

*Most - Often - Needed*

1941

RADIO  
DIAGRAMS

*and Servicing Information*



Compiled by

**M. N. BEITMAN**

**SUPREME PUBLICATIONS**

CHICAGO

VOLUME 4

**\$2<sup>00</sup>**



*Most - Often - Needed*

1941

RADIO  
DIAGRAMS  
*and Servicing Information*

*Compiled by*

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SUPREME PUBLICATIONS

CHICAGO

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

**Y**OU Need radio diagrams to repair sets quickly and properly. In this one manual you will find all the popular 1941 diagrams you really need. All sets, which have been sold in large quantities during the 1941 radio season, are included. The most-often-needed diagrams are here in this one handy manual.

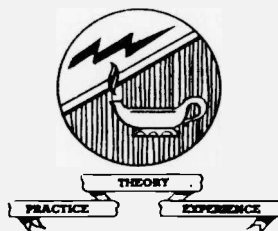
Get into the habit of referring to the index for the page numbers of the material you need. Use the circuit diagrams, parts lists, hints, and alignment information as aids in your daily radio work.

Radio sets of other periods are included in several other SUPREME PUBLICATIONS manuals. Get these service manuals of most popular diagrams at your jobber.

Our aim always has been to be of service to the radio men. We believe you will find this manual your servant and tool, ready to assist you in making radio servicing easier, faster, and much better paying work. Thank you.

M. N. Beitman

Chicago, Illinois



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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

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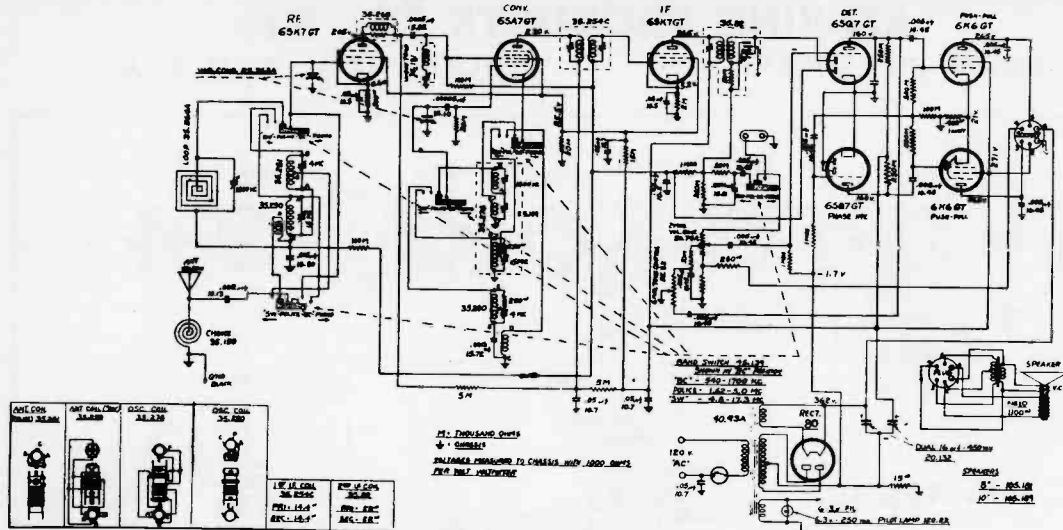
Cash in by improving audio circuits, modernizing cabinets, adding features usually found on late model sets. Practical job-sheets with schematics and photographs make the work easy. You are told how to obtain modernization work, what to charge, and how to complete the job quickly and efficiently. Large size, 8½x11 inch manual is **\$100** priced at only.....

# 6



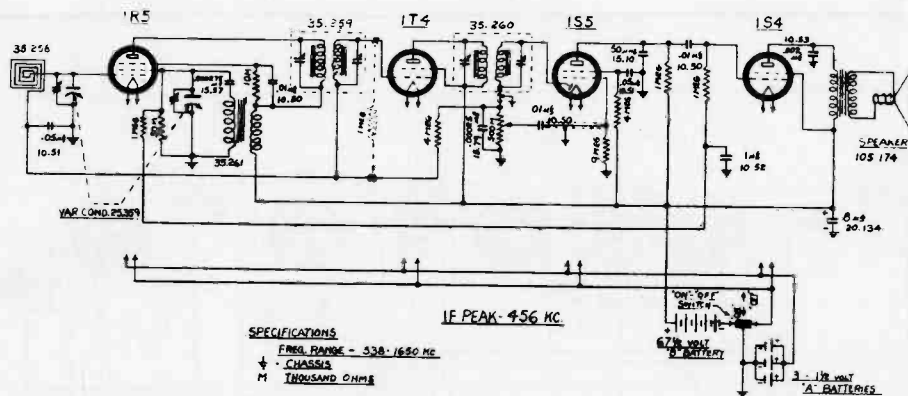


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



I.F. 456 KC.

SCHMATIC DIAGRAM MODELS B-17113—B-17114

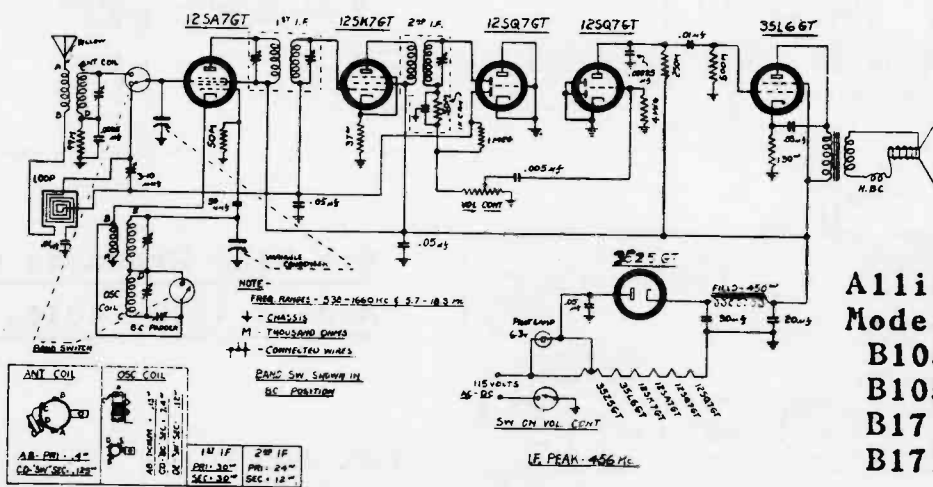


SPECIFICATIONS  
 FREQ. RANGE - 530-1650 KC  
 CHASSIS  
 M THOUSAND OHMS

I.F. PEAK - 456 KC

3-1.7V BATTERY  
 'A' BATTERIES

Models B10600, B10606, B17107-08



NOTE -  
 FREQ. RANGE - 530-1650 KC (2.7-10.3 MC)  
 CHASSIS  
 M THOUSAND OHMS  
 COMMUTATOR WIRES  
 RANGE SW. SHOWN IN  
 DC POSITION

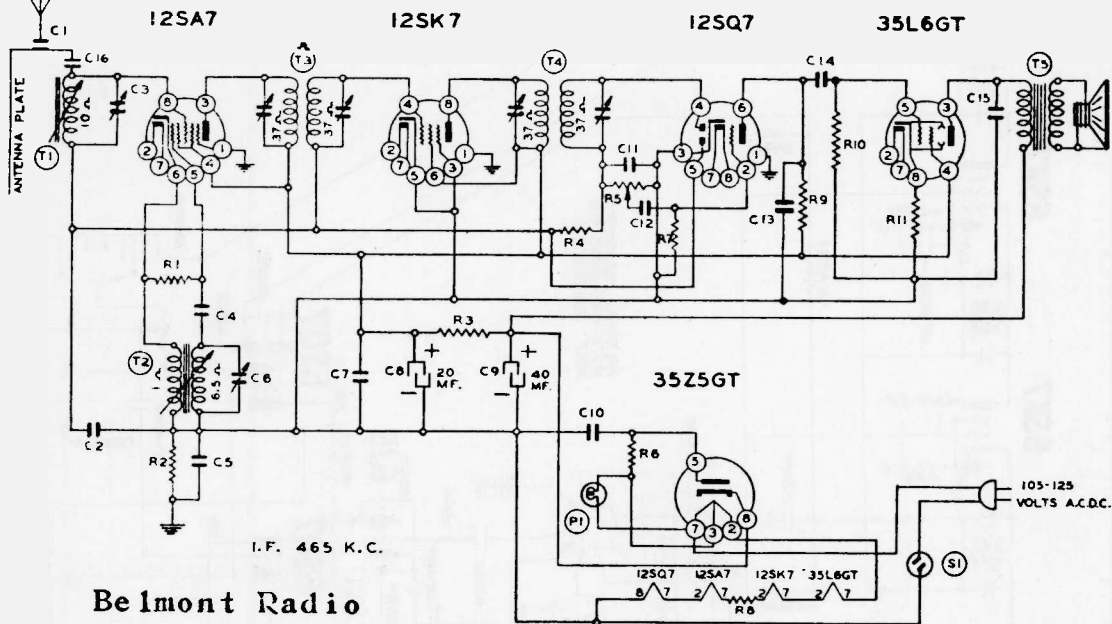
I.F. PEAK - 456 KC

Allied Radio  
 Models:  
 B10596  
 B10598  
 B17103  
 B17104





# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



## Belmont Radio

Circuit Diagram Ref. Part No.

Description

### RESISTORS

R1	130176	20M ohm— $\frac{1}{2}$ w.
R2	130100	150M ohm— $\frac{1}{2}$ w.
R3	130279	1M ohm—1 watt
R4	1304	3 megohm— $\frac{1}{2}$ w.
R5	101196	500M ohm volume control
R6	130293	30 ohm—1 watt
R7	130257	5 megohm— $\frac{1}{2}$ w.
R8	130288	50 ohm—1.5 watt
R9	1302	75M ohm— $\frac{1}{2}$ w.
R10	13011	250M ohm— $\frac{1}{2}$ w.
R11	130166	150 ohm— $\frac{1}{2}$ w.

### CONDENSERS

C1	131262	.00001 washer condenser (on Antenna plate)
C2	10022	.05 x 200 v.
C3	124100	Antenna Trimmer
C4	12930	.00005 Mica
C5	10091	.15 x 400 v.
C6	124100	Oscillator Trimmer
C7	10022	.05 x 200 v.
C8	11992	20 mfd. x 150 v. lytic
C9	11992	40 mfd. x 150 v. lytic
C10	10013	.05 x 400 v.
C11	12912	.00025 mica
C12	10025	.002 x 600 v.
C13	1292	.0005 mica
C14	10011	.01 x 400 v.
C15	10011	.01 x 400 v.

C3 and C6 in one unit  
C8 and C9 in one unit

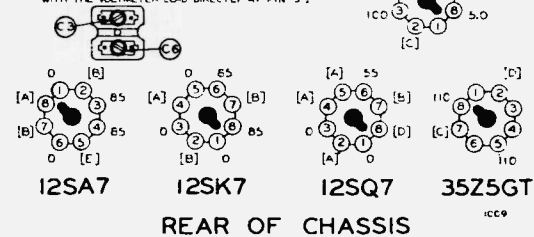
### PARTS

T1	111136B	Antenna Coil Complete
T2	110126B	Oscillator Coil
T3	108157C	Input I. F. Coil—465 kc.
T4	108157C	Output I. F. Coil—465 kc.
T5	114170	4" P. M. Speaker and Transformer
S1	101196	Off-on switch on volume control
P1	107249	6-8 v. pilot light T-47

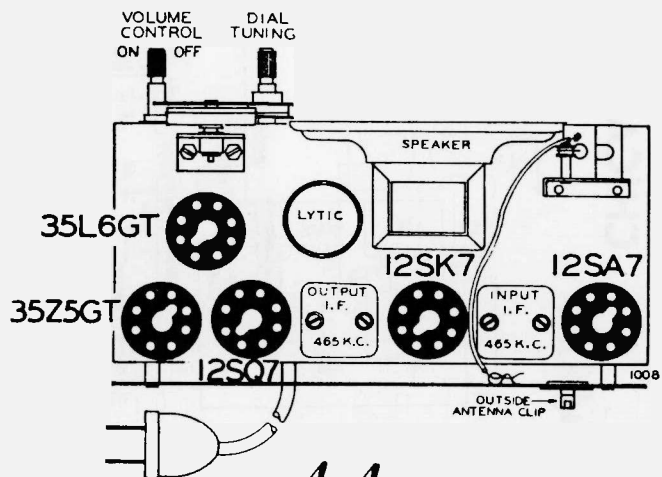
### BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND B—

- [A]—CANNOT BE READ WITH VOLTMETER
- [B]—12 V. A.C. BETWEEN PINS 2 & 7.
- [C]—32 V. A.C. BETWEEN PINS 2 & 7.
- [D]—117 V. A.C. BETWEEN PINS 2 & 8.
- [E]—8 VOLTS OSCILLATOR GRID VOLTAGE SHOULD BE MEASURED WITH AN R.F. CHROME PLACED IN SERIES WITH THE VOLTMETER LEAD DIRECTLY AT PIN 5.



### REAR OF CHASSIS

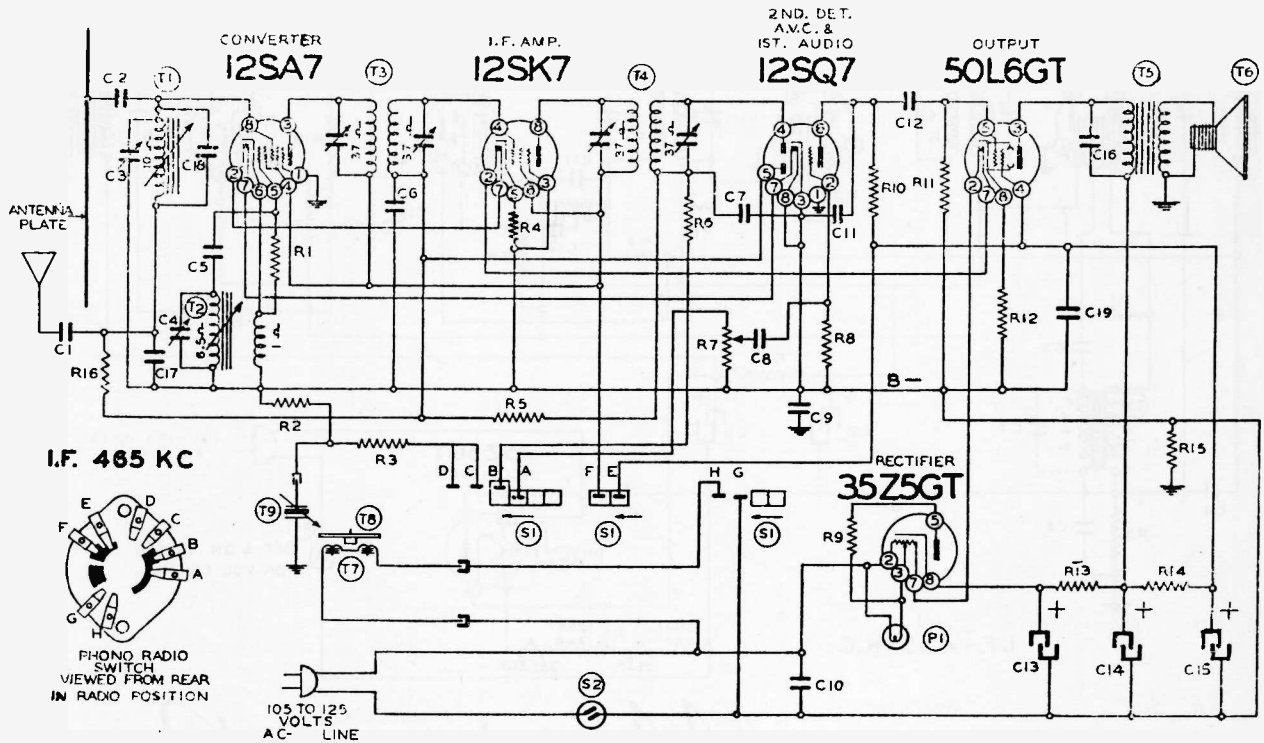


*Model 518*

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



**Circuit Diagram Ref. No. Part No. Description**

**RESISTORS**

R1	130176	20M ohm— $\frac{1}{2}$ w.
R2	130118	600M ohm— $\frac{1}{2}$ w.
R3	130118	600M ohm— $\frac{1}{2}$ w.
R4	13056	100 ohm— $\frac{1}{2}$ w.
R5	130170	3 megohm— $\frac{1}{2}$ w.
R6	13012	50M ohm— $\frac{1}{2}$ w.
R7	101217	$\frac{1}{2}$ megohm—volume control
R8	130257	5 megohm— $\frac{1}{2}$ w.
R9	130215	25 ohm— $\frac{1}{2}$ w.
R10	1309	200M ohm— $\frac{1}{2}$ w.
R11	13037	750M ohm— $\frac{1}{2}$ w.
R12	130166	150 ohm— $\frac{1}{2}$ w.
R13	13097	200 ohm— $\frac{1}{2}$ w.
R14	130287	1200 ohm—1 watt
R15	1309	200M ohm— $\frac{1}{2}$ w.
R16	1309	200M— $\frac{1}{2}$ w.

**CONDENSERS**

C1	1295	.0001 Mica Condenser
C2	129114	.0003 mfd. mica
C3	124136	Antenna Trimmer
C4	124136	Oscillator Trimmer
C5	1295	.0001 mica
C6	1009	.05 x 200 v.
C7	1295	.0001 mica

C8	10025	.002 x 600 v.
C9	100119	.1 x 400 v.
C10	1001	.1 x 400 v.
C11	12912	.00025 mica
C12	10019	.006 x 600 v.
C13	11994	40 mfd. lytic—150 w. v.
C14	11994	20 mfd. lytic—150 w. v.
C15	11994	20 mfd. lytic—150 w. v.
C16	10011	.01 x 400 v.
C17	129162	.0008 Mica Condenser
C18	129163	.000025 Ceramicon Condenser
C19	10013	.05 x 400 v. Cond.

C3 and C4 in same unit  
C13, C14 and C15 are in same unit

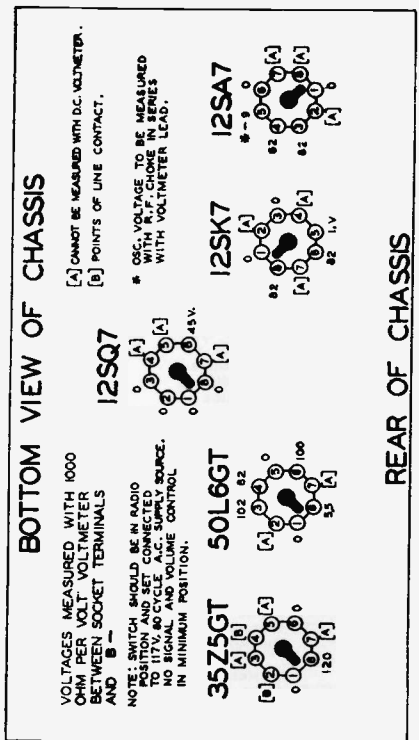
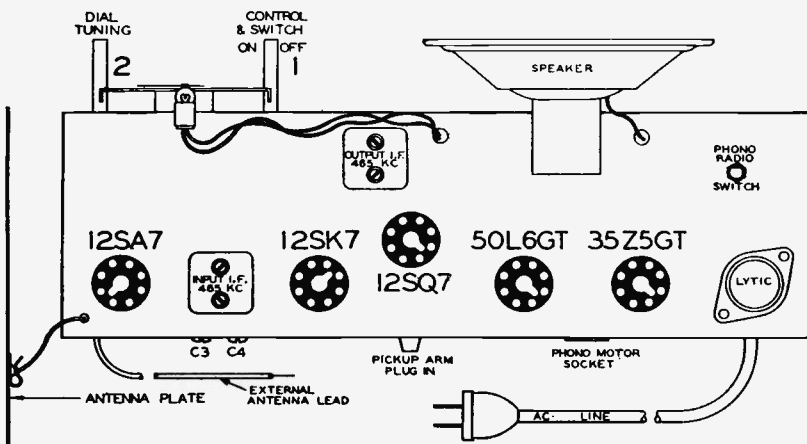
**PARTS**

T1	112866	Antenna Coil—Permeability tuning assembly complete
T2	112866	Oscillator Coil
T3	108140F	Input I. F. Coil—465 kc.
T4	108145D	Output I. F. Coil—465 kc.
T5	105108	Output Transformer
T6	14198	5" P.M. Speaker
T7	104206	Phono Motor
T8	12228	Turntable
T9	114194	Phono pick up arm
S1	125113	Phono Switch
S2		Switch on volume control
P1	107249	Pilot light T47

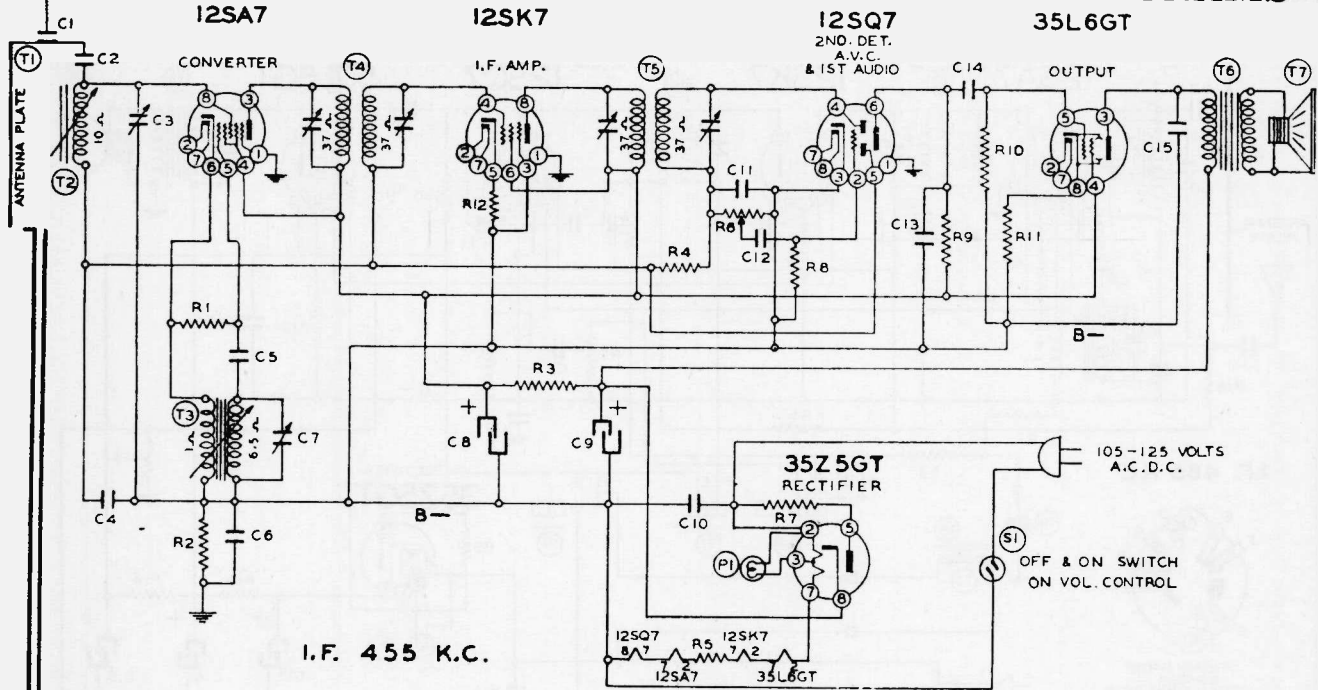
T1 and T2 in same unit

Belmont Radio

MODEL 533—SERIES C



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



I.F. 455 K.C.

Schematic Part Ref. No. No. Description

### RESISTORS

R1	130176	20M ohm— $\frac{1}{4}$ w.
R2	130100	150M ohm— $\frac{1}{4}$ w.
R3	130279	1M ohm—1 w.
R4	1304	3 megohm— $\frac{1}{4}$ w.
R5	130288	50 ohm—1.5 w.
R6	101238	500M ohm volume control and switch
R7	130240	30 ohm— $\frac{1}{4}$ w.
R8	130257	5 megohm— $\frac{1}{4}$ w.
R9	100100	150M ohm— $\frac{1}{4}$ w.
R10	13011	250M ohm— $\frac{1}{4}$ w.
R11	130166	150 ohm— $\frac{1}{4}$ w.
R12	130233	60 ohm— $\frac{1}{4}$ w.

### CONDENSERS

C1	131262	.0001 washer condenser (Antenna clip on back plate)
C2	129114	.0003 mica
C3	124151	Trimmer on antenna coil
C4	1009	.05 x 200 v.
C5	12939	.00005 mica
C6	10091	.15 x 400 v.
C7	124151	Trimmer on oscillator coil
C8	11992	20 mfd. lytic x 150 w. v.
C9	11992	40 mfd. lytic x 150 w. v.
C10	10013	.05 x 400 v.
C11	12912	.00025 mica
C12	10025	.02 x 600 v.
C13	1292	.0005 mica
C14	10011	.01 x 400 v.
C15	10001	.01 x 400 v.

C3 and C7 are in same unit  
C8 and C9 are in same unit

### PARTS

T1	128586B	Back plate (walnut)
	128586	Back plate (ivory)
T2	112877	Antenna coil—Permeability tuning assembly complete
T3	112877	Oscillator coil—Permeability tuning assembly complete
T4	108157L	Input I. F. coil—455 Kc.
T5	108157N	Output I. F. coil—455 Kc.
T6	10595C	Output transformer
T7	114225	5" P. M. speaker
S1		Switch on volume control
P1	107249	Pilot light T47

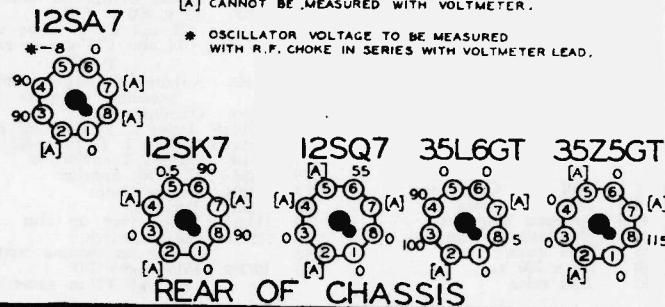
# Model 536 Radio

## BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH A HIGH RESISTANCE VOLTMETER BETWEEN SOCKET TERMINALS AND B—

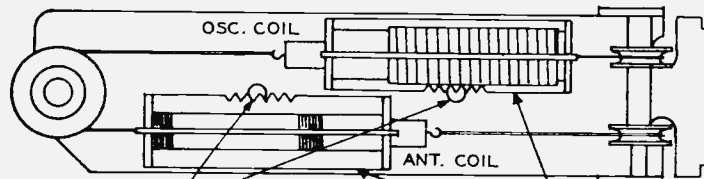
[A] CANNOT BE MEASURED WITH VOLTMETER.

\* OSCILLATOR VOLTAGE TO BE MEASURED WITH R. F. CHOKE IN SERIES WITH VOLTMETER LEAD.



## REAR OF CHASSIS

VIEW LOOKING AT BOTTOM OF CHASSIS



NOTE \*A\* THE ANTENNA COIL ASSEMBLY IS MADE SO THAT IT IS MOVABLE LEFT OR RIGHT. WHEN MAKING THE ADJUSTMENT AS GIVEN IN THE ALIGNMENT PROCEDURE MOVE THE COIL ASSEMBLY VERY SLOWLY. IT CAN BE MOVED BY HAND OR BY PIVOTING ONE EDGE OF THE BLADE OF A SCREWDRIVER IN THE HOLE AND ENGAGING THE BLADE IN THE GEAR TEETH OF THE COIL FORM.

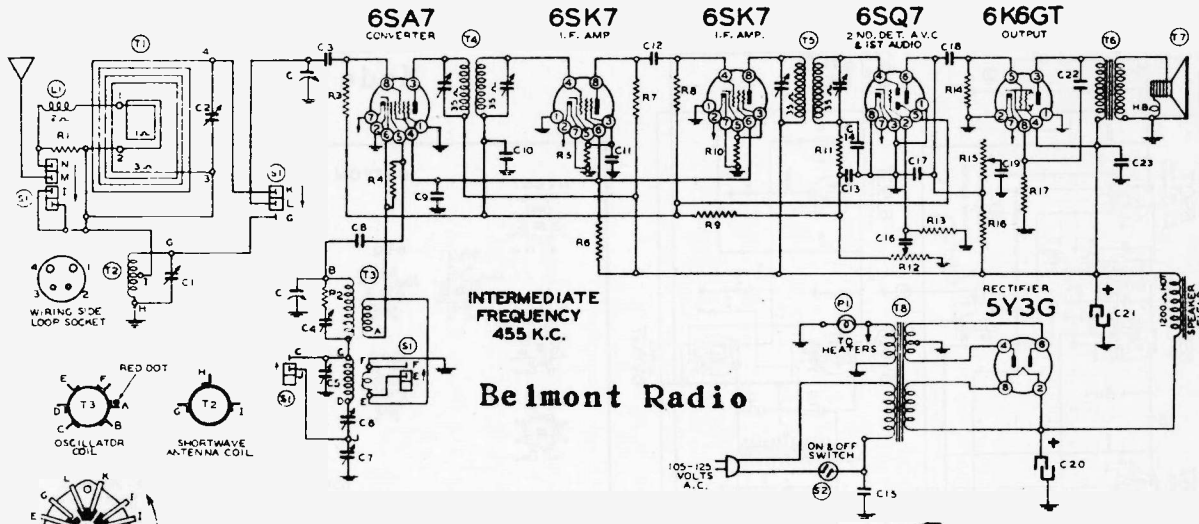
TO ADJUST COIL ASSEMBLY MOVE LEFT OR RIGHT

# 12

Belmont Radio

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



Belmont Radio

## Model 681 Radio

### Setting the Pushbuttons

Make a list of your 6 favorite stations. Push out the call letters of these stations from the call letter sheets supplied. Insert a call letter in the front of each pushbutton.

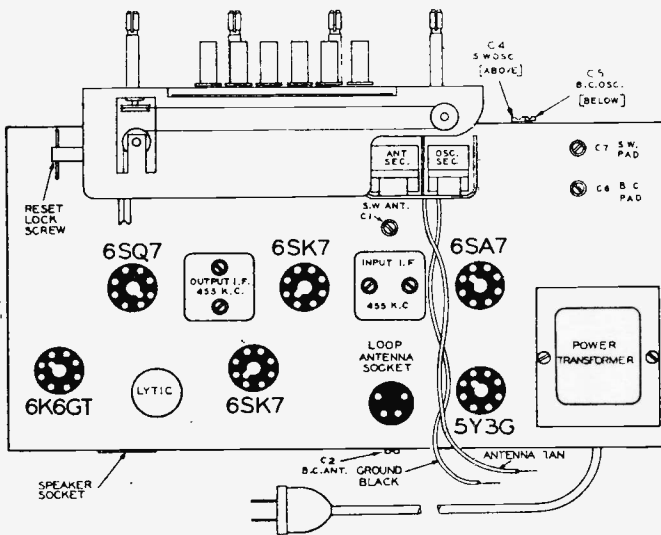
Next push one of the pushbuttons all the way in as far as it will go and hold it there. Now tune in the station you want with the tuning knob—Tune back and forth until the station is clear and distinct, then release the button. Continue setting each pushbutton in the same way. Now rotate the tuning knob to the right (clockwise) as far as it will turn.

Looking at the back of the cabinet note the reset lock screw on the left hand side of the chassis, (see chassis view).

Rotate the reset lock screw to the right (clockwise) by means of the pin thru the shaft.

It is very important that this locking screw is turned until it is absolutely tight.

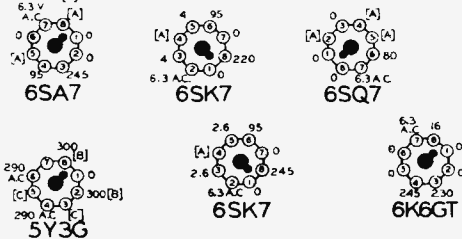
This screw will lock in place all the stations you have selected on the automatic tuner pushbuttons. Pressing the proper button will now tune the station you want.



### BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH A HIGH RESISTANCE VOLTMETER BETWEEN SOCKET TERMINALS AND CHASSIS. VOLUME CONTROL AT MINIMUM, 117 VOLT LINE

- [A] CANNOT BE MEASURED WITH VOLTMETER
- [B] 3 VOLTS A.C. MEASURED ACROSS PINS 2 & 8.
- [C] 117 VOLT A.C. MEASURED ACROSS PINS 3 & 5.



REAR OF CHASSIS

### CONDENSERS

- C 2 gang variable condenser
- C1 S.W. antenna trimmer
- C2 B.C. antenna trimmer
- C3 .0005 mica
- C4 S.W. oscillator trimmer
- C5 B.C. oscillator trimmer
- C6 B.C. padding condenser
- C7 S.W. padding condenser
- C8 150 mfd. mica
- C9 .05 x 400 v.
- C10 .05 x 200 v.
- C11 .05 x 200 v.
- C12 .0005 mica
- C13 .0001 mica
- C14 .0001 mica
- C15 .02 x 600 v.
- C16 .002 x 600 v.
- C17 .00025 mica
- C18 .02 x 400 v.
- C19 .004 x 600 v.
- C20 16 mfd. x 400 v.w. lytic
- C21 16 mfd. x 400 v.w. lytic
- C22 .006 x 600 v.
- C23 .1 x 400 v.

### RESISTORS

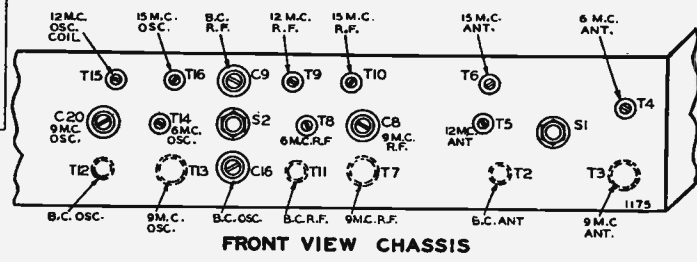
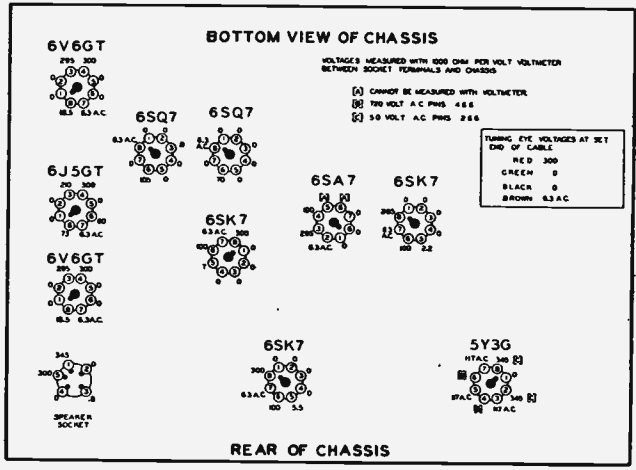
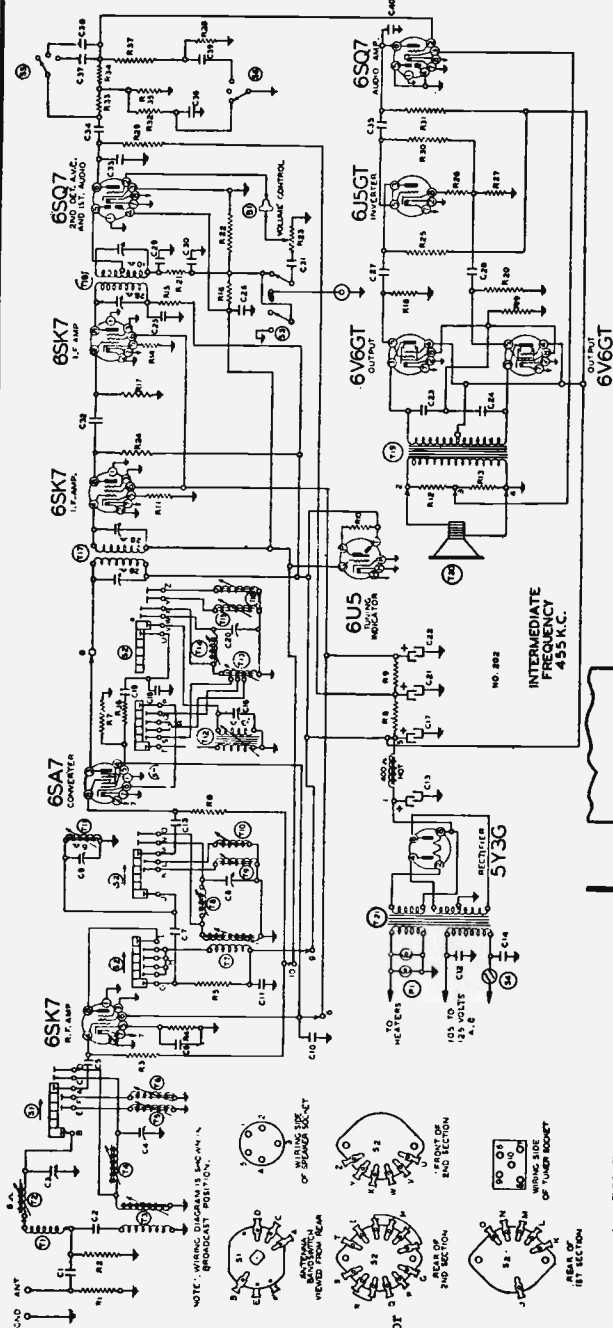
- R1 4M ohm—1/2 w.
- R2 20 ohm—1/2 w.
- R3 1 megohm—1/2 w.
- R4 30M ohm—1/2 w.
- R5 750 ohm—1/2 w.
- R6 19M ohm—1/2 w.
- R7 5M ohm—1/2 w.
- R8 100M ohm—1/2 w.
- R9 3 megohm—1/2 w.
- R10 350 ohm—1/2 w.
- R11 50M ohm—1/2 w.
- R12 1 megohm volume control
- R13 10 megohm—1/2 w.
- R14 500M ohm—1/2 w.
- R15 1 megohm tone control
- R16 250M ohm—1/2 w.
- R17 500 ohm—1 w.

C4 and C5 are in same unit  
C13 and C14 are in same unit  
C6 and C7 are in same unit  
C20 and C21 are in same unit

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## Belmont Radio Model 1100



### TRIMMER VIEW

### 1 F 455 KC.

### RESISTORS

- R1 130232 25M ohm-1/2 W.
- R2 130232 25M ohm-1/2 W.
- R3 13019 1 megohm-1/2 W.
- R4 130239 250 ohm-1/2 W.
- R5 130218 5M ohm-1/2 W.
- R6 130218 5M ohm-1/2 W.
- R7 130232 25M ohm-1/2 W.
- R8 130318 6M ohm-2 watt
- R9 130319 10M-2 watt
- R10 130290 700 ohm-1/2 W.
- R11 13052 10M ohm-1/2 W.
- R12 130235 1500 ohm-1/2 W.
- R13 130235 1500 ohm-1/2 W.
- R14 130235 1500 ohm-1/2 W.
- R15 130192 2M ohm-1/2 W.
- R16 13019 2M ohm-1/2 W.
- R17 13020 100M ohm-1/2 W.
- R18 1303 500M ohm-1/2 W.
- R19 130317 250 ohm-1/2 W.
- R20 1303 500M ohm-1/2 W.
- R21 13020 100M ohm-1/2 W.
- R22 130238 400M ohm-1/2 W.
- R23 101234 500M ohm volume control and line switch (S4)
- R24 13073 5M ohm-1/2 W.
- R25 13074 50M ohm-1/2 W.
- R26 130218 5M ohm-1/2 W.
- R27 13074 50M ohm-1/2 W.
- R28 1303 500M ohm-1/2 W.
- R29 130172 250M ohm-1/2 W.
- R30 1303 500M ohm-1/2 W.
- R31 130172 250M ohm-1/2 W.
- R32 1307 40M ohm-1/2 W.
- R33 13080 150M ohm-1/2 W.
- R34 130399 350M ohm-1/2 W.
- R35 130172 250M ohm-1/2 W.
- R36 130174 50 ohm-1/2 W.
- R37 13080 150M ohm-1/2 W.

### CONDENSERS

- C1 .0005 mica
- C2 .002 x 600 V.
- C3 B.C. Antenna Coil
- C4 9 mc. Antenna Trimmer
- C5 .0005 mica
- C6 .1 x 200 V. Tubular
- C7 .0001 mica
- C8 9 mc. R.F. Trimmer
- C9 B.C. R.F. Trimmer
- C10 .1 x 400 V.
- C11 .1 x 400 V.
- C12 .0001 mica
- C13 .0005 mica
- C14 .02 x 600 V.
- C15 30.0 mfd. lytic
- C16 B.C. Oscillator Coil
- C17 30.0 mfd. lytic x 450 w.v.
- C18 129167 .0002 silver mica
- C19 12938 .0005 mica
- C20 124145 9 mc. Oscillator Coil
- C21 19112 10.0 mfd. lytic
- C22 11969 16 mfd. x 350 w.v.

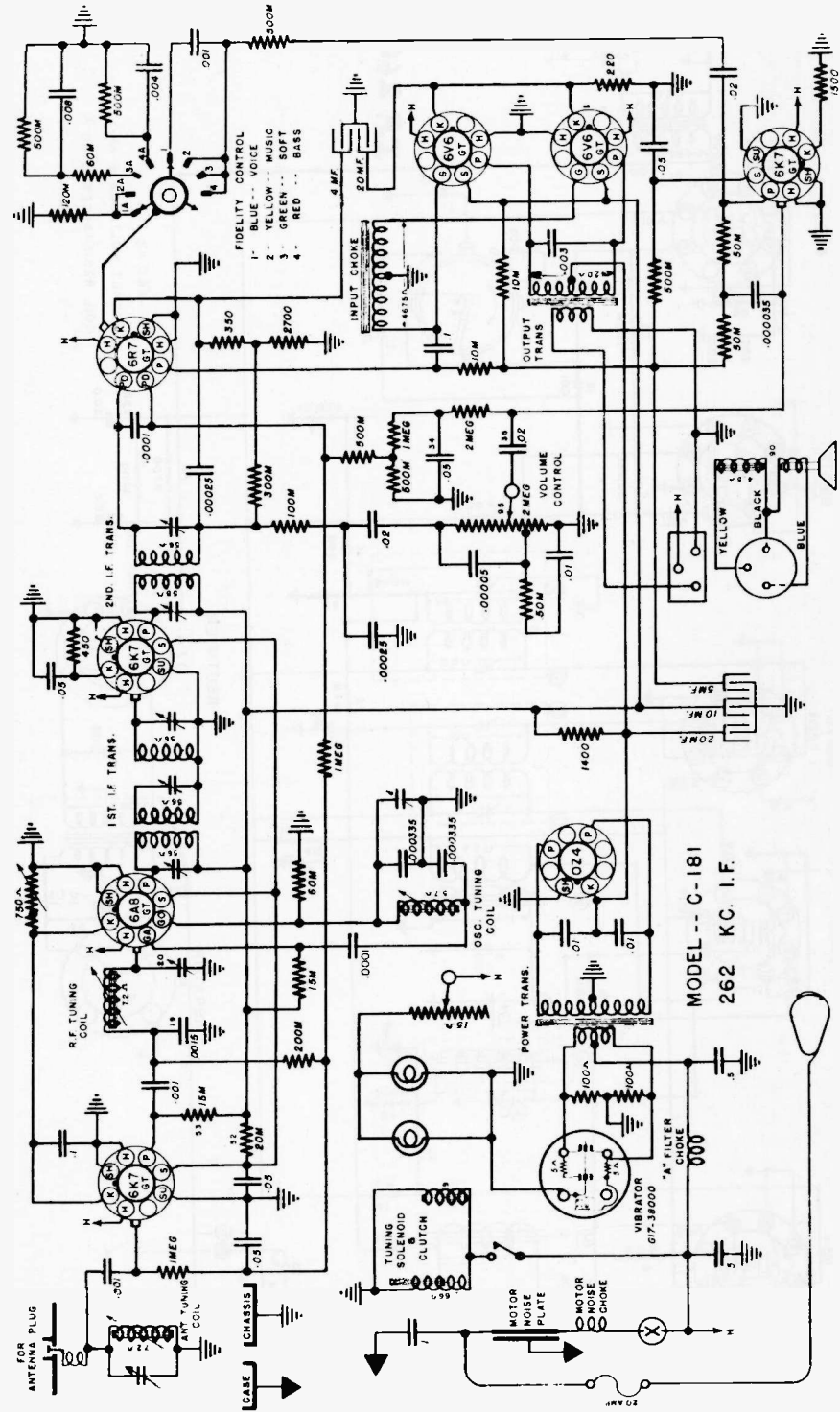
### PARTS

- T1 111207 Loop Antenna Assembly
- T2 111195 B.C. Antenna Coil
- T3 111190 9 mc. Antenna Coil
- T4 111189 6 mc. Antenna Coil
- T5 111191 12 mc. Antenna Coil
- T6 111192 15 mc. Antenna Coil
- T7 110939 9 mc. R.F. Coil
- T8 10938 6 mc. R.F. Coil
- T9 10960 12 mc. R.F. Coil
- T10 10961 15 mc. R.F. Coil
- T11 10962 B.C. R.F. Coil
- T12 110161 B.C. Oscillator Coil
- T13 110157 9 mc. Oscillator Coil
- T14 110156 6 mc. Oscillator Coil
- T15 110158 12 mc. Oscillator Coil
- T16 110159 15 mc. Oscillator Coil

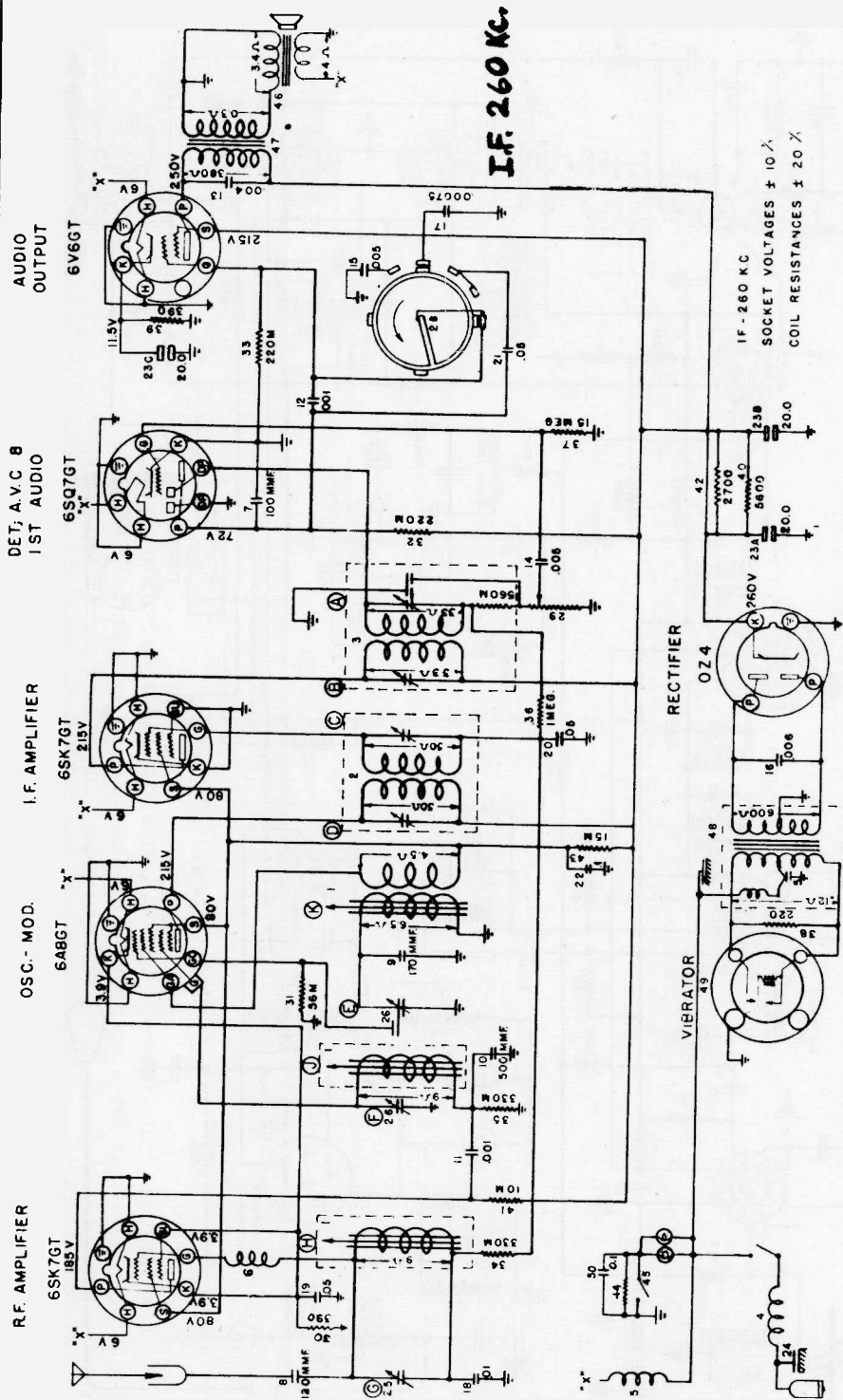


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## Chevrolet Auto Radio, Model 985694



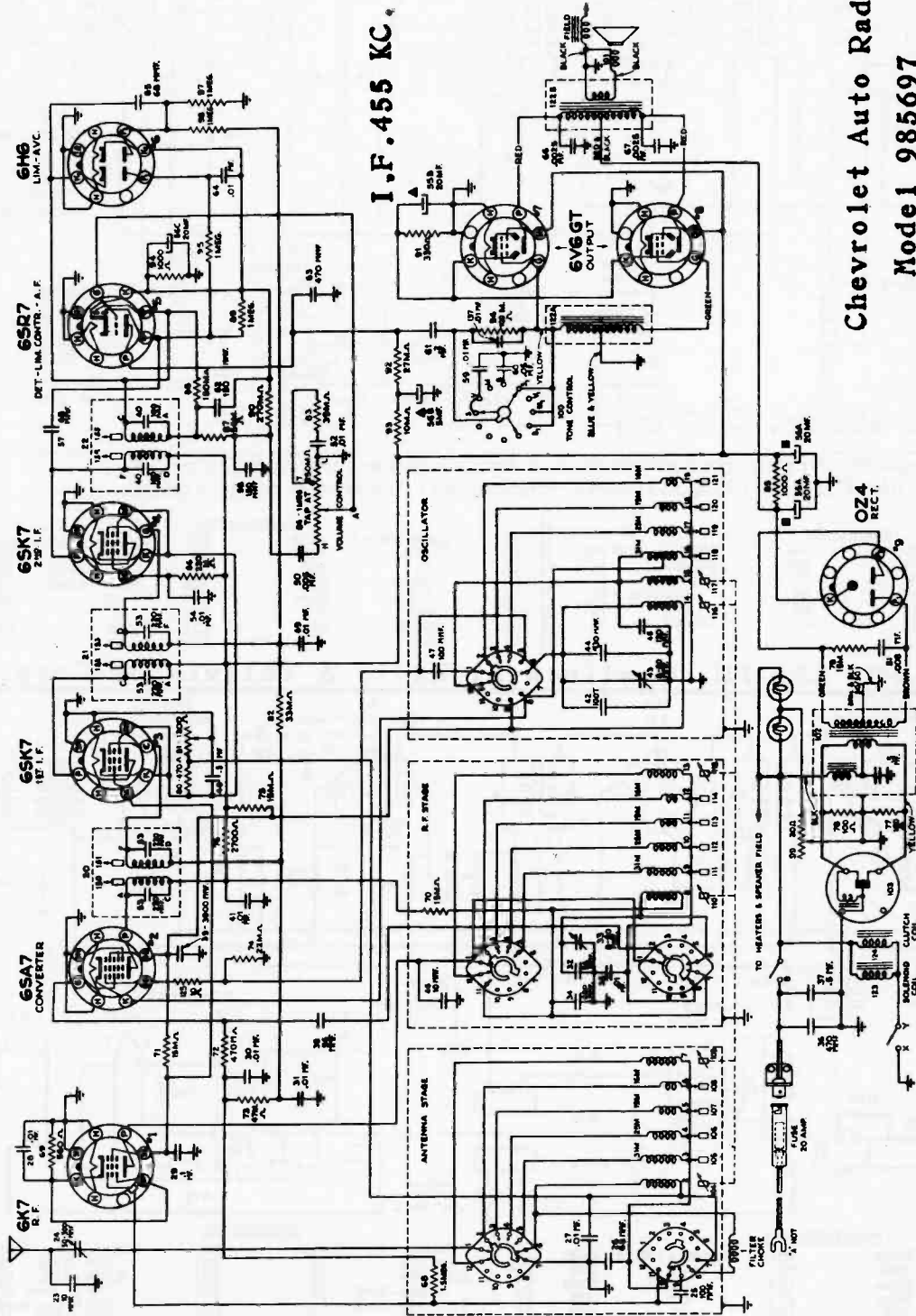
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



**ANTENNA CIRCUIT:** The antenna circuit is directly coupled to the antenna. The antenna coil is tuned by means of an iron core and the circuit is adjusted for slight variations in antenna capacity by means of an antenna trimmer located on the bottom of the receiver case.

**Chevrolet Auto Radio, Model 1 985695**

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

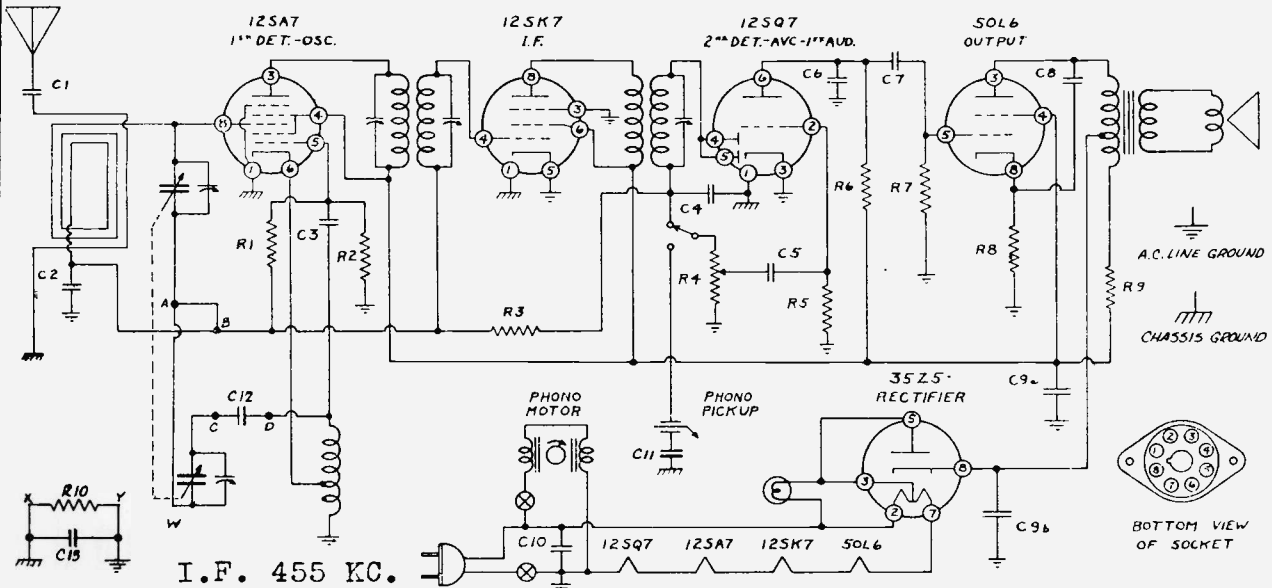


**Chevrolet Auto Radio  
Model 1985697**



This auto radio is a nine-tube self contained receiver, built expressly for installation in 1941 Chevrolet automobiles. Special features incorporated in this receiver are: Electric tuning on five stations; push-button tone control; elliptical speaker; permeability tuning; sensitivity control; noise limiter circuit; OZ4 cold cathode rectifier, and a primary type vibrator.

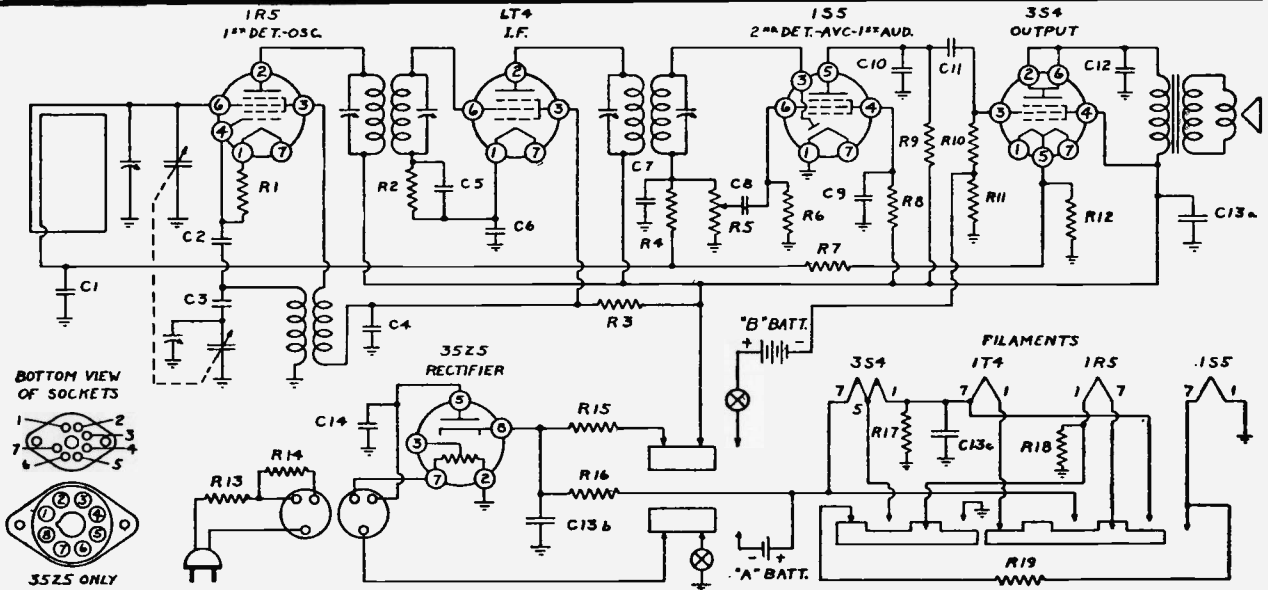
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



In model M5-PH only, connect points w, x, and y together. R10 and C13 are not used. Also C12 is not used, and point C connects to D. Disconnect points A and B.

RESISTORS					CONDENSERS						
No.	Ohms	Watts	No.	Ohms	Watts	No.	Capacity (Mfd.)	Volts	No.	Capacity (Mfd.)	Volts
R1	10,000,000	1/4	R6	250,000	1/4	C1	.001	600	C8	.02	400
R2	25,000	1/4	R7	500,000	1/4	C2	.05	200	C9a	50. Elect.	150
R3	2,000,000	1/4	R8	150-10%	1/4	C3	.00005	Mica	C9b	30. Elect.	150
R4	500,000	V.C.	R9	1,000	1/2	C4	.00025	Mica	C10	.05	400
B5	5,000,000	1/4	R10	150,000	1/2	C5	.005	600	C11	.2	400
						C6	.0005	Mica	C12	.02	400
						C7	.01	400	C13	.16	200

## Models M5-PH, XM5-PH, Continental Radio & Television Corp.



CONDENSERS					RESISTORS						
No.	Capacity (Mfd.)	Volts	No.	Capacity (Mfd.)	Volts	No.	Ohms	Watts	No.	Ohms	Watts
C1	.05	200	C9	.05	200	R1	100,000	1/4	R11	750-10%	1/4
C2	.0001	Mica	C10	.00005	Mica	R2	5,000,000	1/4	R12	3,000-10%	1/4
C3	.000485-2%	Mica	C11	.005	200	R3	5,000-10%	1/4	R13	80 } part of	
C4	.01	120	C12	.01	200	R4	2,000,000-10%	1/4	R14	350 } line cord	
C5	.1	120	C13a	.20	150	R5	1,000,000	V.C.	R15	2,000-10%	1/2
C6	.1	120	C13b	.30	150	R6	10,000,000	1/4	R16	1,750-10%	4
C7	.00025	Mica	C13c	100.	12	R7	3,000,000-10%	1/4	R17	1,700-10%	1/4
C8	.01	200	C13d	.05	400	R8	4,000,000	1/4	R18	1,000-10%	1/4
						R9	1,000,000	1/4	R19	55-10%	1/2
						R10	2,000,000	1/4		(wire wound)	

# 18

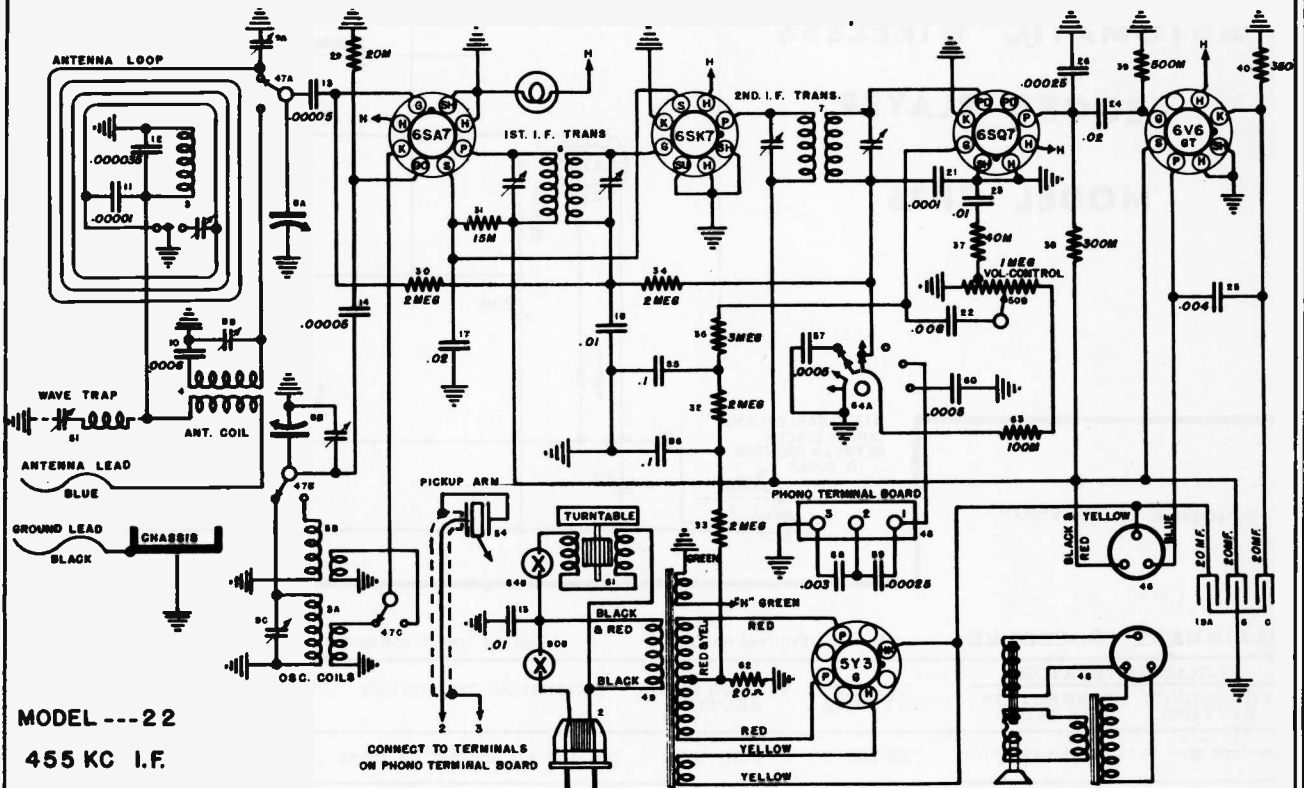
G5

I.F. 455 KC.

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## INSTALLATION, OPERATION AND SERVICE INSTRUCTIONS FOR CROSLEY MODEL 22AS



MODEL ---22  
455 KC I.F.

CONNECT TO TERMINALS  
ON PHONO TERMINAL BOARD

Alignment Sequence	Dummy Antenna	Frequency Setting	Input to Receiver	Band Switch	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02MF.	455 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum output. Adjust for Maximum output.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Lead (Blue)	S. W.	Fully Open	S. W. "OSC" (on gang)	Adjust for Peak. See foot note.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 15 on dial	S. W. "ANT" center trimmer on right end	Adjust for Maximum while rocking gang back and forth.
4.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	B. C. "OSC" front trimmer on right end	Adjust for peak. Make sure the switch on loop is in B. C. position.
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" rear trimmer on right end	Adjust for Maximum output.
6.	.0002 MF.	2.5 Mc.	Ant. Lead (Blue)	B. C. and switch on loop to Pol.	Approx. 2.5 on dial lower right corner	Pol. Ant on loop	Adjust for Maximum output.

### VOLTAGE CHART

ALL VOLTAGES MEASURED FROM SOCKET PIN TO CHASSIS @ .1175 VOLT LINE

TUBE SECTION	SOCKET PIN NUMBER							
	1	2	3	4	5	6	7	8
6SA7—Osc.-Mod. ....	0	0	225	74	0	0	6.3 A.C.	0
6SK7—I. F. Amp. ....	0	0	0	0	0	74	6.3 A.C.	225
6SQ7—Det. A.V.C.—1st A.F. ....	0	0	0	0	0	100	6.3 A.C.	0
6V6GT—Output ....	0	0	209	225	0	0	6.3 A.C.	10.5
5Y3G—Rectifier ....	0	5.0 A.C.	0	316 A.C.	0	316 A.C.	0	283

All voltages measured with 1000 OHM/Volt Voltmeter except heaters. Voltages may vary 10% of values given.

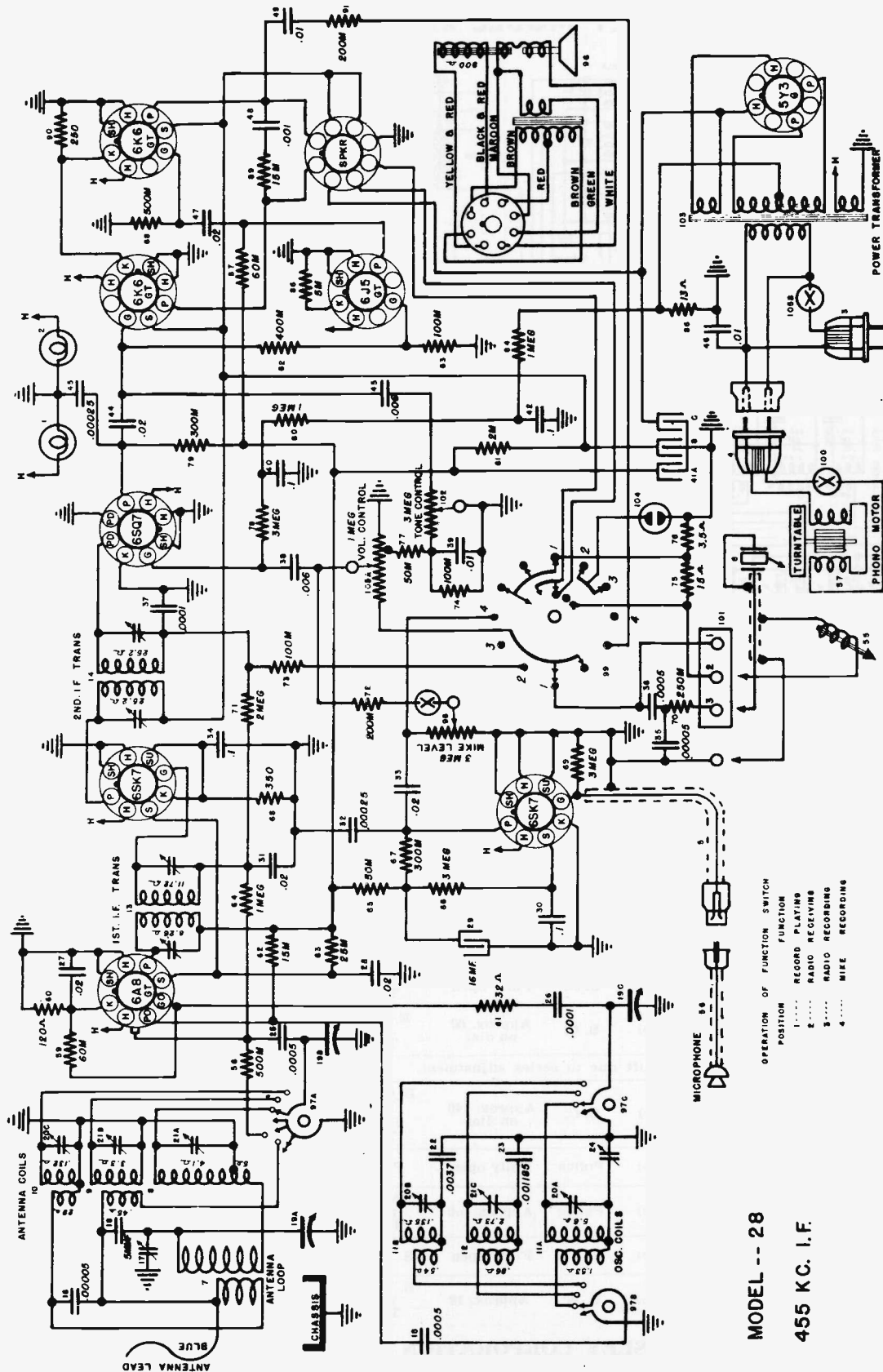
DROP ACROSS SPEAKER FIELD ..... 58 Volts  
MAXIMUM POWER OUTPUT @ 130 V. LINE ..... 6.5 Watts

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



MODEL -- 28

455 KC. I. F.

OPERATION OF FUNCTION SWITCH

POSITION	FUNCTION
1	RECORD PLAYING
2	RADIO RECEIVING
3	RADIO RECORDING
4	MIXE RECORDING

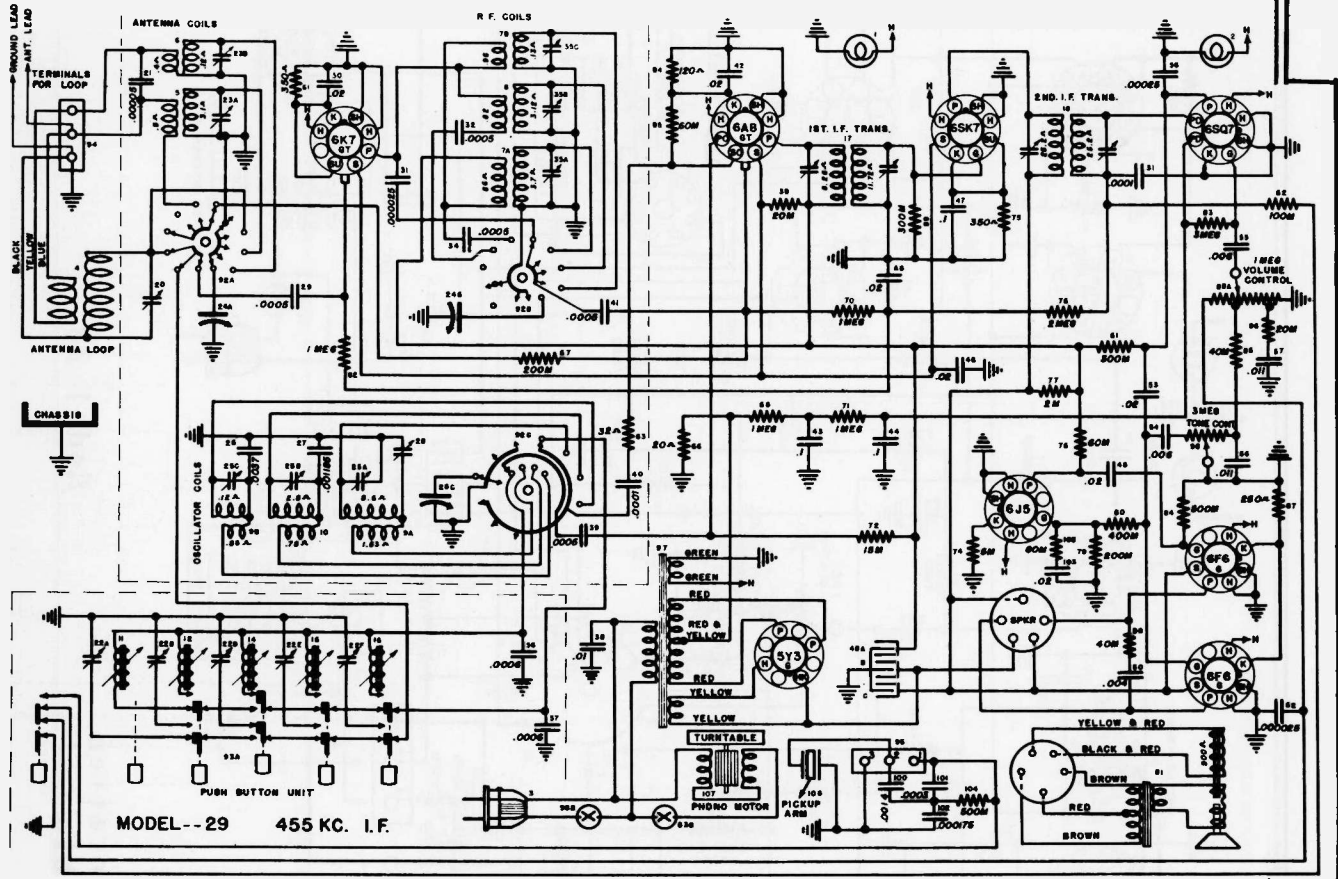
Model 28

The Crosley Corporation  
Cincinnati, Ohio

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## CROSLY MODEL 29 CHASSIS



### ALIGNMENT PROCEDURE CHART

Signal Generator							
Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. R-F Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and R-F Trimmers	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and R-F Trimmers	Adjust for maximum output while rocking gang thru signal.

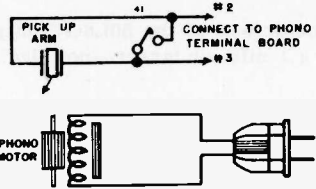
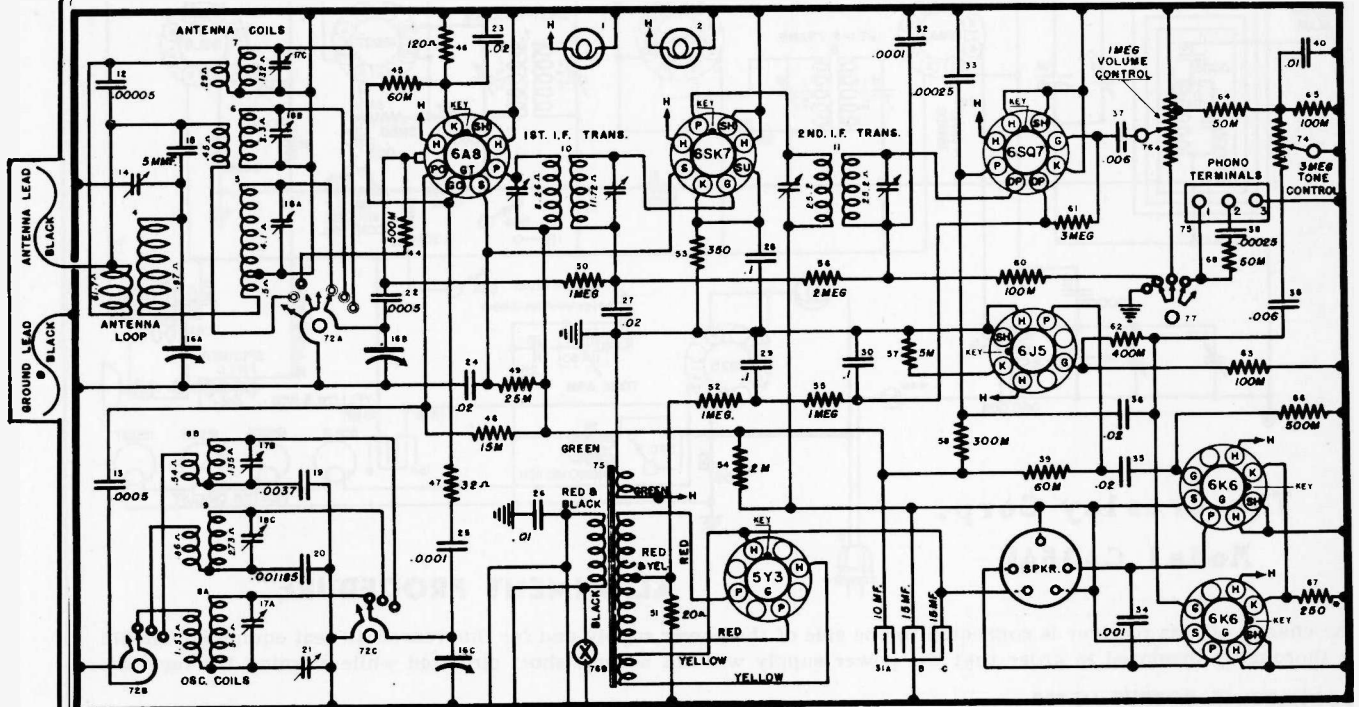
# 22

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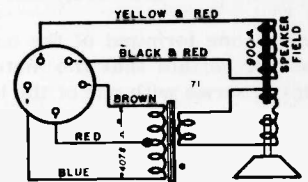
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## CROSELY MODEL J30BC



**MODEL -- 30**  
**455 K.C. I.F.**

FOR TELEVISION SOUND OR F.M. SOUND  
USE TERMINALS NO. 1 & 3 OF PHONO  
TERMINAL BOARD, WITH PHONO-RADIO  
SWITCH IN PHONO POSITION



Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "PRE" Trimmer	Adjust for maximum output; do not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.

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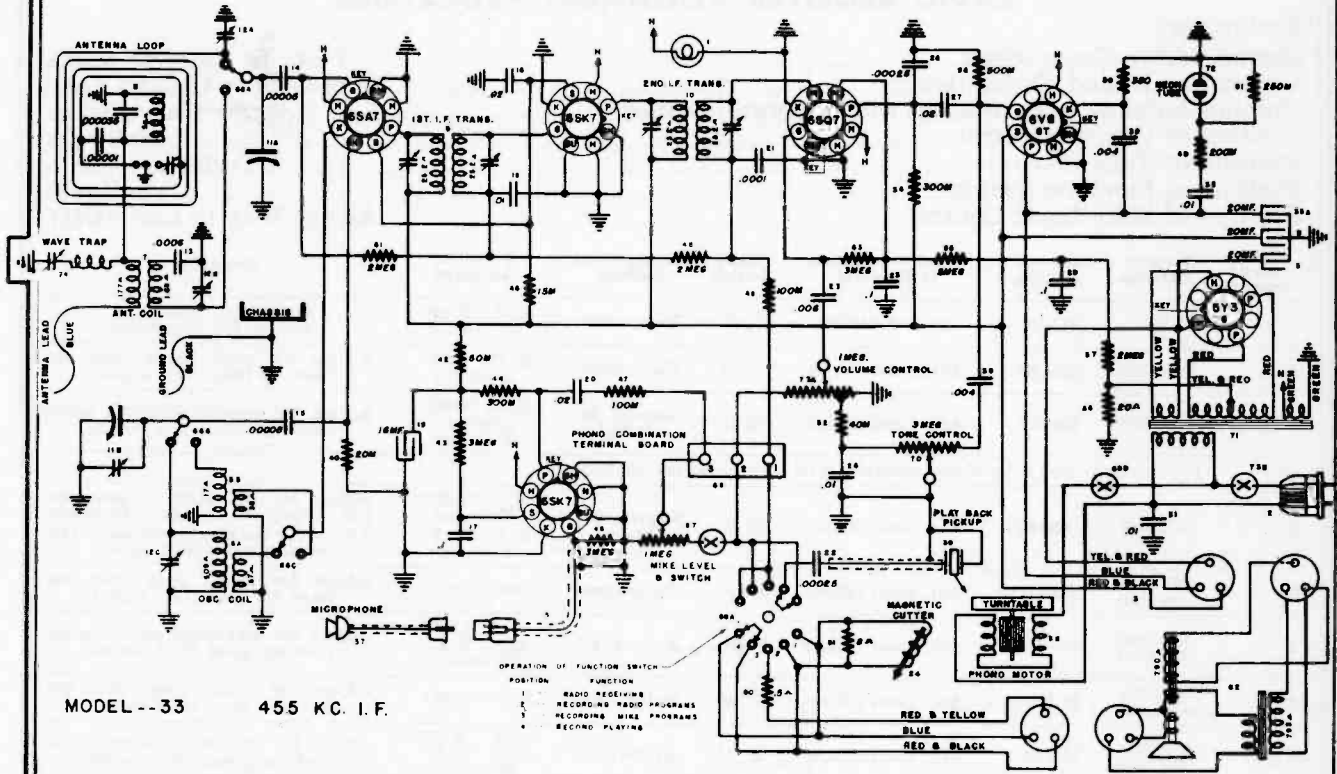
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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## INSTRUCTIONS FOR MODEL 33BG



MODEL -- 33      455 KC. I. F.

OPERATION OF FUNCTION SWITCH  
 POSITION      FUNCTION  
 1      RADIO RECEIVING  
 2      RECORDING RADIO PROGRAMS  
 3      RECORDING DISK PROGRAMS  
 4      RECORD PLAYING

Alignment Sequence	Dummy Antenna	Frequency Setting	Input to Receiver	Band Switch	Tuning Cond. Setting	Trimmers Adjusted	Remarks
1.	.02MF.	455 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum output. Adjust for Maximum output.
2.	400 ohm (carbon)	15.3 Mc.	Ant. Lead (Blue)	S. W.	Fully Open	S. W. "OSC" (on gang)	Adjust for Peak. See foot note.
3.	400 ohm (carbon)	15.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 15 on dial	S. W. "ANT" center trimmer on right end	Adjust for Maximum while rocking gang back and forth.
4.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully Open	B. C. "OSC" front trimmer on right end	Adjust for peak. Make sure the switch on loop is in B. C. position.
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" rear trimmer on right end	Adjust for Maximum output.
6.	.0002 MF.	2.5 Mc.	Ant. Lead (Blue)	B. C. and switch on loop to Pol	Approx. 2.5 on dial lower right corner	Pol. Ant on loop	Adjust for Maximum output.

### VOLTAGE CHART

ALL VOLTAGES MEASURED FROM SOCKET PIN TO CHASSIS @ 117.5 VOLT LINE

TUBE SECTION	SOCKET PIN NUMBER							
	1	2	3	4	5	6	7	8
6SA7—Osc.—Mod.	0	0	225	74	0	0	6.3	0
6SK7—I. F. Amp.	0	0	0	0	0	74	6.3	225
6SQ7—Det. A.V.C.—1st A.F.	0	0	0	0	0	100	6.3	0
6V6GT—Output	0	0	209	225	0	0	6.3	10.5
6SK7—Mike Amp.	0	0	0	0	0	+	6.3	+
5Y3G—Rectifier	0	5.0	0	316 A.C.	0	316 A.C.	0	283

All voltages measured with 1000 OHM/Volt Voltmeter except heaters. Voltages may vary 10% of values given.

DROP ACROSS SPEAKER FIELD ..... 58 Volts  
 MAXIMUM POWER OUTPUT @ 130 V. LINE ..... 6.5 Watts  
 MAXIMUM POWER CONSUMPTION @ 130 V. LINE ..... \*60 Watts

\*Phono Motor 40 Watts additional.

**COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS**

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## INSTRUCTIONS FOR MODEL 34BH

### RADIO RECEIVER ALIGNMENT PROCEDURE

**Preliminary**

Output Meter Connections.....Plate to Plate of 6K6's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech  
 Position of Function Switch.....Radio  
 Position of Mike Level Control.....All the Way to Left (Off)

Align- ment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "R-F" Trimmer	Adjust for maximum output. Do not touch B. C. Osc. Trimmer. Adjust for maximum output while rocking gang thru signal.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak; gang does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT" and "R-F" Trimmers	Adjust for maximum output while rocking gang thru signal.

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

**SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS)  
WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.)**

TUBE	FUNCTION	SOCKET PIN NUMBER							
		1	2	3	4	5	6	7	8
6K7GT—R-F Amp.	.....	.....	.....	195	78.6	.....	2.0	*6.3	2.0
6A8GT—Osc.-Mod.	.....	.....	.....	195	78.6	.....	136	*6.3	1.0
6SK7—I-F Amp.	.....	.....	.....	.....	.....	5.5 B.C. 2.6 S.W.	78.6	*6.3	234
6SQ7—Det. A.V.C. 1st A-F.	.....	.....	.....	.....	.....	.....	110	*6.3	.....
6J5GT—Phase Invert.	.....	.....	118	195	.....	.....	110	*6.3	4.5
6K6GT—Output	.....	.....	220	228	.....	.....	.....	*6.3	15.0
6K6GT—Output	.....	.....	220	228	.....	.....	.....	*6.3	15.0
6SK7—Mike Amp.	.....	.....	.....	.....	.....	.....	.....	*6.3	POS.
5Y3G—Rectifier	.....	305 D.C.	.....	.....	*325	.....	*325	.....	305 D.C.
6E5—Indicator	.....	.....	.....	225	.....	.....	*6.3	.....	.....

\*Measured with A.C. volt meter

VOLTAGE DROP ACROSS SPEAKER FIELD= 77 VOLTS

MAXIMUM POWER OUTPUT @ 130 V. Line=7.5 Watts

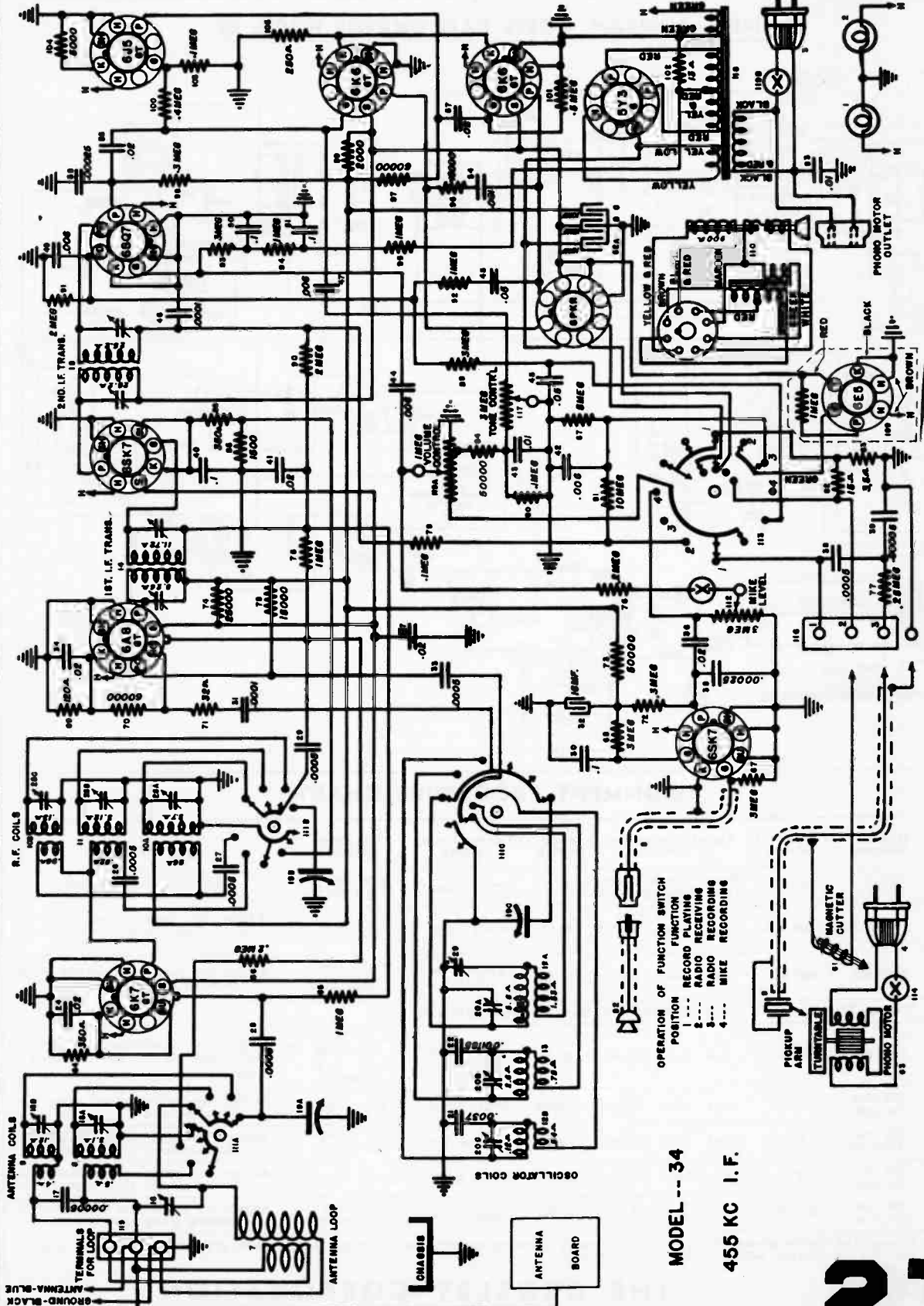
POWER CONSUMPTION @ 117.5 V. Line=Radio 80 Watts, Phono Motor 35 Watts—TOTAL=115 WATTS

Voltages may vary 10% of values given.

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



MODEL -- 34  
455 KC I. F.

OPERATION OF FUNCTION SWITCH POSITION

1	RECORD PLAYING
2	RADIO RECEIVING
3	RADIO RECORDING
4	MIKE RECORDING

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

Model 34

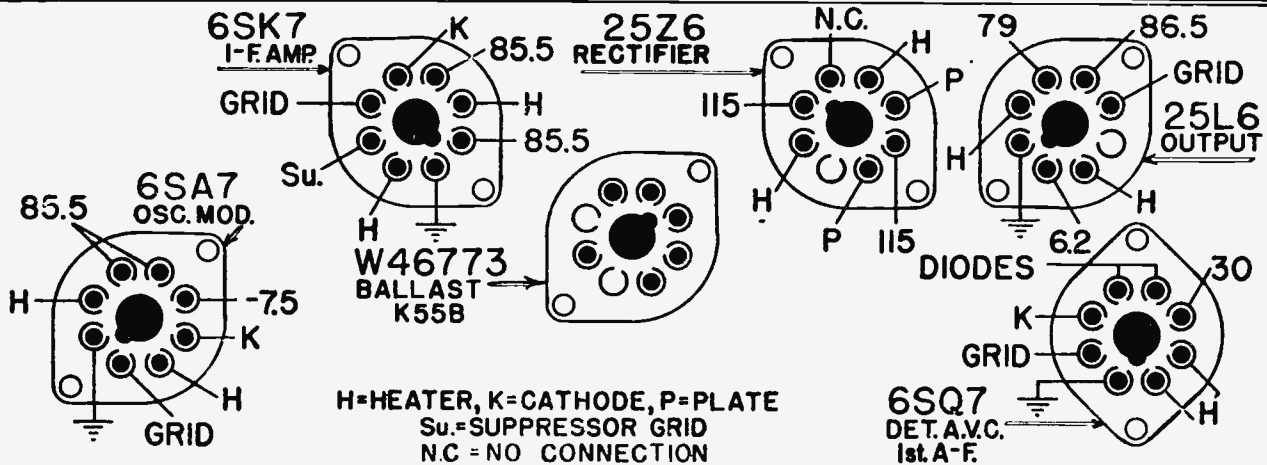
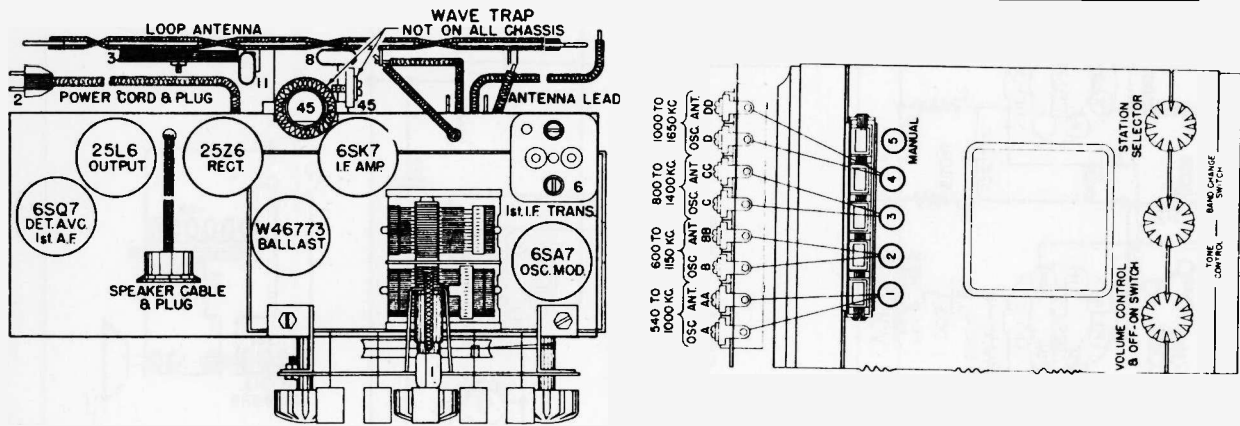
The Crosley Corporation





# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## INSTALLATION, OPERATING AND SERVICE INSTRUCTIONS FOR CROSELY MODEL TA-62 — TA-62W — Chassis Model 63

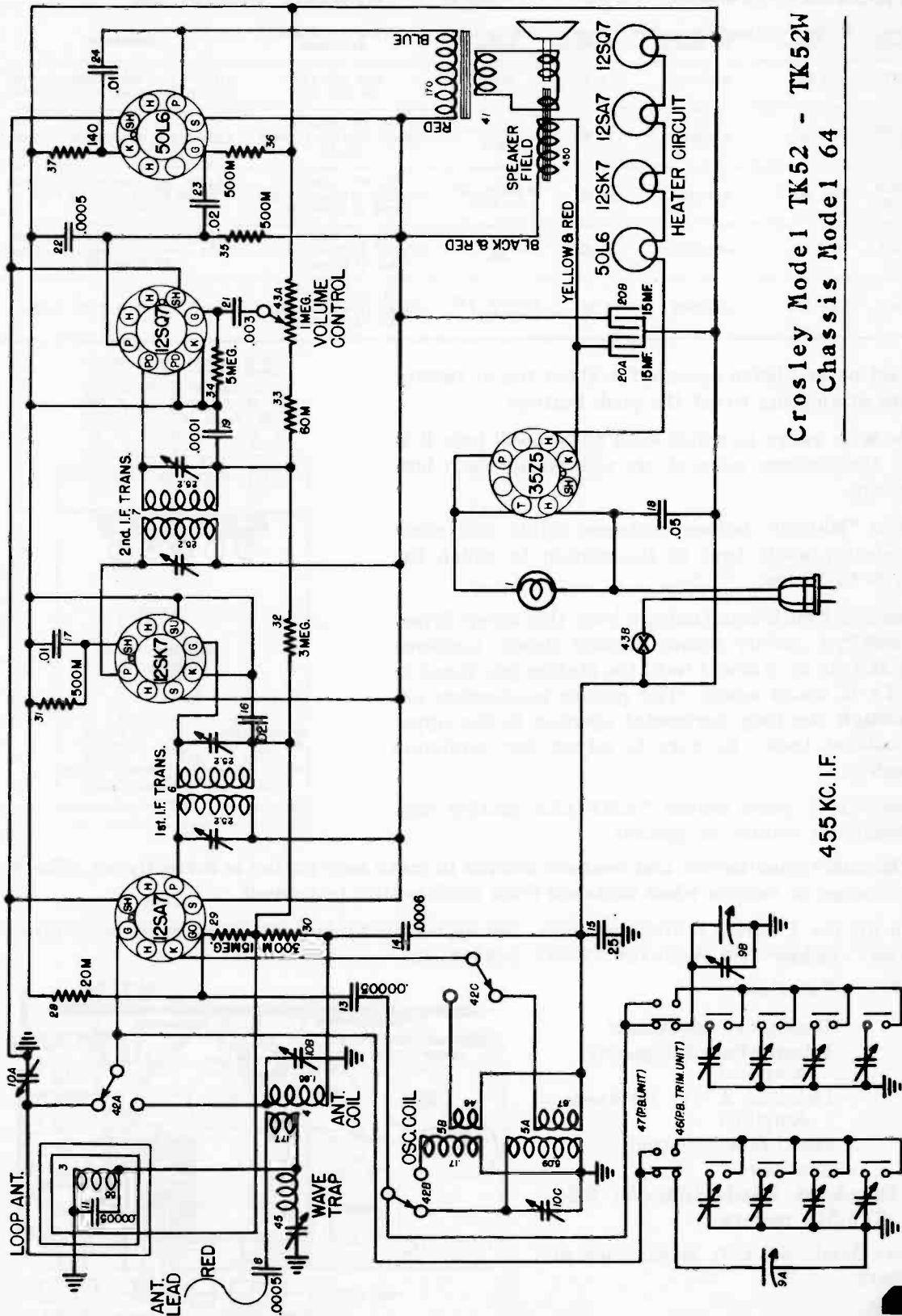


Socket Voltage Chart

Sequence	Dummy Antenna	Frequency Setting	Input Connection for Radio	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1	.05 Mf.	456 Kc.	Antenna	S. B.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2	400 ohm carbon	15.4 Mc.	Antenna	S. W.	Fully open	S. W. "OSC" (rear section of tuning condenser)	Adjust for maximum output.
3	400 ohm carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "Ant." (center trimmer right end of chassis)	Adjust for maximum output while rocking gang thru signal.
4	.0002 Mf.	1600 Kc.	Antenna	S. B.	Fully open	B. C. "OSC" (front trimmer right end of chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5	.002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 1400 on dial	B. C. "ANT" (rear trimmer right end of chassis)	Adjust for maximum output.



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



Crosley Model 1 TK52 - TK52W  
Chassis Model 64

455 KC. I.F.

**THE CROSLY CORPORATION**  
CINCINNATI, OHIO, U. S. A.

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## CROSELY MODEL TK52 — TK52W — Chassis Model 64

Sequence	Dummy Antenna	Frequency Setting	Input Connection To Radio	Band Switch	Tuning Cond. Setting	Trimmer Cond. Adjusted	Remarks
1.	.05 Mf.	456 Kc.	Antenna	S. B.	Fully on	2nd I-F (2) 1st I-F (2)	Adjust for maximum output. Adjust for maximum output.
2.	400 Ohm carbon	15.4 Mc.	Antenna	S. W.	Fully open	S. W. "OSC" (Rear section tuning cond.)	Adjust for maximum output.
3.	400 Ohm carbon	15.0 Mc.	Antenna	S. W.	Approx. 15 on dial	S. W. "ANT" (Center trimmer right end of chassis)	Adjust for maximum output while rocking gang thru signal.
4.	.0002 Mf.	1600 Kc.	Antenna	S. B.	Fully on	B. C. "OSC" (Front trimmer right end of Chassis)	Adjust for maximum output. Gang does not have to tune thru signal.
5.	.0002 Mf.	1400 Kc.	Antenna	S. B.	Approx. 140 on dial	B. C. "ANT" (Rear trimmer right end of chassis)	Adjust for maximum output.

1. Turn the set on and leave operate for about ten or twenty minutes before attempting to set the push buttons.

2. Due to the wide range to which each button will tune it is essential that the stations selected are well within each buttons tuning range.

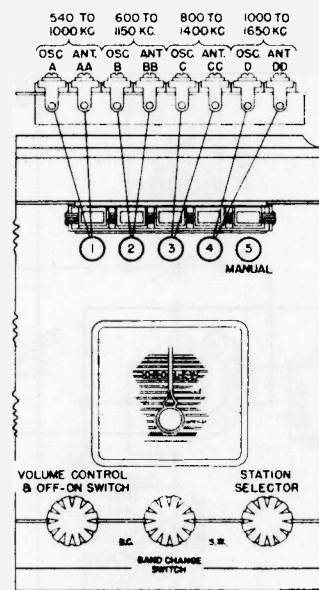
3. Push in the "Manual" button (extreme right) and using the station selector knob, tune in the station to which the No. 1 button is to be set.

4. Push in the No. 1 button and using a long, thin screw driver adjust the "OSC"/A padder screw, turning slowly (extreme right looking at rear of cabinet) until the station you tuned in (MANUALLY) is heard again. The padder condensers are accessible through the long horizontal opening in the upper left side of cabinet back. Be sure to adjust for maximum volume in speaker.

5. Adjust the No. 1 push button "ANT"/AA padder condenser for maximum volume in speaker.

6. Push in "Manual" push button and re-check station to make sure button is correctly set. There should be no change in volume when switched from push button to manual.

7. The set up for No. 1 button is then complete. Set up remaining buttons, using same procedure; adjust the "OSC" padder first, then the "ANT" padder, etc.



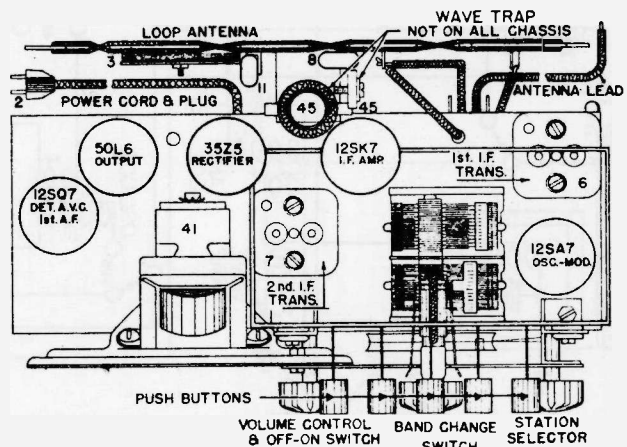
### Tubes Used

### Functions

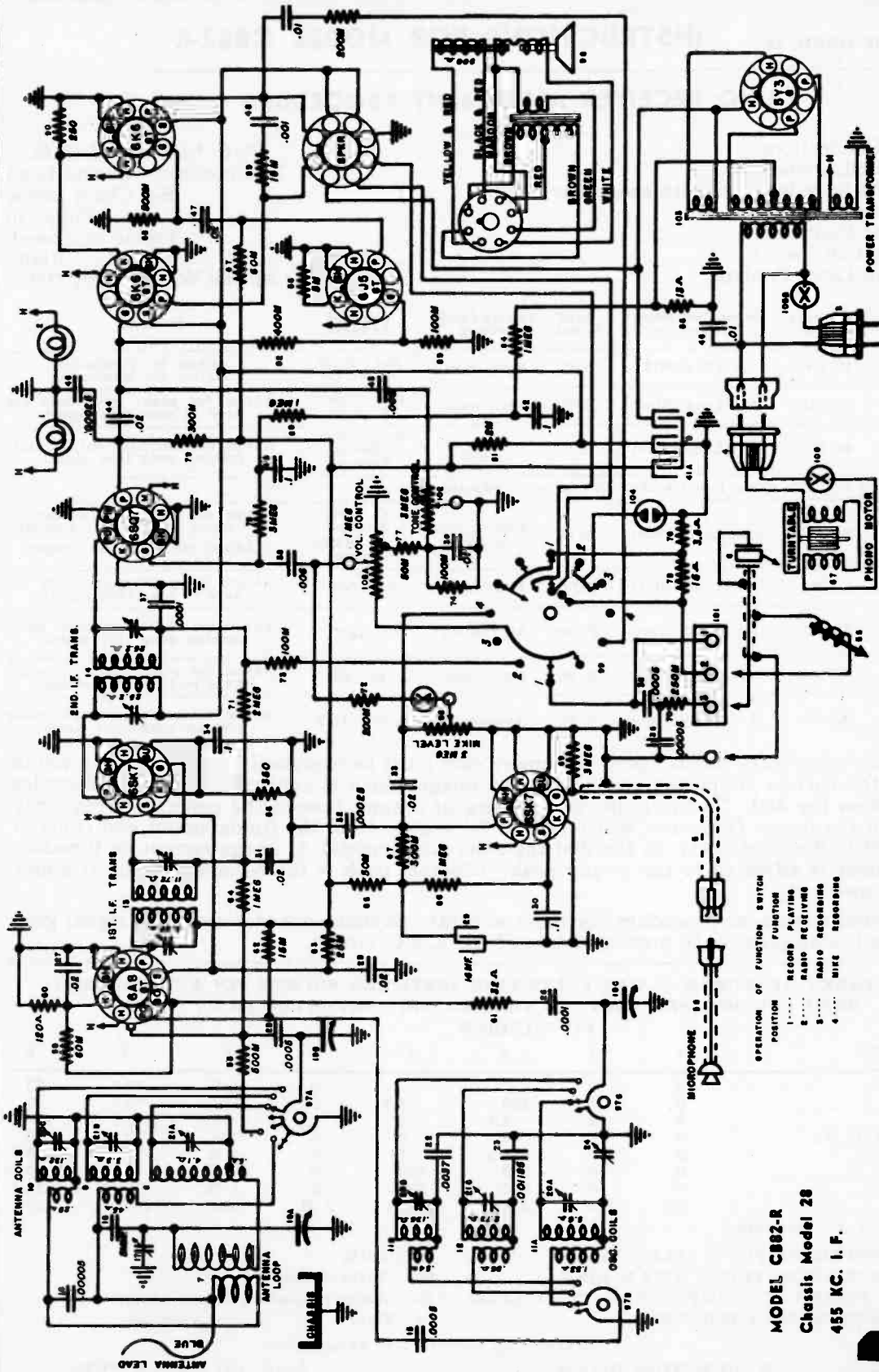
- |       |                                      |
|-------|--------------------------------------|
| 12SA7 | Oscillator—Modulator                 |
| 12SK7 | Intermediate Frequency Amplifier     |
| 12SQ7 | Detector, A.V.C. 1st Audio Amplifier |
| 50L6  | Beam Power Output                    |
| 35Z5  | Rectifier                            |

Standard Broadcast Band—1600-550 Kilocycles or 187.5-545 meters.

Short Wave Band—5.8-15.0 Megacycles or 62.5-20 meters.



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



**Model CB82-R**  
**Chassis 28**

**The Crosley Corporation**  
**Cincinnati, Ohio**

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

CHASSIS MODEL 28

## INSTRUCTIONS FOR MODEL CB82-R

### RADIO RECEIVER ALIGNMENT PROCEDURE

#### PRELIMINARY

Output Meter Connections.....Plate to Plate of 6K6G's  
 Generator Ground Connection.....To chassis or Ground Lead  
 Dummy Antenna to be in series with generator output.....See Chart Below  
 Position of Volume Control.....Fully On  
 Position of Tone Control.....Treble or Speech  
 Position of Function Switch.....Radio  
 Position of Mike Level Control.....All the Way to Left (Off)

Alignment Sequence	Dummy Antenna	Frequency Setting	Input Connection to Receiver	Band Switch	Tuning Cond. Setting	Trimmer Adjusted	Remarks
1.	.02 MF.	455 Kc.	Grid of 6A8GT	B. C.	Fully open	2nd I-F (2) 1st I-F (2)	Adjust for Maximum. Adjust for Maximum.
2.	.0002 MF.	1650 Kc.	Ant. Lead (Blue)	B. C.	Fully open	B. C. "OSC" Trimmer	Adjust for peak; gang does not have to tune thru signal.
3.	.0002 MF.	600 Kc.	Ant. Lead (Blue)	B. C.	Approx. 60 on dial	B. C. "OSC" Series Trimmer	Adjust for maximum output while rocking gang thru signal.
4.	Repeat Step No. 2 to check possible shift due to series adjustment						
5.	.0002 MF.	1400 Kc.	Ant. Lead (Blue)	B. C.	Approx. 140 on dial	B. C. "ANT" Trimmer B. C. "PRE" Trimmer	Adjust for maximum output to not touch B. C. Osc. Trimmer. Adjust for maximum output.
6.	400 ohm (carbon)	5.3 Mc.	Ant. Lead (Blue)	Police	Fully open	Pol "OSC"	Adjust for peak gang; does not have to tune thru signal.
7.	400 ohm (carbon)	5.0 Mc.	Ant. Lead (Blue)	Police	Approx. 5.0	Pol "ANT"	Adjust for maximum output while rocking gang thru signal.
8.	400 ohm (carbon)	18.3 Mc.	Ant. Lead (Blue)	S. W.	Fully open	S. W. "OSC"	Adjust for peak. Gang does not have to tune thru signal.
9.	400 ohm (carbon)	18.0 Mc.	Ant. Lead (Blue)	S. W.	Approx. 18	S. W. "ANT"	Adjust for maximum output while rocking gang thru signal.

When aligning the shortwave bands "OSC" trimmers care must be exercised to see that the circuits are aligned on the correct frequency and not on the image which is approximately 910 kilocycles less as indicated on the dial. To check, increase generator output, tune-in the generator frequency and then tune-in the image frequency which should be weaker than the fundamental and come in approximately 910 kilocycles lower on the dial than the fundamental. If image cannot be tuned-in, the "OSC" trimmer is adjusted to the wrong peak. (Correct peak is the second peak on trimmer from the closed position).

Repeat the original alignment procedure for more accurate adjustments. Always keep signal generator output as low as possible to prevent action of the A.V.C. circuit.

#### SOCKET VOLTAGES MEASURED @ 117.5 VOLTS LINE (BETWEEN SOCKET PIN AND CHASSIS) WITH 1000 OHM PER VOLT, 500 VOLT RANGE VOLTMETER (D. C.)

TUBE FUNCTION	PIN NUMBER							
	1	2	3	4	5	6	7	8
6SK7—Pre-Amp.	0	0	.....	....	0	J. B.	*6.3	52
6A8GT—Osc.-Mod.	0	0	198	76.5	0	132	*6.3	1
6SK7—I. F. Amp.	0	0	2.4	0	2.3	76.5	*6.3	226
6SQ7—Det. A. V.C.-A. F.	0	0	0	0	0	98	*6.3	0
6J5GT—Phase Invert.	0	0	118.5	0	0	J. B.	*6.3	6.0
6K6G—Output	0	0	226	236	0	J. B.	*6.3	15.5
8K6G—Output	0	0	226	236	0	J. B.	*6.3	15.5
5Y3G—Rectifier	NC	310	J. B.	*300	J. B.	*300	J. B.	310

\*Measure with A. C. Voltmeter.

MAX. POWER OUTPUT @ 117.5 V. LINE..... 5.0 Watts  
 POWER CONSUMPTION @ 117.5 V. LINE..... 66 Watts (Radio Only)  
 TOTAL POWER CONSUMPTION @ 117.5 V. LINE.....110 Watts (Including Phono Motor)  
 DROP ACROSS SPEAKER FIELD ..... 74 Volts

Voltagcs may vary 10% of values given.

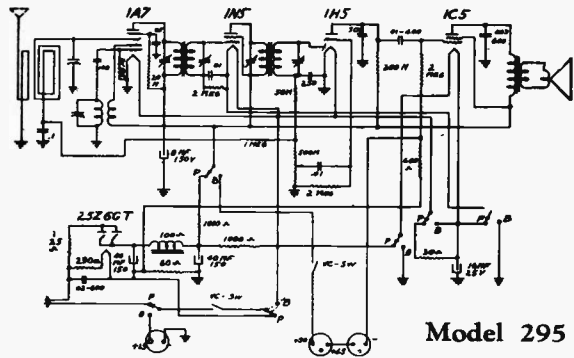
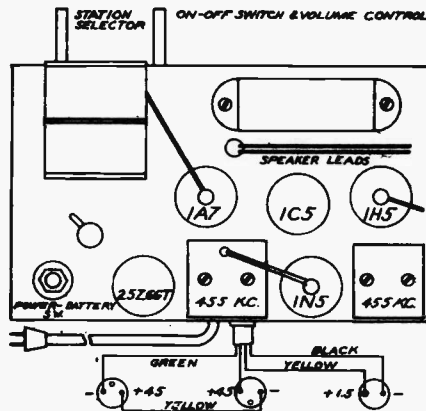
# 34

J. B.—JUNCTION BLOCK

N. C.—NO CONNECTION

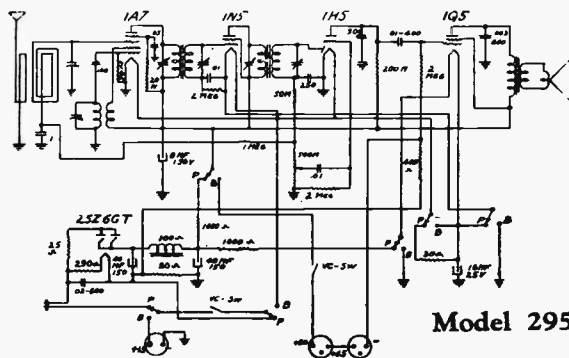
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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



Model 295

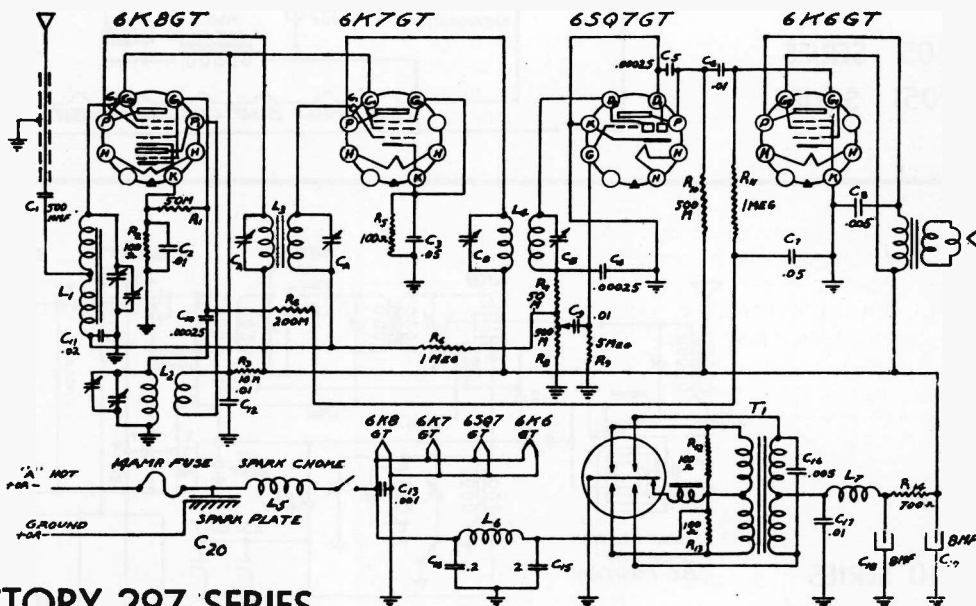
**Detroit Corporation  
Detroit, Michigan**



Model 295-1

## ALIGNMENT PROCEDURE

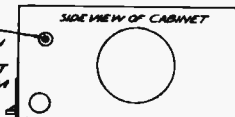
**I.F. Frequency 455 KC. Set Range 540-1580 KC.**  
 Connect the test oscillator, or signal generator, to the set as follows: Connect the "hot" side of the signal generator to the grid of the 1A7 tube, and the ground side to the terminal on the back of the chassis. An output meter should be connected across the voice coil leads of the speaker to indicate resonance. Align the I.F. trimmers at 455 KC for maximum meter reading.  
 Adjust the trimmer on the back of the variable condenser at or near 1400 KC at full volume on a weak broadcast signal. When aligning the set do not set the receiver on or near a metal work bench or other large metal object, as it will affect the tracking of the receiver.



## FACTORY 297 SERIES

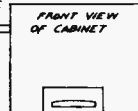
**I.F. 455 KC.**

ANTENNA ADJUSTER  
 TUNE IN A WEAK STATION  
 ON OR NEAR 1400 KC TURN  
 VOLUME ON FULL AND ADJUST  
 THIS SCREW FOR MAXIMUM  
 VOLUME.



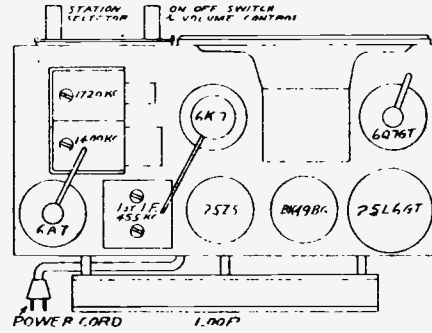
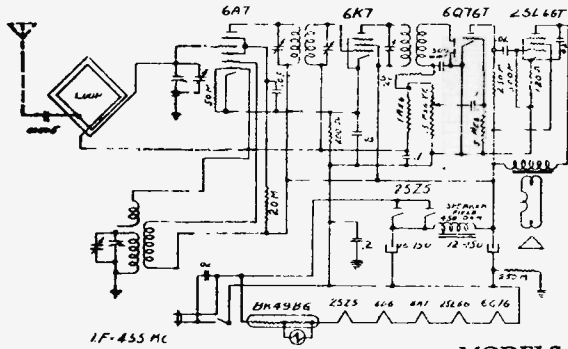
DO NOT CUT ANTENNA CABLE  
 ANTENNA CABLE

DO NOT  
 ALLOW  
 THIS UN-  
 SHIELDED  
 PORTION  
 TO BE EXPOSED  
 INSIDE OF  
 THE CAR  
 GROUND THIS TO FRAME  
 OF CAR MOTOR NOISE  
 IN THE SET WILL RESULT  
 IF THIS IS NOT GROUNDED.



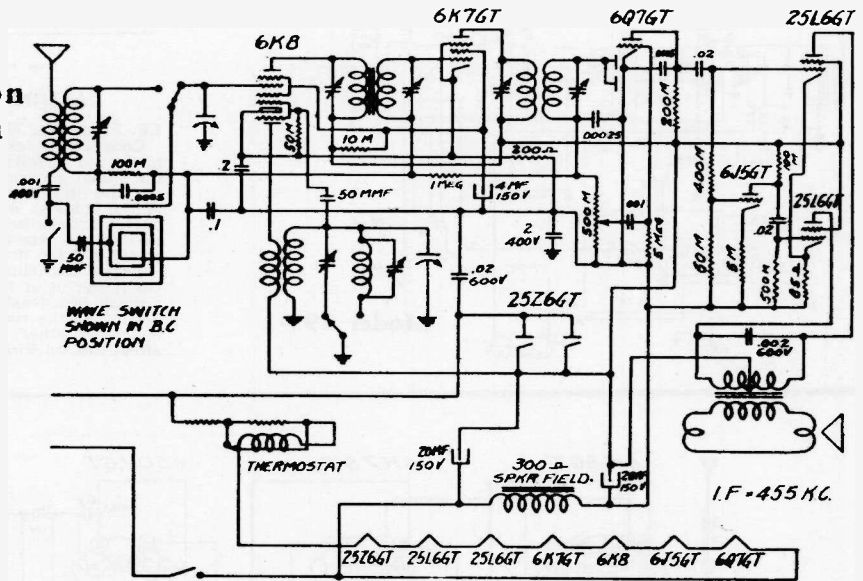
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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



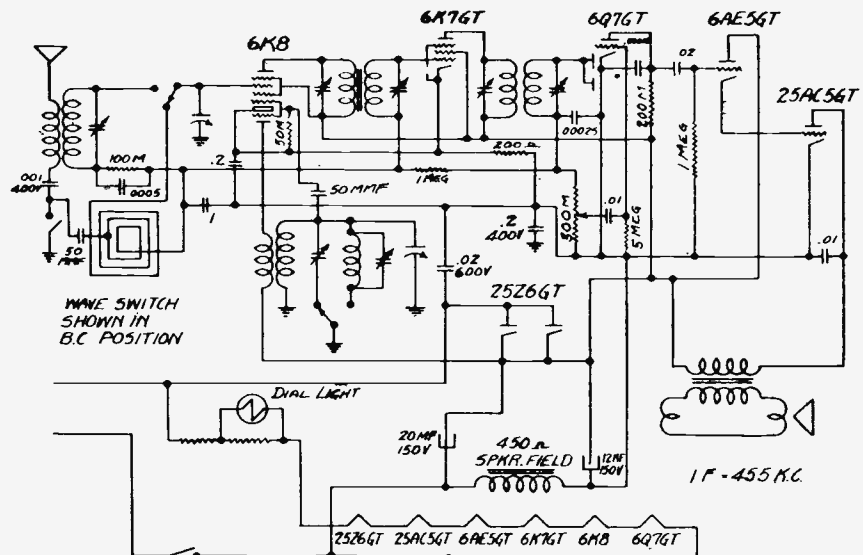
MODELS 304 and 3041

Detroit Corporation  
Detroit, Michigan



FACTORY 305 SERIES  
FACTORY 3051 SERIES

FACTORY 310 SERIES  
FACTORY 3101 SERIES

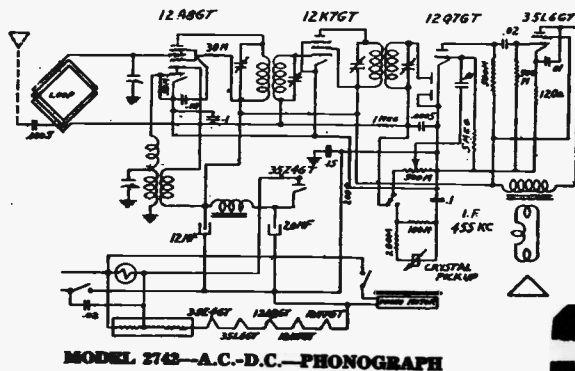
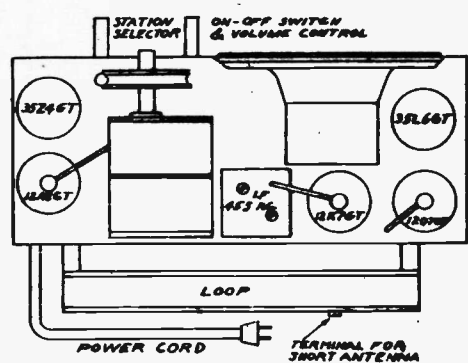
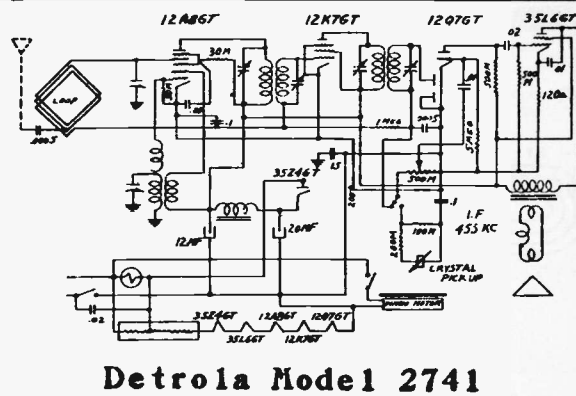
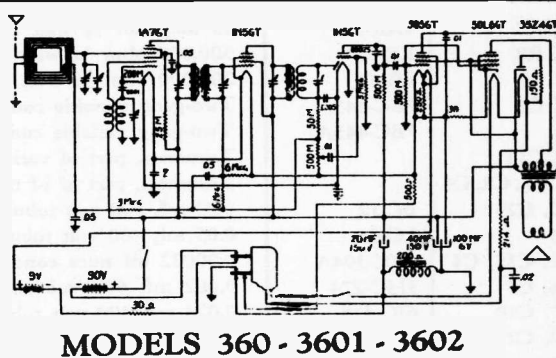
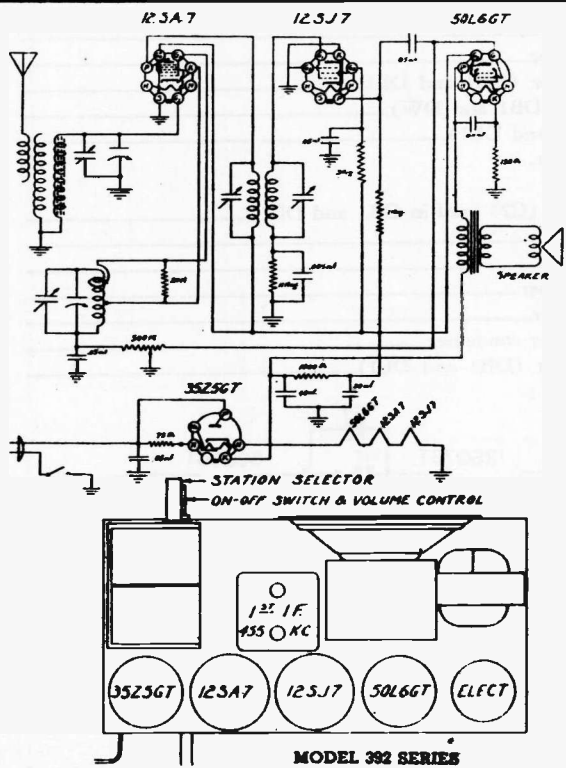
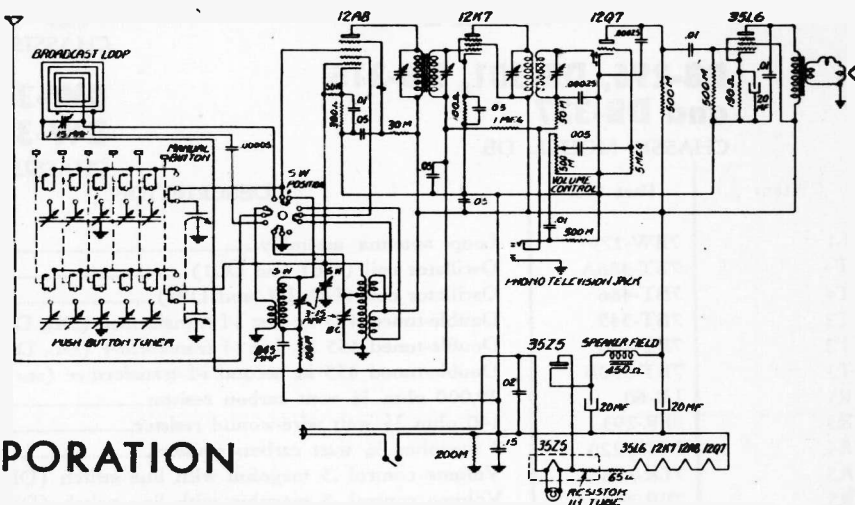


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

FACTORY 320 SERIES  
FACTORY 3201 SERIES  
FACTORY 3202 SERIES

I.F. 455 KC.  
For all Detrola Sets  
on this page.

## DETROLA CORPORATION



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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS MODELS

**DB-296, DB-301, DB-315  
and DB-327**

CHASSIS MODEL: DB

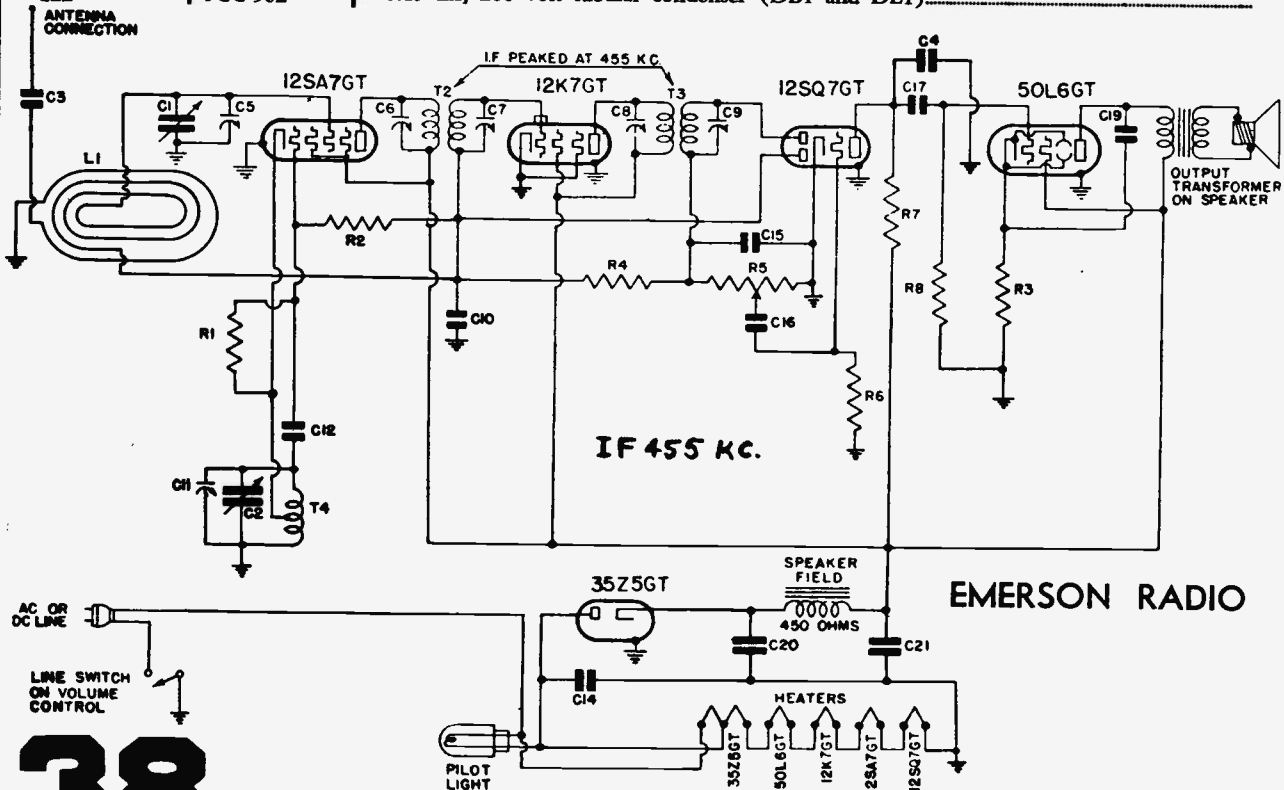
**DL-330**

CHASSIS MODEL: DL

**DW-330A, DW-330B and  
DW-358**

CHASSIS MODEL: DW

*Item	Part No.	DESCRIPTION
L1	7BW-179	Loop antenna assembly.....
T4	7BT-486A	Oscillator coil (DB1 and DL1).....
T4	7BT-486	Oscillator coil (DB, DL and DW).....
T2	7BT-545	Double-tuned 455 kc first i-f transformer (DB, DB1, DW).....
T2	7BT-488	Double-tuned 455 kc first i-f transformer (DL, DL1).....
T3	7BT-550B	Double-tuned 455 kc second i-f transformer (see production change No. 1).....
R1	LR-60	20,000 ohm ¼ watt carbon resistor.....
R3	3FR-293	140 ohm ½ watt wire-wound resistor.....
R4	NNR-220	3 megohm ¼ watt carbon resistor.....
R5	7LR-378	Volume control .5 megohm with line switch (DL, DL1).....
R5	7BR-363	Volume control .5 megohm with line switch (DB, DL1).....
R5	7WR-389	Volume control .5 megohm with line switch (DW).....
R6, R2	4XR-327	15 megohm ¼ watt carbon resistor.....
R7, R8	KR-56	500,000 ohm ¼ watt carbon resistor.....
R9	LR-61	200,000 ohm ¼ watt carbon resistor (DB1 and DL1).....
C1, C2	7BC-445	Two-gang variable condenser (DB, DB1 and DW).....
	7BC-445A	Two-gang variable condenser (DL and DL1).....
C5, C11		Trimmers, part of variable condenser.....
C6, C7, C8, C9		Trimmers, part of i-f transformers.....
C10, C23	BC-12	0.05 mf, 200 volt tubular condenser (C23 used in DB1 and DL1).....
C14	LC-64	0.05 mf, 400 volt tubular condenser.....
C12, C15, C4	4XC-394A	0.00022 mf mica condenser.....
C16, C3	3HC-274	0.002 mf, 600 volt tubular condenser.....
C17, C19	6JC-425	0.024 mf, 400 volt tubular condenser.....
C20, C21	6JC-426C	Dual 20 mf, 150 volt dry electrolytic condenser.....
C22	3CC-302	0.15 mf, 200 volt tubular condenser (DB1 and DL1).....



**38**

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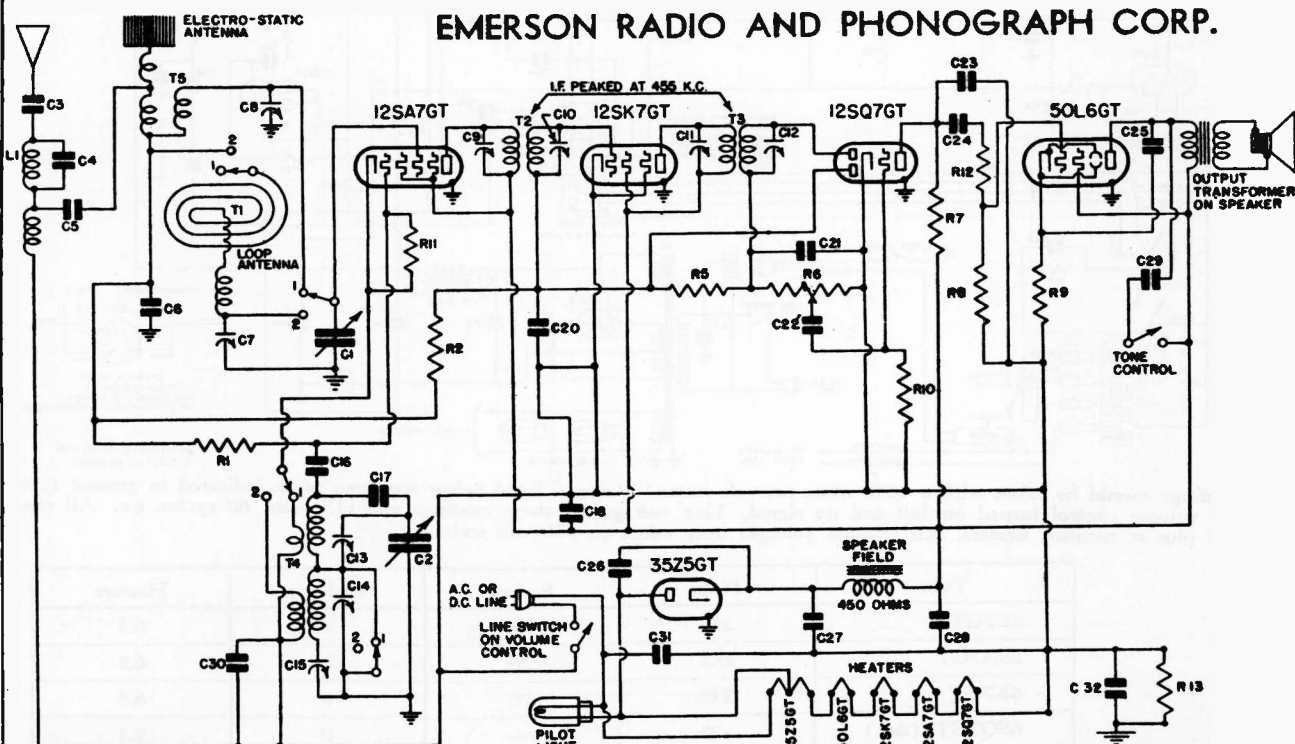


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

**MODELS: DR-343, DR-348, DR-350 | MODELS: DR1-343, DR1-348 and DR1-352**

CHASSIS MODEL: DR

Item	Part No.	DESCRIPTION	
L1	7RT-531A	Antenna choke and 455 kc wave-trap	.85
T1	7RW-232	Loop antenna assembly	1.00
T2	7QT-548A	Double-tuned 455 kc first i-f transformer	1.00
T3	7QT-544	Double-tuned 455 kc second i-f transformer	.95
T4	7RT-528A	Two-band oscillator coil	.65
T5	7RT-530	Short-wave antenna coil	.45
R1, R10	4KR-327	15 megohm 1/4 watt carbon resistor	.16
R2, R13	LR-61U	200,000 ohm 1/4 watt carbon resistor	.16
R7, R8	HR-56	500,000 ohm 1/4 watt carbon resistor	.16
R5	NNR-226U	3 megohm 1/4 watt carbon resistor	.16
R6	7BR-343C	Volume control .5 megohm with line switch	.85
R9	3PR-293	140 ohm 1/4 watt wire-wound resistor	.16
R11	LR-60	20,000 ohm 1/4 watt carbon resistor	.16
R12	KR-53	50,000 ohm 1/4 watt carbon resistor	.16
C1, C2	7RC-464	Two-gang variable condenser	2.40
C3	HC-34	0.006 mf, 600 volt tubular condenser	.20
C4		0.001 mf, part of L1, wave-trap assembly	.20
C5, C16	FC-29	0.02 mf, 200 volt tubular condenser (see production change no. 1)	.20
C7, C8	22C-233	0.0025 mf mica condenser	.20
C9, C10, C11, C12	7RC-465	Dual trimmer assembly	.30
C13, C14	7RC-466	Trimmers, part of i-f transformers	.30
C15	2NC-231D	Dual trimmer assembly	.30
C16	5LC-416A	Single adjustable padding condenser	.20
C17	7RC-479	0.0011 mf mica condenser	.20
C18, C19	BC-12	0.0016 mf mica condenser	.20
C20, C21	3AC-304	0.05 mf, 200 volt tubular condenser	.20
C22	3HC-274	0.0002 mf, 600 volt tubular or mica condenser	.20
C23	LC-65	0.002 mf, 600 volt tubular condenser	.20
C24	BC-23	0.02 mf, 400 volt tubular condenser	.20
C25	TTC-177	0.03 mf, 400 volt tubular condenser	.20
C26, C28	6QC-437A	0.01 mf, 600 volt tubular condenser	.20
C27	KC-38	Multiple dry electrolytic condenser, 150 volt. C27—20 mf; C28—40 mf.	.95
C30	LC-64	0.01 mf, 400 volt tubular condenser	.20
C31	LC-64	0.05 mf, 400 volt tubular condenser	.20
C32	2CC-208	0.2 mf, 200 volt tubular condenser	.20



WAVE BAND SWITCH SHOWN IN SHORT WAVE POSITION.  
POSITION NO.1 SHORT WAVE  
NO.2 BROADCAST

ON MODEL - DR - OMIT PARTS  
R13 AND C32 AND GROUND  
B- TO CHASSIS.

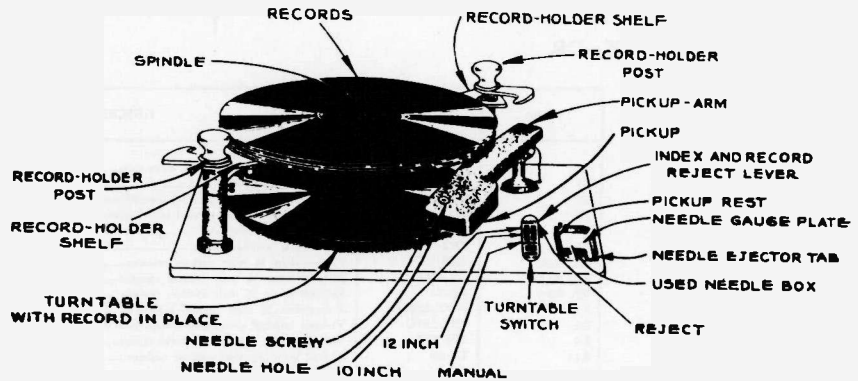
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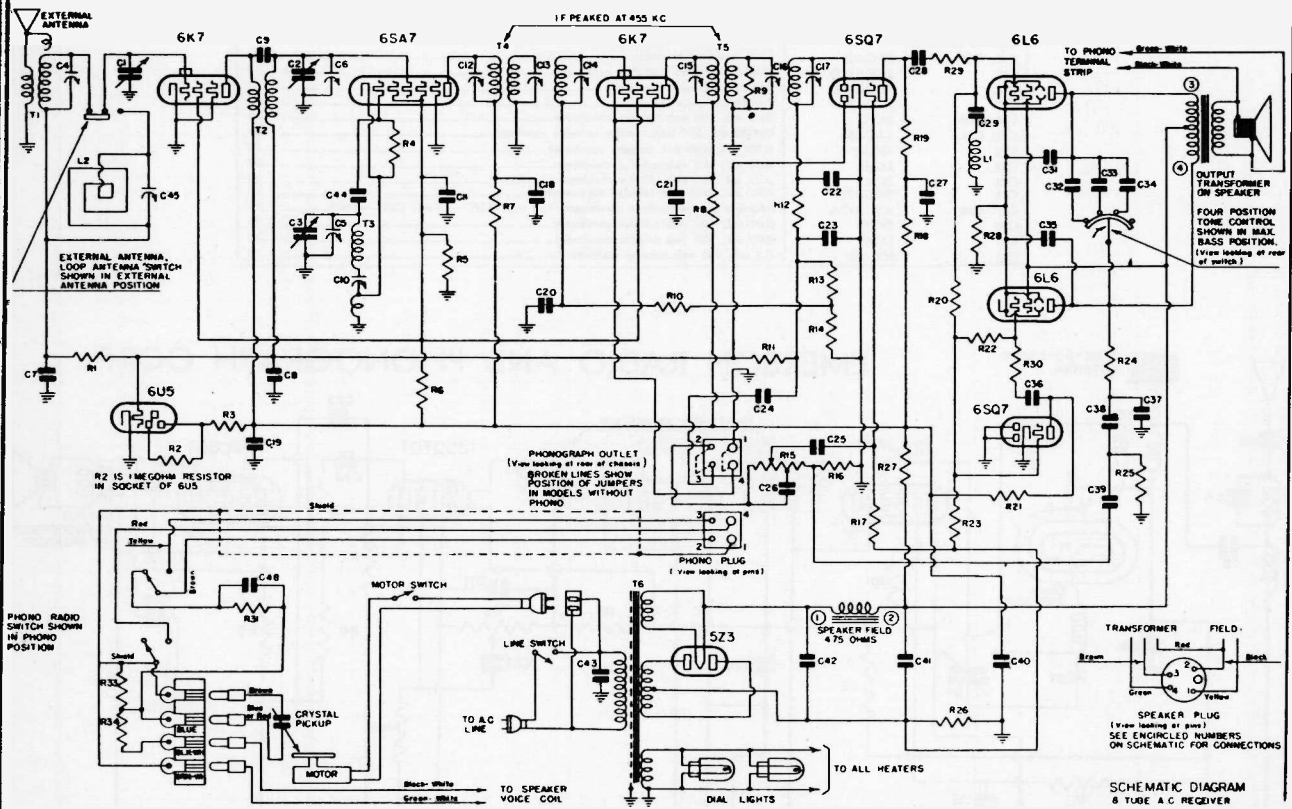
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## EMERSON RADIO AND PHONOGRAPH CORP.

**Models**  
**DS-365**  
**DS-372**



*Top View of Automatic Record Changer*



Readings should be taken with a 1000 ohms-per-volt meter. Voltages listed below are from point indicated to ground (chassis) with the volume control turned on full and no signal. Line voltage for these readings was 117 volts, 60 cycles, a.c. All readings except B plus at rectifier, heaters, and cathode voltages were taken on 300 volt scale.

Tube	Plate	Screen	Cathode	Heaters
6K7GT	245	70	0	6.3
6SA7GT	245	70	0	6.3
6K7GT	235	70	0	6.3
6SQ7GT (det.)	125	—	0	6.3
6SQ7GT (P.I.)	150	—	0	6.3
6L6 (2)	275	285	18.5	6.3

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

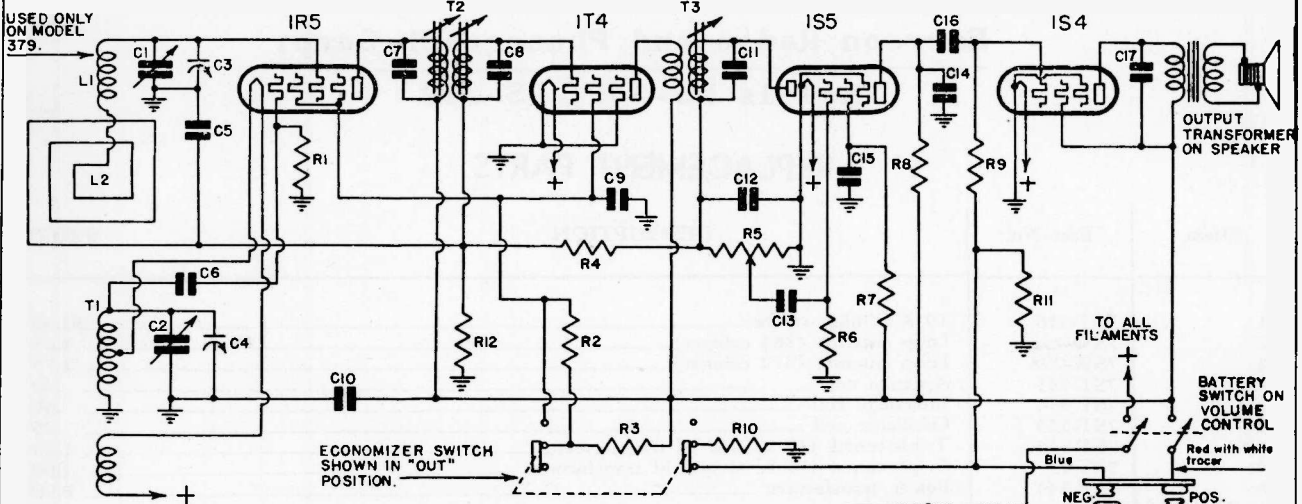
Emerson Radio and Phonograph Corp.

Models DS-365, DS-372

## REPLACEMENT PARTS

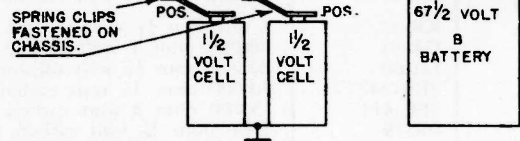
*Item	Part No.	DESCRIPTION	PRICE
L1	7ST-538	10 K.C. filter choke.....	\$1.40
L2	7SW-238	Loop antenna (365 cabinet).....	1.05
L2	7SW-298	Loop antenna (372 cabinet).....	1.75
T1	7ST-533	Antenna coil.....	.40
T2	7ST-534	Interstage coil.....	.50
T3	7ST-535	Oscillator coil.....	.25
T4	7ST-536	Triple-tuned 455 kc first i-f transformer.....	1.45
T5	7ST-537	Triple-tuned 455 kc second i-f transformer.....	1.60
T6	7ST-549	Power transformer.....	8.90
R1, R12, R29, R30	KR-53	50,000 ohm $\frac{1}{4}$ watt carbon resistor.....	.16
R2	KR-57	1 megohm $\frac{1}{4}$ watt resistor in 6U5 tube socket.....	.16
R3	GR-31	20,000 ohm 1 watt carbon resistor.....	.16
R4	LR-60	20,000 ohm $\frac{1}{4}$ watt carbon resistor.....	.16
R5	3BR-247	40,000 ohm $\frac{1}{2}$ watt carbon resistor.....	.16
R6	7SR-411	15,000 ohm 2 watt carbon resistor.....	.25
R7, R8	PR-79	1000 ohm $\frac{1}{4}$ watt carbon resistor.....	.16
R9		190,000 ohm resistor, part of T6.	
R10, R11	NNR-220	3 megohm $\frac{1}{4}$ watt carbon resistor.....	.16
R13	LR-61	200,000 ohm $\frac{1}{4}$ watt carbon resistor.....	.16
R14, R18 R19, R21	KR-54	100,000 ohm $\frac{1}{4}$ watt carbon resistor.....	.16
R15	7SR-379	Volume control, 1.2 megohm, double tapped.....	.70
R16	3ER-262	75 ohm $\frac{1}{2}$ watt wire-wound resistor.....	.16
R17	HR-42	2 megohm $\frac{1}{4}$ watt carbon resistor.....	.16
R20, R22, R23	KR-55	250,000 ohm $\frac{1}{4}$ watt carbon resistor.....	.16
R24	3BR-246	10,000 ohm 2 watt carbon resistor.....	.25
R25	7SR-404	3,500 ohm $\frac{1}{2}$ watt carbon resistor.....	.16
R26	7SR-402	11 ohm $\frac{1}{2}$ watt wire-wound resistor.....	.16
R27	3XR-283	1500 ohm 2 watt carbon resistor.....	.25
R28	7SR-403	180 ohm 3 watt carbon resistor.....	.30
C1, C2, C3	7SC-496	Three-gang variable condenser.....	5.05
C4		Trimmer, part of T1.	
C5, C6		Trimmers, part of variable condenser.	
C7, C8, C20	BC-12	0.05 mf, 200 volt tubular condenser.....	.20
C9	7SC-498A	0.000008 mf, mica condenser.....	.20
C10	2NC-231A	Single adjustable padding condenser; range 300 to 600 mmf.....	.30
C11	EEC-132	0.1 mf, 400 volt tubular condenser.....	.20
C12, C13 C14, C15 C16, C17		Trimmers, part of i-f transformers.	
C18, C21 C36	LC-64	0.05 mf, 400 volt tubular condenser.....	.20
C19, C27 C28	EEC-132	0.1 mf, 400 volt tubular condenser.....	.20
C22, C26 C48	5LC-410A	0.00011 mf, mica condenser.....	.20
C23	4XC-393A	0.00006 mf, mica condenser.....	.20
C24, C25	KC-58	0.01 mf, 400 volt tubular condenser.....	.20
C29		0.0014 mf, mica condenser; part of L1.	
C31, C35	3VC-324	0.003 mf, 600 volt tubular condenser.....	.20
C32	3XC-374	0.1 mf, 600 volt tubular condenser.....	.20
C33	7EC-473	0.05 mf, 600 volt tubular condenser.....	.20
C34	QOC-173	0.015 mf, 600 volt tubular condenser (see production change number 1).....	.20
C37	7SC-497	0.08 mf, 600 volt tubular condenser.....	.20
C38	4DC-349	0.04 mf, 400 volt tubular condenser.....	.20
C39	EC-19	0.5 mf, 200 volt tubular condenser.....	.35
C40, C41	7AC-444A	16 mf, 400 volt dry electrolytic condenser.....	.85
C42	3XC-329 or 7SC-501	30 mf, 450 volt wet electrolytic condenser.....	1.35
		30 mf, 450 volt fabricated plate electrolytic condenser.....	1.00
C43, C44 C45	3LC-297A	0.01 mf, 400 volt tubular condenser.....	.20
		Trimmer, part of L2.	

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



- L1 7UT-542
- L2 7UW-236
- L2 7UW-296
- T1 7UT-539
- T2 7UT-540
- T3 7UT-541
- R1 KR-54
- R2 LR-64
- R3 LR-65
- R4, R12 3RR-274
- R5 7UR-380
- R6 3RR-274
- R7, R9 NNR-220
- R8 KR-57
- R10 7UR-394
- R11 7UR-392
- C1, C2 7UC-469
- †C3, C4
- C5, C9, C15 FC-29
- C6, C12, C14 5LC-410A
- †C7, C8, C11
- C10 7UC-476
- C13 3HC-274
- C16, C17 NNC-199

- Iron core loading coil (379)
- Shoulder strap loop assembly
- Loop antenna (380).....
- Oscillator coil .....
- Iron core double-tuned 455 kc first i-f transformer
- Iron core single-tuned 455 kc second i-f transformer
- 100,000 ohm 1/4 watt carbon resistor.....
- 5,000 ohm 1/4 watt carbon resistor.....
- 10,000 ohm 1/4 watt carbon resistor.....
- 5 megohm 1/4 watt carbon resistor.....
- Volume control 1.5 megohm with double pole battery switch
- 10 megohm 1/4 watt carbon resistor.....
- 3 megohm 1/4 watt carbon resistor.....
- 1 megohm 1/4 watt carbon resistor.....
- 2200 ohm 1/4 watt carbon resistor.....
- 1800 ohm 1/4 watt carbon resistor.....
- Two-gang variable condenser.....
- Trimmers, part of variable condenser.
- 0.02 mf, 200 volt tubular condenser.....
- 0.00011 mf mica condenser.....
- Fixed trimming condensers, contained inside i-f cans.
- 10 mf, 100 volt dry electrolytic condenser.....
- 0.002 mf, 600 volt tubular condenser.....
- 0.001 mf, 600 volt tubular condenser.....

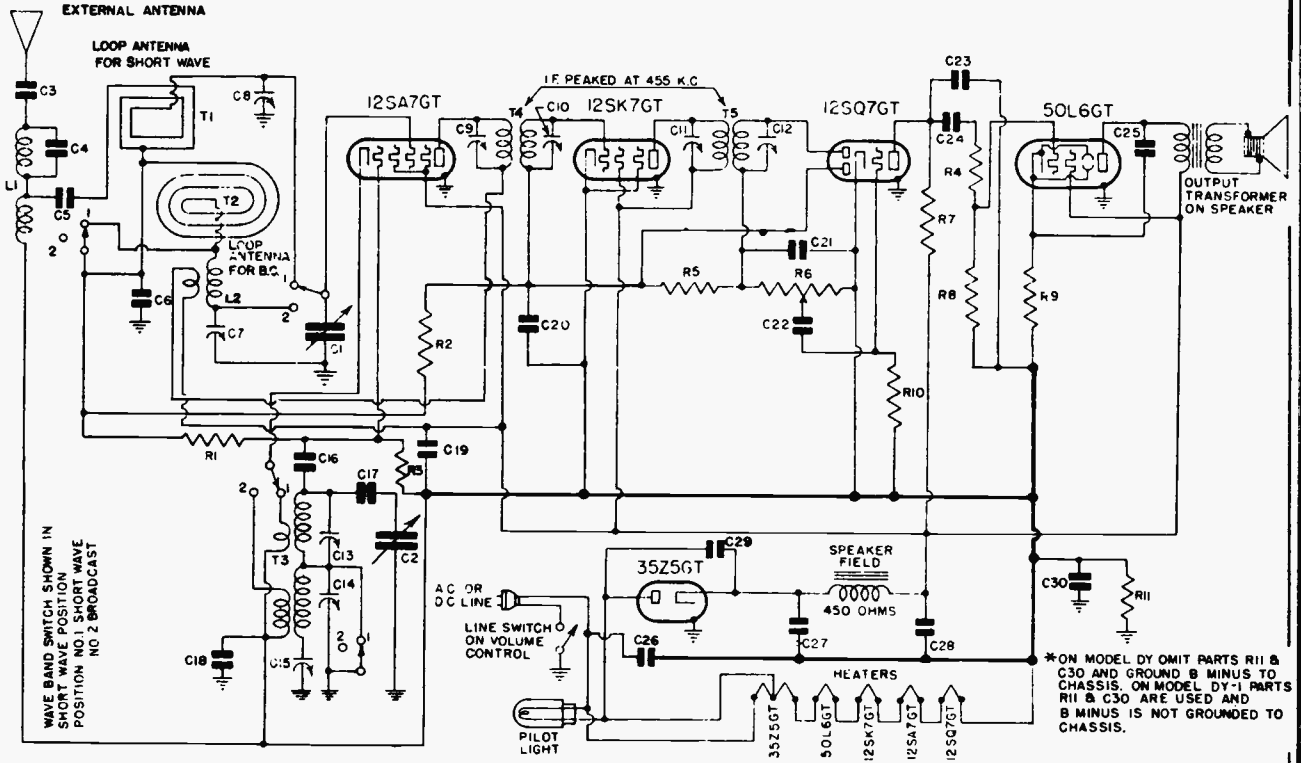


**Emerson  
Radio  
Models  
DU-379  
DU-380**

Readings should be taken with a 1000 ohms-per-volt meter. Voltages listed are from point indicated to chassis with volume control turned on full and no signal. The battery voltages for these readings were: "A" 1.5 volts, "B" 67.5 volts. All readings except filaments were taken on the 250 volt scale, with battery saver "out."

Tube	Plate	Screen	Osc. Plate	Fil.
1R5	57	60	57	1.5
1T4	57	60	—	1.5
1S5	*5	*3	—	1.5
1S4	55	60	—	1.5

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



- L1 7RT-531
- L1 7RT-531A
- L2 7YT-552A
- T1, T2 7YW-249A
- T3 7YT-551A
- T4 7QT-548C
- T5 7QT-544
- R1, R10 4XR-327
- R2, R11 LR-61U
- R3 LR-60
- R4 KR-53
- R5 HR-42
- R6 7BR-363C
- R7, R8 KR-56
- R9 3FR-293
- C1, C2 7RC-464
- C3 HC-34
- C4
- C5, C19 FC-29
- C6 2ZC-253
- C7, C8
- †C9, C10, C11, C12 7RC-466
- C13, C14 2NC-231D
- C15 4XC-394A
- C16 7YC-483
- C17 KC-58
- C18 AC-6
- C20 5AC-384
- C21, C23 3HC-274
- C22 LC-65
- C24 EC-23
- C25 LC-64
- C26 6JC-426H
- C27, C28 TTC-177
- C29 2CC-208
- C30

- Antenna choke and 455 kc wave-trap (DY1).....
- Antenna choke and 455 kc wave-trap (DY).....
- Broadcast loop antenna loading coil.....
- Two-band loop antenna assembly.....
- Two-band oscillator coil.....
- Double-tuned 455 kc first i-f transformer.....
- Double-tuned 455 kc second i-f transformer.....
- 15 megohm ¼ watt carbon resistor.....
- 200,000 ohm ¼ watt carbon resistor.....
- 20,000 ohm ¼ watt carbon resistor.....
- 50,000 ohm ¼ watt carbon resistor.....
- 2 megohm ¼ watt carbon resistor.....
- Volume control .5 megohm with line switch.....
- 500,000 ohm ¼ watt carbon resistor.....
- 140 ohm, ½ watt wire-wound resistor.....
- Two-gang variable condenser.....
- 0.006 mf, 600 volt tubular condenser.....
- 0.001 mf, part of L1, wave-trap assembly.....
- 0.02 mf, 200 volt tubular condenser.....
- 0.0025 mf mica condenser.....
- Trimmers, part of loop antenna assembly.....
- Trimmers, part of i-f transformers.....
- Dual trimmer assembly.....
- Single adjustable padding condenser.....
- 0.00022 mf mica condenser.....
- 0.00114 mf mica condenser (coded 0.0011 mf).....
- 0.01 mf, 400 volt tubular condenser.....
- 0.1 mf, 200 volt tubular condenser.....
- 0.0002 mf, 600 volt tubular or mica condenser.....
- 0.002 mf, 600 volt tubular condenser.....
- 0.02 mf, 400 volt tubular condenser.....
- 0.03 mf, 400 volt tubular condenser.....
- 0.05 mf, 400 volt tubular condenser.....
- Dual 20 mf, 150 volt dry electrolytic condenser.....
- 0.01 mf, 600 volt tubular condenser.....
- 0.2 mf, 200 volt tubular condenser.....

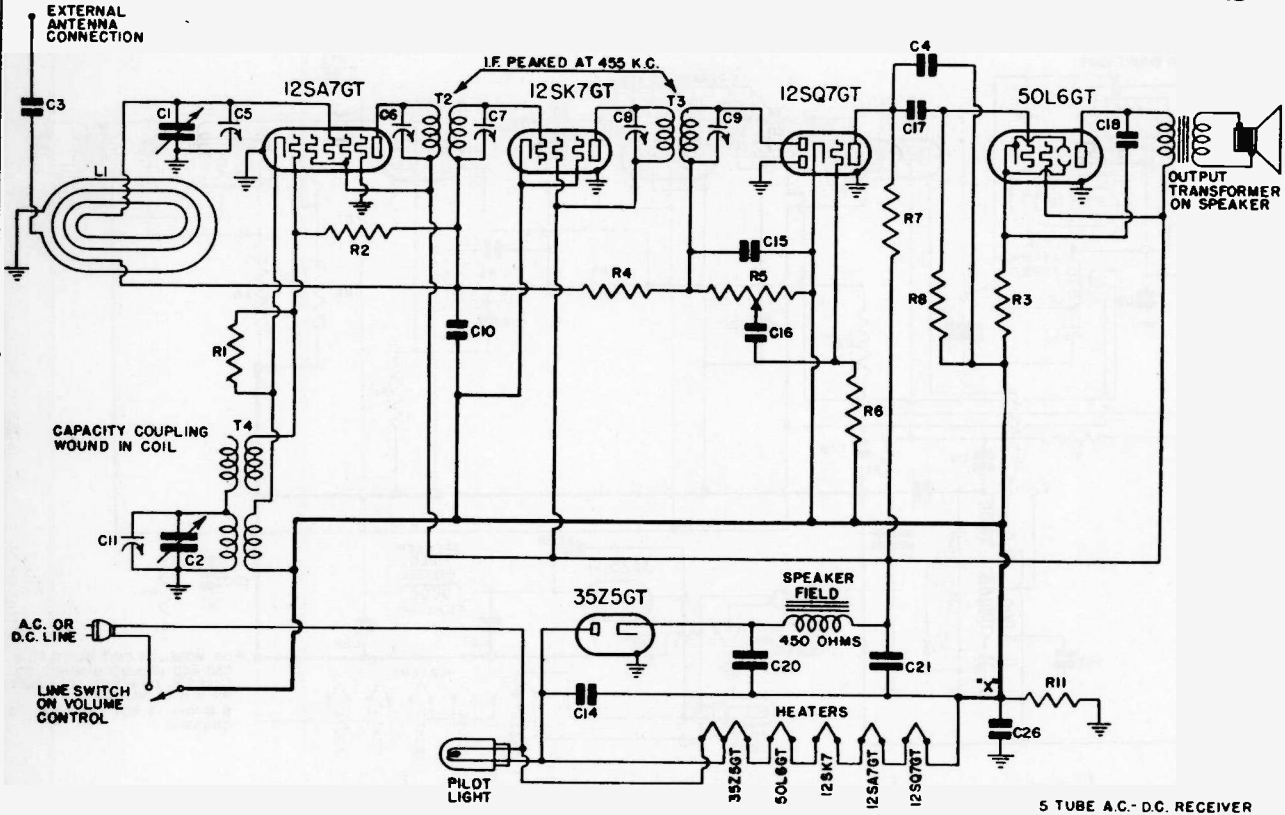
Voltage at 35Z5 cathode—120 volts.  
 Voltage across speaker field—32 volts.  
 Voltage across pilot light—4.5 volts.

**DY-337**  
**DY1-337**  
**DY-349**  
**DY1-349**  
**DY-351**  
**DY1-351**

Tube	Plate	Screen	Cathode	Fil.
12SA7GT	88	88	0	12
12SK7GT	88	88	0	12
12SQ7GT	30	—	0	12
50L6GT	82	88	5.6	50

**Emerson**  
**43**

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



5 TUBE A.C.-D.C. RECEIVER

NOTE: R11 and C26 are used on Underwriters' approved chassis only; on other chassis point X is grounded to the chassis.

L1	7BW-179	Loop antenna assembly (FC)
L1	8CW-334	Loop antenna assembly (FG)
T4	7QT-547A	Oscillator coil
T2	8CT-566	Double-tuned 455 kc first i-f transformer
T3	7BT-550E	Double-tuned 455 kc second i-f transformer
R1	LR-60U	20,000 ohm 1/4 watt carbon resistor
R3	3FR-293	140 ohm 1/2 watt wire-wound resistor
R4	NNR-220	3 megohm 1/4 watt carbon resistor
R5	7BR-363D	Volume control .5 megohm with line switch (FC)
R5	7LR-378	Volume control .5 megohm with line switch (FG)
R6, R2	4XR-327	15 megohm 1/4 watt carbon resistor
R7, R8	KR-56U	500,000 ohm 1/4 watt carbon resistor
R11	LR-61	200,000 ohm 1/4 watt carbon resistor
C1, C2	7BC-445D	Two-gang variable condenser (FC)
C1, C2	7BC-445A	Two-gang variable condenser (FG)
C3, C16	3HC-274	0.002 mf, 600 volt tubular condenser
C4, C15	5AC-384	0.002 mf, 600 volt tubular condenser
C5, C11		Trimmers, part of variable condenser
C6, C7, C8, C9		Trimmers, part of variable condenser
C10, C27	BC-12	0.05 mf, 200 volt tubular condenser
C14	LC-64	0.05 mf, 400 volt tubular
C17, C18	LC-65	0.02 mf, 400 volt tubular condenser
C20, C21	6JC-426E	Dual 20 mf, 150 volt dry electrolytic condenser (FC)
C20, C21	6JC-426M	Dual 20 mf, 150 volt dry electrolytic condenser (FG)
C24	AC-6	0.1 mf, 200 volt tubular condenser
C26	2CC-208	0.2 mf, 200 volt tubular condenser

**Emerson**  
**Radio**

**MODEL: FC-400**

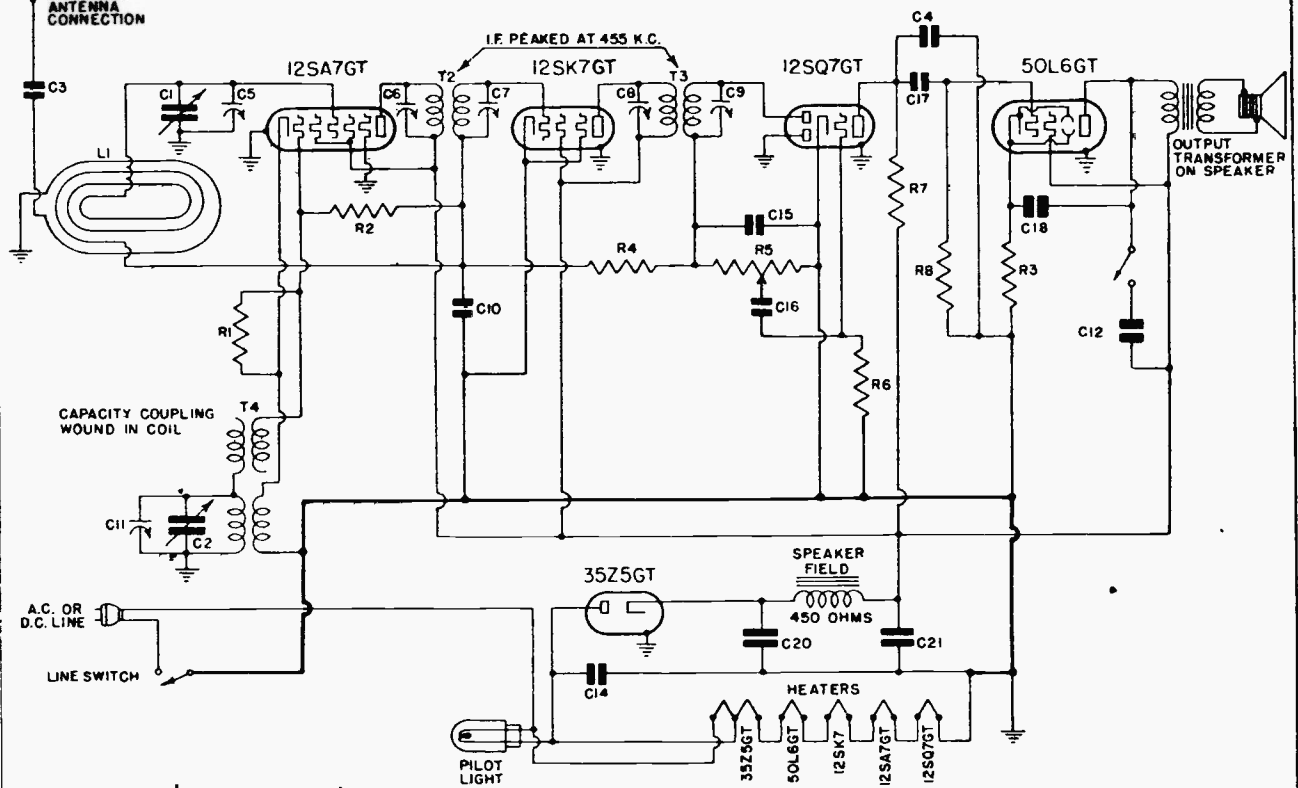
CHASSIS MODEL: FC

**MODEL: FG-330**

CHASSIS MODEL: FG

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## EMERSON RADIO AND PHONOGRAPH CORPORATION



R1	LR-60	20,000 ohm ¼ watt carbon resistor
R2, R6	4XR-327	15 megohm ¼ watt carbon resistor
R3	3FR-293	140 ohm ½ watt wire-wound resistor
R4	NNR-220	3 megohm ¼ watt carbon resistor
R5	9PR-447	Volume control .5 megohm
R7, R8	KR-56	500,000 ohm ¼ watt carbon resistor
C1, C2	9PC-533	Two-gang variable condenser
C3, C16	3HC-274	0.002 mf, 600 volt tubular condenser.
C4	5AC-384	0.0002 mf, 600 volt tubular condenser
C5, C11		Trimmers, part of variable condenser.
C6, C7, C8, C9		Trimmers, part of i-f transformers.
C10	AC-6	0.1 mf, 200 volt tubular condenser
C12	9PC-544	0.04 mf, 200 volt tubular condenser

**Emerson Radio**  
**Models FP-421**  
**FP-422**

### VOLTAGE ANALYSIS

Voltage at 35Z5 cathode—120 volts.  
Voltage across speaker field—32 volts.  
Voltage across pilot light—4.5 volts.

Tube	Plate	Screen	Cathode	Fil.
12SA7GT	88	88	0	12
12SK7GT	88	88	0	12
12SQ7GT	30	—	0	12
50L6GT	82	88	5.6	50

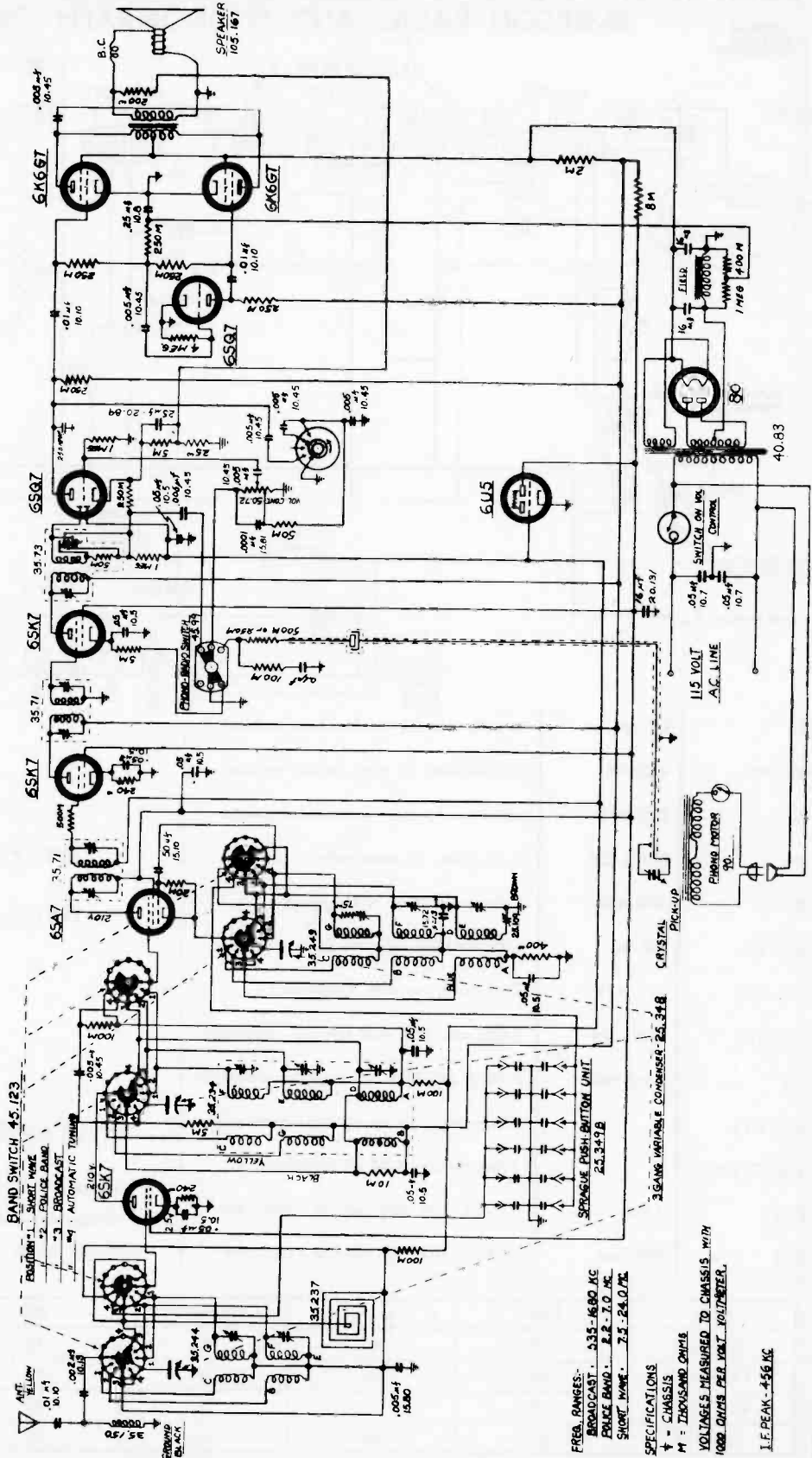
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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

**Fada Radio & Electric Co., Inc.**  
**Long Island City, N. Y.**

<b>ANT. COIL</b> 33,244	<b>R.F. COIL</b> 33,234	<b>FADA RADIO &amp; ELEC. CO. INC.</b> LONG ISLAND CITY, N.Y.
		<b>MODEL - 194 APC</b>
<b>C-E, 0.25"</b>	<b>C-B, 0.25"</b>	<b>DR. NAME</b> C.G.
<b>B-E, 0.75"</b>	<b>B-F, 0.75"</b>	<b>DATE</b> 11-18-40
<b>G-A, 1.0"</b>	<b>G-B, 1.0"</b>	<b>DESIGN</b> W.P.
<b>G-E, 0.5"</b>	<b>G-F, 0.5"</b>	<b>PR.</b> 42
<b>F-D, 1.0"</b>	<b>F-A, 1.0"</b>	<b>SEC.</b> 42
<b>F-E, 1.0"</b>	<b>F-B, 1.0"</b>	<b>54C.</b>

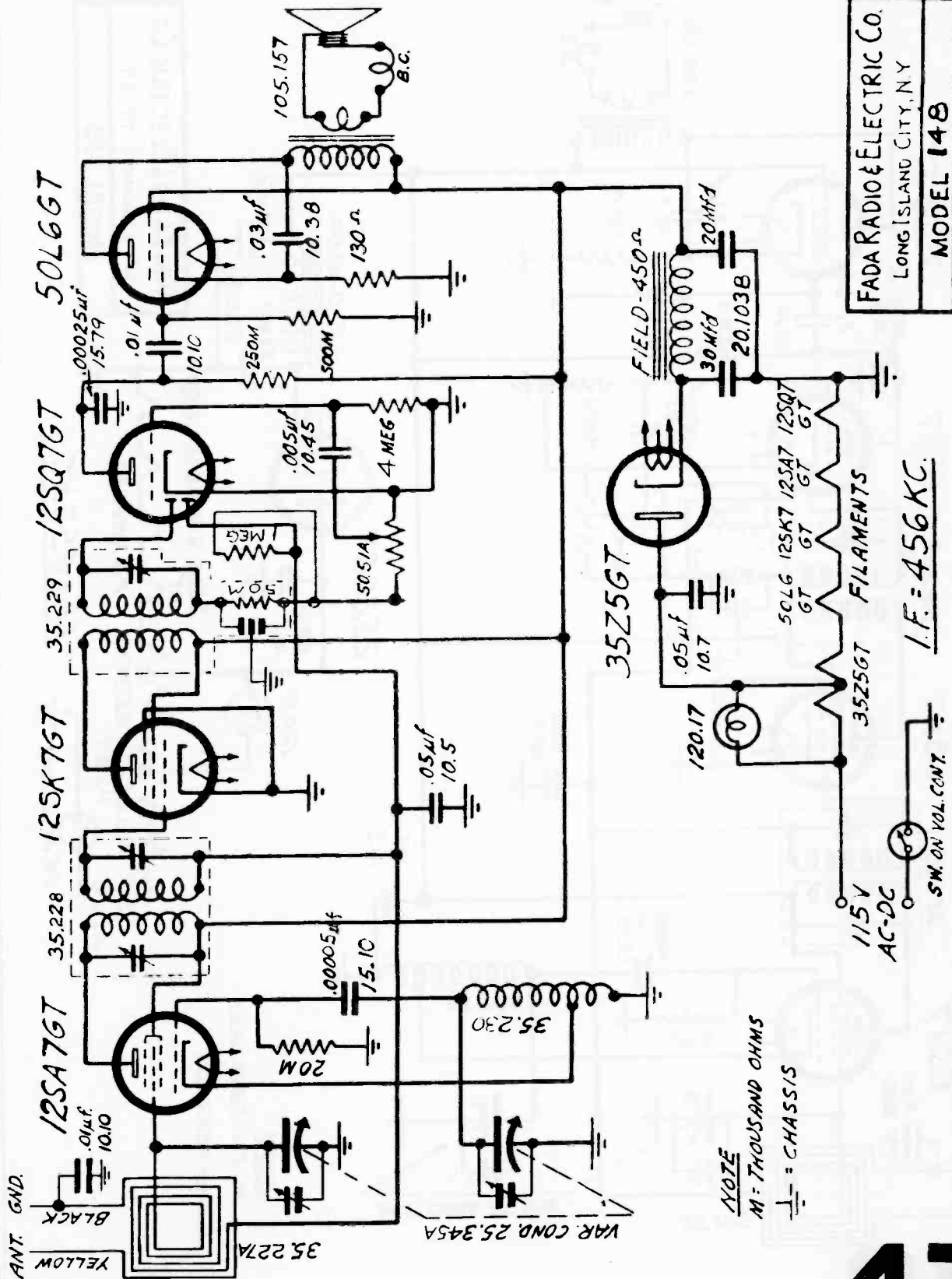


**FREQ. RANGES:**  
 BROADCAST - 535-1600 KC  
 PHONE BAND - 2.2-7.0 MC  
 SHORT WAVE - 7.5-24.0 MC

**SPECIFICATIONS**  
 + = CHASSIS  
 M = INDICATED OHMS  
 VOLTAGES MEASURED TO CHASSIS WITH  
 1000 OHMS PER VOLT VOLTMETER.  
 I.F. PEAK - 456 KC



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

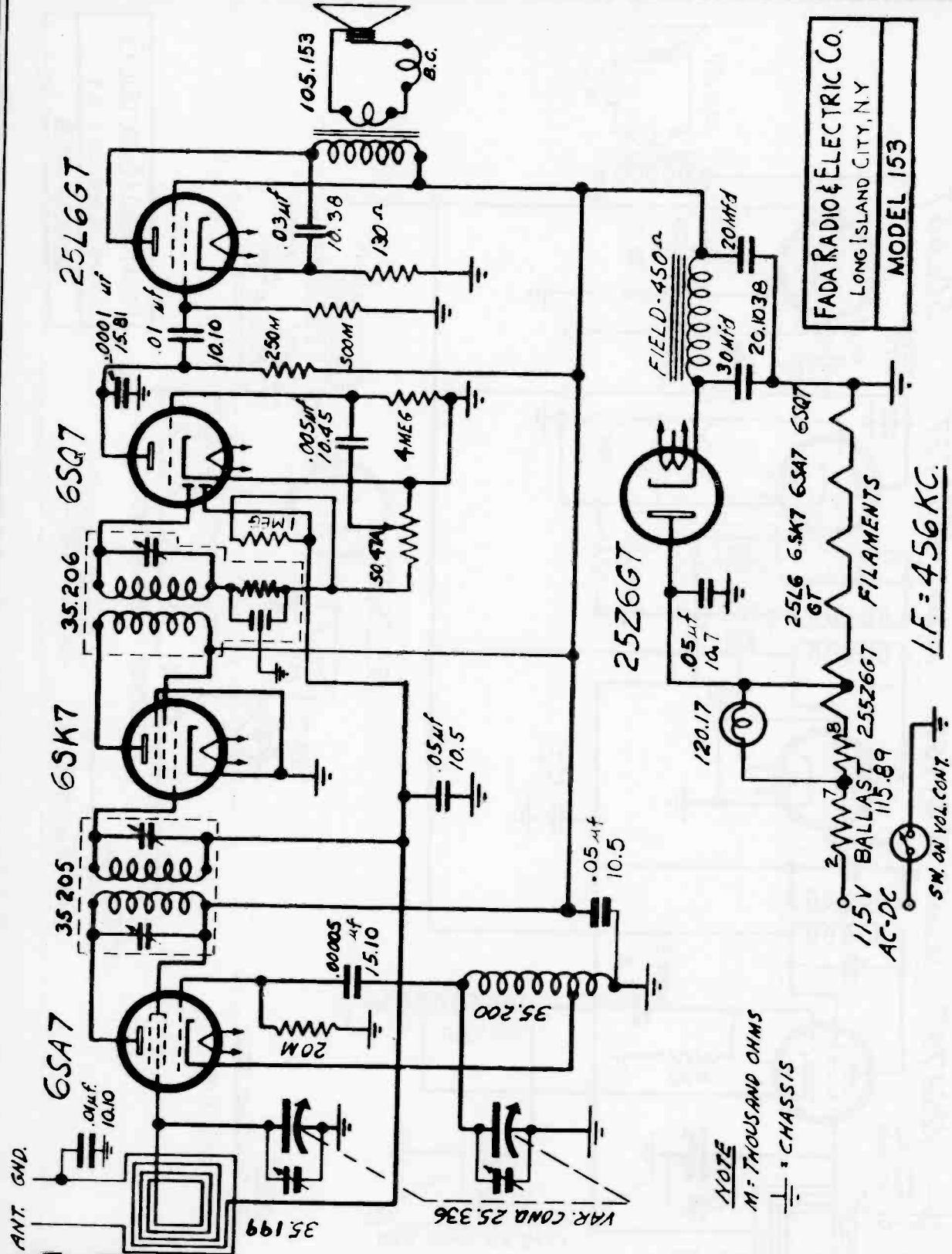


FADA RADIO & ELECTRIC CO.  
LONG ISLAND CITY, N.Y.  
MODEL 148

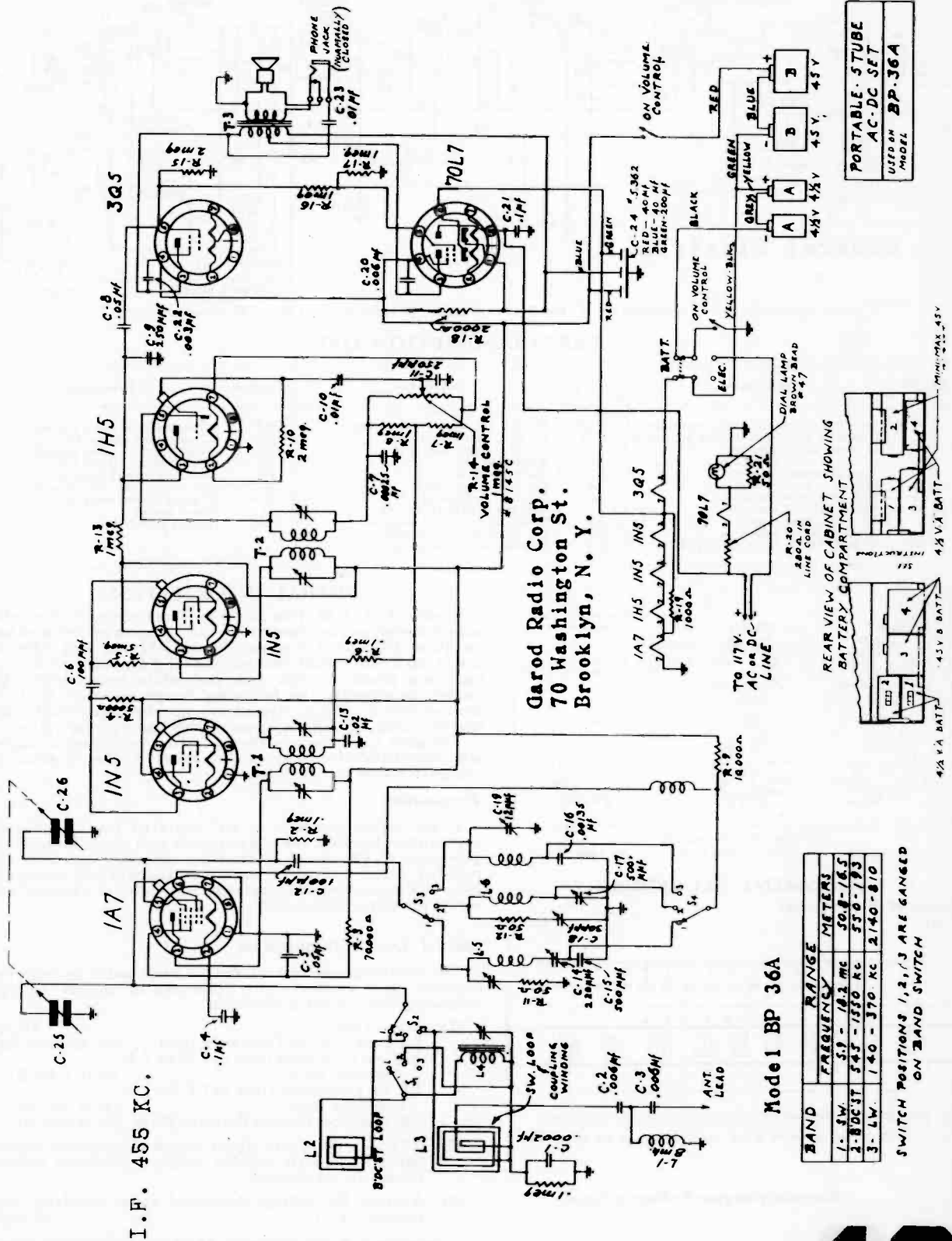
NOTE  
M = THOUSAND OHMS  
⊥ = CHASSIS

I.F. = 456 KC.

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

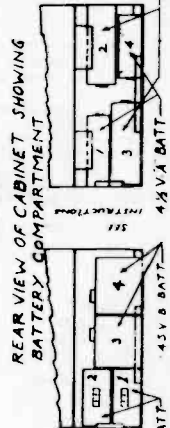


Garod Radio Corp.  
70 Washington St.  
Brooklyn, N. Y.

Model 1 BP 36A

BAND	RANGE	METERS
1- SW	50 - 180 MC	50.8 - 16.5
2- BCST	550 - 1550 KC	330 - 193
3- LW	140 - 370 KC	2140 - 810

SWITCH POSITIONS 1, 2, 3 ARE GANGED ON BAND SWITCH

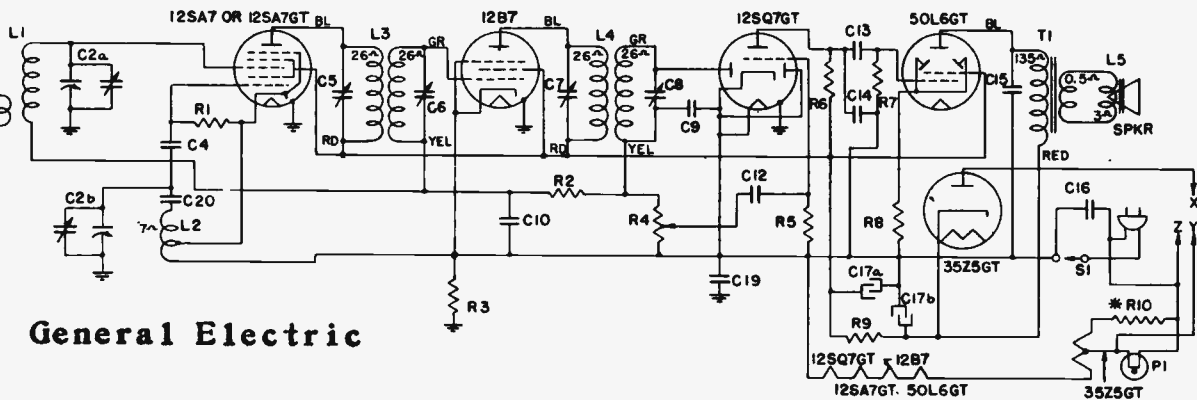


PORTABLE-STUBE  
AC-DC SET  
MODEL BP-36A

I.F. 455 KC.

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

Models J-51, J-53, J-54, and J-54W

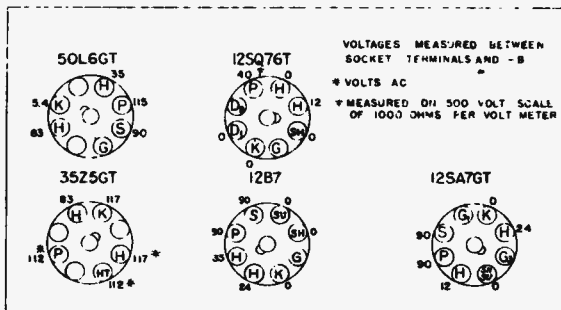


General Electric

\*"A" rated receivers have "X" connected to "Y" and R-10 is shorted. "C" rated receivers have "X" connected to "Z."

## PARTS DESCRIPTION LIST

Symbol	Description	Symbol	Description	Symbol	Description
C2a	Antenna section of tuning condenser	C17b	40 mfd. 150 V. dry electrolytic	R4	0.5 megohms volume control
C2b	Oscillator section of tuning condenser	C19	0.2 mfd. paper capacitor	R5	4.7 megohms carbon resistor
C4	47 mmf. mica capacitor	C20	.01 mfd. paper capacitor	R6	470,000 ohms carbon resistor
C9	470 mmf. mica capacitor	L1	Beam-a-Scope	R7	470,000 ohms carbon resistor
C10	.05 mfd. paper capacitor	L2	Oscillator Coil	R8	150 ohms carbon resistor
C12	.005 mfd. paper capacitor	L3	1st. I.F. transformer	R9	1200 ohms 1 W. carbon resistor
C13	.005 mfd. paper capacitor	L4	2nd I.F. transformer	R10	13 ohms carbon resistor
C14	330 mmf. mica capacitor	P1	Dial lamp, MAZDA No. 47	S1	Power switch
C15	.01 mfd. paper capacitor	R1	33,000 ohms carbon resistor	T1	Output transformer
C16	.05 mfd. paper capacitor	R2	2.2 megohms carbon resistor		
C17a	30 mfd. 150 V. dry electrolytic	R3	470,000 ohms carbon resistor		

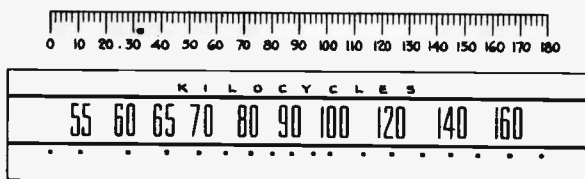


BOTTOM VIEW OF CHASSIS  
AC LINE VOLTS - 117 MAX. VOLUME GANG CLOSED NO SIGNAL

## ALIGNMENT PROCEDURE

### Alignment Frequencies

I.F. .... 455 KC



Frequency-degree Reference Chart

## GENERAL INFORMATION

Models J-51, J-53, J-54 and J-54W are compact, five-tube superheterodyne receivers which can be operated from either an AC or DC source of power. Model J-51 and J-53 cabinets are in matched walnut veneers. Model J-54 and J-54W cabinets are plastic in oak and gray-white respectively. All models incorporate the following design features: Built-in Beam-a-Scope, 5-inch dynapower speaker, increased dial length, automatic volume control, and beam power output.

The glass tubes used in the converter and detector stages are interchangeable with metal tubes if the receiver is realigned following the change.

### Precaution

If the signal generator is AC operated use an isolating transformer between the power supply and the radio receiver power input. The use of an isolating capacitor is not recommended as AC current through the capacitor will introduce hum modulation and/or create the possibility of a burned-out signal generator attenuator.

### Special Service Information

The following information will be very useful in servicing receivers if a vacuum tube voltmeter or similar voltage measuring instrument is available.

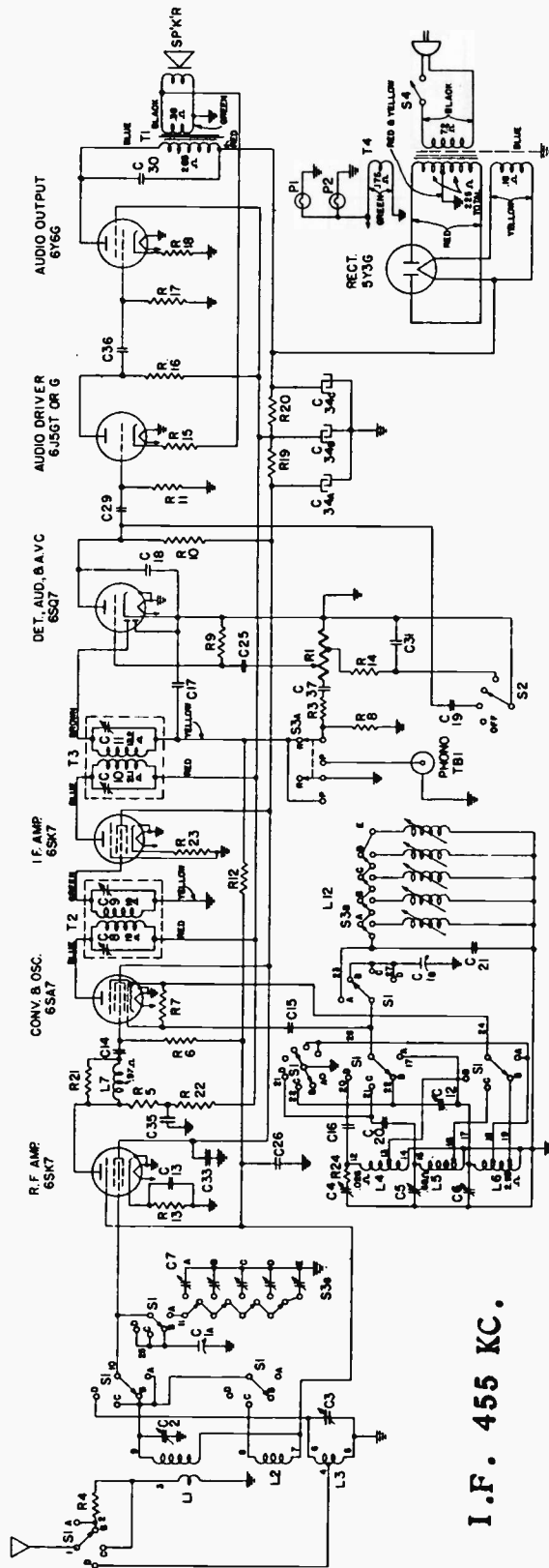
- Stage Gains Gain\*  
Antenna Post to Converter Grid. . . . 4.0 at 1000 KC  
R.F. on Converter Grid to I.F. on I.F.  
Amplifier Grid. . . . . 40 at 1000 KC  
I.F. on Converter Grid to I.F. on I.F.  
Amplifier Grid. . . . . 50 at 455 KC  
I.F. Amplifier Grid to Detector Plate. . 50 at 455 KC
- 0.15-volt, 400-cycle signal across the volume control will give 1/2-watt speaker output.\* (Volume control turned to maximum.)
- Average DC voltage developed across oscillator grid resistor (R-1) . . . . . 15 volts

\* Variations of ± 20% permissible. All readings obtained with enough signal input to give 1/2-watt speaker output.

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



I.F. 455 KC.

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Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description
C1A	Antenna section of tuning condenser	C25	.02 mfd. paper capacitor	L7	R.F. interstage coil	R16	100,000 ohms carbon resistor
C1B	Oscillator section of tuning condenser	C26	.05 mfd. paper capacitor	L12	Station selector oscillator coils	R17	330,000 ohms carbon resistor
C2	"BC" band antenna trimmer	C28	.005 mfd. paper capacitor	P1	Dial lamp, Mazda No. 44	R18	270 ohms 1 W. carbon resistor
C3	"SW2" band antenna trimmer	C29	.01 mfd. paper capacitor	P2	2 megohm volume control	R19	3300 ohms 1 W. carbon resistor
C4	"SW1" band oscillator trimmer	C30	.005 mfd. paper capacitor	R1	47,000 ohms carbon resistor	R20	1800 ohms 2 W. carbon resistor
C5	"SW1" band oscillator trimmer	C31	.01 mfd. paper capacitor	R3	10,000 ohms carbon resistor	R21	10,000 ohms carbon resistor
C6	"BC" band oscillator trimmer	C32	10 mfd., 250 V. dry electrolytic	R4	3300 ohms carbon resistor	R22	1000 ohms carbon resistor
C7	Station selector antenna trimmer strip	C33	30 mfd., 250 V. dry electrolytic	R5	47,000 ohms carbon resistor	R23	150 ohms carbon resistor
C12	.01 mfd. paper capacitor	C34	.01 mfd. paper capacitor	R6	22,000 ohms carbon resistor	R24	27 ohms carbon resistor
C13	100 mmf. mica capacitor	C35	.01 mfd. paper capacitor	R7	470,000 ohms carbon resistor	S1	Band switch
C14	47 mmf. mica capacitor	C36	.01 mfd. paper capacitor	R8	4.7 megohms carbon resistor	S2	Tone control switch
C15	.008 mfd. paper capacitor	C37	.01 mfd. paper capacitor	R9	4.7 megohms carbon resistor	S3A	Phono switch
C16	220 mmf. mica capacitor	L1	"BC" Band Beam-a-Scope	R10	330,000 ohms carbon resistor	S3B	Station selector switch
C17	150 mmf. mica capacitor	L2	"SW2" Band antenna coil	R11	470,000 ohms carbon resistor	S4	Power switch
C18	150 mmf. mica capacitor	L3	"SW2" band antenna coil	R12	2.2 megohms carbon resistor	T1	Output transformer
C19	.002 mfd. paper capacitor	L4	"SW2" band oscillator coil	R13	47 ohms carbon resistor	T2	1st I.F. transformer
C20	2400 mmf. .5% mica capacitor	L5	"SW1" band oscillator coil	R14	100,000 ohms carbon resistor	T3	2nd I.F. transformer
C21	750 mmf. silvered mica capacitor	L6	"BC" band oscillator coil	R15	3300 ohms carbon resistor	T4	Power transformer

### Chassis or Beam-a-Scope Removal

Note: Care must be exercised in removing the chassis to avoid changing the shape of either the short-wave or broadcast loops. These loops are factory formed to give a certain inductance and any alterations in the loops in the field will throw the chassis out of alignment.

When disconnecting the short-wave loop leads from the loop, be sure to support the loop while pulling off the connections. Failure to support the loop may cause the staples to loosen and result in the loop rattling in the cabinet.

# GENERAL ELECTRIC SEVEN-TUBE RADIO GOLDEN TONE RADIO MODEL J-71

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

Symbol	Description	Symbol	Description	Symbol	Description
C1A	Antenna section of tuning condenser	C33B	15 mid. 400 V. dry electrolytic	R17	1000 ohms carbon resistor
C1B	Oscillator section of tuning condenser	C33C	30 mid. 400 V. dry electrolytic	R18	180 ohms 2 W. carbon resistor
C2	"SW2" band antenna trimmer	C34	.002 mid. 1000 V. paper capacitor	R19	1000 ohms carbon resistor
C3	Touch tuning trimmer strip	C35	.01 mid. paper capacitor	R20	1800 ohms carbon resistor
C4	.01 mid. paper capacitor	L1	"BC" and "SW1" band Beam-a-Scope	R21	47,000 ohms carbon resistor
C5	0.1 mid. paper capacitor	L2	"SW1" band antenna coil	R22	6800 ohms carbon resistor
C6	100 mmf. mica capacitor	L3	"SW2" band Beam-a-Scope	R23	27 ohms carbon resistor
C11	.001 mid. paper capacitor	L4	R.P. interstage coil	R24	47,000 ohms carbon resistor
C12	.03 mid. paper capacitor	L5	"SW2" band oscillator coil	R25	2 megohms volume control (1/4 megohm tap)
C13	.03 mid. paper capacitor	L6	"SW1" band oscillator coil	R26	56,000 ohms carbon resistor
C14	.02 mid. paper capacitor	L7	"SW1" band oscillator coil	R27	5.6 megohms carbon resistor
C15	100 mmf. 1000 V. mica capacitor	L8	Touch tuning coil strip	R28	220,000 ohms carbon resistor
C16	.002 mid. 1000 V. paper capacitor	P1	Dial lamp, Masda No. 44	R29	33,000 ohms carbon resistor
C17	220 mmf. mica capacitor	P2	Dial lamp, Masda No. 44	R30	10,000 ohms 3 W. carbon resistor
C18	.01 mid. paper capacitor	R1	1000 ohms carbon resistor	R31	1800 ohms 4 W. carbon resistor
C19	"SW2" band oscillator trimmer	R2	47 ohms carbon resistor	R32	47,000 ohms carbon resistor
C20	.008 mid. paper capacitor	R3	10,000 ohms carbon resistor	R33	470,000 ohms carbon resistor
C21	47 mmf. mica capacitor	R4	3300 ohms 1 W. carbon resistor	R34	1000 ohms carbon resistor
C22	"SW1" band oscillator trimmer	R5	47,000 ohms carbon resistor	S1	Band switch
C23	2400 mmf. ±5% mica capacitor	R6	22,000 ohms carbon resistor	S2	One control switch
C24	"BC" band oscillator trimmer	R7	150 ohms carbon resistor	S3	Touch tuning switch
C25	"BC" band oscillator padder	R8	470,000 ohms carbon resistor	S4	Phono key
C26	750 mmf. silvered mica capacitor	R9	3300 ohms carbon resistor	T1	1st I.P. transformer
C27	.005 mid. paper capacitor	R10	100,000 ohms carbon resistor	T2	2nd I.P. transformer
C28	.05 mid. paper capacitor	R11	220,000 ohms carbon resistor	T3	Output transformer
C29	.004 mid. paper capacitor	R12	220,000 ohms carbon resistor	T4	50-60-cycle power transformer
C30	150 mmf. mica capacitor	R13	150,000 ohms carbon resistor	T5	28-cycle power transformer
C31	.01 mid. paper capacitor	R14	270,000 ohms carbon resistor		
C32	10 mid. 350 V. dry electrolytic	R15	4700 ohms carbon resistor		
C33A		R16			

### Tuning Frequency Range

- Broadcast Band..... 540-1700 KC
- Short-wave Band No. 1..... 2400-7000 KC
- Short-wave Band No. 2..... 7000-22,000 KC

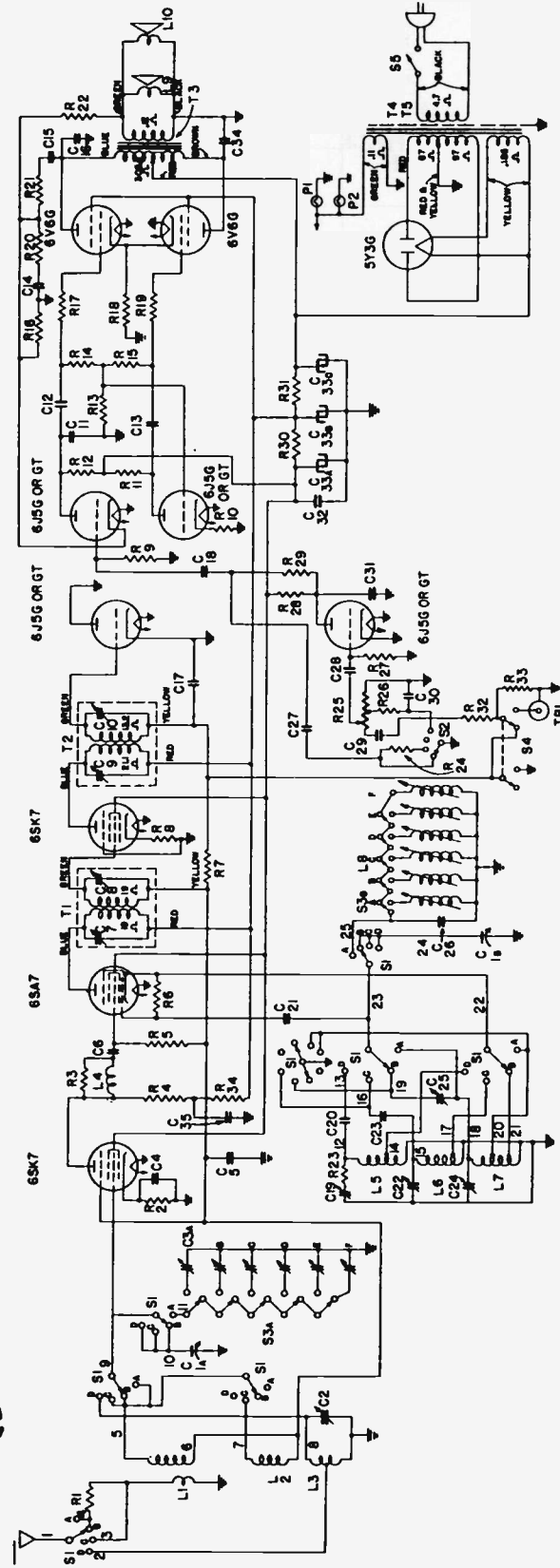
Intermediate Frequency..... 455 KC

# GENERAL ELECTRIC

## MODEL J-105

# 52

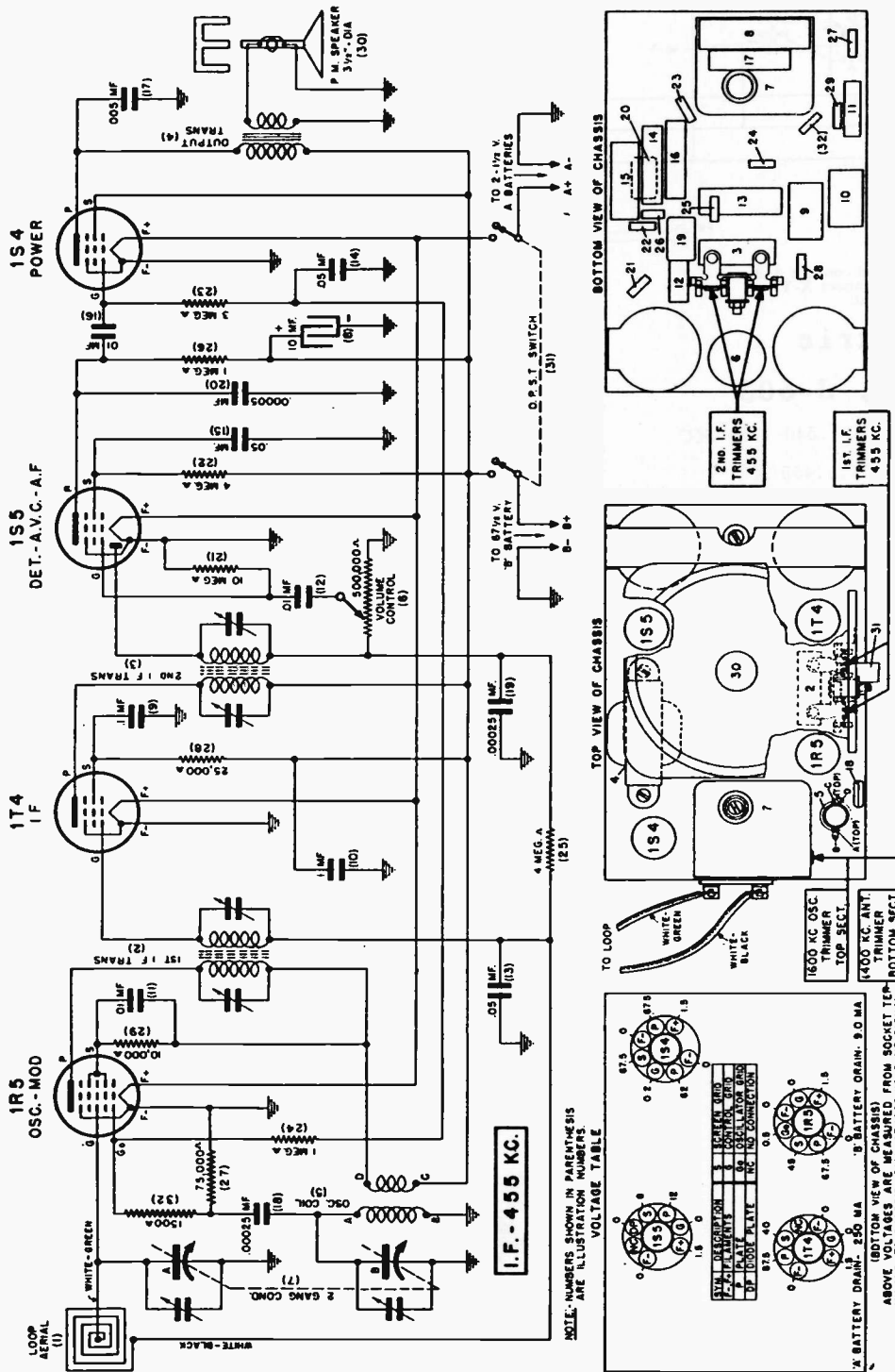
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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS INSTRUCTIONS

## GENERAL ELECTRIC

### Model JB-410



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the first I.F. transformer trimmers. Keep test oscillator output as low as a readable meter reading will permit.

#### R.F. Alignment

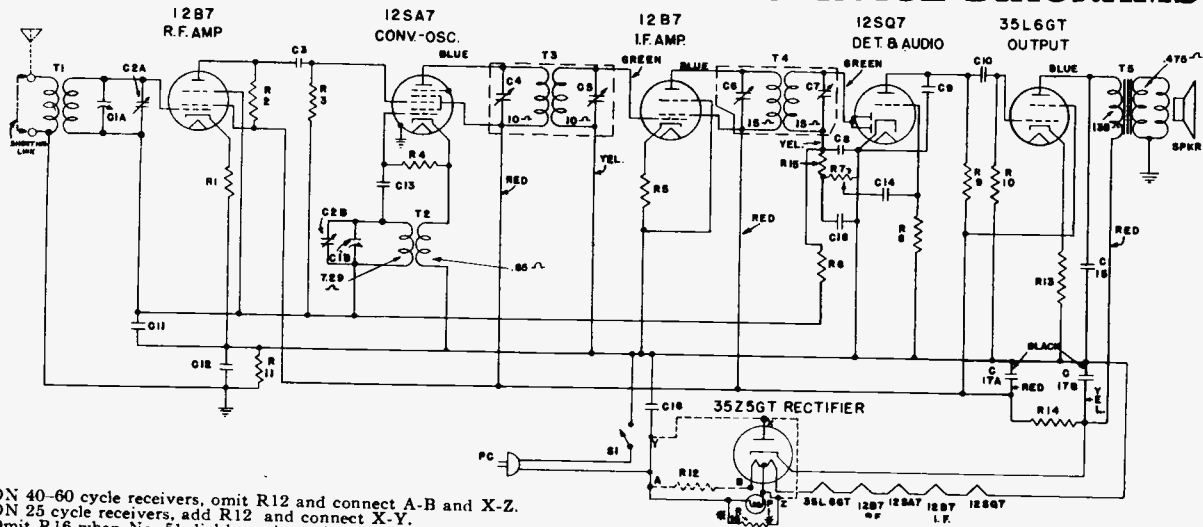
Couple test oscillator output to loop in case cover. Adjust test oscillator and receiver dial to exactly 1600 K.C. Peak 1600 K.C. oscillator trimmer for maximum output. Change test oscillator signal and receiver dial to approximately 1400 K.C. Then while rocking gang condenser trim 1400 K.C. antenna trimmer for maximum output.

**Alignment Frequencies**  
I.F. ....455 K.C.  
R.F. ....1600 & 1400 K.C.

#### I.F. Alignment

Connect an output meter across the voice coil. Rotate the volume to maximum. Set test oscillator to 455 K.C. and apply signal to lug on stator of gang condenser to which loop is connected through a .05 Mfd. capacitor. Align the second I.F. transformer trimmers, next adjust

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



ON 40-60 cycle receivers, omit R12 and connect A-B and X-Z.  
ON 25 cycle receivers, add R12 and connect X-Y.  
Omit R16 when No. 51 dial lamp is used.

## General Electric

### Models J-602, J-603

Tuning Frequency Range ..... 540-1720 KC

Intermediate Frequency ..... 455 KC

Electrical Power Output (117 line volts)  
Undistorted ..... 1.0 watts  
Maximum ..... 1.5 watts

#### Loudspeaker—PM Dynamic

Outside Cone Diameter ..... 5 inches  
Voice Coil Impedance (400 cycles) . 3.5 ohms

#### Tubes

RF Amplifier ..... GE-12B7  
Converter—Oscillator ..... GE-12SA7  
IF Amplifier ..... GE-12B7  
Detector, Audio, and AVC ..... GE-12SQ7  
Power Output ..... GE-35L6GT  
Rectifier ..... GE-35Z5GT  
Dial Lamp (see paragraph below) . . . MAZDA #47 or #51

### GENERAL INFORMATION

Models J602 and J603 are six-tube AC-DC superheterodyne receivers with Underwriters' Approval listing. The Model J602 is housed in a mahogany plastic cabinet, while the Model J603 has an ivory plastic cabinet.

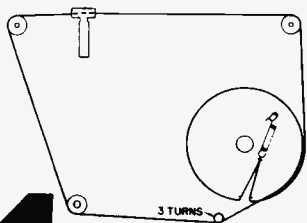
Both the MAZDA No. 47 and No. 51 dial lamps were used during production. When lamp No. 51 is used, the resistor R16 should be omitted.

Either the metal or glass type 12B7 tube may be used in the RF or IF stage. However when the glass tube is used in the IF stage, a tube shield must be used to prevent oscillation at the low frequency end of the broadcast band.

### ALIGNMENT PROCEDURE

#### Alignment Frequencies

RF ..... 1500 KC  
IF ..... 455 KC



Dial Stringing Diagram

#### IF Alignment

Connect an output meter across the voice coil. Turn the volume control to maximum. Set test oscillator to .455 KC and keep the oscillator output as low as a readable meter reading will permit.

Apply signal to the 12SA7 converter grid through a .05 mfd. capacitor and align progressively the trimmers in the 2nd and 1st IF transformers.

#### RF Alignment

When making the following alignment the loop antenna must be bolted to the chassis by the screw and spacer mounting. The RF signal should be capacity coupled to the receiver loop by placing a two-foot piece of wire for an antenna on the test oscillator output post (high side). Keeping this antenna two feet or more from the receiver loop will generally insure freedom from too much coupling. Metal objects such as meters, tools, etc., should not be placed in close proximity to the loop when making this alignment.

With the gang condenser plates completely closed, the pointer should line up with the first mark on the left of the scale. Set the signal generator to 1500 KC. Align (C-1b) to the signal while the pointer is on the 1500 KC mark. Peak (C-1a) for maximum output.

#### Special Service Information

The following information will be very useful to servicemen equipped with vacuum tube voltmeters or similar voltage measuring instruments.

##### (1) Stage Gains

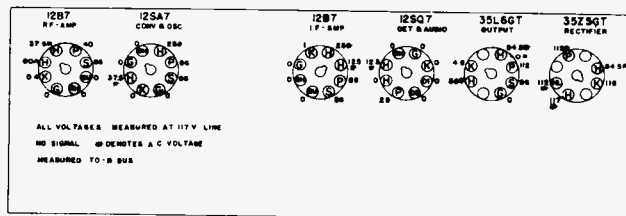
Antenna post to RF grid—3.8 at 1000 KC  
RF grid to converter grid—6.0 at 1000 KC  
Converter grid to IF grid—46 at 455 KC  
IF grid to 12SQ7 diode plate—75 at 455 KC

##### (2) Audio Gain

.14 volts, 400 cycles signal across volume control with control set at maximum, will give approximately 1/2-watt speaker output.

##### (3) DC Voltage developed across oscillator grid resistor (R4) averages 10.0 volts at 1000 KC.

Variations of  $\pm 20\%$  permissible. All readings obtained with enough signal input to give 1/2-watt speaker output.

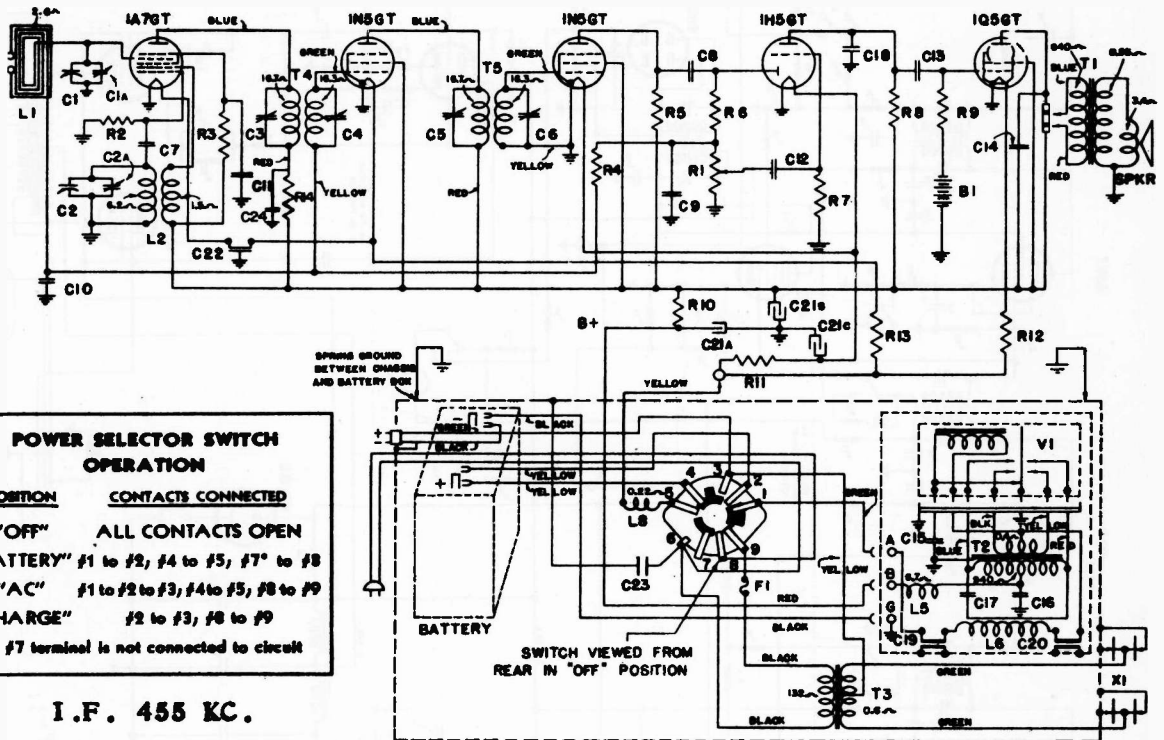


ALL VOLTAGES MEASURED AT 117V LINE  
NO SIGNAL @ DENOTES A C VOLTAGE  
MEASURED TO B BUS

FRONT OF CHASSIS  
BOTTOM VIEW OF CHASSIS



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



**POWER SELECTOR SWITCH OPERATION**

POSITION	CONTACTS CONNECTED
"OFF"	ALL CONTACTS OPEN
"BATTERY"	f1 to f2, f4 to f5, f7 to f8
"AC"	f1 to f2 to f3, f4 to f5, f8 to f9
"CHARGE"	f2 to f3, f8 to f9

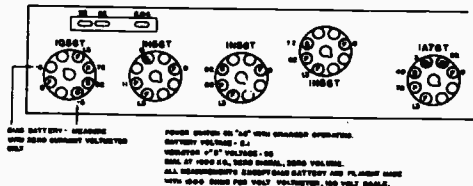
\* f7 terminal is not connected to circuit

I. F. 455 KC.

Stock No.	Symbol	Description	List Price	Stock No.	Symbol	Description	List Price
RC-7054	C-1, 2	CONDENSER—Tuning condenser and trimmer	\$1.55	*RQ-1331	R-8	RESISTOR—1.0 megohm, 1/4 W. carbon	\$0.70-3
*RC-216	C-7	CAPACITOR—47 mmf. mica	.25	*RQ-1339	R-9	RESISTOR—2.2 megohm, 1/4 W. carbon	.70-3
*RC-235	C-8, 9	CAPACITOR—100 mmf. mica	.25	*RQ-1290	R-10	RESISTOR—1,000 ohm, 1/4 W. carbon	.70-3
*RC-072	C-10	CAPACITOR—.05 Mfd., 300 V. paper	.25	RL-1208	R-11, 12, 13	RESISTOR—5.2 ohm, 1/4 W. carbon	.70-3
*RC-398	C-11	CAPACITOR—.01 Mfd., 200 V. paper	.30	RC-2056	B-1	CELL—5.0 V. bias cell assembly	.53
*RC-023	C-12, 13	CAPACITOR—.005 Mfd., 600 V. paper	.25	RL-568	L-1	BEAM-A-SCOPE—Loop antenna assembly (inside cover)	.90
*RC-039	C-14	CAPACITOR—.01 Mfd., 600 V. paper	.25	RL-2055	L-2	COIL—Oscillator coil	.30
*RC-098	C-15	CAPACITOR—.01 Mfd., 200 V. paper	.30	RL-367	L-5	CHOKE—B choke	.20
*RC-072	C-16	CAPACITOR—.05 Mfd., 200 V. paper	.25	RL-366	L-6	CHOKE—Vibrator choke	.35
*RC-027	C-17	CAPACITOR—.008 Mfd., 100 V. paper	.30	RL-567	L-7	BEAM-A-SCOPE—External loop antenna	.45
*RC-235	C-18	CAPACITOR—100 mmf. mica	.25	RL-365	L-8	CHOKE—Filament supply choke	.30
*RC-156A	C-19, 20	CAPACITOR—.5 Mfd., 120 V.	.45	RS-3115	SW1	SWITCH—Power selector switch	.70
	C-21A, 21B	CAPACITOR—15 Mfd., 130 V. dry electrolytic	.75	RT-4010	T-1	TRANSFORMER—Output transformer	.90
RC-5189	C-21C	CAPACITOR—1200 Mfd., 2 V. dry electrolytic	.75	RT-0525	T-2	VIBRATOR—Vibrator power transformer	1.80
*RC-156A	C-22	CAPACITOR—.5 Mfd., 120 V. paper	.45	RT-0524	T-3	TRANSFORMER—50-60 cycle rectifier step-down transformer	1.20
*RC-092	C-23	CAPACITOR—.05 Mfd., 600 V. paper	.30	RT-0527	T-3	TRANSFORMER—25 cycle rectifier step-down transformer	.90
RV-125	R-1	VOLUME CONTROL—.5 megohm volume control	.95	RT-393	T-4	TRANSFORMER—1st I.F. transformer	.90
*RQ-1315	R-2	RESISTOR—220,000 ohm, 1/4 W. carbon	.70-5	RT-392	T-3	TRANSFORMER—2nd I.F. transformer	.90
*RQ-1299	R-3	RESISTOR—47,000 ohm, 1/4 W. carbon	.70-5	RV-204	V-1	VIBRATOR—Power supply synchronous vibrator	3.60
*RQ-1339	R-4	RESISTOR—2.2 megohm, 1/4 W. carbon	.70-5	RR-802	X-1	RECTIFIER—Copper oxide rectifier	.2
*RQ-1293	R-5	RESISTOR—27,000 ohm, 1/4 W. carbon	.70-5	RS-1086	Spkr	SPEAKER—1" M speaker	4.6
*RQ-1290	R-6	RESISTOR—47,000 ohm, 1/4 W. carbon	.70-5				
*RQ-1347	R-7	RESISTOR—4.7 megohm, 1/4 W. carbon	.70-5				

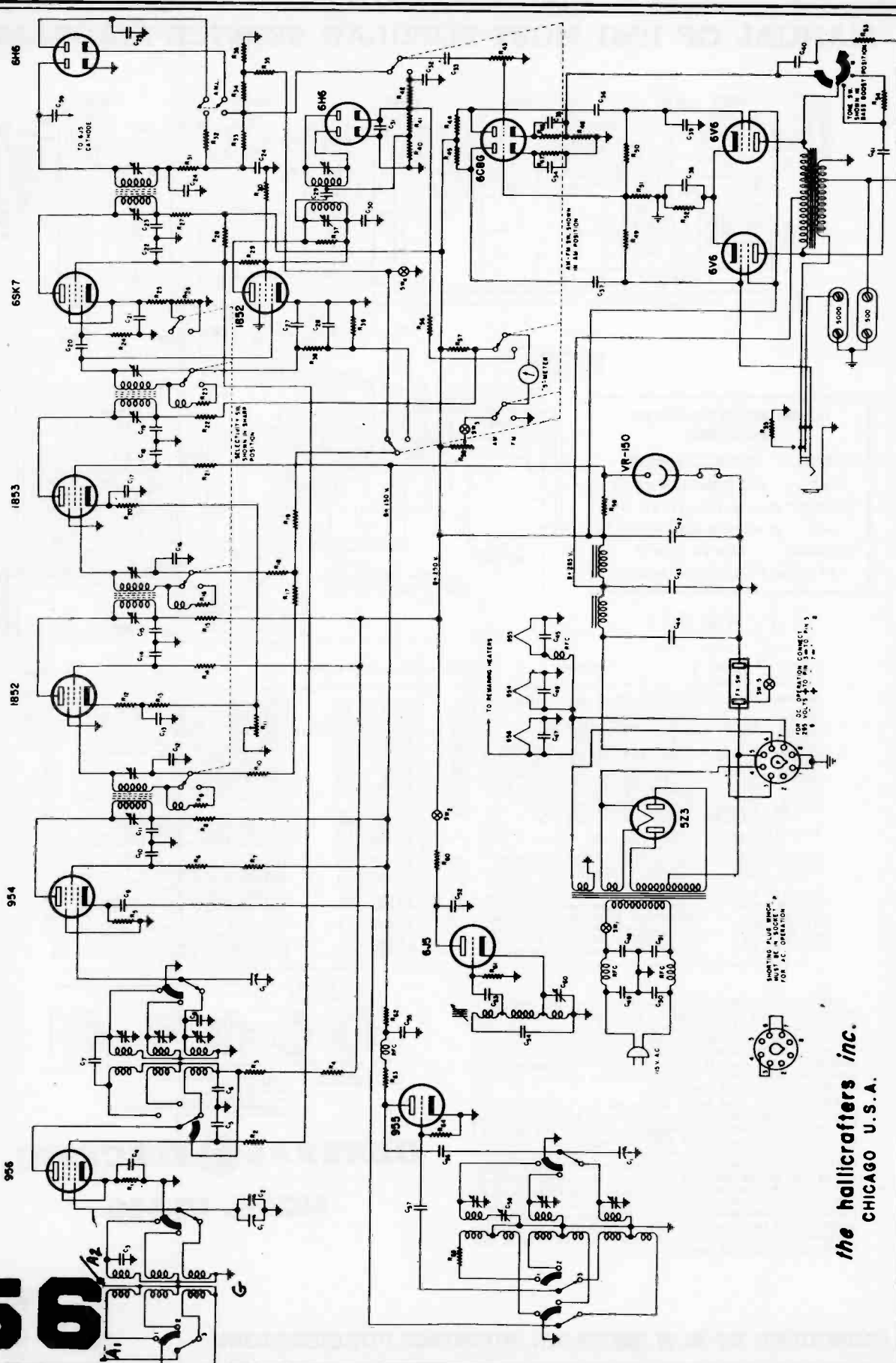
All power necessary for the operation of the receiver is supplied by the 2-volt built-in rechargeable battery. The tube filaments are heated directly by the two volts from the battery while the necessary high voltage for the screen and plates of the tubes is furnished by a synchronous vibrator used in conjunction with a step-up power transformer and its associated filter circuit. The synchronous vibrator operates on the two volts from the battery.

Provision has been made to charge the battery directly from the house current without removing the battery from the receiver circuit. Two charging positions are provided on the four-position power selector switch. The "Charge" position of this switch allows the battery to be charged at the rate of approximately 1.35 amperes from the house current during the period that the receiver is not being operated. The "AC" position of the switch allows the receiver to be operated at the same time that the battery is being charged. Under this condition, however, it takes a considerably longer period for a partially discharged battery to be fully restored due to the fact that current is taken from the battery to operate the receiver.

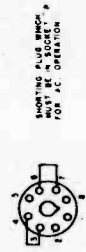


**GENERAL ELECTRIC**  
**MODEL LB-530**

SCHEMATIC DIAGRAM - ULTRA HIGH FREQUENCY FM-AM RECEIVER - MODEL S-27



**56**



**the hallicrafters inc.**  
CHICAGO U.S.A.

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## The Hallicrafters

S-27

### RESISTORS

NO.	OHMS	WATTAGE	NO.	OHMS	WATTAGE
1	250	1/3	34	250,000	1/3
2	1,000	1/3	35	500,000	1/3
3	1,000	1/3	36	250,000	1/3
4	10,000	1-1/2	37	15,000	1/3
5	2,000	1/3	38	50,000	1/3
6	1,000	1/3	39	250,000	1/3
7	100,000	1/3	40	100,000	1/3
8	1,000	1/3	41	100,000	1/3
9	8	1/3	42	200,000	1/3
10	100,000	1/3	43	500,000	Audio Gain Control
11	10,000	R.F. Gain Control	44	250,000	1/3
12	35	1/3	45	250,000	1/3
13	120	1/3	46	5,000	1/3
14	40,000	1/3	47	5,000	1/3
15	300	1/3	48	120	1/3
16	8	1/3	49	250,000	1/3
17	100,000	1/3	50	250,000	1/3
18	100,000	1/3	51	100,000	1/3
19	100,000	1/3	52	250	1-1/2
20	200	1/3	53	10,000	1/3
21	1,000	1/3	54	4,000	1-1/2
22	300	1/3	55	5,000	1-1/2
23	8	1/3	56	600,000	1/3
24	500,000	1/3	57	17	1/3 Wire Wound
25	300	1/3	58	1,500	S. Meter Zero Adj. Wire Wound
26	5,000	1/3	59	3,200	10
27	1,000	1/3	60	25,000	1-1/2
28	7,500	10 Wire Wound	61	50,000	1/3
29	2,000	1/3	62	300	1/3
30	20,000	1-1/2	63	5,000	1/3
31	50,000	1/3	64	20,000	1/3
32	1,000,000	1/3	65	35	1/3
33	100,000	1/3			

### CONDENSERS

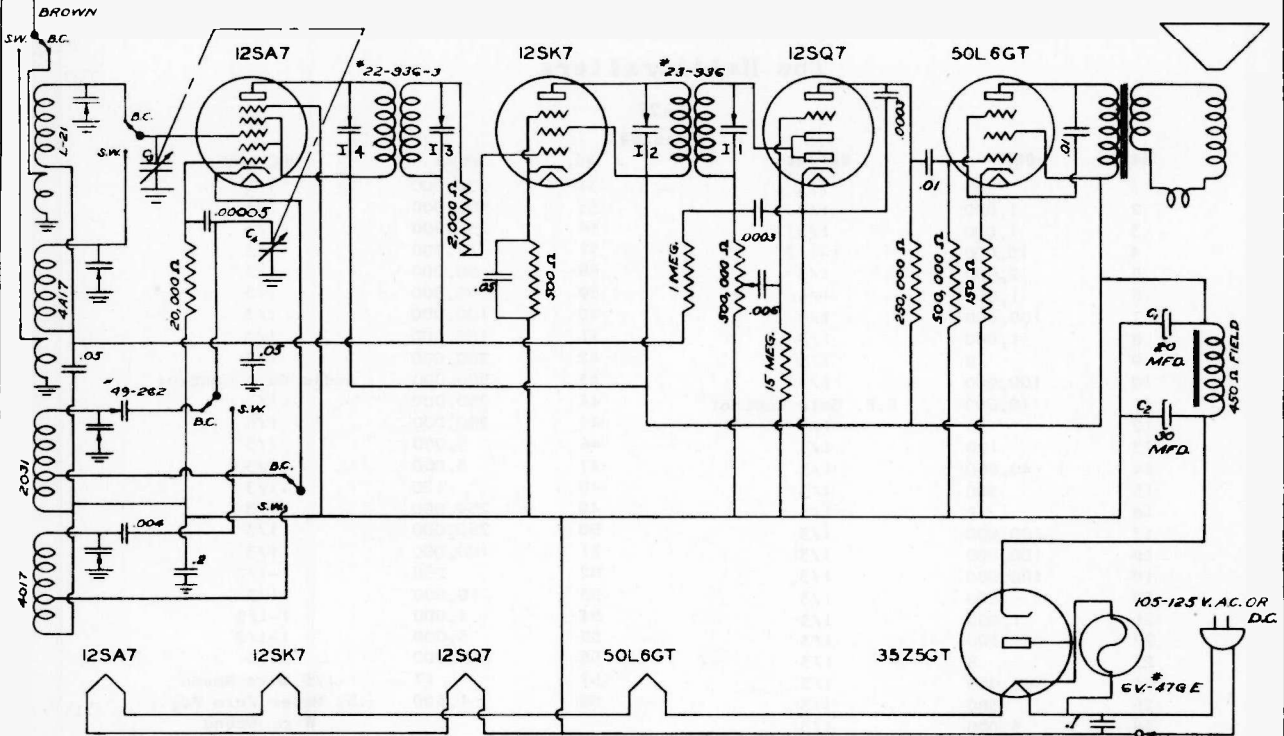
NO.	CAPACITY	VOLTAGE	TYPE	NO.	CAPACITY	VOLTAGE	TYPE
1	60 mmf	Per Section	Air	31	50 mmf		Mica
2	15 mmf	Ant. Trimmer	Air	32	500 mmf		Mica
3	5 mmf		3 Ceramicon	33	.05 mfd	400	Paper
4	.002 mfd		Mica	34	30 mfd	25	Electrolytic
5	300 mmf		Mica	35	30 mfd	25	Electrolytic
6	.002 mfd		Mica	36	.05 mfd	400	Paper
7	10. mmf		Ceramicon	37	.05 mfd	400	Paper
8	10. mmf		Ceramicon	38	20 mfd		Electrolytic
9	300 mmf		Mica	39	.002 mfd		Mica
10	300 mmf		Mica	40	.05 mfd	400	Paper
11	.01 mfd	600	Paper	41	.05 mfd	400	Paper
12	.001 mfd		Mica	42	10. mfd	350	Electrolytic
13	.02 mfd	400	Paper	43	30 mfd	350	Electrolytic
14	.02 mfd	400	Paper	44	10 mfd	400	Electrolytic
15	.01 mfd	600	Paper	45	300 mmf		Mica
16	.001 mfd		Mica	46	300 mmf		Mica
17	.02 mfd	400	Paper	47	300 mmf		Mica
18	.02 mfd	400	Paper	48	.01 mfd	600	Paper
19	.01 mfd	600	Paper	49	.01 mfd	600	Paper
20	50 mmf		Mica	50	.01 mfd	600	Paper
21	.02 mfd	400	Paper	51	.01 mfd	600	Paper
22	.02 mfd	400	Paper	52	.002 mfd		Mica
23	.01 mfd	600	Paper	53	100 mmf		Mica
24	50 mmf		Mica	54	200 mmf		Ceramicon
25	.05 mfd	400	Paper	55	300 mmf		Mica
26	50 mmf		Mica	56	50 mmf		Ceramicon
27	100 mmf		Mica	57	.001 mfd		Mica
28	500 mmf		Mica	58	450 mmf		Pad
29	25 mmf		Mica	59	2 mmf		Twisted Pair
30	.002 mfd		Mica	60	25 mmf		B.O. Pitch Control Air.

I.F. 5.25 MC.

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# 57

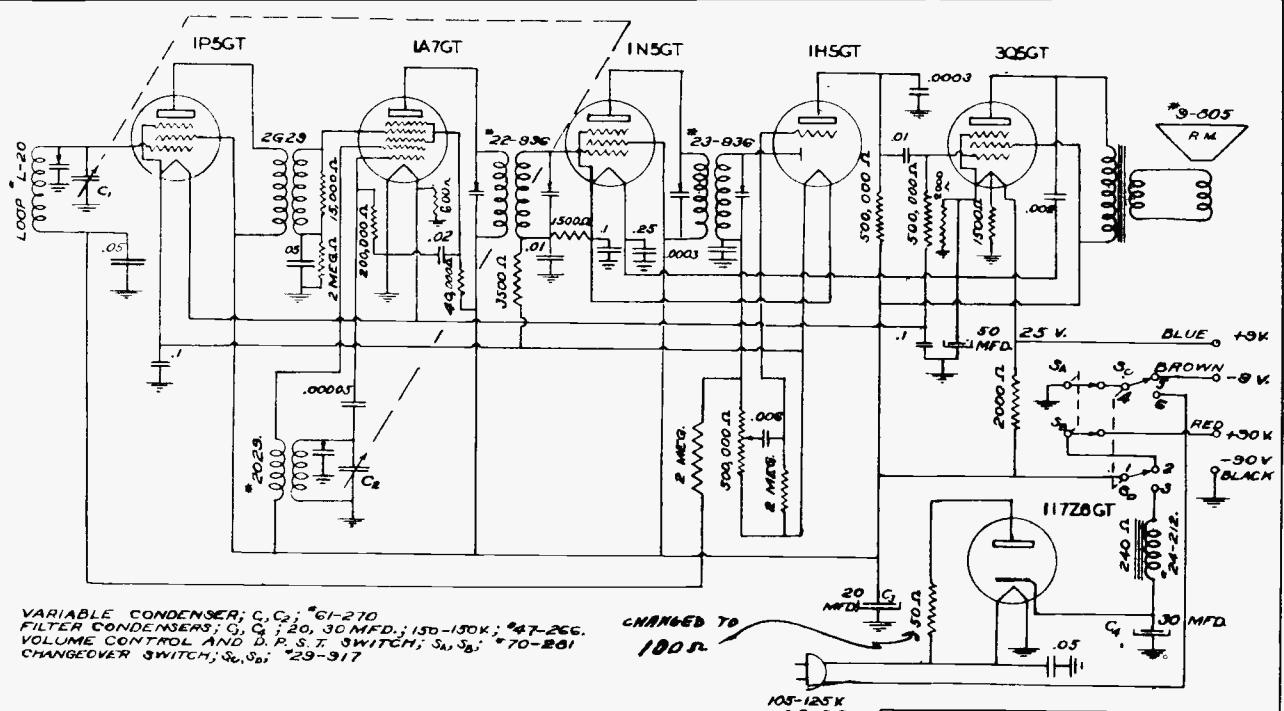
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



C<sub>1</sub>, C<sub>2</sub>-20, 30 MFD-150, 150 V.-NQ 47-266  
 C<sub>3</sub>, C<sub>4</sub>-VARIABLE CONDENSER-NO. 63-270.  
 VOLUME CONTROL AND SWITCH-NO. 69-281

HOWARD RADIO CO.  
 MODEL 702

I. F.-465 K. C.



VARIABLE CONDENSER; C<sub>1</sub>, C<sub>2</sub>; \*61-270  
 FILTER CONDENSERS; C<sub>3</sub>, C<sub>4</sub>; 20, 30 MFD.; 150-150K.; \*47-266.  
 VOLUME CONTROL AND D. P. S. T. SWITCH; S<sub>1</sub>, S<sub>2</sub>; \*70-281  
 CHANGEOVER SWITCH; S<sub>3</sub>, S<sub>4</sub>; \*29-317

CHANGED TO  
 100 Ω

HOWARD RADIO CO.  
 MODEL 14ACB

I. F. 465 K. C.

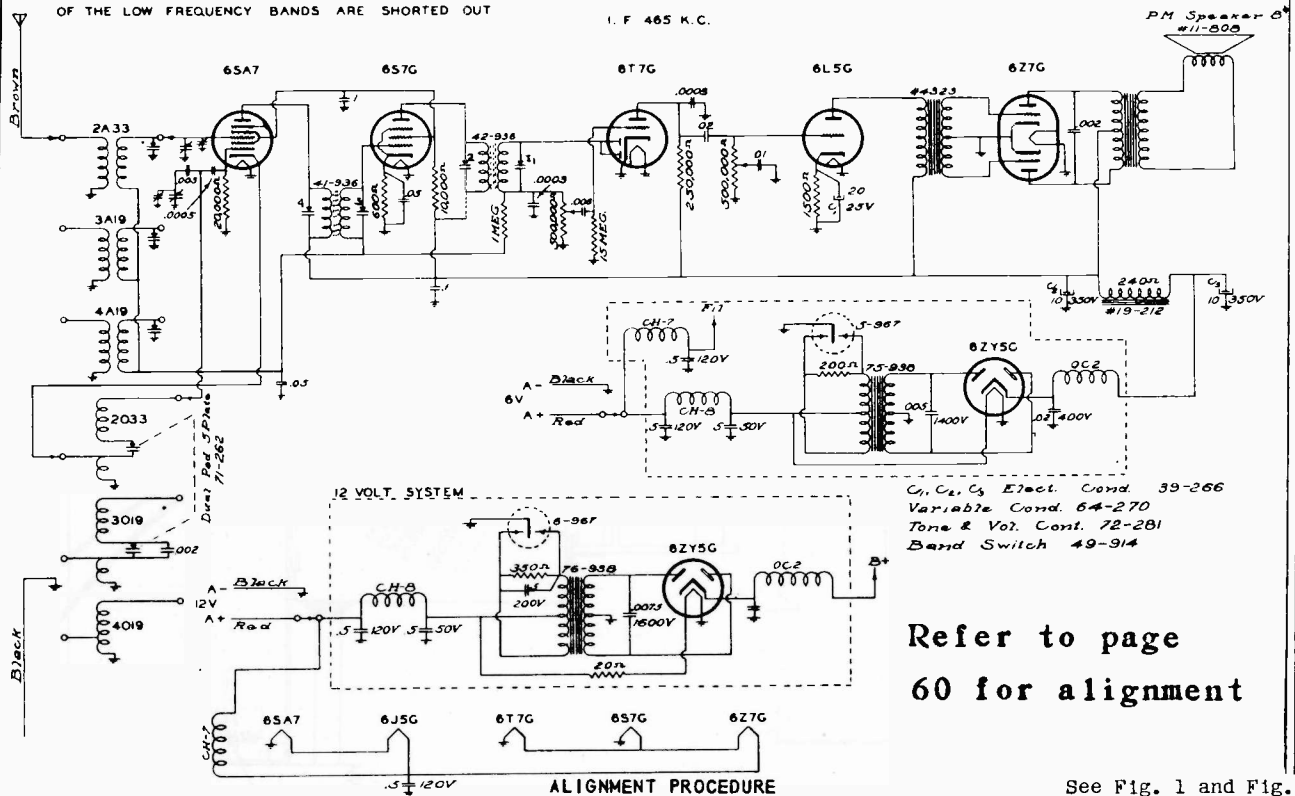
# 58

SWITCH SHOWN IN POSITION FOR BATTERY OPERATION. FOR A.C. OR D.C. OPERATION, SWITCH CONNECTS TERMINAL 4 TO 6 AND 1 TO 3.

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

AS SWITCH IS SET TO HIGHER FREQUENCY BANDS THE SECONDARY COILS OF THE LOW FREQUENCY BANDS ARE SHORTED OUT I. F. 465 K.C.



See Fig. 1 and Fig. 2.

Wave-Band Switch-Position	Position of Dial Pointer	Generator Frequency	Generator Connection	See Note	Trimmers Adjusted (In order shown)	Trimmer Function
Broadcast	Max. Cap.	465 KC	Converter Grid	A, D	I <sub>1</sub> , I <sub>2</sub> , I <sub>3</sub> , I <sub>4</sub>	IF
7-22 MC	21	21 MC	Ant. (Brown)	B	O <sub>5</sub> , A <sub>6</sub>	Osc., Ant.
2.2-7 MC	6	6 MC	" "	"	O <sub>7</sub> , A <sub>8</sub>	Osc., Ant.
2.2-7 MC	2.2	2.2 MC	" "	"	P <sub>9</sub>	Osc. Pad.
Broadcast	1400	1400 KC	" "	"	O <sub>10</sub> , A <sub>11</sub>	Osc., Ant.
Broadcast	600	600 KC	" "	C	P <sub>12</sub>	Osc. Pad.

- A--Each step of the alignment should be repeated in the original order for greater accuracy. Keep output from Signal Generator low. The I.F. trimmers are reached through the two holes on the top of each I.F. can.
- B--When adjusting the short wanders, do not adjust to the IMAGE frequency. For example, if the adjustment is correctly made at 21 MC, then a weaker image will be heard at 21,000 KC less 930 KC, or about 20,070 KC on the dial.
- C--When adjusting this pad, move the tuning hand back and forth and adjust padder until the peak of greatest intensity is obtained.
- D--See that the tuning hand is set exactly on the last line above 540 when the condenser is at maximum capacity.

### SOCKET VOLTAGES MODEL 765, 6 Volt

TUBE	FUNCTION	CATH-ODE	SCR. GRID	PLATE
6SA7	Mixer	3	70	145
6S7G	IF	3	70	145
6T7G	Det.	x	x	50
6L5G	Audio	6 V. Bias	x	145
6Z7G	PP Output	x	x	140

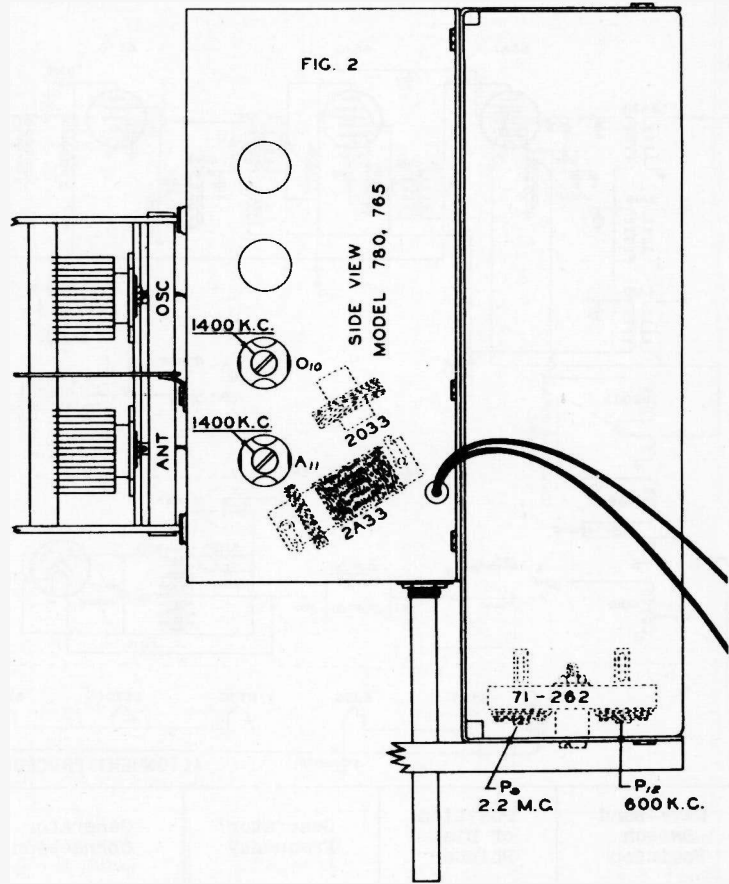
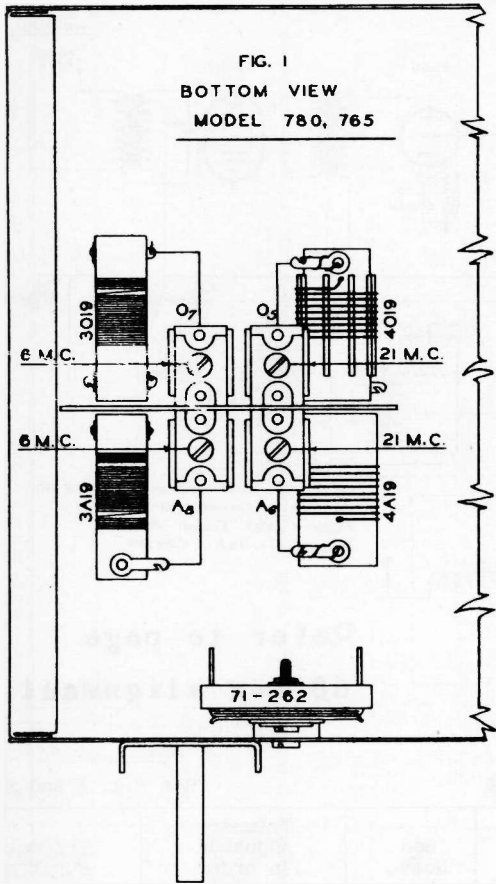
### Howard Radio

MODEL 765		
DWG. NO. C63-715	9-5-40	
DWN. BY. L. A. G.	CHKD. BY. JFR	APPVD. BY. JFR

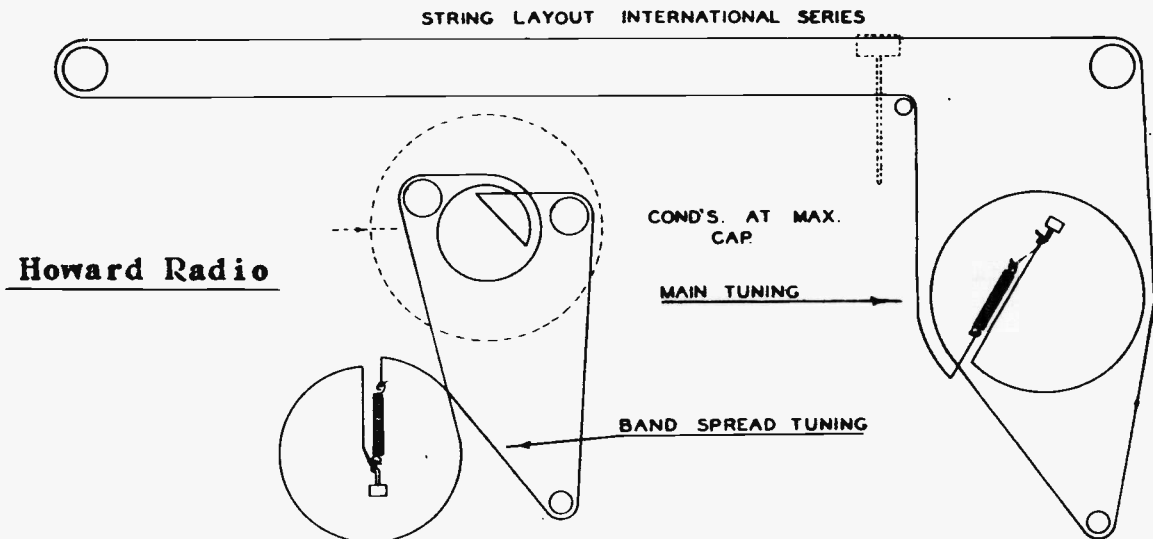
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# 59

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



The below layout shows the order of the drive cord for the tuning and Band Spread mechanisms should any servicing or replacement be necessary.

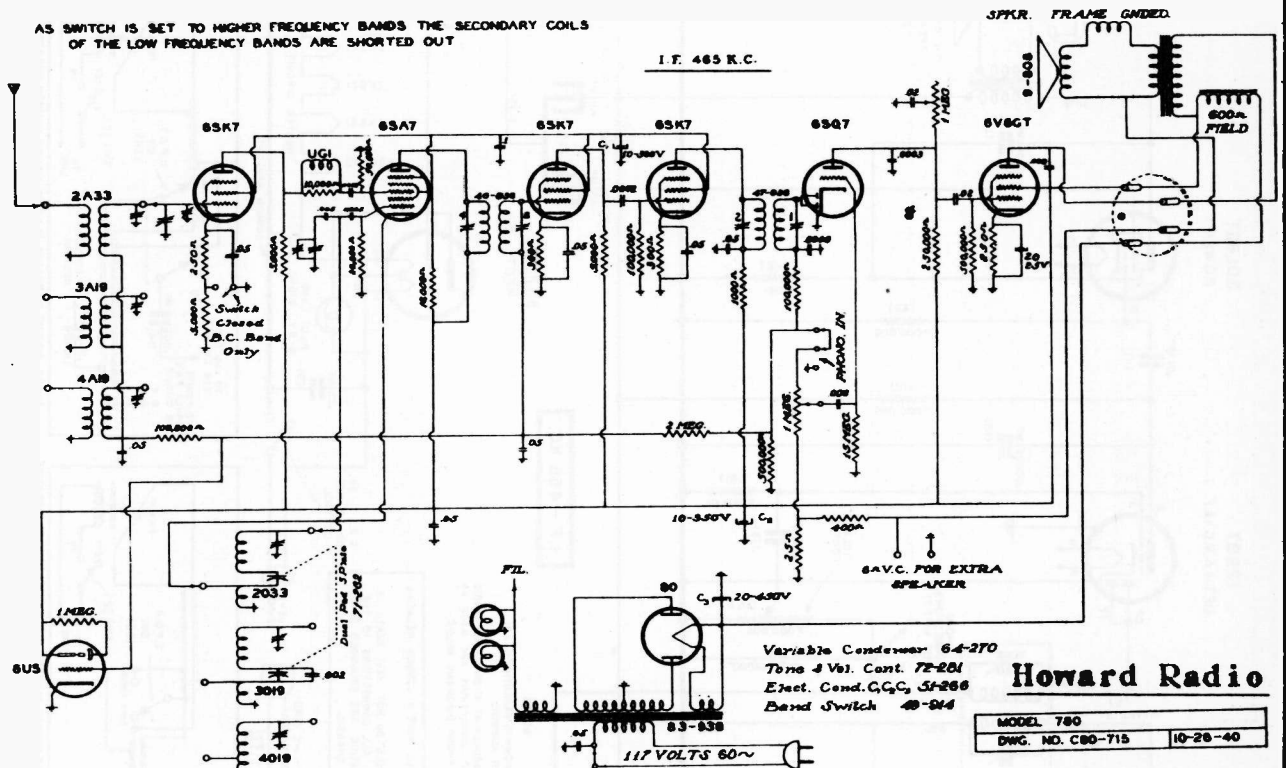


Trimmer Location for Models 765 and 780

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

AS SWITCH IS SET TO HIGHER FREQUENCY BANDS THE SECONDARY COILS OF THE LOW FREQUENCY BANDS ARE SHORTED OUT

I.F. 465 K.C.



## ALIGNMENT PROCEDURE

See Fig. 1 and Fig. 2.

Wave-Band Switch Position	Position of Dial Pointer	Generator Frequency	Generator Connection	See Note	Trimmers Adjusted (In order shown)	Trimmer Function
Broadcast	Max. Cap.	465 KC	Converter Grid	A, D	I <sub>1</sub> , I <sub>2</sub> , I <sub>3</sub> , I <sub>4</sub>	IF
7-22 MC	21	21 MC	Ant. (Brown)	B	O <sub>5</sub> , A <sub>6</sub>	Osc., Ant.
2.2-7 MC	6	6 MC	" "	"	O <sub>7</sub> , A <sub>8</sub>	Osc., Ant.
2.2-7 MC	2.2	2.2 MC	" "	"	P <sub>9</sub>	Osc. Pad.
Broadcast	1400	1400 KC	" "	"	O <sub>10</sub> , A <sub>11</sub>	Osc., Ant.
Broadcast	600	600 KC	" "	C	P <sub>12</sub>	Osc. Pad.

A—Each step of the alignment should be repeated in the original order for greater accuracy. Keep output from Signal Generator low. The I.F. trimmers are reached through the two holes on the top of each I.F. can.

B—When aligning the short wave bands, do not adjust to the IMAGE frequency. For example, if the adjustment is correctly made at 21 MC, then a weaker image will be heard at 21,000 KC less 930 KC, or about 20,070 KC on the dial.

C—When adjusting this pad, move the tuning hand back and forth and adjust padder until the peak of greatest intensity is obtained.

D—See that the tuning hand is set exactly on the last line above 540 when the condenser is at maximum capacity.

TUBE	FUNCTION	CATH-ODE	SCR. GRID	PLATE	OSC. PLATE	TUBE	FUNCTION	CATH-ODE	SCR. GRID	PLATE	OSC. PLATE
6SK7	R.F. BC SW	8.5 2.5	110 98	260 210		6SQ7	Diode-AVC			50	
6SA7	Mixer		110	265	110	6V6GT	Output	12.5	265	250	
6SK7	I.F. Amp.	2	110	230		80	Rect.				
6SK7	I.F. Amp.	4	110	250		6U5	Tuning Eye	265			

Voltage taken from ground with line voltage at - 120 V.

High voltage reading off rectifier - 325 V.

Drop across speaker field - 58 V.

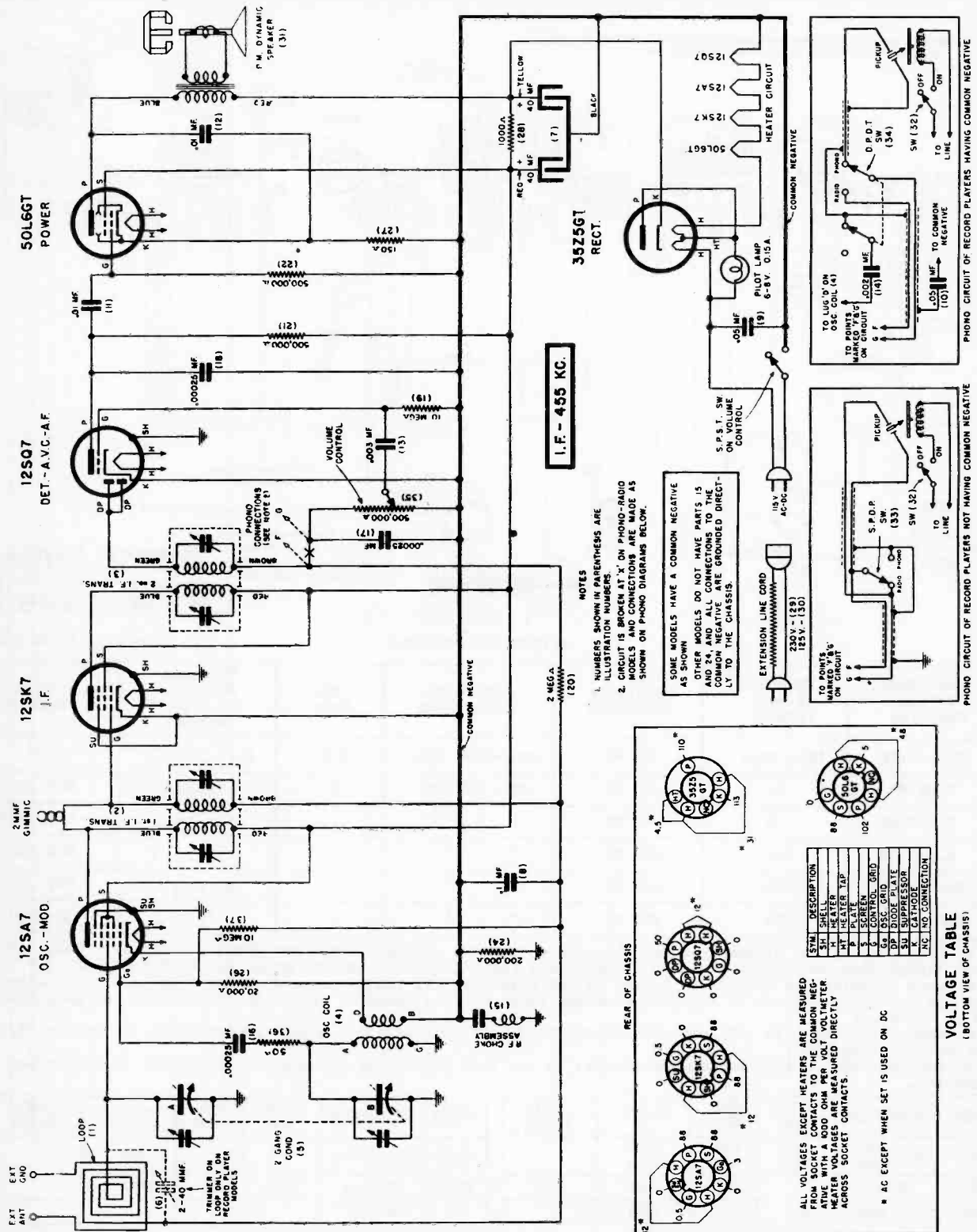
Voltage taken with 1,000 Ohm per volt meter.

Band Switch in BC position except R.F. Stage measurements.

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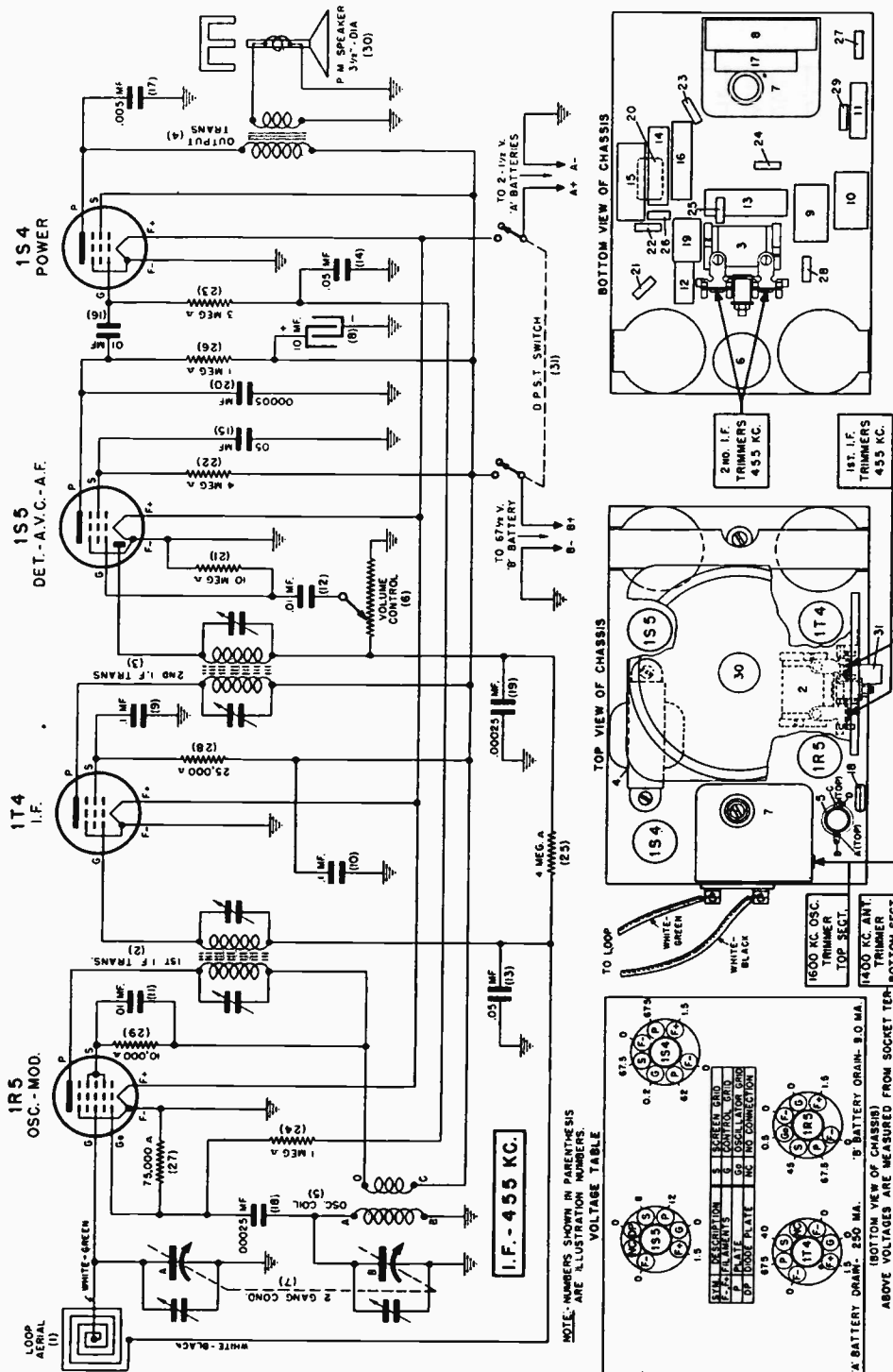
# 61

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS





# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



Set receiver dial to:	TEST OSCILLATOR	
	Adjust test oscillator frequency to:	Attach output of test oscillator to:
Any point where no signal is received	Exactly 455 K.C.	High side to lug on station of gang condenser to which loop lead is connected.
1 Exactly 1600 K.C.	None	Use Small Loop to couple test oscillator to receiver loop.
2 Approx. 1400 K.C.	Approx. 1400 K.C.	Use Small Loop to couple test oscillator to receiver loop.

Refer to parts layout diagram for location of trimmers mentioned below:

Adjust each of the second I.F. transformer trimmers for maximum output, then adjust each of the first I.F. transformer trimmers for maximum output.

Adjust 1600 K. C. oscillator trimmer for maximum output.

While rocking gang condenser adjust 1400 K. C. loop trimmer for maximum output.

## BATTERY EQUIPMENT

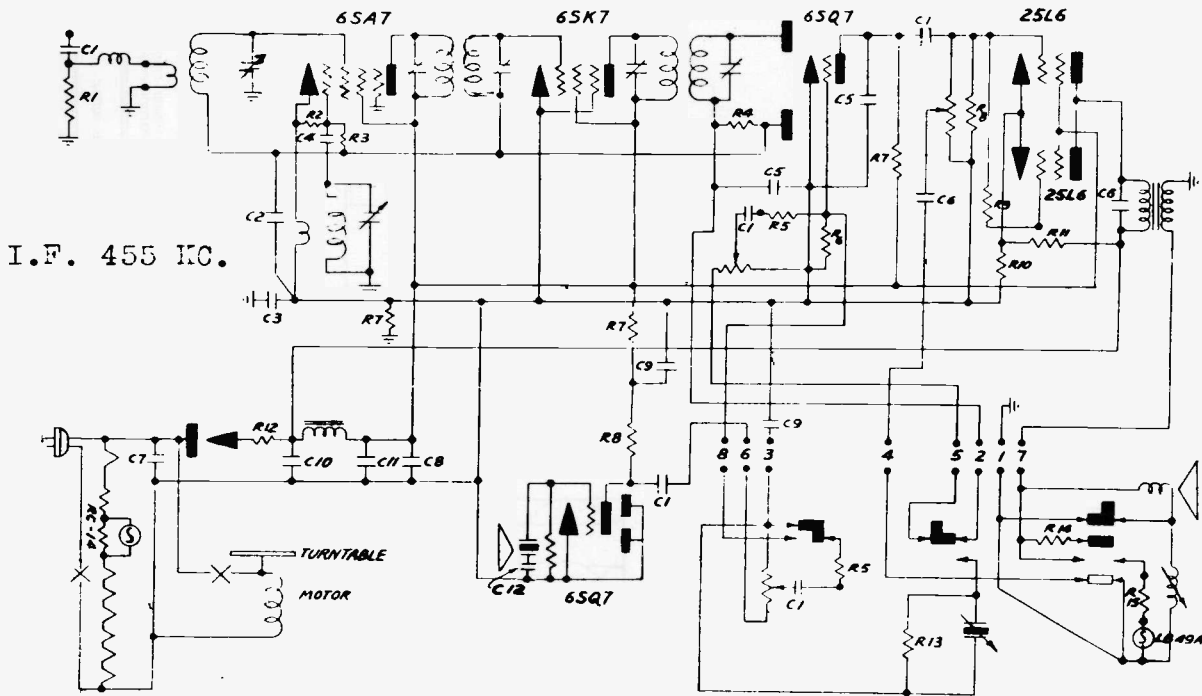
The receiver is designed to use:  
**Two—1 1/2 volt "A" batteries**, such as Eveready No. 950 or equivalent flashlight size cylindrical battery.  
**One—67 1/2 volt "B" battery**, such as Eveready No. 467 or equivalent.  
**IMPORTANT:** THE BATTERIES USED MUST BE OF THE CORRECT VOLTAGE AND SIZE.

Lafayette Radio  
 Model E-191.

# 63

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## SCHEMATIC DIAGRAM MODEL TR321-A TR331-A



**Schematic Location**

Location	Part No.	Description
R1	R-15570	2K ohm 1/4 Watt Resistor 20%
R2	R-15510	20K ohm 1/4 Watt Resistor 20%
R3	R-79	15 Megohm 1/4 Watt Resistor 20%
R4	R-15500	2 Megohm 1/4 Watt Resistor 20%
R5	R-15504	150K ohm 1/4 Watt Resistor 20%
R6	R-149	4.7 Megohm 1/4 Watt Resistor 20%
R7	R-153	270K ohm 1/4 Watt Resistor 20%
R8	R-154	470K ohm 1/4 Watt Resistor 20%

**Schematic Location**

Location	Part No.	Description
R9	R-15601	100 ohm 1/4 Watt Resistor 20%
R10	R-155	68 ohm 1 Watt Resistor 20%
R11	R-147	4K ohm 3 Watt Resistor 20%
R12	R-85	35 ohm 1 Watt Resistor 20%
R13	R-100	300K ohm 1/4 Watt Resistor 20%
R14	R-152	4 ohm 1 Watt Resistor 20%
R15	R-151	7.5 ohm 1 Watt Resistor 20%
RC-14	RC-14	Candohm
C1	C-15754	.01 mfd. 400 Volt Condenser
C2	C-15752	.05 mfd. 200 Volt Condenser
C3	C-15770	.2 mfd. 200 Volt Condenser
C4	CM-29	50 mfd. Mica Condenser
C5	CM-30	250 mfd. Mica Condenser
C6	C-25	.006 mfd. 400 Volt Condenser
C7	C-15756	.05 mfd. 400 Volt Condenser
C8	C-15751	.25 mfd. 200 Volt Condenser
C9, C12	C-15761	.10 mfd. 200 Volt Condenser
C10	CE-66-2	100 mfd. Electrolytic
C11	CE-66-2	40 mfd. Electrolytic

Model TR321-A operates on 105-125 volts 60 cycles AC only.

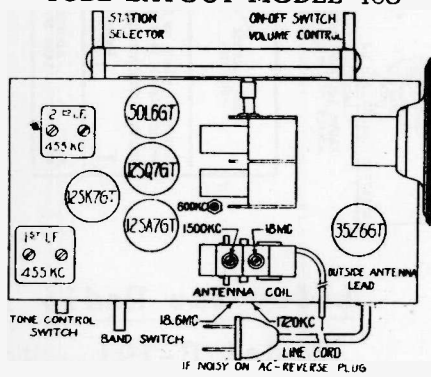
Model TR331-A operates on 105-125 volts 50 cycles AC only.

## Majestic Radio & Television Corporation

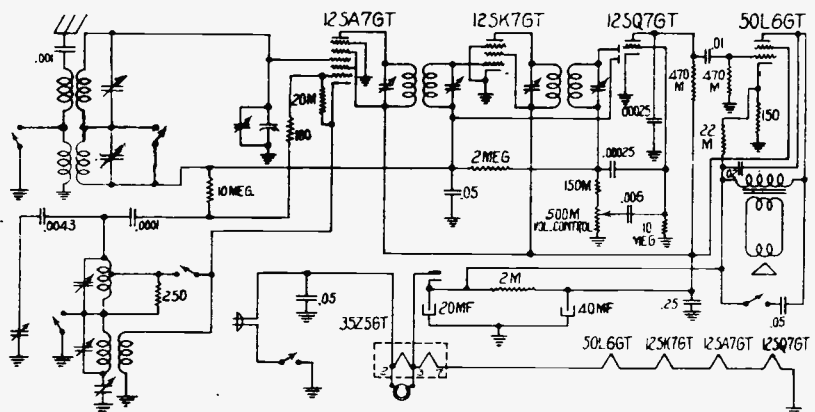
2600 West 50th Street

Chicago, Illinois, U. S. A.

### TUBE LAYOUT MODEL 403



### SCHEMATIC DIAGRAM MODEL 403



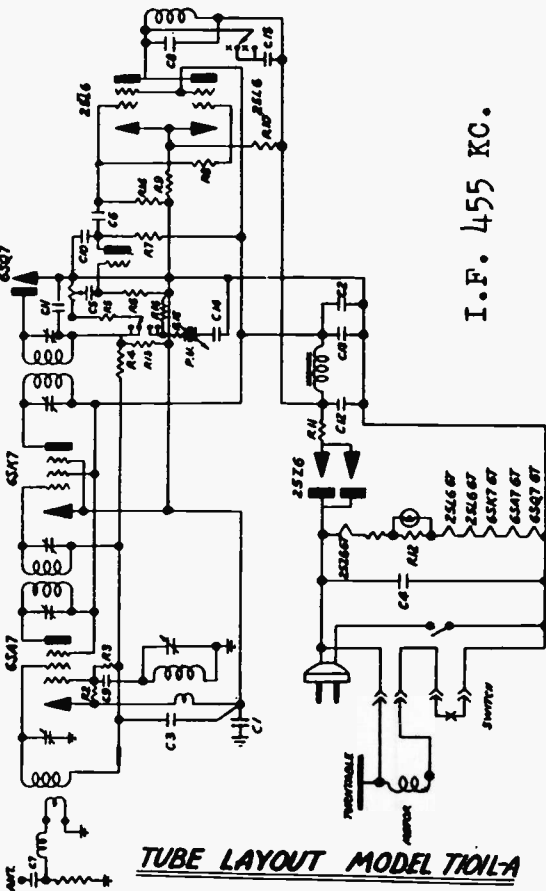
# 64

I.F. 455 KC.

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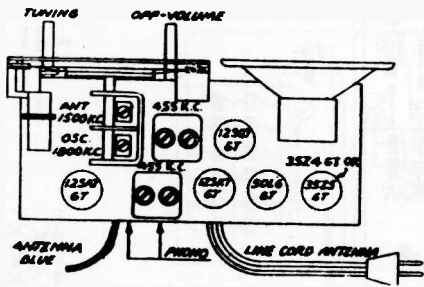
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

**SCHEMATIC DIAGRAM MODEL TP221-A TP231-A**



I.F. 455 KC.

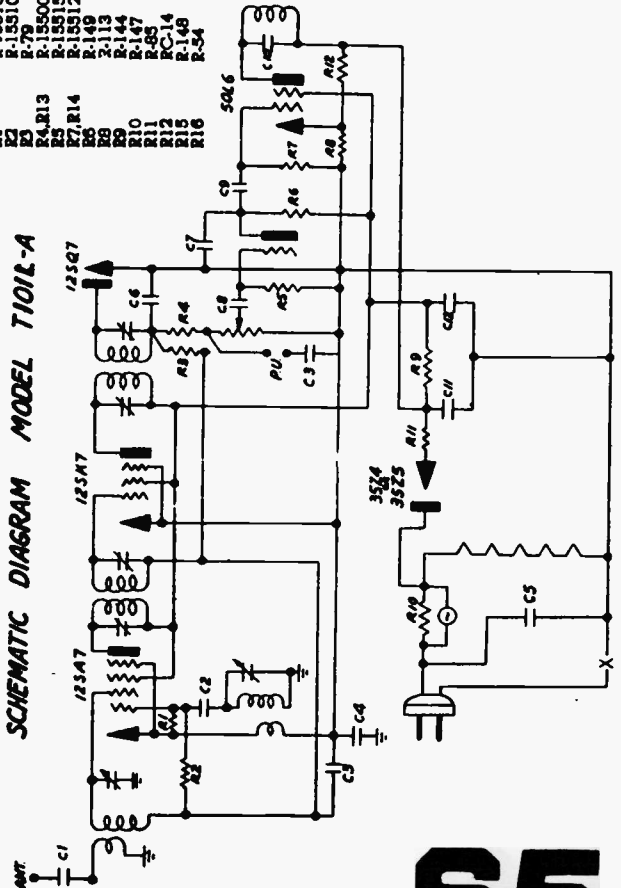
**TUBE LAYOUT MODEL T101-A**



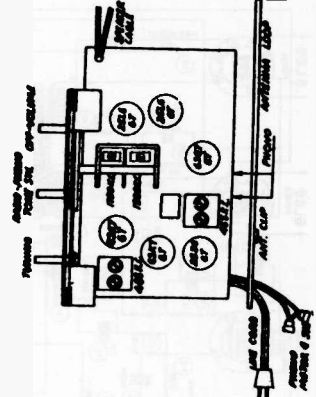
Schematic Location	Part No.	Description
R1	R-15510	20K ohm
R2	R-63	10 Megohm
R3	R-15500	1/2 Watt Resistor 20%
R4	R-15304	150K ohm
R5	R-15320	500K ohm
R6	R-59	110 ohm
R7	R-138	100 ohm
R8	R-150	15 ohm
R9	R-85	35 ohm
R10	R-145	9K ohm
R11	R-15512	250K ohm
R12	R-15512	250K ohm
R13	R-15512	250K ohm
C1	C-15754	.01 mfd. 400 Volt Condenser
C2	C-4	50 mfd. Mica Condenser
C3	C-15752	.05 mfd. 200 Volt Condenser
C4	C-15770	2 mfd. 200 Volt Condenser
C5	C-15756	.05 mfd. 400 Volt Condenser
C6	C-30	250 mfd. Mica Condenser
C7	C-37	500 mfd. Mica Condenser
C8	C-15774	.002 mfd. 400 Volt Condenser
C9	C-47	.004 mfd. 400 Volt Condenser
C10	C-25	.006 mfd. 400 Volt Condenser
C11, C12	Y-CFL-66-1	40 mfd. & 75 mfd. Electr. Cond.

*Majestic*

**SCHEMATIC DIAGRAM MODEL T101-A**

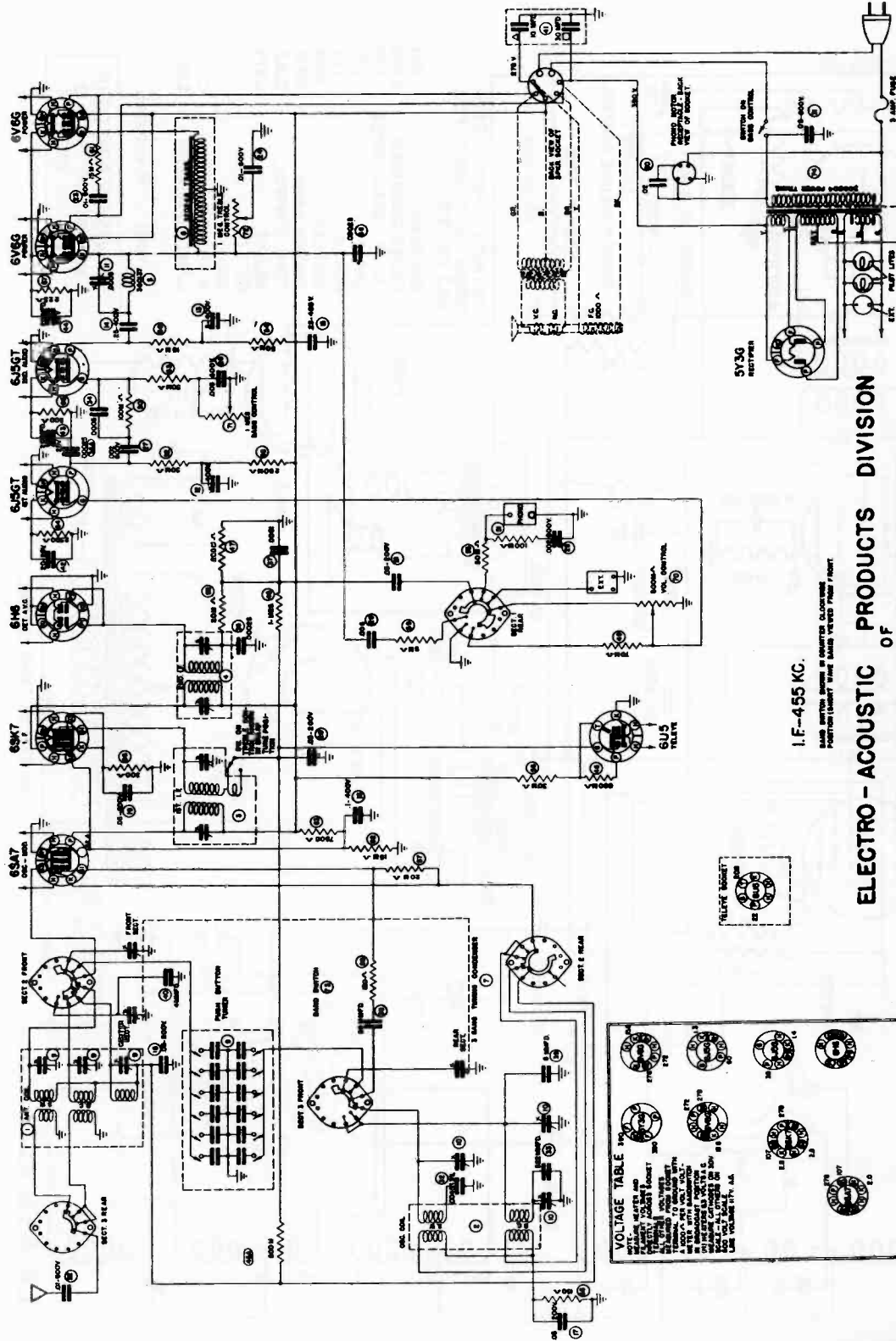


Schematic Location	Part No.	Description
R1	R-15570	2000 ohm
R2	R-15510	20K ohm
R3	R-79	15 Megohm
R4, R13	R-15500	2 Megohm
R5	R-15515	100K ohm
R6	R-15512	250K ohm
R7, R14	R-149	4.7 Megohm
R8	R-113	100 ohm
R9	R-144	70 ohm
R10	R-147	4K ohm
R11	R-85	35 ohm
R12	RC-14	Candohm
R15	R-148	300K ohm
R16	R-54	50K ohm
C1	C-15770	20 mfd. 200 Volt Condenser
C2	C-15751	75 mfd. 200 Volt Condenser
C3	C-15752	105 mfd. 200 Volt Condenser
C4	C-15756	.05 mfd. 400 Volt Condenser
C5	C-15754	.01 mfd. 400 Volt Condenser
C6	C-35	.006 mfd. 400 Volt Condenser
C7	C-37	.002 mfd. 400 Volt Condenser
C8	C-47	.004 mfd. 400 Volt Condenser
C9	C-25	.006 mfd. 400 Volt Condenser
C10	C-4	50 mfd. Mica Condenser
C11	C-30	250 mfd. Mica Condenser
C12	C-30	250 mfd. Mica Condenser
C13	CE-66	75 mfd. 150 Volt Electrolytic
C14	CE-66	40 mfd. 150 Volt Electrolytic





# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



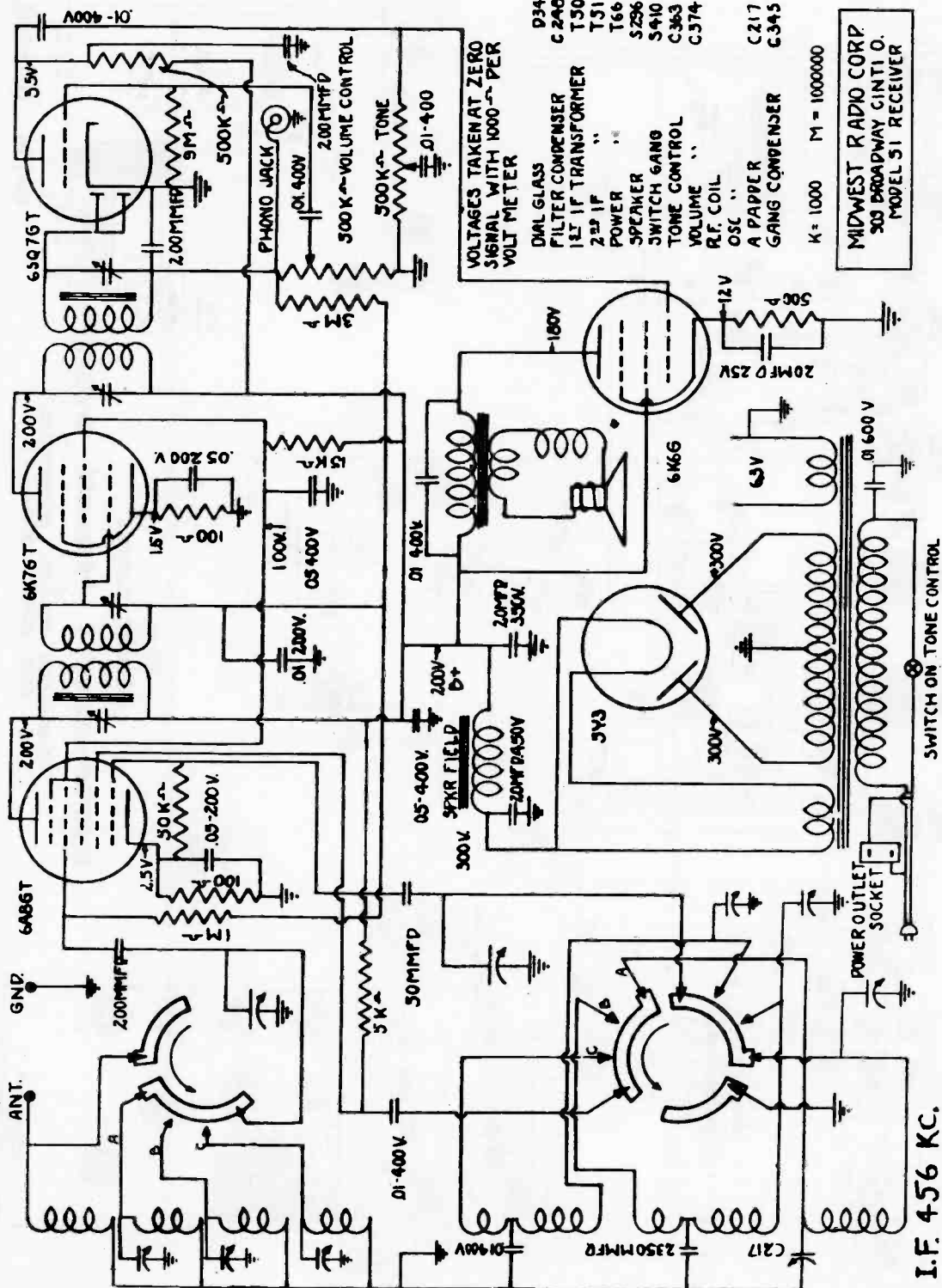
I.F.—455 KC.

BASE SWITCH SHOWN IN CONTACTS CLOSED POSITION (CONTACT WARE MARKED FROM FRONT)

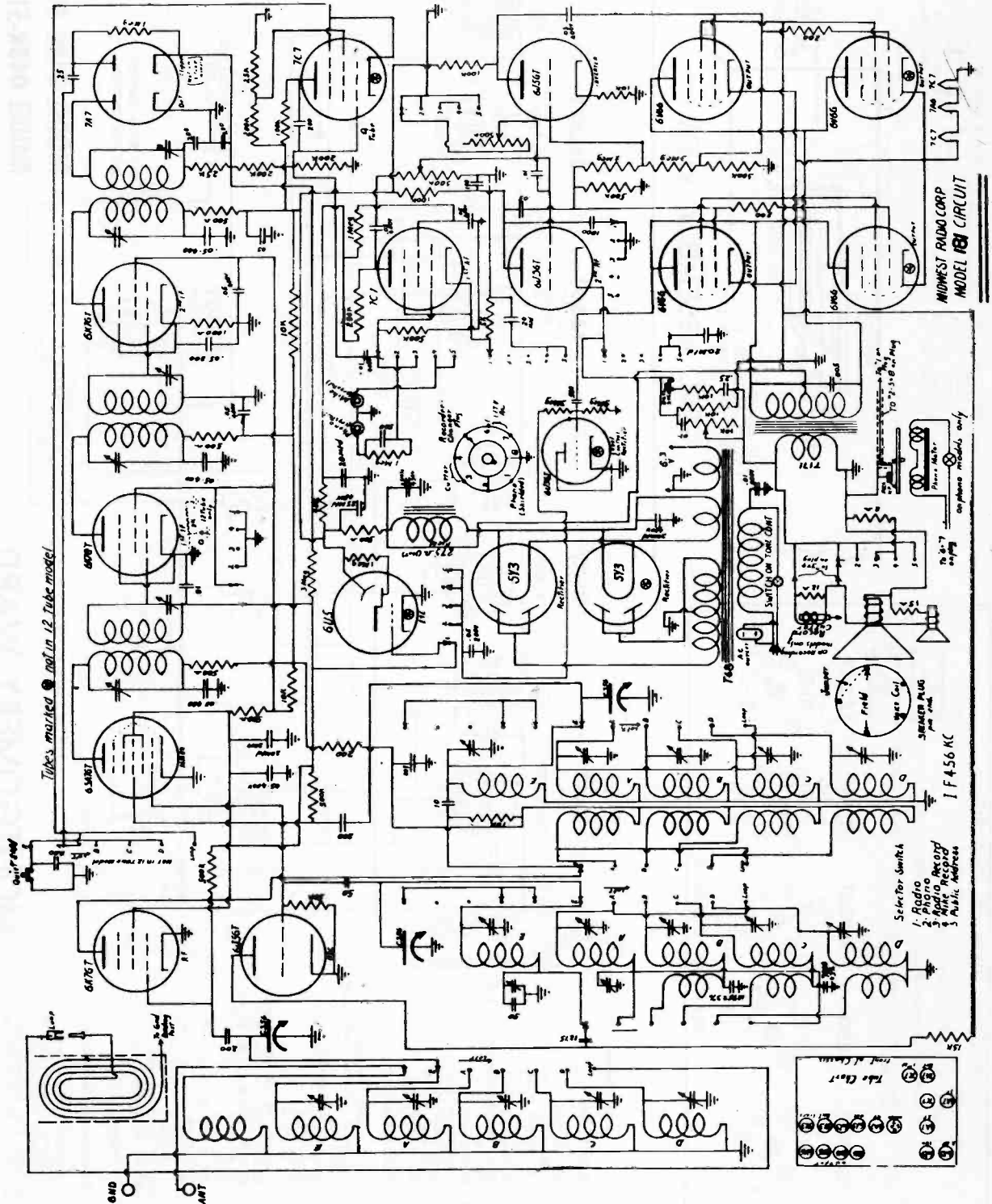
**ELECTRO-ACOUSTIC PRODUCTS DIVISION**  
 OF  
**THE MAGNAVOX COMPANY, INCORPORATED**  
 FORT WAYNE, INDIANA

CR156 595203

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



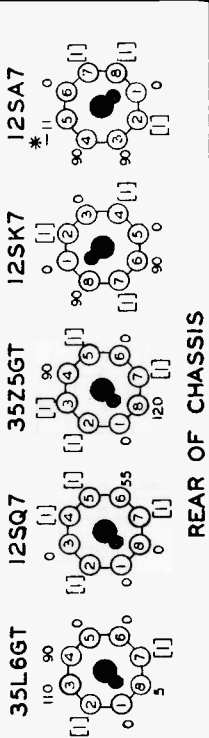
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

# 70

## BOTTOM VIEW OF CHASSIS

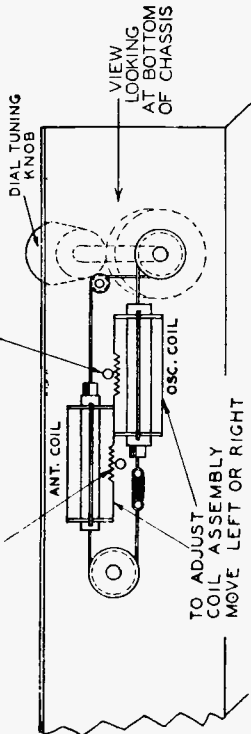
VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER. BETWEEN SOCKET TERMINALS & B-

[ ] CANNOT BE MEASURED WITH D.C. VOLTMETER.  
 \* OSCILLATOR VOLTAGE TO BE MEASURED WITH R.F. CHOKE IN SERIES WITH VOLTMETER LEAD.



REAR OF CHASSIS

NOTE "A" THE ANTENNA COIL ASSEMBLY IS MADE SO THAT IT IS MOVABLE, LEFT OR RIGHT, WHEN MAKING THE ADJUSTMENT AS GIVEN IN THE ALIGNMENT PROCEDURE. MOVE THE COIL ASSEMBLY SLOWLY UNTIL THE POINT OF THE BLADE OF THE SCREWDRIVER IN THE HOLE AND ENGAGING THE BLADE IN THE GEAR TEETH OF THE COIL FORM.

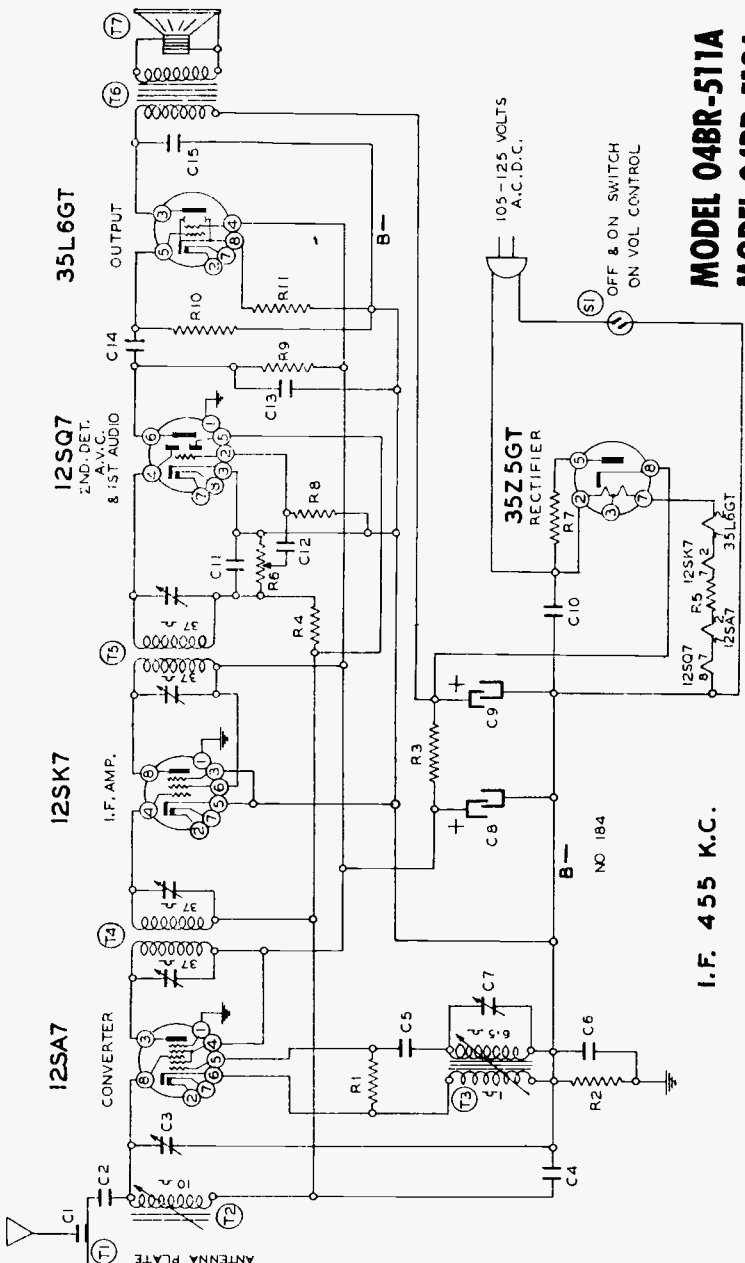


COIL ASSEMBLY VIEW

Schematic Ref. No.	Part No.	Description
R1	BE130176	20M ohm—1/2 w.
R2	BE130100	150M ohm—1/2 w.
R3	BE130279	1M ohm—1 watt
R4	BE1304	3 megohm—1/2 w.
R5	BE130288	50 ohm—1.5 watt
R6	BE101220	500M ohm volume control and Switch
R7	BE130240	30 ohm—1/2 w.
R8	BE130257	5 megohm—1/2 w.
R9	BE130100	150M ohm—1/2 w.
R10	BE13011	250M ohm—1/2 w.
R11	BE130166	150 ohm—1/2 w.

Schematic Ref. No.	Part No.	Description
C1	BE131262	.00001 washer condenser (antenna clip on back plate)
C2	BE129114	.003 mica
C3	BE124137	Trimmer on antenna coil
C4	BE1009	.05 x 200 v.
C5	BE12939	.00005 mica
C6	BE10091	.15 x 400 v.
C7	BE124137	Trimmer on Oscillator coil
C8	BE11992	20 mid. lyric x 150 w. v.
C9	BE11992	40 mid. lyric x 130 w. v.
C10	BE10013	.05 x 400 v.
C11	BE12912	.00025 mica
C12	BE10025	.002 x 600 v.
C13	BE1292	.005 mica
C14	BE10011	.01 x 400 v.
C15	BE10011	.01 x 400 v.

Schematic Ref. No.	Part No.	Description
T1	BE115597-18	Antenna plate—walnut or BE115597-9
T2	BE111181	Antenna plate—ivory coil
T3	BE10153	Oscillator permeability coil
T4	BE106157-H	Input I.F. Coil—455 kc.
T5	BE106157-I	Output I.F. Coil—455 kc.
T6	BE105110	Output Transformer



I.F. 455 K.C.

MONTGOMERY WARD

MODEL 04BR-511A  
 MODEL 04BR-512A



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

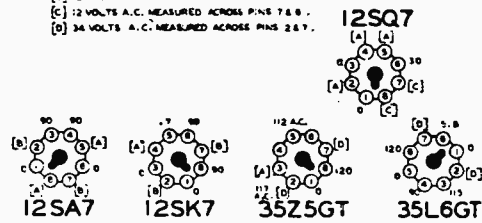
Model No. 04BR-513A and 04BR-514A

MONTGOMERY WARD

CHICAGO, U. S. A.

## BOTTOM VIEW OF CHASSIS

VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS A - B WITH A LINE VOLTAGE OF 117V. VOLUME CONTROL AT MINIMUM.  
 (A) CANNOT BE MEASURED WITH VOLTMETER.  
 (B) 12 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.  
 (C) 12 VOLTS A.C. MEASURED ACROSS PINS 7 & 8.  
 (D) 34 VOLTS A.C. MEASURED ACROSS PINS 2 & 7.



REAR OF CHASSIS

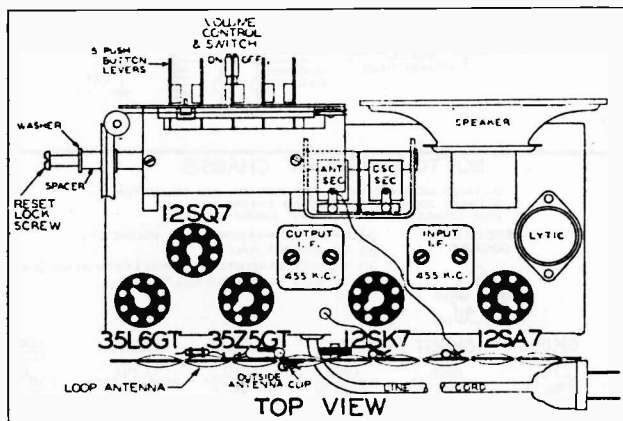
Schematic Diagram Part Ref. No. No. Description

### RESISTORS

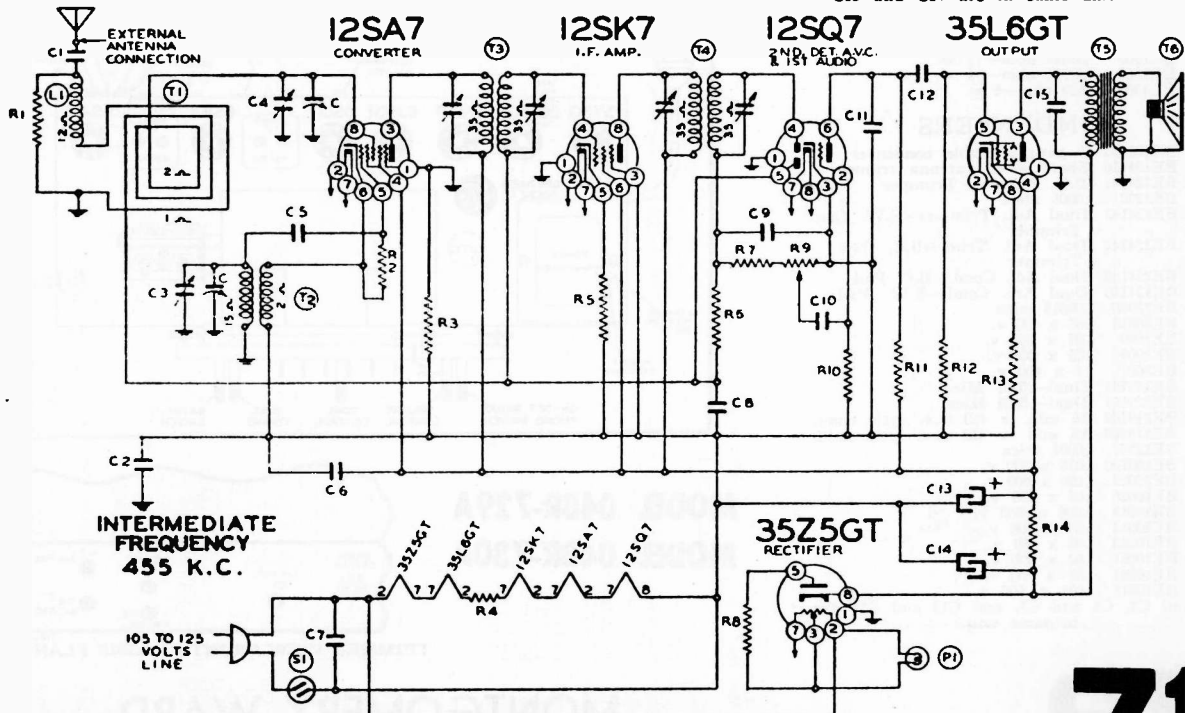
- R1 BE130314 2200 ohm— $\frac{1}{2}$  w.
- R2 BE13094 50M ohm— $\frac{1}{2}$  w.
- R3 BE1309 200M ohm— $\frac{1}{2}$  w.
- R4 BE130315 75 ohm— $\frac{1}{2}$  w.
- R5 BE130203 40 ohm— $\frac{1}{2}$  w.
- R6 BE1304 3 megohm— $\frac{1}{2}$  w.
- R7 BE1301 25M ohm— $\frac{1}{2}$  w.
- R8 BE130215 25 ohm— $\frac{1}{2}$  w.
- R9 BE101198 1 megohm volume control
- R10 BE130257 5 megohm— $\frac{1}{2}$  w.
- R11 BE1303 500M ohm— $\frac{1}{2}$  w.
- R12 BE1303 500M ohm— $\frac{1}{2}$  w.
- R13 BE130166 150 ohm— $\frac{1}{2}$  w.
- R14 BE130287 1200 ohm—1 w.

### CONDENSERS

- C BE102132 2 gang variable condenser
  - C1 BE10011 .01 x 400 v.
  - C2 BE10091 .15 x 400 v.
  - C3 Oscillator trimmer on gang
  - C4 Antenna trimmer on gang
  - C5 BE12921 .0002 mfd. mica
  - C6 BE1009 .05 x 200 v.
  - C7 BE1001 .1 x 400 v.
  - C8 BE1009 .05 x 200 v.
  - C9 BE1295 .0001 mfd. mica
  - C10 BE10025 .002 x 600 v.
  - C11 BE12912 .00025 mfd. mica
  - C12 BE100106 .004 x 600 v.
  - C13 BE11992 20 mfd. lytic x 150 v. v.
  - C14 BE11992 40 mfd. lytic x 150 v. v.
  - C15 BE10026 .02 x 400 v.
- C13 and C14 are in same unit

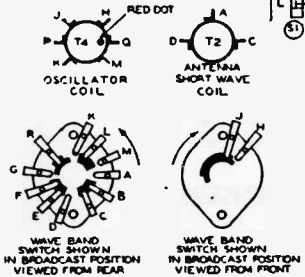
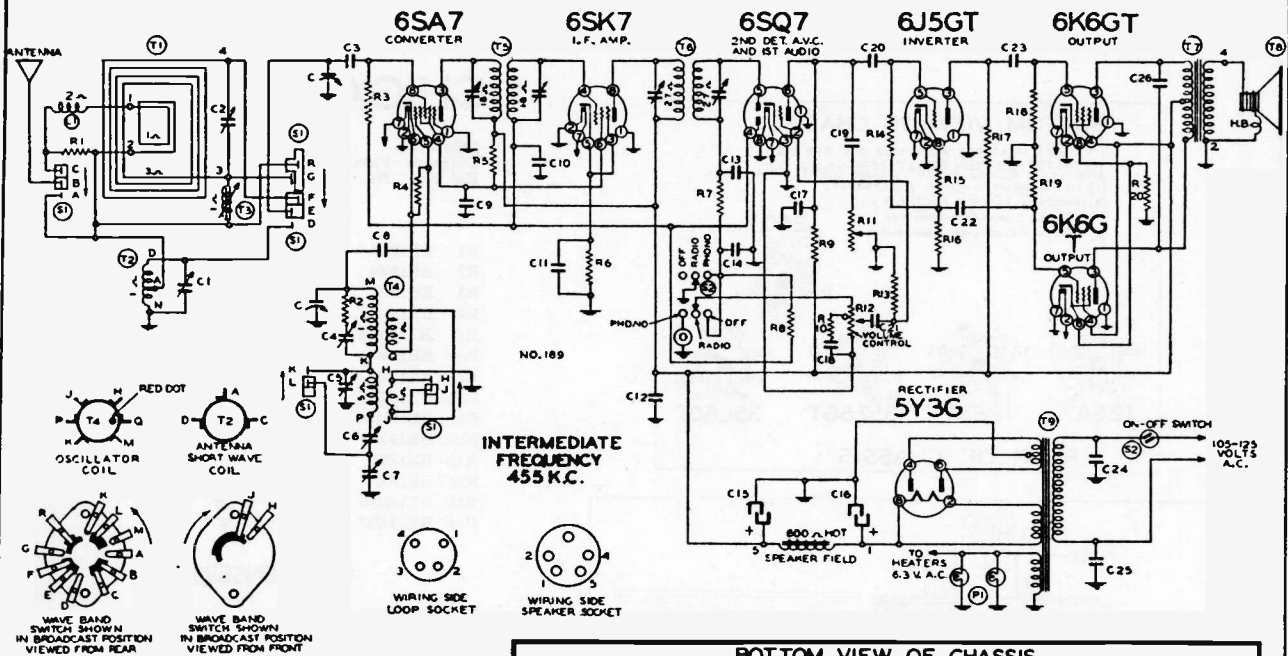


TOP VIEW

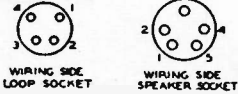


COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



INTERMEDIATE  
FREQUENCY  
455 K.C.

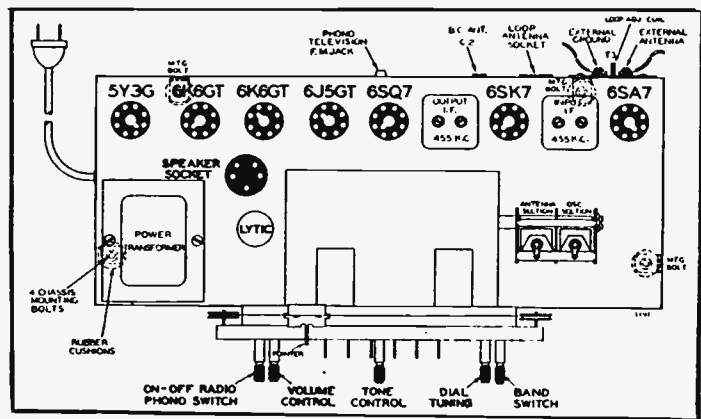
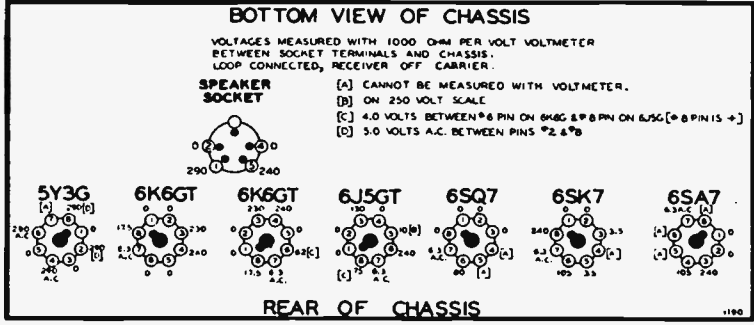


## RESISTORS

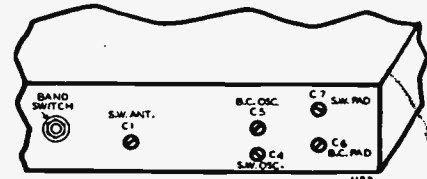
- R1 BE13064 3500 ohm— $\frac{1}{4}$  w.
- R2 BE130276 10 ohm— $\frac{1}{4}$  w.
- R3 BE1304 3 megohm— $\frac{1}{4}$  w.
- R4 BE130236 30M ohm— $\frac{1}{4}$  w.
- R5 BE130307 15M ohm—1 w.
- R6 BE13083 300 ohm— $\frac{1}{4}$  w.
- R7 BE13012 50M ohm— $\frac{1}{4}$  w.
- R8 BE13038 2 megohm— $\frac{1}{4}$  w.
- R9 BE13011 250M ohm— $\frac{1}{4}$  w.
- R10 BE130149 15M ohm— $\frac{1}{4}$  w.
- R11 BE101223 Tone Control—1 megohm
- R12 BE101224 Volume control— $\frac{1}{2}$  megohm
- R13 BE130257 5 megohm— $\frac{1}{4}$  w.
- R14 BE1303 500M ohm— $\frac{1}{4}$  w.
- R15 BE130218 5M ohm— $\frac{1}{4}$  w.
- R16 BE130103 100M ohm— $\frac{1}{4}$  w.
- R17 BE130103 100M ohm— $\frac{1}{4}$  w.
- R18 BE1303 500M ohm— $\frac{1}{4}$  w.
- R19 BE1303 500M ohm— $\frac{1}{4}$  w.
- R20 BE130320 320 ohm—1 w.

## CONDENSERS

- C1 BE124116 2 gang variable condenser
  - C2 BE124141 B.C. Antenna Trimmer
  - C3 BE1292 .0005 mica
  - C4 BE124142 Dual Adj. Trimmer—S.W. Osc. Trimmer
  - C5 BE124142 Dual Adj. Trim.—B.C. Osc. Trimmer
  - C6 BE124140 Dual Adj. Cond.—B.C. Pad
  - C7 BE124140 Dual Adj. Cond.—S.W. Pad
  - C8 BE12960 .00015 mica
  - C9 BE10013 .05 x 400 v.
  - C10 HE1009 .05 x 200 v.
  - C11 BE1009 .05 x 200 v.
  - C12 BE1001 .1 x 400 v.
  - C13 BE129161 Dual—.0001 Mica
  - C14 BE129161 Dual—.0001 Mica
  - C15 BE119108 16 mfd. x 450 v.w. lytic cond.
  - C16 BE119108 16 mfd. x 450 v.w. lytic cond.
  - C17 BE1295 .0001 mica
  - C18 BE100120 .035 x 200 v.
  - C19 BE10019 .006 x 600 v.
  - C20 BE10026 .02 x 400 v.
  - C21 BE10019 .006 x 600 v.
  - C22 BE10013 .05 x 400 v.
  - C23 BE10013 .05 x 400 v.
  - C24 BE10061 .02 x 600 v.
  - C25 BE10061 .02 x 600 v.
  - C26 BE10019 .006 x 600 v.
- C4 and C5, C6 and C7, and C13 and C14 are in same unit.



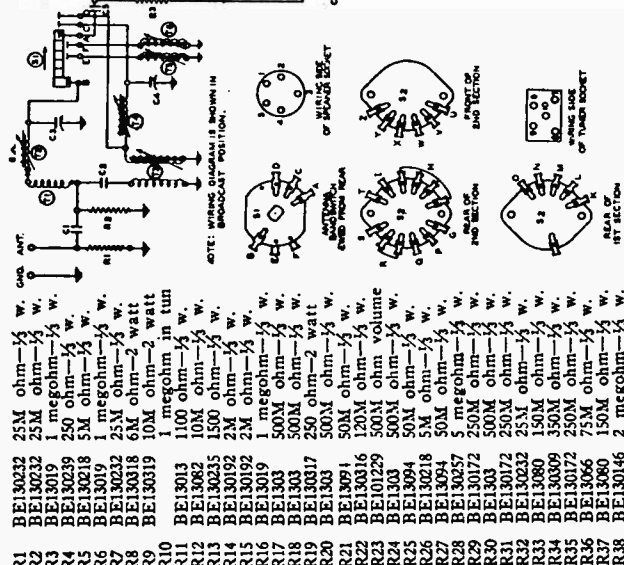
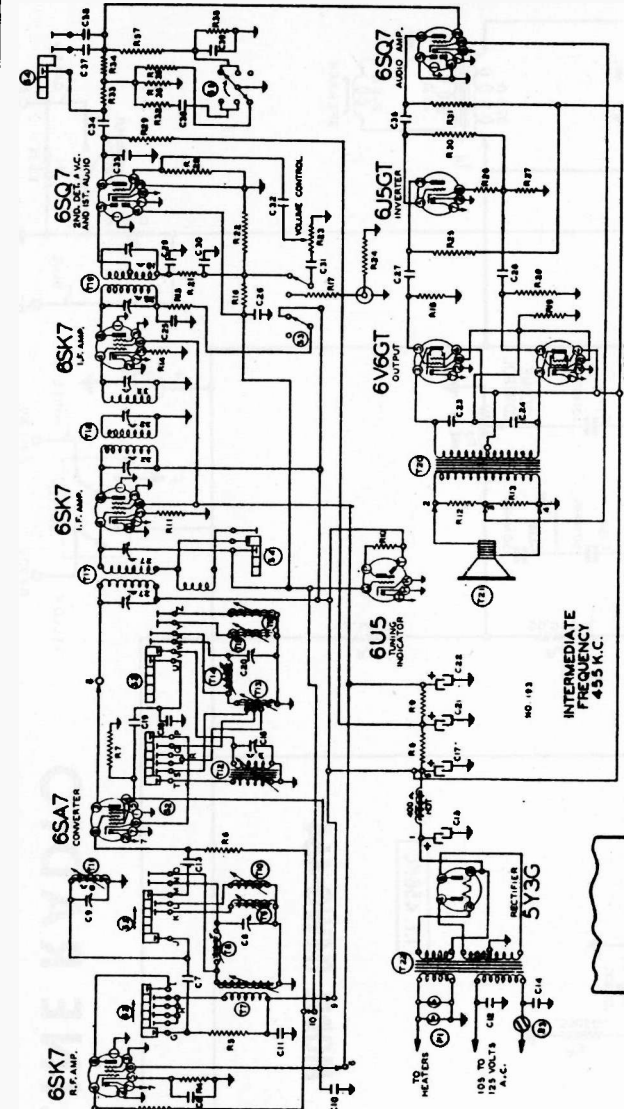
MODEL 04BR-729A  
MODEL 04BR-730A



# 72

MONTGOMERY WARD  
COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

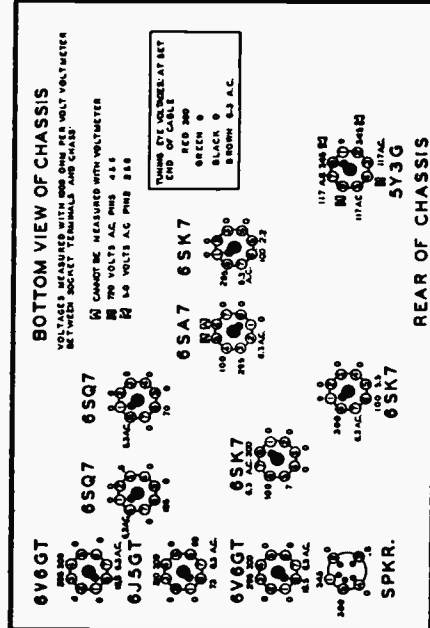
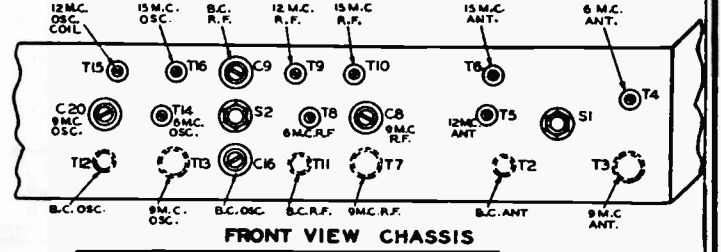


COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

C39 BE10037 .003 x 600 v.  
C15, C17 and C21 are in same unit

### PARTS

- T1 BE11200 Loop Antenna Assembly
- T2 BE11195 B.C. Antenna Coil
- T3 BE11199 9 mc. Antenna Coil
- T4 BE11189 6 mc. Antenna Coil
- T5 BE11191 12 mc. Antenna Coil
- T6 BE11192 15 mc. Antenna Coil
- T7 BE10958 9 mc. R.F. Coil
- T8 BE10960 6 mc. R.F. Coil
- T9 BE10961 15 mc. R.F. Coil
- T10 BE10962 B.C. R.F. Coil
- T11 BE110161 B.C. Oscillator Coil
- T12 BE110157 9 mc. Oscillator Coil
- T13 BE110156 6 mc. Oscillator Coil
- T14 BE110158 12 mc. Oscillator Coil
- T15 BE110159 15 mc. Oscillator Coil
- T16 BE108181 Input I.F. Coil—455 kc.
- T17 BE108182 Intermediate I.F. Coil—455 kc.
- T18 BE108182 Intermediate I.F. Coil—455 kc.
- T19 BE108182 Intermediate I.F. Coil—455 kc.
- T20 BE114207 Output Transformer
- T21 BE103115 12 in. Dynamic Speaker
- T22 BE104217 Power Transformer—50-60 cycles
- T23 BE104217 Power Transformer—50-60 cycles
- S1 BE12121 Antenna Bandswitch
- S2 BE12122 R.F. Oscillator Bandswitch
- S3 BE12124 On-off Radio Phono Switch
- S4 BE12124 Treble Switch
- S5 BE12123 Bass Switch
- P1 BE10794 2 6-8 volt pilot light T44

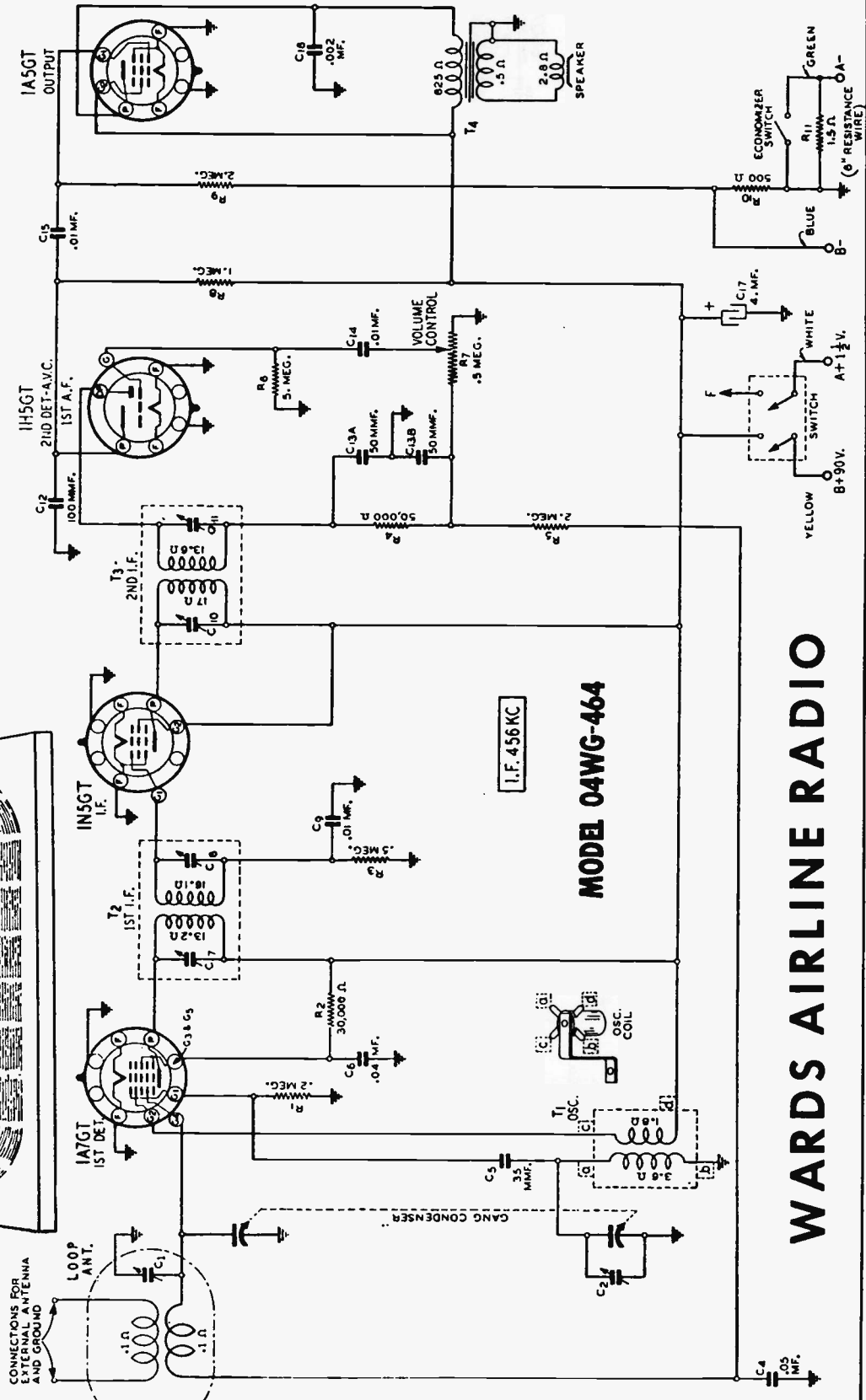
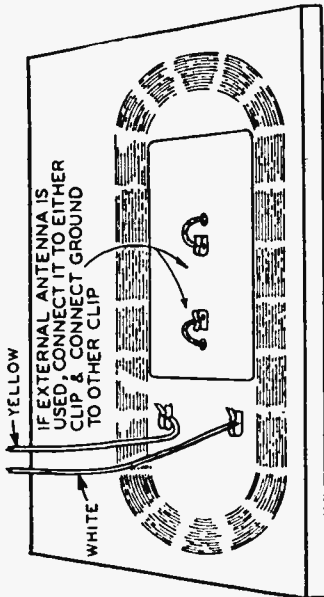
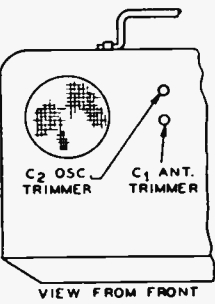
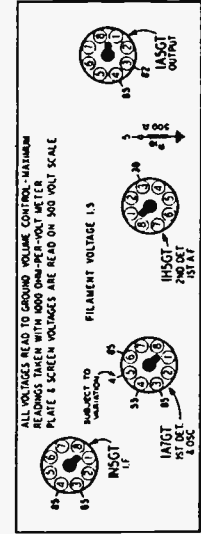


## 73 WARDS AIRLINE

MODEL 04BR-1105A

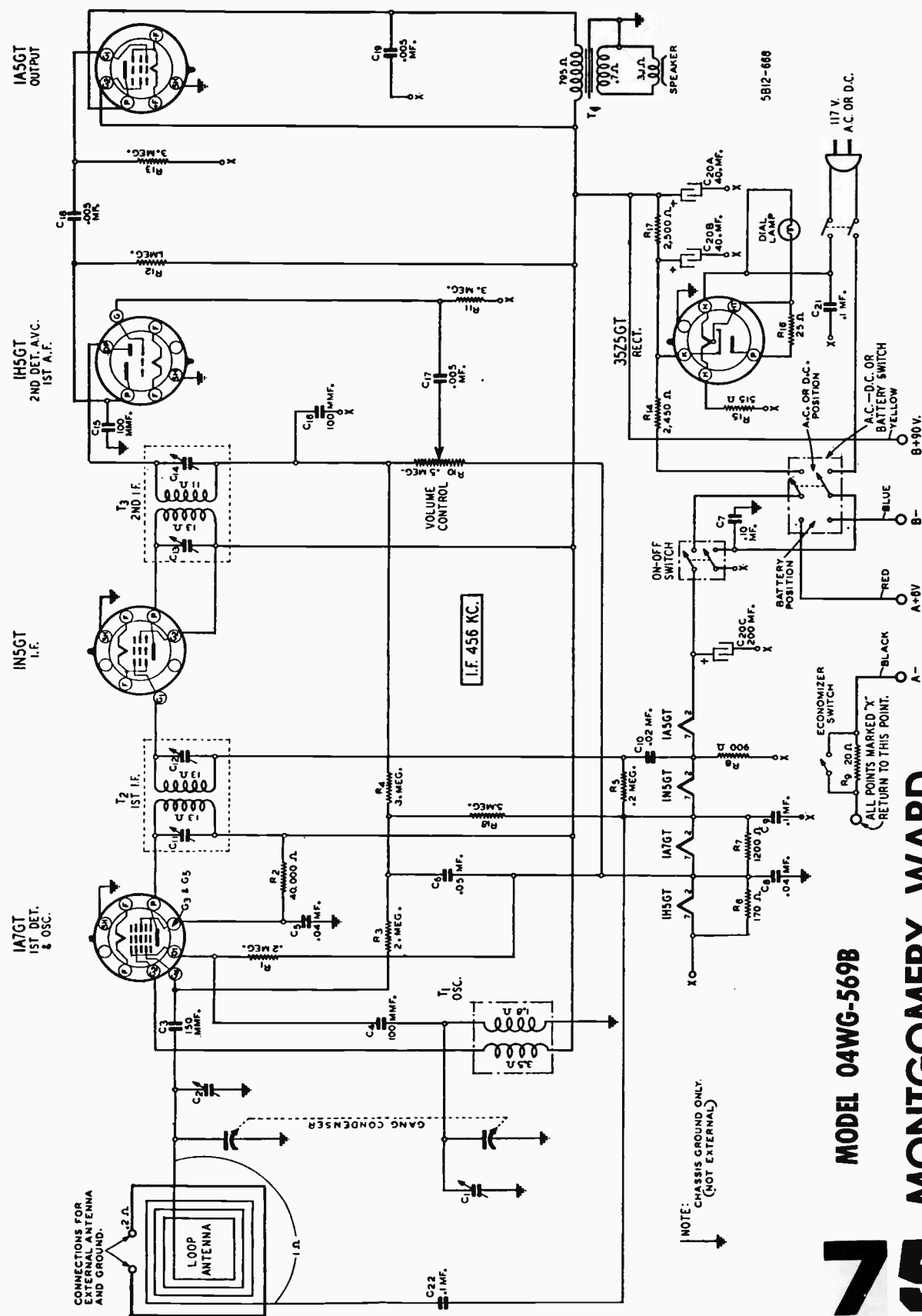


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



## WARDS AIRLINE RADIO

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

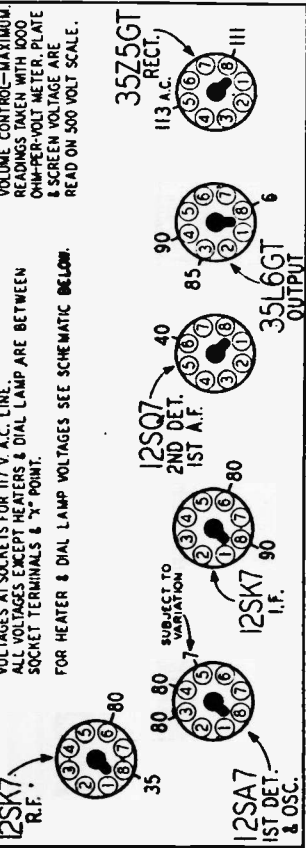


MODEL 04WG-569B

**MONTGOMERY WARD**  
CHICAGO, U. S. A.

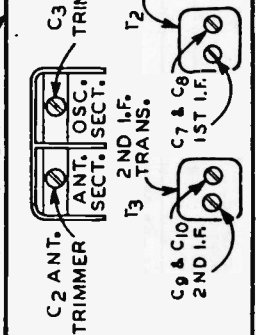
**75**

## WARDS AIRLINE RADIO

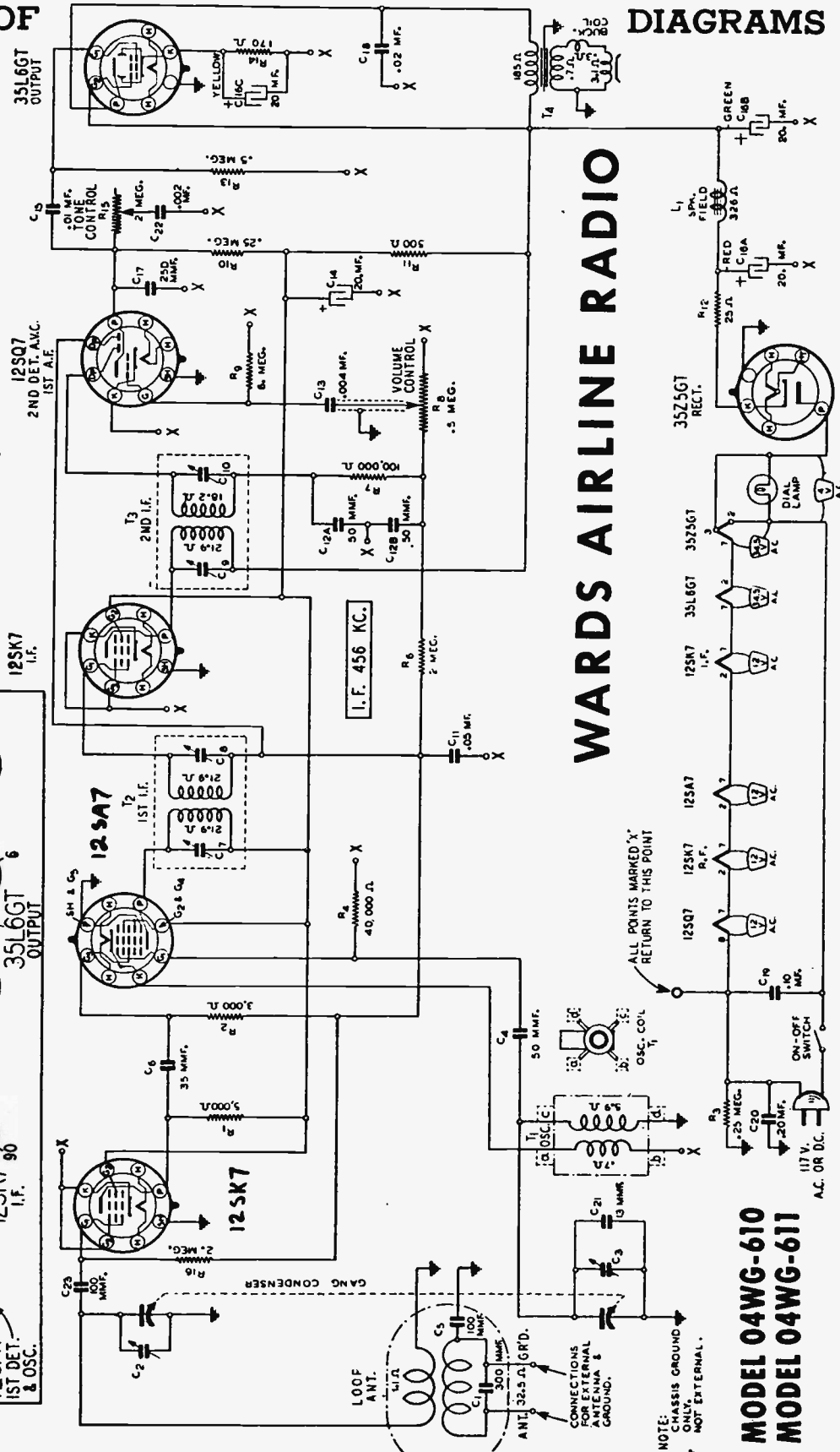


VOLTAGES AT SOCKETS FOR 117 V. A.C. LINE.  
ALL VOLTAGES EXCEPT HEATERS & DIAL LAMP ARE BETWEEN SOCKET TERMINALS & "A" POINT.  
FOR HEATER & DIAL LAMP VOLTAGES SEE SCHEMATIC BELOW.

VOLUME CONTROL—MAXIMUM READINGS TAKEN WITH 1000 OHM-PER-VOLT METER. PLATE & SCREEN VOLTAGE ARE READ ON 500 VOLT SCALE.



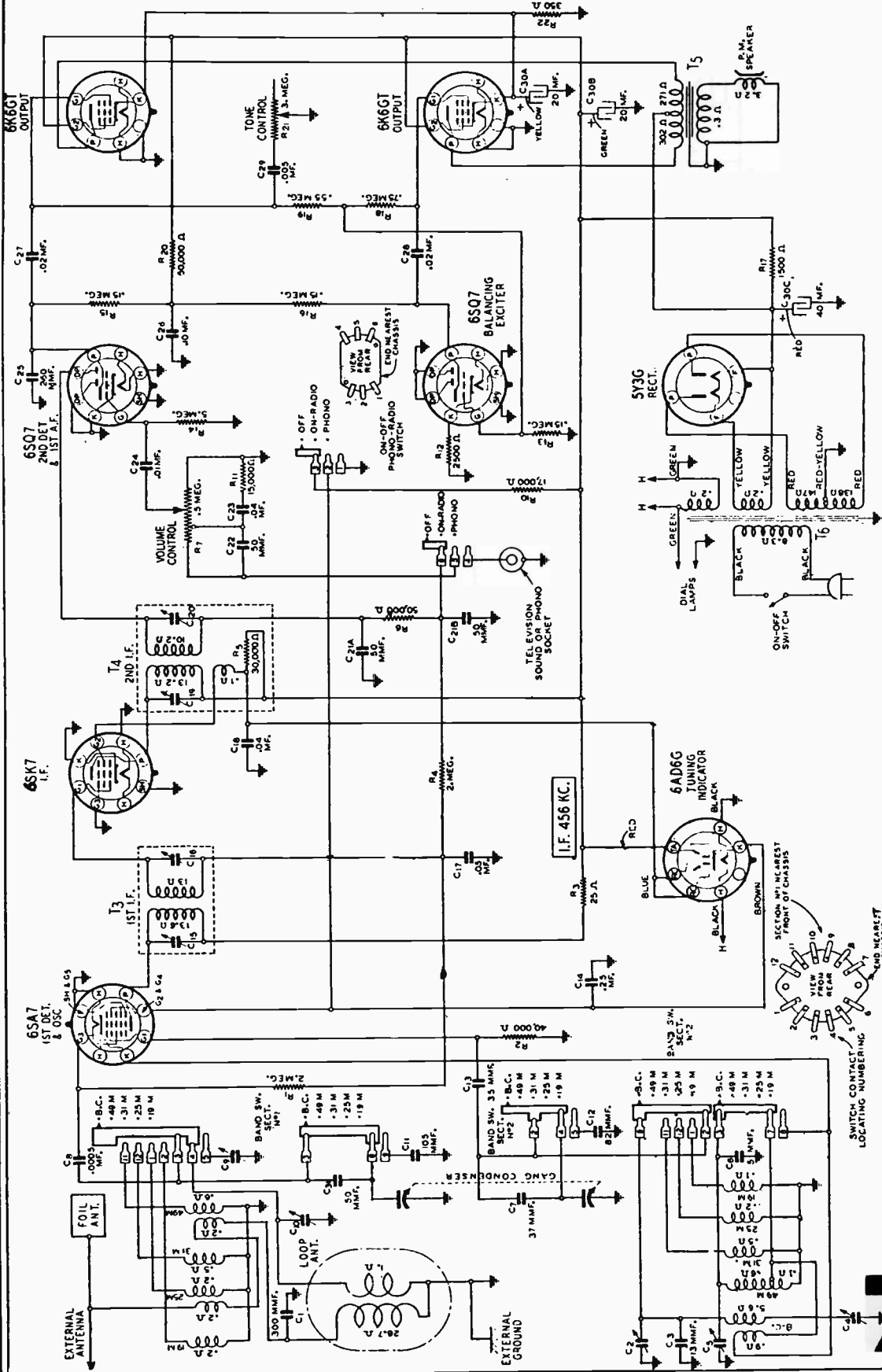
FRONT OF CHASSIS



NOTE: CHASSIS GROUND ONLY, NOT EXTERNAL.

MODEL 04WG-610  
MODEL 04WG-611

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



## WARDS AIRLINE RADIO BROADCAST AND SPREAD-BAND SHORT WAVE RADIO

MODEL 04WG-803

77

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

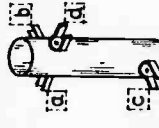
## WARDS

### MODEL 04WG-731A

OSC. T<sub>3</sub>



OSC. T<sub>2</sub>



ANT. T<sub>1</sub>



COIL TERMINALS

VOLUME CONTROL—MAXIMUM READINGS TAKEN WITH 1000 OHM-PER-VOLT METER. PLATE & SCREEN VOLTAGES ARE READ ON 500 VOLT SCALE.

VOLTAGES AT SOCKETS FOR 117 V. A.C. LINE. ALL VOLTAGES EXCEPT HEATERS & DIAL LAMP ARE BETWEEN SOCKET TERMINALS & X POINT. FOR HEATER & DIAL LAMP VOLTAGES SEE SCHEMATIC.

TO EXTERNAL ANTENNA

LOOP ANT.

TO EXTERNAL ANTENNA

EXTERNAL GROUND

T<sub>1</sub> D. ANT.

T<sub>2</sub> D. OSC.

T<sub>3</sub> B. OSC.

351.6GT OUTPUT 95 90

12SQ7 1ST A.F. 40

6L5G 2ND DET. 80

12SK7 2ND I.F. 80

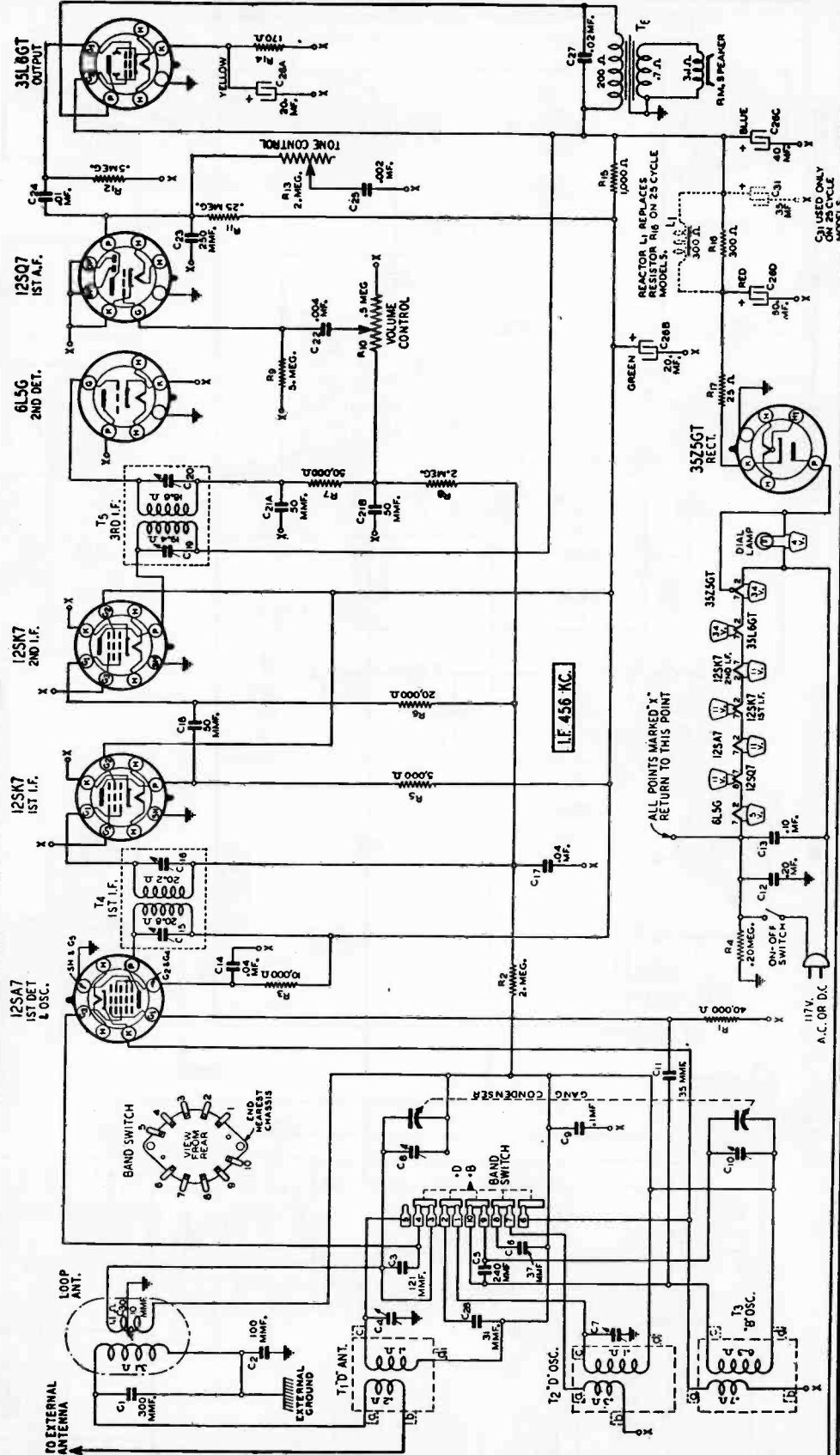
12SK7 1ST I.F. 45

12SK7 1ST I.F. SUBJECT TO VARIATION 50

12SA7 1ST DET. & OSC. 80

3525GT RECT. 110

70S-719

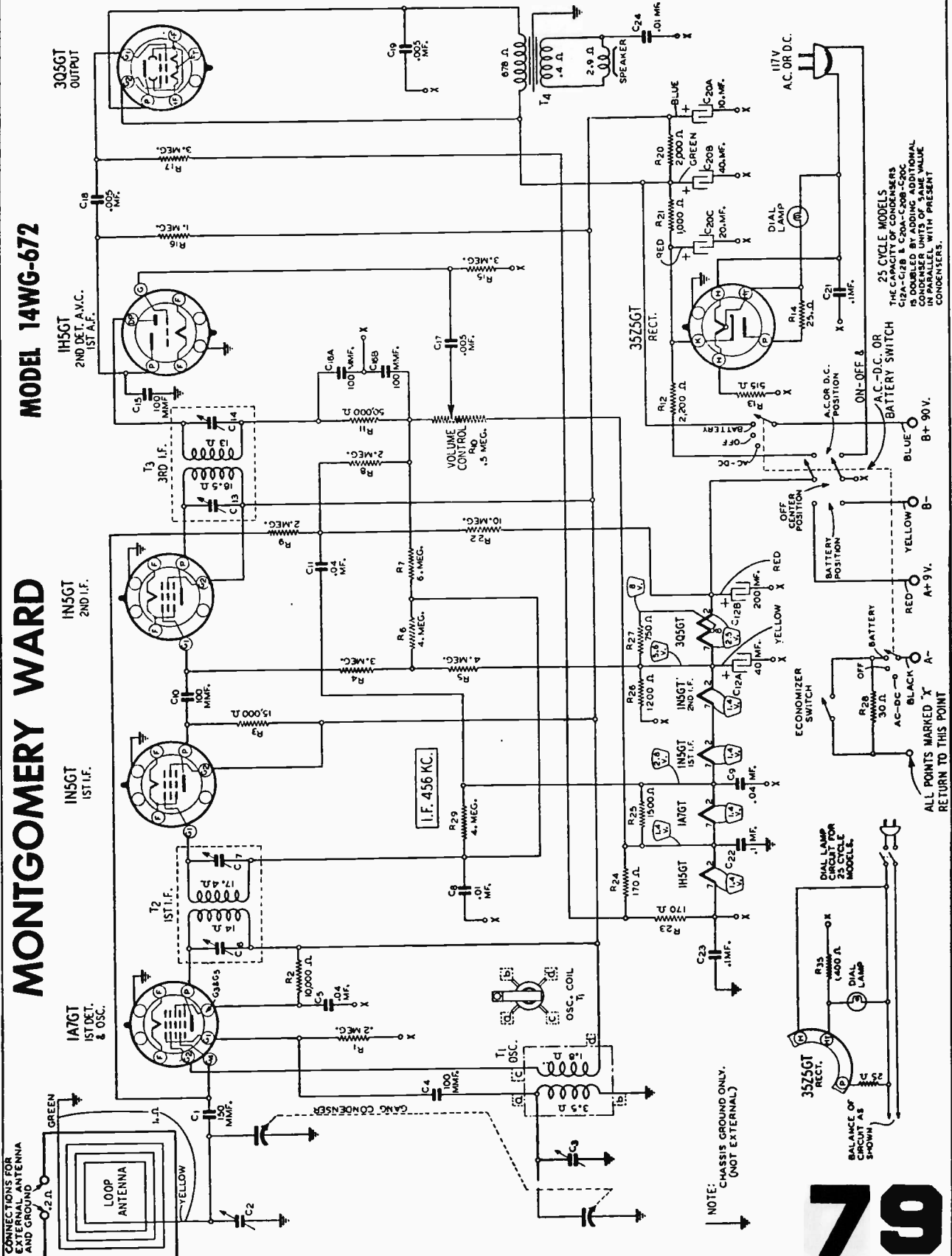


# 78

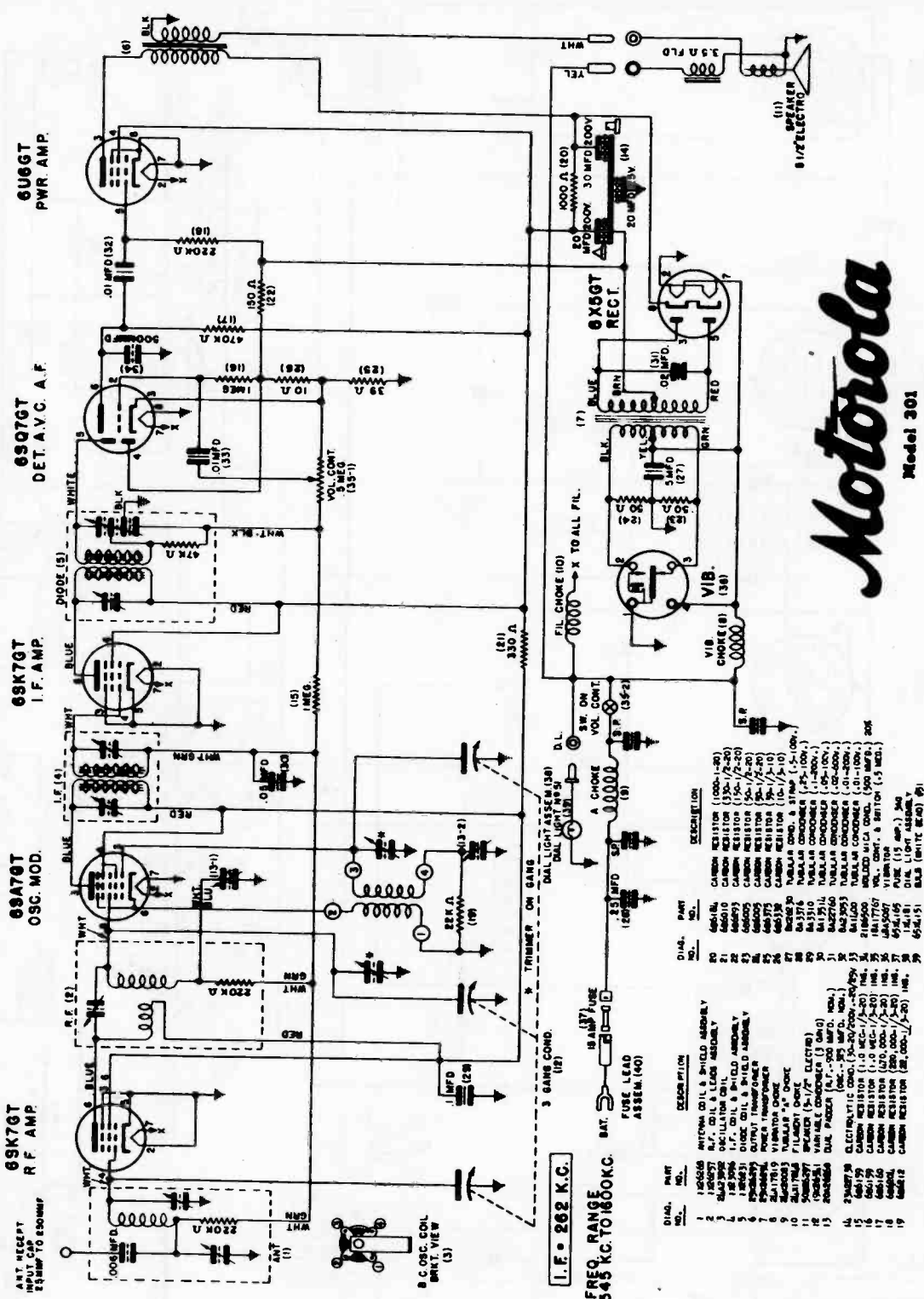


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## MONTGOMERY WARD MODEL 14WG-672



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



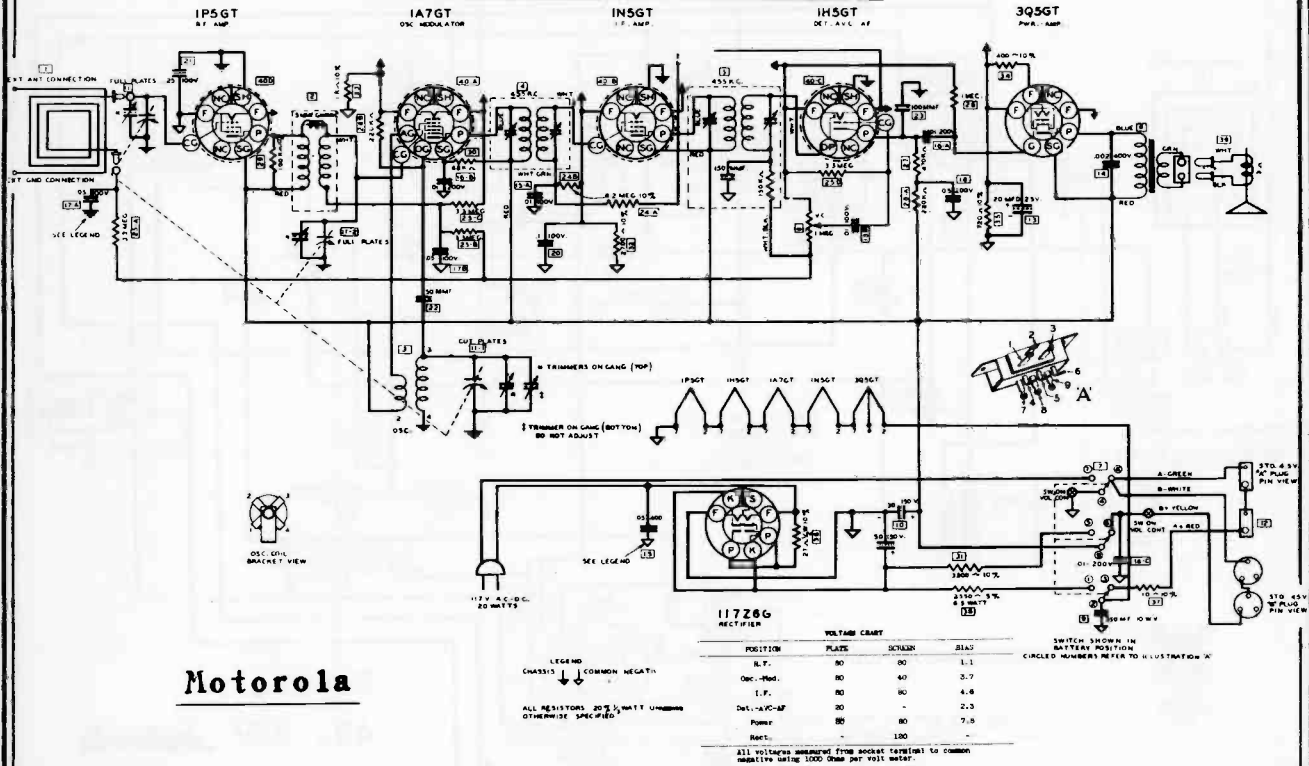
**Motorola**  
Model 301

DIAG. NO.	PART NO.	DESCRIPTION
1	1A625A	MIFERNA COIL & SHIELD ASSEMBLY
2	1A625T	R.F. COIL & LEADS ASSEMBLY
3	2A625T	OSCILLATOR COIL
4	1A625B	OSC. COIL & SHIELD ASSEMBLY
5	1A625C	IF. COIL & SHIELD ASSEMBLY
6	1A625D	IF. COIL & SHIELD ASSEMBLY
7	1A625E	POWER TRANSFORMER
8	1A625F	6X5GT RECTIFIER
9	1A625G	VIBRATOR CHOKES
10	1A625H	6AV6 VIBRATOR CHOKES
11	1A625I	6AV6 VIBRATOR CHOKES
12	1A625J	VARIABLE CONDENSER (5-1/2" ELECTRIC)
13	1A625K	VARIABLE CONDENSER (5-1/2" MECH.)
14	2A625L	ELECTRICALY COND. (50-20000-20000)
15	1A625M	CARBON RESISTOR (1.0 MCC-1/2-20) 100K
16	1A625N	CARBON RESISTOR (1.0 MCC-1/2-20) 100K
17	1A625O	CARBON RESISTOR (200,000-1/2-20) 100K
18	1A625P	CARBON RESISTOR (200,000-1/2-20) 100K
19	1A625Q	CARBON RESISTOR (200,000-1/2-20) 100K
20	1A625R	CARBON RESISTOR (200,000-1/2-20) 100K
21	1A625S	CARBON RESISTOR (1000-20)
22	1A625T	CARBON RESISTOR (500-1/2-20)
23	1A625U	CARBON RESISTOR (500-1/2-20)
24	1A625V	CARBON RESISTOR (500-1/2-20)
25	1A625W	CARBON RESISTOR (500-1/2-20)
26	1A625X	CARBON RESISTOR (500-1/2-20)
27	1A625Y	CARBON RESISTOR (500-1/2-20)
28	1A625Z	CARBON RESISTOR (500-1/2-20)
29	1A625AA	CARBON RESISTOR (500-1/2-20)
30	1A625AB	CARBON RESISTOR (500-1/2-20)
31	1A625AC	TUBULAR CONDENSER (1-75-100K)
32	1A625AD	TUBULAR CONDENSER (1-75-100K)
33	1A625AE	TUBULAR CONDENSER (1-75-100K)
34	1A625AF	TUBULAR CONDENSER (1-75-100K)
35	1A625AG	TUBULAR CONDENSER (1-75-100K)
36	1A625AH	TUBULAR CONDENSER (1-75-100K)
37	1A625AI	TUBULAR CONDENSER (1-75-100K)
38	1A625AJ	TUBULAR CONDENSER (1-75-100K)
39	1A625AK	TUBULAR CONDENSER (1-75-100K)
40	1A625AL	TUBULAR CONDENSER (1-75-100K)
41	1A625AM	TUBULAR CONDENSER (1-75-100K)
42	1A625AN	TUBULAR CONDENSER (1-75-100K)
43	1A625AO	TUBULAR CONDENSER (1-75-100K)
44	1A625AP	TUBULAR CONDENSER (1-75-100K)
45	1A625AQ	TUBULAR CONDENSER (1-75-100K)
46	1A625AR	TUBULAR CONDENSER (1-75-100K)
47	1A625AS	TUBULAR CONDENSER (1-75-100K)
48	1A625AT	TUBULAR CONDENSER (1-75-100K)
49	1A625AU	TUBULAR CONDENSER (1-75-100K)
50	1A625AV	TUBULAR CONDENSER (1-75-100K)
51	1A625AW	TUBULAR CONDENSER (1-75-100K)
52	1A625AX	TUBULAR CONDENSER (1-75-100K)
53	1A625AY	TUBULAR CONDENSER (1-75-100K)
54	1A625AZ	TUBULAR CONDENSER (1-75-100K)
55	1A625BA	TUBULAR CONDENSER (1-75-100K)
56	1A625BB	TUBULAR CONDENSER (1-75-100K)
57	1A625BC	TUBULAR CONDENSER (1-75-100K)
58	1A625BD	TUBULAR CONDENSER (1-75-100K)
59	1A625BE	TUBULAR CONDENSER (1-75-100K)
60	1A625BF	TUBULAR CONDENSER (1-75-100K)
61	1A625BG	TUBULAR CONDENSER (1-75-100K)
62	1A625BH	TUBULAR CONDENSER (1-75-100K)
63	1A625BI	TUBULAR CONDENSER (1-75-100K)
64	1A625BJ	TUBULAR CONDENSER (1-75-100K)
65	1A625BK	TUBULAR CONDENSER (1-75-100K)
66	1A625BL	TUBULAR CONDENSER (1-75-100K)
67	1A625BM	TUBULAR CONDENSER (1-75-100K)
68	1A625BN	TUBULAR CONDENSER (1-75-100K)
69	1A625BO	TUBULAR CONDENSER (1-75-100K)
70	1A625BP	TUBULAR CONDENSER (1-75-100K)
71	1A625BQ	TUBULAR CONDENSER (1-75-100K)
72	1A625BR	TUBULAR CONDENSER (1-75-100K)
73	1A625BS	TUBULAR CONDENSER (1-75-100K)
74	1A625BT	TUBULAR CONDENSER (1-75-100K)
75	1A625BU	TUBULAR CONDENSER (1-75-100K)
76	1A625BV	TUBULAR CONDENSER (1-75-100K)
77	1A625BW	TUBULAR CONDENSER (1-75-100K)
78	1A625BX	TUBULAR CONDENSER (1-75-100K)
79	1A625BY	TUBULAR CONDENSER (1-75-100K)
80	1A625BZ	TUBULAR CONDENSER (1-75-100K)
81	1A625CA	TUBULAR CONDENSER (1-75-100K)
82	1A625CB	TUBULAR CONDENSER (1-75-100K)
83	1A625CC	TUBULAR CONDENSER (1-75-100K)
84	1A625CD	TUBULAR CONDENSER (1-75-100K)
85	1A625CE	TUBULAR CONDENSER (1-75-100K)
86	1A625CD	TUBULAR CONDENSER (1-75-100K)
87	1A625CE	TUBULAR CONDENSER (1-75-100K)
88	1A625CD	TUBULAR CONDENSER (1-75-100K)
89	1A625CE	TUBULAR CONDENSER (1-75-100K)
90	1A625CD	TUBULAR CONDENSER (1-75-100K)
91	1A625CE	TUBULAR CONDENSER (1-75-100K)
92	1A625CD	TUBULAR CONDENSER (1-75-100K)
93	1A625CE	TUBULAR CONDENSER (1-75-100K)
94	1A625CD	TUBULAR CONDENSER (1-75-100K)
95	1A625CE	TUBULAR CONDENSER (1-75-100K)
96	1A625CD	TUBULAR CONDENSER (1-75-100K)
97	1A625CE	TUBULAR CONDENSER (1-75-100K)
98	1A625CD	TUBULAR CONDENSER (1-75-100K)
99	1A625CE	TUBULAR CONDENSER (1-75-100K)
100	1A625CD	TUBULAR CONDENSER (1-75-100K)



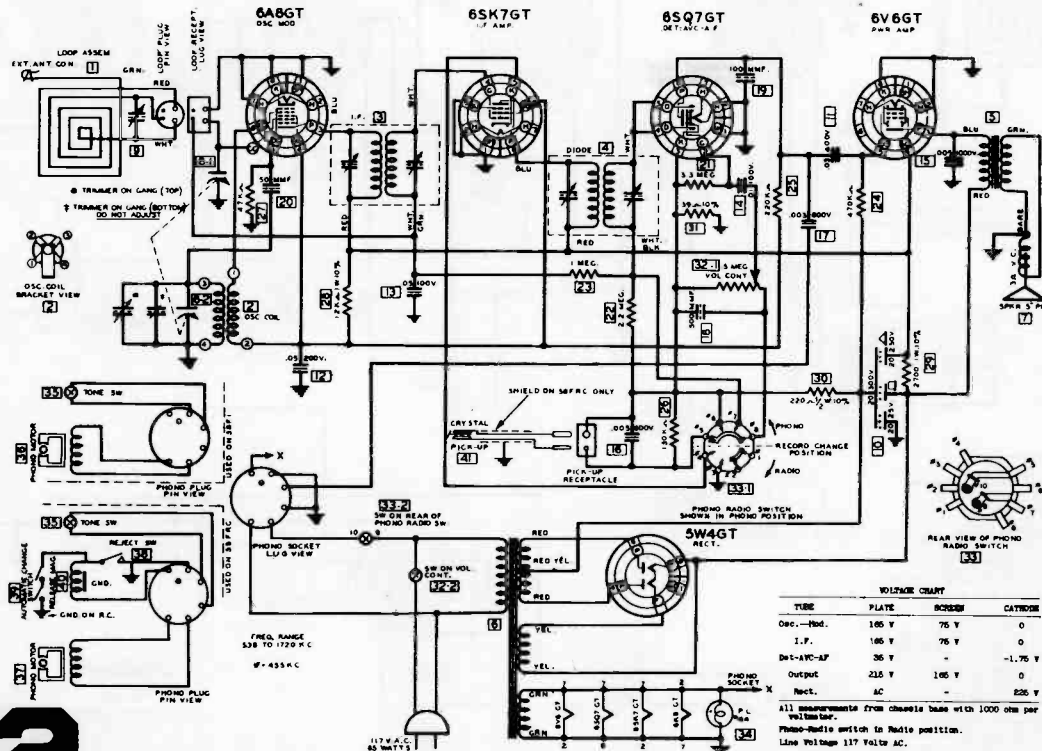
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## CIRCUIT DIAGRAM MODELS 65BP1-2-3-4

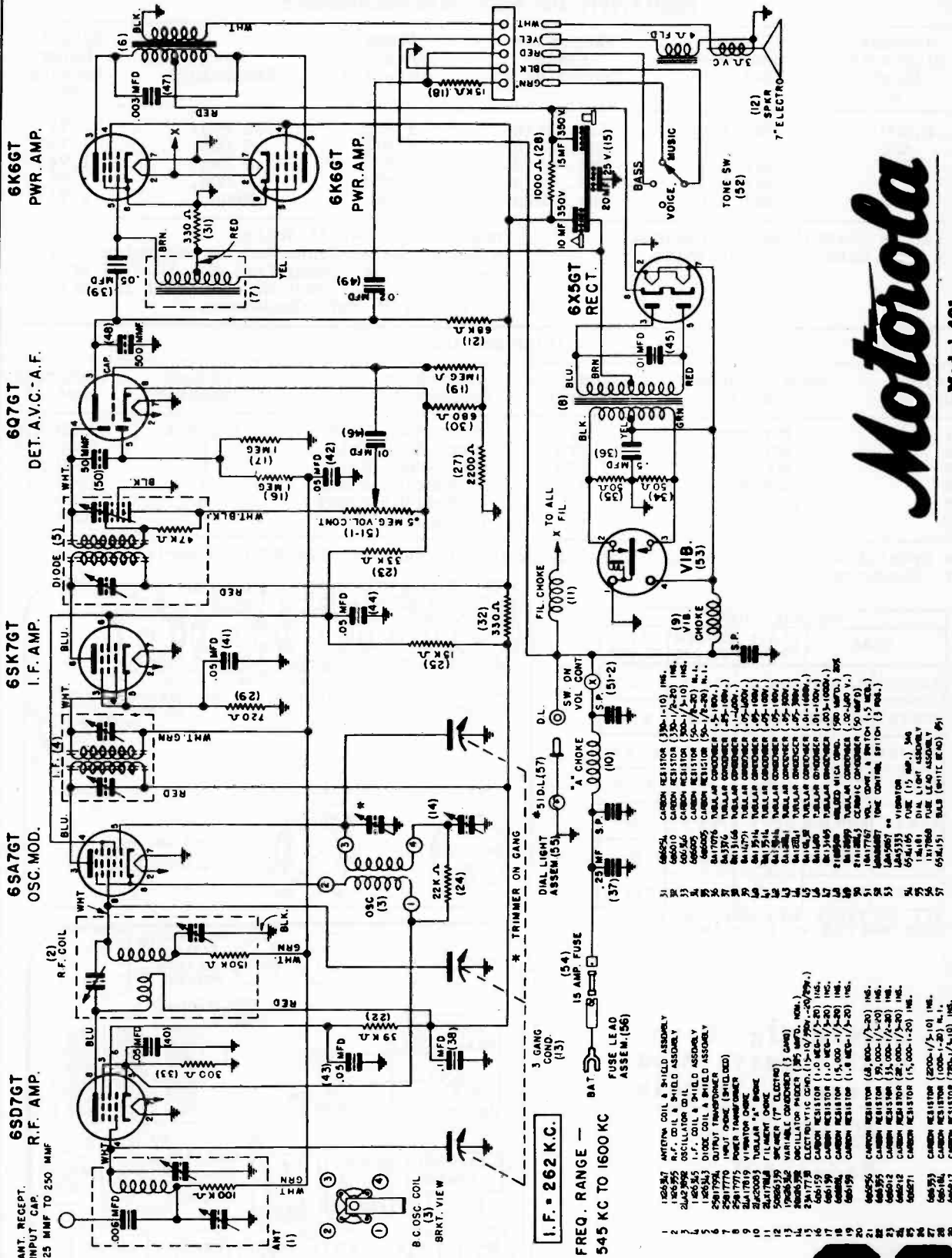


**Motorola**

## Motorola Models 58-F1, 58-FRC



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



# Motorola

Model 401

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## SENSITIVITY AND STAGE GAIN MEASUREMENTS

Average Microvolt Input *	Generator Set At	Generator Feeder Connected To	Dummy Antenna Capacity	Leak Resistance	Output Meter Reading **
2,800	262 K.C.	I.F. Grid	.1 Mfg.	.5 Meg.	1.74
420	262 K.C.	Mod. Grid	.1 Mfg.	.5 Meg.	1.74
510	600 K.C.	Mod. Grid	.1 Mfd.	.5 Meg.	1.74
8	600 K.C.	R.F. Grid	.1 Mfd.	.5 Meg.	1.74
2	600 K.C.	Ant. Lead	***	None	1.74

Volume Control Set At Maximum  
\* 1 Watt = 1.74 Volts

Tone Control Set At Voice  
\*\* Output meter connected across voice coil.  
\*\*\* Use Special Dummy Part No. LX26767 or  
Booster Coil Part No. 24A26751 in series  
with a 35 Mmf. Condenser.

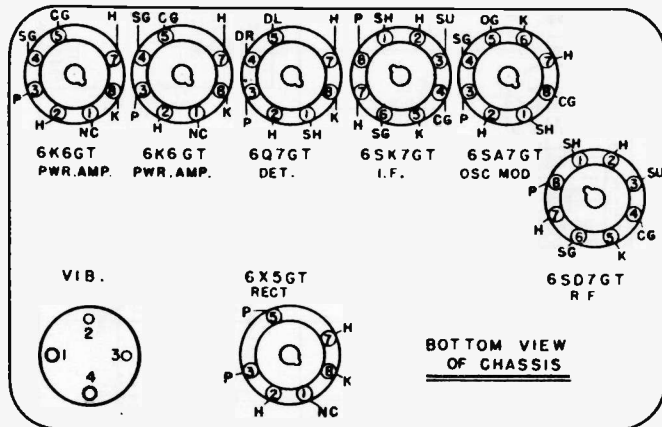
### ALIGNMENT CHART

Operations In Order	Gang Condenser Set At	Dummy Antenna	Generator Connected To	Adjust Trimmers No.	Generator Set At
1	Minimum	.1 Mfd.	Osc.-Mod. Grid	1-2-3-4	262 K.C.
2	1600 K.C.	.1 Mfd.	Osc.-Mod. Grid	5	1600 K.C.
3	600 K.C.	.1 Mfd.	Osc.-Mod. Grid	6	600 K.C.
4	1400 K.C.	*	To Special Dummy	7	1400 K.C.
5	1400 K.C.	*	To Special Dummy	8	1400 K.C.
6	600 K.C.	*	To Special Dummy	9	600 K.C.

\* Use Special Dummy Part No. LX26767 or Booster Coil Part No. 24A26751 in series with a 35 Mmf. Condenser.

VOLTAGE CHART.				
TUBE	PLATE TO GND	SCREEN TO GND	CATH. TO GND	
6SD7GT	R.F. AMP	190 V.	125 V.	3 V.
6SA7GT	OSC. MOD.	190 V.	60 V.	3 V.
6SK7GT	I.F. AMP	195 V.	60 V.	2.75 V.
6Q7GT	DET. AVG.-A.F.	130 V	—	6.5 V.
6K6GT	PWR. AMP	220 V	195 V.	0
6K6GT	PWR. AMP	220 V.	195 V.	0
6X5GT	RECT.	A.C.	—	225 V.

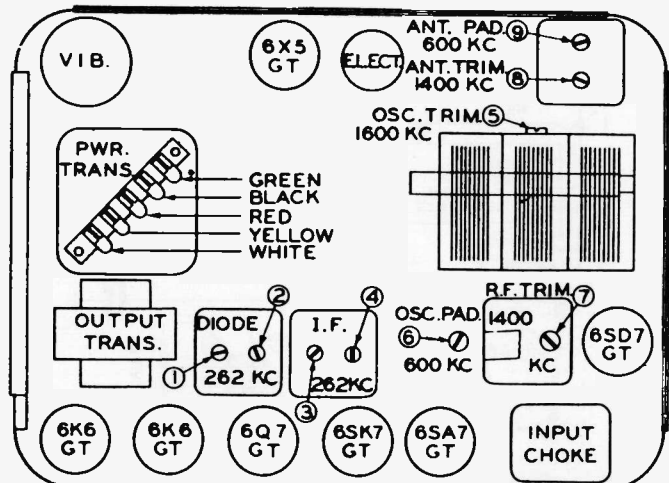
ALL VOLTAGES MEASURED WITH  
1000 OHM PER VOLT VOLTMETER



**Galvin Mfg. Corp.**  
4545 Augusta Blvd.  
Chicago, Illinois

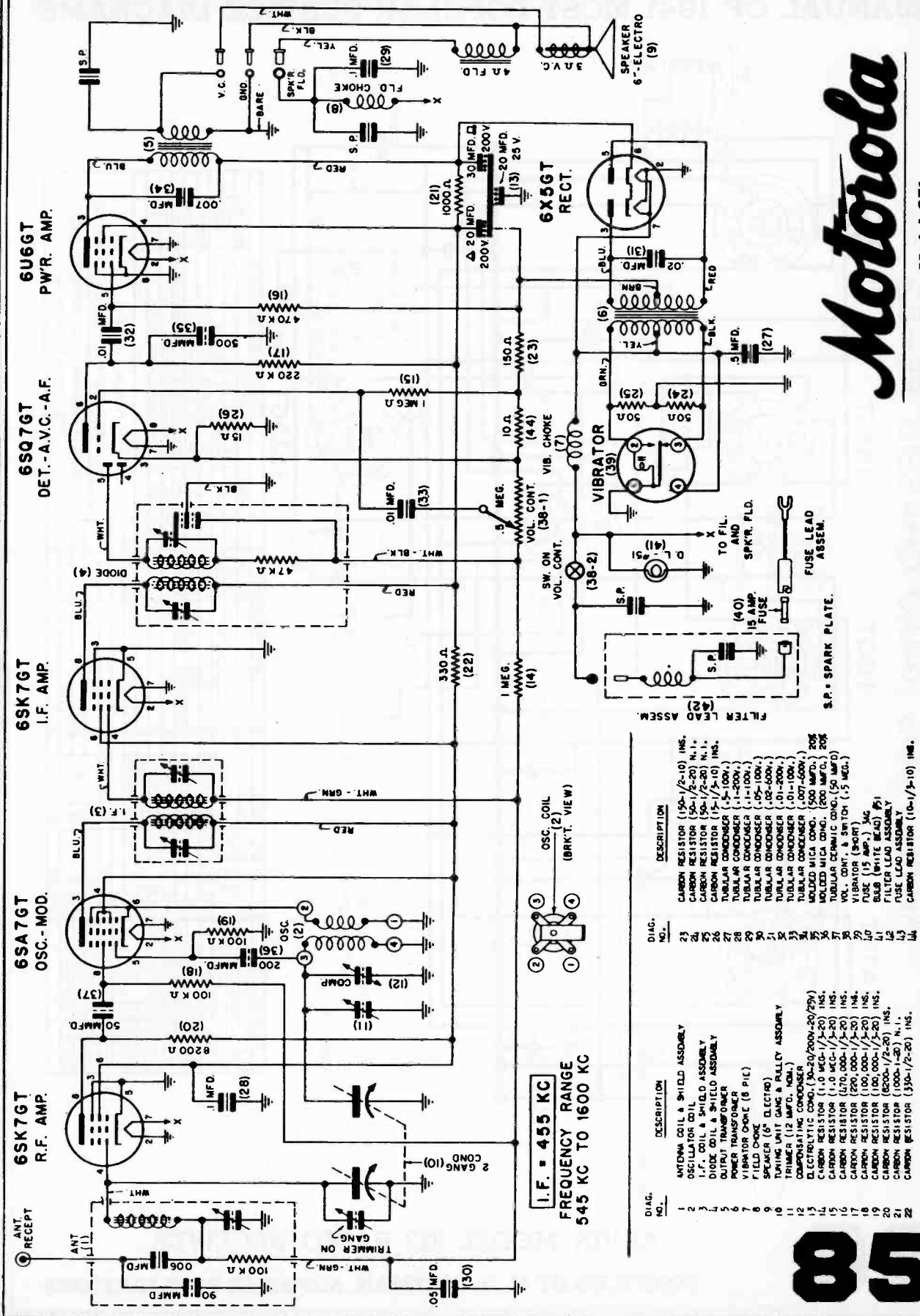
**MOTOROLA**

**Model 401**



# 84

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS



I.F. = 455 KC  
 FREQUENCY RANGE  
 545 KC TO 1600 KC

DIAG. NO.	DESCRIPTION
1	ANTENNA COIL & SHIELD ASSEMBLY
2	OSCILLATOR COIL
3	I.F. COIL & SHIELD ASSEMBLY
4	DIODE COIL & SHIELD ASSEMBLY
5	POWER TRANSFORMER
6	VIBRATOR CHOKE (8 P.I.E.)
7	FIELD CHOKES
8	SPEAKER (6" ELECTRO)
9	TUNING UNIT GANG & PULLEY ASSEMBLY
10	TRIMMER (12 MF. N.O.B.)
11	TRIMMER (12 MF. N.O.B.)
12	TRIMMER (12 MF. N.O.B.)
13	ELECTROLYTIC COND. (30-20/200V-20)
14	CARBON RESISTOR (1.0 MEG.-1/2-20) INS.
15	CARBON RESISTOR (1.0 MEG.-1/2-20) INS.
16	CARBON RESISTOR (1.0 MEG.-1/2-20) INS.
17	CARBON RESISTOR (1.0 MEG.-1/2-20) INS.
18	CARBON RESISTOR (1.0 MEG.-1/2-20) INS.
19	CARBON RESISTOR (1.0 MEG.-1/2-20) INS.
20	CARBON RESISTOR (1.0 MEG.-1/2-20) INS.
21	CARBON RESISTOR (1.0 MEG.-1/2-20) INS.
22	CARBON RESISTOR (330-1/2-20) INS.
23	CARBON RESISTOR (150-1/2-10) INS.
24	CARBON RESISTOR (50-1/2-20) N.I.
25	CARBON RESISTOR (15-1/2-10) INS.
26	TUBULAR CONDENSER (5-100V.)
27	TUBULAR CONDENSER (1-100V.)
28	TUBULAR CONDENSER (.05-100V.)
29	TUBULAR CONDENSER (.05-100V.)
30	TUBULAR CONDENSER (.05-100V.)
31	TUBULAR CONDENSER (.01-100V.)
32	TUBULAR CONDENSER (.01-100V.)
33	TUBULAR CONDENSER (.01-100V.)
34	TUBULAR CONDENSER (.01-100V.)
35	TUBULAR CONDENSER (.01-100V.)
36	TUBULAR CONDENSER (.01-100V.)
37	TUBULAR CONDENSER (.01-100V.)
38	TUBULAR CONDENSER (.01-100V.)
39	TUBULAR CONDENSER (.01-100V.)
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42	TUBULAR CONDENSER (.01-100V.)
43	TUBULAR CONDENSER (.01-100V.)
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86	TUBULAR CONDENSER (.01-100V.)
87	TUBULAR CONDENSER (.01-100V.)
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91	TUBULAR CONDENSER (.01-100V.)
92	TUBULAR CONDENSER (.01-100V.)
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94	TUBULAR CONDENSER (.01-100V.)
95	TUBULAR CONDENSER (.01-100V.)
96	TUBULAR CONDENSER (.01-100V.)
97	TUBULAR CONDENSER (.01-100V.)
98	TUBULAR CONDENSER (.01-100V.)
99	TUBULAR CONDENSER (.01-100V.)
100	TUBULAR CONDENSER (.01-100V.)

# Motorola

Model 251

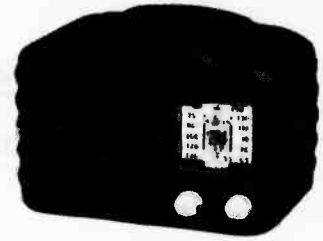




# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

**NOBLITT-SPARKS INDUSTRIES, INC.**

**Columbus, Indiana**



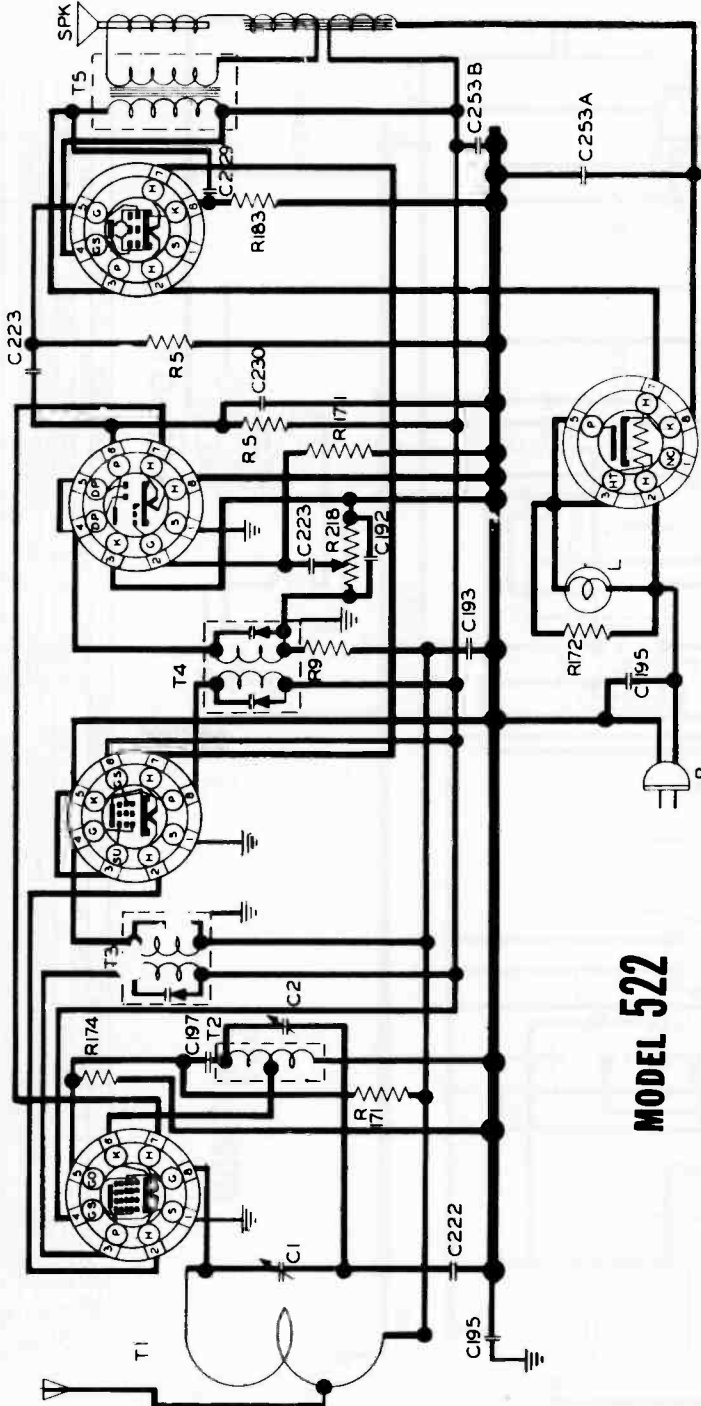
## ARVIN HOME RADIC CHASSIS RE-76

12SA7

12SK7

12SQ7

50L6GT



**MODEL 522**

**35Z5GT**

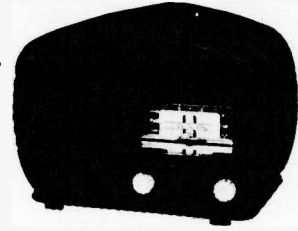
RESISTORS		CONDENSERS		TRANSFORMERS		MISCELLANEOUS UNITS	
R. OHM/W. PART NO.	V. PART NO.	C. CAPACITY/M. PART NO.	T. TYPE	SYMBOL	DESCRIPTION	PART NO.	
281 M	V17-18657	1 TWO GANG	1 ANTENNA LOOP	P	DIAL LIGHT BULB MAZDA	7-16378	
5	500K/417-2070	2 VARIABLE	2 OSCILLATOR COIL	P	LINE CORD & PLUG ASSY	7-16843	
183	150 /417-14316	233A 20 MFD	3 FIRST IF COIL	SPK	SPEAKER ASSY	7-16843	
174	20K /417-14291	233B 10 MFD	4 SECOND IF COIL				
172	100 /417-14289	192 0.0025	5 OUTPUT TRANSF				
171	15 M /417-14288	195 .05					
9	1 M /417-2080	222 .2					
		229 .02					
		223 .002					
		193 .05					
		197 .001					
		230 0.005					

IF PEAK 455 KC.  
BALANCE 1400 KC. - CHECK AT 600 KC.  
NOBLITT-SPARKS INDUSTRIES, INC.  
COLUMBUS, INDIANA

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

NOBLITT-SPARKS INDUSTRIES, INC.

Columbus, Indiana



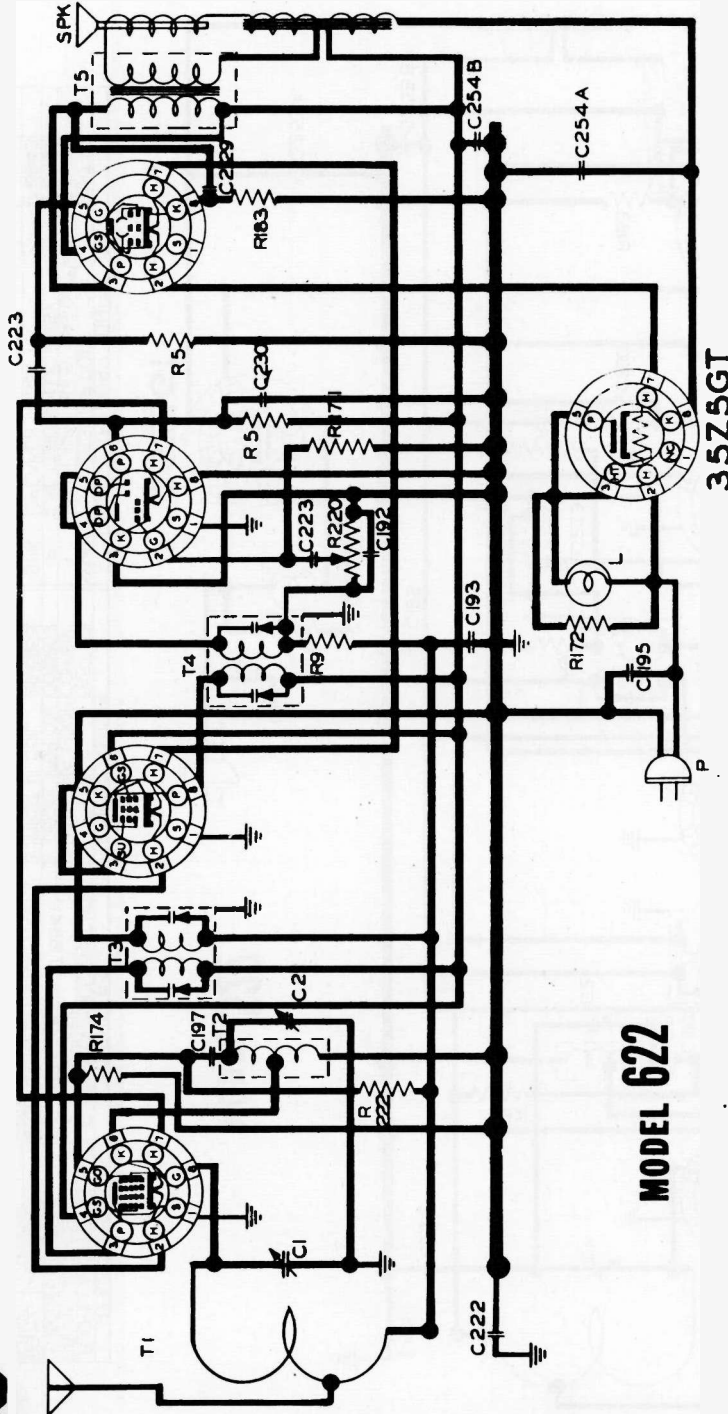
## ARVIN HOME RADIO - CHASSIS RE-78

12SA7

12SK7

12SQ7

50L6GT



MODEL 622

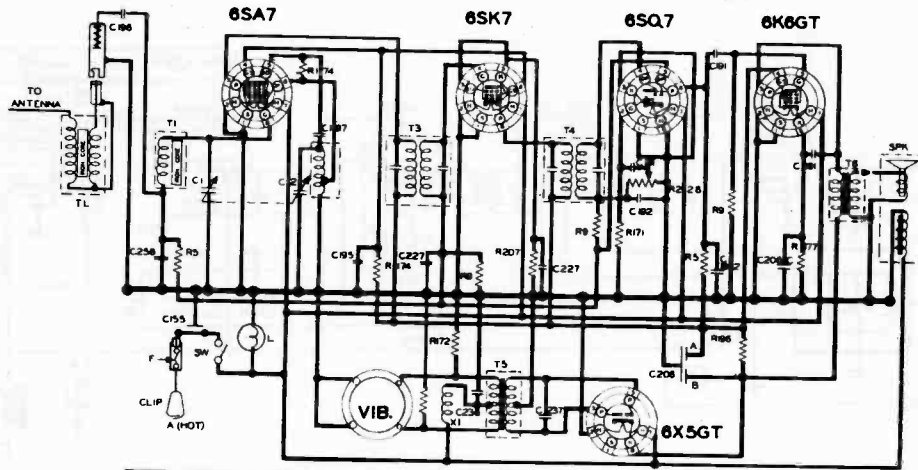
35Z5GT

RESISTORS		CONDENSERS		TRANSFORMERS		MISCELLANEOUS UNITS	
R OHM	W	C CAPACITY	VOLT	T TYPE	PART NO	SYMBOL	DESCRIPTION
220	1 M	1	17-18874	1	00-18882	L	DAL LIGHT BULB MAZDA # 47
5	500K	2	17-14316	2	00-18891	P	LINE CORD & PLUG ASSY
83	50	254A	150	3	00-18893	SPK	SPEAKER ASSY
174	20 K	254B	150	4	00-18888		
172	500	192	00025	5	00-18893		
222	10 M	193	400				
9	1 M	222	400				
		223	400				
		193	400				
		197	800				
		230	400				

IF PEAK 455 KC.  
BALANCE 1400 KC. - CHECK AT 600 KC.  
NOBLITT-SPARKS INDUSTRIES, INC.  
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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## ARVIN CAR RADIO CHASSIS RE-84

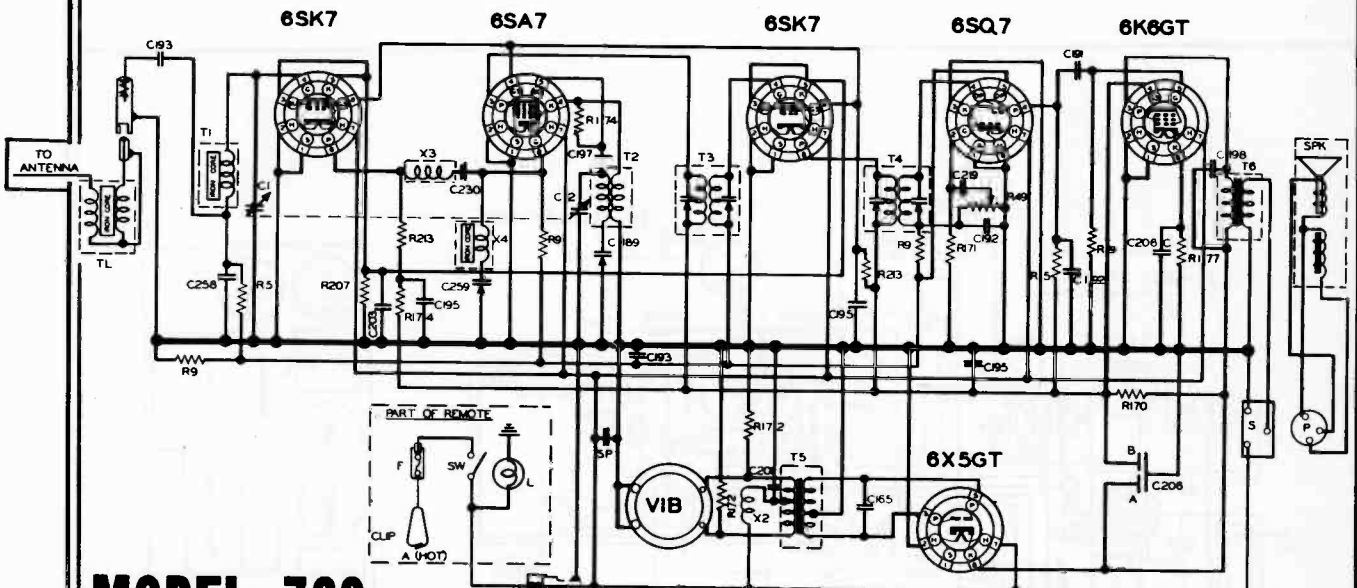


RESISTORS		CONDENSERS		COILS & TRANSFORMERS		MISCELLANEOUS UNITS	
SYMBOL	PART NO.	SYMBOL	VALUE	T-X	TYPE	SYMBOL	DESCRIPTION
R1	1M 1/4W	C1	2500-0.01	T1	ANTENNA COIL	F	FUSE .20 AMP.
R2	500K 1/4W	C2	100-0.002	T2	OSCILLATOR COIL	L	INDUCTOR
R3	10K 1/4W	C3	1000-0.01	T3	FIRST IF COIL	S	SPEAKER PLUG
R4	100K 1/4W	C4	100-0.002	T4	SECOND IF COIL	SP	SPEAKER SOCKET
R5	500K 1/4W	C5	500-0.005	T5	POWER TRANSFORMER	SW	POWER SWITCH
R6	10K 1/4W	C6	100-0.002	T6	OUTPUT TRANSFORMER	TL	TRANSMISSION LINE
R7	100K 1/4W	C7	500-0.005			M	SHIELD PLATE
R8	100K 1/4W	C8	100-0.002			VIB	VIBRATOR
R9	100K 1/4W	C9	100-0.002				
R10	100K 1/4W	C10	100-0.002				
R11	100K 1/4W	C11	100-0.002				
R12	100K 1/4W	C12	100-0.002				
R13	100K 1/4W						
R14	100K 1/4W						
R15	100K 1/4W						
R16	100K 1/4W						
R17	100K 1/4W						
R18	100K 1/4W						
R19	100K 1/4W						
R20	100K 1/4W						
R21	100K 1/4W						
R22	100K 1/4W						
R23	100K 1/4W						
R24	100K 1/4W						
R25	100K 1/4W						
R26	100K 1/4W						
R27	100K 1/4W						
R28	100K 1/4W						
R29	100K 1/4W						
R30	100K 1/4W						

MODEL 520

IF PEAK 455 K.C.  
FREQUENCY RANGE 1575 TO 540 K.C.  
NOBLIT-SPARKS INDUSTRIES, INC.  
COLUMBUS, INDIANA

## ARVIN CAR RADIO — CHASSIS RE-86

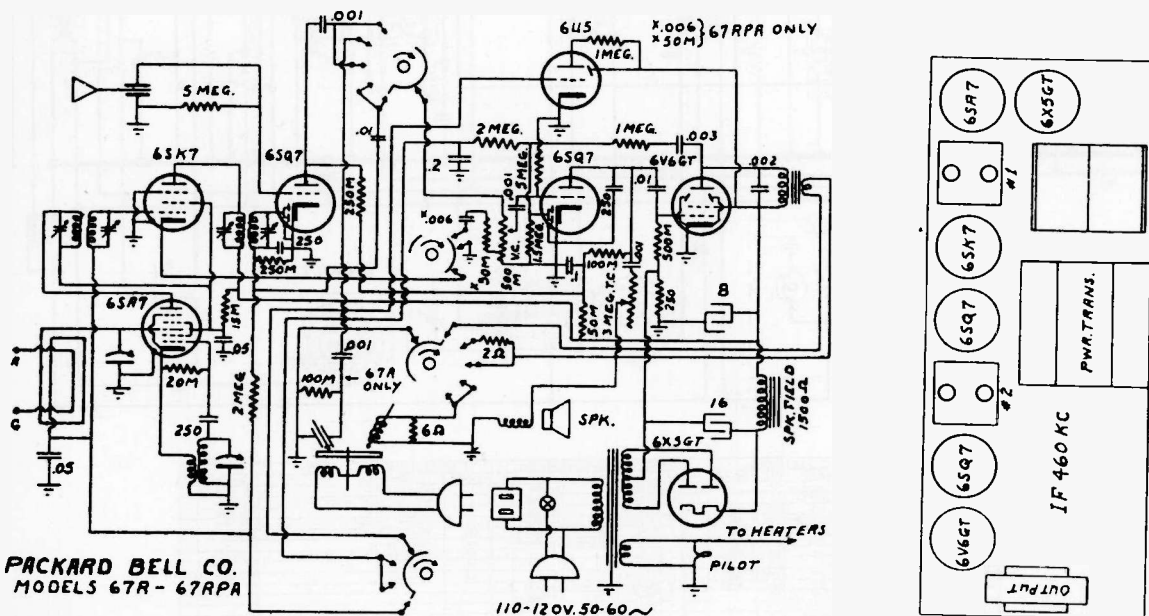
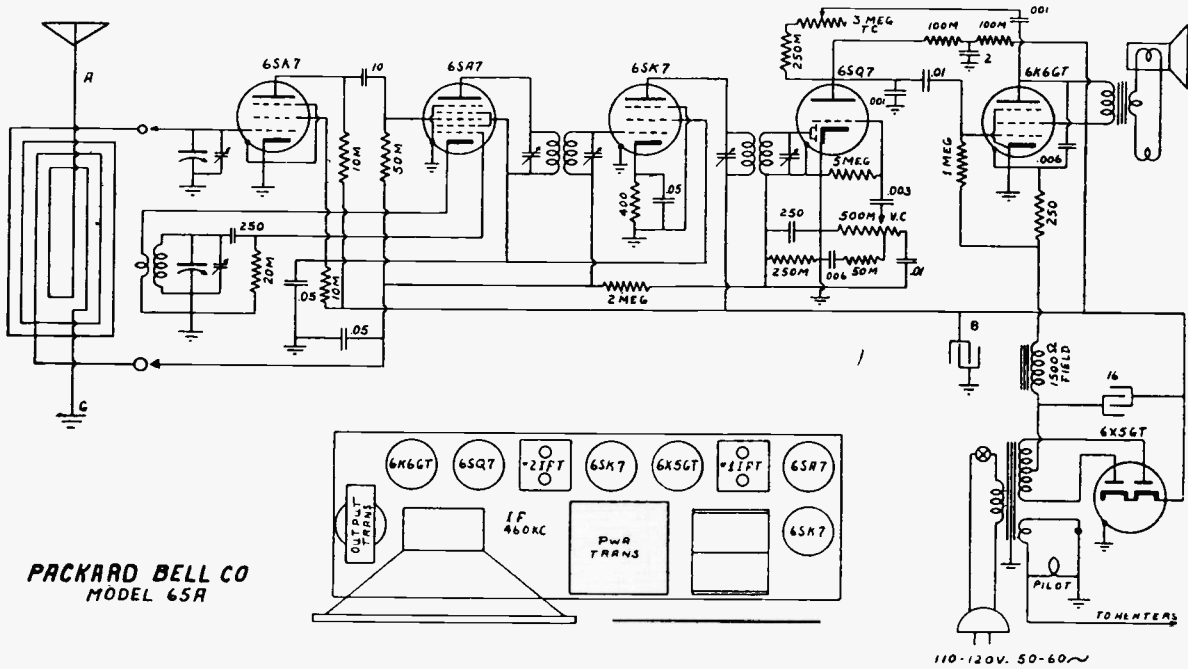


MODEL 720

RESISTORS		CONDENSERS		COILS & TRANSFORMERS		MISCELLANEOUS UNITS	
SYMBOL	PART NO.	SYMBOL	VALUE	T-X	TYPE	SYMBOL	DESCRIPTION
R1	1M 1/4W	C1	2500-0.01	T1	ANTENNA COIL	F	FUSE .20 AMP.
R2	500K 1/4W	C2	100-0.002	T2	OSCILLATOR COIL	L	INDUCTOR
R3	10K 1/4W	C3	1000-0.01	T3	FIRST IF COIL	S	SPEAKER PLUG
R4	100K 1/4W	C4	100-0.002	T4	SECOND IF COIL	SP	SPEAKER SOCKET
R5	500K 1/4W	C5	500-0.005	T5	POWER TRANSFORMER	SW	POWER SWITCH
R6	10K 1/4W	C6	100-0.002	T6	OUTPUT TRANSFORMER	TL	TRANSMISSION LINE
R7	100K 1/4W	C7	500-0.005			M	SHIELD PLATE
R8	100K 1/4W	C8	100-0.002			VIB	VIBRATOR
R9	100K 1/4W	C9	100-0.002				
R10	100K 1/4W	C10	100-0.002				
R11	100K 1/4W	C11	100-0.002				
R12	100K 1/4W	C12	100-0.002				
R13	100K 1/4W						
R14	100K 1/4W						
R15	100K 1/4W						
R16	100K 1/4W						
R17	100K 1/4W						
R18	100K 1/4W						
R19	100K 1/4W						
R20	100K 1/4W						
R21	100K 1/4W						
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R24	100K 1/4W						
R25	100K 1/4W						
R26	100K 1/4W						
R27	100K 1/4W						
R28	100K 1/4W						
R29	100K 1/4W						
R30	100K 1/4W						

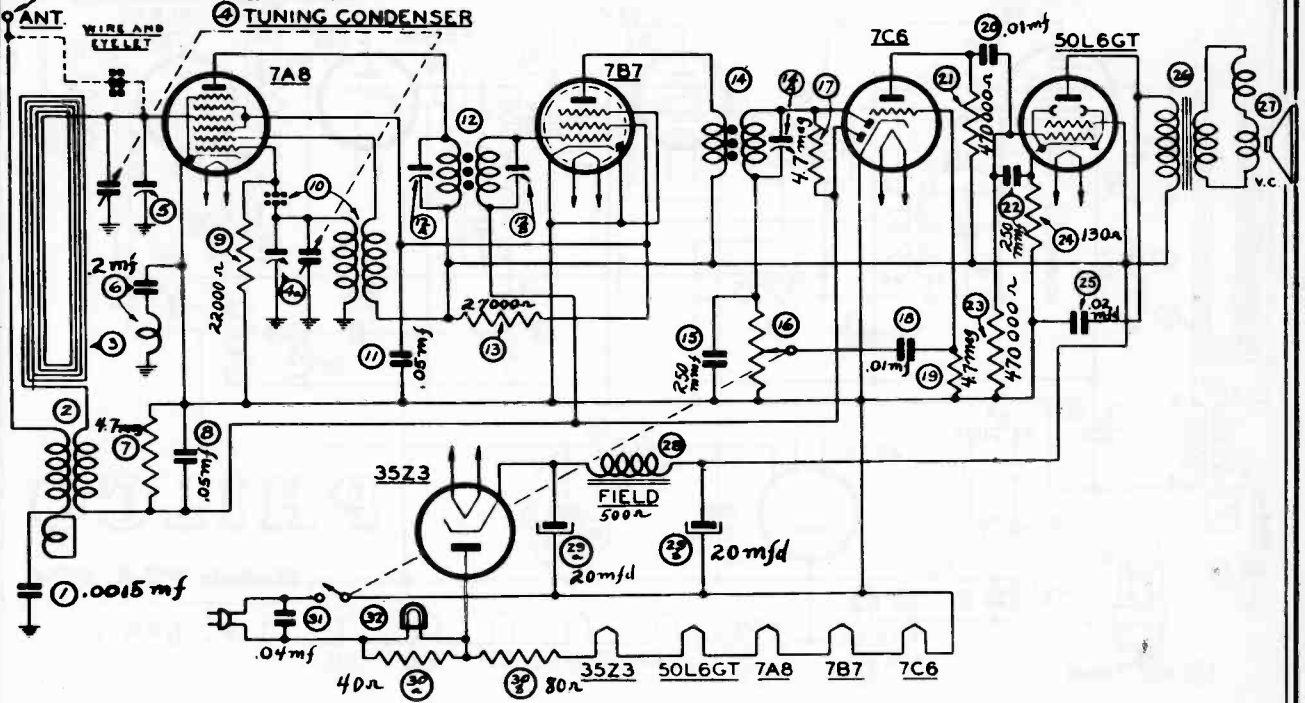
IF PEAK 455 K.C.  
FREQUENCY RANGE 1575 TO 540 K.C.  
NOBLIT-SPARKS INDUSTRIES, INC.  
COLUMBUS, INDIANA

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

NOTE - Ground To Chassis For Loop Operation.



SCHEMATIC DIAGRAM — PT-42, PT-44

## Models PT-30, PT-42, PT-44, PT-49

Models PT-30, PT-42, PT-44, and PT-49 are five (5) tube A. C. or 1 (1) C. operated Super-heterodyne compact radios employing a built-in loop aerial. These Models are similar with the exception of the cabinets, chassis and speaker size.

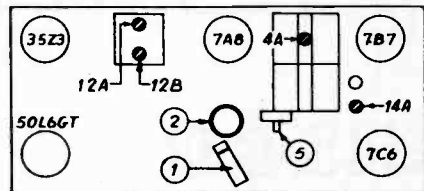
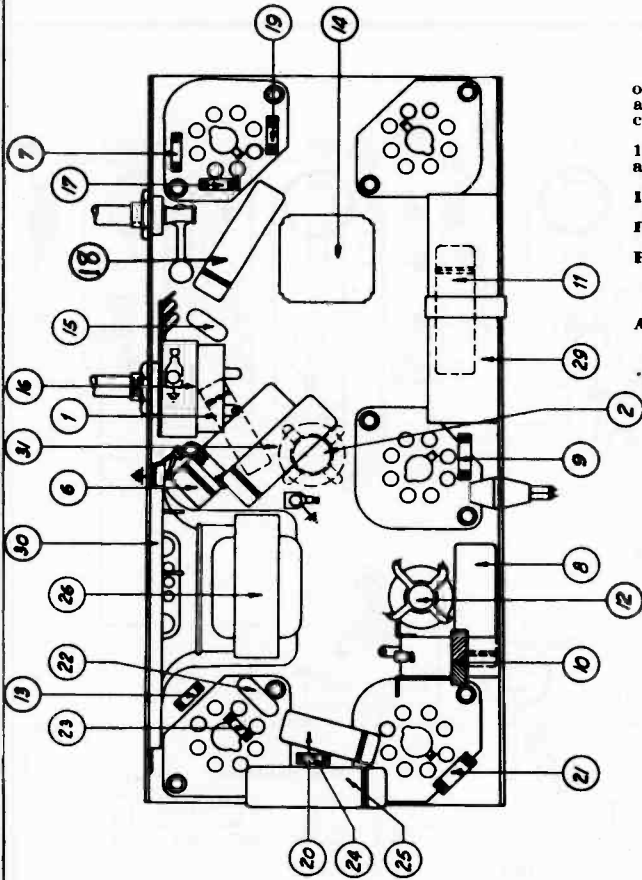
In addition each Model includes a tuning band from 540 to 1600 K. C., Automatic Volume Control; beam power pentode audio output stage and Philco Loktal tubes.

INTERMEDIATE FREQUENCY: 455 K. C.

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

PHILCO TUBES: 7A8, converter; 7B7, I. F. Amplifier; 7C6, 2nd detector, A. V. C., 1st audio; 50L6GT, beam power audio output and a 35Z3, rectifier.

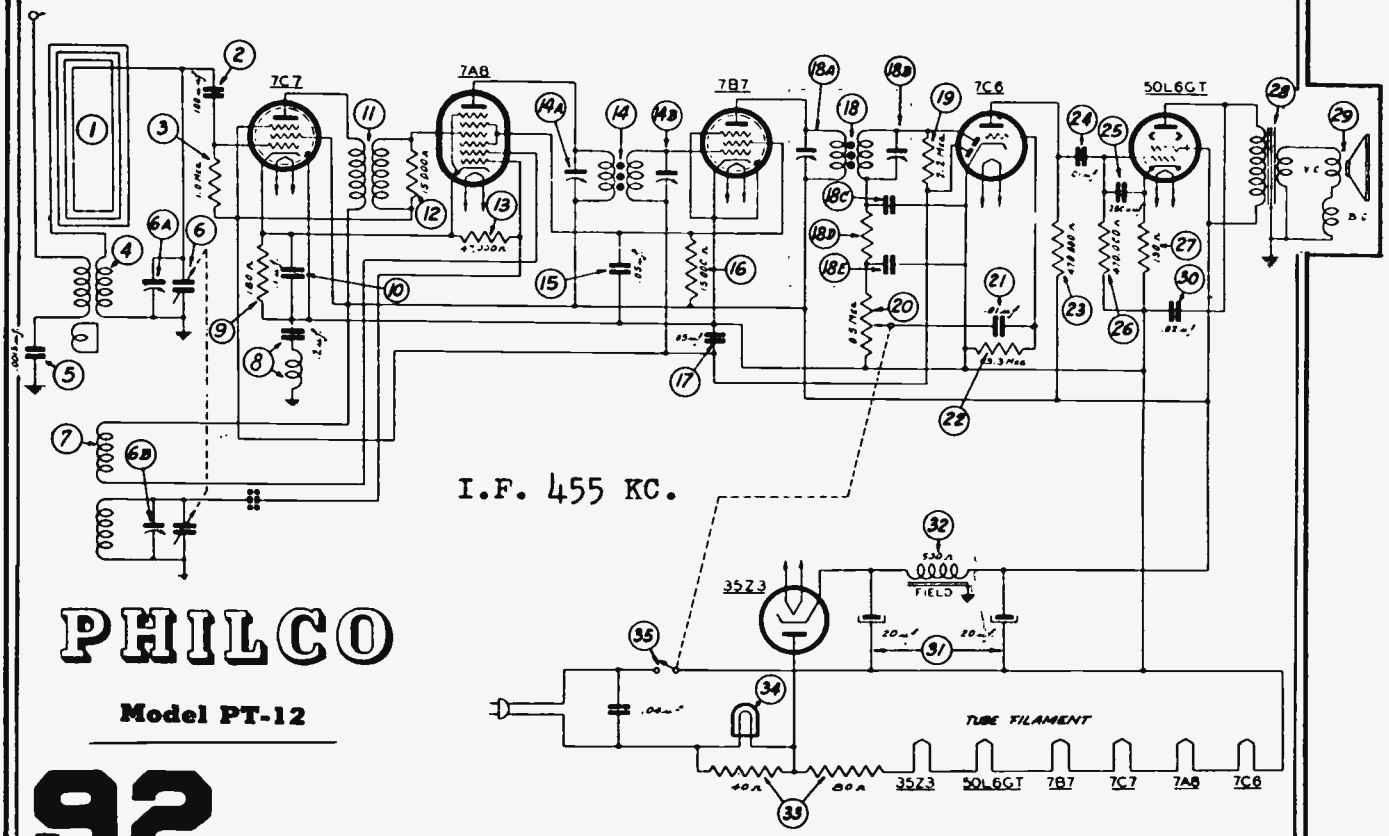
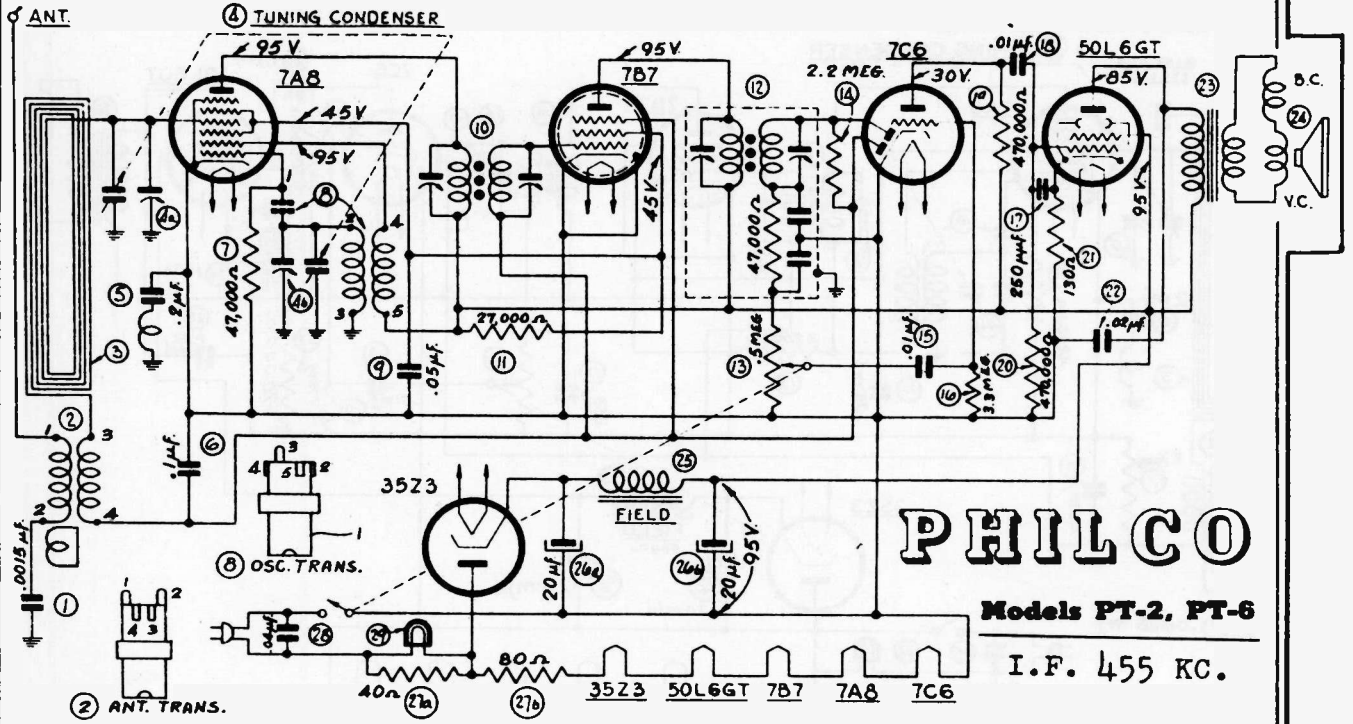
AERIAL AND GROUND: Under ordinary operating conditions an outside aerial or ground is not required. In some locations, however, such as steel reinforced buildings and other shielded areas, an outside aerial should be used for maximum performance. For this purpose an outside aerial connection is located on the rear lower left corner of the chassis. Simply remove the lug from under the screw and attach the aerial lead to the lug.



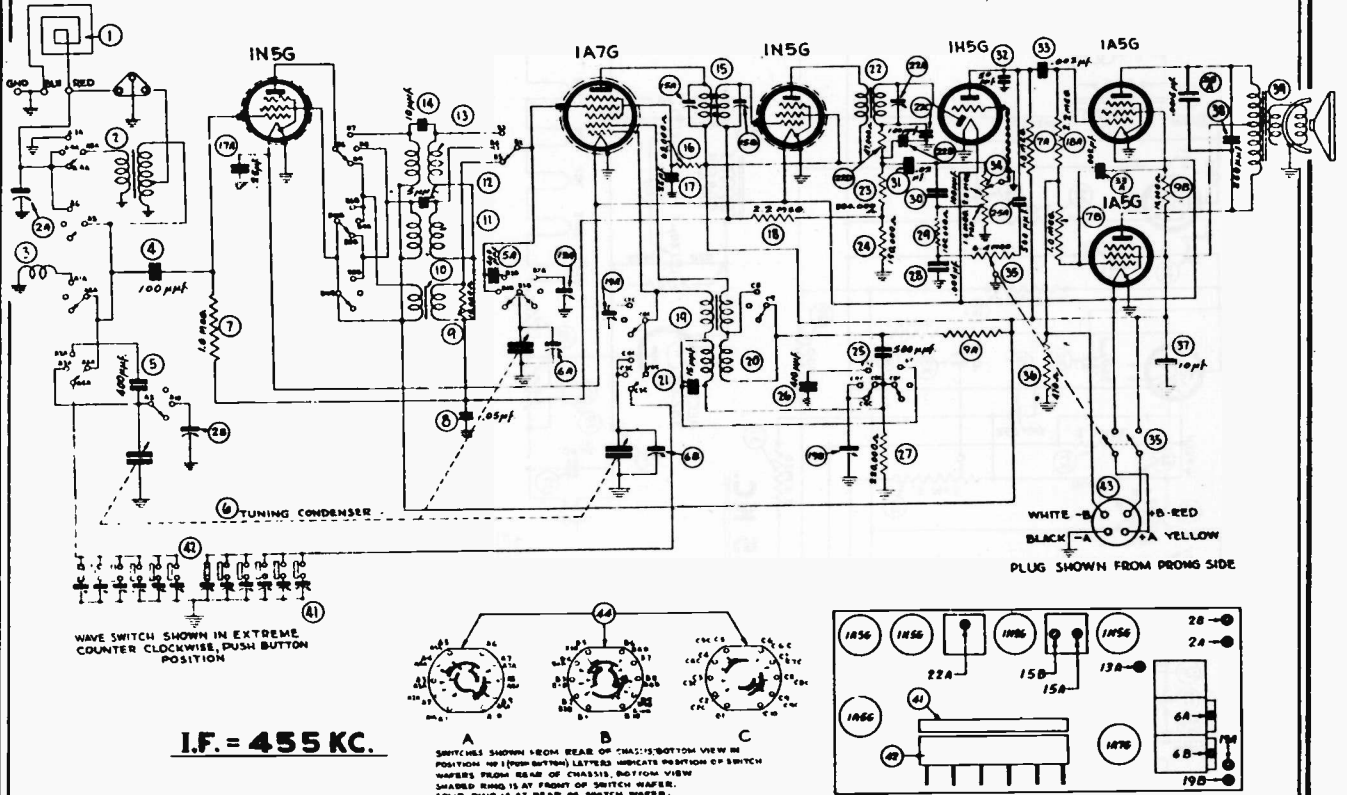
# PHILCO

# 91

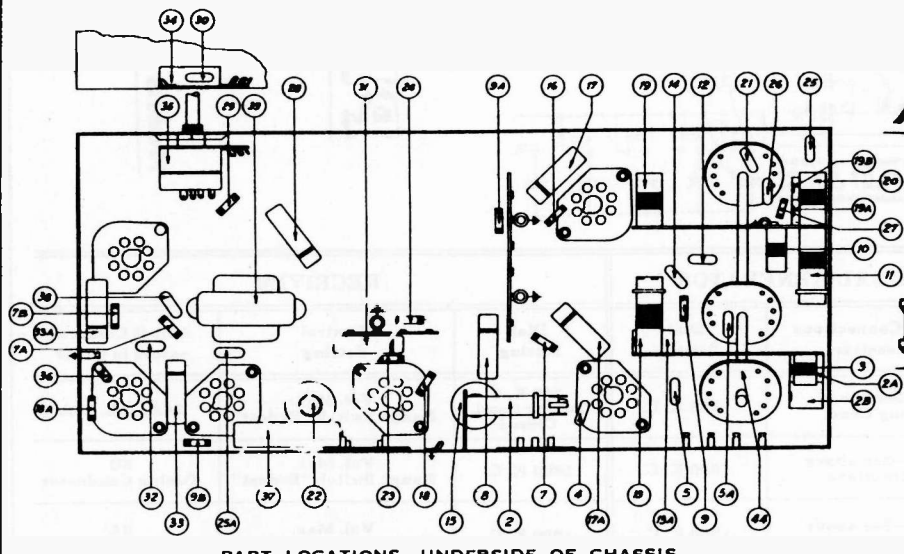
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



Operations in Order	SIGNAL GENERATOR			RECEIVER		
	Output Connections	Dummy Aerial	Dial Setting	Dial Setting	Control Settings	Adjust Compensators
1	1A7G (Grid)	.1 mmfd.	455 K. C.	540 K. C.	Vol. Max. Range Switch Brdcat.	15A, 15B 22A
2	Aerial Connection Receiver	225 mmfd.	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Brdcat.	Osc., R. F., aerial 6B, 6A, 2B
3	Aerial Connection Receiver	225 mmfd.	580 K. C.	580 K. C.	Vol. Max. Range Switch Brdcat.	19B
4	Aerial Connection Receiver	Recheck Operation No. 2				
5	Aerial Connection Receiver	400 Ohms	12 M. C.	12 M. C.	Range Switch S. W.	Osc., R. F., Ant. 19A, 13A, 2A



PART LOCATIONS, UNDERSIDE OF CHASSIS

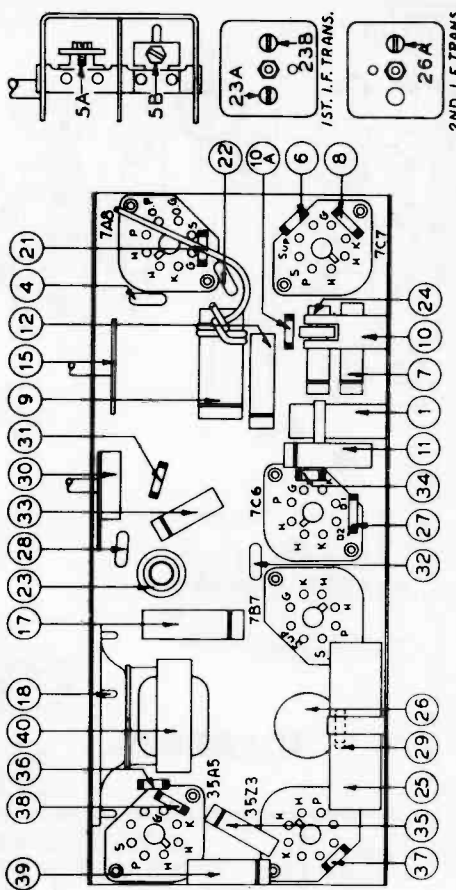
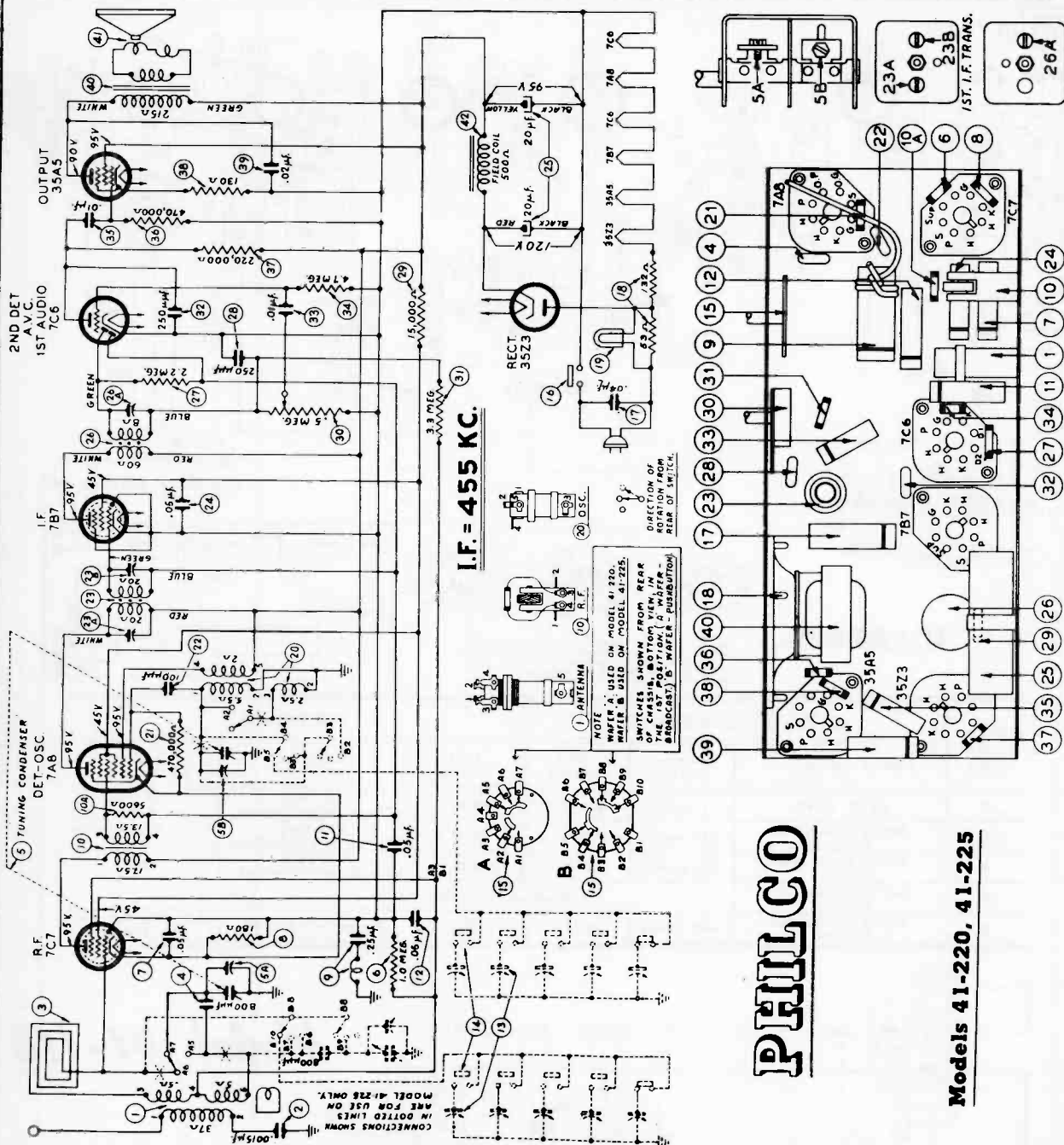
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*Model 41-110*

**PHILCO**

**93**

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



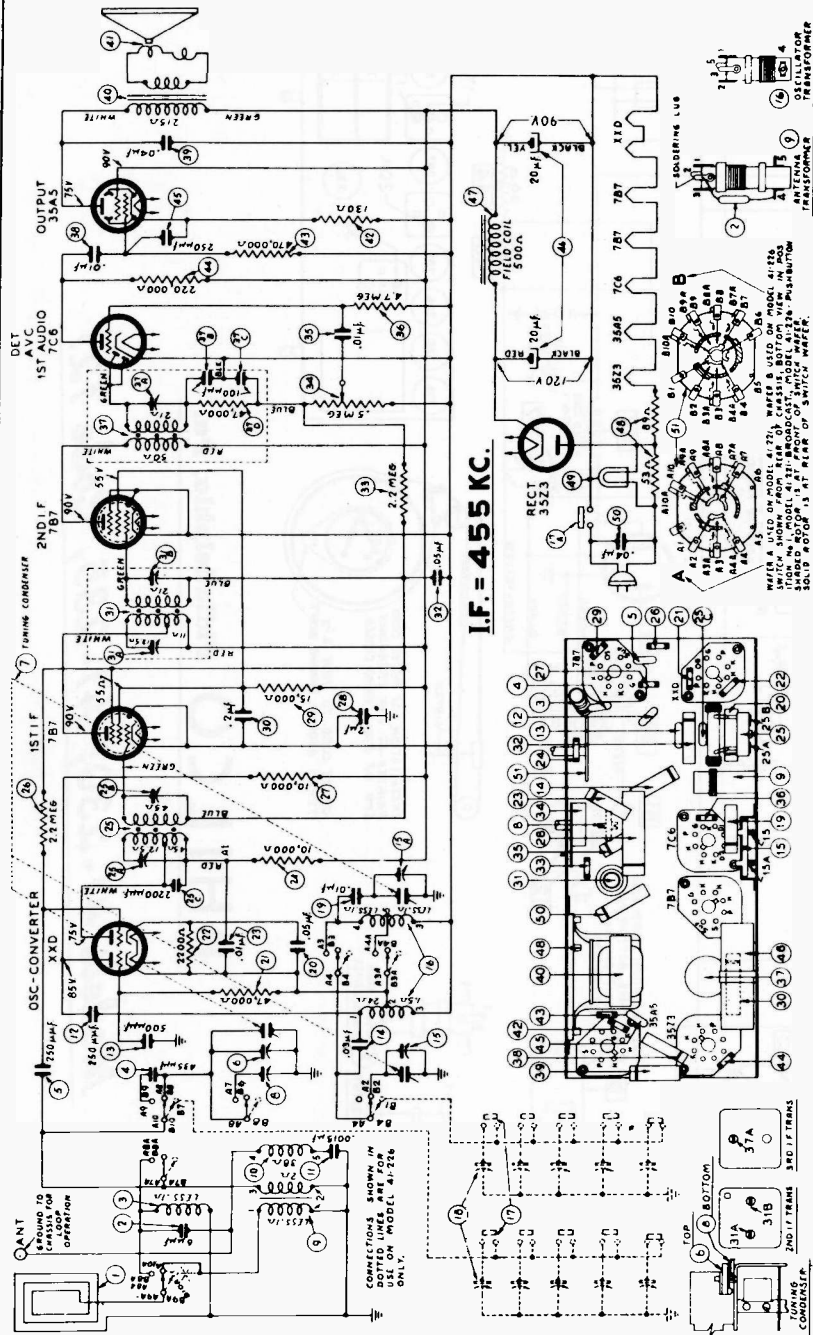
## PHILCO

Models 41-220, 41-225

Operations in Order	SIGNAL GENERATOR		RECEIVER		
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order
1	Ant. Section of Tuning Cond.	455 K. C.	540 K. C. Tuning Cond. Closed	Vol. Max. Range Switch "Brdcast"	26A, 23B, 23A
2	Loop—See above Instructions	1600 K. C.	1600 K. C.	Vol. Max. Range Switch "Brdcast"	5B Tuning Condenser
3	Loop—See above Instructions	1500 K. C.	1500 K. C.	Vol. Max. Range Switch "Brdcast"	5A Tuning Condenser



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



## Philco Radio, Models 41-221, 41-226

### CONNECTING ALIGNING INSTRUMENTS

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

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

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

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

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

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

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

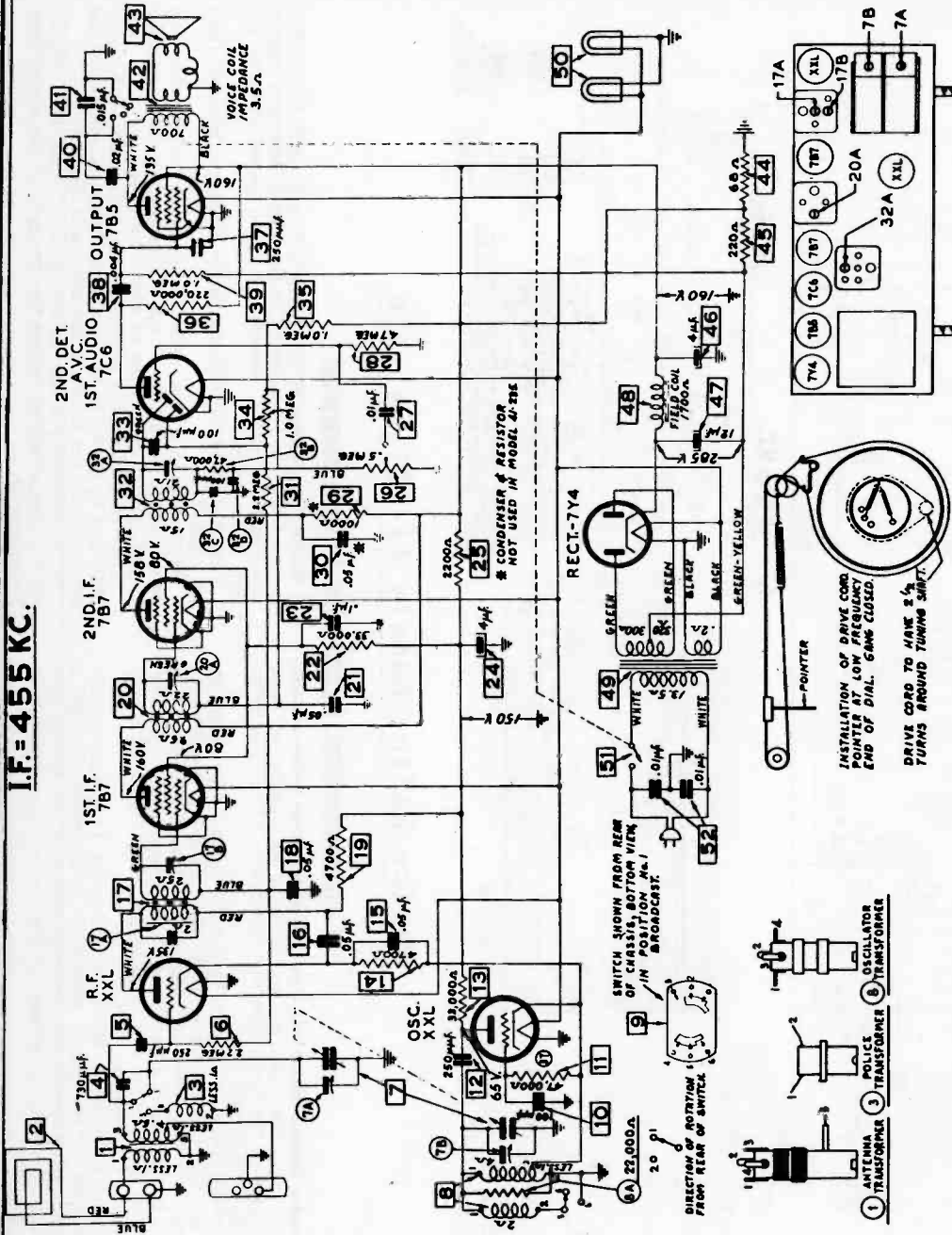
If the indicating meter pointer goes off scale when adjusting the compensators, reduce the strength of the signal from the generator.

Operations in Order	SIGNAL GENERATOR		RECEIVER		
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order
1	Ant. Section of tuning	455 K. C.	540 K. C. Tuning Cond. Closed	Vol Max. Range Switch Brdcat.	37A, 31A, 31B, 25A, 25B
2	Loop see above instructions	1600 K. C.	1600 K. C.	Vol. Max. Range Switch Brdcat.	15
3	Loop see above instructions	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Brdcat.	6
4	Loop see above instructions	12 M. C.	12 M. C.	Range Switch "S. W."	15A, 8

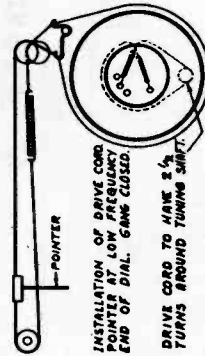
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# 95

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



I.F. = 455 KC.

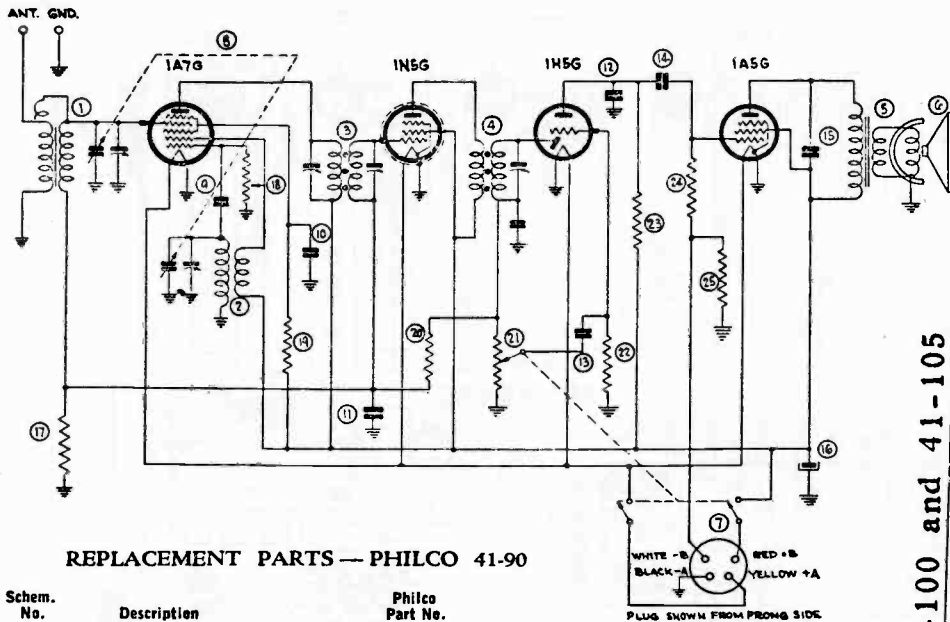


**PHILCO** Philadelphia, Pa.

*Models 41-230; 41-235, Code 121*

Operations in Order	SIGNAL GENERATOR		RECEIVER		
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Setting	Adjust Compensators in Order
1	Ant. Section of Tuning Cond.	455 K. C.	540 K. C. Tuning Cond. Closed	Vol. Max. Range Switch "Brdcat"	32A, 20A 17B, 17A
2	Loop—See above instructions	1600 K. C.	1600 K. C.	Vol. Max. Range Switch "Brdcat"	7B
3	Loop—See above instructions	1500 K. C.	1500 K. C.	Vol. Max. Range Switch "Brdcat"	7A

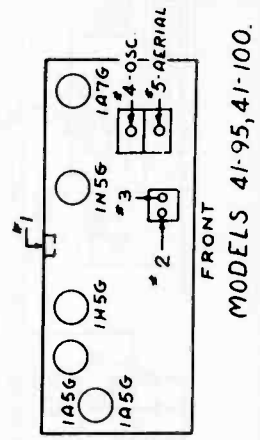
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



REPLACEMENT PARTS — PHILCO 41-90

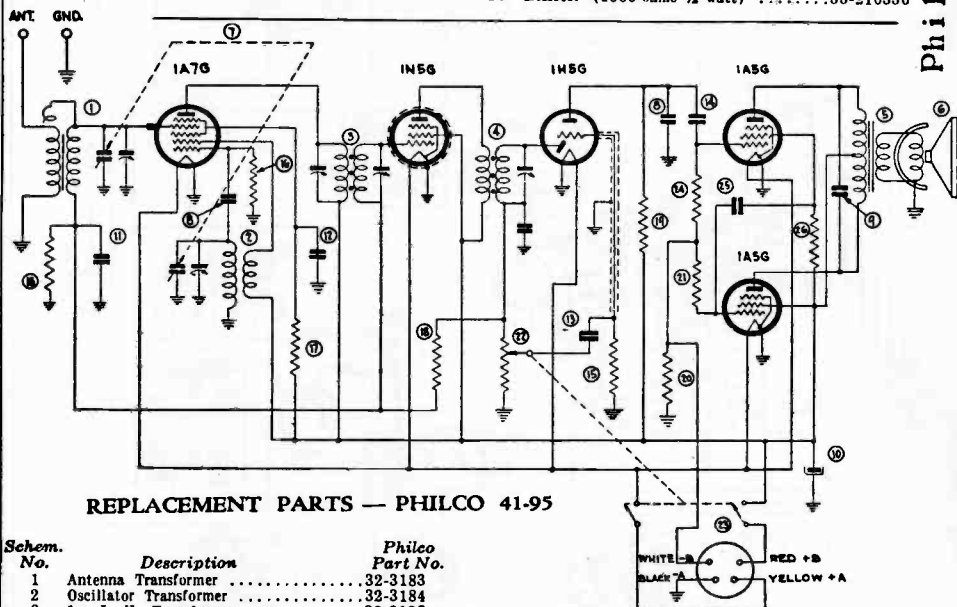
Schem. No.	Description	Philco Part No.
1	Antenna Transformer	32-3490
2	Oscillator Transformer	32-3491
3	First I.F. Transformer	32-3492
4	Second I.F. Transformer	32-3199
5	Output Transformer	32-8100
6	Speaker	36-1507
7	Battery Cable	41-3505
8	Tuning Condenser	31-2485
9	Moulded Mica Condenser (100 mmf.)	60-110157
10	Tubular Condenser (.05 mf. 200 V)	30-4519
11	Tubular Condenser (.05 mf. 200 V)	30-4519
12	Moulded Mica Condenser (100 mmf.)	60-110157
13	Tubular Condenser (.004 mf. 400 V)	30-4578
14	Tubular Condenser (.01 mf. 400 V)	30-4572
15	Moulded Mica Condenser (500 mmf.)	60-150157
16	Electrolytic Condenser (10 mf. 150 V)	30-2396
17	Resistor (4.7 meg. 1/4 watt)	33-547154
18	Resistor (220,000 ohms 1/4 watt)	33-422154
19	Resistor (68,000 ohms 1/4 watt)	33-368154
20	Resistor (10 meg. 1/4 watt)	33-610154
21	Volume Control and "On-Off" Switch	33-5407
22	Resistor (4.7 meg. 1/4 watt)	33-547154
23	Resistor (1.0 meg. 1/4 watt)	33-510154
24	Resistor (2.2 meg. 1/4 watt)	33-522154
25	Resistor (1000 ohms 1/4 watt)	33-210338

WHITE - B BLACK - A RED - B YELLOW - A  
PLUS SHOWN FROM PRONG SIDE



Philco Models 41-100 and 41-105 are similar to the illustrated circuits.

Models 41-90, 41-95, 41-100



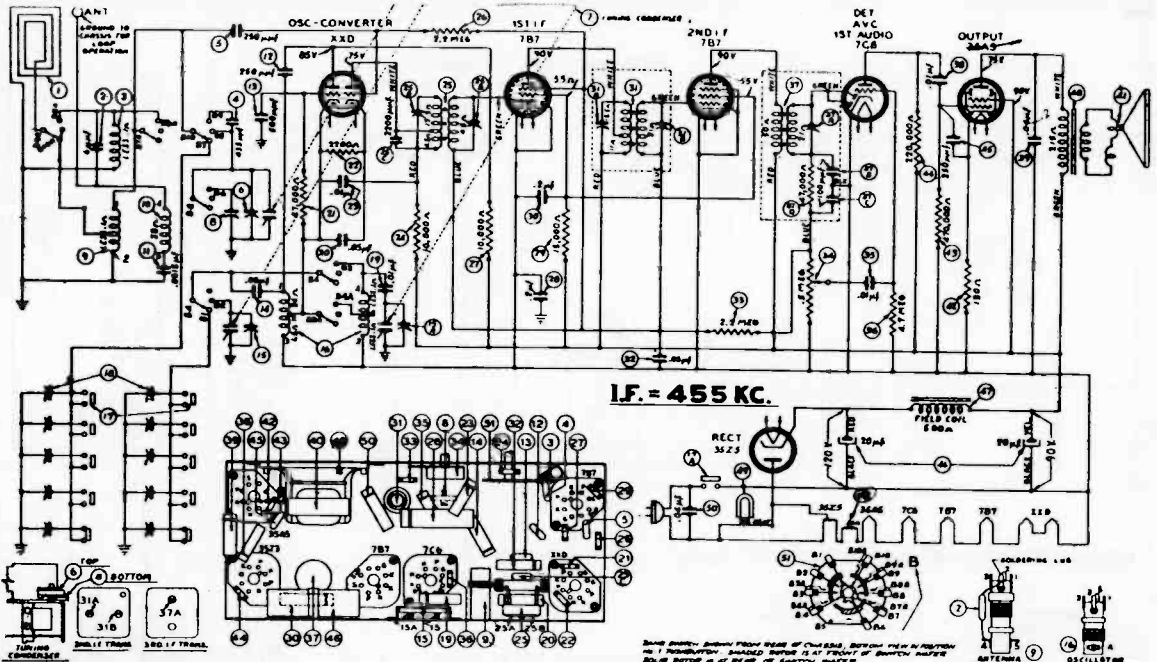
REPLACEMENT PARTS — PHILCO 41-95

Schem. No.	Description	Philco Part No.
1	Antenna Transformer	32-3183
2	Oscillator Transformer	32-3184
3	1st I. F. Transformer	32-3198
4	2nd I. F. Transformer	32-3199
5	Output Transformer	32-8107
6A	8" Speaker for Console	36-1477
7	Tuning Condenser	31-2457
8	Moulded Mica Condenser (100 mmf.)	60-110157
9	Moulded Mica Condenser (250 mmf.)	60-125157
10	Electrolytic Condenser (10 mf., 150 v)	30-2396
11	Tubular Condenser (.05 mf., 200 v)	30-4519
12	Tubular Condenser (.05 mf., 200 v)	30-4444
13	Tubular Condenser (.004 mf., 400 v)	30-4578
14	Tubular Condenser (.01 mf., 400 v)	30-4572
15	Resistor (4.7 Meg., 1/4 watt)	33-547154
16	Resistor (220,000 ohms, 1/4 watt)	33-422154
17	Resistor (68,000 ohms, 1/4 watt)	33-368154
18	Resistor (10 Meg., 1/4 watt)	33-610154
19	Resistor (1 Meg., 1/4 watt)	33-510154
20	Resistor (680 ohms, 1/4 watt)	33-168326
21	Resistor (2.2 Meg., 1/4 watt)	33-522154
24	Resistor (2.2 Meg., 1/4 watt)	33-522154
25	Tubular Condenser (.01 mf., 400 v)	30-4572
26	Resistor (10,000 ohms, 1/4 watt)	33-310154

WHITE - B BLACK - A RED - B YELLOW - A

Operations in Order	SIGNAL GENERATOR		RECEIVER	
	Output Connections	Dummy Antenna Note A	Dial Setting	Controls
1	1A7G (Grid)	.1 mfd.	455 K. C.	Vol. Max.
2	Aerial Connection	225 mmfd.	1500 K. C.	Vol. Max.
			540 K. C.	1, 2, 3
			1500 K. C.	4 Osc., 5 aerial

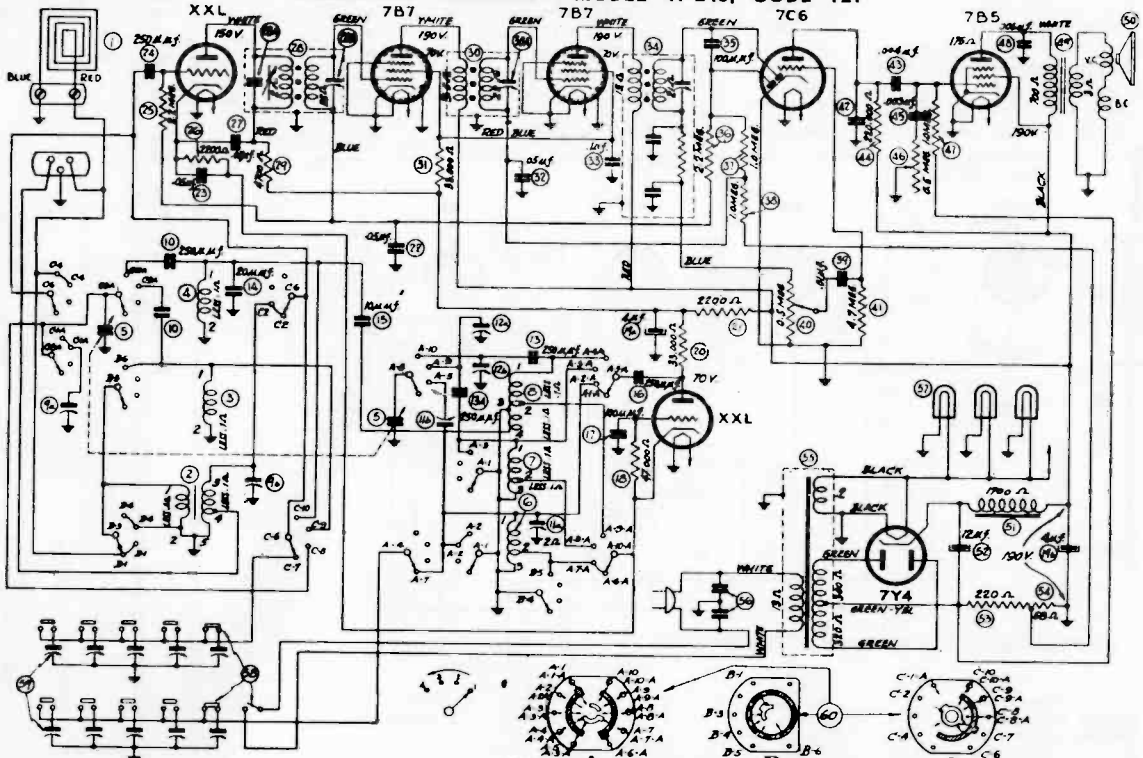
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



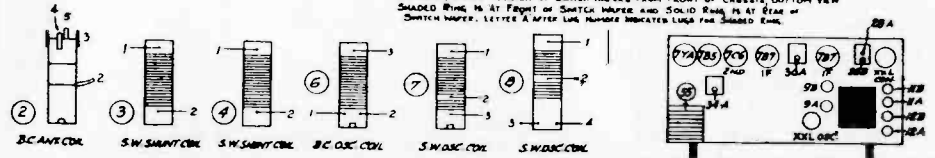
**PHILCO**

**Models 41-231, Code 121**

## SCHEMATIC DIAGRAM — MODEL 41-246, CODE 121



**NOTE:** SHOWN FROM REAR OF CHASSIS, BOTTOM VIEW. POSITION #11 (PUSH BUTTON) LETTERS INDICATE POSITION OF SWITCH HARPER FROM FRONT OF CHASSIS, BOTTOM VIEW. SHADOWED SWITCH IS AT FRONT OF SWITCH HARPER AND SOLID SWITCH IS AT REAR OF SWITCH HARPER. LETTER A AFTER LINE NUMBER INDICATES LEADS FOR SHADOWED SWITCH.

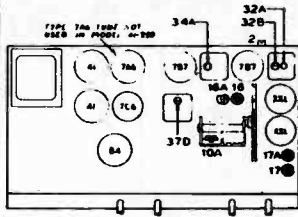


**98**

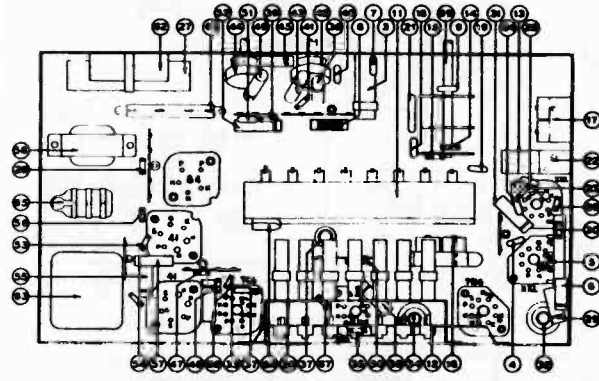
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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

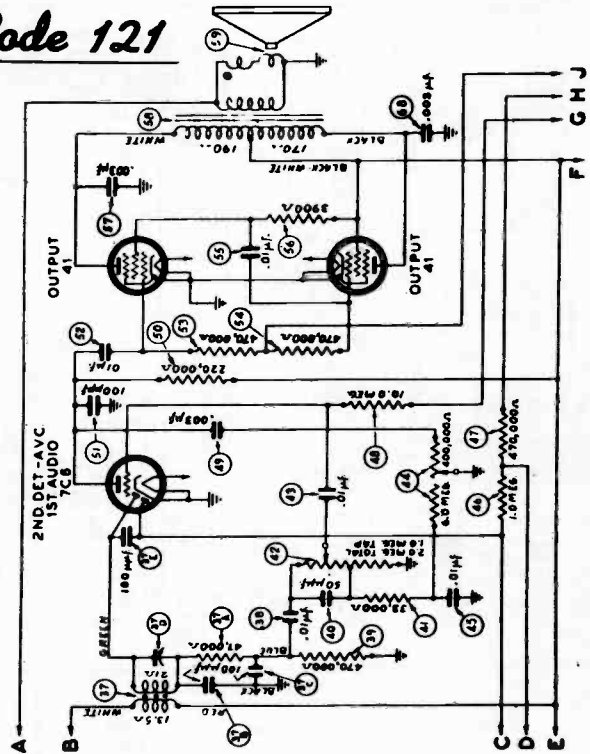
## Models 41-250, 41-255; Code 121



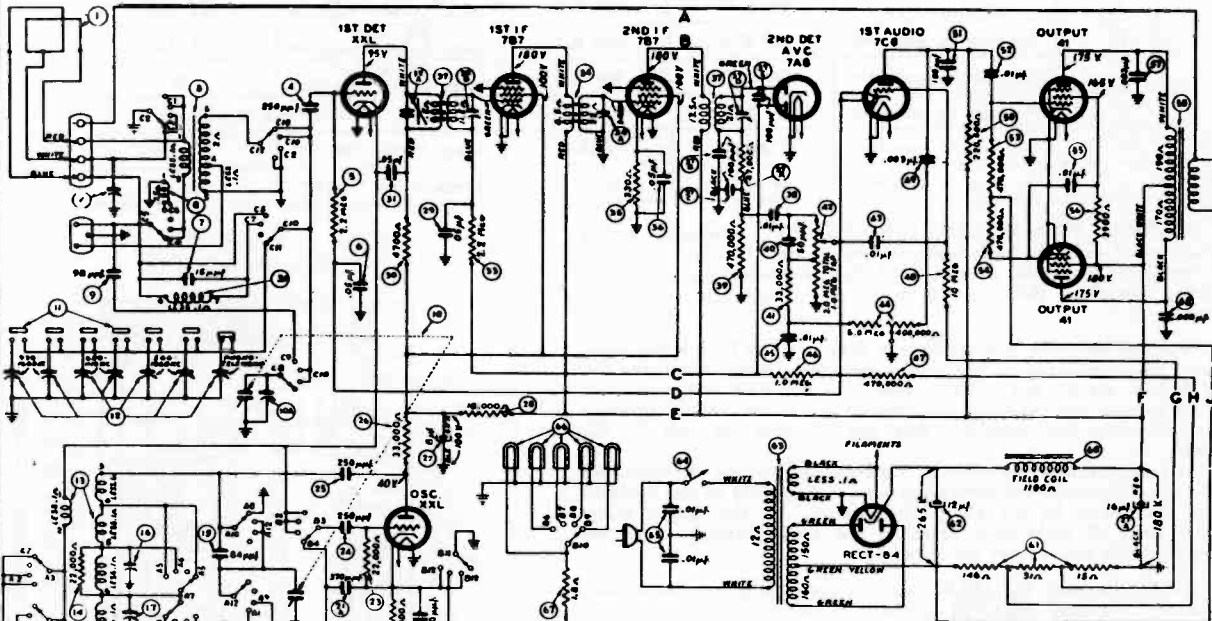
# PHILCO



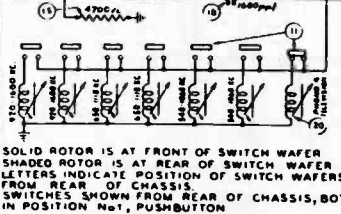
LOCATIONS OF PARTS AND TUBES  
UNDERSIDE OF CHASSIS — MODEL 41-250



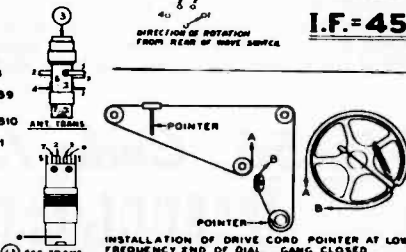
2ND DETECTOR AND AUDIO CIRCUIT  
MODEL 41-250



I.F. = 455 KC.



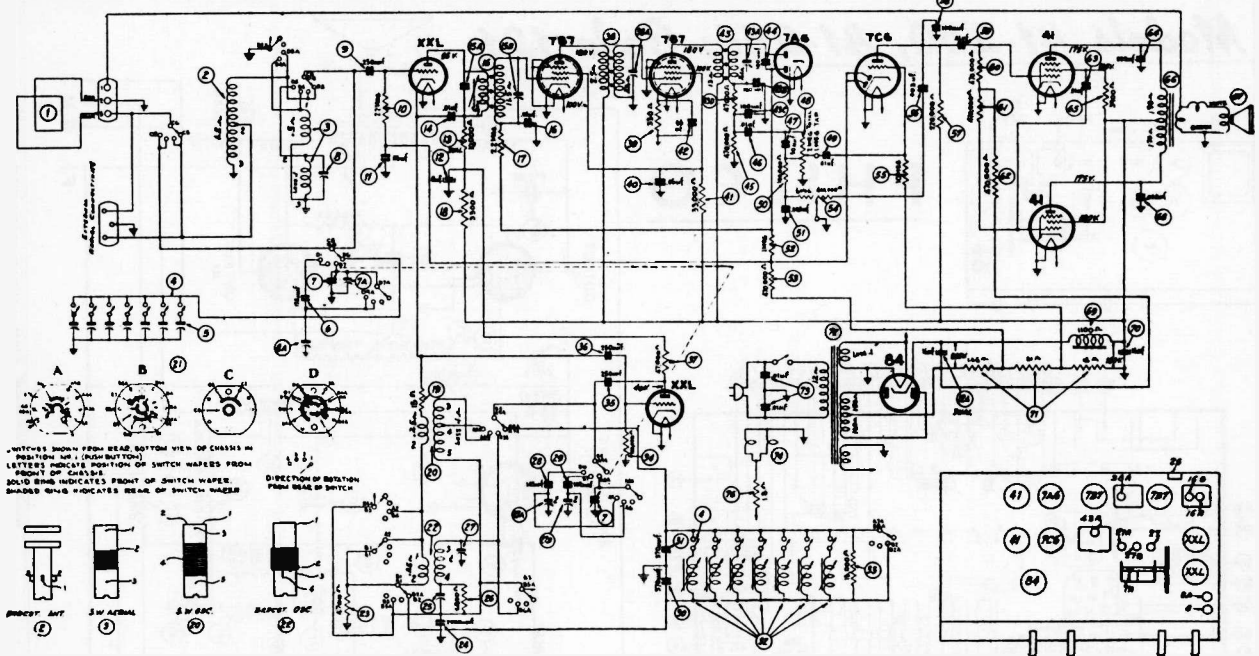
SOLID ROTOR IS AT FRONT OF SWITCH WAFER  
SHADED ROTOR IS AT REAR OF SWITCH WAFER  
LETTERS INDICATE POSITION OF SWITCH WAFERS  
FROM REAR OF CHASSIS.  
SWITCHES SHOWN FROM REAR OF CHASSIS, BOTTOM VIEW,  
IN POSITION NET, PUSHBUTTON



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# 99

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



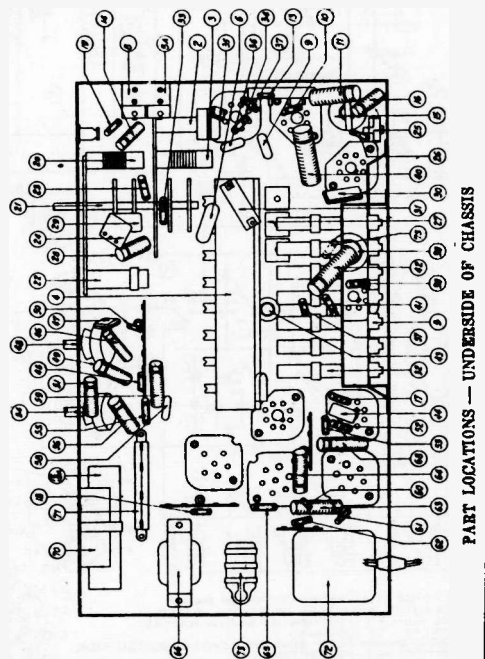
Operations in Order	SIGNAL GENERATOR		RECEIVER		
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order
1	High side to No. 3 terminal loop panel	455 K. C.	500 K. C.	Vol. Max. Range Switch "S. W." Positions	15A, 15B, 38A, 43A
2	Use loop on generator	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Broadcast	27, 7A
3	Use loop on generator	580 K. C.	580 K. C.	Vol. Max. Range Switch Broadcast	25
4	Use loop on generator			Perform operation No. 2 again	
5	Use loop on generator	12 M. C.	12 M. C.	Range Switch "SW-1"	27B, 8A
6	Use loop on generator	18 M. C.	18 M. C.	Range Switch "SW-2"	27A, 8

**ELECTRIC PUSH-BUTTON TUNING:** The automatic tuning mechanism of each model is identical and consists of eight (8) electric tuning push-buttons, seven (7) of the push-buttons are used for selecting broadcast stations, and one as the power control (On-Off switch).

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

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

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



*Model 41-256, Code 121*

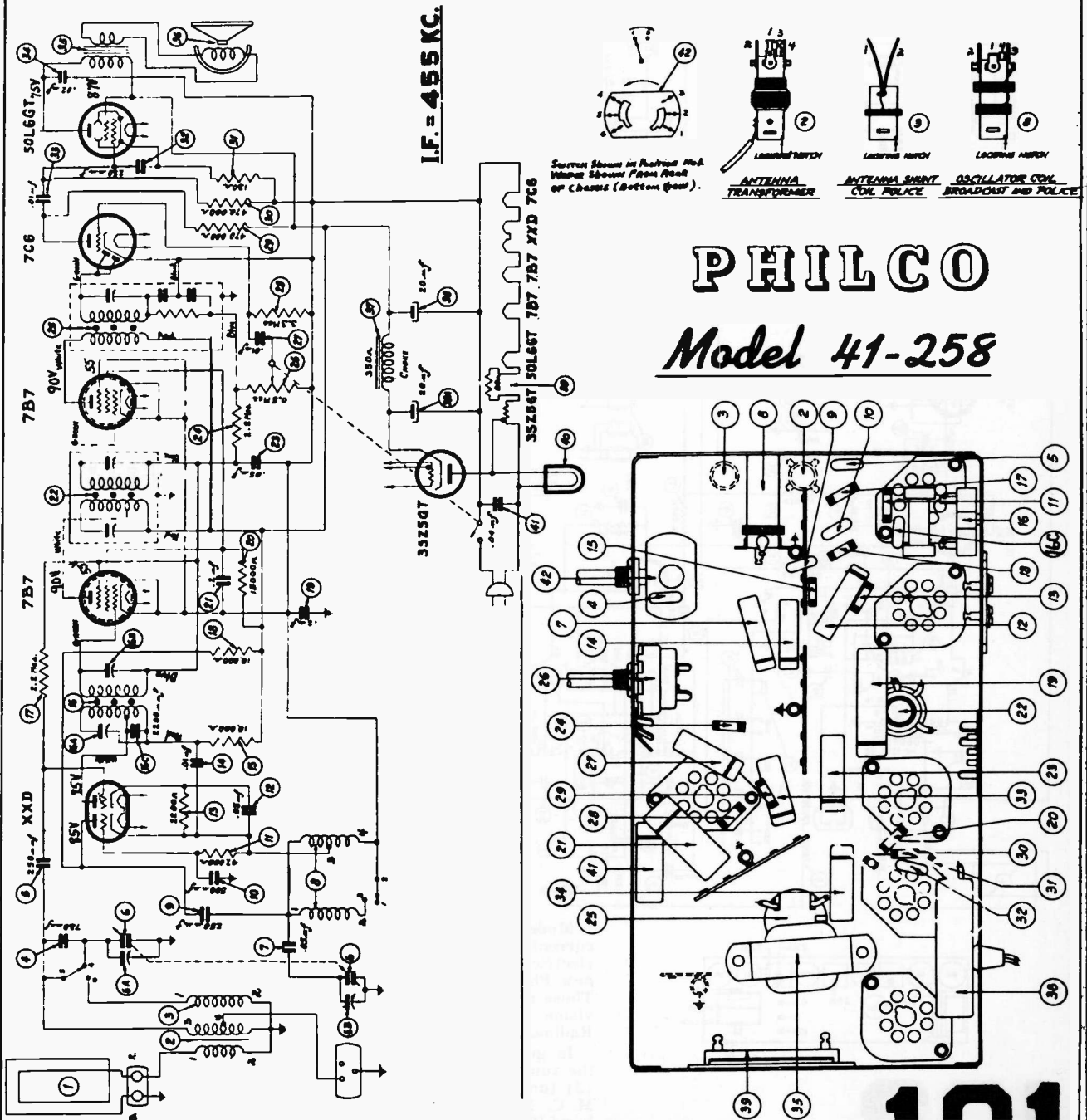
# 100

# PHILCO

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

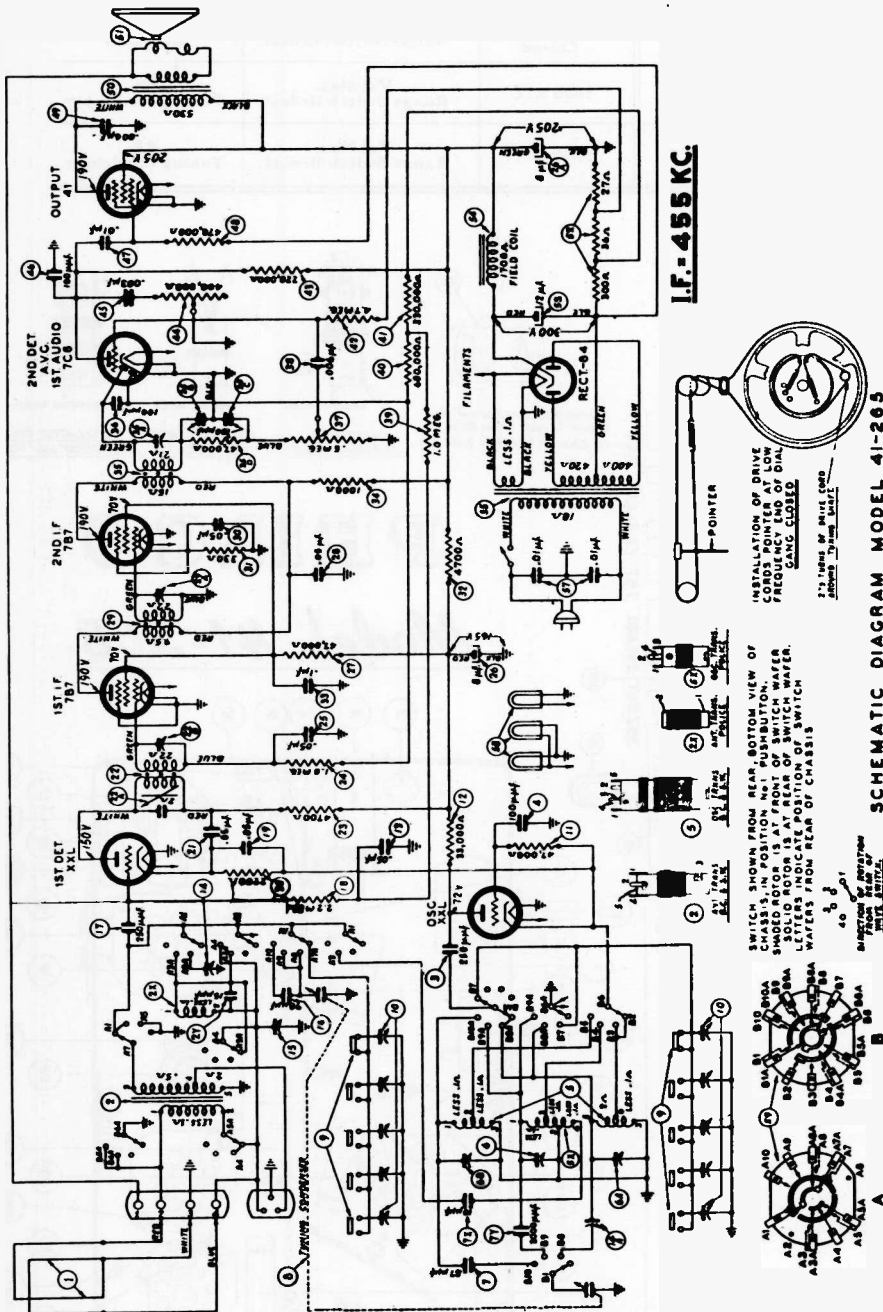
Operations in Order	SIGNAL GENERATOR		RECEIVER		
	Output Connections to Receiver.	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in order
1	Ant. Section of Tuning Cond.	455 K. C.	540 K. C. Tuning Cond. Closed	Vol Max. Range Switch Brdcat.	16A, 16B, 22A, 22B, 25A
2	Loop see above instructions	1600 K. C.	1600 K. C.	Vol Max. Range Switch Brdcat.	6B Tuning Condenser
3	Loop see above instructions	1500 K. C.	1500 K. C.	Vol Max. Range Switch Brdcat.	6A Tuning Condenser



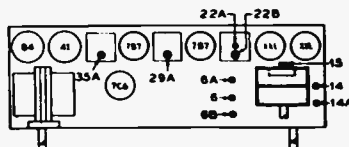
## PHILCO Model 41-258

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## PHILCO Models 41-260; 41-265



Ant. Section of Tuning Cond.	455 K. C.	Tuning Cond. Closed	Val. Max. Range Switch "Brdcast"	35A, 29A, 22A, 22B
1 Loop to Radio Loop See Sig. Gen. Above	1720 K. C.	1720 K. C.	Val. Max. Range Switch "Brdcast"	6A
2 Loop to Radio Loop See Sig. Gen. Above	1500 K. C.	1500 K. C.	Val. Max. Range Switch "Brdcast"	14
3 Loop to Radio Loop See Sig. Gen. Above	580 K. C.	580 K. C.	Val. Max. Range Switch "Brdcast"	14A
4 Loop to Radio Loop See Sig. Gen. Above	6 M. C.	6 M. C.	Range Switch Police	6
5 Loop to Radio Loop See Sig. Gen. Above	12 M. C.	12 M. C.	Range Switch S. W.	6B, 15
6 Loop to Radio Loop See Sig. Gen. Above				



Models 41-260 and 41-265 are seven (7) tube alternating current (A. C.) operated superheterodyne radios incorporating electric push button in addition to manual tuning — and the new Philco built-in American and overseas loop aerial system. These models are also designed to receive the sound of a television program tuned in by special type Philco Television Radios.

In general, these models are similar with the exception of the tuning ranges and cabinet design. Model 41-260 has two (2) tuning ranges covering 540 to 1720 K. C. and 9.0 to 12.0 M. C. Model 41-265 consists of three (3) tuning ranges covering 540 to 1720 K. C., 2.0 to 7.0 M. C. and 9.0 to 12 M. C.





# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

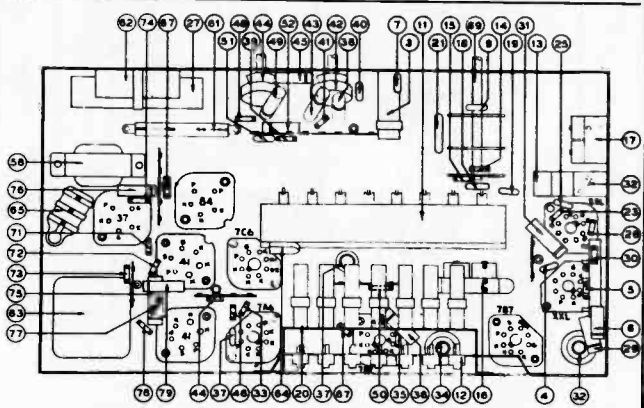
Oper- tions in Order	SIGNAL GENERATOR		RECEIVER		SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Control Settings	Adjust Compen- sators in order	
1	High side to No. 4 terminal loop panel.	455 K. C.	Vol. Max. Range Switch "S. W." Positions 32A, 32B 34A, 37D		
2	Use loop on generator	1500 K. C.	Vol. Max. Range Switch Broadcast	16, 10	Note A
3	Use loop on generator	580 K. C.	Vol. Max. Range Switch Broadcast	17	Roll Tuning Condensers Note B
4	Use loop on generator	6 M. C.	Perform operation No. 2 again		
5	Use loop on generator	12 M. C.	Range Switch "Police"	16A	
6	Use loop on generator	12 M. C.	Range Switch "S. W."	17A, 2	Note C

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

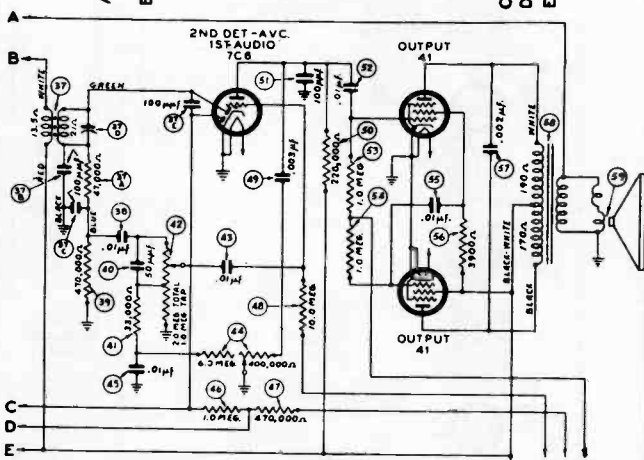
**NOTE B —** When adjusting the low frequency compensator of Range One (Broadcast) or the serial padders of the high frequency tuning range; the receiver Tuning Condenser must be adjusted (rolled) as follows: First tune the compensator for maximum output, then vary the tuning condenser of the receiver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

setting the compensator and then varying the tuning condenser is continued until maximum output reading is obtained.

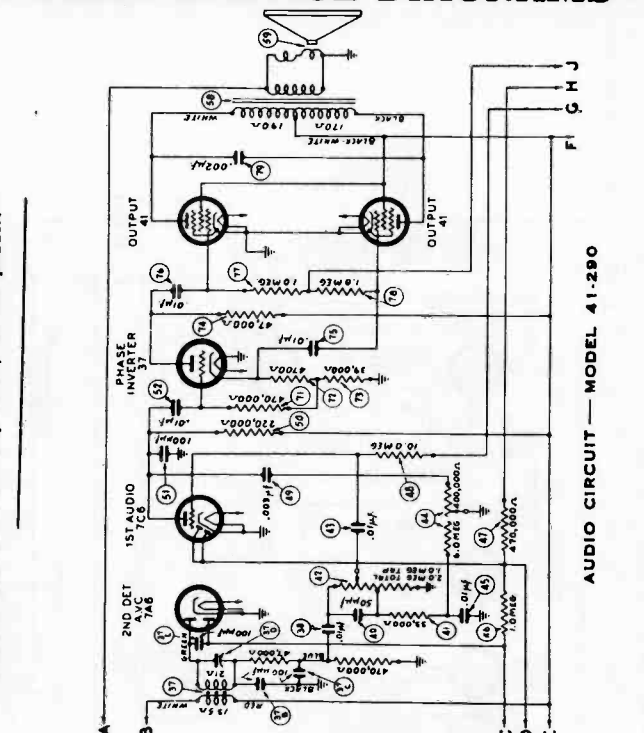
**NOTE C —** To accurately adjust the high frequency oscillator compensator to the fundamental instead of the image signal, turn the oscillator compensator (17A) to the maximum capacity position (clockwise). From this position slowly turn the compensator counter-clockwise until a first peak is obtained on the output meter. Adjust the compensator for maximum output at this first peak.  
If the above procedure is correctly performed, the image signal will be found (much weaker) by turning the receiver dial 910 K. C. above the frequency being used on any high frequency range.  
The serial padder (2) must be adjusted to maximum by rolling the tuning condenser. If two signal peaks occur when turning the padder, adjust to maximum output on the second signal peak from the tight position (screw all the way down) of the padder.



PART LOCATIONS UNDERSIDE — MODEL 41-290



SECOND DETECTOR CIRCUIT — MODEL 41-280



AUDIO CIRCUIT — MODEL 41-290

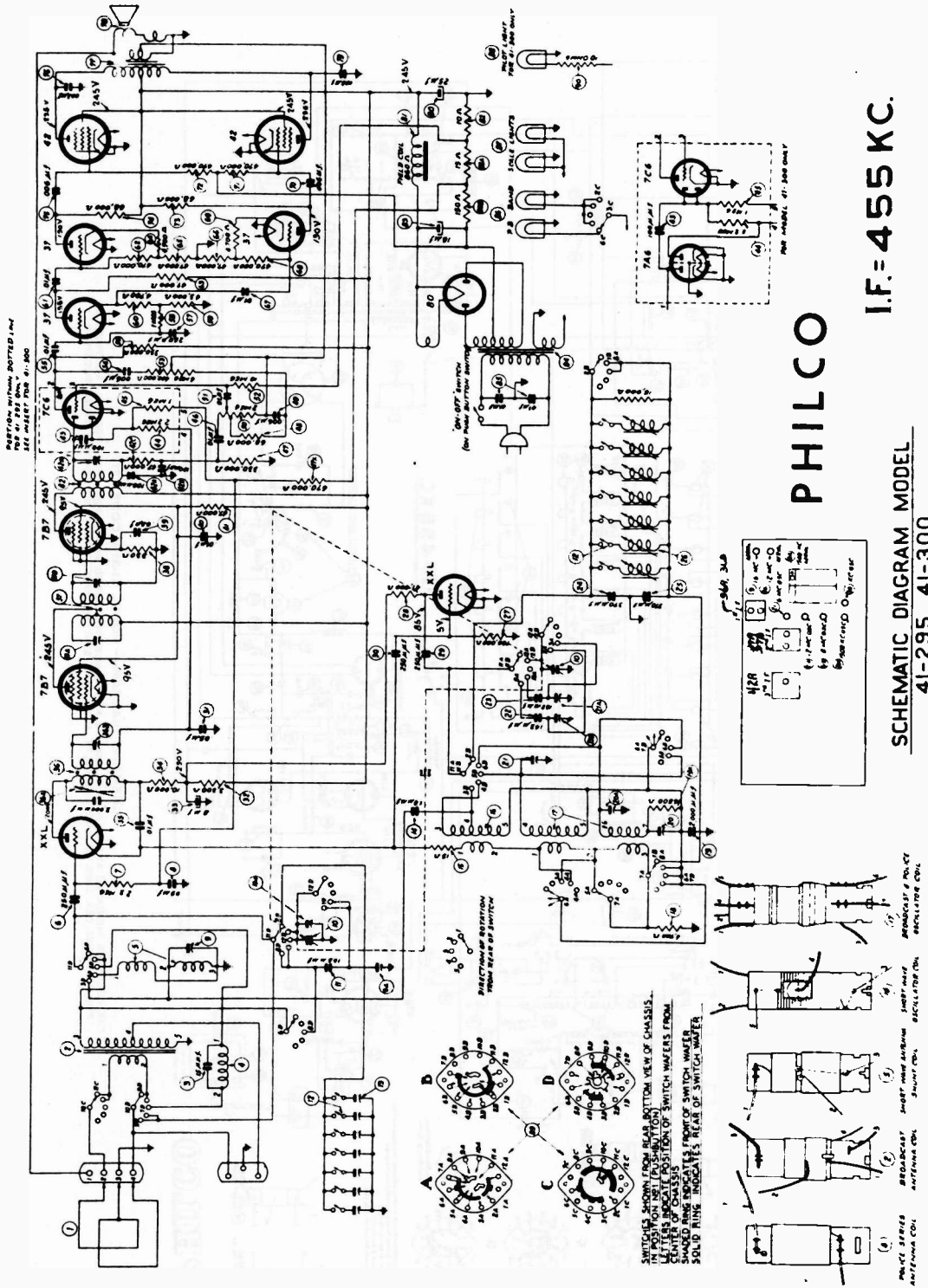
Models 41-280, 41-285,  
41-287, 41-290; Code 121

**PHILCO**

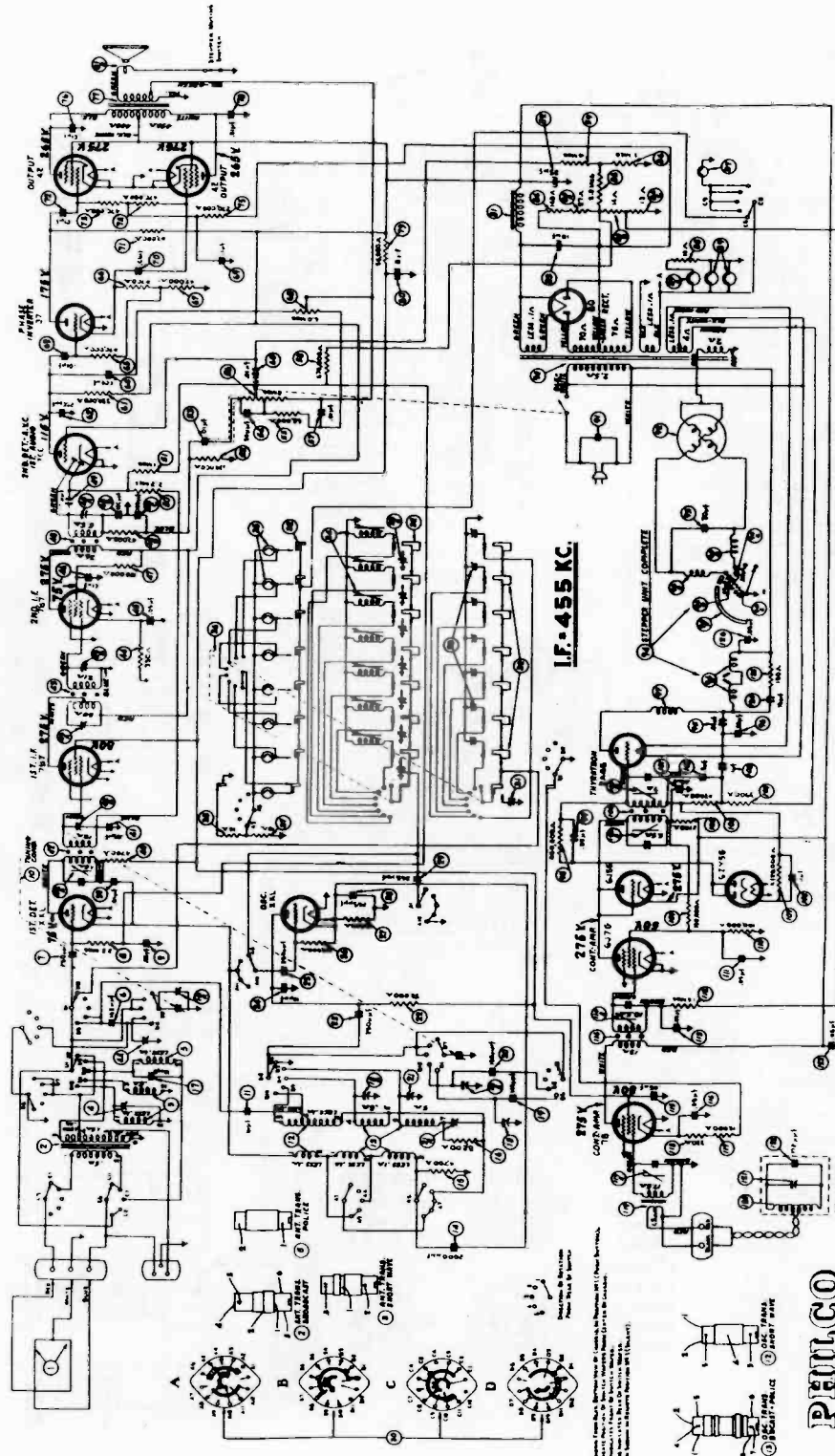
**104**

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



SCHEMATIC DIAGRAM — MODEL 41-316, CODE 121  
 THE VOLTAGES INDICATED AT THE TUBE ELEMENTS ABOVE WERE MEASURED WITH A 1000 OHMS PER VOLT VOLTMETER.  
 PHILCO MODEL 027, LINE VOLTAGE 115 VOLTS, C. BAND SWITCH (BROADCAST), NO STATION BEING RECEIVED.

PHILCO

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

Operations in Order	SIGNAL GENERATOR		RECEIVER			SPECIAL INSTRUCTIONS
	Output Connections to Receiver	Dial Setting	Dial Setting	Control Settings	Adjust Compensators in Order	
1	High side to No. 3 terminal loop Panel.	455 K. C.	580 K. C.	Vol. Max. Range Switch "S. W." Position	48D, 43A, 43B, 42A, 42B	
2	Use Loop on Generator	1500 K. C.	1500 K. C.	Vol. Max. Range Switch Broadcast	21, 10A	Note A
3	Use Loop on Generator	580 K. C.	580 K. C.	Vol. Max. Range Switch Broadcast	21A	Roll Tuning Con Note B
4	Use Loop on Generator	Repeat operation No. 2 again				
5	Use Loop on Generator	6 M. C.	6 M. C.	Range Switch "Police"	18B	Note C
6	Use Loop on Generator	12 M. C.	12 M. C.	Range Switch "S. W." 1	18A, 4A	Note D
7	Use Loop on Generator	18 M. C.	18 M. C.	Range Switch "S. W." 2	18, 4	Note E

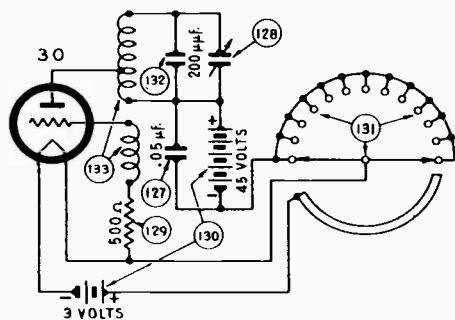
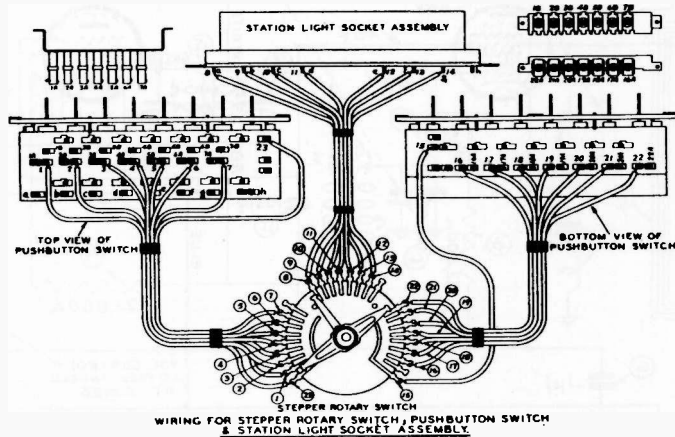
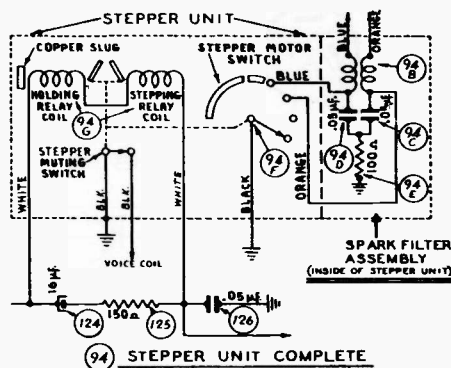
**NOTE A — DIAL CALIBRATION:** In order to adjust the receiver correctly, the dial must be aligned to track properly with the tuning condenser. To adjust the dial, proceed as follows: With the tuning condenser closed (maximum capacity), set the dial pointer on the extreme left index line at the low frequency end of the broadcast scale. The arrangement of the drive cable in this position is shown in Fig. 6.

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

**NOTE C —** Adjust compensator (18B) to the SECOND signal peak from the tight (closed) position.

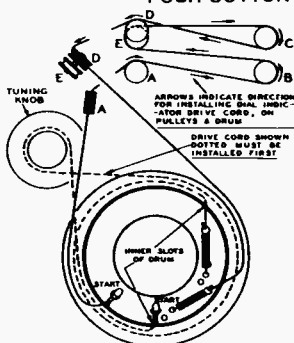
**NOTE D —** Adjust compensator (18A) to the FIRST signal peak from the tight (closed) position. If the compensator is correctly adjusted the image signal will be weakly heard by leaving the receiver dial at 12 M. C. and turn the signal generator to 11.090 M. C.

**NOTE E —** Adjust compensator (18) to the SECOND signal peak from the tight (closed) position. If the compensator is correctly adjusted the image signal will be weakly heard by leaving the receiver at 18 M. C. and turning the signal generator to 18.910 M. C. When adjusting compensator (4) roll the tuning condenser. See Note "B" on how to roll the condenser.



WIRELESS REMOTE CONTROL UNIT WIRING

CABLE WIRING FROM STEPPER ROTARY SWITCH TO PUSH-BUTTON SWITCH AND STATION LIGHTS



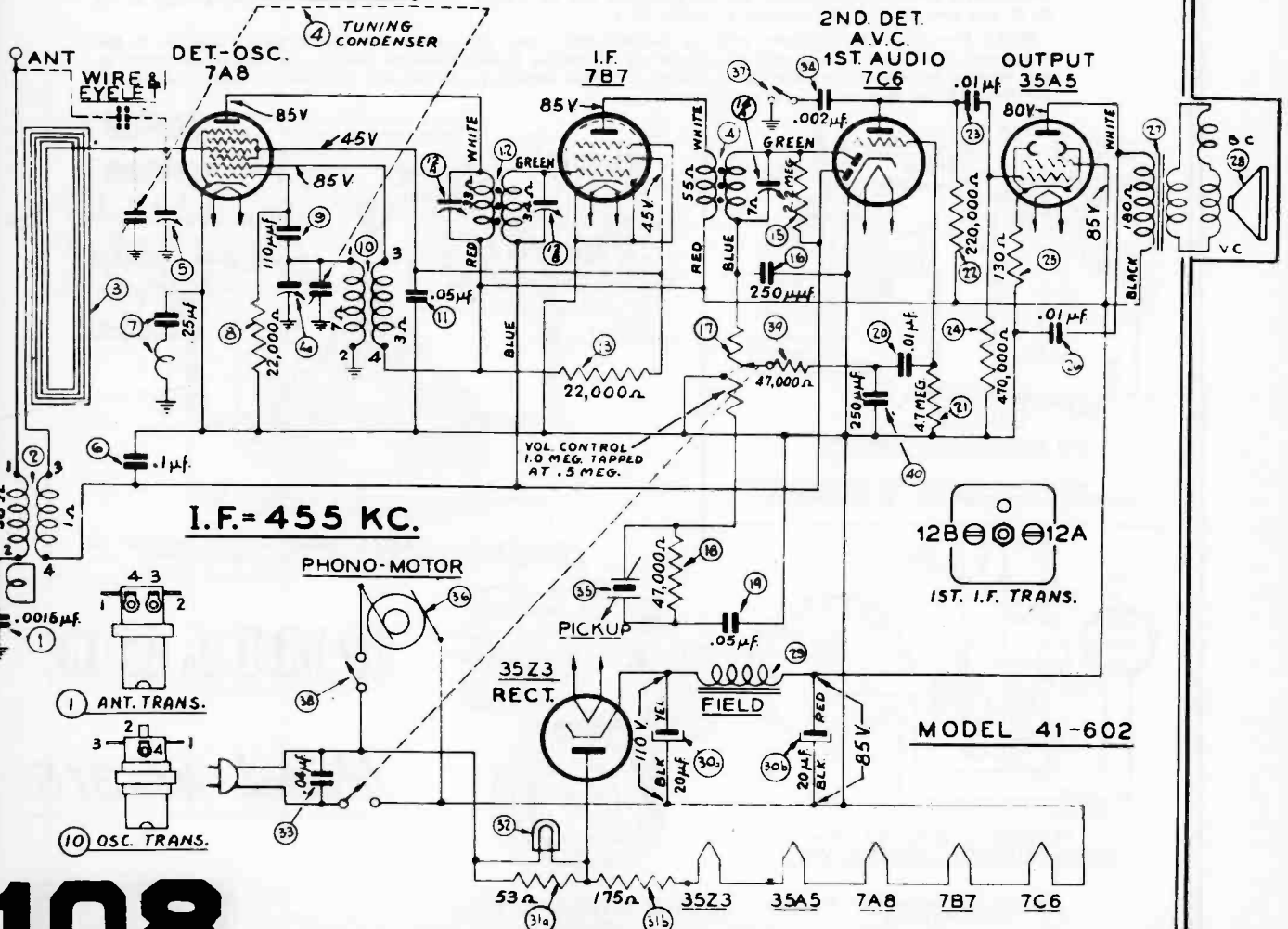
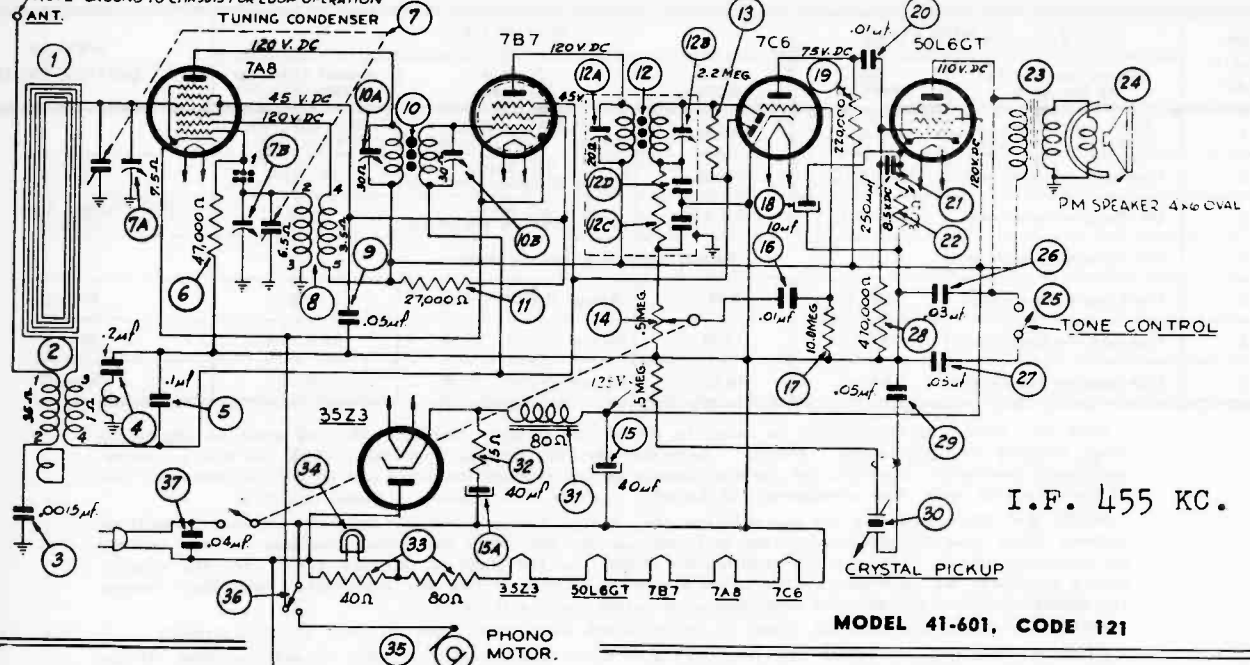
## PHILCO

### Model 41-316

# 107

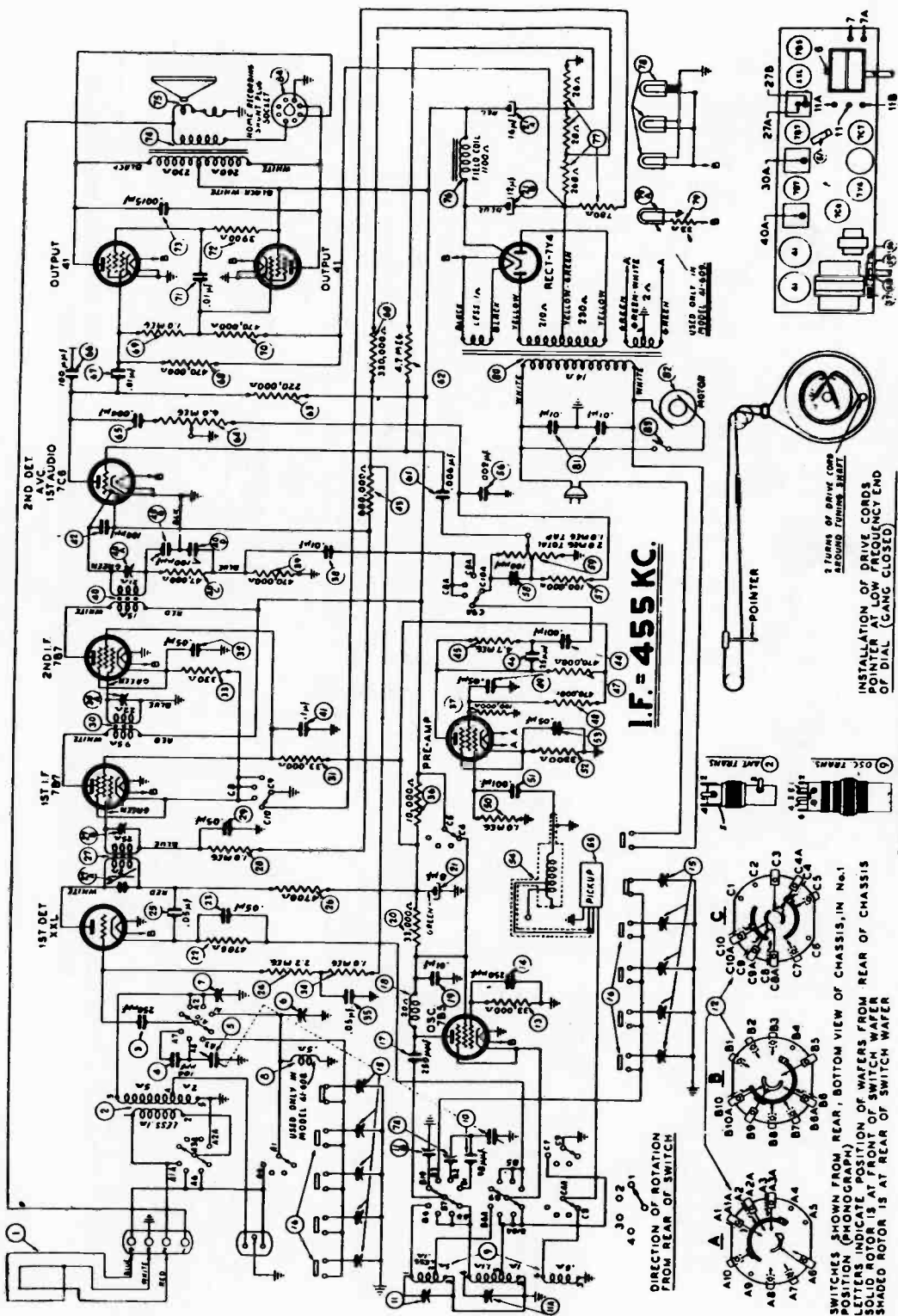
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

NOTE: GROUND TO CHASSIS FOR LOOP OPERATION





# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



SCHEMATIC DIAGRAM MODELS 41-608 & 41-609

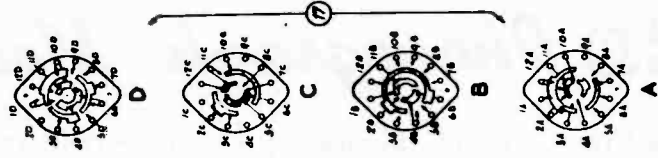
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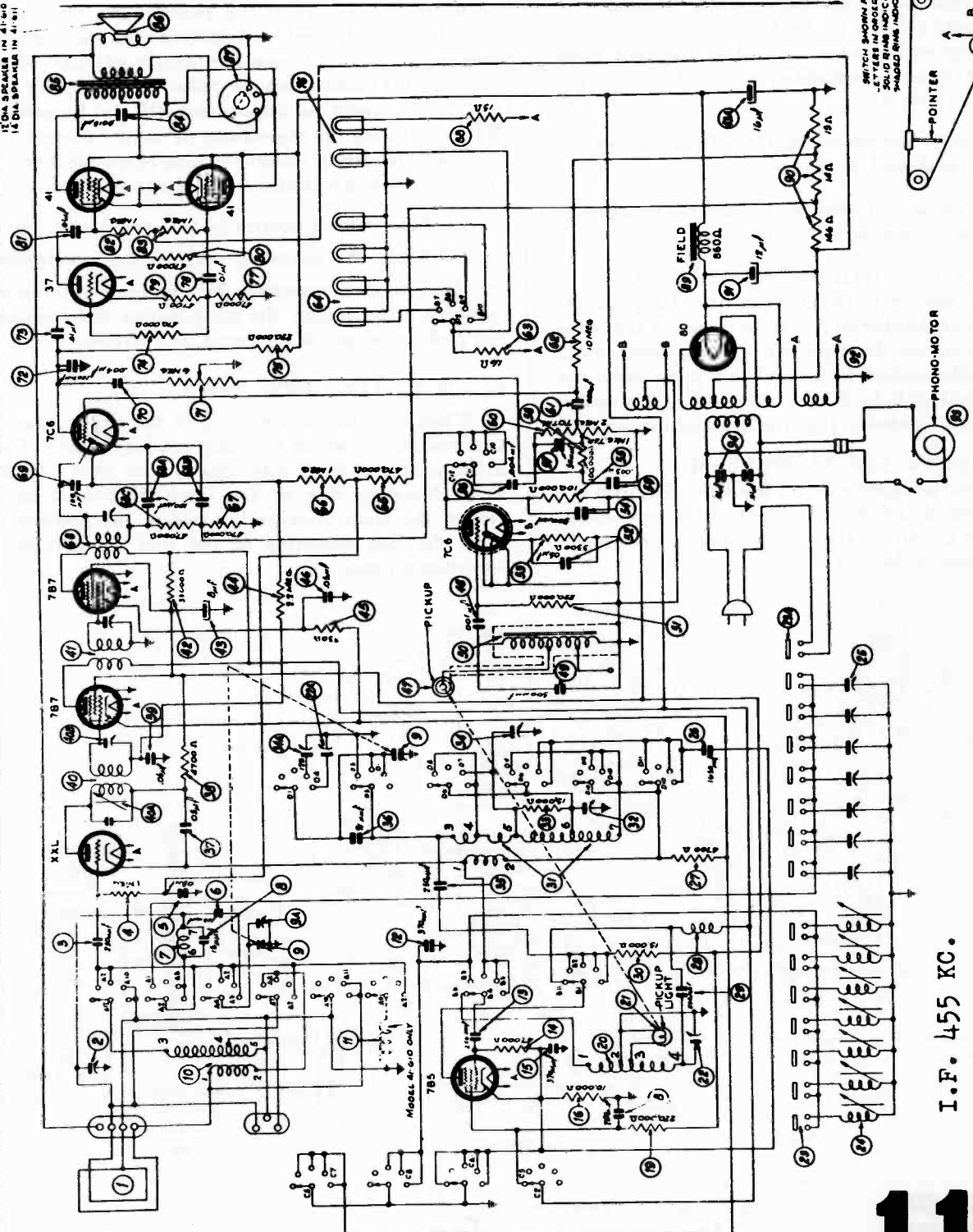
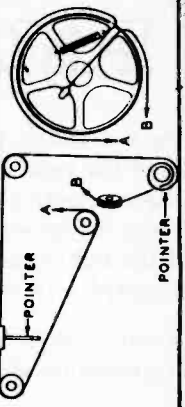


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

15 DIA SPEAKER IN 41-610  
14 DIA SPEAKER IN 41-611



SWITCH SHOWN FROM REAR, IN POS. 1. PHONO  
KEYS IN CIRCLE FROM FRONT TO BACK.  
SOLID BARS INDICATE FRONT OF SWITCH ARM.  
SHADED BARS INDICATE REAR OF SWITCH ARM.



SCHEMATIC DIAGRAM—MODELS 41-610 41-611. CODE 121

I.F. 455 KC.

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## PHILCO Phonograph Model 41-620

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

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

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

### A.—ADJUSTING WIDTH OF LIGHT-BEAM

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

### B.—POSITIONING THE LIGHT-BEAM

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

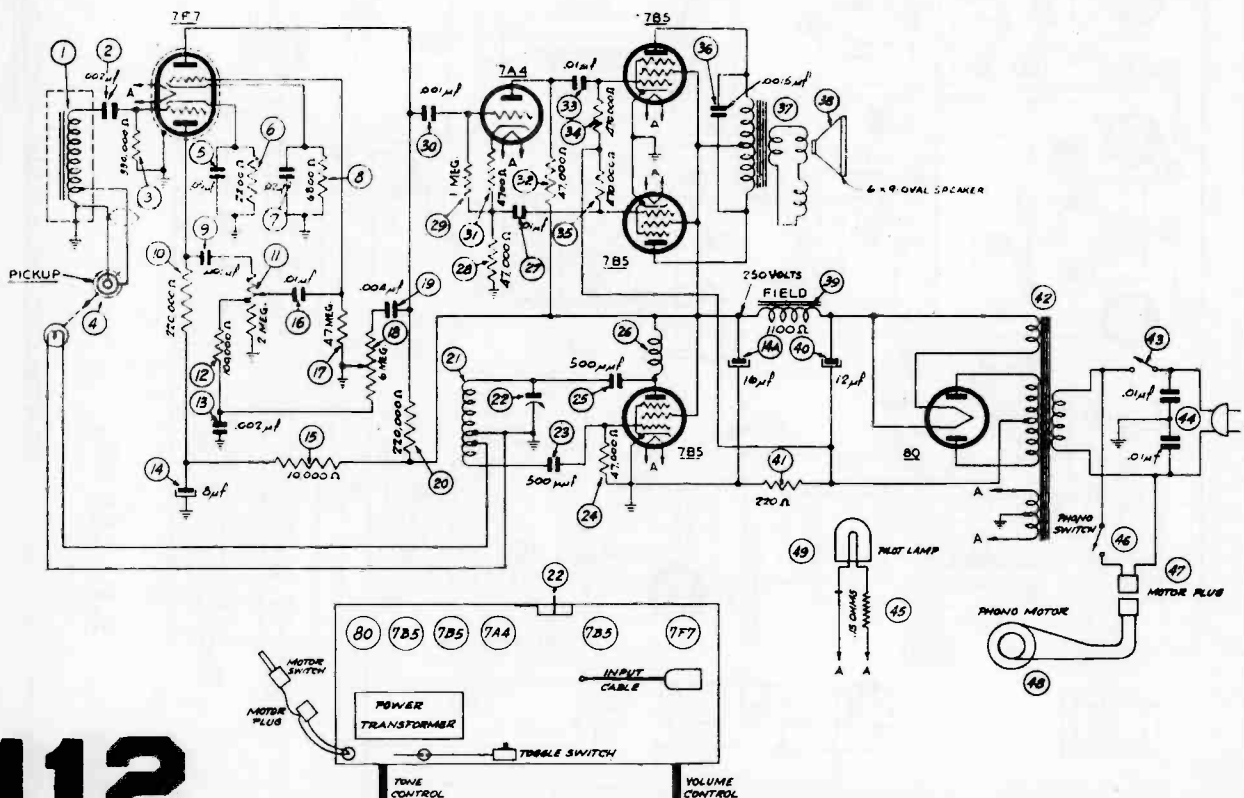
### C.—ADJUSTING INTENSITY OF LAMP

When shipped from the factory, the lamp of the reproducer is adjusted for best operating efficiency. The intensity of the light from the lamp is adjusted by compensator (22) located on the radio chassis. Under ordinary circumstances, an adjustment will not be necessary. When replacing the reproducer or lamp, however, there may be a tendency towards microphonic feedback. In this case the compensator is adjusted as follows:

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

### D.—INSTALLING NEW LAMP

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

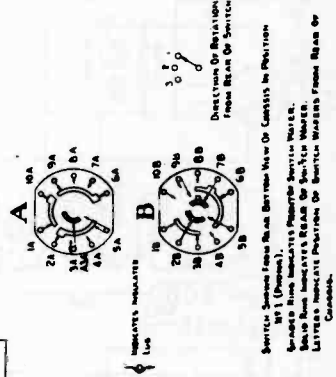
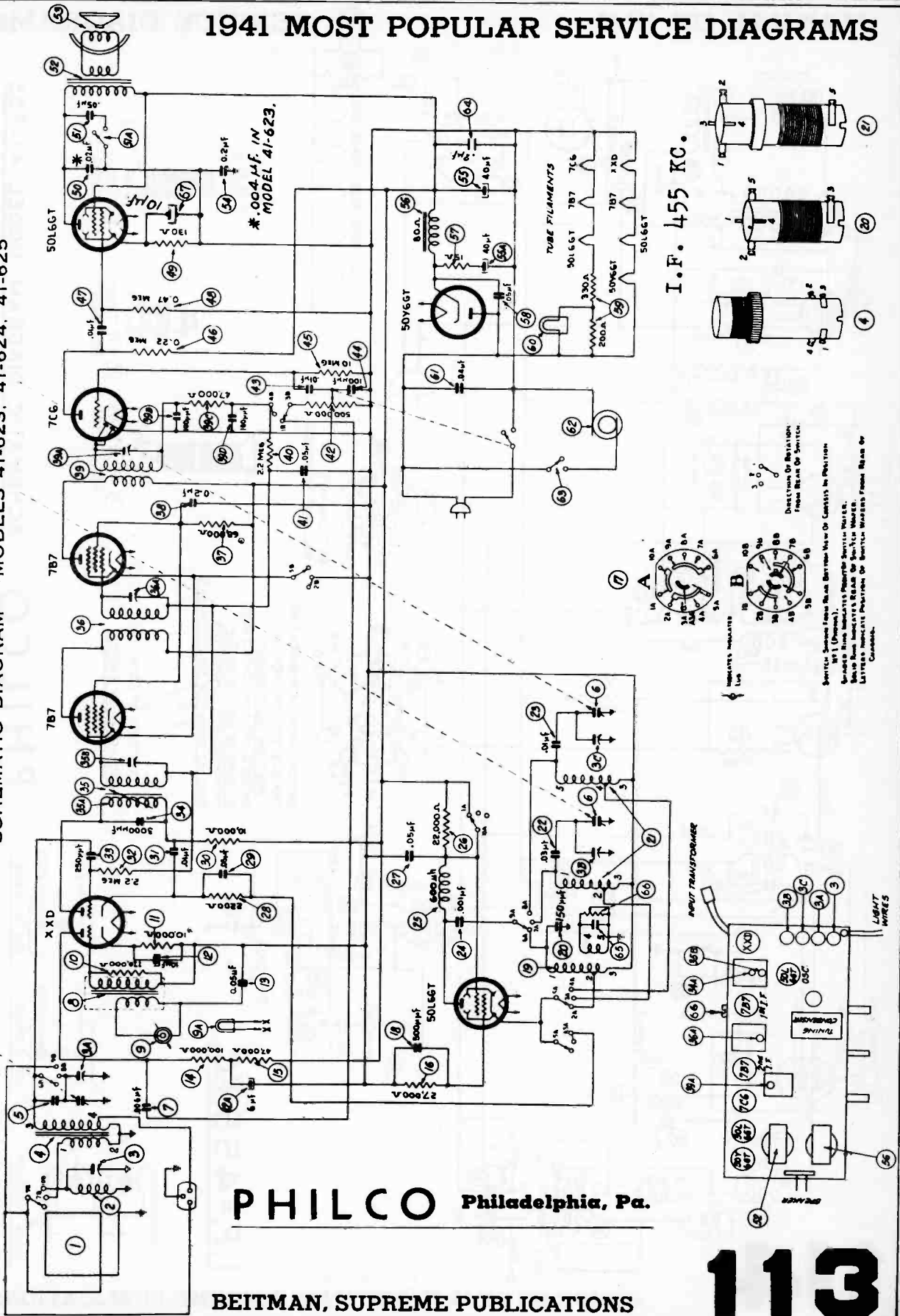


# 112

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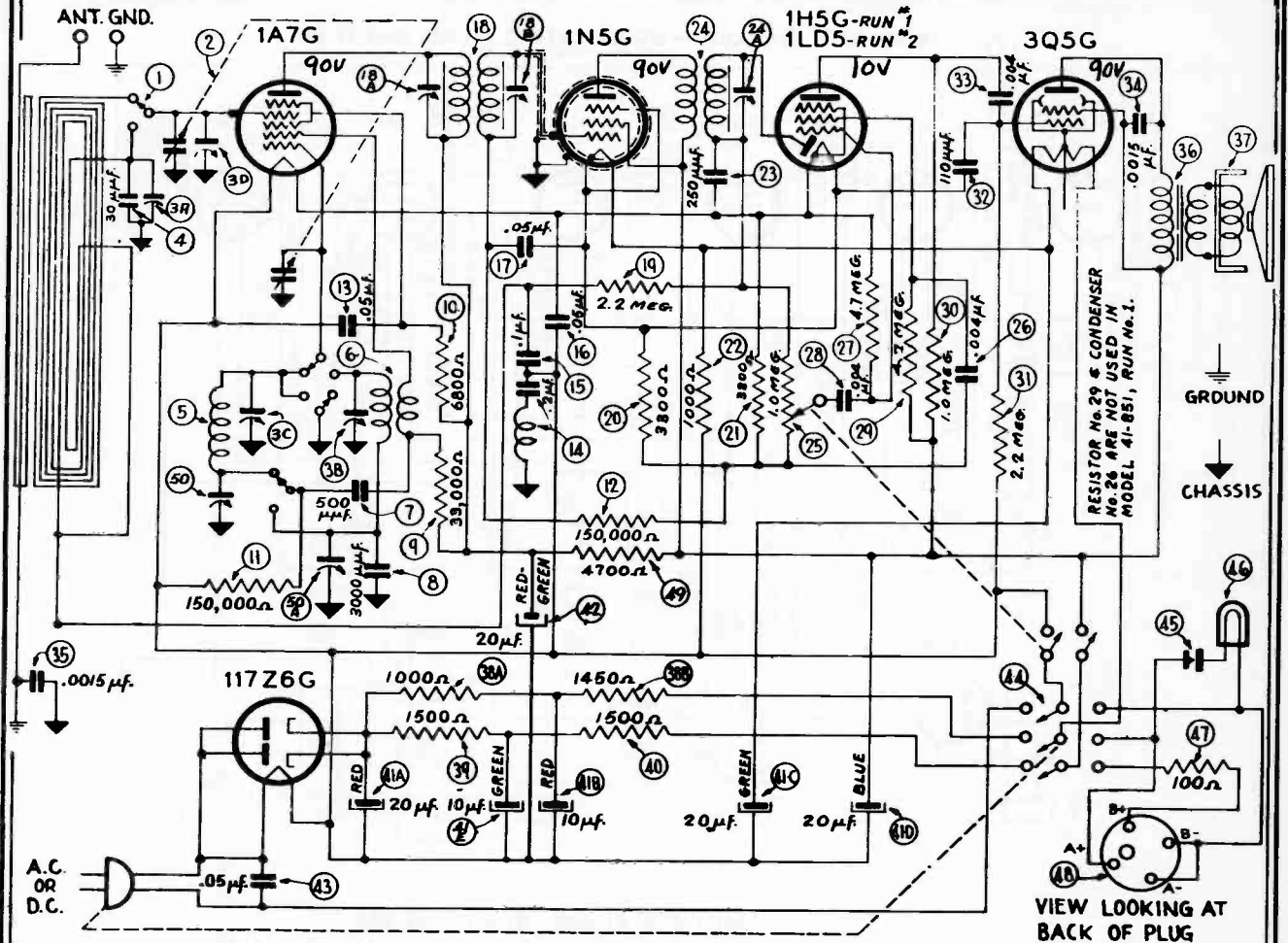
# 1941 MOST POPULAR SERVICE DIAGRAMS

SCHEMATIC DIAGRAM — MODELS 41-623, 41-624, 41-625





# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



SCHMATIC DIAGRAM MODEL 41-851, RUNS 1 AND 2

1	Stator Plate Lug Loop Tuning Condenser	455 K. C.	540 K. C.	Vol. Max.	18A, 18B, 24A
2	Loop on Generator	1500 K. C.	1500 K. C.	Range Switch "Brdcat" Vol. Max.	3C, 3D
3	Loop on Generator	580 K. C.	580 K. C.	Range Switch "Brdcat" Vol. Max.	50
4				Recheck operation No. "2"	
5	Loop on Generator	6 M. C.	6 M. C.	Range Switch "S. W."	50A
6	Loop on Generator	15 M. C.	15 M. C.	Range Switch "S. W."	3B, 3A

## Model 41-851, Code 121, Runs 1 and 2

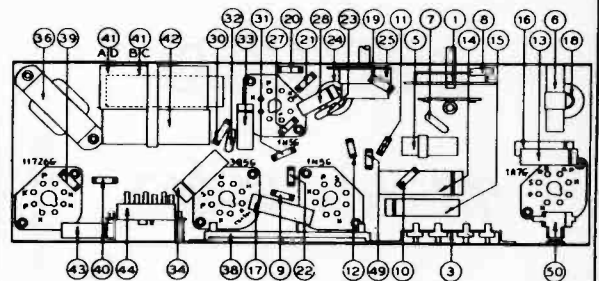
Model 41-851, Code 121, Runs 1 and 2 is a five (5) tube portable A. C.-D. C. or battery operated superheterodyne radio with two tuning ranges, 540 to 1600 K. C. and 6 to 15 M. C. In addition this model includes: a Built-in Loop Aerial; Beam Power Pentode Audio Output Stage; Highly Sensitive Permanent Magnet Speaker; PHILCO Super-efficient Loktal Tubes and an ON-OFF Indicator.

Production Runs 1 and 2 of this model are identical with the exception of the 2nd Detector, 1st Audio tube. The early production (Run 1) radios used a 1H5G tube and the later production radios (Run 2) contained a 1LDS tube.  
**PHILCO TUBES USED:** 1A7G, Oscillator Converter; 1N5G, I. F. Amplifier; \*1H5G, (Run No. 1) 2nd Detector, 1st Audio A. V. C.; 3Q5G, Audio Output; 117Z6G, Rectifier; \*1151, (Run No. 2).

**INTERMEDIATE FREQUENCY:** 455 K. C.  
**POWER SUPPLY:** 115 volts, A. C.-D. C. and a Philco Combination "A. B." battery type P-841.

For portable battery operation wrap the power line cord around its holder clamp on the back of the cabinet back and insert the plug end into the slots provided on the chassis.

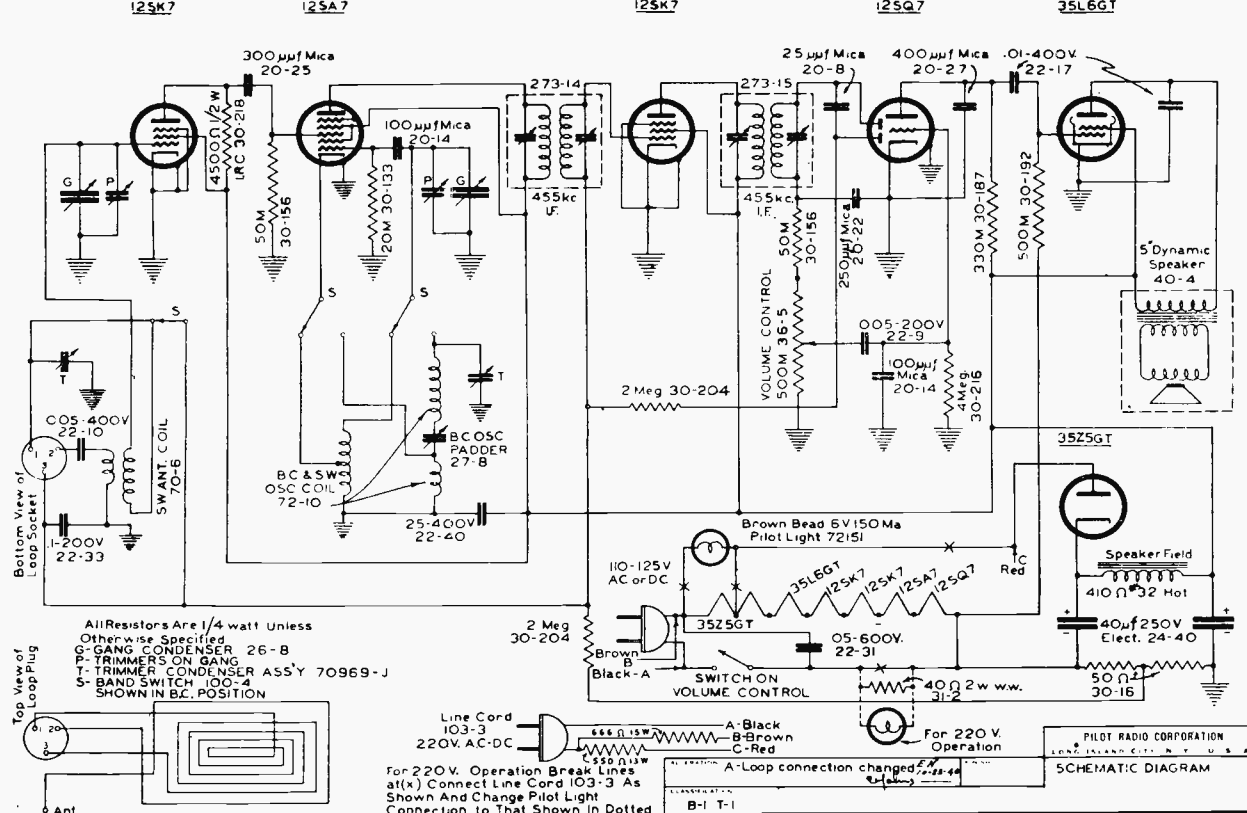
To operate on 115 volts A. C.-D. C. remove the power line cord plug from the slots on the chassis and insert into a power receptacle.



PART LOCATIONS — UNDERSIDE OF CHASSIS MODEL 41-851, RUN 1

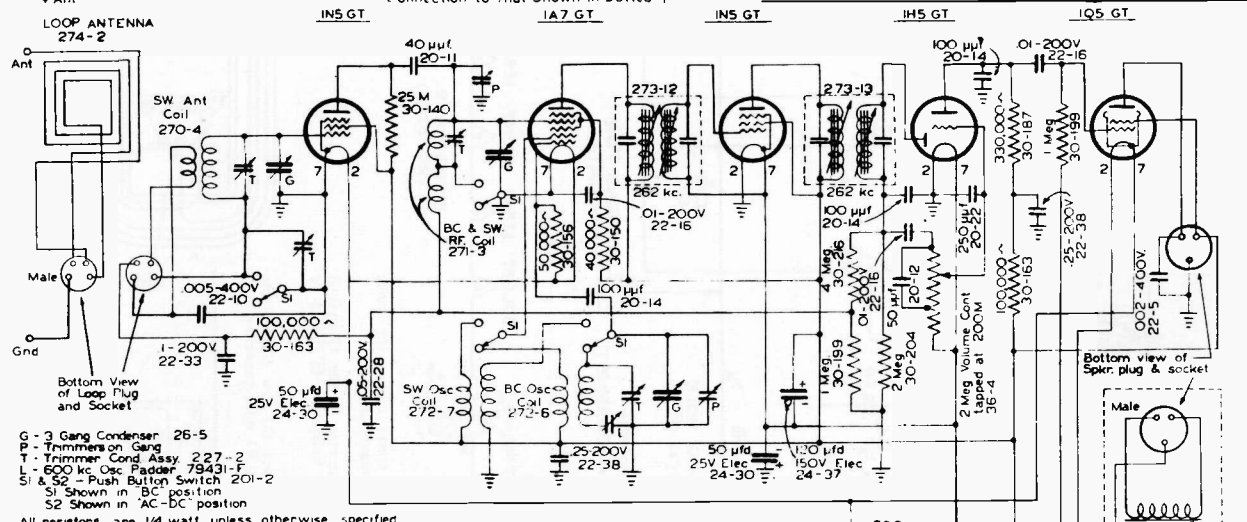


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

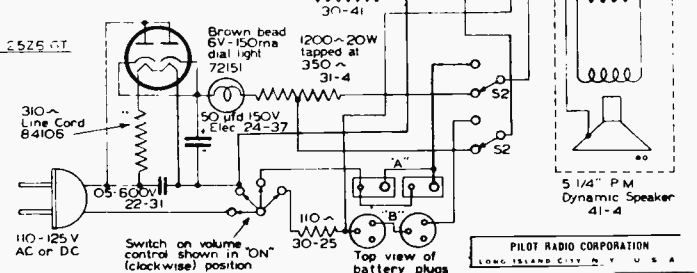
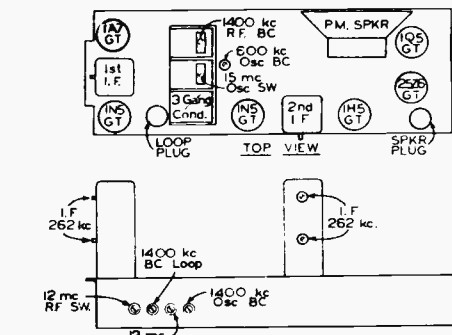


All Resistors Are 1/4 watt Unless  
Other wise Specified  
G- GANG CONDENSER 26-8  
T- TRIMMER ON GANG  
T- TRIMMER CONDENSER ASSY 70969-J  
S- BAND SWITCH 100-4  
SHOWN IN BC POSITION

Line Cord  
103-3  
220V AC-DC  
For 220V. Operation Break Lines  
at(x) Connect Line Cord 103-3 As  
Shown And Change Pilot Light  
Connection to That Shown in Dotted  
Line.



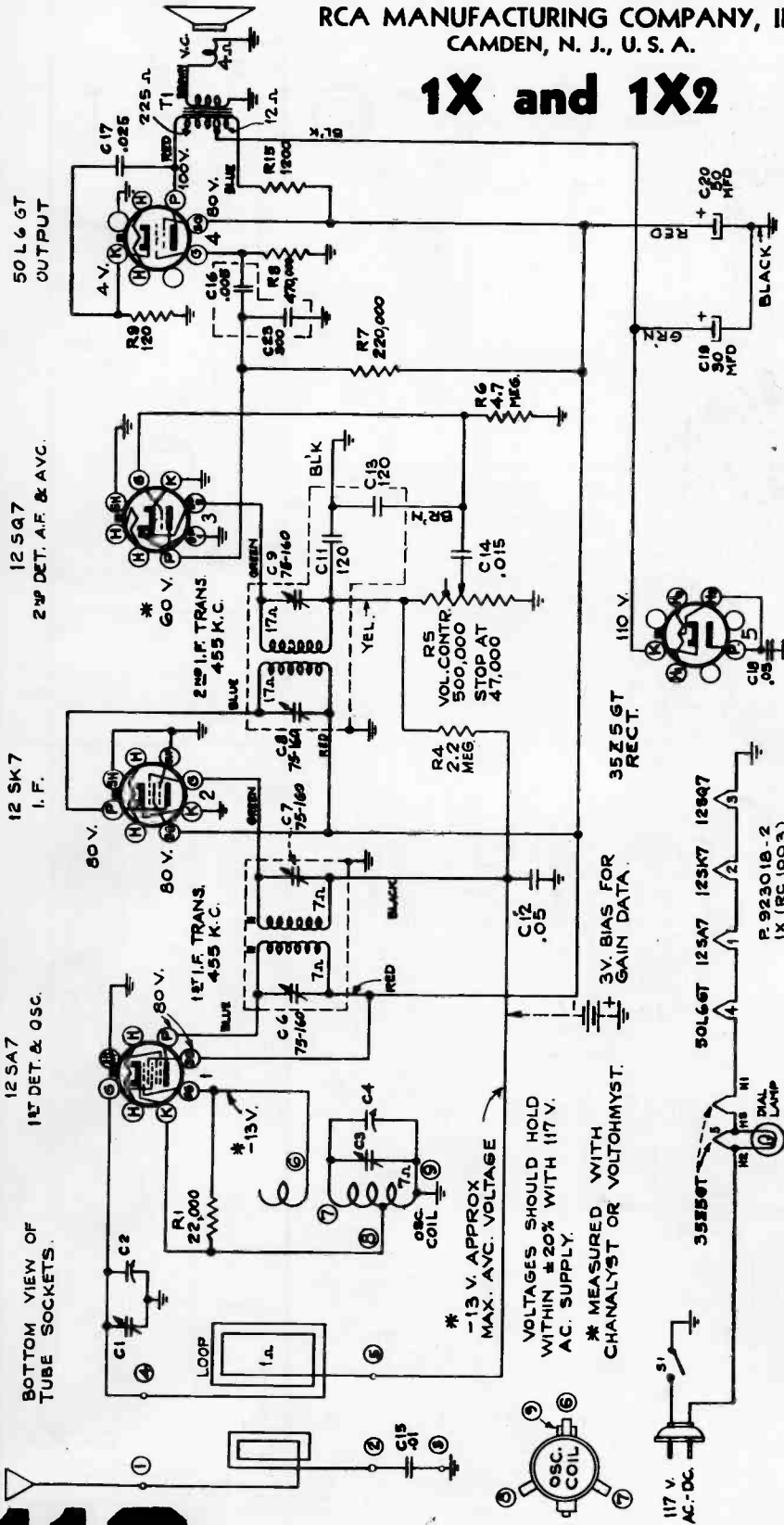
G- 3 Gang Condenser 26-5  
T- Trimmer on Gang  
T- Trimmer Cond Assy 79431-2  
L- 600 kc Osc Padder 79431-1  
S1 & S2 - Push Button Switch 201-2  
S1 Shown in BC position  
S2 Shown in AC-BC position  
All resistors are 1/4 watt unless otherwise specified.



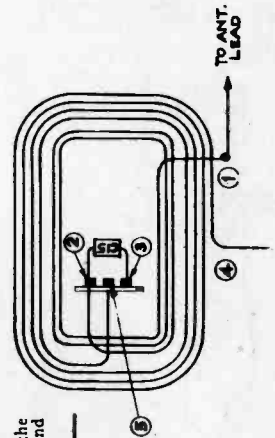
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

RCA MANUFACTURING COMPANY, INC.  
CAMDEN, N. J., U. S. A.

## 1X and 1X2



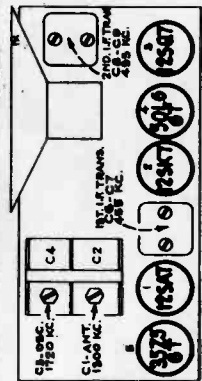
Steps	Connect the high side of test-oscillator to—	Tune test-osc. to—	Turn radio dial to—	Adjust the following for max. peak output
1	I-F grid, in series with .01 mfd.	455 kc	Quiet point 1,600 kc end of dial	C8, C9 2nd I-F Transformer
2	1st Det. grid in series with .01 mfd.	1,720 kc	Gang at minimum	C6, C7 1st I-F Transformer
3	Ant. terminal in series with 100 mmfd.	1,900 kc	Signal Frequency	C3 (osc.)
4	Radiated signal	1,900 kc		C1 (ant.)
5	Repeat steps 3 and 4.			



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

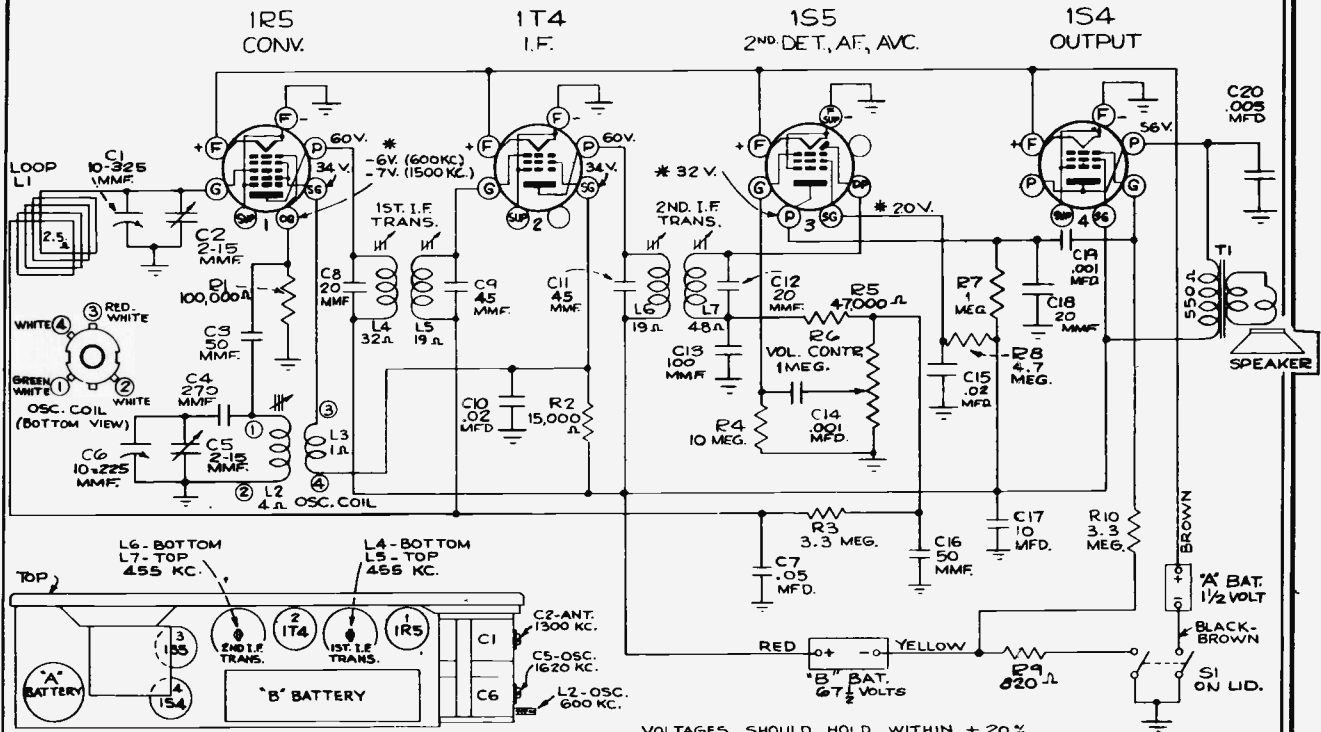
**Electronic Voltmeter**—The electronic voltmeter in the Chanalyt or VoltOhmyst provides an unexcelled output indicator. It should be connected to the AVC bus.

**Test-Oscillator**—For J-F alignment, 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.





# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



VOLTAGES SHOULD HOLD WITHIN  $\pm 20\%$  WITH RATED BATTERY VOLTAGE.  
\* MEASURED WITH GHANALYST OR VOLTOHMYST.

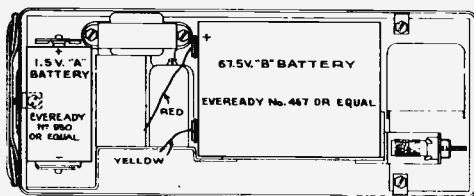
## RCA Victor

### MODEL BP-10 PERSONAL RADIO

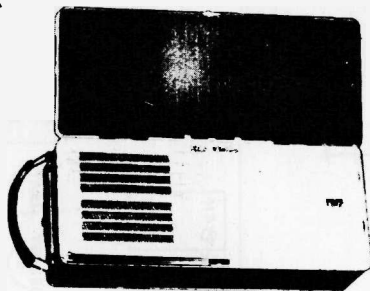
#### Alignment Procedure

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

**Test-Oscillator.**—For all alignment operations, keep the output as low as possible to avoid a-v-c action.



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	Tuning condenser stator (ant.) in series with .01 mfd.	455 kc	Quiet point at 1,600 kc end of dial	L7, L6, L5, L4 (2nd and 1st I-F transformers)
2	Radiated signal 1,620 kc	1,620 kc	Full clockwise (out of mesh)	C5 (oscillator)
3	Radiated signal 1,300 kc	1,300 kc	1,300 kc	C2 (antenna)
4	Radiated signal 600 kc	600 kc	600 kc	L2 (osc.)
5	Repeat steps 2, 3 and 4.			



#### POWER SUPPLY

Type Battery	Current Consumption	Approximate Life (Intermittent Duty)
"A"—1.5 volt Eveready No. 950	0.25 amperes	3-5 hours
"B"—67.5 volts Eveready No. 467	8.5 milliamperes	25-40 hours

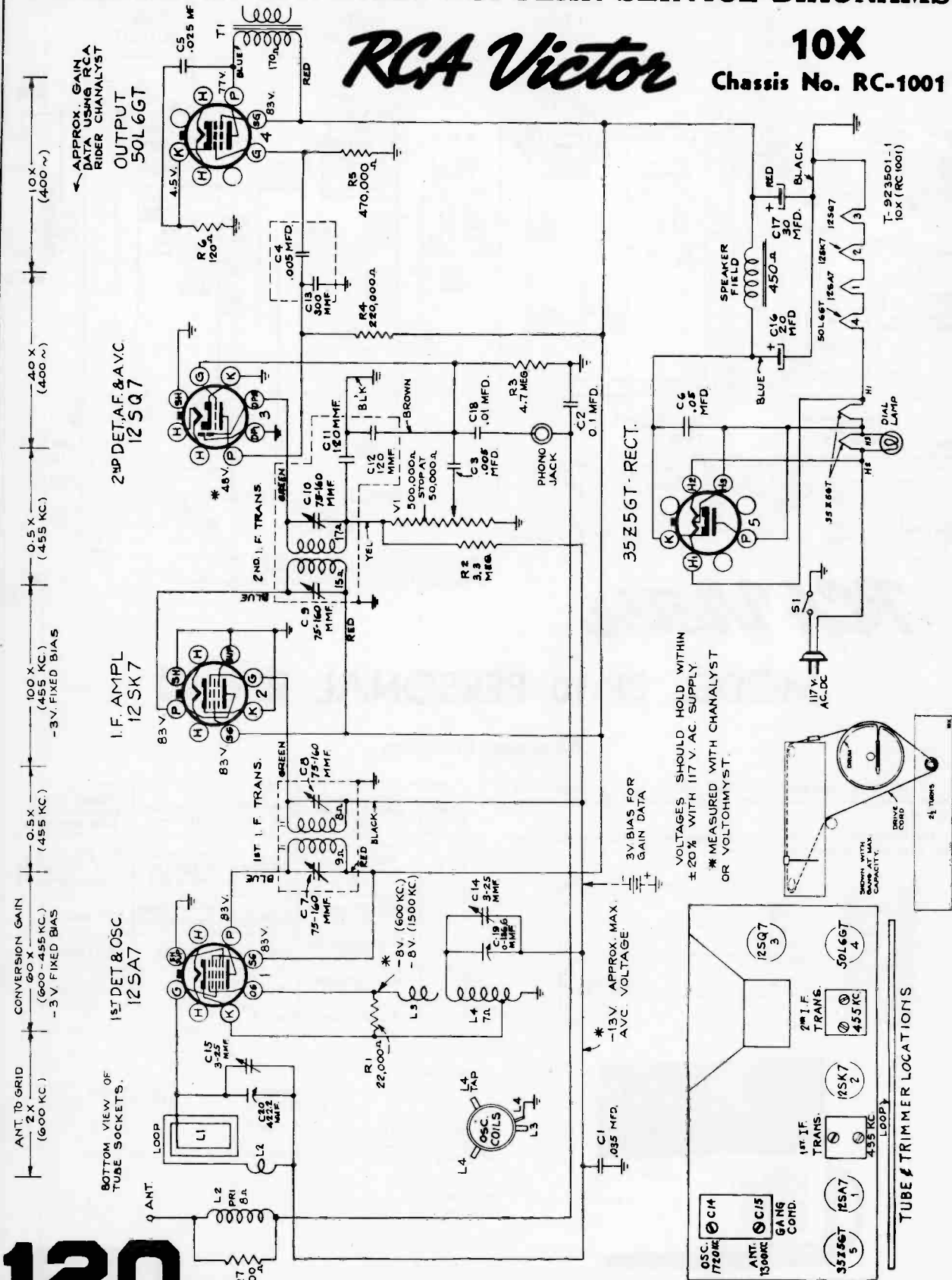
#### POWER OUTPUT

Undistorted.....	0.05 watts
Maximum.....	0.12 watts

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

# RCA Victor

## 10X Chassis No. RC-1001



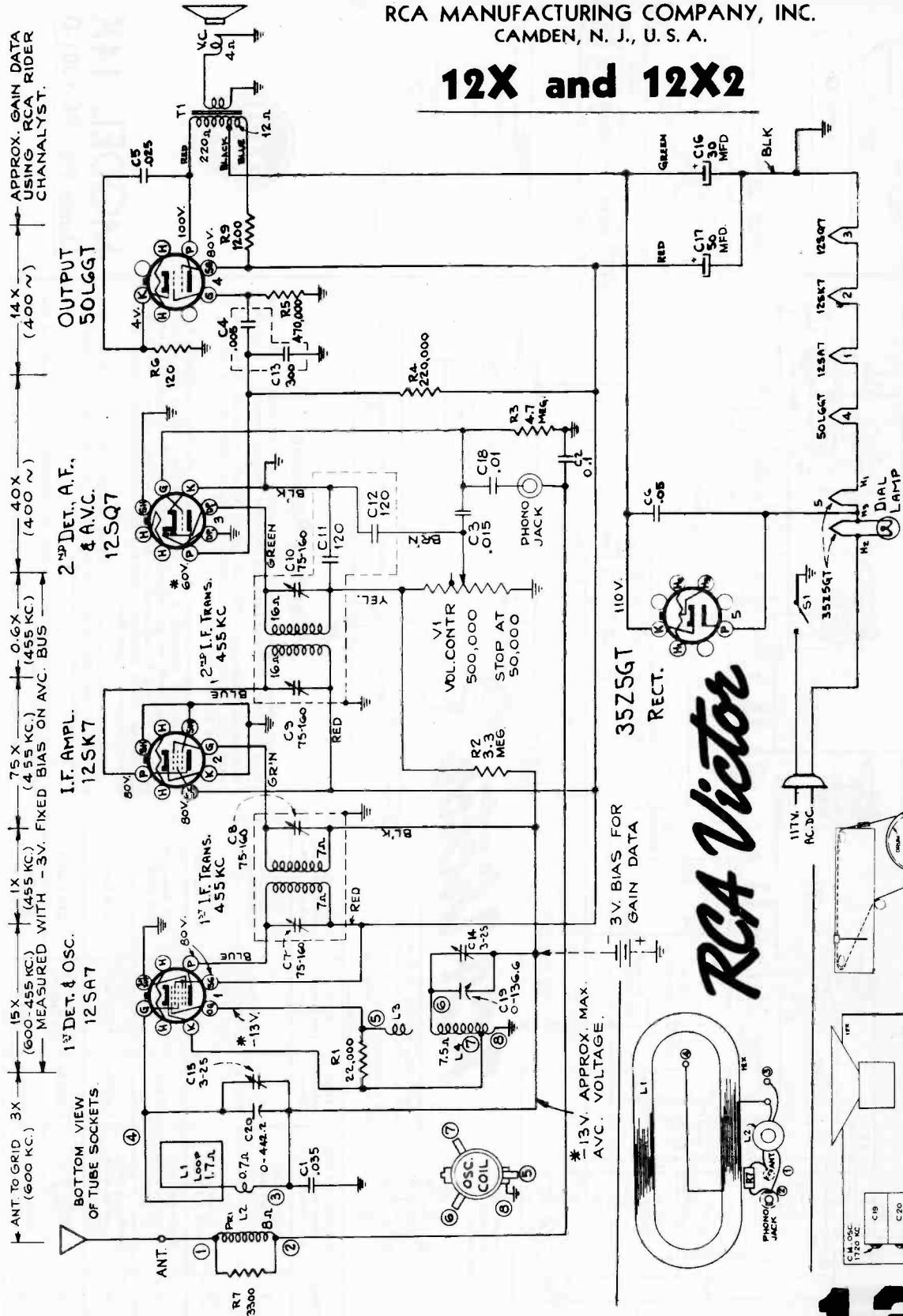
# 120

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

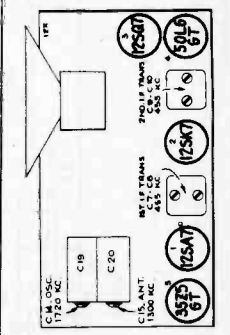
RCA MANUFACTURING COMPANY, INC.  
CAMDEN, N. J., U. S. A.

## 12X and 12X2

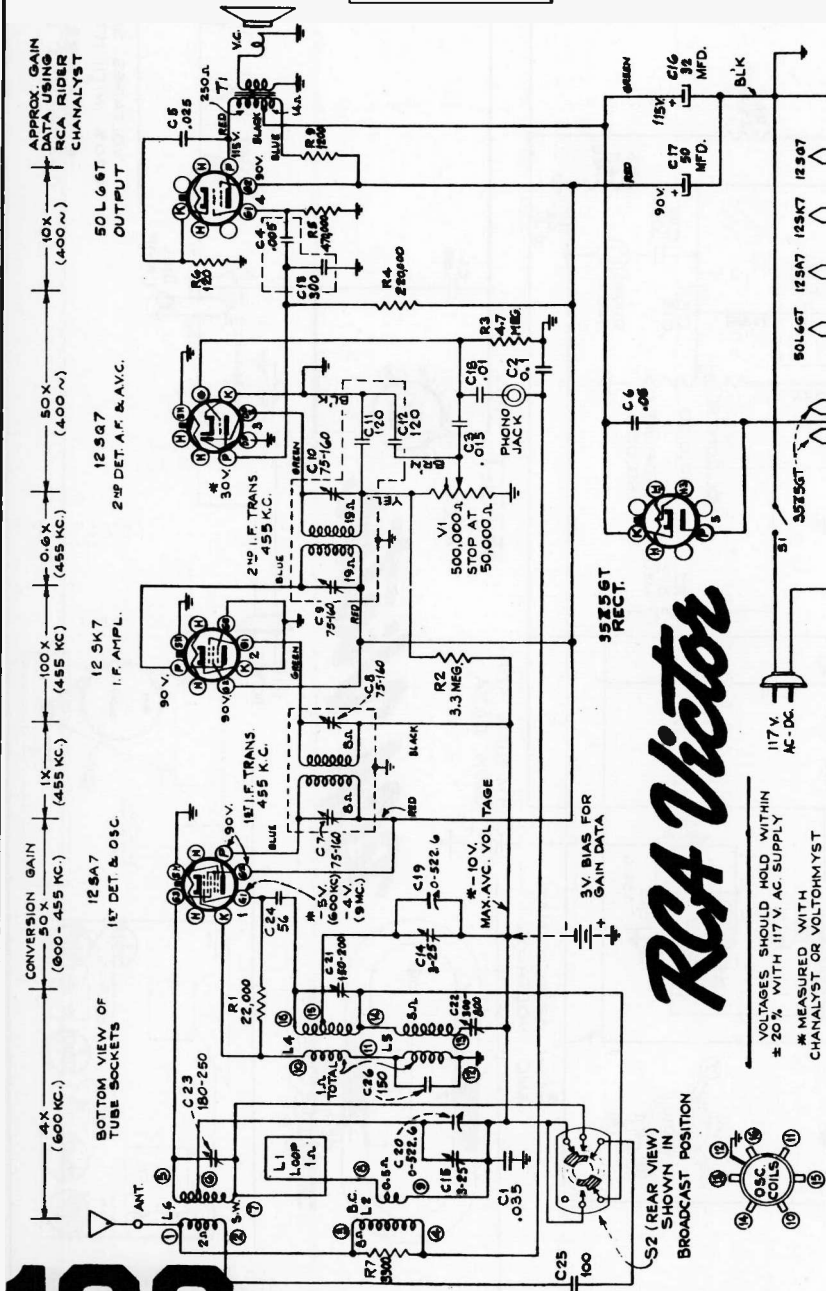


VOLTAGES SHOULD HOLD WITHIN  
± 20% WITH 117 V. AC. SUPPLY.  
\* MEASURED WITH  
CHANALYST OR VOLTOHMYST.

*RCA Victor*



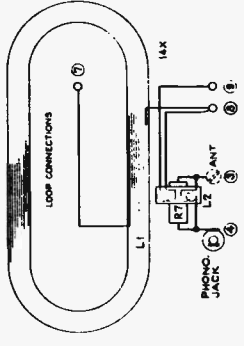
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



**RCA Victor**



**MODEL 14X**  
 Chassis No. RC-1001-D



### Alignment Procedure

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

**Electronic Voltmeter.**—The electronic voltmeter in the Chanalyt or Voltormyst provides an unexcelled output indicator. It should be connected to the AVC bus.

**Test Oscillator.**—Connect the low side of the test oscillator to the receiver chassis through a 0.1 mfd. capacitor. When the electronic voltmeter is used as an alignment indicator the output of the test oscillator should be adjusted to produce several volts of AVC. With the output meter alignment method the test oscillator output should be kept as low as possible.

**Calibration Scale.**—The glass tuning dial may be easily removed from the cabinet and temporarily attached to the dial backing plate for quick reference during alignment.

\* It is recommended that this step be repeated using a received station of known frequency.  
 \*\* Use minimum capacity if two peaks can be obtained.

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	12SK7 grid in series with 0.1 mfd.	455 kc	Quiet Point at 1,600 kc end of dial	C10, C9 2nd I-F Transformer
2	12SA7 grid in series with 0.1 mfd.	10 mc*	10 mc	C8, C7 1st I-F Transformer
3	Antenna term. in series with 47 mmfd.	1,600 kc	1,600 kc	C21 (osc.)** C23 (ant.)
4	Antenna term. in series with 200 mmfd.	1,300 kc	1,600 kc	C14 (osc.)
5	Radiation Loop	600 kc	Resonance on Signal	C15 (ant.)
6	Radiation Loop	600 kc	600 kc	C22 Osc. Rock in

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

# RCA

# MODEL 15BP

## Alignment Procedure

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

**Test-oscillator.**—For all alignment operations, keep the output as low as possible to avoid a-v-c action.

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	1N5GT I-F grid cap, in series with .01 mfd.	455 kc	Quiet point at 1,600 kc end of dial	L8, L7 (2nd. transformer)
2	1A7GT 1st-Det. grid cap, in series with .01 mfd.			L4, L3 (1st I-F transformer)
3	radiated signal 1,720 kc	signal frequency		C22 (Osc. Trimmer)
4	radiated signal 1,400 kc			C20 (Ant. Trimmer)
5	radiated signal near 600 kc			L6 (Rock in)
6	Repeat steps 3, 4 and 5 until aligned.			

Frequency Range..... 540-1,720 kc  
Intermediate Frequency..... 455 kc

### RCA TUBE COMPLEMENT

- (1) RCA-1A7-GT..... 1st-Det.—Osc.
- (2) RCA-1N5-GT..... I-F Amplifier
- (3) RCA-1H5-GT..... 2nd-Det., A-F, and A.V.C.
- (4) RCA-3Q5-GT..... Output
- (5) RCA-35Z5-GT..... Rectifier

### LINE CURRENT SUPPLY

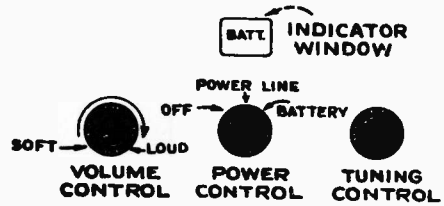
110 to 125 volts, AC 50 or 60 cycles, or DC

### BATTERIES REQUIRED

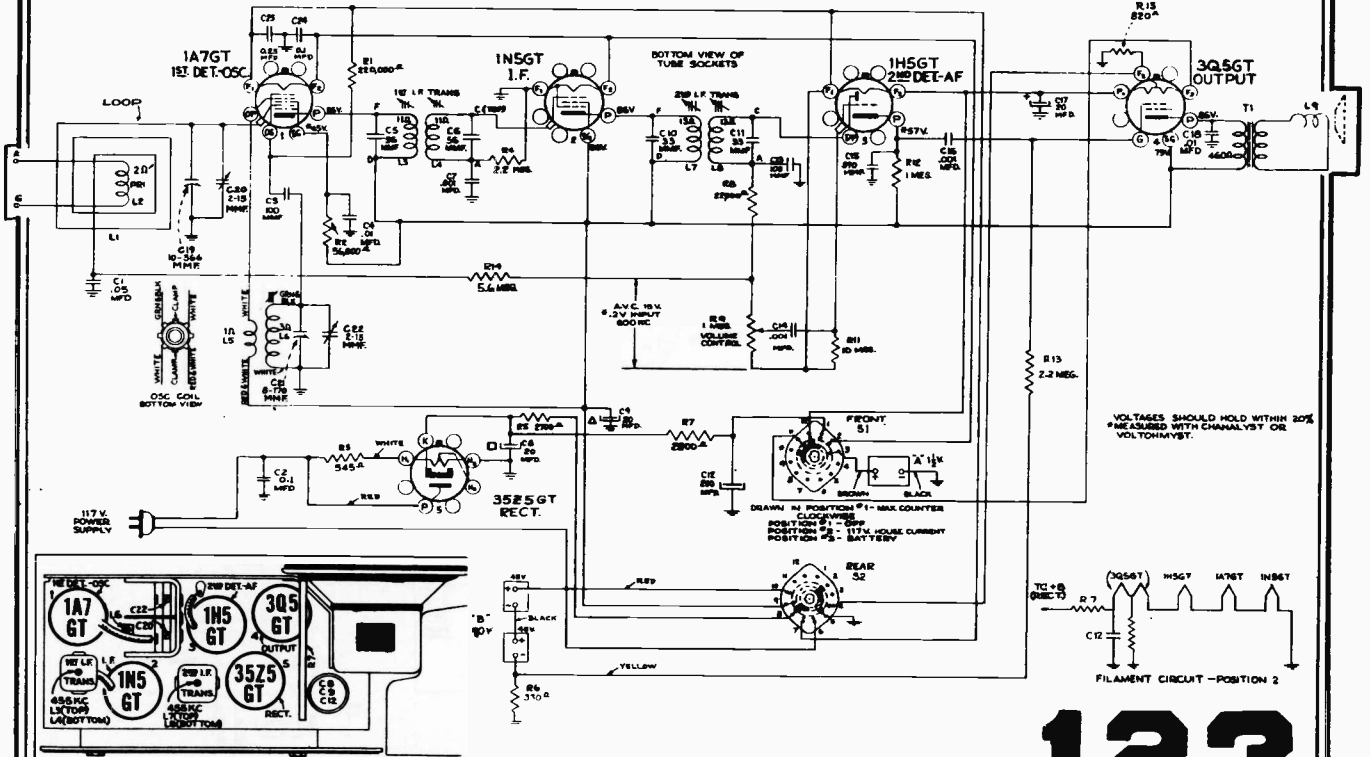
- "A" one 1.5 volt dry plug-in type "A" (Eveready No. 743 or equivalent)  
"B" two 45 volt dry plug-in type "B," (Eveready No. 482 or equivalent)

### CURRENT CONSUMPTION

"A" 0.25 amperes }  
"B" 11.5 milliamperes } Battery Operation



12X (600KC) ANT. TO GRID    CONVERSION GAIN 600 TO 455 KC. 4X (AVC WORKING) 1X (AVC GROUNDING)    1X 455 KC    80X (455 KC)    2X (455 KC)    16X (400~)    14X (400~)    APPROX. GAIN DATA USING RCA DIODE CHANNELYST



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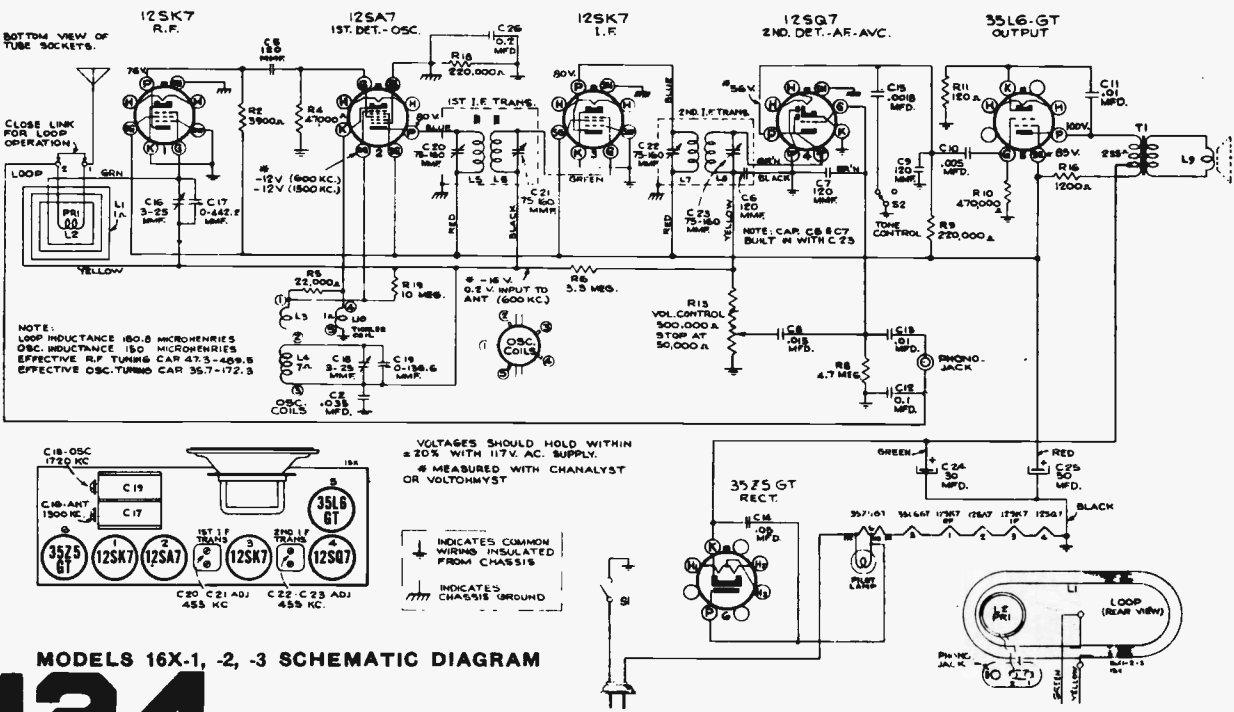
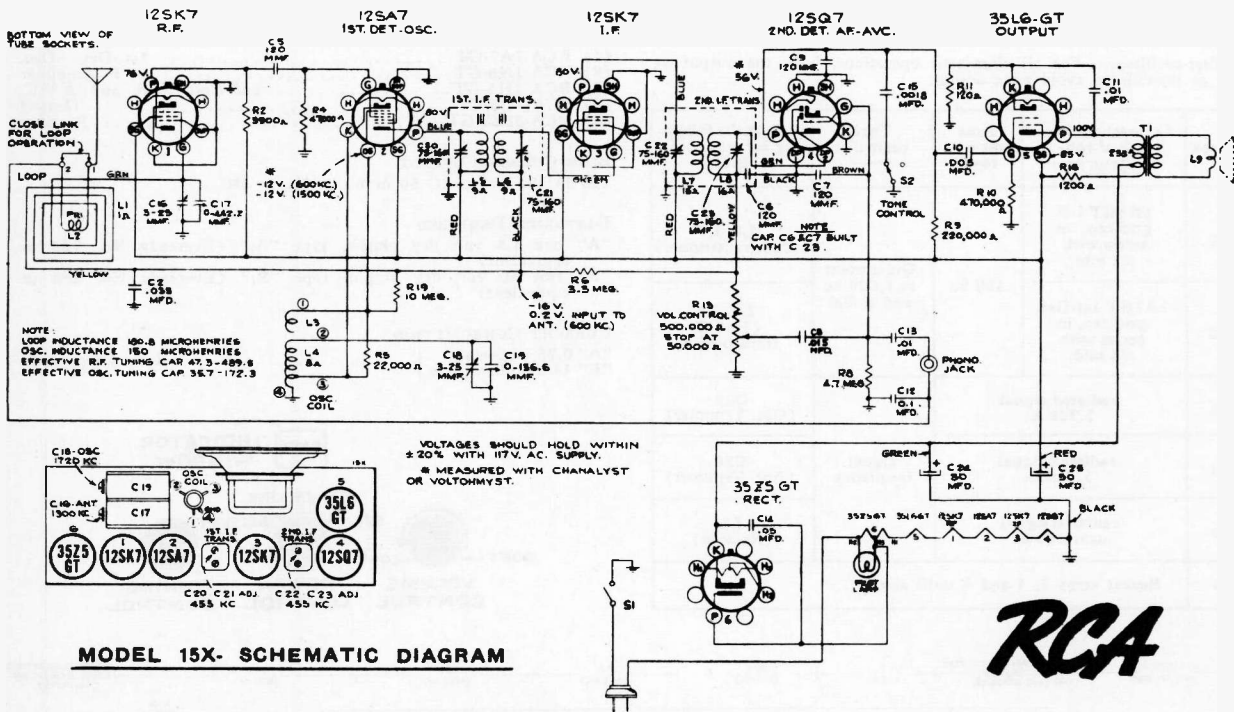
# 123

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## MODELS 15X, 16X-1, 16X-2 and 16X-3

Chassis Nos. RC-462, RC-462A and RC-462B

### Six-Tube, Single-Band, AC-DC, Superheterodyne Receivers





# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## Alignment Procedure

**Cathode-Ray Alignment** is the preferable method. Connections for the oscillograph are shown in the schematic diagrams.

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

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

**Electronic Voltmeter.**—The electronic voltmeter in the Chanalyst or Volt Ohmyst provides an unexcelled output indicator. It should be connected to the AVC bus, and the test-oscillator output adjusted to produce several volts of AVC.

**Calibration Scale.**—The glass tuning dial may be easily removed from the cabinet and temporarily attached to the chassis for quick reference during alignment. In the event that only the chassis is returned for service, and the cabinet with its tuning dial is left in the customer's home, the calibration scale printed in this service note can be used in conjunction with an ordinary 12-inch ruler as an accurate and convenient substitute for the regular dial.

Each method is described below.

### Using Tuning Dial.—

1. Slide out the flat spring clamp at each end of the dial, and remove the glass dial from the cabinet.

2. With gang in full mesh, move the dial pointer to the reference mark at the left-hand end of the dial backing plate.

3. Place the glass dial under the pointer so that the extreme left scale graduations coincide with the pointer. Use scotch tape to hold the glass dial in this position.

4. After completion of alignment, replace the glass dial in cabinet, taking care that the fibre light shields are in correct position at ends of dial.

### Using Calibration Scale.—

1. With gang in full mesh, move the dial pointer to the reference mark at the left-hand end of the dial backing plate.

2. Place a flat 12-inch ruler on the dial backing plate so the left-end of ruler is at the reference mark at left-end of backing plate. Temporarily fasten the ruler with scotch tape to the backing plate.

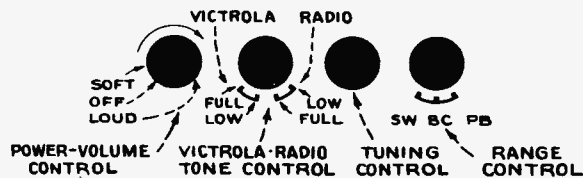
3. Refer to calibration scale printed in this service note. This is a reduced reproduction of the dial with an inch-scale drawn at top and bottom. To find the correct pointer position in inches for any desired frequency, draw a vertical line through this frequency on the calibration scale. For example, 1,500 kc is approximately 4 inches from the reference mark.

**Dial-Pointer Adjustment.**—After the chassis is replaced in cabinet, move the dial pointer (if necessary) so that it is at the left-hand graduation on the dial with the gang in full mesh.

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	I-F grid, in series with .01 mfd.	455 kc	"A" band, Quiet Point at 1,500 kc end of dial	L7 and L8 (2nd I.F. Trans.)
2	1st det. grid, in series with .01 mfd.			L5 and L6 (1st I.F. Trans.)
3	Antenna terminal, in series with 300 ohms (link open)	15.2 mc	15.2 mc "C" band	C11 (osc.)* C2 (ant.)
4	Antenna terminal, in series with 200 mmfd. (link open)	1,500 kc	1,500 kc "A" band	C29 (osc.) C3 (ant.)
5		600 kc	600 kc "A" band	L3 (in 16T2) L4 (in 16K and 16T2) Rock in
6	Repeat steps 4 and 5.			

In case of instability during R-F alignment, connect a 27,000 ohm 1/4 watt resistor across "D" and "F" of 2nd I-F transformer.

\* Use minimum capacity peak if two peaks can be obtained. Check to determine that the correct peak has been used, by tuning receiver to 14.29 mc, where a weaker signal should be received.

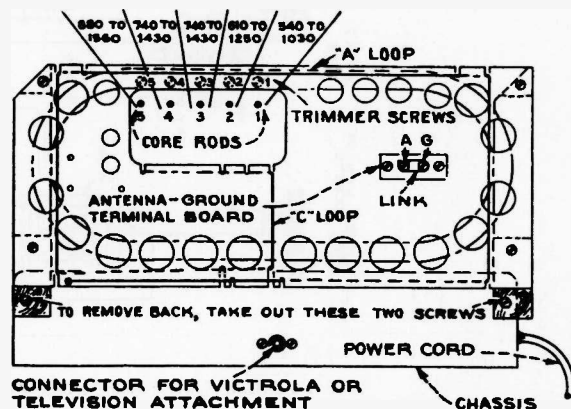


RCA Manufacturing Co.  
Camden, N. J.

Models 16K and 16T3

# 126

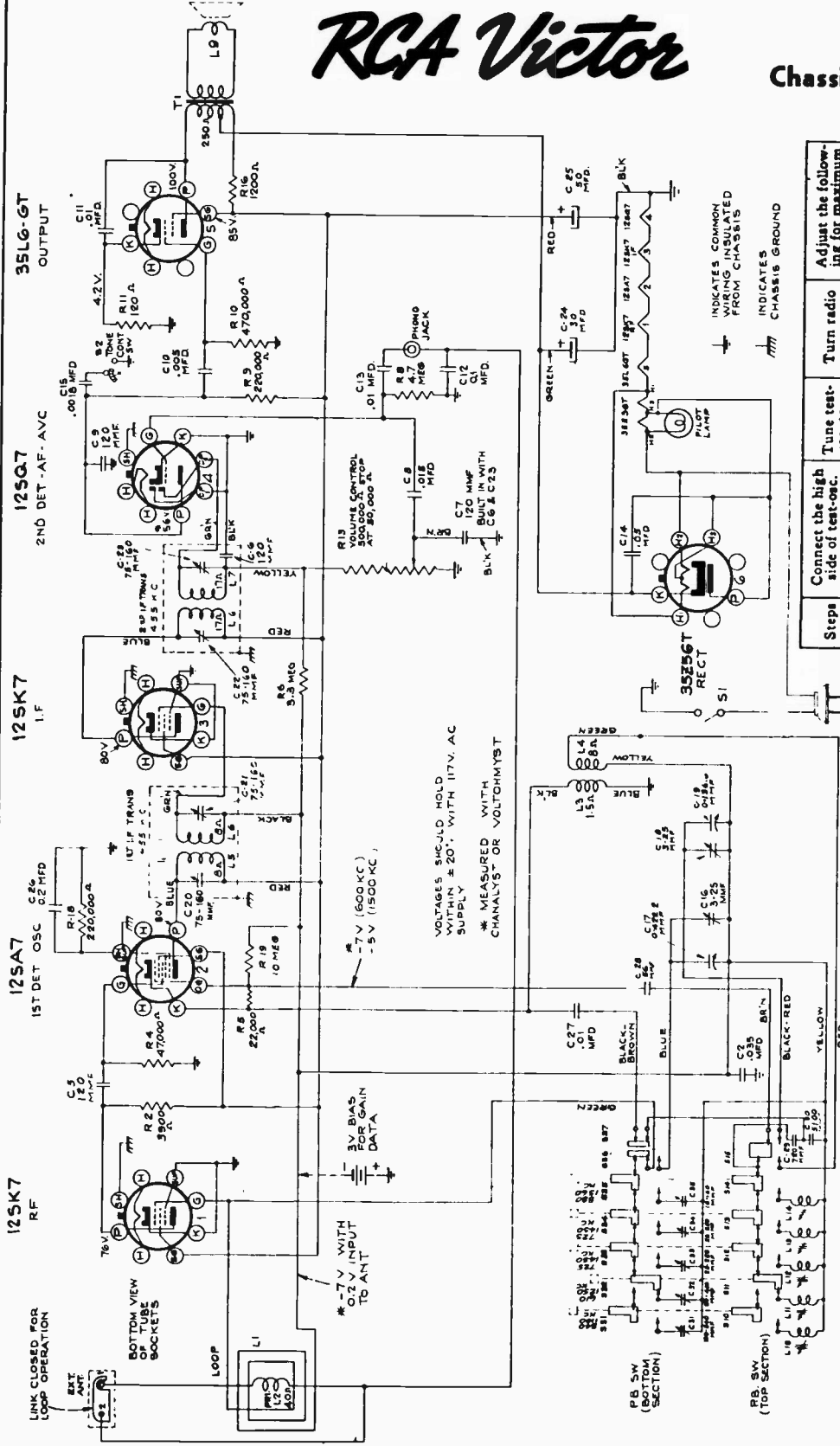
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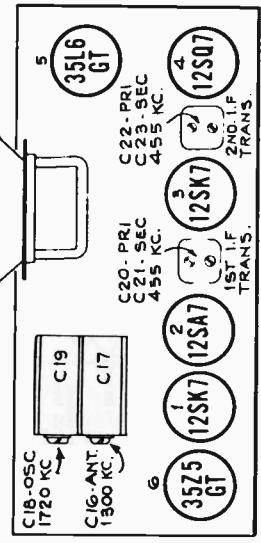
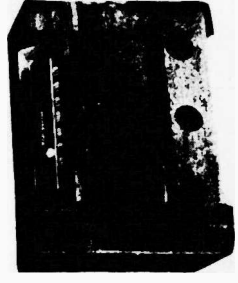


RCA Victor

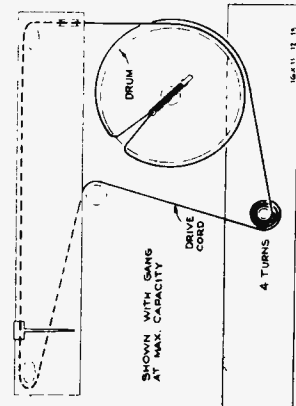
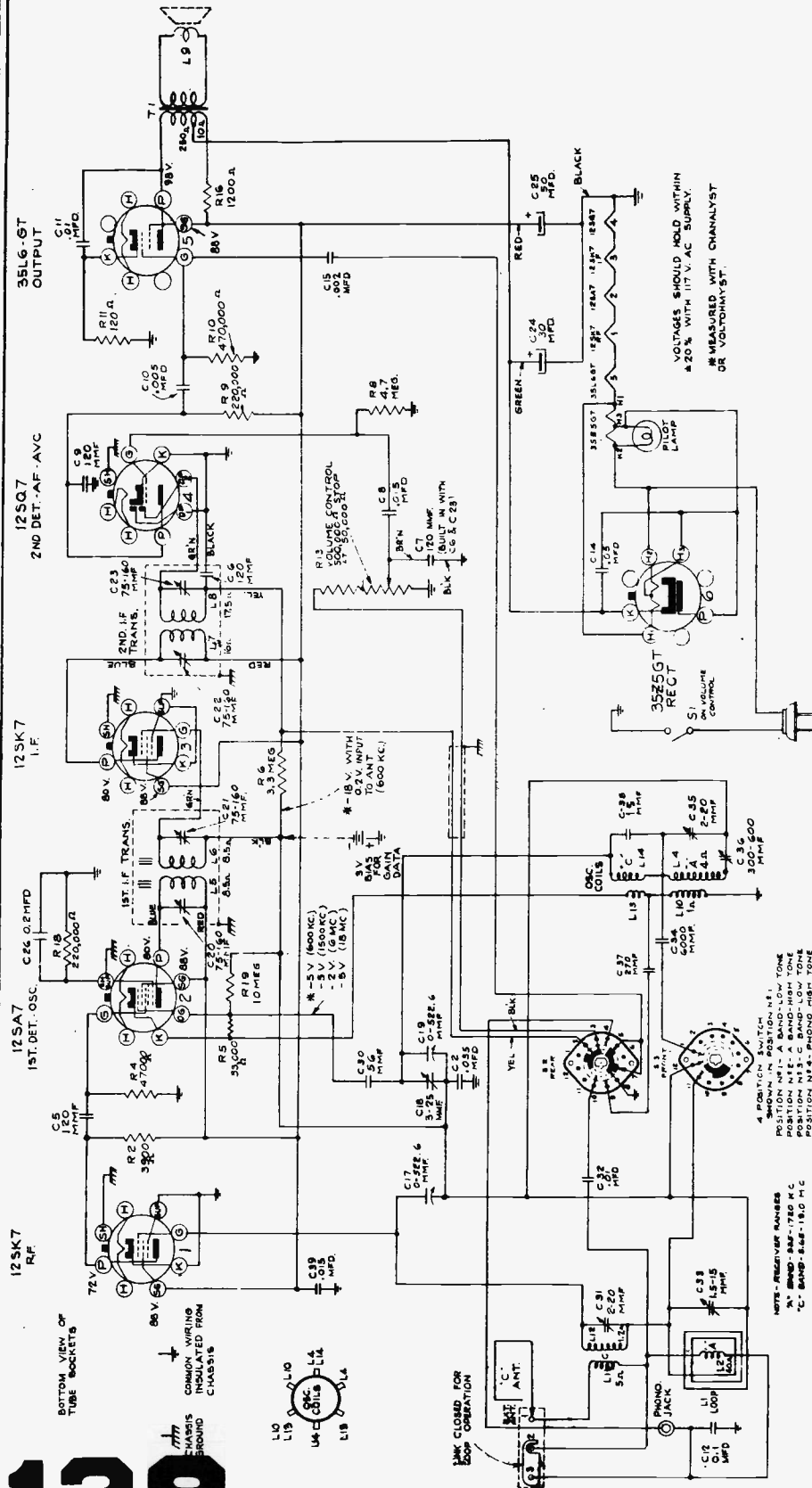
16X-4  
Chassis No. RC-462-C



Steps	Connect the high side of test-osc. to—	Tune test-osc. to—	Turn radio for maximum peak output	Adjust the following for maximum peak output
1	12SK7 1-F grid, in series with 0.1 mfd.	455 kc	Quiet tuning at 1,700 kc and of dial	C23, C28 and 1-F transformer
2	12SA7 1st det. grid, in series with 0.1 mfd.	1,720 kc		C21, C20 1st I-F transformer
3	12SK7 R-F grid, in series with 0.1 mfd.	1,720 kc		C18 (osc.)
4	Radiated signal 1,300 kc	Resonance on signal		C16 (ant.)
5	Repeat steps 3 and 4			



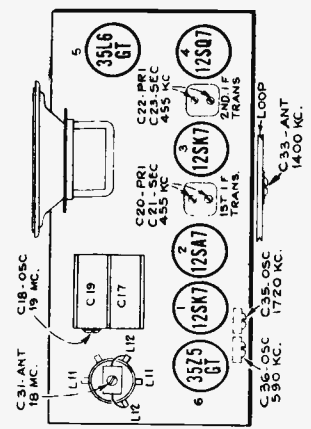
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



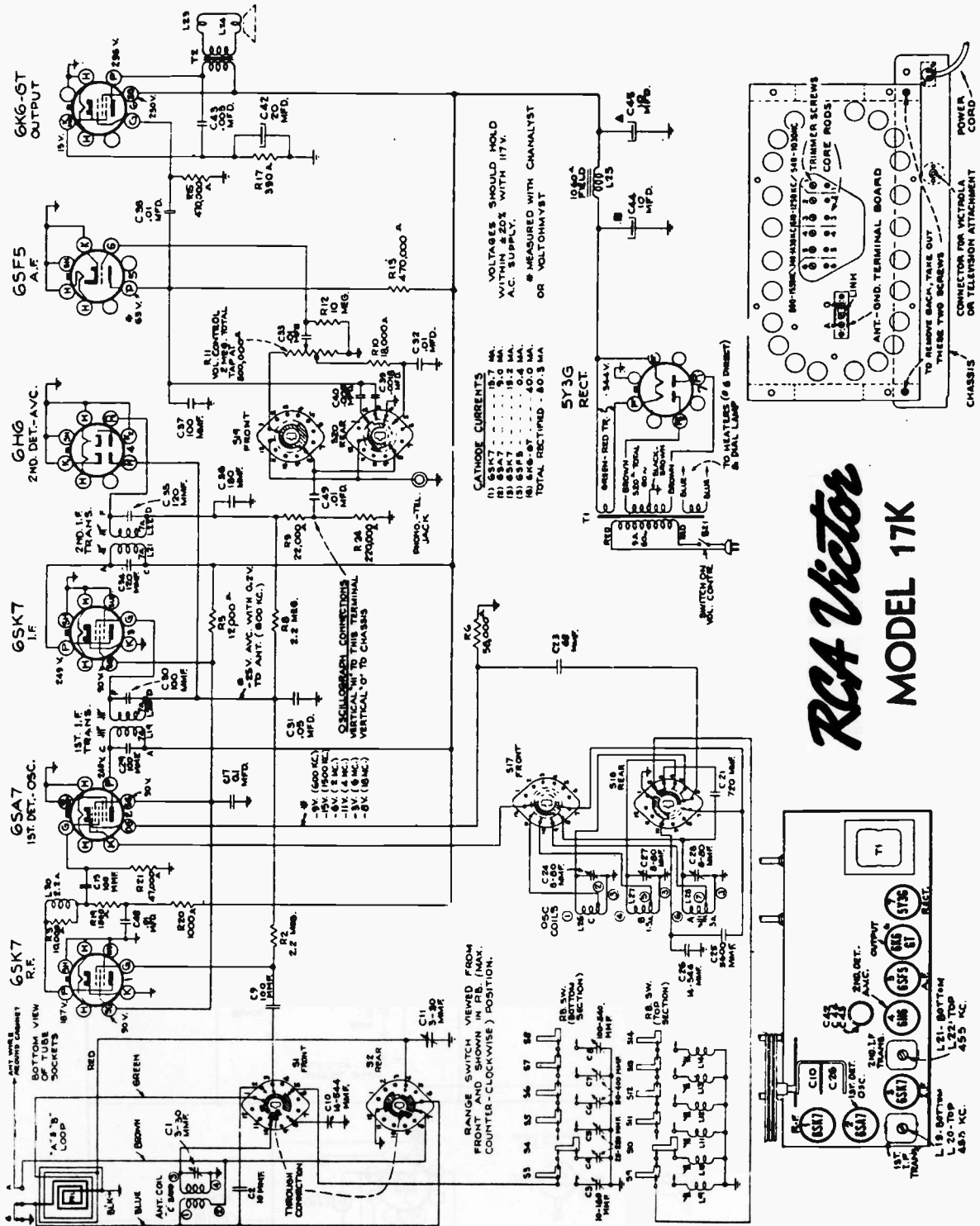
## RCA Victor

### 16X-11 and 16X-13

Chassis Nos. RC-1000 and RC-1000A



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

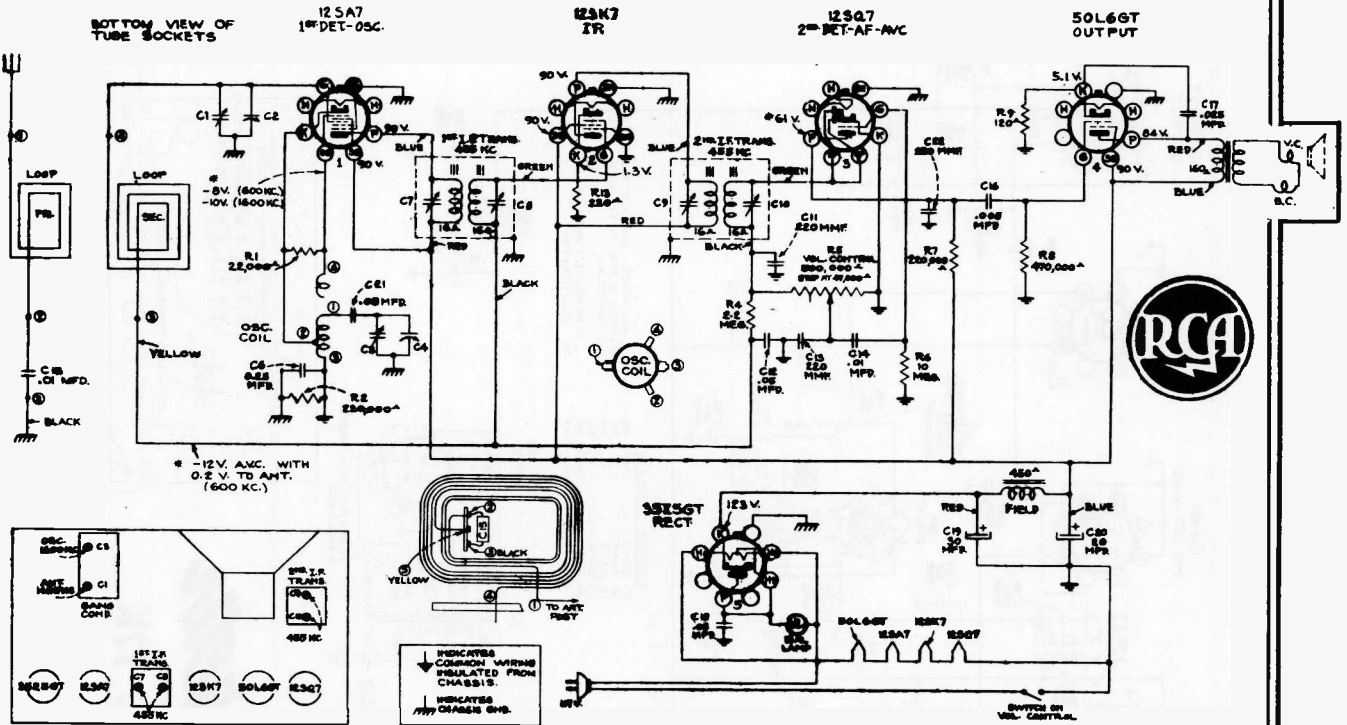


**RCA Victor**  
**MODEL 17K**

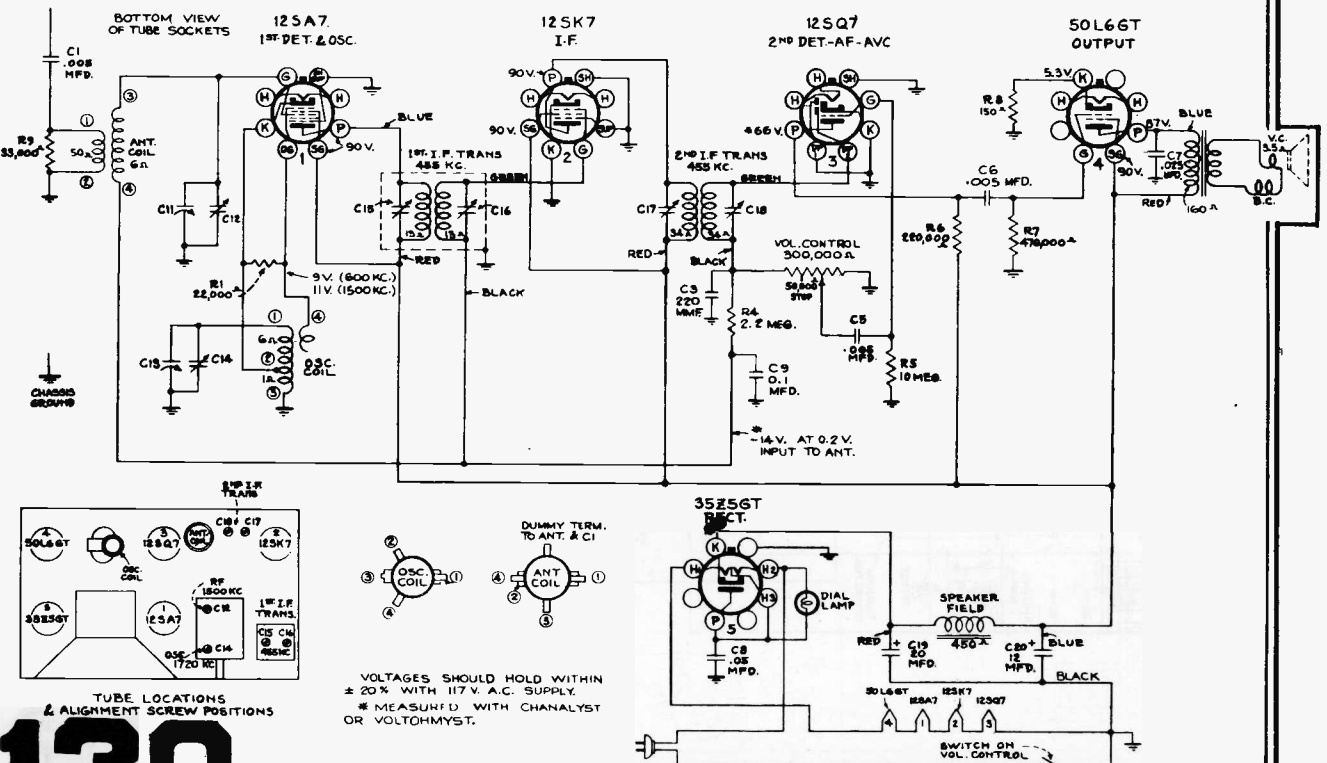
**129**

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## Models 45X-16, 45X-17



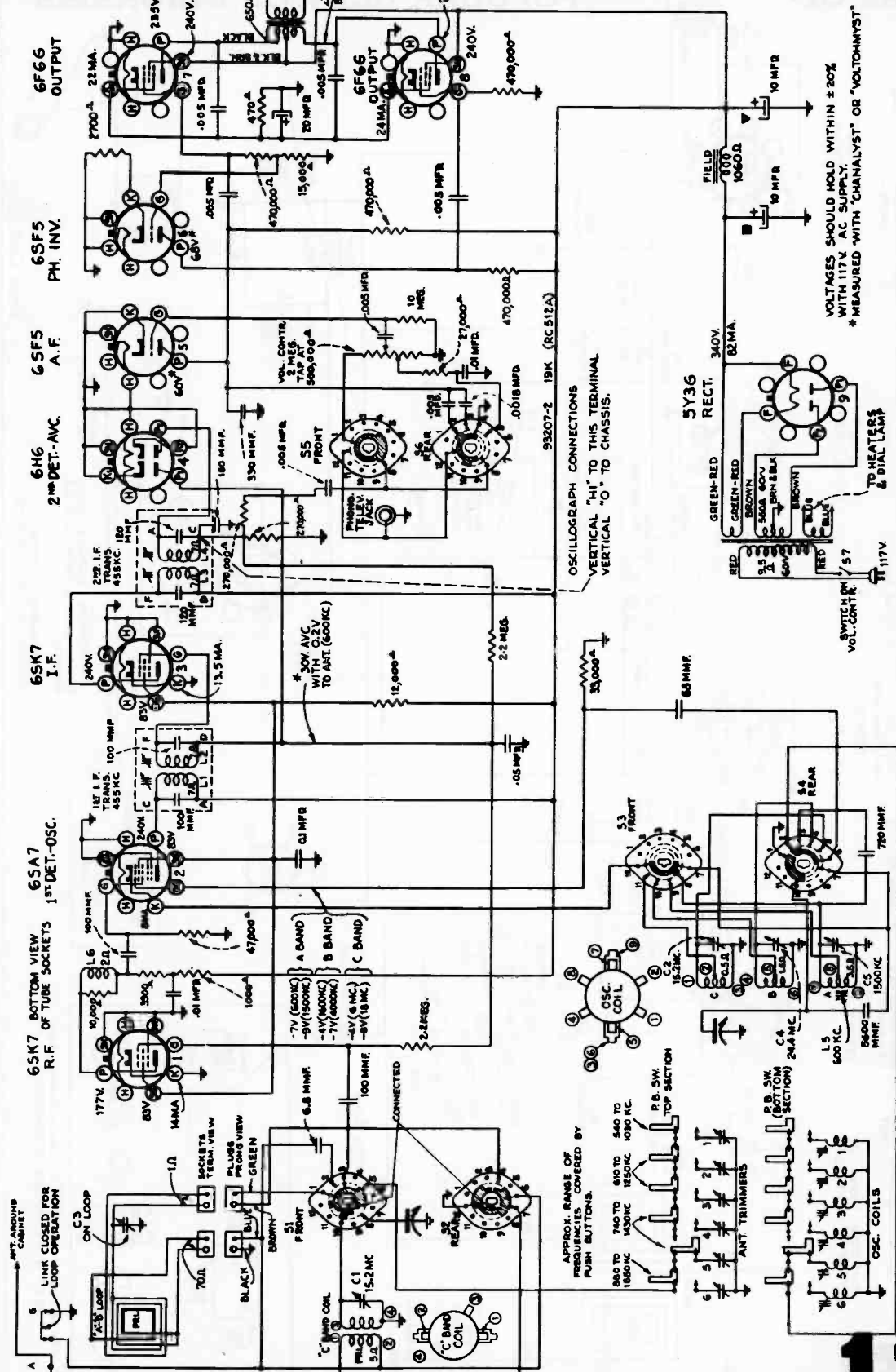
## Models 45X3, 45X4 (Chassis No. RC-457E)



**130**

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# MANUAL OF POPULAR SERVICE DIAGRAMS

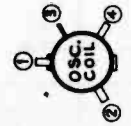
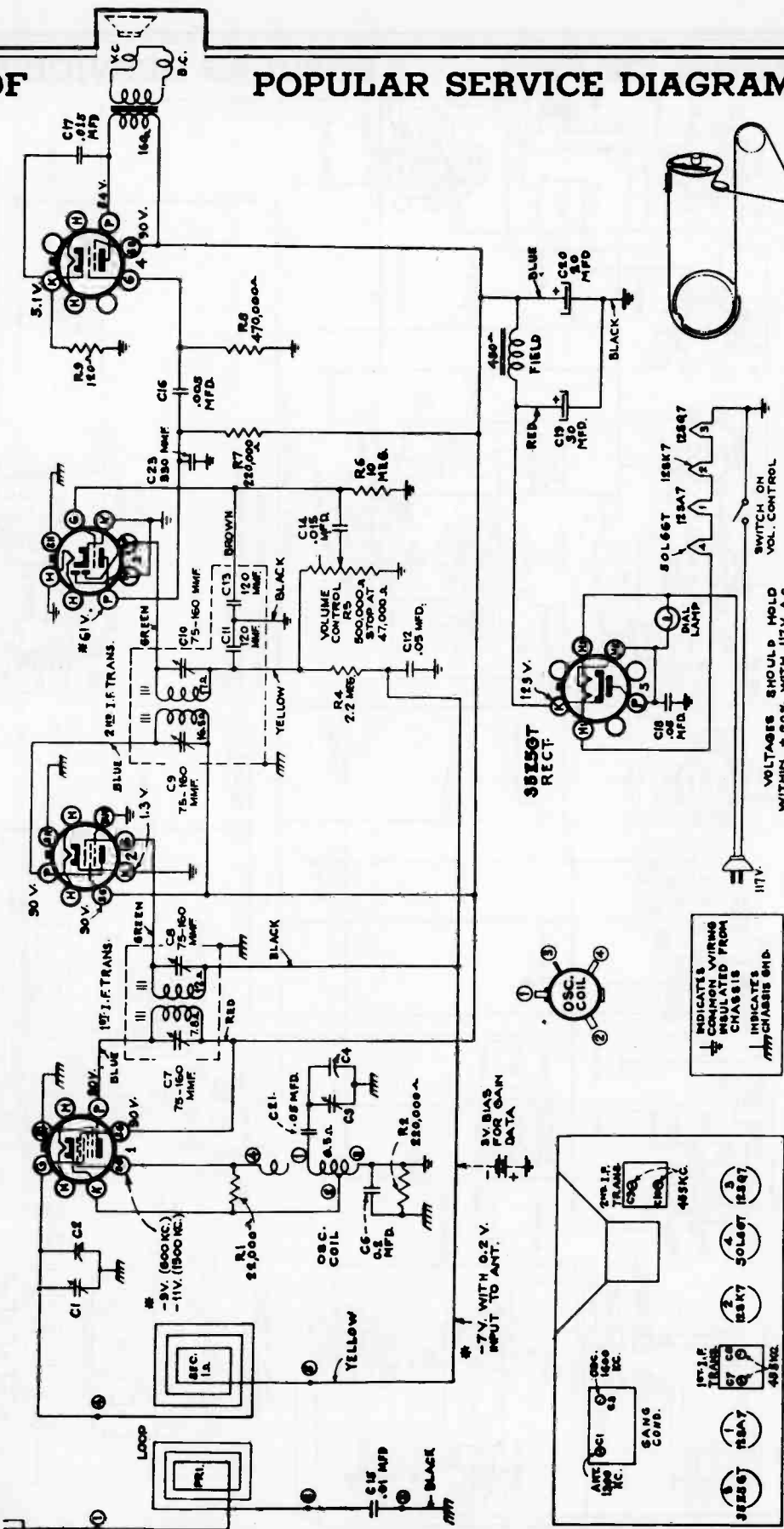
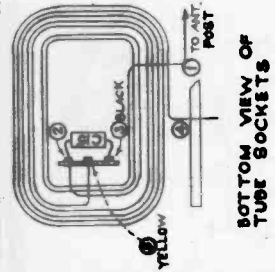
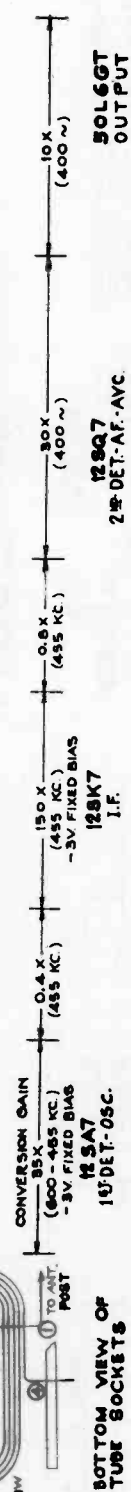


**MODEL 19K (Chassis No. RC-512A)**

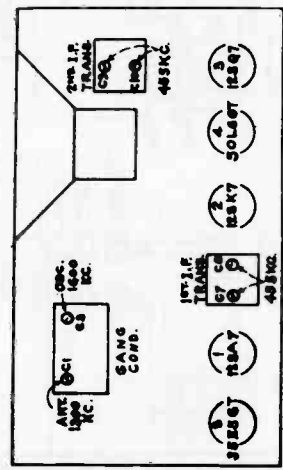
**Nine-Tube, Three-Band, A-C, Loop, Superheterodyne**

**RCA Victor**

### MANUAL OF POPULAR SERVICE DIAGRAMS

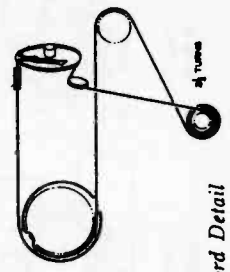


INDICATES COMMON WIRING CHASSIS INDICATES CHASSIS GND



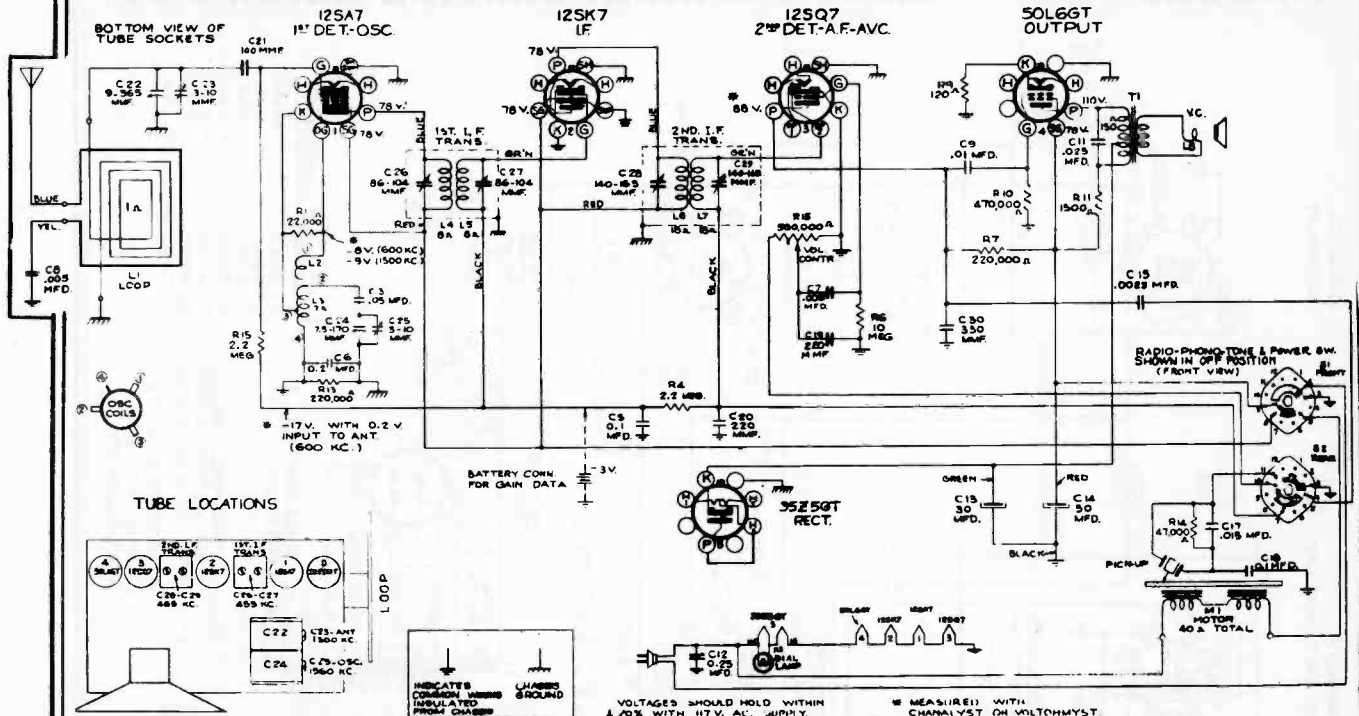
TUBE & TRIMMER LOCATIONS

VOLTAGES SHOULD HOLD WITHIN  $\pm 20\%$  WITH 117V. A.C. SUPPLY.  
\* MEASURED WITH CHANNELYST OR VOLTOHMYST

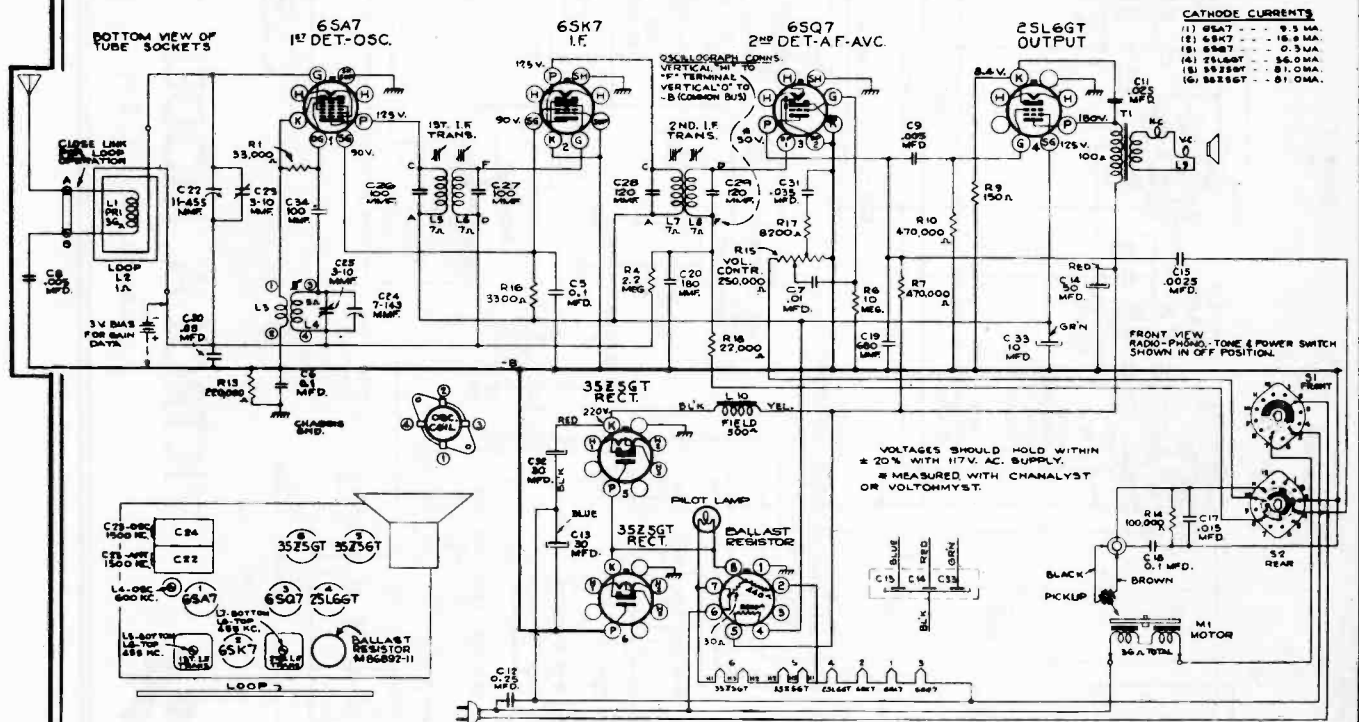


Drive Cord Detail

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



## RCA VICTROLA MODEL V-100

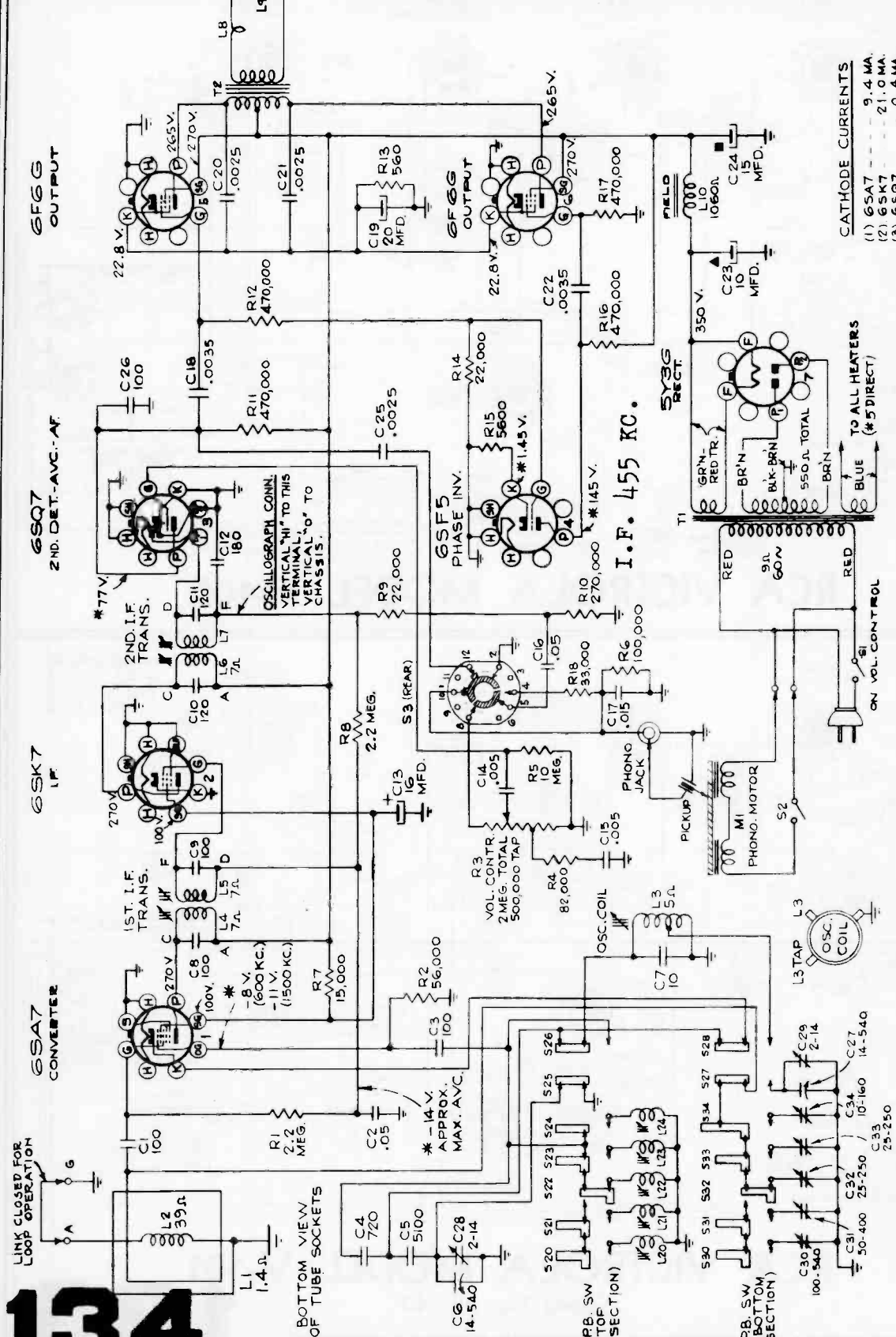


## RCA VICTROLA MODEL V-101

Chassis No. RC-540

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# 133



CATHODE CURRENTS

(1) 6SA7	9.4 MA.
(2) 6SK7	21.0 MA.
(3) 6SQ7	0.4 MA.
(4) 6SF5	0.3 MA.
(5) 6F6G	21.0 MA.
(6) 6F6G	21.0 MA.
(7) TOTAL RECT.	72.0 MA.

VOLTAGES SHOULD HOLD WITHIN ± 20% WITH 117 V. AC. SUPPLY.  
 \* MEASURED WITH CHANALYST OR VOLTOHMYST.

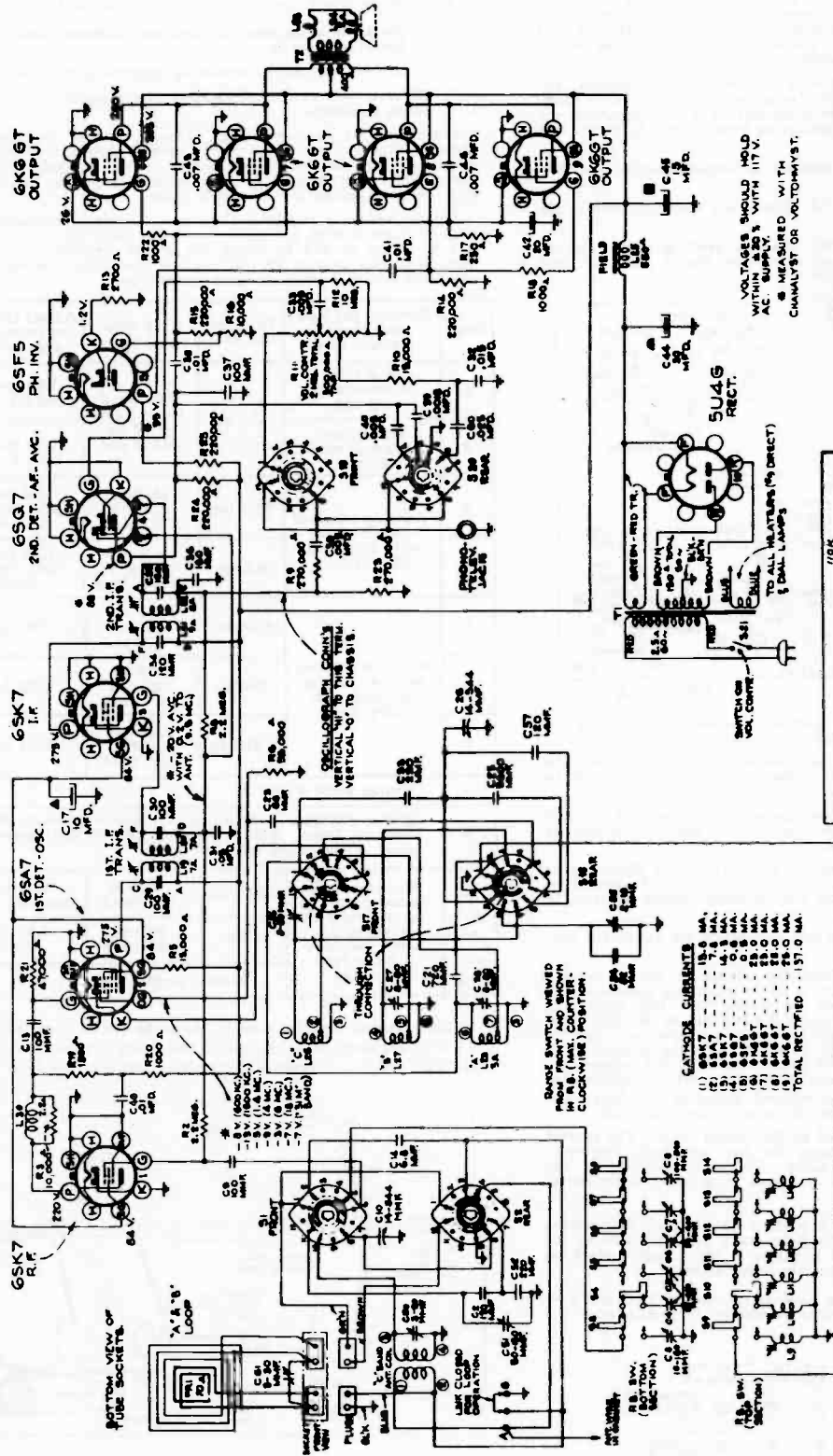
# VICTROLA MODEL V-102

Chassis No. RC-524

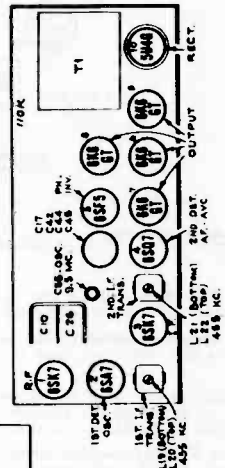




# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



**RCA Victor**  
**MODEL 110-K**  
 Chassis No. RC-513



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## Push Button Adjustment

The station push buttons connect to separate magnetite-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. 81031. Allow at least five minutes warm-up period before making adjustments.

In the event that the receiver is to be used with an external antenna use one or two feet of wire (as an antenna) to ensure sharp peaking during the final adjustment procedure. For loop operation, the link should be strapped across terminals on back of set. In either case the procedure is as follows:

1. Make a list of the desired stations, arranged in order from low to high frequencies.
2. Turn the range selector to "A" band, and manually tune in the first station on the list.
3. Turn range selector to "PB" position, push in station button No. 1 (extreme left). Then adjust the No. 1 oscillator core (L-14) to receive the station.

4. After oscillator core is set correctly, adjust C-8 for maximum output.

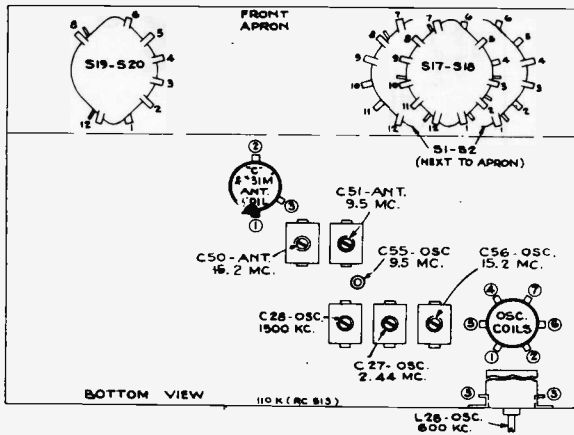
Clockwise adjustment of cores and trimmers tunes the circuits to lower frequencies.

5. Adjust for each of the remaining stations in the same manner.

6. Make a final careful adjustment of the oscillator cores and antenna trimmers.

Owing to the relatively high r-f gain, it may be found that a given station can be tuned in at several different settings of the magnetite-core oscillator push-button coils. In such cases, it is advisable to unscrew the loop push-button trimmers to minimum capacity before adjusting the magnetite cores.

On the 880 to 1,550 kc push-button, the higher frequency stations may be received with L-9 either in or out (oscillator frequency either 455 kc below or 455 kc above the station frequency). The adjustment with this core in its out position (oscillator frequency 455 kc above the station frequency) is the correct one.



Cathode-Ray Alignment is the preferable method. Connections for the oscillograph are shown in the schematic diagram.

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

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

Electronic Voltmeter.—The electronic voltmeter in the Chanalyst or Volt Ohmyst provides an unexcelled output indicator. It should be connected to the AVC bus, and the test-oscillator output adjusted to produce several volts of AVC.

Calibration for Alignment.—The dial calibration for alignment purposes can be set up in two ways:

1. The dial may be removed from the cabinet by sliding out the two spring pieces which clamp it in its mounting position. The condenser plates should then be turned into full mesh, the pointer adjusted to the scratch at the left end of the dial backing plate, and the dial placed on the frame so that its extreme left calibration mark coincides with the pointer. The dial may be held in place with scotch tape. In this manner the actual receiver dial is used for alignment. When alignment is finished, the scale should be replaced including the fibre light shields which are folded under the ends of the glass scale.
2. A calibration scale is attached to the tuning drum. The correct setting of the gang, in degrees, for each alignment frequency is given in the alignment table. Check the position of the drum, making sure that the 0 degree scale mark is horizontal with the gang in full mesh.

Pointer for Calibration Scale.—If method (2) is used, improvise a pointer for the calibration scale by fastening a piece of wire to the chassis, and bend the wire so that it points to the 0 degree mark on the calibration scale when the plates are fully meshed.

Spread-Band Alignment.—Make final adjustment of C56 and C50 during actual reception of a station of known frequency near 9.5 megacycles.

880 TO 1850 KC	740 TO 1430 KC	610 TO 1290 KC	540 TO 1030 KC
6	5	3	2
5	4	2	1
4	3	1	0
3	2	0	0
2	1	0	0
1	0	0	0
0	0	0	0
0	0	0	0

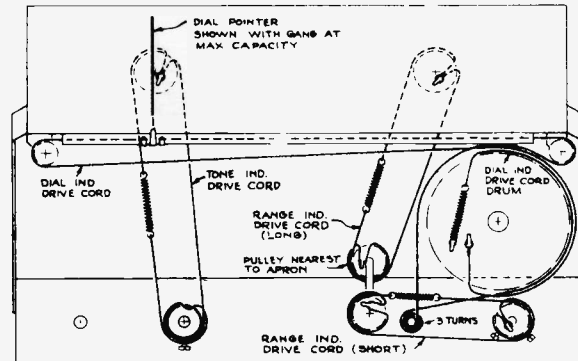
TRIMMER SCREWS  
CORE RODS

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	I-F grid in series with .01 mfd.	455 kc	"C" Band Quiet Point at 18 mc end of dial	L21 and L22 (2nd I.F. Trans.)
2	1st-det. grid in series with .01 mfd.			L19 and L20 (1st I.F. Trans.)
3	Antenna terminal (A), in series with 47 mmfd. (link closed)	15.2 mc	15.2 mc (149°) "C" band	C56 (osc.)* C50 (ant.)** Rock in
4		9.5 mc	9.5 mc (65.5°) "31M" band	C55 (osc.)* C51 (ant.)** Rock in
5	Stator of antenna section of gang, in series with 300 ohms	2.44 mc	2.44 mc (97°) "B" band	C27 (osc.)
6		600 kc	600 kc (30.5°) "A" band	L28 (osc.)
7		1,500 kc	1,500 kc (158°) "A" band	C28 (osc.)
8	Repeat steps 6 and 7.			
9	Fasten chassis in cabinet, see that link is closed on antenna terminal board, indicator at left end of dial scales with gang at maximum capacity.			
10	Radiation loop consisting of two turns of wire 18 inches in diameter located 4 to 6 feet from receiver	1,500 kc	1,500 kc "A" band	C61 (ant.) (mounted on loop)
11		600 kc	600 kc "A" band	L28 (osc.) Rock in
12	Repeat steps 10 and 11			

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

\*\* Use maximum capacity peak if two peaks can be obtained.

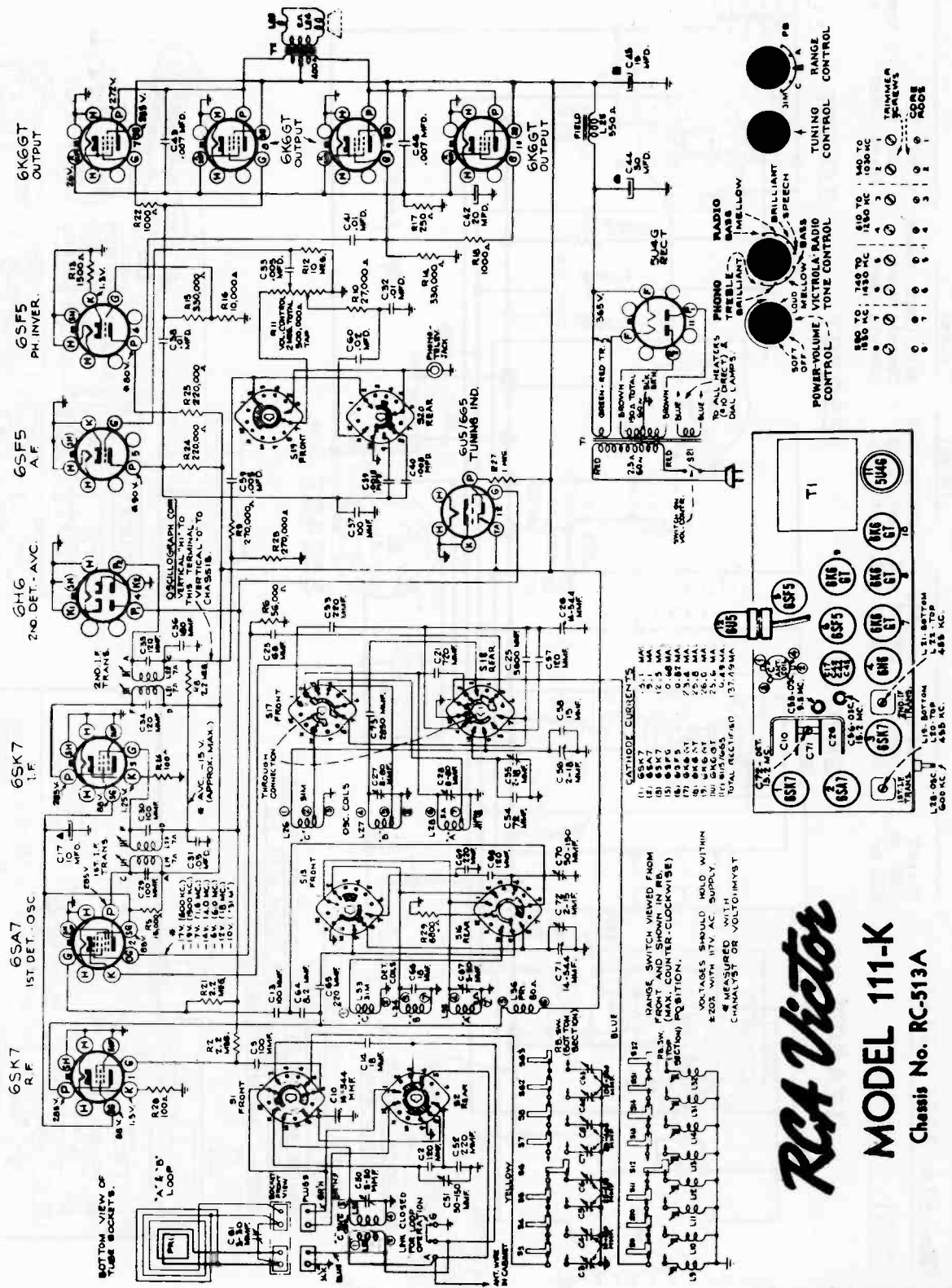
NOTE: Oscillator tracks 455 kc above signal on all bands.



## MODEL 110-K

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



**RCA Victor**  
**MODEL 111-K**  
 Chassis No. RC-513A

Sears, Roebuck & Co.  
Models 3351, 3451,  
3551, 132.802

POSITION OF VARIABLE GENERATOR ANTENNA

Closed  
1400 kc  
800 kc

12A8GT Grid  
Ant. clip

Var. Cond. Frame  
Chassis Base

GENERATOR CONNECTION (Low)

T2, T1  
C2, C1  
Check Point

TRIMMERS ADJUSTED (In order shown)

IF  
Translator

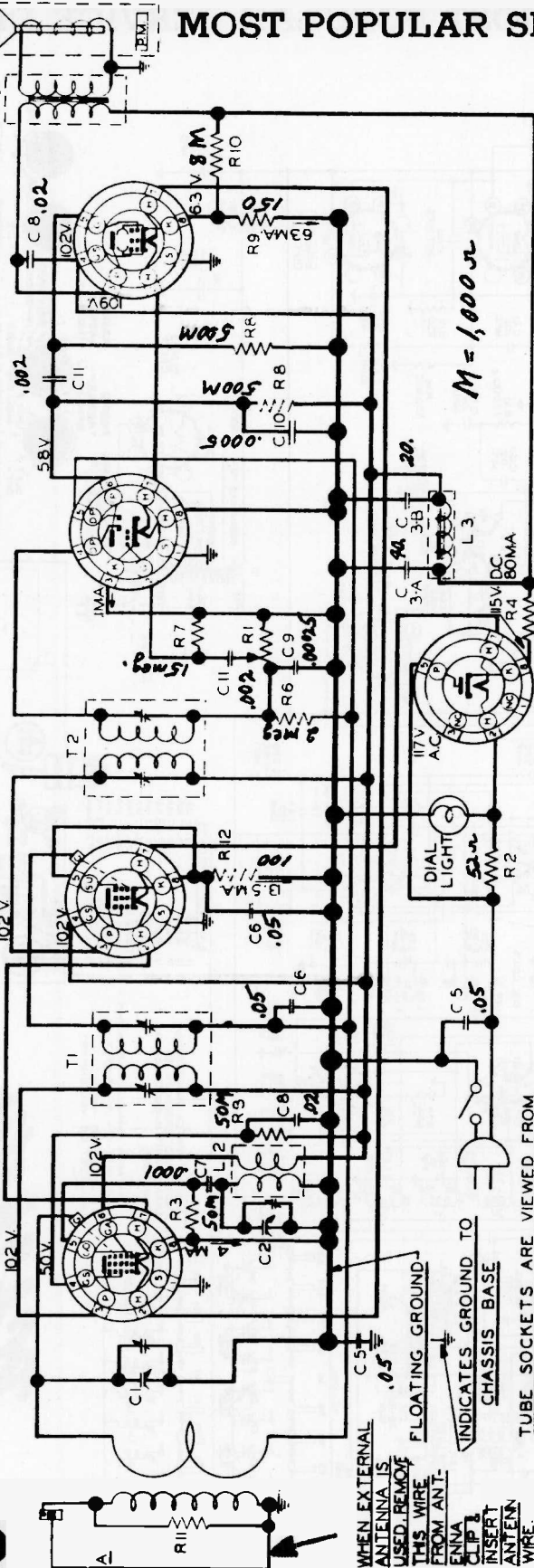
## MOST POPULAR SERVICE DIAGRAMS

12A8GT

12K7GT

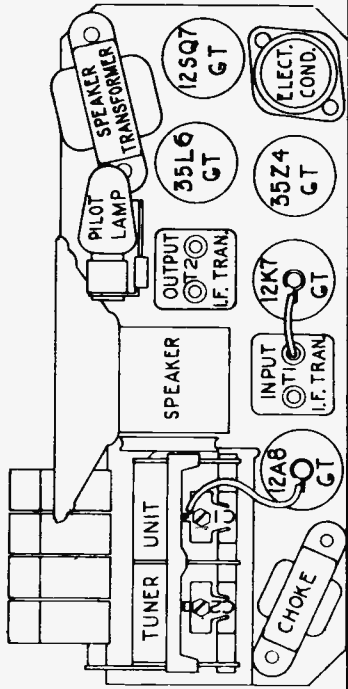
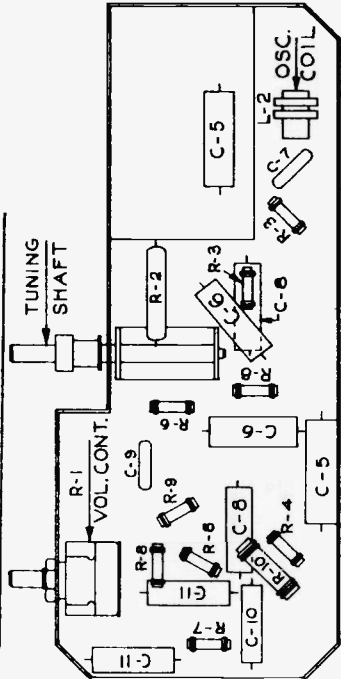
12SQ7GT

35L6GT



M = 1,000  $\mu$

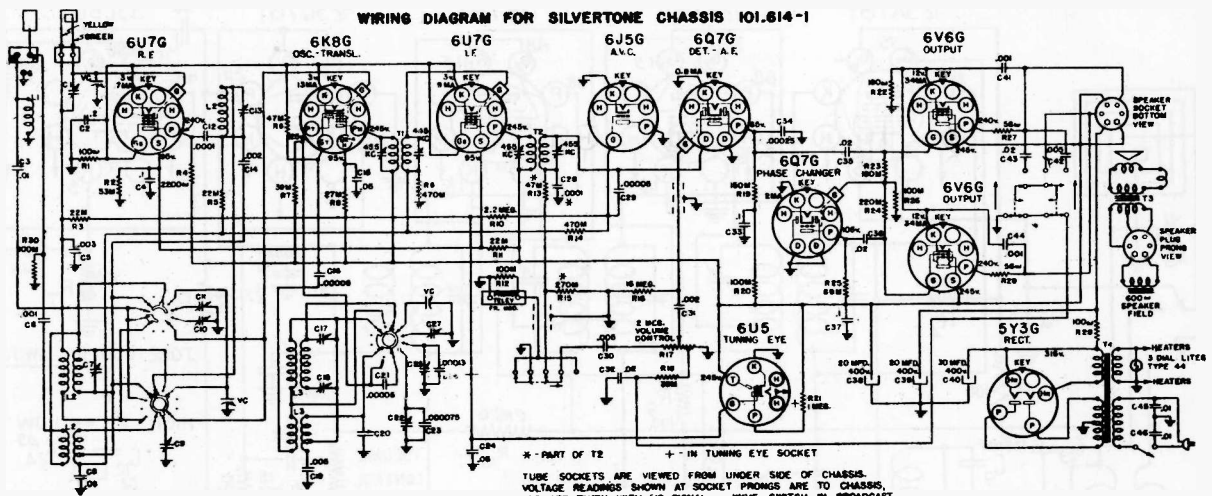
35Z4GT 30 $\mu$



WHEN EXTERNAL ANTENNA IS USED, REMOVE THIS WIRE FROM ANTENNA CLIP. INSERT ANTENNA WIRE.

TUBE SOCKETS ARE VIEWED FROM UNDER SIDE OF CHASSIS  
VOLTAGE READINGS SHOWN AT SOCKET PRONGS ARE TO FLOATING GROUND AND ARE TAKEN WITH NO SIGNAL. A.C. LINE VOLTAGE AT 117 VOLTS.

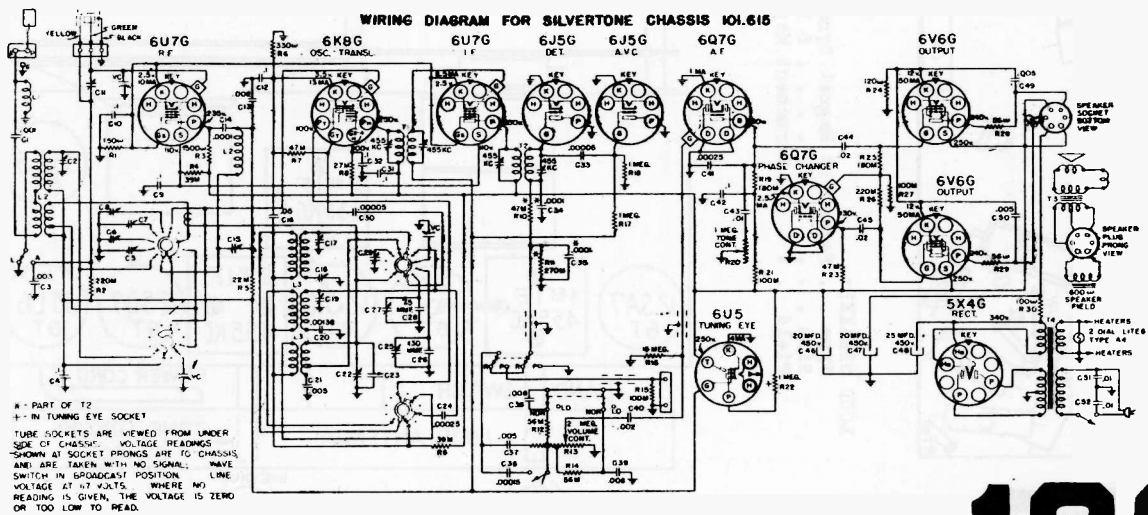
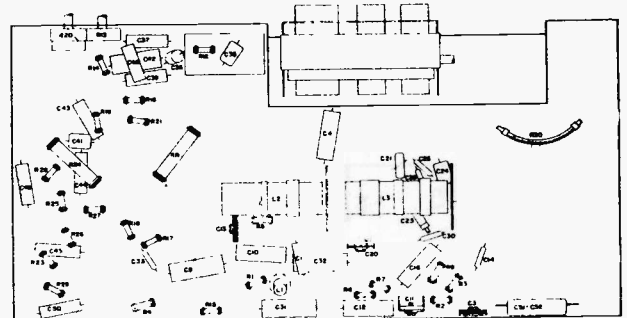
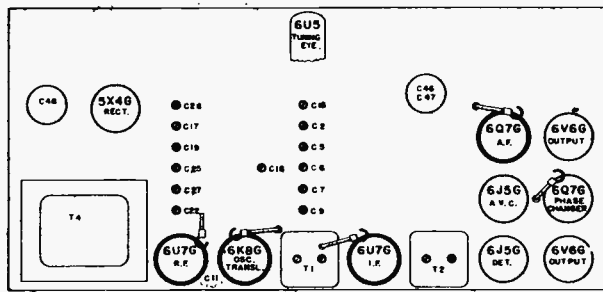
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



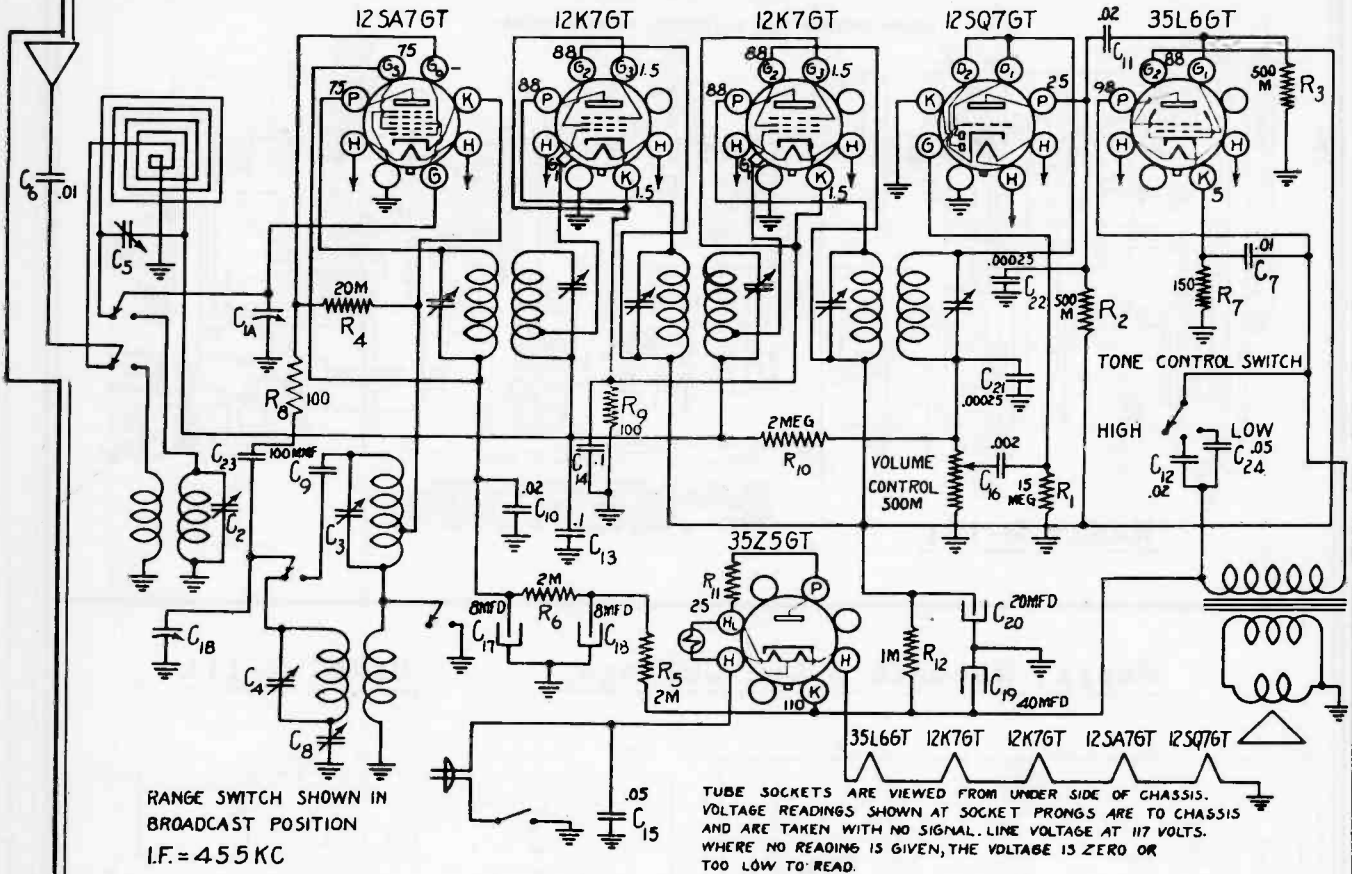
**Model R-101**

**Sears, Roebuck & Co. Chicago.**

**Model R-111**



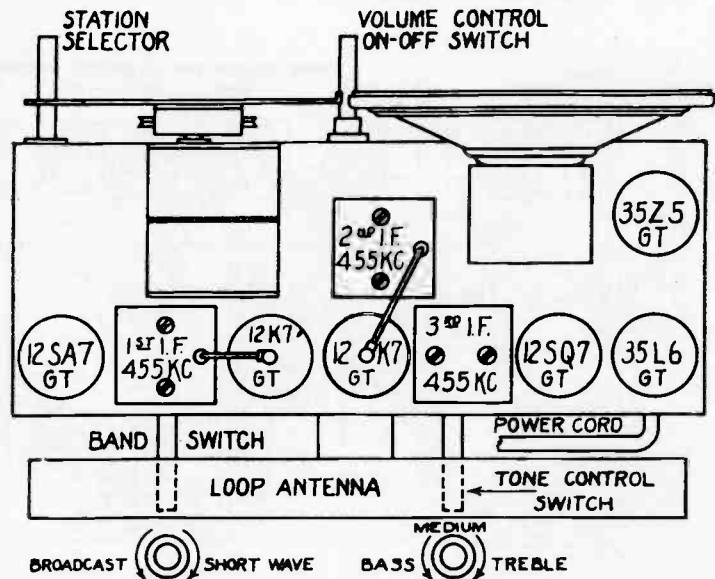
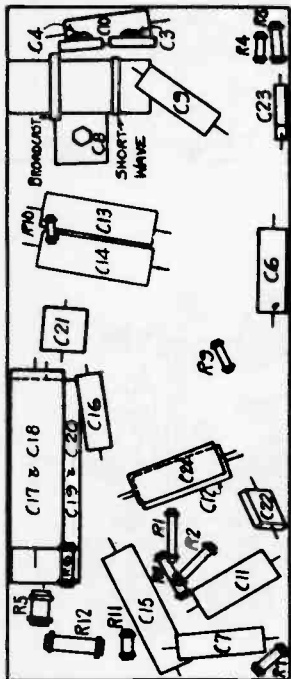
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



Sears, Roebuck & Co. Chicago.

Models 3361, 3461, 3561, 3621.

Factory No. 109.356

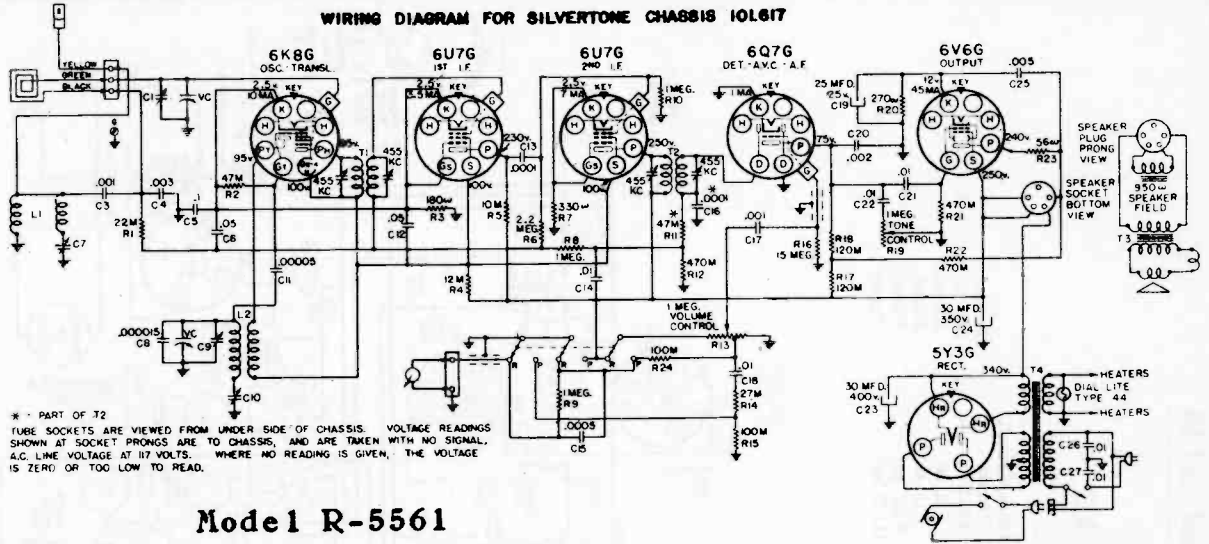


# 140

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

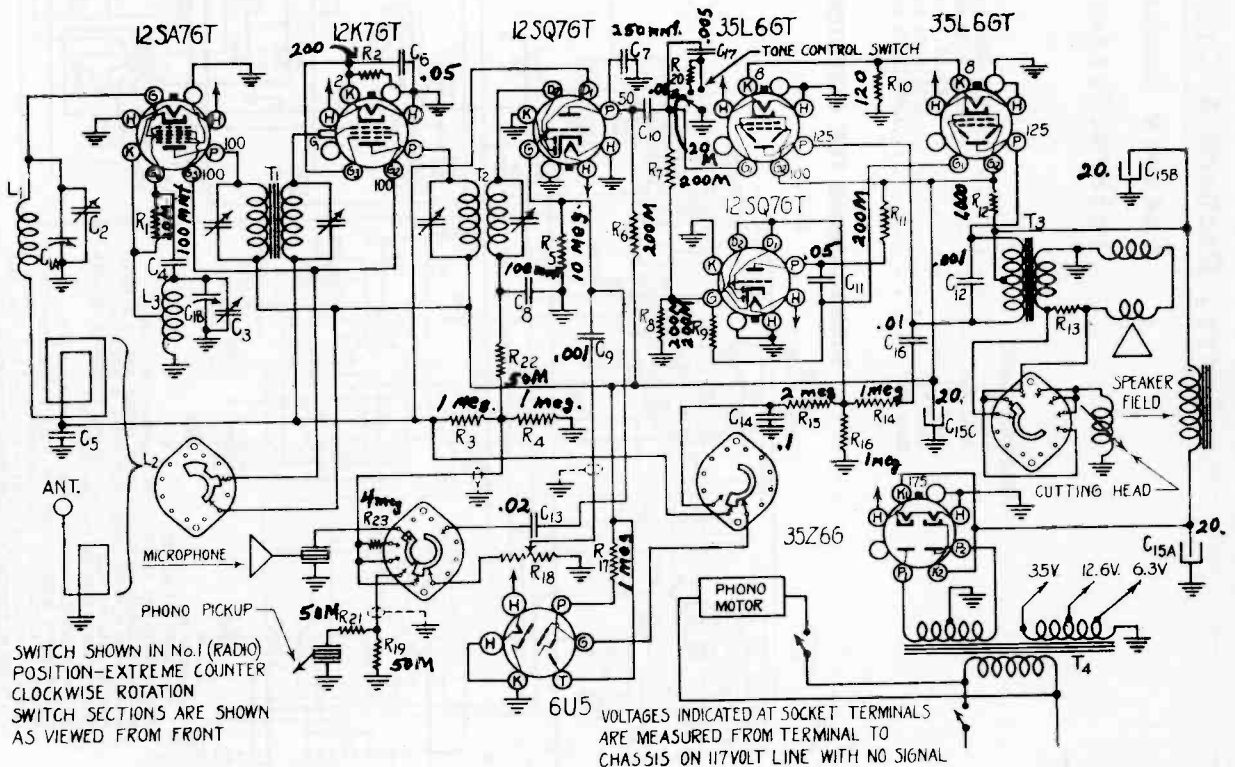
## WIRING DIAGRAM FOR SILVERTONE CHASSIS 10L617



Model R-5561

## Sears, Roebuck & Co. Models 5732 and 5732-B Factory Nos. 109.371 and 109.371-1

These receivers are alike except that the early model C13 is .001 mfd. and C9 is .002 mfd. Also the connection from C13 was connected to the volume control side of C9.



M = 1,000  $\mu$

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

Sears, Roebuck & Co. Models 5601A and 6449

Factory Number 101.628

Intermediate Frequency: 455 KC.

**FREQUENCY RANGES:**

Band "A"	538-1650 kc
Band "B"	1.45-2.56 mc
Band "C"	5.82-18.3 mc
Band "D"	9.35-9.86 mc
Band "E"	10.89-12.02 mc

**ALIGNMENT FREQUENCIES:**

Oscillator	Antenna-Transl.
Trimmer	1500 kc
	2.4 mc
	18.3 mc
	9.55 mc
	11.71 mc

600 kc

Fixed

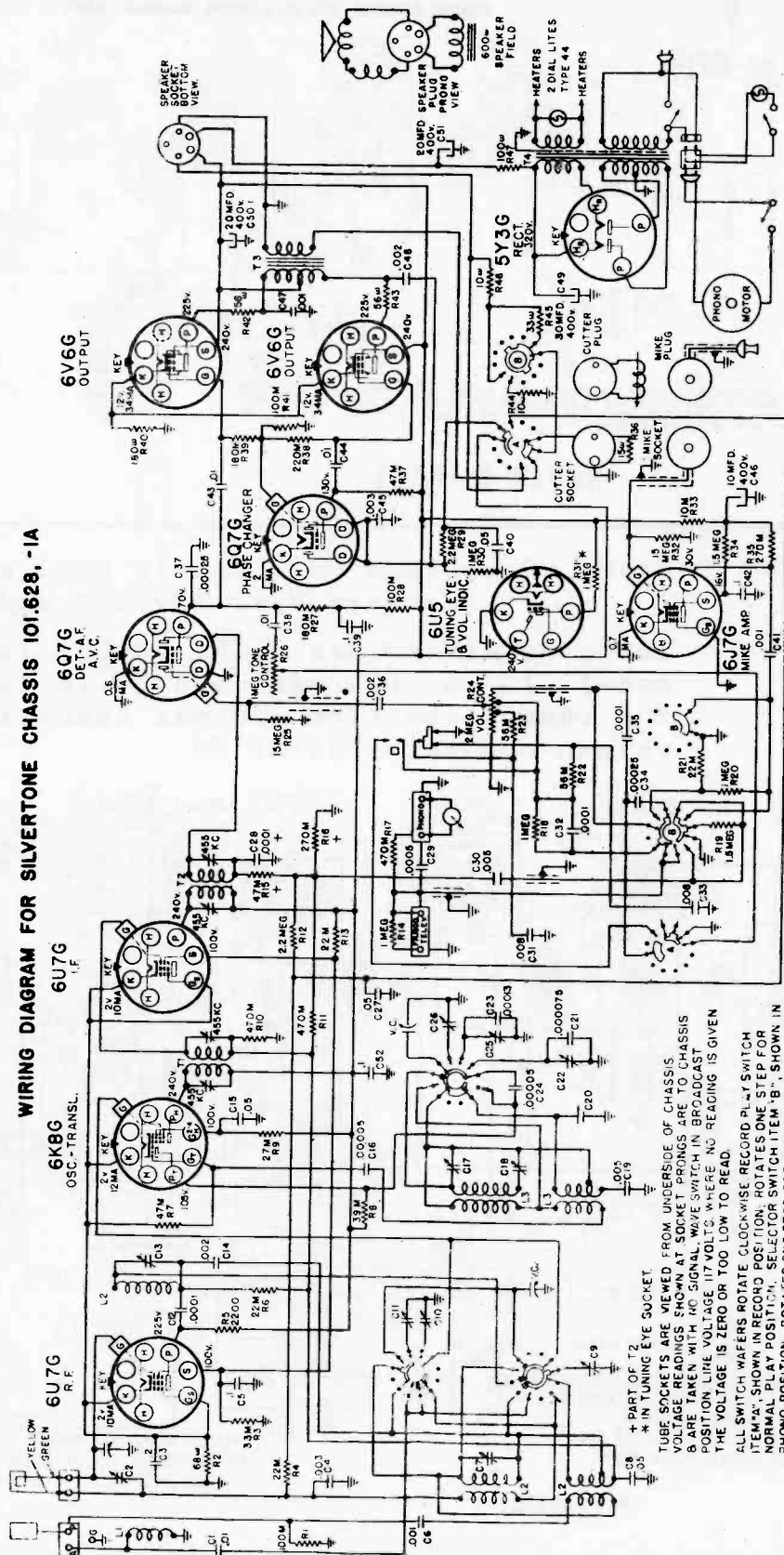
Fixed

Fixed

Fixed

Fixed

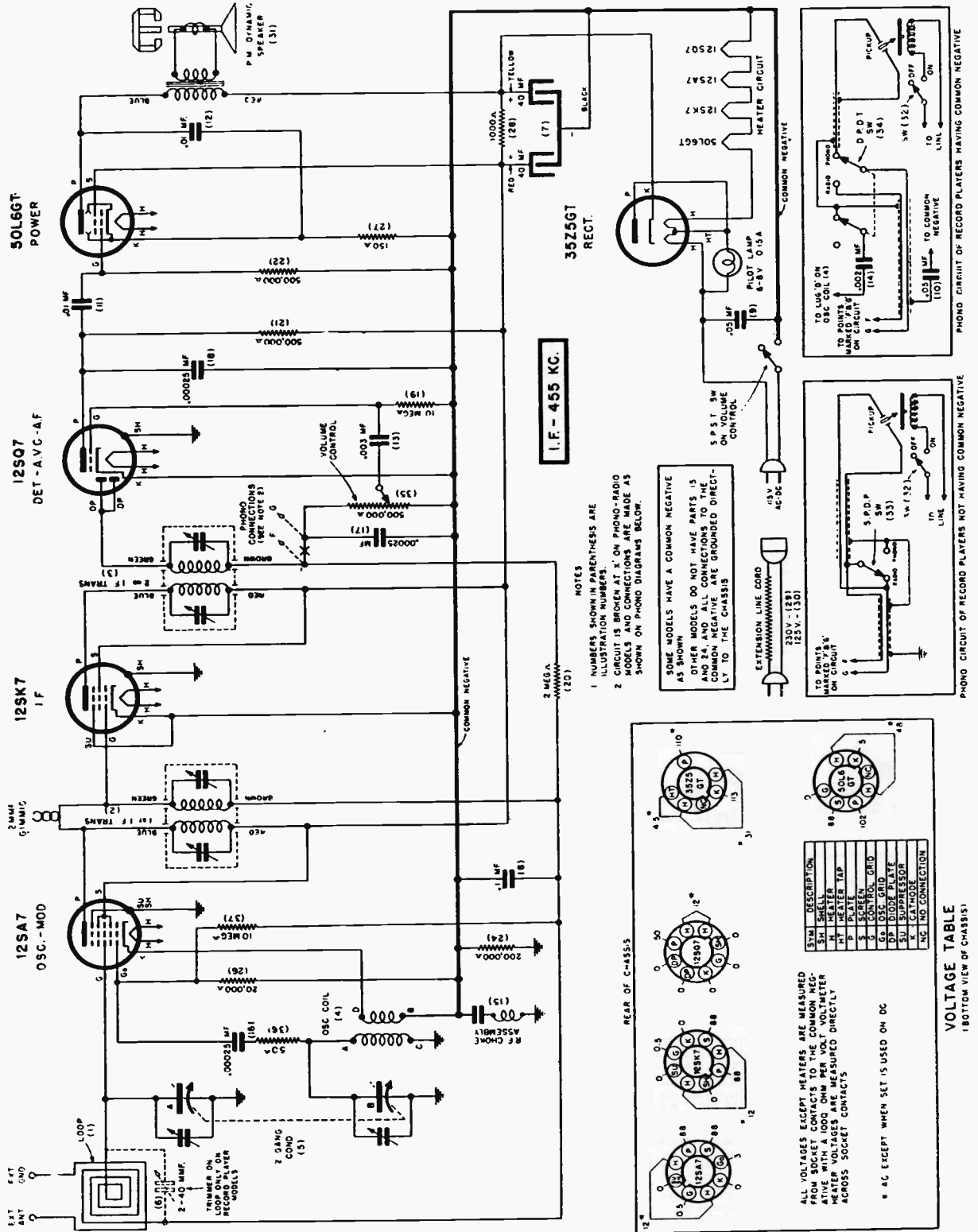
**WIRING DIAGRAM FOR SILVERTONE CHASSIS 101.628, -1A**



\* PART OF T2  
 † IN TUNING EYE SOCKET  
 TUBE SOCKETS ARE VIEWED FROM UNDERSIDE OF CHASSIS.  
 VOLTAGE READINGS SHOWN AT SOCKET PINS ARE TO CHASSIS  
 B ARE TAKEN WITH MIC SIGNAL WAVE SWITCH BROUCAST  
 POSITION LINE VOLTAGE 117 VOLTS WERE MIC READING IS GIVEN  
 THE VOLTAGE IS ZERO OR TOO LOW TO READ.  
 ALL SWITCH WAFERS ROTATE CLOCKWISE RECORD PLAY SWITCH  
 ITEM "A" SHOWS RECORD POSITION; ROTATES ONE STEP FOR  
 NORMAL PLAY POSITION; SELECTOR SWITCH ITEM "B" SHOWN IN  
 PHONO POSITION; ROTATES ONE STEP FOR RADIO POSITION; TWO  
 STEPS FOR MICROPHONE POSITION; THREE STEPS FOR RADIO B  
 MICROPHONE POSITION.



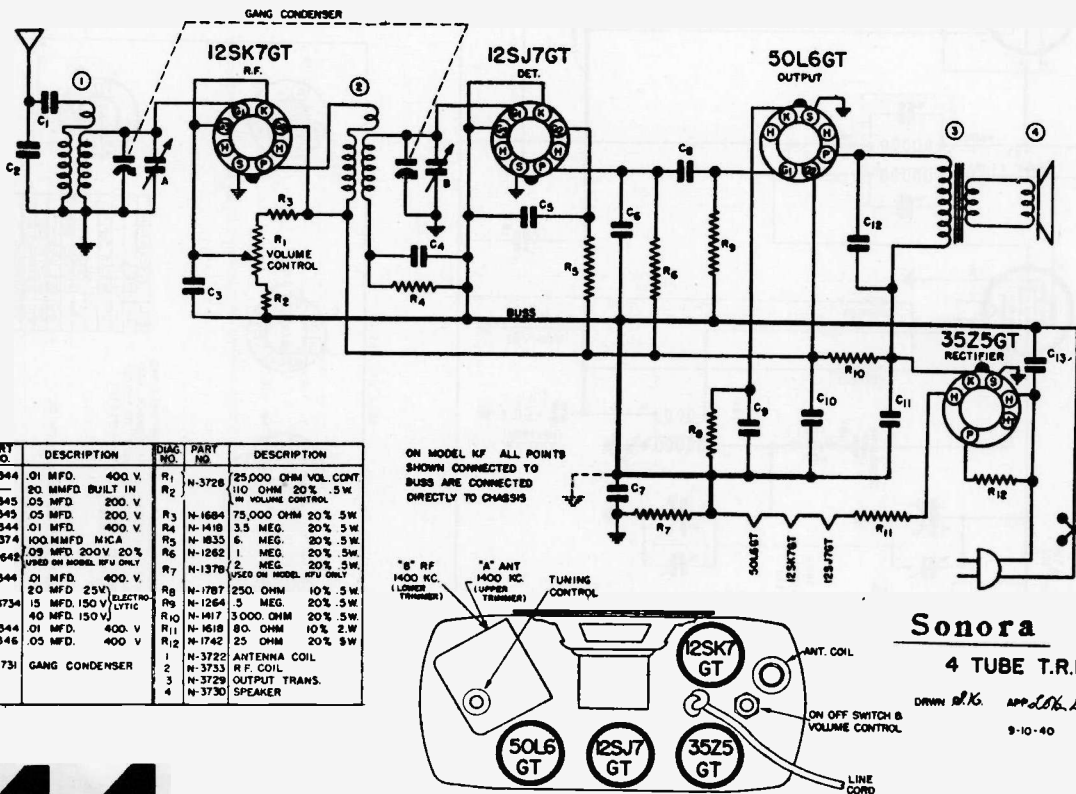
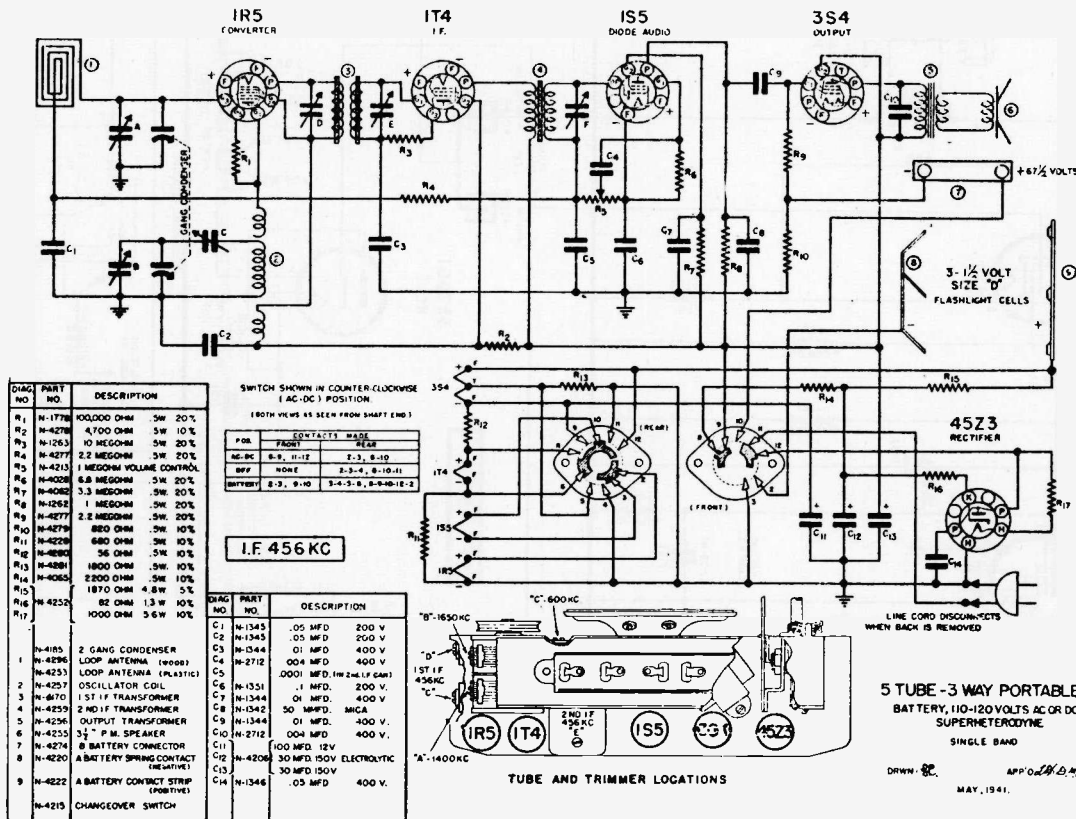
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



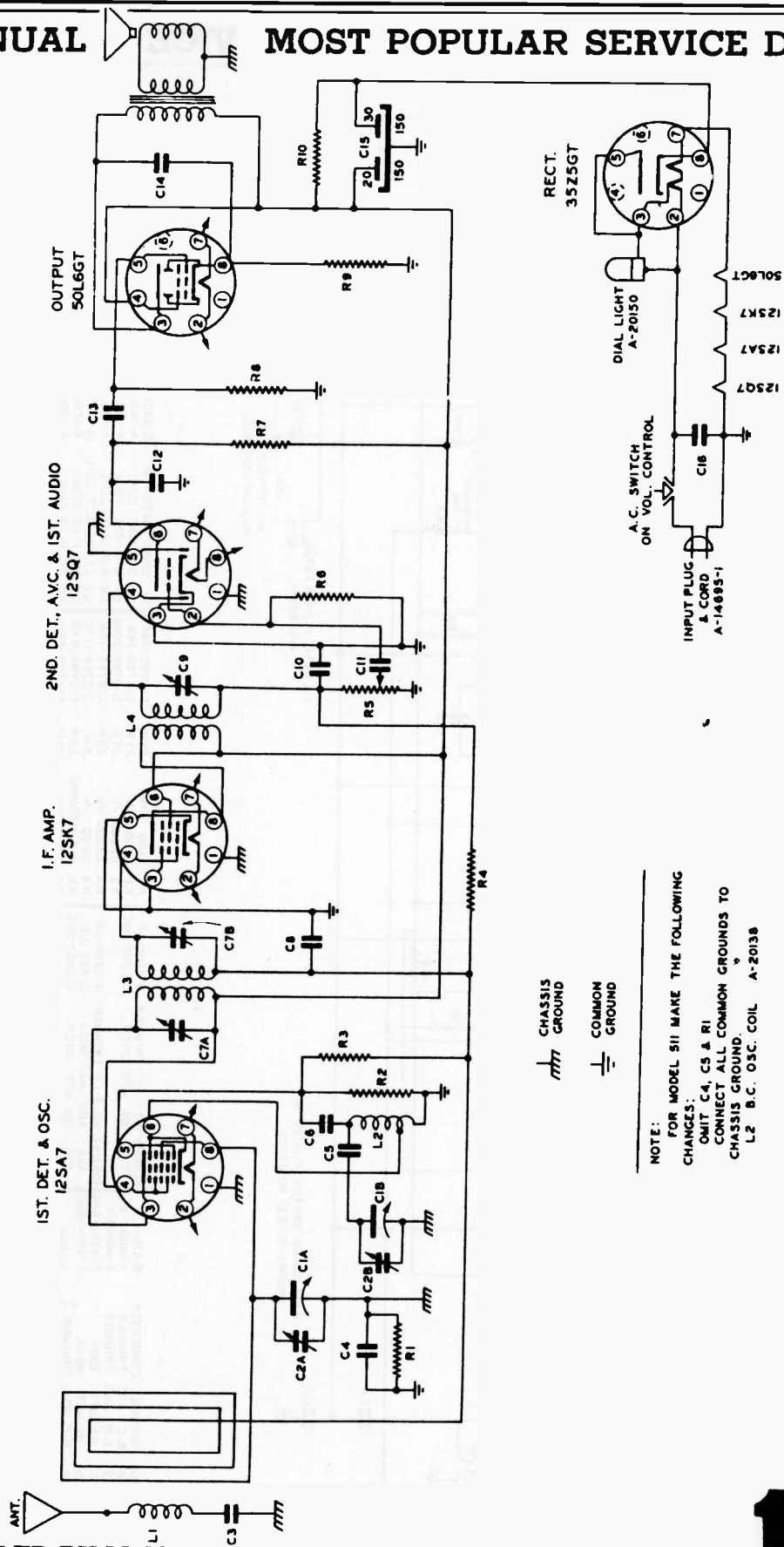
Sentinel Radio Corporation  
 Model 248

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

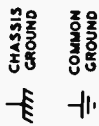
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



**SCHEMATIC DIAGRAM**  
**SPARTON SUPERHETERODYNE MODEL 511U & 511 (SEE NOTE)**  
**INTERMEDIATE FREQUENCY 456 K.C.**  
 BOTTOM VIEWS OF ALL SOCKET CONNECTIONS



**NOTE:**  
 FOR MODEL 511 MAKE THE FOLLOWING  
 CHANGES:  
 OMIT C4, C5 & R1  
 CONNECT ALL COMMON GROUNDS TO  
 CHASSIS GROUND  
 L2 B.C. OSC. COIL A-20138



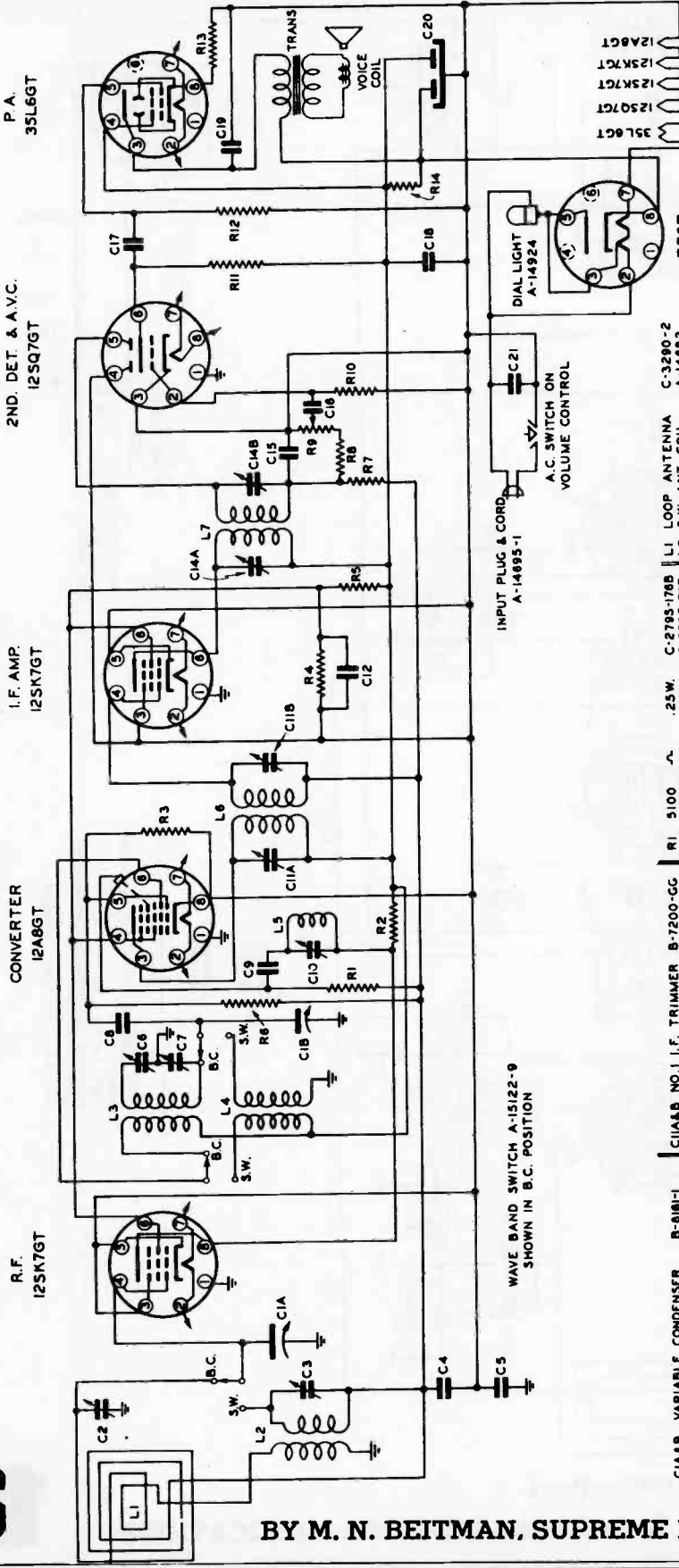
- |     |           |      |             |
|-----|-----------|------|-------------|
| R1  | 150,000 Ω | .5W. | C-2798-26C  |
| R2  | 20,000 Ω  | .5W. | C-2798-190C |
| R3  | 15 MEGOHM | .5W. | A-20138     |
| R4  | 2 MEGOHM  | .5W. | C-2798-238C |
| R5  | 500,000 Ω | .5W. | A-20137     |
| R6  | 5 MEGOHM  | .5W. | C-2798-248C |
| R7  | 250,000 Ω | .5W. | C-2798-216C |
| R8  | 500,000 Ω | .5W. | C-2798-94C  |
| R9  | 150 Ω     | 1W.  | C-2798-52C  |
| R10 | 1000 Ω    | 1W.  | C-2797-13B  |

- |     |                   |
|-----|-------------------|
| C9  | NO.2 I.F. TRIMMER |
| C10 | 250 MMF. MICA     |
| C11 | .01 MFD. 400V.    |
| C12 | 500 MMF. MICA     |
| C13 | .002 MFD. 600V.   |
| C14 | .01 MFD. 400V.    |
| C15 | 20-30 MFD. ELECT. |
| C16 | .05 MFD. 400V.    |

- |         |                      |
|---------|----------------------|
| C1A & B | VARIABLE CONDENSER   |
| C2A & B | TRIMMERS ON VARIABLE |
| C3      | .001 MFD. 800V.      |
| C4      | .2 MFD. 200V.        |
| C5      | .02 MFD. 200V.       |
| C6      | 50 MMF. MICA         |
| C7A & B | NO.1 I.F. TRIMMERS   |
| C8      | .05 MFD. 200V.       |

- |    |                |
|----|----------------|
| L1 | LOOP ANTENNA   |
| L2 | B.C. OSC. COIL |
| L3 | NO.1 I.F. COIL |
| L4 | NO.2 I.F. COIL |

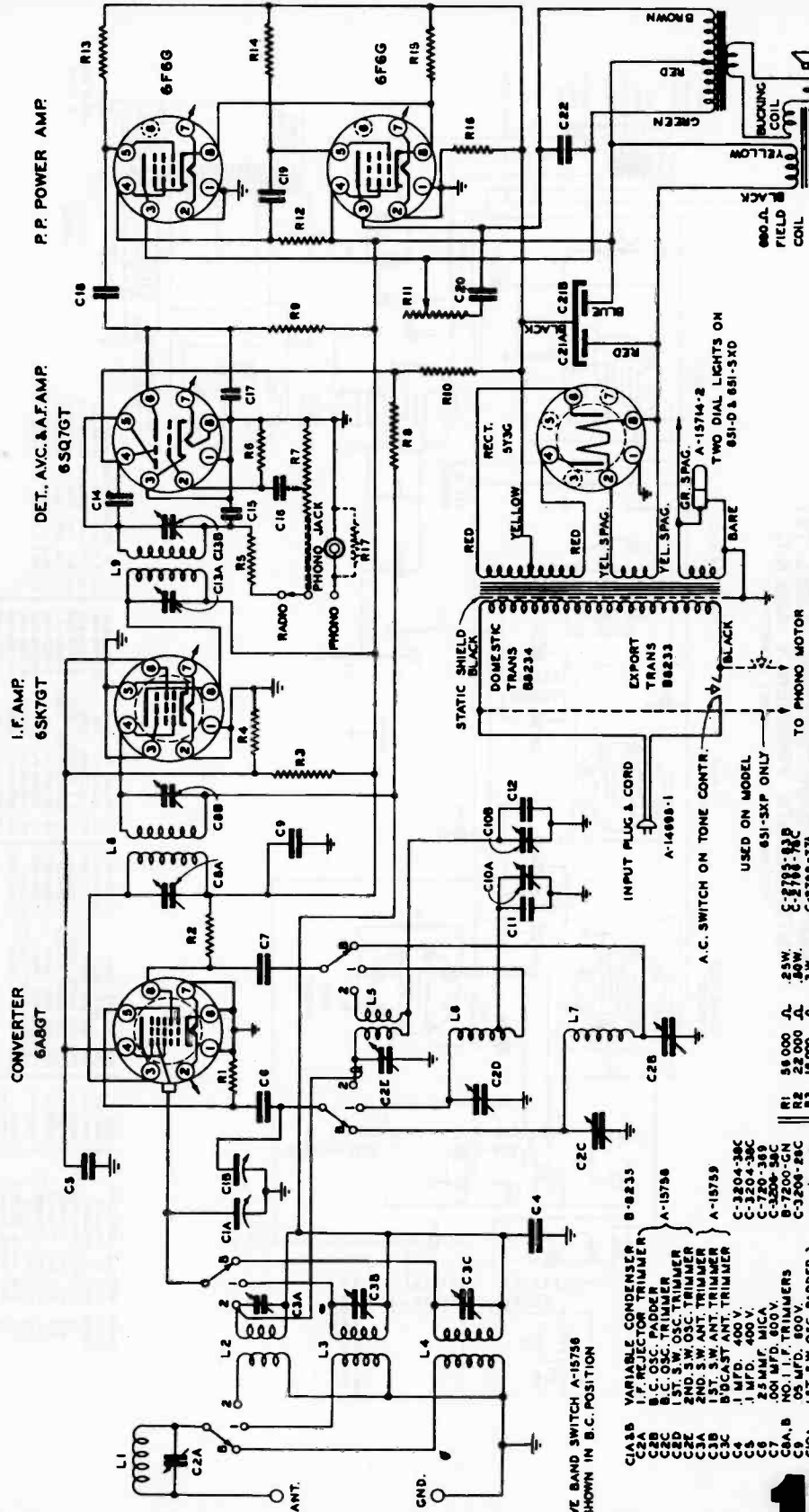
**SCHEMATIC DIAGRAM**  
**SPARTON SUPERHETERODYNE MODEL 601-S**  
**INTERMEDIATE FREQUENCY 456 K.C.**  
 BOTTOM VIEWS OF ALL SOCKET CONNECTIONS



- C1AAB VARIABLE CONDENSER
- C2 B.C. ANT. TRIMMER
- C3 S.W. ANT. TRIMMER
- C4 .05 MFD. 200V.
- C5 .15 MFD. 400V.
- C6 B.C. OSC. TRIMMER
- C7 B.C. OSC. PADDER
- C8 50 MMF. MICA
- C9 100 MMF. MICA
- C10 I.F. REJECT. TRIMMER
- C11A B NO. 1 I.F. TRIMMER
- C12 .05 MFD. 200V.
- C13A B NO. 2 I.F. TRIMMER
- C14A B NO. 2 I.F. TRIMMER
- C15 500 MMF. MICA
- C16 .01 MFD. 200V.
- C17 .01 MFD. 200V.
- C18 .1 MFD. 200V.
- C19 .03 MFD. 400V.
- C20 25-.25 MFD. ELECT.
- C21 .05 MFD. 400V.
- C-3290-2
- A-14682
- A-15232
- A-15233
- A-14718-1
- A-12084-32
- A-12084-17
- L1 LOOP ANTENNA
- L2 5W ANT. COIL
- L3 B.C. OSC. COIL
- L4 5W OSC. COIL
- L5 I.F. REJECT. COIL
- L6 NO. 1 I.F. COIL
- L7 NO. 2 I.F. COIL
- C-2795-17B
- C-2795-20B
- C-2795-17C
- C-2796-105B
- C-2795-99B
- C-2795-201B
- A-15122-10B
- C-2795-91B
- C-2795-91B
- C-2798-53C
- C-2797-65B
- R1 5100 Ω
- R2 10,000 Ω
- R3 56,000 Ω
- R4 22,000 Ω
- R5 5900 Ω
- R6 6.2 MEGOHM
- R7 1 MEGOHM
- R8 56,000 Ω
- R9 VOL. CONT. & SW.
- R10 10 MEGOHM
- R11 270,000 Ω
- R12 880,000 Ω
- R13 180 Ω
- R14 1800 Ω
- R-1
- R-2
- R-3
- R-4
- R-5
- R-6
- R-7
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- R-95
- R-96
- R-97
- R-98
- R-99
- R-100

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## SCHEMATIC DIAGRAM SPARTON SUPERHETERODYNE MODELS 651, 651-D, 651-SX, 651-SXD, 651-SXP INTERMEDIATE FREQUENCY 456 K.C. BOTTOM VIEWS OF ALL SOCKET CONNECTIONS



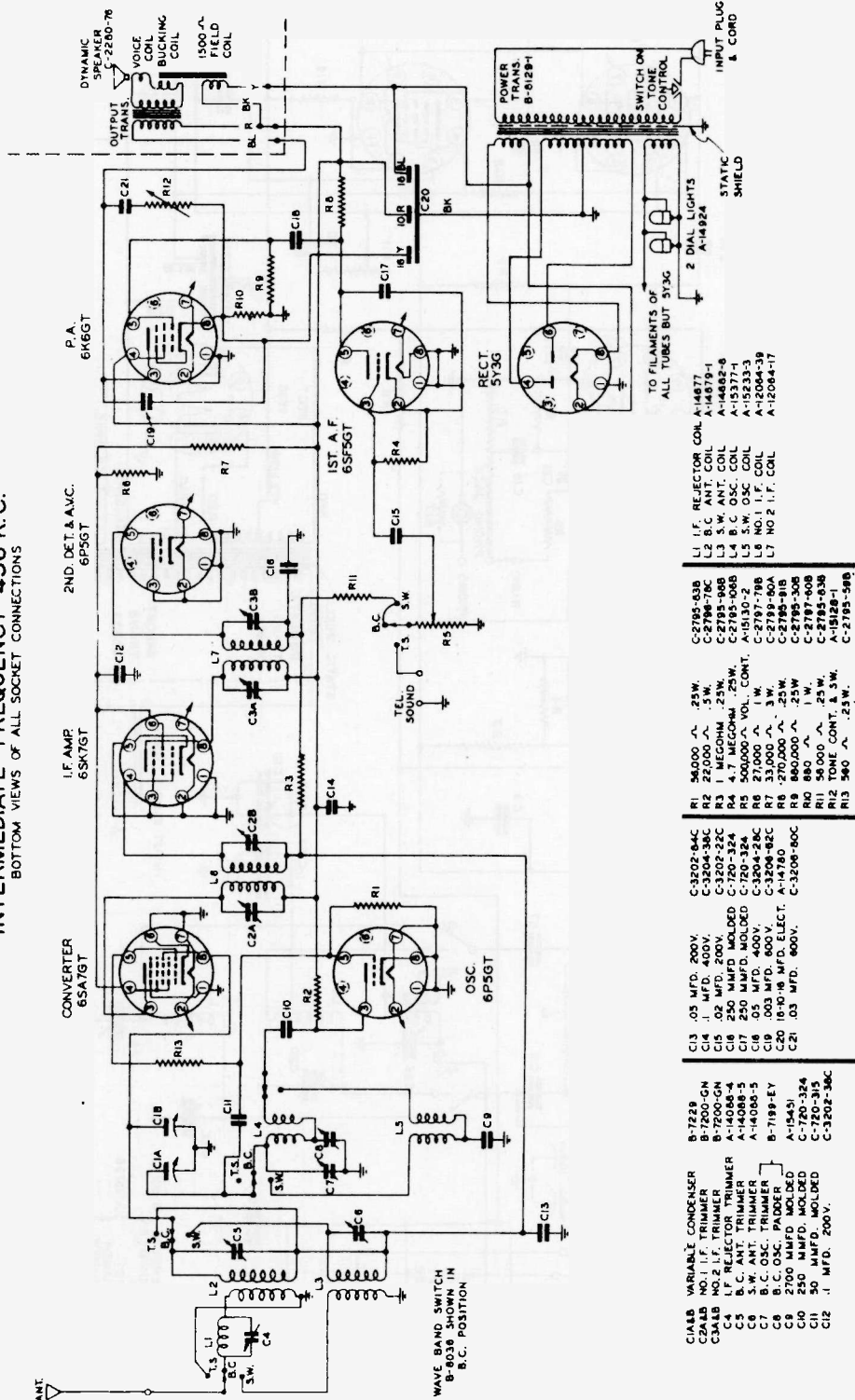
- USED ON MODEL 651-SXP ONLY
- C-2783-82C
  - C-2789-77A
  - C-2789-77B
  - C-2785-83B
  - C-2785-110B
  - C-2785-98B
  - C-2785-98B
  - C-2785-98B
  - A-15131-1
  - C-2785-169B
  - C-2785-223B
  - C-2787-147B
  - C-2787-155B
  - C-2785-74B
- TO PHONO MOTOR
- L1 I.F. REJECTOR COIL A-15772
  - L2 2ND S.W. ANT. COIL A-15778
  - L3 1ST S.W. ANT. COIL A-14864-1
  - L4 2ND S.W. ANT. COIL A-15773-14
  - L5 1ST S.W. ANT. COIL A-15773
  - L6 NO. 1 I.F. COIL A-15771
  - L9 NO. 2 I.F. COIL A-12044-39
  - A-12044-17

- ON 25 ~ RECEIVERS ONLY
- R1 59,000 Ω .25W.
  - R2 22,000 Ω .50W.
  - R3 18,000 Ω 1W.
  - R4 50,000 Ω .25W.
  - R5 50,000 Ω .25W.
  - R6 10 MEG. VOL. CONTROL
  - R7 5 MEG. VOL. CONTROL
  - R8 1 MEG. .25W.
  - R9 270,000 Ω .25W.
  - R10 1 MEG. .25W.
  - R11 1 MEG. T.C. SWITCH
  - R12 2700 Ω .25W.
  - R13 470,000 Ω .25W.
  - R14 470,000 Ω .25W.
  - R15 330 Ω 1W.
  - R16 160 Ω 1W.
  - R17 10,000 Ω .25W.

- CLASS B
- C2A VARIABLE CONDENSER B-9235
  - C2B I.F. REJECTOR TRIMMER A-15736
  - C2C B.C. OSC. PADDER B-7200-CN
  - C2D B.C. OSC. TRIMMER C-3204-58C
  - C2E 2ND S.W. OSC. TRIMMER B-8244-PY
  - C2F 2ND S.W. OSC. TRIMMER B-7200-CN
  - C2G 1ST S.W. ANT. TRIMMER B-7200-CN
  - C2H 1ST S.W. ANT. TRIMMER B-7200-CN
  - C2I BUCAST ANT. TRIMMER C-3208-136C
  - C2J .1 MFD. 400 V. C-3208-136C
  - C2K .5 M MFD. 600V. C-3208-136C
  - C2L .001 MFD. 600V. C-3208-136C
  - C2M .05 MFD. 800V. C-3208-136C
  - C2N .1 MFD. 800V. C-3208-136C
  - C2O 3T. S.W. OSC. PADDER B-7200-CN
  - C2P 100 M MFD. MICA C-3208-136C
  - C2Q 3400 M MFD. MICA C-3208-136C
  - C2R NO. 2 I.F. TRIMMERS C-3208-136C
  - C2S 100 M MFD. MICA C-3208-136C
  - C2T 250 M MFD. MICA C-3208-136C
  - C2U .01 MFD. 600V. C-3208-136C
  - C2V .03 MFD. 600V. C-3208-136C
  - C2W .03 MFD. 600V. C-3208-136C
  - C2X 15 MFD. 450V. ELECT. C-3208-136C
  - C2Y 30 MFD. 300V. ELECT. C-3208-136C
  - C2Z .003 MFD. 800V. C-3208-136C

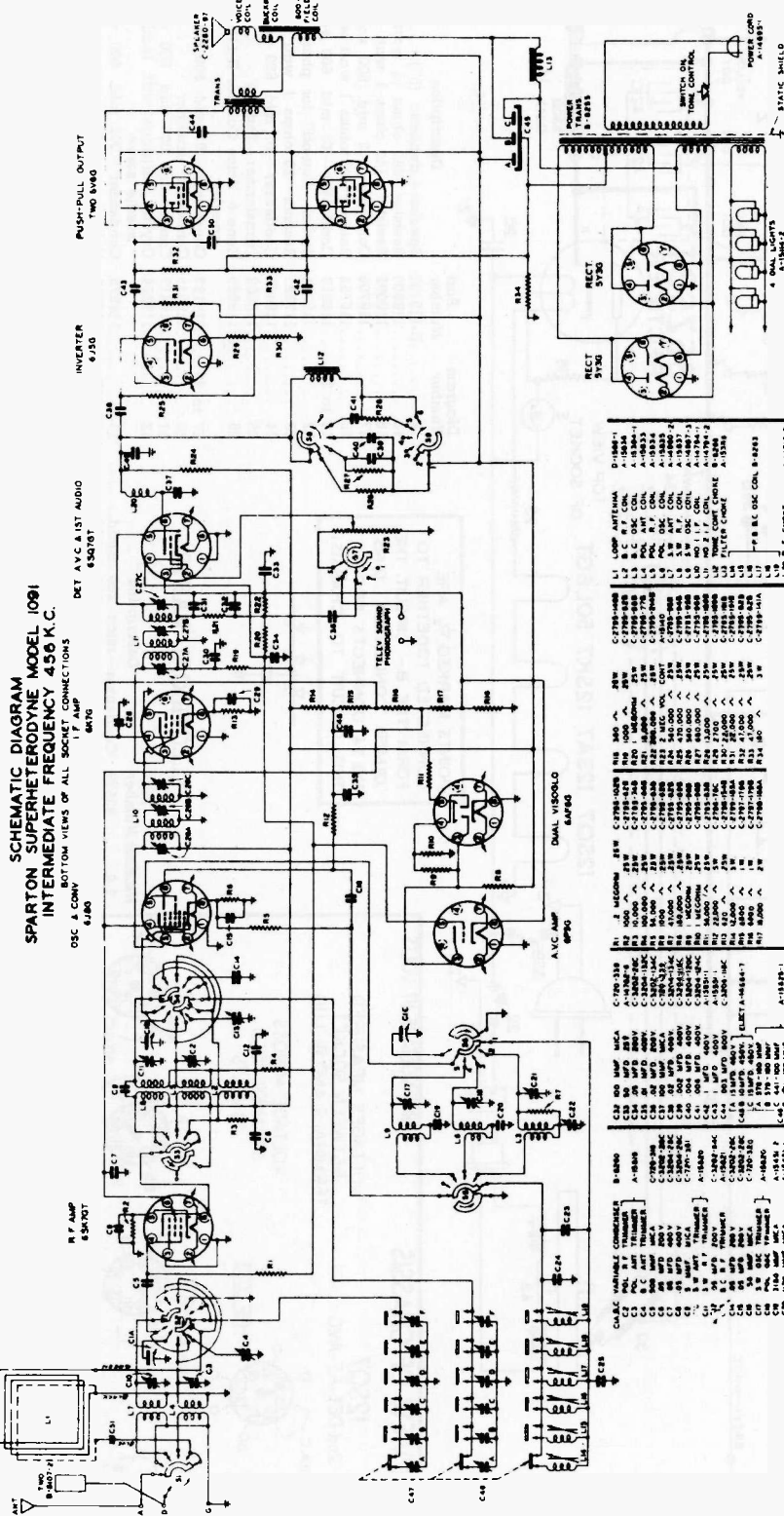
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## SCHEMATIC DIAGRAM SPARTAN SUPERHETERODYNE MODEL 761 INTERMEDIATE FREQUENCY 456 K. C. BOTTOM VIEWS OF ALL SOCKET CONNECTIONS



- |  |   |   |   |
|--|---|---|---|
| <p>C13 .05 MFD. 200V.</p> <p>C14 .1 MFD. 400V.</p> <p>C15 .02 MFD. 200V.</p> <p>C16 250 MMFD. MOLDED</p> <p>C17 250 MMFD. MOLDED</p> <p>C18 .005 MFD. 400V.</p> <p>C19 .003 MFD.</p> <p>C20 16-10-16 MFD. ELECT.</p> <p>C21 .03 MFD. 800V.</p> | <p>R1 50,000 Ω. .25W.</p> <p>R2 22,000 Ω. .5W.</p> <p>R3 1 MEGOHM. .25W.</p> <p>R4 4.7 MEGOHM. .25W.</p> <p>R5 500,000 Ω. VOL. CONT.</p> <p>R6 27,000 Ω. 1W.</p> <p>R7 270,000 Ω. .25W.</p> <p>R8 800,000 Ω. .25W.</p> <p>R9 880 Ω. 1W.</p> <p>R10 56,000 Ω. .25W.</p> <p>R11 56,000 Ω. .25W.</p> <p>R12 15K OHM. .25W.</p> <p>R13 360 Ω. .25W.</p> | <p>L1 I.F. REFLECTOR COIL A-14871</p> <p>L2 B.C. ANT. COIL A-14872-1</p> <p>L3 S.W. ANT. COIL A-14882-8</p> <p>L4 B.C. OSC. COIL A-15377-1</p> <p>L5 S.W. OSC. COIL A-15233-3</p> <p>L6 NO. 1 I.F. COIL A-12084-3B</p> <p>L7 NO. 2 I.F. COIL A-12084-17</p> | <p>B-7228 VARIABLE CONDENSER</p> <p>C2A1B NO. 1 I.F. TRIMMER</p> <p>C3A1B NO. 2 I.F. TRIMMER</p> <p>C4 I.F. REFLECTOR TRIMMER</p> <p>C5 S.W. TRIMMER</p> <p>C6 B.C. ANT. TRIMMER</p> <p>C7 B.C. OSC. TRIMMER</p> <p>C8 B.C. OSC. PADDER</p> <p>C9 A-15451</p> <p>C10 2700 MMFD. MOLDED</p> <p>C11 250 MMFD. MOLDED</p> <p>C12 .1 MFD. 200V.</p> |
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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



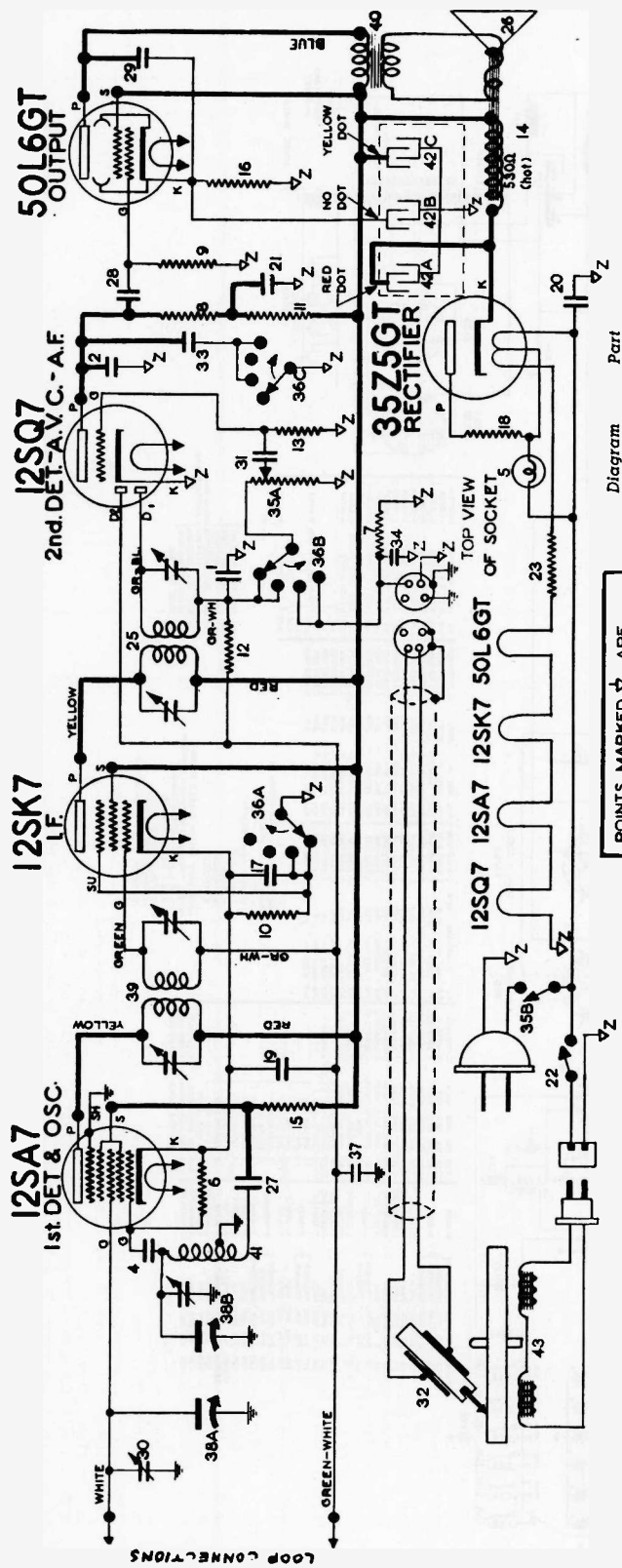
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## STEWART-WARNER 11-5V CHASSIS (MODEL 11-5V9)

### MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



POINTS MARKED  $\frac{1}{2}Z$  ARE CONNECTED TOGETHER TO FORM THE B- CIRCUIT. THE .07MFD. CONDENSER DIAG. NO. 24 CONNECTS FROM THIS CIRCUIT TO CHASSIS.

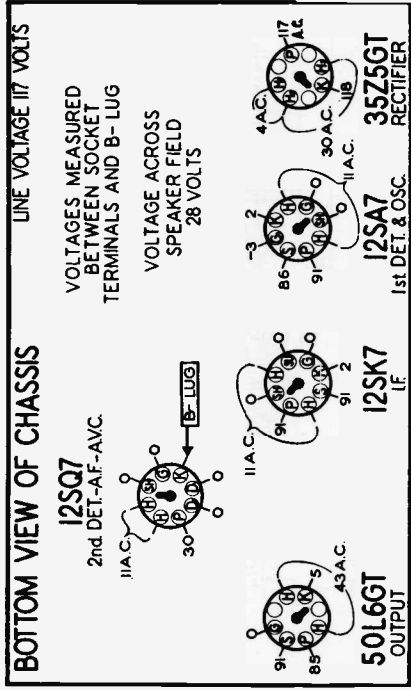


Diagram Number	Part Number	Description
14	R-115102	Speaker—dynamic (5")
15	118803	Resistor—680 ohms 1/4 watt
16	118092	Resistor—140 ohms 1 watt W.W.
17	118706	Condenser—.2 mfd. 600 volt.
18	116752	Resistor—33 ohms 1 watt wire wound
19 to 21	116819	Condenser—.05 mfd. 600 volt.
22	116864	Switch—"on-off" for phono motor.
23	117395	Resistor—20 ohms 1 watt.
24	118487	Condenser—.07 mfd. 600 volts.
25	118903	Transformer—2nd I.F.
26	118999	Cone & Voice Coil for R-115102 speaker
27 to 29	119193	Condenser—.01 mfd. 600 volt.
30	118345	Condenser—trimmer.
31	118617	Condenser—.004 mfd. 600 volt.
32	119864	Crystal cartridge with leads and needle screw
33-34	119875	Condenser—.002 mfd. 600 volt.
35A-35B	119921	Volume control—1 meg. (with switch)
36A-36B-36C	119921	Switch—tone & phonograph (See table for switch positions).
37	119193	Condenser—.01 mfd. 600 volt.
38A-38B	119928	Condenser—variable tuning
39	119935	Transformer—1st I.F.
40	R-119944	Transformer—output for R-115102 Speaker
41	119954	Coil—oscillator
42A-42B-42C	160012	Condenser—electrolytic; A—40 mfd.—200 volt; B—20 mfd.—25 volt; C—20 mfd.—200 volt

#### ELECTRICAL PARTS

Part Number	Description
1-2	Condenser—mica 260 mmfd.
3	Condenser—mica 110 mmfd.
4	Condenser—mica 51 mmfd.
5	Lamp—dial 6 to 8 volt (Marzda 51).
6	Resistor—carbon 47,000 ohms 1/4 w
7	Resistor—carbon 220,000 ohms 1/4 w
8	Resistor—carbon 100 ohms 1/4 w
9	Resistor—carbon 470,000 ohms 1/4 w
10	Resistor—carbon 100,000 ohms 1/4 w
11	Resistor—carbon 2.2 meg. 1/4 watt.
12	Resistor—carbon 10 meg. 1/4 watt.
13	Resistor—carbon 10 meg. 1/4 watt.

#### REAR OF CHASSIS

Use a Voltmeter of 1000 ohms per volt.



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## STEWART-WARNER 11-5W CHASSIS

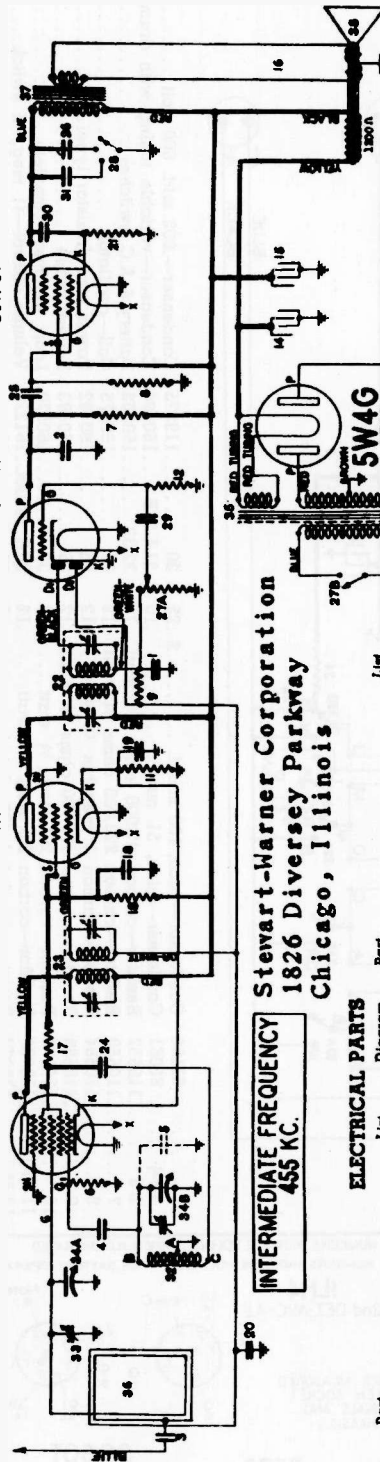
(RECEIVER MODELS 11-SW1 TO 11-SW8)

6SA7  
1st DET & OSC

6SK7  
IF

6SQ7  
2nd DET.-A.V.C.-A.F.

6F6G  
OUTPUT



INTERMEDIATE FREQUENCY  
455 KC.

Stewart-Warner Corporation  
1826 Diversey Parkway  
Chicago, Illinois

NOTE: TERMINALS OF OSCILLATOR COIL ARE LETTERED TO CORRESPOND TO SIMILARLY LETTERED TERMINALS ON THE CIRCUIT DIAGRAM.



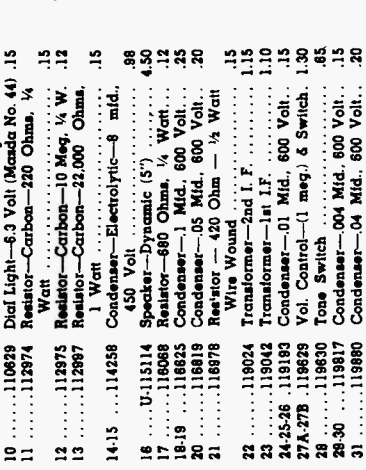
Diagram Number	Part Number	Description	List Price
1-2	83339	Condenser—Mica, 260 Mmfd.	.20
3	83783	Condenser—Mica, 110 Mmfd.	.15
4	85081	Condenser—Mica, 51 Mmfd.	.15
5	85583	Condenser—Mica, 28 Mmfd. (used only on some sets)	.15
6	110552	Resistor—Carbon, 47,000 Ohms, 1/4 Watt	.12
7,8	110553	Resistor—Carbon, 220,000 Ohms, 1/4 Watt	.12
9	110580	Resistor—Carbon, 3.3 meg, 1/4 W.	.12
10	110629	Dial Light—6.3 Volt (Canada No. 44)	.15
11	112974	Resistor—Carbon—220 Ohms, 1/4 Watt	.15
12	112975	Resistor—Carbon—10 Meg, 1/4 W.	.12
13	112987	Resistor—Carbon—22,000 Ohms, 1/4 Watt	.15
14,15	114258	Condenser—Electrolytic—6 mid., 450 Volt	.98
16	U-115114	Speaker—Dynamic (5")	4.50
17	118068	Resistor—680 Ohms, 1/4 Watt	.12
18-19	118625	Condenser—1 Mid., 600 Volt	.25
20	118619	Condenser—.05 Mid., 600 Volt	.20
21	118978	Resistor—420 Ohm — 1/2 Watt Wire Wound	.15
22	119024	Transformer—2nd I.F.	1.15
23	119042	Transformer—1st I.F.	1.10
24-25-26	118183	Condenser—.01 Mid., 600 Volt	.15
27A-27B	119629	Vol. Control—(1 meg.) & Switch	1.30
28	118630	Tone Switch	.85
28-30	119817	Condenser—.004 Mid., 600 Volt	.15
31	119880	Condenser—.04 Mid., 600 Volt	.20

### ELECTRICAL PARTS

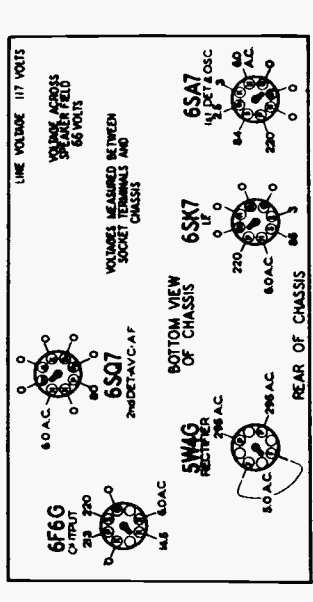
Diagram Number	Part Number	Description	List Price
32	119854	Coil—Oscillator	.38
33	160346	Condenser—Trimmer	.18
34A-34B	160347	Transformer—Variable Tuning	2.30
35	161230	Transformer—Power (50-60 Cycle)	3.80
36	161230	Transformer—Power (25 Cycle)	3.90
37	U-160438	Loop Antenna—(Complete)	.80
38	U-160438	Transformer—Output for U-115114 Speaker	1.50
38	U-160438	Cone & Voice Coil for U-115114 Speaker	1.50

### MISCELLANEOUS PARTS

Part Number	Description	List Price
180452	Cabinet Back	.01
114955	Clamp—Dial Cord	.01
112745	Clip—Coil Mounting	.01
113018	Clip—Dial Scale Retaining	.18
118948	Cord—Dial Drive	.30
180348	Dial Scale	.24
118591	Dial Window	.10
160356	Knob—Push On	.10
160354	Pilot Lamp Socket	.14
160355	Pointer	.50
81145	Retaining Ring for Drive Shaft	.12
83624	Screw—Self Tapping 8x1/4	.01
118690	Socket—Octal Base	.12
117078	Socket—Octal with Special Gating Lug	.02
111060	Spring—Sheet	.07
114968	Spring—Dial Cord Tension	.07
119613	Tuning Shaft	.07
111456	Washer—For Tuning Shaft	.50



NOTE: TERMINALS OF OSCILLATOR COIL ARE LETTERED TO CORRESPOND TO SIMILARLY LETTERED TERMINALS ON THE CIRCUIT DIAGRAM.

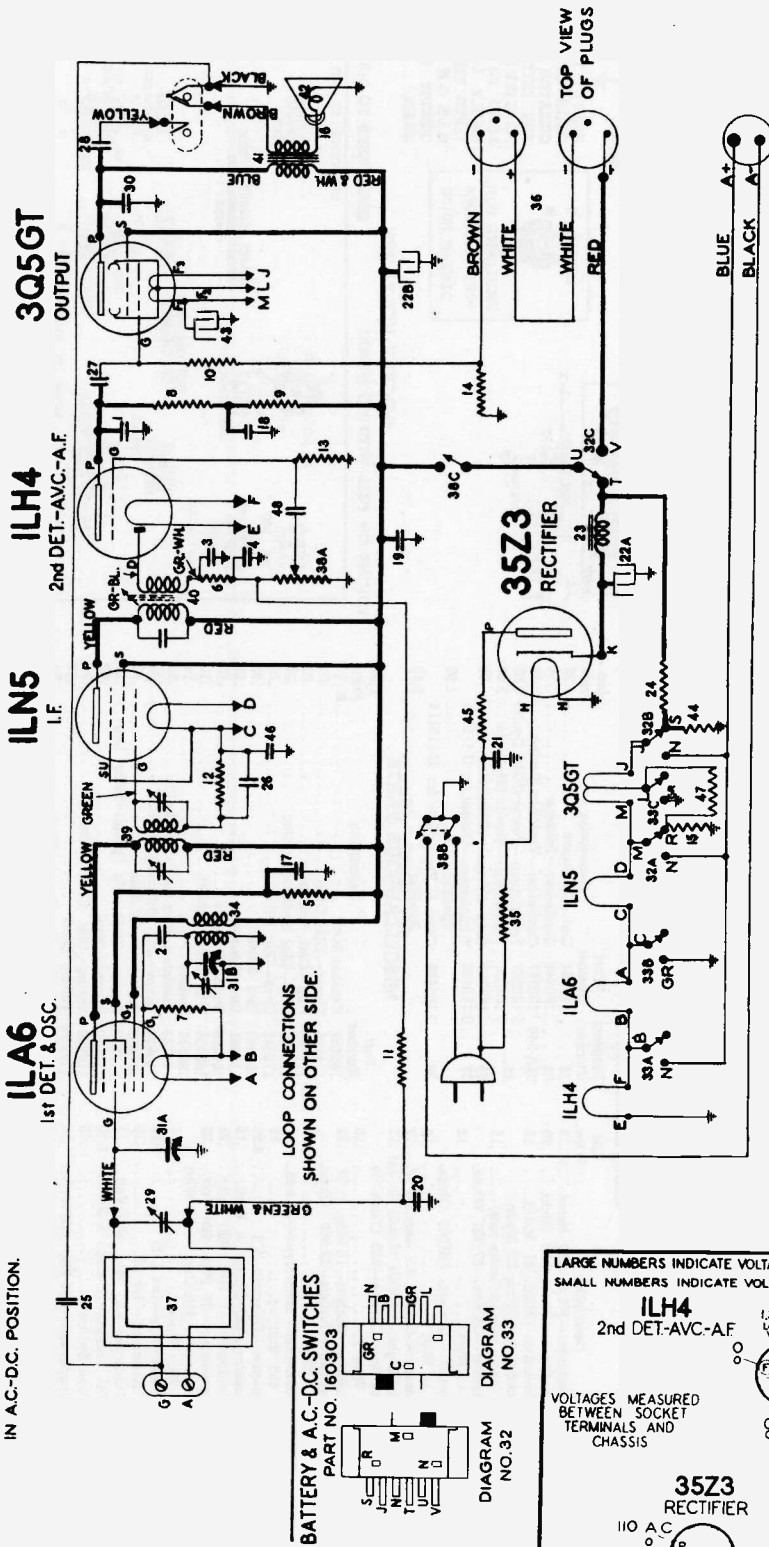


USE A 1000 OHM PER VOLT — VOLTMETER

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## STEWART-WARNER 15-5Y CHASSIS (RECEIVER MODELS 15-5Y1 TO 15-5Y9)

SWITCHES 32 & 33 ARE SHOWN  
IN A.C.-D.C. POSITION.



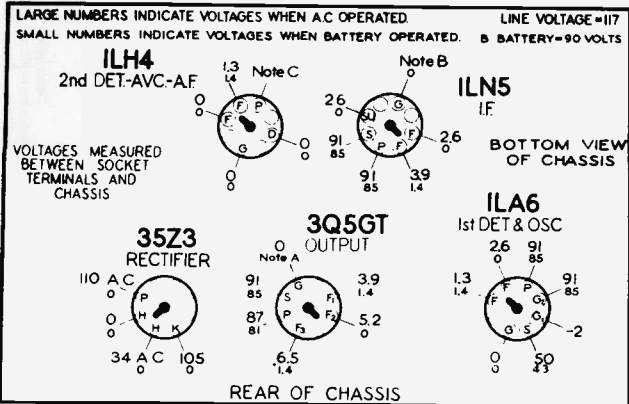
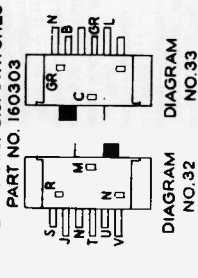
**3Q5GT**  
OUTPUT

**ILH4**  
2nd DET-AVC-A.F.

**ILN5**  
I.F.

**ILA6**  
1st DET. & OSC.

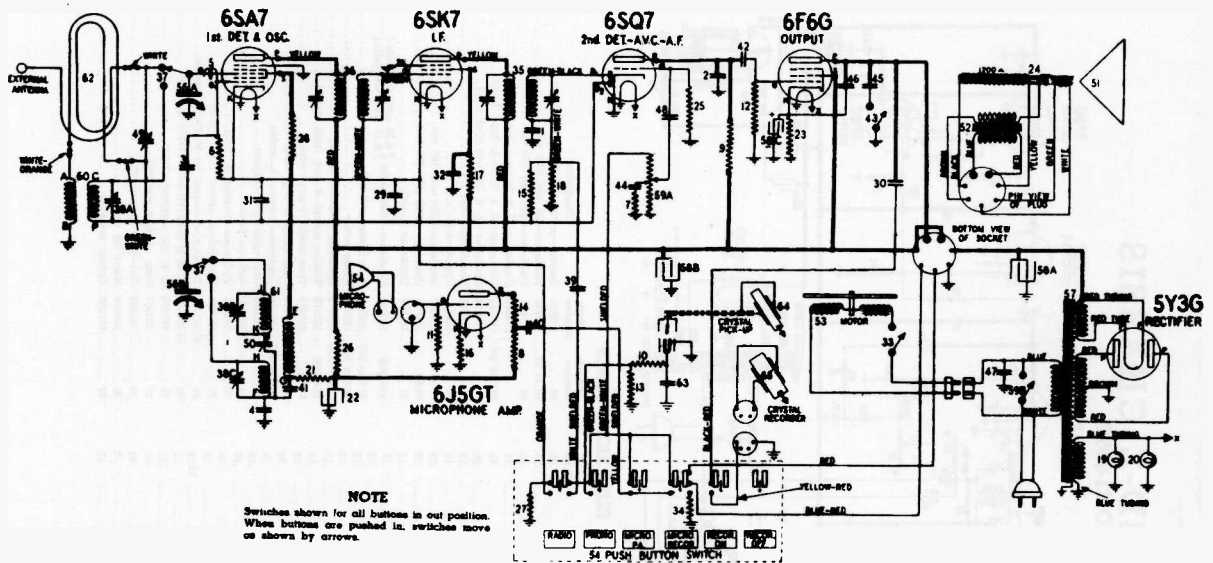
BATTERY & A.C. SWITCHES  
PART NO. 160303



1	81158	Condenser—mica, 100 mmfd.	.25	30	119875	Condenser—.002 mfd., 600 volt.	\$.15
2-3-4	85061	Condenser—mica, 51 mmfd.	.15	31A-31B	160298	Condenser—variable tuning with drum	2.80
5-6	110552	Resistor—carbon 47,000 ohms 1/4 watt	.12	32-33	160303	Battery & A.C. switches.	.68
7	110553	Resistor—carbon 220,000 ohms 1/4 watt	.12	34	160475	Coil—oscillator	.44
8	110554	Resistor—carbon 1 megohm 1/4 watt	.12	35	160492	Power cord (resistor type)	.95
9	110559	Resistor—carbon 470,000 ohms 1/4 watt	.12	36	160493	Battery cable	.54
10	110570	Resistor—carbon 2.2 meg. 1/4 watt	.12	37	160570	Loop antenna—complete	1.50
11-12-13	110580	Resistor—carbon 3.3 meg. 1/4 watt	.12	38A to 38C	161227	Volume control—(1 meg.) & switch	1.30
14-15	112977	Resistor—insulated 470 ohm 1/4 watt	.15	39	161247	Transformer—1st I.F.	1.20
16	U-115120	Speaker—P.M. (5")	5.50	40	161248	Transformer—2nd I.F. (iron core)	1.35
17-18-19	116625	Condenser—1 mfd., 600 volt.	.25	41	U-161255	Transformer—output for U-115120 spkr.	1.50
20-21	116819	Condenser—.05 mfd., 600 volt.	.20	42	U-161256	Cone & Voice coil for U-115120 speaker	1.40
22A-22B	117559	Condenser—electrolytic 30-30 mfd., 150 volt	1.20	43	161273	Condenser—insulated 50 mfd. 25 volt	.50
23	117888	Filter choke	.85	44	116082	Resistor—50 ohms, 1/2 watt W.	.15
24	118842	Resistor—1680 ohms 5 watts W. W.	.15	45	116275	Resistor—50 ohms, 1/2 watt W.	.15
25 to 28	119193	Condenser—.01 mfd., 600 volt.	.15	46	118290	Resistor—carbon, 270 ohms, 1/4 watt	.10
29	119845	Condenser—trimmer (on loop)	.16	47	118827	Resistor—carbon, 270 ohms, 1/4 watt	.10
				48	119817	Condenser—.004 mfd., 600 volt.	.15

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS STEWART-WARNER 11-6T and 11-6T-S CHASSIS

(Receiver Models 11-6T1 to 11-6T9 and 11-6T1-S to 11-6T9-S)



### ELECTRICAL PARTS

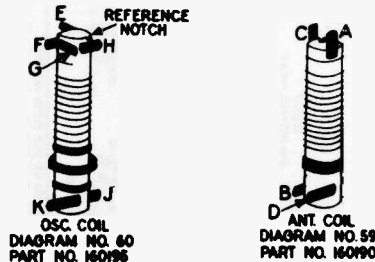
Diagram Number	Part Number	Description	List Price
1-2	85339	Condenser—mica 280 mmfd.	\$0.20
3	80173	Condenser—mica 50 mmfd.	.20
4	88587	Condenser—mica .0047 mid.	.38
5	110510	Condenser—wire 3 mmfd.	.12
6-7-8	110552	Resistor—carbon 47,000 ohms 1/4 watt.	.12
9	110553	Resistor—carbon 220,000 ohms 1/4 watt.	.12
11	110554	Resistor—carbon 1 megohm 1/4 watt.	.12
12	110556	Resistor—carbon 470,000 ohms 1/4 watt.	.12
13	110584	Resistor—carbon 100,000 ohms 1/4 watt.	.12
14	110585	Resistor—carbon 22,000 ohms 1/4 watt.	.12
15	110570	Resistor—carbon 2.2 meg. 1/4 watt.	.15
16	110573	Resistor—carbon 2,200 ohms 1/4 watt.	.12
17	110576	Resistor—carbon 88,000 ohms 1/4 watt.	.12
18	110584	Resistor—carbon 220,000 ohms 1/4 watt.	.12
19-20	110628	Dial light—4-3 volt.	15
21	112853	Resistor—carbon 3,300 ohms 1/4 watt.	.10
22	114008	Condenser—electrolytic 4 mid. 350 volt.	.72
23	114335	Resistor—wire wound 400 ohms 2 watts.	.20
24	U-115107	Speaker—dynamoc 8"	.60
25	118050	Resistor—insulated 10 meg. 1/4 watt.	.12
26	118055	Resistor—carbon 22,000 ohms 1/4 watt.	.12
27-28	118082	Resistor—150 ohms 1/4 watt.	.12
29-30	118025	Condenser—.1 mid. 600 volt.	.25
31-32	118218	Condenser—.05 mid. 600 volt.	.20
33	118064	Switch—on-off for phono motor with scotchcon	.32
34	118919	Resistor—5 ohms 1 watt wire wound.	.14
35	118024	Transformer—2nd I.F.	1.10
36	118042	Transformer—1st I.F.	1.10
37	118085	Bumpy switch	.50

Diagram Number	Part Number	Description	List Price
38A to 38C	118174	Condenser—trimmer—3 section	.45
39-40-41-42	118183	Condenser—.01 mid. 600 volt.	.15
43	118214	Switch—tone control	.48
44-45	118414	Condenser—.02 mid. 600 volt.	.15
46	118416	Condenser—.008 mid. 600 volt.	.15
47	118757	Condenser—metal clad .01 mid. 600 volt.	.20
48	118817	Condenser—.004 mid. 600 volt.	.15
49	118845	Condenser—trimmer (on loop)	.16
50	118924	Condenser—padder	.38
51	U-180028	Cone & voice coil for U-115107 speaker.	1.90
52	U-180028	Transformer—output for U-115107 speaker	1.55
53	180036	Motor (non turntable)	6.00
54	180038	Microphone	12.50
55	180111	Push button switch	2.30
56A-56B	180170	Condenser—variable tuning	2.40
57	180172	Transformer—power (50-60 cycles)	4.20
58A to 58C	180174	Condenser—electrolytic (Section A—20 mid. 400 volt) (Section B—15 mid. 400 volt) (Section C—10 mid. 25 volt)	1.30
58A-58B	180175	Volume control—1 meg. (with switch)	1.40
60	180190	Coil—antenna (B.W.)	.44
61	180195	Coil—oscillator	.75
62	180279	Loop antenna & cabinet back (complete) (Model 11-6T9)	1.40
	180783	Loop antenna & cabinet back (with trimmer) (Model 11-6T9)	1.40
63	180430	Condenser—.001 mid. 600 volt.	.15
64	181280	Crystal Pickup Cartridge	3.00
65	181288	Crystal Recorder Cartridge	3.50

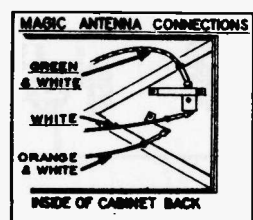
### DIAL AND MISCELLANEOUS PARTS

Part Number	Description	List Price
117117	Cable—motor	.30
114855	Clamp—for dial cord	.01
113018	Clip—dial scale retaining	.01
117057	Cord—drive (supplied in 3 ft. lengths)	.15
160200	Dial scale	.28
182028	Escutcheon—dial	.80
191817	Knob	.10
181866	Knob—push button	.07
117798	Name Plate (S.W.) (Model 11-6T9)	.05
117779	Name Plate (Ott.Val.) (Model 11-6T9)	.05
117790	Name Plate (Tuning) (Model 11-6T9)	.05
181206	Name Plate (Tone) (Model 11-6T9)	.06
181207	Name Plate (F.B.) (Model 11-6T9)	.06
180023	Needle cap	.08
180127	Phonograph needles. Envelope of 10	.10
118683	Pointer	.18
81145	Retaining ring for drive shaft	Per C 50
118218	Screw—scotchcon mounting	.02
118204	Shaft—tuning	.10
111008	Socket—dial lamp	.12
180057	Socket—2 prong	.10
180171	Socket—4 prong	.12
180158	Socket—7 prong for speaker	.14
119791	Socket—8 prong	.12
114878	Socket—octal	.15
180028	Socket for pick up	.08
113177	Spring—dial card tension	.08
181845	Tab & window for recorder push buttons	.10
111458	Washer—spring washer	Per C 30

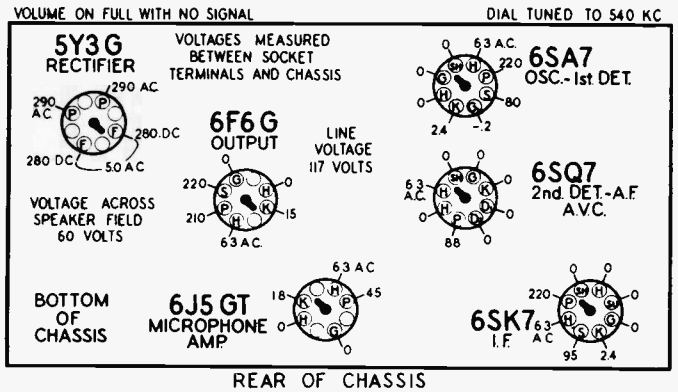
PRICES SUBJECT TO CHANGE WITHOUT NOTICE.



The terminals of the coils illustrated above are lettered to correspond to similarly lettered terminals on the circuit diagram.



### SOCKET VOLTAGES



Use a high resistance voltmeter of 1000 oms per volt.

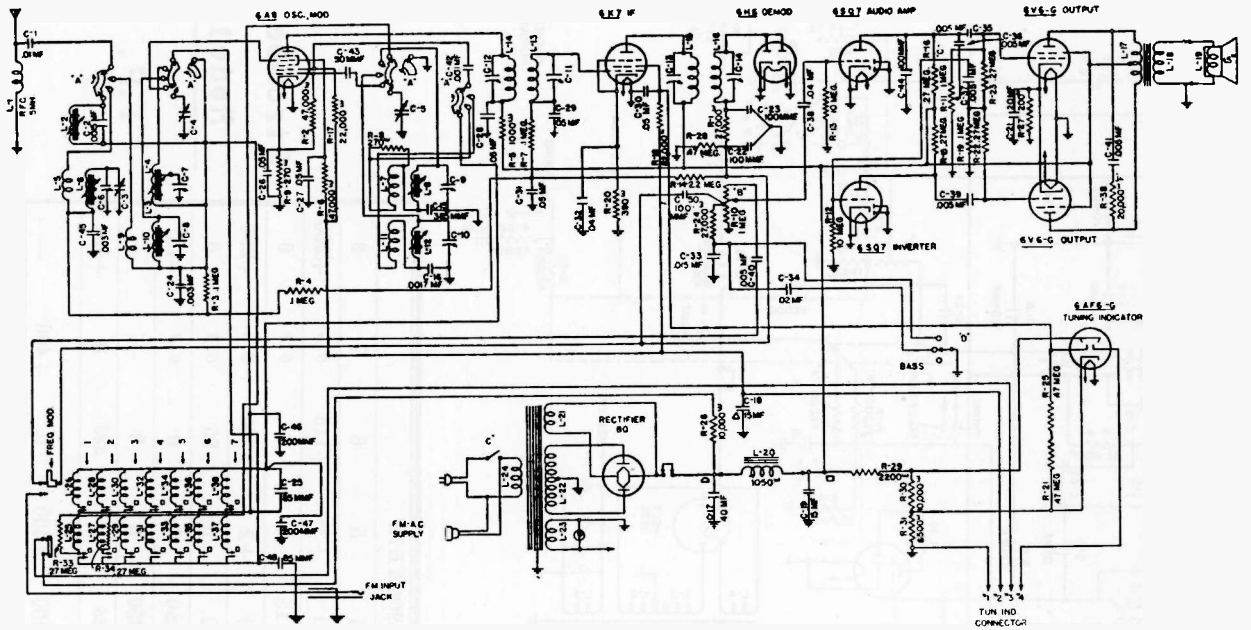


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## STROMBERG-CARLSON NO. 515 RADIO RECEIVERS

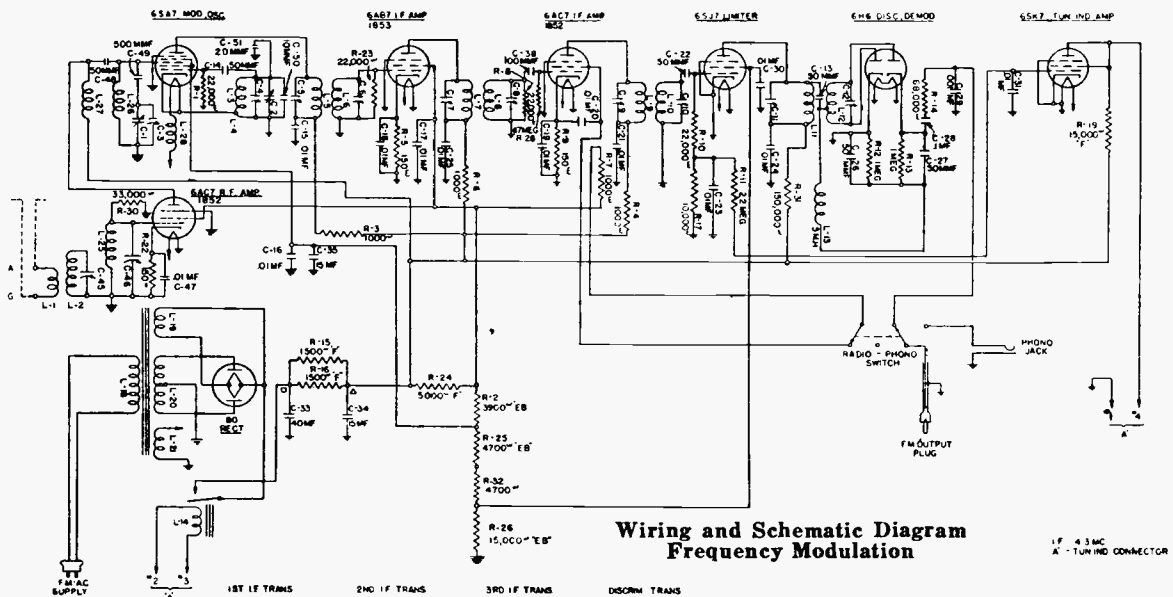
STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY  
ROCHESTER, NEW YORK

Input Power Rating ..... 140 Watts  
Intermediate Frequency ..... { 455 Kilocycles (Amplitude Modulation)  
4.3 Megacycles (Frequency Modulation)



- A - RANGES
- B - VOLUME
- C - OFF-ON-TONE
- D - BASS
- LE - 455 K.C.

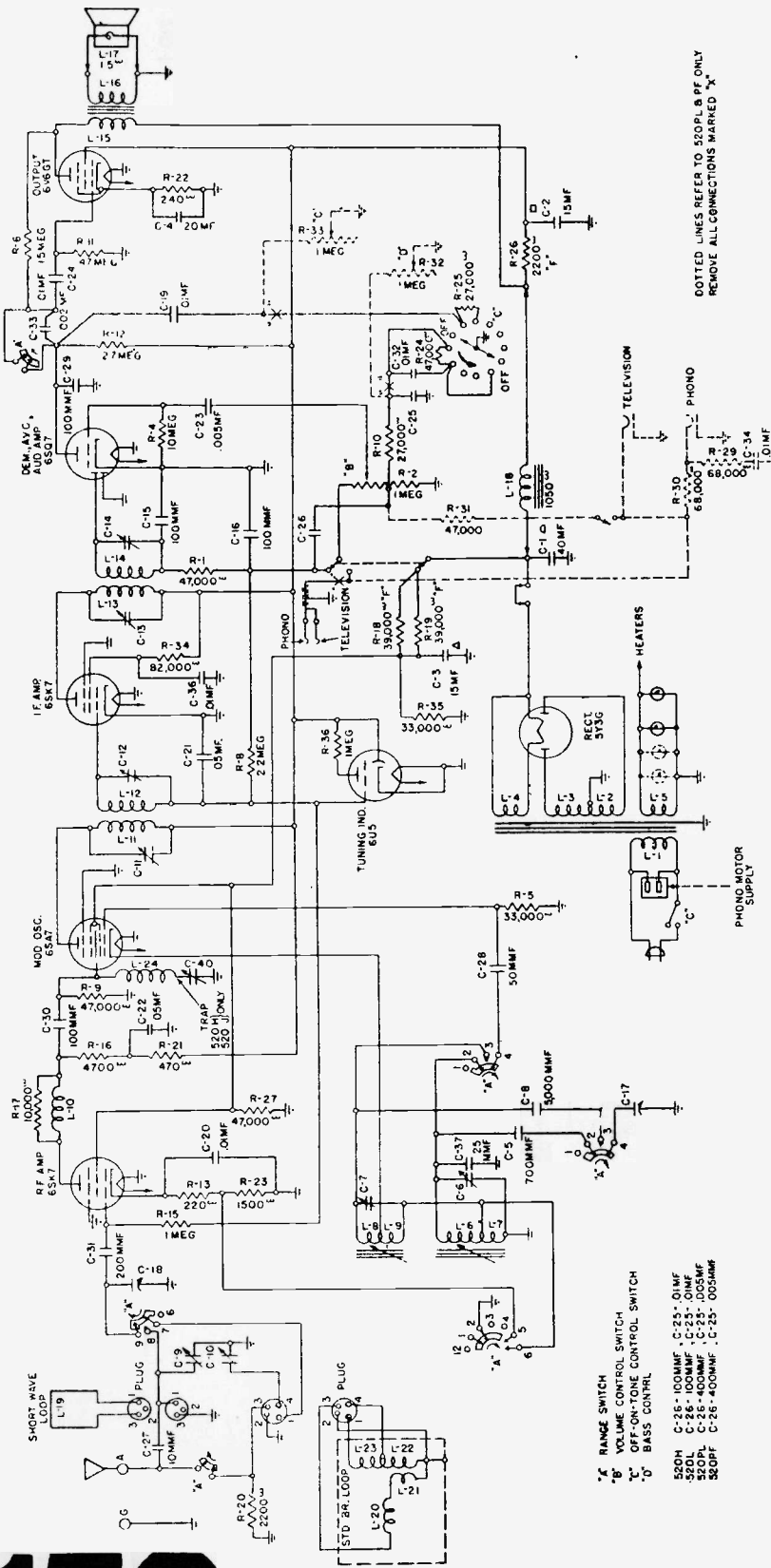
Wiring and Schematic Diagram  
Amplitude Modulation



Wiring and Schematic Diagram  
Frequency Modulation

IF - 4.3 MC  
A - TUNING CONNECTOR

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



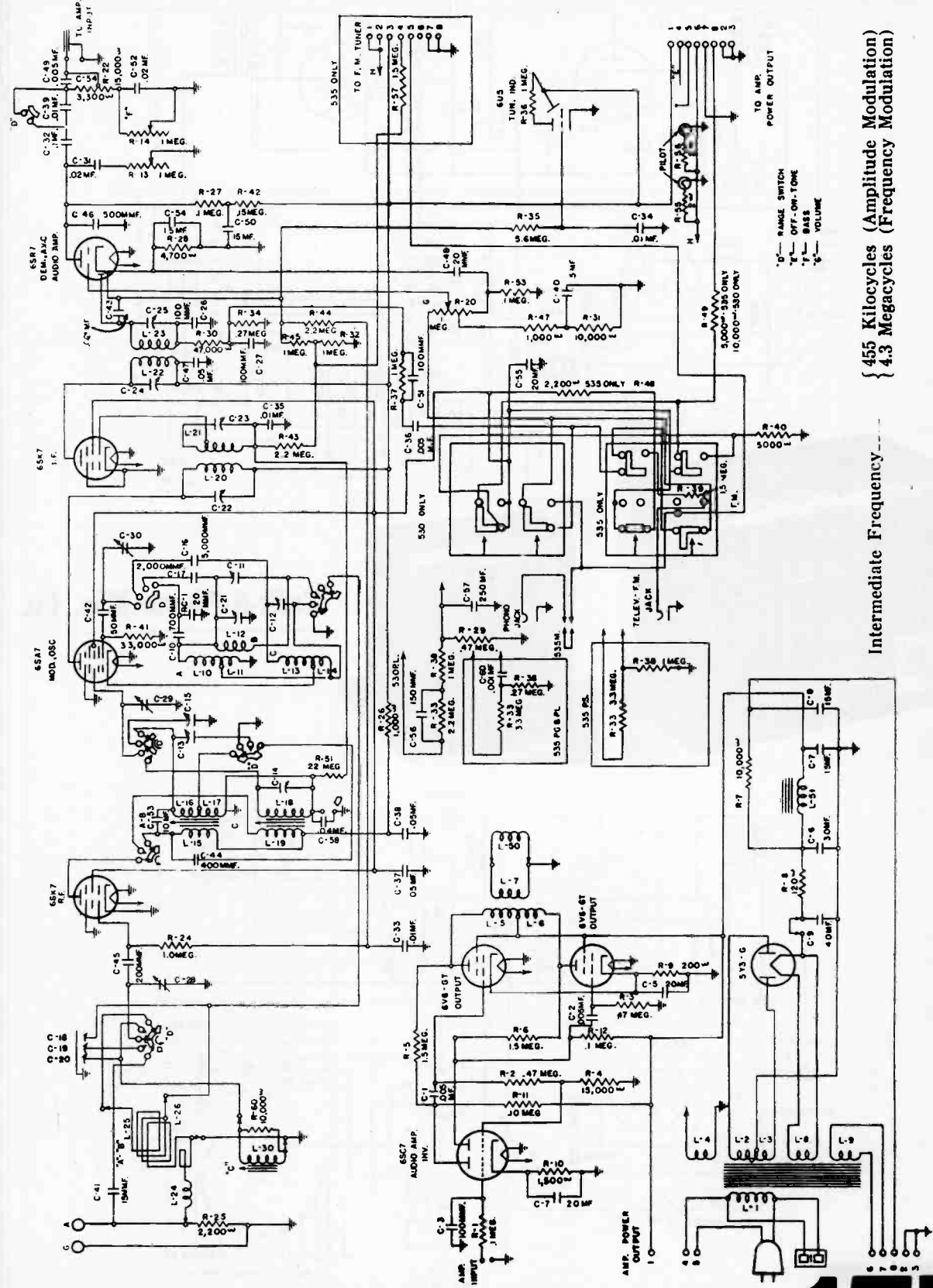
DOTTED LINES REFER TO 520PL & PF ONLY  
REMOVE ALL CONNECTIONS MARKED "X"

**Stromberg-Carlson  
Model 520**

**I.F. 455 KC.**

		TERMINALS OF SOCKETS							
Tube	Circuit	1	2	3	4	5	6	7	8
6SK7	R. F. Amplifier	0	0	0	0	+3*	+115	6.3	+200
6SA7	Modulator and Oscillator	0	0	+250	+115	0	0	6.3	0
6SK7	I. F. Amplifier	0	0	0	0	+2	+100	6.3	+250
6SQ7	Demodulator, A. V. C., Audio	0	0	0	0	0	+95	6.3	0
6V6GT	Output	0	0	+300	+250	0	0	6.3	+12*
6U5	Tuning Indicator	6.3	+90	0	+250	0	0	—	—
5Y3G	Rectifier	0	+400	0	385	0	385	0	+400
Speaker Socket	—	+310	0	0	+400	+400	0	+400	—

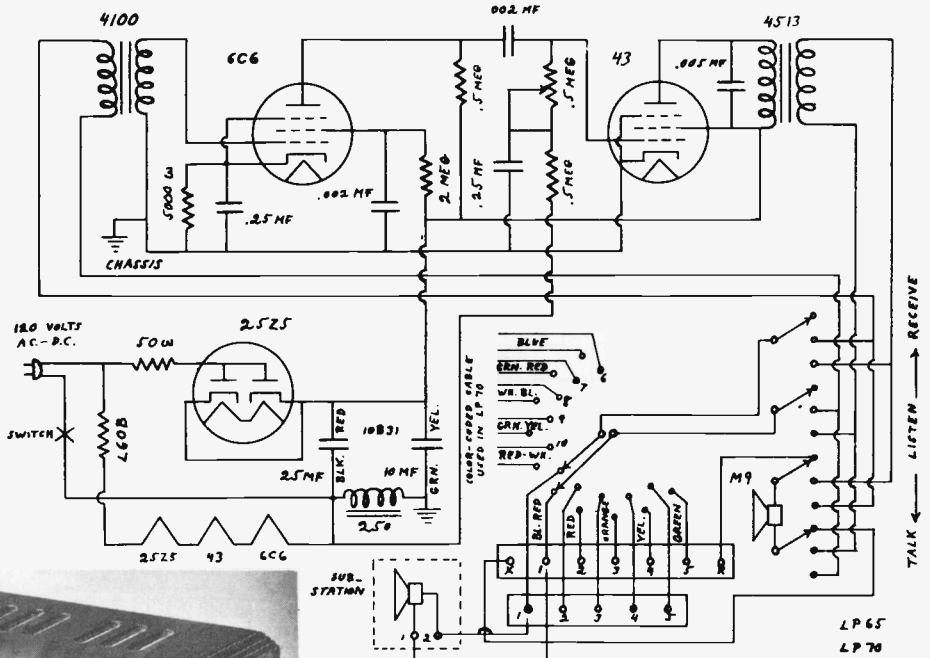
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



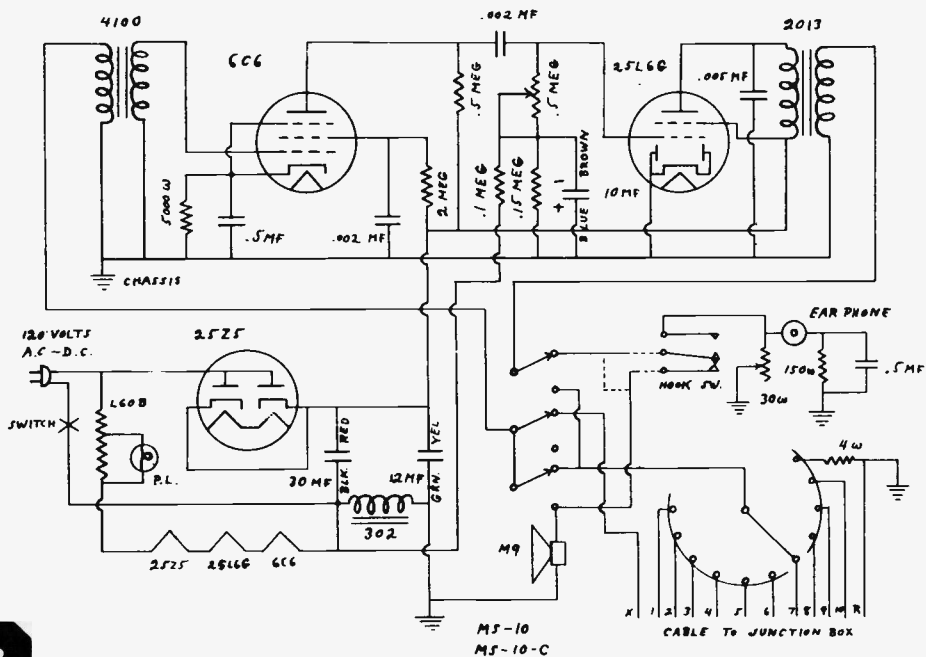
Intermediate Frequency-----  
 { 455 Kilocycles (Amplitude Modulation)  
 { 4.3 Megacycles (Frequency Modulation)

## STROMBERG-CARLSON NO. 530 AND NO. 535 RADIO RECEIVERS

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

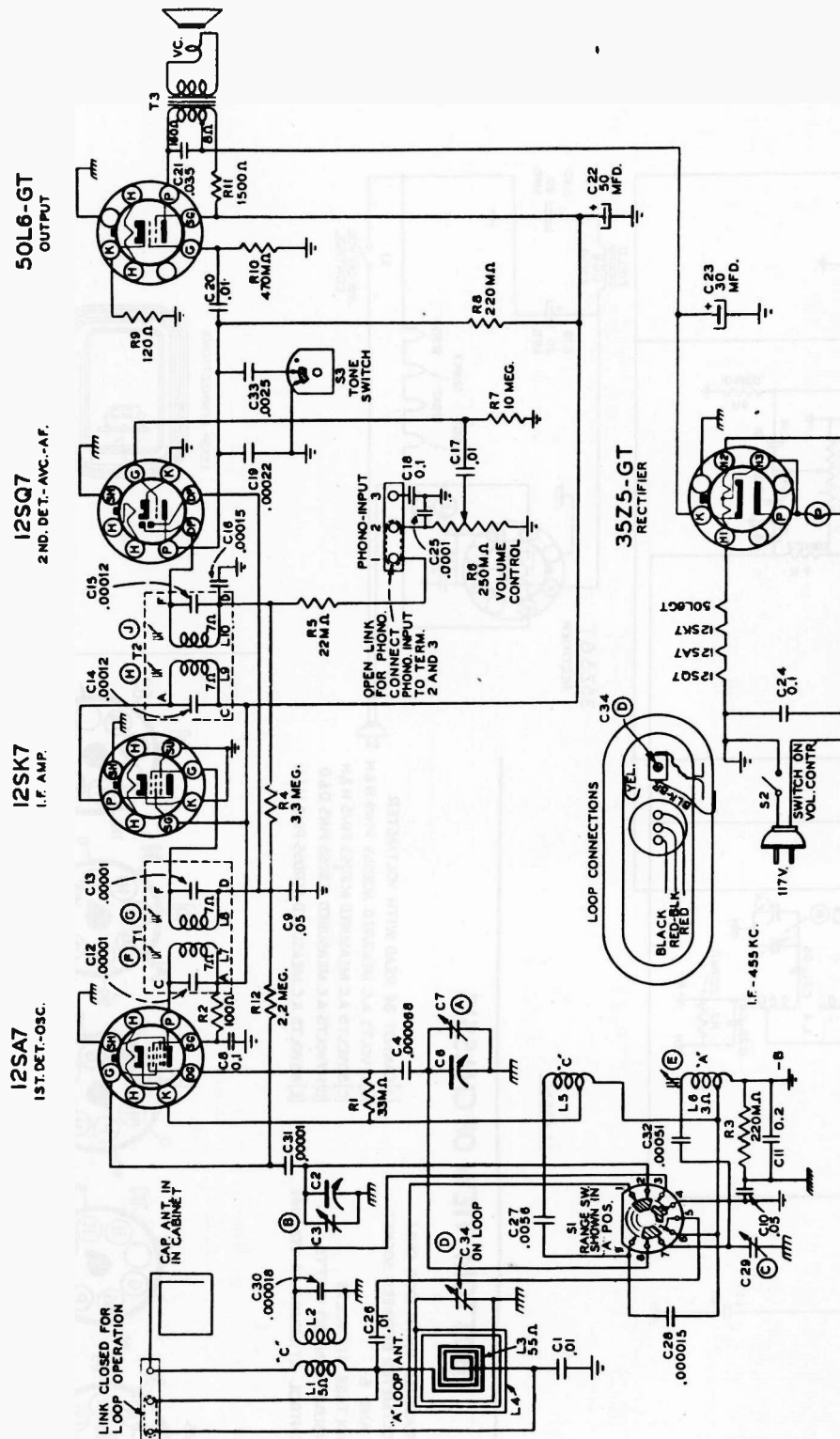


**Talk-A-Phone Mfg. Co.**





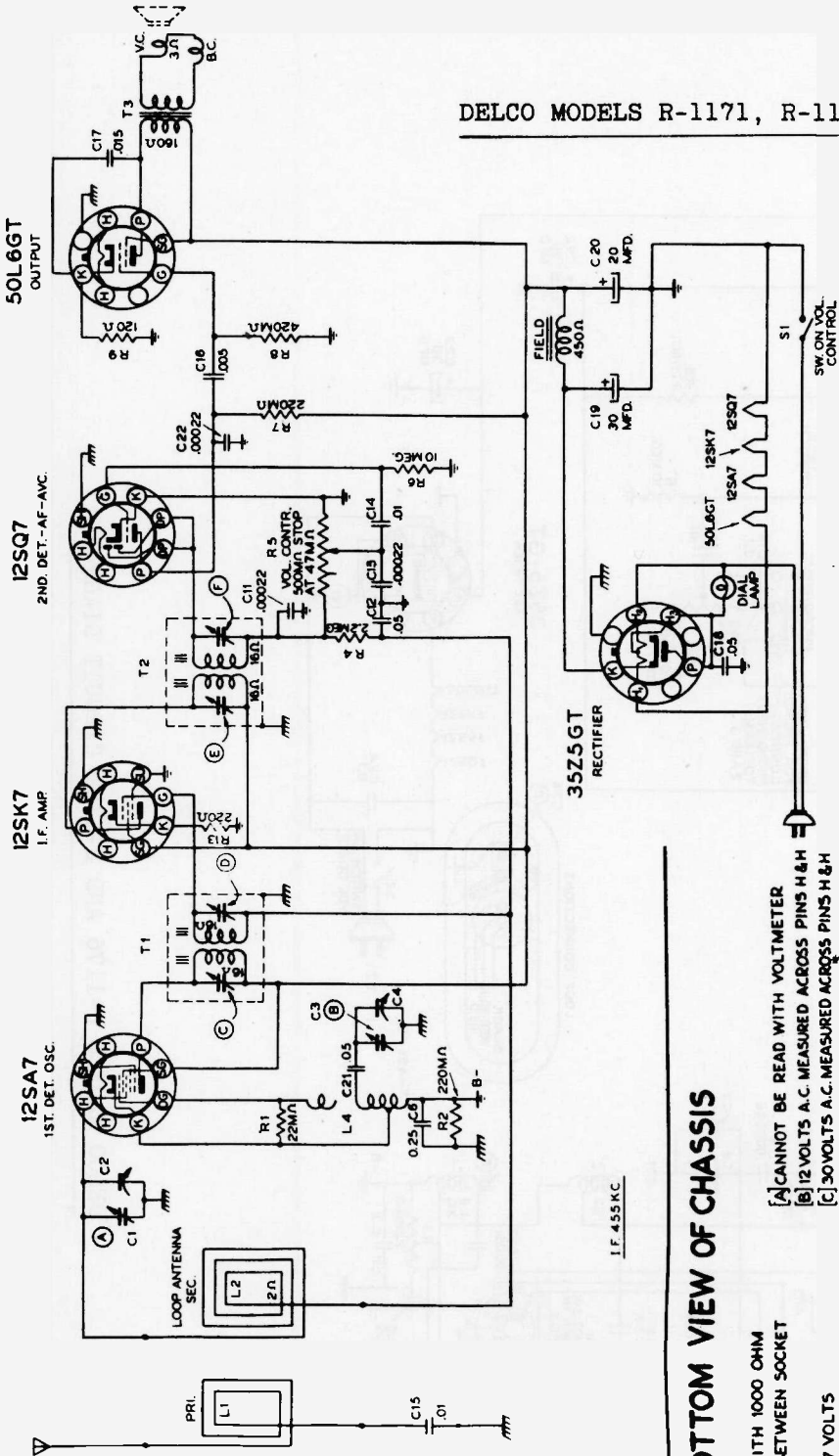
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



DELCO MODELS R-1176 AND R-1181 CIRCUIT DIAGRAM

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

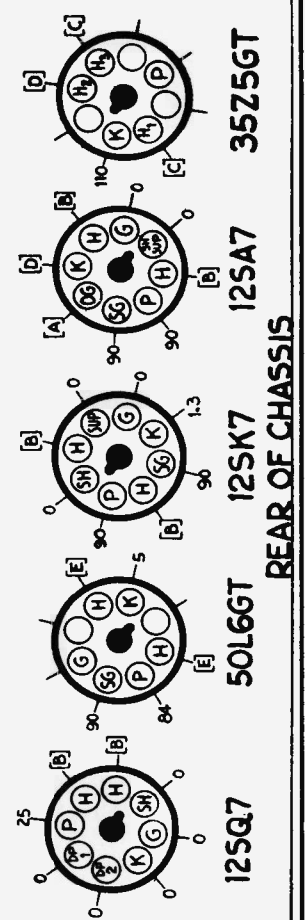
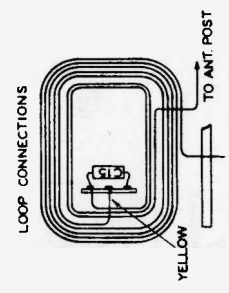
DELCO MODELS R-1171, R-1172, R-1173



I.F. 455 KC.

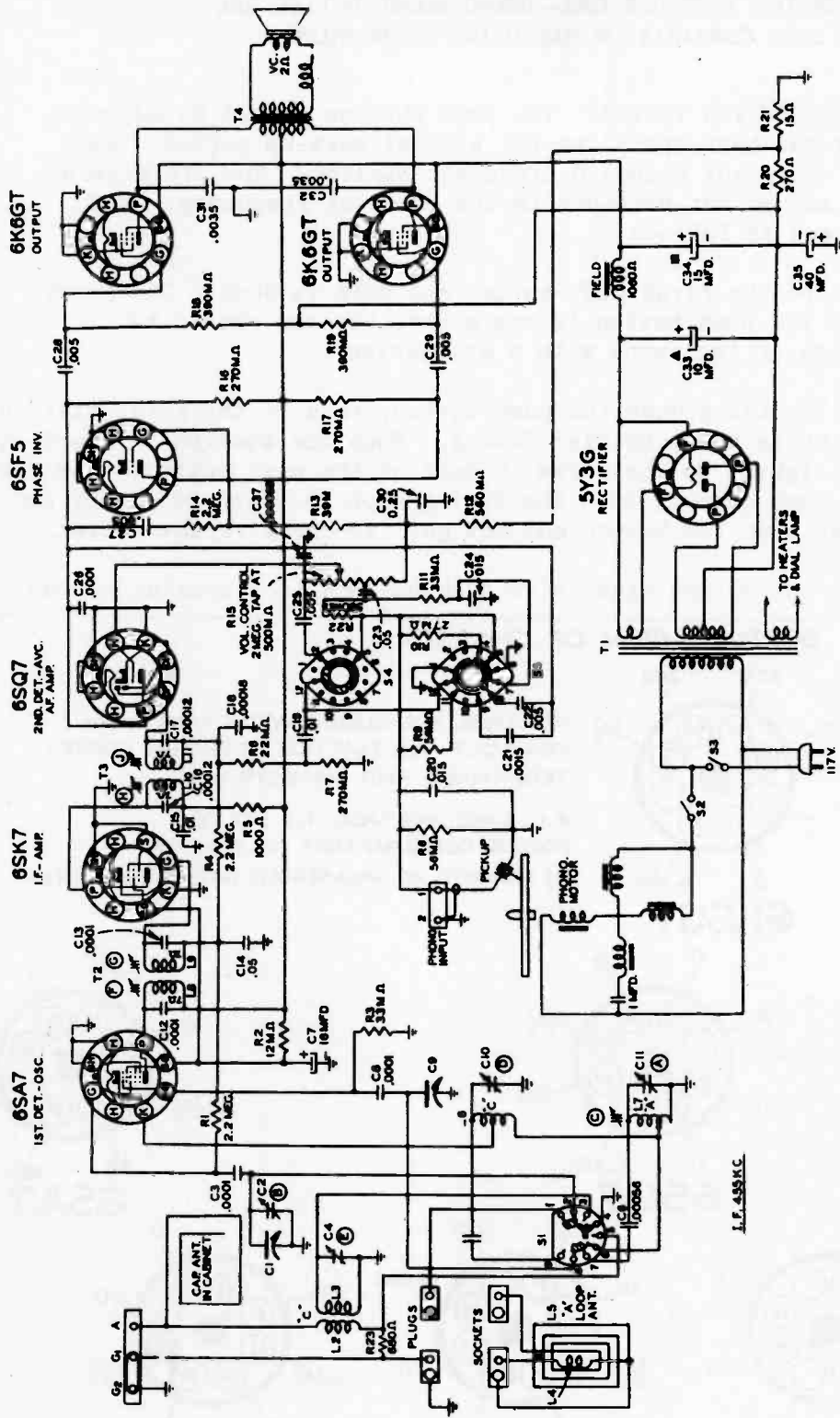
## BOTTOM VIEW OF CHASSIS

- [A] CANNOT BE READ WITH VOLTMETER
  - [B] 12 VOLTS A.C. MEASURED ACROSS PINS H & H
  - [C] 30 VOLTS A.C. MEASURED ACROSS PINS H & H
  - [D] 117 VOLTS A.C. MEASURED ACROSS PINS D & D
  - [E] 45 VOLTS A.C. MEASURED ACROSS PINS H & H
- VOLTAGES MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND B-  
A.C. LINE VOLTAGE 117 VOLTS  
POWER CONSUMPTION 30 WATTS  
VOLUME CONTROL AT MINIMUM VOLUME.



## REAR OF CHASSIS

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



I.F. 455 KC.

**UNITED MOTORS SERVICE**  
 INCORPORATED  
 GENERAL OFFICES—DETROIT

DELCO MODELS R-1186 AND R-1188 CIRCUIT DIAGRAM.



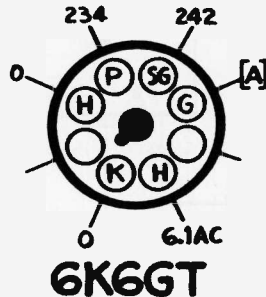
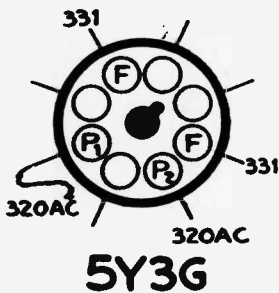
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

SERVICE INSTRUCTIONS--DELCO MODEL R-1186 AND R-1188 COMBINATION RADIO AND PHONOGRAPH

**ADJUSTMENTS FOR PUSH-BUTTON TUNING:** The push buttons should be adjusted after the receiver has been operating for a brief warm-up period. Each button may be set up to any standard broadcast station. The preferable arrangement is to adjust for stations in the order of frequency, from low to high. Proceed as follows:

1. Press down on the first push button and hold it down. The screw in back of the push button is now accessible and should be loosened one or two turns with a screwdriver.
2. While still holding down the push button, tune in the first station with the tuning knob, by Dial Tuning. When the station is heard at its best, tighten up the screw in back of the push button. Now let go of the push button, turn the tuning knob in order to detune and again press down the button and let go. To check repeat action.
3. Proceed to set up the other five push buttons in a similar manner.

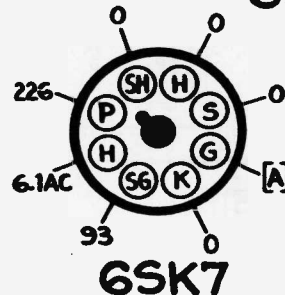
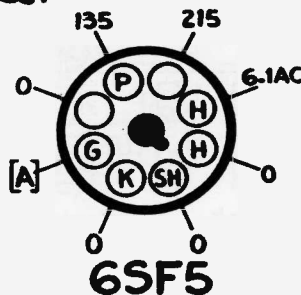
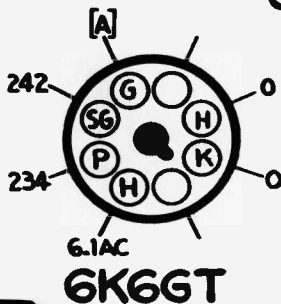
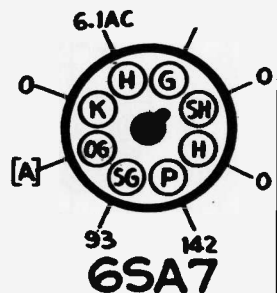
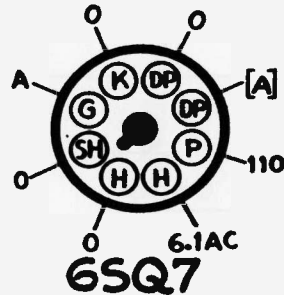
## BOTTOM VIEW OF CHASSIS



VOLTAGE MEASURED WITH 1000 OHM PER VOLT VOLTMETER BETWEEN SOCKET TERMINALS AND CHASSIS

A.C. LINE VOLTAGE 117 VOLTS  
POWER CONSUMPTION 110 WATTS

[A] CANNOT BE MEASURED WITH VOLTMETER

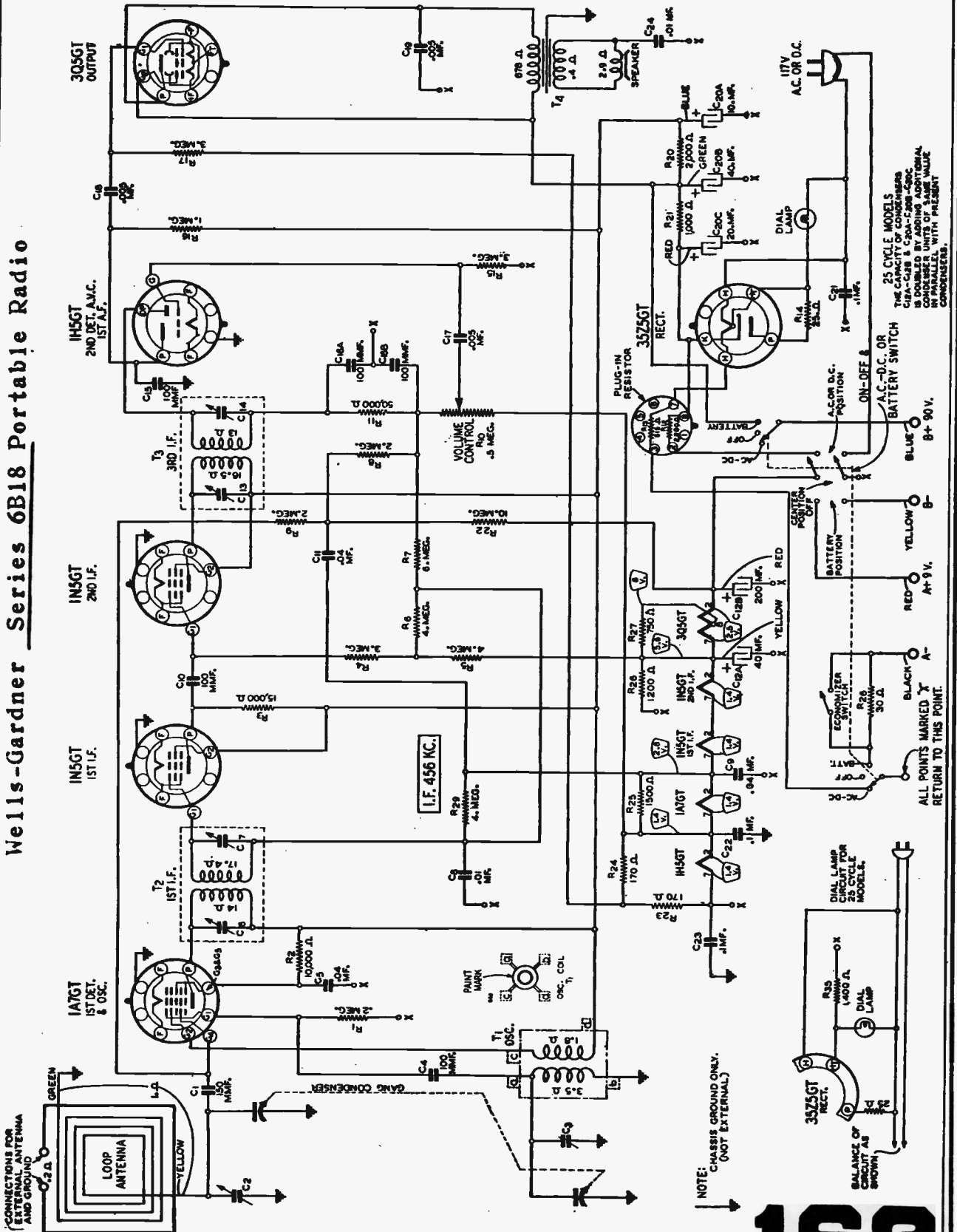


## REAR OF CHASSIS

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## Wells-Gardner Series 6B18 Portable Radio

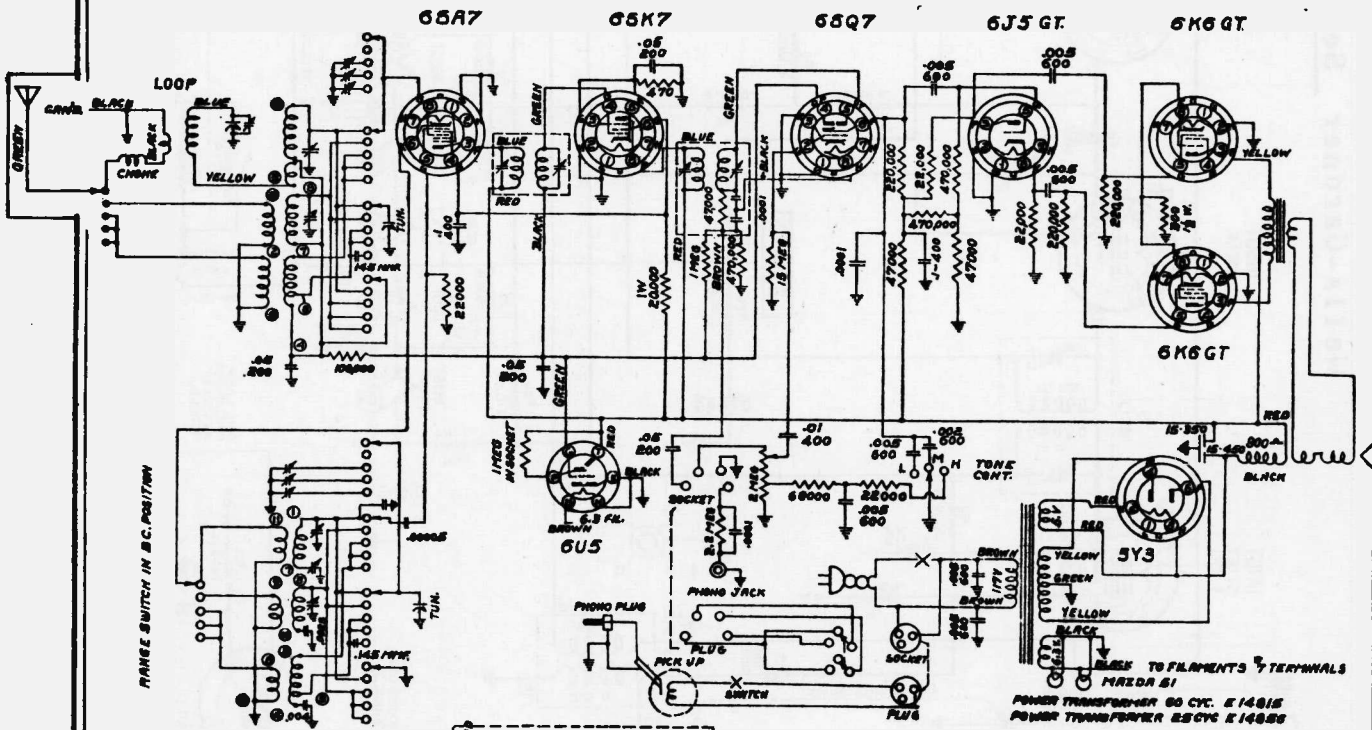


# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## Truetone

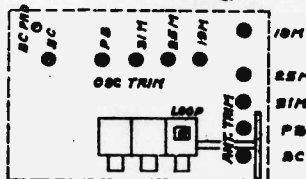
# MODEL D-1175

Generator	Connection at Radio	Dummy Antenna	Range Switch	Dial	Trimmers to Tune	Sensitivity
I. F. 456 K. C.	Center Stator of Variable	.1 MFD.	A	H. F. End	I. F. Transformers	65-70 MV.
B. C. 1735 K. C.	Antenna	200 MMF.	A	H. F. Limit of Travel	B. C. Oscillator	
1400 K. C.	Antenna	200 MMF.	A	1400	B. C. Antenna and Loop	5-10 MV.
600 K. C.	Antenna	200 MMF.	A	Rock Rotor	Padder	10-15 MV.
P. B. 6.0 M. C.	Antenna	400 Ohm	B	6.0 M. C.	P. B. Osc. P. B. Ant.	25 MV.
2.2 M. C.	Antenna	400 Ohm	B	2.2 M. C.	Check	40 MV.
31M. 9.6 M. C.	Antenna	400 Ohm	C	9.6 M. C.	31M. Ant. 31M. Osc.	25 MV.
25M. 11.6 M. C.	Antenna	400 Ohm	D	11.6 M. C.	25M. Ant. 25M. Osc.	30 MV.
19M. 15.2 M. C.	Antenna	400 Ohm	E	15.2 M. C.	19M. Ant. 19M. Osc.	40 MV.

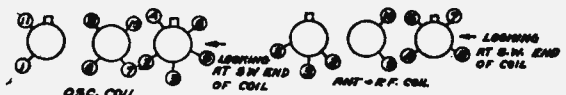


Western  
Auto

# 164



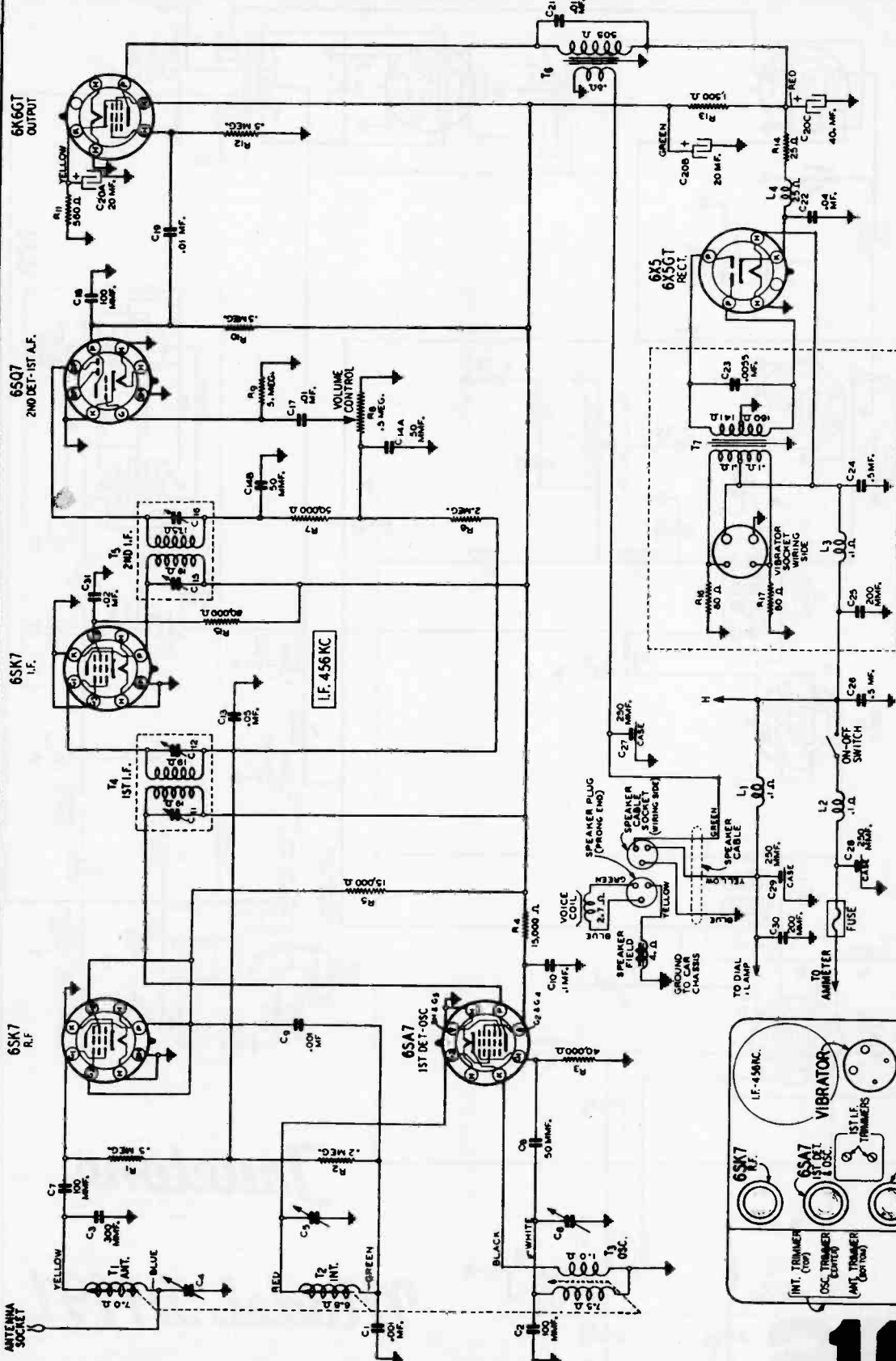
TRIMMER LOCATIONS



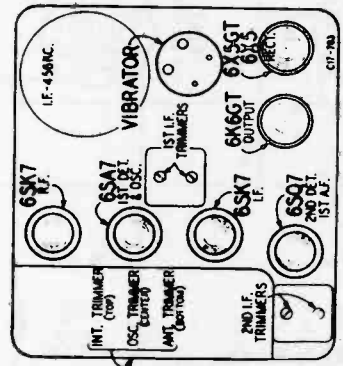
I. F. 456 K. C.

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



*Truetone Model D1190*

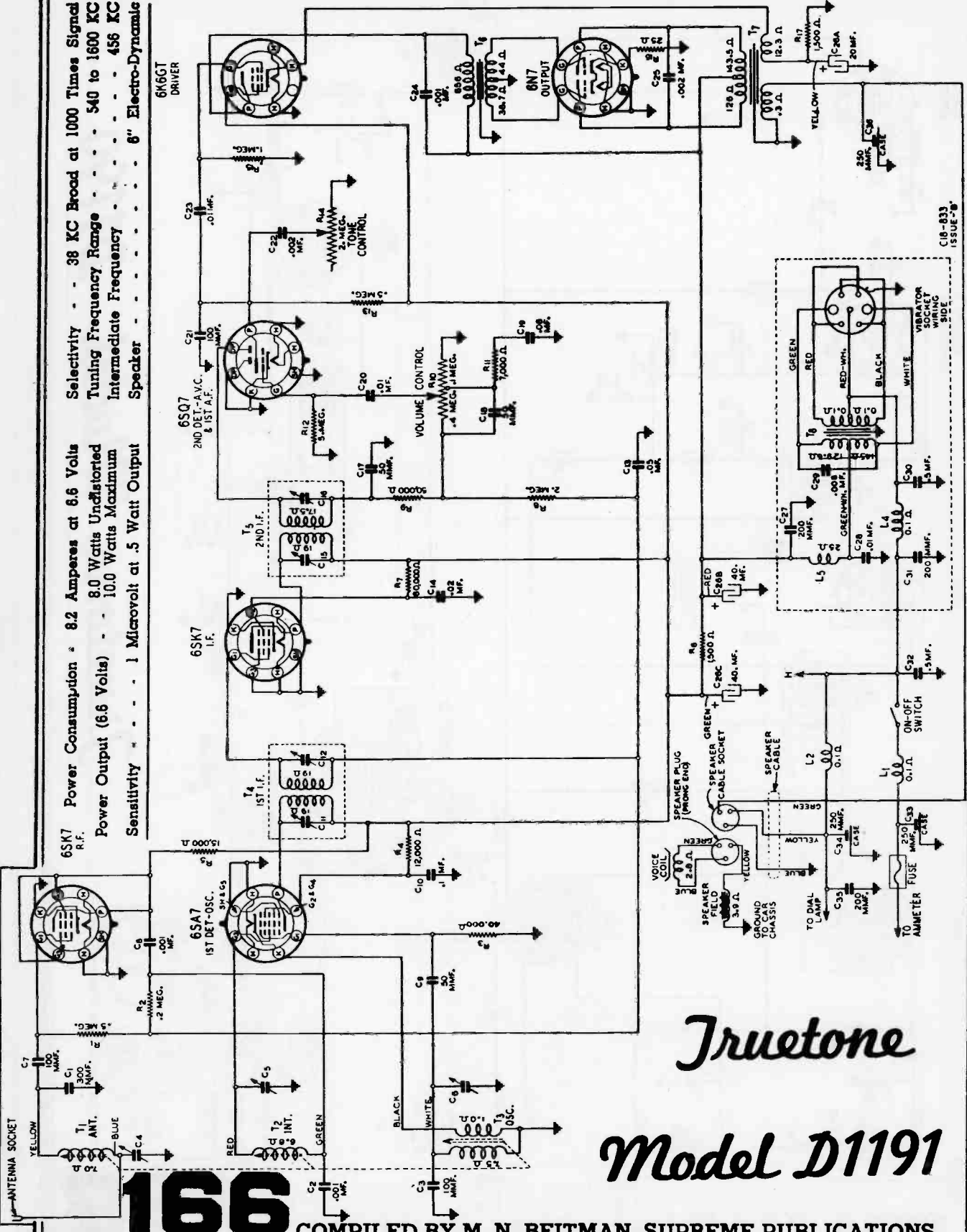


COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

**6SK7** Power Consumption - 8.2 Amperes at 6.6 Volts  
 Power Output (6.6 Volts) - 8.0 Watts Uncluttered  
 Sensitivity - 1 Microvolt at .5 Watt Output

**6SK7** Selectivity - 38 KC Broad at 1000 Times Signal  
 Tuning Frequency Range - 540 to 1600 KC  
 Intermediate Frequency - 456 KC  
 Speaker - 8" Electro-Dynamic



# 166

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

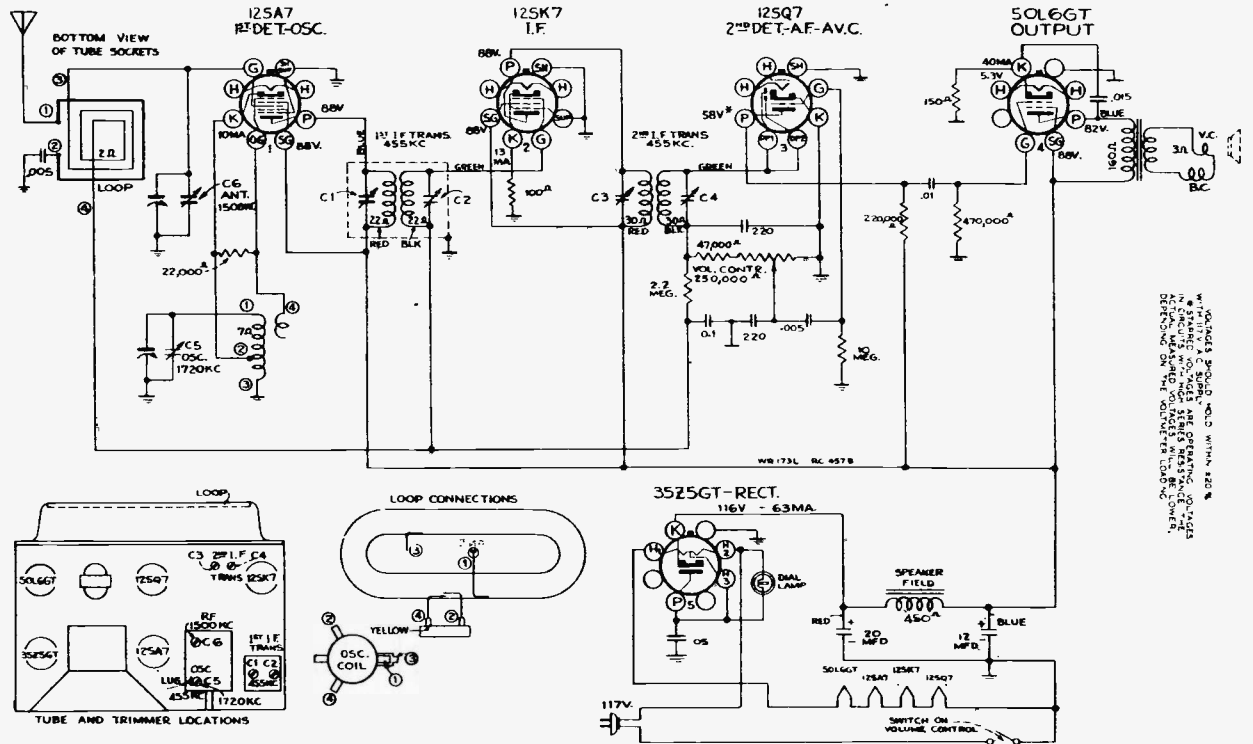
## Truetone Model D1191

C10-833  
ISSUE '38

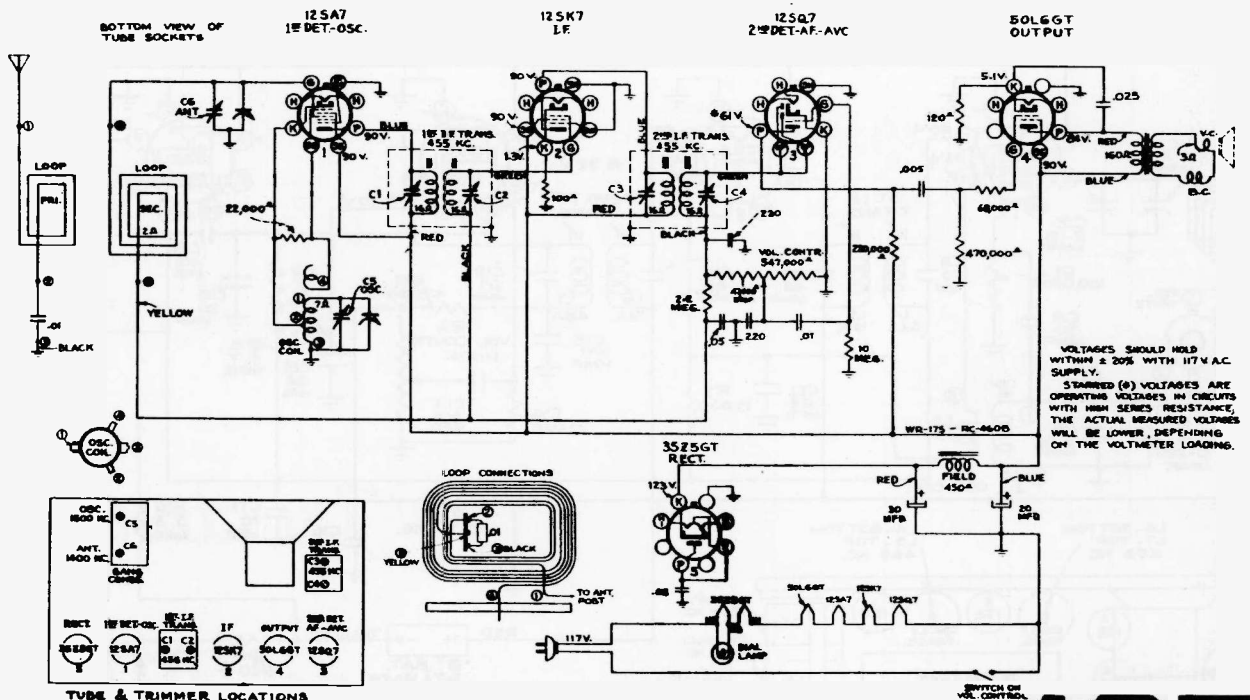


MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

# Westinghouse Radio



Schematic Circuit Diagram Model WR-173L



Schematic Circuit Diagram Model WR-175

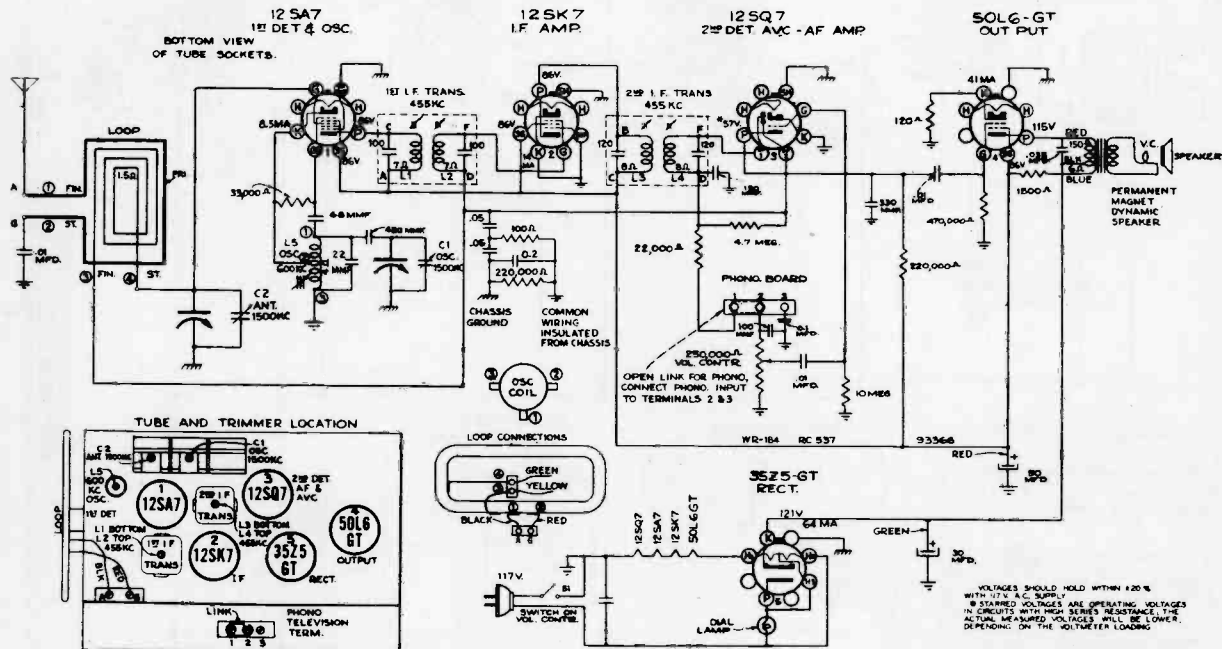
VOLTAGES SHOULD HOLD WITHIN ± 2% WITH 117 V. A.C. SUPPLY.  
 STAMPED (S) VOLTAGES ARE OPERATING VOLTAGES IN CIRCUITS WITH HIGH SERIES RESISTANCE. THE ACTUAL MEASURED VOLTAGES WILL BE LOWER, DEPENDING ON THE VOLTMETER LOADING.

VOLTAGES SHOULD HOLD WITHIN ± 2% WITH 117 V. A.C. SUPPLY.  
 STAMPED (S) VOLTAGES ARE OPERATING VOLTAGES IN CIRCUITS WITH HIGH SERIES RESISTANCE. THE ACTUAL MEASURED VOLTAGES WILL BE LOWER, DEPENDING ON THE VOLTMETER LOADING.

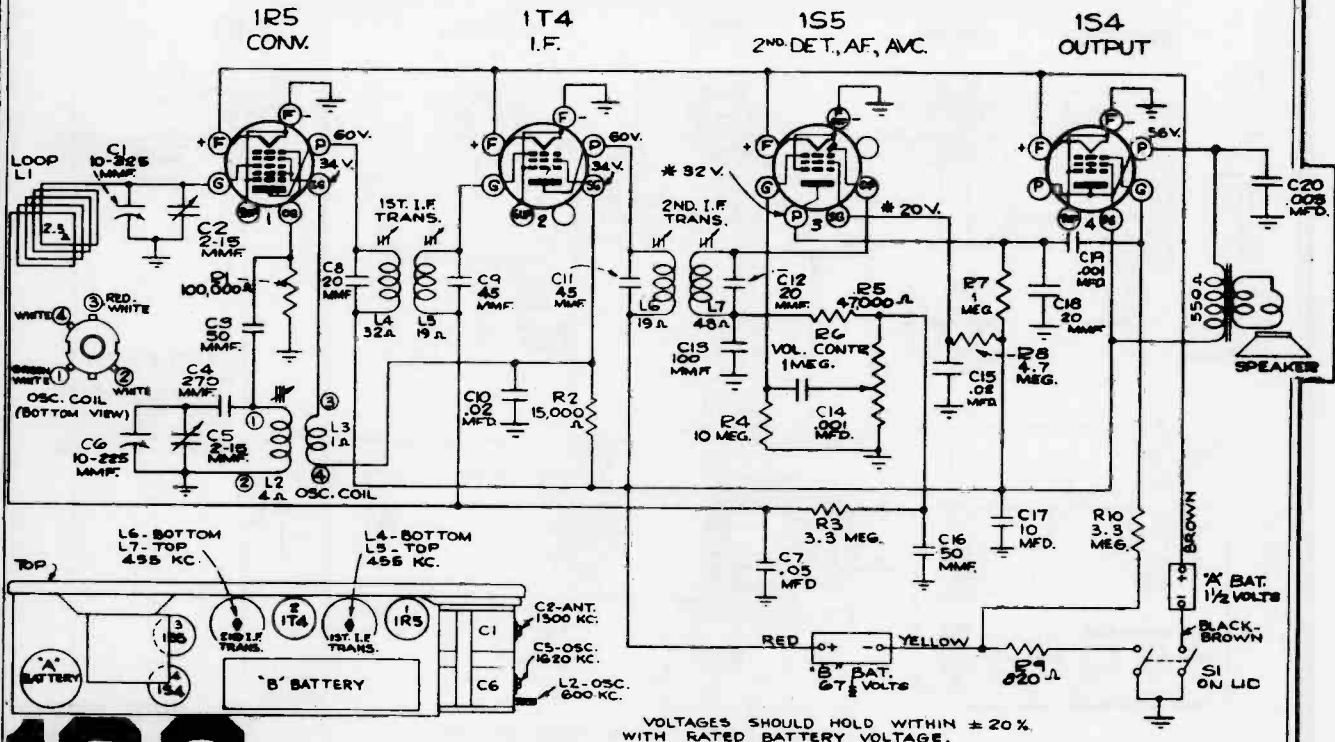
MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

# Westinghouse Radio

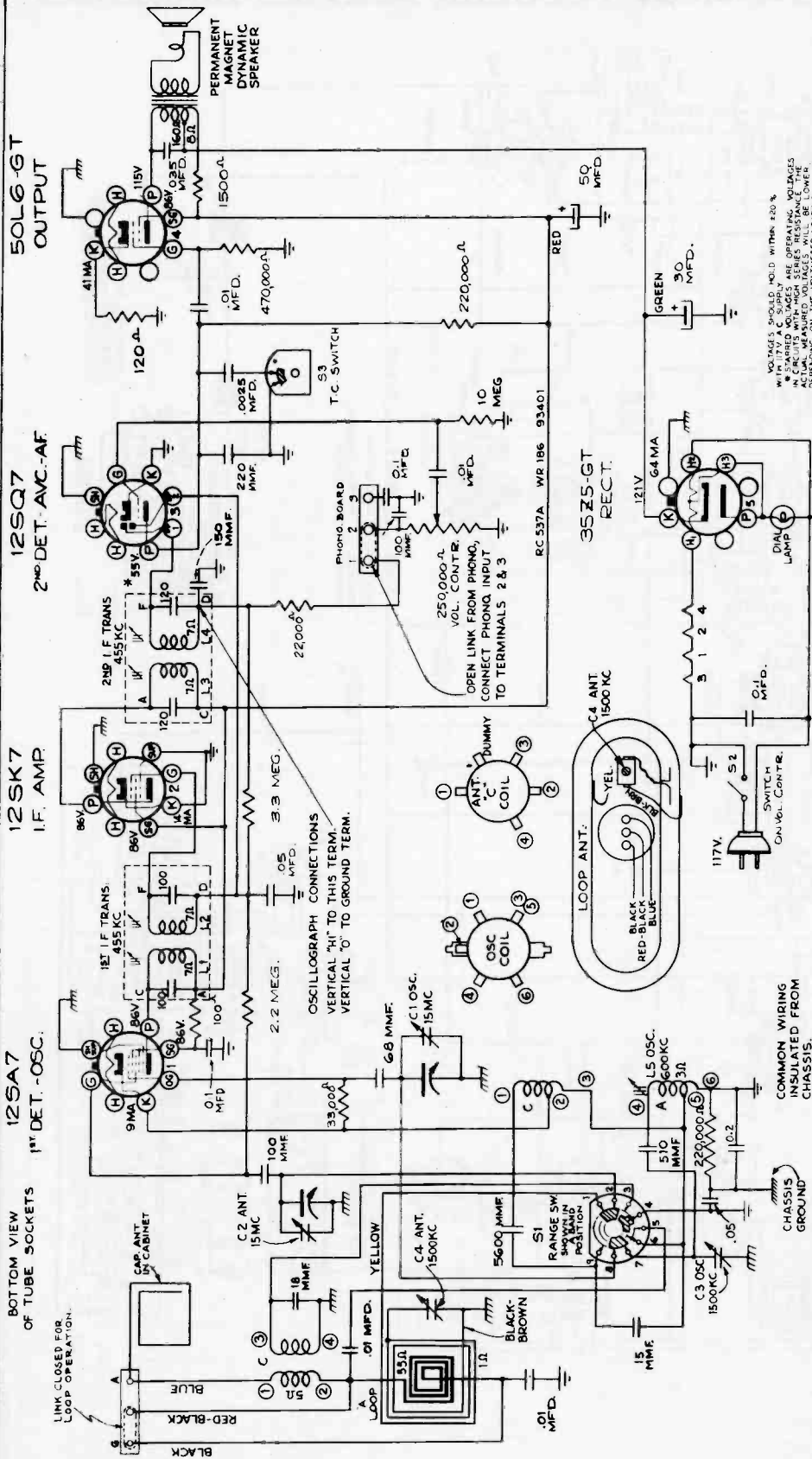
## Model WR-184



## Models WR-682 & WR-682A



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



VOLTS SHOULD HOLD WITHIN ±20%  
 \* SHARED VOLTAGES ARE OPERATING VOLTAGES  
 \*\* MEASURED VOLTAGES WITH RESISTANCE  
 \*\* MEASURED VOLTAGES WILL BE LOWER  
 DEPENDING ON THE VOLT-METER LOADING.

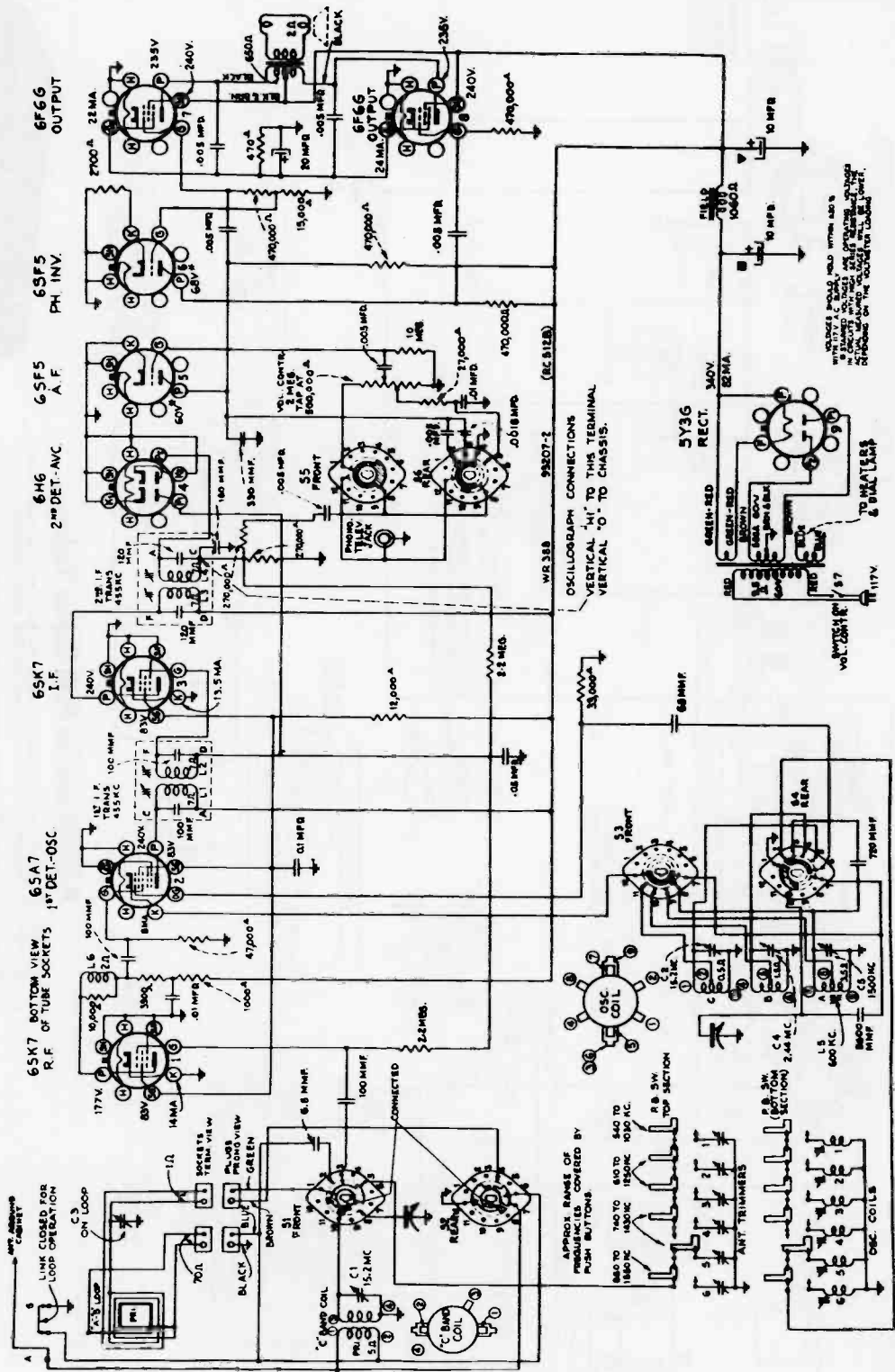
## Adjustments for Push Button Tuning

1. Cut out the tabs for your six favorite stations and arrange them in order of frequency in the recesses on the push buttons.
2. Press down on the first push button and hold it down. The screw in back of the push button is now accessible and should be loosened one or two turns with a screwdriver.
3. While still holding down the push button, tune in the first station represented by the station tabs with the tuning knob, by Dial Tuning. When the station is heard at its best, tighten up the screw in back of the push button. Now let go of the push button, turn the tuning knob in order to detune and again press down the button and let go. The station should be heard again. If not, repeat the above adjustment process until reception is satisfactory.
4. Proceed to set up the other five push buttons in a similar manner.

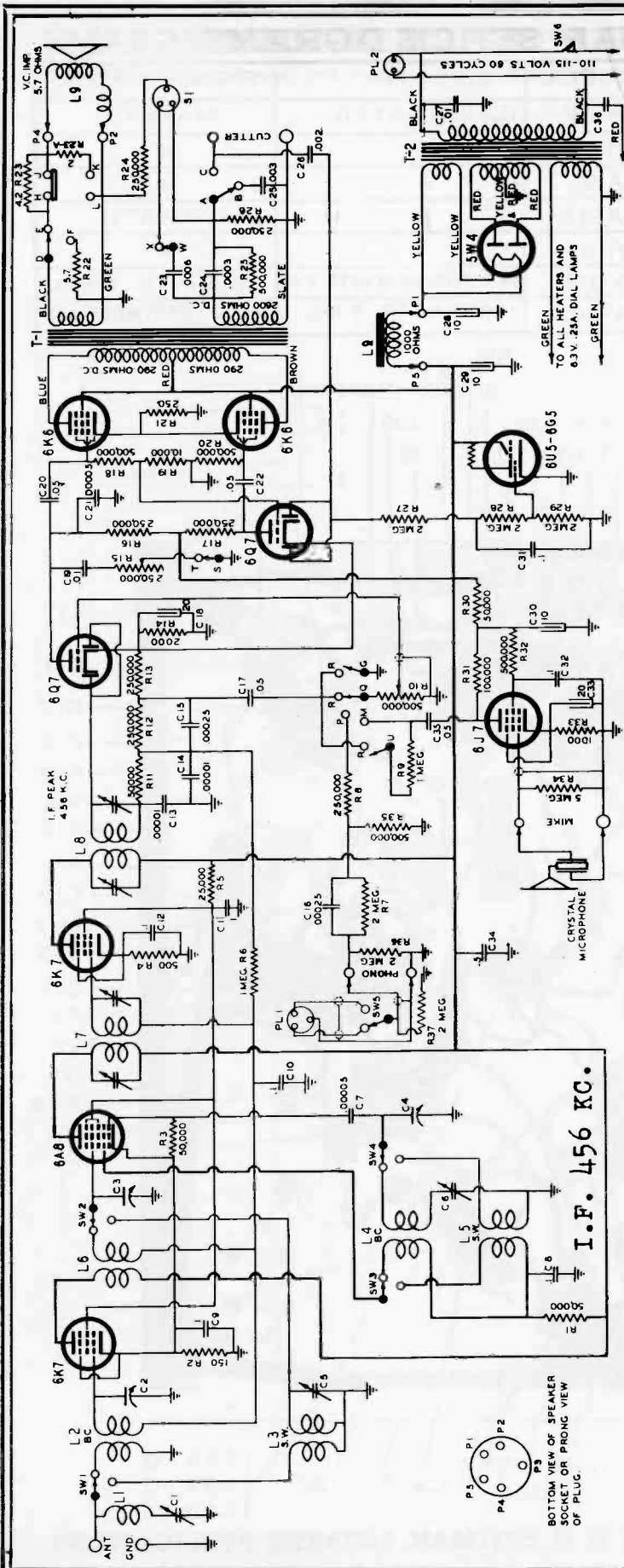


**Westinghouse Radio**  
**Models WR-186, WR-12X7**

# Westinghouse Radio Model WR-388



# SERVICE DIAGRAMS

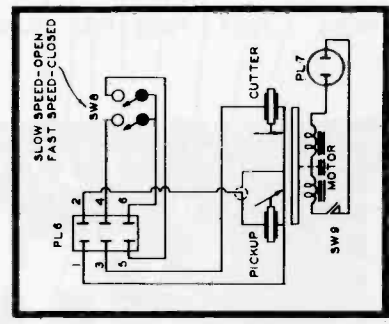


**PLUG CONNECTIONS**

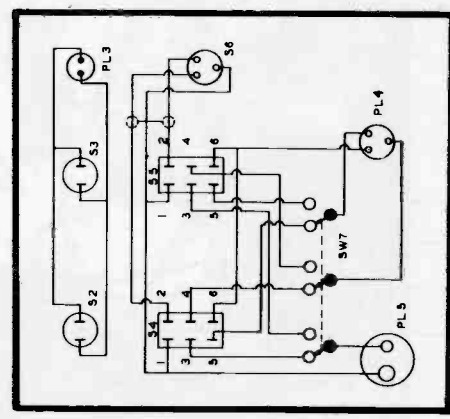
- PL1 (A-101 CHASSIS) TO S6 (A-101 PANEL)
- PL2 (A-101 CHASSIS) TO PL3 (A-101 PANEL)
- PL6 (A-102) TO S4 OR S5 (A-101 PANEL)
- PL7 (A-102) TO S2 OR S3 (A-101 PANEL)
- PL4 (A-101 PANEL) TO S1 (A-101 CHASSIS)
- PL5 (A-101 PANEL) TO "CUTTER" SOCKET (A-101 CHASSIS)

PUSH BUTTON CIRCUIT FUNCTIONS	
NORMAL "UP" POSITION OF PUSH BUTTON SWITCHES INDICATED IN SCHEMATIC DIAGRAM	
1	OPENS Q-R, W-X, CLOSSES Q-R, R-G
2	OPENS Q-R, CLOSSES Q-M
3	FIRST POS. OPENS A-B, T-S, CLOSSES U-V
4	SECOND POS. OPENS Q-R, A-B, D-E, T-S, CLOSSES G-M, A-C, D-F
5	FIRST POS. OPENS A-B, T-S, CLOSSES A-C
6	SECOND POS. OPENS A-B, T-S, H-J, CLOSSES A-C, K-L

NOTE - ALL OTHER CONTACT POSITIONS INDICATED IN DIAGRAM



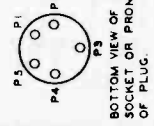
**TURNTABLE UNIT**  
A-102



**PANEL WIRING - MASTER UNIT**  
A-101

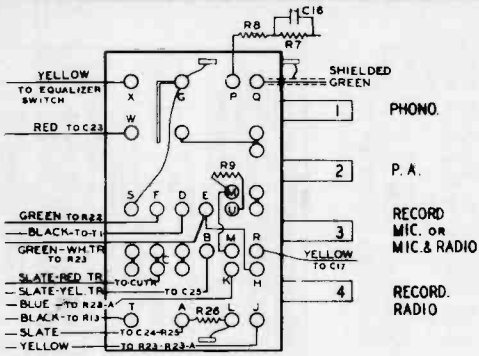
**Wilcox-Gay Corporation**  
Models A-89, A-91, A-92, A-93, A-94, A-101, A-102.

See next page for details

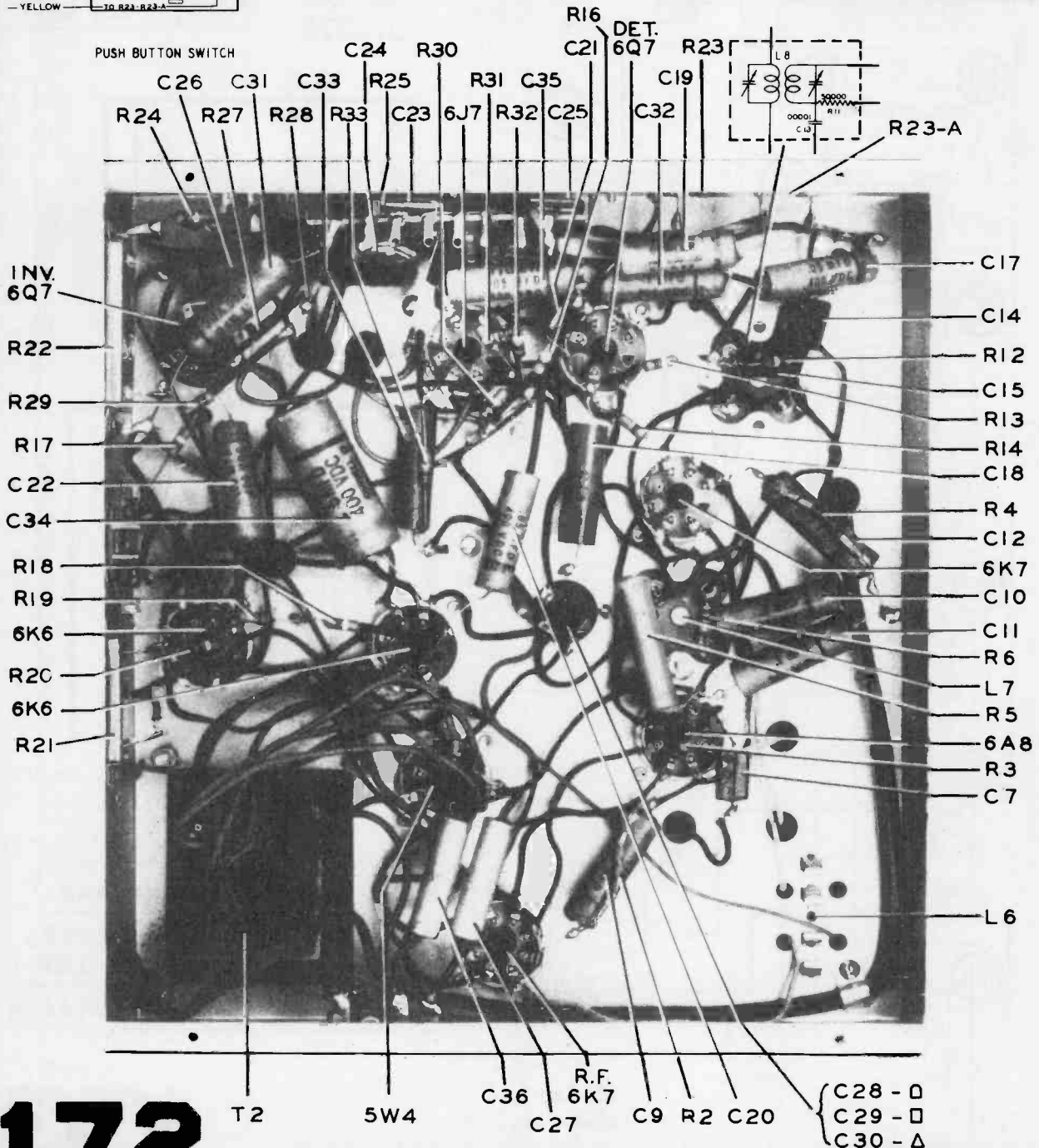


BOTTOM VIEW OF SPEAKER SOCKET OR PRONG VIEW OF PLUG.

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



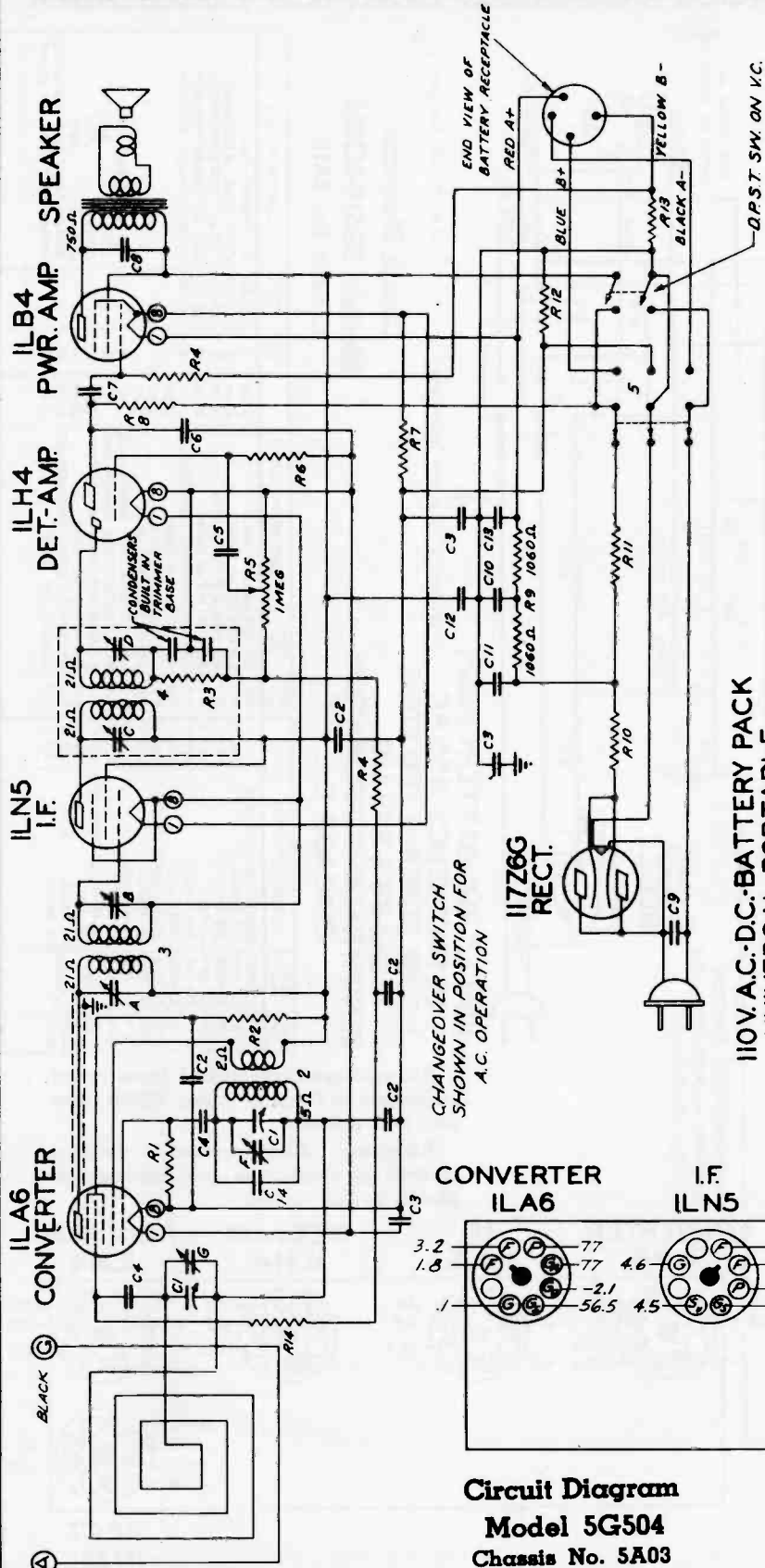
MODELS	CIRCUIT	PHONO-PLAYER
A-89	ILLUSTRATED	MANUAL
A-91	"	"
A-92	"	"
A-93	"	AUTOMATIC
A-94	"	"
A-101	SEE WIRING & NOTE A-101	USED WITH A-102
A-102	SEE NOTE A-102	DUAL TURNTABLE ONLY



# 172

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



ZENITH RADIO CORPORATION  
CHICAGO, ILL.

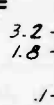
110V. A.C.-D.C. BATTERY PACK  
UNIVERSAL PORTABLE  
I.F. FREQUENCY 455 KC.  
5 TUBE SUPERHETERODYNE  
CHASSIS No 5A03

DIAG. NO.	PART NO.	DESCRIPTION
1	53728	180 M OHM
2	53729	33 M OHM
3	53728	47 M OHM
4	53729	2.2 MEG OHM
5	53728	VOLUME CONTROL
A	53729	15 MEG OHM
B	53728	1 M. OHM WIREWOUND
C	53729	1 MEG OHM WIREWOUND
D	53728	2.2 M. OHM WIREWOUND
E	53729	33 OHM WIREWOUND
F	53728	180 OHM
G	53729	250 M OHM

DIAG. NO.	PART NO.	DESCRIPTION
1	53728	180 M OHM
2	53729	33 M OHM
3	53728	47 M OHM
4	53729	2.2 MEG OHM
5	53728	VOLUME CONTROL
A	53729	15 MEG OHM
B	53728	1 M. OHM WIREWOUND
C	53729	1 MEG OHM WIREWOUND
D	53728	2.2 M. OHM WIREWOUND
E	53729	33 OHM WIREWOUND
F	53728	180 OHM
G	53729	250 M OHM

CONVERTER  
ILA6



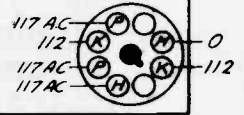
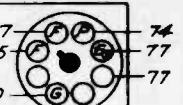
I.F.  
ILN5



DET. AMP.  
ILH4



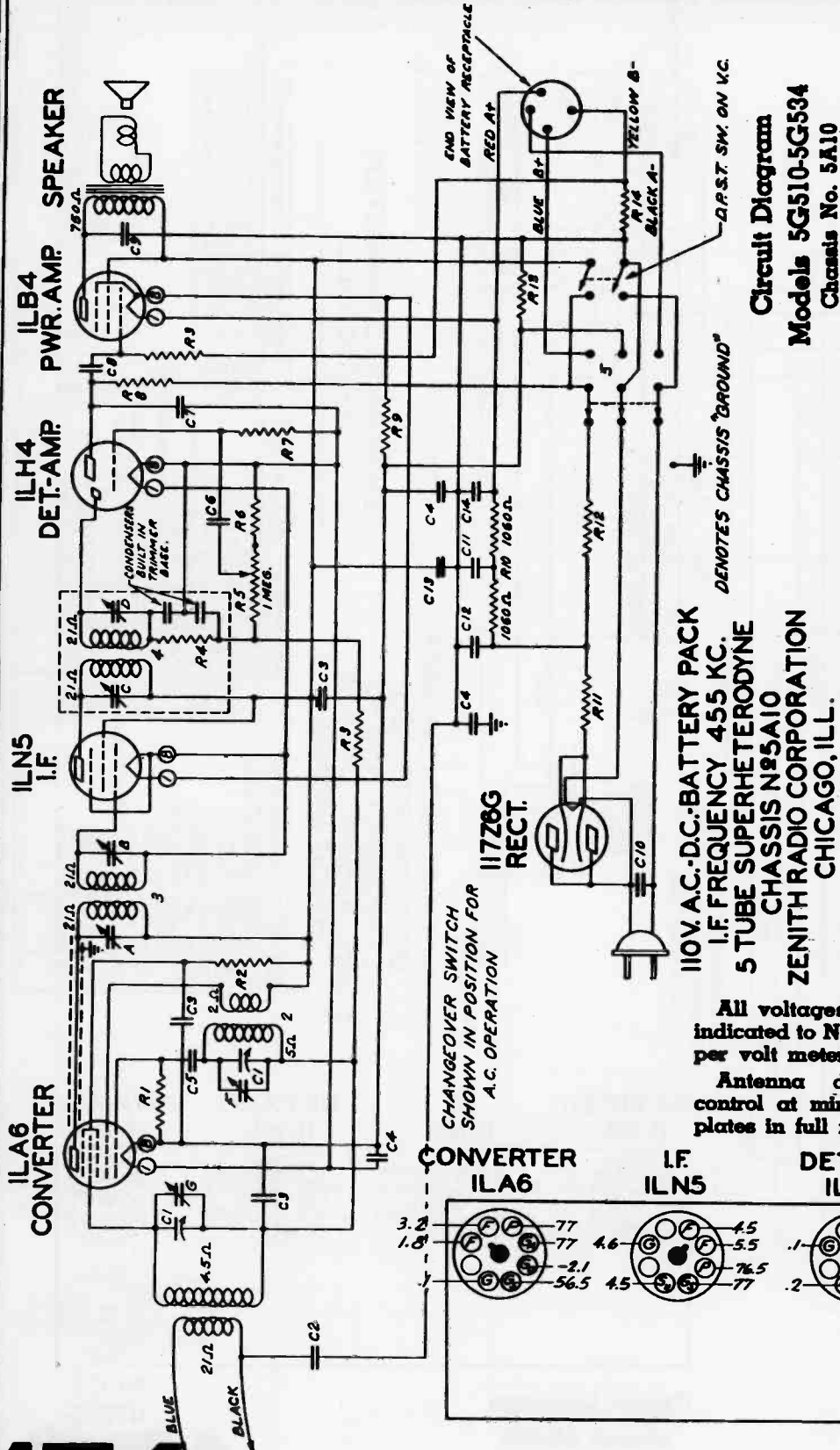
PWR. AMP.  
ILB4



Circuit Diagram  
Model 5G504  
Chassis No. 5A03

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# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

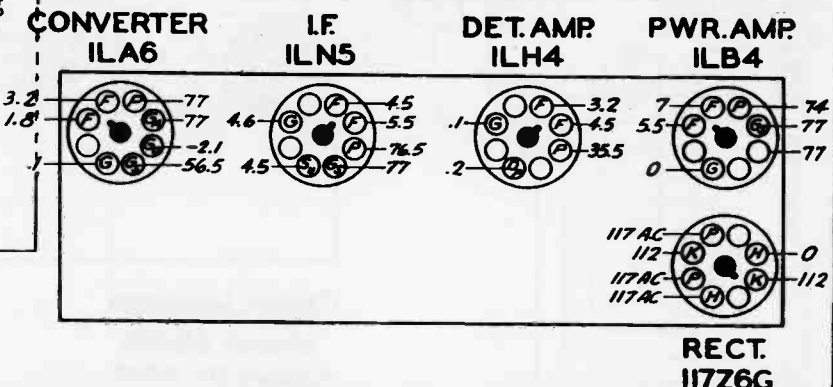


**Circuit Diagram**  
**Models 5G510-5G534**  
**Chassis No. 5A10**

DIAG. NO.	PART NO.	DESCRIPTION	RES.	W.
1	20-227	ANTENNA COIL		1/4 W.
2	5B914	OSC. COIL ASSEMBLY		1/4 W.
3	98-720	11L I.F. TRANSFORMER		1/4 W.
4	95-721	25D I.F. TRANSFORMER		1/4 W.
5	85-284	CHANGE-OVER SWITCH		1/4 W.
A		11L I.F. TRANS. PRI.		1/4 W.
B		11L I.F. TRANS. SEC.		1/4 W.
C		25D I.F. TRANS. PRI.		1/4 W.
D		25D I.F. TRANS. SEC.		1/4 W.
F		BROADCAST ANT. (BY GANG)		1/4 W.
G		BROADCAST ANT. (BY GANG)		1/4 W.

All voltages measured from point indicated to Neg. B. using 20000 ohm per volt meter.

Antenna disconnected — volume control at minimum and condenser plates in full mesh.



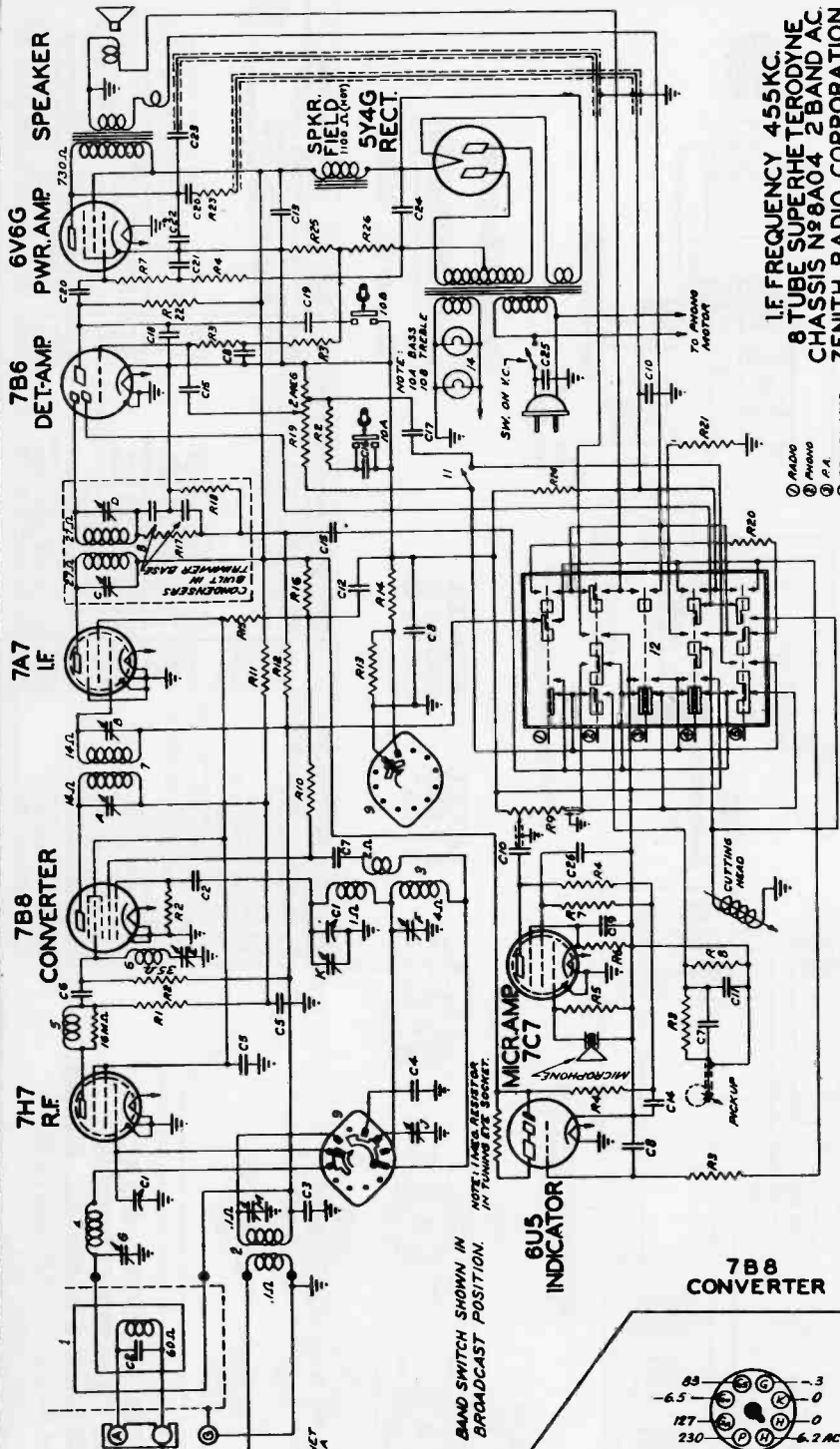








# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

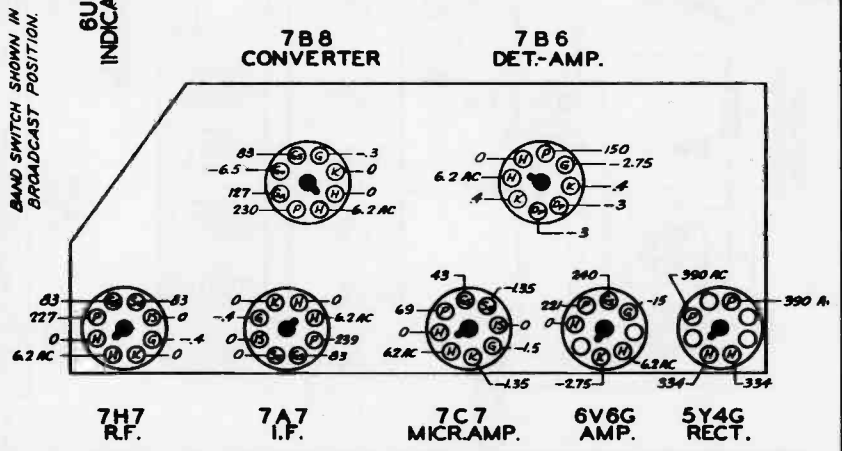


IF FREQUENCY 455KC.  
 8 TUBE SUPERHETERODYNE  
 CHASSIS N°8A04 2 BAND AC  
 ZENITH RADIO CORPORATION  
 CHICAGO, ILL.

NOTE: ALL BUTTONS SHOWN IN  
 NON-OPERATED POSITION.

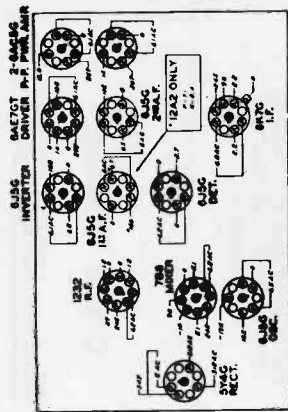
**Circuit Diagram**  
**Models 8S593-8S594**  
**Chassis No. 8A04**

QW	PART	DESCRIPTION	QW	PART	DESCRIPTION
10	3883	TONE CONTROL SWITCH	10	3883	TONE CONTROL SWITCH
11	85-736	NORMAL-BRILLIANT SWITCH	11	85-736	NORMAL-BRILLIANT SWITCH
12	95-252	PILOT LIGHT 175V 50-60W	12	95-252	PILOT LIGHT 175V 50-60W
14	100-36	PILOT LIGHT 6.3V .25A	14	100-36	PILOT LIGHT 6.3V .25A
1	82-941	IF TRANS. SEC.	1	82-941	IF TRANS. SEC.
2	82-942	BROADCAST ANT.	2	82-942	BROADCAST ANT.
3	82-943	BROADCAST MODER.	3	82-943	BROADCAST MODER.
4	82-1042	SHORT NAME ANT.	4	82-1042	SHORT NAME ANT.
5	82-944	IF TRANS. SEC.	5	82-944	IF TRANS. SEC.
6	82-945	IF TRANS. SEC.	6	82-945	IF TRANS. SEC.
7	82-946	IF TRANS. SEC.	7	82-946	IF TRANS. SEC.
8	82-947	IF TRANS. SEC.	8	82-947	IF TRANS. SEC.
9	82-948	IF TRANS. SEC.	9	82-948	IF TRANS. SEC.
10	82-949	IF TRANS. SEC.	10	82-949	IF TRANS. SEC.
11	82-950	IF TRANS. SEC.	11	82-950	IF TRANS. SEC.
12	82-951	IF TRANS. SEC.	12	82-951	IF TRANS. SEC.
13	82-952	IF TRANS. SEC.	13	82-952	IF TRANS. SEC.
14	82-953	IF TRANS. SEC.	14	82-953	IF TRANS. SEC.
15	82-954	IF TRANS. SEC.	15	82-954	IF TRANS. SEC.
16	82-955	IF TRANS. SEC.	16	82-955	IF TRANS. SEC.
17	82-956	IF TRANS. SEC.	17	82-956	IF TRANS. SEC.
18	82-957	IF TRANS. SEC.	18	82-957	IF TRANS. SEC.
19	82-958	IF TRANS. SEC.	19	82-958	IF TRANS. SEC.
20	82-959	IF TRANS. SEC.	20	82-959	IF TRANS. SEC.
21	82-960	IF TRANS. SEC.	21	82-960	IF TRANS. SEC.
22	82-961	IF TRANS. SEC.	22	82-961	IF TRANS. SEC.
23	82-962	IF TRANS. SEC.	23	82-962	IF TRANS. SEC.
24	82-963	IF TRANS. SEC.	24	82-963	IF TRANS. SEC.
25	82-964	IF TRANS. SEC.	25	82-964	IF TRANS. SEC.
26	82-965	IF TRANS. SEC.	26	82-965	IF TRANS. SEC.
27	82-966	IF TRANS. SEC.	27	82-966	IF TRANS. SEC.
28	82-967	IF TRANS. SEC.	28	82-967	IF TRANS. SEC.
29	82-968	IF TRANS. SEC.	29	82-968	IF TRANS. SEC.
30	82-969	IF TRANS. SEC.	30	82-969	IF TRANS. SEC.
31	82-970	IF TRANS. SEC.	31	82-970	IF TRANS. SEC.
32	82-971	IF TRANS. SEC.	32	82-971	IF TRANS. SEC.
33	82-972	IF TRANS. SEC.	33	82-972	IF TRANS. SEC.
34	82-973	IF TRANS. SEC.	34	82-973	IF TRANS. SEC.
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38	82-977	IF TRANS. SEC.	38	82-977	IF TRANS. SEC.
39	82-978	IF TRANS. SEC.	39	82-978	IF TRANS. SEC.
40	82-979	IF TRANS. SEC.	40	82-979	IF TRANS. SEC.
41	82-980	IF TRANS. SEC.	41	82-980	IF TRANS. SEC.
42	82-981	IF TRANS. SEC.	42	82-981	IF TRANS. SEC.
43	82-982	IF TRANS. SEC.	43	82-982	IF TRANS. SEC.
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62	83-001	IF TRANS. SEC.	62	83-001	IF TRANS. SEC.
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67	83-006	IF TRANS. SEC.	67	83-006	IF TRANS. SEC.
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76	83-015	IF TRANS. SEC.	76	83-015	IF TRANS. SEC.
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87	83-026	IF TRANS. SEC.	87	83-026	IF TRANS. SEC.
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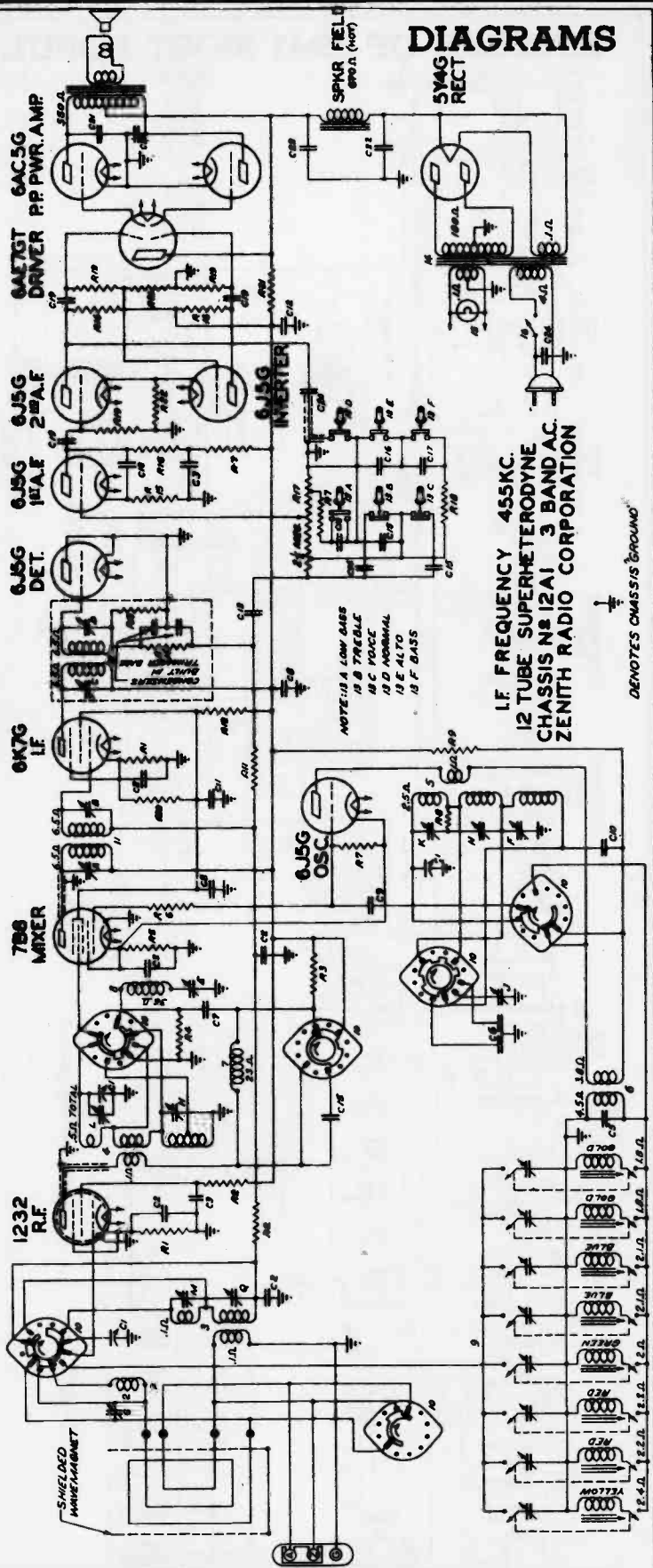




Part No.	Part No.	Description	Part No.	Description	Part No.	Description
C1	12-569	THREE BAND VARIABLE	1	12-569	250 OHM	12S569Z
C2	12-569	1000 OHM	2	12-569	100 OHM	12S569Z
C3	12-569	100 OHM	3	12-569	100 OHM	12S569Z
C4	12-569	100 OHM	4	12-569	100 OHM	12S569Z
C5	12-569	100 OHM	5	12-569	100 OHM	12S569Z
C6	12-569	100 OHM	6	12-569	100 OHM	12S569Z
C7	12-569	100 OHM	7	12-569	100 OHM	12S569Z
C8	12-569	100 OHM	8	12-569	100 OHM	12S569Z
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C68	12-569	100 OHM	68	12-569	100 OHM	12S569Z
C69	12-569	100 OHM	69	12-569	100 OHM	12S569Z
C70	12-569	100 OHM	70	12-569	100 OHM	12S569Z
C71	12-569	100 OHM	71	12-569	100 OHM	12S569Z
C72	12-569	100 OHM	72	12-569	100 OHM	12S569Z
C73	12-569	100 OHM	73	12-569	100 OHM	12S569Z
C74	12-569	100 OHM	74	12-569	100 OHM	12S569Z
C75	12-569	100 OHM	75	12-569	100 OHM	12S569Z
C76	12-569	100 OHM	76	12-569	100 OHM	12S569Z
C77	12-569	100 OHM	77	12-569	100 OHM	12S569Z
C78	12-569	100 OHM	78	12-569	100 OHM	12S569Z
C79	12-569	100 OHM	79	12-569	100 OHM	12S569Z
C80	12-569	100 OHM	80	12-569	100 OHM	12S569Z
C81	12-569	100 OHM	81	12-569	100 OHM	12S569Z
C82	12-569	100 OHM	82	12-569	100 OHM	12S569Z
C83	12-569	100 OHM	83	12-569	100 OHM	12S569Z
C84	12-569	100 OHM	84	12-569	100 OHM	12S569Z
C85	12-569	100 OHM	85	12-569	100 OHM	12S569Z
C86	12-569	100 OHM	86	12-569	100 OHM	12S569Z
C87	12-569	100 OHM	87	12-569	100 OHM	12S569Z
C88	12-569	100 OHM	88	12-569	100 OHM	12S569Z
C89	12-569	100 OHM	89	12-569	100 OHM	12S569Z
C90	12-569	100 OHM	90	12-569	100 OHM	12S569Z
C91	12-569	100 OHM	91	12-569	100 OHM	12S569Z
C92	12-569	100 OHM	92	12-569	100 OHM	12S569Z
C93	12-569	100 OHM	93	12-569	100 OHM	12S569Z
C94	12-569	100 OHM	94	12-569	100 OHM	12S569Z
C95	12-569	100 OHM	95	12-569	100 OHM	12S569Z
C96	12-569	100 OHM	96	12-569	100 OHM	12S569Z
C97	12-569	100 OHM	97	12-569	100 OHM	12S569Z
C98	12-569	100 OHM	98	12-569	100 OHM	12S569Z
C99	12-569	100 OHM	99	12-569	100 OHM	12S569Z
C100	12-569	100 OHM	100	12-569	100 OHM	12S569Z



SOCKET VOLTAGES



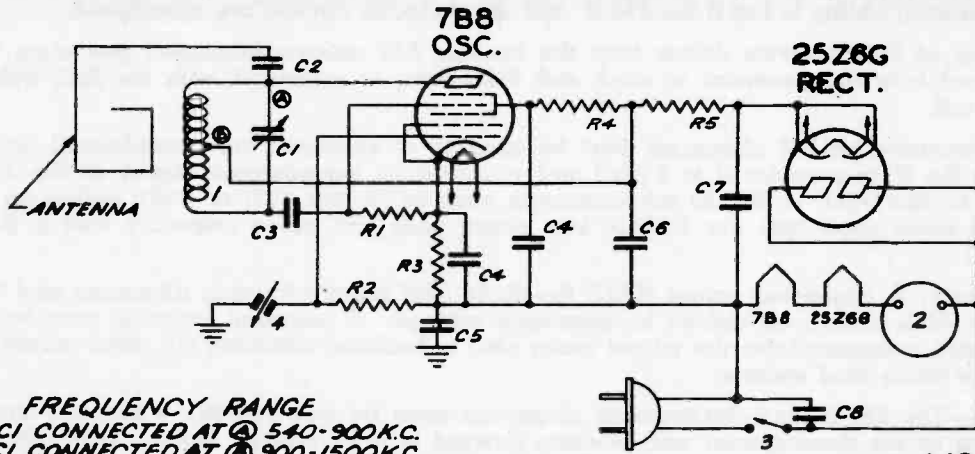
LF FREQUENCY 455KC.  
12 TUBE SUPERHETERODYNE  
CHASSIS N° 12A1 3 BAND AC.  
ZENITH RADIO CORPORATION

⊥ DENOTES CHASSIS GROUND

MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

ZENITH RADIO CORPORATION

CHICAGO • ILLINOIS

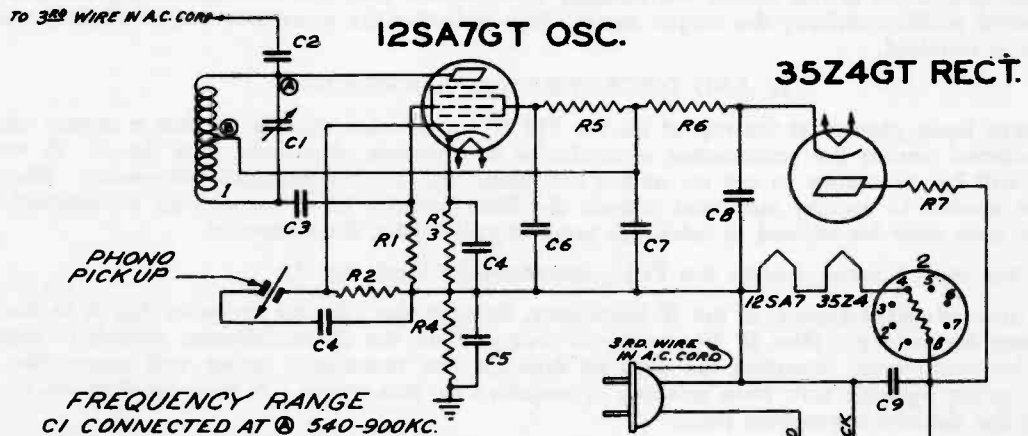


FREQUENCY RANGE  
 C1 CONNECTED AT (A) 540-900K.C.  
 C1 CONNECTED AT (B) 900-1500K.C.

MODELS  
 S8500Z

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-690	TUNING CONDENSER	R2	63-464	1 MEGOHM
C2	22-127	25 MMFD.	R3	63-581	470 OHM
C3	22-182	.00025 MFD.	R4	63-964	4700 OHM
C4	22-829	.05 MFD.	R5	63-707	4700 OHM
C5	22-827	.1 MFD.			
C6	22-1061	8 MFD. ELECTROLYTIC	1	S8611	OSC. COIL ASSEM.
C7	22-1061	16 MFD. "	2	141-85	MOTOR (60~)
C8	22-869	.05 MFD.	3	85-191	A.C. SWITCH
			4	42-30	PICKUP
R1	63-593	47M OHM			

PHONOGRAPH OSCILLATOR  
 ZENITH RADIO CORPORATION  
 CHICAGO ILL.



FREQUENCY RANGE  
 C1 CONNECTED AT (A) 540-900K.C.  
 C1 CONNECTED AT (B) 900-1500K.C.

MODEL  
 S9000

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
C1	22-690	TUNING CONDENSER	R3	63-701	470 OHM
C2	22-127	25 MMFD.	R4	63-296	220M OHM
C3	22-182	.00025 MFD.	R5	63-964	4700 OHM
C4	22-829	.05 MFD.	R6	63-803	2200 OHM
C5	22-827	.1 MFD.	R7	63-575	47 OHM
C6	22-243	.01 MFD.			
C7	22-876	8 MFD. ELECTROLYTIC	1	S8611	OSC. COIL ASSEM.
C8	22-876	40 MFD. "	2	100-76	BALLAST TUBE
C9	22-828	.05 MFD.	3	52-208	3 PRONG RECEPTACLE
R1	63-591	22 M OHM			
R2	63-271	1 MEGOHM			

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## FREQUENCY MODULATION

Broadcasting by the Frequency Modulation method has already proved to be the most satisfactory means of "Local" radio transmission with reduced noise and high fidelity. It is not generally understood that these two features of FM are due in a great measure to the wide frequency band which this method of modulation employs. The FM receiver must be accurately aligned because much of the FM system's noise reducing ability is lost if the FM IF and discriminator circuits are misaligned.

The alignment of FM receivers differs from the familiar AM receiver alignment procedure where a modulated signal from the generator is used and the output is measured with an A.C. voltmeter across the voice coil.

The signal generator for FM alignment must be capable of supplying an unmodulated signal of at least .5 volt at the IF frequencies (4 to 9 Mc.) and a moderate unmodulated signal at the FM RF frequencies (41.5 to 50.5 Mc.) A 50-0-50 microammeter, such as Triplett #321 or #521, makes an excellent output meter when used with our #S9614 four prong plug and cable assembly and a S.P.D.T. switch. (see fig. 1)

The output meter is connected across HALF the diode load resistor for gain alignment and is connected across the FULL diode load resistor for frequency settings. A polarized socket is provided (near the 7A6 tube) which accommodates the output meter plug to facilitate switching the meter across either FULL or HALF the diode load resistor.

**IMPORTANT**—The FM IF and discriminator alignment must be followed in a stage-by-stage sequence, beginning at the discriminator and working forward to the converter stage. This differs from the conventional AM IF alignment procedure where the signal is applied to the converter grid and all the IFs are aligned simultaneously.

The signal from the generator must be kept just below the point where the limiter action of the receiver begins. To explain further we should consider the purpose of the limiter. It does what its name implies; it limits the amount of signal applied to the discriminator circuit. When the input signal is strong the limiter cuts off, allowing only a portion of the signal to pass, while at low signal levels the limiter acts as an IF amplifier. Therefore, it is easy to understand why the signal input to the receiver and IFs must be held below the limiter operating range during alignment. The most practical way of determining the proper amount of input signal is to watch the output meter (connected across HALF the diode load) while the signal from the generator is increased. The meter will indicate the increase in signal until limiting action begins, from which point on no appreciable increase can be noted on the meter even though the generator signal has been increased considerably. The desired signal input level (from the generator) is just below the limiting point which may be determined by increasing the generator output while watching the output meter, then reducing the generator output slightly when the limiting point is reached.

### IF AND DISCRIMINATOR ALIGNMENT

Holes have been placed at the top of all the FM IF transformer shields so that a signal generator may be connected across the transformer secondaries to facilitate alignment. (see fig. 2) A very high input signal will be necessary to get an output indication for the discriminator alignment. Should the generator be unable to supply sufficient signal, the Discriminator input stage may be aligned first in order that its gain may be utilized to raise the input signal to the discriminator.

1. Connect the output meter across the FULL discriminator load. (fig. 1)
2. Feed an unmodulated signal, at the IF frequency, through the dummy antenna (fig. 2) to the 3rd IF transformer secondary. (The IF frequency is stamped on the IF transformer shields.) Adjust the slug B4 for resonance. Rotating the slug B4 through the resonance point will cause the output meter to swing through zero from positive to negative or vice versa. A zero reading on the meter indicates the desired resonance point.
3. Switch the output meter to HALF discriminator load (fig. 1). Adjust trimmer A4 for maximum output, keeping the signal input below the point of limiting action.
4. (Meter at HALF load) Connect the generator to the 2nd IF transformer secondary and adjust the 3rd IF trimmers A3 and B3 for maximum output.
5. (Meter at HALF load) Connect the generator across the 1st IF transformer secondary and adjust the 2nd IF transformer trimmers A2 B2 for maximum output.
6. (Meter at HALF load) Connect the generator to the converter grid. A small socket is provided near the converter tube which will accommodate the side pin of the #S9615 Dummy Antenna assembly (Fig. 2) to facilitate this generator connection. Adjust the 1st IF transformer trimmers A1 B1 for maximum output.



# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## FM OSCILLATOR AND RF ALIGNMENT

- 7a. (Meter at FULL load) Connect the generator, through a 100 ohm dummy antenna, to the FM antenna terminals. Set the generator at 50 Mc. and tune in the signal on the receiver. As the pointer passes the 50 Mc. calibration the output meter will swing from negative through zero to a positive reading or vice versa. The resonance point is again at the zero setting. Should the pointer be off calibration more than plus or minus .5 Mc., which is tolerable, the oscillator may be set by adjusting the two flexible green leads between the manual tuning oscillator coil and the band switch. If the pointer is below 50 Mc. it can be raised by bringing the two green leads together and in the same manner the pointer can be lowered by separating the leads.
- 7b. (Meter still at FULL load) Set the generator at 46 Mc. and check the dial calibration (zero on meter). 46 Mc. should be on scale unless the cam on the condenser shaft has been loosened. If the cam has to be adjusted to scale the oscillator at 46 Mc., the 50 Mc. oscillator adjustment must be repeated. The converter stage is aligned after the receiver has been adjusted to scale within the .5 Mc. limits.
- 8a. (Meter at FULL load) With generator connected to the FM antenna terminals through 100 ohm dummy, set the generator at 49 Mc. and tune in signal on receiver to get a zero output meter reading. Switch the meter to HALF load and adjust the generator to give an output just below the limiter action point. Adjust slug P1 for maximum output.
- 8b. (Meter at FULL load) Set generator at 46 Mc. and tune in on receiver. Switch meter to HALF load and adjust "Z" for maximum output.
- 8c. (Meter at FULL load) Set generator at 42.5 Mc. and tune in on receiver. Switch meter to HALF load and adjust P2 for maximum output.

There are no RF adjustments for the FM push buttons when the push buttons are used on automatic. Button #1 is checked at 50 Mc., buttons #2 and #3 checked at 49 Mc., buttons #5 and #6 checked at 42.5 Mc., and button #4 is the manual switch.

In conclusion we again wish to emphasize the importance of keeping the signal from the generator below the point where limiter action begins, that the output meter is connected across the FULL diode load resistor for frequency and calibration operations, and that the output meter is connected across HALF the diode load resistor for gain checks.

This information on alignment of Frequency Modulation circuits is presented with the permission of Zenith Radio Corp. of Chicago.

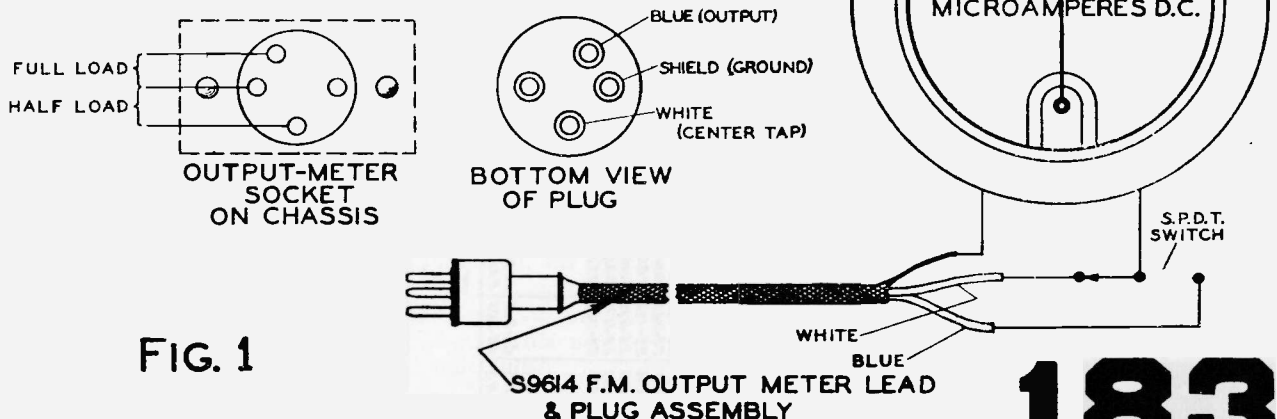


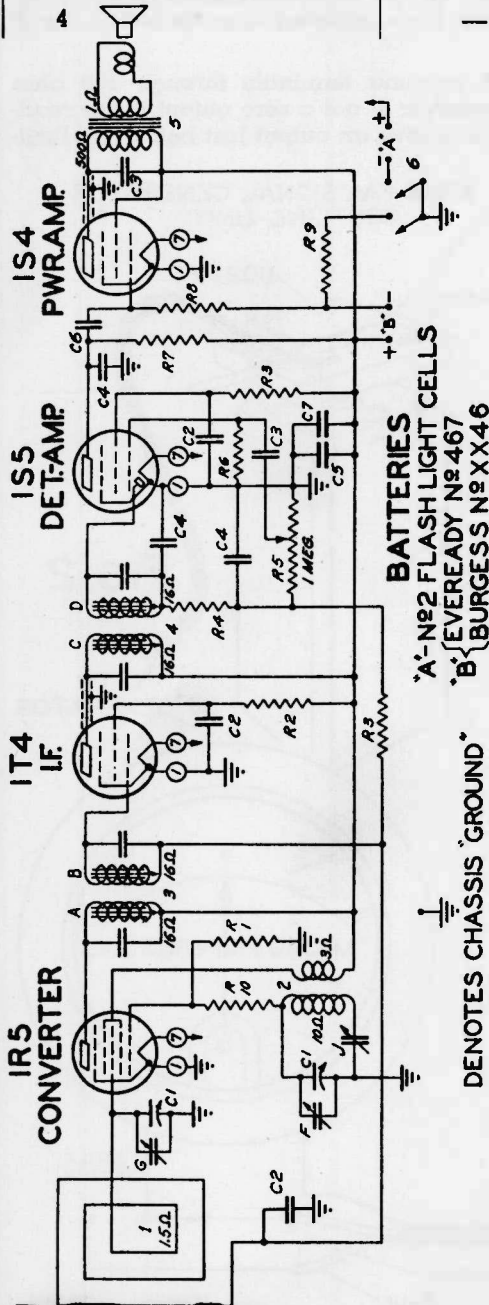
FIG. 1

FIG. 2

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

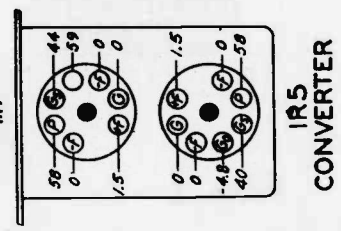
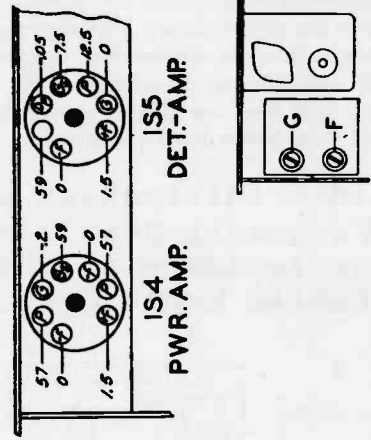
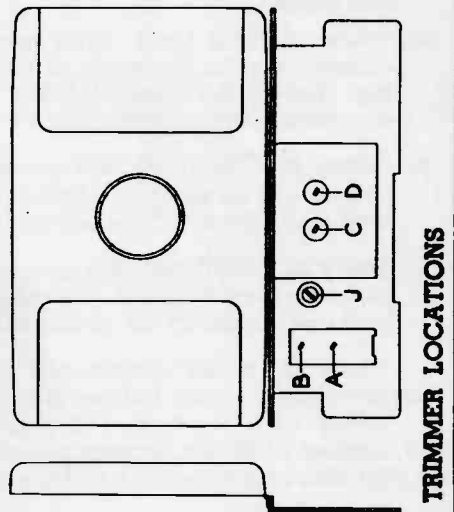
## ALIGNMENT PROCEDURE

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial A1	Trimmers	Purpose
1	Converter Grid	.1 mfd.	455 Kc.	—	1600 Kc.	A, B, C, D	Align I. F.
2	1 Turn Loop Made from Generator Leads. Diameter Approx. 10"	—	1600 Kc.	—	1600 Kc.	F	Set Oscillator to Scale
3		—	600 Kc.	—	600 Kc.	J	Rock Gang and Adjust for Max.
4		—	1400 Kc.	—	1400 Kc.	G	Align Antenna

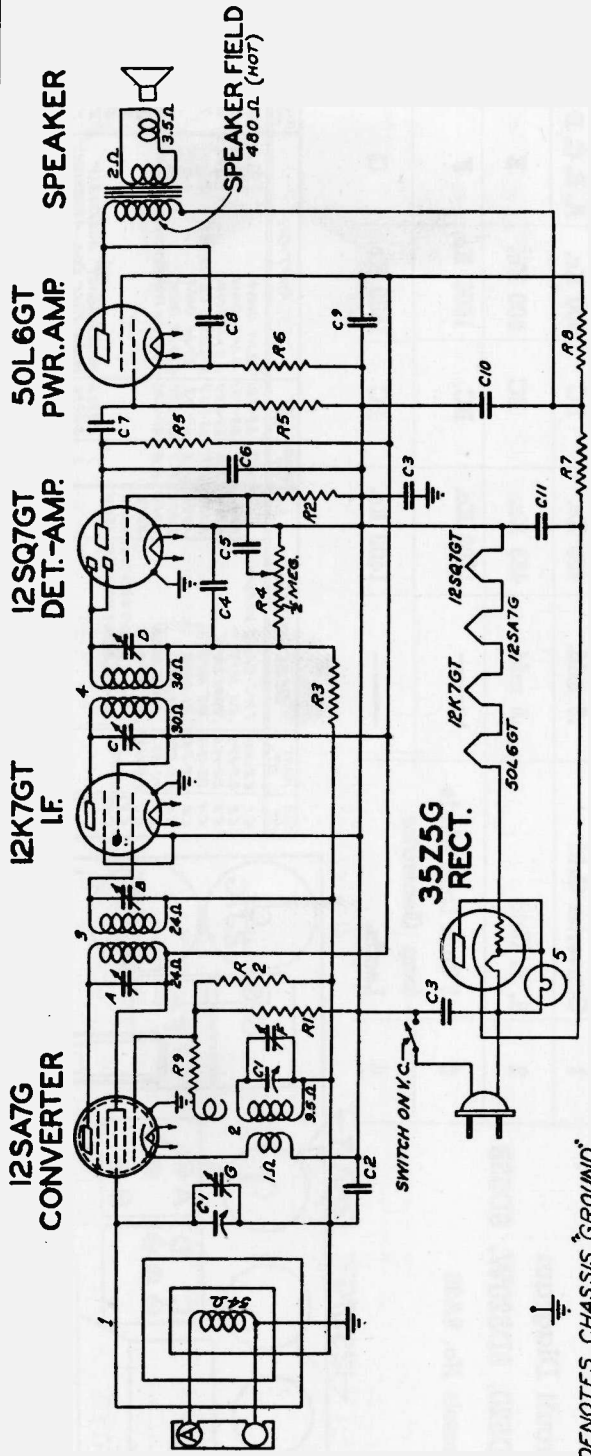


**Circuit Diagram**  
**Model 4K600**  
 Chassis No. 4B01

DIAG. NO.	PART NO.	DESCRIPTION	DIAG. NO.	PART NO.	DESCRIPTION
1-29-41	R10 ADDED		4	95-779	2 <sup>nd</sup> I.F. TRANS.
C1	22-1167	TWO GANG VARIABLE	5	95-779	SPKR. TRANS.
C2	22-1170	.01 MFD.	6	95-267	PWR. SWITCH
C3	22-1169	.001 MFD.	A	1E1	1 <sup>st</sup> I.F. PRI.
C4	22-162	.001 MFD.	B	1E1	1 <sup>st</sup> I.F. SEC.
C5	22-176	5 MFD. ELECTROLYTIC	C	2E1	1 <sup>st</sup> I.F. SEC.
C6	22-175	.005 MFD.	D	2E1	2 <sup>nd</sup> I.F. SEC.
C7	22-180	.05 MFD.	E	2E1	2 <sup>nd</sup> I.F. SEC.
R1	63-715	100 M OHM	F	2E1	2 <sup>nd</sup> I.F. SEC.
R2	63-765	33 M OHM	G	2E1	2 <sup>nd</sup> I.F. SEC.
R3	63-724	4.7 MEG OHM	H	2E1	2 <sup>nd</sup> I.F. SEC.
R4	63-713	4.7 M OHM	I	2E1	2 <sup>nd</sup> I.F. SEC.
R5	63-1176	VOLUME CONTROL	J	2E1	2 <sup>nd</sup> I.F. SEC.
R6	63-1093	15 MEG OHM			
R7	63-464	1 MEG OHM			
R8	63-723	3.3 MEG OHM			
R9	63-749	680 OHM			
R10	63-1234	680 OHM			
	S9385	WAVEMAGNET ASSEMBLY			
	S9384	OSC. COIL ASSEMBLY			
	95-780	1 <sup>st</sup> I.F. TRANS.			



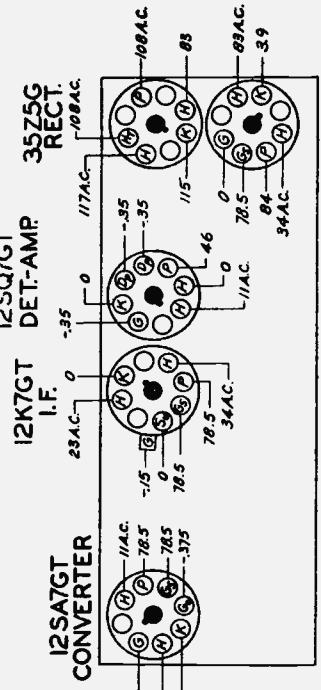
# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



## ALIGNMENT PROCEDURE

Operation	Connect Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At
1	Converter Grid	.1 mid.	455 Kc.	—	600 Kc.
2	1 Turn Loop Made from Generator Leads.	—	1500 Kc.	—	1500 Kc.
3			1500 Kc.	—	1500 Kc.

DENOTES CHASSIS GROUND



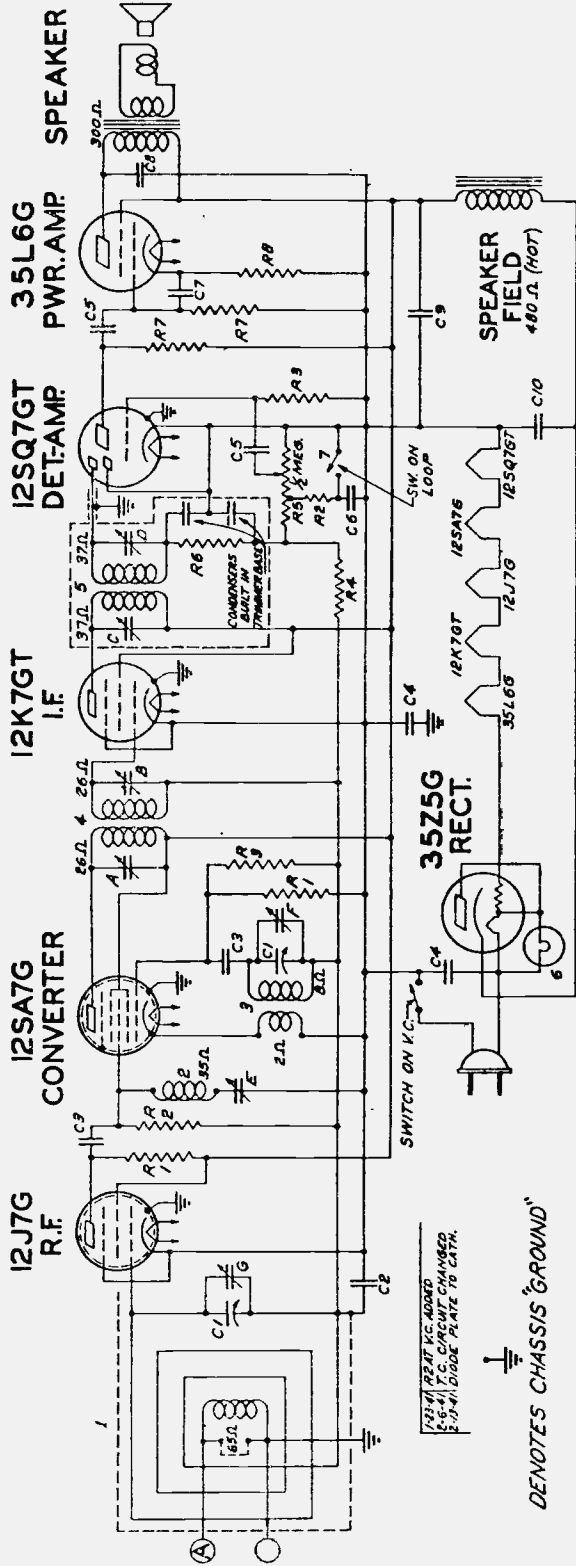
1-3-4) R9 ADDED

50L6GT PWR. AMP

ZENITH RADIO CORPORATION  
CHICAGO, ILL.

Circuit Diagram  
Models 5D610, 5D610W, 5D625  
Chassis No. 5B01

DIAL NO.	PART NO.	DESCRIPTION	DIAL NO.	PART NO.	DESCRIPTION
C1	22-1185	TWO-GANG VARIABLE	2	S9450	OSC. COIL ASSEMBLY
C2	22-859	.05 MFD.	3	95-696	1ET I.F. TRANS.
C3	22-1017	.05 MFD.	4	95-794	2ND I.F. TRANS.
C4	22-953	.0002 MFD.	5	100-67	PILOT LIGHT 6.3 V. .15A.
C5	22-492	.002 MFD.			
C6	22-654	.0005 MFD.	1		1ET I.F. TRANS. PRL.
C7	22-243	.01 MFD.	2		1ET I.F. TRANS. SEC.
C8	22-182	.01 MFD.	3		2ND I.F. TRANS. PRL.
C9		[20 MFD. ELECTROLYTIC]	4		2ND I.F. TRANS. SEC.
C10	22-1186	[20 MFD. ELECTROLYTIC]	5		BROADCAST OSC. (ON GANG)
C11		[30 MFD. ELECTROLYTIC]	6		BROADCAST ANT. (ON GANG)
			7		
			8		
			9		
			10		
			11		
				59452	WAVEMAGNET ASSEMBLY



DENOTES CHASSIS GROUND

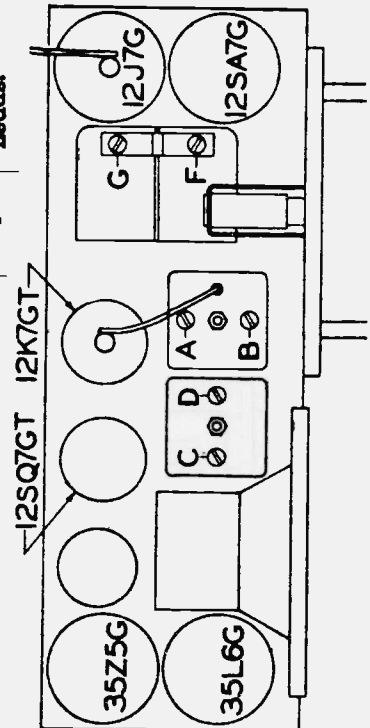
I.F. FREQUENCY 455 KC.

Circuit Diagram

Models 6D520, 6D520W, 6D538

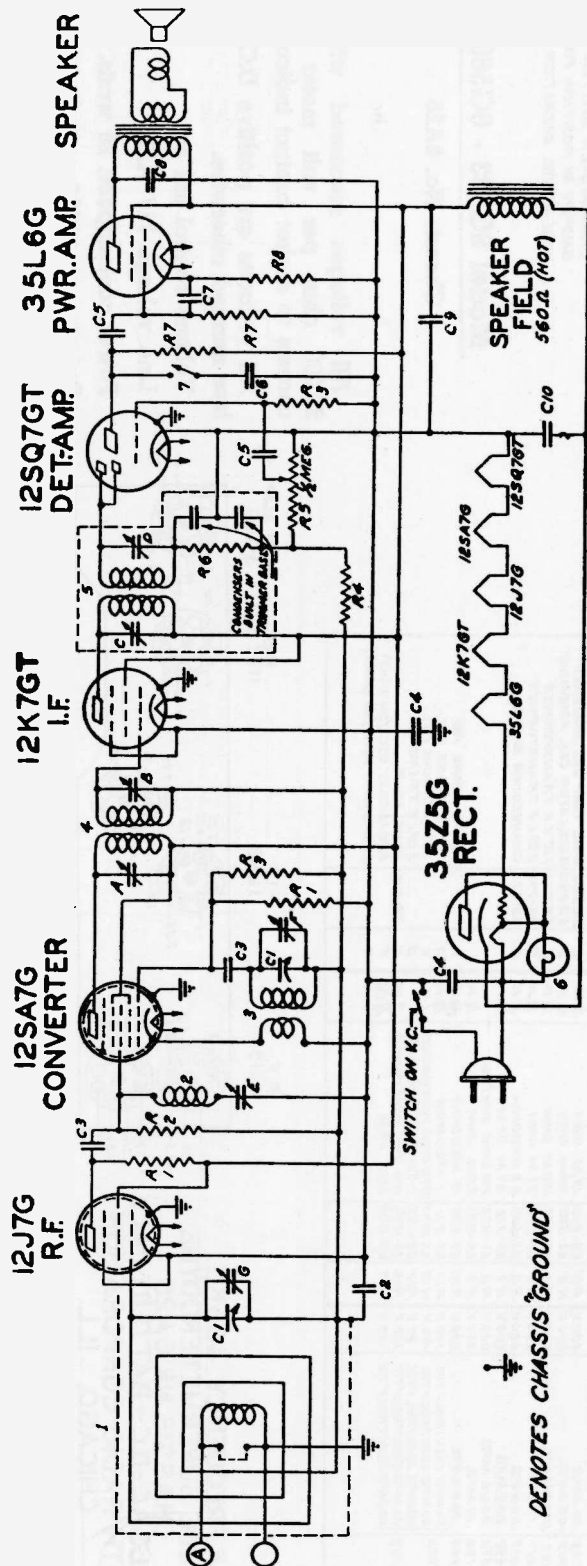
Chassis No. 6A26

Operation	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mfd.	455 Kc.	BC	600 Kc.	A, B, C, D	Align I. F.
2	R. F. Grid	.5 mfd.	455 Kc.	BC	600 Kc.	E	Adj. Wave Trap for Minimum
3	1 Turn Loop Made from Generator Leads.	—	1600 Kc.	BC	1600 Kc.	F	Set Oscillator to Scale
4	—	—	1400 Kc.	BC	1400 Kc.	G	Align Antenna



DIAG. NO.	PART NO.	DESCRIPTION	QTY.	DESCRIPTION	PART NO.	DESCRIPTION
C1	22-1068	TWO-GANG VARIABLE	1	58356	WAVEMAGNET ASSEMBLY	F
C2	22-029	.05 MFD.	1	58356	WAVE TRAP COIL ASSEMBLY	F
C3	22-167	.001 MFD.	1	58356	OSC. COIL ASSEMBLY	F
C4	22-167	.05 MFD.	1	58356	OSC. COIL ASSEMBLY	F
C5	22-248	.01 MFD.	1	58356	OSC. COIL ASSEMBLY	F
C6	22-254	.01 MFD.	1	58356	OSC. COIL ASSEMBLY	F
C7	22-254	.0005 MFD.	1	58356	OSC. COIL ASSEMBLY	F
C8	22-1182	50 MFD. ELECTROLYTIC 150 V.	1	58356	OSC. COIL ASSEMBLY	F
C9	22-104	30 MFD. ELECTROLYTIC 150 V.	1	58356	OSC. COIL ASSEMBLY	F
C10	—	—	—	—	—	—
R1	63-529	10M OHM	1	58356	OSC. COIL ASSEMBLY	F
R2	63-591	22M OHM	1	58356	OSC. COIL ASSEMBLY	F
R3	63-1028	25 MEG OHM	1	58356	OSC. COIL ASSEMBLY	F
R4	63-500	2 MEG OHM	1	58356	OSC. COIL ASSEMBLY	F
R5	63-149	VOLUME CONTROL	1	58356	OSC. COIL ASSEMBLY	F
R6	63-713	47 M OHM	1	58356	OSC. COIL ASSEMBLY	F
R7	63-597	470 M OHM	1	58356	OSC. COIL ASSEMBLY	F
R8	63-606	150 OHM WIREWOUND	1	58356	OSC. COIL ASSEMBLY	F
R9	—	—	—	—	—	—
R10	—	—	—	—	—	—
L1	12K7GT	37 OHM	1	58356	OSC. COIL ASSEMBLY	F
L2	12SA7G	26 OHM	1	58356	OSC. COIL ASSEMBLY	F
L3	12SQ7GT	12 OHM	1	58356	OSC. COIL ASSEMBLY	F
L4	35L6G	480 OHM (HOT)	1	58356	OSC. COIL ASSEMBLY	F
L5	—	—	—	—	—	—
L6	—	—	—	—	—	—
L7	—	—	—	—	—	—
L8	—	—	—	—	—	—
L9	—	—	—	—	—	—
L10	—	—	—	—	—	—

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



PART NO.	DESCRIPTION	PART NO.	DESCRIPTION	PART NO.	DESCRIPTION
C1	22-104	TWO-GANG VARIABLE	R2	63-591	22 M OHM
C2	22-889	.05 MFD.	R3	63-376	2.2 MEG OHM
C3	22-162	.0001 MFD.	R4	63-600	2.2 MEG OHM
C4	22-1017	.05 MFD.	R5	63-130	VOLUME CONTROL
C5	22-848	.01 MFD.	R6	63-713	47 M OHM
C6	22-492	.002 MFD.	R7	63-597	470 M OHM
C7	22-954	.0005 MFD.	R8	63-686	150 OHM WIREWOUND
C8	22-1049	.03 MFD.	R9	59469	WAVE TRAP COIL ASSEMBLY
C9	22-1014	50 MFD. ELECTROLYTIC	1	59469	WAVE TRAP COIL ASSEMBLY
C10	22-1014	50 MFD. ELECTROLYTIC	2	59437	OSC. COIL ASSEMBLY
R1	63-589	10 M OHM	3	59437	OSC. COIL ASSEMBLY
4	1/4 W.		4	95-760	1ET. I.F. TRANS.
5	1/4 W.		5	95-780	2ET. I.F. TRANS.
6	1/4 W.		6	100-67	PILOT LIGHT 6 BK. .15A.
7	1/4 W.		7	95-870	100-67 PILOT LIGHT 6 BK. .15A.
A	1/4 W.		A	1ET. I.F. TRANS. PH.	
B	1/4 W.		B	1ET. I.F. TRANS. SEC.	
C	1/4 W.		C	2ET. I.F. TRANS. PH.	
D	1/4 W.		D	2ET. I.F. TRANS. SEC.	
E	1/4 W.		E	WAVE TRAP	
F	1/4 W.		F	BROADCAST OSC. (ON GANG)	
G	1/4 W.		G	BROADCAST ANT. (ON GANG)	

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

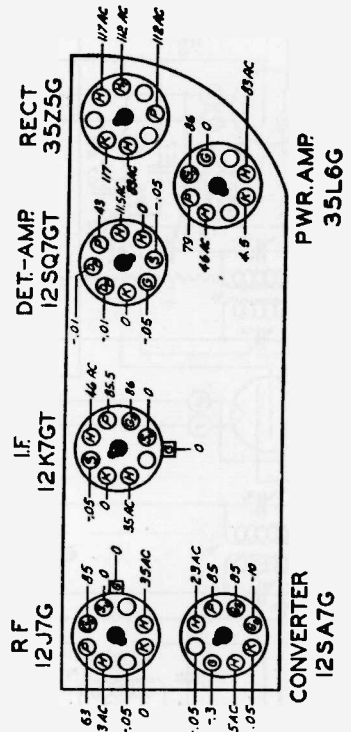
Line voltage 117 A.C.

Power consumption 25.5 watts.

Power output 1. watt.

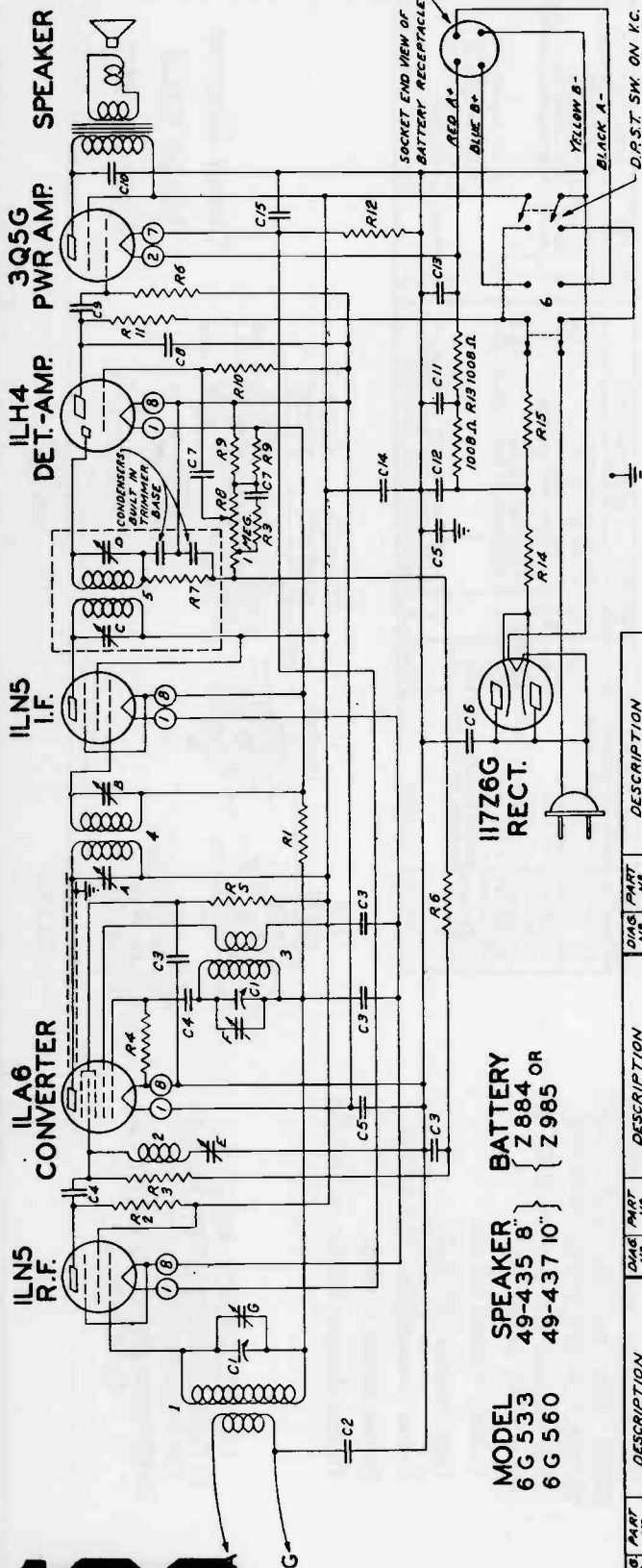
Tuning Ranges 540 Kc. to 1600 Kc.

**Circuit Diagram**  
**Model 6D516**  
**Chassis No. 6A24**



I.F. FREQUENCY 455 KC.  
 6 TUBE SUPERHETERODYNE  
 CHASSIS NO. 6A24 A.C.-D.C.  
 ZENITH RADIO CORPORATION  
 CHICAGO, ILL.

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



**MODEL 6G 533**  
**MODEL 6G 560**

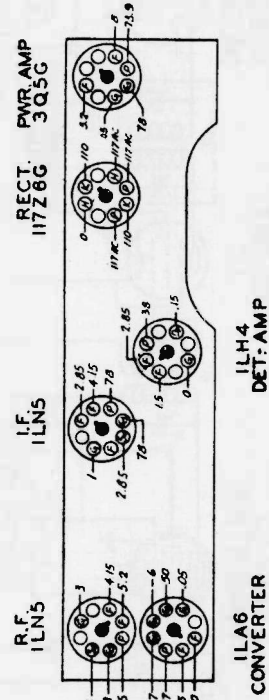
SOCKET END VIEW OF BATTERY RECEPTACLE  
 RED A+  
 BLUE B+  
 YELLOW B-  
 BLACK A-  
 DR. ST. SW. ON K.C.

CHANGEOVER SWITCH SHOWN IN POSITION FOR 115 K.A.C.-D.C. OPERATION.

**Model 6G533 - 6G560**  
 Chassis No. 6A25

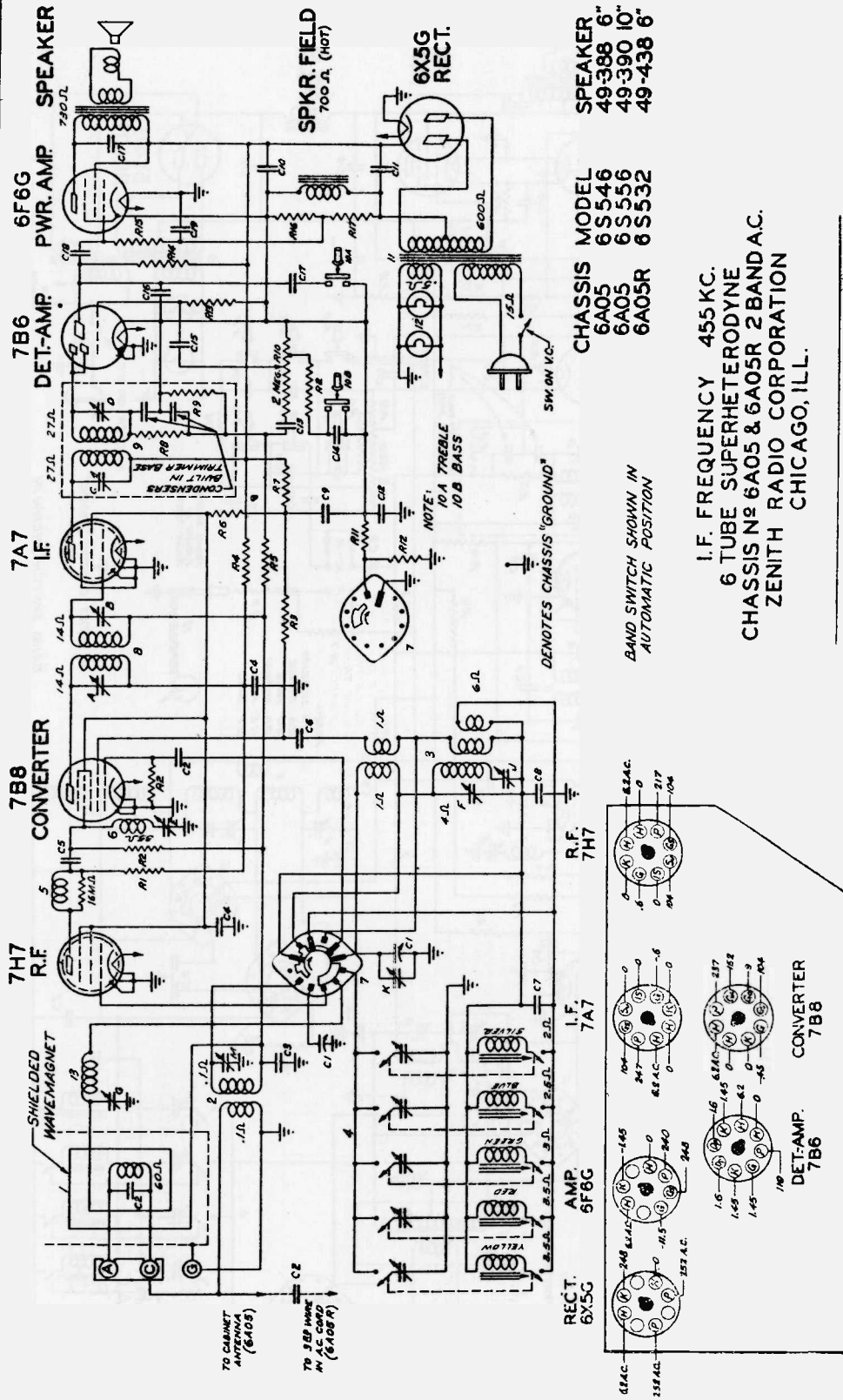
All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.  
 All voltages are positive D.C. unless marked otherwise.  
 Volume control full on.  
 Line voltage 117 A.C.  
 Power consumption 20 watts.  
 Power output .360 watts.  
 Tuning Ranges 540 Kc. to 1620 Kc.

DWG. NO.	PART NO.	DESCRIPTION	DWG. NO.	PART NO.	DESCRIPTION
C1	22-1181	TWO GANG VARIABLE	A1	63-325	150M OHM
C2	22-1183	.01 MFD.	A2	63-390	151M OHM
C3	22-0923	.05 MFD.	A3	63-382	150M OHM
C4	22-1024	100M MFD.	A4	63-382	150M OHM
C5	22-1017	.05 MFD.	A5	63-592	33M OHM
C6	22-492	.005 MFD.	A6	63-600	2.2 MEGOHM
C7	22-470	.0005 MFD.	A7	63-718	47M OHM
C8	22-196	.01 MFD.	A8	63-1178	VOLUME CONTROL
C9	22-448	.004 MFD.	A9	63-585	2200 OHM
C10	22-1026	10M MFD. ELECTROLYTIC	A10	63-976	15 MEGOHM
C11	22-1026	10M MFD. ELECTROLYTIC	A11	63-271	1 MEGOHM
C12	20M MFD. ELECTROLYTIC	150 K	A12	63-1097	870 OHM WIREWOUND
C13	20M MFD. ELECTROLYTIC	25 K	A13	63-1132	2-SECTION CANDOHM
C14	22-1189	40M MFD. ELECTROLYTIC	A14	63-1096	140 OHM WIREWOUND
C15		40M MFD. ELECTROLYTIC	A15	63-1156	1000 OHM



I.F. FREQUENCY 455 KC.  
 6 TUBE SUPERHETERODYNE  
 CHASSIS No. 6A25  
 110 VOLT A.C.-D.C.-BATTERY PACK  
 ZENITH RADIO CORPORATION  
 CHICAGO, ILL.

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS



QWG NO.	PART NO.	DESCRIPTION	QWG NO.	PART NO.	DESCRIPTION	QWG NO.	PART NO.	DESCRIPTION
C1	22-1004	TRIM BANG VARIABLE	R19	6105	200 K	1	38507	WAVEMAGNET ASSEMBLY
C2	22-229	50 MF.	R15	6105	470 M OHM	2	38508	ANTENNA COIL ASSEMBLY
C3	22-829	.05 MF.	R16	63-554	100 M OHM	3	38509	500 OHM AUTO. CONTROL SWITCH
C4	22-829	.05 MF.	R17	63-656	270 M OHM	4	58359	R.F. CHOKES & RES. ASSEMBLY
C5	22-162	.0005 MF.	R1	63-537	4700 OHM	5	58326	WAVE TRAP ASSEMBLY
C6	22-162	.0005 MF.	R2	63-537	4700 OHM	6	58326	WAVE TRAP ASSEMBLY
C7	22-162	.0005 MF.	R3	63-537	4700 OHM	7	85-333	BAND SELECTOR SWITCH
C8	22-162	.0005 MF.	R4	63-537	4700 OHM	8	55-708	I.F. TRANSFORMER
C9	22-162	.0005 MF.	R5	63-537	4700 OHM	9	55-708	I.F. TRANSFORMER
C10	22-1084	15 MF. ELECTROLYTIC	R6	63-102	15 M OHM	10	55-708	I.F. TRANSFORMER
C11	22-1036	15 MF.	R7	63-102	15 M OHM	11	55-708	I.F. TRANSFORMER
C12	22-927	1 MF.	R8	63-713	470 M OHM	12	100-36	PILOT LIGHT .53 W. .15 A.
C13	22-108	.02 MF.	R9	63-713	470 M OHM			
C14	22-229	.05 MF.	R10	63-713	470 M OHM			
C15	22-229	.05 MF.	R11	63-713	470 M OHM			
C16	22-229	.05 MF.	R12	63-713	470 M OHM			
C17	22-446	.004 MF.	R13	63-976	25 MEG OHM			
C18	22-830	.02 MF.	R14	63-296	220 M OHM			

**Circuit Diagram**

**Model 6S532**

**Chassis No. 6A05R**

# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

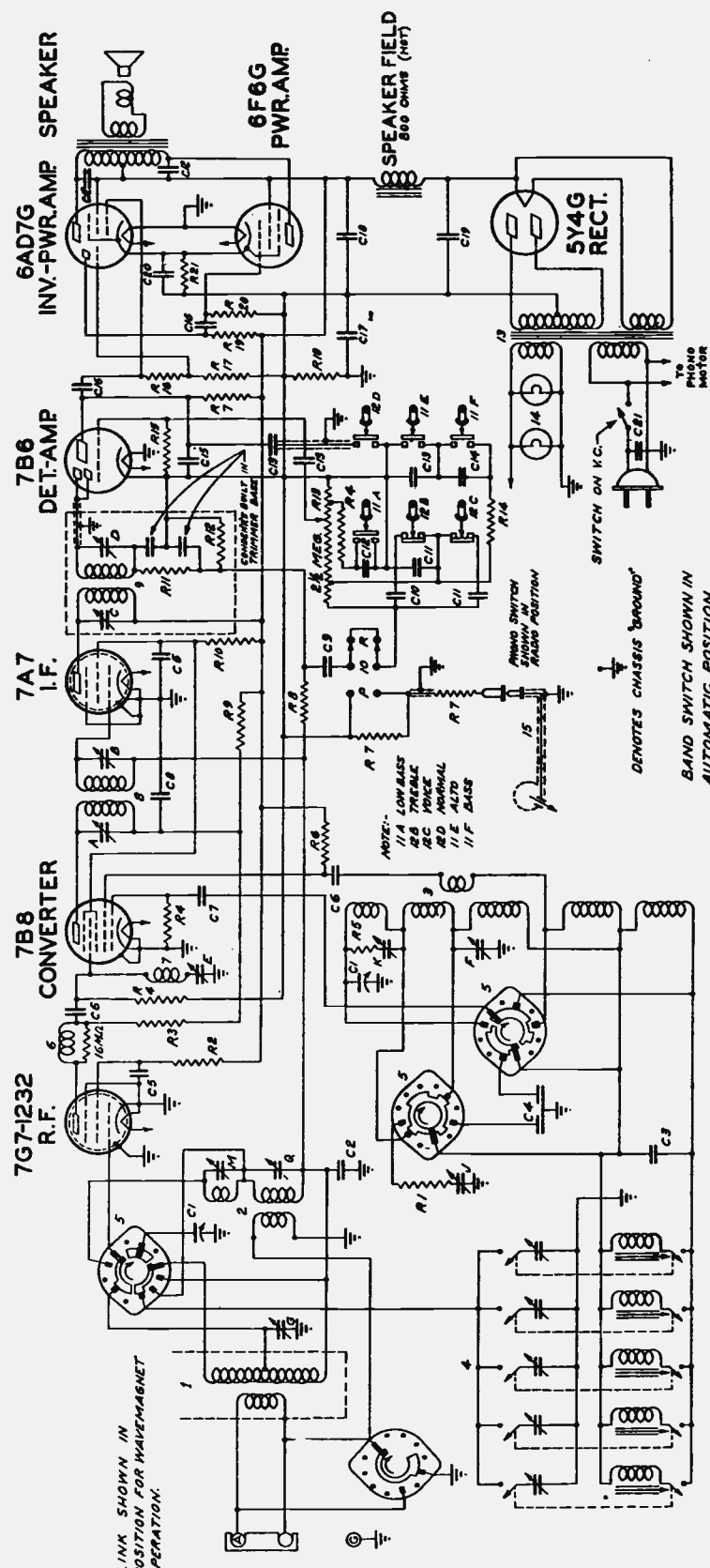
**Circuit Diagram**  
**Model 7S598**  
**Chassis No. 7A11**

**I.F. FREQUENCY 455 KC.**  
**7 TUBE SUPERHETERODYNE**  
**CHASSIS NO. 7A11-3 BAND A.C.-PHONO**  
**ZENITH RADIO CORPORATION**  
**CHICAGO, ILL.**

# 190

DWG. PART NO.	DESCRIPTION	DWG. PART NO.	DESCRIPTION	DWG. PART NO.	DESCRIPTION
C1	22-180 TIVO GANG VARIABLE	A1	63-134 83 OHM	1	1E1 I.F. TRANS. P.W.R.
C2	22-225 .05 MFD. TUNING COND.	A2	63-260 100M OHM	2	1E1 I.F. TRANS. SEC.
C3	22-1071 DUAL BANDER	A3	63-527 470M OHM	3	22M I.F. TRANS. SEC.
C4	22-1071 DUAL BANDER	A4	63-537 470M OHM	4	WAIVER TRAP
C5	22-1071 DUAL BANDER	A5	63-537 470M OHM	5	ARMACAST OSC. (NOTE 1)
C6	22-1071 DUAL BANDER	A6	63-537 470M OHM	6	ARMACAST OSC. (NOTE 2)
C7	22-229 .50 M.M.F.D.	A7	63-537 470M OHM	7	ARMACAST OSC. (NOTE 3)
C8	22-229 .50 M.M.F.D.	A8	63-537 470M OHM	8	ARMACAST OSC. (NOTE 4)
C9	22-229 .50 M.M.F.D.	A9	63-537 470M OHM	9	ARMACAST OSC. (NOTE 5)
C10	22-229 .50 M.M.F.D.	A10	63-537 470M OHM	10	ARMACAST OSC. (NOTE 6)
C11	22-229 .50 M.M.F.D.	A11	63-537 470M OHM	11	ARMACAST OSC. (NOTE 7)
C12	22-229 .50 M.M.F.D.	A12	63-537 470M OHM	12	ARMACAST OSC. (NOTE 8)
C13	22-229 .50 M.M.F.D.	A13	63-537 470M OHM	13	ARMACAST OSC. (NOTE 9)
C14	22-229 .50 M.M.F.D.	A14	63-537 470M OHM	14	ARMACAST OSC. (NOTE 10)
C15	22-229 .50 M.M.F.D.	A15	63-537 470M OHM	15	ARMACAST OSC. (NOTE 11)
C16	22-229 .50 M.M.F.D.	A16	63-537 470M OHM	16	ARMACAST OSC. (NOTE 12)
C17	22-229 .50 M.M.F.D.	A17	63-537 470M OHM	17	ARMACAST OSC. (NOTE 13)
C18	22-1187 .50 M.M.F.D. ELECTROLYTIC	A18	63-537 470M OHM	18	ARMACAST OSC. (NOTE 14)
C19	22-1187 .50 M.M.F.D. ELECTROLYTIC	A19	63-537 470M OHM	19	ARMACAST OSC. (NOTE 15)
C20	22-1187 .50 M.M.F.D. ELECTROLYTIC	A20	63-537 470M OHM	20	ARMACAST OSC. (NOTE 16)
C21	22-1041 .505 M.M.F.D.				

[2-7-41] CEO WAS 80M.P. - CEE OMITTED







# MANUAL OF 1941 MOST POPULAR SERVICE DIAGRAMS

## Models 10H571R, 10H573

Chassis No. 10A3R

All voltages measured with a 20,000 ohm per volt meter from chassis to socket contact indicated.

All voltages are positive D.C. unless marked otherwise.

Volume control full on.

Line voltage 117 A.C.

Power consumption 80 watts.

Power output 6.5 watts.

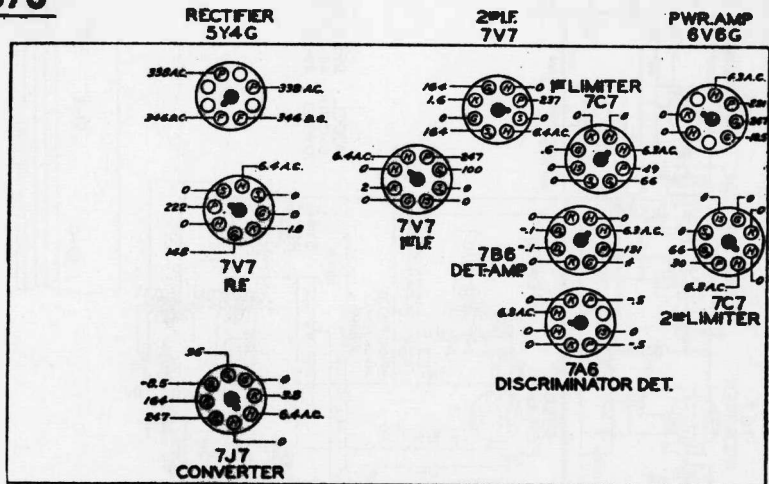
Tuning Ranges

540 Kc. to 1600 Kc.

1.5 Mc. to 5.2 Mc.

5.7 Mc. to 18.5 Mc.

41.5 Mc. to 50.5 Mc.

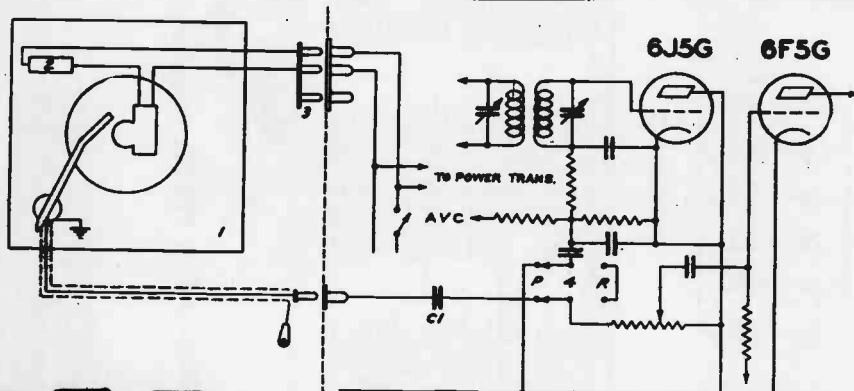


### ALIGNMENT PROCEDURE

Op.	Connect Test Oscillator to	Dummy Antenna	Input Signal Frequency	Band	Set Dial At	Trimmers	Purpose
1	Converter Grid	.5 mid.	485 Kc.	BC	600 Kc.	A, B, C, D.	Align I. F.
2	R. F. Grid	"	485 Kc.	BC	600 Kc.	E	Adj. Wave Trap for Minimum
3	Antenna Z and G	400 ohms	18 Mc.	SW	18 Mc.	X	Set Oscillator to Scale
4	"	"	18 Mc.	SW	18 Mc.	M	Align Antenna
5	"	"	5.0 Mc.	Med.	5.0 Mc.	N	Set Oscillator to Scale
6	"	"	4.5 Mc.	Med.	4.5 Mc.	Q	Align Antenna
7	1 Turn Loop Made with Generator Leads to 18" dia.	—	1400 Kc.	BC	1400 Kc.	F	Set Oscillator to Scale
8	See Note!	—	1400 Kc.	BC	1400 Kc.	G	Align Antenna
9	See Note!	—	600 Kc.	BC	600 Kc.	J	Back Gang to Track BC Podder

F. M. ALIGNMENT — See Pages 126-127  
 X = FM output meter across full discriminator load. Y = FM output meter across half discriminator load.

10	7V7 2nd I.F. Grid	.5 mid.	8.8 Mc.	Manual FM	8.8 Mc.	A 4	Align for Maximum deflection—Y
11	"	"	8.8 Mc.	"	8.8 Mc.	B 4	Align for Zero deflection—X
12	"	"	8.8 Mc.	"	8.8 Mc.	A 3 - B 3	Align for Maximum deflection—Y
13	7V7 1st I. F. Grid	"	8.8 Mc.	"	8.8 Mc.	A 2 - B 2	" — Y
14	Converter Grid	"	8.8 Mc.	"	8.8 Mc.	A 1 - B 1	" — Y
15	FM Ant. Terminals	100 ohms	46. Mc.	"	46. Mc.	Adj. Cam on Gang Shaft to Scale Osc.	Align for Zero deflection—X
16	"	"	42.5 Mc.	"	42.5 Mc.	P 1	Align for Maximum deflection—Y
17	"	"	49. Mc.	"	49. Mc.	P 2	" — Y
18	"	"	46. Mc.	"	46. Mc.	Z	" — Y

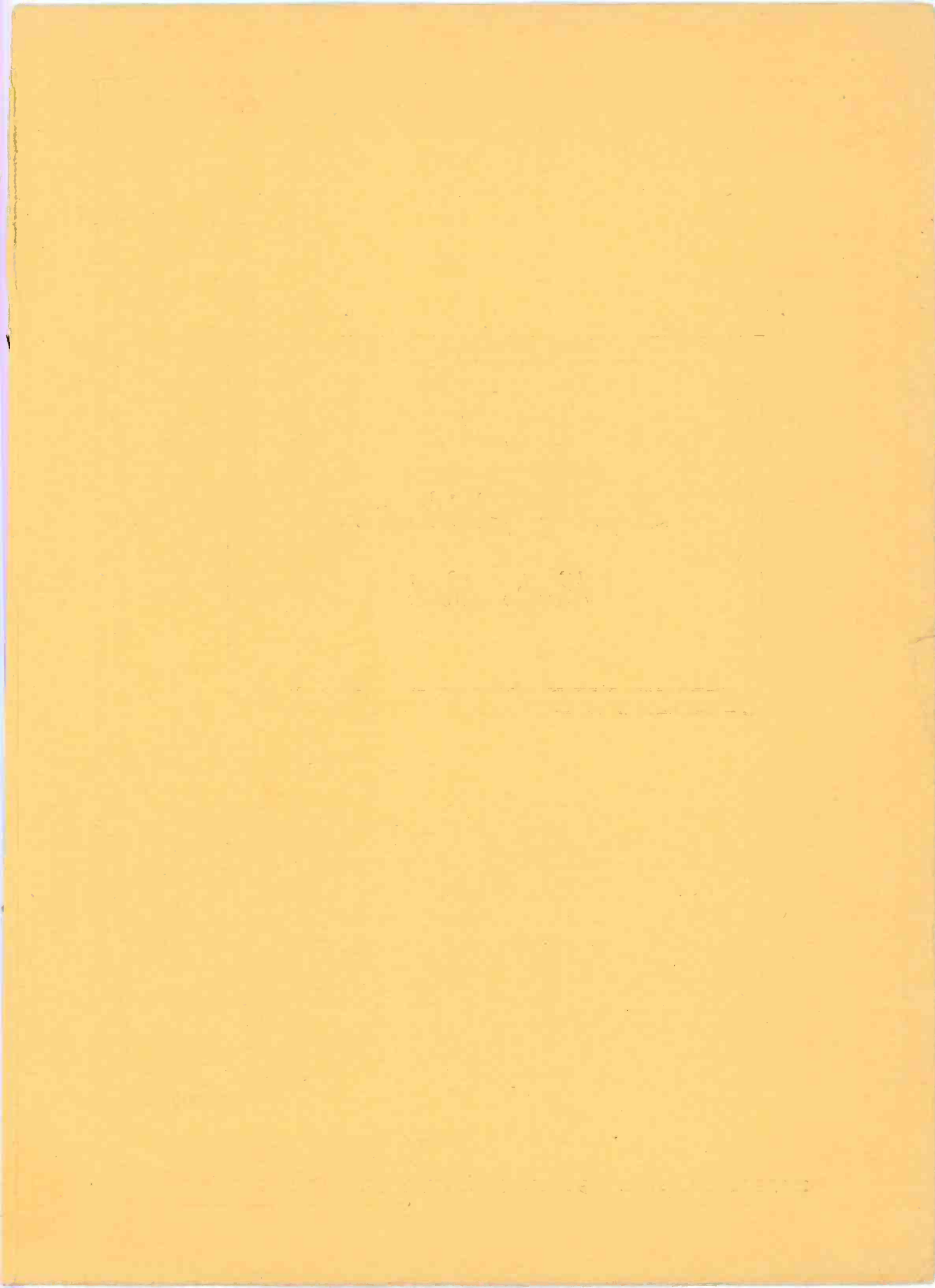


DIAG. NO.	PART NO.	DESCRIPTION
C1	22-1189	.00075 MFD. 500 V
1	669-63 167-64	WEBSTER AUTOMATIC RECORD PLAYER
2	85-191	A.C. SWITCH
3	88-88	A.C. PLUG
4	88-228	PHONO-RADIO SW.

PHONO CIRCUIT DATA  
 MODEL SPEAKER  
 10S599 49-442-14"  
 CHASSIS N#10A2R

Same as 10A2R with audio compensation revised to match new pickup.

COMPILED BY M. N. BEITMAN, SUPREME PUBLICATIONS



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