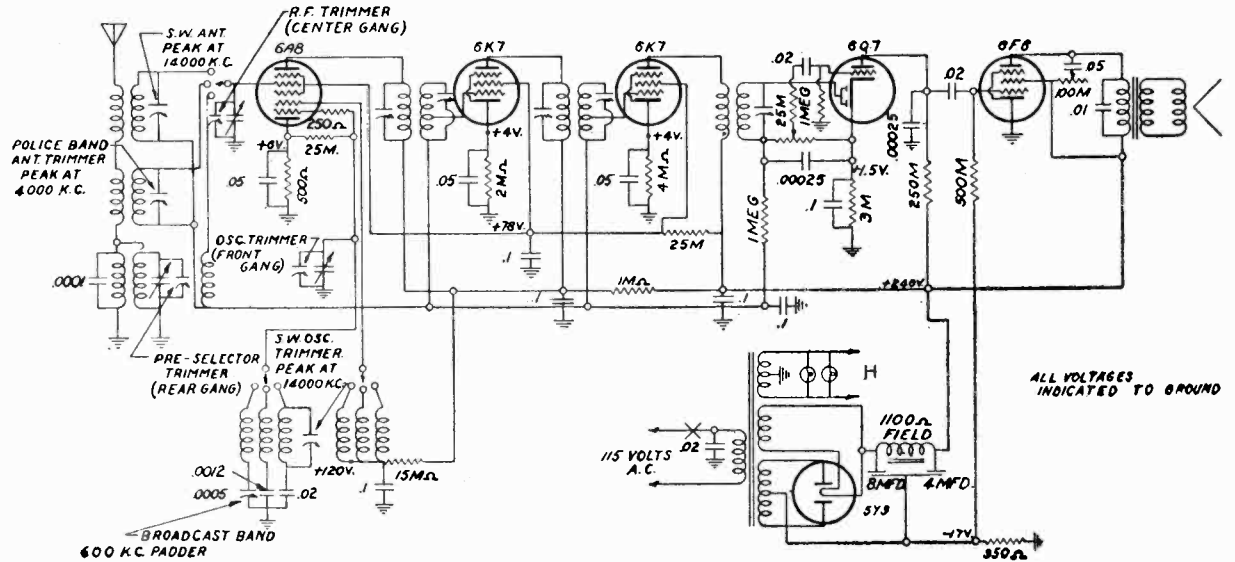
No chassis. The dial pointer and the test oscillator to 1800 KC in preparation for adjusting the padding condenser. This adjustment is made by turning the padding condenser on the underside of the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated, but is the easiest way to correctly align the oscillator to the R.F. section. Return to 4000 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 1800 KC.

If it is found that in returning to 4000 KC the pointer is accurately on scale, the only readjustment that should be made in this receiver is the trimmer on the enamel wire antenna coil located underneath the oscillator trimmer. Alignment of the pointer can only be corrected by adjustment of the oscillator trimmer. **Important:** There are only three trimmer adjustments necessary for the Police Band. Do not attempt any adjustment of the gang condenser trimmer in aligning the Police Band; otherwise, the Broadcast Band will be thrown out of alignment.

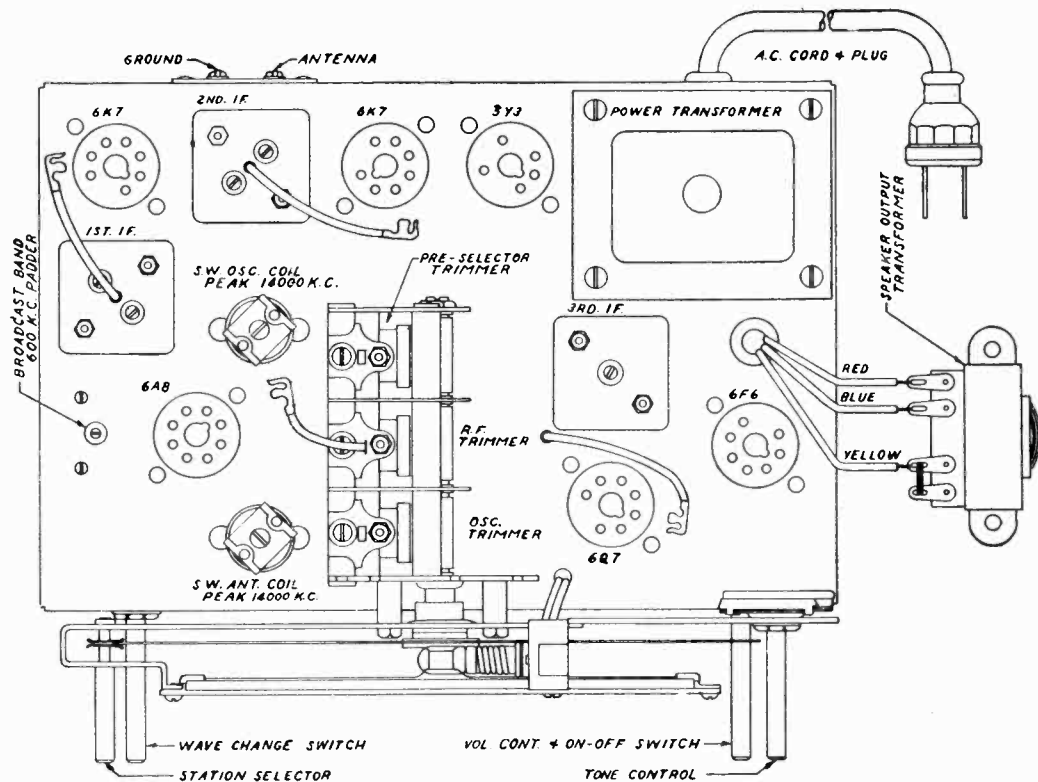
Part No.	Description
P391	Battery, Cond. Dual 6 Mid.
P392	Electro. Cord
P422	40 Ohm Cathodohm Res.
P766	Gang Cathodohm
P767	16 Ohm Cathodohm
P411	Filter Choke
P400	Vibrator Transformer
P401	Rectifier Tube
P457	'A' Choke
P395	.5 Mid. 10 Volt Condenser
P142	.1 Mid. 200 V. Condenser
P148	.05 Mid. 200 V. Condenser
P393	.02 Mid. 200 V. Condenser
P395	.01 Mid. 800 V. Condenser
P402	.01 Mica Cond.
P872	.001 Mica Cond.
P400	.0001 Mica Cond.
P147	.0025 Mica Condenser
P136	250 Ohm 1/4 Watt Resistor
P188	8,000 Ohm 1/4 Watt Res.
P165	25,000 Ohm 1/4 Watt Res.
P287	50,000 Ohm 1/4 Watt Res.
P282	1 Megohm 1/4 Watt Res.
P182	1 Megohm 1/4 Watt Res.
P888	Bias Coil
P403	6" Speak. (Midget Speak.)
P404	8" Speak. (Cons. Speak.)
P646	Dial and Scale Complete
P886	Excitacion Plate
P886	Excitacion Plate
P446	Pilot Light
P634	Knob
P670	3 Gang Condenser
P189	14 and 2nd I.F. Trns.
P719	Class B Input Transformer
P688	Single Tuned I.F. Trns.
P691	Vol. Con. 5 "On-Off" Sw.
P682	Tone Control
P659	Wave Change Switch
G550	Short Wave Antenna Coil
G550	Short Wave Antenna Coil
G563	Police Band Antenna Coil
G563	Police Band Ant. Coil
P173	Oscillator Coil
P193	Pre-selector Coil
P788	R.F. Osc. Plate Choke
P619	R.F. Choke
P617	Padding Condenser

MODEL M-1  
Schematic, Voltage  
Socket, Trimmers

# CONTINENTAL RADIO



## Six Tube A. C. All Wave Superheterodyne M1 Chassis



**MODEL M-1  
Alignment  
Parts**

**CONTINENTAL RADIO**

**M1**

This receiver is designed to operate from a power supply math of 110-120 volts, 60 cycle alternating current (AC). **Never plug into a DC outlet.**

**Six Tube A. C. All Wave Superheterodyne**

This receiver is designed to operate over three tuning ranges. The broadcast range which extends from 540 to 1700 Kilocycles (KC) (175 to 550 meters), Police and Aviation Band which extends from 1700 to 5000 Kilocycles (KC) (52 to 175 Meters) and the International Short Wave Band which extends from 5800 to 15,200 Kilocycles (KC) (18.5 to 52 meters). This short wave range is the one which includes the four internationally assigned bands—the 19, 25, 31 and 49 meter bands.

**ALIGNMENT DATA AND SERVICING**

**I.F. ALIGNMENT**

Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tubes (6A7) through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all five I.F. trimmers, of the three I.F. transformers, to peak or maximum reading on the output meter.

**BROADCAST BAND ALIGNMENT**

Adjust the oscillator to 1400 KC and connect the output to the antenna post marked "A" through a .0001 mfd. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 KC and adjust the front gang condenser trimmer (oscillator circuit) to peak. After this has been carefully done, the next step is to adjust the center and rear trimmers of the gang condenser to peak. The center gang section tunes the R.F. or grid coil of the 6A8 tube and the front condenser section tunes the pre-selector stage circuit.

Next, re-set the dial pointer on the receiver and the test oscillator to 600 KC. Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment seems a little complicated but is the easiest way to adjust the oscillator to the pre-selector or R.F. section. The padding condenser is located on the left hand side of the chassis, directly to the left of the 6A7 tube and in front of the first I.F. transformer.

Return to 1400 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 KC.

This completes the correct sequence of operations in properly aligning the receiver for the Broadcast Band, and **must always be done before** attempting to align the Short Wave Bands.

**FOREIGN BAND**

The Foreign Band of 19 to 49 meters can be adjusted by the two trimmers on the short wave coil located on the top of the chassis. Set the test oscillator to 14,000 KC. The oscillator coil is located near the 1st I.F. Transformer and the antenna or R.F. coil is

located directly in front of the Short Wave oscillator coil and about midway between the 1st I.F. Transformer and the 6A7 tube. These two trimmers should be adjusted for peak at 14,000 KC and as the inherent design of the circuit has been expressly designed for simplicity in servicing, no other adjustments are necessary for aligning this band. **Note:** Always start this procedure by having the oscillator coil trimmer loose (out all the way), and the antenna coil trimmer fairly tight (in all the way); otherwise it is possible to make a false alignment on the image frequency.

**Important:** Do not attempt any adjustment of the gang condenser trimmers in aligning the Foreign Band as this will throw the Broadcast Band out of alignment.

**POLICE BAND**

There is only one adjustment to be made in the alignment of the Police Band. Due to the circuit design and correct matching of the coils, no oscillator adjustment is necessary.

Set the dial pointer to 4000 KC (also the test oscillator) and adjust the antenna coil trimmer to resonance. In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with the .0001 mfd. condenser on the output lead of the test oscillator. This resistor is used with the test oscillator only on the Short Wave Bands and should not be used for Broadcast Band alignment. The two police band coils are under the chassis and the antenna coil trimmer is mounted on the end of the antenna coil.

**Important:** This is the only adjustment necessary for the Police Band. Do not attempt any adjustment of the gang condenser trimmers in aligning the Police Band, otherwise the Broadcast Band will be thrown out of alignment.

**SERVICE DATA FOR ALL BANDS**

If it is suspected that the oscillator has stopped but is doubtful due to the presence of the usual amount of noise level, it is suggested that the oscillator plate voltage be checked. To ascertain whether the tube is oscillating, ground the oscillator grid of the 6A8 (short stator and rotor plates of oscillator section on gang condenser). If oscillating properly, grounding the grid will cause an appreciable drop in oscillator voltage.

**GENERAL DATA**

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 1800, 4000, 6000, and 14,000 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible, to prevent the AVC from operating and giving false readings.

**CORRECT ALIGNMENT PROCEDURE**

The intermediate frequency (I.F.) stage should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast Band should always be the next procedure; after which, either or both of the Short Wave Bands may be aligned.

**PARTS LIST**

Part No.	Description	Part No.	Description
P617	Padding Condenser	P480	.0001 Mica Condenser
P634	Knob	P142	.10 Mid. 200 Volt Condenser
P646	Complete Dial & Scale	P143	.02 Mid. 600 Volt Condenser
P660	Volume Control & "On-Off" Switch	P148	.05 Mid. 200 Volt Condenser
P661	Tone Control	P276	.10 Mid. 400 Volt Condenser
P668	Dial Glass	P334	.05 Mid. 400 Volt Condenser
P670	3 Gang Condenser	P335	.01 Mid. 200 Volt Condenser
P574	Wave Change Switch	P478	.0012 Mid. 200 Volt Condenser
P686	I.F. Transformer	P136	250 Ohm 1/4 Watt Resistor
P758	I.F. Transformer	P137	500,000 Ohm 1/4 Watt Resistor
P160	Electrolytic Condenser	P139	250,000 Ohm 1/4 Watt Resistor
P170	350 Ohm Resistor	P162	1 Megohm 1/4 Watt Resistor
P173	Oscillator Coil	P165	25,000 Ohm 1/4 Watt Resistor
P176	AC Cord & Plug	P166	15,000 Ohm 1/4 Watt Resistor
P182	Output Transformer	P258	15,000 Ohm 1/4 Watt Resistor
P193	Pre-Selector Coil	P278	1,000 Ohm 1/4 Watt Resistor
P306	Power Transformer	P279	500 Ohm 1/4 Watt Resistor
G560	Short Wave Antenna Coil	P481	3,000 Ohm 1/4 Watt Resistor
G561	Short Wave Oscillator Coil	P757	4,000 Ohm 1/4 Watt Resistor
G562	Police Band Antenna Coil	P758	2,000 Ohm 1/4 Watt Resistor
G563	Police Band Oscillator Coil	P435	6" Speaker Cone Only
P124	Pilot Light	P439	Spider & Voice Coil
P147	.00025 Mica Condenser	G564	Complete 6" Dynamic Speaker





**MODEL X-8  
Alignment  
Parts**

**CONTINENTAL RADIO**

This receiver is designed to operate from a power supply main of 110-120 volts, 60 cycle alternating current (A.C.). **Never plug into a DC outlet.**

**GENERAL DATA**

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 1800, 4000, 6000, and 14,000 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible, to prevent the AVC from operating and giving false readings.

**CORRECT ALIGNMENT PROCEDURE**

The intermediate frequency (I.F.) stage should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast Band should always be the next procedure; after which, either or both of the Short Wave Bands may be aligned.

**I.F. ALIGNMENT**

Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tubes (6A7) through a .05 or .1 mid. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter.

**PARTS LIST**

Part No.	Description	Part No.	Description
P166	25,000 Ohm 1/4 Watt Resistor	P180	Elect. Condenser
P165	25,000 Ohm 1 Watt Resistor	P170	350 Ohm Resistor
P280	100,000 Ohm 1/4 Watt Resistor	P173	Oscillator Coil
P139	250,000 Ohm 1/4 Watt Resistor	P176	A.C. Plug & Cord
P182	1 Megohm 1/4 Watt Resistor	P182	Speaker Output Transformer
P143	.02 Mid. 400 Volt Condenser	P189	1st I.F. Transformer
P142	.1 Mid. 200 Volt Condenser	P190	2nd I.F. Transformer
P276	.1 Mid. 400 Volt Condenser	P617	Padding Condenser
P141	.25 Mid. 200 Volt Condenser	G560	Short Wave Antenna Coil
P478	.0012 Mid. 200 Volt Condenser	G561	Short Wave Oscillator Coil
P435	.00225 Mica Condenser	P193	Pre-Selector Coil
P439	6" Speaker Cone Only	P306	Power Transformer
G564	Spider & Voice Coil Unit—Complete	G562	Police Band Antenna Coil
P634	Knob	G563	Police Band Oscillator Coil
P639	Dial Glass	P642	3 Gang Condenser
P632	Dial & Scale—Complete	P630	Volume Control & "On-Off" Switch
P124	Pilot Light	P629	Wave Change Switch
		P138	250 Ohm 1/4 Watt Resistor
		P188	8,000 Ohm 1/4 Watt Resistor
		P238	15,000 Ohm 1/4 Watt Resistor

**Five Tube A.C. All Wave Superheterodyne X8**

This receiver is designed to operate over three tuning ranges. The broadcast range which extends from 540 to 1700 Kilocycles (KC) (175 to 550 meters), Police and Aviation Band which extends from 1700 to 5000 Kilocycles (KC) (52 to 175 Meters) and the International Short Wave Band which extends from 9800 to 15,200 Kilocycles (KC) (18.5 to 52 meters). This short wave range is the one which includes the four internationally assigned bands—the 19, 25, 31 and 49 meter bands.

**ALIGNMENT DATA AND SERVICING**

**BROADCAST BAND ALIGNMENT**

Adjust the oscillator to 1400 KC and connect the output to the antenna post marked "A" through a .0001 mid. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 KC and adjust the rear gang condenser trimmer (oscillator circuit) to peak. After this has been carefully done, the next step is to adjust the center and front trimmers of the gang condenser to peak. The center gang section tunes the R.F. or grid coil of the 6A7 tube and the front condenser section tunes the pre-selector stage circuit.

Next, re-set the dial pointer on the receiver and the test oscillator to 600 KC. Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment seems a little complicated but is the easiest way to adjust the oscillator to the pre-selector or R.F. section. The padding condenser is located on the left hand end of the chassis near the 6D6 tube.

Return to 1400 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 KC.

This completes the correct sequence of operations in properly aligning the receiver for the Broadcast Band, and **must always be done before attempting to align the Short Wave Bands.**

**FOREIGN BAND**

The Foreign Band of 19 to 49 meters can be adjusted by the two trimmers on the short wave coil

located on the top of the chassis. Set the test oscillator to 14,000 KC. The oscillator coil is located near the 1st I.F. Transformer and the antenna or R.F. coil is located directly in front of the Short Wave oscillator coil and about midway between the 1st I.F. Transformer and the 6A7 tube. These two trimmers should be adjusted for peak at 14,000 KC and as the inherent design of the circuit has been expressly designed for simplicity in servicing, no other adjustments are necessary for aligning this band. **Note:** Always start this procedure by having the oscillator coil trimmer loose (out all the way), and the antenna coil trimmer fairly tight (in all the way); otherwise it is possible to make a false alignment on the image frequency.

**Important:** Do not attempt any adjustment of the gang condenser trimmers in aligning the Foreign Band as this will throw the Broadcast Band out of alignment.

**POLICE BAND**

There is only one adjustment to be made in the alignment of the Police Band. Due to the circuit design and correct matching of the coils, no oscillator adjustment is necessary.

Set the dial pointer to 4000 KC (also the test oscillator) and adjust the antenna coil trimmer to resonance. The two police band coils are under the chassis, but the antenna coil trimmer for this band is on top of the chassis and is located at the left front corner along side of wave band switch.

**Important:** This is the only adjustment necessary for the Police Band. Do not attempt any adjustment of the gang condenser trimmers in aligning the Police Band, otherwise the Broadcast Band will be thrown out of alignment.



**MODEL Z-2**  
**Alignment**  
**Parts**

**CONTINENTAL RADIO**

**ZZ**

This receiver is designed to operate from a power supply main of 110-120 volts, 60 cycle alternating current (A.C.). **Never plug into a DC outlet.**

**GENERAL DATA**

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 455, 600, 1400, 1800, 4000, 6000, and 14,000 KC and an output meter to be connected across the primary or secondary of the output transformers. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible, to prevent the AVC from operating and giving false readings.

**CORRECT ALIGNMENT PROCEDURE**

The intermediate frequency (I.F.) stage should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast Band should always be the next procedure; after which, either or both of the Short Wave Bands may be aligned.

**Six Tube A.C. All Wave Superheterodyne**

This receiver is designed to operate over three tuning ranges. The broadcast range which extends from 540 to 1700 Kilocycles (KC) (175 to 550 meters), Police and Aviation Band which extends from 1700 to 5000 Kilocycles (KC) (52 to 175 Meters) and the International Short Wave Band which extends from 5800 to 15,200 Kilocycles (KC) (18.5 to 52 meters). This short wave range is the one which includes the four internationally assigned bands—the 19, 25, 31 and 49 meter bands.

**ALIGNMENT DATA AND SERVICING**

**I.F. ALIGNMENT**

Adjust the test oscillator to 455 KC and connect through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter.

**BROADCAST BAND ALIGNMENT**

Adjust the oscillator to 1400 KC and connect the output to the antenna post marked "A," through a .0001 mfd. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 KC and adjust the peck gang condenser trimmer (oscillator circuit) to peck. After this has been carefully done, the next step is to adjust the center and front trimmers of the gang condenser to peck. The center gang section tunes the R.F. or grid coil of the 6A7 tube and the front condenser section tunes the pre-selector stage circuit.

Next, reset the dial pointer on the receiver and the test oscillator to 600 KC. Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment seems a little complicated but is the easiest way to adjust the oscillator to the pre-selector or R.F. section. The padding condenser is located on the left hand side of the chassis, directly to the left of the 6A7 tube and in front of the first I.F. transformer.

Return to 1400 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 KC.

This completes the correct sequence of operations in properly aligning the receiver for the Broadcast Band, and **must always be done before** attempting to align the Short Wave Bands.

**FOREIGN BAND**

The Foreign Band of 19 to 49 meters can be adjusted by the two trimmers on the short wave coil located on the top of the chassis. Set the test oscillator to 14,000 KC. The oscillator coil is located near the 1st I.F. Transformer and the antenna or R.F. coil is located directly in front of the Short Wave oscillator coil and about midway between the 1st I.F. Transformer and the 6A7 tube. These two trimmers should be adjusted for peak at 14,000 KC and as the inherent design of the circuit has been expressly designed for simplicity in servicing, no other adjustments are necessary for aligning this band. **Note:** Always start this procedure by having the oscillator coil trimmer loose (out all the way), and the antenna coil trimmer fairly tight (in all the way); otherwise it is possible to make a false alignment on the image frequency.

**Important:** Do not attempt any adjustment of the gang condenser trimmers in aligning the Foreign Band as this will throw the Broadcast Band out of alignment.

**POLICE BAND**

There is only one adjustment to be made in the alignment of the Police Band. Due to the circuit design and correct matching of the coils, no oscillator adjustment is necessary.

Set the dial pointer to 4000 KC (also the test oscillator) and adjust the antenna coil trimmer to resonance. In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with the .0001 mfd. condenser on the output lead of the test oscillator. This resistor is used with the test oscillator only on the Short Wave Bands and should not be used for Broadcast Band alignment. The two police band coils are under the chassis and the antenna coil trimmer is mounted on the end of the antenna coil.

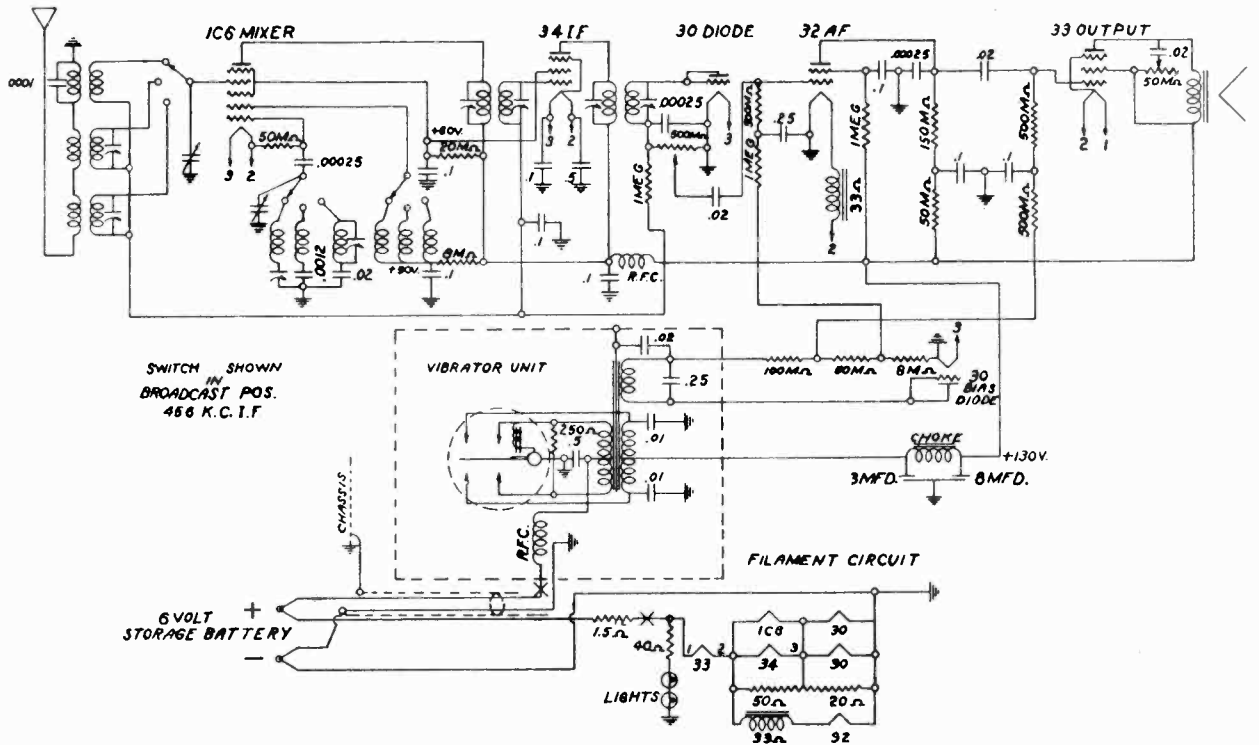
**Important:** This is the only adjustment necessary for the Police Band. Do not attempt any adjustment of the gang condenser trimmers in aligning the Police Band, otherwise the Broadcast Band will be thrown out of alignment.

**PARTS LIST**

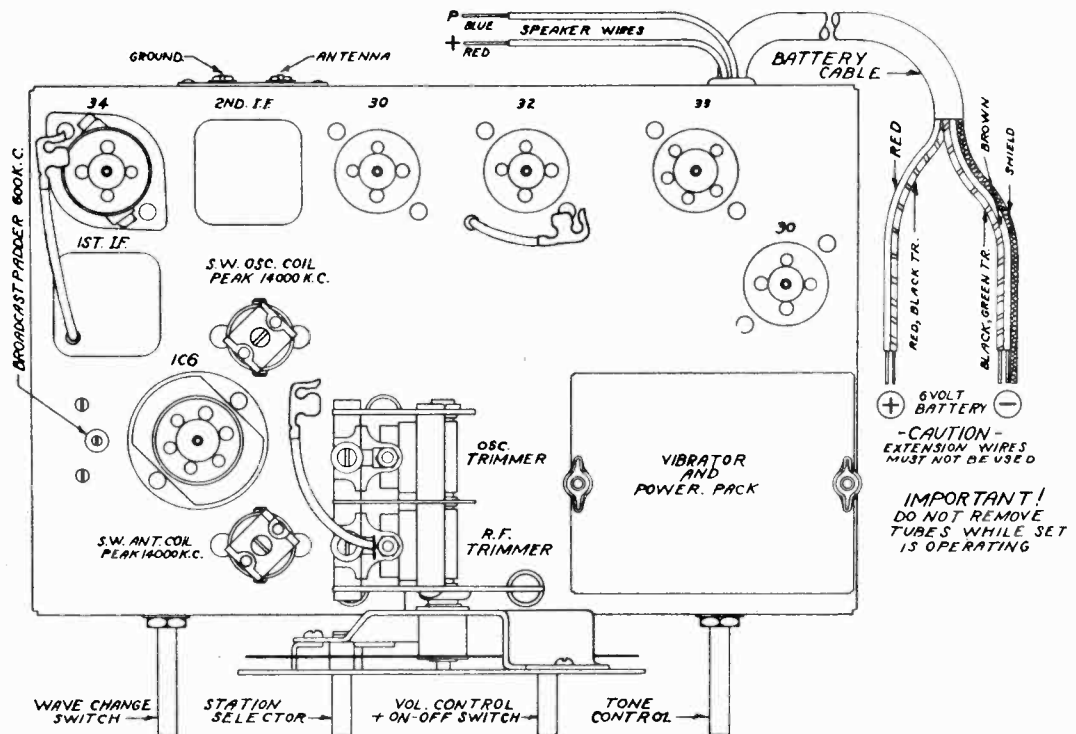
Part No.	Description	Part No.	Description
P137	500,000 Ohm 1/4 Watt Resistor	P142	.1 Mid. 200 Volt Condenser
P138	1 Megohm 1/4 Watt Resistor	P276	.1 Mid. 400 Volt Condenser
P143	.02 Mid. 400 Volt Condenser	P141	.25 Mid. 200 Volt Condenser
P144	.1 Mid. 200 Volt Condenser	P147	.00025 Mico Condenser
P275	.1 Mid. 400 Volt Condenser	P146	.05 Mid. 200 Volt Condenser
P141	.25 Mid. 200 Volt Condenser	P334	.01 Mid. 600 Volt Condenser
P147	.00025 Mico Condenser	P335	.0012 Mid. 200 Volt Condenser
P146	.05 Mid. 200 Volt Condenser	P478	Speaker Output Transformer
P334	.01 Mid. 600 Volt Condenser	P182	8" Speaker Cone Only
P335	.0012 Mid. 200 Volt Condenser	G579	8% Speaker Field Coil
P478	Speaker Output Transformer	G564 A	8" Spider & Voice Coil Unit—Complete
P182	8" Speaker Cone Only	G725	8" Dynamic Speaker with R.C.
G579	8% Speaker Field Coil	P631	Dial & Scale—Complete
G564 A	8" Spider & Voice Coil Unit—Complete	P639	Dial Glass
G725	8" Dynamic Speaker with R.C.	P124	Pilot Light
P631	Dial & Scale—Complete	P634	Knob
P639	Dial Glass		
P124	Pilot Light		
P634	Knob		
P170	Elect. Condenser	P173	Oscillator Coil
P630	350 Ohm Resistor	P176	A.C. Plug & Cord
P628	Volume Control & "On-Off" Switch	P206	Power Transformer
P633	Wave Change Switch	P685	3 Gang Condenser
P173	Oscillator Coil	P189	1st I.F. Transformer
P176	A.C. Plug & Cord	P190	2nd I.F. Transformer
P206	Power Transformer	P193	Pre-Selector Coil
P685	3 Gang Condenser	G560	Short Wave Antenna Coil
P189	1st I.F. Transformer	G561	Short Wave Oscillator Coil
P190	2nd I.F. Transformer	G562	Police Band Antenna Coil
P193	Pre-Selector Coil	P136	250 Ohm 1/4 Watt Resistor
G560	Short Wave Antenna Coil	P168	15,000 Ohm 1/4 Watt Resistor
G561	Short Wave Oscillator Coil	P168	15,000 Ohm 1/4 Watt Resistor
G562	Police Band Antenna Coil	P165	25,000 Ohm 1 Watt Resistor
P136	250 Ohm 1/4 Watt Resistor	P280	100,000 Ohm 1/4 Watt Resistor
P168	15,000 Ohm 1/4 Watt Resistor	P139	250,000 Ohm 1/4 Watt Resistor
P168	15,000 Ohm 1/4 Watt Resistor		

# CONTINENTAL RADIO

**MODEL Z-4**  
**Schematic, Voltage**  
**Socket, Trimmers**



## Six Tube 6 Volt Battery Superheterodyne Z4 Chassis



**MODEL 2-4**  
**Alignment**  
**Parts**

**Z4**

**CONTINENTAL RADIO**

**Six Tube 6 Volt Battery All Wave Superheterodyne**

This receiver is designed to operate over three tuning ranges: the broadcast range which extends from 540 to 1700 Kilocycles (KC) (175 to 550 meters), Police and Aviation Band which extends from 1700 to 5000 Kilocycles (KC) (52 to 175 Meters) and the International Short Wave Band which extends from 5800 to 15,200 Kilocycles (KC) (18.5 to 52 meters). This latter range is the one which includes the four internationally assigned bands—the 19, 25, 31 and 49 meter bands.

**GENERAL DATA**

The alignment of this receiver requires the use of a test oscillator which will cover the frequencies of 456, 600, 1400, 1800, 4000, 6000, and 14,000 KC and an output meter, which is to be connected across the primary or secondary of the output transformer. If possible, all alignments should be made with the volume control on maximum and the test oscillator output as low as possible, to prevent the AVC from operating and giving false readings.

**CORRECT ALIGNMENT PROCEDURE**

The intermediate frequency (I.F.) stage should be aligned properly as the first step. After the I.F. transformers have been properly adjusted and peaked, the Broadcast Band should always be the next procedure; after which, either or both of the Short Wave Bands may be aligned.

**I.F. ALIGNMENT**

Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (1C5) through a .05 or .1 mid. condenser. The ground on the test oscillator can be connected to the chassis ground. Align all four I.F. trimmers to peak or maximum reading on the output meter.

**BROADCAST BAND ALIGNMENT**

Adjust the oscillator to 1400 KC and connect the output to the antenna post marked "A" through a .0001 mid. mica condenser to give the equivalent of an antenna about 60 feet. Set the receiver pointer to 1400 KC and adjust the rear gang condenser trimmer (oscillator circuit) to peak. After this has been carefully done, the next step is to adjust the front trimmer of the gang condenser to peak. The front condenser section tunes the RF or grid circuit of the 1C6 tube. Next, reset the dial pointer on the receiver and the test oscillator to 600 KC. Slowly increase or decrease the oscillator padding condenser and at the same time continuously tune back and forth across the signal with the receiver until the maximum reading is obtained on the output meter. This adjustment may seem a little complicated but is the easiest way to adjust the oscillator to the RF section. The padding condenser is located on the left hand side of the chassis, directly to the left of the 1C6 tube and in front of the first I.F. transformer. Return to 1400 KC and again go over the adjustments of this frequency to be certain that they were not put slightly out of alignment when adjustment was made at 600 KC. This completes the correct sequence of operations in properly aligning the receiver for the Broadcast Band, and **must always be done before attempting to align the Short Wave Bands.**

**FOREIGN BAND ALIGNMENT**

The Foreign Band of 19 to 49 meters can be adjusted by the two trimmers on the short wave coils located on the top of the chassis. Set the test oscillator to 14,000 KC. In preparing

**WINDCHARGERS**

There are many types of windchargers now on the market which may be used to advantage for greater economy of receiver operation. Such chargers will pay for themselves over a period of time, by saving the cost of battery re-charging; removing the inconvenience of taking the battery to a charging station; non-operation of the receiver during the charging period.

**BATTERY SELECTION**

This receiver is designed to operate entirely from a 6 volt storage battery. It requires no other batteries. It will operate from any storage battery having a capacity ranging from 90 to 175 ampere hours. It is suggested, for the sake of greatest economy, that the largest possible capacity battery be used. The following is a schedule giving the number of hours of service on a single charge from batteries of standard capacities. A fully charged battery will provide satisfactory power for the periods specified before requiring additional charge.

- 90 Ampere Hour Capacity provides 60 hours use.
- 100 Ampere Hour Capacity provides 66 hours use.
- 110 Ampere Hour Capacity provides 73 hours use.
- 120 Ampere Hour Capacity provides 80 hours use.
- 150 Ampere Hour Capacity provides 100 hours use.
- 170 Ampere Hour Capacity provides 113 hours use.

**Note: The above tabulation is rated very conservatively and in most cases, with new or correctly rated batteries in good condition, many additional hours of service can be obtained from each charge. If, for any reason, the proper hours of service are not obtained, it will be due to the use of an old battery whose condition and rating are no longer up to standard. If a brand new battery fails to give the required hours of service, it is due to the battery being wrongly rated.**

**PARTS LIST**

Part No.	Description	Part No.	Description
P879	1 Gang Condenser	P446	Pilot Lights
P889	1st I.F. Transformer	P422	40 Ohm Camdohm Resistor
P890	2nd I.F. Transformer	P423	20-50 Ohm Camdohm Resistor
P829	Wave Change Switch	P456	R.F. Choke
P880	Volume Control and "On-Off" Switch	P411	Filter Choke
P882	Tone Control	P410	Vibrator Transformer
G580	Short Wave Antenna Coil	P402	Vibrator Unit
G581	Short Wave Oscillator Coil	P684	Wing Nut
G582	Police Band Antenna Coil	G728	Power Unit Complete with Vibrator
G583	Police Band Oscillator Coil	P457	A Choke (Midjet Speaker)
P382	Antenna Coil	P403	8" Speaker (Console Speaker)
P173	Oscillator Coil	P404	8" Speaker (100 Volt Condenser)
P817	Filter Choke	P133	2.5 Mid. 100 Volt Condenser
P821	Filter Choke	P143	2.5 Mid. 200 Volt Condenser
P891	Electrolytic Condenser: Dual 8 Mid.	P143	.02 Mid. 600 Volt Condenser
P392	Battery Cord	P280	100,000 Ohm 1/4 Watt Resistor
P335	.01 Mid. 800 Volt Condenser	P418	150,000 Ohm 1/4 Watt Resistor
P478	.0012 200 Volt Condenser	P137	500,000 Ohm 1/4 Watt Resistor
P147	.00025 Mica Condenser	P182	1 Meg Ohm 1/4 Watt Resistor
P490	.0001 Mica Condenser	P637	Dial and Scale Complete
P136	250 Ohm Resistor	P638	Excitecon Plate
P188	8,000 Ohm 1/4 Watt Resistor	P639	Dial Glass
P419	20,000 Ohm 1/4 Watt Resistor	P634	Knob
P417	50,000 Ohm 1/4 Watt Resistor		

**ALIGNMENT DATA AND SERVICING INFORMATION FOR THE RADIO SERVICE MAN**

The test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with the .001 mid. condenser in the output lead of the test oscillator. The oscillator is connected to the 1st I.F. transformer. We use an antenna or R.F. coil located directly in front of the rear condenser. These two trimmers should be adjusted for peak at 14,000 KC and as the inherent design of the circuit has been expressly developed for simplicity in servicing, no other adjustments are necessary for aligning this band. **Note:** Always start this procedure by having the oscillator coil trimmer loose (on all the way), and the antenna coil trimmer fairly tight (on all the way); otherwise it is possible to make a false alignment on the intermediate frequency. In order to prevent alignment on the intermediate frequency, it is suggested that the following check be made: Readjust the pointer to 13,100 KC where the image frequency should be found. If properly aligned, the image frequency will be found to be weaker. If, however, the signal at 13,100 KC is found to be stronger than the signal at 14,000 KC, it signifies that alignment was incorrectly made on the image frequency.

**IMPORTANT:** Do not attempt any adjustment of the gang condenser trimmers in aligning the Foreign Band as this will throw the Broadcast Band out of alignment.

**POLICE BAND ALIGNMENT**

There is only one adjustment to be made in the alignment of the Police Band. Due to the circuit design and correct matching of the coils, no oscillator adjustment is necessary. Set the dial pointer to 4000 KC (also the test oscillator) and adjust the antenna coil trimmer to resonance. In preparing the test oscillator for alignment of this band, connect a 400 ohm carbon resistor in series with the .001 mid. condenser on the output lead of the test oscillator. This resistor is used with the test oscillator only in the Short Wave Bands and should not be used for Broadcast Band alignment. The Police Band coils are under the chassis and this centering will be necessary to align the antenna and oscillator coil. **Note:** This is the only adjustment necessary for the Police Band. Do not attempt any adjustment of the gang condenser trimmers in aligning the Police Band, otherwise the Broadcast Band will be thrown out of alignment.

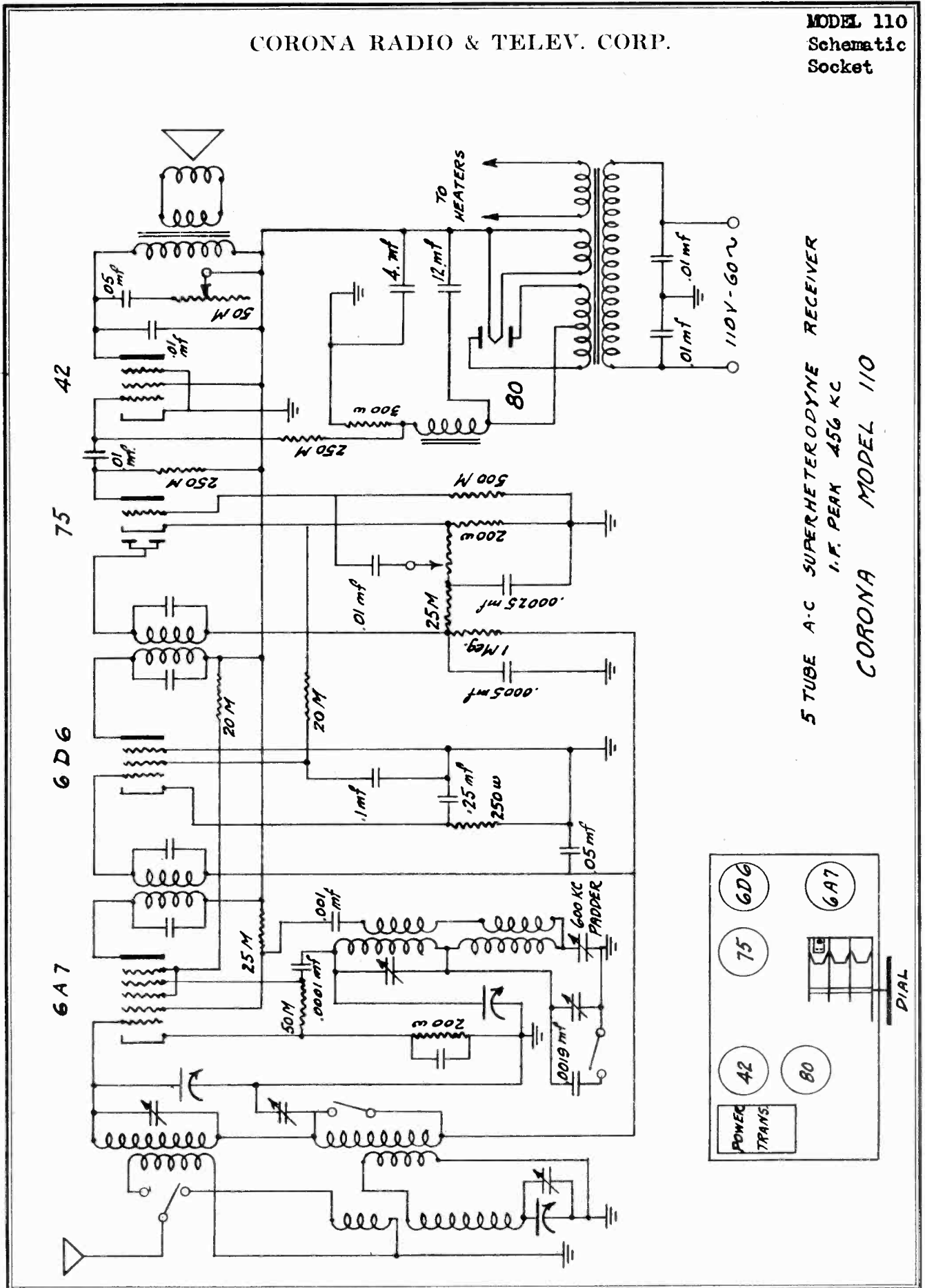
**SERVICE DATA FOR ALL BANDS**

If it is suspected that the oscillator has stopped but is doubtful due to the presence of the usual amount of noise level, it is suggested that the oscillator plate voltage be checked. To ascertain whether the tube is oscillating, ground the oscillator grid of the 1C5 (short stub and rotor plates of oscillator section on gang condenser). If oscillating properly, grounding the grid will cause an appreciable drop in oscillator voltage.

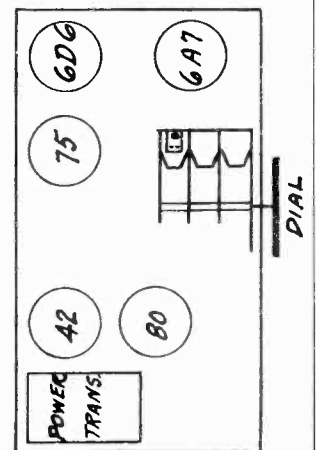
**IMPORTANT NOTE:** The battery must never be charged while set in operation. If a windcharger is used, it should always be disconnected from the battery when the receiver is being used. An inexpensive single pole switch can be used for disconnecting the windcharger from the battery. This will increase the life of the tubes and give additional economy to the use of the receiver.

CORONA RADIO & TELEV. CORP.

MODEL 110  
Schematic  
Socket



5 TUBE A-C SUPERHETERODYNE RECEIVER  
I.F. PEAK 456 KC  
CORONA MODEL 110



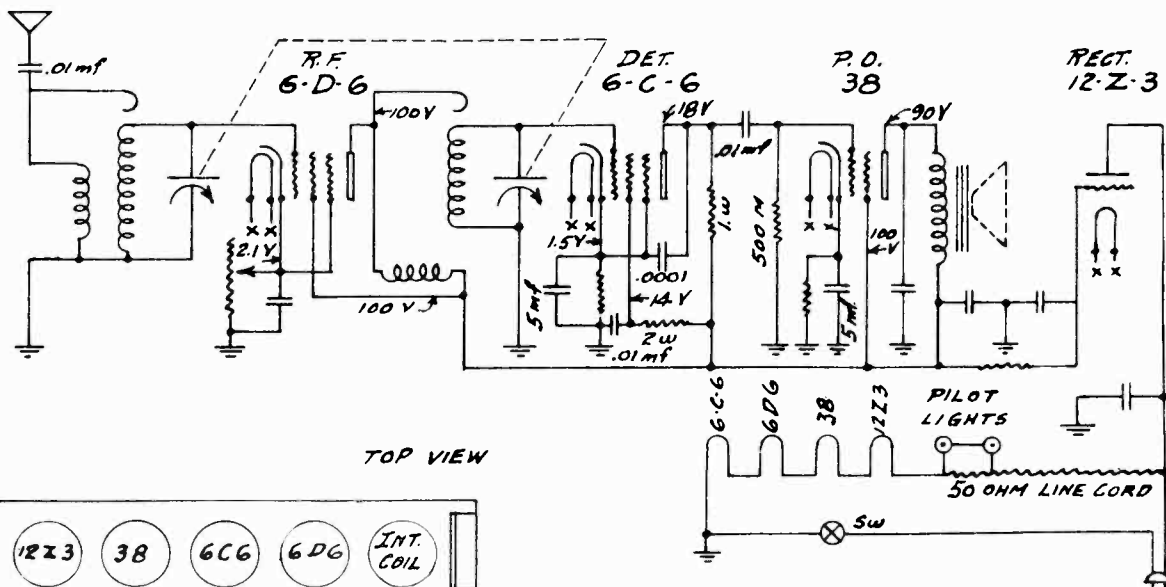
MODEL 110  
 Alignment  
 MODEL 105  
 Schematic  
 Socket

CORONA RADIO & TELEV. CORP.

ALIGNMENT PROCEDURE, MODEL 110

Bring Int. frequency circuits in balance by applying a 456 Kc signal to the control grid of the 6A7 tube. Adjust I.P. trimmers for maximum output. Apply a 6 Megacycle note to the antenna and with the band switch on the short wave position, turn gang condenser until the pointer is at 6.00 Mc on the dial. Next, adjust the Osc. trimmer located under the chassis near the electrolytic condenser until the signal is heard. Care should be taken to make certain this trimmer is adjusted to the fundamental rather than the image; this can be checked by tuning in the image near 5.00 Mc. Next, adjust the short wave antenna trimmer, located on top of chassis near dial, for maximum gain. The low frequency padder of short wave band is fixed and no adjustment is necessary. However, check it at 2.5 Mc to determine whether or not it is still oscillating. If not, change 6A7 tube.

Change band switch to broadcast position and turn dial to extreme high frequency end (1720 Kc). Apply a 1720 Kc signal to the antenna and adjust the B.C. oscillator trimmer, located under chassis near outer edge, to 1720 Kc. Bring antenna coil into resonance by adjusting the trimmer on top of chassis near the I.F. transformers. Adjust the low frequency padder for maximum gain at 600 Kc, by applying a 600 Kc signal to the antenna and rocking the gang condenser with each adjustment of the padder until maximum gain is achieved. An output meter is necessary in order to obtain best results in alignment. Recheck 1720 Kc again as it might be thrown off by the adjustment at the low frequency end.



NOTE -  
 UNDER NO CIRCUMSTANCES SHOULD THE CHASSIS BE CONNECTED TO A GROUND, INASMUCH AS A GROUND IS UNNECESSARY.

CROSLY RADIO CORP.

**MODEL A-156**  
**Schematic**  
**Socket, Voltage**

**SPECIFICATIONS**

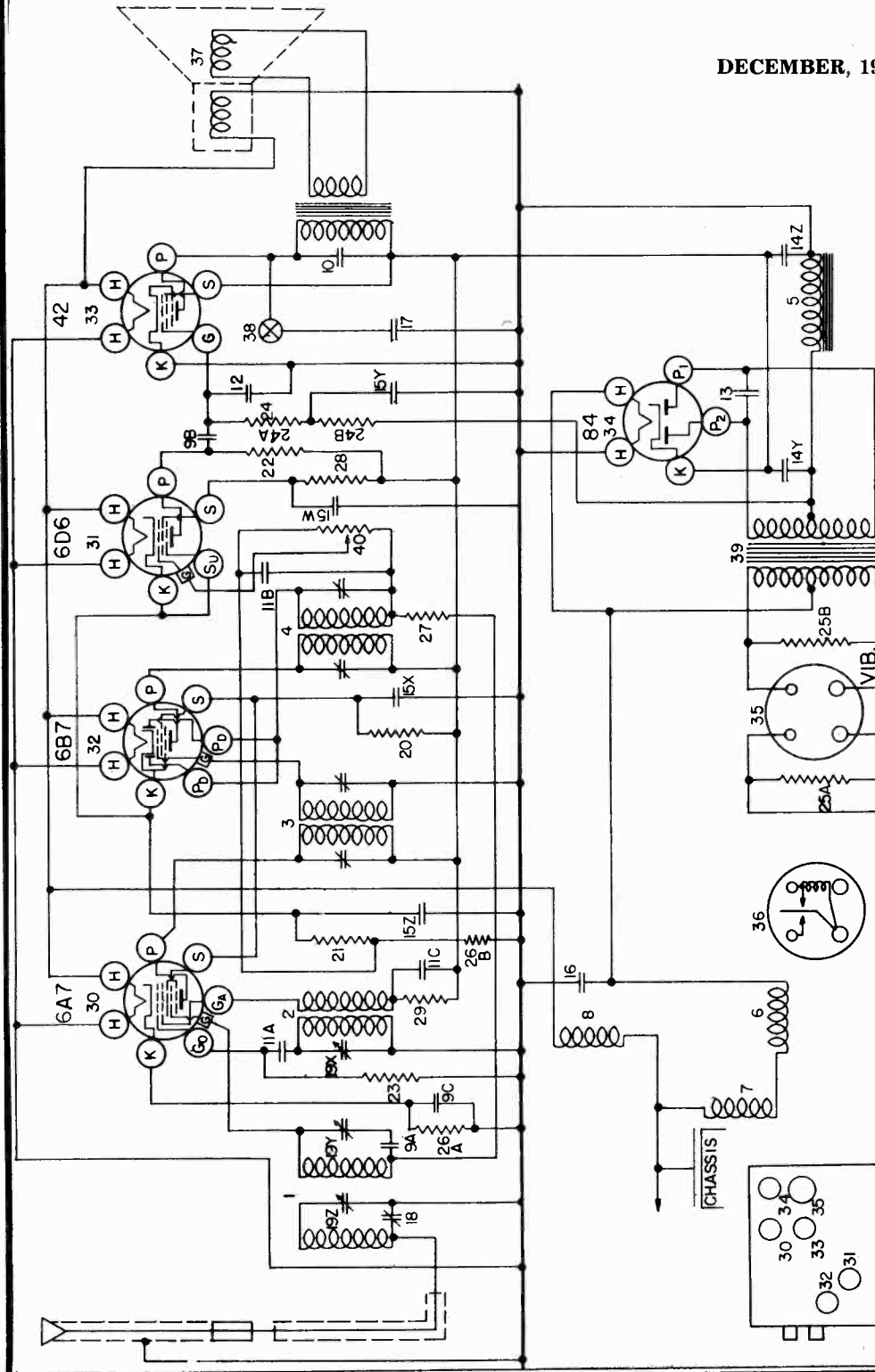
The Crosley Model A-156 auto radio is a single unit, five-tube superheterodyne receiver. The power supply unit is built into a completely shielded compartment and is an integral part of the receiver chassis.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes

used, together with the voltage readings between the tube socket contacts and the receiver chassis. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

DECEMBER, 1935



**TUBE SOCKET VOLTAGE READINGS**

262.5 KC. I.F.

Tube	Function	H	P	P2	S	G	K	Su	Ga	Go
6A7	Osc.-Mod.	6.0	230	—	100	0	6.0	—	—	—
6B7	I-F, Diode Det. & AVC	6.0	230	—	100	0	2.0	—	220	0 to -30
6D6	1st A-F Amp.	6.0	55	—	20	0	2.0	—	—	—
42	Output	6.0	220	—	230	-7*	0	—	—	—
84	Rectifier	6.0	230	230	—	—	—	—	—	—

Power Output Approximately 3 Watts.  
 Battery Drain Approximately 6.3 Amperes at 6 volts.  
 \* True Bias Reading Approximately -15 Volts Measured Across Filter Choke.



**MODEL A-156**  
**Trimmers, Chassis**  
**Alignment, Parts**

**CROSLLEY RADIO CORP.**

**PARTS LIST—MODEL A-156**

Figures in first column refer to parts in Diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G1	Pre-selector Coil Assm. Complete	29	W	-22196 Resistor 20,000 Ohms 1/4 W.
2	W	-38276 Pre-selector Coil only	30	G47	-28807 Socket 6B7
3	W	-38277 Wood Coil Spacer (2)	31	G78	-28807 Socket 6B7
4	W	-35400A Rubber Band	32	G28	-28807 Socket 42
5	W	-26091 Osc. Coil only	33	G48	-28807 Socket 84
6	W	-21541A Insulating Washer	34	G1	-28807 Socket VIB
7	W	-52525B Shield Socket	35	W	-31210 Tube Shield (Half)
8	G13	1st I. F. Assm.	36	W	-2494A Shield Base
9	G14	2nd I. F. Assm.	37	W	-38290 Speaker
10	G25	Filter Choke	38	W	-38292 Vibrator Partition Assm.
11	G4	Motor Noise Choke	39	G6	-35741 Tone Control Switch
12	G3	Motor Noise Choke	40	W	-32769 Power Transformer
13	W	-28277 Condenser 0.02 Mfd. 200 V.		W	-37256 Volume Control 1. Megohm
14	W	-28281 Condenser 0.02 Mfd. 200 V.		W	-38257C Case Bracket
15	W	-28621 Condenser 0.02 Mfd. 200 V.		W	-38258 Case Cover
16	W	-28621 Condenser 0.02 Mfd. 200 V.		W	-38224A Bottom Cover
17	G1	-23635 Condenser 0.006 Mfd. 400 V.		W	-37057 Emblem
18	G1	-34002 Condenser 0.00025 Mfd.		W	-32947 Hole Plug
19	G1	-34002 Condenser 0.00025 Mfd.		W	-38390 V. Remote Control Complete
20	G3	-34002 Condenser 0.00025 Mfd.		W	-38384 V. Remote Control Head Assm.
21	G3	-34002 Condenser 0.00025 Mfd.		W	-38377 Dial Glass
22	W	-32762 Condenser 4.0 Mfd.		W	-38392 Spring
23	W	-37020 Condenser 5.0 Mfd.		W	-38393 Knob (2)
24	W	-37021 Condenser 0.1 Mfd. 180 V.		W	-23472 Dial Light Socket Assm.
25	W	-37021 Condenser 0.1 Mfd. 180 V.		W	-38389 On-Off Switch
26	W	-37047 Condenser 0.05 Mfd. 180 V.		W	-38446 Switch Cover
27	W	-32926A Condenser 0.015 Mfd. 400 V.		W	-38448 Control Cable Assm. (Level Con.)
28	G41	3 Section Tuning Condenser Gang		W	-38310 Control Cable Assm. (Level Con.)
	W	-38204B Gear Assm.		G14	-32750 "A" Lead with Fuse Assm.
	G1	-38227 Compiling Link Assm.		W	-31103 Fuse 10 Amp.
	W	-32331 Resistor 275 Ohm (1/2 W. Flex.)		W	-3258A Mounting Stud (2)
	W	-35929 Resistor 150,000 Ohms 1/4 W.		W	-32457 Mounting Nut (2)
	W	-21237A Resistor 60,000 Ohms 1/4 W.		W	-38336 Steering Column Brkt. Assm.
	W	-35601 Resistor 300,000 Ohm 1/4 W.		W	-31625A Suppressor, Distributor
	W	-32504 Resistor 100 Ohm 1/4 W.		W	-29754A Condenser 0.5 Mfd. (Elim) (2)
	W	-27504 Resistor 100 Ohm 1/4 W.			
	W	-22514 Resistor 750 Ohm 1/2 W. Flex.			
	W	-22514 Resistor 750 Ohm 1/2 W. Flex.			
	W	-34883 Resistor 2.0 Megohm 1/4 W.			
	W	-35602 Resistor 1.0 Megohm 1/4 W.			

\*Used on sets with serial numbers 1,084,155 to 1,085,154 inclusive.

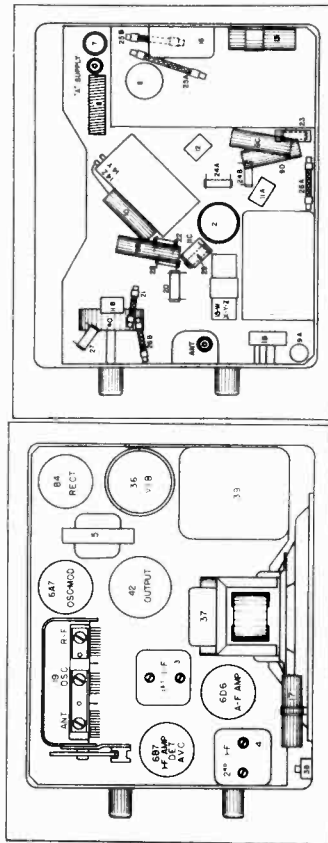


Fig. 3. Bottom View

Fig. 2. Top View

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 42 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (1.1 mfd. or larger—not electrolytic) in series with one of the leads.

NOTE: The receiver chassis must be in its case and a speaker similar to the one used with the receiver must be connected to the chassis before making any adjustments. It is also advisable to use a spare control unit for making adjustments of the volume control and tuning condenser. A standard control unit with short cables (6" to 8") makes a very convenient and useful tool. If it is desired to shorten a pair of long cables it will be absolutely necessary to heavily tin the cables before cutting them.

**1. Tuning I.F. Amplifier To 262 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap

of the 6A7 Osc. Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.

(c) Turn the volume control of the receiver full on and turn the tone control to the treble position.

(d) Set the signal generator to 262 kilocycles.

(e) Adjust both trimmers located on the 2nd I.F. transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on the 1st I.F. transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" connection of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.

(e) Adjust the trimmer on the "R.F." section of the tuning condenser for maximum output.

(f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

(g) Readjust the station selector for maximum output. DO NOT READJUST THE OSC. TRIMMER.

(h) Repeat operations (e) and (f) for more accurate adjustments.

**3. Adjusting Antenna Compensating Condenser.**

(a) Set the signal generator to 600 kilocycles.

(b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, illus. No. 18, Fig. 3, for maximum output.

(d) Repeat operations (b) and (c) alternately until no further improvement in output can be obtained.

(e) Set the signal generator to 1400 kilocycles again.

(f) Tune in the 1400 kilocycle signal with the station selector for maximum output.

(g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output.

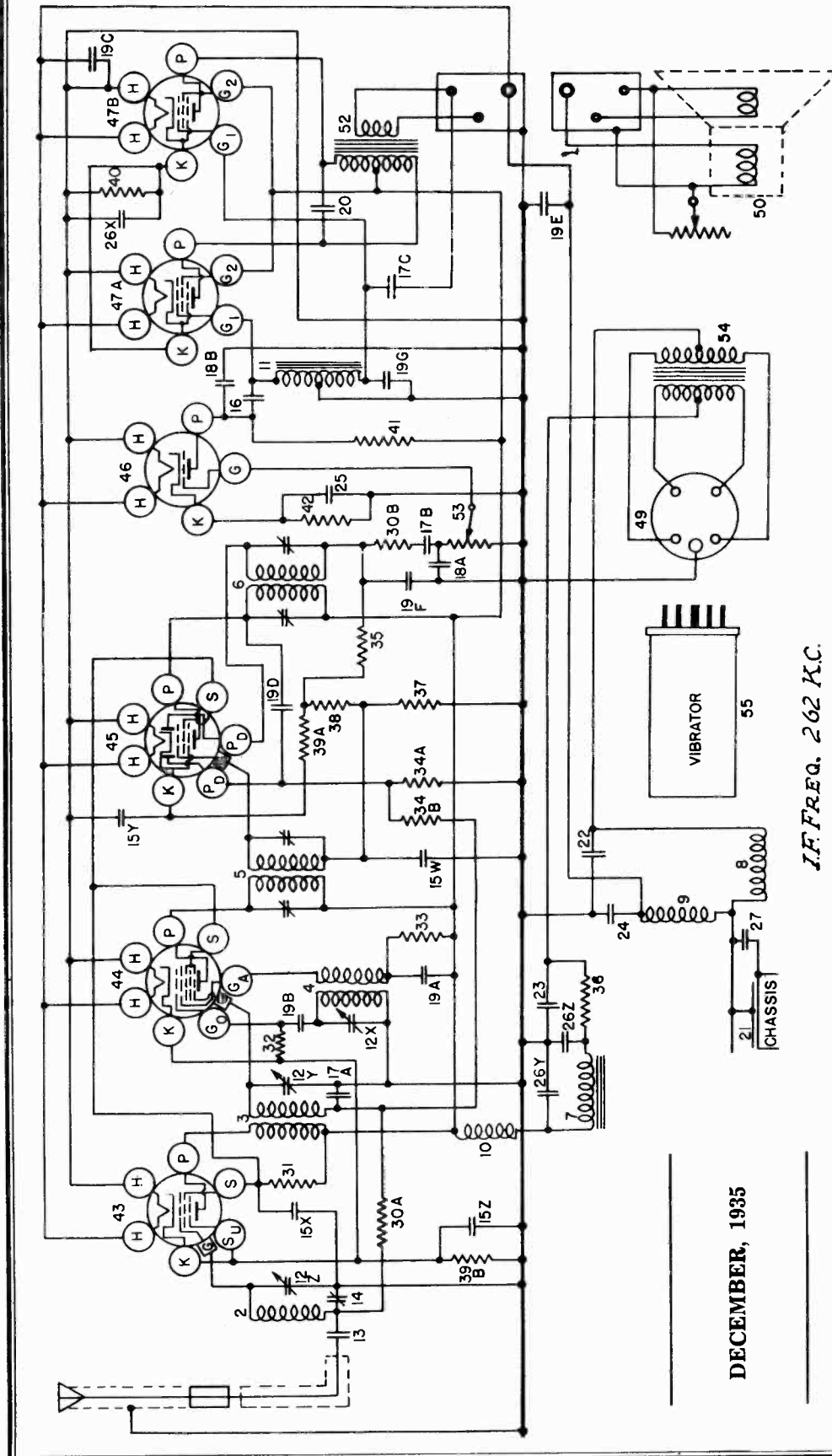
It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.

(g) Alter the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.

(h) Adjust the antenna compensating condenser for maximum volume in the speaker.

CROSLY RADIO CORP.

**MODEL A-166**  
**Schematic**  
**Voltage**



*I.F. FREQ. 262 K.C.*

DECEMBER, 1935

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	G	K	Ga	Go
6D6	R-F Amplifier	6.0	220	100	0	5.7	—	—
6A7	Osc.-Mod.	6.0	220	100	0	5.7	130	-5 to -10
6B7	I-F Amp. & Diode Detector	6.0	220	100	0	6.8	—	—
76	1st A-F Amp.	6.0	130	—	0	8.0	—	—
41	(2) Output	6.0	210	—	0	18.0	—	—

POWER OUTPUT APPROXIMATELY 3 WATTS.

BATTERY DRAIN APPROXIMATELY 6.2 AMPERES AT 6 VOLTS.

**MODEL A-166**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

**PARTS LIST—MODEL A-166**

Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G83-32000	Ant. Coil Shield	34B	35602	Insulated Type Resistor, 1 Megohm, 1/4 W., In-
2	W-32913	Wood Coil Spacer	35	35601	Insulated Type Resistor, 100,000 Ohm, 1/4 W., In-
3	G22-32001	R. F. Coil Shield	36	W-32961	Insulated Type Resistor, 100 Ohm, 3/4 W., Flex.
4	W-32957	R. F. Coil Shield	37	W-21452	Resistor, 1100 Ohm, 1/2 W., Flex.
5	G27-32002	Wood Coil Spacer	38	W-28589	Resistor, 350 Ohm, 1/2 W., Flex.
6	W-32026	Osc. Coil Shield	39A	W-30127	Resistor, 450 Ohm, 1/2 W., Flex.
7	W-35252A	Coll. Spacers, Washer	40	W-26045	Resistor, 450 Ohm, 3/4 W., Flex.
8	W-35691	Insulating Washer	41	36761	Resistor, 40,000 Ohm, 1/4 W.
9	G16-21541C	Retaining Ring	42	38428	Resistor, 4,500 Ohm, 1/4 W.
10	G15-32005	1st I. F. Coil Assem.	43	G47-28807	Socket 6D6
11	G15-32005	2nd I. F. Coil Assem.	44	G47-28807	Socket 6A7
12	G15-32005	Coil, "B", Filter Choke	45	G48-28807	Socket 8B7
13	G15-32007	Coil, "A", Filter Choke	46	G22-28807	Socket 16
14	G5-32987	Coil, Motor Noise, "B", Choke	47A	G22-28807	Socket 41
15	G11-25535	Coil, A. F. Grid Coupling Choke	47B	G22-28807	Socket 41
16	G44-33002	3 Section Tuning Cond. Gang	48	W-31212	Tube Shield—small half (Plan)
17	W-38597	Condenser, 0.02 Mfd. 200 V.	49	W-34174	Tube Shield—small half (Cut Out)
18	W-38597	Condenser, 0.05 Mfd. 400 V.	50	W-34175	Tube Shield—large half (Plan)
19	W-38419	Condenser, 0.01 Mfd. 400 V.	51	W-32760	Tube Shield—large half (Cut Out)
20	W-22688	Condenser, 0.1 Mfd. 400 V.	52	W-32985	Shielding Base
21	W-32779	Condenser, 0.02 Mfd. 200 V.	53	W-32965A	Vib. Socket
22	W-32779	Condenser, 0.02 Mfd. 200 V.	54	424-G1	Vib. Ground Clip
23	G2-34002	Condenser, 0.0001 Mfd. (Mica)	55	W-35181A	Suppressor, 20,000 Ohm
24	G1-34002	Condenser, 0.0025 Mfd. (Mica)		G28-38428	Transformer, Output
25	W-35435	Condenser, 0.0025 Mfd. (Mica)		W-38428	Vibrator, 20 M.A., 250 Ohm
26	W-32904	Condenser, 0.0025 Mfd. (Mica)		G7-32769	Power Transformer
27	W-38433	Condenser, 0.5 Mfd. 160 V.		W-38400	Vibrator, (D. A. Corp. No. 5041245)
28	W-37190	Condenser, 0.02 Mfd. 160 V.		C-38407	Case
29	W-38427	Condenser, 4 Mfd.		C-38409A	Case Top Cover
30	W-29910A	Condenser, 8 Mfd. 350 V.		C-38409A	Case Bottom Cover
31	W-35600	Condenser, 12 Mfd. 250 V.		W-38412A	Trimmer Hole Plug
32	W-38952	Condenser, 0.25 Mfd. 200 V.		W-38412A	Trimmer Hole Plug
33	W-35600	Resistor, 100,000 Ohm, 1/4 W.		W-38412A	Control Cable to Vol. Cont.
34	W-38760	Resistor, 30,000 Ohm, 1/4 W.		W-38412A	Control Cable to Vol. Cont.
35	W-38760	Resistor, 20,000 Ohm, 1/4 W.		W-38412A	"A" Lead, Fused
36	W-35602	Resistor, 20,000 Ohm, 1/4 W.		W-38412A	Knob (2)
37	W-35602	Resistor, 1 Megohm, 1/4 W., In-		W-38412A	Under Instr. Panel Mtg. Kit
38	W-35602	Resistor, 1 Megohm, 1/4 W., In-		W-38412A	Steering Column Mtg. Kit

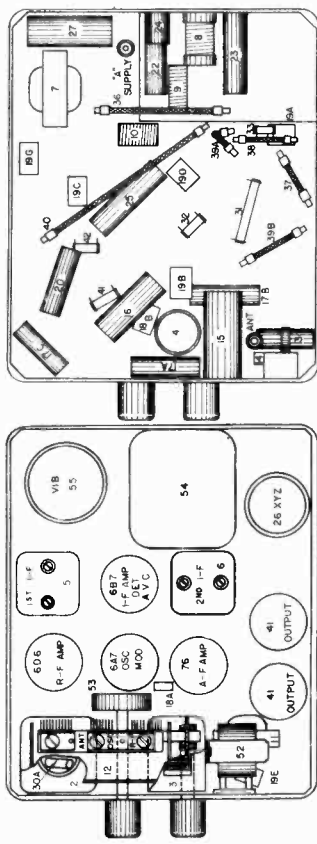


Fig. 2. Top View

Fig. 3. Bottom View

**SPECIFICATIONS**

The Crosley Model A-166 auto radio is a two-unit, six-tube superheterodyne receiver with an under-cowl type speaker. The power supply unit is an integral part of the receiver chassis and is completely shielded from the remainder of the receiver.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the receiver chassis. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter with receiver in operating condition and no signal input. Voltage limits may vary plus or minus 10% of values given.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate of one of the 41 Output tubes and connect the other terminal to the plate of the other Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**NOTE:** The receiver chassis must be in its case and a speaker similar to the one used with the receiver must be connected to the chassis before making any adjustments. It is also advisable to use a spare control unit for making adjustments of the volume control and tuning condenser. A standard control unit with short cables (6" to 8") makes a very convenient and useful tool. If it is desired to shorten a pair of long cables it will be absolutely necessary to heavily tin the cables before using them.

**1. Tuning I-F Amplifier to 262 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GENERATOR LEADS AS THE OTHER SCREEN GRID TUBES.**  
 (b) Adjust the station selector so that the rotor plates

of the tuning condenser are completely in mesh.  
 (c) Turn the volume control of the receiver full on and turn the signal generator to 262 kilocycles.  
 (d) Set the trimmer on the "OSC." section of the I-F transformer for maximum output. (Fig. 2).  
 (e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.  
 (f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.  
 (g) Repeat operations (e) and (f) for more accurate adjustments.

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .010025 mfd. condenser to the "ANT" section of the receiver.  
 (b) Set the signal generator to 1400 kilocycles.  
 (c) Adjust the station selector to 140 on the dial.  
 (d) Adjust the trimmer on the "OSC." section of the tuning condenser for maximum output. (Fig. 2).  
 (e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.  
 (f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.  
 (g) Repeat operations (e) and (f) for more accurate adjustments.

**3. Adjusting Antenna Compensating Condenser.**

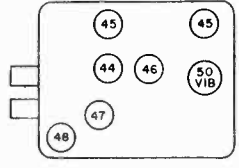
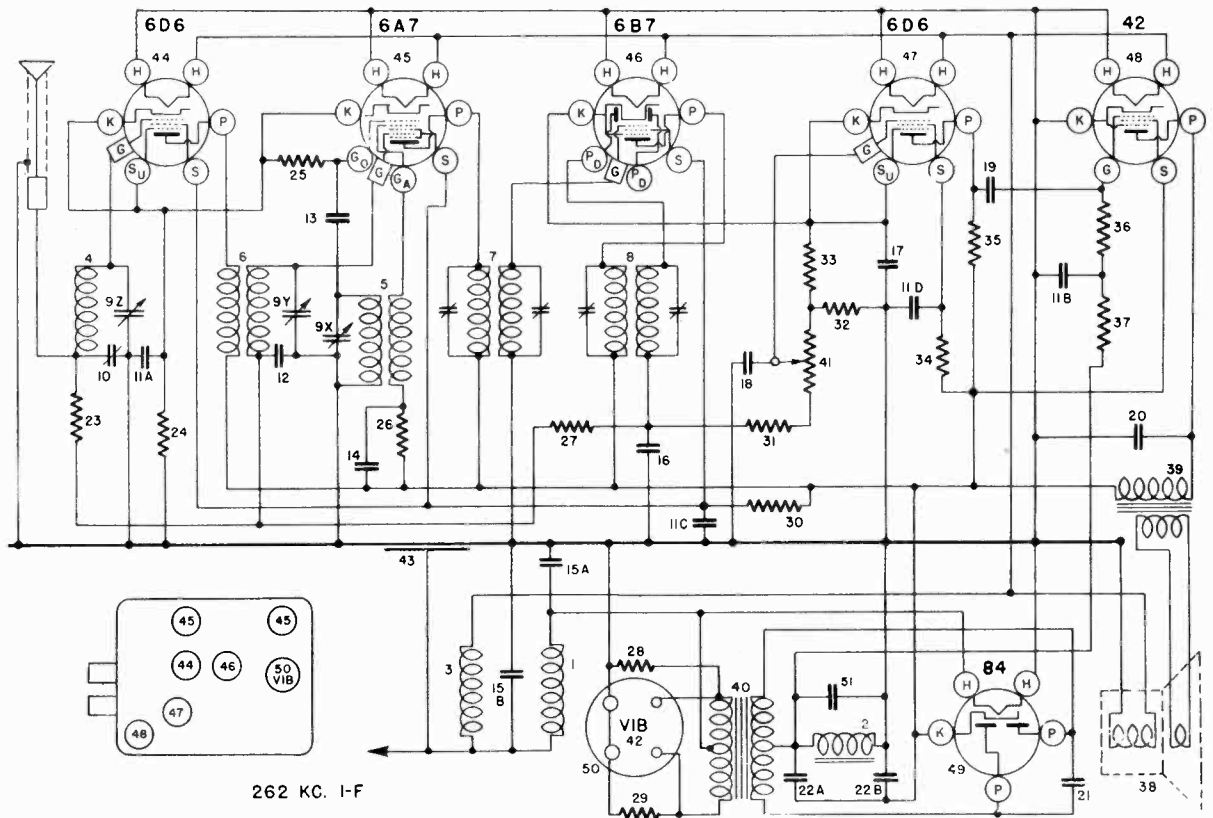
(a) Set the signal generator to 600 kilocycles.  
 (b) Tune in the 600 kilocycle signal with the station selector for maximum output.

(c) Adjust the antenna compensating condenser, illus. No. 14, Fig. 3, for maximum output.  
 (d) Repeat operations (b) and (c) alternately until no further improvement in output can be obtained.  
 (e) Set the signal generator to 1400 kilocycles again.  
 (f) Tune in the 1400 kilocycle signal with the station selector for maximum output.  
 (g) Readjust the trimmer on the "ANT" section of

the tuning condenser for maximum output.  
 It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.  
 (a) After the installation is complete, tune in a WEAK station between 55 and 65 on the dial.  
 (b) Adjust the antenna compensating condenser for maximum volume in the speaker.

CROSLY RADIO CORP.

MODEL A-266  
Schematic, Socket  
Trimmers, Chassis  
Voltage



262 KC. I-F

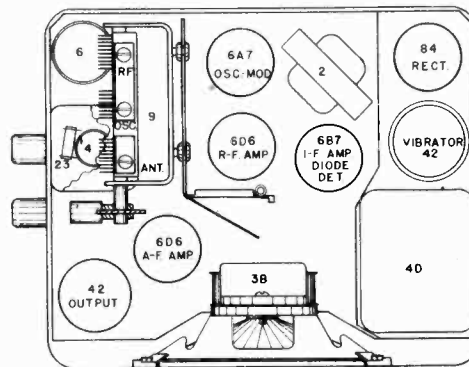


Fig. 2. Top View A-266

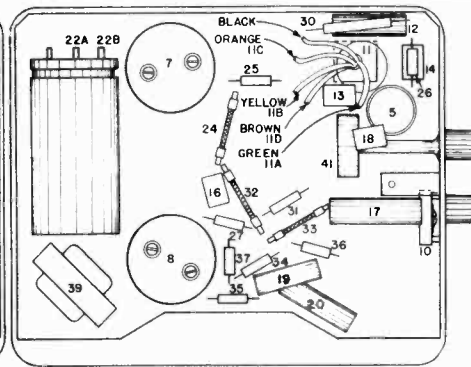


Fig. 3. Bottom View A-266

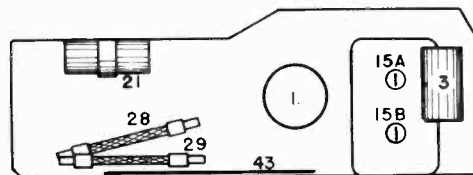


Fig. 4. Bottom View Power Supply Unit A-266

MAY, 1936

TUBE SOCKET VOLTAGE READINGS

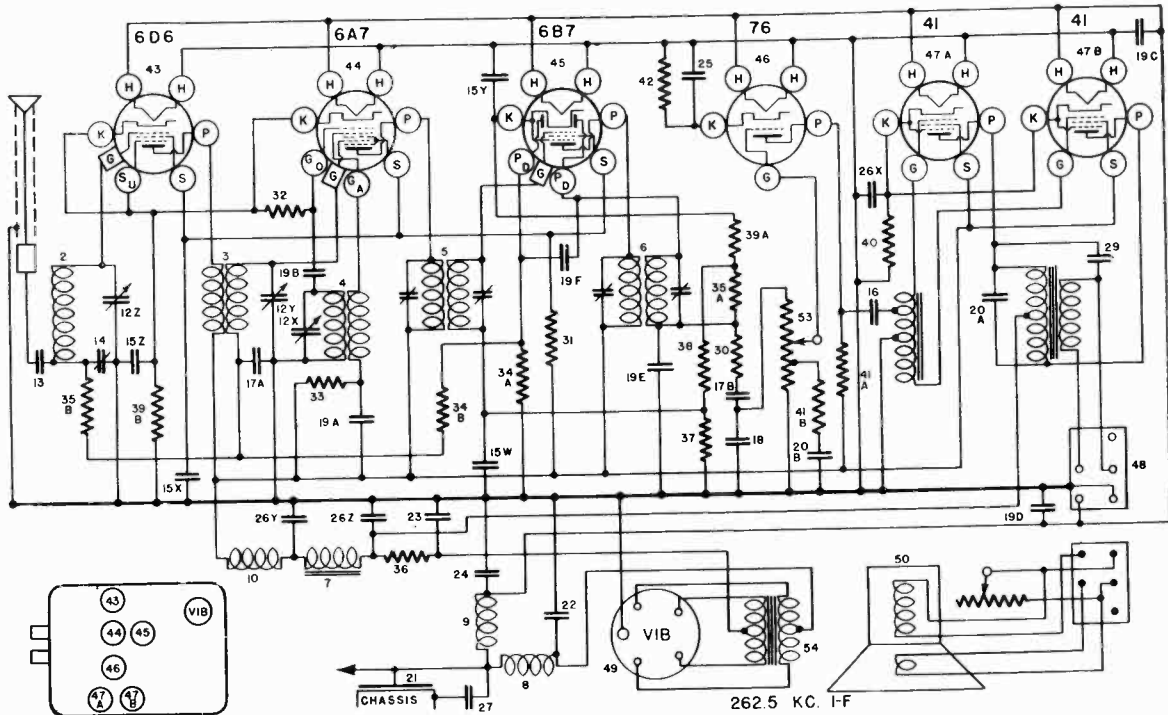
Tube	Function	H	P	P2	S	G	K	Su	Ga	Go
6D6	R-F Amplifier	6.0	240	—	80	0	5.5	—	—	—
6A7	Osc.-Mod.	6.0	240	—	80	0	5.5	—	1c5	0 to -30
6B7	1-F. Diode Det. & AVC	6.0	240	—	80	0	3.5	—	—	—
6D6	1st A-F Amplifier	6.0	50	—	35	1.5	3.5	3.5	—	—
42	Output	6.0	220	—	230	—	0	—	—	—
84	Rectifier	6.0	240	240	—	—	—	—	—	—

Power Output Approximately 3 Watts.  
Battery Drain Approximately 7.0 Amperes at 6 volts.  
\*True Bias Reading Approximately -15 Volts. Measured Across Filter Choke.



CROSLLEY RADIO CORP.

MODEL A-366  
Schematic  
Socket, Parts



PARTS LIST—MODEL A-366

MAY, 1936

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
2	G83-32000	Ant. Coil	39A	W-30127	Resistor 450 Ohm 1/2 W. Flexible
W	38120	Ant. Coil Shield	39B	W-30127	Resistor 450 Ohm 1/2 W. Flexible
3	G20-32001	R-F Coil	40	W-26019	Resistor 450 Ohm 3/4 W. Flexible
4	G27-32002	Osc. Coil	41A	W-36761	Resistor 40,000 Ohm 1/2 W. Insul
5	G16-32005	1st I-F Assembly	41B	W-36761	Resistor 40,000 Ohm 1/2 W. Insul
6	G30-32005	2nd I-F Assembly	42	38428	Resistor 4,500 Ohm 1/2 W. Insul
7	G31-24628	"B" Filter Choke	43	G75-28807	Socket Type 6L6
8	G15-28067	"A" Filter Choke	44	G47-28807	Socket Type 6A7
9	G6-32977	Motor Noise Choke	45	G48-28807	Socket Type 6B7
10	G5-32977	R-F "B" Choke	46	G80-28807	Socket Type 76
11	G50-24628	A-F Grid Choke	47A	G22-28807	Socket Type 41
12	G44-33002	3 Section Var. Tuning Condenser	47B	G22-28807	Socket Type 41
13	W-38367	Condenser .02 Mfd. 200 V.	47C	G22-28807	Socket Type 41
14	W-38350	Condenser, Ant. Compensating	48	W-32895	Speaker Socket
15Z		.05 Mfd. 400 V.	49	W-32865A	Vibrator Socket
15Y	W-38419A	Condenser .1 Mfd. 200 V.			
15X		.05 Mfd. 400 V.			
15W		.1 Mfd. 200 V.			
16	W-22688	Condenser 1 Mfd. 400 V.	50	NONE	Speakers (See Below)
17A	W-28621	Condenser .02 Mfd. 200 V.	51	G51-24628	Output Transformer
17B	W-28621	Condenser .02 Mfd. 200 V.	52	W-38810	Volume Control (1 Meg.)
18	G2-34002	Condenser .001 Mfd. (Molded)	53	G8-32769	Power Transformer
19A			54	G7-38000	Vibrator
19B	G1-34002	Condenser .00025 Mfd. (Molded)	55	W-38113	Vibrator Ground Clip
20A	W-25125	Condenser .003 Mfd. 400 V.	W	W-35181A	Distributor Suppressor
20B	W-25435	Condenser .003 Mfd. 400 V.	W	W-32956A	Suppressor Adapter
21	W-32904	Condenser, Riveted Plate to Chassis	W	W-29754C	Generator Condenser
22	W-38433	Condenser 5 Mfd. 160 V.	W	32783A	Antenna Lead
23	W-38431	Condenser 15 Mfd. 400 V.	C	38407	Case
24	W-37190	Condenser .02 Mfd. 160 V.	C	38408	Top Cover
25	W-38430	Condenser 8 Mfd. 10 V. Electrolytic	MG2	38798	Bottom Cover
26Z	W-38427	Condenser 8 Mfd. 350 V. Electrolytic	W	32946	Cable Set Screw
26Y		Condenser 12 Mfd. 25 V.	W	32947	Comp. Cond Hole Plug
26X	W-38427	Condenser 25 Mfd. 200 V.	W	38112B	Oval Head Nut, Cover Mtg.
27	W-29910A	Condenser .05 Mfd. 400 V.	W	32921	Cover Tie Bolt
28	NONE		W	32856	Mounting Stud
29	W-38488	Condenser .05 Mfd. 400 V.	W	38455	Case Mtg. Spacer
30	W-35600	Resistor 100,000 Ohm 1/2 W. Insulated			
31	W-36852	Resistor 30,000 Ohm 1/2 W. Insulated			
32	W-35928	Resistor 60,000 Ohm 1/2 W. Insulated			
33	W-35010	Resistor 20,000 Ohm 1/2 W. Insulated			
34A	W-35002	Resistor 1 Megohm 1/2 W. Insulated			
34B	W-35002	Resistor 1 Megohm 1/2 W. Insulated			
34C	W-35002	Resistor 1 Megohm 1/2 W. Insulated			
35A	W-35001	Resistor 300,000 Ohm 1/2 W. Insulated			
35B	W-35001	Resistor 300,000 Ohm 1/2 W. Insulated			
36	W-32961	Resistor 100 Ohm 3 W. Flexible			
37	W-21452	Resistor 1100 Ohm 1/2 W. Flexible			
38	W-28589	Resistor 3.0 Ohm 1/2 W. Flexible			
					W-32957 Lock Washer
					W-6213 Hex. Nut
					---424-G-6 Speaker Parts
					---40311 Speaker Complete (under cowl)
					---38824A "M" Spec. 1-D-399
					---40148 Knob (Tone Control)
					---40461 Tone Control (300,000 Ohm)
					---40293 Grille & Screen (424-G-6)
					---40301 Baffle Gasket (424-G-6)
					---40305 Speaker Unit only (424-G-6)
					---32974 Speaker Cone Assembly (424-G-6)
					---40305 Speaker Field Coil (424-G-6)
					---32974 Plug
					---32975 Plug Cover
					---38847 Cable
					---421-G-4 Speaker Complete (under cowl)
					---40311 "M" Spec. 1-D-398
					---40551 Knob (Switch)
					---40552 Switch
					---40555 Candohm Resistor
					---32895 Leader Socket
					---40561 Choke
					W-37849 Cable
					---40148 Grille & Screen (424-G-4)
					---10161 Baffle Gasket (424-G-4)
					---40562 Speaker Unit only (424-G-1)
					---40301 Speaker Cone Assembly (424-G-4)
					---40305 Speaker Field Coil (424-G-4)
					---32974 Plug
					---32975 Plug Cover
					---324-G-5 Speaker Assembly (Headline)
					---35252A "M" Spec. 1-D-396
					---32974 Tone Control Knob
					---38852 Tone Control
					---38839 Speaker Unit (324-G-5)
					---40102 Speaker Cone Assembly (324-G-5)
					---40297 Speaker Field Coil (324-G-5)
					---321-G-6 Speaker Assembly (Header)
					---41439 "M" Spec. 1-D-397
					W-41439 Grille & Screen (324-G-6)
					W-40260 Baffle Gasket (324-G-6)
					W-40257 Speaker Clamp (324-G-6)
					W-35252A Tone Control Knob
					W-38824A Tone Control
					B-35280 Mtg. Bracket (324-G-6)
					---38820 Speaker Unit (324-G-6)
					---40402 Speaker Cone Assembly (324-G-6)
					---40297 Speaker Field Coil (324-G-6)

**MODEL A-366**  
**Socket, Trimmers**  
**Voltage, Alignment**

CROSLLEY RADIO CORP.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the receiver chassis. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and no signal input. Voltage limits may vary plus or minus 10% of voltages given.

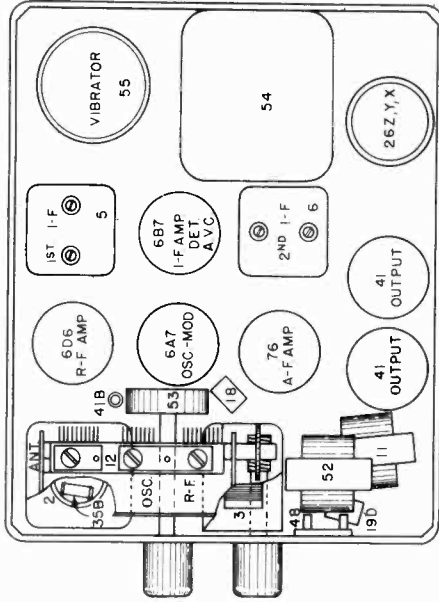


Fig. 1. Top View

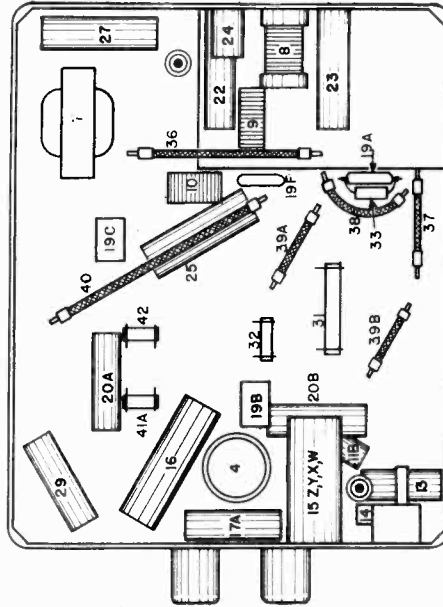


Fig. 2. Bottom View

(g) Repeat operations (e) and (f) for more accurate adjustments.  
**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

- (a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" section of the receiver.
- (b) Set the signal generator to 1400 kilocycles.
- (c) Adjust the station selector to 140 on the dial.
- (d) Adjust the trimmer on the "OSC" section of the tuning condenser for maximum output.
- (e) Adjust the trimmer on the "R-F" section of the tuning condenser for maximum output.
- (f) Adjust the trimmer on the "ANT" section of the tuning condenser for maximum output.
- (g) Readjust the station selector for maximum output. **DO NOT READJUST THE OSC. TRIMMER.**
- (h) Repeat operations (e) and (f) for more accurate adjustments.

**3. Adjusting Antenna Compensating Condenser.**

- (a) Set the signal generator to 600 kilocycles.
- (b) Tune in the 600 kilocycle signal with the station selector for maximum output.
- (c) Adjust the antenna compensating condenser, Illustration No. 14, Fig. 3, for maximum output.
- (d) Repeat operations (b) and (c) alternately until no further improvement can be obtained.
- (e) Set the signal generator to 1400 kilocycles again.
- (f) Tune-in the 1400 kilocycle signal with the station selector for maximum output.
- (g) Readjust the trimmer on the "ANT" section of the tuning condenser for maximum output. It will be necessary to adjust the antenna compensating condenser to the car antenna after the receiver has been installed in the car.
- (a) After the installation is complete, tune-in a WEAK station between 55 and 65 on the dial.
- (b) Adjust the antenna compensating condenser for maximum volume in the speaker.

**ALIGNMENT PROCEDURE**  
 All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**  
 Connect one terminal of the output meter to the plate and the other terminal to the screen of the 42 Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**NOTE:** The receiver chassis must be in its case and a speaker similar to one used with the receiver must be connected to the chassis before making any adjustments. It is also advisable to use a spare control unit for making adjustments of the volume control and tuning condenser. A standard control unit with short cables (6" to 8") makes a very convenient and useful tool. If it is desired to shorten a pair of long cables it will be absolutely necessary to heavily tin the cables before cutting them.

**1. Tuning I-F Amplifier To 262 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 mfd., or larger, condenser to the top cap of the 6A7 Osc-Mod. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis frame. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**
- (b) Adjust the station selector so that the rotor plates of the tuning condenser are completely in mesh.
- (c) Turn the volume control of the receiver full on and turn the tone control to the treble position.
- (d) Set the signal generator to 262 kilocycles.
- (e) Adjust both trimmers located on the 2nd I-F transformer for maximum output. (Fig. 2)
- (f) Adjust both trimmers located on the 1st I-F transformer for maximum output.

**TUBE SOCKET VOLTAGE READINGS**

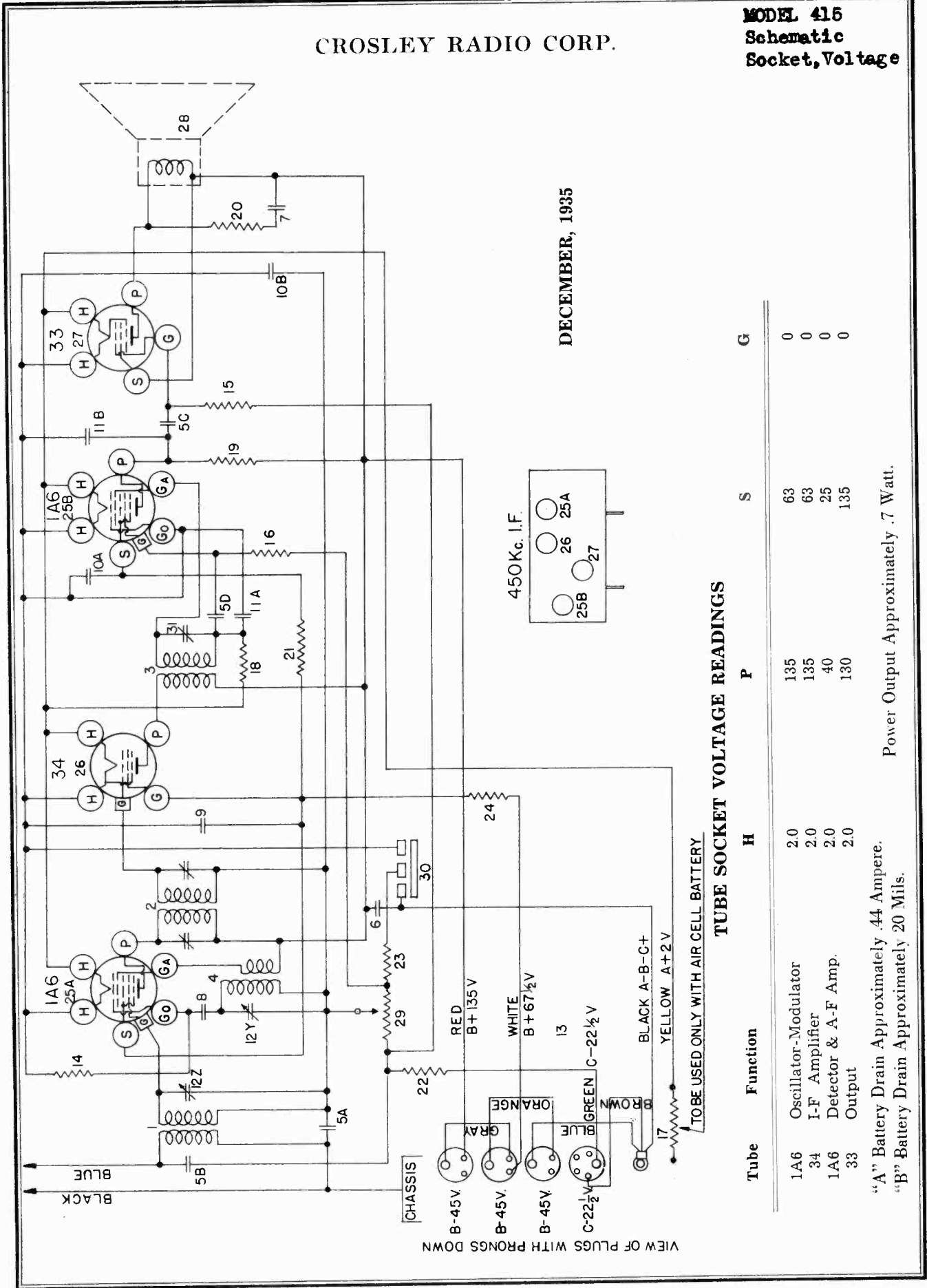
Tube	Function	H	P	S	G	K	Ga	Go
6D6	R-F Amplifier	6.0	220	100	0	5.7	—	—
6A7	Osc.-Mod.	6.0	220	100	0	5.7	130	-5 to -10
6B7	I-F Amp. & Diode Detector	6.0	220	100	0	6.8	—	—
76	1st A-F Amp.	6.0	130	—	0	8.0	—	—
41	(2) Output	6.0	210	—	0	18.0	—	—

Power Output Approximately 3 Watts.  
 Battery Drain Approximately 6.2 Amperes at 6 Volts.

CROSLEY RADIO CORP.

**MODEL 415**  
**Schematic**  
**Socket, Voltage**

DECEMBER, 1935



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	G
1A6	Oscillator-Modulator	2.0	135	63	0
34	I-F Amplifier	2.0	135	63	0
1A6	Detector & A-F Amp.	2.0	40	25	0
33	Output	2.0	130	135	0

"A" Battery Drain Approximately .44 Ampere.  
 "B" Battery Drain Approximately 20 Mils.  
 Power Output Approximately .7 Watt.



**MODEL 415**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

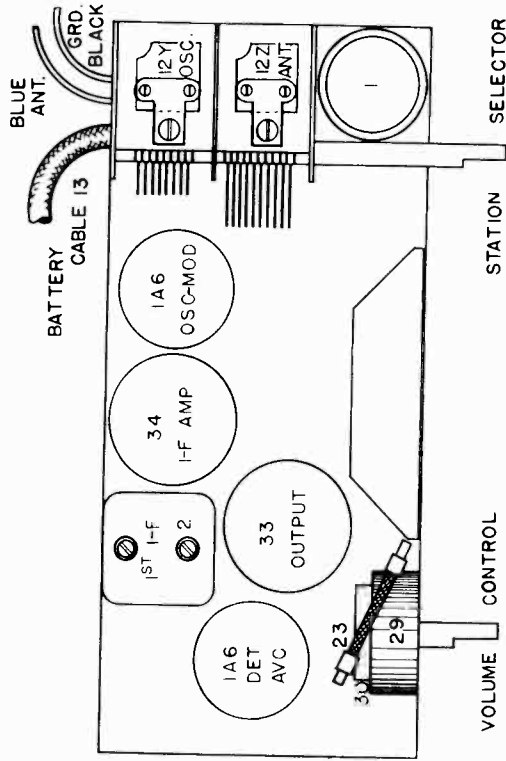


Fig. 2. Top View

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and B—. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range D.C. voltmeter (approximately 0-10 volts). Voltage limits may vary plus or minus 10% of values given.

**SPECIFICATIONS**

The Crosley Model 415 radio is a four-tube super-heterodyne receiver designed for operation from batteries. The method of connecting the battery cable to the batteries is shown on the Wiring Diagram. The batteries required are: one two-volt storage battery or an air cell battery, three "plug-in type" 45 volt "B" batteries and one "plug-in type" 22½ volt "C" battery.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 33 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier To 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground wire (BLACK) at the rear of the chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the tuning condenser so that the plates are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condenser for the 2nd I-F transformer, Fig. 3, illustration No. 31, for maximum output.

(e) Adjust both trimmer condensers, located on top of the 1st I-F transformer, for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna wire (BLUE) at the rear of the chassis.

(b) Set the signal generator to 1400 kilocycles.

(c) Place the chassis in the cabinet and adjust the station selector to 140 on the dial.

(d) Remove the chassis from the cabinet and adjust the "OSC" trimmer, 12Y, located on the tuning condenser, for maximum output. (Fig. 2).

(e) Adjust the "ANT" trimmer, 12Z, located on the tuning condenser, for maximum output.

(f) Tune-in the generator signal with the station selector for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

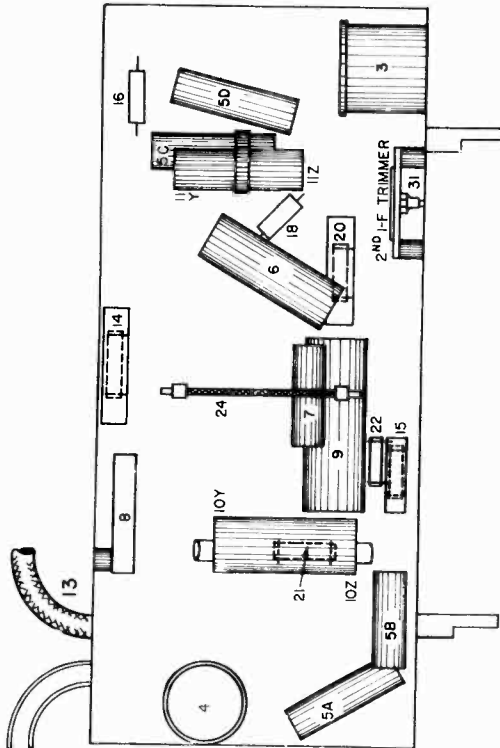


Fig. 3. Bottom View

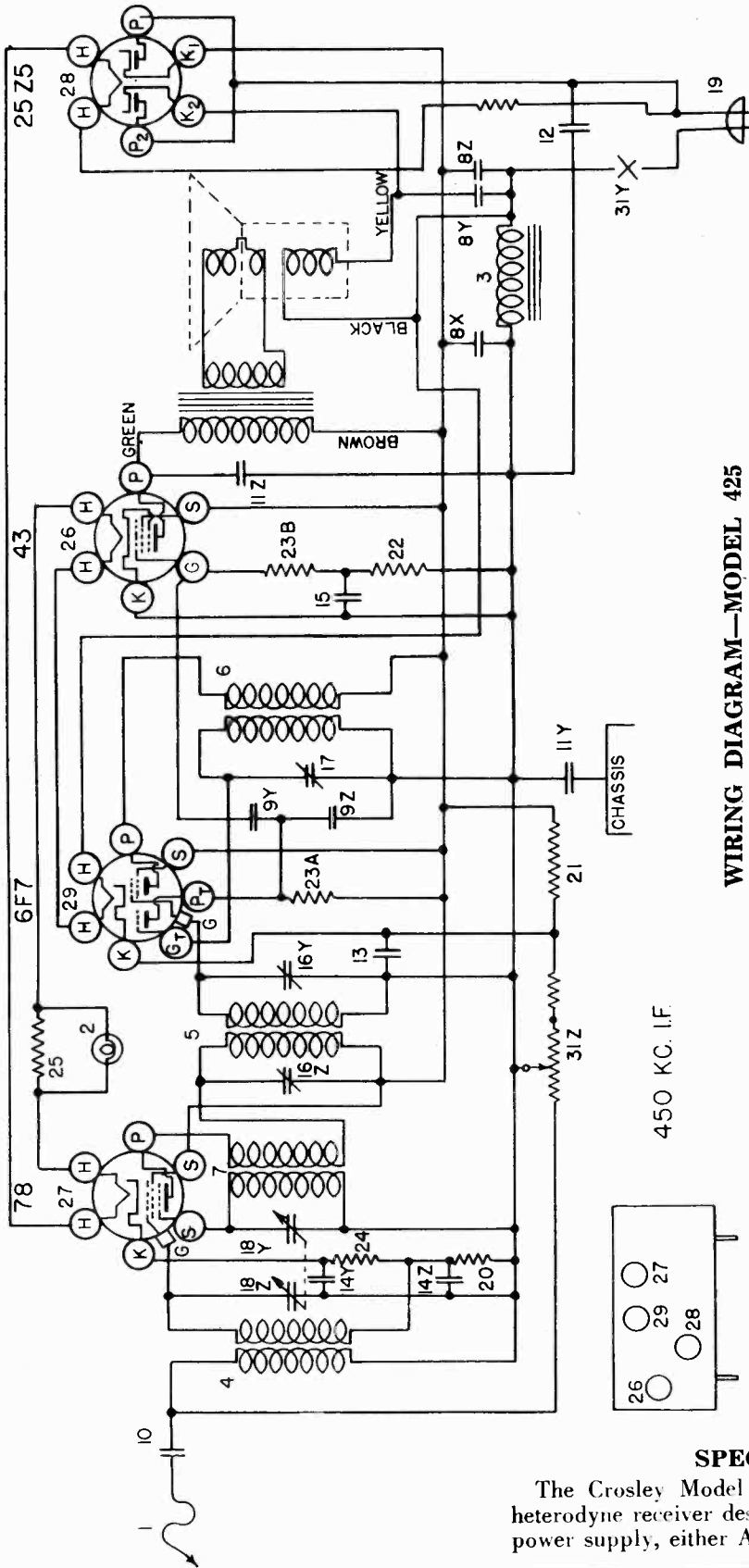
**PARTS LIST—MODEL 415**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G27-32000	Ant Coil	13	C-36726C	Battery Cabinet Assm.
2	W-30028A	Coil Shield	14	W-21875	Resistor 100,000 Ohm ¼ W.
3	W-30028B	Retaining Ring	15	W-21454	Resistor 1.0 Megohm ¼ W.
4	W-35025B	1st I-F Coil—only	16	W-26577	Resistor 3.0 Megohm ¼ W.
5A	W-26691	Coil Shield Washer	17	G5-23300	Resistor 0.6 Ohm
5B	W-21541C	Retaining Ring	18	W-23785	Resistor 500,000 Ohm ¼ W.
5C	W-25200A	Coil Socket	19	W-21455	Resistor 300,000 Ohm ¼ W.
5D	G13-32004	2nd I-F Coil Assm.	20	W-24904	Resistor 25,000 Ohm ¼ W.
6	G8-32002	Osc. Coil	21	W-27121	Resistor 100,000 Ohm ¼ W. Flex.
7	W-25025B	Coil Shield	22	W-23013	Resistor 1,100 Ohm ¼ W. Flex.
8	W-21541C	Retaining Ring	23	W-21452	Resistor 1,100 Ohm ¼ W. Flex.
9	W-59819	Insulating Washer	24	W-21452	Resistor 1,100 Ohm ¼ W. Flex.
10A	W-23200A	Coil Shield	25A	G55-27875	Socket Cushion
10B	W-28621	Condenser 0.02 Mfd. 200 V.	26	W-33070	Socket I-A6
10C	W-28621	Condenser 0.02 Mfd. 200 V.	27	G55-33070	Socket I-A6
10D	W-28621	Condenser 0.02 Mfd. 200 V.	28	G38-27875	Socket 34
10E	W-28621	Condenser 0.02 Mfd. 200 V.	29	G38-27875	Socket 33
10F	W-28910A	Condenser 0.25 Mfd. 200 V.	30	W-21M	Volume Control
10G	W-59819	Insulating Washer	31	W-33922A	On-Off Switch
10H	W-30321A	Condenser 0.0025 Mfd. 200 V.		W-33005	Condenser 1st I-F Trimmer
10I	W-30321A	Condenser 0.0025 Mfd. 200 V.		W-33005	Condenser 2nd I-F Trimmer
10J	W-28622	Condenser 0.1 Mfd. 200 V.		W-33938	Cabinet
10K	W-28622	Condenser 0.1 Mfd. 200 V.		W-31140	Escutcheon (V. C.)
10L	W-25572	Condenser 0.0005 Mfd. 400 V.		W-28760B	Escutcheon (Dial)
10M	W-25572	Condenser 0.0005 Mfd. 400 V.		W-28760B	Escutcheon Pin (6)
10N	W-25572	Condenser 0.0005 Mfd. 400 V.		W-33938	Knob (2)
10O	W-25572	Condenser 0.0005 Mfd. 400 V.			
10P	W-25572	Condenser 0.0005 Mfd. 400 V.			
10Q	W-25572	Condenser 0.0005 Mfd. 400 V.			
10R	W-25572	Condenser 0.0005 Mfd. 400 V.			
10S	W-25572	Condenser 0.0005 Mfd. 400 V.			
10T	W-25572	Condenser 0.0005 Mfd. 400 V.			
10U	W-25572	Condenser 0.0005 Mfd. 400 V.			
10V	W-25572	Condenser 0.0005 Mfd. 400 V.			
10W	W-25572	Condenser 0.0005 Mfd. 400 V.			
10X	W-25572	Condenser 0.0005 Mfd. 400 V.			
10Y	W-25572	Condenser 0.0005 Mfd. 400 V.			
10Z	W-25572	Condenser 0.0005 Mfd. 400 V.			
11	G6-33001	2 Section Tuning Condenser Gang			

CROSLY RADIO CORP.

**MODEL 425**  
**Schematic**  
**Socket**  
**Voltage**



WIRING DIAGRAM—MODEL 425

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	G	Pt	Gt
78	Osc.-Mod.	6.5	105	105	17	20	—	—
6F7	I-F Amp. & Det.	6.5	105	105	0	3	35	0
43	Output	26.0	105	105	-20	0	—	—
25Z5	Rectifier	26.5	117.5	—	—	—	—	—

Power Demand Approximately 60 Watts on 117.5 V.-A.C. Power Supply.  
Power Output Approximately .9 Watt.  
Voltage Reading Approximately 10% lower on 120 V., D.C.

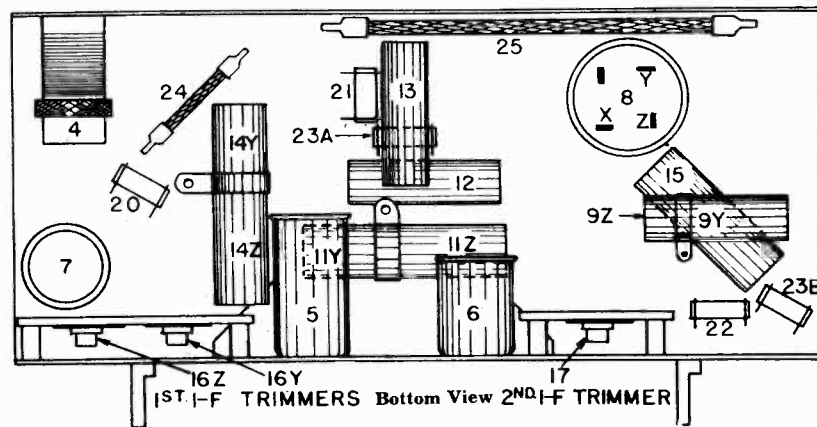
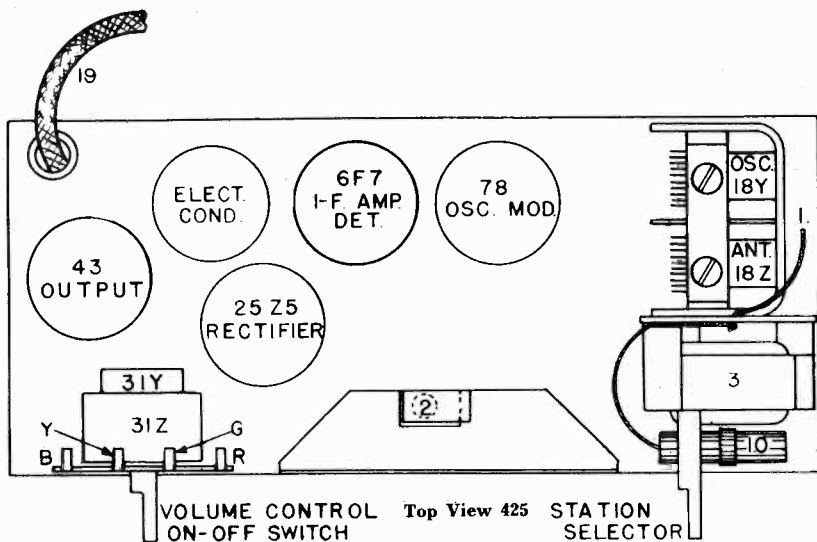
SPECIFICATIONS

The Crosley Model 425 radio is a four-tube super-heterodyne receiver designed for operation on a 110 volt power supply, either A.C. or D.C.

DECEMBER, 1935

**MODEL 425**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**



**PARTS LIST—MODEL 425**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W -29784-3	Antenna Roll	16Z	G11-33006	2 Section 1st I. F. Trimmer
2	G2-27812	Dial Light Socket Assem.	16Y	G5-33005	1 Section 2nd I. F. Trimmer
3	G1-28859	Choke Assembly (filter)	17	G16-33001	2 Section Tuning Condenser Gang
4	G75-32000	Antenna Coil	18Z		
5	G3-32004	First I. F. Coil Only	18Y		
	W -25024B	Coil Shield	W -36786A		Gang Insulator Cover
	W -25200	Coil Socket	B -35350		Power Cord and Plug
	W -26891	Insulating Washer		31093	Resistor 2700 Ohm 1/4 W.
	W -21541	Retaining Ring		24990	Resistor 25,000 Ohm 1/4 W.
6	G11-32004	Second I. F. Coil Only		21455	Resistor 300,000 Ohm 1/4 W.
	W -25025B	Coil Shield		22	Resistor 500,000 Ohm 1/4 W.
	W -25200	Coil Socket		23A	Resistor 500,000 Ohm 1/4 W.
	W -26891	Insulating Washer		23B	Resistor 350,000 Ohm 1/4 W.
	W -21541	Retaining Ring		24	Resistor 350 Ohm 1/2 W Flex.
7	G6-32002	Oscillating Coil Only		25	Resistor 26.7 Ohm 3 W Flex.
	W -25025B	Coil Shield		G30-28807	Socket 43
	W -25200	Coil Socket		G39-28807	Socket 78
	W -26891	Insulating Washer		G51-28807	Socket 25Z5
	W -21541	Retaining Ring		G49-28807	Socket 6F7
		Condenser 16 Mfd. 125 V.			Speaker
8Z		Condenser 8 Mfd. 125 V.			
8Y	W -29804A	Condenser 25 Mfd. 100 V.			
8X		Condenser 0.00017 Mfd. 200 V.			
9Z	W -30322A	Condenser 0.006 Mfd. 200V.			
10	W -30325	Condenser 0.003 Mfd. 200 V.			
11Z	W -29265	Condenser 0.008 Mfd. 200 V.			
11Y	W -29265	Condenser 0.05 Mfd. 200 V.			
12	W -30488	Condenser 0.02 Mfd. 400 V.			
13	W -28621	Condenser 0.02 Mfd. 200V.			
14Z	W -28623	Condenser 0.02 Mfd. 200V.			
14Y	W -28623	Condenser 0.02 Mfd. 200V.			
15	W -29910A	Condenser 0.25 Mfd. 200 V.			

- PUT METER READING.**
2. **Aligning R-F Amplifier.**
    - (e) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.
    - (b) Set the signal generator to 1400 kilocycles.
    - (c) Place the chassis in the cabinet and adjust the station selector to 140 on the dial.
    - (d) Remove the chassis from the cabinet and adjust the "OSC" trimmer, located on the station selector condenser, for maximum output. (Fig. 2.)
    - (e) Adjust the "ANT" trimmer, located on the station selector condenser, for maximum output.
    - (f) Repeat operations (d) and (e) for more accurate adjustments.

- TOR LEADS AS FAR AS POSSIBLE FROM THE 6F7 TUBE.**
- (b) Set the station selector condenser so that the plates are completely out of mesh and turn the volume control to the right (ON).
  - (c) Set the signal generator to 450 kilocycles.
  - (d) Adjust the trimmer condenser for the 2nd I-F transformer, Fig. 3, Illustration No. 17, for maximum output.
  - (e) Adjust both trimmer condensers for the 1st I-F transformer, Fig. 3, Illustration Nos. 16Y and 16Z, for maximum output.
  - (f) Check operations (d) and (e) for more accurate adjustments.
- ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUT.**

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier To 450 Kilocycles.**

- (a) Connect the output of the signal generator through a .02 condenser to the top cap of the 78 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. **KEEP THE GENERA-**

CROSLY RADIO CORP.

**MODEL 435**  
Schematic  
Voltage

**SPECIFICATIONS**

The Crosley Model 435 radio is a four-tube super-heterodyne receiver designed for operation from a six-volt storage battery. It contains a completely shielded, built-in power supply unit which employs a self-rectifying type vibrator.

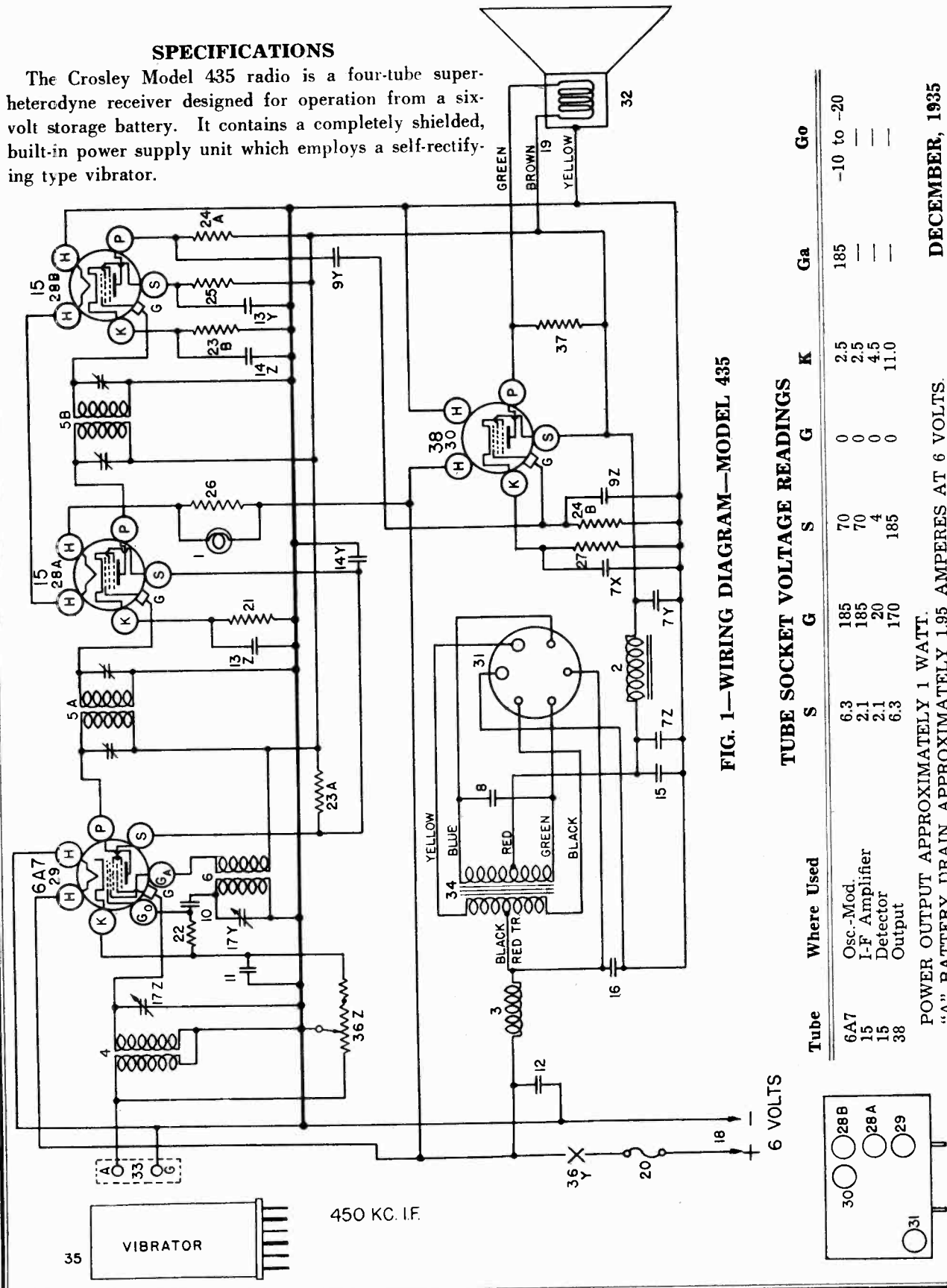


FIG. 1—WIRING DIAGRAM—MODEL 435

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	S	G	S	G	K	Ga	Go
6A7	Osc.-Mod.	6.3	185	70	0	2.5	185	-10 to -20
15	I-F Amplifier	2.1	185	70	0	2.5	---	---
15	Detector	2.1	20	4	0	4.5	---	---
38	Output	6.3	170	185	0	11.0	---	---

POWER OUTPUT APPROXIMATELY 1 WATT.

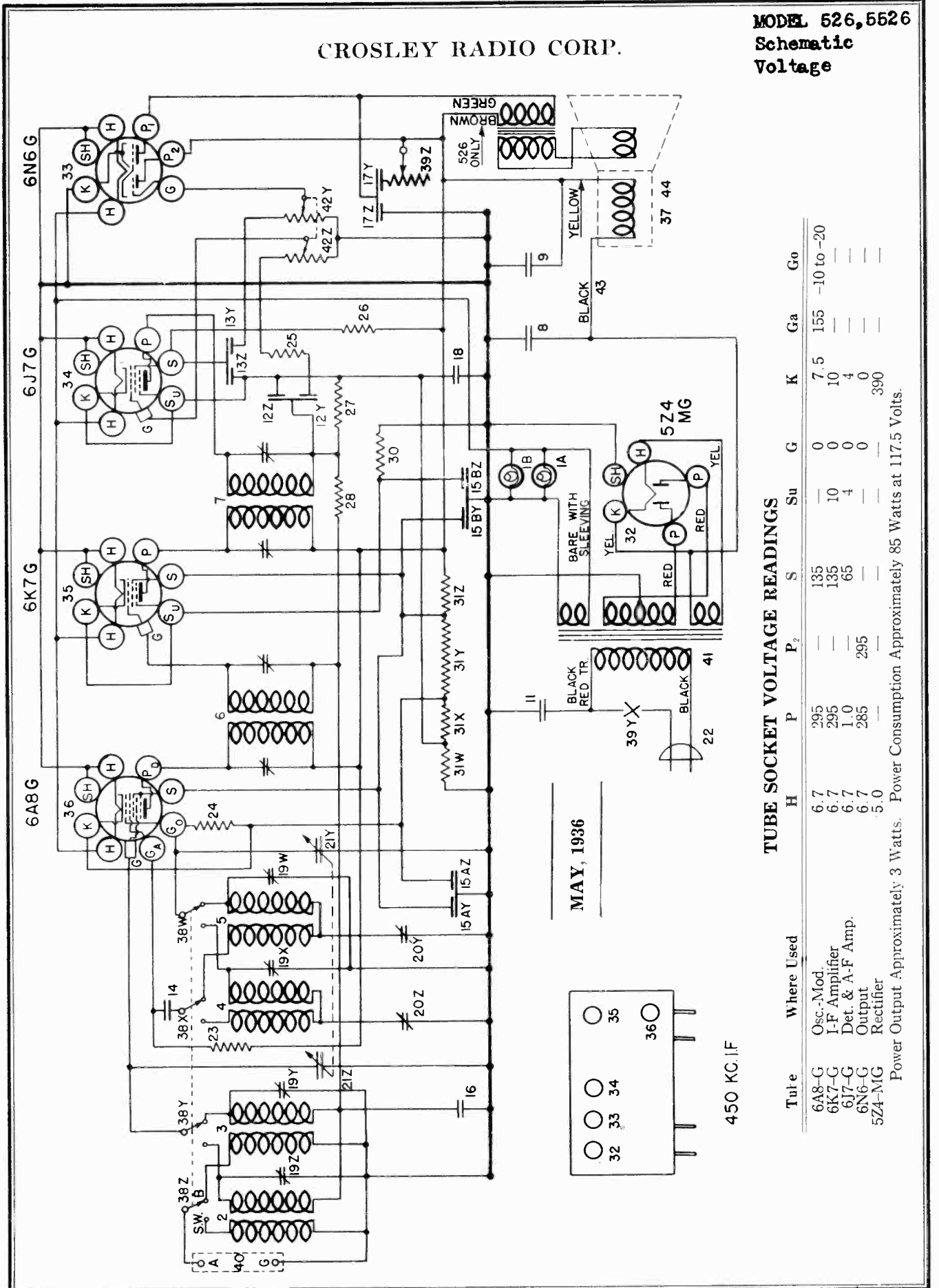
"A" BATTERY DRAIN APPROXIMATELY 1.95 AMPERES AT 6 VOLTS.

DECEMBER, 1935



CROSLY RADIO CORP.

MODEL 526, 526E  
Schematic  
Voltage



TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	P <sub>2</sub>	S	Su	G	K	Ga	Go
6A8-G	Osc.-Mod.	6.7	295	—	135	—	0	7.5	155	-10 to -20
6K7-G	I-F Amplifier	6.7	295	—	65	10	0	10	—	—
6J7-G	Det. & A-F Amp.	6.7	1.0	—	—	4	0	4	—	—
6N6-G	Output	6.7	285	295	—	—	0	0	—	—
5Z4-MG	Rectifier	5.0	—	—	—	—	—	390	—	—

Power Output Approximately 3 Watts. Power Consumption Approximately 85 Watts at 117.5 Volts.

**MODELS 526, 5526**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect the output meter to P<sub>1</sub> and P<sub>2</sub> of the 6N6 Output Tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

**2. Aligning R-F Amplifier.**

(a) When aligning the R-F Amplifier the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm (Non Inductive) carbon resistor.

Each hand should be shunt aligned, series aligned and then shunt aligned again in the order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.

Adjust the "OSC" and "ANT" shunt trimmers (shunt alignment. See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer. NOTE: When aligning the high frequency band care should be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately 10 times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct dial setting.

To adjust the "series" trimmers (Fig. 3) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

**SPECIFICATIONS**

The Crosley Radio Models 526 and 5526 are companion models employing the same circuit. The Model 526 is supplied in a mantle cabinet having the speaker mounted on the chassis and the Model 5526 is a console type having the speaker mounted in the cabinet.

This receiver is designed to use either metal tubes or the equivalent glass tubes with octal bases. If glass tubes are replaced with metal tubes or metal tubes are replaced with glass tubes it will be necessary to completely realign the circuits of the receiver. The frequency ranges covered are from 540 to 1710 kilocycles in the broadcast band and from 2350 to approximately 7500 kilocycles in the high frequency band.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between tube socket contacts and chassis. Voltage readings should be taken with a 1000 ohm per volt, 500 volt voltmeter (except filaments) with receiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A.C. voltmeter (Approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

**PARTS LIST—MODELS 526 and 5526**

Figures in first column refer to parts in Diagram.

Item	Part No.	Description
1A	W —37922	Dial Light Bulb
1B	W —37922	Dial Light Bulb
	G3 —37965	Dial Light Socket Assembly
2	G82 —32000	Ant. Coil S. W. B.
3	G81 —32000	Ant. Coil B. C. B.
4	G65 —32000	Osc. Coil S. W. B.
5	G66 —32002	Osc. Coil B. C. B.
6	G71 —32004	1st I-F Assembly
7	G72 —32004	2nd I-F Assembly
8	W —36555	Condenser 35 Mfd. 400 V.
9	W —36557	Condenser 40 Mfd. 300 V.
10	None	
11	W —30805	Condenser 0.01 Mfd. 400 V.
12Z	W —30322A	Condenser 0.00017 Mfd. 200 V.
12Y	W —30322A	Condenser 0.006 Mfd. 200 V.
13Z	W —25537A	Condenser 0.001 Mfd. 400 V.
13Y	W —25537A	Condenser 0.03 Mfd. 400 V.
14	W —23191A	Condenser 0.01 Mfd. 400 V.
15AZ	W —28623	Condenser 0.02 Mfd. 200 V.
15AY	W —28623	Condenser 0.02 Mfd. 200 V.
15BZ	W —28623	Condenser 0.02 Mfd. 200 V.
15BY	W —27216	Condenser 0.05 Mfd. 200 V.
16	W —27216	Condenser 0.05 Mfd. 200 V.
17Z	W —31052	Condenser 0.004 Mfd. 400 V.
17Y	W —31052	Condenser 0.05 Mfd. 400 V.
18	W —36541	Condenser 0.02 Mfd. 160 V.
19Z	W —37241A	4 Section Trimmer Cond.
19X	W —37241A	4 Section Trimmer Cond.
19W	W —37241A	4 Section Trimmer Cond.
20Z	G29 —33005	S. W. Osc. Series Trimmer
20Y	G29 —33005	B. C. Osc. Series Trimmer
21Z	G17 —33001	Var. Tuning Cond. Gang.
21Y	G17 —33001	Var. Tuning Cond. Gang.
C	—40821	Dial Glass
W	—40186	Pointer Disc Mtg. Screw
B	40818B	Pointer Disc
MG16	—40765	Drive Mtg. Brkt. Assembly
W	—40804	Dial Glass Cushion
W	—40797	Dial Glass Brkt.
W	—40798	Support Brkt. L. H.
W	—40799	Support Brkt. R. H.
B	—40802	Speaker Mtg. Bracket (526)
W	—40801	Drive Segment
W	—40793	Dial Drive Unit
MG33	—40765	Drive Bearing Assembly
B	—3906A	Power Cord & Plug
23	—5370A	Resistor 20,000 Ohm
24	—21237	Resistor 60,000 Ohm
25	—21875	Resistor 100,000 Ohm
26	—21455	Resistor 300,000 Ohm
27	—33344	Resistor 400,000 Ohm
28	—37245	Resistor 1.5 Megohm
29	None	
30	W —28106	Resistor 500 Ohm 1/4 W. Flxx.
31Z	W —37246A	10,000 Ohm
31Y	W —37246A	25,000 Ohm
31X	W —37246A	185 Ohm
31W	W —37246A	185 Ohm
32	G154 —36400	Socket 524
33	G185 —36400	Socket 6N6
34	G157 —36400	Socket 6I7
35	G151 —36400	Socket 6K7
36	G156 —36400	Socket 6A8
37	331 BL-9	Speaker (526)
	432-CJ-3	Speaker (5526)
G3	—35696	Speaker Cable (5526)
W	—11001A	Speaker Clamp
38W	to	Band Selector Switch
38Z	to	Band Selector Switch
38Y	to	Band Selector Switch
40	W —11028	Tone control
	G1 —26719	On Off Switch
	G1 —26719	Ant & Grd. Terminal Board
41	G12 —28500	Power Trans. 60 Cy. 110 V.
	G13 —28500	Power Trans. 25 Cy. 110 V.
	G14 —28500	Power Trans. 25 Cy. 220 V.
42Z	—41027	Volume Control A-F Grid
42Y	—41027	Volume Control Output Grid.
B	—40839	Escutcheon Ring
W	—28760B	Escutcheon Ptn
W	—37339	Knob V. C. & Station Select.
W	—37341	Knob T. C. & Band Select.
W	—40911	Shield, Tube
W	—27981A	Base Tube Shield

(b) Signal Generator Frequencies.

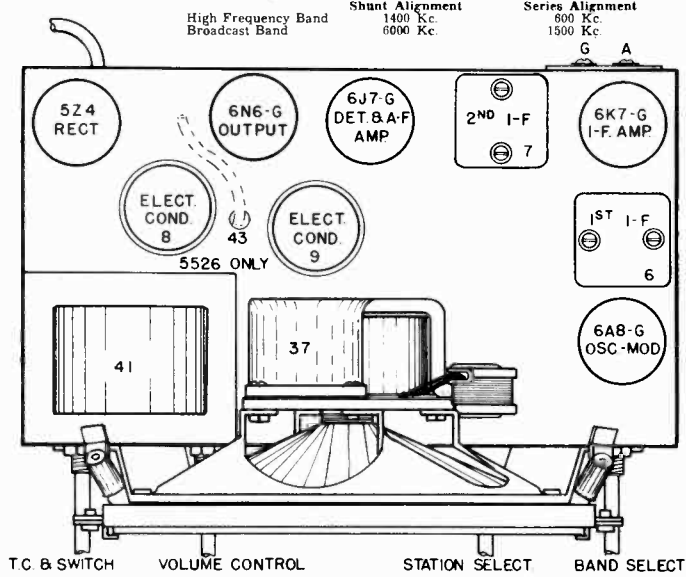


Fig. 2 Top View 526

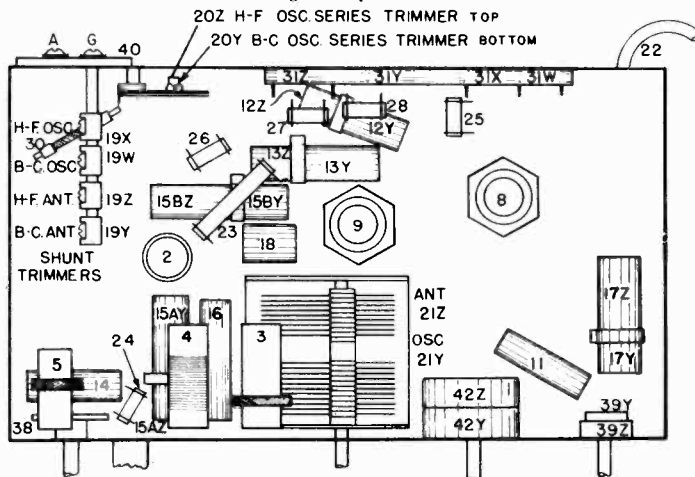
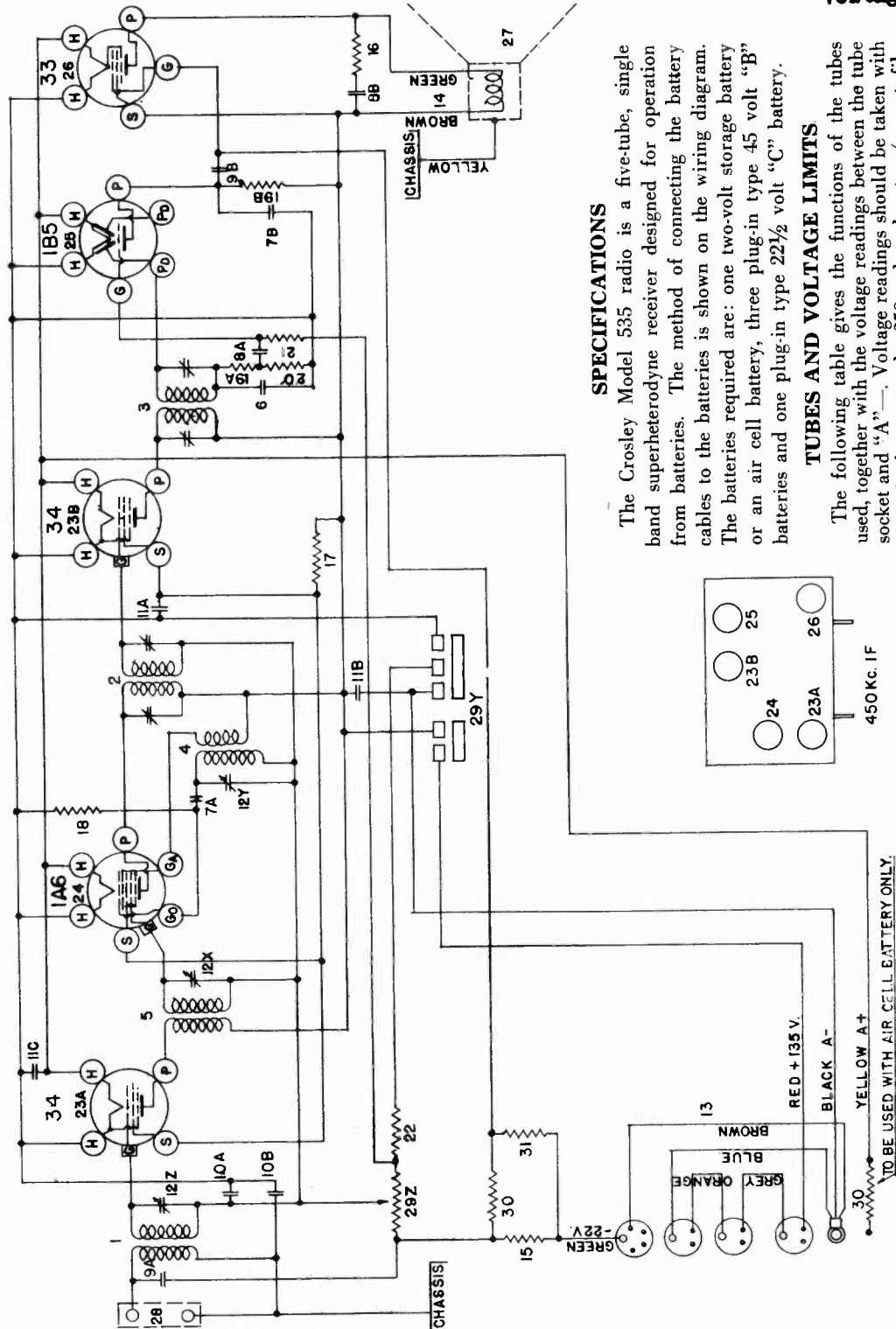


Fig. 3 Bottom View 526

CROSLY RADIO CORP.

**MODEL 535**  
**Schematic, Socket**  
**Voltage**

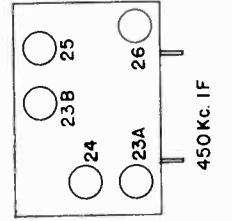


**SPECIFICATIONS**

The Crosley Model 535 radio is a five-tube, single band superheterodyne receiver designed for operation from batteries. The method of connecting the battery cables to the batteries is shown on the wiring diagram. The batteries required are: one two-volt storage battery or an air cell battery, three plug-in type 45 volt "B" batteries and one plug-in type 22½ volt "C" battery.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket and "A". Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and no signal input. Filament voltages should be measured with an accurate low range D.C. voltmeter (0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.



**FIG. 1—WIRING DIAGRAM**

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	67.5	-2.5	—	—
1A6	Osc.-Mod.	2.0	135	67.5	-2.5	135	-5 to -10
34	I-F Amplifier	2.0	135	67.5	-2.5	—	—
1B5	Diode Detector & A-F Amplifier	2.0	65	—	-0.1	—	—
33	Output	2.0	130	135	-1.0	—	—

"A" BATTERY DRAIN APPROXIMATELY 0.5 AMPERES—"B" BATTERY DRAIN APPROXIMATELY 23 MILS. MILS.  
POWER OUTPUT APPROXIMATELY 1 WATT.



**MODEL 535**

**Socket, Trimmers**

**Chassis, Parts**

**Alignment**

**CROSLLEY RADIO CORP.**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 33 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID WIRES OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector condenser so that the plates are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust the trimmer condensers located on top of the 2nd I-F transformer for maximum output. (Fig. 2).

(e) Adjust the trimmer condensers located on top of the 1st I-F transformer for maximum output.

(f) Repeat operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

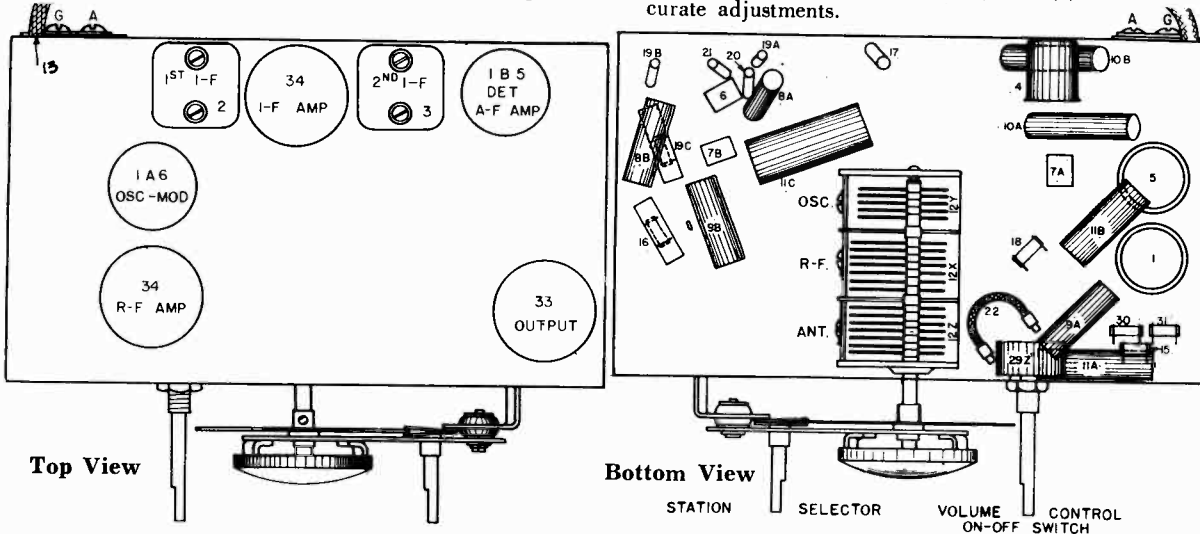
(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output. (Fig. 3.)

(e) Adjust the trimmer located on the "R-F" section of the condenser gang for maximum output.

(f) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(g) Repeat operations (d), (e) and (f) for more accurate adjustments.



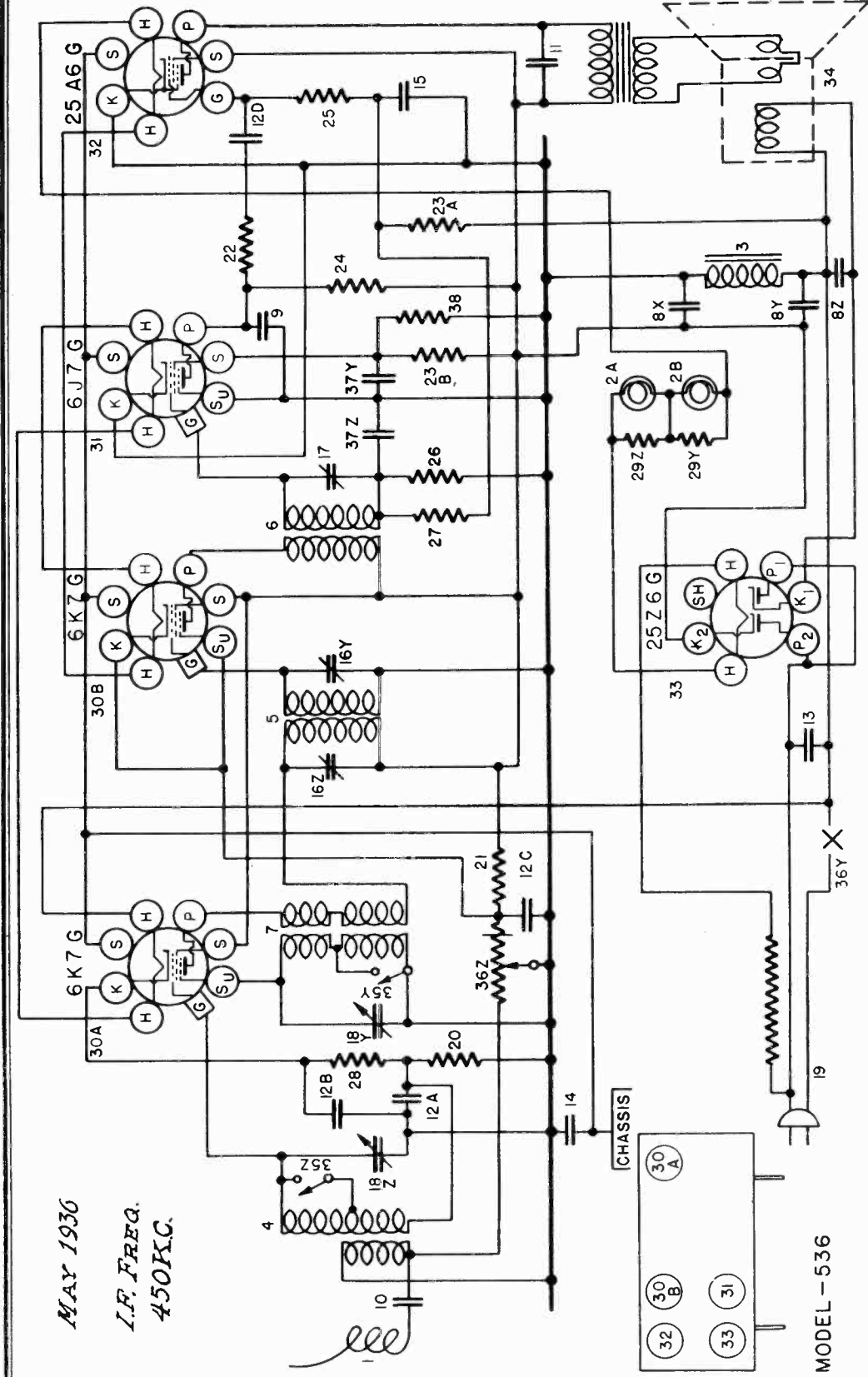
**PARTS LIST—MODEL 535**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G55-32000	Antenna Coil (only)		-37156	Pointer
	W-30802A	Coil Shield		-37157	Pointer Screw (1)
	W-30026	Retaining Ring	13	C-37396	Battery Cable
2	G73-32004	First I. F. Assembly	14	W-35111	Speaker Cable
3	G38-32004	Second I. F. Assembly	15	-27121	Resistor 5000 Ohm ¼ W.
4	G67-32002	Oscillator Coil (only)	16	-24814	Resistor 7000 Ohm ¼ W.
	W-25025B	Coil Shield	17	-37377	Resistor 20,000 Ohm 1 W.
	W-25200	Coil Socket	18	-34019	Resistor 75,000 Ohm ¼ W.
	W-26891	Insulating Washer	19A	-21455	Resistor 300,000 Ohm ¼ W.
	W-21541C	Retaining Ring	19B	-21455	Resistor 300,000 Ohm ¼ W.
5	G53-32001	R. F. Coil (only)	19C	-21455	Resistor 300,000 Ohm ¼ W.
	W-30802A	Coil Shield	20	-21454	Resistor 1.0 Megohm ¼ W.
	W-30026	Retaining Ring	21	-26577	Resistor 3.0 Megohm ¼ W.
6	G2-34002	Condenser 0.0001 Mfd. Mica	22	W-23013	Resistor 20,000 Ohm ½ W. Flex.
7A	G1-34002	Condenser 0.00025 Mfd. Mica	23A	G31-28807	Socket 34
7B	G1-34002	Condenser 0.00025 Mfd. Mica	23B	G31-28807	Socket 34
8A	W-28619	Condenser 0.006 Mfd. 160 Volt	24	G55-28807	Socket 1A6
8B	W-28619	Condenser, 0.006 Mfd. 160 Volt	25	G91-28807	Socket 1B5
9A	W-28621	Condenser 0.02 Mfd. 200 Volt	26	G36-28807	Socket 33
9B	W-28621	Condenser 0.02 Mfd. 200 Volt		W-26974	Tube Shield
10A	W-24049B	Condenser 0.1 Mfd. 200 Volt		W-26973	Shield Base
10B	W-24049B	Condenser 0.1 Mfd. 200 Volt	27	31-MS-3	Speaker
11A	W-29910A	Condenser 0.25 Mfd. 200 Volt	28	G1-26719	Terminal Board—Ant & Grnd.
11B	W-29910A	Condenser 0.25 Mfd. 200 Volt	29Z	-37409	Volume Control
11C	W-29910A	Condenser 0.25 Mfd. 200 Volt	29X	-34883	On-Off Switch
12Z	G43-33002	Three Section Tuning Con. Gang	30	-34883	Resistor 2. Megohm ¼ W.
12X			31	-26578	Resistor 5.0 Megohm ¼ W.
12Y	-37147	Dial Drive Unit		B-35917	Escutcheon
	MG16-35757	Drive Mounting Bracket		D-28	Escutcheon Screw (3)
	W-36150A	Dial Face		W-31585B	Knob (2)
	-37158	Dial Glass		G2-23300	Resistor 0.53 Ohm (For air cell only)

CROSLY RADIO CORP.

MODEL 536, 5536  
Schematic,  
Voltage



TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	K
6K7	Osc.- Modulator	6.5	100	100	16	19
6K7	I-F Amplifier	6.5	100	100	0	3
6I7	Detector	6.5	35	10	0	—
25A6	Output	25.2	92	100	—	—
25Z6	Rectifier	25.2	—	—	—	—

Readings taken on 117.5 Volt A-C Power Supply.  
Power Consumption Approximately 50 Watts at 117.5 Volts.  
Voltage Reading Approximately 10% Lower on 117.5 Volts, D. C.

**MODELS 536, 5536**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 25A6 Output tube. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6K7 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd. or larger, condenser to the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh, turn the band selector switch to the right (High Frequency Position) and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.  
 (d) Adjust the 2nd I-F trimmer condenser, Illus. No. 17—Fig. 3, located on the rear of the chassis for maximum output.

(e) Adjust the 1st I-F trimmer condensers, Illus. Nos. 16Z and 16Y, located on the rear of the chassis for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.

(b) Set the signal generator to 1400 kilocycles.  
 (c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer (18-Y Fig. 3) located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer (18-Z) located on the "ANT" section of the condenser gang for maximum output.

(f) Readjust the tuning condenser slightly for maximum output.

(g) Repeat operation (e) for more accurate adjustment.

**NOTE:** The locations of the speaker and electrolytic condenser (Illus. No. 8) are interchanged on Models 536 and 5536. The dial used on Model 5536 is larger than the dial used on Model 536 and replacement parts are clearly indicated in the Parts List.

**SPECIFICATIONS**

The Crosley Models 536 and 5536 are five-tube super-heterodyne receivers designed for operation on a 110 volt power supply, either AC or DC.

The tuning range of the receiver is from 540-1550 kilocycles (555-195 Meters) in the Broadcast Band and from 1500-3450 Kilocycles (200-87 Meters) in the High Frequency Band.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and one of the terminals of the 25Z6 tube. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with volume control full on and no signal input. The filament voltages should be measured with an accurate low range voltmeter. Voltage limits may vary plus or minus 10% of values given.

**PARTS LIST—MODEL 536-5536**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description
1	W - 29784B	Antenna—Flexible
2A	W - 4099B	Dial Light
2B	W - 4099B	Dial Light
	G6 - 27134	Dial Light Socket Assembly
3	C4 - 28859	Filter Choke
4	G106 - 3200A	Ant. Coil
5	G104 - 3200A	1st I-F Coil
6	G103 - 3200A	2nd I-F Coil
7	G94 - 32002	Osc. Coil
8Z		Condenser, .08 Mfd. 125 V.
8Y	W - 29801A	Condenser, .16 Mfd. 125 V.
8X		Condenser, .25 Mfd. 100 V.
9	G1 - 34002	Condenser, .00025 Mfd. (Molded)
10	W - 28620	Condenser, .003 Mfd. 200 V.
11	W - 25191A	Condenser, .01 Mfd. 400 V.
12A	W - 36541	Condenser, .02 Mfd. 160 V.
12B	W - 36541	Condenser, .02 Mfd. 160 V.
12C	W - 36541	Condenser, .02 Mfd. 160 V.
12D	W - 36541	Condenser, .02 Mfd. 160 V.
13	W - 32780B	Condenser, .05 Mfd. 300 V.
14	W - 24049C	Condenser, 1 Mfd. 160 V.
16	W - 37075	Condenser, 2 Section Trimmer
17	W - 40998	Condenser, 1 Section Trimmer
18	C22 - 33001	2 Section Var. Tuning Condenser
	C - 40926	Dial Glass—536 only
	W - 40632B	Pointer Disc—536 only
	W - 41014A	Dial Glass Bracket R-H—536 only
	W - 41013A	Dial Glass Bracket L-H—536 only
	W - 41227	Drive Chain—536 only
	W - 40633B	Bearing Support—536 only
	W - 41122A	Driven Sprocket—536 only
	W - 41133A	Driver Sprocket
	W - 40486	Pointer Disc Mtg. Screw
	C - 40927	Dial Glass—5536 only
	B - 40818B	Pointer Disc—5536 only
	W - 41158	Support Bracket L-H—5536 only
	W - 41143	Support Bracket R-H—5536 only
	W - 40797	Dial Glass Bracket—5536 only
	W - 41162	Drive Chain—5536 only
	W - 41160	Bearing Bracket—5536 only
	W - 41159A	Shaft—5536 only
	W - 40909	Spring Washer—5536 only
	W - 31840A	Snap Ring—5536 only
14	B - 40999	Power Cord & Plug
19	W - 36316	Resistor, 2700 Ohm 1/4 W.
20	W - 4921C	Resistor, 10,000 Ohm 1 W.
21	W - 35928	Resistor, 60,000 Ohm 1/4 W.
22	W - 35600	Resistor, 100,000 Ohm 1/4 W.
23A	W - 35601	Resistor, 300,000 Ohm 1/4 W.
24	W - 36322	Resistor, 500,000 Ohm 1/4 W.
25	W - 35927	Resistor, 2 Megohm 1/4 W.
26	W - 33490	Resistor, 10 Megohm 1/4 W.
27	W - 28589	Resistor, 350 Ohm 1/2 W. Flex.
28	W - 41000	Candohm—2 Sections
30A	G151 - 36400	Socket Type 6K7
30B	G151 - 36400	Socket Type 6K7
31	G157 - 36400	Socket Type 6J7
32	G161 - 36400	Socket Type 25A6
33	G162 - 36400	Socket Type 25Z6
	W - 10911	Tube Shield
	W - 27981A	Tube Shield Base
	B - 41012	Speaker 237BL9
	W - 40593	Speaker Mtg. Bracket
	W - 6115	Mtg. Bracket Screw
35	W - 41004	Band Selector Switch
36Z	W - 41002	Volume Control 4800 Ohm Tap 160 Ohm Line Switch
	B - 40590	Escutcheon
	D - 28	Escutcheon Mtg. Screws (4)
	W - 41019	Knob
	W - 40839	Escutcheon
	W - 40840	Escutcheon Plate
	W - 29760A	Escutcheon Pin—5536 only
	W - 41019	Knob (2)
	W - 41021	Knob (1)

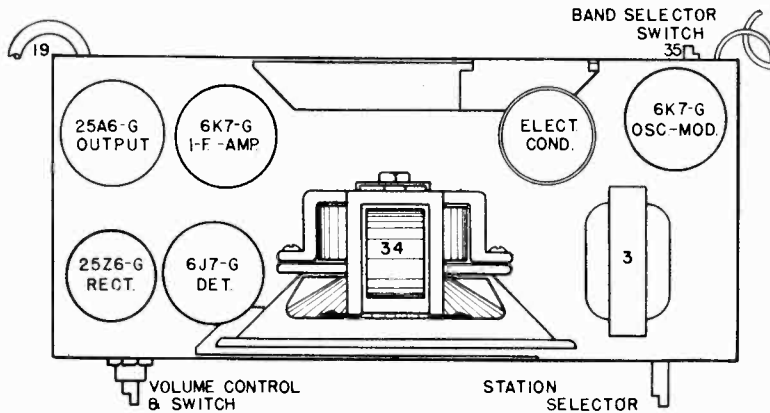


Fig. 2 Top View

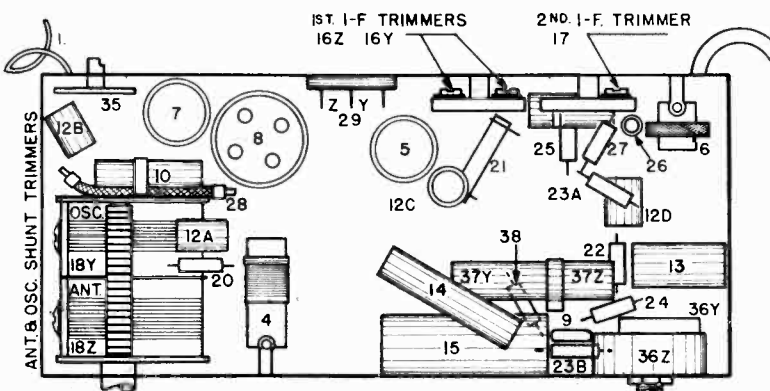


Fig. 3 Bottom View

CROSLY RADIO CORP.

**MODEL 545**  
**Schematic**  
**Voltage**

**SPECIFICATIONS**

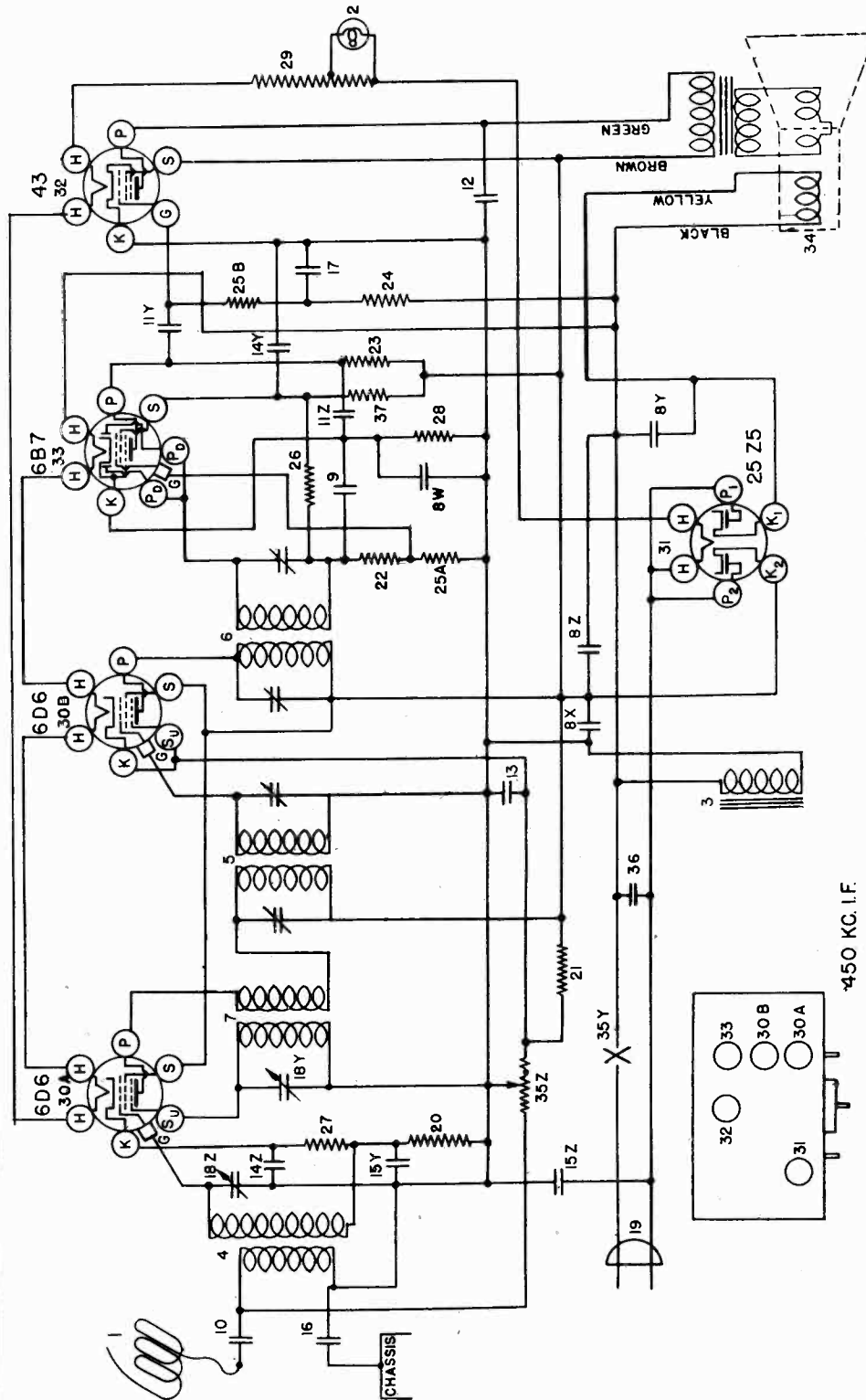
The Crosley Model 545 radio is a five-tube single band superheterodyne receiver designed for operation on a 110 volt power supply, either AC or DC.

The frequency range covered is from 530 Kc. to 1710 Kc.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes

used, together with the voltage readings between the tube socket contacts and one of the terminals of the 25Z5 tube. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with volume control full on and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter. Voltage limits may vary plus or minus 10% of values given.



**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	H	P	S	Su	G	K
6D6	Osc.-Mod.	6.5	105	105	0	-17	20
6D6	I-F Amplifier	6.5	105	105	3.5	0	3.5
6B7	Diode Detector & A-F Amplifier	6.5	25	20	—	0	1.5
43	Output	25.2	100	105	—	0	0
25Z5	Rectifier	25.2	117.5 A.C.	—	—	-20	—

Power Consumption Approximately 55 Watts at 120 Volts.  
Voltage Reading Approximately 10% Lower on 120 V., D.C.

**WIRING DIAGRAM—MODEL 545**

**MODEL 545**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 43 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 condenser to the top cap of the 6D6 Oscillator-Modulator tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator through a .05 mfd., or larger, condenser to the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the plates of the condenser gang are completely out of mesh and turn the volume control to the right (ON).

(c) Set the signal generator to 450 kilocycles.

(d) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.

(e) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(f) Check operations (d) and (e) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the antenna condenser at the point where the antenna wire is connected.

(b) Set the signal generator to 1400 kilocycles.

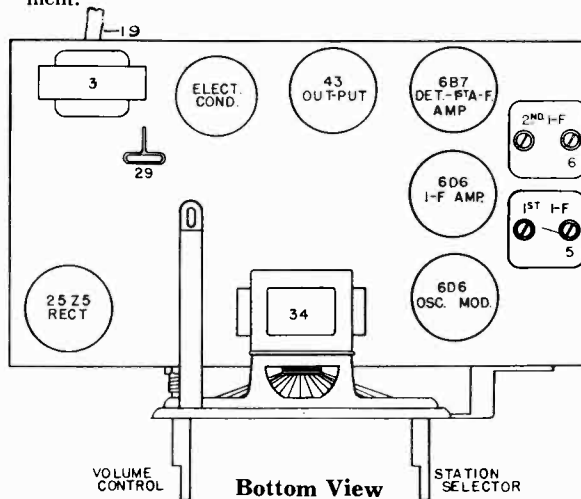
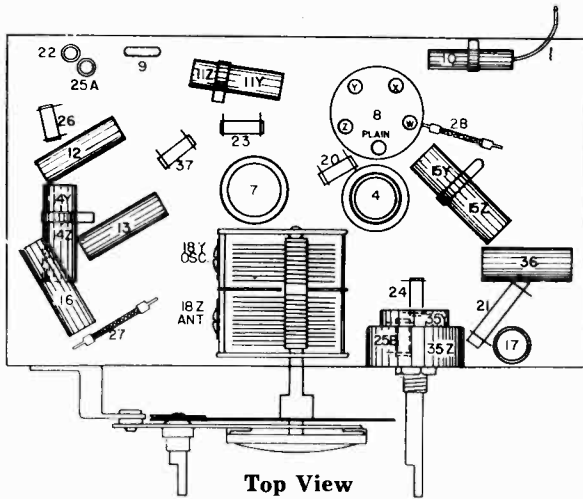
(c) Adjust the station selector to 140 on the dial.

(d) Adjust the trimmer (18-Y Fig 3) located on the "OSC" section of the condenser gang for maximum output.

(e) Adjust the trimmer (18-Z) located on the "ANT" section of the condenser gang for maximum output.

(f) Readjust the tuning condenser slightly for maximum output.

(g) Repeat operation (e) for more accurate adjustment.



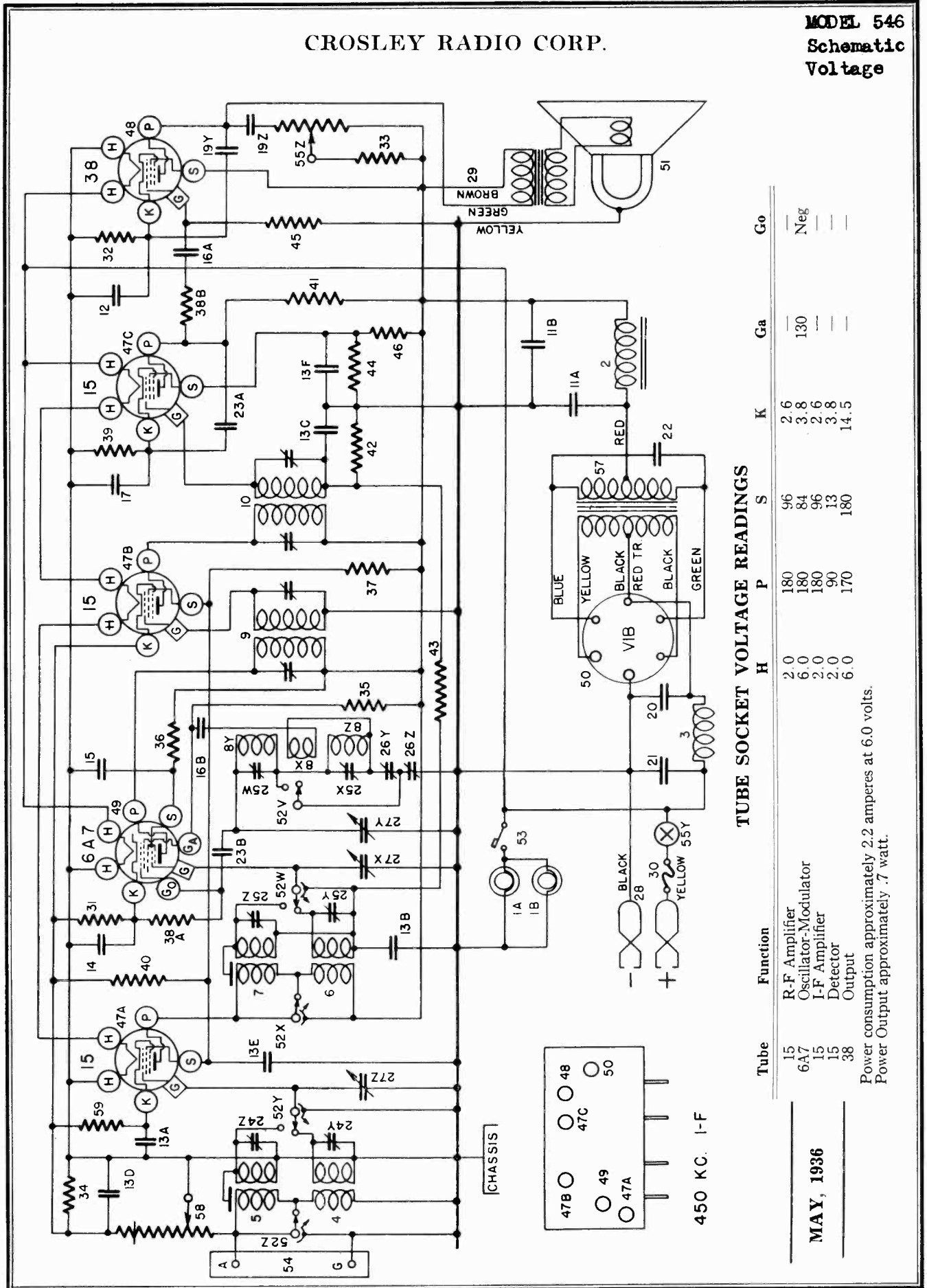
Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description
1	W —29784B	Ant. (Flex Wire)
2	G4 —27134	Dial Light Socket Assm.
3	G3 —28859	Filter Choke
4	G51—32000	Ant. Coil
5	W —36457	Ant. Coil Mounting Brkt.
6	G51—32004	1st I. F. Assm.
7	G49—32004	2nd I. F. Assm.
8Z	W —25200	Coil Socket
W —26891	Coil Insulator	
8Y	W —21541C	Retaining Ring
8X	W —31992	Condenser, 8. Mfd. 125 V.
9	G2 —34002	Condenser, 10. Mfd. 125 V.
11Z	W —30322A	Condenser, 0.003 Mfd. 200 V.
13	W —28621	Condenser, 0.006 Mfd. 200 V.
14Y	W —28623	Condenser, 0.02 Mfd. 200 V.
15Y	W —29271	Condenser, 0.02 Mfd. 200 V.
17	W —29910A	Condenser, 0.1 Mfd. 200 V.
18Y	G14—33001	2 Section Tuning Cond. Gang
	—35757	Dial Drive Support Brkt. Assm.

Item No.	Part No.	Description
19	W —36150A	Dial Face
20	—37156	Pointer
22	B —33906A	Power Supply Cord & Plug
24	—23616	Resistor, 15,000 Ohm 1 W.
25B	—35929	Resistor, 150,000 Ohm ¼ W.
27	—23785	Resistor, 500,000 Ohm ¼ W.
29	—33490	Resistor, 10. Megohm ¼ W.
30B	W —27503	Resistor, 1,400 Ohm ½ W. Flex.
32	G75—28807	Socket, 6D6
34	G51—28807	Socket, 25Z5
35Y	G48—28807	Socket, 6B7
37	W —35773	Tube Shield Cap (3)
39	214—BL—9	Speaker
41	W —32780A	On-Off Switch
43	B —35917	Resistor, 2 Megohm ¼ W.
45	W —31585B	Escutcheon Screws (3)

CROSLY RADIO CORP.

**MODEL 546**  
**Schematic**  
**Voltage**



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	K	Ga	Go
15	R-F Amplifier	2.0	180	96	2.6	---	---
6A7	Oscillator-Modulator	6.0	180	84	3.8	130	Neg
15	I-F Amplifier	2.0	180	96	2.6	---	---
15	Detector	2.0	90	13	3.8	---	---
38	Output	6.0	170	180	14.5	---	---

Power consumption approximately 2.2 amperes at 6.0 volts.  
 Power Output approximately .7 watt.

**MAY, 1936**

**MODEL 546**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 3B Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier To 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency Band).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

**2. Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A-1") terminal of the receiver through a .00025 mfd. condenser.

Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal generator for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. NOTE: When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune in the signal at both the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To adjust the "series" trimmers set the signal generator to the frequency indicated and then tune-in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the chassis. Voltage readings should be taken with a 1000 ohm per volt, 250 volt power supply unit which employs a self-rectifying type vibrator.

The tuning range of the receiver is from 540 to 7000 kilocycles and is divided into two bands as follows:  
 (American Broadcast Band)  
 (High Frequency Band)

voltmeter (except filaments) with the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

**PARTS LIST—MODEL 546**

Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description
1A	W -37922	Dial Bulb
2	G3 -37965	Dial Light Socket Assembly
3	G27 -24628	Filter Choke
4	G16 -28067	R-F Filter Choke
5	G114 -32000	Ant Coil -B-C-B
6	G115 -32000	Ant Coil -H-F-B
7	G81 -32001	R-F Coil -B-C-B
8	G82 -32001	R-F Coil -H-F-B
9	G104 -32002	Double Osc Coil
10	G109 -32004	1st I-F Assembly
11	G110 -32004	2nd I-F Assembly
11A	W -36567	Condenser .40 Mfd. 300 V. Electrolytic
11B	W -36567	Condenser .40 Mfd. 300 V. Electrolytic
12	W -41195	Condenser 12 Mfd. 25 V. Electrolytic
13A	W -35936	Condenser .05 Mfd. 200 V.
13E	W -35936	Condenser .05 Mfd. 200 V.
14	W -32380	Condenser .05 Mfd. 200 V.
15	W -30488	Condenser .02 Mfd. 400 V.
16A	W -34647	Condenser .006 Mfd. 400 V.
16B	W -34647	Condenser .006 Mfd. 400 V.
17	W -34712	Condenser .25 Mfd. 160 V.
18	W -24049B	Condenser .1 Mfd. 200 V.
19Z	W -25537A	Condenser .03 Mfd. 400 V.
20	W -37174	Condenser .001 Mfd. 400 V.
21	W -37190	Condenser .02 Mfd. 160 V.
22	W -37214	Condenser .001 Mfd. 1000 V.
23A	G2 -34002	Condenser .0001 Mfd. (Molded)
23B	G2 -34002	Condenser .0001 Mfd. (Molded)
24	W -37986	2 Section Shunt Trimmer Condenser
25	W -41247	4 Section Shunt Trimmer Condenser
26	W -41288	2 Section Osc. Series Trimmer
27	G23 -33001	3 Section Var. Tuning Condenser
C	-41321	Dial (Glass)
W	-40804	Dial Glass Cushion
B	-40818B	Pointer Disc
W	-40486	Pointer Disc Screw
W	-41314	Shaft Assembly (Sprocket etc.)
B	-41316	Support Bracket (Bearing)
B	-41315	Sprocket Assembly (Driver)
W	-40809	Spring Washer (Shaft)
W	-31840A	Snapp Spring (Shaft)
W	-41317	Lower glass Support Bracket
W	-41318	Upper glass Support Bracket R-H
W	-41319	Upper glass Support Bracket L-H
W	-41320	Drive Chain
W	-41743	Chain Take up Spring
28	MG25 -37103	Battery Cable Assembly
29	G9 -35696	Speaker Cable
30	W -37024	Fuse (4 Amp.)
G2	-33339	Fuse Panel Assembly
W	-33310A	Fuse Cover
W	-34223	Fus Cover Insulator
W	-4072	Thumb Screw (Cover)
31	W -21964	Resistor 165 Ohm 1/2 W. Flexible
32	W -21452	Resistor 1100 Ohm 1/2 W. Flexible
33	W -27503	Resistor 1400 Ohm 1/2 W. Flexible
34	W -23013	Resistor 2000 Ohm 1 1/2 W. Flexible
35	W -37485	Resistor 15,000 Ohm 1/2 W. Car.
36	W -33390	Resistor 30,000 Ohm 1/2 W. Car.
37	W -37472	Resistor 50,000 Ohm 1/2 W. Car.
38A	W -21237A	Resistor 60,000 Ohm 1/2 W. Car.
38B	W -21237A	Resistor 60,000 Ohm 1/2 W. Car.
39	W -36761	Resistor 40,000 Ohm 1/2 W. Ins.
40	W -23403	Resistor 150,000 Ohm 1/2 W. Car.
41	W -35630	Resistor 200,000 Ohm 1/2 W. Ins.
42	W -23785	Resistor 500,000 Ohm 1/2 W. Car.
43	W -21454	Resistor 1 Megohm 1/2 W. Car.
44	W -35602	Resistor 1 Megohm 1/2 W. Ins.
45	W -37245	Resistor 1.5 Megohm 1/2 W. Car.
46	W -36638	Resistor 3 Megohm 1/2 W. Ins.
47A	G88 -28807	Socket Type 15
47B	G88 -28807	Socket Type 15
47C	G88 -28807	Socket Type 15
48	G15 -28907	Socket Type 38
49	G47 -28807	Socket Type 6A7
50	G92 -28807	Socket Type V1B
W	-27981A	Tube Shield Base
W	-40911	Tube Shield
51	-3PJ-3	Speaker Spec. R-6000 D-1 (Table)
W	-41434	Cone Assy. for Above Speaker
W	-41454	Output Transformer for Above Speaker
W	-41458	Mtg. Ring (Cardboard) for Above Cone
W	-3PJ-3	Speaker Spec. R-8000 B-3 (Console)
W	-41452	Cone Assy. for Above Speaker
W	-41459	Mtg. Ring (Cardboard) for Above Cone
W	-41456	Output Transformer for Above Speaker
52	B -41233A	Band Selector Switch
53	W -41068A	Dial Light Switch
54	G10 -26719	Ant. & Grd. Terminal Assembly
54	W -32908	Tone Control On-off Switch
55	W -37216	Vibrator
56	G11 -32769	Power Transformer
57	W -41252	Volume Control (10,000 Ohm)
58	W -35467	Resistor 220 Ohm 1/2 W. Flexible
W	-34903	Battery Clip (+) (Pos.)
W	-34904	Battery Clip (-) (Neg.)
B	-40839	Escutcheon
W	-28760B	Escutcheon Pin
W	-41221	Upper Knob (1) Dial Light
W	-41222	Lower Knob (1) Station Select.
W	-41366A	Knob (1) Band Select.
W	-41224	Knob (2) V. C. & T. C.

**SIGNAL INPUT FREQUENCIES**

American Broadcast Band (BLUE)  
 High Frequency Band (RED)

Shunt Alignment 1400 Kc.  
 8000 Kc.

Series Alignment 600 Kc.  
 2500 Kc.

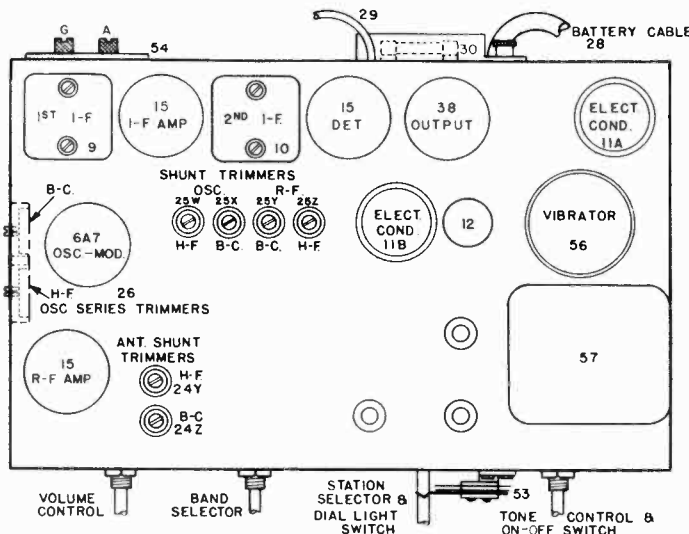


Fig. 2. Top View

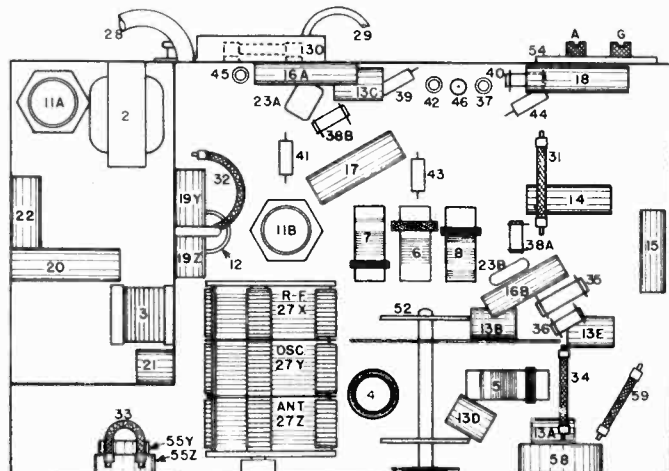


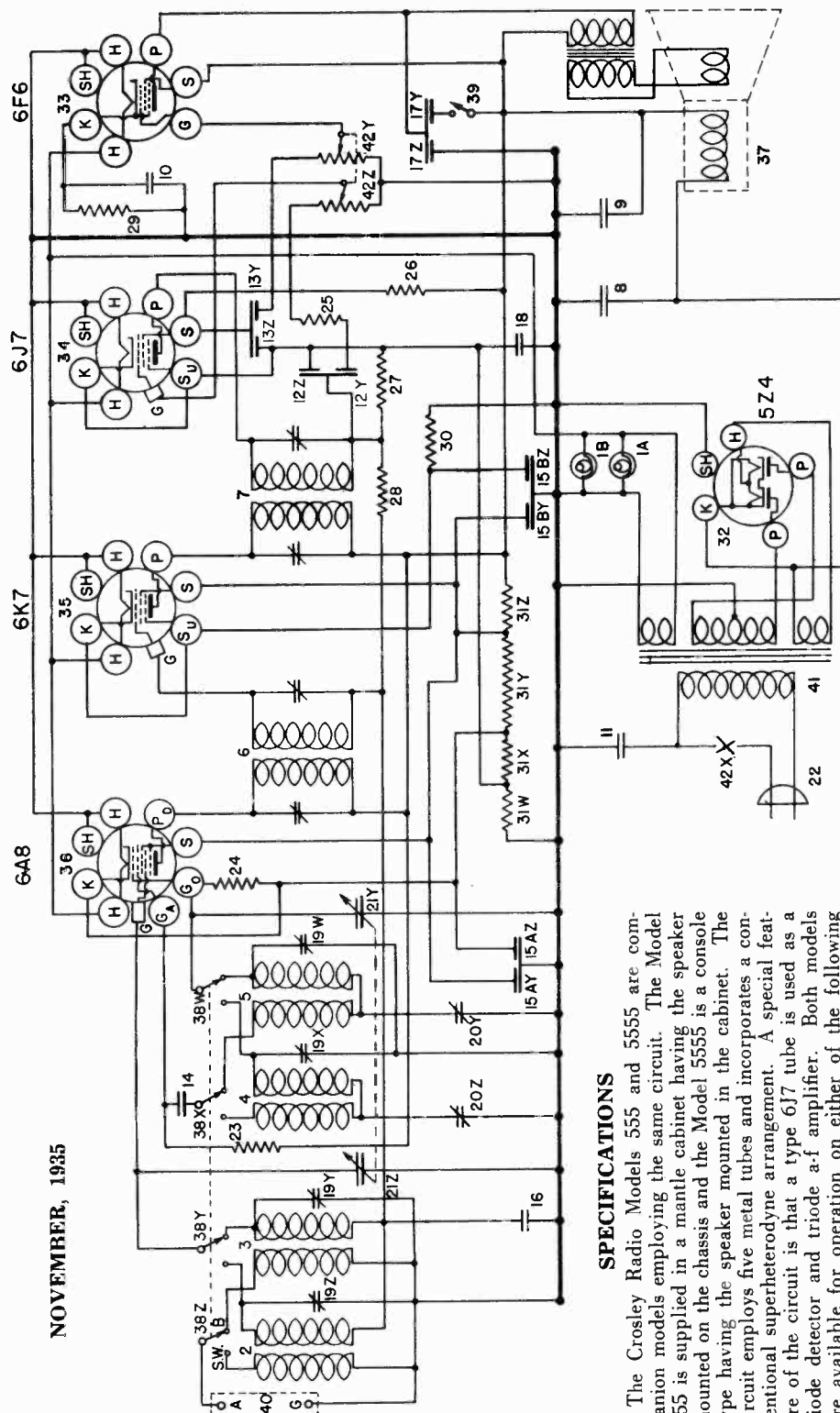
Fig. 3. Bottom View

CROSLLEY RADIO CORP.

MODEL S 555, 5555

Schematic

Voltage, Socket



WIRING DIAGRAMS—MODELS 555 AND 5555

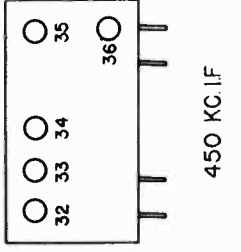
SPECIFICATIONS

The Crosley Radio Models 555 and 5555 are companion models employing the same circuit. The Model 555 is supplied in a mantle cabinet having the speaker mounted on the chassis and the Model 5555 is a console type having the speaker mounted in the cabinet. The circuit employs five metal tubes and incorporates a conventional superheterodyne arrangement. A special feature of the circuit is that a type 6J7 tube is used as a diode detector and triode a-f amplifier. Both models are available for operation on either of the following sources of power; 110 V.-60 cycles, 110 V.-25 cycles or 220 V.-25 cycles. The frequency ranges covered are from 540 to 1710 kilocycles in the broadcast band and from 2350 to approximately 7500 kilocycles in the high frequency band.

TUBE SOCKET VOLTAGE READINGS

Type	Where Used	H	P	S	Su	G	K	Ga	Go
6A8	Osc.-Mod.	6.7	295	135	—	0	7.5	155	-10 to -20
6K7	I-F Amplifier	6.7	295	135	10	0	10	—	—
6J7	Det. & A-F Amp.	6.7	1.0	65	4	0	4	—	—
6F6	Output	6.7	295	—	—	0	20	—	—
5Z4	Rectifier	5.0	—	—	—	—	390	—	—

Power Output Approximately 3 Watts. Power Consumption Approximately 85 Watts at 117.5 Volts.



NOVEMBER, 1935



**MODEL S 555, 5555**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

**PARTS LIST—MODEL 555**

Figures in first column refer to parts in Diagrams.

Item No.	Description	Part No.	Description	Item No.	Part No.	Description
1A	Dial Light Assm.	G6	Dial Light Assm.	22	37354	Dial Face only
1B	Ant. Coil, S. W. B.	G82	Ant. Coil, S. W. B.	23	33906A	A. C. Cord & Plug
2	Osc. Coil, S. W. B.	G81	Osc. Coil, S. W. B.	24	5370A	Resistor, 20,000 Ohm
3	Osc. Coil, S. W. B.	G85	Osc. Coil, S. W. B.	25	21237	Resistor, 60,000 Ohm
4	1st I. F. Assm.	G66	1st I. F. Assm.	26	21875	Resistor, 100,000 Ohm
5	2nd I. F. Assm.	G71	2nd I. F. Assm.	27	21485	Resistor, 300,000 Ohm
6	Condenser, .001 Mfd. 400 V.	G72	Condenser, .001 Mfd. 400 V.	28	37245	Resistor, 400,000 Ohm
7	Condenser, .002 Mfd. 200 V.	W	Condenser, .002 Mfd. 200 V.	29	25231	Resistor, 500 Ohm 1/2 W. (Flex)
8	Condenser, .005 Mfd. 200 V.	W	Condenser, .005 Mfd. 200 V.	30	28106	Resistor, 500 Ohm 1/2 W. (Flex)
9	Condenser, .008 Mfd. 400 V.	W	Condenser, .008 Mfd. 400 V.	31Z	—	Resistor, 10,000 Ohm Candohm
10	Condenser, .01 Mfd. 400 V.	W	Condenser, .01 Mfd. 400 V.	31Y	—	Resistor, 25,000 Ohm Candohm
11Z	Condenser, .00017 Mfd. 200 V.	W	Condenser, .00017 Mfd. 200 V.	31X	—	Resistor, 185 Ohm Candohm
12Z	Condenser, .003 Mfd. 400 V.	W	Condenser, .003 Mfd. 400 V.	31W	—	Resistor, 185 Ohm Candohm
13Z	Condenser, .003 Mfd. 400 V.	W	Condenser, .003 Mfd. 400 V.	G154	36400	Socket, 5Z4
14	Condenser, .02 Mfd. 200 V.	W	Condenser, .02 Mfd. 200 V.	G153	36400	Socket, 8T7
15AZ	Condenser, .02 Mfd. 200 V.	W	Condenser, .02 Mfd. 200 V.	G157	36400	Socket, 8T7
15BZ	Condenser, .02 Mfd. 200 V.	W	Condenser, .02 Mfd. 200 V.	G155	36400	Socket, 8K7
15CZ	Condenser, .02 Mfd. 200 V.	W	Condenser, .02 Mfd. 200 V.	G156	36400	Socket, 8A8
16Z	Condenser, .02 Mfd. 200 V.	W	Condenser, .02 Mfd. 200 V.	331	CL-9	Speaker, (555)
17Z	Condenser, .005 Mfd. 200 V.	W	Condenser, .005 Mfd. 200 V.	432	CL-3M	Speaker, (5555)
18Z	Condenser, .008 Mfd. 400 V.	W	Condenser, .008 Mfd. 400 V.	G3	35698	Speaker Cable (5555)
19Z	Condenser, .02 Mfd. 100 V.	W	Condenser, .02 Mfd. 100 V.	37247	—	Band Change Switch
20Z	4 Section Trimmer Cond.	W	4 Section Trimmer Cond.	36184A	—	Tone Control Switch
21Y	S. W. Osc. Series Padder	G29	S. W. Osc. Series Padder	G1	26719	Ant. & Grid Terminal
21Z	Var. Tuning Cond. Gang	G17	Var. Tuning Cond. Gang	G12	28500	Power Trans. 60 Cy. 110 V.
22Y	Dial Assm. Complete	G11	Dial Assm. Complete	G13	28500	Power Trans. 25 Cy. 110 V.
23Y	Dial Pointer	—	Dial Pointer	G14	28500	Power Trans. 25 Cy. 220 V.
24Y	Pointer Screw	—	Pointer Screw	37395	—	Volume Control A. F. Grid
				35917	—	Volume Control Output Grid
				28	—	On-Off Switch
				D	—	Escutcheon
				W	—	Escutcheon Screws (3)
				W	—	Knob, V. C. & Dial
				W	—	Knob, T. C. & Band Change

**2. Aligning R-F Amplifier.**  
 (a) When aligning the R-F Amplifier, the output lead from the signal generator should be connected through a dummy antenna to the "ANT" terminal of the receiver. For the broadcast band the dummy antenna should be a .00025 mfd. condenser and for the high frequency band this condenser should be replaced by a 400 ohm carbon resistor ("Non Inductive").  
 Each band should be shunt aligned, series aligned and then shunt aligned again in the order given. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated below for each adjustment.  
 Adjust the "OSC" and "ANT" parallel trimmers (shunt alignment. See Fig. 3) in the order given for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustment of the "ANT" trimmer. NOTE: When aligning the high frequency band care should be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately 10 times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct dial setting.  
 To adjust the "series" trimmers (Fig. 2A or 2B) set the signal generator to the frequency indicated below and then tune-in this signal with the station selector for maximum output. Adjust the series trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

**(b) Signal Generator Frequencies.**  

Shunt Alignment	Series Alignment
1400 Kc.	600 Kc.
6000 Kc.	1500 Kc.

**ALIGNMENT PROCEDURE**  
 All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.  
**CONNECTING OUTPUT METER**  
 Connect one terminal of the output to the plate and the other terminal to the screen of the 6F6 Output Tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.  
**Tuning I-F Amplifier to 450 Kilocycles.**  
 (a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.  
 (b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).  
 (c) Turn the band selector switch to the right (High Frequency).  
 (d) Set the signal generator to 450 kilocycles.  
 (e) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output. (Fig. 2A or 2B).  
 (f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.  
 (g) Check operations (e) and (f) for more accurate adjustments.  
**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

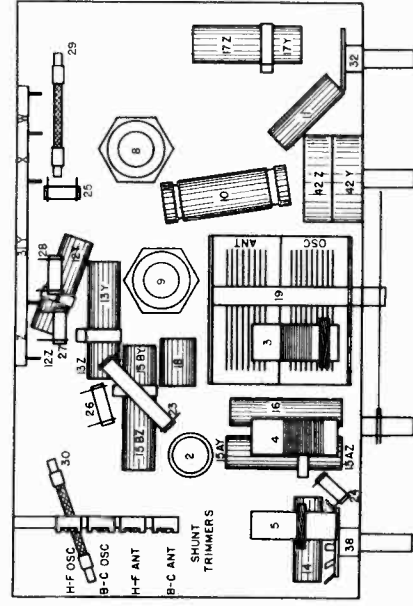


Fig. 3. Bottom View 555 & 5555

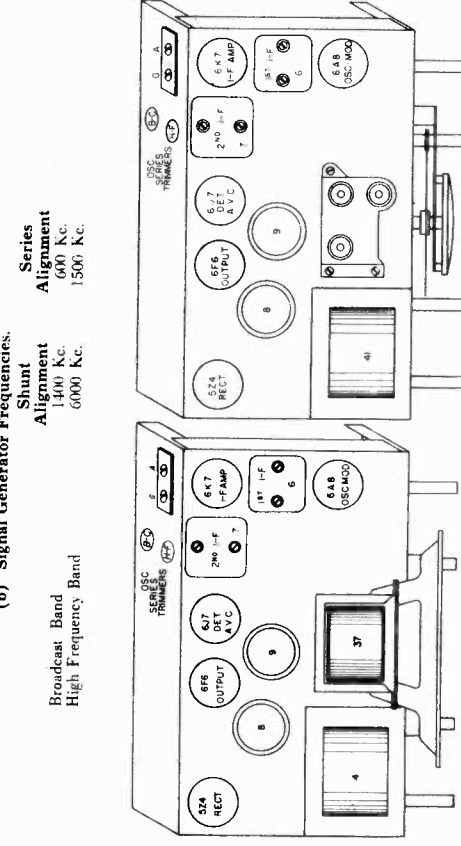


Fig. 2-B. Top View 5555

Fig. 2-A. Top View 555

CROSLY RADIO CORP.

MODEL 556  
Schematic  
Voltage

TUBE SOCKET VOLTAGE READINGS

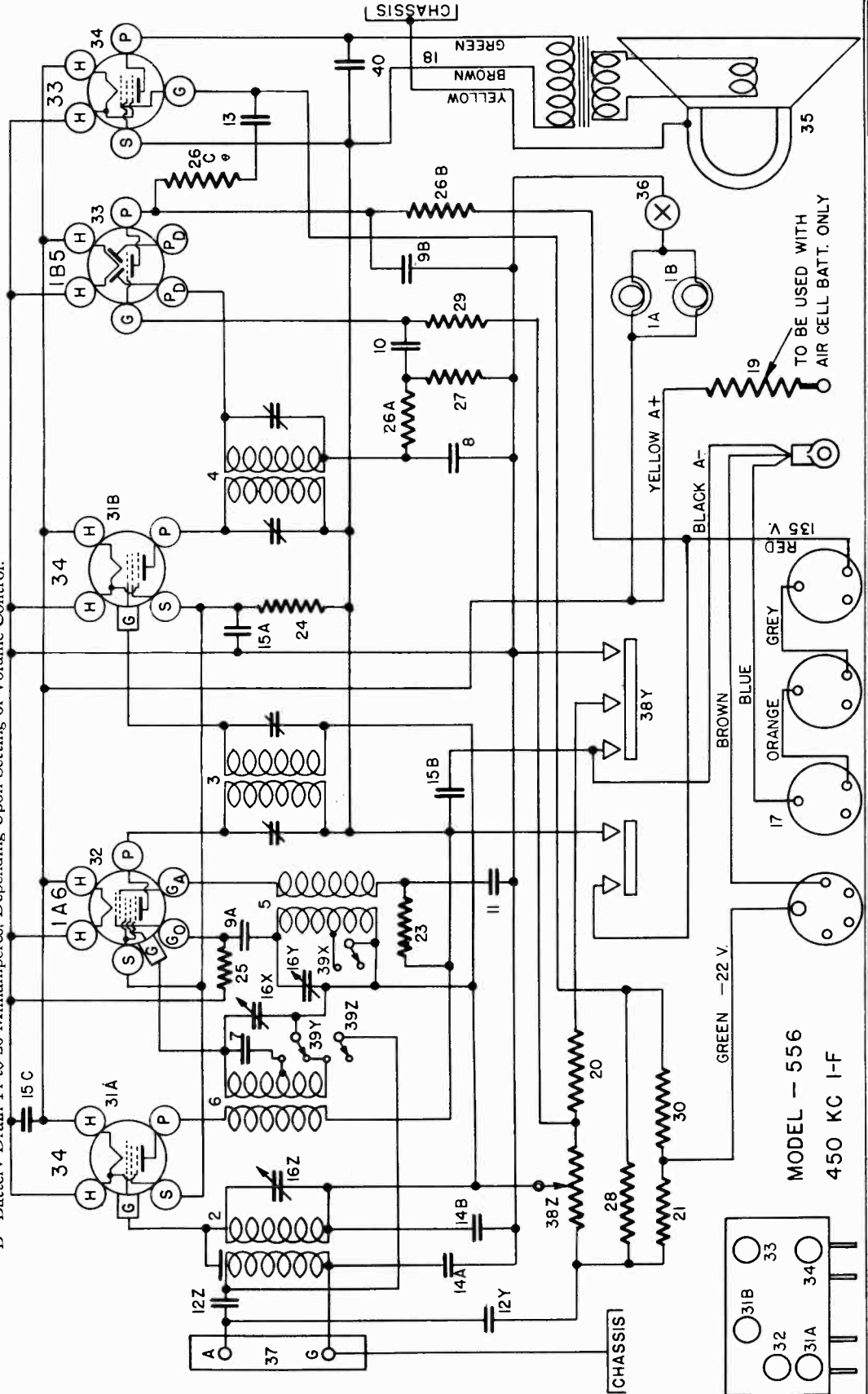
Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	65	-2.5	—	—
1A6	Osc.-Modulator	2.0	135	65	-2.5	85	-5 to -20
34	I-F Amplifier	2.0	135	65	-2.5	—	—
1B5	Diode Detector and A-F Amplifier	2.0	60	135	—	—	—
33	Output	2.0	135	135	-1.0	—	—

MAY, 1936

Power Output Approximately 1.0 Watt.

"A" Battery Drain Approximately .5 Ampere at 2 Volts.

"B" Battery Drain 14 to 20 Milliamperes, Depending Upon Setting of Volume Control.



MODEL - 556  
450 KC I-F

**MODEL 556**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 33 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02, or larger, mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Turn the band selector switch to the right (Broadcast Band).

(d) Adjust the station selector to 140 on the dial.

(e) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output. Fig. 3.

(f) Adjust the trimmer located on the "R-F" section of the condenser gang for maximum output.

(g) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(h) Tune the station selector to the generator signal for maximum output.

(i) Repeat operations (f) and (g) for more accurate adjustments.

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and the negative side of the "A" battery circuit. Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with receiver in operating condition and the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D-C voltmeter (Approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

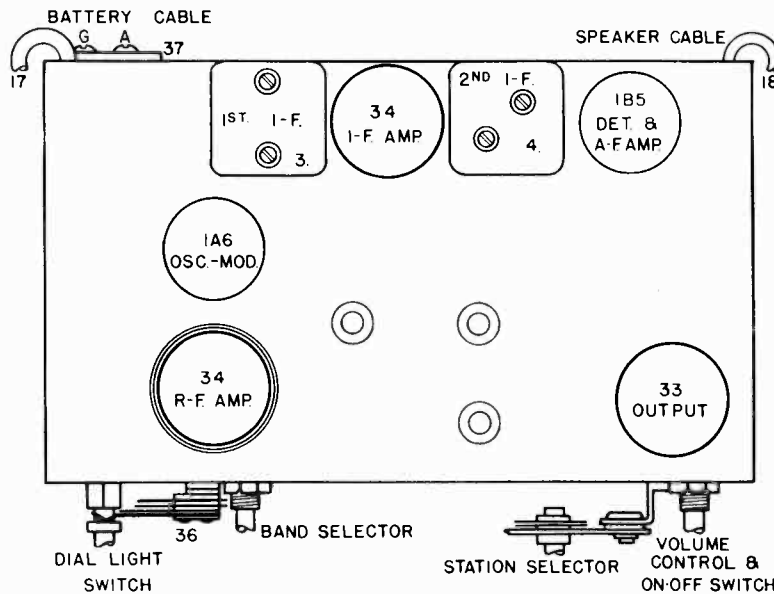


Fig. 2. Top View 556

**SPECIFICATIONS**

The method of connecting the battery cable to the batteries is shown on the Wiring Diagram. The batteries required are: one two-volt storage battery or air cell battery, three plug-in type 45 volt "B" batteries and one plug-in type 22½ volt "C" battery.

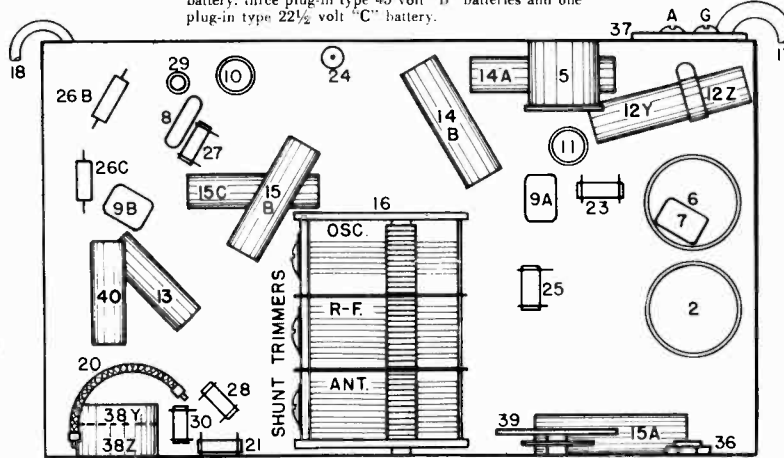


Fig. 3. Bottom View

**PARTS LIST—MODEL 556**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description	Item No.	Part No.	Description
1A	W-37188	Dial Light	W	-40909	Spring Washer	32	G55-28807	Socket Type—1A6
1B	W-37188	Dial Light	W	-40795A	Hand Shaft	33	G41-28807	Socket Type—1B5
	G6-27134	Dial Light Bracket Assembly	W	-40904	Dial Glass Cushion	34	G36-28807	Socket Type—33
2	G76-32000	Ant. Coil	W	-40797	Dial Glass Bracket (2)	W	-26973B	Tube Shield Base
3	G73-32001	1st I-F Assembly	W	-40798	Support Bracket L-H	W	-26974B	Tube Shield
4	G38-32001	2nd I-F Assembly	W	-40799	Support Bracket R-H	35	-41056	Speaker (Table) 31 P. J. 3
5	G47-32002	Osc. Coil	W	-41578	Gear Spring	W	-41390	Speaker (Console) 41 P. J. 3
6	G53-32001	R-F Coil	W	-40793A	Drive Unit	36	W-11058	Dial Light Switch
7	G9-34002	Condenser .00002 Mfd. (Molded)	MGI6-40765	Drive Mtg. Bracket	37	G1-26719	Ant. & Grd. Terminal Assembly	
8	G2-34002	Condenser .0001 Mfd. (Molded)	C	-37396	Battery Cable	38Z	W-41059	Volume Control (10,000 Ohm)
9A	C1-34002	Condenser .00025 Mfd. (Molded)	G6-35696	Speaker Cable	38Y	W-37108A	Battery Switch	
9B	G1-34002	Condenser .00025 Mfd. (Molded)	W	-23000	Resistor .53 Ohm (Air Cell)	39	W-35758	Band Selector Switch
10	W-28619	Condenser .006 Mfd. 200 V.	G2-23300	Resistor 3000 Ohm ¼W.	40	B-40839A	Condenser .008 Mfd. 400 V.	
11	W-28621	Condenser .02 Mfd. 200 V.	W	-23013	Resistor 2000 Ohm ¼W. Flex.	W	-11058	Escutcheon Ring
12Z	W-28623	Condenser .02 Mfd. 200 V.	21	NONE	Resistor 3000 Ohm ¼W.	W	-28760B	Escutcheon Pin
12Y	W-28623	Condenser .02 Mfd. 200 V.	22	-22196	Resistor 20,000 Ohm ¼W.	W	-31585C	Knob (Large)
13	W-32378	Condenser .01 Mfd. 400 V.	23	-37377	Resistor 20,000 Ohm 1W.	W	-36355A	Knob (Small)
14A	W-24019B	Condenser .1 Mfd. 200 V.	24	-34019	Resistor 75,000 Ohm ¼W.	W	-25025B	Osc. Coil Shield
14B	W-24019B	Condenser .1 Mfd. 200 V.	25	-35601	Resistor 300,000 Ohm ¼W.	W	-21541	Retaining Ring
15A	W-29910A	Condenser .25 Mfd. 200 V.	26A	-35601	Resistor 300,000 Ohm ¼W.	W	-25200	Coil Socket
15B	W-29910A	Condenser .25 Mfd. 200 V.	26B	-35601	Resistor 300,000 Ohm ¼W.	W	-26891	Insulating Washer
15C	W-29910A	Condenser .25 Mfd. 200 V.	26C	-21454	Resistor 1 Megohm ¼W.	W	-30802A	R-F & Ant. Coil Shield
16	G13-33002	3 Section Var. Tuning Condenser	27	-34883	Resistor 2 Megohm ¼W.	W	-30026A	Retaining Ring
	C-41059	Dial Glass	28	-26577	Resistor 3 Megohm ¼W.	W	-37164	Insulating Washer
	H-40818B	Printer Disc	29	-26578	Resistor 5 Megohm ¼W.			
	W-40791	Bearing Bracket	30	G31-28807	Socket Type—34			
	W-31840A	Snap Ring	31A	G31-28807	Socket Type—34			
			31B	G31-28807	Socket Type—34			

CROSLY RADIO CORP.

**MODEL 605**  
**Schematic**  
**Voltage**

NOVEMBER, 1935

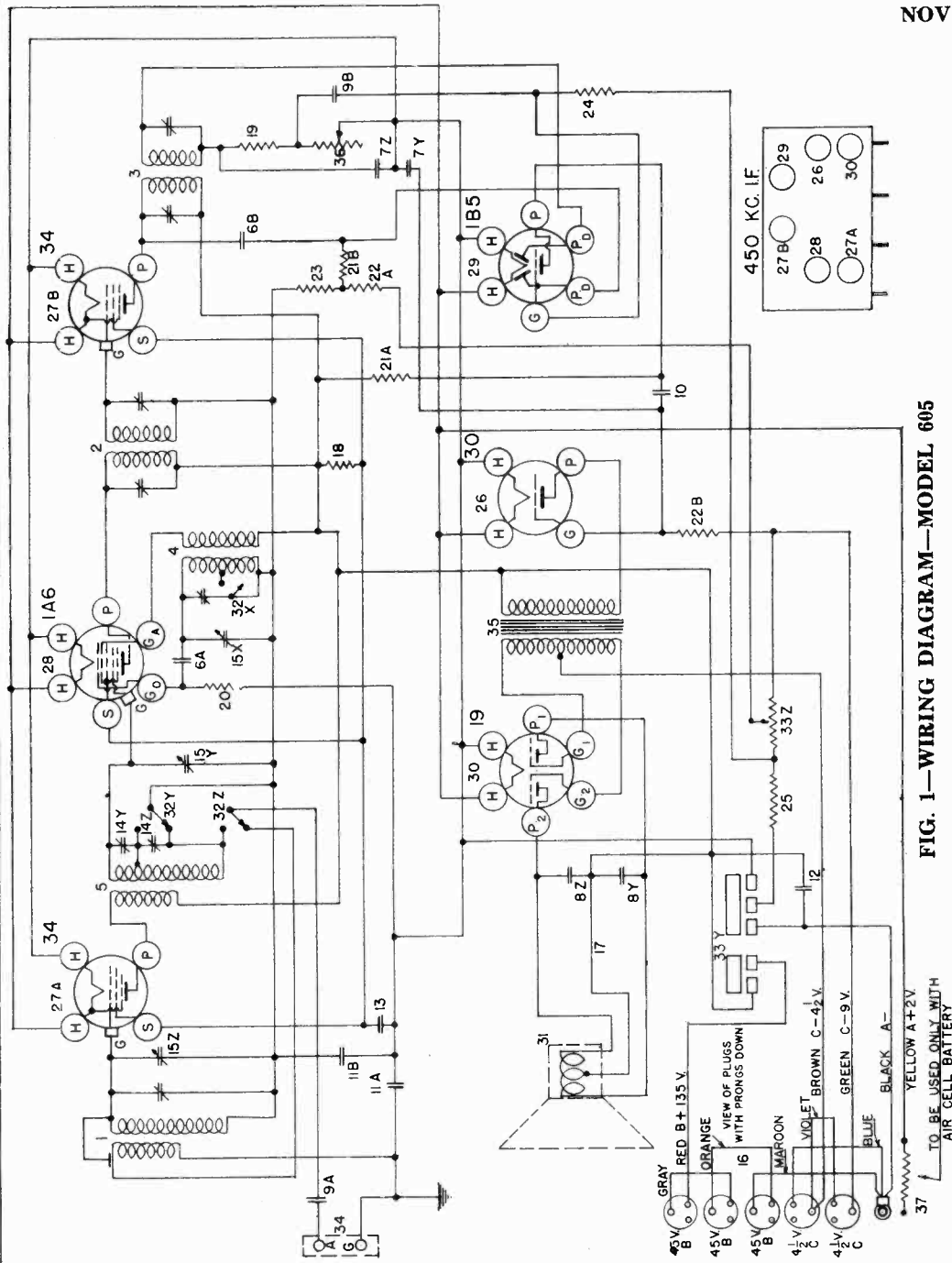


FIG. 1—WIRING DIAGRAM—MODEL 605

**SPECIFICATIONS**

The Crosley Model 605 radio is a six-tube superheterodyne receiver designed for operation from batteries. The method of connecting the battery cable to the batteries is shown on the Wiring Diagram. The batteries required are: one two-volt s,orange battery or air cell battery, three plug-in type 45 volt "B" batteries and two plug-in type 4 1/2 volt "C" batteries. The sensitivity control will enable the operator to control the sensitivity and apparent

selectivity of the receiver. When tuning for weak stations turn the control to the right. When the control is turned toward the left it will decrease the sensitivity, increase the apparent selectivity and decrease the "B" battery drain.

The frequency ranges covered are from 540 to 1575 kilocycles in the broadcast band and from 1565 to 3800 kilocycles in the high frequency band.

**TUBE SOCKET VOLTAGE READINGS**

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	55	.5		
1A6	Osc.-Mod.	2.0	135	55	.5	135	-5 to -10
34	I-F Amplifier	2.0	135	55	.5		
1B5	Diode Detector and A-F Amplifier	2.0	75		.5		
30	A-F Amplifier	2.0	135		-3.0		
19	Double Tri. Output	2.0	135		-1.0		

Power Output Approximately 2.5 Watts.

"A" Battery Drain Approximately .56 Amperes at 2 Volts.

"B" Battery Drain 12 to 30 Milliamperes, Depending Upon Setting of Volume and Sensitivity Controls.

**MODEL 605**  
**Socket, Trimmers**  
**CONNECTING OUTPUT METER**

**CROSLEY RADIO CORP.**

**Chassis, Parts**  
**Alignment**

Connect the two terminals of the output meter to the two plates of the 19 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02, or larger, mfd. condenser to the top cap of the 1A6 Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control and the sensitivity control knobs to the right (ON).

(c) Turn the band selector switch to the left (High Frequency).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUT**

PUT METER READING.

**2. Aligning R-F Amplifier.**

(a) Connect the output lead from the signal generator through a .00025 mfd. condenser to the "ANT" terminal of the receiver.

(b) Set the signal generator to 1400 kilocycles.

(c) Turn the band selector switch to the right (Broadcast Band).

(d) Adjust the station selector to 140 on the dial.

(e) Adjust the trimmer located on the "OSC" section of the condenser gang for maximum output. Fig. 3.

(f) Adjust the "R-F" trimmer condenser, No. 14Z, Fig. 2, for maximum output.

(g) Adjust the trimmer located on the "ANT" section of the condenser gang for maximum output.

(h) Tune the station selector to the generator signal for maximum output.

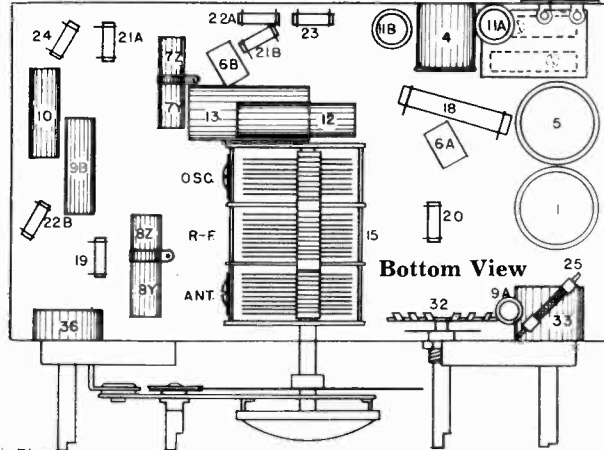
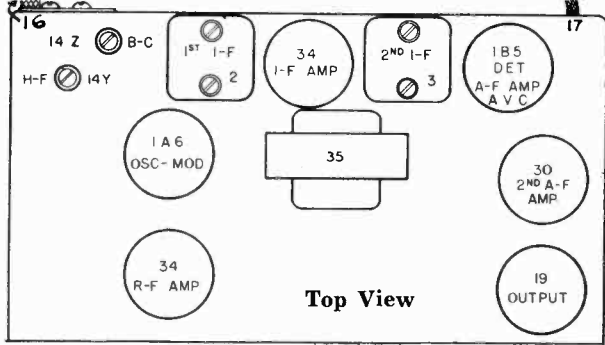
(i) Repeat operations (f) and (g) for more accurate adjustments.

(j) Turn the band selector switch to the left (High Frequency Band).

(k) Set the signal generator to 3500 kilocycles.

(l) Adjust the station selector to 3.5 on the dial.

(m) Adjust the "R-F" trimmer condenser, No. 14Y, Fig. 2, for maximum output.

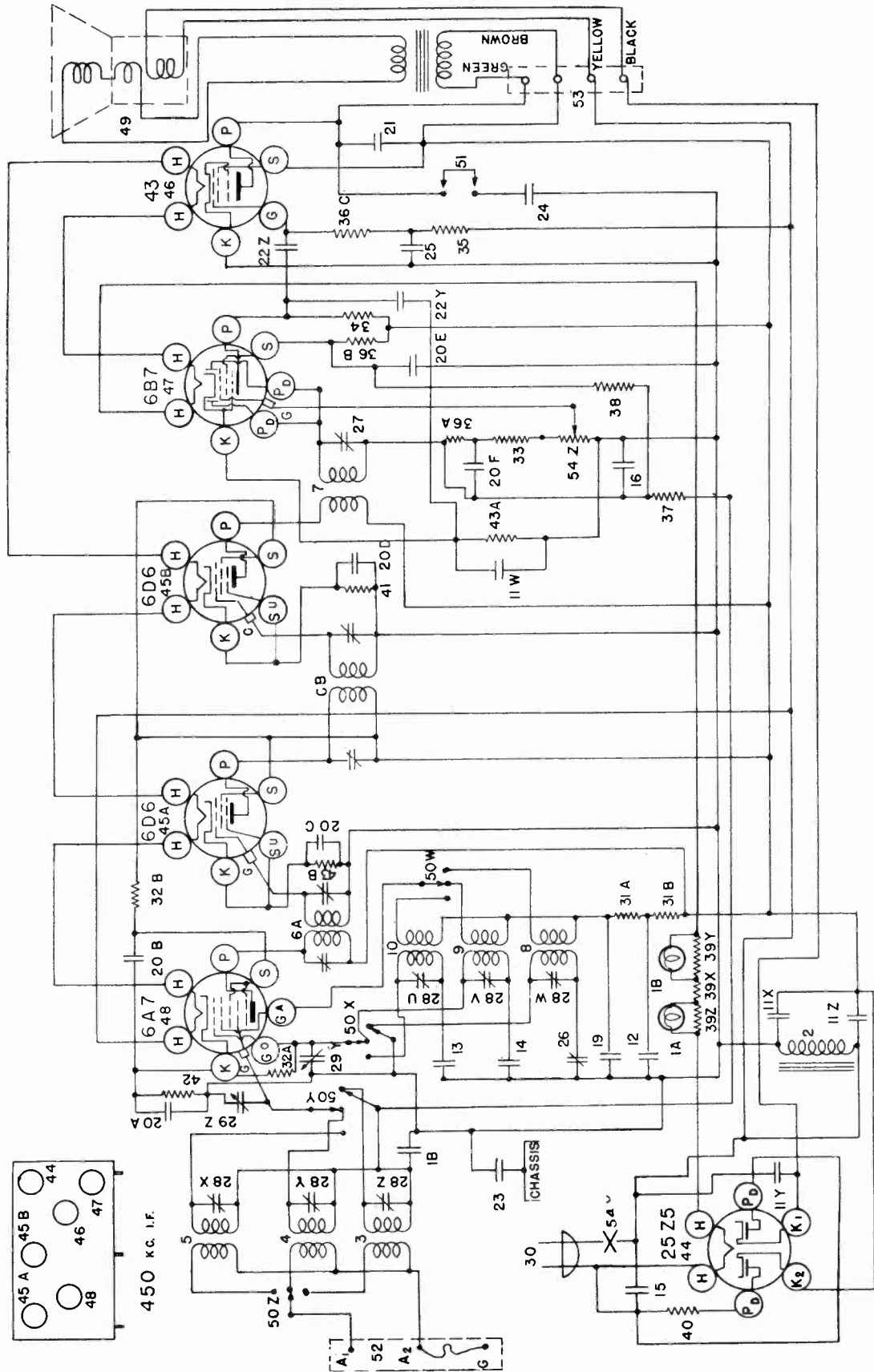


Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description
1	G76-32000	Ant. Coil only
	W-30802A	Coil Shield
	W-30026A	Retaining Ring
2	G48-32004	1st I. F. Assm.
3	G69-32004	2nd I. F. Assm.
4	G47-32002	Osc. Coil only
	W-25025B	Coil Shield
	W-25200	Coil Socket
	W-26891	Insulator Ring
	W-21541C	Retaining Ring
5	G53-32001	R. F. Coil only
	W-30802A	Coil Shield
	W-30026A	Retaining Ring
6A	G2-34002	Condenser, 0.0001 Mfd.
6B	G2-34002	Condenser, 0.0001 Mfd.
7Z	W-26152A	Condenser, 0.0001 Mfd.
7Y	W-26152A	Condenser, 0.00015 Mfd.
8Z	W-31158	Condenser, 0.006 Mfd. 400 V.
8Y	W-31158	Condenser, 0.006 Mfd. 400 V.
9A	W-30323	Condenser, 0.01 Mfd. 200 V.
9B	W-30323	Condenser, 0.01 Mfd. 200 V.
10	W-28621	Condenser, 0.02 Mfd. 200 V.
11A	W-24049B	Condenser, 0.1 Mfd. 200 V.
11B	W-24049B	Condenser, 0.1 Mfd. 200 V.
12	W-29910A	Condenser, 0.25 Mfd. 200 V.
13	W-30321A	Condenser, 1.0 Mfd. 160 V.
14Z	G22-33009	Condenser, B. C. Trimmer R. F.
14Y	G22-33009	Condenser, H. F. Trimmer R. F.
15Z	G42-33002	3 Section Tuning Cond. Gang
15Y	G42-33002	3 Section Tuning Cond. Gang
15X	G42-33002	3 Section Tuning Cond. Gang
	W-36148B	Dial Drive Assm.
	W-36160D	Dial Drive Mtg. Bracket
	B-36151A	Dial Face
	W-37156	Pointer
	W-37157	Pointer Screw

Item No.	Part No.	Description
	W-37158	Dial Glass
16	C-37106B	Battery Cable
17	W-31008	Speaker Cable
18	W-5370A	Resistor, 20,000 Ohm 1 W.
19	W-21453	Resistor, 40,000 Ohm ¼ W.
20	W-21237A	Resistor, 60,000 Ohm ¼ W.
21A	W-23403	Resistor, 150,000 Ohm ¼ W.
21B	W-23403	Resistor, 150,000 Ohm ¼ W.
22A	W-23785	Resistor, 500,000 Ohm ¼ W.
22B	W-23785	Resistor, 500,000 Ohm ¼ W.
23	W-21454	Resistor 1. Megohm ¼ W.
24	W-26577	Resistor, 3. Megohm ¼ W.
25	W-21452	Resistor, 1100. Ohm Flex ¾ W.
26	G9-28807	Socket, 30
27A	G31-28807	Socket, 34
27B	G31-28807	Socket, 34
28	G55-28807	Socket, 1A6
29	G91-28807	Socket, 1B5
30	G44-28807	Socket, 19
	W-26973B	Shield Base (1)
	W-26974B	Tube Shield (1)
31	W-42MS4	Speaker, Console Model
	W-32MS4	Speaker, Table & Conolette
32Z	W-37108A	Band Change Switch
32Y	W-37108A	Band Change Switch
32X	W-37108A	Band Change Switch
33Z	W-37109A	Sensitivity Control
33Y	W-37109A	On-Off Switch
34	G1-26719	Ant. Gnd. Terminal
35	G26-24628	Audio Transformer
36	W-37110A	Volume Control
37	G3-23300	Resistor, 372 Ohm (Air Cell)
	B-35917	Escutcheon
	D-28	Escutcheon Screw (3)
	W-37339	Knob (Large) (2)
	W-37341	Knob (Small) (2)

CROSLY RADIO CORP.



OCTOBER 1935

**MODEL 615, Cruiser**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

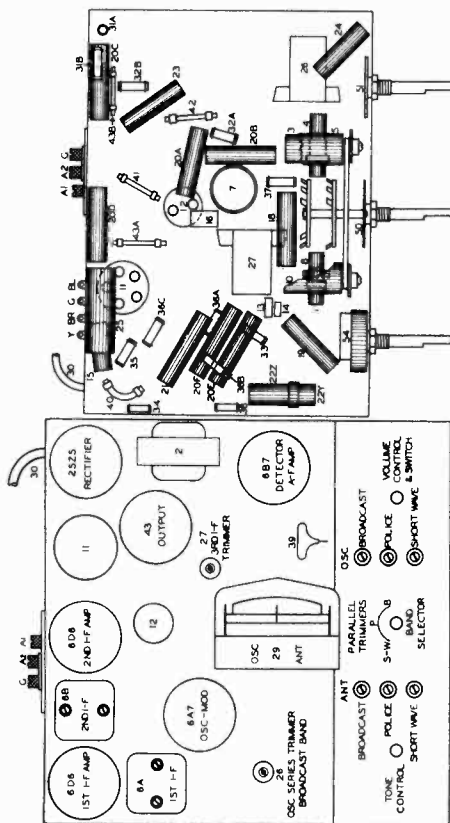


Fig. 3—Bottom View

Fig. 2—Top View

**PARTS LIST—MODEL 615**

Figures in first column refer to parts shown in diagram.

Item No.	Part No.	Description	Part No.	Description
1A	W-31992	Dial Light Socket	B	Cable & Plug (Power Supply)
1B	W-31994	Dial Light Socket	30	Resistor, 100,000 Ohms
2	G4-27134	Choke, 9 Henry	31A	Resistor, 4,500 Ohms
3	G3-28859	Ant. Coil B. C. Band	32A	Resistor, 40,000 Ohms
4	G43-32000	Ant. Coil P. Band	32B	Resistor, 60,000 Ohms
5	G36-32000	Ant. Coil S. W. Band	33	Resistor, 150,000 Ohms
6A	G43-34004	3rd I. F. Trans.	34	Resistor, 500,000 Ohms
6B	G13-32004	3rd I. F. Trans.	35	Resistor, 500,000 Ohms
7	G34-32002	Osc. Coil B. C. Band	36A	Resistor, 500,000 Ohms
8	G35-32002	Osc. Coil P. Band	36B	Resistor, 500,000 Ohms
9	G32-32002	Osc. Coil S. W. Band	37	Resistor, 1 Megohm
10	W-31982	Condenser, .01	38	Resistor, 25,000 Ohms
11	W-31982	Condenser, .01	39	Resistor, 25,000 Ohms
12	W-31982	Condenser, .01	39X	Resistor, 25,000 Ohms
13	W-31982	Condenser, .01	40	Resistor, 25,000 Ohms
14	W-31982	Condenser, .01	41	Resistor, 60 Ohms
15	W-31982	Condenser, .01	42	Resistor, 350 Ohms
16	W-31982	Condenser, .01	43	Resistor, 750 Ohms
17	W-31982	Condenser, .01	44	Resistor, 1,400 Ohms
18	W-31982	Condenser, .01	45	Resistor, 1,400 Ohms
19	W-31982	Condenser, .01	46	Resistor, 1,400 Ohms
20A	W-31982	Condenser, .01	47	Resistor, 1,400 Ohms
20B	W-31982	Condenser, .01	48	Resistor, 1,400 Ohms
20C	W-31982	Condenser, .01	49	Resistor, 1,400 Ohms
20E	W-31982	Condenser, .01	50	Resistor, 1,400 Ohms
21	W-31982	Condenser, .01	51	Resistor, 1,400 Ohms
22	W-31982	Condenser, .01	52	Resistor, 1,400 Ohms
23	W-31982	Condenser, .01	53	Resistor, 1,400 Ohms
24	W-31982	Condenser, .01	54	Resistor, 1,400 Ohms
25	W-31982	Condenser, .01	55	Resistor, 1,400 Ohms
26	W-31982	Condenser, .01	56	Resistor, 1,400 Ohms
27	W-31982	Condenser, .01	57	Resistor, 1,400 Ohms
28	W-31982	Condenser, .01	58	Resistor, 1,400 Ohms
29	W-31982	Condenser, .01	59	Resistor, 1,400 Ohms
30	W-31982	Condenser, .01	60	Resistor, 1,400 Ohms
31	W-31982	Condenser, .01	61	Resistor, 1,400 Ohms
32	W-31982	Condenser, .01	62	Resistor, 1,400 Ohms
33	W-31982	Condenser, .01	63	Resistor, 1,400 Ohms
34	W-31982	Condenser, .01	64	Resistor, 1,400 Ohms
35	W-31982	Condenser, .01	65	Resistor, 1,400 Ohms
36	W-31982	Condenser, .01	66	Resistor, 1,400 Ohms
37	W-31982	Condenser, .01	67	Resistor, 1,400 Ohms
38	W-31982	Condenser, .01	68	Resistor, 1,400 Ohms
39	W-31982	Condenser, .01	69	Resistor, 1,400 Ohms
40	W-31982	Condenser, .01	70	Resistor, 1,400 Ohms
41	W-31982	Condenser, .01	71	Resistor, 1,400 Ohms
42	W-31982	Condenser, .01	72	Resistor, 1,400 Ohms
43	W-31982	Condenser, .01	73	Resistor, 1,400 Ohms
44	W-31982	Condenser, .01	74	Resistor, 1,400 Ohms
45	W-31982	Condenser, .01	75	Resistor, 1,400 Ohms
46	W-31982	Condenser, .01	76	Resistor, 1,400 Ohms
47	W-31982	Condenser, .01	77	Resistor, 1,400 Ohms
48	W-31982	Condenser, .01	78	Resistor, 1,400 Ohms
49	W-31982	Condenser, .01	79	Resistor, 1,400 Ohms
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51	W-31982	Condenser, .01	81	Resistor, 1,400 Ohms
52	W-31982	Condenser, .01	82	Resistor, 1,400 Ohms
53	W-31982	Condenser, .01	83	Resistor, 1,400 Ohms
54	W-31982	Condenser, .01	84	Resistor, 1,400 Ohms
55	W-31982	Condenser, .01	85	Resistor, 1,400 Ohms
56	W-31982	Condenser, .01	86	Resistor, 1,400 Ohms
57	W-31982	Condenser, .01	87	Resistor, 1,400 Ohms
58	W-31982	Condenser, .01	88	Resistor, 1,400 Ohms
59	W-31982	Condenser, .01	89	Resistor, 1,400 Ohms
60	W-31982	Condenser, .01	90	Resistor, 1,400 Ohms
61	W-31982	Condenser, .01	91	Resistor, 1,400 Ohms
62	W-31982	Condenser, .01	92	Resistor, 1,400 Ohms
63	W-31982	Condenser, .01	93	Resistor, 1,400 Ohms
64	W-31982	Condenser, .01	94	Resistor, 1,400 Ohms
65	W-31982	Condenser, .01	95	Resistor, 1,400 Ohms
66	W-31982	Condenser, .01	96	Resistor, 1,400 Ohms
67	W-31982	Condenser, .01	97	Resistor, 1,400 Ohms
68	W-31982	Condenser, .01	98	Resistor, 1,400 Ohms
69	W-31982	Condenser, .01	99	Resistor, 1,400 Ohms
70	W-31982	Condenser, .01	100	Resistor, 1,400 Ohms

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	G	K	Go	Ga
6A7	Osc. Mod.	6.5	95	45	—	0	3.0	—5	80
6B6	1st I. F.	6.5	95	95	3.5	0	3.5	—	—
6B7	2nd I. F.	6.5	95	95	3.5	0	3.5	—	—
6X4	Output A. F.	26.0	90	—	—	—	1.0	—	—
2525	Rectifier	26.0	117.5 A. C.	—	—	-20	—	—	—

Power Consumption Approximately 60 Watts.

**ALIGNMENT PROCEDURE**

All the circuits in the receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned only with the use of a modulated signal generator and an output meter.

**Connecting Output Meter.**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 6A7 tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first to the left of the filaments and the screen prong will be next to the plate prong. Be sure the meter is protected from D. C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

- Peaking I. F. Stages at 450 Kilocycles.**
  - Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER S. G. TUBES.**
  - Turn the tuning condenser rotor plates until they are completely meshed.
  - Turn the band selector switch to the short wave band (extreme left hand position).
  - Set the signal generator to 450 kilocycles.
  - Adjust the trimmer for the 3rd I. F. transformer (Item No. 27, Fig. 2) for maximum output.
  - Adjust both trimmers located on top of the 2nd I. F. transformer for maximum output.
  - Adjust both trimmers located on top of the 1st I. F. transformer for maximum output.
  - Using the lowest signal generator output that will give a reasonable scale deflection on the output meter repeat operations (e) (f) and (g) as many times as necessary to obtain the maximum output.
- Peaking R. F. Circuits—Broadcast Band (540 to 1700 K. C.)**
  - Connect the output of the signal generator through a .00025 mfd. condenser to the "Ant" terminal of the receiver.
  - Turn the tuning condenser rotor plates until they are **COMPLETELY OUT OF MESH**.
  - Turn the band selector switch to the broadcast band (extreme right hand position) at 1720 kilocycles.
  - Set the signal generator at 1720 kilocycles.
  - Adjust the oscillator parallel trimmer (Broad cast band) for maximum output. (Fig. 2).
  - Set the signal generator at 1400 kilocycles.
  - Tune-in the 1400 kilocycles signal with the station selector.
  - Adjust the antenna parallel trimmer (broadcast band) for maximum output.
  - Using the lowest signal generator output that will give a reasonable output meter reading, repeat operations (g) and (h) until no further increase in output can be obtained.
  - Repeat the two operations in (i) as many times as necessary to obtain the maximum output.

- Tune-in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output meter.
- Adjust the oscillator series trimmer, (Fig. 2) while rocking the condenser gang plates back and forth slightly, until no further increase in output can be obtained.
- Repeat operations (g) and (h) for more accurate adjustments.

**3. Peaking R. F. Circuits—Police Band (1650 to 4750 K. C.)**

- Turn the band selector switch to the police band (middle position).
- Set the signal generator to 4000 kilocycles. (4.0 megacycles).
- Turn the station selector to 4 on the police band.
- Adjust the oscillator parallel trimmer (P. Band) for maximum output.
- Adjust the antenna parallel trimmer (P. Band) for maximum output.

**4. Peaking R. F. Circuits—Short Wave Band (5.3 to 15 Meg.)**

- Replace the .00025 mfd. condenser which is being used in series with the output lead of the signal generator with a 400 ohm carbon resistor.
- Turn the band selector switch to the short wave band (left hand position).
- Set the signal generator to 15 megacycles.
- Close the Oscillator parallel trimmer (S-W Band) and then open three turns.
- Close the Antenna parallel trimmer (S-W Band) and then open 1/2 turn.
- Turn the station selector to 15 on the dial (S-W Band).
- Peak the oscillator parallel trimmer (S-W Band) on the FIRST signal heard when closing the condenser. In making this adjustment care should be taken not to use too much output from the signal generator to avoid setting the oscillator circuit on the wrong frequency.

**NOTE:** Check on the adjustment of the S-W Band oscillator parallel trimmer as follows:

- Increase the signal generator output not more than ten times.
- Try to tune-in the 15 megacycles signal with the station selector at approximately 14 on the dial.
- If the 15 megacycles signal can be heard at approximately 14 and 15 both on the dial the oscillator parallel trimmer has been aligned on the correct frequency. If should be noted, however, that the signal tuned in at 15 on the dial should be much stronger than the signal heard at 14. If this condition is not found it will be necessary to repeat operation (g).
- Reduce the output of the signal generator to the previous output and retune the station selector to 15 megacycles at 15 on the dial.
- Adjust the antenna parallel trimmer (S-W Band) for maximum output, then retune the station selector for maximum output.
- Repeat the two operations in (i) as many times as necessary to obtain the maximum output.

CROSLY RADIO CORP.

**MODEL 616**  
**Schematic**  
**Voltage Trimmers**

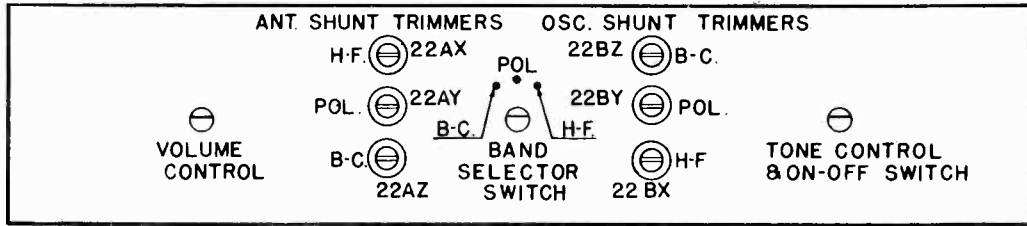
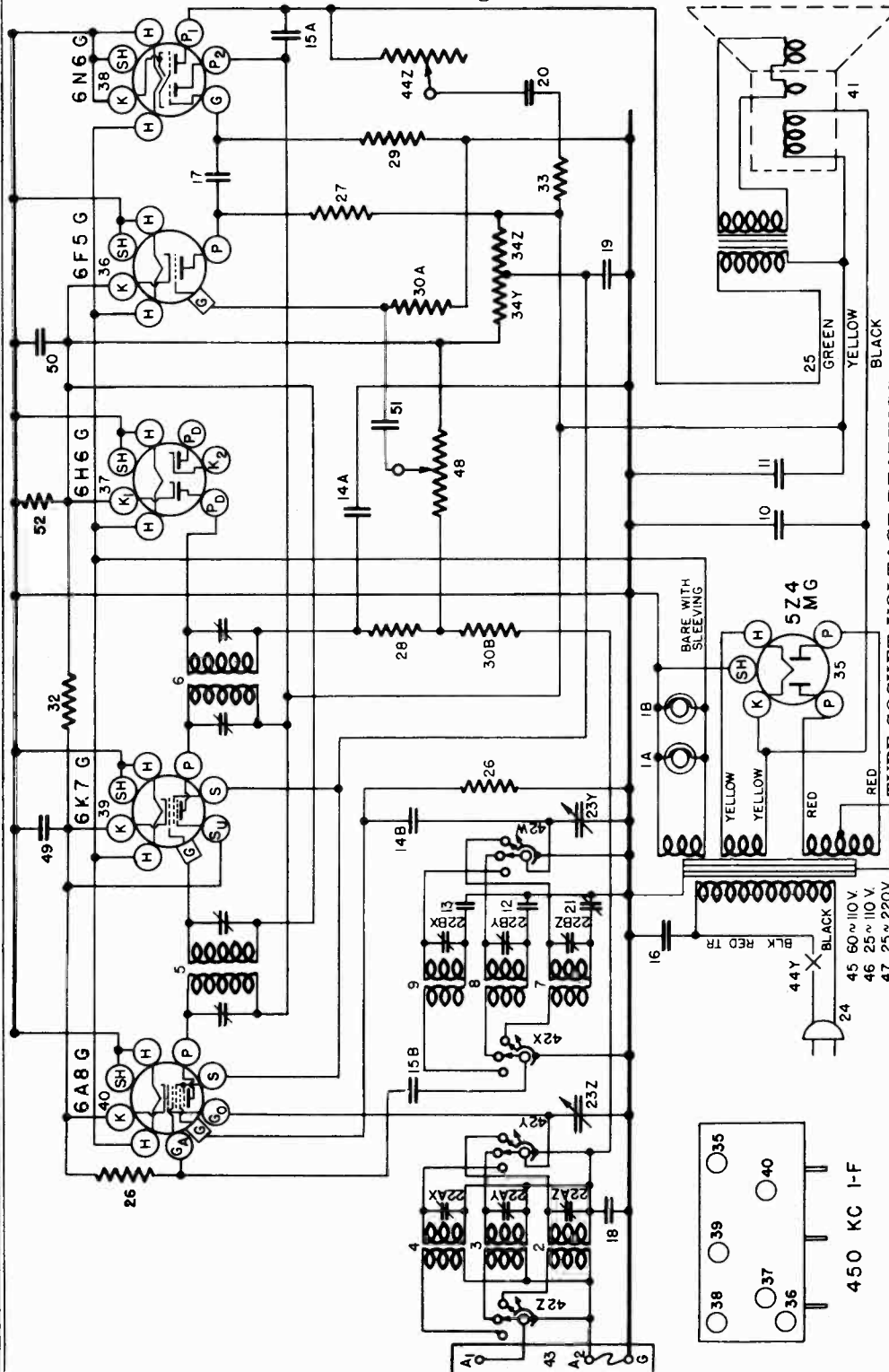


Fig. 4 Front View



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	P <sub>2</sub>	S	Su	G	K	G <sub>0</sub>	G <sub>a</sub>
6A8-G	Osc.-Modulator	6.3	240	—	95	—	0	4.5	-5 to -30	115
6K7-G	I-F Amplifier	6.3	240	—	95	4.5	0	4.5	—	—
6H6-G	Diode-Detector	6.3	0	—	—	—	0	—	—	—
6F5-G	A-F Amplifier	6.3	150	—	—	—	0	1.5	—	—
6N6-G	Output	6.3	220	240	—	—	0	—	—	—
5Z4-MG	Rectifier	4.9	310	—	—	—	—	—	—	—

MEASURED ON 117.5 VOLT-60 CYCLE POWER SUPPLY.  
POWER CONSUMPTION APPROXIMATELY 80 WATTS.  
POWER OUTPUT APPROXIMATELY 4 WATTS.

MAY, 1936



**MODEL 616**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect the output meter to the two plates of the 6N6 Output Tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the High Frequency Band.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I-F Transformer for maximum output.

(f) Adjust both trimmers located on top of the 1st I-F Transformer for maximum output.

(g) Check operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**Aligning R-F Amplifier.**

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 300 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (e) for each adjustment.

(a) Adjust the "Osc" and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the ad-

justments of the "ANT" trimmers. **DO NOT READJUST the "OSC" TRIMMER.**

**NOTE:** When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times, or more, and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the

circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmer (Item 21, Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for the series trimmer it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies:

American Broadcast Band (BLUE)  
 Police Band (RED)  
 High-Frequency Band (GREEN)

**Shunt Alignment**  
 1700 Kilocycles  
 6000 Kilocycles  
 18000 Kilocycles

**Series Alignment**  
 600 Kilocycles

**SPECIFICATIONS**

The Crosley Radio Model 616 is a six tube superheterodyne receiver designed to operate on an ALTERNATING CURRENT power supply. It is designed to use either metal tubes or the equivalent glass tubes with

BLUE 540-1800 Kilocycles (American Broadcast Band)  
 RED 1.8-6.0 Megacycles (Police and Amateurs)  
 GREEN 6.0-18.0 Megacycles (High Frequency Bands).

**SOCKET VOLTAGES**

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500 volt D.C. voltmeter (except filaments) with the re-

ceiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A-C voltmeter (Approximately 0.10 volts). Readings may vary plus or minus 10% of values given.

ceiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A-C voltmeter (Approximately 0.10 volts). Readings may vary plus or minus 10% of values given.

**PARTS LIST—MODEL 616**

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1A	W	—37922	28	—21455	Resistor 300,000 Ohm, 1/4 W.
1B	W	—37922	29	—23785	Resistor 500,000 Ohm, 1/4 W.
	G3	—37965	30A	—36688	Resistor 3 Megohm, 1/4 W.
2	G104	—32000	30B	—36688	Resistor 3 Megohm, 1/4 W.
3	G103	—32000	31	—36852	Resistor 30,000 Ohm, 1 W.
4	G105	—32000	32	W	—21964
5	G99	—32004	33	W	—27503
6	G100	—32004	34Z	W	—32301
7	G91	—32002	34Y	W	—32301
8	G92	—32002			
9	G93	—32002	35	G166	—36400
10	W	—36525	36	G158	—36400
11	W	—36527	37	G155	—36400
12	G7	—34007	38	G165	—36400
13	G8	—34007	39	G151	—36400
14A	G2	—34002	40	G156	—36400
14B	G2	—34002		W	—40911
15A	W	—35139		W	—27981A
15B	W	—35139			
16	W	—36935	41	—40971	Speaker Spec. 33Z-BJ-3
17	W	—36948			
18	W	—35936	42W		
19	W	—24049H	43	G27	—26719
20	W	—22598	44Z	—37908	Ant & Grd. Terminal Board
21	W	—40769	44Y	—37908	Tone Control (100,000 Ohm)
22AZ	W	—35951	45	G12	—28500
22AX	W	—35951	46	G13	—28500
22HZ	W	—35951	47	G14	—28500
23Z	W	—35951	48	W	—37967
24	G21	—33001	49	W	—2910A
25	MG27	—40762	50	W	—28621
26	C	—40930	51	W	—35758
27	W	—40804	52	W	—25357
	B	—33906A		W	—41839
	G3	—35696		W	—28760A
		—40757		W	—37339
		—35930		W	—40192B
				W	—36117

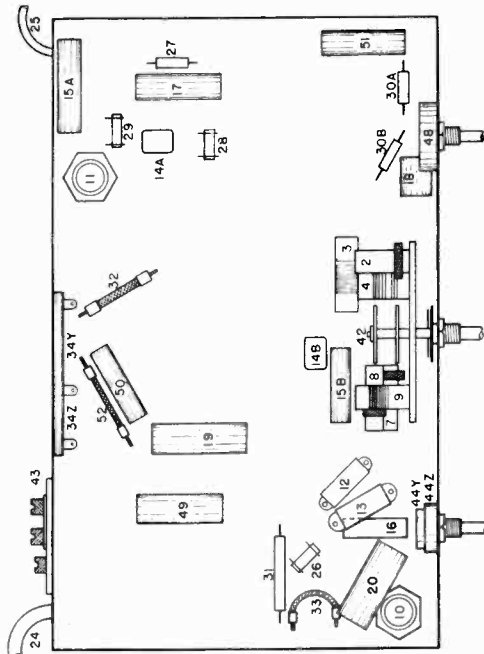


Fig. 3 Bottom View

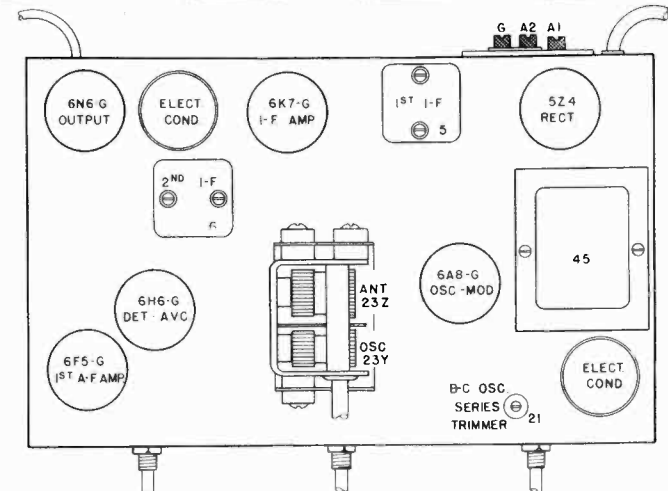
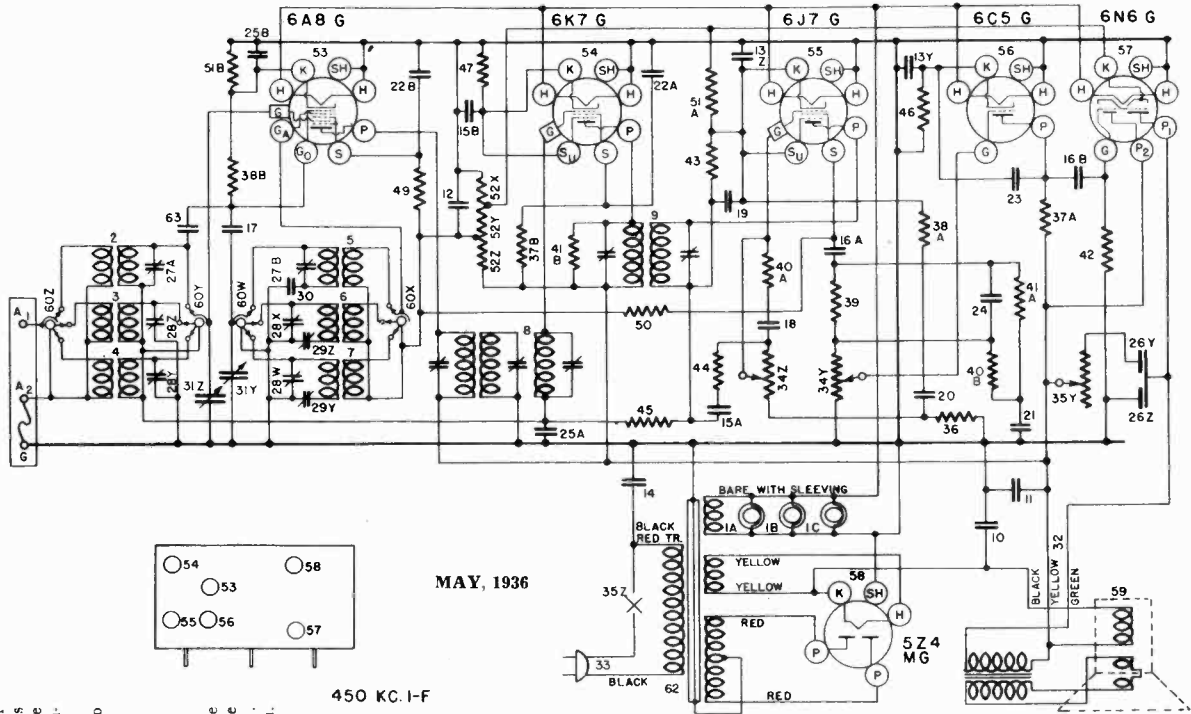


Fig. 2 Top View

CROSLEY RADIO CORP.

MODEL 626  
Schematic  
Parts



MAY, 1936

450 KC. I-F

This receiver is designed to use either metal tubes or the equivalent glass tubes with octal bases. If glass tubes are replaced with metal tubes or metal tubes are replaced with glass tubes it will be necessary to completely realign the circuits of the receiver. It is a three band receiver and the dial is divided into three sections as follows:

- BLUE 540-1800 Kilocycles (American Broadcast Band)
- 600-800 Kilocycles (Police and Amateurs)
- RED 1800-3000 Kilocycles (High Frequency Band)
- GREEN 5800-18800 Kilocycles

ceiver in operating condition and no signal input. The filament voltages should be measured with an accurate low range A-C voltmeter (Approximately 0.10 volts). Readings may vary plus or minus 10% of values given.

**SPECIFICATIONS**  
The Crosley Model 626 radio is a six-tube superheterodyne receiver designed to operate on an ALTERNATING CURRENT power supply. It is available with either of the following types of power transformers: 110 volt—60 cycles, 110 volt—25 cycles or 220 volts—25 cycles.

**SOCKET VOLTAGES**

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500 volt D.C. voltmeter (except filaments) with the re-

**PARTS LIST—MODEL 626**

Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1A	W-37922	Bulb, Dial Light	38A	-38781	Resistor, 40,000 Ohm, 1/4 W., Insul.
1B	W-37922	Bulb, Indicator Light	38B	-38781	Resistor, 40,000 Ohm, 1/4 W., Insul.
2	C90	Coil, Ant. 1800-6000 Kc.	39	-21454	Resistor, 50,000 Ohm, 1/4 W.
3	C90	Coil, Ant. 540-1800 Kc.	40A	-34020	Resistor, 250,000 Ohm, 1/4 W.
4	G90	Coil, Osc. 6000-18000 Kc.	40B	-37590	Resistor, 750,000 Ohm, 1/4 W.
5	G84	Coil, Osc. 1800-6000 Kc.	41A	-37590	Resistor, 750,000 Ohm, 1/4 W.
6	G84	Coil, Osc. 540-1800 Kc.	41B	-37590	Resistor, 750,000 Ohm, 1/4 W.
7	G82	Coil, 1st I-F Assm.	42	-33344	Resistor, 400,000 Ohm, 1/4 W.
8	G101	Coil, 2nd I-F Assm.	43	-33344	Resistor, 400,000 Ohm, 1/4 W.
9	W-36055	Condenser, .35 mid., 400 V.	44	-37245	Resistor, 150,000 Ohm, 1/4 W.
10	W-36057	Condenser, .30 mid., 300 V.	45	-21876	Resistor, 10,000 Ohm, 1/4 W.
11	W-40925	Condenser, .50 mid., 150 V.	46	-22511	Resistor, 750 Ohm, 1/2 W., Flex.
12	W-37778	Condenser, .12 mid., 25 V.	47	-22831	Resistor, 15,000 Ohm, 1/4 W.
13V	W-30905	Condenser, .01 mid., 400 V.	48	-21875	Resistor, 100,000 Ohm, 1/4 W.
14	W-36541	Condenser, .02 mid., 150 V.	49	-28106	Resistor, 500 Ohm, 1/2 W., Flex.
15A	W-36541	Condenser, .02 mid., 150 V.	50	-28106	Resistor, 500 Ohm, 1/2 W., Flex.
16A	W-32780B	Condenser, .05 mid., 400 V.	51R	-37829A	Resistor, 25,000 Ohm, 1/4 W.
16B	W-32780B	Condenser, .05 mid., 400 V.	52	-37829A	Resistor, 25,000 Ohm, 1/4 W.
17	G1	Condenser, .00025 mid., (molded)	53	-37829A	Resistor, 25,000 Ohm, 1/4 W.
18	G2	Condenser, .0001 mid., (molded)	54	G156	36400
19	G2	Condenser, .0001 mid., (molded)	55	G151	36400
20	W-30323	Condenser, .01 mid., 200 V.	56	G157	36400
21	W-37988	Condenser, .017 mid., 200 V.	57	G152	36400
22A	W-23142	Condenser, .02 mid., 400 V.	58	G165	36400
22B	W-23142	Condenser, .02 mid., 400 V.	59	G154	36400
23	W-27540	Condenser, .0005 mid., 400 V.	60	B	37916
24	C5	Condenser, .05 mid., 400 V.	61	C27	25719
25A	W-35936	Condenser, .05 mid., 400 V.	62	G18	28500
25B	W-35936	Condenser, .05 mid., 400 V.	63	G17	28500
26V	W-31052	Condenser, .04 mid., 400 V.	64	W	27981A
27A	W-37954	Condenser, .05 mid., 400 V.	65	W	22334
28V	W-37954	Condenser, .05 mid., 400 V.	66	W	40537
28X	W-37954	Condenser, .05 mid., 400 V.	67	MC	30906
28Y	W-37954	Condenser, .05 mid., 400 V.	68	C	37884
28Z	W-37954	Condenser, .05 mid., 400 V.	69	C	40929
29V	C31	Condenser, .05 mid., 400 V.	70	C	40365
30	G17	Condenser, .05 mid., 400 V.	71	W	40485
31Y	G19	Condenser, .05 mid., 400 V.	72	W	41145
32	C4	Condenser, .05 mid., 400 V.	73	W	30182B
33	B	Condenser, .05 mid., 400 V.	74	B	37898
34Y	56696	Cable, Speaker	75	W	37909
35Y	33006	Cable & Plug, Power Supply	76	W	40911
36	33006	Cable & Plug, Power Supply	77	W	40570
37A	33006	Cable & Plug, Power Supply	78	W	37896A
37B	33006	Cable & Plug, Power Supply	79	B	37887
38	33006	Cable & Plug, Power Supply	80	B	40715

**MODEL 626**  
**Socket, Trimmers**  
**Chassis, Voltage**  
**Alignment**

**CROSLLEY RADIO CORP.**

**SHUNT TRIMMERS**

Ant. Osc. High-Frequency  
 28V 28X 28V  
 Pri. Plate Broadcast  
 28V 28W 28V  
 Broadcast

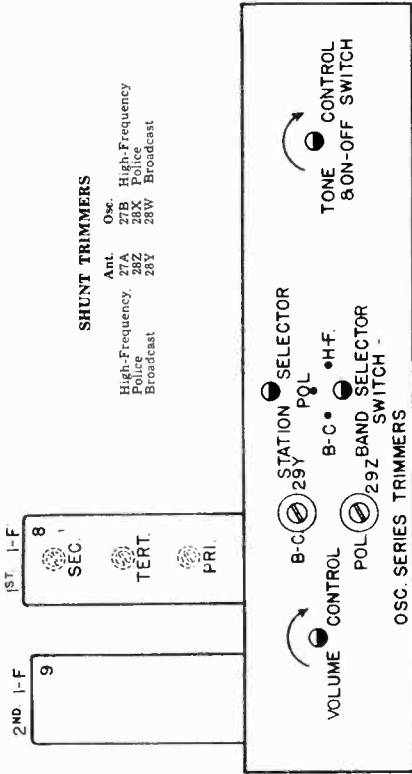


Fig. 4 Front View

obtained. DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.

**Aligning R-F Amplifier.**

When aligning the R-F Amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE and RED bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the station selector and signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC." and "ANT" shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "ANT" trimmers. DO NOT READJUST the "OSC." TRIMMER.

(NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the correct frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.)

(b) To align the series trimmers (29Y, 29Z, Fig. 4) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. To obtain the best adjustment for each series trimmer, it will be necessary to rotate the station selector back and forth slightly while adjusting the trimmer for maximum output.

(c) Signal Input Frequencies.

Shunt Alignment	Series Align
American Broadcast Band (BLUE)	1700 Kilocycles
High-Frequency Band (GREEN)	1800 Kilocycles
	2300 Kilocycles

**ALIGNMENT PROCEDURE**

**CONNECTING OUTPUT METER**

Connect the two terminals of the output meter to the two plates of the 6N6 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F Amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Turn the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Set the signal generator to 450 kilocycles. (d) Adjust the trimmer for maximum output (Fig. 2). ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(e) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Oscillator-Modulator tube, leaving the tube's grid clip in place. (f) Close the middle trimmer (Tert. Fig. 4) on the 1st I-F transformer so that it is moderately tight. (Do not force adjusting screw.)

(g) Adjust the top trimmer on the 1st I-F transformer for maximum output.

(h) Adjust the bottom trimmer on the 1st I-F transformer for maximum output.

(i) Transfer the signal generator output lead from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary. (j) Check the adjustment of the bottom trimmer of the 1st I-F transformer. DO NOT READJUST THE TOP TRIMMER.

(k) Adjust the middle trimmer of the 1st I-F transformer by opening condenser until maximum output is former by opening condenser until maximum output is

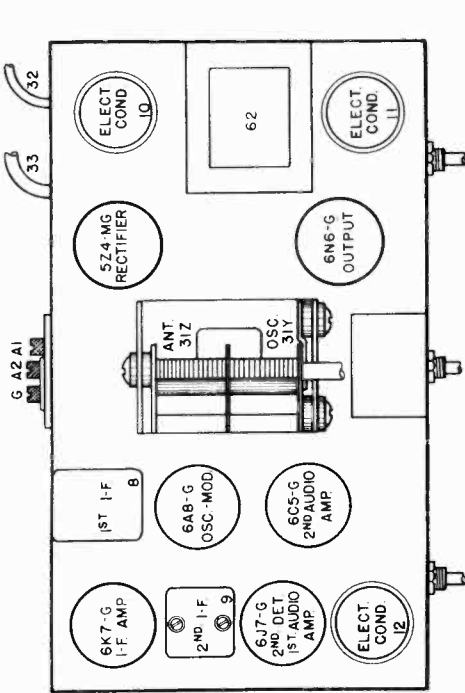


Fig. 2 Top View

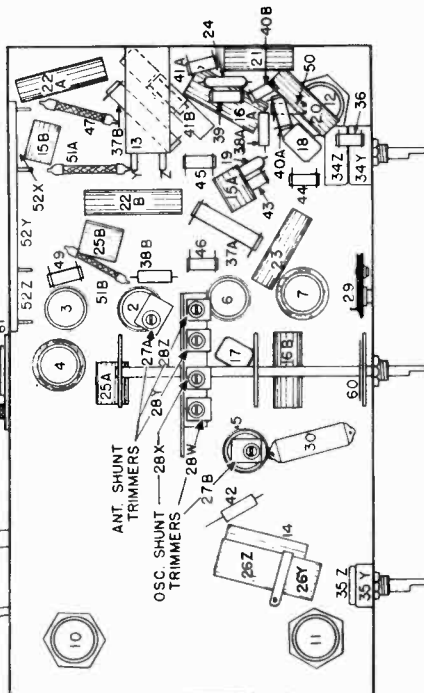


Fig. 3 Bottom View

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	P	S	Su	G	K	Co	Gk
6A8-G	Osc-Modulator	6.3	265	—	100	—	0	0	0	140
6K7-G	I-F Amplifier	6.3	265	—	120	6.2	0	6.2	—	—
6C5-G	Det. & A-F Amplifier	6.3	0	—	75	2.6	0	2.6	—	—
6N6-G	2nd. A-F Amplifier	6.3	270	255	—	0	0	12.3	—	—
574-MG	Rectifier	4.9	350	—	—	—	—	2.3	—	—

MEASURED ON 117.5 VOLT - 60 CYCLE POWER SUPPLY.  
 POWER CONSUMPTION APPROXIMATELY 78 WATTS.  
 POWER OUTPUT APPROXIMATELY 3 WATTS.

CROSLLEY RADIO CORP.

MODEL 656  
Schematic, Voltage  
Trimmers

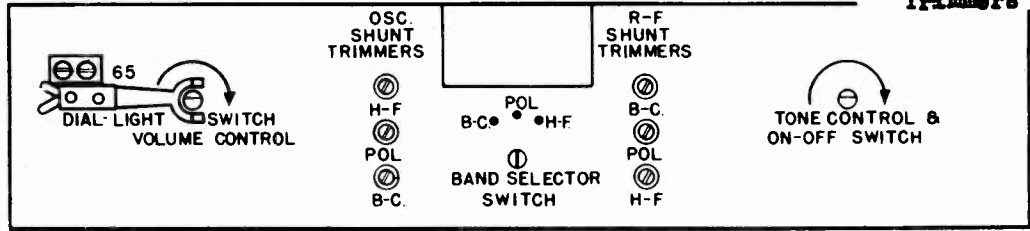
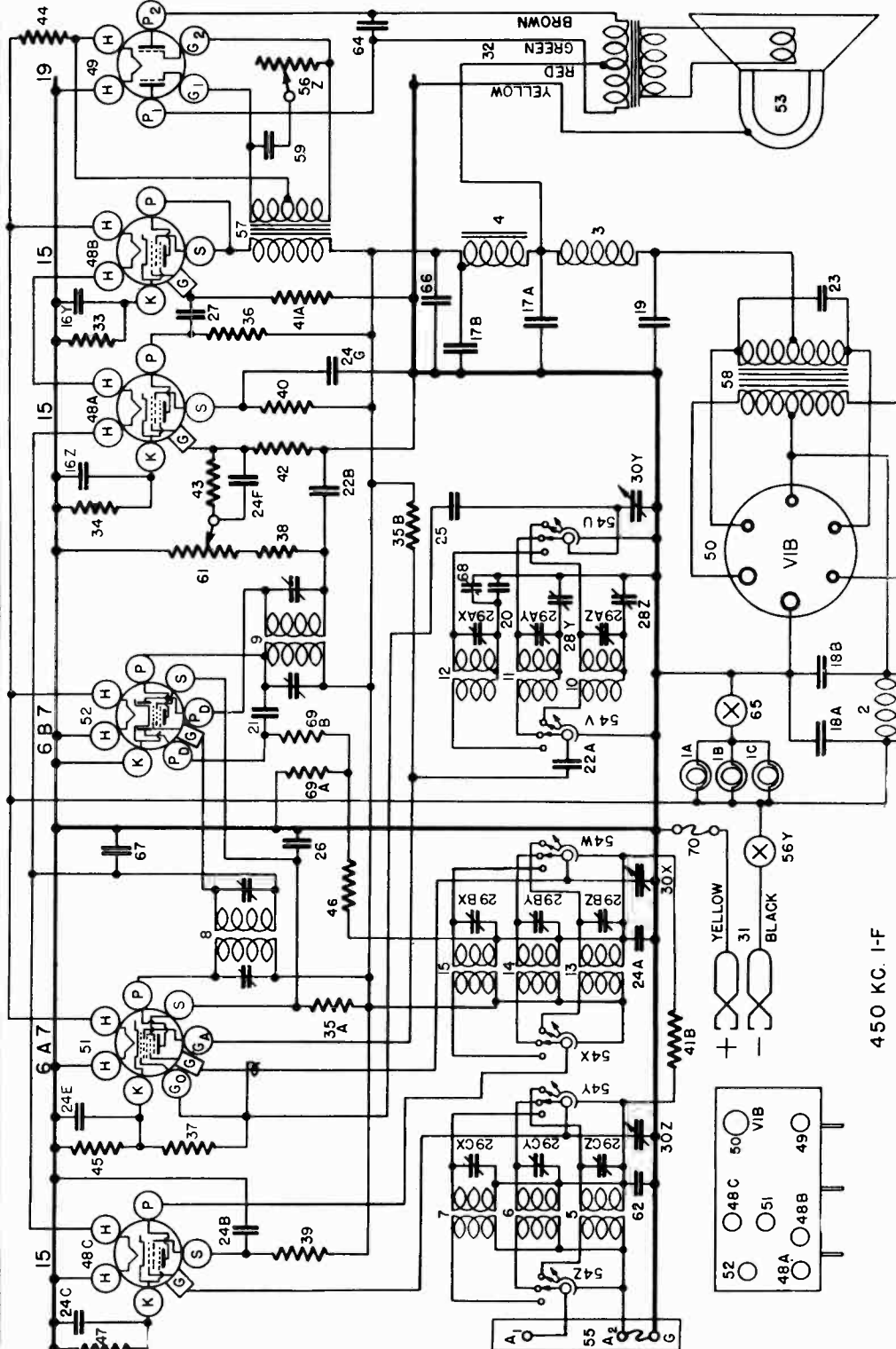


Fig. 4. Front View



MAY, 1936

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	K	Ga	Go
15	R-F Amplifier	2.0	180	105	—	1.5	120	—8.0
6A7	Oscillator-Mod.	6.0	180	95	—	3.5	—	—
6B7	I-F Amp.-Diode Det.	6.0	180	95	—	3.0	—	—
15	A-F Amplifier	2.0	130	80	—	—	—	—
15	Audio Driver	2.0	180	—	—	—	—	—
19	Twin Output	2.0	180	—	—	—	—	—

"A" Battery Drain Approximately 2.8 Amperes at 6.0 Volts.  
Power Output Approximately 2 Watts.

**MODEL 636  
Socket, Trimmers  
Chassis, Parts  
Alignment**

**CROSLEY RADIO CORP.**

**PARTS LIST—MODEL 636**

Figures in first column refer to parts in Diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	37922	Dial Light	39	34020	Resistor 250,000 Ohm 1/2 W. Ins.
2	28625	Choke H.F. "B" Filter	40	34020	Resistor 500,000 Ohm 1/2 W. Ins.
3	24234	Choke L.F. "B" Filter	41	34020	Resistor 500,000 Ohm 1/2 W. Ins.
4	24628	Choke L.F. "B" Filter	42	34020	Resistor 500,000 Ohm 1/2 W. Ins.
5	32000	Ant. Coil P.C.B.	43	34020	Resistor 500,000 Ohm 1/2 W. Ins.
6	32000	Ant. Coil P.C.B.	44	34020	Resistor 500,000 Ohm 1/2 W. Ins.
7	32000	Ant. Coil P.C.B.	45	34020	Resistor 500,000 Ohm 1/2 W. Ins.
8	32000	Ant. Coil P.C.B.	46	34020	Resistor 500,000 Ohm 1/2 W. Ins.
9	32000	Ant. Coil P.C.B.	47	34020	Resistor 500,000 Ohm 1/2 W. Ins.
10	32000	Ant. Coil P.C.B.	48	34020	Resistor 500,000 Ohm 1/2 W. Ins.
11	32000	Ant. Coil P.C.B.	49	34020	Resistor 500,000 Ohm 1/2 W. Ins.
12	32000	Ant. Coil P.C.B.	50	34020	Resistor 500,000 Ohm 1/2 W. Ins.
13	32000	Ant. Coil P.C.B.	51	34020	Resistor 500,000 Ohm 1/2 W. Ins.
14	32000	Ant. Coil P.C.B.	52	34020	Resistor 500,000 Ohm 1/2 W. Ins.
15	32000	Ant. Coil P.C.B.	53	34020	Resistor 500,000 Ohm 1/2 W. Ins.
16	32000	Ant. Coil P.C.B.	54	34020	Resistor 500,000 Ohm 1/2 W. Ins.
17	32000	Ant. Coil P.C.B.	55	34020	Resistor 500,000 Ohm 1/2 W. Ins.
18	32000	Ant. Coil P.C.B.	56	34020	Resistor 500,000 Ohm 1/2 W. Ins.
19	32000	Ant. Coil P.C.B.	57	34020	Resistor 500,000 Ohm 1/2 W. Ins.
20	32000	Ant. Coil P.C.B.	58	34020	Resistor 500,000 Ohm 1/2 W. Ins.
21	32000	Ant. Coil P.C.B.	59	34020	Resistor 500,000 Ohm 1/2 W. Ins.
22	32000	Ant. Coil P.C.B.	60	34020	Resistor 500,000 Ohm 1/2 W. Ins.
23	32000	Ant. Coil P.C.B.	61	34020	Resistor 500,000 Ohm 1/2 W. Ins.
24	32000	Ant. Coil P.C.B.	62	34020	Resistor 500,000 Ohm 1/2 W. Ins.
25	32000	Ant. Coil P.C.B.	63	34020	Resistor 500,000 Ohm 1/2 W. Ins.
26	32000	Ant. Coil P.C.B.	64	34020	Resistor 500,000 Ohm 1/2 W. Ins.
27	32000	Ant. Coil P.C.B.	65	34020	Resistor 500,000 Ohm 1/2 W. Ins.
28	32000	Ant. Coil P.C.B.	66	34020	Resistor 500,000 Ohm 1/2 W. Ins.
29	32000	Ant. Coil P.C.B.	67	34020	Resistor 500,000 Ohm 1/2 W. Ins.
30	32000	Ant. Coil P.C.B.	68	34020	Resistor 500,000 Ohm 1/2 W. Ins.
31	MG21	Indicator Control Cable	69	34020	Resistor 500,000 Ohm 1/2 W. Ins.
32	34903	Shunt	70	34020	Resistor 500,000 Ohm 1/2 W. Ins.
33	34903	Shunt			
34	34903	Shunt			
35	34903	Shunt			
36	34903	Shunt			
37	34903	Shunt			
38	34903	Shunt			
39	34903	Shunt			
40	34903	Shunt			
41	34903	Shunt			
42	34903	Shunt			
43	34903	Shunt			
44	34903	Shunt			
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46	34903	Shunt			
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66	34903	Shunt			
67	34903	Shunt			
68	34903	Shunt			
69	34903	Shunt			
70	34903	Shunt			

**2. Aligning R.F. Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A.1") terminal of the receiver through a .00025 mfd. condenser.

Each band should first be tuned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC.", "R.F." and "ANT." shunt trimmers in the order given for maximum output. Tune the station selector to the signal generator for maximum output and then check the adjustments of the "R.F." and "ANT." trimmers in the order given. Do not readjust the "OSC." trimmer. NOTE: When aligning the High Frequency band care must be exercised so that the trimmer be aligned on the fundamental frequency rather than on the first overtone. This is done by tuning to kilocycles less than the fundamental. To check on this, increase the output of the signal generator about ten times and try to tune on the station at both the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To adjust the "series" trimmers (Illus. Nos. 68, 287 and 28Y top view, Fig. 2) set the signal generator to the frequency indicated and then tune in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

**SIGNAL INPUT FREQUENCIES**

Series	Shunt	Alignment
BLUE	(American Broadcast)	180 Kc.
RED	(Police and Amateur)	180 Kc.
GREEN	(High Frequency)	6.0 Mc.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can best be properly aligned with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to P1 and the other terminal to P2 of the 19 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**Tuning I-F Amplifier To 450 Kilocycles.**

(a) Connect the output of the signal generator through a .002 mfd. condenser to the top center pin of the 6B7 tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch to the right (High Frequency Band).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust the trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.

(f) Adjust the trimmers located on top of the 1st I-F transformer for maximum output.

(g) Repeat operations (e) and (f) for more accurate adjustments.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

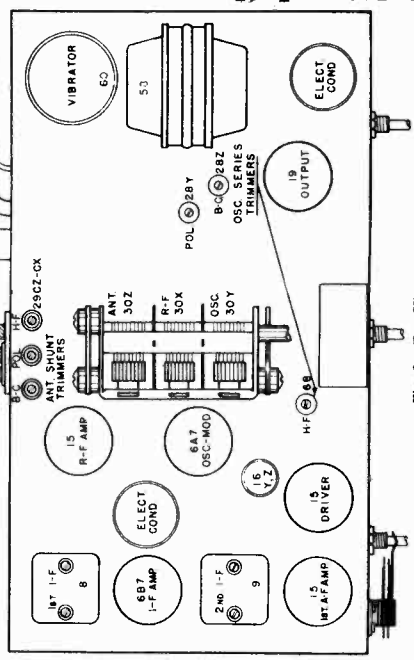


Fig. 2. Top View

**SPECIFICATIONS**

The Crosley Model 636 is a six-tube superheterodyne receiver designed for operation from a six-volt storage battery. It contains a completely shielded, built-in

BLUE 540,1800 Kc. or 655-187 Meters  
RED 180,000 V.C. or 27-50 Kc.  
GREEN 6.0-18.0 Mc. or 50-17 Meters

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the filament voltages and the tube base connections and the chassis voltage readings should be taken with a 1000 ohm per volt, 250 volt power supply unit which employs a self-rectifying type vibrator.

The tuning range of this receiver is from 540 to 18000 kilocycles and is divided into three bands as follows:

(American Broadcast Band)  
(High Frequency or Short Wave Band)

volmeter (except filaments), with the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D.C. voltmeter (approximately 10 volts). Voltage limits may vary plus or minus 10% of values given.

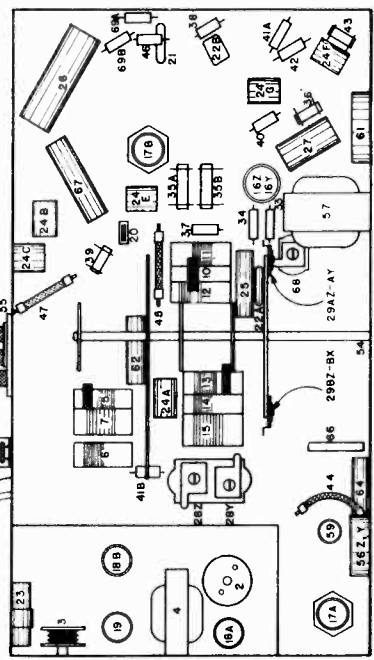
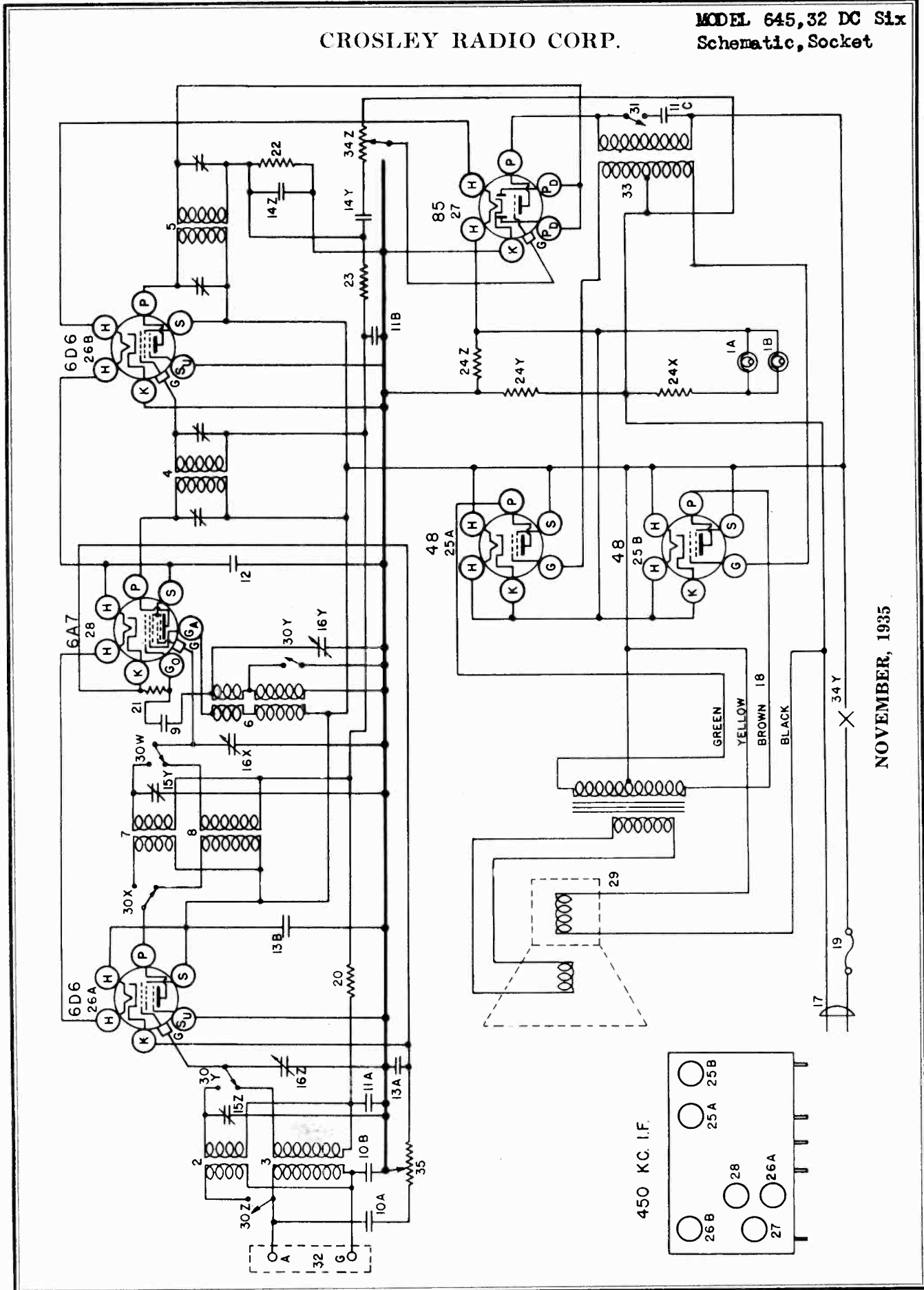


Fig. 3. Bottom View

CROSLLEY RADIO CORP.

MODEL 645, 32 DC Six  
Schematic, Socket



NOVEMBER, 1935

MODEL 645, 32 DC S1x  
Socket, Trimmers  
Voltage, Alignment  
Chassis, Parts

CROSLLEY RADIO CORP.

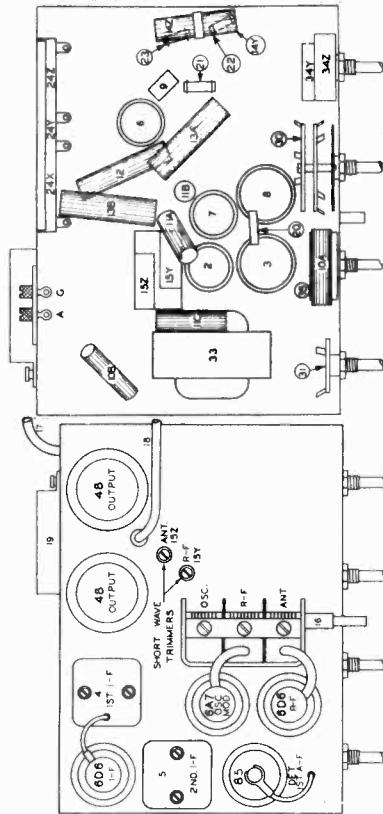


Fig. 3. Bottom View

Fig. 2. Top View

PARTS LIST—MODEL 645

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G4	27134	17	MG21	36630
1B	G54	32000	18	W	37198
2	W	25200B	19	G2	34332
3	W	28891	20	G2	35898
4	G55	32000	21	G1	33330
5	W	25200	22	G1	33330A
6	G56	32000	23	W	34223
7	W	28891	24	W	35600
8	G57	32000	25	W	21453
9	W	25200	26	G33	28807
10A	W	28891	27	G33	28807
10B	W	25200	28	G33	28807
11A	W	28891	29	W	35772
11B	W	25200	30Z	W	36753
11C	W	28891	31	W	36755A
12	W	27216	32	G28	26719
13A	W	24049A	33	MG14	36630
13B	W	24049A	34Z	W	36687
14	W	30322	35	B	33528C
15Z	G5	33008		D	33884
16Z	G39	33002		W	28
17X				W	37339
					Knob (2) Small

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	Go	Ga	K
6D6	R-F Amp.	63	31.5	32	0	0	—	—	0
6A7	Osc. Mod.	63	32.0	20	0	0	2	32	0
6B6	R-F Amp.	63	32.0	32	0	0	—	—	0
6C6	D.C. A-F Amp.	63	32.0	32	0	0	—	—	0
48	Output	25.0	31.5	32	—	—	—	—	5.7
48	Output	25.0	31.5	32	—	—	—	—	5.7

Measured on 32 Volt D.C. Line.

Current Drain Approximately 1.35 Amperes at 32 Volts.

SENSITIVITY CONTROL

The sensitivity control, Illus. No. 35, is a low resistance potentiometer. One end is connected through a condenser to the antenna lead and the other end is connected to the cathode of the R-F and Osc-Mod tubes. The moving arm is connected to the chassis. When the knob is turned toward the left it simultaneously decreases the resistance across the primary of the antenna coil and increases the grid bias on the R-F and Osc-Mod tubes. This has the effect of decreasing the sensitivity of the receiver and increasing the selectivity. Since the sensitivity of the R-F and I-F amplifiers is simultaneously decreased, it serves as a control of overall oscillations which sometimes develop with abnormally high line voltage.

GROUND CIRCUIT

DO NOT ground the chassis except through the use of the "Gnd" terminal. This terminal is separated from the chassis by a series condenser in order to prevent a short circuit when operating the receiver on a 32 volt line with the positive side grounded.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if an adjustment is found necessary the circuits can be properly aligned only with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate of one of the type 48 output tubes and connect the other terminal to the plate of the other 48 tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first prong to the left of the filament prongs. Be sure the meter is protected from D.C. by connecting a condenser (.1 mid. or larger—not electrolytic) in series with one of the leads.

I. Peaking I-F Stages at 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mid. condenser to the grid cap of the 6A7 tube, leaving the tube's grid clip in place. KEEP THE OUTPUT LEAD FROM THE SIGNAL GENERATOR AS FAR AS POSSIBLE FROM THE OTHER SCREEN GRID TUBES.

(b) Connect the ground terminal of the signal generator to the ground terminal of the receiver.

(c) Set the signal generator to exactly 450 kilocycles.

(d) Rotate the receiver tuning condenser until the rotor plates are completely meshed.

(e) Turn the band selector switch to the left. (Short Wave).

(f) Adjust the line voltage to 32 volts.

(g) Turn the volume control and the sensitivity control all the way to the right.

(h) With the signal generator set to the lowest usable output level adjust the I-F trimmer condensers for maximum signal output.

NOTE: The I-F trimmers are located on top of the I-F transformers, Fig. 2, and may be adjusted with an insulated screw driver. Always make the adjustments very carefully, going over them several times to insure that the final setting is at resonant frequency.

2. Aligning R-F Circuits—Broadcast Band (540-1570 K. C.)

(a) Turn the band selector switch to the right hand position. (Broadcast Band).

(b) Rotate the tuning condenser until the rotor plates are completely out of mesh.

(c) Connect the antenna terminal of the signal generator to the receiver antenna terminal through a .00025 mid., mica, series condenser.

(d) Connect the ground terminal of the signal generator to the ground terminal of the receiver.

(e) Set the signal generator to approximately 1575 kilocycles.

(f) Adjust the "Osc." section (rear section) of the tuning condenser gang for maximum signal output. (Fig. 2.)

(g) Set the signal generator to 1400 kilocycles.

NOTE: If electrical interference causes an excessive reading on the output meter, making alignment difficult, it can be reduced by connecting a 5 to 10 mid., paper, condenser between the ground terminal of the receiver and the chassis frame.

(h) Tune in the 1400 kilocycle signal with station selector for maximum output.

NOTE: Do not disturb the setting of the oscillator trimmer (rear section) as this is adjusted at 1575 kilocycles only and any further adjustment at this point would affect both the tuning range of the receiver and the tracking of its circuits.

(i) Adjust the "R-F" parallel trimmer of the condenser gang for maximum output.

(j) Adjust the "Ant." parallel trimmer of the condenser gang for maximum output.

(k) Repeat operations (h), (i) and (j) until no further improvement in output can be made.

3. Aligning R-F Circuits—Short Wave (1570-4000 K. C.)

(a) Set the signal generator to 2500 kilocycles.

(b) Turn the band selector switch to the left. (Short Wave).

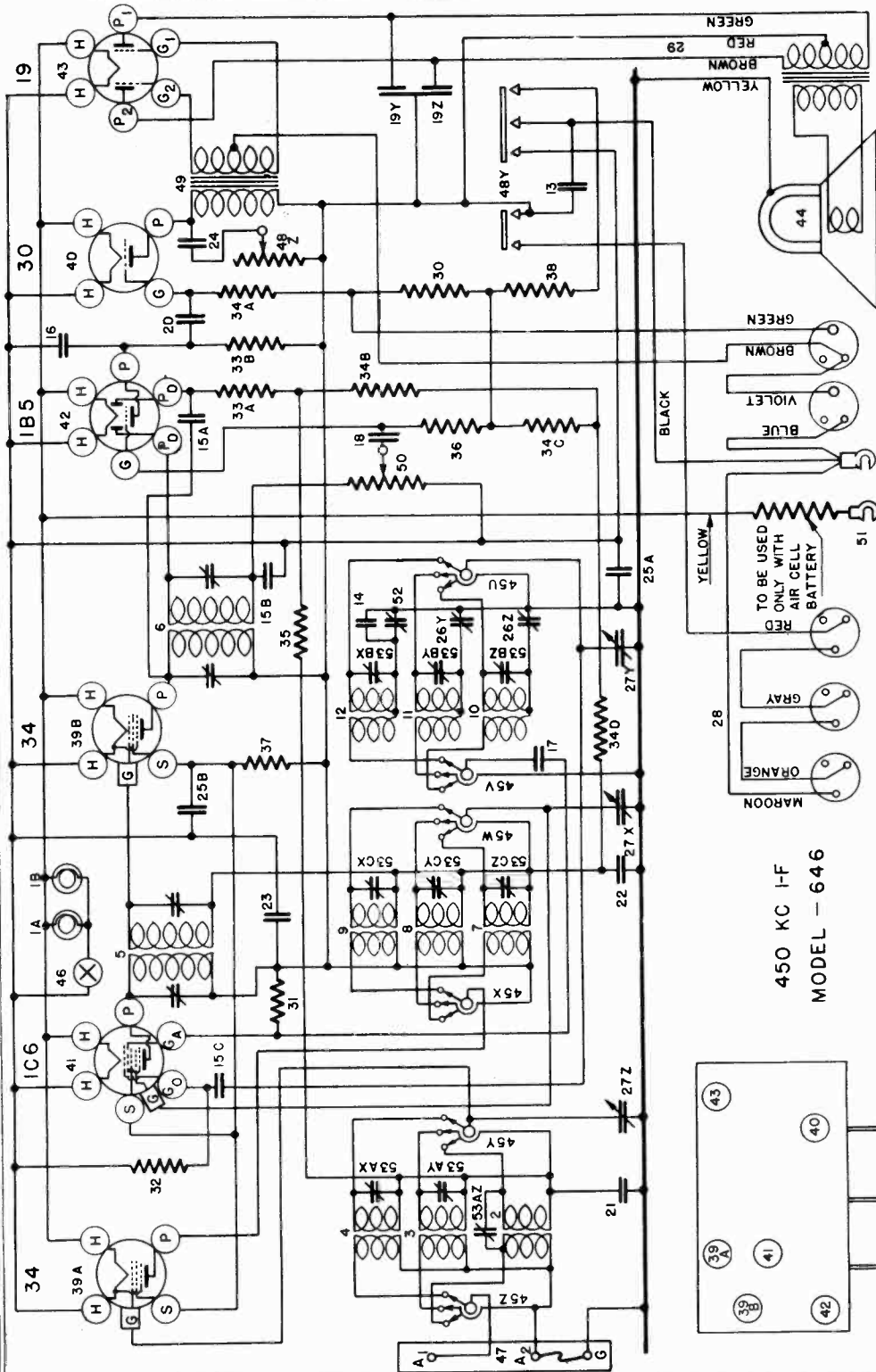
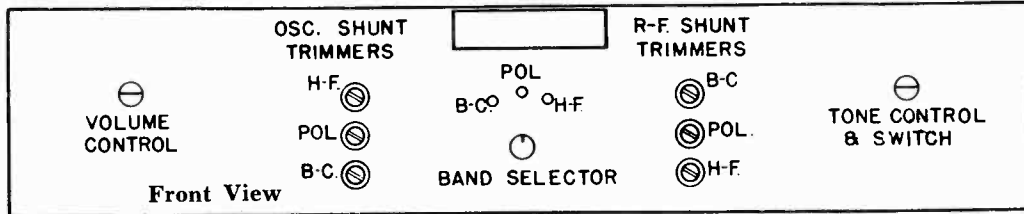
(c) Tune in the 2500 kilocycle signal with the tuning condenser for maximum output.

(d) Adjust the R-F short wave padding condenser, Illus. No. 15Z for maximum output.

(e) Adjust the Ant. short wave padding condenser, Illus. No. 15Z for maximum output.

CROSLY RADIO CORP.

**MODEL 646**  
Schematic, Trimmers  
Voltage, Socket



450 KC I-F  
MODEL - 646

MAY, 1936

TUBE SOCKET VOLTAGE READINGS

Tube	Where Used	H	P	S	G	Ga	Go
34	R-F Amplifier	2.0	135	65	0	70	-2 to -10
1C6	Osc-Modulator	2.0	135	65	0	70	---
34	I-F Amplifier	2.0	135	65	0	70	---
1B5	Diode & A-F Amp.	2.0	135	65	0	70	---
30	Driver	2.0	132	---	-9	---	---
19	Output	2.0	130	---	-4.5	---	---

Power output approximately 1.6 watts.  
"A" battery drain approximately .62 amperes at 2 Volts.  
"B" battery drain approximately 12 to 30 milliampers depending on setting of Volume Control.



**MODEL 646**  
**Socket, Trimmers**  
**Chassis, Parts**  
**Alignment**

**CROSLLEY RADIO CORP.**

each "series" trimmer rock the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

and 26Y—Fig. 2, set the signal generator to the frequency indicated, and then tune-in the signal with the station selector for maximum output. While adjusting station selector for maximum output. While adjusting station selector for maximum output. While adjusting station selector for maximum output.

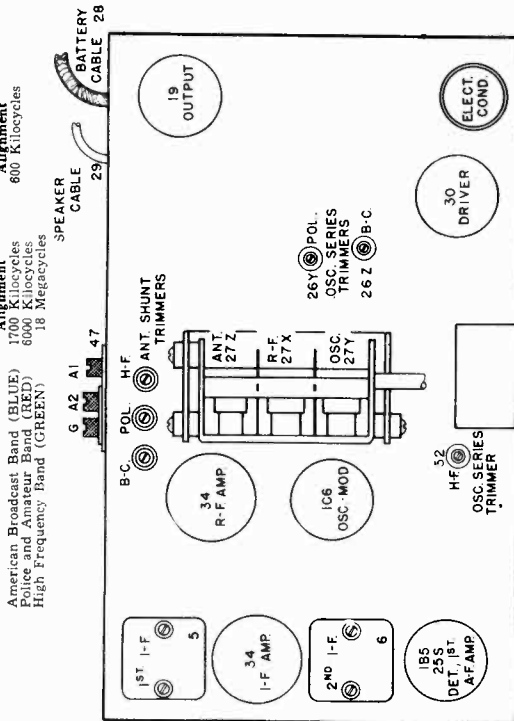


Fig. 2 Top View

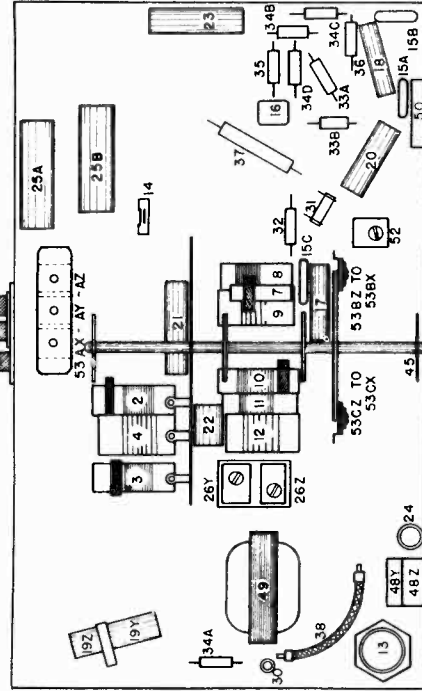


Fig. 3 Bottom View

(f) Adjust both trimmers located on top of the 1st I-F transformer for maximum output.  
(g) Check operations (e) and (f) for more accurate adjustments.  
**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**

**2. Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the "ANT" (A1) terminal of the receiver through a .0025 mfd. condenser. Each band should first be stunt aligned and then series aligned. The band selector and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "OSC." "R-F" (Fig. 4), and "ANT" (Fig. 2), shunt trimmers in the order given, for maximum output. Tune the station selector to the generator signal for maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. **NOTE:** When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency.  
To adjust the "series" trimmers, illus. Nos. 52, 26Z.

**PARTS LIST—MODEL 646**

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	W-37188	Dial Light	28	G8	Speaker Cable
1B	W-37188	Dial Light	29	G8	Speaker Cable
2	G6-27131	Light Bracket Assembly	30	W-32180	Resistor 3000 Ohm 1/4 W.
3	G11-32000	Ant. Coil—B-C-B.	31	W-33390	Resistor 3000 Ohm 1/4 W.
4	G11-32000	Ant. Coil—Pol-B.	32	W-36761	Resistor 4000 Ohm 1/4 W.
5	G11-32001	1st I-F Assembly	33A	W-35928	Resistor 6000 Ohm 1/4 W.
6	G16-32004	2nd I-F Assembly	33B	W-35928	Resistor 6000 Ohm 1/4 W.
7	G8-32002	Osc. Coil—B-C-B.	34	W-36322	Resistor 50000 Ohm 1/4 W.
8	G9-32002	Osc. Coil—Pol-B.	34C	W-36322	Resistor 50000 Ohm 1/4 W.
9	G10-32002	R-F Coil—B-C-B.	34D	W-36322	Resistor 50000 Ohm 1/4 W.
10	G7-32001	R-F Coil—Pol-B.	35	W-35927	Resistor 2000 Ohm 1/4 W.
11	G7-32001	R-F Coil—H-F-B.	36	W-37377	Resistor 2000 Ohm 1/4 W.
12	W-37628	R-F Coil—H-F-B.	37	W-37377	Resistor 2000 Ohm 1/4 W.
13	W-37628	Condenser 30 Mid. 200 V. Electrolytic	38	G31-28807	Socket Type 34
14	G5-34007	Condenser 2757 Mimd. Mica.	39B	G31-28807	Socket Type 34
15A	G2-34002	Condenser Molded 0001 Mfd.	40	G84-29807	Socket Type 19
15C	G3-34002	Condenser Molded 0005 Mfd.	41	G84-29807	Socket Type 19
16	W-35139	Condenser Tubular .001 Mid. 400 V.	42	G44-29807	Socket Type 19
17	W-28614	Condenser Tubular .005 Mid. 400 V.	43	W-29573B	Tube Shield Base
18	W-28614	Condenser Tubular .005 Mid. 400 V.	44	W-29573B	Tube Shield Base
19Y	W-28621	Condenser Tubular .02 Mid. 200 V.	45Z	C-40710	Band Selector Switch
20	W-28621	Condenser Tubular .02 Mid. 200 V.	46	W-1102A	Switch Dial Light
21	W-32379	Condenser Tubular .02 Mid. 200 V.	G27	W-25719	Batt. Switch
22	W-30488	Condenser Tubular .02 Mid. 100 V.	48Y	W-11368	Tone Control
23	W-23615	Condenser Tubular .05 Mid. 400 V.	G25	W-35951	Volume Control
24	W-23615	Condenser Tubular .05 Mid. 400 V.	49	W-24628	Audio Transformer
25A	W-29610A	Condenser Tubular .25 Mid. 200 V.	50	W-37857	Resistor 374 Ohm Air Cell
25B	W-29610A	Condenser Tubular .25 Mid. 200 V.	51	G3-41369	3 Section Shunt Trimmer
26Y	W-37874	P.C. Osc. Series Trimmer	52	W-40839	Escutcheon Pin
27	G50-33002	3 Section Var. Tuning Condenser	53	W-41221	Knob, Station Selector
	C-40903B	Dial Drive Unit	54	W-41221	Knob, Band Selector
	W-41220	Dial Glass	55	W-40192B	Knob, V. C. & T. C.
	W-41386	Pointer Disc			
	W-41386	Pointer Disc			
	W-41584	Coil Line Unit			
	W-41584	Pointer Disc, Screw			
	C-37106C	Battery Supply Cable Assembly			

Figures in first column refer to parts in Diagrams.

The Crosley Model 646 radio is a six-tube superheterodyne receiver designed for operation from batteries. The method of connecting the battery cable is shown on the Wiring Diagram, Fig. 1. The batteries required are: one two volt storage battery or air cell battery, three plug-in type 45 volt "B" batteries and two plug-in type 4 1/2 volt "C" batteries.

**ALIGNMENT PROCEDURE**

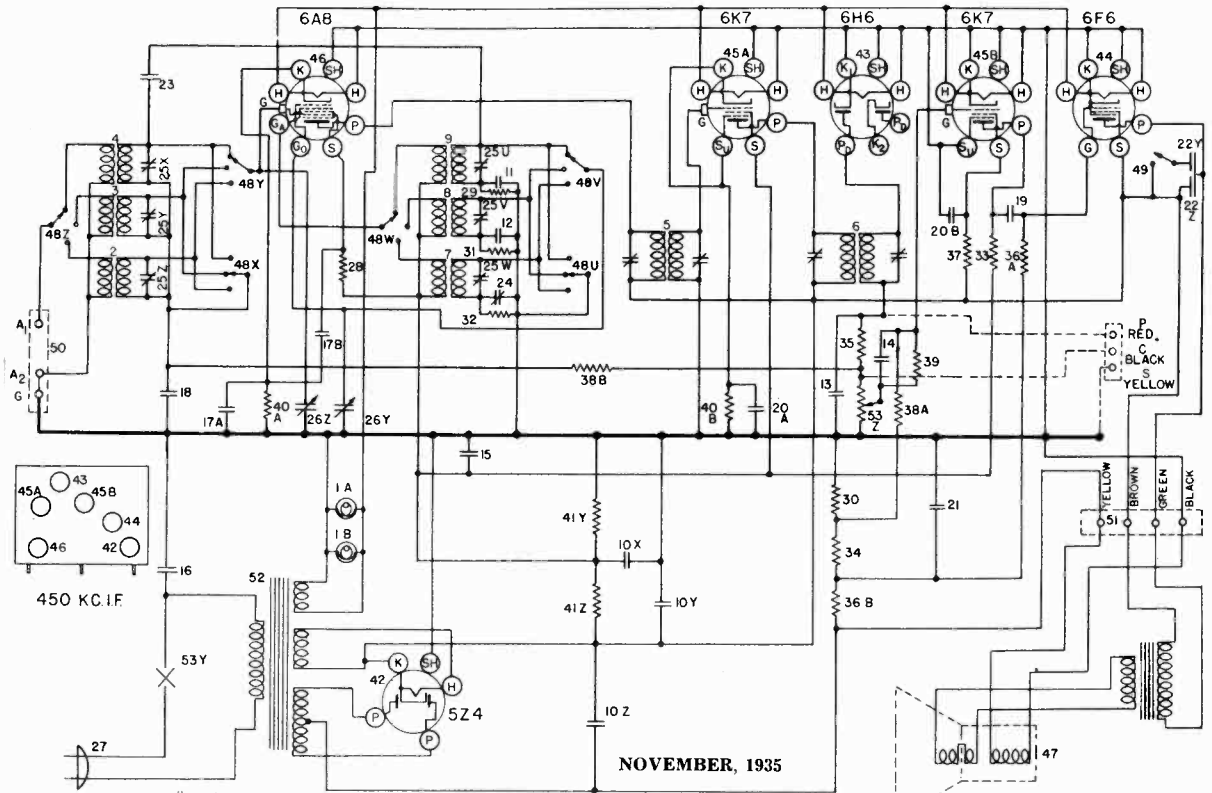
**CONNECTING OUTPUT METER**  
Connect the two terminals of the output meter to the two plates of the 19 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. or larger, condenser to the top cap of the ICS Osc-Mod tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.**  
(b) Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON).  
(c) Turn the band selector switch to the "H-F" position.  
(d) Set the signal generator to 450 kilocycles.  
(e) Adjust both trimmers located on top of the 2nd I-F transformer for maximum output. Fig. 2.

CROSLY RADIO CORP.

MODEL 655, Olympia  
Schematic, Socket  
Trimmers, Voltage  
Chassis



**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	G	Go	Ga	K
6A8	Osc-Mod	6.3	220	80	—	0	-4 to -10	105	2.5
6K7	I. F. Amplifier	6.3	220	105	3.3	0	—	—	3.3
6H6	Diode Detector	6.3	—	—	—	—	—	—	0
6K7	A. F. Amplifier	6.3	20	20	0	1.0	—	—	0
6F6	Output	6.3	210	220	—	8.0	—	—	0
5Z4	Rectifier	4.9	220	—	—	—	—	—	—

Measured on 117.5 Volt—60 Cycle Line.  
Power Consumption Approximately 60 Watts.

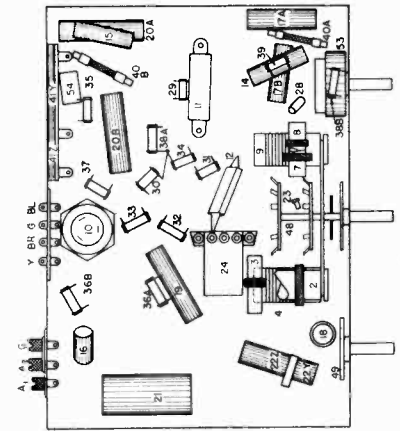


Fig. 3. Bottom View

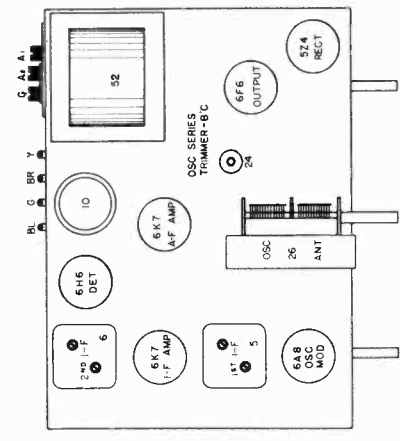


Fig. 2. Top View

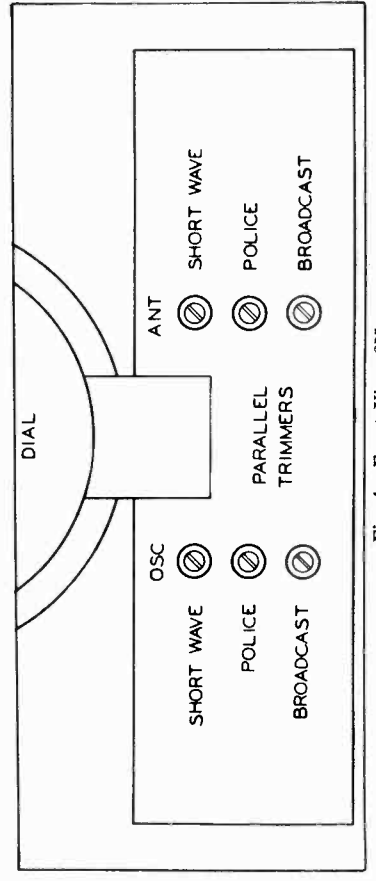


Fig. 4. Front View 655

**MODEL 655, Olympia  
Alignment, Parts**

**CROSLLEY RADIO CORP.**

**PARTS LIST—MODEL 655**

Figures in first column refer to parts shown in diagrams.

Item No.	Part No.	Description
1A	G4	—27134 Dial Light Assm.
1B	G4	—27134 Dial Light Assm.
2	G39	—32000 Ant. Coil only 540-1725 Kc.
3	G43	—32000 Ant. Coil only 1.7-5.2 Mc.
4	G40	—32000 Ant. Coil only 5.3-15.5 Mc.
5	G59	—32004 1st I. F. Trans. Assm.
6	G38	—32004 2nd I. F. Trans. Assm.
7	G34	—32002 Osc. Coil only 540-1725 Kc.
8	G35	—32002 Osc. Coil only 1.7-5.2 Mc.
9	G48	—32002 Osc. Coil only 5.3-15.5 Mc.
10Z	B	—30059C Condenser, 8 mfd. 450 V.
10Y	B	—30059C Condenser, 8 mfd. 450 V.
10X	B	—30059C Condenser, 8 mfd. 450 V.
11	G12	—34000 Condenser, 4725 mmf.
12	G7	—34000 Condenser, 1450 mmf.
13	G2	—34002 Condenser, 0.0001 mfd. 200 V.
14	W	—28619 Condenser, 0.006 mfd. 200 V.
15	W	—32378 Condenser, 0.01 mfd. 400 V.
16	W	—30805 Condenser, 0.01 mfd. 400 V.
17A	W	—28621 Condenser, 0.02 mfd. 200 V.
17B	W	—28621 Condenser, 0.02 mfd. 200 V.
18	W	—32380 Condenser, 0.05 mfd. 200 V.
19	W	—27216 Condenser, 0.1 mfd. 200 V.
20A	W	—24049B Condenser, 0.1 mfd. 200 V.
20B	W	—24049B Condenser, 0.1 mfd. 200 V.
21	W	—30321A Condenser, 1.0 mfd. 160 V.
22Z	W	—35011 Condenser, 0.006 mfd. 400 V.
22Y	W	—35011 Condenser, 0.003 mfd. 400 V.
23	G49	—34403 Condenser, 1.0 mmf.
24	G10	—33005 Condenser, B. C. Series Padder
25Z	W	—35951 3 Section Ant. Trimmer Cond.
25Y	W	—35951 3 Section Ant. Trimmer Cond.
25W	W	—35951 3 Section Osc. Trimmer Cond.
25U	W	—35951 3 Section Osc. Trimmer Cond.
26Z	W	—35951 3 Section Osc. Trimmer Cond.
26Y	W	—35951 3 Section Osc. Trimmer Cond.
G13	—33001	Var. Tuning Cond. Gang
G29	—32086	Dial Assm. Complete
W	—37198	Dial Hand
W	—32293	Dial Hand Nut (2)

27	B	—33905A A. C. Cord & Plug
28		Resistor, 15,000 Ohm (Insul.)
29		Resistor, 15,000 Ohm (Insul.)
30		Resistor, 15,000 Ohm (Insul.)
31		—24990 Resistor, 25,000 Ohm
32		—21453 Resistor, 40,000 Ohm
33		—21875 Resistor, 100,000 Ohm
34		—34018 Resistor, 200,000 Ohm
35		—21455 Resistor, 300,000 Ohm
36A		—23785 Resistor, 500,000 Ohm
36		—23785 Resistor, 500,000 Ohm
37		—34883 Resistor, 2.0 Megohm
38A		—26577 Resistor, 3.0 Megohm
38B		—26577 Resistor, 3.0 Megohm
39		—26578 Resistor, 5.0 Megohm
40A		—25937 Resistor, 275 Ohms (Flex)
40B		—25937 Resistor, 275 Ohms (Flex)
41Z		—35963 Resistor, 8,500 Ohms
41Y		—35963 Resistor, 25,000 Ohms
42		G154—36400 Socket, 52A
43		G155—36400 Socket, 8H6
44		G153—36400 Socket, 6F6
45A		G151—36400 Socket, 6K7
45B		G151—36400 Socket, 6K7
46		G156—36400 Socket, 6A8
47		318BL—18M Speaker, (Table Model)
		418CL—22M Speaker, (Console Model)
48U		To
48Z		48Z
49	W	—35937 Switch Tone Control
G27	W	—26713 Terminal Board Ant.—Grd.
G5	W	—31128 Terminal Board Speaker
50	W	—34628 Term. Board Cover (Speaker)
51	W	—34627 Term. Board Cover Insulator
G8	W	—28500 Power Trans. 60 Cy. 110 V.
G9	W	—28500 Power Trans. 25 Cy. 110 V.
G10	W	—28500 Power Trans. 25 Cy. 220 V.
52		Volume Control & On-Off Switch
53Z		Condenser, 0.00025 mfd.
53Y		Condenser, 0.00025 mfd.
54		Escutcheon
G1	B	—34002 Escutcheon Gasket
B	B	—33528C Escutcheon Screw (4)
D	W	—33984 Escutcheon Gasket
W	W	—28 Escutcheon Screw (4)
W	W	—26312 Band Change Plate
W	W	—36309 Band Change Indicator
W	W	—28760B Escutcheon Pins
W	W	—37340 Knob, Band Change
W	W	—37339 Knob (3)

**ALIGNMENT PROCEDURE**  
All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary, the circuits can be properly aligned only with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 6F6 output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I. F. Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the grid cap of the 6A8 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. **KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID WIRES OF THE OTHER S. C. TUBES.**

(b) Turn the tuning condenser rotor plates until they are completely meshed.

(c) Turn the band selector switch to the short wave band (extreme left hand position).

(d) Set the signal generator to 450 kilocycles.

(e) Adjust both trimmers located on top of the 2nd I. F. transformer for maximum output. (Fig. 2).

(f) Adjust both trimmers located on top of the 1st I. F. transformer for maximum output.

(g) Using the lowest signal generator output that will give a reasonable scale deflection on the output meter repeat operations (e) and (f) as many times as necessary to obtain the maximum output.

**2. Aligning R. F. Amplifier—Broadcast Band (540 to 1700 Kc.)**

(a) Connect the output of the signal generator through a .00025 mfd. condenser to the "Ant" terminal of the receiver.

(b) Turn the tuning condenser rotor plates until they are COMPLETELY OUT OF MESH.

(c) Turn the band selector switch to the broadcast band (extreme right hand position).

(d) Set the signal generator at 1720 kilocycles.

(e) Adjust the oscillator parallel trimmer (broadcast band) for maximum output.

(f) Set the signal generator at 1400 kilocycles.

(g) Tune in the 1400 kilocycle signal with the station selector.

(h) Adjust the antenna parallel trimmer (broadcast band) for maximum output.

(i) Using the lowest signal generator output that will give a reasonable output meter reading, repeat operations (g) and (h) until no further increase in output can be obtained.

(j) Set the signal generator to 600 kilocycles.

(k) Tune in the 600 kilocycle signal with the station selector in the region of 60 on the dial, for maximum reading on the output meter.

(l) Adjust the oscillator series trimmer. (Fig. 2) while rocking the condenser gang plates back and forth slightly, until no further increase in output can be obtained.

(m) Repeat operations (g) and (h) for more ac-

**SPECIFICATIONS**

The Crosley Model 655 radio is a six-tube superheterodyne receiver using all metal tubes and is available or adaptable for operation on A-C lines as follows: 110 V—60 cycles, 110 V—25 cycles and 220 V—25 cycles. It is a three band receiver tuning from 540 to 1700 kilocycles in the broadcast band, 1700 to 5200 kilocycles in the police and amateur band and 5400 to 15,800 kilocycles in the high frequency band.

The tubes used are: 6A8 Oscillator-Modulator, 6K7 I-F Amplifier, 6H6 Detector and AVC, 6K7 A-F Amplifier, 6F6 Output and type 5Z4 Rectifier.

**SOCKET VOLTAGES**

The tube socket voltages are measured from the socket contacts to the chassis with a 1000 ohm per volt, 250 volt voltmeter (except filaments) with the receiver in operating condition and no signal input. Readings may vary plus or minus 10% of values given.

curate adjustments.

**3. Aligning R. F. Amplifier—Police Band 1700 to 5200 Kc.**

(a) Turn the band selector switch to the police band (middle position).

(b) Set the signal generator to 5000 kilocycles. (5.0 megacycles).

(c) Turn the station selector to 5 on the police band.

(d) Adjust the oscillator parallel trimmer (P. Band) for maximum output. (Fig. 4).

(e) Adjust the antenna parallel trimmer (P. Band) for maximum output.

**4. Aligning R. F. Amplifier—Short Wave Band (5.4 to 15 Meg.)**

(a) Replace the .00025 mfd. condenser which is being used in series with the output lead of the signal generator with a 400 ohm carbon resistor.

(b) Turn the band selector switch to the short wave band (left hand position).

(c) Set the signal generator to 15 megacycles.

(d) Close the Oscillator parallel trimmer (S-W Band) and then open three turns.

(e) Close the Antenna parallel trimmer (S-W Band) and then open 1/2 turn.

(f) Turn the station selector to 15 on the dial (S-W Band).

(g) Peak the oscillator parallel trimmer (S-W Band) on the FIRST signal heard when closing the condenser. In making this adjustment care should be taken not to use too much output from the signal generator to avoid setting the oscillator circuit on the wrong frequency.

**NOTE:** Check on the adjustment of the S-W Band oscillator parallel trimmer as follows:

1. Increase the signal generator output not more than ten times.

2. Try to tune in the 15 megacycles signal with the station selector at approximately 14 on the dial.

3. If the 15 megacycles signal can be heard at approximately 14 and 15 both on the dial the oscillator parallel trimmer has been aligned on the correct frequency. It should be noted, however, that the signal tuned in at 15 on the dial should be much stronger than the signal heard at 14. If this condition is not found it will be necessary to repeat operation (g).

(h) Reduce the output of the signal generator to the previous output and retune the station selector to 15 megacycles at 15 on the dial.

(i) Adjust the antenna parallel trimmer (S-W Band) for maximum output, then retune the station selector for maximum output.

(j) Repeat the two operations in (i) as many times as necessary to obtain the maximum output.

**NOTE:** On the band selector switch there is a small eyelet soldered to one of the connecting lugs. This eyelet, item No. 23, is used as a small condenser the capacity of which is formed by inserting an insulated wire into the sleeve of the eyelet. If a new band selector switch is installed care should be taken to see that the "capacity wire" is inserted into the sleeve of the eyelet. This insulated wire should be passed through the eyelet and a slight hook made in the end to prevent it from pulling out. (See Fig. 3).



**MODEL 725, Viking  
Socket, Trimmers  
Chassis, Parts  
Alignment**

**CROSLLEY RADIO CORP.**

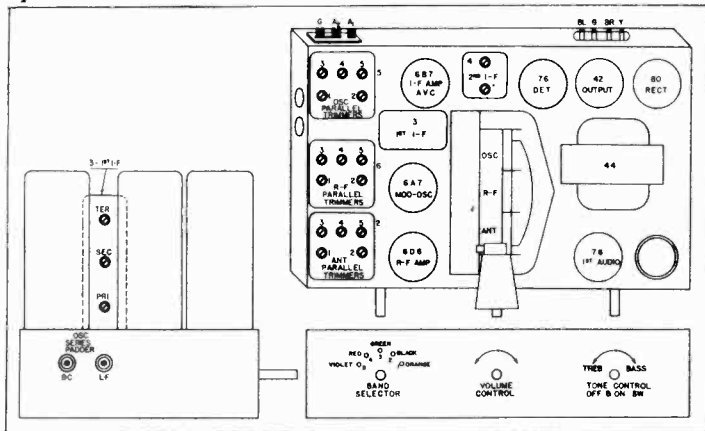


Fig. 2. Top View 725

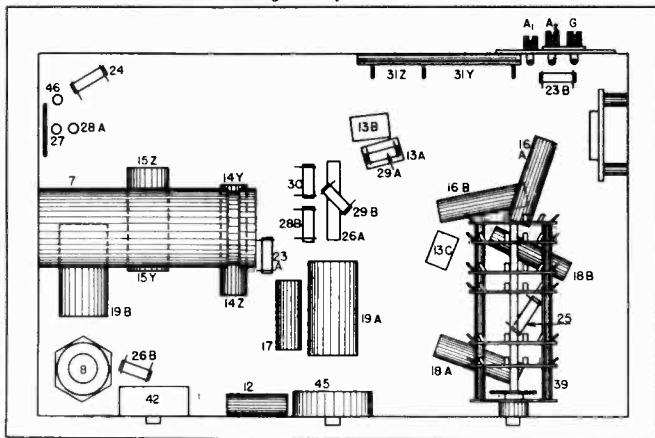


Fig. 3. Bottom View

**PARTS LIST—MODEL 725**

Figures in first column refer to parts shown in diagrams

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	—36504	Dial Light Socket Assm.	21X	G34—33002	Var. Tuning Cond. Gang
1B			21Y		
2	G57—32900	Ant. Coil Assm. Complete	21Z		
	G48—32000	Ant. Coil only 150-400 Kc.		C	—37433B Dial Drive Assm.
	G47—32000	Ant. Coil only 540-1500 Kc.			—37434A Dial Face only
	G49—32000	Ant. Coil only 1500-4000 Kc.			—37551 Dial Hand
	G53—32000	Ant. Coil only 4-10 Mc.			—37554 Second Hand
	G52—32000	Ant. Coil only 10-22 Mc.			—37484 Hand Screw
MG9	—36168	Shield			—37543 Hand Washer
W	—36028	5 Section Trimmer Condenser			—3395A A. C. Ward & Plug
		Coil Support Base	22		
3	G47—32004	1st I. F. Assm.	23A		Resistor, 10,000 Ohms
4	G46—32002	2nd I. F. Assm.	23B		Resistor, 10,000 Ohms
5	G46—32002	Osc. Coil Assm. Complete	24		Resistor, 20,000 Ohms
	G39—32002	Osc. Coil only 150-400 Kc.	25		Resistor, 100,000 Ohms
	G40—32002	Osc. Coil only 540-1500 Kc.	26A		Resistor, 150,000 Ohms
	G41—32002	Osc. Coil only 1500-4000 Kc.	26B		Resistor, 150,000 Ohms
	G45—32002	Osc. Coil only 4-10 Mc.	27		Resistor, 100,000 Ohms
	G44—32002	Osc. Coil only 10-22 Mc.	28A		Resistor, 500,000 Ohms
	G4—34007	Condenser, 1135 mmf. *	28B		Resistor, 500,000 Ohms
	G6—34007	Condenser, 1707 mmf. *	29A		Resistor, 1.0 Megohm
	G5—34007	Condenser, 2757 mmf. *	29B		Resistor, 1.0 Megohm
	G6—34002	Condenser, 25 mmf.	30		Resistor, 3.0 Megohm
MG20	—36168	Coil Support Base	31Z	W	—36442 Resistor, 17,500 Ohms
W	—36028	5 Section Trimmer Condenser	31Y		Resistor, 15,000 Ohms
		Shield	32		Socket, 80
6	MG10—36168	Shield	33A	G80—28807	Socket, 76
	G33—32001	R. F. Coil Assm. Complete	33B	G80—28807	Socket, 76
	G27—32001	R. F. Coil only 150-400 Kc.	34	G75—28807	Socket, 6D6
	G26—32001	R. F. Coil only 540-1500 Kc.	35	G25—28807	Socket, 42
	G28—32001	R. F. Coil only 1500-4000 Kc.	36	G47—33070	Socket, 6A7
	G31—32001	R. F. Coil only 4-10 Mc.	37	G48—28807	Socket, 6B7
	G30—32001	R. F. Coil only 10-22 Mc.		W	—35772 Tube Shield Half
	G1—34002	Condenser, 250 mmf.		W	—35773 Tube Shield Cap
MG9	—36168	Shield		W	—35774 Tube Shield Base
MG10	—36168	Coil Support Base		W	—33072 Socket Cushion
W	—36028	5 Section Trimmer Condenser	38	330CL—32	Speaker (Table Model)
		Coil Support Base		330CL—27	Speaker (Console Model)
7Z	W	—36056 Condenser, 8 mfd. 450 Volt		—36271E	Band Change Switch
7Y	W	—34007 Condenser, 4 mfd. 350 Volt	39U		
7X	W	—34007 Condenser, 4 mfd. 250 Volt	40		
8	W	—36055 Condenser, 35 mfd. 400 Volt	41		
9	G4—34007	Condenser, 1135 mmf. *	42		
10	G6—34007	Condenser, 1707 mmf. *	42Z		
11	W	—30965 Condenser, 0.01 mfd. 400 Volt	42Y		
12	W	—30965 Condenser, 0.01 mfd. 400 Volt	43	W	—36500 Tuning Meter
13A	G2—34002	Condenser, 100 mmf.	44	G10—30745	Power Trans. 60 Cy., 110 V.
13B	G2—34002	Condenser, 100 mmf.		G11—30745	Power Trans. 25 Cy., 110 V.
13C	G2—34002	Condenser, 100 mmf.		G12—30745	Power Trans. 25 Cy., 220 V.
14Z	W	—55337A Condenser, 0.001 mfd. 400 V.		W	—36066 Volume Control 1.0 Megohm
15Z	W	—55337B Condenser, 0.001 mfd. 400 V.		W	—34019 Resistor, 75,000 Ohms
15Y	W	—31052 Condenser, 0.01 mfd. 400 V.		B	—36515 Escutcheon
16A	W	—32378 Condenser, 0.01 mfd. 400 V.		D	28 Escutcheon Screw (3)
16B	W	—32378 Condenser, 0.01 mfd. 400 V.		W	—36311 Band Change Escutcheon
17	W	—32379 Condenser, 0.02 mfd. 200 V.		W	—36310 Escutcheon Indicator (Celluloid)
18A	W	—32379 Condenser, 0.02 mfd. 200 V.		W	—28700B Escutcheon Pin
18B	W	—30321 Condenser, 1.0 mfd. 160 V.		W	—36518 Knob, Bd. Chg. & Tone Control
19A	W	—30321 Condenser, 1.0 mfd. 160 V.		W	—36519 Knob, Dial
19B	W	—30321 Condenser, 1.0 mfd. 160 V.		W	—36520A Knob, Vernier
20Y	G15—33006	Condenser, B. C. Series Osc.		W	—36521 Knob, Volume Control
20Z		Condenser, L. F. Series Osc.			

NOTE: \* First models had condensers mounted externally but eventually placed in G46—32002 Assm.

**ALIGNMENT PROCEDURE**

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned only with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 42 output tube. Looking at the bottom of the tube with the filament prongs toward you the plate prong will be the first to the left of the filament prongs and the screen prong will be next to the plate prong. Be sure the meter is protected from D. C. by connecting a condenser (1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier to 450 Kilocycles.**

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR LEADS AS FAR AS POSSIBLE FROM THE GRID WIRES OF THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the left.

(d) Set the signal generator for 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st. I-F transformer.

(f) Adjust the trimmers located on top of the 2nd. I-F transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I-F transformer for maximum output.

(h) Repeat operations (f) and (g) for more-accurate adjustments.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(i) Reduce the output of the signal generator and adjust the middle trimmer on the 1st. I-F transformer for maximum output. DO NOT READJUST THE OTHER TRIMMERS.

**2. Aligning R-F Amplifier.**

(a) When aligning the R-F amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Weather Band and Broadcast Band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc.", "R-F" and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order. NOTE: When aligning the Police and High Frequency Bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is always approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune in the signal both at the generator frequency as with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no further improvement in output can be obtained.

After the "series" alignment of any band has been completed it will be necessary to repeat the "shunt" alignment of that band. Indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

To align the "series" trimmer, set the signal generator to the frequency indicated and then tune-in this signal

**(b) Signal Input Frequencies.**

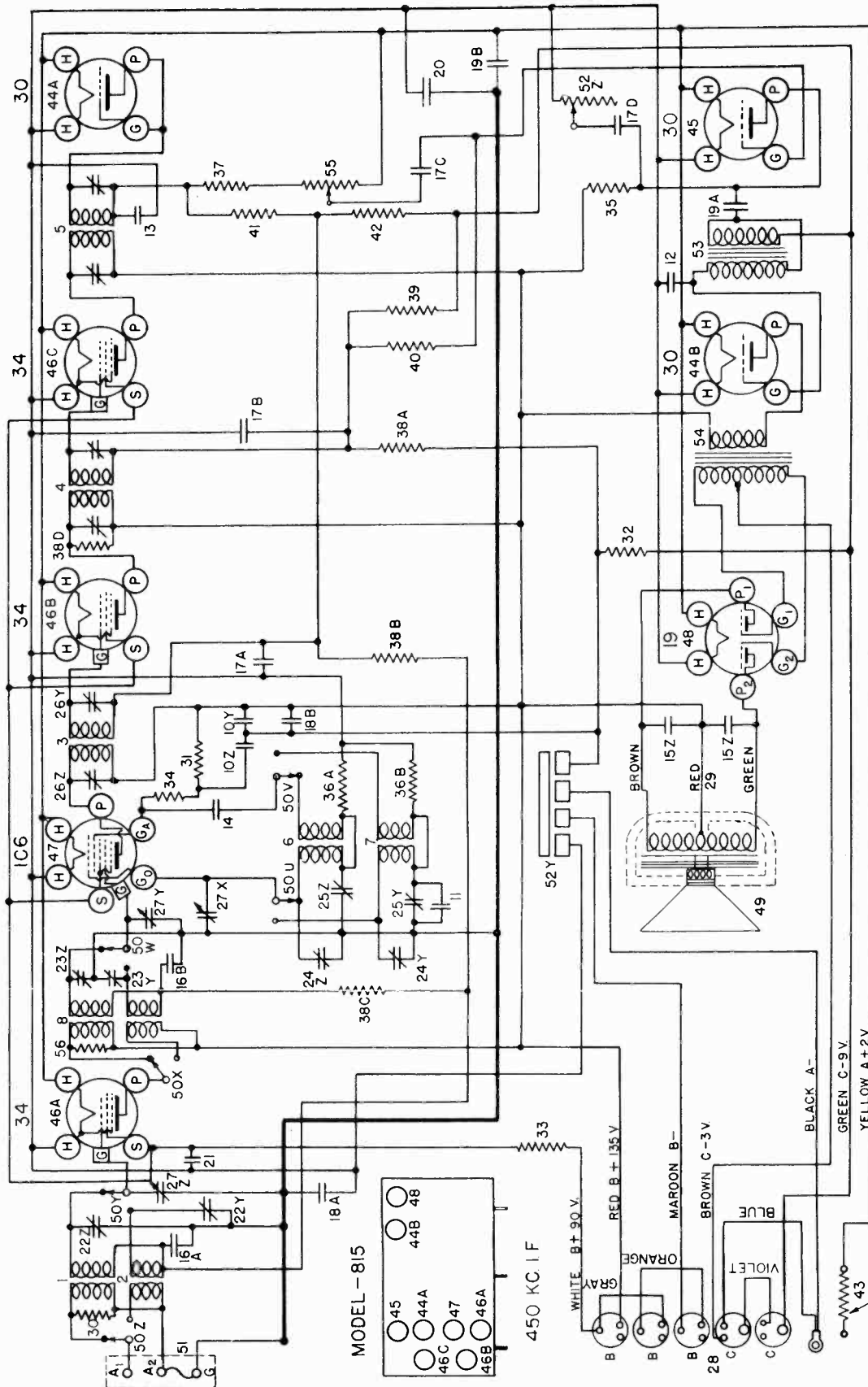
	Shunt Alignment	Series Alignment
Weather Band (ORANGE)	400 Kc.	150 Kc.
American Broadcast Band (BLACK)	1400 Kc.	600 Kc.
Police and Amateur Band (GREEN)	4000 Kc.	—
Night H-F Band (RED)	10 Megacycles	—
Day H-F Band (VIOLET)	21 Megacycles	—

**SOCKET VOLTAGES**

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500 volt voltmeter (except titaniums) with the receiver in operating condition and no signal input. Readings may vary plus or minus 10% of values given.

MODEL 815, Battery 8  
Schematic

CROSLY RADIO CORP.



**MODEL 815, Battery 8  
Socket, Trimmers  
Chassis, Parts  
Alignment, Voltage**

**CROSLLEY RADIO CORP.**

**TUBES AND VOLTAGE LIMITS**

The following table gives the functions of the tubes used, together with the voltage readings between the tube socket contacts and "A". Voltage readings should be taken with a 1000 ohm per volt, 250 volt voltmeter (rept filaments) with volume control full on and no signal input. Filament voltages should be measured with an accurate low range D.C. voltmeter (0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

Tube	Where Used	H	P	S	G	Ga	Go
34	R. F. Amplifier	2.0	135	87.5	—	85	-5 to -10
1C6	Osc. Mod.	2.0	135	87.5	—	—	—
34	2nd I. F. Amplifier	2.0	135	87.5	—	—	—
34	1st I. F. Amplifier	2.0	135	87.5	—	—	—
30	D. F. Detector	2.0	70	—	—	—	—
30	A. F. Amplifier	2.0	70	—	—	—	—
30	A. F. Driver	2.0	135	—	—	—	—
19	Double Triode Output	2.0	135	—	—	—	-1.5

**POWER OUTPUT APPROXIMATELY 2.5 WATTS.**  
 "A" BATTERY DRAIN APPROXIMATELY 74 AMPERES AT 2 VOLTS.  
 "B" BATTERY DRAIN 20 TO 35 MILLIAMPERES—DEPENDENT UPON VOLUME CONTROL ADJUSTMENT.

**PARTS LIST—MODEL 815**

Item No.	Part No.	Description	Item No.	Part No.	Description
1	3000	Ant. Coil 540 1250 Mc.	41	G1	25000
2	3002A	Coil Shield	42	G2	25000
3	3002B	Insulating Washer	43	G3	25000
4	3002C	Coil Shield 37-13.5 Mc.	44	G4	25000
5	3002D	Retaining Ring	45	G5	25000
6	3002E	Coil Shield 37-13.5 Mc.	46	G6	25000
7	3002F	Insulating Washer	47	G7	25000
8	3002G	Coil Shield 37-13.5 Mc.	48	G8	25000
9	3002H	Retaining Ring	49	G9	25000
10	3002I	Coil Shield 37-13.5 Mc.	50	G10	25000
11	3002J	Insulating Washer	51	G11	25000
12	3002K	Coil Shield 37-13.5 Mc.	52	G12	25000
13	3002L	Retaining Ring	53	G13	25000
14	3002M	Coil Shield 37-13.5 Mc.	54	G14	25000
15	3002N	Insulating Washer	55	G15	25000
16	3002O	Coil Shield 37-13.5 Mc.	56	G16	25000
17	3002P	Retaining Ring	57	G17	25000
18	3002Q	Coil Shield 37-13.5 Mc.	58	G18	25000
19	3002R	Insulating Washer	59	G19	25000
20	3002S	Coil Shield 37-13.5 Mc.	60	G20	25000
21	3002T	Retaining Ring	61	G21	25000
22	3002U	Coil Shield 37-13.5 Mc.	62	G22	25000
23	3002V	Insulating Washer	63	G23	25000
24	3002W	Coil Shield 37-13.5 Mc.	64	G24	25000
25	3002X	Retaining Ring	65	G25	25000
26	3002Y	Coil Shield 37-13.5 Mc.	66	G26	25000
27	3002Z	Insulating Washer	67	G27	25000
28	3003	R. F. Coil 540 1250 Mc.	68	G28	25000
29	3004	Shield	69	G29	25000
30	3005	1st I. F. Coil (only)	70	G30	25000
31	3006	2nd I. F. Coil	71	G31	25000
32	3007	Shield	72	G32	25000
33	3008	2nd I. F. Arm	73	G33	25000
34	3009	Coil Shield 37-13.5 Mc.	74	G34	25000
35	3010	Insulating Washer	75	G35	25000
36	3011	Coil Shield 37-13.5 Mc.	76	G36	25000
37	3012	Retaining Ring	77	G37	25000
38	3013	Coil Shield 37-13.5 Mc.	78	G38	25000
39	3014	Insulating Washer	79	G39	25000
40	3015	Coil Shield 37-13.5 Mc.	80	G40	25000
41	3016	Retaining Ring	81	G41	25000
42	3017	Coil Shield 37-13.5 Mc.	82	G42	25000
43	3018	Insulating Washer	83	G43	25000
44	3019	Coil Shield 37-13.5 Mc.	84	G44	25000
45	3020	Retaining Ring	85	G45	25000
46	3021	Coil Shield 37-13.5 Mc.	86	G46	25000
47	3022	Insulating Washer	87	G47	25000
48	3023	Coil Shield 37-13.5 Mc.	88	G48	25000
49	3024	Retaining Ring	89	G49	25000
50	3025	Coil Shield 37-13.5 Mc.	90	G50	25000
51	3026	Insulating Washer	91	G51	25000
52	3027	Coil Shield 37-13.5 Mc.	92	G52	25000
53	3028	Retaining Ring	93	G53	25000
54	3029	Coil Shield 37-13.5 Mc.	94	G54	25000
55	3030	Insulating Washer	95	G55	25000
56	3031	Coil Shield 37-13.5 Mc.	96	G56	25000
57	3032	Retaining Ring	97	G57	25000
58	3033	Coil Shield 37-13.5 Mc.	98	G58	25000
59	3034	Insulating Washer	99	G59	25000
60	3035	Coil Shield 37-13.5 Mc.	100	G60	25000
61	3036	Retaining Ring	101	G61	25000
62	3037	Coil Shield 37-13.5 Mc.	102	G62	25000
63	3038	Insulating Washer	103	G63	25000
64	3039	Coil Shield 37-13.5 Mc.	104	G64	25000
65	3040	Retaining Ring	105	G65	25000
66	3041	Coil Shield 37-13.5 Mc.	106	G66	25000
67	3042	Insulating Washer	107	G67	25000
68	3043	Coil Shield 37-13.5 Mc.	108	G68	25000
69	3044	Retaining Ring	109	G69	25000
70	3045	Coil Shield 37-13.5 Mc.	110	G70	25000
71	3046	Insulating Washer	111	G71	25000
72	3047	Coil Shield 37-13.5 Mc.	112	G72	25000
73	3048	Retaining Ring	113	G73	25000
74	3049	Coil Shield 37-13.5 Mc.	114	G74	25000
75	3050	Insulating Washer	115	G75	25000
76	3051	Coil Shield 37-13.5 Mc.	116	G76	25000
77	3052	Retaining Ring	117	G77	25000
78	3053	Coil Shield 37-13.5 Mc.	118	G78	25000
79	3054	Insulating Washer	119	G79	25000
80	3055	Coil Shield 37-13.5 Mc.	120	G80	25000
81	3056	Retaining Ring	121	G81	25000
82	3057	Coil Shield 37-13.5 Mc.	122	G82	25000
83	3058	Insulating Washer	123	G83	25000
84	3059	Coil Shield 37-13.5 Mc.	124	G84	25000
85	3060	Retaining Ring	125	G85	25000
86	3061	Coil Shield 37-13.5 Mc.	126	G86	25000
87	3062	Insulating Washer	127	G87	25000
88	3063	Coil Shield 37-13.5 Mc.	128	G88	25000
89	3064	Retaining Ring	129	G89	25000
90	3065	Coil Shield 37-13.5 Mc.	130	G90	25000
91	3066	Insulating Washer	131	G91	25000
92	3067	Coil Shield 37-13.5 Mc.	132	G92	25000
93	3068	Retaining Ring	133	G93	25000
94	3069	Coil Shield 37-13.5 Mc.	134	G94	25000
95	3070	Insulating Washer	135	G95	25000
96	3071	Coil Shield 37-13.5 Mc.	136	G96	25000
97	3072	Retaining Ring	137	G97	25000
98	3073	Coil Shield 37-13.5 Mc.	138	G98	25000
99	3074	Insulating Washer	139	G99	25000
100	3075	Coil Shield 37-13.5 Mc.	140	G100	25000
101	3076	Retaining Ring	141	G101	25000
102	3077	Coil Shield 37-13.5 Mc.	142	G102	25000
103	3078	Insulating Washer	143	G103	25000
104	3079	Coil Shield 37-13.5 Mc.	144	G104	25000
105	3080	Retaining Ring	145	G105	25000
106	3081	Coil Shield 37-13.5 Mc.	146	G106	25000
107	3082	Insulating Washer	147	G107	25000
108	3083	Coil Shield 37-13.5 Mc.	148	G108	25000
109	3084	Retaining Ring	149	G109	25000
110	3085	Coil Shield 37-13.5 Mc.	150	G110	25000
111	3086	Insulating Washer	151	G111	25000
112	3087	Coil Shield 37-13.5 Mc.	152	G112	25000
113	3088	Retaining Ring	153	G113	25000
114	3089	Coil Shield 37-13.5 Mc.	154	G114	25000
115	3090	Insulating Washer	155	G115	25000
116	3091	Coil Shield 37-13.5 Mc.	156	G116	25000
117	3092	Retaining Ring	157	G117	25000
118	3093	Coil Shield 37-13.5 Mc.	158	G118	25000
119	3094	Insulating Washer	159	G119	25000
120	3095	Coil Shield 37-13.5 Mc.	160	G120	25000
121	3096	Retaining Ring	161	G121	25000
122	3097	Coil Shield 37-13.5 Mc.	162	G122	25000
123	3098	Insulating Washer	163	G123	25000
124	3099	Coil Shield 37-13.5 Mc.	164	G124	25000
125	3100	Retaining Ring	165	G125	25000
126	3101	Coil Shield 37-13.5 Mc.	166	G126	25000
127	3102	Insulating Washer	167	G127	25000
128	3103	Coil Shield 37-13.5 Mc.	168	G128	25000
129	3104	Retaining Ring	169	G129	25000
130	3105	Coil Shield 37-13.5 Mc.	170	G130	25000
131	3106	Insulating Washer	171	G131	25000
132	3107	Coil Shield 37-13.5 Mc.	172	G132	25000
133	3108	Retaining Ring	173	G133	25000
134	3109	Coil Shield 37-13.5 Mc.	174	G134	25000
135	3110	Insulating Washer	175	G135	25000
136	3111	Coil Shield 37-13.5 Mc.	176	G136	25000
137	3112	Retaining Ring	177	G137	25000
138	3113	Coil Shield 37-13.5 Mc.	178	G138	25000
139	3114	Insulating Washer	179	G139	25000
140	3115	Coil Shield 37-13.5 Mc.	180	G140	25000
141	3116	Retaining Ring	181	G141	25000
142	3117	Coil Shield 37-13.5 Mc.	182	G142	25000
143	3118	Insulating Washer	183	G143	25000
144	3119	Coil Shield 37-13.5 Mc.	184	G144	25000
145	3120	Retaining Ring	185	G145	25000
146	3121	Coil Shield 37-13.5 Mc.	186	G146	25000
147	3122	Insulating Washer	187	G147	25000
148	3123	Coil Shield 37-13.5 Mc.	188	G148	25000
149	3124	Retaining Ring	189	G149	25000
150	3125	Coil Shield 37-13.5 Mc.	190	G150	25000
151	3126	Insulating Washer	191	G151	25000
152	3127	Coil Shield 37-13.5 Mc.	192	G152	25000
153	3128	Retaining Ring	193	G153	25000
154	3129	Coil Shield 37-13.5 Mc.	194	G154	25000
155	3130	Insulating Washer	195	G155	25000
156	3131	Coil Shield 37-13.5 Mc.	196	G156	25000
157	3132	Retaining Ring	197	G157	25000
158	3133	Coil Shield 37-13.5 Mc.	198	G158	25000
159	3134	Insulating Washer	199	G159	25000
160	3135	Coil Shield 37-13.5 Mc.	200	G160	25000
161	3136	Retaining Ring	201	G161	25000
162	3137	Coil Shield 37-13.5 Mc.	202	G162	25000
163	3138	Insulating Washer	203	G163	25000
164	3139	Coil Shield 37-13.5 Mc.	204	G164	25000
165	3140	Retaining Ring	205	G165	25000
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CROSLEY RADIO CORP.

MODEL 816  
Schematic, Parts

May, 1936

PARTS LIST—MODEL 816

Figures in first column refer to parts in Diagrams.

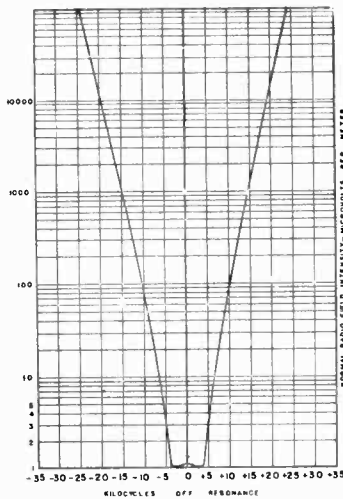


Fig. 6

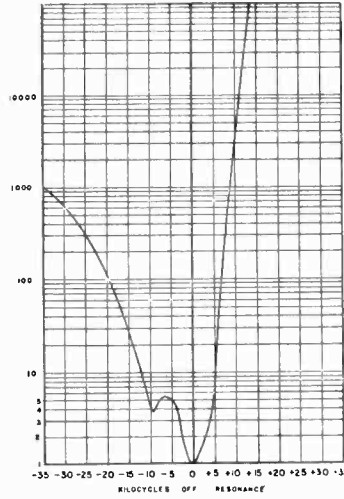
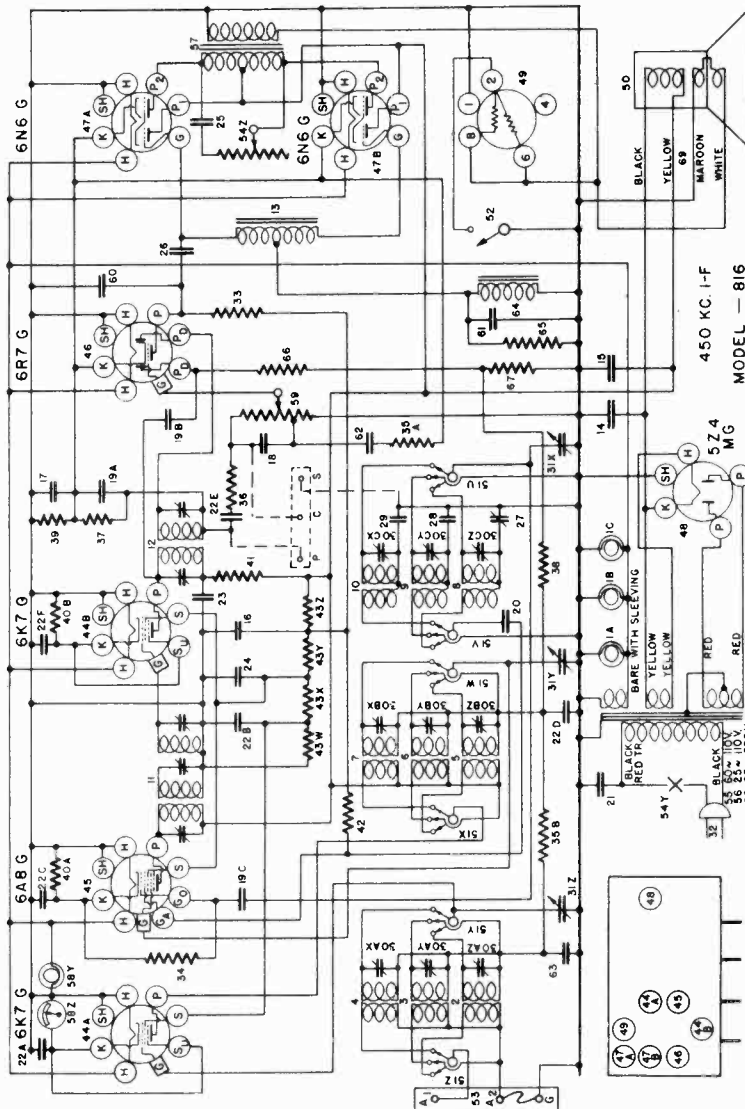


Fig. 5



Item No.	Part No.	Description
37	—36321	Resistor, 400,000 Ohm 1/2 W. Insulated
38	—37245	Resistor, 15 Megohm 1/2 W. Carbon
39	W —24537	Resistor, 60 Ohm 1/2 W. Flexible
40A	W —28589	Resistor, 350 Ohm 1/2 W. Flexible
40B	W —28589	Resistor, 350 Ohm 1/2 W. Flexible
41	W —23013	Resistor, 2,000 Ohm 1 1/2 W. Flexible
42	W —37987	Resistor, 15,000 Ohm 1 W. Wire Wound
43Z		1000 Ohm
43Y	W —41484	7000 Ohm Candelohm
43X		3500 Ohm
43W		1500 Ohm
44A	G151—36400	Socket Type 6K7
44B	G151—36400	Socket Type 6K7
45	G156—36400	Socket Type 6A8
46	G164—36400	Socket Type 6I7
47A	G165—36400	Socket Type 6N6
47B	G165—36400	Socket Type 6N6
48	G154—36400	Socket Type 5Z4
49	G167—36400	Socket Type 5 Prong (W1187 tube)
W	—37981A	Tube Shield Base
W	—40911	Tube Shield
50		Socket 542 CJ 4
51	C —40910	Band Selector Switch
52	W —41486	Phantom Control Switch
53	G26 —26719	Ant. & Grid Terminal Assembly
54Z		Tone Control
54Y		A-C Switch
55		Power Transformer 110 V. 60 Cy.
		Power Transformer 110 V. 25 Cy.
		Power Transformer 220 V. 25 Cy.
57	G53	Audio Output Transformer
58Z	W —41259	Tuning Meter
58Y	W —41464	Tuning Meter Bulb
59	W —41301	Volume Control 3 Megohm tap 1 Meg
60	W —34002	Condenser .0025 Mfd. Molded
61	W —27216	Condenser .05 Mfd. 200 V.
62	W —34713	Condenser .006 Mfd. 160 V.
63	W —32379	Condenser .02 Mfd. 200 V.
64	W —29535	Compensator Choke
G13		Resistor 20,000 Ohm 1/2 W. Carbon
		Resistor 20,000 Ohm 1/2 W. Insulate
		Resistor 500,000 Ohm 1/2 W. Carbon
66	—35930	
67	—23785	
	—37894	Escutcheon
C	—37896A	Escutcheon Retaining Spring
G	—37898	Glass Lens (Bezel)
B	—37897	Lens Retaining Spring
W	—37339	Knob (3)
W	—40192B	Knob (2)
W	—36117	Rubber Mtg. Foot
1ABC	W —37922	Dial Light
	G3 —37965	Dial Light Socket Assembly
	W —40570	Dial Light Shield (2)
2	G110—32000	Ant. Coil -B-C-B.
3	G111—32000	Ant. Coil -Pol-B.
4	G112—32000	Ant. Coil -H-F-B.
5	G76—32001	R-F. Coil -B-C-B.
6	G83—32001	R-F. Coil -Pol-B.
7	G84—32001	R-F. Coil -H-F-B.
8	G98—32002	Osc. Coil -B-C-B.
9	G99—32002	Osc. Coil -Pol-B.
10	G107—32002	Osc. Coil -H-F-B.
11	G112—32004	1st I-F Assembly
12	G114—32004	2nd I-F Assembly
13	G12 —29535	A-F Driver Choke
14	W —36055	Condenser, 35 Mfd. 400 V. Electrolytic
15	W —41080	Condenser, 12 Mfd. 200 V. Electrolytic
16	W —11081	Condenser, 16 Mfd. 250 V. Electrolytic
17	W —41598	Condenser, 50 Mfd. 25 V. Electrolytic
18	G6 —34002	Condenser, .00025 Mfd. Molded
19A	G2 —34002	Condenser, .0001 Mfd. Molded
19B	G2 —34002	Condenser, .0001 Mfd. Molded
19C	G2 —34002	Condenser, .0001 Mfd. Molded
20	W —35139	Condenser, .001 Mfd. 400 V.
21	W —30805	Condenser, .01 Mfd. 400 V.
22A	W —36541	Condenser, .02 Mfd. 200 V.
22B	W —36541	Condenser, .02 Mfd. 200 V.
22F	W —36541	Condenser, .02 Mfd. 200 V.
23	W —30488	Condenser, .02 Mfd. 400 V.
24	W —35936	Condenser, .05 Mfd. 200 V.
25	W —23615	Condenser, .05 Mfd. 400 V.
26	W —28410A	Condenser, .01 Mfd. 200 V.
27	—40769	B-C Osc. Series Trimmer Condenser
28	G7 —34000	Pol. Osc. Series Fixed Cond. (1450Mfd.)
29	G20 —34000	H-F Osc. Series Fixed Cond. (1910Mfd.)
30	W —35951	3 Section Stant. Trimmer Cond. A-sy.
31	G52 —33002	3 Section Var. Tuning Condenser
MG-22	11475	Dial Drive Assembly Complete
C	—41501	Dial
	—1136A	Dial Mask
	—40485	Long Hand
	—41145	Short Hand
W	—40486	Hand Mtg. Screw
	—41157	Driver Belt
32	B —33906	Power Cord & Plug
33	—24990	Resistor, 25,000 Ohm 1/2 W. Carbon
34	—21237A	Resistor, 60,000 Ohm 1/2 W. Carbon
35A	—35600	Resistor, 100,000 Ohm 1/2 W. Insulated
35B	—35600	Resistor, 100,000 Ohm 1/2 W. Insulated
36	—23403	Resistor, 150,000 Ohm 1/2 W. Carbon



**MODEL 816**  
**Socket, Trimmers**  
**Voltage, Chassis**  
**Alignment**

**CROSLLEY RADIO CORP.**

**SPECIFICATIONS**

The Crosley Model 816 radio is an eight-tube super-heterodyne receiver and uses either glass or metal tubes, except the Phantom Conductor (Auto-Expressionist) tube which is always glass and the 5Z4 rectifier which should always be the MG type. NOTE: If glass tubes are replaced with metal tubes or metal tubes replaced with glass tubes it will be necessary to completely re-align the circuits of the receiver because of the difference in inter-electrode capacities. Chassis are available either with a standard 110 Volt—60 Cycle, 110 Volt—25 Cycle or 220 Volt—25 Cycle Power Transformer.

The tuning range of the receiver is from 530 to 1900 Kilocycles and is divided into three bands as follows:

BLUE	540-1900 Kc. or 555-158 Meters (Standard American Broadcast)
RED	1.8-6.5 Mc. or 158-48 Meters (Police and Amateurs)
GREEN	6.0-19.0 Mc. or 30-16 Meters (High Frequency)

**SOCKET VOLTAGES**

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt, 500 volt D. C. voltmeter (except filaments) with the receiver in operating condition and no signal input. The filaments should be measured with an accurate low range A. C. voltmeter. Readings may vary plus or minus 10% of values given.

**PANTOM CONDUCTOR (Auto Expressionist)**

The Phantom Conductor tube, Illustration No. 49, is connected across the voice coil of the speaker. When operating its resistance varies so as to increase the volume of loud tones, thus giving a wider volume range to reproduced music which tends to compensate for the electrical limitations of broadcasting equipment.

**PHONOGRAPH PICKUP**

Chassis equipped with a 25 cycle power transformer also have three terminals on the back for connecting a phonograph pickup. These terminals are marked P, C, S and the pickup is connected through a double pole single throw switch to these terminals as shown in Fig. 7.

**ALIGNMENT PROCEDURE**

This is a High Fidelity receiver and in order to secure maximum performance the alignment of its circuits should be done with precision instruments.

The I-F amplifier employs two triple-tuned I-F transformers and under no condition should their trimmer condensers be readjusted just to determine if they are properly tuned. Fig. 5 shows the selectivity curve of a receiver whose I-F amplifier was slightly mistuned while Fig. 6 shows a curve made from actual measurements of a receiver which was properly aligned with the use of an oscilloscope. (See Note 3, next page).

**1. Conventional Method—**

(a) Connect one terminal of the output meter to P2 of one of the 6N6 Output tubes and the other terminal through a .1 mf. or larger, condenser—Not Electrolytic—to P2 of the other Output tube.

(b) Connect the output of the signal generator through a .02 mf. condenser, to the top cap of the 6K7 I-F Amp. tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the GND. terminal of the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE), and turn the Phantom Control Switch to the left (OFF).

(d) Set the signal generator to 450 Kilocycles.

(e) Adjust the trimmer condensers on the top of the 2nd. I-F transformer for maximum output. Fig. 2 (Item 12).

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc. Mod.

tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer condenser on the 1st. I-F transformer (Item, Fig. 4) so that it is moderately tight. (DO NOT FORCE ADJUSTING SCREW).

(h) Adjust the top (Sec) and then the bottom (Pri) trimmers of the 1st. I-F transformer for maximum output.

(i) Transfer the lead of the signal generator from the 6A8 tube to the "ANT" terminal of the receiver and increase the output of the signal generator if necessary. (j) Check the adjustment of the bottom (Pri) trimmer of the 1st. I-F transformer. Then adjust the middle trimmer by opening until maximum output is obtained. DO NOT READJUST TOP OR BOTTOM TRIMMERS AFTER THE MIDDLE TRIMMER HAS BEEN ADJUSTED.

**2. Oscilloscope Method.**

(a) Connect the output of the signal generator through a .02 mf. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Connect the vertical plates of the cathode ray oscilloscope to the receiver as follows. The binding post marked "GND" should be connected to the receiver chassis and the other binding post should be connected to the plate terminal of the 6R7 tube. (Be sure the oscilloscope is protected from D. C. by connecting a condenser, 0.1 to .05 mf., in series with the lead to the plate of the 6R7 tube.)

(c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. The exact setting should be at a position where no broadcast signal will be received. Turn the volume control to the right (ON), turn the tone control to the left (TREBLE) and turn the Phantom Conductor switch to the left (OFF).

(d) Set the signal generator to 450 Kilocycles. (e) Adjust the trimmer condensers located on top of the 2nd. I-F transformer for maximum amplitude and symmetry of the selectivity curve on the resonance line (R).

NOTE: Keep the signal generator output as low as possible in order to prevent AVC action in the receiver.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 oscillator-modulator tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer (TERT) of the 1st.

I-F transformer so that it is moderately tight. (Do not force adjustment screw).

(h) Increase the output of the signal generator and adjust the top trimmer (Sec) of the 1st. I-F transformer for maximum symmetry and amplitude.

(i) Adjust the bottom trimmer (Pri) of the 1st. I-F transformer for maximum amplitude.

(j) Reduce the output of the signal generator and adjust the middle trimmer of the 1st. I-F transformer for maximum symmetry and amplitude.

**Aligning R-F Amplifier.**

The R-F amplifier can best be aligned in the conventional manner, using a modulated signal generator and output meter.

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .0025 mf. condenser must be in series with the output lead of the signal generator and for the high frequency band a 500 Ohm carbon resistor should be used in place of the condenser.

Each hand should be slant aligned and their series aligned, where provision is made for series alignment (BLUE band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "Osc." "R-F" (Fig. 4) and "Ant." (Fig. 2) shunt trimmers in the order given for maximum output. Readjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "Ant." trimmers in the order given. DO NOT READJUST THE "OSC" TRIMMER.

NOTE: When slant-aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 Kilocycles less than the fundamental frequency. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 Kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the 10C "OSC" series trimmer, Illus. 27, Fig. 4, set the signal generator to 600 Kilocycles and then tune-in this signal with the station selector for maximum output. While the series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

**(C) SIGNAL INPUT FREQUENCIES**

American Broadcast (BLUE)	Shunt Aligned	Series Aligned
Pol. & Amateur (RED)	700 Kc.	690 Kc.
High-Frequency (GREEN)	8000 Kc.	1800 Kc.

NOTE 3: The high frequency oscillator on this receiver is neutralized by the addition of some small capacity coupling between the oscillator grid and the R-F grid of the 6A8 tube. This is accomplished by loosely wrapping a piece of insulated hook-up wire around the

R-F grid lug and connecting it to the oscillator grid lug on the band selector switch.

If it is necessary on some sets to adjust or even remove this coupling, in which case the wire should be unwrapped and threaded through the extra hole in the grid end of the R-F coil.

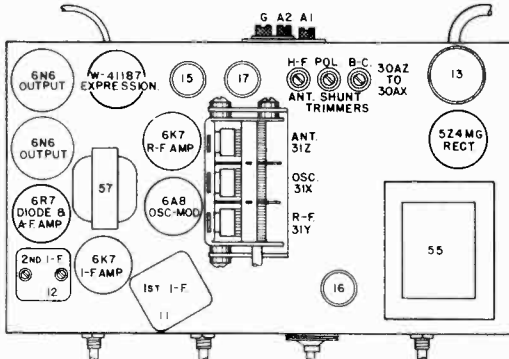


Fig. 2. Top View

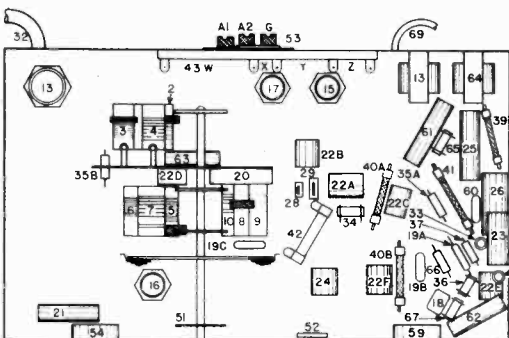


Fig. 3. Bottom View

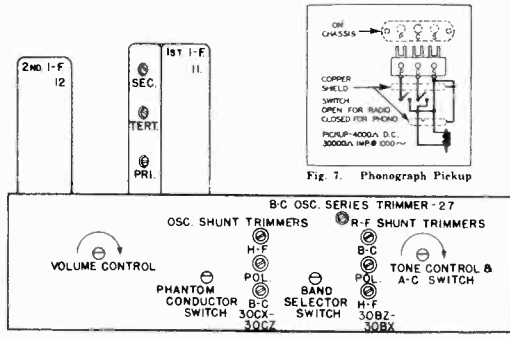


Fig. 4. Front View

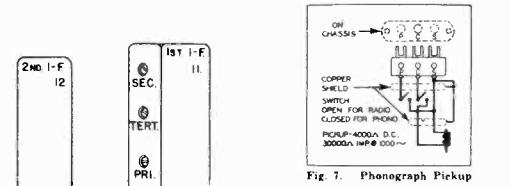


Fig. 7. Phonograph Pickup

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	V <sub>1</sub>	V <sub>2</sub>	S <sub>0</sub>	G	K	G <sub>2</sub>	G <sub>3</sub>
6K7	R-F Amplifier	6.3	245	—	100	4.0	0	4.0	—	—
6A8	Osc. Modulator	6.3	245	—	100	0	4.5	150	-5 to -30	—
6K7	I-F Amplifier	6.3	230	—	130	4.0	0	4.0	—	—
6R7	Diode Detector & A-F Amplifier	6.3	150	—	0	4.0	—	—	—	—
6N6	(2) Output	6.3	245	230	—	—	0	4.0	—	—
5Z4MG	Rectifier	5.0	345	—	—	—	—	—	—	—

W-41187 Phantom Conductor Tube—All Voltages Variable  
 Voltage drop across speaker field 100 volts  
 Power Output approximately 8 watts.  
 Power Consumption approximately 115 watts  
 All readings taken on 117.5 volt power supply.

CROSLY RADIO CORP.

**MODEL 855, Merrimac**  
**Schematic**  
**Voltage, Socket**

**SPECIFICATIONS**

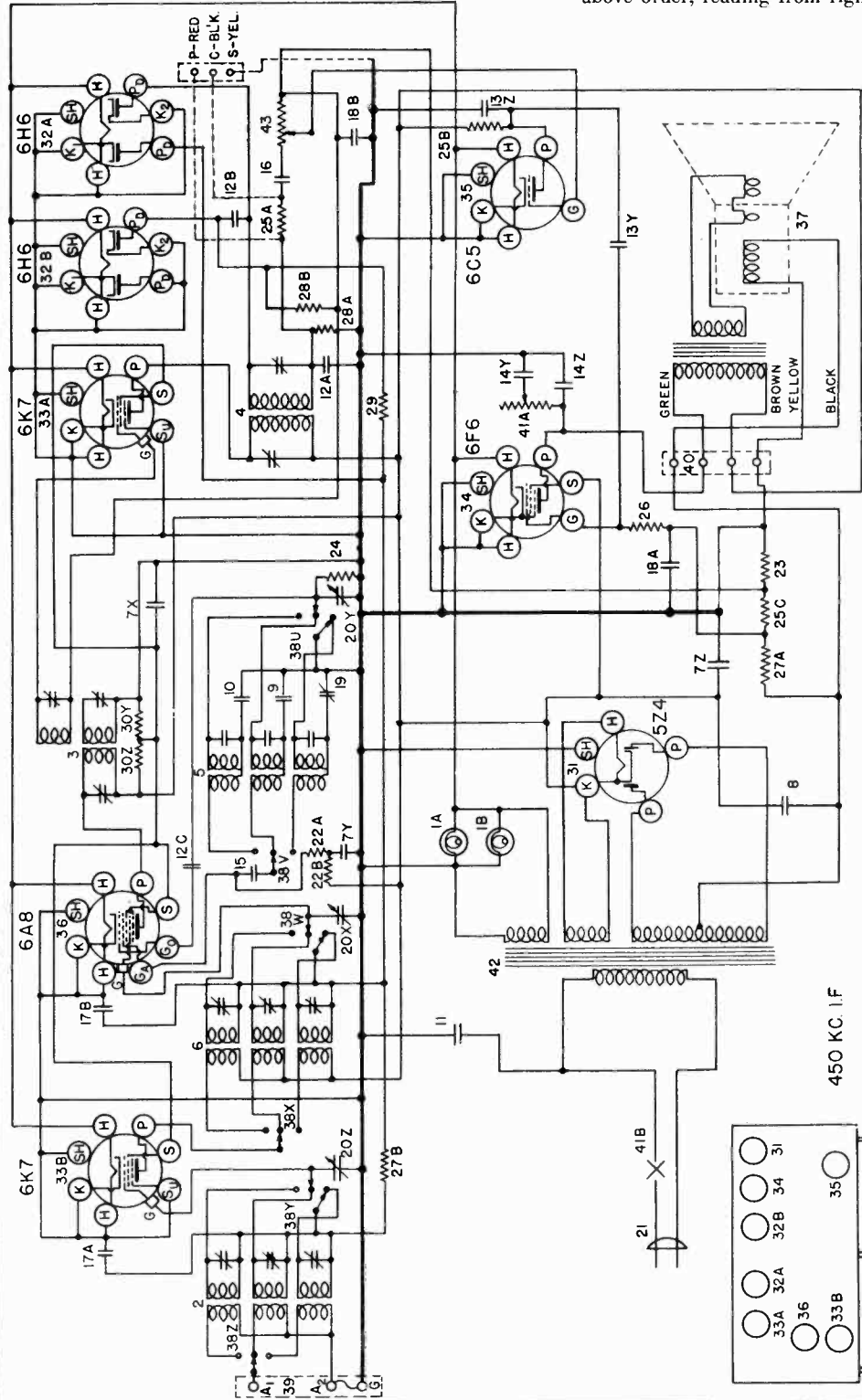
The Crosley Model 855 radio is an eight-tube super-heterodyne receiver using all metal tubes. It is available or adaptable for operation on A-C lines as follows: 110 V—60 cycles, 110 V—25 cycles and 220 V—25 cycles.

It is a three band receiver and the dial is divided into three sections as follows:

- BLACK— 540- 1,625 kilocycles
- GREEN—1,625- 4,700 kilocycles
- RED —5,250-15,300 kilocycles

The positions on the band selector switch are in the above order, reading from right to left.

NOVEMBER, 1935



**TUBE SOCKET VOLTAGE READINGS**

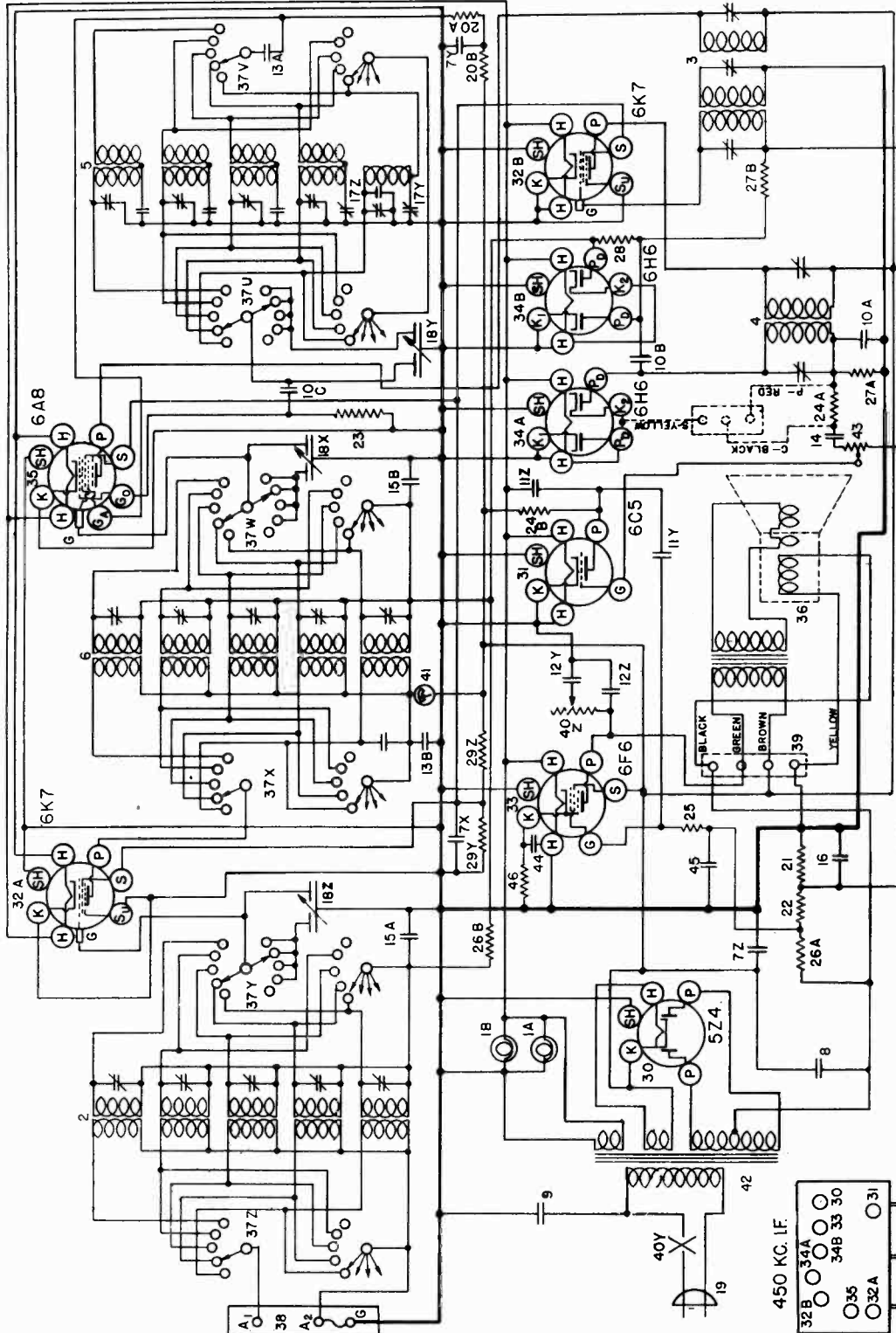
Tube	Function	H	P	S	Su	G	K	G0	Ga
6K7	R-F Amplifier	6.3	245	110	0	-3	0	-	-
6A8	Osc.-Mod.	6.3	245	110	0	-3	0	-5 to -15	175
6K7	I-F Amplifier	6.3	245	110	0	-3	0	-	-
6H6	Detector	6.3	-	-	-	-	0	-	-
6H6	AVC	6.3	-	-	-	-	0	-	-
6C5	A-F Amplifier	6.3	35	245	-	-3	0	-	-
6F6	Output	6.3	235	-	-	-16	0	-	-
5Z4	Rectifier	5.0	250	-	-	-	-	-	-

Power Consumption Approximately 60 Watts. Measured on 117.5 Volt Line—60 Cycles A. C.



CROSLY RADIO CORP.

**MODEL 865**  
Schematic  
Voltage



**FIG. 1—WIRING DIAGRAM—MODEL 865**

- ORANGE— 150- 400 kilocycles (Weather Band)
- BLACK — 540- 1,555 kilocycles (American Broadcast Band)
- GREEN — 1,500- 4,200 kilocycles (Police and Amateur Band)
- RED — 3,900-10,400 kilocycles (Night High Frequency Band)
- VIOLET — 9,800-22,000 kilocycles (Day High Frequency Band)

**TUBE SOCKET VOLTAGE READINGS**

Tube	Function	H	P	S	Su	G	K	Go	Ga
6K7	R-F Amplifier	6.3	245	110	0	∩∩	0	—	—
6A8	Osc.-Mod.	6.3	245	110	—	∩∩	0	-5 to -15	175
6K7	I-F Amplifier	6.3	245	110	0	∩∩	0	—	—
6H6	Detector	6.3	—	—	—	—	0	—	—
6H6	AVC	6.3	—	—	—	—	0	—	—
6C5	A-F Amplifier	6.3	35	—	—	∩	0	—	—
6F6	Output	6.3	235	245	—	-16	0	—	—
5Z4	Rectifier	5.0	250	—	—	—	—	—	—

Measured on 117.5 Volt Line—60 Cycles A.C.  
Power Output Approximately 5 Watts.

Power Consumption Approximately 60 Watts.



CROSLY RADIO CORP.

MODEL 915, Clipper  
Schematic, Voltage

SPECIFICATIONS

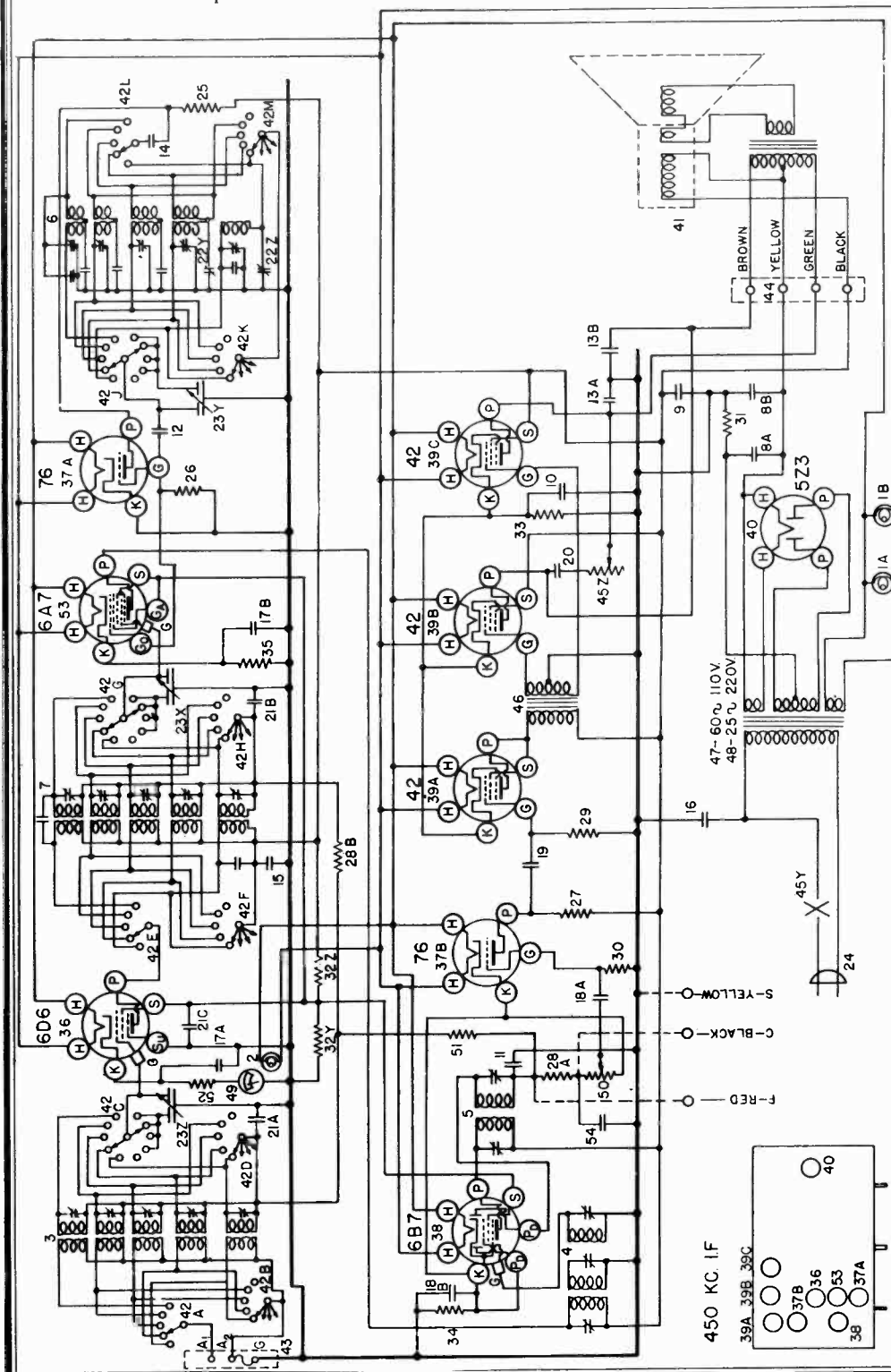
The Crosley Model 915 radio is a nine-tube super-heterodyne receiver and is available either with a stan-

ard 110 volt—60 cycle power transformer or with a universal power transformer which can be adapted to A-C lines from 95 to 267 volts and any frequency.

It is a five band receiver and the dial is divided into five sections as follows:

- ORANGE— 150- 400 kilocycles (Weather Band)
- BLACK — 540- 1,500 kilocycles (American Broadcast Band)
- GREEN — 1,500- 4,000 kilocycles (Police and Amateur Band)
- RED — 4,000-10,000 kilocycles (Night High Frequency Band)
- VIOLET —10,000-21,000 kilocycles (Day High Frequency Band)

The positions on the band selector switch are in the above order, reading from left to right.



TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go	Ga
6D6	R-F Amplifier	6.2	238	102	7	0	7	—	—
6A7	Modulator	6.2	238	102	—	0	6	-1 to -30	102
76	Oscillator	6.2	74	—	—	-24	0	—	—
6B7	I-F Amp. & Det.	6.2	238	102	—	0	3	—	—
76	1st. A-F Amp.	6.2	46	—	—	0	3	—	—
42	2nd. A-F Amp.	6.2	208	—	—	0	18	—	—
42	Output	6.2	335	238	—	0	18	—	—
42	Output	6.2	335	238	—	0	18	—	—
5Z3	Rectifier	4.9	345	—	—	—	—	—	—

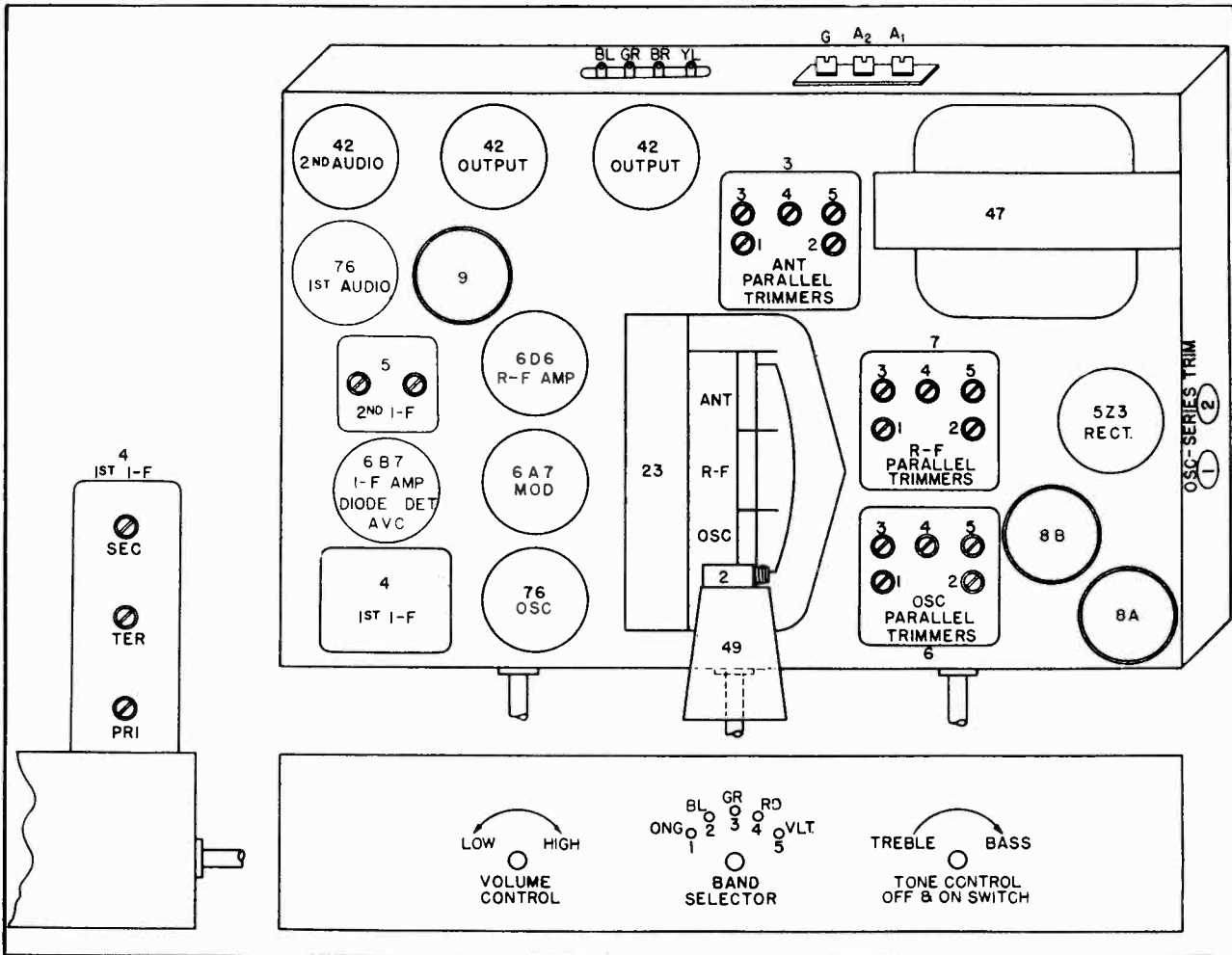
Power Consumption Approximately 122 Watts.

Measured on 117.5 Volt—60 Cycle Line.

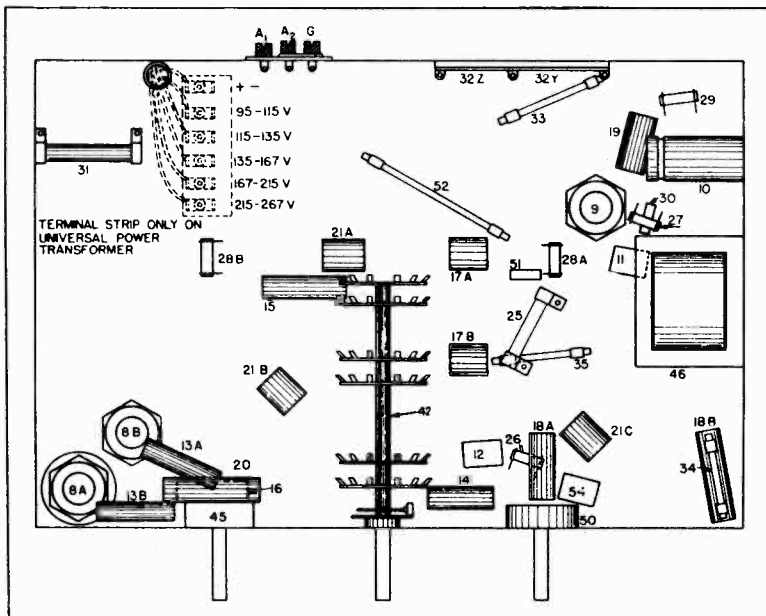
NOVEMBER, 1935

**MODEL 915, Clipper  
Socket, Trimmers  
Chassis, Phono.**

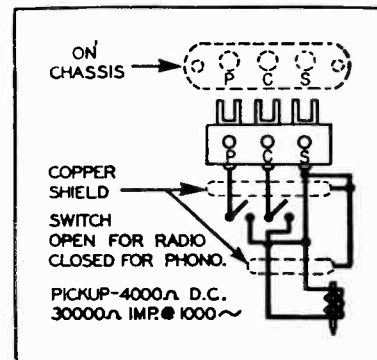
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**Fig. 2. Top View**



**Fig. 3. Bottom View**



**Fig. 4. Phono Connections**

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MODEL 915, Clipper Alignment, Parts

PARTS LIST—MODEL 915

Figures in first column refer to parts shown in diagram.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	—3654	Dial Light Socket Assm.	24	G37-33002	Var. Tuning Condenser Gang
1B	—3657	Tuning Meter Bulb	25	C	Dial Drive Assm.
2	G63-32000	Ant. Coil Assm. Complete	26	—37378B	Dial Face only
3	G64-32000	Ant. Coil only, 150-400 Kc.	27	—36658	Dial Hand
4	G68-32000	Ant. Coil only, 540-1500 Kc.	28	—37551	Dial Hand
5	G67-32000	Ant. Coil only, 4-10 Mc.	29	—37484	Dial Hand Washer
6	G68-32000	Ant. Coil only, 10-22 Mc.	30	—37543	Dial Hand Washer
7	MG28-36542	5 Section Trimmer Cond. Assm.	31	W	A.C. Cord & Plug
8	MG27-36542	Shield	32	W	Resistor, 20,000 Ohm, 1/4 Watt
9	G67-32004	Shield	33	W	Resistor, 150,000 Ohm, 1/4 Watt
10	G68-32002	Ant. I. F. Trans. Assm.	34	W	Resistor, 300,000 Ohm, 1/4 Watt
11	G54-32002	Osc. Coil Assm. Complete	35	W	Resistor, 300,000 Ohm, 1/4 Watt
12	G55-32002	Osc. Coil only, 150-400 Kc.	36	W	Resistor, 300,000 Ohm, 1/4 Watt
13	G56-32002	Osc. Coil only, 540-1500 Kc.	37	W	Resistor, 200,000 Ohm, 1/4 Watt
14	G57-32002	Osc. Coil only, 4-10 Mc.	38	W	Resistor, 10,000 Ohms
15	G58-32002	Osc. Coil only, 10-22 Mc.	39	W	Resistor, 220 Ohm (Flex) 2 1/2 W
16	MG28-36542	5 Section Trimmer Cond. Assm.	40	W	Resistor, 750 Ohm (Flex) 1/2 W
17	W	Condenser, 4350 mmf. (2)	41	G75-23807	Socket, 6DK, 6 Prong
18	G6-34007	Condenser, 25 mmf. (2)	42	G48-23807	Socket, 76, 3 Prong
19	MG9-36168	Shield	43	G48-23807	Socket, 6B7, 3 Prong
20	G39-32001	R. F. Coil Assm. Complete	44	G28-23807	Socket, 42, 6 Prong
21	G40-32001	R. F. Coil only, 150-1500 Kc.	45	G28-23807	Socket, 42, 6 Prong
22	G41-32001	R. F. Coil only, 1500-4000 Kc.	46	G53-23807	Socket, 523, 4 Prong
23	G42-32001	R. F. Coil only, 4-10 Mc.	47	W	Tube Shield Half
24	G43-32001	R. F. Coil only, 10-22 Mc.	48	W	Tube Shield Cap
25	MG27-36542	Shield	49	W	Tube Shield Base
26	MG9-36168	Shield	50	W	Tube Shield Base (Osc.)
27	G1-34002	Condenser 25 mmf.	51	427CL-22	Speaker, (Table Model)
28	W	Condenser, 35 mmf. 400 Volts	52	G27-36519	Band Change Switch
29	W	Condenser, 45 mmf. 300 Volts	53	G35-31128	Speaker Terminal
30	W	Condenser, 45 mmf. 25 Volts	54	—32063	Tone Control
31	G2-34002	Condenser, 0.0025 mfd. 200 Volts	55	G22-24628	A. F. Driver Transformer
32	G1-34002	Condenser, 0.008 mfd. 400 Volts	56	W	Universal Power Transformer
33	W	Condenser, 0.008 mfd. 400 Volts	57	W	Tuning Meter
34	W	Condenser, 0.006 mfd. 400 Volts	58	W	Tuning Meter Bracket
35	W	Condenser, 0.01 mfd. 400 Volts	59	W	Volume Control
36	W	Condenser, 0.01 mfd. 400 Volts	60	W	Resistor, 100 Ohm, 1/4 Watt
37	W	Condenser, 0.02 mfd. 200 Volts	61	W	Resistor, 100 Ohm (Flex) 1/4 W
38	W	Condenser, 0.02 mfd. 200 Volts	62	G47-23807	Socket, 6A7, 7 Prong
39	W	Condenser, 0.02 mfd. 200 Volts	63	G6-34002	Condenser, 25 mmf.
40	W	Condenser, 0.05 mfd. 400 Volts	64	W	Escutcheon
41	W	Condenser, 0.05 mfd. 400 Volts	65	W	Band Change Escutcheon
42	W	Condenser, 0.05 mfd. 200 Volts	66	W	Band Change Escutcheon Index
43	W	Condenser, 0.05 mfd. 200 Volts	67	W	Knob, Tuning
44	W	Condenser, 0.03 mfd. 200 Volts	68	W	Knob, Volume
45	W	Series Trimmer Condenser	69	W	Knob, (Fail) Band Change
46	G27-33006	Series Trimmer Condenser	70	W	Knob (2)
47	W		71	G25-36954	Terminal Junction for Uni. P. T.

adjustments. ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(f) Reduce the output of the signal generator and adjust the middle trimmer on the 1st. I.F. transformer for maximum output. DO NOT READJUST THE OTHER TRIMMERS.

2. **Aligning R-F Amplifier.** (a) When aligning the R.F. amplifier the output lead from the signal generator is connected to the "Ant" terminal of the receiver. For the ORANGE, BLACK and GREEN bands a .00025 mfd. condenser must be connected in series with the output lead from the signal generator and for the two high frequency bands a 400 ohm resistor should be used in place of the condenser. Each band should first be shunt aligned and then series aligned where provision is made for series alignment (Weather band and Broadcast band). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment.

Adjust the "Osc.", "R.F." and "Ant" trimmers in the order given for maximum output and then check the adjustments in the same order. NOTE: When aligning the Police and High Frequency Bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is always approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately 10 times and try to tune in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct frequency.

To align the "series" trimmer, set the signal generator to the frequency indicated and then tune in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning condenser back and forth slightly, until no improvement in output can be obtained.

After the "series" alignment of any band has been completed it will be necessary to repeat the "shunt" alignment of that band.

(b) Signal Input Frequencies.

Weather Band (ORANGE)	Shunt Alignment	Series Alignment
400 Kc.	150 Kc.	150 Kc.
Police & Broadcast Band (BLACK)	4000 Kc.	600 Kc.
Night H-F Band (RED)	10 Megacycles	21 Megacycles
Day H-F Band (VIOLET)		

SOCKET VOLTAGES

The tube socket voltages are measured from the tube socket contacts to the chassis with a 1000 ohm per volt.

UNIVERSAL POWER TRANSFORMER

The Model 915 chassis for use on other than 110 volts, 60 cycles, is supplied with a universal power transformer designed to operate on 25 cycles and up. When leaving the factory it is wired for the voltage indicated on the license plate. It is possible, however, by a slight change in the power transformer wiring to adapt the set to a different voltage anywhere from 95 to 267 volts. To adapt the set to a different line voltage it is necessary to remove the chassis from the cabinet, remove the bottom of the chassis and locate the terminal strip on the bottom of the power transformer, Fig. 3. After careful measurement of the maximum values of line voltages, unsolder the wire of the A.C. line cord from the terminal strip and solder it to the correct terminal. The correct terminal will be the one marked so as to cover the maximum line voltage. THE MAXIMUM VOLTAGE SHOULD NOT EXCEED THE HIGH EST RATING STAMPED ON THE TERMINAL BOARD BESIDE THE TERMINAL TO BE USED BY MORE THAN 3%.

PHONOGRAPH PICKUP

Chassis equipped with a universal power transformer also have three terminals on the back for connecting a phonograph pickup. These terminals are marked P, C, S and the pickup is connected through a double pole single throw switch to these terminals as shown in Fig. 4.

ALIGNMENT PROCEDURE

All the circuits in this receiver are very accurately adjusted at the factory and should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned only with the use of a modulated signal generator and an output meter.

CONNECTING OUTPUT METER

Connect one terminal of the output meter to the plate of one of the type 42 output tubes and connect the other terminal to the plate of the other 42 output tube. Be sure the meter is protected from D.C. by connecting a condenser (.1 mfd. or larger—not electrolytic) in series with one of the leads.

I. Tuning I.F. Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE OTHER SCREEN GRID TUBES.

(b) Set the station selector so that the tuning condenser plates are open. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).

(c) Turn the band selector switch all the way to the right.

(d) Set the signal generator to 450 kilocycles.

(e) Close the middle trimmer condenser on the 1st. I.F. transformer.

(f) Adjust the trimmers located on top of the 2nd. I.F. transformer for maximum output.

(g) Adjust the top and bottom trimmers of the 1st. I.F. transformer for maximum output.

(h) Repeat operations (f) and (g) for more accurate

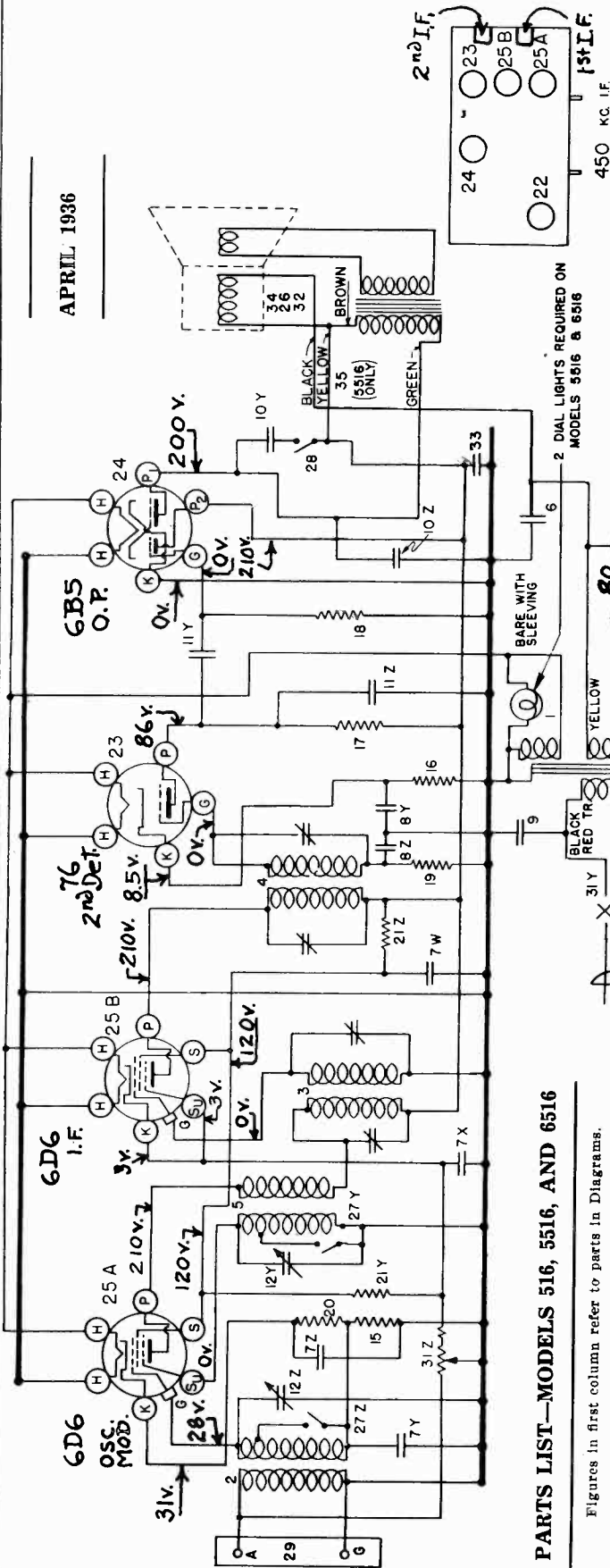
500 volt voltmeter (except filaments) with the receiver in operating condition and no signal input. Readings may vary plus or minus 10% of values given.



MODELS 516, 5516, 6516  
Schematic, Voltage  
Socket, Parts

CROSLLEY RADIO CORP.

APRIL 1936



**PARTS LIST—MODELS 516, 5516, AND 6516**

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Name	Description
1	W-37922	Bulb	Dial Light
2	G3-37965	Socket	Dial Light
3	G42-32000	Coil	Antenna
4	C48-32004	Coil	1st I-F. (Complete)
5	G49-32004	Coil	2nd I-F. (Complete)
6	G47-32002	Coil	Osc.
7 Z	W-41080	Condenser	12 Mfd. 300V.
7 Y			.02 Mfd. 200V.
7 X	W-28623	Condenser	.02 Mfd. 200V.
7 W			.02 Mfd. 200V.
8 Z	W-28622	Condenser	.1 Mfd. 200V.
8 Y	W-30805	Condenser	.1 Mfd. 200V.
9	W-35011	Condenser	.01 Mfd. 400V.
10 Z	W-25537A	Condenser	.06 Mfd. 400V.
10 Y			.03 Mfd. 400V.
11 Y			.001 Mfd. 400V.
12 Z			.03 Mfd. 400V.
12 Y	G14-33001	Condenser	2 section Var. Tuning.
13	B-33906A	Cord & Plug	Power Supply
15	W-31094	Resistor	4500 Ohm.
16	W-21237A	Resistor	6000 Ohm. 1/4 W.
17	W-21455	Resistor	300,000 Ohm.
18	W-23785	Resistor	500,000 Ohm.
19	W-21454	Resistor	1 Megohm
20	W-25937	Resistor	275 Ohm Flex
21 Z	W-35963	Resistor	8500 Ohm Candohm
21 Y			25000 Ohm
22	G6-28807	Socket	Type 80
23	G80-28807	Socket	Type 76
24	C90-28807	Socket	Type 6B5
25 A	G75-28807	Socket	Type 6D6
25 B	G75-28807	Socket	Type 6D6
26	W-219BL9	Speaker	Used on 6516 Only
27 Z	W-35753A	Switch	Band Selector
27 Y			Tone Control
28	W-36184A	Switch	Ant. & Grd.
29	G1-28719	Terminal Board	Power—110V. 60 Cy.
30	G5-28500	Transformer	Power—110V. 25 Cy.
31 Z	G6-28500	Transformer	Power—220V. 25 Cy.
31 Y	G7-28500	Transformer	Volume Control
32	W-37343	Speaker	On-Off Switch
33	W-219B13	Condenser	Used on 5516 Only
34	W-41081	Speaker	16 Mfd. 250V
	W-241BL9	Speaker	Used on 516 only
	G3-35696	Cable	Speaker (6516 only)
	W-31585B	Knob	Tube (Half)
	W-36355	Knob	Tube Shield
	W-35772	Shield	Tube Shield
	W-35773	Cap	Calibrated Glass
	W-35774	Base	Dial Glass Mtg. RH
	C-40822	Dial	Dial Glass Mtg. LH
	W-40815	Bracket	Dial Glass
	W-40816	Bracket	Dial
	W-40804	Cushion	Drive Mtg. Assy.
	W-40806	Drive Unit	Escutcheon Mtg.
	MG16-40819	Drive Unit	Escutcheon
	B-40590	Bracket	Dial
	D-28	Screw	Calibrated Glass
	C-41059	Dial	Calibrated Glass
	W-40797	Bracket	Dial Class Mtg.
	W-40798	Bracket	Dial Support L. H.
	W-40799	Bracket	Dial Support R. H.
	W-40793	Drive Unit	Drive Mtg. Assy.
	MG16-40765	Drive Bearing	Assy.
	MG33-40765	Drive Bearing	Assy.
	B-40839	Escutcheon	Ring
	W-28760	Escutcheon	Pin
	W-40818B	Pointer	Disc
	W-40486	Bracket	Disc
	W-40802	Bracket	Speaker Mtg.
	W-41001A	Clamp	Speaker

CROSLY RADIO CORP.

MODEL 916  
Schematic  
Parts

PARTS LIST—MODEL 916

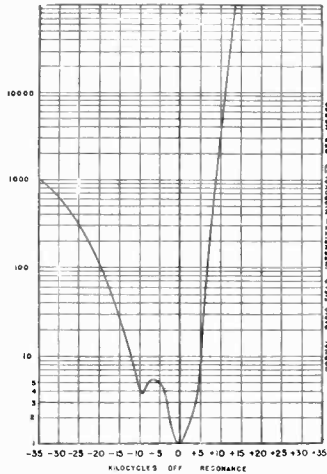


Fig. 5

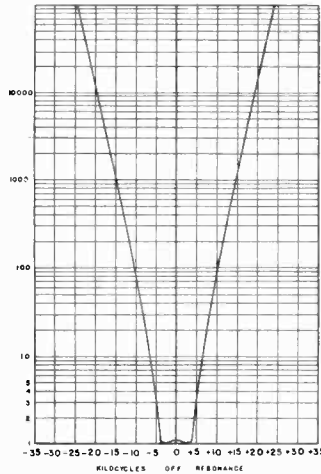
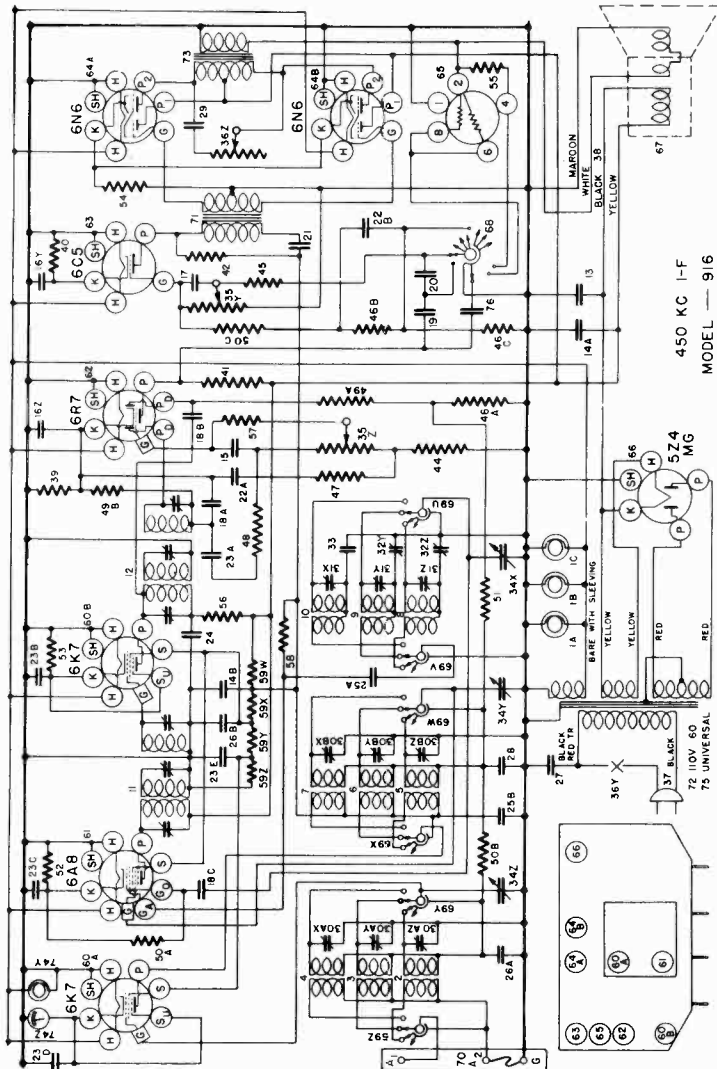


Fig. 6



Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description
1ABC	W	-37922 Dial Light
2	G3	-37965 Dial Light Socket
3	G94	-32000 Ant. Coil, B. C. B.
4	G85	-32000 Ant. Coil, Pol. B.
5	G113	-32000 Ant. Coil, H. F. B.
6	G68	-32001 R. F. Coil, B. C. B.
7	G80	-32001 R. F. Coil, Pol. B.
8	G79	-32001 R. F. Coil, H. F. B.
9	G101	-32002 Osc. Coil, B. C. B.
10	G102	-32002 Osc. Coil, Pol. B.
11	G103	-32002 Osc. Coil, H. F. B.
12	G90	-32001 1st I. F. Assembly
13	G91	-32001 2nd I. F. Assembly
14A	W	-36055 Condenser, 35 Mfd. 400 V. Electrolytic
14B	W	-36057 Condenser, 10 Mfd. 300 V. Electrolytic
15	W	-36057 Condenser, 10 Mfd. 300 V. Electrolytic
16Z	W	-37778 Condenser, 00001 Mfd. (Molded)
16V	W	-37778 Condenser, 12 Mfd. 25 V. Electrolytic
17	G6	-34002 Condenser, 000025 Mfd. (Molded)
18A	G2	-34002 Condenser, 0001 Mfd. (Molded)
18B	G2	-34002 Condenser, 0001 Mfd. (Molded)
18C	G2	-34002 Condenser, 0001 Mfd. (Molded)
19	W	-32780.3 Condenser, .05 Mfd. 400 V.
20	G3	-34002 Condenser, 0005 Mfd. (Molded)
21	W	-37732 Condenser, 3 Mfd. 160 V.
22A	W	-31219 Condenser, .023 Mfd. 200 V.
22B	W	-31219 Condenser, .023 Mfd. 200 V.
23A	W	-36541 Condenser, .02 Mfd. 160 V.
23E	W	-36541 Condenser, .02 Mfd. 160 V.
24	W	-30488 Condenser, .02 Mfd. 400 V.
25A	W	-32378 Condenser, .01 Mfd. 400 V.
25B	W	-32378 Condenser, .01 Mfd. 400 V.
26A	W	-35936 Condenser, .05 Mfd. 200 V.
26B	W	-35936 Condenser, .05 Mfd. 200 V.
27	W	-30805 Condenser, .01 Mfd. 400 V.
28	W	-32380 Condenser, .05 Mfd. 200 V.
29	W	-23615 Condenser, .05 Mfd. 400 V.
30	W	-37891 3 Section Slant Trimmer Assembly
31	W	-35951 3 Section Slant Trimmer Assembly
32Z	W	-37874 Pol. Osc. Series Trimmer Cond.
33	G18	-34000 H. F. Fixed Series Trimmer Cond.
34	G47	-33002 3 Section Var. Tuning Condenser
		-41153 Dial Drive Unit
C		-41148 Dial Glass
		-41136 Mask for Dial
W		-40801 Dial Cushion
W		-40185 Dial Hand Screw
W		-40185 Long Dial Hand
W		-41145 Short Dial Hand
W		-40537 Coupling Unit
W		-41157 Belt (Drive)
W		-40638 Indicator Cable
35Z		-41417 Volume Control 1st A. F. 3Mmegohm
35Y		-41417 Volume Control 2nd A. F. 1 Megohm
36Z		-37966 Tone Control
36Y		-37966 A. C. Switch
37	B	-33906A Power Cord & Plug
38	G3	-37918 Speaker Cable
39		-31093 Resistor, 2,700 Ohm 1/4 W.
40	W	-21452 Resistor, 1,100 Ohm 1/2 W. Flex.
41		-37788 Resistor, 65,000 Ohm 1/4 W.
42		-5370A Resistor, 20,000 Ohm 1 W.
43		-21451 Resistor, 1 Megohm 1/4 W.
44		-21455 Resistor, 300,000 Ohm 1/4 W.
45		-23785 Resistor, 500,000 Ohm 1/4 W.
46A		-23785 Resistor, 500,000 Ohm 1/4 W.
46C		-23785 Resistor, 500,000 Ohm 1/4 W.
47		-21453 Resistor, 40,000 Ohm 1/4 W.
48		-23403 Resistor, 150,000 Ohm 1/4 W.
49A		-33344 Resistor, 400,000 Ohm 1/4 W.
49B		-33344 Resistor, 400,000 Ohm 1/4 W.
50A		-35600 Resistor, 100,000 Ohm 1/4 W.
50B		-35600 Resistor, 100,000 Ohm 1/4 W.
50C		-35600 Resistor, 100,000 Ohm 1/4 W.
51		-37245 Resistor, 1.5 Megohm 1/4 W.
52	W	-28589 Resistor, 350 Ohm 1/2 W. Flex.
53	W	-28105 Resistor, 500 Ohm 1/2 W. Flex.
54	W	-23012A Resistor, 40 Ohm 3/4 W. Flex.
55	W	-41193 Resistor, 1 Ohm 2 1/2 W. Flex.
56	W	-23013 Resistor, 2,000 Ohm 1 1/4 W. Flex.
57	W	-21273A Resistor, 60,000 Ohm 1/4 W.
58	W	-37987 Resistor, 15,000 Ohm 1 W. Wire Wound
59	W	-41225 4 Section Canlohm
60A	G151	-36400 Socket Type 6K7
60B	G151	-36400 Socket Type 6K7
61	G156	-36400 Socket Type 6A8
62	G164	-36400 Socket Type 6R7
63	G152	-36400 Socket Type 6C5
64A	G165	-36400 Socket Type 6N6
64B	G165	-36400 Socket Type 6N6
65	G167	-36100 Socket For W1187 (5 prong tube)
66	G154	-36400 Socket Type 5Z4
67		-40193 Speaker 633CJ4
68	W	-41146 Switch, Mixvox Control
69	C	-37638E Switch, Band Selector
70	G27	-26719 Ant. & Grd. Terminal Board Assy.
71	G1	-37995 Audio Input Transformer
72	G43	-25669 Power Supply Transformer (110V. 60C)
73	G48	-24628 Audio Output Transformer
74Z	W	-41259 Tuning Meter
74Y	W	-41259 Bull for Meter
75		-37685A Universal Power Transformer
76	W	-41445 Condenser, .036 Mfd. 400 V.
MG54		-41214 Complete Dial Assembly
		-37894 Escutcheon
B		-37894 Escutcheon Retaining Spring
D		-37898 Dial Lens
H		-37897 Lens Retaining Spring
W		-40365 Escutcheon Felt
W		-37339 Knob (3 required)
W		-40192B Knob (2 required)

May, 1936

**MODEL 916**  
**Socket, Trimmers**  
**Chassis, Voltage**  
**Alignment**

**CROSLLEY RADIO CORP.**

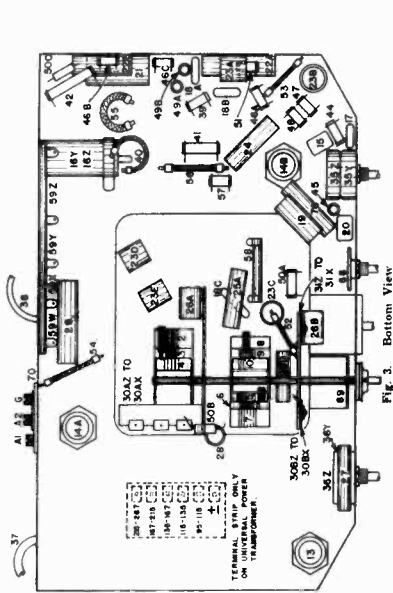


Fig. 3. Bottom View

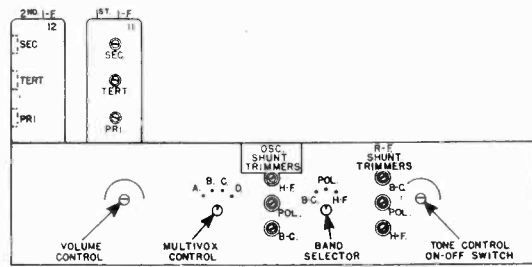


Fig. 4. Front View

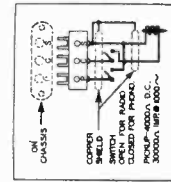


Fig. 7. Phonograph Pickup

**Shunt-Aligned Series Aligned**  
 American Broadcast Band (BLUE) 5000 KC.  
 Police Band (RED) 2000 KC.  
 High-Frequency Band (GREEN) 15000 KC.

**SCREEN GRID TUBES.**  
 (c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the maximum (ON) position. Turn the Multivox control knob to the Audiotone position. Third position in the clockwise direction.  
 (d) Turn the signal generator to 450 kilocycles. 2nd. I-F transformer (Text, Fig. 3) so that it is moderately light. (Do not force the adjustment screw).  
 (e) Adjust the top trimmer and then the bottom trimmer for maximum output. ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE READING ON THE OUTPUT METER. Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6A8 Osc. Mod. tube, leaving the tube's grid clip in place.  
 (f) Open the middle trimmer of the 1st. I-F transformer. Turn the four turns from the closed position. (Do not force the adjustment screw).  
 (g) Adjust the top trimmer and then the bottom trimmer of the 1st. I-F transformer for maximum output. from the 6A8 tube to "ANT" terminal of the signal generator and increase the output of the signal generator, if necessary.  
 (h) Adjust the middle trimmer of the 2nd. I-F transformer for maximum output.  
 (i) DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.  
 (j) Adjust the middle trimmer of the 1st. I-F transformer. DO NOT READJUST THE TOP AND BOTTOM TRIMMERS.  
**10. Oscilloscope Method.**  
 (a) Connect the output of the signal generator through a .02 ml. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. (Do not force the adjustment screw).  
 (b) Connect the vertical plates of the cathode ray tube to the "ANT" terminal of the signal generator. The positive terminal "GND" should be connected to the binding post marked "GND" on the chassis. The other binding post should be connected to the terminal marked "P2" of the 6A8 tube. Be sure the oscilloscope is properly grounded to the chassis. (See instructions supplied with signal generator and oscilloscope.)  
 (c) Set the band selector switch to the Broadcast Band and rotate the station selector to approximately 60 on the dial. Turn the volume control knob to the maximum (ON) position. Turn the Multivox control knob to the left (TREBLE) and turn the volume control knob to the right (BASS).  
 (d) Set the signal generator to 450 kilocycles. See instructions supplied with signal generator and oscilloscope.  
 (e) Close the middle trimmer condenser on the 2nd. I-F transformer. (Do not force adjustment screw).  
 (f) Adjust the top trimmer (Sec) of the 2nd. I-F transformer so that the rise of the selectivity curve is centered on the resonance axis (K) of the transparent scale supplied with the oscilloscope. (P1) of the 2nd. I-F transformer for maximum amplitude. (P2) of the 2nd. I-F transformer for maximum symmetry of the selectivity curve about the resonance line.  
 (g) Reduce the output of the signal generator and adjust the middle trimmer of the 2nd. I-F transformer for maximum symmetry of the selectivity curve about the resonance line.  
 (h) Readjust the bottom trimmer of the 2nd. I-F transformer for maximum symmetry and amplitude.  
 (i) Transfer the output lead of the signal generator from the 6A8 Modulation tube to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place.  
 (j) Turn the four turns from the closed position. (Do not force the adjustment screw).  
 (k) Increase the output of the signal generator and adjust the top trimmer (Sec) of the 1st. I-F transformer for maximum symmetry and amplitude.

**SOCKET VOLTAGE READINGS**

Tube	Function	H	I <sub>1</sub>	I <sub>2</sub>	S	G	K	G <sub>2</sub>	G <sub>3</sub>
6X7	R.F. Amplifier	6.5	221	—	—	—	—	—	—
6A8	Osc. Mod.	6.3	221	—	—	—	—	—	—
6K7	I-F Amplifier	6.3	280	—	—	—	—	—	—
6B5	2nd. I-F Amplifier	6.3	130	—	—	—	—	—	—
6C5	500 KC. Oscillator	6.3	286	—	—	—	—	—	—
5Z4	Rectifier	4.5	357	—	—	—	—	—	—

Values with power output.

**UNIVERSAL POWER TRANSFORMER**  
 The Model 916 chassis for use on other than 110 volts 60 cycles, is supplied with a universal power transformer. The primary winding is connected to a 0-250-0 volt tap, 0-250-0 volts and any commercial frequency of 25 cycles or above. To adapt the set to a different line voltage it is necessary to remove the chassis from the cabinet and connect the primary winding of the transformer to the correct tap on the transformer. After careful measurement of the terminal strip, the wire leading from the power switch to the terminal strip should be cut and the wire de-soldered to the correct lug. The correct lug will be the one marked so as to cover or nearly cover the maximum line voltage. THE MAXIMUM LINE VOLTAGE SHOULD BE USED. THE TERMINAL STRIP BESIDE THE TAP SHOULD BE USED FOR THE TAP BEING USED. THIS TAP SHOULD BE USED BY MORE THAN 5%.

**PHONOGRAPH PICKUP**  
 Chassis equipped with a universal power transformer also have three terminals on the back for connecting a phonograph pickup. These terminals are marked P C S and the pickup is connected through a double pole—single throw switch to these terminals as shown in Fig. 7.

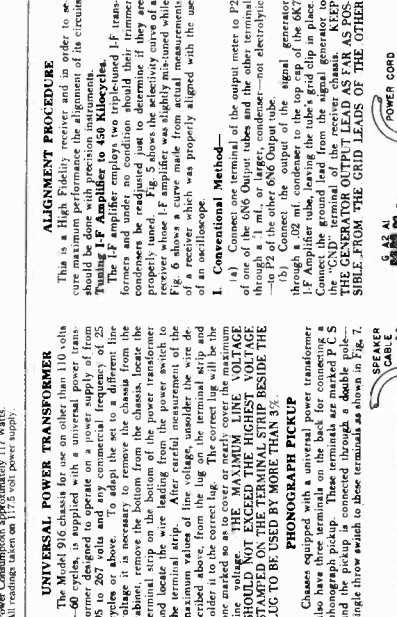


Fig. 2. Top View 916

**SPECIFICATIONS**  
 The Crosley Model 916 radio is a nine-tube super-heterodyne radio with a variable frequency standard universal power transformer.  
 The tubes used are 6K7 R.F. Amplifier, 6A8 Oscillator, BLUE 540-1000 KC. or GREEN 6.0-19 Megacycles or 10-15 Meters High Frequency (Auto Expression) PHANTOM CONDUCTOR (Auto Expression) The Phantom Conductor tube, Illustration No. 65, is connected across the voice coil of the speaker. When it is operating its resonance varies so as to increase the volume of loud tones, thus giving a wider volume range to reproduced music which tends to compensate for the electrical limitations of broadcasting equipment.

**ALIGNMENT PROCEDURE**  
 This is a High Fidelity receiver and in order to secure maximum performance the alignment of its circuit tuning is important. The alignment of the I-F transformers and the I-F amplifier should be done in the following order:  
 1. I-F Transformer Alignment  
 The I-F amplifier employs two triple-tuned I-F transformers and under no condition should their trimmer condensers be readjusted just to determine if they are properly aligned. The alignment of the I-F amplifier of a receiver whose I-F amplifier was slightly misadjusted while in an oscilloscope.  
 I. Conventional Method—  
 (a) Connect one terminal of the output meter to P2 of the 6K7 I-F amplifier tube. Connect the other terminal through a .1 ml. or larger, condenser—not electrolytic—to P2 of the other 6K6 Output tube.  
 (b) Connect the output of the signal generator through a .02 ml. condenser to the top cap of the 6K7 I-F amplifier tube. Leave the tube's grid clip in place. Connect the ground lead from the signal generator to the "GND" terminal of the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER TUBES.  
 (c) Set the signal generator to 450 kilocycles. See instructions supplied with signal generator and oscilloscope.  
 (d) Adjust the middle trimmer of the 1st. I-F transformer for maximum output.  
 (e) Adjust the middle trimmer of the 2nd. I-F transformer for maximum output.  
 (f) Adjust the top trimmer (Sec) of the 2nd. I-F transformer so that the rise of the selectivity curve is centered on the resonance axis (K) of the transparent scale supplied with the oscilloscope. (P1) of the 2nd. I-F transformer for maximum amplitude. (P2) of the 2nd. I-F transformer for maximum symmetry of the selectivity curve about the resonance line.  
 (g) Reduce the output of the signal generator and adjust the middle trimmer of the 2nd. I-F transformer for maximum symmetry of the selectivity curve about the resonance line.  
 (h) Readjust the bottom trimmer of the 2nd. I-F transformer for maximum symmetry and amplitude.  
 (i) Transfer the output lead of the signal generator from the 6A8 Modulation tube to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place.  
 (j) Turn the four turns from the closed position. (Do not force the adjustment screw).  
 (k) Increase the output of the signal generator and adjust the top trimmer (Sec) of the 1st. I-F transformer for maximum symmetry and amplitude.



CROSLLEY RADIO CORP.

MODEL 955  
Socket, Trimmers  
Chassis, Voltage  
Alignment

output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned, where provision is made for series alignment (BLUE and RED bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" shunt trimmers in the order given for maximum output. Re-adjust the station selector slightly so that the generator signal is tuned-in with maximum output and then check the adjustments of the "R-F" and "ANT" trimmers in the order given. DO NOT READJUST THE "OSC" TRIMMER.

NOTE: When shunt aligning the RED and GREEN bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 Kilocycles less than the fundamental. To check on this, increase the output of the signal generator ten times or more and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 Kilocycles less than the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the series trimmers, 30Y and 30Z Fig. 2, set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. At the same time that any series trimmer is being adjusted rotate the station selector back and forth slightly until no further improvement in output can be obtained.

(c) Signal Input Frequencies:

- Shunt Aligned
- 1700 Kc.
- 600 Kc.
- 2500 Kc.
- 18000 Kc.
- Series Aligned
- 800 Kc.
- 2500 Kc.
- 18000 Kc.

Connect the ground lead from the signal generator to the bottom terminal of the receiver chassis.

(c) Set the band selector switch to the broadcast band and rotate the station selector knob to the right on the dial. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE) and turn the expessorator switch OFF.

(d) Set the signal generator to 450 kilocycles.

(e) Adjust the trimmer condensers located on top of the 2nd I-F transformer for maximum output. (7 Fig. 2).

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6L7 modulator tube, leaving the tube's grid clip in place.

(g) Close the middle trimmer condenser on the 1st I-F transformer (Ter. Fig. 4) so that it is moderately tight. (Do not force adjusting screw).

(h) Adjust the top and then the bottom trimmer of the 1st I-F transformer for maximum output.

(i) Transfer the output lead of the signal generator from the 6L7 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.

(j) Adjust the middle trimmer of the 1st I-F transformer by opening condenser until maximum output is obtained. (DO NOT READJUST THE TOP AND BOTTOM TRIMMERS).

When aligning the R-F amplifier the output lead of the signal generator is connected to the antenna terminal of the receiver. For the BLUE and RED bands a .0025 mfd. condenser must be connected in series with the

American Broadcast Band (BLUE) 1700 Kc.  
Police Band (RED) 600 Kc.  
High-Frequency Band (GREEN) 2500 Kc.

Specifications:  
The Crosley Model 955 radio is a nine-tube super-heterodyne receiver and uses all metal tubes. It is available either with a standard 110 volt-60 cycle power transformer or with a universal power transformer.

BLUE 540-1900 Kilocycles (Police Band)  
RED 190-600 Kc. (American Broadcast Band)  
GREEN 6000-19000 Kilocycles (High Frequency Band)

The tubes used are 6K7 R-F Amplifier, 6L7 Modulator, 6C5 Oscillator, 6K7 I-F Amplifier, 6Q7 Diode Detector and A-F Amplifier, 6C5 Output Driver, two 6F6 Output tubes and 5Z4 Rectifier tube.

It is a three band receiver and the dial is divided into three sections as follows:

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The Crosley Model 955 radio is a nine-tube super-heterodyne receiver and uses all metal tubes. It is available either with a standard 110 volt-60 cycle power transformer or with a universal power transformer.

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RED 190-600 Kc. (American Broadcast Band)  
GREEN 6000-19000 Kilocycles (High Frequency Band)

The tubes used are 6K7 R-F Amplifier, 6L7 Modulator, 6C5 Oscillator, 6K7 I-F Amplifier, 6Q7 Diode Detector and A-F Amplifier, 6C5 Output Driver, two 6F6 Output tubes and 5Z4 Rectifier tube.

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BLUE 540-1900 Kilocycles (Police Band)  
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GREEN 6000-19000 Kilocycles (High Frequency Band)

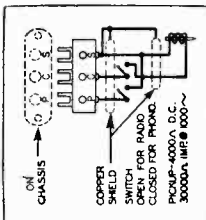


Fig. 7. Phonograph Pickup

AUTO EXPRESSIONATOR

The auto-expressionator circuit, items numbered 2A, 2B, 29, 43A, 43B, 60 and 67, reduces the volume of soft tones and increases the volume of loud tones. This gives a wider volume range to reproduced music and tends to compensate for the electrical limitations of broadcasting equipment. The condenser and transformer, items 28 and 67, provide bass compensation by preventing normal suppression of low frequency tones.

1st. I-F

SEC.

TERT.

PRI.

2nd. I-F

SEC.

TERT.

PRI.

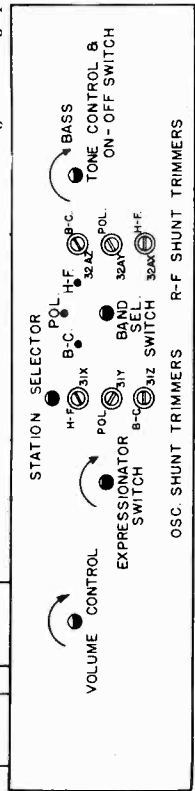


Fig. 4. Front View

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	Su	G	K	Go
6K7	R-F Amplifier	64	185	85	3.0	0	3.0	-5 to -30
6L7	Modulator	64	180	85	3.0	0	3.0	-5 to -30
6C5	Oscillator	64	110	85	3.0	0	3.0	-5 to -30
6K7	I-F Amplifier	64	195	85	3.0	0	3.0	-5 to -30
6Q7	Diode and A-F Amplifier	64	130	285	—	0	10.0	—
6C5	Output Driver	64	280	—	—	0	10.0	—
6F6	Output	64	280	—	—	0	10.0	—
5Z4	Rectifier	49	350	—	—	0	6.5	—

VOLTAGE DROP ACROSS SPEAKER FIELD 80 VOLTS  
POWER CONSUMPTION APPROXIMATELY 125 WATTS  
ALL READINGS TAKEN ON 117.5 VOLT POWER SUPPLY

UNIVERSAL POWER TRANSFORMER

The Model 955 chassis for use on other than 110 volts—60 cycles, is supplied with a universal power transformer designed to operate on a power supply of from 95 to 267 volts and any commercial frequency of 25 cycles or above. To adapt the set to a different line voltage it is necessary to remove the chassis from the cabinet, remove the bottom of the power transformer terminal strip on the bottom of the chassis, locate the maximum values of line voltage, unsolder the wire described above, from the lug on the terminal strip and the terminal strip. After careful measurement of the maximum values of line voltage, unsolder the wire described above, from the lug on the terminal strip and the terminal strip. The correct lug will be the one marked so as to cover or nearly cover the maximum line voltage. THE MAXIMUM LINE VOLTAGE SHOULD NOT EXCEED THE HIGHEST VOLTAGE STAMPED ON THE TERMINAL STRIP BESIDE THE LUG TO BE USED BY MORE THAN 3%.

PHONOGRAPH PICKUP

Chassis equipped with a universal power transformer also have three terminals on the back for connecting a phonograph pickup. These terminals are marked P, C, S and the pickup is connected through a double pole—single throw switch to these terminals as shown in Fig. 7.

ALIGNMENT PROCEDURE

This is a high fidelity receiver and in order to secure maximum performance the alignment of its circuits should be done with the use of precision instruments.

should be done with the use of precision instruments.

Tuning I-F Amplifier to 450 Kilocycles.  
The I-F amplifier employs a triple-tuned I-F transformer in conjunction with a double-tuned I-F transformer in order to secure flat top tuning. The trimmer condensers in these transformers are very accurately adjusted at the factory and should not be readjusted unless it is definitely known that the circuits are misaligned or after new parts have been installed. The graphic representation in Fig. 5, shows the selectivity curve of a receiver whose I-F amplifier is slightly mistuned. This is only one of hundreds of curves that were obtained from actual measurements of a receiver which was properly aligned with the use of an oscilloscope.

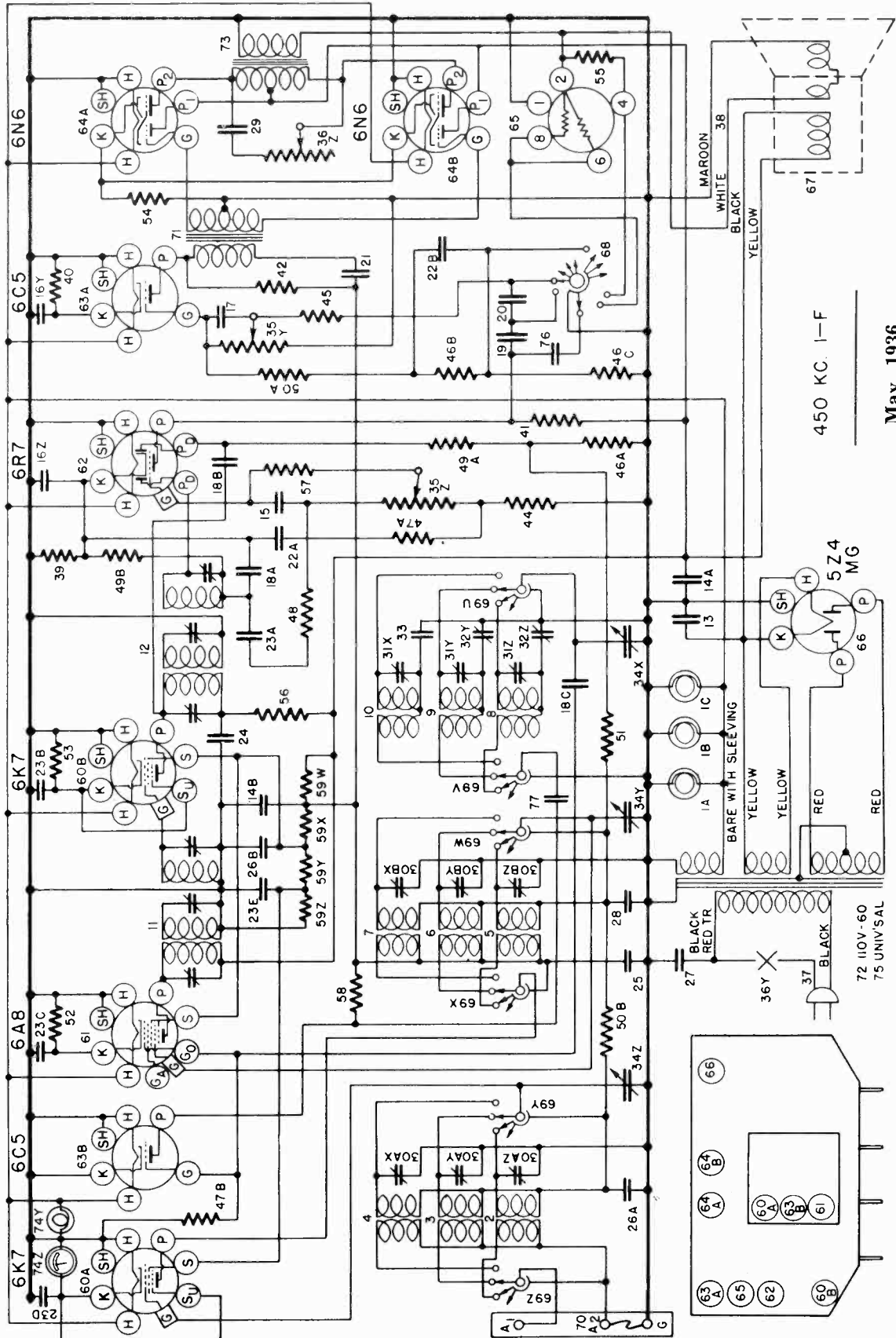
The circuits of this receiver may be most accurately aligned with the aid of an oscilloscope. However, if an oscilloscope is not available a good alignment may be obtained by means of a signal generator and an output meter provided the following procedure is carefully observed.

(a) Connecting Output Meter: Connect one terminal of the output meter to the plate of one of the 6F6 Output tubes and the other terminal through a .1 mfd. or larger condenser—not electrolytic—to the plate of the other 6F6 Output tube.

(b) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place.

CROSLY RADIO CORP.

MODEL 1016  
Schematic  
Socket



450 KC. I-F  
May, 1936







**MODEL 1055, Constitution**  
**Socket, Trimmers, Chassis**  
**Voltage**

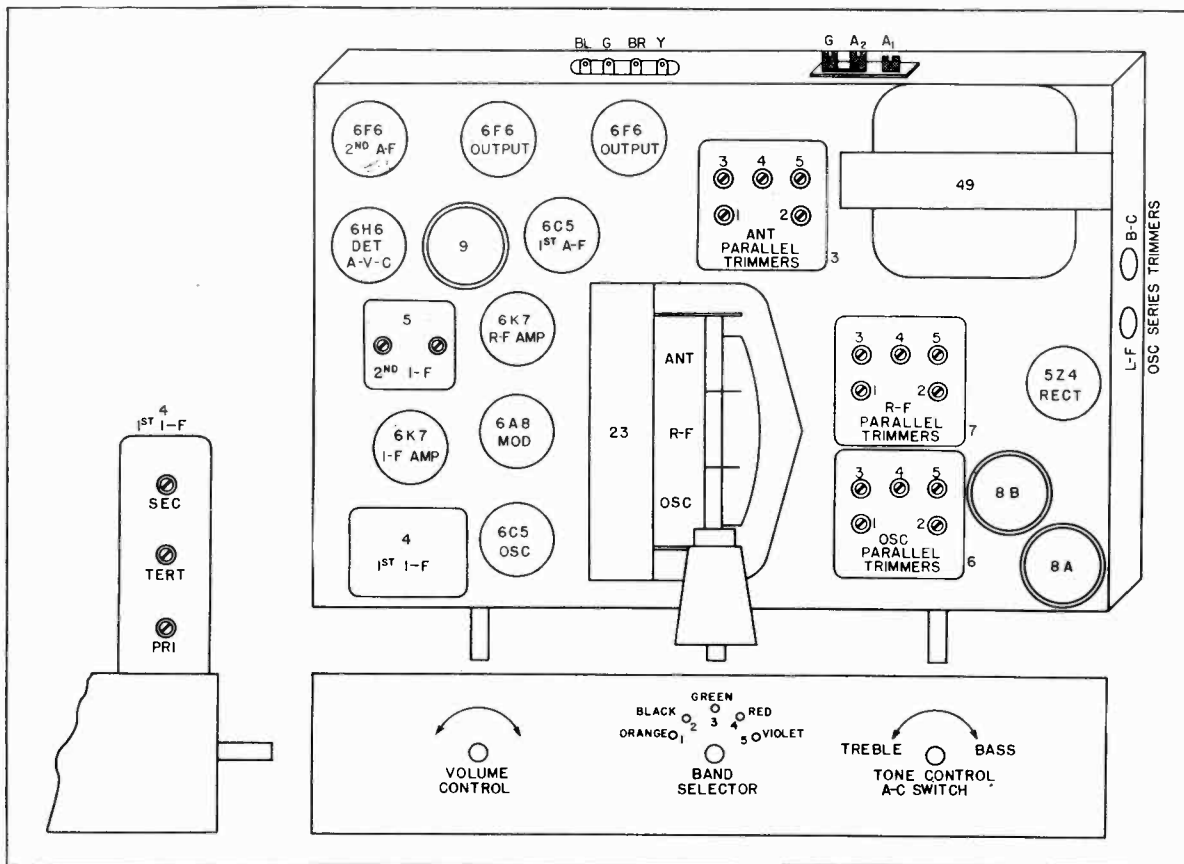
**CROSLLEY RADIO CORP.**

**TUBE SOCKET VOLTAGE READINGS**

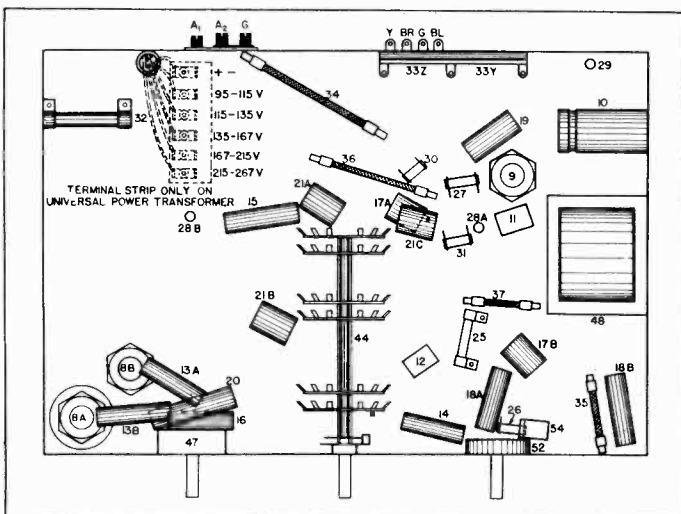
Tube	Function	H	P	S	Su	G	K	Go	Ga
6K7	R-F Amplifier	6.2	250	103	6	0	6	—	—
6A8	Modulator	6.2	250	103	—	0	6	-1 to -30	107
6C5	Oscillator	6.2	75	—	—	—	0	—	—
6K7	I-F Amp.	6.2	250	103	3	0	3	—	—
6H6	Detector & AVC	6.2	—	—	—	—	0	—	—
6C5	1st. A-F Amp.	6.2	70	—	—	0	3	—	—
6F6	2nd. A-F Amp.	6.2	218	218	—	0	18	—	—
6F6	Output	6.2	355	245	—	0	18	—	—
6F6	Output	6.2	355	245	—	0	18	—	—
5Z4	Rectifier	4.9	365	—	—	—	—	—	—

Measured on 117.5 Volt—60 Cycle Line.

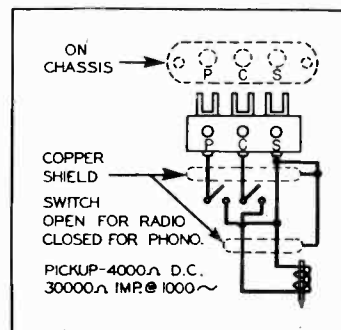
Power Consumption Approximately 123 Watts.



**Fig. 2. Top View**



**Fig. 3. Bottom View**



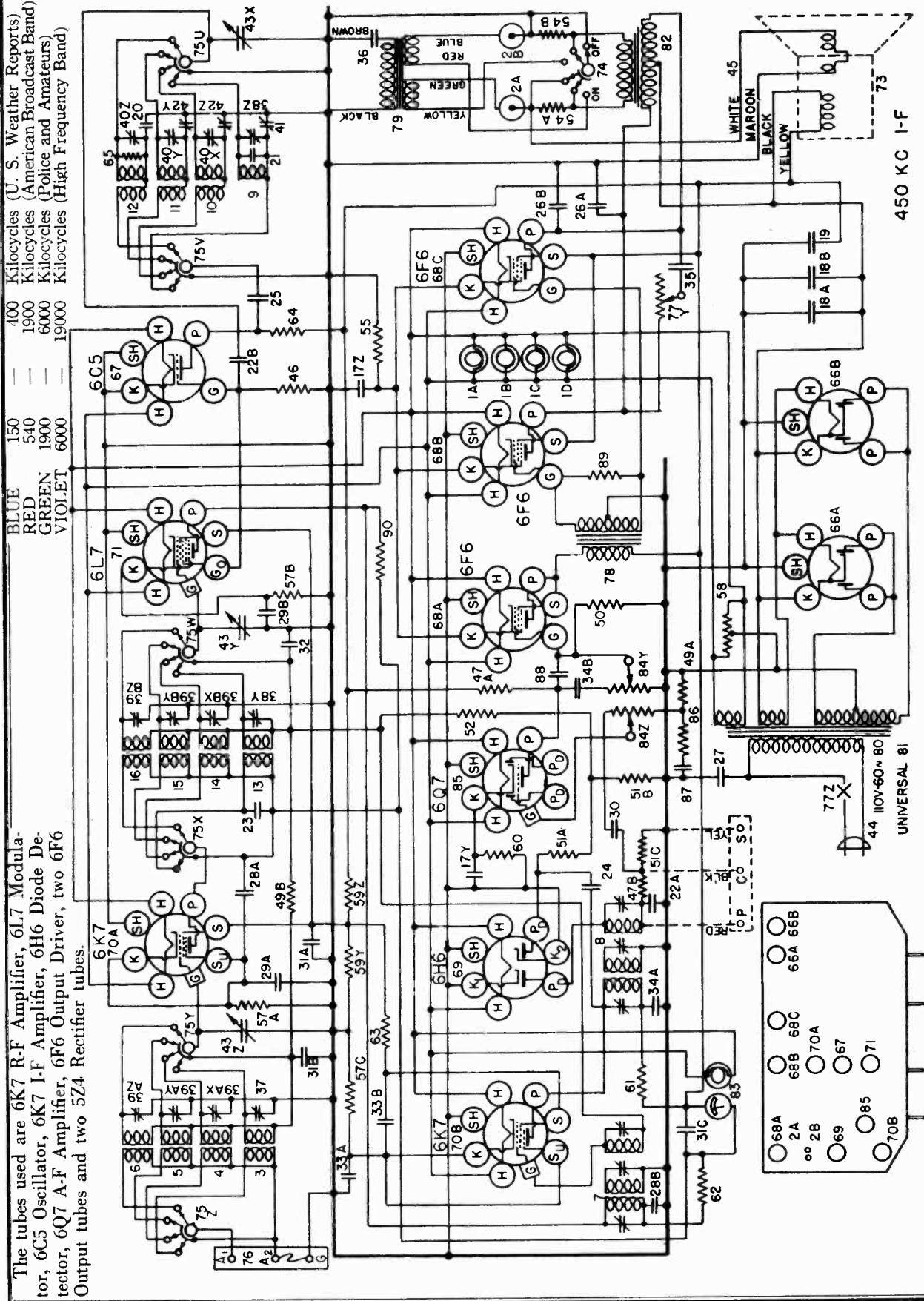
**Fig. 4. Phono Connections**





CROSLY RADIO CORP.

MODEL 1155  
Schematic



JANUARY, 1936



# CROSLY RADIO CORP.

## MODEL 1155 Voltage, Parts Alignment

Tube	Function	TUBE SOCKET VOLTAGE READINGS							
		H	P	S	Su	G	K	Go	
6K7	R. F. Amplifier	6.3	238	100	3	0	3	—	
6L7	Modulator	6.3	230	100	—	0	—	—	
6C5	Oscillator	6.3	140	—	—	—	—	—	
6K7	I-F Amplifier	6.3	230	95	3	0	3	—	
6H6	Diode Detector	6.3	—	—	—	—	—	—	
6Q7	A. F. Amplifier	6.3	155	—	—	0	2	—	
6R6	Output Driver	6.3	210	210	—	0	17	—	
6R6	(2) Output	6.3	360	235	—	0	17	—	
5Z4	(2) Rectifiers	5.0	360	—	—	—	—	—	

VOLTAGE DROP ACROSS SPEAKER FIELD 125 VOLTS. POWER OUTPUT APPROXIMATELY 15.5 WATTS. POWER CONSUMPTION APPROXIMATELY 140 WATTS. ALL READINGS TAKEN ON 117.5 VOLT POWER SUPPLY.

### UNIVERSAL POWER TRANSFORMER

The Model 1155 chassis for use on other than 110 volts—60 cycles, is supplied with a universal power transformer designed to operate on a power supply of from 95 to 267 volts and any commercial frequency of 25 cycle or above. To adapt the set to a different line voltage it is necessary to remove the chassis from the cabinet, remove the bottom from the chassis and locate the terminal strip on the bottom of the power transformer. After careful measurement of the maximum values of line voltage, unsolder the wire leading from the power switch from the terminal strip and solder it to the correct terminal. The correct terminal will be the one marked so as to cover or nearly cover the maximum line voltage. THE MAXIMUM VOLTAGE SHOULD NOT EXCEED THE HIGHEST RATING STAMPED ON THE TERMINAL BOARD BESIDE THE TERMINAL TO BE USED BY MORE THAN 3%.

### PHONOGRAPH PICKUP

Chassis equipped with a universal power transformer also have three terminals on the back for connecting a phonograph pickup. These terminals are marked P, C and S and the pickup is connected through a double pole—single throw switch to these terminals as shown in Fig. 7.

### ALIGNMENT PROCEDURE

This is a high fidelity receiver and in order to secure maximum performance the alignment of its circuits should be done with the use of precision instruments. The I-F amplifier employs two triple-tuned I-F transformers and under no condition should their trimmer condensers be readjusted just to determine if they are properly tuned. The graphic representation in Fig. 5, shows the selectivity curve of a receiver whose I-F amplifier is slightly mis-tuned. This is only one of hundreds of curves that were obtained through mis-alignment. Fig. 6, shows a curve made from actual measurements of a receiver which was properly aligned with the use of an oscilloscope.

Poor quality, loss of high frequency response and poor selectivity are likely results of an improperly tuned I-F amplifier.

The circuits of this receiver may be most accurately aligned with the aid of an oscilloscope. However, if an oscilloscope is not available a good alignment may be obtained by means of a signal generator and output meter, provided the following procedure is carefully observed.

### Connecting Output Meter.

Connect one terminal of the output meter to the plate of one of the 6F6 Output tubes and the other terminal through a .1 mfd., or larger, condenser—not electrolytic—to the plate of the other 6F6 Output tube.

### Tuning I-F Amplifier to 450 Kilocycles.

(a) Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6K7 I-F amplifier tube, leaving the tube's grid clip in place. Connect the ground lead from the signal generator to the ground terminal of the receiver chassis. KEEP THE GENERATOR OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.

(b) Set the band selector switch to the broadcast band and rotate the station selector to 60 on the Broadcast Band. Turn the volume control knob to the right (ON), turn the tone control knob to the left (TREBLE), and turn the expessorator control knob to the left (OFF).

(c) Set the signal generator to 450 kilocycles.

(d) Close the middle trimmer condenser on the 2nd I-F transformer (Vert. Fig 4) so that it is moderately tight. (Do not force adjusting screw).

(e) Adjust the top and then the bottom trimmers (Sec. and Pri.) of the 2nd I-F transformer for maximum output.

ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.

(f) Transfer the output lead of the signal generator from the 6K7 tube to the top cap of the 6L7 modulator tube leaving the tube's grid clip in place.

(g) Open the middle trimmer of the 1st I-F transformer three or four turns from the closed position. (Care should be taken that the screw does not become dislodged from the nut).

(h) Adjust the top and then the bottom trimmers of the 1st I-F transformer for maximum output.

(i) Adjust the output lead of the signal generator from the 6L7 tube to the "ANT" terminal of the receiver and increase the output of the signal generator, if necessary.

(j) Adjust the middle trimmer of the 2nd I-F transformer by opening condenser until maximum output is obtained. (DO NOT READJUST THE TOP AND BOTTOM TRIMMERS).

(k) Adjust the middle trimmer of the 1st I-F transformer by closing condenser until maximum output is obtained. (DO NOT READJUST THE TOP AND BOTTOM TRIMMERS).

### Aligning R-F Amplifier.

When aligning the R-F amplifier the output lead of the signal generator is connected to the "ANT" terminal of the receiver. For the BLUE, RED and GREEN, bands a .00025 mfd. condenser must be connected in series with the output lead of the signal generator and for the high-frequency band a 400 ohm carbon resistor should be used in place of the condenser.

Each band should first be shunt aligned and then series aligned where provision is made for series alignment (BLUE, RED and GREEN bands). The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated (c) for each adjustment.

(a) Adjust the "OSC", "R-F" and "ANT" parallel trimmers (Fig. 4 and 2) in the order given for maximum put. Tune the station selector slightly to the generator signal for maximum output and then check the adjustments of the "R-F" (Fig. 4) and "ANT" trimmers (Fig. 2) in the order given. DO NOT READJUST THE "OSC" TRIMMER.

NOTE: When shunt aligning the GREEN and VIOLET bands care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune-in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned-in at both positions but much stronger at the correct position.

(b) To align the "series" trimmers (Fig. 2) set the signal generator to the frequency indicated (c) and then tune-in this signal with the station selector for maximum output. Tune the station selector slightly to the generator output. Adjust the series trimmer while rotating the station selector back and forth slightly until no further improvement in output can be obtained.

### (c) Signal Input Frequencies for Alignment:

	Shunt Alignment	Series Alignment
Weather Band (BLUE)	400 Kc	150 Kc
American Broadcast Band (RED)	1700 Kc	600 Kc
Police Band (GREEN)	6000 Kc	2500 Kc
High Frequency Band (VIOLET)	18000 Kc	

### AUTO-EXPRESSIONATOR

The auto-expressionator circuit, items numbered 2A, 2B, 36, 54A, 54B, 74 and 79, reduces the volume of soft tones and sustains the volume of loud tones. This gives a wider volume range to reproduced music and tends to compensate for the electrical limitations of broadcast-receiving equipment. The transformer and condenser, items No. 79 and 36, provide bass compensation by preventing the normal suppression of low frequency tones.

### PARTS LIST—MODEL 1155

Figures in first column refer to parts in diagrams.

Item No.	Part No.	Name	Description
1A	W-37922	Bulb	Dial Light
1B	W-37922	Bulb	Dial Light
1C	W-37922	Bulb	Dial Light
1D	W-37922	Bulb	Dial Light
2A	W-40445	Hull	Auto-Expressionator Hull
2B	W-40445	Hull	Auto-Expressionator Hull
3	G2-37965	Socket	Auto-Expressionator Hull
4	G1-32000	Coil	Ant. 150-400 Kc.
5	G1-32000	Coil	Ant. 540-1900 Kc.
6	G1-32000	Coil	Ant. 1900-6000 Kc.
7	G2-32004	Coil	1st I-F. Assem.
8	G1-32004	Coil	2nd I-F. Assem.
9	G2-32004	Coil	1st I-F. Assem.
10	G40-32012	Coil	Sec. 540-1900 Kc.
11	G41-32012	Coil	Sec. 1900-6000 Kc.
12	G78-32012	Coil	Sec. 6-18 Mc.
13	G67-32011	Coil	R. F. 150-400 Kc.
14	G68-32011	Coil	R. F. 540-1900 Kc.
15	G69-32011	Coil	R. F. 1900-6000 Kc.
16	G65-32011	Coil	R. F. 6-18 Mc.
17	W-37923	Condenser	25 Mfd., 25 Volt
18	W-39365	Condenser	35 Mfd., 100 Volt
19	W-39367	Condenser	35 Mfd., 100 Volt
20	G18-10000	Condenser	40 Mfd., 300 Volt
21	G2-34032	Condenser	00025 Mfd., 200 Volt
22	G2-34032	Condenser	00025 Mfd., 200 Volt
23	G2-34032	Condenser	00025 Mfd., 200 Volt
24	G1-34045	Condenser	00025 Mfd., 200 Volt
25	W-34847	Condenser	00025 Mfd., 200 Volt
26	W-35179	Condenser	00025 Mfd., 200 Volt
26A	W-35139	Condenser	00025 Mfd., 200 Volt
26B	W-35139	Condenser	00025 Mfd., 200 Volt
27	W-35278	Condenser	01 Mfd., 400 Volt
28	W-35278	Condenser	01 Mfd., 400 Volt
29	W-35278	Condenser	01 Mfd., 400 Volt
29A	W-35278	Condenser	01 Mfd., 400 Volt
29B	W-35278	Condenser	01 Mfd., 400 Volt
30	W-35278	Condenser	01 Mfd., 400 Volt
31	W-35278	Condenser	01 Mfd., 400 Volt
31A	W-35278	Condenser	01 Mfd., 400 Volt
31B	W-35278	Condenser	01 Mfd., 400 Volt
32	W-35278	Condenser	01 Mfd., 400 Volt
33	W-35278	Condenser	01 Mfd., 400 Volt
33A	W-35278	Condenser	01 Mfd., 400 Volt
33B	W-35278	Condenser	01 Mfd., 400 Volt
34	W-35278	Condenser	01 Mfd., 400 Volt
34A	W-35278	Condenser	01 Mfd., 400 Volt
34B	W-35278	Condenser	01 Mfd., 400 Volt
35	W-23615	Condenser	3 Mfd., 160 Volt
36	W-37732	Condenser	Single Section Osc. Trimmer
37	W-37564	Condenser	Double Section Osc. Trimmer
38	W-37966	Condenser	R. F. Trimmer
39AZ	W-37891	Condenser	Ant. Triple Sec. I-F. Trimmer
39AY	W-37891	Condenser	Ant. Triple Sec. II-F. Trimmer
39AX	W-37891	Condenser	Ant. Triple Sec. III-F. Trimmer
39B	W-37891	Condenser	Ant. Triple Sec. IV-F. Trimmer
39C	W-37891	Condenser	Ant. Triple Sec. V-F. Trimmer
40	W-35851	Condenser	Triple Sec. Osc. Trimmer
41	W-37917	Condenser	I-F. Osc. Series Trimmer
42	W-37874	Condenser	H. C. Trimmer
43	W-37874	Condenser	H. C. Trimmer
43Z	W-37874	Condenser	H. C. Trimmer
43V	W-37874	Condenser	H. C. Trimmer
43X	W-37874	Condenser	H. C. Trimmer
44	W-37874	Condenser	H. C. Trimmer
45	W-37874	Condenser	H. C. Trimmer
46	W-37874	Condenser	H. C. Trimmer
47A	W-37874	Condenser	H. C. Trimmer
47B	W-37874	Condenser	H. C. Trimmer
48	W-37874	Condenser	H. C. Trimmer
49A	W-37874	Condenser	H. C. Trimmer
49B	W-37874	Condenser	H. C. Trimmer
50	W-37874	Condenser	H. C. Trimmer
51A	W-37874	Condenser	H. C. Trimmer
51B	W-37874	Condenser	H. C. Trimmer
51C	W-37874	Condenser	H. C. Trimmer
52	W-37874	Condenser	H. C. Trimmer
53	W-37874	Condenser	H. C. Trimmer
54	W-37874	Condenser	H. C. Trimmer
54A	W-37874	Condenser	H. C. Trimmer
54B	W-37874	Condenser	H. C. Trimmer
55	W-37874	Condenser	H. C. Trimmer
56	W-37874	Condenser	H. C. Trimmer
57A	W-37874	Condenser	H. C. Trimmer
57B	W-37874	Condenser	H. C. Trimmer
58	W-37874	Condenser	H. C. Trimmer
59	W-37874	Condenser	H. C. Trimmer
60	W-37874	Condenser	H. C. Trimmer
61	W-37874	Condenser	H. C. Trimmer
62	W-37874	Condenser	H. C. Trimmer
63	W-37874	Condenser	H. C. Trimmer
64	W-37874	Condenser	H. C. Trimmer
65	W-37874	Condenser	H. C. Trimmer
66A	G51-36400	Socket	Type 52A
67	G152-36400	Socket	Type 66
68A	G153-36400	Socket	Type 66B
68B	G153-36400	Socket	Type 66B
69	G155-36400	Socket	Type 66B
70A	G151-36400	Socket	Type 66B
70B	G151-36400	Socket	Type 66B
71	G159-36400	Socket	Type 66B
72	None	Socket	Type 66B
73	None	Socket	Type 66B
74	W-42414	Speaker	
75	W-4956	Switch	Auto-Expressionator
76	C-37957-A	Switch	Band Selector
77	G27-26719	Ter Board	Ant. and Ground
78	W-37966	Transformer	Auto-Expressionator
79	G31-24628	Transformer	Audio
80	G31-24628	Transformer	Audio
81	G1-37900	Transformer	60 Cycle, 110 V. Power
82	G2-37900	Transformer	Universal Power
83	G25-24628	Transformer	Push-pull Output
84	W-37962	Volume	Slide-graph
84Z	W-37962	Volume	Slide-graph
84Y	W-37962	Volume	Slide-graph
85	G160-36400	Socket	Type 66B
86	W-37962	Volume	Slide-graph
87	W-37962	Volume	Slide-graph
88	W-30270	Condenser	500 Mfd., 200 Volt
89	W-30270	Condenser	500 Mfd., 200 Volt
90	W-30270	Condenser	500 Mfd., 200 Volt
91	W-30270	Condenser	500 Mfd., 200 Volt
92	W-30270	Condenser	500 Mfd., 200 Volt
93	W-30270	Condenser	500 Mfd., 200 Volt
94	W-30270	Condenser	500 Mfd., 200 Volt
95	W-30270	Condenser	500 Mfd., 200 Volt
96	W-30270	Condenser	500 Mfd., 200 Volt
97	W-30270	Condenser	500 Mfd., 200 Volt
98	W-30270	Condenser	500 Mfd., 200 Volt
99	W-30270	Condenser	500 Mfd., 200 Volt
100	W-30270	Condenser	500 Mfd., 200 Volt
101	W-30270	Condenser	500 Mfd., 200 Volt
102	W-30270	Condenser	500 Mfd., 200 Volt
103	W-30270	Condenser	500 Mfd., 200 Volt
104	W-30270	Condenser	500 Mfd., 200 Volt
105	W-30270	Condenser	500 Mfd., 200 Volt
106	W-30270	Condenser	500 Mfd., 200 Volt
107	W-30270	Condenser	500 Mfd., 200 Volt
108	W-30270	Condenser	500 Mfd., 200 Volt
109	W-30270	Condenser	500 Mfd., 200 Volt
110	W-30270	Condenser	500 Mfd., 200 Volt
111	W-30270	Condenser	500 Mfd., 200 Volt
112	W-30270	Condenser	500 Mfd., 200 Volt
113	W-30270	Condenser	500 Mfd., 200 Volt
114	W-30270	Condenser	500 Mfd., 200 Volt
115	W-30270	Condenser	500 Mfd., 200 Volt
116	W-30270	Condenser	500 Mfd., 200 Volt
117	W-30270	Condenser	500 Mfd., 200 Volt
118	W-30270	Condenser	500 Mfd., 200 Volt
119	W-30270	Condenser	500 Mfd., 200 Volt
120	W-30270	Condenser	500 Mfd., 200 Volt
121	W-30270	Condenser	500 Mfd., 200 Volt
122	W-30270	Condenser	500 Mfd., 200 Volt
123	W-30270	Condenser	500 Mfd., 200 Volt
124	W-30270	Condenser	500 Mfd., 200 Volt
125	W-30270	Condenser	500 Mfd., 200 Volt
126	W-30270	Condenser	500 Mfd., 200 Volt
127	W-30270	Condenser	500 Mfd., 200 Volt
128	W-30270	Condenser	500 Mfd., 200 Volt
129	W-30270	Condenser	500 Mfd., 200 Volt
13			



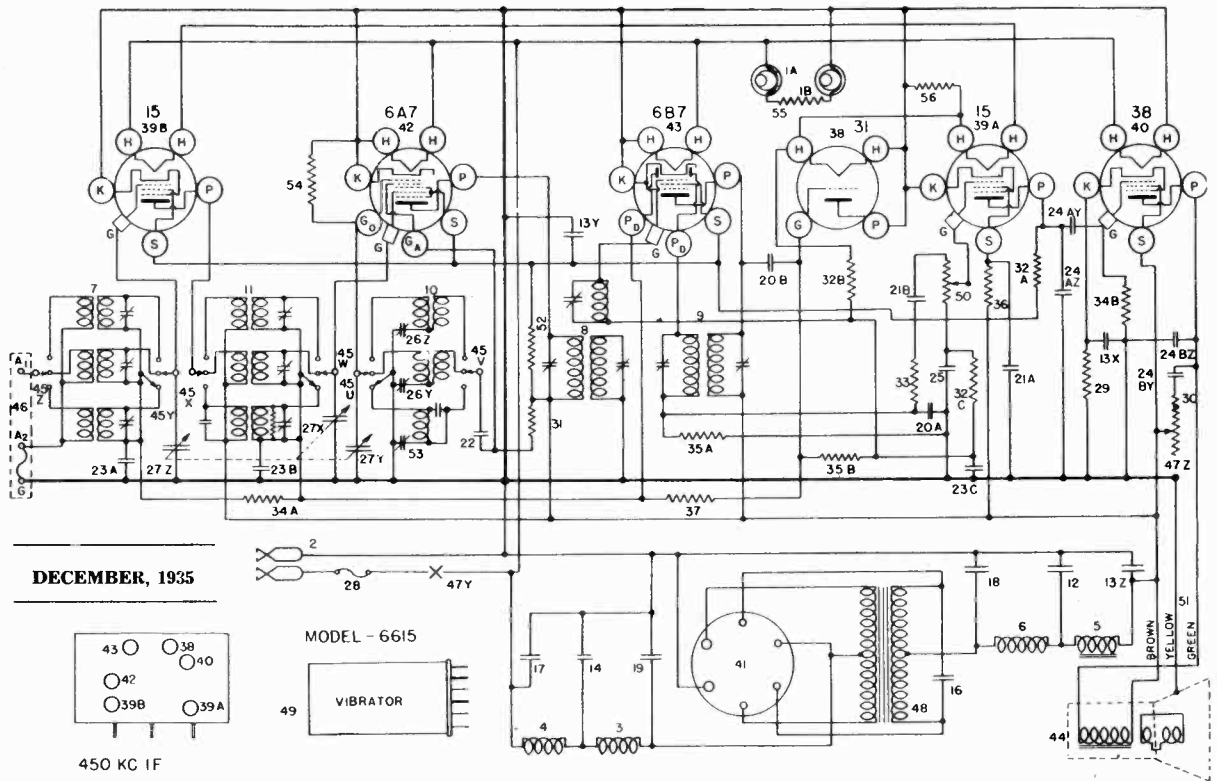






CROSLLEY RADIO CORP.

MODEL 6615  
Schematic  
Parts



DECEMBER, 1935

MODEL - 6615

PARTS LIST—MODEL 6615

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1A	G6 - 27134	Dial Light Bracket Assem.	26Z	G29 - 33006	Condens., L.F. - Series Osc. Trimmer
1B	G6 - 27134	Dial Light Bracket Assem.	26Y		Condenser, B.C. - Series Osc. Trimmer
2	MC25 - 37103	Battery Clip (+)	27Z	G33 - 33002	3 Section Tuning Cond. Gang.
		Battery Clip (-)	27Y		
		Battery Cable Clamp	27X		
3	W - 37251	Choke, I.-F., "A" Sup. Filter	MC25 - 37257		Dial Assem.
4	G10 - 32977	Choke, I.-F., "A" Sup. Filter	C - 37439A		Dial Face
5	G27 - 24628	Choke, I.-F., "B" Sup. Filter	W - 37198		Pointer
6	G2 - 24234	Choke, I.-F., "B" Sup. Filter	W - 32293		Pointer Nut (2)
7	G80 - 32000	Ant. Coil Assem. Complete	G2 - 33339		Fuse Panel
8	G78 - 32000	Ant. Coil only, 150-400 Kc.	W - 37624		Fuse, 4 Amp.
9	G44 - 32000	Ant. Coil only, 1710-540 Kc.	W - 33310A		Fuse Cover
10	G79 - 32000	Ant. Coil only, 2.3 - 7.5 Mc.	W - 34225		Cover Insulator
	G12 - 36031	Coil Shield	W - 22514		Resistor, 750 Ohm, 1/2 W. Flex.
	W - 35951	3 Section Trimmer Cond.	30		Resistor, 7,000 Ohm, 1/2 W.
	W - 36033	Trimmer Cond. Bracket	31		Resistor, 15,000 Ohm, 1/2 W.
	G6 - 36031	Support Base	32A		Resistor, 100,000 Ohm, 1/2 W.
	G79 - 32004	1st. I.-F. Coil Assem.	32B		Resistor, 100,000 Ohm, 1/2 W.
	G78 - 32004	2nd. I.-F. Coil Assem.	32C		Resistor, 100,000 Ohm, 1/2 W.
	G64 - 32002	Osc. Coil Assem. Complete	33		Resistor, 100,000 Ohm, 1/2 W.
	G62 - 32002	Osc. Coil only, 150-400 Kc.	34A		Resistor, 500,000 Ohm, 1/2 W.
	G69 - 32002	Osc. Coil only, 1710-540 Kc.	34B		Resistor, 1.0 Megohm, 1/2 W.
	G63 - 32002	Osc. Coil only, 2.3 - 7.5 Mc.	35A		Resistor, 1.0 Megohm, 1/2 W.
	G13 - 36031	Coil Shield	35B		Resistor, 2.0 Megohm, 1/2 W.
	W - 35951	3 Section Trimmer Cond.	36		Resistor, 3.0 Megohm, 1/2 W.
	W - 36033	Trimmer Cond. Bracket	37		Socket, "21"
	G11 - 36031	Support Base	38	G14 - 28807	Socket, "15"
	G6 - 34002	Condenser, 25 Mmf.	39A	G15 - 28807	Socket, "36"
	G57 - 32001	R.-F. Coil Assem. Complete	40	G32 - 28807	Socket, "V11"
	G55 - 32001	R.-F. Coil only, 150-400 Kc.	41	G47 - 28807	Socket, "6A7"
	G59 - 32001	R.-F. Coil only, 1710-540 Kc.	42	G48 - 28807	Socket, "6B7"
	G56 - 32001	R.-F. Coil only, 2.3 - 7.5 Mc.	43	W - 35772	Tube Shield (Half), (6)
	G12 - 36031	Coil Shield	44	W - 35773	Tube Shield Cap, (3)
	W - 35951	3 Section Trimmer Cond.	45Z	W - 35771	Tube Shield Base, (3)
	W - 36033	Trimmer Cond. Bracket	46	33 - MS - 3	Speaker
	G1 - 34002	Support Base	47Y	43 - MS - 3	Speaker (Console)
	G6 - 34002	Condenser, 25 Mmf.	48	MC38 - 37257	Band Change Switch
	W - 37590	Resistor, 750,000 Ohms, 1/2 W.	49		
12	W - 36037	Condenser, 40 Mfd., 300 V.	45U		
13Z		Condenser, 12 Mfd., 250 V.	46		
13Y	W - 34886	Condenser, 8 Mfd., 250 V.	47Z	G27 - 26719	Terminal Board, Ant. and Grnd.
14	W - 32904	Condenser, 8 Mfd., 25 V.	48		Tone Control
15	W - 37211	Condenser, 20 Mmf.	49	G7 - 32769	On Off Switch
16	W - 37190	Condenser, 0.001 Mfd., 1000 V.		MG19 - 37257	Power Transformer
17	W - 37190	Condenser, 0.02 Mfd., 160 V.		W - 32930A	Power Transformer Can. Cover
18	W - 37173	Condenser, 0.01 Mfd., 400 V.		W - 37216	Vibrator
19	W - 37174	Condenser, 0.02 Mfd., 400 V.		W - 37225	Vibrator Cover, (Shield)
20A	G2 - 34002	Condenser, 100 Mmf.		W - 33312A	Vibrator Sieve, (Rubber)
20B	G2 - 34002	Condenser, 100 Mmf.	50	W - 36090	Volume Control
21A	W - 23191A	Condenser, 0.01 Mfd., 400 V.	51	W - 35111	Speaker Cable
21B	W - 23191A	Condenser, 0.01 Mfd., 400 V.	52	W - 37485	Resistor, 15,000 Ohm, 1/2 W.
22	W - 32178	Condenser, 0.01 Mfd., 400 V.	53	G12 - 33005	Condenser, H.F. - Series Osc.
23A	W - 32379	Condenser, 0.02 Mfd., 200 V.	54	W - 37472	Resistor, 50,000 Ohm, 1/2 W.
23B	W - 32379	Condenser, 0.02 Mfd., 200 V.	55	W - 37631	Resistor, 32.0 Ohm, 1/2 W. Flex.
23C	W - 32379	Condenser, 0.02 Mfd., 200 V.	56	W - 37630	Resistor, 21.0 Ohm, 1/2 W. Flex.
24AZ	W - 25537A	Condenser, 0.001 Mfd., 400 V.		MG9 - 37257	Synchronec Partition Assem.
24AY	W - 25537A	Condenser, 0.001 Mfd., 400 V.		W - 37227	Synchronec Cover
24BZ	W - 25537A	Condenser, 0.001 Mfd., 400 V.		W - 37490	Transformer Shield
25	W - 30321A	Condenser, 1.0 Mfd., 160 V.		H - 33528	Escutcheon
				W - 33984	Escutcheon Gasket
				D - 28	Escutcheon Screws (4)
				W - 37340	Knob (Band Change)
				W - 37339	Knob (3)

**MODEL 6615**  
**Socket, Chassis**  
**Trimmers, Voltage**  
**Alignment**

**CROSLLEY RADIO CORP.**

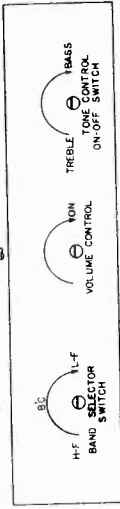
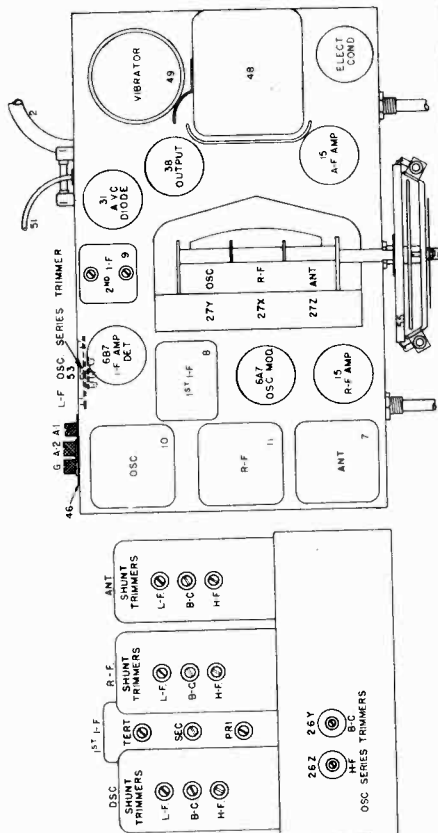


Fig. 2. Top View 6615

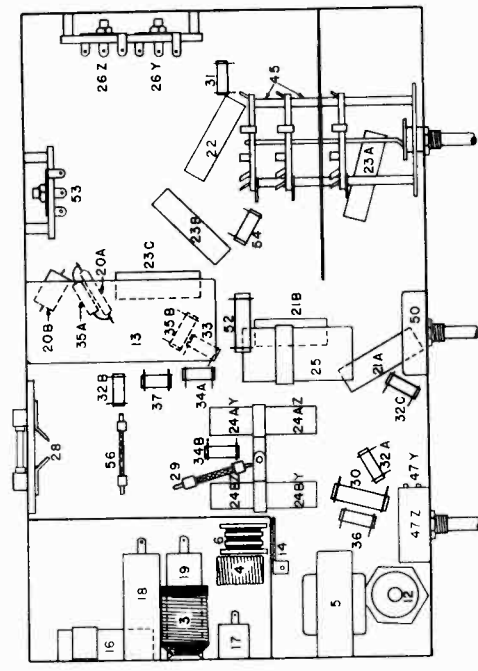


Fig. 3. Bottom View

condenser back and forth slightly, until no further improvement in output can be obtained.

**SIGNAL INPUT FREQUENCIES**

Series Alignment	Shunt Alignment
400 Kc.	150 Kc.
1400 Kc.	600 Kc.
6000 Kc.	2500 Kc.

built-in power supply unit which employs a self-rectifying type vibrator.  
 It is a three band receiver and the dial is divided into three sections as follows:

- Weather Band (American Broadcast Band)
- High Frequency Band
- Low Frequency Band

volumeter, (except filaments) with the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D.C. voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

TUBE	FUNCTION	P	S	G	K	Ga	Go
15	R-F Amplifier	2.0	150	-2	0	120	-5 to -15
6A7	Osc-Modulator	5.8	150	-2	0	0	0
6B7	I-F Amp. & Detector	5.8	150	-2	0	0	0
15	A-F Amplifier	2.0	150	-2	12	0	0
38	Output	5.8	145	0	0	0	0
31	AVC Diode	2.0	0	0	0	0	0

Power Output Approximately 9 Watt.

**ALWAYS USE THE LOWEST SIGNAL GENERATOR OUTPUT THAT WILL GIVE A REASONABLE OUTPUT METER READING.**  
 (1) Reduce the output of the signal generator and adjust the middle trimmer on the 1st I-F transformer for maximum output. **DO NOT READJUST THE OTHER TRIMMERS.**

**2. Aligning R-F Amplifier.**

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A, 1") terminal of the receiver through a .00025 mfd. condenser. Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment. Adjust the "OSC," "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. **NOTE:** When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned in at both positions but much stronger at the correct position.

To adjust the "series" trimmers (illus. Nos. 53 top view, 26Z and 26Y side view, Fig. 2) set the signal generator to the frequency indicated and then tune in this signal with the station selector for maximum output. Adjust the "series" trimmer while rocking the tuning

**SPECIFICATIONS**  
 The Crosley Model 6615 radio is a six-tube super-heterodyne receiver designed for operation from a six-volt storage battery. It contains a completely shielded, built-in power supply unit which employs a self-rectifying type vibrator.  
 It is a three band receiver and the dial is divided into three sections as follows:

- Weather Band (American Broadcast Band)
- High Frequency Band
- Low Frequency Band

volumeter, (except filaments) with the volume control full on and no signal input. The filament voltages should be measured with an accurate low range D.C. voltmeter (approximately 0 to 10 volts). Voltage limits may vary plus or minus 10% of values given.

TUBE	FUNCTION	P	S	G	K	Ga	Go
15	R-F Amplifier	2.0	150	-2	0	120	-5 to -15
6A7	Osc-Modulator	5.8	150	-2	0	0	0
6B7	I-F Amp. & Detector	5.8	150	-2	0	0	0
15	A-F Amplifier	2.0	150	-2	12	0	0
38	Output	5.8	145	0	0	0	0
31	AVC Diode	2.0	0	0	0	0	0

Power Output Approximately 2.5 Amperes.

**ALIGNMENT PROCEDURE**  
 All the circuits in this receiver are very accurately adjusted at the factory and normally should need no further adjustment. However, if it is definitely known that an adjustment is necessary the circuits can be properly aligned ONLY with the use of a modulated signal generator and an output meter.

**CONNECTING OUTPUT METER**

Connect one terminal of the output meter to the plate and the other terminal to the screen of the 38 Output tube. Be sure the meter is protected from D.C. by connecting a condenser (1 mfd. or larger—not electrolytic) in series with one of the leads.

**1. Tuning I-F Amplifier To 450 Kilocycles.**

- Connect the output of the signal generator through a .02 mfd. condenser to the top cap of the 6A7 tube, leaving the tube's grid clip in place. Connect the terminal of the receiver to the "GND" ground lead from the signal generator to the "GND" OUTPUT LEAD AS FAR AS POSSIBLE FROM THE GRID LEADS OF THE OTHER SCREEN GRID TUBES.
- Set the station selector so that the tuning condenser plates are completely out of mesh. Turn the volume control knob to the right (ON) and turn the tone control knob to the left (TREBLE).
- Turn the band selector switch all the way to the left (High Frequency Band).
- Set the signal generator to 450 kilocycles.
- Close the middle trimmer condenser (SEC) on the 1st I-F transformer (Fig. 2).
- Adjust the trimmers located on top of the 2nd I-F transformer for maximum output.
- Adjust the top and bottom trimmers (TERT and PRI) of the 1st I-F transformer for maximum output.
- Repeat operations (f) and (g) for more accurate adjustments.

When aligning the R-F amplifier the output lead from the signal generator is connected to the antenna ("A, 1") terminal of the receiver through a .00025 mfd. condenser. Each band should first be shunt aligned and then series aligned. The band selector switch should be set for the band being aligned and the signal generator should be set to the frequency indicated for each adjustment. Adjust the "OSC," "R-F" and "ANT" shunt trimmers in the order given for maximum output. Tune the station selector to the signal adjustments of the "R-F" and "ANT" trimmers in the order given. Do not readjust the "OSC" trimmer. **NOTE:** When aligning the High Frequency Band care must be exercised so that the circuits will be aligned on the fundamental frequency rather than on the image frequency which is approximately 900 kilocycles less than the fundamental. To check on this, increase the output of the signal generator approximately ten times and try to tune in the signal both at the generator frequency as indicated on the station selector dial and at approximately 900 kilocycles below the correct frequency. If the circuits have been properly aligned the signal can be tuned in at both positions but much stronger at the correct position.



