

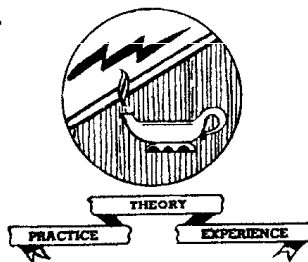
Most - Often - Needed

1939

RADIO
DIAGRAMS
and Servicing Information

Compiled by

M. N. BEITMAN



SUPREME PUBLICATIONS
CHICAGO

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

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To all radio manufacturers represented in this book, due thanks and acknowledgement are given. It is only with the cooperation of these firms that the most-popular diagrams needed by you have been selected and prepared for publication.

M. N. Beitman

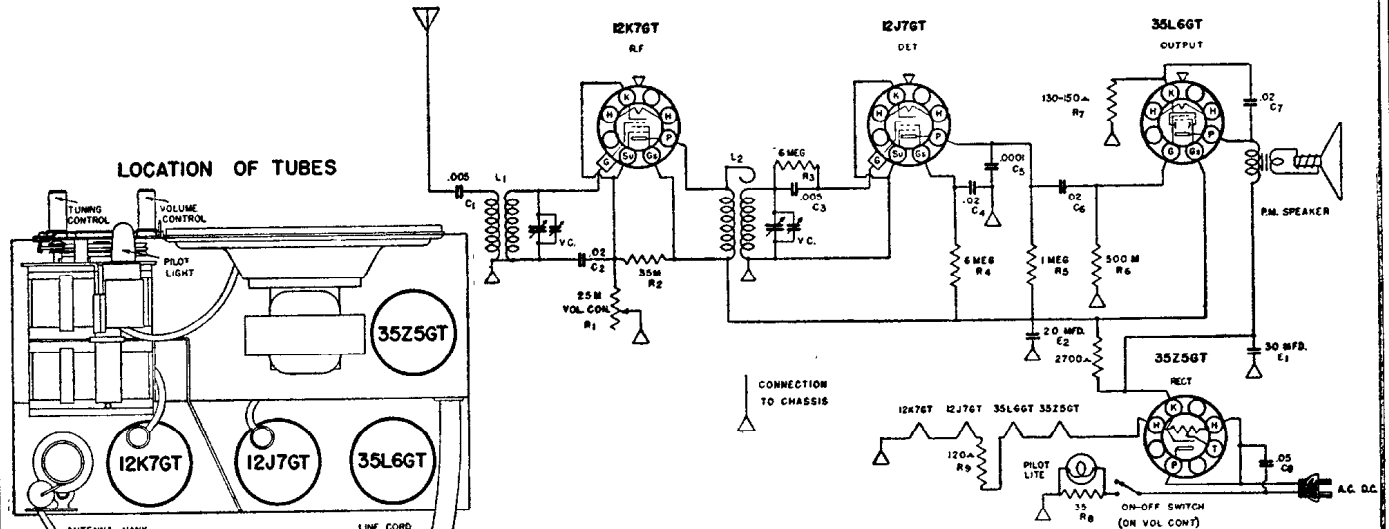
Chicago, Ill.

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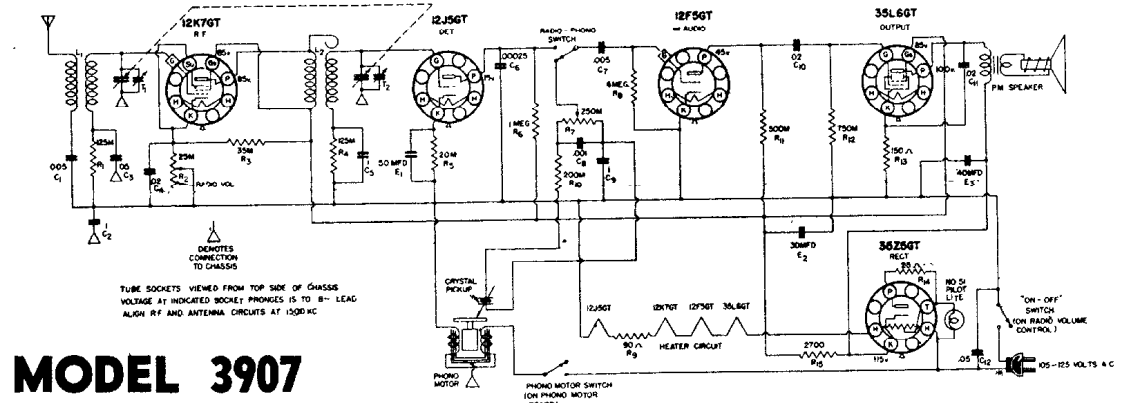
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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

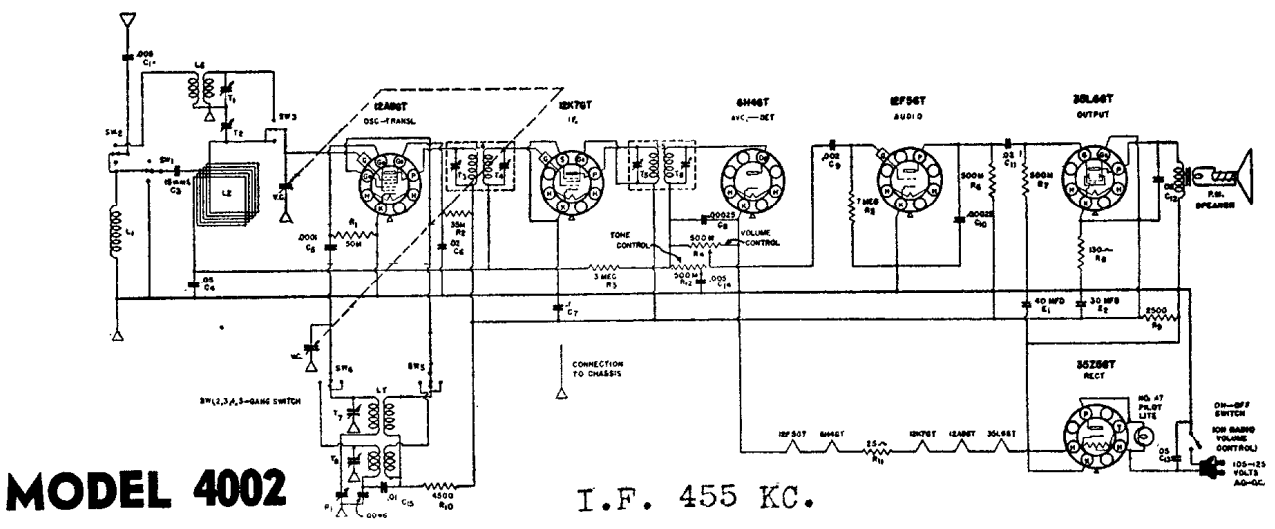
AIR-KING PRODUCTS CO., INC.—BROOKLYN, N. Y.



MODELS 9822, 9823 and 9922



MODEL 3907



MODEL 4002

I.F. 455 KC.

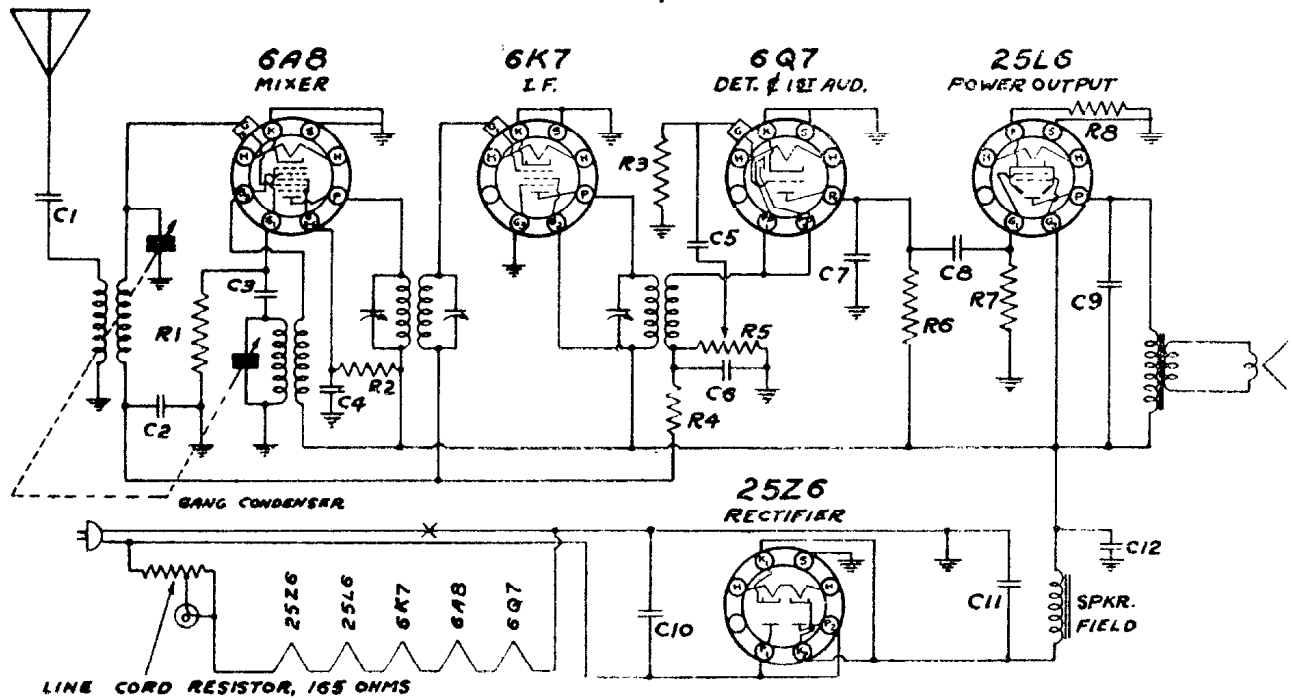
This receiver comprises a six-tube AC-DC two-band superheterodyne incorporating the ingenious "Noise Minimizer" system. An improved filter circuit, automatic volume control, beam power output tube and oversized dynamic speaker are utilized for improved performance. The tuning range of this instrument accommodates two bands of frequencies from 530 to 1700 kilocycles (standard American broadcast) and 5.7 to 18 megacycles (foreign broadcast).

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Allied Radio
CORPORATION



LINE CORD RESISTOR, 165 OHMS

RESISTORS		
NO.	OHMS	WATTS
R1	50,000	1/4
R2	40,000	1/4
R3	15 MEG	1/4
R4	2 MEG	1/4
R5	500,000	VOL. CONT.
R6	250,000	1/4
R7	500,000	1/4
R8	110	1/4 ±10%

CONDENSERS		
NO.	MFD.	TYPE
C1	.005	600V.
C2	.02	400V.
C3	.00025	MICA
C4	.01	400V.
C5	.01	400V.
C6	.00025	MICA
C7	.00025	MICA
C8	.01	400V.
C9	.005	600V.

NO.	MFD.	TYPE
C10	.05	400V.
C11	25.	BLECT. 150V.
C12	10.	BLECT. 150V.

I.F. - 456 KC

ALIGNMENT DATA

I.F. ALIGNMENT

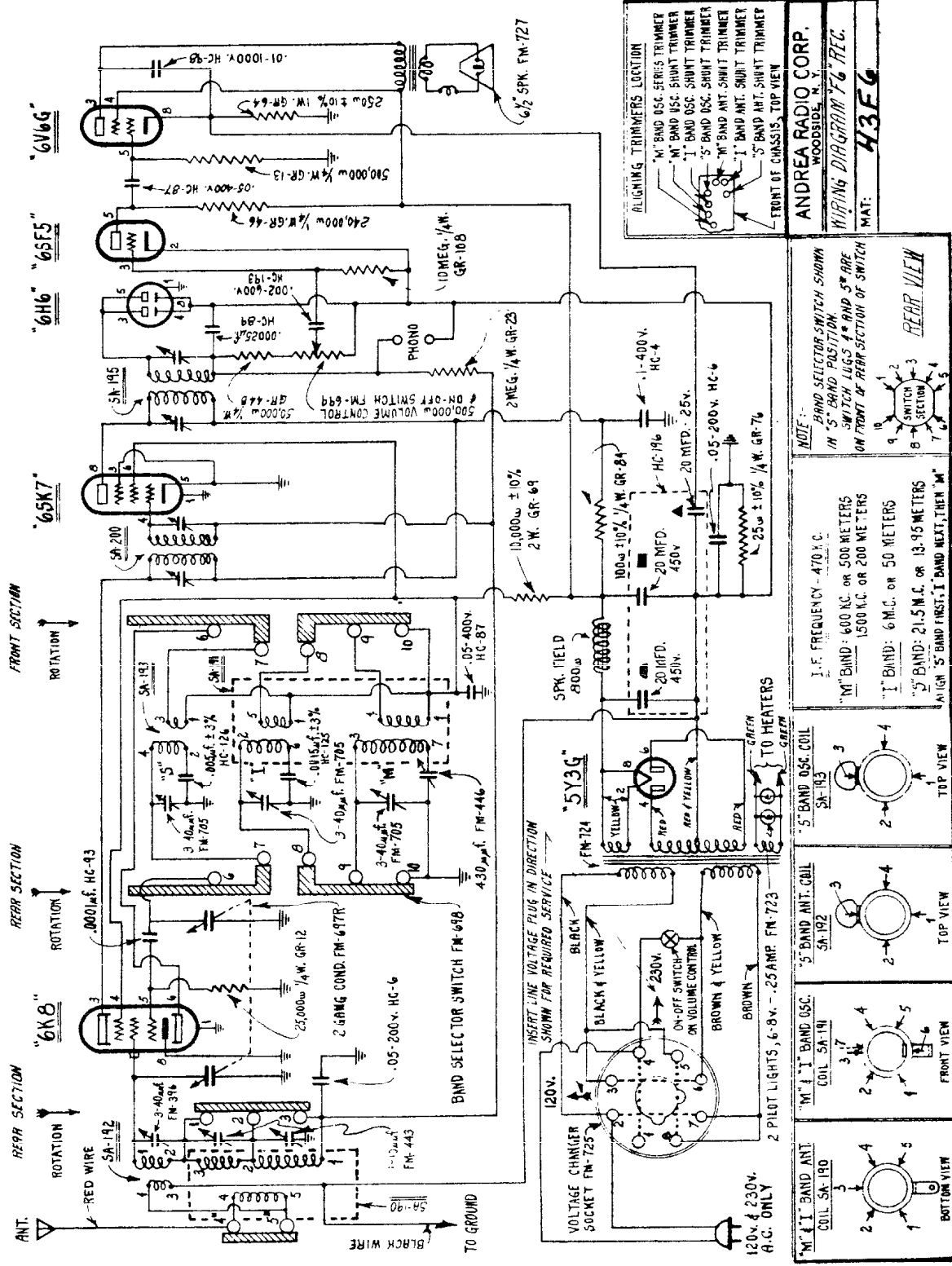
Adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6A8) through a .05 or .1 mfd. condenser. Connect ground or test oscillator to chassis ground through a .1 mfd. condenser. Align all three I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT

Adjust the oscillator to 1730 KC and connect the output to the antenna lead, through a .0001 mfd. mica condenser. Set the gang condenser to minimum capacity and adjust the gang condenser trimmer (oscillator) to receive this signal. After this has been carefully done, the next step is to set the generator to 1400 KC and after tuning in the signal adjust the antenna trimmer to peak. This is all that is necessary for the alignment unless the plates of the gang condenser have been bent out of shape. In case of bent plates, set the test oscillator and the receiver to 600 KC and bend the plates into the position for maximum output.

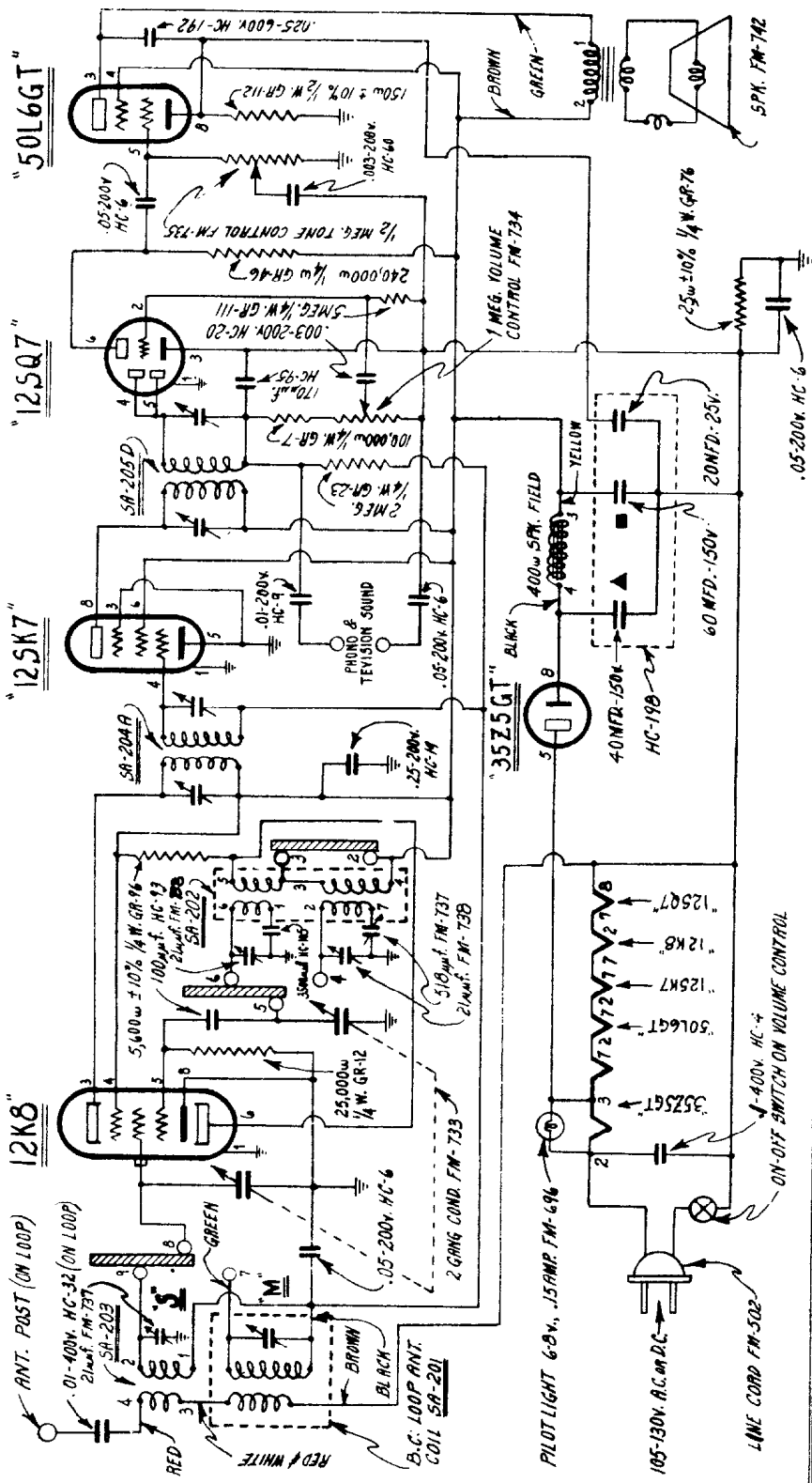
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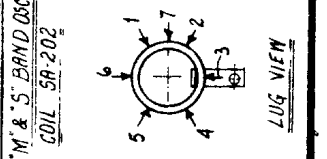
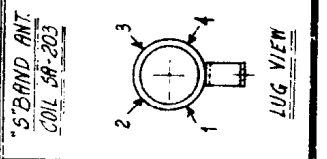
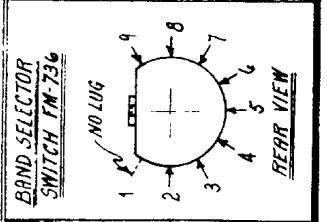
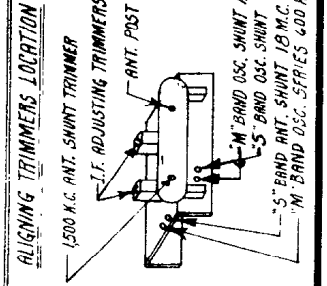
ANDREA RADIO CORP.
48-20 48th Ave., Woodside, L. I., N. Y.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

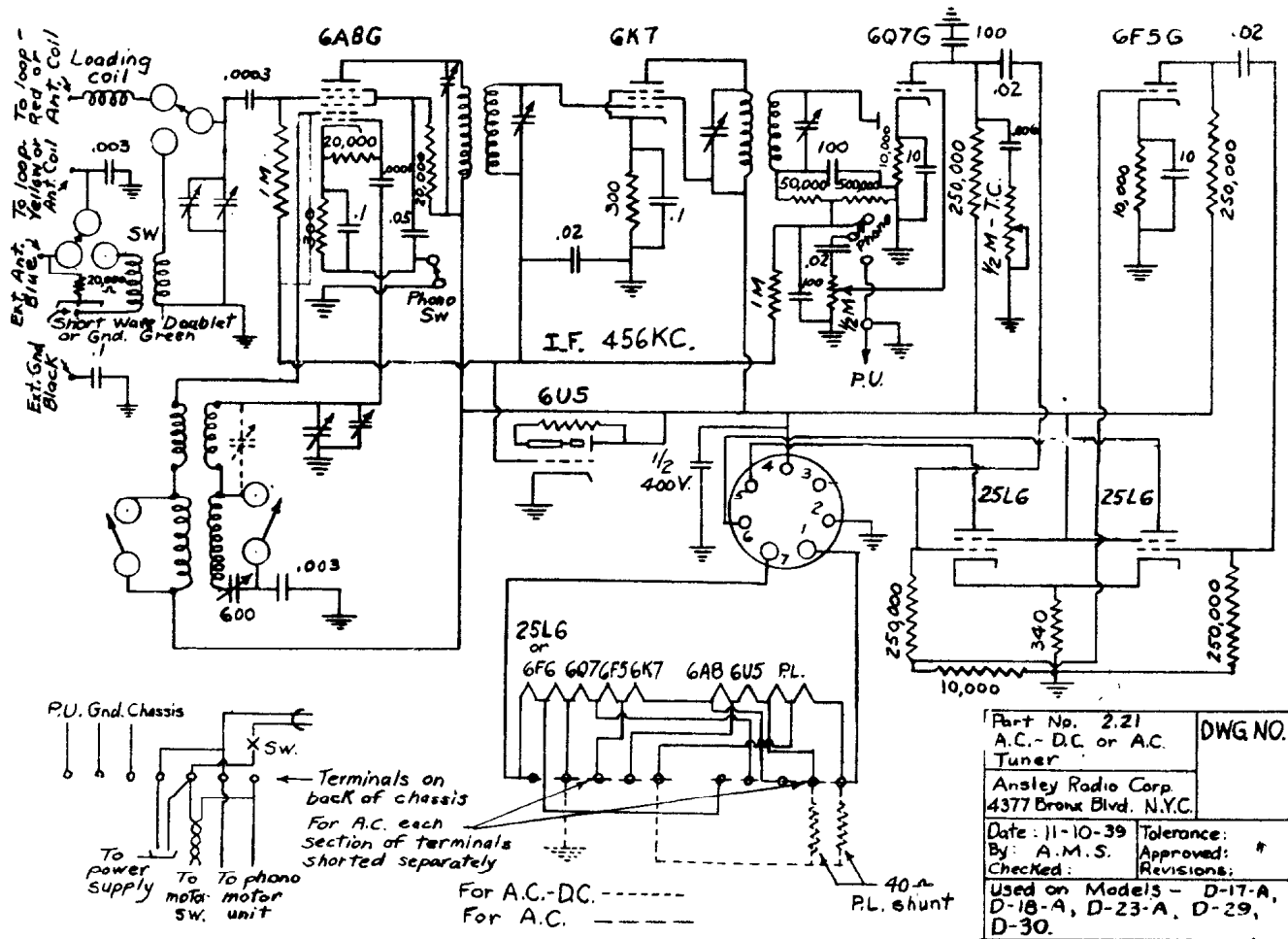


NOTE:
 BRAND SELECTOR SWITCH SHOWN ON "S" BAND POSITION, TO THE EXTREME CLOCKWISE POSITION.
ANDREA RADIO CORP.
 WOODSIDE, N. Y.
WIRING DIAGRAM "UG-55" REC.
 MODEL: "25G5"
 DR. J. R. DATE: 2-2-40
 W. J. H.

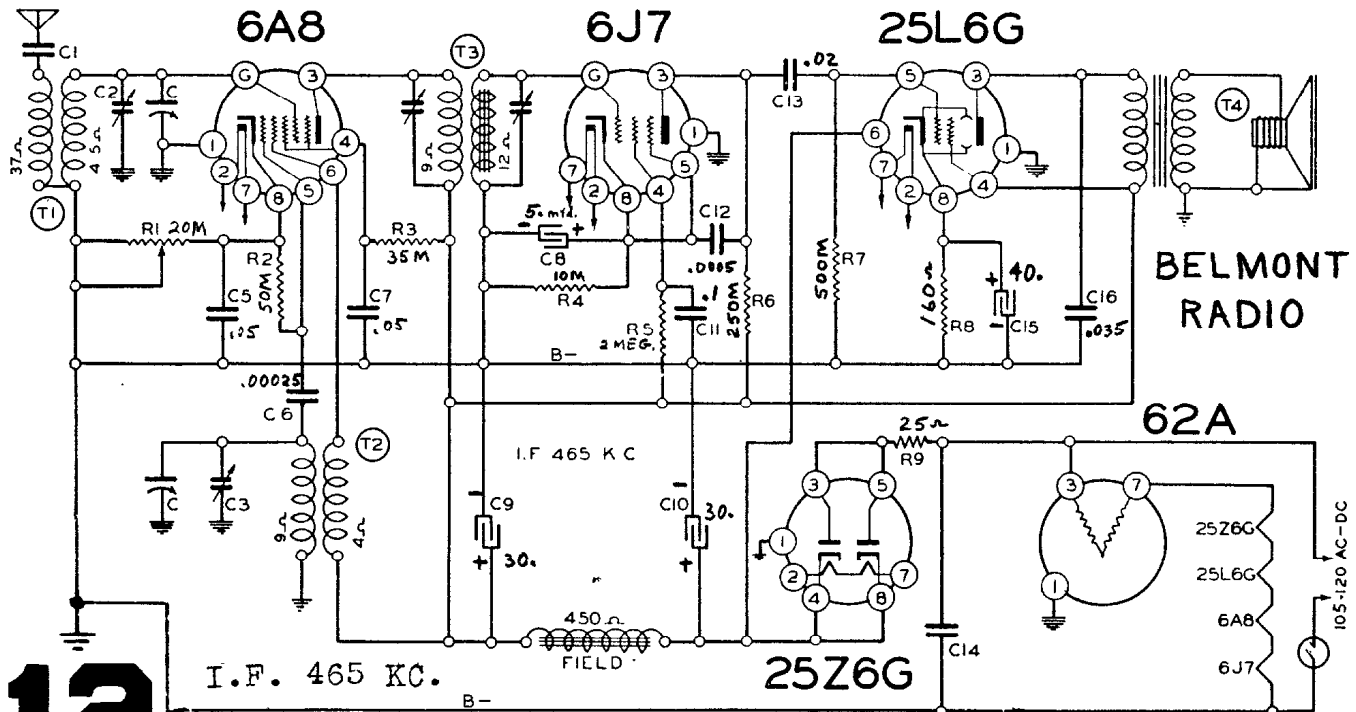
I.F. FREQUENCY = 455 K.C.
 "M" BAND: 600 K.C. OR 500 METERS
 1,500 K.C. OR 200 METERS
 "S" BAND: 18 M.C. OR 16.67 METERS
IMPORTANT: RECEIVER MUST BE ALIGNED WITH LOOP CORRECTLY ASSEMBLED ON CHASSIS



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



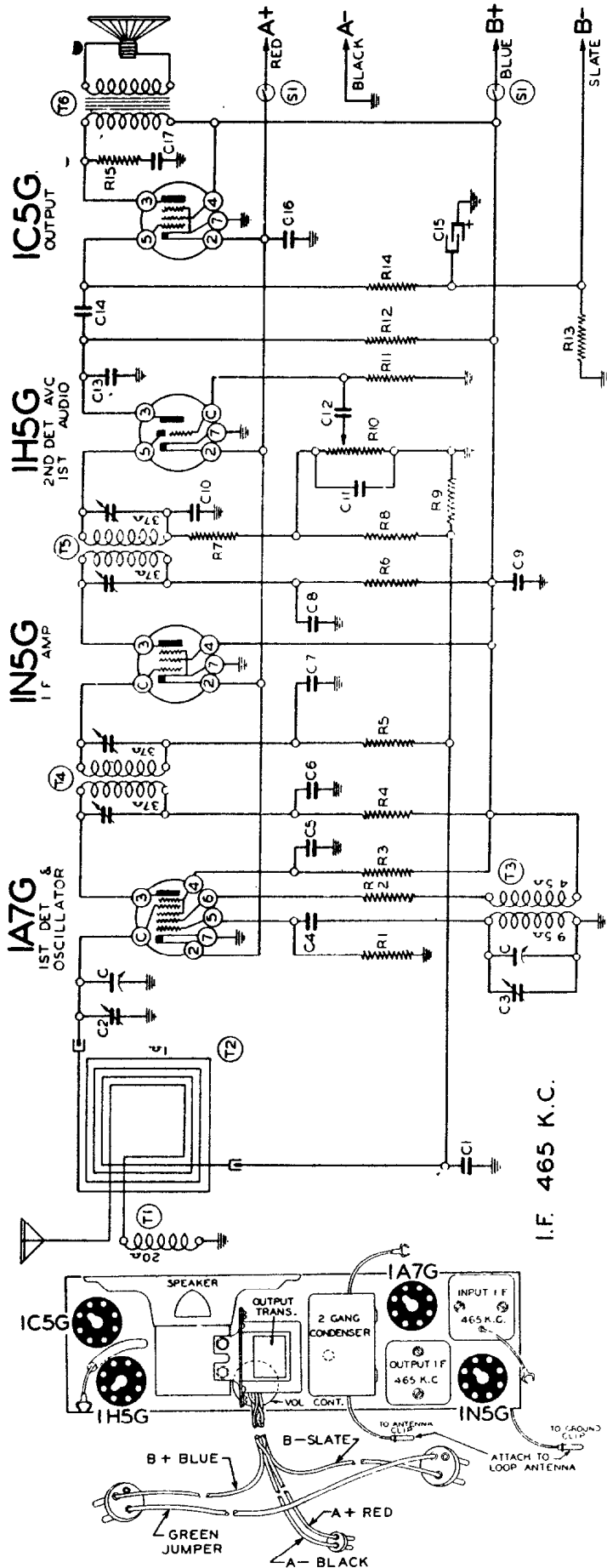
AUTOMATIC TUNER MODEL 520



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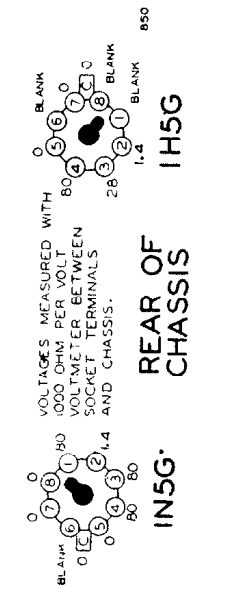
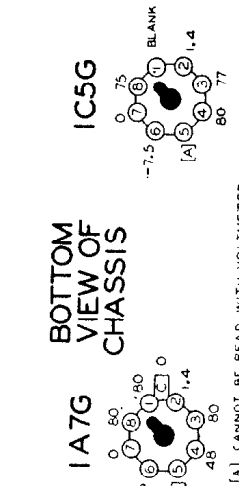


MODEL 403 Belmont Radio Corporation Chicago, Illinois

Part No.	Description
C2	Loop ant. trimmer on gang
C3	Oscillator trimmer on gang
C4	.00025 mica
C5	.05 x 200 v.
C6	.01 x 200 v.
C7	.01 x 200 v.
C8	.01 x 200 v.
C9	.25 x 200 v.
C10	.0001 mica
C11	.0001 mica
C12	.01 x 200 v.
C13	.00025 mica
C14	.01 x 200 v.
C15	25 mid. 25 w. v. lytic
C16	.5 x 200 v.
C17	.003 x 600 v.

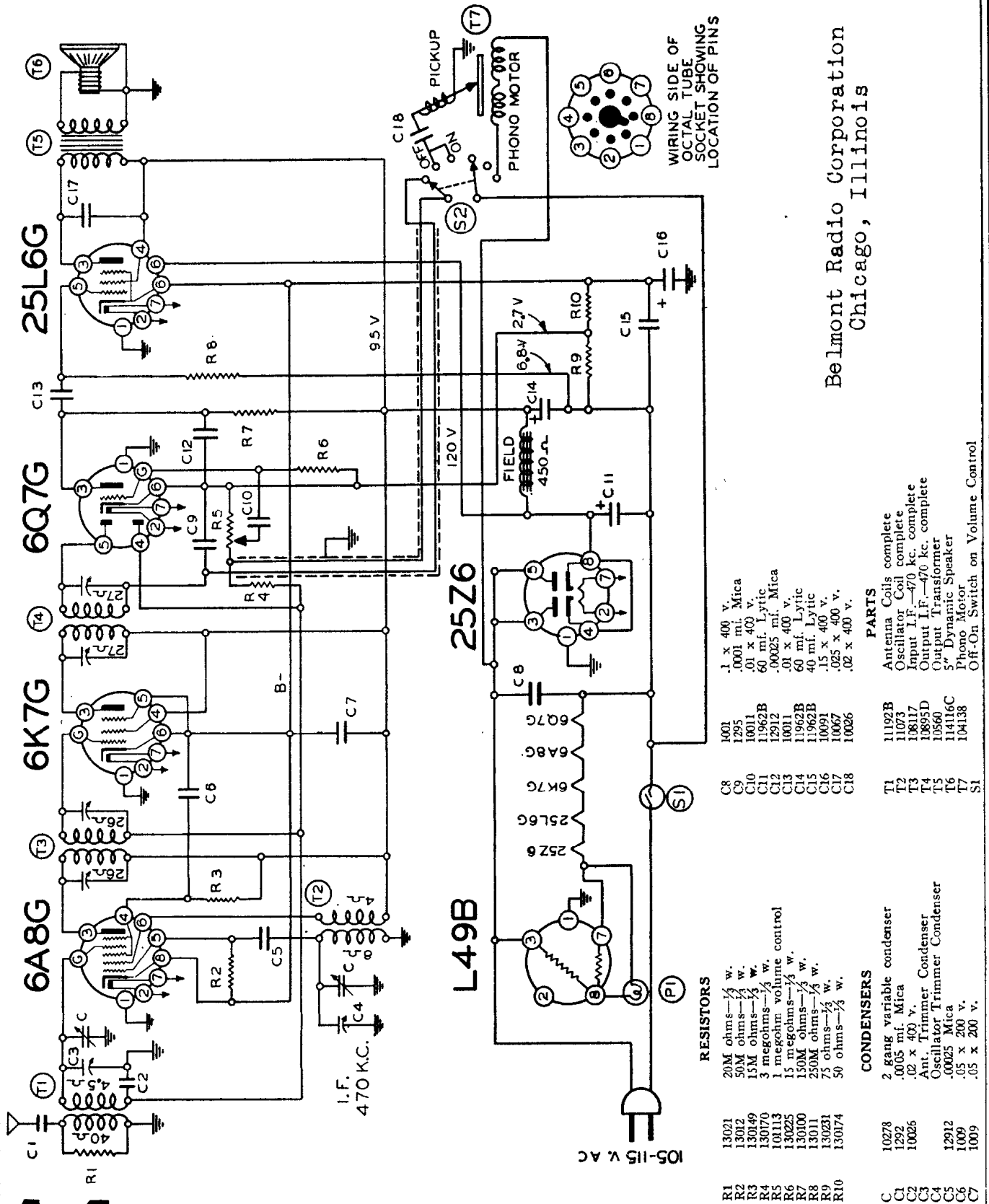
Part No.	Description
R1	200M ohm—1/4 w.
R2	4M ohm—1/4 w.
R3	40M ohm—1/4 w.
R4	1000 ohm—1/4 w.
R5	100M ohm—1/4 w.
R6	1000 ohm—1/4 w.
R7	19M ohm—1/4 w.
R8	2 megohm—1/4 w.
R9	2 megohm—1/4 w.
R10	1 megohm volume control
R11	1 megohm—1/4 w.
R12	500M ohm—1/4 w.
R13	750 ohm—1/4 w.
R14	2 megohm—1/4 w.
R15	5M ohm—1/4 w.

Part No.	Description
C	2 gang variable condenser
CI	.05 x 200 v.



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AUTOMATIC TUNER MODEL 632



Belmont Radio Corporation
Chicago, Illinois

WIRING SIDE OF
OCTAL TUBE
SOCKET SHOWING
LOCATION OF PINS

- RESISTORS**
- 13021 20M ohms— $\frac{1}{2}$ w.
 - 13012 50M ohms— $\frac{1}{2}$ w.
 - 130149 15M ohms— $\frac{1}{2}$ w.
 - 130170 3 megohms— $\frac{1}{2}$ w.
 - 101113 1 megohm— $\frac{1}{2}$ w.
 - 130225 15 megohms— $\frac{1}{2}$ w.
 - 130100 150M ohms— $\frac{1}{2}$ w.
 - 13011 250M ohms— $\frac{1}{2}$ w.
 - 130231 75 ohms— $\frac{1}{2}$ w.
 - 130174 50 ohms— $\frac{1}{2}$ w.
- CONDENSERS**
- 10278 2 gang variable condenser
 - 1292 .0005 mf. Mica
 - 10026 .02 x 400 v.
 - 12912 Ant. Trimmer Condenser
 - 10003 Oscillator Trimmer Condenser
 - 10005 .00025 Mica
 - 1000 .05 x 200 v.
 - 1009 .05 x 200 v.
- PARTS**
- 1001 .1 x 400 v. Mica
 - 1295 .0001 mf. Mica
 - 10011 .01 x 400 v.
 - 11962B 60 mf. Lytic
 - 12912 .00025 mf. Mica
 - 10011 .01 x 400 v.
 - 11962B 60 mf. Lytic
 - 10011 40 mf. Lytic
 - 10091 .15 x 400 v.
 - 10067 .025 x 400 v.
 - 10026 .02 x 400 v.
- PARTS**
- 11192B Antenna Coils complete
 - 11073 Oscillator Coil complete
 - 106117 Input I.F.—470 kc. complete
 - 10695D Output I.F.—470 kc. complete
 - 10560 Output Transformer
 - 114116C 5" Dynamic Speaker
 - 104138 Phono Motor
 - S1 Off-On Switch on Volume Control

MODEL 665

Belmont Radio

CONDENSERS

- Adjustable Capacitor
- Adjustable Capacitor
- 2 gang variable condenser
- .000105 Mica
- .00009 Mica
- .005 x 600 v.
- SV. Antenna Trimmer 2.5 mmfd.
- BC. Antenna Trimmer 1-10 mmfd.
- .05 x 400 v.
- SW. Oscillator Trimmer 2-25 mmfd.
- BC. Oscillator Trimmer 2-25 mmfd.
- .00005 Mica
- .002 x 600 v.
- 350 mmfd. W.C. B.C. Series Pad
- .041 Compression Type
- .00005 Mica
- .01 x 400 v.
- .005 Mica
- .01 x 400 v.
- .05 x 400 v.
- 8 mfd.—350 w. v. lytic
- 12 mfd.—350 w. v. lytic

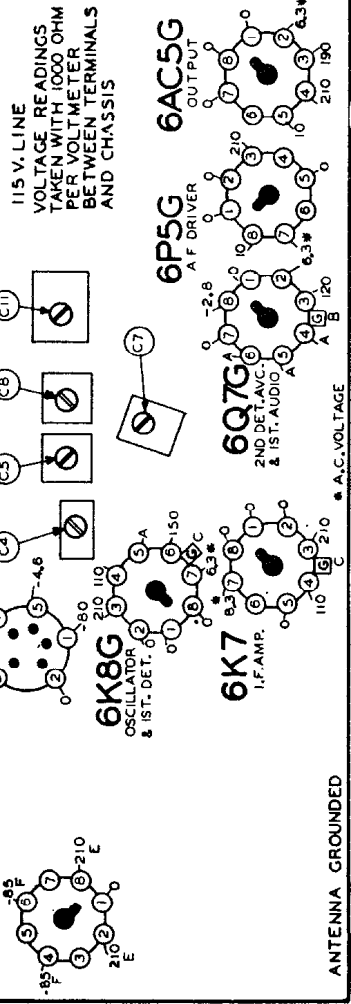
RESISTORS

- 800 ohm—1/4 w.
- 10M ohm—1/4 w.
- 100M ohm—1/4 w.
- 50M ohm—1/4 w.
- 10M ohm—1/4 w.
- 1500 ohm—1/2 w.
- 20M ohm—1/2 w.
- 3 megohm—1/2 w
- 1 megohm control
- 60 ohm—1/2 w.
- 3 megohm—1/2 w.
- 40 ohm—1/2 w.
- 200M ohm—1/2 w.
- 1 megohm—1/2 w.
- 25M ohm—1/2 w.

PARTS

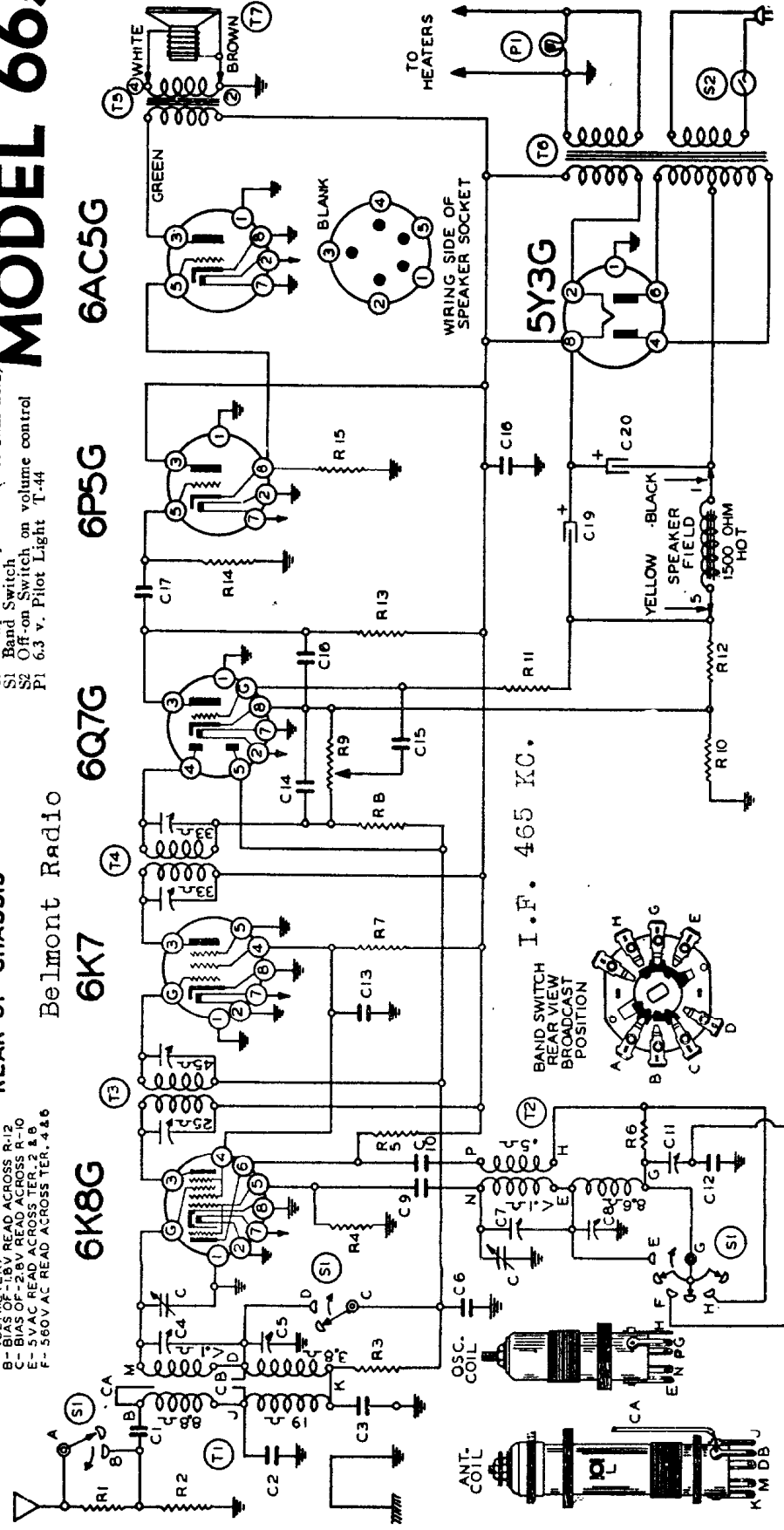
- SW. B. C. Antenna Coil Complete
- SW. B. C. Oscillator Coil Complete
- Input I. F.—465 kc.
- Output I. F.—465 kc.
- Power Transformer
- 6" Speaker Dynamic (1500 ohm field)
- Band Switch
- Off-on Switch on volume control
- 6.3 v. Pilot Light T-44

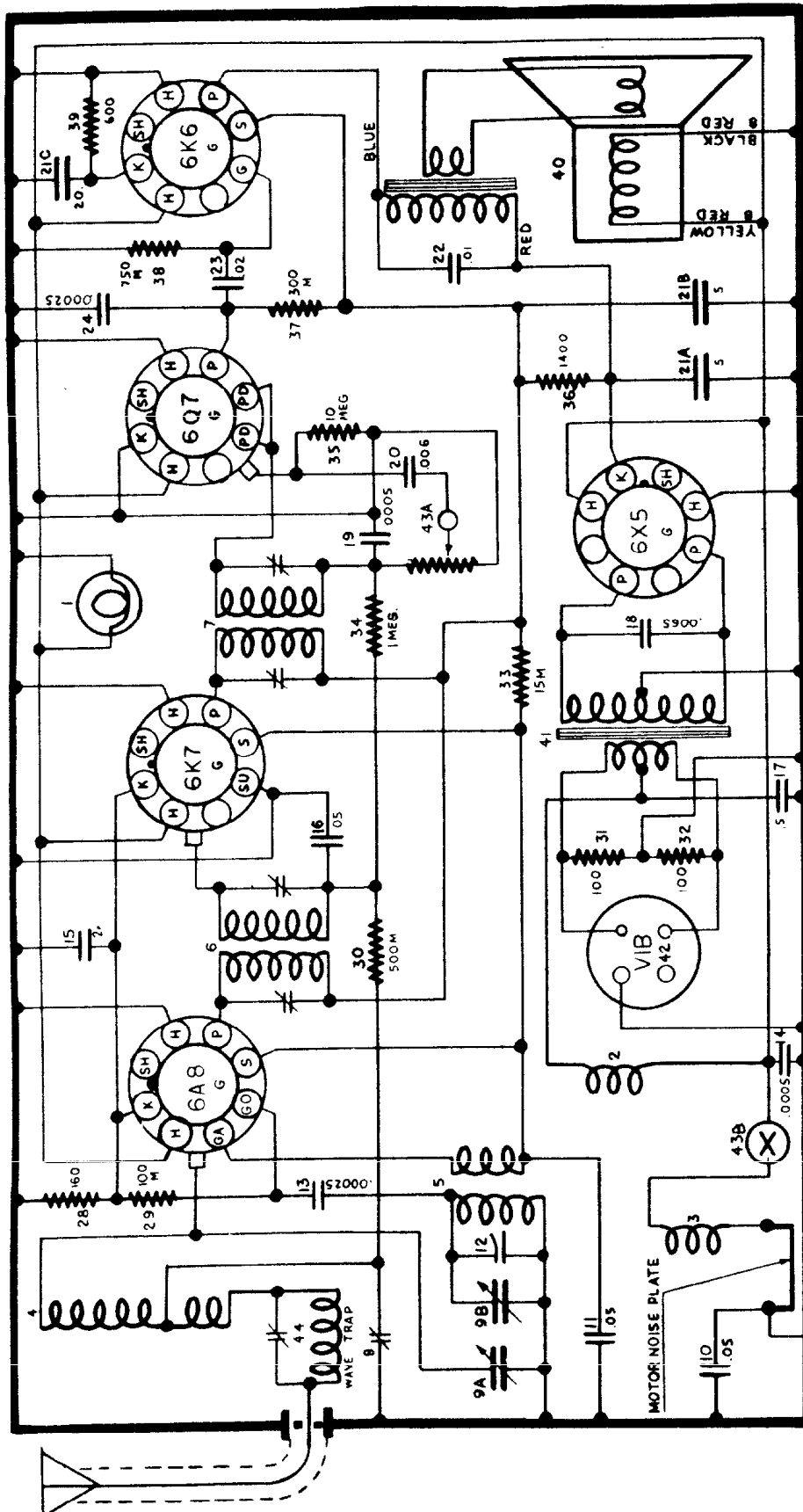
BOTTOM VIEW OF CHASSIS



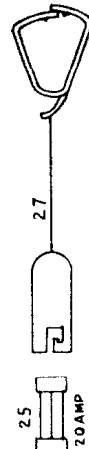
REAR OF CHASSIS

- A - CANNOT BE MEASURED WITH
- B - BIAS OF -1.8V READ ACROSS R-12
- C - BIAS OF -2.8V READ ACROSS R-10
- E - 5V AC READ ACROSS TER. 2 & B
- F - 560V AC READ ACROSS TER. 4 & 6



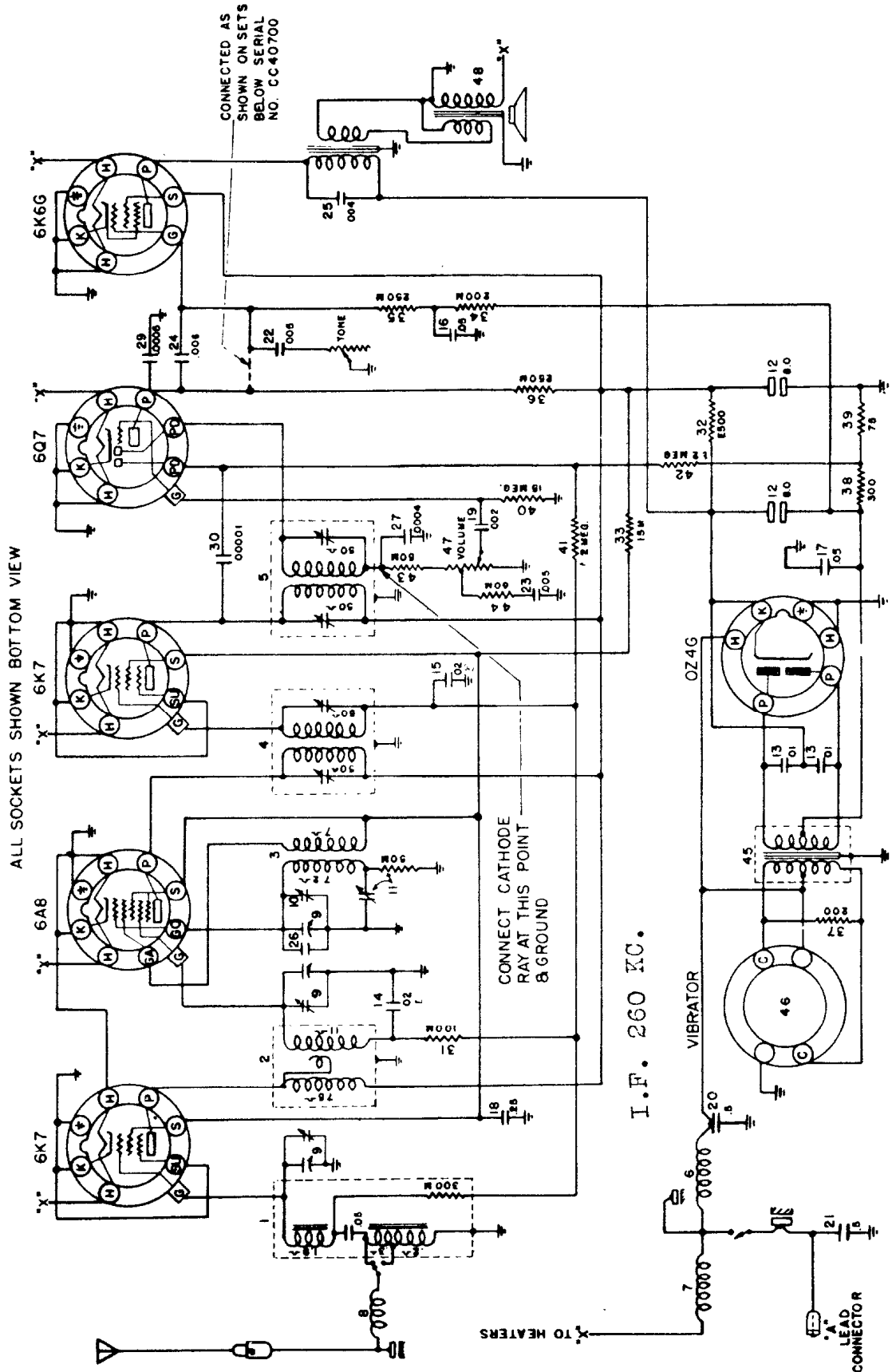


CHEVROLET
 M=1,800-V
 455 K.C. I.F.



985-425 WIRING DIAGRAM

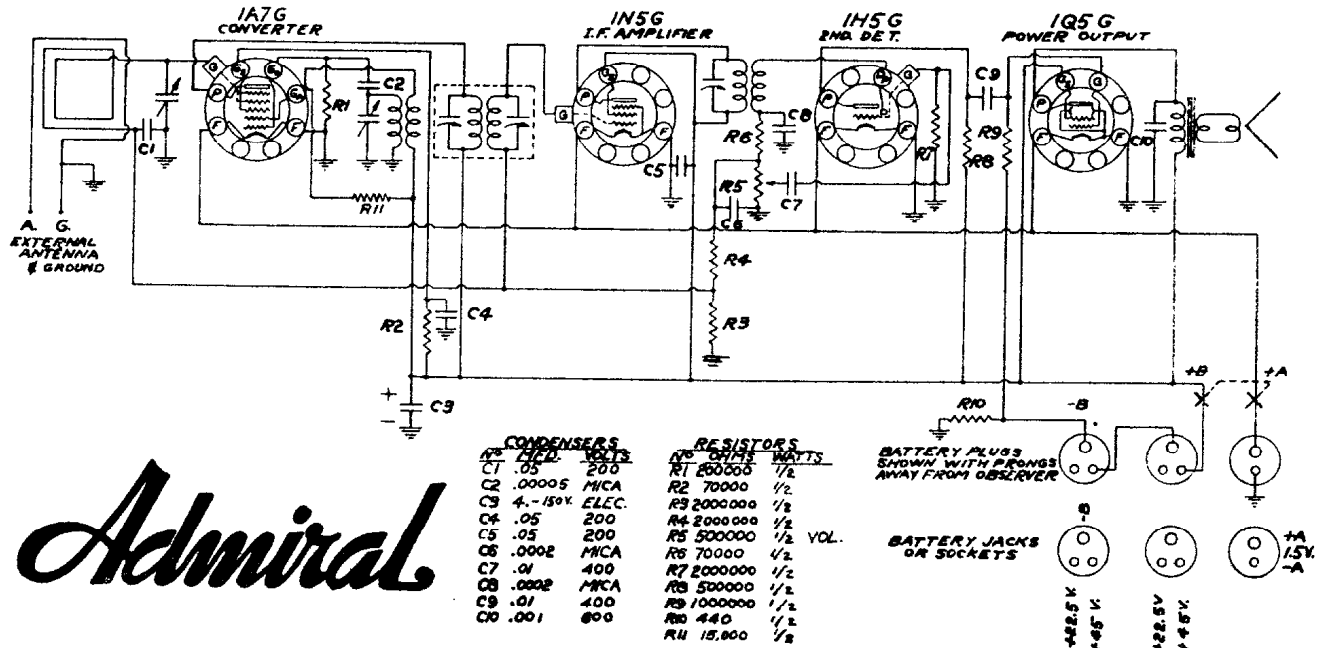
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



985-426 WIRING DIAGRAM

CHEVROLET

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

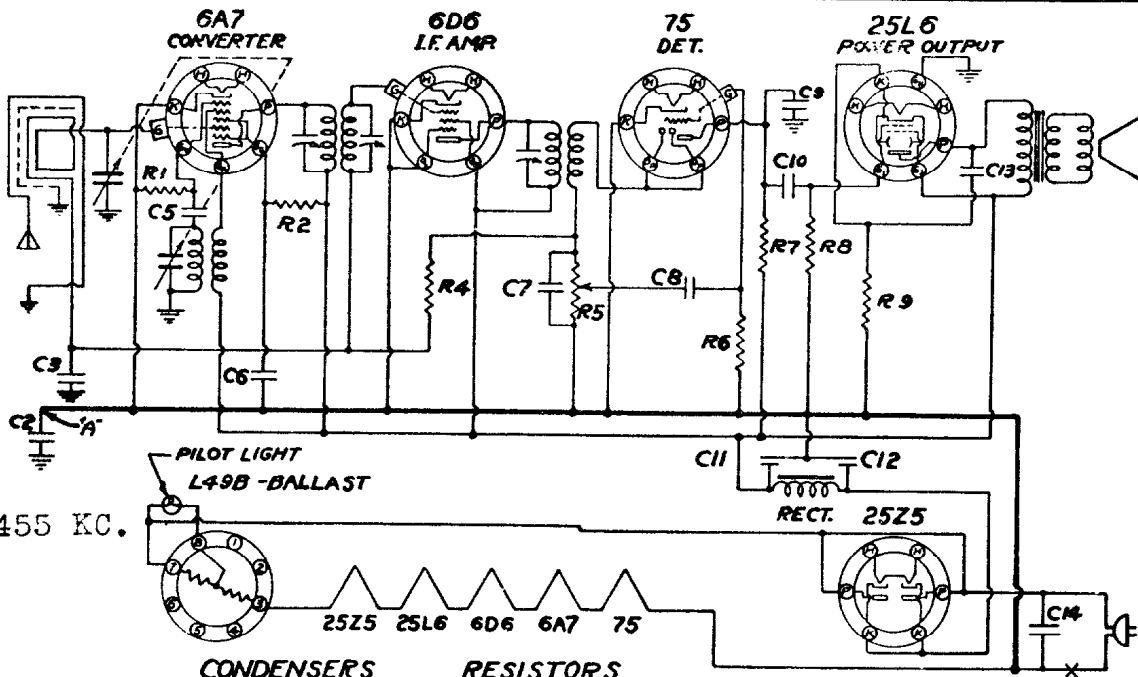


Admiral

I.F. ALIGNMENT

Remove the receiver chassis from the cabinet and connect a 100,000 ohm resistor to the green and yellow leads in place of the loop antenna to which they were originally connected. Adjust the signal generator to 455 KC and connect the output to the grid of the first detector tube (1A7) through a .05 or .1 mfd. condenser. The ground on the signal generator should be connected to the chassis ground. Align all I.F. trimmers to peak or maximum reading on the output meter.

Admiral Radio
Model 4D



I.F. 455 KC.

Admiral Radio

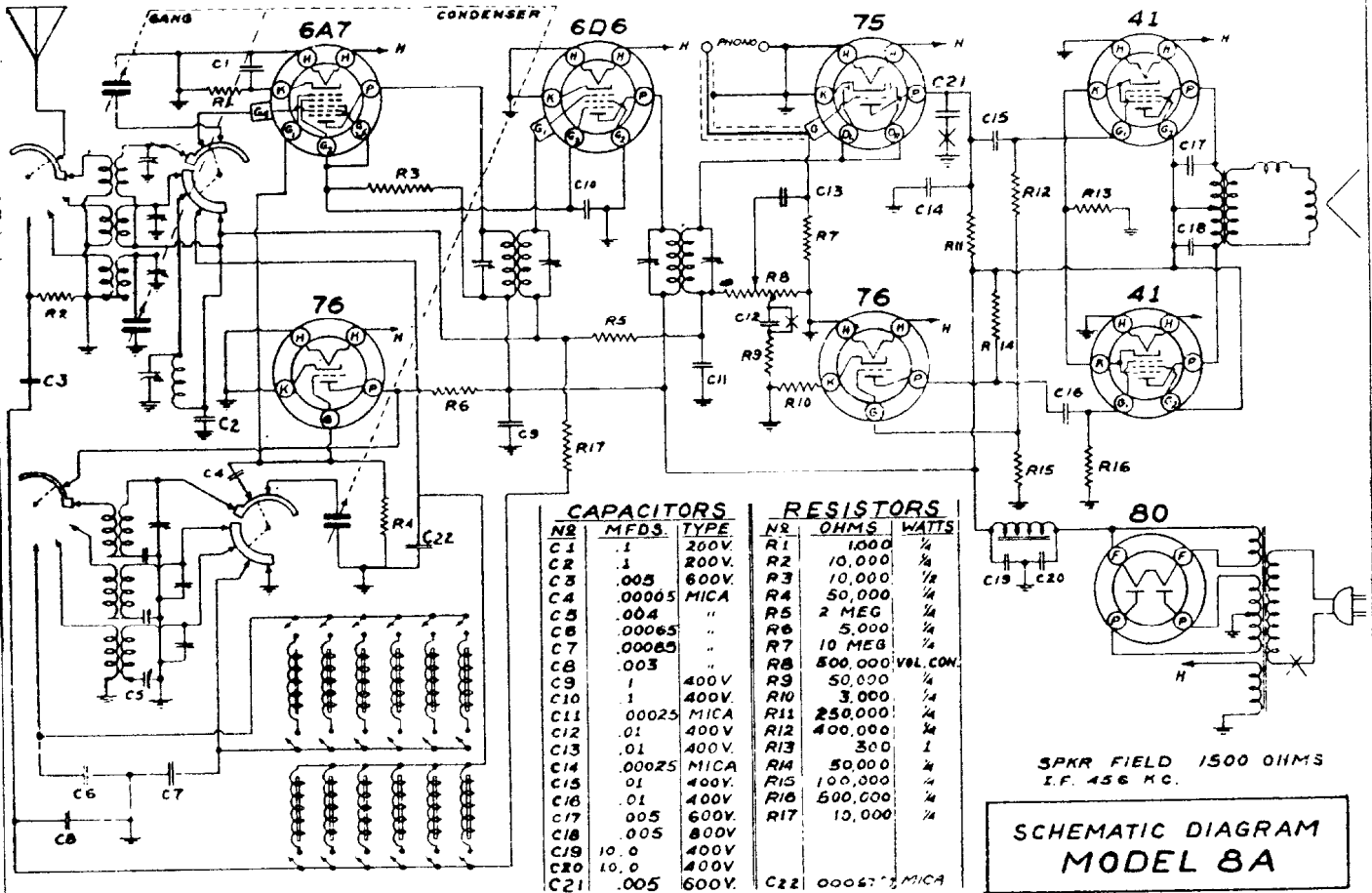
SCHEMATIC DIAGRAM
MODEL 5LL
MODEL 5L

18

NOTE: C2 USED ON MODEL 5LL ONLY.
ON MODEL 5L POINT A' IS CONNECTED TO CHASSIS

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



SPKR FIELD 1500 OHMS
I.F. 456 KC.

**SCHEMATIC DIAGRAM
MODEL 8A**

GENERAL DATA

The alignment of this receiver requires the use of a test oscillator that will cover the frequencies of 456, 600, 1400, 1730, 1800, 4000, 5600, 6000, 16,000 and 18,100 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

With the wave switch in the Broadcast Band and the gang condenser set at minimum, adjust the test oscillator to 456 KC and connect the output to the grid of the first detector tube (6A7) through a .05 or .1 mfd. condenser. The ground on the test oscillator can be connected to the chassis ground if the test oscillator is not grounded to one side of the power line. In case one side is connected to ground, connect a large condenser from ground on the test oscillator to ground of the chassis. Align all four I.F. trimmers to peak or maximum reading on the output meter.

BROADCAST BAND ALIGNMENT

Connect the output of the signal generator to the antenna lead (blue) through a .0002 mfd. mica condenser. Set the gang condenser to minimum and the oscillator to 1730 KC and adjust the "oscillator trimmer" to receive this signal. Make no other adjustments at this frequency. Then set the generator to 1400 KC and tune in this signal by rotating the gang to 1400 on the dial. Adjust the "preselector" and "antenna" trimmer to maximum signal. Set the signal generator to 600 KC and tune in the signal on the receiver. **Note:** approximately the same

sensitivity should be noted at this point as was at 1400 KC. The signal strength may sometimes be improved by padding the circuits. This is done by slowly increasing or decreasing 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 may seem a little complicated but is the easiest way to adjust the oscillator to the preselector of the R.F. section. 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.

POLICE BAND ALIGNMENT

The police band is adjusted by first replacing the .0002 dummy with a 400 ohm resistor and setting the generator to 5600 KC. With the gang set at minimum, adjust the "police oscillator trimmer" to receive this signal, then set the signal generator to 4000 KC and adjust "police antenna trimmer" to give maximum output. Next, set the oscillator to 1800 KC and "pad" the circuit of this frequency as described in the instructions for padding the broadcast circuits.

SHORT WAVE BAND ALIGNMENT

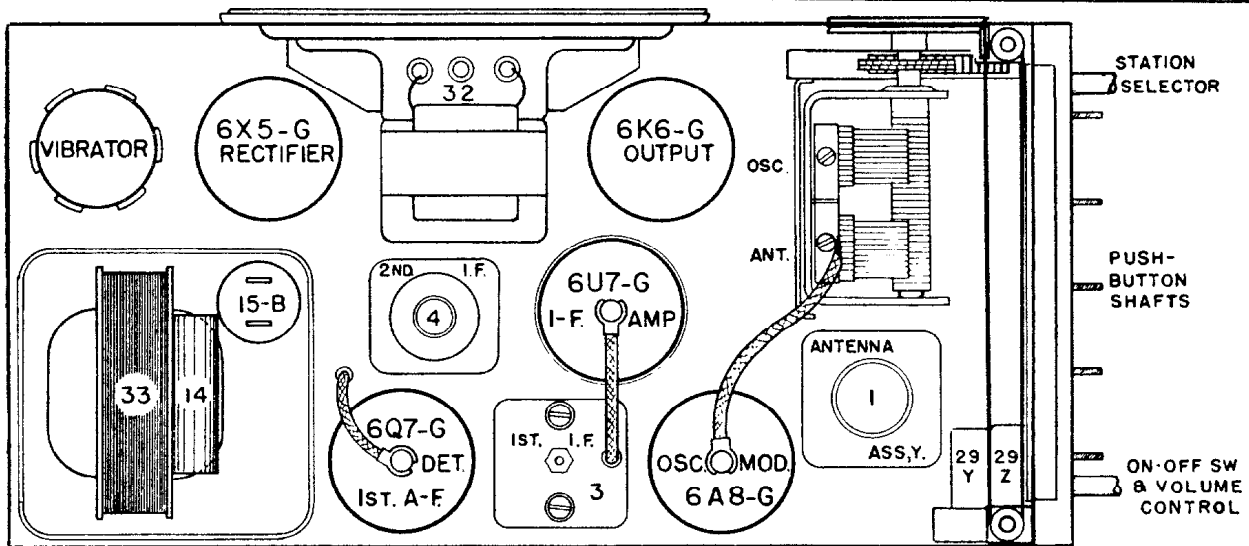
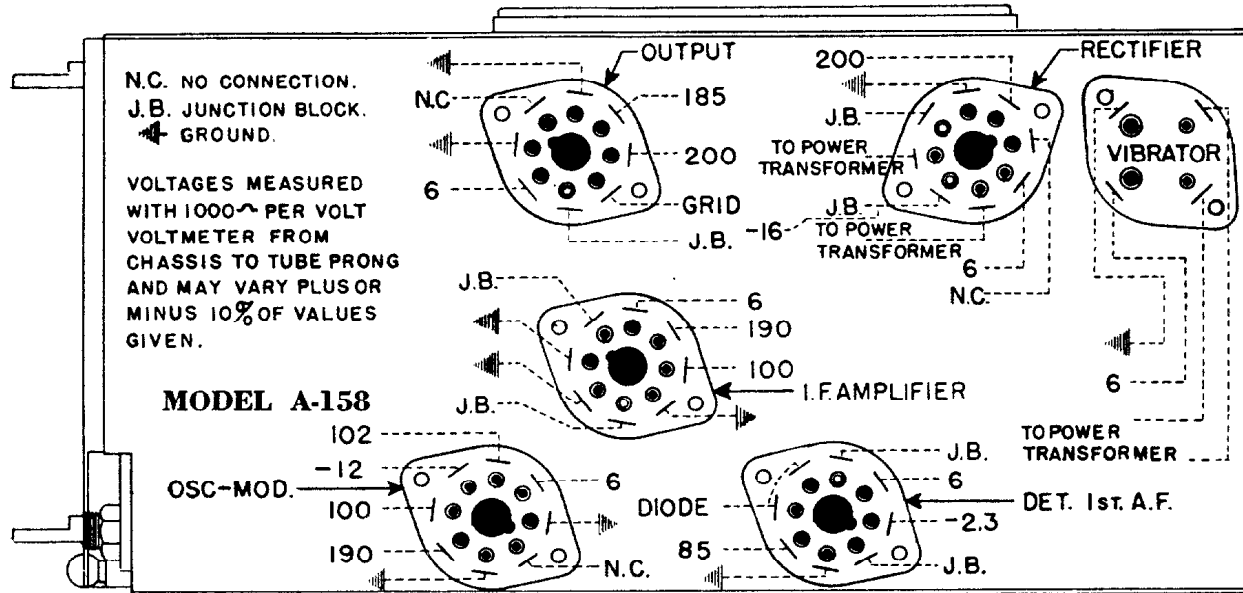
The short wave band is adjusted by setting the generator to 18,100 KC and with the gang at minimum, adjust the "short wave oscillator trimmer" to receive the signal. Set the generator at 16,000 KC, tune in the signal and adjust the "short wave antenna" trimmer to give maximum output. As there is no variable low frequency padding condenser on this band, the sensitivity of the receiver should be checked at 6000 KC to determine whether the circuits are in line at this frequency. Should the receiver lack sensitivity at 6000 KC, the antenna and the oscillator coils, as well as the .004 mica padding condenser, should be tested for defects as sometimes these components become subject to mechanical or electrical injuries, despite their rugged construction and liberal ratings.

Continental Radio & Television Corp., Chicago, Ill.

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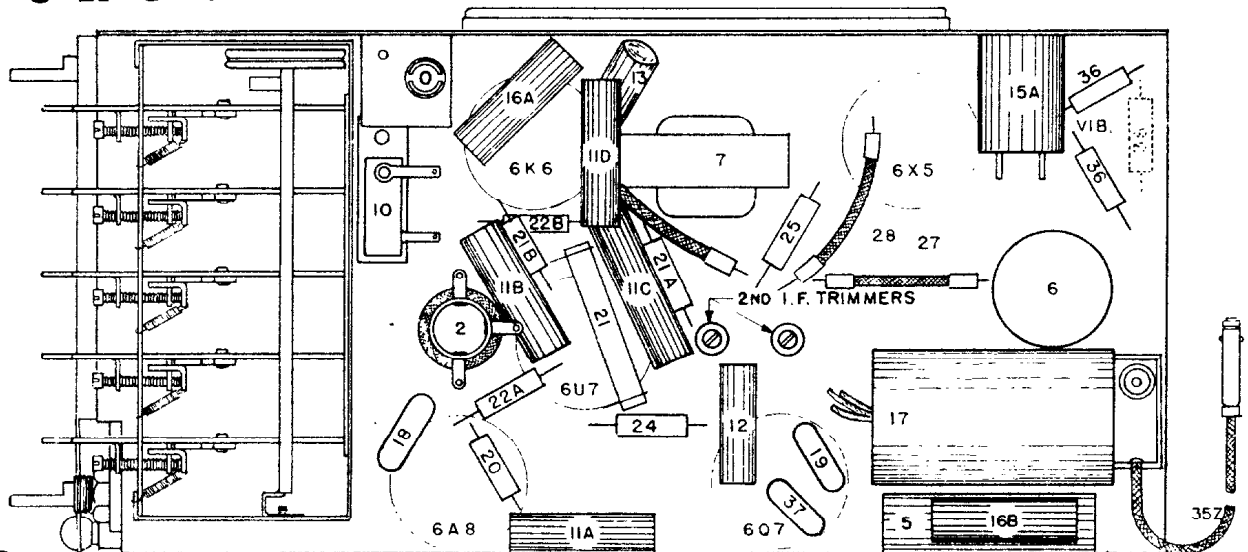
19

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



CROSLEY

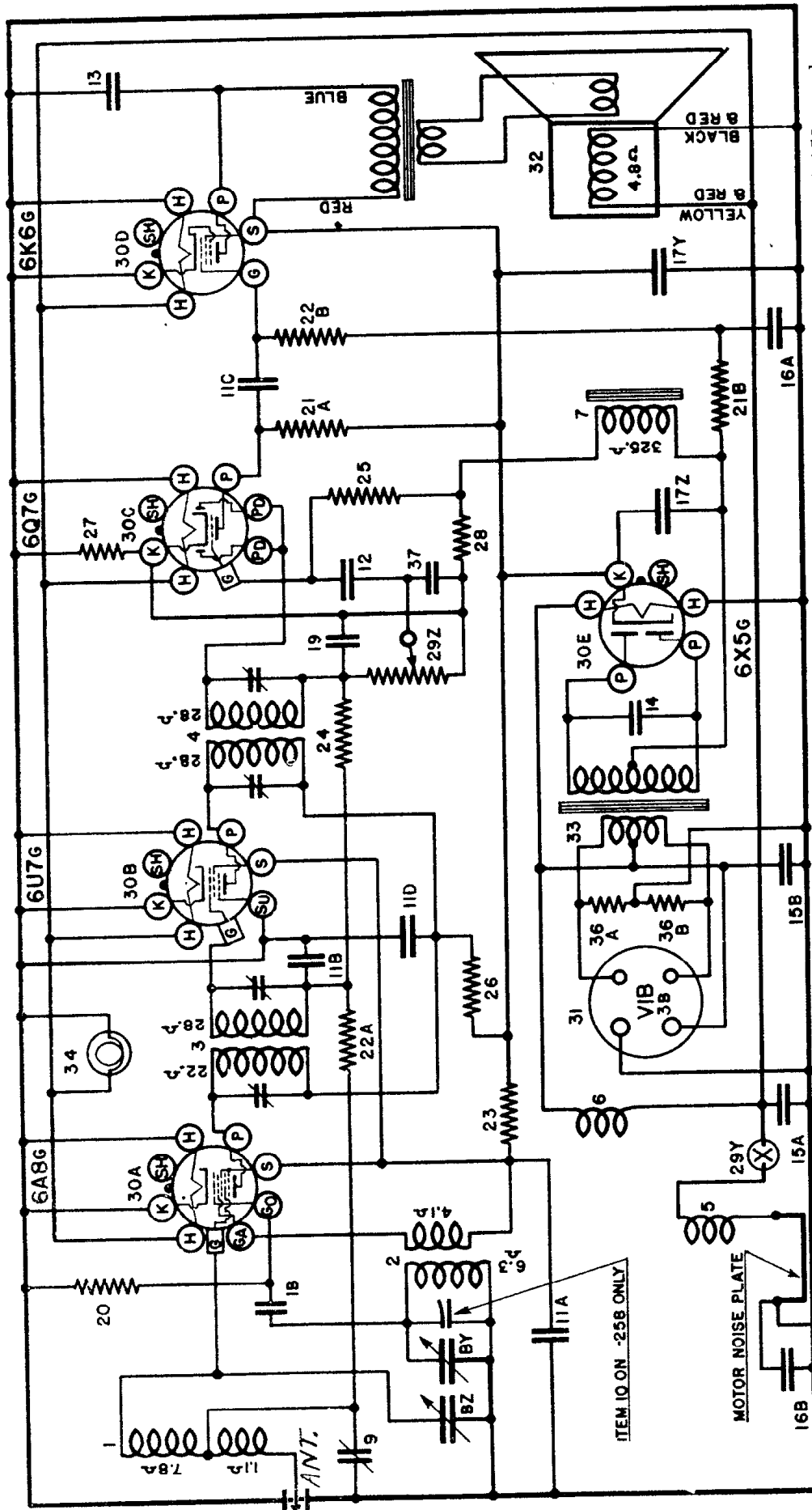
Top View A-258



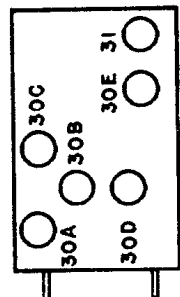
Bottom View A-258

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



The model A-158 and the model A-258 are the same electrically with the exception of a few minor parts. Mechanically they differ in that the A-258 has Push Button Tuning and the A-158 is manually tuned. When referring to the A-258 Parts List for replacement parts for the A-158 disregard all parts listed between Items 7 and 11 and all parts listed under the heading Miscellaneous Mechanical Parts.



CROSLLEY
MODEL -158
MODEL -258
455 KC. I.F.

MODEL A-158 AND A-258 (Roamio)

WIRING DIAGRAM—MODEL A-258

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

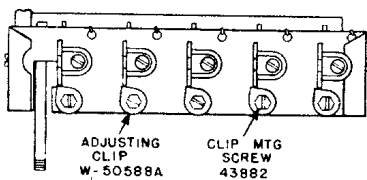
PARTS LIST—MODEL A-258

Figures in first column refer to parts in Diagrams.

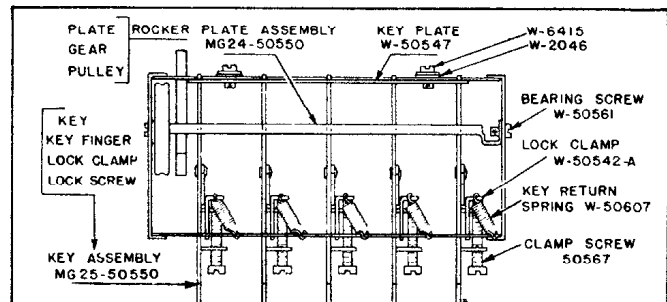
Item No.	Part No.	Description	Item No.	Part No.	Description
1	G167-32000	Ant. Coil	30	G178-36400	8 Prong Socket
2	G167-32002	Osc. Coil	W	-50176	Tube Shield Half (2 Req.)
3	G185-32004	1st I-F Assy., 455 Kc.	W	-31210	Tube Shield Ring
4	G186-32004	2nd I-F Assy., 455 Kc.	31	G105-28807	Vib. Socket
5	G19-32977	Motor Noise Check	W	-50123A	Vib. Gnd. Clip
6	G27-28067	"A" Filter Choke	32	278-BL-7"U"	Speaker, Mfg. Spec. 5B-122
7	G16-29535	"B" Filter Choke	W	-45889	Output Trans.
8	G50-33001	2 Section Gang Cond.	33	B	Power Trans.
9	-50054B	Ant. Compensating Cond.	W	-50644	Power Trans. Can
	C	Glass Dial Face	34	G1	Dial Light Bulb—6-8 V.
	W	L. H. Dial Mtg. Clip	35Z	G29-32750	"A" Lead—Set to Fuse
	W	R. H. Dial Mtg. Clip	35Y	G27-32750	"A" Lead—Fuse to Ammeter
	W	Dial Mask (Maroon)	36A	-38915	Resistor, 100 Ohm 1/2 W. W. W.
	W	Pointer	36B	-38915	Resistor, 100 Ohm 1/2 W. W. W.
	B	Screw—Dial Clip Mtg.	37	G2-31002	Condenser, .0001 Mf. Molded
	MG23-50550	Dial Mtg. Bracket Assy. (Riveted to Chassis)	38	G10-38000	Vibrator, Interchangeable
	MG28-50550	Manual Drive Shaft Brkt. Assy.	W	-38000	Vibrator
	G8-43564	Pulley and Hub Assy.	W	-32757	Fuse (12 Amp.)
	W	Set Screw—Hub	W	-32776	Fuse Insulator
	-41582	Drive Cord—40 Inches			
	W	Spring—Cord Tension—Large Pulley	MG27-50550		Miscellaneous Mechanical Parts
	W	Spring—Cord Tension—Small Pulley	MG25-50550		Push Button Unit Assy.
	W	Manual Drive Shaft	W	-50542A	Key Assy.
10	G3-50369	Temp. Compensating Cond.	W	-50567	Key Clip (Lock Clamp)
11A	W	Condenser, .05 Mf. 200 V.	W	-50607	7/8" —6x32 Screw (Clamp)
11B	W	Condenser, .05 Mf. 200 V.	W	-50588A	Spring—(Key Return)
11C	W	Condenser, .05 Mf. 200 V.	W	-43882	Adjusting Clip (Heart Shaped)
11D	W	Condenser, .05 Mf. 200 V.	W	-50547	1/4" No. 8 P. K. Screw (Clip Mtg.)
12	W	Condenser, .02 Mf. 160 V.	MG24-50550		Key Plate (Rear Guide)
13	W	Condenser, .01 Mf. 400 V.	W	-50561	Rocker Plate Assy.
14	W	Condenser, .0065 Mf. 1,000 V.	W	-45553B	1/8" —6x40—Fil. H. Screw (Rock Plate Bearing)
15A	W	Condenser, .5 Mf. 120 V.	W	-50551A	Push Button
15B	W	Condenser, .5 Mf. 120 V.	W	-50549	Celluloid Cover
16A	W	Condenser, .1 Mf. 160 V.	D	-50503B	Call Letter Sheet
16B	W	Condenser, .1 Mf. 160 V.	C	-50554A	Case (Rear Half) FS49
17Z	W	Condenser, 4. Mf. 350 V.	W	-50589	Case (Front Half) FS49
17Y	W	Condenser, 4. Mf. 350 V.	W	-505505	Felt (Dial Window)
	W	Cond. Clamp	W	-50505	Knob (2 Req.)
18	G1-34002	Condenser, .00025 Mf. Molded			
19	G3-34002	Condenser, .0005 Mf. Molded			
20	-35600	Resistor, 100,000 Ohm 1/4 W.	W	-38038D	Mounting Parts
21A	-35601	Resistor, 300,000 Ohm 1/4 W.	W	-29754C	Distributor Suppressor
21B	-35601	Resistor, 300,000 Ohm 1/4 W.	W	-25846	Generator Condenser
22A	-36322	Resistor, 500,000 Ohm 1/4 W.		-6213	3/4" No. 10 P. K. Screw (Set Mtg.)
22B	-36322	Resistor, 500,000 Ohm 1/4 W.		-35065	1/4" —20 Hex. Nut (Brkt. Mtg.)
23	-23616	Resistor, 15,000 Ohm 1 W.	W	-38205	1/4" —20 Screw (Brkt. Mtg.)
24	-35602	Resistor, 1. Megohm 1/4 W.	W	-32783	1/4" Lock Washer (Brkt. Mtg.)
25	-35927	Resistor, 2. Megohm 1/4 W.	W	-50167	Ant. Cable (Accessory)
26	-50641	Resistor, 750 Ohm 1/2 W.	W	-50395	Mtg. Bracket (Set)
27	-50643	Resistor, 60 Ohm 1/2 W.	W	-38935	Ammeter Cond. (Accessory)
28	-50642	Resistor, 40 Ohm 1/2 W.			Case Ground Clip
29Z	-50526	Volume Control, 1. Meg.			
29Y	-50526	On-Off Switch			

The Crosley Corporation
Cincinnati, Ohio

MG27-50550 PUSH BUTTON ASSEMBLY



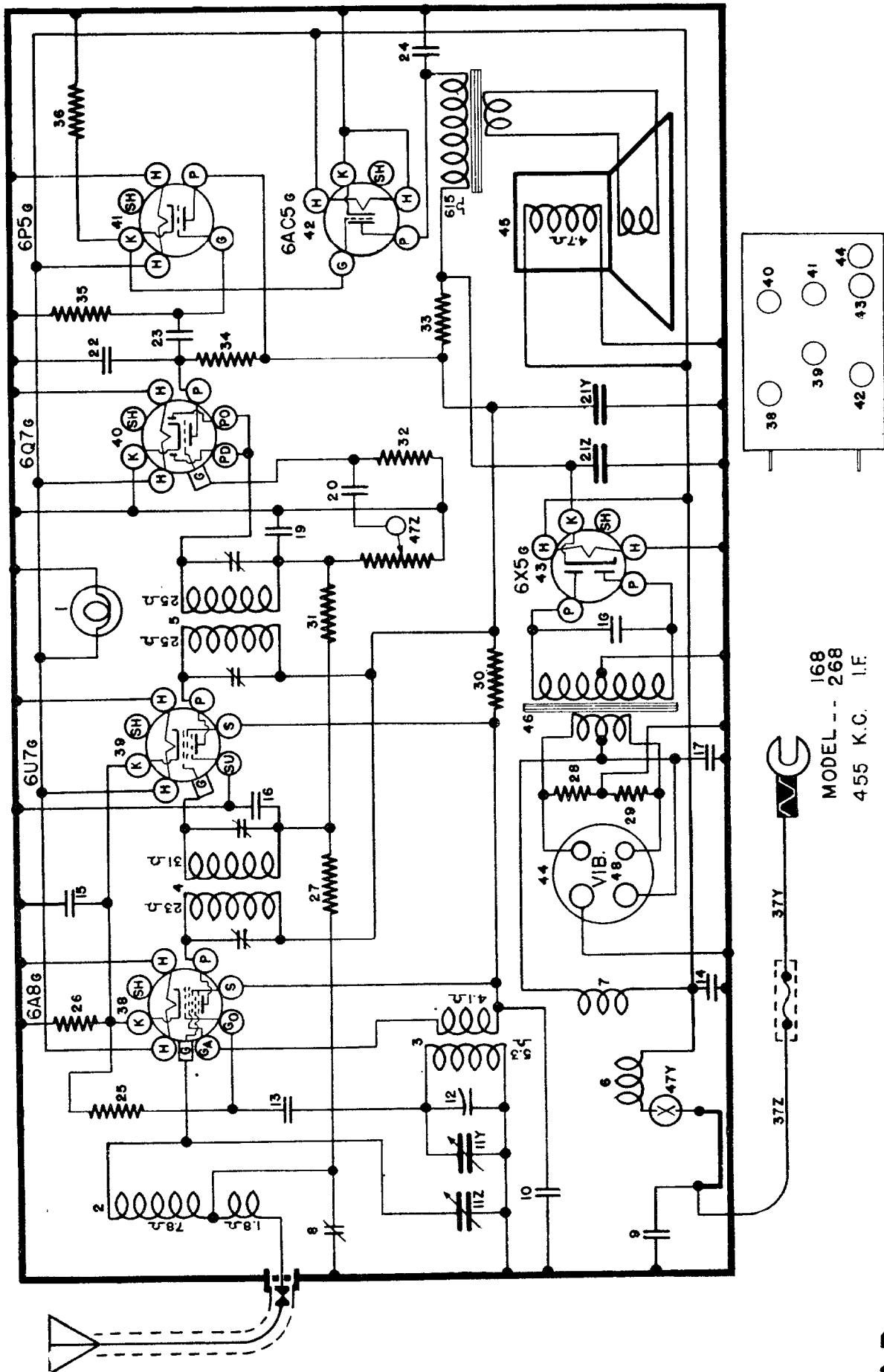
Push Button Assembly



22

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



168
MODEL -- 268
455 K.C. I.F.

WIRING DIAGRAM—MODELS A-168 and A-268

The Crosley Corporation
Cincinnati, Ohio

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

PARTS LIST—MODELS A-168 and A-268

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —43567	Dial Light Bulb, 6-8 V.	44	G105—28807	Socket Vibrator
2	G175—32000	Antenna Coil	W —50174	Tube Shield Base	
3	G176—32002	Oscillator Coil	W —50176	Tube Shield Half	
4	G191—32004	1st I-F. Trans., 455 Kc.	W —31210	Tube Shield Ring	
5	G196—32004	2nd I-F. Trans., 455 Kc.	45	278BL7"U"	Speaker—Mfg. Spec. No. 5-B-122
6	G19 —32977	Motor Noise Choke		—45889	Output Transformer
7	G29 —28067	"A" Filter Choke		278BL7"B"	Speaker—Mfg. Spec. No. 55-W-1
8	—38998B	Ant. Comp. Cond.		—45721	Output Transformer
	—50049	Nut—Comp. Cond. Mtg.	46	B —50644A	Power Transformer
9	W —35936	Condenser, .05 Mf. 200 V.	W —50680	Shield—P. T.	
10	W —32380	Condenser, .05 Mf. 200 V.	47Z		Volume Control (1 Meg.)
11	G50 —33001	2 Section Gang Condenser	47Y		On-Off Switch
	C —50688	Dial (Glass) A-168 only	48	G10 —38000	Vibrator Interchangeable
	W —50517B	Dial Mask (Maroon) A-168 only		G13 —38000	Vibrator
	W —50518A	Pointer—A-168 only			
	W —50758	Dial (Glass) A-268 only			
	W —50757	Dial Mask (Blue) A-268 only			
	W —50759	Pointer—A-268 only			
	W —50560	R. H. (Dial Mtg.) Clip			
	W —50545	L. H. (Dial Mtg.) Clip			
	B —78	Screws—Clip Mtg.			
	W —2045	Washers—Clip Mtg.			
	W —50524D	Drive Shaft—Manual			
	W —50325A	Washer—Shaft Retaining			
	MG28—50675	Shaft Brkt. Assm. (Rear Bearing)			
	G8 —43564	Pulley and Hub. Assm.			
	W —50590	Spring (Tension—22" Cord)			
	G6 —41582	Drive Cord—22-Inch			
	W —43561	Spring (Tension—18" Cord)			
	G5 —41582	Drive Cord—18-Inch			
	MG23—50675	Dial Brkt. Assm. Riveted to Chassis			
12	G3 —50369	Temp. Comp. Cond. (Bi-metal)			
13	G1 —34002	Condenser, .00025 Mf. Molded			
14	G3 —34002	Condenser, .0005 Mf. Molded			
15	W —50105	Condenser, .1 Mf. 160 V.			
16	W —32380	Condenser, .05 Mf. 200 V.			
17	W —50682A	Condenser, .5 Mf. 120 V.			
18	W —50203	Condenser, .0065 Mf. 1,000 V.			
19	G3 —34002	Condenser, .0005 Mf. Molded			
20	W —45810B	Condenser, .006 Mf. 160 V.			
21Z	W —50674	Condenser, 10. Mf. 350 V.			
21Y		Condenser, 5 Mf. 350 V.			
22	G1 —34002	Condenser, .00025 Mf. Molded			
23	W —37226	Condenser, .02 Mf. 160 V.			
24	W —35758	Condenser, .008 Mf. 400 V.			
25	—35600	Resistor, 100,000 Ohms 1/4 W. Ins.			
26	—50699	Resistor, 200 Ohms 1/2 W. W. W.			
27	—36322	Resistor, 500,000 Ohms 1/4 W. Ins.			
28	—38915	Resistor, 100 Ohms 1/2 W. W. W.			
29	—38915	Resistor, 100 Ohms 1/2 W. W. W.			
30	—23616	Resistor, 15,000 Ohms 1 W. Carbon			
31	—35602	Resistor, 1 Meg. 1/4 W. Ins.			
32	—50671	Resistor, 15 Meg. 1/4 W. Ins.			
33	—45388	Resistor, 1,400 Ohms 1 1/2 W. W. W.			
34	—35601	Resistor, 300,000 Ohms 1/4 W. Ins.			
35	—38623	Resistor, 750,000 Ohms 1/4 W. Ins.			
36	—40643	Resistor, 25,000 Ohms 1/4 W. Ins.			
37Z	G29 —32750	"A" Lead, Set to Fuse			
37Y	G27 —32750	"A" Lead, Fuse to Ammeter			

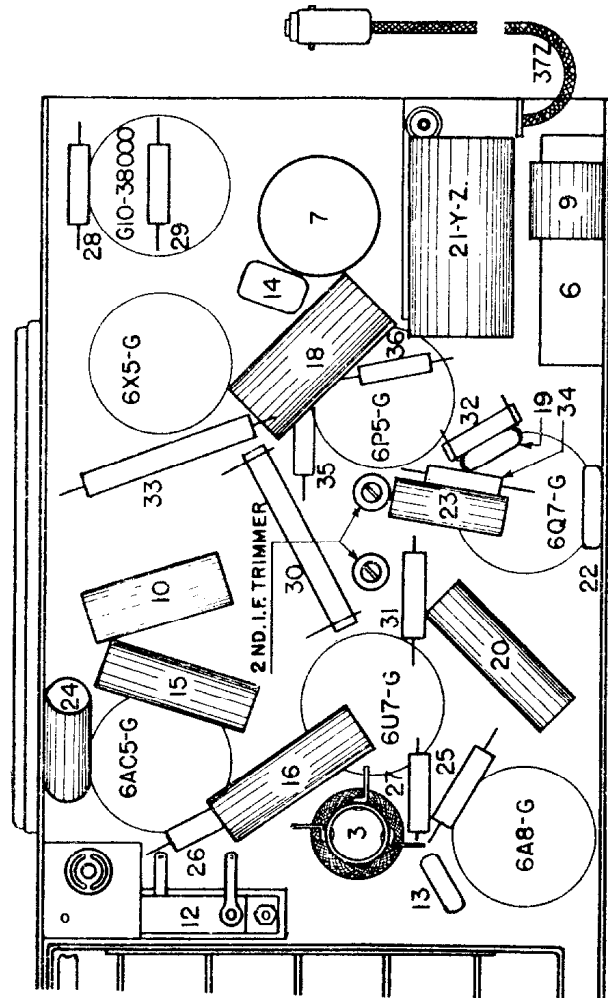


Fig. 3. Bottom View A-168 and A-268

TUBE SOCKET VOLTAGE READINGS

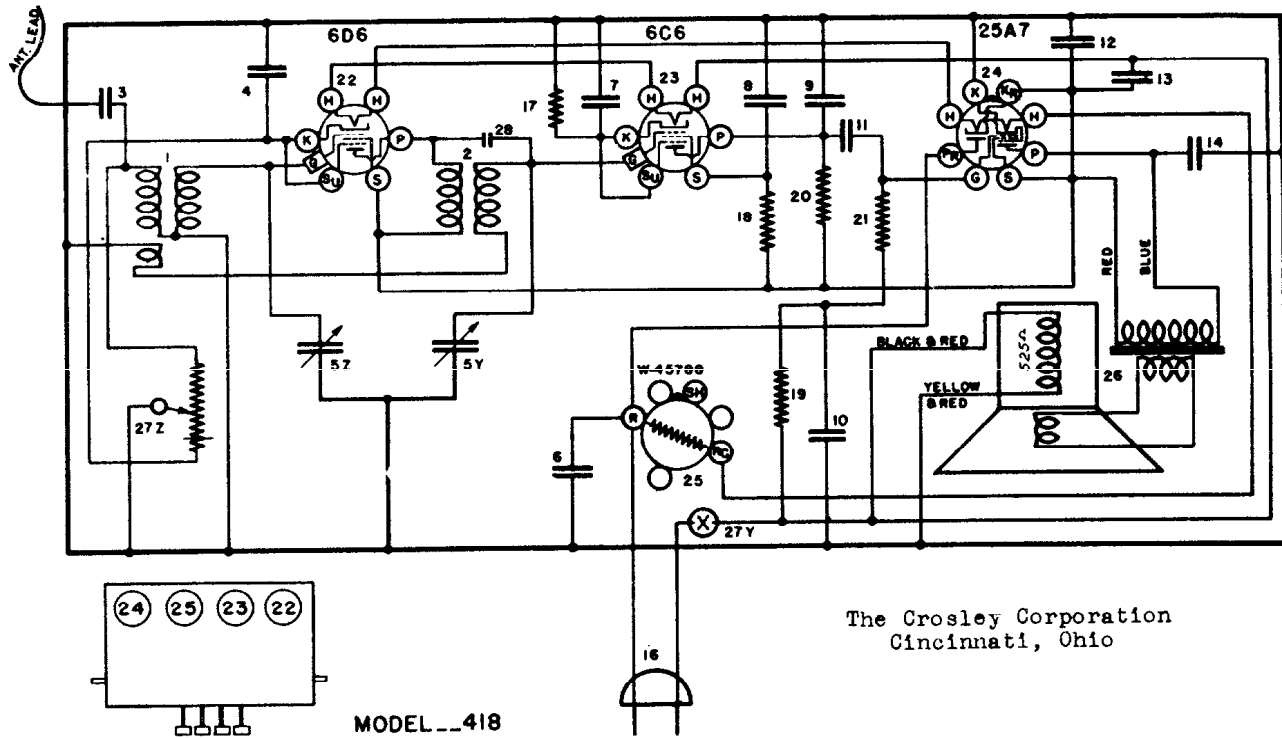
Tube	Function	H	P	S	Su	K	Ga	Go	G
6A8-G	Oscillator-Modulator	6.0	220	100	—	3.5	100	—	—
6U7-G	I-F. Amplifier	6.0	220	100	—	3.5	—	—	—
6Q7-G	Det., A. V. C. 1st A-F. Amplifier	6.0	60	—	—	—	—	—	—
6P5-G	2nd A-F. Amplifier	6.0	200	—	—	11	—	—	—
6A5-G	Output	6.0	225	—	—	—	—	—	11
6X5-G	Rectifier	6.0	—	—	—	240	—	—	—

Power Output (max.) 6 Watts—approx.

Battery Drain 6.5 Amperes—approx.

It will be noted that certain terminals on the sockets are used as junction blocks.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

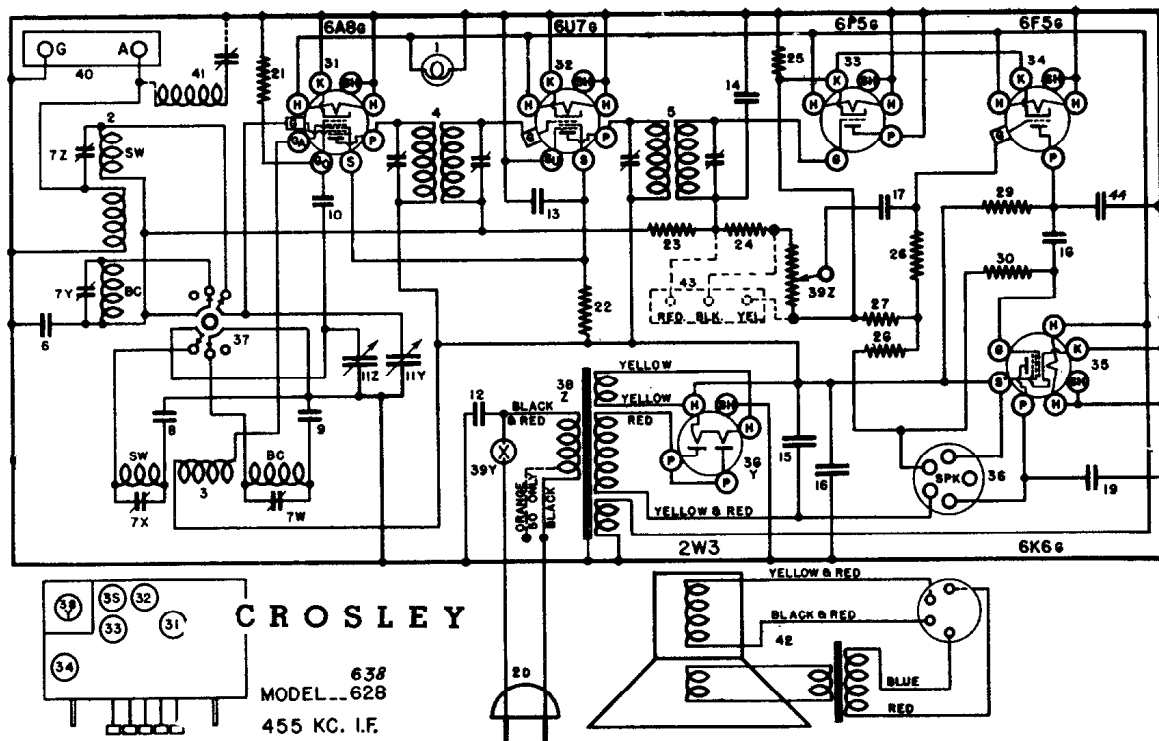


WIRING DIAGRAM—MODEL 418

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G173—32000	Antenna Coil		—46045	Output Transformer
2	G102—32001	Oscillator Coil		W —45900A	Speaker Mtg. Brkt.
3	W —45780B	Condenser, .02 Mf. 160 Volt	27Z		Volume Control (40,000
4	W —45780B	Condenser, .02 Mf. 160 Volt	27Y	—45786	
5Z					Line Switch
5Y	G53 —33001	2 Section Gang Condenser		W —45789A	V. C. Mtg. Brkt.
6	W —45782B	Condenser, .05 Mf. 400 Volt	28	G3 —50640	Condenser, 7-10 Mmf.
7	W —45781B	Condenser, .25 Mf. 160 Volt		G6 —45683	Push Button Unit
8	W —45780B	Condenser, .02 Mf. 160 Volt		G27 —45683	Rocker Plate Assy.
9	G2 —34002	Condenser, .0001 Mf. Molded		G26 —45683	Key Assy.
10	W —45781B	Condenser, .25 Mf. 160 Volt		W —50542C	Key Clip (Lock Clamp)
11	W —45780B	Condenser, .02 Mf. 160 Volt		—45717	Adjusting Screw
12	W —45783	Condenser, 16 Mf. 150 Volt		W —50607B	Spring (Key Return)
13	W —45783	Condenser, 16 Mf. 150 Volt		W —50561	Bearing Screw (Rocker
14	W —45780B	Condenser, .02 Mf. 160 Volt		W —50547	Key Plate (Rear Guide)
15	—None			W —45788	Ballast Tube
16	B —45784	Power Cord & Plug		W —46259	Cabinet Assy. 8BB (Brown)
	W —45902	Clamp—Power Cord		—45828B	Back Cabinet 8BB (Brown)
17	—24990	Resistor, 25,000 Ohm 1/3 W.		W —45930C	Rubber Foot (Bottom)
18	—37583	Resistor, 2.5 Megohm 1/3 W.		W —45931	Rubber Foot (Screw Type)
19	—34018	Resistor, 200,000 Ohm 1/3 W.			(Back)
20	—23785	Resistor, 500,000 Ohm 1/3 W.		W —45852	Baffle Board
21	—21455	Resistor, 300,000 Ohm 1/3 W.		W —45853	Grille Cloth
22	G21 —28807	Socket, 6 Prong		—45553B	Push Button (Brown)
23	G21 —28807	Socket, 6 Prong		—45822	Dial Knob (Brown)
24	G178—36400	Socket, 8 Prong (Octal)		—45825A	Vol. Cont. Knob (Brown)
25	G178—36400	Socket, 8 Prong (Octal)		—50549	Station Call Letter List
	W —34175	Tube Shield Half (Slotted)		W —50551A	Celluloid Protector (Cover)
	W —34174	Tube Shield Half			
	W —31210	Ring—Tube Shield			
26	282-BL-4	Speaker Mfg. Spec.			

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



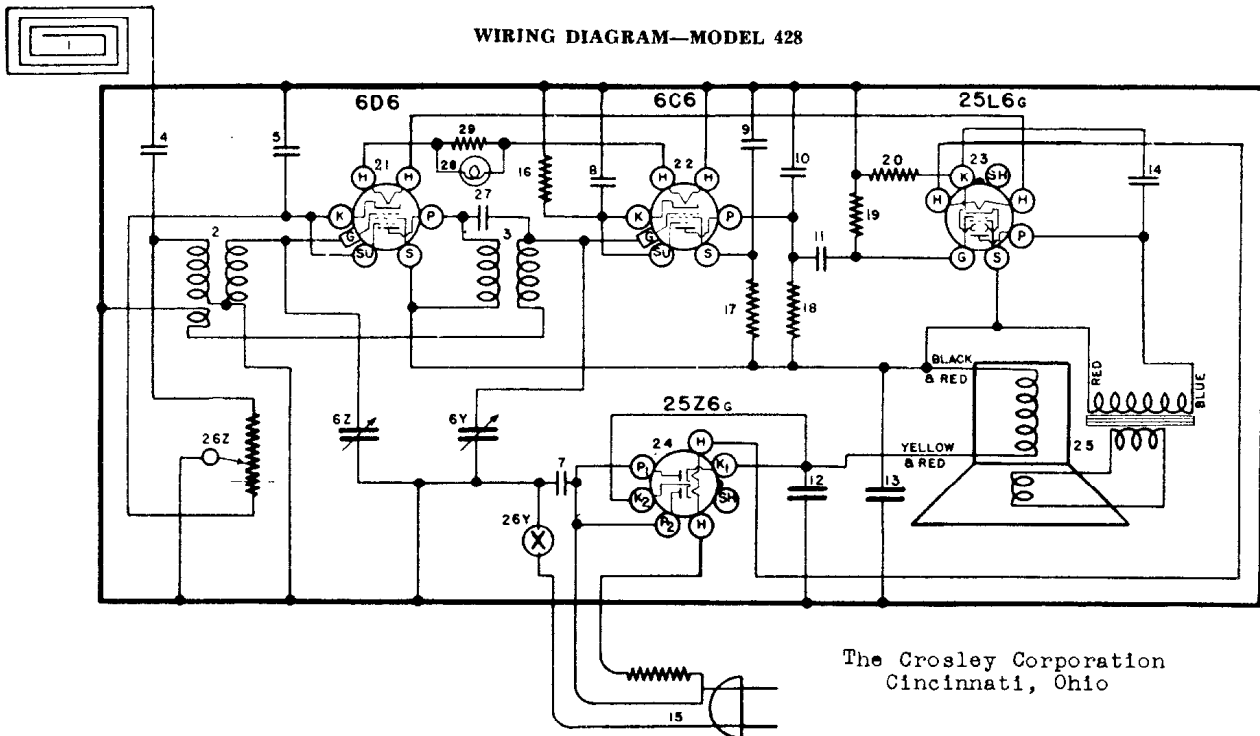
WIRING DIAGRAM—MODEL 628—638—5628

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —37922	Dial Light 6-8 Volt		—45940	Power Trans., 50 Cycle, 220 V.
2	G12 —43598	Dial Light Socket	39Z	—45864	Vol. Cont., 1 Meg. (628-5628)
3	G174 —32000	Antenna Coil, B-C and S-W.	39Y		Line Switch
4	G187 —32004	Oscillator Coil, B-C and S-W.	39Z	—46314	Vol. Cont., 1 Meg. (638)
5	G188 —32004	1st I-F Assy., 455 Kc.	39Y		Line Switch
6	W —36541	2nd I-F Assy., 455 Kc.	40	G1 —26719	A-G Terminal Assy.
7	W —41247A	Condenser, .02 Mf., 160 V.	41	G193 —32004	456 Kc. Wave Trap
8	G13 —34005	4 Section Trimmer Assy.	42	279-BP-12"U"	Speaker
9	G18 —34002	Condenser, .0014 Mf., Molded		—46121	Output Transformer
10	G5 —34002	Condenser, .0004 Mf., Molded	43	G41 —26719	Phono. Terminal Assy.
11	G55 —33001	Condenser, .0005 Mf., Molded	44	G7 —34002	Condenser, .0004 Mf., Molded
	C —45747	2 Section Gang Condenser	G3	—45683	Push Button Unit (628-5628)
	W —46872	Glass Dial Face (628-638)	G11	—45683	Push Button Unit (638)
	W —46872	Glass Dial Face (5628)	G32	—45683	Riveted Key & Toggle
	W —46397	Dial Hand (Pointer)		G26 —45683	Riveted Key & Toggle (638)
	B —45743B	Dial Support Bracket	W —50542C		Key Lock Clamp
	W —45984	L. H. Dial Mtg. Clip	W —45717		1 7/16 6x32 Lock Clamp Screw
	W —45985	R. H. Dial Mtg. Clip	W —50607B		Spring, Key Return
	W —46037A	Dial Hand Guide	G22 —45683		Rocker & Gear Segment Assy.
	W —45768C	Felt Strip	W —50561		1/2 6x40 Screw (Rocker Plate Bearing)
	—45885	Manual Drive Shaft (628-5628)	W —50588B		Adjusting Clip
	—46056	Manual Drive Shaft (638)	—45242		Rubber Foot (628-5628)
	W —43542B	Mounting Bracket Drive Shaft			Model 628
	G12 —43564	Pulley & Hub Assy.		—8AA	Cabinet (Brown)
	G2 —41682	Drive Cord	W —43552		Clamp, Speaker Plug
	W —50607B	Cord Tension Spring	—45957		Knob, Band Switch
	W —46290	Drive Cord Clamp	—45771		Knob, V. C. & Tuning
12	W —30805	Condenser, .01 Mf., 400 V.	—50841		Station Call List
13	W —28621	Condenser, .02 Mf., 200 V.	—45553B		Push Button
14	G1 —34002	Condenser, .00025 Mf., Molded	W —80551A		Celluloid Call Letter Cover
15	W —44012	Condenser 16 Mf., 250 V., Elec.			Model 638
16	W —45068	Condenser 16 Mf., 250 V., Elec.	—8G		Cabinet (Wood Has Inlays)
17	W —28619	Condenser, .006 Mf., 200 V.	—8K		Cabinet (Wood)
18	W —28621	Condenser, .02 Mf., 200 V.	—46399C		Escutcheon
19	W —34847	Condenser, .006 Mf., 400 V.	D —30		Screws, Escutcheon Mtg.
20	B —45769	Power Cord and Plug	—46407		Knob, Band Switch
21	—36761	Resistor, 40,000 Ohm, 1/2 W.	—45408		Knob, V. C. & Tuning
22	—33590	Resistor, 30,000 Ohm, 1/3 W.	—50841		Station Call List
23	—26577	Resistor, 3 Megohm, 1/3 W.	—45551A		Celluloid Cover
24	—21875	Resistor 100,000 Ohm, 1/3 W.	—46417		Push Button
25	WAS-A	1/2 W. Resistor from 6P5 Cathode to Gnd. (Deleted)			Model 5628
26	—37584	Resistor, 11 Megohm, 1/3 W.	—8AB		Cabinet (Red)
27	WAS-A	1/2 W. Resistor from 6P5 Cathode to Junction of Items 26 and 28 (Deleted)	—8AC		Cabinet (Ivory)
28	W —21965	Resistor, 375 Ohm, 1 W (was 275 Ohm)	—44552		Knob, V. C. & Tuning
29	—21455	Resistor, 300,000 Ohm, 1/3 W.	—44934		Knob, Band Switch
30	—23785	Resistor, 500,000 Ohm, 1/3 W.	—46897		Station Call List
31	G178 —36400	Socket, 8 Prong	W —50551A		Call Letter Cover
32	G178 —36400	Socket, 8 Prong	—50617		Push Button
33	G178 —36400	Socket, 8 Prong			Instructions (628)
34	G178 —36400	Socket, 8 Prong			Instructions (638)
35	G178 —36400	Socket, 8 Prong			Instructions (5628)
	W —40911	Tube Shield			
36	G103 —28807	Socket, Speaker Plug			
37	—45901	Band Switch			

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

WIRING DIAGRAM—MODEL 428



The Crosley Corporation
Cincinnati, Ohio

Figures in first column refer to parts in Diagrams.

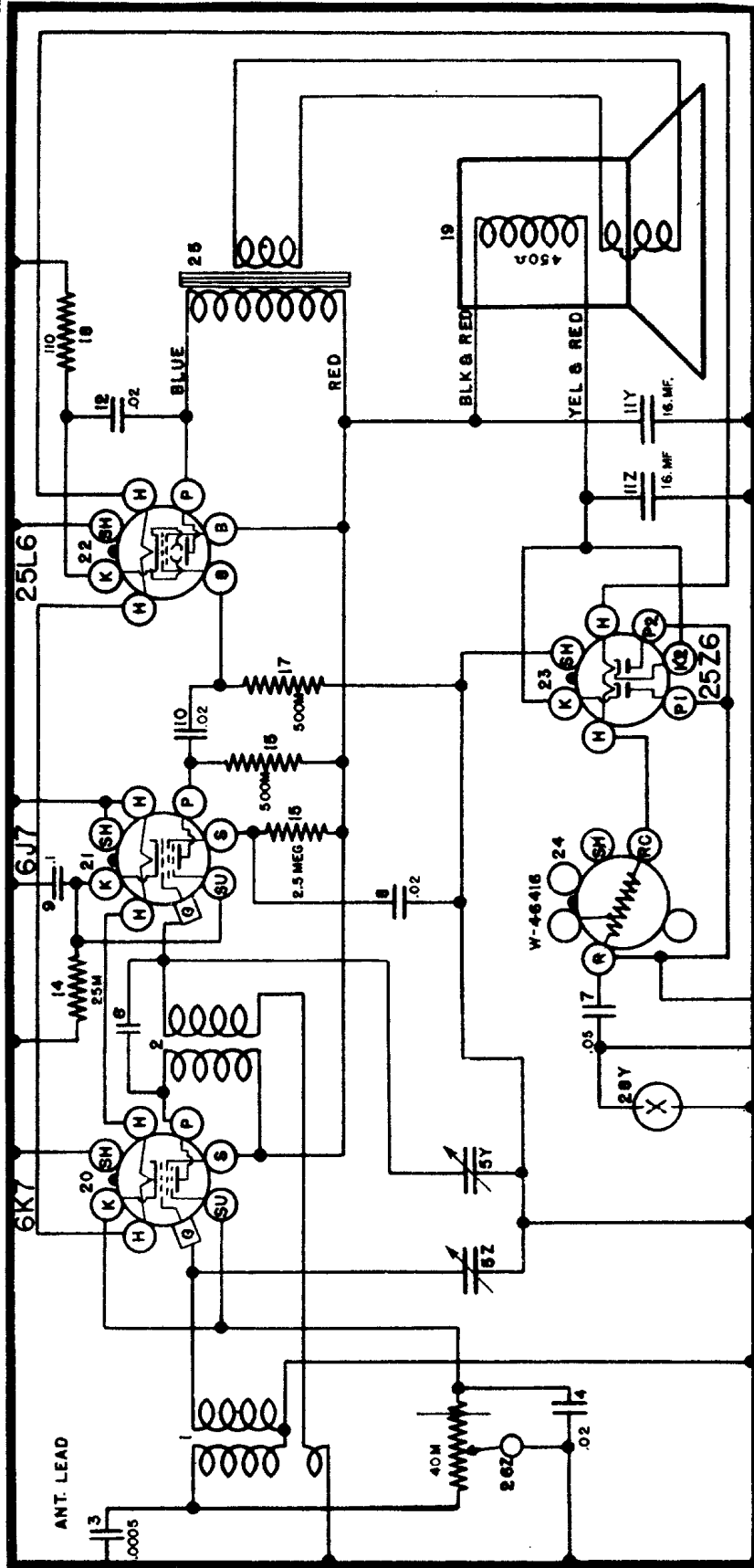
Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —45577	Antenna Roll	27	G3 —50640	Condenser Assembly
2	G180—32000	Antenna Coil	28	W —44337	Dial Light, 6-8 Volt
3	G104—32001	R. F. Coil		W —40570	Dial Light Shield
4	W —45780B	(Condenser, .02 Mf. 160 V.		G6 —27134	Dial Light Socket
5		Condenser, .02 Mf. 160 V.	29	W —44396	Resistor, 40 Ohms 3½W. Flex.
6Z	G53 —33001	2 Section Gang Condenser			
6Y					
7	W —45782B	Condenser, .05 Mf. 400 V.			
8	W —45781B	Condenser, .25 Mf. 160 V.			
9	W —45780B	Condenser, .02 Mf. 160 V.			
10	G2 —34002	Condenser, .0001 Molded			
11	W —45780B	Condenser, .02 Mf. 160 V.			
12	W —45783	Condenser, 16 Mf. 150 V. Elect.			
13	W —45783	Condenser, 16 Mf. 150 V. Elect.			
14	W —45817A	Condenser, .05 Mf. 160 V.			
15	B —46114	Power Cord (165 Ohm 15W Lead)			
	W —45902	Cord Clamp			
16	—24990	Resistor, 25,000 Ohms ½W.			
17	—37583	Resistor, 2.5 Meg Ohms ½W.			
18	—23785	Resistor, 500,000 Ohms ½W.			
19	—23785	Resistor, 500,000 Ohms ½W.			
20	W —45965	Resistor, 110 Ohms ½W. Flex.			
21	G21 —28807	6 Prong Socket			
22	G21 —28807	6 Prong Socket			
23	G178—36400	8 Prong Socket			
24	G178—36400	8 Prong Socket			
	W —34175	Tube Shield Half (Slotted)			
	W —34174	Tube Shield Half (Plain)			
	W —31210	Tube Shield Ring			
25	281-BL-5-U	Speaker Spec. 5-B-130			
	W —45900A	Speaker Mtg. Bracket			
26Z	—45786	Volume Control, 40,000 Ohms			
26Y		On-Off Switch			

TUBE SOCKET VOLTAGE READINGS

Tube	H	P	S	K	Su
6D6	6.3*	97	98	2.5-25	as
6C6	6.3*	20	10	7	
25L6	25*	85	98	6	
25Z6	25*	117*		126	

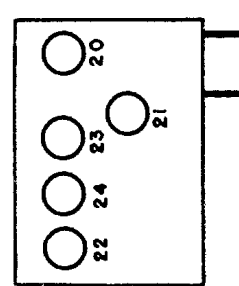
Readings taken with a 1000 ohm per volt meter. Volume full on. Readings between terminals indicated and chassis. Values marked with a * are A.C.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Item No.	Part No.	Description
1	G182-32000	Antenna Coil
2	G102-32001	R-F. Coil
3	G3-34002	Condenser, .0005 Mf. Molded
4	W-45708B	Condenser, .02 Mf. 160 V.
5	G60-33001	2 Section Gang Condenser
6	G3-50640	Twisted Lead—Cap. Coupling
7	W-45782B	Condenser, .05 Mf. 120 V.
8	W-45780B	Condenser, .02 Mf. 160 V.
9	W-50105	Condenser, .1 Mf. 160 V.
10	W-45708B	Condenser, .02 Mf. 160 V.
11Z	W-46398	Condenser, 16 Mf. 125 V.
11Y	W-45780B	Condenser, 16 Mf. 125 V.
12	B	Power Cord and Plug
13	W-45784	Resistor, 25,000 Ohm $\frac{3}{8}$ W.
14	W-24990	Resistor, 2.5 Megohm $\frac{3}{8}$ W.
15	W-37583	Resistor, 500,000 Ohm $\frac{3}{8}$ W.
16	W-23785	Resistor, 500,000 Ohm $\frac{3}{8}$ W.
17	W-23785	Resistor, 110 Ohm $\frac{1}{2}$ W.
18	W-45965	Resistor, 110 Ohm $\frac{1}{2}$ W.

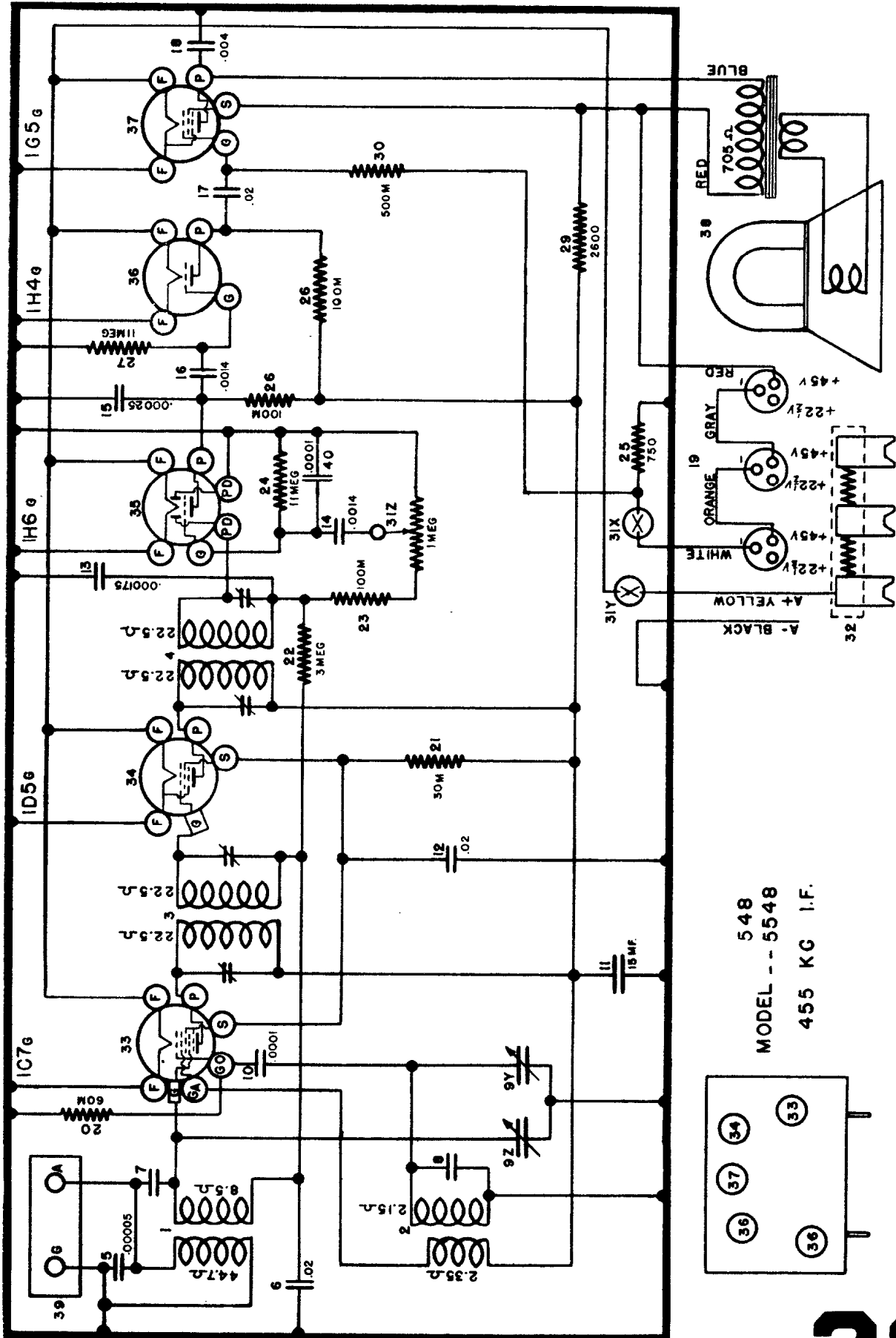
19	284-BL-4"B"	Speaker—Spec.
	-46691	Field Coil—450 Ohm
	284-BL-4"H"	Speaker—Spec.
	-46901	Field Coil—450 Ohm
20 to 24	G-178-36400	Socket—8 Prong Octal
	W-46477	Tube Shield
25	G-25-29535	Output Transformer
26Z	-46411	Volume Control—
26Y		Line Switch—



WIRING DIAGRAM—

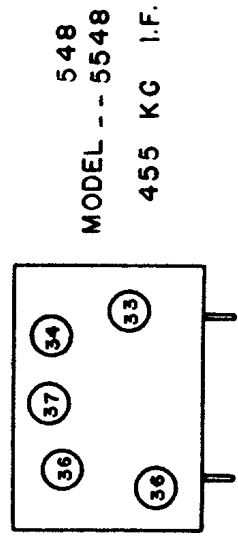
MODEL 568

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



WIRING DIAGRAM MODELS 548, 5548

The Crosley Corporation
Cincinnati, Ohio



548
MODEL -- 5548
455 KG I.F.

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

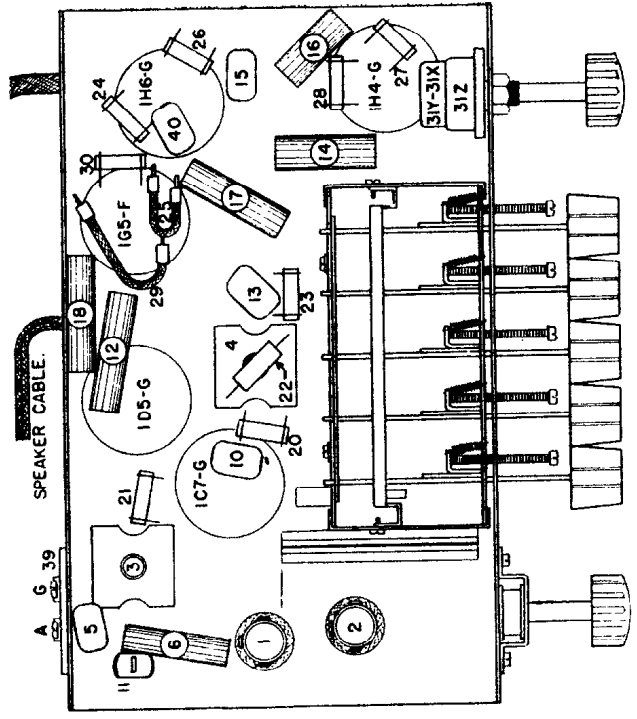
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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

PARTS LIST—MODELS 548 & 5548

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	G176—32000	Antenna Coil	38	W —40911	Tube Shield
2	G177—32002	Oscillator Coil		274PL18"H"	Speaker, Spec. S-4504 AMD5
3	G194—32004	1st I. F. Transformer		—46800	Speaker Cone Assembly
4	G195—32004	2nd I. F. Transformer		—46802	Output Transformer
5	G5 —34002	Condenser, .00005 Mf. Molded		—46803	Cardboard Ring
6	W —28621	Condenser, .02 Mf. 200 V. Paper	39	G1 —26719	Terminal (A-G)
7	G5 —50640	Condenser (Capacity Coupling) Ant.	40	G2 —34002	Condenser, .0001 Mf. Molded
8	G3 —50640	Condenser (Capacity Coupling) Osc.			
9Z	G52 —33001	2 Sect. Condenser { Antenna			
9Y		{ Oscillator			
	W —23877	Set Screw (For Pulley-Hub Assembly)			
	G12 —43564	Pulley and Hub Assembly			
	MG14—45894	Riveted Dial Support Bracket, R. H.			
	MG16—46000	Riveted Dial Support Bracket, L. H.			
	C —46042	Dial Glass			
	W —45984	Dial Glass Clip, L. H.			
	W —45985	Dial Glass Clip, R. H.			
	W —46397	Dial Pointer (White)			
	W —46037	Dial Hand Guide			
	W —45742B	Dial Glass Cushion			
	B —45743B	Dial Support			
	—46056	Drive Shaft (5548)			
	—45865	Drive Shaft (548)			
	W —43542B	Drive Shaft Bracket			
	G2 —41582	Drive Cord (44 Inches)			
	W —46290	Cord Clamp			
	W —46087	Drive Cord Spring			
10	G2 —34002	Condenser, .0001 Mf. Molded			
11	W —45968	Condenser, 15 Mf. 250 V. Elect.			
12	W —28621	Condenser, .02 Mf. 200 V. Paper			
13	G11 —34002	Condenser, .000175 Mf. Molded			
14	W —41461	Condenser, .0014 Mf. 200 V. Paper			
15	G1 —34002	Condenser, .00025 Mf. Molded			
16	W —41461	Condenser, .0014 Mf. 200 V. Paper			
17	W —28621	Condenser, .02 Mf. 200 V. Paper			
18	W —28904	Condenser, .004 Mf. 200 V. Paper			
19	C —46014	Battery Cable, Model 548			
19	C —46072A	Battery Cable, Model 5548			
20	—21237A	Resistor, 60,000 Ohms $\frac{1}{8}$ W. Carbon			
21	—33390	Resistor, 30,000 Ohms $\frac{1}{8}$ W. Carbon			
22	—26577	Resistor, 3 Megohms $\frac{1}{8}$ W. Carbon			
23	—21875	Resistor, 100,000 Ohms $\frac{1}{8}$ W. Carbon			
24	—37584	Resistor, 11 Megohms $\frac{1}{8}$ W. Carbon			
25	W —22514	Resistor, 750 Ohms $\frac{1}{2}$ W. Flex.			
26	—21875	Resistor, 100,000 Ohms $\frac{1}{8}$ W. Carbon			
27	—37584	Resistor, 11 Megohms $\frac{1}{8}$ W. Carbon			
28	—21875	Resistor, 100,000 Ohms $\frac{1}{8}$ W. Carbon			
29	W —30960	Resistor, 2,600 Ohms $1\frac{1}{2}$ W. Flex.			
30	—23785	Resistor, 500,000 Ohms $\frac{1}{8}$ W. Carbon			
31Z		Volume Control			
31Y	—45996A	Switch "A" Supply Model 548			
31X		Switch "B" Supply			
31Z		Volume Control			
31Y	—46057A	Switch "A" Supply Model 5548			
31X		Switch "B" Supply			
32	W —41995A	Resistance Strip, 1.83 Ohms Tap at 1.1 Ohms			



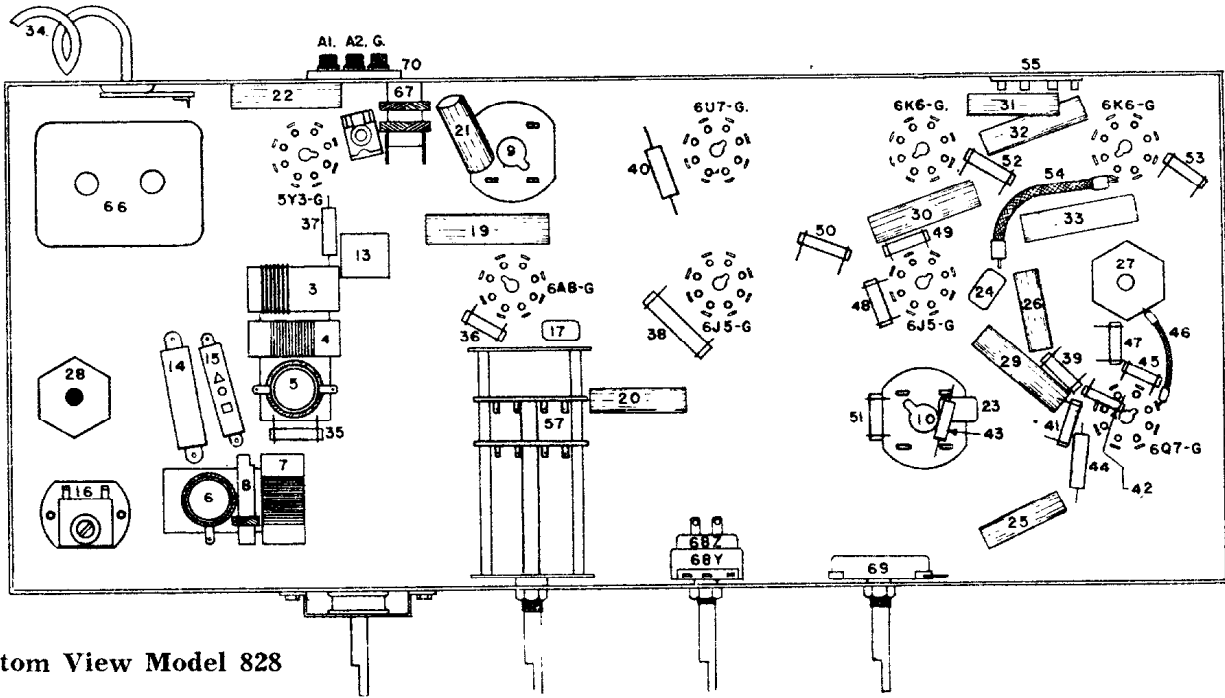
Bottom View Model 548

TUBE SOCKET VOLTAGE READINGS

Tube	Function	H	P	S	G	Ga	Go
1C7-G	Oscillator-Modulator	2.0	120	40	0	120	-3
1D5-G	I-F Amplifier	2.0	120	40	0	—	—
1H6-G	Detector & 1st A-F Amp.	2.0	50	—	0	—	—
1H4-G	2nd A-F Amplifier	2.0	50	—	0	—	—
1G5-G	Output	2.0	123	129	-6	—	—

Power Output approximately .750 Watt.
 "A" Battery Drain approximately .42 Ampere at 2 Volts.
 "B" Battery Drain approximately 18 Milliamperes at 135 Volts.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Bottom View Model 828

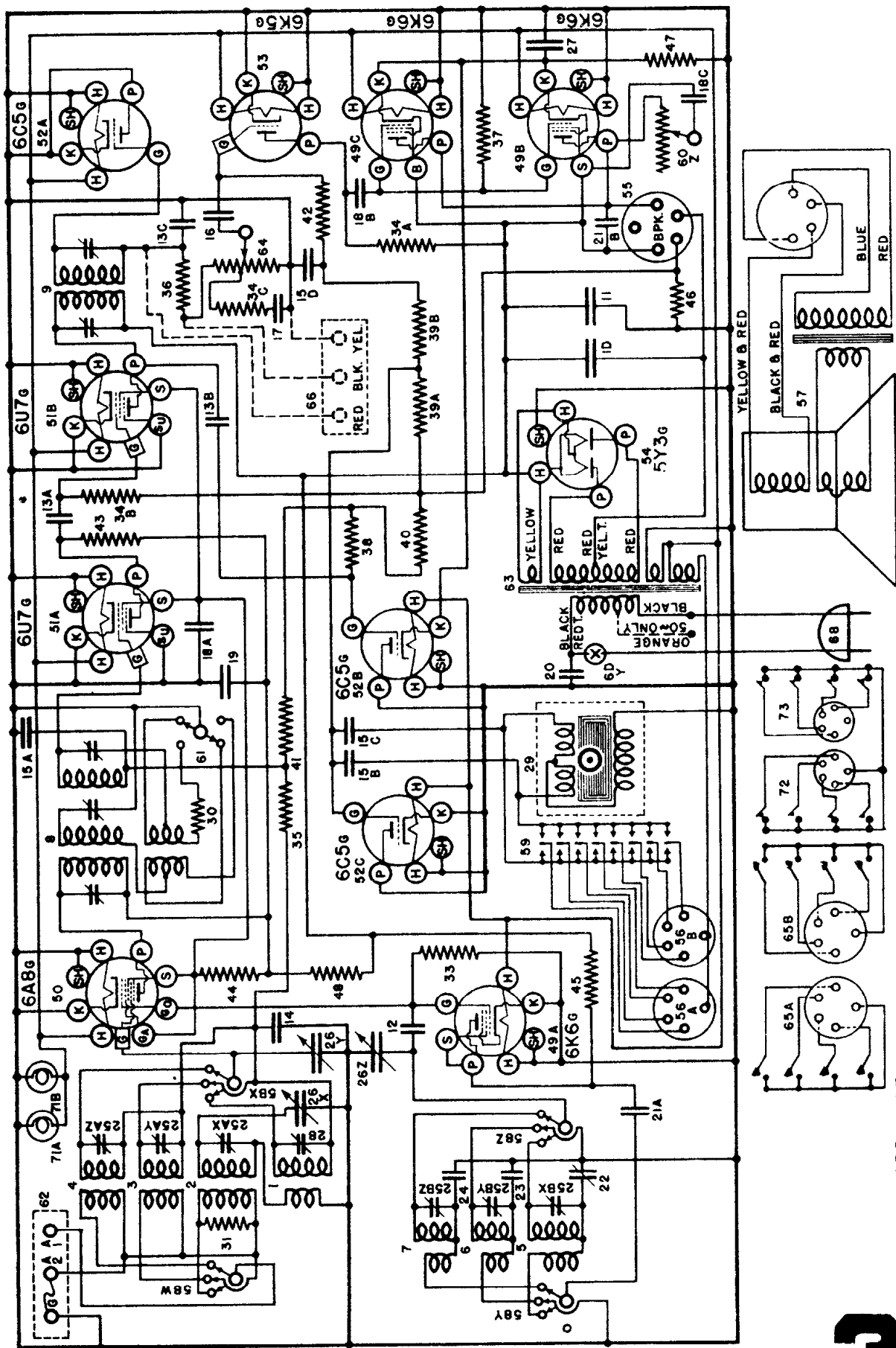
PARTS LIST — MODEL 828

Figures in first column refer to parts in Diagrams.

Item No.	Part No.	Description	Item No.	Part No.	Description
1	W —37922	Dial Light—6-8 Volt	48	—23785	Resistor, 500,000 Ohm 1/2 W.
2	W —37922	Dial Light—6-8 Volt	49	—27121	Resistor, 5,000 Ohm 1/2 W.
	G16 —45398	Socket and Brkt. Assy., Dial Light	50	—21875	Resistor, 100,000 Ohm 1/2 W.
3	G170—32000	Antenna Coil—H-F.	51	—21875	Resistor, 100,000 Ohm 1/2 W.
4	G168—32000	Antenna Coil—Pol.	52	—23785	Resistor, 500,000 Ohm 1/2 W.
5	G169—32000	Antenna Coil—B-C.	53	—23785	Resistor, 500,000 Ohm 1/2 W.
6	G170—32002	Oscillator Coil—H-F.	54	W —22873	Resistor, 220 Ohm 2 1/2 W.
7	G168—32002	Oscillator Coil—Pol.	55	G103—28807	Socket—(5 Prong Spkr.)
8	G169—32002	Oscillator Coil—B-C.	W —43552	Spkr. Plug Clamp	
9	G175—32004	1st I-F. Assy., 455 Kc.	56	583-CP-18"K"	Speaker, Spec. No. V. C. and Cone Assy.
10	G176—32004	2nd I-F. Assy., 455 Kc.			Field Coil—(525 Ohm)
11	W —45713	3 Section Trimmer (Osc. Shunt)			Output Transformer
12	W —35951A	3 Section Trimmer (Ant. Shunt)			Cardboard Ring
13	W —35936	Condenser, .05 Mf. 200 V.			Speaker, Spec. No. S-4893N3
14	G20 —34000	Condenser, .004910 Mf. Mica		583-CP-18"H"	V. C. and Cone Assy.
15	G23 —34000	Condenser, .001560 Mf. Mica		—46786	Field Coil (525 Ohm)
16	—40769	B-C. Osc. Series Trimmer		—46787	Output Transformer
17	G13 —34002	Condenser, .000035 Mf. Molded		—46788	Cardboard Ring
18	G59 —33001	2 Section Gang Condenser		—46789	Speaker, Spec. No. E10K326
19	W —23615	Condenser, .05 Mf. 400 V.		583-CP-18"Z"	V. C. and Cone Assy.
20	W —35139	Condenser, .004 Mf. 400 V.		—46758	Field Coil (525 Ohm)
21	W —28621	Condenser, .02 Mf. 200 V.		—46759	Output Transformer
22	W —30805	Condenser, .01 Mf. 400 V.		—46760	Cardboard Ring
23	G2 —34002	Condenser, .0001 Mf. Molded		—46761	Band Selector Switch
24	G2 —34002	Condenser, .0001 Mf. Molded		—46762	8 Prong Socket
25	W —41461	Condenser, .0014 Mf. 200 V.	57	B —16276	Power Transformer, 60 Cy.—110 V.
26	W —28621	Condenser, .02 Mf. 200 V.	58 to 65	G178—36400	Power Transformer, 50 Cy.—110 V.
27	W —36057B	Condenser, 40 Mf. 300 V.		—46318	Power Transformer, 50 Cy.—220 V.
28	W —44054	Condenser, 30 Mf. 350 V.		—46307	Power Transformer, 25 Cy.—110 V.
29	W —23615	Condenser, .05 Mf. 400 V.		—46308	Power Transformer, 25 Cy.—220 V.
30	W —23615	Condenser, .05 Mf. 400 V.		—46309	Power Transformer, 25 Cy.—220 V.
31	W —35139	Condenser, .004 Mf. 400 V.		—46310	Power Transformer, 40-100 Cy.—95-267 V
32	W —23615	Condenser, .05 Mf. 400 V.		—46311	Wave Trap—455 Kc.
33	W —23615	Condenser, .05 Mf. 400 V.	67	MG41—46287	Coil—Only—Wave Trap
34	B —33906A	Power Cord and Plug		G188—32000	Tone Control
35	—22196	Resistor, 20,000 Ohm 1/2 W.	68Y		Line Switch
36	—21237A	Resistor, 60,000 Ohm 1/2 W.	68Z		Volume Control
37	—35600	Resistor, 100,000 Ohm 1/2 W.	70	G27 —26719	Ant. and Gnd. Terminal Assy.
38	—4921C	Resistor, 10,000 Ohm 1 W.	71	G41 —26719	Phono Terminal Assy.
39	—21454	Resistor, 1 Megohm 1/2 W.		G10 —45683	Push Button Unit Assy.
40	—36952	Resistor, 30,000 Ohm 1 W.		G29 —45683	Key and Toggle Assy.
41	—34020	Resistor, 250,000 Ohm 1/2 W.		—45717	Screw—Key Adjusting
42	—37590	Resistor, 750,000 Ohm 1/2 W.	W —50607C	Spring—Key Return	
43	—36320	Resistor, 120,000 Ohm 1/4 W.	W —50542C	Clamp—Toggle Lock	
44	—36688	Resistor, 3 Megohm 1/4 W.	W —50588B	Adjusting Clip—(Heart Shaped)	
45	—23785	Resistor, 500,000 Ohm 1/2 W.	W —45646B	Adjusting Clip—(Hooked)	
46	W —37631	Resistor, 32 Ohm 1/2 W.	W —46278	Guide Plate—Key	
47	—21875	Resistor, 100,000 Ohm 1/2 W.	G18 —45683	Rocker Plate and Gear Sector Assy.	
			W —50561	Screw—Rocker Plate Bearing	
			W —45976	Bronze Spring—Bearing Thrust	
			W —50273	Rubber Band—Used on Keys	
			8R	Cabinet	
			—46360A	Knob—4 Req.	
			8T	Cabinet (Lowboy Style)	
			—46360A	Knob—Tuning—Volume	
			—46784A	Knob—Tone Control—Band Sw.	
			C —46228C	Escutcheon	
			—46417	Push Button	
			—50841	Station Call List	
			W —50551A	Celluloid Call Letter Cover	
			—46329	Instruction Booklet	

The Crosley Corporation
Cincinnati, Ohio

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



455 Kc. I.F.

WIRING DIAGRAM—MODEL 1118 AND 1128

CROSLLEY

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

33

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

PARTS LIST — MODEL 1118

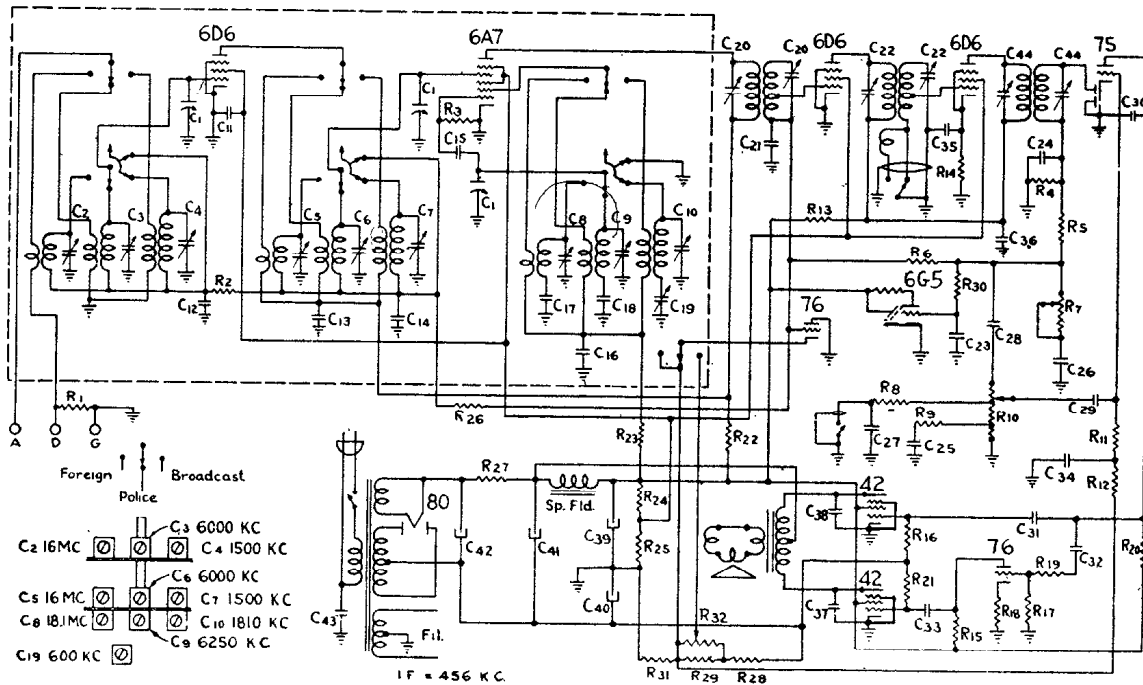
Figures in first column refer to parts in Diagrams.

Item	Part No.	Description	Item	Part No.	Description
1	G97 —32001	Pre-Selector Coil, B.C.	35	—35600	Resistor, 100,000 Ohm $\frac{1}{4}$ W. Carb.
2	G138 —32000	Antenna Coil, B.C.	36	—36320	Resistor, 120,000 Ohm $\frac{1}{4}$ W. Carb.
3	G151 —32000	Antenna Coil, Police	37	—34018	Resistor, 200,000 Ohm $\frac{1}{4}$ W. Carb.
4	G150 —32000	Antenna Coil, H.F.	38	—34020	Resistor, 250,000 Ohm $\frac{1}{4}$ W. Carb.
5	G139 —32002	Oscillator Coil, B.C.	39A	—23785	Resistor, 500,000 Ohm $\frac{1}{4}$ W. Carb.
6	G154 —32002	Oscillator Coil, Police	39B	—23785	Resistor, 500,000 Ohm $\frac{1}{4}$ W. Carb.
7	G153 —32002	Oscillator Coil, H.F.	40	—37590	Resistor, 750,000 Ohm $\frac{1}{4}$ W. Carb.
8	G161 —32004	1st I-F., 455 Kc. Assy.	41	—21454	Resistor, 1 Megohm $\frac{1}{4}$ W. Carb.
9	G154 —32004	2nd I-F., 455 Kc. Assy.	42	—26577	Resistor, 3 Megohm $\frac{1}{4}$ W. Carb.
10	W —44054	Condenser, 30 Mf. 350 V.	43	—44165	Resistor, 5,000 Ohm $\frac{1}{2}$ W. Carb.
11	W —36057B	Condenser, 40 Mf. 300 V.	44	—4921C	Resistor, 10,000 Ohm 1W. Carb.
12	G1 —44886	Condenser, Bimetal Temp. Control	45	—44008	Resistor, 10,000 Ohm 2W. Carb.
13A	G2 —34002	Condenser, .0001 Mf. Molded	46	W —37631	Resistor, 32 Ohm $\frac{1}{2}$ W. Flex.
13B	G2 —34002	Condenser, .0001 Mf. Molded	47	W —15381	Resistor, 300 Ohm 2W. Flex.
13C	G2 —34002	Condenser, .0001 Mf. Molded	48	W —23013	Resistor, 2,000 Ohm 1 $\frac{1}{4}$ W. Flex.
14	W —35936	Condenser, .05 Mf. 200 V.	49		
15A	W —28621	Condenser, .02 Mf. 200 V.	50	G178 —36400	Socket, 8 Prong Octal.
15B	W —28621	Condenser, .02 Mf. 200 V.	51		
15C	W —28621	Condenser, .02 Mf. 200 V.	52		
15D	W —28621	Condenser, .02 Mf. 200 V.	53	G103 —28807	Socket, Speaker
16	W —41461	Condenser, .0014 Mf. 200 V.	54	G16 —28807	Socket, Push Button Cable
17	W —28619	Condenser, .006 Mf. 200 V.	55	W —41007	Cable Clamp, P. B. Cable
18A	W —22688	Condenser, .1 Mf. 400 V.	56	W —40911	Tube Shield
18B	W —22688	Condenser, .1 Mf. 400 V.	57	671BP-18-“M”	Speaker, Spec. No. 1-D-1180
18C	W —22688	Condenser, .1 Mf. 400 V.		—45184	V. C. and Cone Assembly
19	W —23615	Condenser, .05 Mf. 400 V.		—45185	Field Coil (515 Ohm)
20	W —30805	Condenser, .01 Mf. 400 V.		—44678	Output Transformer
21A	W —35139	Condenser, .004 Mf. 400 V.		—43680	Cone Mounting Ring
21B	W —35139	Condenser, .004 Mf. 400 V.		W —24715	Elastic Mounting Nuts
22	—40769	Condenser, B.C. Osc. Series Trimmer		W —22985	Rubber Washer
23	G23 —34000	Condenser, .001560 Mf. Pol. Osc. Fixed Trimmer		W —46804	Spacer
24	G20 —34000	Condenser		W —24865	Steel Washer
25	W —35951A	3 Section Shunt Trimmer Assy.	58	—44049	Band Selector Switch
26	G60 —33002	3 Section Var. Tuning Cond. (1118)	59	G1 —44628	Switch, Discriminator, Assy.
26	G62 —33002	3 Section Var. Tuning Cond. (1128)	60	G2 —44628	Flexible Coupling
	W —44907A	Idler Pulley (1118)	61	—44024B	Tone Control (300,000 Ohm) and Switch
	W —44908	Idler Mtg. Stud (1118)	61	—46086	Switch, Local Distance (1128)
	D —46239	Dial Face (Glass) (1128)	61	—44665A	Switch, Local Distance (1118)
	C —46094	Dial Glass Support (1128)	62	G27 —26719	Ant. and Gnd. Terminal Assy.
	W —46099	Dial Glass Clip (2) (1128)	63	—44910	Power Transformer, 110 V. 60 C
	W —46096	Dial Glass Clip, R.H. (1128)		—44915	Power Transformer, 110 V. 50 C
	W —46095	Dial Glass Clip, L.H. (1128)		—44916	Power Transformer, 220 V. 50 C
	—46203	Dial Pointer (1128)		—45527	Power Transformer, Universal
	W —46097	Dial Pointer Guide (1128)	64	—44702	Volume Control, 1 Megohm
	G —41582	Drive Cord (50-Inch) (1128)	65A	G8 —45228	Push Button—Cable and Plug (R.H.) (1118)
	W —46941	Dial Glass Cushion (1128)	65B	G9 —45228	Push Button—Cable and Plug (L.H.) (1118)
	G13 —43564	Pulley and Hub Assy. (1128)		W —45478	Trip Bar and Connecting Link Switch (1118)
	MG44 —46080	Idler Pulley and Brkt. Assy. (1128)	66	G37 —26719	Phono Terminal Assy.
	W —44989	Cord Tension Spring (1128)	68	B —33960A	Line Cord and Plug
	W —46477	Tubing—Drive Shaft (1128)	71	W —43567	Dial Light Bulb, 6-8 Volt (1118)
	W —45448	Drive Belt (1128)	71	W —37922	Dial Light Bulb, 6-8 Volt (1128)
	W —44907B	Idler Pulley (Dual) (1128)		G9 —44363	Dial Light Socket Assy.
	W —44908	Idler Stud (1128)	72	MG45 —46081	Push Button—Cable and Plug (1128)
	D —46949	Dial Glass (Foreign Only) (1128)	73		
	W —46290	Drive Cord Clamp (1128)		7P	Cabinet (1118)
27	W —41598	Condenser, 50 Mf. 25 V.		B —45652A	Escutcheon (Dial) (1118)
28	—44516	Condenser, Pre-Select Shunt		—45667	Escutcheon (Push Button) L.H.
29	MG105 —44879	Motor Assembly (50-60 Cycle)		—45666	Escutcheon (Push Button) R.H.
	—45168	Motor		W —44380B	Knob, Vol. Cont. and Tuning (2)
	W —45165	Motor Foot		W —44426A	Knob, T. C.—L. D. Sw. and B. C. (3) (1118)
	W —45164	Motor Mounting Bracket		W —44871A	Push Button (Bakelite) (1118)
	W —20800	Shakeproof Washer		B —44876A	Switch (Push Button) Only
	—6875	W. H. Machine Screw, $\frac{3}{16}$ " Long		8Q	Cabinet (1128)
	—6876	W. H. Machine Screw, $\frac{1}{4}$ " Long		8QA	Cabinet (1128)
	—44497	Headed Bushing—Brkt. Mtg.		C —46228C	Escutcheon (1128)
	W —36180	Rubber Sleeve—Brkt. Mtg.		—46360A	Knob, Vol. Cont. and Tuning (2)
30	—42401A	Resistor, 99 Ohm $\frac{1}{4}$ W. Ins.		—46362A	Knob, T. C.—L. D. Sw. and B. C. (3) (1128)
31	—22196	Resistor, 20,000 Ohm $\frac{1}{4}$ W. Carb.		W —45171	Push Button (Bakelite) (1128)
33	—21237A	Resistor, 60,000 Ohm $\frac{1}{4}$ W. Carb.		B —46221	Switch (Push Button) Only (1128)
34A	—21875	Resistor, 100,000 Ohm $\frac{1}{4}$ W. Carb.		W —44876A	Celluloid Cover (Button)
34B	—21875	Resistor, 100,000 Ohm $\frac{1}{4}$ W. Carb.			
34C	—21875	Resistor, 100,000 Ohm $\frac{1}{4}$ W. Carb.			

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

DETROLA RADIO AND TELEVISION CORPORATION

DETROIT, MICHIGAN



- C2 16MC
- C3 6000 KC
- C4 1500 KC
- C5 16MC
- C6 6000 KC
- C7 1500 KC
- C8 18JM
- C9 6250 KC
- C10 1810 KC
- C19 600 KC

MODEL 165

Symbol	Part No.	Description
C1	3814	9-400 mmf Variable
C2,3,4	3822	2-35 triple trimmer
C5,6,7	3822	2-35 triple trimmer
C8,9,10	3822	2-35 triple trimmer
C11,21,34	572	.1-200 V.
C12,14,23	580	.05-200 V.
C13	575	.1-400 V.
C15,24	2780	50 mmf mica
C16,35	568	.01-400 V.
C17	2694	.005 5% tolerance
C18	2741	1330 mmf 5% tolerance
C19	2560	350 mmf variable padder
C20,22,44		IF Trimmer
C25	4072	.03-200 V.
C26	2695	.003-600 V.
C27	824	.002-600 V.
C28,29	576	.02-400 V.
C30	1286	250 mmf mica
C31,33	2600	.02-600 V.
C32,36	563	.05-400 V.
C37,38	3138	.001-800 V.
C39	3113	16 MF regulating
C40	3136	20 MF 25 V.
C41	3112	16 MF 450 V.

C42	3111	16 MF 500 V.
C43	3135	.003-800 V.
R1,5,15,26	603	100 M 1/3 W.
R2,3	631	50 M 1/3 W.
R4,16,21	615	500 M 1/3 W.
R6	2693	2 meg 1/3 W.
R7	3799	2 meg tone control
R8	2568	300 M 1/3 W.
R9,23	617	20 M 1/3 W.
R10	3800	3 meg volume control
R11,12	624	1 meg 1/3 W.
R13,14,22	2421	1 M 1/3 W.
R17	2880	100 M 1/3 W. 10 %
R18	614	5 M 1/3 W.
R19	2731	500 M 1/3 W. 10 %
R20	598	200 M 1/3 W.
R24	3805	7 M 3.5 W.
R25	3805	8 M 1.5 W.
R27	3809	100 ohms 2 W. 10 %
R28	3806	120 ohms 1.5 W. 10 %
R29	4111	85 ohms 1.0 W. 10 %
R30	2106	3 meg 1/3 W.
R31	3870	15 ohms .5 W. 10 %
R32	3801	2 M variable

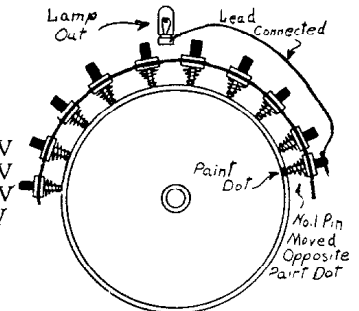
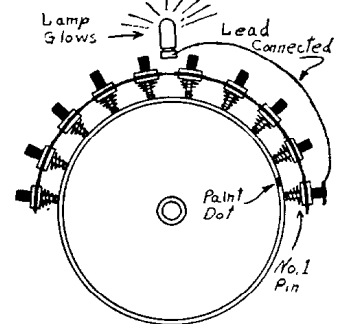
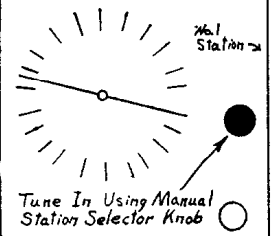
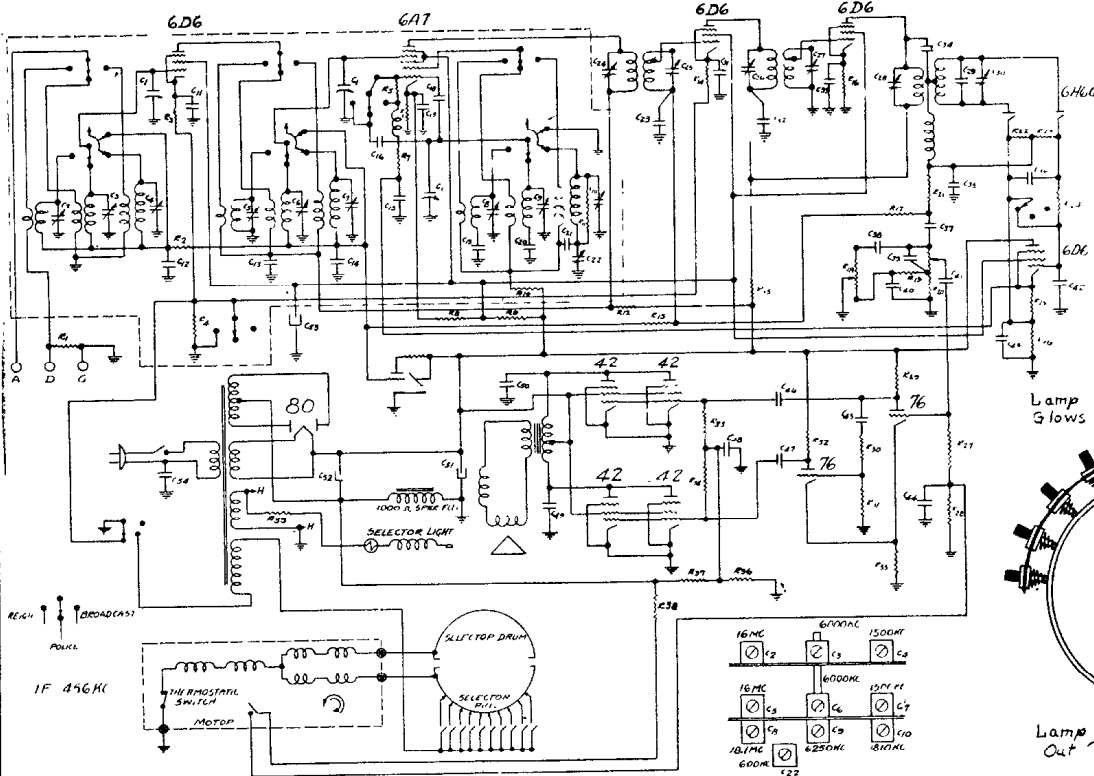
Using 400 ohm resistor in series with generator, set band selector in center position, set generator to 5400 kc and adjust oscillator trimmer for top frequency. Set generator to 5000 kc, tune receiver to signal and adjust antenna trimmer.

Turn band selector to extreme clockwise position. Using 400 ohm resistor in series with generator, set oscillator top frequency for 15,750 kc—screw trimmer down tight, then unscrew to second peak. Set generator to 15,000 kc, tune receiver to signal and adjust antenna trimmer—Screw trimmer down tight, then unscrew to first peak, rocking the tuning condenser back and forth through the signal while the adjustment is being made. Above procedure for alinement at 15,000 kc must be followed exactly to insure proper tracking. A dead spot at about 12,000 kc will result if antenna and oscillator circuits are not set in proper relation to each other.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

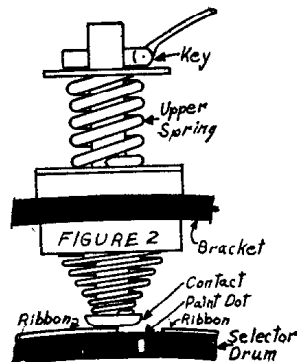
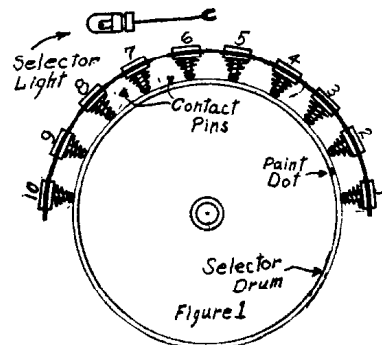
DETROLA RADIO AND TELEVISION CORPORATION

192 Series

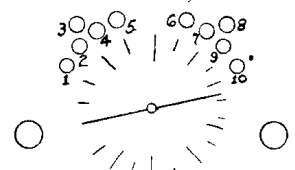


C45,46,47	2600	.02—600 V
C49,50	2601	.01—600 V
C51	4062	30 MF 275 V
C52	4649	24 MF 450 V
C53	3079	8 MF 150 V
C54	3135	.003—800 V

Symbol	Part No.	Description
R1,13,29,32	2880	100 M 1/3W 10%
R2,7,21	631	50 M 1/3W
R3,12,14,15,16	2421	1000 ohm 1/3W
R4	2421	1000 ohm 1/3W
R5	2783	2500 ohm 1/3W 10%
R6	3937	500 ohm 1/2 W Wire-wound ±10%
R8	3805	7000 ohm 3 1/2 W Wirewound
R9	3805	8000 ohm 1 1/2 W Wirewound
R10	600	10M 1/3W
R11	3581	3M 1/3W ±10%
R17,22,23,24,28,27,30	2599	1 meg 1/3W 10%
R18	2737	2 meg tone control
R20	3800	3 meg volume control
R25	2572	400 ohm 1/3W 10%
R26	2691	500 ohm 1/3W 10%
R33,34,19	2730	200 M 1/3W 10%
R36		150 M 1/3W 10%
R38,37	2731	500 M 1/3W 10%
R39		20 ohm 1 W
C1		400 mmf variable
C2,3,4	3822	2-35 mmf triple trimmer
C5,6,7	3822	2-35 mmf triple trimmer
C8,9,10	3822	2-35 mmf triple trimmer
C11,12,14,17,31,33	580	.05—200 V
C13,32	575	.1—400 V
C15,23,42,43,44	572	.1—200 V
C16	2925	25 mmf mica
C18	4676	8 mmf
C19	2694	.005—600 5%
C20	2741	1330 mmf 5%
C21		.01—400 V
C22	2560	350 mmf variable padder
C34,35	1285	100 mmf mica
C36,48	2792	.2—200 V
C37,41	576	.02—400 V
C38,40	824	.002—600 V
C39	2780	50 mmf mica

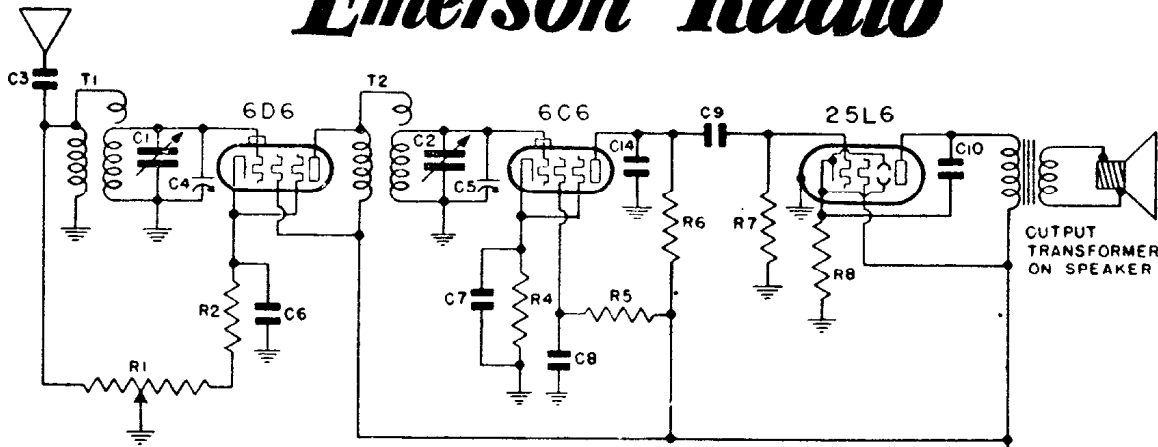


Master Selector Set Up For Station No. 1. Repeat Similar Operations For Station No. 2 Using No. 2 Pins, Etc

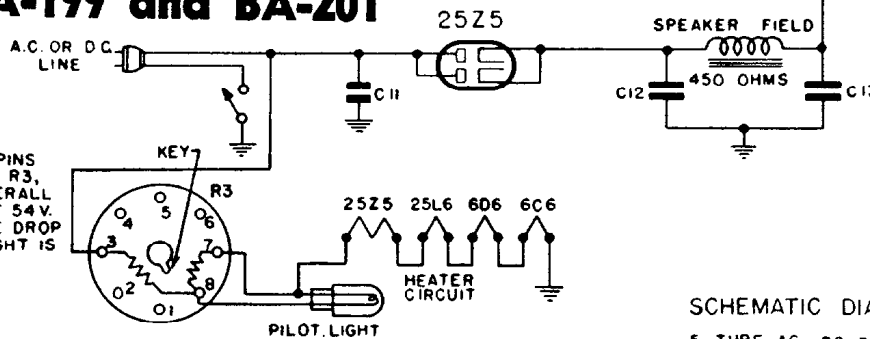


All Stations Set Up Place Call Letters On Buttons As Numbered

Emerson Radio



MODELS BA-199 and BA-201



VIEW LOOKING AT PINS OF BALLAST TUBE R3, WHICH HAS AN OVERALL VOLTAGE DROP OF 5.4V. AT 3AMP VOLTAGE DROP ACROSS PILOT LIGHT IS 4 VOLTS.

SCHEMATIC DIAGRAM
5 TUBE AC-DC RECEIVER

*Item number locates the article on the schematic diagram.

†These condensers cannot be supplied separately.

‡Note: In replacing the dual 16 mf electrolytic condenser, the green lead should be connected to the rectifier.

PRODUCTION CHANGES

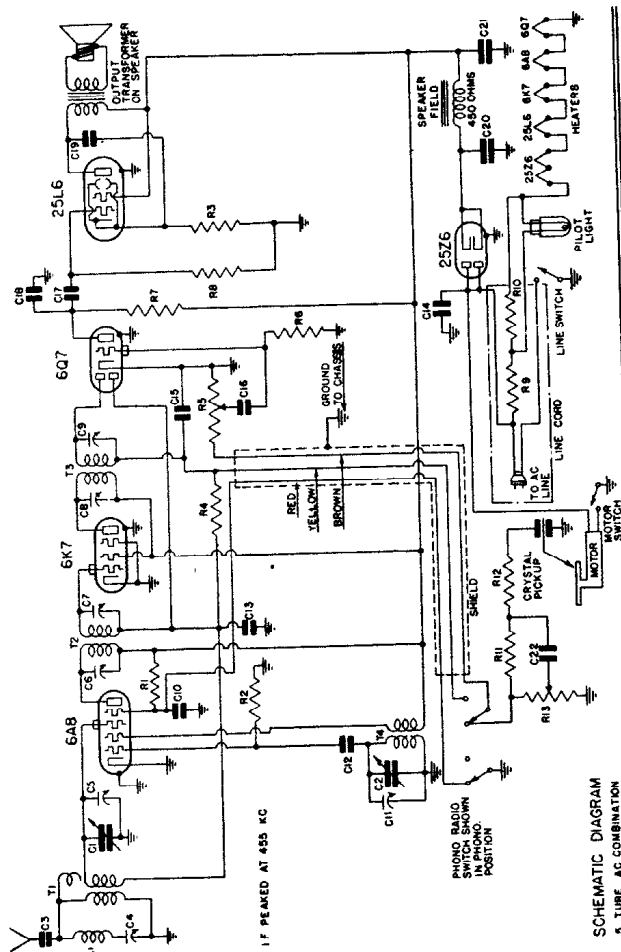
1. Receivers bearing serial numbers below 1496300, C14 was a 0.0001 mf condenser instead of 0.0002.
2. Receivers bearing serial numbers below 1585100, C10 was a 0.03 mf condenser instead of 0.05.

*Item	Part No.	DESCRIPTION
T1	5AT-422	Broadcast antenna coil
T2	5AT-423	Broadcast detector coil
R1	2VR-219D	Volume control—75,000 ohms, with line switch
R2	3CR-294	240 ohm, 1/2 watt wire-wound resistor
R3	L55-BG	Plug-in ballast tube (Interchangeable with L55-B)
R4	OR-73U	25,000 ohm, 1/4 watt carbon resistor
R5	HR-42U	2 megohm, 1/4 watt carbon resistor
R6, R7	KR-56U	500,000 ohm, 1/4 watt carbon resistor
R8	3QR-297	110 ohm, 1/2 watt wire-wound resistor
C1, C2	5AC-376	Two-gang variable condenser
C3	NNC-199	.001 mf, 600 volt tubular condenser
†C4, C5		Trimmers, part of variable condenser.
C6, C8	AC-6	.1 mf, 200 volt tubular condenser
C7	5AC-388	.25 mf, 100 volt tubular condenser
C9	LC-65	.02 mf, 400 volt tubular condenser
C10	LC-64	.05 mf, 400 volt tubular condenser. (See production change No. 2)
C11	EEC-132	.1 mf, 400 volt tubular condenser
‡C12, C13	4DC-345A	Dual 16 mf, 100 volt dry electrolytic condenser. (See note below.)
C14	5AC-384	.0002 mf, 600 volt tubular condenser. (See production change No. 1)
	3TS-312	5" dynamic speaker
	XL-9	Pilot light, 6.3 volt, .25 amp., Mazda No. 46
	5AZ-745	Condenser pulley
	5AZ-746	Pointer pulley
	5AZ-747	Dial pointer
	4YZ-772	Drive cord
	3RZ-519	Drive cord spring
	5AZ-792	Dial face
	5AZ-779A	Dial crystal for Model BA-199
	5AZ-794	Dial crystal for Model BA-201

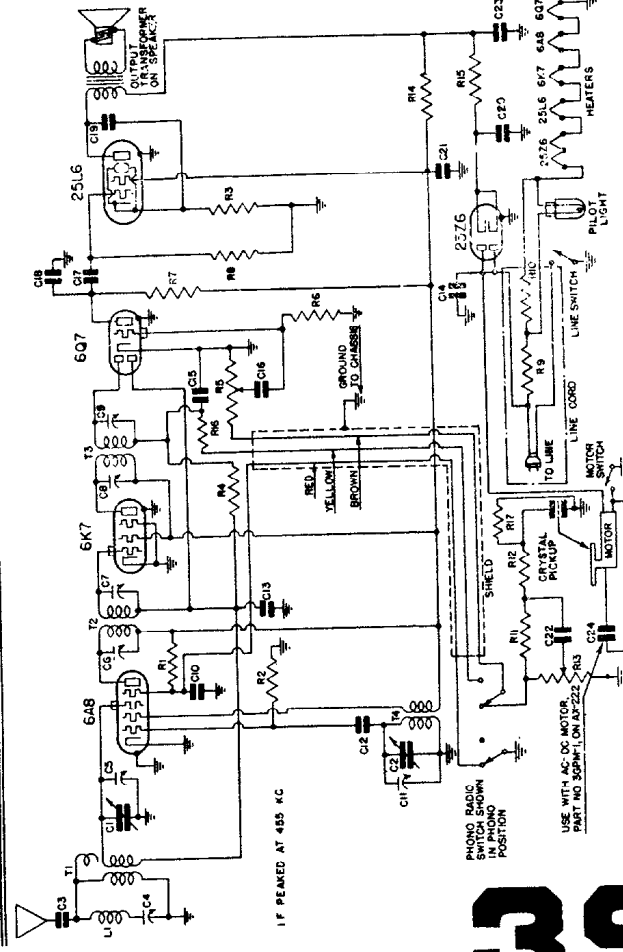
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Emerson Radio and Phonograph Corp.

L1, T1	Antenna coil with adjustable 455 kc wave-trap
T2	Double-tuned 455 kc first i-f transformer
T8	Double-tuned 455 kc second i-f transformer
T4	Oscillator coil
R1	30,000 ohm 1/2 watt carbon resistor
R2	50,000 ohm 1/4 watt carbon resistor
R3	140 ohm 1/2 watt wire-wound resistor
R4, R17	1 megohm 1/4 watt carbon resistor
R5	Volume control .25 megohm with line switch
R6	15 megohm 1/4 watt carbon resistor
R7	250,000 ohm 1/4 watt carbon resistor
R8	500,000 ohm 1/4 watt carbon resistor
R9, R10	Resistance line cord with pilot light ballast section.
R13	Tone control .5 megohm with motor line switch
R14	2,500 ohm 1 watt metalized resistor
R15	175 ohm 1 watt metalized resistor
R16	100,000 ohm 1/4 watt carbon resistor
R18	Tone control .5 megohm
C1, C2	Two-gang variable condenser (for 219 and 221)
C1, C2	Two-gang variable condenser (for 222 and 232)
C3	0.00055 mf mica condenser
C4	Trimmer, part of wave-trap assembly.
C5, C11	Trimmers, part of variable condensers.
C6, C7, C8, C9	Trimmers, part of i-f transformers.
C10	0.05 mf, 200 volt tubular condenser
C12	0.00006 mf mica condenser
C18	0.1 mf, 200 volt tubular condenser
C14, C18	0.1 mf, 400 volt tubular condenser
C15, C18	0.0022 mf mica condenser
C16	0.002 mf, 600 volt tubular condenser
C17	0.02 mf, 400 volt tubular condenser
C19	0.025 mf, 400 volt tubular condenser
C20, C21	Dual 20 mf, 150 volt dry electrolytic condenser
C22	0.0005 mf mica condenser
C23	20 mf, 135 volt dry electrolytic condenser
C24	0.01 mf, 400 volt molded condenser
C25	0.006 mf, 600 volt tubular condenser
C26	0.0003 mf mica condenser
	Phono-radio switch
	Pilot light, 6.3 volt, .25 amp, Mazda No. 44
	Drive cord
	Drive cord spring
	Drive shaft
	Dial face fasteners
	Needle cup (for 219 and 221)
	Needle cup (for 222)
	Dial pointer (for 221, 222 and 232)
	Dial crystal (for 221, 222 and 232)
	Dial face (for 221, 222 and 232)
	6 1/2" permanent magnet dynamic speaker
	ADDITIONAL PARTS USED ON AX-219
R11, R12	500,000 ohm 1/4 watt carbon resistor
	ADDITIONAL PARTS USED ON AX-221 and AX-222
R11, R12	1 megohm 1/4 watt carbon resistor
	110 volt, a.c. motor (for 221-AC)
	AC-DC motor (for 221AC-DC and 222)



MODEL AX-219

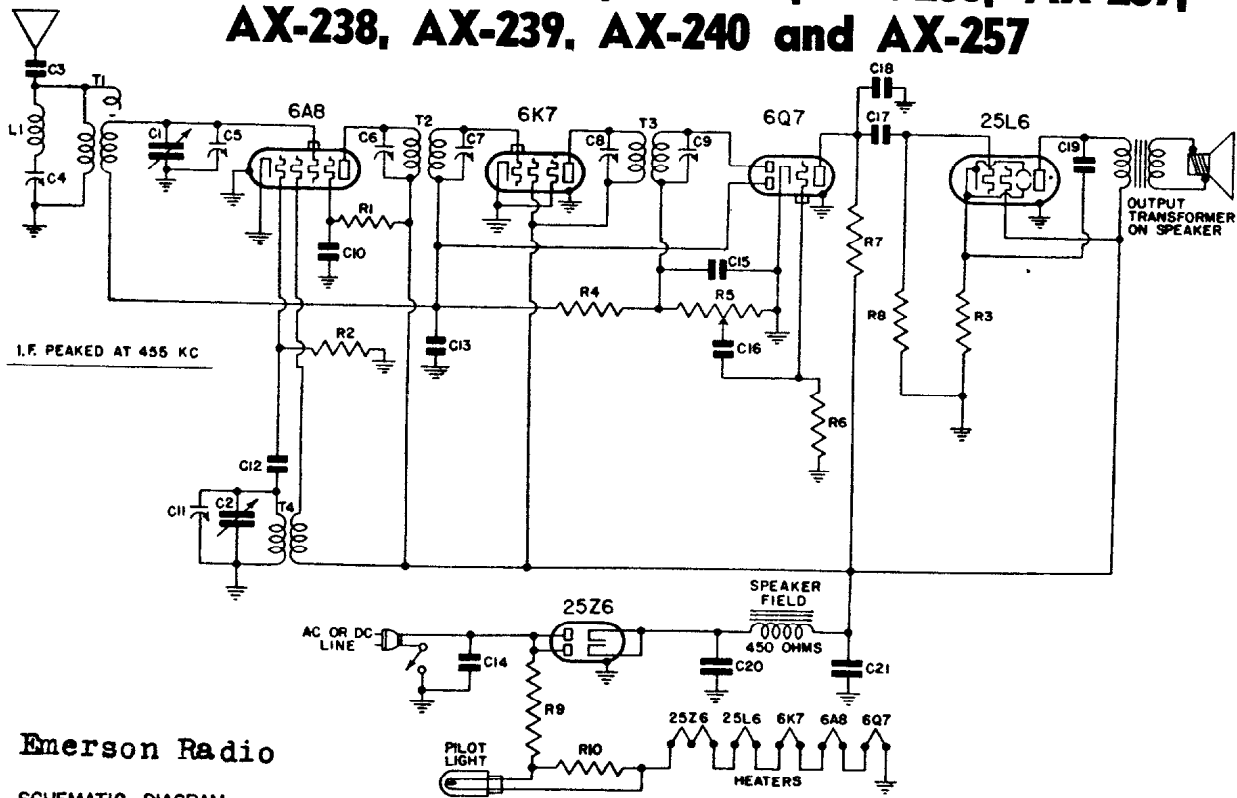


MODELS AX-221 AC, AX-222 AC-DC and AX-222

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Emerson Radio and Phonograph Corp.

Models AX-211, AX-212, AX-217, AX-235, AX-237, AX-238, AX-239, AX-240 and AX-257



Emerson Radio

SCHEMATIC DIAGRAM

5 TUBE AC-DC RECEIVER

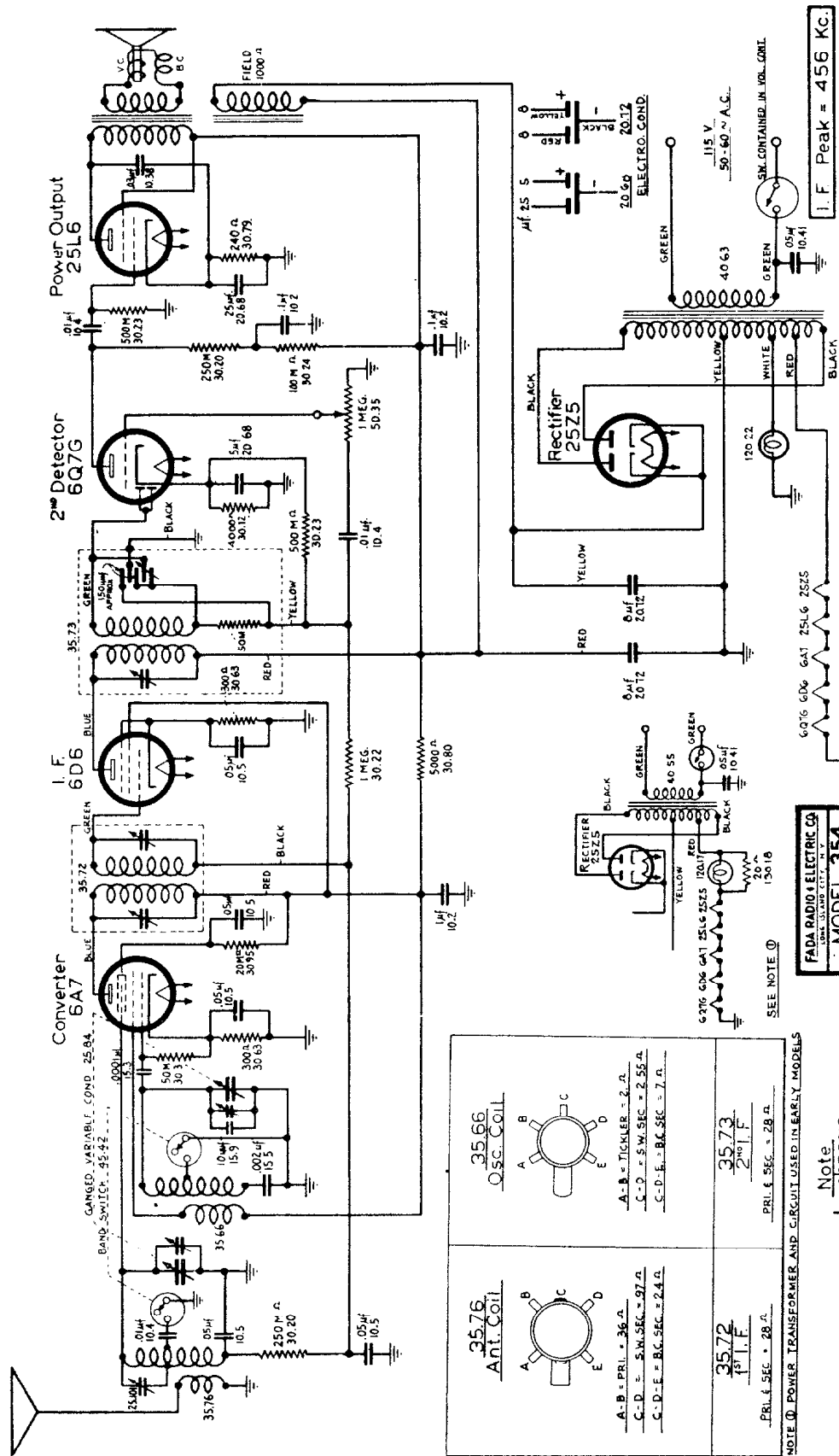
SCHEMATIC DIAGRAM FOR MODELS AX-211, 212, 217, 235, 237, 238, 239 and 257

*Item	Part No.	DESCRIPTION
L1, T1	4XT-432	Antenna coil with adjustable 455 kc wave-trap
T4	4XT-458	Oscillator coil (see production change no. 2)
T2	4XT-434	Double-tuned 455 kc first i-f transformer
T3	4XT-435	Double-tuned 455 kc second i-f transformer
R1	2CR-193	30,000 ohm 1/2 watt carbon resistor
R2	KR-53	50,000 ohm 1/4 watt carbon resistor
R3	3FR-293	140 ohm 1/2 watt wire-wound resistor
R4	KR-57	1 megohm 1/4 watt carbon resistor
R5	4XR-335	Volume control .25 megohm with line switch
R6	4XR-327	15 megohm 1/4 watt carbon resistor
R7	KR-55	250,000 ohm 1/4 watt carbon resistor
R8	KR-56	500,000 ohm 1/4 watt carbon resistor
R9, R10	4XW-112	Resistance line cord with pilot light ballast section R9—150 ohms; R10—40 ohms
R14	4XR-334	2,500 ohm 1 watt carbon resistor
R15	4ZR-325	175 ohm 1 watt metallized resistor
C1, C2	4XC-391A	Two-gang variable condenser
C3	4XC-401	0.00055 mf mica condenser
+C4		Trimmer, part of wave-trap assembly
+C5, C11		Trimmers, part of variable condenser
+C6, C7, C8, C9		Trimmers, part of i-f transformers
C10	BC-12	0.05 mf, 200 volt tubular condenser
C12	4XC-393A	0.00006 mf mica condenser
C13	AC-6	0.1 mf, 200 volt tubular condenser
C14	LC-64	0.05 mf, 400 volt tubular condenser
C15, C18	4XC-394A	0.00022 mf mica condenser
C16	3HC-274	0.002 mf, 600 volt tubular condenser
C17	LC-65	0.02 mf, 400 volt tubular condenser
C19	3FC-336	0.025 mf, 400 volt tubular condenser
C20, C21	4HC-348B	Dual 20 mf, 150 volt dry electrolytic condenser
C23	4XC-404	20 mf, 125 volt dry electrolytic condenser
	4XS-324	4" dynamic speaker (for 211, 212, 217, 235, 237, 238, 239 and 257)
	4PS-303A	6" permanent magnet dynamic speaker (for 240 cabinet)
	4BL-94	Pilot light, 6.3 volt, .25 amp., Mazda No. 44

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COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



30-20 Thomson Ave.
Long Island City
New York

FADA Radio

FADA RADIO & ELECTRIC CO.
LONG ISLAND CITY, N. Y.
MODEL 354
DESIGNED BY: J. H. F. 8-31-37
CHECKED BY: J. H. F. 1/13/38

<p>3576 ANT. COIL</p> <p>A-B = PRI. = 36 Ω C-D = S.W. SEC. = 97 Ω C-D-E = B.C. SEC. = 2.4 Ω</p> <p>PR. L. SEC. = 28 Ω</p>	<p>3566 OSC. COIL</p> <p>A-B = TICKLER = 2 Ω C-D = S.W. SEC. = 2.55 Ω C-D-E = B.C. SEC. = 7 Ω</p> <p>PR. L. SEC. = 28 Ω</p>
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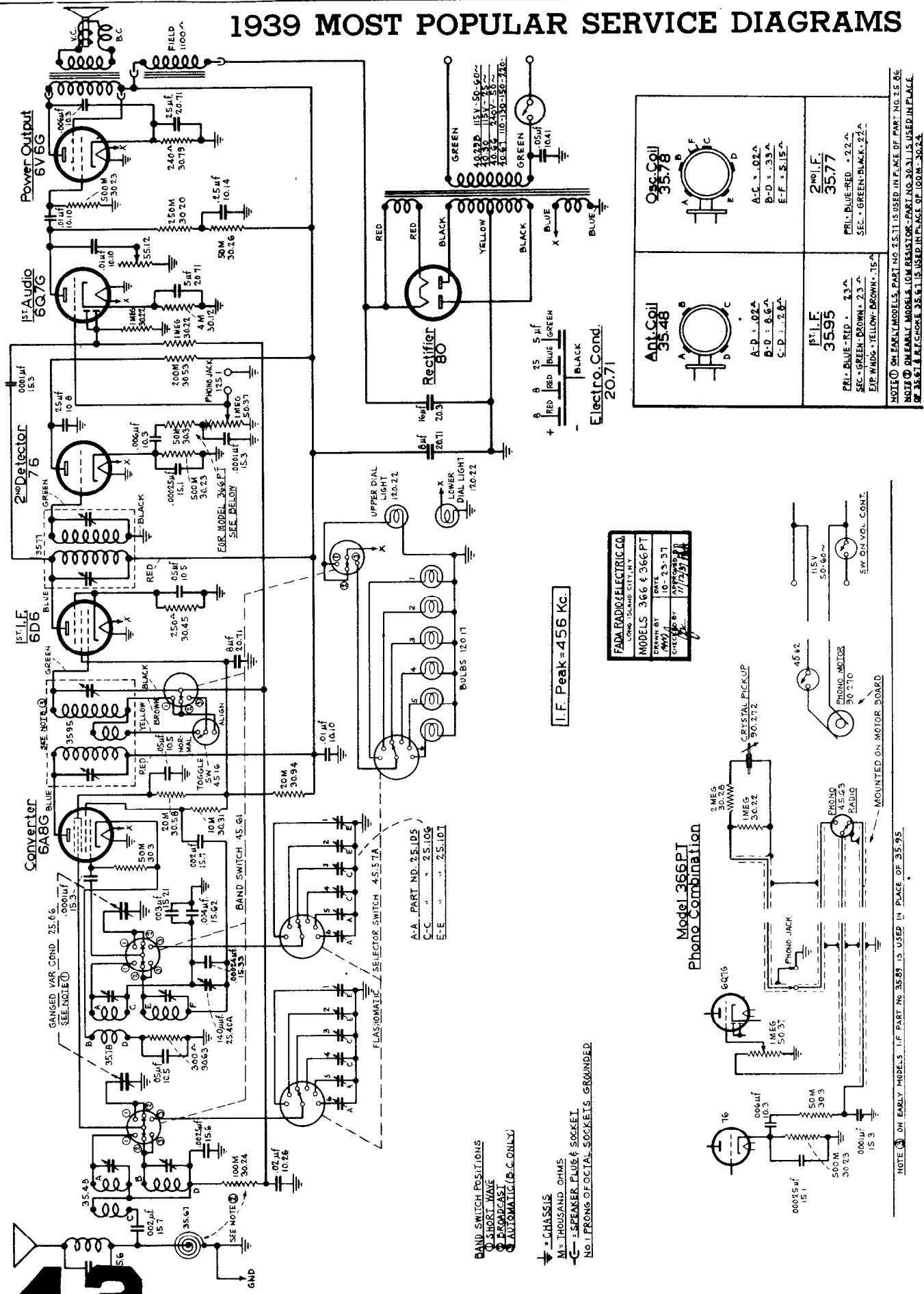
SEE NOTE ⓐ

Note:
= chassis
Band sw. shown in B.C. pos.
M = thousand

I.F. Peak = 456 KC.

1939 MOST POPULAR SERVICE DIAGRAMS

42



FADA RADIO ELECTRIC CO.
LONG ISLAND CITY, N.Y.
MODELS 366 & 366 PT
DRAWN BY: [Signature]
DATE: 10-23-37
CHECKED BY: [Signature]
APPROVED BY: [Signature]

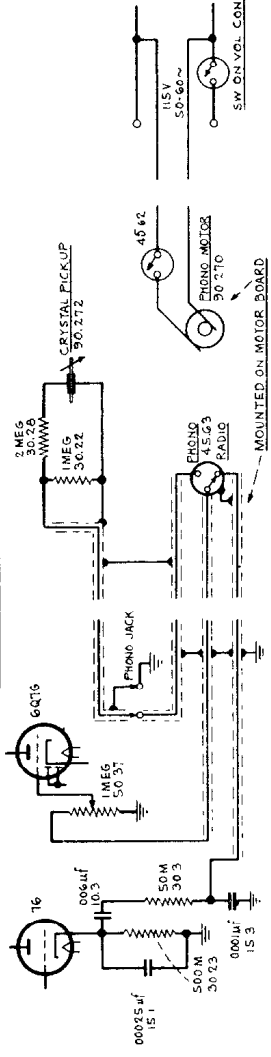
I.F. Peak = 456 Kc.

<p>Q.S.C. Coil 35.78</p> <p>A-C : 0.02μ B-D : .39μ E-F : .15μ</p>	<p>2nd I.F. 35.77</p> <p>PHI. BLUE-RED .22μ SEC. GREEN-BLACK .22μ E.P. WINDG. YELLOW-BROWN .75μ</p>
<p>A.I.F. Coil 35.48</p> <p>A-D : .02μ B-D : .66μ C-D : .28μ</p>	<p>1st I.F. 35.95</p> <p>PHI. BLUE-RED .23μ SEC. GREEN-BROWN .23μ E.P. WINDG. YELLOW-BROWN .75μ</p>

NOTE: ON EARLY MODELS, PART NO. 25.11 IS USED IN PLACE OF PART NO. 25.46.
NOTE: ON EARLY MODELS, I.F. PART NO. 35.87 IS USED IN PLACE OF 35.95.
OR 35.51 & R.F. PHONE 35.61 IS USED IN PLACE OF 100M-30.24.

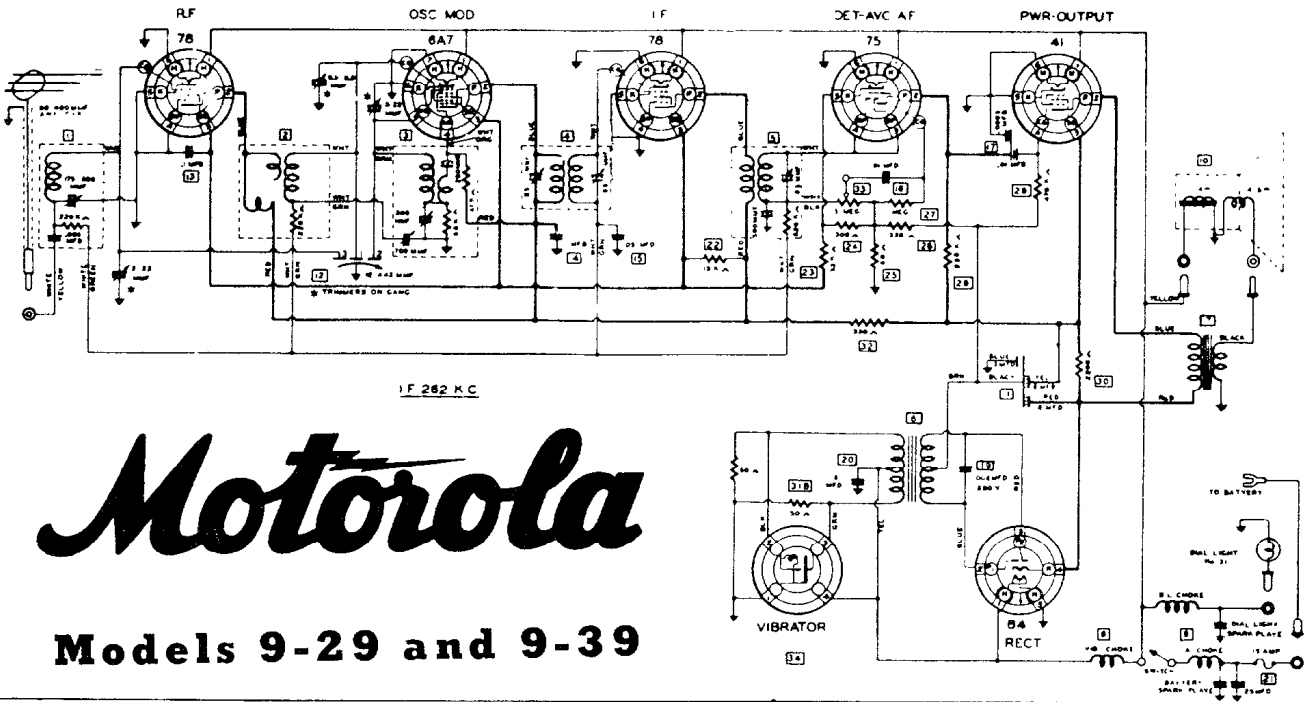
- BAND SWITCH POSITIONS**
- SHORT WAVE
 - BROADCAST
 - AUTOMATIC (B.C. ONLY)
- ⊕ = CHASSIS
M = THOUSAND OHMS
- = SPEAKER PLUS & SOCKET
NO. 1 PRONG OF OCTAL SOCKETS GROUNDED

Model 366 PT Phono Combination



NOTE: ON EARLY MODELS, I.F. PART NO. 35.87 IS USED IN PLACE OF 35.95.

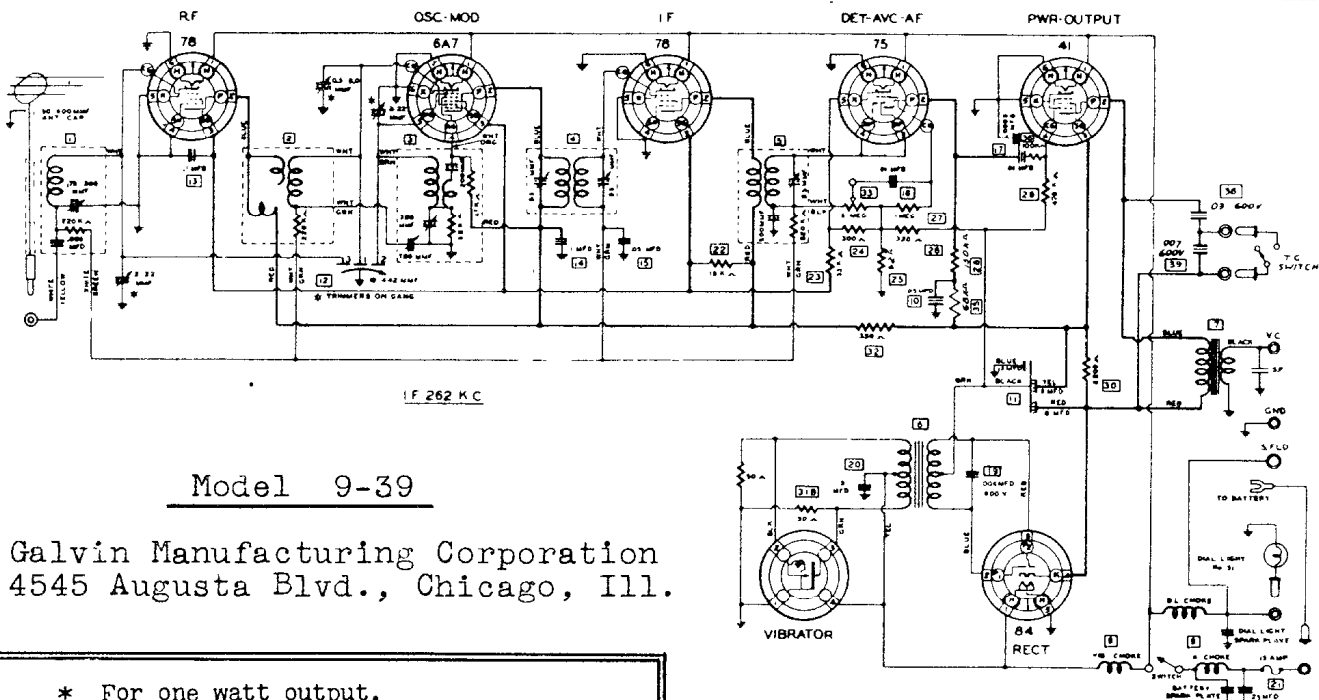
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Motorola

Models 9-29 and 9-39

Average Microvolt Input *	Generator Set at	Generator Feeder Connected to	Dummy Antenna Capacity	Leak Resistance	Output Meter Reading **
.25 Volts	400 Cycles	75 Grid	.1 MF	.5 Meg	2.2 Volts
25,000	262 K.C.	78 Grid (I.F.)	.1 MF	.5 Meg	2.2 Volts
700	262 K.C.	6A7 Grid	.1 MF	.5 Meg	2.2 Volts
800	600 K.C.	6A7 Grid	.1 MF	.5 Meg	2.2 Volts
45	600 K.C.	78 Grid (R.F.)	.1 MF	.5 Meg	2.2 Volts
3	600 K.C.	Ant. Lead	40 MMF	None	2.2 Volts



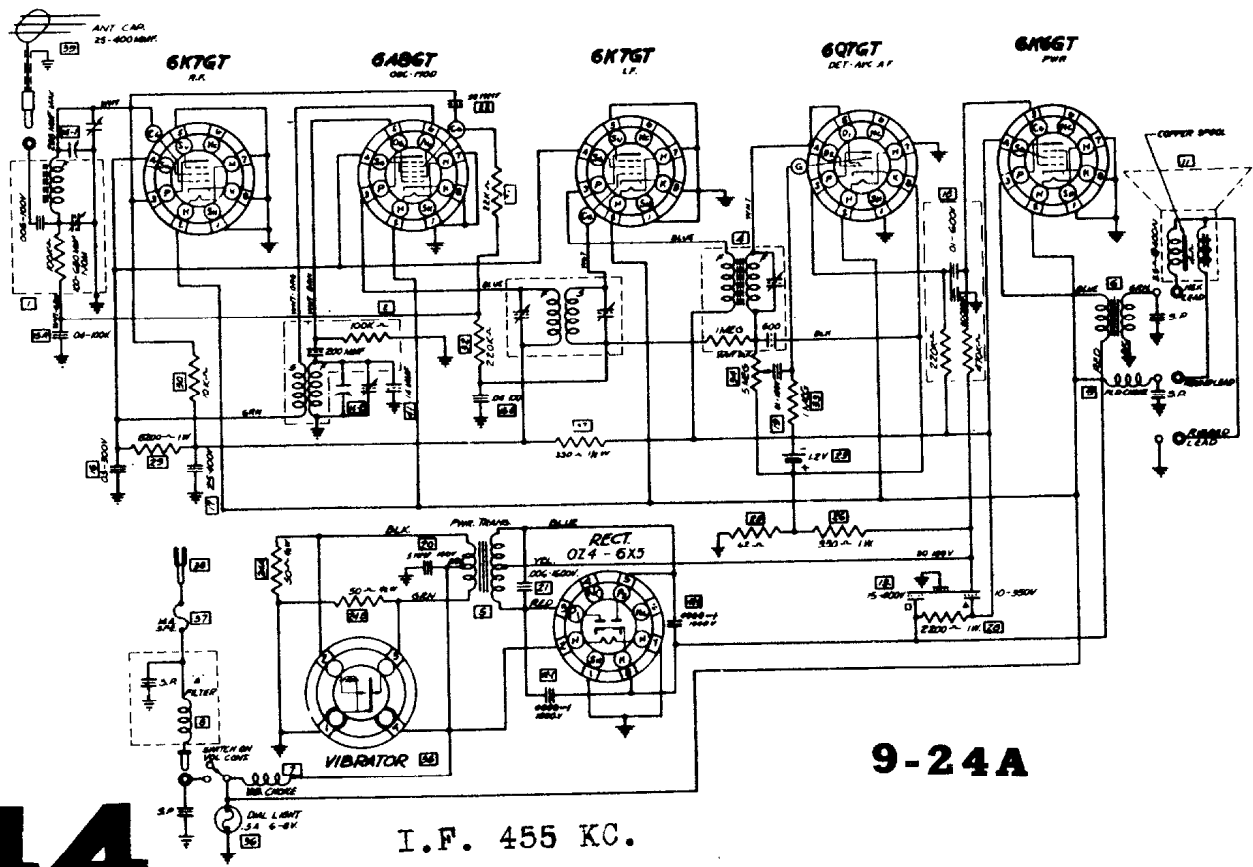
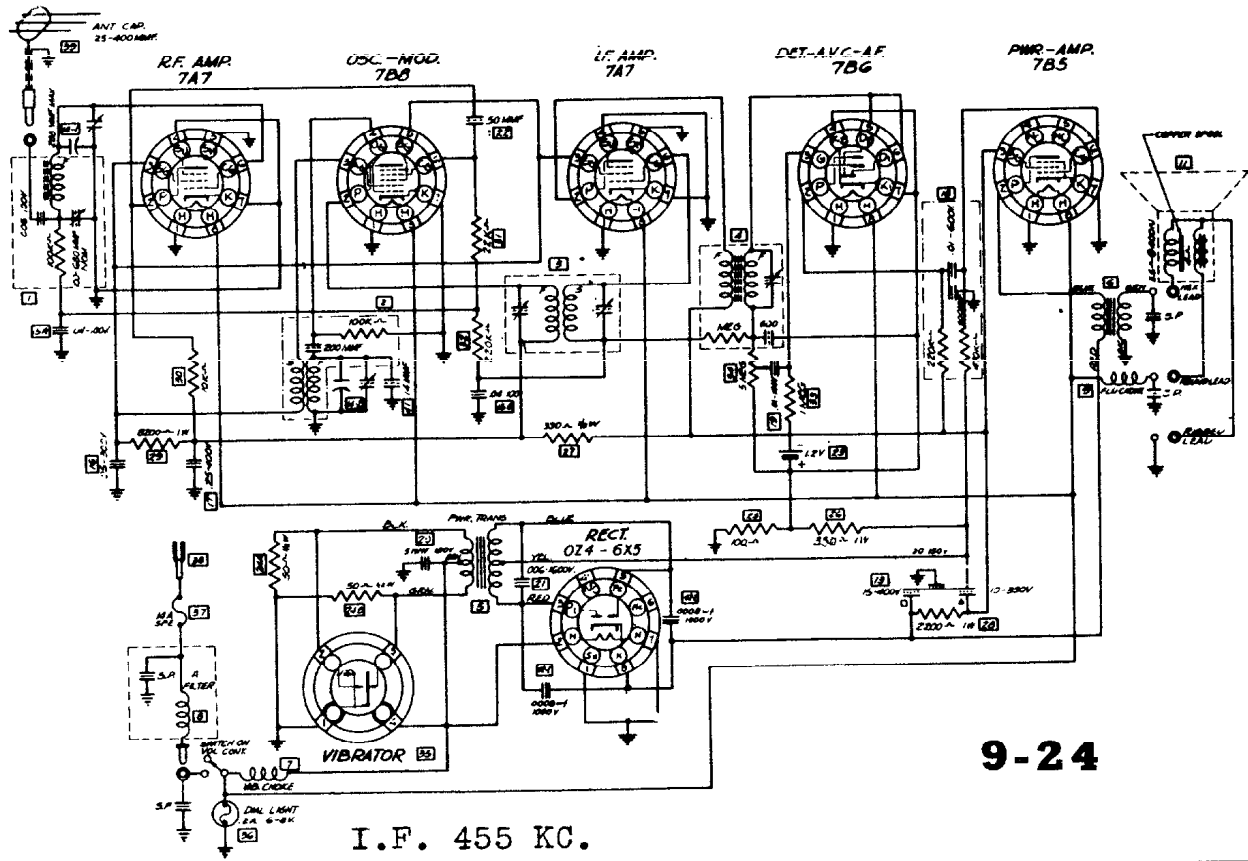
Model 9-39

Galvin Manufacturing Corporation
4545 Augusta Blvd., Chicago, Ill.

- * For one watt output.
- ** Meter connected across voice coil.

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GALVIN MANUFACTURING CORPORATION



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

ALIGNMENT PROCEDURE

Place the radio on the service bench with the front cover removed, but with the speaker and battery connected to it.

Turn the volume control to maximum position and leave it there throughout the alignment, reducing the signal generator output if necessary.

NOTE: Do not adjust the trimmer in the R.F. coil can that is covered with Scotch Tape. The original adjustment, made in the factory, should not be tampered with. (Fig. 1 below, shows all trimmer locations.)

I.F. ALIGNMENT

1. Connect the signal generator to the control grid (Terminal No. 6) of the Osc.-Mod. tube (7B8). Turn the condenser gang completely out of mesh. Connect an output meter across speaker voice coil.

2. Set the signal generator at 262 K.C. and carefully adjust the single trimmer in the Diode coil can to the point showing the highest reading on the output meter.

3. Adjust the two trimmers in the I.F. coil can to the point showing the highest output reading.

4. Repeat the I.F. and Diode adjustment several times for maximum accuracy.

SETTING THE RANGE

1. Connect the signal generator to the con-

trol grid (Terminal No. 6) of the R.F. tube (7A7) using the same .1 MF condenser.

2. Set the signal generator at 1550 K.C. and with the condenser gang completely out of mesh, adjust the 1550 K.C. trimmer in the oscillator coil can to the point showing the highest output reading.

3. Set the signal generator at 535 K.C. Turn the condenser gang completely in mesh and adjust the 600 K.C. trimmer in the Oscillator coil can for the highest output reading.

NOTE: The adjustments above set the range so the receiver will track with the calibrations in the control head.

R.F. AND ANTENNA ALIGNMENT

1. Connect the signal generator to the antenna lead through a 40 MMF condenser and to chassis ground. Set the signal generator at 600 K.C. and turn the condenser gang until the signal is heard. Adjust the 600 K.C. trimmer on the antenna coil can for the maximum output reading.

2. Set the signal generator at 1400 K.C. Turn the condenser gang until the signal is heard. Adjust the 1400 K.C. trimmer in the antenna coil can for maximum output reading.

3. Adjust the 1400 K.C. trimmer in the R.F. coil can for maximum output reading.

4. Recheck steps 1, 2, and 3, for accuracy.

SENSITIVITY AND STAGE GAIN MEASUREMENTS

These stage gain measurements will, if properly used, enable you to localize trouble quickly. They are intended for use with a signal generator that is accurately calibrated in microvolts.

Starting with the I.F., and working back step by step to Osc.-Mod., R.F. and finally to the antenna terminal, the circuit in which the trouble exists will quickly be determined by evidence of low gain, when signal generator attenuation readings are compared to the normal values as shown in the table.

All stage-gain measurements must be made with the volume control set for full volume. The shielded lead from the signal generator is connected to the grid terminal of the tube through a .1 MF condenser, with a 500M ohm resistor connected as a leak resistance between the grid of the tube and the grid lead which has been removed.

When measuring over-all sensitivity at the antenna terminal, use a 40 MMF condenser in place of the .1 MF. It must be remembered that the figures in the table are average and allowance must be made for variations between two sets of the same general type, due to difference of tube characteristics, etc.

Average Microvolt Input *	Generator Set at	Generator Feeder Connected to	Dummy Antenna Capacity	Leak Resistance	Output Meter Reading **
25,000	262 K.C.	Grid(I.F.)	.1 MF	.5 Meg.	1.74 Volts
700	262 K.C.	Grid(Mod.)	.1 MF	.5 Meg	1.74 Volts
800	600 K.C.	Grid(Mod.)	.1 MF	.5 Meg	1.74 Volts
45	600 K.C.	Grid(R.F.)	.1 MF	.5 Meg	1.74 Volts
2	600 K.C.	Ant. Lead	40 MMF	None	1.74 Volts

* For one watt output.

** Meter connected across voice coil.

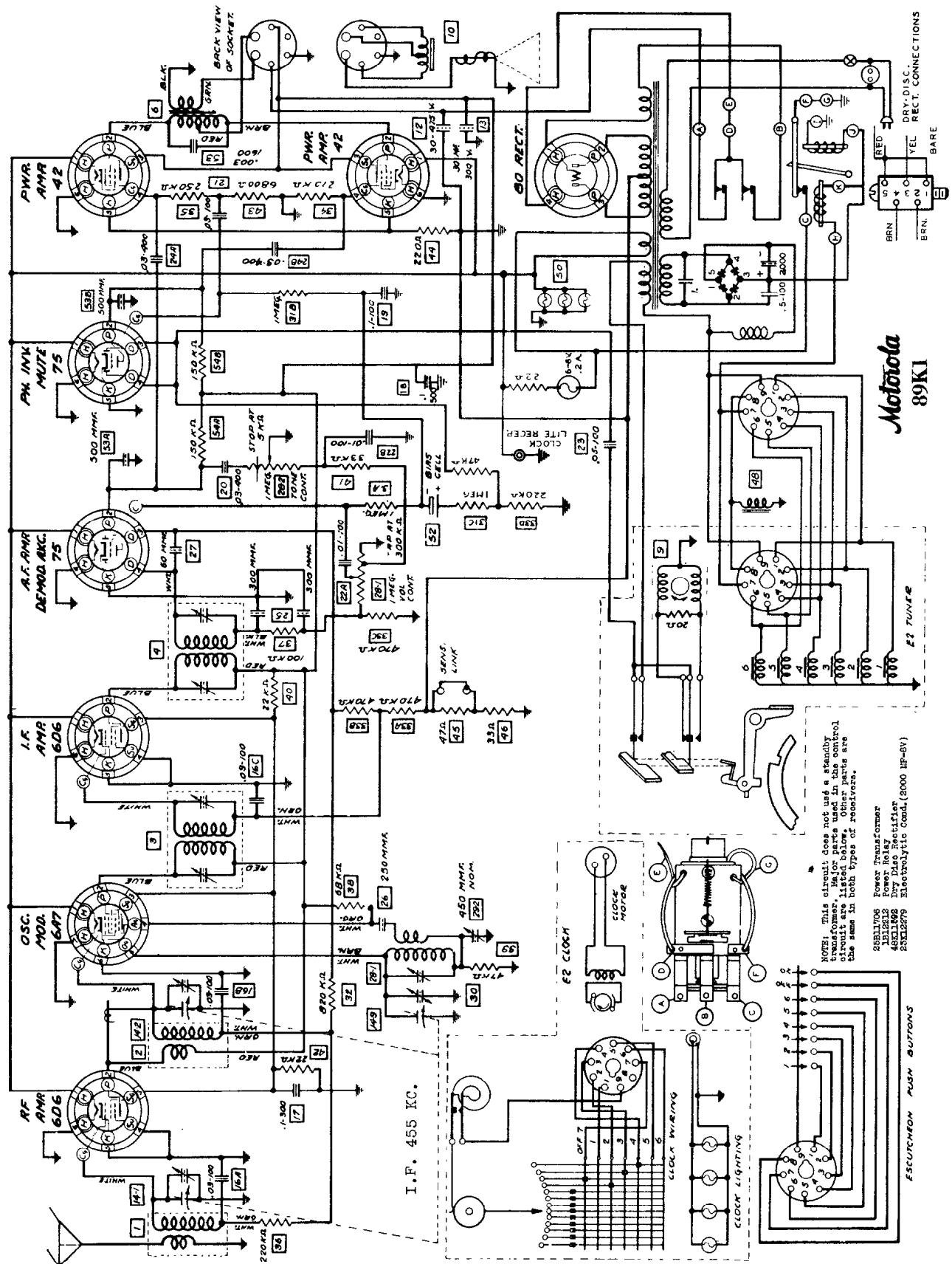
V.C. impedance - 3 ohms at 400 cycles.

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Model 9-49

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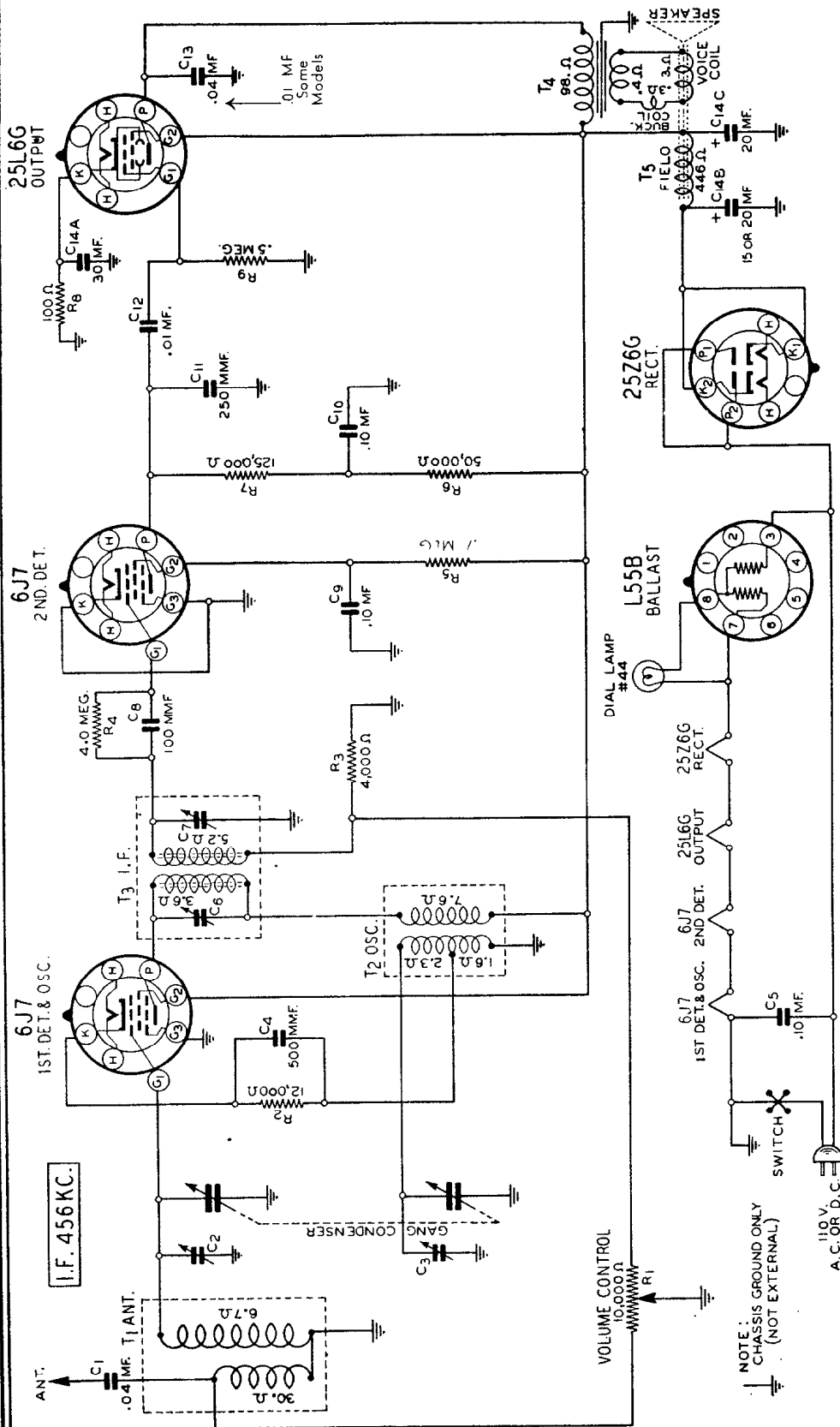
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Gamble-Skogmo, Inc.

SERIES A 11



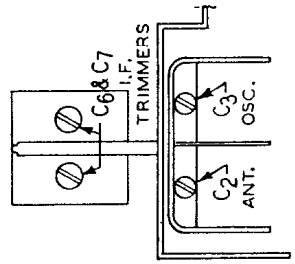
ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments. Allow Chassis and Signal Generator to "Heat Up" for Several Minutes.

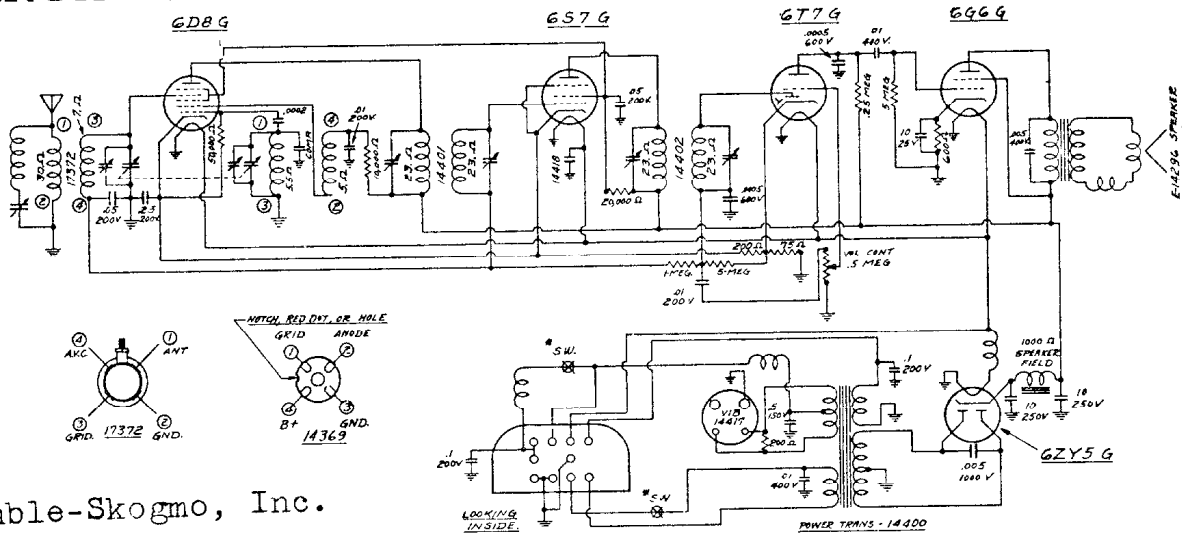
SIGNAL GENERATOR FREQUENCY SETTING	CONNECTION AT RADIO	DUMMY ANTENNA SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM (See Illustration)
456 KC	Grid of 1st Det.	.1 mf.	Turn rotor to full open	I.F. (C6) & (C7)
1730 KC	Antenna Lead	200 mmf.	Turn rotor to full open	Oscillator (C3)
1500 KC	Antenna Lead	200 mmf.	Turn rotor to max. output	Antenna (C2)

The following equipment is required for aligning:
 Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.
 Output Indicating Meter; Non-Metallic Screwdriver.
 Dummy Antennas—.1 mf. and 200 mmf.

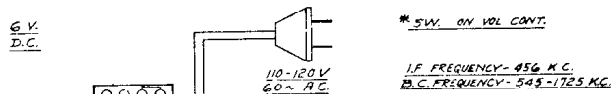
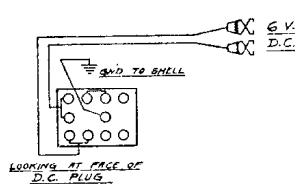
NOTE—To obtain dial scale calibration, tune in an 800 KC signal. The pointer should be at the 800 KC mark on the dial. If it is not, loosen the pointer screw, set the pointer at the 800 KC mark and retighten the pointer screw.



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

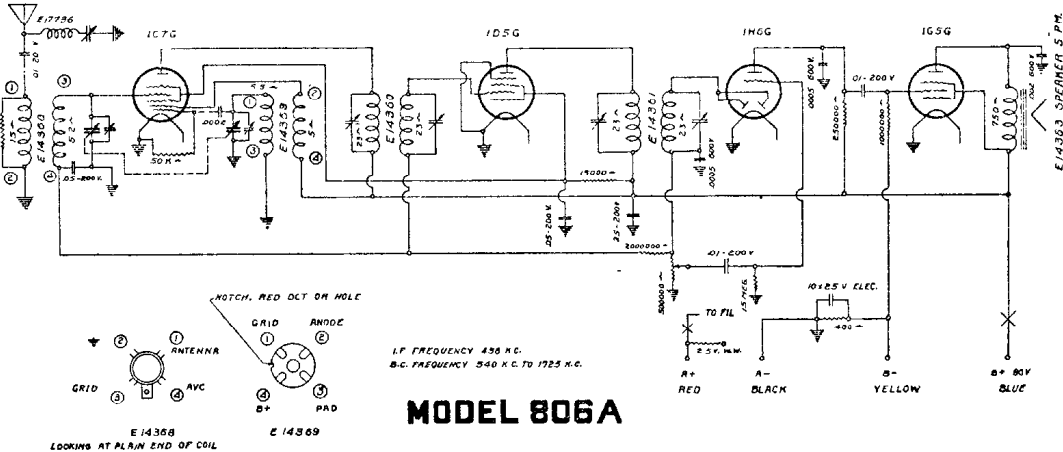


Gamble-Skogmo, Inc.



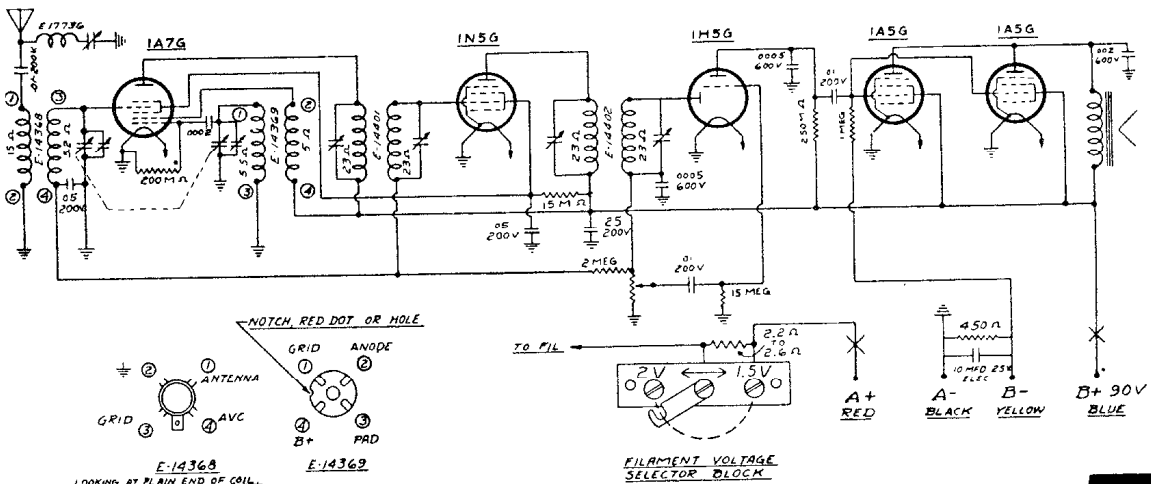
MODEL 803

Gamble-Skogmo, Inc.



MODEL 806A

LOOKING AT PLAIN END OF COIL



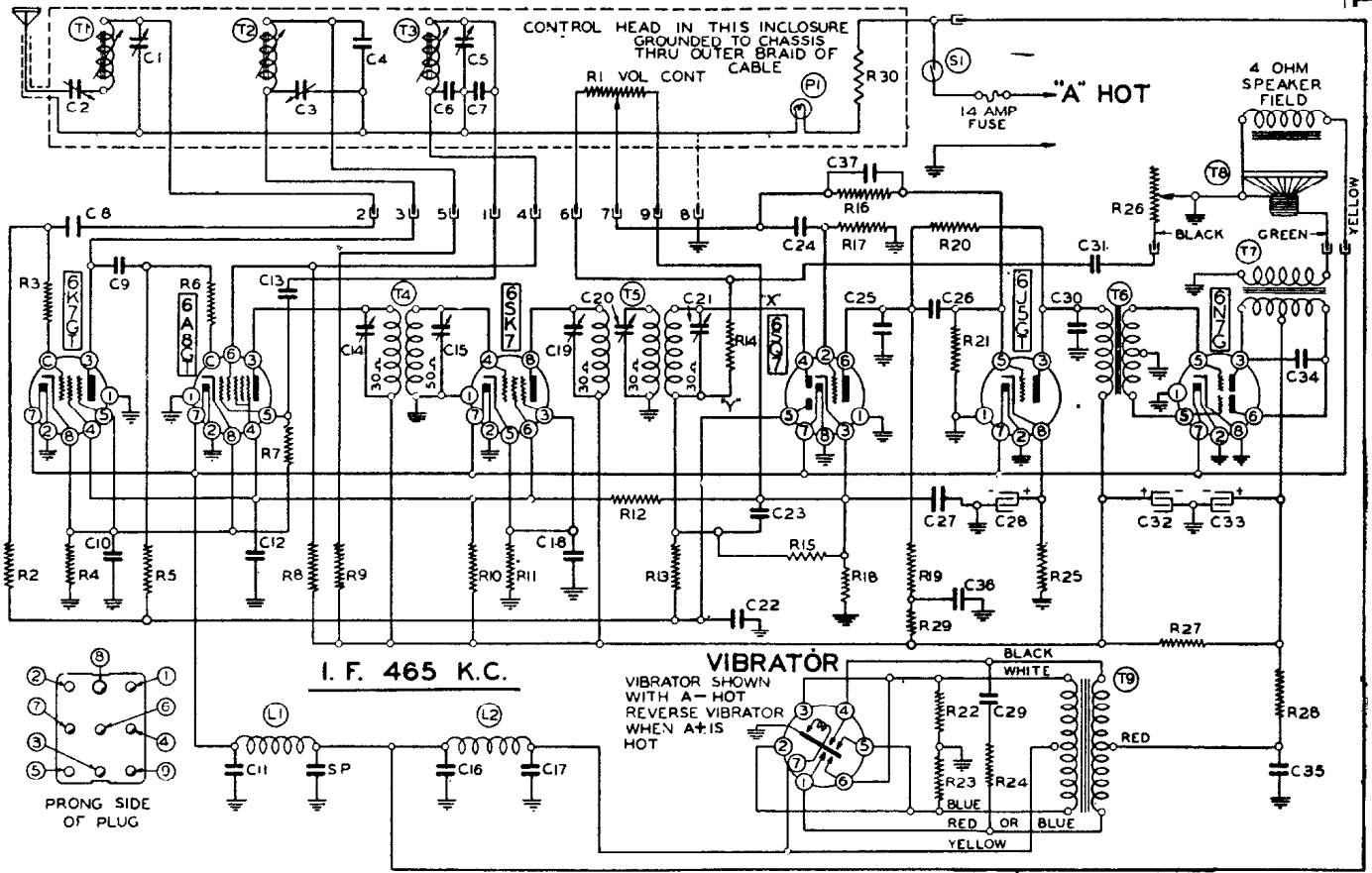
MODEL 813

I.F. - 456 K.C.
B.C. FREQUENCY - 540 KC TO 1725 K.C.

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



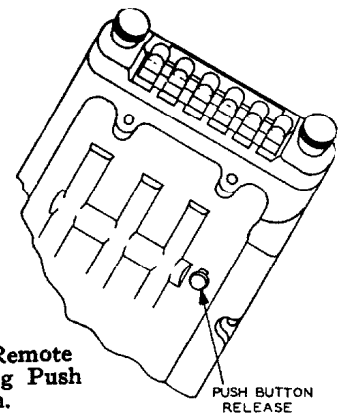
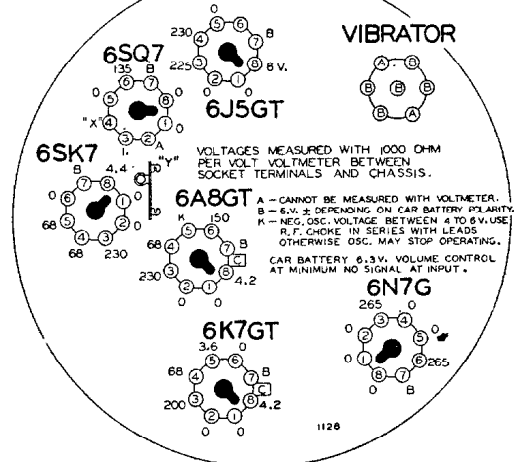
MODEL 678

R1 101161	1.2 megohm volume	C11 1296	.002 Mica
R2 13019	1 megohm— $\frac{1}{2}$ w.	C12 11625	.25 x 400 v.
R3 130275	500 ohm— $\frac{1}{2}$ w.	C13 12912	.00025 Mica
R4 13079	400 ohm— $\frac{1}{2}$ w.	C14	Plate Trimmer on Input I.F.
R5 13019	1 megohm— $\frac{1}{2}$ w.	C15	Grid Trimmer on Input I.F.
R6 130275	500 ohm— $\frac{1}{2}$ w.	C16 10031	.5 x 120 v.
R7 13012	50M ohm— $\frac{1}{2}$ w.	C17 10031	.5 x 120 v.
R8 13012	50M ohm— $\frac{1}{2}$ w.	C18 1009	.05 x 200 v.
R9 13021	20M ohm— $\frac{1}{2}$ w.	C19	Plate Trimmer on Output I.F.
R10 130196	30M ohm—1 watt	C20	Tertiary Trimmer on Output I.F.
R11 130235	1500 ohm— $\frac{1}{2}$ w.	C21	Grid Trimmer on Output I.F.
R12 1307	40M ohm— $\frac{1}{2}$ w.	C22 11625	.05 x 200 v.
R13 13019	1 megohm— $\frac{1}{2}$ w.	C23 1295	.0001 Mica
R14 13020	100M ohm— $\frac{1}{2}$ w.	C24 10011	.01 x 400 v.
R15 130118	600M ohm— $\frac{1}{2}$ w.	C25 1295	.0001 Mica
R16 130257	5 megohm— $\frac{1}{2}$ w.	C26 10011	.01 x 400 v.
R17 13019	1 megohm— $\frac{1}{2}$ w.	C27 10026	.02 x 400 v.
R18 130101	600 ohm— $\frac{1}{2}$ w.	C28 11988	20 mfd.—25 w. v. lytic
R19 13011	250M ohm— $\frac{1}{2}$ w.	C29 100101	.0055 x 1600
R20 13038	2 megohm— $\frac{1}{2}$ w.	C30 129114	.0003 Mica
R21 1303	500M ohm— $\frac{1}{2}$ w.	C31 10047	.002 x 600 v.
R22 130269	100 ohm— $\frac{1}{2}$ w.	C32 11988	15 mfd.—450 w. v. lytic
R23 130269	100 ohm— $\frac{1}{2}$ w.	C33 11988	15 mfd.—450 w. v. lytic
R24 13071	4M ohm— $\frac{1}{2}$ w.	C34 100103	.004 x 800 v.
R25 13092	1M ohm— $\frac{1}{2}$ w.	C35 1001	.1 x 400 volt
R26 101162	1 megohm tone control	C36 10013	.05 x 400 v.
R27 130199	1500 ohm Resistor—1 w	C37 12967	.00004 Mica
R28 130231	75 ohm— $\frac{1}{2}$ w.		
R29 13020	100M ohm— $\frac{1}{2}$ w.		
R30 130299	10 ohm— $\frac{1}{2}$ w.		

CONDENSERS	
C1 12483	Antenna Shunt Trimmer
C2 12481	Antenna Series Trimmer
C3 12480	R. F. Shunt Trimmer
C4 100102	.15 x 400 v.
C5 12480	Oscillator Shunt Trimmer
C6 129137	.0005 Mica
C7 129136	.00017 Mica
C8 12997	.00005 Ceramicon—5%
C9 1292	.0005 Mica
C10 11625	.05 x 200 v.

PARTS	
T1 111118	P. B. Antenna Coil Assembly
T2 10949	P. B. R. F. Coil Assembly
T3 110109	P. B. Oscillator Coil
T4 108120B	Input I.F. Coil—465 kc.
T5 108115B	Output I.F. Coil—465 kc.
T6 10584	Audio Driver Transformer
T7 10583	Output Transformer
T8 114155	8" Dynamic Speaker
T9 104158	Power Transformer
L1 10566	"A" Choke
L2 10519	"A" Choke
P1 10797	6-8 v. Pilot Light T51
S1	Off-on Switch on volume control

BOTTOM VIEW OF CHASSIS



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Bottom View of Remote
Gamble-Skogmo, Inc. Tuner Unit Showing Push
Button Release Pin.

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

General Electric

MODELS GD-41 AND GD-41-U

ALIGNMENT

Connect the high side of the signal generator through a 250 mmf. condenser to the antenna lead. The low side of the signal generator output should be connected to the receiver chassis through a .05 mfd. condenser. Connect a suitable output meter across the voice coil leads; then proceed as follows:

Electrical Power Output

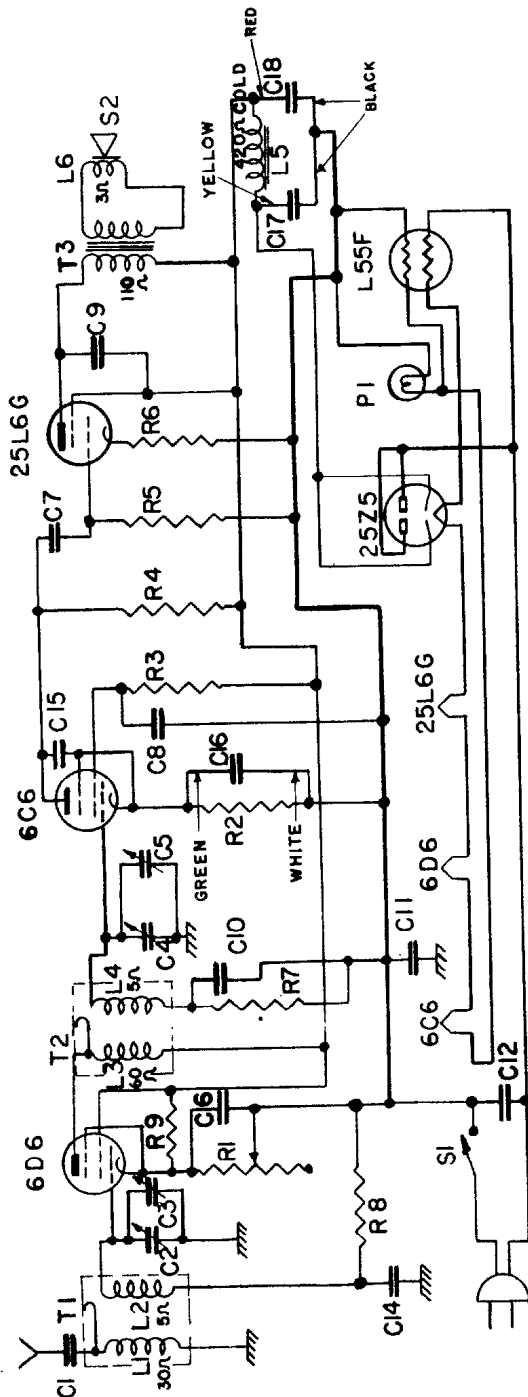
Undistorted.....1.0 watt
Maximum.....2.0 watts

Loud-speaker—Electrodynamic

Outside Cone Diameter.....5 inches
Voice Coil Impedance.....3.5 ohms at 400 cycles
Field Coil Resistance.....420 ohms (cold)

1. With gang condenser plates completely closed, the dial pointer should coincide with the horizontal dial line.
2. Tune receiver to the 1500 kc. point on the dial; then align trimmers (C-3 and C-5) on the gang condenser at 1500 kc. for a maximum output meter reading.

Precaution—One side of the power supply is connected to the chassis—Do not connect chassis to any external ground.



Symbol	Description	Symbol	Description	Symbol	Description
C-1	Capacitor—.01 Mfd. (GD-41)	C-11	Capacitor—Paper .1 Mfd.	R-5	Resistor—1 Megohm
C-2	Capacitor—Paper .001 Mfd. (GD-41-U)	C-12	Capacitor—Paper .05 Mfd.	R-6	Resistor—150 Ohms
C-3	Capacitor—Variable	C-13	Capacitor—Paper .01 Mfd.	R-7	Resistor— $\frac{1}{2}$ Megohm
C-4	Capacitor—Trimmer on gang	C-14	Capacitor—Mica 100 Mmf.	R-8	Resistor— $\frac{1}{2}$ Megohm
C-5	Capacitor—Variable	C-15	Capacitor—Elect. 5 Mfd. 25 V.	T-1	Antenna Transformer
C-6	Capacitor—Trimmer on gang	C-16	Capacitor—Elect. 16 Mfd. 150 V.	T-2	R.F. Transformer
C-7	Capacitor—Paper .05 Mfd.	C-17	Capacitor—Elect. 10 Mfd. 150 V.	T-3	Output Transformer (on speaker)
C-8	Capacitor—Paper .01 Mfd.	R-1	Resistor—25,000 Ohms Volume Control	R-9	Resistor—50,000 Ohms
C-9	Capacitor—Paper .02 Mfd.	R-2	Resistor—35,000 Ohms	S-1	Power Switch (Comb. with R-1)
C-10	Capacitor—Paper .01 Mfd.	R-3	Resistor—3 Megohms	S-2	Loud-speaker—5-inch
		R-4	Resistor—1 Megohm		

Note—The schematic shown is for the Model GD-41-U. Model GD-41-A omits items C-10, C-11, C-14, R-7, R-8, R-9; also X-X bus is grounded to chassis, coils L-2 and L-4 return to chassis, C-13 to chassis ground instead of to 6C6 cathode, low end of volume control is connected between C-1 and L-1.

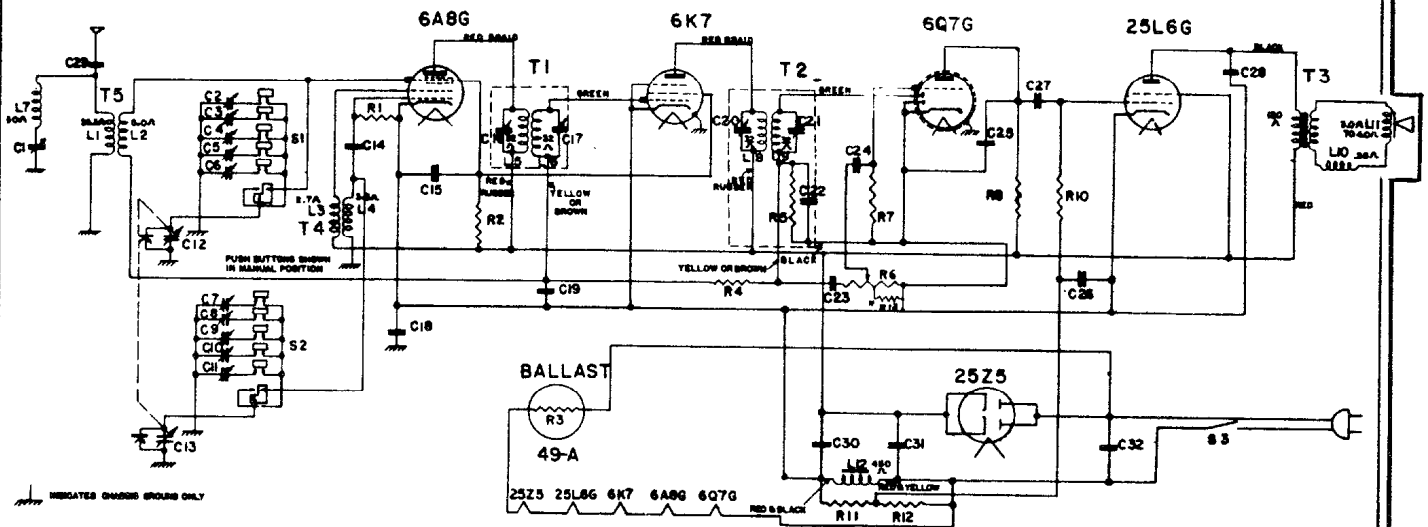
Tube No.	Plate to -B Volts D.C.		Screen to -B Volts D.C.		Cathode to -B Volts D.C.		Cathode Current M.A. D-C		Heater Volts	
	AC	DC	AC	DC	AC	DC	AC	DC	AC	DC
6D6	113	90	113	90	9.0	7.4	0.7	0.6	6.35	6.06
6C6	20*	16.4*	45	37	3.1	2.5	0.1	0.08	6.35	6.06
25L6G	108	88	113	90	7.6	6.2	40.5	33.1	25.0	23.5
25Z5	.....	.....	.....	.....	133	108	43.0	35.0	26.0	24.0

Line voltage 115 AC or DC—No signal input—1000 ohms per volt meter.
Dial pointer at 540 kc. Volume control at minimum.
* Measured on 250 volt scale.



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

General Electric Model GD-60



* Used on early production receivers only. For replacement purposes, use specified volume control and omit R-13

Symbol	Description	Symbol	Description	Symbol	Description
C-1	Wave Trap Trimmer, 45-145 Mmf.	C-20	Trimmer Capacitor, 50-135 Mmf.	R-7	Carbon Resistor, 15 Megohms
C-2	Selector Trimmer, 100-510 Mmf.	C-21	Trimmer Capacitor, 50-135 Mmf.	R-8	Carbon Resistor, 220,000 Ohms
C-3	Selector Trimmer, 75-410 Mmf.	C-22	Mica Capacitor, 470 Mmf.	R-10	Carbon Resistor, 470,000 Ohms
C-4	Selector Trimmer, 50-300 Mmf.	C-23	Paper Capacitor, .002 Mfd.	R-11	Carbon Resistor, 270,000 Ohms
C-5	Selector Trimmer, 50-300 Mmf.	C-24	Paper Capacitor, .002 Mfd.	R-12	Carbon Resistor, 68,000 Ohms
C-6	Selector Trimmer, 20-200 Mmf.	C-25	Mica Capacitor, 330 Mmf.	R-13	Carbon Resistor, 68,000 Ohms
C-7	Selector Trimmer, 50-300 Mmf.	C-26	Paper Capacitor, .15 Mfd.	S-1	Antenna Switch
C-8	Selector Trimmer, 50-300 Mmf.	C-27	Paper Capacitor, .005 Mfd.	S-2	Oscillator Switch
C-9	Selector Trimmer, 20-200 Mmf.	C-28	Paper Capacitor, .93 Mfd.	S-3	Power Switch combined with R-6
C-10	Selector Trimmer, 20-200 Mmf.	C-29	Paper Capacitor, .001 Mfd.	T-1	1st I.F. Transformer
C-11	Selector Trimmer, 10-100 Mmf.	C-30	Dry Electrolytic Cap., 12 Mfd.	T-2	2nd I.F. Transformer
C-12	Tuning Condenser Ant.	C-31	Dry Electrolytic Cap., 20 Mfd.	T-3	Output Transformer
C-13	Tuning Condenser Osc.	C-32	Paper Capacitor, .02 Mfd.	T-4	Oscillator Transformer
C-14	Mica Capacitor, 47 Mmf.	R-1	Carbon Resistor, 47,000 Ohms	T-5	Antenna Transformer
C-15	Paper Capacitor, .25 Mfd.	R-2	Carbon Resistor, 10,000 Ohms	L-10	Hum Buck Coil
C-16	Trimmer Capacitor, 50-135 Mmf.	R-3	Ballast Tube 49-A, 170 Ohms	L-11	Voice Coil
C-17	Trimmer Capacitor, 50-135 Mmf.	R-4	Carbon Resistor, 2.2 Megohms	L-12	Field Coil—450 Ohms (cold)
C-18	Paper Capacitor, .25 Mfd.	R-5	Carbon Resistor, 470,000 Ohms		
C-19	Paper Capacitor, 0.5 Mfd.	R-6	Volume Control, 2 Megohms		

NOTE—In some receivers a 150,000 to 390,000 ohm resistor is connected across C-18.

GENERAL INFORMATION

Model GD-60 is a compact, six-tube AC-DC superheterodyne receiver, employing six General Electric Pre-tested Tubes as described above, in a superheterodyne circuit. It incorporates a simplified trimmer tuned "Touch-Tuning" system, allowing a set up of five stations for automatic tuning. Other features of design include I.F. wave trap, automatic volume control and an improved dustproof speaker.

I.F. Alignment

Connect an output meter across the voice coil. Set the volume control for maximum.

Set test oscillator to 455 and apply signal to the control grid of the 6A8G tube through a .05 mfd. capacitor. Do not remove the grid lead from the 6A8G and keep the test oscillator output as low as possible to give a readable output. Adjust all four I.F. trimmers for maximum output.

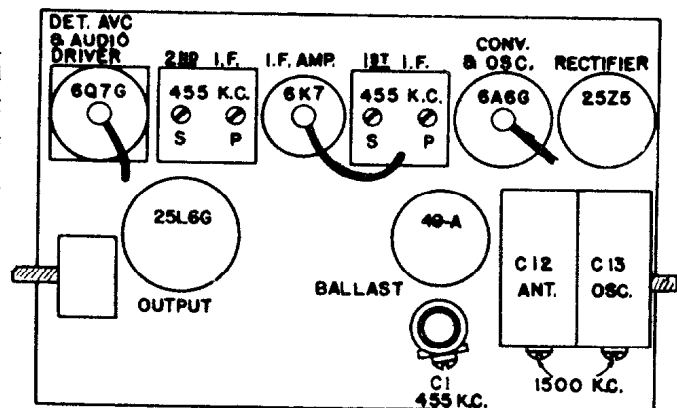
Wave Trap Alignment

Leave the test oscillator set to 455 K.C. and connect one output lead to the receiver chassis and the other through a 250 mmf. capacitor in series with 200 ohms to the receiver antenna lead. Adjust (C-1) for minimum output.

R.F. Alignment

Use the same dummy antenna (250 mmf. and 200 ohms) with 1500 K.C. input, adjust the oscillator trimmer (C-13) and antenna trimmer (C-12) for a maximum output.

Precaution—One side of the power supply is connected to the chassis through a .25 mfd. capacitor. If signal generator is AC operated, connect a .05 mfd. capacitor in the ground side before connecting it to the receiver chassis.



Tuning Frequency Range..... 540-1750 K.C.

Intermediate Frequency..... 455 K.C.

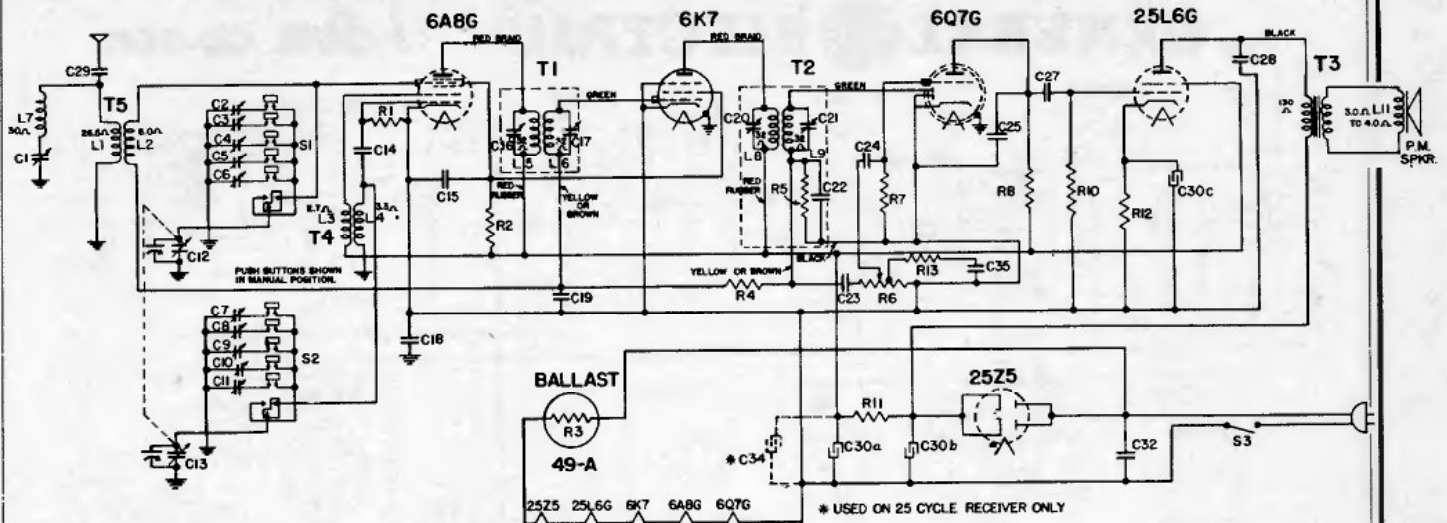
Electrical Power Output (120—line volts)

	AC	DC
Undistorted.....	1.2	1.0
Maximum.....	2.0	1.7

Loudspeaker—Electrodynamic

Outside Cone Diameter..... 5-inch
 Voice Coil Impedance..... 3.5 ohms at 400 cycles
 Field Coil Resistance..... 450 ohms (cold)

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Set test oscillator to 455 and apply signal to the control grid of the 6A8G tube through a .05 mfd. capacitor. Do not remove the grid lead from the 6A8G. Keep the test oscillator output as low as possible to give a readable output. Adjust all four I.F. trimmers for maximum output.

Wave Trap Alignment

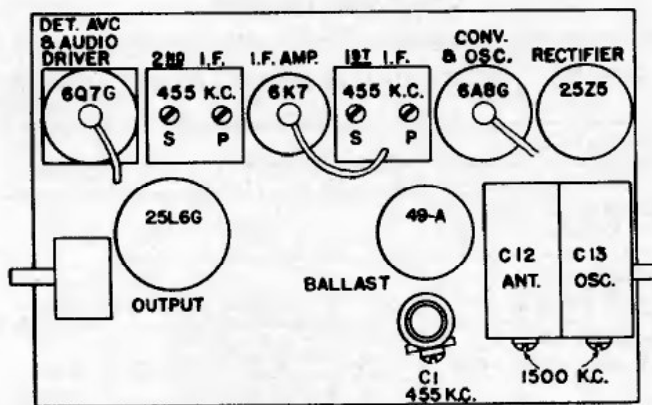
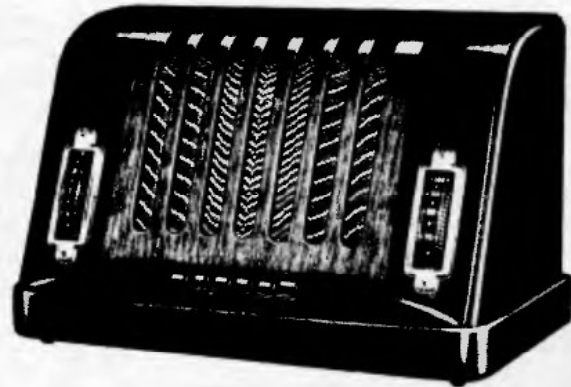
Leave the test oscillator set to 455 K.C. and connect one output lead to the receiver chassis and the other through a 250 mmf. capacitor in series with 200 ohms to the receiver antenna lead. Adjust (C-1) for minimum output.

R.F. Alignment

Use the same dummy antenna (250 mmf. and 200 ohms) with 1500 K.C. input, adjust the oscillator trimmer (C-13) and antenna trimmer (C-12) for a maximum output.

Precaution—One side of the power supply is connected to the chassis through a .25 mfd. capacitor. If signal generator is AC operated, connect a .05 mfd. capacitor in the ground side before connecting it to the receiver chassis.

General Electric MODEL GD-63



VOLTAGE CHART

Tube No.	6A8G	6K7	6Q7G	25L6G	25Z5
Plate to -B volts	112	112	55*	130	..
Screen to -B volts	75	75	..	115	..
Cathode to -B volts	0	0	0	7.5	136
Cathode Current MA	6.6	1.4	0.5	40	50
Filament Volts	6.0	6.0	6.1	24.5	24.0

Line Voltage—120 AC. No signal input

* Measured on 250-volt scale.

On DC, voltages are about 15 per cent lower.

Symbol	Description
C1	Wave trap trimmer
C2-C6	Antenna trimmer strip
C7-C11	Oscillator trimmer strip
C12, C13	Tuning condenser
C14	47 mmf., mica capacitor
C15	25 mfd., paper capacitor
C18	25 mfd., paper capacitor
C19	.05 mfd., paper capacitor
C22	470 mmf., mica capacitor
C23, 24	.002 mfd., paper capacitor
C25	330 mmf., mica capacitor
C27	.005 mfd., paper capacitor
C28	.01 mfd., paper capacitor
C29	.001 mfd., paper capacitor
C30a	20 mfd., dry electrolytic
C30b	40 mfd., dry electrolytic
C30c	20 mfd., dry electrolytic
C32	.02 mfd., molded capacitor
C34	15 mfd., dry electrolytic
C35	.005 mfd., paper capacitor
R1	47,000 ohm, carbon resistor
R2	10,000 ohm, carbon resistor
R3	Ballast resistance, 49A
R4	2.2 megohm, carbon resistor
R5	470,000 ohm, carbon resistor
R6	2.2 megohm, volume control
R7	15.0 megohm, carbon resistor
R8	220,000 ohm, carbon resistor
R10	1.0 megohm, carbon resistor
R11	2200 ohm, carbon resistor
R12	180 ohm, carbon resistor
R13	68,000 ohm, carbon resistor
T1	1st I.F. transformer
T2	2nd I.F. transformer
T3	Output transformer*
T4	Osc. transformer
T5	Antenna transformer

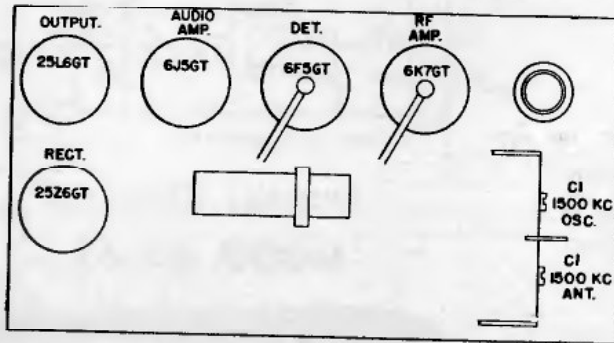
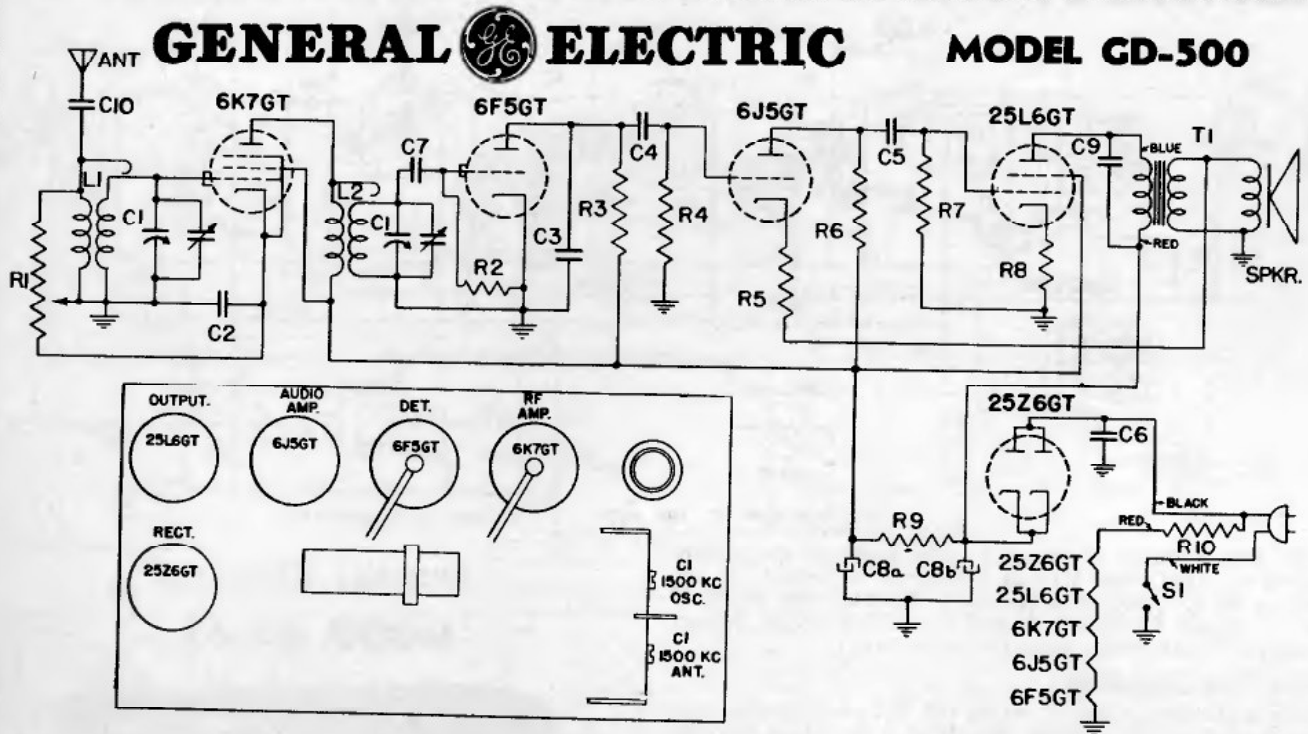
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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

GENERAL ELECTRIC

MODEL GD-500



Symbol	Description	Symbol	Description	Symbol	Description
C-1	Tuning Condenser	C-9	.02 mfd., Paper Capacitor	R-7	470,000 ohm, Carbon Resistor
C-2	.05 mfd., Paper Capacitor	C-10	.002 mfd., Paper Capacitor	R-8	150 ohm, Carbon Resistor
C-3	.001 mfd., Paper Capacitor	R-1	30,000 ohm, Volume Control	R-9	4,700 ohm, Carbon Resistor
C-4, -5	.005 mfd., Paper Capacitor	R-2	15 megohm, Carbon Resistor	R-10	162 ohm, Power Cord Resistor
C-6, -7	.01 mfd., Paper Capacitor	R-3, -4	470,000 ohm, Carbon Resistor	L-1	Antenna Coil
C-8a	15 mfd., Dry Electrolytic	R-5	3,300 ohm, Carbon Resistor	L-2	RF Coil
C-8b	30 mfd., Dry Electrolytic	R-6	100,000 ohm, Carbon Resistor	T-1	Output Transformer

VOLTAGE CHART

Tube No.	6K7GT	6J5GT	6F5GT	25L6GT	25Z6GT
Plate to -B Volts	88	30 *	35 *	132	120. AC
Screen to -B Volts	88	...	....	88	....
Cathode to -B Volts	0	1.3	0	5.5	140
Filament Volts	6.4	6.3	6.2	25.0	25.0

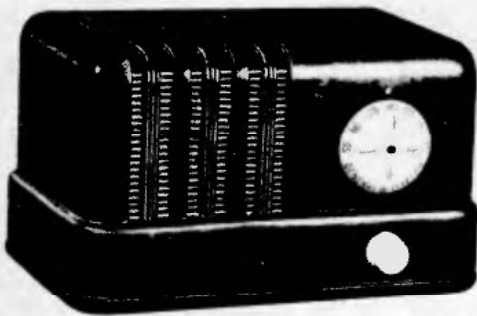
Voltage measured when volume control is set to maximum.
Line Voltage—120 AC. No signal input.
* Measured on 500-volt scale.
On DC, voltages should read approximately 10% lower.

ALIGNMENT

Connect the high side of the signal generator through a 250 mmf. condenser to the antenna lead. The low side of the signal generator output should be connected to the receiver chassis through a .05 mfd. condenser. Connect a suitable output meter across the voice coil leads; then proceed as follows:

1. With gang condenser plates completely closed, the tuning mark should be over the last mark on the dial.
2. Tune receiver to the 1500 KC point on the dial; then align trimmers on the gang condenser at 1500 KC for a maximum output meter reading.

Precaution—One side of the power supply is connected to the chassis. Do not connect chassis to any external ground.



Electrical Power Output

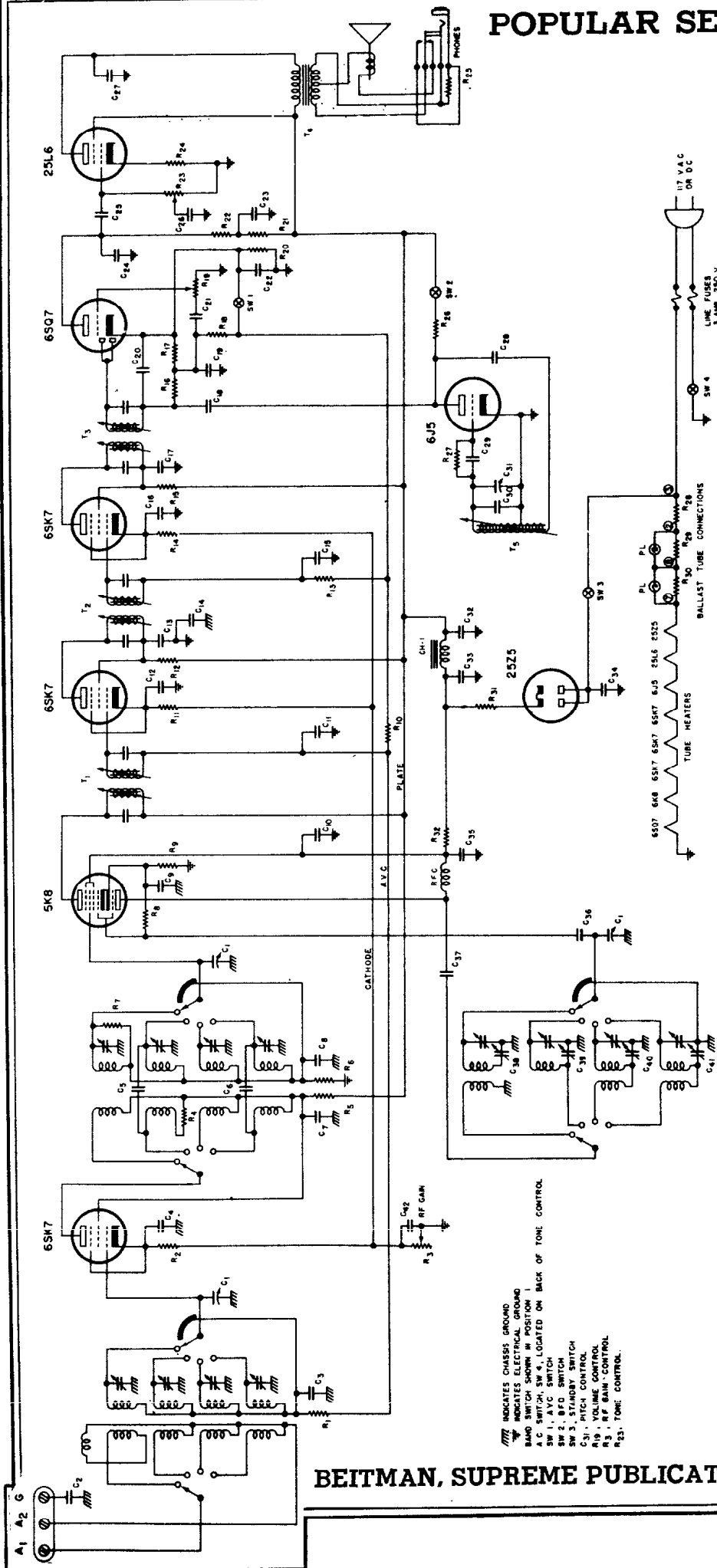
Undistorted.....1.4 watts
Maximum.....2.0 watts

Loudspeaker—Permanent Magnet

Outside Cone Diameter.....4½ inches
Voice Coil Impedance (400 cycles).....3.5 ohms

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INDICATES CHASSIS GROUND
 ALL OTHERS ARE TO BE CONNECTED TO
 COMMON GROUND POINT SHOWN
 A.C. SWITCH SW 4, LOCATED ON BACK OF TONE CONTROL
 SW 1, AVC SWITCH
 SW 2, BFO SWITCH
 SW 3, STANDBY SWITCH
 C 31, PITCH CONTROL
 R 19, VOLUME CONTROL
 R 3, R.F. GAIN CONTROL
 R 33, TONE CONTROL

BEITMAN, SUPREME PUBLICATIONS

MODEL S-22-R
the hallicrafters co.
 SETTING OF CONTROLS PRIOR TO ALIGNMENT -
 IF AND RF.

- Equipment needed for aligning:
- 1 - An all wave signal generator which will provide an accurately calibrated signal at the test frequencies indicated.
 - 2 - Output indicating meter connected to a headphone plug, and inserted in the headphone jack.
 - 3 - Non-metallic screw driver.
 - 4 - Dummy antenna of .002 mfd. condenser and 400 ohm resistor.

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- 1 - Tone control at maximum high frequency position.
- 2 - AVC switch OFF.
- 3 - BFO switch OFF.
- 4 - RF Gain at maximum.
- 5 - AF gain at maximum.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

NO.	VALUE	VOLTAGE OR PURPOSE	NO.	VALUE	VOLTAGE OR PURPOSE	NO.	VALUE IN OHMS	
C ₁	Tuning Condenser		C ₂₆	.01 mfd	400 V.	R ₇	100,000	
C ₂	.01 mfd	400 V.	C ₂₇	.005 mfd	600 V.	R ₈	50,000	
C ₃	.05 mfd	400 V.	C ₂₈	.01 mfd	400 V.	R ₉	400	
C ₄	.05 mfd	400 V.	C ₂₉	250 mmfd		R ₁₀	100,000	
C ₅	5 mmf		C ₃₀	200 mmfd		R ₁₁	500	
C ₆	5 mmf		C ₃₁	5 mmf	BFO Pitch Con.	R ₁₂	1,000	
C ₇	.25 mfd	400 V.	C ₃₂	40 mfd	150 V.	R ₁₃	100,000	
C ₈	.05 mfd	400 V.	C ₃₃	40 mfd	150 V.	R ₁₄	400	
C ₉	.05 mfd	400 V.	C ₃₄	.05 mfd	400 V.	R ₁₅	1,000	
C ₁₀	.1 mfd	400 V.	C ₃₅	30 mfd	150 V.	R ₁₆	100,000	
C ₁₁	.02 mfd	400 V.	C ₃₆	100 mmfd		R ₁₇	250,000	
C ₁₂	.02 mfd	400 V.	C ₃₇	2000 mmfd		R ₁₈	1 Meg.	
C ₁₃	.01 mfd	400 V.	C ₃₈	32 mmfd	Band 1 Pad	R ₁₉	500,000	
C ₁₄	.25 mfd	400 V.	C ₃₉	110 mmfd	Band 2 Pad	R ₂₀	7,500	
C ₁₅	.02 mfd	400 V.	C ₄₀	480 mfd	Band 3 Pad	R ₂₁	100,000	
C ₁₆	.02 mfd	400 V.	C ₄₁	1300 mfd	Band 4 Pad	R ₂₂	250,000	
C ₁₇	.01 mfd	400 V.	C ₄₂	.1 mfd	200 V.	R ₂₃	500,000	
C ₁₈	10 mmf		NO. VALUE IN OHMS				R ₂₄	140
C ₁₉	100 mmf		R ₁	100,000		R ₂₅	100	
C ₂₀	100 mmf		R ₂	300		R ₂₆	5,000	
C ₂₁	.02 mfd	400 V.	R ₃	25,000		R ₂₇	250,000	
C ₂₂	10 mf	25 V.	R ₄	400		R ₂₈	Plug-in Ballast	
C ₂₃	.05 mfd	400 V.	R ₅	1,000		R ₂₉	Plug-in Ballast	
C ₂₄	250 mfd		R ₆	100,000		R ₃₀	Plug-in Ballast	
C ₂₅	.05 mfd	400 V.				R ₃₁	25	
						R ₃₂	4,000	

SKYRIDER MARNE - MODEL S-22 R

Connect hot Lead of Signal Generator to A₁ through dummy Antenna shown in Table. Leave Jumper connected between A₂ and G. Ground of Generator to Chassis.

BAND	REC. DIAL SETTING	SIG. GEN. FREQ.	DUMMY ANTENNA	HIGH FREQUENCY END		LOW FREQUENCY END
				ADJUST OSC WITH	ADJUST TRIMMERS WITH	ADJUST OSCILLATOR WITH
1	125 Kc	125 Kc	.002 mfd	-----	-----	P ₁
	350 Kc	350 Kc	.002 mfd	C _C	C _A -C _B	-----
2	450 Kc	450 Kc	.002 mfd	-----	-----	P ₂
	1400 Kc	1400 Kc	.002 mfd	C _F	C _E -C _D	-----
3	2 Mc	2 Mc	400 Ohm	-----	-----	P ₃
	4.5 Mc	4.5 Mc	400 Ohm	C _J	C _G -C _H	-----
4	7 Mc	7 Mc	400 Ohm	-----	-----	P ₄
	15 Mc	15 Mc	400 Ohm	C _M	C _L -C _K	-----

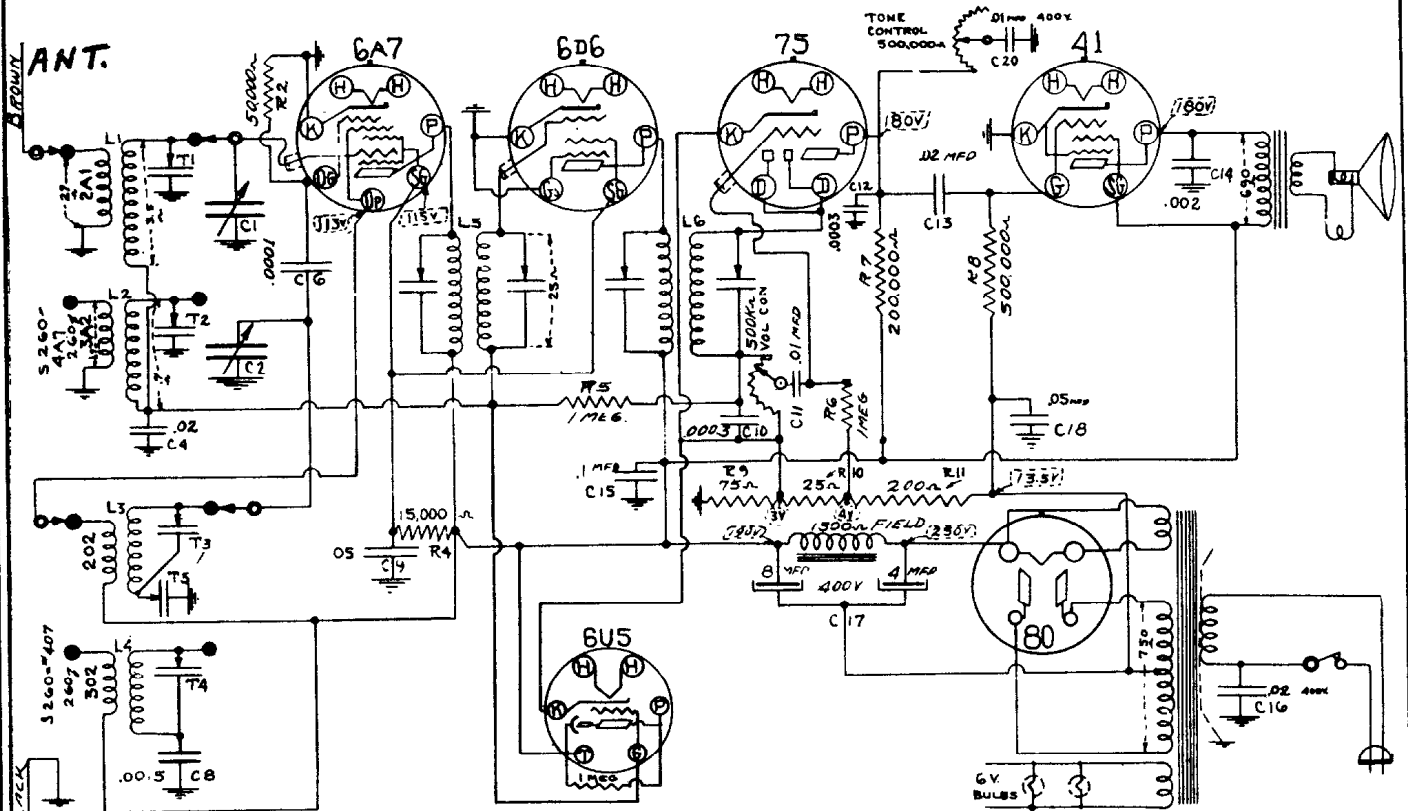
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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Howard Radio Company, 1731 Belmont Avenue, Chicago, Illinois

Models: 225, S-225, 250, S-250, 260, S-260, 275, 275-C, 280.



VOLTAGES AS SHOWN [...] TAKEN FROM GROUND, LINE VOLTAGE 117 V. A.C.

TWO BANDS -

- (1) - 540 TO 1700 KC BROADCAST.
- (2) - 2 TO 6.5 MC. POLICE BAND MODEL 260.
- OR - 6 TO 17 MC. SHORT WAVE BAND MODEL S 240

The models 225 and 250 are electrically the same chassis; the only difference being the cabinets in which they are mounted. These models have two band circuits covering the Broadcast Band 550 to 1700 KC and the so-called Police Band from 2 to 6.5 megacycles, having separate Antenna and Oscillator coils for each band.

The models S225 and S250 cover the Broadcast Band 550 to 1700 KC and the short wave band 5.5 to 18 MC.

The models 260 and S260 have the same circuit as the 225, S225 respectively with the addition of the tuning eye tube to indicate resonance.

The models 275, 275C and 280 are the same electrically, covering 3 bands, 550 to 1700 KC, 1.7 to 5.5 MC, and 5.5 to 18 MC.

The I. F.'s are aligned by the usual system of feeding the intermediate frequency of 465 KC into the grid of the 6A7 tube.

The two trimmers in each of the I. F. cans should be very carefully peaked to resonance as they are very critical and will greatly affect the performance of the set. These are trimmers number T8, T9, T10, T11.

The Sensitivity of the I. F. stages will be 25 to 50 microvolts or better for a 50 milliwatt output.

Always use as low an output as possible from the test oscillator in making the various adjustments.

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Howard Radio Co.

Models: 400, 400-A, 425, 425-A.

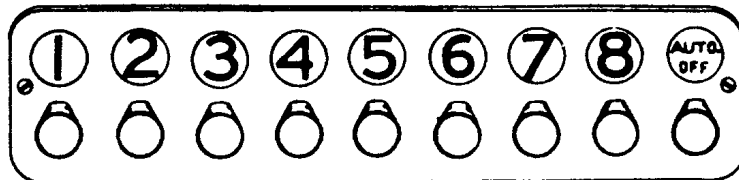
Model 400 is a 12 tube, 3 band receiver with all coils shielded. See Fig. 4, for coil location and information on trimmers and padding condensers for each band. The 6F5 is a bass boost stage. The 6J5G is a phase inverter with push-pull 6V6G's in the output. The schematic of the model 425 illustrated is the same for the RF and IF stages. A single type 80 rectifier is used.

Model 425 is a 14 tube set having 6L6G's in the output.

Models 400-A and 425-A have the same electrical circuits as the 400 and 425. These models employ the Howard motor automatic tuning feature by use of the reversible motor controlled by the commutator disc near the back of the set.

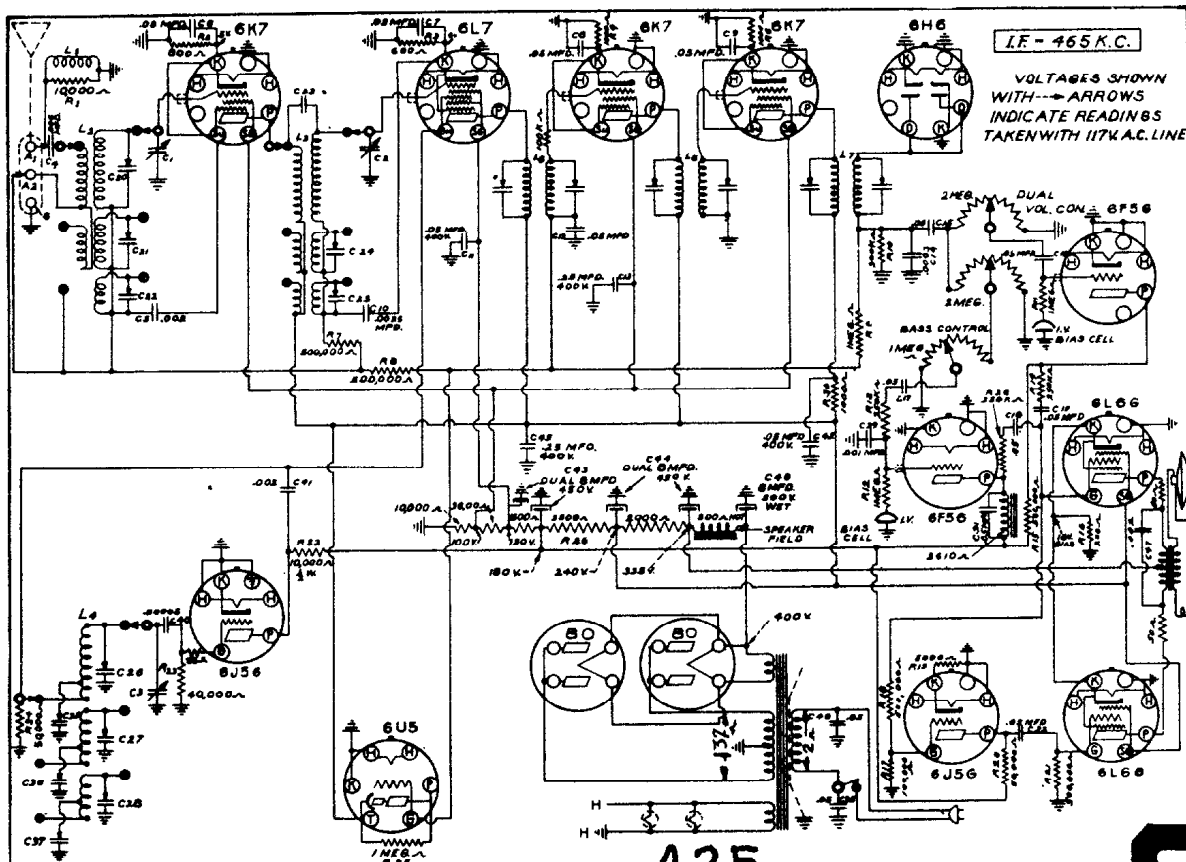
ADJUSTMENT OF HOWARD MOTOR AUTOMATIC

FIRST - Select and depress the push-button by number that will include the desired station according to frequency chart listing below:-



540 TO 580 KC	570 TO 620 KC	600 TO 670 KC	650 TO 720 KC	700 TO 820 KC	800 TO 990 KC	880 TO 1720 KC	1100 TO 1720 KC
------------------------	------------------------	------------------------	------------------------	------------------------	------------------------	-------------------------	--------------------------

See next page-

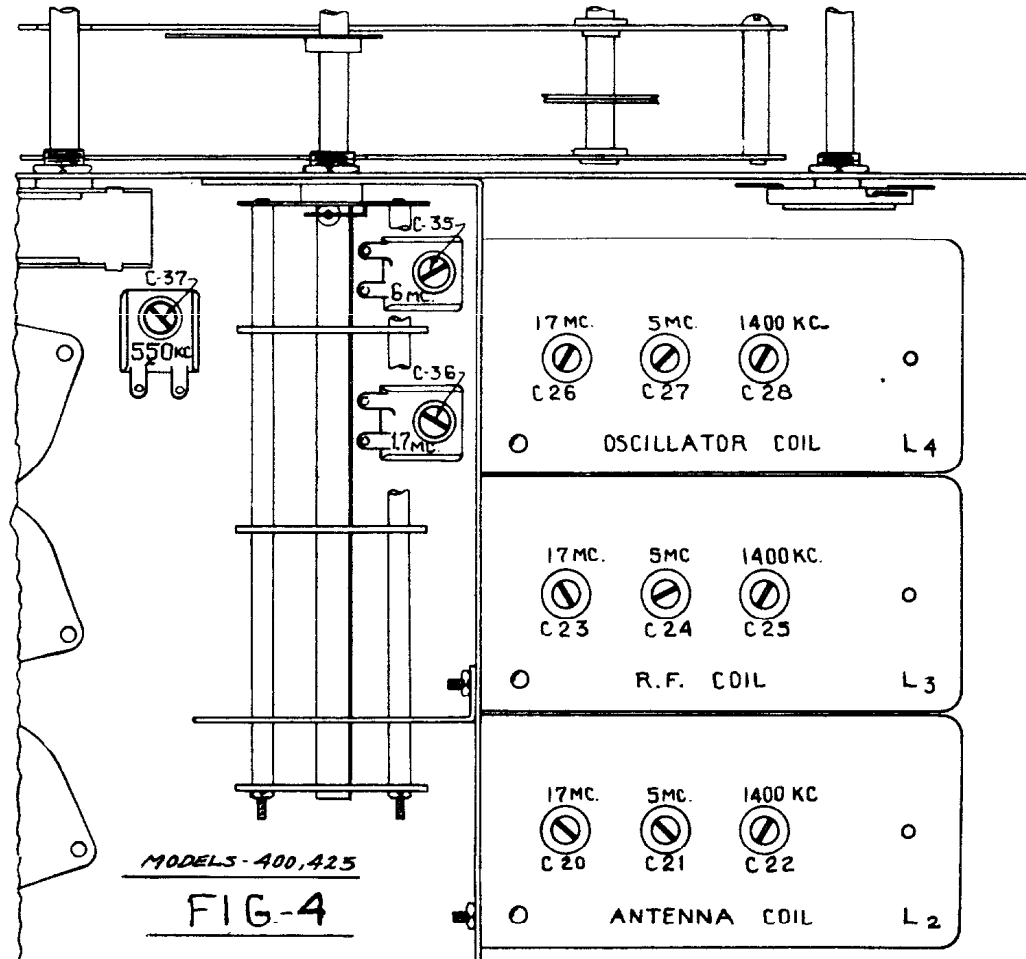


425

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



SECOND - Reach to back of chassis and turn muting switch to OFF position.

LOCATE THE SAME NUMBERED STATIONS CONTACTOR ON BACK OF TUNING CONDENSER THAT CORRESPONDS TO THE BUTTON DEPRESSED IN FIRST PARAGRAPH, AND SLIDE UNTIL THE DESIRED STATION IS TUNED IN.

With the muting switch in the OFF position the stations will be heard while moving the slide contactor. For silent tuning after all adjustments are made, turn switch to ON position.

THIRD - Remove station call letter tab from tab sheet and insert in place with finger tip in front of escutcheon plate over the number that was selected. Repeat above procedure for each of remaining buttons.

NOTE - When tuning the set by hand or if a remote cable is used the selector button AUTO-OFF must be depressed.

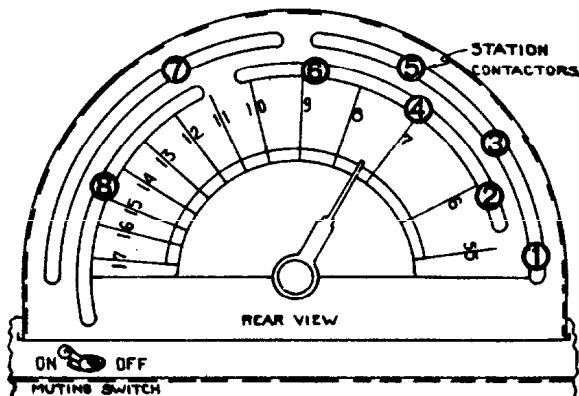
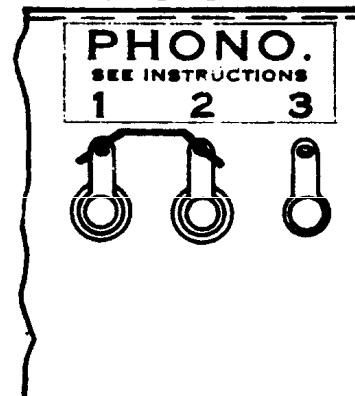
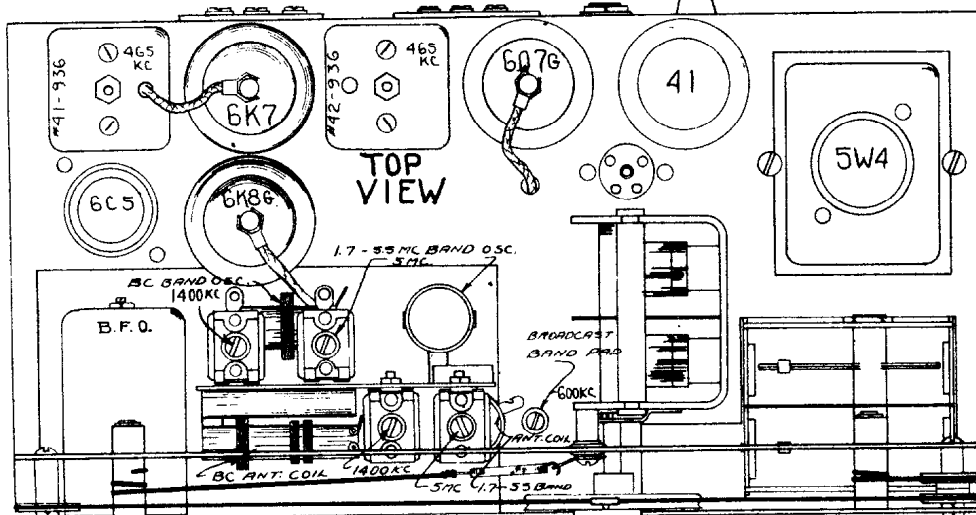
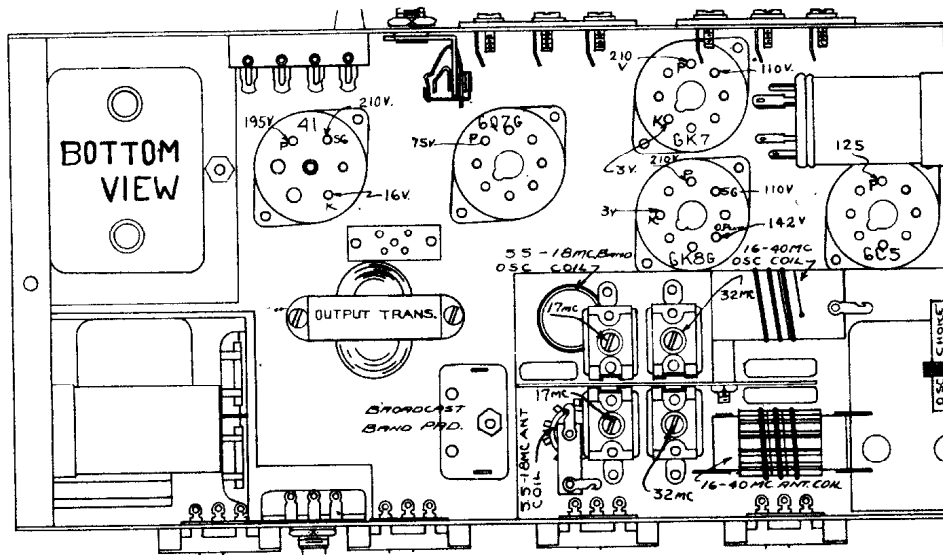
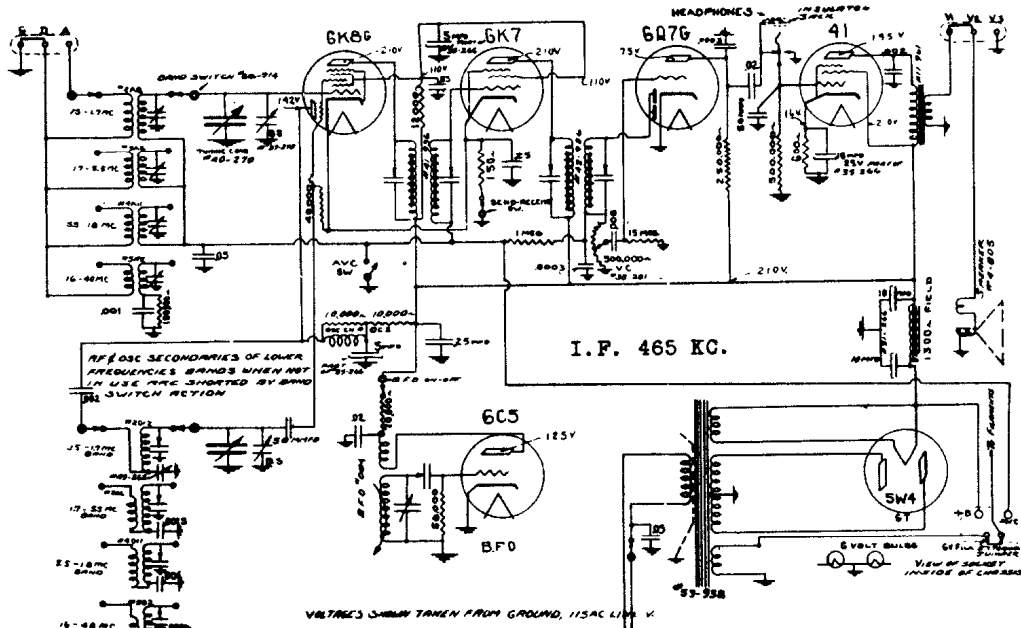


Fig. 1



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



HOWARD

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NOTE 1: When aligning the I.F. channel, a condenser of .05 MFD may be used in series with the generator lead.

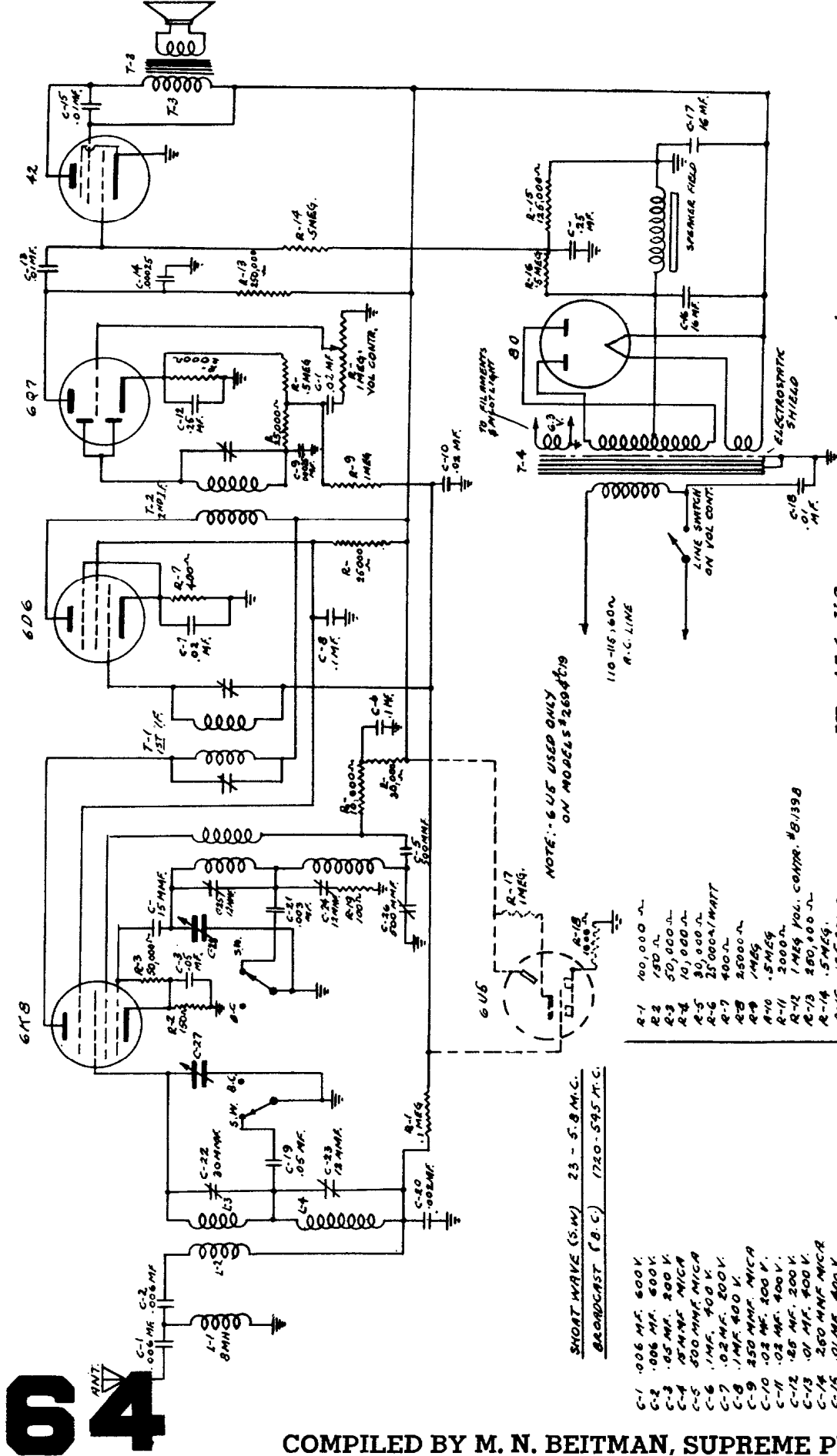
NOTE 2: When aligning the broadcast band, a 250 MMFD condenser may be used in series with the signal generator.

NOTE 3: When aligning the short wave bands, a 400 ohm resistor may be used in series with the signal generator.

NOTE 4: After the chassis has been removed from the cabinet, be sure when it is again assembled that the speaker plug is in place in the socket on top of the chassis and that the speaker cable wires do not lay back near the RF circuit, thus causing howling.

NOTE 5: Check for an image signal about .9 mc. lower in frequency. For example:- If a peak has been made at 6 mc. an image should be heard at about 5.1 mc. Otherwise the original setting was not correct.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Lafayette Radio Corp.
Radio Wire Television, Inc.
Models C-16, C-19, 259, 269

IF 456 KC.

NOTE: 6U5 USED ONLY ON MODELS 269 & 19

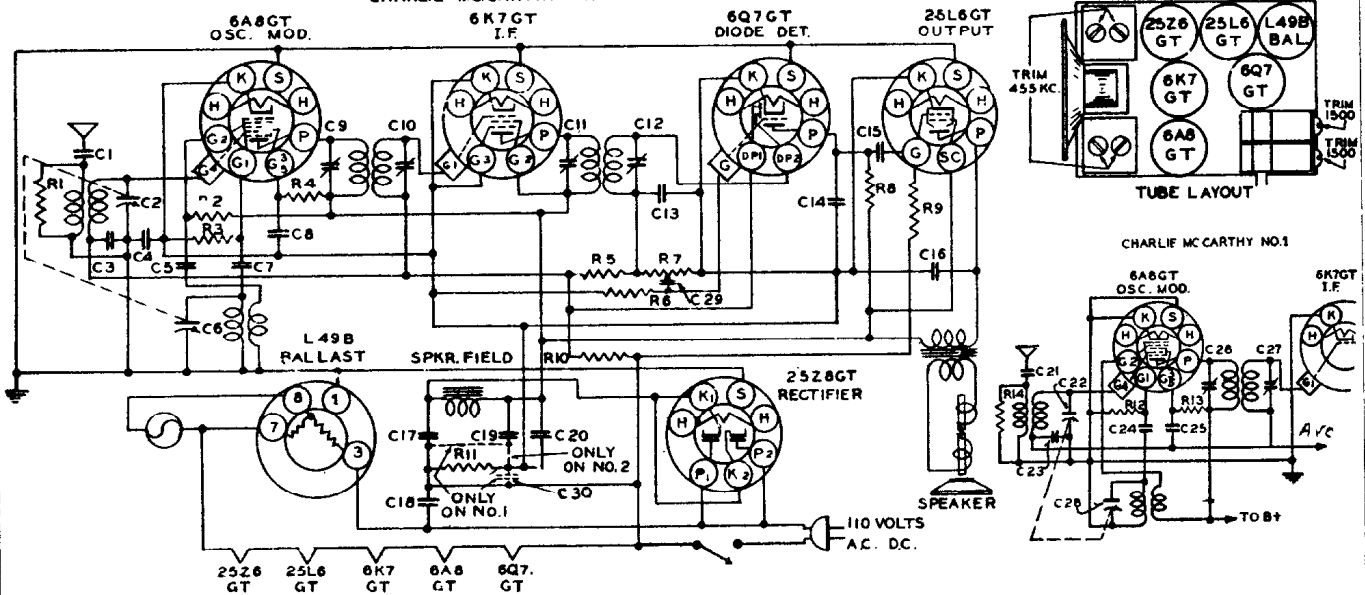
- | | | | |
|------|-------------------------------------|------|--------------------------|
| C-1 | .006 MF. 600V. | T-1 | GT. I.F. INPUT #1, 25-A |
| C-2 | .006 MF. 600V. | T-2 | ST. I.F. OUTPUT #1, 200 |
| C-3 | .05 MF. 200V. | T-3 | OUTPUT TRANS. ON SPEAKER |
| C-4 | AT-MICA | T-4 | POWER TRANS. #1, 122 |
| C-5 | 500 MMF. MICA | | NON-TRIGGER #1, 122 |
| C-6 | .1 MF. 400V. | | |
| C-7 | .02 MF. 200V. | | |
| C-8 | .1 MF. 400V. | | |
| C-9 | 450 MMF. MICA | | |
| C-10 | .02 MF. 200V. | | |
| C-11 | .02 MF. 400V. | | |
| C-12 | .85 MF. 200V. | | |
| C-13 | .01 MF. 400V. | | |
| C-14 | 260 MMF. MICA | | |
| C-15 | .01 MF. 400V. | | |
| C-16 | 16 MF. 450 W.V. | | |
| C-17 | 16 MF. 450 W.V. | | |
| C-18 | .01 MF. 400V. | | |
| C-19 | .05 MF. 200V. | | |
| C-20 | .002 MF. 1570 MCA | | |
| C-21 | .003 MF. 1570 MCA | | |
| C-22 | 30 MMF. TRIMMER | | |
| C-23 | 30 MMF. TRIMMER | | |
| C-24 | DUAL 12 MMF. TRIMMER COND. | | |
| C-25 | 18 MMF. TRIMMER COND. | | |
| C-26 | 500 MMF. PARADIA COND. | | |
| C-27 | 2 GANG 450 MMF. VAR. COND. # 2, 136 | | |
| C-28 | | | |
| R-1 | 100,000 Ω | R-15 | 250,000 Ω |
| R-2 | 150 Ω | R-16 | 250,000 Ω |
| R-3 | 50,000 Ω | R-17 | 1 MEG. |
| R-4 | 10,000 Ω | R-18 | 1000 Ω |
| R-5 | 30,000 Ω | R-19 | 1000 Ω |
| R-6 | 25,000 Ω/WATT | | |
| R-7 | 400 Ω | | |
| R-8 | 2500 Ω | | |
| R-9 | 1 MEG. | | |
| R-10 | .5 MEG. | | |
| R-11 | 2000 Ω | | |
| R-12 | 1 MEG. VOL. CONTR. # 1, 139 | | |
| R-13 | 200,000 Ω | | |
| R-14 | .5 MEG. | | |
| R-15 | 125,000 Ω | | |
| R-16 | .5 MEG. | | |
| R-17 | 1 MEG. IN 6U5 SOCKET | | |
| R-18 | 1000 Ω (OPTIONAL) | | |
| R-19 | 100 Ω | | |

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

CHARLIE MCCARTHY NO. 2



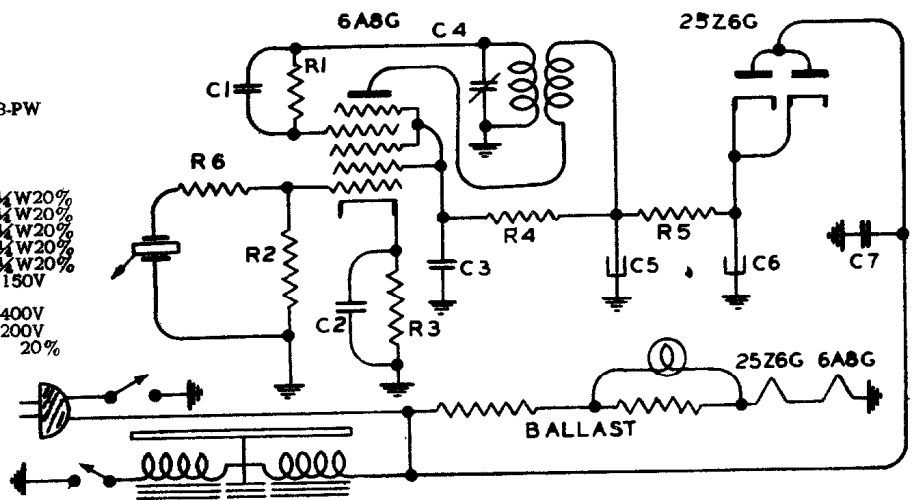
CHARLIE MCCARTHY No. 2—PARTS LIST

Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
C15, C29	C-15754	Tubular cond. .01 mfd. 400 V	C17	CE-39	Electr. cond. 40 mfd. 200 V
C3	C-15752	Tubular cond. .05 mfd. 200 V	C19	CE-40	Electr. cond. 16 mfd. 150 V
C1	C18	Tubular cond. .01 mfd. 400 V Paper mold case	C9, C10	Y-CT-18	Trimmer cond. 1st I. F.
C8, C20	C19	Tubular cond. .05 mfd. 400 V Paper mold case	C11, C12	Y-CT-18	Trimmer cond. 2nd I. F.
C4	C20	Tubular cond. .25 mfd. 200 V Paper mold case	C2, C6	Y-CV-18	2 gang variable cond.
C5	C21	Tubular cond. .005 mfd. 400 V Paper mold case	R11	R-67	Wire wound res. 100 ohms 1W 10%
C16	C22	Tubular cond. .02 mfd. 600 V Paper mold case	R3	R-54	Carbon resistor 50K 1/4W 20%
C18	C24	Tubular cond. .1 mfd. 300 V Paper mold case	R4	R-53	Carbon resistor 15K 1/4W 20%
C7	CM-15929	Mica cond. 50 mmf. 20%	R8	R-51	Carbon resistor 500K 1/4W 20%
C13	CM-15928	Mica cond. 250 mmf. 20%	R9	R-52	Carbon resistor 400K 1/4W 20%
C14	CM-15918	Mica cond. 100 mmf. 20%	R5	R-55	Carbon resistor 2 meg. 1/4W 20%
			R10	R-50	Carbon resistor 5 meg. 1/4W 20%
			R6	R-49	Carbon resistor 15 meg. 1/4W 20%
			R1	R-65	Carbon resistor 10K 1/4W 20%
			R2	R-68	Carbon res. 7500 ohms 1/4W 20%
			R7	Y-VC-15	Volume control .5 meg.
			C21		.01 mfd.
			C23		.05 mfd.
			C24		50 mmfd.
			C25		.05 mfd.
			R12		50K 1/4W.
			R13		15K 1/4W.

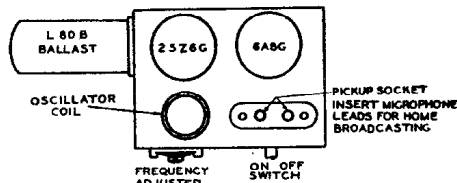
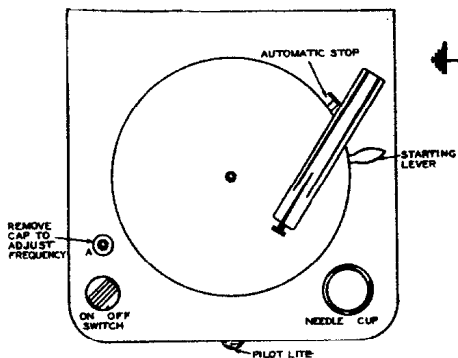
Majestic Radio & Television Corp. Wireless Record Player 3-PW

REPLACEMENT PARTS LIST FOR MODEL 3-PW

Schematic Location	Part No.	Description
R4, R5	R-2	Carbon resistor 5K 1/4W 20%
R1	R-65	Carbon resistor 10K 1/4W 20%
R3	R-15542	Carbon resistor 1K 1/4W 20%
R6	R-15512	Carbon resistor 250K 1/4W 20%
R2	R-15515	Carbon resistor 100K 1/4W 20%
C5, C6	CE-47	Elect. cond. 8.16 mfd. 150V
C4	Y-CT-6	Adj. padder cond.
C7	C-15757	Paper cond. .1 mfd. 400V
C2, C3	C-15761	Paper cond. .1 mfd. 200V
C1	CM-15929	Mica cond. 50 mmf. 20%



TUBE LOCATION CHART

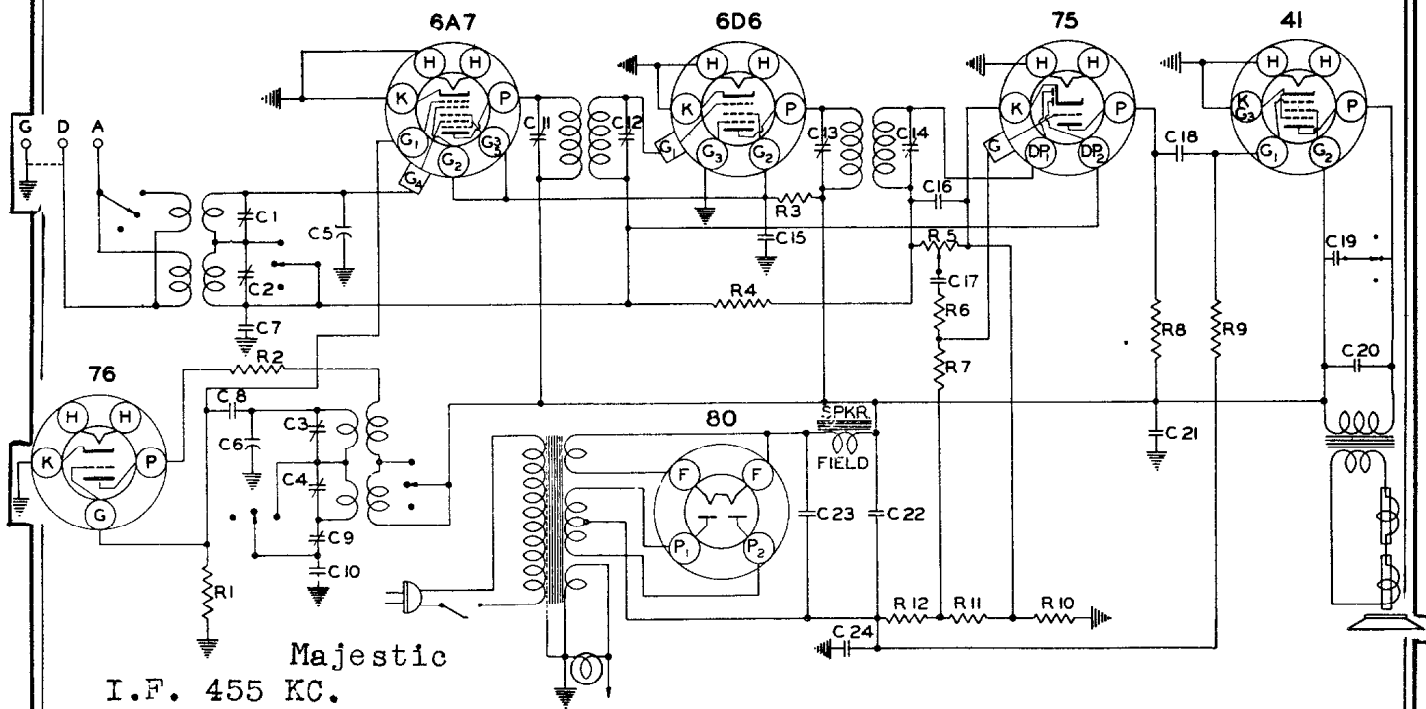


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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

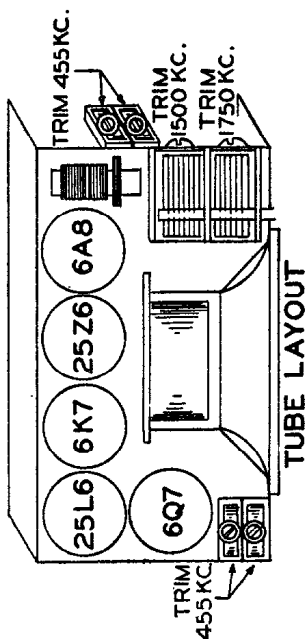
SCHEMATIC DIAGRAM MODEL 62A



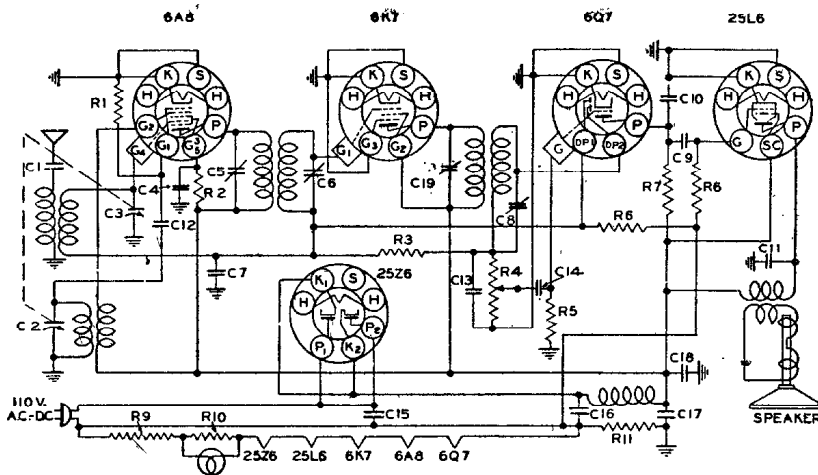
Schematic Location	Description
R1	50K 1/4 W 20%
R2	100K 1/4 W 20%
R3	7.5K 2W 1/4 W 20%
R4	2 Meg. 1/4 W 20%
R5	Volume control 1 meg.
R6, R8	250K 1/4 W 20%
R7	1 Meg.
R9	500K 1/4 W 20%

Schematic Location	Part No.	Description
R10	61 Ohms	E-C-6 Candohm
R11	33 Ohms	
R12	150 Ohms	
C1, C2	Y-CP-2	Trimmer cond.
C3, C4	Y-CV19	Variable gang condenser
C5, C6	C-15752	Tubular cond. .05 mfd. 200 V
C7	CM-15929	Mica cond 50 mmf. 20%
C8	C-16472	Padder cond.
C9	CM-17	Mica cond. 4330

Schematic Location	Description
C11, C12	Trimmer cond.
C13, C14	Trimmer cond.
C15, C21	Tubular cond. .05 mfd 400V
C16	Mica cond. 250 mmf. 20%
C17, C18, C19	Tubular cond. .01 mfd. 400 V
C20	Tubular cond. .006 m.f. 400V
C22	8,300 V
C23	12,300 V
C24	20.25 V



Majestic Radio Model 52



REPLACEMENT PARTS LIST

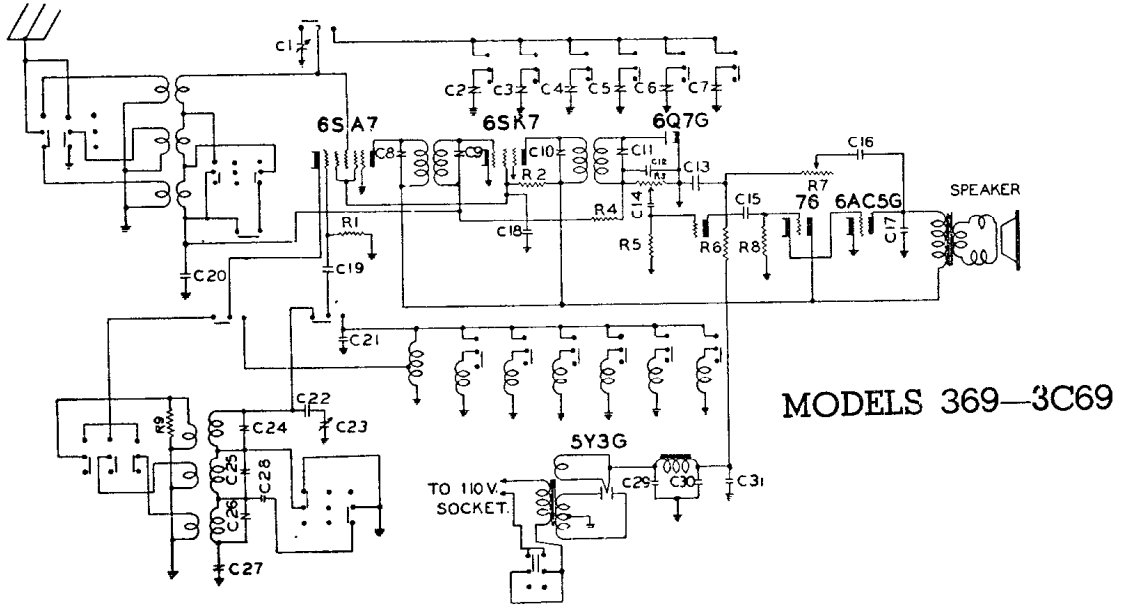
Schematic Location	Part No.	Description	Schematic Location	Part No.	Description
C2, C3	Y-CV 14	Variable Gang Condenser	R1	R-54	Carbon resistor 50K 1/4 W20%
C7, C18	C-15761	Tubular cond. .1 mfd. 200 V	R2	R-53	Carbon resistor 15K 1/4 W20%
C4	C-15752	Tubular cond. .05 mfd. 200 V	R3	R-55	Carbon resistor 2meg 1/4 W20%
C9, C1	C-15754	Tubular cond. .01 mfd. 400 V	R5	R-49	Carbon resistor 15meg 1/4 W20%
C15	C-15757	Tubular cond. .1 mfd. 400 V	R6	R-50	Carbon resistor 5meg 1/4 W20%
C11	C-15772	Tubular cond. .02 mfd. 400 V	R7	R-51	Carbon resistor 500K 1/4 W20%
C14	C-15754	Tubular cond. .01 mfd. 400 V	R8	R-52	Carbon resistor 300K 1/4 W20%
C16	CE-32	Tub. dry elec. cond. 40 mfd.	R11	R-56	Carbon res. 100 ohm 1/4 W10%
C17	CE-35	Tub. dry elec. cond. 16 mfd.	R10	R-57	Wire wound flex. res. 40 ohms
C5, C6	Y-CT-16	Trimmer cond. 1st I. F.	R9	LC-8	141 ohms in line cord
C8, C19	Y-CT-17	Trimmer cond. 2nd I. F.	R4	Y-VC-15	.5 meg Volume control
C10, C13	CM-15928	Mica cond. 250 mmf. 20%			
C12	CM-15919	Mica cond. 50 mmf. 20%			

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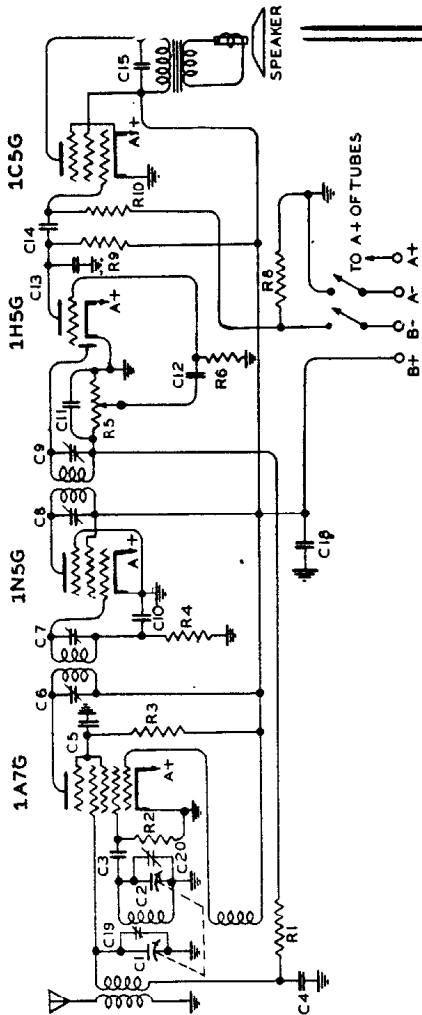
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Majestic Radio & Television Corporation



MODELS 369-3C69

Schematic Location	Description	Schematic Location	Part No.	Description	Schematic Location	Description
R3	Volume and tone control	C27	Y-CT-4	Padding Condenser	C12, C13, C19	Mica cond. 100 mmf. 30%
R1	Carbon res. 20K ohm $\frac{1}{4}$ W 20%	C29, C30	CE-52	Electrolytic	C16	Mica cond. 250 mmf. 30%
R2	Carbon res. 10K ohm $\frac{1}{4}$ W 20%	C20	C-15757	Tubular cond. .05 mfd. 200V	C22	Mica cond. 4330 mmf. 5%
R4, R8	Carbon res. 1 meg. $\frac{1}{4}$ W 20%	C15	C-15754	Tubular cond. .01 mfd. 400 V	C28	Mica cond. 2770 mmf. 5%
R5	Carbon res. 15 meg. $\frac{1}{4}$ W 20%	C17	C-15759	Tubular cond. .006 mfd. 600V	C21	Mica cond. 100 mmf. 5%
R6	Carbon res. 250K ohm $\frac{1}{4}$ W 20%	O31	C-15757	Tubular cond. .1 mfd. 400V	C2, C3, C4, C5, C6, C7	Push-Button Switch
R9	Carbon res. 400 ohm $\frac{1}{4}$ W 20%	O18	C-15756	Tubular cond. .002 mfd. 400V		

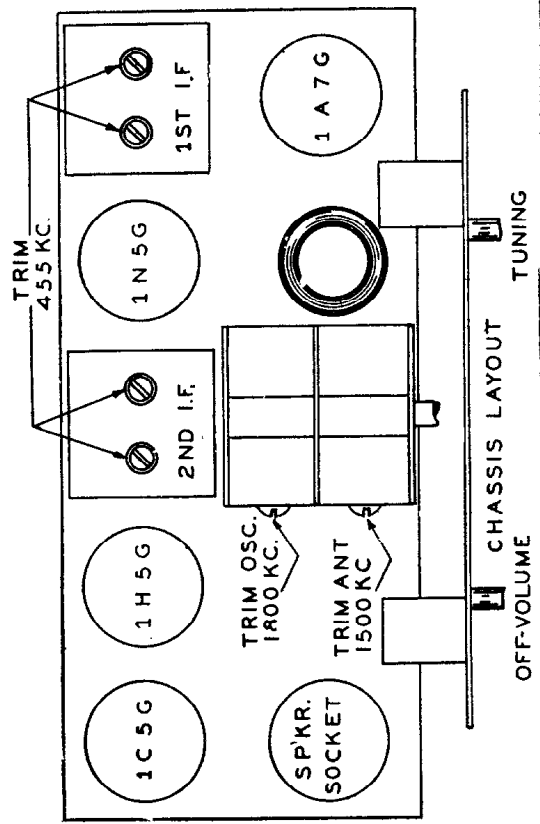


REPLACEMENT PARTS LIST

Schematic Location	Description	Part No.	Description
C4, C5	.05 mfd. 200V	R 15520	500K $\frac{1}{4}$ W 20%
C10, C12, C14	.01 mfd. 200V	R 15517	1 meg. $\frac{1}{4}$ W 20%
C15	.006 mfd. 400V	R 72	600 ohms $\frac{1}{4}$ W 20%
C3, C11, C13	100 mmf. Type 'O' Mica	R-15523	200K $\frac{1}{4}$ W 20%
C1, C2	Variable Condenser	R-15529	3 meg. $\frac{1}{4}$ W 20%
C6, C7, C8, C9	I. F. Trimmer condenser	R 44	70K $\frac{1}{4}$ W 10%
C18	8 mfd. 150V Electrolytic	R-15500	2 meg $\frac{1}{4}$ W 20%
		Y-VC-26	Volume Control
		R1, R4	
		R5	

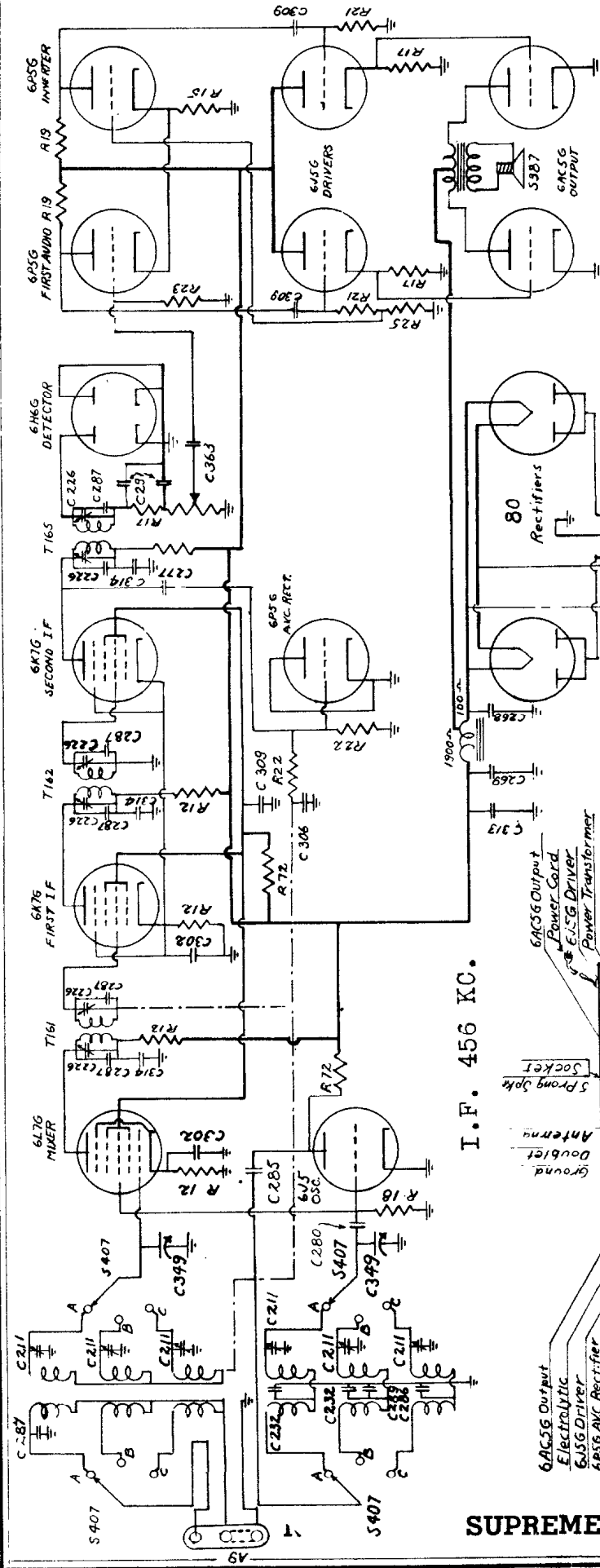
MAJESTIC RADIO Model 419-B

TUBE LOCATION CHART



Compliments of www.nucow.com

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



R18	3000 Ohm 1/2 Watt
R19	100M
R21	500M
R22	1Meg Ohm
R23	3
R25	40M Ohm 1/2 W
R72	15M
R73	15M
S319	SpringBelt Ten.
S301	Speaker 8"
S333	Pointer
S407	Coil Switch
T73	Power Trans.
T161	1 1/2 I.F. Trans.
T162	2 1/2
T165	3 1/2
C285	2000 MMFD
C280	100

A5	Antenna Strip
C26	Cablet Plug (4)
C211	3 Gang Trimmer
C226	I.F. Padder
C232	Osc. Padder
C268	24 MF 500 V
C269	40 MF 350 V
C291	250 Mica Dual
C271	25 MMFD Mica
C284	3000
C287	200
C289	1200
C302	0.5 MF 200 V
C309	0.2 MF 400 V
C313	125
C314	1.05
C399	2 Gang Variable
C363	Control Volume 4S
C401	Fish Line Cord
K24	Knob 1 inch
P46	Pilot Light 6V
R11	200 Ohm 1/2 Watt
R12	500
R15	5000
R17	25000

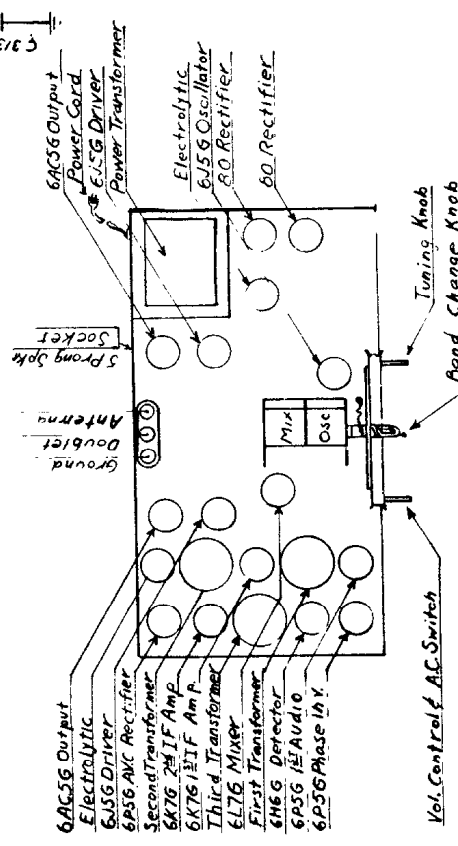
OPERATING VOLTAGES

No Signal, Volume Control Turned Off

Line Voltage 117 Volts 60 Cycles
Meter Used 20000 Ohms per Volt

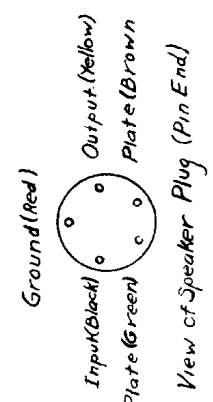
TUBE	PLATE/GREEN SUP	CATH. HEATER
6L7 Mixer	245 85	2.4 6.0
6V5 Osc.	140	0 6.0
6K7 1st IF	245 85	2.4 4.4 6.0
6K7 2nd IF	245 85	4.4 4.4 6.0
6P5 Avc. Rect.	0	6.0
6H6 2nd DET.	0	6.0
6P5 1st AF	150	9.2 6.0
6J5 Drivers	245	10 6.0
6P5 Inverter	150	9.2 6.0
6A5 Drivers	335	0 6.0
60 Rectifiers	340 (AC)	350 4.8

I.F. 456 KC.



In long wave sets, the coverage of B Band is from 125 to 350 KC.

Model 14-Z-9
Midwest Radio Corp.
909 Broadway
Cincinnati, Ohio

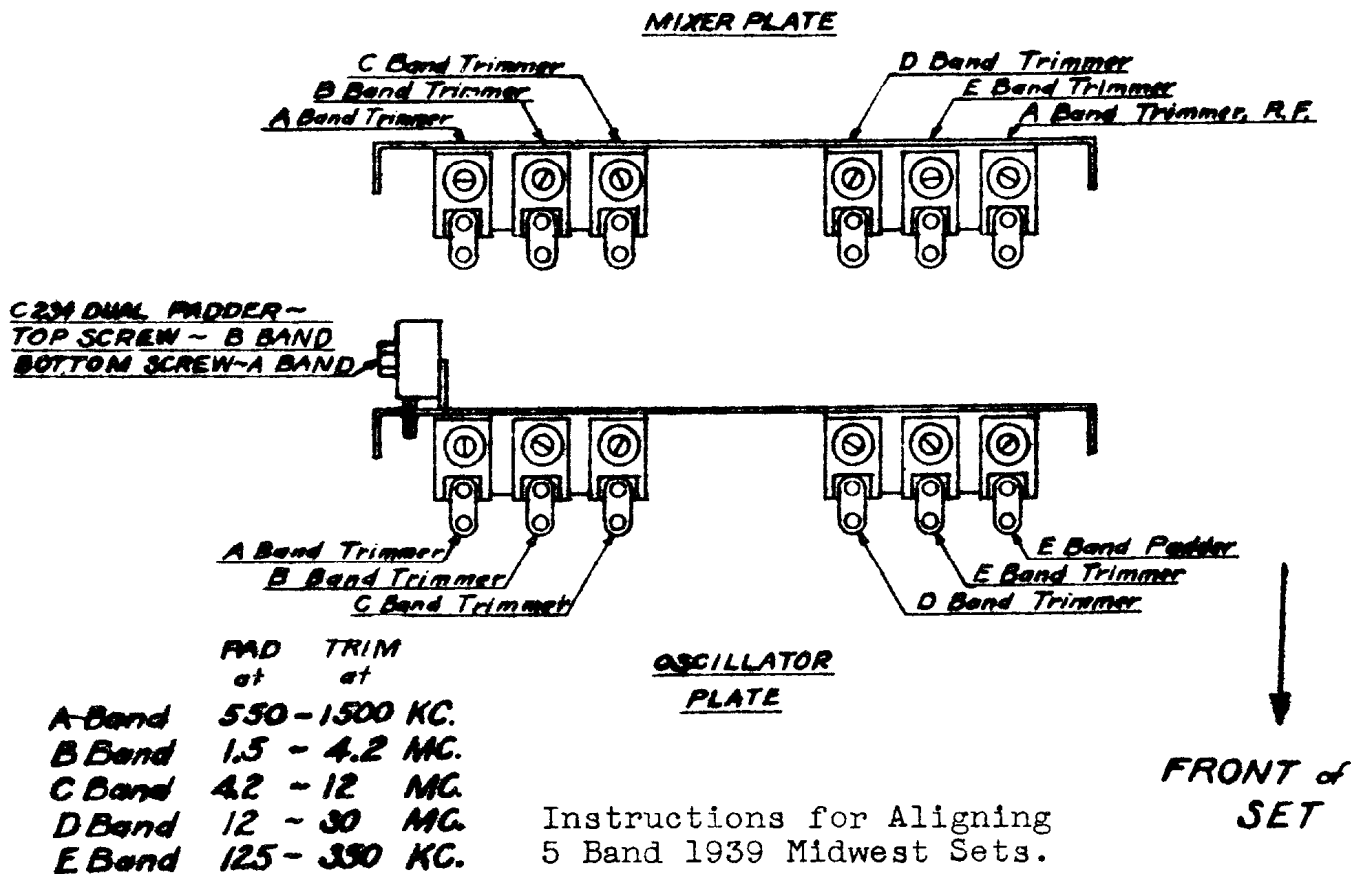


SUPREME PUBLICATIONS



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

The Midwest Radio Corp. Models 12 & 17 1939 Trimmers and Padders



Remove the oscillator tube. Peak I.F.'s at 456 KC. for maximum gain, while AFC is off. Receive a signal from generator, turn on AFC. If tuning is disturbed, realign secondary side of AFC transformer. Re-adjust trimmer across the primary of the AFC transformer until maximum AFC voltage is developed. May be measured with voltmeter from cathode of 6J7 AFC control tube to ground.

Band "A" 550 to 1500 KC. Padded at 550 KC. and trimmed at 1400 KC. R.F. and mixer trimmers should be adjusted at 1400 KC.

Band "B" 1.5 to 4.2 MC. This band should be padded at 1.7 MC., and trimmed at 4.0 MC.

Band "C" 4.2 to 12.0 MC. This band has a fixed padder and should be trimmed 11.0 MC.

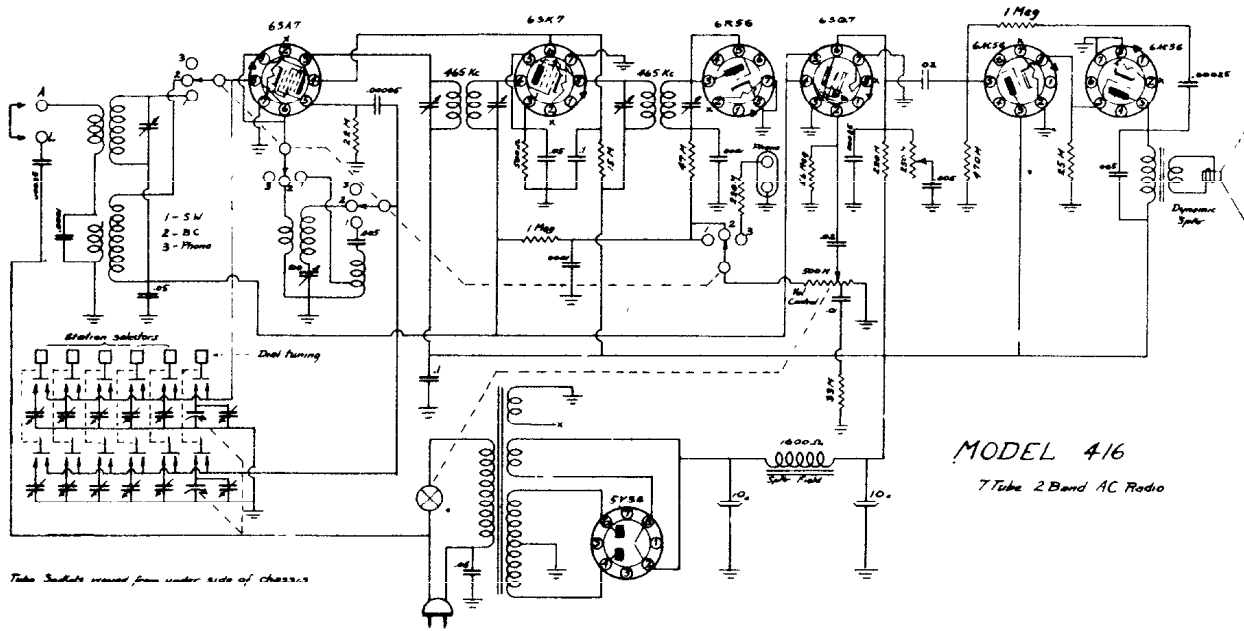
Band "D" covers from 12 MC to 30 MC. This band has a fixed padder and should be trimmed at 29 MC. Adjust R.F. and mixer trimmers for maximum gain at 29 MC.

Band "E" covers from 125 to 350 KC. (long wave). This band should be padded at 135 KC. and trimmed at 340 KC.

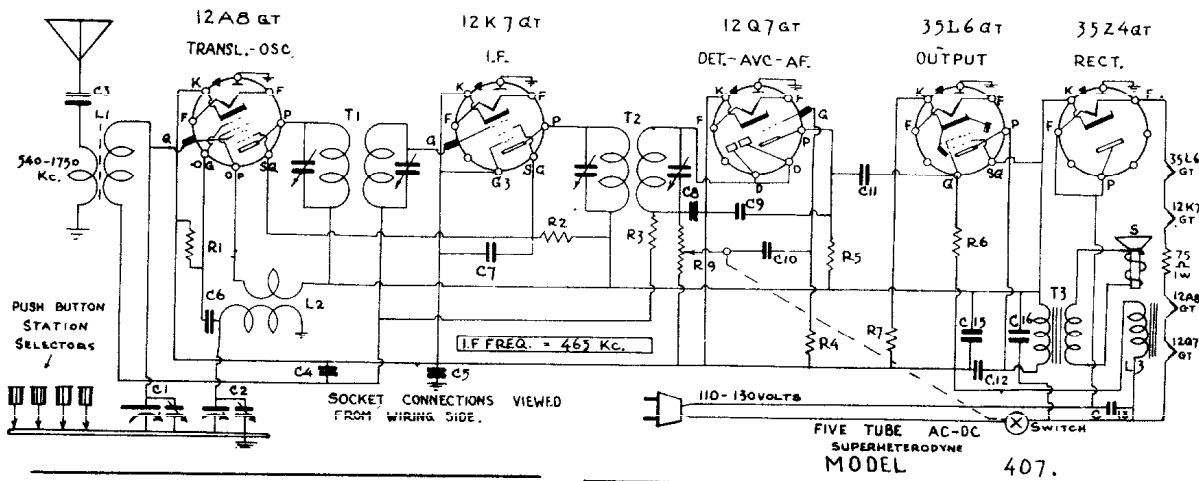
A dummy antenna, consisting of a 200 ohm resistor and 10 mmfd. condenser in parallel, should be connected in series with output of signal generator.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Mission Bell Radio Mfg Co., 831 Venice Blvd., Los Angeles, Calif.



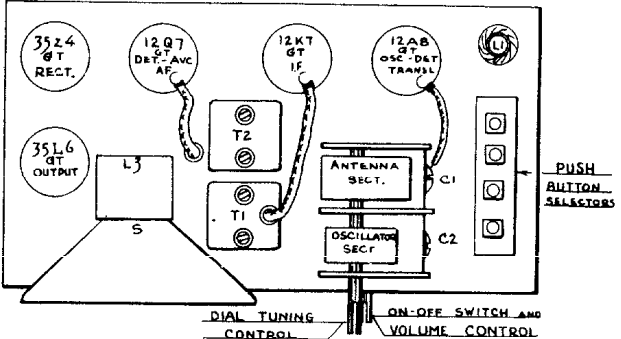
MODEL 416
7 Tube 2 Band AC Radio



FIVE TUBE AC-DC SUPERHETERODYNE MODEL 407.

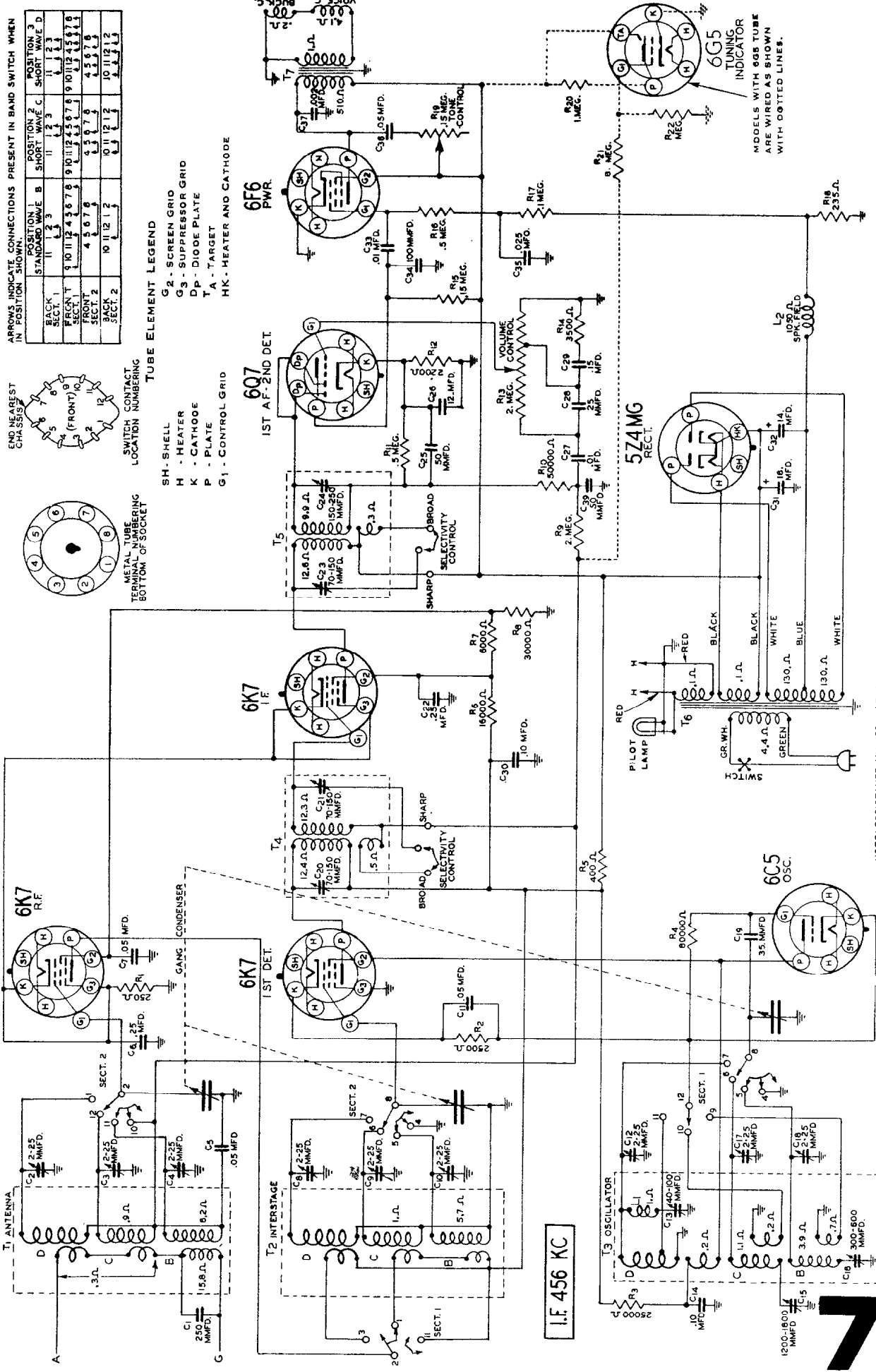
IDENTIFICATION NO. 111-407

SCHEMATIC LOCATION		PART NUMBER		DESCRIPTION		SELLING PRICE EACH	SCHEMATIC LOCATION		PART NUMBER		DESCRIPTION		SELLING PRICE EACH
T2		113394071		Coil-Input I.F.	C3	1.00	C3		Cond.-.005 Mfd 600V			.15	
T2		113394072		Coil-Oscillator I.F.	C5	1.00	C5		.0001 " 200V			.20	
L2		113284073		Coil-Antenna	C6, C9	.75	C6, C9		.0001 " Mica			.15	
L2		113284074		Coil-Oscillator	R1	.40	R1		.0005 " Mica			.15	
R9		113244079		Control-Volume	R2	.85	R2		Resistor 47M Ohms 1/2W			.10	
				500M Ohm with Switch	R3		R3		2M " 1/2W			.10	
				Speaker 5" Diaphragm	R4	3.50	R4		2 Meg 1/2W			.10	
T3		11313407241		Transformer	R5, R6	1.50	R5, R6		5.6 " 1/2W			.10	
L3		11313407242		Field Coil	R7	1.50	R7		220M Ohms 1/2W			.10	
		11337407243		Cans & Voice Coil		2.00			150 " "			.10	
		1135440725		Grid-Stop		.25							
		1139440749		Comp.-Variable		2.00							
C15		11313407242		Comp.-Electrolytic		.50							
C16		1132040754		40 Mfd. 150 Volt		.45							
C2, C7				Cond.-.05 Mfd 200V		.15							
C13				" .05 " 200V		.15							
C14				" .05 " 200V		.15							
C10, C11				" .01 " 200V		.15							



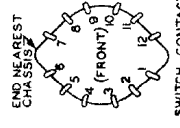
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ARROWS INDICATE CONNECTIONS PRESENT IN BAND SWITCH WHEN IN POSITION SHOWN.

POSITION 1	POSITION 2	POSITION 3
STANDARD WAVE	SHORT WAVE C.	SHORT WAVE D.
BACK SECT. 1	11	11
FRONT SECT. 1	9 10 11 12 4 5 6 7 8	9 10 11 12 4 5 6 7 8
BACK SECT. 2	4 5 6 7 8	4 5 6 7 8
FRONT SECT. 2	10 11 12 1 2	10 11 12 1 2



END NEAREST CHASSIS

METAL TUBE TERMINAL NUMBERING BOTTOM OF SOCKET

SWITCH LOCATION NUMBERING

TUBE ELEMENT LEGEND

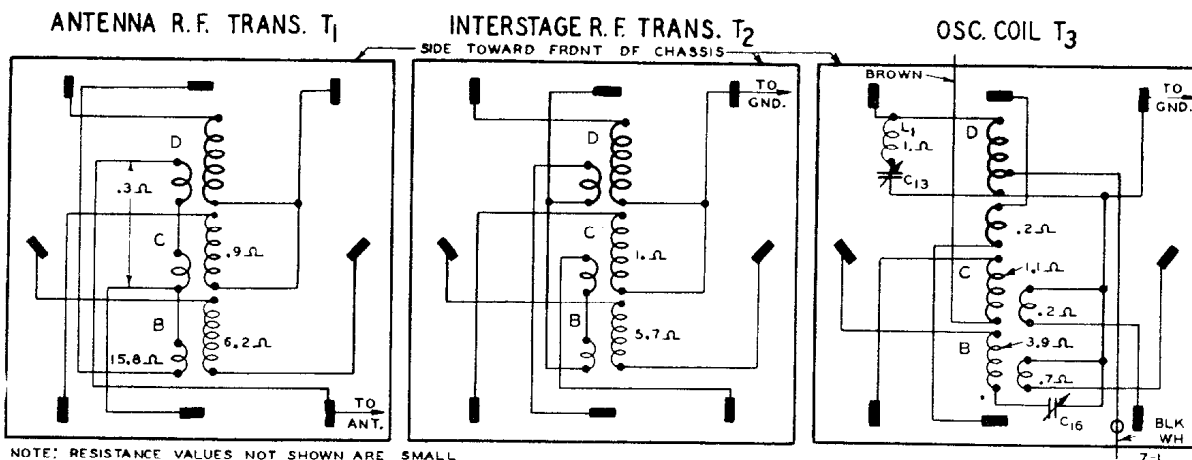
- SH - SHELL
- H - HEATER
- K - CATHODE
- P - PLATE
- G1 - CONTROL GRID
- G2 - SCREEN GRID
- G3 - SUPPRESSOR GRID
- DP - DIODE PLATE
- T - TARGET
- HK - HEATER AND CATHODE

NOTE: RESISTANCE VALUES NOT SHOWN ARE SMALL.

Montgomery Ward Models 62-226, 62-228, 62-259, 62-308, 62-318, 62-408, 62-418

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



NOTE: RESISTANCE VALUES NOT SHOWN ARE SMALL

R. F. and Oscillator Coil Base Terminal Arrangement and D. C. Resistance of Windings

Line Voltage: 115

Volume Control: Maximum

Antenna Shorted to Ground
Position of Band Switch: Standard Wave

TUBE	FUNCTION	VOLTAGE BETWEEN SOCKET PRONGS AND GROUND (Unless otherwise indicated)							
		Prong No. 1	Prong No. 2	Prong No. 3	Prong No. 4	Prong No. 5	Prong No. 6	Prong No. 7	Prong No. 8
6K7	RF.....	0	6.1(1)	260	100	4.0	....	6.1(1)	4.0
6K7	1st Det.....	0	6.1(1)	260	118	0	....	6.1(1)	9.0
6C5	Osc.....	0	6.1(1)	120	...	0	....	6.1(1)	0
6K7	I F.....	0	6.1(1)	260	138	4.0	....	6.1(1)	4.0
6Q7	1st A.F.—2nd Det.....	0	6.1(1)	105	0	0	....	6.1(1)	1.4
6F6	Power Amp.....	0	6.1(1)	238	260	18	....	6.1(1)	0
5Z4MG	Rect.....	0	4.9(2)	...	680(3)	...	680(3)	....	4.9(2)
6E5	Tuning Indicator	Plate to Ground 30(4)		Target to Ground 270		Cathode to Ground 0		Across Heater 6.1 A.C.	

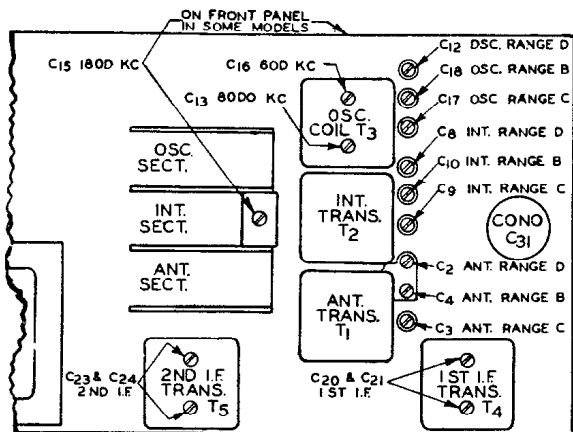
- (1) A.C. voltage as read across heater terminals 2 and 7.
(2) A.C. voltage as read across heater terminals 2 and 8.

- (3) A.C. voltage as read across terminals 4 and 6.
(4) As read with 500,000 ohm meter.

The voltage readings are taken with a voltmeter having a resistance of 1000 ohms per volt. The standard metal tube socket terminal numbering system (bottom of socket) is shown in Fig. 5

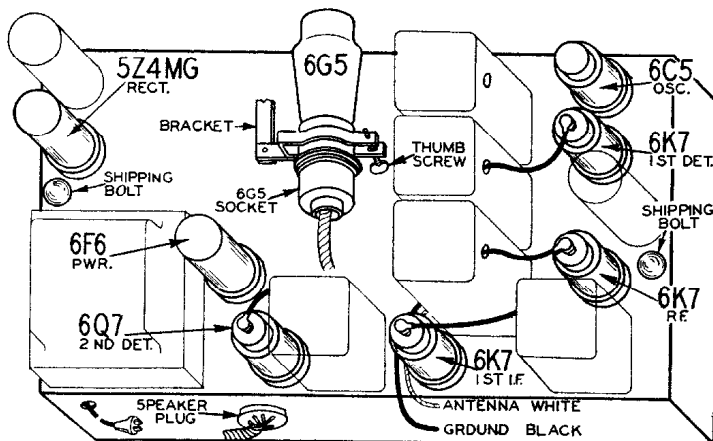
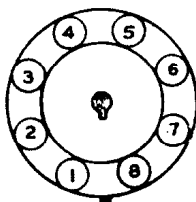
MONTGOMERY WARD

62-226, 62-228, 62-259, 62-308,
62-318, 62-408, 62-418



Location of Trimmers

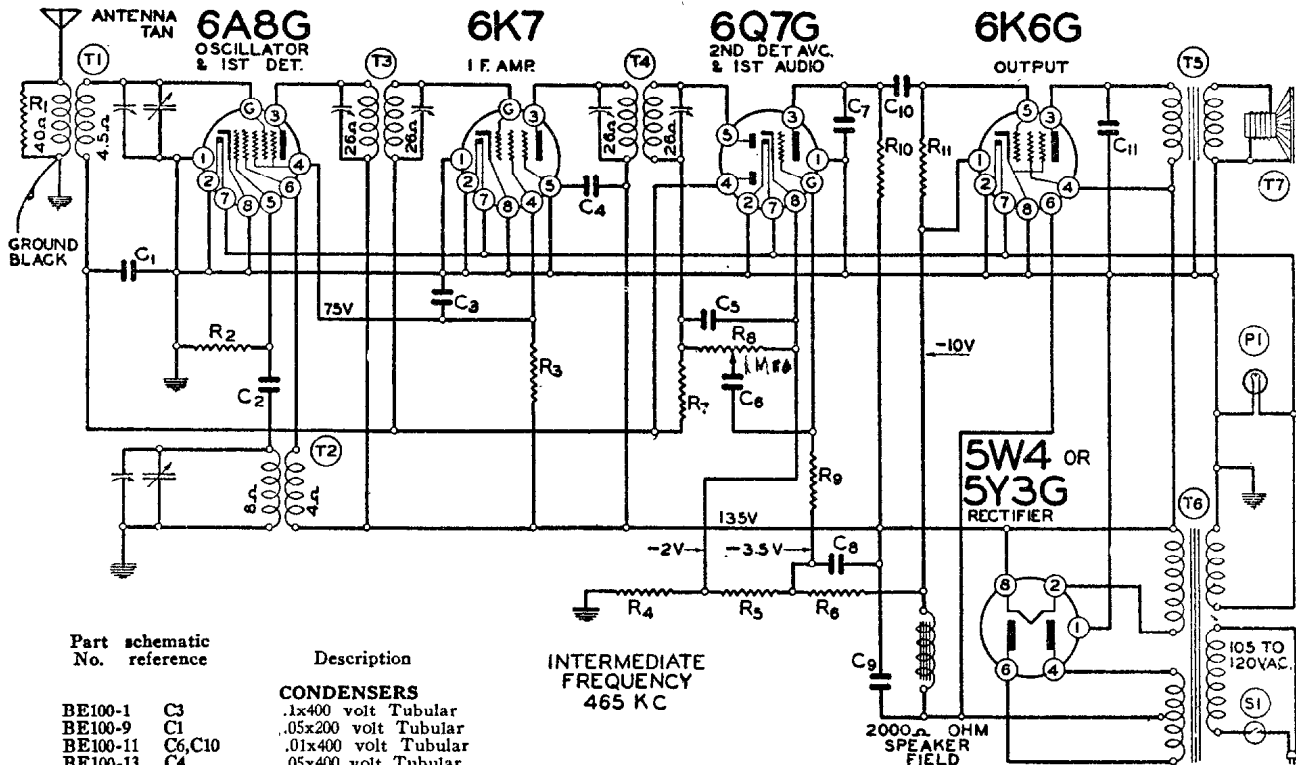
Fig. 5—Metal tube terminal numbering (bottom of socket)



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

WARDS AIRLINE RADIO

MODELS 62-350, 62-351 and 62-352



Part schematic
No. reference

Description

INTERMEDIATE
FREQUENCY
465 KC

CONDENSERS

BE100-1	C3	.1x400 volt Tubular
BE100-9	C1	.05x200 volt Tubular
BE100-11	C6,C10	.01x400 volt Tubular
BE100-13	C4	.05x400 volt Tubular
BE100-19	C11	.006x600 volt Tubular
BE119-47C	C8,C9	Dual 5 Mfd x 250 w. v. Filter Condenser

RESISTORS

BE129-2	C7	.0005 Mica Type 20%
BE129-5	C5	.0001 Mica Type 20%
BE129-12	C2	.00025 Mica Type 20%
BE106-35	R4,R5,R6	65 Ohm, 45 Ohm, 220 Ohm Metal Clad Strip
BE130-9	R10	200M Ohm-1/3 watt-20% Carbon
BE130-12	R2	50M Ohm-1/3 watt-20% Carbon
BE130-21	R1	20M Ohm-1/3 watt-20% Carbon
BE130-118	R11	600M Ohm-1/3 watt-20% Carbon
BE130-149	R3	15M Ohm-1/3 watt-20% Carbon
BE130-170	R7,R9	3 Megohm-1/3 watt-20% Carbon

COILS

BE108-82E	T3	Input I.F. Coil Assembly Complete with can
BE108-83E	T4	Output I.F. Coil Assembly Complete with can
BE110-73	T2	Oscillator Coil Assembly Complete
BE111-92	T1	Antenna Coil Assembly Complete

TRANSFORMERS

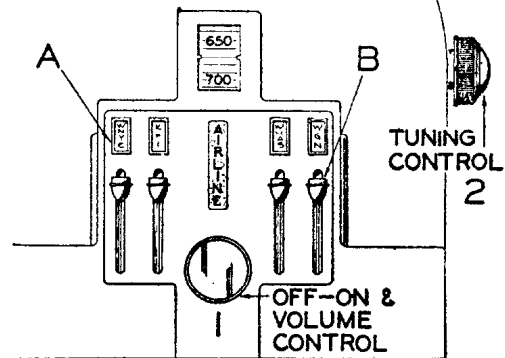
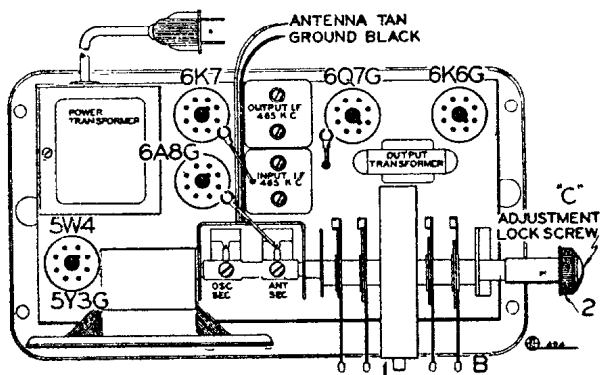
BE104-100E	T6	Power Transformer 50/60 Cycle 105-120 volt
BE104-108E		Power Transformer 25 cycle 105-120 volt
BE104-104E		Universal Transformer 25 cycle primary
BE104-99E		Universal Transformer 40 cycle primary

SPEAKER

BE114-108A & B	T7	Five inch Dynamic (2000 ohm field)
BE105-55B	T5	Output Transformer for Speaker

MISCELLANEOUS

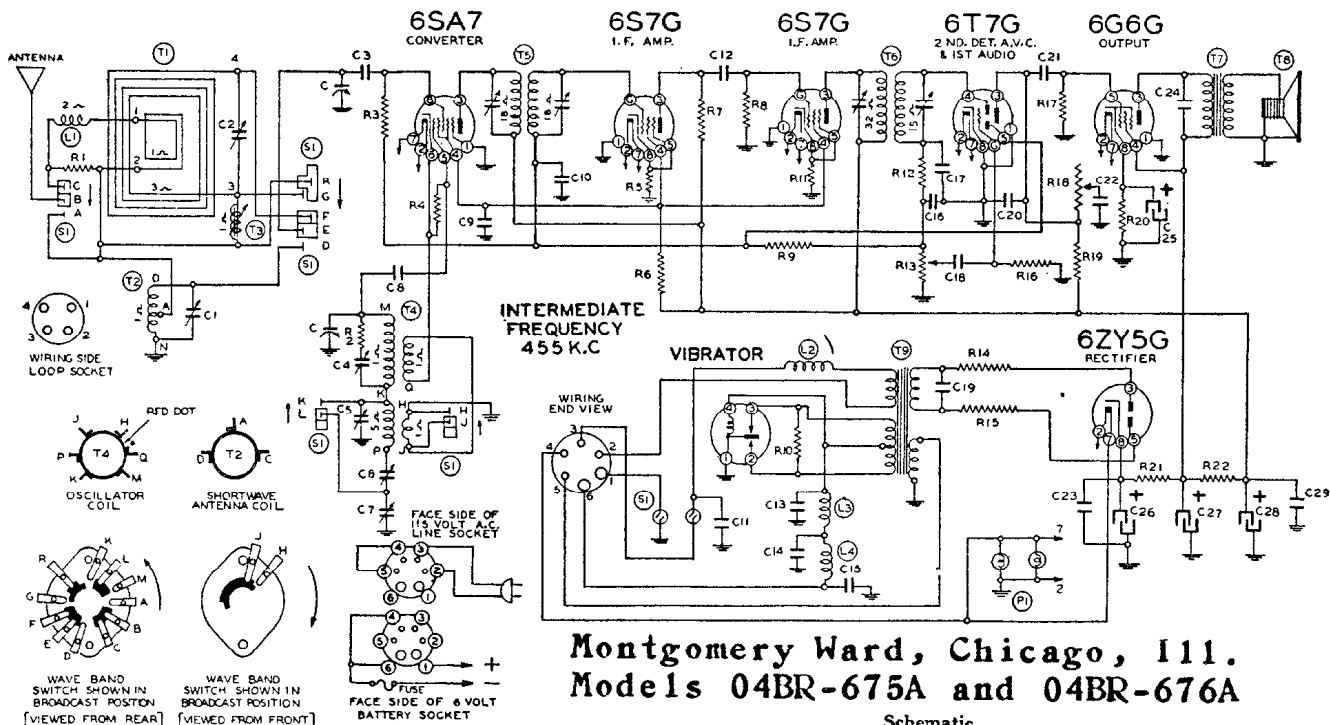
BE101-106	R8,S1	Volume Control and Switch (1 megohm)
BE102-67	C	Two Gang Variable Condenser



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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Montgomery Ward, Chicago, Ill.
Models 04BR-675A and 04BR-676A

Schematic Diagram Part
Ref. No. No.

Description

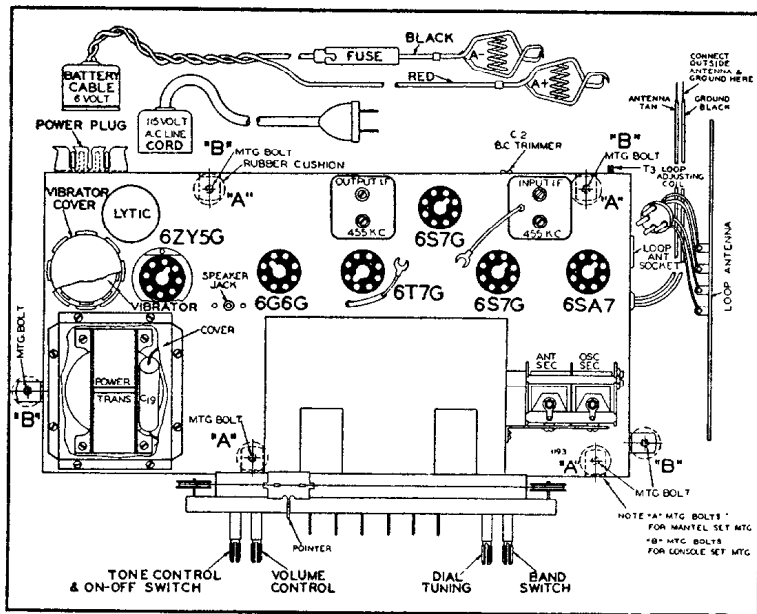
RESISTORS

R1	BE130193	3M ohm— $\frac{1}{2}$ w.
R2	BE130276	10 ohm— $\frac{1}{2}$ w.
R3	BE13019	1 megohm— $\frac{1}{2}$ w.
R4	BE130236	30M ohm— $\frac{1}{2}$ w.
R5	BE13070	500 ohm— $\frac{1}{2}$ w.
R6	BE13067	9M ohm— $\frac{1}{2}$ w.
R7	BE130157	12M ohm— $\frac{1}{2}$ w.
R8	BE13019	1 megohm— $\frac{1}{2}$ w.
R9	BE130170	3 megohm— $\frac{1}{2}$ w.
R10	BE13084	200 ohm— $\frac{1}{2}$ w.
R11	BE130192	2M ohm— $\frac{1}{2}$ w.
R12	BE13020	100M ohm— $\frac{1}{2}$ w.
R13	BE101227	Volume Control
R14	BE130233	60 ohm— $\frac{1}{2}$ w.
R15	BE130233	60 ohm— $\frac{1}{2}$ w.
R16	BE130223	10 megohm— $\frac{1}{2}$ w.
R17	BE1303	500M ohm— $\frac{1}{2}$ w.
R18	BE101228	2 megohm Tone Control
R19	BE130266	200M ohm— $\frac{1}{2}$ w.
R20	BE13079	400 ohm— $\frac{1}{2}$ w.
R21	BE130222	350 ohm— $\frac{1}{2}$ w.
R22	BE130235	1500 ohm— $\frac{1}{2}$ w.

CONDENSERS

C	BE102133	2 Gang Variable Condenser
C1	BE124116	S.W. Antenna Trimmer
C2	BE124141	B.C. Antenna Trimmer
C3	BE12921	.0002 mica
C4	BE124142	S.W. Oscillator Trimmer
C5	BE124142	B.C. Oscillator Trimmer
C6	BE124140	B.C. Pad Trimmer
C7	BE124140	S.W. Pad Trimmer
C8	BE12938	.00005 mica
C9	BE10048	.25 x 200 v.
C10	BE1009	.05 x 200 v.
C11	BE10013	.05 x 400 v.
C12	BE1292	.0005 mica
C13	BE10031	.5 x 120 v.
C14	BE10031	.5 x 120 v.
C15	BE10031	.5 x 120 v.
C16	BE129161	.0001 mica
C17	BE129161	.0001 mica
C18	BE10025	.002 x 600 v.
C19	BE10073	.008 x 1200 v.
C20	BE1292	.0005 mica
C21	BE10026	.02 x 400 v.
C22	BE100106	.004 x 600 v.
C23	BE10020	.1 x 200 v.
C24	BE100106	.004 x 600 v.
C25	BE119111	20 Mfd. Lytic x 20 w.v.
C26	BE119111	40 Mfd. Lytic x 200 w.v.
C27	BE119111	20 Mfd. Lytic x 200 w.v.
C28	BE119111	20 Mfd. Lytic x 200 w.v.
C29	BE10020	.1 x 200 v.

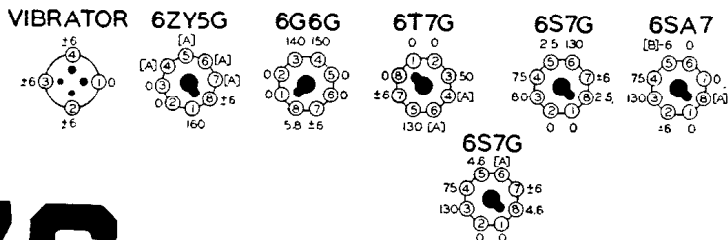
C4 and C5 in one unit.
C16 and C17 in one unit.
C6 and C7 in one unit.
C25, C26, C27 and C28 in one unit



BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND CHASSIS LOOP PLUGGED INTO CHASSIS AND SET TUNED OFF SIGNAL SET OPERATING ON 6.3 VOLT STORAGE BATTERY

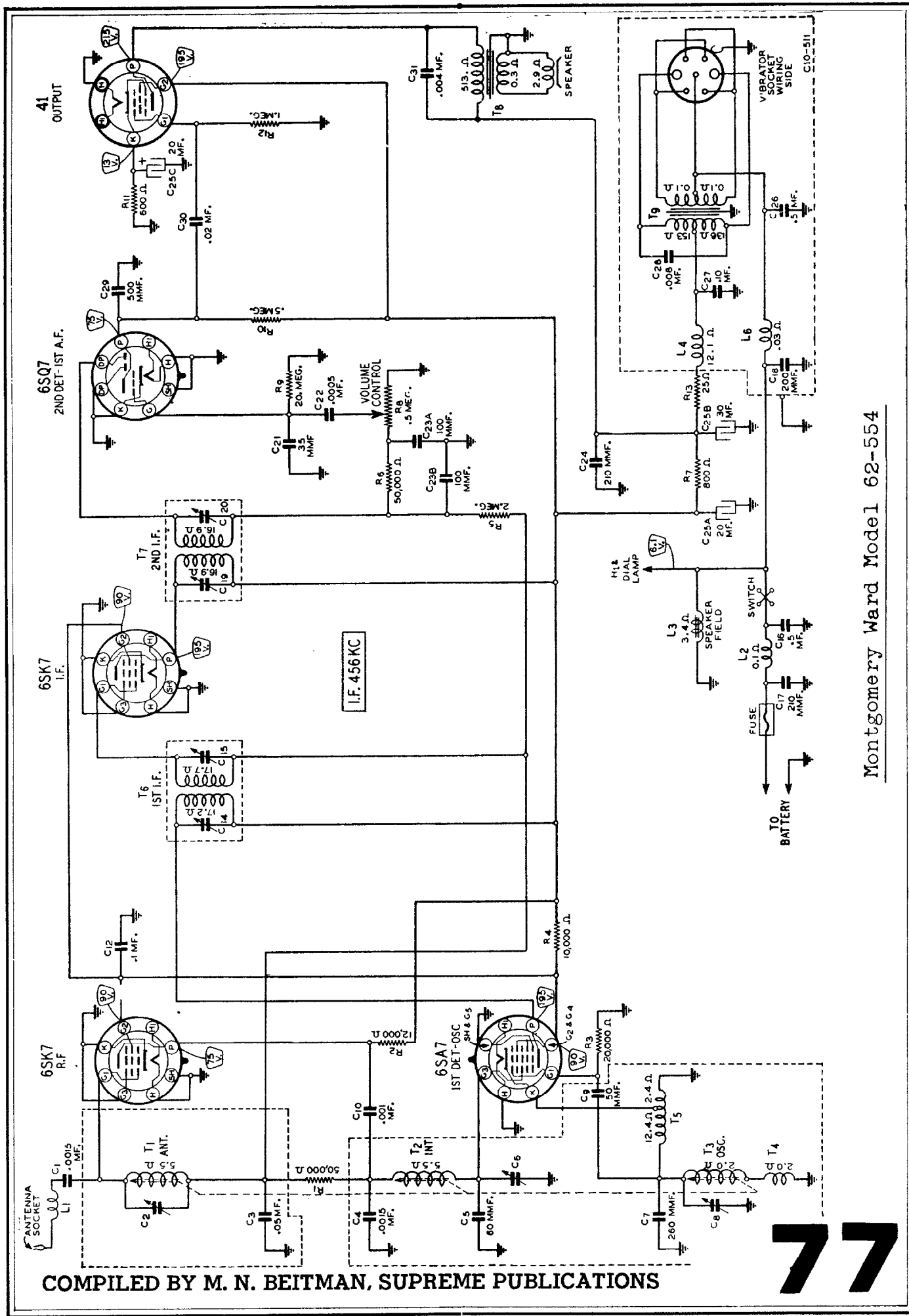
[A] CANNOT BE MEASURED WITH VOLTMETER.
[B] OSCILLATOR VOLTAGE MEASURED WITH R.F. CHOKER IN SERIES WITH VOLTMETER LEAD



REAR OF CHASSIS

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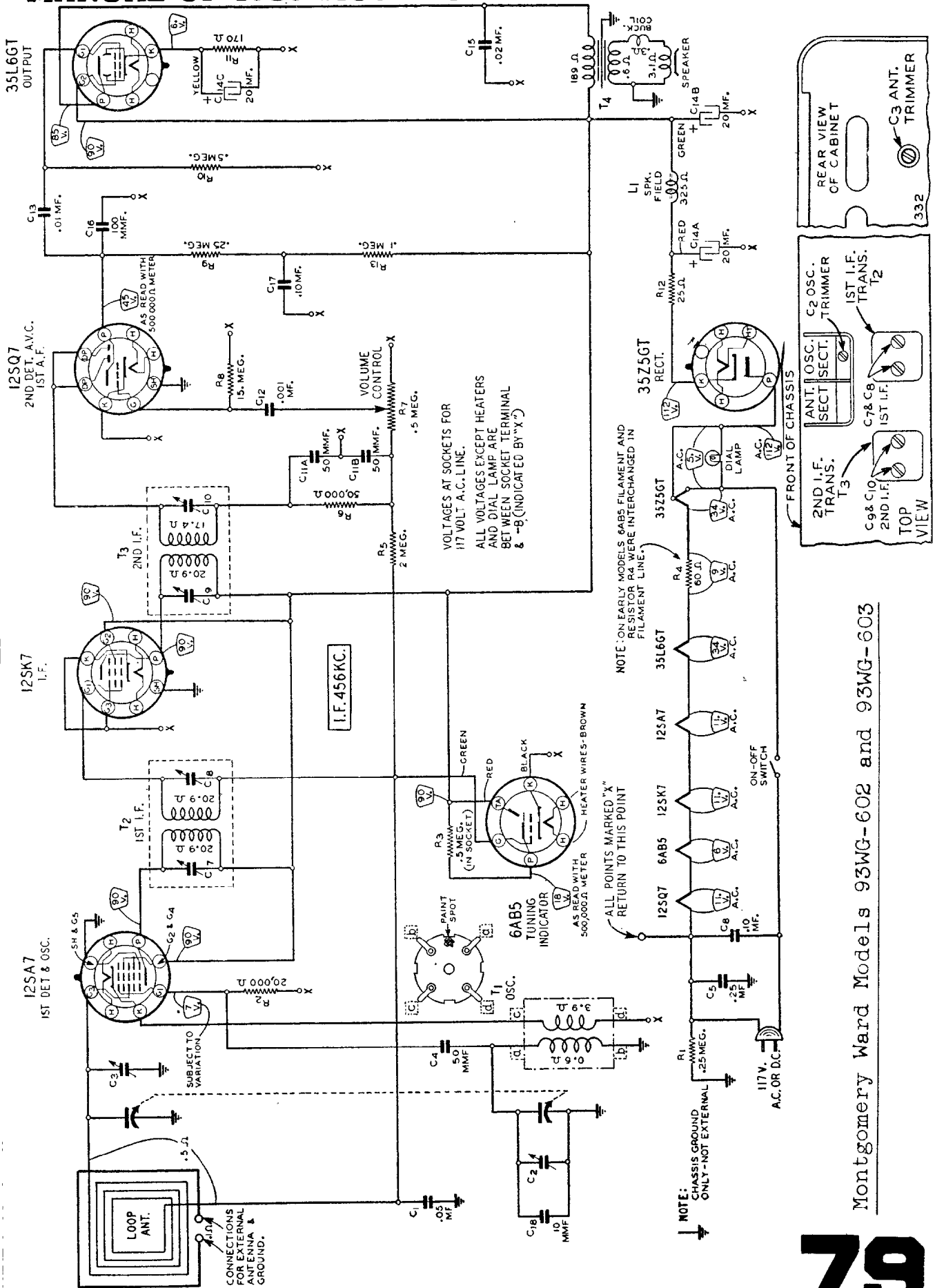


Montgomery Ward Model 62-554

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



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Montgomery Ward Models 93WG-602 and 93WG-603

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Montgomery Ward Model 93WG-800

ALIGNMENT PROCEDURE

Volume Control—Maximum All Adjustments.

Connect Radio Chassis to Ground Post of Signal Generator with a Short Heavy Lead.

Allow Chassis and Signal Generator to "Heat Up" for several minutes.

The following equipment is required for aligning:

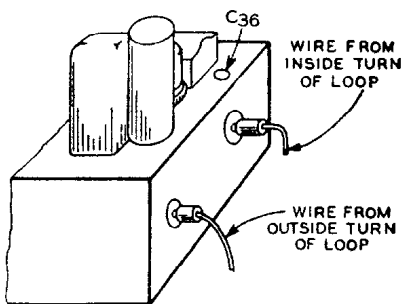
An All Wave Signal Generator which will provide an accurately calibrated signal at the test frequencies as listed.

Output Indicating Meter—Non-Metallic Screwdriver.

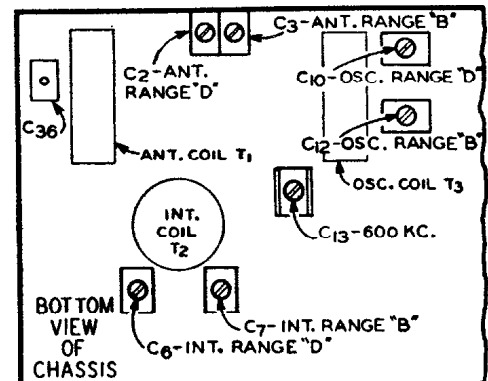
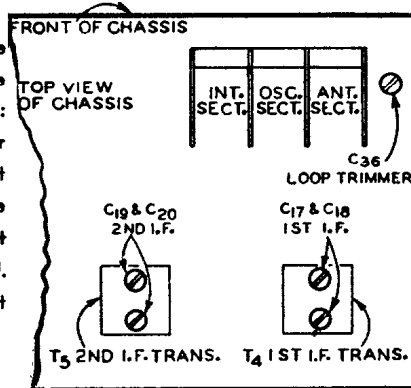
Dummy Antennas—.1 mf., 200 mmf., and 400 ohms.

SIGNAL GENERATOR		DUMMY ANTENNA	BAND SWITCH SETTING	CONDENSER SETTING	ADJUST TRIMMERS TO MAXIMUM
FREQUENCY SETTING	CONNECTION AT RADIO				
I. F.					
456 KC	Grid of 1st Det.	.1 mf.	B Range	Turn Rotor to Full Open	1st I.F. (C17) & (C18) 2nd I.F. (C19) & (C20)
RANGE B					
1730 KC	Antenna Lead	200 mmf.	B Range Ext. Ant.	Turn Rotor to Full Open	Oscillator Range B (C12)
1500 KC	Antenna Lead	200 mmf.	B Range Ext. Ant.	Turn Rotor to Max. Output	Ant. Range B (C3) Int. Range B (C7)
600 KC	Antenna Lead	200 mmf.	B Range Ext. Ant.	Turn Rotor to Max. Output	600 KC (C13) Rock Rotor—See Note A
RANGE D					
18,300 KC	Antenna Lead	400 Ohm	D Range	Turn Rotor to Full Open	Oscillator Range D (C10)
18,300 KC	Antenna Lead	400 Ohm	D Range	Keep Rotor at Full Open Position	Ant. Range D (C2) Int. Range D (C6) Rock Rotor—See Note A
LOOP RANGE B					
1500 KC See Note B	None See Note B		Loop	Turn Rotor to Max. Output	See Note C Loop Trimmer (C36)

CAUTION—When aligning the short wave band, be sure NOT to adjust at the image frequency. This can be checked as follows: Let us say the signal generator is set for 15,000 KC. The signal will then be heard at 15,000 on the dial of the radio. The image signal, which is much weaker, will be heard at 15,000 less 912 KC, or 14,088 KC on the dial. It may be necessary to increase the input signal to hear the image.



LOOP CONNECTIONS



Attenuate the signal from the signal generator to prevent the leveling-off action of the AVC. After each range is completed, repeat the procedure as a final check.

NOTE A—Turn the rotor back and forth and adjust the trimmer until the peak of greatest intensity is obtained.

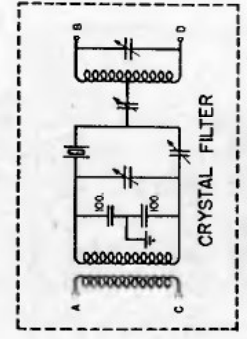
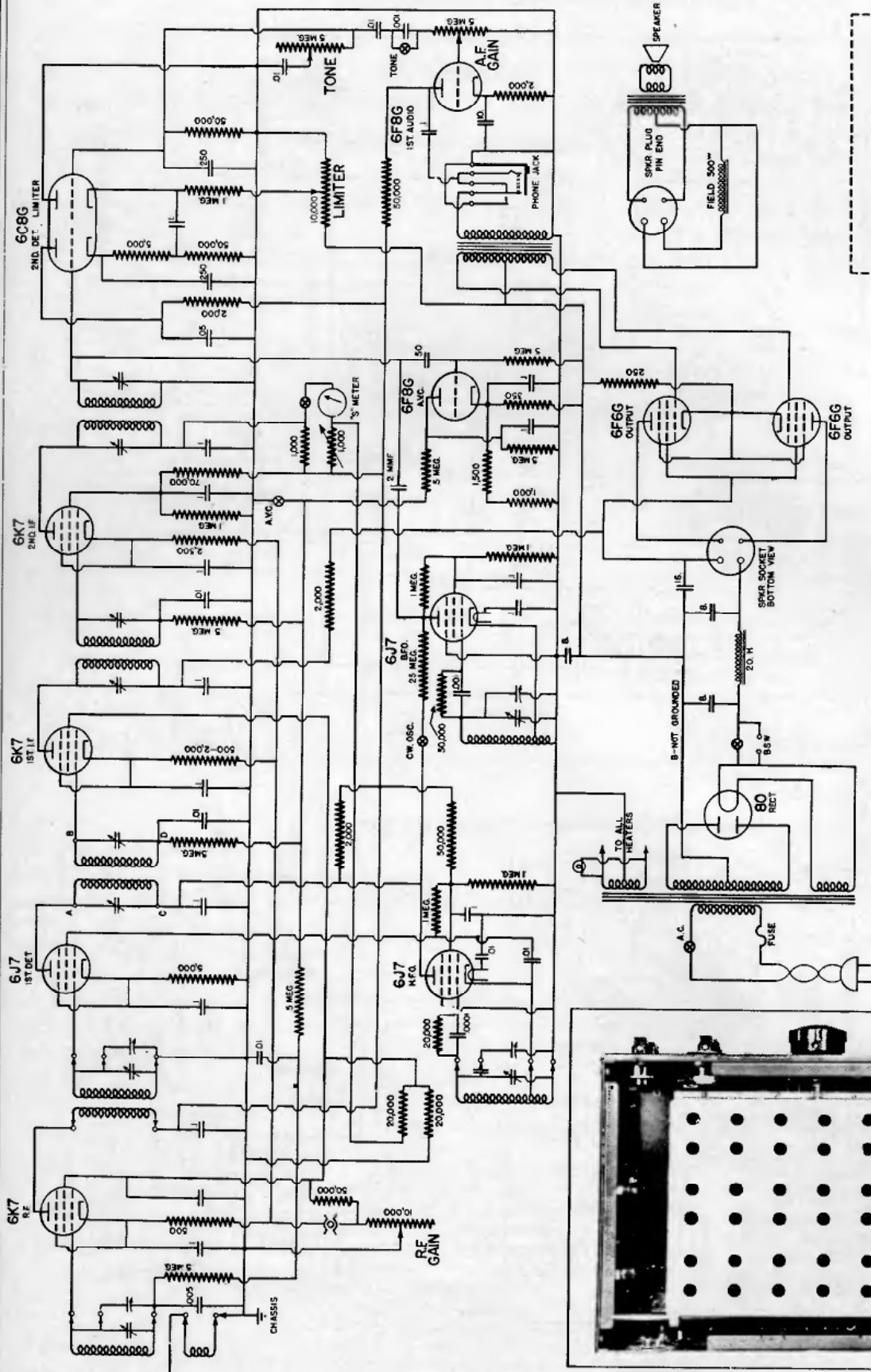
NOTE B—Reinstall set in cabinet. Connect a loop approximately one foot in diameter across the antenna and ground posts of the signal generator. Place signal generator so that this loop is between 3 and 10 feet from loop in cabinet.

NOTE C (CONSOLE MODELS)—Turn knob of loop until output is maximum.

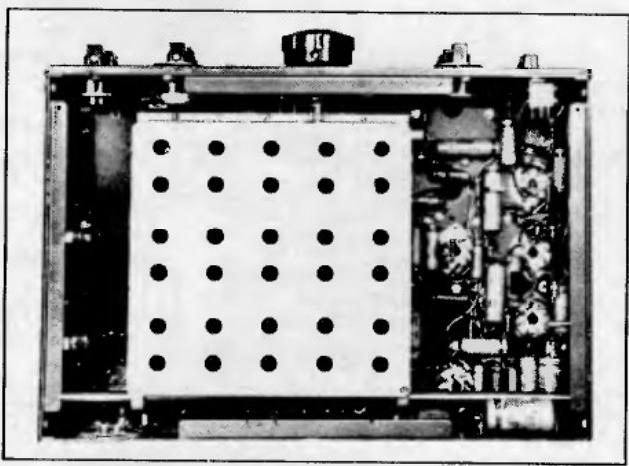
CALIBRATION—Chassis should be in cabinet. If it is necessary to recalibrate the radio, loosen the set screw on the dial hub near the volume control drum. Tune in a signal of known frequency. Hold the tuning control drum stationary and at the same time turn the dial drum the necessary amount in the required direction. If the radio detunes as the dial drum is turned, loosen the set screw a slight additional amount and recalibrate. Retighten the set screw.

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NATIONAL COMPANY, INC.
THE NC-100A RECEIVER



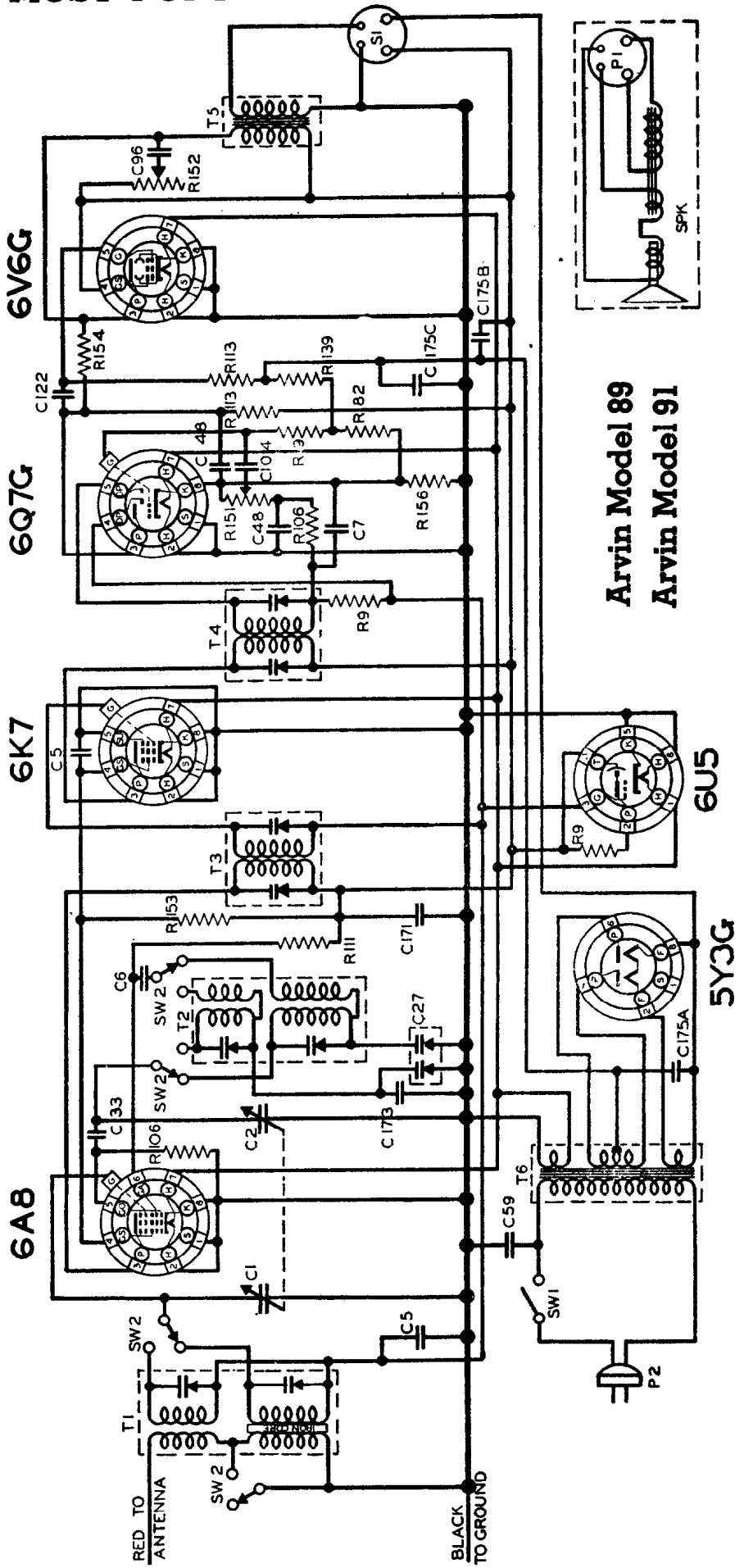
BOTTOM VIEW
The coil assembly is shown midway between the 1.3-2.8 mc. and 2.7-6.4 mc. ranges.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

RESISTORS		CONDENSERS		TRANSFORMERS		MISCELLANEOUS UNITS	
R	W	C	W	T	S	S	D
OHMS	PART NO.	CAPACITY	VOLTS	TYPE	DESCRIPTION	SYMBOL	PART NO.
1	17-1000	10 MFD	450	1	ANTENNA COIL	L	17-19004
2	17-1417	10 MFD	450	2	OSCILLATOR COIL	P1	17-19004
3	17-1417	20 MFD	25	3	FIRST I.F. COIL	P2	17-19004
4	17-1417	20 MFD	25	4	SECOND I.F. COIL	S1	17-19004
5	17-1417	20 MFD	25	5	OUTPUT TRANS.	SW	17-19004
6	17-1417	20 MFD	25	6	POWER TRANS.	SW2	17-19004
7	17-1417	20 MFD	25				
8	17-1417	20 MFD	25				
9	17-1417	20 MFD	25				
10	17-1417	20 MFD	25				
11	17-1417	20 MFD	25				
12	17-1417	20 MFD	25				
13	17-1417	20 MFD	25				
14	17-1417	20 MFD	25				
15	17-1417	20 MFD	25				
16	17-1417	20 MFD	25				
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36	17-1417	20 MFD	25				
37	17-1417	20 MFD	25				
38	17-1417	20 MFD	25				
39	17-1417	20 MFD	25				
40	17-1417	20 MFD	25				
41	17-1417	20 MFD	25				
42	17-1417	20 MFD	25				
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96	17-1417	20 MFD	25				
97	17-1417	20 MFD	25				
98	17-1417	20 MFD	25				
99	17-1417	20 MFD	25				
100	17-1417	20 MFD	25				

I.F. PEAK 455 K.C.
 BROADCAST BALANCE AT 1500 K.C.
 SHORTWAVE BALANCE AT 15 M.C.
 NOBLITT-SPARKS INDUSTRIES, INC.
 COLUMBUS, INDIANA

ARVIN RADIO CHASSIS RE 27



Arvin Model 89
 Arvin Model 91

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

ARVIN HOME RADIO CHASSIS RE 37.

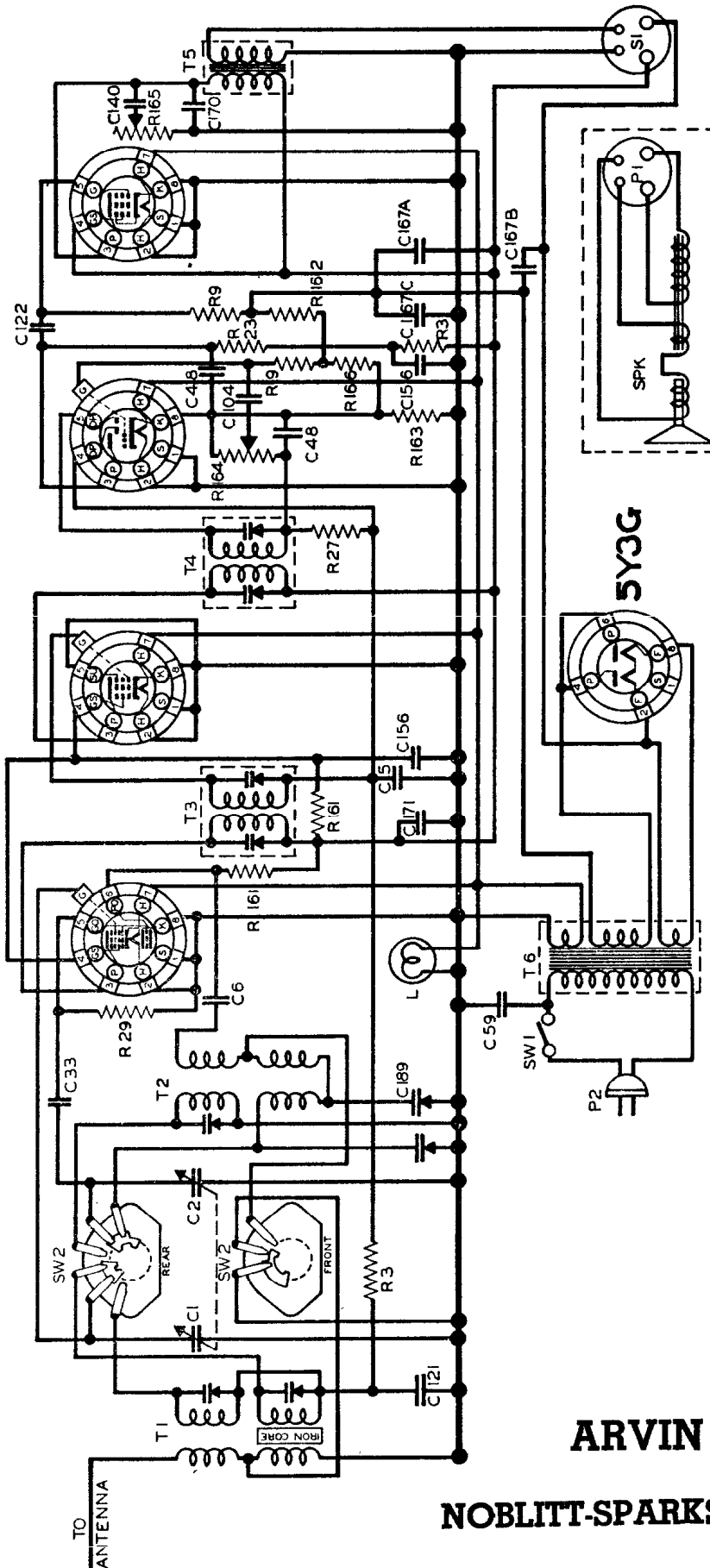
6K6G

6Q7G

6K7

6K8

5Y3G



RESISTORS		CONDENSERS		TRANSFORMERS		MISCELLANEOUS UNITS	
R	OHMS	C	CAPACITY	T	TYPE	SYMBOL	DESCRIPTION
3	100K	1	TWO-GANG	1	ANTENNA COILS	L	DIAL LIGHT BULB - MAZDA 4.4
9	1M	2	VARIABLE	2	OSCILLATOR COILS	P1	SPEAKER PLUG (PART OF SPEAKER)
23	250K	5	.05	3	FIRST I.F. COIL	P2	LINE CORD & PLUG ASSEMBLY
27	21K	6	.002	4	SECOND I.F. COIL	S1	SPEAKER SOCKET
29	50K	33	.00005	5	OUTPUT TRANS.	SPK	SPEAKER
181	15K	48	.00025	6	POWER TRANS.	SW1	A.C. LINE SWITCH (PART OF NO.17-16089)
182	200	59	.01			SW2	BAND SWITCH
183	30	104	.001				
184	500K	121	.02				
185	100K	122	.01				
186	40	140	.02				
		156	.05				
		167A	10 MFD.				
		167B	10 MFD.				
		167C	20 MFD				
		170	.005				
		171	.1				
		189	5004-5005 PAD.				

I.F. PEAK 455 K.C.
 BROADCAST PAD AT 600 K.C.
 SHORT WAVE CHECK AT 7 M.C.
 NOBLITT-SPARKS INDUSTRIES, INC.,
 COLUMBUS, INDIANA.

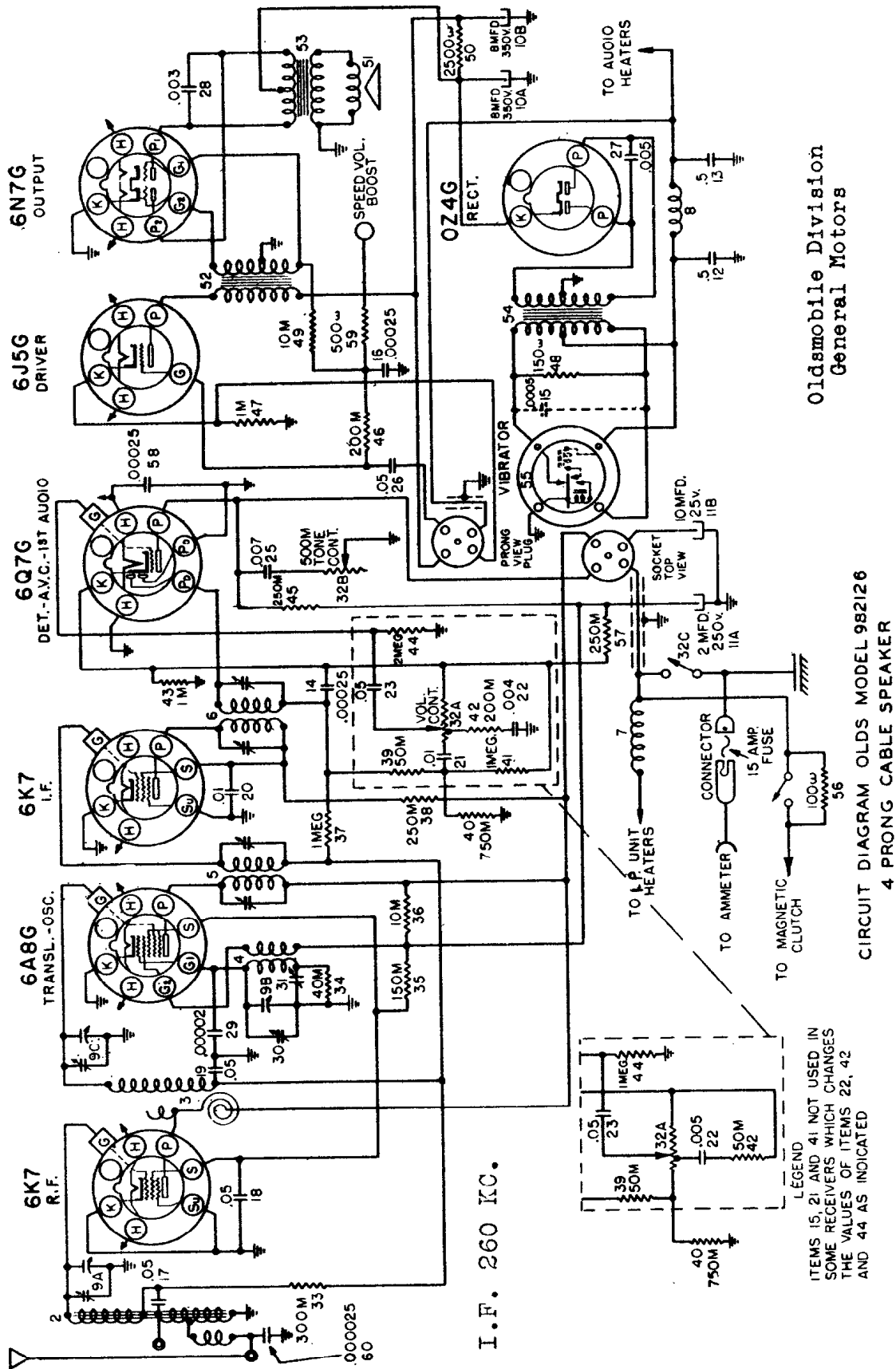
ARVIN MODEL 78

NOBLITT-SPARKS INDUSTRIES, INC.

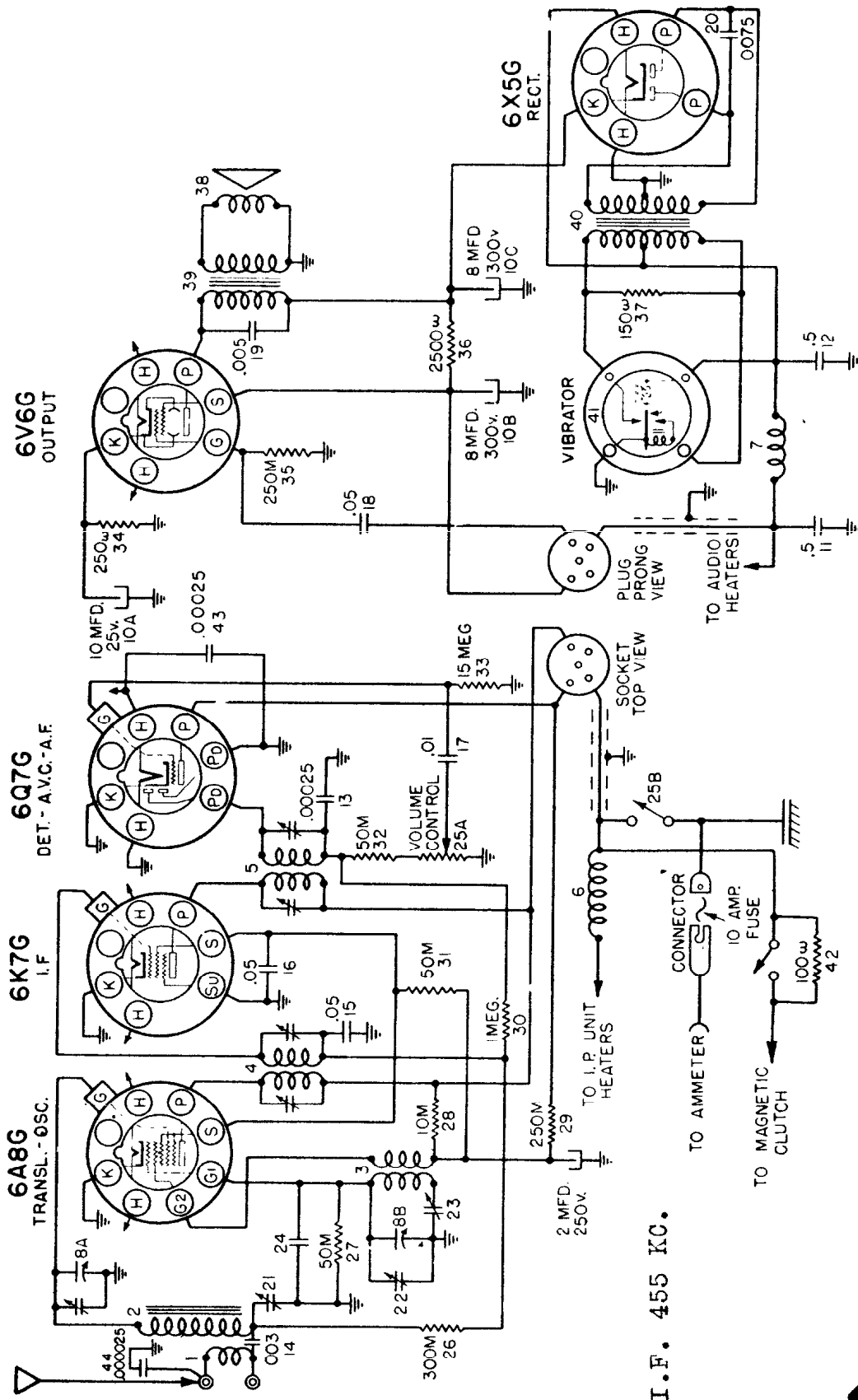
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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



I.F. 455 KC.

Oldsmobile Division
General Motors

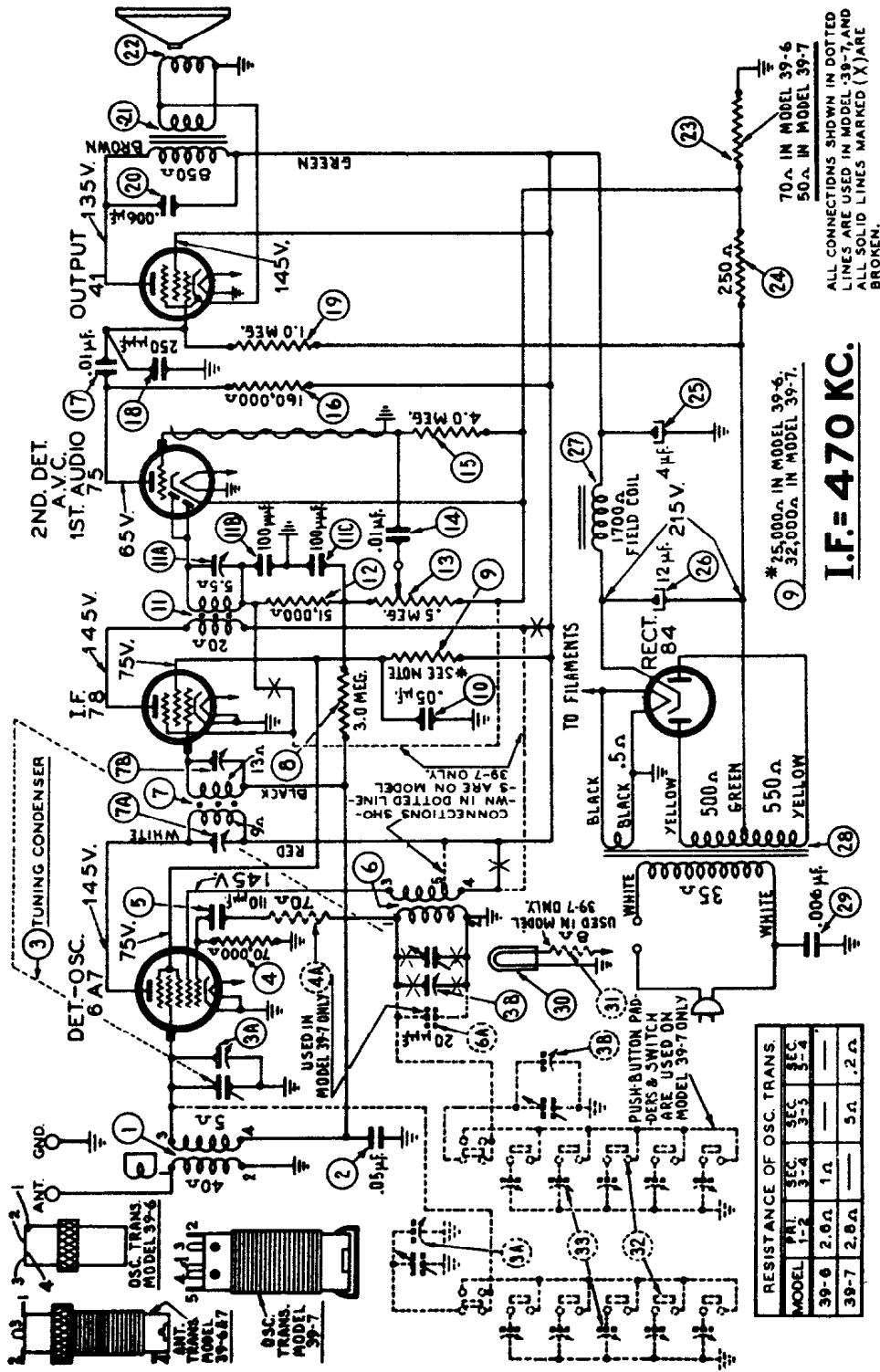
CIRCUIT DIAGRAM OLDS MODEL 982127



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Philco Radio & Television Corporation

Models 39-6, 39-7.



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

NOTE B—DIAL CALIBRATION: With the tuning condenser in "maximum capacity" position (plates fully meshed), set the dial pointer between the two horizontal lines at the low frequency end of the scale (550 K.C.).

Operation in Order	SIGNAL GENERATOR		RECEIVER			
	Output Connections to Receiver	Dummy Antenna Note A	Dial Setting	Control Setting	Adjust Compensators in Order	Special Instructions
1	6A7	.1 mf.	580 K.C.	Vol. Cont. Max.	11A, 7B, 7A	Adjust for max. output
2	Ant. Lead	100 mf.	1550 K.C.	Vol. Cont. Max.	3B, 3A	Adjust for max. output Note A, B

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Setting Push-Buttons on Models: -- 39-25 39-30 39-31 39-35 39-40 39-45

Circuits	Frequency Range
1 and 2	540 to 1030 kilocycles
3 and 4	670 to 1160 kilocycles
5 and 6	900 to 1470 kilocycles
7 and 8	1170 to 1600 kilocycles

(C) Turn the receiver Tuning Range Selector to position two ("Manual Tuning") and tune the receiver to the station to be set on the first button.

(D) Plug the output leads of the Station Setter into the "High" and "Gnd" jacks, and turn the output controls to maximum. Turn the modulation control to "Modulation Off." Connect the output lead of the Station Setter to the "ANT" and "GND" terminals of the receiver and tune to the frequency of the station being received. As the indicator is slowly tuned through the frequency of the station there will be two points at which a high pitched swish will be heard, one above and one below the frequency of the station. When the indicator is on the frequency of the station, minimum high pitched swish will be heard.

(E) Set the modulation control of the Station Setter for "Modulation On." The modulated signal of the Station Setter will then be heard through the receiver.

(F) Turn the receiver Tuning Range Selector to position one (Automatic Tuning) and push in the first button. Using the Part No. 45-2610 Insulated Screw Driver, turn the number 1 "OSC" screw until the modulated signal of the Station Setter is tuned in to maximum volume. Then adjust the number 1 "ANT" screw for maximum signal.

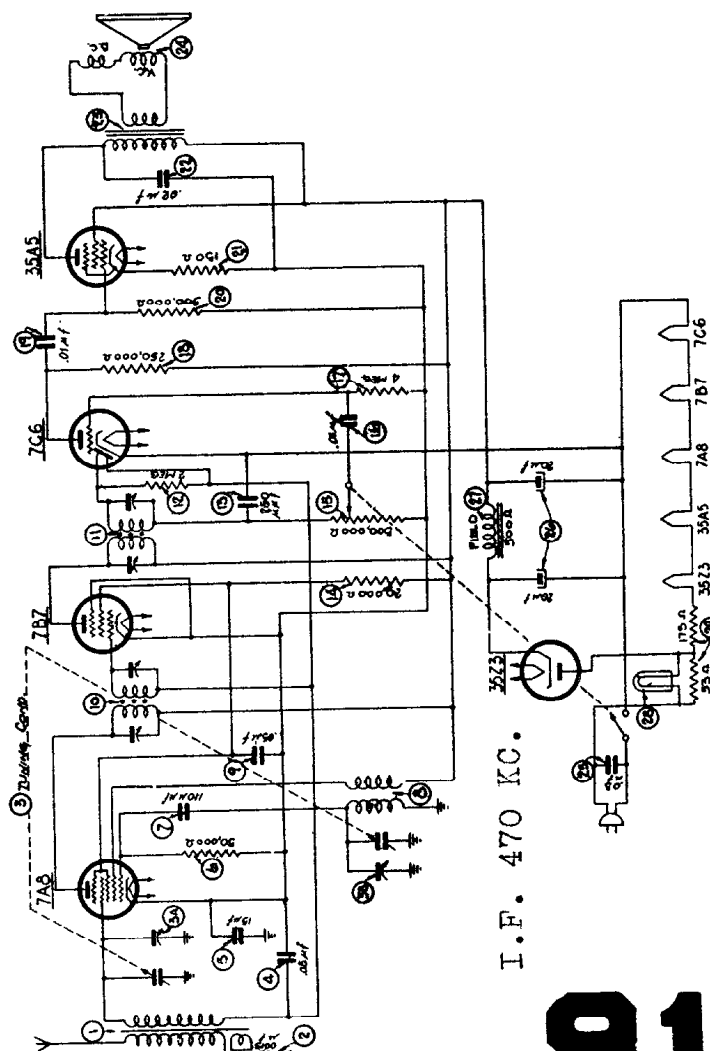
(G) Remove the output lead of the Philco Station Setter from the "ANT" terminal of the receiver and turn its indicator off the frequency of the station. The program of the desired station will then be heard on the receiver.

(H) With the volume of the receiver low, slowly turn the number 1 "OSC" back and forth until maximum output is received. Repeat the same procedure for the number 1 "ANT" screw.

After setting up the first station, the same procedure given under (C) to (H) is used for the other stations.

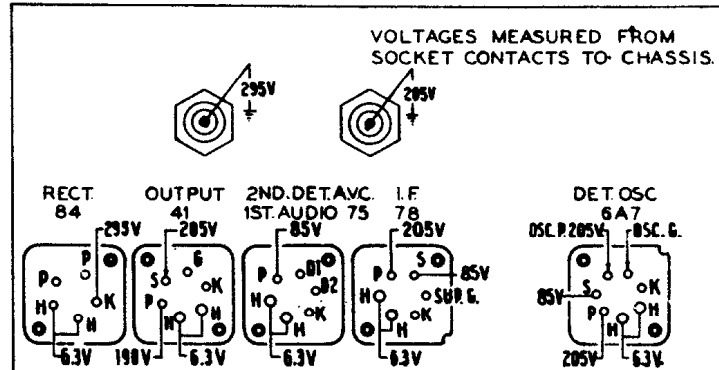
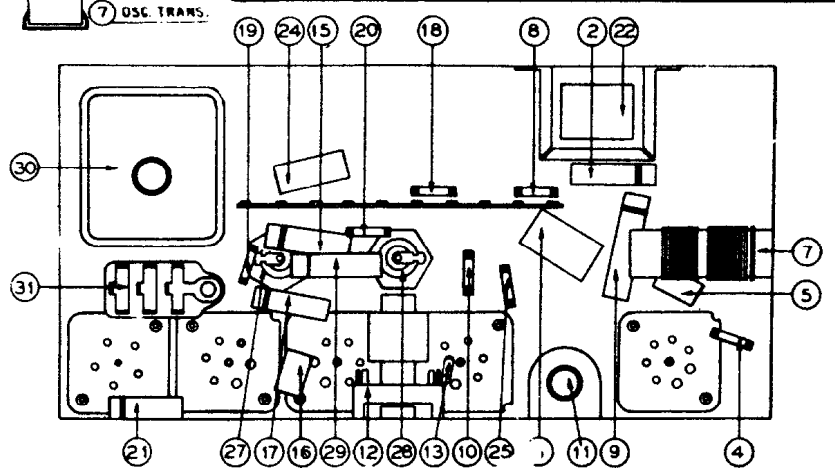
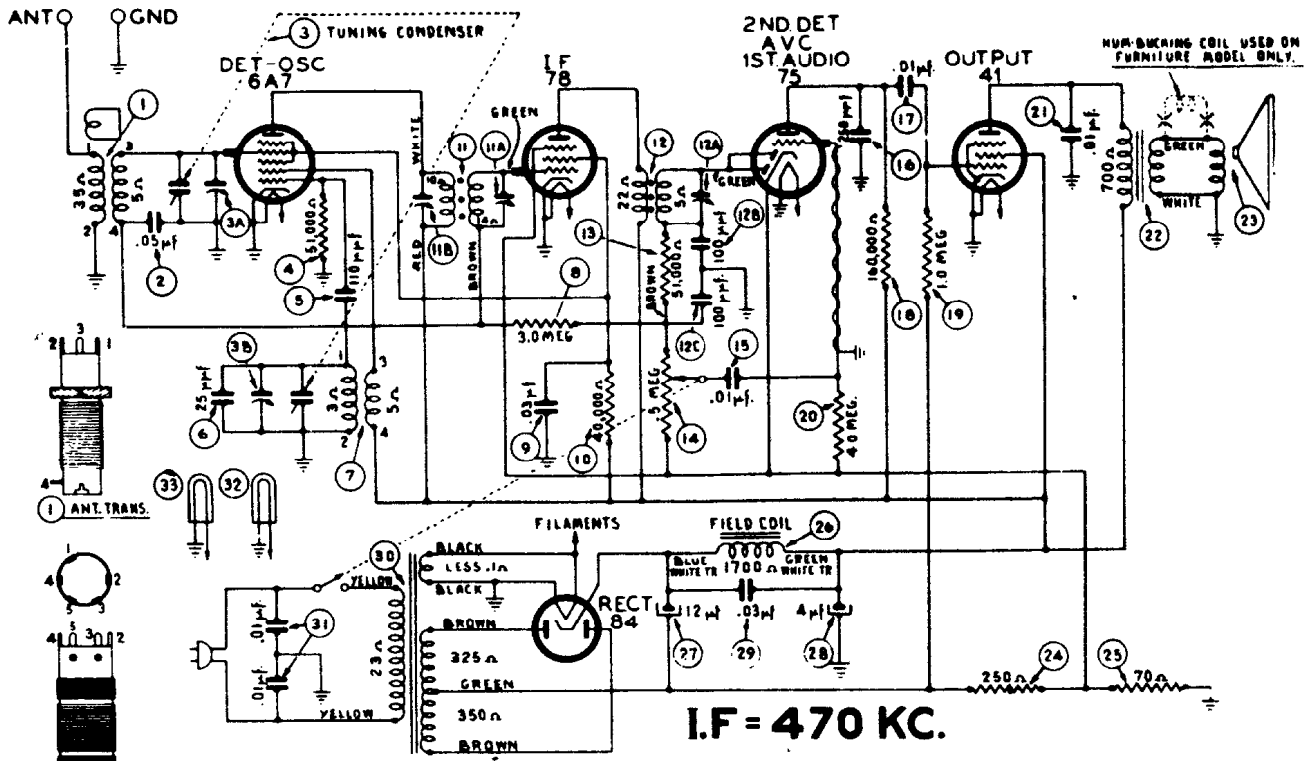
PHILCO MODEL TH-4

1	Antenna Transformer.....	17	Resistor (4 meg., 1/3 watt).....
2	Tubular Condenser (.0015 mf., 200V.)	18	Resistor (250,000 ohms, 1/3 watt)
3	Tuning Condenser.....	19	Tubular Condenser (.01 mf., 400V)
4	Tubular Condenser (.05 mf., 400V.)	20	Resistor (500,000 ohms, 1/3 watt)
5	Tubular Condenser (.15 mf., 400V.)	21	Resistor (130 ohms, 1/2 watt).....
6	Resistor (50,000 ohms, 1/3 watt).	22	Tubular Condenser (.02 mf., 400V
7	Mica Condenser (110 mmf.).....	23	Output Transformer.....
8	Oscillator Transformer (.05 mf., 400V.)		For Speaker 38-1469-1.....
9	1st I.F. Transformer.....	24	Speaker.....
10	2nd I.F. Transformer.....	25	Tubular Condenser (.03 mf., 400V
11	Resistor (2 meg., 1/3 watt).....	26	Electrolytic Condenser (20-20mf.
12	Mica Condenser (250 mmf.).....	27	Field Coil -- Part of Speaker
13	Resistor (20,000 ohms, 1/3 watt).	28	Pilot Lamp.....
14	Volume Control (500,000 ohms).....	29	Line Resistor.....
15	Tubular Condenser (.01 mf., 200V.)		



PHILCO

Model 39-17, Codes 121-122



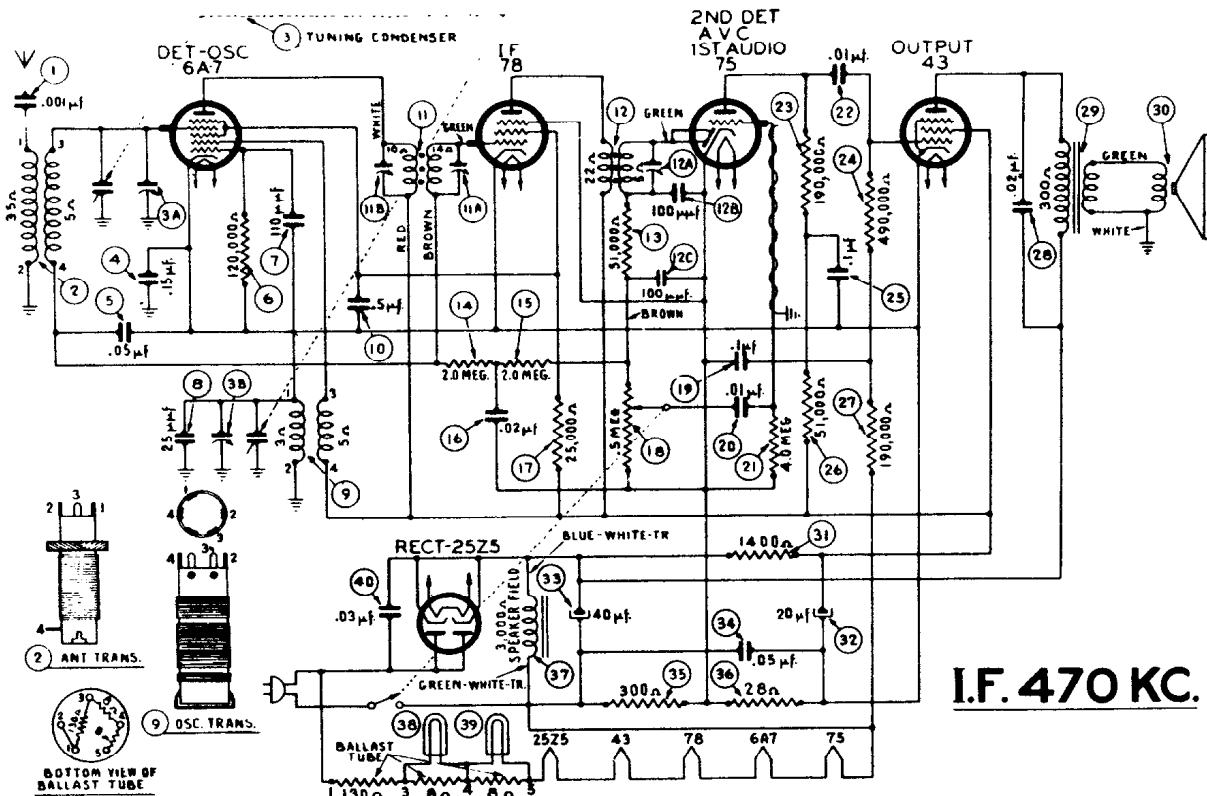
Volume minimum,
no signal, line
voltage 115 v.

Schem. No.	Description	Part No.
1	Antenna Transformer	32-3039
2	Condenser (.05 mf. tubular)	30-4519
3	Tuning Condenser Assembly	31-2265
4	Resistor (51,000 ohms, 1/2 watt)	33-351339
5	Condenser (110 mmf. mica)	30-1031
6	Condenser (.25 mmf. silver plated mica)	30-1112
7	Oscillator Transformer	32-3040
8	Resistor (3.0 megohm)	33-530339
9	Condenser (.03 mf. tubular)	30-4449
10	Resistor (40,000 ohms, 1/2 watt)	33-340339
11	1st I. F. Transformer Assembly	32-3075
12	2nd I. F. Transformer Assembly	32-2944
13	Resistor (51,000 ohms, 1/2 watt)	33-351339
14	Volume Control and On-Off Switch	33-5276
15	Condenser (.01 mf. tubular)	30-4479
16	Condenser (mica, 250 mmf.)	30-1032
17	Condenser (.01 mf. tubular)	30-4572
18	Resistor (16,000 ohms, 1/2 watt)	33-316339
19	Resistor (1.0 megohm, 1/2 watt)	33-510339
20	Resistor (4.0 megohm, 1/2 watt)	33-540339
21	Condenser (.01 mf. tubular)	30-4572
22	Output Transformer	32-7980
23	Cone and Voice Coil Assembly for Speaker (Part No. 36-1426-1)	36-4083
	(Part No. 36-1426-3)	36-4085
	Cone and Voice Coil Assembly for Speaker (Part No. 36-1440)	36-4086
24	Resistor (250 ohms, wire wound)	33-125431
25	Resistor (70 ohms, 1/2 watt)	33-070339
26	†Field Coil for Speaker (Pt. No. 36-1426)	
	†Field Coil for Speaker (Pt. No. 36-1440)	
27	Condenser (12 mf. electrolytic)	30-2319
28	Condenser (4 mf. electrolytic)	30-2236
29	Condenser (.03 mf. tubular)	30-4449
30	Power Transformer (115 volts, 50-60 cycles)	32-7974
31	Condenser (.01 mf.—.01 mf., bakelite)	3903DG

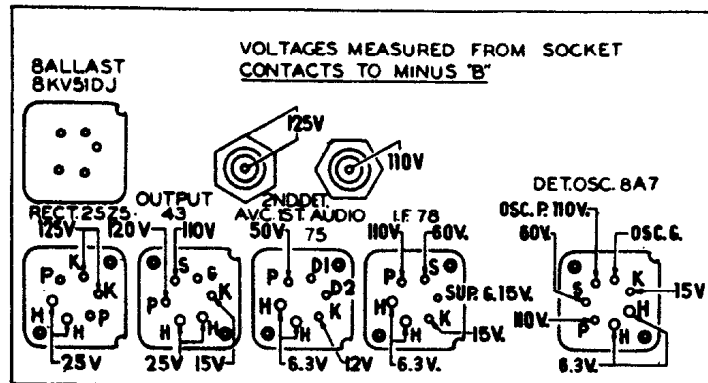
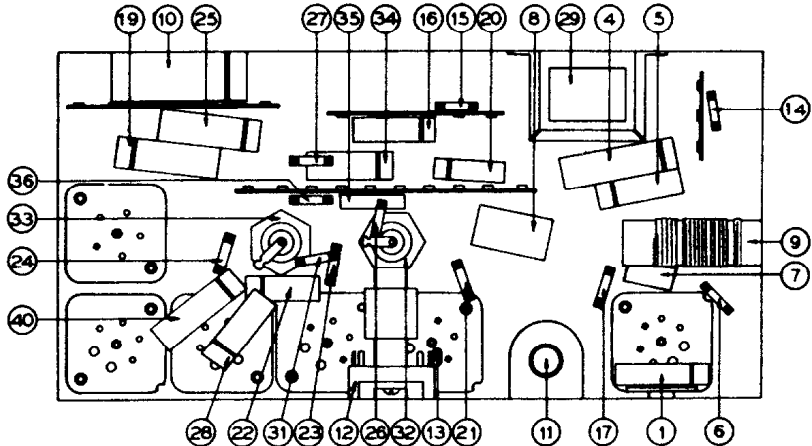
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

PHILCO

Model 39-18, Codes 121 & 122



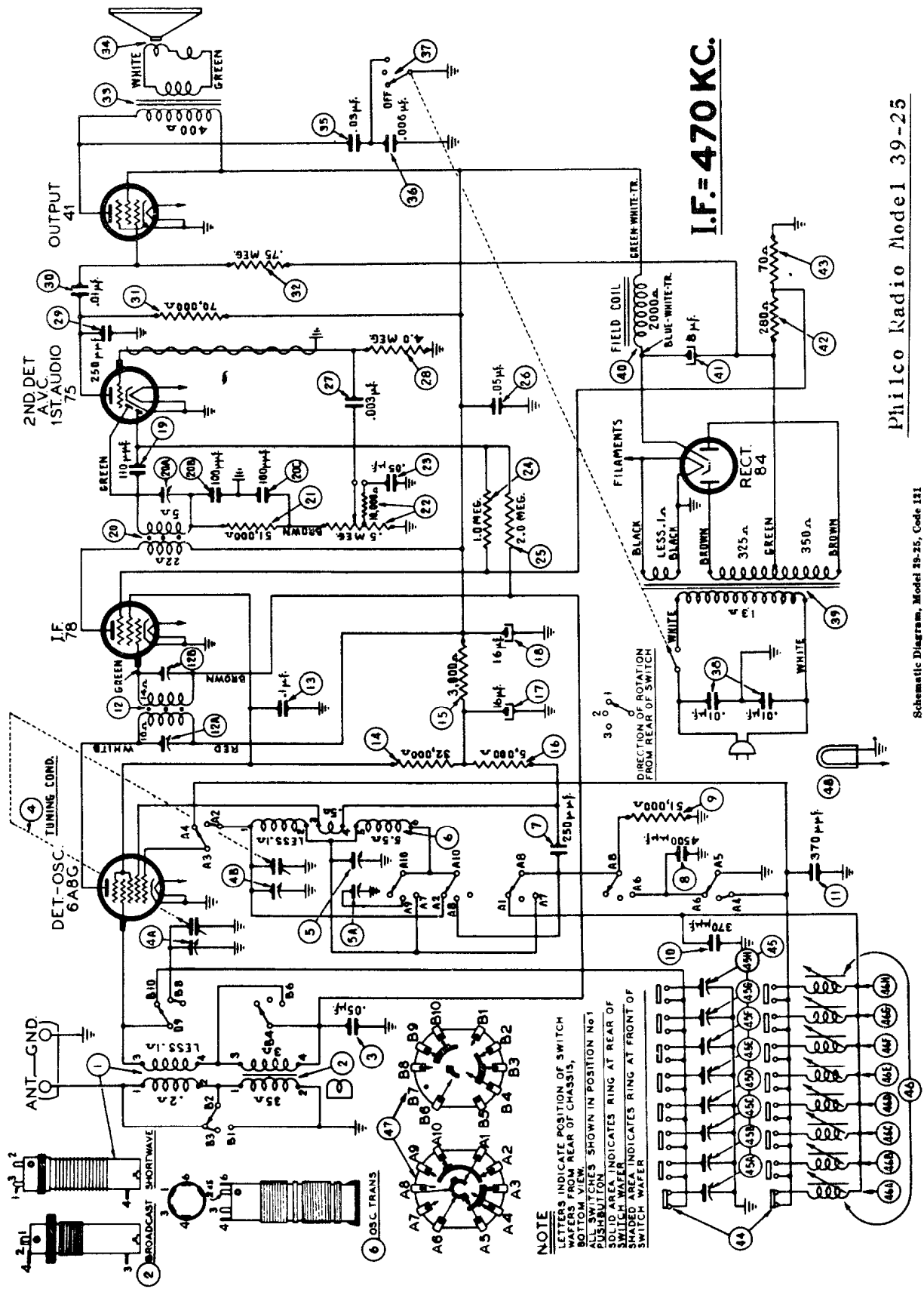
Schem. No.	Description	Part No.
1	Condenser (.001 mfd. tubular)	30-4453
2	Antenna Transformer	32-3039
3	Tuning Condenser Assembly	31-2265
4	Condenser (.15 mfd. tubular)	30-4505
5	Condenser (.05 mfd. tubular)	30-4519
6	Resistor (120,000 ohms, 1/2 watt)	33-412339
7	Condenser (110 mmf., mica)	30-1031
8	Condenser (25 mmf., silver plated mica)	30-1112
9	Oscillator Transformer	32-3040
10	Condenser (.5 mf., tubular)	30-4551
11	1st I. F. Transformer Assembly	32-3075
12	2nd I. F. Transformer Assembly	32-2944
13	Resistor (51,000 ohms, 1/2 watt)	33-351339
14	Resistor (2.0 megohms, 1/2 watt)	33-520339
15	Resistor (2.0 megohms, 1/2 watt)	33-520339
16	Condenser (.02 mf., tubular)	30-4516
17	Resistor (25,000 ohms, 1/2 watt)	33-325339
18	Volume Control and On-Off Switch	33-5276
19	Condenser (.1 mf., tubular)	30-4499
20	Condenser (.01 mf., tubular)	30-4572
21	Resistor (4.0 megohms, 1/2 watt)	33-540339
22	Condenser (.01 mf., tubular)	30-4572
23	Resistor (190,000 ohms, 1/2 watt)	33-419339
24	Resistor (490,000 ohms, 1/2 watt)	33-449339
25	Condenser (.1 mf., tubular)	30-4499
26	Resistor (51,000 ohms, 1/2 watt)	33-351339
27	Resistor (190,000 ohms, 1/2 watt)	33-419339
28	Condenser (.02 mf., tubular)	30-4215
31	Resistor (1400 ohms, 1/2 watt)	33-214339
32	Condenser (20 mf., electrolytic)	30-2245
33	Condenser (40 mf., electrolytic)	30-2332
34	Condenser (.05 mf., tubular)	30-4444
35	Resistor (300 ohms, wire wound)	33-130431
36	Resistor (28 ohms, 1/2 watt)	33-028339



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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



I.F. = 470 KC.

Philco Radio Model 39-25

Schematic Diagram, Model 39-25, Code 121

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Models 39-30, 31 and 39-35, Code 121

PHILCO

TYPE OF CIRCUIT:

Models 39-30 and 39-35 code 121 are similar with the exception of the type of Cabinets, Speakers and Power Transformers. These differences are shown on the Replacement Parts list and circuit diagram.

Models 39-31XF and 39-31XK are identical to Model 39-35, Code 121 with the exception of cabinets.

The Model 39-35, code 121 specifications, diagram and replacement parts listed below and on the following pages apply to Models 39-31XF and XK.

A.C. operated; superheterodyne circuit with two tuning ranges, covering standard broadcast (540 K.C. to 1720 K.C.) and short-wave (4.9 M.C. to 18.0 M.C.) frequencies; Automatic Volume Control; and pentode output.

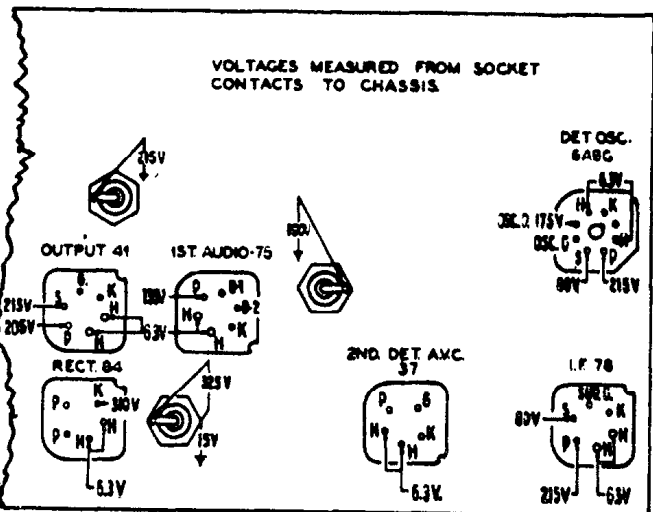
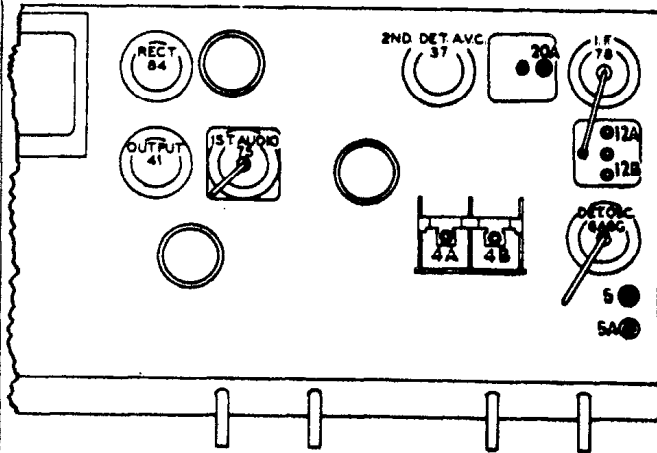
POWER SUPPLY:

Voltage, 115 volts. Frequency, 50-60 cycles.
Power consumption 45 watts.

INTERMEDIATE FREQUENCY: 470 K.C.

TUNING RANGES:

540 K.C. to 1720 K.C.; 4.9 M.C. to 18.0 M.C.



Alignment of Compensators

EQUIPMENT REQUIRED:

- (1) Signal Generator; Philco Model 077 Signal Generator which has a fundamental frequency range from 115 to 30,000 K.C. is the correct instrument for this purpose.
- (2) Output meter, Philco Model 027 Circuit Tester, incorporates a sensitive output meter and is recommended.
- (3) Philco Fiber Handle Screw Driver, Part No. 27-7059, and Fiber Wrench, Part No. 3164.

OUTPUT METER:

Two indicating devices for aligning of the receiver can be used; either an audio output meter or a vacuum tube voltmeter. The method of connecting the audio output meter is given in the next paragraph. The procedure for connecting the vacuum tube voltmeter as an aligning indicator will be found on page 4, where greater accuracy of the various tuned circuits is desired, the vacuum tube voltmeter is recommended as an aligning device.

The Philco 027 Output Meter is connected to the plate and cathode terminals of the type 41 tube. After connecting the Output Meter, adjust compensators in the order as given below.

Operations	Signal Generator			Receiver		
	Output Connections To Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in order
1	6AG5 Grid	.1 mf.	470 K.C.	580 K.C.	Vol. Cont. Max.	(20A) (12B) (12A)
2	Ant. Ter.	100 mf.	18.0 M.C.	18.0 M.C.	Vol. Cont. Max.	(4B)
3	Ant. Ter.	100 mf.	1550 K.C.	1550 K.C.	Vol. Cont. Max.	(5) (4A)
4	Ant. Ter.	100 mf.	580 K.C.	580 K.C.	Vol. Cont. Max.	(5A)
5	Ant. Ter.	100 mf.	1550 K.C.	1550 K.C.	Vol. Cont. Max.	(5)

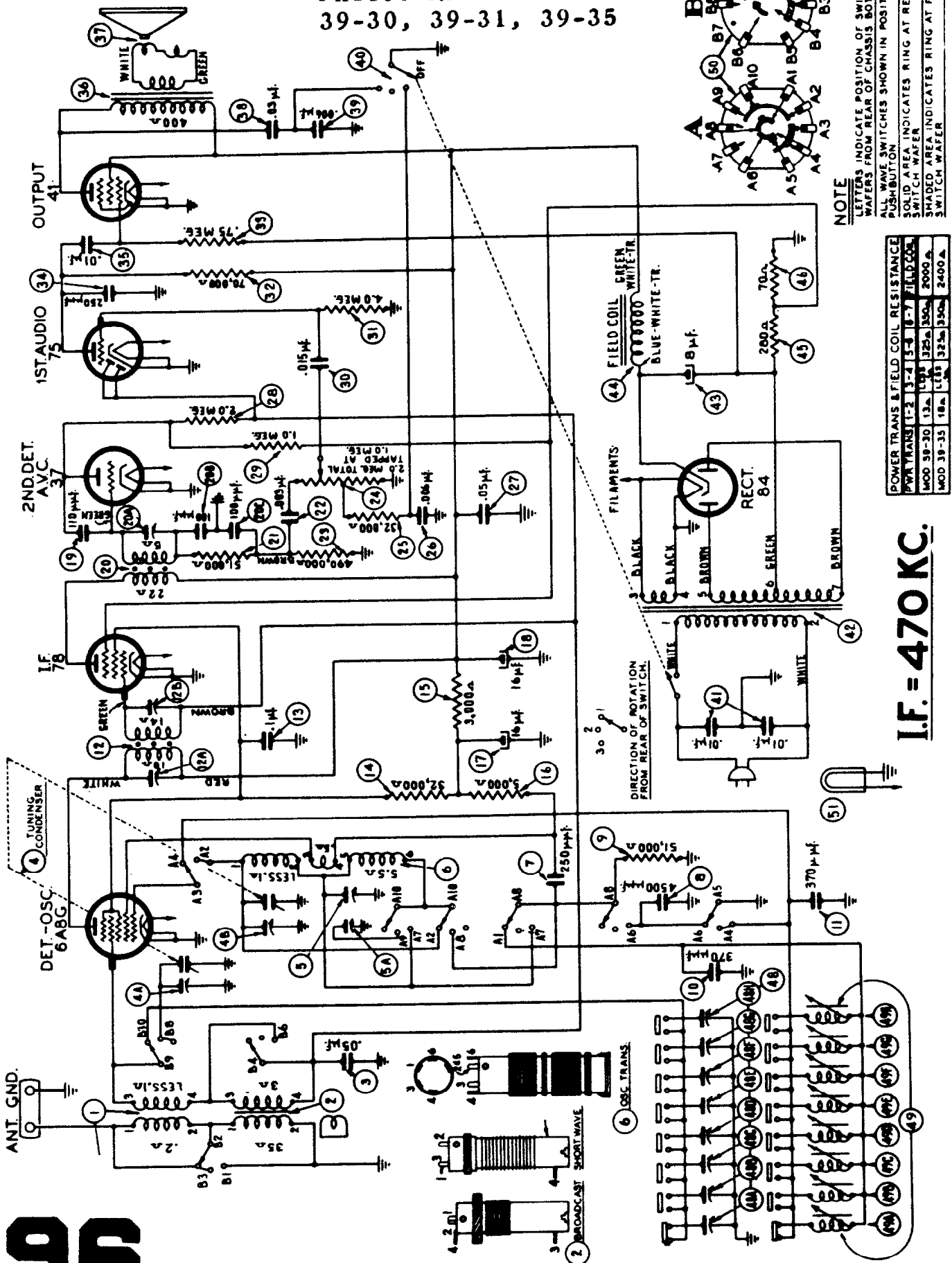
A--The "Dummy Antenna" consists of a condenser connected in series with the signal generator output lead (high side). Use the capacity as specified in each step of the above procedure.

B--DIAL CALIBRATION: In order to adjust the re-

ceiver correctly the dial pointer must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: With the tuning condenser closed, set the dial pointer on the extreme left index line at the low frequency end of the scale.

MANUAL OF 1939 MOST POPULAR

Philco Radio Models 39-30, 39-31, 39-35

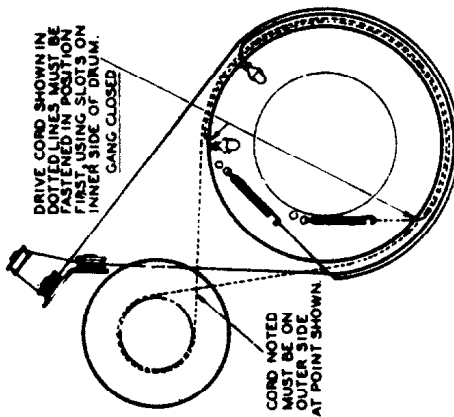


NOTE
LETTERS INDICATE POSITION OF SWITCH
WAFERS FROM REAR OF CHASSIS BOTTOM VIEW
PUSH-BUTTON
SOLID AREA INDICATES RING AT REAR OF
SWITCH WAFER
SHADED AREA INDICATES RING AT FRONT OF
SWITCH WAFER

POWER TRANS	FIELD COIL RESISTANCE
MOD 39-30	125Ω
MOD 39-31	150Ω
MOD 39-35	180Ω
	200Ω
	250Ω
	300Ω
	350Ω
	400Ω
	450Ω
	500Ω
	550Ω
	600Ω
	650Ω
	700Ω
	750Ω
	800Ω
	850Ω
	900Ω
	950Ω
	1000Ω
	1050Ω
	1100Ω
	1150Ω
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	1700Ω
	1750Ω
	1800Ω
	1850Ω
	1900Ω
	1950Ω
	2000Ω
	2050Ω
	2100Ω
	2150Ω
	2200Ω
	2250Ω
	2300Ω
	2350Ω
	2400Ω
	2450Ω
	2500Ω

I.F. = 470 KC.

Operations	SIGNAL GENERATOR			RECEIVER		
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Setting	Adjust Compensators to Max. Reading
1	6A7	.1 mf	470 KC.	580 KC.	Vol. Max. Range Switch Broadcast	26B, 26A, 23B, 23A
2	Ant. Ter.	150 mmf	1550 KC.	1550 KC.	"	15, 7B, 7A
3	Ant. Ter.	150 mmf	580 KC.	580 KC.	"	17
4	Ant. Ter.	150 mmf	1550 KC.	1550 KC.	"	15
5	Ant. Ter.	400 ohms	18.0 MC.	18.0 MC.	Range Switch S. W.	15A, 12, 5



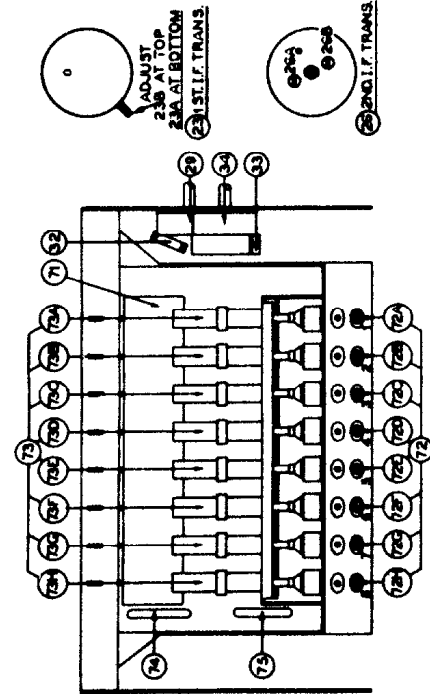
METHOD OF INSTALLING DRIVE CORDS ON TUNING CONDENSER DRUM

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

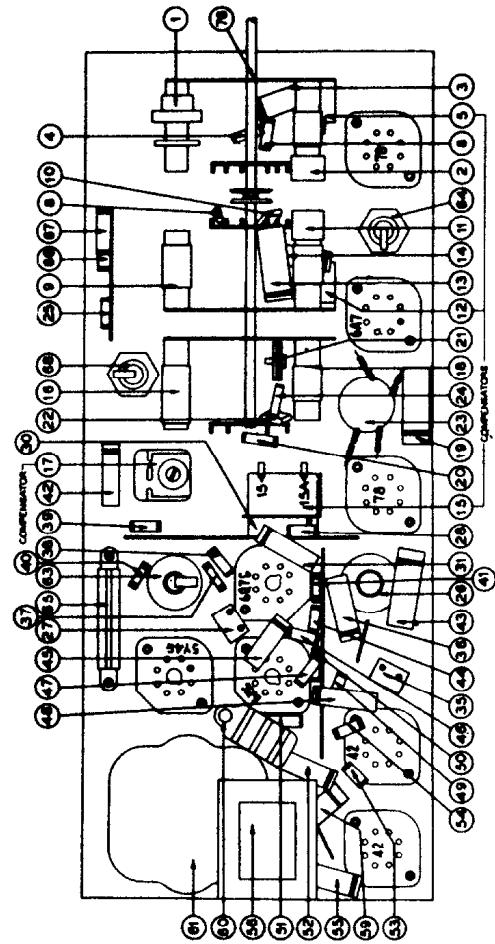
NOTE B—Dial Calibration. In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To adjust

the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale. The arrangement of the drive cable is shown on page 3.

NOTE C—Compensators (7A) and (7B) are located on top of the tuning condenser. Compensator (7A) is the first one from the tuning drum side.



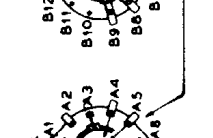
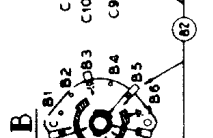
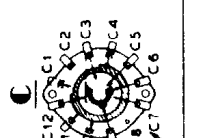
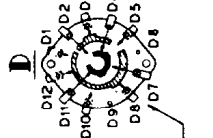
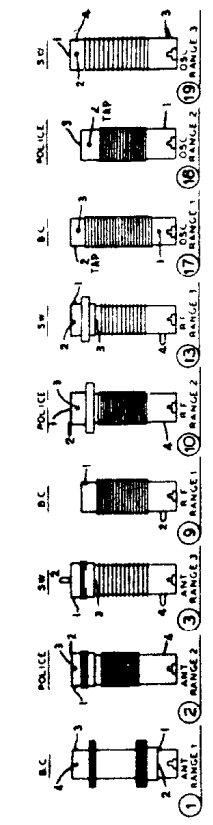
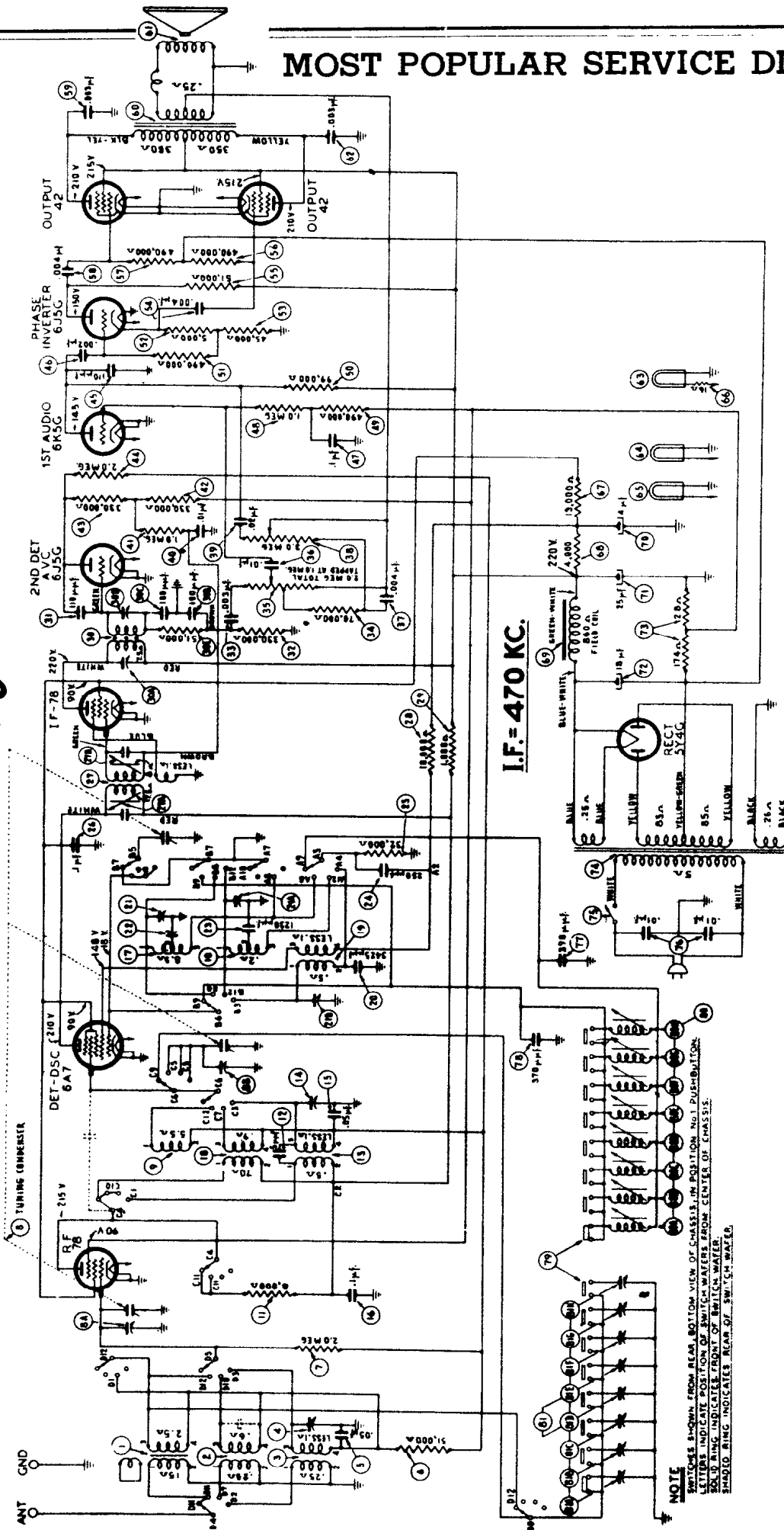
ELECTRIC AUTOMATIC PUSH BUTTON UNIT



PART LOCATIONS UNDERSIDE OF CHASSIS MODEL 39-40

MOST POPULAR SERVICE DIAGRAMS

Model 39-45, Code 121



NOTE
SWITCHES SHOWN FROM REAR, BOTTOM VIEW OF CHASSIS, IN POSITION, NO. 1 PUSHBUTTON.
LETTERS INDICATE POSITION OF SWITCH-MAKERS FROM CENTER OF CHASSIS.
SOLID RING INDICATES FRONT OF SWITCH-MAKER.
SHADDED RING INDICATES REAR OF SWITCH-MAKER.

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PHILCO

Model 39-45, Code 121

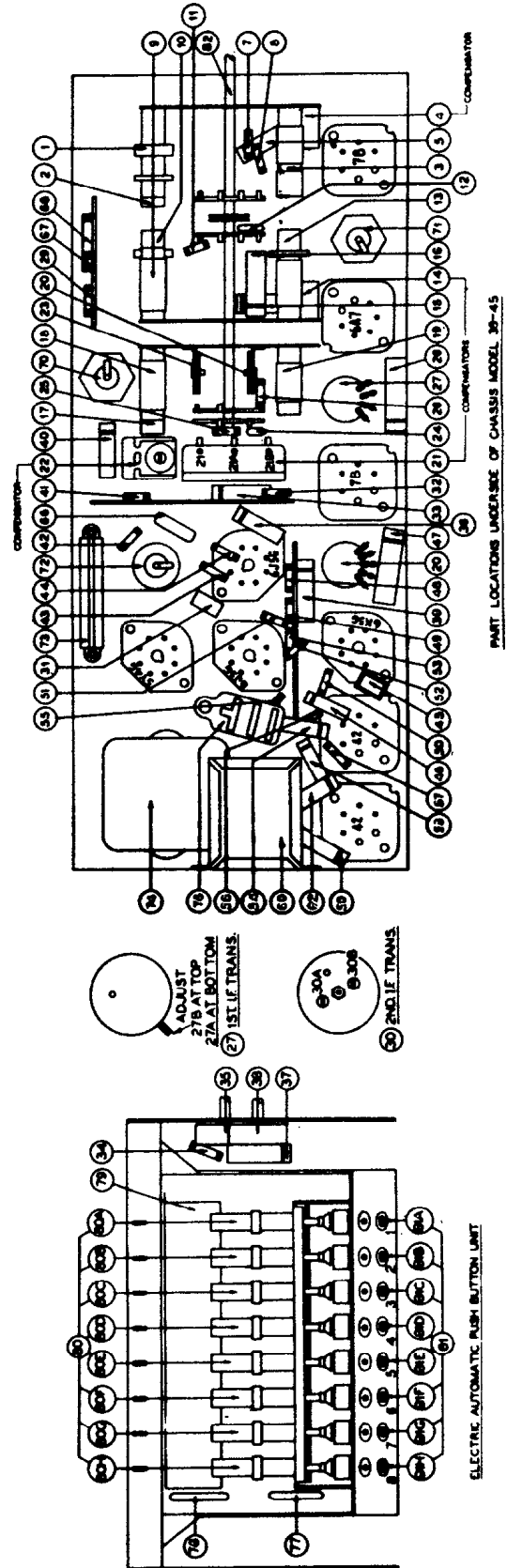
Opera- tion	SIGNAL GENERATOR			RECEIVER			Special In- struc- tions
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Setting	Adjust Compensators to Max. Reading	
1	6A7	.1 mf	470 KC.	470 KC.	Vol. Max. Range Switch Broadcast	30B, 30A, 27B, 27A	See Note B and C
2	Antenna	150 mmf	1550 KC.	1550 KC.	"	21, 8B, 8A	
3	Antenna	150 mmf	580 KC.	580 KC.	"	22	Roll Tuning Condenser
4	Antenna	150 mmf	1550 KC.	1550 KC.	"	21	
5	Antenna	400 ohms	5.0 MC.	5.0 MC.	Range Switch Police	21A	
6	Antenna	400 ohms	18.0 MC.	18.0 MC.	Range Switch S. W.	21B, 14, 4	

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

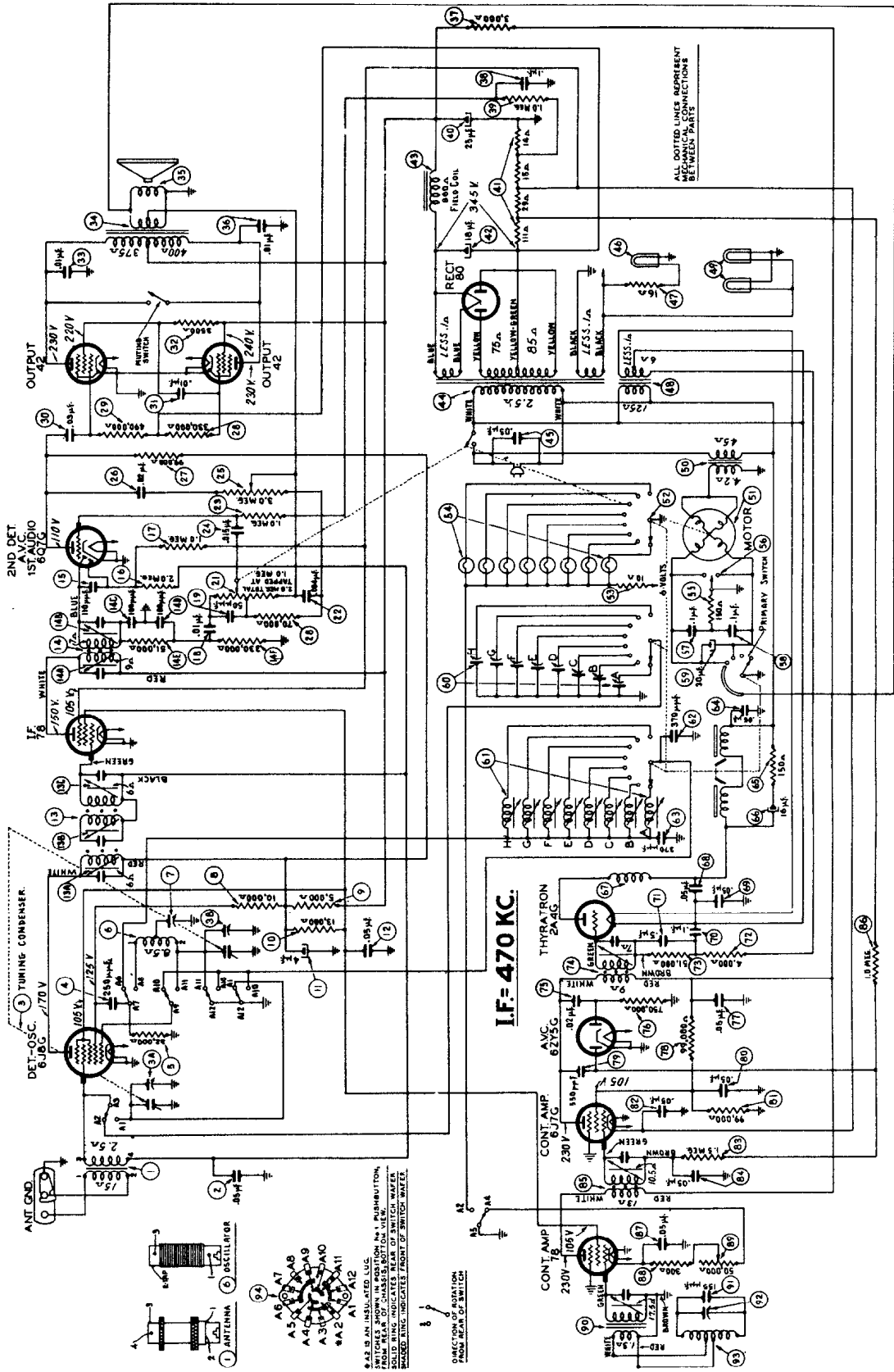
NOTE B—Dial Calibration: In order to adjust the receiver correctly the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum

capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale. The arrangement of the drive cable is shown on page 3.

NOTE C—Compensators (8A) and (8B) are located on top of the tuning condenser. Compensator (8A) is the first one from the tuning drum side.



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



MODEL 39-55 SCHEMATIC DIAGRAM AND SOCKET VOLTAGES.

Philco Radio & Television Corp.

Voltages measured from Socket Contacts to Chassis; Line Voltage, 115 V.A.C.; Volume Control, Minimum; Range Selector (Broadcast).

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

PHILCO Models 39-55, 39-116

ADJUSTING MYSTERY CONTROL FREQUENCY AMPLIFIER

The Mystery Control receivers are shipped with five (5) different control frequencies which range from 350 to 400 K.C. These are identified by code numbers appearing on the serial number ticket and on the rear of the chassis. These code numbers and frequencies are as follows:

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

The purpose of the different control frequencies is to prevent interaction between two Mystery Control receivers which are on the same floor or are exceptionally close together. When several Mystery Control receivers are to be located close together, it will be necessary to use different control frequencies to avoid interaction between the receivers. In order to prevent interaction between receivers, there should be a difference of 20 K.C. between their control frequencies.

If three receivers are to be operated at the same time and are closely situated, it will be advisable to adjust the control frequency of the first set to 355 K.C., the second set to 375 K.C. and the third to 395 K.C.

When realigning or changing the control frequency of the Mystery Control circuit, a Philco Model 077 Signal Generator with a coil of wire (about 4 or 5 turns—12" in diameter) attached to the output terminals is required. The leads between the coil of wire and Signal Generator should be long enough so that the coil of wire can be placed near the large secondary inductor in the bottom of the receiver cabinet.

With this apparatus, the Control Frequency is adjusted as follows:

1. With the temporary coil of wire in the center of (or near) the secondary inductor, the control frequency to which the Mystery Control Amplifier is tuned can be determined by tuning the Signal Generator between 350 and 400 K.C. When the Signal Generator is tuned to the control frequency, the Thyatron (2A4G) tube will glow (blue haze). If this frequency is to be used, leave the Signal Generator indicator at this point or turn the indicator to any other frequency desired between 350 and 400 K.C.
2. When the control frequency is selected, turn the sensitivity control (117) in Model 116 and (89) Model 55.

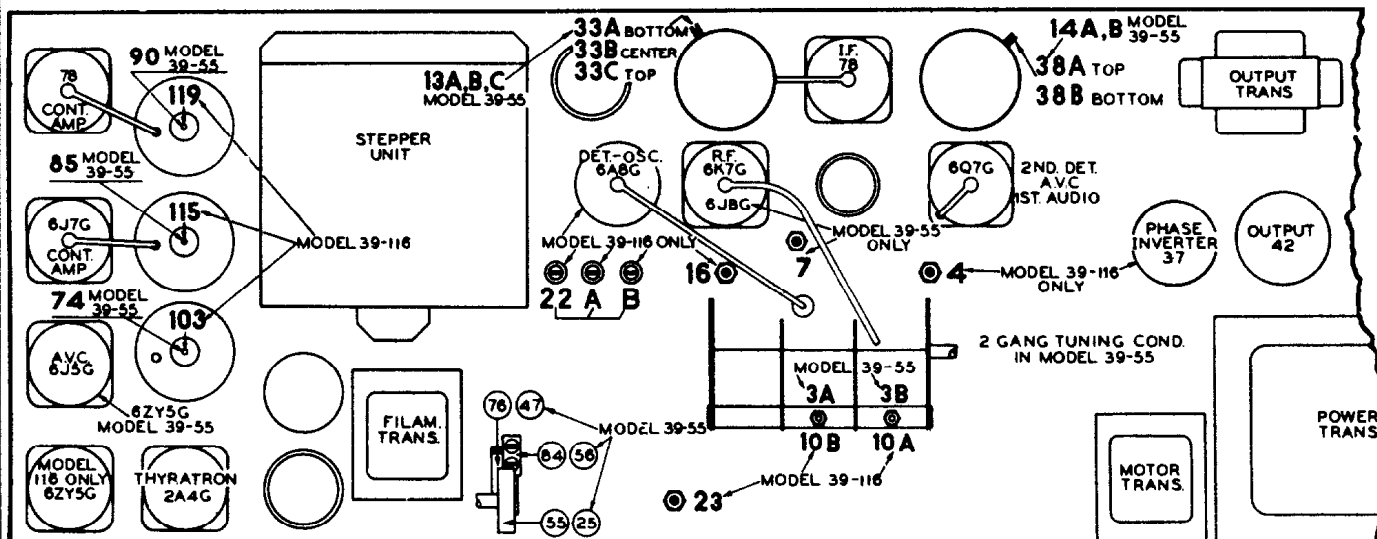
located on the left rear of the chassis—towards the position marked "extreme." Using the 2A4G Thyatron tube as a resonance indicator, adjust padders (103), (115), (119) in Model 116 and (74), (85), (90) in Model 55 for maximum signal. This will be indicated by the brilliance of the glow in the 2A4G Thyatron tube. As the padders are adjusted, gradually turn the sensitivity control to the "near" position or reduce the output from the Signal Generator. When the padders are correctly adjusted to maximum, the Thyatron will glow with the sensitivity control (117) at the "near" position and with a very weak signal from the Signal Generator.

3. Next, adjust the padding condenser (121) in Model 116 and (92) in Model 55 on the secondary inductor located in the bottom of the receiver. The padding condenser is located in one corner of the secondary inductor and is encased in a cardboard container. This padding condenser should be carefully adjusted for maximum glow in the 2A4G tube. Use the weakest signal possible from the Signal Generator that will cause the 2A4G to glow. Also, have the sensitivity control as close as possible to the "near" position. Extreme care should be used in adjusting the padder to the exact point of resonance, as the secondary inductor is a very sharply tuned circuit. After adjusting the circuit, remove the Signal Generator and loop from the receiver.

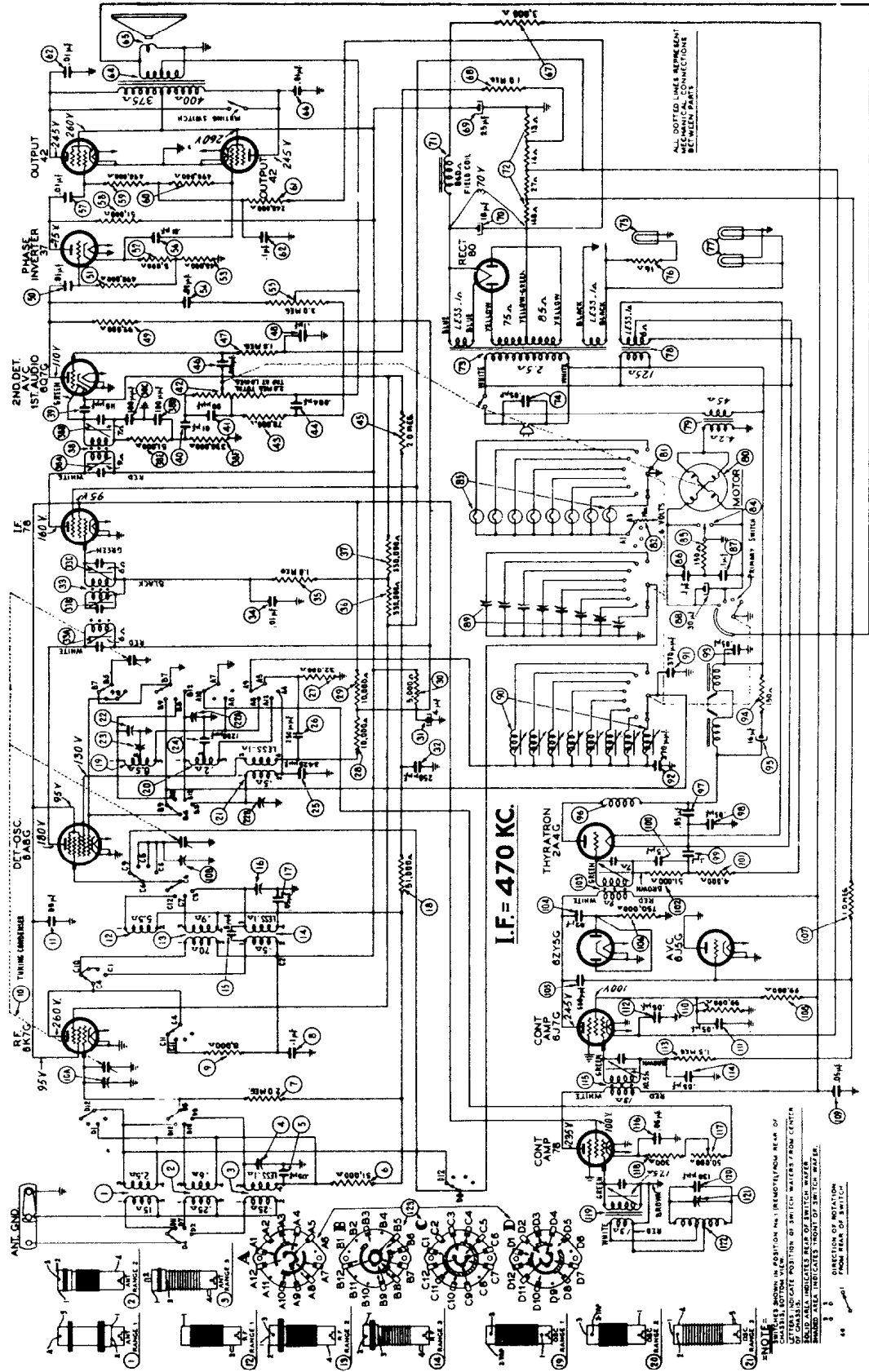
4. The Mystery Control unit is now adjusted as follows:

- A. Dial any one of the stations indicated on the remote unit by pulling the selector to the "Stop" position. Then, as the dial is released at the "Stop," press the "Stop" down and hold it in this position.
- B. Holding the "Stop" in this position, bring the Mystery Control unit close to the receiver. Using the padding wrench, tune the padding screw (126) located on the bottom of the unit until the 2A4G Thyatron in the receiver glows at full brilliance.

Now, turn the sensitivity control on the receiver towards the "near" position until a point is reached where the 2A4G tube almost stops glowing. Then, readjust the padder (126) of the unit again for maximum brilliance in the 2A4G tube. The Mystery Control unit should now be adjusted to the same frequency as the control frequency in the receiver.



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PHILCO *Model 39-116*
 Socket Voltage Measured for Socket Contacts to Chassis. Line Voltage 115 V.A.C. Volume Minimum, Range Selector (Broadcast)

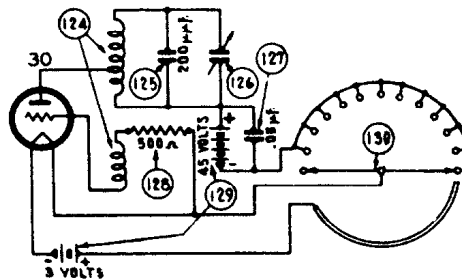
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

RADIO RECEIVER CIRCUIT ADJUSTMENTS Model 39-116

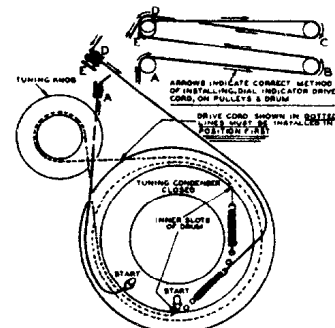
Opera- tion	SIGNAL GENERATOR				RECEIVER			Special Instructions
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1	78 Grid	.1 mfd.	470 K.C.	580 K.C.	Vol. Max. Range Switch Brdst.	38A, 38B	Turn Out 33B Full	
2	6A8 Grid	.1 mfd.	470 K.C.	580 K.C.	Vol. Max. Range Switch Brdst.	33C, 33A, 33B, 38B	Note B	
3	Antenna and Ground	150 mmfd.	1550 K.C.	1550 K.C.	Vol. Max. Range Switch Brdst.	22, 10B, 10A		
4	Antenna and Ground	150 mmfd.	580 K.C.	580 K.C.	Vol. Max. Range Switch Brdst.	23	Rollgang	
5	Antenna and Ground	150 mmfd.	1550 K.C.	1550 K.C.	Vol. Max. Range Switch Brdst.	22		
6	Antenna and Ground	400 ohms	5.0 M.C.	5.0 M.C.	Vol. Max. Range Switch Police	22A		
7	Antenna and Ground	400 ohms	18.0 M.C.	18.0 M.C.	Vol. Max. Range Switch Short Wave	22B, 16, 4	Note C	

RADIO RECEIVER CIRCUIT ADJUSTMENTS Model 39-55

Opera- tion	SIGNAL GENERATOR				RECEIVER			Special Instructions
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Dial Setting	Control Setting	Adjust Compensators	
1	78 Grid	.1 mfd.	470 K.C.	580 K.C.	Vol. Max. Range Switch Brdst.	14A, 14B	Turn Out 13B Full	
2	6J8G Grid	.1 mfd.	470 K.C.	580 K.C.	Vol. Max. Range Switch Brdst.	13C, 13A 13B, 14B	Note B	
3	Antenna and Ground	150 mmfd.	1550 K.C.	1550 K.C.	Vol. Max. Range Switch Brdst.	3B, 3A		
4	Antenna and Ground	150 mmfd.	580 K.C.	580 K.C.	Vol. Max. Range Switch Brdst.	7	Rollgang	
5	Antenna and Ground	150 mmfd.	1550 K.C.	1550 K.C.	Vol. Max. Range Switch Brdst.	3B, 3A	Note C	

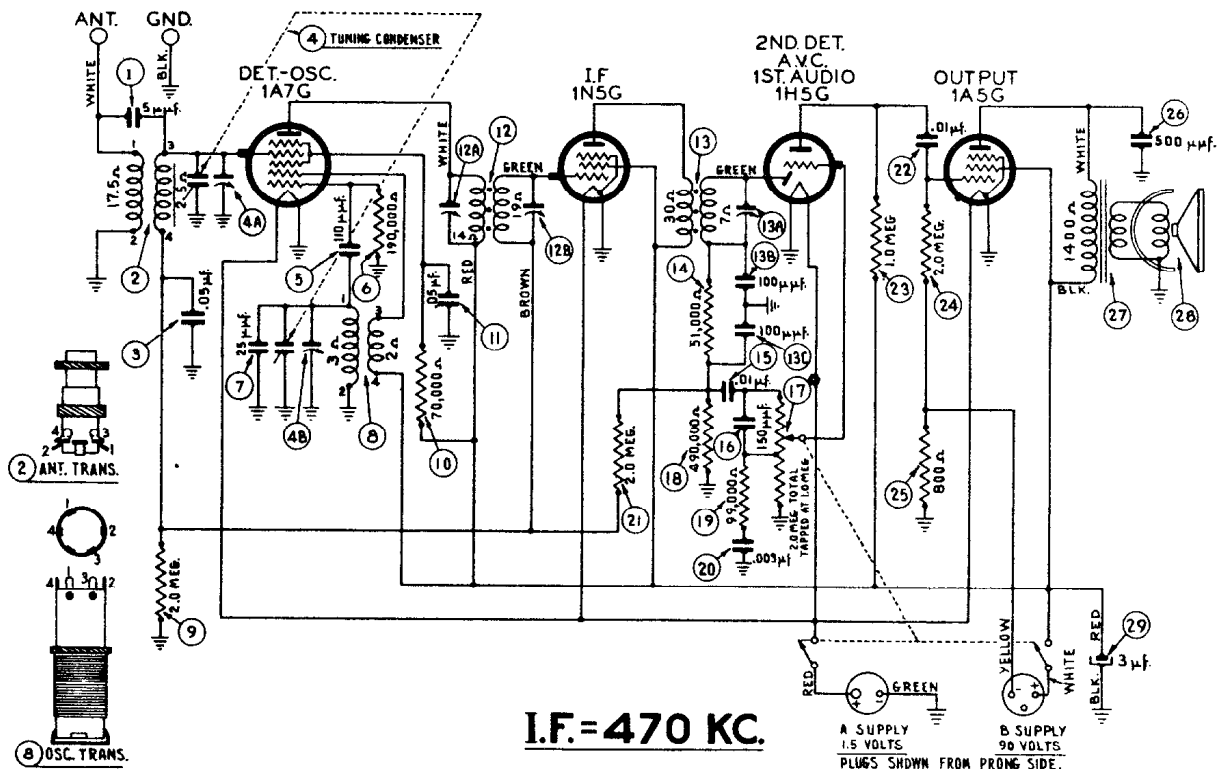
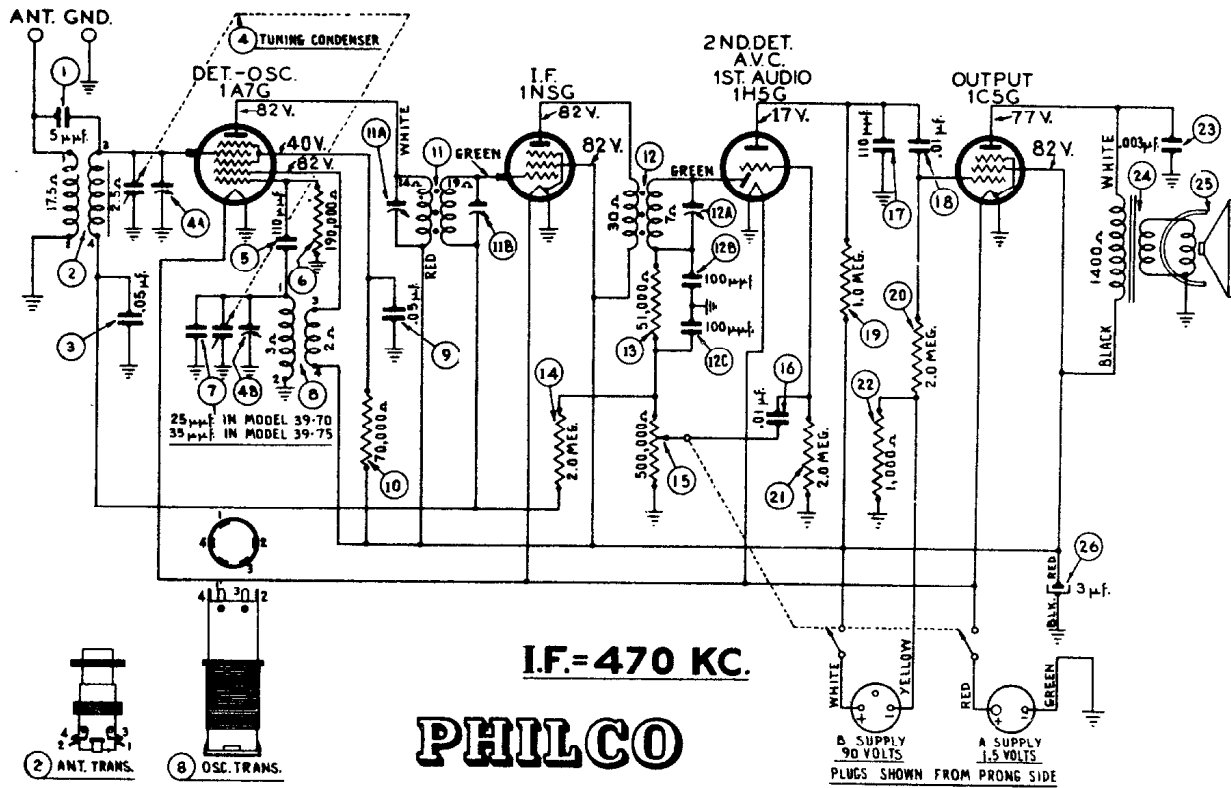


Mystery Control Unit Diagram



ARRANGEMENT OF DRIVE CORDS ON TUNING CONDENSER DRUM & PULLEYS

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

PROCEDURE FOR MODELS 39-70 AND 39-75

Operations in Order	SIGNAL GENERATOR			RECEIVER		
	Output Connections to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Setting	Adjust Compensators
1	1A7G Grid	.1 mfd.	470 K. C.	580 K. C.	Vol. Max.	12A, 11B, 11A
2	Ant. (White)	225 mfd.	1550 K. C.	1550 K. C.	Vol. Max.	4B, 4A

PROCEDURE FOR MODEL 39-80

Operations in Order	SIGNAL GENERATOR			RECEIVER		
	Output Connections to Receiver	Dummy Antenna Note A	Dial Setting	Dial Setting	Control Setting	Adjust Compensators
1	1A7G Grid	.1 mfd.	470 K. C.	580 K. C.	Vol. Max.	13A, 12B, 12A
2	Ant. (White)	225 mfd.	1550 K. C.	1550 K. C.	Vol. Max.	4B, 4A

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

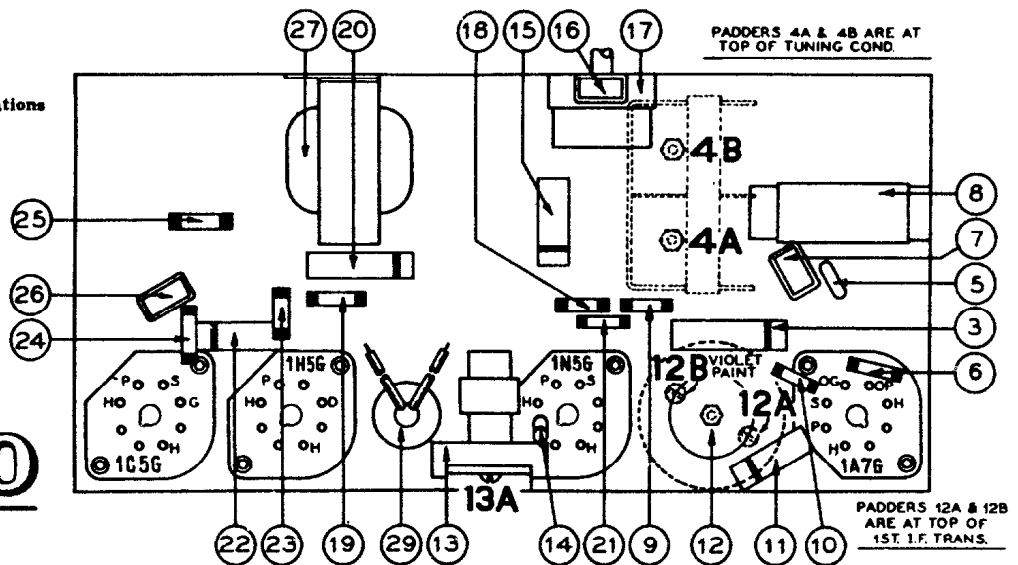
B—DIAL CALIBRATION: In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser.

Model 39-70 and 39-80—To adjust the dial proceed as follows: Turn the tuning condenser to maximum capacity (plates fully meshed). With the tuning condenser in this position, set the pointer horizontally across the dial.

Model 39-75—With the tuning condenser in the maximum capacity position (plates fully meshed), loosen the coupling screws connecting the push-button unit to the condenser. The pointer is then set on the extreme left edge of the index line (low frequency end of the scale) with the tuning condenser fully closed. The gang is then opened until the pointer is at the right edge of the index line. The push-button shaft is then turned counter-clockwise to its "stop." With the tuning condenser and push-button shaft in these positions tighten the coupling set screws.

C—The locations of the compensators in Models 39-70, 39-75 and 39-80 are shown in Figs. (1), (2) and (3) respectively.

Fig. 3. Compensator and Part Locations
Model 39-80, Code 121
Underside of Chassis



PHILCO

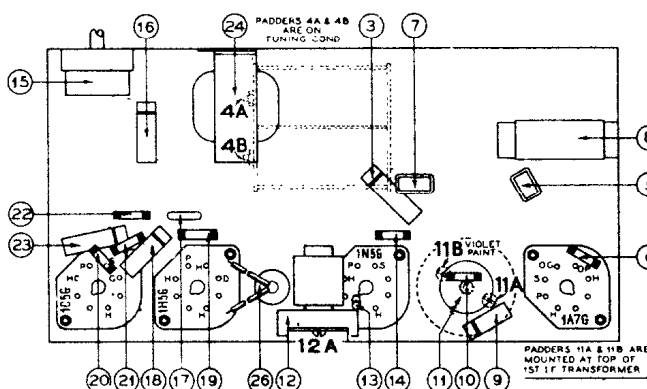


Fig. 1. Compensator and Part Locations
Model 39-70, Code 121

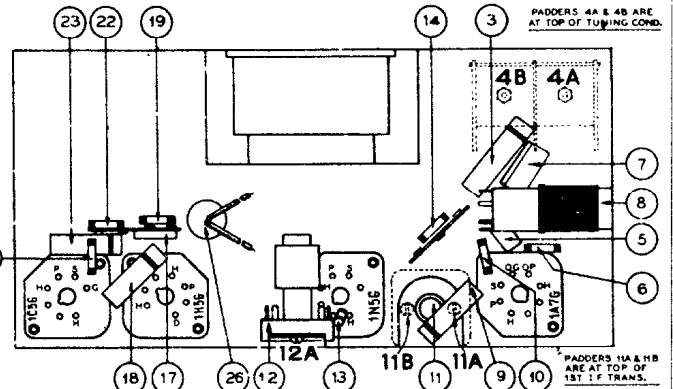


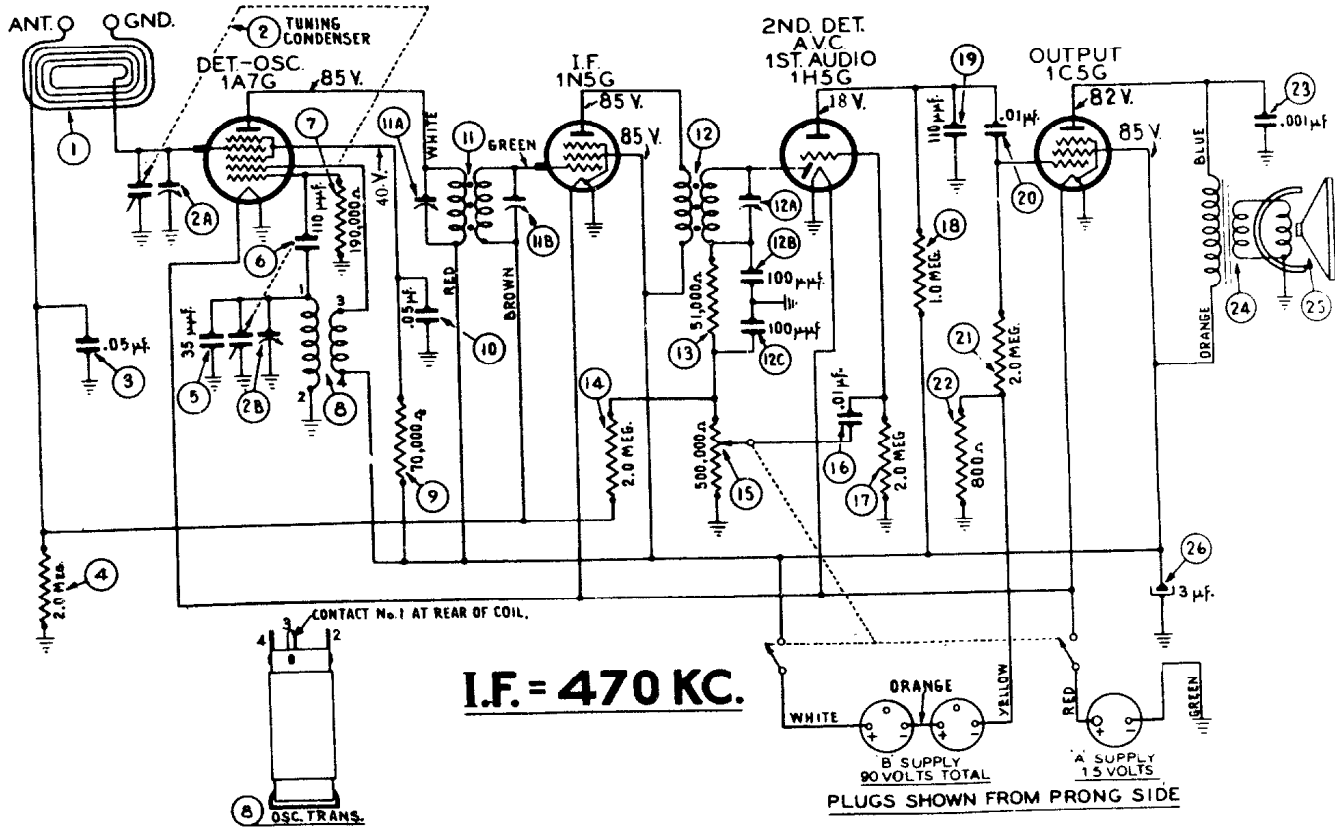
Fig. 2. Compensator and Part Locations
Model 39-75, Code 121-122
Underside of Chassis

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PHILCO Model 39-71, Codes 121, 122



Operations in Order	SIGNAL GENERATOR			RECEIVER		
	Output Connections to Receiver	Dummy Antenna (Note A)	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order
1	1A7G Grid	.1 mfd.	470 K. C.	580 K. C.	Vol. Cont. Max.	12A, 11B, 11A
2	Ant. & Grd. Terminals	400 ohms	1550 K. C.	1550 K. C.	Vol. Cont. Max.	2B, 2A

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

B — **DIAL CALIBRATION:** In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To adjust the dial proceed as follows: Turn the tuning condenser to maximum capacity (plates fully meshed). With tuning condenser in this position set the pointer to the small "black dot" at the low frequency end of the dial scale.

C — To adjust the I. F. compensators, remove the back from the cabinet, which is held in place by four screws. The chassis is then taken out by removing the four screws and two corks underneath the cabinet, and the Tuning and Volume knobs. The I. F. compensators are located on top of the I. F. transformers.

When adjusting the Antenna (2A) and Oscillator (2B) compensators, the chassis must be assembled in the cabinet with the batteries and loop in place. The Signal Generator output lead with the "Dummy Antenna" is then connected to the terminals marked "Ant" and "Grd" underneath the cabinet. The antenna and oscillator compensators are then adjusted through the holes in the bottom of the cabinet.

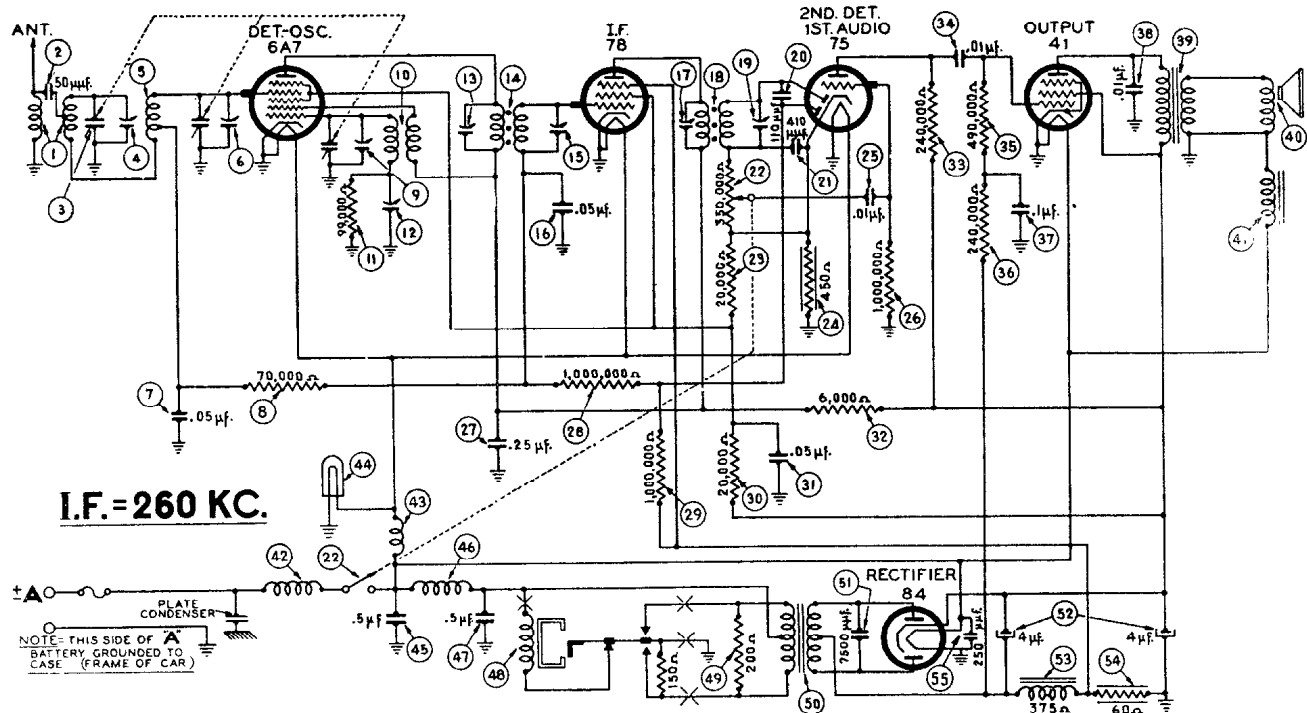
Replacement Parts

Code No.	Description	Part No.	Code No.	Description	Part No.	Code No.	Description	Part No.
1	Loop Assy.	40-6421	14	Resistor (2 megohms)	33-520339	26	Electrolytic Cond. (3 mf.)	30-2359
2	Tuning Cond.	31-2322	15	Volume Control & Switch	33-5301		Bezel Window	27-5434
3	Tubular Cond. (.05 mf.)	30-4519	16	Tubular Cond. (.01 mf.)	30-4572		Dial	31-2321
4	Resistor (2 megohm)	33-520339	17	Resistor (2 megohm)	33-520339		Dial Pointer	28-5185
5	Mica Cond. (35 mmf.)—mounted on top of tuning condenser	30-1095	18	Resistor (1 megohm)	33-510339		Dial Drive Cord Assy.	31-2323
6	Mica Cond. (110 mmf.)	30-1031	19	Mica Cond. (110 mmf.)	30-1031		Dial Tuning Shaft & Brkt. Assy.	31-2324
7	Resistor (190,000 ohms)	33-419339	20	Tubular Cond. (.01 mf.)	30-4572		Escutcheon (knobs)	56-1252
8	Oscillator Trans.	32-3118	21	Resistor (2 megohm)	33-520339		Escutcheon (screws)	W-2129
9	Resistor (70,000 ohms)	33-370339	22	Resistor (800 ohms)	33-180339		Knob (Tuning, Volume)	27-4331
10	Tubular Cond. (.05 mf.)	30-4444	23	Tubular Cond. (.001 mf.)	30-4201		Loop Antenna	40-6421
11	1st I. F. Trans. Assy.	32-3103	24	Output Trans. for Speaker No. 36-1451-3	32-8036		Pulley (Tuning Condenser)	28-6662
12	2nd I. F. Trans. Assy.	32-3081	25	Voice Coil Assy. for Speaker No. 36-1451-3	36-4090			
13	Resistor (51,000 ohms)	33-351339						

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PHILCO AUTO RADIO Model 920

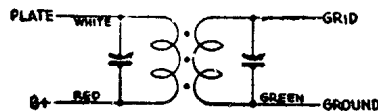


	SIGNAL GENERATOR		DUMMY CAPACITY	SPECIAL INSTRUCTIONS	ADJUST PADDER
	FREQUENCY	CONNECTION			
1	260 K. C.	To grid of 6A7 Tube	.1 Mfd. Condenser in Series with Generator Lead	No Antenna Connection	17 19 13 15 17
2	1550 K. C.	To Antenna Receptacle on Radio	50 Mmfd. See Note 1	Turn Tuning Condenser Plates Out of Mesh as Far as They Will Go.	9 6 6
3	580 K. C.	To Antenna Receptacle on Radio	50 Mmfd. See Note 1	Set Tuning Condenser at 580 K. C.	Note 2
4	1550 K. C.	To Antenna Receptacle on Radio	50 Mmfd. See Note 1	Turn Tuning Condenser Plates Out of Mesh as Far as They Will Go.	12 9
5	1400 K. C.	To Antenna Receptacle on Radio	50 Mmfd. See Note 1	Set Tuning Condenser at 1400 K. C.	8 6 Note 3

Make all adjustments for maximum reading on the output meter.

- 1 — Connect the antenna lead, Part No. 41-3191, to the antenna receptacle in the radio. Connect a 50 Mmfd. Condenser in series between the signal generator and the antenna lead.
- 2 — Rock the tuning condenser while adjusting the low frequency padder. Tune the condenser to the signal and adjust the padder for maximum output. Rotate the tuning condenser back and forth slightly for maximum output. Then re-adjust the padder for maximum output. Repeat this procedure until no further improvement is noticed.
- 3 — When the antenna stage adjustment is made with the Radio installed in the car, the Radio antenna lead must be connected to the car antenna in the usual manner. Connect the signal generator output lead to a wire placed near the car antenna but not connected to it.

I. F. TRANSFORMERS



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

PHILCO Model "L" RECORD CHANGER

OPERATING INSTRUCTIONS

The Model "L" Record Changer plays seven 12" or eight 10" Records automatically. The last record remains on the turntable and repeats as long as the Record Changer is in operation.

Records may be repeated as often as desired by raising the record removing arm at A Fig. 1 to the upright position.

To reject a record and play the next record below it, pull the latch lever at L Fig. 1 forward.

To adjust the record removing arm to handle 10" records set the record removing arm change lever at D Fig. 1 opposite the number 10 stamped on the base plate. For 12" records set the lever opposite the number 12.

To adjust the pickup to play 10" records, push the pickup stop at K Fig. 1 back. (Away from the pickup needle). For 12" records pull the stop forward (toward the needle) as far as it will go.

Some units are equipped with two speed motors, and others with 78 RPM motors. When the two speed motor is used change from one speed to the other by simply moving lever at F Fig. 1 to position desired.

To start motor, throw switch at N Fig. 1 on the "on" position.

clamps the lever to the motor shaft. This shaft is provided with a screw-driver slot in the end. Next, using a screw driver, turn this shaft in a clockwise direction until you feel it strike the stop. The motor is now in the 33-1/3 RPM position. Now set the lever against the lug provided in the base plate and opposite the legend 33-1/3 and tighten the clamp screw. This places the lever in the correct position on the motor shaft. The final step is the adjustment of the eccentric bushing at G Fig. 1 which limits the throw of the lever. First loosen the screw which holds the eccentric bushing. Next, throw the speed changer lever to its farthest 78 RPM position, (using care that the lever does not slip on the motor shaft). Then turn the eccentric bushing around until it touches the side of the lever, and tighten it in place with the screw provided.

TRIP MECHANISM

The trip mechanism is the trigger that sets the Record Changer in motion. This is done by allowing the latch bar at O Fig. 1 to drop in front of, and be actuated by the cam at P Fig. 1. This cam is driven by the motor and is in motion as long as the motor is running. If this mechanism does not operate smoothly, the precautions outlined in succeeding paragraphs should be observed.

First of all, make sure that the square pin in the latch lever at U Fig. 1 latches properly in the notch in the lift lever at I Fig. 1. When latched, the notch should be engaged approximately one-half of its depth. The depth of engagement is adjusted by means of the eccentric washer and locking screw at J Fig. 1. Now run the Record Changer through its cycle. If the square pin fails to engage the notch in the lift lever, first check the tension of the latch spring at H Fig. 1 to insure that the notch can engage the pin. Next check the tension of the reset spring at E Fig. 1. This reset spring should not be under tension when the latch bar is latched but should have enough tension when the latch bar drops off of the cam to cause the square pin to over travel the notch in the lift lever.

IMPORTANT— Before attempting to change the tension of any spring, be sure that the parts involved work freely without any tendency to bind, as of course any binding condition would preclude proper operation.

The Record Changer is adjusted at the factory to trip on a spiral trip groove record when the phonograph needle is 1/4" from the edge of the hole in the center of the record.

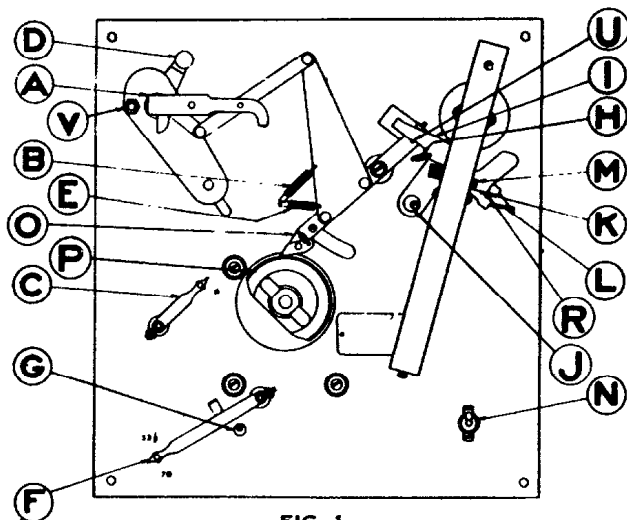


FIG. 1.

MOTOR SPEED

The motor speed is adjusted by means of a lever at C Fig. 1 which is mounted under the turntable. The direction of swing to fast or slow is indicated by the legends F and S on the base plate.

33-1/3 RPM — 78 RPM SHIFT (Two-speed motors only)

Move the speed change lever at F Fig. 1 as far as it will go in the direction of swing indicated by the legends 33-1/3 and 78 on the base plate.

If adjustment of the speed change lever is required for any reason, proceed as follows: First loosen the screw which

MOTOR LUBRICATION

The motor installed in the Record Changer is governor controlled, with all gearing enclosed, and leaves the factory lubricated for proper operation. For maximum satisfaction, lubricate the motor at regular intervals with SAE No. 10 oil. Please do not use any other grade of oil.

The governor disc engages with a ring of hard felt. This felt is impregnated with a lubricating solution sufficient for proper operation for approximately a year under normal conditions.

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When eccentric or oscillating trip groove records are used, tripping is effected by means of the hardened steel pin in the end of tone arm lift crank at S Fig. 2 engaging the serrated block on the trip lever at T Fig. 2. There must be a minimum of $1/32$ "

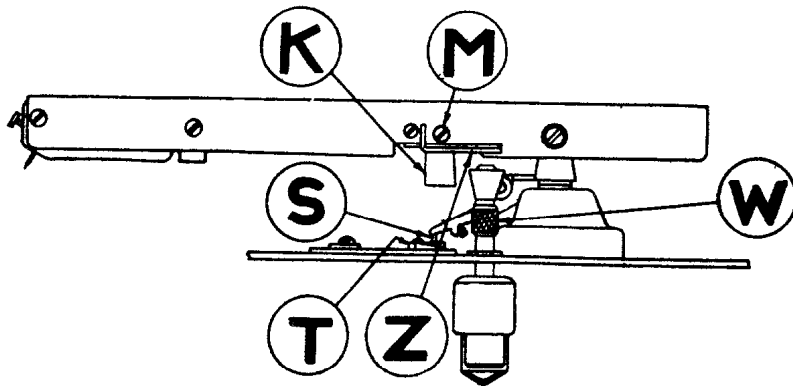


FIG. NO. 2

play between the end of the pin and the block, when, with a short needle, ($5/8$ " Minimum Length) the pickup is resting on one record on the turntable. If the pressure of the pin on the block is not sufficient to insure operation, then check the pressure spring which is located up under the pickup.

The oval head pivot screw at R Fig. 1 serves as a pivot for the lift lever at I Fig. 1. This screw should allow the lift lever to be raised by the latch bar to its maximum height without binding but also without any additional play.

If the Record Changer fails to trip, see if the phonograph needle is jumping out of a worn record trip groove. Next make certain that all parts of the mechanism work freely and smoothly. If it is found that the latch bar at O Fig. 1 is not dropping in far enough to engage the cam at P Fig. 1, then check the tension of the trip spring at B Fig. 1.

In case the Record Removing Mechanism fails to operate smoothly, proceed as follows: First make certain that all parts work freely with no binding in pivots or bearings, and that the record removing arm assembly rests on the stop screw at Q Fig. 3.

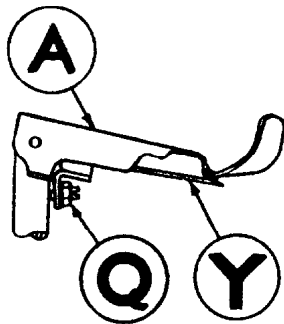


FIG. NO. 3

Next stop the motor in such a position that the latch bar at O Fig. 1 can swing by and clear the cam at P Fig. 1. Place just one record on the turntable and measure from the top of this record down to the base plate. This distance should be one inch. Now by pulling the reject lever at L Fig. 1 first, it will be found possible to swing the record removing finger at Y Fig. 3 over to where it just touches the edge of the record. If the adjustment is correct, the record removing finger should just barely rise over the edge of the first record. If adjustment is required it can be made by means of the stop screw at Q Fig. 3. In the event the record removing arm raises the record from the turntable and drops it back in place without removing it, check the lift adjustment at V Fig. 1. This adjustment consists of an eccentric stud which is provided with a lock nut, and is made by loosening the lock nut and turning the eccentric stud.

The lift adjustment should be set so that the hole in the center of the record just clears turntable spindle when the Record Changer is in operation.

The pickup lowering mechanism has two functions. First, it lowers the phonograph needle gently to the surface of the record. Second, it feeds the needle toward the center of the record so that it will enter the playing groove.

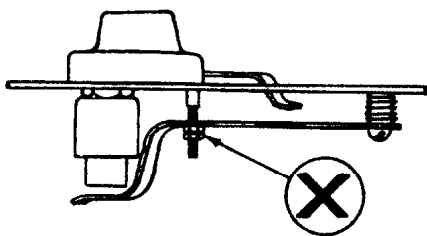
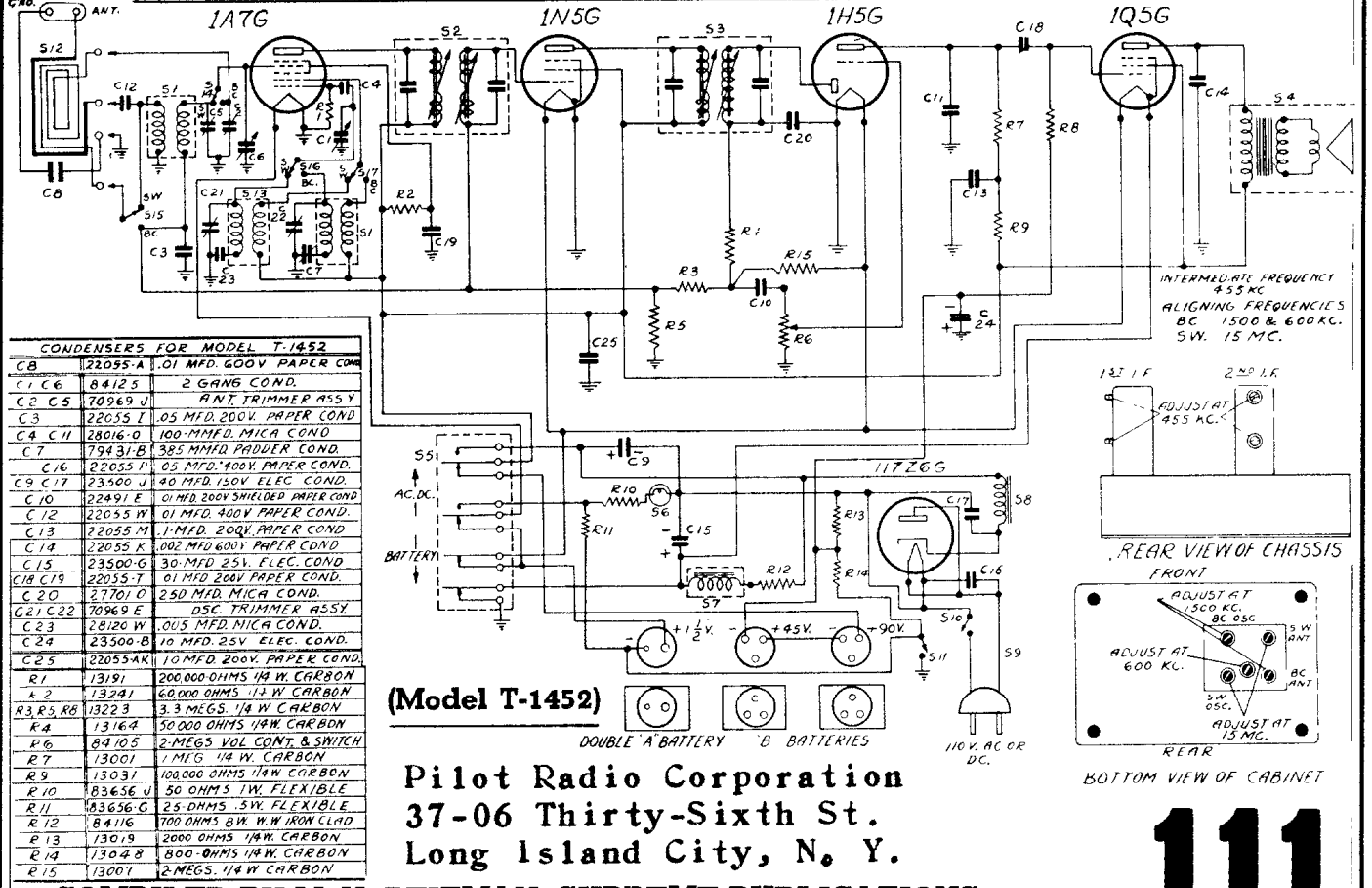
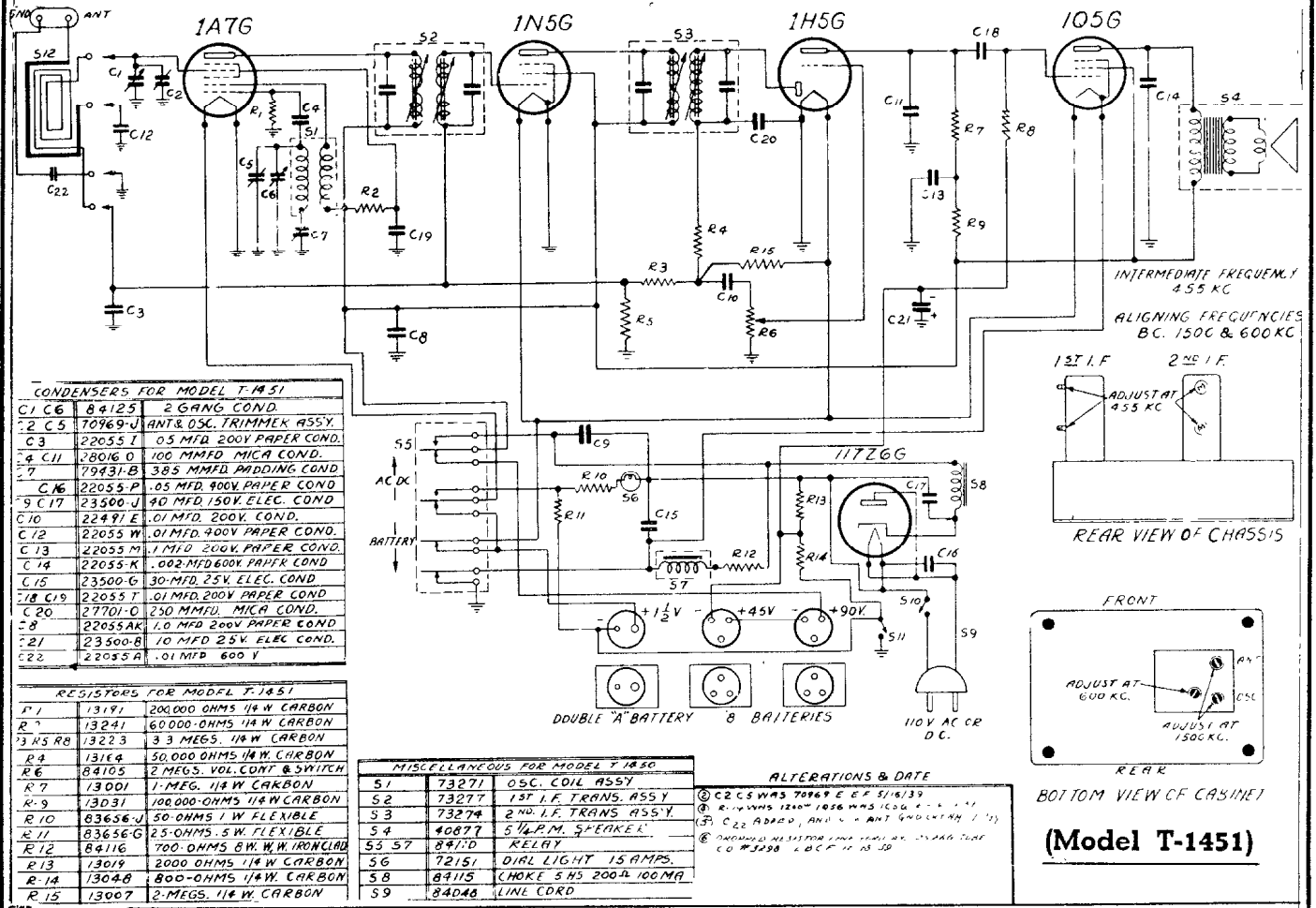


FIG. NO. 4

If the pickup descends too fast or too slow, adjust the speed of descent by turning the knurled thumb nut on the dashpot sleeve at W Fig. 2.

The unit is adjusted at the factory so that the needle will be set down approximately $3/32$ " in from the edge of the record. An adjusting screw is provided on the side of the pickup at M Fig. 2. If the needle is being lowered onto the playing surface of the record, and the adjusting screw at M Fig. 2 fails to correct the condition proceed as follows: First stop the record changer, with the pickup in the maximum raised position and check the clearance between the underside of the pickup shelf at Z Fig. 2 and the tip of the dashpot. This clearance should be very small as otherwise the pickup will tend to bounce as it is lowered. There must be sufficient clearance however to prevent the pickup shelf from rubbing on the tip of the dash pot, or the pickup will not swing out far enough to allow the adjustable stop at K Fig. 2 to come to rest against the dashpot. Check this clearance in both 10" and 12" record positions. If adjustment is required, the height of the dashpot may be regulated by loosening the nuts on the bottom of the lift lever stud at X Fig. 4 and changing their position on the stud. To raise the dashpot turn the nuts clockwise, to lower the dashpot turn the nuts counter-clockwise.

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Pilot Radio Corporation
37-06 Thirty-Sixth St.
Long Island City, N. Y.

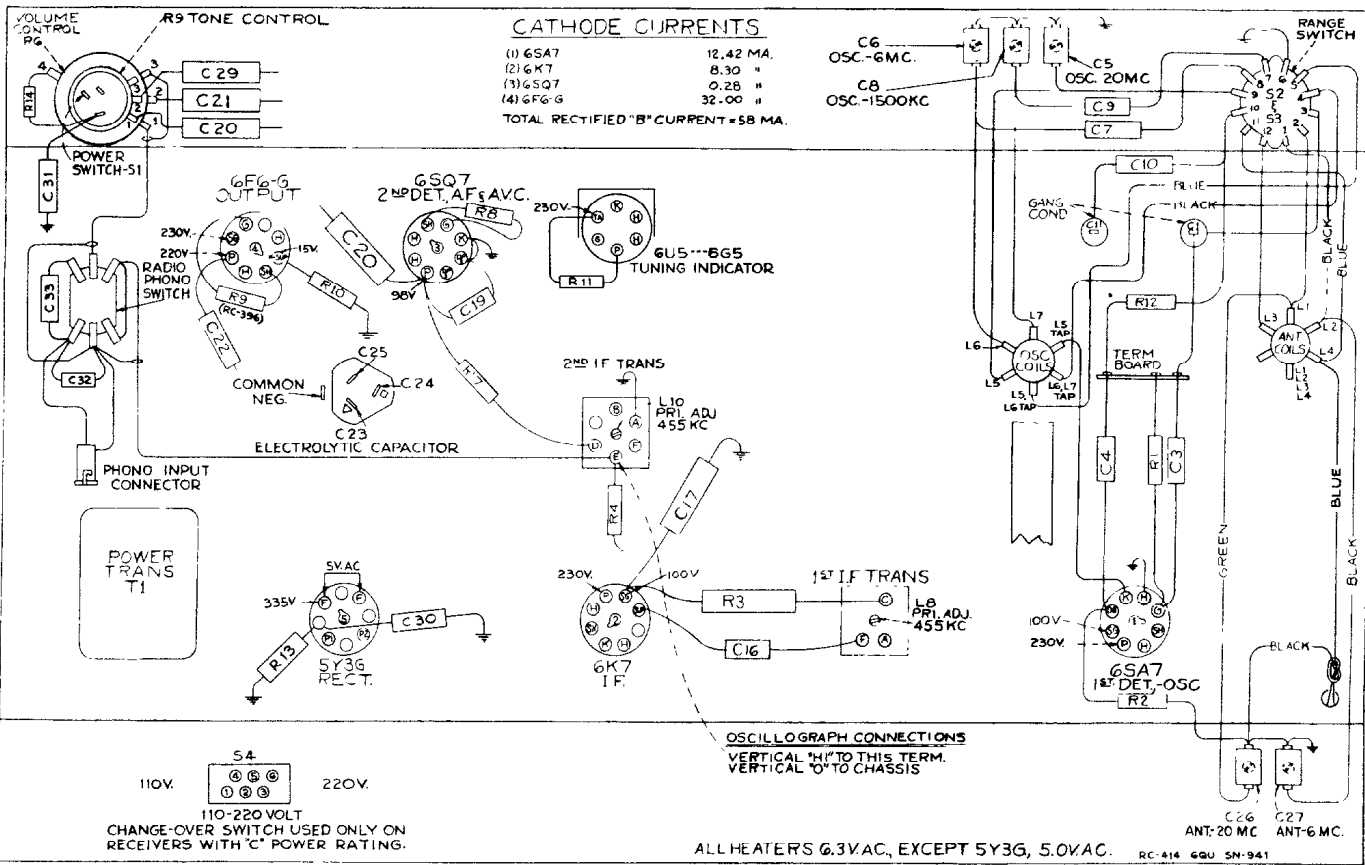
111

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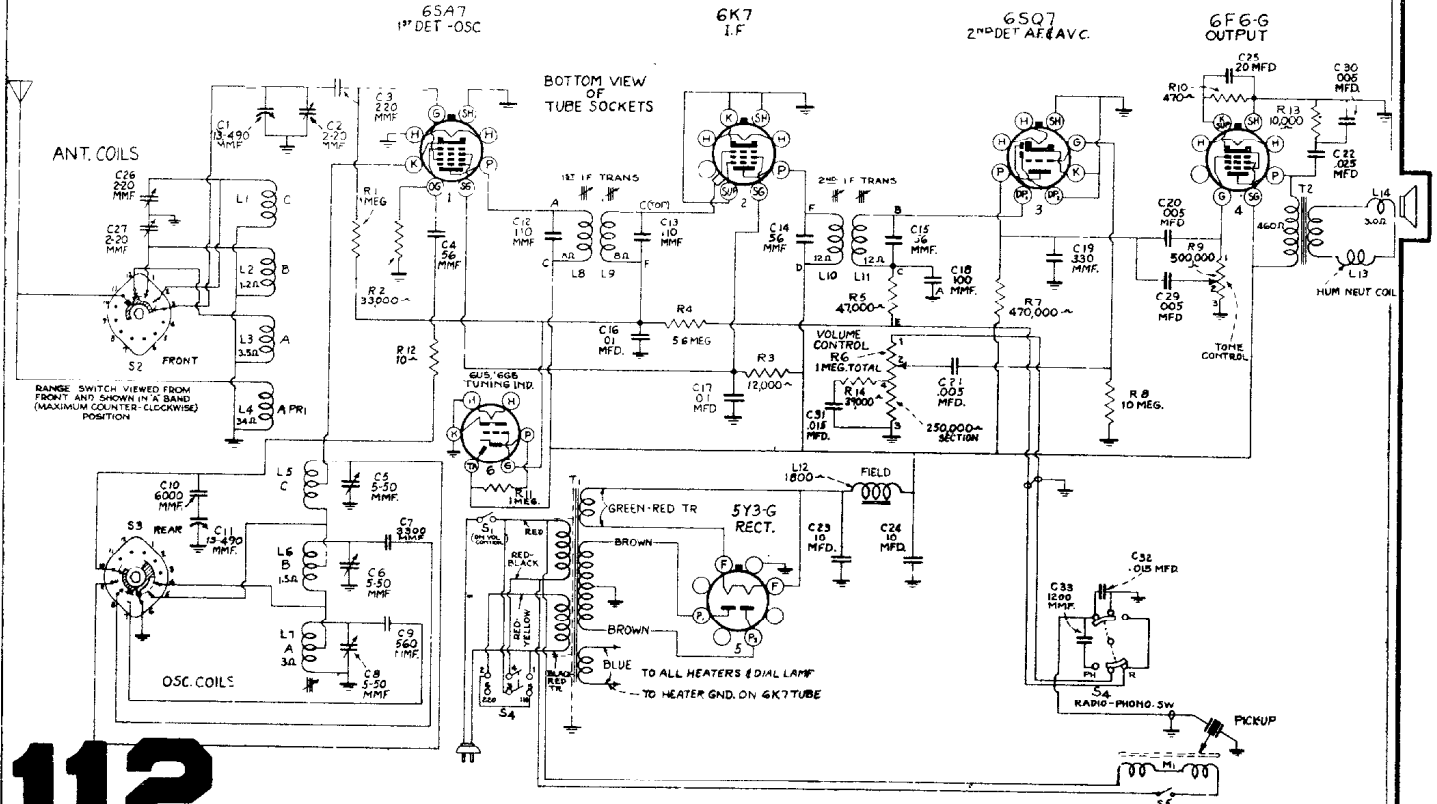
RCA Victor

MODEL 6QU



Measurements made to chassis unless otherwise indicated, with set tuned to quiet point and volume control at minimum. Values should hold within $\pm 20\%$ with 117-volt a-c supply.

NOTE: Values with star () are operating voltages in circuits with high series resistance. The actual measured voltages will be lower, depending on the voltmeter loading.

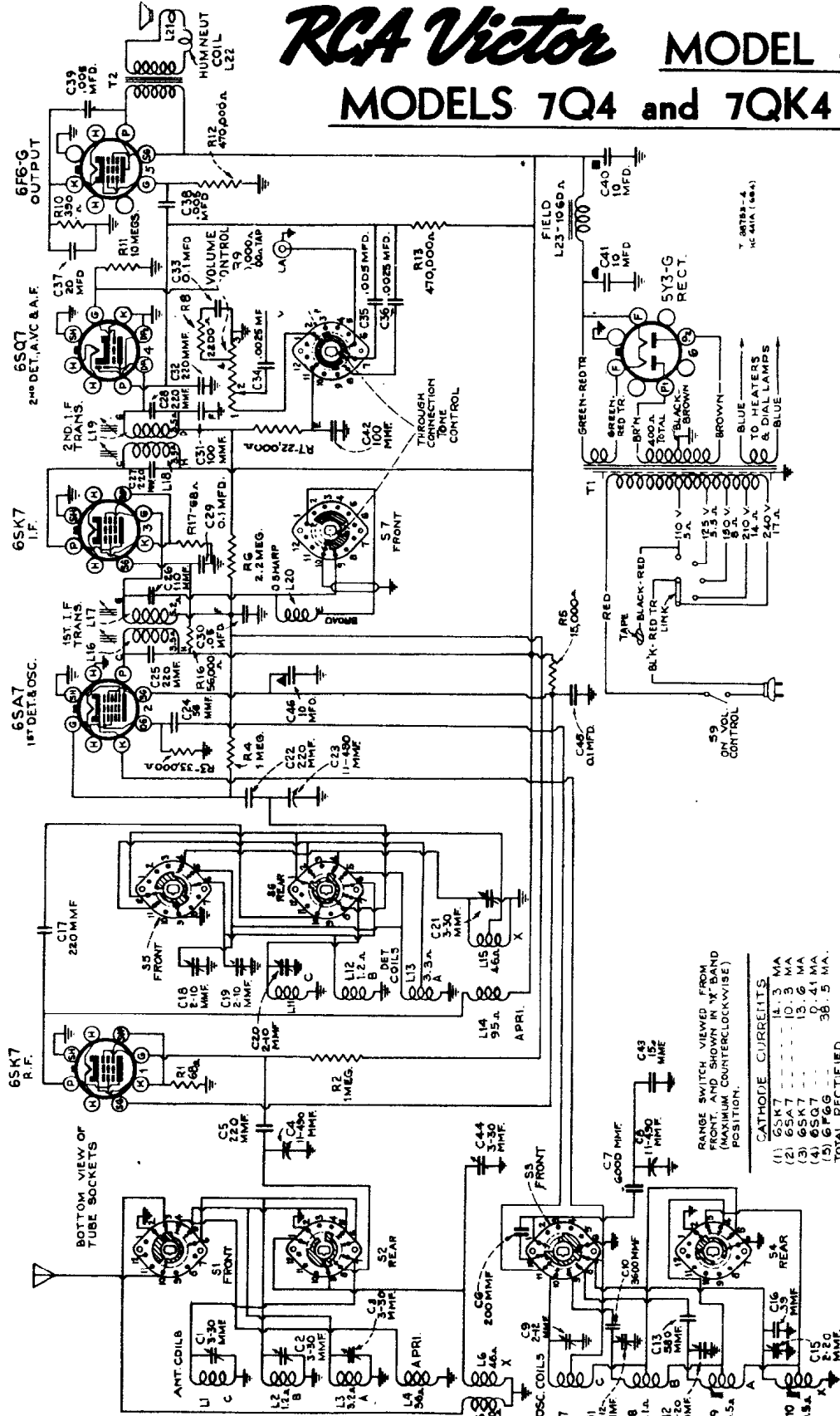


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RCA Victor MODEL 6Q4

MODELS 7Q4 and 7QK4



Models 7Q4 and 7QK4 are similar to Model 6Q4 except for the addition of a tuning indicator (RCA-6U5/6G5). The 7QK4 chassis uses an RCA-6F6 output tube, whereas the 7Q4 uses an RCA-6F6-G output tube.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

RCA Victor

Models 9TX-21, -22, and -23

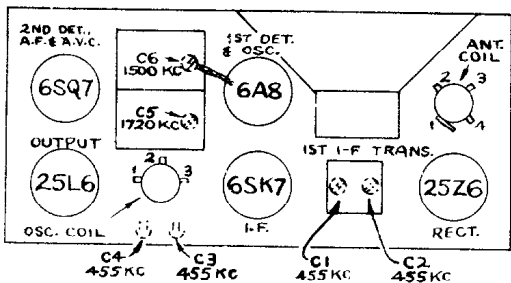
Chassis No. RC-403 RC-403 RC-403A

Five-Tube, Single-Band, AC-DC Superheterodyne Receivers

Alignment Procedure

Output Meter Alignment.—Connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—Connect the low side of the test-oscillator to the receiver chassis, through a .01 mfd. capacitor, and keep the output as low as possible. The antenna should be rolled up and kept at least one foot from chassis during alignment.



Trimmer Locations

Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1	6A8 1st-Det. grid cap, in series with .01 mfd.	455 kc	Quiet point at 1,600 kc end of dial	C1, C2, C3, C4 (1st and 2nd I-F transformers)
2	Antenna term. of ant. trans. in series with 100 mmfd.	1,720 kc	Full clockwise (out of mesh)	C5 (oscillator)
3		1,500 kc	Resonance on 1,500 kc signal.	C6 (antenna)

INTERMEDIATE FREQUENCY..... 455 kc

POWER OUTPUT (125 volt, 60 cycle supply)

Undistorted..... 1.5 watts
Maximum..... 2.0 watts

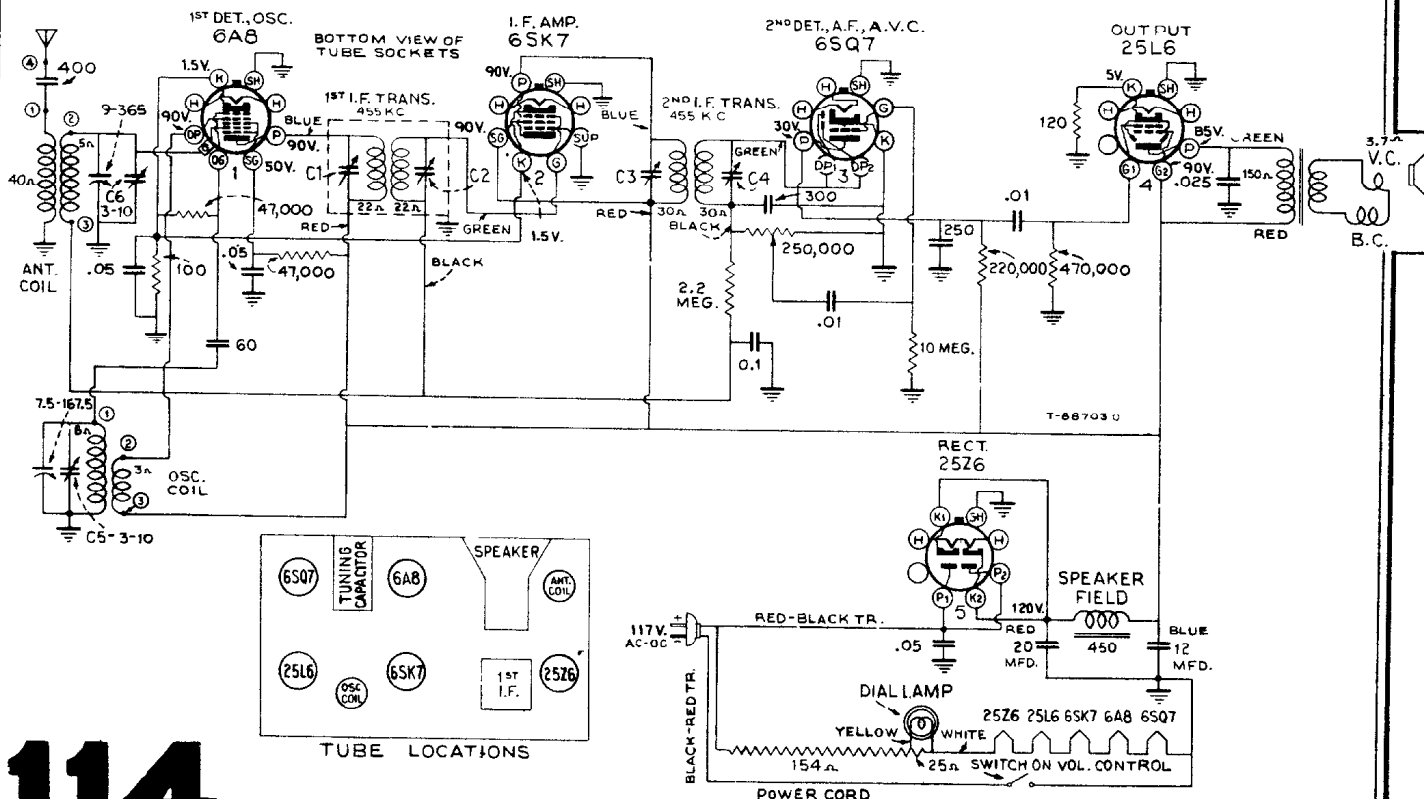
LOUDSPEAKER (39105-1)

Type..... 4-inch Electrodynamic

Power-Supply Polarity.—For operation on d-c, the power plug must be inserted in the outlet for correct polarity. If the set does not function, reverse the plug. On a-c, reversal of the plug may reduce hum.

Resistor in Power Cord.—The power cord contains a resistor which becomes warm during operation.

Antenna.—The set is equipped with length of antenna wire. Do not connect the antenna to ground. If an outdoor antenna is used, it should not be longer than 100 feet, including lead-in. If it is longer, connect a 100 to 200 mmf. capacitor in series with the lead-in.



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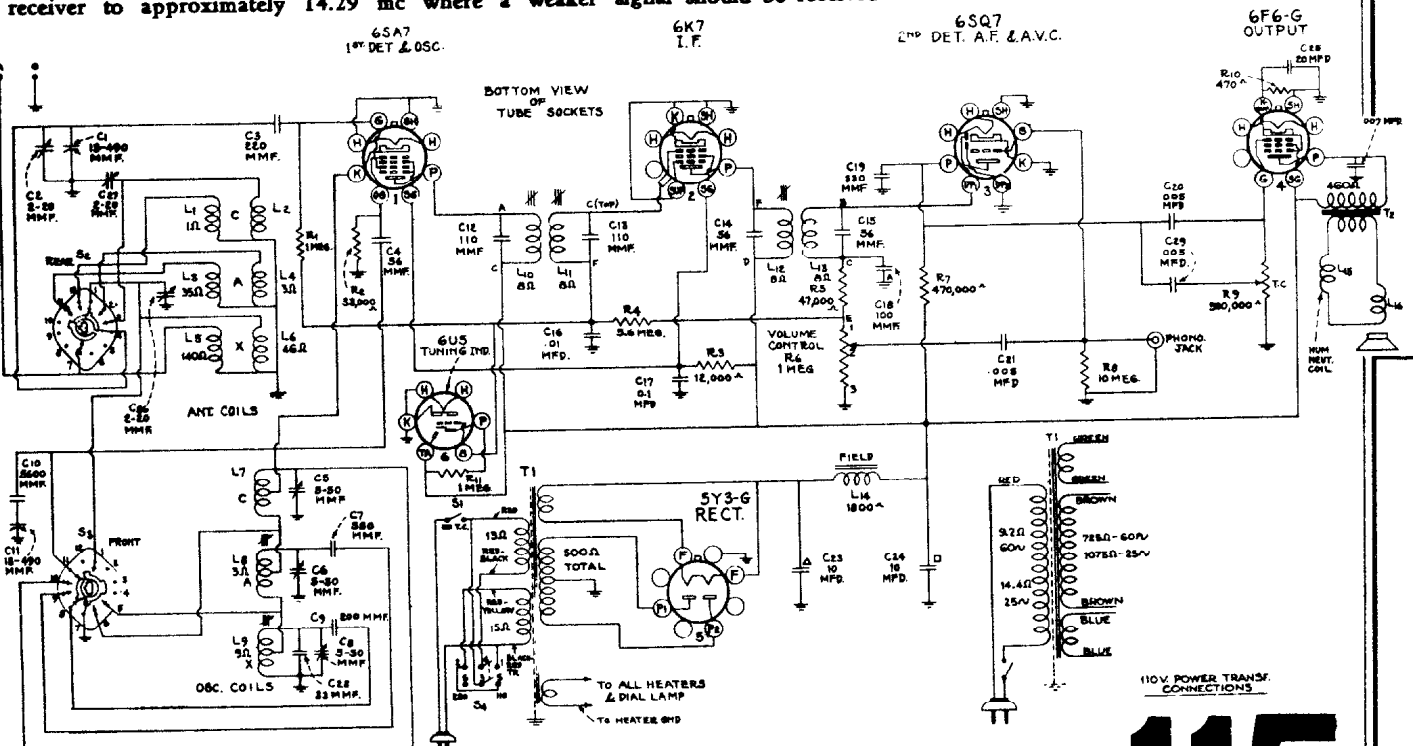
RCA Victor

MODEL 6Q8

Chassis No. RC-414B

Steps	Connect the high side of the test-osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output
1	6K7 I-F grid cap in series with .01 mfd.	455 kc	"A" Band Quiet Point between 550-750 kc	L12 and L13 (2nd I-F Trans.)
2	6SA7 det. grid in series with .01 mfd.	455 kc		L10 and L11 (1st I-F Trans.)
3	Ant. terminal in series with 200 mmf.	1,500 kc	1,500 kc (152.4°) "A" Band	C6 (osc.) C2 (ant.)
4	Ant. terminal in series with 200 mmf.	600 kc	600 kc (33°) "A" Band	L8 (osc.) Rock Gang
5	Repeat steps 3 and 4			
6	Ant. terminal in series with 200 mmf.	360 kc	360 kc (151.5°) "X" Band	C8 (osc.) C26 (ant.)
7	Ant. terminal in series with 200 mmf.	175 kc	175 kc (53.3°) "X" Band	L9 (osc.) Rock Gang
8	Repeat steps 6 and 7			
9	Ant. terminal in series with 300 ohms	15.2 mc	15.2 mc (147.3°) "C" Band	C5 (osc.)* C27 (ant.)
10	Ant. terminal in series with 200 mmf.	360 kc	360 kc (151.5°) "X" Band	C8 (osc.)
11	Ant. terminal in series with 200 mmf.	1,500 kc	1,500 kc (152.4°) "A" Band	C6 (osc.)

*Use minimum capacity peak if two can be obtained. Check to determine that C5 is adjusted to correct peak by tuning receiver to approximately 14.29 mc where a weaker signal should be received.



RANGE SWITCH VIEWED FROM FRONT AND SHOWN IN "X" BAND (MAX. COUNTER CLOCKWISE) POSITION.

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RCA Victor

MODELS 9TX-31, 9TX-32, 9TX-33

Chassis No. RC-405, RC-405A, RC-405B.

Five-Tube, Single-Band, AC-DC Superheterodyne Receivers

Alignment Procedure

Output Meter Alignment.—Connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—Connect the low side of the test-oscillator to the receiver chassis, through a .01 mfd. capacitor, and keep the output as low as possible.

Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1	Tuning condenser stator (osc.) in series with .01 mfd.	455 kc	Quiet point at 1,600 kc end of dial	C1, C2, C3, C4 (1st and 2nd I-F transformers)
2	Antenna term. of ant. trans. in series with 100 mmfd.	1,720 kc	Full clockwise (out of mesh)	C5 (oscillator)
3		1,500 kc	Resonance on 1,500 kc signal	C6 (antenna)

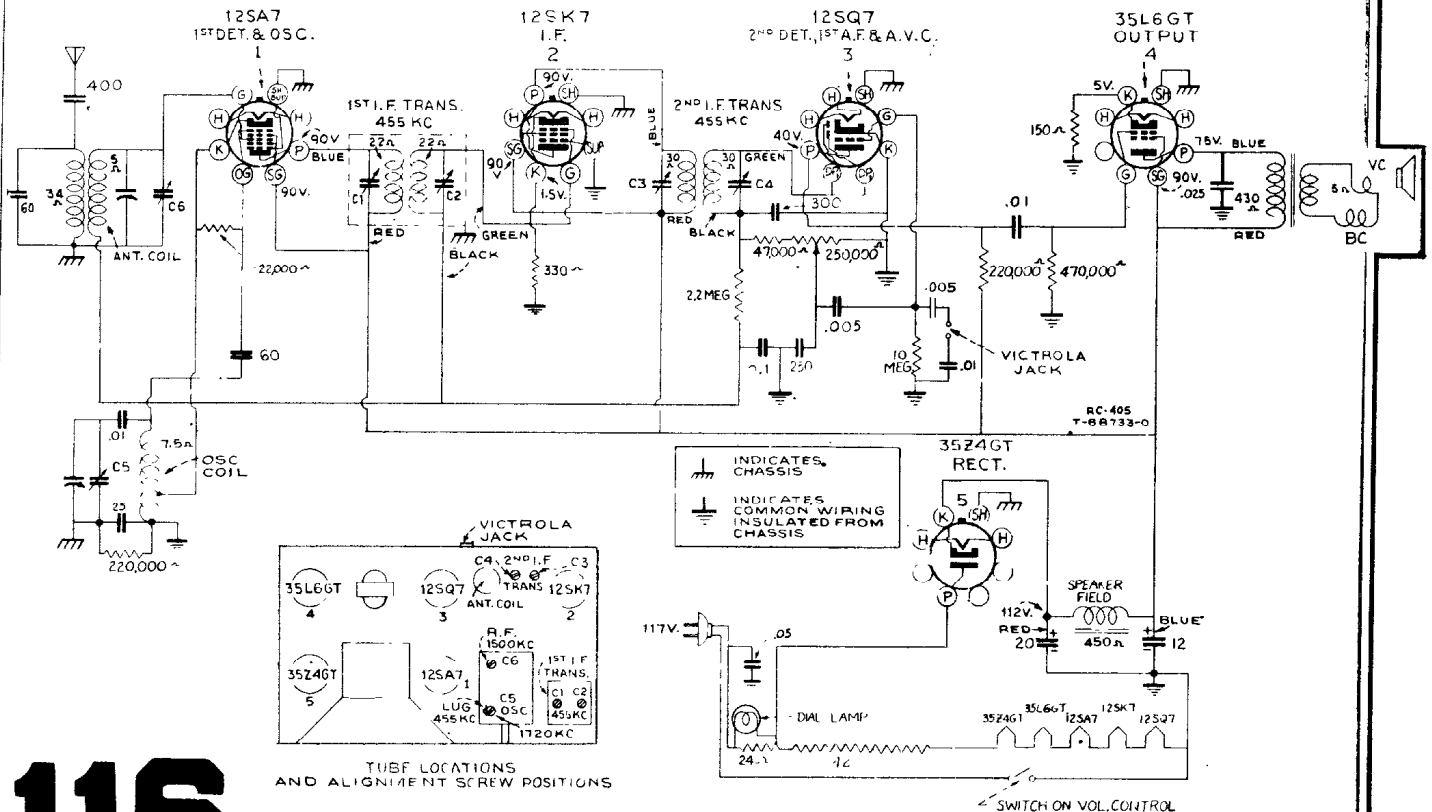
Precautionary Lead Dress

1. Dress 1st I-F plate and grid leads against chassis and away from each other. Dress plate lead from 12SK7 close to chassis.
2. Dress electrolytic capacitor against rear apron.

Power-Supply Polarity.—For operation on d-c, the power plug must be inserted in the outlet for correct polarity. If the set does not function, reverse the plug. On a-c, reversal of the plug may reduce hum.

Antenna.—The set is equipped with length of antenna wire. Do not connect the antenna to ground. If an outdoor antenna is used, it should not be longer than 100 feet, including lead-in. If it is longer, connect a 100 to 200 mmf. capacitor in series with the lead-in.

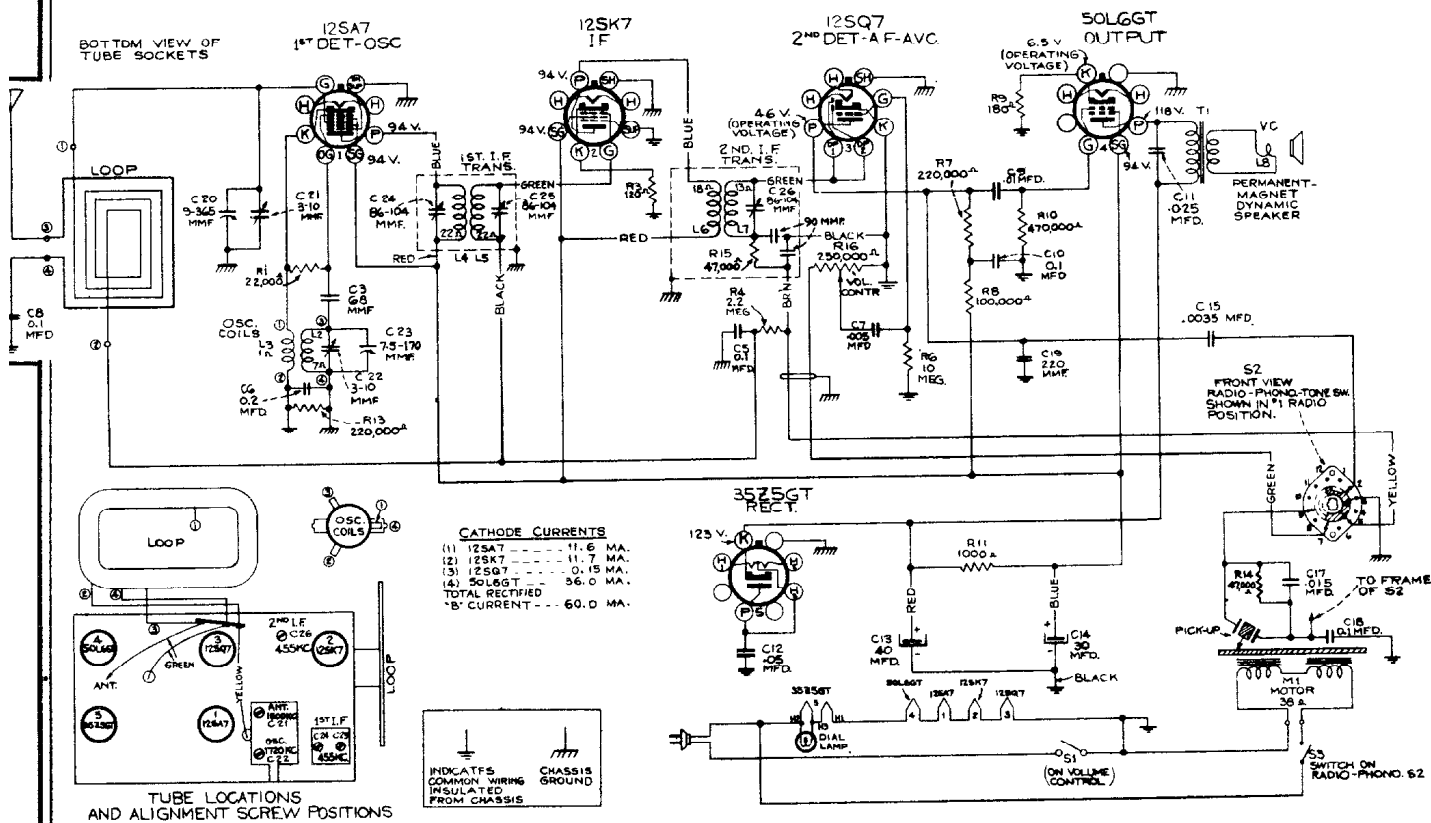
Victrola Attachment.—A jack is provided on the rear of chassis for connecting a Victrola Attachment into the audio-amplifying circuit. The cable from the Victrola Attachment should be terminated in a Stock No. 31048 plug to fit the jack.





RCA VICTROLA MODEL U-9 (Chassis No. RC-482B)

Five-Tube, Single-Band, A-C, Superheterodyne



Miscellaneous Service Data

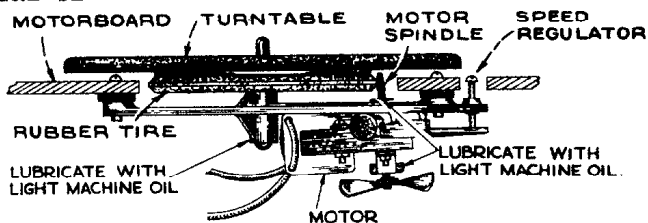
PHONOGRAPH MECHANISM.—

The phonograph motor is self-starting and operates the turntable through friction drive between the motor spindle and the rubber tire on the underside of the turntable.

The rubber driving tire on the turntable should never be removed since it is ground in to be concentric with the spindle. If replacement is required, the entire turntable should be replaced.

The speed regulator raises and lowers the motor. This changes the driving ratio between the motor and the turntable due to the motor spindle being conical in shape. It is important to adjust this regulator for a turntable speed of 78 r.p.m. WHILE PLAYING A 10-INCH RECORD WITH THE NEEDLE APPROXIMATELY ONE INCH FROM THE OUTER EDGE OF THE RECORD.

Lubrication.—The motor should be lubricated as follows: Place a few drops of S.A.E. 20 (or equivalent) on the turntable spindle and saturate the oil retaining felt pads on the motor shaft with S.A.E. 10 oil. This oiling process should be repeated once or twice a year. **CAUTION.**—THE MOTOR DRIVE SPINDLE AND RUBBER DRIVING TIRE ON THE TURNTABLE MUST BE KEPT CLEAN AND ENTIRELY FREE FROM OIL AND GREASE AT ALL TIMES.



Alignment Procedure

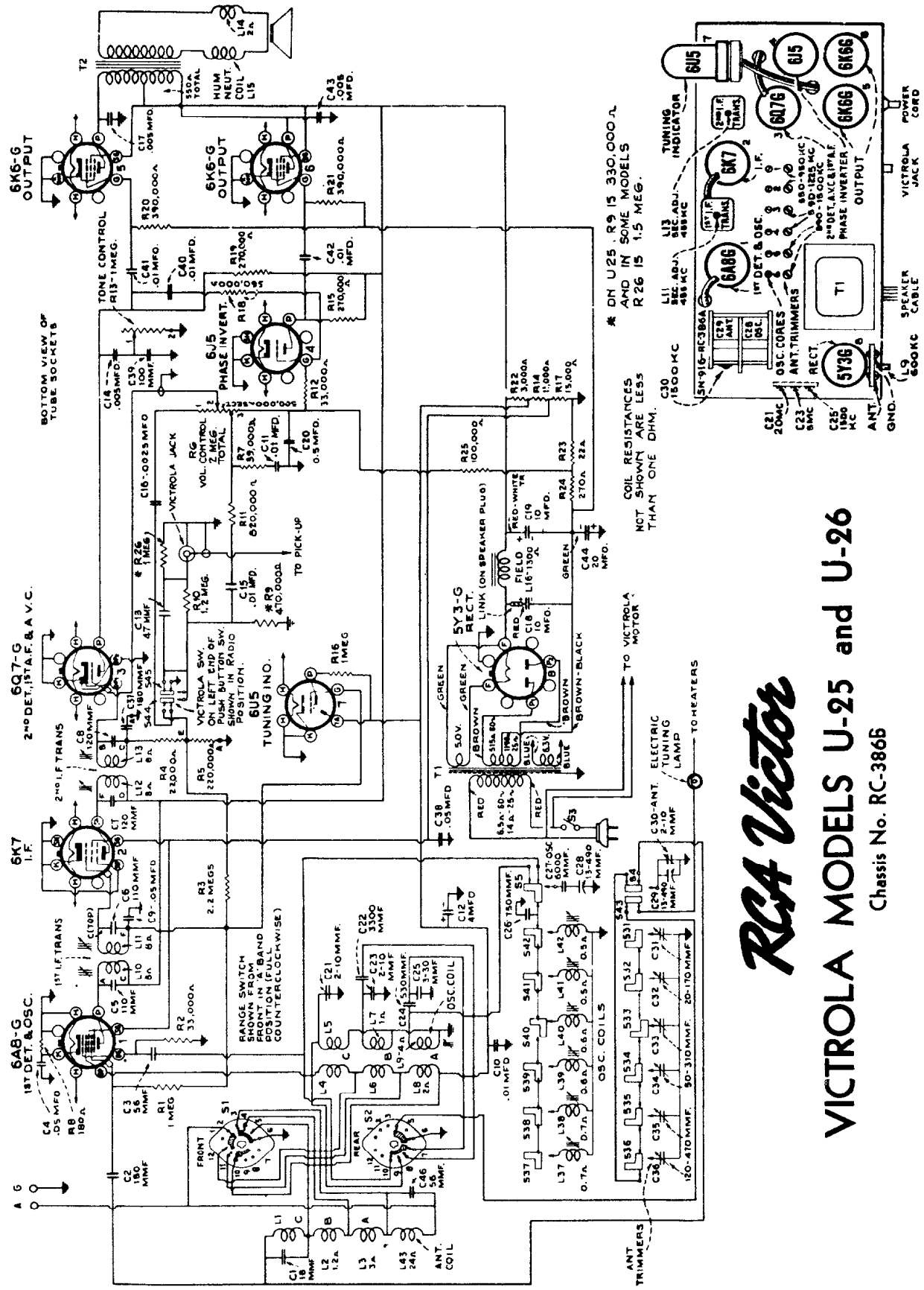
Output Meter Alignment.—Connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test Oscillator.—Connect the low side of the test oscillator to the receiver chassis through a 0.01 mfd capacitor, and keep the output as low as possible.

Pre-Setting Dial.—With gang condenser in full mesh, the pointer should coincide with the left hand mark stamped in the dial back-plate.

Antenna.—This set is equipped with a built-in loop antenna. If an outdoor antenna is used, it may be connected to the green antenna lead, stapled to the base of the cabinet. The antenna should not be longer than 100 feet including the lead-in. If it is longer, connect a 100 mmfd. capacitor in series with the lead-in.

Steps	Connect the high side of test oscillator to—	Tune test osc. to—	Turn radio dial to—	Adjust the following for max. output—
1	Tuning Cond. stator (det.) in series with 0.01 mfd.	455 kc	Quiet Point at 1,600 kc end of dial	C24, C25, C26 (1st and 2nd I-F transformers)
2	Antenna lead (green) in series with 100 mmfd.	1,720 kc	Full Clockwise (out of mesh)	C22 (osc.)
3		1,500 kc	Resonance on 1,500 kc signal	C21 (ant.)



* ON U25 .R9 IS 330,000 Ω
AND IN SOME MODELS
R26 IS 1.5 MEG.

COIL RESISTANCES
NOT SHOWN ARE LESS
THAN ONE OHM.

TO VICTROLA MOTOR

TO HEATERS

RCA Victor

VICTROLA MODELS U-25 and U-26

Chassis No. RC-3866

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Automatic Record Changer

GENERAL INFORMATION

Before servicing the automatic record changer, inspect the assembly to see that all levers, parts, gears, springs, etc. are in good order and are correctly assembled.

A bind or jam in the mechanism can usually be relieved by rotating the turntable in the reverse direction.

The changer can be conveniently rotated through its change cycle by pushing the index lever to "Reject" and revolving the turntable by hand. Six turntable revolutions are required for one change cycle.

ADJUSTMENTS

A. Main Lever.—This lever is basically important in that it interlinks the various individual mechanisms which control needle landing, tripping, record separation, etc. One adjustment is provided for the main lever. Rotate the turntable until the changer is out-of-cycle; and adjust rubber bumper bracket (A) so that the roller clears the nose of the cam plate by $1/16$ inch.

B. Friction Clutch.—The motion of the tone arm toward the center of the record is transmitted to the trip pawl "22" by the trip lever "7" through a friction clutch "5." If the motion of the pickup is abruptly accelerated or becomes irregular due to swinging in the eccentric groove, the trip finger "7" moves the trip pawl "22" into engagement with the pawl on the main gear, and the change cycle is started. Proper adjustment of the friction clutch "5" occurs when movement of the tone arm causes positive movement of the trip pawl "22" without tendency of the clutch to slip. The friction should be just enough to prevent slippage, and is adjustable by means of screw "B." If adjustment is too tight, the needle will repeat grooves; if too loose, tripping will not occur at the end of the record.

C. Pickup Lift Cable Screw.—During the record change cycle, lever "16" is actuated by the main lever "15" so as to raise the tone arm clear of the record by means of the pickup lift cable. To adjust pickup for proper elevation, stop the changer "in-cycle" at the point where pickup is raised to the maximum height above turntable plate, and has not moved outward; at this point adjust locknuts "C" to obtain 1 inch spacing between needle point and turntable top surface.

D. & E. Needle Landing on Record.—The relation of coupling between the tone arm vertical shaft and lever "20" determines the landing position of the needle on a 10 inch record. Position of eccentric stud "E" governs the landing of the needle on a 12 inch record; this, however, is dependent on the proper 10 inch adjustment.

To adjust for needle landing, place 10 inch record on turntable; push index lever to reject position and return to the 10 inch position; see that pickup locating lever "17" is tilted fully toward turntable; rotate mechanism through cycle until needle is just ready to land on the record; then see that pin "V" on lever "14" is in contact with "Step T" on lever "17." The correct point of landing is $4-11/16$ inches from the nearest side of the turntable spindle; loosen the two screws "D" and adjust horizontal position of tone arm to proper dimension, being careful not to disturb levers "14" and "17." Leave approximately $1/32$ inch end play between hub of lever "20" and pickup base bearing, and tighten the blunt nose screw "D"; run mechanism through several cycles as a check, then tighten cone pointed screw "D".

After adjusting for needle landing on a 10 inch record, place 12 inch record on turntable; push index lever to reject and return to 12 inch position; rotate mechanism through cycle until needle is just ready to land on the record; the correct point of landing is $5-11/16$ inches from nearest side of spindle. If the landing is incorrect, turn stud "E" until the eccentric end adjusts lever "14" to give correct needle landing. The eccentric end of the stud must always be toward the rear of the motor board, otherwise incorrect landing may occur with 10 inch records.

F. & G. Record Separating Knife.—The upper plate (knife) "25" on each of the record posts serves to separate the lower record from the stack and to support the remaining records during the change cycle. It is essential that the spacing between the knife and the rotating record shelf "27" be accurately maintained. The spacing for the 10 inch record is nominally $.058$ inch, and for the 12 inch record is $.075$ inch.

To adjust rotate the knife to the point of minimum

vertical separation from the record shelf and turn screw and locknut "F" to give $.055-.061$ inch separation. Screw "G" must not be depressed during this adjustment. After setting screw "F" adjust screw "G" so that when its tip is depressed flush with top of record shelf, the vertical spacing between the knife, in its lowest rotational position, and the shelf, is $.072-.078$ inch.

H. Record Support Shelf.—The record shelf revolves during the change cycle to allow the lower record to drop onto the turntable. Both posts are rotated simultaneously by a gear and rack coupled to the main lever "15," and it is necessary that adjustments be such that the record is released from both shelves at the same instant. To adjust, place a 12 inch record on the turntable, rotate mechanism into cycle to the point where tone arm is at maximum distance outward from turntable; lift record upward until it is in contact with both separating knives, then loosen screws "H" and shift record shelves so that the curved inner edges of the shelves are uniformly spaced at least $1/16$ inch from record edge. Tighten the blunt nose screw "H," run mechanism through cycle several times to check action, then tighten cone pointed screw "H".

If record shelves or knives are bent, or not perfectly horizontal, improper operation and jamming of mechanism will occur.

J. Tone Arm Rest Support (not shown).—When the changer is out-of-cycle, the front lower edge of the pickup head should be $5/16$ inch above surface of motor board. This may be adjusted by bending the tone arm support bracket, which is associated with the tone arm mounting base, in the required direction.

K. Trip Pawl Stop Pin.—The position of the trip pawl stop pin "K" in relation to the main lever "15" governs the point at which the roller enters the cam. By bending the pin support either toward or away from trip pawl bearing stud, the roller can be made to enter the cam later or earlier, respectively. This adjustment should be made so that the roller definitely clears the cam outer guide as well as the nose of the cam plate.

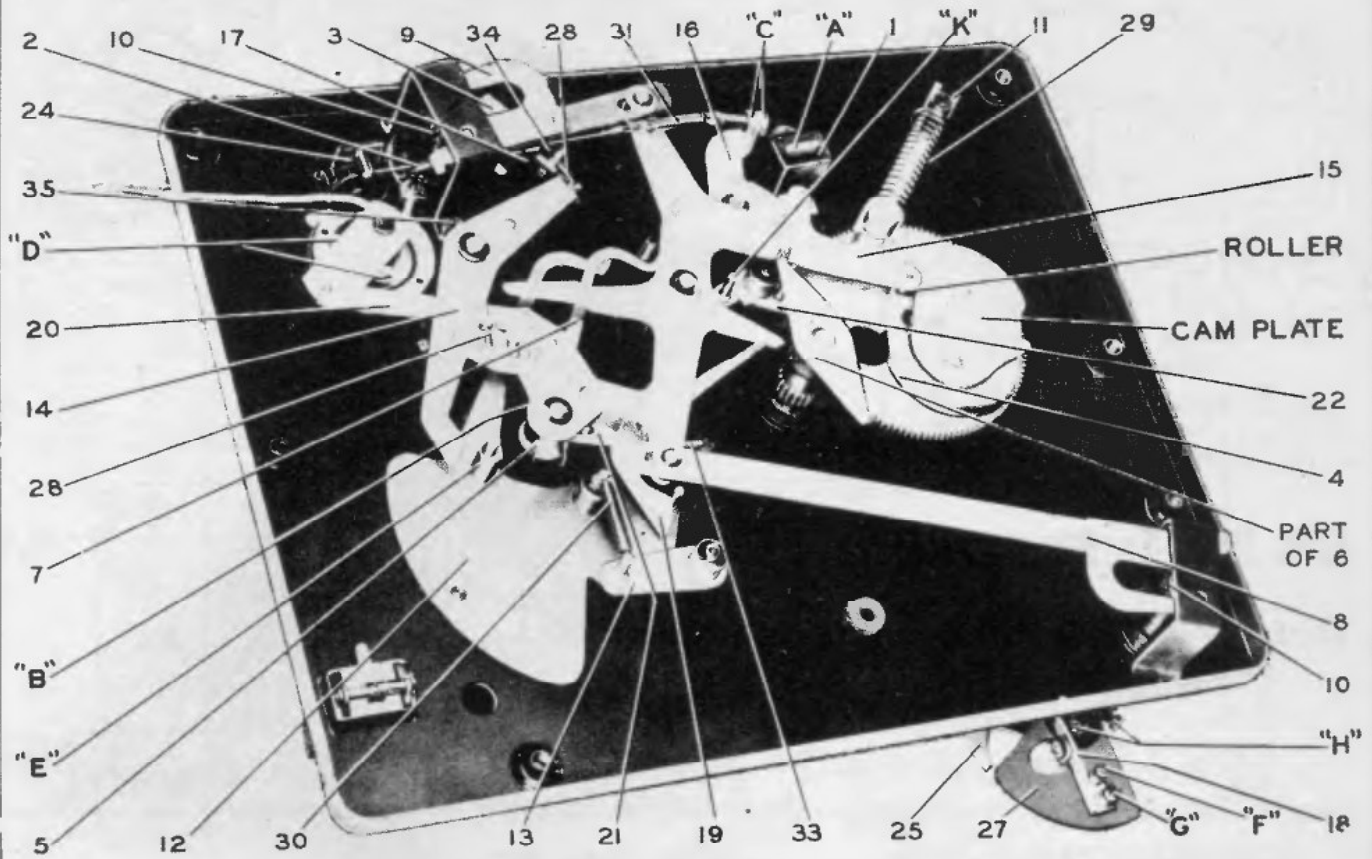
Lubrication.—Petrolatum or petroleum jelly should be applied to cam, main gear, spindle pinion gear, and gears of record posts.

MISCELLANEOUS SERVICE HINTS

Incorrect adjustment of a particular mechanism of the changer is generally exhibited in a specific mode of improper operation. The following relations between effects on operation and the usual mis-adjustments will enable ready adjustment in most cases.

1. For any irregularity of operation, the adjustment of the main lever "15" should be checked first as in "A".
2. Needle does not land properly on both 10 and 12 inch records—Make complete adjustments "D" and "E".
3. Needle does not land properly on 12 inch record but correct on 10 inch—Effect adjustment "E".
4. Failure to trip at end of record—Increase clutch "5" friction by means of screw "B". Also, see that levers "7" and "12" are free to move without touching each other.
5. Pickup strikes lower record of stack or drags across top record on turntable—Adjust lift cable per adjustment "C".
6. Needle does not track after landing—Friction clutch "5" adjustment "B" may be too tight; bind in tone arm vertical bearing; levers "7" and "12" fouled; or pickup output cable twisted.
7. Cycle commences before record is complete—Record is defective, or adjustment "B" of friction clutch "5" is too tight.
8. Wow in record reproduction—Record is defective; flexible coupling between motor and changer mechanism not correctly assembled; or instrument is not being operated at normal room temperature (65° F).
9. Record knives strike edge of records—Records warped; record edges are rough; or knife adjustments "F" and "G" are incorrect.
10. Record not released properly—Adjust record shelf assemblies in respect to shaft by means of adjustment "H".
11. Needle lands in 10 inch position on 12 inch record or misses record when playing both types mixed—Increase tension of pickup locating lever spring "34".

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS VICTROLA MODELS U-25 and U-26



Bottom View of Automatic Record Changer

NOTE: Numbers refer to parts—letters refer to adjustments.

SPEED ADJUSTMENT (SCREW) TO DECREASE SPEED TURN CLOCKWISE

TURN SPEED ADJUSTER SO THE FELT WILL PROTRUDE $\frac{1}{16}$ " WHEN ALL THE WAY IN. ADJUST GOVERNOR SO AS TO LEAVE $\frac{1}{16}$ " BETWEEN FELT AND DISC, THEN SECURE BY MEANS OF GOVERNOR SCREW.

ADJUST SO THAT SHAFT IS FREE TO ROTATE WITHOUT END PLAY

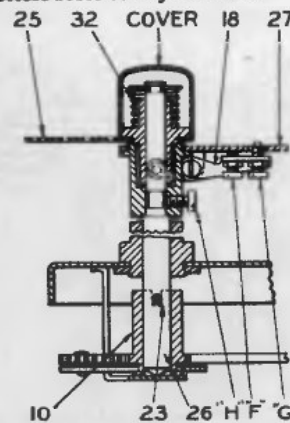
REMOVE TO TAKE OFF GOVERNOR

SPEED ADJUSTMENT LOCK NUT

OIL
KEEP FILLED WITH LIGHT OIL TO INSURE SMOOTH OPERATION

DO NOT CHANGE THIS ADJUSTMENT

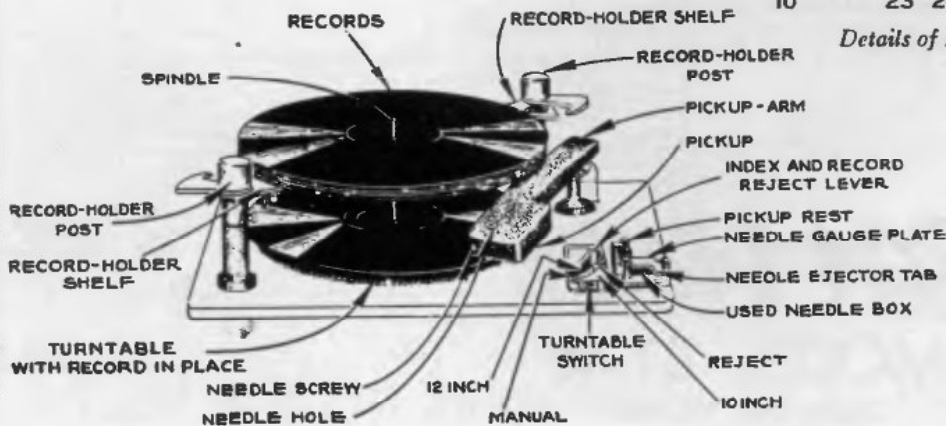
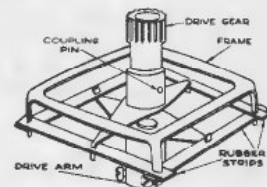
RCA MFG CO. INC
M-81474-0



PIN "V" ON END OF 14

STEP "T"

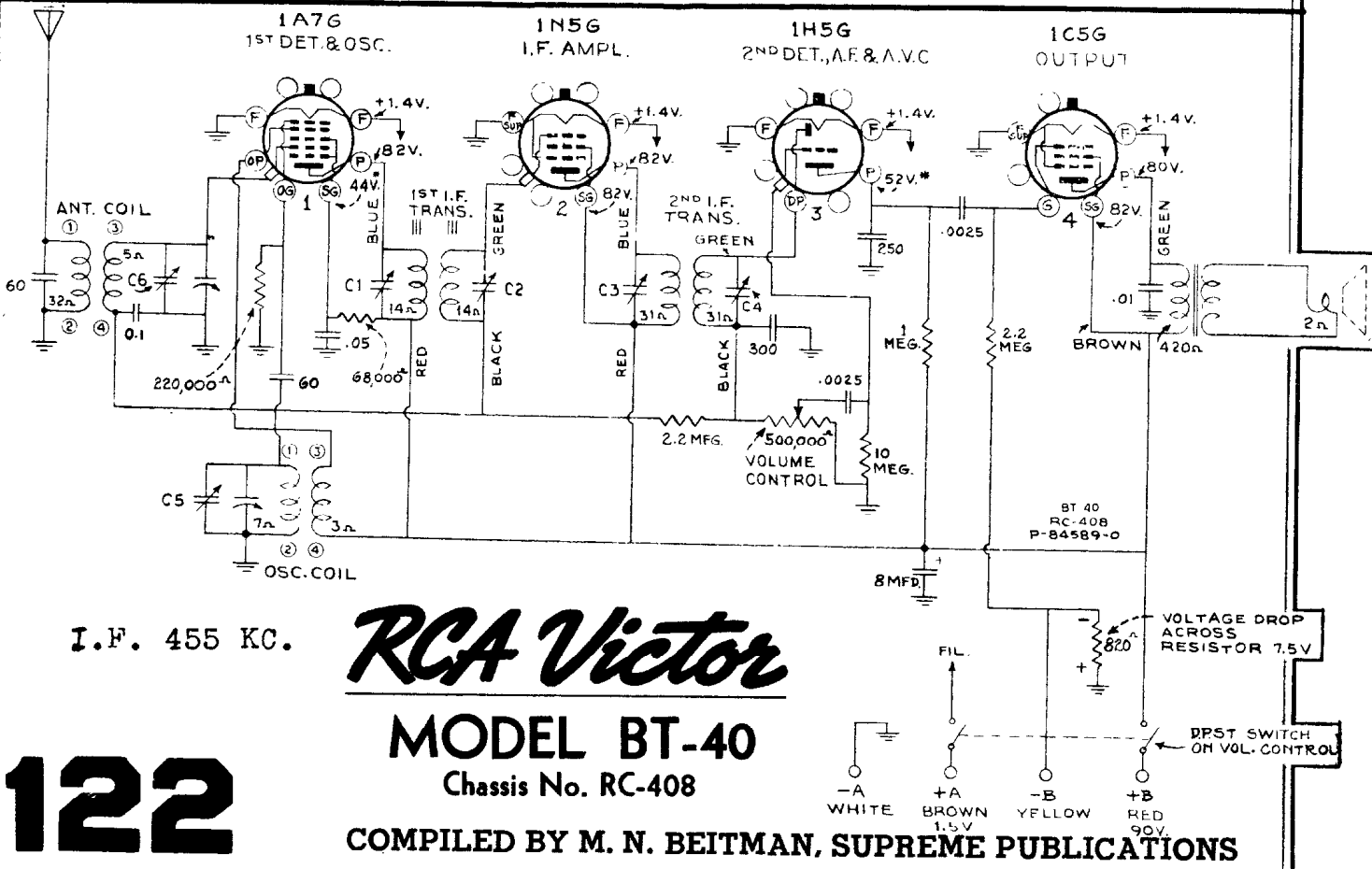
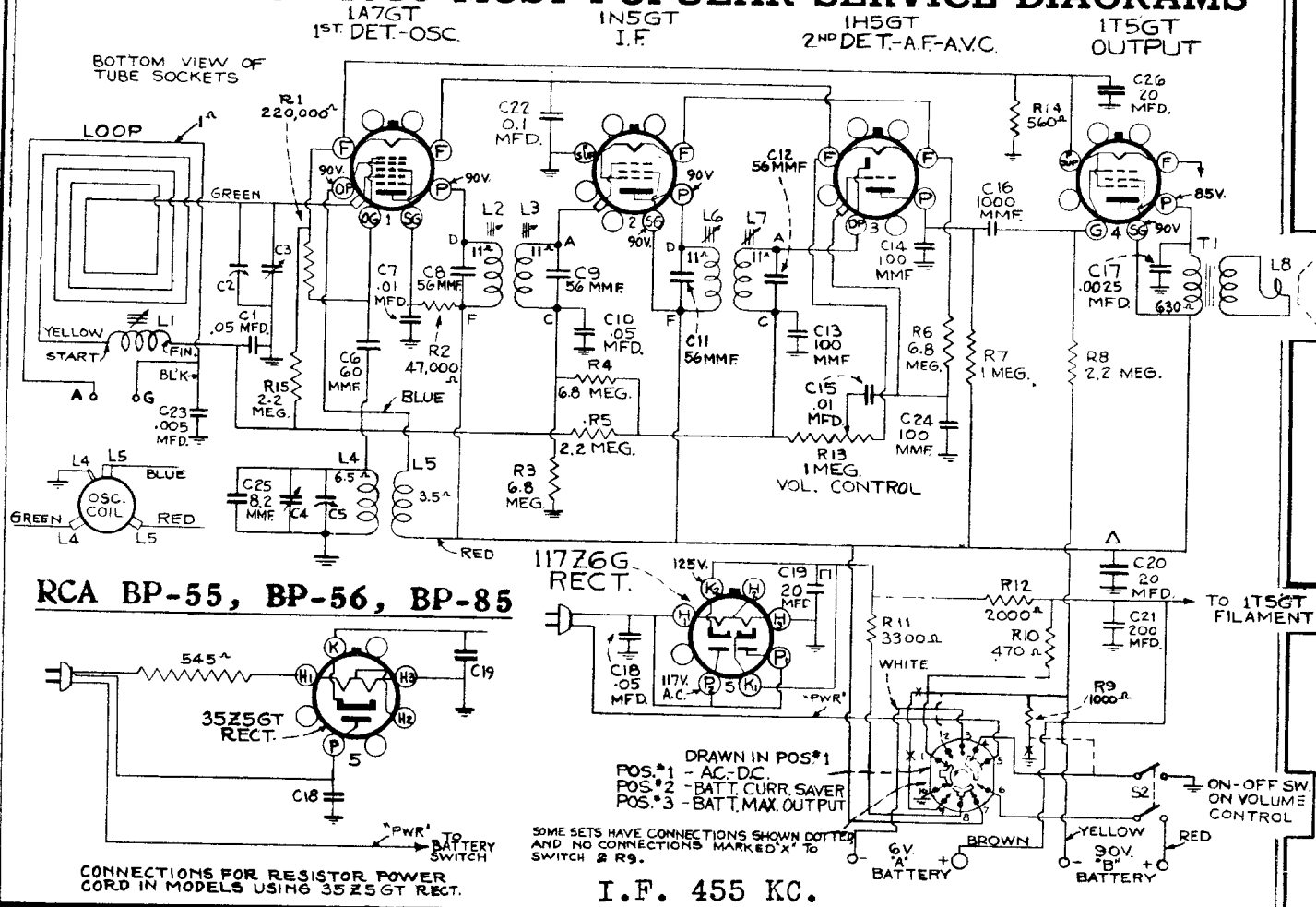
Details of Record Shelf Posts, and Locating Lever Assemblies



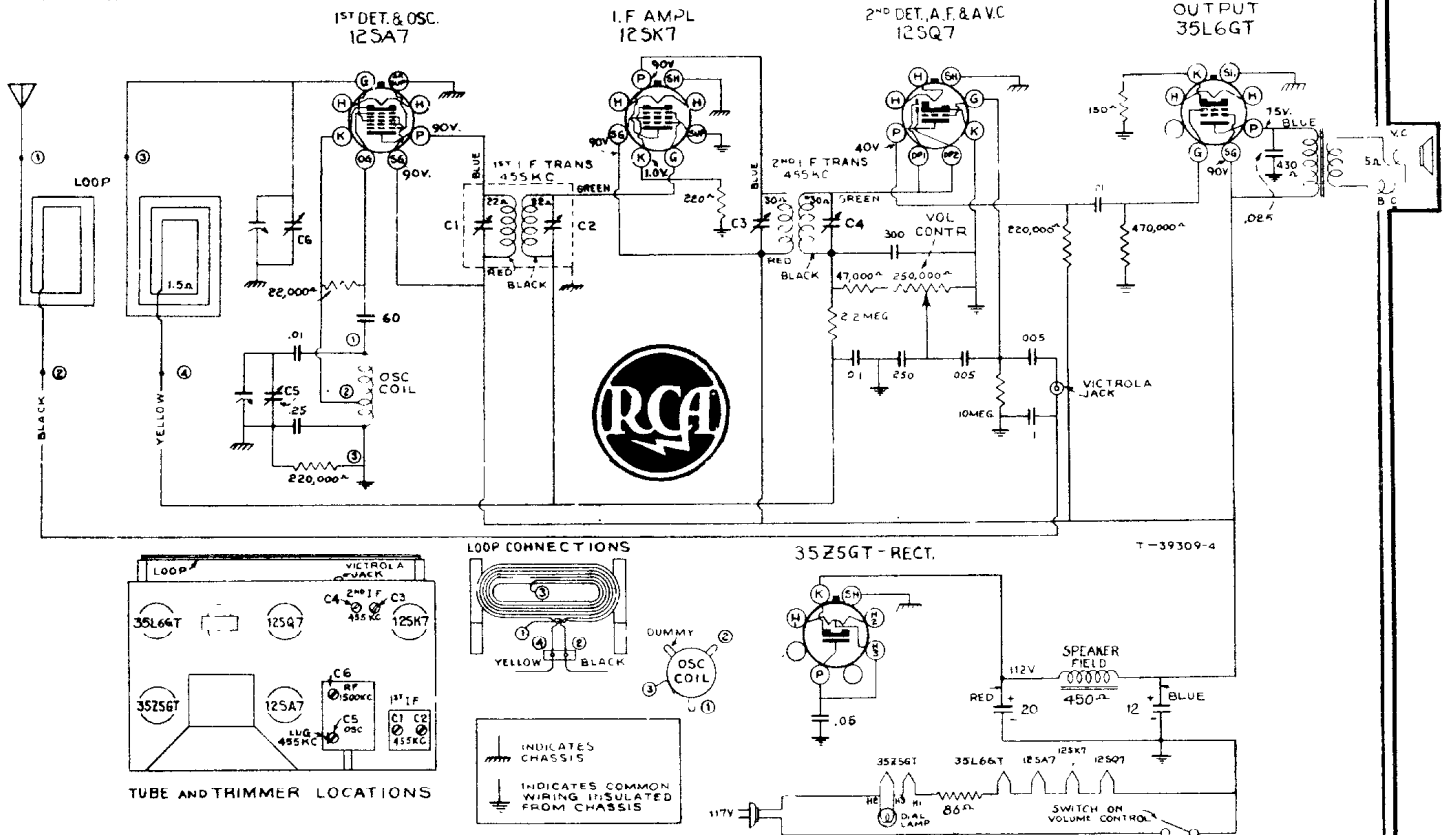
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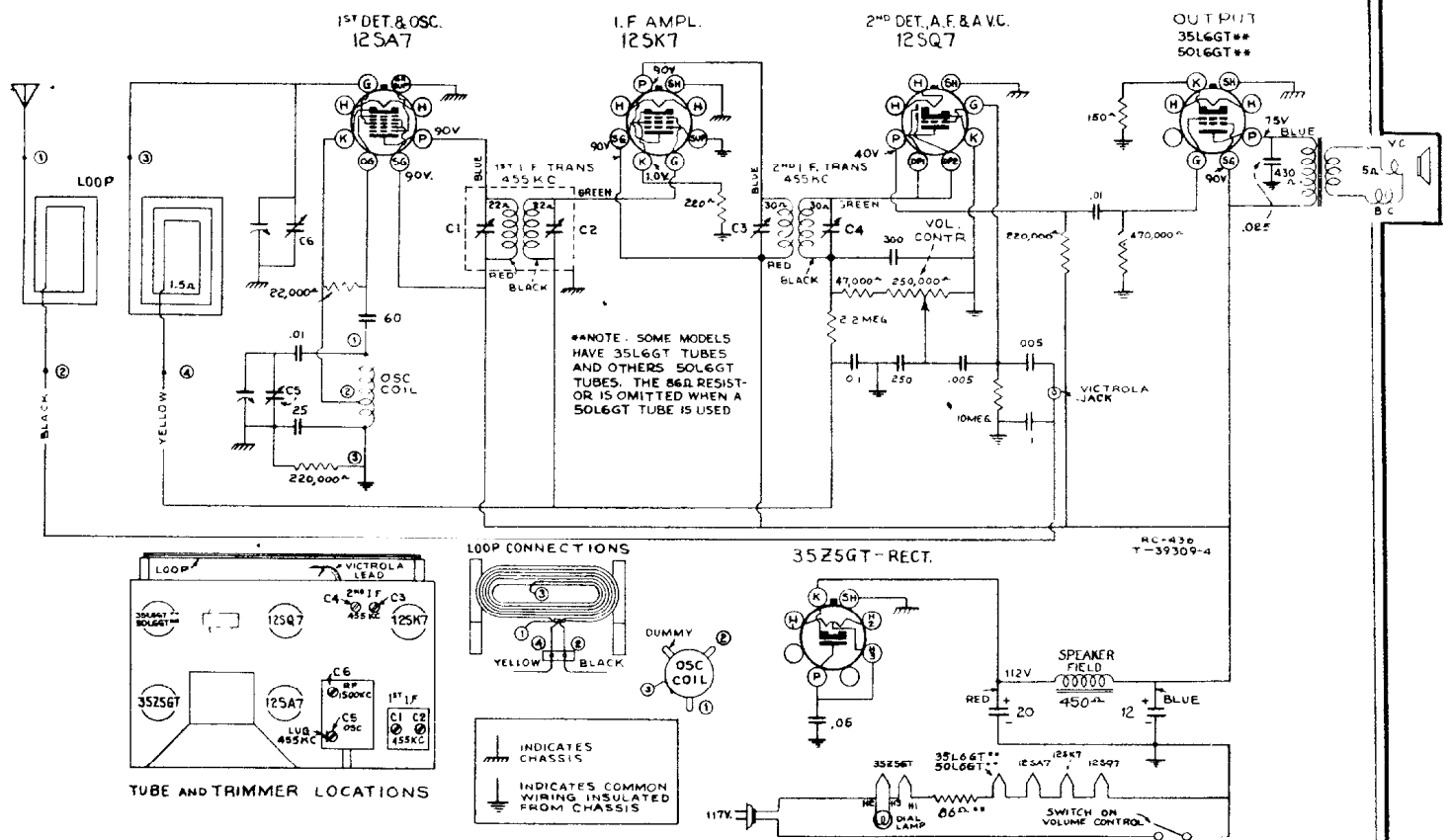
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Models 40X-30 and 40X-31 (Chassis No. RC405C & D)

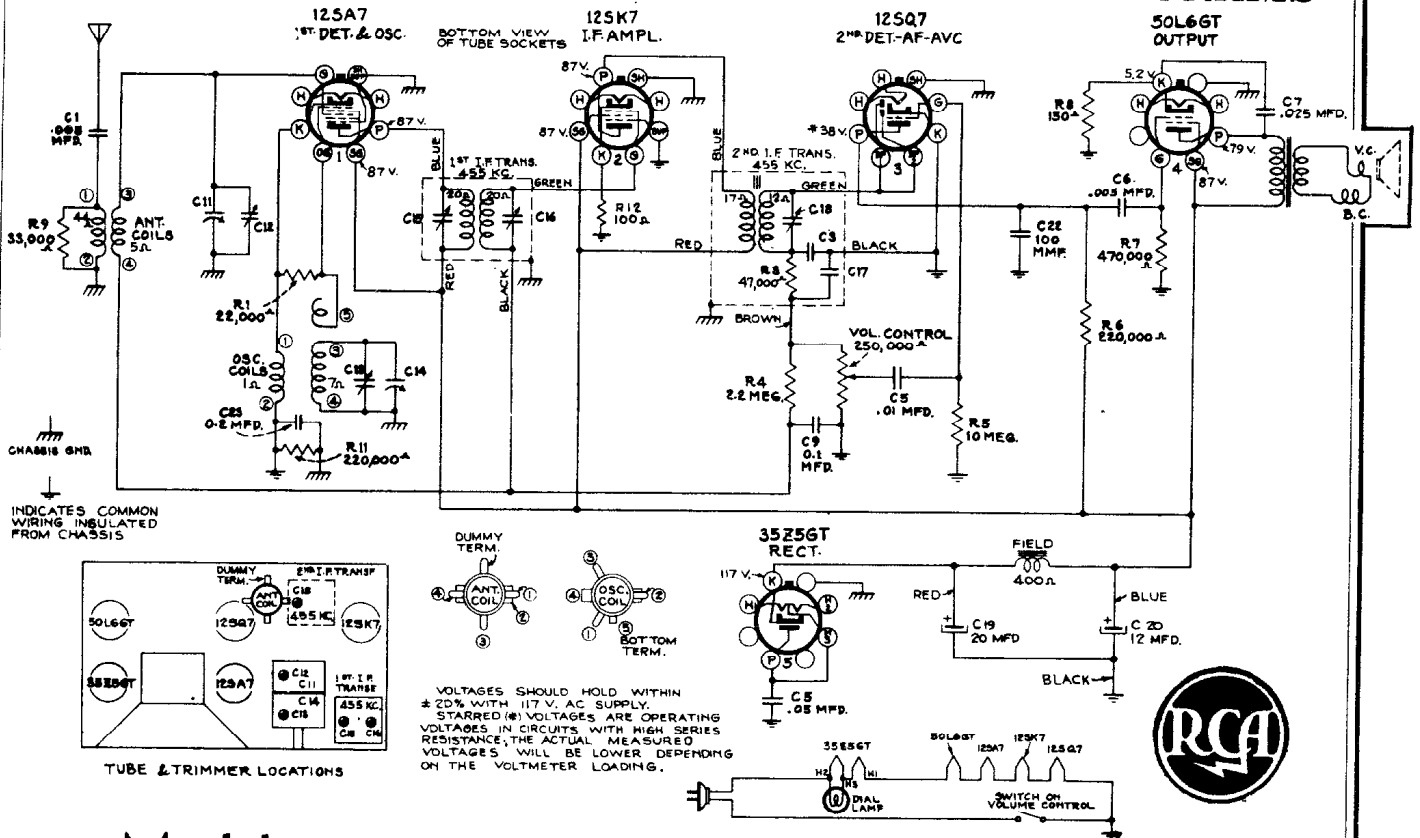


Model 40X-50 Series (Chassis No. RC-436)

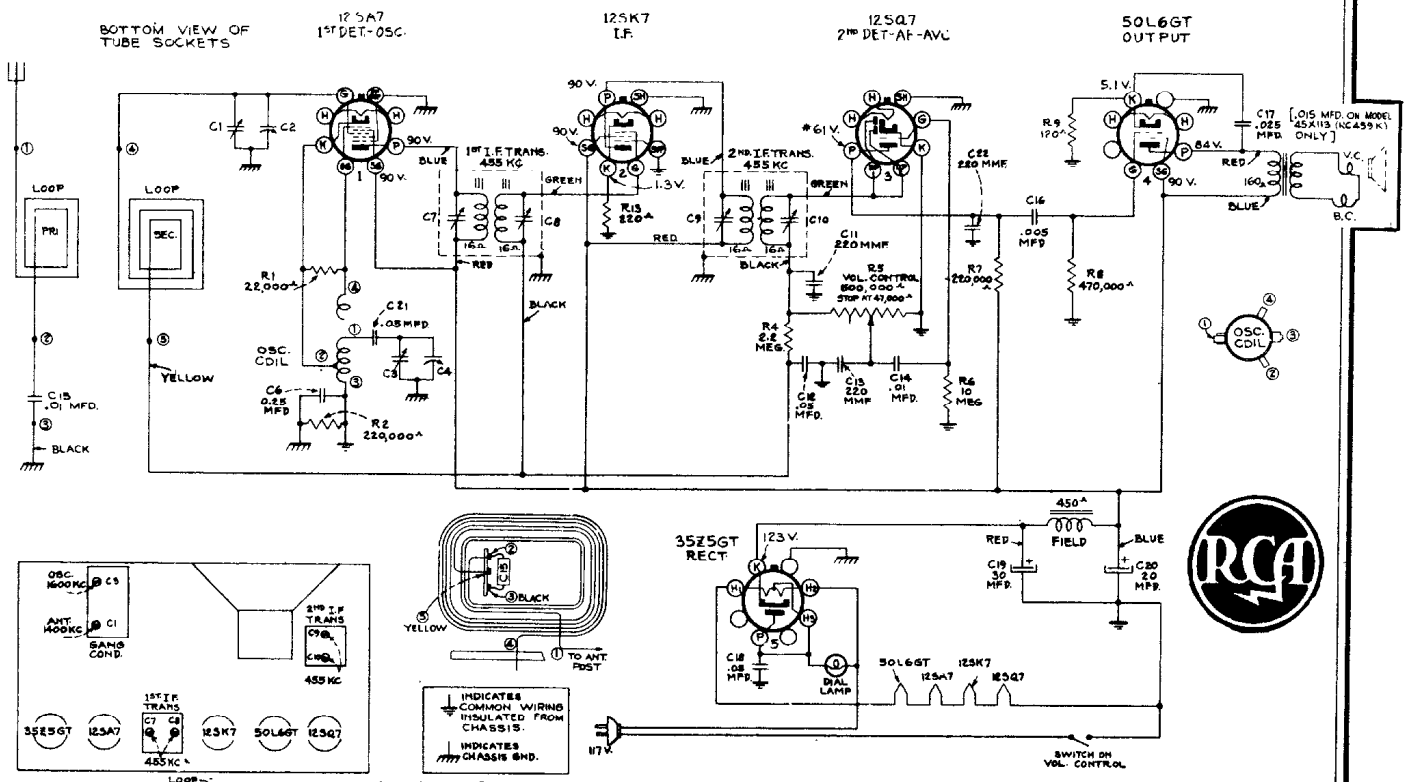
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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Models 45X5 and 45X6 (Chassis No. RC-457-D)



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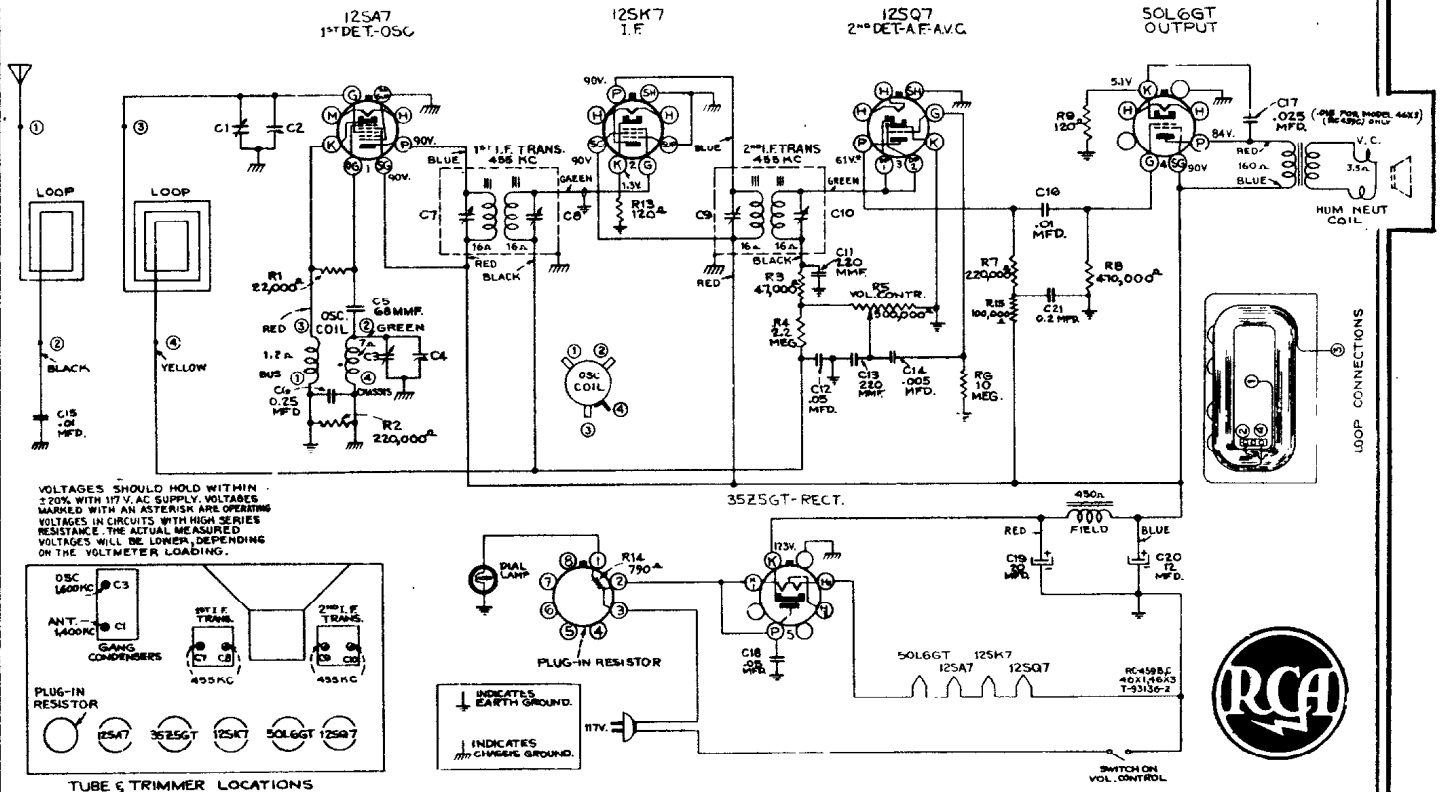
Models 45X111, 45X112 and 45X113

Chassis Nos. 459J

and 459K

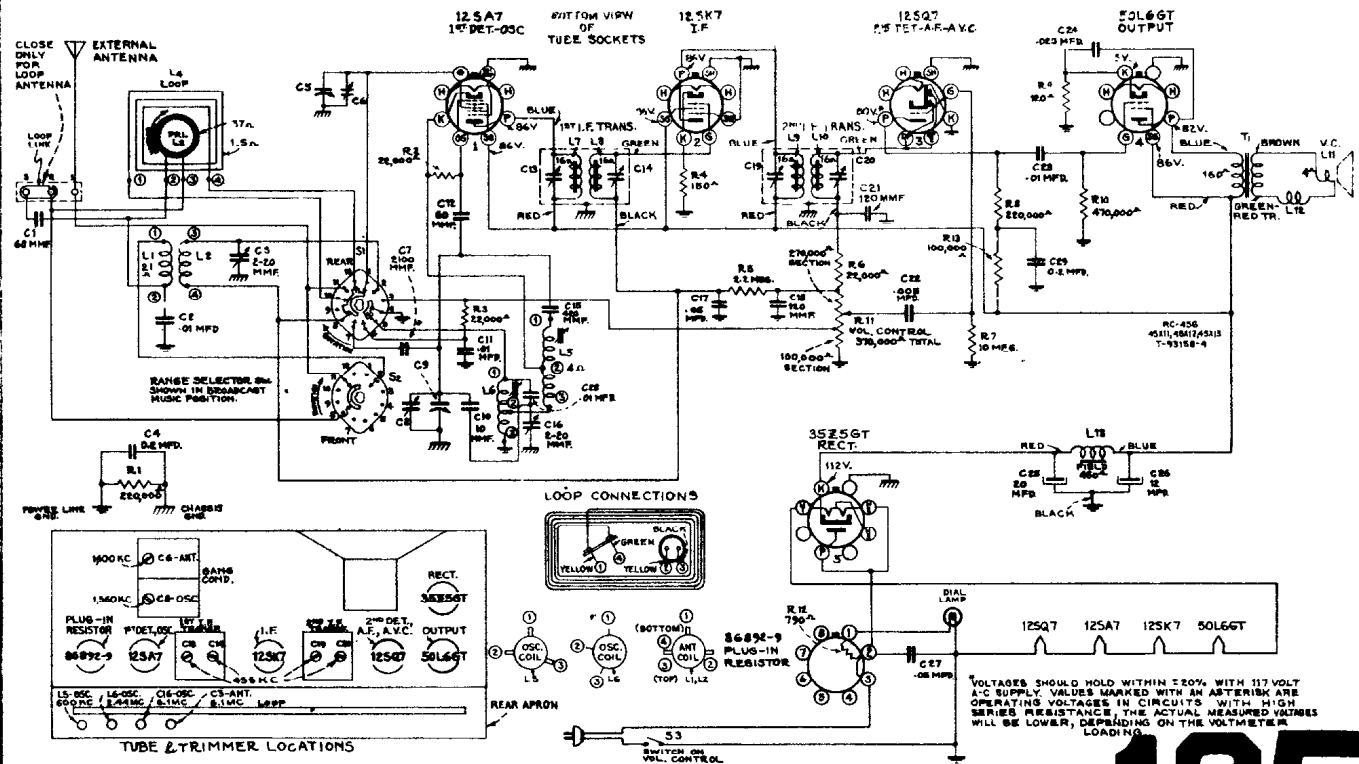
COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

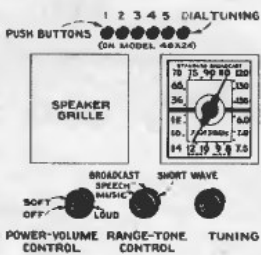
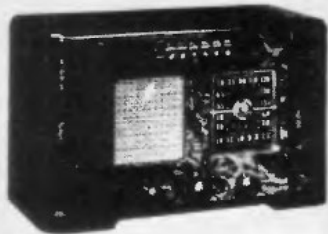
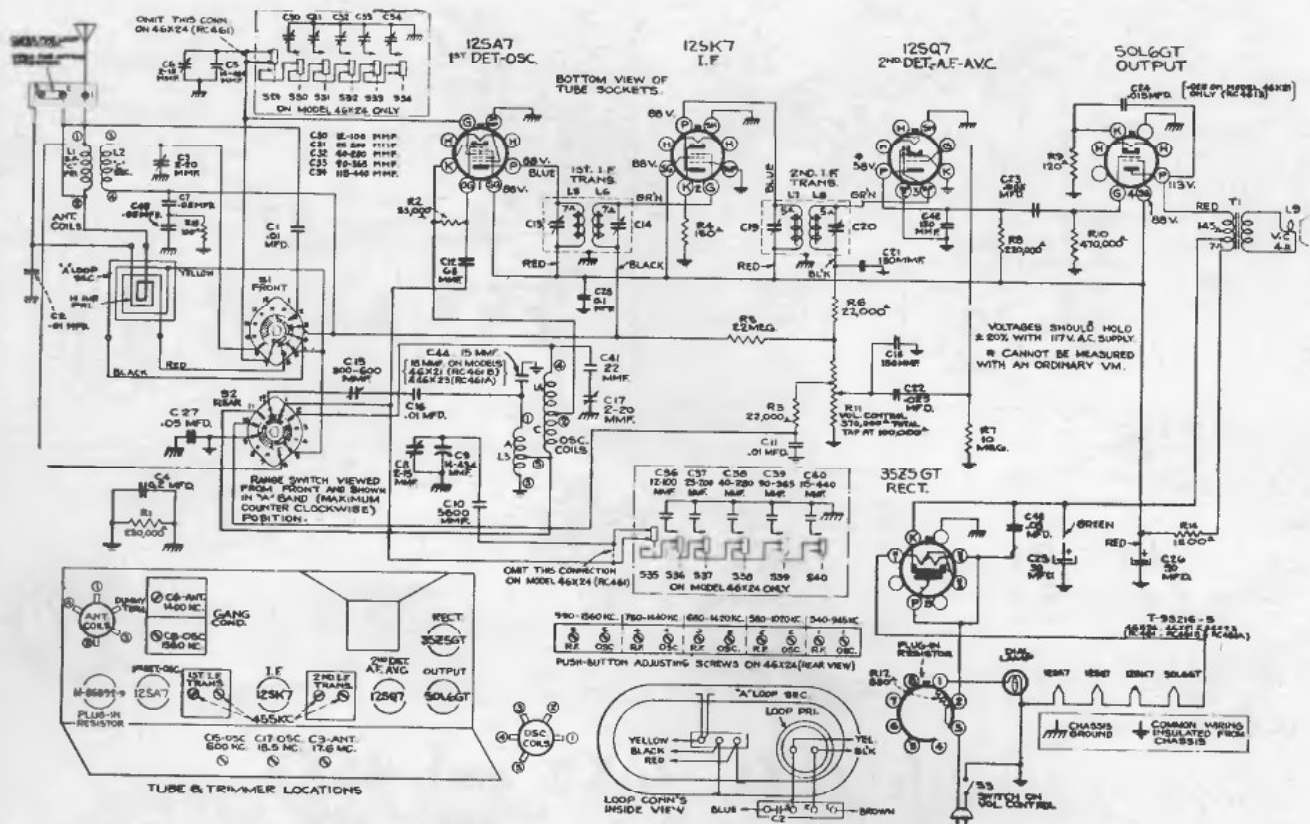


Models 46X1, 46X2 and 46X3 Chassis Nos. 459B and 459C

Models 46X11, 46X12, and 46X13 Chassis Nos. RC456 and RC456A



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS RCA Victor Models 46X21, 46X23, and 46X24



Alignment Procedure

Output Meter Alignment.—Connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—Connect the low side of the test-oscillator to the receiver chassis through a .01 mfd. capacitor, and keep the output as low as possible.

Pre-Setting Pointer.—With gang condenser in full mesh, the pointer should be adjusted to a horizontal position.

Antenna.—The set is equipped with a built-in loop antenna. If the loop antenna is used, the antenna terminal board link should be closed. This link should be open when an external antenna is used. Connect the external antenna to terminal 1.

Adjustments for Electric Tuning:

- The push buttons and corresponding frequency ranges are given in the schematic diagram. Allow the set to warm up for about 15 minutes and proceed as follows:
- (1) List five desired stations in order of the push button ranges.
- (2) Push in the dial tuning (right hand) button and manually tune in the first station on the list.
- (3) Press button No. 1. Turn R-F screw half way in; next turn the oscillator screw entirely in and then gradually back out until the station is heard.
- (4) Adjust the R-F trimmer for maximum output.
(Clockwise adjustment of oscillator and R-F trimmers tunes the circuits to lower frequencies.)
- (5) By turning the set to a position in which reception is weak a final more accurate adjustment may be made.
- (6) Adjust for each of the remaining stations in a similar manner and place corresponding station tabs in recesses above buttons. A "Dial Tuning" tab should be above button No. 6.

Precautionary Lead Dress:

- (1) Dress all leads away from oscillator and antenna coils.
- (2) Dress cathode resistor (R4) and B+ lead across 12SK7 socket between plate and grid terminals.
- (3) (46X24 only) Dress leads to push button switch straight up and parallel so that they do not touch each other.
- (4) Dress black lead from 1st I-F transformer over green lead.
- (5) Keep plate-cathode bypass (C43) of rectifier tube away from volume control.

Step	Connect high side of test oscillator to—	Tune test oscillator to—	Turn radio dial to—	Adjust following for max. output—
1	Grid 12SK7 in series with 0.01 mfd.	455 kc	"A" Band Quiet Point at 1,560 kc end of dial	C19 and C20 (2nd I-F Trans.)
2	Grid 12SA7 in series with 0.01 mfd.			C13 and C14 (1st I-F Trans.)
3	Antenna in series with 200 mmfd.	600 kc	"A" Band 600 kc	C15 (osc.)
4		1,560 kc	"A" Band Full Clockwise	C8 (osc.)
5		1,400 kc	Resonance on 1,400 kc "A" Band	C6 (ant.)
6	Repeat steps 3 (rock in), 4 and 5			
7	Antenna in series with 300 ohms	18.5 kc	"C" Band Full Clockwise	C17 (osc.)*
8		17.8 kc	"C" Band Resonance on 17.8 kc Signal	C3 (ant.)
9	Repeat steps 7 and 8			

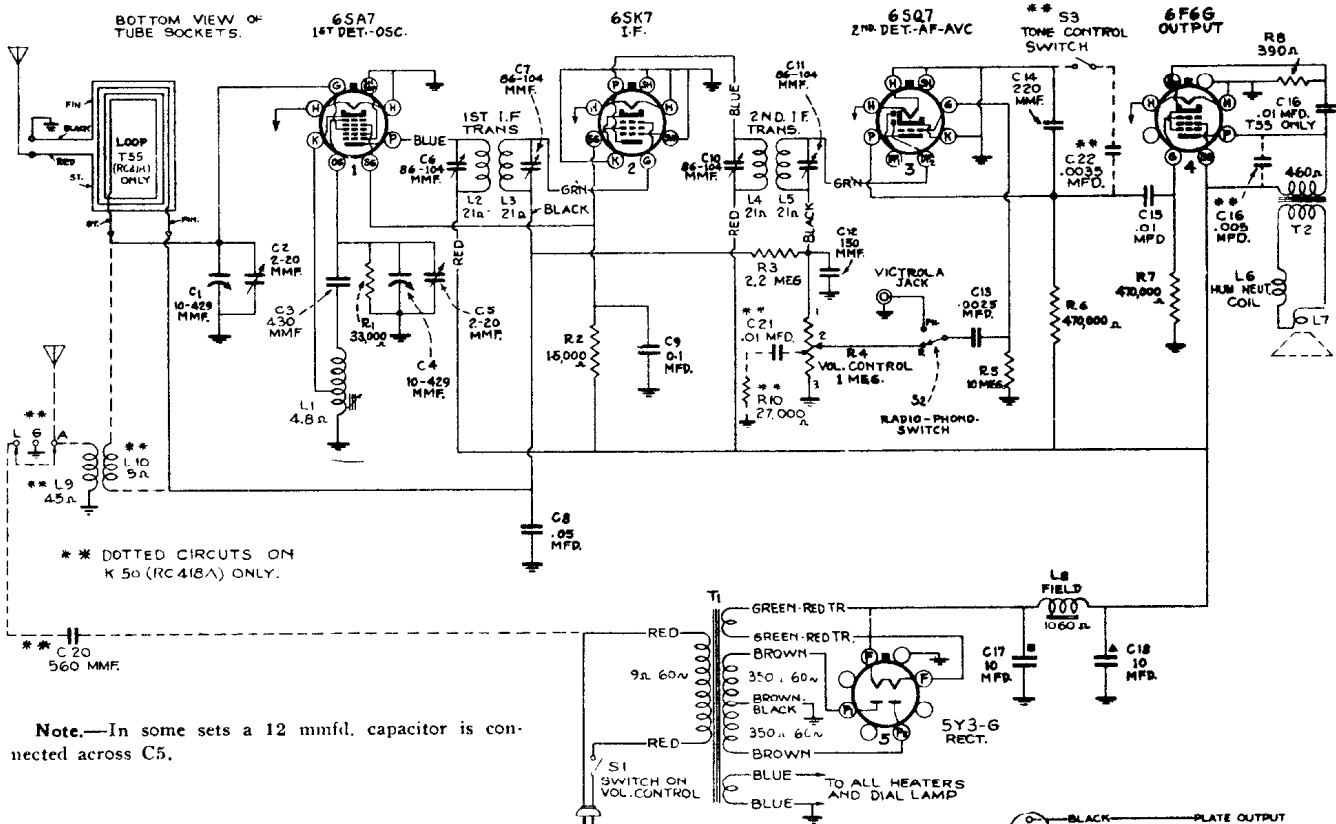
* Use minimum capacity peak if two can be obtained.

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RCA Victor

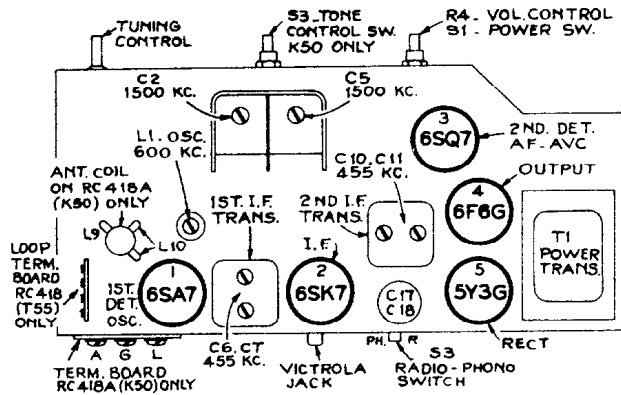
MODELS K-50 and T-55

Chassis Nos. RC-418A and RC-418



Adjustments for Push-Button Tuning

1. Pull off the push-buttons and loosen the push-button rods with a small screwdriver.
2. Set the radio-phono switch to "radio" position and accurately tune in the station for which the first button is to be set.
3. Press in push-button rod No. 1 (left) with the screwdriver, as far as it will go without undue pressure, hold in, retune station with manual control if necessary for best reception, and then carefully tighten up the rod. Do not tighten more than 1/4 turn after the rod begins to grip or damage to the mechanism may result.
4. Replace the push-button on its shaft.
5. Proceed in a similar manner for the remainder of the push-buttons
6. Insert the station marker tabs in the recesses above the push-buttons.



Steps	Connect the high side of the test-osc. to—	Tune test osc. to—	Turn radio dial to	Adjust the following for maximum peak output
1	Antenna terminal	455 kc	Quiet Point between 1,720-1,500 kc	C10 and C11 (2nd I-F trans.)
2	Antenna terminal			C6 and C7 (1st I-F trans.)
3	Ant. terminal in series with 200 mmfd.	1,500 kc	1,500 kc calibration mark	C5 (osc.) C2 (ant.)
4		600 kc	600 kc calibration mark	L1 (osc.) (Rock in)
5	Repeat step 3			

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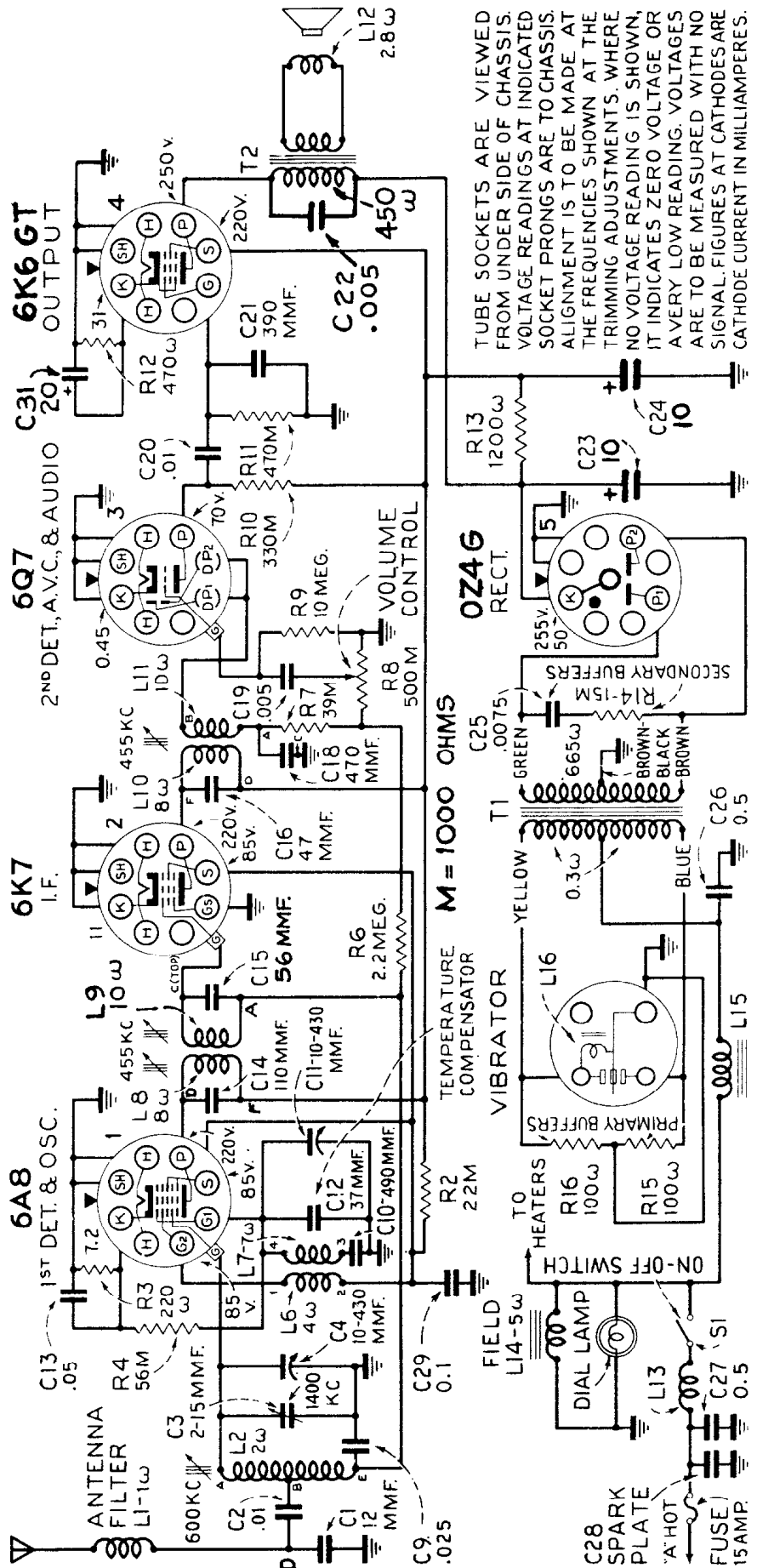


MODEL M50

Chassis No. RC 357J

Position of Dial Pointer	Generator Frequency	Dummy Antenna	Generator Connection	Adjustment Symbol	Circuit Adjusted
No Signal 550-750 kc	455 kc	.001 mfd.	6K7 Grid	L-10	2nd I.F. Trans.
No Signal 550-750 kc	455 kc	.001 mfd.	6A8 Grid	L-8, L-9	1st I.F. Trans.
1,400 kc	1,400 kc	.0001 mfd. †	Ant. Lead	C-3	Ant.
600 kc	600 kc	.0001 mfd. †	Ant. Lead	L-2	Ant.
1,400 kc	1,400 kc	.0001 mfd. †	Ant. Lead	C-3*	Ant.

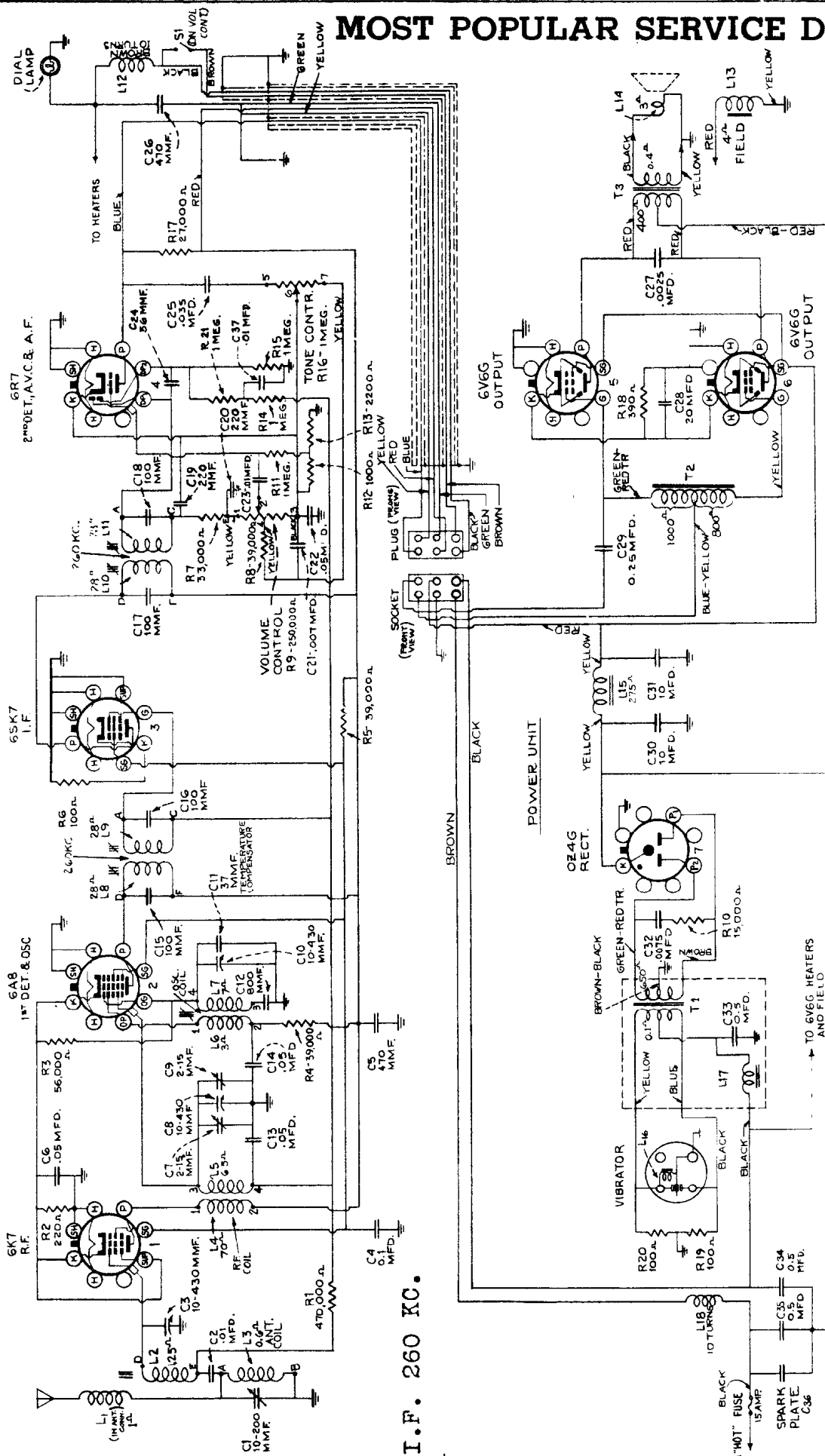
NOTE: No oscillator alignment adjustments are required in this receiver.



TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS. VOLTAGE READINGS AT INDICATED SOCKET PRONGS ARE TO CHASSIS. ALIGNMENT IS TO BE MADE AT THE FREQUENCIES SHOWN AT THE TRIMMING ADJUSTMENTS. WHERE NO VOLTAGE READING IS SHOWN, IT INDICATES ZERO VOLTAGE OR A VERY LOW READING. VOLTAGES ARE TO BE MEASURED WITH NO SIGNAL. FIGURES AT CATHODES ARE CATHODE CURRENT IN MILLIAMPERES.

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MOST POPULAR SERVICE DIAGRAMS



I.F. 260 KC.

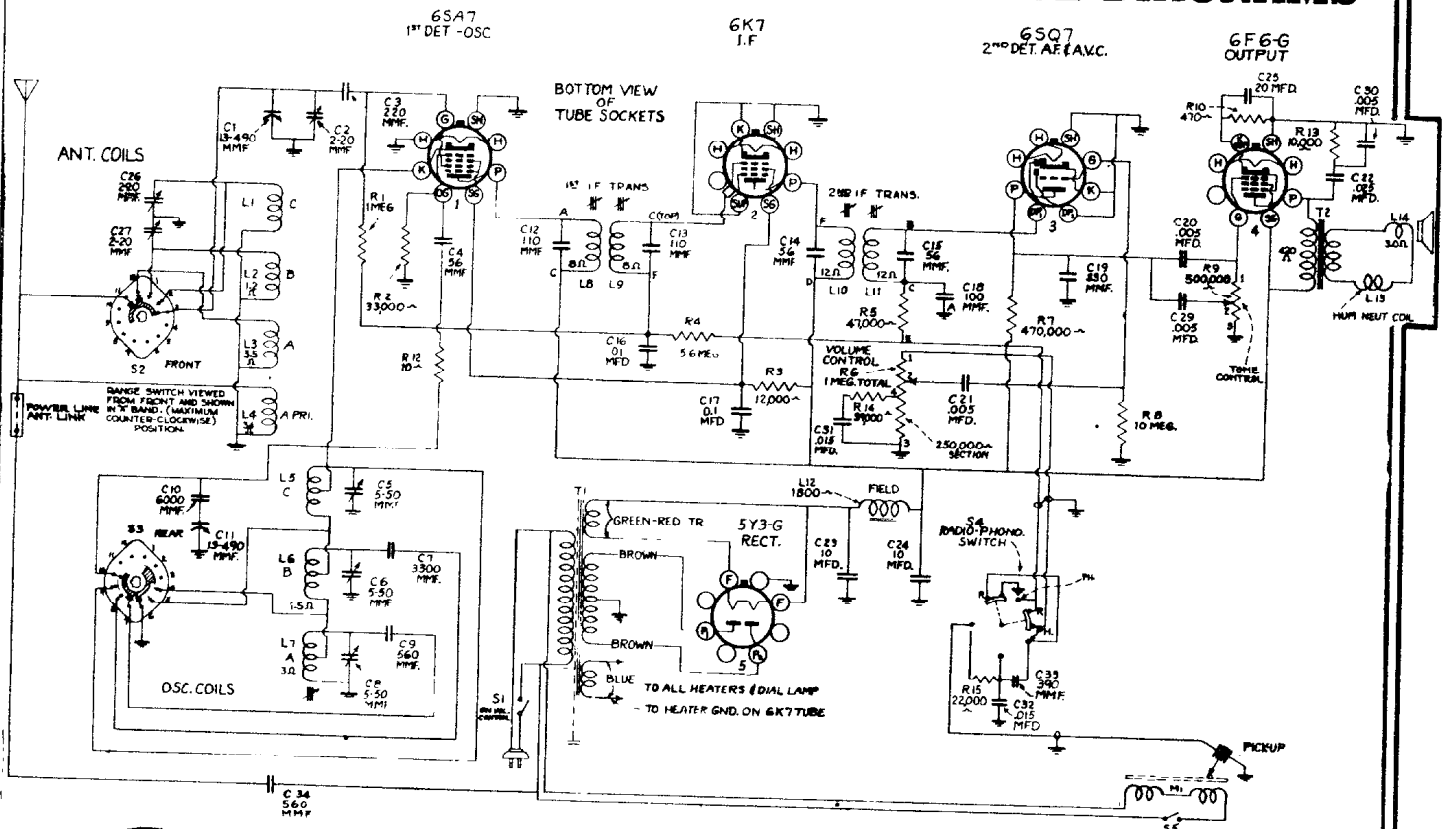
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MODEL M-70
Chassis No. RC-394

RCA Victor

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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



RCA Victor MODEL U-50 CHASSIS No. RC-414C

Steps	Connect the high side of test-osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output
1	6K7 I-F grid cap. in series with .01 mfd.	455 kc	"A" Band quiet point between 550-750 kc	L10 and L11 (2nd I.F. trans.)
2	Tuning condenser stator (osc.) in series with .01 mfd. **	455 kc		L8 and L9 (1st I.F. trans.)
3	Antenna lead in series with 200 mmfd.	600 kc	600 kc (93°) "A" Band	L7†
4		1,500 kc	1,500 kc (152.4°) "A" Band	C2 (ant.) C8 (osc.)
5	Repeat steps 3 and 4			
6	Antenna lead in series with 400 ohms	20 mc	20 mc (155.4°) "C" Band	C6 (osc.) * C26 (ant.)
7		6 mc	6 mc (149°) "B" Band	C8 (osc.) * C27 (ant.)
8	Antenna lead in series with 200 mmfd.	1,500 kc	1,500 kc (152.4°) "A" Band	C8 (osc.)

* Use minimum capacity peak if two peaks can be obtained.
 † Rock gang condenser slightly while adjusting L7.
 ** Make test-oscillator connection to lug on tuning condenser stator (oscillator section) in series with .01 mfd. condenser.
 Note.—Oscillator tracks 455 kc above signal on all bands.

Cathode-Ray Alignment is the preferable method. Connections for the oscillograph are shown in the chassis drawing.
 Output Meter Alignment.—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

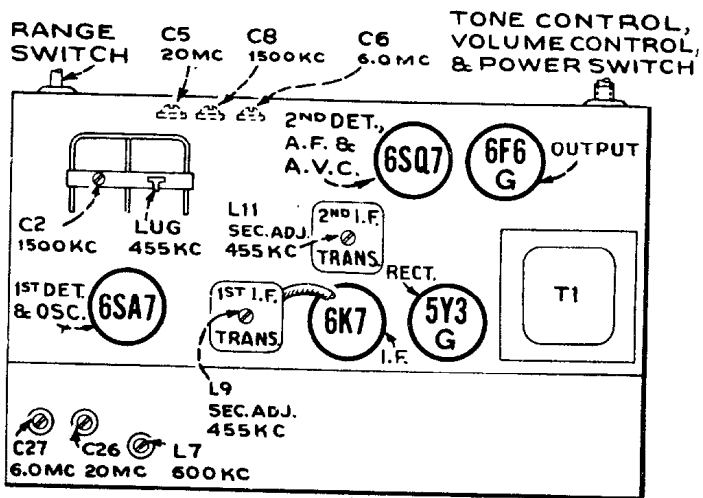
Test-Oscillator.—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid a-v-c action.

Calibration Scale On Indicator-Drive-Cord Drum.—In most cases it will not be necessary to remove the chassis from the dial scale for alignment, allowing the dial scale to be used for calibration. However, if alignment is made with the receiver chassis removed, the calibration scale attached to the rear of the drum which is mounted on the front shaft of the gang condenser must be used. The setting of the gang condenser is read on this scale, which is calibrated in degrees. The correct setting of the gang in degrees, for each alignment frequency, is given in the alignment table.

As the first step in r-f alignment, check the position of the drum. The 135° mark on the drum scale must be vertical, and directly under the center of the gang-condenser shaft when the plates are fully meshed. The drum is held in place by one set-screw, which must be securely tightened when the drum is in the correct position.

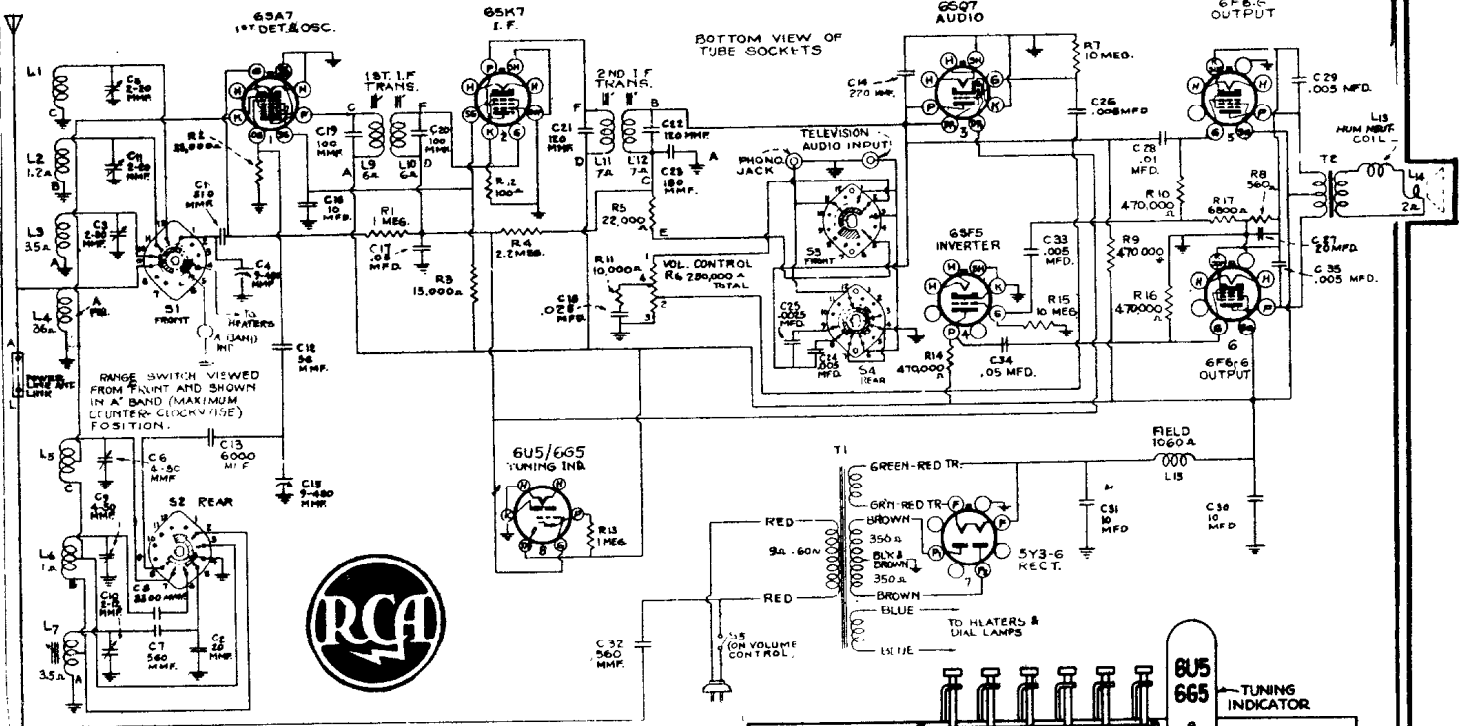
Pointer for Calibration Scale.—Improvise a pointer for the calibration scale by fastening a piece of wire to the gang-condenser frame, and bend the wire so that it points to the 0° mark on the calibration scale when the plates are fully meshed.

Dial-Indicator Adjustment.—After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with indicator at the 530 kc mark, and gang condenser fully meshed. The indicator has a spring clip for attachment to the cable.



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

MODEL T-80 Eight-Tube, Three-Band, AC, Superheterodyne

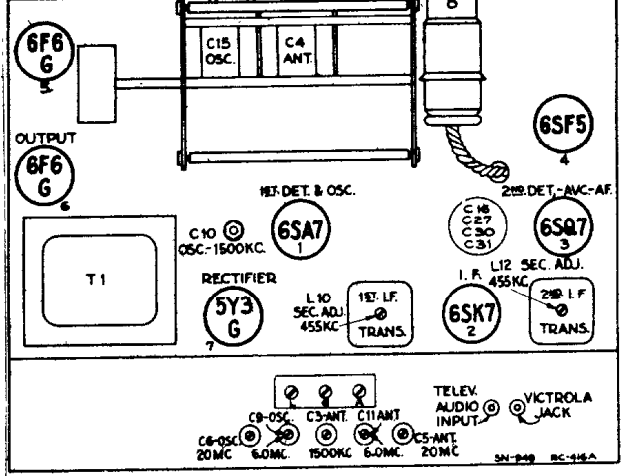


Steps	Connect the high side of the test-osc. to—	Tune test osc. to—	Turn radio dial to—	Adjust the following for maximum peak output
1	6SK7 grid in series with .01 mfd.	455 kc	"A" Band Quiet Point between 550-750 kc	L11 and L12 (2nd I-F Trans.)
2	6SA7 grid in series with .01 mfd.			L9 and L10 (1st I-F Trans.)
3	Ant. terminal in series with 300 ohms	20 mc	20 mc (40°) "C" Band	C8 (osc.)* C5 (ant.)
4		6 mc	6 mc (52.5°) "B" Band	C9 (osc.)** C11 (ant.)
5	Ant. terminal in series with 200 mmfd.	1,500 kc	1,500 kc (41.75°) "A" Band	C10 (osc.) C3 (ant.)
6		600 kc	600 kc (200.25°) "A" Band	L7 (osc.) Rock Gang
7	Repeat step 5.			

* Use minimum capacity peak if two can be obtained. Check to determine that C8 has been adjusted to correct peak by tuning receiver to approximately 19.09 mc where a weaker signal should be received.

** Use minimum capacity peak if two can be obtained. Check to determine that C9 has been adjusted to correct peak by tuning receiver to approximately 5.09 mc where a weaker signal should be received.

Note: Oscillator tracks above signal on all bands.



Cathode-Ray Alignment is the preferable method. Connections for the oscillograph are shown in the chassis drawing.

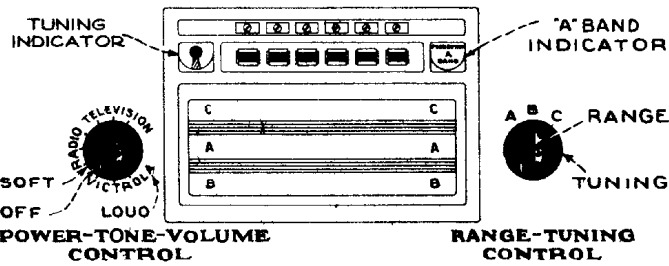
Output Meter Alignment.—If this method is used, connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid a-v-c action.

Calibration Scale on Indicator-Drive-Cord-Drum.—The tuning dial is fastened in the cabinet and cannot be used for reference during alignment; therefore, a calibration scale is attached to the tuning drum. The setting of the gang condenser is read on this scale, which is calibrated in degrees. The correct setting of the gang in degrees, for each alignment frequency, is given in the alignment table.

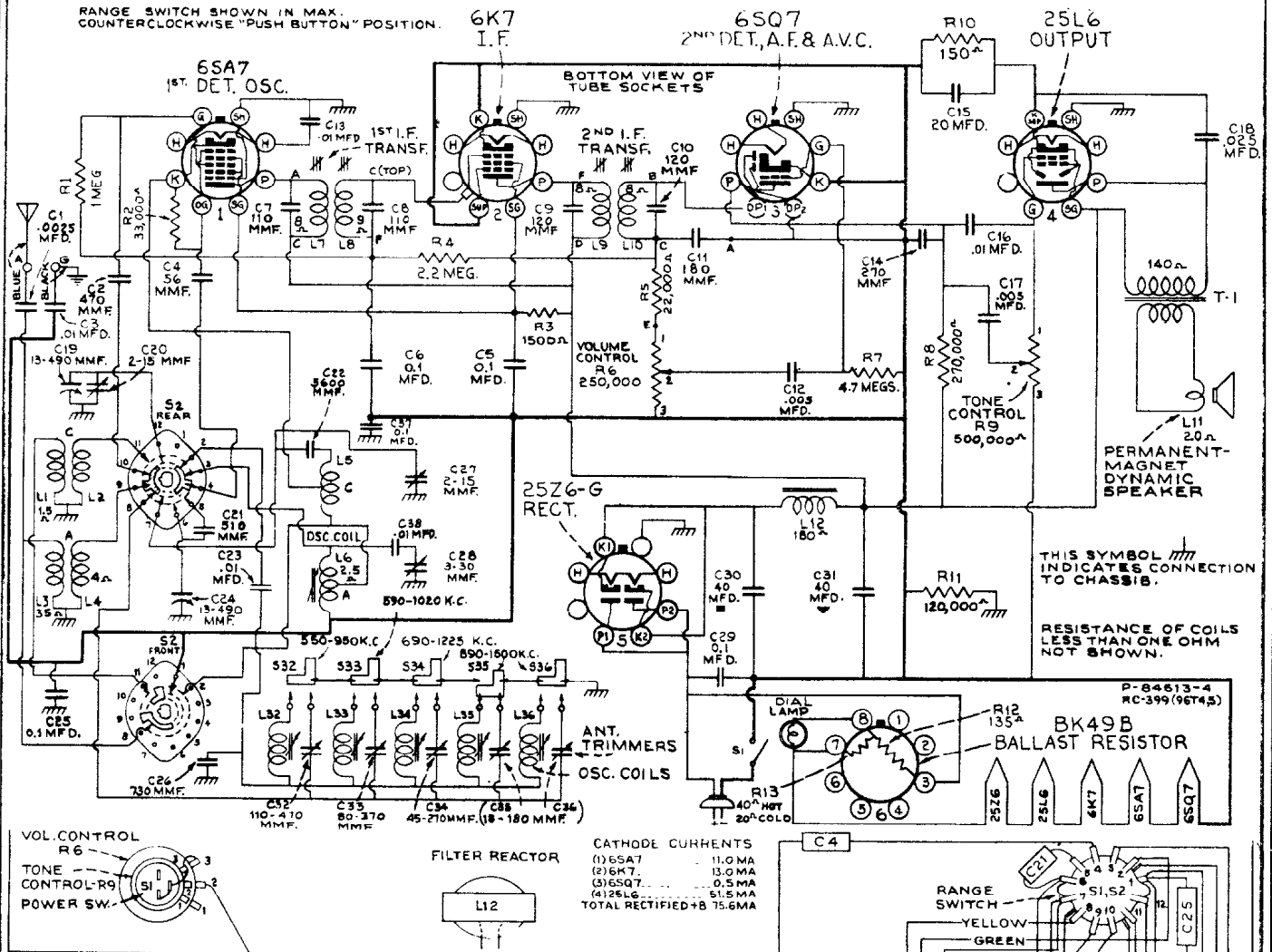
As the first step in r-f alignment, check the position of the drum. The 240° mark on the drum scale must be vertical and directly above the center of the shaft of the tuning drum when the plates are fully meshed. The drum is held to the shaft by means of two set-screws, which must be tightened securely when the drum is in the correct position.

On the inner side of the tuning drum are two projections which serve as stops to prevent extreme rotation of the gang condenser. The tuning drum should be set so that the stop limiting clockwise movement of the drum takes effect just as the gang condenser plates are becoming fully meshed, thus preventing stress on the gang due to extreme rotation.

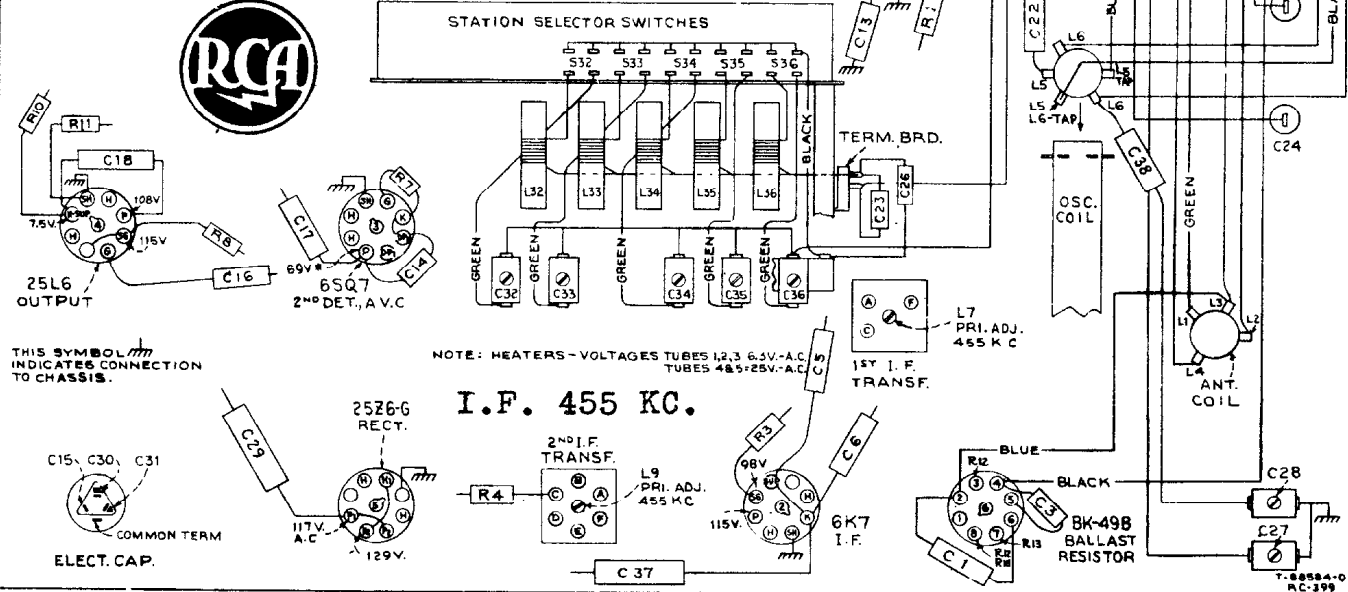


MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

RANGE SWITCH SHOWN IN MAX. COUNTERCLOCKWISE "PUSH BUTTON" POSITION.



Measurements made to low-side of volume control unless otherwise indicated, with set tuned to quiet point and volume control at minimum. Values should hold within $\pm 20\%$ with 117 volt a-c supply.



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Models 96T4, 96T5 and 96T6
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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

RCA Victor

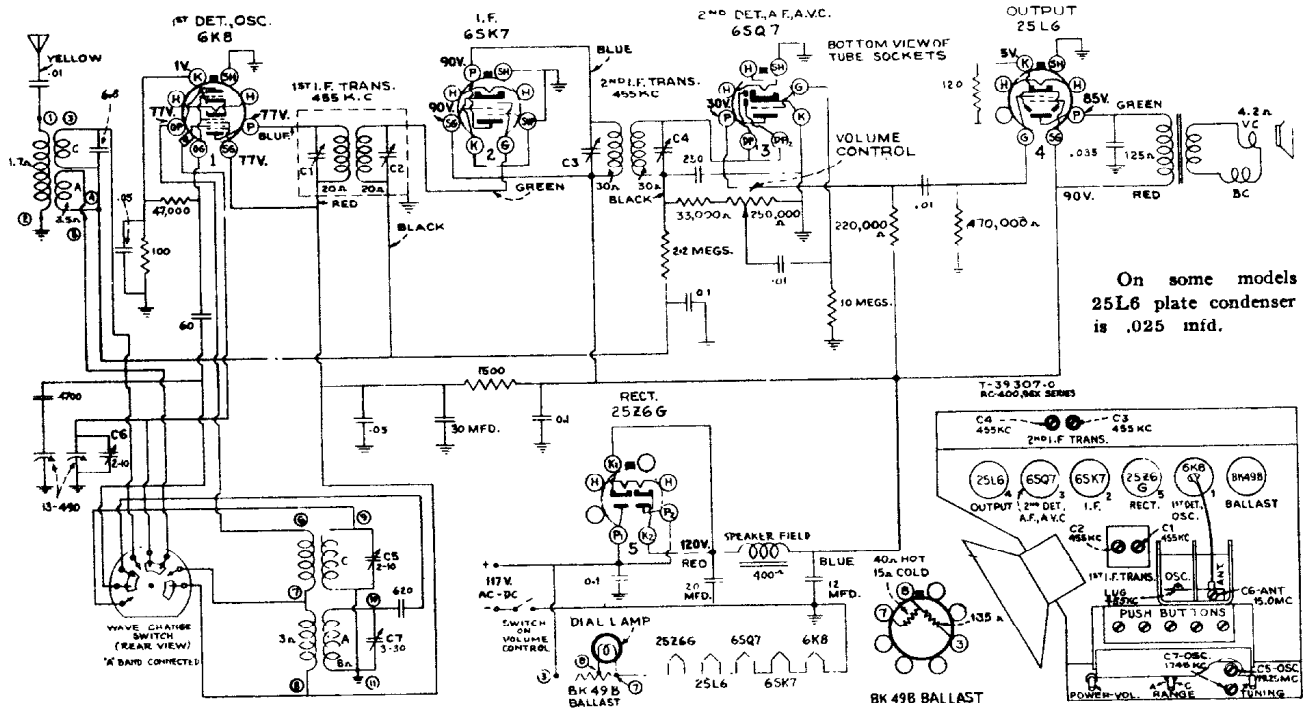
MODELS 96X-1, -2, -3, -4 and -11, -12, -13, -14

Chassis No. RC-400

and

RC-400A

Six-Tube, Two-Band, A-C—D-C, Superheterodyne Receivers



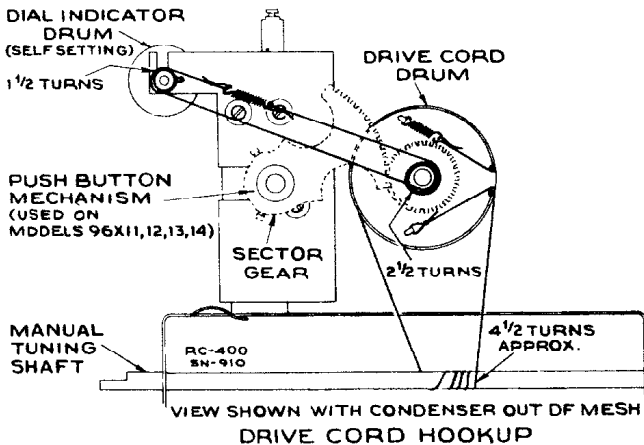
Alignment Procedure

Output Meter Alignment.—Connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—Connect the low side of the test-oscillator to the receiver chassis, through a .01 mfd. capacitor, and keep the output as low as possible.

Dial Setting.—To set dial indicator drum, turn tuning condensers fully clockwise and then counter-clockwise.

Push-button Adjustments.—Remove bakelite button and loosen screw two turns with a screwdriver or coin. Tune in the desired station by means of the right-hand control knob. Press push lever down as far as it will go and tighten screw. Release lever and put on push-button.



Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1	Tuning condenser stator (osc.) in series with .01 mfd.†	455 kc	Quiet point between 550-750 kc	C1, C2, C3, C4 (1st and 2nd I-F transformer)
2	Antenna lead (yellow) in series with 400 ohms	19.25 mc	Full clockwise (out of mesh) "C" band	C5* (osc.)
3	Same as step 2	15.0 mc	15.0 mc Test oscillator signal	C6** (ant.) See Note No. 1
4	Antenna lead in series with 200 muf condenser	1,745 kc	Full clockwise (out of mesh) "A" band	C7 (osc.)

* Use minimum capacity peak if two peaks can be obtained.
 ** Rock gang slightly and check to determine that C5 has been adjusted to the correct peak by tuning to approximately 14.09 mc, where a weaker signal should be received.
 † Make test oscillator connection to lug on tuning condenser stator (oscillator section) in series with .01 mfd. condenser.

Note No. 1.—Accurately tune receiver to the 15.0 mc test oscillator signal. This signal will appear twice (14.09 and 15.0 mc) as dial is turned. Use the higher frequency setting of the tuning condensers (gang furthest out of mesh).

Note No. 2.—Oscillator tracks 455 kc above signal on all bands.

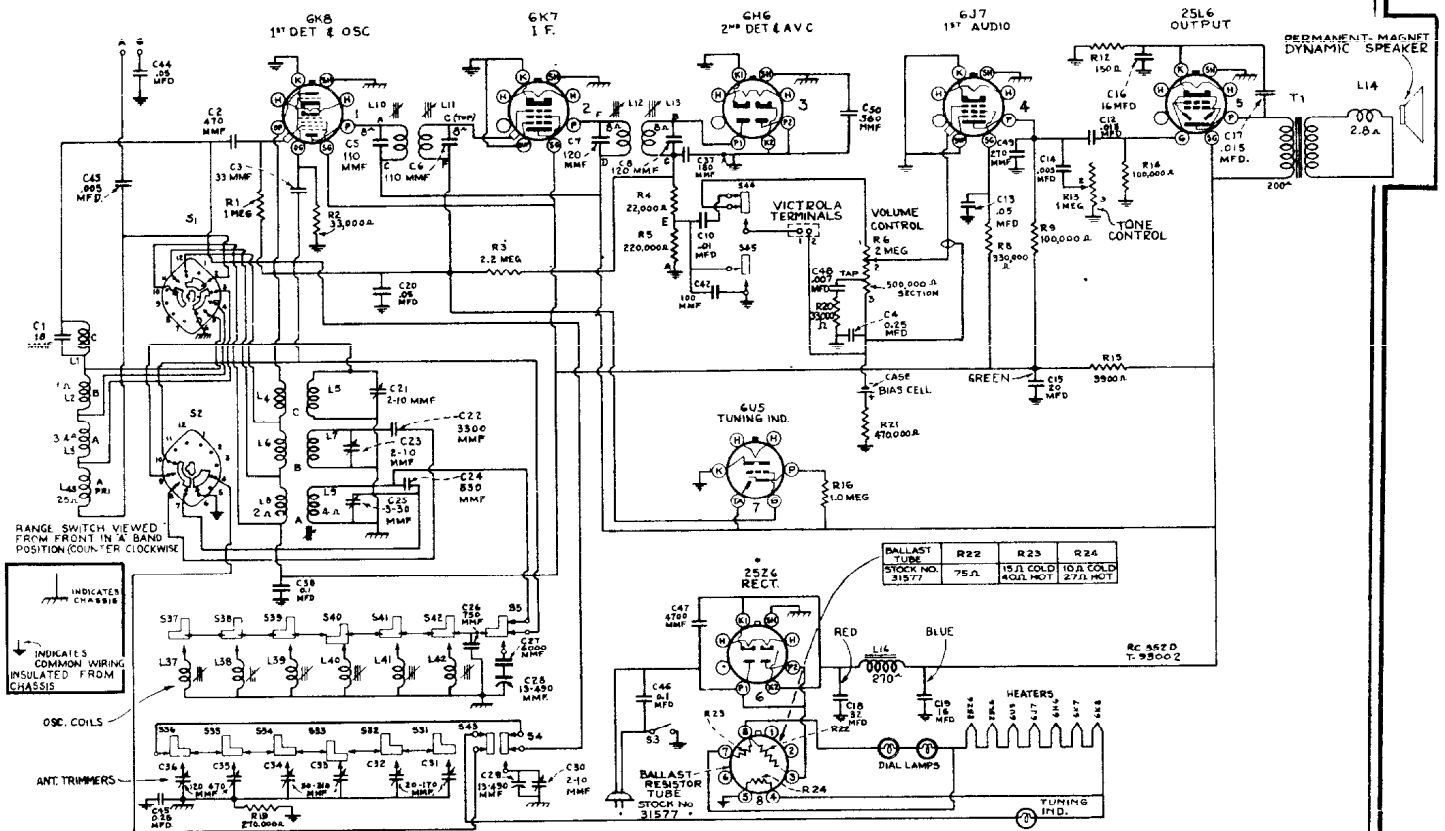
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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

RCA Victor

MODEL 98T2



Adjustments for Electric Tuning

These models have eight push buttons. The left-hand button is a Victrola switch. The right-hand button connects the gang condenser for manual tuning. The other six buttons are for electric tuning of six different stations in the standard-broadcast range. The station buttons connect to separate magnetic-core oscillator coils and separate antenna trimmers which must be adjusted for the desired stations. Use an insulated screwdriver or alignment tool such as RCA Stock No. 31031. Allow at least five minutes warm-up period before making adjustments.

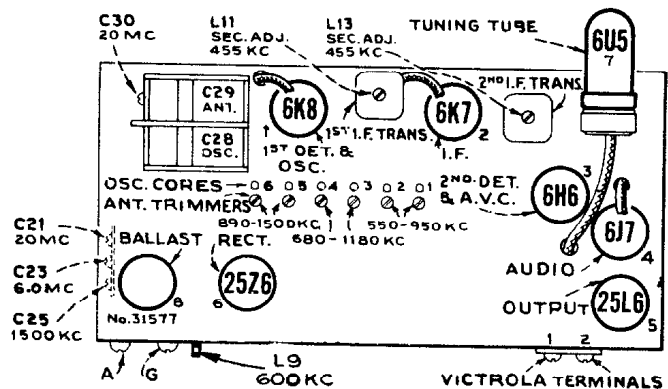
The procedure is as follows:

1. Make a list of the desired six stations, arranged in order from low to high frequencies.
 2. Push in the dial-tuning button, and manually tune in the first station on the list.
 3. Push in station button No. 1 (second from left) and adjust No. 1 oscillator core (L37) to receive this station. Screw the core all the way in, to lowest frequency, and then unscrew slowly until station is received.
 4. Adjust No. 1 antenna trimmer (C36) for maximum output on this station.
- Clockwise adjustment of cores and trimmers tunes the circuits to lower frequencies.
5. Adjust for each of the remaining five stations in the same manner.
 6. Make a final careful adjustment of the oscillator cores and antenna trimmers.

Steps	Connect the high side of test-osc. to—	Tune test-osc. to—	Turn radial to—	Adjust the following for max. peak output
1	6K7 I-F grid cap, in series with .01 mfd.	455 kc	"A" band, Quiet Point between 550-750 kc	L12 and L13 (2nd I-F Transformer)
2	.6K8. det. grid cap, in series with .01 mfd.	455 kc		L10 and L11 (1st I-F Transformer)
3	Antenna Terminal, in series with 200 mmf.	600 kc	600 kc (150.5°) "A" band	L9
4		1,500 kc	1,500 kc (28°) "A" band	C25 (osc.) C30 (ant.)
5	Repeat steps 3 and 4.			
6	Antenna Terminal, in series with 400 ohms.	6 mc	6 mc (26.5°) "B" band	C23 (osc.)*
7		20 mc	20 mc (22°) "C" band	C21 (osc.)*
8	Follow "Adjustments for Electric Tuning."			

*Use minimum capacity peak if two peaks can be obtained, and rock gang condenser slightly while adjusting C23 and C21.
Note.—Oscillator tracks 455 kc above signal on all bands.

Dial-Indicator Adjustment.—After fastening the chassis in the cabinet, move the dial indicator on the drive cable to the left-hand end mark on dial, with gang condenser fully meshed.



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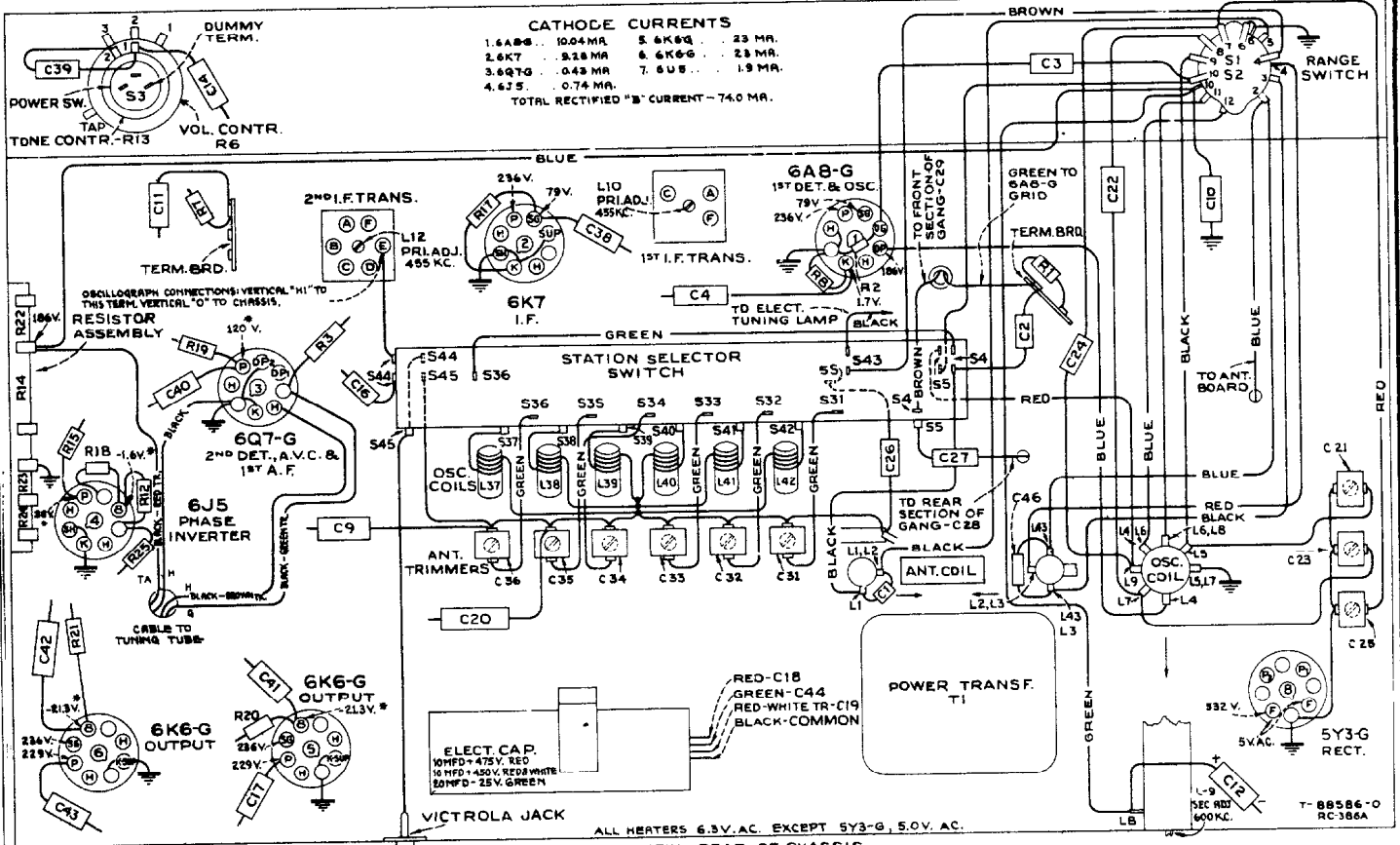
COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

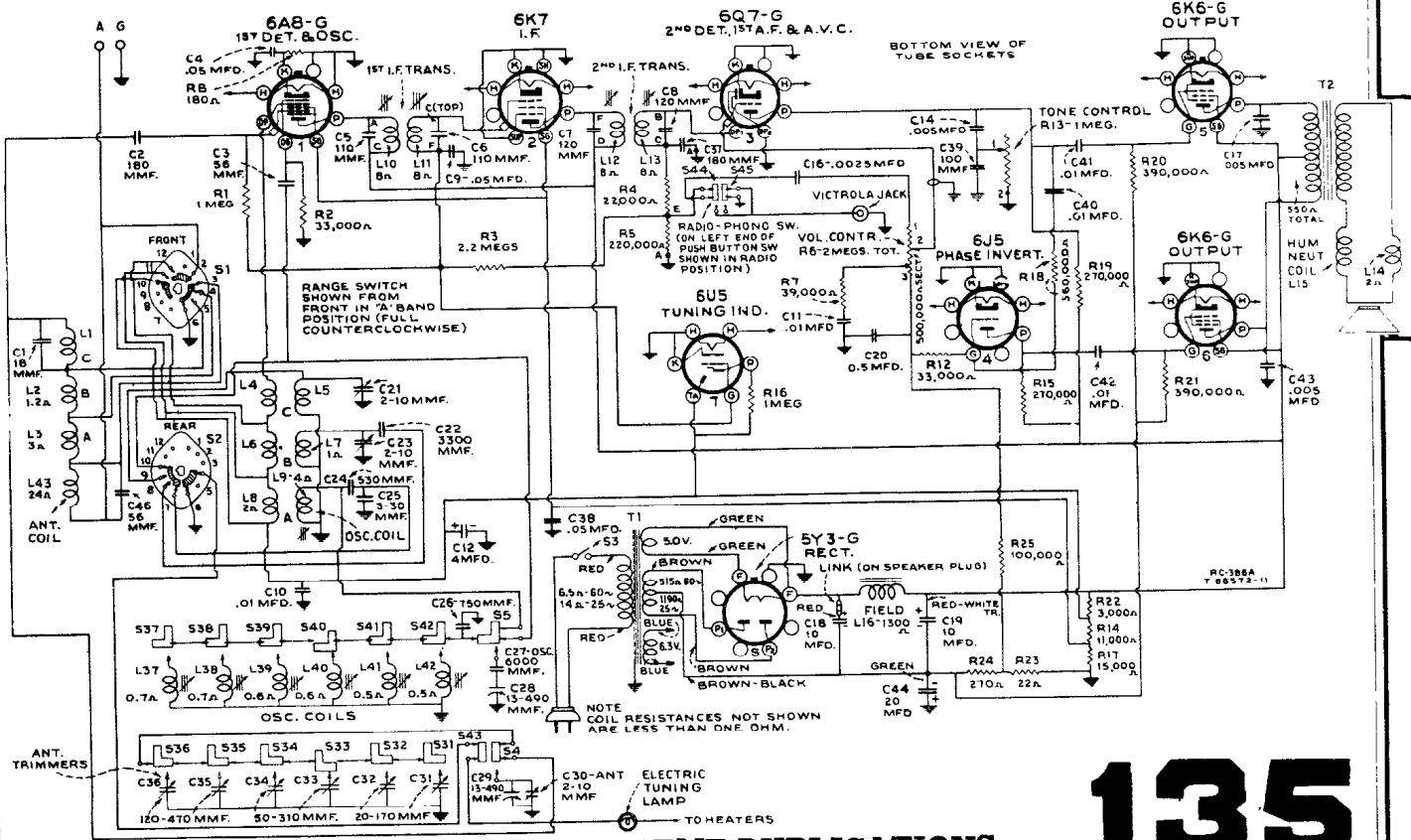
RCA Victor

MODELS 98T and 98K2

Chassis No. RC-386A and RC-386A



BOTTOM VIEW- REAR OF CHASSIS

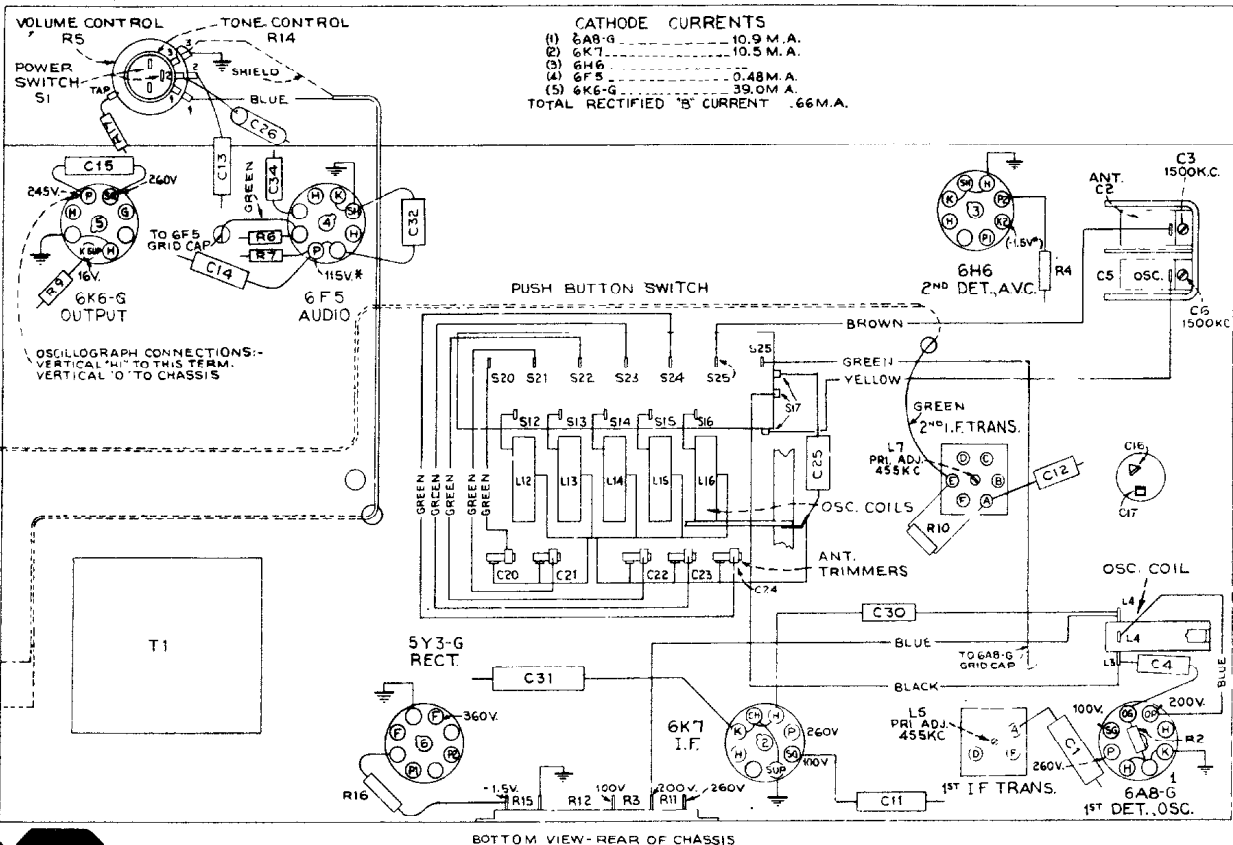
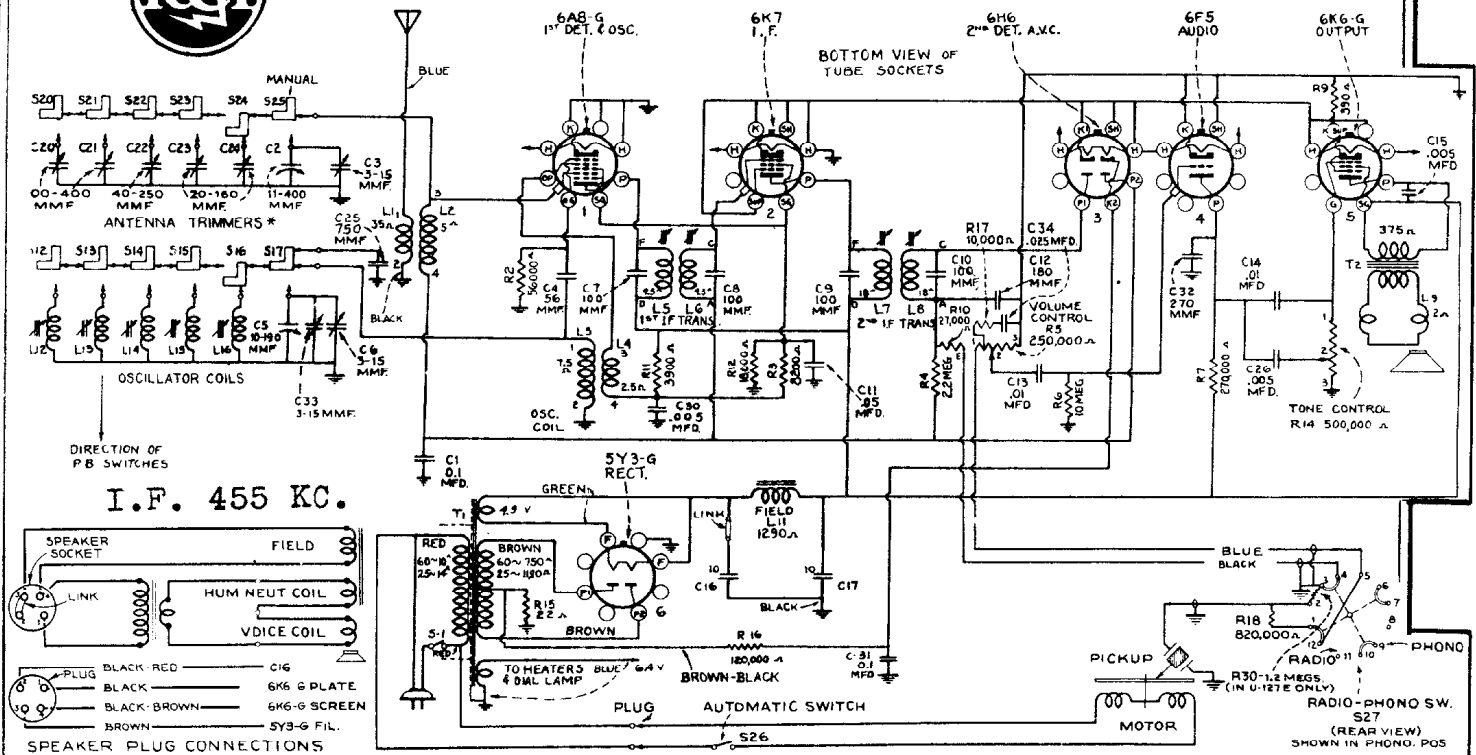


BOTTOM VIEW OF TUBE SOCKETS

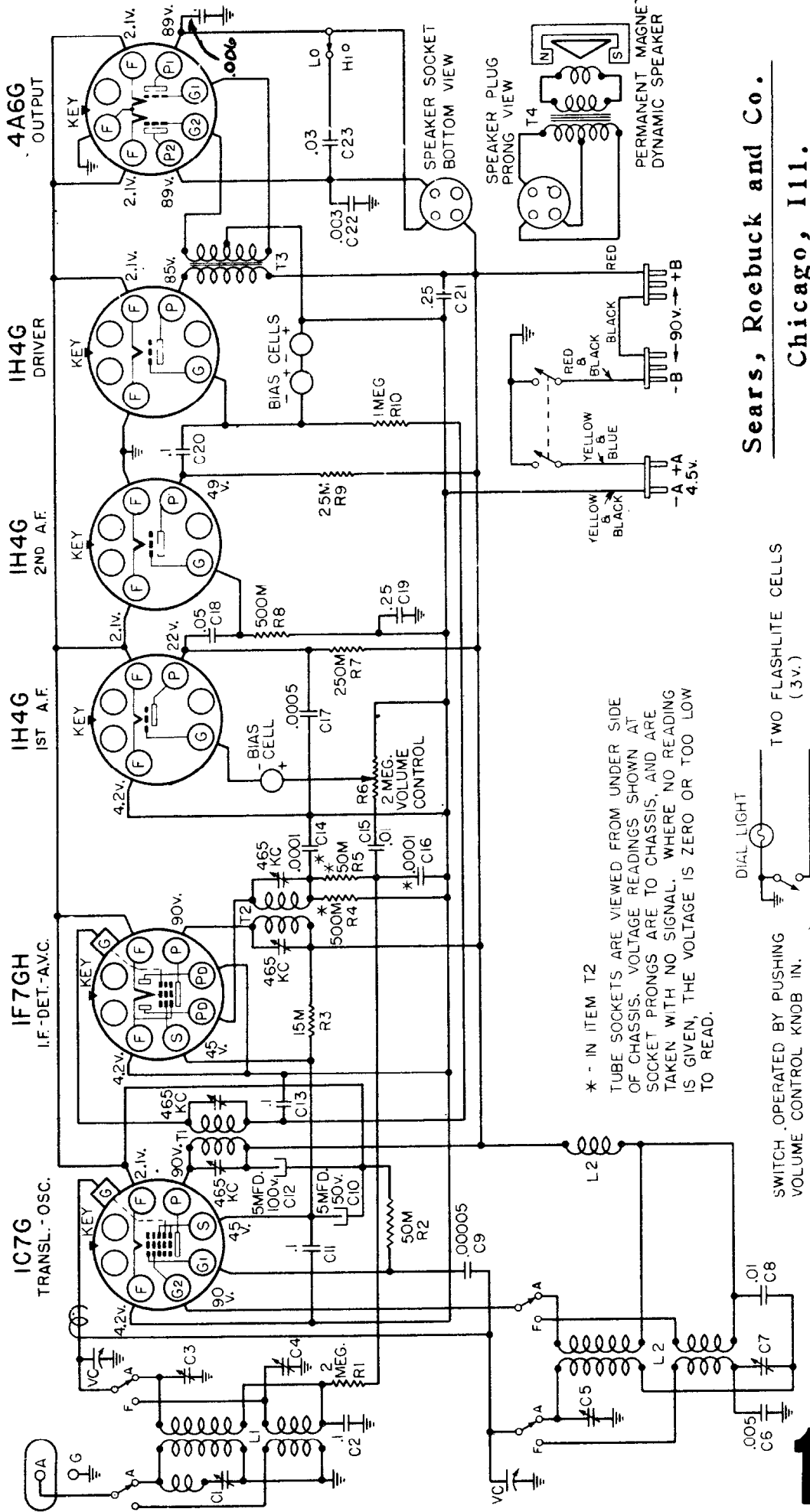
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



U-121, U-123 (Single-Band), and U-127E



WIRING DIAGRAM FOR SILVERTONE CHASSIS 101.505 & 101.505X



* - IN ITEM T2
 TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS. VOLTAGE READINGS SHOWN AT SOCKET PRONGS ARE TO CHASSIS, AND ARE TAKEN WITH NO SIGNAL. WHERE NO READING IS GIVEN, THE VOLTAGE IS ZERO OR TOO LOW TO READ.

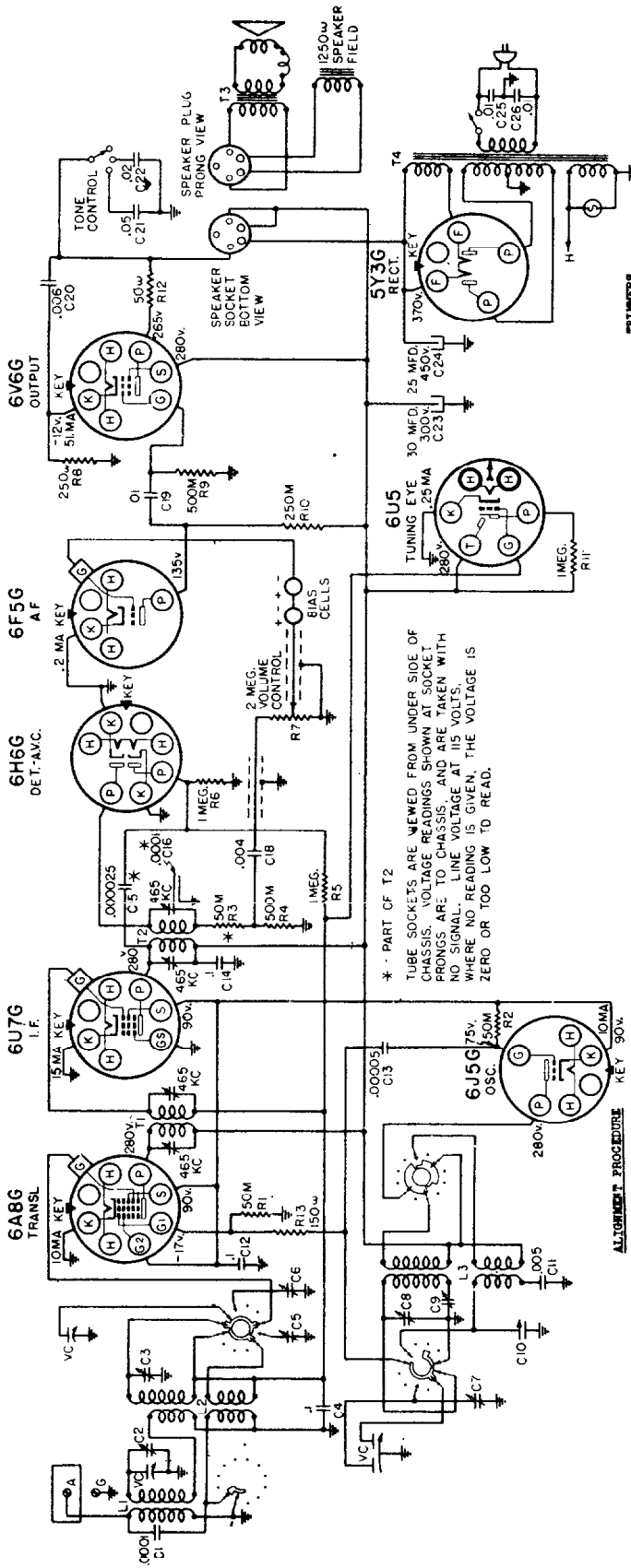
DIAL LIGHT
 SWITCH OPERATED BY PUSHING VOLUME CONTROL KNOB IN.
 (MODELS 4632A & 4633A ONLY)

TWO FLASHLITE CELLS (3V.)

Sears, Roebuck and Co.
 Chicago, Ill.

Models 4632A, 4633A, 6014, 6015, 6044, 6045, 6058, 6059,
 6063, 6064, 6065, 6144, and 6164

WIRING DIAGRAM FOR SILVERTONE CHASSIS 101.510



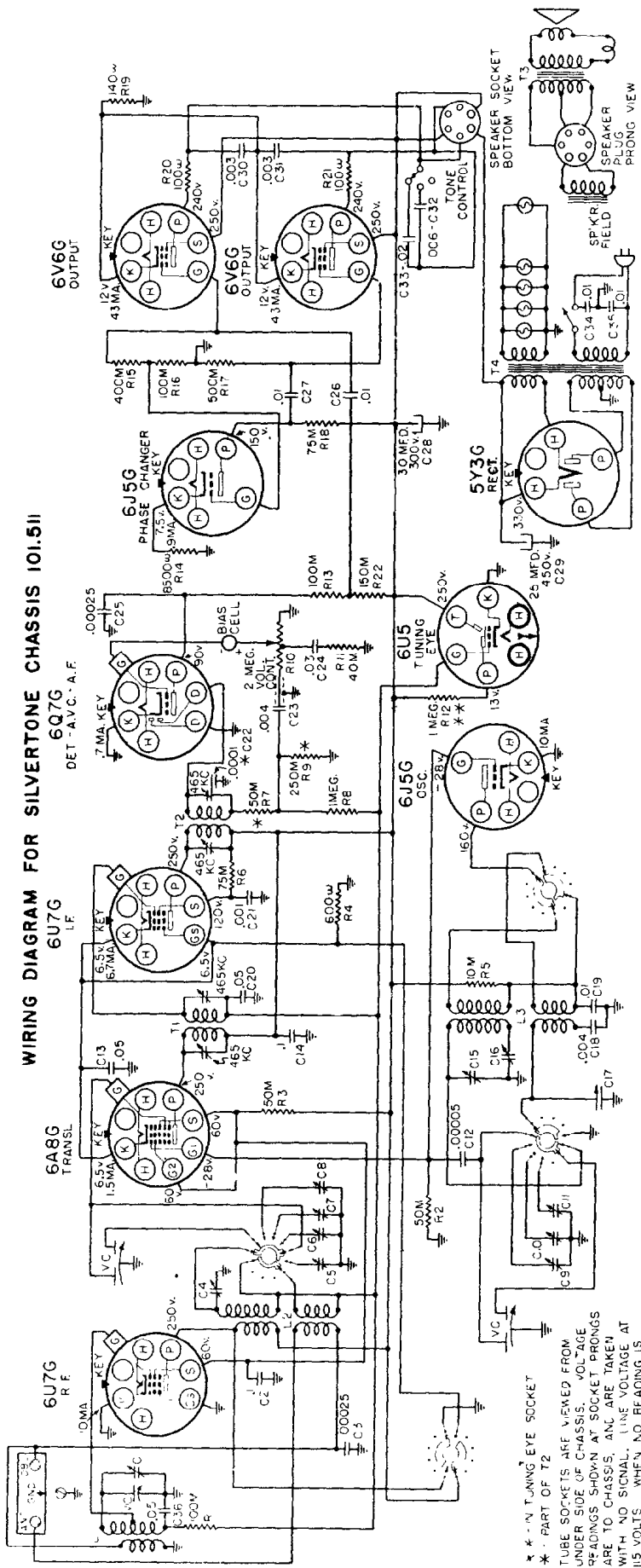
WAVE BAND SWITCH POSITION	POSITION OF VARIABLE	DUMMY GENERATOR FREQUENCY	ANTENNA CONNECTION	GENERATOR CONNECTION	TRIMMERS ADJUSTED (IN ORDER SHOWN)	TRIMMER FUNCTION	APPROXIMATE MICROVOLTS
'AM'	Closed	485 kc	.1 mfd.	6A8G Grid	T2, T1	IF Output IF Input	90
'SW'	15 mc (rook)	15 mc	400 ohms	Ant. Term.	C5	Translator	50
'9FOR'	9.55 mc	9.55 mc	400 ohms	Ant. Term.	C7*	Oscillator Translator	80
'AM'	Fully open	1730 kc	.0003 mfd.	Ant. Term.	C8	Oscillator	90
'AM'	1400 kc	1400 kc	.0003 mfd.	Ant. Term.	C3, C2	Trans., Ant.	75
'AM'	500 kc(rook)	800 kc	.0003 mfd.	Ant. Term.	C9	Padder	80

IMPORTANT ALIGNMENT NOTE

The alignment must be done in the order given.
*Two peaks can be had, one with the trimmer screwed further out than the other. The correct adjustment is with the trimmer screwed further out.

- PRELIMINARY:**
- Output meter connection Across load speaker voice coil
 - Output meter reading to indicate 500 milliwatts 0-.85 volts
 - Average sensitivity in microvolts for 500 milliwatts output See chart below
 - Generator ground lead connection Receiver chassis
 - Dummy antenna value to be in series with generator output See chart below
 - Connection of generator output lead See chart below
 - Generator modulation 30%, 400 cycles
 - Position of Volume Control Fully clockwise
 - Position of Tone Control RI
 - Position of Dial Pointer with variable fully closed Center of block to left of 550 kc calibration mark.

Sears, Roebuck and Co., Chicago.
Models 6003, 6004, 6024, 6034, 6124, 6134



WIRING DIAGRAM FOR SILVERTONE CHASSIS 101.511

GENERAL INFORMATION & SERVICE HINTS

THE AVC CIRCUIT:

The diode current of one of the 6Q7G diode plates, flowing through the 250M ohm resistor, R9, creates a voltage drop across it. This voltage is applied to the control grids of the R7, translator, and IF tubes, to provide AVC.

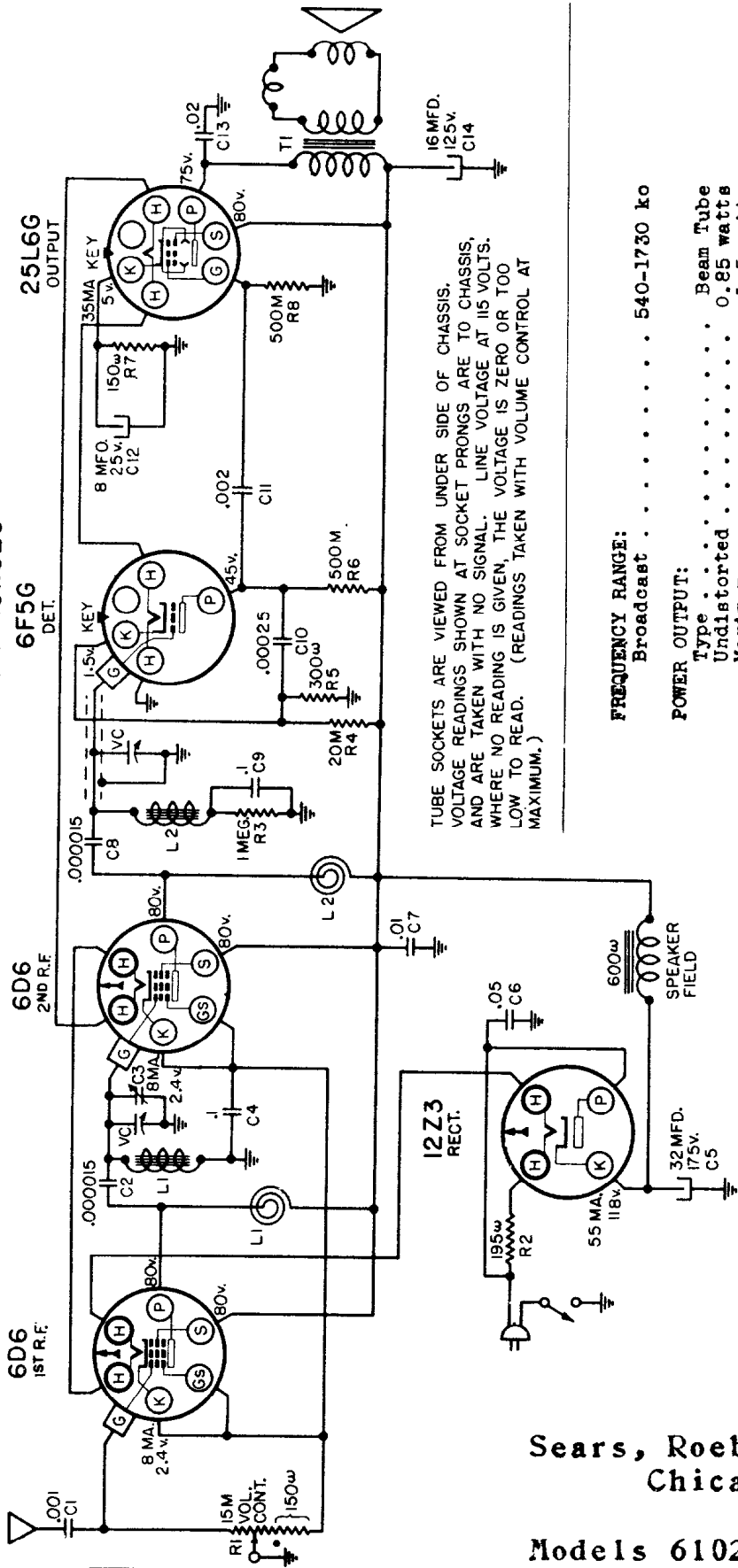
ELIMINATING WHISTLE AT 930 KC:

A whistle, due to a beat between the second harmonic (930 kc) of the 4S5 kc IF, and a 930 kc signal may be experienced. In localities where the 930 kc station is one that is frequently listened to, it will be desirable to shift the whistle to some other point where it will not be objectionable. This can be done by shifting the IF frequency of the receiver. Determine at what point between 900 kc and 960 kc the whistle will be least objectionable. Dividing this frequency by two will give the new IF frequency to which the receiver should be aligned. For example, if it is determined that a whistle at 915 kc would not be objectionable, the IF should be realigned at 915/3 or 457.5 kc. Try to select the new IF frequency as near as possible to 455 kc.

* * * TUNING EYE SOCKET PART OF T2 TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS. VOLTAGE READINGS SHOWN AT SOCKET PRONGS ARE TO CHASSIS AND ARE TAKEN WITH NO SIGNAL. LINE VOLTAGE AT 115 VOLTS. WHEN NO READING IS GIVEN, THE VOLTAGE IS ZERO OR TOO LOW TO READ. READINGS TAKEN WITH WAVE SWITCH IN BROADCAST POSITION.

Sears, Roebuck & Co.
Chicago.
Models 6036, 6136.

WIRING DIAGRAM FOR SILVERTONE FOR SILVERTONE CHASSIS 101.526



TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS. VOLTAGE READINGS SHOWN AT SOCKET PRONGS ARE TO CHASSIS, AND ARE TAKEN WITH NO SIGNAL. LINE VOLTAGE AT 115 VOLTS. WHERE NO READING IS GIVEN, THE VOLTAGE IS ZERO OR TOO LOW TO READ. (READINGS TAKEN WITH VOLUME CONTROL AT MAXIMUM.)

FREQUENCY RANGE:
Broadcast 540-1730 ko

POWER OUTPUT:
Type Beam Tube
Undistorted 0.85 watts
Maximum 1.5 watts

ALIGNMENT PROCEDURE

The receiver need not be taken out of the cabinet for alignment.

Either a broadcast signal of about 1500 ko should be tuned in or else a signal generator, connected through a .0003 mfd. condenser to the set's antenna, should be used.

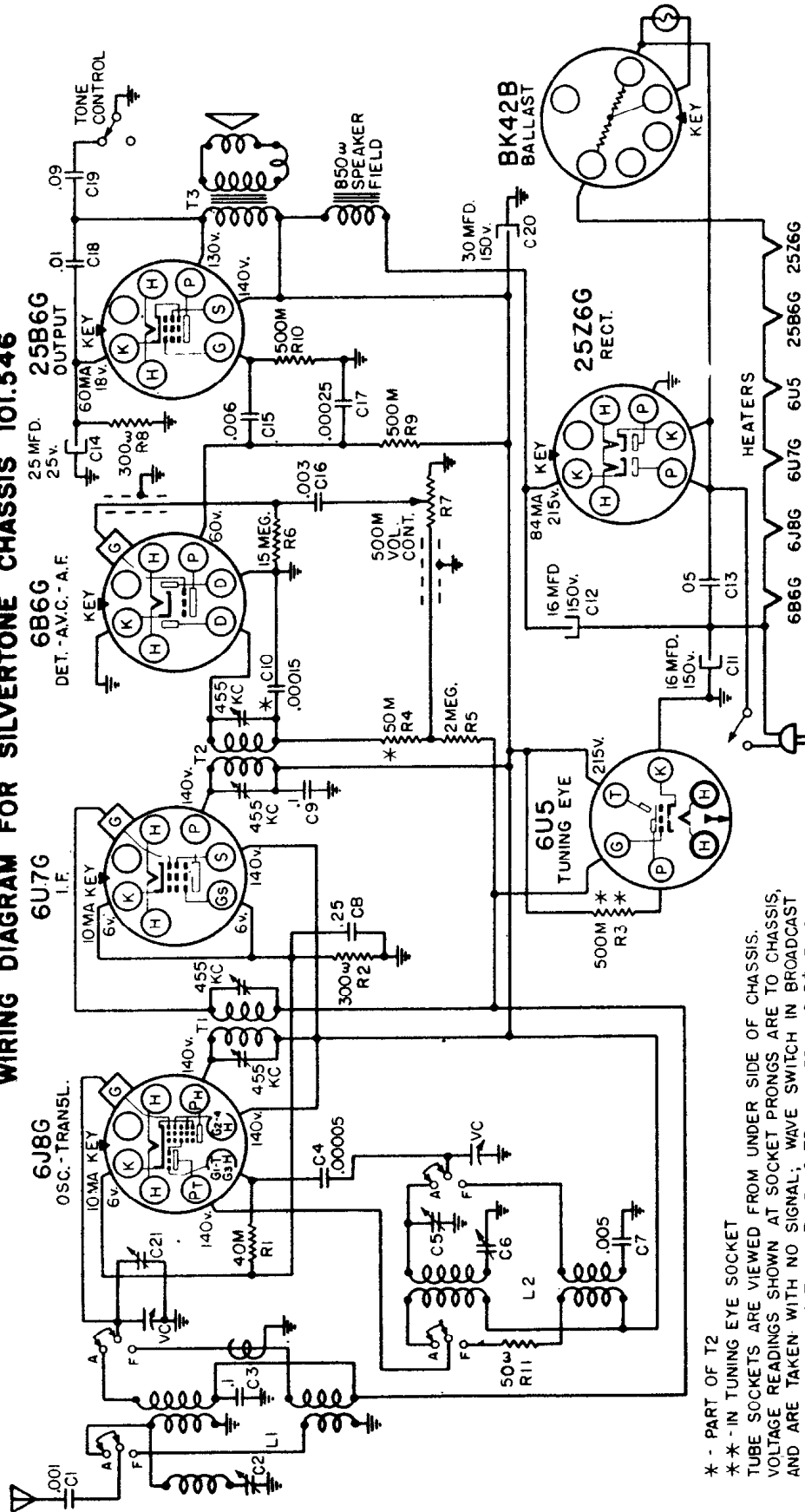
Tune in the signal and adjust the trimmer (accessible through the hole in the bottom of the cabinet) for maximum loud speaker response. This can be done most accurately, if the volume control setting is reduced to give low volume level. (This set has no AVC.) The variable should be rocked a degree or two during the adjustment. An insulated screw driver should be used, since the chassis may be above ground potential as explained previously.

Sears, Roebuck and Co.
Chicago.

Models 6102, 6103, 6105

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

WIRING DIAGRAM FOR SILVERTONE CHASSIS 101.546



* - PART OF T2
 ** - IN TUNING EYE SOCKET
 TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS.
 VOLTAGE READINGS SHOWN AT SOCKET PRONGS ARE TO CHASSIS,
 AND ARE TAKEN WITH NO SIGNAL; WAVE SWITCH IN BROADCAST
 POSITION. LINE VOLTAGE AT 115 VOLTS. WHERE NO READING
 IS GIVEN, THE VOLTAGE IS ZERO OR TOO LOW TO READ.

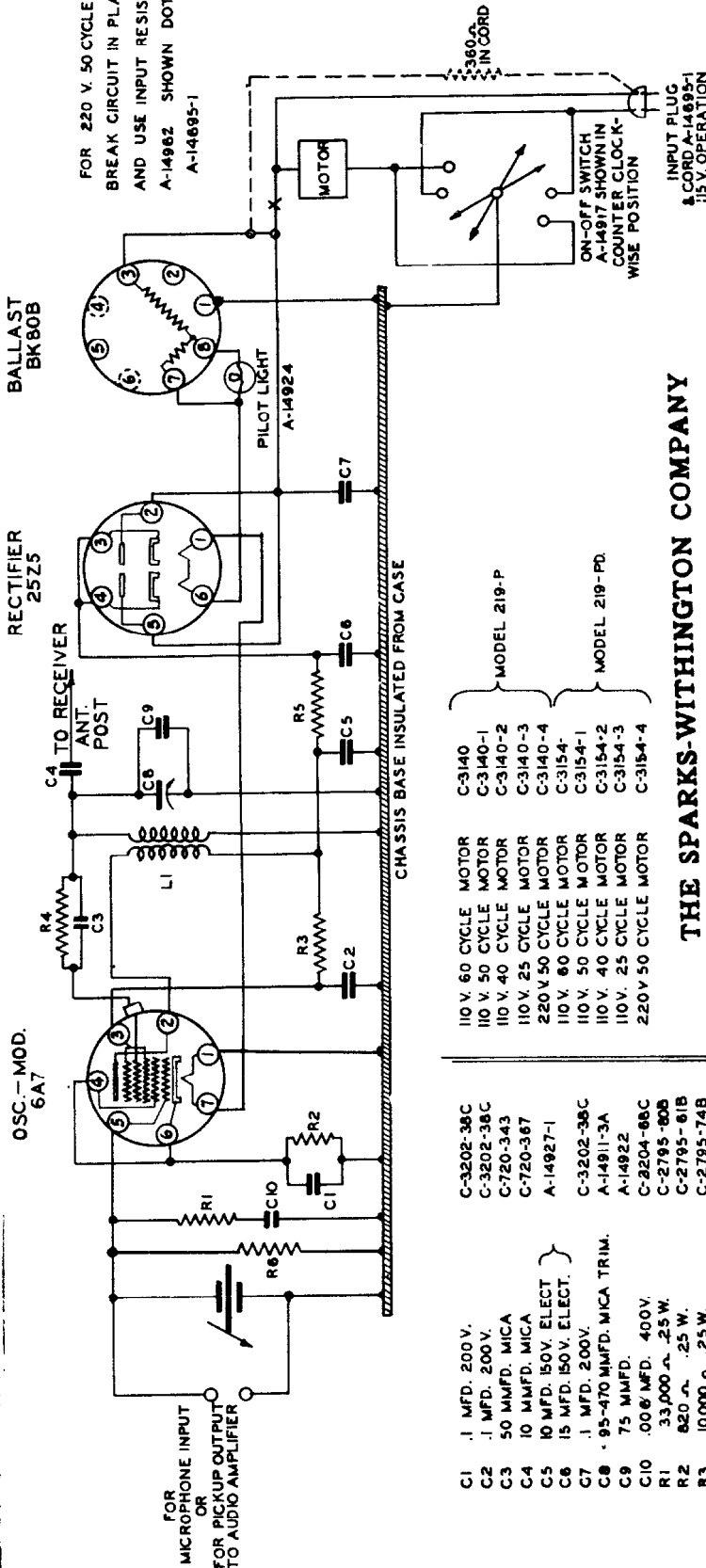
WAVE BAND SWITCH POSITION	POSITION OF VARIABLE	GENERATOR FREQUENCY	DUMMY ANTENNA	GENERATOR CONNECTION	ADJUSTED (IN ORDER SHOWN)	TRIMMER FUNCTION
"AM"	Closed	455 kc	.1 mfd.	6J8G Grid	T2, T1	IF Output IF Input
"AM"	600 kc	455 kc*	.0003 mfd.	Ant. Lead	C3*	Wave Trap
"AM"	1400 kc	1400 kc	.0003 mfd.	Ant. Lead	C5, C31	Oscillator Translator
"AM"	800 kc (rock)	600 kc	.0003 mfd.	Ant. Lead	C6	Padder

Sears, Roebuck & Co.
 Models 6200, 6120, 6126,
 6127, 6119, 6250.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Sparton Wireless Phonograph Models

219-P 219-PD



THE SPARKS-WITHINGTON COMPANY
SERVICE DIVISION
Jackson, Michigan, U. S. A.

Antenna Not Connected.
Microphone Not Connected.

Tube	Function	Voltage of Socket Prongs to Gnd. (See Prong Nos. on Schematic Diagram)							
		No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8
6A7	Oscillator-Modulator	0	120	80	4.5	0	4.5	6.3*	0
25Z5	Rectifier	6.3*	117*	150	150	117*	31.3*	-	-
BK-80B	Ballast	0	-	117*	-	-	-	31.3*	37*

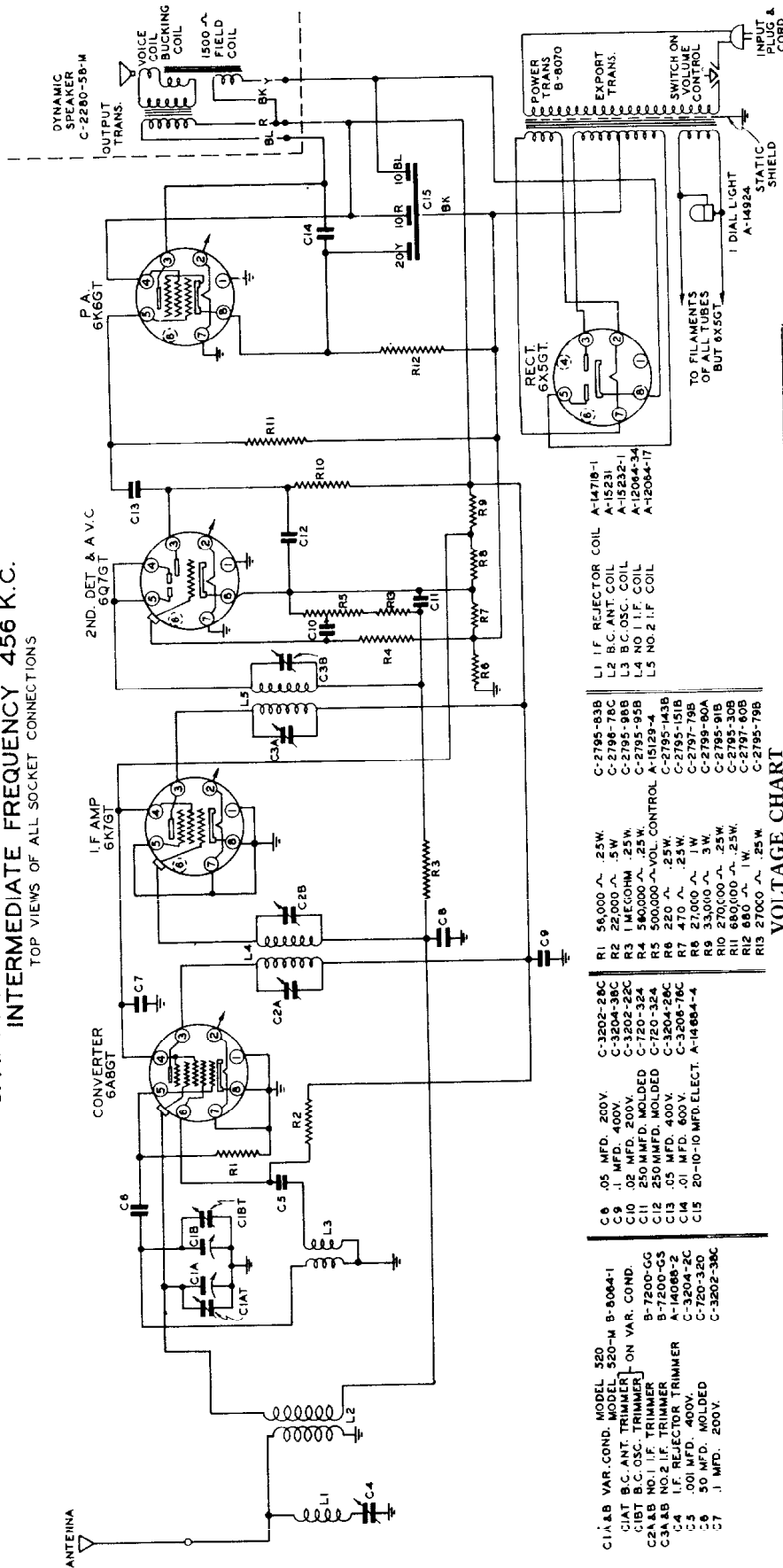
Notes: Voltage readings are for schematic diagram on back of sheet. Allow 15% + or - on all measurements. Always use meter scale which will give greatest deflection within scale limits. All DC measurements made with 1000 ohms per volt voltmeter. All AC voltages made with rectifier type voltmeter. Unless designated otherwise, voltages in table are + DC voltages.

*AC volts.

NOTE: Original production models did not have resistor R6 and condenser C10 included in the circuit as shown above. In these first run production sets resistor R1 connected across the microphone tip jacks in the same position as shown for resistor R6. The above change can be made easily, when servicing any of the first run Models 219-P Wireless Phonographs.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

SCHEMATIC DIAGRAM SPARTON SUPERHETERODYNE MODELS 520 & 520-M INTERMEDIATE FREQUENCY 456 K.C. TOP VIEWS OF ALL SOCKET CONNECTIONS



- C1A & B VAR. COND. MODEL 520 B-8064-1
- C1AT B.C. ANT. TRIMMER ON VAR. COND. B-7200-CG
- C1BT B.C. OSC. TRIMMER A-14088-2
- C2A & B NO. 1 I.F. TRIMMER A-14088-2
- C4 I.F. REJECTOR TRIMMER C-3204-2C
- C5 .001 MFD. MOLDED C-7200-320
- C7 .1 MFD. 200V. C-3202-38C

- C6 .05 MFD. 200V. C-3202-28C
- C9 .01 MFD. 400V. C-3204-36C
- C10 .02 MFD. 200V. C-3202-22C
- C11 250 MMFD. MOLDED C-720-324
- C12 250 MMFD. MOLDED C-720-324
- C13 .05 MFD. 400V. C-3204-28C
- C14 .01 MFD. 600V. C-3208-76C
- C15 20-10-10 MFD. ELECT. A-14684-4

- C2A & B 500,000- Ω VOL. CONTROL A-15129-4
- C3A & B 270,000- Ω 1W C-2795-151B
- C3B 270,000- Ω 3W C-2797-795
- C3C 330,000- Ω 3W C-2798-60A
- C3D 680,000- Ω .25W C-2795-308
- C3E 270,000- Ω 1W C-2797-808
- C3F 270,000- Ω .25W C-2795-798

- L1 IF REJECTOR COIL A-14719-1
- L2 B.C. ANT. COIL A-15231
- L3 B.C. OSC. COIL A-15232-1
- L4 NO. 1 I.F. COIL A-12084-34
- L5 NO. 2 I.F. COIL A-12084-17

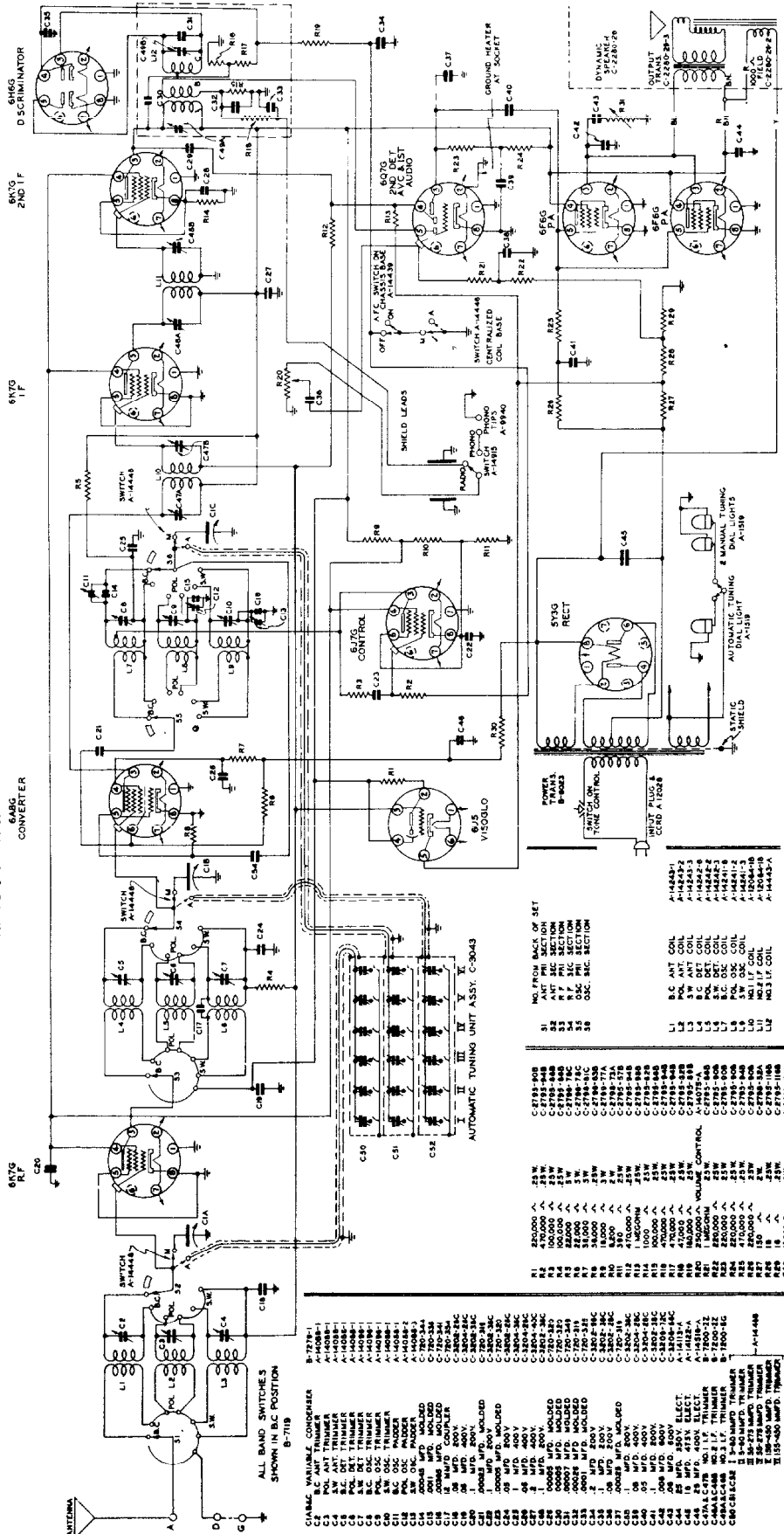
VOLTAGE CHART

Tube	Function	Position of Volume Control: Full with Antenna Disconnected								
		#1	#2	#3	#4	#5	#6	#7	#8	
6A8GT	Converter	0	0	250	67	4	175	*6.3	0	.1
6K7GT	I. F. Amp.	0	0	250	67	0	1.5	*6.3	0	.1
6Q7GT	2nd. Det. AVC-AF	0	0	65	**	**	**	*6.3	0	0
6K6GT	P. A.	0	0	225	250	0	2.5	*6.3	10	-
6X5GT	Rectifier	-	0	275*	0	275*	0	0	300	-

Notes: Voltage readings are for schematic diagram on back of sheet. Allow 15% + or - on all measurements. Always use meter scale which will give greatest deflection within scale limits. All DC measurements made with 1000 ohms per volt voltmeter. All AC voltages made with rectifier type voltmeter. Unless designated otherwise, voltages in table are + DC voltages. *AC volts. **Cannot be measured with Weston Analyzer #665 Type 2.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

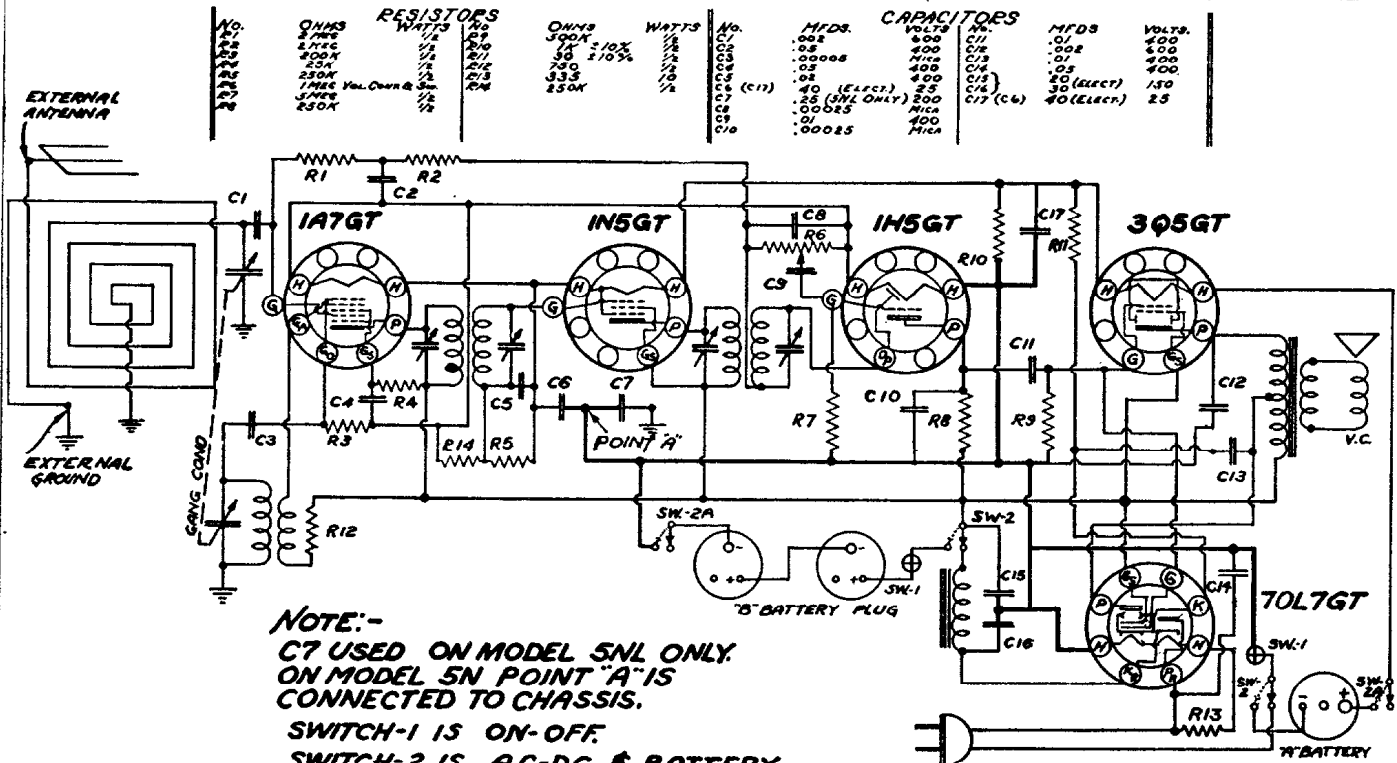
**SCHEMATIC DIAGRAM
SPARTAN SUPERHETERODYNE MODEL 1160
INTERMEDIATE FREQUENCY 456 K.C.
TOP VIEWS OF ALL SOCKET CONNECTIONS
CONVERTER**



ML FROM BACK OF SET

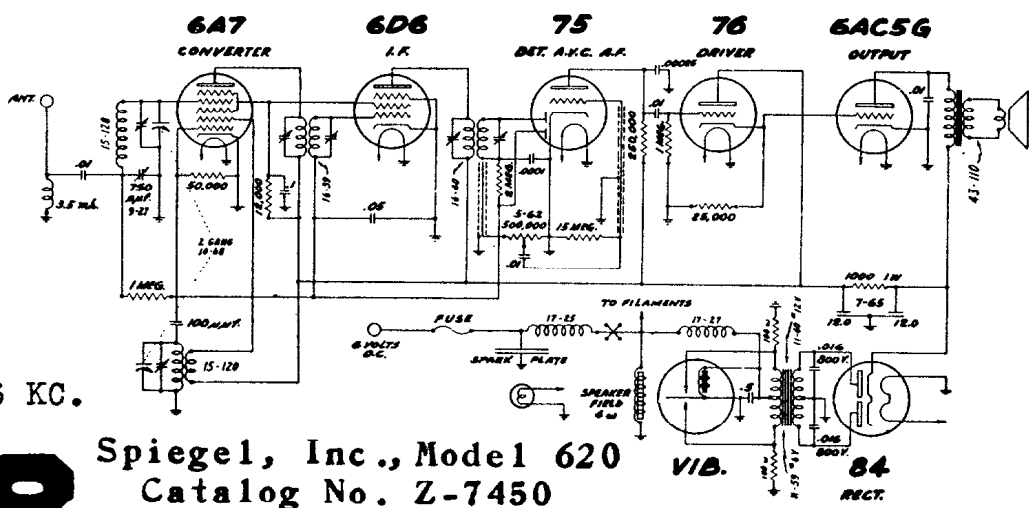
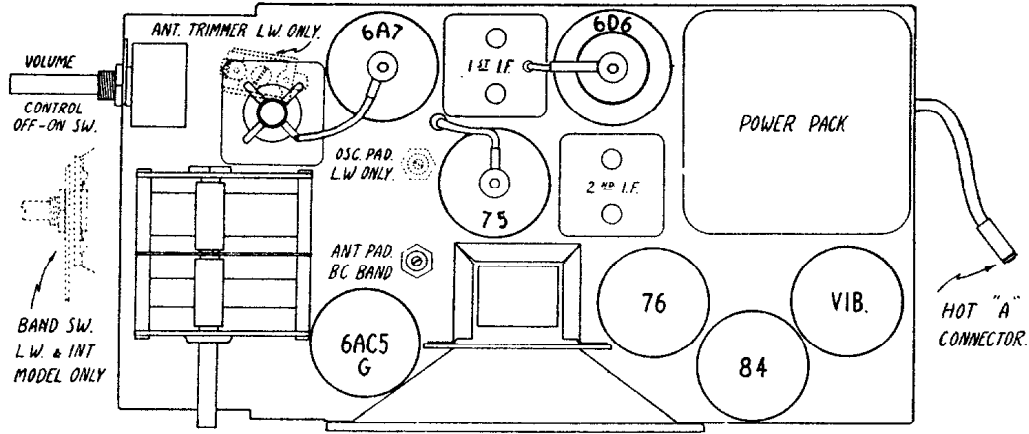
31	C 8782-908
32	C 8782-908
33	C 8782-908
34	C 8782-908
35	C 8782-908
36	C 8782-908
37	C 8782-908
38	C 8782-908
39	C 8782-908
40	C 8782-908
41	C 8782-908
42	C 8782-908
43	C 8782-908
44	C 8782-908
45	C 8782-908
46	C 8782-908
47	C 8782-908
48	C 8782-908
49	C 8782-908
50	C 8782-908
51	C 8782-908
52	C 8782-908
53	C 8782-908
54	C 8782-908
55	C 8782-908
56	C 8782-908
57	C 8782-908
58	C 8782-908
59	C 8782-908
60	C 8782-908
61	C 8782-908
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84	C 8782-908
85	C 8782-908
86	C 8782-908
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88	C 8782-908
89	C 8782-908
90	C 8782-908
91	C 8782-908
92	C 8782-908
93	C 8782-908
94	C 8782-908
95	C 8782-908
96	C 8782-908
97	C 8782-908
98	C 8782-908
99	C 8782-908
100	C 8782-908

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



NOTE:-
C7 USED ON MODEL 5N1 ONLY.
ON MODEL 5N POINT "A" IS
CONNECTED TO CHASSIS.
SWITCH-1 IS ON-OFF
SWITCH-2 IS A.C.-D.C. & BATTERY.
SWITCH-2 SHOWN FOR A.C.-D.C.
IF 455 K.C.
ON MODEL 5N SWITCH, SWITCH 2A NOT USED.

Spiegel, Inc. Model 5N
 Cat. No. Z-7126

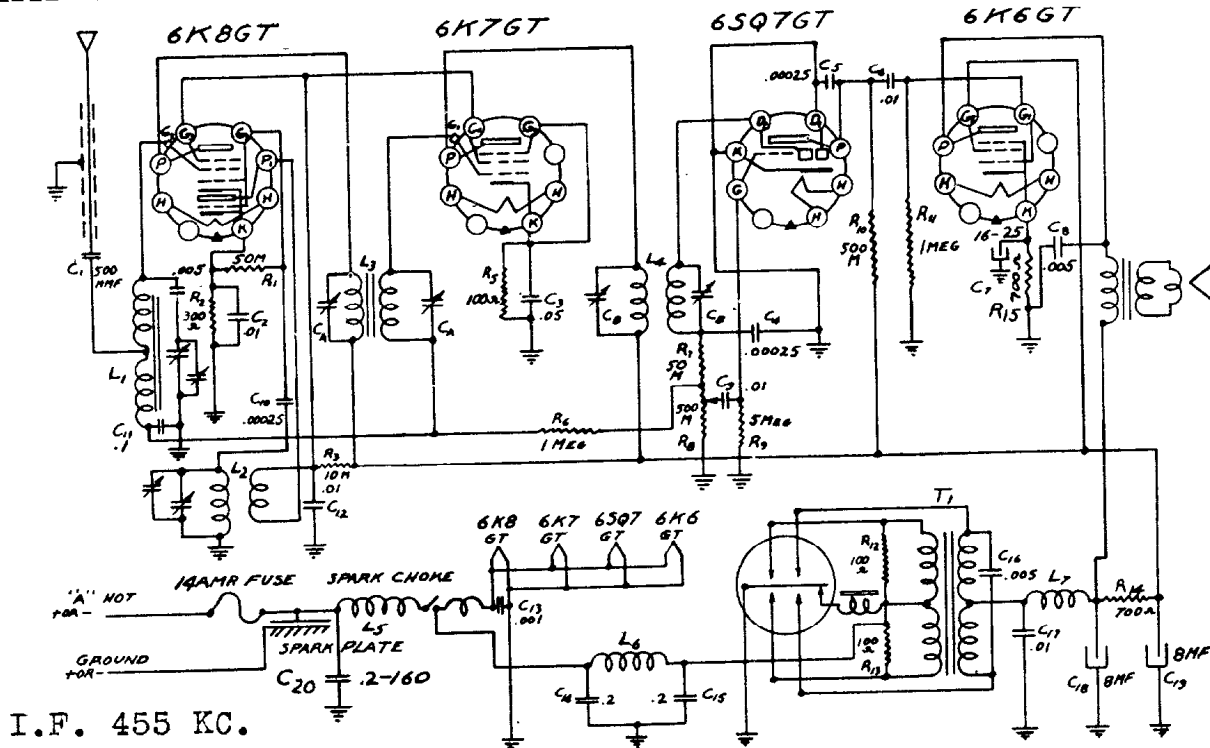


148

Spiegel, Inc., Model 620
 Catalog No. Z-7450

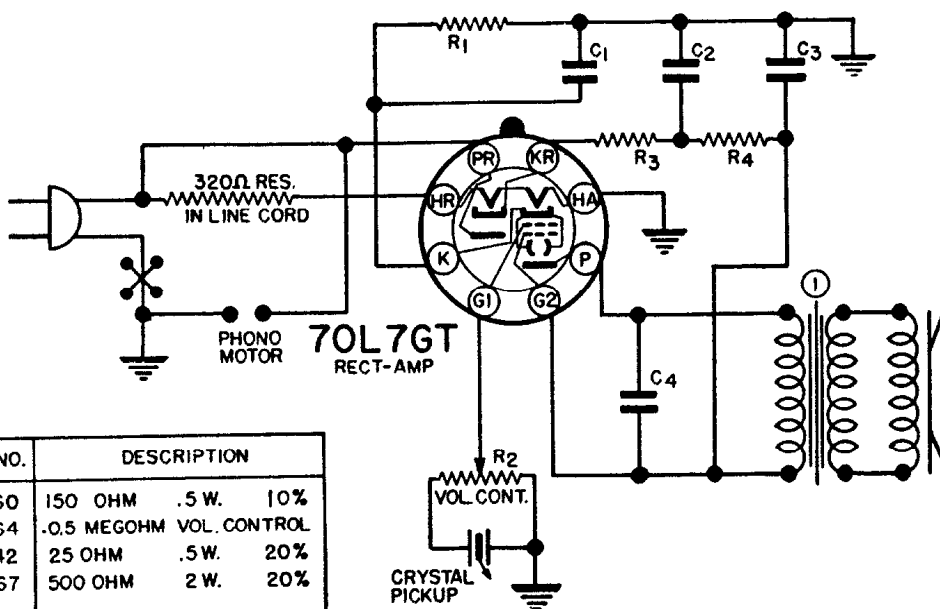
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MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Spiegel, Inc., Chicago, Illinois

Model 297, Catalog Nos. Z-7456 and Z-7458



DIAG NO.	PART NO.	DESCRIPTION
R1	N-1360	150 OHM .5 W. 10%
R2	N-1864	.05 MEGOHM VOL. CONTROL
R3	N-1742	25 OHM .5 W. 20%
R4	N-1867	500 OHM 2 W. 20%
C1	N-1866	20MFD. 25V. } ELECTRO.
C2		30 MFD. 150V. }
C3		30 MFD. 150V. }
C4	N-1344	.01 MFD. 400V.
1	N-1863	5 1/2" P.M. SPEAKER(TE-38)
	N-1865	LINE RES. CORD
1	N-1910	5 1/2" P.M. SPKR(TE-40&41)

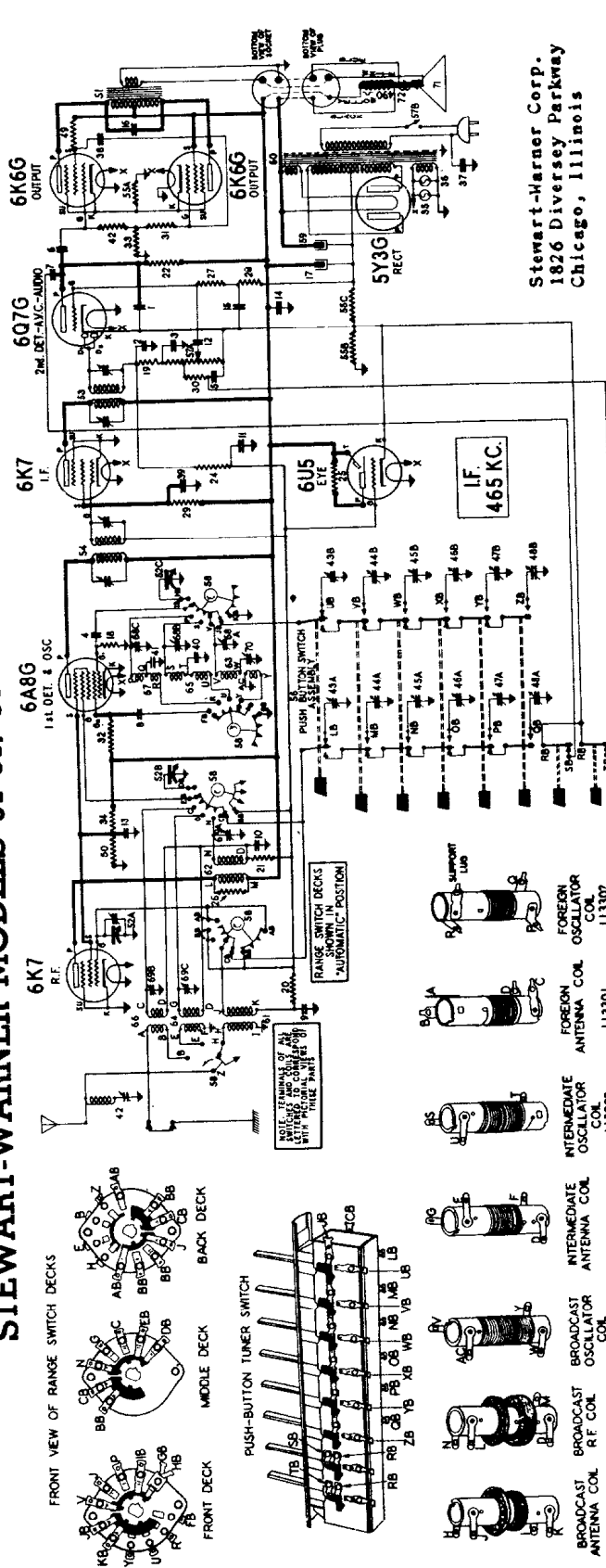
Spiegel, Inc., Chicago, Illinois

Phonograph Model "TE"

Catalog Numbers Z-7020 and Z-7021

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

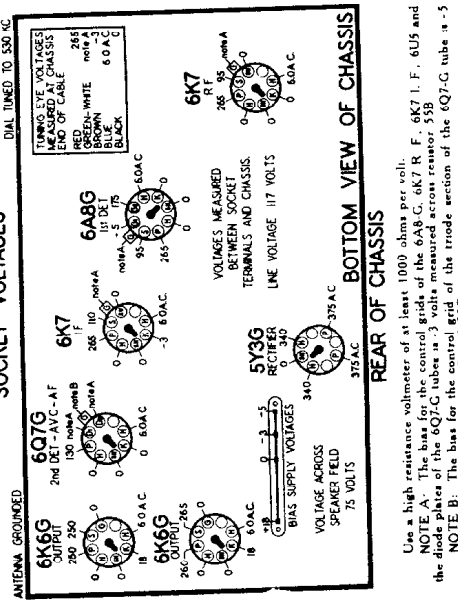
STEWART-WARNER MODELS 91-81, 98-81 AND 910-81 CHASSIS



Stewart-Warner Corp.
1826 Diversey Parkway
Chicago, Illinois

PARTS LIST

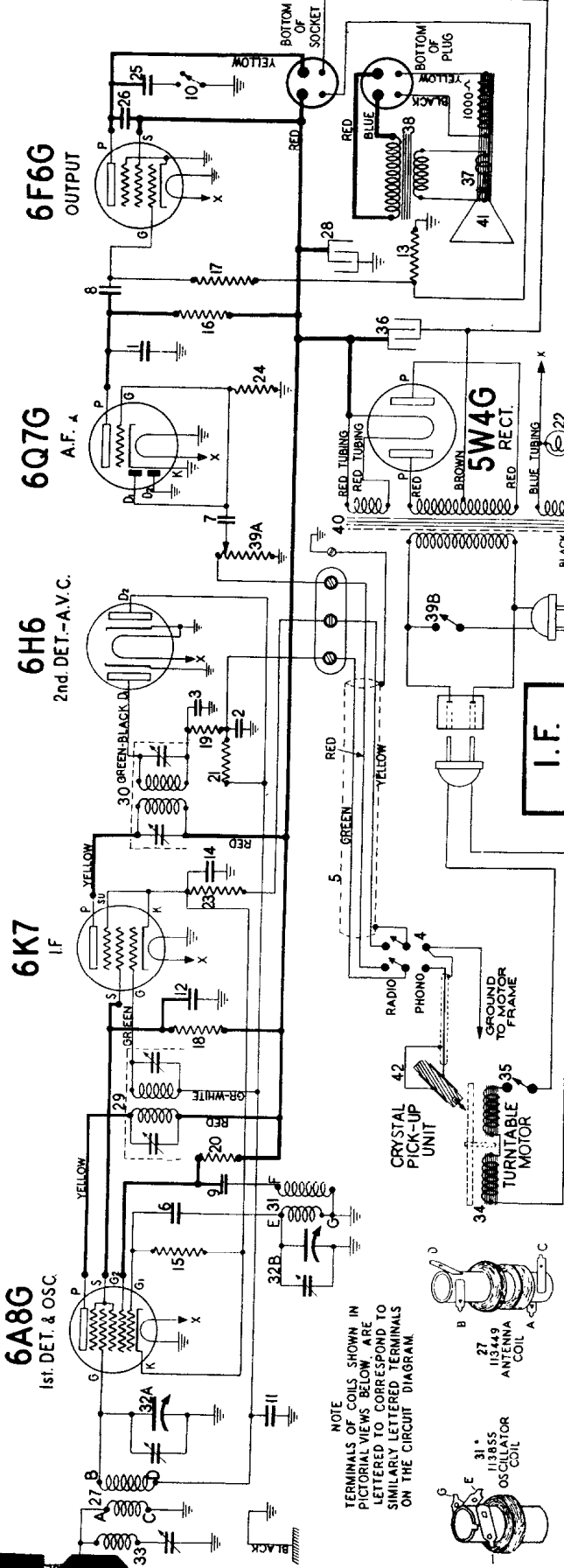
Part No.	Description	List Price
11085	Washer—flat steel, for mtg. chassis	0.01
11086	Start—(for tuning of A.C. recepts)	0.01
11087	Shield—steel, for tube shields	0.01
11088	Screen—No. 33, for tube shields	0.01
11089	Screen—No. 33, for tube shields	0.01
11090	Screen—No. 33, for tube shields	0.01
11091	Screen—No. 33, for tube shields	0.01
11092	Screen—No. 33, for tube shields	0.01
11093	Screen—No. 33, for tube shields	0.01
11094	Screen—No. 33, for tube shields	0.01
11095	Screen—No. 33, for tube shields	0.01
11096	Screen—No. 33, for tube shields	0.01
11097	Screen—No. 33, for tube shields	0.01
11098	Screen—No. 33, for tube shields	0.01
11099	Screen—No. 33, for tube shields	0.01
11100	Screen—No. 33, for tube shields	0.01
11101	Screen—No. 33, for tube shields	0.01
11102	Screen—No. 33, for tube shields	0.01
11103	Screen—No. 33, for tube shields	0.01
11104	Screen—No. 33, for tube shields	0.01
11105	Screen—No. 33, for tube shields	0.01
11106	Screen—No. 33, for tube shields	0.01
11107	Screen—No. 33, for tube shields	0.01
11108	Screen—No. 33, for tube shields	0.01
11109	Screen—No. 33, for tube shields	0.01
11110	Screen—No. 33, for tube shields	0.01
11111	Screen—No. 33, for tube shields	0.01
11112	Screen—No. 33, for tube shields	0.01
11113	Screen—No. 33, for tube shields	0.01
11114	Screen—No. 33, for tube shields	0.01
11115	Screen—No. 33, for tube shields	0.01
11116	Screen—No. 33, for tube shields	0.01
11117	Screen—No. 33, for tube shields	0.01
11118	Screen—No. 33, for tube shields	0.01
11119	Screen—No. 33, for tube shields	0.01
11120	Screen—No. 33, for tube shields	0.01
11121	Screen—No. 33, for tube shields	0.01
11122	Screen—No. 33, for tube shields	0.01
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11155	Screen—No. 33, for tube shields	0.01
11156	Screen—No. 33, for tube shields	0.01
11157	Screen—No. 33, for tube shields	0.01
11158	Screen—No. 33, for tube shields	0.01
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11247	Screen—No. 33, for tube shields	0.01
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11249	Screen—No. 33, for tube shields	0.01
11250	Screen—No. 33, for tube shields	0.01



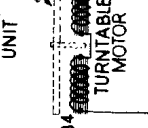
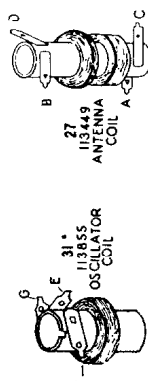
Use a high resistance voltmeter of at least 1000 ohms per volt.
NOTE A: The bias for the control grids of the 6A8 G, 6K7 R, F, 6K7 I, F, 6U5 and the diode plates of the 6Q7-G tubes is .3 volts measured across resistor 55B.
NOTE B: The bias for the control grid of the triode section of the 6Q7-G tube is .5 volts measured across resistor 32B and

STEWART-WARNER MODEL 91-648 RECEIVER

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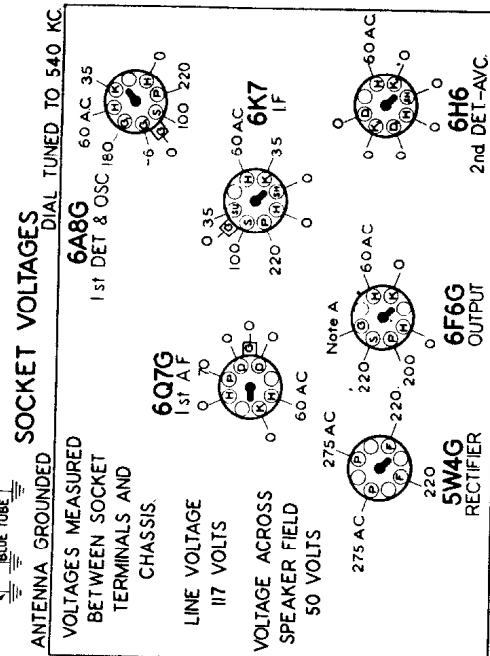


NOTE
TERMINALS OF COILS SHOWN IN
PICTORIAL VIEWS BELOW ARE
LETTERED TO CORRESPOND TO
SIMILARLY LETTERED TERMINALS
ON THE CIRCUIT DIAGRAM



I.F. KC.
465 KC.

Diagram Number	Part Number	Description	Diagram Number	Part Number	Description
1	83539	Condenser—mica 260 mmfd.	25	113034	Condenser—paper .04 mfd. 600 volt
2-3	83783	Condenser—mica 110 mmf.	26	113035	Condenser—paper .006 mfd. 800 V
4	84566	Switch—"phono-radio"; D.P.D.T.	27	113449	Antenna coil
5	84572	Cable—Shielded for Phono. Pickup.	28	113808	Condenser—electrolytic 8 mfd. 350 V.
6	85061	Condenser—mica 51 mmfd.	29	113853	Transformer—1st I.F.
7-8	88026	Condenser—paper .02 mfd. 400 Volt	30	113854	Transformer—2nd I.F.
9	88030	Condenser—paper .01 mfd. 400 Volt	31	113855	Coil—oscillator
10	88034	Switch for tone control.	32A-32B	113869	Condenser—gang
11	88189	Condenser—paper .05 mfd. 200 Volt	33	113889	Coil—wave trap
12	88191	Condenser—paper .1 mfd. 300 Volt	34	114400	Phono. motor & turntable.
13	88462	Resistor—W. W. 270 ohms 1 W. 10%	35	114437	Toggle Switch—phono. power off-on switch
14	89532	Condenser—paper .25 mfd. 200 Volt			
15	110552	Resistor—carbon 47,000 ohms 1/4 W.			
16	110553	Resistor—carbon 220,000 ohms 1/4 W.	36	114972	Condenser—elect. 16 mfd. 450 V.
17	110559	Resistor—carbon 470,000 ohms 1/4 W.	37	U-115048	Speaker—dynamic 6"
18-19	110566	Resistor—carbon 33,000 ohms 1/4 W.	38	U-116212	Output transformer for U-115048 speaker
20	110589	Resistor—carbon 10,000 ohms 1/4 W.	39A-39B	116274	Volume control 500,000 ohms with switch
21	110580	Resistor—carbon 3.3 meg. 1/4 watt			
22	110629	Dial bulb—6.3 volt .25 cmeps.	40	116283	Transformer—power 110 V 60 C.
23	112974	Resistor—carbon 220 ohms 1/4 W. (10%)	41	U-116296	Cone & voice coil assembly for U-115048 speaker
24	112975	Resistor—carbon 10 meg. 1/4 watt.	42	116300	Phono. pickup head.



SOCKET VOLTAGES
DIAL TUNED TO 540 KC

VOLTAGES MEASURED BETWEEN SOCKET TERMINALS AND CHASSIS.

LINE VOLTAGE 117 VOLTS

VOLTAGE ACROSS SPEAKER FIELD 50 VOLTS

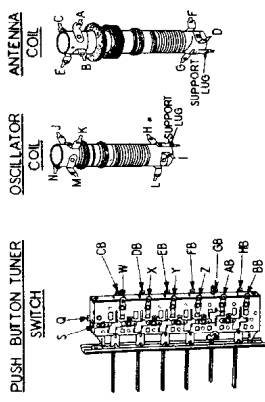
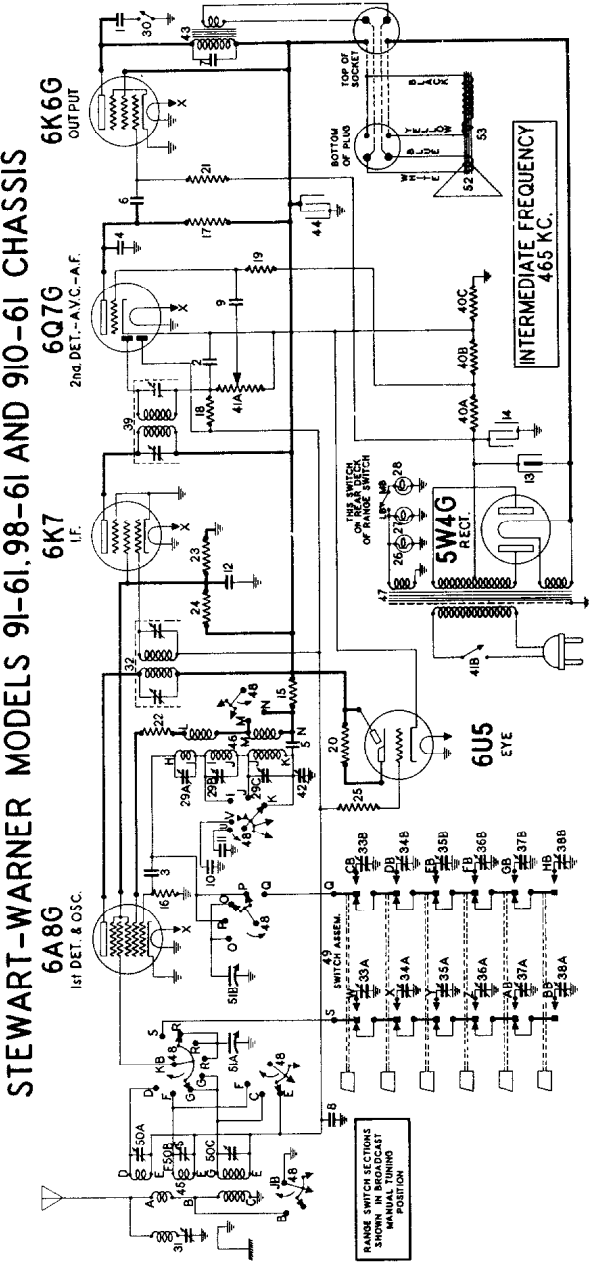
REAR OF CHASSIS

Use a high resistance voltmeter of at least 1000 ohms per volt.

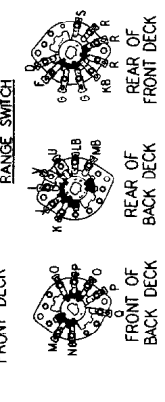
NOTE A: The bias for the control grid of the 6F6G tube is —3.5 volts measured across resistor number 13.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

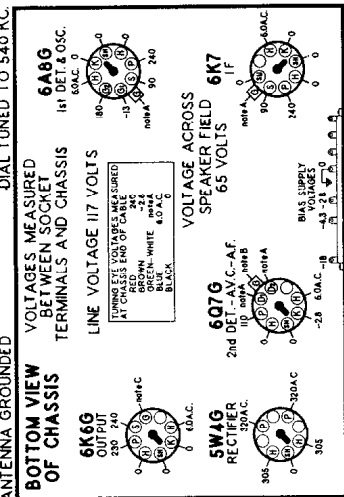
STEWART-WARNER MODELS 91-6I, 98-6I AND 910-6I CHASSIS



NOTE
TERMINALS OF SWITCHES AND COILS SHOWN IN THIS DIAGRAM SHOULD BE IDENTIFIED TO CORRESPOND TO SIMILARLY LETTERED TERMINALS ON THE CIRCUIT DIAGRAM AT THE POINTS WHERE THEY ARE CONNECTED TOGETHER CARRY THE SAME LETTER.



SOCKET VOLTAGES



REAR OF CHASSIS
Use a high resistance voltmeter of 1000 ohms per volt.
NOTE 1: The bias for the control grids of the 6A8G, 6K7, 6U5, and the diode biased of the 6Q7-G tubes is -2.8 volts measured across resistor 40C.
NOTE 2: The bias for the control grid of the triode sections of the 6Q7-G is -4.5 volts measured across resistor 40B and 40C.
NOTE 3: The bias for the control grid of the 6K6-G output tubes is -18 volts measured across resistor 40A, 40B and 40C.

Stewart-Warner Corp.
1826 Diversey Parkway
Chicago, Illinois

PARTS LIST

Diagram Number	Part Number	Description	List Price
30	112047	Transformer - 2nd 1/2	1.10
30	400-112057	Resistor - 400 ohms	.46
41A	41B-112087	Volume control - 500,000 ohms	.25
42	112085	Transformer - output	.25
43	112084	Transformer - 2nd 1/2	1.70
44	112088	Coil - 1000 ohms	.84
45	112091	Coil - 1000 ohms	1.20
47	112094	Transformer - power 117 volt	4.00
48	112085	Push Button Switch - range	6.00
48	112084	Push Button Switch Assembly	3.00
51A	51B-112050	Condenser - variable	3.00
52	40A-112042	Coil - 400 ohms	1.80
53	40B-112042	Coil - 400 ohms	1.80
54	40C-112042	Coil - 400 ohms	1.80
55	40D-112042	Coil - 400 ohms	1.80

DIAL & MISCELLANEOUS PARTS

Part Number	Description	List Price
67508	Washer - paper (for back of knobs)	.06
67509	Washer - flat steel (for speaker)	.18
112050	Socket - 4 prong (for speaker)	.03
112051	Washer - flat steel (for speaker)	.03
112052	Coil - dial drive 8 or 5/8" f.l.	.05
112053	Spring - drive cord tension	.02
112054	Pin - bushing - for dial drive	.35
112055	Coil - for wdg. wire trap coil	.01
112056	Coil - for wdg. wire trap coil	.01
112057	Coil - for wdg. wire trap coil	.01
112058	Coil - for wdg. wire trap coil	.01
112059	Coil - for wdg. wire trap coil	.01
112060	Coil - for wdg. wire trap coil	.01
112061	Coil - for wdg. wire trap coil	.01
112062	Coil - for wdg. wire trap coil	.01
112063	Coil - for wdg. wire trap coil	.01
112064	Coil - for wdg. wire trap coil	.01
112065	Coil - for wdg. wire trap coil	.01
112066	Coil - for wdg. wire trap coil	.01
112067	Coil - for wdg. wire trap coil	.01
112068	Coil - for wdg. wire trap coil	.01
112069	Coil - for wdg. wire trap coil	.01
112070	Coil - for wdg. wire trap coil	.01
112071	Coil - for wdg. wire trap coil	.01
112072	Coil - for wdg. wire trap coil	.01
112073	Coil - for wdg. wire trap coil	.01
112074	Coil - for wdg. wire trap coil	.01
112075	Coil - for wdg. wire trap coil	.01
112076	Coil - for wdg. wire trap coil	.01
112077	Coil - for wdg. wire trap coil	.01
112078	Coil - for wdg. wire trap coil	.01
112079	Coil - for wdg. wire trap coil	.01
112080	Coil - for wdg. wire trap coil	.01
112081	Coil - for wdg. wire trap coil	.01
112082	Coil - for wdg. wire trap coil	.01
112083	Coil - for wdg. wire trap coil	.01
112084	Coil - for wdg. wire trap coil	.01
112085	Coil - for wdg. wire trap coil	.01
112086	Coil - for wdg. wire trap coil	.01
112087	Coil - for wdg. wire trap coil	.01
112088	Coil - for wdg. wire trap coil	.01
112089	Coil - for wdg. wire trap coil	.01
112090	Coil - for wdg. wire trap coil	.01
112091	Coil - for wdg. wire trap coil	.01
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112093	Coil - for wdg. wire trap coil	.01
112094	Coil - for wdg. wire trap coil	.01
112095	Coil - for wdg. wire trap coil	.01
112096	Coil - for wdg. wire trap coil	.01
112097	Coil - for wdg. wire trap coil	.01
112098	Coil - for wdg. wire trap coil	.01
112099	Coil - for wdg. wire trap coil	.01
112100	Coil - for wdg. wire trap coil	.01
112101	Coil - for wdg. wire trap coil	.01
112102	Coil - for wdg. wire trap coil	.01
112103	Coil - for wdg. wire trap coil	.01
112104	Coil - for wdg. wire trap coil	.01
112105	Coil - for wdg. wire trap coil	.01
112106	Coil - for wdg. wire trap coil	.01
112107	Coil - for wdg. wire trap coil	.01
112108	Coil - for wdg. wire trap coil	.01
112109	Coil - for wdg. wire trap coil	.01
112110	Coil - for wdg. wire trap coil	.01
112111	Coil - for wdg. wire trap coil	.01
112112	Coil - for wdg. wire trap coil	.01
112113	Coil - for wdg. wire trap coil	.01
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112198	Coil - for wdg. wire trap coil	.01
112199	Coil - for wdg. wire trap coil	.01
112200	Coil - for wdg. wire trap coil	.01

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

MODEL 97-56-S CHASSIS RECEIVER MODELS 97-561 to 97-569

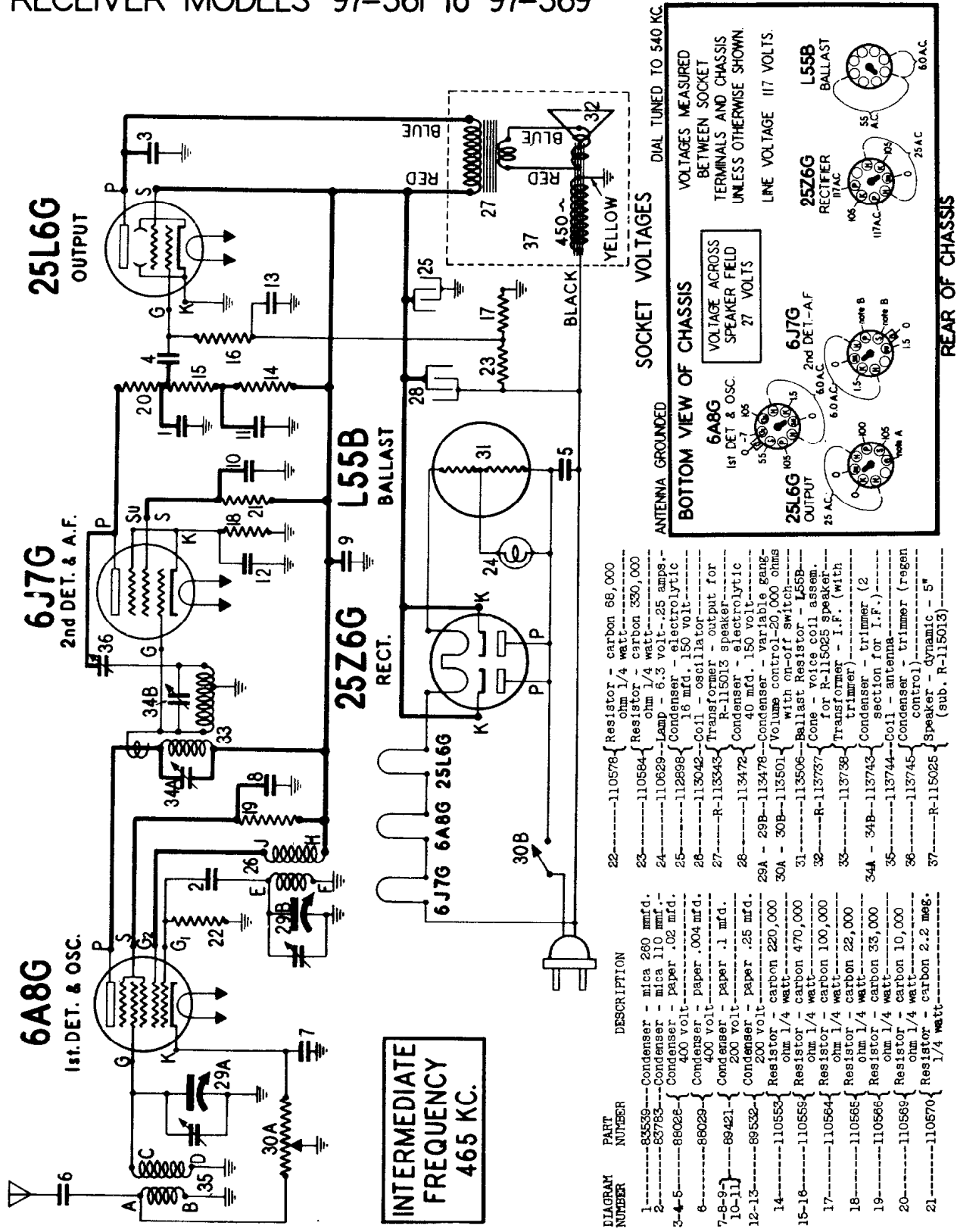
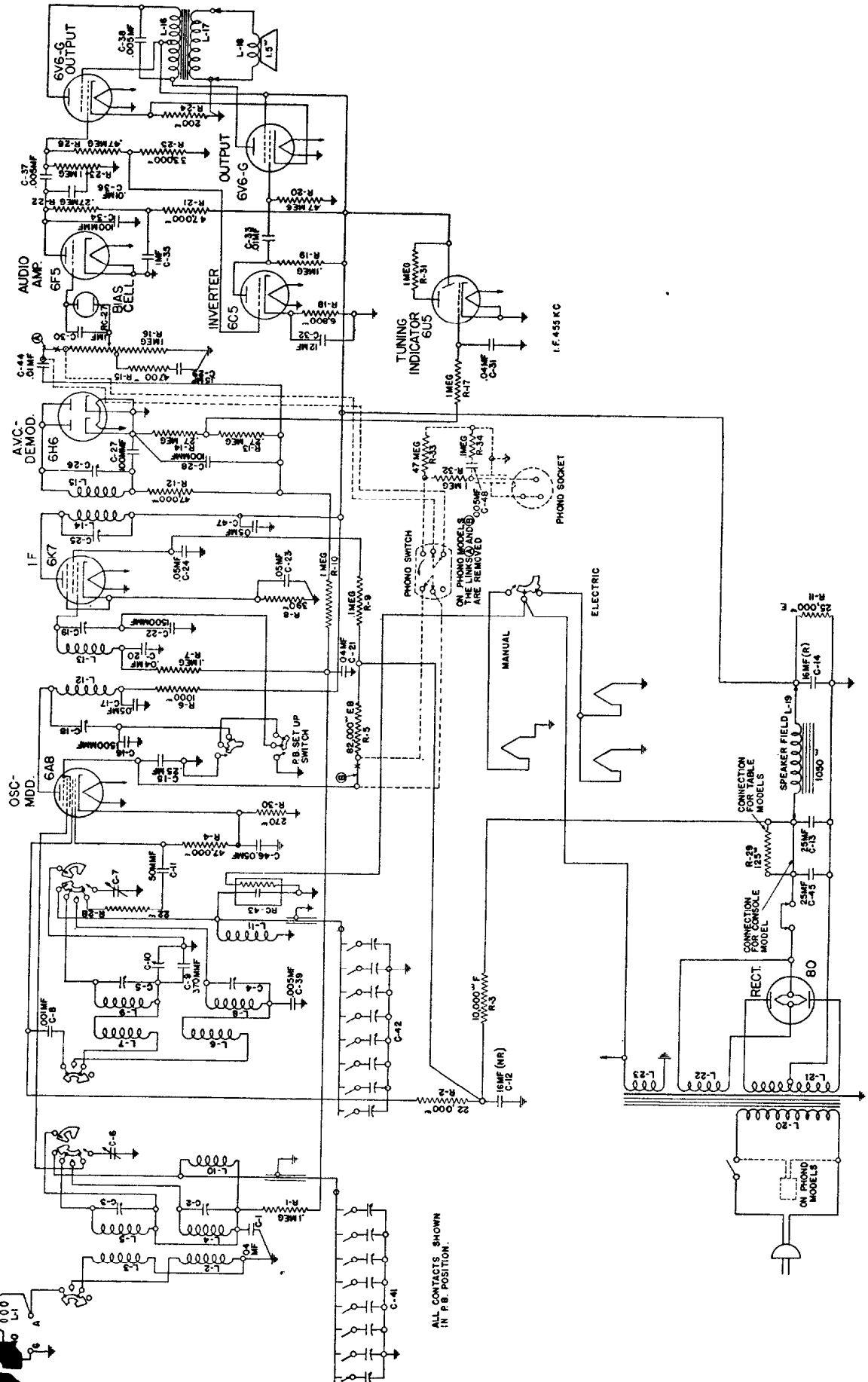


DIAGRAM NUMBER	PART NUMBER	DESCRIPTION
1	63539	Condenser - mica 260 mmfd.
2	63783	Condenser - mica 110 mmfd.
3-4-5	89028	Condenser - paper .02 mfd.
6	89029	Condenser - paper .004 mfd.
7-8-9	89421	Condenser - paper .1 mfd.
10-11	89532	Condenser - paper .25 mfd.
12-13	110553	Resistor - carbon 220,000 ohm 1/4 watt
14	110559	Resistor - carbon 470,000 ohm 1/4 watt
15-16	110564	Resistor - carbon 100,000 ohm 1/4 watt
17	110565	Resistor - carbon 22,000 ohm 1/4 watt
18	110566	Resistor - carbon 35,000 ohm 1/4 watt
19	110569	Resistor - carbon 10,000 ohm 1/4 watt
20	110570	Resistor - carbon 2.2 meg. 1/4 watt
21	110578	Resistor - carbon 68,000 ohm 1/4 watt
22	110584	Resistor - carbon 330,000 ohm 1/4 watt
23	110629	Lamp - 6.3 volt - 25 amps.
24	112898	Condenser - electrolytic 16 mfd. 150 volt
25	113042	Coil oscillator
26	R-113343	Transformer - output for R-115013 speaker
27	113472	Condenser - electrolytic 40 mfd. 150 volt
28	113478	Volume control - variable gang
29A	29B-113501	with on-off switch
30A	30B-113506	Ballast Resistor - L55B
31	R-113737	Cone - voice coil assem. for R-115025 speaker
32	113738	Transformer - I.F. (with trimmer)
33	34A-113743	Condenser - trimmer (2 section for I.F.)
34A	113744	Coil - antenna
35	113745	Condenser - trimmer (regen control)
36	R-115025	Speaker - dynamic - 5" (sub. R-115013)
37		

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Stromberg-Carlson Nos. 340 and 341 Radio Receivers

STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY
ROCHESTER, NEW YORK



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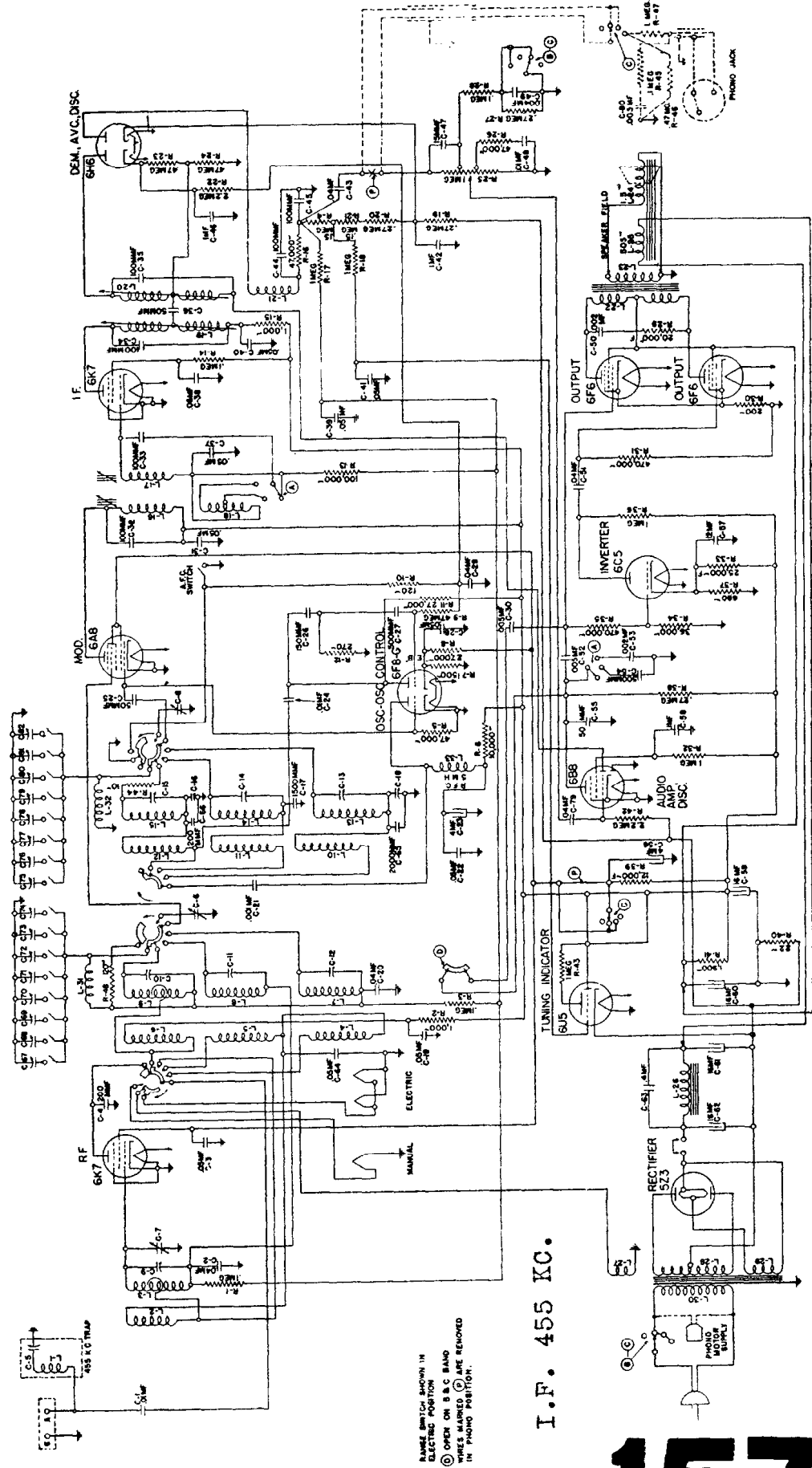
COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

Stromberg-Carlson No. 350 Radio Receivers

STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY
ROCHESTER, NEW YORK

ELECTRICAL SPECIFICATIONS

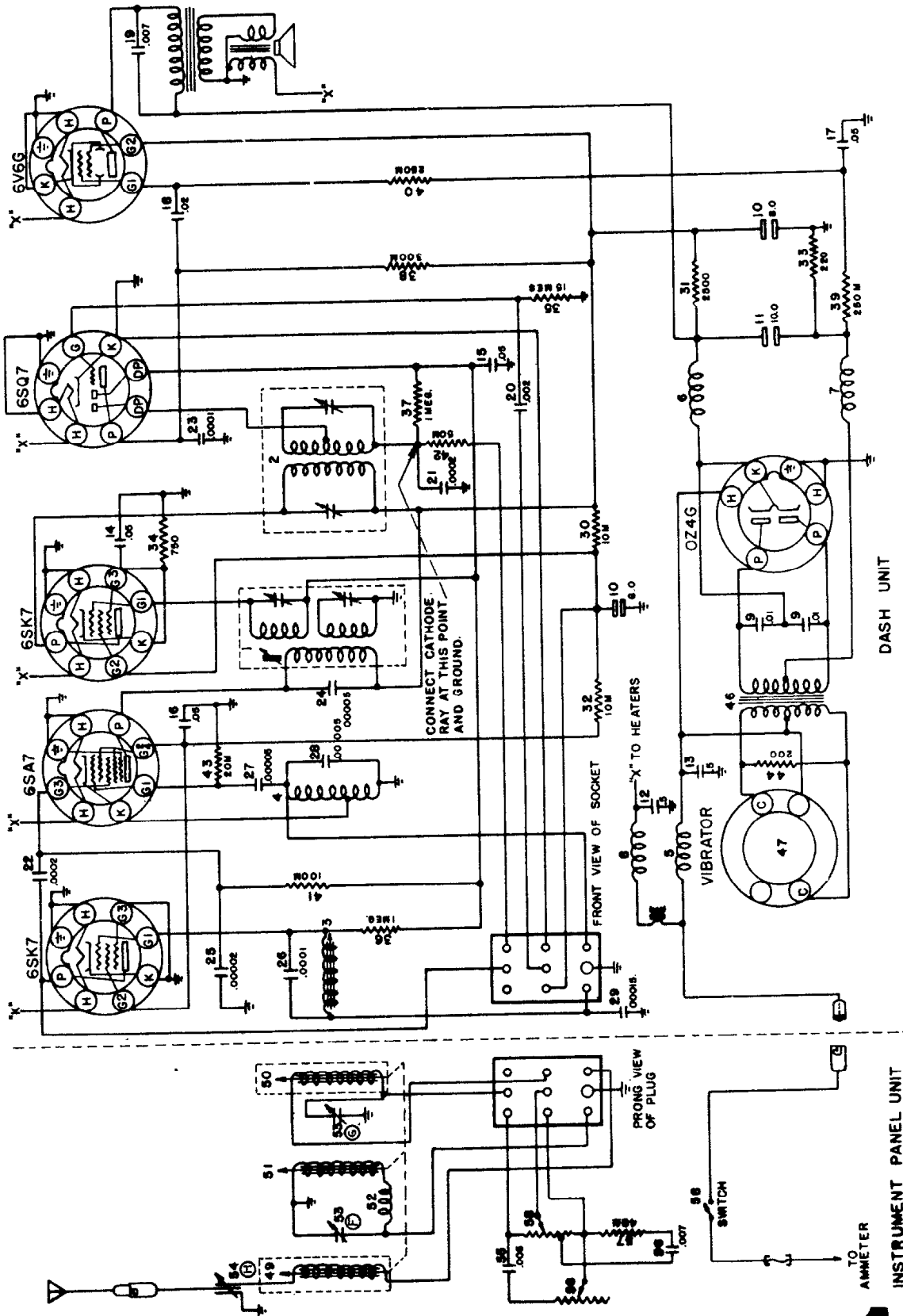
Type of Circuit Superheterodyne with A. F. C. Electric Tuning
Tuning Ranges A—530 to 1700 Kc.; B—1700 to 5600 Kc.; C—5600 to 18,000 Kc.



I.F. 455 KC.

NAME SWITCH SHOWN IN
ELECTRIC POSITION
⊙ OPEN ON B & C BAND
WIRE MARKED ⊕ ARE REMOVED
IN PHONO POSITION.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



DELCO MODEL R-678 CIRCUIT DIAGRAM

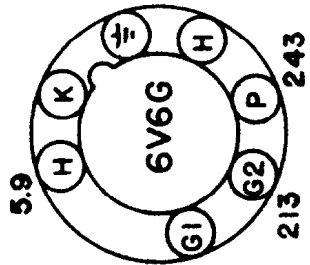
I.F. 455 IC.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

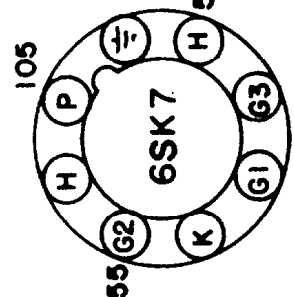
SERVICE INSTRUCTIONS--DELCO MODEL R-678--Cont'd.

Tuning is accomplished by means of the conventional manual control or by means of five push-buttons which mechanically adjust the position of the iron cores in the tuning coils, tuning the radio to preselected frequencies

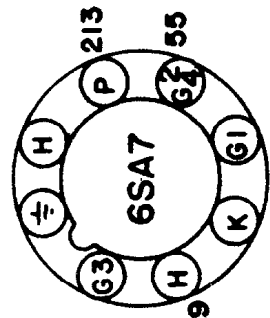
UNITED MOTORS SERVICE INCORPORATED



6V6G

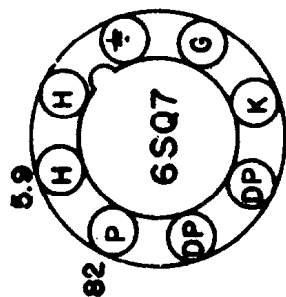


6SK7

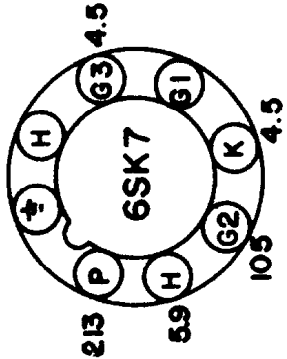


6SA7

VOLTAGE READINGS TAKEN BETWEEN SOCKET
TERMINALS AND GROUND WITH D.C. VOLTMETER
HAVING RESISTANCE OF 1000 OHMS PER VOLT.
ALL READINGS TAKEN WITH 5.9 FILAMENT VOLTAGE
AT TUBES.




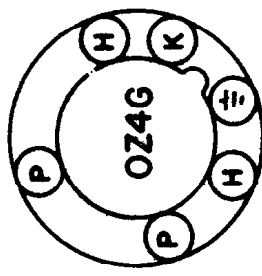
6SQ7



6SK7

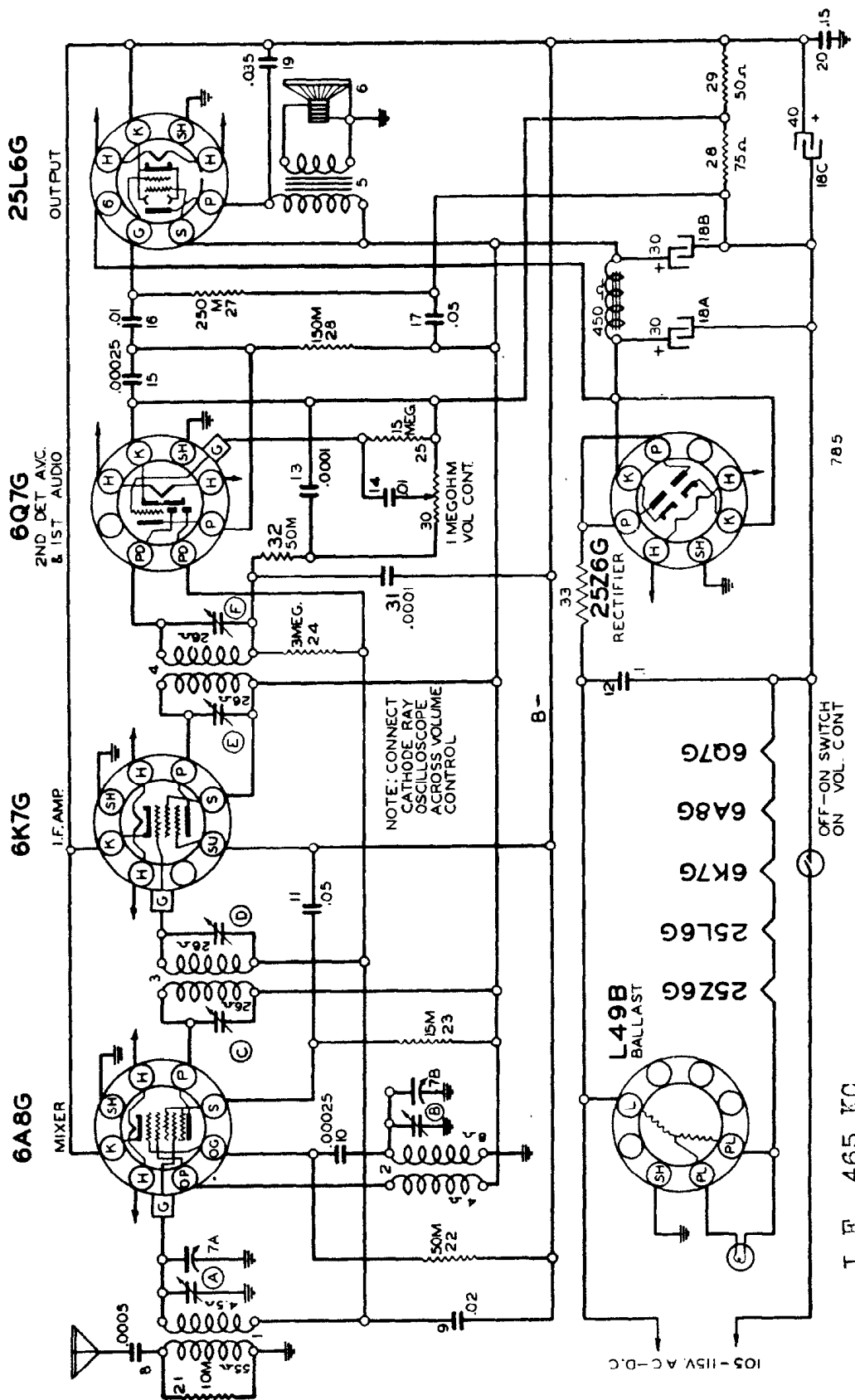
CURRENT DRAIN WITH SPEAKER & DIAL LIGHT 6.7 AMPS.
"B" SUPPLY DRAIN 50 M.A.





OZ4G

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

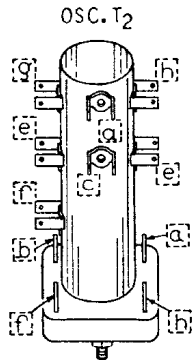
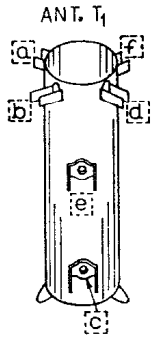


DELCO MODELS R-1134-35-39 CIRCUIT DIAGRAM

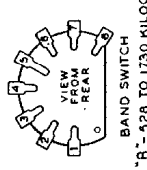
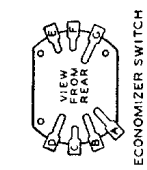
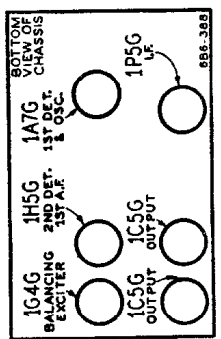
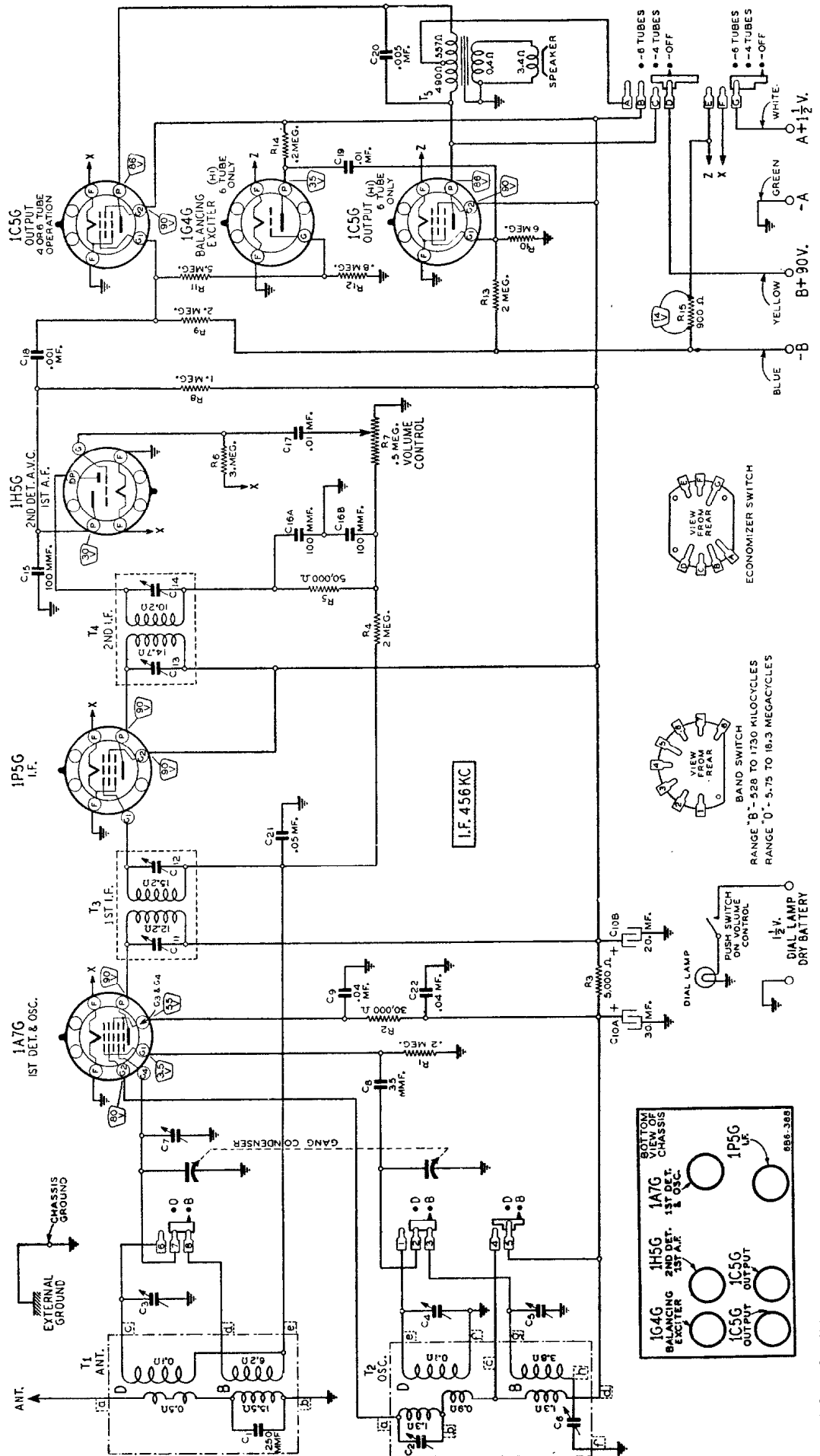
United Motors Service, Inc.
 3044 West Grand Blvd.
 Detroit, Mich.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

COIL TERMINALS



166 Truetone Model D934



BAND SWITCH
RANGE "B" - 528 TO 1730 KILOCYCLES
RANGE "O" - 5.75 TO 18.3 MEGACYCLES

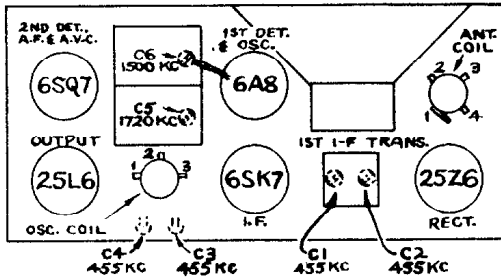
Westinghouse Radio Model WR-165

Five-Tube, Single-Band, AC-DC, Superheterodyne Receiver

Alignment Procedure

Output Meter Alignment.—Connect the meter across the voice coil, and turn the receiver volume control to maximum.

Test-Oscillator.—Connect the low side of the test-oscillator to the receiver chassis, through a .01 mfd. capacitor, and keep the output as low as possible. The antenna should be rolled up and kept at least one foot from chassis during alignment.



Trimmer Locations

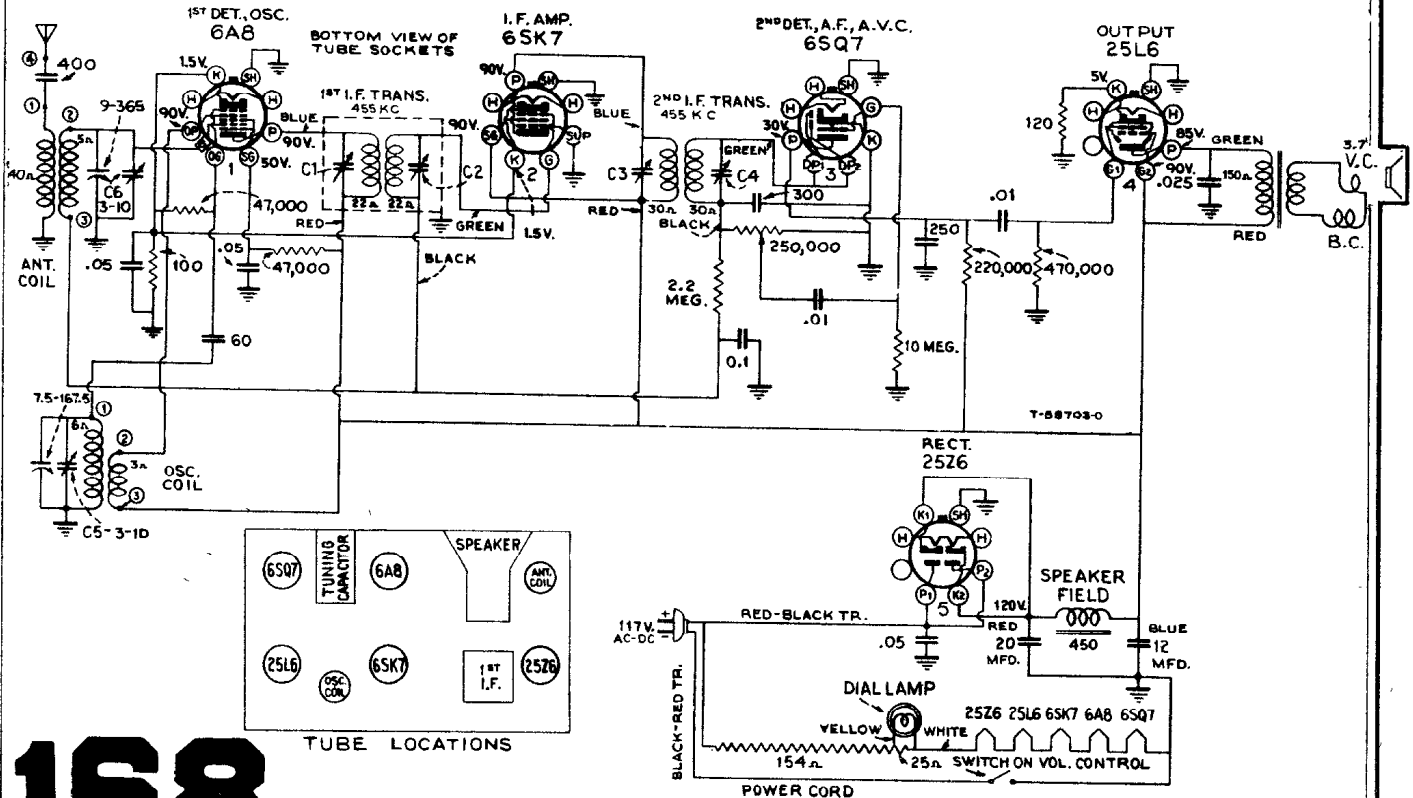
Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output—
1	6A8 1st-Det. grid cap, in series with .01 mfd.	455 kc	Quiet point at 1,600 kc end of dial	C1, C2, C3, C4 (1st and 2nd I-F transformers)
2	Antenna term. of ant. trans. in series with 100 mmfd.	1,720 kc	Full clockwise (out of mesh)	C5 (oscillator)
3		1,500 kc	Resonance on 1,500 kc signal.	C6 (antenna)

INTERMEDIATE FREQUENCY..... 455 kc
 POWER OUTPUT (125 volt, 60 cycle supply)
 Undistorted..... 1.5 watts
 Maximum..... 2.0 watts
 LOUDSPEAKER
 Type..... 4-inch Electrodynamic

Power-Supply Polarity.—For operation on d-c, the power plug must be inserted in the outlet for correct polarity. If the set does not function, reverse the plug. On a-c, reversal of the plug may reduce hum.

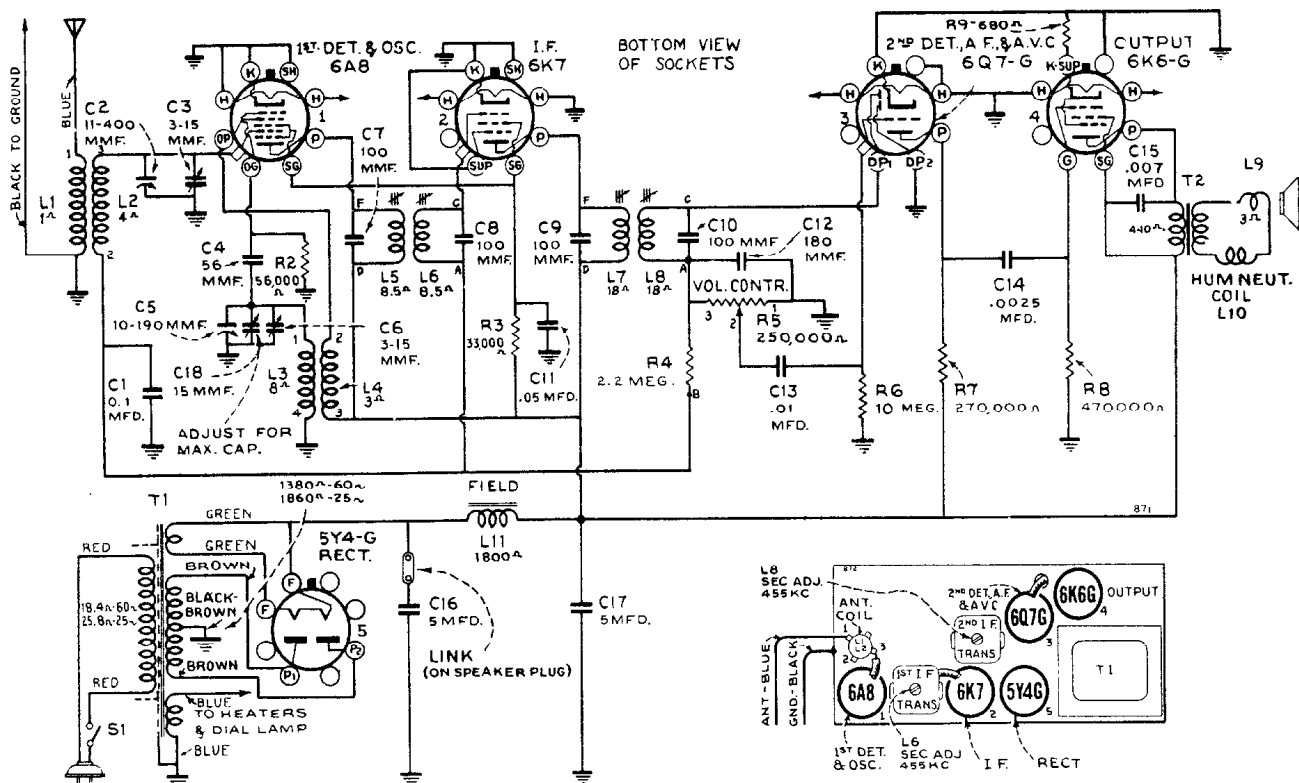
Resistor in Power Cord.—The power cord contains a resistor which becomes warm during operation.

Antenna.—The set is equipped with length of antenna wire. Do not connect the antenna to ground. If an outdoor antenna is used, it should not be longer than 100 feet, including lead-in. If it is longer, connect a 100 to 200 mmfd. capacitor in series with the lead-in.



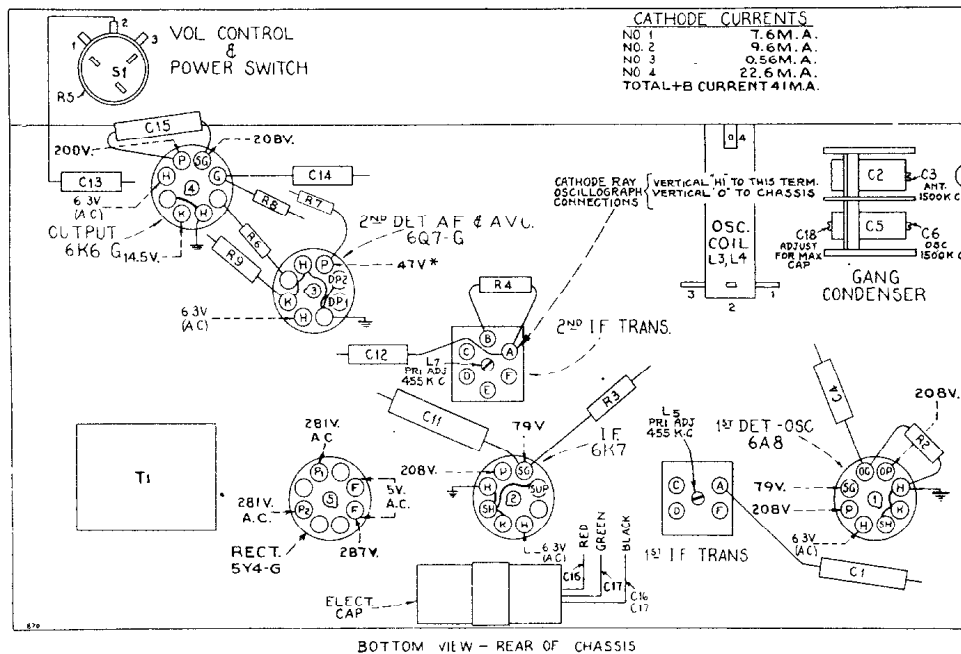
TUBE LOCATIONS

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Model WR-256

Five-Tube, Single-Band, Superheterodyne Receiver



BOTTOM VIEW - REAR OF CHASSIS

Tube Socket Voltages and Location of Parts

* Note: Values with star (*) are operating voltages. Values not starred are actual measured voltages.

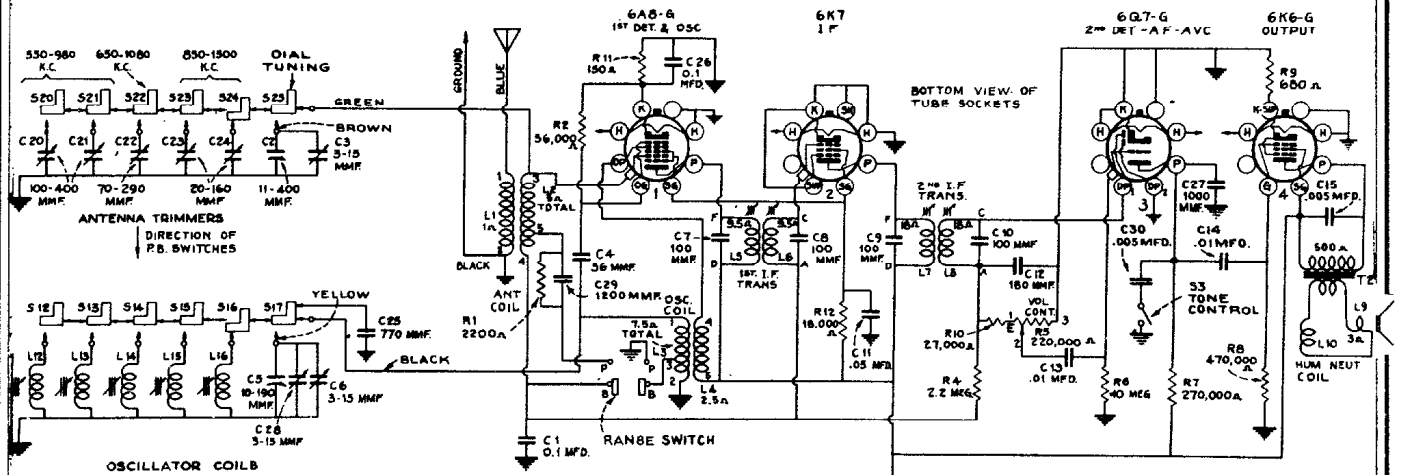
Measurements made to chassis unless otherwise indicated. Measurements made with set tuned to quiet point, volume control at minimum, using 1,000-ohm-per-volt meter, having ranges of 10, 50, 250, and 500 volts. (Use nearest range above the specified measured voltage.) Values should hold within approximately ± 20% for 117-volt 60-cycle supply.

WESTINGHOUSE
ELECTRIC SUPPLY COMPANY

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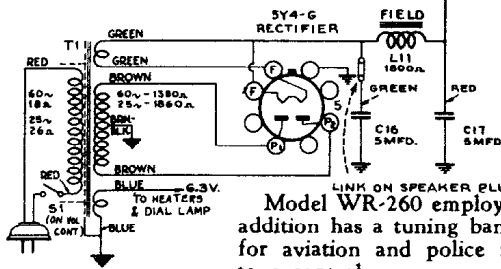
COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

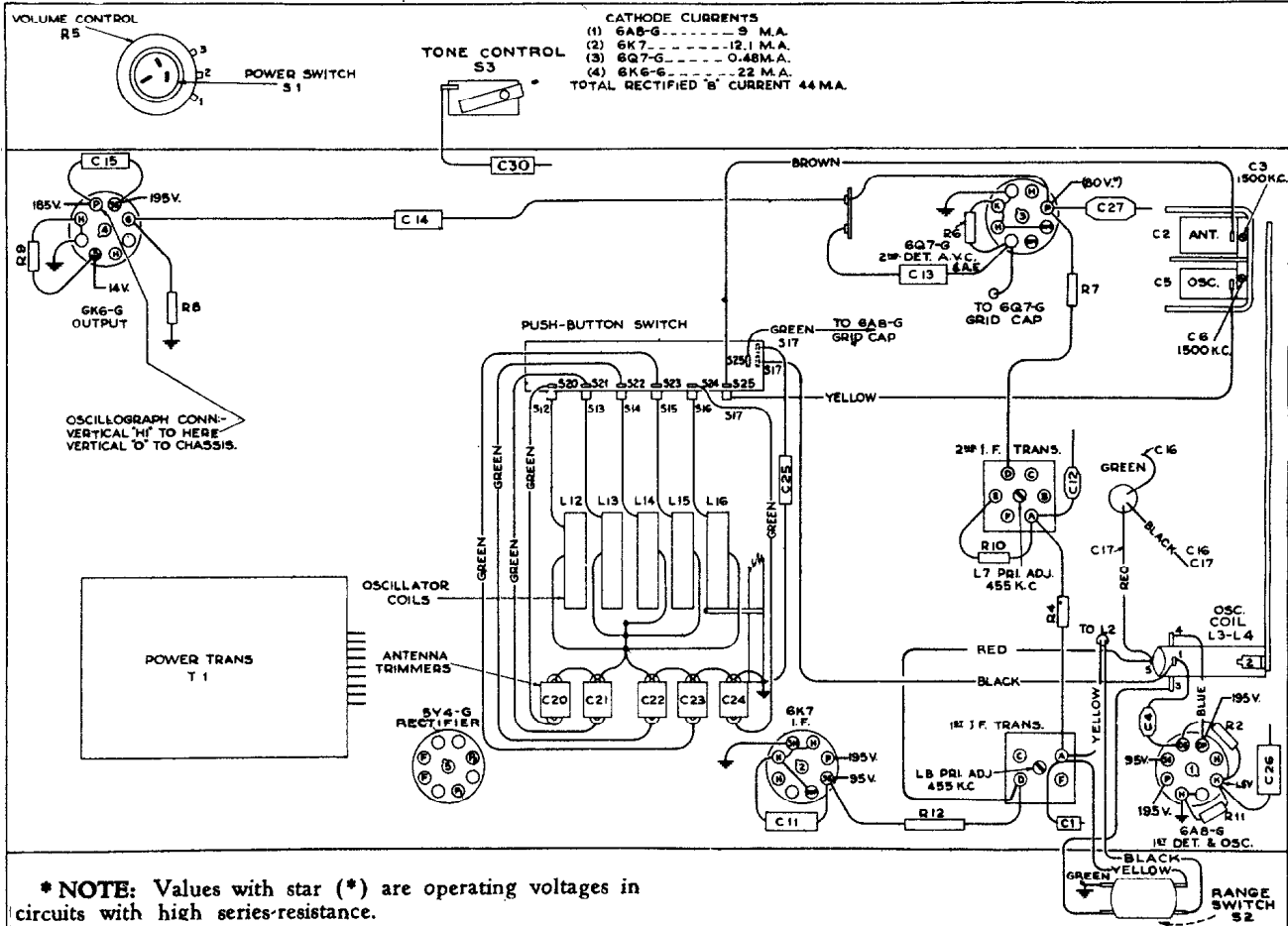


WR-258 WR-260

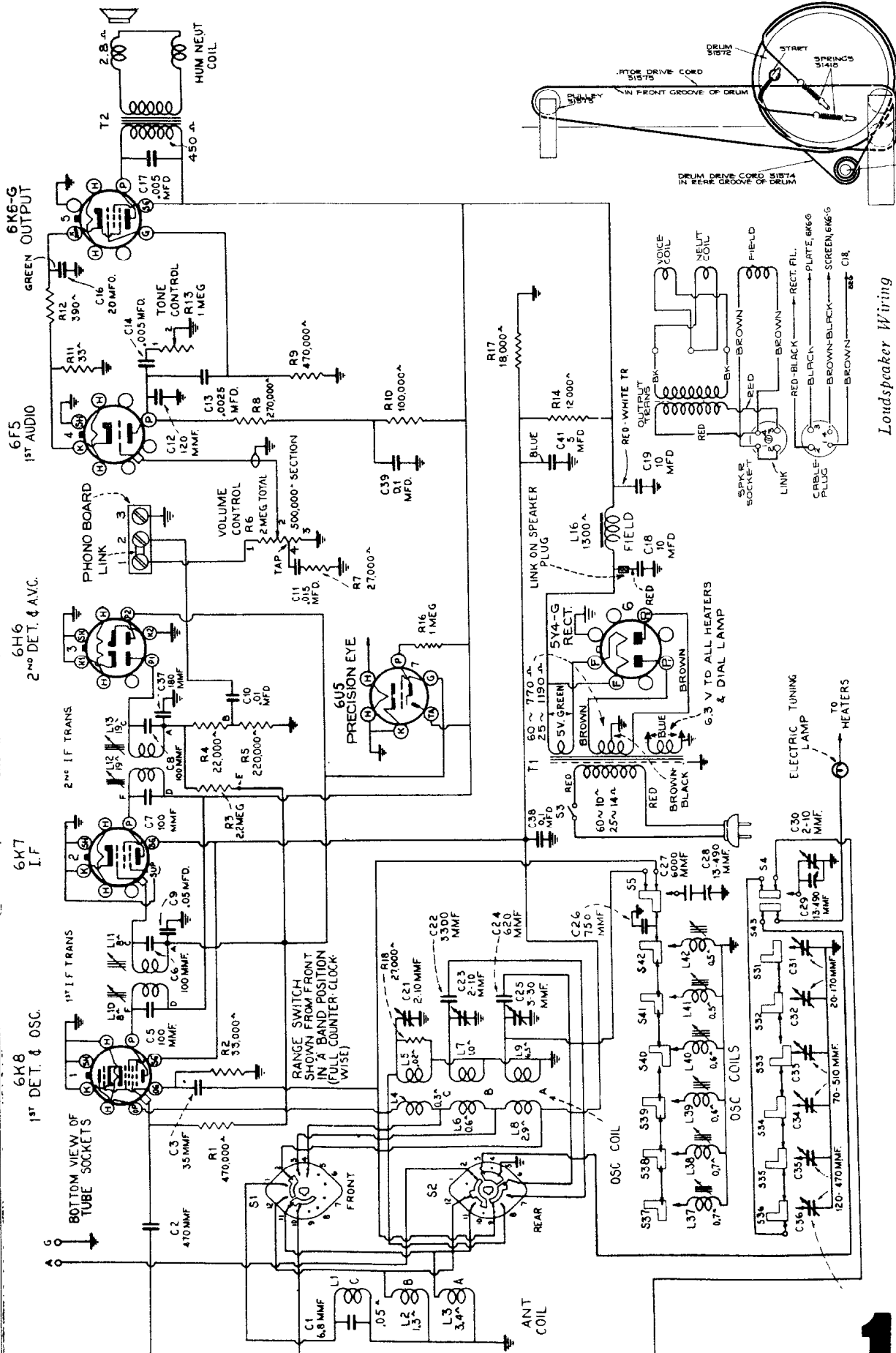
Westinghouse
Radio



Model WR-260 employs all features of the WR-258 and in addition has a tuning band covering from 1,550 to 3,500 kc for aviation and police reception. It also has a two-point tone control.



MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



Westinghouse Radio Model WR-264

Loudspeaker Wiring

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Cathode-Ray Alignment is the preferable method. Connections for the oscillograph are shown in the chassis drawing.

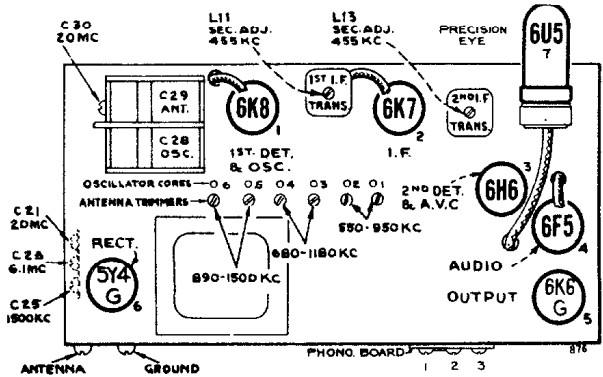
Output Meter Alignment.—If this method is used, connect the meter across the voice-coil, and turn the receiver volume control to maximum.

Test-Oscillator.—For all alignment operations, connect the low side of the test-oscillator to the receiver chassis, and keep the output as low as possible to avoid a-v-c action.

Calibration Scale on Indicator - Drive - Cord Drum.—The tuning dial is fastened in the cabinet and cannot be used for reference during alignment, therefore, a calibration scale is attached to the rear of the drum which is mounted on the front shaft of the gang condenser. The setting of the gang condenser is read on this scale, which is calibrated in degrees. The correct setting of the gang in degrees, for each alignment frequency, is given in the alignment table.

As the first step in r-f alignment, check the position of the drum. The 180° mark on the drum scale must be vertical, and directly over the center of the gang-condenser shaft when the plates are fully meshed. The distance from the front of the chassis to the drum must not exceed 3/8-inch. The drum is held to the shaft by means of two set screws, which must be tightened securely when the drum is in the correct position.

Pointer for Calibration Scale.—Improvise a pointer for the calibration scale by fastening a piece of wire to the gang-condenser frame, and bend the wire so that it points to the "180°" mark on the calibration scale when the plates are fully meshed.



Tube and Trimmer Locations

Dial-Indicator Adjustment.—After fastening the chassis in the cabinet, attach the dial indicator to the drive cable with indicator at the 530 kc mark, and gang condenser fully meshed. The indicator has a spring clip for attachment to the cable.

After completion of alignment, seal the i-f core-adjusting screws with household cement.

The dial tuning (right hand) push button must be pushed in for steps 1 to 5 inclusive.

Steps	Connect the high side of test-osc. to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output
1	6K7 I-F grid cap, in series with .01 mfd.	455 kc	"A" band, Quiet Point between 550-750 kc	L12 and L13 (2nd I-F Trans.)
2	6K8 det. grid cap, in series with .01 mfd.	455 kc		L10 and L11 (1st I-F Trans.)
3	Antenna Terminal, in series with 400 ohms	20 mc	20 mc (23°) "C" band	C21 (osc.)* C30 (ant.）**
4	Antenna Terminal, in series with 400 ohms	6.1 mc	6.1 mc (31°) "B" band	C23 (osc.)†
5	Antenna Terminal, in series with 200 mmf.	1,500 kc	1,500 kc (28 1/2°) "A" band	C25 (osc.)
6	Follow "Adjustments for Electric Tuning"			

* Use minimum capacity peak if two peaks can be obtained.

** Rock gang slightly and use maximum capacity peak if two peaks can be obtained with C30. Check to determine that C21 has been adjusted to the correct peak by tuning to approximately 28° (19.09 mc), where a weaker signal should be received.

† Use minimum capacity peak if two peaks can be obtained. Check to determine that C23 has been adjusted to the correct peak by turning to approximately 49° (5.19 mc), at which point a weaker signal should be received.

ADJUSTMENTS FOR ELECTRIC TUNING

This receiver has seven push buttons. The right-hand button connects the gang condenser for manual tuning. The other six buttons are for electric tuning of six different stations in the standard-broadcast range. The station buttons connect to separate permeability tuned oscillator coils and separate antenna trimmers which must be adjusted for the

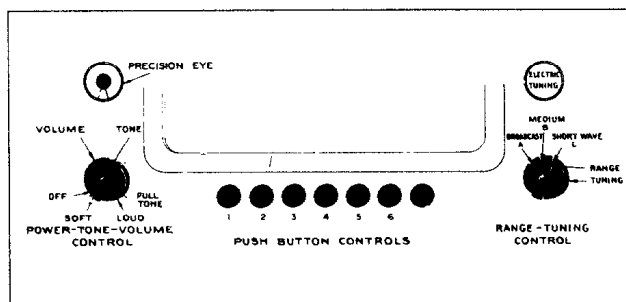
desired stations. Use an insulated screwdriver or alignment tool for making adjustments. Allow at least five minutes warm-up period before making adjustments.

The procedure is as follows:

1. Make a list of the desired six stations, arranged in order from low to high frequencies. See "Tube and Trimmer Locations" view for frequency coverage of each button.
2. Push in the dial-tuning button, and manually tune in the first station on the list.
3. Push in station button No. 1 (left) and adjust No. 1 oscillator core (L37) to receive this station. Screw the core all the way in, to lowest frequency, and then unscrew slowly until station is received.
4. Adjust No. 1 antenna trimmer (C36) for maximum output on this station.

Clockwise adjustment of cores and trimmers tunes the circuits to lower frequencies.

5. Adjust for each of the remaining five stations in the same manner.
6. Make a final careful adjustment of the oscillator cores and antenna trimmers. Use the Precision Eye to ensure sharp peaking.

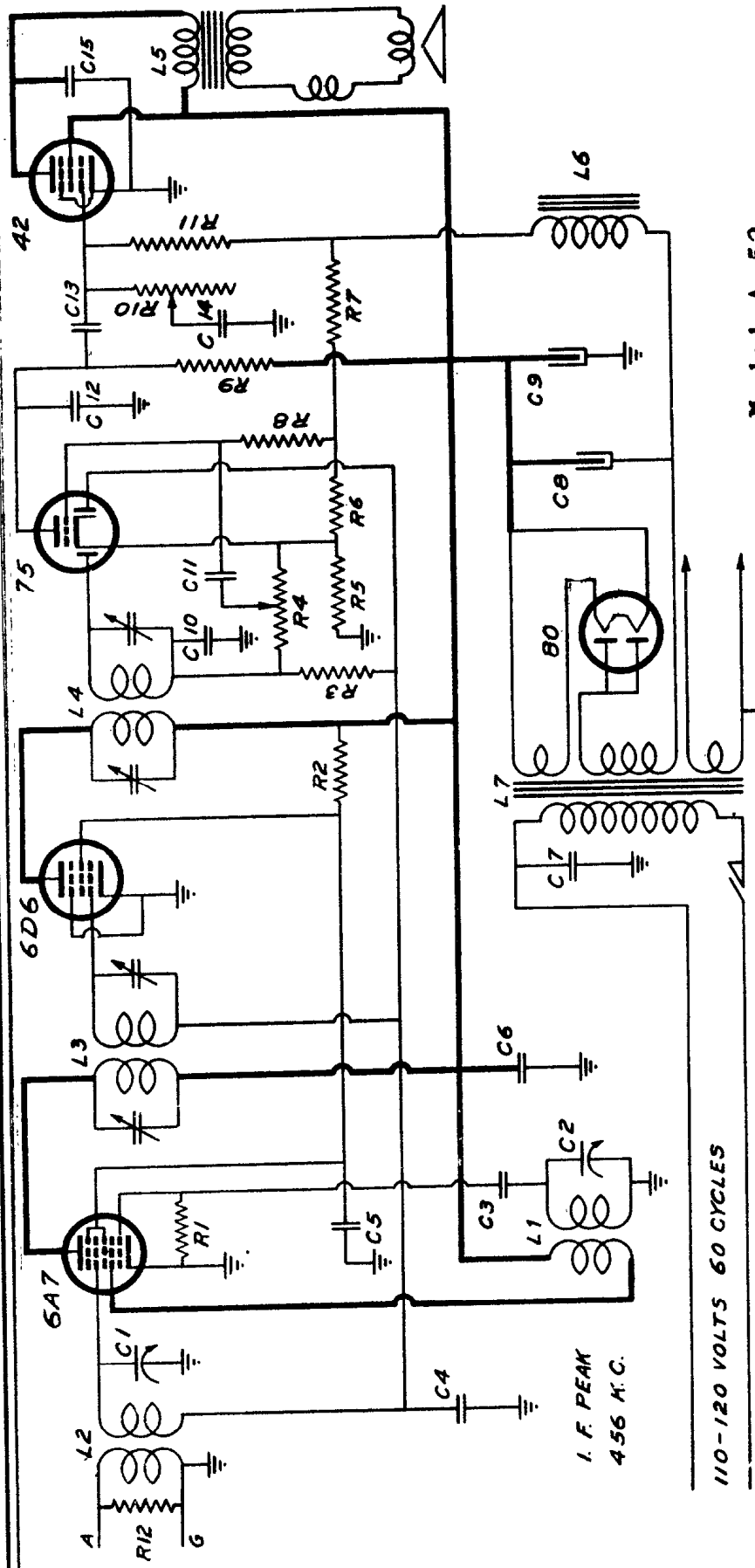


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Westinghouse
Model WR-264

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

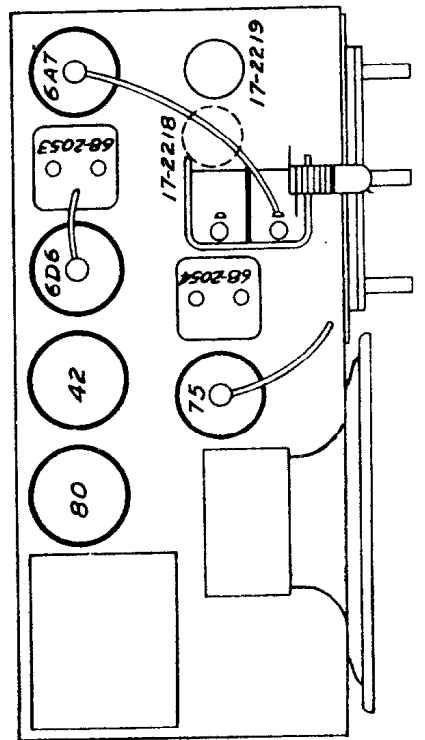
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



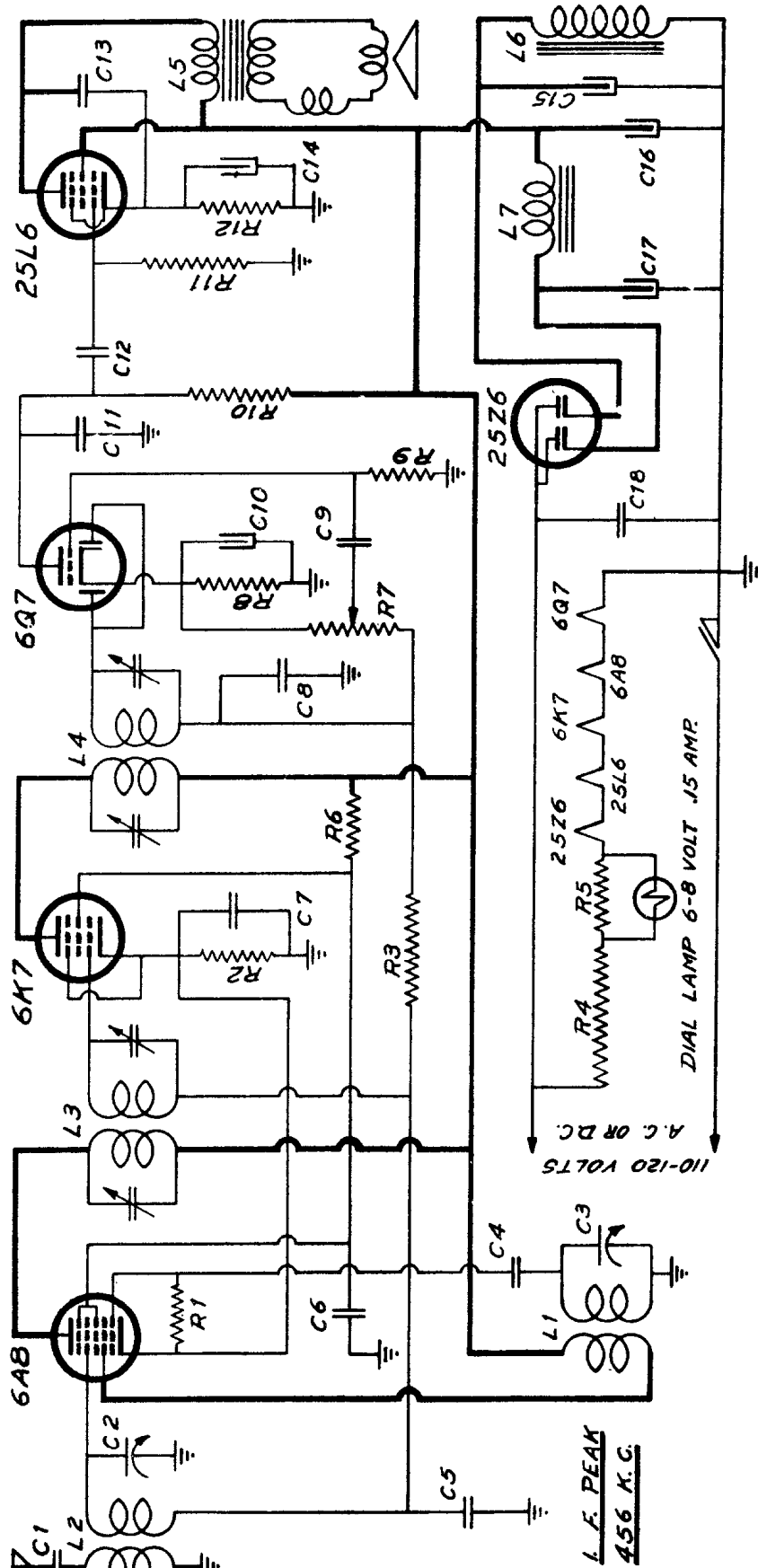
Model A-52

CODE OF SCHEMATIC DIAGRAM

Wilcox-Gay Corporation, Charlotte, Mich.
SOCKET LAYOUT



- RESISTORS**
- R1 53-898
 - R2 53-941
 - R3 53-926
 - R4 19-2007
 - R5 53-2019
 - R6 53-925
 - R7 53-924
 - R8 19-2009
 - R9 53-925
 - R10 53-925
 - R11 53-925
 - R12 53-925
- CONDENSERS**
- C1, C2 17-2014 Two Gang Variable Condenser
 - C3 76-2002 50 Mfd., Mica Condenser
 - C4 75-2005 .1 Mfd., 200 V. Paper Condenser
 - C5 75-2005 .1 Mfd., 200 V. Paper Condenser
 - C6 76-2005 .1 Mfd., 200 V. Paper Condenser
- INDUCTANCES**
- L1 17-2218 Oscillator Coil Assembly
 - L2 17-2219 Preset/selector Coil Assembly
 - L3 68-2053 First I.F. Trans. Assembly
 - L4 68-2054 Second I.F. Trans. Assembly
 - L5 64-2057 6X6 Speaker, Output Trans. for 42 Tube
 - L6 64-2057 1500 Ohm Speaker Field
 - L7 80-2009 Power Transformer
- COND. (Cont.)**
- C7 75-2003 .01 Mfd., 400 V. Paper Cond.
 - C8 18-2014 8 Mfd., 500 W.V. Electro. Cond.
 - C9 18-2013 4 Mfd., 500 W.V. Electro. Cond.
 - C10 78-307 .0005 Mfd. Mica Condenser
 - C11 75-2003 .01 Mfd., 400 V. Paper Cond.
 - C12 75-2014 .001 Mfd., 600 V. Paper Cond.
 - C13 75-2003 .01 Mfd., 400 V. Paper Cond.
 - C14 75-2003 .01 Mfd., 400 V. Paper Cond.
 - C15 75-2002 .004 Mfd., 600 V. Paper Cond.



Wilcox-Gay Corporation, Charlotte, Mich.

Model A-53

- RESISTORS
- R1 58-286 50,000 Ohm 1/4 Watt Resistor
 - R2 58-1062 250 Ohm 1/2 Watt Resistor
 - R3 58-926 1 Meg Ohm 1/4 Watt Resistor
 - R4 20-2011 154 Ohm 1/4 Watt Resistor
 - R5 58-2018 28 Ohm 2.5 Watt Resistor
 - R6 58-1042 25,000 Ohm 1/4 Watt Resistor
 - R7 19-2012 500,000 Ohm Volume Cont. & Switch
 - R8 58-918 5,000 Ohm 1/4 Watt Resistor
 - R9 58-925 500,000 Ohm 1/4 Watt Resistor
 - R10 58-924 250,000 Ohm 1/4 Watt Resistor
 - R11 58-925 500,000 Ohm 1/4 Watt Resistor
 - R12 58-2014 200 Ohm 1/4 Watt Resistor

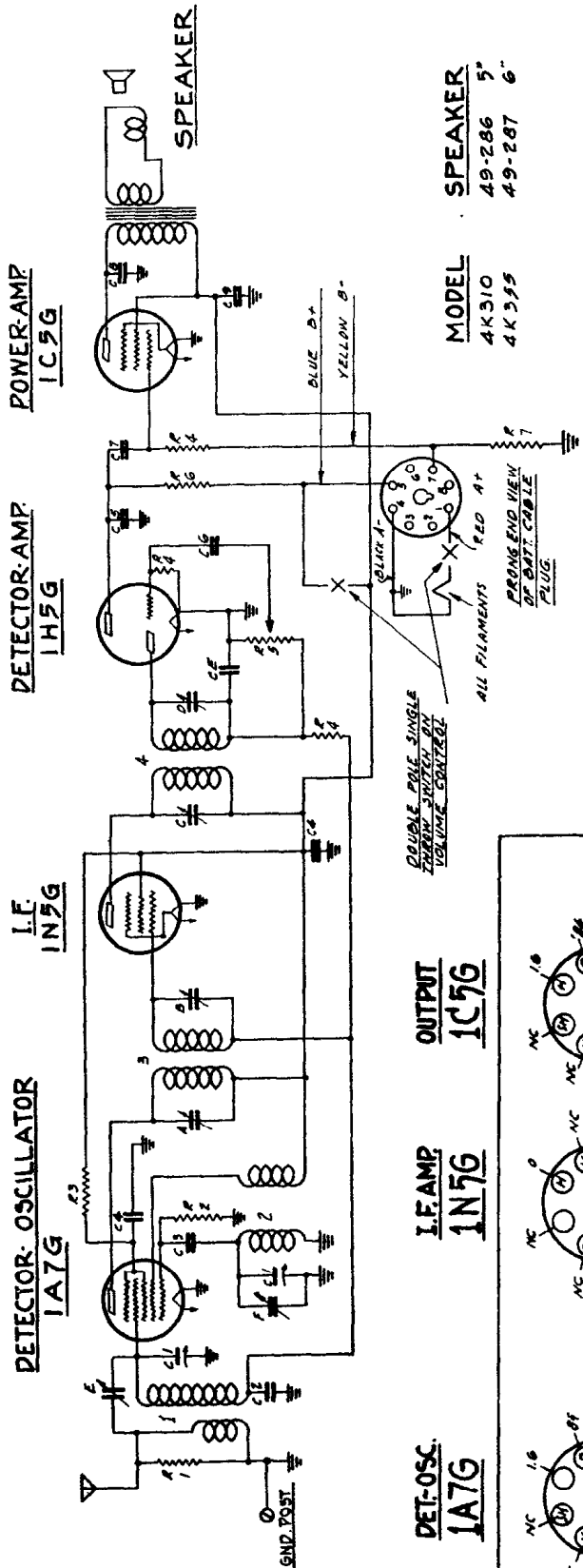
- CONDENSERS
- C1 75-2003 .01 Mfd 400 V. Paper Cond.
 - C2, C3 77-2015 Two Gear Variable Condenser
 - C4 .00005 Mfd Mica Condenser
 - C5 75-2005 .1 Mfd 200 V. Paper Cond.
 - C6 75-2005 .1 Mfd 200 V. Paper Cond.
 - C7 75-2005 .1 Mfd 200 V. Paper Cond.
 - C8 76-507 .0005 Mfd Mica Condenser
 - C9 75-2003 .01 Mfd 400 V. Paper Cond.
 - C10 16-2012 10 Mfd 25 W. V. Dry Elect. Cond.
 - C11 75-2014 .001 Mfd 600 V. Paper Cond.
 - C12 75-2003 .01 Mfd 400 V. Paper Cond.
 - C13 75-2001 .002 Mfd 600 V. Paper Cond.
 - C14 19-2012 10 Mfd 25 W.V. Dry Elect. Cond.

- C15 18-2011 8 Mfd 150 W.V. Dry Elect. Cond.
- C16 18-2011 8 Mfd 150 W.V. Dry Elect. Cond.
- C17 13-2010 15 Mfd 160 W.V. Dry Elect. Cond.
- C18 75-2005 .1 Mfd 200 V. Paper Condenser
- L1 17-2232 Oscillator Coil Assembly
- L2 17-2230 Preselector Coil Assembly
- L3 68-2055 First I.F. Trans. Assembly
- L4 68-2052 Second I.F. Trans. Assembly
- L5 64-2043 5" Speaker, Output Trans. for 25L6 Tube
- L6 64-2043 3000 Ohm Field on L5
- L7 14-2002 1 1/2 Henry Filter Choke

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Models 4K310, 4K331, 4K355

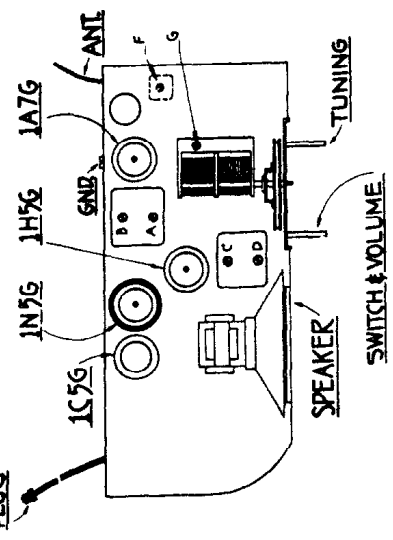
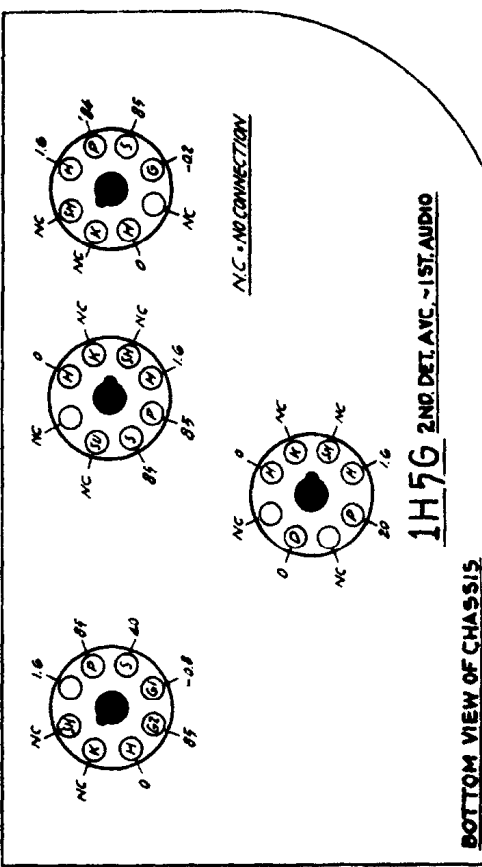
CHASSIS No. 5412



MODEL	SPEAKER
4K310	49-286 5"
4K355	49-287 6"

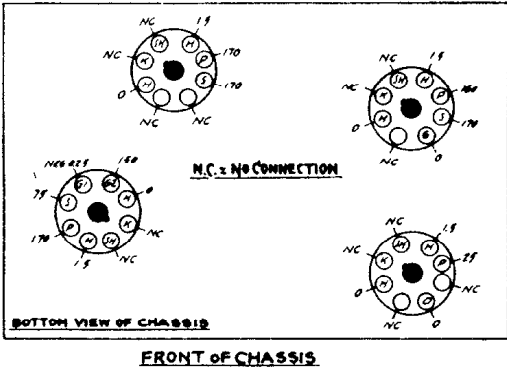
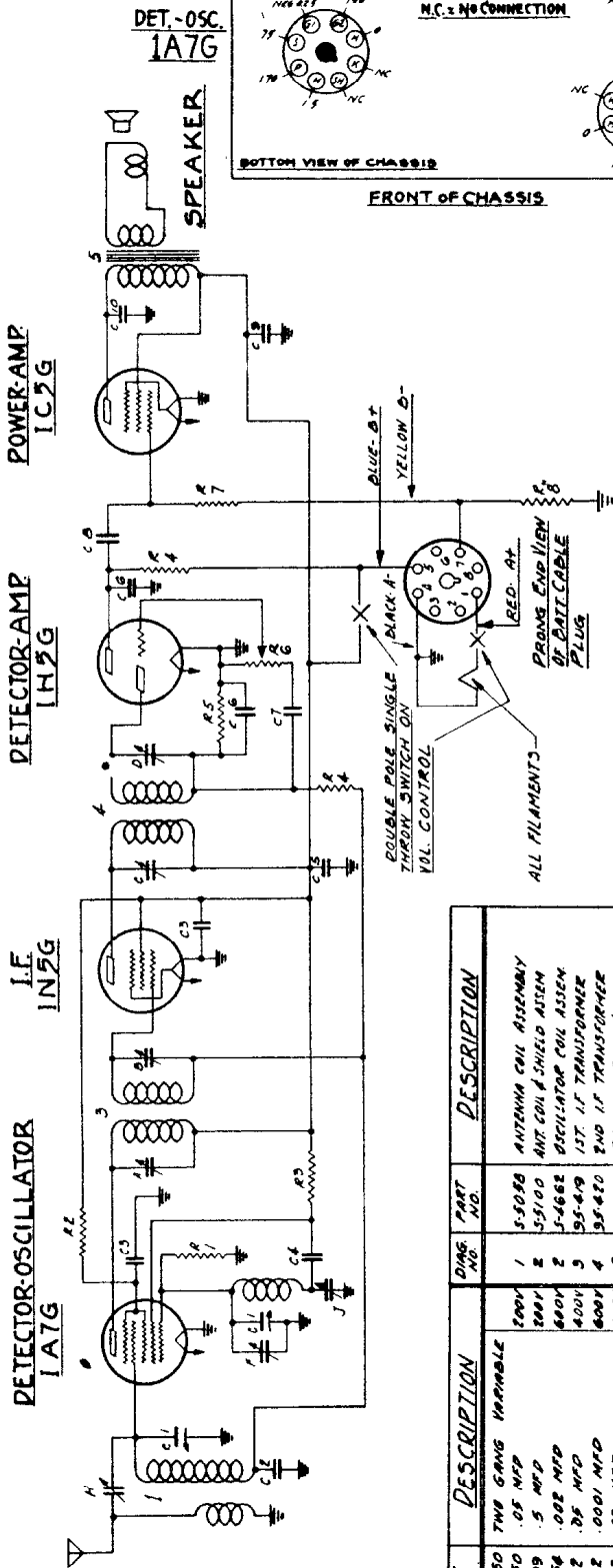
PART NO.	DESCRIPTION
3-5704	ANTENNA COIL ASSEMBLY
3-6301	OSCILLATOR COIL ASSEMBLY
95-573	1ST. I.F. TRANSFORMER
95-570	2ND. I.F. TRANSFORMER
	SPEAKER TRANS. (ON SPEAKER)
1E-308	1ST. I.F. TRANS. PRIMARY
	1ST. I.F. TRANS. SECONDARY
	2ND. I.F. TRANS. PRIMARY
	2ND. I.F. TRANS. SECONDARY
	ANTENNA TUNING
	BROADCAST OSC. (ON GRAYS)

Q.M.S. PART NO.	DESCRIPTION	RESISTANCE
C-1	2 GANG VARIABLE	200V
C-2	.05 MFD	600V
C-3	.00025 MFD	400V
C-4	.05 MFD	600V
C-5	.0001 MFD	200V
C-6	.01 MFD	400V
C-7	.01 MFD	600V
C-8	.001 MFD	600V
C-9	.01 MFD DRY ELER.	150
R-1	4700 OHM	1/4W
R-2	180 M OHM	1/4W
R-3	88 M OHM	1/4W
R-4	2.2 MEG OHM	1/4W
R-5	400 M OHM VOLT. CONT. & SW. RES.	1/4W
R-6	1 MEG OHM	1/4W
R-7	1000 OHM	1/4W



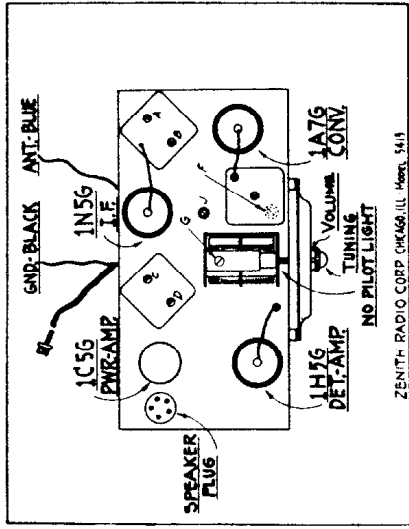
I.F. FREQUENCY 455 K.C.
 4 TUBE BATTERY SUPERHETERODYNE
 CHASSIS NO. 5412
 ZENITH RADIO CORPORATION
 CHICAGO ILLINOIS

All voltages measured from point indicated to chassis using a 1000 ohm per volt meter.
 Antenna disconnected — volume control at minimum and condenser plates in full mesh.



OUTPUT
1C5G

2ND DET. & I.F. STAGE
1N5G



Location of tubes and trimmers

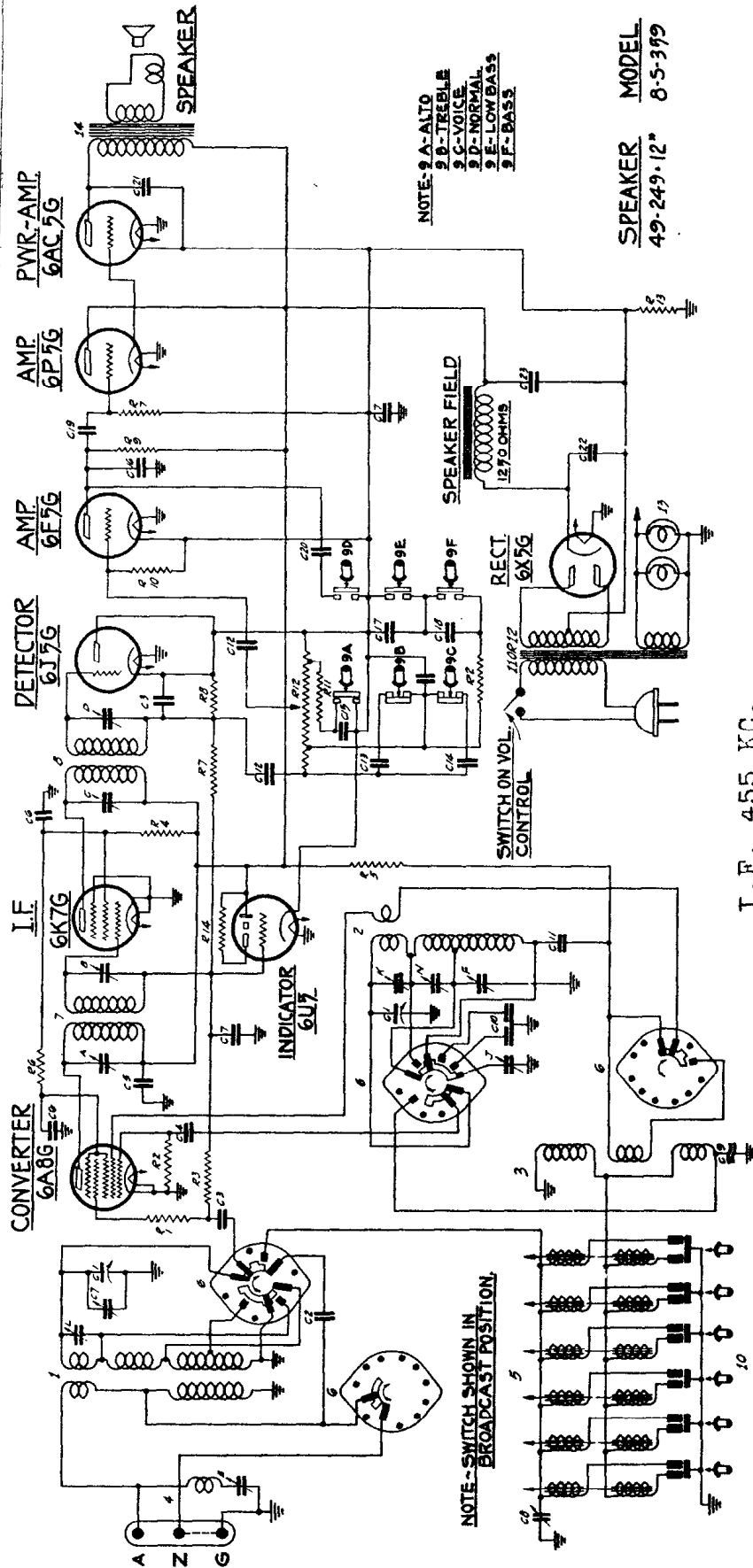
Model 4K329
I.F. FREQUENCY 456 KC.
4 TUBE BATTERY SUPERHETERODYNE
CHASSIS NO 5413
ZENITH RADIO CORPORATION
CHICAGO, ILL

DWG. NO.	PART NO.	DESCRIPTION
C-1	3-5058	ANTENNA COIL ASSEMBLY
C-2	3-5100	ANT. COIL & SHIELD ASSEM.
C-3	3-4662	OSCILLATOR COIL ASSEM.
C-4	95-479	1ST. I.F. TRANSFORMER
C-5	95-480	2ND I.F. TRANSFORMER
C-6	180V	1ST. I.F. TRANS. PRI.
C-7	600V	1ST. I.F. TRANS. SEC.
C-8	180V	2ND I.F. TRANS. PRI.
C-9	600V	2ND I.F. TRANS. SEC.
C-10	22-578	BROADCAST OSCILLATOR
R-1	63-325	ANTENNA BROADCAST
R-2	63-326	OSCILLATOR PADDER
R-3	63-327	150 M OHM
R-4	63-328	68 M OHM
R-5	63-329	3600 OHM
R-6	63-330	1 MEG OHM
R-7	63-331	300 M OHM
R-8	63-332	1 MEG OHM VOL CONTROL
R-9	63-333	2.2 MEG OHM
R-10	63-334	1000 OHM

ALIGNMENT PROCEDURE

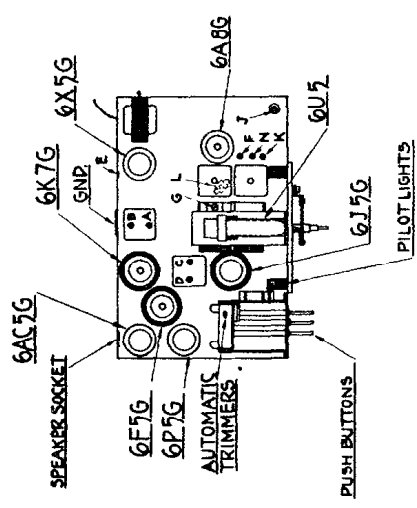
Operation	Connect Test Oscillator to—	Dummy Antenna	Set Test Osc. Jo	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	1/2 Mfd.	456	Br'dc't	600	ABCD	I. F. Algm't.
2	Rec. Ant. Lead	200 Mmfd.	1500	"	1500	F	Set Osc. to Scale
3	"	200 Mmfd.	1500	"	1500	G	Algm't of Ant.
4	"	200 Mmfd.	600	"	600	J	Rock gang & adj. for max. output
5	"	200 Mmfd.	1500	"	1500	FG	Rpt. 3 & 4

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



NOTE - 9A-ALTO
9B-TREBLE
9C-VOICE
9D-NORMAL
9E-LOW BASS
9F-BASS

SPEAKER MODEL
49-249-12" 8-5-399



Location of tubes and trimmers

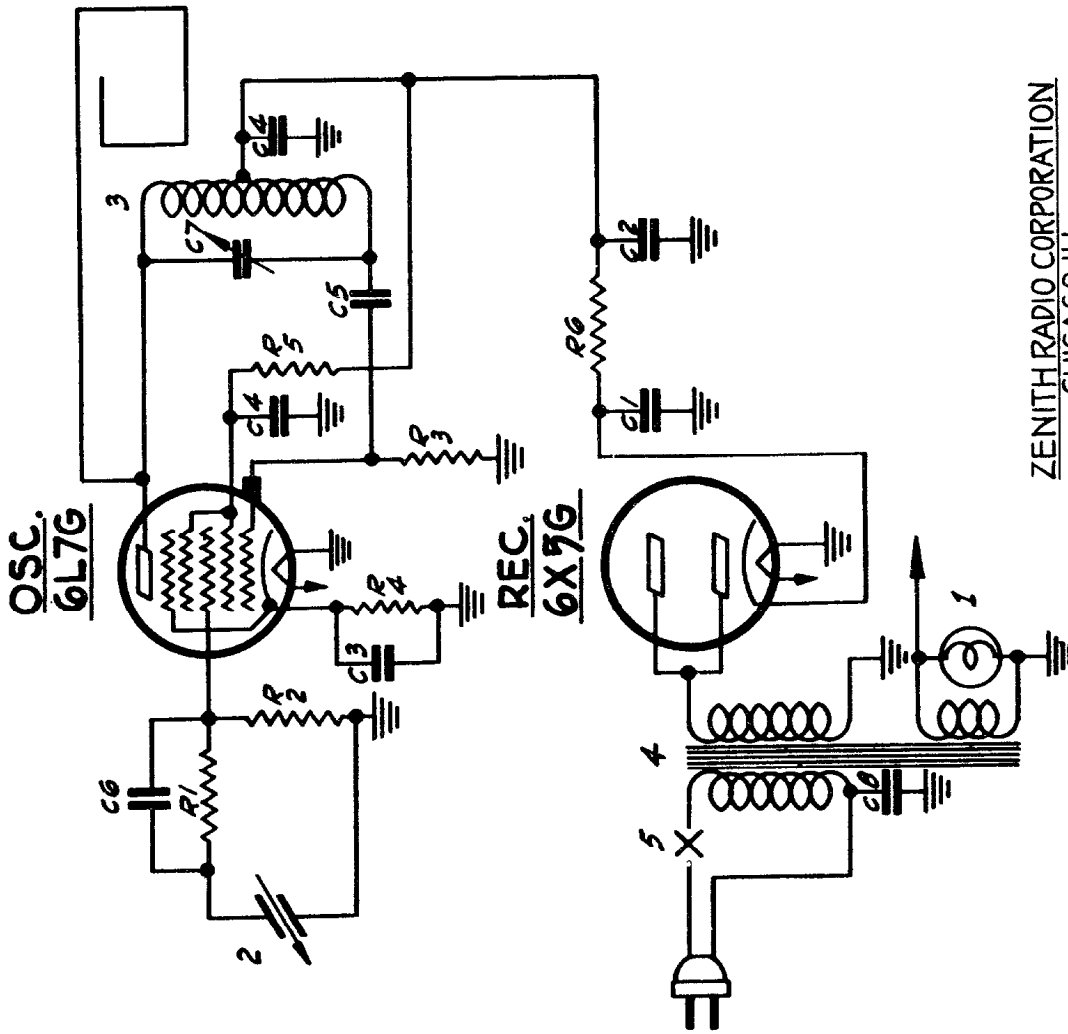
I.F. 455 KC.

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
C-1	7M 6V6 VARIABLE	1	1-4224	ANT COIL ASSEMBLY	1	1-4224	ANT COIL ASSEMBLY	1
C-2	500MFD	1	1-4225	ANT COIL ASSEMBLY	1	1-4225	ANT COIL ASSEMBLY	1
C-3	1MFD	1	1-4226	ANT COIL ASSEMBLY	1	1-4226	ANT COIL ASSEMBLY	1
C-4	1MFD	1	1-4227	ANT COIL ASSEMBLY	1	1-4227	ANT COIL ASSEMBLY	1
C-5	1MFD	1	1-4228	ANT COIL ASSEMBLY	1	1-4228	ANT COIL ASSEMBLY	1
C-6	1MFD	1	1-4229	ANT COIL ASSEMBLY	1	1-4229	ANT COIL ASSEMBLY	1
C-7	1MFD	1	1-4230	ANT COIL ASSEMBLY	1	1-4230	ANT COIL ASSEMBLY	1
C-8	1MFD	1	1-4231	ANT COIL ASSEMBLY	1	1-4231	ANT COIL ASSEMBLY	1
C-9	1MFD	1	1-4232	ANT COIL ASSEMBLY	1	1-4232	ANT COIL ASSEMBLY	1
C-10	1MFD	1	1-4233	ANT COIL ASSEMBLY	1	1-4233	ANT COIL ASSEMBLY	1
C-11	1MFD	1	1-4234	ANT COIL ASSEMBLY	1	1-4234	ANT COIL ASSEMBLY	1
C-12	1MFD	1	1-4235	ANT COIL ASSEMBLY	1	1-4235	ANT COIL ASSEMBLY	1
C-13	1MFD	1	1-4236	ANT COIL ASSEMBLY	1	1-4236	ANT COIL ASSEMBLY	1
C-14	1MFD	1	1-4237	ANT COIL ASSEMBLY	1	1-4237	ANT COIL ASSEMBLY	1
C-15	1MFD	1	1-4238	ANT COIL ASSEMBLY	1	1-4238	ANT COIL ASSEMBLY	1
C-16	1MFD	1	1-4239	ANT COIL ASSEMBLY	1	1-4239	ANT COIL ASSEMBLY	1
C-17	1MFD	1	1-4240	ANT COIL ASSEMBLY	1	1-4240	ANT COIL ASSEMBLY	1
C-18	1MFD	1	1-4241	ANT COIL ASSEMBLY	1	1-4241	ANT COIL ASSEMBLY	1
C-19	1MFD	1	1-4242	ANT COIL ASSEMBLY	1	1-4242	ANT COIL ASSEMBLY	1
C-20	1MFD	1	1-4243	ANT COIL ASSEMBLY	1	1-4243	ANT COIL ASSEMBLY	1

Model 8S359. Chassis No. 5807

PHONOGRAPH OSCILLATOR

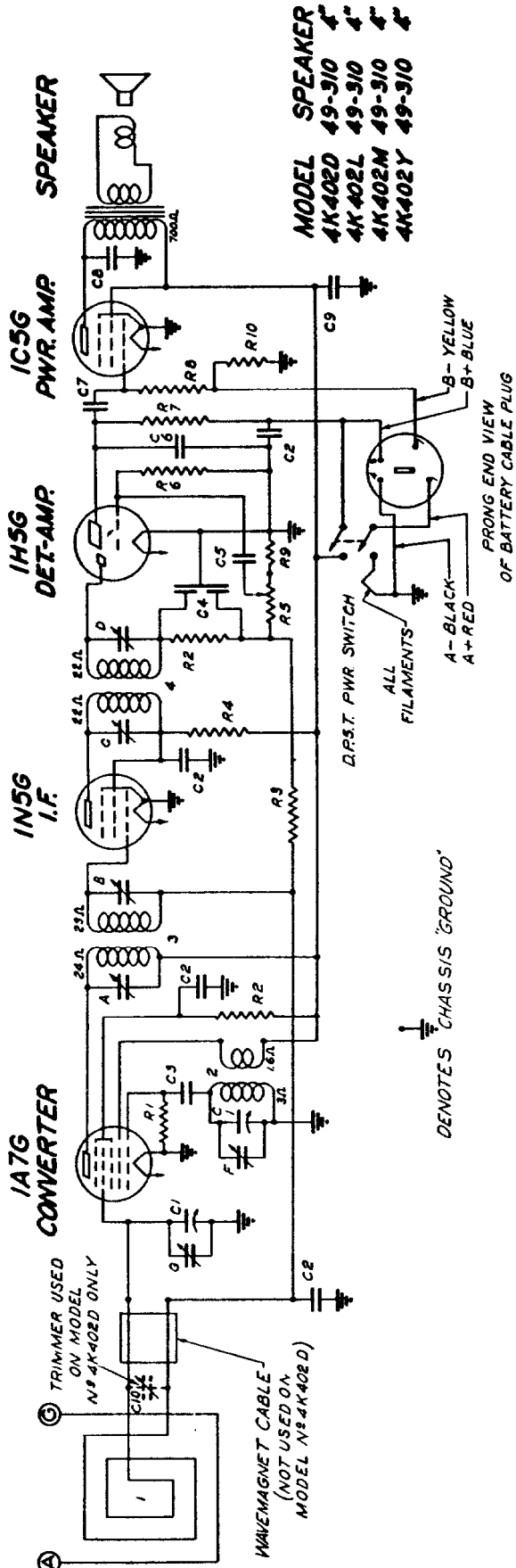
MODEL-S 6622



ZENITH RADIO CORPORATION
CHICAGO, ILL.

DIAG. NO.	PART NO.	DESCRIPTION	VALUES
C-1	22-768	1/6 MFD. ELECTROLYTIC	200V
C-2	22-290	40 MFD.	150V
C-3	22-196	.05 MFD	200V
C-4	22-196	.01 MFD	600V
C-5	22-182	.00025 MFD	600V
C-6	22-147	.0005 MFD	600V
C-7	22-463	TRIMMER	
C-8	22-525	.005 MFD	1000V
R-1	63-658	390M OHM	1/4W
R-2	63-654	180M OHM	1/4W
R-3	63-593	47M OHM	1/4W
R-4	63-589	1000 OHM	1/4W
R-5	63-587	4700 OHM	1/4W
R-6	63-964	4700 OHM	1/2W
1	100-36	PILOT LIGHT-63X.25A.	
2	142-14	PICKUP ARM - COMPLETE	
3	142-16	CRYSTAL UNIT ONLY	
4	5-6625	OSC. COIL ASSEM.	
5	95-567	POWER TRANS.	
	85-170	SWITCH	

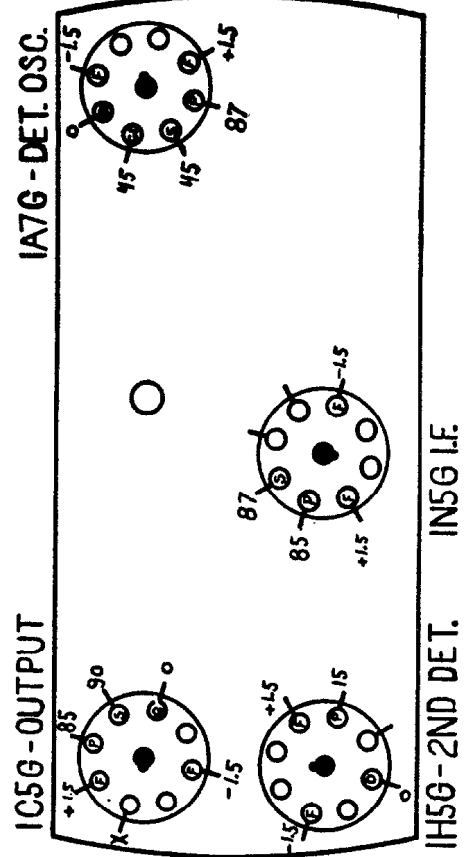
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



1/2 V. BATTERY PORTABLE
 I.F. FREQUENCY 455 KC.
 4 TUBE SUPERHETERODYNE
 CHASSIS N^o 5419
 ZENITH RADIO CORPORATION
 CHICAGO, ILL.

Model 4K402
 CHASSIS No. 5419

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-885	TWO-GANG VARIABLE	1	57029	WAVEMAGNET ASSEMBLY	A	63-652	120 M OHM
C2	22-829	.05 MFD.	2	57030	OSCILLATOR COIL ASSEM.	B	63-593	47 M OHM
C3	22-829	100 MMFD.	3	95-606	1ST I.F. TRANS. ASSEM.	C	63-583	3.9 MEGOHM
C4	22-829	DUAL 100 MMFD.	4		2ND I.F. TRANS.	D	63-1034	1000 OHM
C5	22-826	01 MFD.	A		1ST I.F. TRANS. PRI.	E	63-504	VOLUME CONTROL
C6	22-162	0001 MFD.	B		1ST I.F. TRANS. SEC.	F	63-271	10 MEGOHM
C7	22-243	01 MFD.	C		2ND I.F. TRANS. PRI.	G	63-600	1 MEGOHM
C8	22-440	.004 MFD.	D		2ND I.F. TRANS. SEC.		63-587	2.2 MEGOHM
C9	22-664	B.M.P.D. ELECTROLYTIC	E		BROADCAST OSC. (ON GANG)		63-238	4700 OHM
C10	22-662	TRIMMER COND.	F		ANTENNA BROADCAST (ON GANG)			1000 OHM



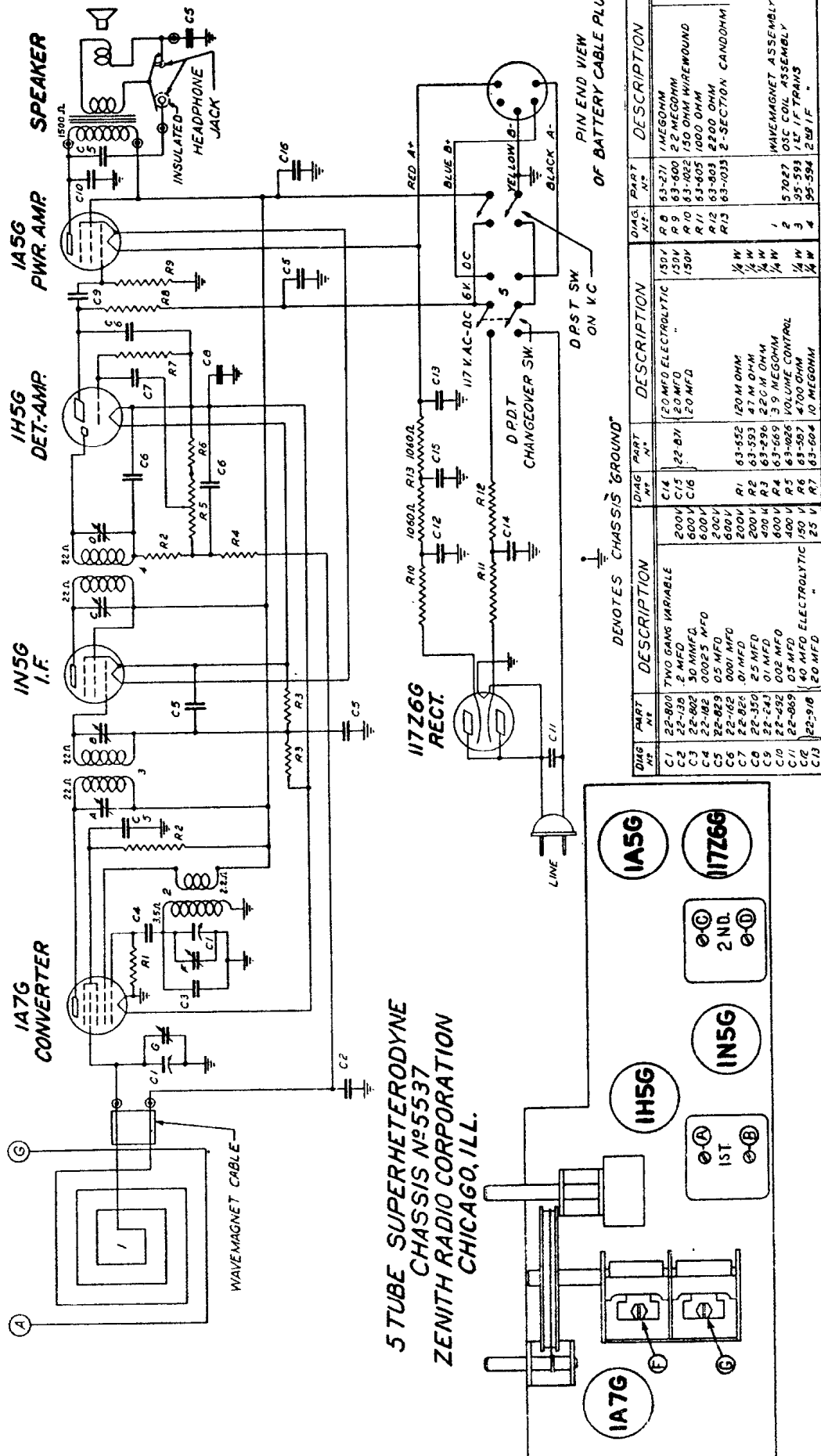
NOTE

All measurements with 1000 ohms per volt meter — loop antenna not connected—volume at minimum — All readings made with fresh Zenith (part No. Z-59) battery pack with speaker in circuit.

All voltages measured from contact X on 1C56 tube socket to point indicated.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

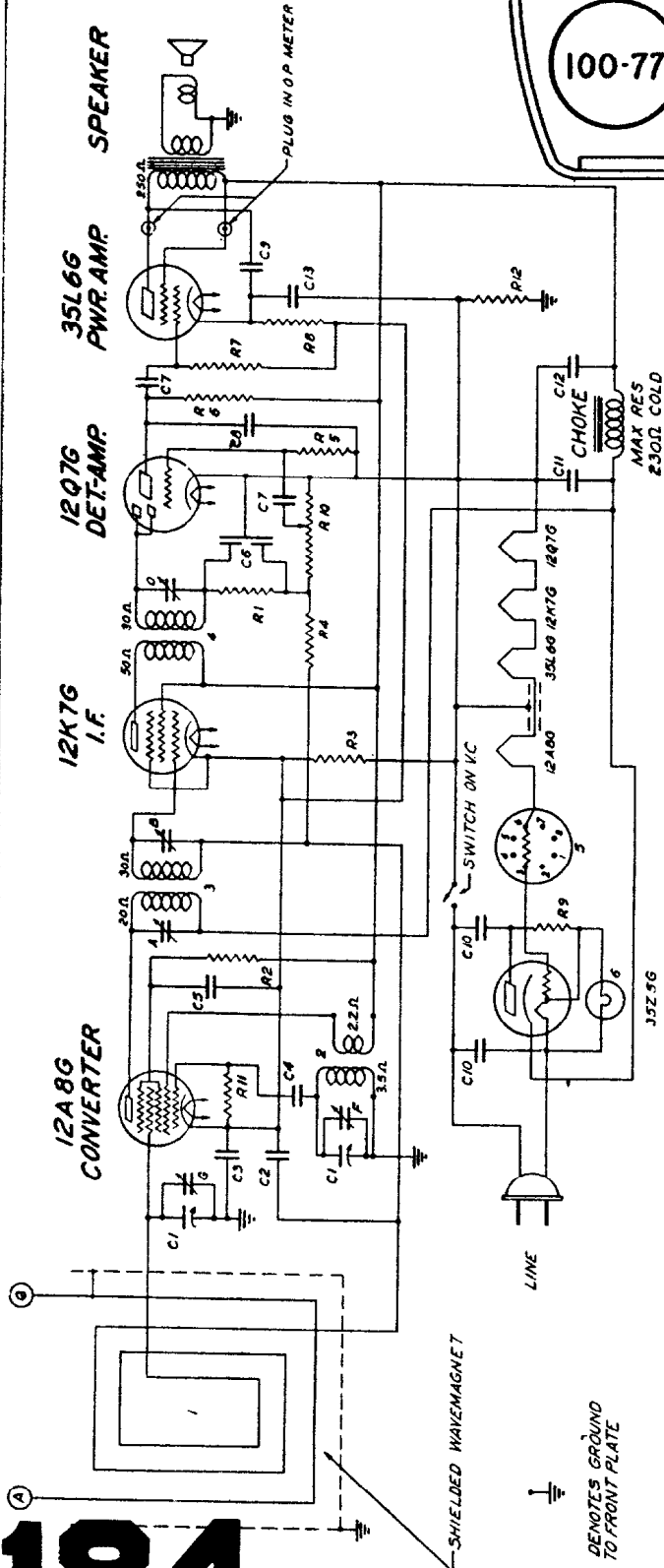
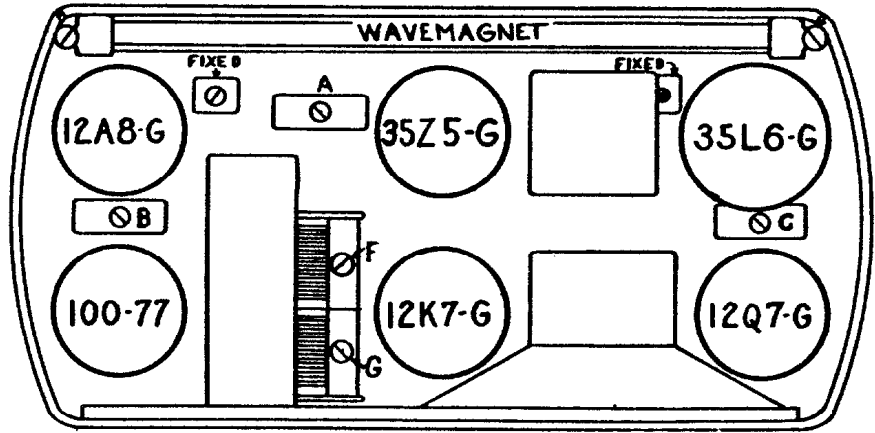
Model 5G401
CHASSIS No. 5537



Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	.5 mmfd.	455	—	600	A B C D	I. F. Alignment
2	Single Turn Loop Coupled Loosely to Wave Magnet	—	1400	—	1400	F	Set Osc. to Scale
3		—	1400	—	1400	G	Alignment of Antenna

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

I.F. FREQUENCY 455 KC.
6 TUBE SUPERHETERODYNE
CHASSIS No 5659-5663 AC-DC
ZENITH RADIO CORPORATION
CHICAGO, ILL.



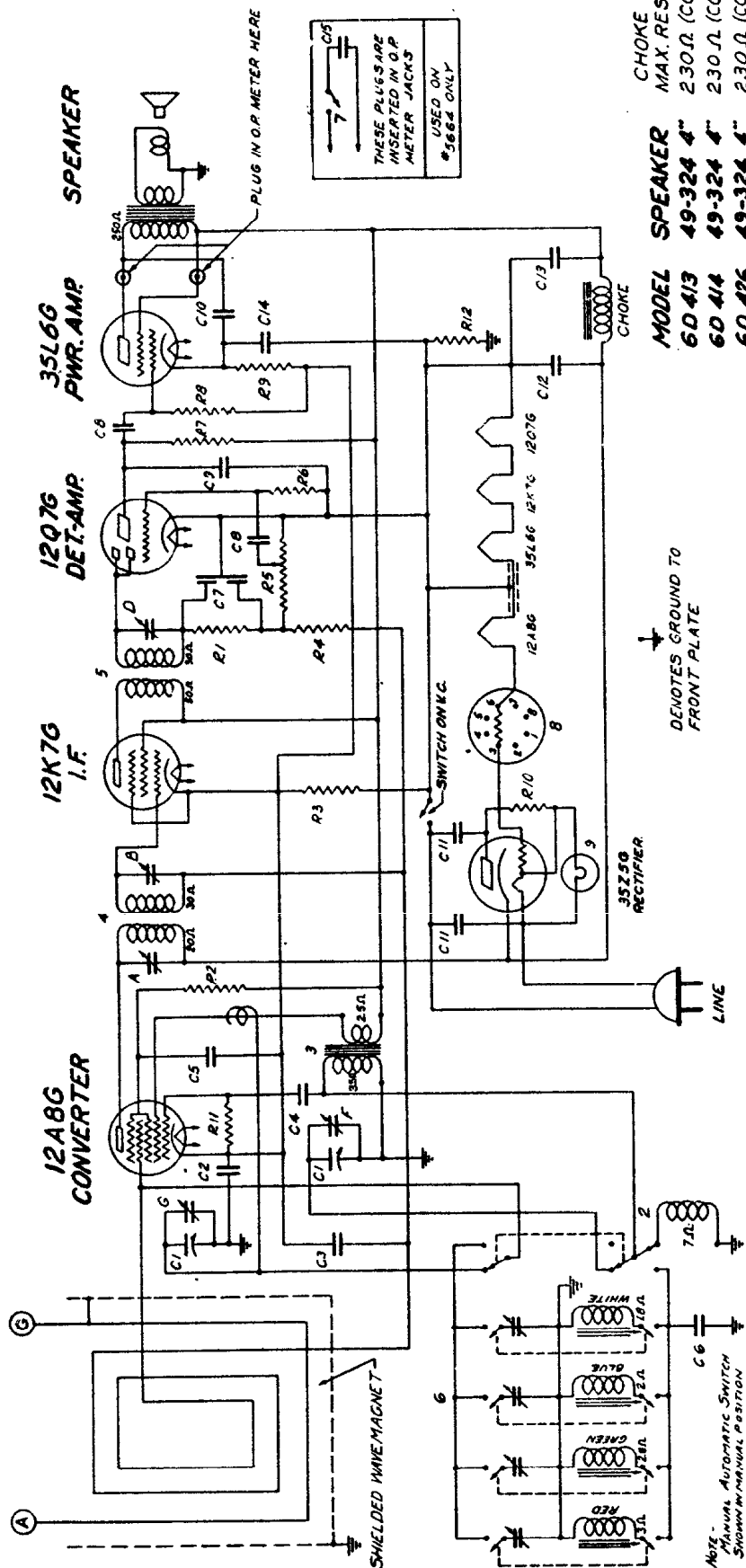
MODEL	SPEAKER
6D410	49-323 4"
6D411	49-323 4"
6D425	49-323 4"

DIAG. NO.	PART NO.	DESCRIPTION	QTY.	PART NO.	DESCRIPTION	QTY.
C1	22-865	250K. VARIABLE	1	56903	2ND I.F. TRANS	1
C2	55-230	100 MFD	1	100-77	BALLAST TUBE	1
C3	22-130	100 MFD	1	100-87	PILOT LIGHT 6.3 V. 1.5A.	1
C4	22-841	0.05 MFD	1	MS 517	PHONE CONTROL SWITCH	1
C5	22-841	0.05 MFD	1			
C6	22-837	0.1 MFD	1			
C7	22-833	0.05 MFD	1			
C8	22-816	0.5 MFD	1			
C9	22-819	0.5 MFD	1			
C10	22-819	0.5 MFD	1			
C11	22-835	16 MFD	1			
C12	22-835	16 MFD	1			
C13	22-844	20 MFD	1			
C14	22-844	20 MFD	1			
R1	63-593	47M OHM	1			
R2	63-591	22M OHM	1			
R3	63-572	22M OHM	1			
R4	63-603	22 MEG OHM	1			
R5	63-596	220 M OHM	1			
R6	63-596	220 M OHM	1			
R7	63-537	470 M OHM	1			
R8	63-686	150 OHM WIREWOUND	1			
R9	63-1028	VOLUME CONTROL	1			
R10	63-713	47M OHM	1			
R11	63-713	220 M OHM	1			
R12	63-717	220 M OHM	1			
R13	63-717	220 M OHM	1			
R14	56901	OSC. COIL	1			
R15	56902	1ST I.F. TRANS	1			

MODELS 6D410, 6D411, 6D425 (Chassis No. 5659)

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial A1	Adjust Trimmers	Purpose
1	1st Det. Grid	.5 Mfd.	455	B'dcast	600	A B C	I. F. Alignm't
2	Single Turn Loop Loosely Coupled to Wave Magnet	—	1500	"	1500	F	Set Osc. to Scale
3	Wave Magnet	—	1500	"	"	G	Alignment of Ant.

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



THESE PLUGS ARE
INSERTED IN O.P.
METER JACKS
USED ON
#5664 ONLY

MODEL	SPEAKER	CHOKE MAX. RES.
6D 413	49-324 4"	230 Ω (COLD)
6D 414	49-324 4"	230 Ω (COLD)
6D 426	49-324 4"	230 Ω (COLD)
6D 427	49-324 4"	230 Ω (COLD)
6D 446	49-336 5"	325 Ω (HOT)
6D 455	49-324 4"	230 Ω (COLD)

I.F. FREQUENCY 455KC.
6 TUBE SUPERHETERODYNE
CHASSIS #5660X#5664 AC-DC.
ZENITH RADIO CORPORATION
CHICAGO, ILL.

↓
DENOTES GROUND TO
FRONT PLATE

QMG NO.	PART NO.	DESCRIPTION	QMG NO.	PART NO.	DESCRIPTION
C1	22-886	TWO GANG VARIABLE	R1	53-593	47M OHM
C2	22-935	100 MFD	R2	53-591	81M OHM
C3	22-250	100 MFD	R3	53-579	15 OHM
C4	22-844	100 MFD	R4	53-600	2.2 MEG OHM
C5	22-860	100 MFD	R5	53-602	VOLUME CONTROL
C6	22-883	100 MFD	R6	53-602	47 MEG OHM
C7	22-833	100 MFD	R7	53-296	250 M OHM
C8	22-833	100 MFD	R8	53-597	470 M OHM
C9	22-834	100 MFD	R9	53-684	150 OHM WIRE WOUND
C10	22-834	100 MFD	R10	53-1017	27 OHM WIRE WOUND
C11	22-839	100 MFD	R11	53-713	47M OHM
C12	22-839	100 MFD	R12	53-717	220M OHM
C13	22-839	100 MFD			
C14	22-844	100 MFD			
C15	22-844	100 MFD			
			1	S 6927	OSCILLATOR COIL ASSEMBLY
			2	S 6945	OSC COUPLER COIL ASSEMBLY
			3	S 6902	I.F. TRANS. ASSEMBLY
			4	S 6902	I.F. TRANS. ASSEMBLY
			5	S 6902	I.F. TRANS. ASSEMBLY
			6	S 6902	I.F. TRANS. ASSEMBLY
			7	S 6902	I.F. TRANS. ASSEMBLY
			8	S 6902	I.F. TRANS. ASSEMBLY
			9	S 6902	I.F. TRANS. ASSEMBLY
			10	S 6902	I.F. TRANS. ASSEMBLY
			11	S 6902	I.F. TRANS. ASSEMBLY
			12	S 6902	I.F. TRANS. ASSEMBLY
			13	S 6902	I.F. TRANS. ASSEMBLY
			14	S 6902	I.F. TRANS. ASSEMBLY
			15	S 6902	I.F. TRANS. ASSEMBLY
			16	S 6902	I.F. TRANS. ASSEMBLY
			17	S 6902	I.F. TRANS. ASSEMBLY
			18	S 6902	I.F. TRANS. ASSEMBLY
			19	S 6902	I.F. TRANS. ASSEMBLY
			20	S 6902	I.F. TRANS. ASSEMBLY
			21	S 6902	I.F. TRANS. ASSEMBLY
			22	S 6902	I.F. TRANS. ASSEMBLY
			23	S 6902	I.F. TRANS. ASSEMBLY
			24	S 6902	I.F. TRANS. ASSEMBLY
			25	S 6902	I.F. TRANS. ASSEMBLY
			26	S 6902	I.F. TRANS. ASSEMBLY
			27	S 6902	I.F. TRANS. ASSEMBLY
			28	S 6902	I.F. TRANS. ASSEMBLY
			29	S 6902	I.F. TRANS. ASSEMBLY
			30	S 6902	I.F. TRANS. ASSEMBLY
			31	S 6902	I.F. TRANS. ASSEMBLY
			32	S 6902	I.F. TRANS. ASSEMBLY
			33	S 6902	I.F. TRANS. ASSEMBLY
			34	S 6902	I.F. TRANS. ASSEMBLY
			35	S 6902	I.F. TRANS. ASSEMBLY
			36	S 6902	I.F. TRANS. ASSEMBLY
			37	S 6902	I.F. TRANS. ASSEMBLY
			38	S 6902	I.F. TRANS. ASSEMBLY
			39	S 6902	I.F. TRANS. ASSEMBLY
			40	S 6902	I.F. TRANS. ASSEMBLY
			41	S 6902	I.F. TRANS. ASSEMBLY
			42	S 6902	I.F. TRANS. ASSEMBLY
			43	S 6902	I.F. TRANS. ASSEMBLY
			44	S 6902	I.F. TRANS. ASSEMBLY
			45	S 6902	I.F. TRANS. ASSEMBLY
			46	S 6902	I.F. TRANS. ASSEMBLY
			47	S 6902	I.F. TRANS. ASSEMBLY
			48	S 6902	I.F. TRANS. ASSEMBLY
			49	S 6902	I.F. TRANS. ASSEMBLY
			50	S 6902	I.F. TRANS. ASSEMBLY
			51	S 6902	I.F. TRANS. ASSEMBLY
			52	S 6902	I.F. TRANS. ASSEMBLY
			53	S 6902	I.F. TRANS. ASSEMBLY
			54	S 6902	I.F. TRANS. ASSEMBLY
			55	S 6902	I.F. TRANS. ASSEMBLY
			56	S 6902	I.F. TRANS. ASSEMBLY
			57	S 6902	I.F. TRANS. ASSEMBLY
			58	S 6902	I.F. TRANS. ASSEMBLY
			59	S 6902	I.F. TRANS. ASSEMBLY
			60	S 6902	I.F. TRANS. ASSEMBLY
			61	S 6902	I.F. TRANS. ASSEMBLY
			62	S 6902	I.F. TRANS. ASSEMBLY
			63	S 6902	I.F. TRANS. ASSEMBLY
			64	S 6902	I.F. TRANS. ASSEMBLY
			65	S 6902	I.F. TRANS. ASSEMBLY
			66	S 6902	I.F. TRANS. ASSEMBLY
			67	S 6902	I.F. TRANS. ASSEMBLY
			68	S 6902	I.F. TRANS. ASSEMBLY
			69	S 6902	I.F. TRANS. ASSEMBLY
			70	S 6902	I.F. TRANS. ASSEMBLY
			71	S 6902	I.F. TRANS. ASSEMBLY
			72	S 6902	I.F. TRANS. ASSEMBLY
			73	S 6902	I.F. TRANS. ASSEMBLY
			74	S 6902	I.F. TRANS. ASSEMBLY
			75	S 6902	I.F. TRANS. ASSEMBLY
			76	S 6902	I.F. TRANS. ASSEMBLY
			77	S 6902	I.F. TRANS. ASSEMBLY
			78	S 6902	I.F. TRANS. ASSEMBLY
			79	S 6902	I.F. TRANS. ASSEMBLY
			80	S 6902	I.F. TRANS. ASSEMBLY
			81	S 6902	I.F. TRANS. ASSEMBLY
			82	S 6902	I.F. TRANS. ASSEMBLY
			83	S 6902	I.F. TRANS. ASSEMBLY
			84	S 6902	I.F. TRANS. ASSEMBLY
			85	S 6902	I.F. TRANS. ASSEMBLY
			86	S 6902	I.F. TRANS. ASSEMBLY
			87	S 6902	I.F. TRANS. ASSEMBLY
			88	S 6902	I.F. TRANS. ASSEMBLY
			89	S 6902	I.F. TRANS. ASSEMBLY
			90	S 6902	I.F. TRANS. ASSEMBLY
			91	S 6902	I.F. TRANS. ASSEMBLY
			92	S 6902	I.F. TRANS. ASSEMBLY
			93	S 6902	I.F. TRANS. ASSEMBLY
			94	S 6902	I.F. TRANS. ASSEMBLY
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			98	S 6902	I.F. TRANS. ASSEMBLY
			99	S 6902	I.F. TRANS. ASSEMBLY
			100	S 6902	I.F. TRANS. ASSEMBLY

MODELS 6D413, 6D414, 6D426, 6D427, 6D446, 6D455 (Chassis No. 5660)

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Models 6D413, 6D414, 6D426, 6D427, 6D446, 6D455

CHASSIS No. 5660

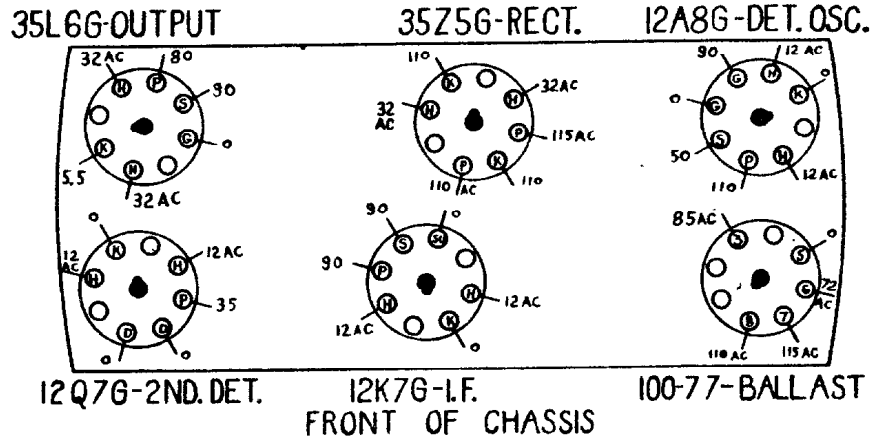
Zenith Radio Corporation

NOTE

Voltages measured from No. 7 pin on ballast tube to point indicated using a 1000 ohm per volt meter. Vol. control at minimum. Antenna disconnected.

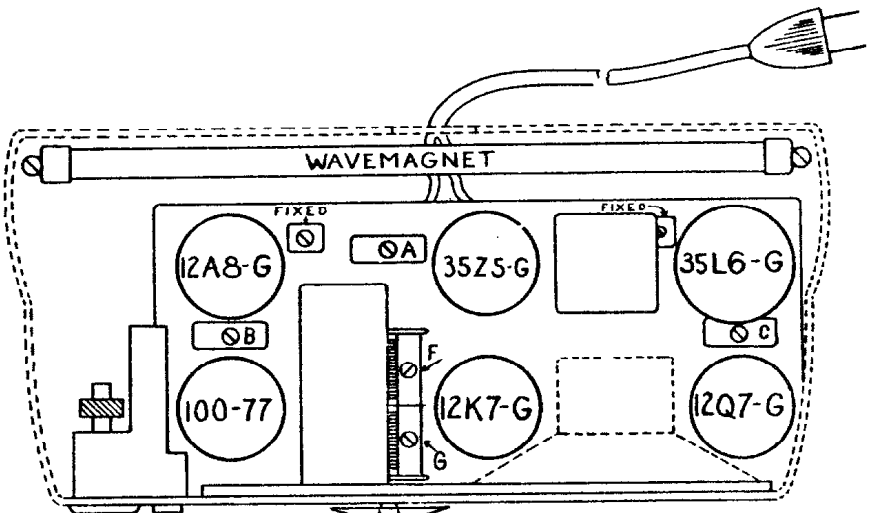
All filament voltages measured across each respective tube, using an A.C. volt-meter.

Line voltage — 110v.



LEGEND

- NC—No Connection
- SH—Shield
- H—Heater
- P—Plate
- S—Screen
- G—Grid
- SU—Suppressor
- D—Diode
- F—Filament
- K—Cathode



Location of tubes and trimmers

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	.5 Mfd.	455	B'dcast	600	A B C	I. F. Alignm't.
2	Single Turn Loop Loosely Coupled to Wave Magnet	—	1500	"	1500	F	Set Osc. to Scale
3		—	1500	"	"	G	Alignment of Ant.

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COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

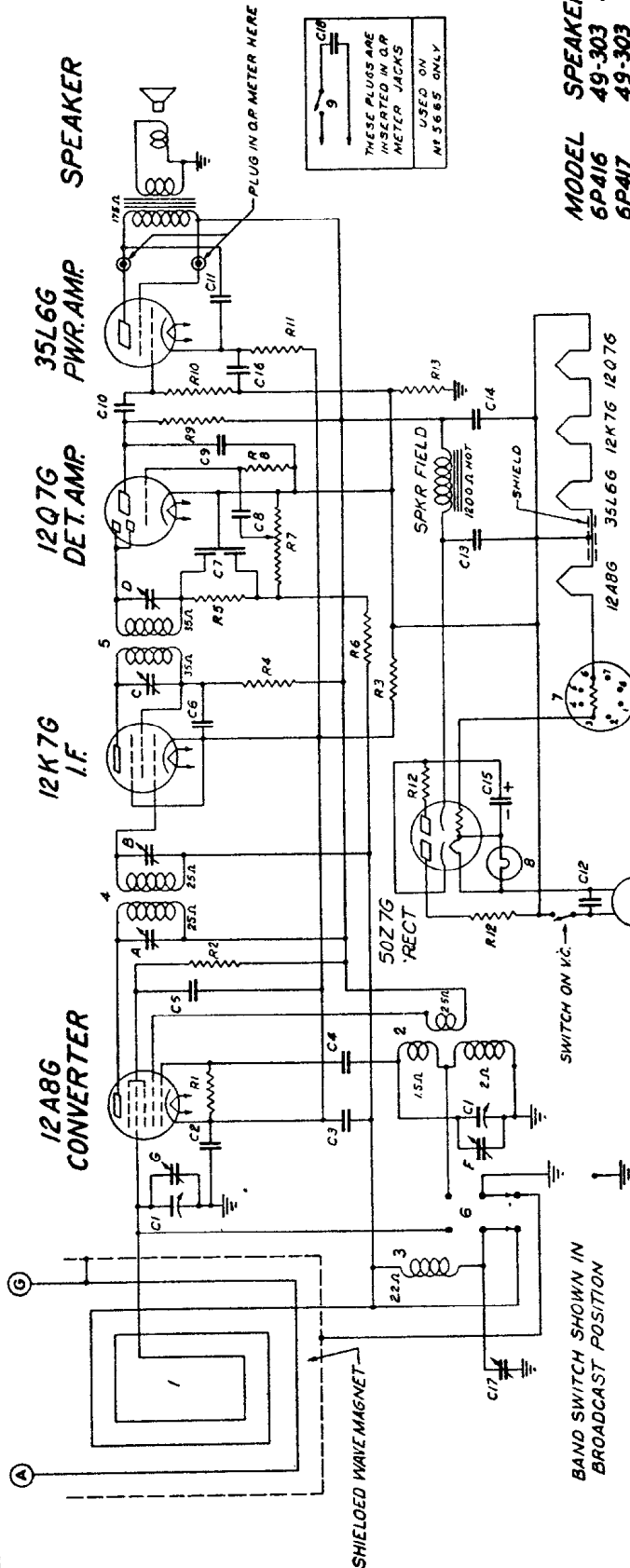
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

Models 6P416, 6P417, 6P428

CHASSIS No. 5661

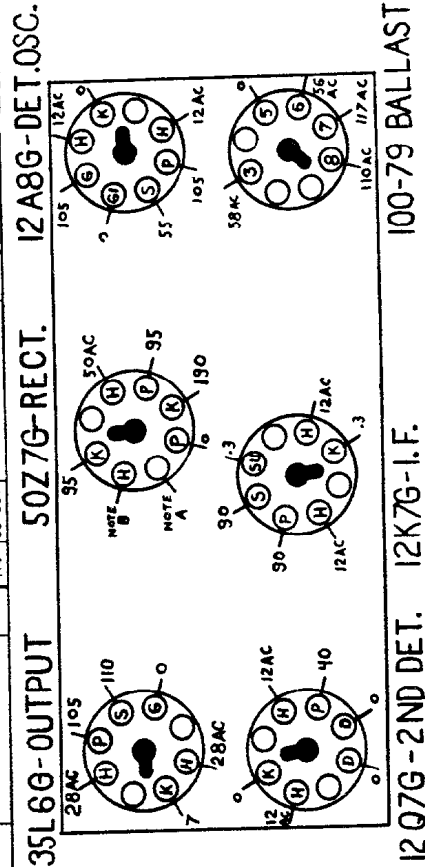
MODEL SPEAKER
 6P416 49-303 5"
 6P417 49-303 5"
 6P428 49-303 5"

I. F. FREQUENCY 455KC
 6 TUBE SUPERHETERODYNE
 VOLTAGE DOUBLER A.C.
 CHASSIS No. 5661/5665
 ZENITH RADIO CORPORATION



DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-843	TWO GANG VARIABLE	R5	63-553	17 M OHM	5	95-590	2ND I.F. TRANS
C2	22-190	.1 MFD	R6	63-722	2.5 MEG OHM	6	M5515	BAND SWITCH
C3	22-250	.05 MFD	R7	63-974	15 MEG OHM	7	100-79	BALLAST TUBE
C4	22-842	100 MMFD	R8	63-284	220 M OHM	8	100-39	PILOT LIGHT 2.9V-17A
C5	22-842	.02 MFD	R9	63-597	470 M OHM	9	M5517	TONE CONTROL SWITCH
C6	22-212	.05 MFD	R10	63-484	150 OHM WIREWOUND	A		I.F. TRANS. PRI.
C7	22-836	DUAL 100 MMFD	R11	63-1023	22.0M OHM	B		I.F. TRANS. SEC.
C8	22-836	.0005 MFD	R12	63-717	22.0M OHM	C		I.F. TRANS. SEC.
C9	22-837	.0005 MFD	R13	56913	WAVEMAGNET ASSEMBLY	D		2ND I.F. SEC.
C10	22-837	.01 MFD	R14	56914	OSCILLATOR COIL ASSEM.	E		2ND I.F. SEC.
C11	22-836	.01 MFD	R15	56915	SHUNT ANT	F		BROADCAST OSC. (ON GANG)
C12	22-875	.15 MFD	R16	56916	1.8 I.F. TRANS.	G		ANTENNA BOOSTER

- NOTE**
 Voltages measured from No. 7 pin on ballast tube to point indicated using a 1000 ohm per volt meter. Vol. control at minimum. Antenna disconnected.
 All filament voltages measured across each respective tube, using a 0-50 A.C. volt-meter.
- A. This lug is C.T. of fil and is one side of pilot light supply line.
 - B. This lug (No. 8) has a 50 v. A.C. potential with respect to lug No. 2 and also a 117 v. A.C. potential with respect to line switch.



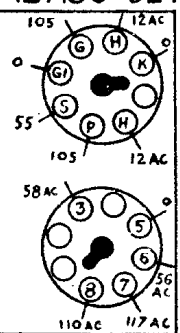
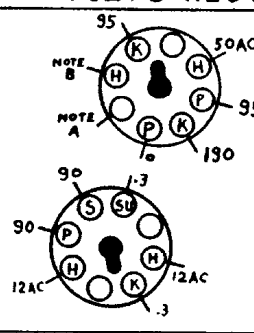
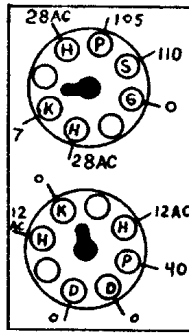
MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

I.F. FREQUENCY 455KC
 6 TUBE SUPERHETERODYNE
 VOLTAGE DOUBLER A.C.
 CHASSIS No.5662 & 5666
 ZENITH RADIO CORPORATION
 CHICAGO, ILL.

35L6G-OUTPUT

50Z7G-RECT.

12A8G-DET.OSC.

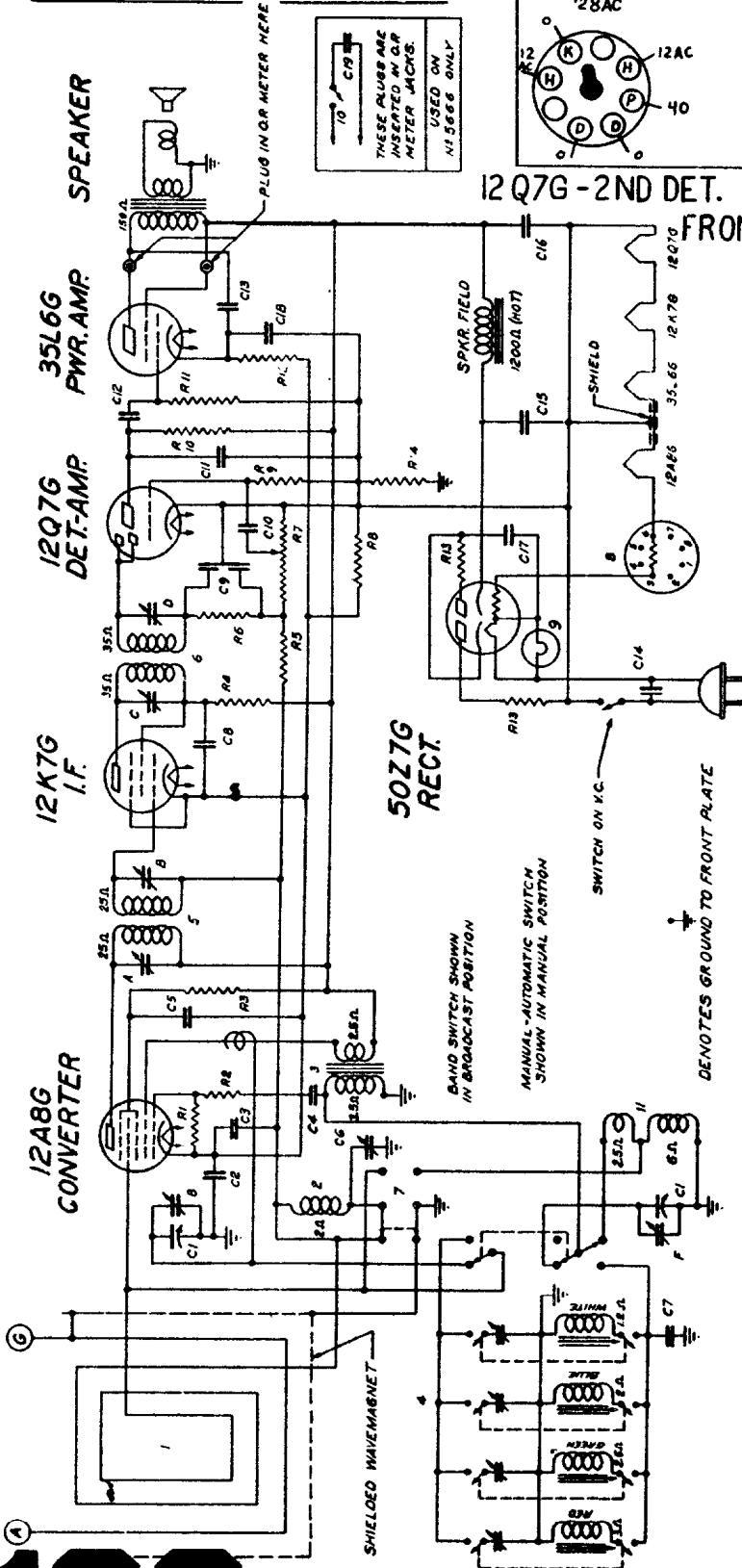


12Q7G-2ND DET.

12K7G-I.F.

100-79 BALLAST

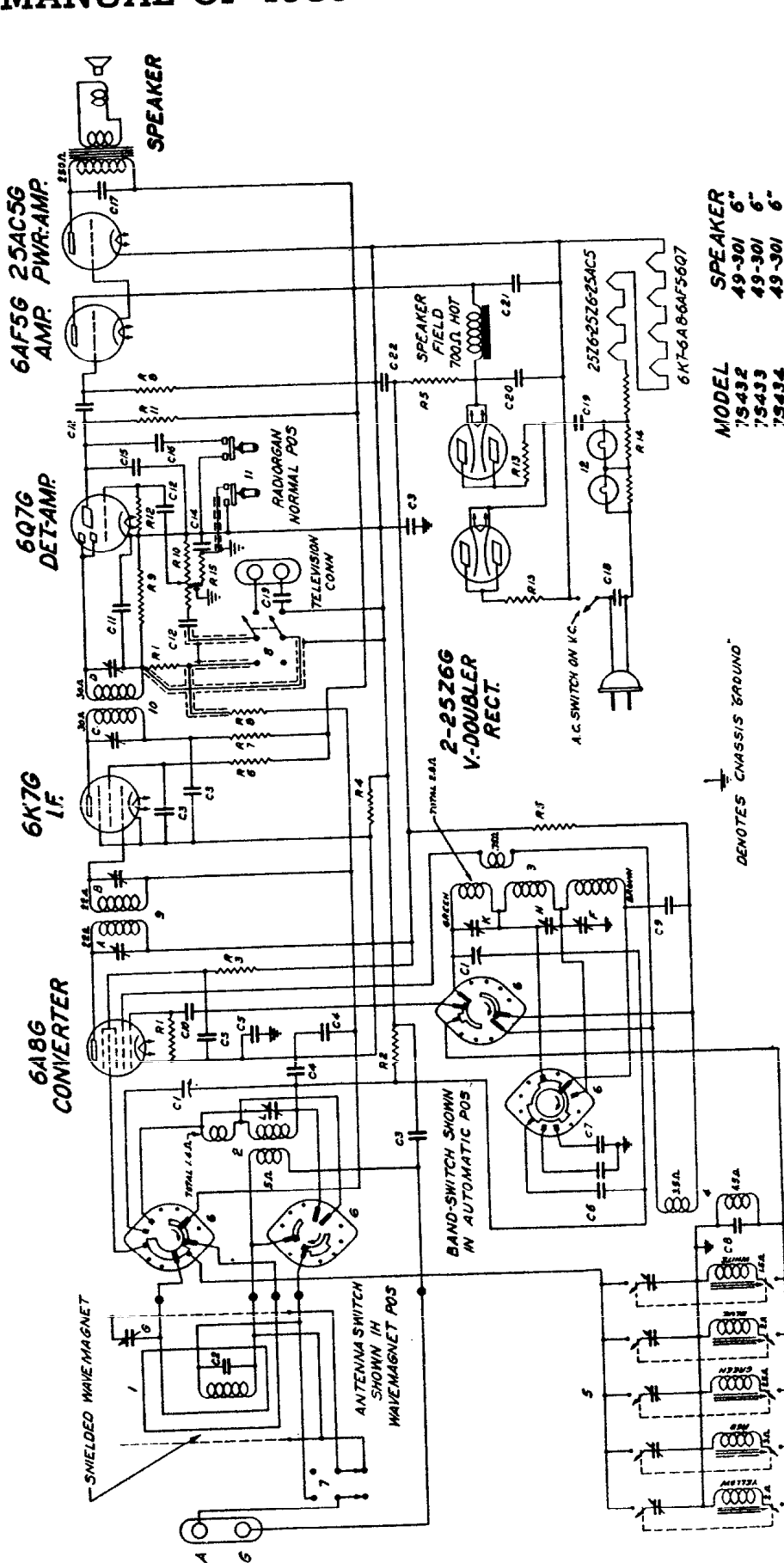
FRONT OF CHASSIS



10 C19
 THESE PLUGS ARE
 INSERTED IN THE
 METER JACKS.
 USED ON
 No. 5666 ONLY

Q. NO.	PART NO.	DESCRIPTION	Q. NO.	PART NO.	DESCRIPTION
C1	22-948	TWO-BAND VARIABLE	R9	350Ω	ELECTRIFIC
C2	22-949	.1MFD	R10	63-296	15 MEGOHM
C3	22-950	.05 MFD	R11	63-297	220 M OHM
C4	22-951	.02 MFD	R2	63-298	470 M OHM
C5	22-952	.01 MFD	R3	63-299	150 OHM WIRE WOUND
C6	22-953	.005 MFD	R4	63-300	22 OHM WIRE WOUND
C7	22-954	.001 MFD	R5	63-301	220 M OHM
C8	22-955	.0005 MFD	R6	63-302	220 M OHM
C9	22-956	.0001 MFD	R7	63-303	220 M OHM
C10	22-957	.00005 MFD	R8	63-304	220 M OHM
C11	22-958	.00001 MFD	R9	63-305	220 M OHM
C12	22-959	.000005 MFD	R10	63-306	220 M OHM
C13	22-960	.000001 MFD	R11	63-307	220 M OHM
C14	22-961	.0000005 MFD	R12	63-308	220 M OHM
			R13	63-309	220 M OHM
			R14	63-310	220 M OHM
			R15	63-311	220 M OHM
			R16	63-312	220 M OHM
			R17	63-313	220 M OHM
			R18	63-314	220 M OHM
			R19	63-315	220 M OHM
			R20	63-316	220 M OHM
			R21	63-317	220 M OHM
			R22	63-318	220 M OHM
			R23	63-319	220 M OHM
			R24	63-320	220 M OHM
			R25	63-321	220 M OHM
			R26	63-322	220 M OHM
			R27	63-323	220 M OHM
			R28	63-324	220 M OHM
			R29	63-325	220 M OHM
			R30	63-326	220 M OHM
			R31	63-327	220 M OHM
			R32	63-328	220 M OHM
			R33	63-329	220 M OHM
			R34	63-330	220 M OHM
			R35	63-331	220 M OHM
			R36	63-332	220 M OHM
			R37	63-333	220 M OHM
			R38	63-334	220 M OHM
			R39	63-335	220 M OHM
			R40	63-336	220 M OHM
			R41	63-337	220 M OHM
			R42	63-338	220 M OHM
			R43	63-339	220 M OHM
			R44	63-340	220 M OHM
			R45	63-341	220 M OHM
			R46	63-342	220 M OHM
			R47	63-343	220 M OHM
			R48	63-344	220 M OHM
			R49	63-345	220 M OHM
			R50	63-346	220 M OHM
			R51	63-347	220 M OHM
			R52	63-348	220 M OHM
			R53	63-349	220 M OHM
			R54	63-350	220 M OHM
			R55	63-351	220 M OHM
			R56	63-352	220 M OHM
			R57	63-353	220 M OHM
			R58	63-354	220 M OHM
			R59	63-355	220 M OHM
			R60	63-356	220 M OHM
			R61	63-357	220 M OHM
			R62	63-358	220 M OHM
			R63	63-359	220 M OHM
			R64	63-360	220 M OHM
			R65	63-361	220 M OHM
			R66	63-362	220 M OHM
			R67	63-363	220 M OHM
			R68	63-364	220 M OHM
			R69	63-365	220 M OHM
			R70	63-366	220 M OHM
			R71	63-367	220 M OHM
			R72	63-368	220 M OHM
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			R74	63-370	220 M OHM
			R75	63-371	220 M OHM
			R76	63-372	220 M OHM
			R77	63-373	220 M OHM
			R78	63-374	220 M OHM
			R79	63-375	220 M OHM
			R80	63-376	220 M OHM
			R81	63-377	220 M OHM
			R82	63-378	220 M OHM
			R83	63-379	220 M OHM
			R84	63-380	220 M OHM
			R85	63-381	220 M OHM
			R86	63-382	220 M OHM
			R87	63-383	220 M OHM
			R88	63-384	220 M OHM
			R89	63-385	220 M OHM
			R90	63-386	220 M OHM
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			R99	63-395	220 M OHM
			R100	63-396	220 M OHM
			R101	63-397	220 M OHM
			R102	63-398	220 M OHM
			R103	63-399	220 M OHM
			R104	63-400	220 M OHM
			R105	63-401	220 M OHM
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			R161	63-457	220 M OHM
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			R171	63-467	220 M OHM
			R172	63-468	220 M OHM
			R173	63-469	220 M OHM
			R174	63-470	220 M OHM
			R175	63-471	220 M OHM
			R176	63-472	220 M OHM
			R177	63-473	220 M OHM
			R178	63-474	220 M OHM
			R179	63-475	220 M OHM
			R180	63-476	220 M OHM
			R181	63-477	220 M OHM
			R182	63-478	220 M OHM
			R183	63-479	220 M OHM
			R184	63-480	220 M OHM
			R185	63-481	220 M OHM
			R186	63-482	220 M OHM
			R187	63-483	220 M OHM
			R188	63-484	220 M OHM
			R189	63-485	220 M OHM
			R190	63-486	220 M OHM
			R191	63-487	220 M OHM
			R192	63-488	220 M OHM
			R193	63-489	220 M OHM
			R194	63-490	220 M OHM
			R195	63-491	220 M OHM
			R196	63-492	220 M OHM
			R197	63-493	220 M OHM
			R198	63-494	220 M OHM
			R199	63-495	220 M OHM
			R200	63-496	220 M OHM

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS



MODEL	SPEAKER
7S432	49-301 6"
7S433	49-301 6"
7S434	49-301 6"
7S449	49-301 6"
7S450	49-314 8"
7S458	49-308 10"
7S459	49-314 8"
7S460	49-311 10"
7S461	49-309 12"
7S462	49-311 10"

I.F. FREQUENCY 455 KC.
 TUBE SUPERHETERODYNE.
 CHASSIS NO. 5719 VOLTAGE DOUBLER AC.
 ZENITH RADIO CORPORATION
 CHICAGO, ILL.

DISC. NO.	PART NO.	DESCRIPTION	QTY.	DISC. NO.	PART NO.	DESCRIPTION	QTY.
C-1	22-849	TWO-GANG VAR	1	R-12	65-978	15 MEGOHMS	1
C-2	22-782	1000'S MFD.	1	R-13	65-1028	22 OHM WIREWOUND	1
C-3	22-829	45 MFD.	1	R-14	65-1039	5-SECTION CHANGING	1
C-4	22-534	15 MFD.	1	R-15	65-713	4 1/2 M OHM	1
C-5	22-823	OSC. PANNER	1	1	56836	ANTENNA COIL	1
C-6	22-868	COMPENSATING COND.	1	2	56837	OSCILLATOR	1
C-7	22-359	50 MFD.	1	3	57044	AUTOMATIC TUNING	1
C-8	22-359	50 MFD.	1	4	56894	OSC. COMP. L.	1
C-9	22-359	50 MFD.	1	5	57044	AUTOMATIC TUNING	1
C-10	22-359	50 MFD.	1	6	65-185	UNIT ASSEMBLY	1
C-11	22-359	50 MFD.	1	7	65-171	WAVE MAGNET	1
C-12	22-359	50 MFD.	1	8	65-171	WAVE MAGNET	1
C-13	22-359	50 MFD.	1	9	55-600	1/2 IF TRANSFORMER	1
C-14	22-359	50 MFD.	1	10	55-412	2 1/2 IF TRANSFORMER	1
C-15	22-359	50 MFD.	1	11	56894	OSC. COMP. L.	1
C-16	22-449	10 MFD.	1	12	100-36	PILOT LIGHT 6.3K. 25A.	1
C-17	22-449	10 MFD.	1				
C-18	22-449	10 MFD.	1				
C-19	22-632	10 MFD. ELECTROLYTIC	1				

MODELS 7S432, 7S434, 7S433, 7S434, 7S449, 7S450, 7S458, 7S459, 7S460, 7S461, 7S462 (Chassis No. 5719)

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

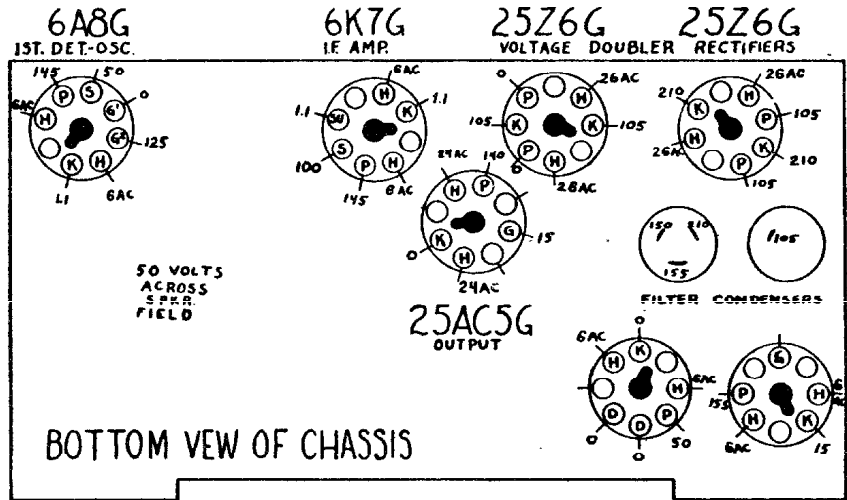
Models 7S432, 7S433, 7S434, 7S449, 7S450, 7S458, 7S459 7S460, 7S461, 7S462

(Chassis No. 5719)

NOTE

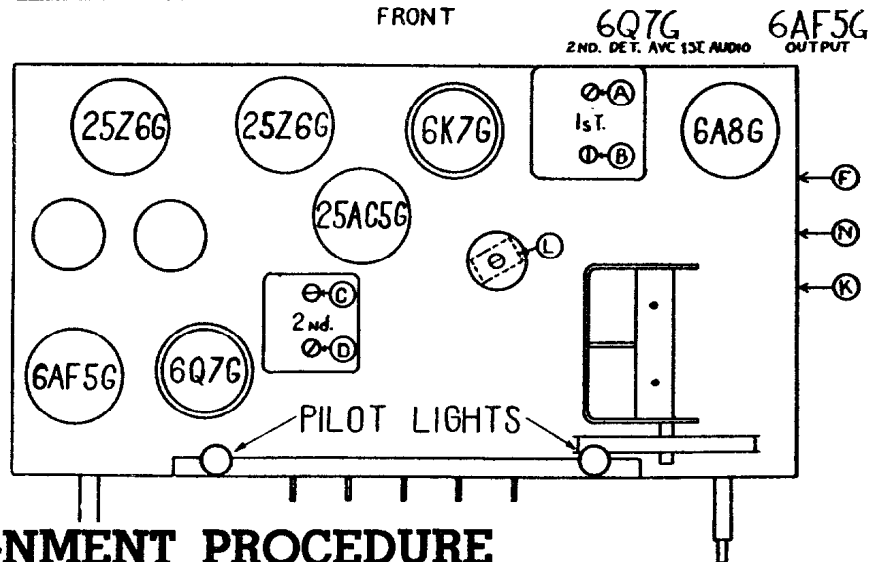
Voltages measured from line switch to point indicated using a 1000 ohm per volt meter. Vol. control at minimum. Antenna disconnected.

All filament voltages measured across each respective tube, using an A.C. volt-meter.



BOTTOM VIEW OF CHASSIS

FRONT



LEGEND

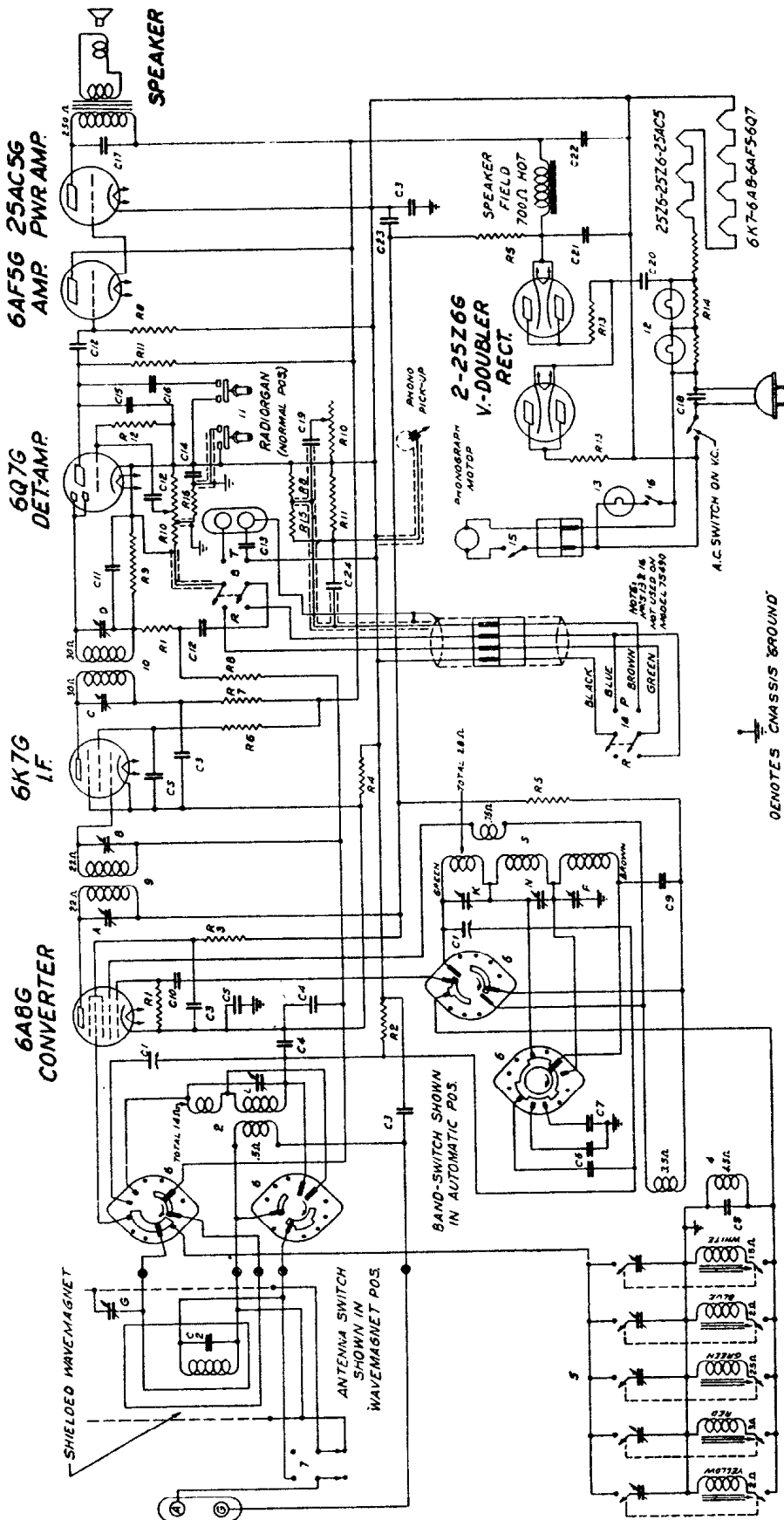
- NC—No Connection
- SH—Shield
- H—Heater
- P—Plate
- S—Screen
- G—Grid
- SU—Suppressor
- D—Diode
- F—Filament
- K—Cathode

ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Set Test Oscillator to	Band	Set Dial At	Adjust Trimmers	Purpose
1	1st Det. Grid	5 mfd.	455	B'dcast	600	A B C D	I. F.
2	Single *x Turn Coil	—	1500	"	1500	F	Set Osc. to Scale
3	" "	—	1500	"	1500	On Wave Magnet	Alignment of Wave Magnet
4	Rec. Ant. Post **	400 ohms	18000	S.W.#2	18000	K	Set Osc. to Scale
5	"	"	16000	"	16000	L	Rock gang & adj. for max. output
6	"	"	4500	S.W. #1	4500	N	"

* Loosely coupled to Wave Magnet
 x Switch in Wave Magnet Position
 ** Switch in Antenna Position

MANUAL OF 1939 MOST POPULAR SERVICE DIAGRAMS

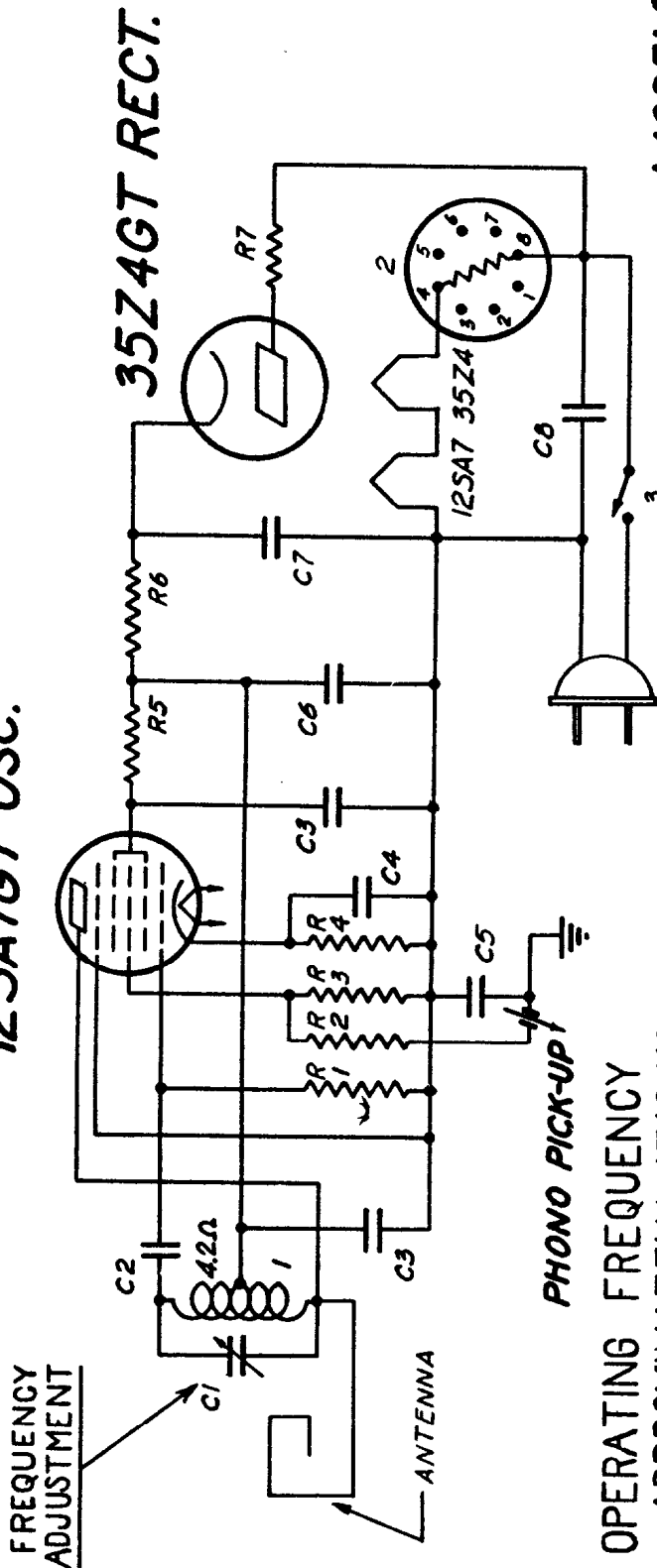


MODEL 7S487 SPEAKER 49-3/2 10"
7S488 49-3/8 12"
7S490 49-3/4 8"
I.F. FREQUENCY 455 KC
7 TUBE SUPERHETERODYNE
CHASSIS NO. 5721 3 BAND
VOLTAGE DOUBLER AC.
ZENITH RADIO CORPORATION
CHICAGO, ILL.

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	63-849	250V ELECTROLYTIC	15	85-204	DOOR SWITCH
C2	22-182	250V	16	85-203	1E1 IF TRANS. HD
C3	22-825	10MFD	A	5	5W1F
C4	22-825	10MFD	B	6	5W1F
C5	22-825	10MFD	C	7	5W1F
C6	22-825	10MFD	D	8	5W1F
C7	22-863	OSCILLATOR PHOSOR	E	22-863	BROADCAST OSC. (SEE NOTE)
C8	22-864	OSCILLATOR PHOSOR	F	22-863	ANTENNA BROADCAST
C9	22-865	OSCILLATOR PHOSOR	G	22-863	SHORT WAVE OSC. (SEE NOTE)
C10	22-866	OSCILLATOR PHOSOR	H	22-863	SHORT WAVE DETECTOR
C11	22-867	OSCILLATOR PHOSOR	I	22-863	POLICE BAND OSC. (SEE NOTE)
C12	22-868	OSCILLATOR PHOSOR	J		
C13	22-869	OSCILLATOR PHOSOR	K		
C14	22-870	OSCILLATOR PHOSOR	L		
C15	22-871	OSCILLATOR PHOSOR	M		
C16	22-872	OSCILLATOR PHOSOR	N		
C17	22-873	OSCILLATOR PHOSOR			
C18	22-874	OSCILLATOR PHOSOR			
C19	22-875	OSCILLATOR PHOSOR			
C20	22-876	OSCILLATOR PHOSOR			
R1	63-893	47M OHM			
R2	63-894	100K OHM			
R3	63-895	100K OHM			
R4	63-896	100K OHM			
R5	63-897	100K OHM			
R6	63-898	100K OHM			
R7	63-899	100K OHM			
R8	63-900	100K OHM			
R9	63-901	100K OHM			
R10	63-902	100K OHM			
R11	63-903	100K OHM			
R12	63-904	100K OHM			
R13	63-905	100K OHM			
R14	63-906	100K OHM			
R15	63-907	100K OHM			
R16	63-908	100K OHM			

MODELS 7S487, 7S488, 7S490 (Chassis No. 5721)

12SA7GT OSC.



OPERATING FREQUENCY
APPROXIMATELY 1540 KC.

MODELS
S-7000
S-7001
S-7002
S-7003

PHONOGRAPH OSCILLATOR
ZENITH RADIO CORPORATION
CHICAGO, ILL.

DIAG. N ^o	PART N ^o	DESCRIPTION	DIAG. N ^o	PART N ^o	DESCRIPTION
C1	22-690	TUNING CONDENSER	R2	63-658	390 M OHM
C2	22-182	.00025 MFD.	R3	63-260	100 M OHM
C3	22-243	.01 MFD.	R4	63-583	1000 OHM
C4	22-829	.05 MFD.	R5	63-964	4700 OHM
C5	22-927	.1 MFD.	R6	63-803	2200 OHM
C6	22-876	8MFD. ELECTROLYTIC	R7	63-575	47 OHM
C7	22-670	40 MFD.			
C8	22-670	.1 MFD.			
R1	63-591	22 M OHM	1	S6854	OSC. COIL ASSEM
			2	100-76	BALLAST TUBE
			3	85-170	AC SWITCH

WIRELESS RECORD PLAYER Models S7000, S7001, S7002, S7003