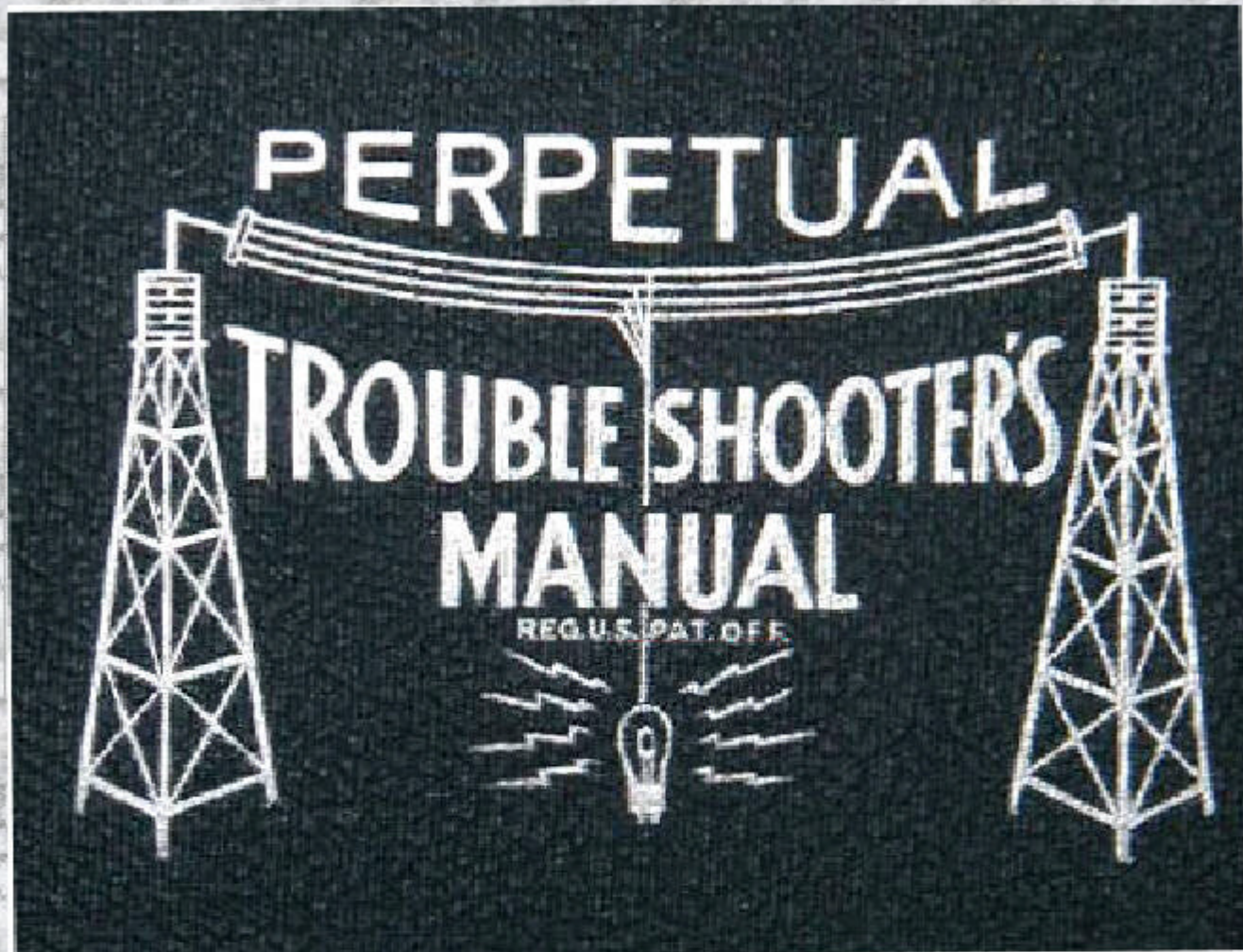


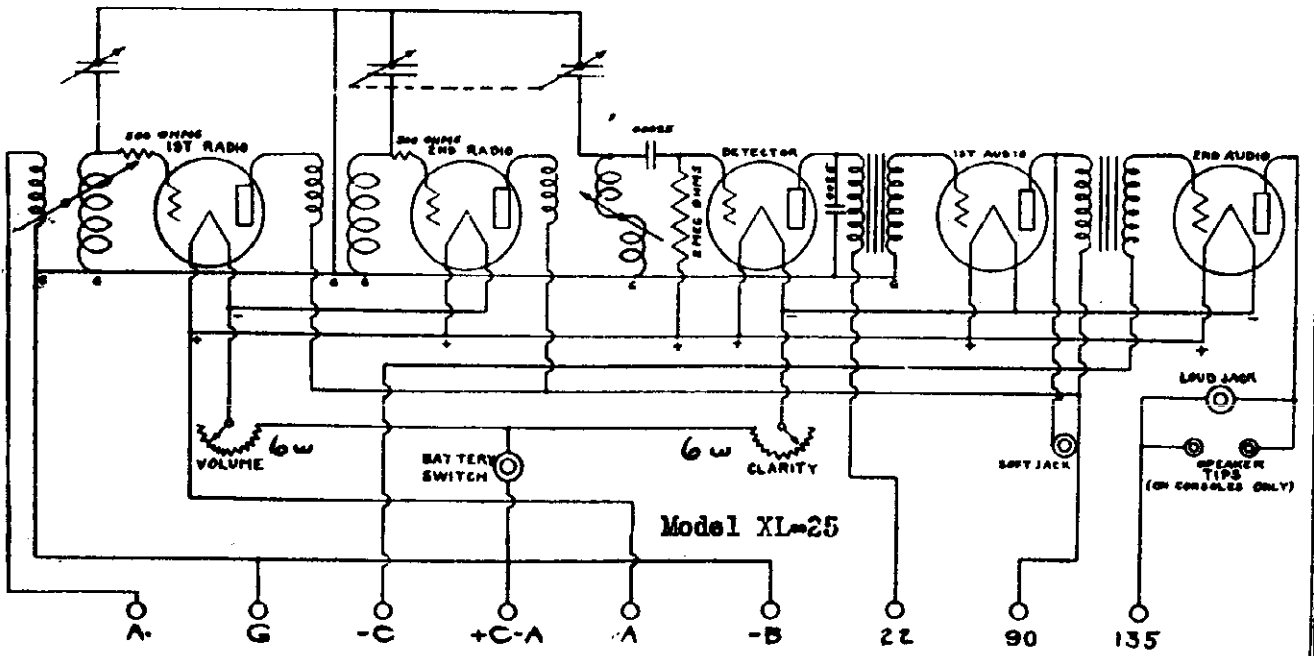
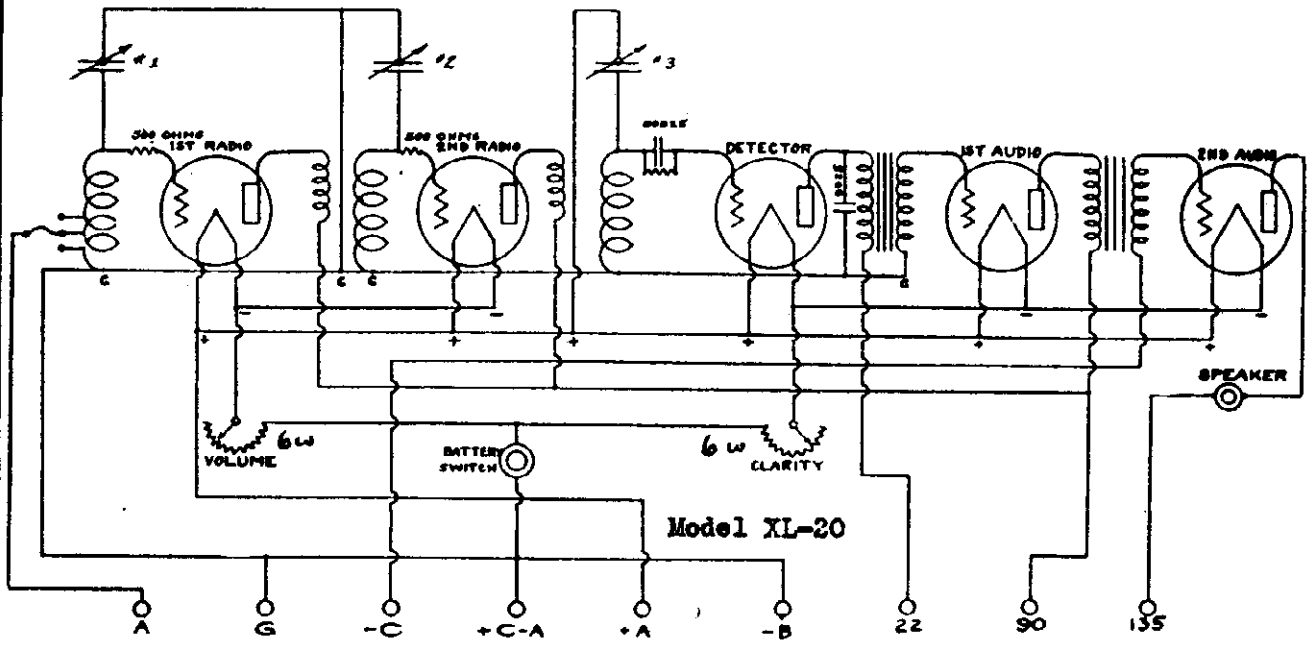
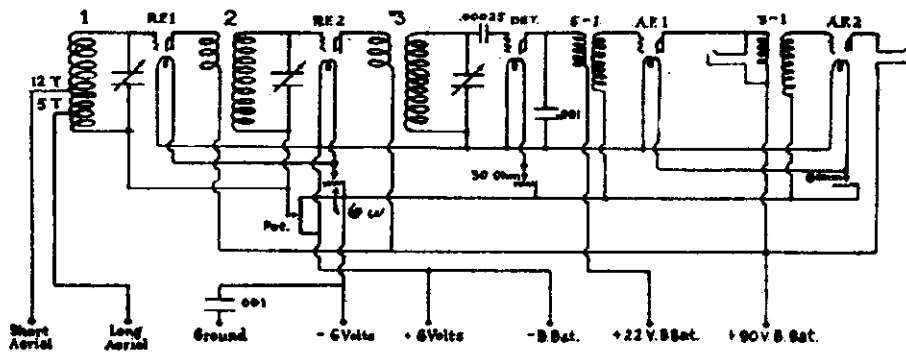
RIDER'S **VOLUME - I**



**COVERING THE 1920's
THROUGH
LATE 1930**

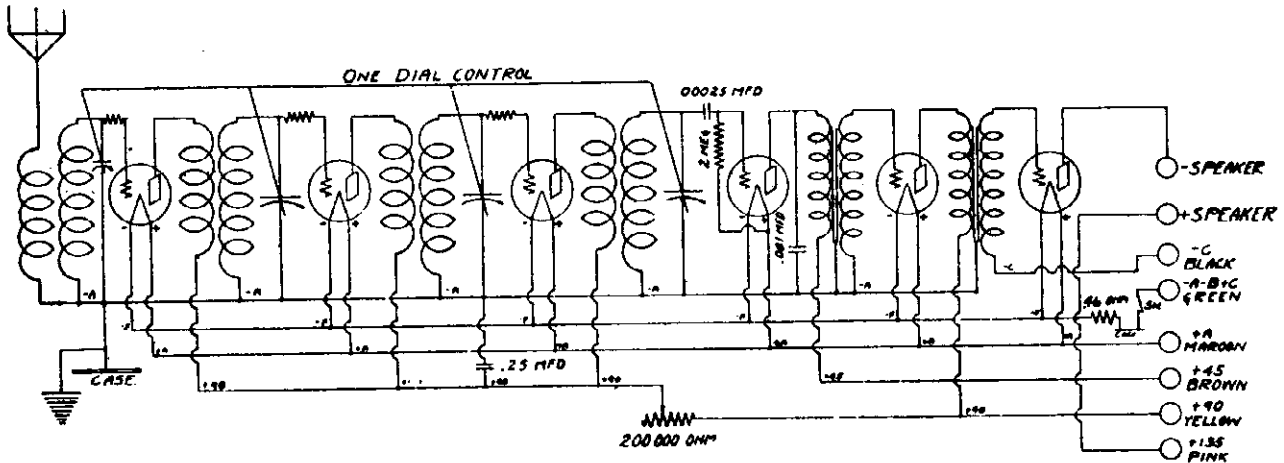
THE A-C DAYTON CO.

MODEL XL-5
XL-20
XL-25

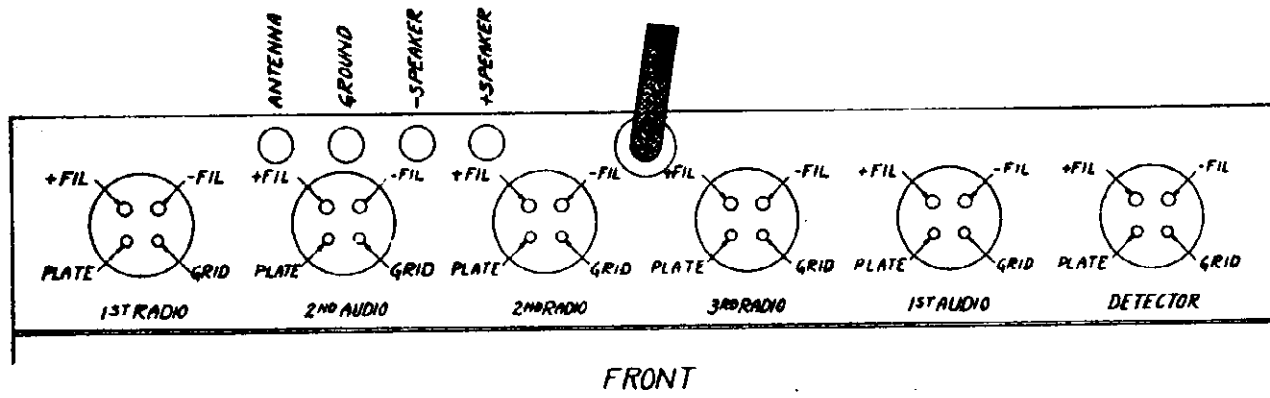


MODEL XL - 50
 XL - 60

THE A-C DAYTON CO.

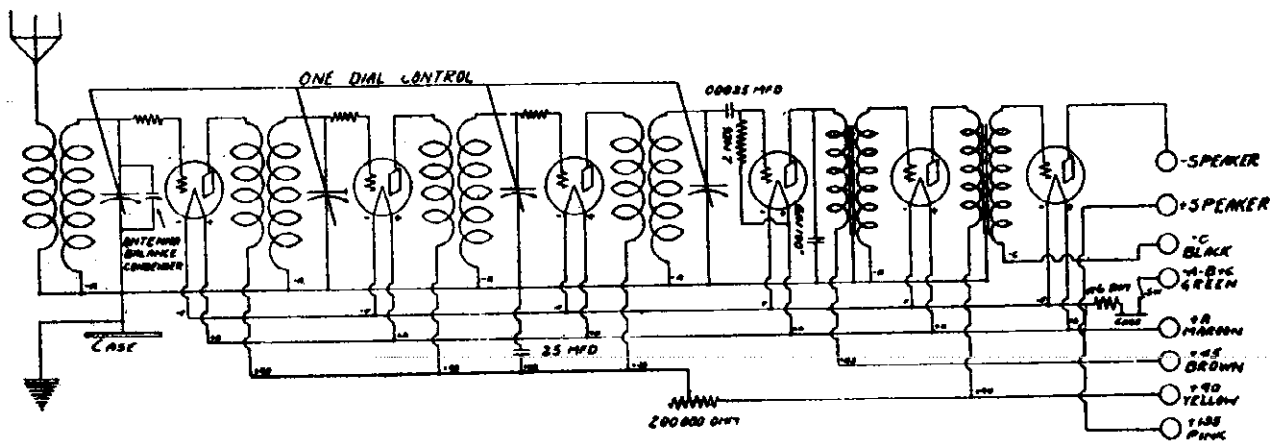


Model XL - 50



FRONT

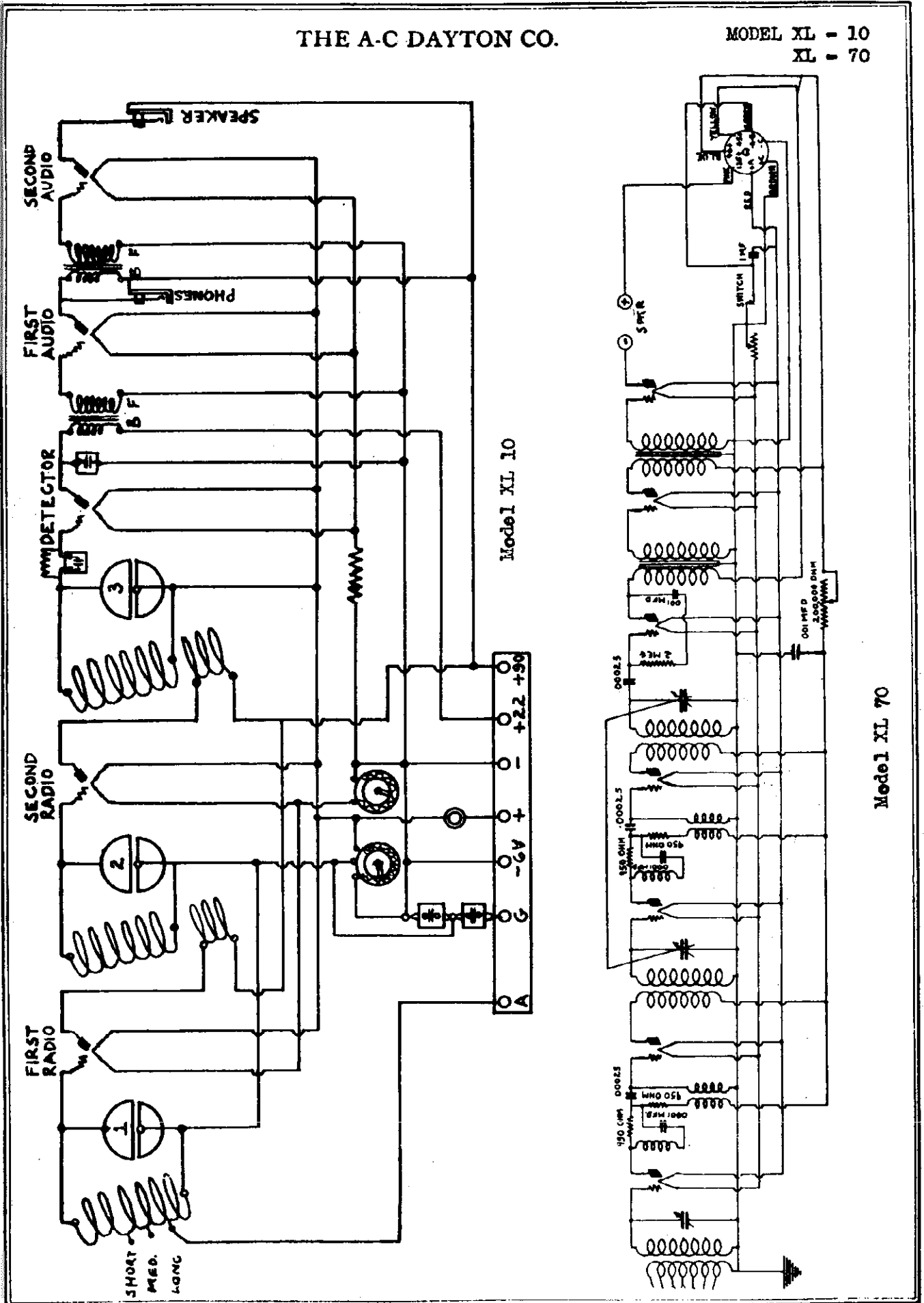
THE A-C DAYTON CO



Model XL - 60

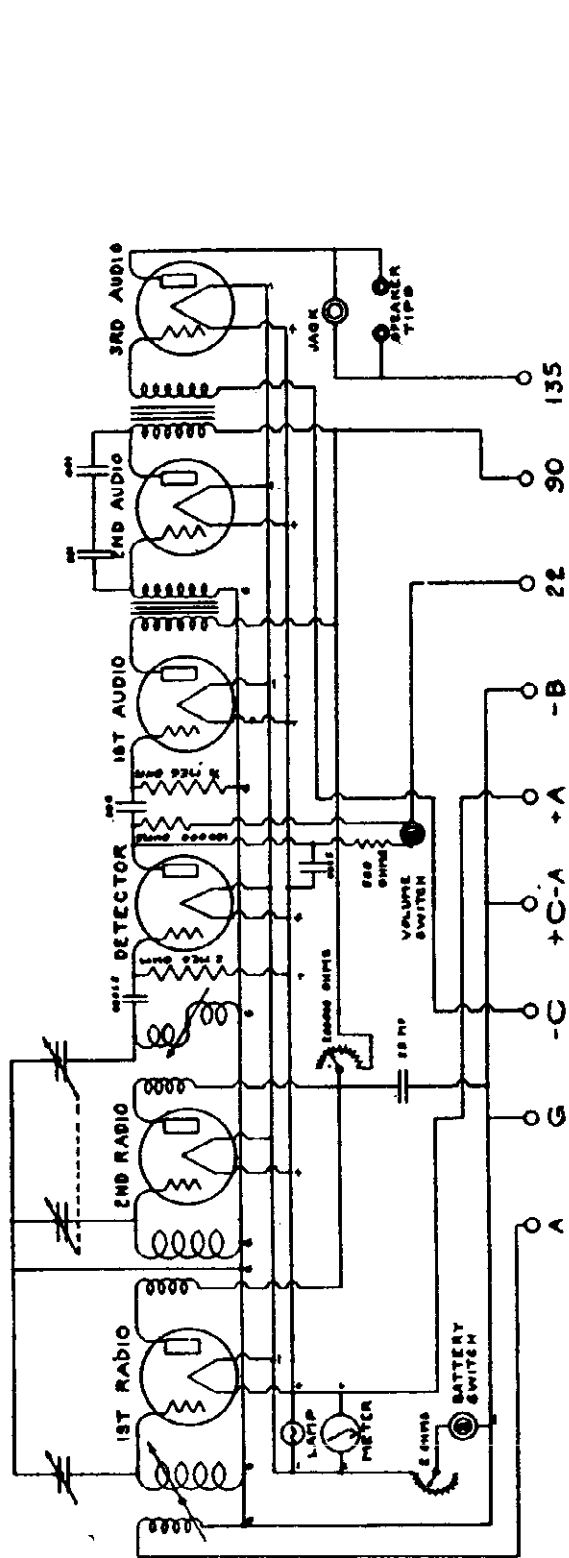
THE A-C DAYTON CO.

MODEL XL - 10
XL - 70

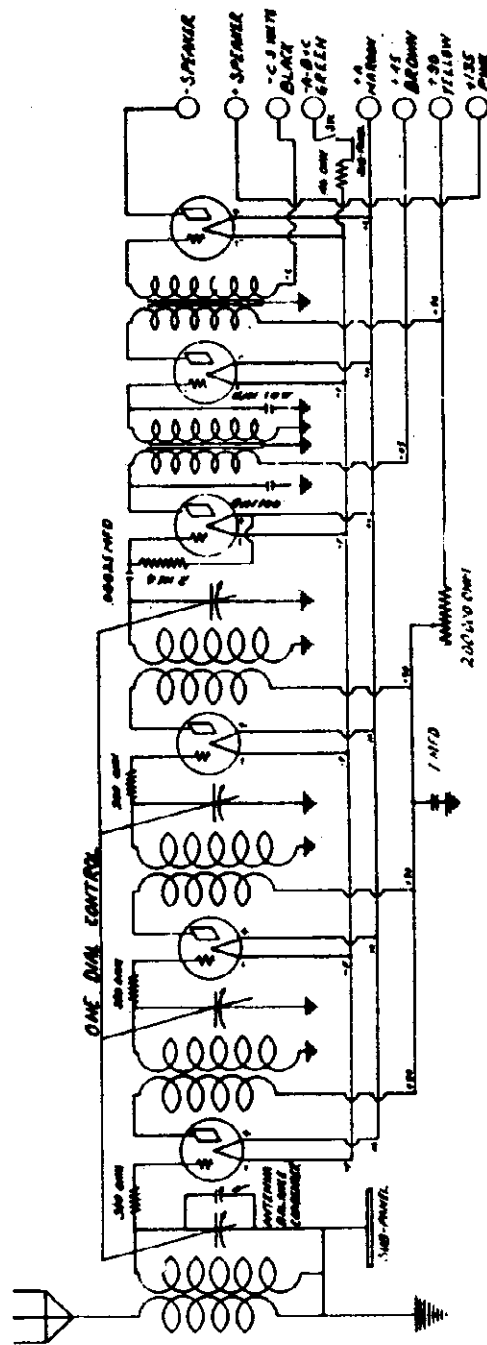


MODEL XL - 30
XL - 61

THE A-C DAYTON CO



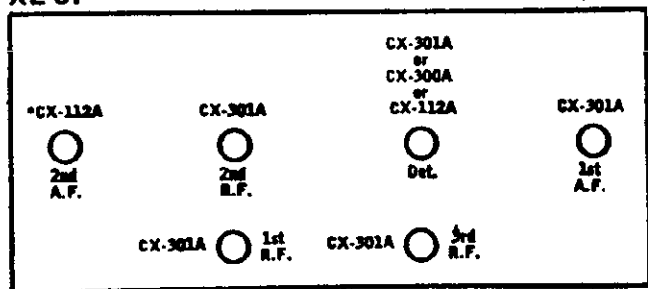
Model XL - 30



Model XL - 61 Battery

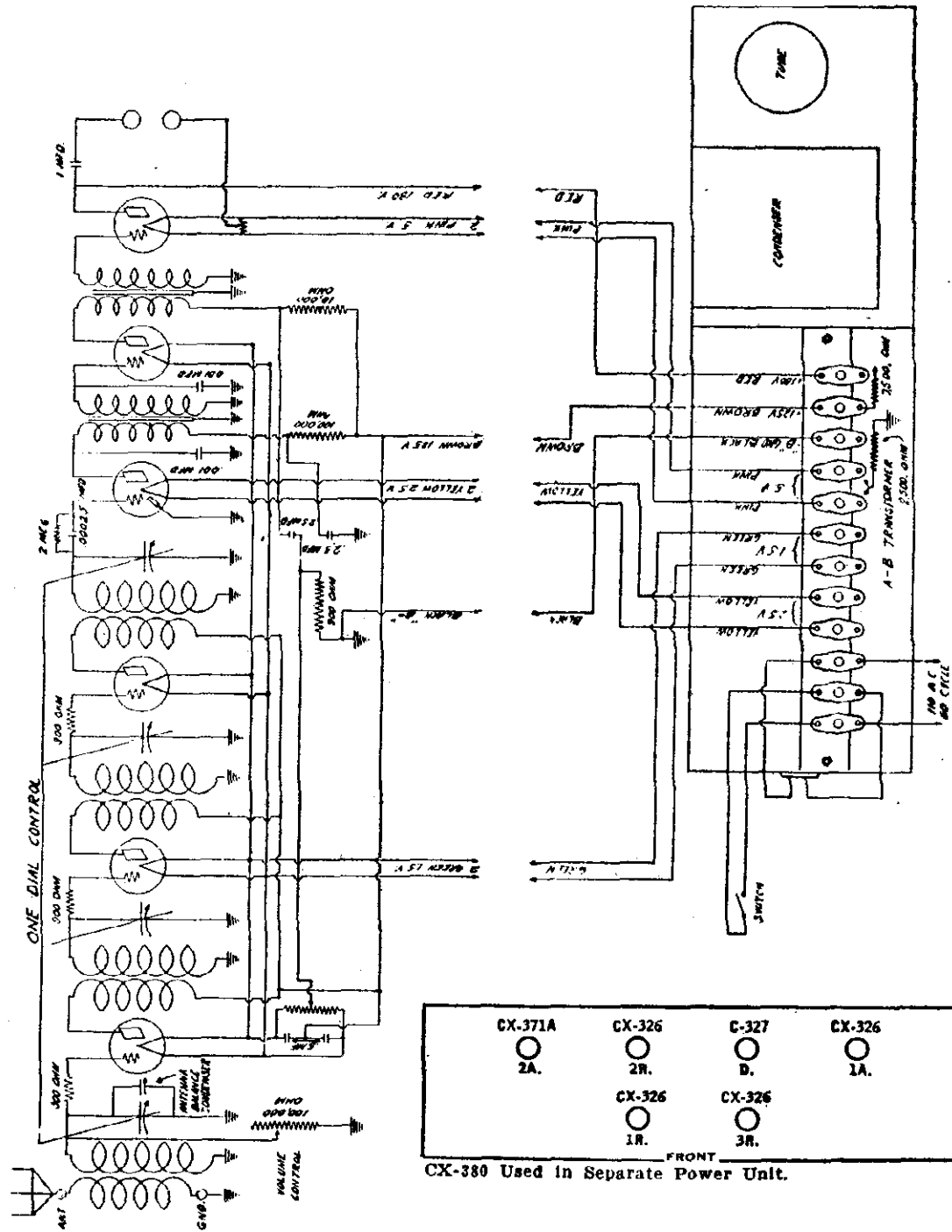
XL 61

(Cont.)



THE A-C DAYTON CO

MODEL AC - 63



- | | | | |
|----------------|---------------|---------------|---------------|
| CX-371A
2A. | CX-326
2R. | C-327
D. | CX-326
1A. |
| | CX-326
1R. | CX-326
3R. | |
- FRONT
- CX-380 Used in Separate Power Unit.

AC-63
(A.C.)

4-CX326
1-C327
1-CX371A
1-CX380

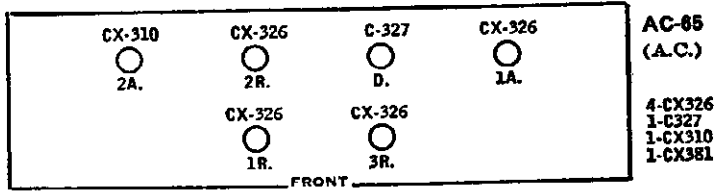
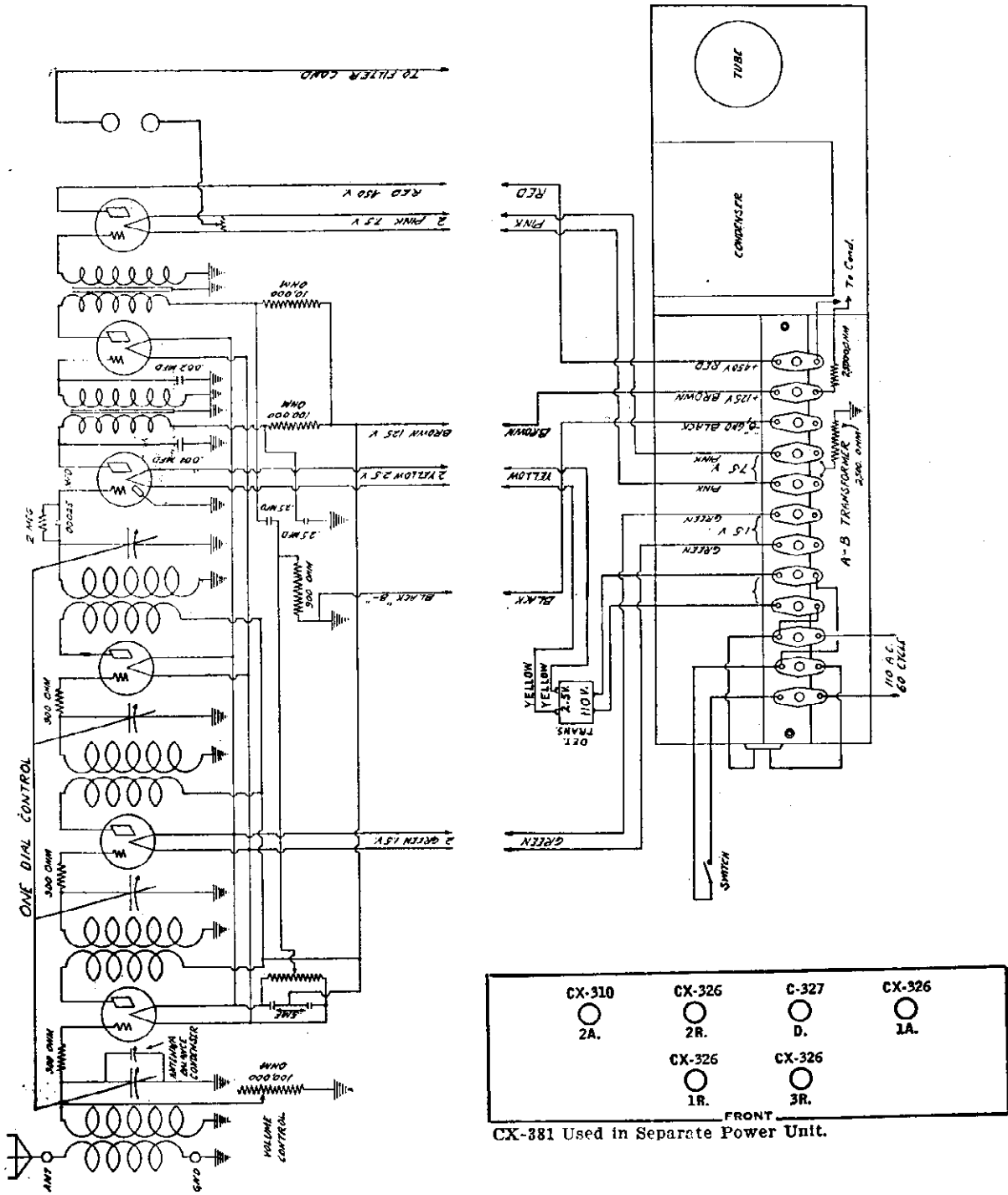
VOLTAGES OF VARIOUS CIRCUITS

Tube Socket	Plate Volts	Plate Current	Filament Volts	"C" Bias
1st R. F.	150 V.	4 mils	1.5 V.	11 V.
2nd R. F.	150 V.	4 mils	1.5 V.	11 V.
3rd R. F.	150 V.	4 mils	1.5 V.	11 V.
Detector	25 V.	1.5 mils	2.5 V.	0 V.
1st A. F.	120 V.	2 mils	1.5 V.	11 V.
2nd A. F.	160 V.	16 mils	5.00 V.	40 V.

The above readings are taken at 120 Volt line voltage. These readings may vary 5% plus or minus.

MODEL AC - 65

THE A-C DAYTON CO.



CX-881 Used in Separate Power Unit.

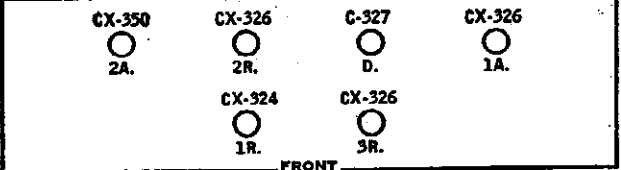
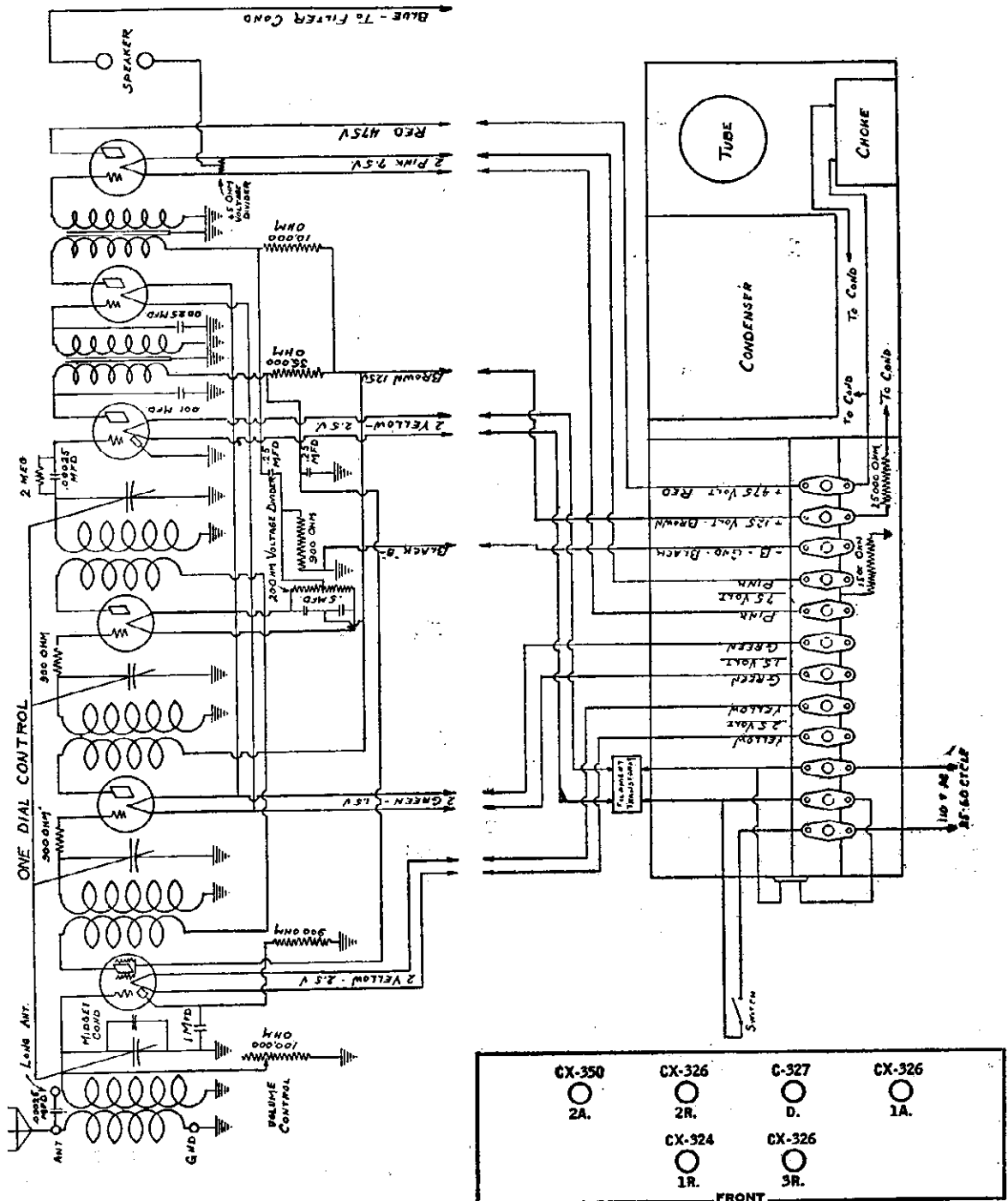
VOLTAGES OF VARIOUS CIRCUITS

Tube Socket	Plate Volts	Plate Current	Filament Volts	"C" Bias
1st R. F.	145 V.	4 mils	1.5 V.	11 V.
2nd R. F.	145 V.	4 mils	1.5 V.	11 V.
3rd R. F.	145 V.	4 mils	1.5 V.	11 V.
Detector	25 V.	1.3 mils	2.45 V.	0 V.
1st A. F.	120 V.	2 mils	1.5 V.	11 V.
2nd A. F.	430 V.	18 mils	6.75 V.	42 V.

The above readings are taken at 120 Volt line voltage. Readings may vary 5% plus or minus

- AC-65 (A.C.)
- 4-CX326
- 1-C327
- 1-CX310
- 1-CX381

THE A-C DAYTON CO.



AC-66
(A.C.)
1-C324
3-CX326
1-C327
1-CX350
1-CX381

*CX-381 Used in Separate Power Unit.

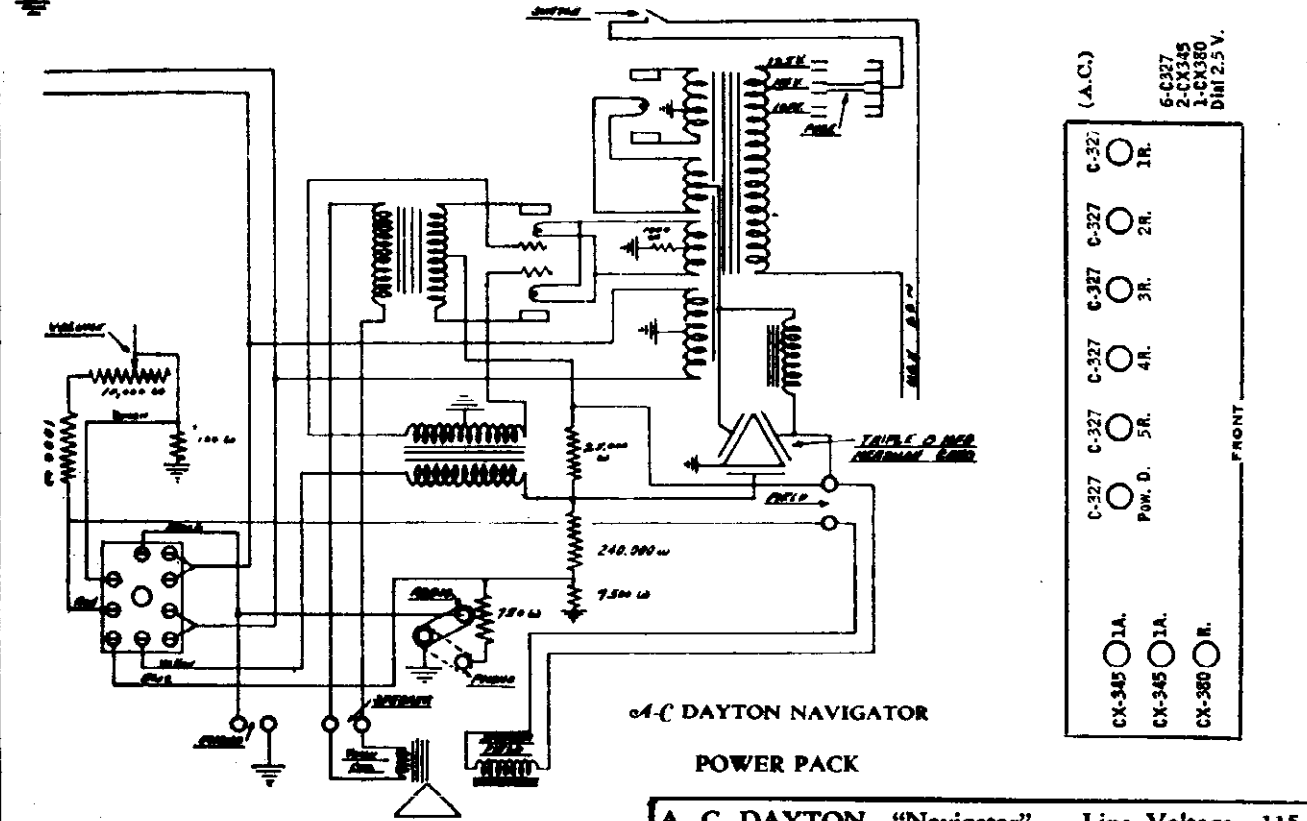
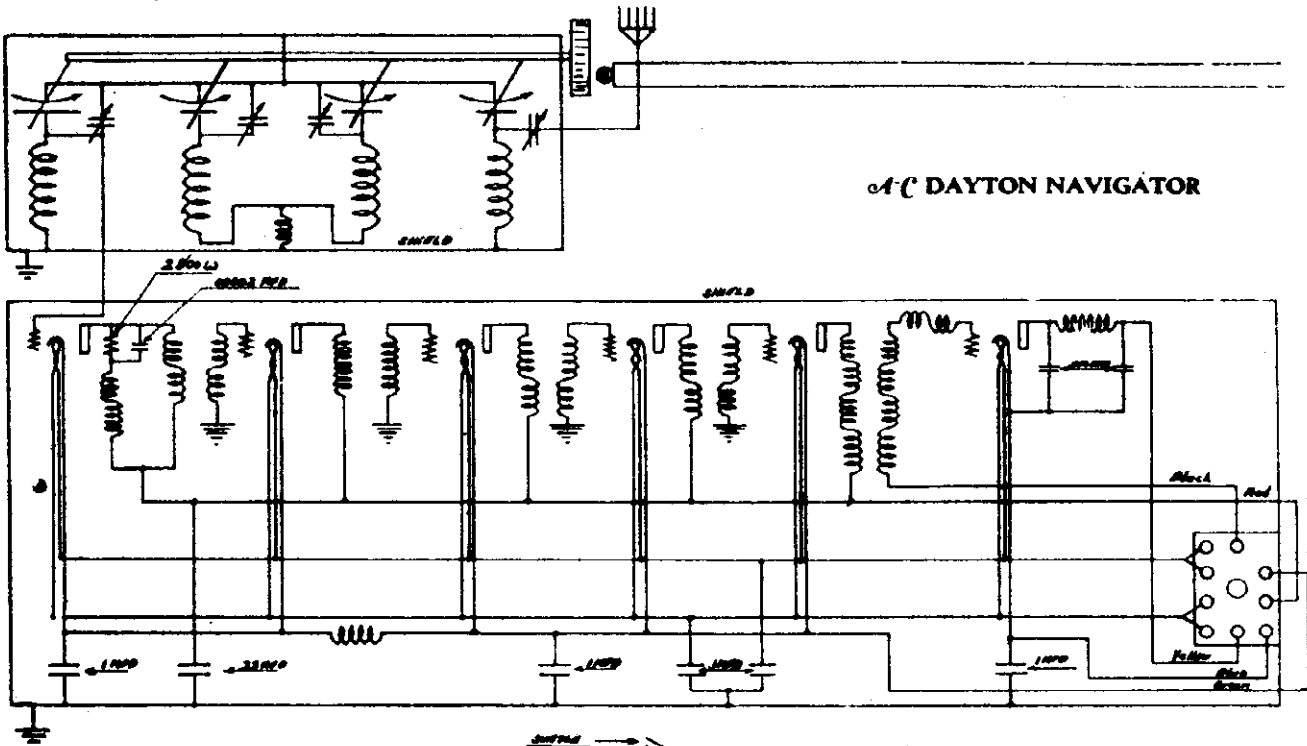
VOLTAGES AT THE VARIOUS SOCKETS

Tube Socket	Plate Volts	Plate Current	Filament Volt	C Bias
1st R. F.	130 V.	1 mil.	2.4 V.	7.5 V.
2nd R. F.	130 V.	4 mils.	1.4 V.	9 V.
3rd R. F.	130 V.	4 mils.	1.4 V.	9 V.
Detector	38 V.	2 mils.	2.4 V.	0 V.
1st A. F.	110 V.	2 mils.	1.4 V.	9 V.
2nd A. F.	350 V.	40 mils.	6.75 V.	63 V.

The above readings can only be taken on a Set Analyzer. They may vary 5% depending on tubes and line voltage.

MODEL "Navigator"

THE A-C DAYTON CO.



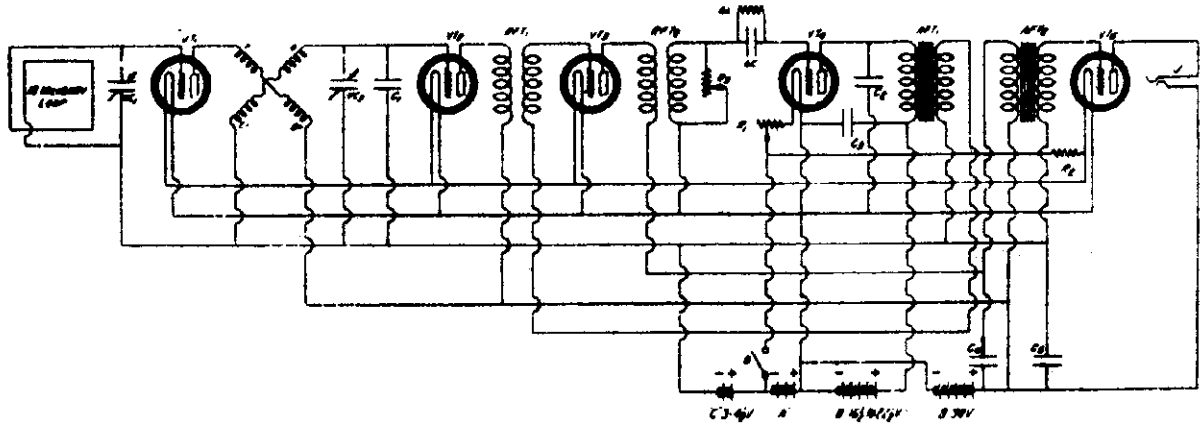
- (A.C.)
- 6-C327
 - 2-CX345
 - 1-CX380
 - DIM 2.5 V.
- | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|
| C-327 | C-327 | C-327 | C-327 | C-327 | C-327 | C-327 |
| 1R. | 2R. | 3R. | 4R. | 5R. | 5R. | 5R. |
- POW. D.
- CX-345 1A.
 - CX-345 1A.
 - CX-380 R.
- FRONT

A. C. DAYTON—"Navigator" Line Voltage—115

TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION OF TUBE (BY REF. DET. ETC.)	TUBE DATA					READINGS PLUG IN SOCKET BY SET				
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	CATHODE CONTROL VOLTS	HEATER VOLTS	NORMAL PLATE VOLTS	PLATE CURR. (MA) TEST	PLATE CURR. (MA) CHARGE	SCREEN CURR. (MA) TEST
1	227	1st RP	2.5	111	2.4	110	3.5	3.5	5	9	4	-
2	227	2nd RP	2.5	111	2.4	110	3.5	3.5	5	9	4	-
3	227	3rd RP	2.5	111	2.4	110	3.5	3.5	5	9	4	-
4	227	4th RP	2.5	111	2.4	110	3.5	3.5	5	9	4	-
5	227	5th RP	2.5	111	2.4	110	3.5	3.5	5	9	4	-
6	227	Det.	2.5	105	2.4	105	15.0	0	1	-	-	-
7	245	Audio	2.5	235	2.4	230	30	-	22	26	4	-
8	245	Audio	2.5	235	2.4	230	30	-	22	26	4	-
9	280	Rect.	4.0	-	4.75	-	-	-	65	-	-	-

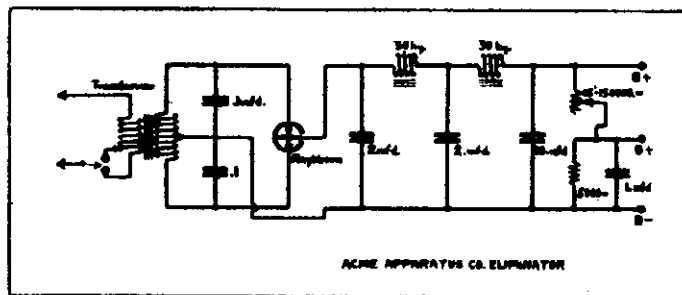
ACME APPARATUS CO.

MODEL 5 Tube Reflex
"B" Unit



CONSTANTS FOR ACME 5 TUBE REFLEX (1926)

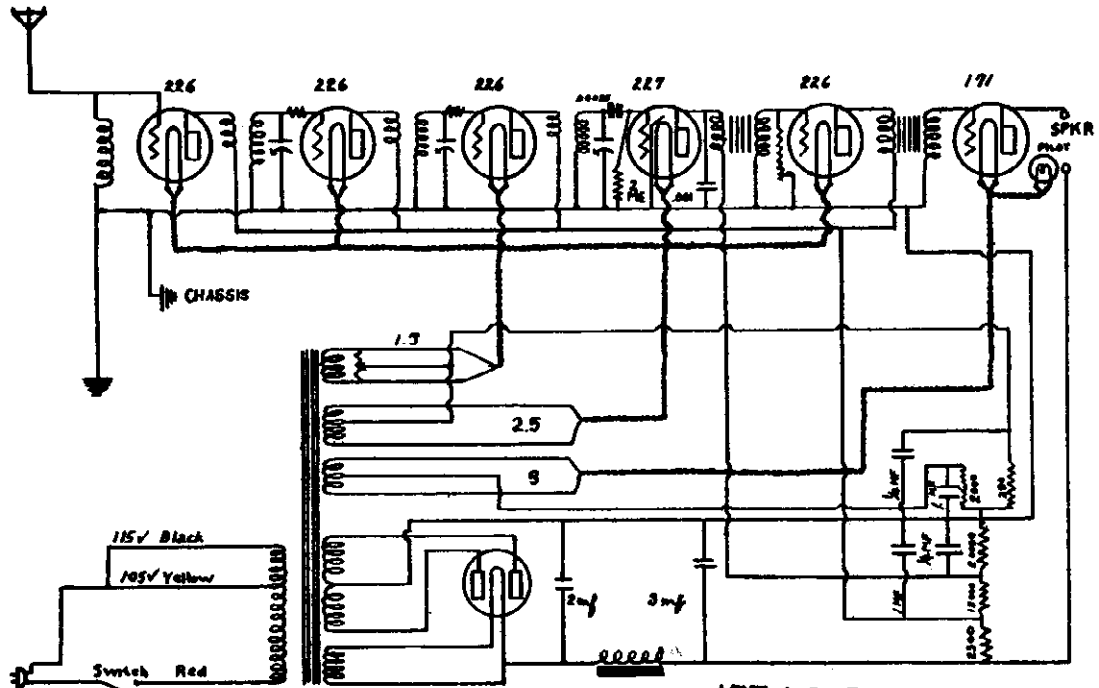
C1	.0004 mfd.	3C	.00025 mfd.
C2	.002 mfd.	GL	.5 to 2 meg
C4	.002 mfd.	R1	6 ohms
C5	1. mfd.	R2	1 ohm
C6	2. mfd.	R3	2000 ohms



ACME APPARATUS CO. "B" ELIMINATOR (1926)

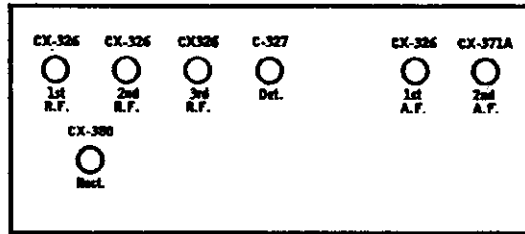
ACME ELECTRIC & MFG. CO.

MODEL AC-7
SG-83



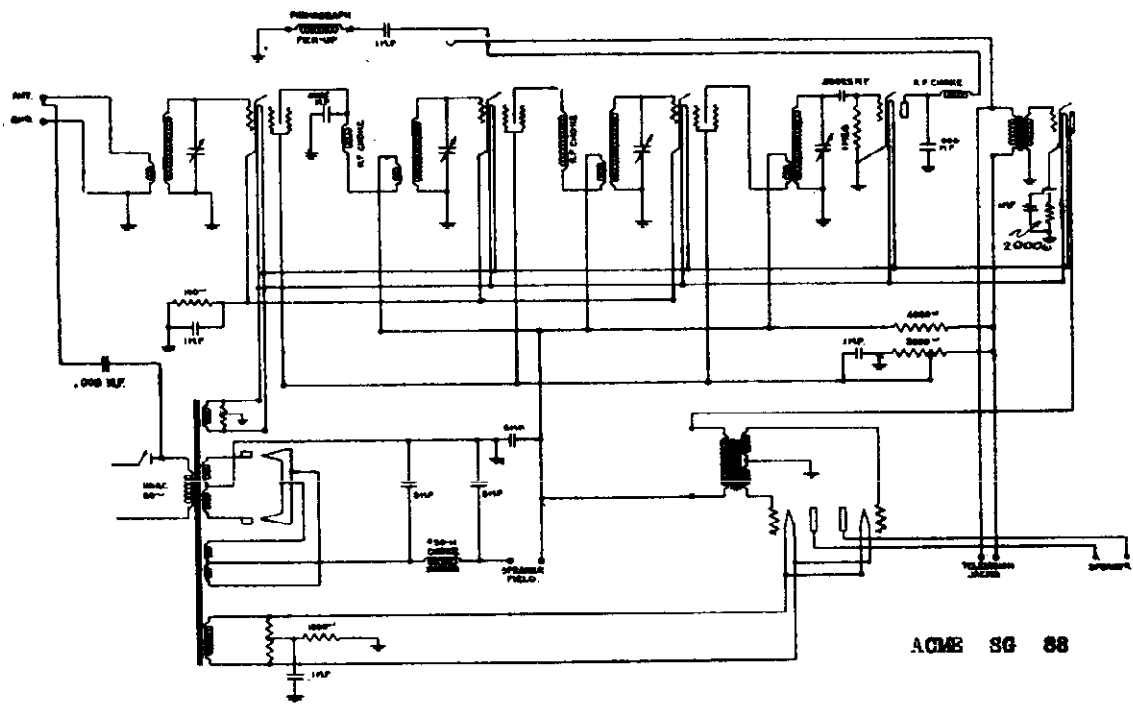
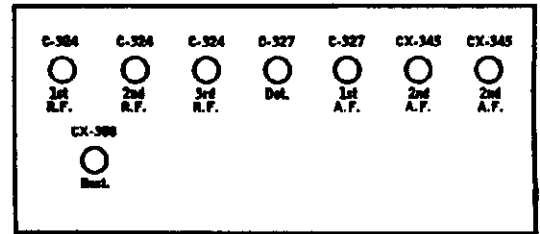
ACME A.C. 7

AC7



88

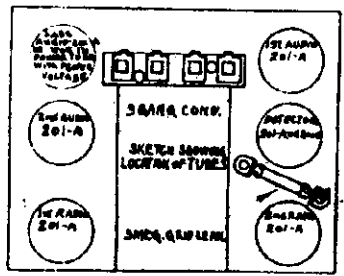
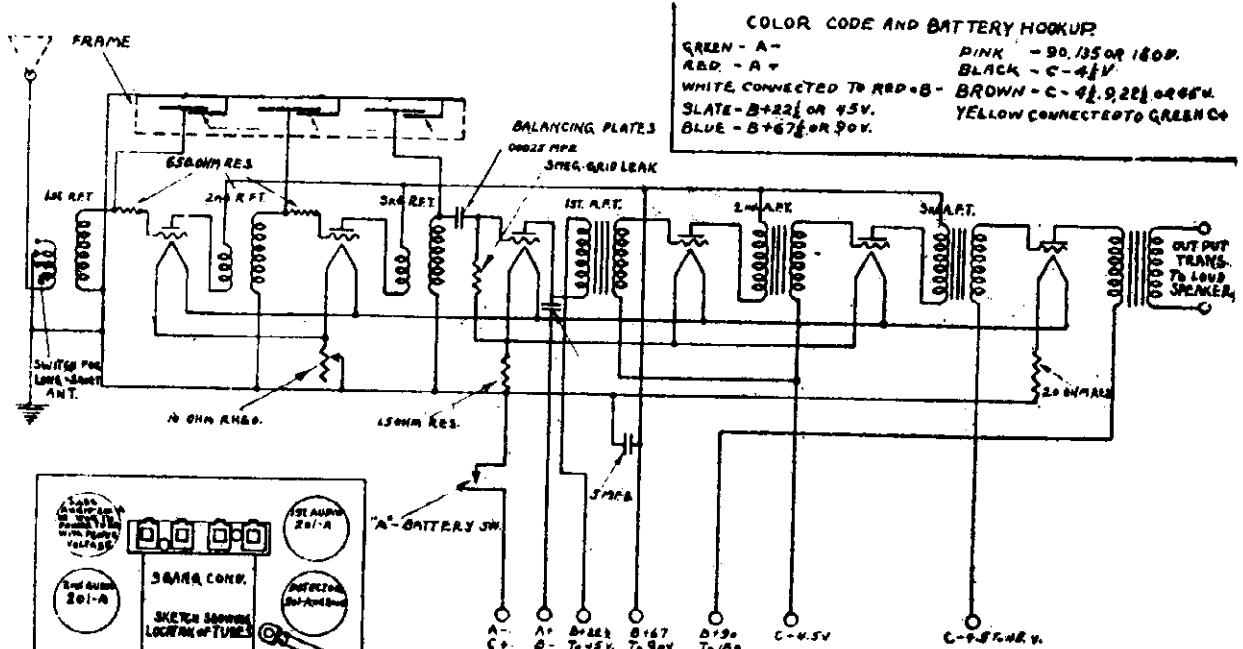
(A.C.)



ACME SG 88

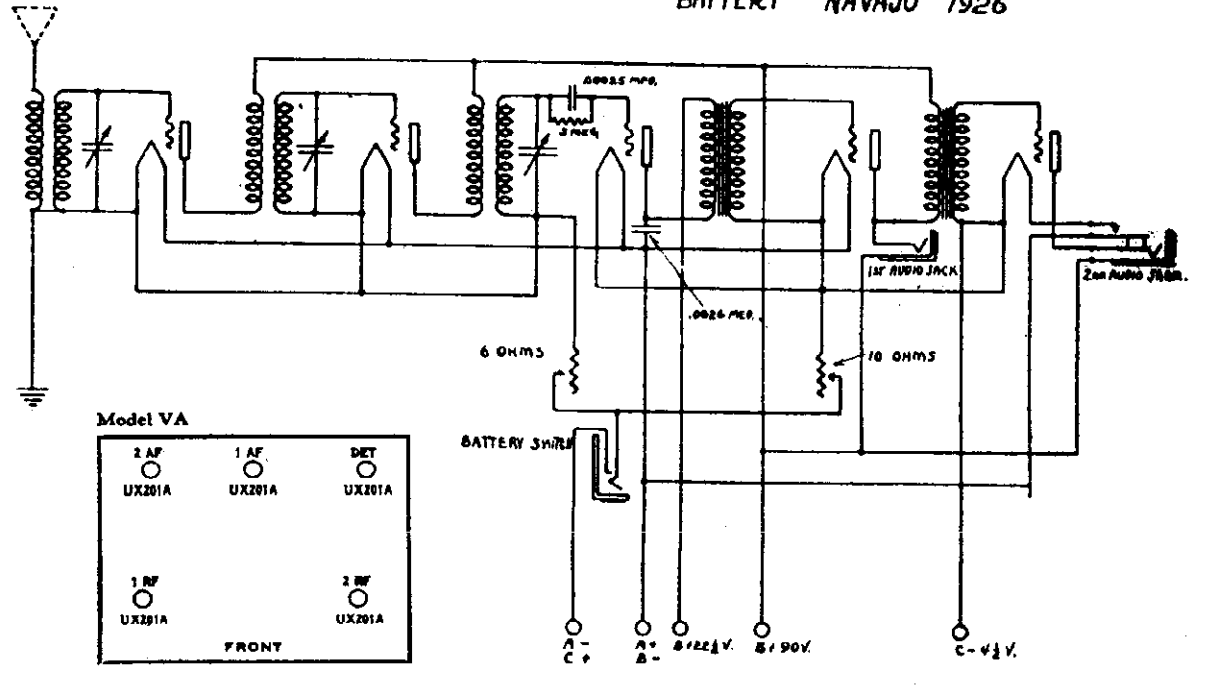
ALL-AMERICAN MOHAWK CORP.

MODEL Navajo VA
Battery Operated



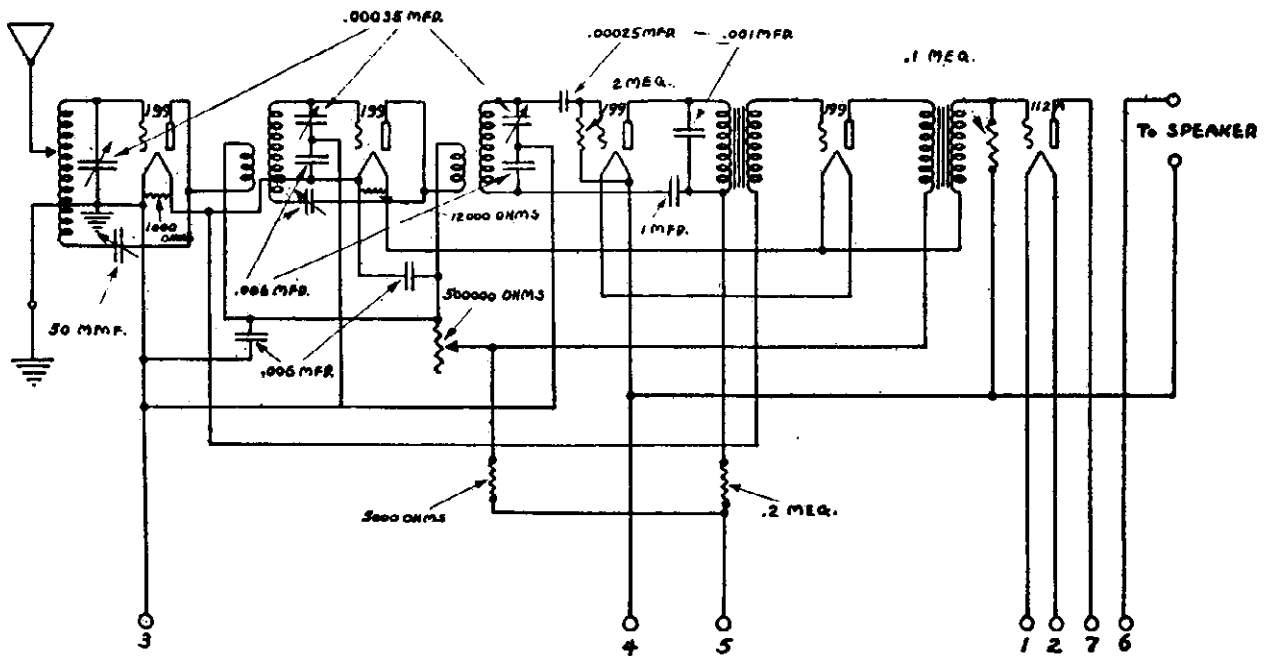
NOTE: ALL TRANSFORMERS ARE ENCLOSED IN A COPPER SHIELD AND SHIELDED TO EACH OTHER.

SCHEMATIC CIRCUIT of MOHAWK RECEIVER. BATTERY NAVAJ0 1926

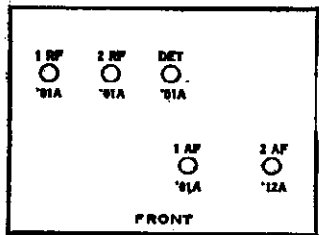


5 TUBE VA CIRCUIT -1925-26-

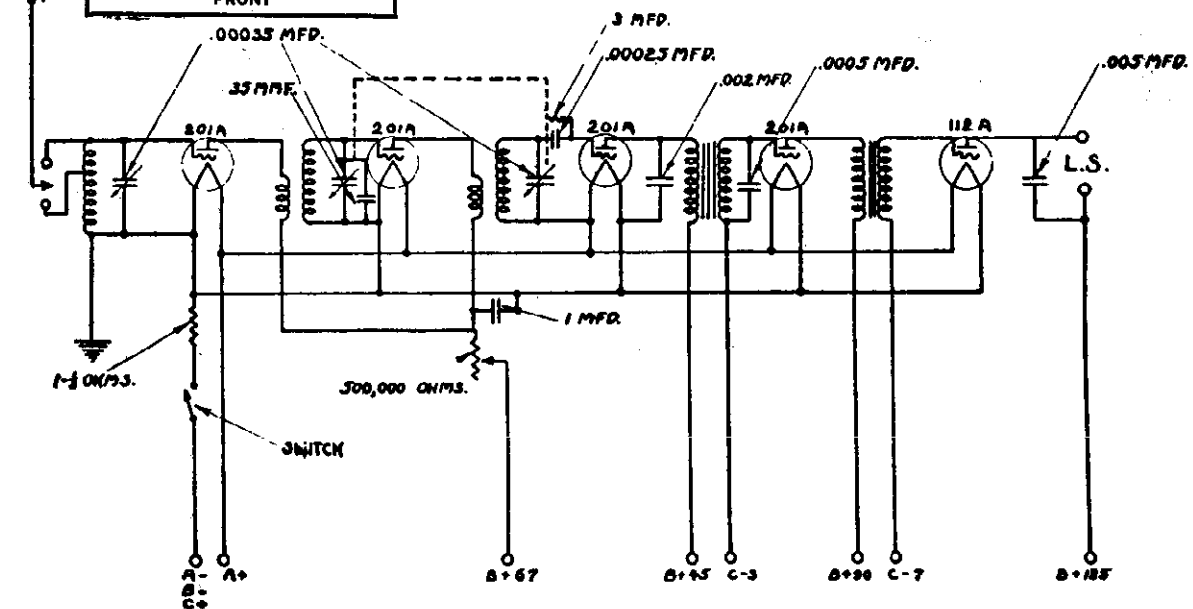
MODEL 115 -1926 ALL-AMERICAN MOHAWK CORP.
5 Tube All-Electric
MODEL 115- 1926
5 Tube All-Battery



Model 115-BO (1926)



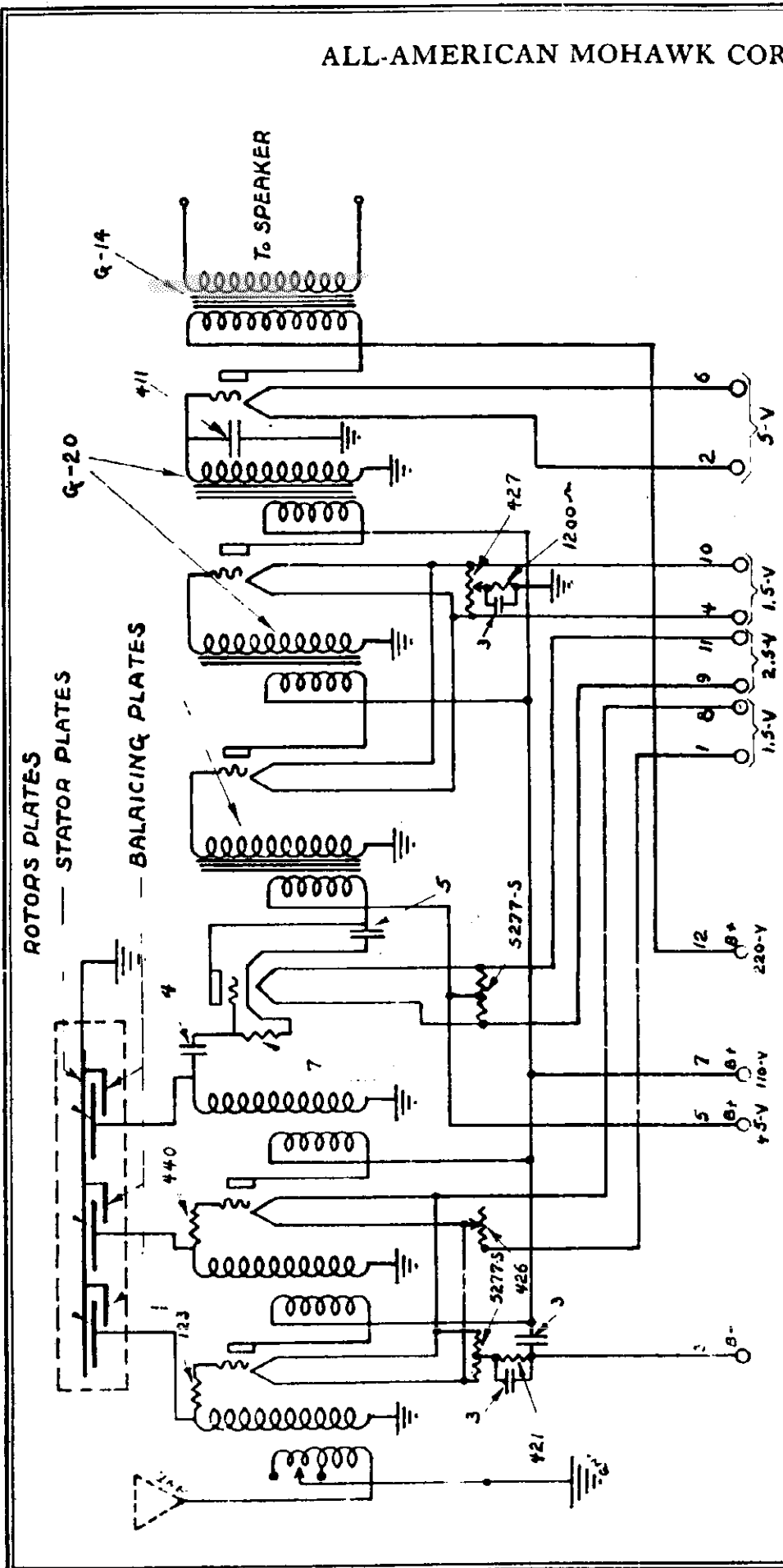
5 TUBE ALL ELECTRIC - 1926.
MODEL -115



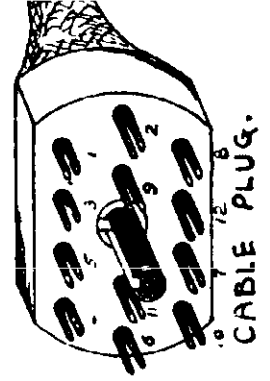
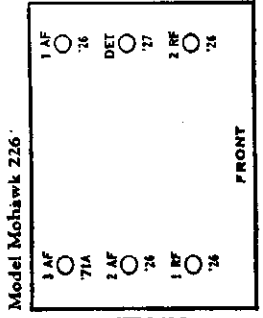
5 TUBE ALL AMERICAN BATTERY SET.
MODEL 115 - 1926-27.

ALL-AMERICAN MOHAWK CORP.

MODEL Mohawk 1926
 All-Electric
 226 Type
 Receiver Chassis



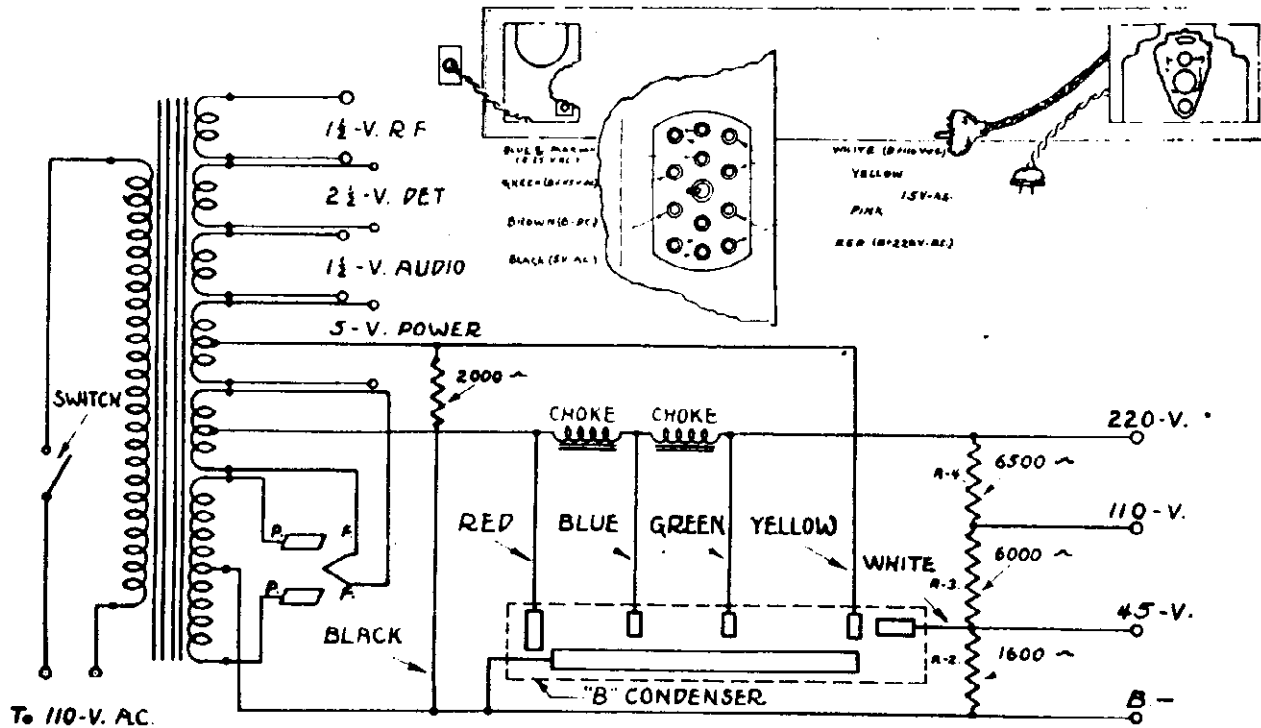
CIRCUIT OF MOHAWK SET - 1926 -
 (ALL ELECTRIC)



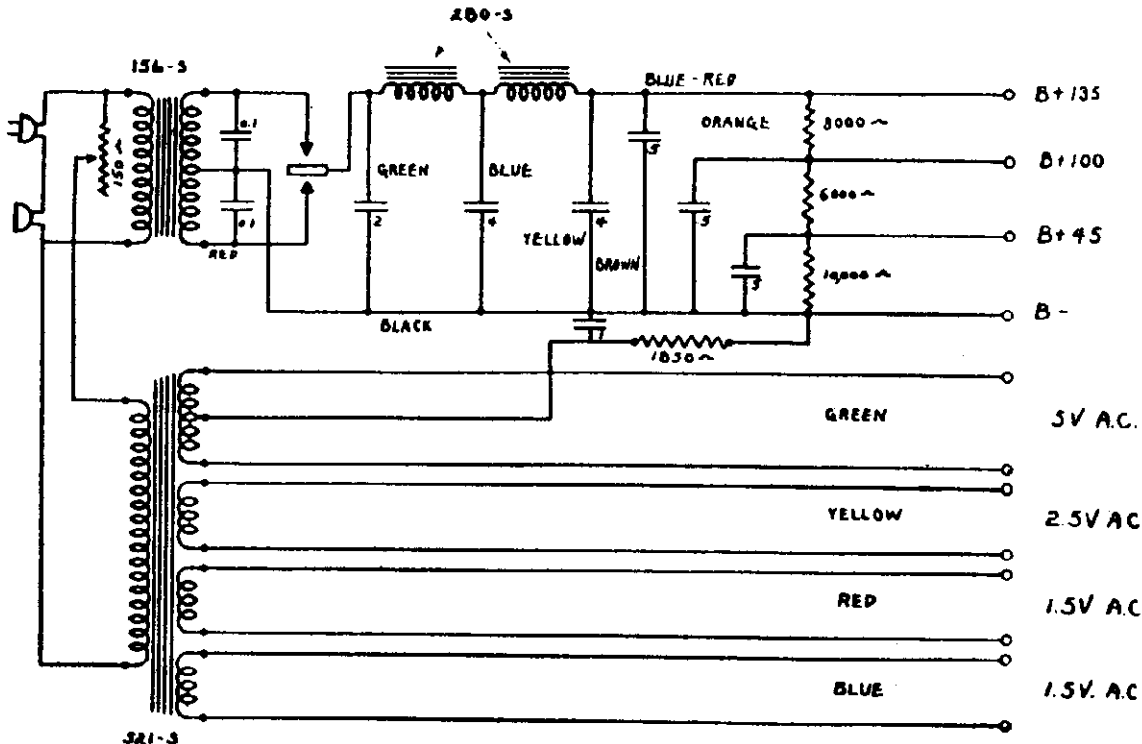
CABLE PLUG.

MODEL Mohawk 226
 12 Contact
 Power Pack
 A-10 Eliminator

ALL-AMERICAN MOHAWK CORP.



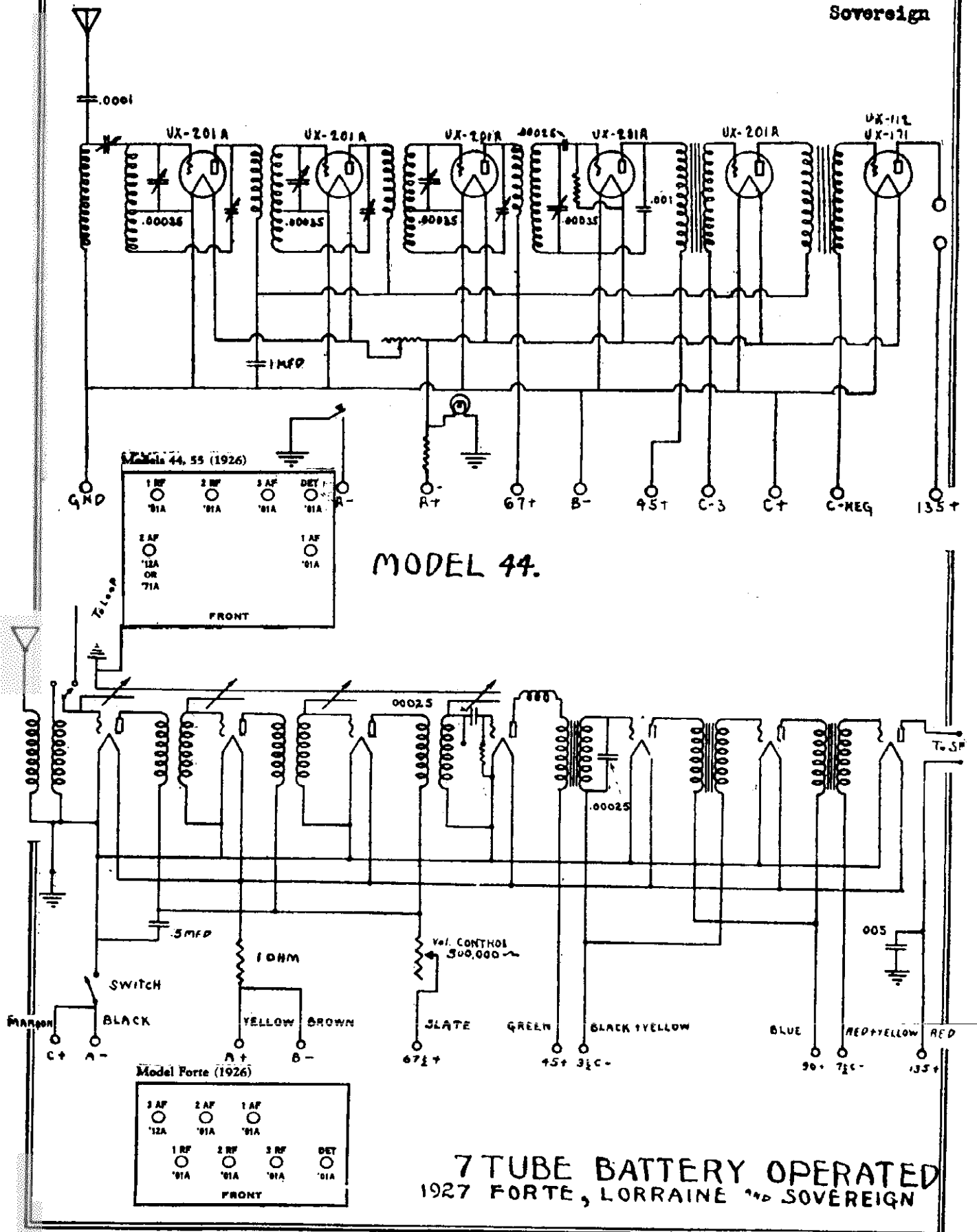
12 CONTACT POWER PACK for Mohawk 226
 WITH NEWTYPE CONDENSER



A-10 MOHAWK ELIMINATOR

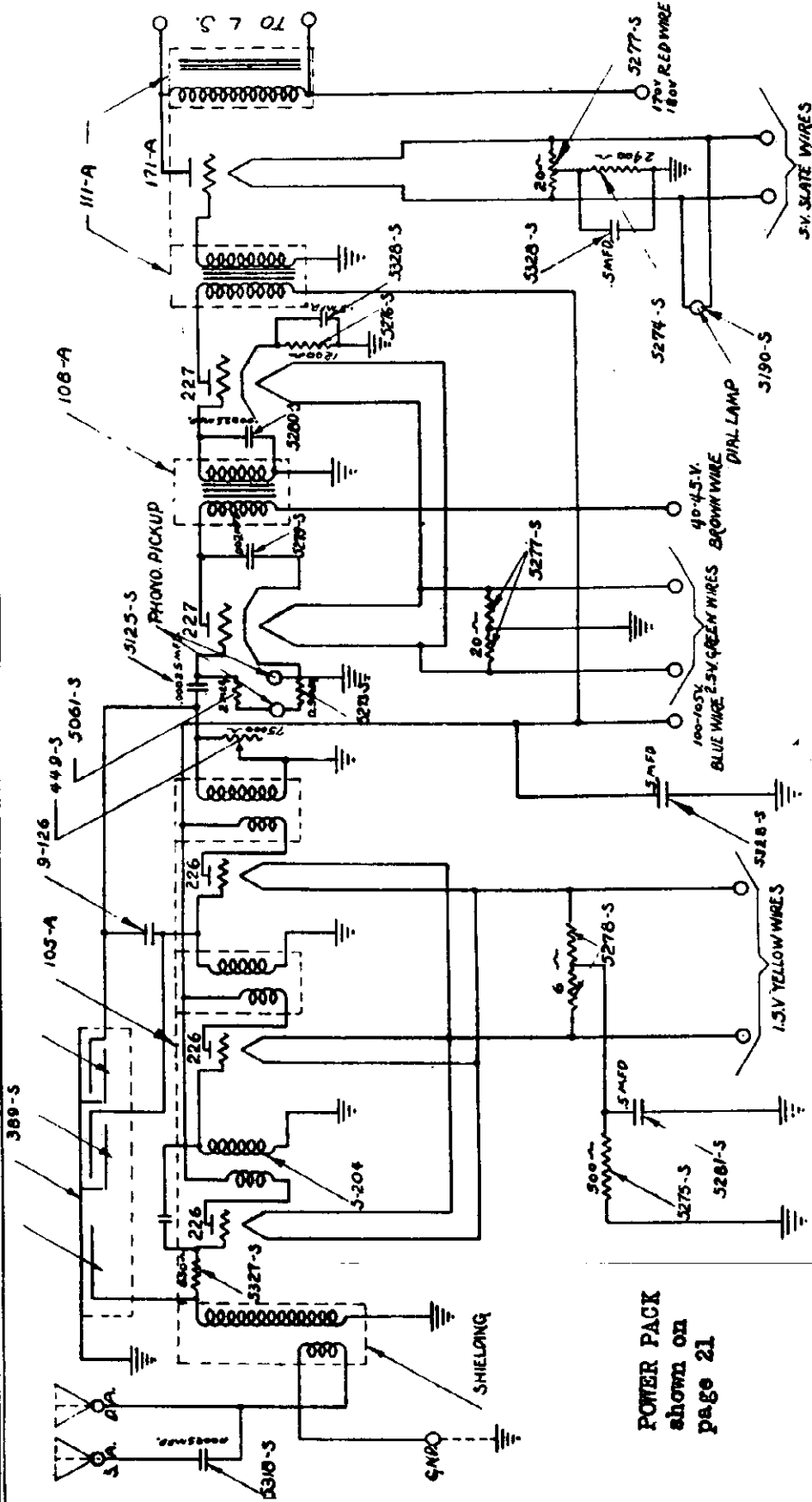
ALL-AMERICAN MOHAWK CORP.

MODEL 44
7 Tube
Forte
Lorraine
Sovereign



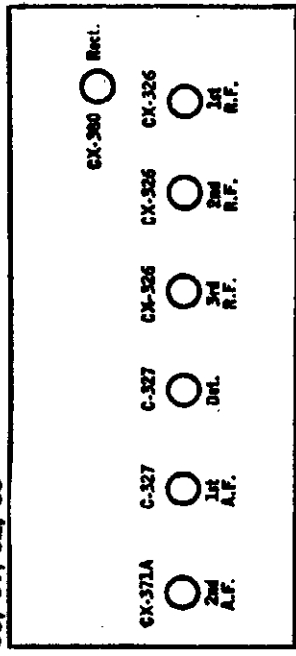
MODEL 60,61,62,
65,66
Receiver Chassis

ALL-AMERICAN MOHAWK CORP.



60, 61, 62, 65 (A.C.)

- 3-CX326
- 2-CX327
- 1-CX371A
- 1-CX380



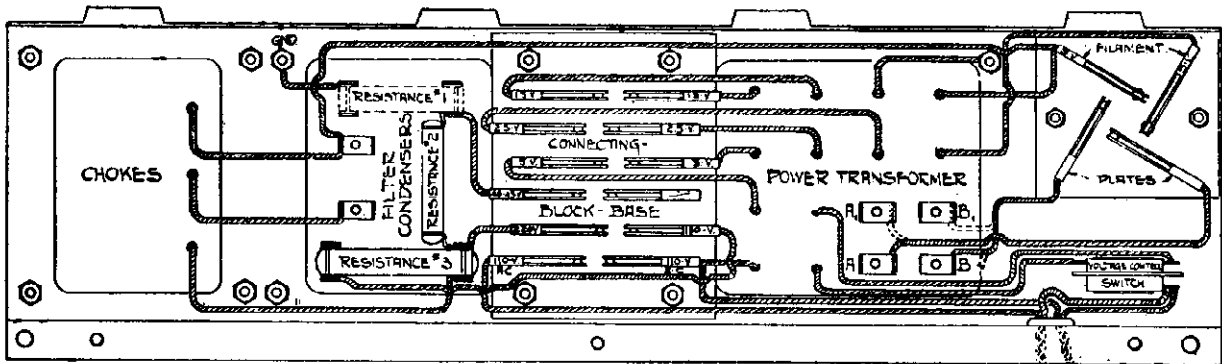
POWER PACK
shown on
page 21

ALL AMERICAN—Models 60-61-62-65-66
Line Voltage 110:—95-115 Volt Tap:—Volume Control Full

TUBE NO.	TYPE	MFR.	RESISTANCE VALUE IN OHMS OR KΩ					TAP IN VOLTS					PLATE ALIQUOT	PLATE TEST CURRENT	PLATE TEST VOLTAGE	
			1	2	3	4	5	1	2	3	4	5				
1	326	6X326	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
2	327	6X327	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
3	371A	6X371A	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
4	380	6X380	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
5	326	6X326	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
6	327	6X327	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
7	371A	6X371A	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
8	380	6X380	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
9	326	6X326	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
10	327	6X327	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
11	371A	6X371A	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
12	380	6X380	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
13	326	6X326	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
14	327	6X327	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
15	371A	6X371A	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
16	380	6X380	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
17	326	6X326	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
18	327	6X327	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
19	371A	6X371A	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
20	380	6X380	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
21	326	6X326	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
22	327	6X327	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
23	371A	6X371A	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
24	380	6X380	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
25	326	6X326	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
26	327	6X327	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
27	371A	6X371A	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
28	380	6X380	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
29	326	6X326	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
30	327	6X327	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
31	371A	6X371A	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—
32	380	6X380	1.4	180	1.25	112	8	—	3.2	0.6	3.4	—	—	—	—	—

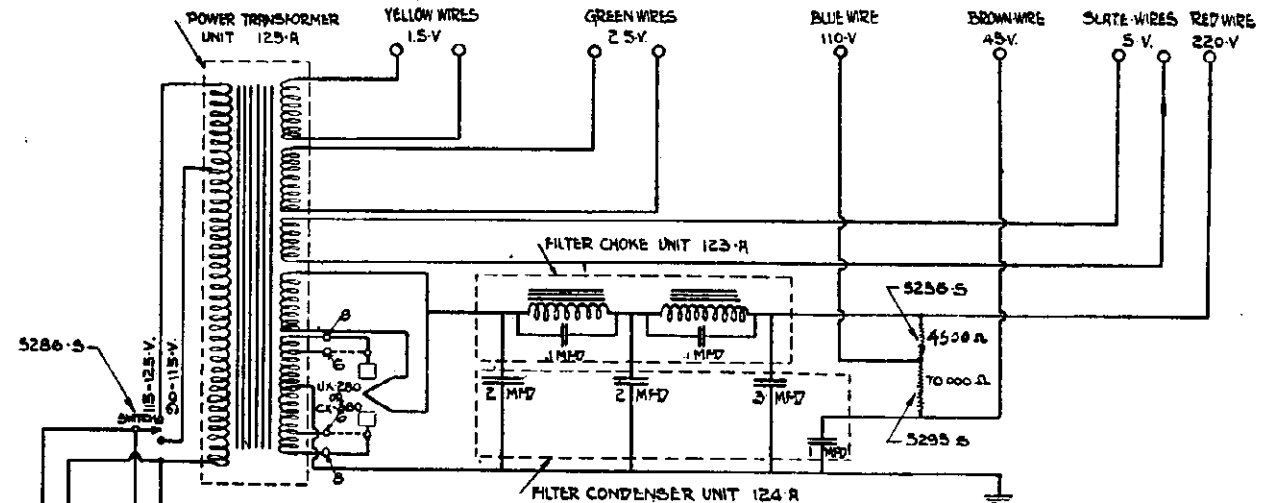
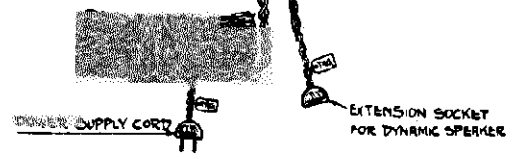
ALL-AMERICAN MOHAWK CORP.

MODEL 60,61,62,
65,66
Power Pack



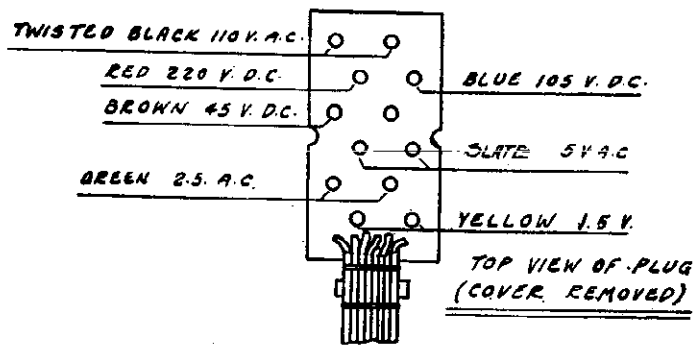
BLUE RESISTANCE #1 = 10,000 Ω
 RED #2 = 25,000 Ω OR ORANGE-70,000 Ω WITH RES. #1 OUT
 MAROON #3 = 4500 Ω

NOTE:
 WIRING FOR 8 TUBE SET-AS SHOWN-
 WIRING FOR 6 TUBE SET-PLATE WIRE 'A' LEAD TO 'A',
 AND PLATE WIRE 'B' LEAD TO 'B'.

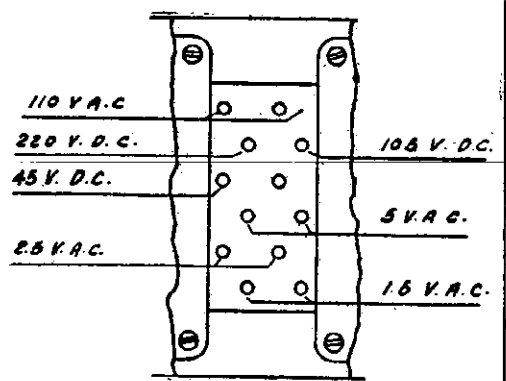


CIRCUIT DIAGRAM OF
6 & 8 TUBE AC SET-POWER PACK

NOTE: ABOVE INDICATED PART NUMBERS ARE THE ELECTRICAL PART AND ASSEMBLY NUMBERS OF ITEMS USED IN CIRCUIT. WHEN ORDERING PARTS OR ASSEMBLIES SPECIFY THIS NUMBER AS WELL AS NAME OF ITEM



TOP VIEW OF PLUG
(COVER REMOVED)



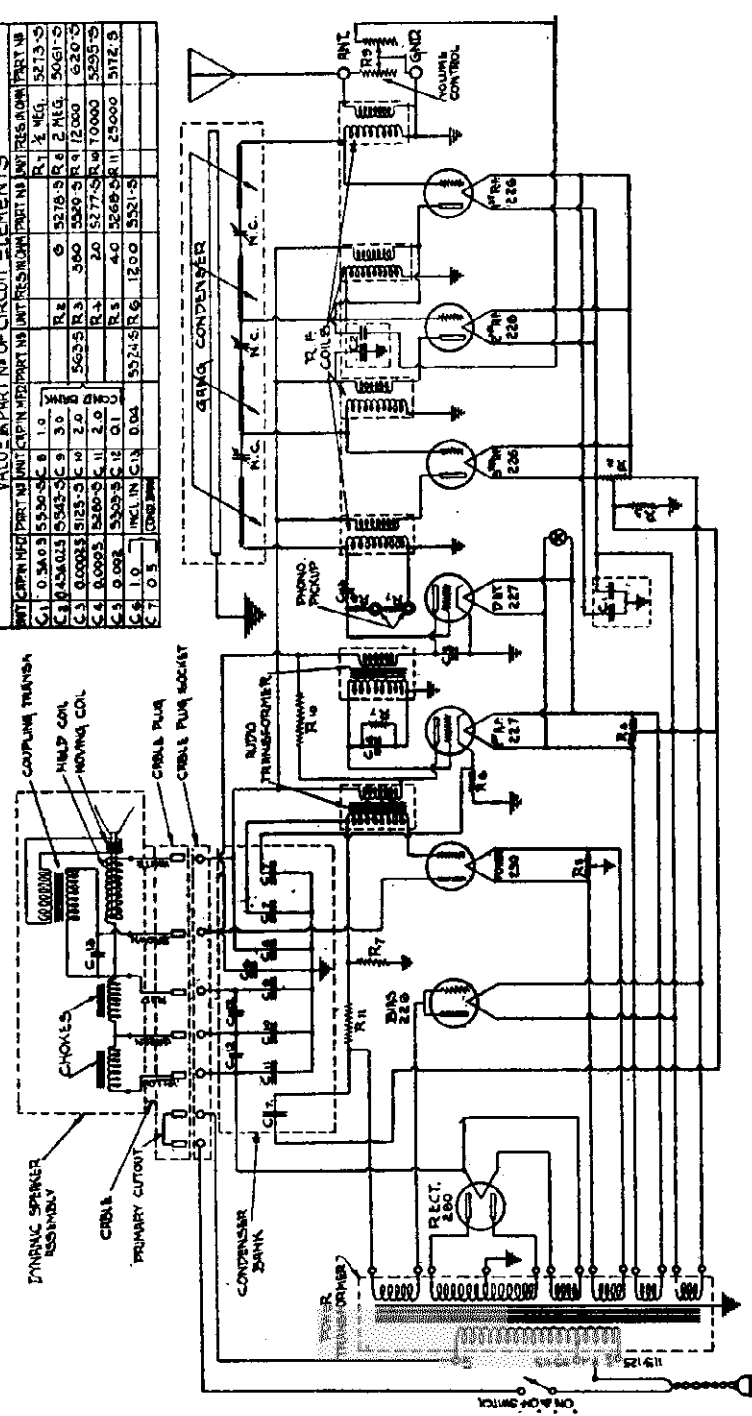
TOP VIEW OF CONNECTING
PLUG SOCKET IN POWER PACK

ALL-AMERICAN MOHAWK CORP.

MODEL 70, 73, 75

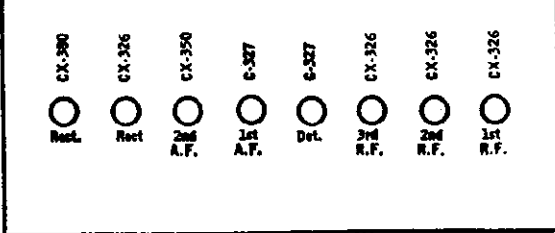
VALUE A PART NO OF CIRCUIT ELEMENTS

UNIT	RESISTOR	CAPACITOR	INDUCTOR	TRANSFORMER	COIL	RELAY	SWITCH	OTHER
C1	0.5MΩ	5000-5C	0			R1	2 MEG.	5K73-S
C2	1000Ω	5000-5C	0			R2	500	5K73-S
C3	0.0001	5000-5C	0			R3	500	5K73-S
C4	0.0001	5000-5C	0			R4	20	5K73-S
C5	0.001	5000-5C	0			R5	40	5K73-S
C6	1.0	5000-5C	0			R6	1200	5K73-S
C7	0.5	5000-5C	0			R7	20	5K73-S



70, 73, 75

(A.C.)



4-6X326
2-6X327
1-6X350
1-6X300

HUM— If an undue amount of hum is experienced it may be caused by any of the following:—Defective tube in either the detector or first a.f. stage. Center tapped resistors open on one side of filament or heater connection or one-half of center tapped resistor shorted out. Center tap of 20 ohm resistor across 227 heater terminals open. A grounded 226 filament or short circuited grid bias resistor.

The hum will also be increased by a defective 226 bias tube for the 250 power tube, filter or load resistor, or by-pass condensers short circuited or open. The adjustable center tapped resistor on the 250 tubes filament being out of adjustment will likewise cause an increase in the hum level. As the filter circuit is a part of the loud speaker assembly it may be checked for hum trouble by substituting another speaker assembly. The condenser bank and power transformer may be substituted in checking for defects in these units which may cause hum. Generally most causes of hum are defective 227 tubes and improper adjustment of the 250 tube filament center tapped resistor.

Possible causes of hum in the power supply and their remedy will be taken up in the paragraph "Power Unit Servicing". It is important that a good ground connection be employed with this receiver as sometimes the hum level will increase where a poor ground connection is used.

TUBE VOLTAGE READINGS—

The following gives the values of the various tube readings which should be obtained: When line voltage is 110 V. A.C., and the line voltage control switch on power pack is in the 95-115 position: (Note these values will vary slightly.)

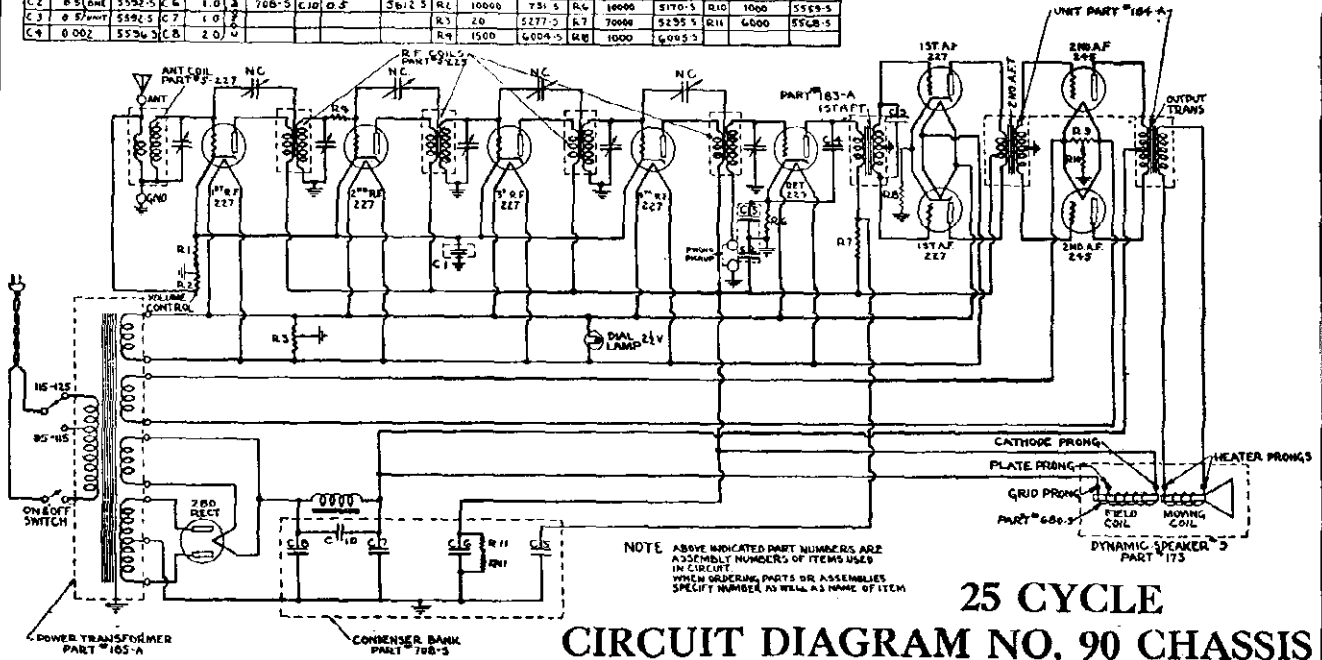
- R. F. tubes 226-326 type**
Filament voltage—1.45 to 1.50, "B" voltage—100 to 120, "C" voltage—7 to 9.
- Detector 227-327 type**
Heater voltage—2.40 to 2.50, "B" voltage—35 to 50, Cathode Bias, 0, Heater Bias 6-9 plus.
- First A.F. Amplifier 227-327 type**
Heater voltage—2.40 to 2.50, "B" voltage—100 to 120, Cathode bias—6 to 9, Heater Bias 6-9 plus.
- Power Amplifier 250-350**
Filament voltage—7.30 to 7.40, "B" voltage—300 to 325, "C" voltage—52 to 56.
- Bias Tube**
Filament voltage 1.4 to 1.50.

MODEL 90
25 Cycle

ALL-AMERICAN MOHAWK CORP.

182-W

VALUE AND PART N° OF CIRCUIT ELEMENTS											
UNIT	CAP. IN INFO	PART N°	UNIT	CAP. IN INFO	PART N°	UNIT	RES. IN OHMS	PART N°	UNIT	RES. IN OHMS	PART N°
C1	0.01	5525-S	C2	0.00025	5125-S	R1	380	5526-S	R5	100	5594-S
C2	0.01	5592-S	C4	1.0	70B-S	R2	10000	5170-S	R6	1000	5595-S
C3	0.01	5592-S	C7	1.0	70B-S	R3	2.0	5277-S	R7	70000	5595-S
C4	0.002	5594-S	C8	2.0	70B-S	R4	1500	6004-S	R8	1000	6005-S



25 CYCLE
CIRCUIT DIAGRAM NO. 90 CHASSIS

VOLTAGE READINGS.

Type of Tube	Position of Tube	Tube in Tester			Cathode-Heater Volts	Normal Plate M. A.
		A Volts	B Volts	C Volts		
227	1 R. F.	2.3	100	6.25	3.5	
227	2 R. F.	2.4	100	5.50	3.5	
227	3 R. F.	2.3	95	6.25	3.5	
227	4 R. F.	2.4	100	6.25	3.5	
227	DET.	2.3	56	5.00	0.5	
227	1 P. P.	2.4	90	5.00	3.5	
227	1 P. P.	2.4	90	5.00	3.5	
245	2 P. P.	2.2	210	42.00	24.0	
245	2 P. P.	2.2	210	42.00	24.0	
280	RECT.	4.5			38 x 2	

SOCKET LAYOUT SAME AS NO. MODEL 90 - 60 CYCLE

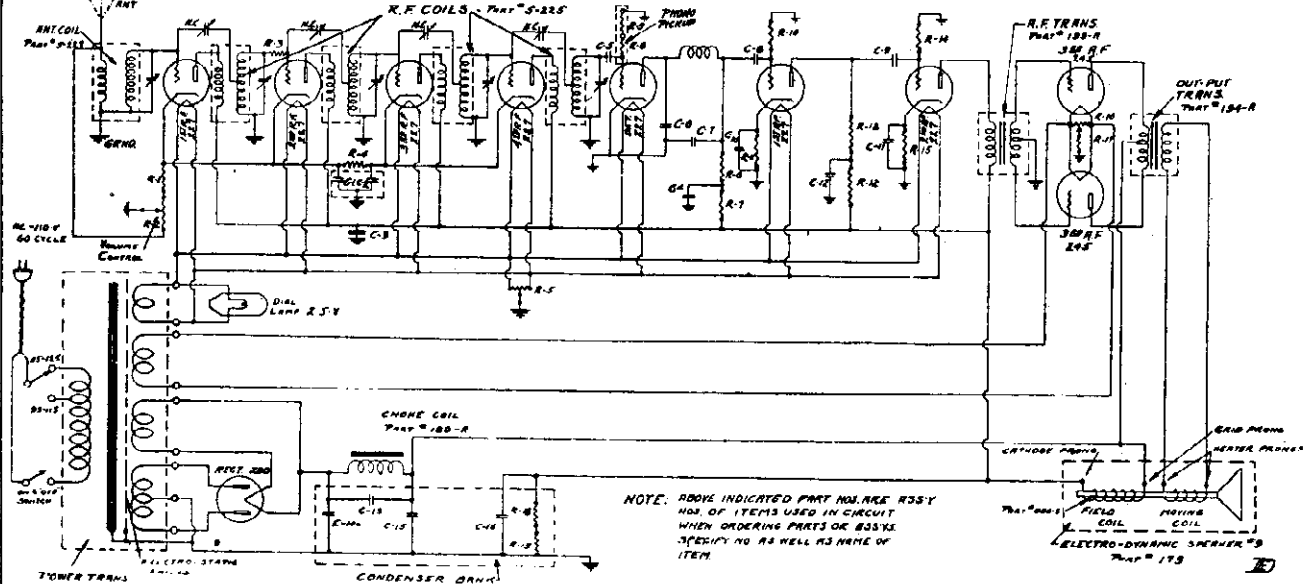
ALL-AMERICAN MOHAWK CORP.

MODEL 90
60 Cycle

180-W

VALUES AND PART NUMBER OF CIRCUIT ELEMENTS

UNIT	CAP. IN PFD.	PART NO.	UNIT	CAP. IN PFD.	PART NO.	UNIT	RES. IN OHMS	PART NO.	UNIT	RES. IN OHMS	PART NO.	UNIT	RES. IN OHMS	PART NO.
G1	0.1	5223-S	C1	0.001	5124-S	R1	250	5310-S	R7	20,000	5295-S	R13	25,000	5407-S
G2	0.1	5223-S	C2	0.01	5203-S	R2	1,000	5310-S	R8	20,000	5295-S	R14	25,000	5407-S
G3	0.1	5223-S	C3	0.01	5203-S	R3	1,000	5310-S	R9	20,000	5295-S	R15	25,000	5407-S
G4	0.1	5223-S	C4	0.01	5203-S	R4	1,000	5310-S	R10	20,000	5295-S	R16	25,000	5407-S
G5	0.00025	5127-S	C5	0.5	5127-S	R5	20	5310-S	R11	2,400	5295-S	R17	1,900	5407-S
G6	0.001	5124-S	C6	1.0	5124-S	R6	20,000	5310-S	R12	20,000	5295-S	R18	25,000	5407-S

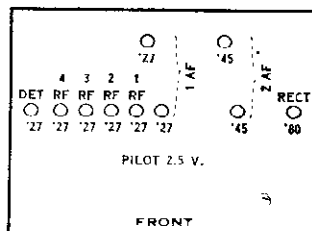


Lyric No. 90 A. C. receiver
-60 CYCLE

TUBE VOLTAGE AND CURRENT READINGS.
Below is given a standard set of readings for the tubes of the Lyric A. C. No. 90 receiver, which will serve as a reference in tube voltage and plate current readings:

Type of Tube	Position of Tube	Tube Out		Tube in Tester			Cathode-Heater	Normal Plate
		A Volts	B Volts	A Volts	B Volts	C Volts	Volts	
227	1 R. F.	2.45	120	2.40	114	6.5	6.5	5.3
227	2 R. F.	2.45	120	2.40	115	6.5	6.5	4.6
227	3 R. F.	2.45	120	2.40	113	7.5	7.5	5.8
227	4 R. F.	2.45	120	2.40	113	7.5	7.5	5.9
227	DET.	2.45	84	2.40	16	.5	.0	.7
227	1 A. F.	2.45	94	2.40	30	.5	2.5	1.0
227	2 A. F.	2.45	128	2.40	106	1.5	7.0	3.6
245	P. P.	2.55	256	2.45	232	45.0		23.0
245	P. P.	2.55	256	2.45	232	45.0		23.0
280	RECT.	5.30		4.90				78.0

Models 90, 93, 94, 95 (1929)

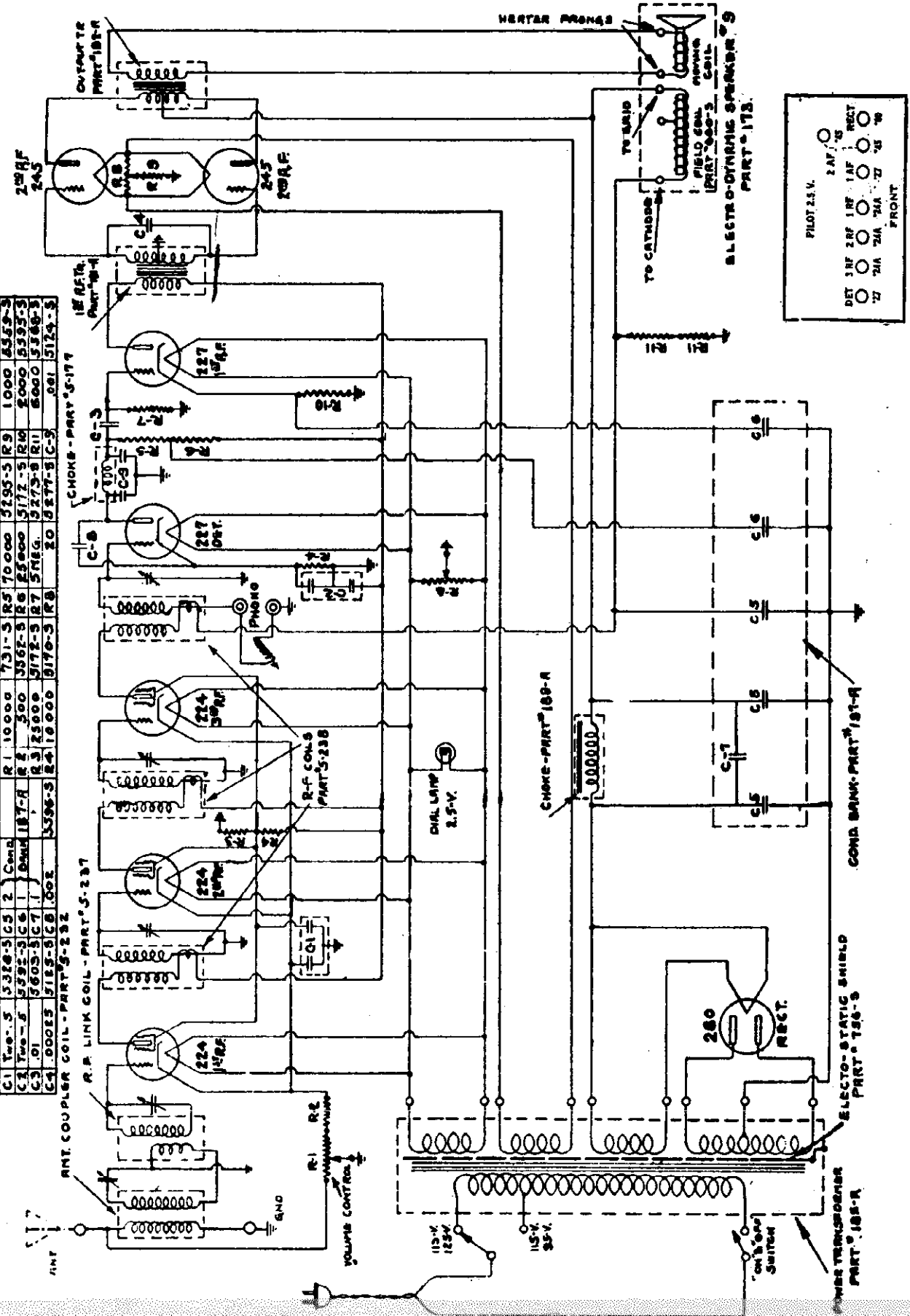


MODEL 96
60 Cycle

ALL-AMERICAN MOHAWK CORP.

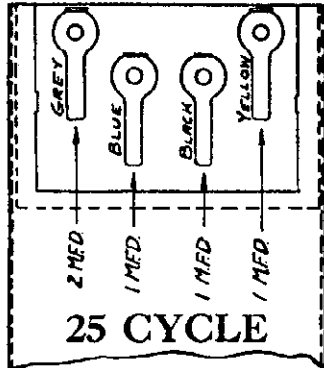
VALUE AND PART NO OF CIRCUIT ELEMENTS

UNIT	CONT'D	PART NO	UNIT	CONT'D	PART NO	UNIT	CONT'D	PART NO	UNIT	CONT'D	PART NO	UNIT	CONT'D	PART NO
C1	Two - S	5328-S	C2	Cond	R1	10000	R2	731-S	R3	70000	R4	1000	R5	1000
C3	Two - S	5328-S	C6	Cond	R6	2500	R7	5172-S	R8	2500	R9	1000	R10	5328-S
C4	One	5603-S	C7	Cond	R11	2500	R12	5172-S	R13	2500	R14	1000	R15	5328-S
C5	One	5155-S	C8	Cond	R16	10000	R17	5172-S	R18	2500	R19	1000	R20	5328-S
C9	One	5155-S	C9	Cond	R21	10000	R22	5172-S	R23	2500	R24	1000	R25	5328-S
C10	One	5155-S	C10	Cond	R26	10000	R27	5172-S	R28	2500	R29	1000	R30	5328-S

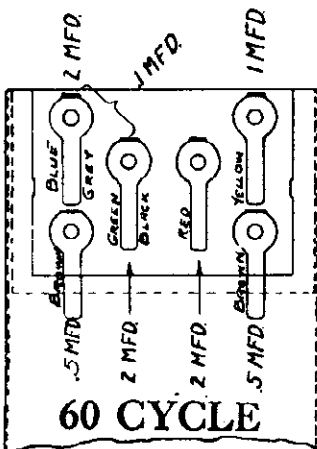


ALL-AMERICAN MOHAWK CORP.

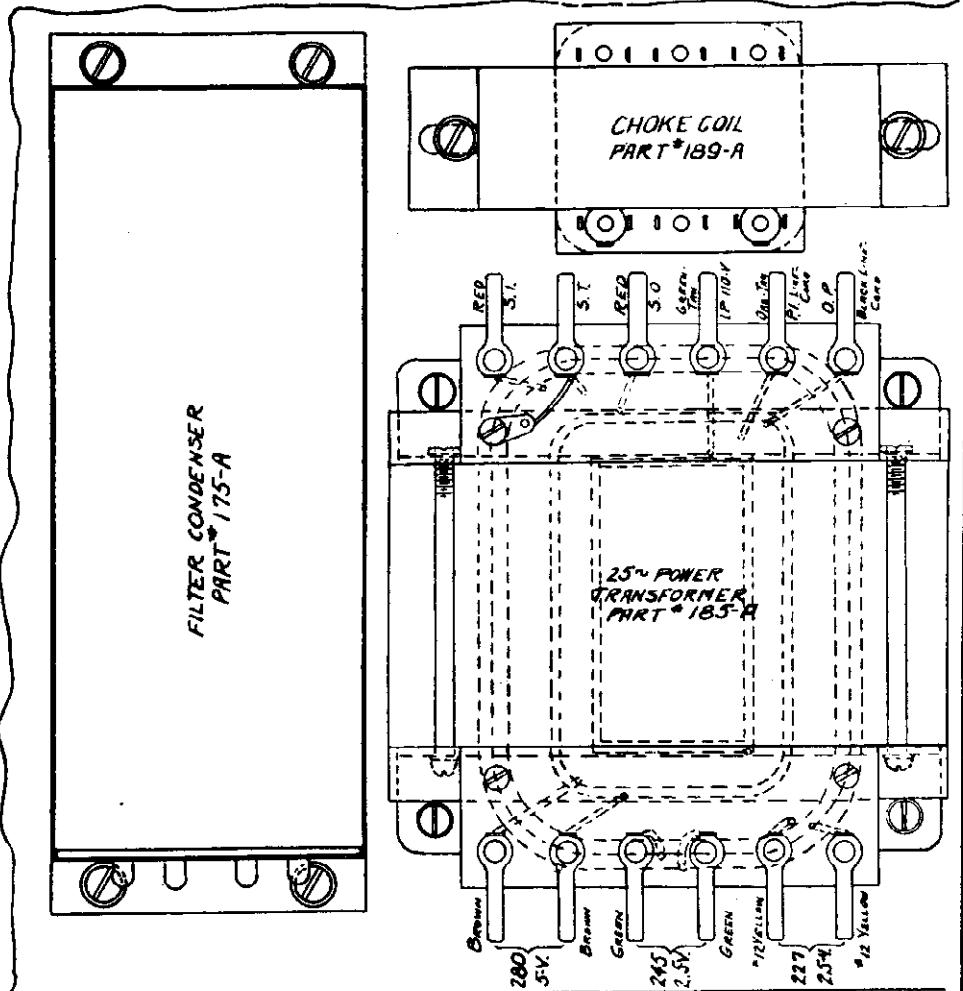
MODEL 90
Data



FRONT VIEW OF
CONDENSER TERMINALS

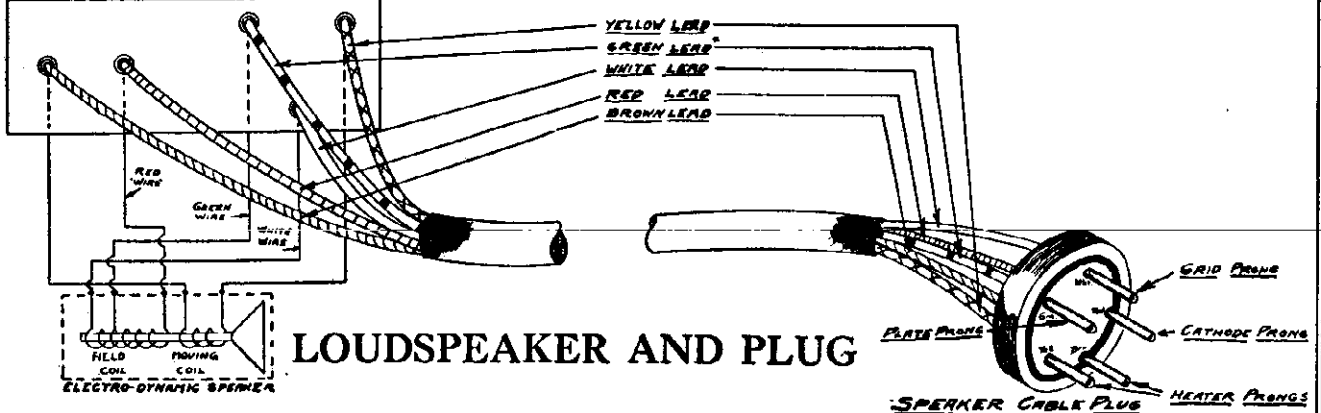


FRONT VIEW OF
CONDENSER TERMINALS



POWER PACK TERMINALS NO. 90 CHASSIS

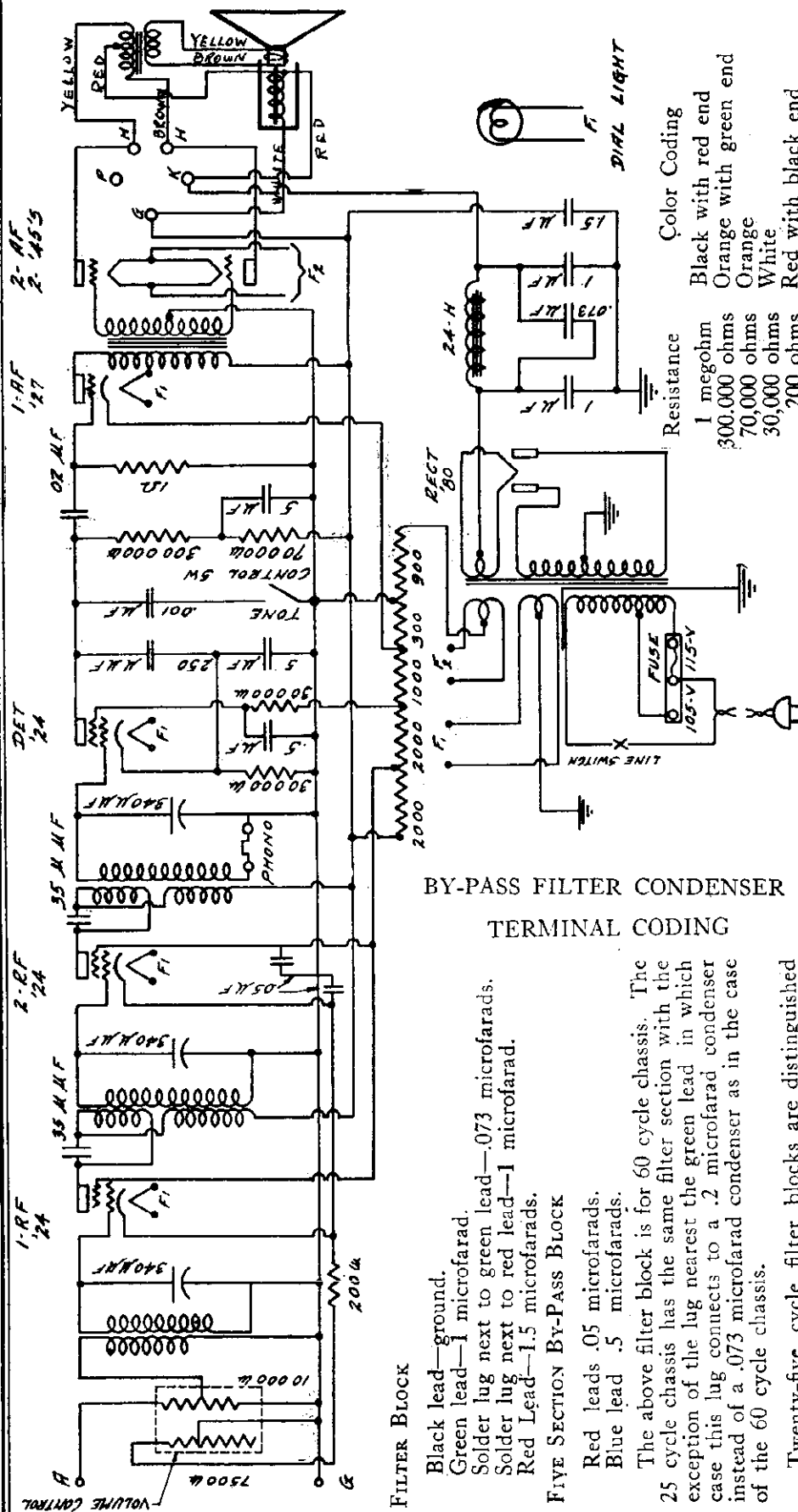
SPEAKER TERMINAL STRIP



LOUDSPEAKER AND PLUG

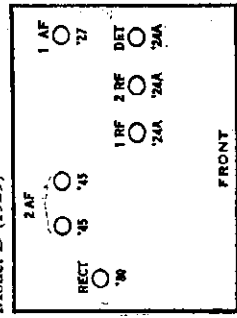
MODEL LYRIC D

ALL-AMERICAN MOHAWK CORP.



Color Coding
 Black with red end
 Orange with green end
 Orange
 White
 Red with black end

Resistance
 1 megohm
 300,000 ohms
 70,000 ohms
 30,000 ohms
 200 ohms



Model D (1929)

BY-PASS FILTER CONDENSER
 TERMINAL CODING

FILTER BLOCK

- Black lead—ground.
- Green lead—1 microfarad.
- Solder lug next to green lead—.073 microfarads.
- Solder lug next to red lead—.1 microfarad.
- Red Lead—1.5 microfarads.

FIVE SECTION BY-PASS BLOCK

- Red leads .05 microfarads.
- Blue lead .5 microfarads.

The above filter block is for 60 cycle chassis. The 25 cycle chassis has the same filter section with the exception of the lug nearest the green lead in which case this lug connects to a .2 microfarad condenser instead of a .073 microfarad condenser as in the case of the 60 cycle chassis.

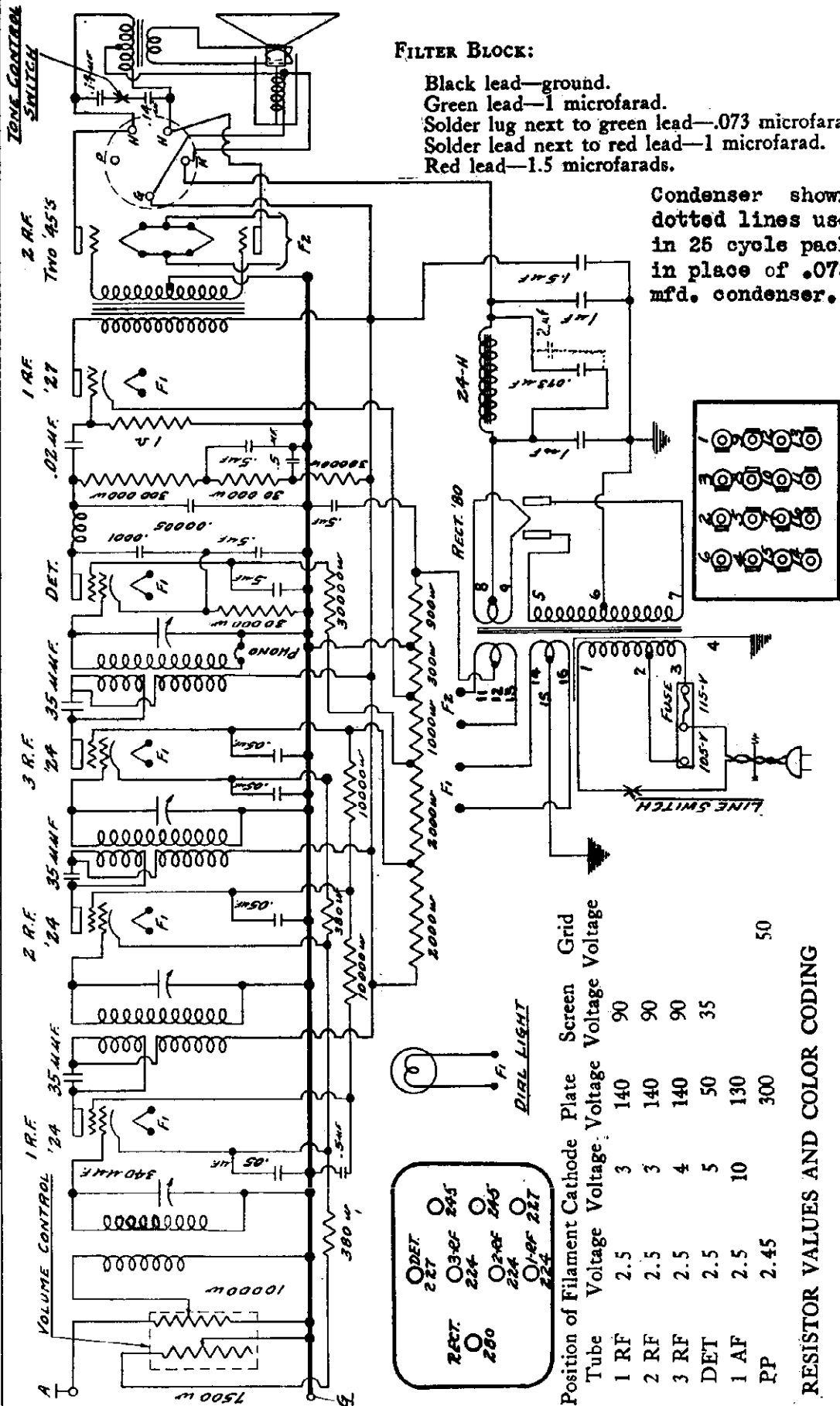
Twenty-five cycle filter blocks are distinguished from sixty cycle blocks by the green dot on the terminal strip at the bottom.

Below is a standard list of voltage readings for the tubes of the LYRIC AC Model D receiver:

Type of Tube	Position of Tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
224	1 RF	2.5	1.6	140	90	
224	2 RF	2.5	1.6	140	90	
224	DET	2.5	5	50	35	
227	1 AF	2.5	10	130		50
245	PP	2.45		300		50
245	PP	2.45		300		50

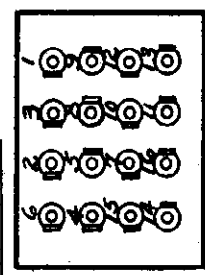
ALL-AMERICAN MOHAWK CORP.

MODEL H



FILTER BLOCK:
 Black lead—ground.
 Green lead—1 microfarad.
 Solder lug next to green lead—.073 microfarads.
 Solder lead next to red lead—1 microfarad.
 Red lead—1.5 microfarads.

Condenser shown in dotted lines used in 25 cycle pack in place of .073 mfd. condenser.

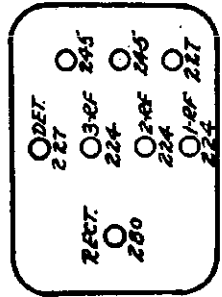


POWER TRANSFORMER

FIXED CONDENSER VALUES AND COLOR CODING

Capacity	Color Coding
35 micro-microfarads	Grey dot
50 micro-microfarads	Blue dot and white dot
100 micro-microfarads	Orchid dot

Color Coding
 Five Section By-Pass Block, LEAD TYPE:
 Red leads .05 microfarads.
 Blue lead .5 microfarads.



RESISTOR VALUES AND COLOR CODING

Resistance	Color Coding
1 megohm	Black with red end
300,000 ohms	Orange with green end
30,000 ohms	White
10,000 ohms	Blue
380 ohms	Blue with black end

Tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
1 RF	2.5	3	140	90	90
2 RF	2.5	3	140	90	90
3 RF	2.5	4	140	90	35
DET	2.5	5	50	130	50
1 AF	2.5	10	300	300	50
PP	2.45				

VOLUME CONTROL

2 RF TWO '25'S

1 RF '27

.02 MF

DET.

3 RF '24

2 RF '24

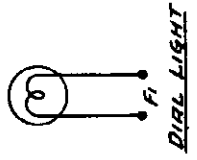
35 M.M.F.

1 RF '24

35 M.M.F.

VOLUME CONTROL

1500 W



DIAL LIGHT

LINE SWITCH

RECT. '80

24-H

1.5 MF

1 MF

.073 MF

1 MF

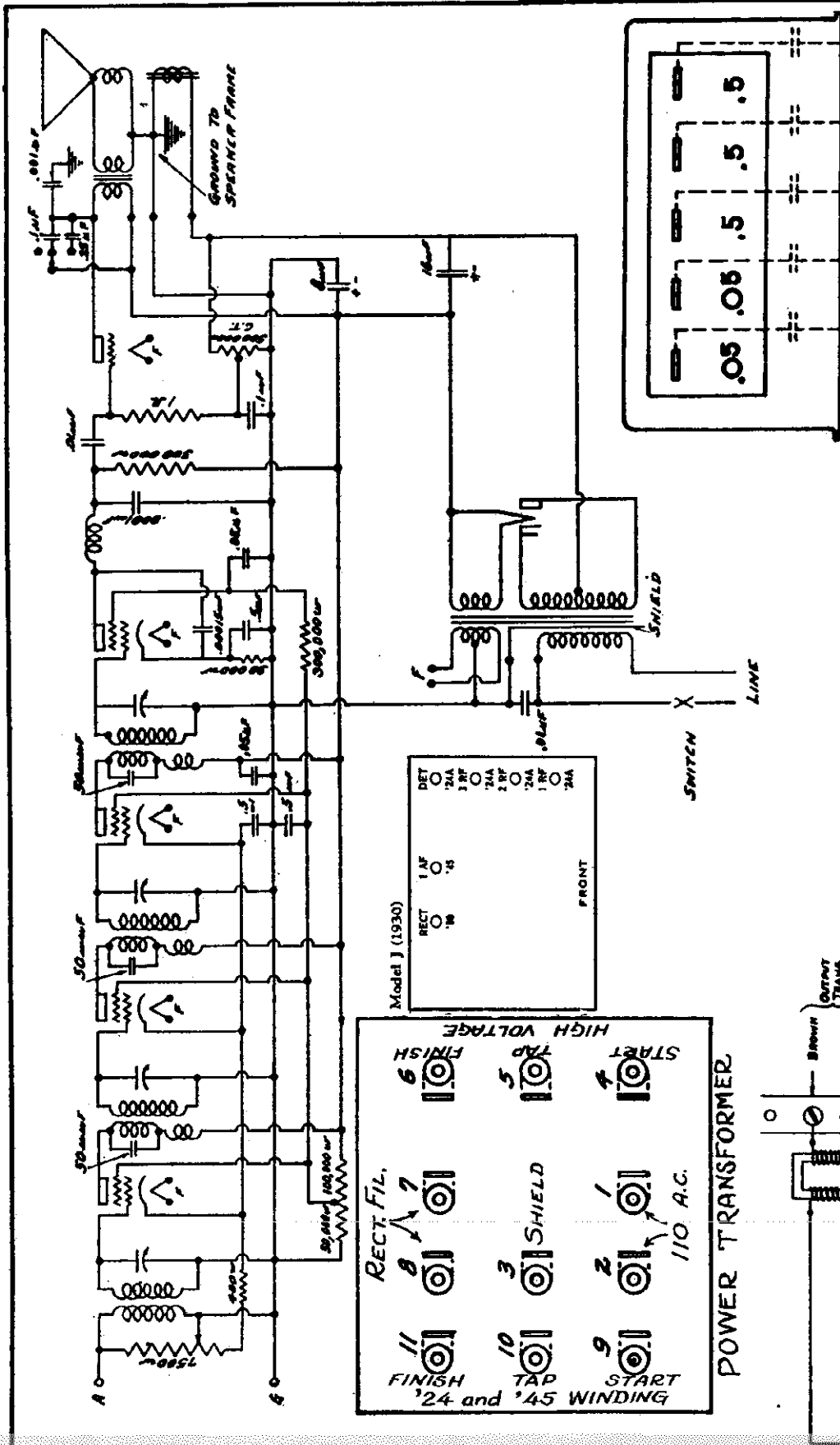
100,000

100

1500 W

MODEL "J"
Schematic

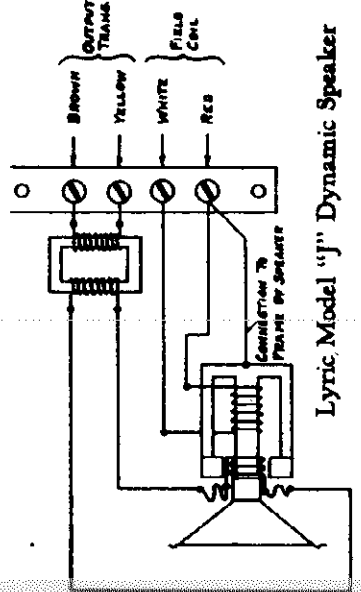
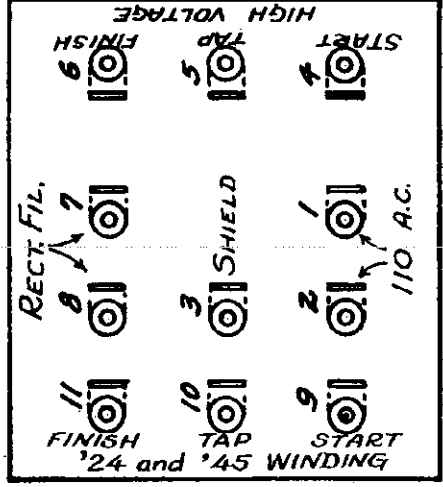
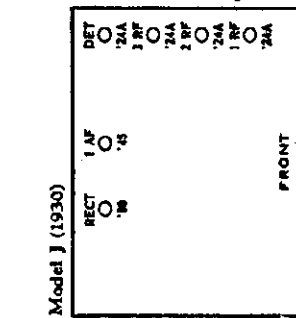
ALL-AMERICAN MOHAWK CORP.



By-Pass Condenser Y-1247-R.
One Side Each Section to Can.

DIAGRAM OF LYRIC MODEL "J" CHASSIS

Model "J" Chassis



ALL-AMERICAN MOHAWK CORP.

MODEL "J"
Data

Model "J" Chassis

TECHNICAL DATA

The following table shows normal voltages to be found on the LYRIC A. C. Model "J" receiver:

Type of Tube	Position of Tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
'24	1 RF	2.25	2.5	250	70	
'24	2 RF	2.25	2.5	250	70	
'24	3 RF	2.25	2.5	250	70	
'24	DET	2.25	3.0	180*	60*	
'45	AUD	2.25		250		-50*
'80	RECT	4.8		360 A.C.		

*Due to the high resistance of the circuit, these voltages can only be accurately measured with an electrostatic voltmeter.

The voltages tabulated above are standard under the following conditions:--

1. Line voltage 114.
2. Volume control in full on position.
3. Antenna disconnected so that no signal is received.
4. Measurements made with a 1000 ohm per volt voltmeter.
5. Except where a minus sign precedes the value, the negative side of the instrument is to be connected to the chassis pan.
6. Tested tubes are used.

Slight variation in voltages will be experienced due to manufacturing tolerance on both the parts of the set and the tubes.

RESISTOR VALUES AND COLOR CODING

Each resistance unit in this set has a distinguishing color code to designate its resistance and current handling capacity. It is recommended that when ordering resistors for replacement purposes, they be specified by colors, resistance and their position in the circuit. This will prevent any possibility of errors.

Resistance	Limits	Watts	Color Code
400 ohms (Wire Wound)	390- 410	1	None
30,000 ohms	27,000- 33,000	1	White or Orange-black-orange
150,000 ohms	135,000- 165,000	1	Violet-green-orange or Brown-green-yellow
300,000 ohms	270,000- 330,000	1	Orange-green end or Orange-black-yellow
500,000 ohms	450,000- 550,000	1	Red-green-yellow or Green-black-yellow
1,000,000 ohms	750,000- 1,250,000	1	Black-red end or Brown-black-green

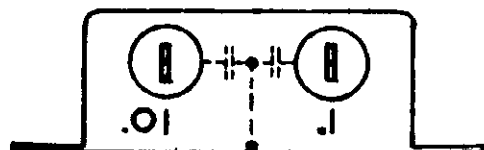
The color coding listed above is in accordance with R. M. A. standards wherever possible. The first color indicates the body, the second the end and the third the band or dot.

FIXED CONDENSER VALUES AND COLOR CODING

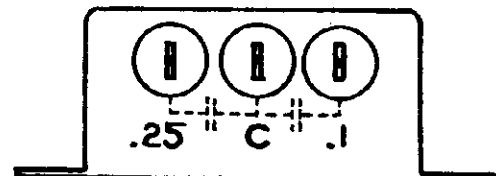
The small condensers in this chassis are color coded and should be ordered the same way as resistors.

Capacitance	Limits	Color Code
.00005 mfd.	.000045-.000055	Grey Dot
.0001	.00009-.00011	Purple Dot
.00015	.000135-.000165	Yellow Dot
.001	.0009-.0011	Blue Dot
.01	.009-.011	None

Diagrams show the connections of the various tone control and by-pass condenser blocks. The electrolytic condensers may be distinguished by the diameters of their cans. The 16 mfd. unit is in a 2½" container while the 8 mfd. unit is in a 1½" container.



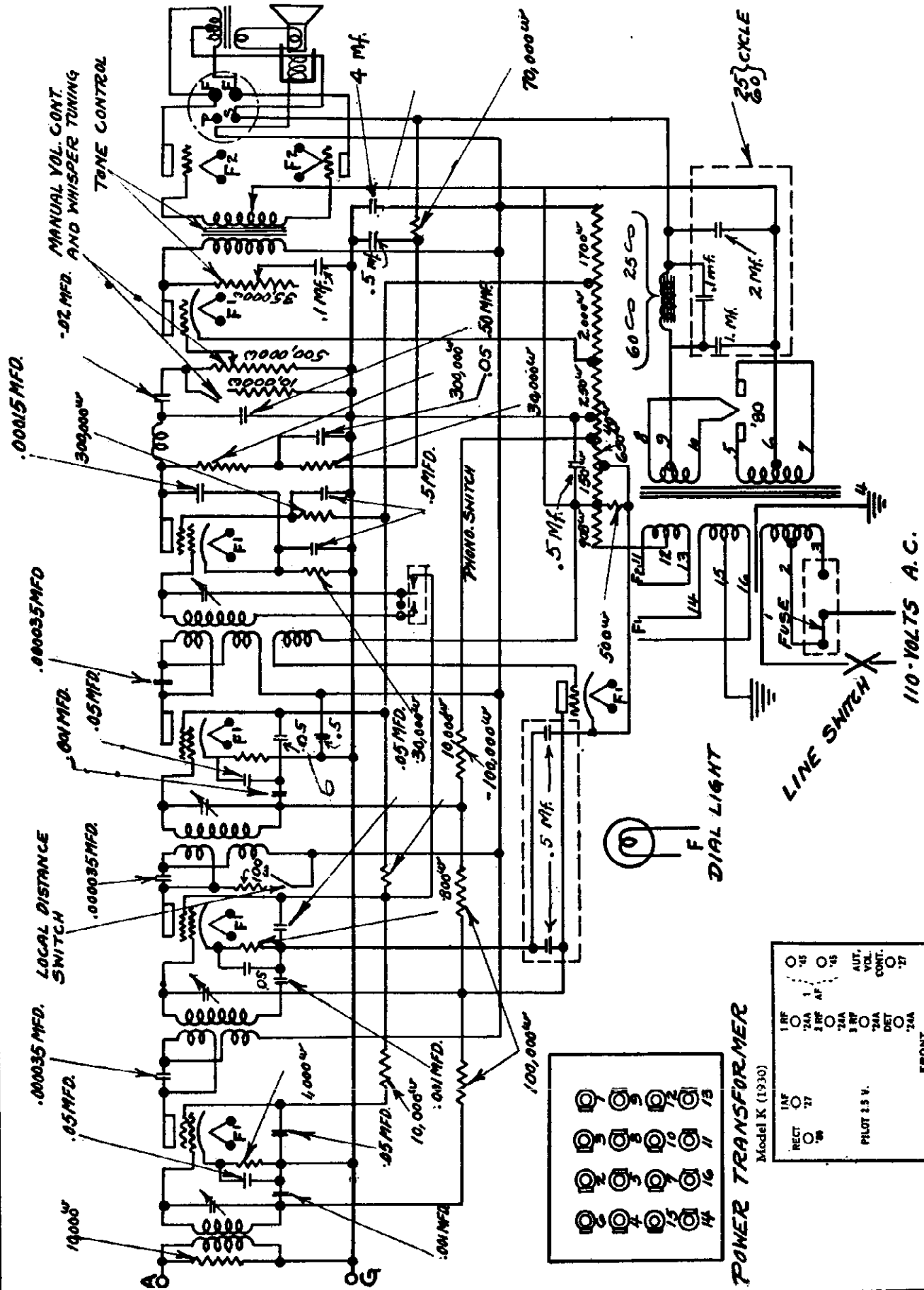
Aux. By-Pass Condenser Y-1276-R.
One Side Each Section to Can.



Tone Control Condenser Y-1279-R.
One Side Each Section to Central Lug.

MODEL "K"

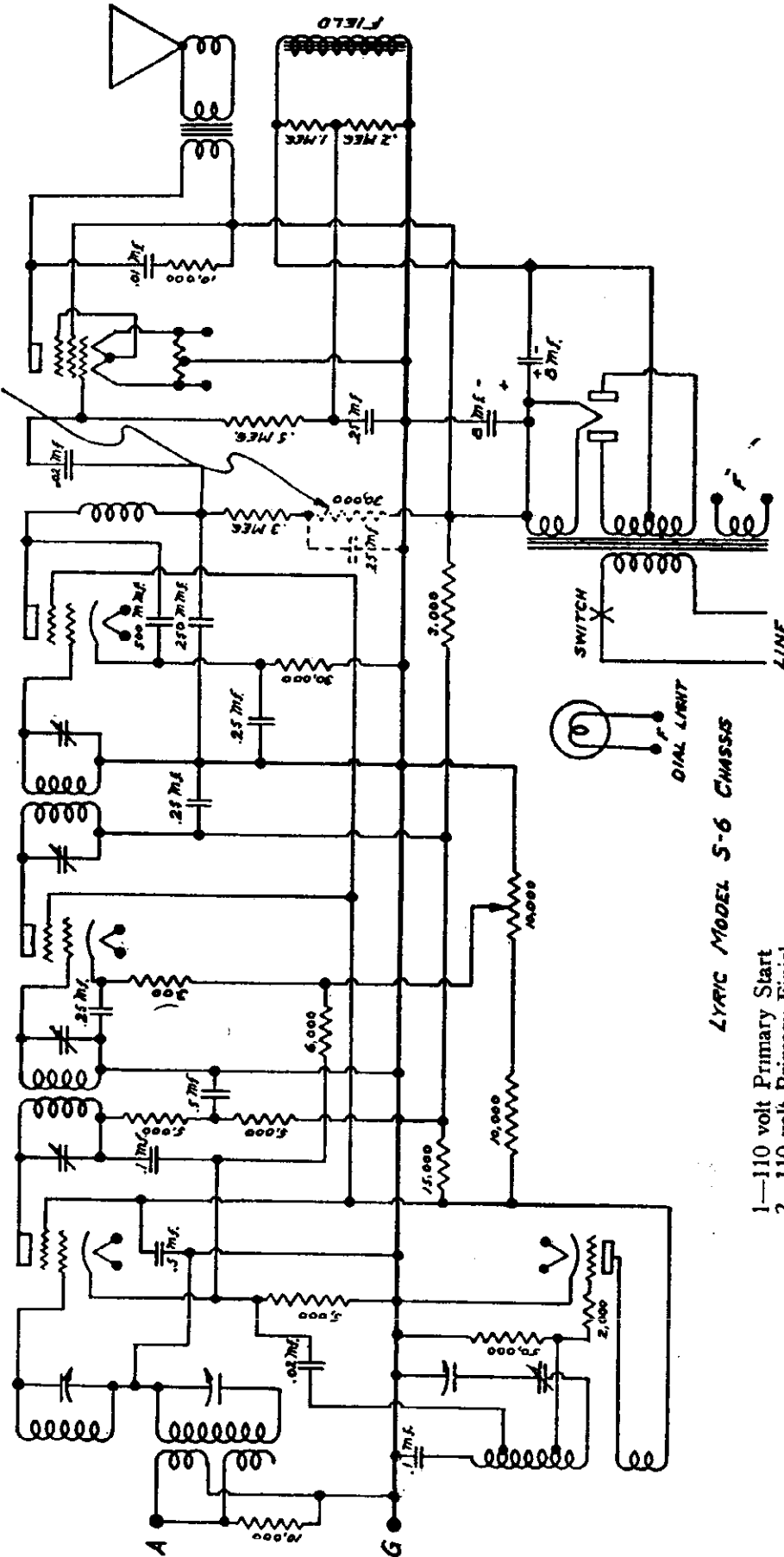
ALL-AMERICAN MOHAWK CORP.



ALL-AMERICAN MOHAWK CORP.

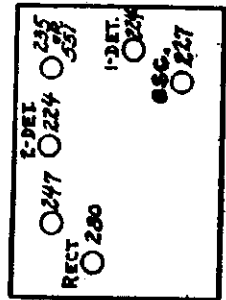
MODEL S-6
Chassis

DOTTED LINES REPRESENT
CHANGE IN EFFECT AFTER
SERIAL NUMBER 1,402,550



LYRIC MODEL S-6 CHASSIS

- 1—110 volt Primary Start
- 2—110 volt Primary Finish
- 3—Shield
- 4—High Voltage Secondary Start
- 5—High Voltage Secondary Tap
- 6—High Voltage Secondary Finish
- 7—'80 Filament Winding Start
- 8—'80 Filament Winding Finish
- 9—Heater Winding Start
- 10—Heater Winding Finish
- 11—No Connection



POWER TRANSFORMER

FRONT

MODEL S-6
Data

ALL-AMERICAN MOHAWK CORP.

Model S-6

TECHNICAL DATA

Resistors:

All carbon resistors used in these chassis are color coded in accordance with the R.M.A. code.

Resistance	Color	Capacity	Tolerance	Part No.
300 ohms	Orange-black-brown	1/3 watt	10%	14-1773
2,000 ohms	Red-black-red	1/3 watt	10%	14-1806
3,000 ohms	Orange-black-red	1 watt	10%	14-1498
5,000 ohms	Green-black-red	1/3 watt	10%	14-1600
6,000 ohms	Blue-black-red	1/3 watt	10%	14-1502
10,000 ohms	Brown-black-orange	1/3 watt	10%	14-1599
15,000 ohms	Brown-green-orange	3 watt	10%	14-1745
30,000 ohms	Orange-black-orange	1/3 watt	10%	14-1555
50,000 ohms	Green-black-orange	1/3 watt	10%	14-1544
100,000 ohms	Brown-black-yellow	1/3 watt	10%	14-1541
200,000 ohms	Red-black-yellow	1/3 watt	10%	14-1730
300,000 ohms	Orange-black-yellow	1/3 watt	10%	14-1556
500,000 ohms	Green-black-yellow	1/3 watt	10%	14-1531

One-third watt resistors are approximately 3/4" long x 1/4" diameter.

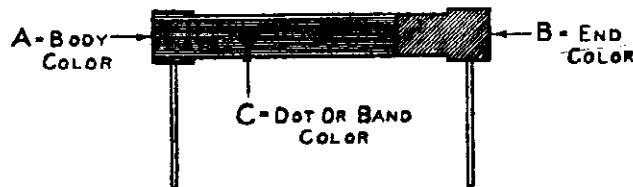
One watt resistors are approximately 1 1/4" long x 1/4" diameter.

Three watt resistors are approximately 1 3/4" long x 3/8" diameter.

RESISTOR COLOR CODE

All resistors on LYRIC Model "S" receivers have their resistance value indicated by the RMA Color Code which is described below.

C—Dot or band color denotes number of zeros following second significant figure.



0—Black	5—Green
1—Brown	6—Blue
2—Red	7—Violet
3—Orange	8—Grey
4—Yellow	9—White

A few samples of this code are given below.

Body Color	End Color	Dot Color	Resistance
Orange	Black	Yellow	300,000 ohms
Brown	Green	Orange	15,000 ohms
Violet	Green	Red	7,500 ohms
Orange	Black	Brown	300 ohms

A—Body color denotes first significant figure.
B—End color denotes second significant figure.

Condensers:

Fixed mica condensers used in these receivers are color coded to indicate capacity.

Capacity	Color	Tolerance	Part Number
.0005 Mfd.	Green, Black, Brown	10%	14-1186

Paper bypass condensers used in these receivers are of the cub type and are plainly marked to show capacity. In addition each unit carries a distinguishing color dot indicating the voltage rating as listed below:

Voltage	Color
200	Green dot or label
400	Red dot or label
600	Yellow dot or label

Normal Working Voltages:

- Line voltage 115 volts.
- Volume control in full "ON" position.
- Antenna disconnected so that no signal is received.
- Measurements made with 1000 ohm per volt meter.
- Except where a minus sign precedes the reading the NEGATIVE SIDE OF THE INSTRUMENT IS TO BE CONNECTED TO THE CHASSIS PAN.
- Tested tubes are used.

In a normal receiver all voltages will be within 5% of the values listed below:—

Position of tube	Type of tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
1st Det.	-24	2.5	4.2	185	70	0
Oscillator	-27	2.5	0	70		0
I.F. Amp.	-51 or -35	2.5	1.8	195	70	0
2nd Det.	-24	2.5	4.5	195**	70	0
Output	-47	2.5		225	245 (note)	-17**

Speaker Field Current—49 M.A.

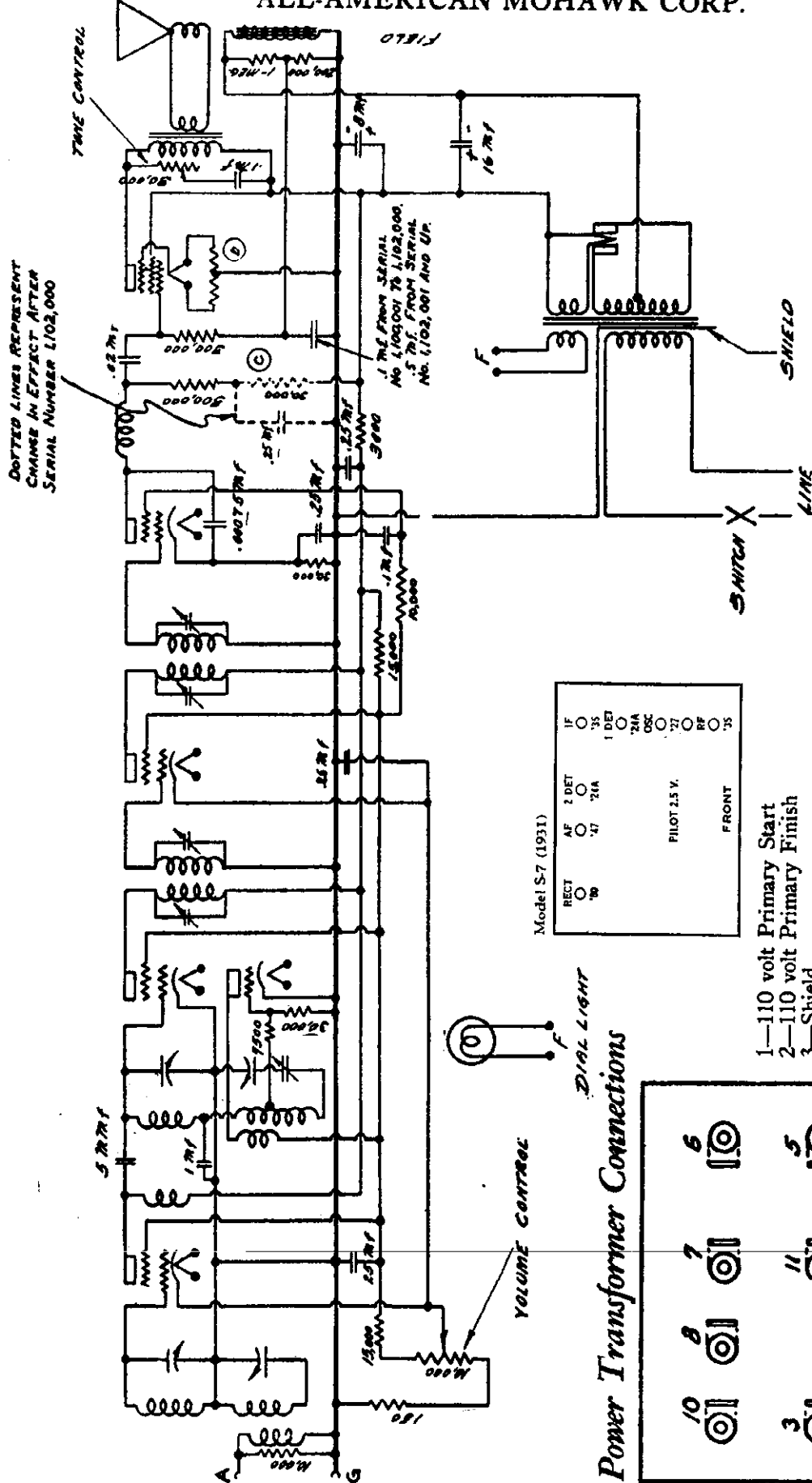
Note—Screen of pentode is connected to cathode pin on socket.

** Owing to the high resistance of the circuit these voltages can be measured accurately only with an electrostatic voltmeter.

ALL-AMERICAN MOHAWK CORP.

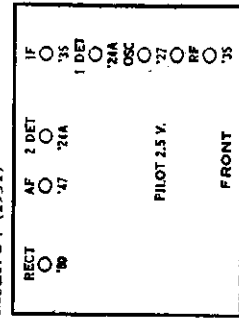
MODEL S-7

PEAK FREQUENCY = 175 KC.

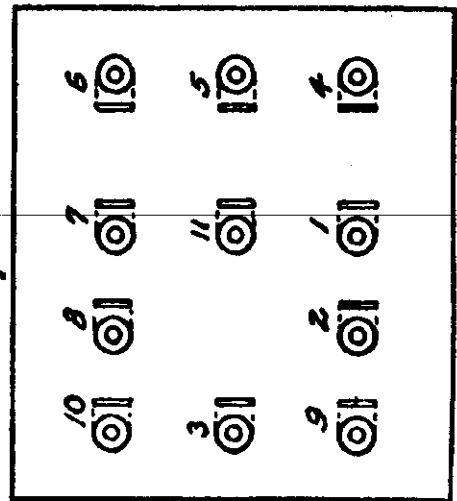


Model S-7 Receiver

Model S-7 (1931)



Power Transformer Connections



- 1—110 volt Primary Start
- 2—110 volt Primary Finish
- 3—Shield
- 4—High Voltage Secondary Start
- 5—High Voltage Secondary Tap
- 6—High Voltage Secondary Finish
- 7—'80 Filament Winding Start
- 8—'80 Filament Winding Finish
- 9—Heater and '47 Filament Winding Start
- 10—Heater and '47 Filament Winding Finish
- 11—No Connection

MODEL S-7

Data

ALL-AMERICAN MOHAWK CORP.

Model S-7

TECHNICAL DATA

Resistors:

All carbon resistors used in these chassis are color coded in accordance with the R.M.A. code. In the following table the nominal resistance, power capacity, test limits, color marks and part numbers are listed.

Resistance	Color	Capacity	Tolerance	Part No.
150 ohms	Brown-green-brown	1/3 watt	10%	11-1760 or 11-1603
3,000 ohms	Orange-black-red	2 watt	10%	11-1759
4,500 ohms	Yellow-green-red	1/3 watt	10%	11-1542
7,500 ohms	Violet-green-red	1/3 watt	10%	11-1642
10,000 ohms	Brown-black-orange	1/3 watt	10%	11-1599
15,000 ohms	Brown-green-orange	1/3 watt	10%	11-1601
15,000 ohms	Brown-green-orange	2 watt	10%	11-1745
30,000 ohms	Orange-black-orange	1/3 watt	10%	11-1555
200,000 ohms	Red-black-yellow	1/3 watt	10%	11-1730
300,000 ohms	Orange-black-yellow	1/3 watt	10%	11-1556
500,000 ohms	Green-black-yellow	1/3 watt	10%	11-1531

One-third watt resistors are approximately 3/4" long by 1/4" in diameter.

One watt resistors are approximately 1 1/4" long by 1/4" in diameter.

Two watt resistors are approximately 1 1/4" long by 3/8" in diameter.

Condensers:

Fixed mica condensers used in these receivers are color coded to indicate capacity. In the following table nominal capacity, test limits, color code and part number are listed.

Capacity	Color	Tolerance	Part Number
.00075 Mfd.	Violet, Green, Brown	10%	11-1801
5 m. mfd.	Black, Green, Black	10%	11-1595

Paper bypass condensers used in these receivers are of the cub type and are plainly marked to show capacity. In addition each unit carries a distinguishing color dot indicating the voltage rating as listed below.

Voltage	Color
200	Green dot or label
400	Red dot or label
600	Yellow dot or label

Normal Working Voltages:

- Line voltage 115 volts.
- Volume control in full "ON" position.
- Antenna disconnected so that no signal is received.
- Measurements made with 1000 ohm per volt meter.
- Except where a minus sign precedes the reading the NEGATIVE SIDE OF THE INSTRUMENT IS TO BE CONNECTED TO THE CHASSIS PAN.
- Tested tubes are used.

In a normal receiver all voltages will be within 5% of the values listed below:

Position of tube	Type of tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
R.F. Amp.	-51 or 35	2.50 A. C.	2.00	195.0	70.0	0
1st Det.	-24	2.50 A. C.		195.0	70.0	0
Oscillator	-27	2.50 A. C.	0	70.0		0
I.F. Amp.	-51 or 35	2.50 A. C.	2.00	195.0	70.0	0
2nd. Det.	-24	2.50 A. C.	4.50	168.0 **	70.0	0
Output	-47	2.50 A. C.		230.0	250.0 (note)	-17.0**
Rectifier	-80	5.00 A. C.		350.0 A. C.		

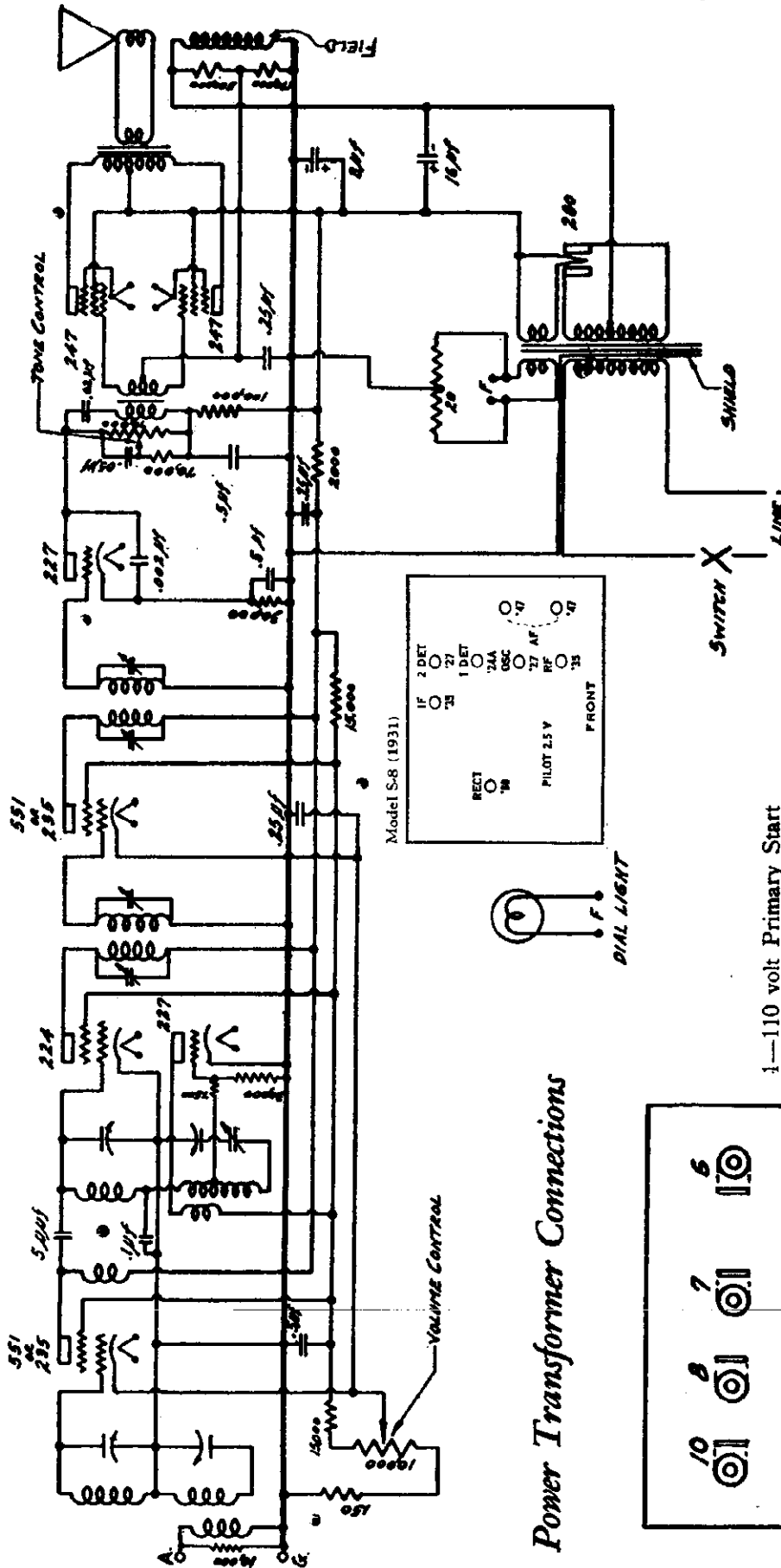
Speaker field current—57 M. A.

** Owing to the high resistance of the circuit these voltages can be measured accurately only with an electrostatic voltmeter
 Note—Screen of pentode is connected to cathode pin on socket.

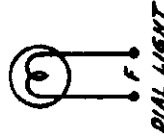
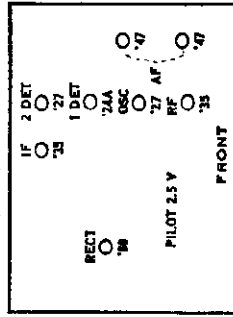
ALL-AMERICAN MOHAWK CORP.

MODEL S-8

PEAK FREQUENCY = 176 KC.



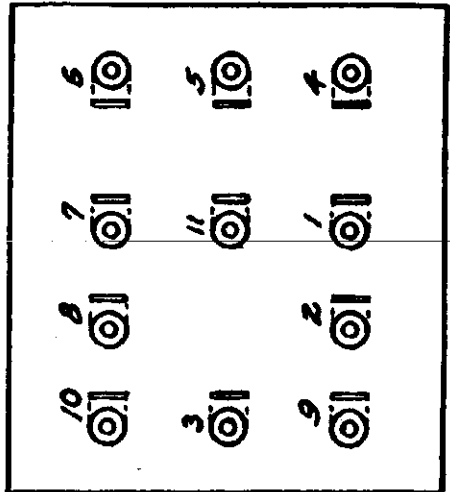
Model S-8 (1931)



Model S-8 Receiver

- 1—110 volt Primary Start
- 2—110 volt Primary Finish
- 3—Shield
- 4—High Voltage Secondary Start
- 5—High Voltage Secondary Tap
- 6—High Voltage Secondary Finish
- 7—'80 Filament Winding Start
- 8—'80 Filament Winding Finish
- 9—Heater and '47 Filament Winding Start
- 10—Heater and '47 Filament Winding Finish
- 11—No Connection

Power Transformer Connections



MODEL S-8
Data

ALL-AMERICAN MOHAWK CORP

Model S-8

TECHNICAL DATA

Resistors:

All carbon resistors used in these chassis are color coded in accordance with the R.M.A. code. In the following table the nominal resistance, power capacity, test limits, color marks and part numbers are listed.

Resistance	Color	Capacity	Tolerance	Part No.
150 ohms	Brown-green-brown	1/3 watt	10%	12-1603 or 12-1760
2,000 ohms	Red-black-red	3 watt	10%	12-1777
7,500 ohms	Violet-black-red	1/3 watt	10%	12-1642
10,000 ohms	Brown-black-orange	1/3 watt	10%	12-1599
15,000 ohms	Brown-green-orange	1/3 watt	10%	12-1601
15,000 ohms	Brown-green-orange	3 watt	10%	12-1745
30,000 ohms	Orange-black-orange	1/3 watt	10%	12-1555
70,000 ohms	Violet-black-orange	1/3 watt	10%	12-1558
100,000 ohms	Brown-black-yellow	1/3 watt	10%	12-1614
170,000 ohms	Brown-violet-yellow	1/3 watt	10%	12-1734
500,000 ohms	Green-black-yellow	1/3 watt	10%	12-1531

One-third watt resistors are approximately 3/4" long by 1/4" in diameter.

One watt resistors are approximately 1 1/4" long by 1/4" diameter.

Three watt resistors are approximately 1 3/4" long by 3/8" in diameter.

Condensers:

Fixed mica condensers used in these receivers are color coded to indicate capacity. In the following table nominal capacity, test limits, color code and part numbers are listed.

Capacity	Color	Tolerance	Part Number
5 m. mfd.	Black, Green, Black	10%	12-1595
.002	Red, Black, Red	10%	12-1625

Paper bypass condensers used in these receivers are of the cub type and are plainly marked to show capacity. In addition each unit carries a distinguishing color dot indicating the voltage rating as listed below.

Voltage	Color
200	Green dot or label
400	Red dot or label
600	Yellow dot or label

Part numbers for these units are given on the schematic diagram at the end of the manual.

Normal Working Voltages:

1. Line voltage 115 volts.
2. Volume control in full "On" position.
3. Antenna disconnected so that no signal is received.
4. Measurements made with 1000 ohm per volt meter.
5. Except where a minus sign precedes the reading the NEGATIVE SIDE OF THE INSTRUMENT IS TO BE CONNECTED TO THE CHASSIS PAN.
6. Tested tubes are used.

In a normal receiver all voltages will be within 5% of the values listed below:—

Position of tube	Type of tube	Filament Voltage	Cathode Voltage	Plate Voltage	Screen Voltage	Grid Voltage
R.F. Amp.,	-51 or -35	2.5 A. C.	2.1	200	70	0
1st Det.	-24	2.5 A. C.		205	70	0
Oscillator	-27	2.5 A. C.	0	70		0
I.F. Amp.	-51 or -35	2.5 A. C.	2.1	200	70	0
2nd Det.	-24	2.5 A. C.	10	125		0
Output	-47	2.5 A. C.		235	250 (note)	-17.0**

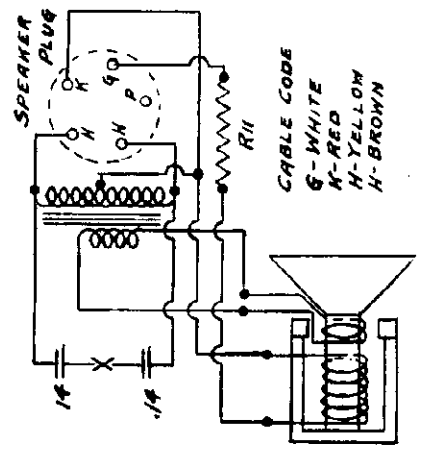
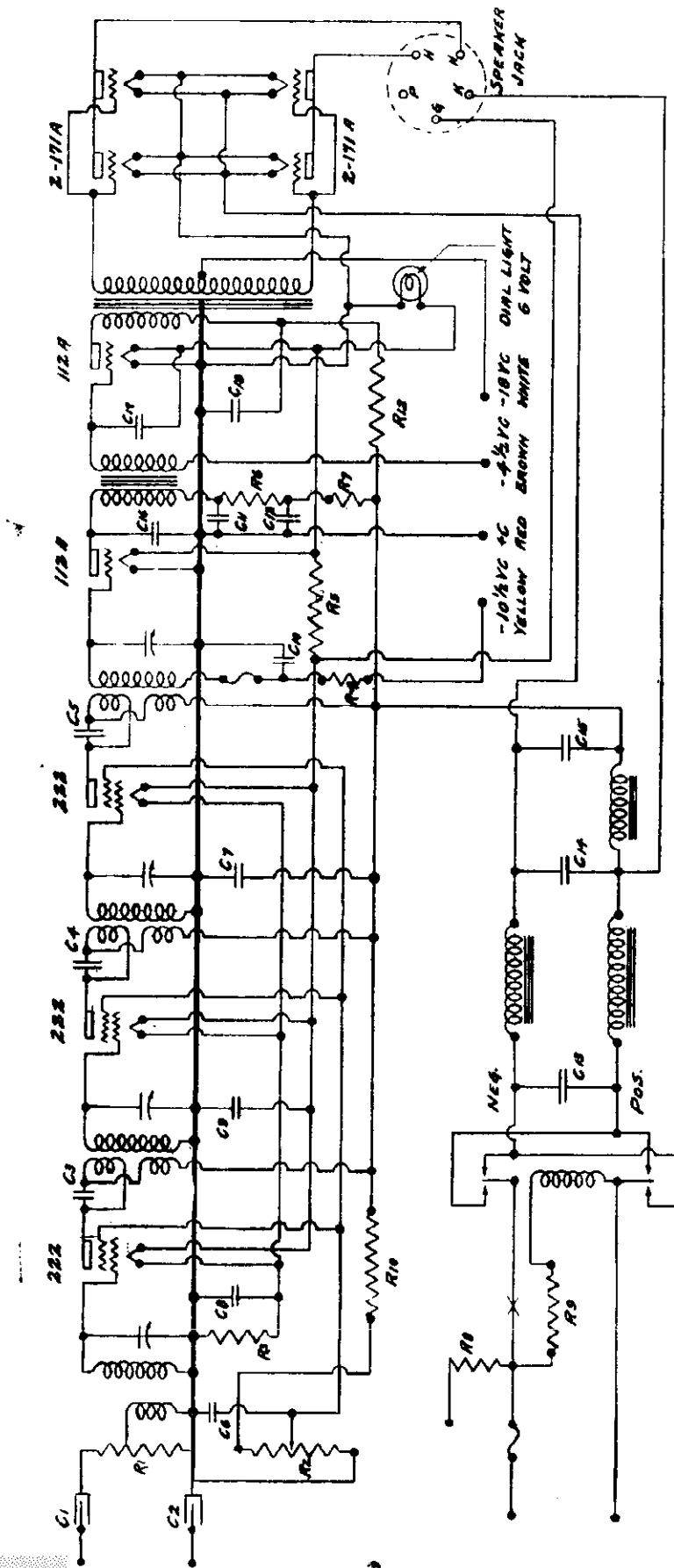
Speaker field current—91 M.A.

Note—Screen of pentode is connected to cathode pin on socket.

**Owing to the high resistance of the circuit these voltages can be measured accurately only with an electrostatic voltmeter.

ALL-AMERICAN MOHAWK CORP

MODEL - DC



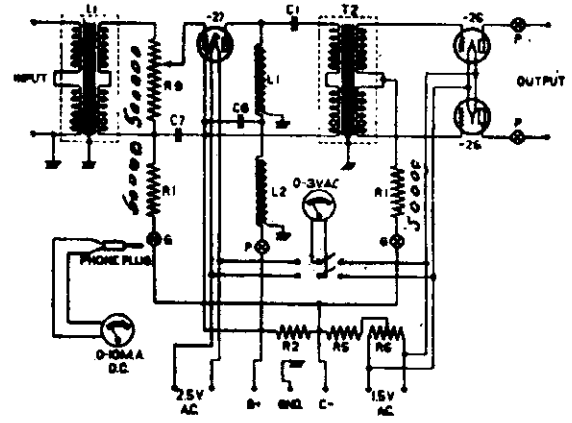
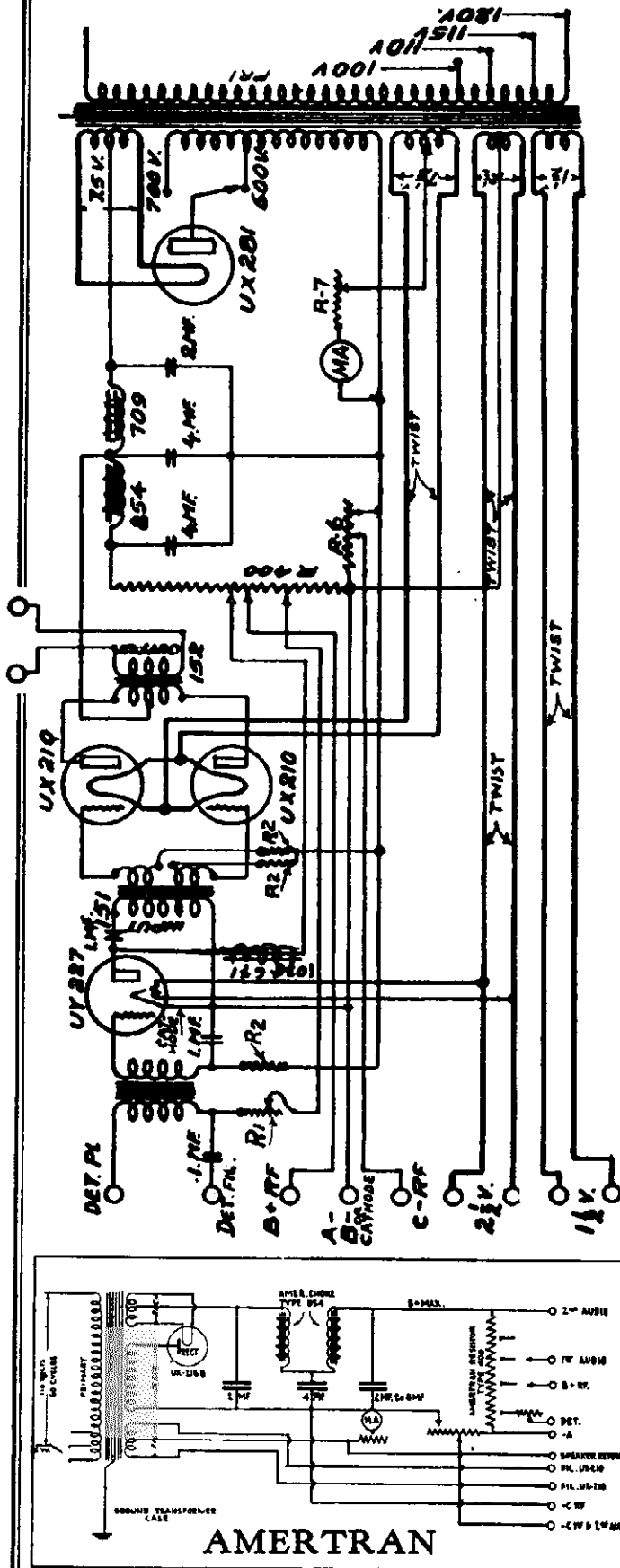
- R1 10000 w VOLUME CONTROL
- R2 3500 w WIRE WOUND
- R3 86 w WIRE WOUND
- R4 10000 w CARBON
- R5 2.25 w WIRE WOUND
- R6 4500 w CARBON
- R7 4500 w CARBON
- R8 10 w VITREOUS ENAMELLED (IN CHASSIS)
- R9 700 w CARBON
- R10 4500 w CARBON
- R11 85 w VITREOUS ENAMELLED (ON SPEAKER)
- R12 2400 w CARBON

- C1 .02 uf
- C2 .05 uf
- C3 .38 uf
- C4 .35 uf
- C5 .35 uf
- C6 .5 uf
- C7 .5 uf
- C8 .5 uf
- C9 .05 uf
- C10 .1 uf (2.05k IN PARALLEL)
- C11 .1 uf (2.5k IN PARALLEL)
- C12 .5 uf
- C13 1.0 uf
- C14 8 uf (ELECTROLYTIC)
- C15 8 uf (ELECTROLYTIC)
- C16 .001 uf
- C17 .0025 uf
- C18 .5 uf

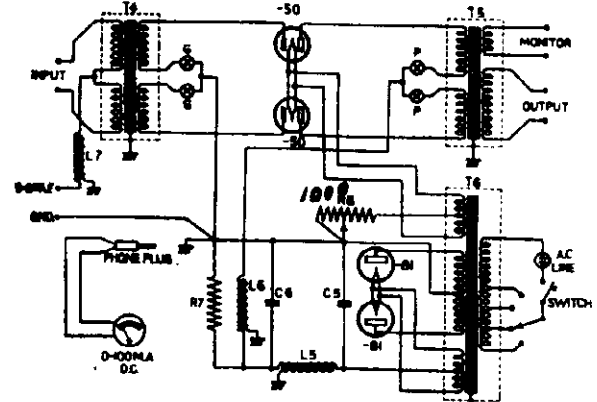
SCHEMATIC DIAGRAM - DC CHASSIS 11-4-30

CABLE CODE
G-WHITE
H-RED
H-YELLOW
H-BROWN

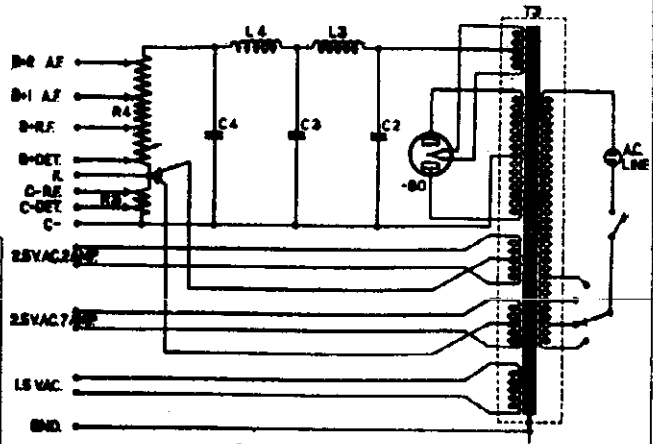
AMERICAN TRANSFORMER CO. MODEL 25-A Amp'ier



25-A Power Amplifier (A Unit)



25-A Power Amplifier (PA Unit)

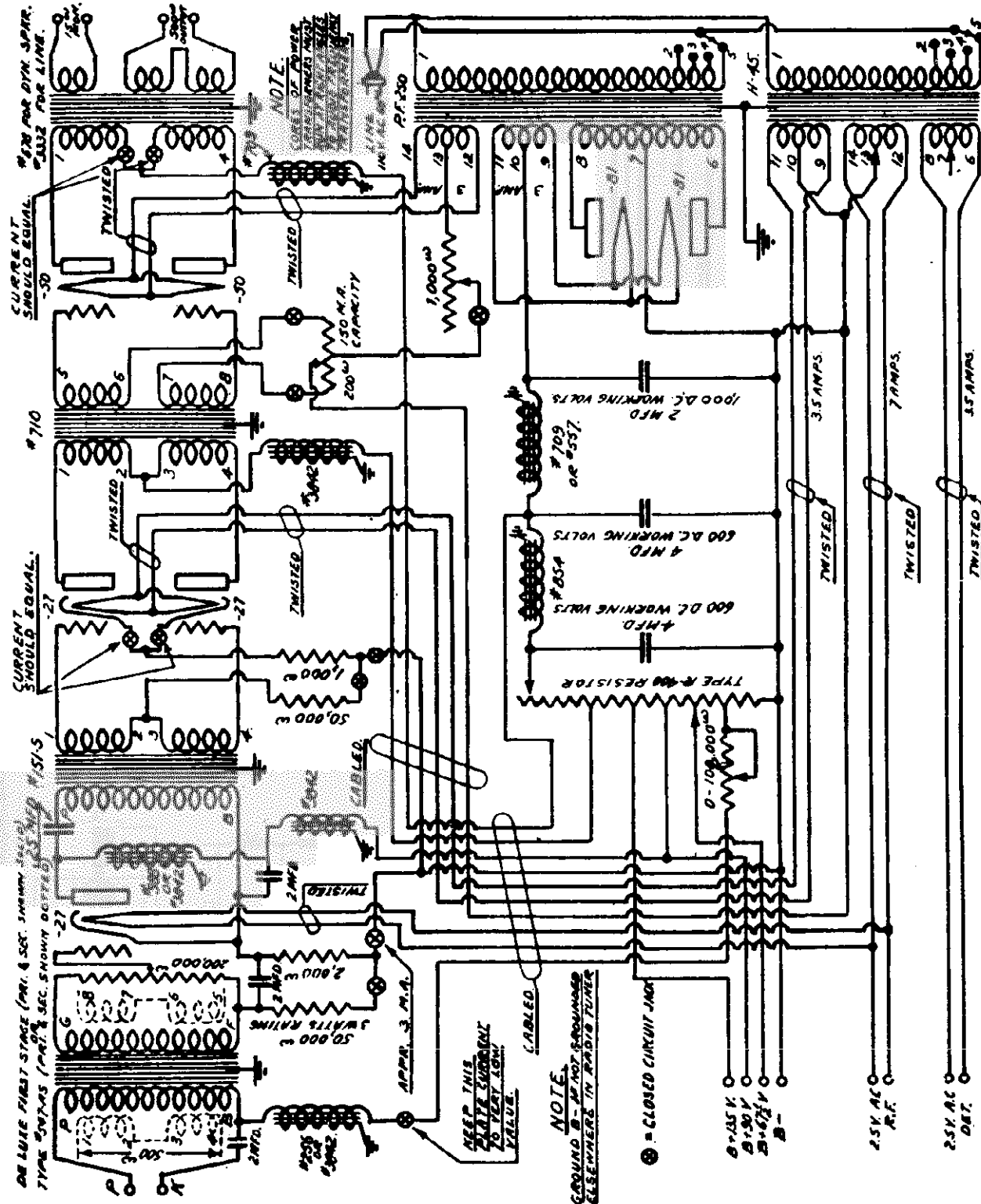


25-A Power Amplifier (P Unit)

AMERTRAN

MODEL 250 Amertran
Power Amplifier

AMERICAN TRANSFORMER CO.



NOTE: USE OF POWER TAP ON SECONDARY WINDING OF TRANSFORMERS IS NOT RECOMMENDED.

CURRENT SHOULD BE EQUAL.

ON LURE FIRST STAGE (PRI. & SEC. 3 AMP. 50,000 WATT) TYPE #710 (PRI. & SEC. SHOWN DETAIL) #515

NOTE: USE OF POWER TAP ON SECONDARY WINDING OF TRANSFORMERS IS NOT RECOMMENDED.

KEEP THIS PLATE CURRENT TO VERY LOW VALUE.

NOTE: GROUND B - DO NOT BOUNDER ELEMENTS IN RADIO TUNER

⊙ = CLOSED CIRCUIT JAG

0-15V
0-30V
0-67V

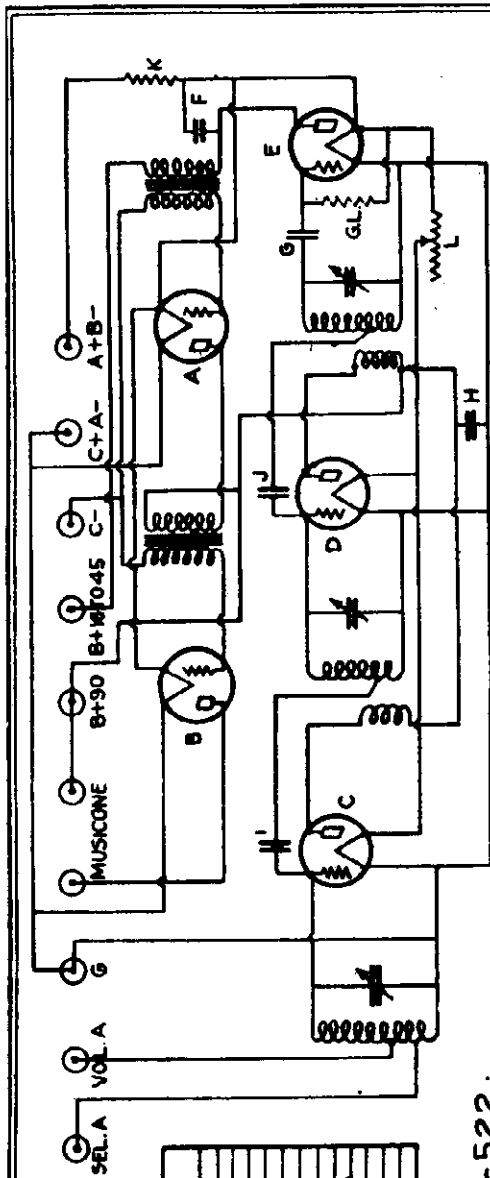
25V AC R.F.

25V AC DET.

250 POWER AMPLIFIER

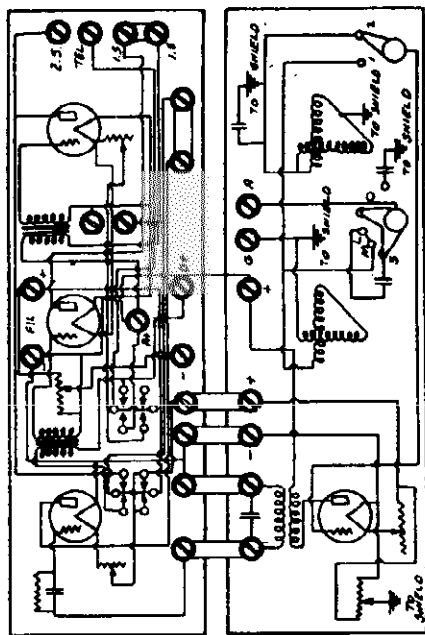
AMRAD CORPORATION

MODEL S-522
 MODEL 3500-1
 MODEL 3500-2



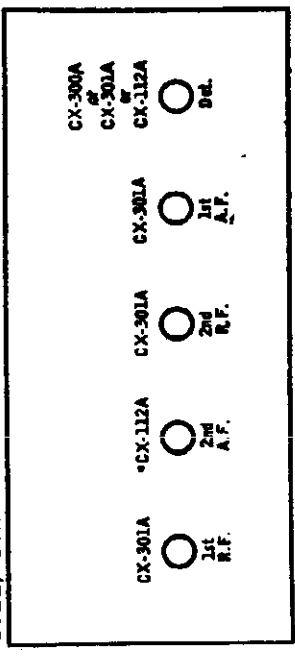
KEY	
A	1st Audio Stage
B	Detector
C	2nd Audio Stage
D	3rd Audio Stage
E	4th Audio Stage
F	5th Audio Stage
G	6th Audio Stage
H	7th Audio Stage
I	8th Audio Stage
J	9th Audio Stage
K	10th Audio Stage
L	11th Audio Stage
M	12th Audio Stage
N	13th Audio Stage
O	14th Audio Stage
P	15th Audio Stage
Q	16th Audio Stage
R	17th Audio Stage
S	18th Audio Stage
T	19th Audio Stage
U	20th Audio Stage
V	21st Audio Stage
W	22nd Audio Stage
X	23rd Audio Stage
Y	24th Audio Stage
Z	25th Audio Stage

S-522



INTERNAL WIRING OF DETECTOR & STAGE AMPLIFIERS 2634 AND BROADCAST TUNER 3475 AS VIEWED FROM FRONT OF INSTRUMENTS

S522, S522-C (Batt.)

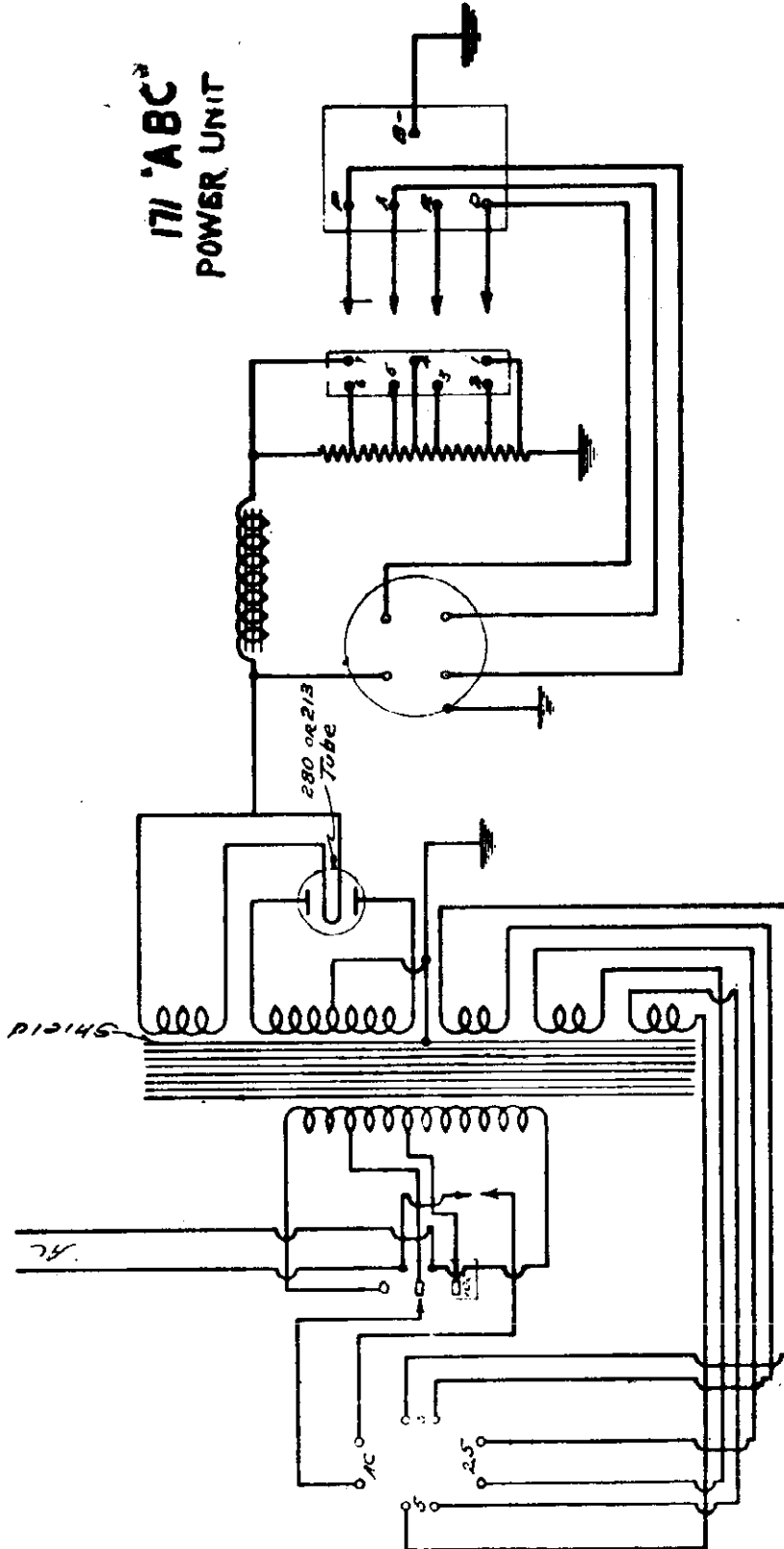


INTERNAL WIRING OF DETECTOR & STAGE AMPLIFIERS 2634 AND BROADCAST TUNER 3475 AS VIEWED FROM FRONT OF INSTRUMENT

3500-1

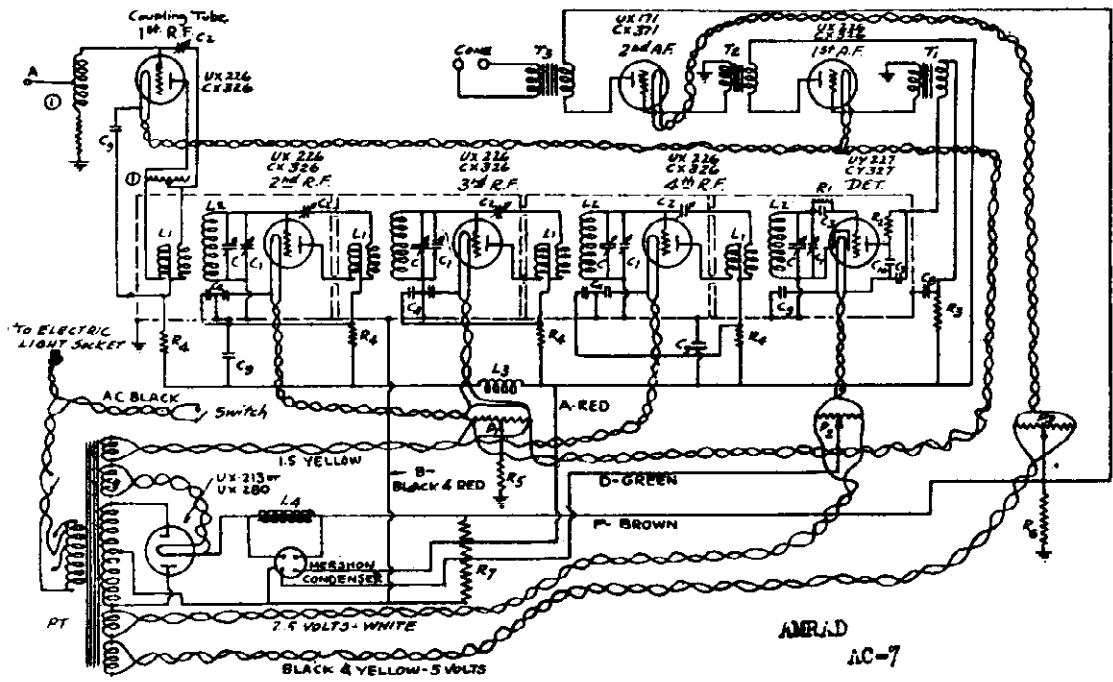
MODEL 171 ABC
Power Pack

AMRAD CORPORATION

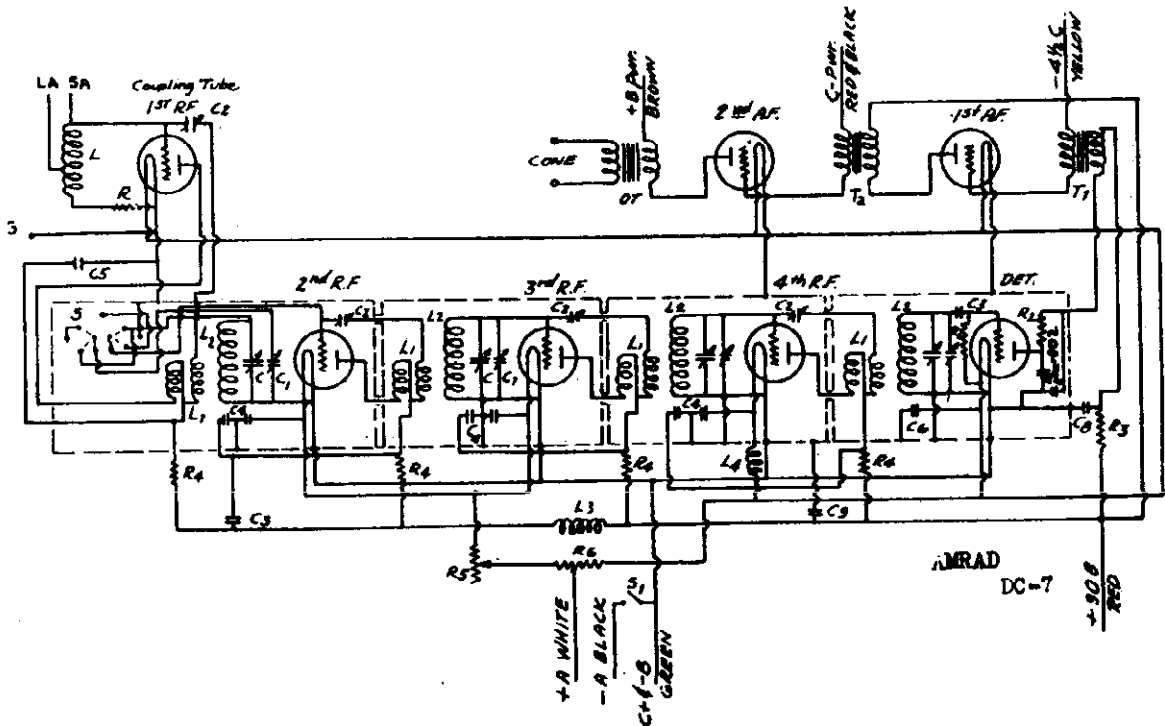


AMRAD CORPORATION

MODEL AC-7
MODEL DC-7

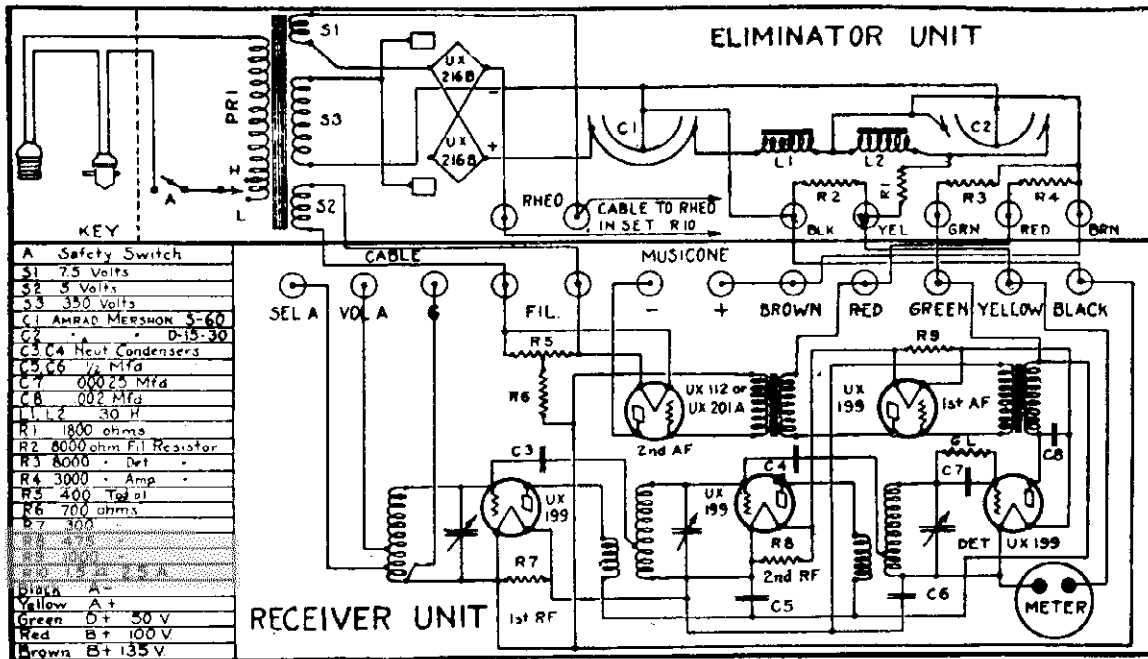


AC7, AC7-C				(A.C.) DC7, DC7-C				(D.C.)
CX-326	CX-371A	CX-326		CX-301A	CX-371A	CX-301A		
1st R.F.	2nd A.F.	1st A.F.		1st R.F.	2nd A.F.	1st A.F.		
CX-326	CX-326	CX-326	C-327	CX-301A	CX-301A	CX-301A	CX-301A or CX-300A	
2nd R.F.	2nd R.F.	4th R.F.	Det.	2nd R.F.	R.F.	4th R.F.	Det.	

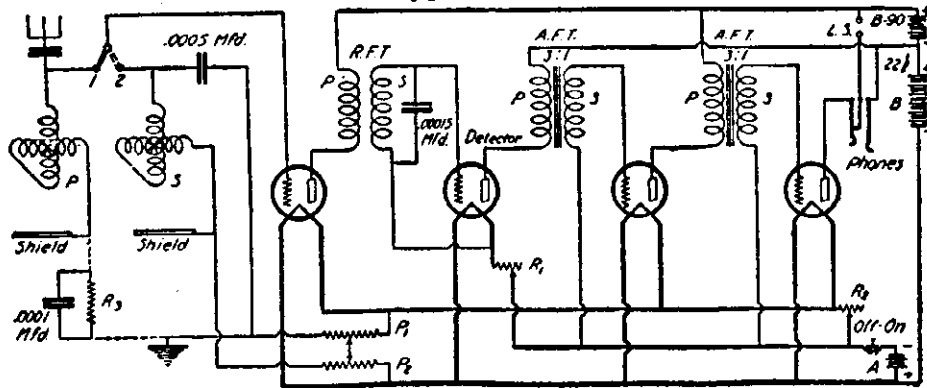


MODEL AC-5
 MODEL 80,82,83
 MODEL Inductrol

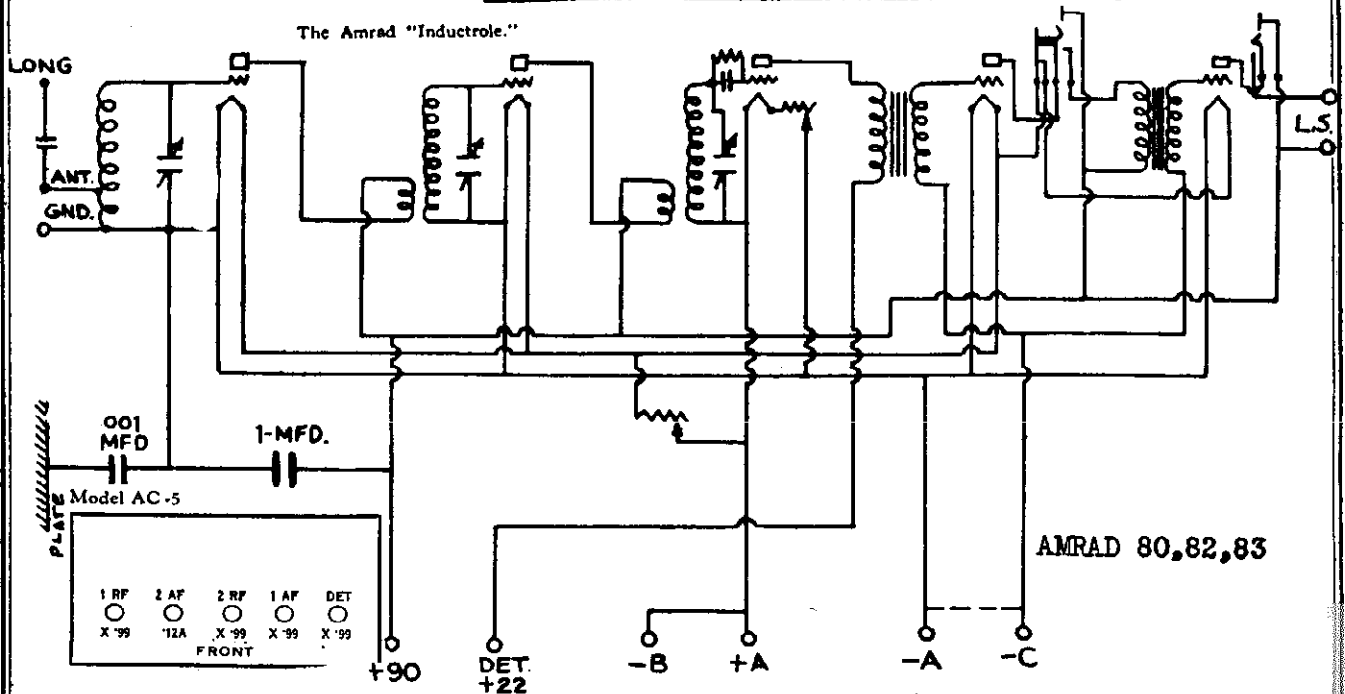
AMRAD CORPORATION



NEUTRODYNE. Type AC-5 and Power Unit.

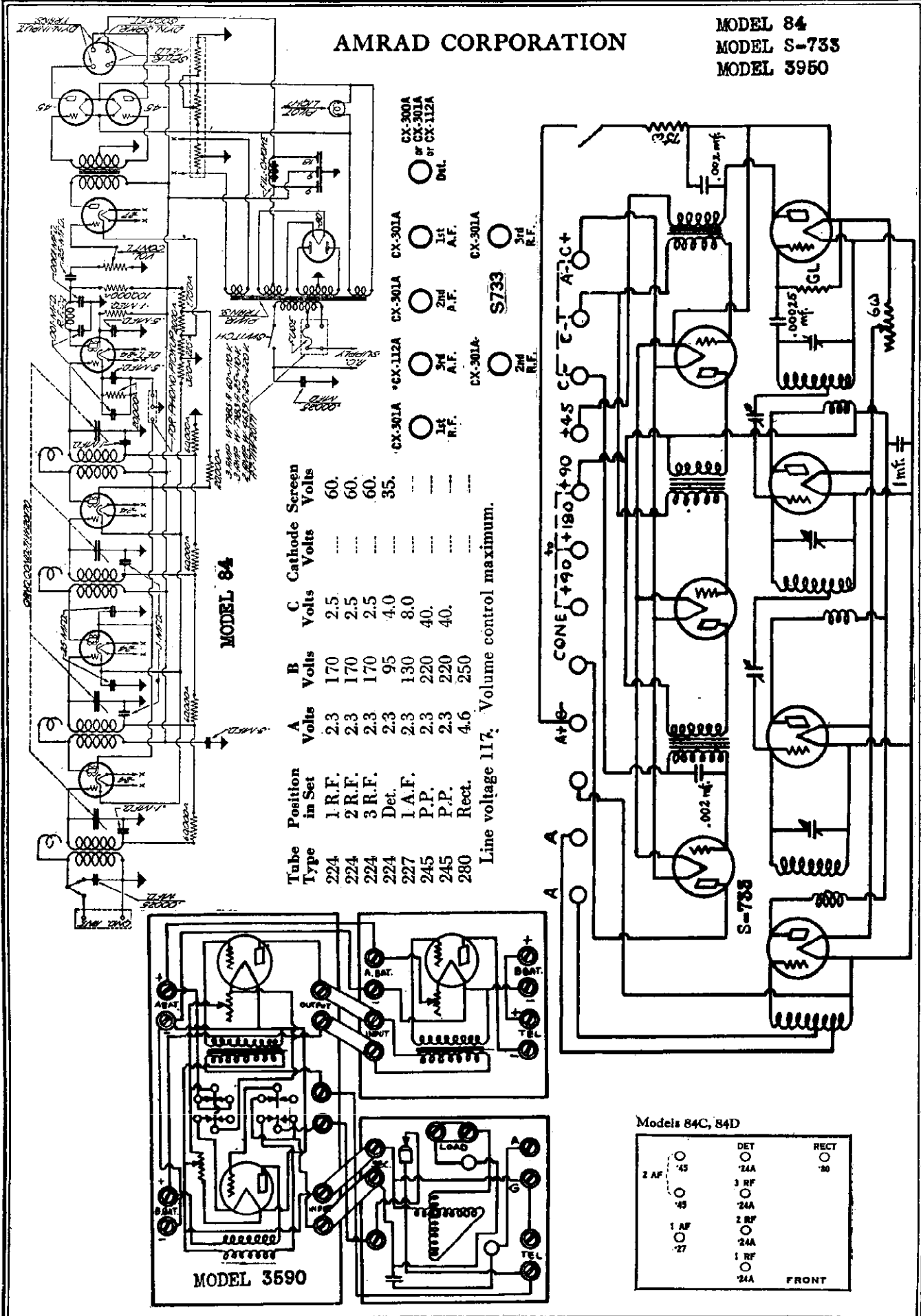


The Amrad "Inductrol."



AMRAD CORPORATION

MODEL 84
MODEL S-733
MODEL 3950

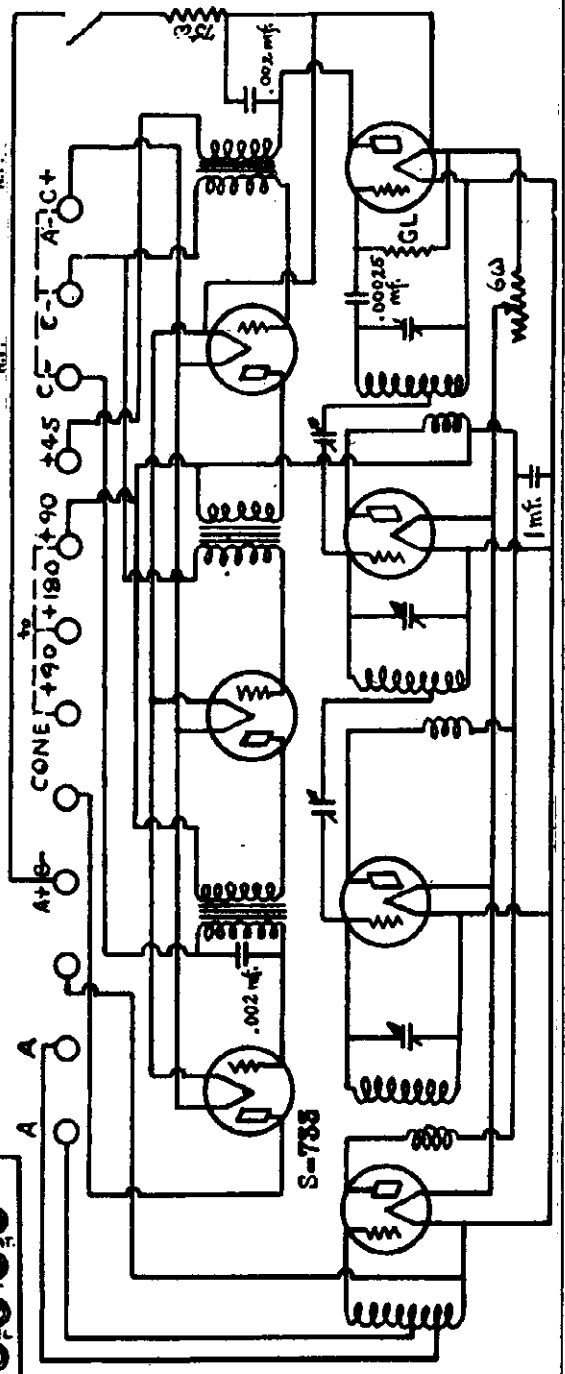
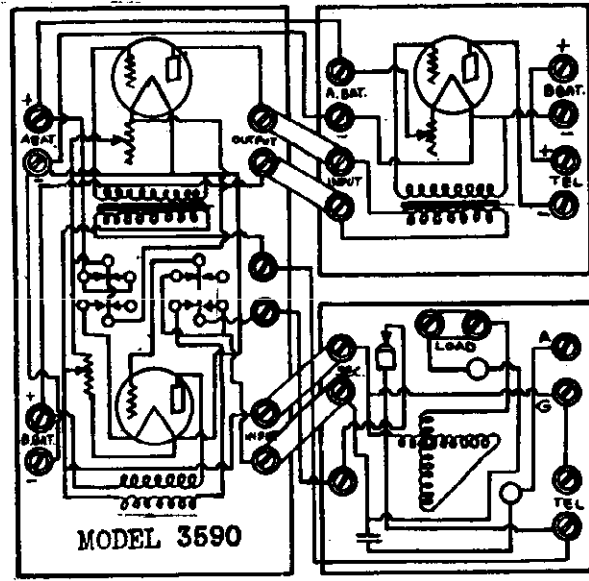


MODEL 84

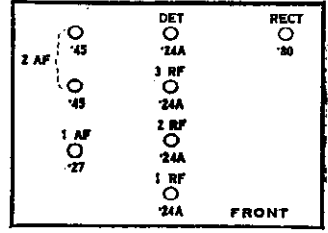
Tube Type	Position in Set	A Volts	B Volts	C Volts	Screen Volts
224	1 R.F.	2.3	170	2.5	60.
224	2 R.F.	2.3	170	2.5	60.
224	3 R.F.	2.3	170	2.5	60.
224	Det.	2.3	95	4.0	35.
227	1 A.F.	2.3	130	8.0	---
245	P.P.	2.3	220	40.	---
245	P.P.	2.3	220	40.	---
280	Rect.	4.6	250	---	---

Line voltage 117. Volume control maximum.

- CX-300A or CX-301A or CX-112A Det.
- CX-301A 1st A.F.
- CX-301A 2nd A.F.
- CX-301A 3rd A.F.
- CX-301A 1st R.F.
- CX-301A 2nd R.F.
- S733
- CX-301A 3rd R.F.

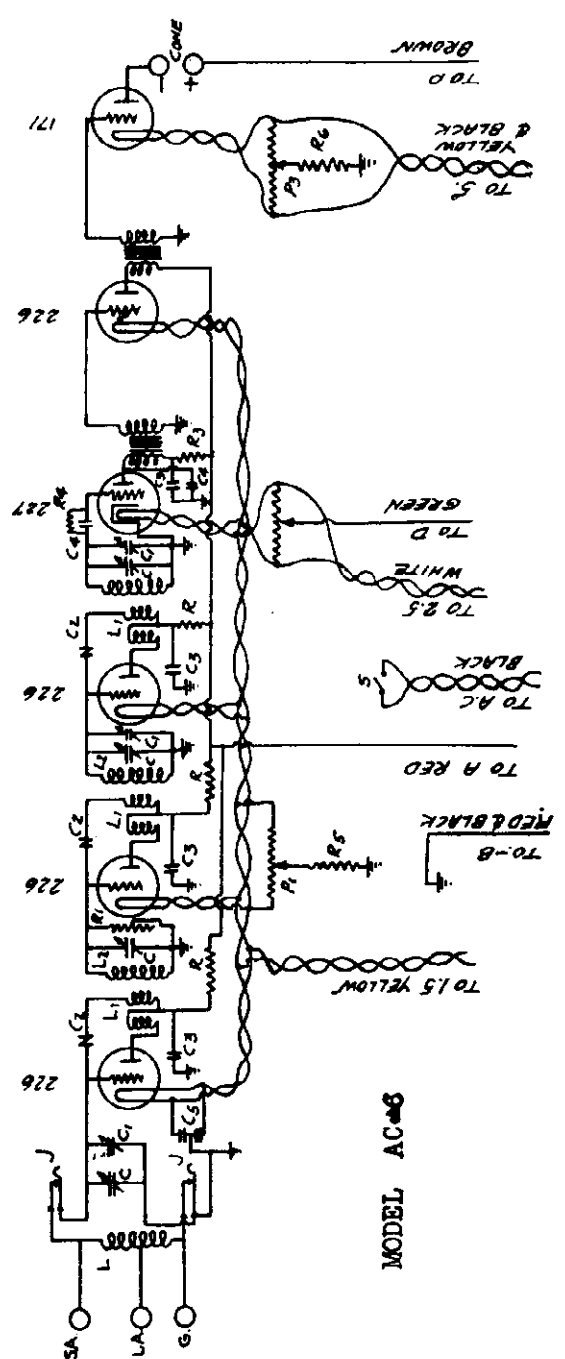
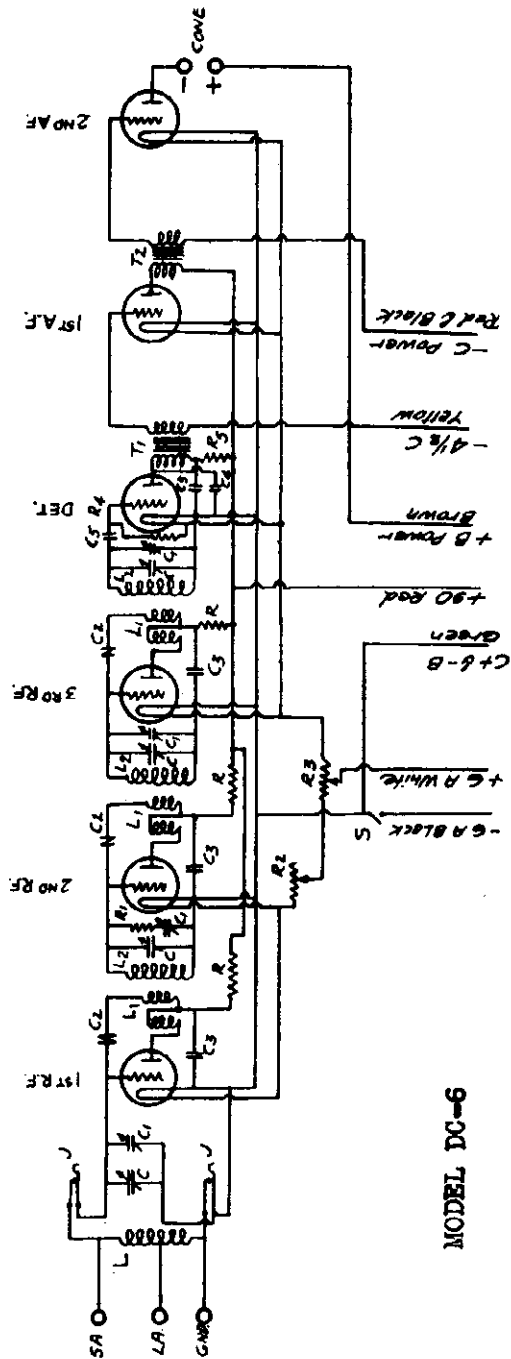


Models 84C, 84D

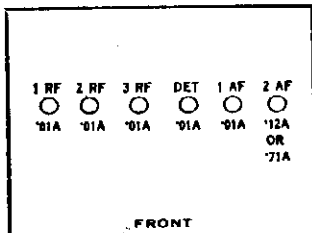


MODEL AC-6
MODEL DC-6

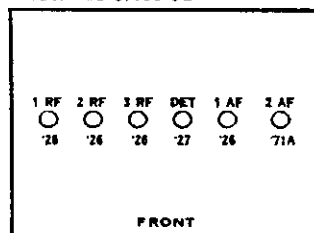
AMRAD CORPORATION



Models DC-6, DC-6C

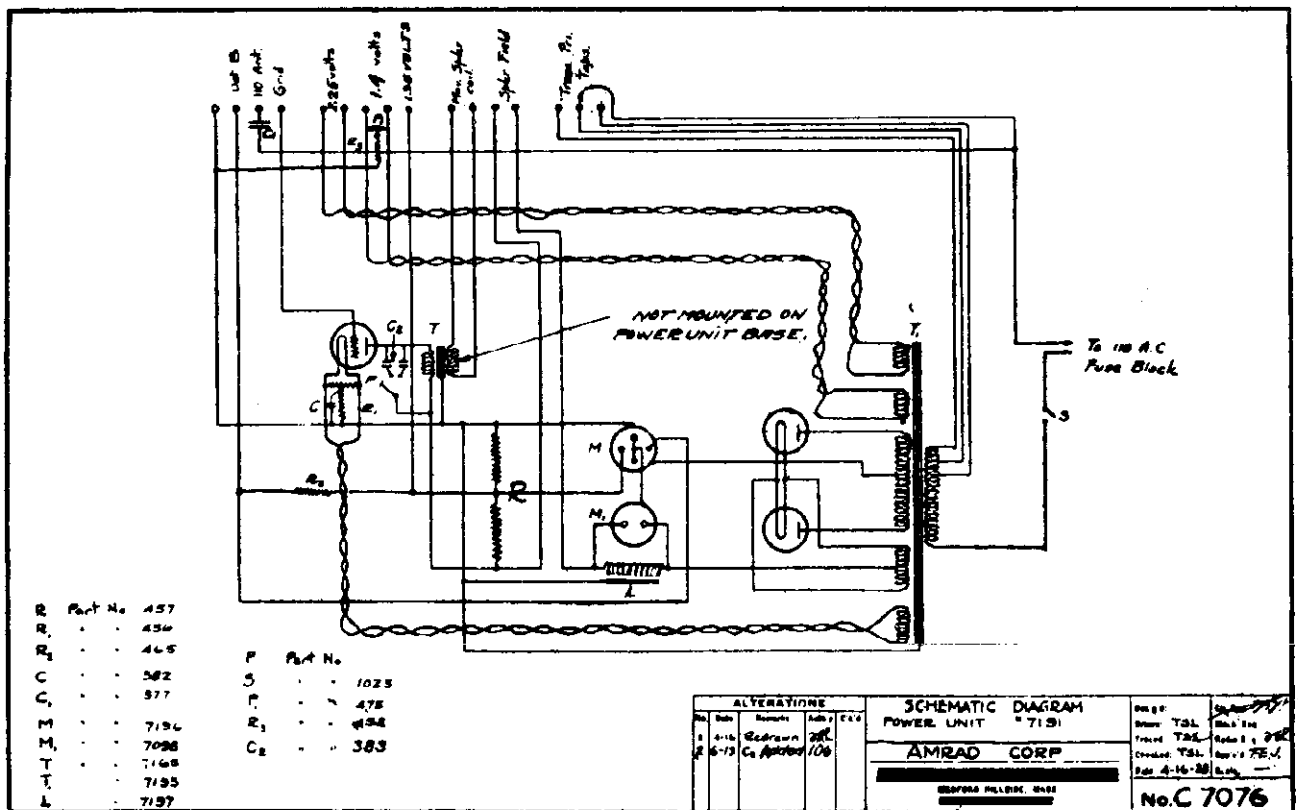
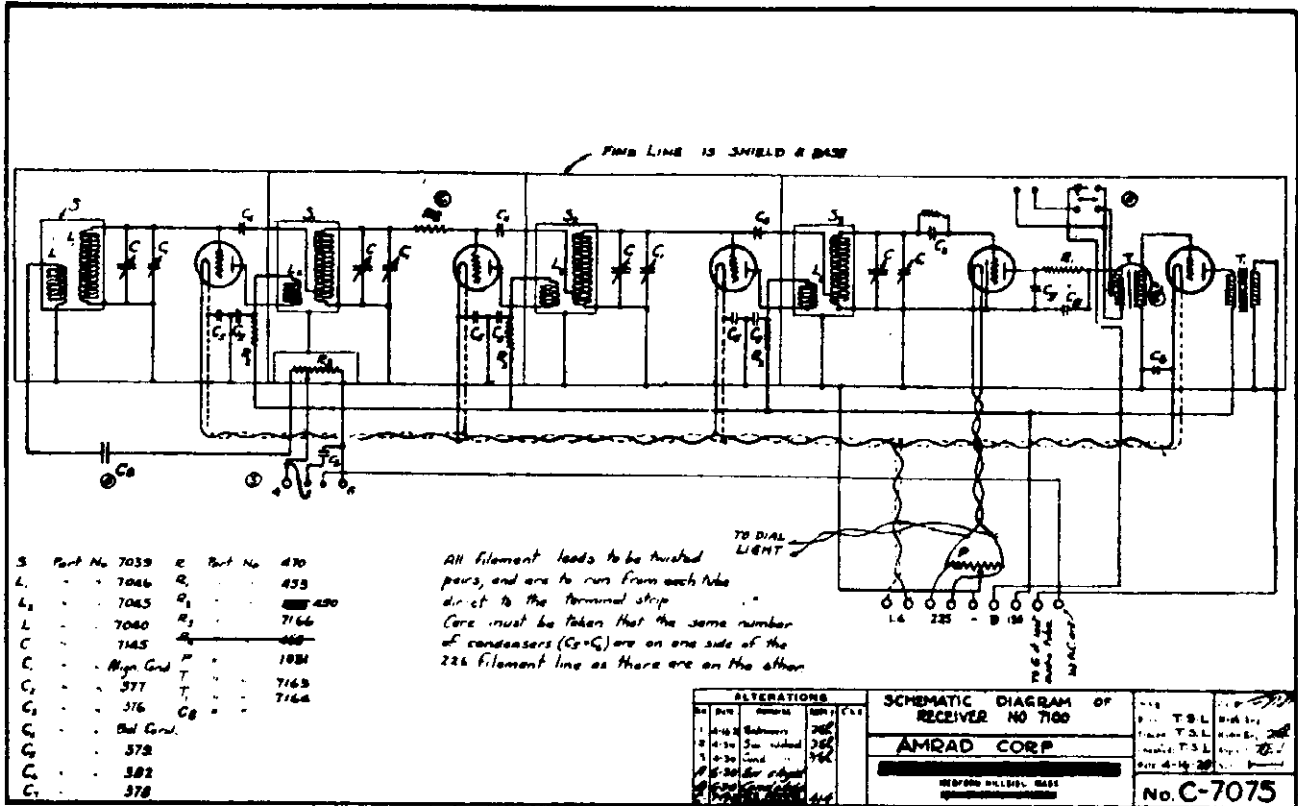


Models AC-6, AC-6C



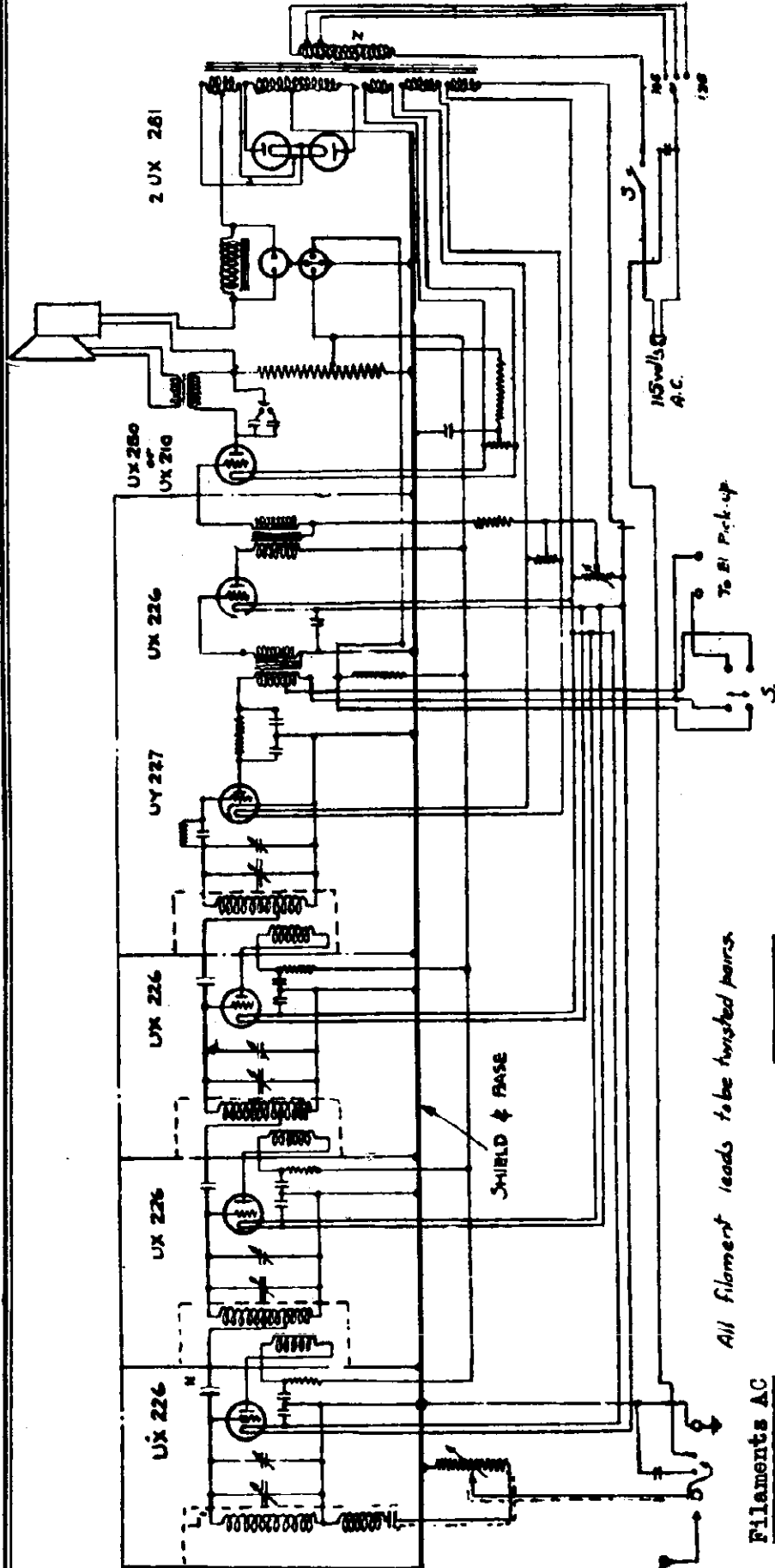
AMRAD CORPORATION

MODEL 7100 Receiver
MODEL 7191 Power Unit



MODEL 70

AMRAD CORPORATION



All filament leads to be twisted pairs.

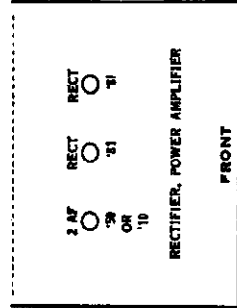
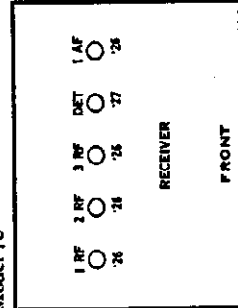
Filaments AC

UX-226	1.4 to 1.45	185 to 160
UX-227	2.2 to 2.3	20 to 30
UX-250	7.3 to 7.4	350 to 370
UX-281	7.3 to 7.4	
UX-210 is used in place of 250	7.3 to 7.4	400 to 425

Bias

UX-226	9 to 11
UX-250	60 to 70

Model 70



RECEIVER

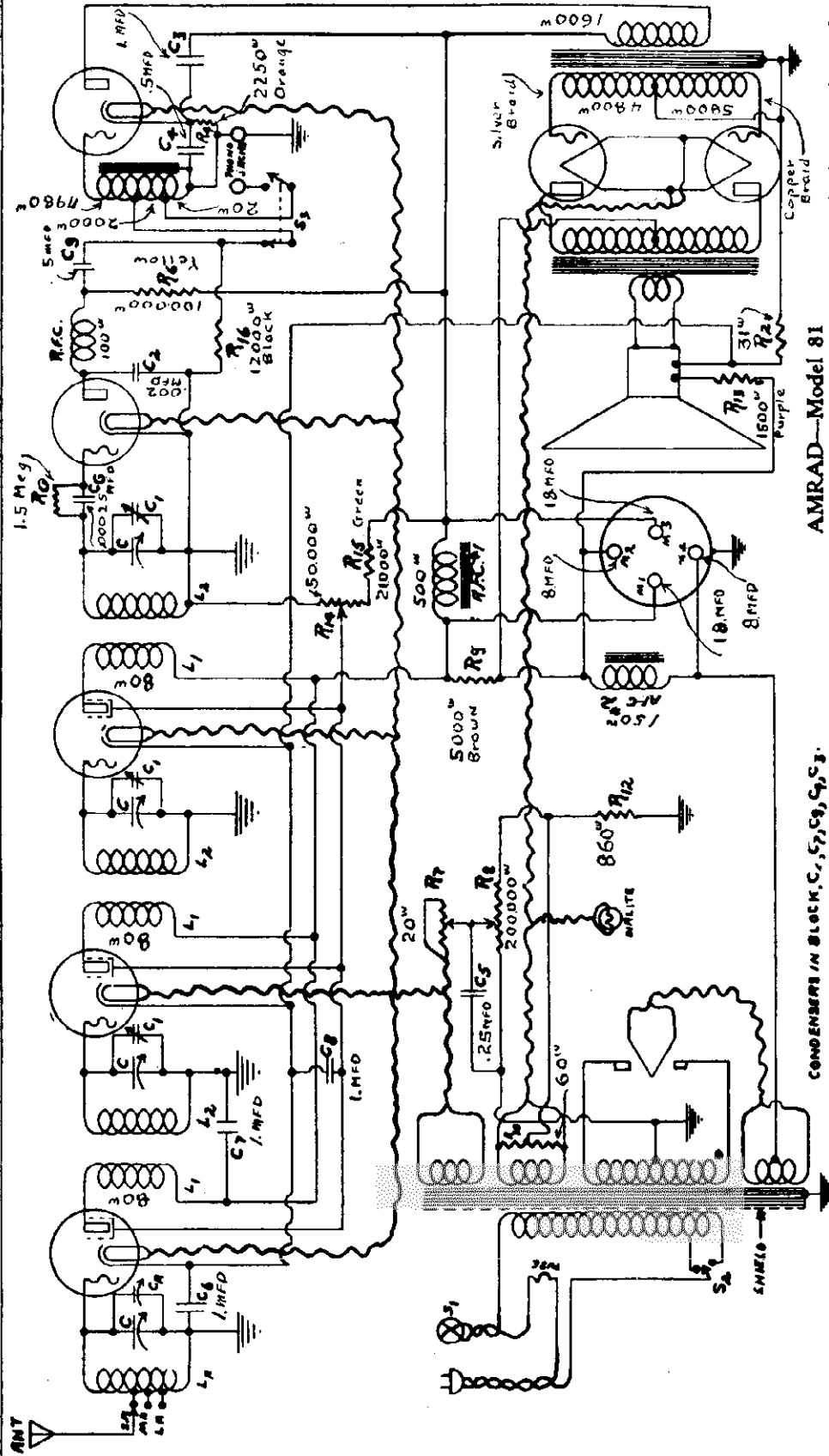
RECTIFIER, POWER AMPLIFIER

FRONT

FRONT

AMRAD CORPORATION

MODEL Bel-Canto 81.



AMRAD—Model 81
 Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Full On
 Note: To get the 10.5 V. reading (4-8) the hum control potentiometer must be turned to ground side.

TYPE	PART NO.	POSITION	TUNE OUT		C		TABLE IN TESTER		PLATE	GRID	SCREEN	BIAS	M.A.	M.P.A.	M.P.A.	M.P.A.	M.P.A.	
			VOLTS	RES.	VOLTS	RES.	VOLTS	RES.										VOLTS	RES.
2 AF	27	1 RF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2 AF	27	2 AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2 AF	27	3 AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2 AF	27	4 AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2 AF	27	5 AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2 AF	27	6 AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2 AF	27	7 AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2 AF	27	8 AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2 AF	27	9 AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2 AF	27	10 AF	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

CONDENSERS IN BLOCK C, C₁, C₂, C₃, C₄, C₅.

RCA Speaker
 0.8 Ohm
 Secondary

410 Ohm Primary
 7000 Ohm Field

Peerless Speaker
 Single turn
 Secondary

550 Ohm Primary

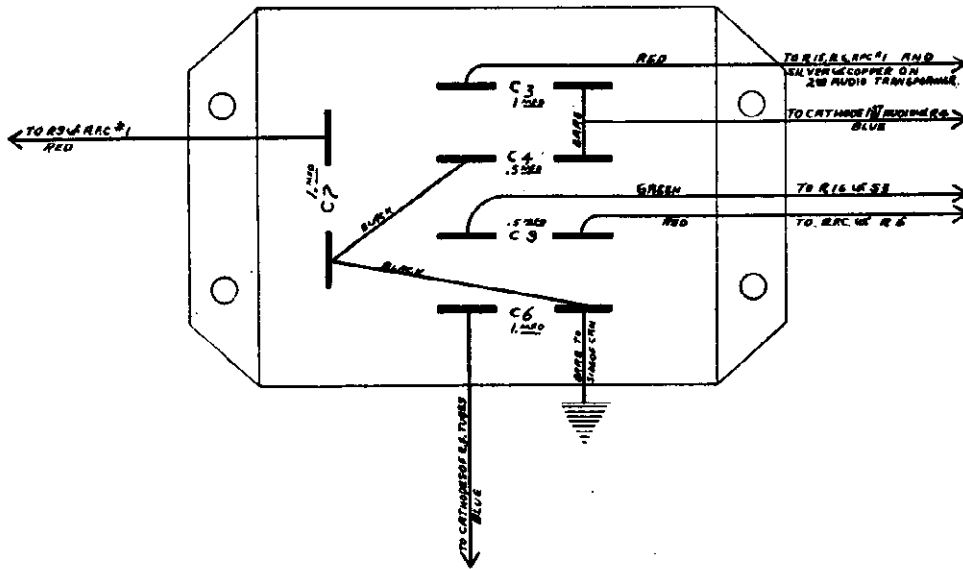
BEL - CANTO SERIES
 Aria, Minuett
 Serenata, Duet
 Symphony

Condenser Data on next page.

Model 81	Aria	Minuett	Serenata	Duet	Symphony
2 AF	27	27	27	27	27
1 AF	27	27	27	27	27
RECT	30	30	30	30	30
FRONT	27	27	27	27	27

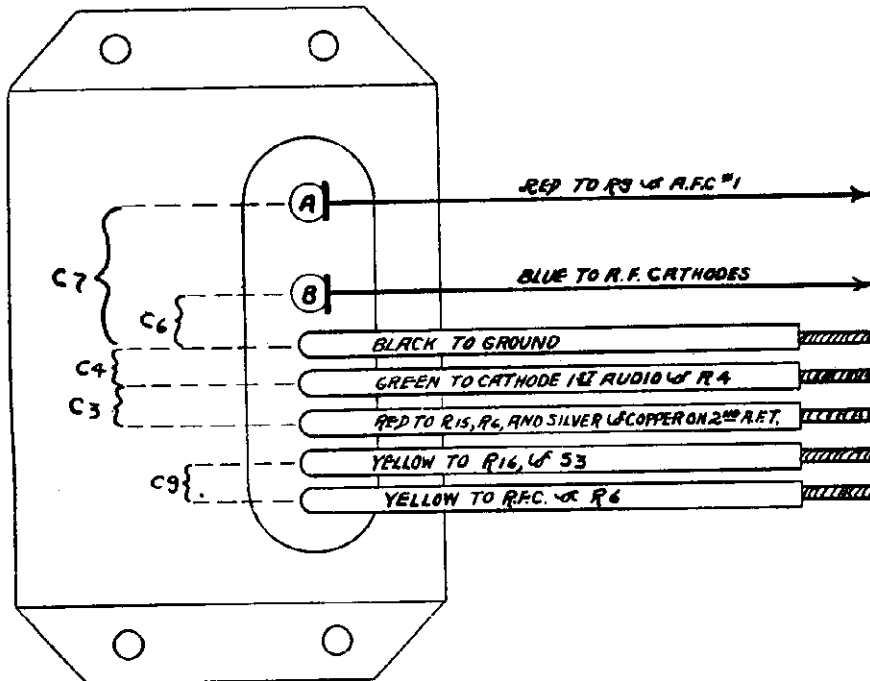
MODEL Bel-Canto 81
Condenser Data

AMRAD CORPORATION



BY-PASS BLOCK CONDENSER, NO. 8113

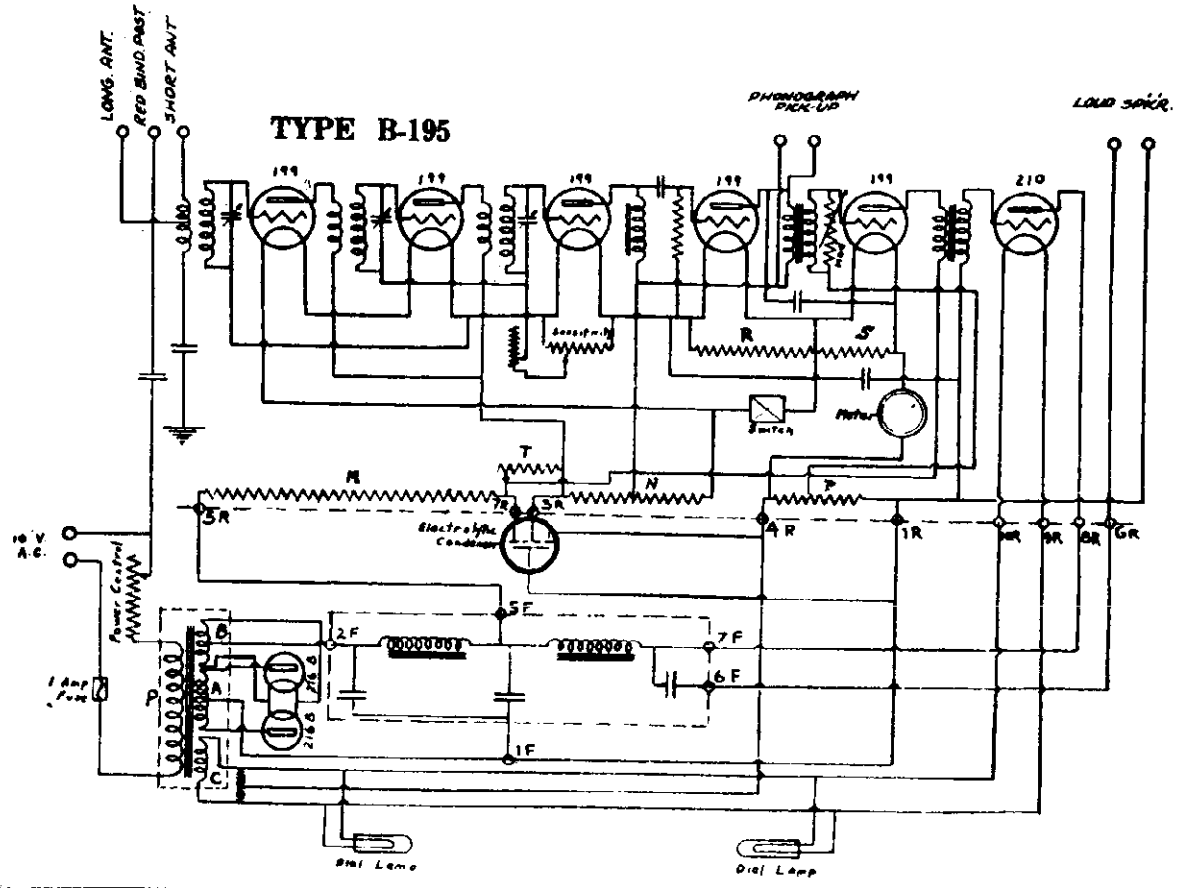
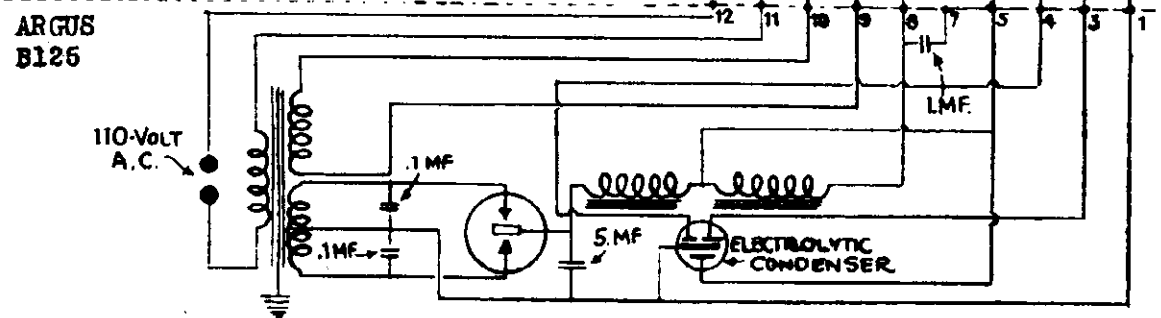
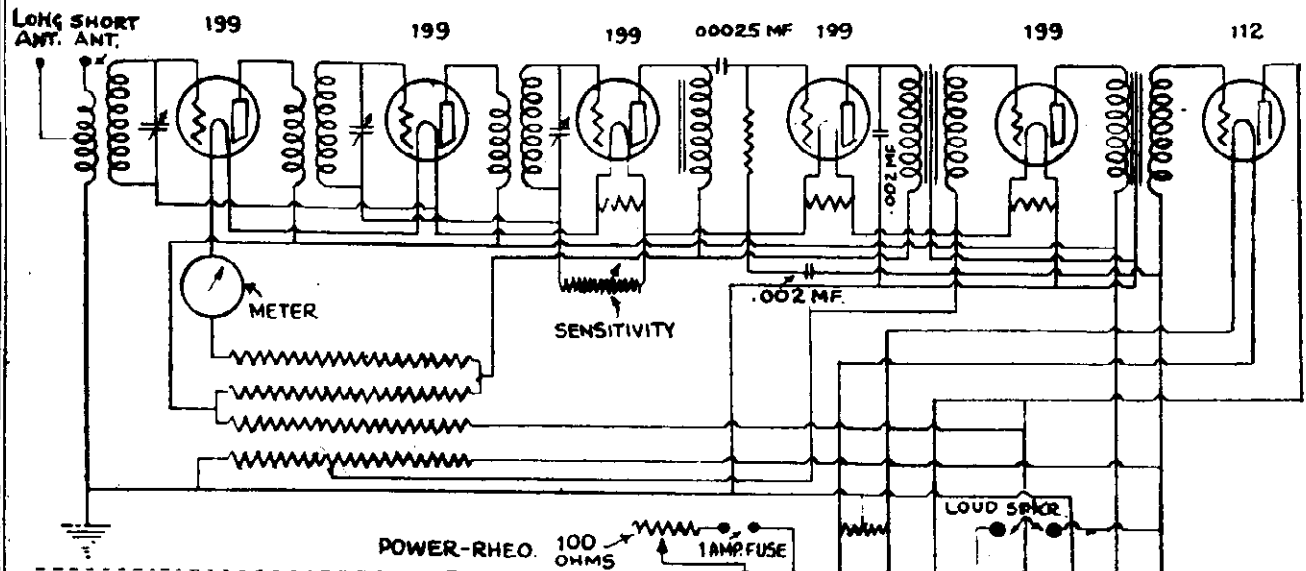
"Lug Terminal" Style. This block contains Fixed Condensers, C3, C4, C6, C7, C9. The different units are indicated, with their connections to their respective circuits.



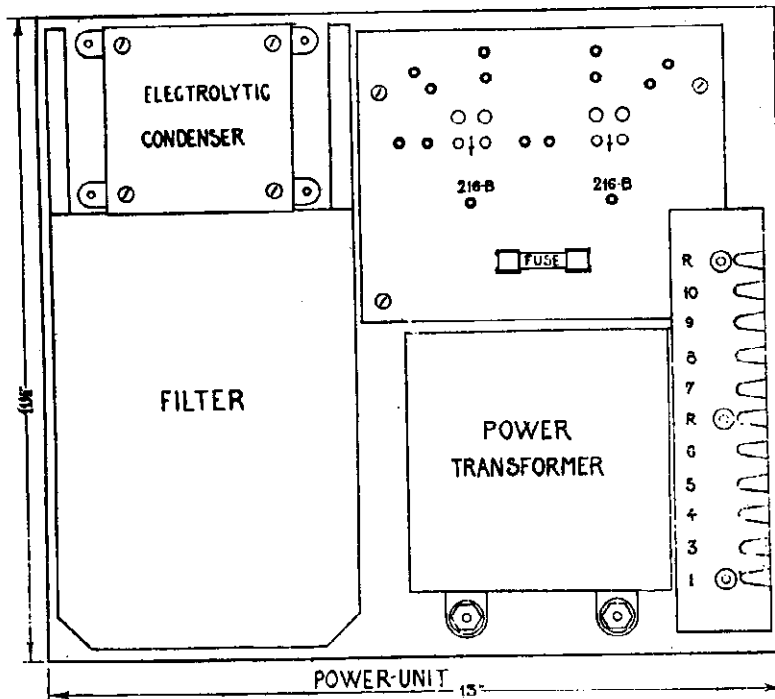
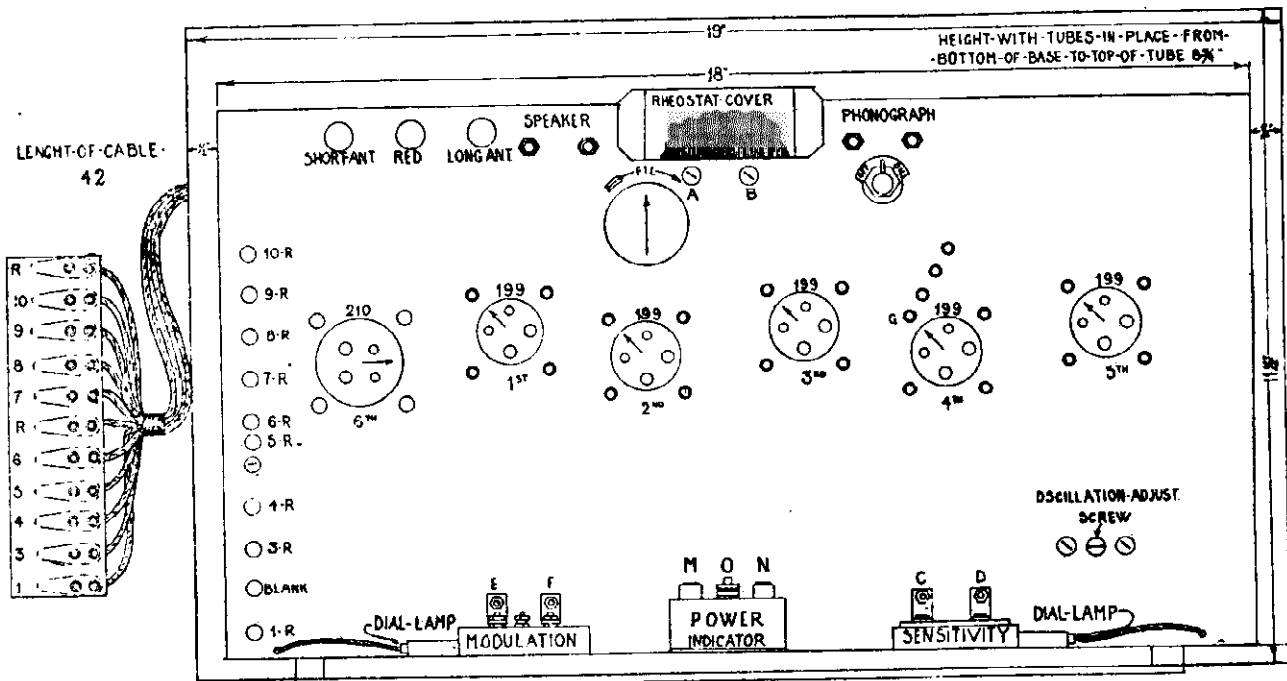
BY-PASS BLOCK CONDENSER, NO. 8113

"Wire Terminal" Style. This block contains the same units as does the No. 8113 "Lug Terminal" Style. To test for capacity, opens or shorts, it is necessary to disconnect at least one terminal of the unit from the circuit.

ARGUS RADIO CORP.



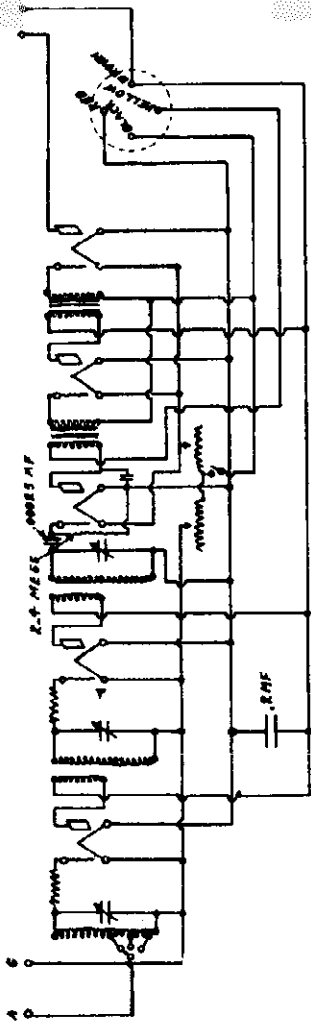
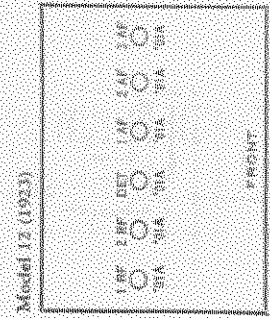
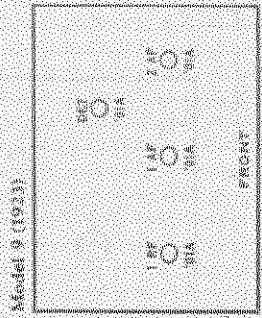
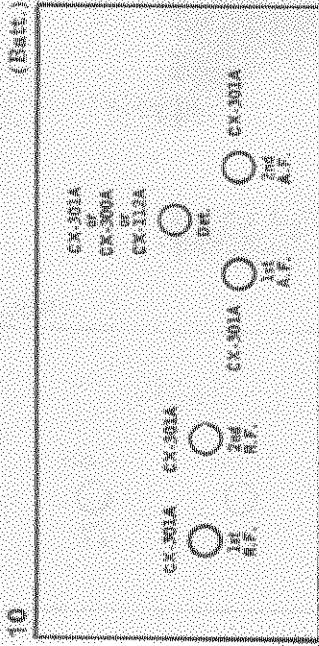
ARGUS RADIO CORP.



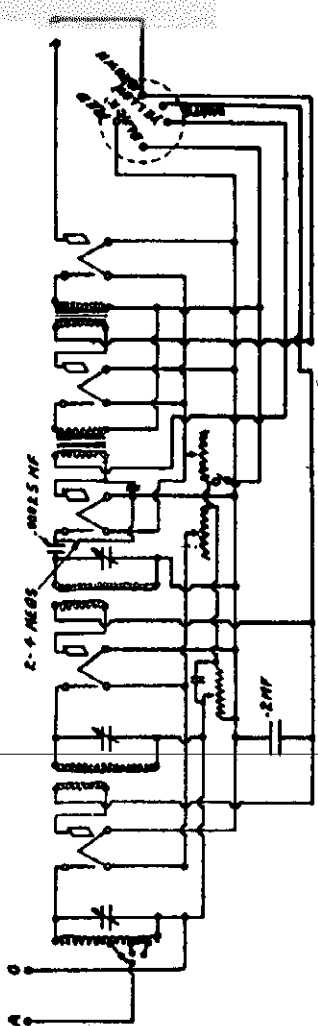
Inside view of ARGUS ELECTRIC RADIO RECEIVER, Model B195.
TWO-PIECE CHASSIS. Diagram shows location of connecting cables.

ATWATER KENT MFG. CO.

MODEL 10
 MODEL 10-B
 MODEL 12

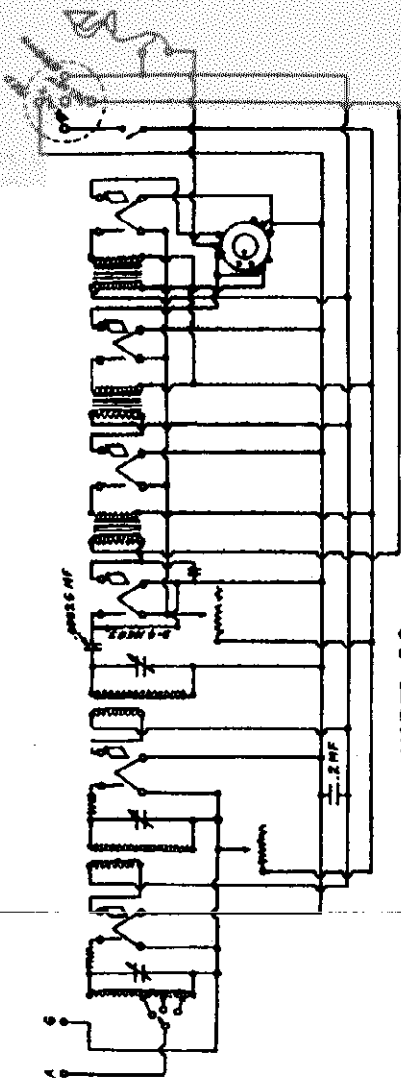


MODEL 10 No. 4700



MODEL 10-B

NOTE.—This set has two R.F. rheostats (one for each R.F. tube). —F1R connects to the slider lead of the 1st R.F. rheostat instead of to —F2R.

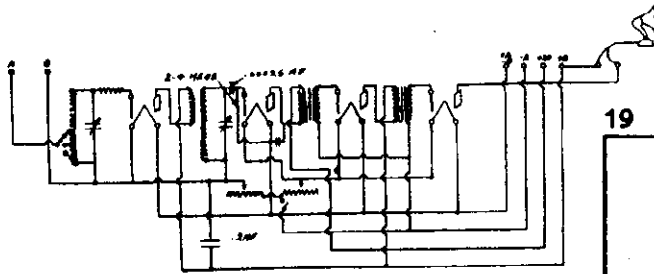


MODEL 12

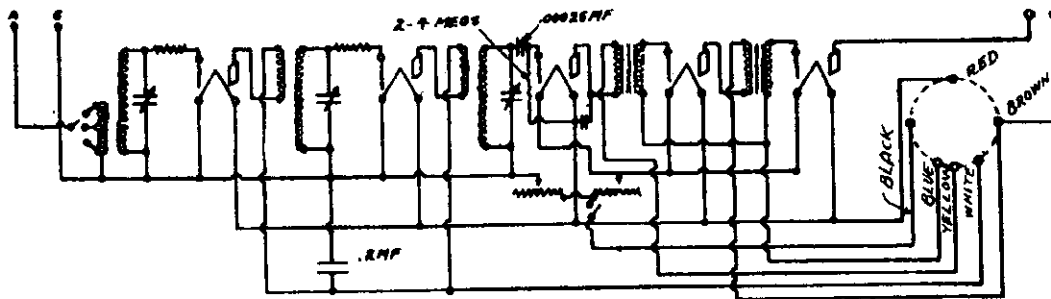
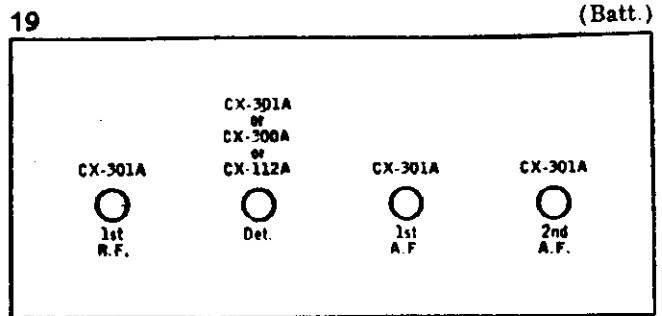
(Diagram shows one rheostat controlling detector and all three A.F. tubes. In actual set, rheostat controls detector and 1st audio only, 2nd and 3rd audio tubes being on separate fixed resistances.)

MODEL 19
 MODEL 20 # 7570
 MODEL 20 # 4640

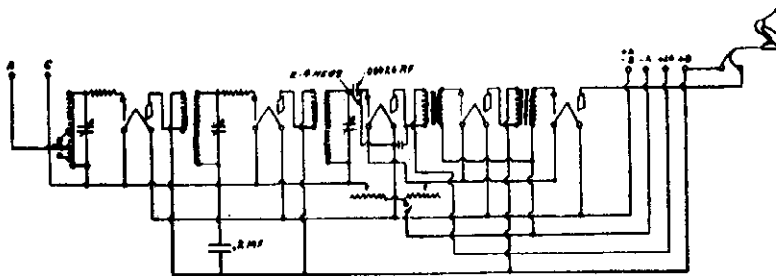
ATWATER KENT MFG. CO.



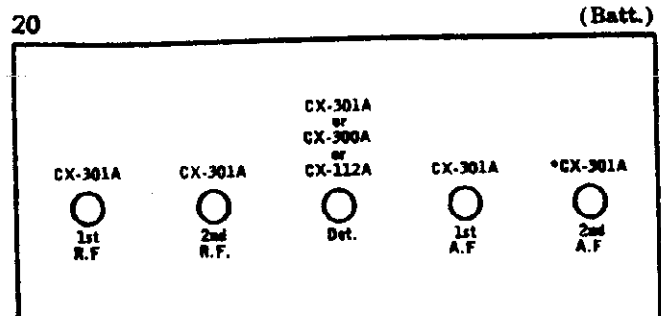
MODEL 19 SET No. 4880.



MODEL 20 COMPACT SET NO. 7570. WIRING DIAGRAM.



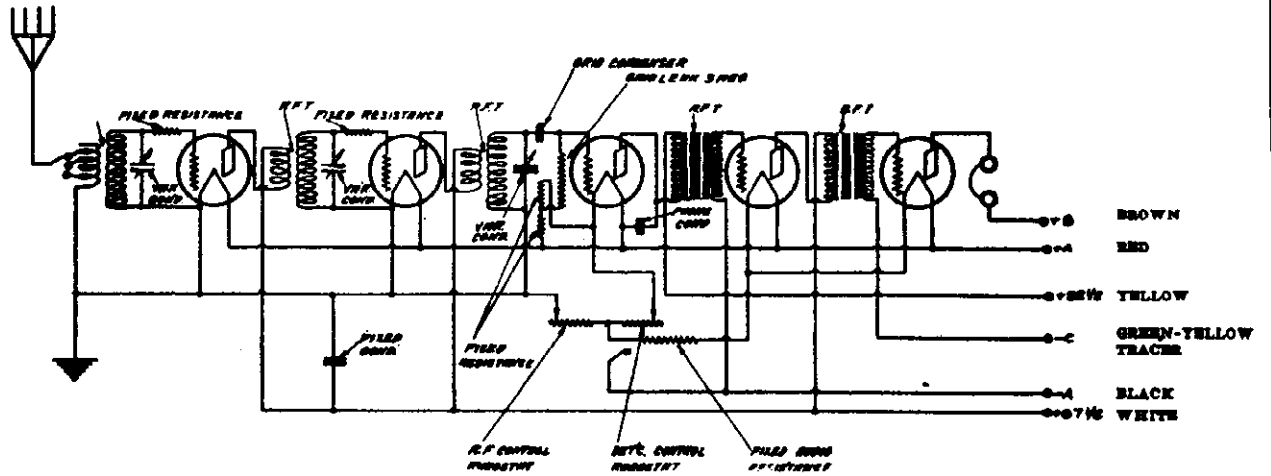
MODEL 20 SET No. 4640.



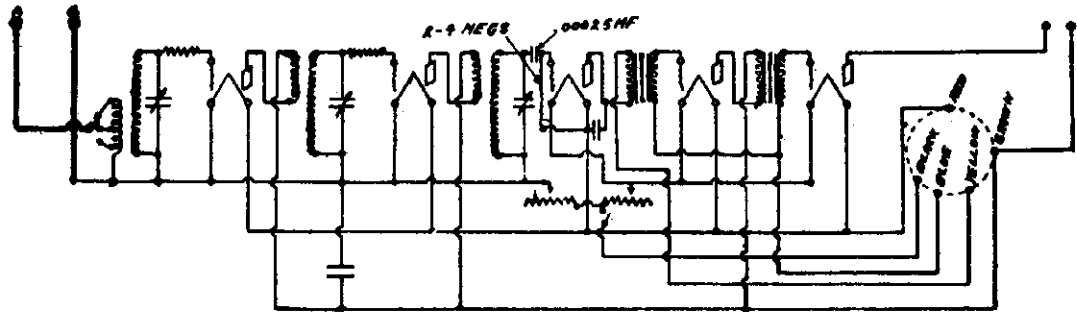
* This tube is a CX-371A in Model 20 compact.

MODRL 20 # 7960
 MODEL 21 # 7780

ATWATER KENT MFG. CO.

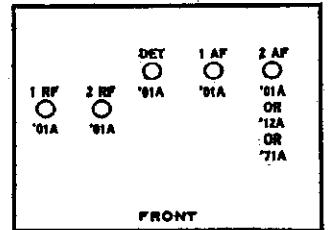


MODEL 20 COMPACT SET No. 7900. WIRING DIAGRAM.



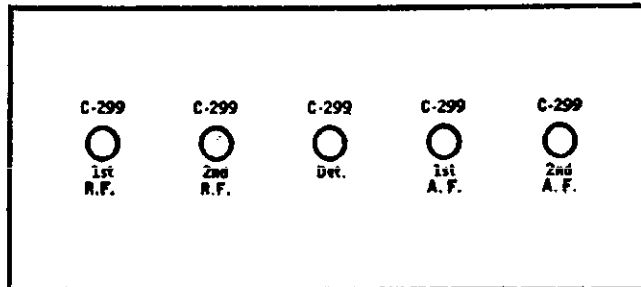
MODEL 21 DRY CELL SET No. 7780.

Model 20 Comp. (1925)



21

(Batt.)



ATWATER KENT MFG. CO.

MODEL 33
 MODEL 36 Early
 MODEL 36 Late
 MODEL 49

MODEL 36 ABOVE SERIAL No. 2,610,000

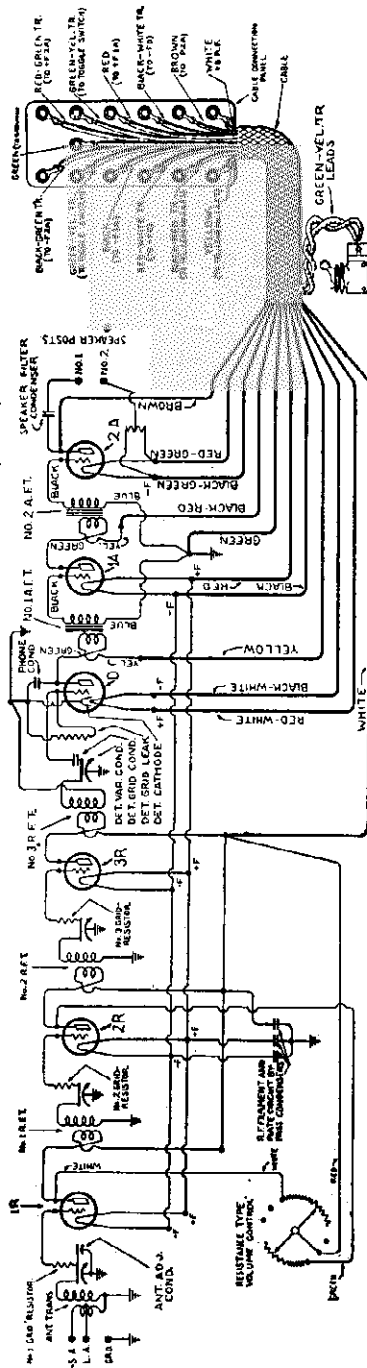
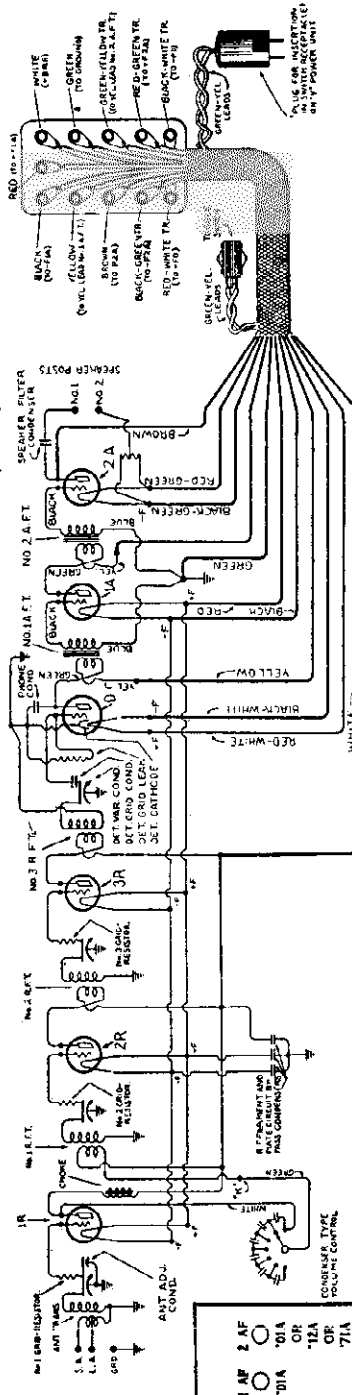


FIG. 70. WIRING DIAGRAM OF MODEL 36 WITH RESISTANCE-TYPE VOLUME CONTROL.

MODEL 36 BELOW SERIAL No. 2,610,000

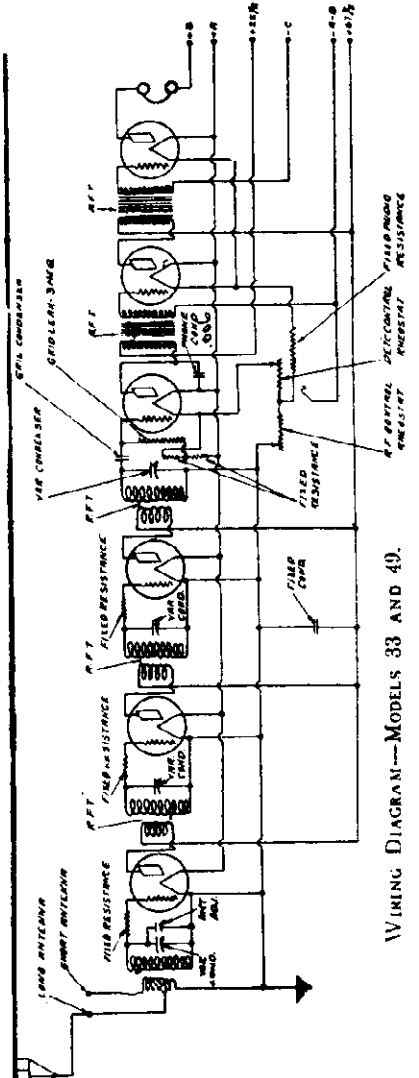


WIRING DIAGRAM OF MODEL 36 WITH CONDENSER-TYPE VOLUME CONTROL.

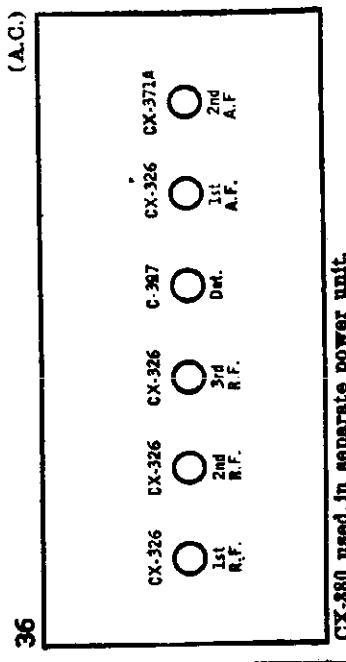
Model 33 (1927)

1 RF	2 AF	01A	OR	71A
2 RF	3 RF	01A	OR	71A
01A	01A	01A	OR	71A
01A	01A	01A	OR	71A

FRONT



WIRING DIAGRAM—MODELS 33 AND 49.



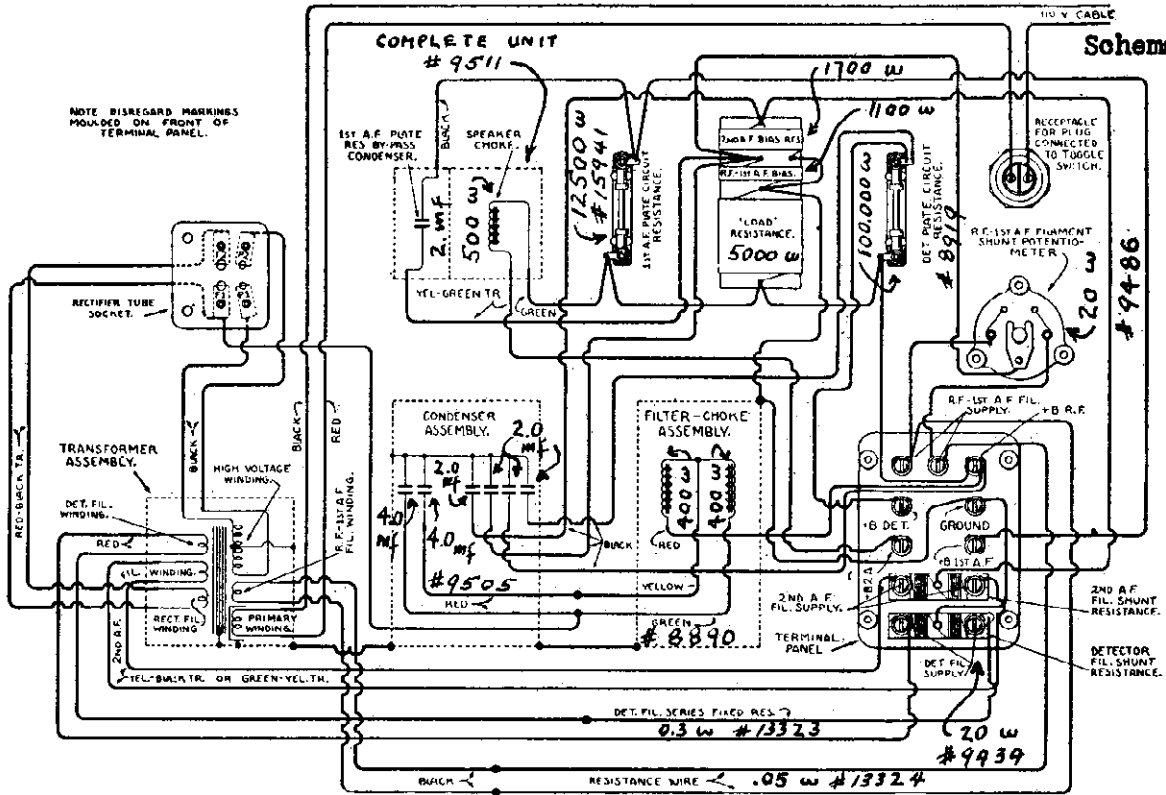
36

CX-380 used in separate power unit.

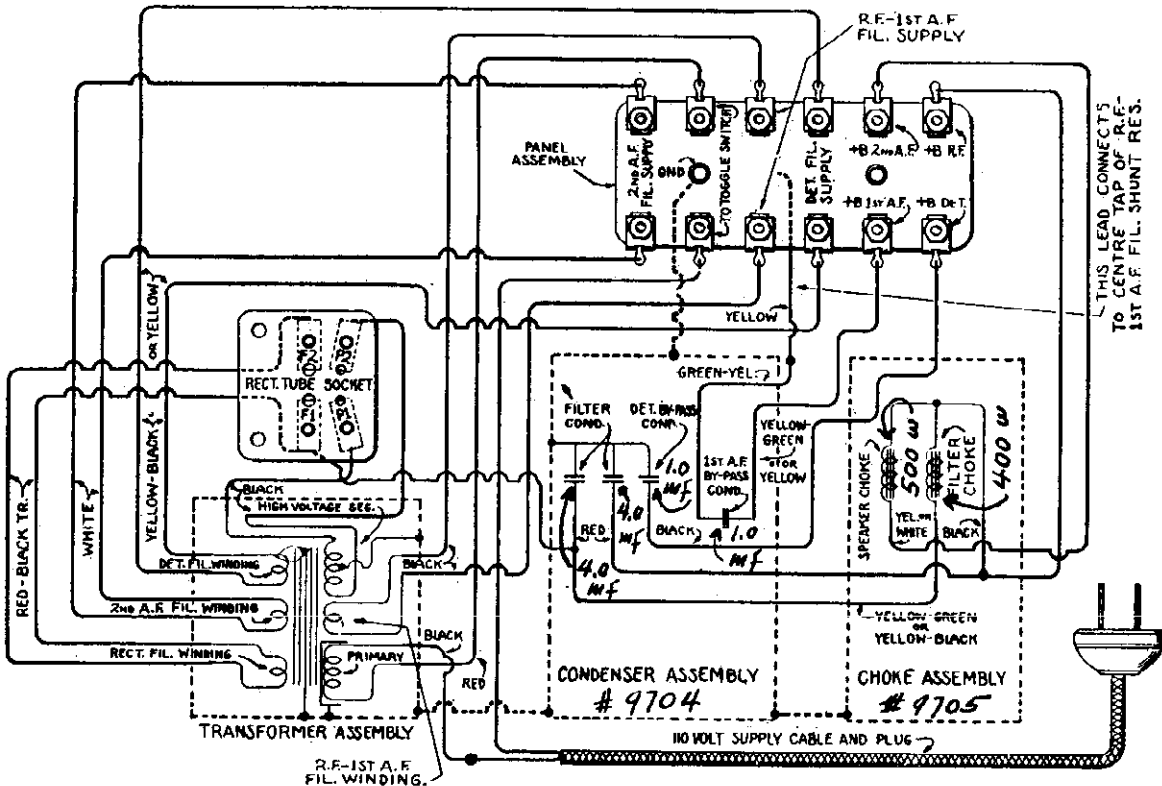
ATWATER KENT MFG. CO.

MODEL 36
Power Pack

Schematic



*Model "Y" Power Units below Serial No. 260,000
(Used with Model 36 Sets below Serial No. 2,610,000)*

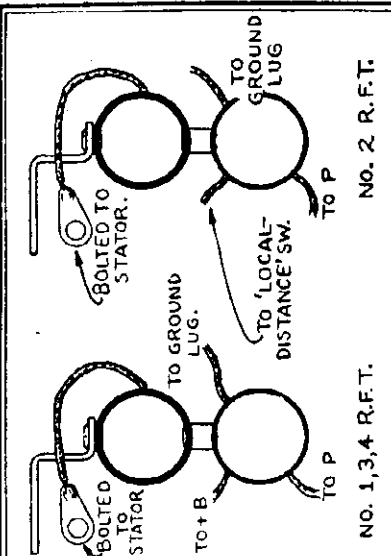
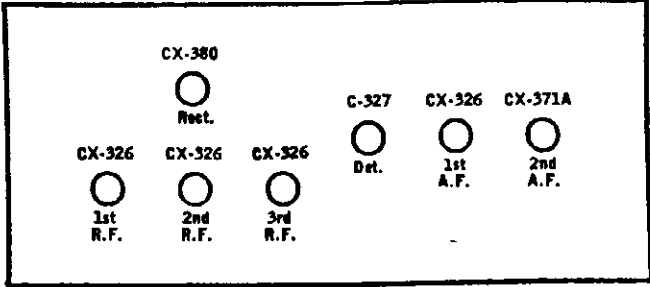


*Model "Y" Power Units Above Serial No. 260,000
(Used with Model 36 Sets above Serial No. 2,610,000)*

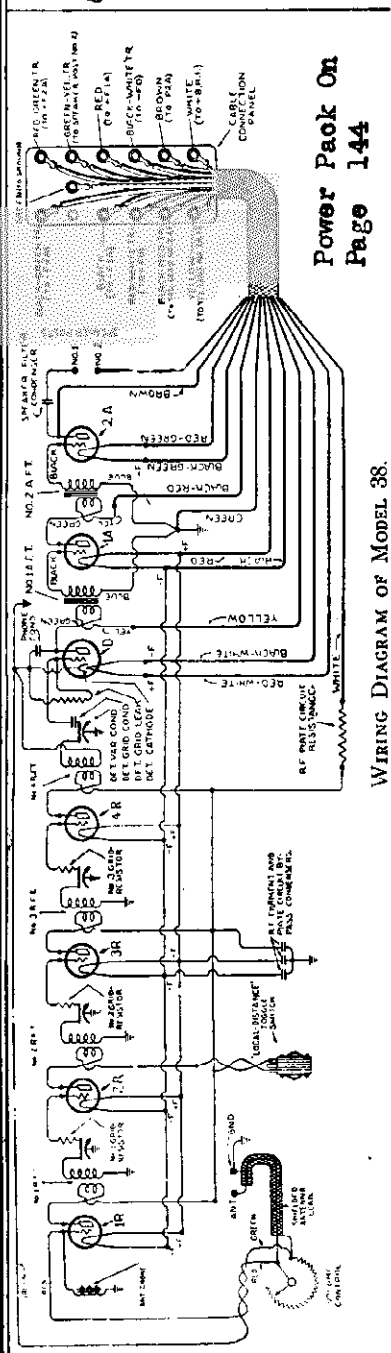
ATWATER KENT MFG. CO.

MODEL 37
MODEL 38
(A.C.)

37

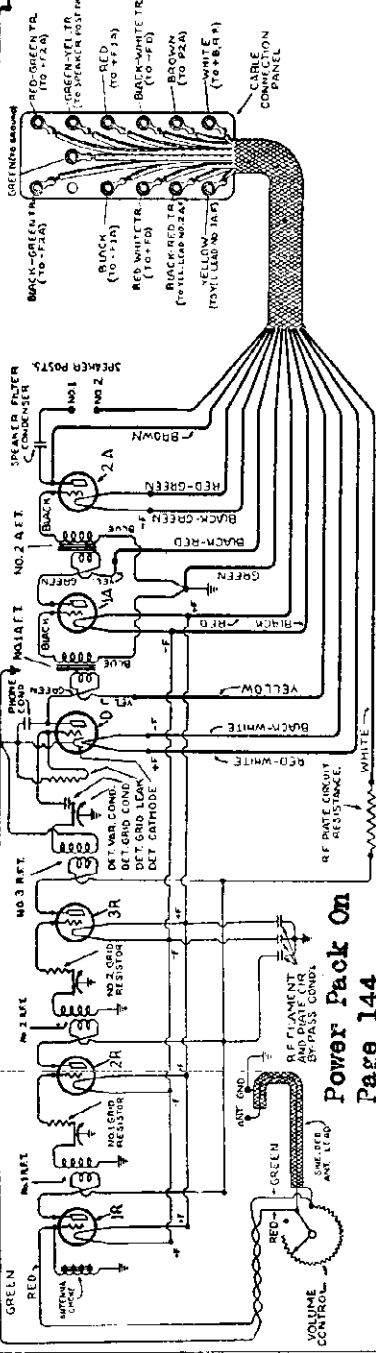


SKETCH SHOWING CONNECTIONS FROM R. F. TRANSFORMERS



Power Pack On Page 144

WIRING DIAGRAM OF MODEL 38.
A 2nd A. F. filament-shunt resistor is used before Serial No. 1,752,000 and the green-yellow tracer cable lead is not used. Connections for this resistor are shown in dotted lines in the diagram on page 61. A schematic diagram of the volume control is shown in Fig. 78.



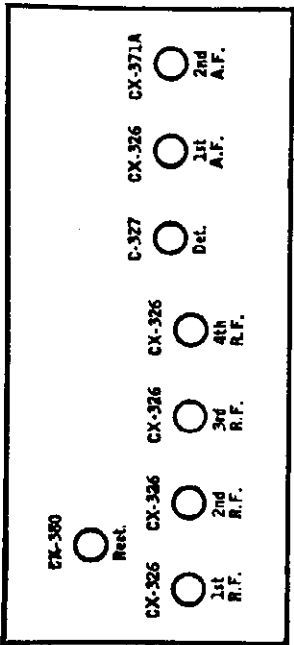
Power Pack On Page 144

WIRING DIAGRAM OF MODEL 37, 37-F, 37-C.
A 2nd-A. F. filament-shunt resistor is used before Serial No. 1,385,000, in which case speaker post No. 2 connects to the centre-tap of this resistor, and the green-yellow tracer lead is not used. The R. F. plate circuit resistor is used after Serial No. 1,385,000.
In Model 37-C the on-off switch is connected to the two terminals on either side of the ground cyclet. A 2nd-A. F. filament shunt resistor is used in the chassis of all Model 37-C receivers.

ATWATER-KENT—Models 37-38
Line Voltage 115—On Early Models "B" and "C"
Voltages Are Lower Than Shown

TYPE OF TUBE	POSITION OF TUBE IN SET	TYPE ONT		REMAINING PARTS OF MODEL OF SET		TYPE IN TESTER		PLATE VOLTAGE	GRID VOLTAGE	SCREEN VOLTAGE	FILAMENT TEST CURRENT
		A VOLTS	B VOLTS	A VOLTS	B VOLTS	A VOLTS	B VOLTS				
225	1st A.F.	1.5	1.75	1.25	1.65	10	—	4.8	8.4	5.6	—
226	2nd R.F.	1.5	1.75	1.25	1.65	10	—	4.8	8.4	5.6	—
227	3rd R.F.	1.5	1.75	1.25	1.65	10	—	4.8	8.4	5.6	—
228	Det.	2.25	2.0	2.25	2.0	—	—	—	—	—	—
229	1st A.F.	1.5	1.75	1.25	1.65	10	—	4.8	8.4	5.6	—
230	2nd A.F.	4.8	1.92	1.60	1.60	36	—	18.0	19.5	18.5	—
231	3rd R.F.	—	—	—	—	—	—	—	—	—	—
232	2nd R.F.	—	—	—	—	—	—	—	—	—	—
233	1st R.F.	—	—	—	—	—	—	—	—	—	—

38 (A.C.)



MODEL 37
Power Pack
Early and Late
Data

ATWATER KENT MFG. CO.

Schematic

RESISTORS

	Early	Late
Detector plate	100000 ohms #8919 Green paint	65000 ohms # 15592 1 watt black or bl. and gr.
1st a-f plate	12500 ohms #15941 red See late.	12500 ohms # 15941 red or purple and yellow or red.
R-f and 1st a-f bias	1100 ohms # 9691 elliptical	625 ohms # 13128 elliptical
2nd a-f bias	1750 ohms # 9692 elliptical	2200 ohms # 13289 elliptical
Filament shunt	20 ohms # 9434	20 ohms # 9434 flat, wire
Speaker choke	500 ohms	500 ohms
Filter chokes	1600 ohms total	1600 ohms total

CONDENSERS

See schematic
 See Schematic. Condenser unit is # 13315. Also houses transformer.

Special Note.

A 1. mfd condenser is also contained in the transformer-condenser housing but this condenser is not connected in the model 37 power pack.

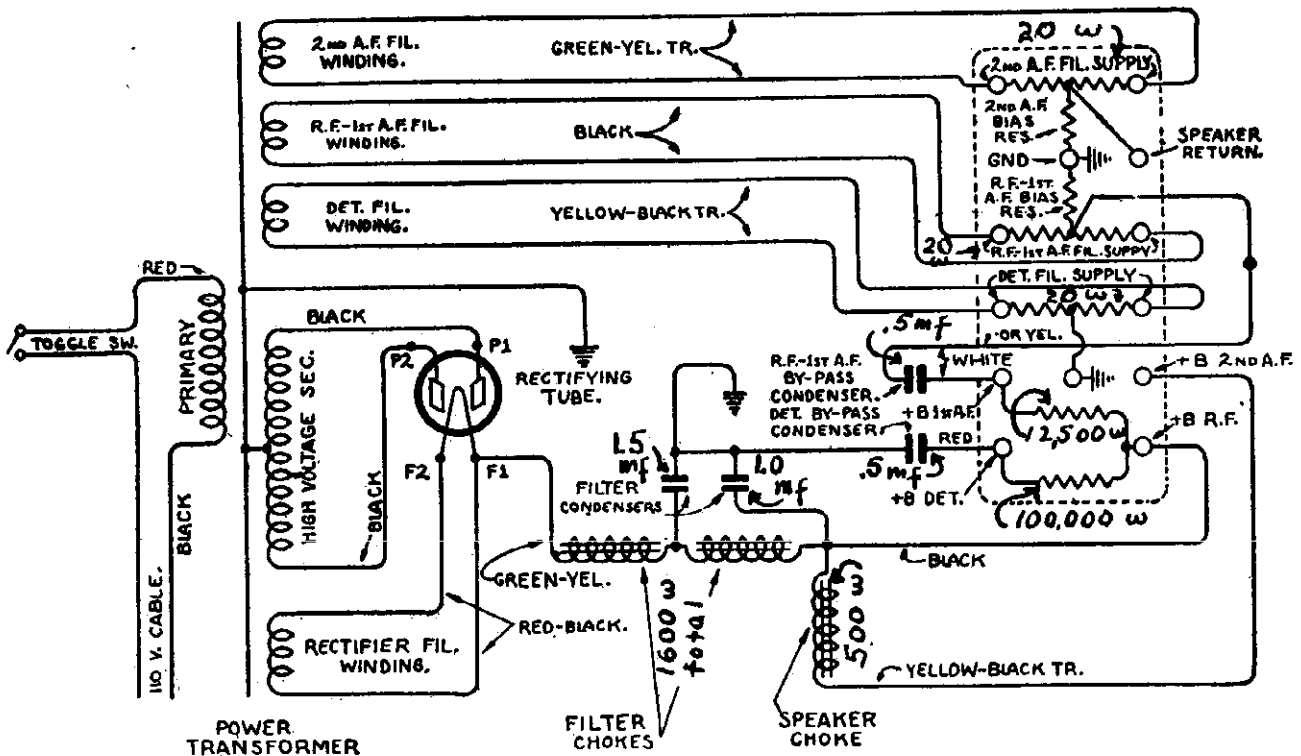
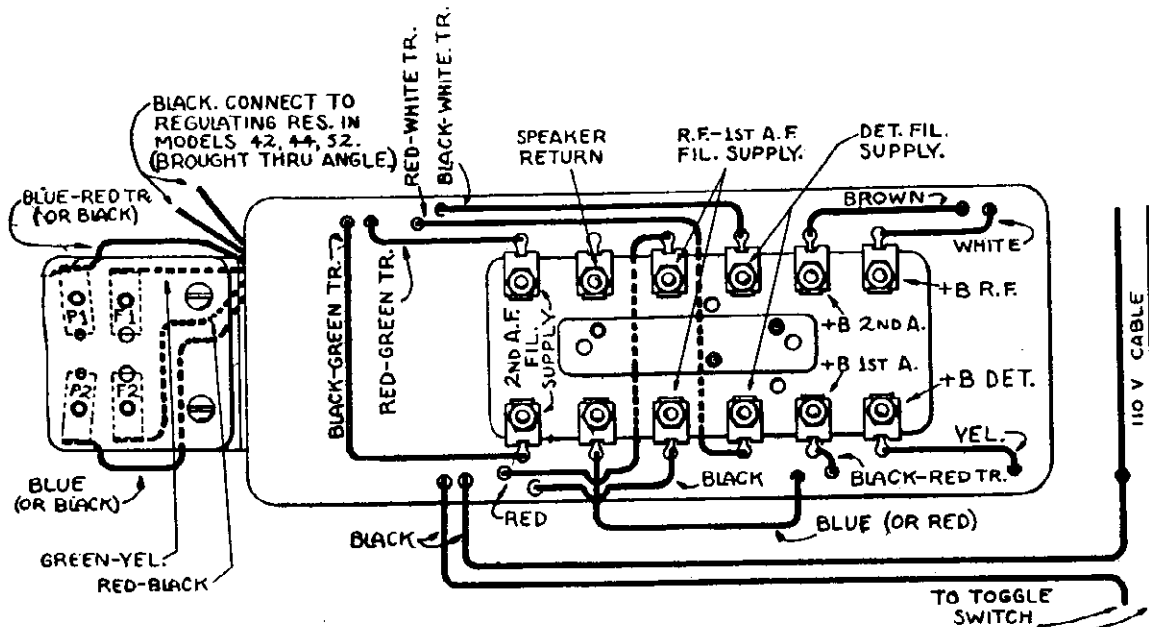


DIAGRAM OF POWER UNIT IN MODELS 37 AND 38

MODEL 40,42,44,52
 Power Unit Layout
 MODEL 40,45
 2nd Type Power Unit

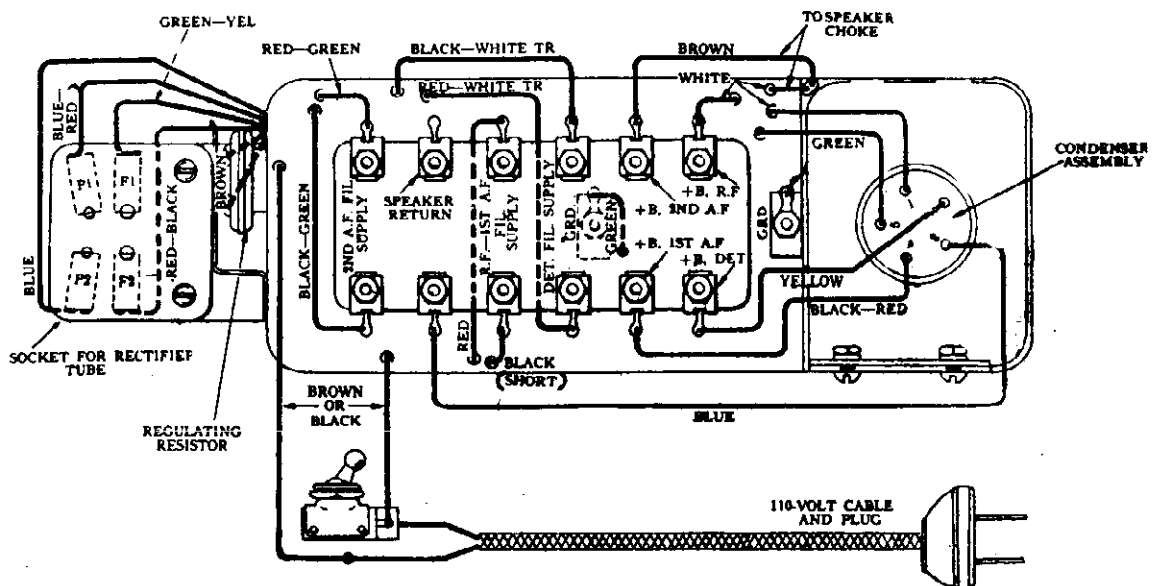
ATWATER KENT MFG. CO.

Schematic



POWER UNIT IN MODELS 40, 42, 44 AND 52, SHOWING CONNECTIONS FROM SEALED CONTAINER TO PANEL ASSEMBLY, RECTIFIER SOCKET AND REGULATING RESISTANCE

This view shows the approximate position of leads from sealed container. In Models 42, 44 and 59, a hole is cut in the rectifier-socket mounting angle and the two black leads are brought up through the hole and connect to the regulating resistance, which is mounted upright at the left-hand end of the sealed container.



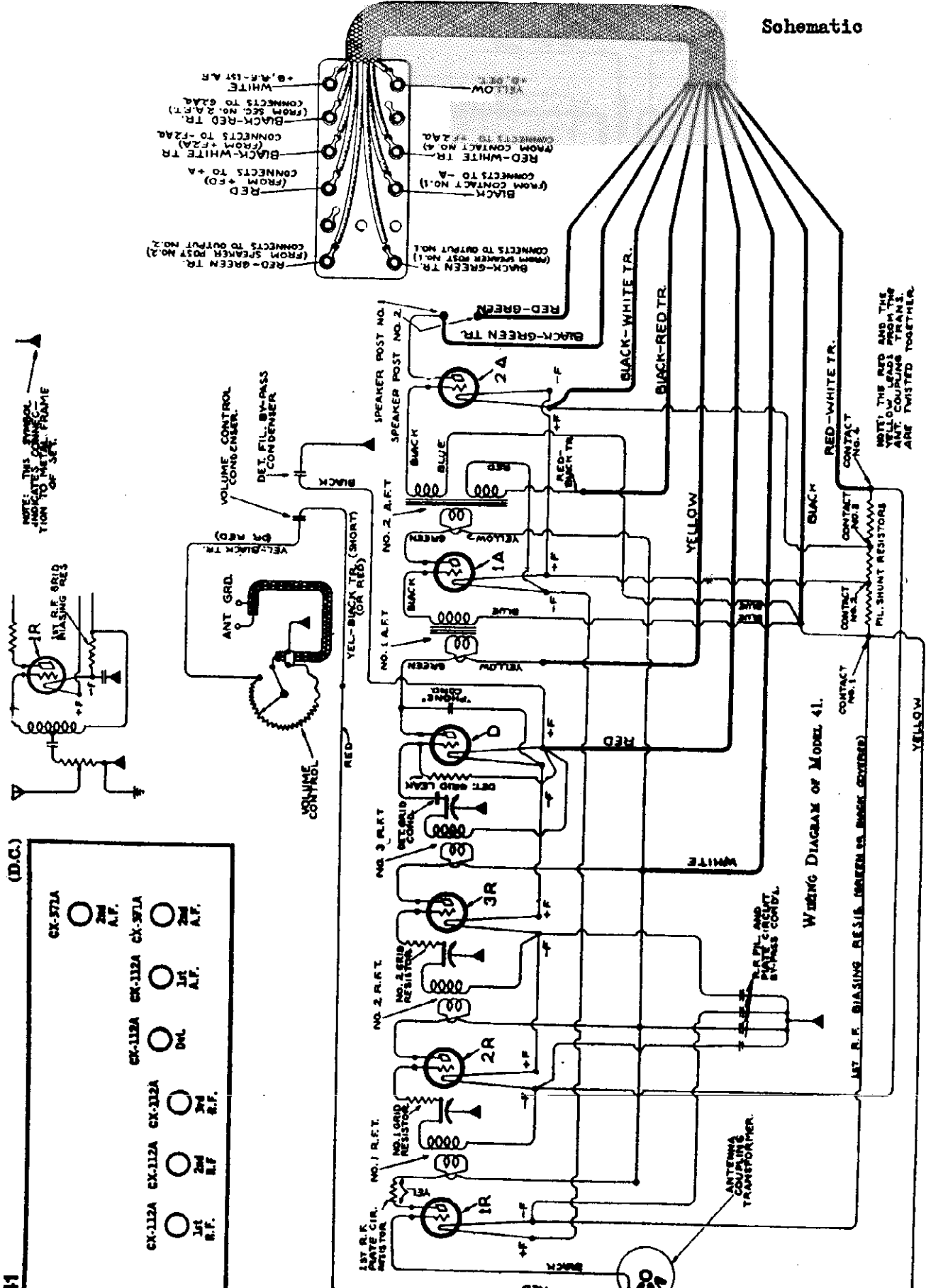
VIEW SHOWING CONNECTIONS IN 2ND TYPE OF POWER UNIT FOR MODELS 40 AND 45.

This view shows the panel assembly moved to left of normal position.
 The regulating resistor is not used in these models.

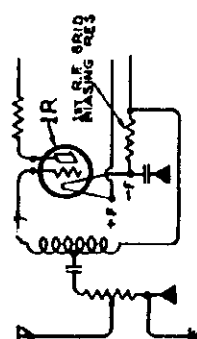
ATWATER KENT MFG. CO.

MODEL 41 DC

Schematic



NOTE: THIS SYMBOL INDICATES CONNECTION TO THE FRAME OF SET.



(D.C.)

CK-371A	2M A.F.	CK-371A	2M A.F.
CK-112A	1R A.F.	CK-112A	1R A.F.
CK-112A	2M R.F.	CK-112A	2M R.F.
CK-112A	1R R.F.	CK-112A	1R R.F.

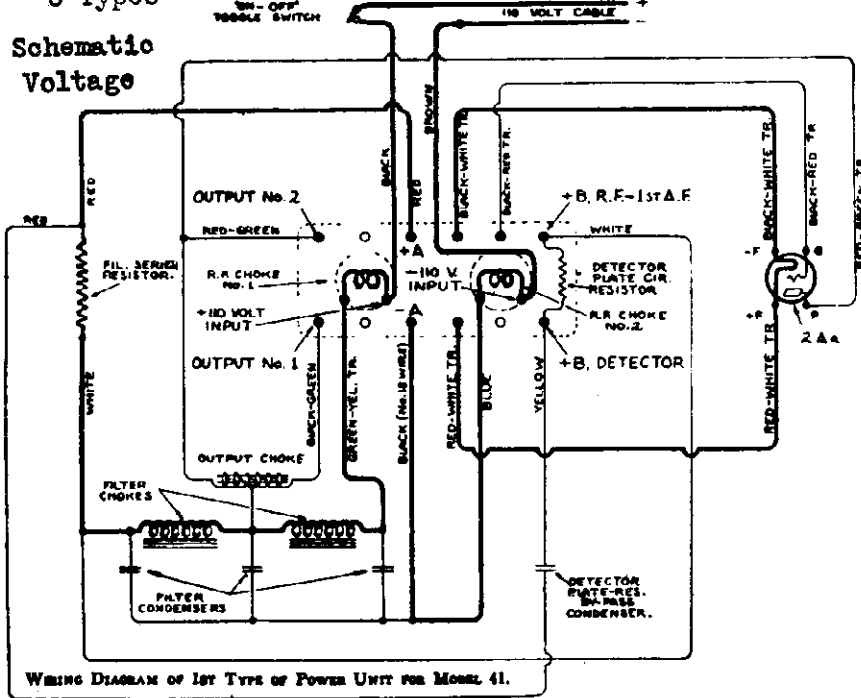
Wiring Diagram of Model 41.

NOTE: THE RED AND THE YELLOW LEADS FROM THE ANT. COUPLING TRANS. ARE TWISTED TOGETHER.

MODEL 41
Power Pack
3 Types

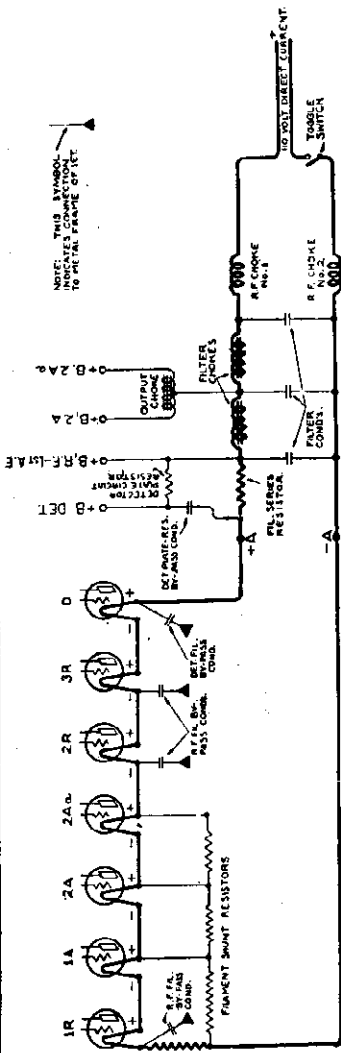
ATWATER KENT MFG. CO.

Schematic
Voltage

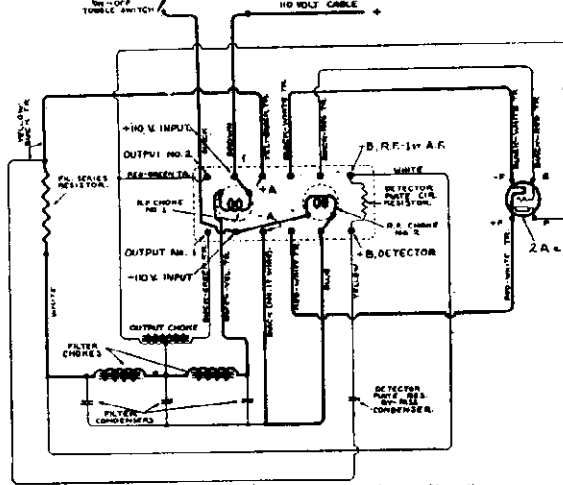


WIRING DIAGRAM OF 1ST TYPE OF POWER UNIT FOR MODEL 41.

Filament Voltage	Plate Voltage
1st R.F.	60 V.
2nd R.F.	65 V.
3rd R.F.	65 V.
Detector	24 V.
1st A.F.	81 V.
2nd A.F.	81 V.

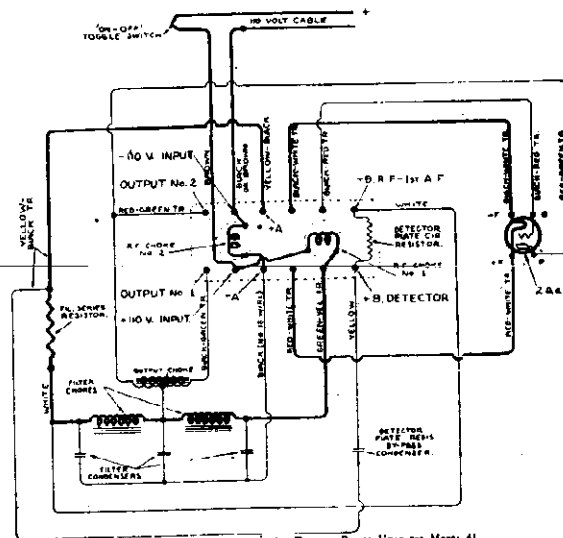


SIMPLIFIED DIAGRAM OF POWER UNIT AND FILAMENT CIRCUIT IN MODEL 41 RECEIVER.
Tubes of the 112-A type are used in all sockets except 2A and 2Aa.



WIRING DIAGRAM OF 2ND TYPE OF POWER UNIT FOR MODEL 41.

Filament Voltage	Grid Bias	Plate Voltage
4.8 V.	2 V.	60 V.
9.7 V.	4.8 V.	65 V.
85 V.	9.7 V.	65 V.

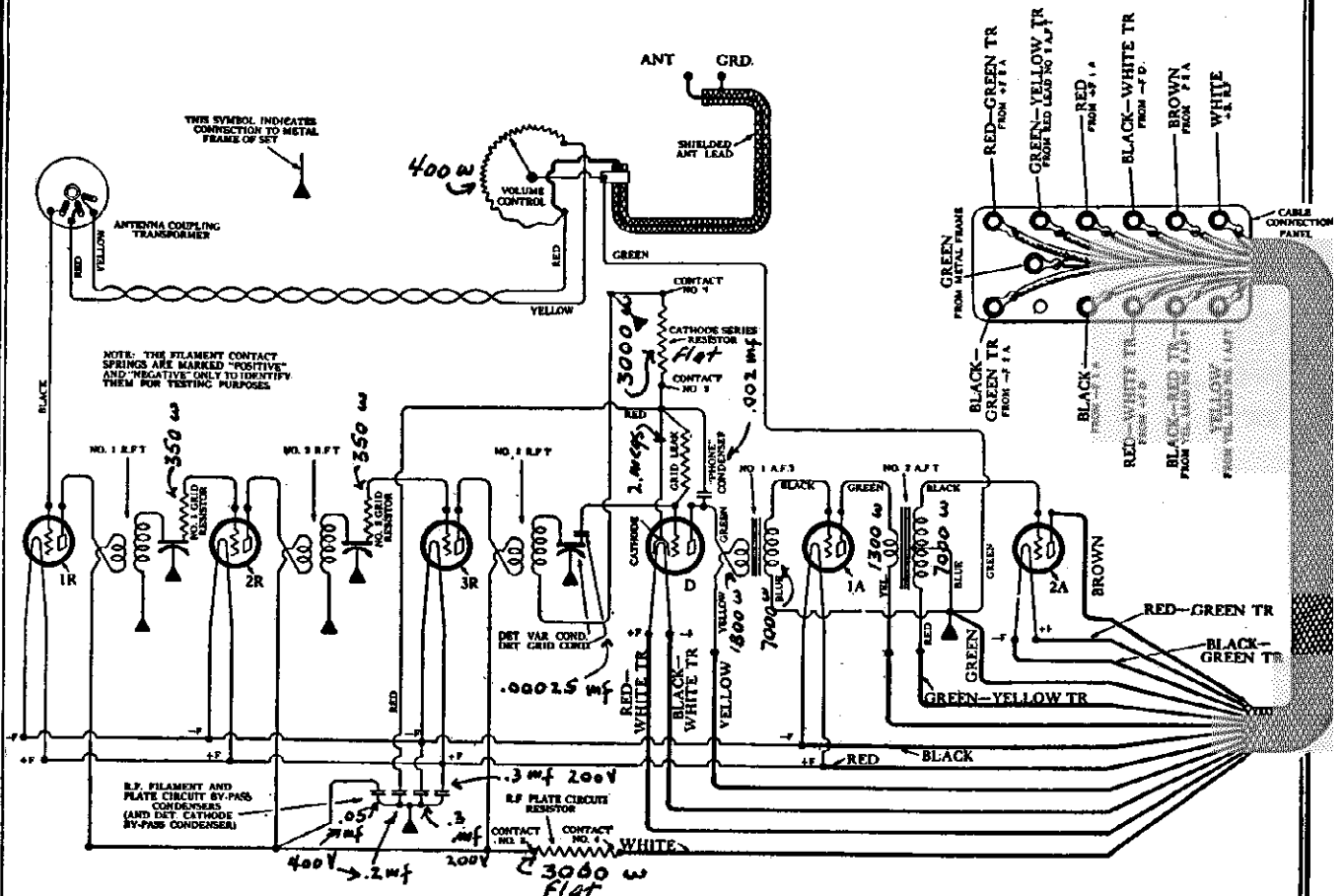


WIRING DIAGRAM OF 3RD TYPE OF POWER UNIT FOR MODEL 41.

Filament Voltage	Grid Bias	Plate Voltage
4.8 V.	2 V.	60 V.
9.7 V.	4.8 V.	65 V.
85 V.	9.7 V.	65 V.

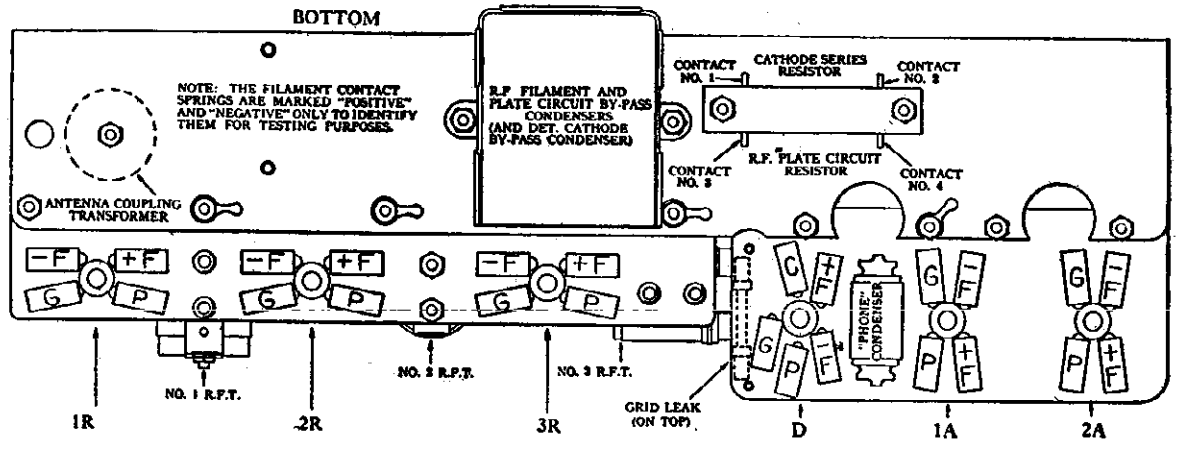
ATWATER KENT MFG. CO. MODEL 43 Receiver

Schematic



The +B, 1st A. F. cable lead is black with a red tracer.

Wiring diagram of Model 43 power pack is shown on 152



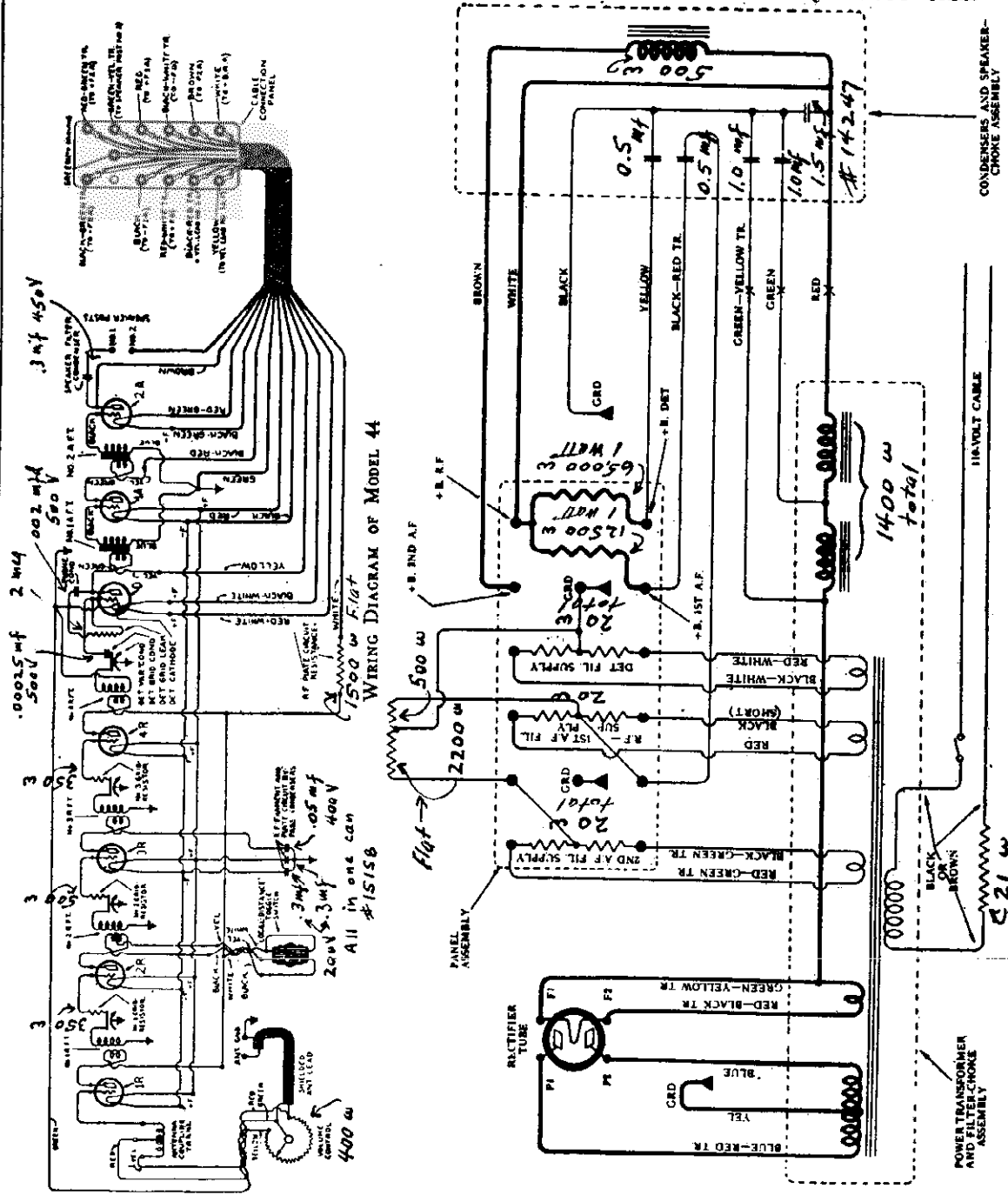
MODEL 44 and 45 ATWATER KENT MFG. CO.
SPECIAL NOTE.

1st type power unit for Model 44 is shown on page 145. Second type power unit for Model 45 is shown on page 148.

TRANSFORMERS IN MODELS 44 and 45

1st a-f primary 1000 ohms # 8060
1st a-f secondary 7000 ohms

2nd a-f primary 1700 ohms # 7661
2nd a-f secondary 3250 ohms



WIRING DIAGRAM OF MODEL 44

WIRING DIAGRAM OF 2ND TYPE OF POWER UNIT FOR MODEL 44

MODEL 50

ATWATER KENT MFG. CO.

MODEL 50

Model 50

CONDENSERS

Detector grid	.00025 mfd	# 8593	500 volts
Detector phone	.002 mfd	# 8590	500 volts
Plate bypass	.3 mfd	# 14902	450 volts

RESISTORS

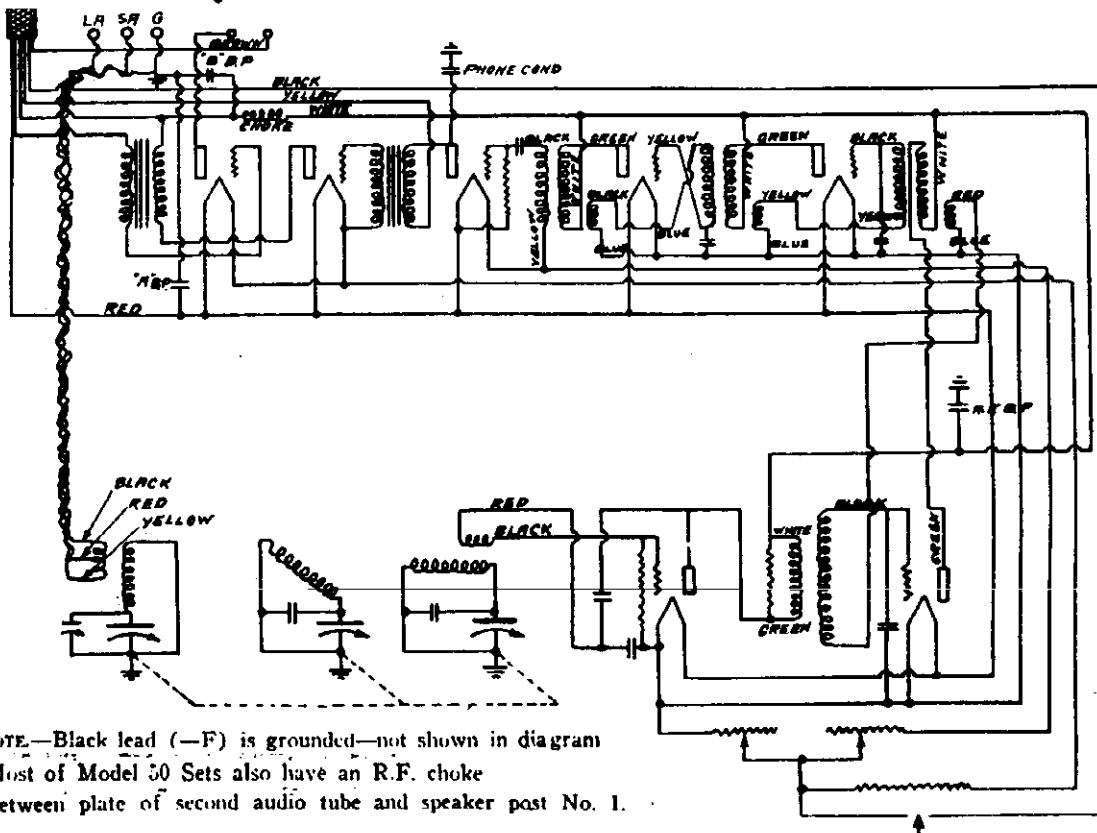
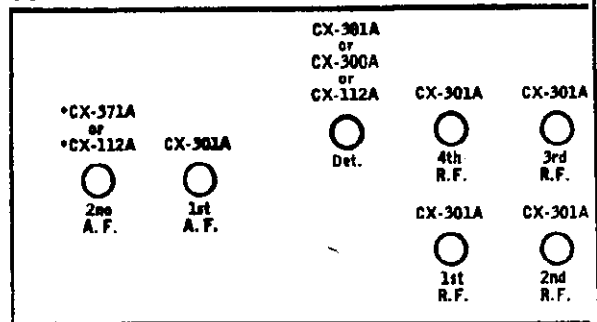
Detector grid leak	2.0 megs	# 15892 (8195)	1 watt
1st r-f plate	12500 ohms	# 8796	yellow glass
A-f filament	1.5 ohms	# 8627	black covered, flexible
Detector rheostat	20 ohms	# 8310	
R-f rheostat	5 ohms	# 8599	
R-f grid leak	2.0 megs	# 15892 (8195)	1 watt

CHOKES

A-f plate	35 ohms	# 8232
-----------	---------	--------

TRANSFORMERS

1st a-f primary	1000 ohms	# 8650
1st a-f secondary	7000 ohms	
2nd a-f primary	1400 ohms	# 8940
2nd a-f secondary	7000 ohms	



NOTE.—Black lead (—F) is grounded—not shown in diagram
 Most of Model 50 Sets also have an R.F. choke
 between plate of second audio tube and speaker post No. 1.

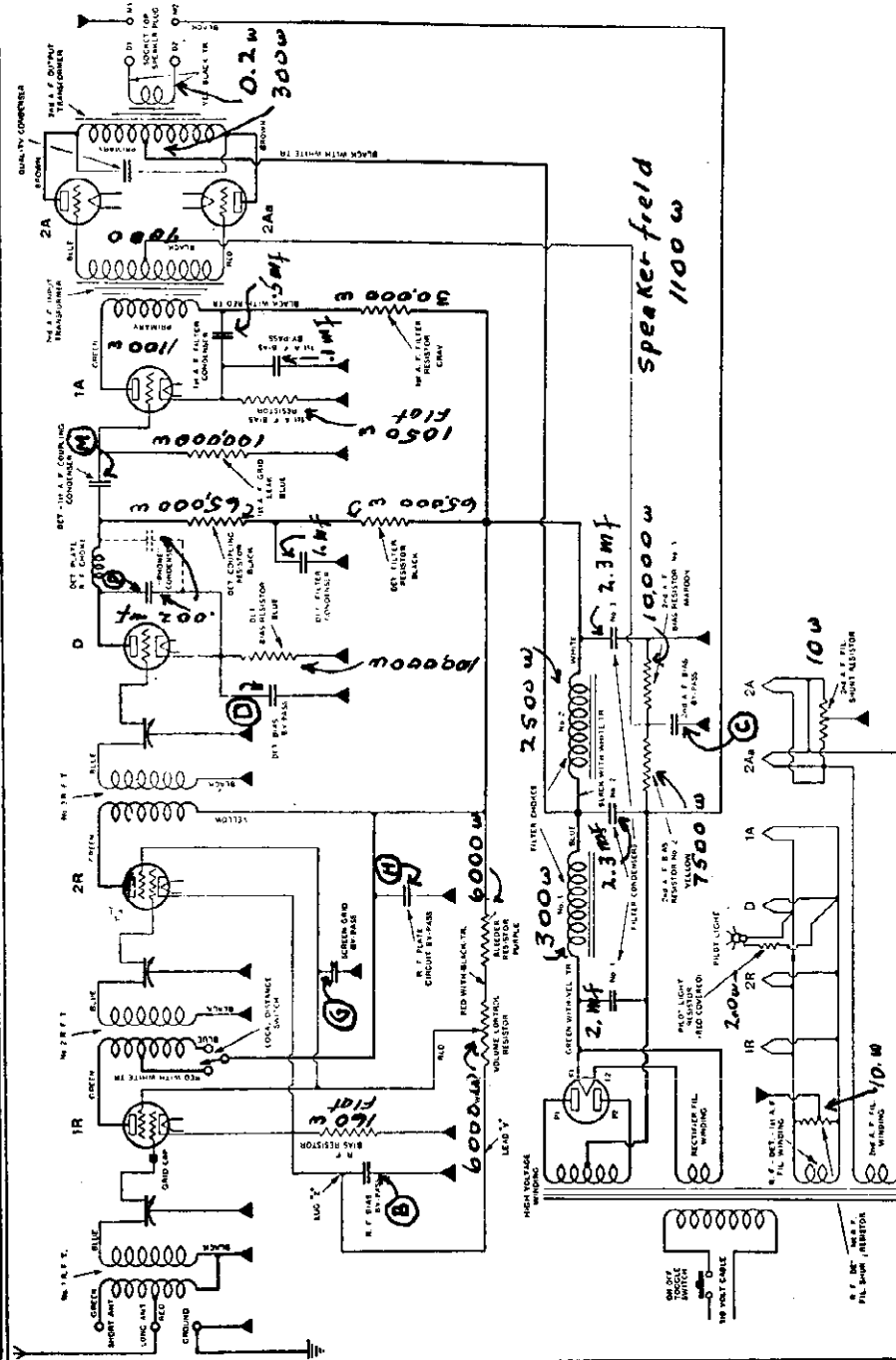
WIRING DIAGRAM OF MODEL 50.

ATWATER KENT MFG. CO.

MODEL 55, 55-C
Early

Tube	Filament		Plate		Grid		Screen	
	Early	Late	Early	Late	Early	Late	Early	Late
R-F	2.2	2.2	160	160	2.8	3.7	78	96
Det	2.2	2.2	101	101	11.	11.		
1st A-F	2.2	2.2	64	69	1.8*	2.8*		
2nd A-F	2.2	2.2	213	230	39.	46		
Rec	4.5	4.5						

* Measured voltage, not operating voltage. Line voltage 110 V.



FILTER CONDENSER CONNECTIONS. See chassis
 • These numbers refer to the figures shown within the circle
 representing the filter condenser can.

- 1st a-f filter .5 mfd connected between centre stud and terminal (3)
- Detector filter 1. mfd connected between terminal (4) and can
- 1st a-f bias .5 mfd connected between centre stud and can
- Filter #1 2.0 mfd connected between terminals (1) and (4)
- Filter #2 2.3 mfd connected between terminals (2) and (4)
- Filter #3 2.3 mfd connected between terminals (6) and can.

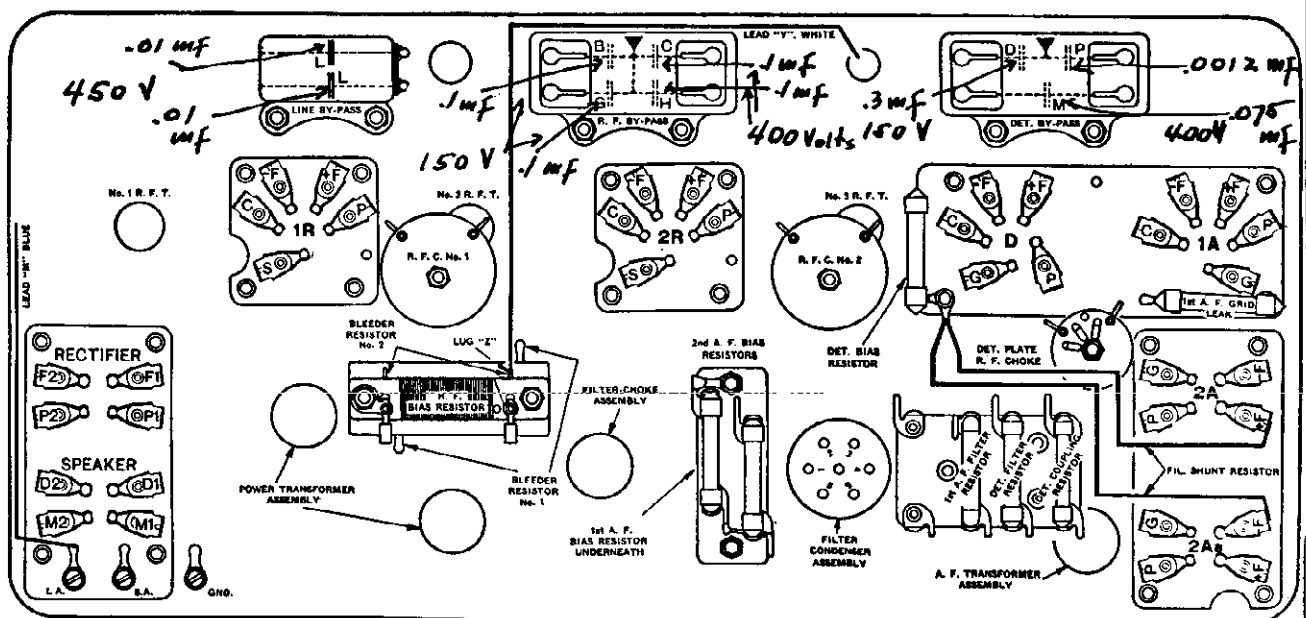
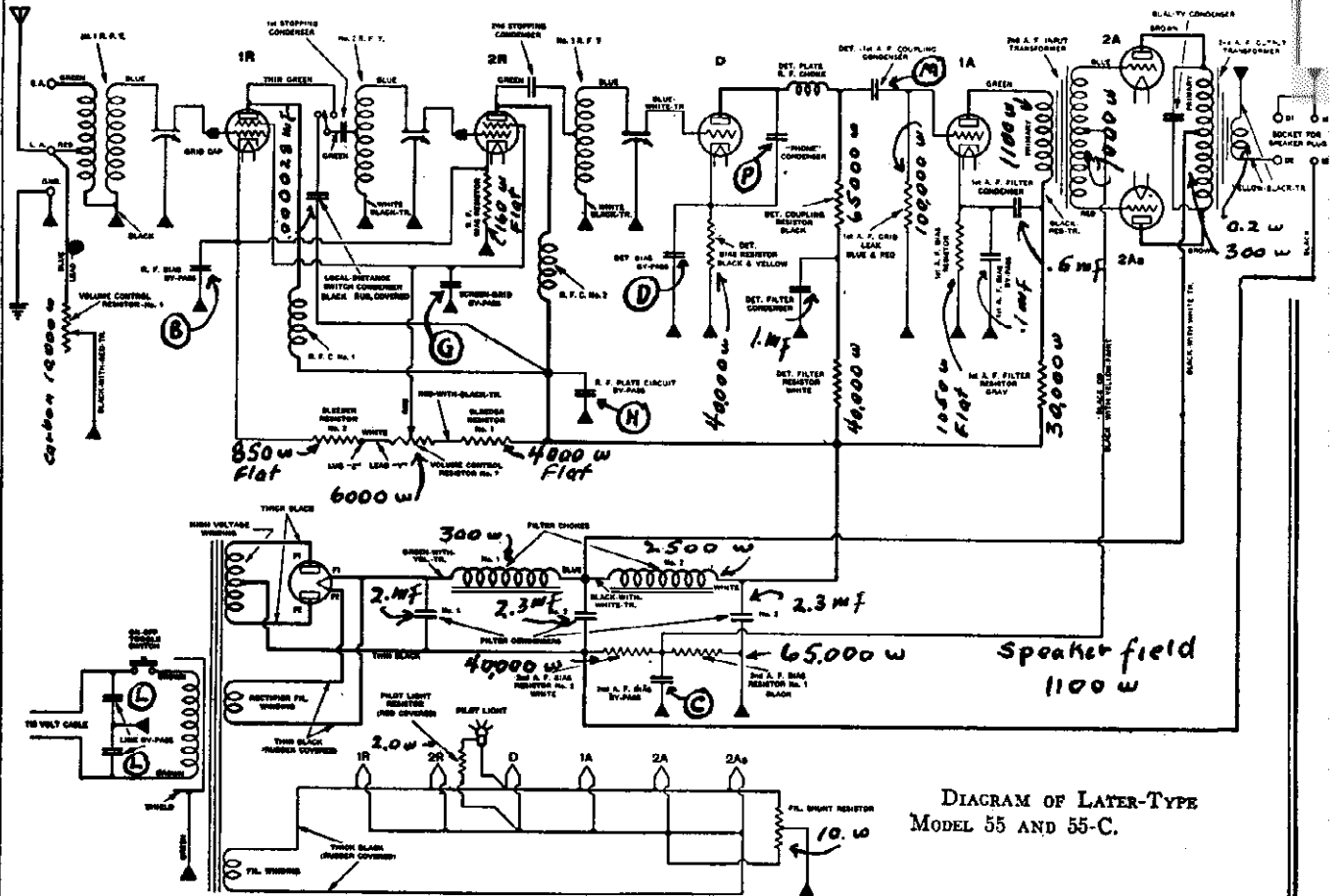
ATWATER KENT MFG. CO.

MODEL 55 and 55-C

Late

Schematic

Chassis



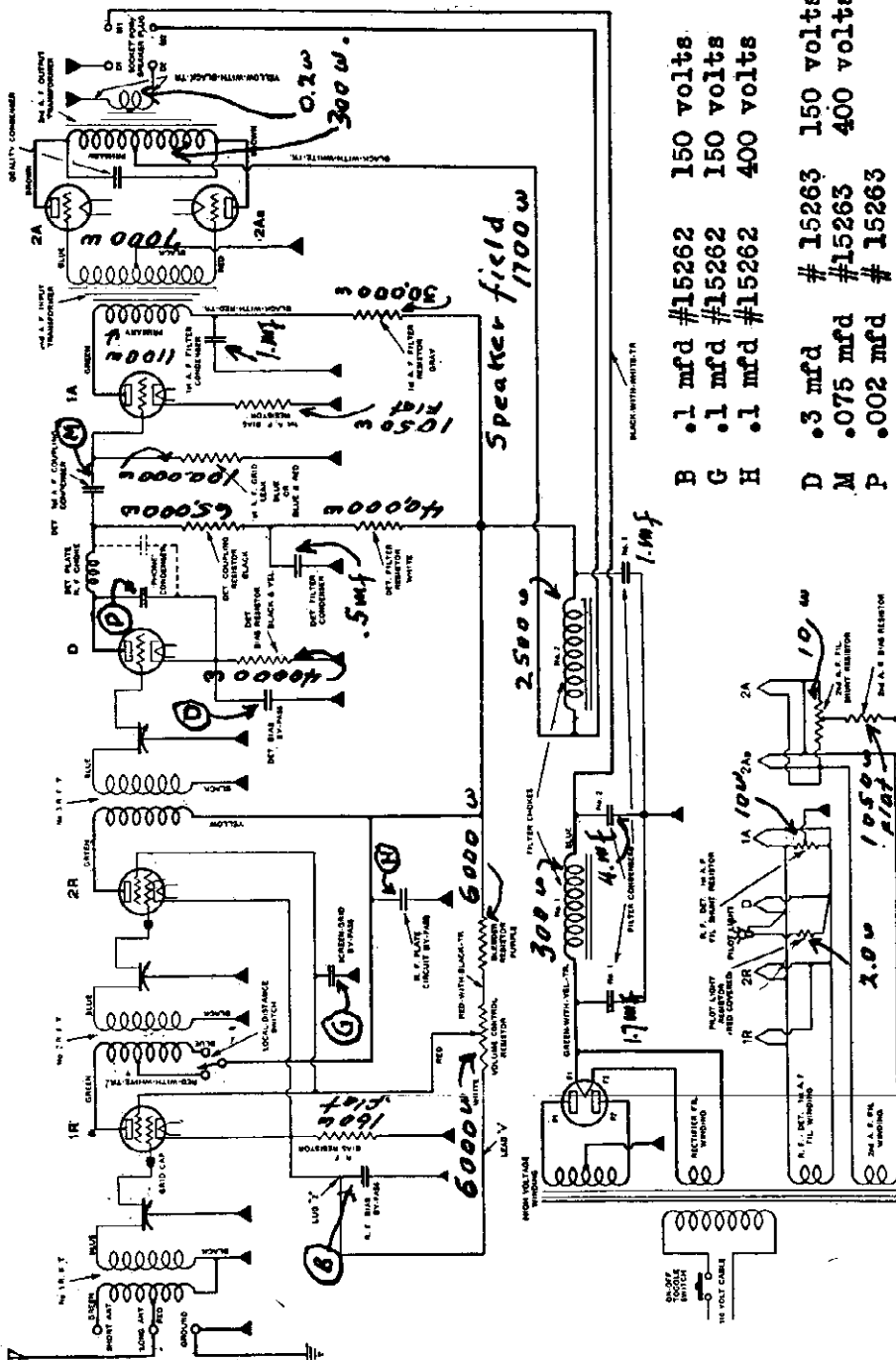
Condenser references on pages 1-17 and 1-18

MODEL 55-F and 55-FC ATWATER KENT MFG. CO.
Early

VOLTAGE TABLE

Tube	Filament	Plate	Grid	Screen
R-F	2.2	160	3.7	96
Det	2.2	101	11.	
1st A-F	2.2	69	2.8*	
2nd A-F	4.5	174	41.	
Rect.	4.5			

* Measured voltage, not operating voltage. Line voltage 110 V.



B	.1 mfd	#15262	150 volts
G	.1 mfd	#15262	150 volts
H	.1 mfd	#15262	400 volts
D	.3 mfd	# 15263	150 volts
M	.075 mfd	#15263	400 volts
P	.002 mfd	# 15263	

FILTER CONDENSER CONNECTIONS. (See chassis layout. The numbers and connections stated are marked upon the filter unit can and are also shown on the chassis layout within the circles designating the filter condenser can.)

- Filter #1 1.7 mfd connected between the center stud and can
- Filter #2 4.0 mfd connected between terminal (1) and can
- Filter #3 1.0 mfd connected between terminal (4) and can
- Detector filter .5 mfd connected between terminal (2) and can
- A-f filter 1.0 mfd connected between terminal (3) and can

DIAGRAM OF EARLY-TYPE MODEL 55-F AND 55-F-C.

MODEL 55-F and 55-FC **ATWATER KENT MFG. CO.**
Late
Chassis

FILTER CONDENSER CONNECTIONS. See data pertaining thereto on page 162
 Bypass condenser specifications are shown below.

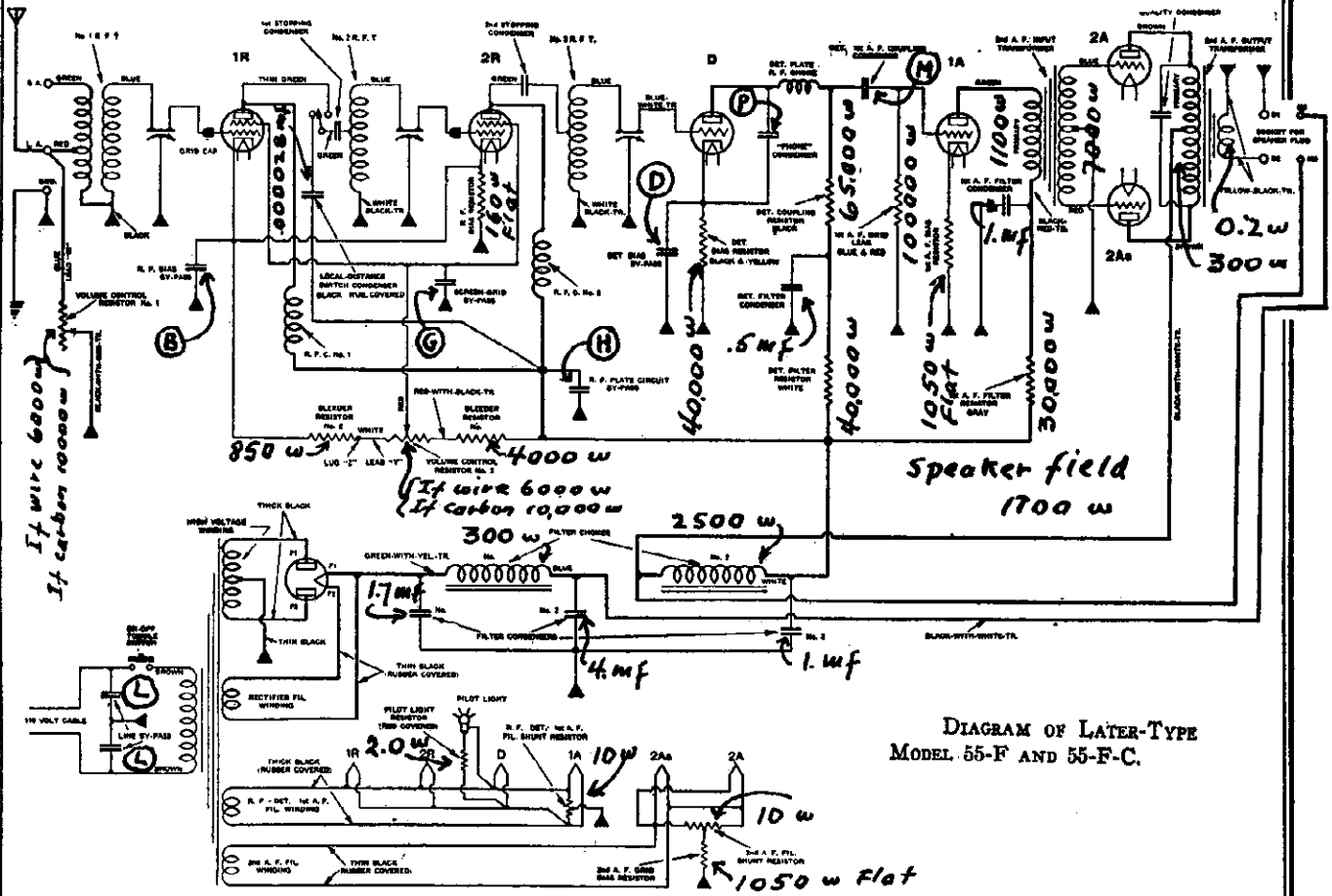
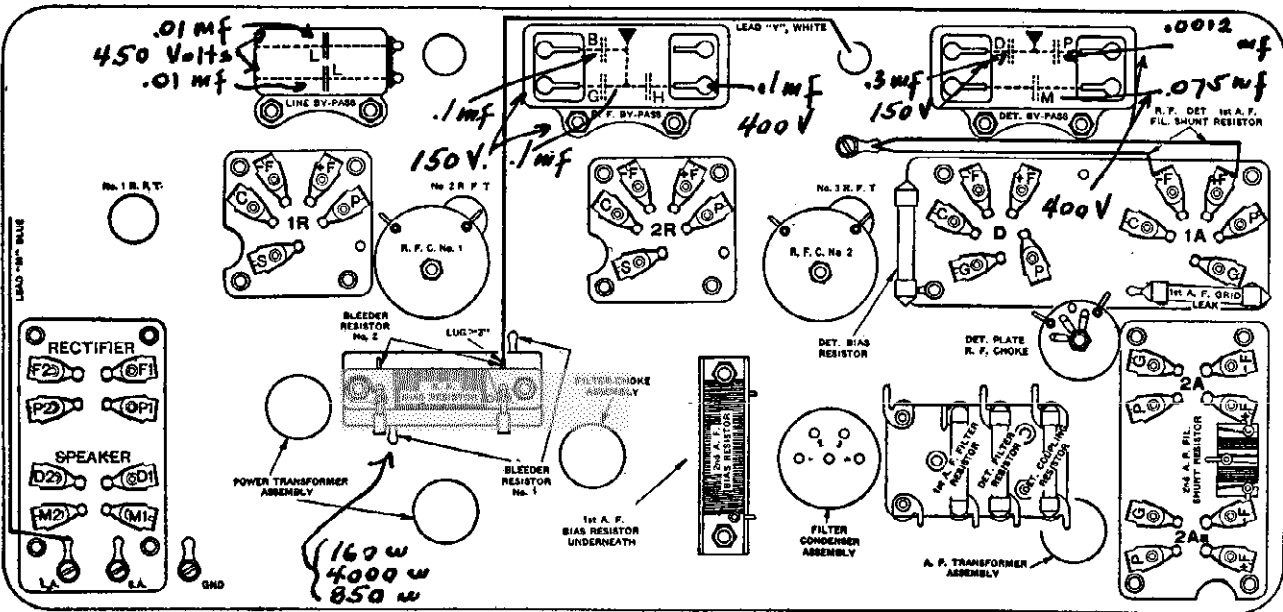


DIAGRAM OF LATER-TYPE
MODEL 55-F AND 55-F-C.



BOTTOM CHART OF LATER-TYPE MODEL 55-F AND 55-F-C.

ATWATER KENT MFG. CO.

MODEL 60 and 60-C

VOLTAGE DATA FOR MODELS 60 and 60-C (1st and 2nd Types)

Line voltage 110. Tube	Filament	120 volt line is Plate	10 percent higher. Grid	Screen
R-F (1st)	2.2	160	7.3	119 119
R-F (2nd-3rd)	2.2	160	3.7	83
Det.	2.2	101	11.	
A-F (1st)	2.2	69	1.8*	
A-F (2nd)	2.2	230	44.	
Rect.	4.5			

* Measured, not actual operating voltage.

VOLTAGE DATA FOR MODEL 60 and 60-C (3rd Type)

Line voltage 110. Tube	Filament	Volume control at minimum. Plate	Grid	Screen
R-F	2.3	170	16.5*	142
Det.	2.3	119	1.5	
A-F (1st)	2.3	73	1.9**	
A-B (2nd)	2.3	224	36. ***	

* local distance switch at distance

** Measured, not actual operating voltage.

*** If 2nd A-F bias resistor #1 is open, bias will be about 85 v.

Checking Sensitivity of Set

When checking the sensitivity of the set, it is necessary to use an oscillator, and a meter to indicate maximum output volume.

A local oscillator is necessary to ensure constancy of signal strength; signals from broadcast stations are not sufficiently constant for this work.

An output meter is necessary to ensure a reliable indication of output volume; the ear is not reliable enough for this purpose.

The oscillator feeds a weak signal into the receiver. The signal is amplified in the receiver and produces a reading on a meter which is connected to the output of the set. This meter indicates the strength of output volume. The reading on the output meter is greatest when all the tuned circuits

in the set are adjusted to the same frequency as the oscillator signal.

1. Oscillator.

The oscillator must provide modulated R. F. signals at four different frequencies in the broadcast range. These four frequencies should correspond to dial settings of 5, 45, 65 and 95 on the dial of a 3rd type Model 60-C which has the original factory synchronism.

Each of the four R. F. oscillators should have an adjustable pick-up so that the strength of each oscillator may be controlled independently of the other three.

2. Output Measuring Circuit.

The output measuring circuit is shown and described

Adjusting Trimmer Condensers

1. Connect the common pick-up lead from the four R. F. oscillators to one end of a No. 8112 condenser. Connect the other end of this condenser to the Long-Antenna post. Connect the oscillator container to the Ground 5. post.
2. Put plug "A" of the output measuring circuit in the speaker-plug socket on the set. Plug an F-4 type speaker in socket "B." Throw switch "D" to the right.
3. Put all tubes in the set; power switch on; volume control at maximum; local-distance switch at distance. Break away the sealing wax on the trimmer-condenser screws
4. Tune set exactly to 5 on dial. Reduce or increase the

amount of pick-up from the 1st oscillator to secure a reading of about 20 on the output meter.

With a screw-driver, turn the pressure screw of the 4th trimmer condenser one way or the other, as necessary, to the point where the reading on the output meter is greatest. Repeat this process on the 3rd trimmer, then on the 2nd, and finally on the 1st. Reduce the pick-up from the 1st oscillator if necessary in order to keep the needle of the galvanometer near the centre of its scale.

This adjustment of the trimmer-condenser screws is termed the CORRECT POSITION.

MODEL 61,61-C DC
Early
Schematic
ATWATER KENT MFG. CO.

FILTER CONDENSER DATA. The filter condenser unit in the Model 61 and 61-C, (Direct Current) Early, contains two of the filter condensers and two other bypass condensers. The numbers to be quoted in connection with the connections are marked upon the condenser can and are shown upon the chassis layout

- 1st a-f filter .5 mfd connected between terminals (1) and (3)
- Detector filter 1.0 mfd connected between terminals (2) and (6)
- Filter # 2 4.0 mfd connected between terminal (4) and center stud
- Filter # 3 2.0 mfd connected between terminal (5) and center stud

Filter #1 is a part of one of the bypass units as stated elsewhere on this page.

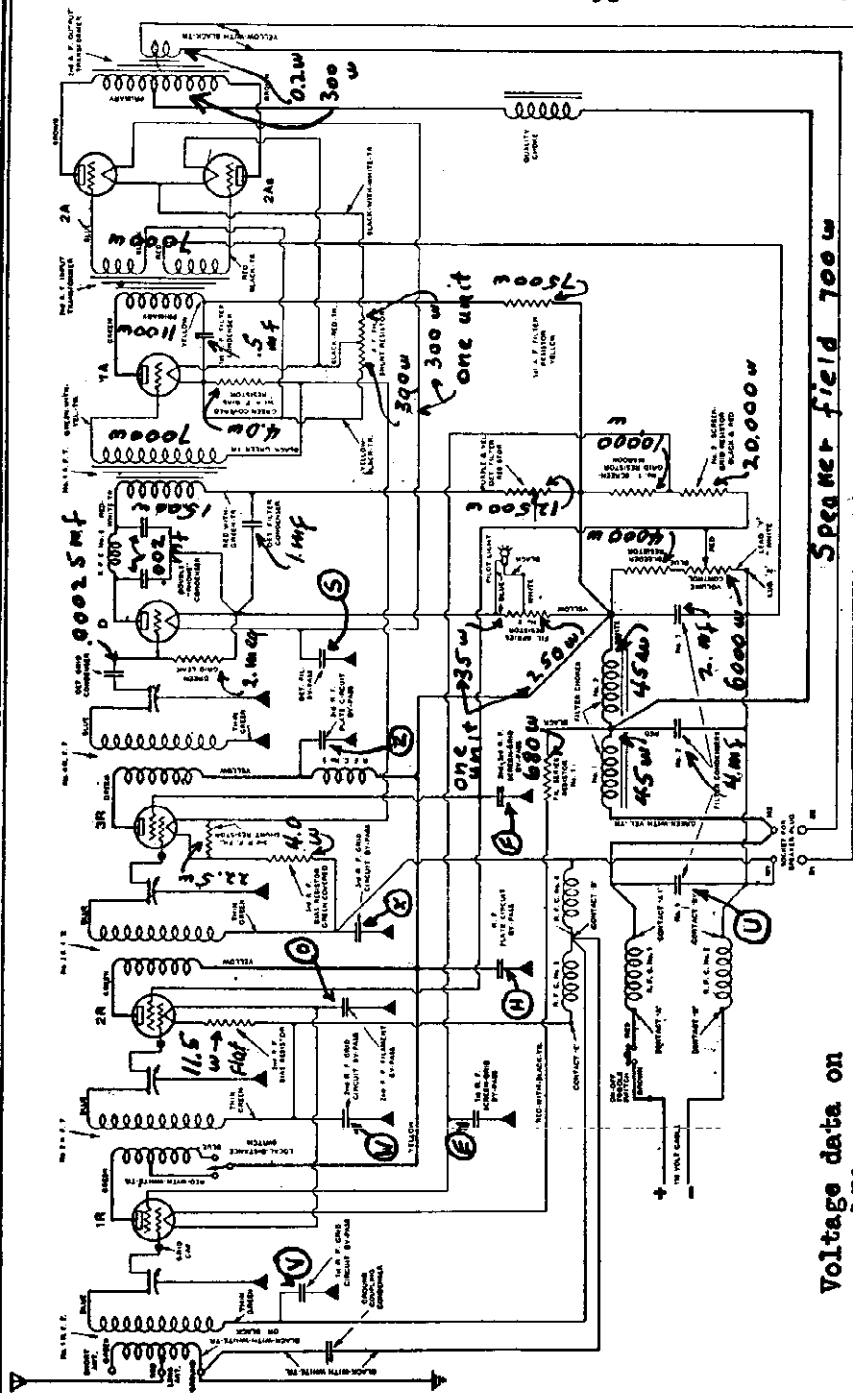


DIAGRAM OF EARLY MODEL 61 AND 61-C (DIRECT CURRENT).

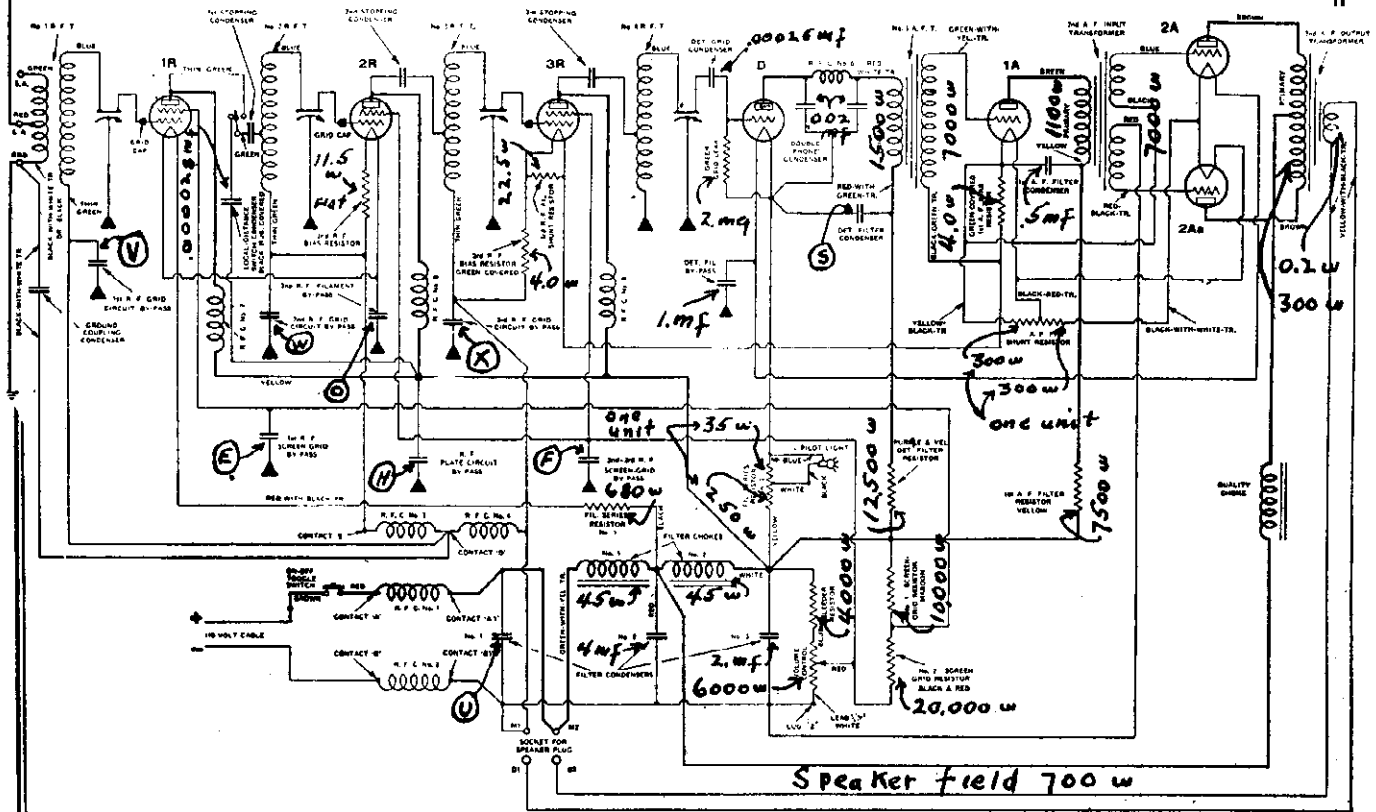
BYPASS CONDENSERS. The following designating letters are shown upon the schematic wiring diagram and also upon the chassis layout

RF Bypass #1	E	.1 mfd	150 volts	O	.1 mfd	400 volts
RF Bypass #2	V	.1 mfd	150 volts	W	.1 mfd	400 volts
Detector Bypass	F	.1 mfd	400 volts	H	.1 mfd	400 volts
	X	.1 mfd	150 volts	Z	.1 mfd	150 volts
	S	.3 mfd	150 volts	U*	.075 mfd	400 volts

* Condenser U is Filter #1

MODEL 61-61-C
Late Schematic

ATWATER KENT MFG. CO



SCHEMATIC DIAGRAM OF LATER MODEL 61 AND 61-C (DIRECT CURRENT).

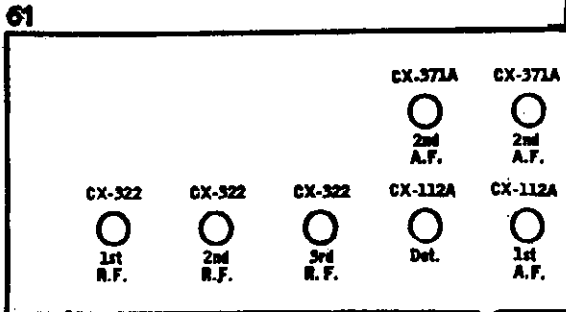
FILTER CONDENSER SPECIFICATIONS are shown on page 174.
BYPASS CONDENSER designations shown upon wiring diagram also appear upon chassis layout on page 177. For BYPASS CONDENSER data refer only to page 177 and not to page 174.

	R-F	Det.	1st A-F	2nd A-F	61
Fil.	2.9	4.6	4.6	4.6	
Plate	78	32	50	80	
Grid	4.6*		1.4	9	
Screen	60**				

* This voltage applies only to the 1st R-F stage. The 2nd R-F bias voltage is 1.4 volts and the 3rd R-F bias voltage is 0.9 volts.

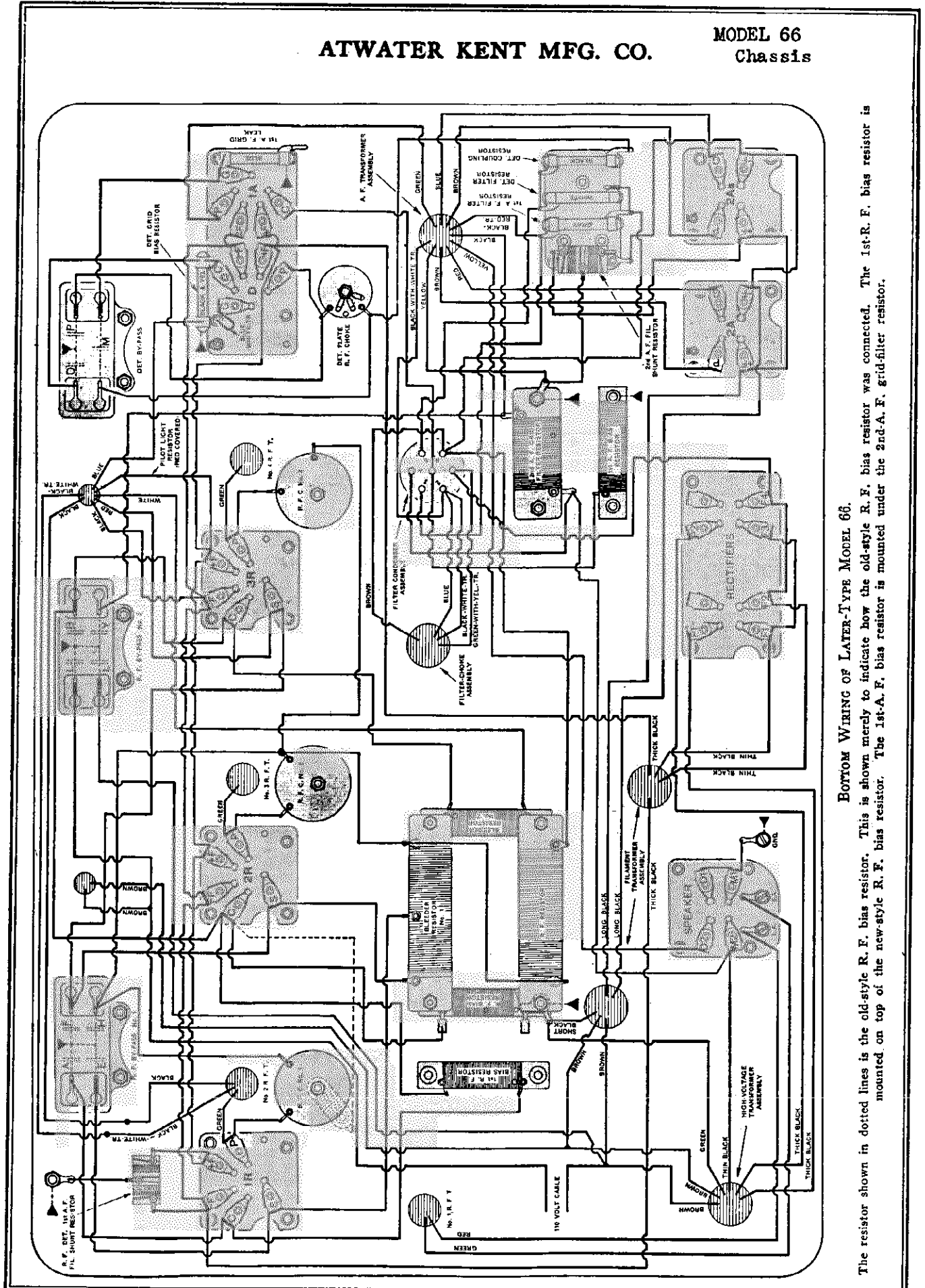
**The screen voltage quoted applies only to the third R-F tube. The other R-F tubes secure different values of screen voltage. R-F tube number 1 or rather the first R-F stage has 46 volts applied to its screen. Likewise the 2nd R-F stage has 46 volts applied to its screen.

The forementioned voltage measurements are made with the volume control adjusted to minimum.



ATWATER KENT MFG. CO.

MODEL 66 Chassis



BOTTOM WIRING OF LATER-TYPE MODEL 66.
 The resistor shown in dotted lines is the old-style R. F. bias resistor. This is shown merely to indicate how the old-style R. F. bias resistor was connected. The 1st-R. F. bias resistor is mounted on top of the new-style R. F. bias resistor. The 1st-A. F. bias resistor is mounted under the 2nd-A. F. grid-filter resistor.

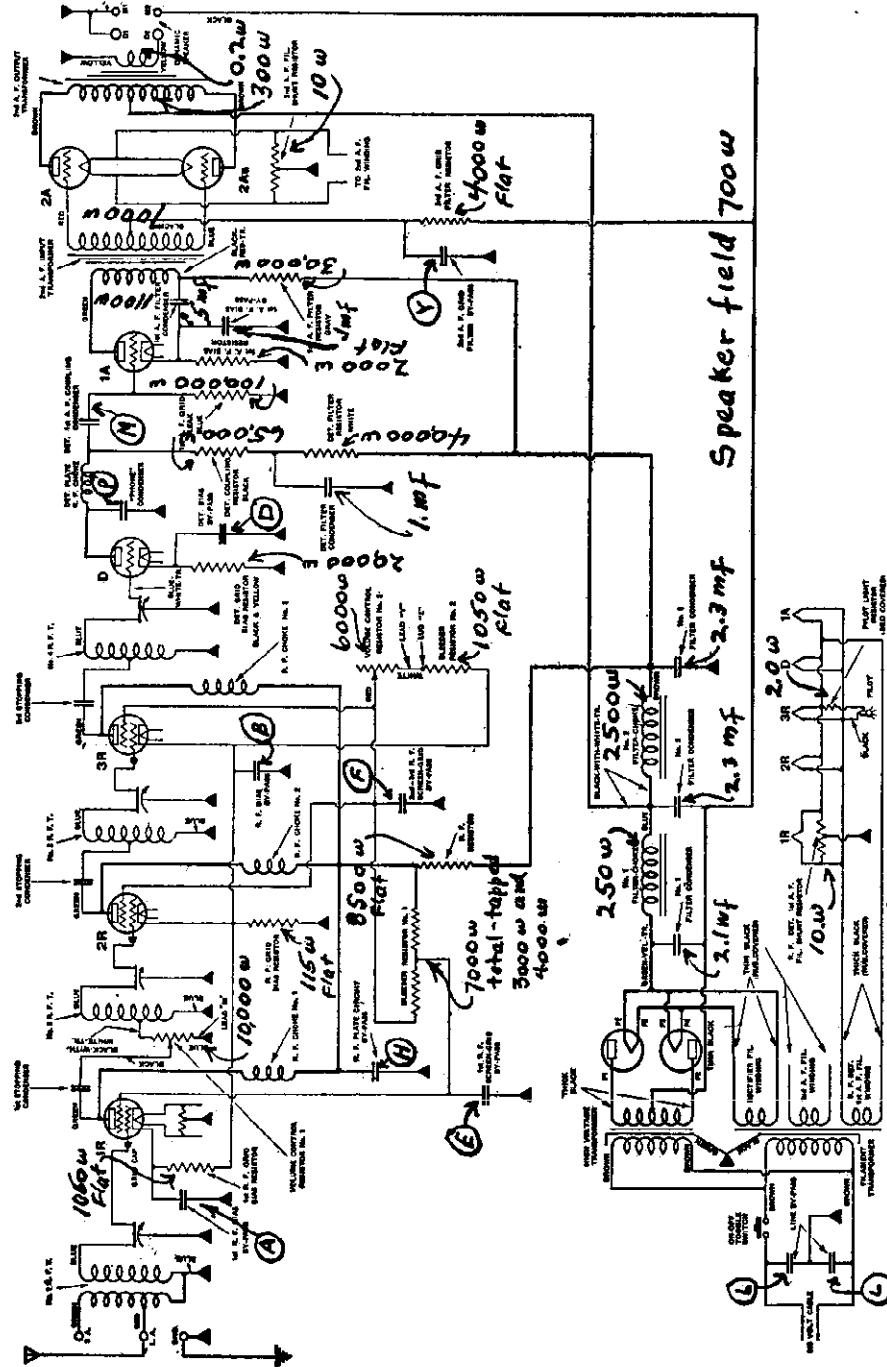
MODEL 66
Schematic
Data.

ATWATER KENT MFG. CO

FILTER CONDENSER CONNECTIONS. The following specifications should be used in conjunction with the schematic shown below and the chassis layout shown on

The numerals refer to the numbers marked upon the condenser can

- Filter #1 2.1 mfd connected between terminals (1) and (4)
- Filter #2 2.3 mfd connected between terminals (2) and (4)
- Filter #3 2.3 mfd connected between terminal (6) and can
- Detector filter 1.0 mfd connected between terminal (5) and can
- 1st a-f filter 0.5 mfd connected between center stud and can
- 1st a-f bias 0.1 mfd connected between center stud and (3)



In some early Model 66, volume control resistor No. 1 is connected across the R. F. choke coil in the plate circuit of the 1st R. F. tube. The slider of this resistor is connected to a tap on No. 2 R. F. T. through a coupling condenser.

CIRCUIT OF MODEL 66.

BYPASS CONDENSER VALUES. The letter designations given should be used in conjunction with the schematic wiring diagram above and the chassis layout

RF Bypass #1	A	.1 mfd	150 volts	F	.1 mfd	400 volts
	E	.1 mfd	150 volts	H	.1 mfd	400 volts
RF Bypass #2	B	.1 mfd	150 volts	L	.01 mfd	400 volts
	Y	.1 mfd	150 volts	L	.01 mfd	400 volts
Detector Bypass	D	.3 mfd	150 volts	M	.075 mfd	400 volts
				P	.0012 mfd	400 volts

ATWATER KENT MFG. CO.

MODEL 67, 67-C
Early and Late
Schematic

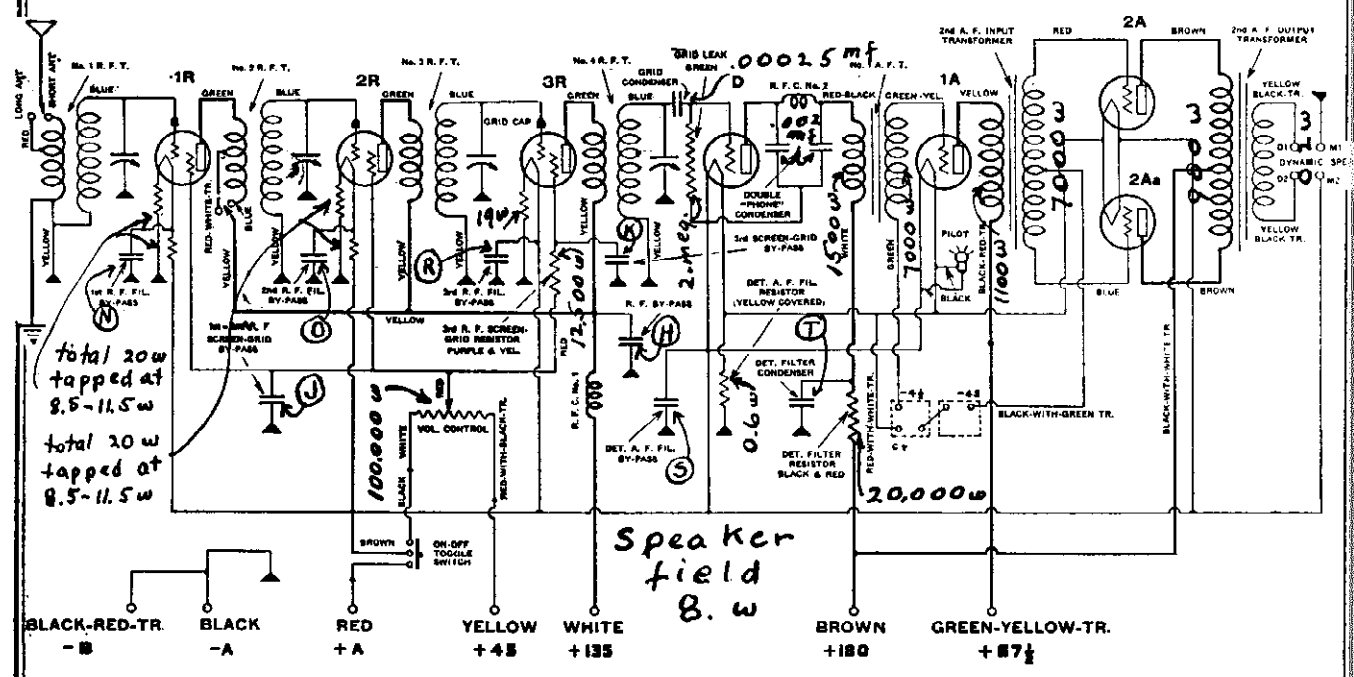


DIAGRAM OF EARLY MODEL 67 AND 67-C (BATTERY OPERATED).

Voltage data on page 180

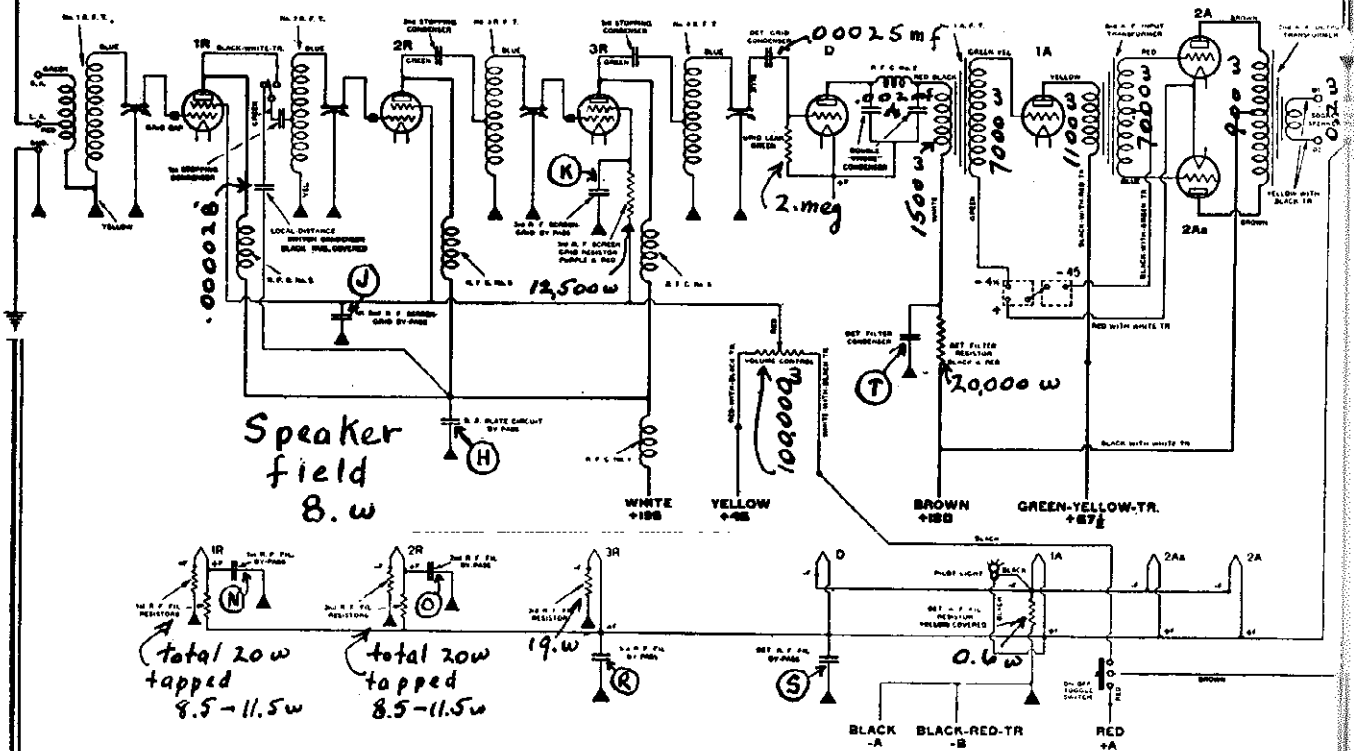


DIAGRAM OF LATER MODEL 67 AND 67-C (BATTERY OPERATED).

MODEL 66 Voltage
MODEL 67 and 67-C
Voltage

ATWATER KENT MFG. CO.

VOLTAGE DATA FOR MODEL 66

Line voltage 110. Line voltage of 120 volts increases voltage 10%.

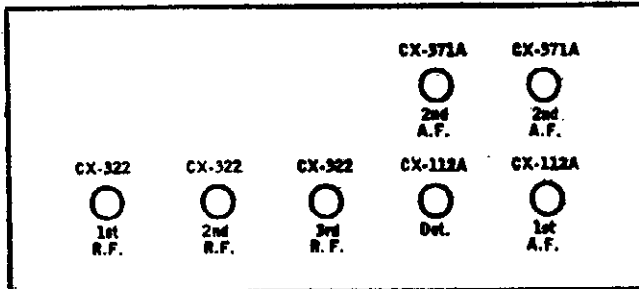
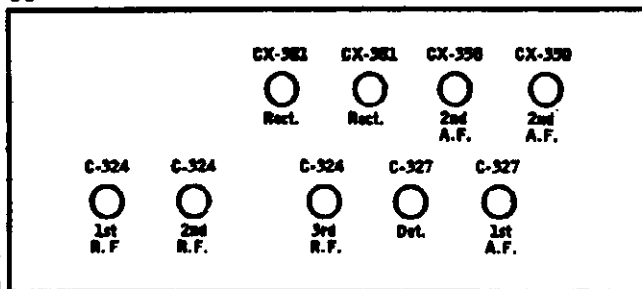
Tube	Filament	Plate	Grid	Screen
R-F (1st)	2.2	158	5.5	110
R-F (2nd-3rd)	2.2	160	2.8	78
Detector	2.2	206	23.	
A-F (1st)	2.2	137	2.8*	
A-F (2nd)	6.9	412	78.	

* This is the measured voltage, not the actual operating voltage.

66

(A.C.) 67

(Batt.



VOLTAGE DATA FOR MODELS 67 and 67-C

These values apply when the total "B" voltage is 150 volts.

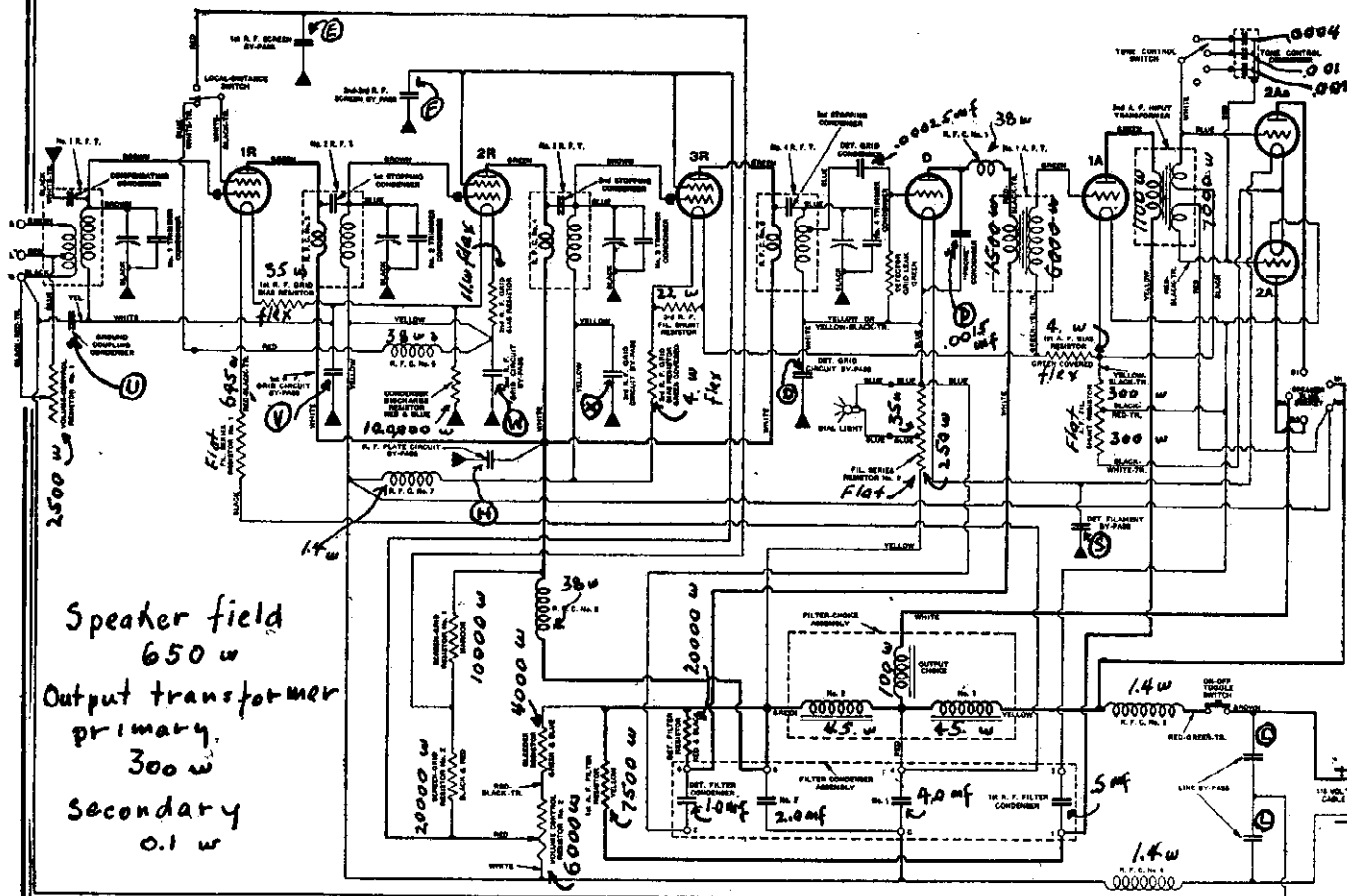
Tube	Filament	Plate	Grid	Screen
RF (1st-2nd)	3.3	110	1.5	30
R-F (3rd)	3.3	110	2.5	25
Det.	5.0	50	--	
A-F (1st)	5.0	55	4.5	
A-F (2nd)	5.0	150	45.	

These values apply when the total "B" voltage is 180 volts.

Tube	Filament	Plate	Grid	Screen
R-F (1st-2nd)	3.3	135	1.5	45
R-F (3rd)	3.3	135	2.5	40
Det.	5.0	60	--	
A-F (1st)	5.0	65	4.5	
A-F (2nd)	5.0	180	45.	

ATWATER KENT MFG. CO.

MODEL 70, 74, 76
Chassis D



Speaker field
650 w
Output transformer
primary
300 w
Secondary
0.1 w

DIAGRAM OF D-1 CHASSIS.

BYPASS CONDENSERS. The letters within the circles adjacent to the various bypass condensers correspond with the letters shown within the respective bypass units on chassis layout

Note exception stated beneath the following tabulation.

RF Bypass #1	L	.01 mfd	400 volts	L	.01 mfd	400 volts	# 14710
	U	.02 mfd	400 volts				
RF Bypass #2	E	.01 mfd	400 volts	F	.01 mfd	400 volts	# 15262
	V1*	.01 mfd	400 volts	W1*	.01 mfd	400 volts	
RF Bypass #3	H	.01 mfd	400 volts	S	.01 mfd	400 volts	# 16880
	P	.0015mfd	400 volts				
RF Bypass #4	D	.01 mfd	400 volts	V	.01 mfd	400 volts	# 15262
	X	.01 mfd	400 volts	W	.01 mfd	400 volts	

* Used only in D-2 chassis as shown in wiring diagram of D-2 receiver
These two condensers are not used in D-1 chassis, but are shown in their proper position in the chassis layout

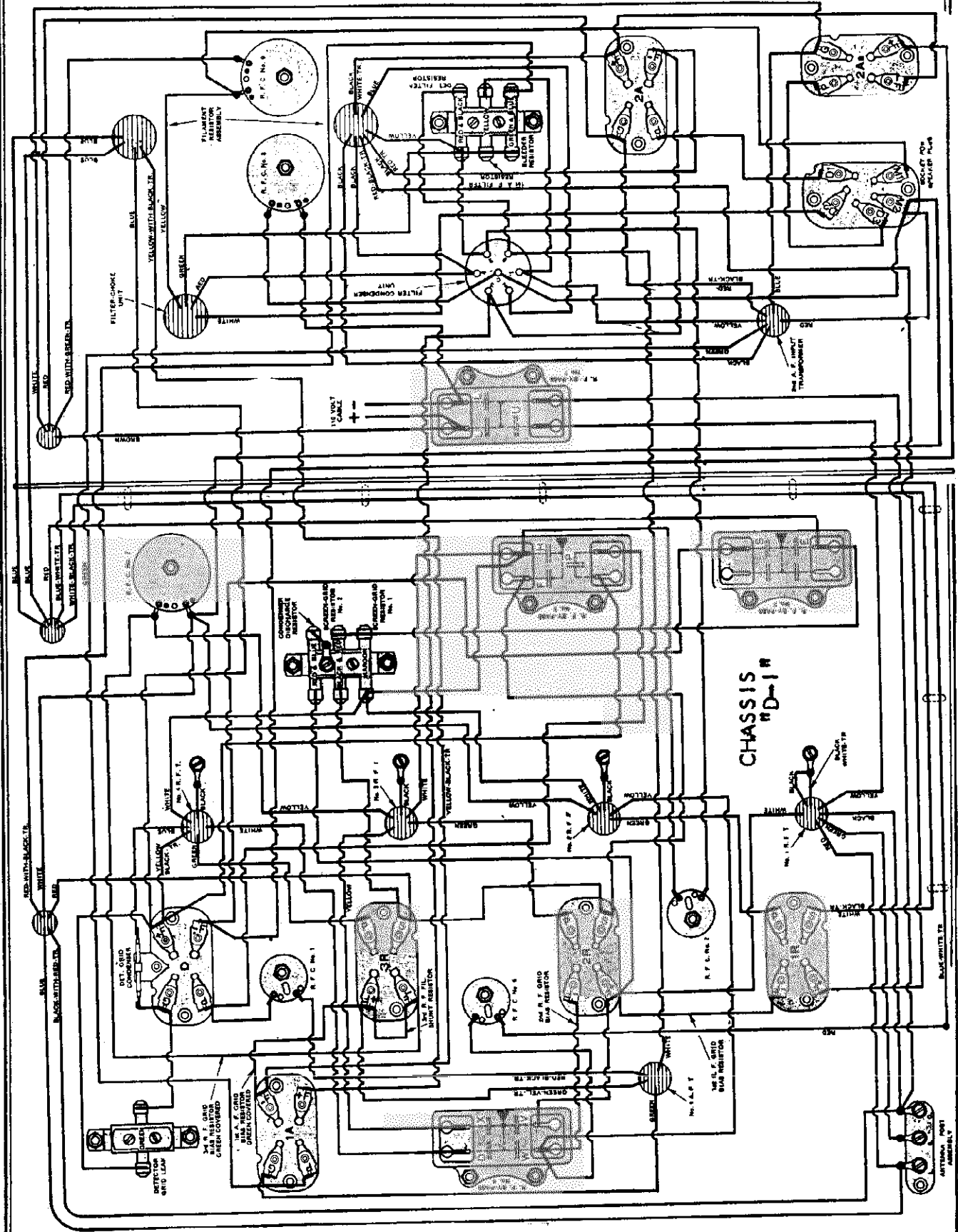
Tone control All condensers are rated at 100 volts

SPECIAL NOTE.

Chassis D-1 and D-2 are identical except for the minor changes noted above in connection with bypass condensers W1 and V1 and also as noted on the D-2 schematic

MODEL 70,74,76
Chassis "D-1"

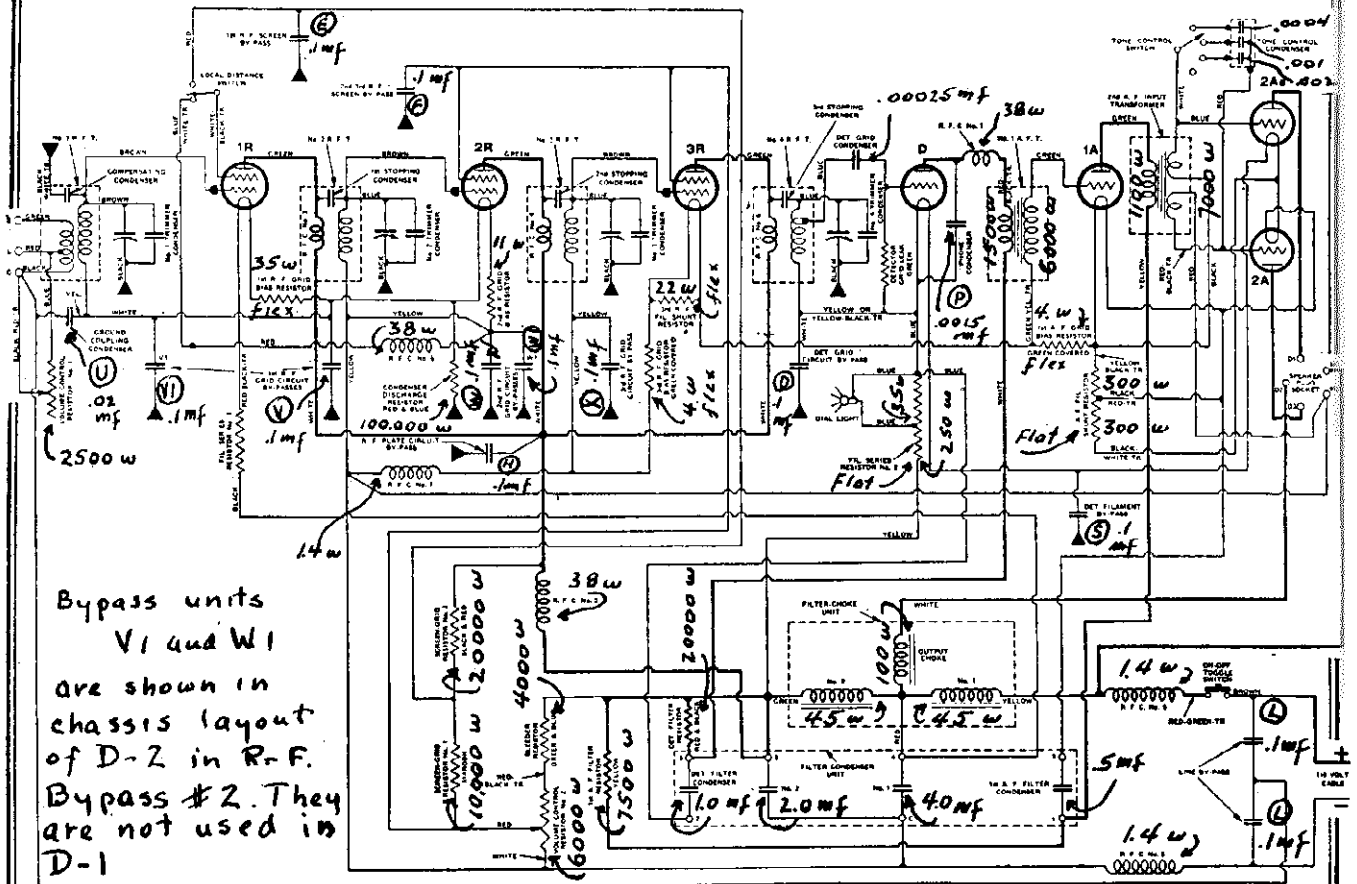
ATWATER KENT MFG. CO.



Voltage data on page 189

ATWATER KENT MFG. CO.

MODEL 70, 74, 76
Chassis "D-2"



SCHMATIC DIAGRAM OF TYPE D-2 CHASSIS.

Note the addition of by-pass condensers V-1 and W-1 and the reversal of screen-grid resistors No. 1 and No. 2.

VOLTAGE TABLE FOR TYPE D CHASSIS

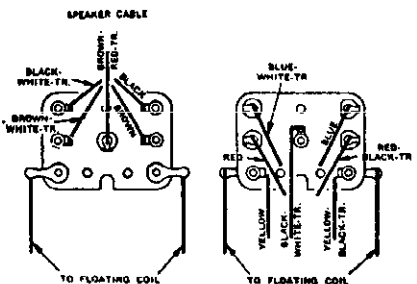
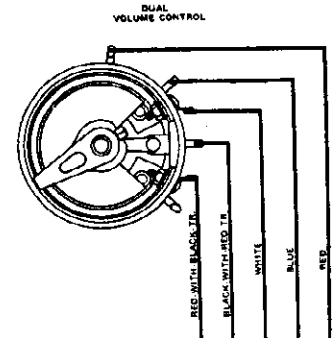
Set in operation. Volume control at maximum.
L-D switch at distance.

Use High Resistance D. C. Voltmeter (about 0-50-250) to Measure Plate and Grid Voltages.
Use A. C. Voltmeter to Measure Filament Voltages.

APPROX. VOLTAGES, USING 120 V. LINE

TUBE	FILAMENT VOLTAGE	PLATE VOLTAGE	CONTROL-GRID VOLTAGE	SCREEN VOLTAGE
1st-R.F.	3-3	75	4.2	60*
2nd-R.F.	3-3	75	1.3	50
3rd-R.F.	3-3	75	1	50
Detector	5	20	—	—
1st-A.F.	5	45	6	—
2A	5	75	10	—
2Aa	5	80	10	—

All readings made from cathode in heater-type tubes, and from —F in plain-filament-type tubes.
Use 250-volt scale to measure 2nd A. F. grid voltage.
*This is 50 volts in D-2 chassis.

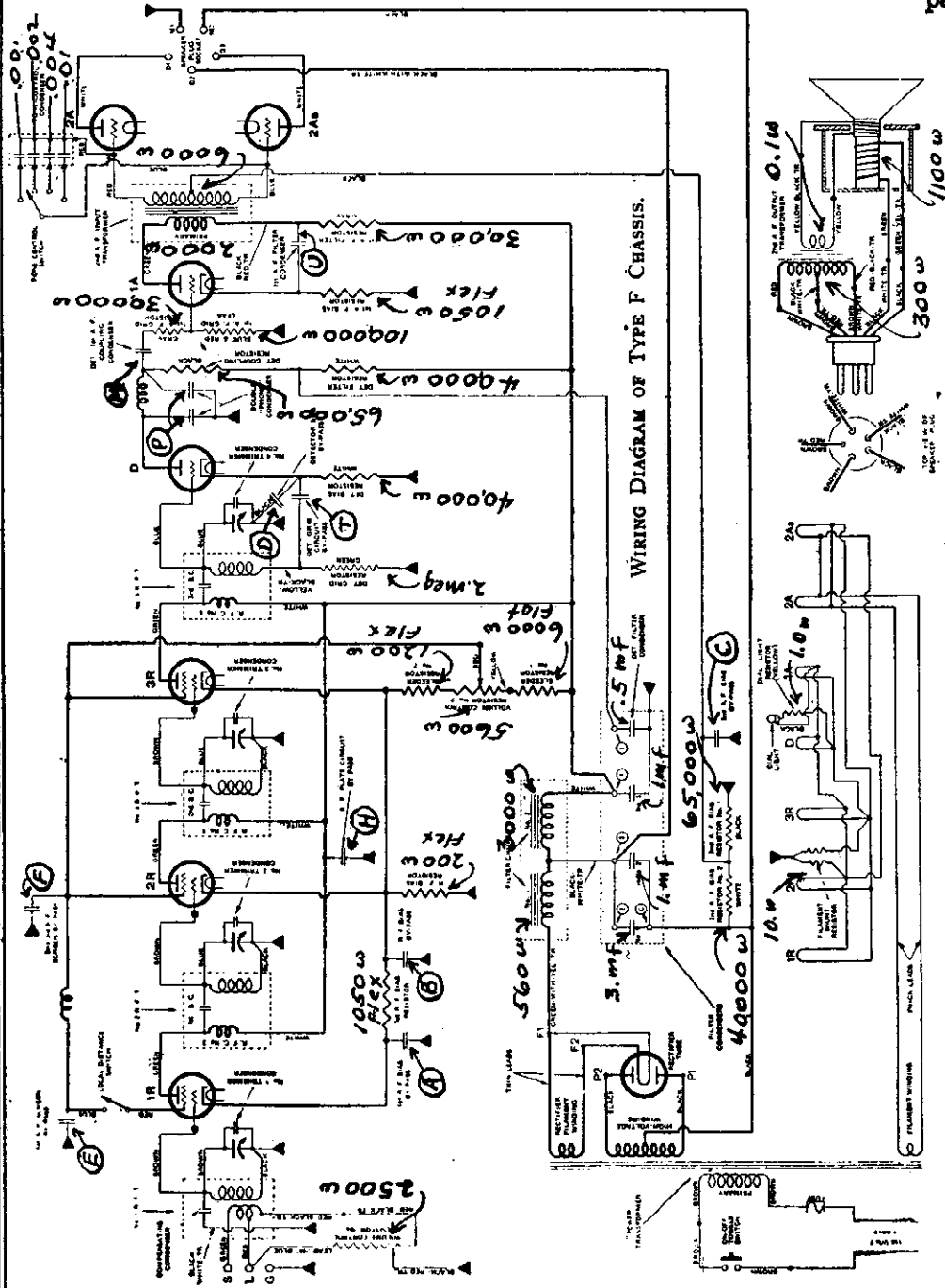


SPEAKER PANEL CONNECTIONS

MODEL 70,74,76
Chassis F

ATWATER KENT MFG. CO.

Voltage data on
page 186



In some early-type F chassis, a line by-pass condenser is used and the 1st-A. F. grid resistor (gray) is omitted.
In later-type F chassis, the filter condenser has only four contacts, A. F. grid leak is connected to the opposite end of the 1st-A. F. grid resistor.

FILTER CONDENSER. In early models, the filter condenser has five contacts as indicated by the numbers within circles in the diagram. For those shown there

Detector filter .5 mfd connected between terminal (1) and can
Filter #1 3.0 mfd connected between terminal (2) and center stud
Filter #2 1.0 mfd connected between terminal (3) and center stud
Filter #3 1.0 mfd connected between terminal (4) and can

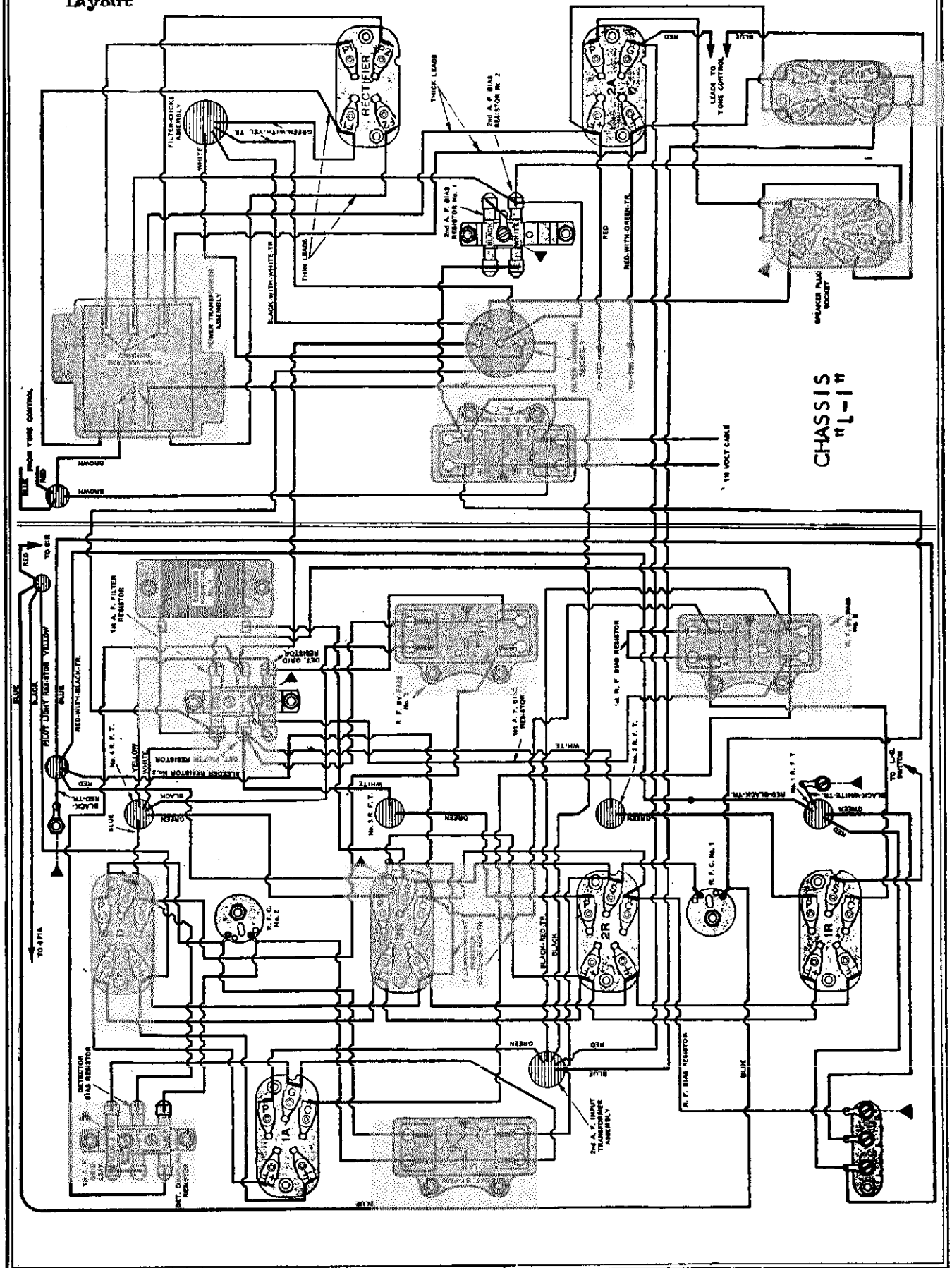
BYPASS CONDENSERS. The letters within the circles correspond with the designations within the bypass units shown in the chassis layout

RF Bypass #1	C	.1 mfd	400 volts	E	.1 mfd	400 volts	# 15790
	F	.01mfd	400 volts	(In very early F "F" is .1 mfd.)			
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts	# 15770
	B	.1 mfd	150 volts				
RF Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15780
	T	.04 mfd	400 volts				
Detector Bypass	H	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	

Tone Control All condensers are rated at 100 volts

MODEL 70,74,76
Chassis "L-1"
Layout

ATWATER KENT MFG. CO.



MODEL 70,74,76
Chassis L-1

ATWATER KENT MFG. CO.

BYPASS CONDENSERS. The letters within the circles designate the condensers within the multiple units shown on the chassis layout

RF Bypass #1	L	.01 mfd	400 volts	L	.01 mfd	400 volts	# 15790
	C	.1 mfd	400 volts	E	.1 mfd	400 volts	
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts	#15770
	B	.1 mfd	150 volts				
RF Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15780
	T	.04 mfd	400 volts				
Detector Bypass	F	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	
Tone Control	All condensers rated at 100 volts						

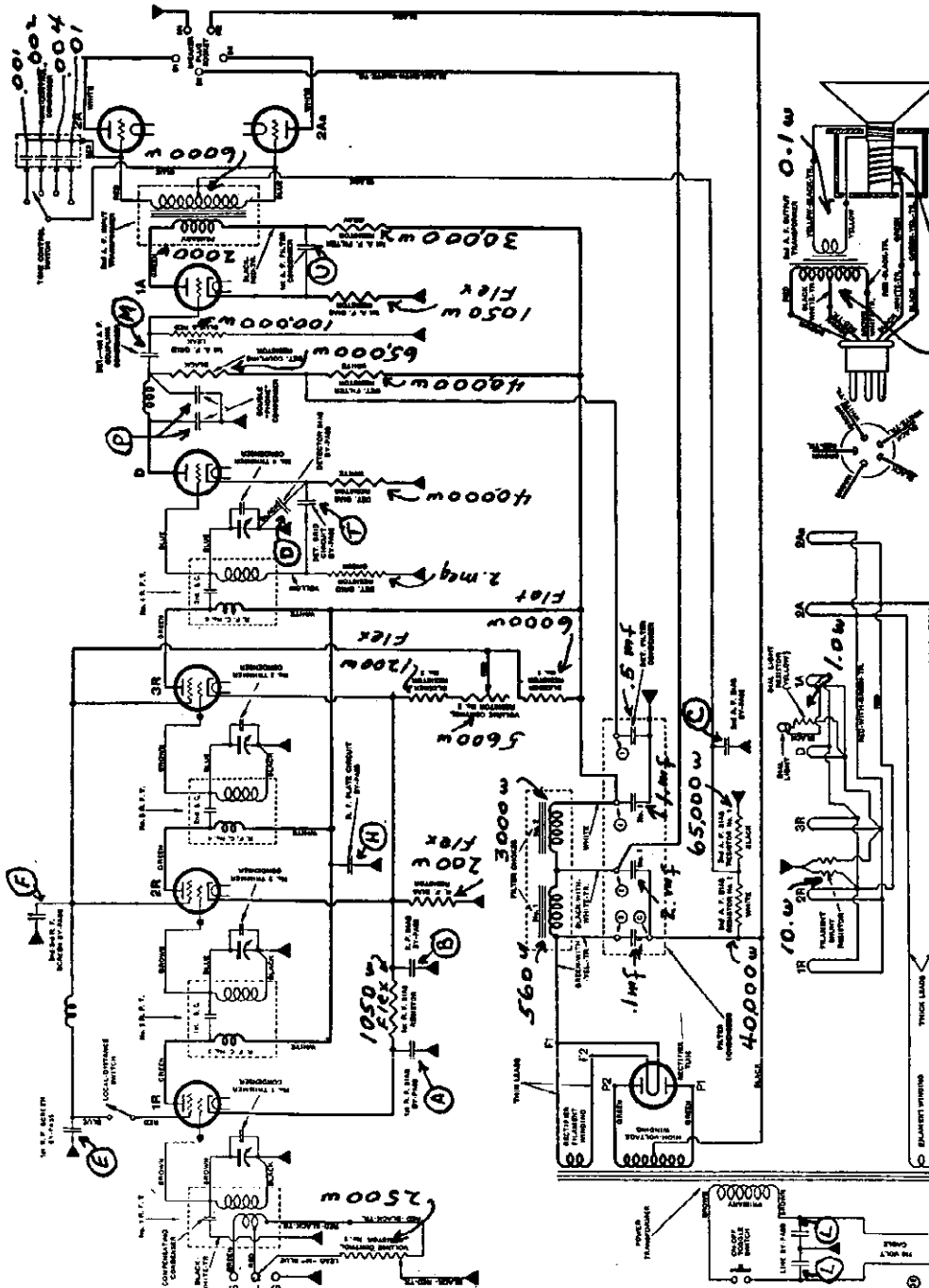


DIAGRAM OF L-1 CHASSIS.

FILTER CONDENSERS

Numerals within circles adjacent to filter condensers designate connections upon condenser can terminal block. These numbers are also shown upon the chassis layout

- Detector filter
- Filter #1
- Filter #2
- Filter #3
- .5 mfd connected between terminal (1) and can
- .1 mfd connected between terminal (3) and center stud
- 2.0 mfd connected between terminal (2) and center stud
- 1.0 mfd connected between terminal (4) and can

ATWATER KENT MFG. CO. MODEL 70, 74, 76 Chassis L-2

BYPASS CONDENSERS. The letters within circles designate the condensers within the multiple units shown on the chassis layout

RF Bypass #1	L	.01 mfd	400 volts	L	.01 mfd	400 volts	# 15790
	C	.1 mfd	400 volts	E	.1 mfd	400 volts	
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts	# 15770
	B	.1 mfd	150 volts				
RF Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts	# 15780
	T	.04 mfd	400 volts				
Detector Bypass	F	.1 mfd	400 volts	M	.075 mfd	400 volts	# 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts	
Tone Control	All condensers are rated at 100 volts						

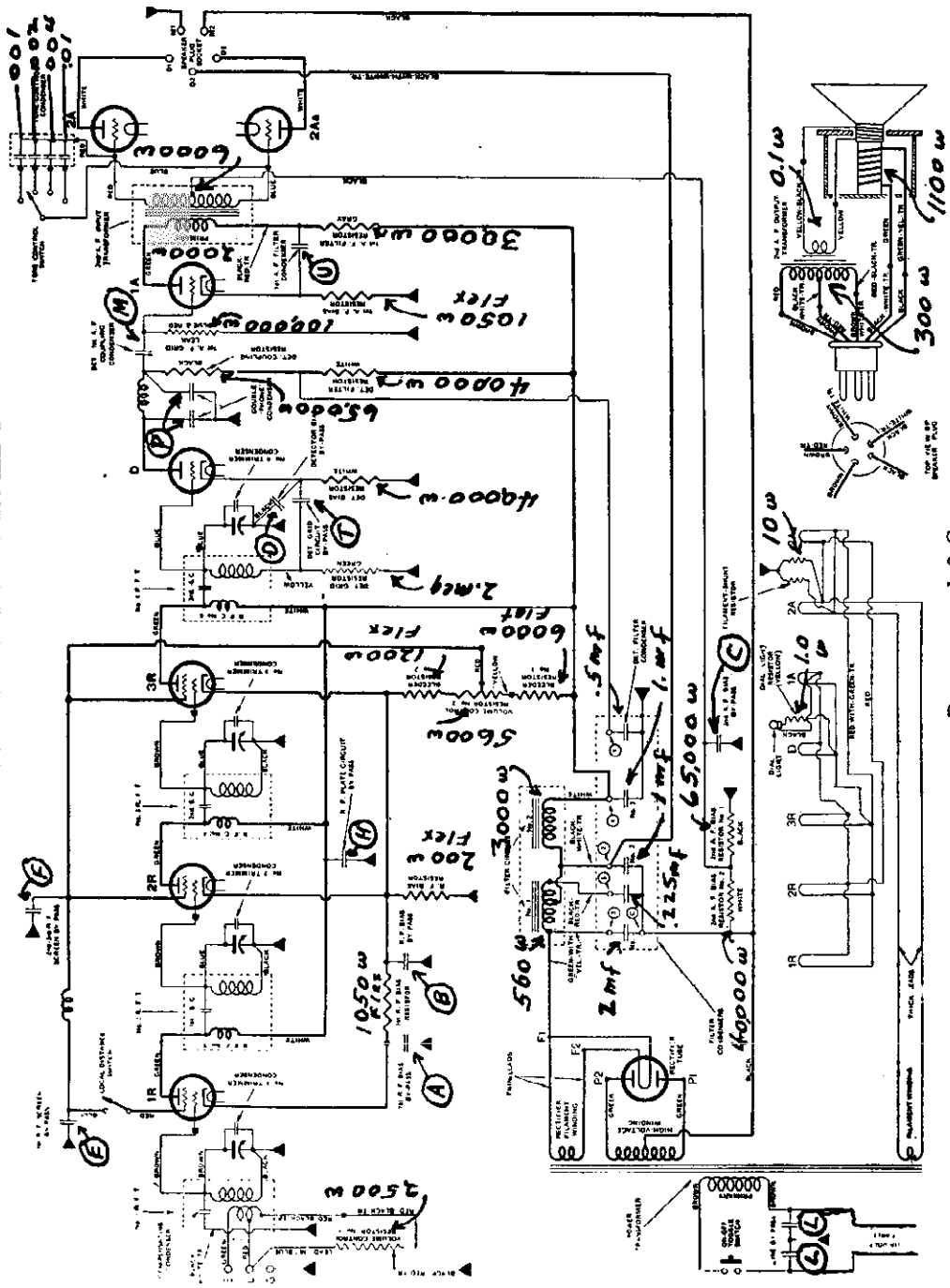


DIAGRAM OF L-2 CHASSIS.

In the majority of L-2 sets, the filament shunt resistor is connected across the R.F. filaments
Also, a 2-ampere fuse is connected in one side of the 110-volt line.

FILTER CONDENSERS. Numerals in circles designate connections upon filter condenser terminal block.

Detector filter .1 mfd connected between terminal (1) and can

Filter #1 2.0 mfd connected between terminal (2) and center stud

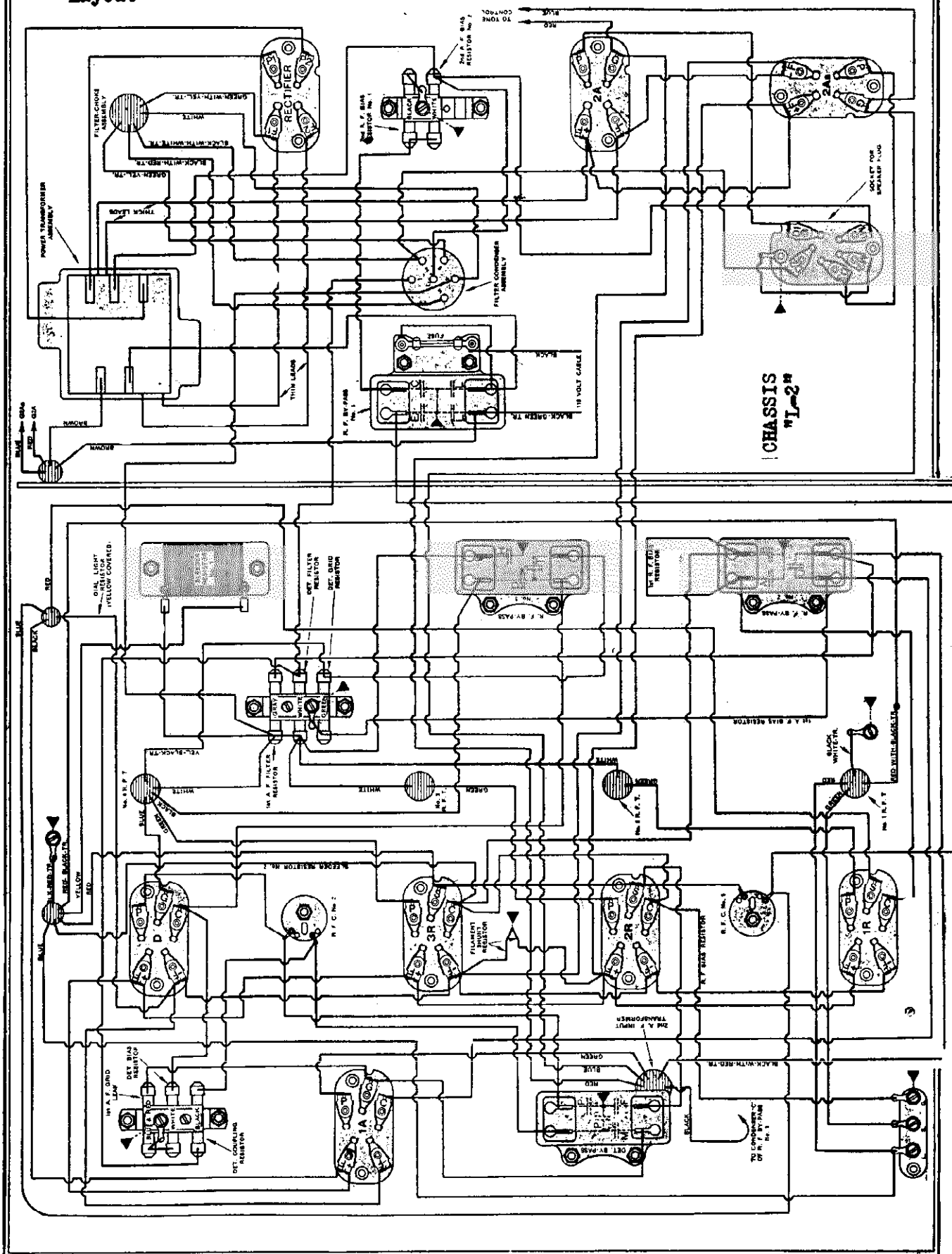
Filter #2 1.0 mfd connected between terminal (3) and center stud

Filter #3 1.0 mfd connected between terminal (4) and can

Resonant condenser .225 mfd connected between terminal (5) and center stud

MODEL 70,74,76
Chassis "L-2"
Layout

ATWATER KENT MFG. CO.



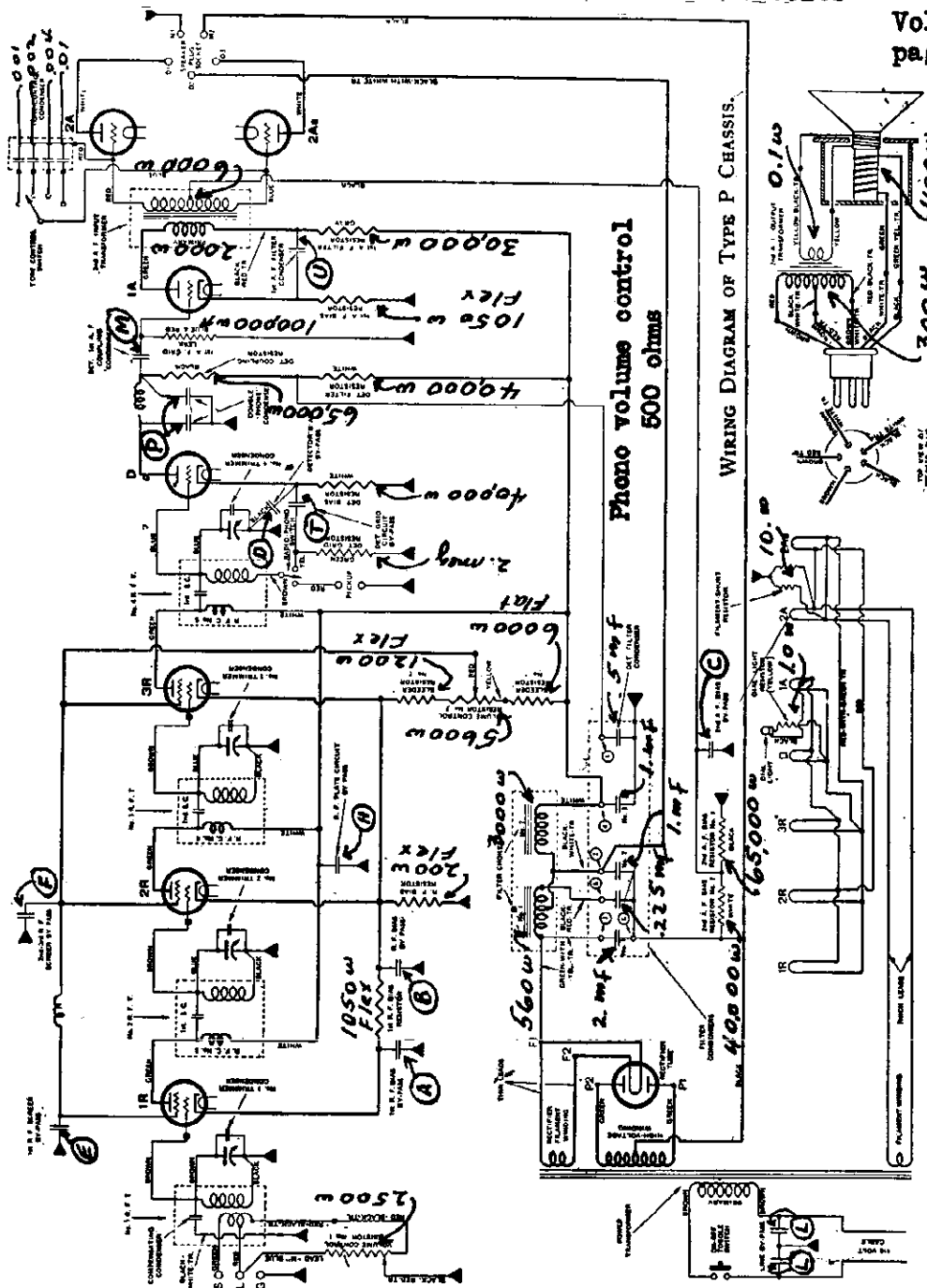
MODEL 76
Chassis P

ATWATER KENT MFG. CO.

BYPASS CONDENSERS. The letters within circles designate the condensers within the multiple units shown on the chassis layout

RF Bypass #1	L	.01 mfd	400 volts	L	.01 mfd	400 volts # 15790
	C	.1 mfd	400 volts	E	.1 mfd	400 volts
RF Bypass #2	A	.1 mfd	150 volts	U	.12 mfd	400 volts # 15770
	B	.1 mfd	150 volts			
RF Bypass #3	D	.1 mfd	400 volts	H	.2 mfd	400 volts # 15780
	T	.04 mfd	400 volts			
Detector Bypass	F	.1 mfd	400 volts	M	.075 mfd	400 volts # 15640
	P	.0012 mfd	400 volts	P	.00025 mfd	400 volts

Tone Control All condensers are rated at 100 volts



Voltage data on page 194

FILTER CONDENSERS. Numerals in circles designate connections upon filter condenser terminal block.

- Detector filter .1 mfd connected between terminal (1) and can
- Filter #1 2.0 mfd connected between terminal (2) and center stud
- Filter #2 1.0 mfd connected between terminal (3) and center stud
- Filter #3 1.0 mfd connected between terminal (4) and can
- Resonant condenser .225 mfd connected between terminal (5) and center stud

MODEL 70, 74, 76

Chassis "L-2" - "P"

Voltage Data

Notes

VOLTAGE TABLE FOR TYPE L-2 AND P CHASSIS

ATWATER KENT MFG. CO.

Set in operation. Volume control at maximum.
L-D (or 'phono) switch up.

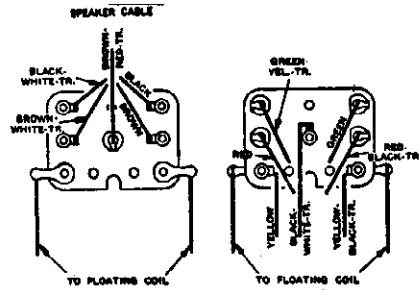
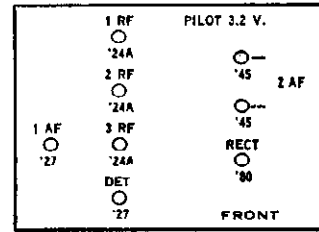
Use High Resistance D. C. Voltmeter (about 0-30-250) to Measure Plate and Grid Voltages.
Use A. C. Voltmeter to Measure Filament Voltages.

APPROX. VOLTAGES, USING 120 V. LINE

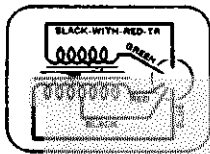
TUBE	FILAMENT VOLTAGE	PLATE VOLTAGE	CONTROL-GRID VOLTAGE	SCREEN VOLTAGE
1st-R.F.	2.4	180	5	85
2nd-R.F.	2.35	180	4.5	86
3rd-R.F.	2.35	180	4.5	86
Detector	2.35	110	14**	—
1st-A.F.	2.35	70	2	—
2A	2.45	250	55*	—
2Aa	2.45	250	55*	—
Rectifier	5.	—	—	—

* Use 250-volt scale.
** This is the voltage across the detector bias resistor; when measuring from grid to cathode, the voltage reading is only 2.
All readings made from cathode in heater-type tubes, and from -F in plain-filament-type tubes.

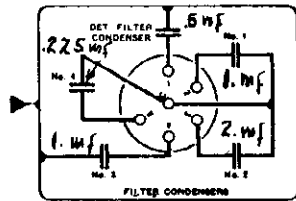
Models 75P, 70, 74, 76, 60 (3rd type) (1930)



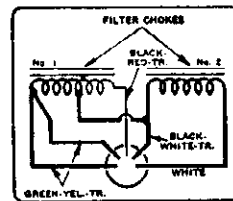
SPEAKER PANEL CONNECTIONS



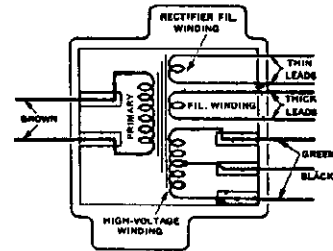
INPUT A. F. TRANSFORMER ASSEMBLY



FILTER CONDENSER ASSEMBLY

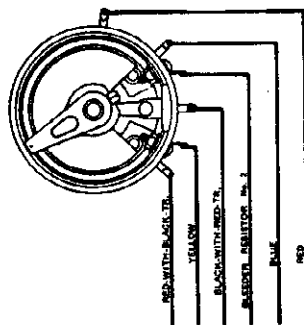


FILTER CHOKES ASSEMBLY



POWER TRANSFORMER ASSEMBLY

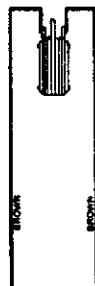
DUAL VOLUME CONTROL



LOCAL-DISTANCE SWITCH



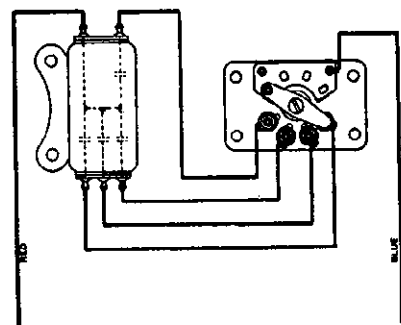
ON-OFF SWITCH



DIAL LIGHT



TOBE CONTROL CONDENSER



TOBE CONTROL SWITCH

Condensers in R.F. By-Pass No. 1

- L—Line by-pass.
- L—Line by-pass.
- C—2nd-A.F. bias by-pass.
- E—1st-R.F. screen by-pass.

Condensers in Detector By-Pass

- F—2nd-3rd R.F. screen by-pass.
- M—Detector-1st A.F. coupling condenser.
- P—Phone condenser.
- P—Phone condenser.

Condensers in R.F. By-Pass No. 2

- A—1st-R.F. bias by-pass.
- B—R.F. bias by-pass.
- U—1st-A.F. filter condenser.

Condensers in R.F. By-Pass No. 3

- D—Detector bias by-pass.
- H—R.F. plate-circuit by-pass.
- T—Detector grid-circuit by-pass.

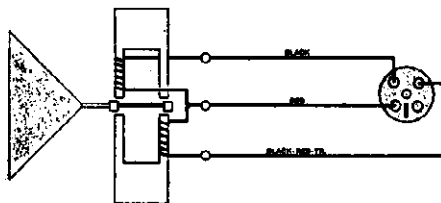
CONNECTION OF UNITS IN TYPE L-2 CHASSIS, AND, AT RIGHT, CONNECTIONS TO TERMINAL PANEL OF TYPE N SPEAKER.

ATWATER KENT MFG. CO.

MODEL 70,76
Chassis "Q"
Voltage

Type Q Chassis (battery operated) has three stages of screen-grid R. F. amplification, grid detection, one stage of transformer-coupled audio, and a double-audio output stage.

An output filter choke and condenser are used in the Q-2 (above Serial No. 5704025), as shown in the diagram below. The Q-1 Chassis does not have these two parts.



CONNECTIONS OF INDUCTOR
TYPE J SPEAKER.

VOLTAGE TABLE FOR TYPE Q CHASSIS

Set in operation. Volume control at maximum.
L-D switch at distance.

Use High Resistance D. C. Voltmeter (about 0-50-250) to Measure Plate and Grid Voltages.
Use A. C. Voltmeter to Measure Filament Voltages.

180 VOLTS "B" BATTERY

TUBE	FILAMENT VOLTAGE	PLATE VOLTAGE	CONTROL-GRID VOLTAGE	SCREEN VOLTAGE
1st-R.F.	3.3	135	1.5	45
2nd-R.F.	3.3	135	1.5	45
3rd-R.F.	3.3	135	2.5	45
Detector	5.0	70	—	—
1st-A.F.	5.0	67	45	—
2A	5.0	180	45	—
2Aa	5.0	180	45	—

R.F. By-Pass No. 1

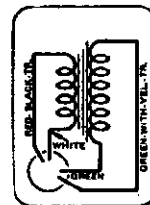
- G—R.F. screen by-pass.
- V—1st-R.F. grid-circuit by-pass.
- Y—Output filter condenser.
- N—1st-R.F. filament by-pass.

R.F. By-Pass No. 2*

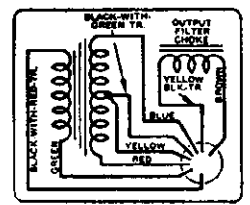
- H—R.F. plate-circuit by-pass.
- T—Detector filter condenser.
- P—"Phone" condenser.
- P—"Phone" condenser.

R.F. By-Pass No. 3

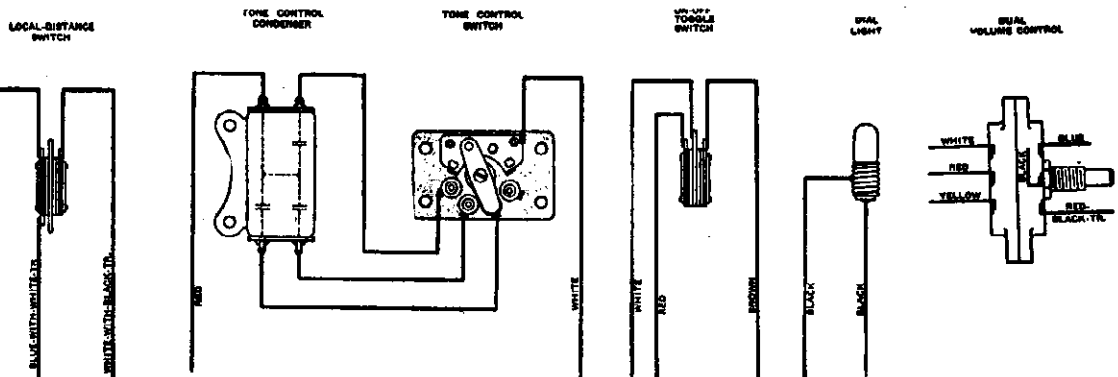
- S—Detector filament by-pass.
- R—3rd-R.F. filament by-pass.
- R—3rd-R.F. filament by-pass.
- O—2nd-R.F. filament by-pass.



NO. 1A.F.T.



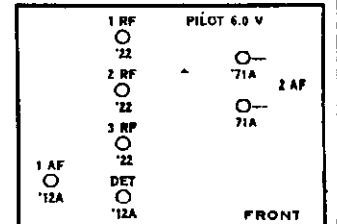
2ND A.F. INPUT TRANSFORMER



The output filter choke is not used in the Q-1 chassis.

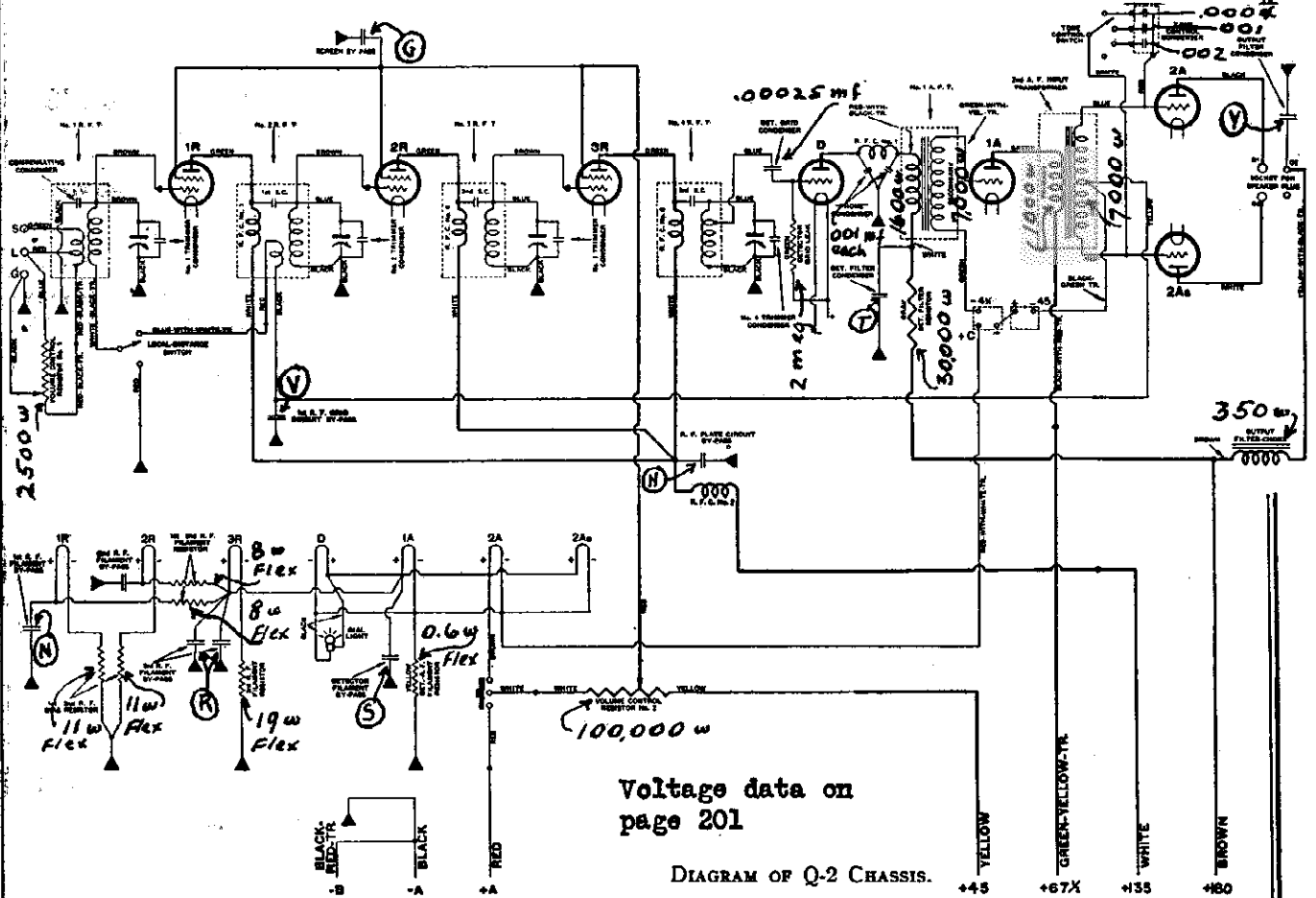
*The connections shown for R. F by-pass No. 2 are correct when this part is No. 16060. However, if a No. 18350 (H-28) is used. "P" and "P" are at top and "H" and "T" are at bottom; therefore, the connections to this condenser are correspondingly changed

Models Q (Battery), D (DC) (1930)



MODEL 70,76
Chassis Q

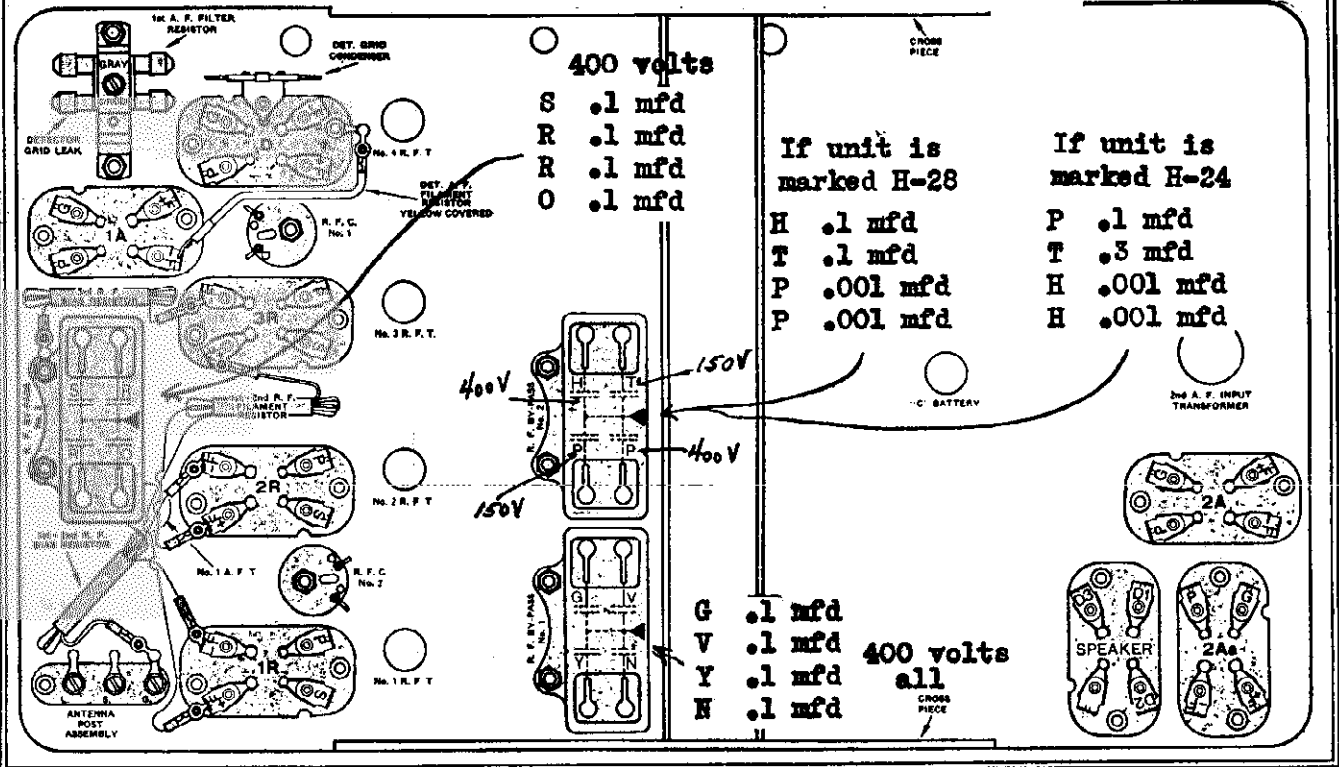
ATWATER KENT MFG. CO.



Voltage data on
page 201

DIAGRAM OF Q-2 CHASSIS.

The output filter choke and filter condenser are used only in Type Q-2 Chassis. The choke is mounted in the 2nd-A. F. input transformer container. Type Q-1 Chassis may be converted to Q-2 by installing this unit (No. 18020) and connecting it as shown above



400 volts

- S .1 mfd
- R .1 mfd
- R .1 mfd
- O .1 mfd

If unit is
marked H-28

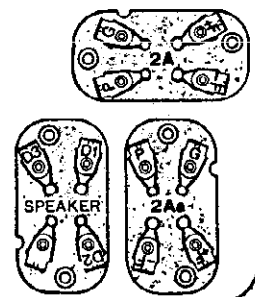
- H .1 mfd
- T .1 mfd
- P .001 mfd
- P .001 mfd

If unit is
marked H-24

- P .1 mfd
- T .3 mfd
- H .001 mfd
- H .001 mfd

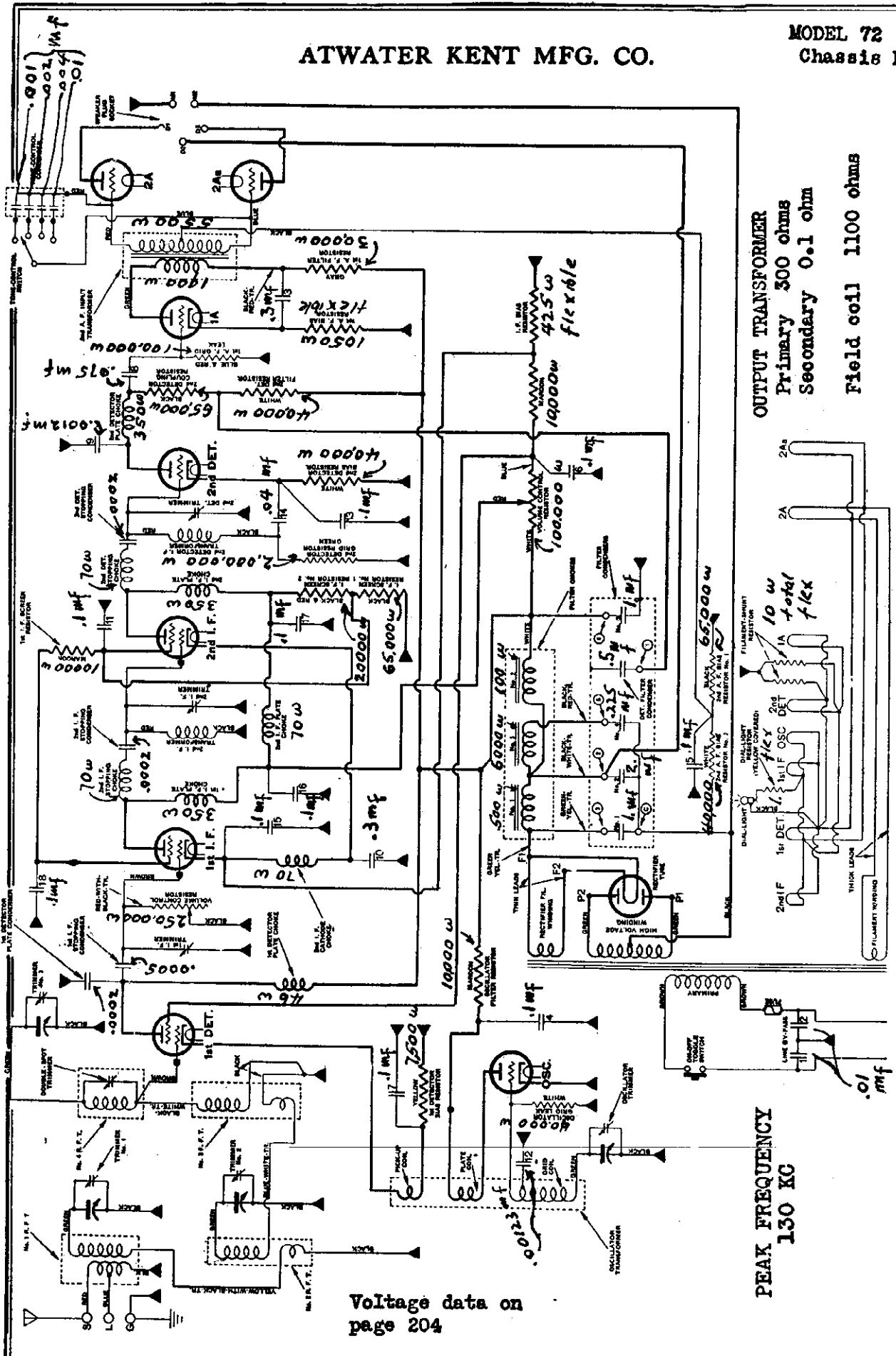
- G .1 mfd
- V .1 mfd
- Y .1 mfd
- H .1 mfd

400 volts
all
CROSS
PIECE



ATWATER KENT MFG. CO.

MODEL 72
Chassis H-1



Voltage data on page 204

PEAK FREQUENCY
130 KC

OUTPUT TRANSFORMER
Primary 300 ohms
Secondary 0.1 ohm
Field coil 1100 ohms

SCHEMATIC DIAGRAM OF TYPE H-1 CHASSIS

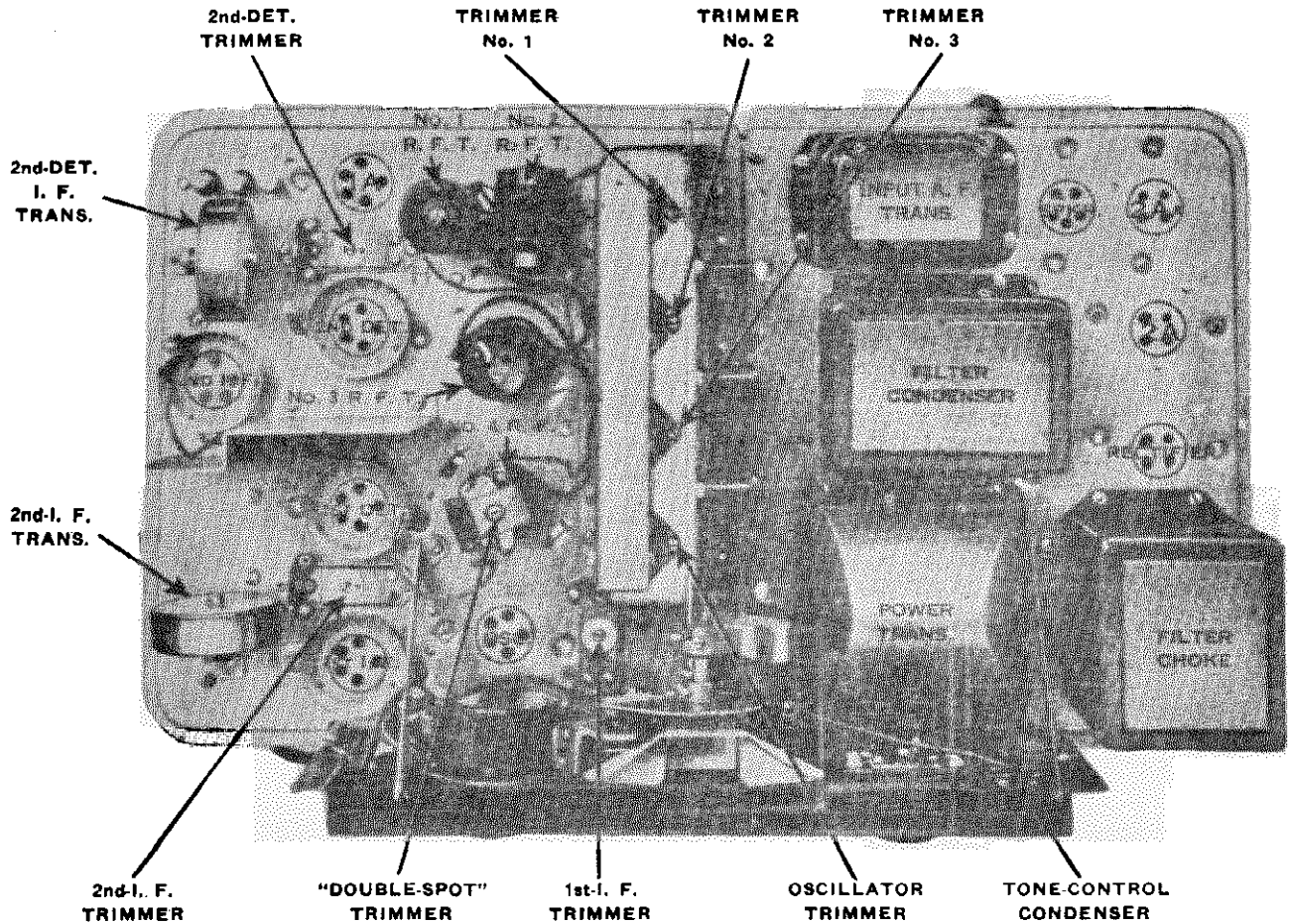
In some Type H-1 sets the +B lead to the I. F. screens is connected to the 1st-I. F. side of the 1st-I. F. screen resistor.

MODEL 72
Chassis "H-1"
Voltage

ATWATER KENT MFG. CO.

TYPE H-1, No. 16500, SUPER-HETERODYNE CHASSIS

(Below Serial No. 5,855,201)



TOP VIEW OF ATWATER KENT TYPE H-1 SUPER-HETERODYNE CHASSIS

Tube	"A" Volts	"B" Volts	Control Grid	Screen
1st Det	2.4	150	3.	12.
Osc.	2.3	100	10.*	
1st IF	2.3	150	3.	75.
2nd IF	2.3	145	3.	85.
2nd Det	2.3	100	13.**	
1st AF	2.3	65	2.	
2nd AF PP	2.5	250	55.*	
2nd AF PP	2.5	250	55.*	
Rect.	4.7			

With volume control at minimum, the IF plate voltage is reduced to about 150 volts and screen voltage is reduced to about 10 volts. * Use 250 volts scale of high resistance voltmeter. ** This is the voltage across the detector bias resistor.

ATWATER KENT MFG. CO.

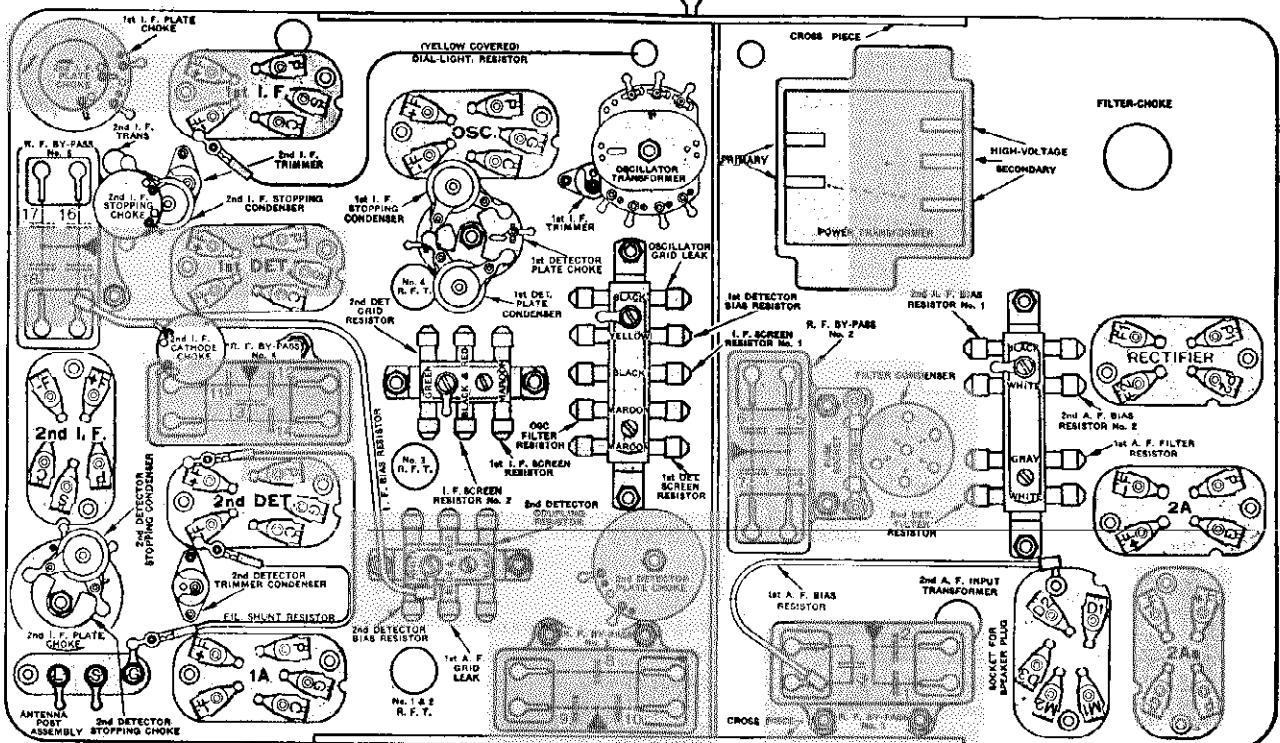
 MODEL 72
 Chassis H-1
 Below serial
 5,855,201

FILTER CONDENSERS. Numerals in circles indicate connections upon filter condenser terminal block. These numbers are shown upon the parts layout below and also upon the chassis layout

Detector filter	.1 mfd	connected between terminal (1) and can
Filter #1	2.0 mfd	connected between terminal (2) and center stud
Filter #2	1.0 mfd	connected between terminal (3) and center stud
Filter #3	1.0 mfd	connected between terminal (4) and can
Resonant condenser	.225 mfd	connected between terminal (5) and center stud

BYPASS CONDENSERS. The small numerals adjacent to the bypass condensers corresponds with the designating numerals upon the chassis layout

RF Bypass #1	1	.01 mfd	400 volts	2	.01 mfd	400 volts	# 17360
	3	.3 mfd	400 volts				
RF Bypass #2	4	.1 mfd	400 volts	5	.1 mfd	400 volts	# 15262
	6	.1 mfd	400 volts	7	.1 mfd	400 volts	
RF Bypass #3	8	.075 mfd	400 volts	9	.0012 mfd	400 volts	# 16745
	10	.3 mfd	150 volts				
RF Bypass #4	11	.1 mfd	400 volts	12	.00123mfd	400 volts	# 17370
	13	.1 mfd	400 volts	14	.04 mfd	400 volts	
RF Bypass #5	15	.1 mfd	400 volts	16	.1 mfd	400 volts	# 15262
	17	.1 mfd	400 volts	18	.1 mfd	400 volts	

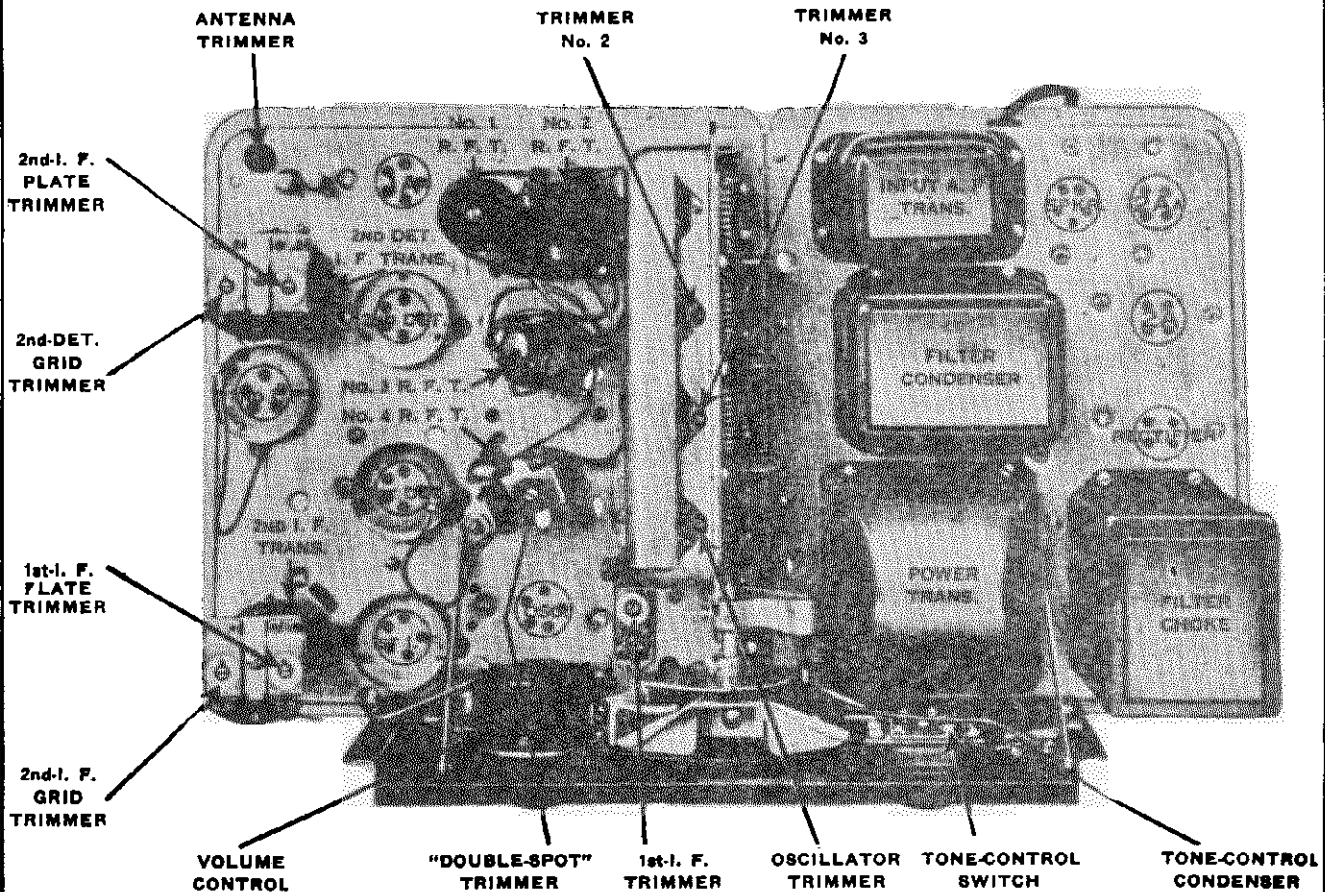


BOTTOM CHART OF TYPE H-1 CHASSIS

MODEL 72
Chassis "H-2"
Voltage

ATWATER KENT MFG. CO.

TYPE H-2, No. 16500, SUPER-HETERODYNE CHASSIS
(Above Serial No. 5,855,201)



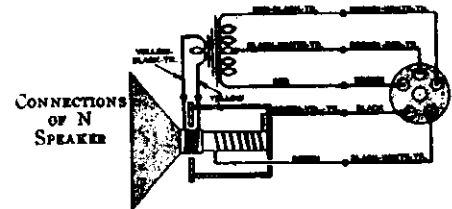
TOP VIEW OF ATWATER KENT TYPE H-2 SUPER-HETERODYNE CHASSIS
Note that trimmer No. 1 is omitted. The antenna trimmer serves the same purpose

VOLTAGE TABLE FOR TYPE H-2 CHASSIS

Set in operation. Volume control at maximum

Tube	"A" Volts	"B" Volts	Control Grid	Screen
1st Det	2.3	150	4.	15.
Osc	2.5	130	10.*	
1st IF	2.3	150	3.5	100.
2nd IF	2.3	150	3.5	85.
2nd Det	2.3	100	14.**	
1st AF	2.3	70	2.	
2nd AF PP	2.5	250	55.*	
2nd AF PP	2.5	250	55.*	
Rect.	4.7			

With the volume control at minimum, the IF voltage is reduced to 15 volts. * Use 250 volt scale of high resistance voltmeter. ** This is the voltage across the detector bias resistor; when measuring from grid to cathode, the voltage reading is only 2. All readings made from cathode in heater type tubes and -F in filament type tubes.

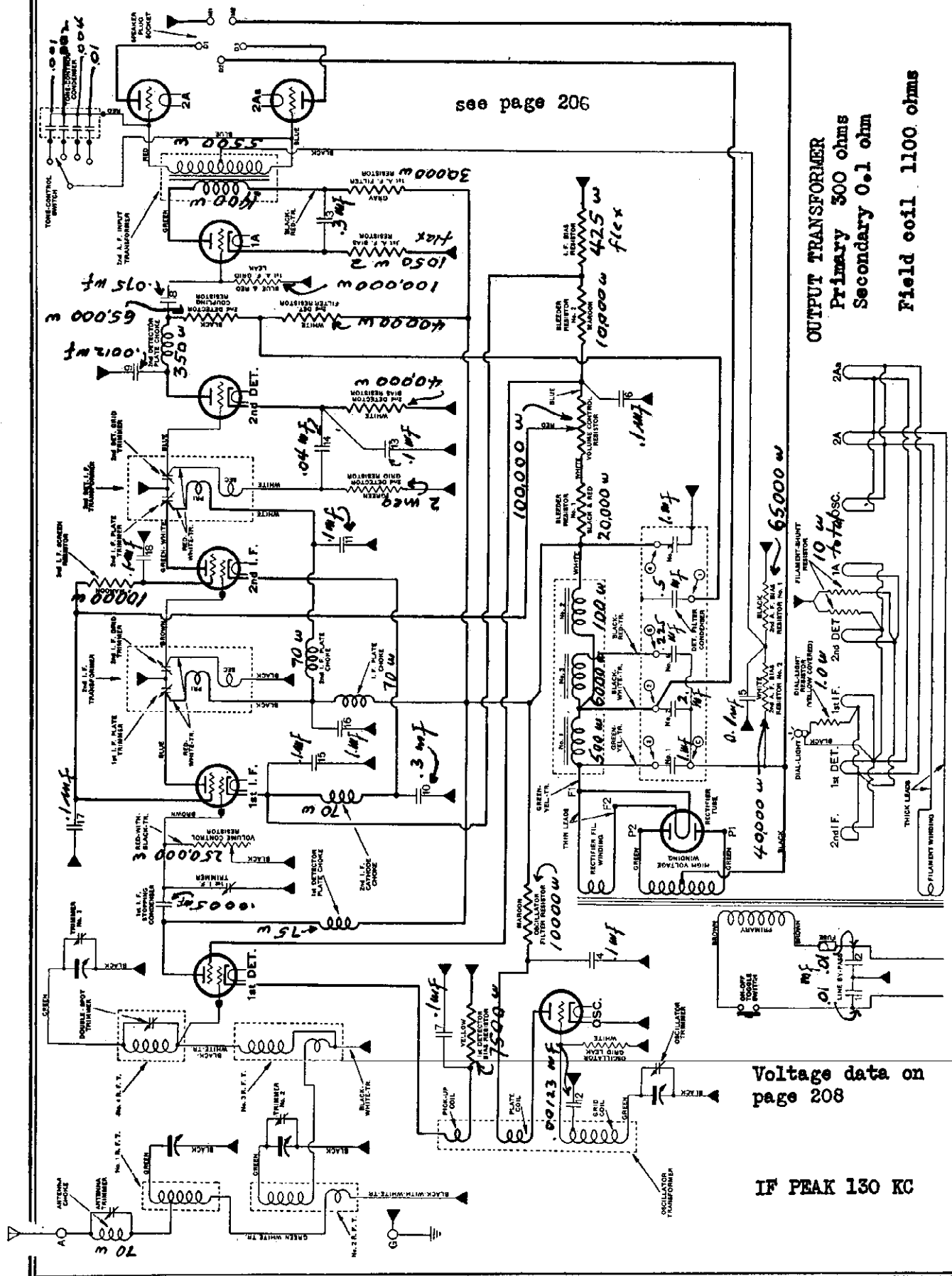


THE DOUBLE SPOT CIRCUIT

The double spot circuit is simultaneously tuned to two different frequencies. The complete circuit consists of #3 and #4 RF transformers and #3 variable condenser. A part of this circuit, #4 RFT, the double spot trimmer and #3 variable condenser is automatically tuned to 260 KC more than the desired frequency.

ATWATER KENT MFG. CO.

MODEL 72
Chassis H-2



MODEL 72

Chassis H-2
Above serial
5,855,201

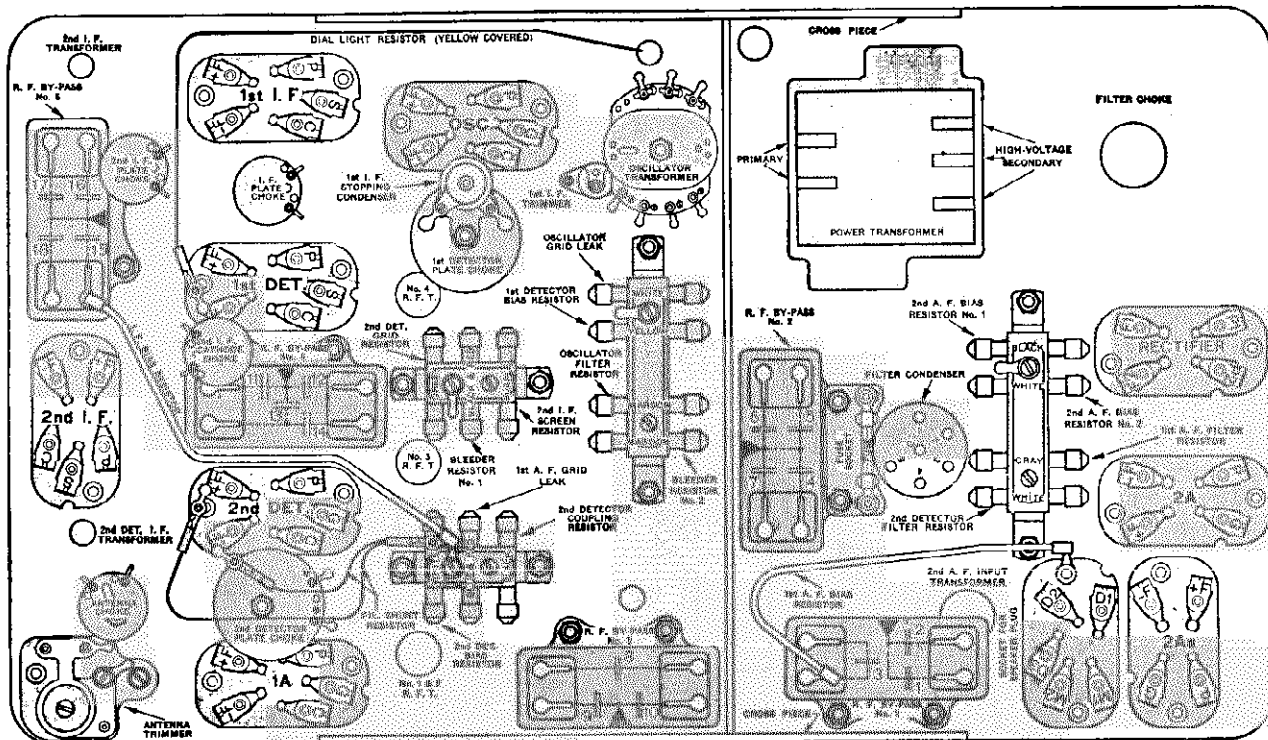
ATWATER KENT MFG. CO.

FILTER CONDENSERS. Numerals in circles shown on wiring diagram indicate connections upon filter condenser terminal block. These numbers are also shown upon the parts layout below. Also upon the chassis wiring diagram

Detector filter	.1 mfd	connected between terminal (1) and can
Filter #1	2.0 mfd	connected between terminal (2) and center stud
Filter #2	1.0 mfd	connected between terminal (3) and center stud
Filter #3	1.0 mfd	connected between terminal (4) and can
Resonant condenser	.225 mfd	connected between terminal (5) and center stud

BYPASS CONDENSERS. The small numerals adjacent to the various bypass condensers shown on the wiring diagram correspond with the designating numerals upon the parts layout below and the chassis

RF Bypass #1	1	.01 mfd	400 volts	2	.01 mfd	400 volts	# 17360
	3	.3 mfd	400 volts				
RF Bypass #2	4	.1 mfd	400 volts	5	.1 mfd	400 volts	# 15262
	6	.1 mfd	400 volts	7	.1 mfd	400 volts	
RF Bypass #3	8	.075 mfd	400 volts	9	.0012 mfd	400 volts	# 16745
	10	.3 mfd	150 volts				
RF Bypass #4	11	.1 mfd	400 volts	12	.00123 mfd	400 volts	# 17370
	13	.1 mfd	400 volts	14	.04 mfd	400 volts	
RF Bypass #5	15	.1 mfd	400 volts	16	.1 mfd	400 volts	# 15262
	17	.1 mfd	400 volts	18	.1 mfd	400 volts	

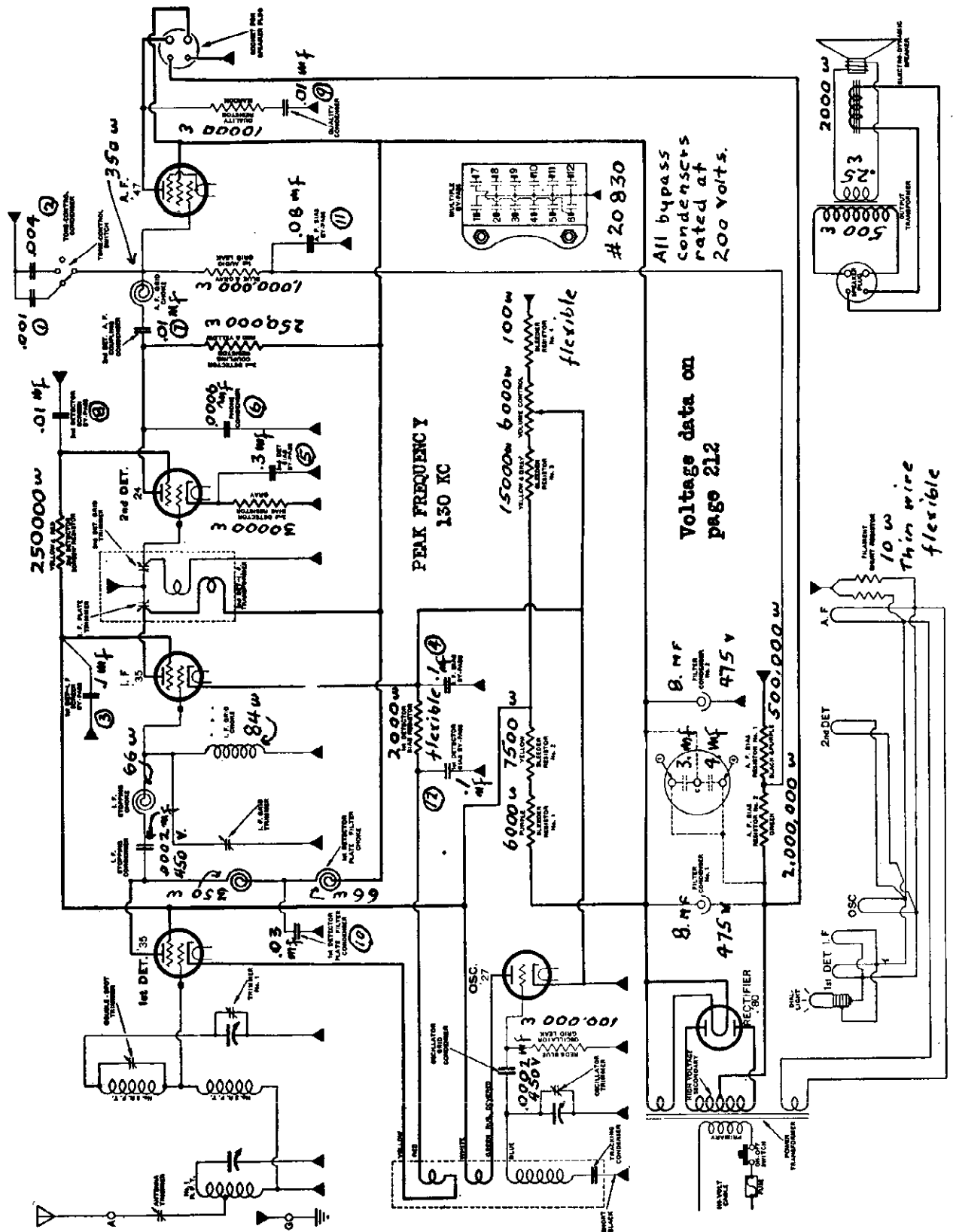


BOTTOM VIEW OF TYPE H-2 CHASSIS

In this chart, the 2nd-I. F. screen resistor should be maroon instead of purple.

ATWATER KENT MFG. CO.

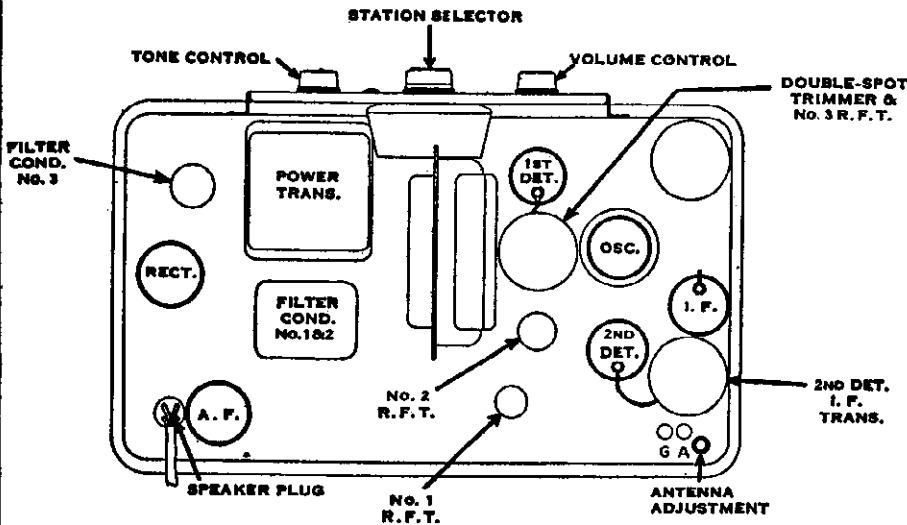
MODEL 80, 80-F
83, 83-F



In Model 83 and 83-F, a filter-condenser unit is used and it is connected as shown in dotted lines. This unit is NOT used in Model 80 and 80-F. In Model 83, 83-F, the electrolytic filter condenser No. 1 is not used, and the filament circuit is slightly different.

MODEL 80, 80-F
83, 83-F

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 83, 83-F.

The circle in the upper right-hand corner is the shield that covers the coupling unit between the 1st-detector and the I. F. tubes.

Condensers in Multiple By-pass Model 80, 80-F, 83, 83-F

- 1—Tone-control condenser.
- 2—Tone-control condenser.
- 3—1st-detector—I. F. screen by-pass.
- 4—I. F. bias by-pass.
- 5—2nd-detector bias by-pass.
- 6—Phone condenser.
- 7—2nd-detector—A. F. coupling condenser.
- 8—2nd-detector screen by-pass.
- 9—Quality condenser.
- 10—1st-detector plate filter condenser.
- 11—A. F. bias by-pass.
- 12—1st-detector bias by-pass.

The numbers given above correspond with the numbers marked upon the multiple condenser unit.

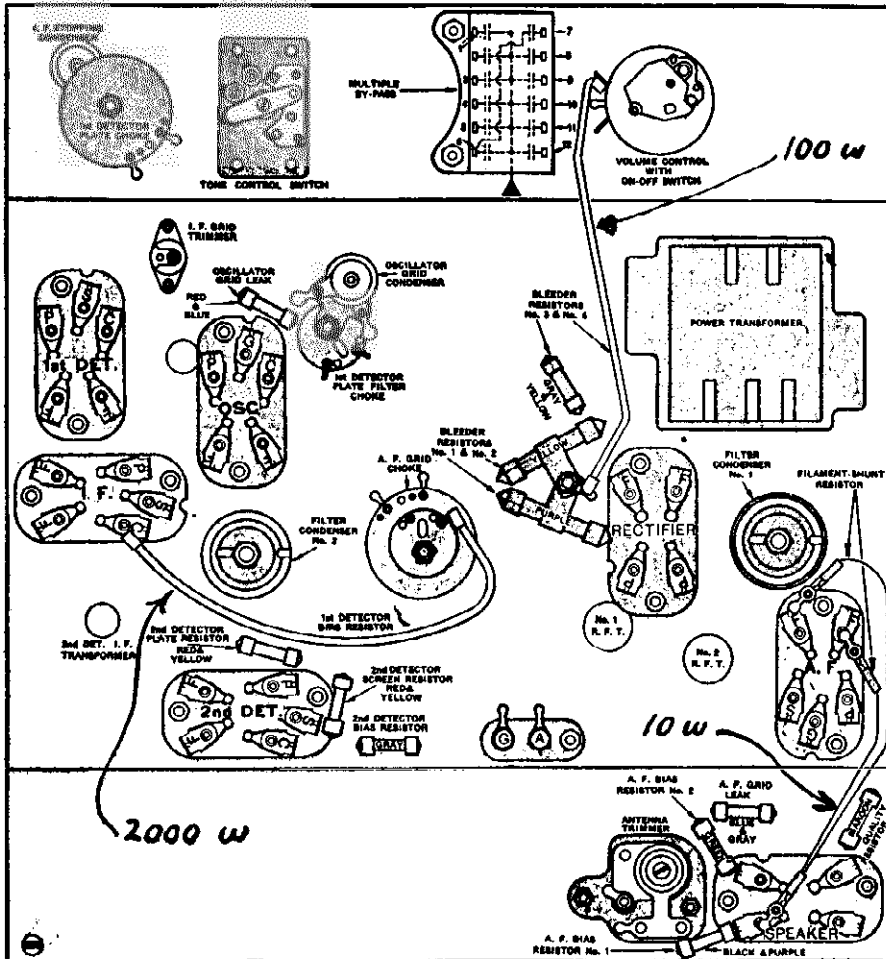


CHART OF MODEL 80, 80-F.

The parts on Model 83, 83-F are similar except that Model 83, 83-F has a filter condenser unit and only one electrolytic condenser.

	VOLTAGE TABLE		
	Plate	Screen	Control
1st Det.	225	90	5*
I-F	230	95	2*
2nd Det	110	45	5*
1st A-F	230	240	4*
2nd A-F	100		*
Osc	2.4		

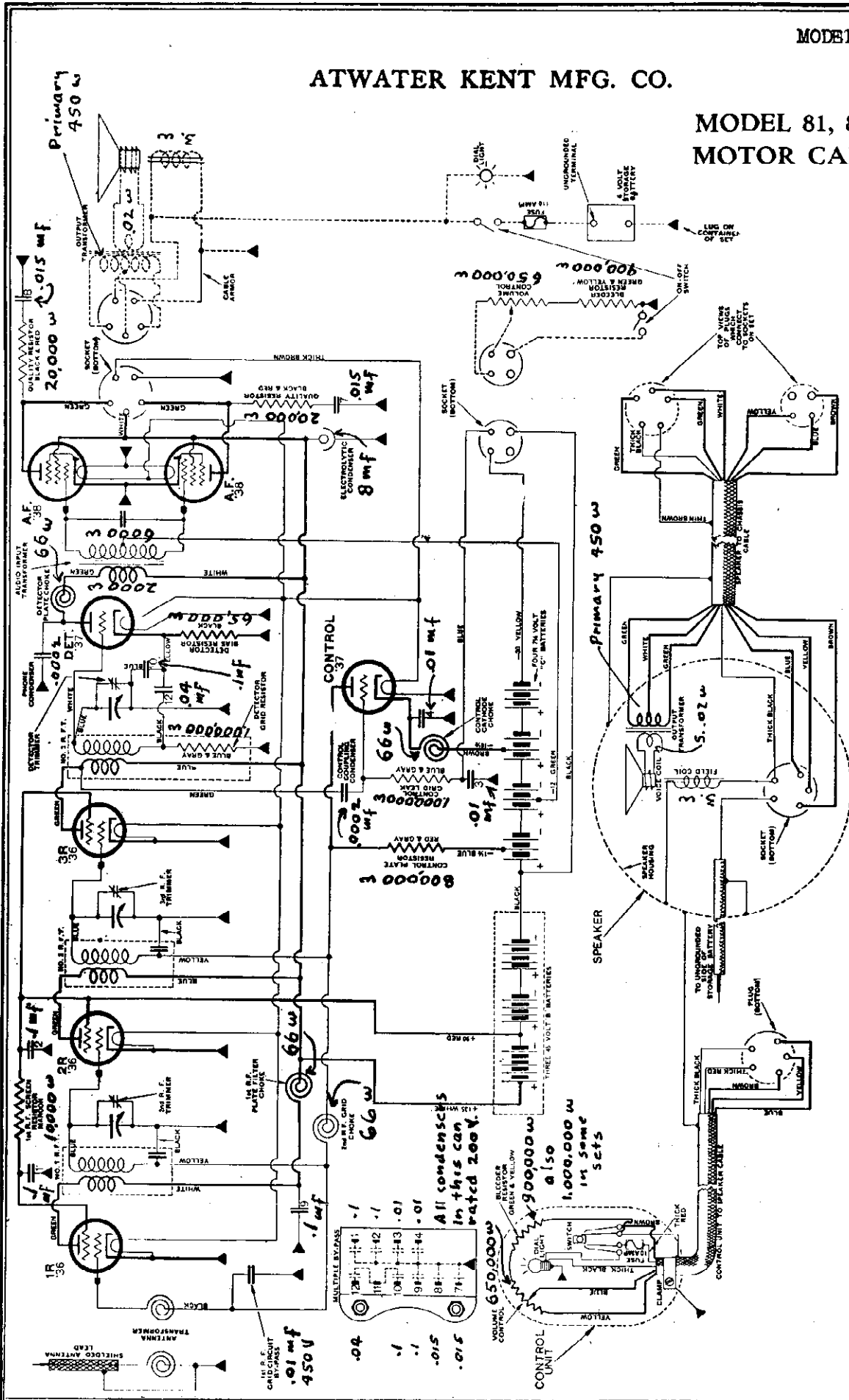
.Fil. 2.4 2.4 2.4 2.4 2.4

* A variable depending upon several factors. Capacity of voltmeter leads may cause oscillator tube to cease functioning.

ATWATER KENT MFG. CO.

MODEL 81
81-B
81-C

MODEL 81, 81-B, 81-C MOTOR CAR RADIO



Voltage data on page 212

The small numerals adjacent to the bypass condensers correspond with the numerals marked upon the multiple bypass condenser unit.

Voltage reference on page I-56.

ATWATER KENT MFG. CO.

VOLTAGE TABLE

FOR MODEL 80, 81, 82, 82-D, 82-Q, 83, 84, 84-D, 84-Q, 85, 85-Q, 86, 87 and 89

The voltages listed in this table are only approximate, and are measured values, not actual operating values. Turn volume control to maximum.

Use 250-volt scale of a 1000-ohm-per-volt D. C. voltmeter.

All plate, screen and grid measurements are made from cathode in heater-type tube, and from —F in plain-filament-type tube.

When replacing a tubular resistor, use a resistor of the same color as the defective unit. However, if a resistor has been removed, or its identification destroyed, replace it with a resistor having the color that is specified in the diagram for that set.

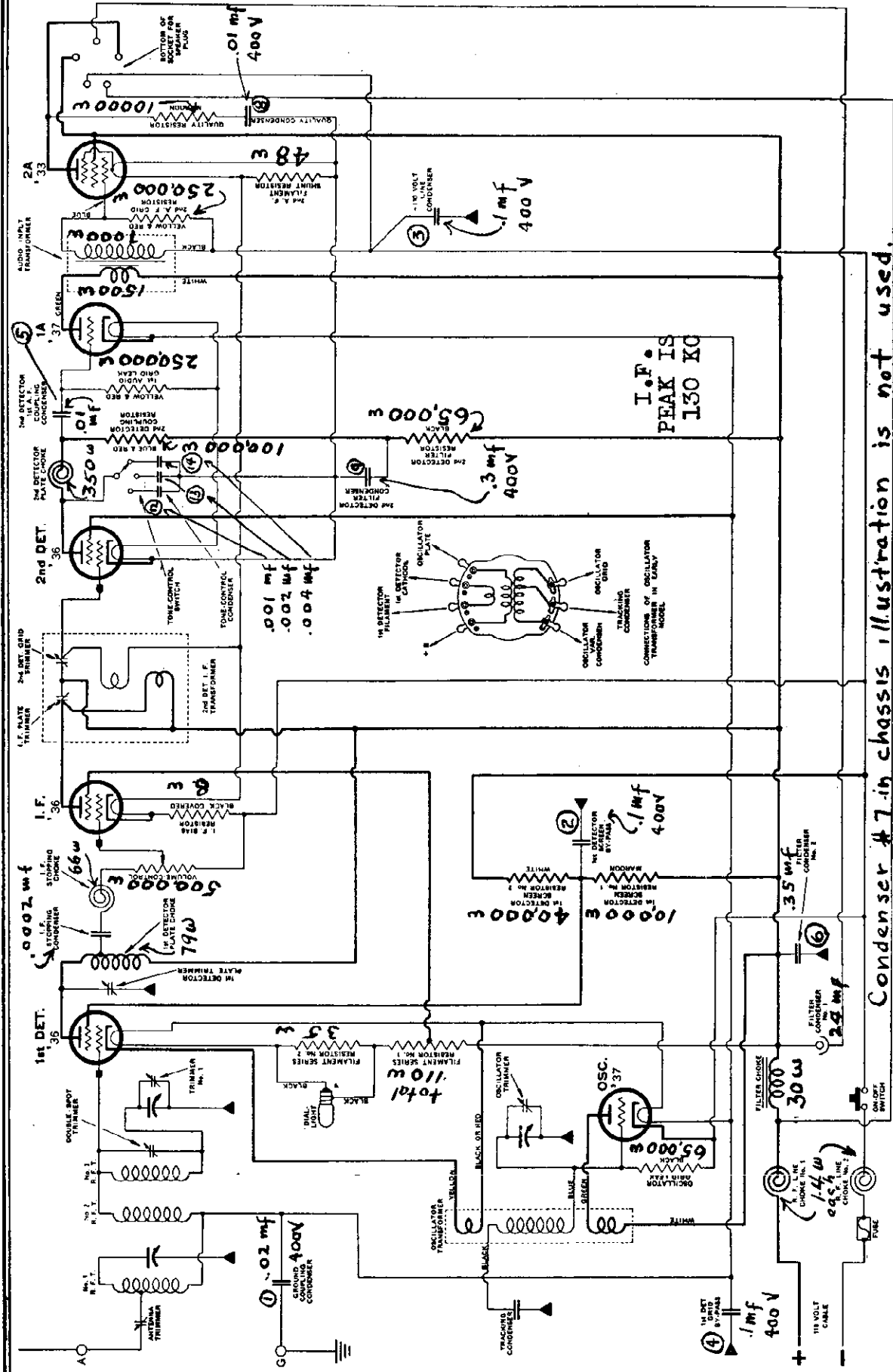
the same color as the defective unit. However, if a resistor has been removed, or its identification destroyed, replace it with a resistor having the color that is specified in the diagram for that set.

	MODEL 80	MODEL 81	MODEL 82	MODEL 82-D	MODEL 82-Q	MODEL 83	MODEL 84	MODEL 84-D	MODEL 84-Q	MODEL 85	MODEL 85-Q	MODEL 86	MODEL 87	MODEL 89
LINE VOLTAGE	110	110	110	112	110	110	110	120	110	110	110	115	110	110
TOTAL "B" VOLTAGE	125	125	125	125	125	125	125	125	125	125	125	125	125	125
FILAMENT	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
PLATE	125	125	125	125	125	125	125	125	125	125	125	125	125	125
SCREEN	75	75	75	75	75	75	75	75	75	75	75	75	75	75
GRID	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL
FILAMENT	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PLATE	235	95	135	70	135	235	205	80	135	135	135	135	160	130
SCREEN	90	50	50	50	40	90	65	50	25	50	40	35	70	45
GRID	5	7	4	5	3	5	6	5	3	3	3	4	11	4
FILAMENT	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PLATE	140	140	140	95	135	210	215	105	135	135	135	135	170	135
SCREEN	50	50	50	50	60	95	65	55	65	50	65	40	80	50
GRID	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL	SMALL
FILAMENT	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PLATE	110	105	105	55	45	110	90	55	60	100	40	95	90	130
SCREEN	45	65	65	10	35	45	45	10	35	65	25	60	—	—
GRID	5	8	2	2	3	5	6	1	3	7	3	8	SMALL	15
FILAMENT	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PLATE	230	130	230	75	55	230	205	80	55	215	55	210	90	130
SCREEN	240	133	240	—	—	240	215	—	—	235	—	230	—	—
GRID	4	11	5	3	3	4	5	2.5	3	5	3	5	3	4
FILAMENT	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PLATE	95	95	95	85	130	90	90	90	120	120	120	120	200	235
SCREEN	—	—	—	90	135	—	—	95	135	—	135	—	210	235
GRID	—	—	—	7	15	—	—	7	5	—	15	—	14	14
FILAMENT	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
PLATE	95	95	95	100	60	100	70	110	60	100	40	95	85	100
SCREEN	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GRID	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FILAMENT	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5
PLATE	3	3	3	3	3	3	3	3	3	3	3	3	3	3
SCREEN	—	—	—	—	—	—	—	—	—	—	—	—	—	—
GRID	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* The measured oscillator grid voltage will vary dependent on the capacity of the voltmeter leads. In some cases, the presence of the leads will stop oscillation and no reading will be secured for grid bias. In other cases, the reading will be only slight, or it may be as high as 10 volts.
 **This includes the 1st, 2nd and 3rd R. F. tubes in Model 81. †This is the detector tube in Model 81.

ATWATER KENT MFG. CO.

MODEL 82-D



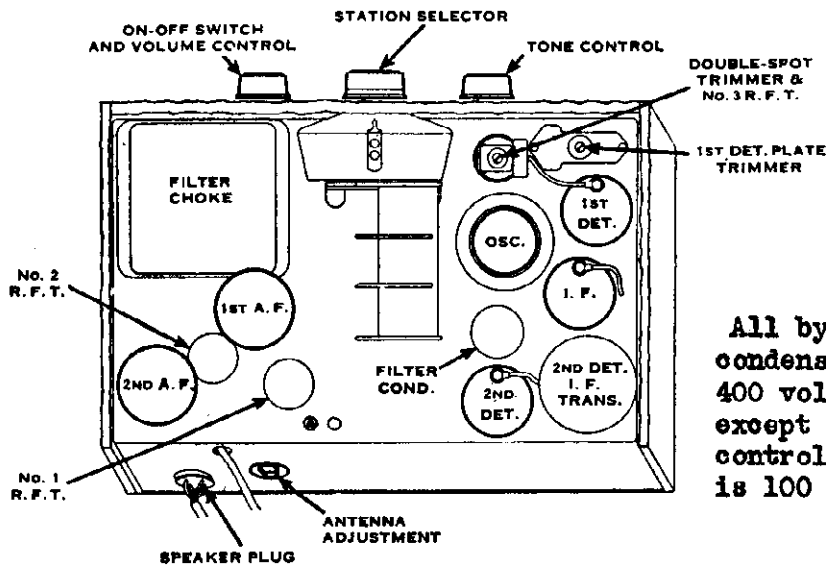
Condenser #7 in chassis illustration is not used.

Voltage data on page 212

MODEL 82-D

ATWATER KENT MFG. CO.

MODEL 82-D TOP VIEW AND CHART



All bypass condensers except tone control which is 100 volts

The protective lamp (15 watts) is connected in series with the electrolytic filter condenser in the chassis. If the 110-volt D. C. supply plug is reversed, the lamp will light. When the 110-volt plug is properly inserted, the lamp does not light. This action is due to the fact that the electrolytic condenser passes current if the polarity of the applied D. C. voltage is not correct.

TOP VIEW OF MODEL 82-D.

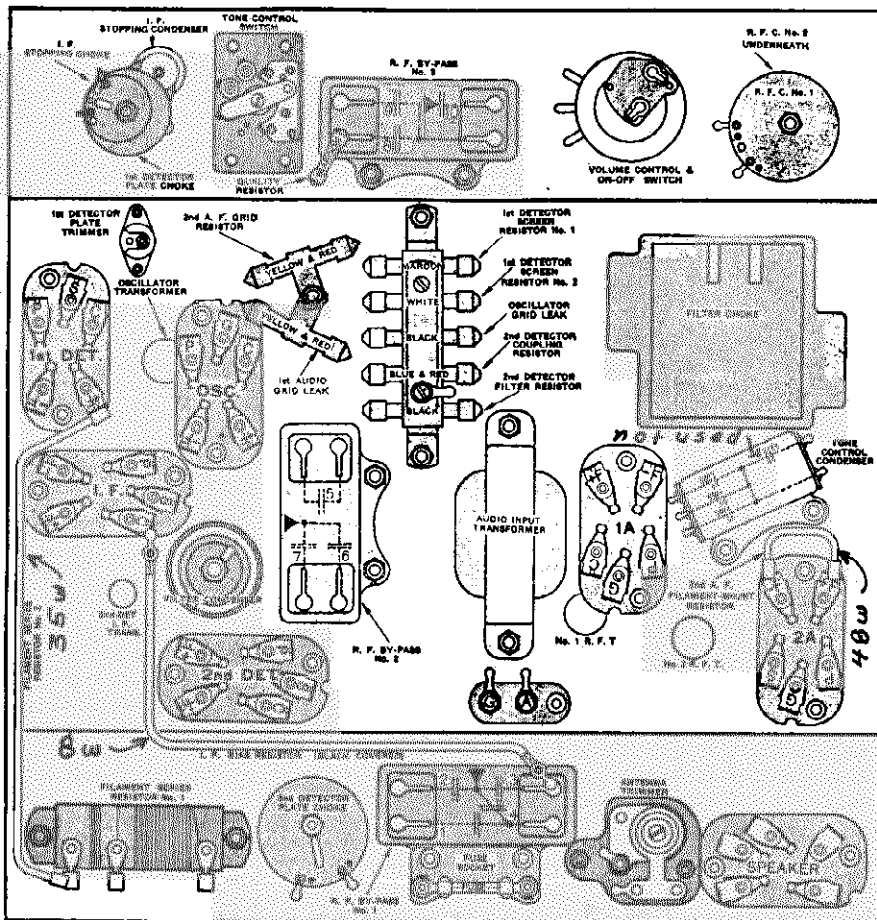
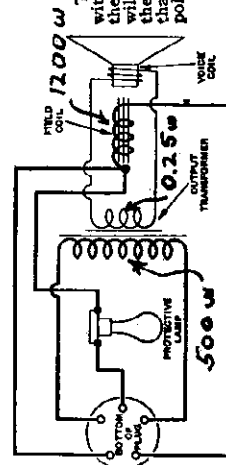


CHART OF MODEL 82-D.



CIRCUIT OF SPEAKER USED IN MODEL 82-D, 84-D.

By-pass Condensers in Model 82-D

R. F. By-pass No. 1

- 1—Ground coupling condenser.
- 2—1st-detector by-pass.
- 3—110-volt line condenser.
- 4—1st-detector grid by-pass.

R. F. By-pass No. 2

- 5—2nd-detector—1st-A.F. coupling condenser
- 6—Filter condenser No. 2.
- 7—Not used.

R. F. By-pass No. 3

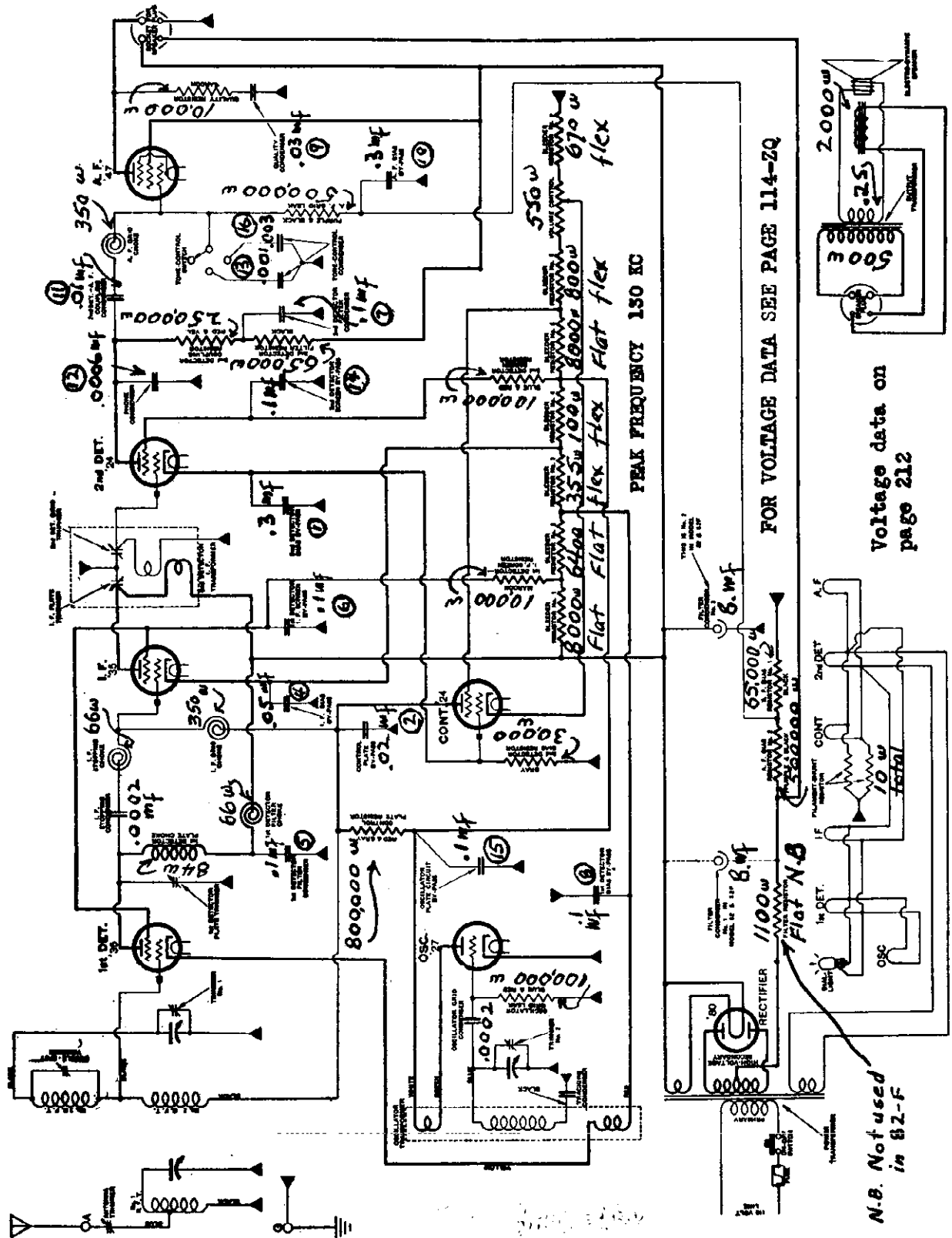
- 8—Quality condenser.
- 9—2nd-detector filter condenser.
- 10—110-volt line by-pass.

Tone-control Condenser

- 11—Not used.
- 12—Tone condenser.
- 13—Tone condenser.
- 14—Tone condenser.

ATWATER KENT MFG. CO.

MODEL 82, 82-F

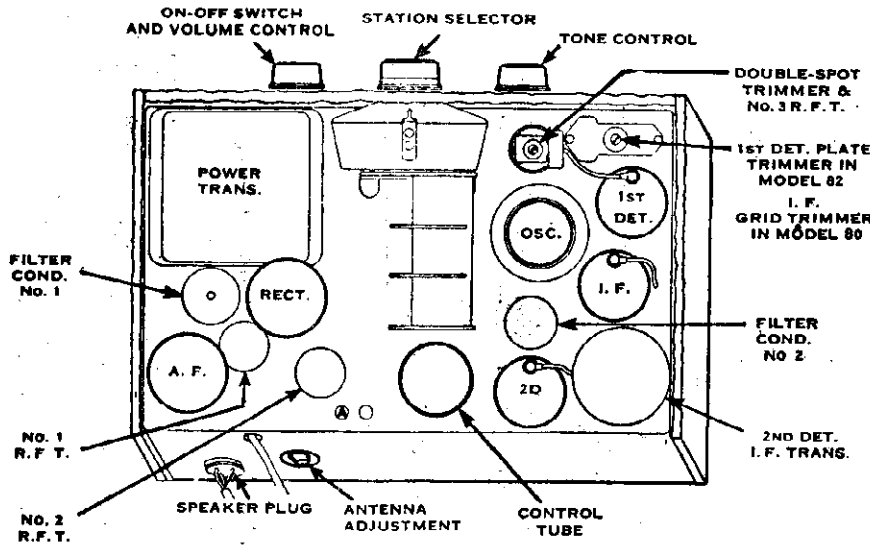


Numerals adjacent to bypass condensers designate units shown upon parts layout on next page within multiple condensers. Condenser voltage ratings are shown upon next page.

Voltage reference on page 1-56.

MODEL 82, 82-F

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 82, 82-F.

The top view of Model 80, 80-F is similar except that it has no control tube and the position of No. 1 and No. 2 R. F. T. is interchanged.

CONDENSERS

RF Bypass # 1
21180
All 400 Volts

RF Bypass # 2
15262
5-6 150 volts
7-8 400 volts

RF Bypass # 3
21170
All 400 volts

Tone Control
20010
All 100 volts

By-pass Condensers in Model 82, 82-F

R. F. By-pass No. 1

- 1—2nd-detector bias by-pass.
- 2—Control plate by-pass.
- 3—Not used.
- 4—I. F. bias by-pass.

R. F. By-pass No. 2

- 5—1st-detector filter condenser.
- 6—1st-detector—I. F. screen by-pass.
- 7—2nd-detector filter condenser.
- 8—1st-detector bias by-pass.

R. F. By-pass No. 3

- 9—Quality condenser.
- 10—A. F. bias by-pass.
- 11—2nd-detector—A. F. coupling condenser.
- 12—Phone condenser.

Tone-control Condenser

- 13—Tone condenser.
- 14—2nd-detector screen by-pass.
- 15—Oscillator plate-circuit by-pass.
- 16—Tone condenser.

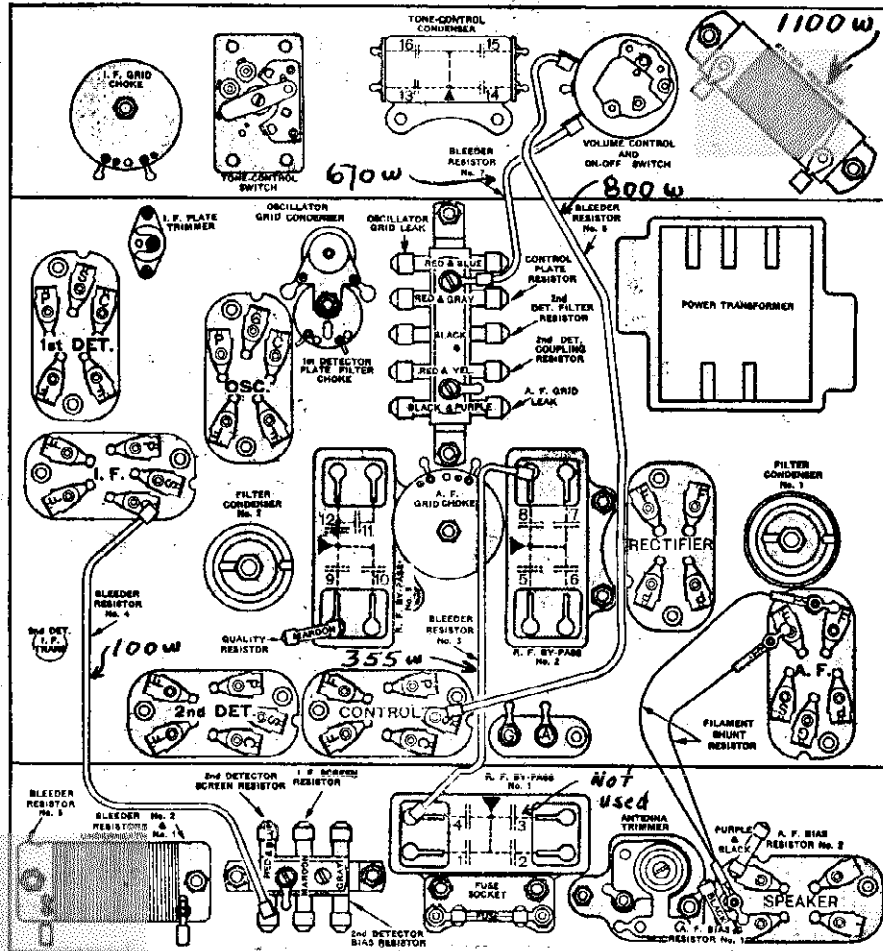
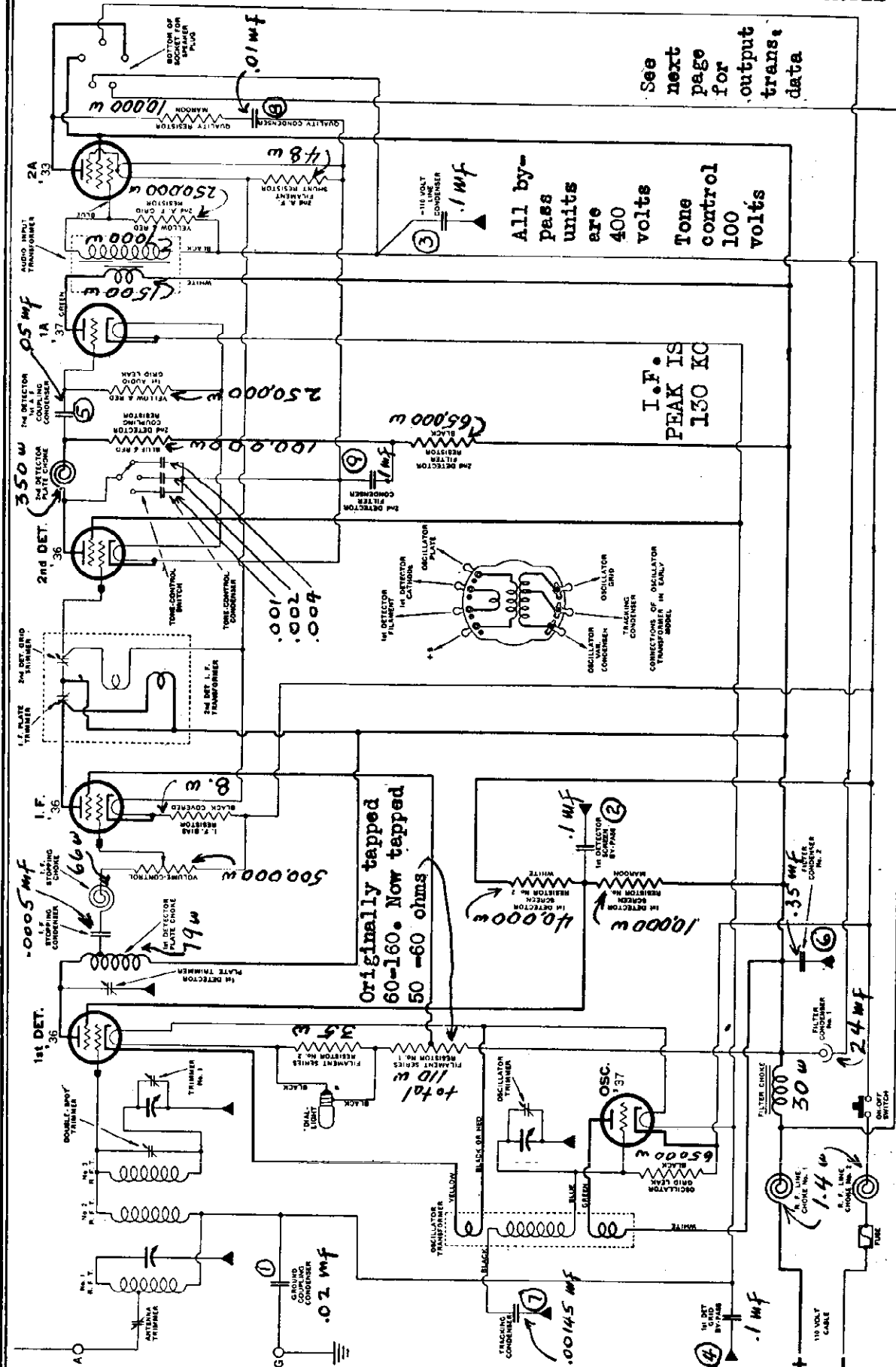


CHART OF MODEL 82, 82-F.

The filter resistor is not used in Model 82-F.

ATWATER KENT MFG. CO.

MODEL 84-D



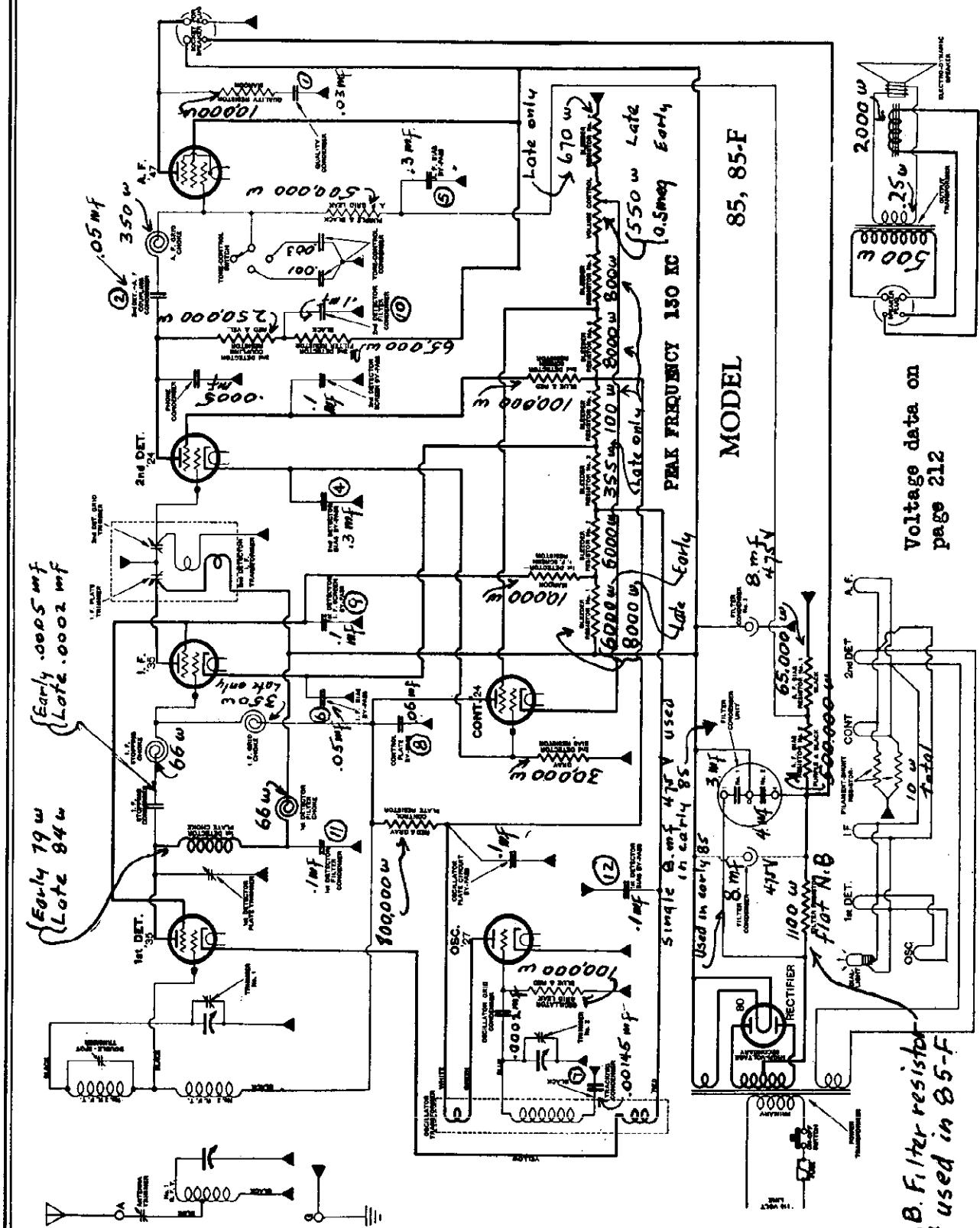
Early Model 84-D does not have tone control; it has a condenser, instead of a resistor, across the secondary of the audio input transformer; it has a small phone condenser (.500 m.m.f.) connected to the plate of the 2nd-detector, and it has an antenna choke connected between the antenna and ground posts.

Antenna choke 130 w 2nd A-F grid condenser # 10 is .0015 mf

Voltage data on page 212

ATWATER KENT MFG. CO.

MODEL 85, 85-F



Early 79w (Late 84w)
Early .0005 mf (Late .0002 mf)

Single 8 mf 47v used in early 85

N.B. Filter resistor not used in 85-F

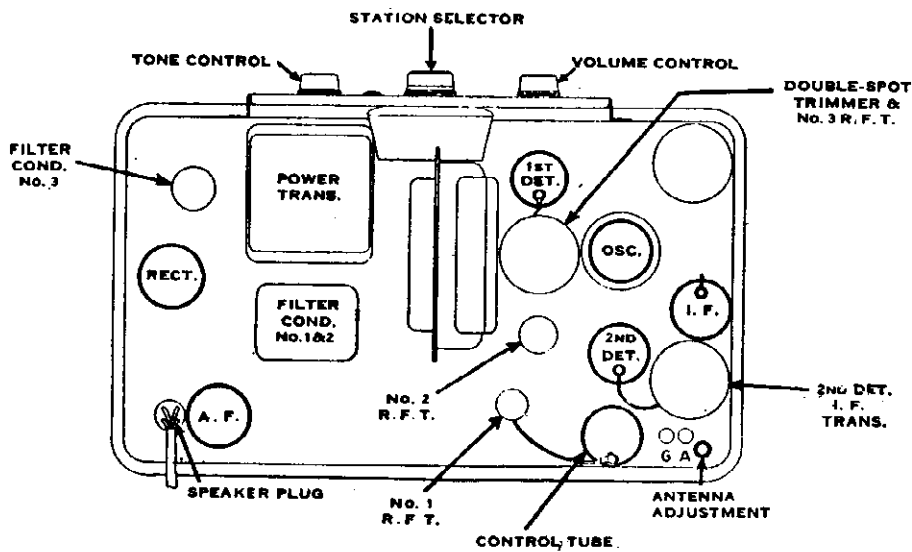
Antenna choke used in early 85 has d.c. resistance of 130. w

Voltage data on page 212

A few early-type Model 85 do not have automatic volume control; they have three electrolytic filter condensers; the circuit of these early Model 85 sets is similar to Model 80. The tracking condenser is mounted on the oscillator transformer in Model 82 and some 85 sets. The filament circuit of Model 82 is somewhat different from that shown above.

MODEL 85, 85-F

ATWATER KENT MFG. CO.



TOP VIEW OF MODEL 85, 85-F.

The circle in the top right corner represents the shield for the coupling unit between the 1st-detector and I. F. tubes.

See schematic

CONDENSERS

RF Bypass # 1
19160 Early
19980 Late
All 400 volts

RF Bypass # 2
19150 Early
19990 Late
All 400 volts

RF Bypass # 3
15262
All 400 volts
Tone Control
16490 Early
20010 Late
All 100 volts

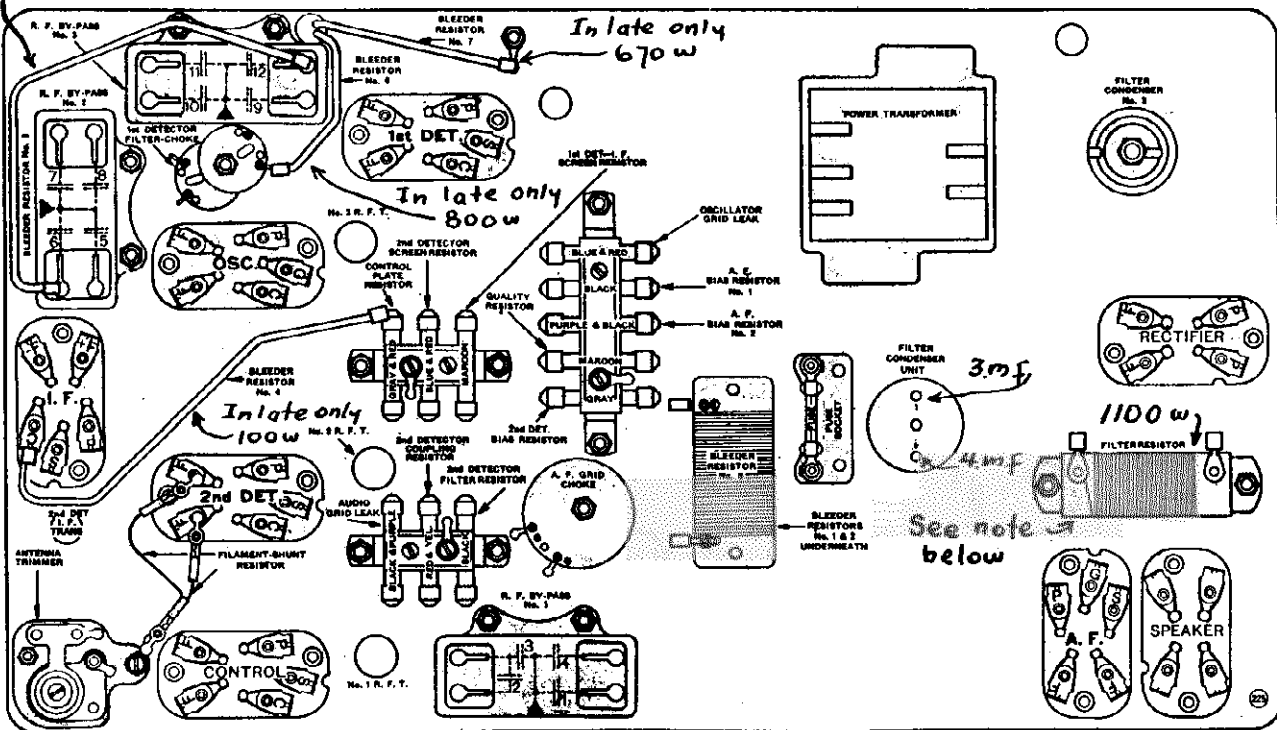


CHART OF MODEL 85, 85-F.

The filter resistor is not used in Model 85-F.

By-pass Condensers in Model 85, 85-F

R. F. By-pass No. 1

- 1—Quality condenser.
- 2—2nd-detector—A. F. coupling condenser.
- 3—Phone condenser.
- 4—2nd-detector bias by-pass.

R. F. By-pass No. 2

- 5—A. F. bias by-pass.
- 6—I. F. bias by-pass.
- 7—Tracking condenser.
- 8—Control-plate by-pass.

R. F. By-pass No. 3

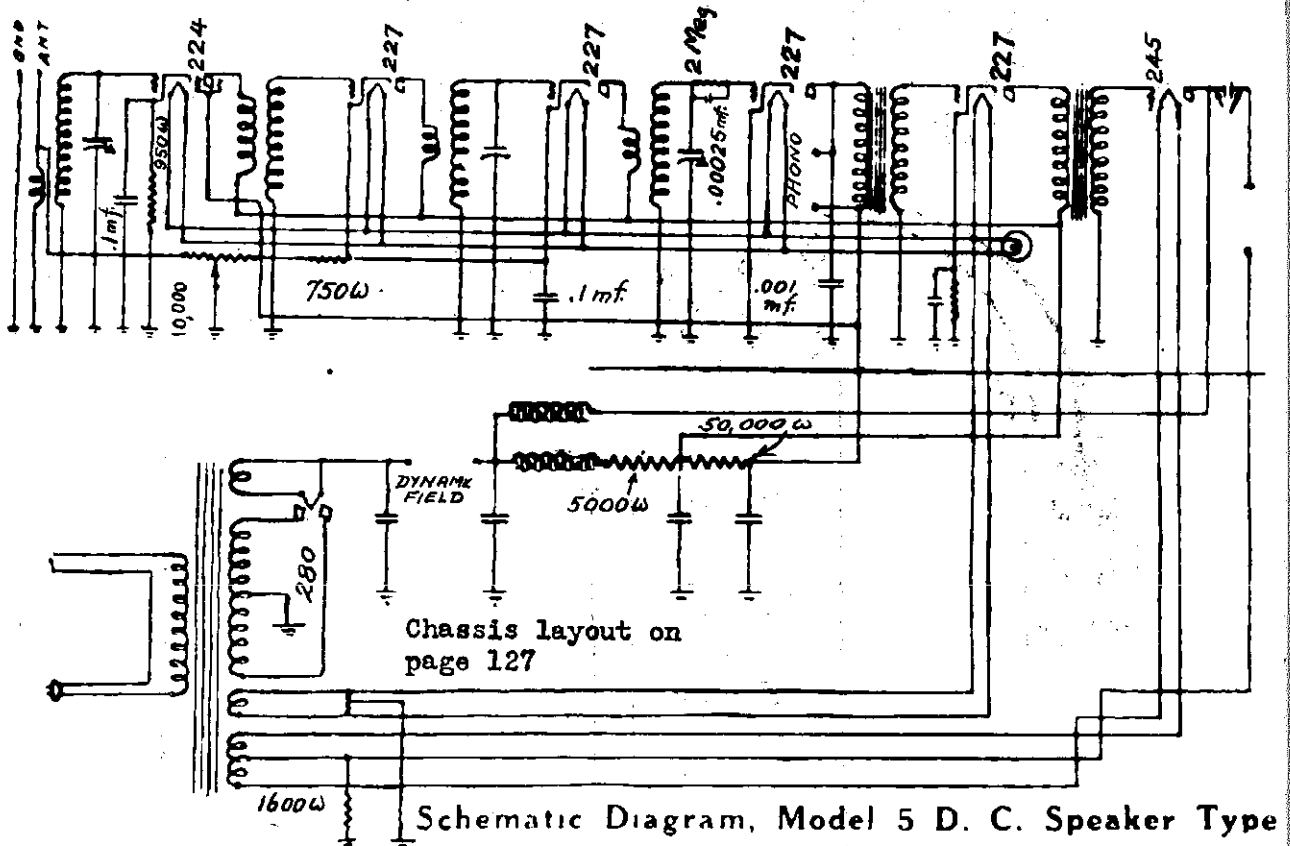
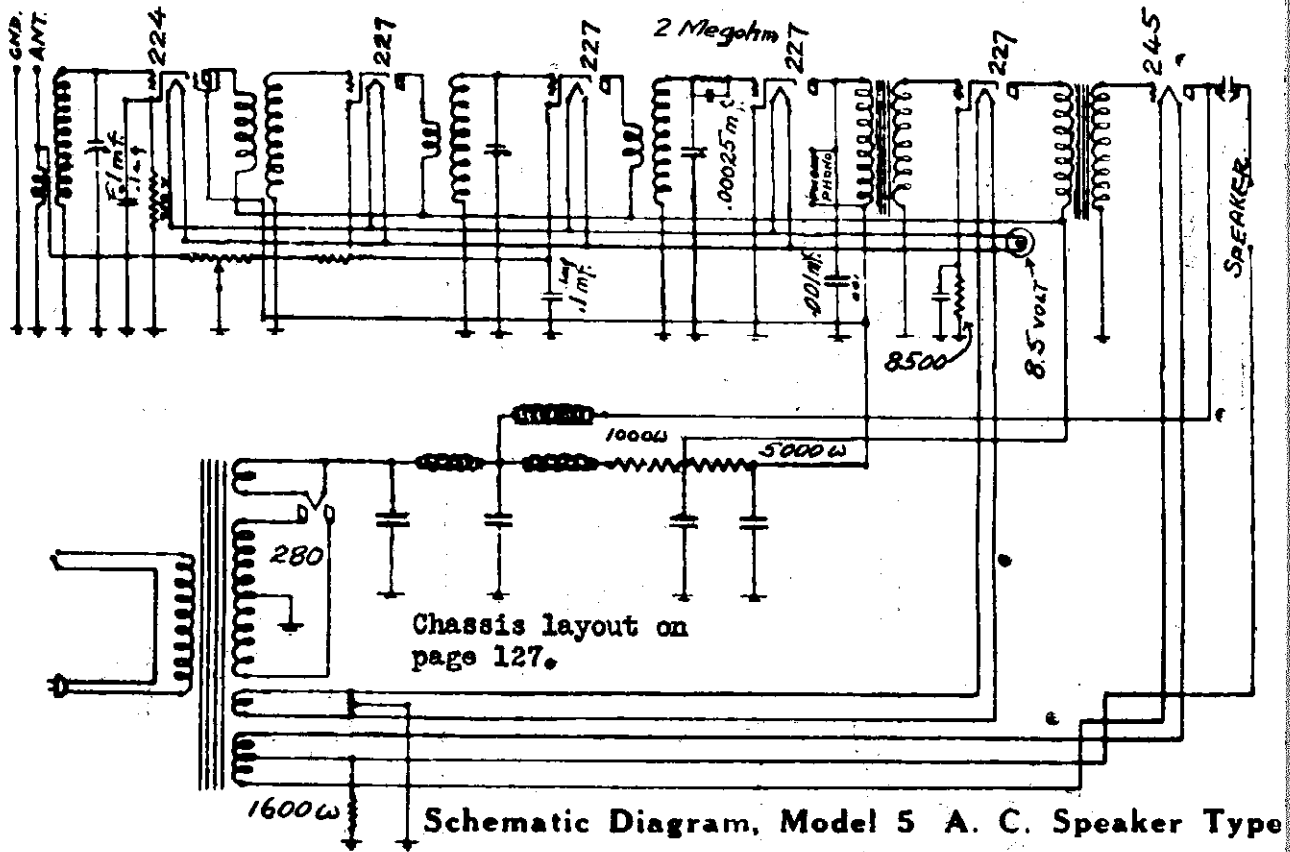
- 9—1st-detector—I. F. screen by-pass.
- 10—2nd-detector filter condenser.
- 11—1st-detector filter condenser
- 12—1st-detector bias by-pass.

Tone-control Condenser (on front panel)

Two top contacts—2nd-detector screen by-pass and oscillator plate-circuit by-pass.
Two bottom contacts—tone-control condensers.

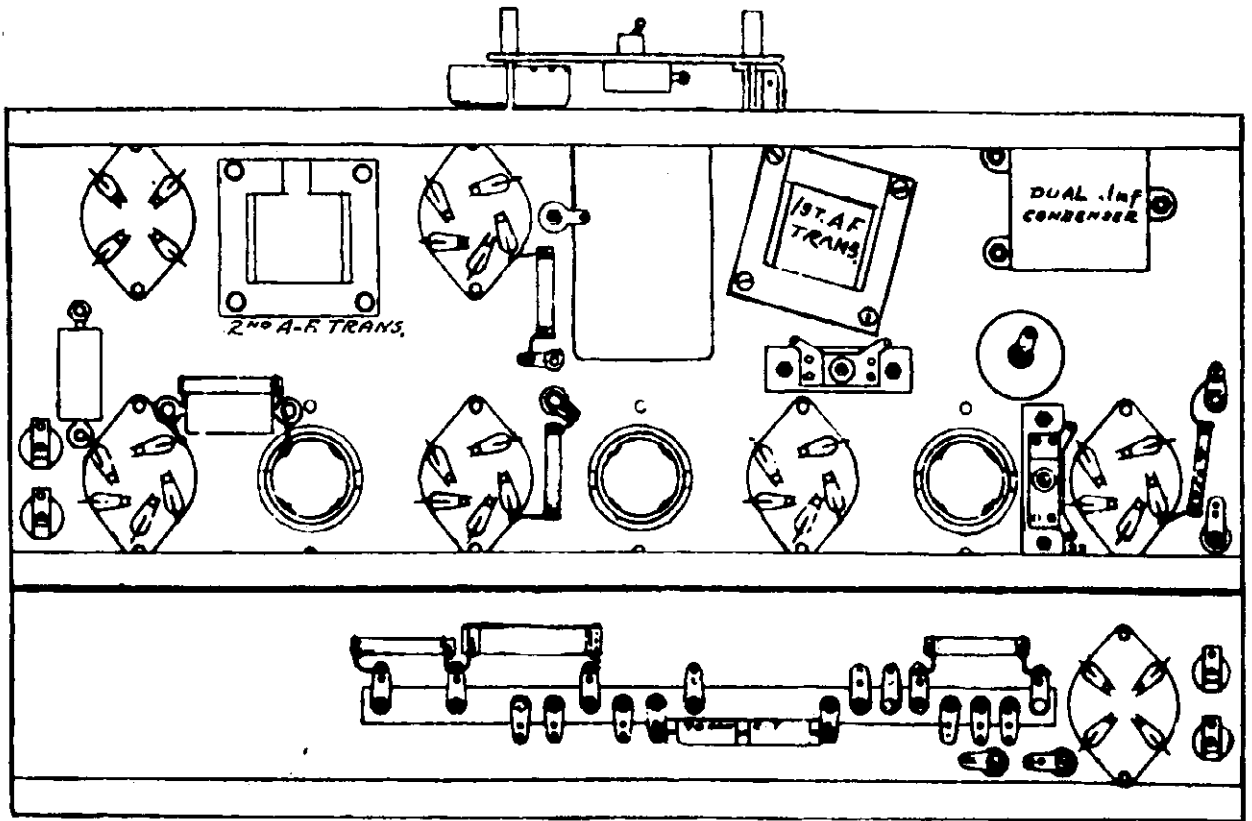
ATCHISON RADIO MFG. CO.

MODEL 5 AC
MODEL 5 DC

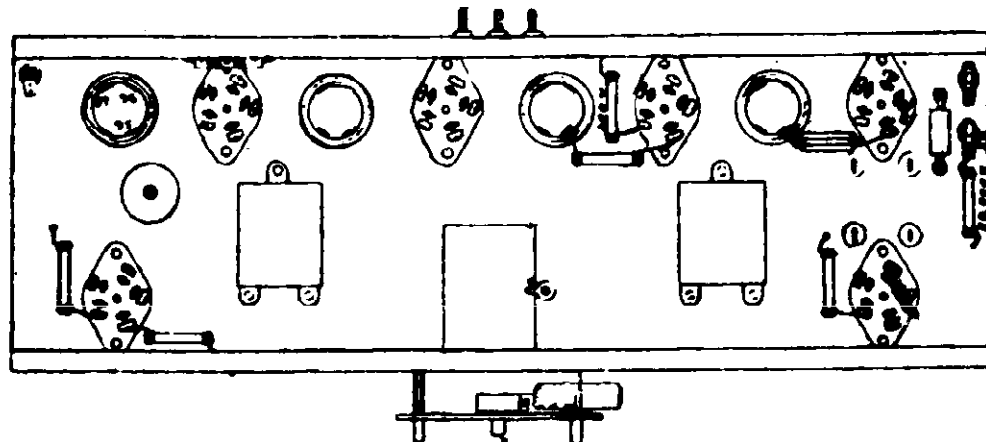


ATCHISON RADIO MFG. CO.

MODEL 5 Chassis
MODEL 6 Chassis



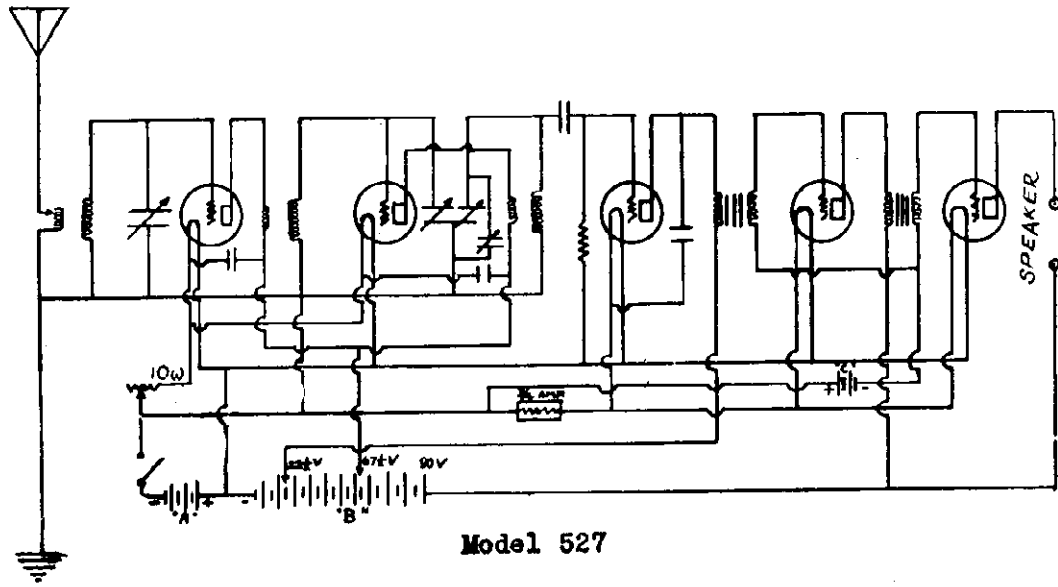
Model 5. Chassis Arrangement



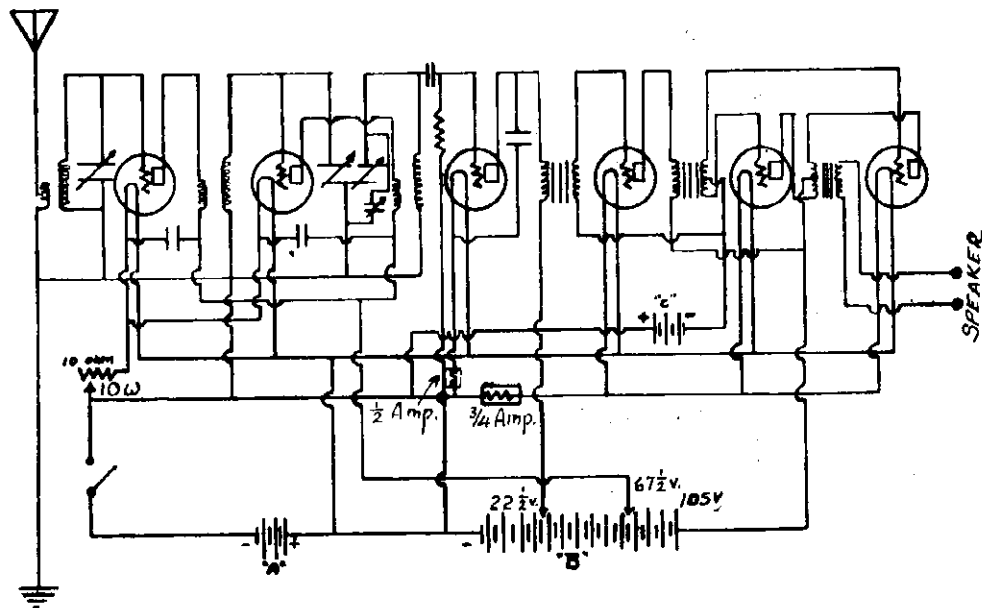
Model 6. Chassis Arrangement

AUDIOLA RADIO CO.

MODEL 527
MODEL 627



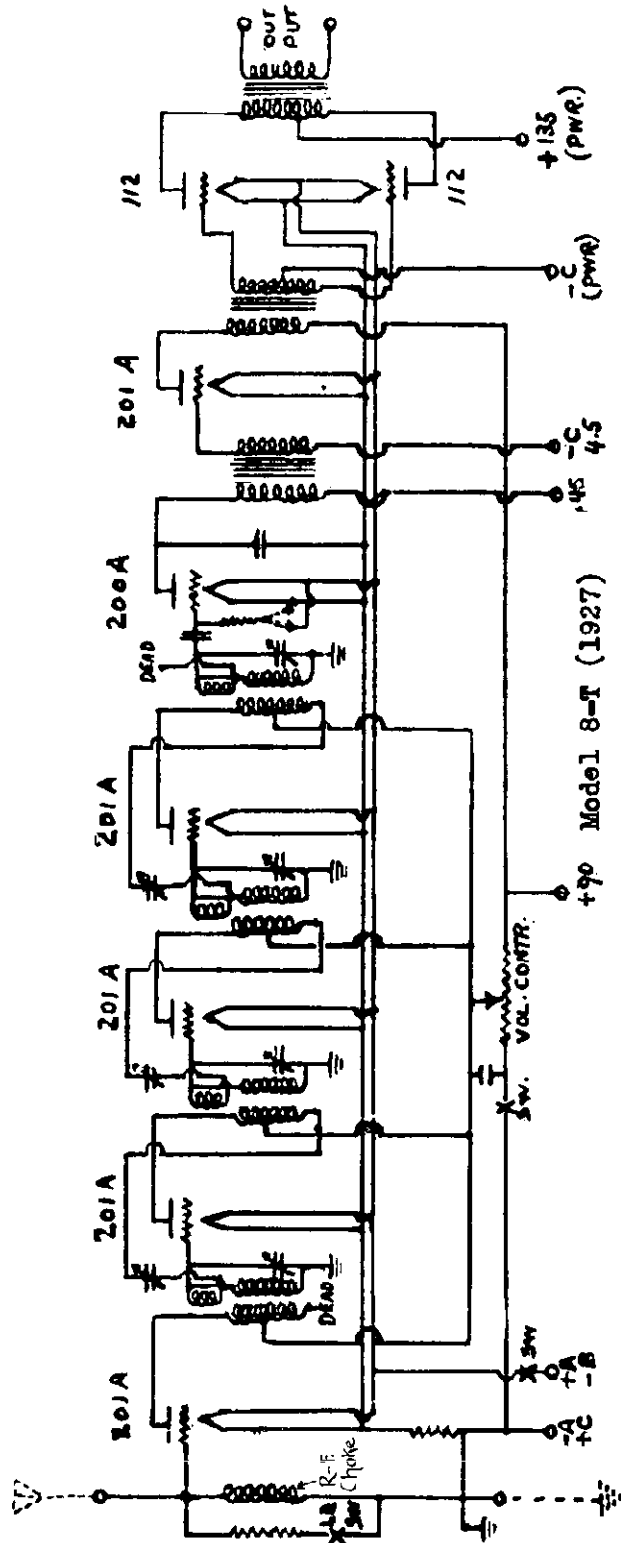
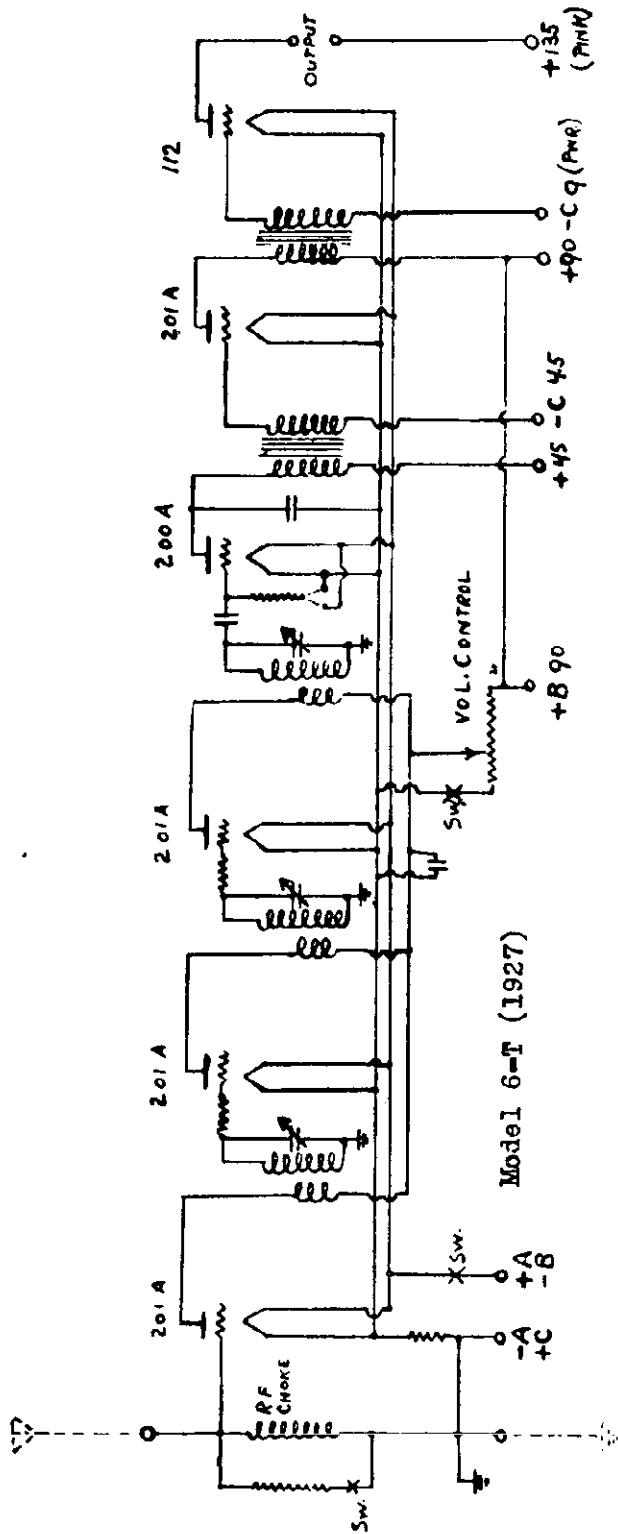
Model 527



Model 627

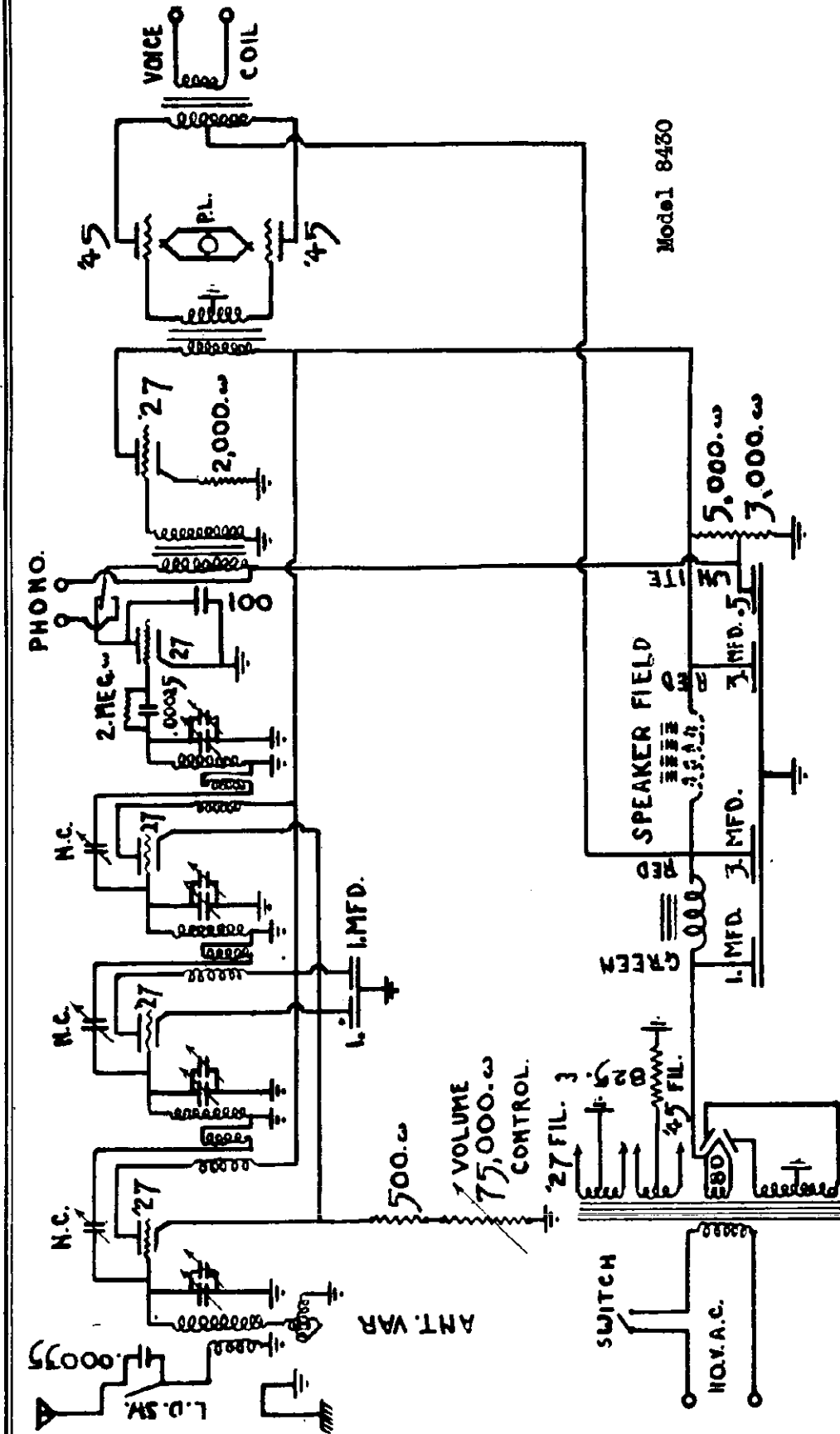
AUDIOLA RADIO CO.

MODEL 6-T (1927)
 MODEL 8-T (1927)



AUDIOLA RADIO CO.

MODEL 8430



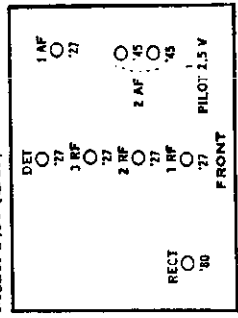
Model 8430

Line Voltage 115 Volts. Volume control Maximum. Watts. 90-100.

Plt. Crnt.
5. - 8. ma
2. - 4.
4. - 6.
22. - 32.
95. - 105.

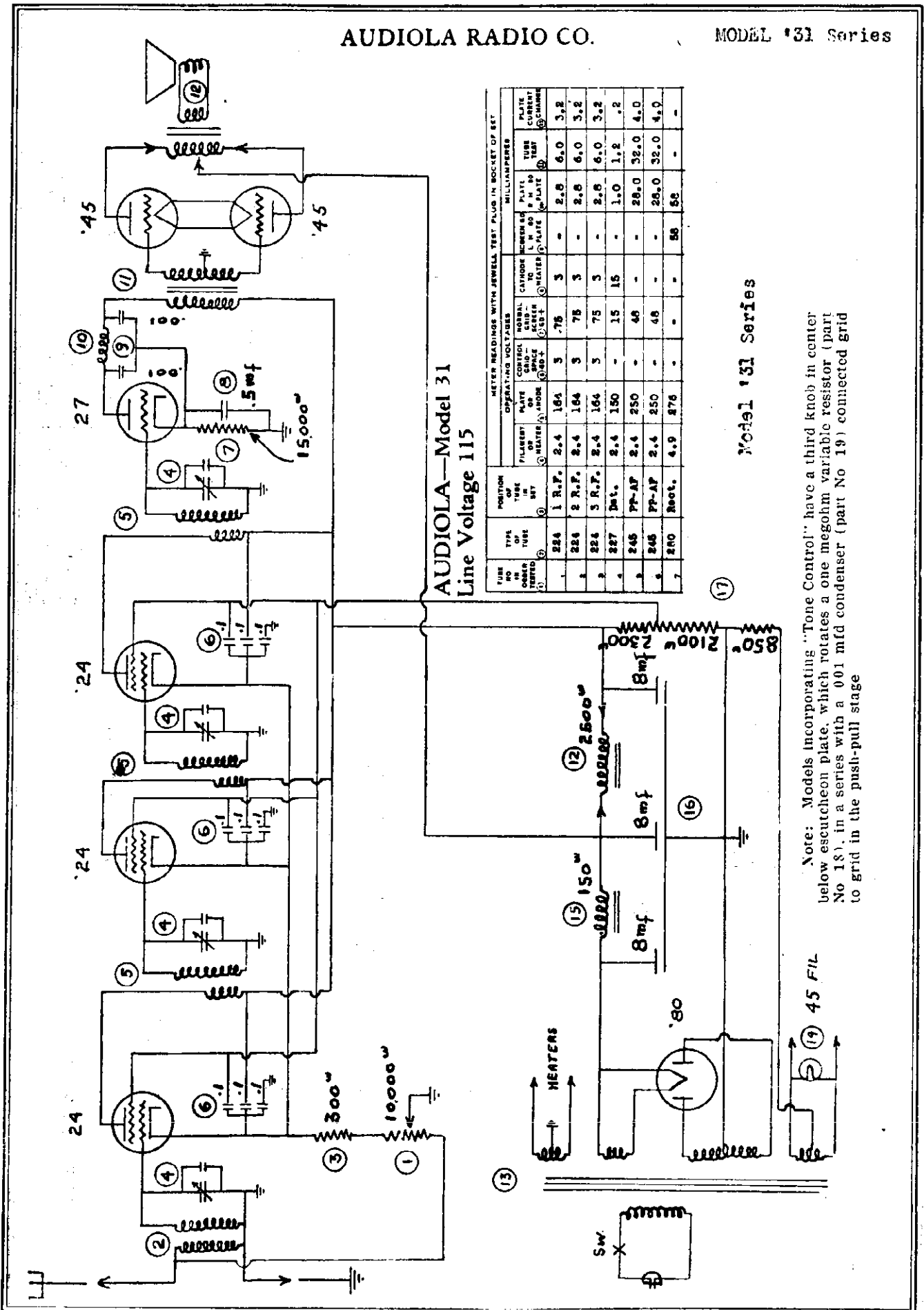
R-F	Det.	A-F (1st)	A-F (2nd)	Rect.	Vol. across field	Field current
2.4	2.4	2.4	2.4	4.7-5.2	80 - 100.	40-50 ma.
135-150	80-80*	135-150	210-250			
8-10		10-14	40-50			

Model 8430 (1929)



AUDIOLA RADIO CO.

MODEL '31 Series



AUDIOLA—Model 31
Line Voltage 115

METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET										
TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION IN SET	OPERATING VOLTAGES			MILLIAMPERES			PLATE CURRENT (A) CHARGE	
			FILAMENT (A) (1)	CONTROL GRID (B) (2)	NORMAL GRID (C) (3)	SCREEN GRID (D) (4)	HEATER (E) (5)	TUBE CURRENT (A) (6)		PLATE CURRENT (B) (7)
1	224	1 R.F.	2.4	3	.75	3	-	2.5	6.0	3.2
2	224	2 R.F.	2.4	3	.75	3	-	2.5	6.0	3.2
3	224	3 R.F.	2.4	3	.75	3	-	2.5	6.0	3.2
4	227	Det.	2.4	150	-	15	15	1.0	1.2	.2
5	245	PP-AP	2.4	250	-	48	-	28.0	32.0	4.0
6	245	PP-AP	2.4	250	-	48	-	28.0	32.0	4.0
7	240	Rect.	4.9	275	-	-	-	58	-	-

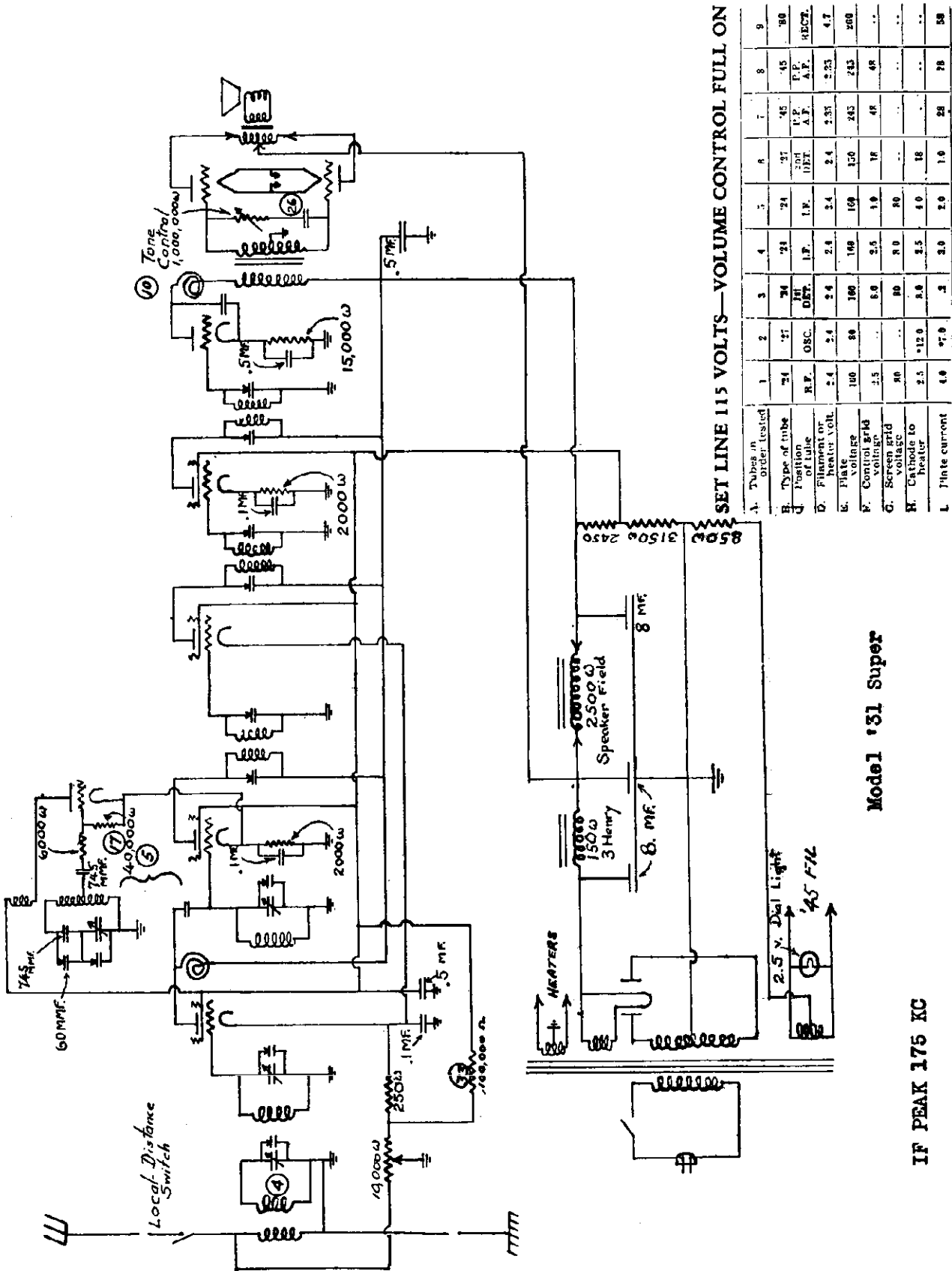
Model '31 Series

Note: Models incorporating "Tone Control" have a third knob in center below escutcheon plate, which rotates a one megohm variable resistor (part No 18) in a series with a .001 mfd condenser (part No 19) connected grid to grid in the push-pull stage

45 FIL

MODEL '31 Super

AUDIOLA RADIO CO.



SET LINE 115 VOLTS—VOLUME CONTROL FULL ON

A. Tubes in Order Tested	1	2	3	4	5	6	7	8	9
B. Type of tube	7A	7A	7A	7A	7A	7A	7A	7A	7A
C. Position of tube	R.F.	OSC.	I.F.	I.F.	I.F.	I.F.	I.F.	I.F.	RECT.
D. Filament or heater volt.	2.4	2.4	2.4	2.4	2.4	2.4	2.31	2.53	4.7
E. Plate voltage	100	89	100	109	150	150	245	245	200
F. Control grid voltage	2.5	...	5.0	2.5	1.9	1.9	4.8	4.8	...
G. Screen grid voltage	80	...	80	80	80	...	...	...	...
H. Cathode to heater	2.5	*12.0	0.0	3.5	4.0	1.8	...	...	...
I. Plate current	4.0	*7.0	3	3.0	2.0	1.0	2.8	2.8	5.8

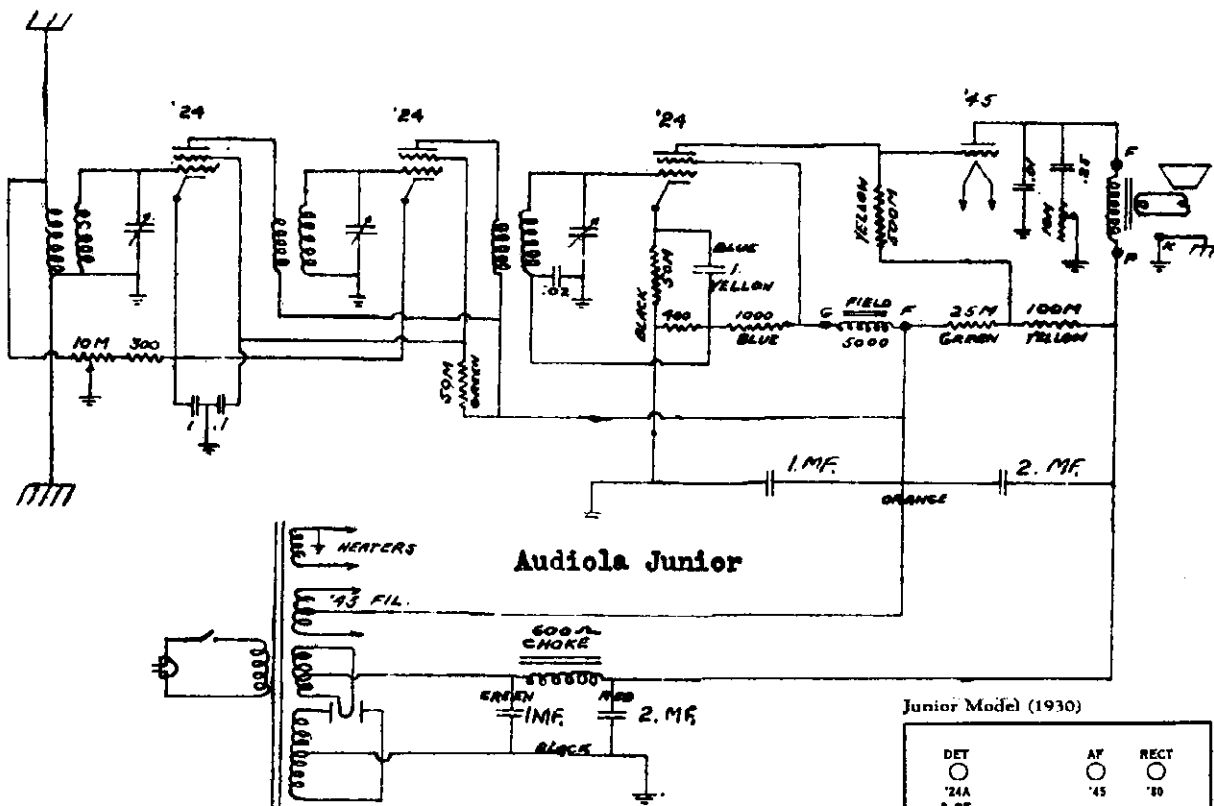
*Non-Oscillating.

Model '31 Super

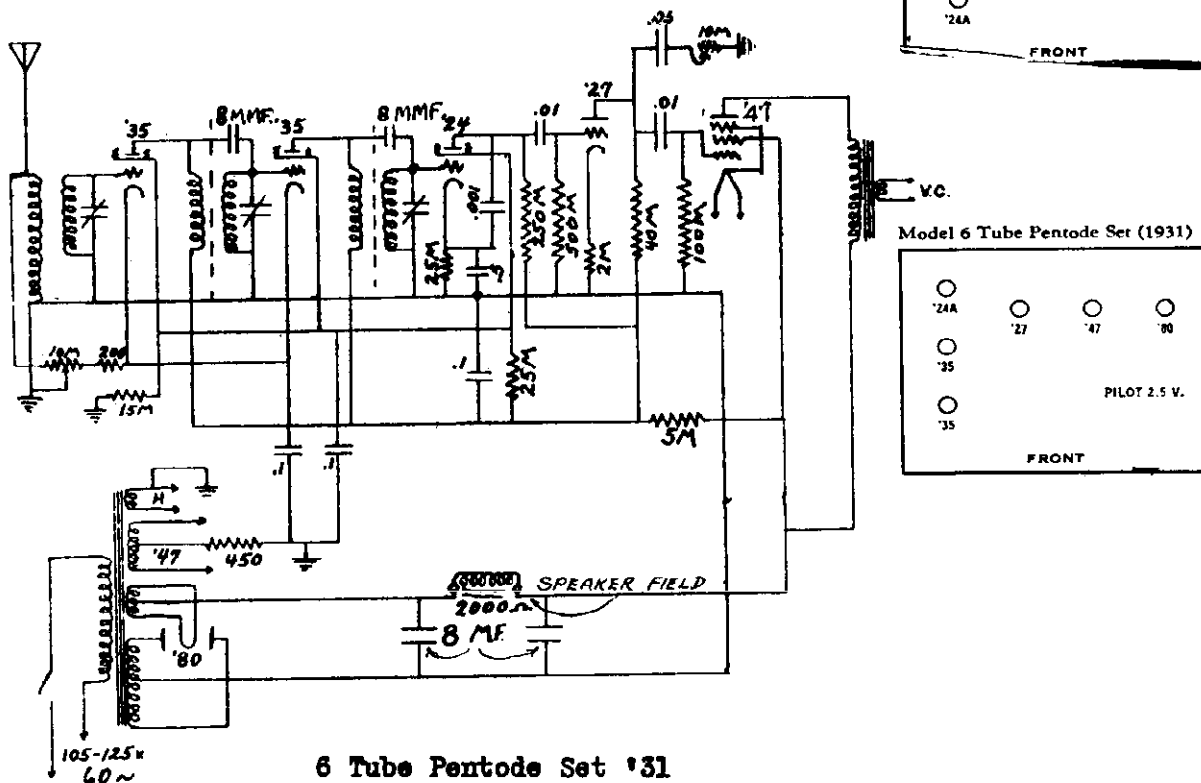
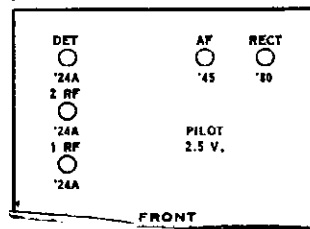
IF PEAK 175 KC

AUDIOLA RADIO CO.

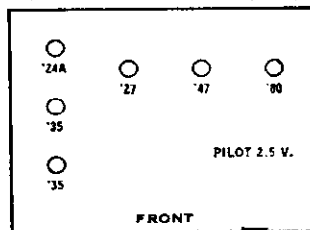
MODEL Audiola Jr.
MODEL 6 Tube Pentode
'31



Junior Model (1930)



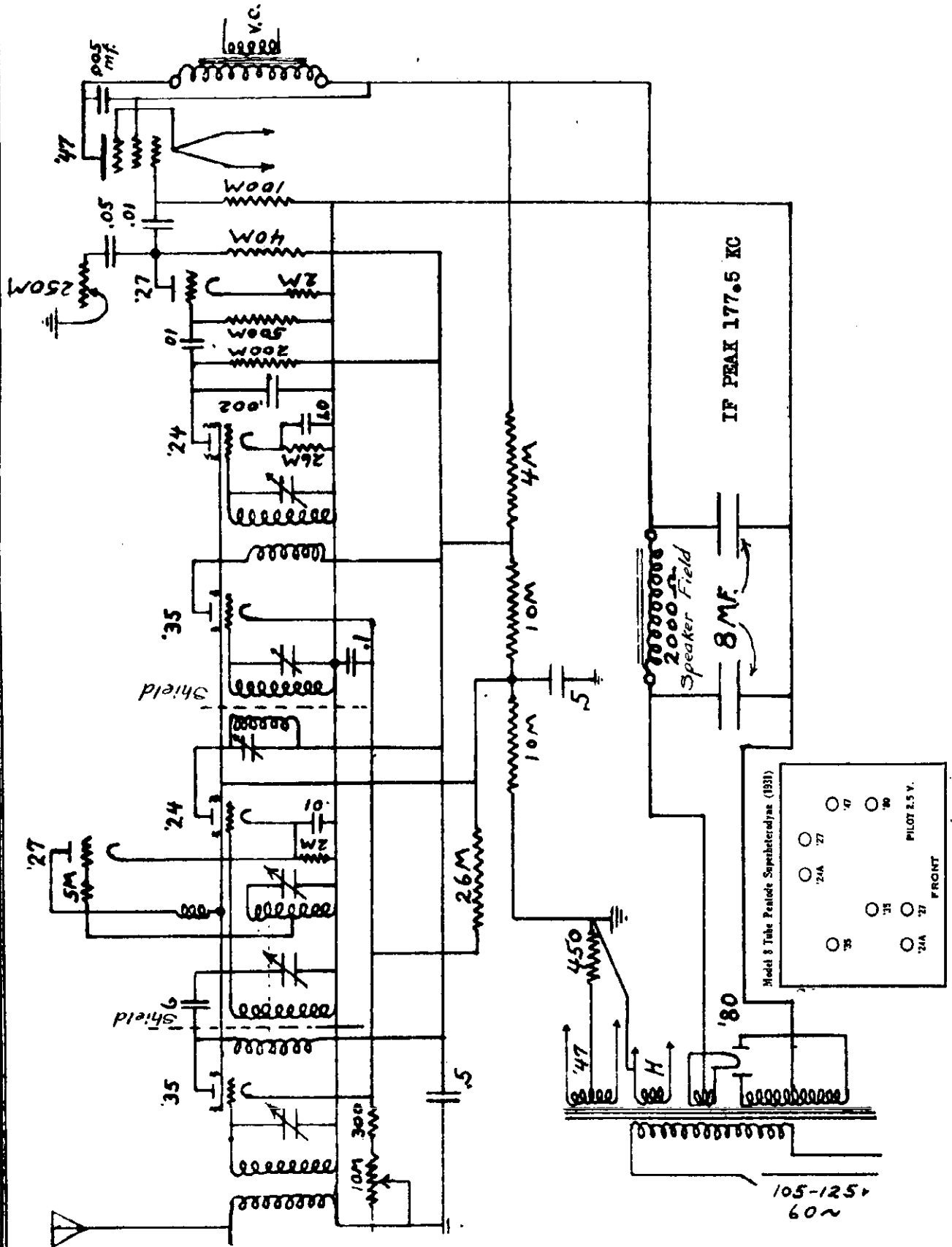
Model 6 Tube Pentode Set (1931)



6 Tube Pentode Set '31

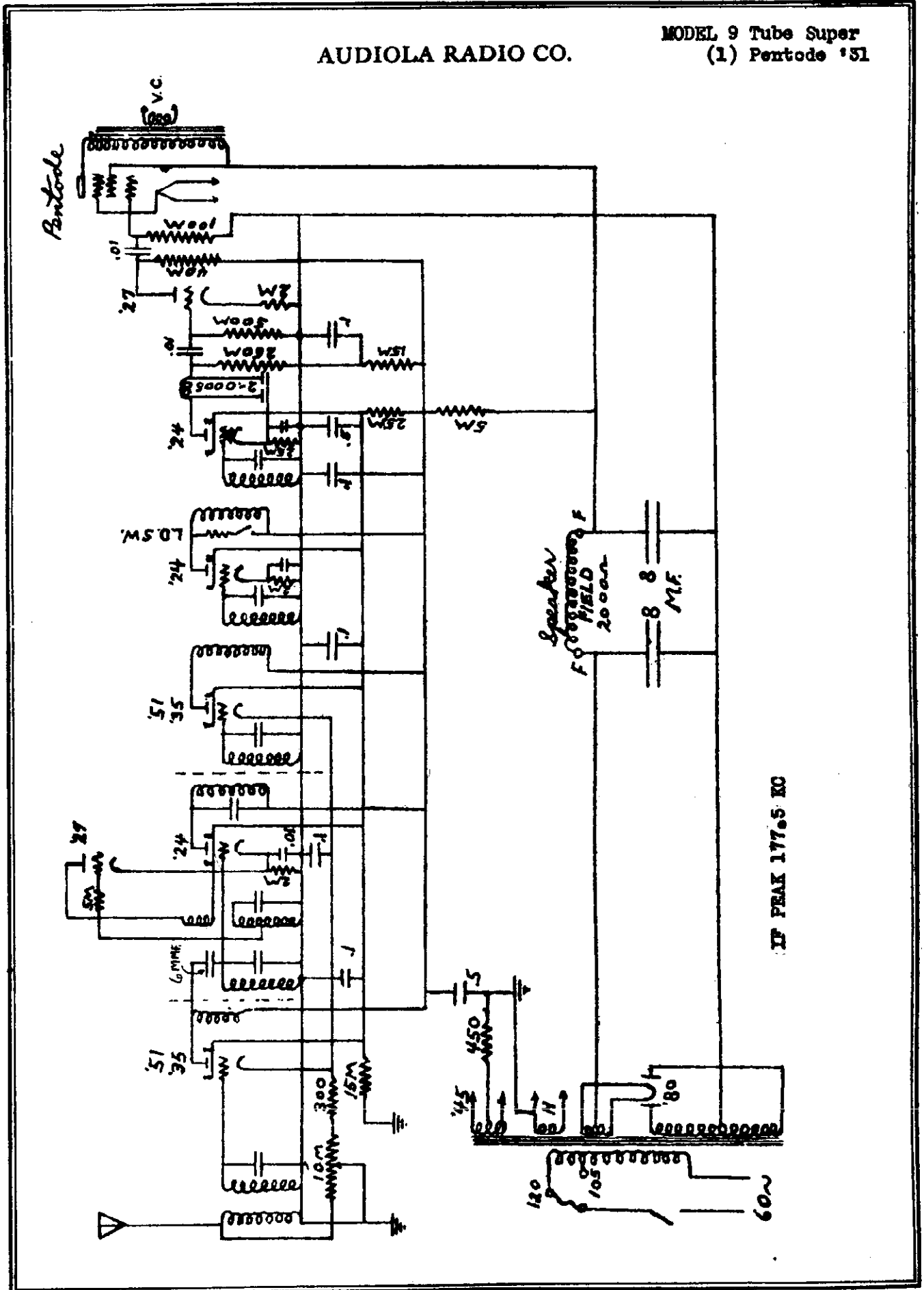
MODEL 8 Tube Super
Pentode '31

AUDIOLA RADIO CO.



AUDIOLA RADIO CO.

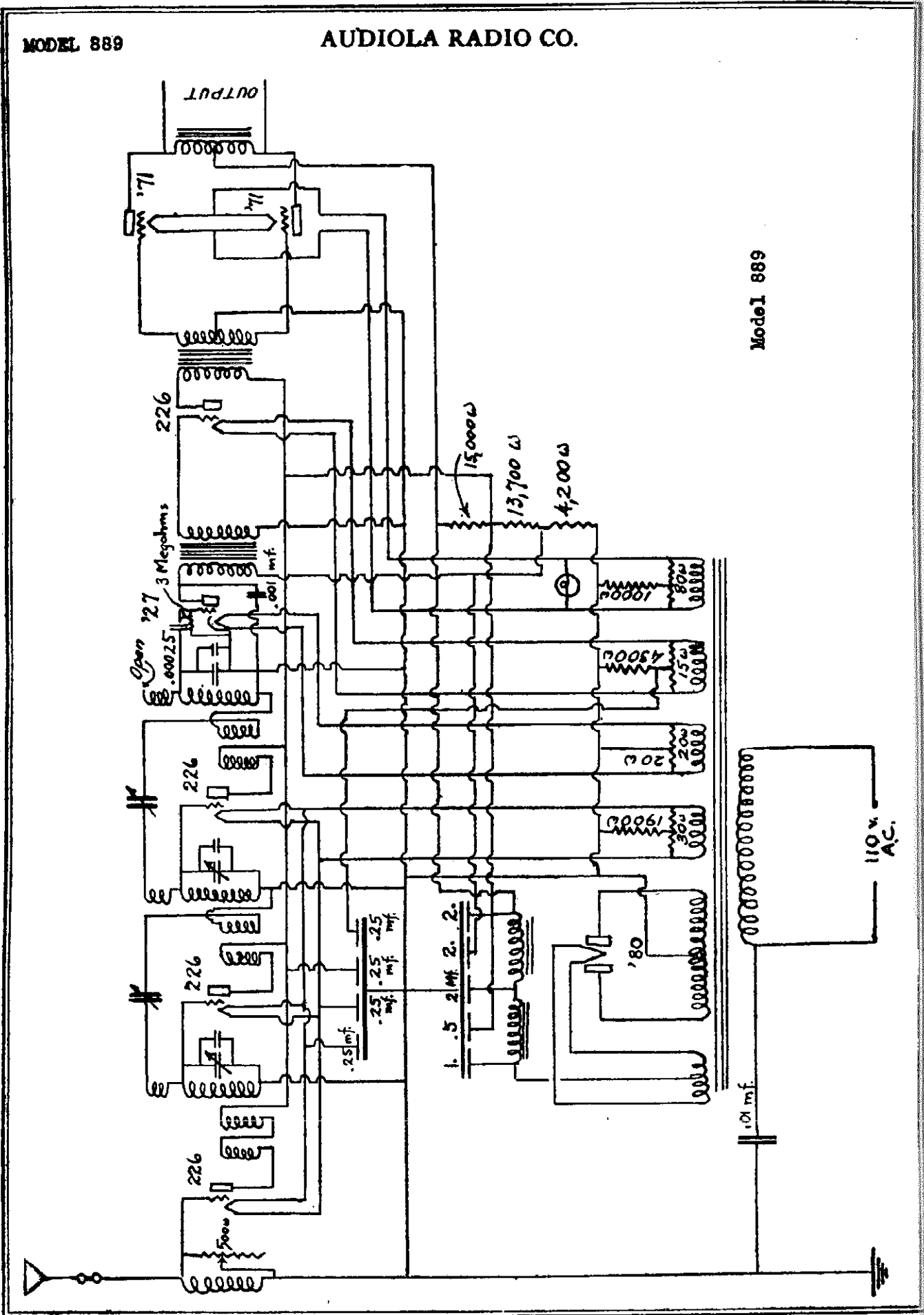
MODEL 9 Tube Super
(1) Pentode '51



AUDIOLA RADIO CO.

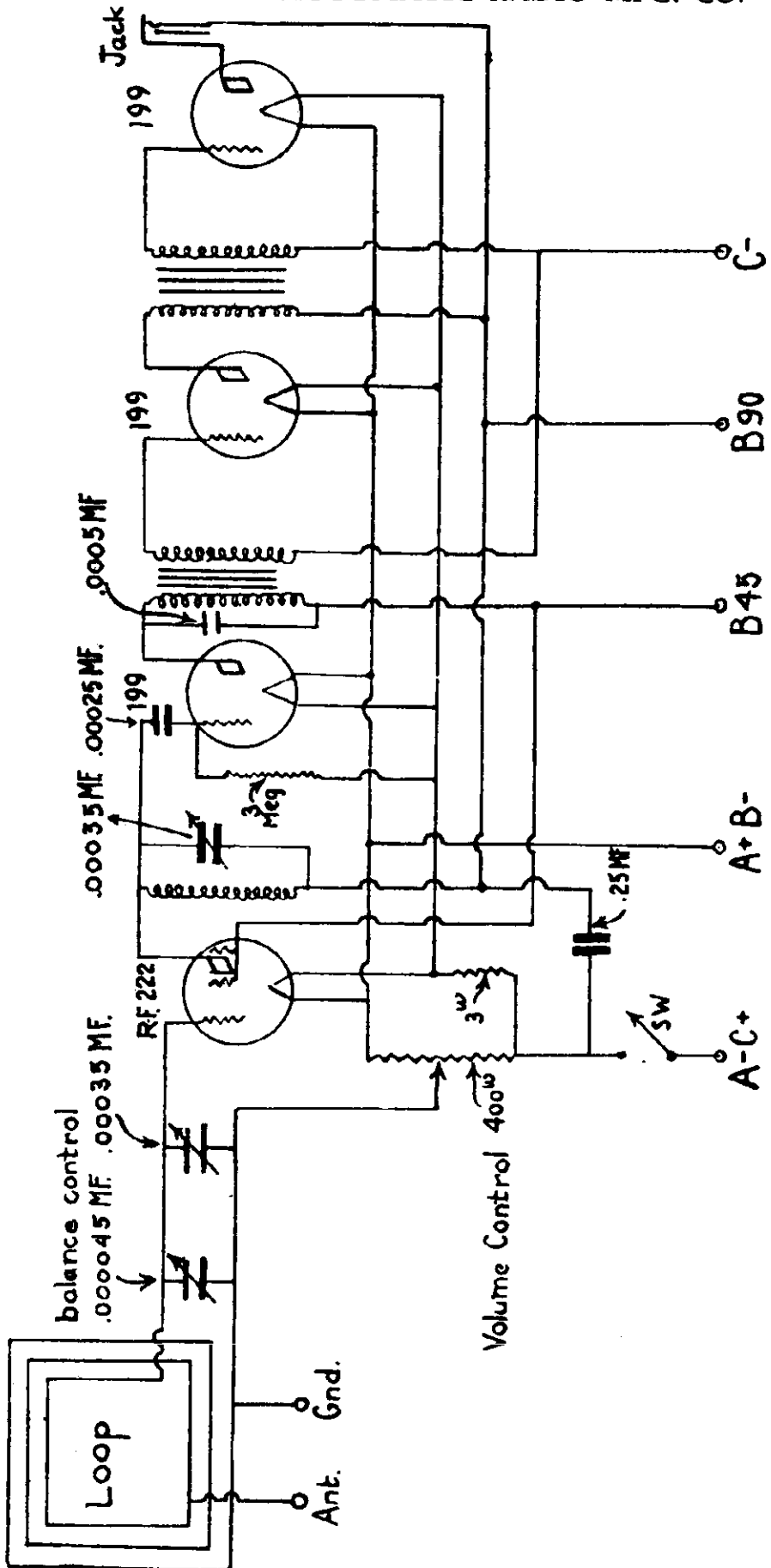
MODEL 889

Model 889



AUTOMATIC RADIO MFG. CO.

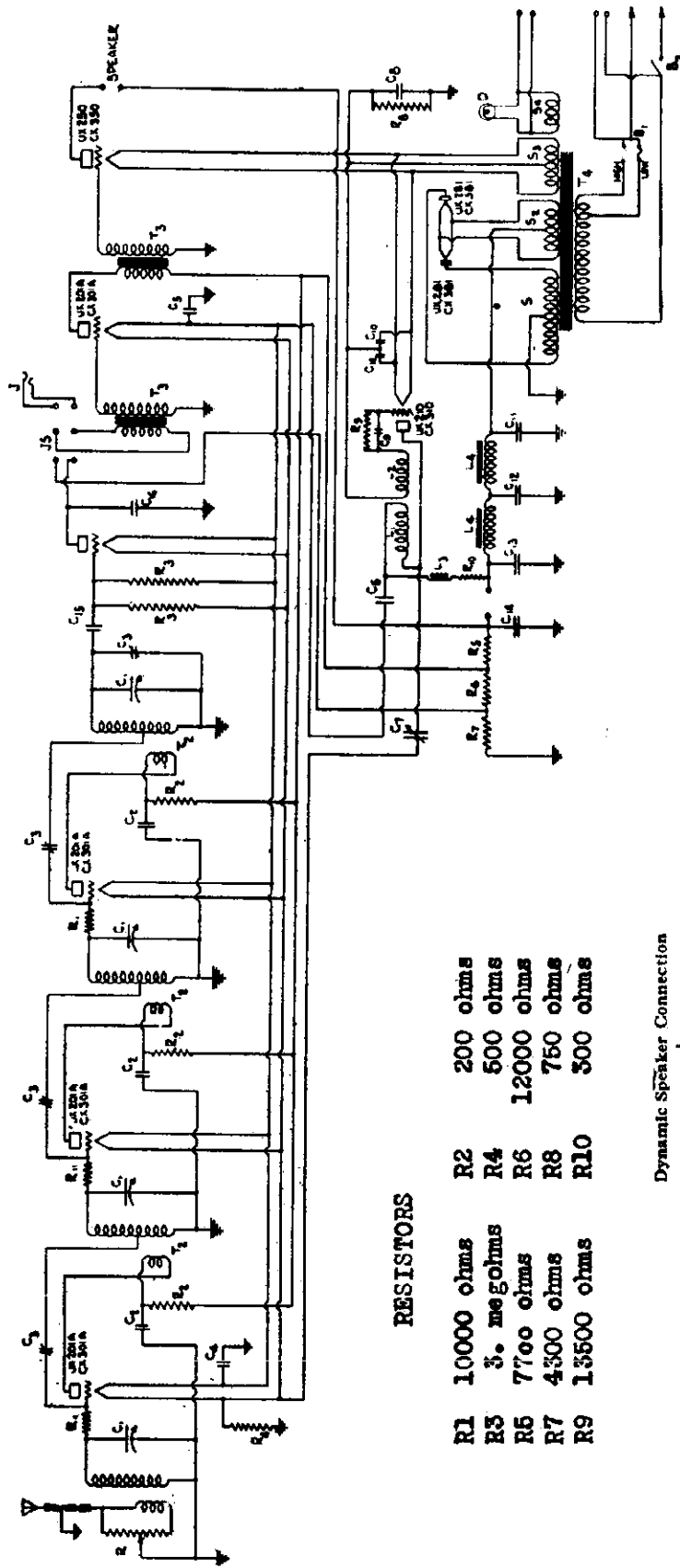
MODEL "TOM THUMB"
Screen Grid Four
Battery



Schematic diagram of "Tom Thumb" screen grid four
(battery)

BALKEIT RADIO CO.

MODEL B-7 and B-9



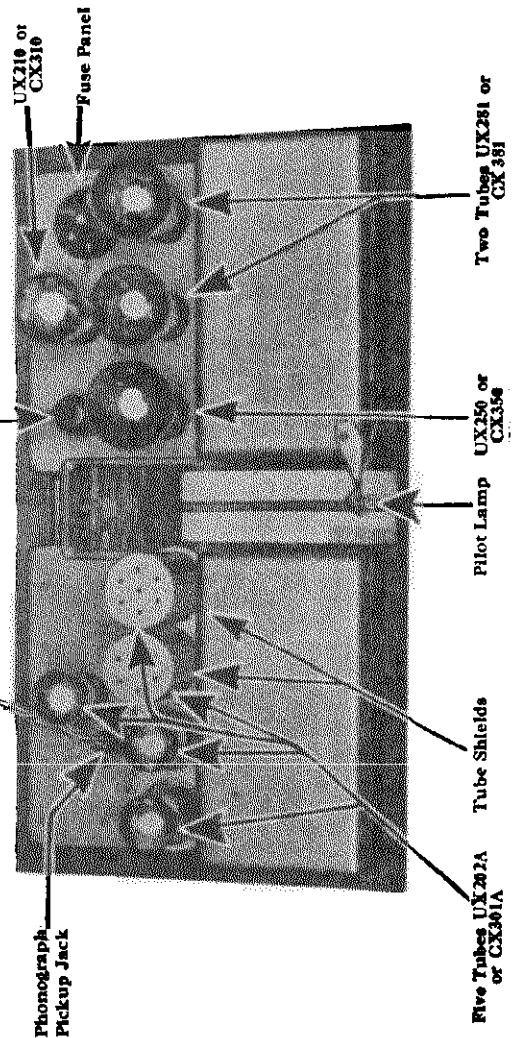
RESISTORS

- R1 10000 ohms
- R2 200 ohms
- R3 5. megohms
- R4 500 ohms
- R5 7700 ohms
- R6 12000 ohms
- R7 4300 ohms
- R8 750 ohms
- R9 13500 ohms
- R10 500 ohms

CONDENSERS

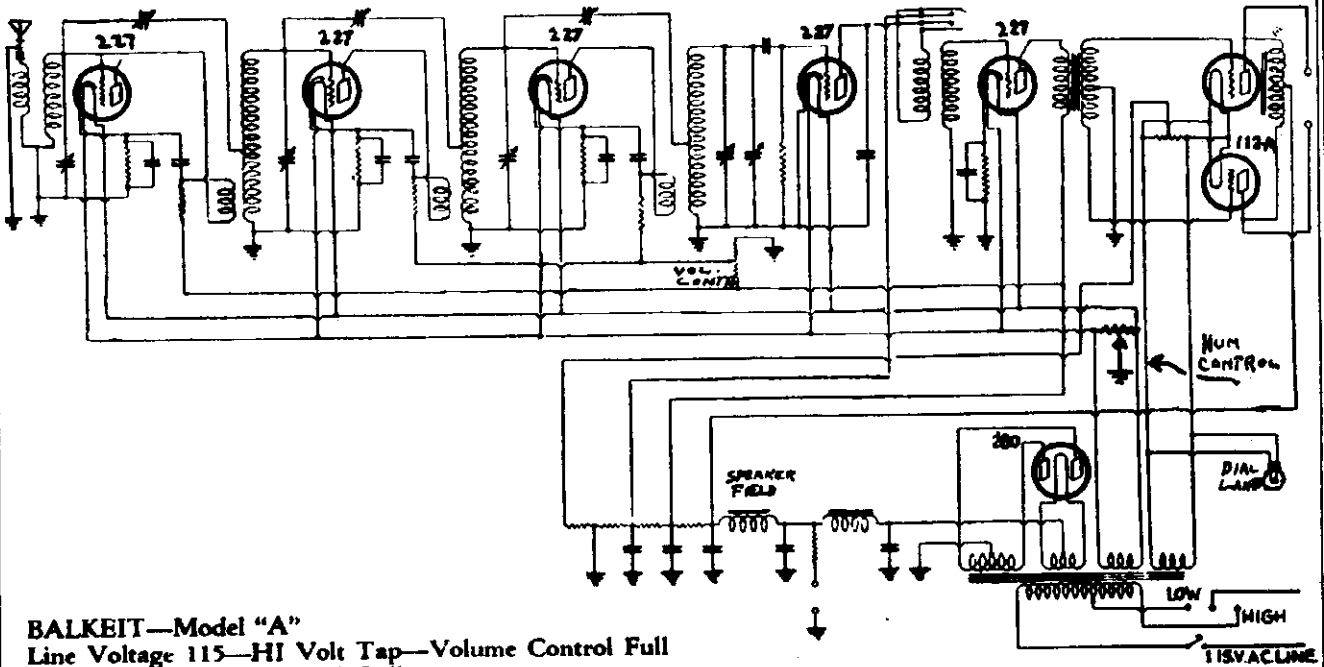
- C1 .00037 mfd
- C2 .1 mfd
- C3 .00002 mfd
- C4 .5 mfd
- C5 1. mfd
- C6 .006 mfd
- C7 .00025 mfd
- C8 2. mfd
- C9 .0025 mfd
- C10 .002 mfd
- C11 2. mfd
- C12 3. mfd
- C13 4. mfd
- C14 4. mfd
- C15 .00015 mfd

Dynamic Speaker Connection



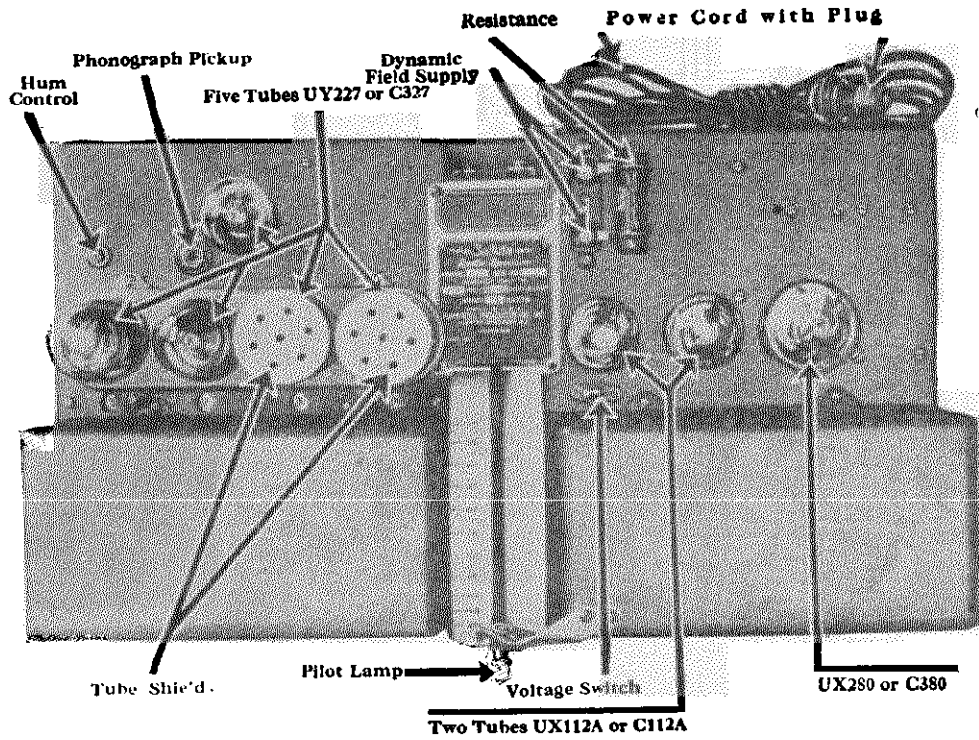
MODEL A-3, A-5, A-7

BALKEIT RADIO CO.



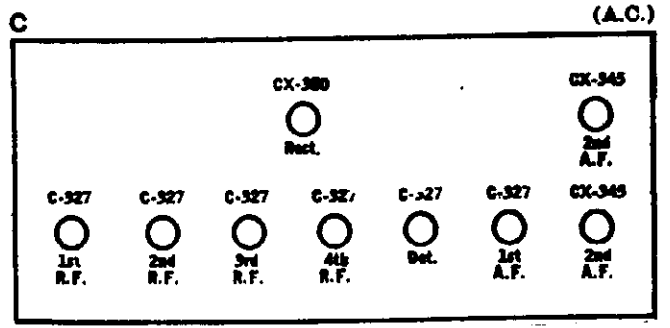
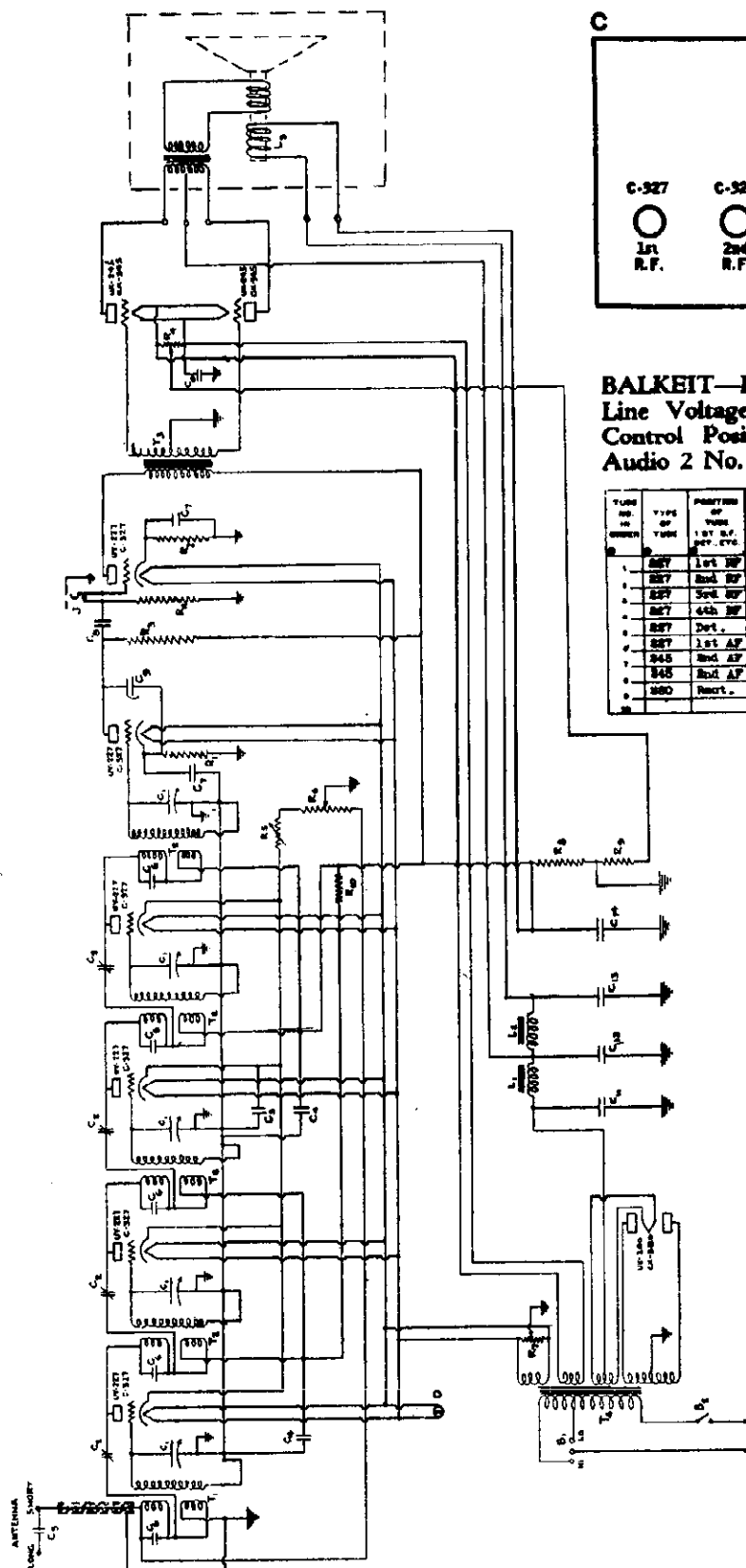
BALKEIT—Model "A"
 Line Voltage 115—HI Volt Tap—Volume Control Full
 2nd A. F.—Two Tubes Push Pull

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1ST, 2ND, DET., ETC.)	DESIGNATED PLUGS IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	OUTER VOLTS	NORMAL PLATE VOLTAGE	PLATE P.A. SOCKET TEST	PLATE P.A. SOCKET	
1	227	1st. A.F.	2.5	98	2.1	84	5	-	3.1	4.5	2.4	
2	227	2nd. A.F.	2.5	98	2.1	84	5	-	3.1	4.5	2.4	
3	227	3rd. A.F.	2.5	98	2.1	84	5	-	3.1	4.5	2.4	
4	227	Detector	2.5	46	2.1	50	0	-	2.2	2.4	0.2	
5	227	4th. A.F.	2.5	98	2.1	84	5	-	3.1	4.5	2.4	
6	112A	2nd. A.F.	4.7	142	4.5	132	9.5	-	0.0	15.8	4.8	
7	112A	2nd. A.F.	4.7	142	4.5	132	9.5	-	9.0	15.8	4.8	
8	280	Rectifier	-	-	4.5	-	-	-	32.0	-	-	



MODEL "C"

BALKEIT RADIO CO.



BALKEIT—Model "C"
Line Voltage 115—Set on High Volt Tap—Volume Control Position Full On—Use 120 V. Scale—2nd Audio 2 No. 245 in Parallel

TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION OF TAP 1ST. SEC. SEC. CYC.	TAPING DATA					TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	WARMUP VOLTS	OPERATING VOLTS	PLATE VOLTS	SCREEN VOLTS	GRID VOLTS
1	827	1st RF	2.35	118	2.4	117	10	10	3.5	2.5	.5	-
2	827	2nd RF	2.35	118	2.4	117	10	10	3.5	2.5	.5	-
3	827	3rd RF	2.35	118	2.4	117	10	10	3.5	2.5	.5	-
4	827	4th RF	2.35	118	2.4	117	10	10	3.5	2.5	.5	-
5	827	Det.	2.35	68	2.4	68	8.5	9.5	0.5	0.5	.5	-
6	827	1st AF	2.35	118	2.4	117	8	7.5	4.5	0.5	1.0	-
7	845	2nd AF	2.4	-	2.5	225	41	-	84	80	4.	-
8	845	2nd AF	2.4	-	2.5	225	41	-	84	80	4.	-
9	850	Rect.	-	-	6.75	-	-	-	-	-	-	-

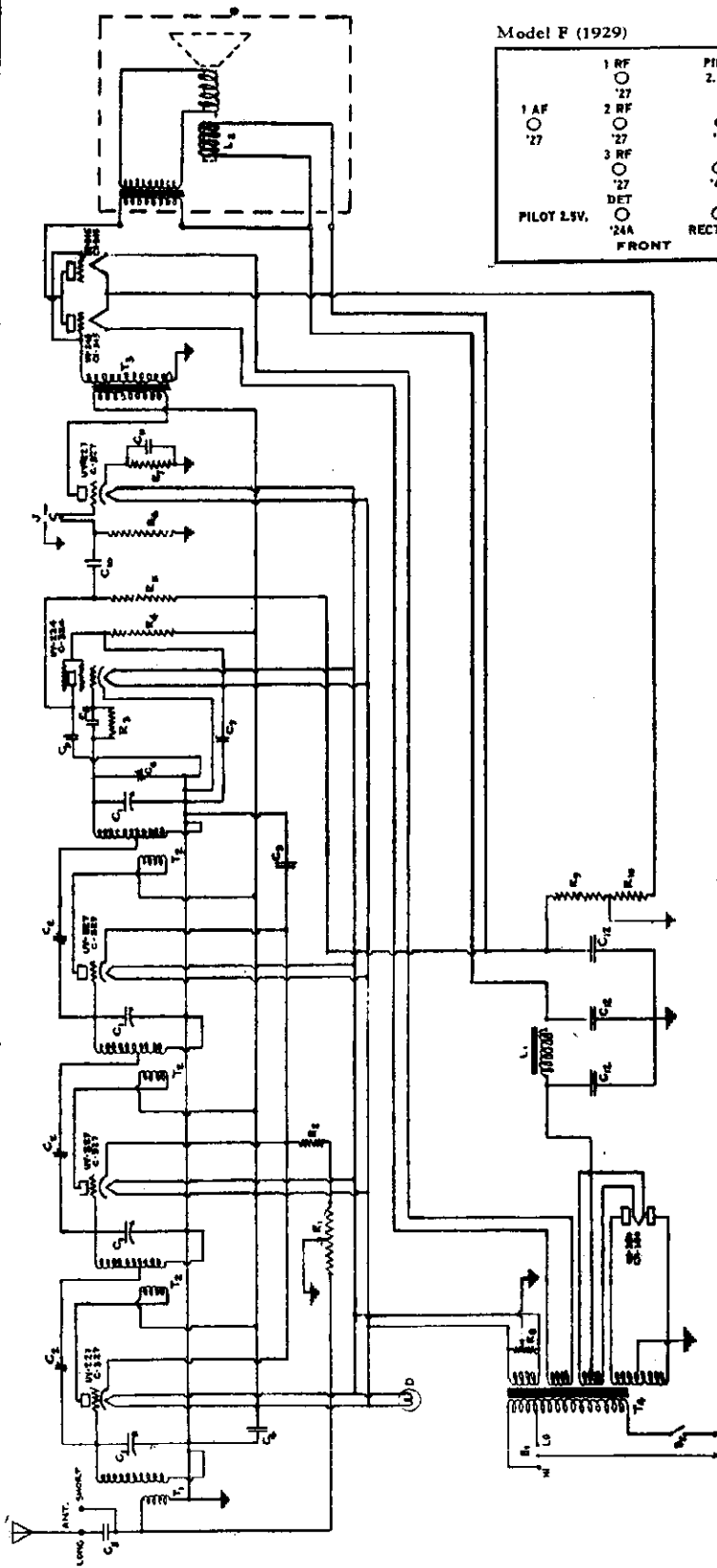
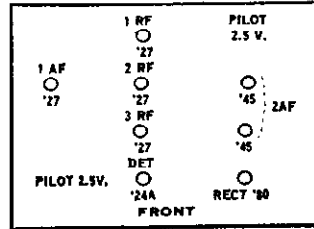
- C-1 Tuning Condenser
- C-2 Neutralizing Condenser
- C-3 R. F. Grid Bias Condenser .25 MF
- C-4 R. F. Plate By-Pass Condenser .25 MF
- C-5 Antenna Condenser .00025 MF
- C-6 Primary By-Pass Condenser .00025 MF
- C-7 Grid Bias Condenser 1.0 MF
- C-8 1st Audio Coupling Condenser 0.1 MF
- C-9 Detector Plate Condenser .002 MF
- C-10 By-Pass Condenser .25 MF
- C-11 Filter Condenser 2 MF
- C-12 Filter Condenser 2 MF
- C-13 Filter Condenser 2 MF
- C-14 Filter Condenser 1 MF
- J Phonograph Jack
- L-1 Filter Choke
- L-2 Filter Choke
- L-3 Speaker Field
- R-1 Detector Grid Bias Resistance 25,000 Ohms
- R-2 1st Audio Grid Bias Resistance 1,750 Ohms
- R-3 1st Audio Coupling Resistance .1 Megohm
- R-4 Mid-Tap Resistance 20 Ohms
- R-5 R. F. Grid Bias Resistance 2,000 Ohms
- R-6 Volume Control 15,000 Ohms
- R-7 Hum Control 20 Ohms
- R-8 Loss Current Resistance 3,600 Ohms
- R-9 245 Grid Bias Resistance 770 Ohms
- R-10 R. F. Plate Resistance
- R-11 1st Audio Grid Resistance .5 Megohm
- T-1 Antenna Transformer
- T-2 R. F. Interstage Transformer
- T-3 Input Push-Pull Transformer
- T-4 Power Transformer
- B-1 HI-LO S.P.D.T. Toggle Switch
- B-2 S.P.S.T. Toggle Switch
- D* Dial Lamp

Chassis layout on next page.

MODEL "F"

BALKEIT RADIO CO.

Model F (1929)



BALKEIT—Model "F"
 Line Voltage 115—Set on High Volt Tap—Volume Control Position Full On Last Stage Is 2 No. 245 in Parallel

Type	Value	Tuning		Detector		1st AF		2nd AF		Rectifier	
		Value	Units	Value	Units	Value	Units	Value	Units	Value	Units
1	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
2	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
3	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
4	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
5	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
6	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
7	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
8	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
9	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
10	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
11	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
12	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
13	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
14	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
15	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
16	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
17	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
18	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
19	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
20	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
21	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
22	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
23	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
24	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
25	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
26	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
27	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
28	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
29	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF
30	247	1.5	MF	0.5	MF	0.5	MF	0.5	MF	0.5	MF

- C₁ Tuning Condenser.
- C₂ Neutralizing Condenser.
- C₃ R.F. Grid Bias Condenser .25 MF.
- C₄ R.F. Plate By-Pass Condenser .25 MF.
- C₅ Antenna Condenser .00025 MF.
- C₆ Det. Padding Condenser.
- C₇ Det. Screen Grid Bias Condenser .25 MF.
- C₈ Det. Control Grid Condenser .0001 MF.
- C₉ Det. Plate Condenser .0005 MF.
- C₁₀ 1st Audio Coupling Condenser 0.1 MF.
- C₁₁ 1st Audio Grid Condenser 0.5 MF.
- C₁₂ Filter Condensers 8.0 MF Each.
- L₁ Filter Choke.
- L₂ Speaker Field 2500 Ohms.
- J Phonograph Jack.
- D Dial Lamp.
- R₁ Volume Control 15,000 Ohms.
- R₂ R.F. Grid Bias Resistance 620 Ohms.
- R₃ Det. Control Grid Resistance .5 Megohm
- R₄ Det. Screen Grid Resistance .1 Megohm
- R₅ 1st Audio Coupling Resistance .1 Megohm.
- R₆ 1st Audio Grid Resistance .5 Megohm.
- R₇ 1st Audio Grid Bias Resistance 1750 Ohms.
- R₈ Hum Control 20 Ohms.
- R₉ Loss Current Resistance 4500 Ohms
- R₁₀ 245 Grid Bias Resistance 650 Ohms
- T₁ Antenna Transformer.
- T₂ R.F. Inter stage Transformer.
- T₃ Input Audio Transformer
- T₄ Power Transformer.
- B₁ Hi-Lo S.P.D.T. Toggle Switch.
- B₂ S.P.S.T. Toggle Switch.

Chassis layout on next page

BALKITE PRODUCTS CO.

SPECIFICATIONS

Balkite Models and Specifications

Current Models

Balkite AB 6-180, "A" and "B" Current Supply

	Max. Output	
"A"	6 volts	2 amperes
"B"	180	55 m.a.

B Voltages, 180, 135, 90, 67½, 45 or 22½

Consumption: watts 127
Dimensions: 10¼" x 18½" x 7¾"

Balkite AB 6-135, "A" and "B" Current Supply.

	Max. Output	
"A"	6 volts	2 amperes
"B"	135	40 m.a.

B Voltages, 135, 90, 67½, 45 or 22½

Consumption: watts 117
Dimensions: 10¼" x 18½" x 7¾"

Balkite A-6, "A" Current Supply.

	Output	
6 volts		2 amperes

Consumption: watts 100
Dimensions: 6" x 10¾" x 8¾"

Balkite B-180, "B" Current Supply.

	Output	
180 volts		55 m.a.

Voltages, 180, 135, 90, 67½ and 45 or 22½

Consumption: watts 27
Dimensions 4½" x 12¾" x 8¾"

Balkite B-135, "B" Current Supply.

	Output	
135 volts		40 m.a.

Voltages, 135, 90, 67½ and 45 or 22½

Consumption: watts 17
Dimensions: 4½" x 8¼" x 8½"

Balkite BW, "B" Current Supply.

	Output	
90 volts		18 m.a.

Voltage, 90 and 45 or 22½

Consumption: watts 6
Dimensions: 3½" x 7½" x 8¾"

Balkite Model J Charger, Full Rate and Trickle Charger

Charging Rates

High Rate, 2½ amperes
Low Rate, ½ ampere

Consumption: watts 60
Dimensions: 5¾" x 8½" x 7½"

Balkite Model N Trickle Charger, Trickle Charger

Charging Rates

High Rate, .8 ampere
Low Rate, .5 ampere

Consumption: watts 20
Dimensions: 4½" x 7½" x 6¼"

Balkite Model K Trickle Charger, Trickle Charger

Charging Rate, .5 ampere

Consumption: watts 15
Dimensions: 2¾" x 5½" x 5¼"

Previous Models

Balkite BY, "B" Current Supply.

Output

150 volts 40 milliamperes
Voltages, 150, 135, 90, 67½ and 45 or 22½

Consumption: watts 17
Dimensions: 4½" x 12¾" x 8¾"

Balkite BX, "B" Current Supply.

Output

135 volts 30 milliamperes
Voltages, 135, 90, 67½ and 45 or 22½

Consumption: watts 12
Dimensions: 4½" x 8¼" x 8½"

Balkite Combination, Model "KX", "B" Current Supply and Trickle Charger.

"B" Output

135 volts 30 milliamperes
"B" Voltages, 135, 90, 67½ and 45 or 22½

"A" Charging Rate, 0.5 ampere
Consumption: watts 17
Dimensions: 13¼" x 4½" x 8¾"

Balkite "B", Model D, "B" Current Supply.

Output

90 volts 20 milliamperes
Voltages, 90, 45 or 22½

Consumption: watts 7
Dimensions: 3½" x 7½" x 8¾"

Balkite BII, "B" Current Supply.

Output

90 volts 40 milliamperes
Voltages, 90, 45, 22½

Consumption: watts 10

Balkite Model H Charger, High Rate Charger.

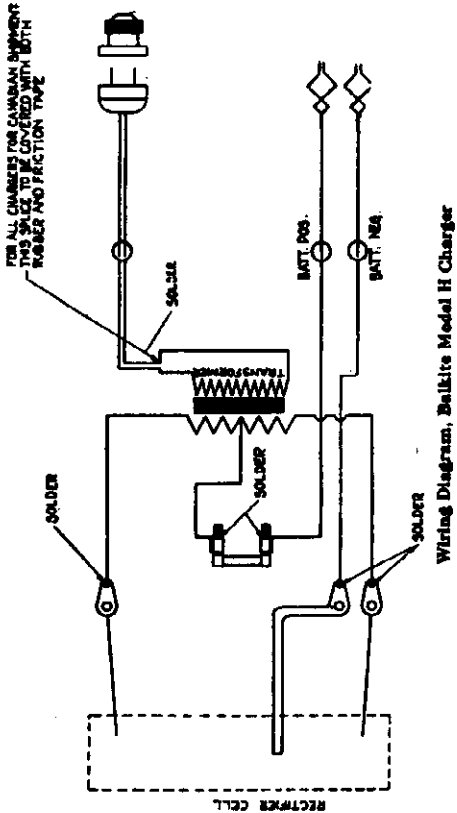
Charging Rate, 2½ amperes
Consumption: watts 60

Balkite Model A Charger, High Rate Charger.

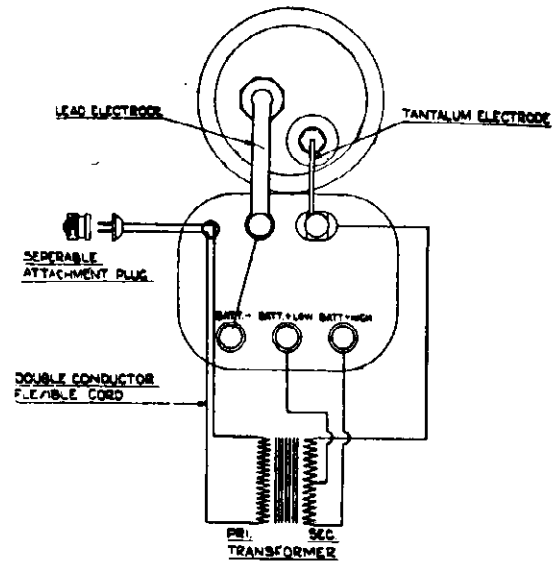
Charging Rate, 3 amperes
Consumption: watts 80

MODEL H - J Chargers
 MODEL K - N Chargers

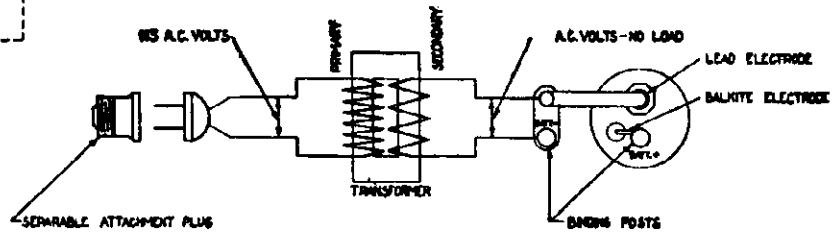
BALKITE PRODUCTS CO.



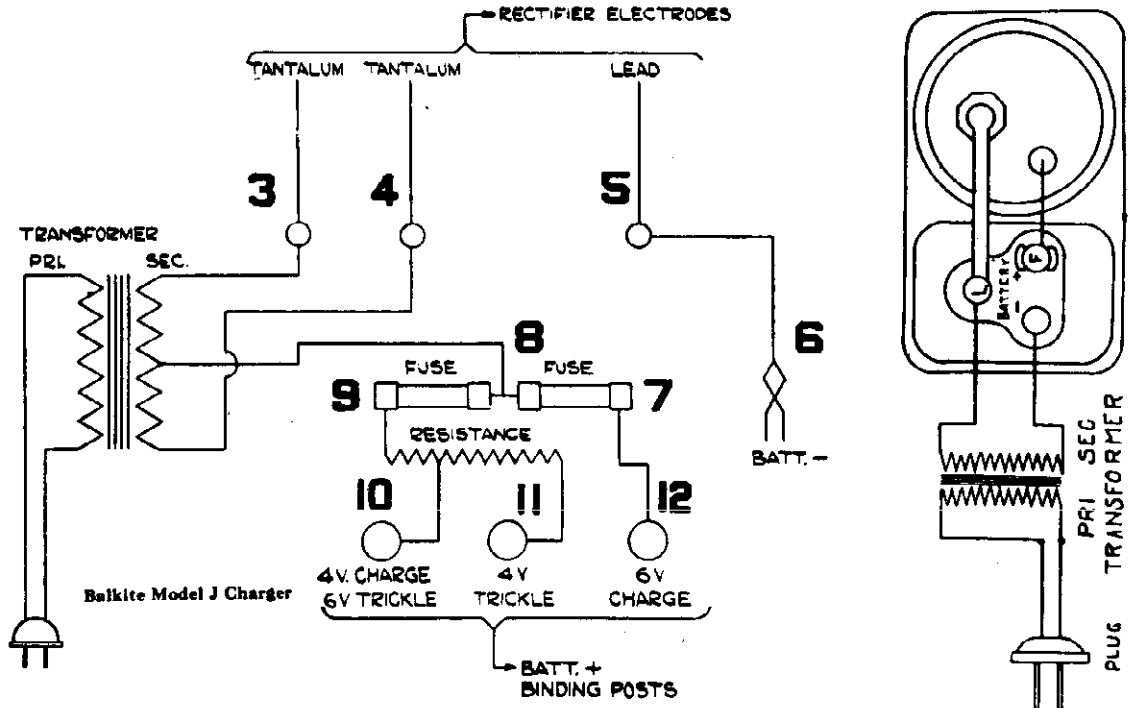
Wiring Diagram, Balkite Model H Charger



Wiring Diagram, Balkite Model N Charger



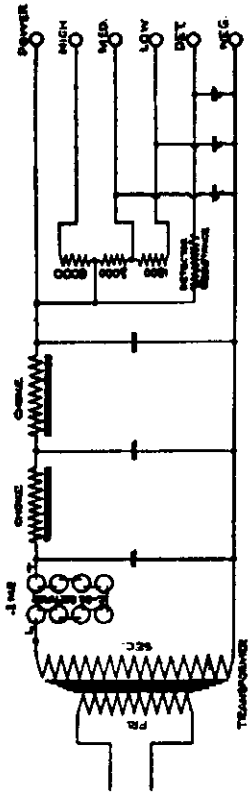
Wiring Diagram, Balkite Model K, Trickle Charger



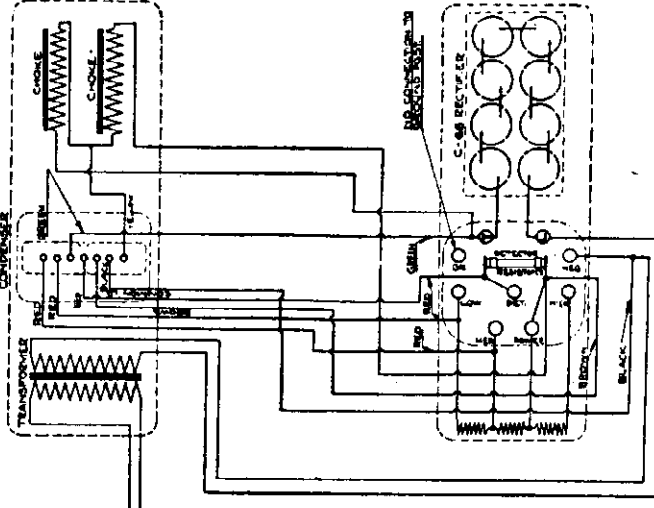
Wiring Diagram, Balkite Model J, Trickle Charger

MODEL AB-6-180 Form A
MODEL B-180 Form B

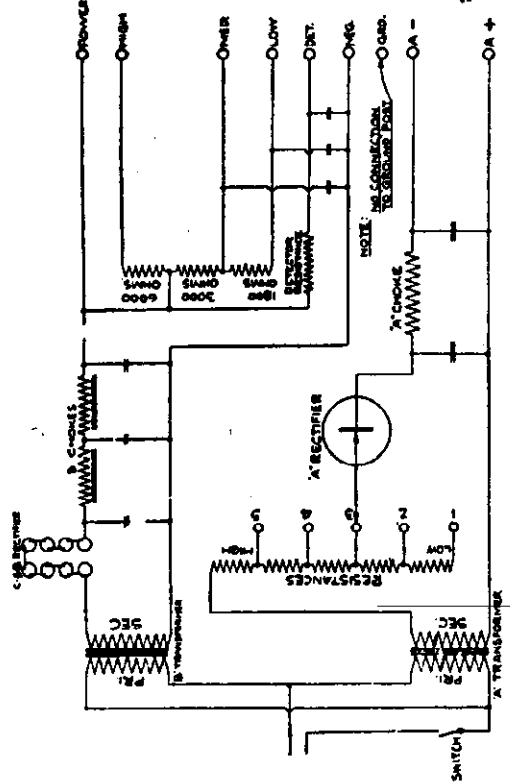
BALKITE PRODUCTS CO.



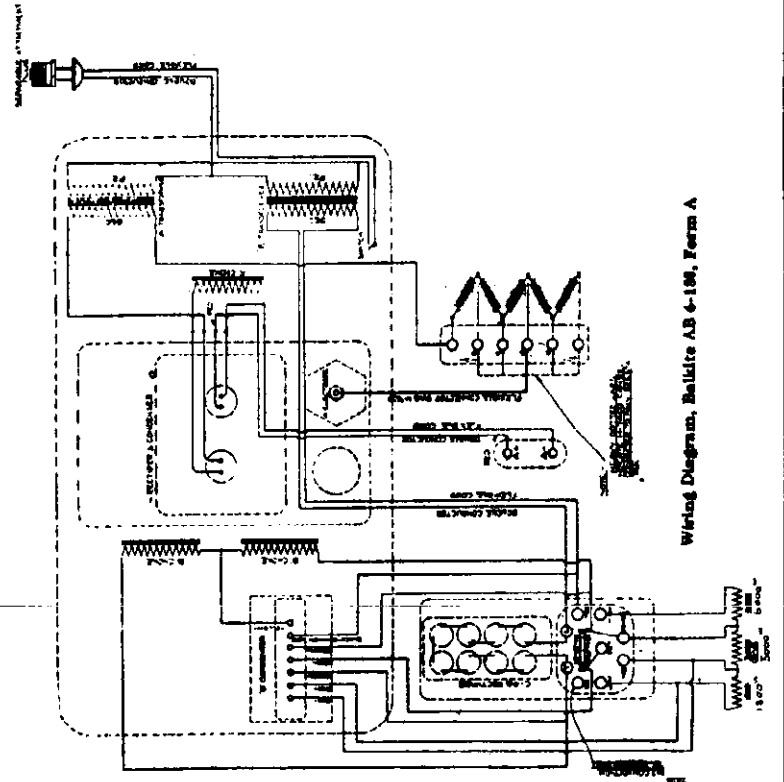
Schematic Diagram
Schematic Wiring Diagram, Balkite B-180, Form B



Wiring Diagram, Balkite B-180, Form B



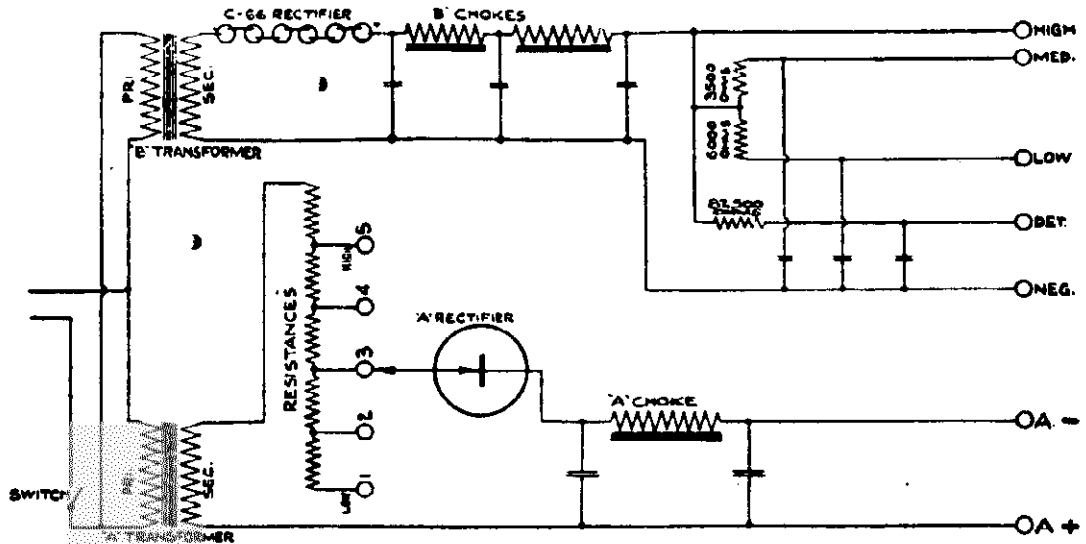
Schematic Diagram
Schematic Wiring Diagram, Balkite AB 6-180, Form A



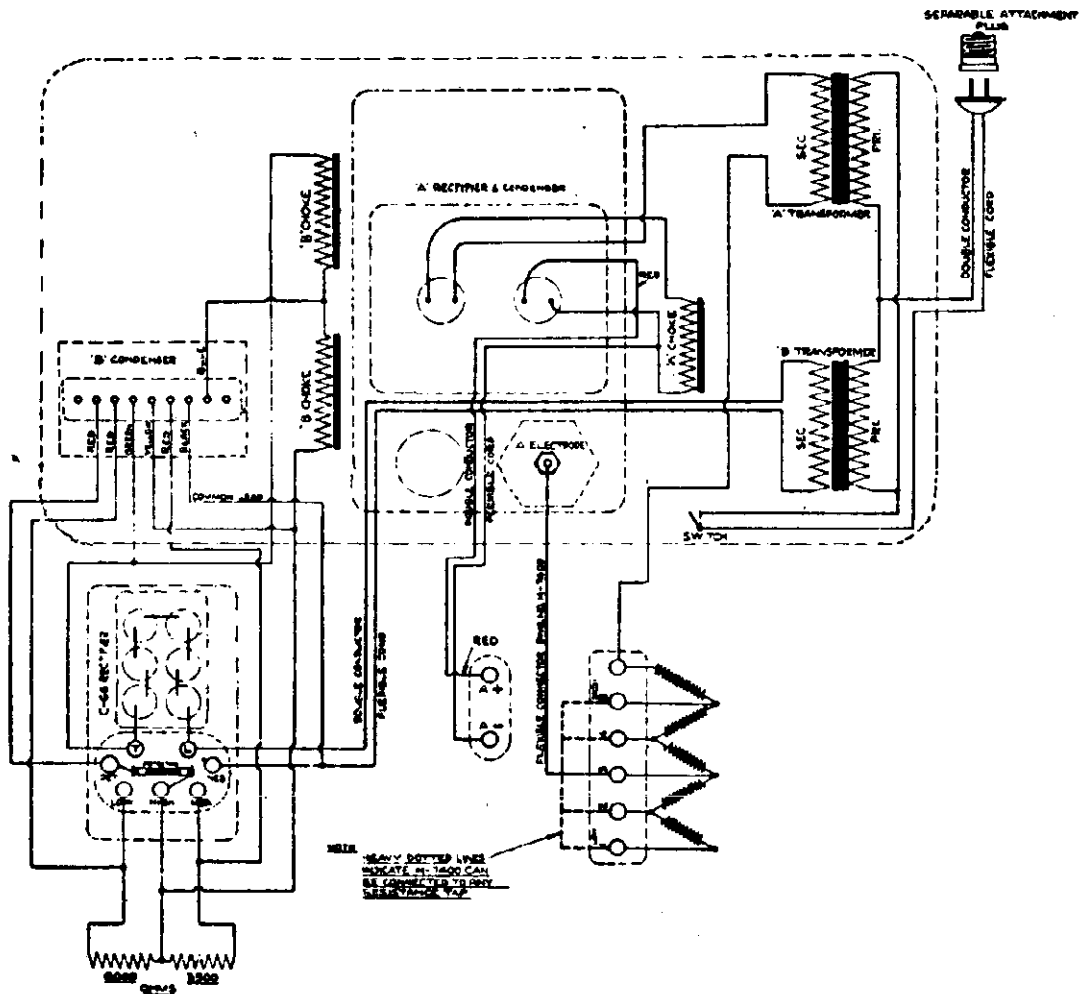
Wiring Diagram, Balkite AB 6-180, Form A

BALKITE PRODUCTS CO.

MODEL AB-6-135 Form A



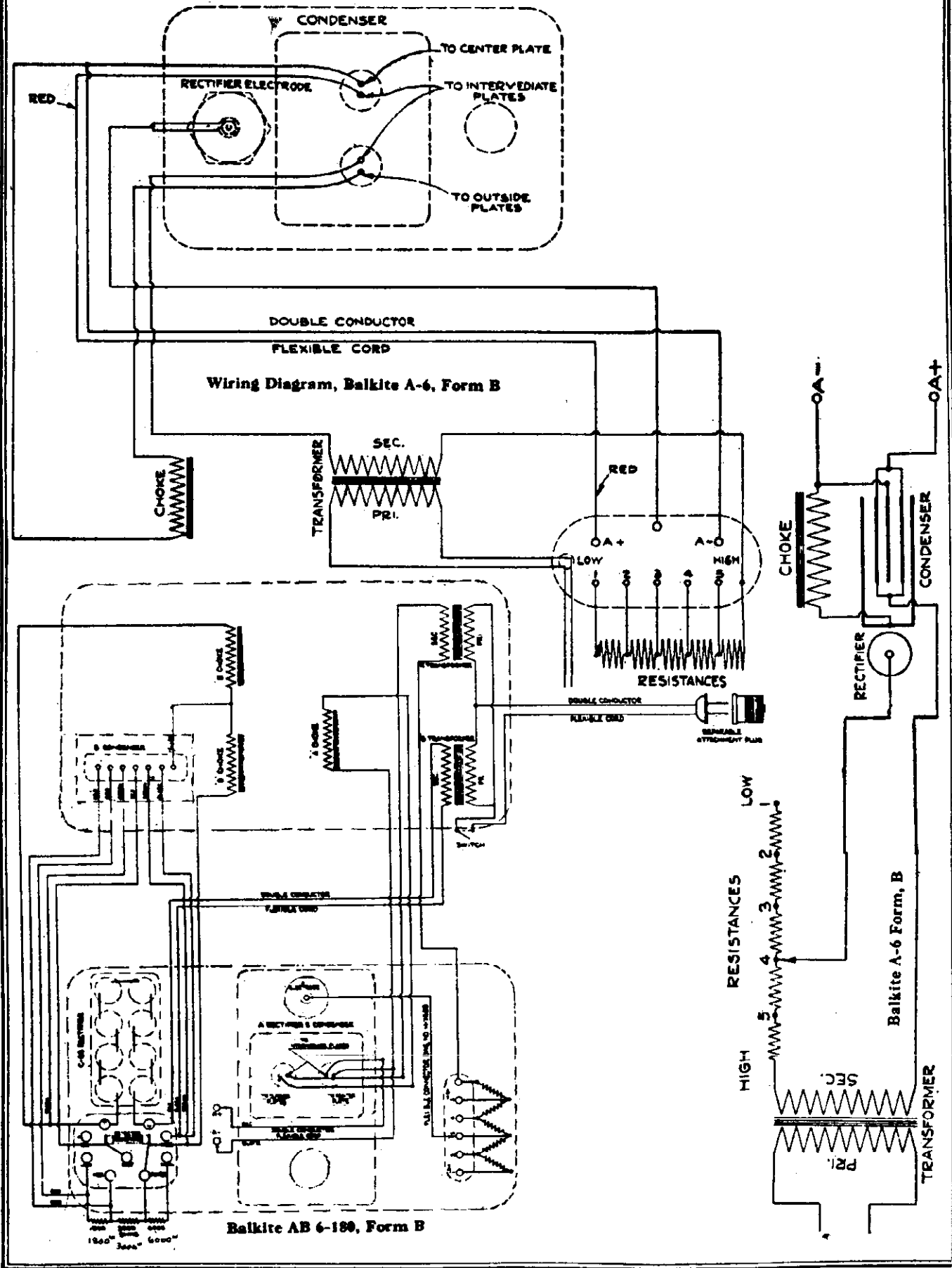
Schematic Wiring Diagram, Balkite AB 6-135, Form A



Wiring Diagram, Balkite AB 6-135, Form A

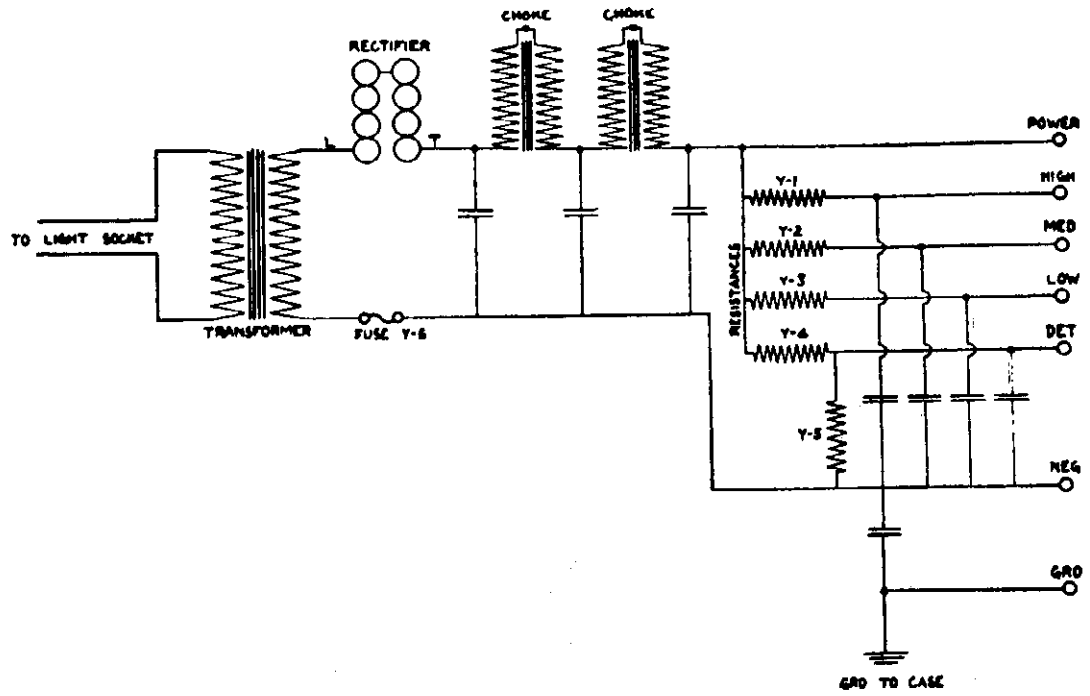
MODEL AB-6 Form B

BALKITE PRODUCTS CO.

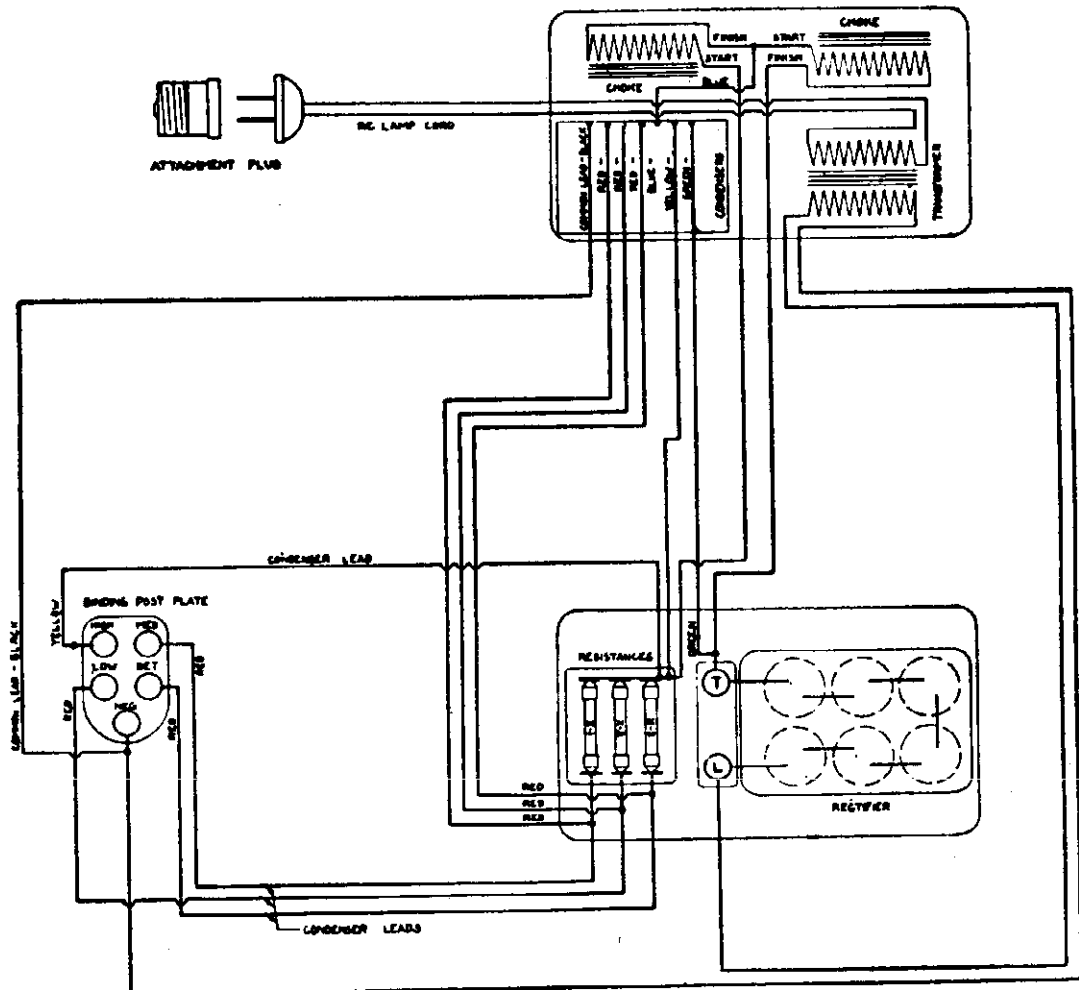


MODEL BY

BALKITE PRODUCTS CO.



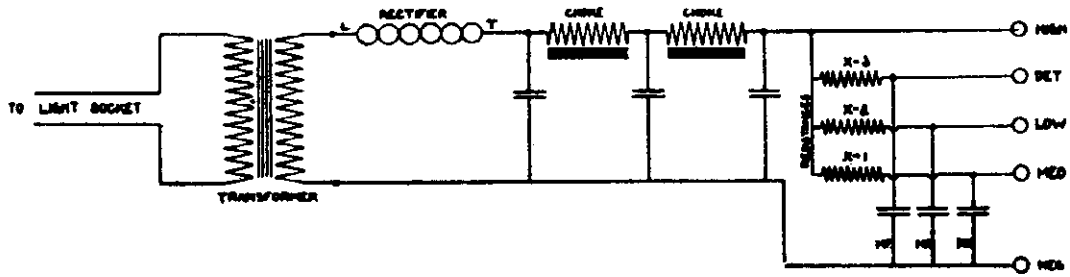
Schematic Wiring Diagram, Balkite BY



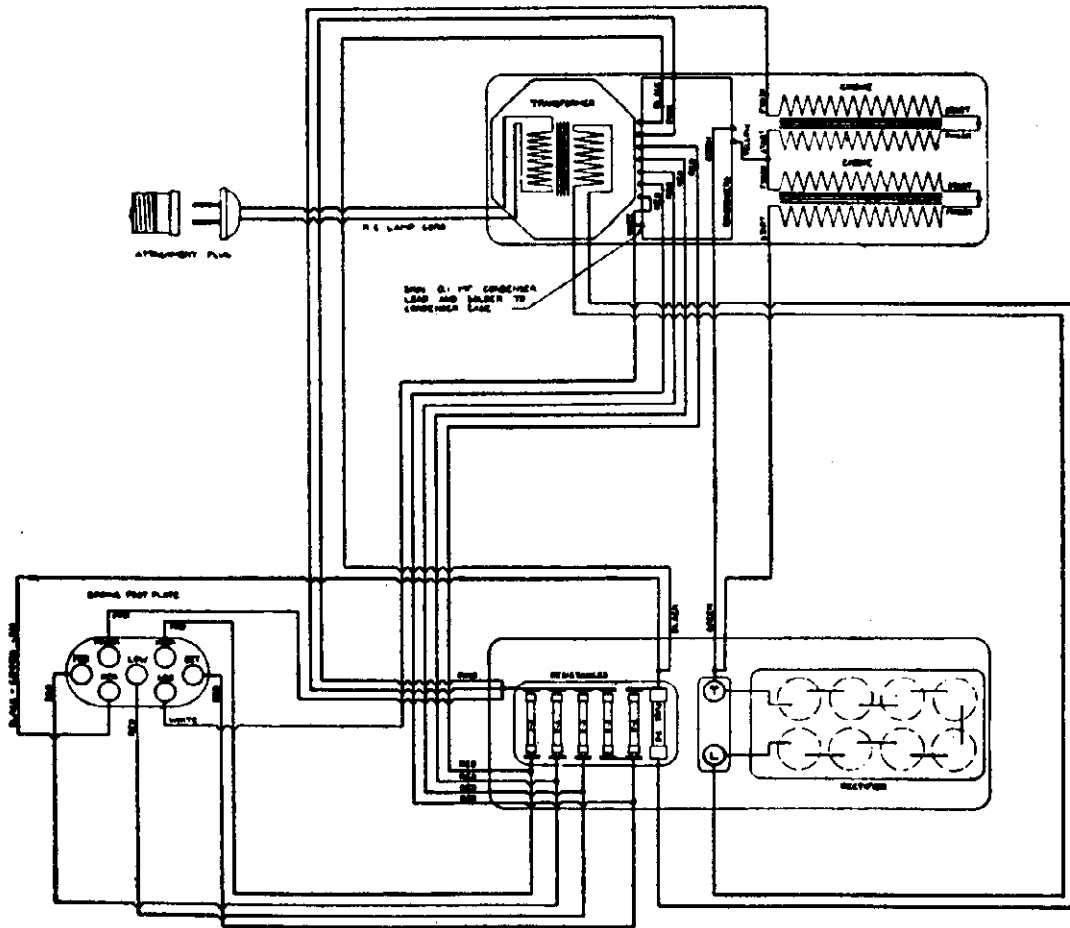
Wiring Diagram, Balkite BY

MODEL A-6
 MODEL B-X

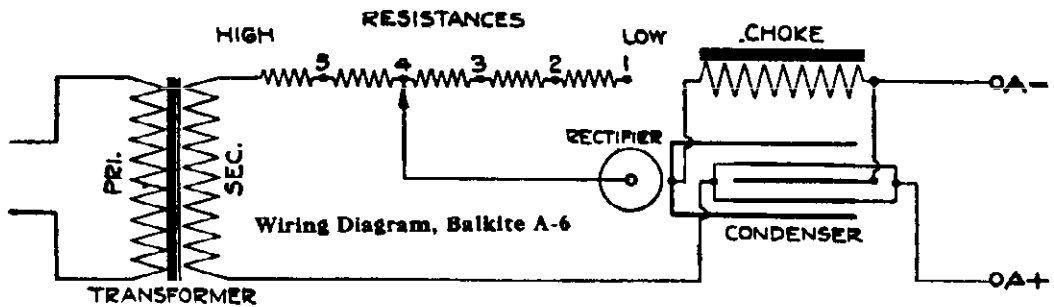
BALKITE PRODUCTS CO.



Schematic Wiring Diagram, Balkite BX



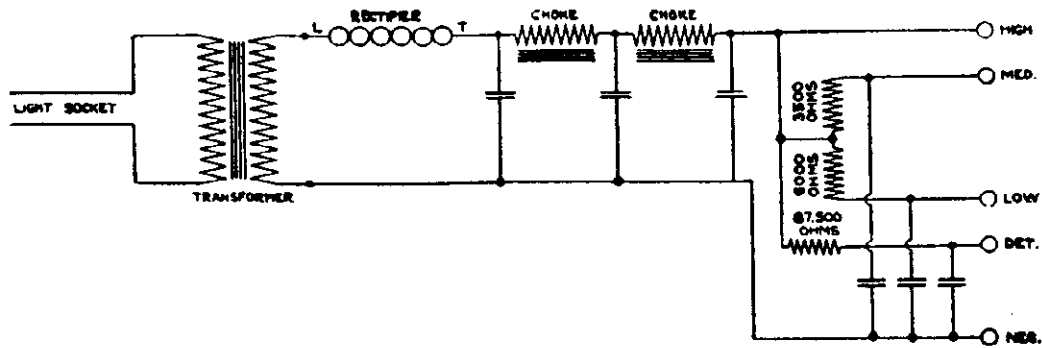
Wiring Diagram, Balkite BX



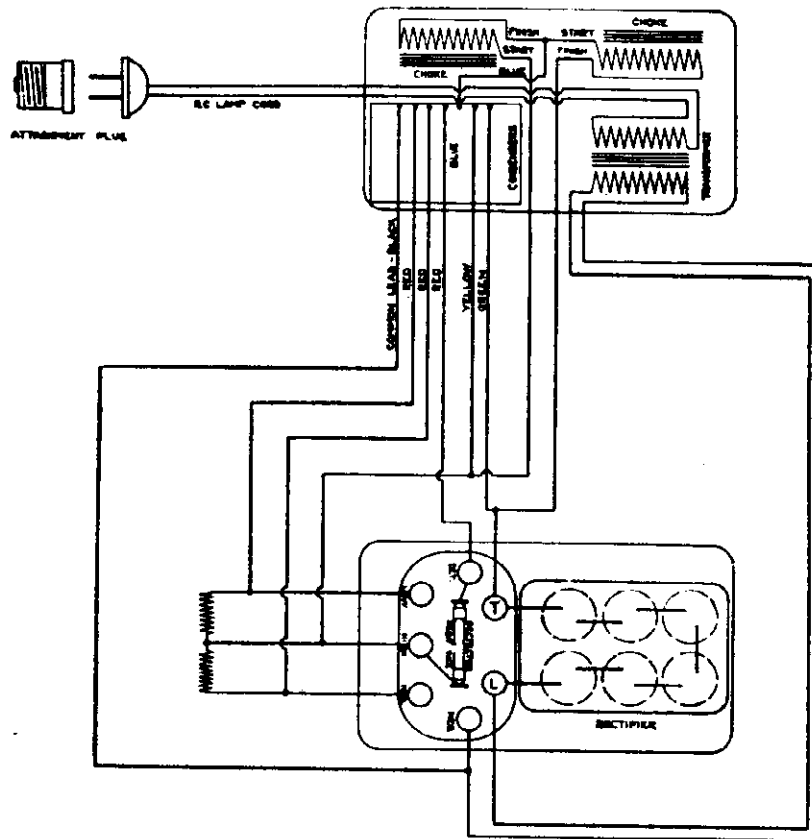
Wiring Diagram, Balkite A-6

BALKITE PRODUCTS CO.

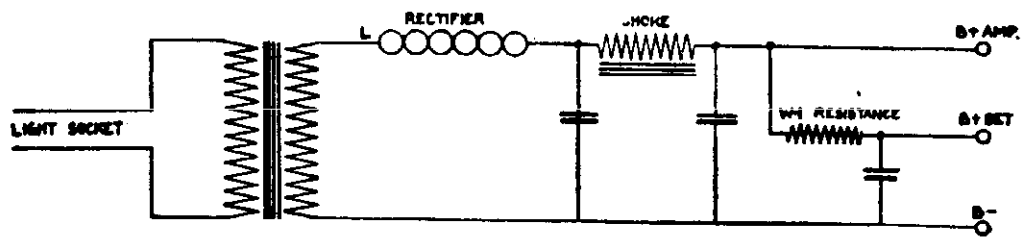
MODEL B-135 Form A
MODEL B-W



Schematic Wiring Diagram, Balkite B-135



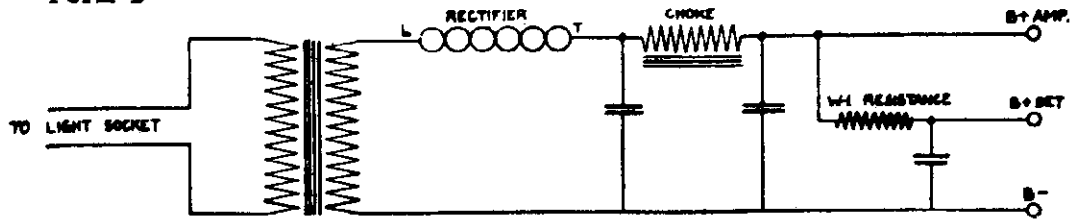
Wiring Diagram, Balkite B-135, Form A



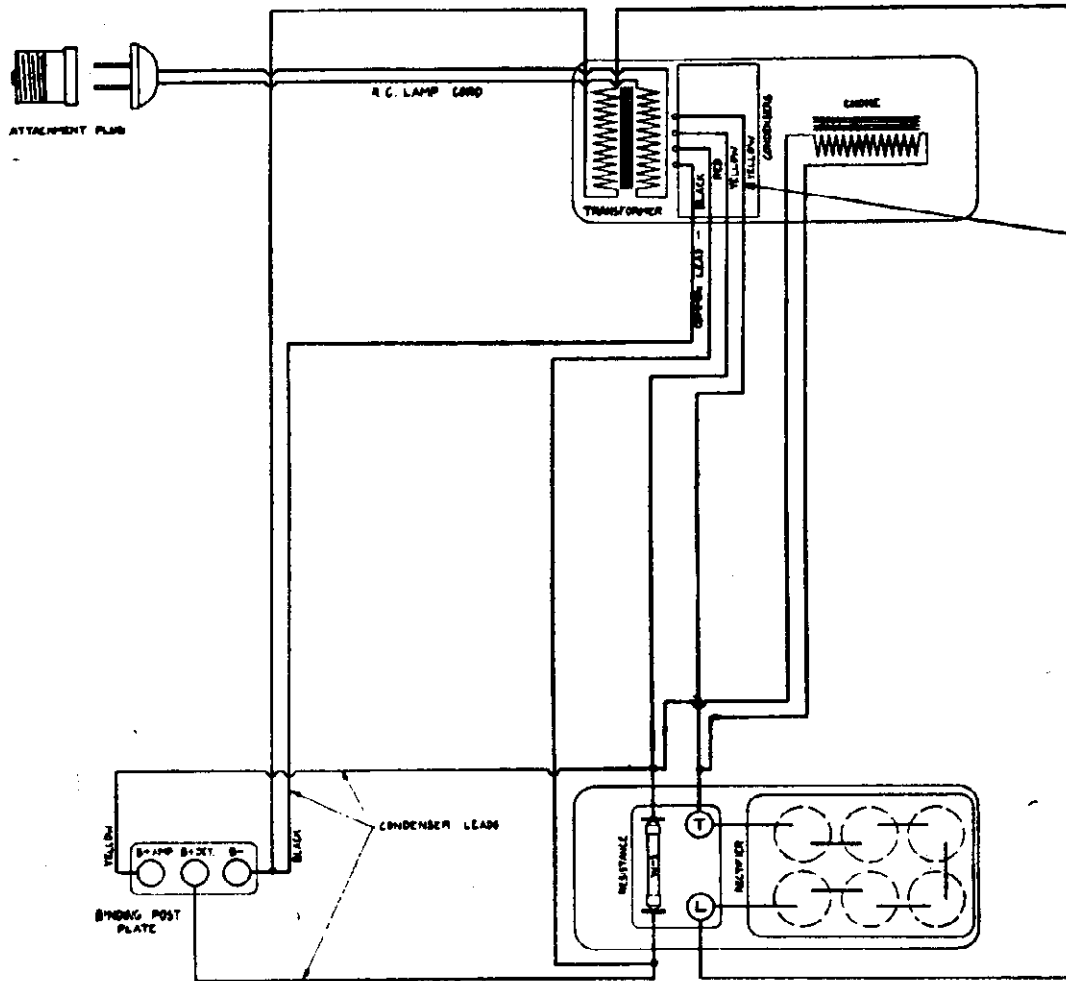
Wiring Diagram, Balkite BW

MODEL B-H
 MODEL B-W Form D
 MODEL B Form D

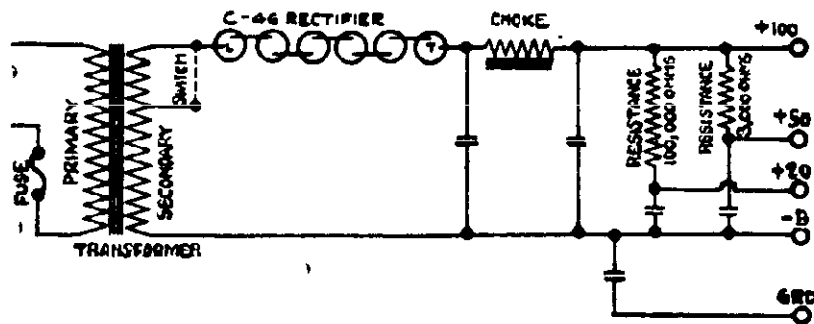
BALKITE PRODUCTS CO.



Schematic Wiring Diagram, Balkite BW or Balkite B, Model D



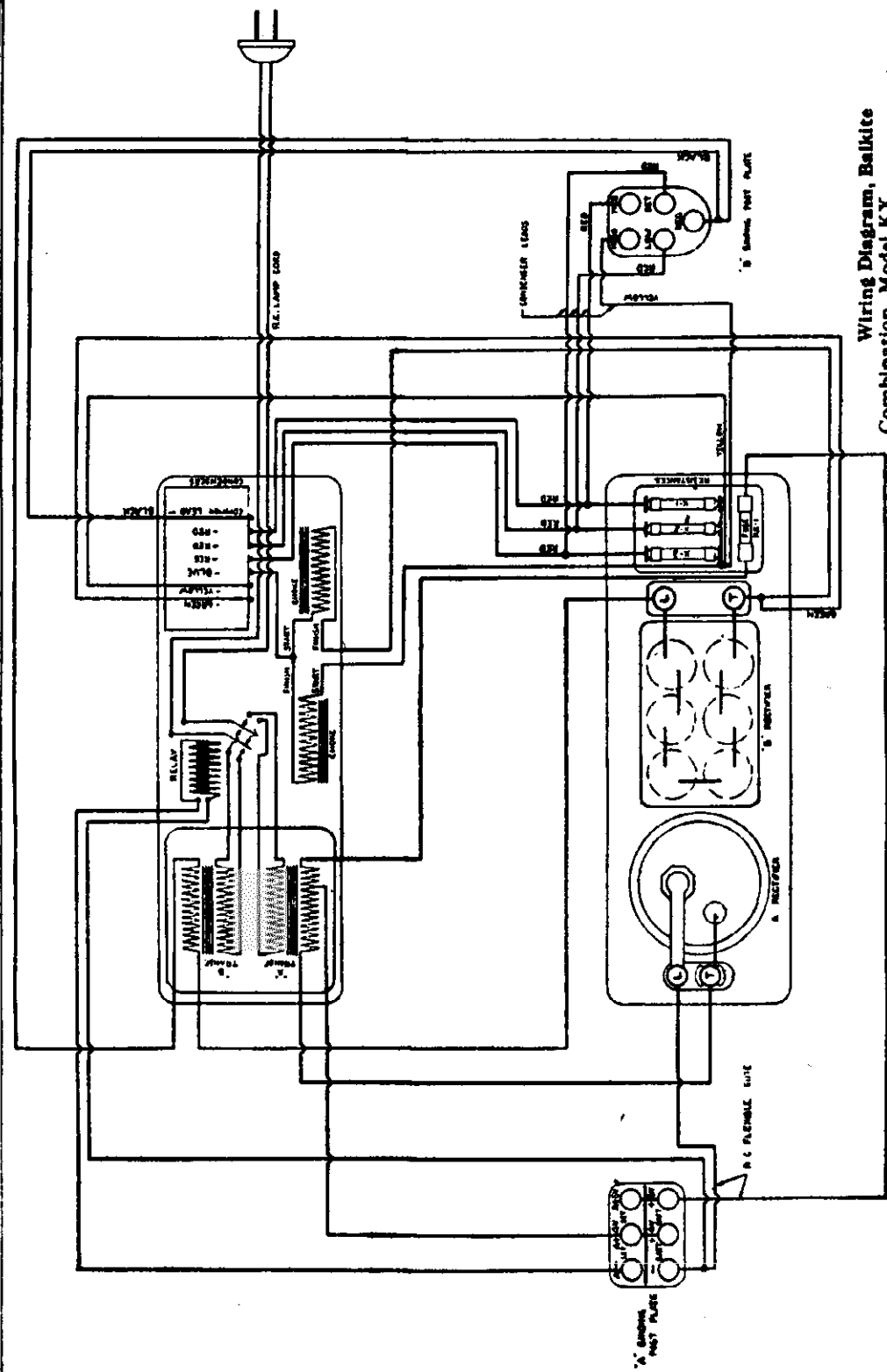
Wiring Diagram, Balkite BW or Balkite B, Model D



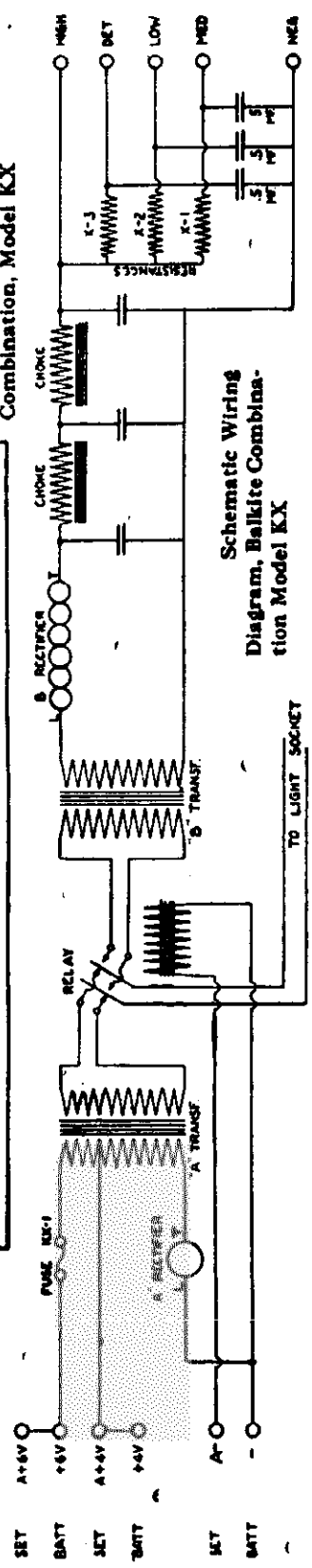
Wiring Diagram, Balkite B-H

BALKITE PRODUCTS CO.

MODEL K-X



Wiring Diagram, Balkite Combination, Model KX



Schematic Wiring Diagram, Balkite Combination Model KX

MODEL B-10 -
Voltage

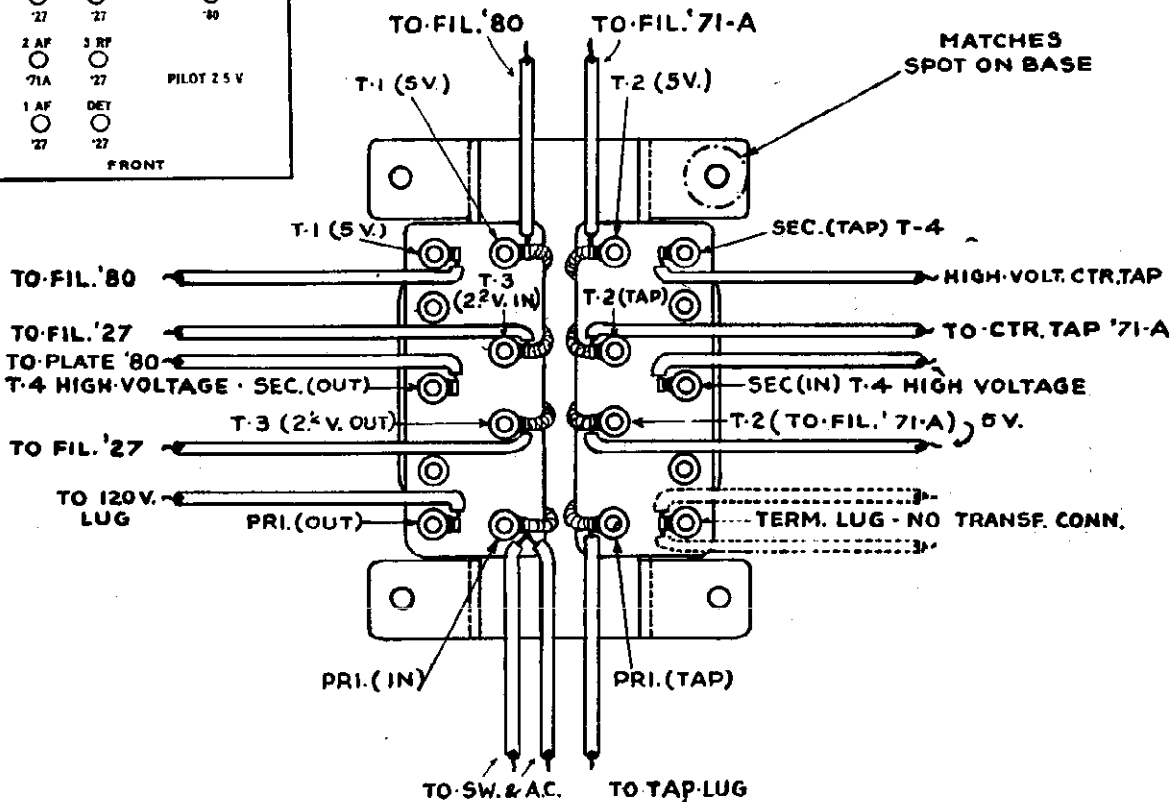
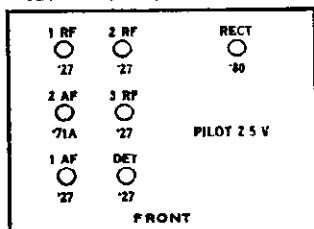
BRANDES PRODUCTS CORP.

Input Voltage 115			Switch 110-120 Side				
Tube No.	Type Tube	Position of Tube	A Volts	B Volts	C Volts	Normal Plate MA	Plate MA Grid Test
1	'27	1st R.F.	2	88	3	4.3	8.
2	'27	2nd R.F.	2	88	3	4.3	8.
3	'27	3rd R.F.	2	88	3	6.	9.2
4	'27	Detector	2	36	3	3.	3.1
5	'27	1st Audio	2	88	3	5.3	8.2
6	'71A	2nd Audio	5	164	35	20.	30
7	'80	Rectifier	5				

The above readings are the average and may vary due to differences in line voltage, variation in tube characteristics, etc.

The readings are given merely as a guide to work from.

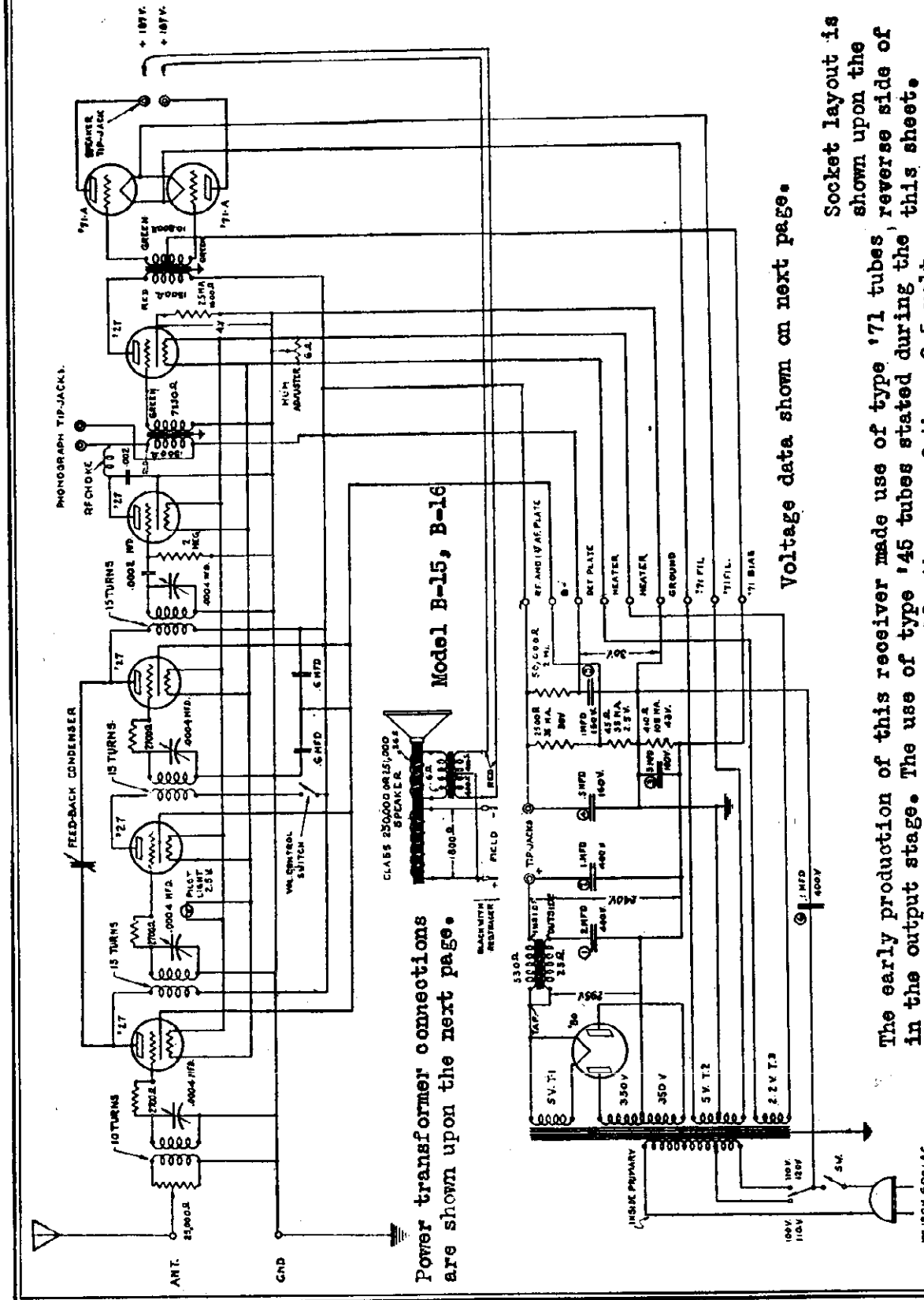
Models B10, B11, B12



POWER TRANSFORMER ASSEMBLY

MODEL B-15, B-16

BRANDES PRODUCTS CORP.



Power transformer connections are shown upon the next page.

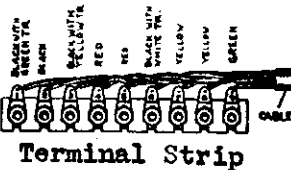
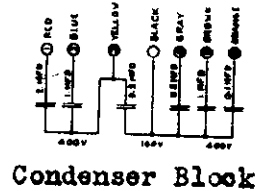
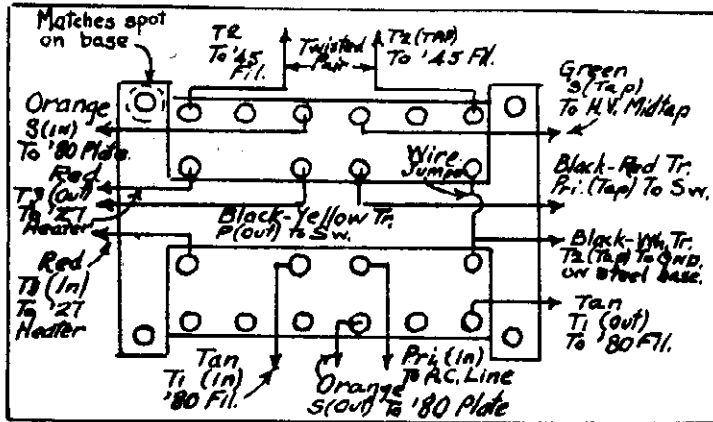
Voltage data shown on next page.

Socket layout is shown upon the reverse side of this sheet.

The early production of this receiver made use of type '71 tubes, in the output stage. The use of type '45 tubes stated during the '35 later production. In order to enable the use of these 2.5 volt tubes, series resistors were employed in the '71 filament circuit. A resistor was inserted into each filament lead. The "B" and grid bias voltages remained the same for '71s and '45s.

BRANDES PRODUCTS CORP.

MODEL B-15, B-16
Voltage and Data

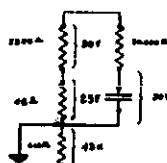


POWER TRANSFORMER CONNECTIONS
FOR LATE MODELS

BRANDES—Models 15 and 16
Line Voltage 112—Volume Control Position Max
*Grid leak not shorted.

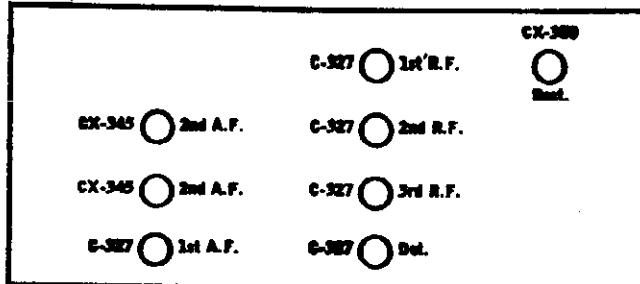
TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST BY SET ETC	TUBE OUT							TUBE IN TESTER			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS (CONV. ONLY)	CATHODE HEATER VOLTS	NORMAL PLATE VOLTS	PLATE CHARGE TEST M.A.	PLATE CHARGE TEST M.A.	SCREEN GRID VOLTS	
1	227	1st RF	2.5	94	2.2	90	2.5	-	5.6	10.0	4.4	-	-
2	227	2nd RF	2.5	98	2.2	90	2.5	-	5.6	10.0	4.4	-	
3	227	3rd RF	2.5	98	2.2	90	2.5	-	5.6	10.0	4.4	-	
4	227	Det.	2.5	80	2.2	24	0	-	1.3	1.3	*-	-	
5	227	1st A	2.5	95	2.2	85	5	-	3	4.2	1.2	-	
6	245	2nd A	2.4	210	2.3	190	36	-	18	21	3	-	
7	245	2nd A	2.4	210	2.3	190	36	-	18	21	3	-	
8	200	-	5	-	4.5	-	-	-	100	-	-	-	

The above voltage table shows '45 type tubes in the output stage. When '71s are used, the filament voltage without the tubes in the sockets is 4.5 and the plate voltage under similar conditions is 200. With the tubes in the sockets the filament voltage is about 4.5, the plate voltage about 187, grid bias, 36 volts and plate current about 20 ma.



Resistor Diagram

B-15, B-16

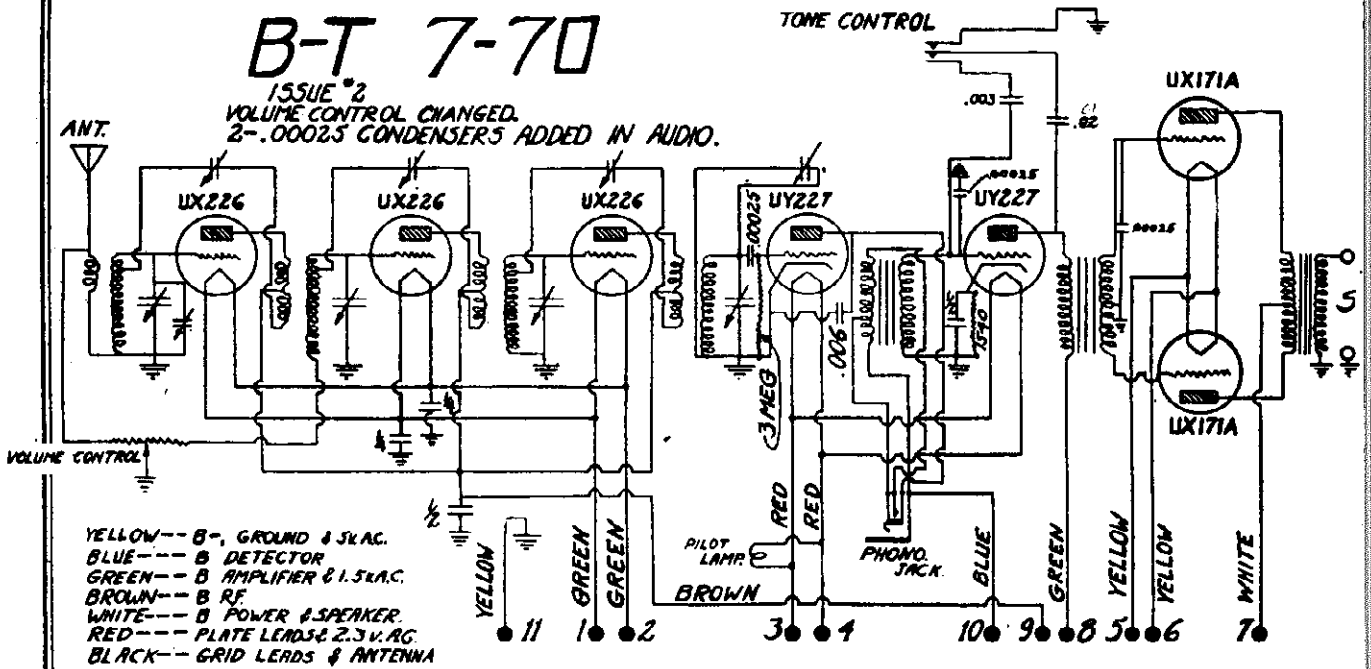


BREMER-TULLY MFG. CO

MODEL 7-70 Receiver

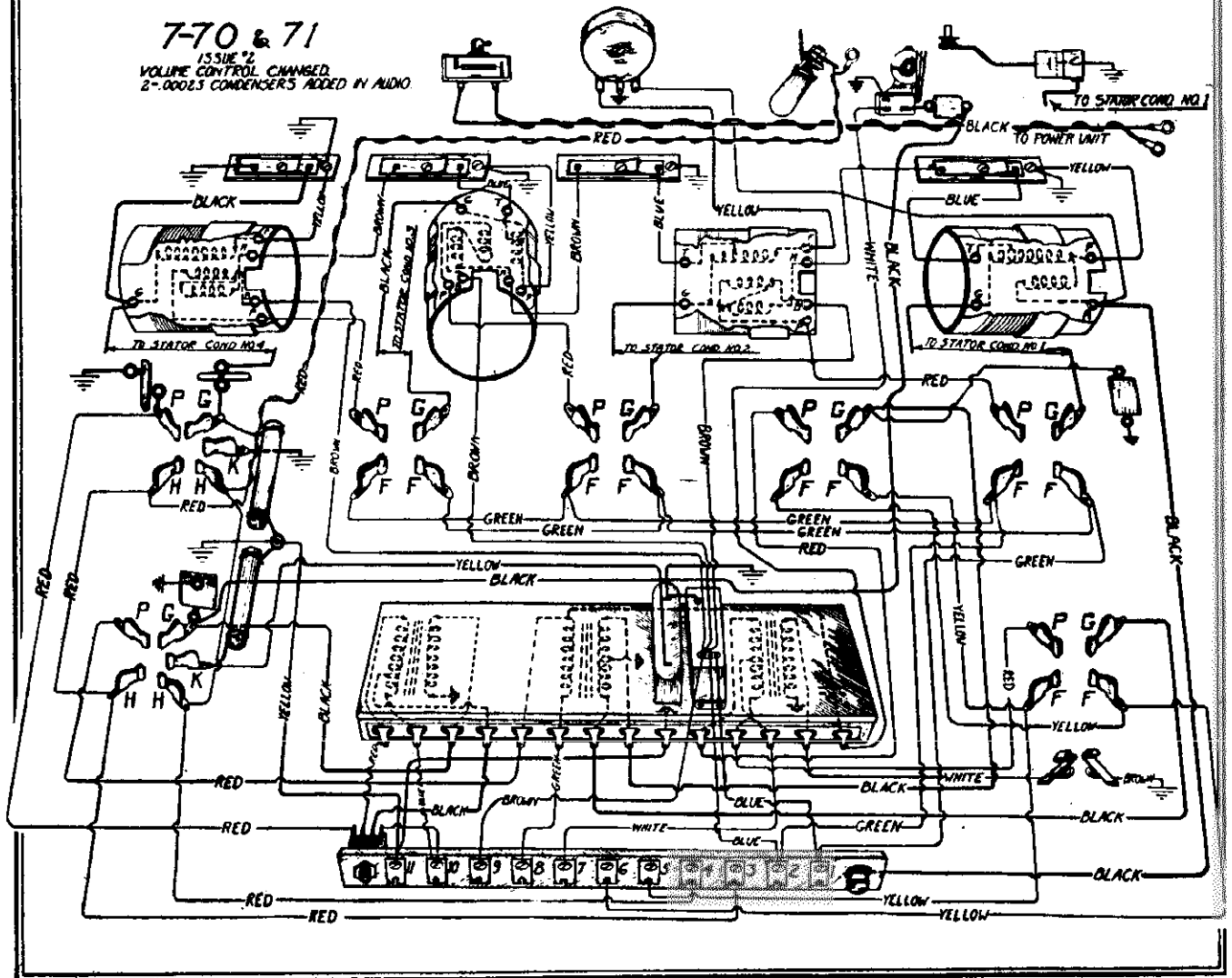
B-T 7-70

ISSUE #2
VOLUME CONTROL CHANGED.
2-.00025 CONDENSERS ADDED IN AUDIO.



7-70 & 71

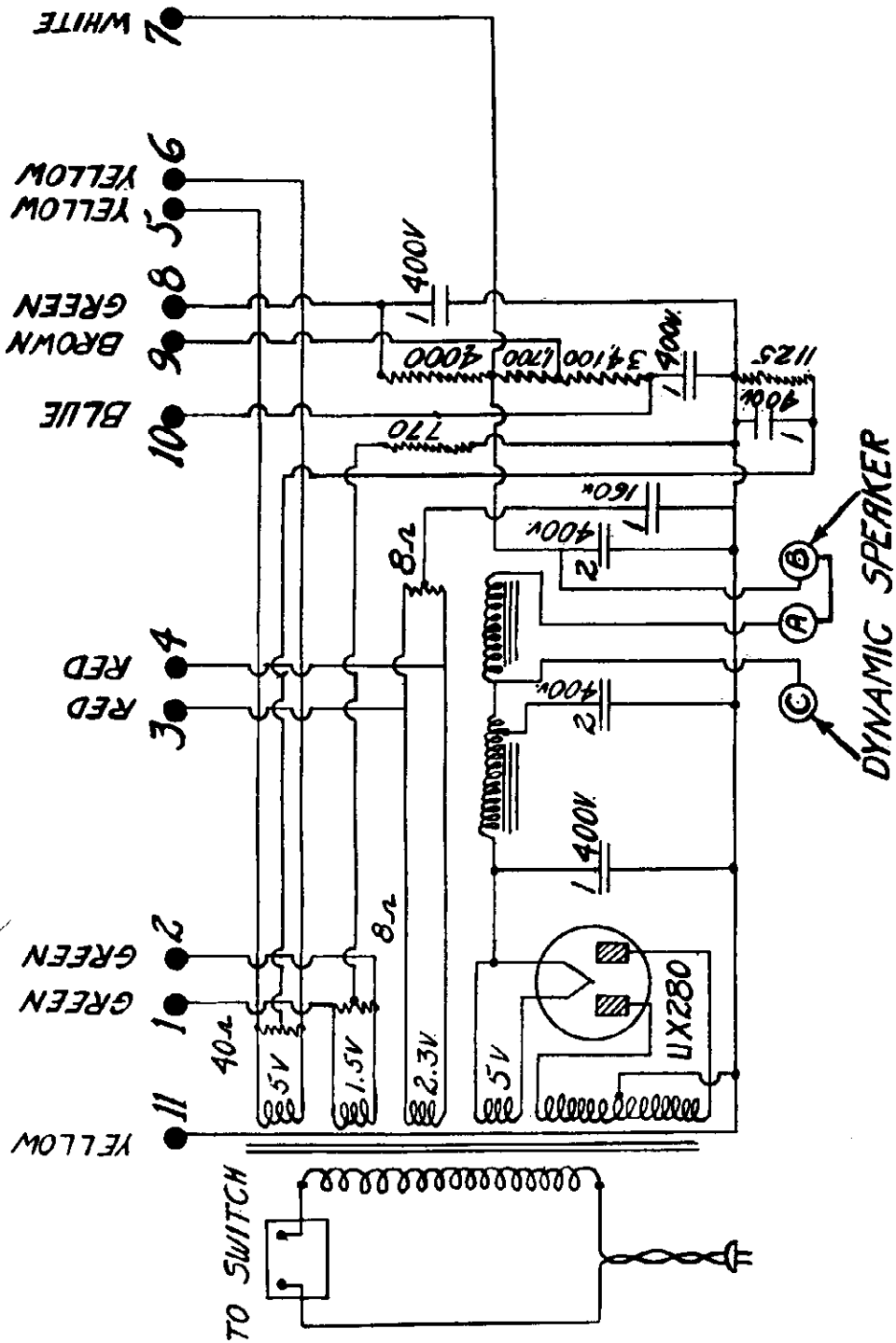
ISSUE #2
VOLUME CONTROL CHANGED.
2-.00025 CONDENSERS ADDED IN AUDIO.



MODEL 7-70
Power Converter

BREMER-TULLY MFG. CO

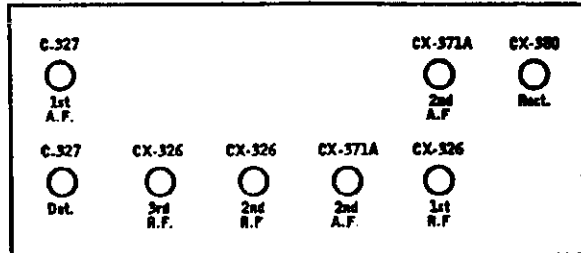
B-T 7-70 POWER CONVERTER



BREMER-TULLY—Models 7-70 and 7-71
Line Voltage 115

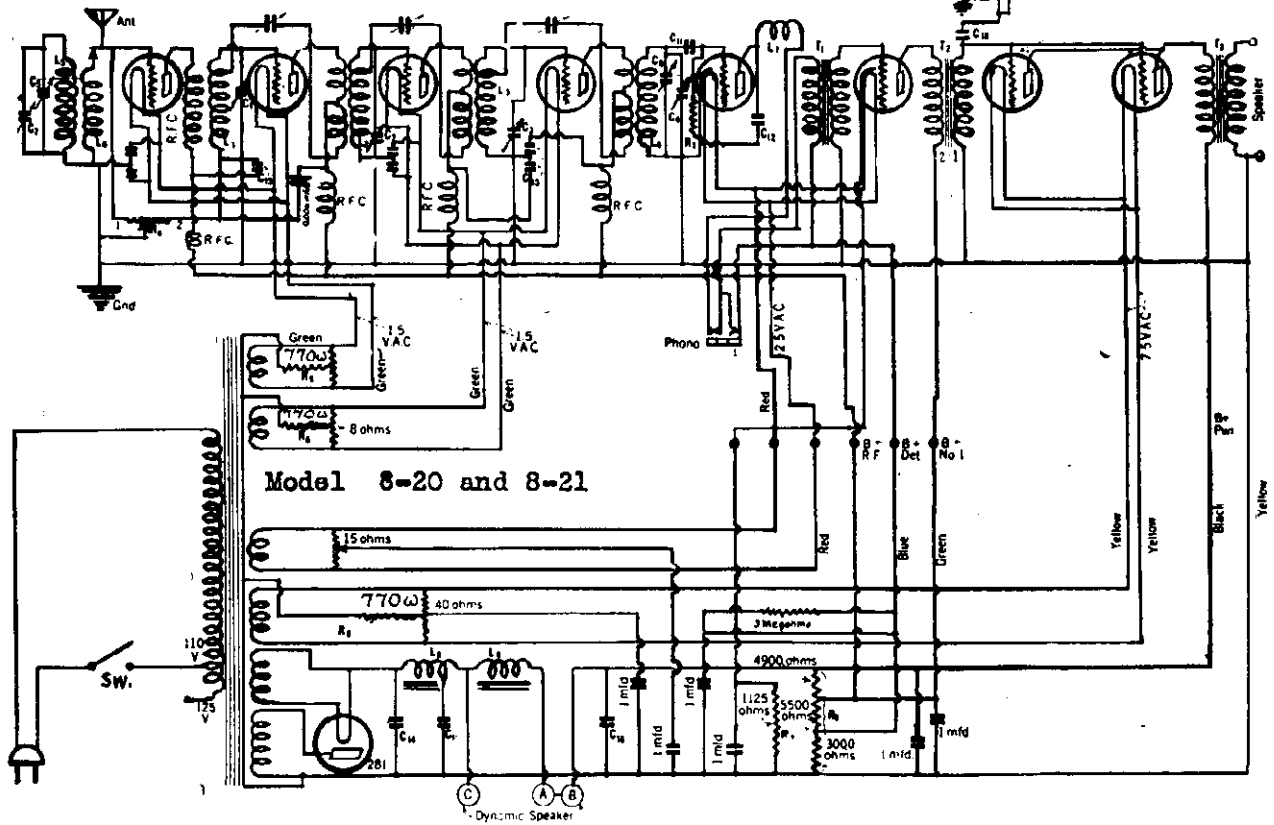
TUBE NO. OR NUMBER	TYPE OF TUBE	POSITION OF TUBE IN SET BY KEY	HEATING PLUG IN SOCKET OF SET														
			TUBE OUT			TUBE IN TESTER						NORMAL PLATE CHARACTERISTICS					
			VOLTS	AMPS	WATTS	VOLTS	VOLTS	VOLTS	VOLTS	CATHODE CURRENT	ANODE CURRENT	PLATE RESISTANCE	SCREEN RESISTANCE	CONTROL RESISTANCE	PLATE CHARACTERISTIC		
226	1st H.F.		1.4	150	—	9	—	5	12	7	—	—	—	—	—	—	—
171A	Push-Pull		4.9	150	30	—	18	51	13	—	—	—	—	—	—	—	—
226	2nd H.F.		1.4	150	9	—	5	12	7	—	—	—	—	—	—	—	—
226	3rd H.F.		1.4	150	9	—	5	12	7	—	—	—	—	—	—	—	—
227	Detector		2.1	60	0	—	2	—	—	—	—	—	—	—	—	—	—
227	1st A.F.		4.1	150	8	—	5	8	3	—	—	—	—	—	—	—	—
171A	Push-Pull		4.9	150	18	—	18	51	13	—	—	—	—	—	—	—	—

7-70, 7-71M, 7-71P (A.C.)



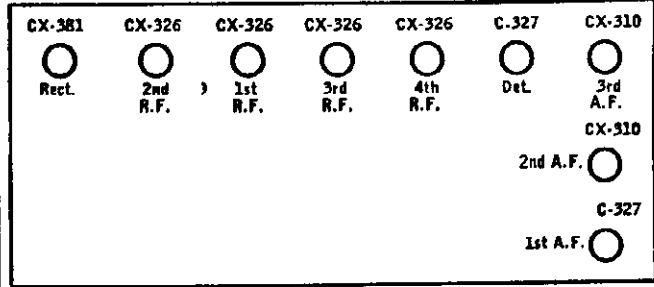
BREMER-TULLY MFG. CO

MODEL 8-20, 8-21
MODEL 8
Counterphase

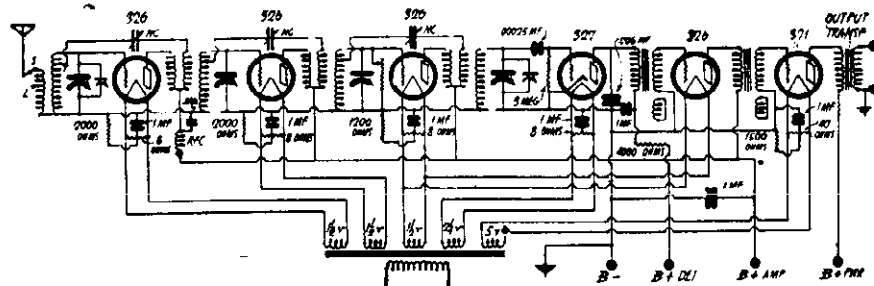


8-20, 8-21, 8-22

(A.C.) BREMER-TULLY—Models 8-20 and 8-21
Line Voltage 115



TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE IN SET, ETC.	RECOMM. PLUG IN SOCKET OF SET						TUBE IN TESTER			
			1	2	3	4	5	6	7	8	9	10
			VOLTS	WATTS	VOLTS	WATTS	WATTS	VOLTS	CATHODE VOLTS	NORMAL PLATE IN A	PLATE IN A GRID TEST	PLATE IN A SCREEN
1	226	1st. R.F.			1.4	150	10			5	10	5
2	226	Ant.			1.4	150	10			5	10	5
3	226	2nd. R.F.			1.4	150	10			5	10	5
4	226	3rd. R.F.			1.4	150	10			5	10	5
5	227	Detector			2.2	60	0			5	—	—
6	227	1st. A.F.			2.2	130	7			5	10	5
7	310	2nd. A.F.			7.5	350	18			20	50	30
8	310	End. A.F.			7.5	350	18			20	50	30

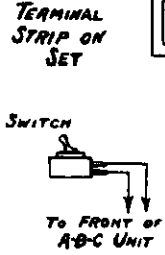
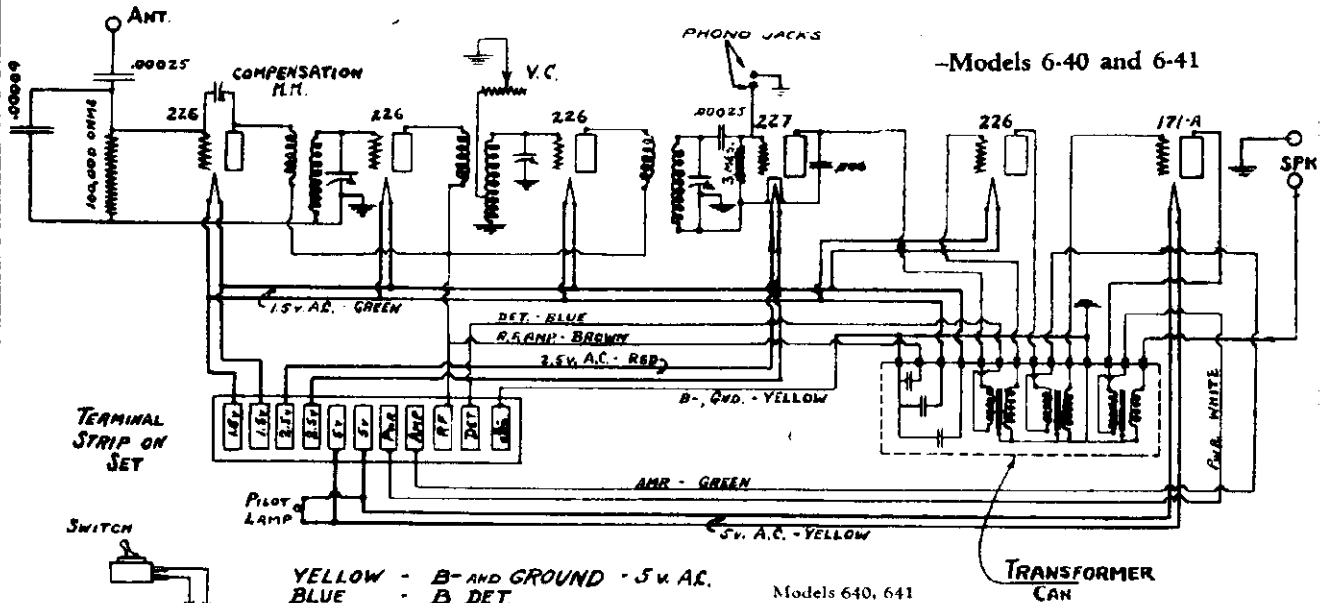


Model Counterphase "8"

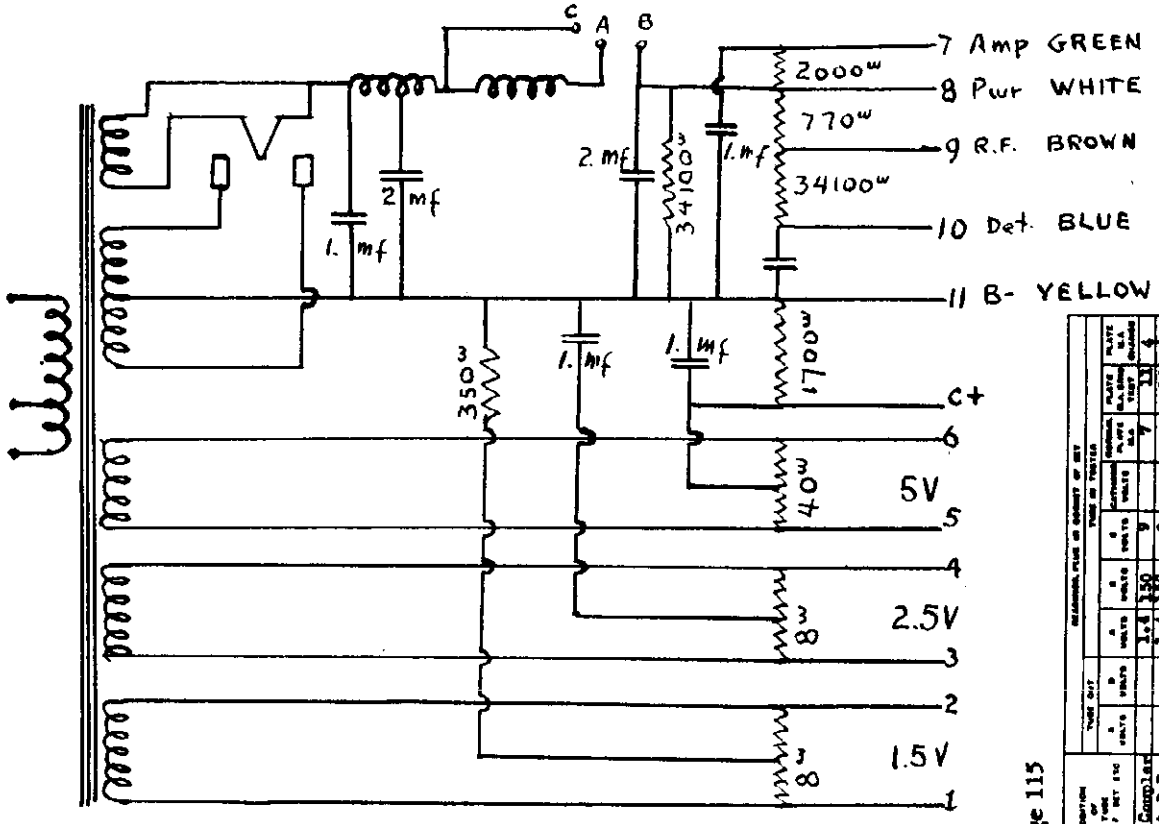
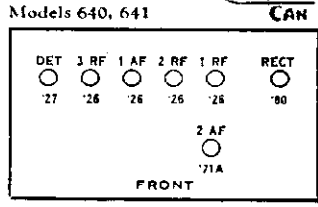
MODEL 6-40,6-41

BREMER-TULLY MFG. CO

-Models 6-40 and 6-41



- YELLOW - B- AND GROUND - 5 v. AC.
- BLUE - B. DET.
- GREEN - B. AMP - 1.5 v. AC.
- BROWN - B. RF - ANT.
- WHITE - B. PWR - SPK.
- RED - PLATE LEADS - 2.5 v. AC.
- BLACK - GRID LEADS



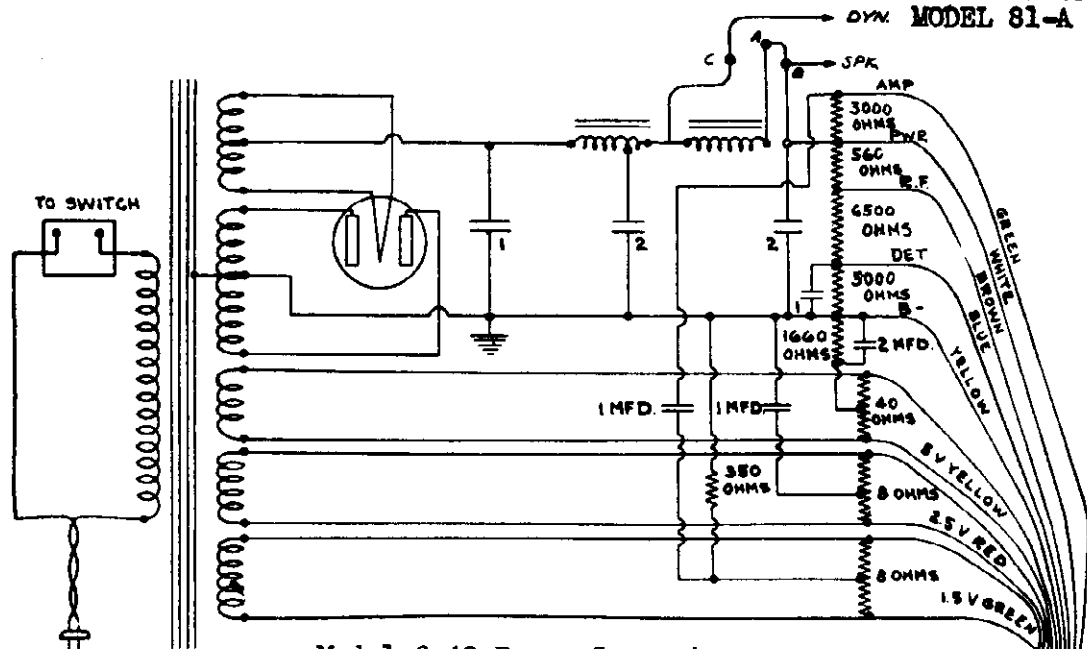
Model 6-40 ABC Power Pack

Line Voltage 115

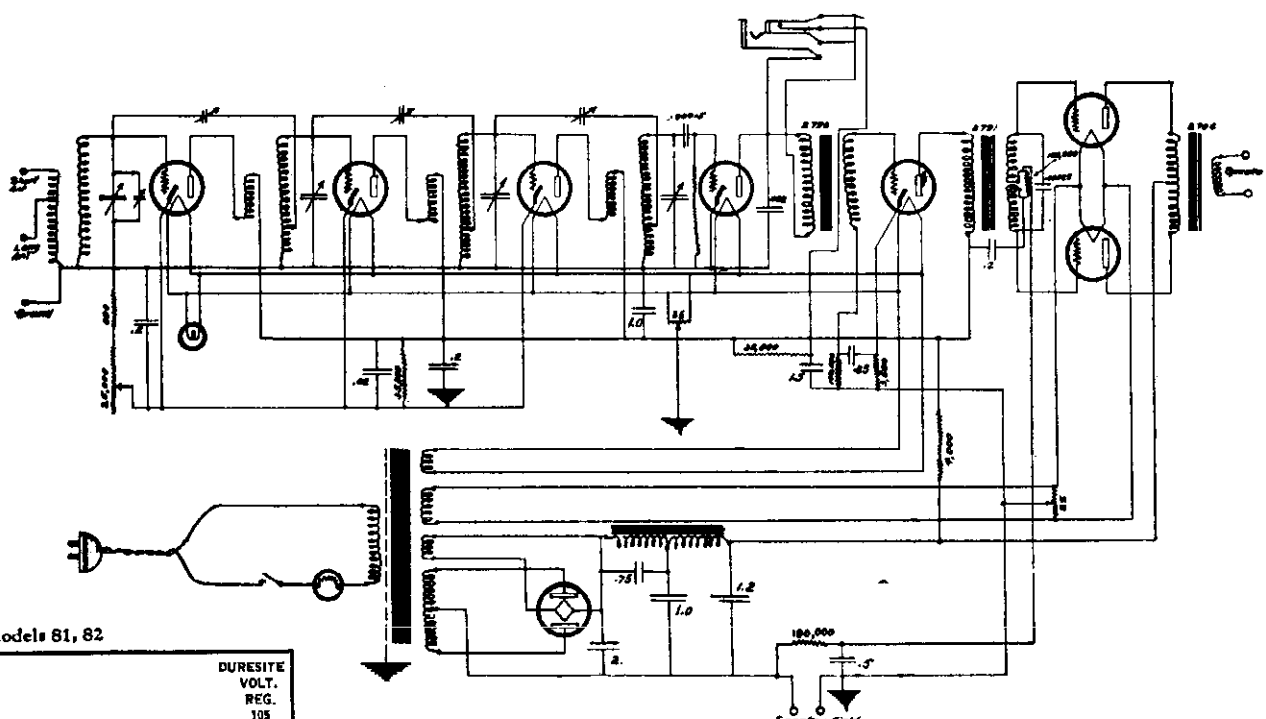
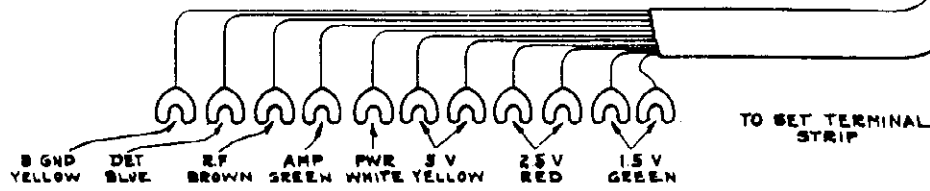
TUBE	TYPE	POSITION	RESISTANCE VALUE IN OHMS OF SET		TURNS IN TRANSFORMER		TURNS IN TRANSFORMER	
			1.5V. A.C.	2.5V. A.C.	1.5V. A.C.	2.5V. A.C.	1.5V. A.C.	2.5V. A.C.
226	AMPL. COMP.	1	1.5	150	7	13	4	
226	1st. R.F.	2	1.5	150	9	12	4	
226	1st. A.F.	3	1.5	150	7	13	4	
226	2nd. R.F.	4	1.5	150	9	12	4	
227	Detector	5	2.5	60	3	18	8	
171A	PWR.	6	2.5	150	30			

BREMER-TULLY MFG. CO

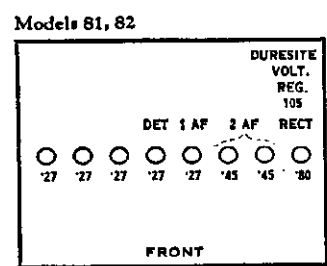
MODEL 6-40 Converter MODEL 81-A



Model 6-40 Power Converter



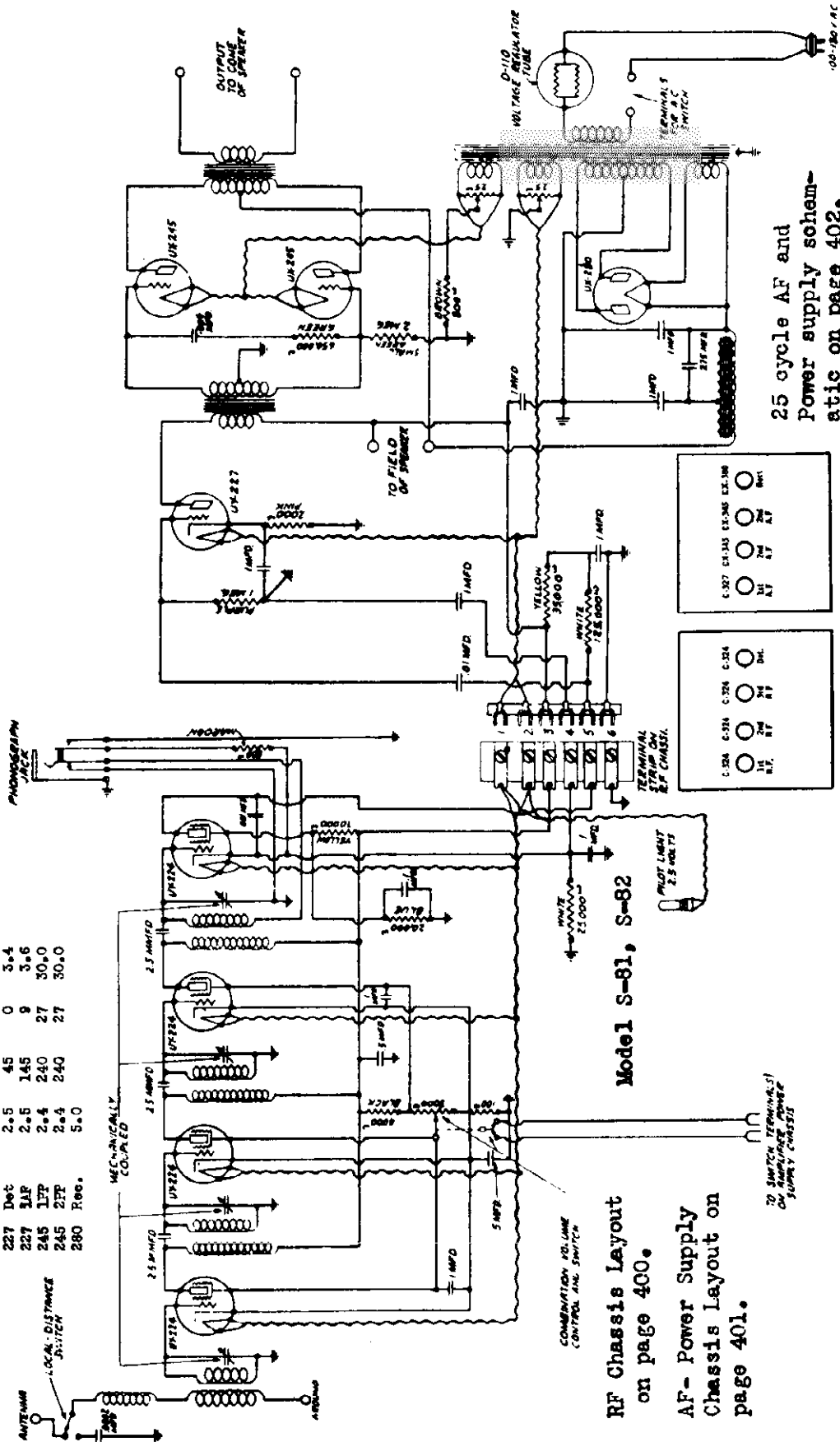
Model 81-A



BREMER-TULLY MFG. CO

MODEL S-81, S-82

	A	B	C	Plate Current
227 1RF	2.5	150	12	5.5 mA
227 2RF	2.5	150	12	5.5
227 3RF	2.5	150	12	5.5
227 1dC	2.5	45	0	3.4
227 1AF	2.5	145	9	3.6
245 1RF	2.4	240	27	30.0
245 2RF	2.4	240	27	30.0
280 Reg.	5.0			



25 cycle AF and Power supply schematic on page 402.

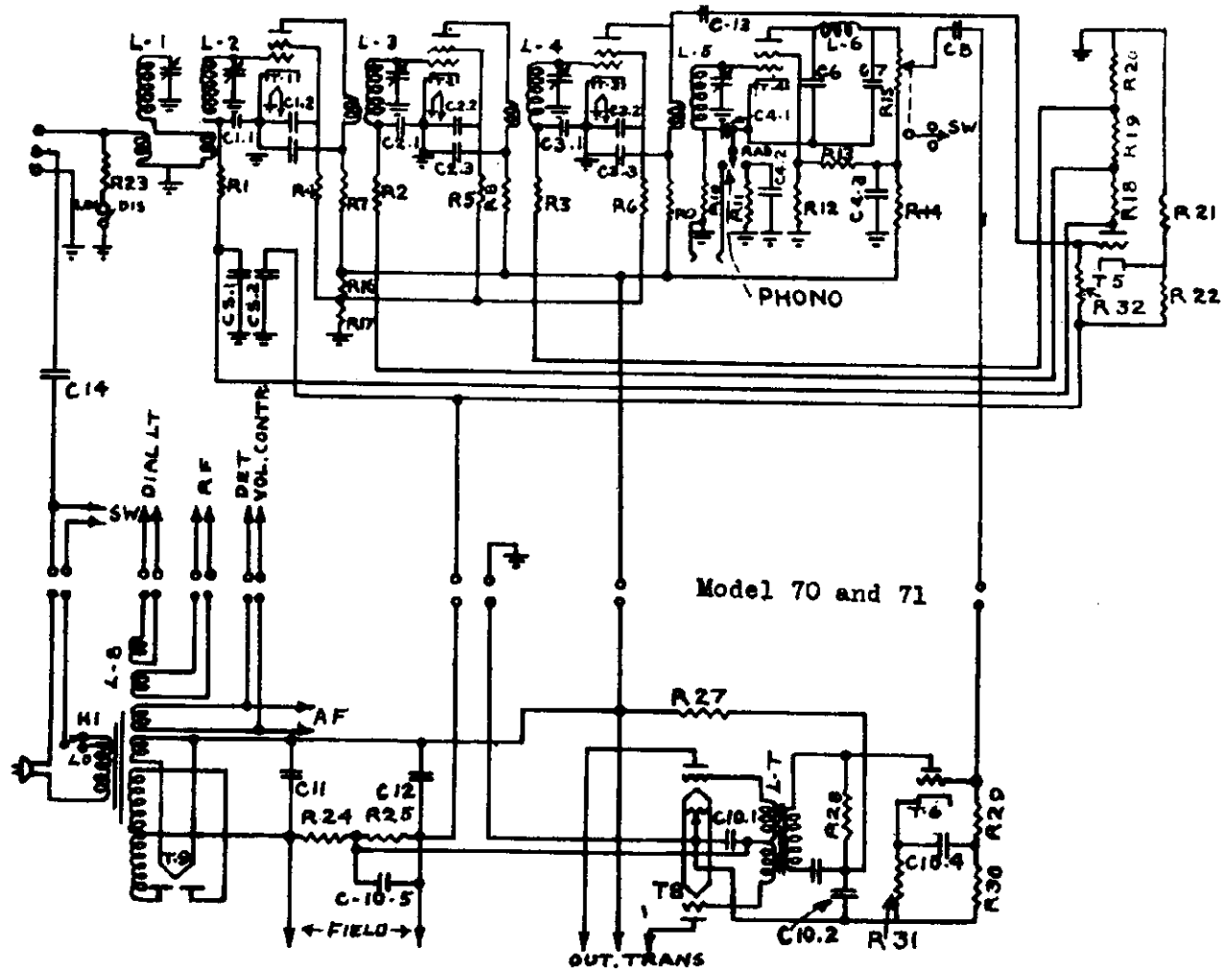
Model S-81, S-82

RF Chassis Layout on page 400.
 AF- Power Supply Chassis Layout on page 401.

TO SWITCH TERMINALS ON SUPPLY CHASSIS

BROWNING - DRAKE CORP.

MODEL 70, 71

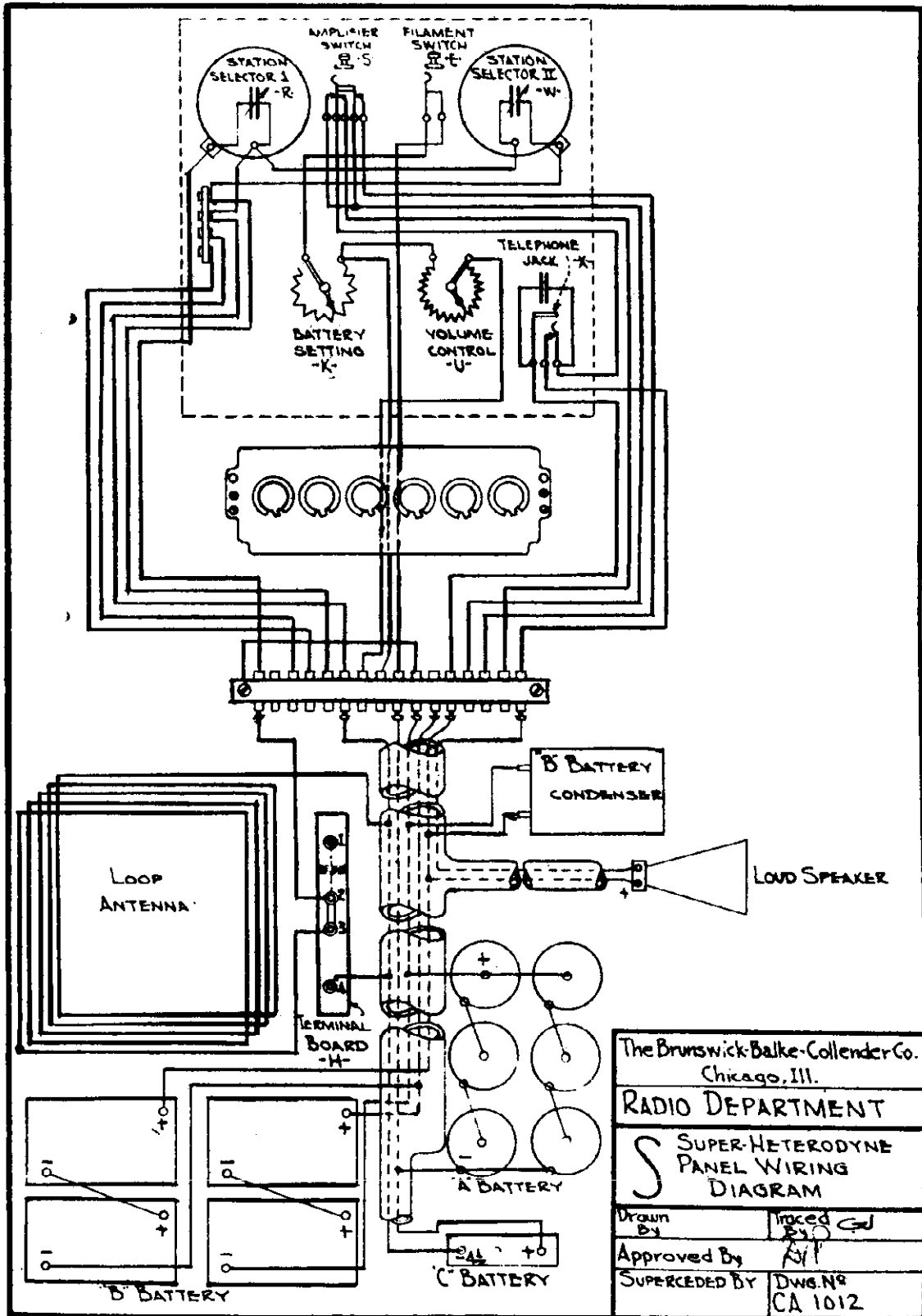


Model 70 and 71

- | | | | |
|----------------------|-------------|------------------------------------|------------|
| R1, R2, R5, R14, R15 | .25 megohm | R28 | 20000 ohms |
| R4, R5, R6 | 10000 ohms | R30, R32 | 2 megohms |
| R7, R8, R9 | 20000 ohms | R31 | 2000 ohms |
| R10, R29 | 1 megohm | C1.1; C2.1; C3.1; C1.2; C2.2; C5.2 | .1 mfd |
| R11, R18, R19 | 40000 ohms | C1.3; C2.3; C3.3 | .1 mfd |
| R12 | .1 megohm | C4.1; C4.2 | .1 mfd. |
| R13 | .25 megohm | C4.3 | .25 mfd |
| R16 | 40000 ohms | C5.1; C5.2 | 1. mfd |
| R17 | 90000 ohms | C6, C7, C13 | .00025 mfd |
| R20 | 200000 ohms | C8 | .01 mfd. |
| R21 | 500 ohms | C10.1 | .25 mfd |
| R22 | 45 ohms | C10.2 | .5 mfd |
| R23, R26 | 20 ohms | C10.3 | .1 mfd |
| R24 | .5 megohm | C10.4 | .2 mfd |
| R25 | .15 megohm | C10.5 | 2. mfd |
| R27 | 10000 ohms | C14 | .00025 mfd |

MODEL Superheterodyne
Panel Wiring

BRUNSWICK RADIO CORPORATION



The Brunswick-Balke-Collender Co.
Chicago, Ill.

RADIO DEPARTMENT

S SUPER-HETERODYNE
PANEL WIRING
DIAGRAM

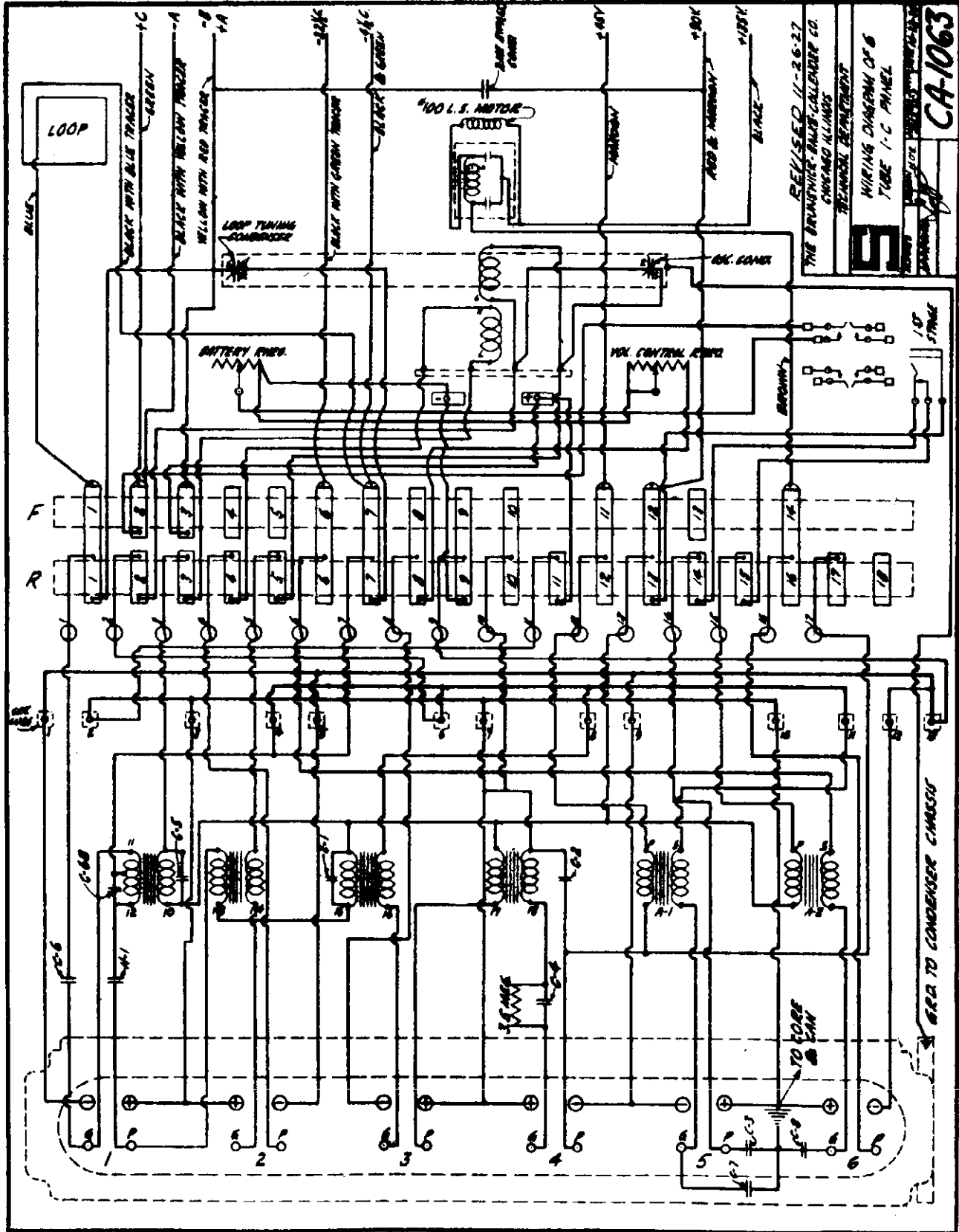
Drawn By *[Signature]* Traced By *[Signature]*

Approved By *[Signature]*

SUPERCEDED BY DWG. No. CA 1012

MODEL PR-6
6 Tube 1-C
Panel

BRUNSWICK RADIO CORPORATION



REVISED 11-26-27
THE BRUNSWICK RADIO CORPORATION
CHICAGO ILLINOIS
RESEARCH DEPARTMENT
CA-1063

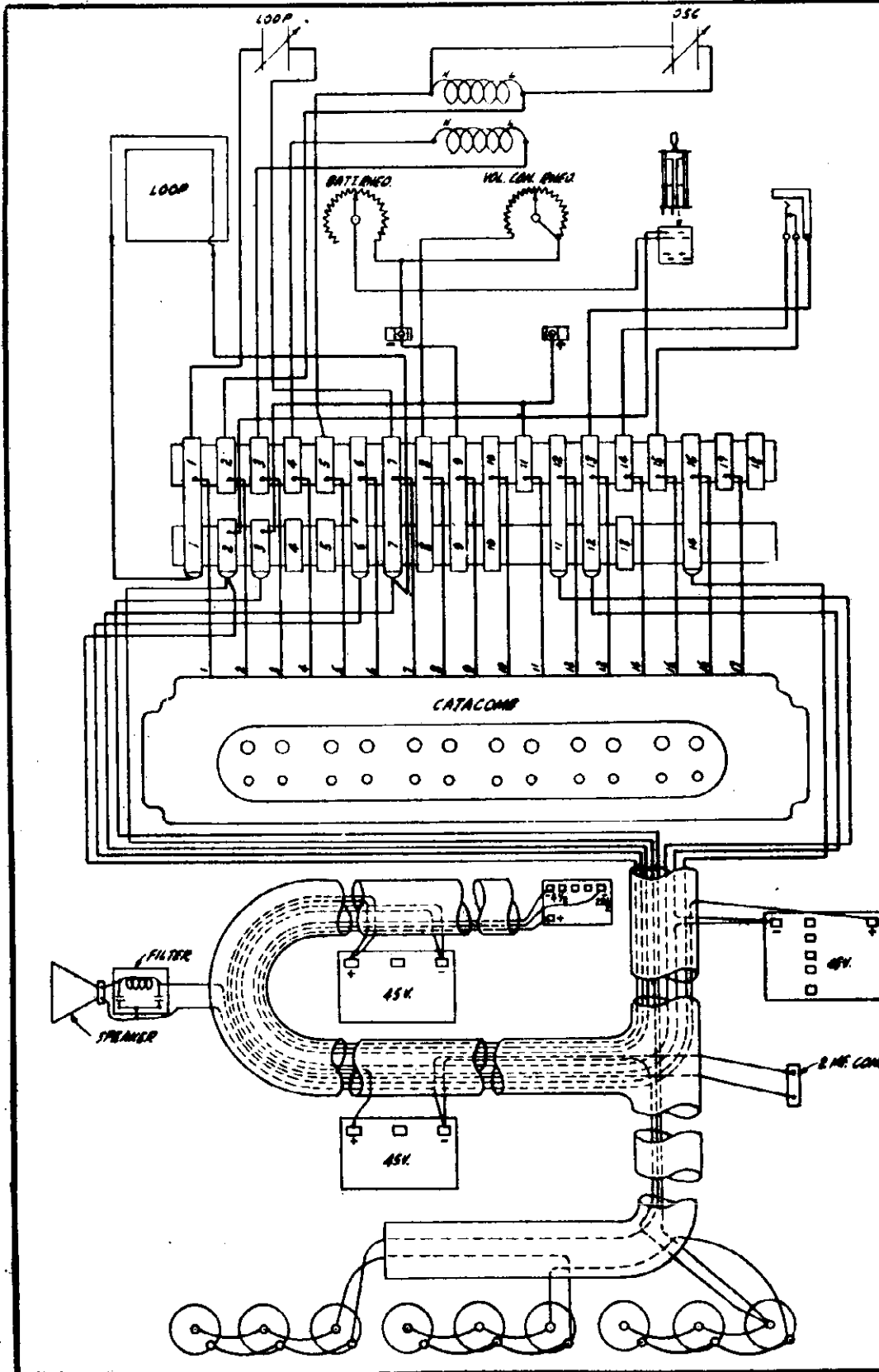
WIRING DIAGRAM OF 6
TUBE 1-C PANEL

CA-1063

WIRE TO CONDENSER CHASSIS

BRUNSWICK RADIO CORPORATION

MODEL 6 Tube
Cordova



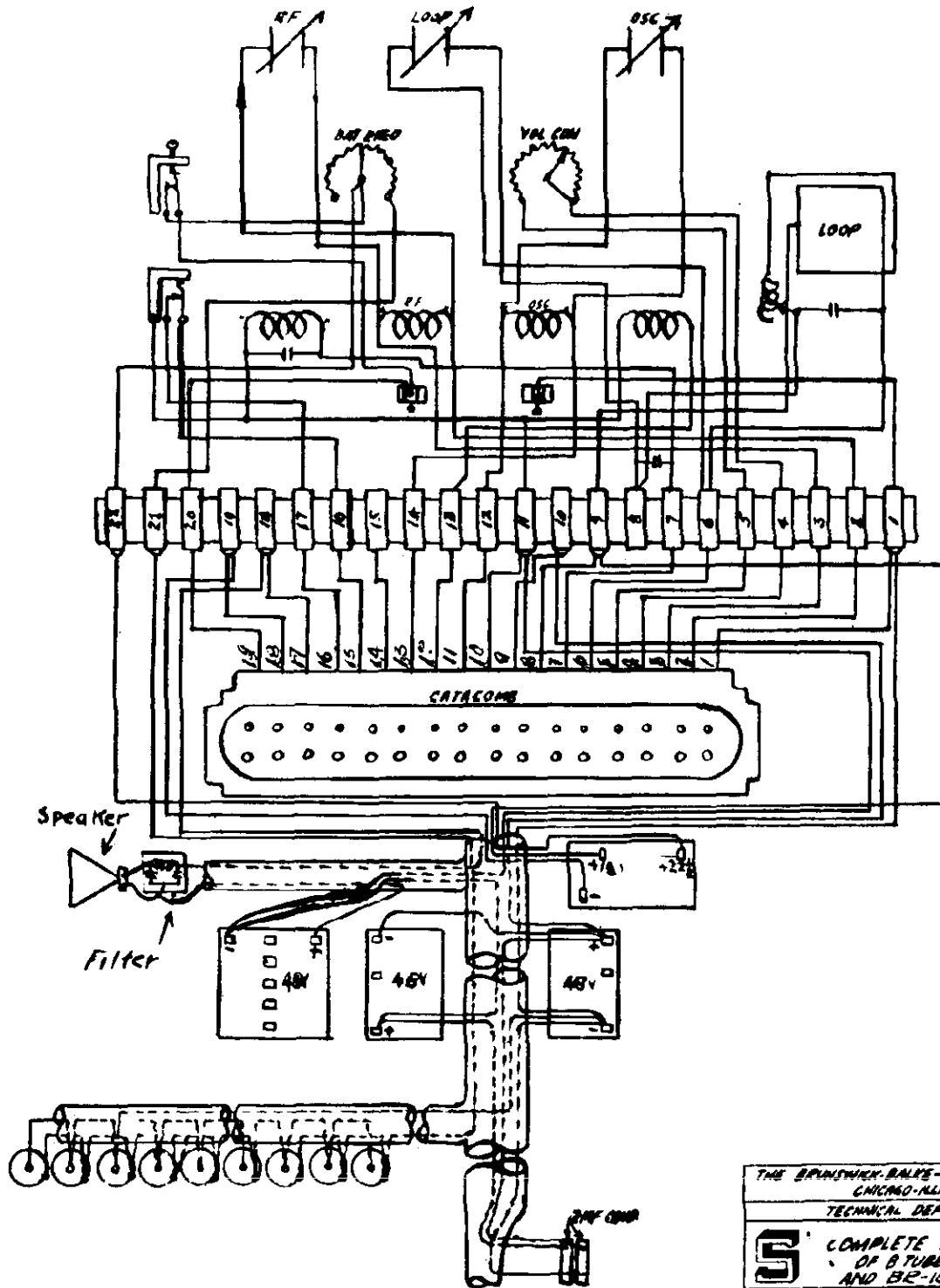
THE BRUNSWICK-WALTE-COLEMAN CO.
CHICAGO-ILLINOIS
TECHNICAL DEPARTMENT

COMPLETE WIRING DIAGRAM
OF 6 TUBE CORDOVA

REVISED 4-28-37
JULY 27
CA-1112

MODEL 8 Tube
Cordova

BRUNSWICK RADIO CORPORATION



THE BRUNSWICK-BALKE-COLLIER CO.
CHICAGO-ILLINOIS
TECHNICAL DEPARTMENT

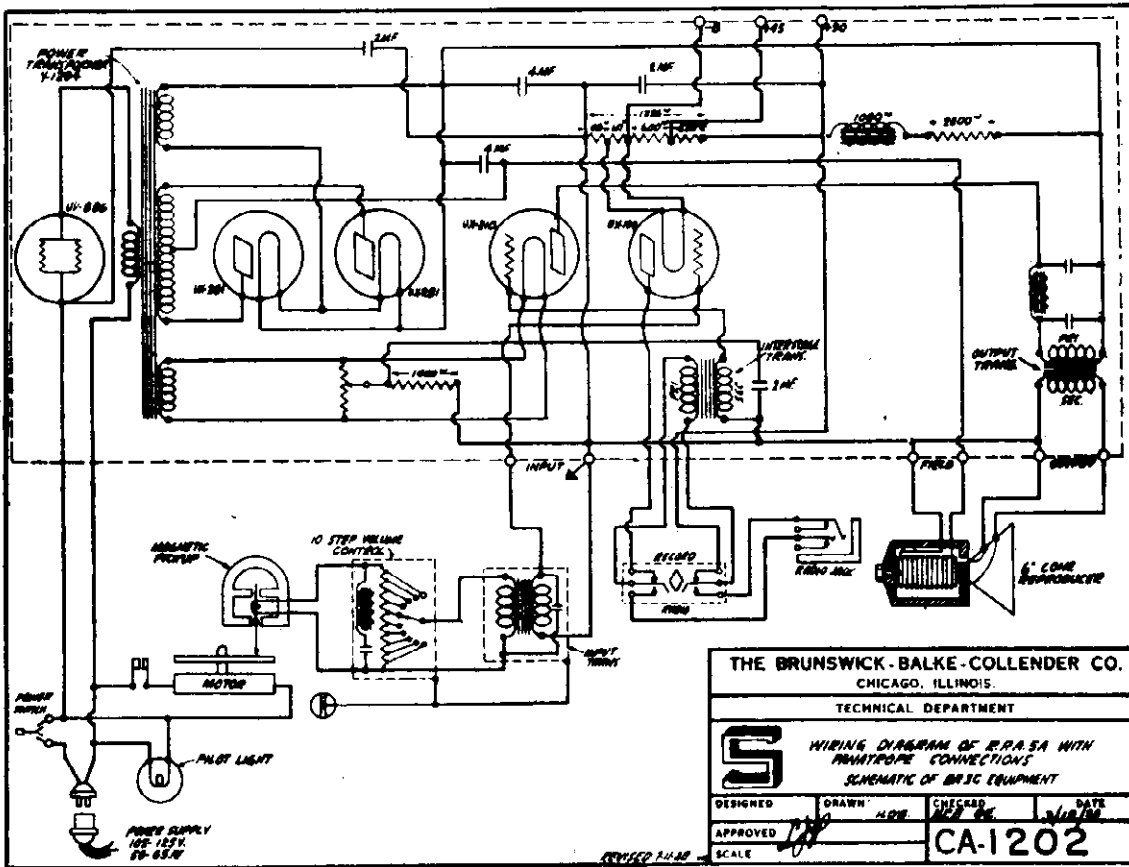
S COMPLETE WIRING DIAGRAM
OF 8 TUBE CORDOVA
AND BR-18 CABINETS.

DESIGNED BY [Signature] NOV 1921
CHECKED BY [Signature] DEC 31 1921
APPROVED BY [Signature] 1-10-21

CA-1111

MODEL RPA-5A

BRUNSWICK RADIO CORPORATION

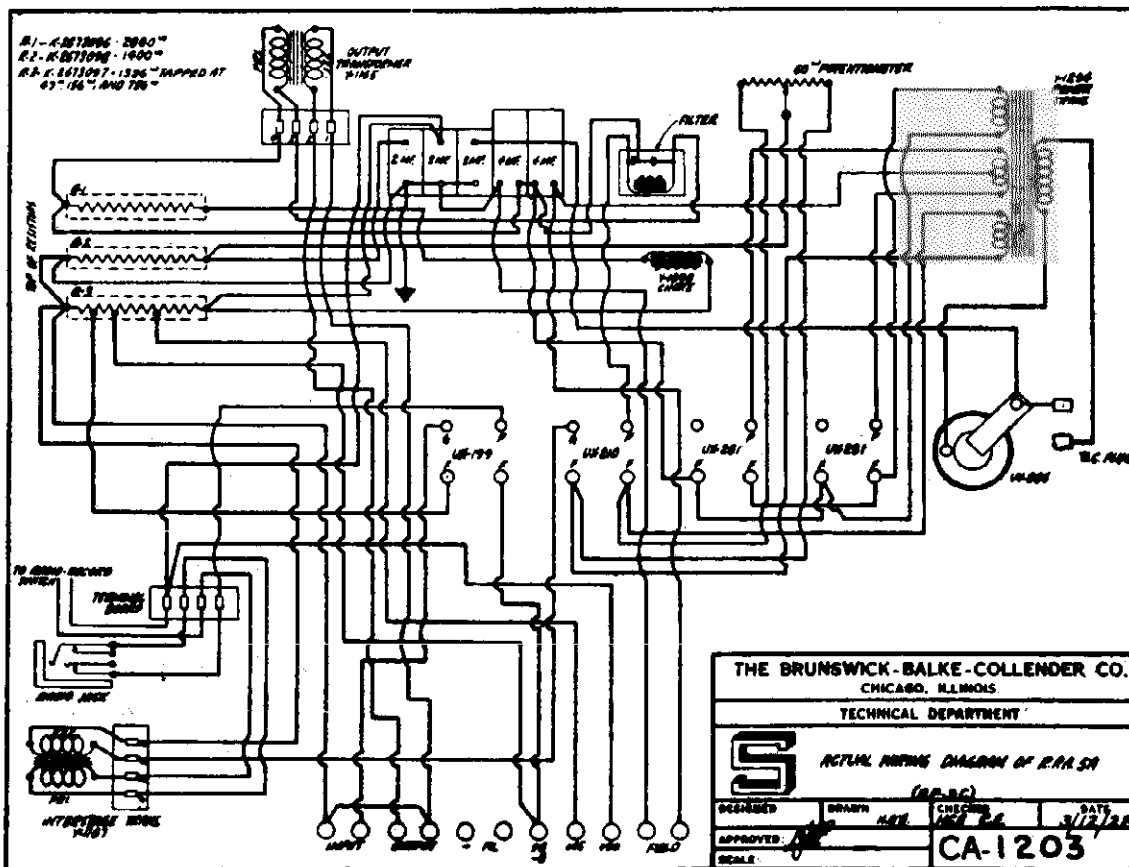


THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO, ILLINOIS

TECHNICAL DEPARTMENT

S WIRING DIAGRAM OF R.P.A. 5A WITH
PUSHPIPE CONNECTIONS
SCHEMATIC OF BRSC EQUIPMENT

DESIGNED	DRAWN	CHECKED	DATE
APPROVED	SCALE	CA-1202	



THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO, ILLINOIS

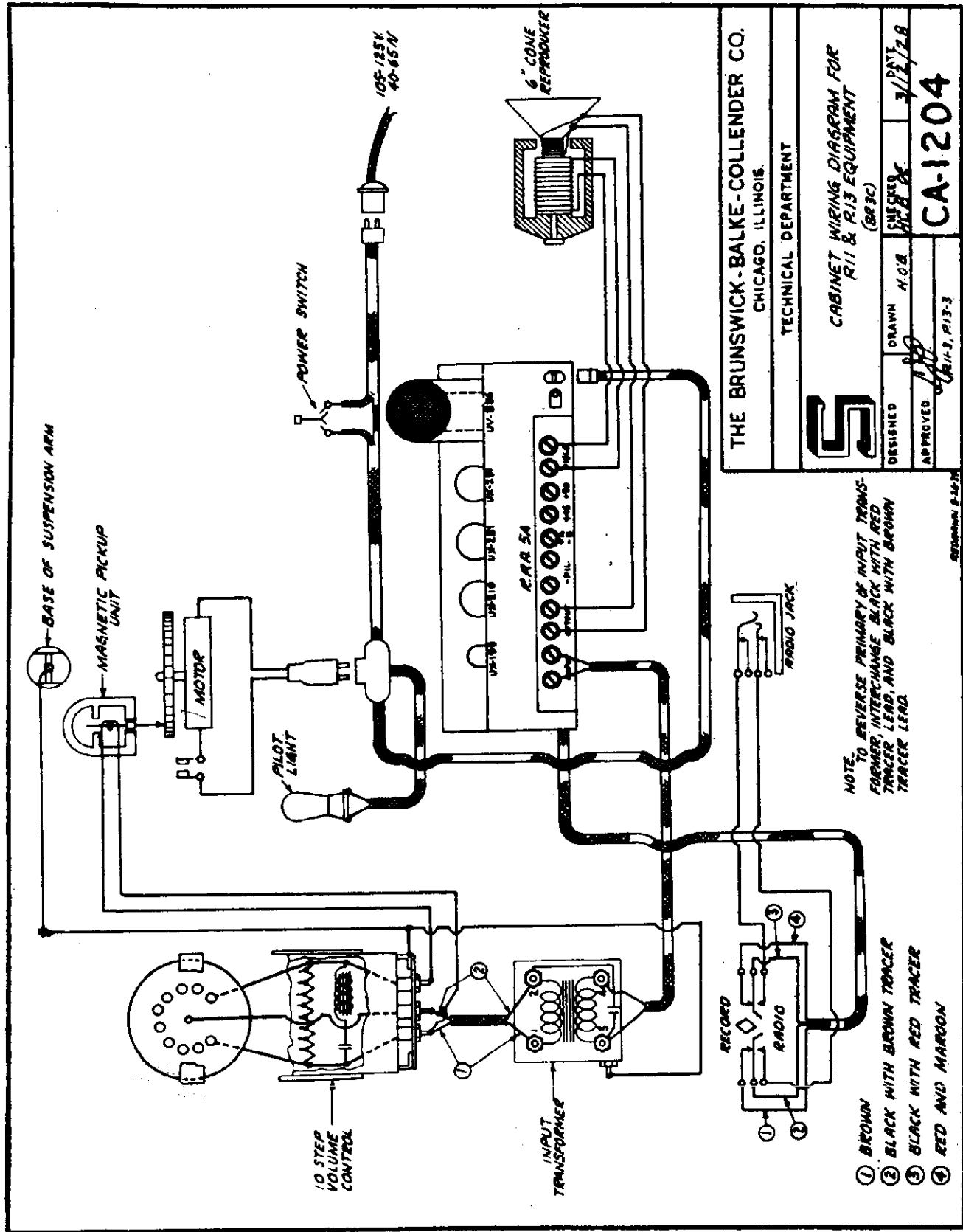
TECHNICAL DEPARTMENT

S ACTUAL WIRING DIAGRAM OF R.P.A. 5A
(BRSC)

DESIGNED	DRAWN	CHECKED	DATE
APPROVED	SCALE	CA-1203	3/12/28

BRUNSWICK RADIO CORPORATION

MODEL P-11, P-13
Cabinet Wiring



THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO, ILLINOIS.

TECHNICAL DEPARTMENT

S

CABINET WIRING DIAGRAM FOR
P-11 & P-13 EQUIPMENT
(BR 9C)

DESIGNED	H.O.B.	3/12/28
DRAWN	M.C.H.	
APPROVED		

CA-1204

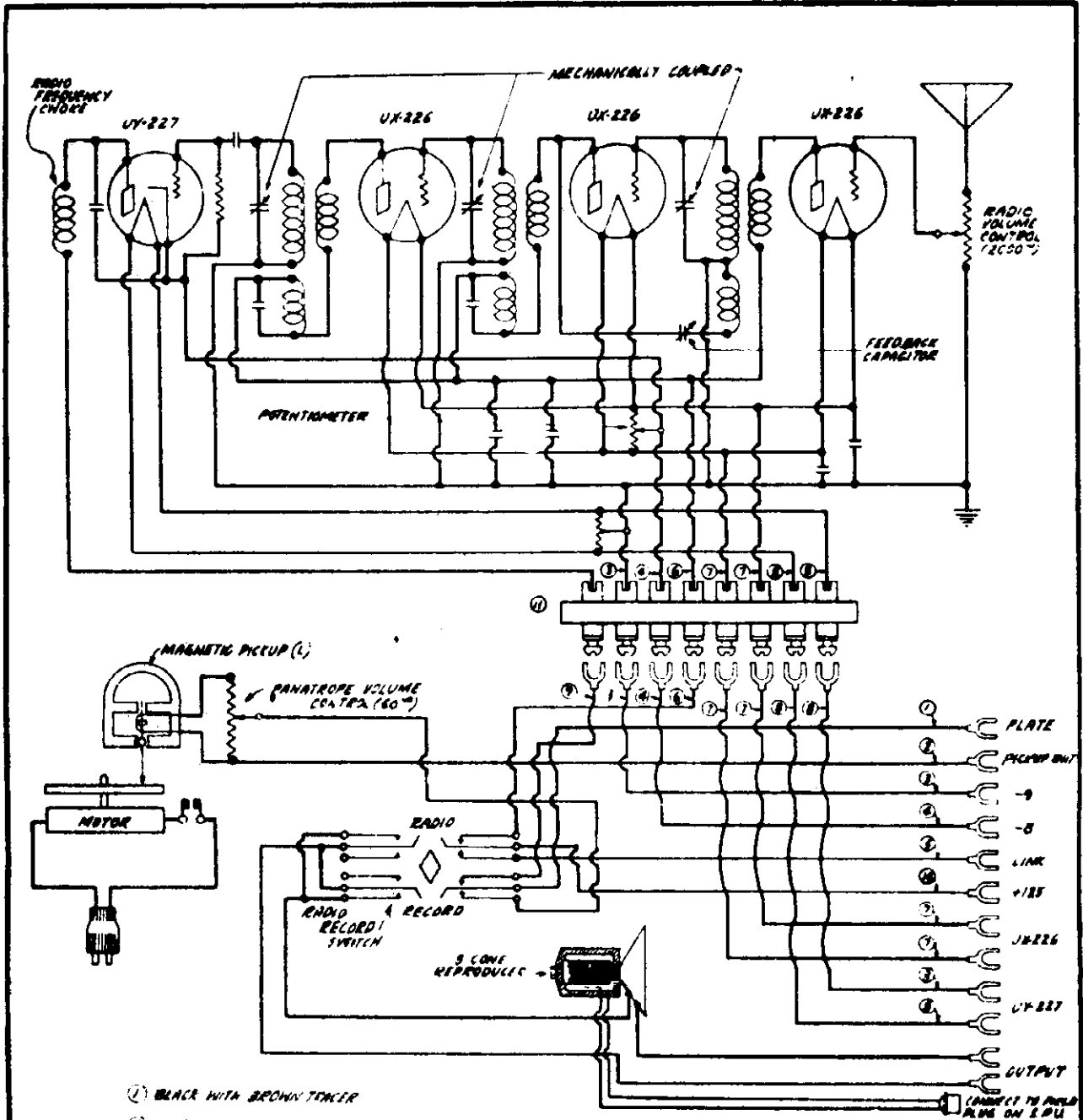
REVISION P-2574

NOTE TO REVERSE PRIMARY OF INPUT TRANS-
FORMER, INTERCHANGE BLACK WITH RED
TRACER LEAD, AND BLACK WITH BROWN
TRACER LEAD.

- ① BROWN
- ② BLACK WITH BROWN TRACER
- ③ BLACK WITH RED TRACER
- ④ RED AND MAROON

MODEL 3 KR8
RF Schematic

BRUNSWICK RADIO CORPORATION



- ① BLACK WITH BROWN TRACER
- ② BROWN
- ③ BLACK WITH GREEN TRACER
- ④ BLACK WITH RED TRACER
- ⑤ MAROON
- ⑥ RED AND MAROON
- ⑦ BLACK WITH YELLOW TRACER
- ⑧ BLUE
- ⑨ RED
- ⑩ BLACK
- ⑪ BROWN WITH WHITE TRACER

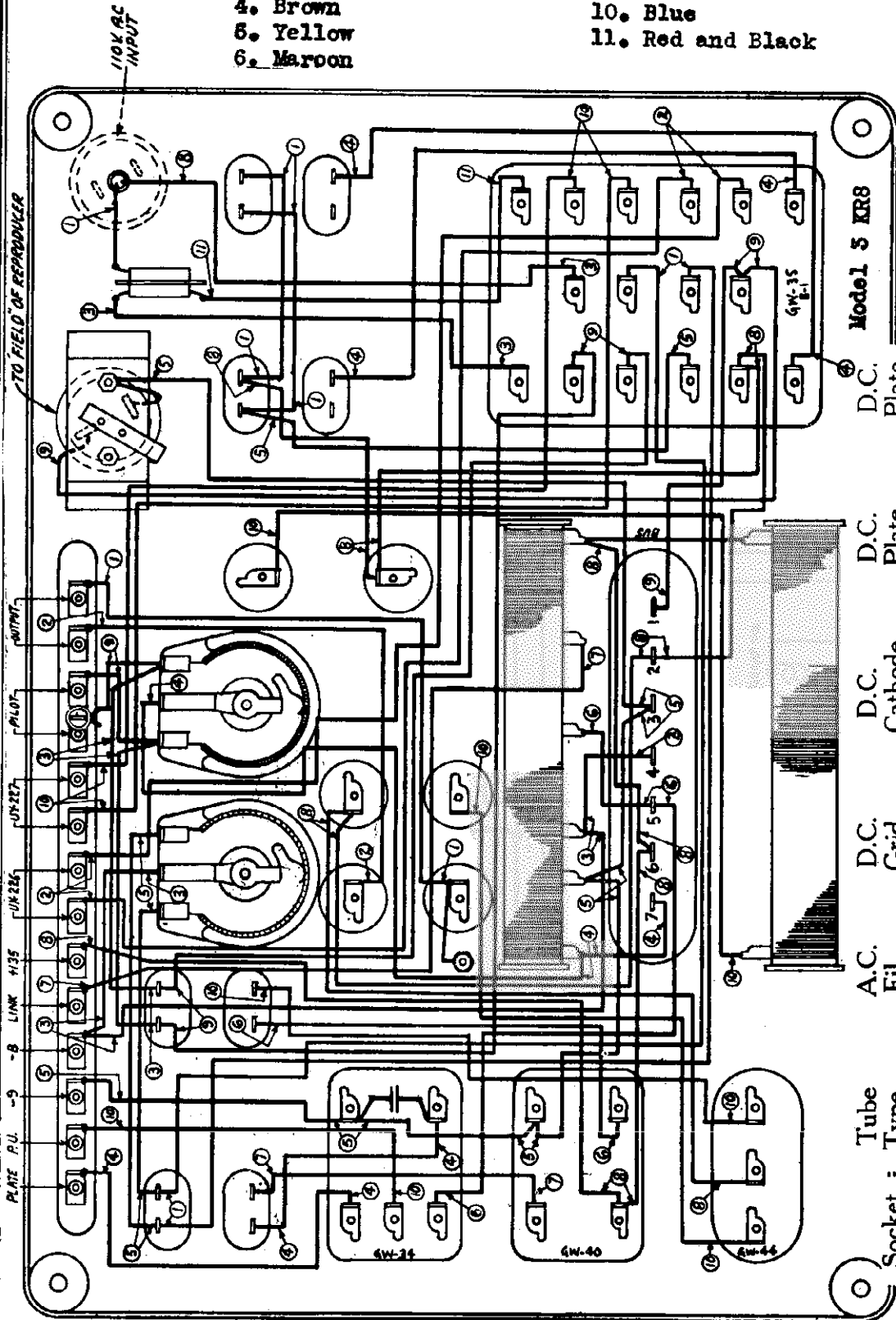
BRUNSWICK—Model 3KR8
Line Voltage 115—Volume Control Minimum

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1-2-3-4-5-6-7-8-9-10	TUBE DATA						REARANG. PLUG IN ORDER OF SET		
			TUBE OUT		TUBE IN		TUBE IN VESTER				
			WOLFE	WOLFE	A	B	C	CATHODE VOLTS	NOMINAL PLATE AL.	PLATE (A.A. AMP. TEST)	PLATE (A.A. CATHODE)
1	226	1st. A.F.	1.5	138	1.4	130	9	-	5	9.5	4.5
2	226	2nd. A.F.	1.5	138	1.4	130	9	-	5	9.5	4.5
3	226	3rd. A.F.	2.5	158	2.4	150	9	-	5	9.5	4.5
4	227	Detector	2.4	158	2.1	150	9	-	5	9.5	4.5
5	226	1st. A.F.	1.5	138	1.4	130	9	-	5	10.0	5.0
6	250	End. A.F.	7.0	500	6.6	450	70	-	50	55.0	5.0

MODEL 3 KR8
SPU Chassis

BRUNSWICK RADIO CORP.

- 1. Black
- 2. Black with Yellow Tracer
- 3. Black with Red Tracer
- 4. Brown
- 5. Yellow
- 6. Maroon
- 7. Maroon and Red
- 8. Red
- 9. Green
- 10. Blue
- 11. Red and Black



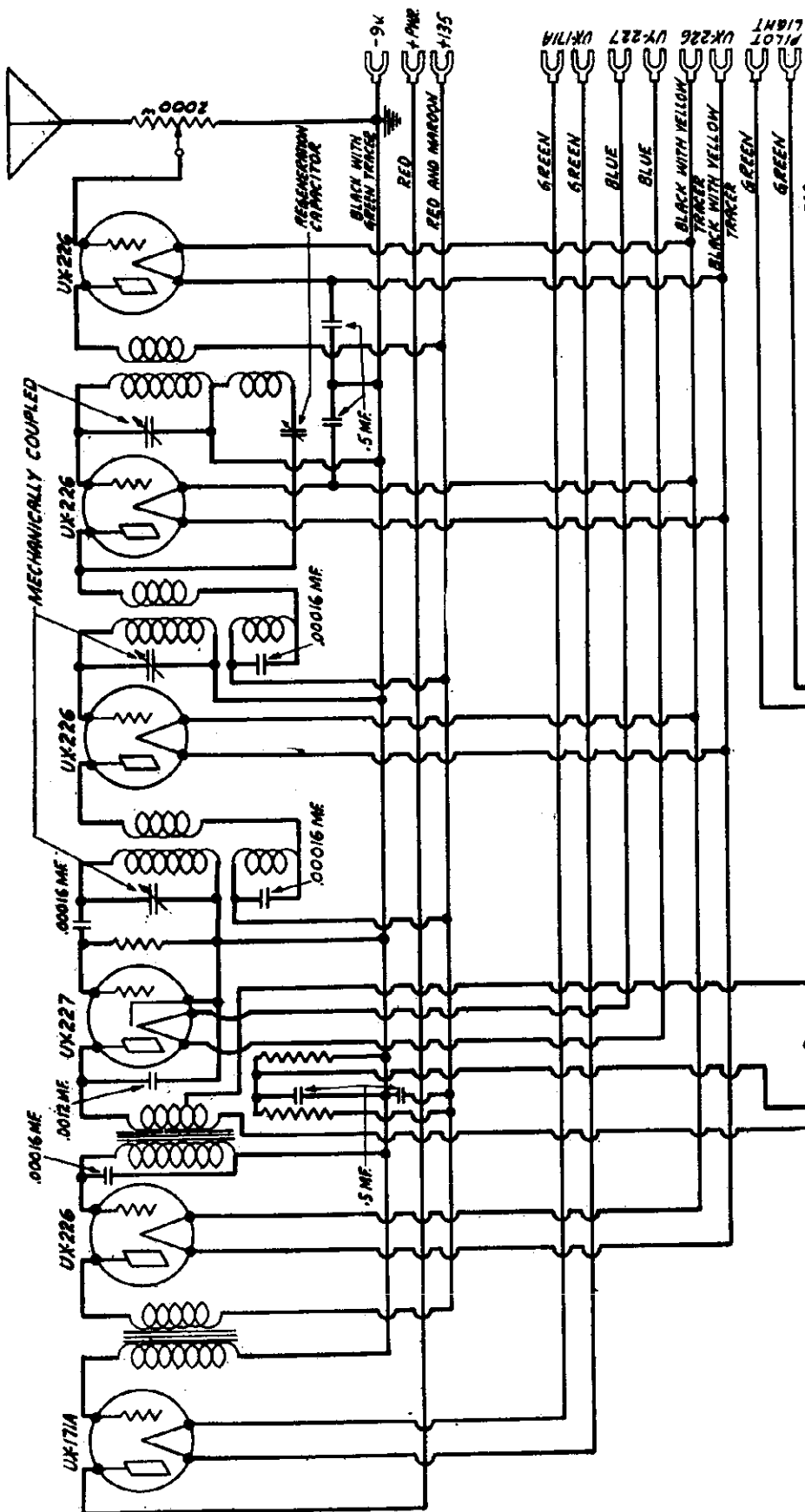
THE BRUNSWICK-BALKE-COLLIER CO.
CHICAGO-ALINDI
TECHNICAL DIVISION
ACTUAL WIRING DIAGRAM OF C.R.U.
USED WITH 3KR8 EQUIPMENT
REVISED 11-10-33
DATE 11-5-33

Model 3 KR8

Tube Socket : Type	A.C. Fil. Voltage	D.C. Grid Voltage	D.C. Cathode Voltage	D.C. Plate Voltage	D.C. Plate Current
1st R. F. UX-226	1.4	-9	None	130	4-6
2nd R. F. UX-226	1.4	-9	None	130	4-6
3rd R. F. UX-226	1.4	-9	None	130	4-6
Detector UY-227	2.1	None*	0	45	2-3

MODEL 3 KRO, 3 KR6
RF Schematic

BRUNSWICK RADIO CORP.

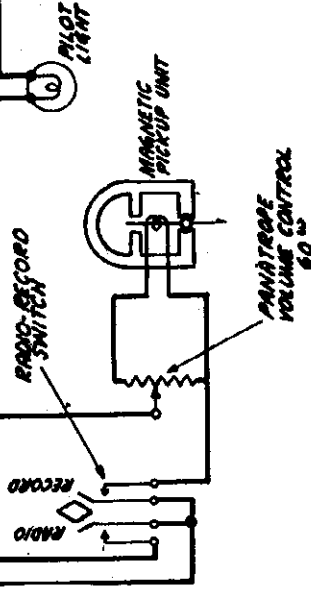


CONNECT PILOT LIGHT LEADS TO UX-171A
TERMINALS ON S.P.U.

THE BRUNSWICK-BALKE-COLLINDER CO.
CHICAGO, ILLINOIS
TECHNICAL DEPARTMENT

SCHEMATIC CIRCUIT OF RADIO CHASSIS K-802
WITH PANTHOPE CONNECTIONS
(USED WITH 3KR0 & 3KR6 EQUIPMENT)

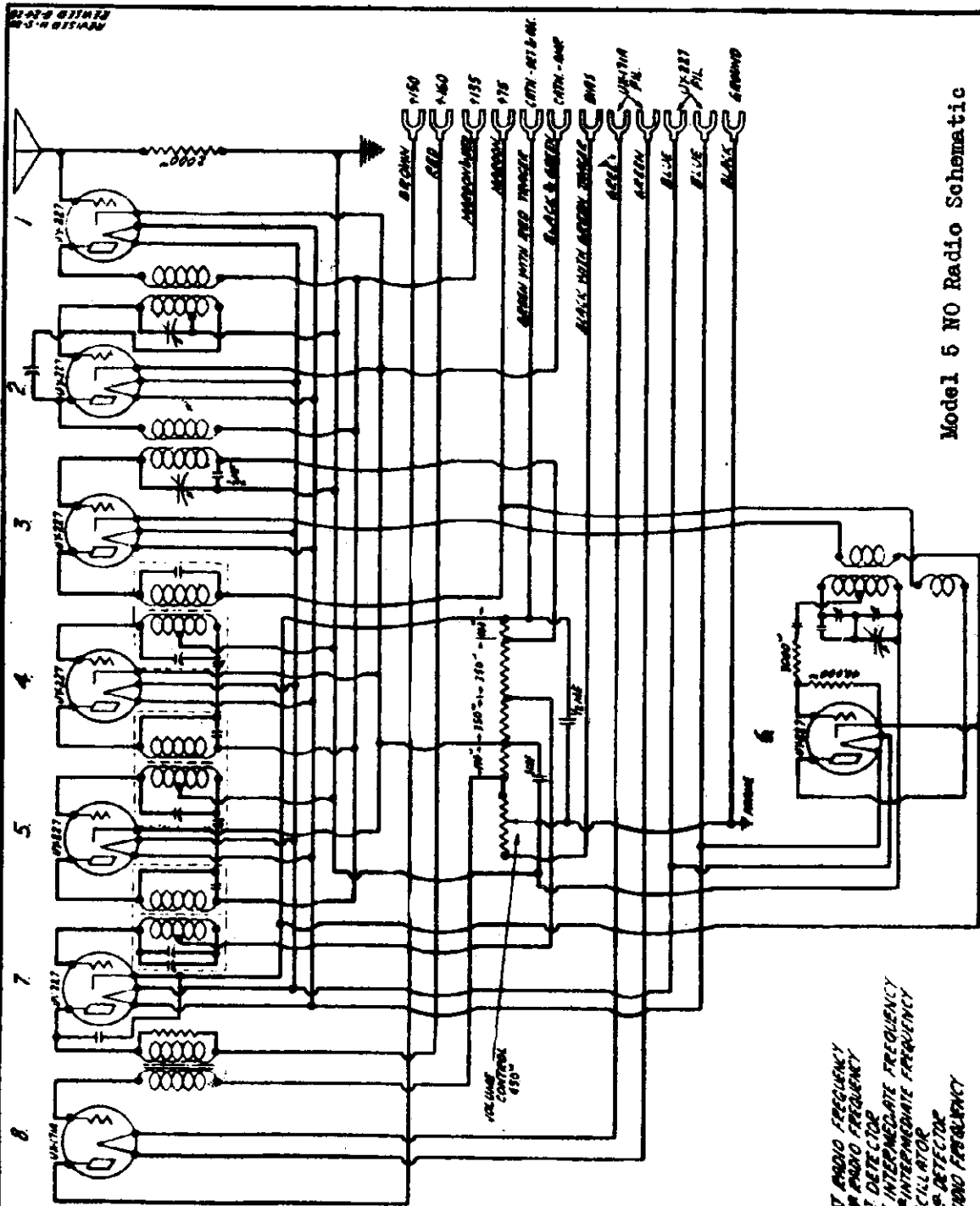
DESIGNED	DRAWN	CHECKED	M.J.D.	DATE
				4-25-38



VOLTAGE DATA
See page 426

BRUNSWICK RADIO CORP.

MODEL 5 NO
RF Schematic



Model 5 NO Radio Schematic

- 1 1st AUDIO FREQUENCY
- 2 2nd AUDIO FREQUENCY
- 3 1st DETECTOR
- 4 1st INTERMEDIATE FREQUENCY
- 5 2nd INTERMEDIATE FREQUENCY
- 6 OSCILLATOR
- 7 2nd DETECTOR
- 8 AUDIO FREQUENCY

5NO (A.C.)

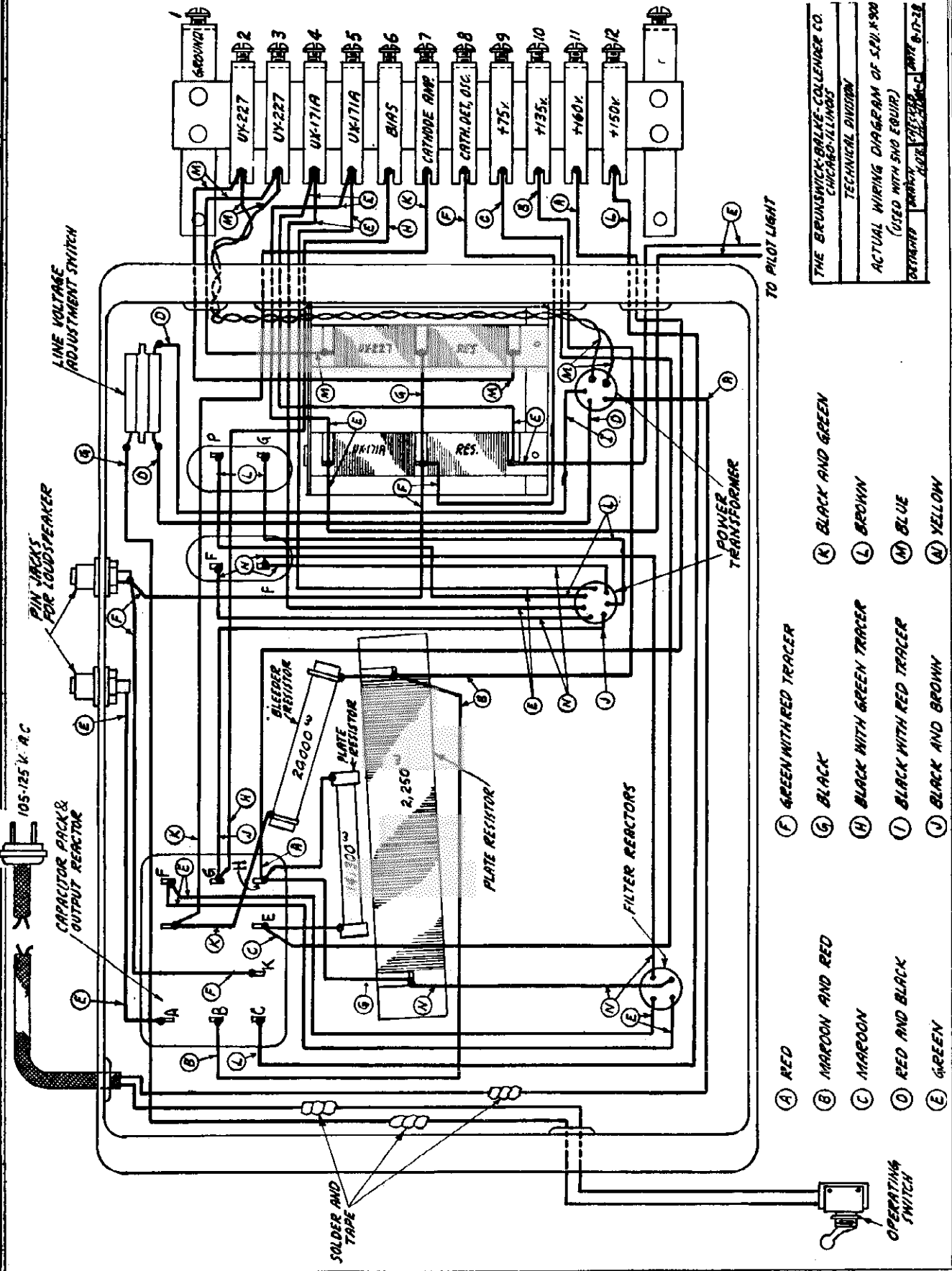
CK-971A	C-327	C-327	C-327	C-327	C-327	C-327	CX-380
A.F. AMP.	Power Out.	Oscillator	2nd I.F.	1st I.F.	1st Det.	2nd R.F.	Rect.
						C-327	
						1st R.F.	

BRUNSWICK—Model 5NO—
Line Voltage 110—Volume Control Minimum

TUBE	TYPE	POSITION OF TUBE IN SET	TUNE OUT				REORDER PLUG IN ORDER OF SET				TUNE IN TUBES			
			1	2	3	4	1	2	3	4	PLATE VOLTAGE (V)	GRID VOLTAGE (V)	BIAS (V)	SCREEN (V)
227	Ant. Coupler	2-35	170	2-35	180	24	27	1.0	2.0	1.0	2.0	2.0	2.0	2.0
227	1st. R.F.	2-35	170	2-25	160	24	27	1.0	2.0	1.0	2.0	2.0	2.0	2.0
227	1st. Det.	2-35	94	2-25	80	10	10	1.0	2.0	1.0	2.0	2.0	2.0	2.0
227	1st. I.F.	2-35	170	2-25	160	24	27	1.0	2.0	1.0	2.0	2.0	2.0	2.0
227	2nd. I.F.	2-35	170	2-25	160	24	27	1.0	2.0	1.0	2.0	2.0	2.0	2.0
227	Oscillator	2-35	120	2-25	75	-	-	1.0	2.0	1.0	2.0	2.0	2.0	2.0
227	2nd. Det.	2-35	170	2-25	160	15	-	1.0	2.0	1.0	2.0	2.0	2.0	2.0
171A	Power	5-5	180	5.0	150	30	-	180.0	22.0	1.0	2.0	2.0	2.0	2.0
280	Rectifier	-	-	5.0	-	-	-	20.0	-	-	-	-	-	-

MODEL 5 NO
SPU Chassis

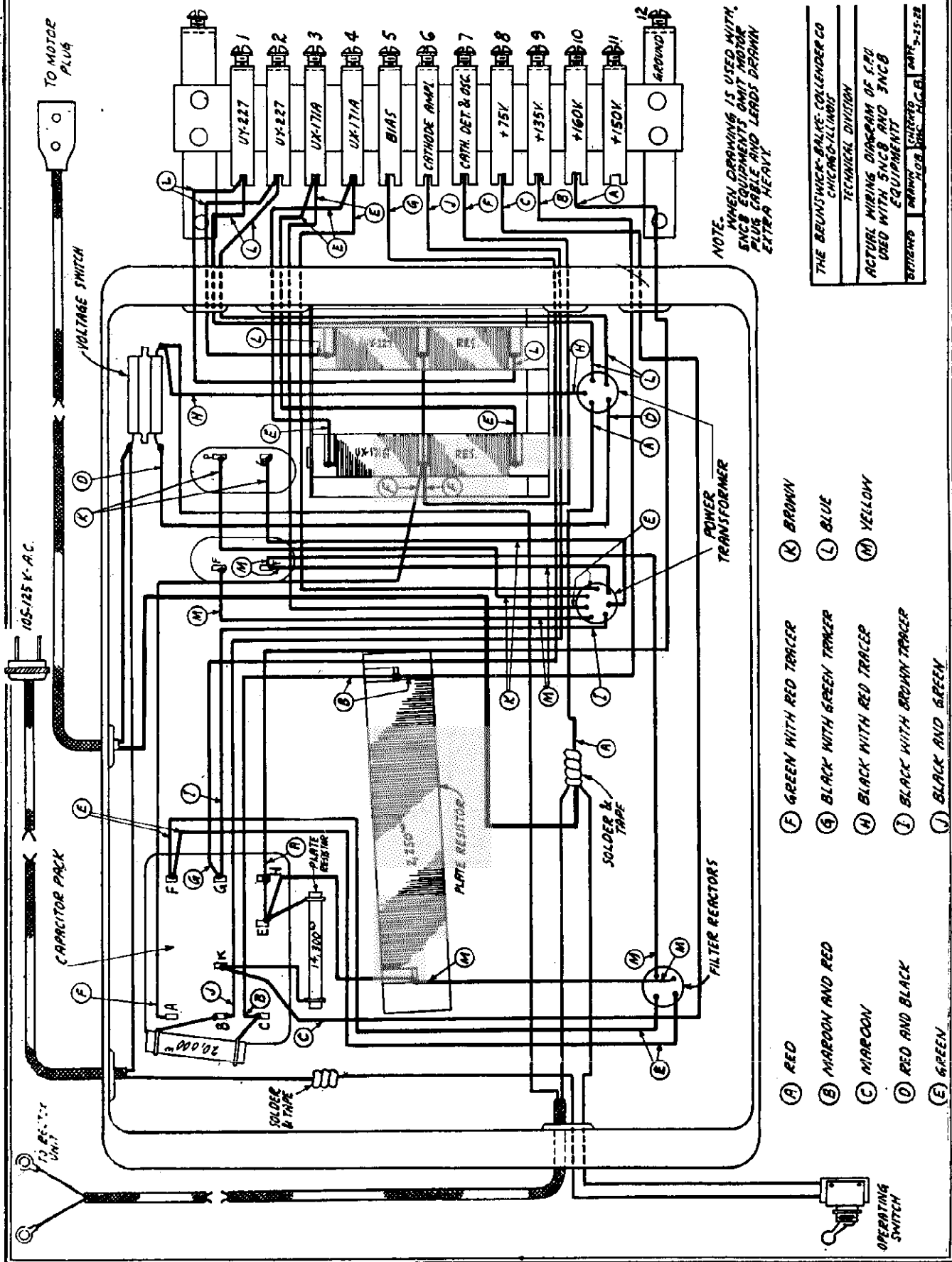
BRUNSWICK RADIO CORP.



- (A) RED
- (B) MAROON AND RED
- (C) MAROON
- (D) RED AND BLACK
- (E) GREEN
- (F) GREEN WITH RED TRACER
- (G) BLACK
- (H) BLACK WITH GREEN TRACER
- (I) BLACK WITH RED TRACER
- (J) BLACK AND BROWN
- (K) BLACK AND GREEN
- (L) BROWN
- (M) BLUE
- (N) YELLOW

MODEL 3 NC8, 5 NC8
Audio Chassis

BRUNSWICK RADIO CORP.



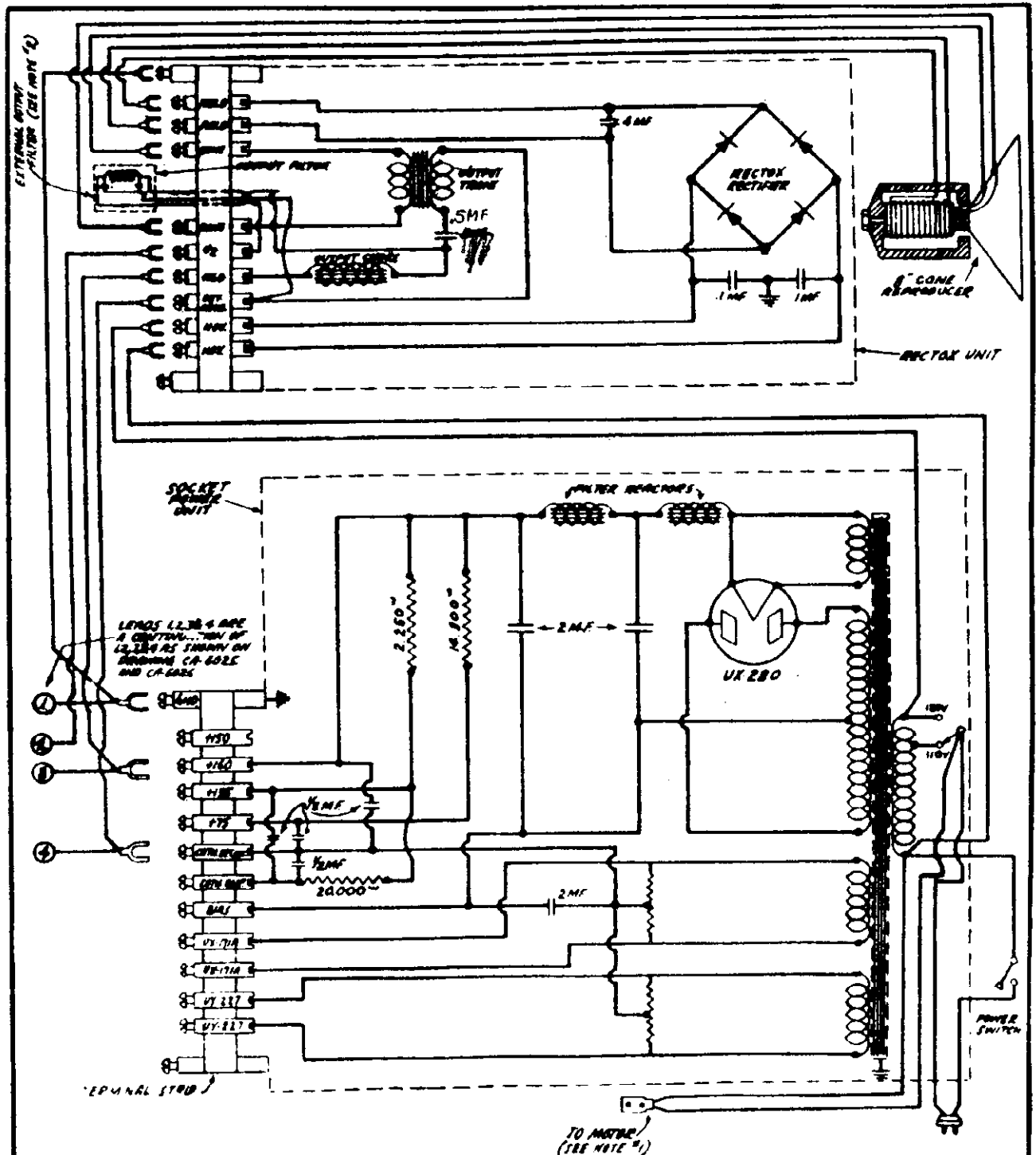
NOTE: WHEN DRAWING IS USED WITH ENCLOSURE EQUIPMENT OMIT MOTOR PLUG CABLE AND LEADS DRAWN EXTRA HEAVY

THE BRUNSWICK-BALKE-COLLENDER CO
CHICAGO-ILLINOIS
TECHNICAL DIVISION
ACTUAL WIRING DIAGRAM OF S.P.U.
USED WITH 5NC8 AND 5NC8
EQUIPMENT
STANDARD PARTS LIST
PAGE 5-15-28

- (A) RED
- (B) MAROON AND RED
- (C) MAROON
- (D) RED AND BLACK
- (E) GREEN
- (F) GREEN WITH RED TRACER
- (G) BLACK WITH GREEN TRACER
- (H) BLACK WITH RED TRACER
- (I) BLACK WITH BROWN TRACER
- (J) BLACK AND GREEN
- (K) BROWN
- (L) BLUE
- (M) YELLOW

BRUNSWICK RADIO CORP.

MODEL 3 NCB, 5 NCB
Audio Schematic

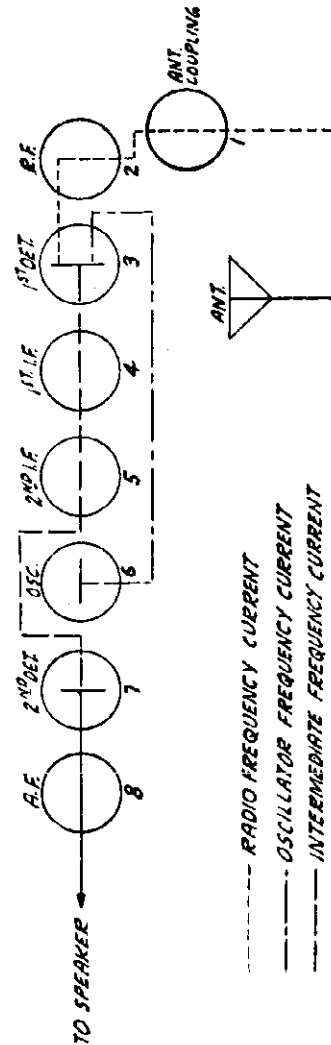
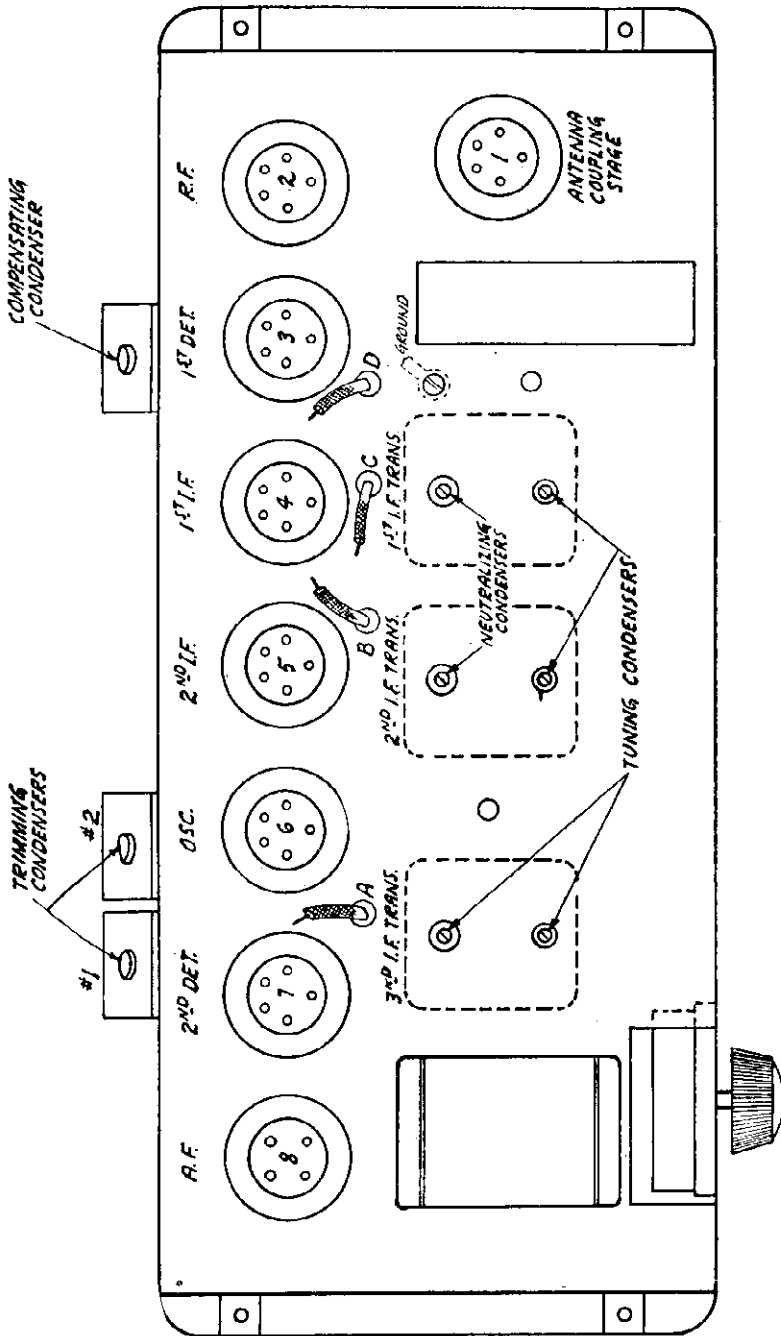


Model 3 NCB, 5 NCB Audio Schematic

- NOTE:
1. MOTOR PLUG AND LEADS NOT USED WITH 5 PU FOR SMCB EQUIPMENT
 2. EXTERNAL OUTPUT FILTER IS USED ONLY ON THE SMCB EQUIPMENTS

MODEL 5 NO. 5 NC8,
3 NC8
Trimmer Locations

BRUNSWICK RADIO CORP.



THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO ILLINOIS.
TECHNICAL DEPARTMENT

LOCATION OF ADJUSTING CONDENSERS ON
5NO. 5NC8 & 3NC8 EQUIPMENTS

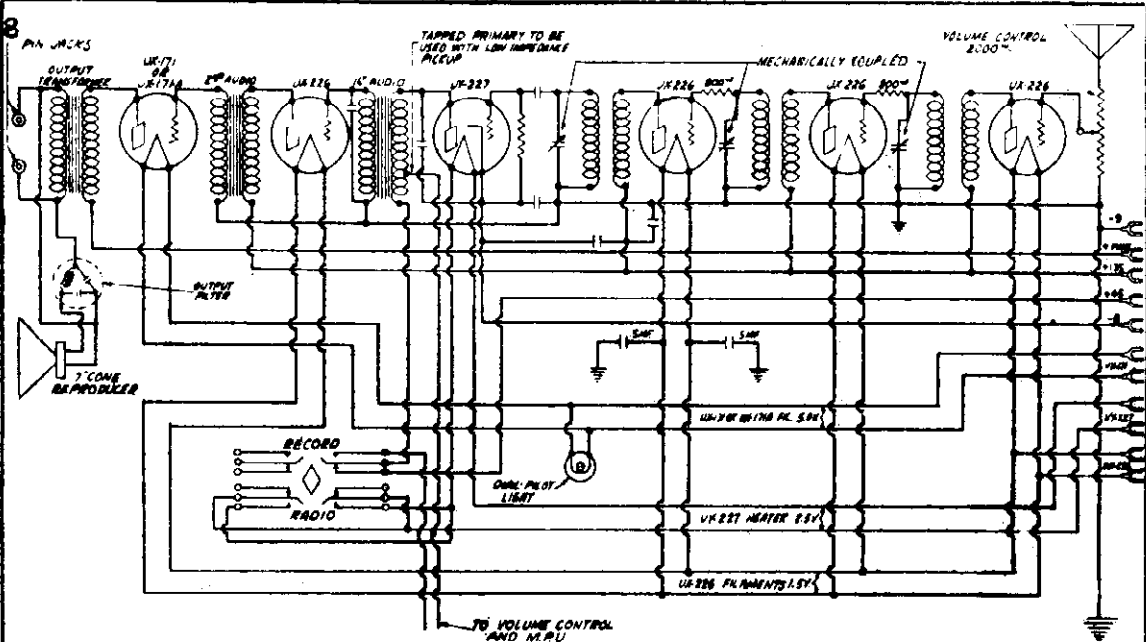
DESIGNED	DRAWN	CHECKED	DATE
	H.O.B.	H.C.D.	10-10-28
APPROVED:			SCALE
			CA-6039

REVISED 11-12-28
REVISED 10-26-28

MODEL B-17
MODEL SFU 18

BRUNSWICK RADIO CORPORATION

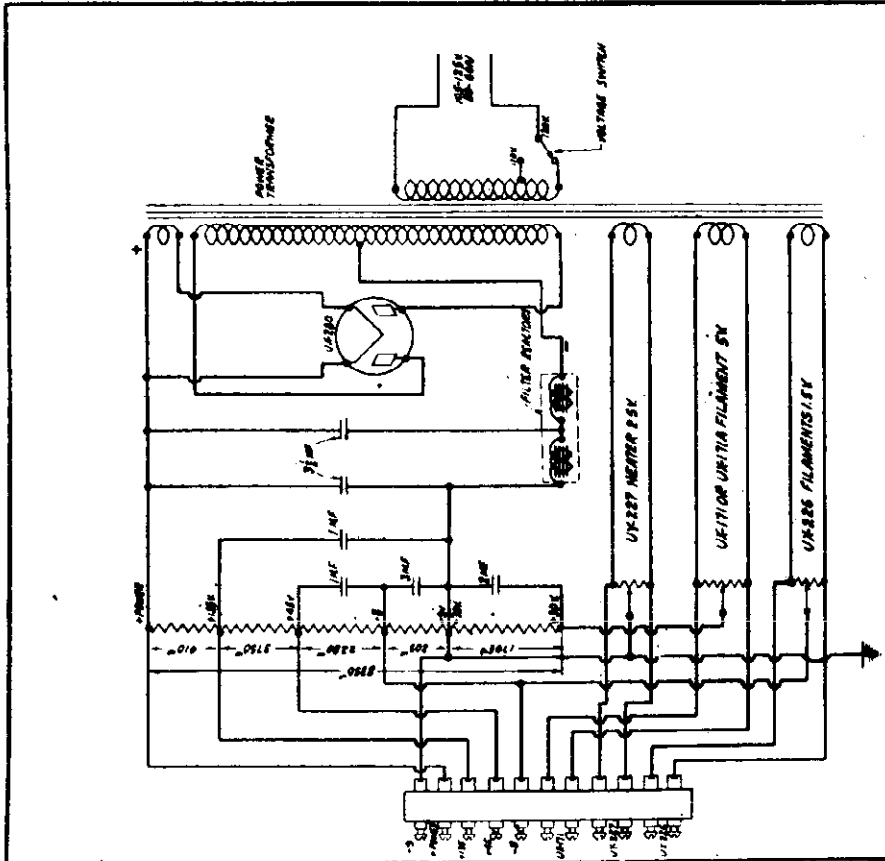
For
PR-17-8



THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO, ILLINOIS.
TECHNICAL DEPARTMENT

S SCHEMATIC WIRING DIAGRAM OF B-17 CHASSIS AS USED IN MODEL PR-17-8
(OVER)

DESIGNED	DRAWN	CHECKED	DATE
	KOB	S.A. JCA	1-16-37
APPROVED	CA-1190		
SCALE			



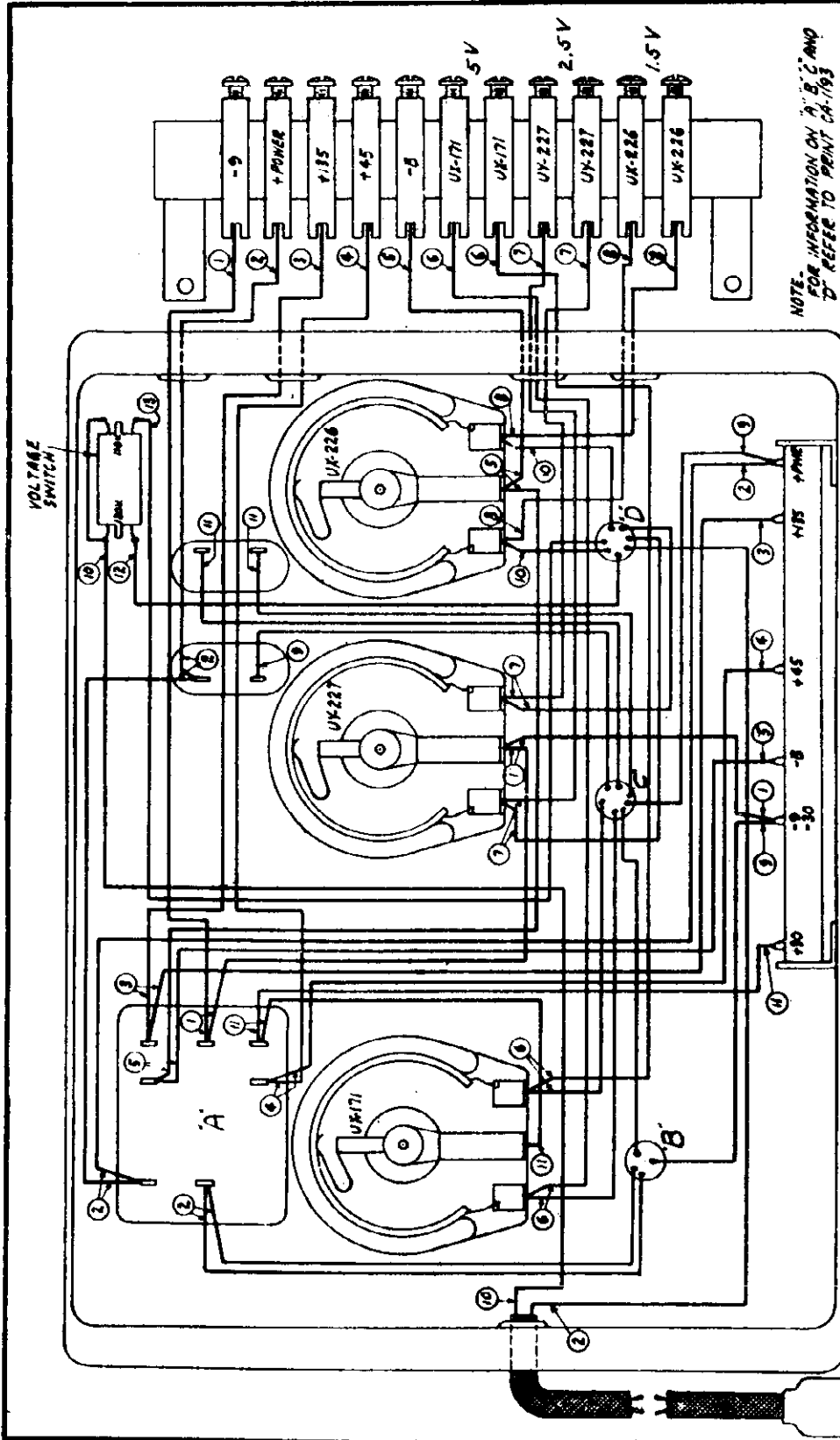
THE BRUNSWICK-BALKE-COLLENDER CO.
CHICAGO, ILLINOIS
TECHNICAL DEPARTMENT

S SCHEMATIC WIRING DIAGRAM OF S.P.U.18 AS USED IN MODEL PR-17-8
(OVER)

DESIGNED	DRAWN	CHECKED	DATE
	KOB	S.A. JCA	1-16-37
APPROVED	CA-1191		
SCALE			

BRUNSWICK RADIO CORPORATION

MODEL SPU-18
Chassis for PR-17



NOTE FOR INFORMATION ON A, B, C AND D REFER TO PRINT CA-1193

- ① BLACK WITH GREEN TRACER
- ② RED
- ③ MAROON AND RED
- ④ MAROON
- ⑤ GREEN WITH RED TRACER
- ⑥ GREEN
- ⑦ BLUE
- ⑧ BLACK WITH YELLOW TRACER
- ⑨ YELLOW
- ⑩ BLACK
- ⑪ BROWN
- ⑫ RED AND BLACK
- ⑬ BLACK WITH RED TRACER
- ⑭ BLACK WITH BROWN TRACER

THE BRUNSWICK-GALKE-COLENDER CO.
CHICAGO, ILLINOIS

TECHNICAL DEPARTMENT

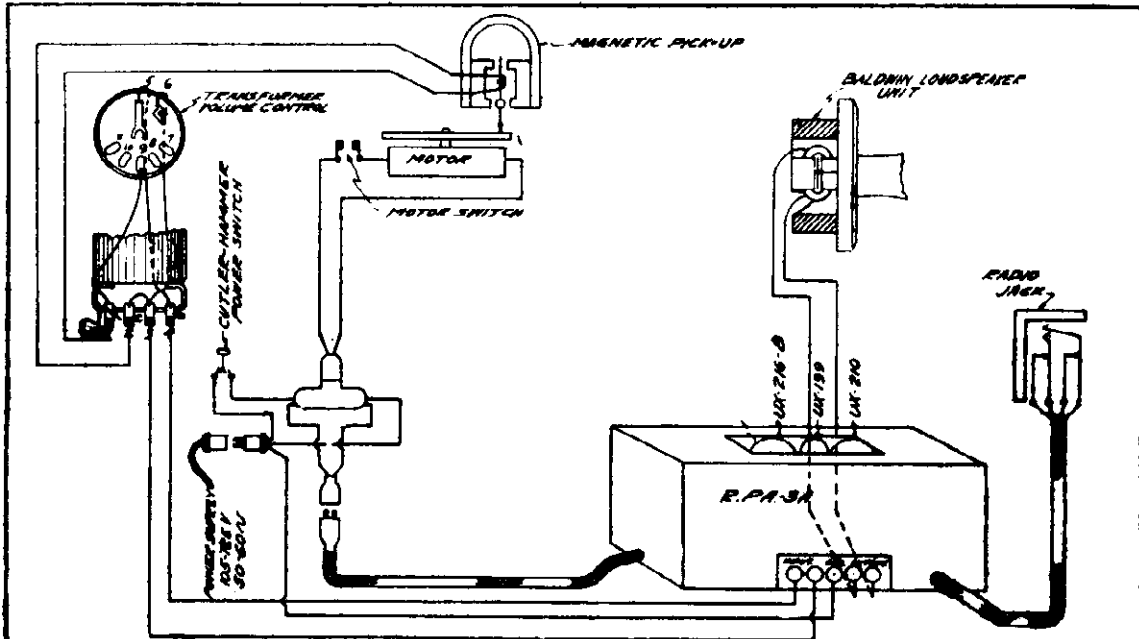
ACTUAL WIRING DIAGRAM OF
SPU-18 AS USED IN PR-17

DATE: 1/25/50
APPROVED: [Signature]
DATE RE-FILED: [Signature]

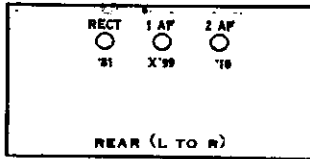
CA-1192

MODEL P-14

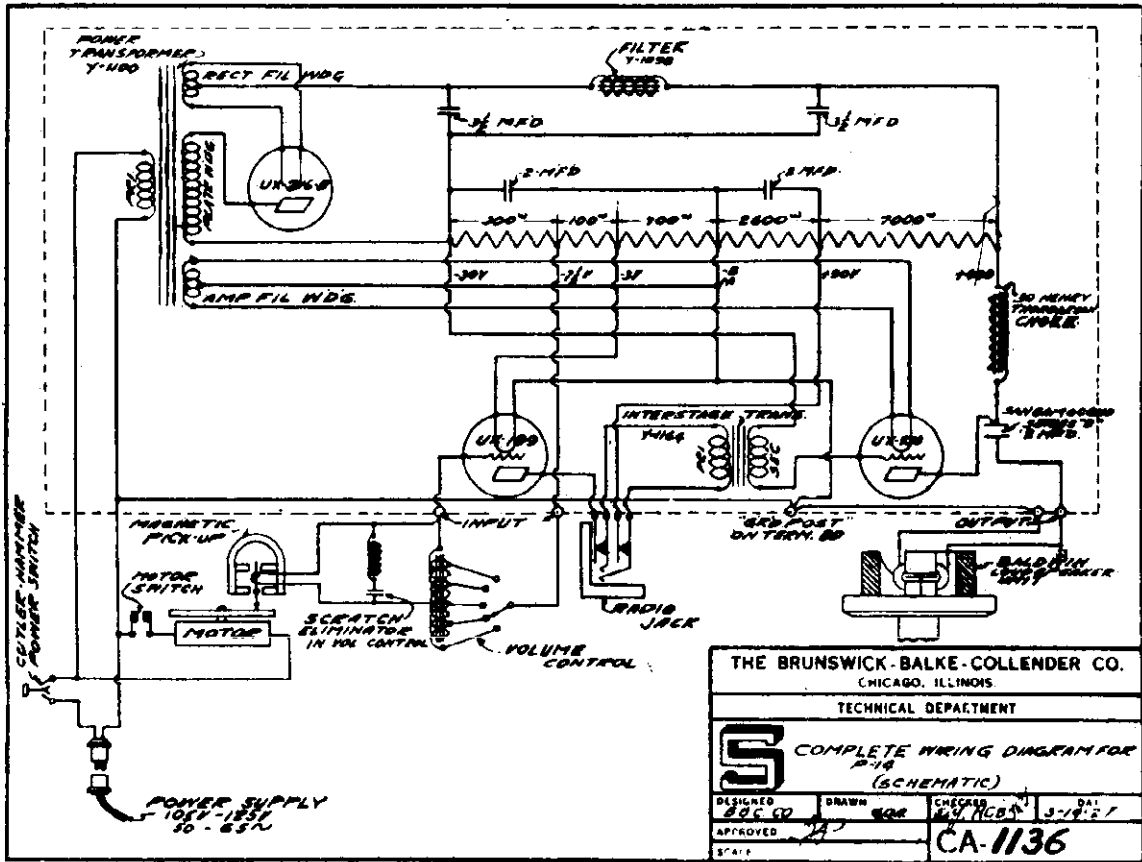
BRUNSWICK RADIO CORPORATION



Models Brunswick Panatropes P2, P9, P14 (1926)



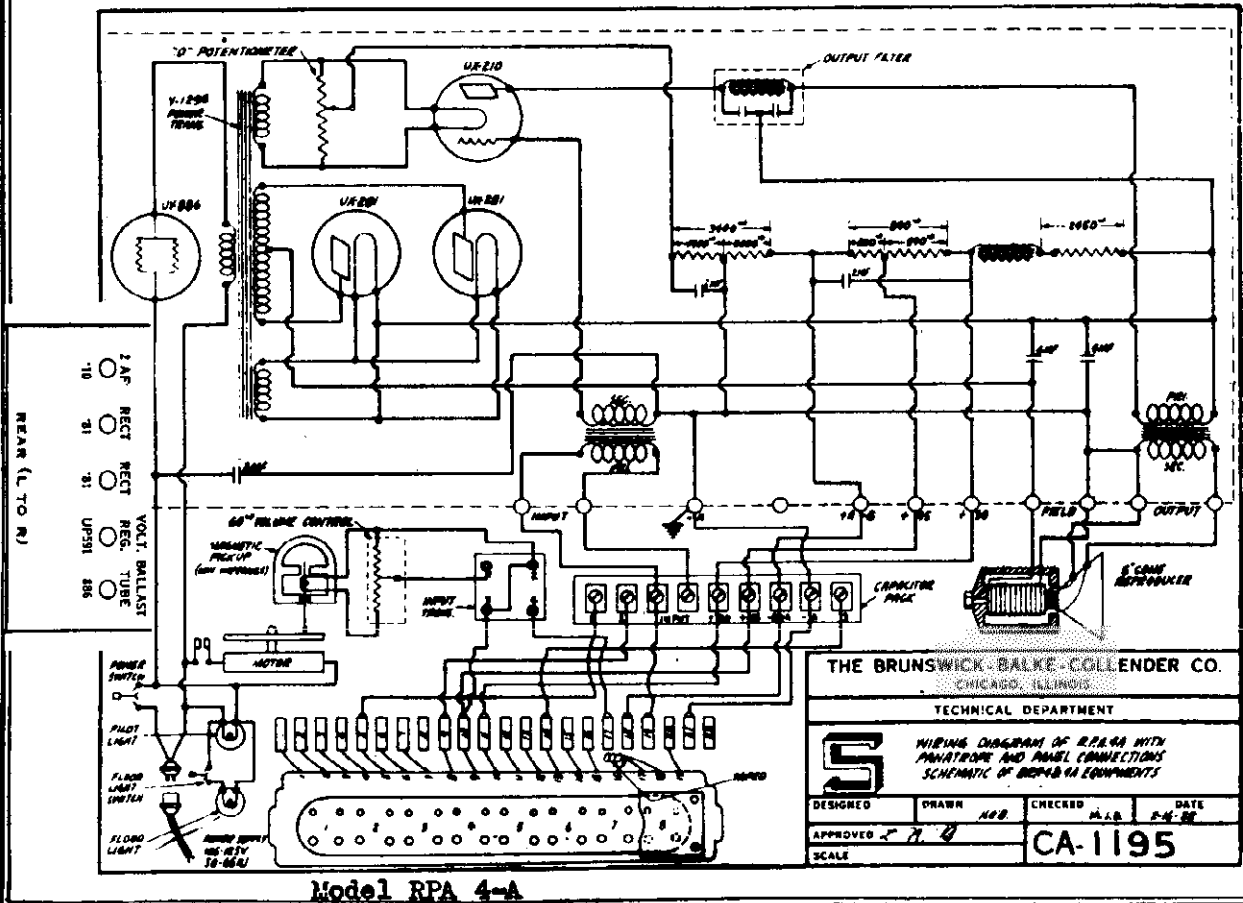
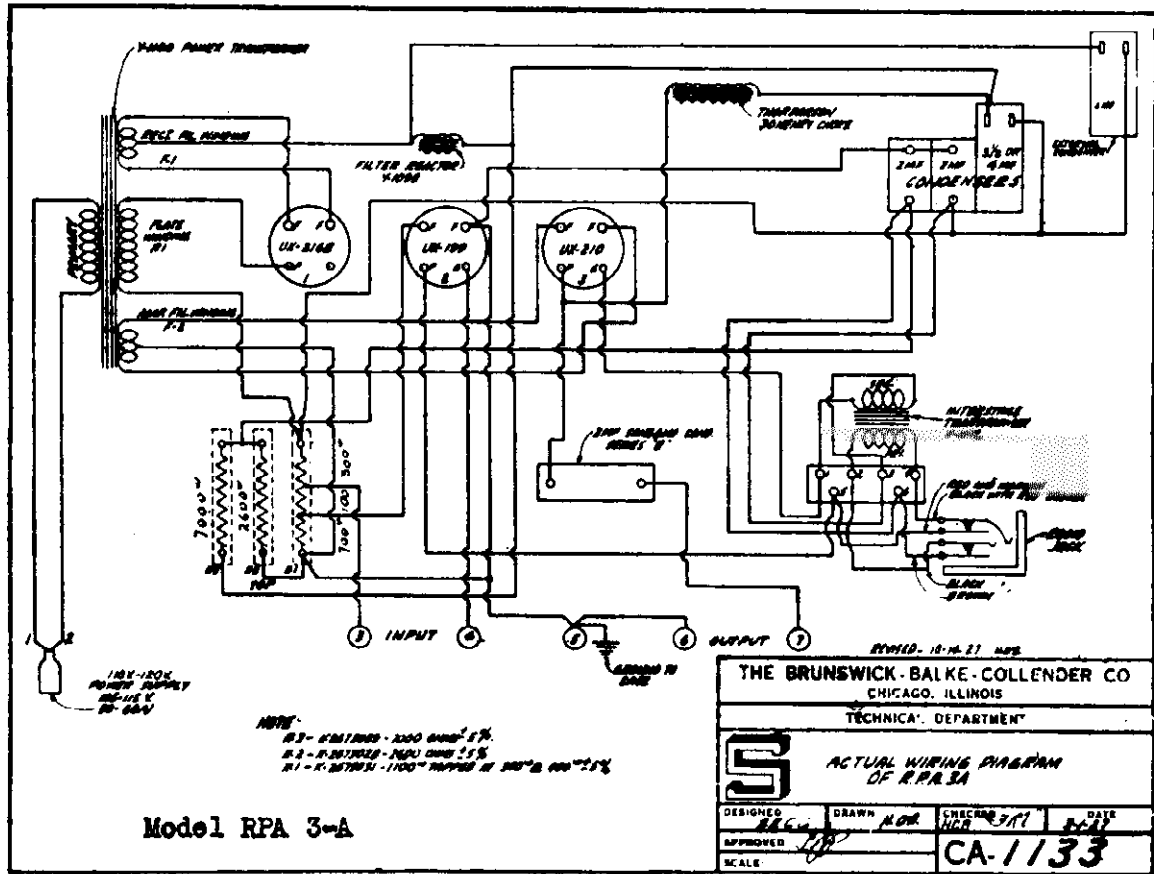
THE BRUNSWICK - BALKE - COLLENDER CO.	
CHICAGO, ILLINOIS	
TECHNICAL DEPARTMENT	
S COMPLETE WIRING DIAGRAM FOR MODEL P-14	
DESIGNED E.C.C. Co.	DATE 5-19-27
APPROVED A	SCALE CA-1128



THE BRUNSWICK - BALKE - COLLENDER CO.	
CHICAGO, ILLINOIS	
TECHNICAL DEPARTMENT	
S COMPLETE WIRING DIAGRAM FOR P-14 (SCHEMATIC)	
DESIGNED E.C.C. Co.	DATE 5-19-27
APPROVED A	SCALE CA-1136

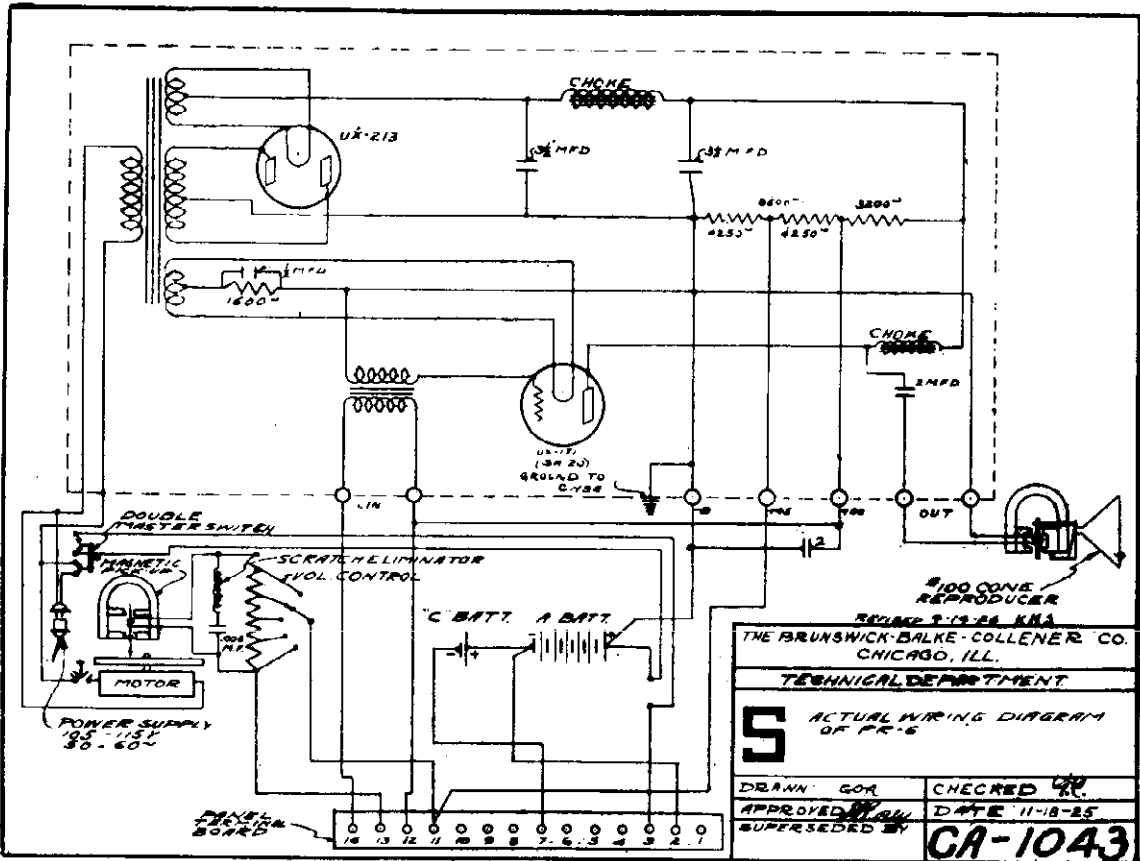
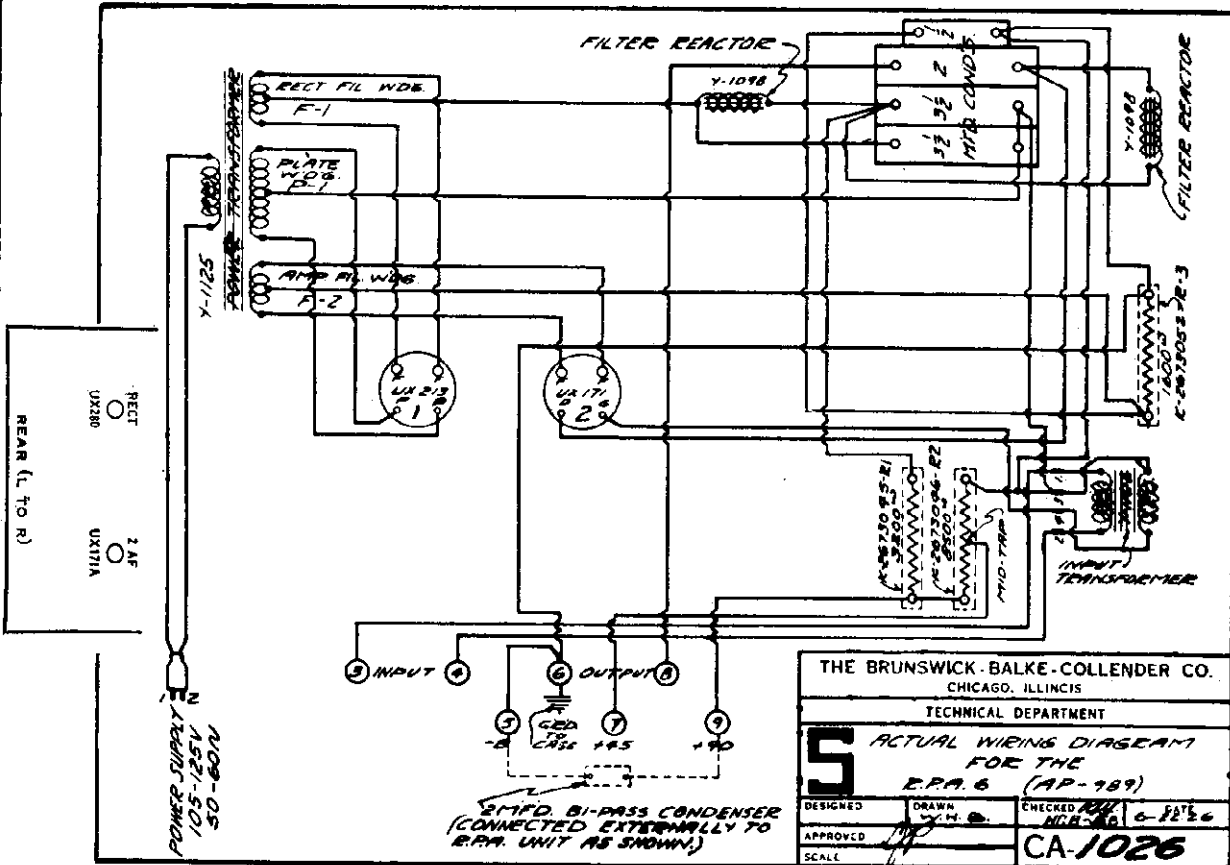
BRUNSWICK RADIO CORPORATION

MODEL RPA-3A
MODEL RPA-4A



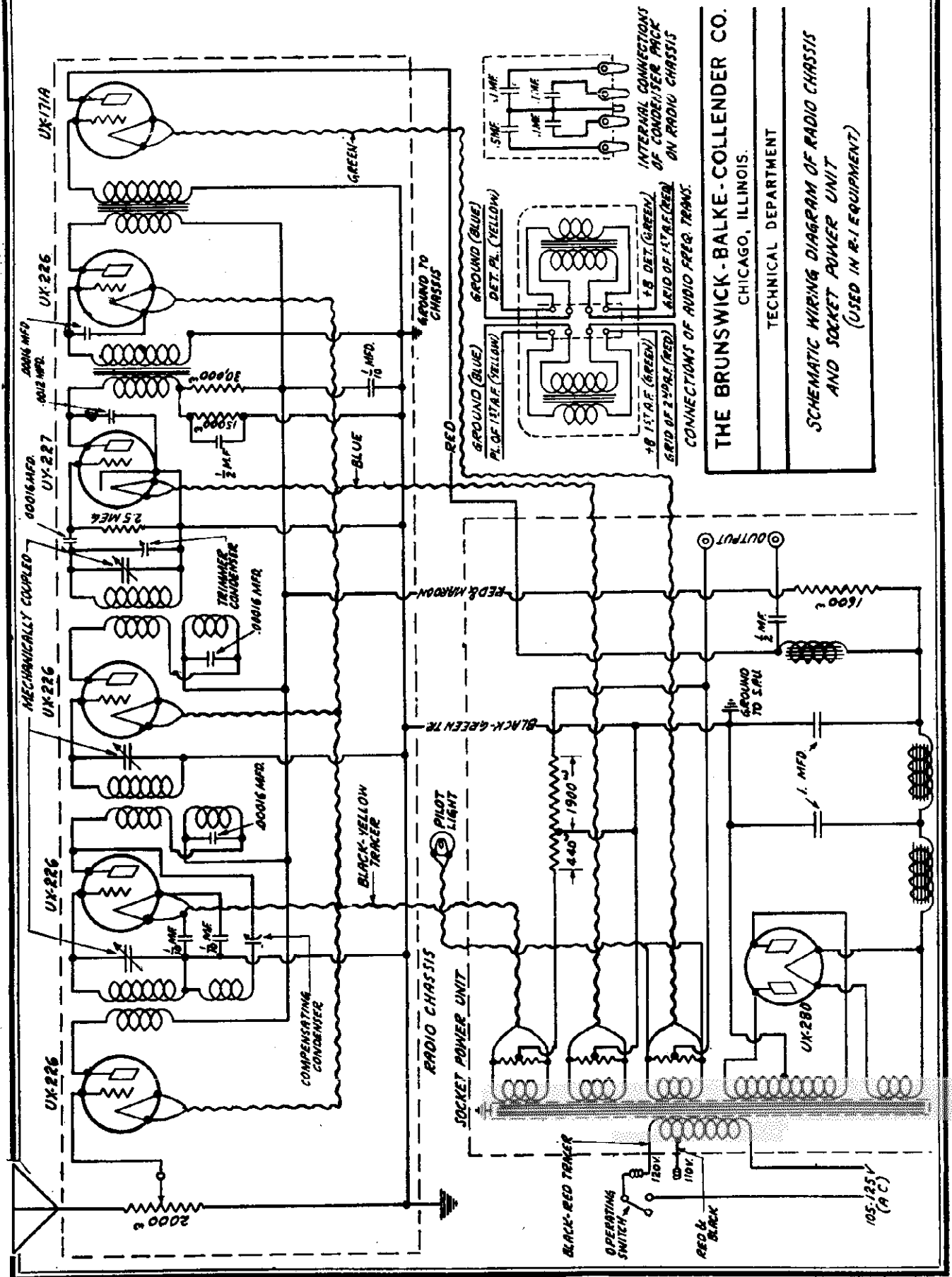
MODEL RPA-6
MODEL PR-6

BRUNSWICK RADIO CORPORATION



BRUNSWICK RADIO CORPORATION

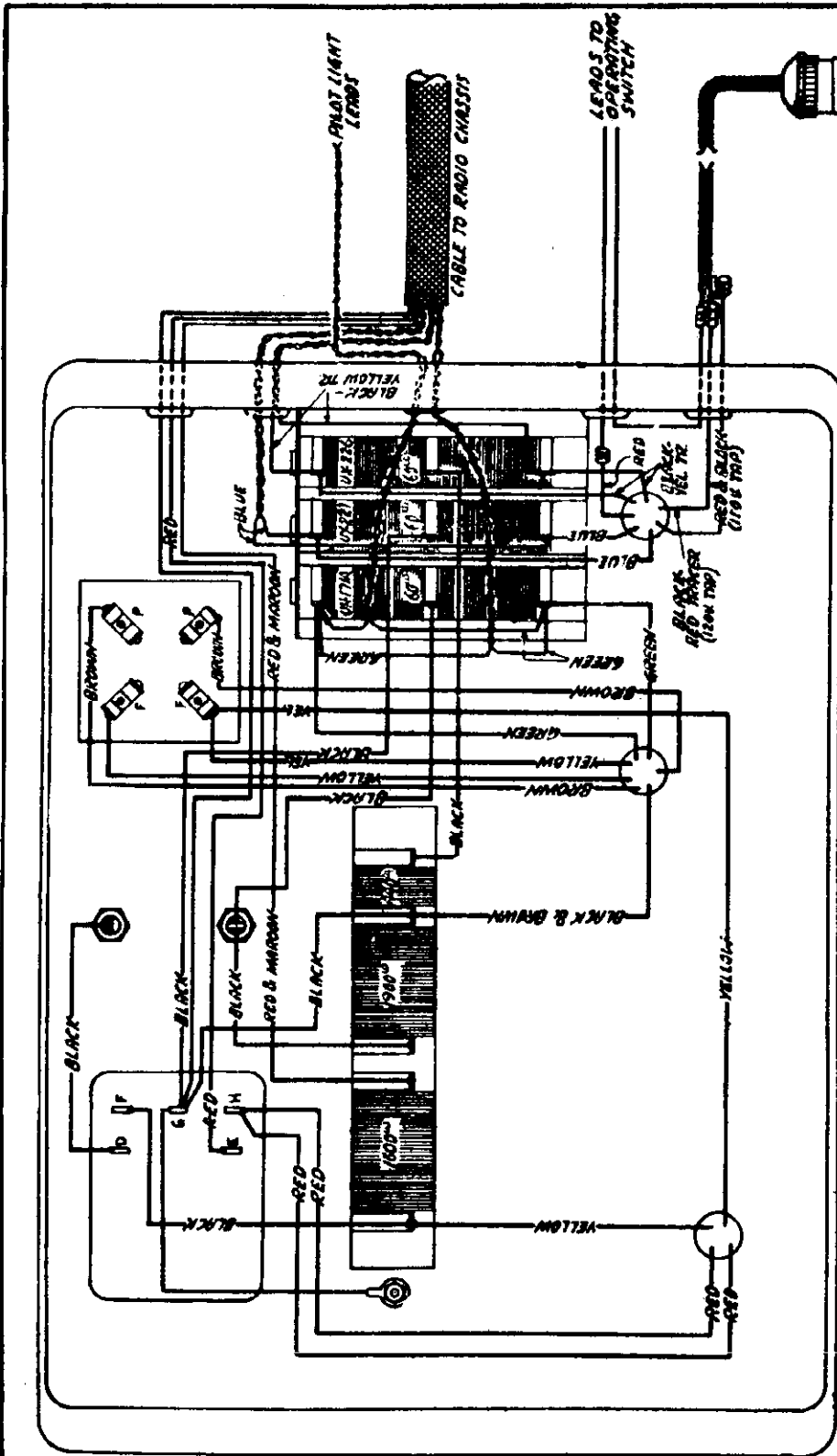
MODEL R-1



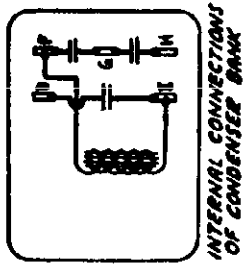
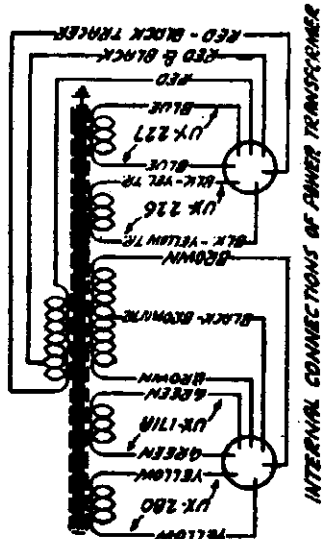
THE BRUNSWICK - BALKE - COLLENDER CO.
 CHICAGO, ILLINOIS.
 TECHNICAL DEPARTMENT
SCHEMATIC WIRING DIAGRAM OF RADIO CHASSIS AND SOCKET POWER UNIT (USED IN R-1 EQUIPMENT)

MODEL R-1
Chassis

BRUNSWICK RADIO CORPORATION



THE BRUNSWICK-BALKE-COLLINDER CO. CHICAGO, ILLINOIS.		TECHNICAL DEPARTMENT	
ACTUAL WIRING DIAGRAM OF SOCKET POWER UNIT (USED IN R-1 EQUIPMENT)			
DESIGNED	DRAWN	CHECKED	DATE
	HOB	G.C.C. DRUG	1-24-29
APPROVED:	H.A.D.		SCALE:
			CA-6060



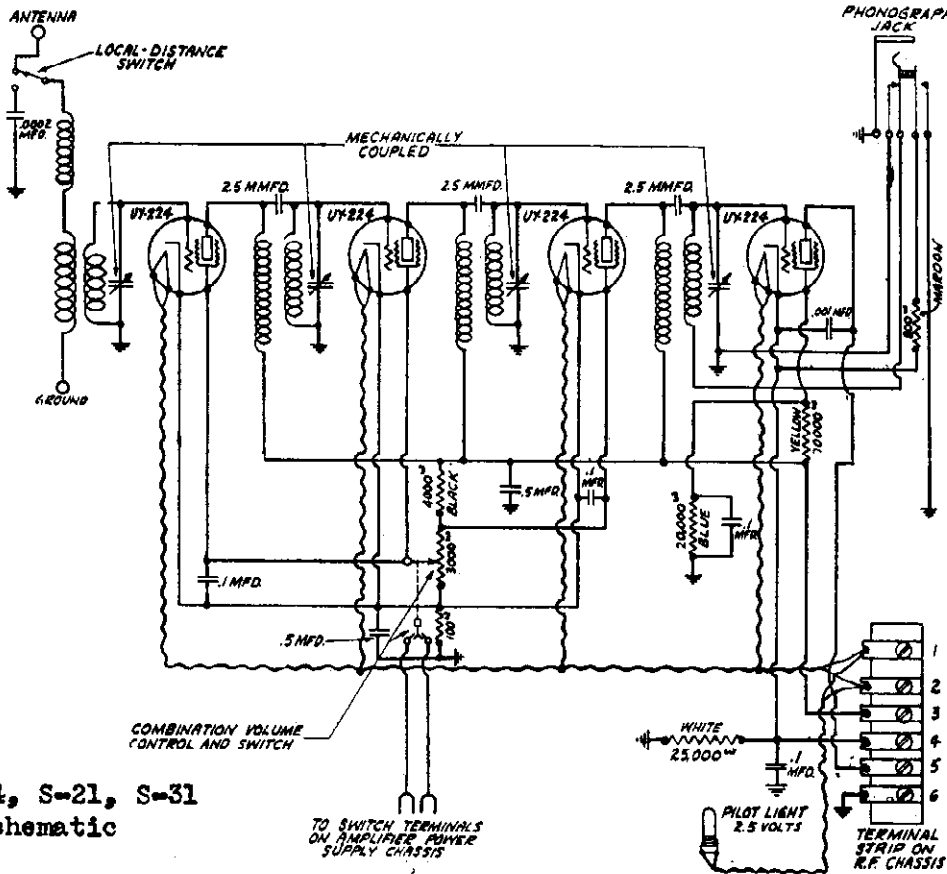
INTERNAL CONNECTIONS OF FILAMENT TRANSFORMER

INTERNAL CONNECTIONS OF CONDENSER BANK

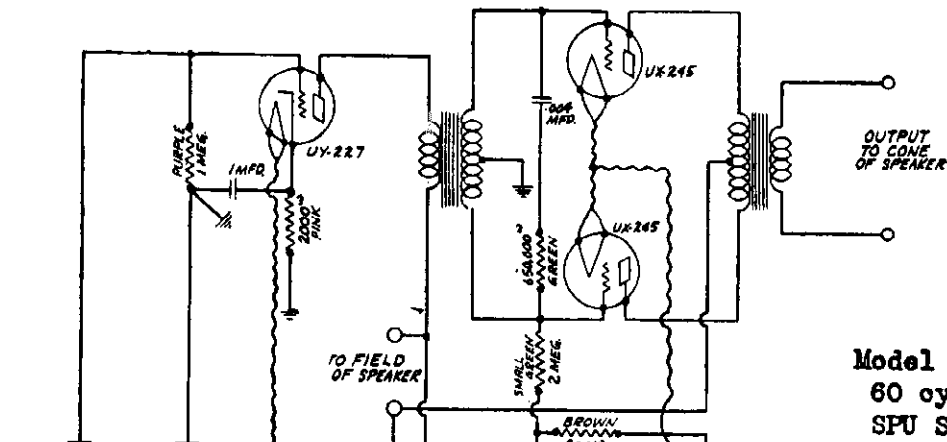
MODEL S-14, S-21,
S-31, S-81, S-82 AC
Radio
Schematic

BRUNSWICK RADIO CORPORATION

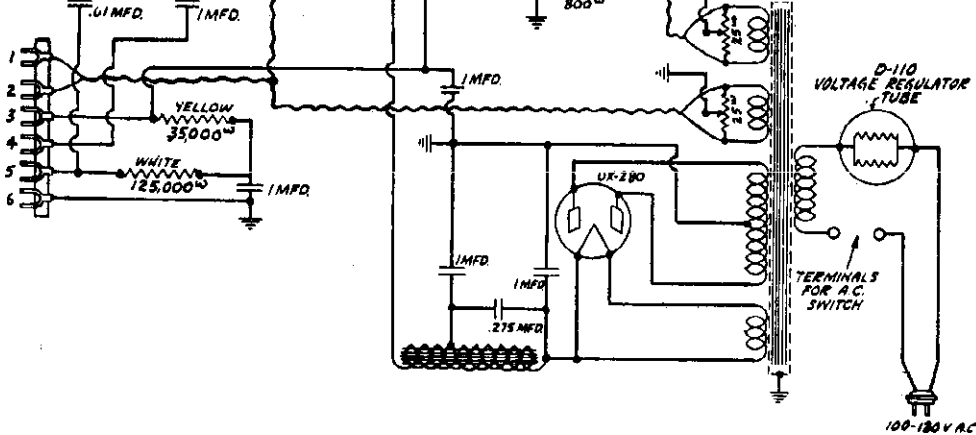
MODEL S-14, S-21
S-81 AF and
SPU
Schematic



Model S-14, S-21, S-31
Radio Schematic

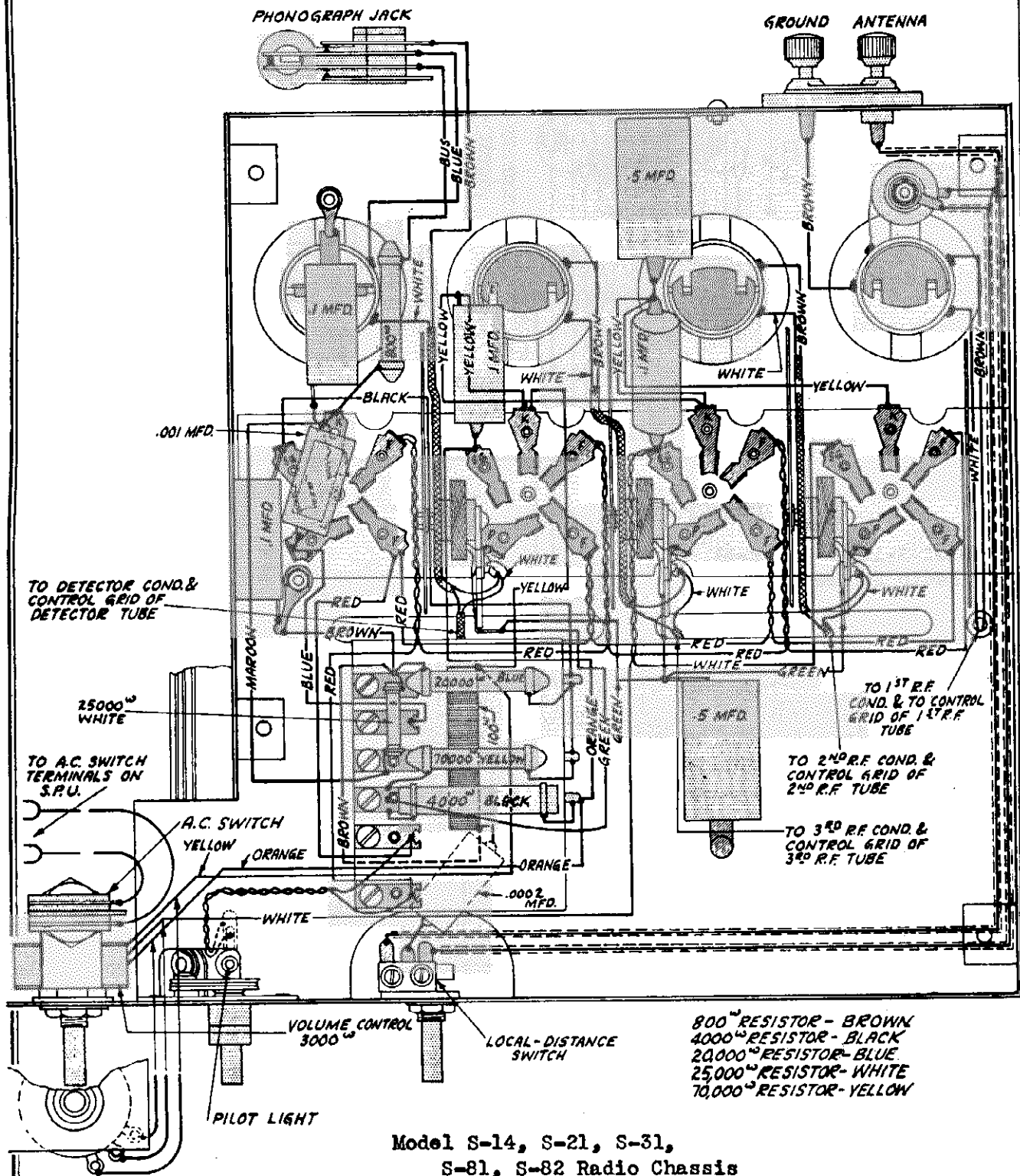


Model S-14, S-21
60 cycle AF and
SPU Schematic



MODEL S-14, S-21, S-31
S-81, S-82 Radio
Chassis

BRUNSWICK RADIO CORPORATION

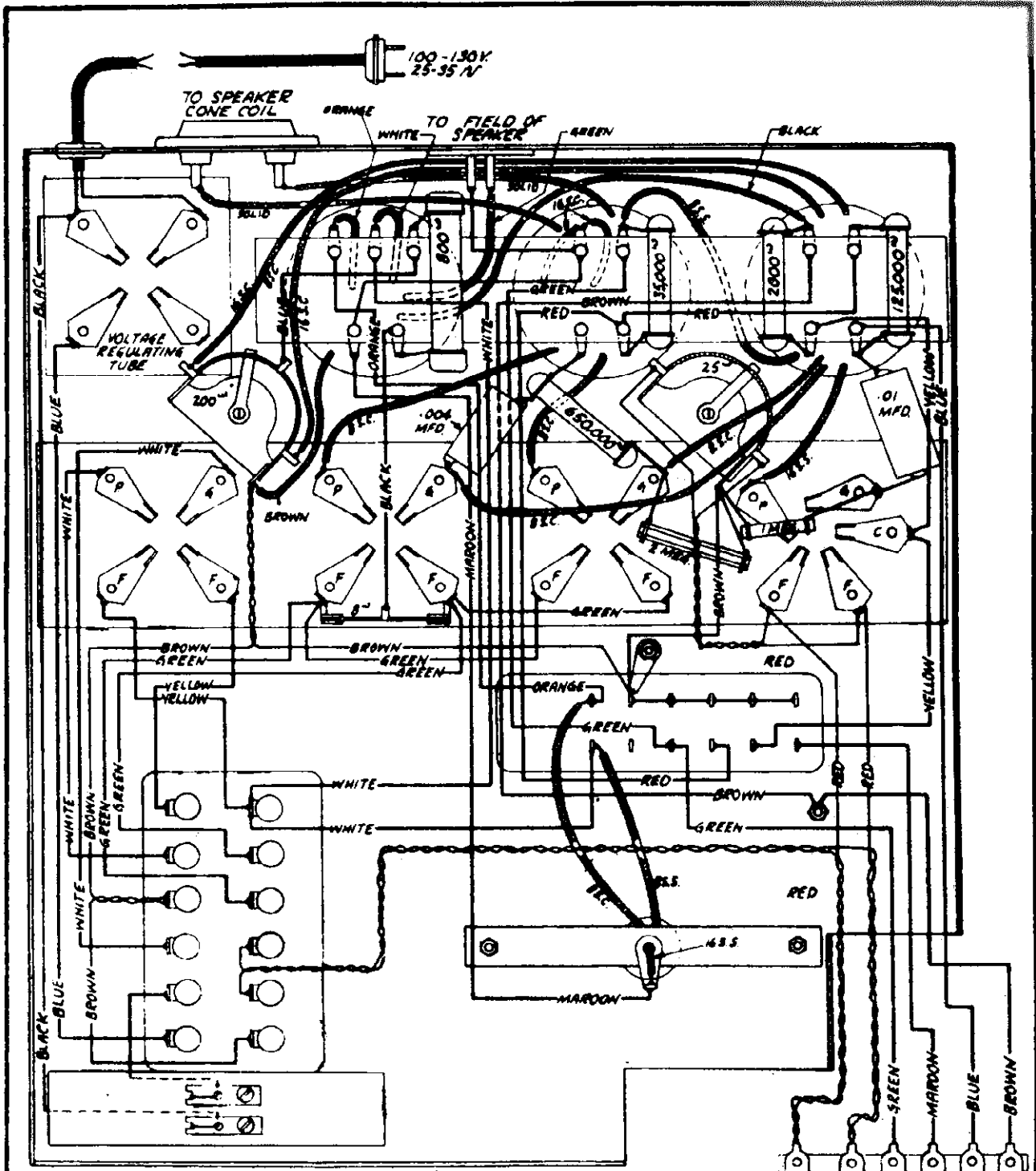


Model S-14, S-21, S-31,
S-81, S-82 Radio Chassis

SCHEMATIC CIRCUIT OF RADIO CHASSIS USING UY-224 TUBES

BRUNSWICK RADIO CORPORATION

MODEL S-14, S-21,
S-81, S-82
25 cycle AF
Chassis

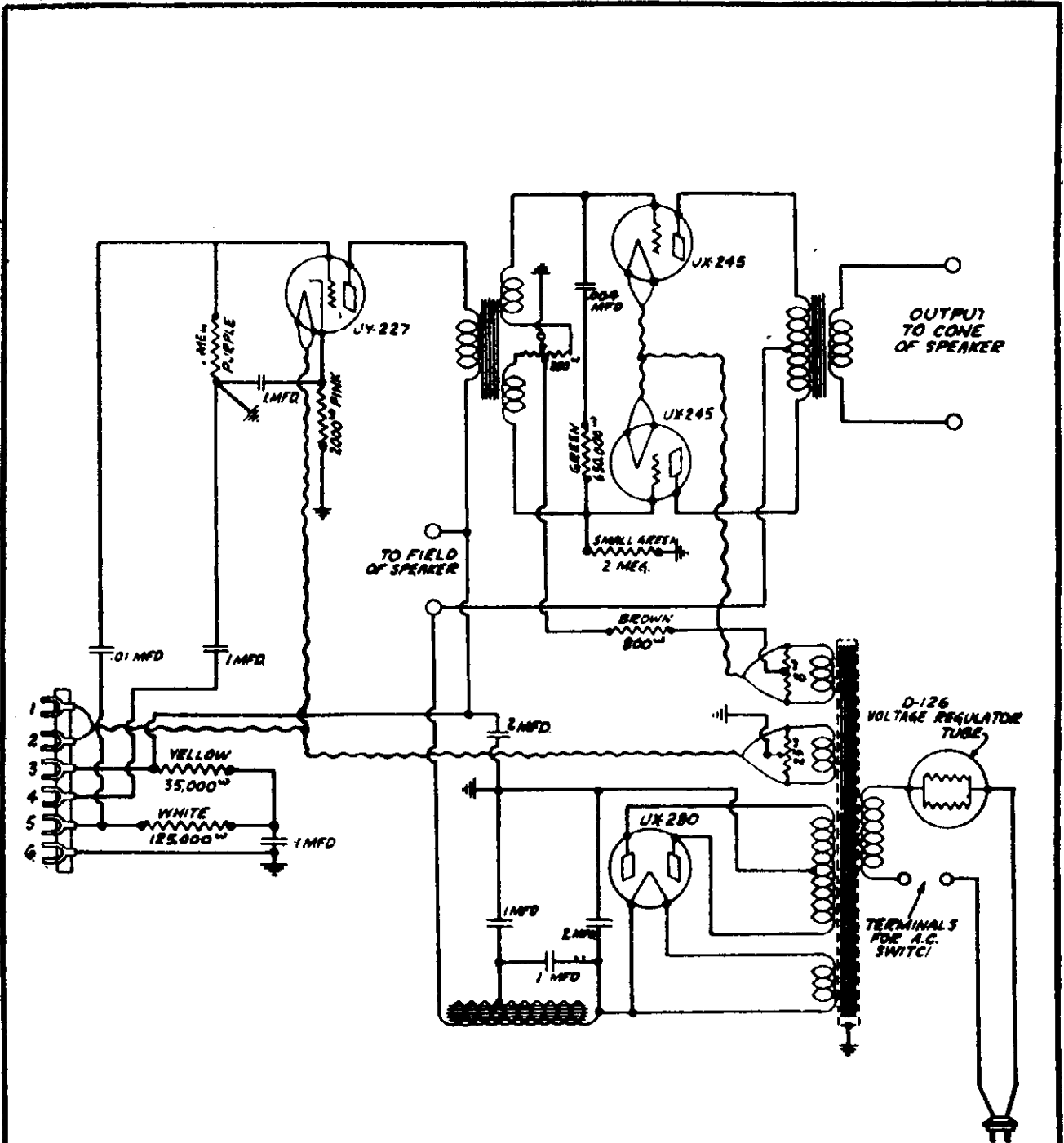


- 800^Ω RESISTOR - BROWN
- 2000^Ω RESISTOR - PINK
- 35000^Ω RESISTOR - ORANGE
- 125000^Ω RESISTOR - WHITE
- 650,000^Ω RESISTOR - GREEN
- 1 MEG RESISTOR - PURPLE
- 2 MEG RESISTOR - LIGHT GREEN

Model S-14, S-21, S-81, S-82 AF Chassis
25 cycle

MODEL S-14, S-21
S-81, S-82 AC
25 cycle AF
Schematic

BRUNSWICK RADIO CORPORATION

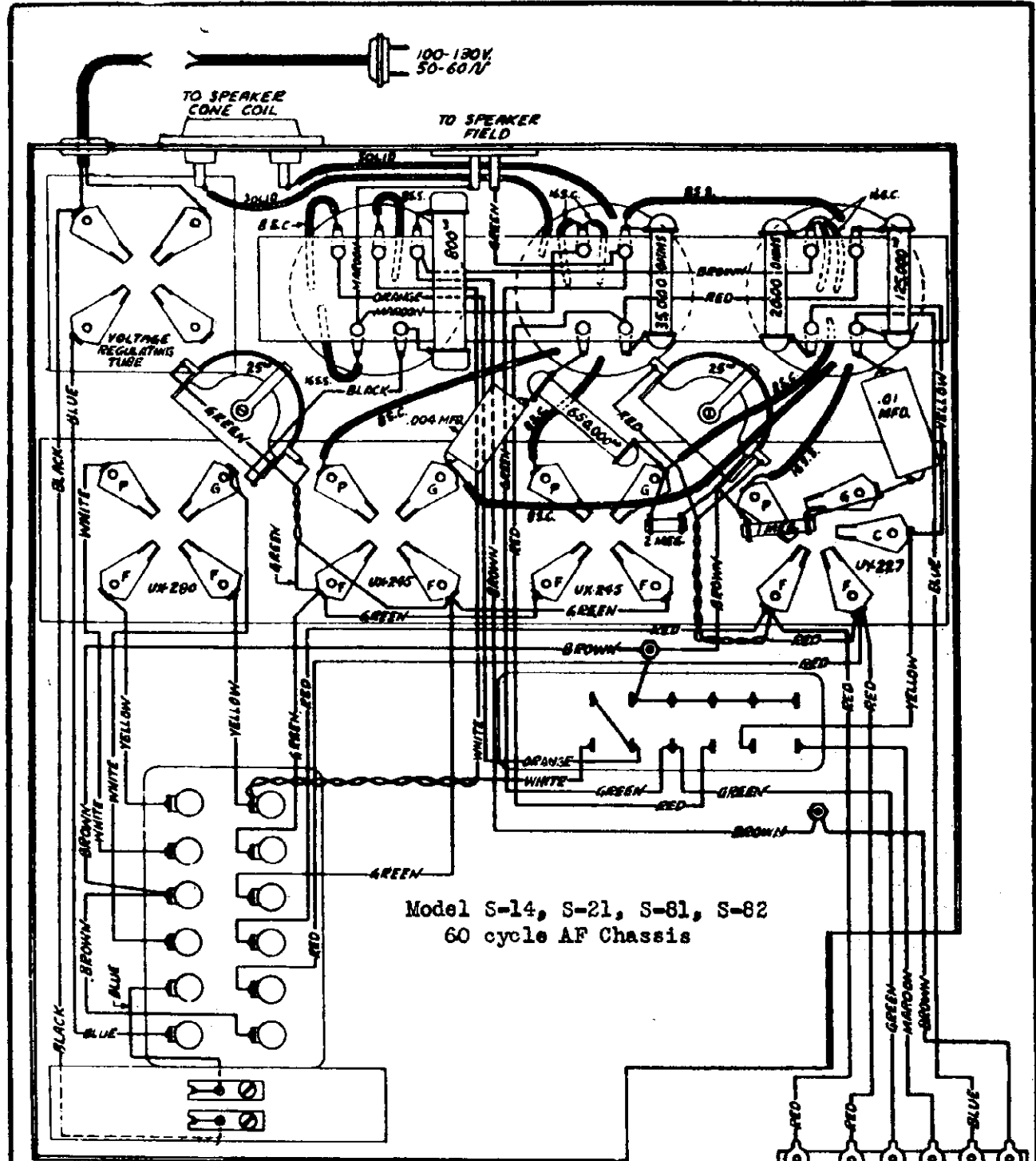


Model S-14, S-21, S-81, S-82
25 cycle AF Schematic

100-130V. A.C.

BRUNSWICK RADIO CORPORATION

MODEL S-14, S-21
S-81, S-82
60 cycle AF
Chassis



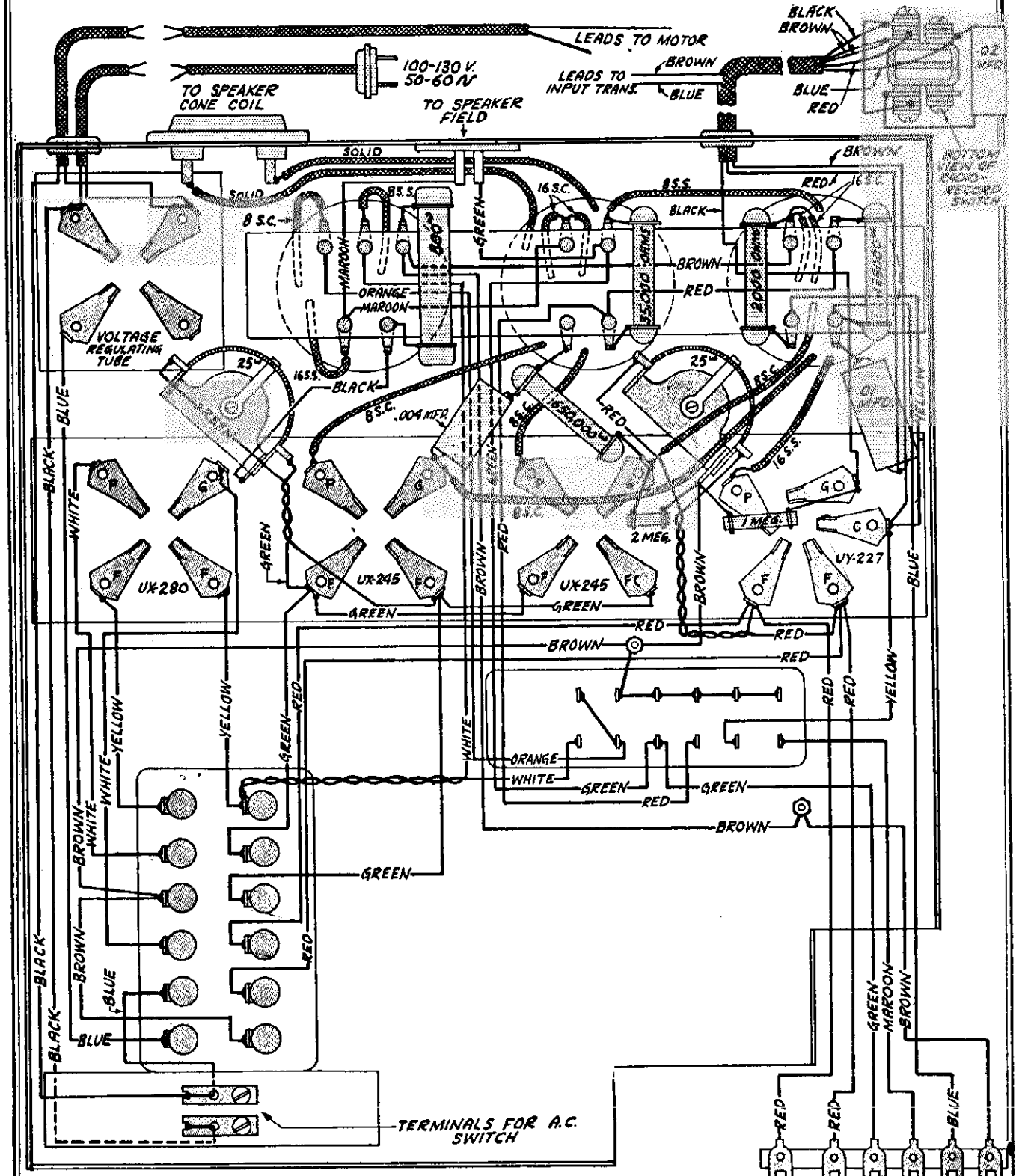
Model S-14, S-21, S-81, S-82
60 cycle AF Chassis

- 600^Ω RESISTOR - BROWN
- 2000^Ω RESISTOR - PINK
- 35000^Ω RESISTOR - ORANGE
- 125000^Ω RESISTOR - WHITE
- 650000^Ω RESISTOR - GREEN
- 1 MEG. RESISTOR - PURPLE
- 2 MEG. RESISTOR - LIGHT GREEN



BRUNSWICK RADIO CORPORATION

MODEL S-31
60 cycle AF
Chassis



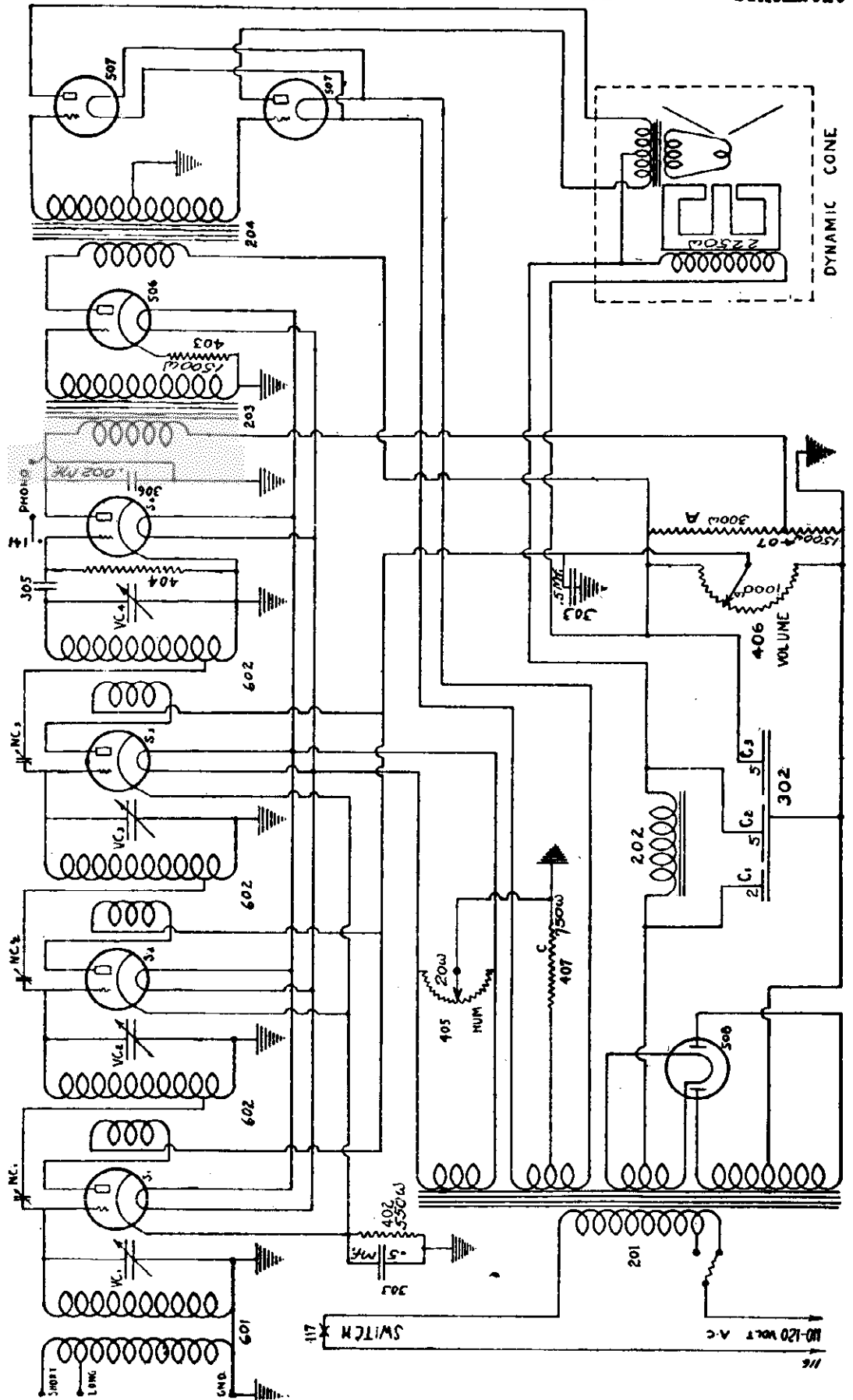
8 S.C. = #8 STRAND COPPER WIRE
 8 S.S. = #8 STRAND SILVER WIRE
 16 S.C. = #16 STRAND COPPER WIRE
 16 S.S. = #16 STRAND SILVER WIRE

800^Ω RESISTOR - BROWN
 2000^Ω RESISTOR - PINK
 35000^Ω RESISTOR - ORANGE
 125,000^Ω RESISTOR - WHITE
 650,000^Ω RESISTOR - GREEN
 1 MEG. RESISTOR - PURPLE
 2 MEG. RESISTOR - GREEN

ACTUAL WIRING DIAGRAM OF AUDIO AMPLIFIER POWER SUPPLY CHASSIS USED S-31 COMBINATION 6083

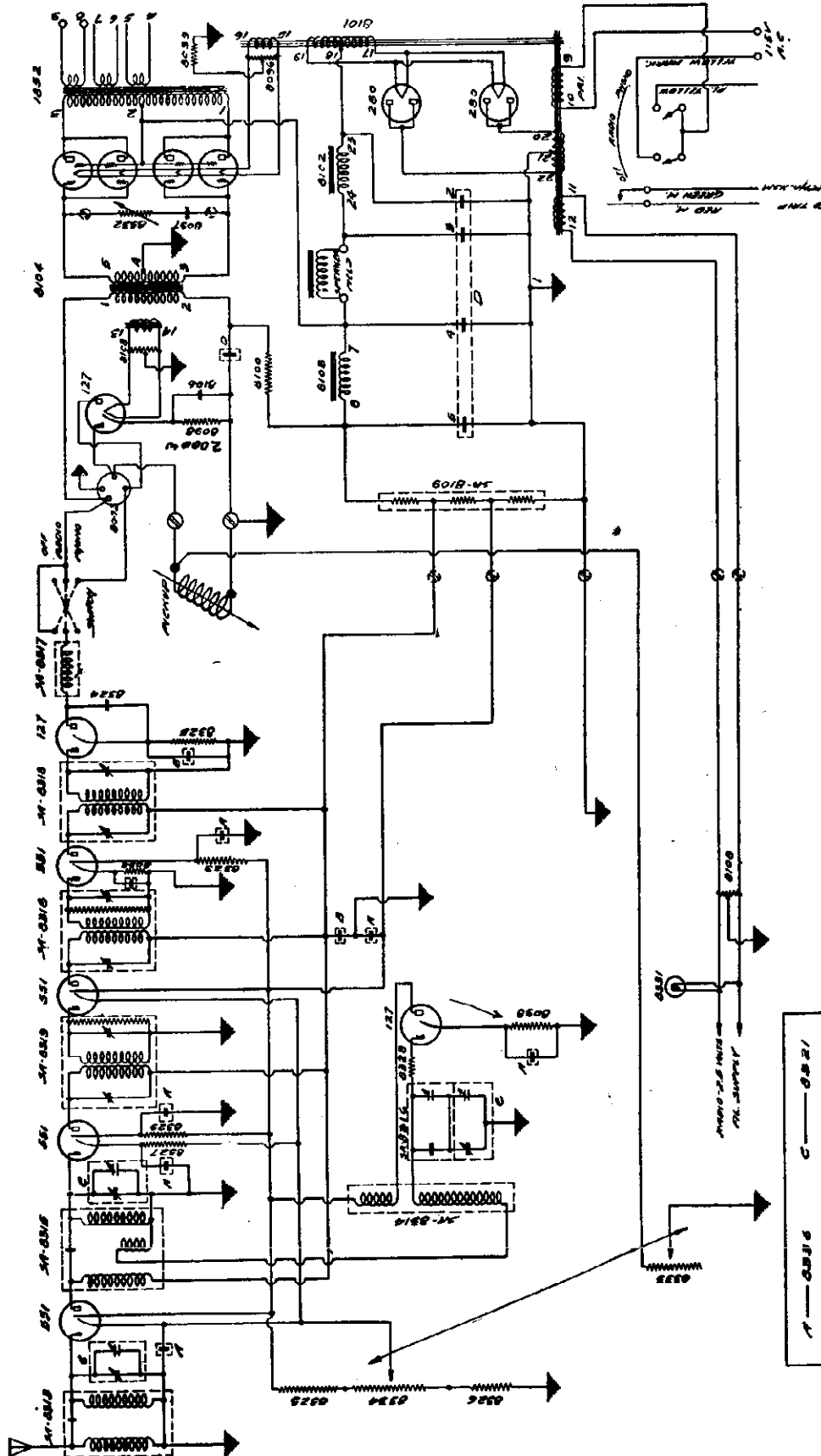
BUSH & LANE PIANO COMPANY

MODEL 10 Schematic



CAPEHART CORPORATION

MODEL 400, 401, 402
Schematic



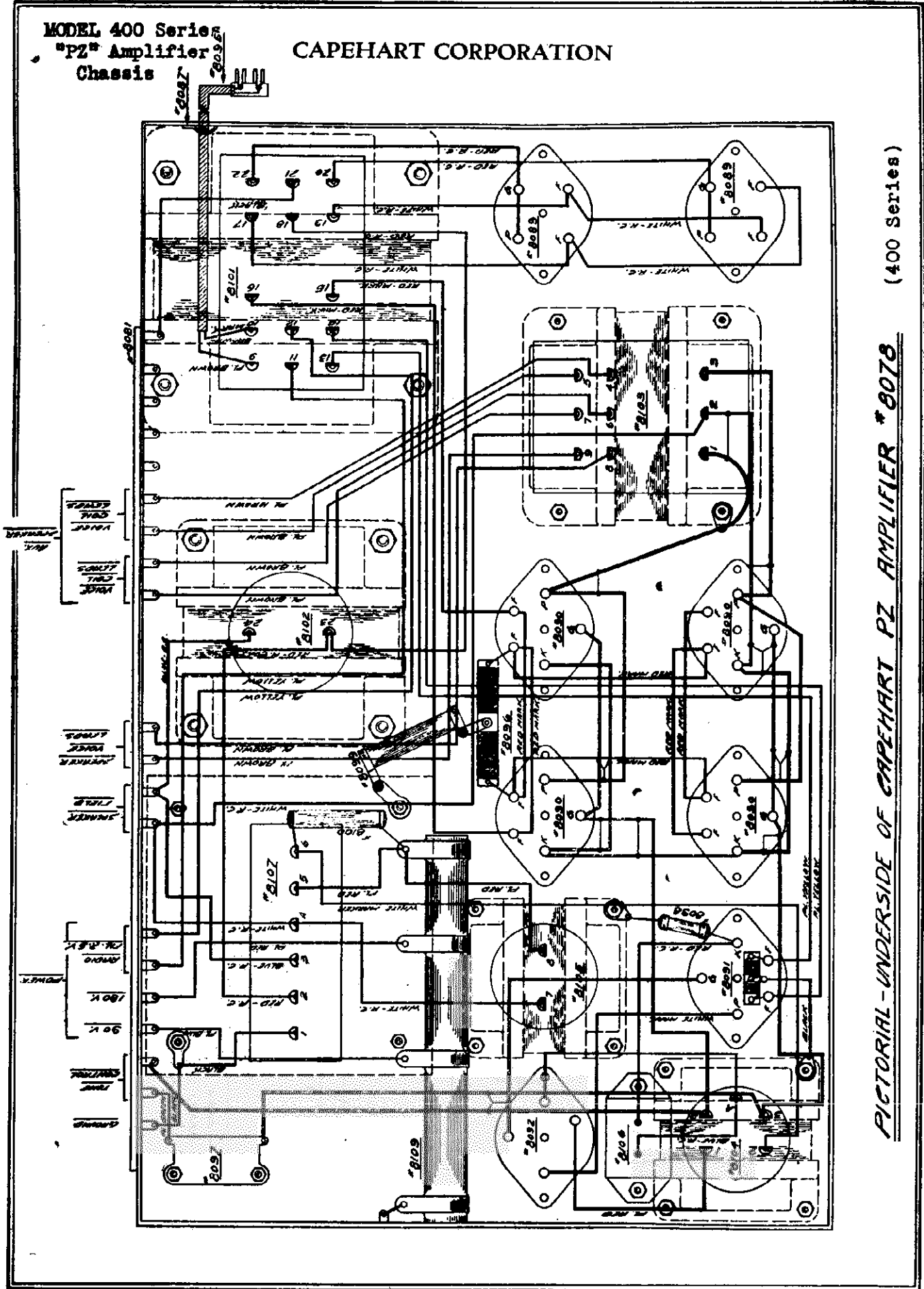
SCHEMATIC - CAPEHART TUNER & AMPLIFIER "400" - "401" - "402"

- 8096 - Large 10 ohm CT
- 8097 - .004 mfd
- 8098 - 2000 ohms
- 8099 - 105 ohms
- 8100 - 11000 ohms
- 8108 - Small 10 ohm CT
- 8106 - Pentode bias cond. 300 mfd
- 8107 - 5 section cond. 24 mfd
- 8109 - 6250 ohms
- 8323 - 20 megohms
- 8325 - 30000 ohms
- 8326 - 200 ohms
- 8327 - 1800 ohms
- 8328 - 5000 ohms
- 8329 - 300 ohms
- 8330 - .0009 mfd
- 8331 - 2.5 volt lamps



MODEL 400 Series
"PZ" Amplifier
Chassis

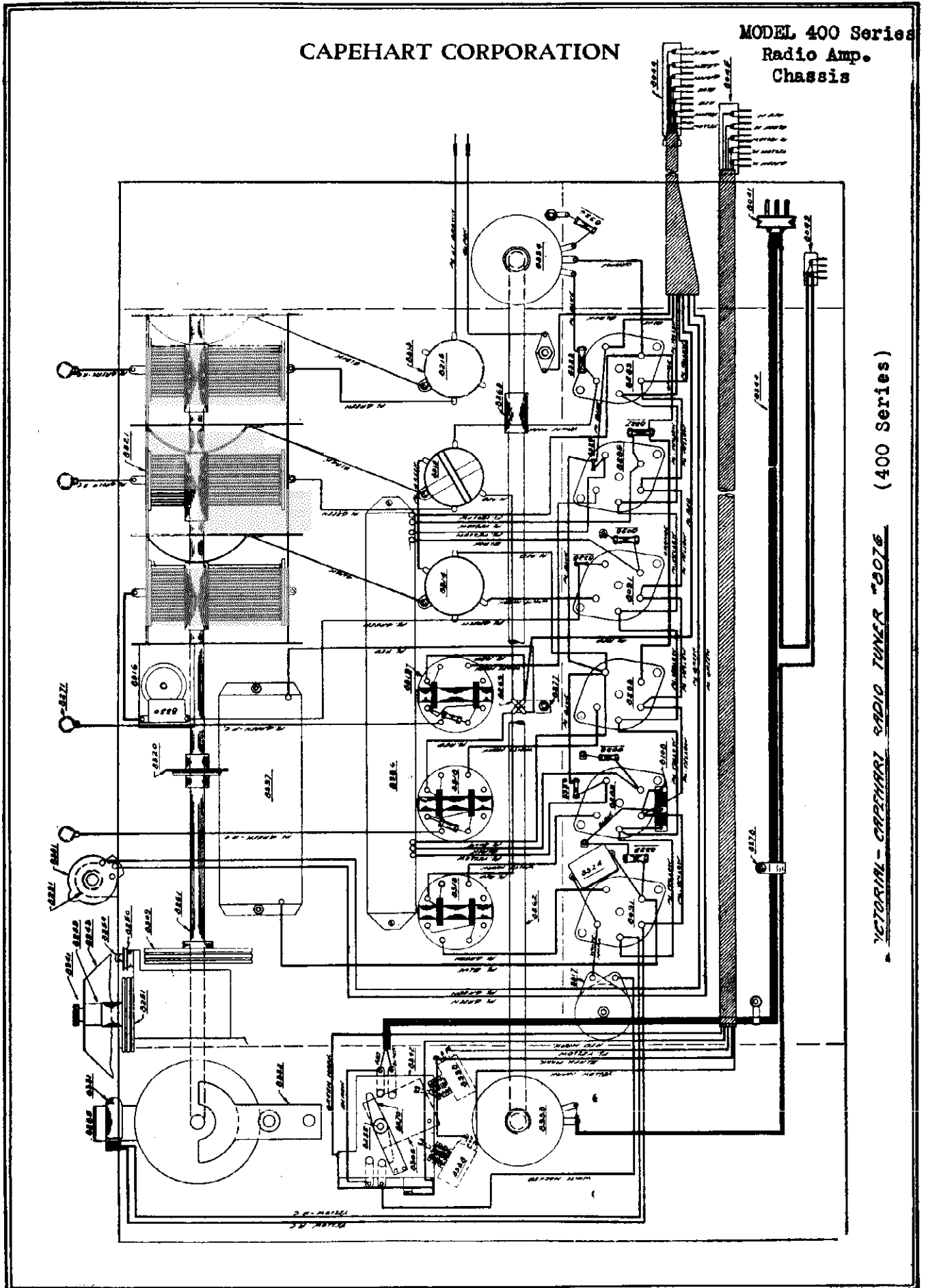
CAPEHART CORPORATION



PICTORIAL - UNDERSIDE OF CAPEHART PZ AMPLIFIER *8078 (400 Series)

CAPEHART CORPORATION

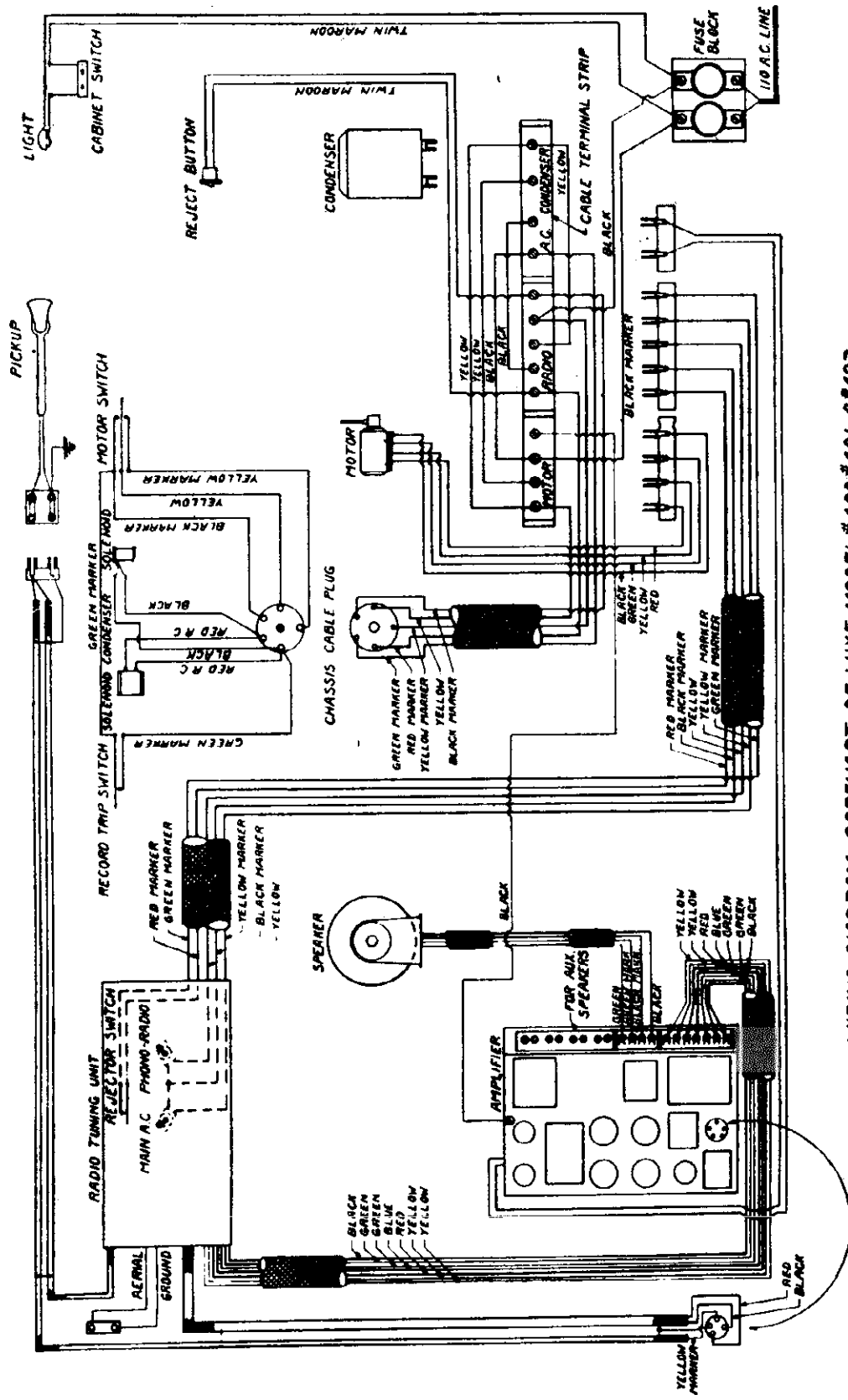
MODEL 400 Series
Radio Amp.
Chassis



VICTORIAN - CAPEHART RADIO TUNER "5076" (400 Series)

MODEL 400, 401, 402
Complete Wiring

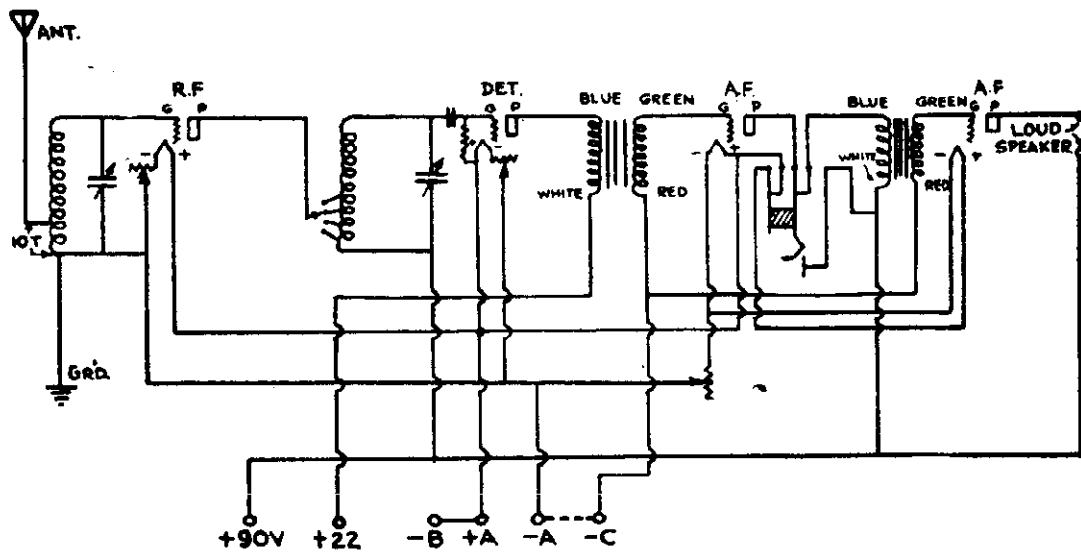
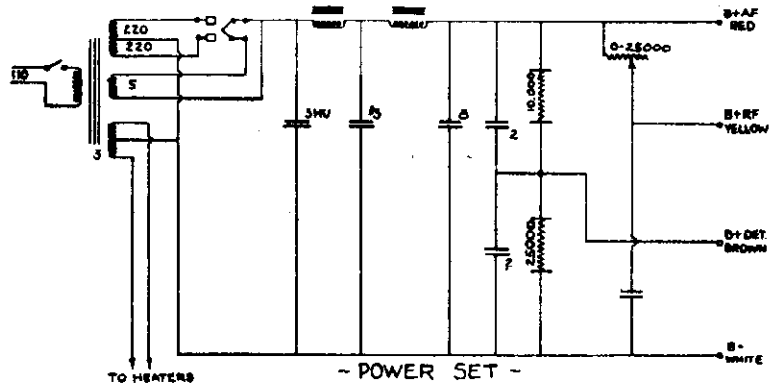
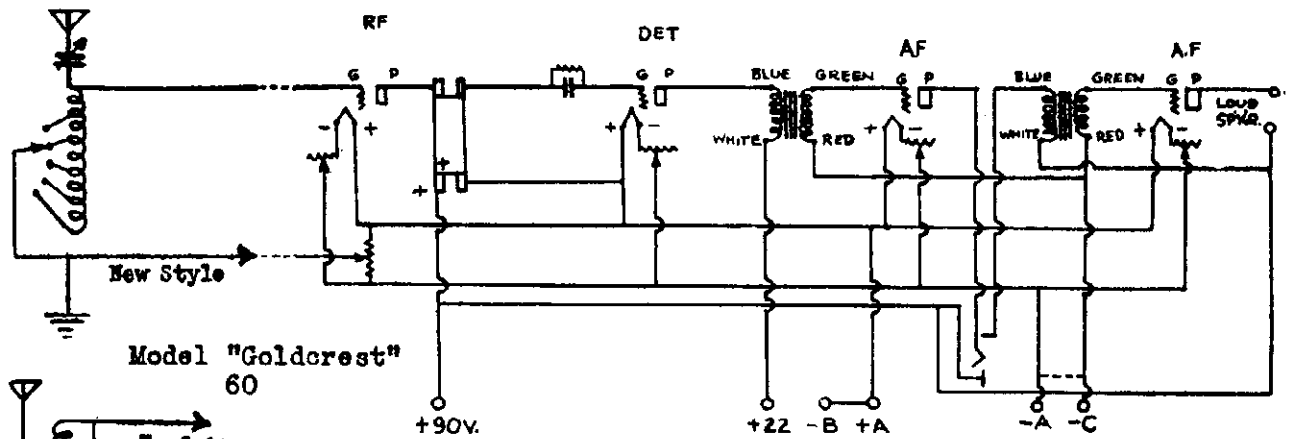
CAPEHART CORPORATION



WIRING DIAGRAM CAPEHART DE LUXE MODEL #400 #401 & #402

CLEARTONE RADIO CORPORATION

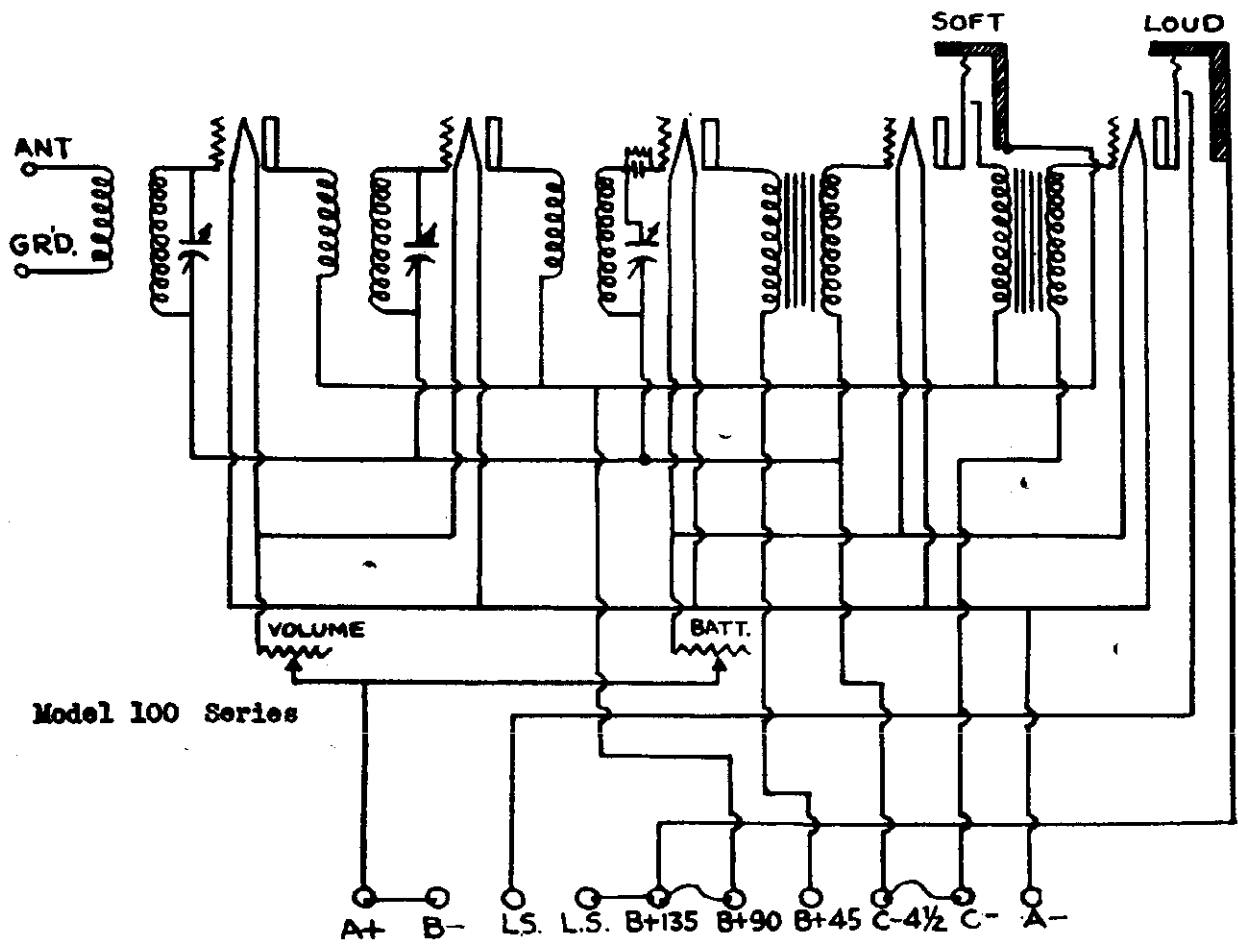
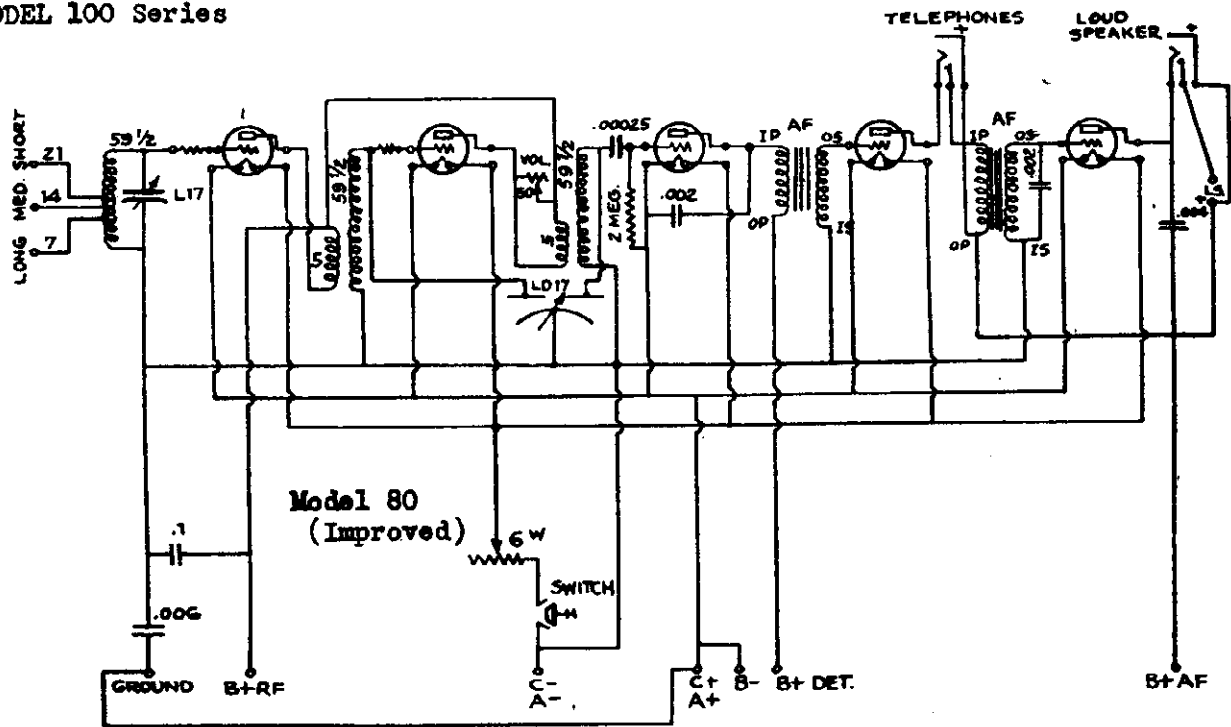
MODEL 60
 Goldcrest
 MODEL 70
 Clearodyne



Model Clearodyne 70

MODEL 80
 (Improved)
 MODEL 100 Series

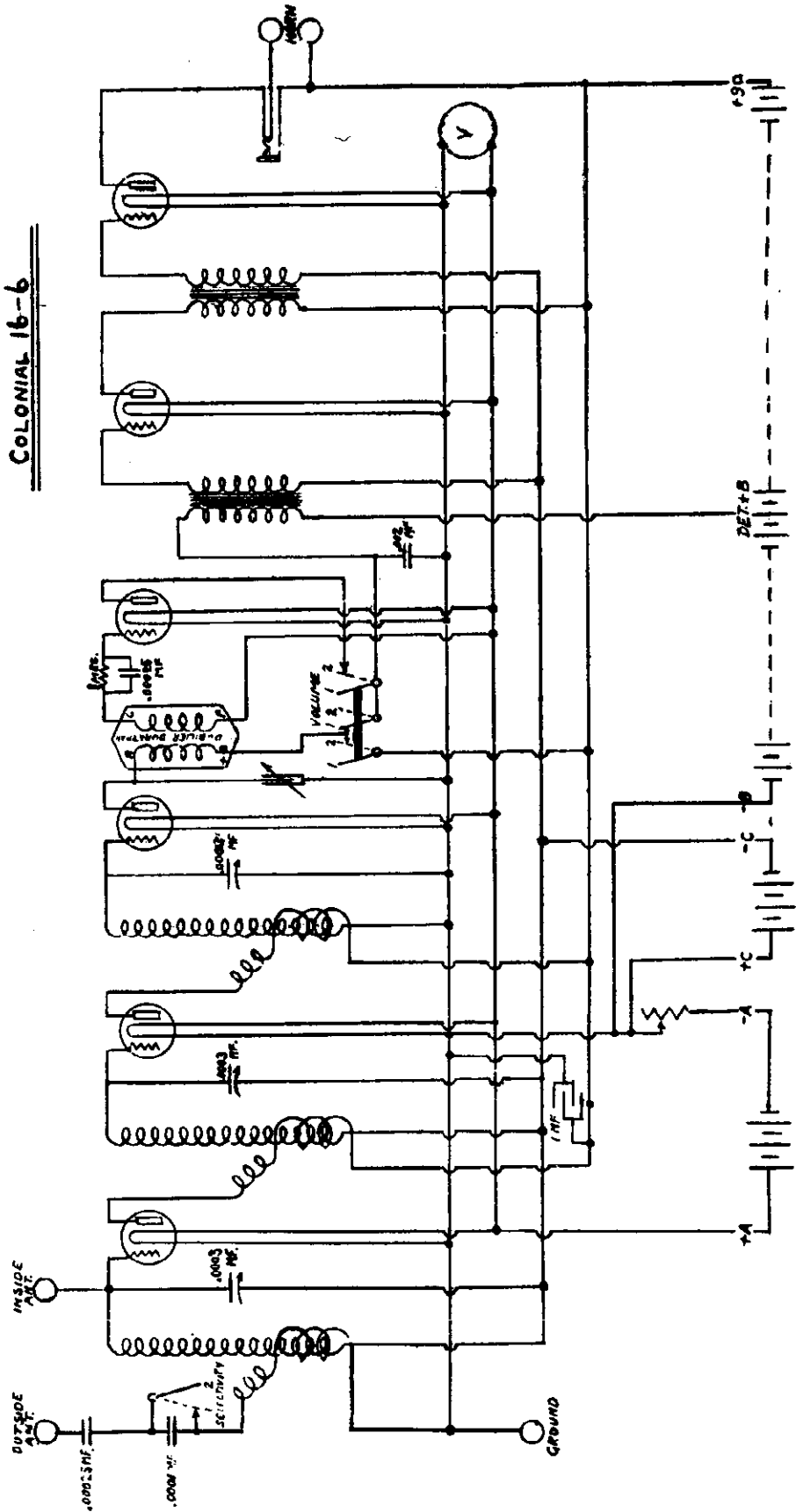
CLEAR TONE RADIO CORPORATION



COLONIAL RADIO CORP.

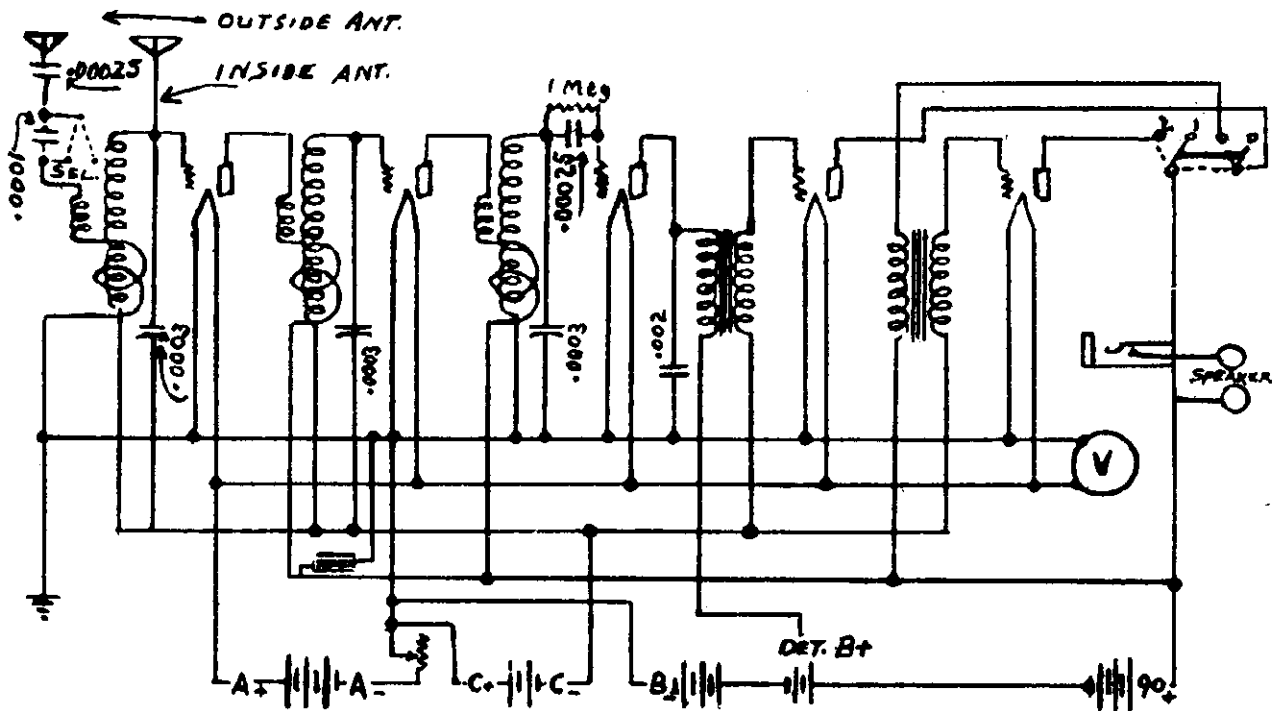
MODEL 16-6

COLONIAL 16-6

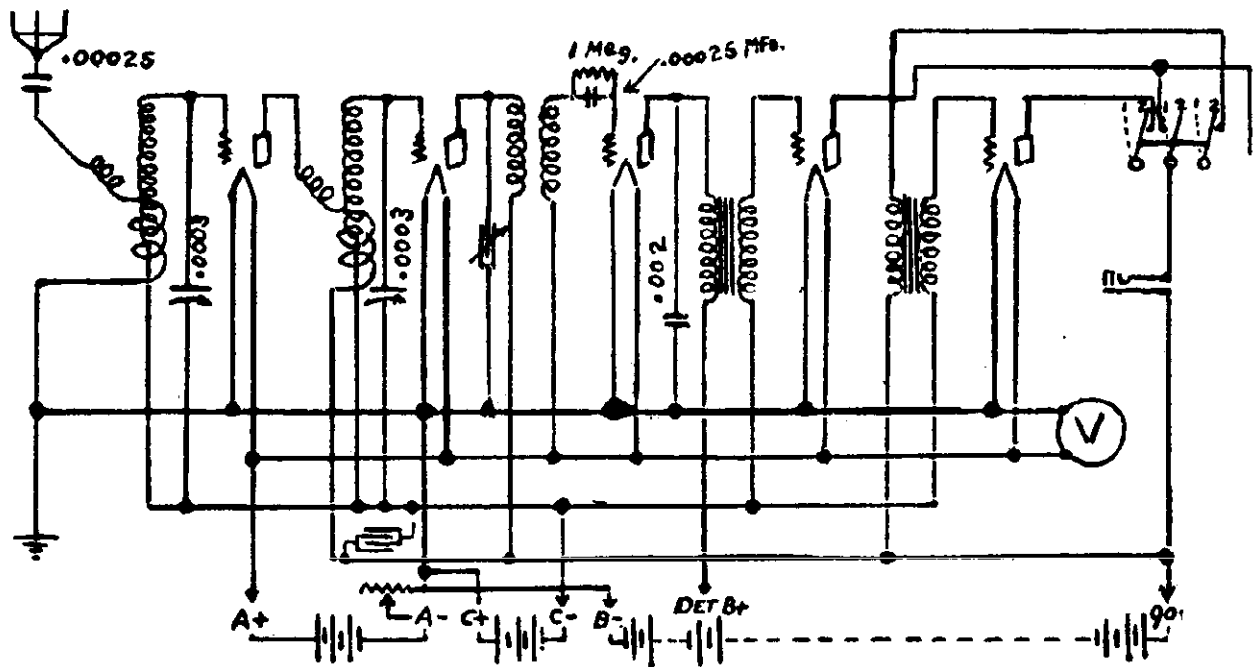


MODEL 16-5
MODEL 17-5

COLONIAL RADIO CORP.



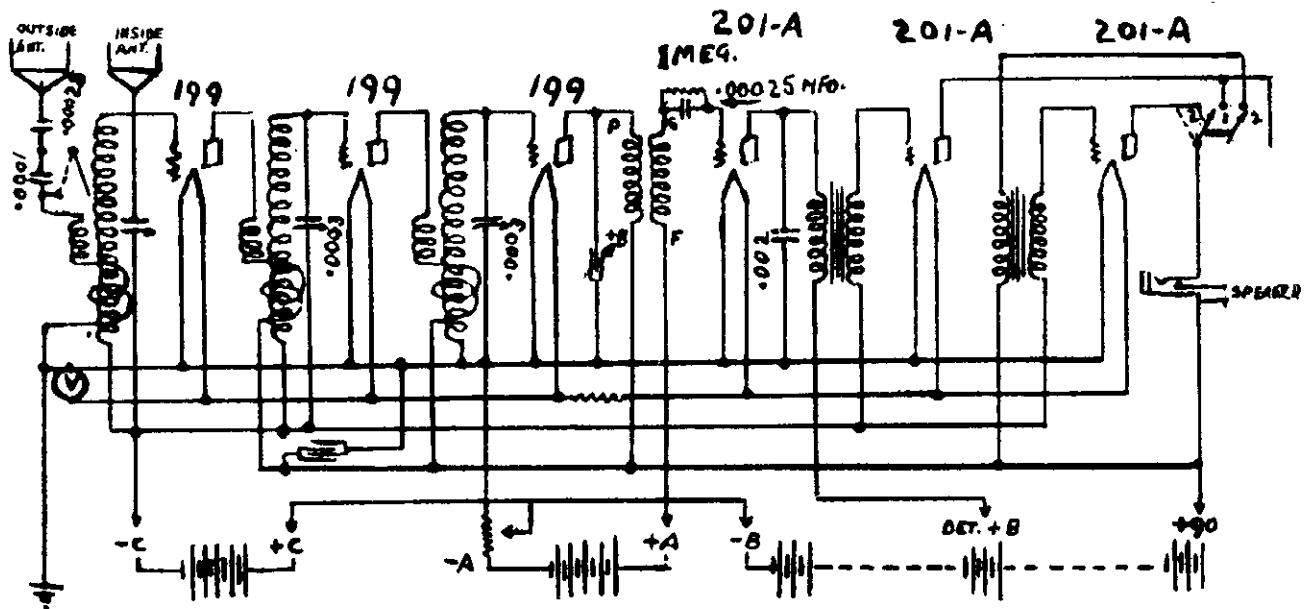
Model 16-5



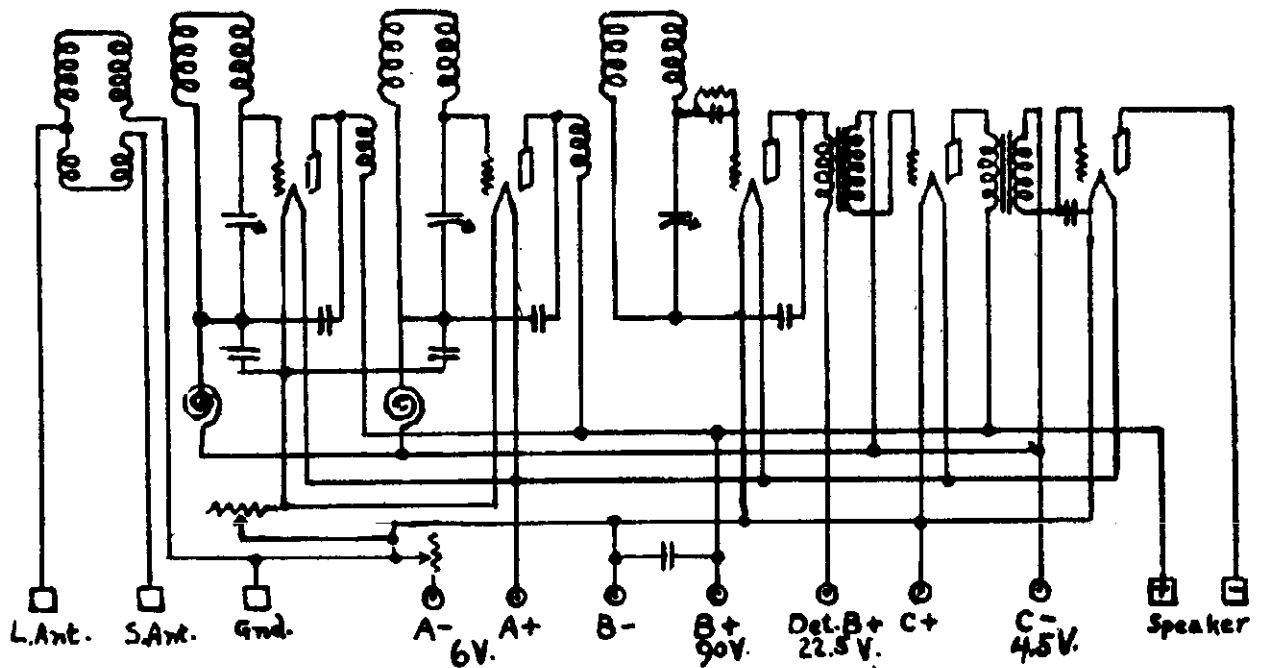
Model 17-5

COLONIAL RADIO CORP.

MODEL 20
MODEL 21



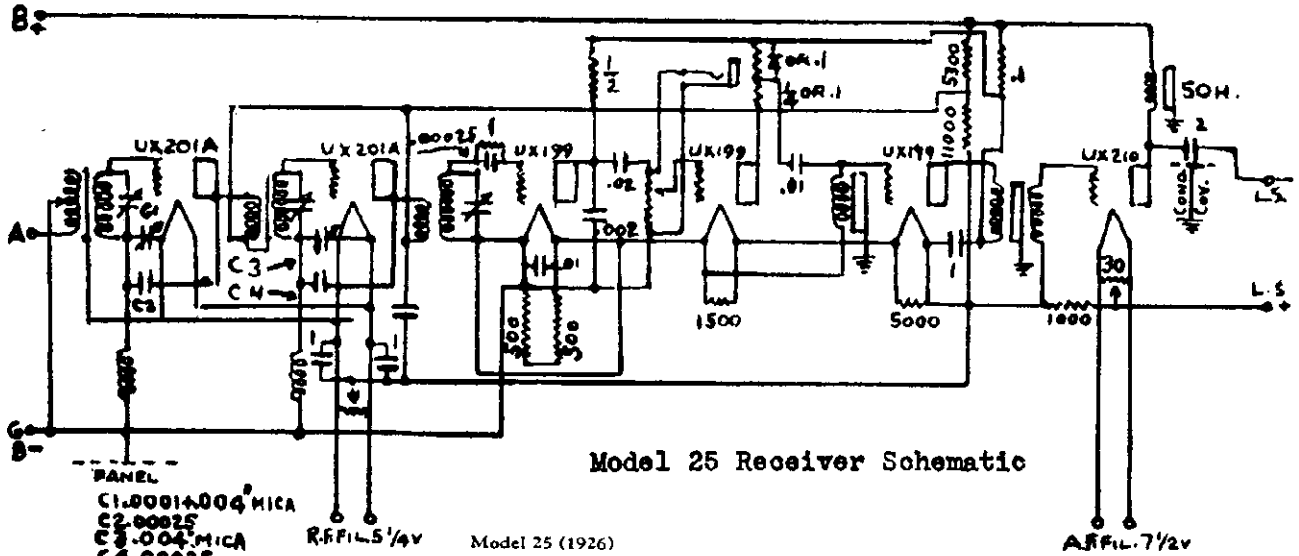
Model 20



Model 21

MODEL 25

COLONIAL RADIO CORP

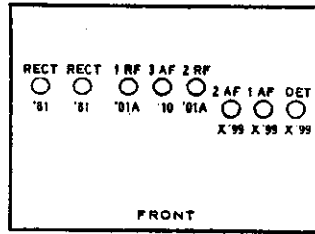


Model 25 Receiver Schematic

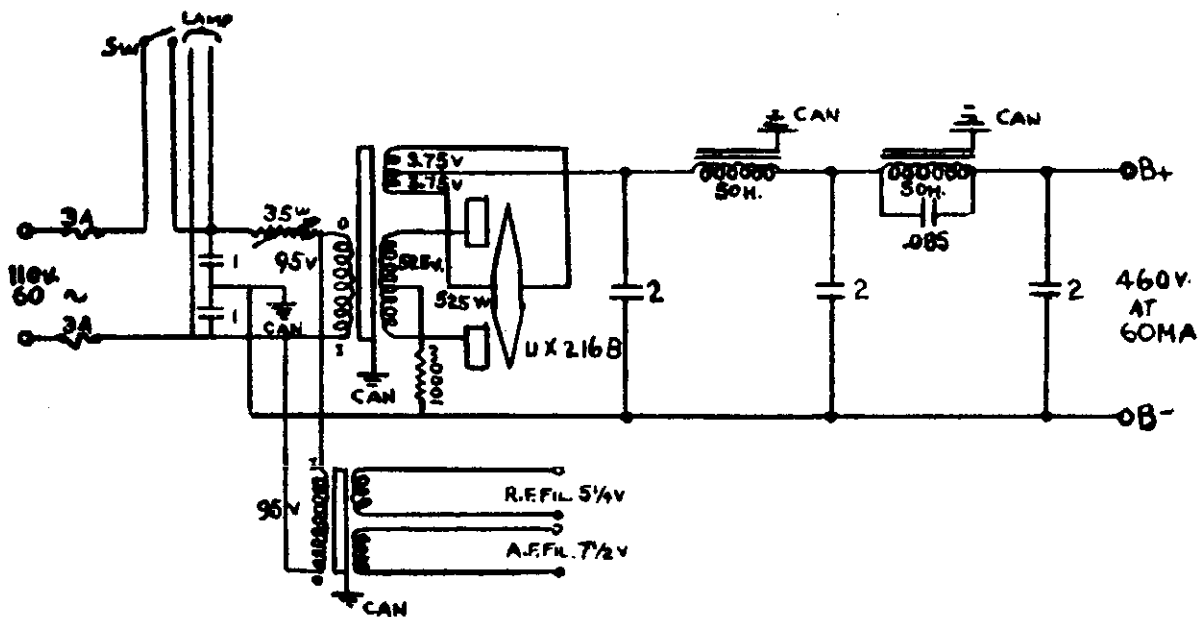
- PANEL
 C1-0001+004 MICA
 C2-00025
 C3-004 MICA
 C4-00025

R.F. FIL. 5 1/4V

Model 25 (1926)



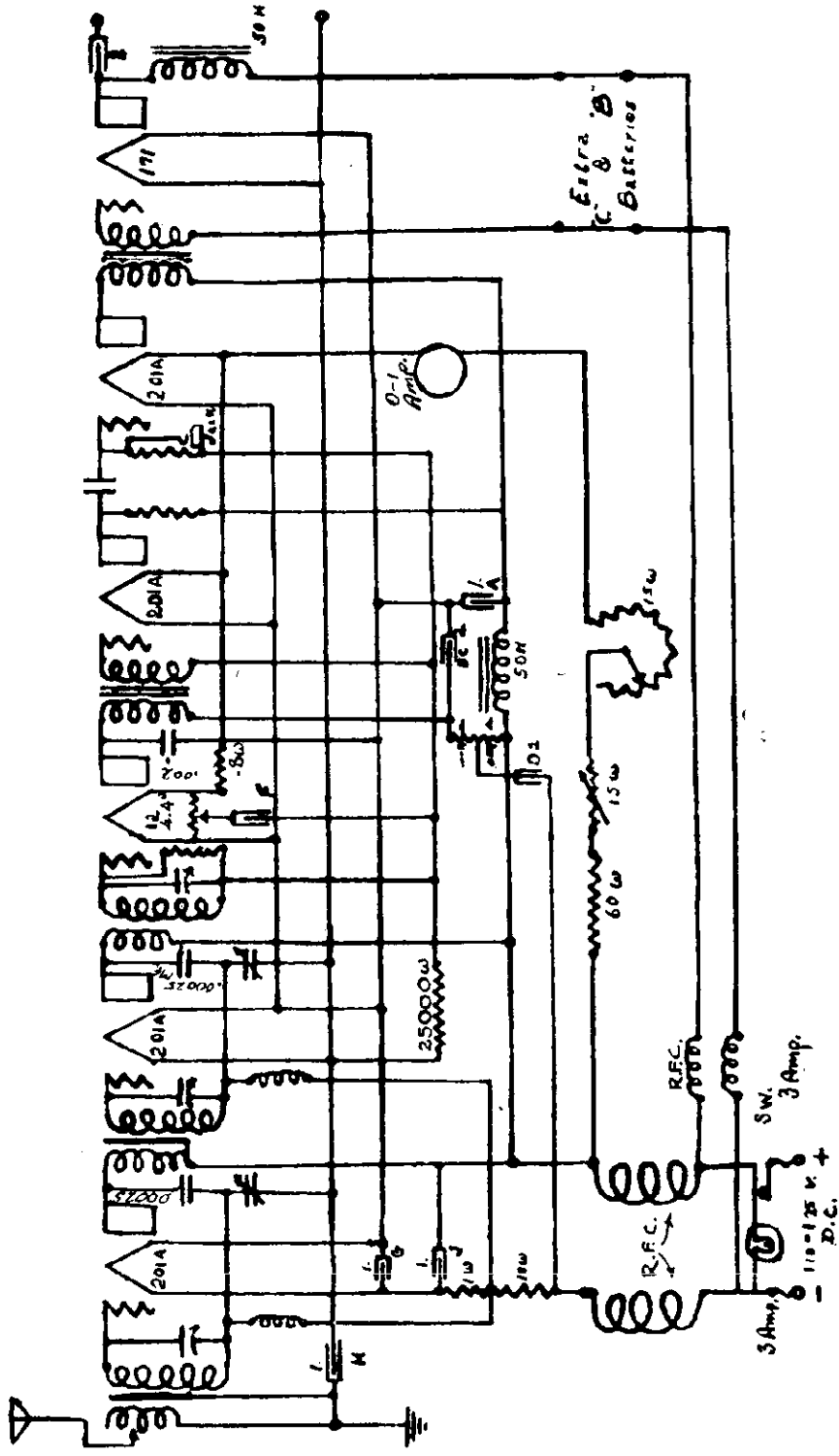
A.F. FIL. 7 1/2V



Model 25 Power Pack Schematic

COLONIAL RADIO CORP.

MODEL 26



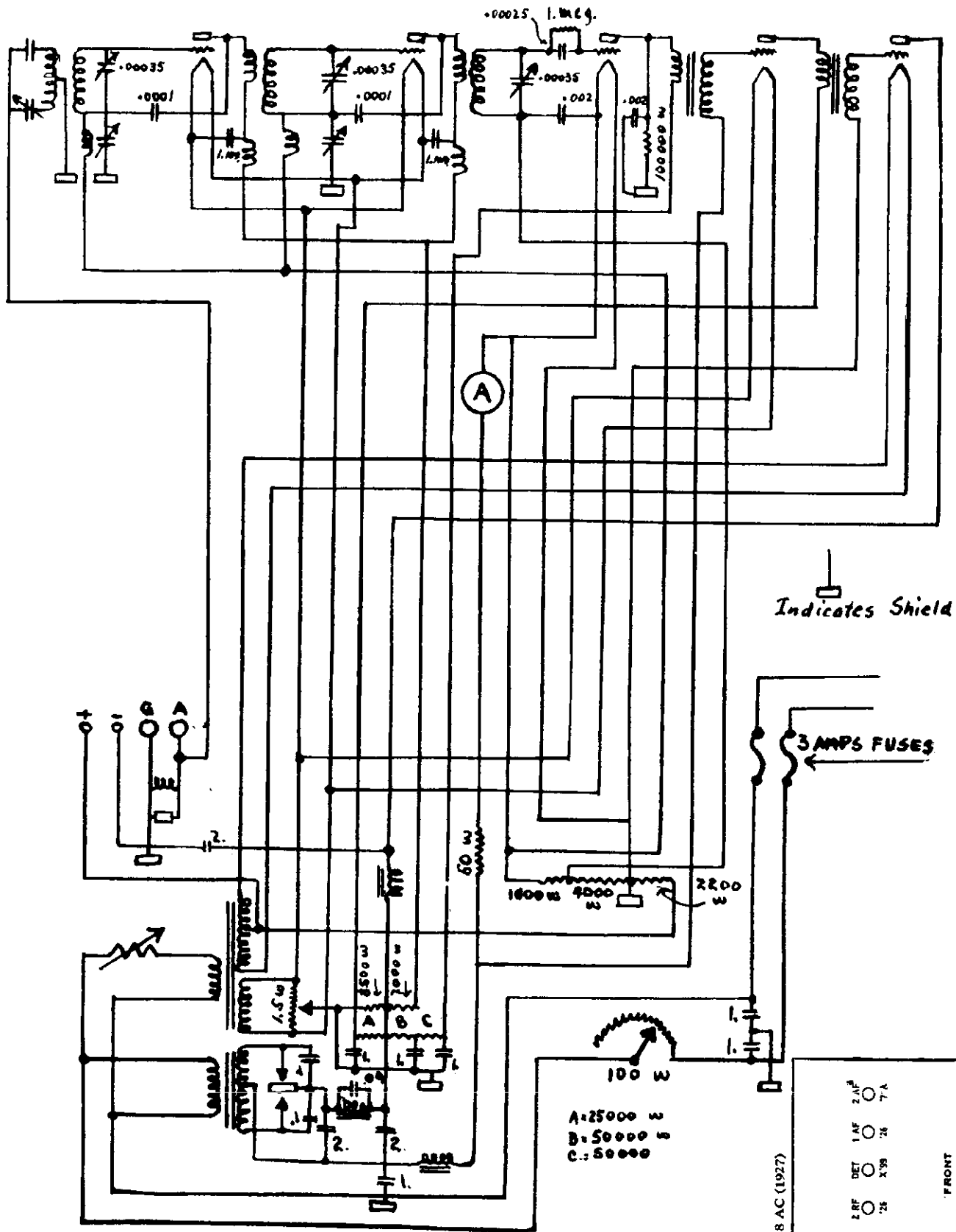
Model 26

(D.C.)

CK-501A	CK-371A	CK-590A	CK-301A	CK-12
1st A.F.	1st A.F.	1st I.F.	2nd A.F.	2nd A.F.
⊙	⊙	⊙	⊙	⊙

COLONIAL RADIO CORP.

MODEL 28 AC



Indicates Shield

3 AMPS FUSES

1600 W 4000 W 2200 W
60 W

100 W
A: 25000 W
B: 50000 W
C: 50000 W

1.0F	2.0F	7A
2.0F	1.0F	7A
DET	1.0F	7A
2.0F	2.0F	7A
1.0F	2.0F	7A

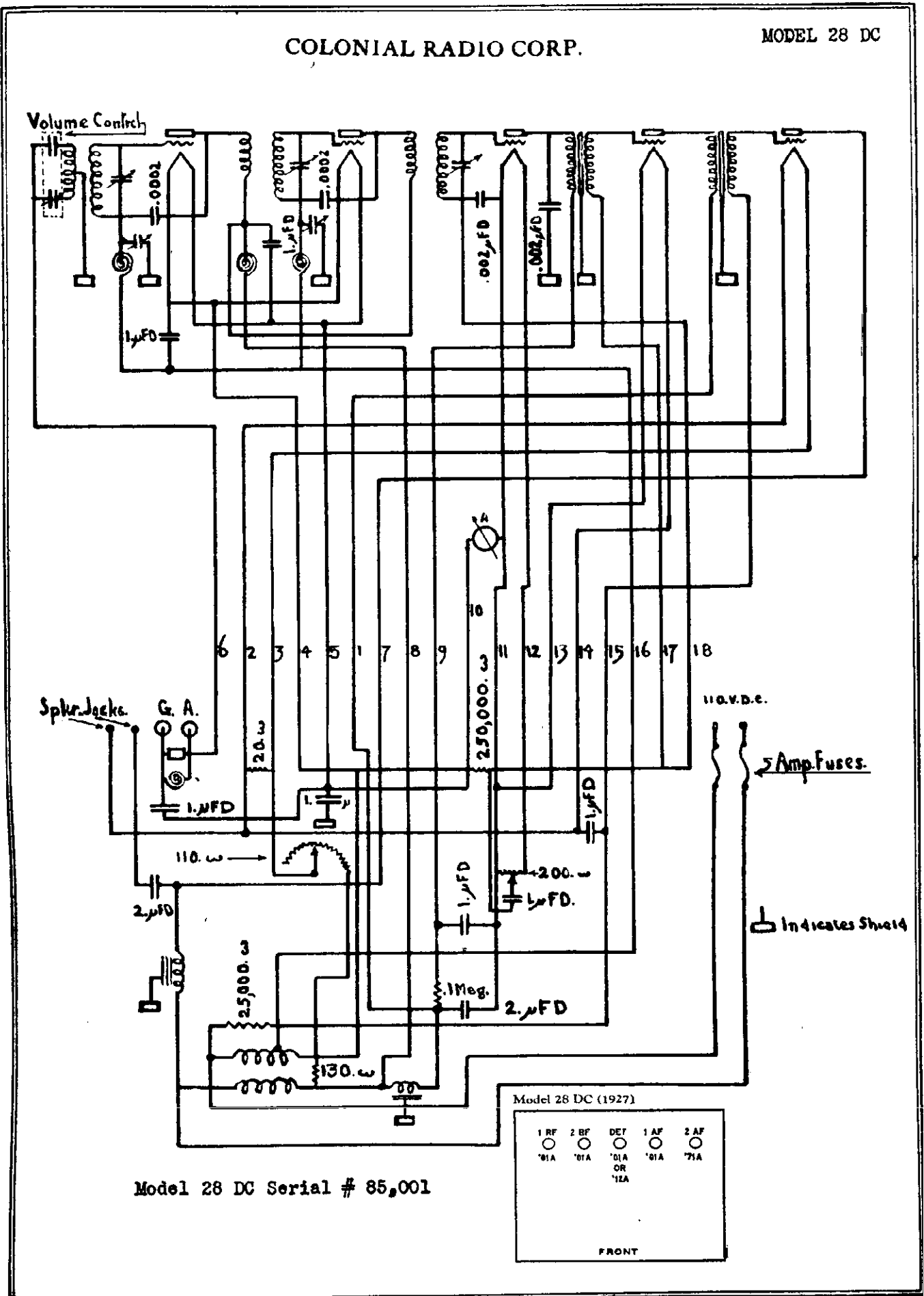
Model 28 AC Serial # 90,001

Model 28 AC (1927)

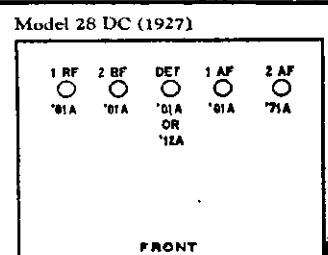
FRONT

COLONIAL RADIO CORP.

MODEL 28 DC

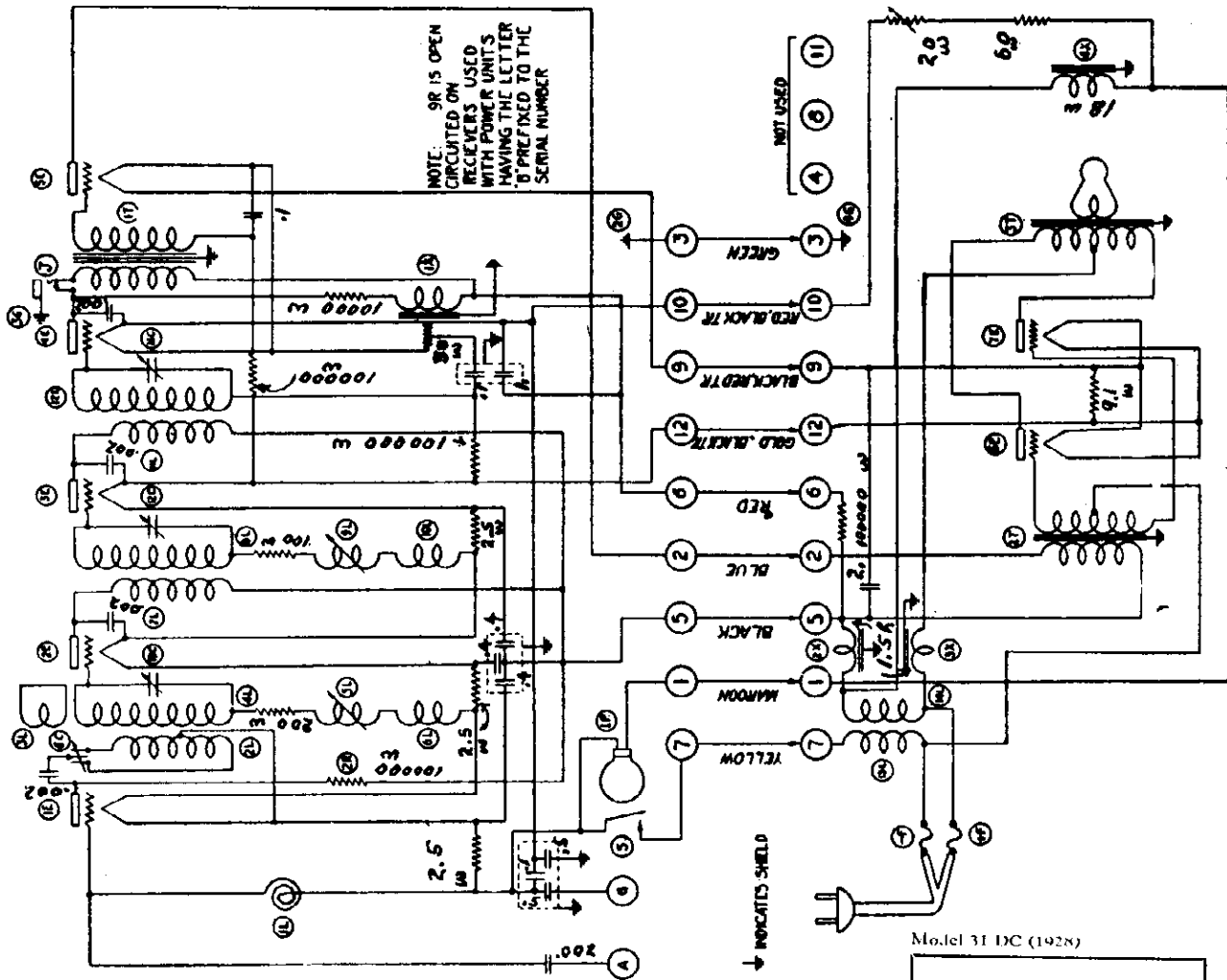


Model 28 DC Serial # 85,001



MODEL 31 DC

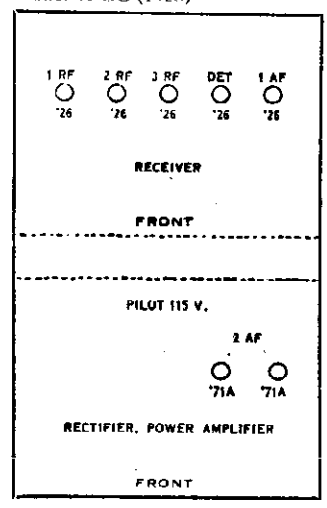
COLONIAL RADIO CORP.



Model 31 DC (1928)

STAGE	TUBE	GRID VOLTAGE		FILAMENT VOLTAGE		PLATE VOLTAGE		PLATE CURRENT	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
1 ST RF	CX 326 UX 226	2	4	1.4	1.6	50	90	2	5
2 ND RF	"	2	4	1.4	1.6	75	120	5	10
3 RD RF	"	2	4	1.4	1.6	75	115	5	10
DETECTOR	"	2	4	1.3	1.5	40	70	1	.5
1 ST AF	"	1.5	3	1.3	1.5	70	100	2.5	5.5
2 ND AF #1	UX 171A CX 371A	12	16	4.4	5.1	75	115	8	20
2 ND AF #2	"	12	16	4.4	5.1	75	115	8	20

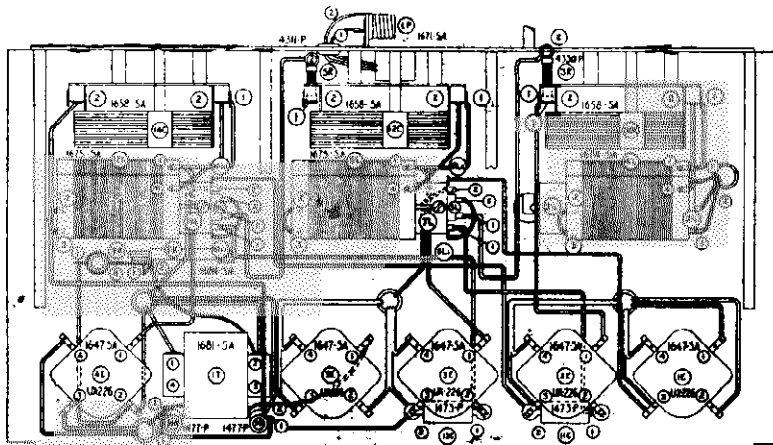
TUBE CURRENT AND VOLTAGE CHART
Model 31 D. C. 50,010



CIRCUIT DIAGRAM
MODEL 31 DC 50,001 - 48,801
COLONIAL RADIO CORPORATION

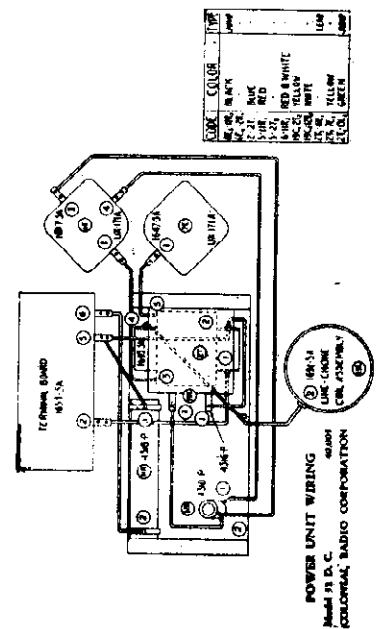
COLONIAL RADIO CORP.

MODEL 31 DC
Data
MODEL 31 AC
Voltage

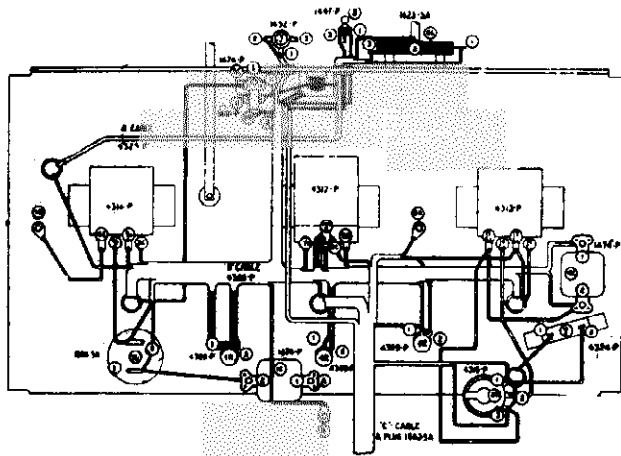


NOTE: 6X5 GREEN CONNECTED ON RECEIVERS USED WITH POWER UNITS HAVING THE LETTER 'B' PREFIXED TO THE SERIAL NUMBER.

TYPE	COLOR	TYPE	COLOR	TYPE	COLOR	TYPE	COLOR	TYPE	COLOR	TYPE	COLOR
6X4	BLACK	6AR5	RED	6AV6	RED	6BE6	RED & WHITE	6BE7	GREEN (BLACK SPINLED)	6X5	GREEN
6X5	RED & WHITE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	YELLOW	6X5	YELLOW
6X6	BLUE	6AR5	RED	6AV6	RED	6BE6	BLACK	6BE7	GREEN OR RED	6X5	GREEN
6X7	WHITE	6AR5	RED	6AV6	RED	6BE6	BLACK	6BE7	GREEN	6X5	GREEN
6X8	NO WIRE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	RED	6X5	RED
6X9	WHITE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	WHITE	6X5	WHITE
6X10	BLUE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	BLUE	6X5	BLUE
6X11	YELLOW	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	YELLOW	6X5	YELLOW
6X12	GOLD BLACK TR	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	YELLOW	6X5	YELLOW
6X13	NO WIRE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	YELLOW	6X5	YELLOW



TOP VIEW OF RADIO SET WIRING
Model 31 DC 30,002



TYPE	COLOR	TYPE	COLOR	TYPE	COLOR	TYPE	COLOR	TYPE	COLOR
6X4	BLACK	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	GREEN
6X5	RED & WHITE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	YELLOW
6X6	BLUE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	GREEN OR RED
6X7	WHITE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	GREEN
6X8	NO WIRE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	RED
6X9	WHITE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	WHITE
6X10	BLUE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	BLUE
6X11	YELLOW	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	YELLOW
6X12	GOLD BLACK TR	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	YELLOW
6X13	NO WIRE	6AR5	RED	6AV6	RED	6BE6	RED	6BE7	YELLOW

BOTTOM VIEW OF RADIO SET WIRING
Model 31 DC 30,001
COLONIAL RADIO CORPORATION

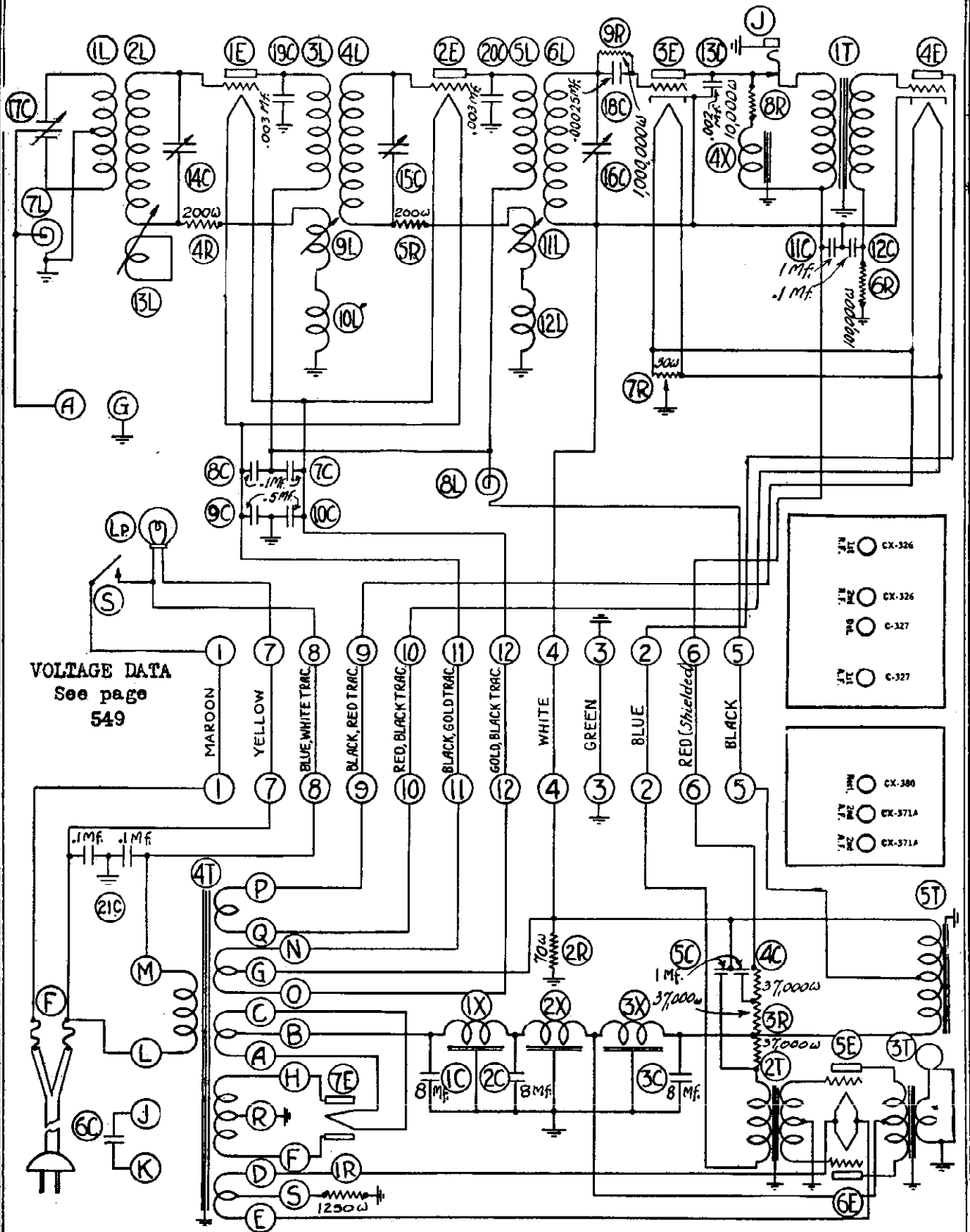
STAGE	TUBE	GRID VOLTAGE		FILAMENT VOLTAGE		PLATE VOLTAGE		PLATE CURRENT	
		AT SOCKET	MIN. MAX.	AT TRANSFORMER	MIN. MAX.	AT SOCKET	MIN. MAX.	AT SOCKET	MIN. MAX.
1 ST	R.F. UX-226	-4.5	-6.1	1.53	1.77	95	125	6	9
2 ND	R.F. UX-226	-4.5	-6.1	1.53	1.77	95	125	6	9
DETECTOR	UY-227	0	0	1.98	2.42	30	40	2	3
1 ST	A.F. UX-171A	-4.5	-6.1	1.98	2.42	80	110	3	4
2 ND	A.F. UX-171A	-38	-52	4.6	5.10	160	220	15	21
3 RD	A.F. UX-171A	-38	-52	4.6	5.10	160	220	15	21
RECTIFIER	UX-280	-	-	4.6	5.10	-	-	42	58

TUBE CURRENT AND VOLTAGE CHART

Model 31 AC 60001-5001

MODEL 31 AC

COLONIAL RADIO CORP.



VOLTAGE DATA
See page
549

12A6	12C	CX-326
6X4	12C	CX-326
6AV6	11C	C-327
6X4	12C	C-327

12A6	12C	CX-380
6X4	12C	CX-571A
6X4	12C	CX-571A

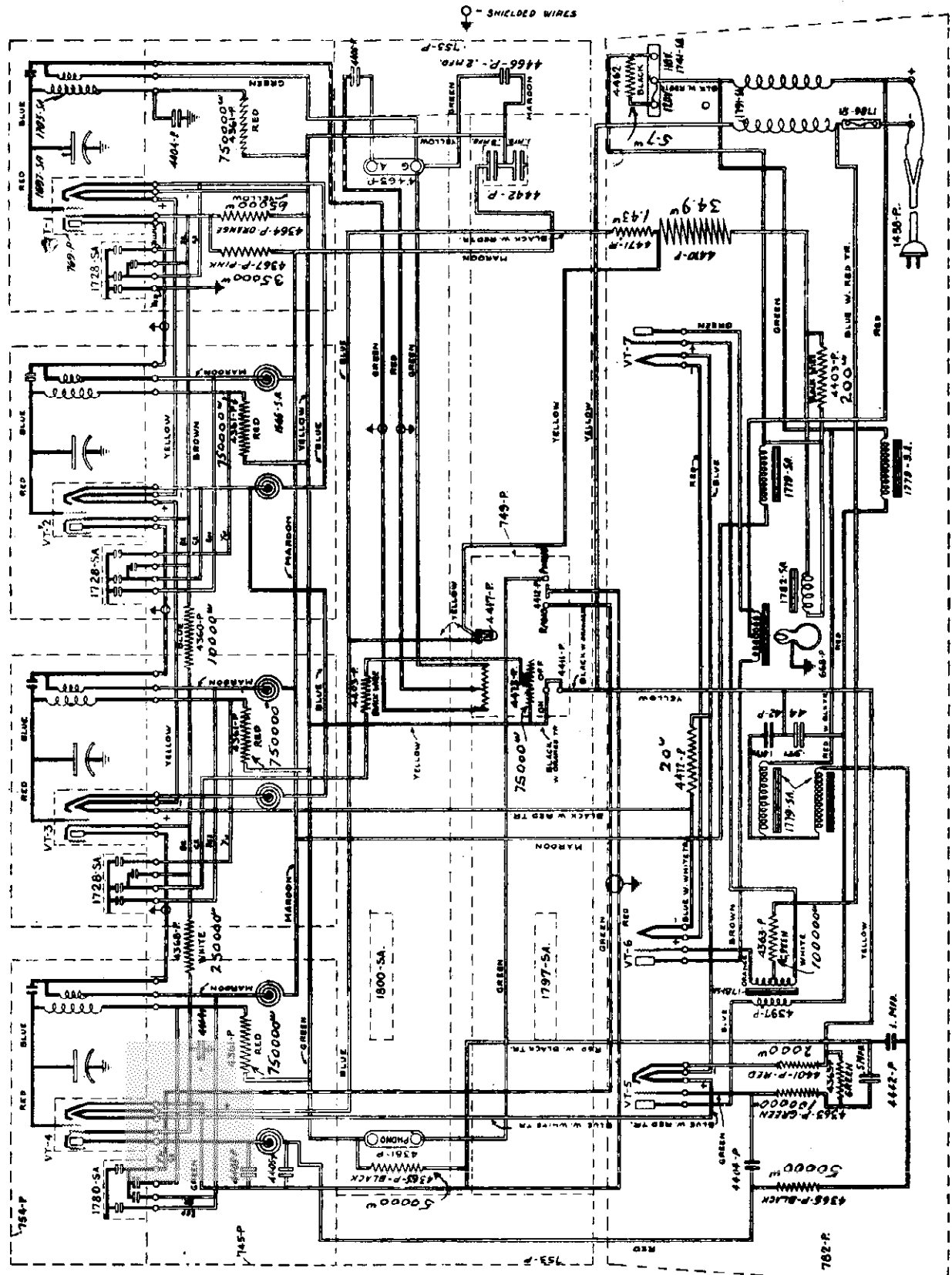
CIRCUIT DIAGRAM

MODEL 31 AC

60001-5001

COLONIAL RADIO CORP.

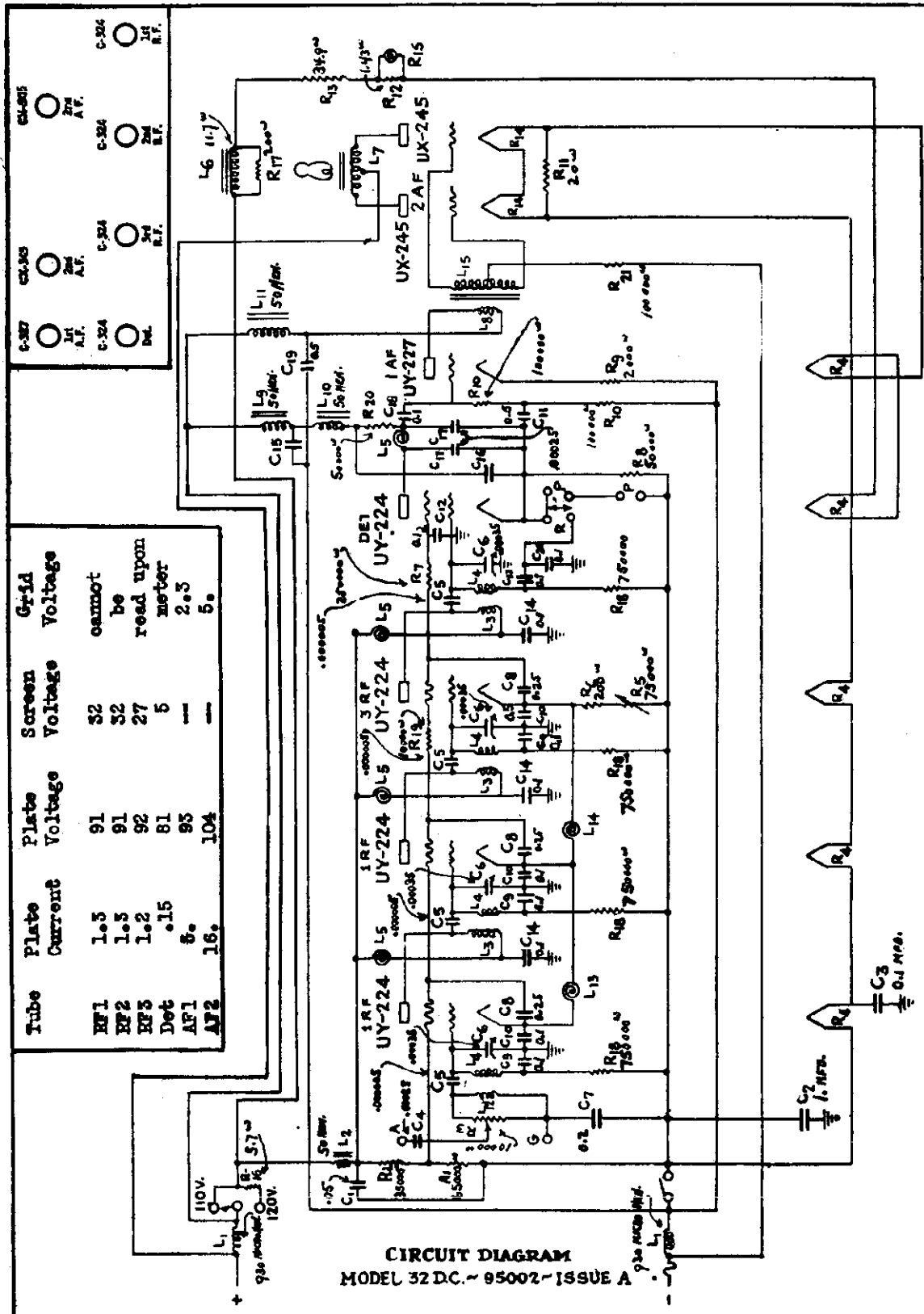
MODEL 32 DC
Chassis



SCHMATIC DIAGRAM
Model 32 D.C. ~ 95001 ~ Issue A

MODEL 32 DC

COLONIAL RADIO CORP.



Tube	Plate Current	Plate Voltage	Screen Voltage	Grid Voltage
RF1	1.5	91	52	cannot be read upon meter
RF2	1.5	91	52	2.5
RF3	1.2	92	27	5.
Det	.15	81	5	—
AF1	6.	93	—	—
AF2	16.	104	—	—

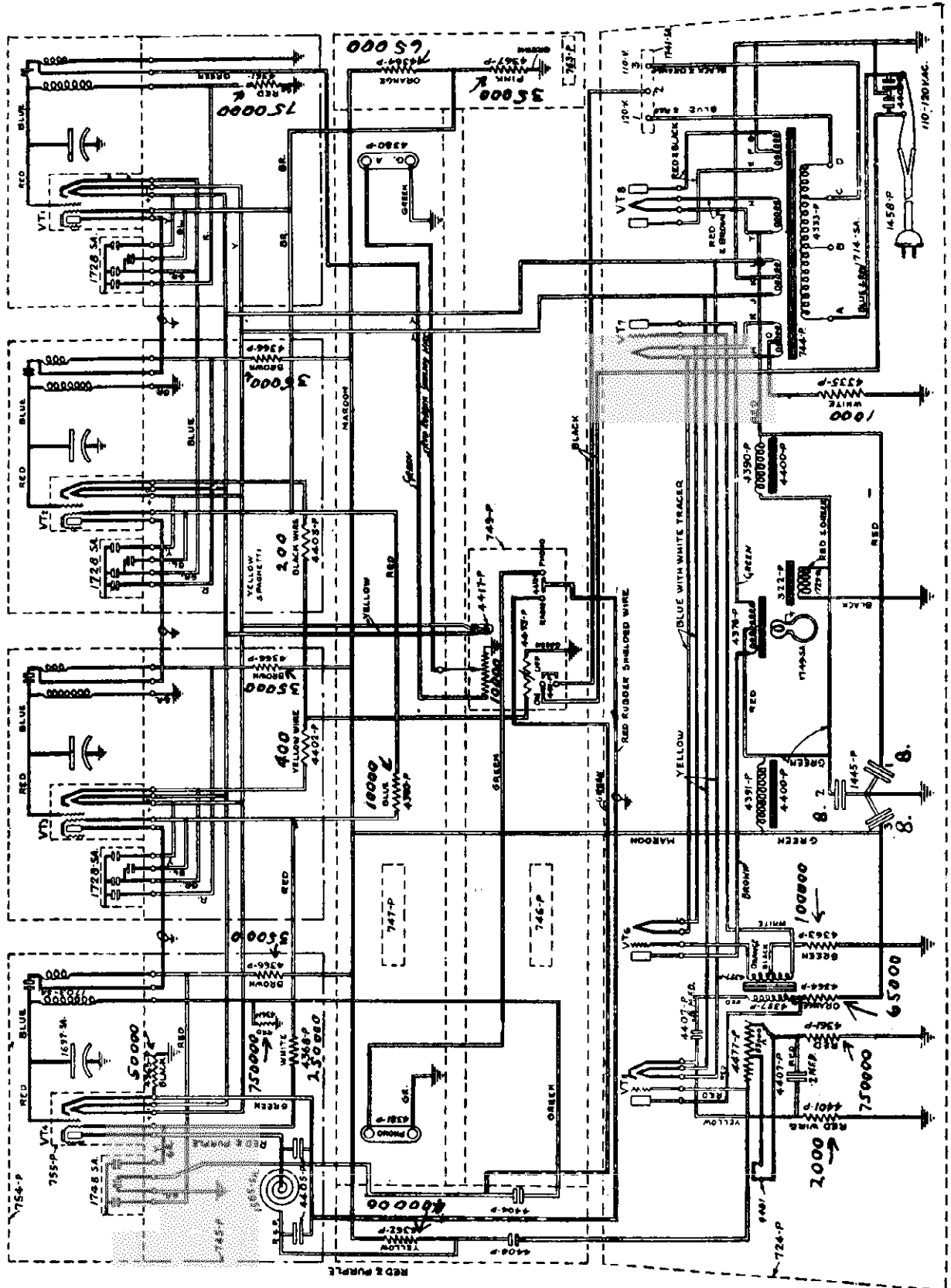
CIRCUIT DIAGRAM
MODEL 32 DC. - 95002 - ISSUE A

NOTE:- ALL GROUND CONNECTIONS SHOWN ARE TO CHASSIS.
C-5 IS BUILT INTO THE R.F. TRANSFORMER.

Chassis layout on next page.

COLONIAL RADIO CORP.

MODEL 32 AC Chassis

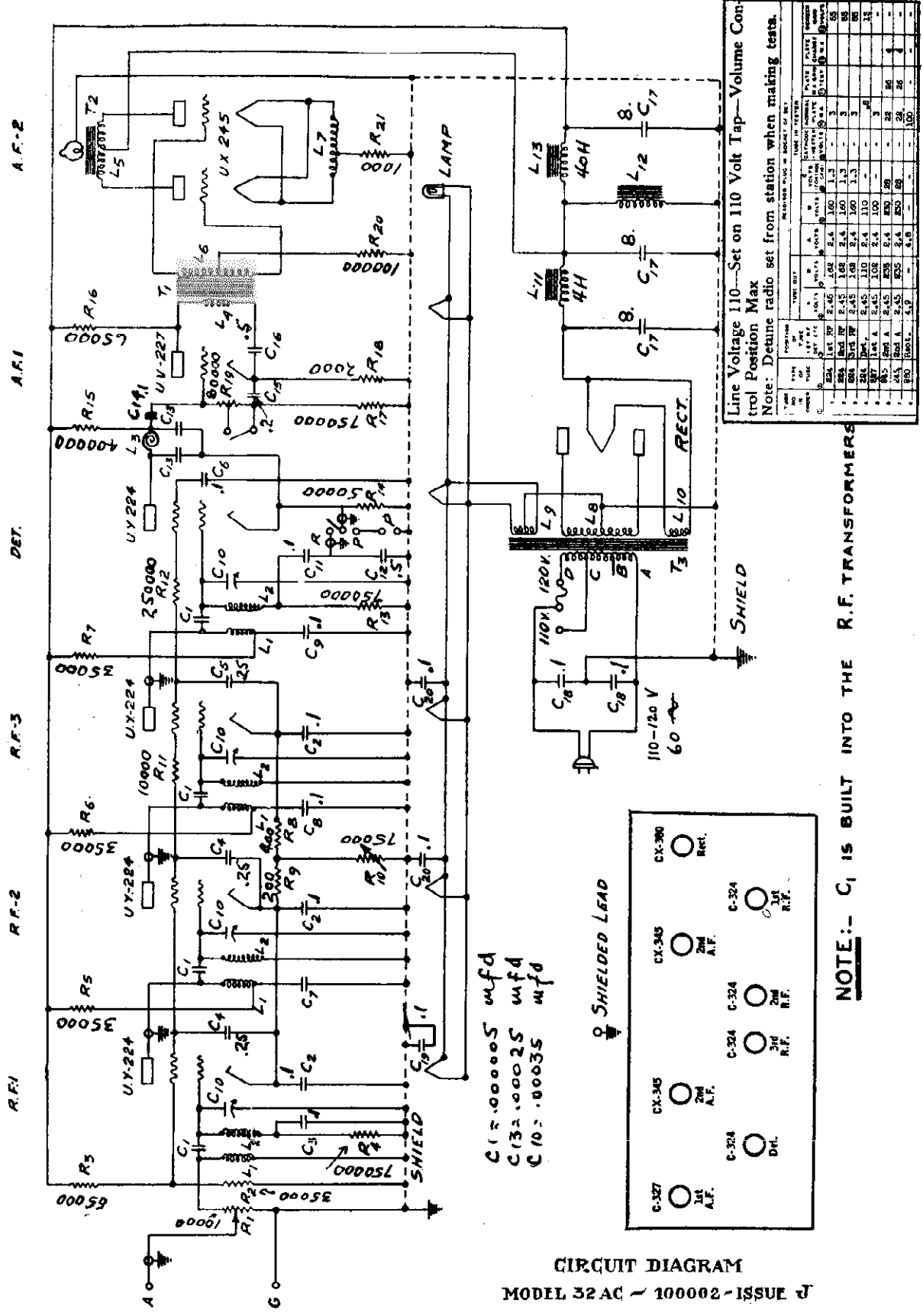


SCHMATIC DIAGRAM

Model 32 A.C. 100001-Issue-J

MODEL 32 AC
Schematic

COLONIAL RADIO CORP.



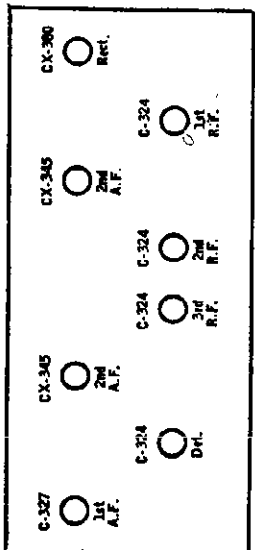
Line Voltage 110—Set on 110 Volt Tap—Volume Control Position Max
Note: Detune radio set from station when making tests.

TYPE	PART NO.	RATING	VOLTAGE		CURRENT		RESISTANCE	TOLERANCE	TEMPERATURE	MATERIAL	REMARKS
			AC	DC	MAX.	AVERAGE					
C	C1	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C2	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C3	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C4	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C5	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C6	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C7	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C8	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C9	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C10	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C11	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C12	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C13	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C14	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C15	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C16	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C17	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C18	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R1	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R2	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R3	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R4	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R5	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R6	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R7	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R8	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R9	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R10	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R11	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R12	25000	110	110	0.00005	0.00005	25000	±5%	25°C	500V	500V
R	R13	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R14	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R15	40000	110	110	0.00005	0.00005	40000	±5%	25°C	500V	500V
R	R16	5000	110	110	0.00005	0.00005	5000	±5%	25°C	500V	500V
R	R17	15000	110	110	0.00005	0.00005	15000	±5%	25°C	500V	500V
R	R18	2000	110	110	0.00005	0.00005	2000	±5%	25°C	500V	500V
R	R19	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R20	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
R	R21	1000	110	110	0.00005	0.00005	1000	±5%	25°C	500V	500V
L	L1	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L2	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L3	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L4	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L5	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L6	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L7	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L8	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L9	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L10	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
L	L11	4H	110	110	0.00005	0.00005	4H	±5%	25°C	500V	500V
L	L12	8.	110	110	0.00005	0.00005	8.	±5%	25°C	500V	500V
L	L13	40H	110	110	0.00005	0.00005	40H	±5%	25°C	500V	500V
C	C1	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C2	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C3	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C4	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C5	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C6	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C7	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C8	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C9	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C10	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C11	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C12	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C13	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C14	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C15	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C16	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C17	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V
C	C18	10000	110	110	0.00005	0.00005	10000	±5%	25°C	500V	500V

NOTE:— C₁ IS BUILT INTO THE R.F. TRANSFORMERS

C1: .00005 mfd
C2: .00025 mfd
C10: .00035 mfd

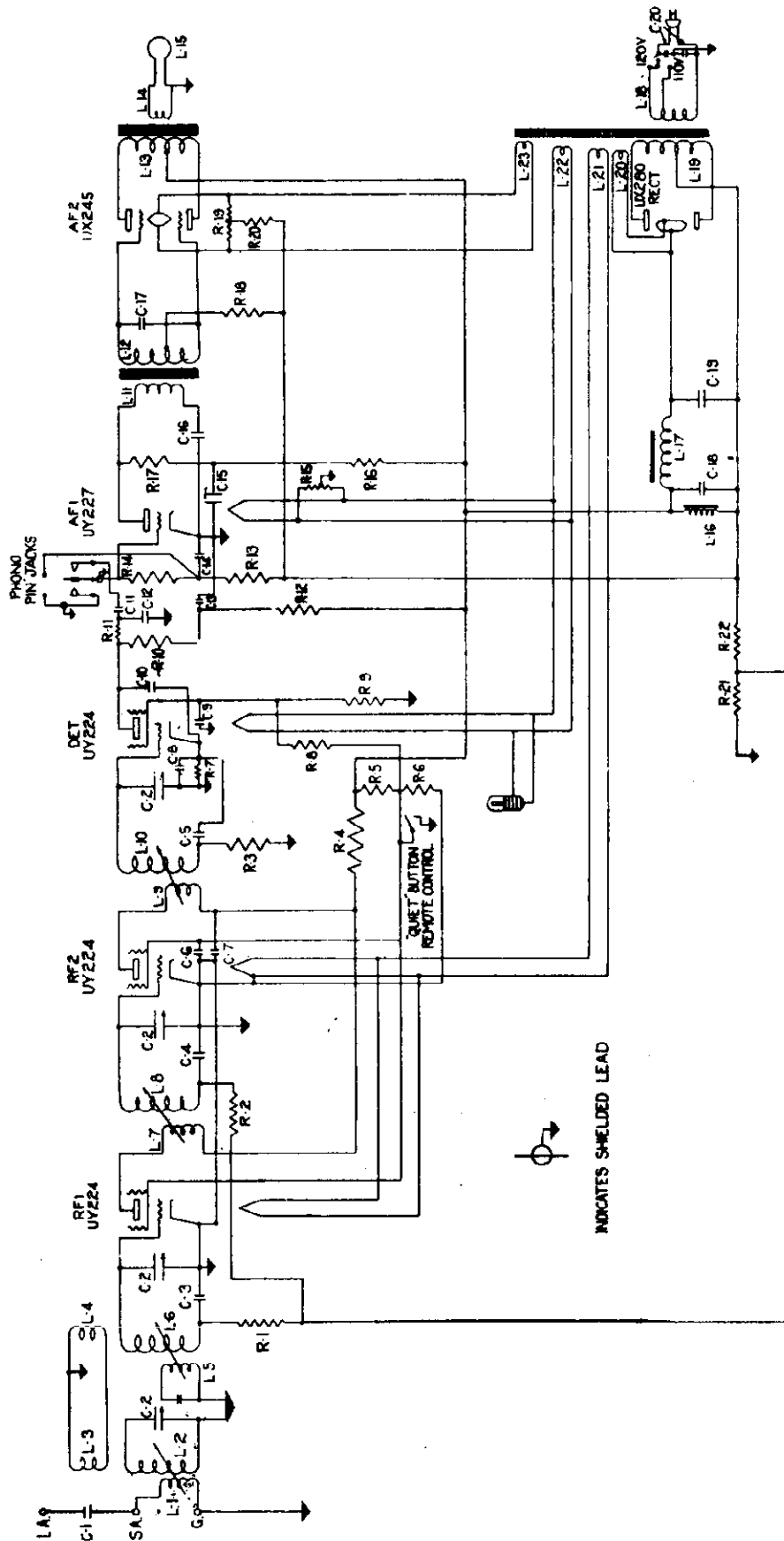
SHIELDED LEAD



CIRCUIT DIAGRAM
MODEL 32 AC - 100002 - ISSUE J

COLONIAL RADIO CORP.

MODEL 33, 34, 35 AC
Schematic



NOTE—In the 25 cycle models, R₃ is shorted out and there is an additional

1 mfd. condenser connected from the R.F. screen-grids to ground.

Socket layout on page 560

Remote Control tuning notes on page 560

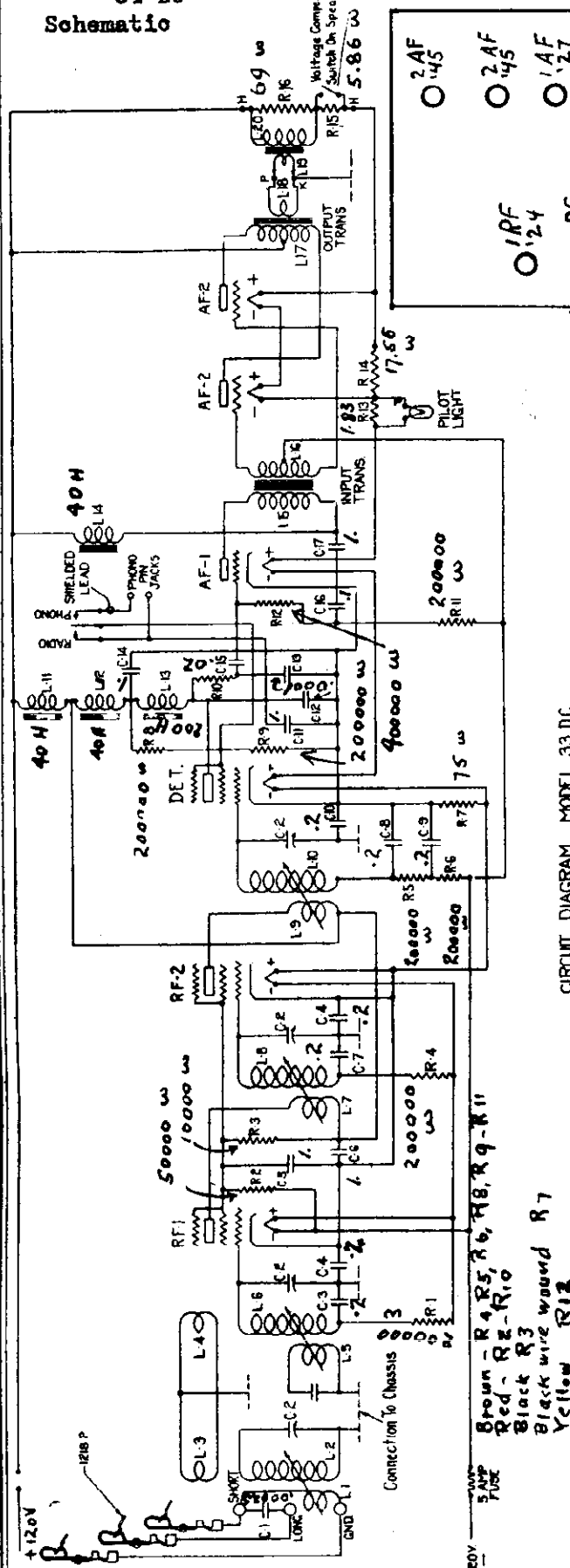
Remote Control circuit on page 561

Electrical values on next page.

INDICATES SHIELDED LEAD

MODEL 33 DC
34 DC
Schematic

COLONIAL RADIO CORP.



CIRCUIT DIAGRAM MODEL 33 DC

TUBE VOLTAGE AND CURRENT READINGS

Actual Voltages Applied to Tubes

	RF1	RF2	Det.	AF1	AF2
Plate Voltage	110v.	110v.	105v.	110v.	110v.
Control-Grid Voltage	-2.3	-2.3	-4.8	-4.8	-13
Screen-Grid Voltage	72	72	40		
Plate Current	2.5 m.a.	2.5 m.a.	0.8 m.a.	4 m.a.	15 m.a.

Voltages as Read on a 1000 OHMS Per Volt Meter

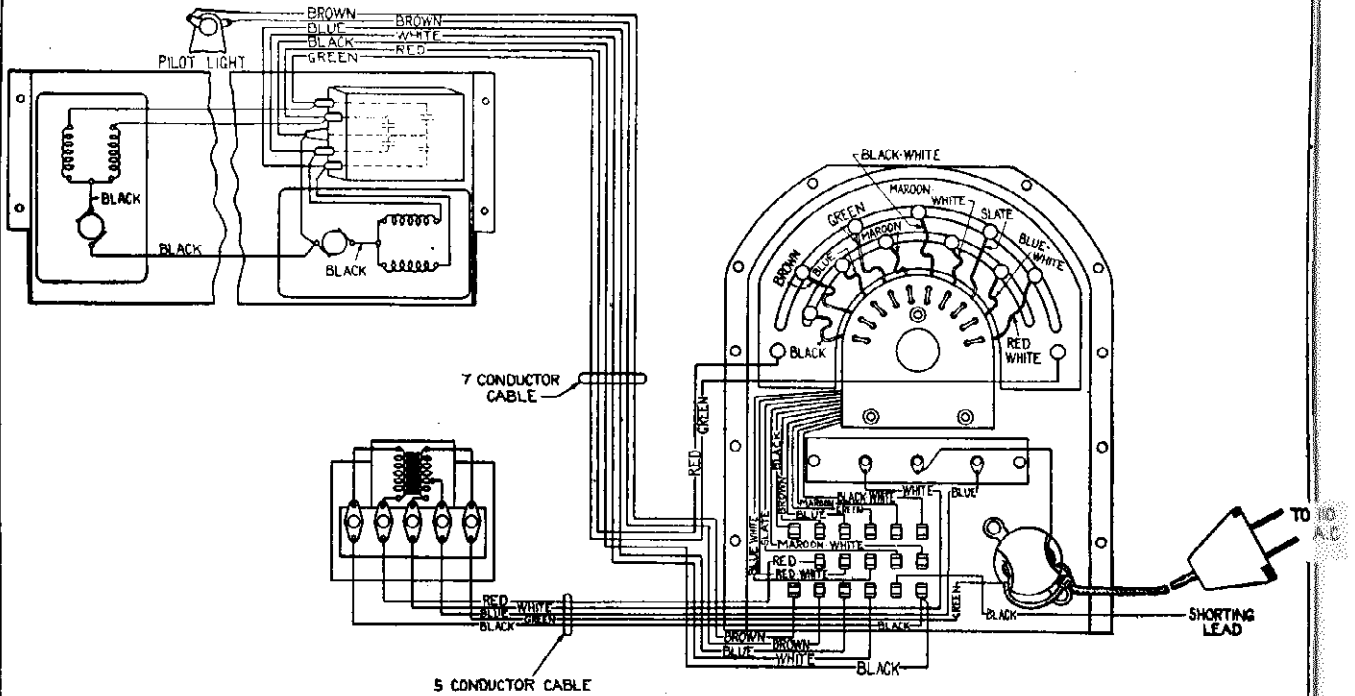
Plate Voltages on the 250 v. scale; Control-Grid Voltages on the 50 v. scale; Screen-Grid Voltages on the 100 v. scale

Plate Voltage	100 v.	100 v.	85 v.	100 v.	100 v.
Control-Grid Voltage	-0.6	-0.6	-0.5	0.35	12
Screen-Grid Voltage	68	68	10		
Plate Current	2.5 m.a.	2.5 m.a.	0.8 m.a.	4 m.a.	15 m.a.

- Brown - R4, R5, R6, R8, R9, R11
- Red - R2, R10
- Black - R3
- Black wire wound - R7
- Yellow - R12

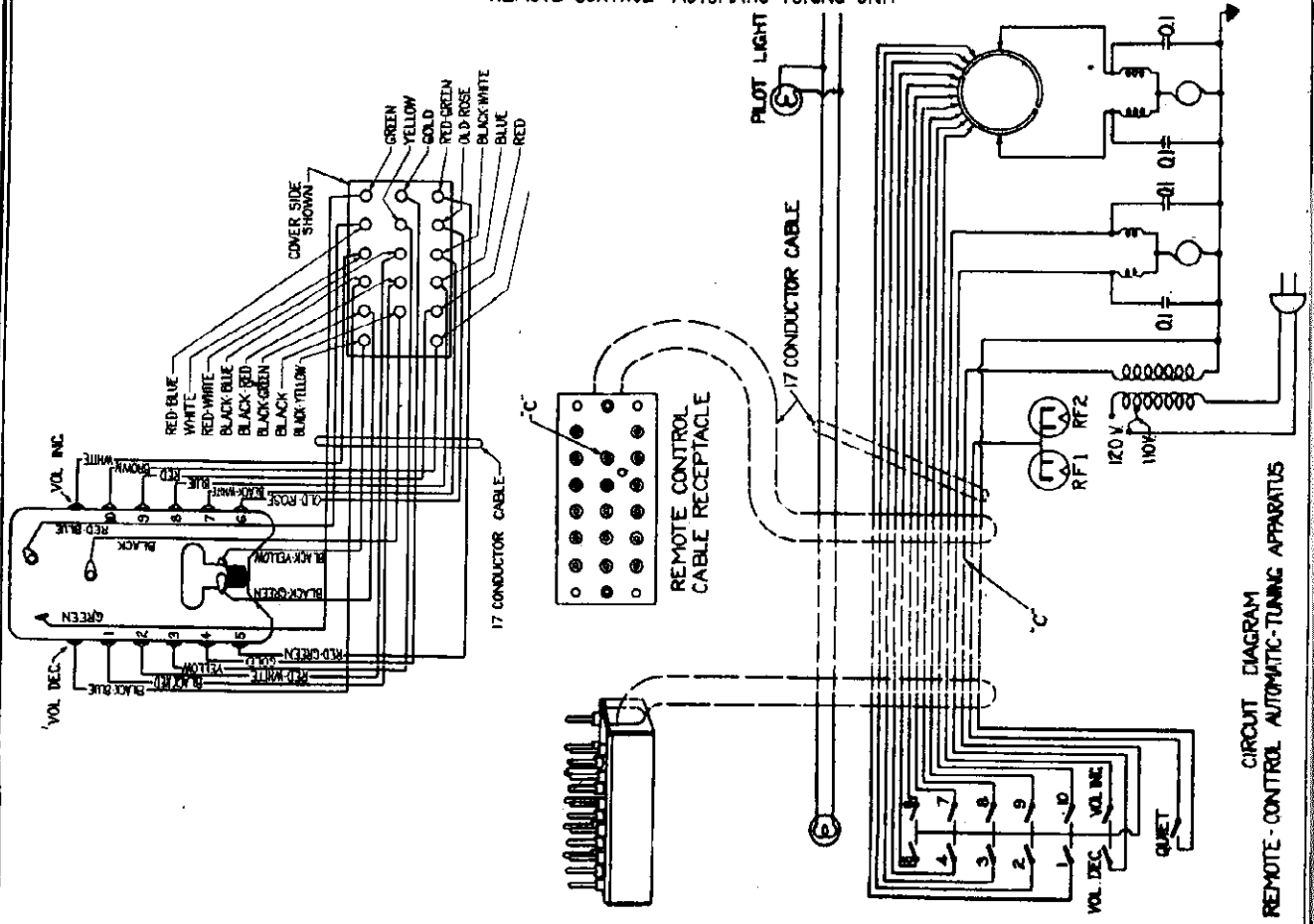
COLONIAL RADIO CORP.

MODEL 33,34,35 AC
Remote Control
Schematic



WIRING DIAGRAM

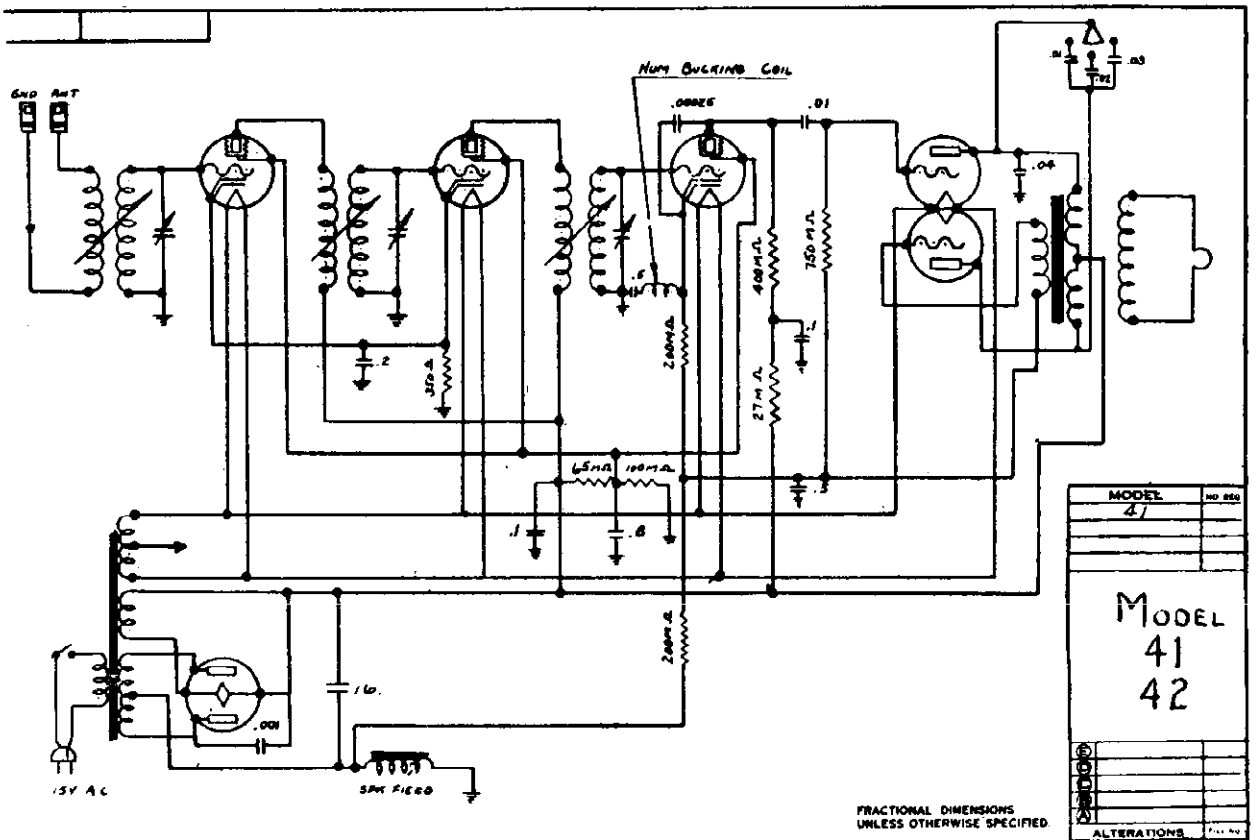
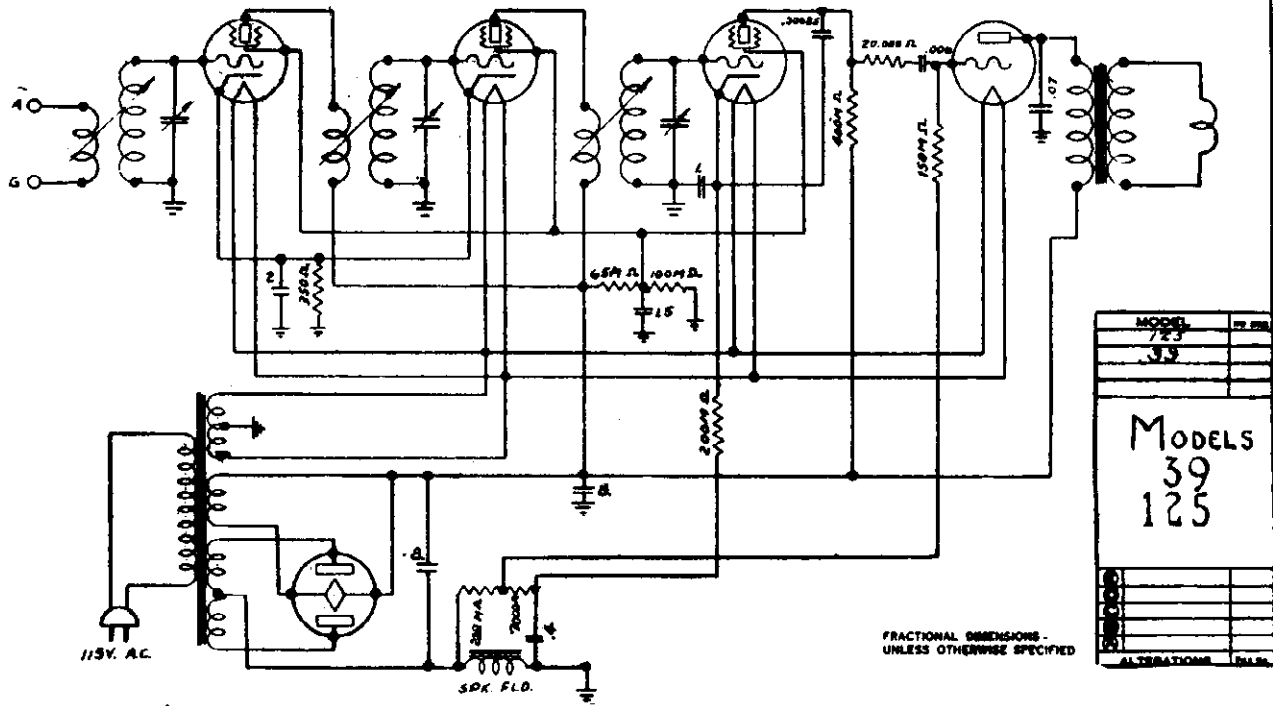
REMOTE-CONTROL AUTOMATIC-TUNING UNIT



CIRCUIT DIAGRAM
REMOTE-CONTROL AUTOMATIC-TUNING APPARATUS

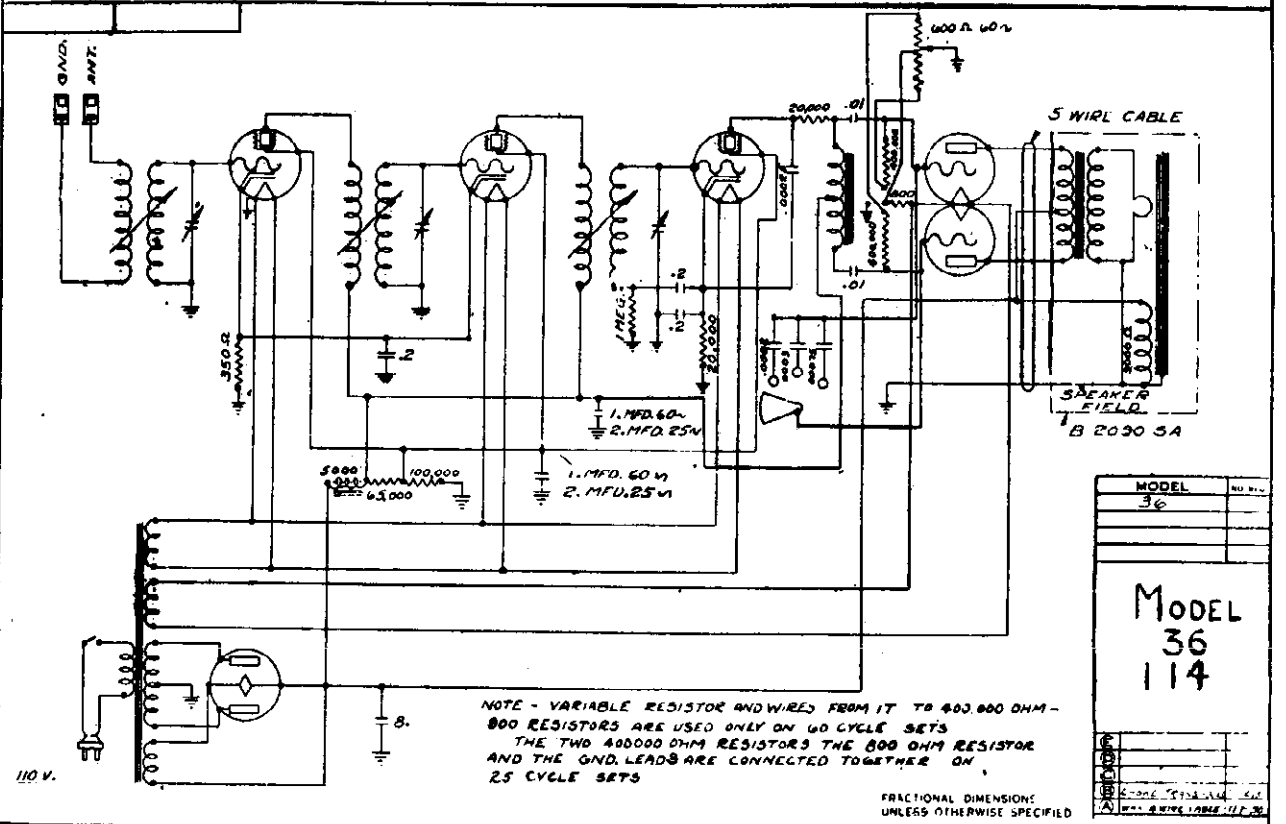
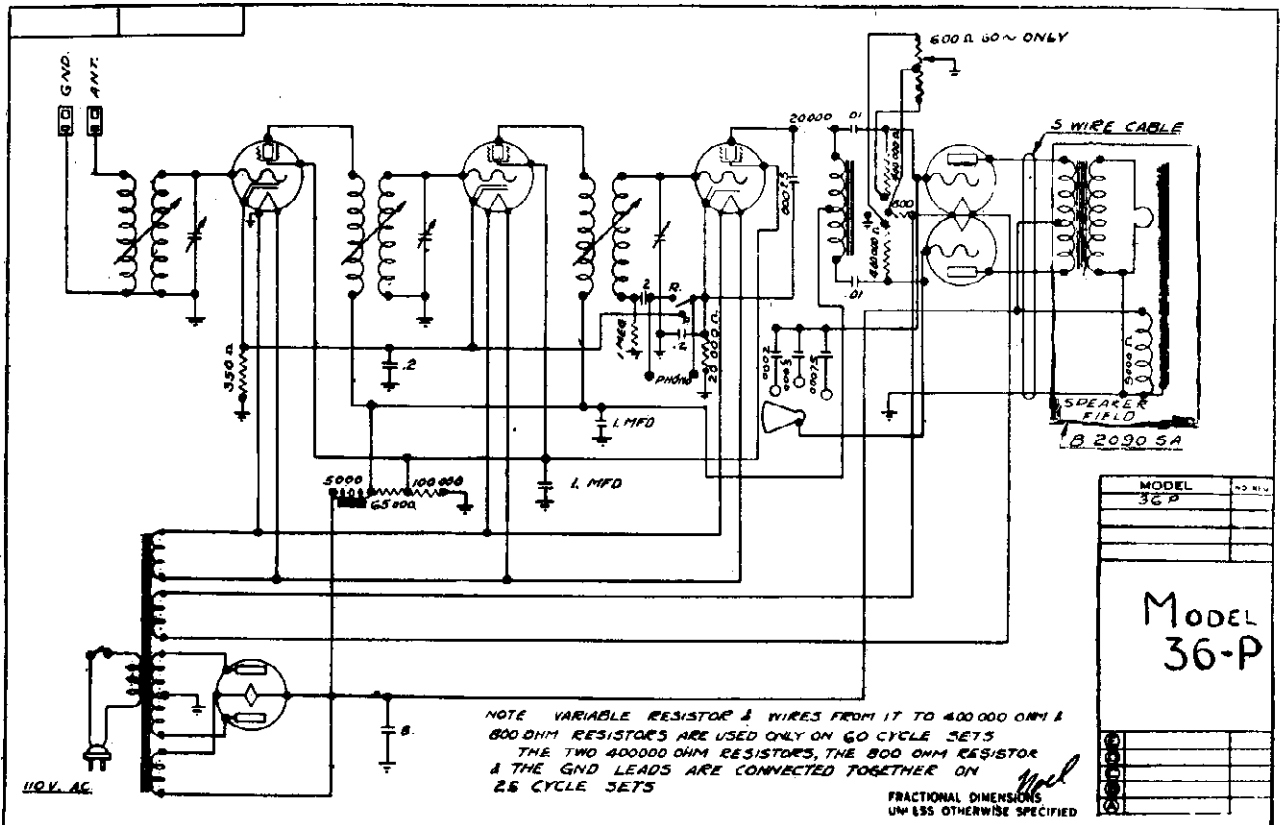
MODEL 39, 125
 MODEL 41, 42
 Schematics

COLONIAL RADIO CORP.



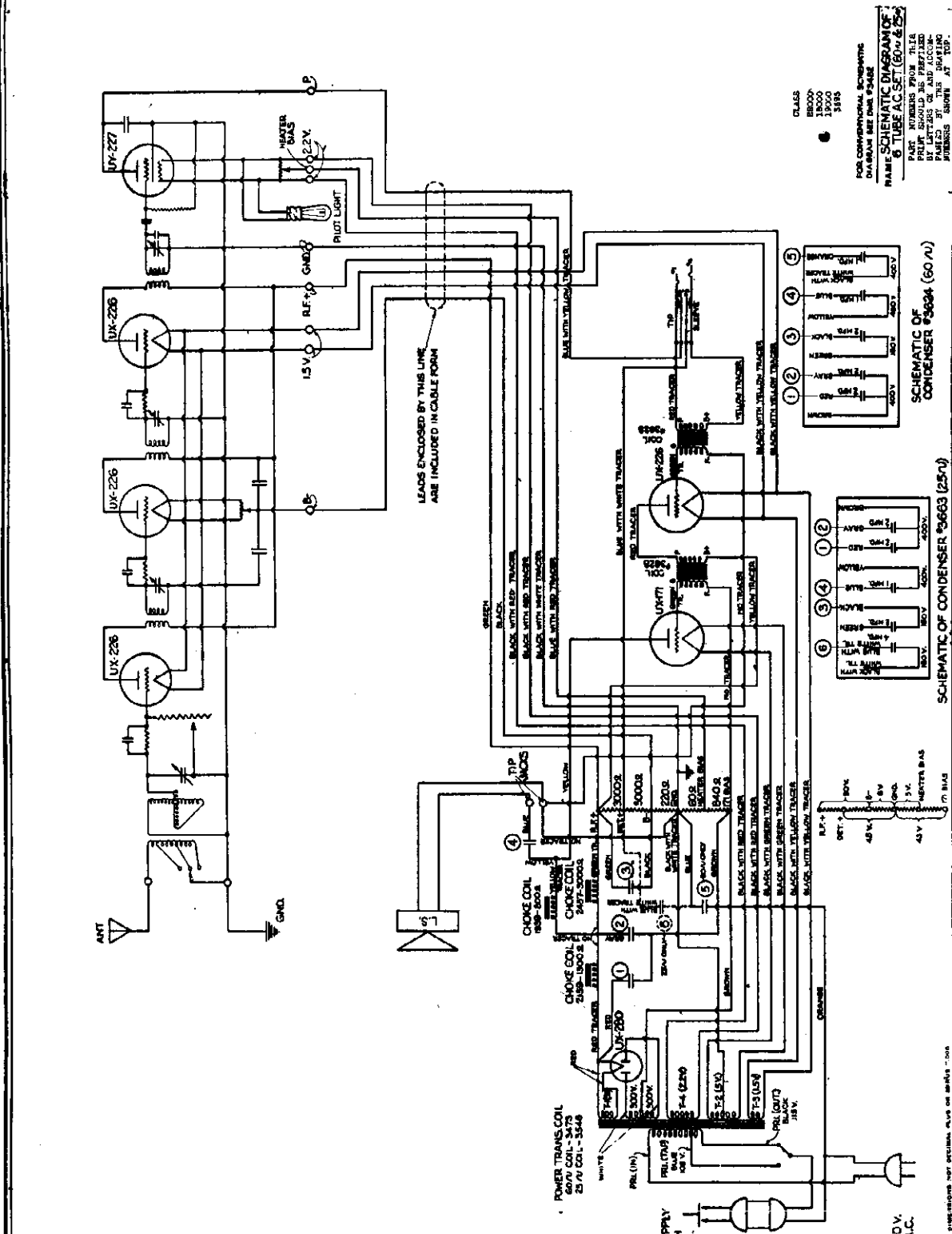
COLONIAL RADIO CORP.

MODEL 36
MODEL 36-P
MODEL 114



COLUMBIA PHONOGRAPH COMPANY

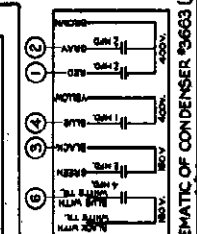
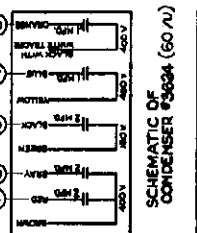
MODEL C-1, C-3
Schematic



CLASS
1800
1900
1900
1900

FOR CONVENTIONAL SCHEMATIC DIAGRAM SEE THE FRAME
SCHEMATIC DIAGRAM OF TUBE AC SET (60 AU)

THIS SCHEMATIC DIAGRAM IS PART OF THE SCHEMATIC SET WHICH SHOULD BE ORDERED BY LETTERS OF AND ACCORDING TO THE INSTRUCTIONS WHICH ARE SHOWN AT THE END OF THIS SET.

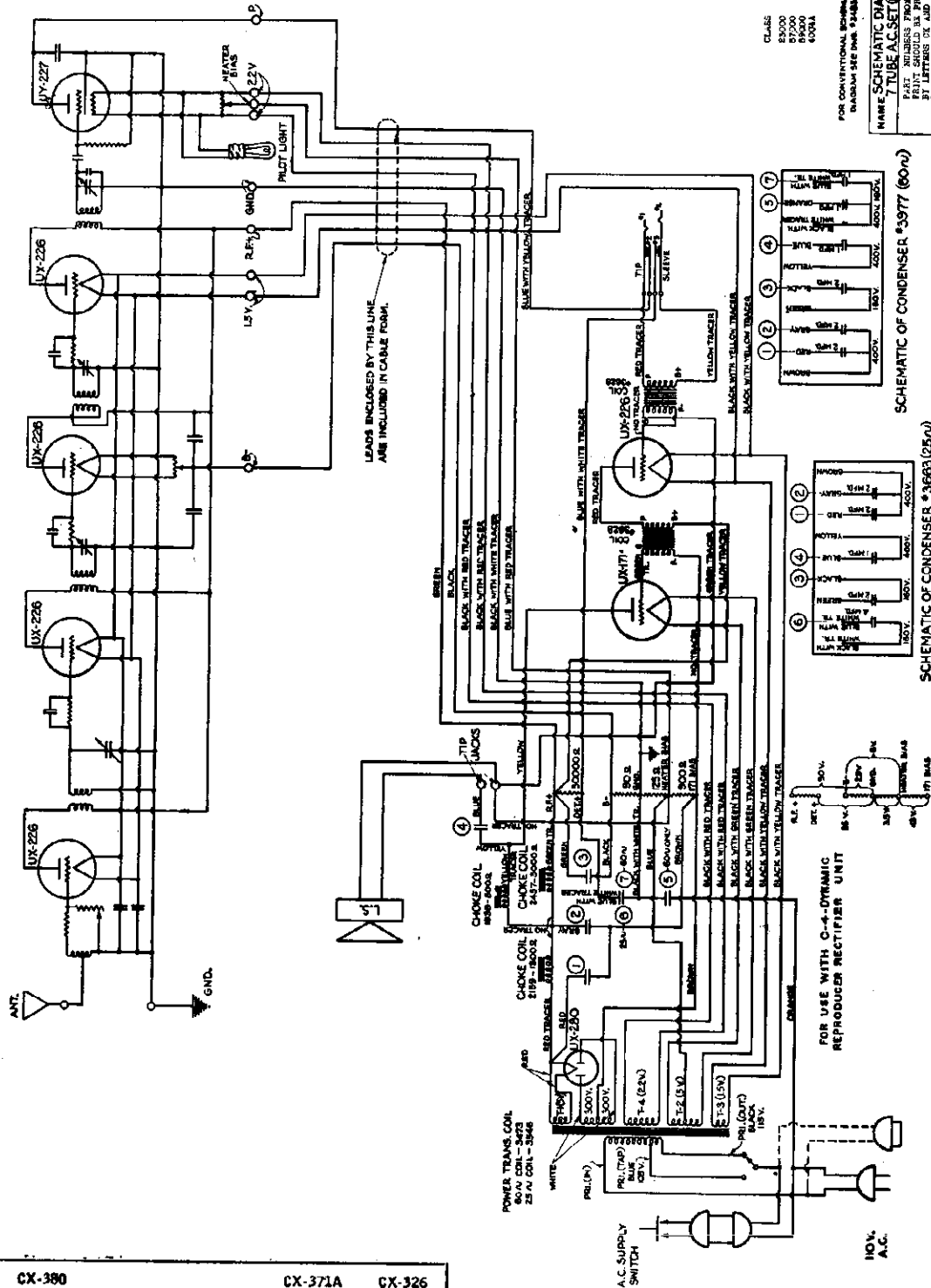


C-1, C-3			
CX-380 Rect.	CX-326 1st R.F.	CX-371A 2nd A.F.	CX-326 1st A.F.
CX-326 2nd R.F.	CX-326 3rd R.F.	C-327 Det.	

SEE ALL DIMENSIONS FOR DETAILS PLUS ON DRAWING - 1018

MODEL C-2,C-4
Schematic

COLUMBIA PHONOGRAPH COMPANY

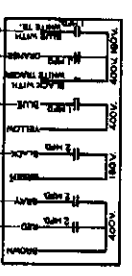


FOR CONVENTIONAL SCHEMATIC DIAGRAMS SEE PAGE 1248A.

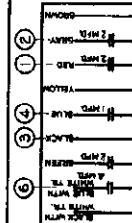
NAME: **7 TUBE AC SET (60μ)**

THIS SCHEMATIC DIAGRAM IS PRINTED IN THIS BOOK BY LETTERS OF AND ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS. SHOULD AT ALL TIMES BE KEPT AT HAND.

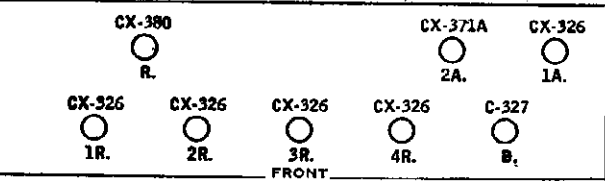
CLASS
6700
6750
6800
6081



SCHEMATIC OF CONDENSER #3977 (60μ)



SCHEMATIC OF CONDENSER #3663 (25μ)

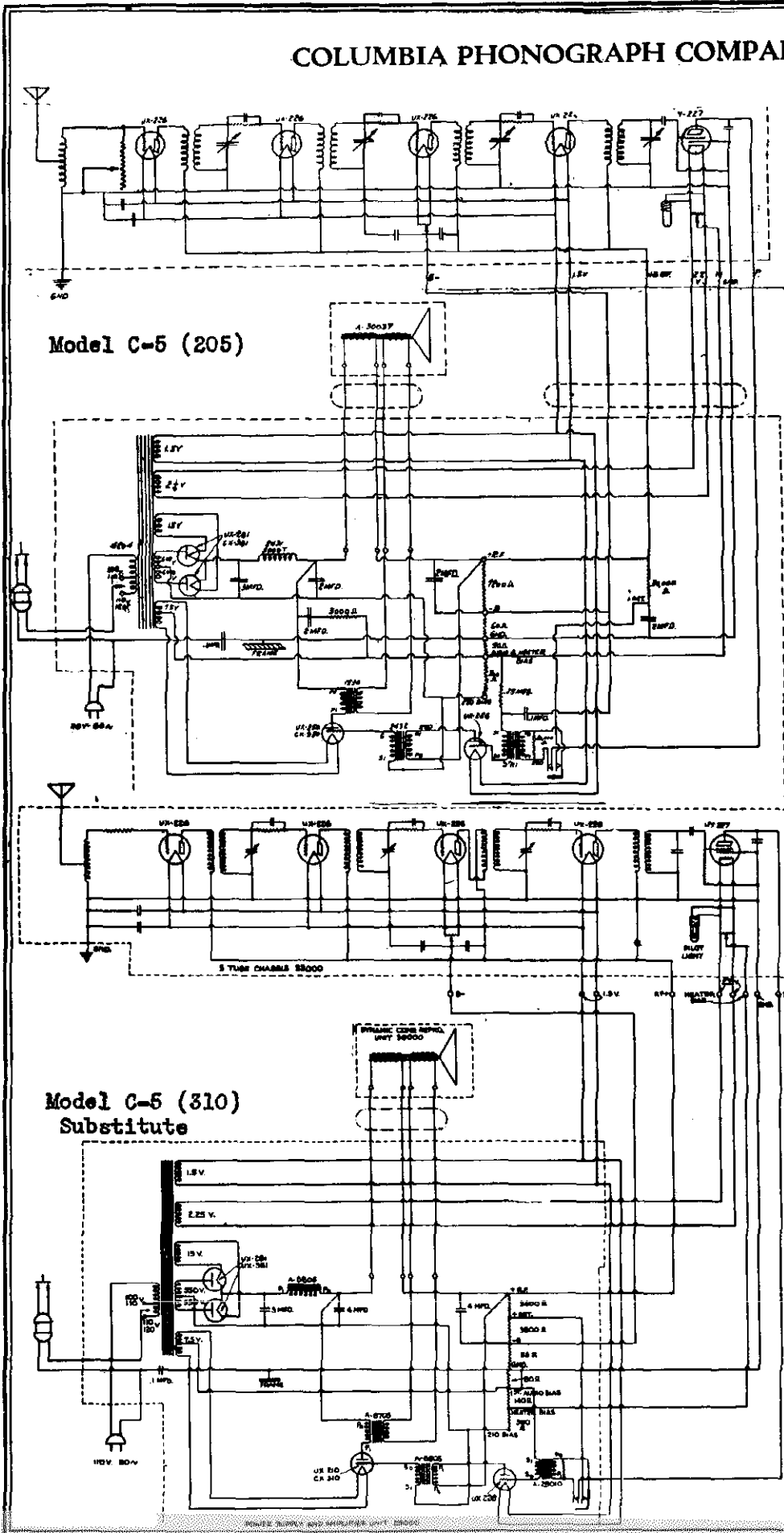


*This Model Uses a CX-381 Also for the Dynamic Speaker Field Supply.

FIG. 1-11. (Continued from page 1-10) PHONO. CO. 1938

COLUMBIA PHONOGRAPH COMPANY

MODEL C-5 (205)
 MODEL C-5 (310)
 Schematic
 Voltage
 Socket

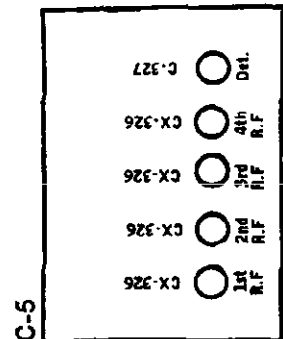
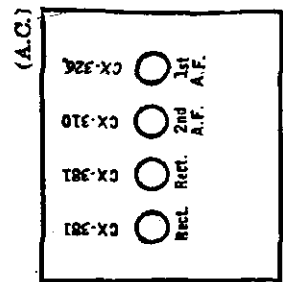


Model C-5 (205)

Model C-5 (310)
 Substitute

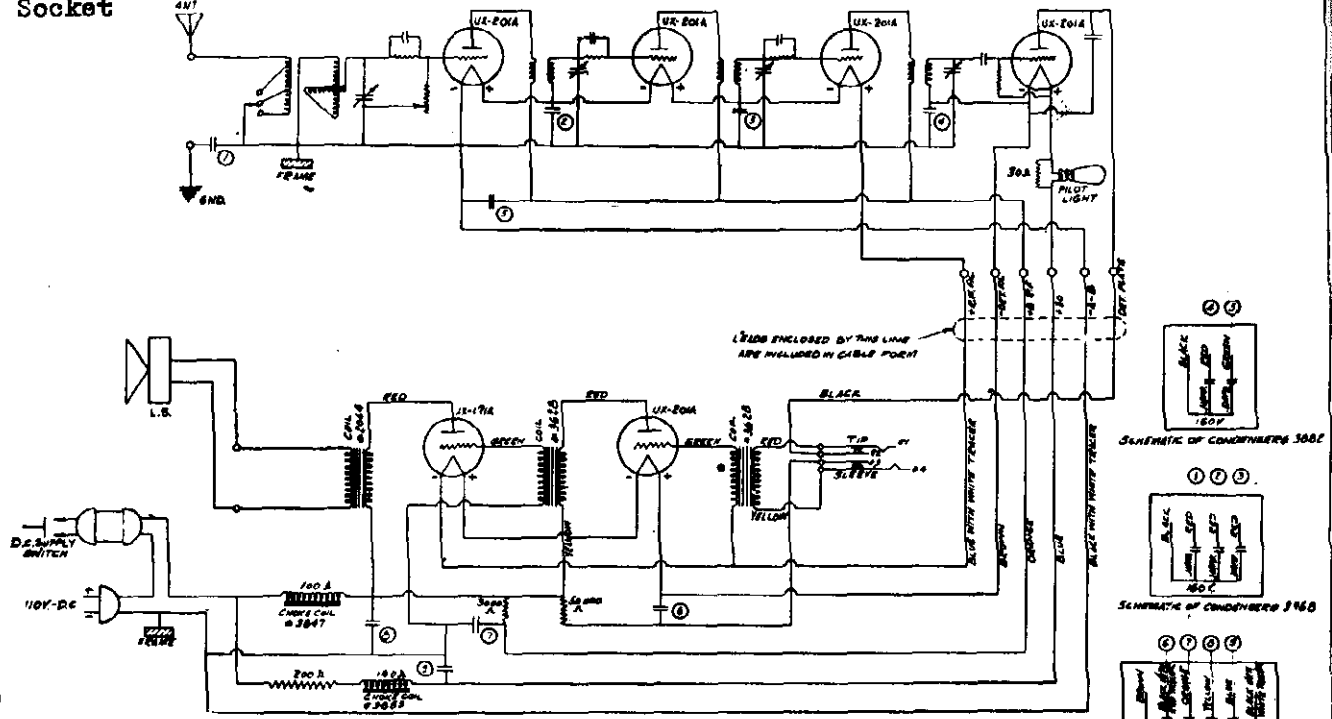
Line Voltage 116

TYPE OF TUBE IN SOCKET	TUBE OUT		TUBE IN TESTER		NOMINAL PLATE VOLTAGE	PLATE RESISTANCE
	TYPE	VOLTS	TYPE	VOLTS		
225	1st A.F.	80	54	2.0	5.0	1.0
226	2nd A.F.	80	54	2.0	5.0	1.0
227	3rd A.F.	80	54	2.0	5.0	1.0
228	4th A.F.	80	54	2.0	5.0	1.0
229	1st A.F.	80	54	2.0	5.0	1.0
230	2nd A.F.	80	54	2.0	5.0	1.0
231	3rd A.F.	80	54	2.0	5.0	1.0
232	4th A.F.	80	54	2.0	5.0	1.0
233	1st A.F.	80	54	2.0	5.0	1.0
234	2nd A.F.	80	54	2.0	5.0	1.0
235	3rd A.F.	80	54	2.0	5.0	1.0
236	4th A.F.	80	54	2.0	5.0	1.0
237	1st A.F.	80	54	2.0	5.0	1.0
238	2nd A.F.	80	54	2.0	5.0	1.0
239	3rd A.F.	80	54	2.0	5.0	1.0
240	4th A.F.	80	54	2.0	5.0	1.0
241	1st A.F.	80	54	2.0	5.0	1.0
242	2nd A.F.	80	54	2.0	5.0	1.0
243	3rd A.F.	80	54	2.0	5.0	1.0
244	4th A.F.	80	54	2.0	5.0	1.0
245	1st A.F.	80	54	2.0	5.0	1.0
246	2nd A.F.	80	54	2.0	5.0	1.0
247	3rd A.F.	80	54	2.0	5.0	1.0
248	4th A.F.	80	54	2.0	5.0	1.0
249	1st A.F.	80	54	2.0	5.0	1.0
250	2nd A.F.	80	54	2.0	5.0	1.0
251	3rd A.F.	80	54	2.0	5.0	1.0
252	4th A.F.	80	54	2.0	5.0	1.0
253	1st A.F.	80	54	2.0	5.0	1.0
254	2nd A.F.	80	54	2.0	5.0	1.0
255	3rd A.F.	80	54	2.0	5.0	1.0
256	4th A.F.	80	54	2.0	5.0	1.0
257	1st A.F.	80	54	2.0	5.0	1.0
258	2nd A.F.	80	54	2.0	5.0	1.0
259	3rd A.F.	80	54	2.0	5.0	1.0
260	4th A.F.	80	54	2.0	5.0	1.0
261	1st A.F.	80	54	2.0	5.0	1.0
262	2nd A.F.	80	54	2.0	5.0	1.0
263	3rd A.F.	80	54	2.0	5.0	1.0
264	4th A.F.	80	54	2.0	5.0	1.0
265	1st A.F.	80	54	2.0	5.0	1.0
266	2nd A.F.	80	54	2.0	5.0	1.0
267	3rd A.F.	80	54	2.0	5.0	1.0
268	4th A.F.	80	54	2.0	5.0	1.0
269	1st A.F.	80	54	2.0	5.0	1.0
270	2nd A.F.	80	54	2.0	5.0	1.0
271	3rd A.F.	80	54	2.0	5.0	1.0
272	4th A.F.	80	54	2.0	5.0	1.0
273	1st A.F.	80	54	2.0	5.0	1.0
274	2nd A.F.	80	54	2.0	5.0	1.0
275	3rd A.F.	80	54	2.0	5.0	1.0
276	4th A.F.	80	54	2.0	5.0	1.0
277	1st A.F.	80	54	2.0	5.0	1.0
278	2nd A.F.	80	54	2.0	5.0	1.0
279	3rd A.F.	80	54	2.0	5.0	1.0
280	4th A.F.	80	54	2.0	5.0	1.0
281	1st A.F.	80	54	2.0	5.0	1.0
282	2nd A.F.	80	54	2.0	5.0	1.0
283	3rd A.F.	80	54	2.0	5.0	1.0
284	4th A.F.	80	54	2.0	5.0	1.0
285	1st A.F.	80	54	2.0	5.0	1.0
286	2nd A.F.	80	54	2.0	5.0	1.0
287	3rd A.F.	80	54	2.0	5.0	1.0
288	4th A.F.	80	54	2.0	5.0	1.0
289	1st A.F.	80	54	2.0	5.0	1.0
290	2nd A.F.	80	54	2.0	5.0	1.0
291	3rd A.F.	80	54	2.0	5.0	1.0
292	4th A.F.	80	54	2.0	5.0	1.0
293	1st A.F.	80	54	2.0	5.0	1.0
294	2nd A.F.	80	54	2.0	5.0	1.0
295	3rd A.F.	80	54	2.0	5.0	1.0
296	4th A.F.	80	54	2.0	5.0	1.0
297	1st A.F.	80	54	2.0	5.0	1.0
298	2nd A.F.	80	54	2.0	5.0	1.0
299	3rd A.F.	80	54	2.0	5.0	1.0
300	4th A.F.	80	54	2.0	5.0	1.0

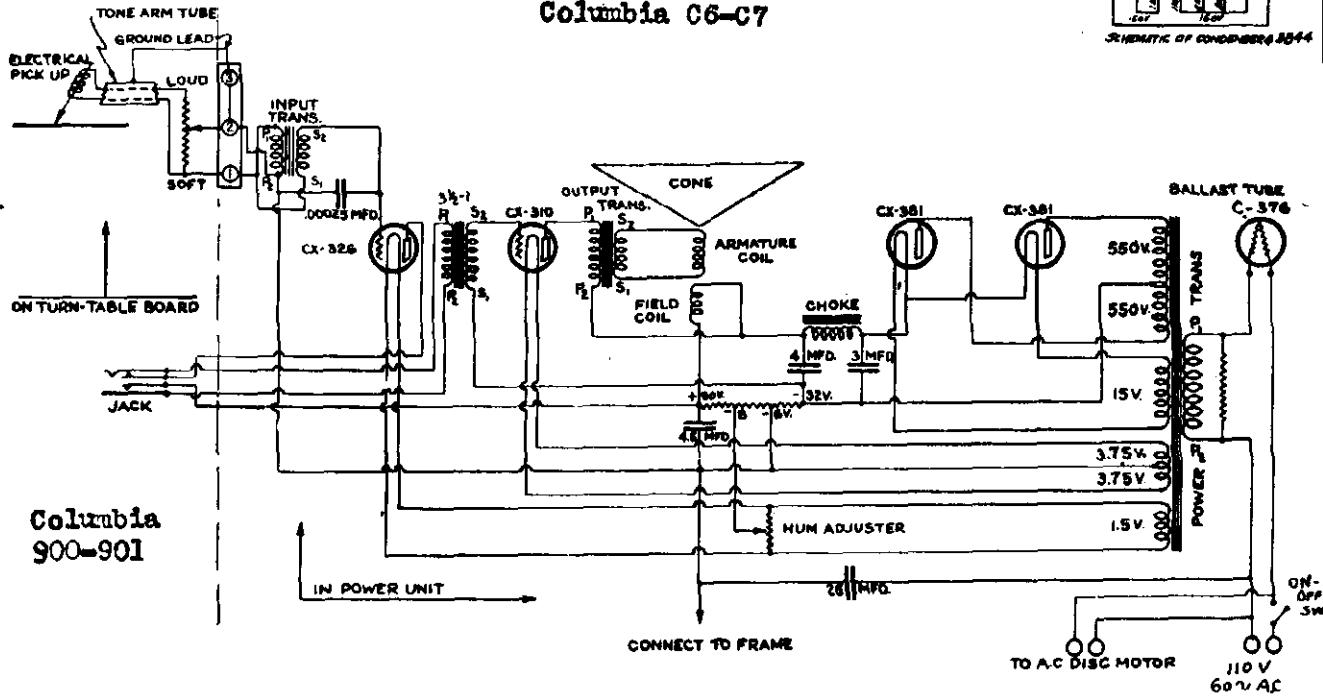


MODEL C-6, C-7
 MODEL 900, 901
 Schematic
 Socket

COLUMBIA PHONOGRAPH COMPANY



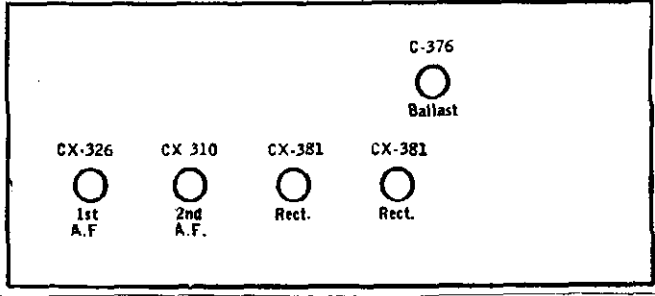
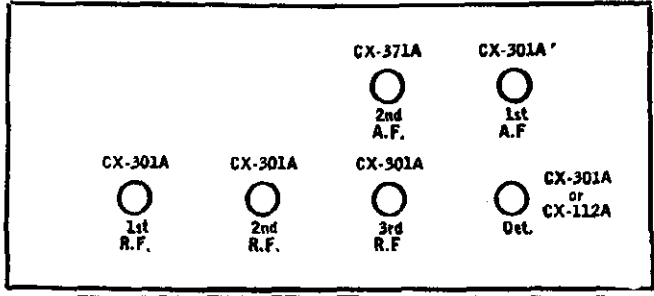
Columbia C6-C7



C-6, C-7

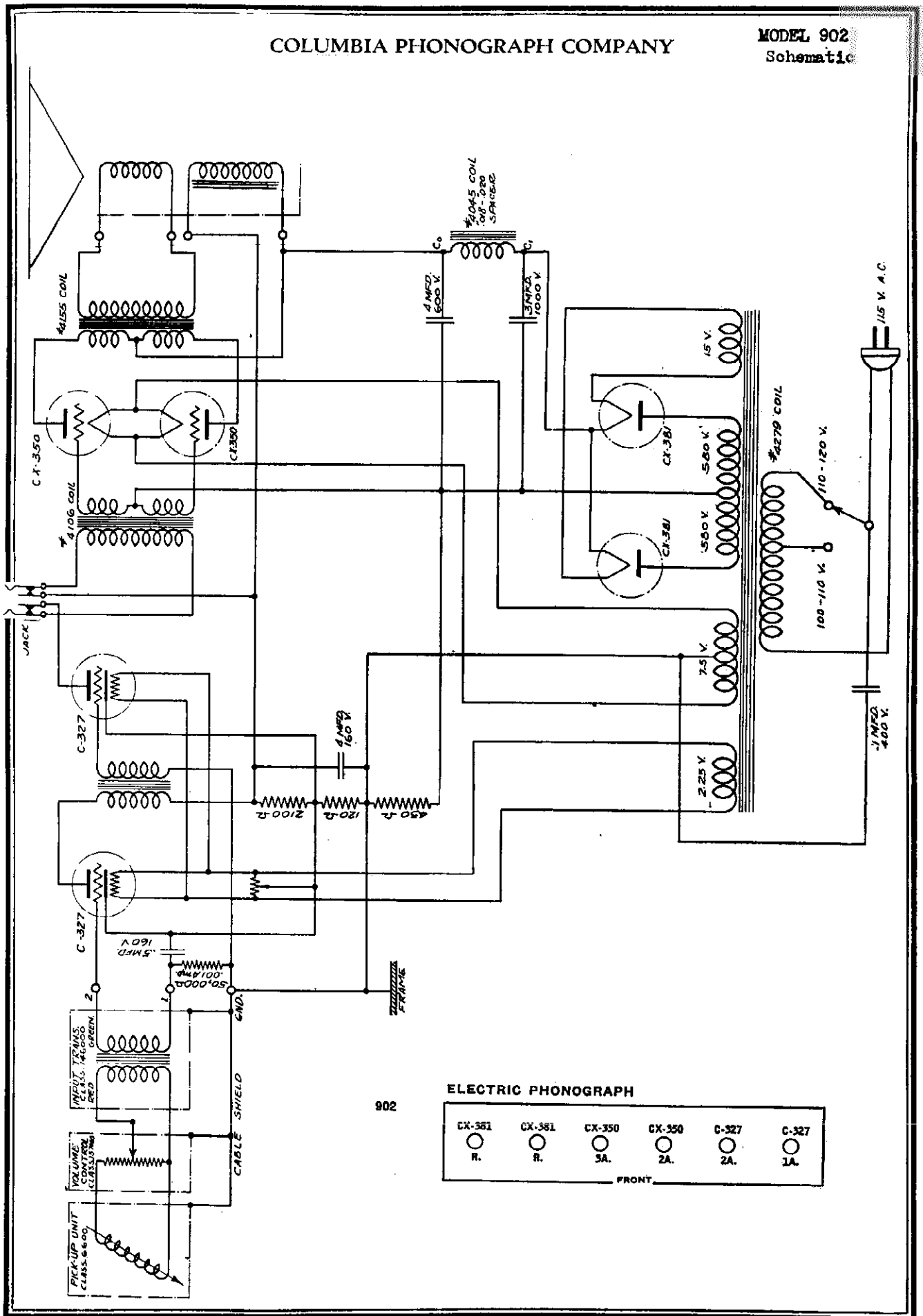
(D.C.) 900, 901 Electric Phonograph

(A.C.)



COLUMBIA PHONOGRAPH COMPANY

MODEL 902
Schematic



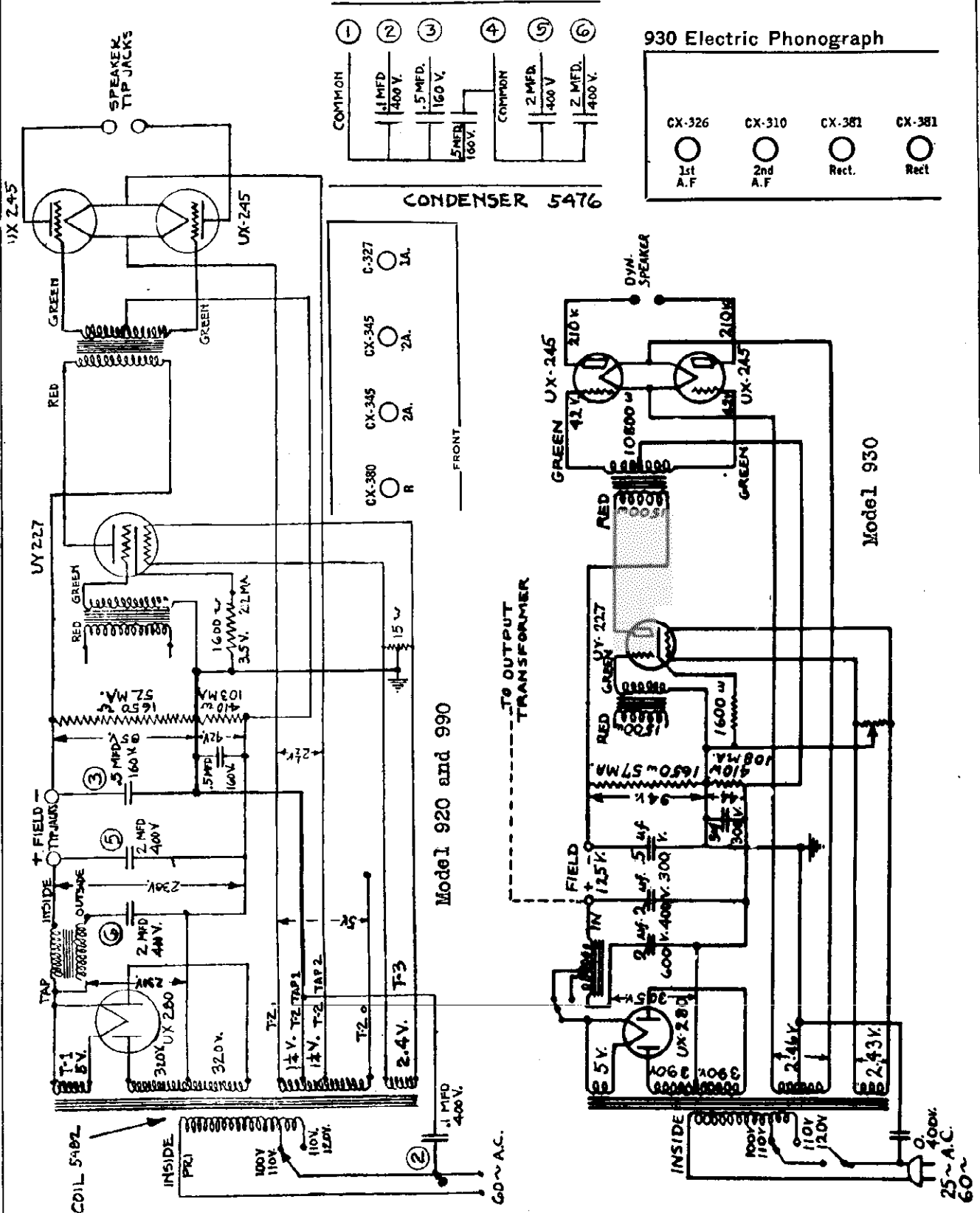
ELECTRIC PHONOGRAPH

CX-351	CX-351	CX-350	CX-350	C-327	C-327
○	○	○	○	○	○
R.	R.	5A.	2A.	2A.	1A.

FRONT.

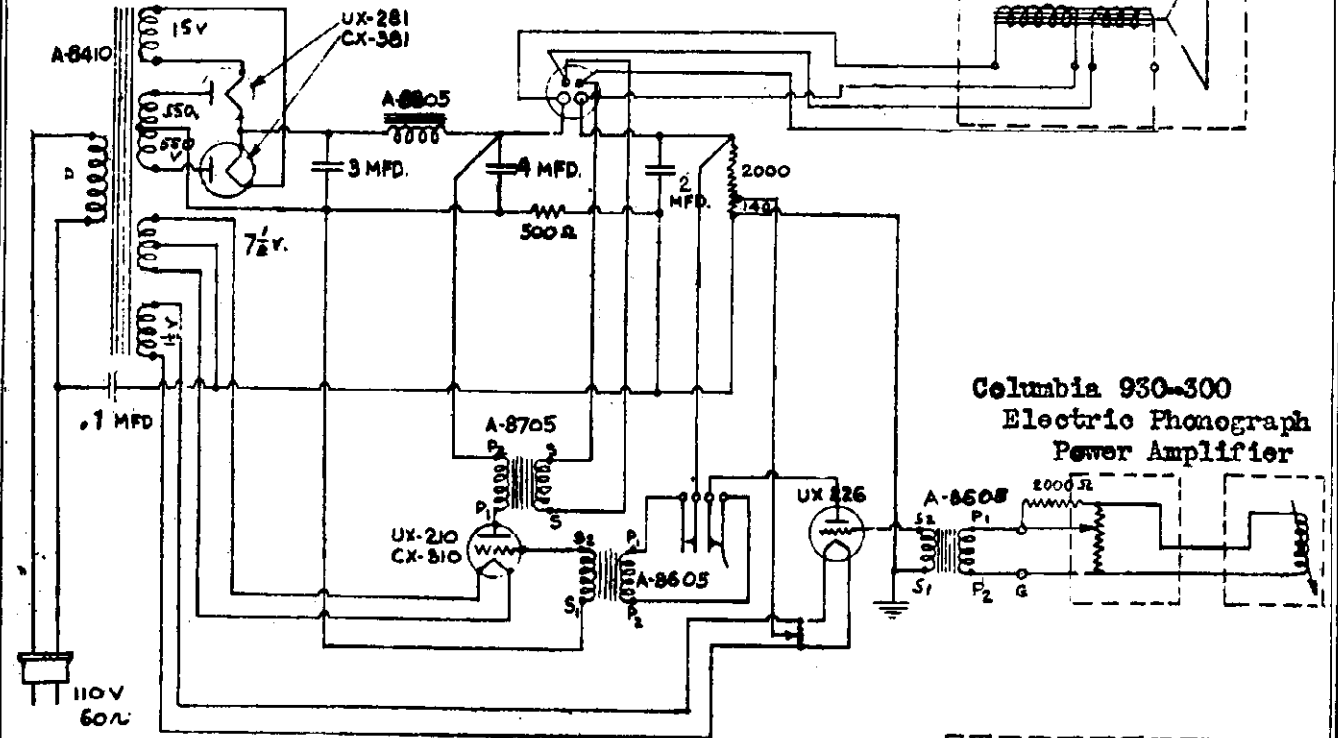
COLUMBIA PHONOGRAPH COMPANY

MODEL 920
 MODEL 930
 MODEL 990
 Schematic

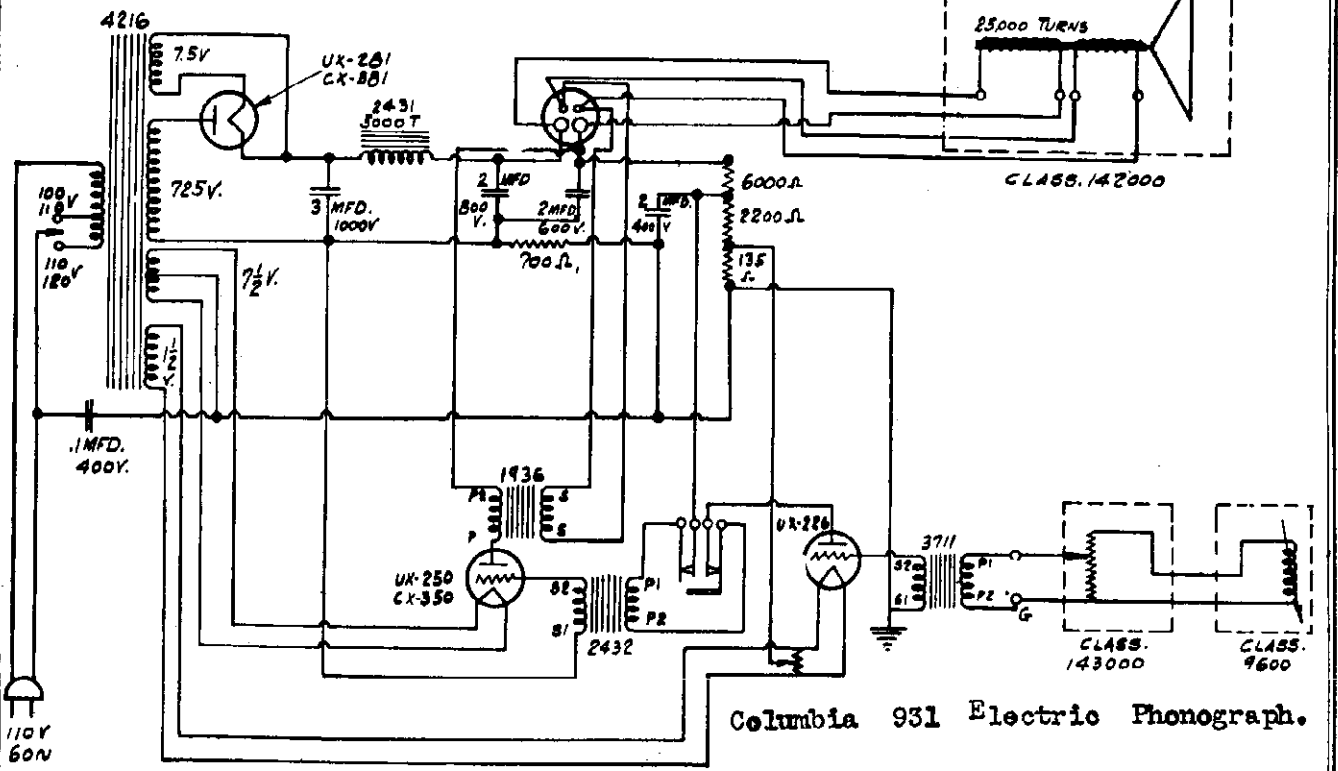


COLUMBIA PHONOGRAPH COMPANY MODEL 930-300

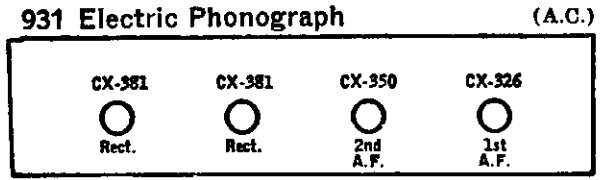
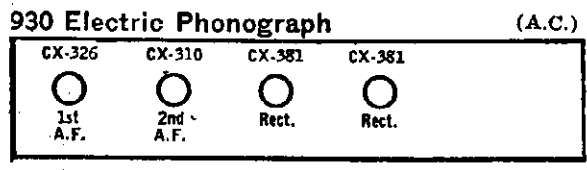
MODEL 931 Schematic A-8137



Columbia 930-300 Electric Phonograph Power Amplifier

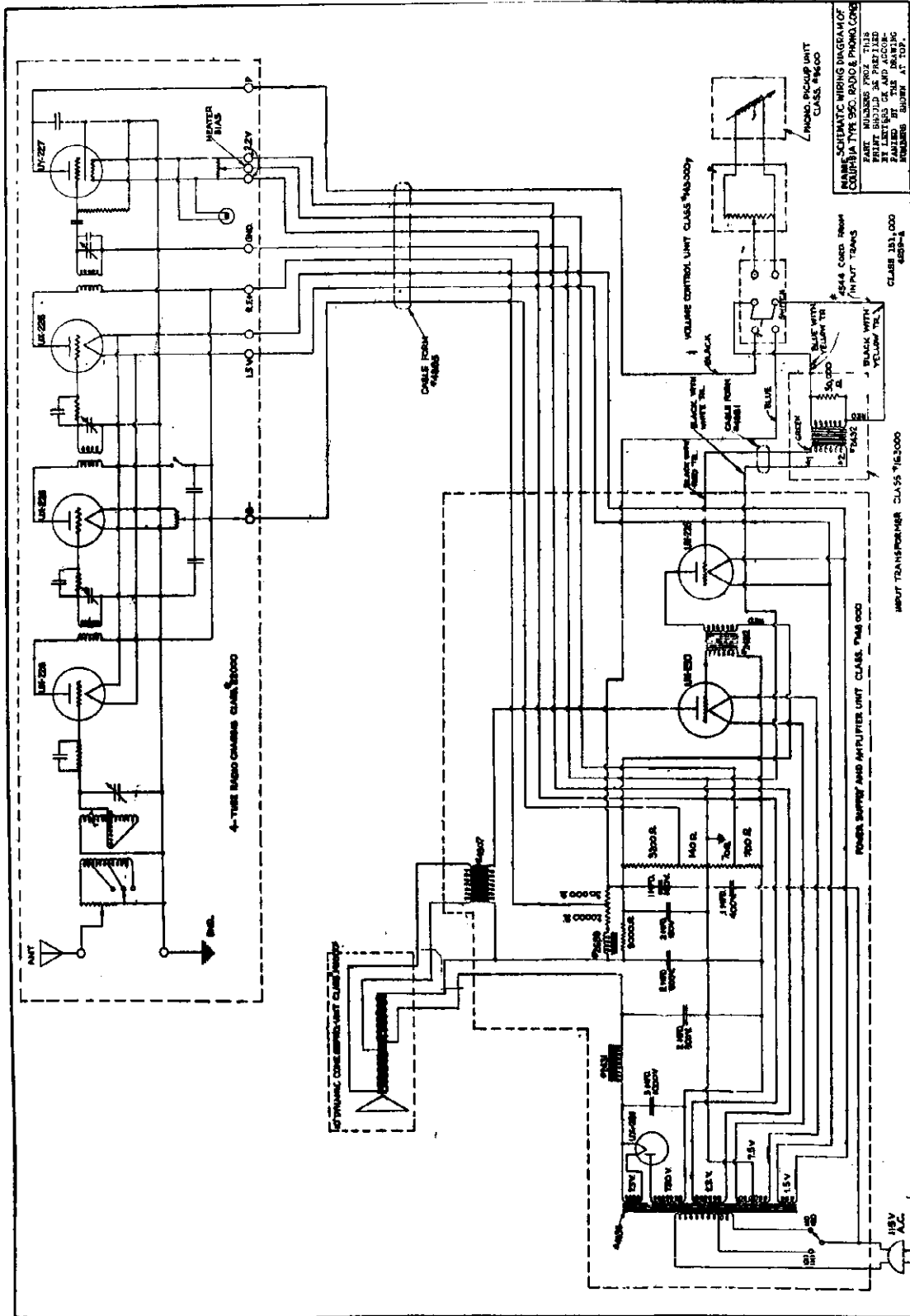


Columbia 931 Electric Phonograph.



COLUMBIA PHONOGRAPH COMPANY

MODEL 950
Schematic



CX-381	950	CX-350	CX-326
R.		2A.	1A.
CX-326	CX-326	CX-326	C-327
1R.	2R.	3R.	D.

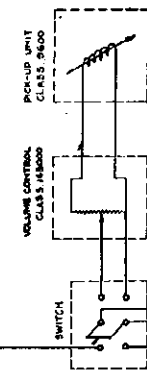
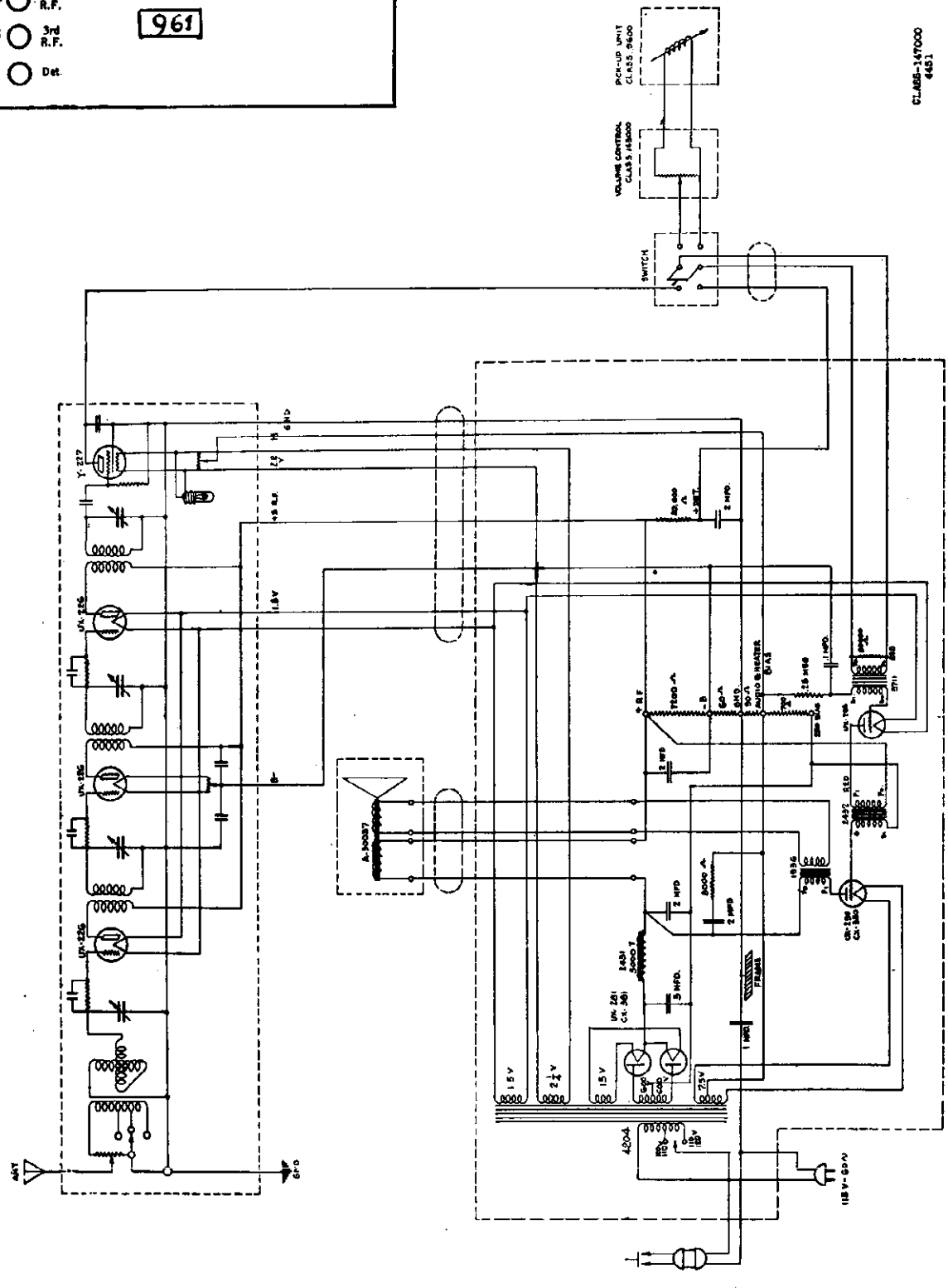
FRONT

MODEL 961

COLUMBIA PHONOGRAPH COMPANY

Chassis	CX-351	CX-351	CX-350	CX-326
CX-326	<input type="radio"/> 1st R.F.	<input type="radio"/> Rect.	<input type="radio"/> 2nd A.F.	<input type="radio"/> 1st A.F.
CX-326	<input type="radio"/> 2nd R.F.			
CX-326	<input type="radio"/> 3rd R.F.			
C-327	<input type="radio"/> Det.			

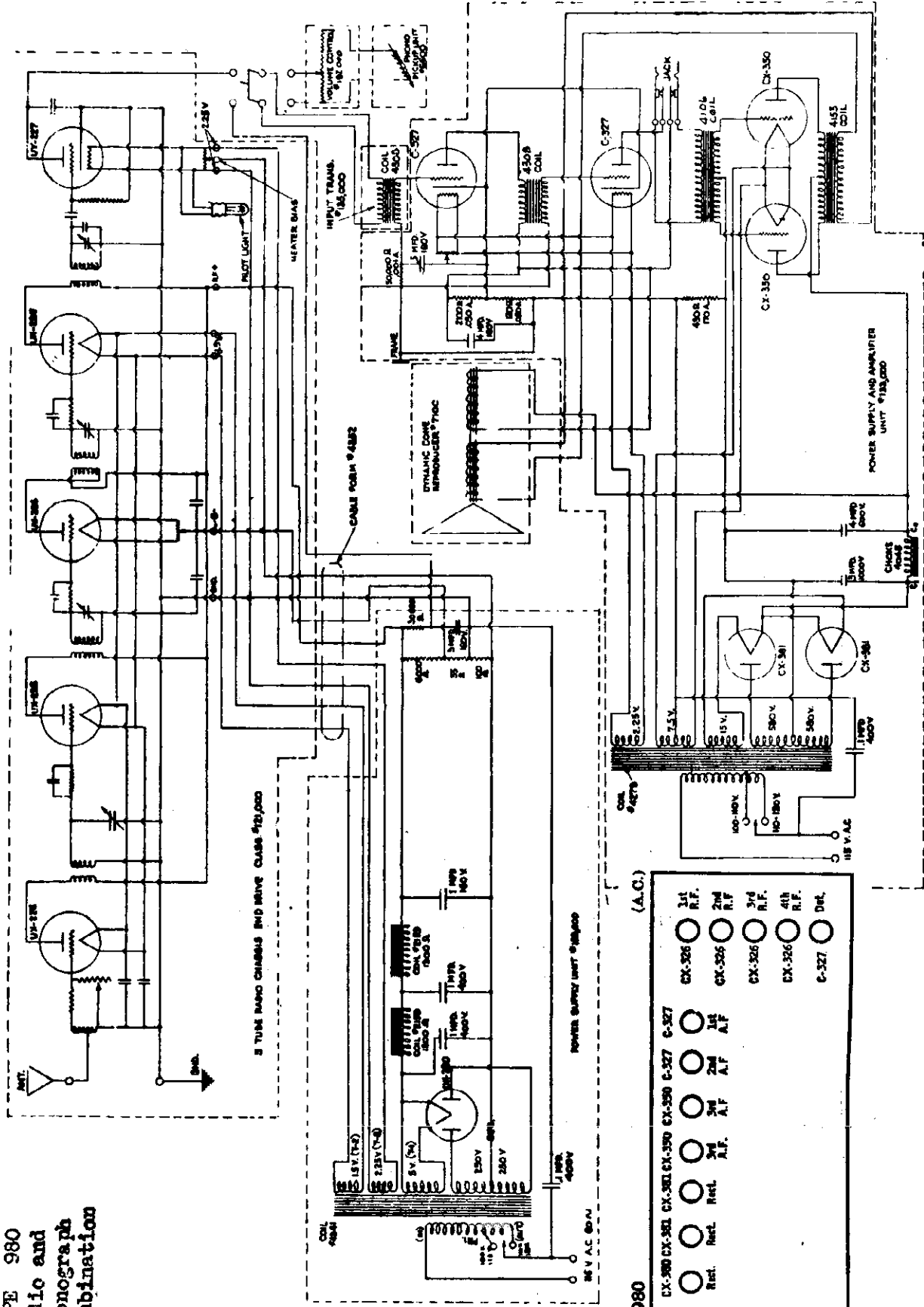
961



CLASB-147000
4451

COLUMBIA PHONOGRAPH COMPANY

MODEL 980



TYPE 980
Radio and
Phonograph
Combination

980

(A.C.)	
1st R.F.	6X-326
2nd R.F.	6X-326
3rd A.F.	6X-326
4th R.F.	6X-326
5th R.F.	6X-326
6th R.F.	6X-326
7th R.F.	6X-326
8th R.F.	6X-326
9th R.F.	6X-326
10th R.F.	6X-326
11th R.F.	6X-326
12th R.F.	6X-326
13th R.F.	6X-326
14th R.F.	6X-326
15th R.F.	6X-326
16th R.F.	6X-326
17th R.F.	6X-326
18th R.F.	6X-326
19th R.F.	6X-326
20th R.F.	6X-326
21st R.F.	6X-326
22nd R.F.	6X-326
23rd R.F.	6X-326
24th R.F.	6X-326
25th R.F.	6X-326
26th R.F.	6X-326
27th R.F.	6X-326
28th R.F.	6X-326
29th R.F.	6X-326
30th R.F.	6X-326
31st R.F.	6X-326
32nd R.F.	6X-326
33rd R.F.	6X-326
34th R.F.	6X-326
35th R.F.	6X-326
36th R.F.	6X-326
37th R.F.	6X-326
38th R.F.	6X-326
39th R.F.	6X-326
40th R.F.	6X-326
41st R.F.	6X-326
42nd R.F.	6X-326
43rd R.F.	6X-326
44th R.F.	6X-326
45th R.F.	6X-326
46th R.F.	6X-326
47th R.F.	6X-326
48th R.F.	6X-326
49th R.F.	6X-326
50th R.F.	6X-326
51st R.F.	6X-326
52nd R.F.	6X-326
53rd R.F.	6X-326
54th R.F.	6X-326
55th R.F.	6X-326
56th R.F.	6X-326
57th R.F.	6X-326
58th R.F.	6X-326
59th R.F.	6X-326
60th R.F.	6X-326
61st R.F.	6X-326
62nd R.F.	6X-326
63rd R.F.	6X-326
64th R.F.	6X-326
65th R.F.	6X-326
66th R.F.	6X-326
67th R.F.	6X-326
68th R.F.	6X-326
69th R.F.	6X-326
70th R.F.	6X-326
71st R.F.	6X-326
72nd R.F.	6X-326
73rd R.F.	6X-326
74th R.F.	6X-326
75th R.F.	6X-326
76th R.F.	6X-326
77th R.F.	6X-326
78th R.F.	6X-326
79th R.F.	6X-326
80th R.F.	6X-326
81st R.F.	6X-326
82nd R.F.	6X-326
83rd R.F.	6X-326
84th R.F.	6X-326
85th R.F.	6X-326
86th R.F.	6X-326
87th R.F.	6X-326
88th R.F.	6X-326
89th R.F.	6X-326
90th R.F.	6X-326
91st R.F.	6X-326
92nd R.F.	6X-326
93rd R.F.	6X-326
94th R.F.	6X-326
95th R.F.	6X-326
96th R.F.	6X-326
97th R.F.	6X-326
98th R.F.	6X-326
99th R.F.	6X-326
100th R.F.	6X-326

COLUMBIA RADIO CORPORATION

MODEL SG-8
Bottom View
#1

MODEL SG-8 BOTTOM VIEW

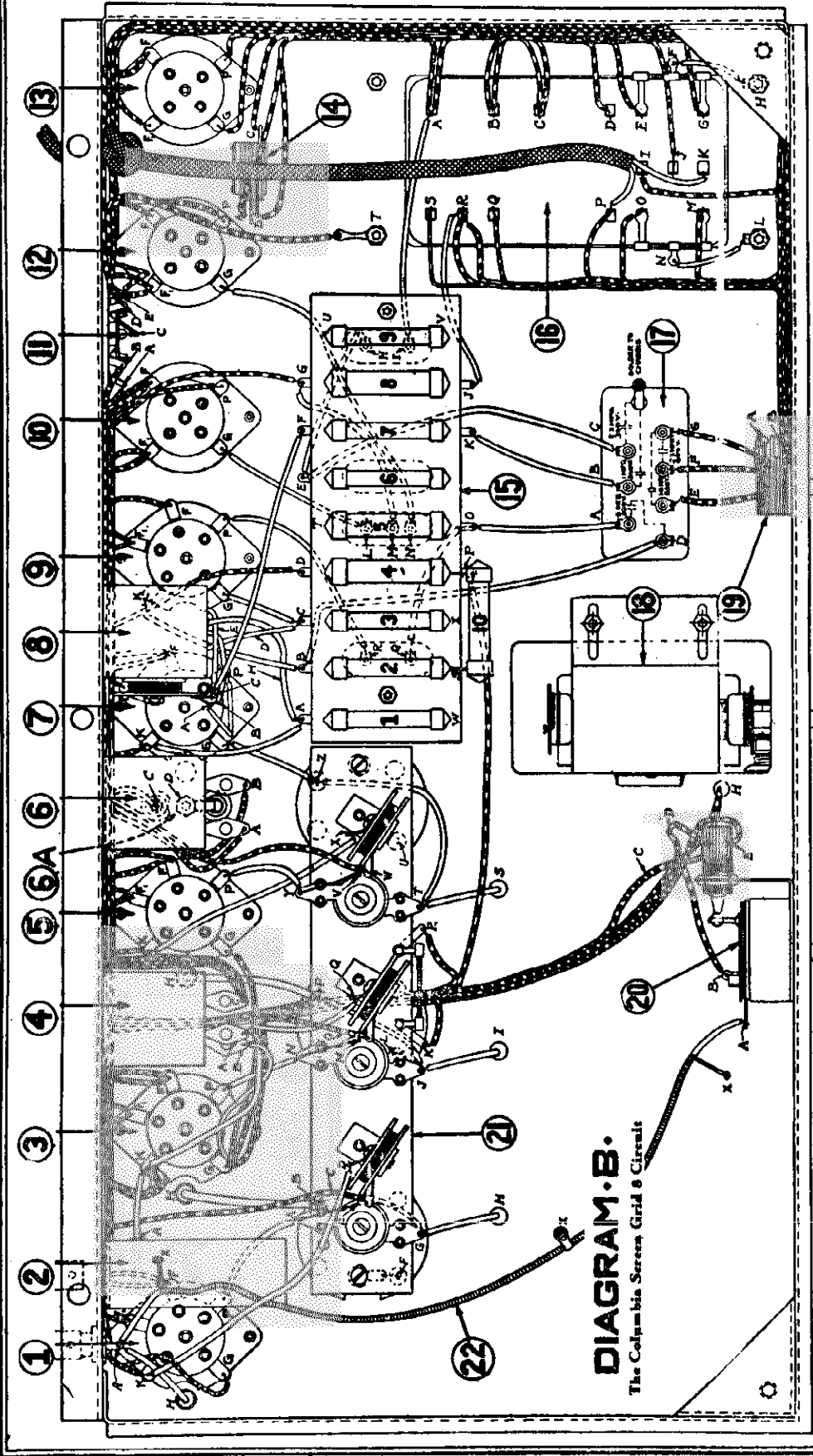


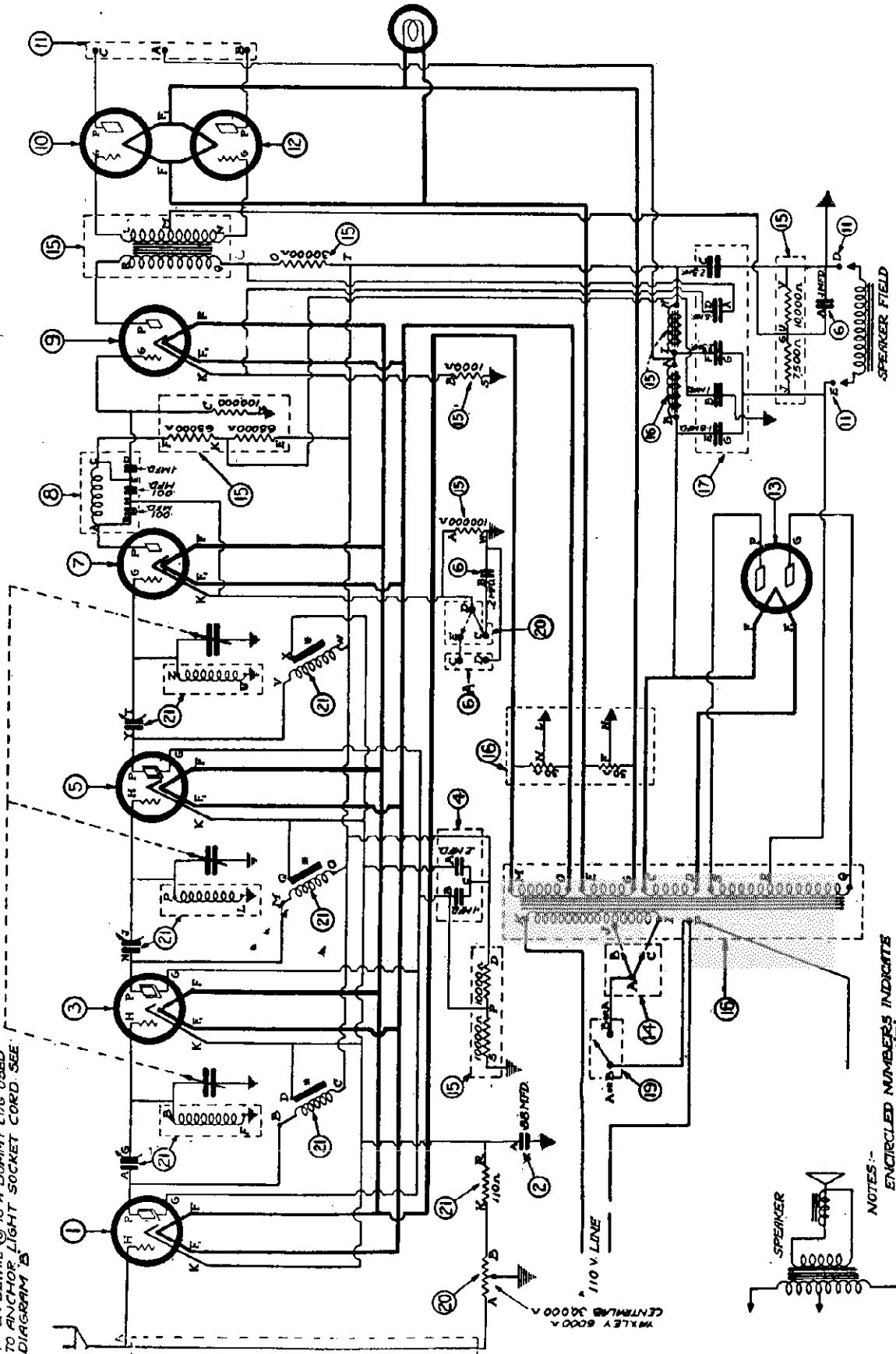
DIAGRAM B.
The Columbia Screen Grid 6 Circuits

Tube No. In Order (1)	Type Of Tube (2)	Position of Tube 1st R.F. Det., Etc (3)	Tube Out		Readings, Plug In Socket Of Set							Tube In Tester		
			A Volts (4)	B Volts (5)	A Volts (6)	B Volts (7)	C Volts (Control (8) Grnd) (9)	Cathode-Heater Volts (10)	Normal Plate M.A. (11)	Plate M.A. Grnd Test (12)	Plate Change M.A. (13)	Screen Grid Volts (14)		
1	224	1st R.F.	2.45	180	2.4	174	-1.5	1.5	4.5	6.7	2.2	80		
2	224	2nd R.F.	2.45	180	2.4	174	-1.5	1.5	4.5	6.7	2.2	80		
3	224	3rd R.F.	2.45	180	2.4	174	-1.5	1.5	4.5	6.7	2.2	80		
4	227	Det.	2.45	106	2.4	106	-14.5	14.5	3.2	3.8	..6			
5	227	1st A.F.	2.45	162	2.4	68	-3.	3.	20	23	3.			
6	245	2nd A.F.	2.35	230	2.2	212	-3.8	3.8	19	22	3..			
7	245	2nd A.F.	2.35	230	2.2	212	-3.8	3.8	19	22	3..			

Line Voltage 115. Set on Low (1) Volt Tap. Volume Control Position Maximum

MODEL SG-8
Schematic

COLUMBIA RADIO CORPORATION

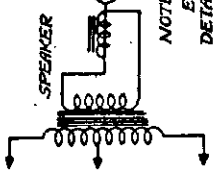


* ON DETAIL (6) IS A DUMMY 1/16 USED TO ANCHOR LIGHT SOCKET CORD. SEE DIAGRAM 2.

MODEL SG-8 (1930)

VOLTAGE DATA ON NEXT PAGE

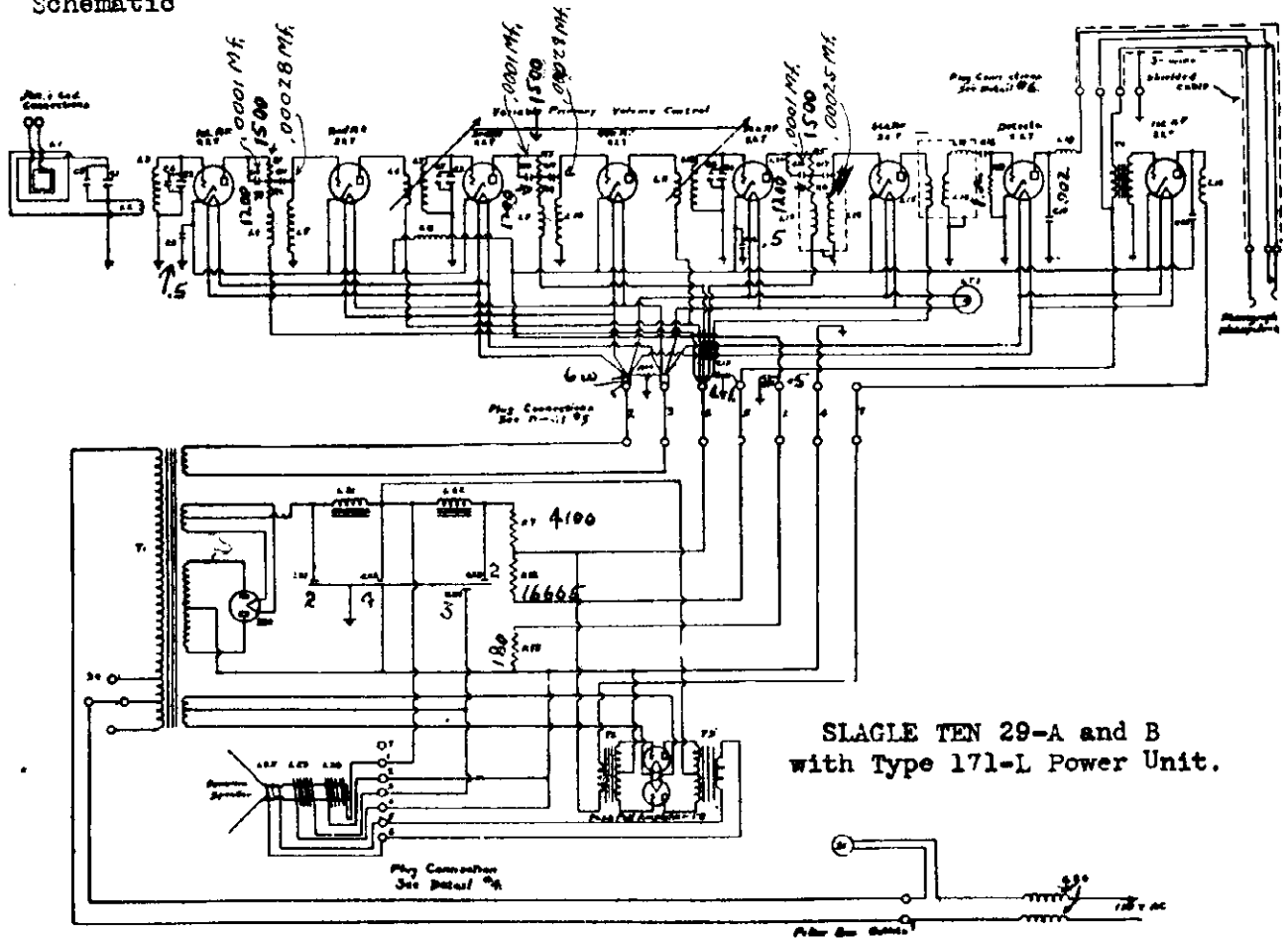
Detail 11 is the Loud-Speaker Socket. Terminals D and E are the speaker field winding.



NOTES:-
ENCIRCLED NUMBERS INDICATE DETAILS ON DIAGRAM 'B'.
LETTERS INDICATE TERMINALS ON DETAILS.
* INDICATES MOUNTING BRACKETS ON DETAIL-(2)

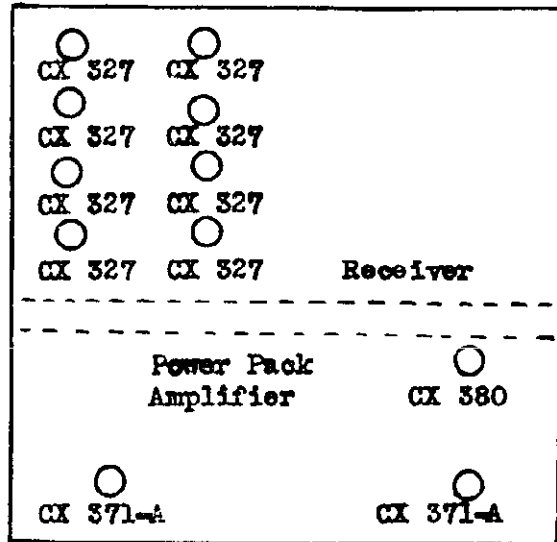
MODEL "Slagle"
10 29-A and
B with '71A
Power Pack.
Schematic

CONTINENTAL RADIO CORPORATION



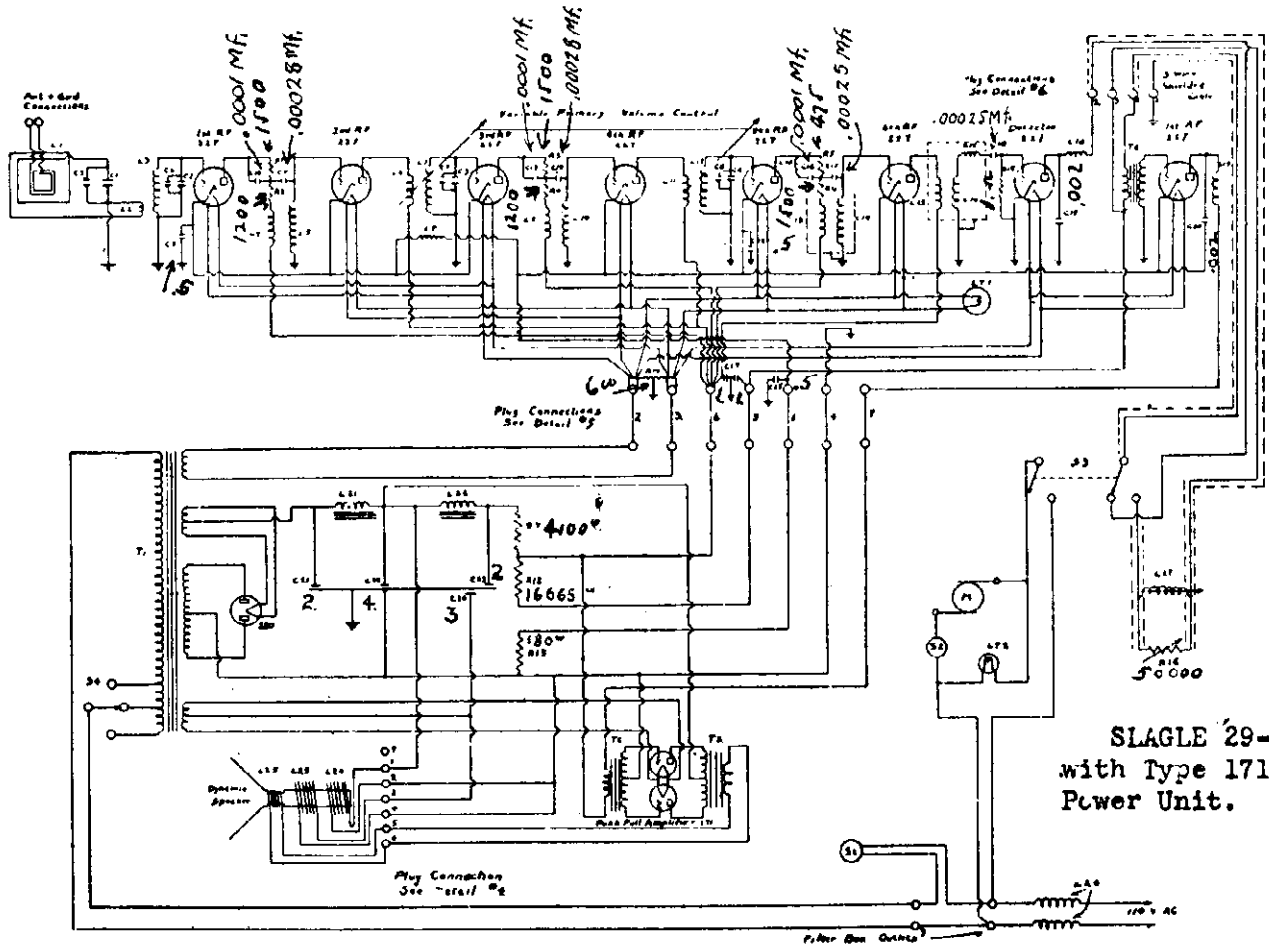
SLAGLE TEN 29-A and B
with Type 171-L Power Unit.

SLAGLE 29 A and B with '71 Pr.Pck.

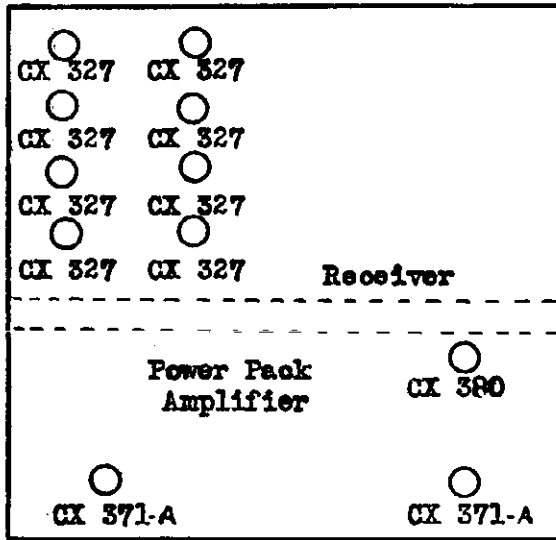


CONTINENTAL RADIO CORPORATION

MODEL "Slagle"
29-C with '71A
Power Pack.
Schematic

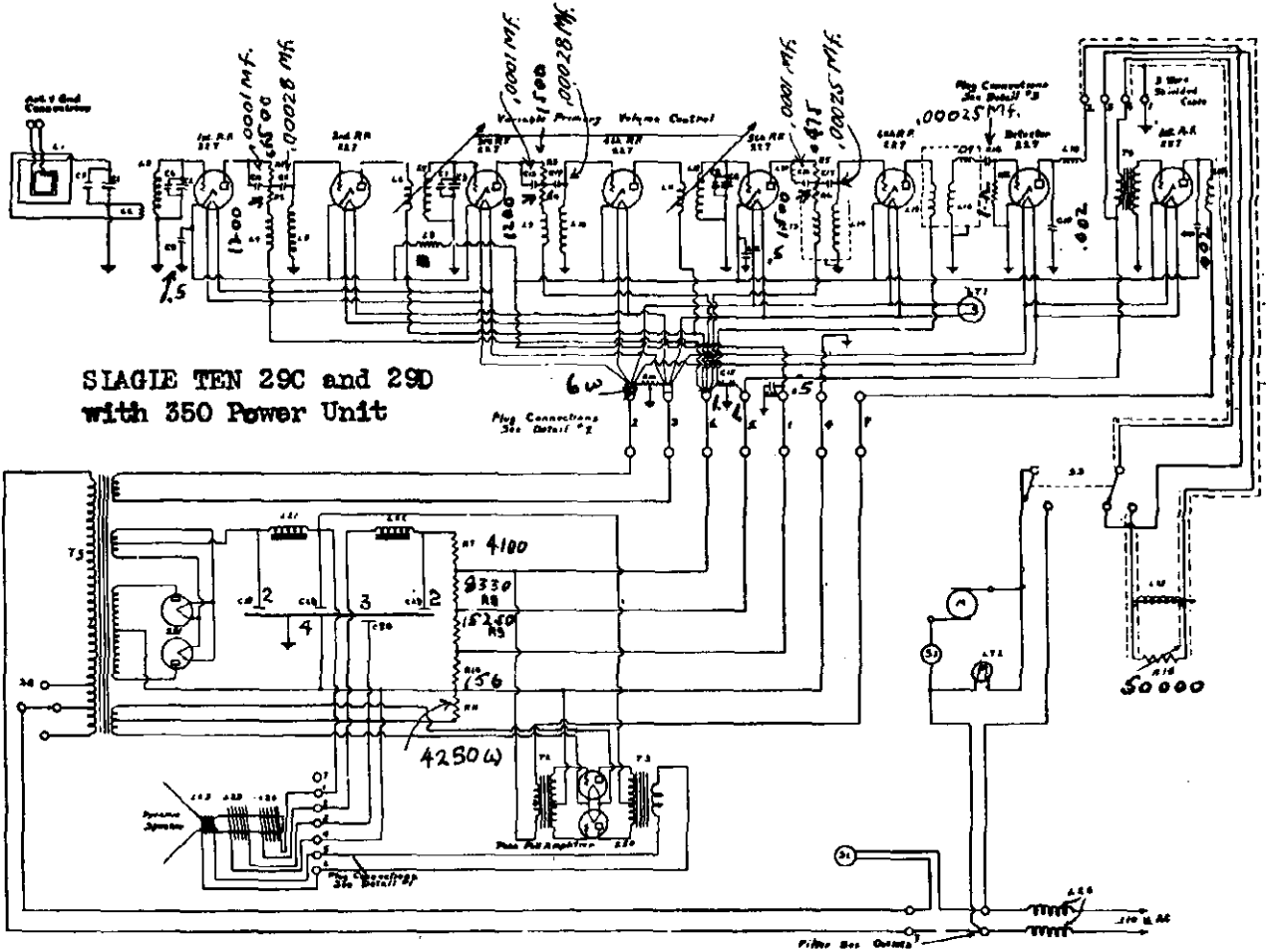


SLAGLE 29-C
with Type 171-L
Power Unit.

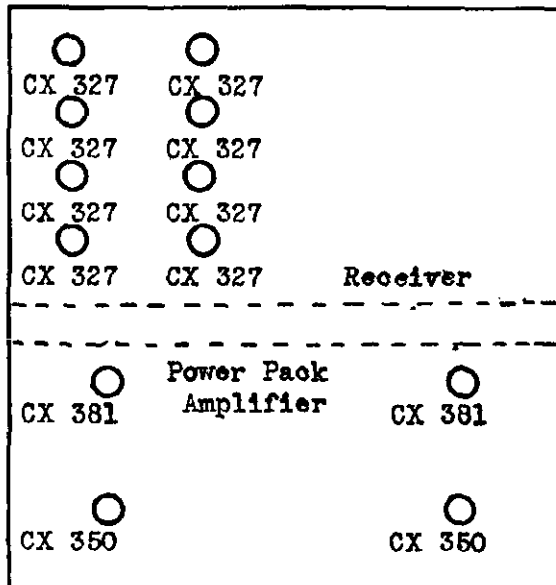


CONTINENTAL RADIO CORPORATION

MODEL "Slagle"
29-C and 29-D
with 150 Power
Pack.
Schematic

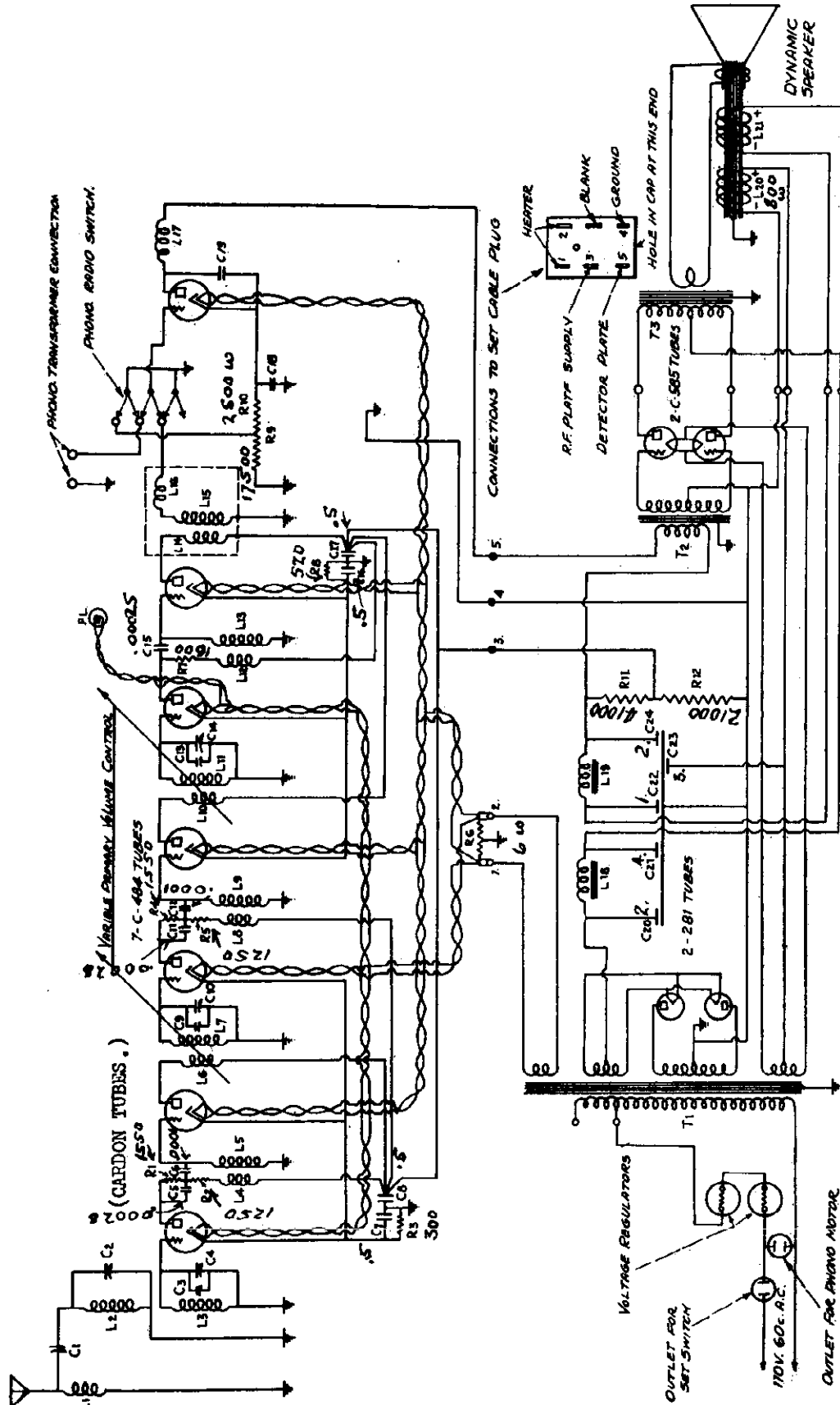


SLAGIE TEN 29C and 29D
with 350 Power Unit



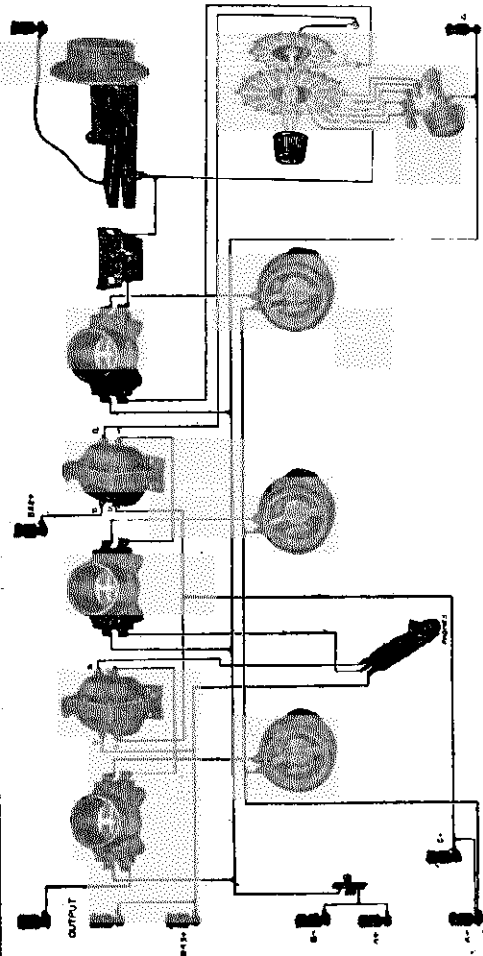
MODEL Star Raider
R-20, R-30, R-40
Schematic

CONTINENTAL RADIO CORPORATION

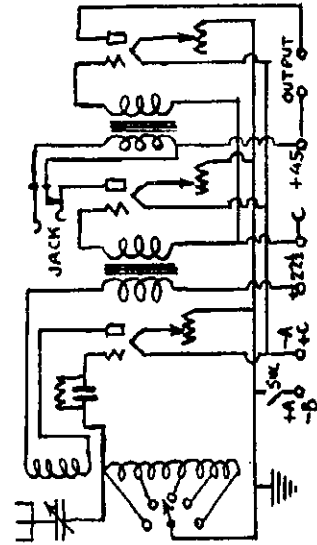


CROSELY RADIO CORP.

MODEL XJ, XL
MODEL 3B, 3C
Schematic



Crosley 3B or 3C Detector and Two-step Amplifier Receiver

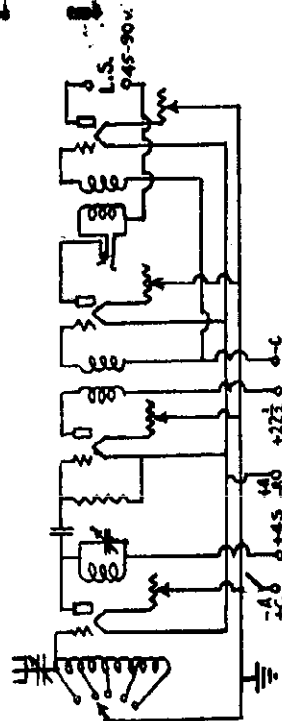


MODEL 3B or 3C

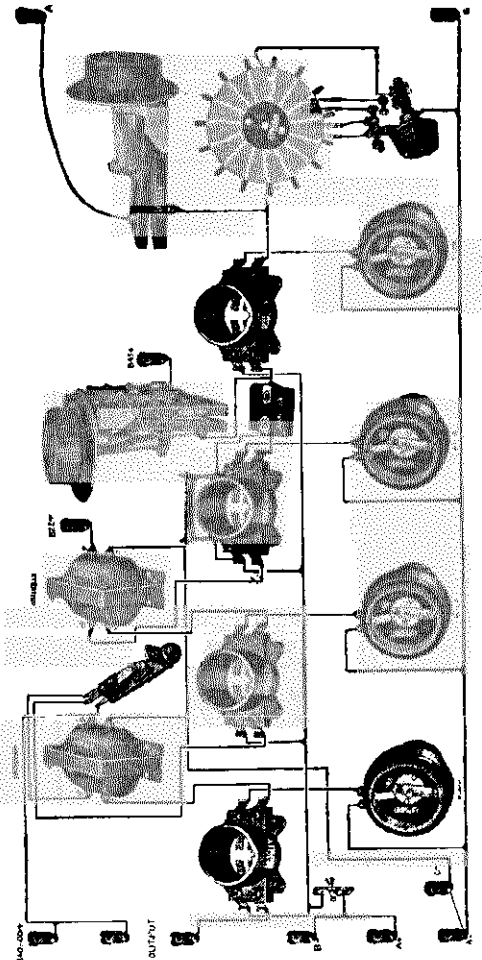
Model XJ

RF	01A	OR	X'95	OR	12
DET	01A	OR	X'95	OR	12
1 AF	01A	OR	X'95	OR	12
2 AF	01A	OR	X'95	OR	12

FRONT



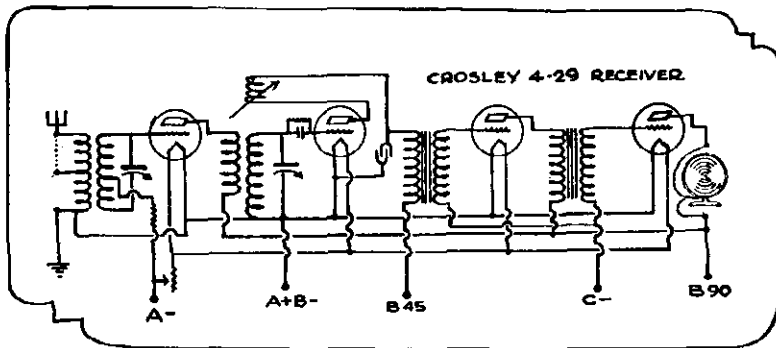
MODELS XJ and XL



Crosley Models XJ and XL Circuit

MODEL 4-29
 MODEL RFL 60,75
 Schematic

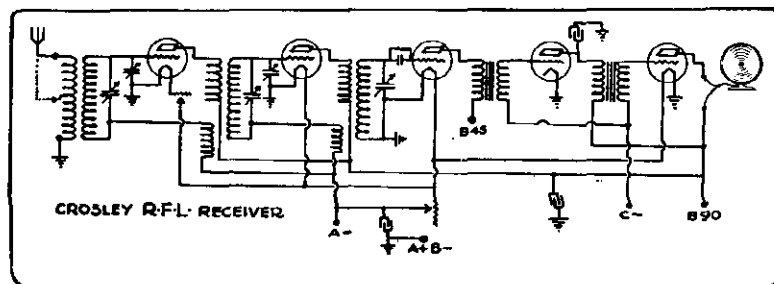
CROSLLEY RADIO CORP.



Model 4-29

RF	2 AF	1 AF	DET
○	○	○	○
'01A	'01A	'01A	'01A
OR	OR	OR	OR
X'99	X'99	X'99	X'99
OR	OR	OR	OR
12	12	12	12

FRONT



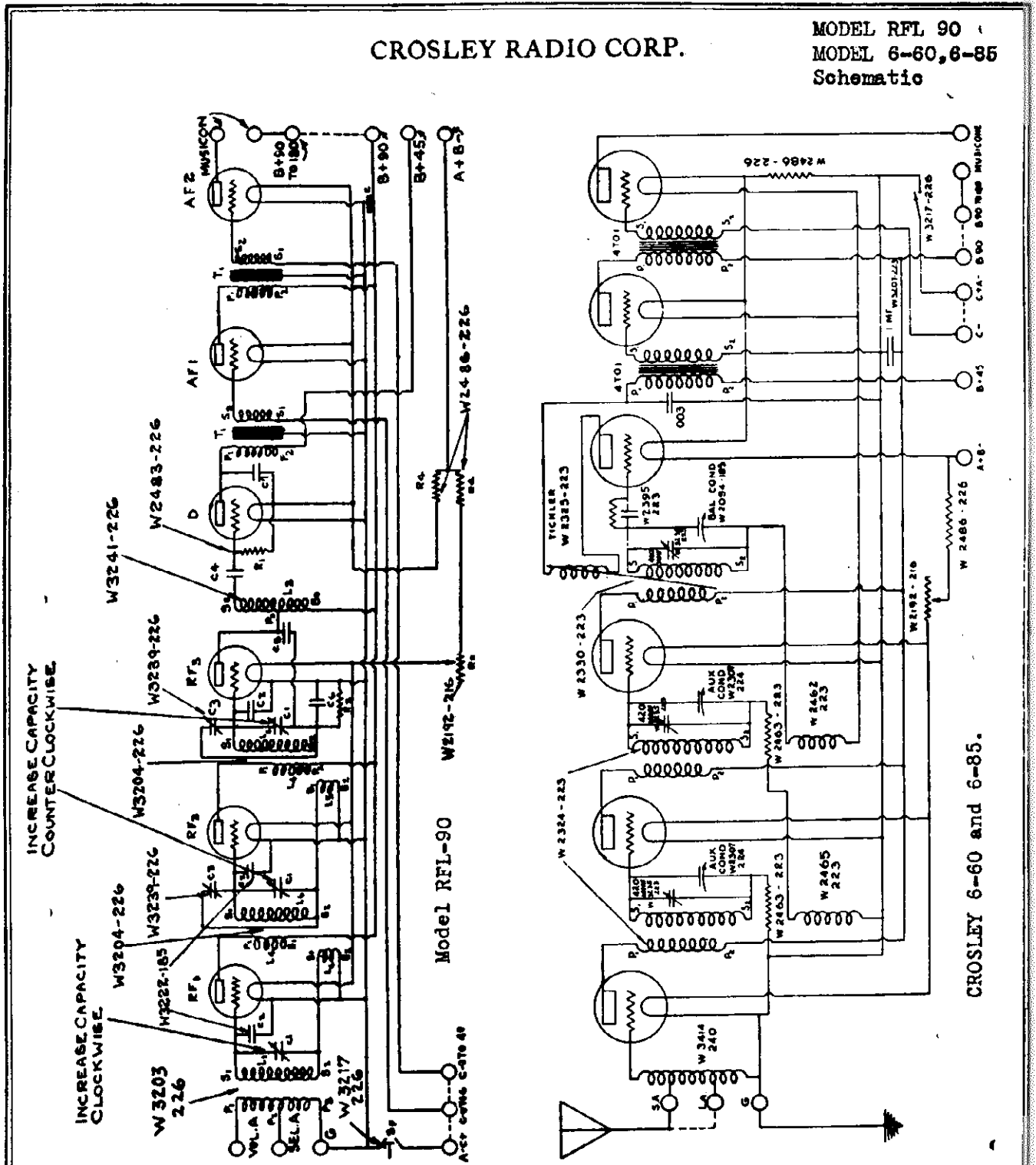
Models RFL60, 75

2 AF	1 AF	DET
○	○	○
'01A	'01A	'01A
1 RF	2 RF	
○	○	
'01A	'01A	

FRONT

CROSLY RADIO CORP.

MODEL RFL 90
MODEL 6-60, 6-85
Schematic



RFL 90

(Batt.) 6-60, 6-85

(Batt.)

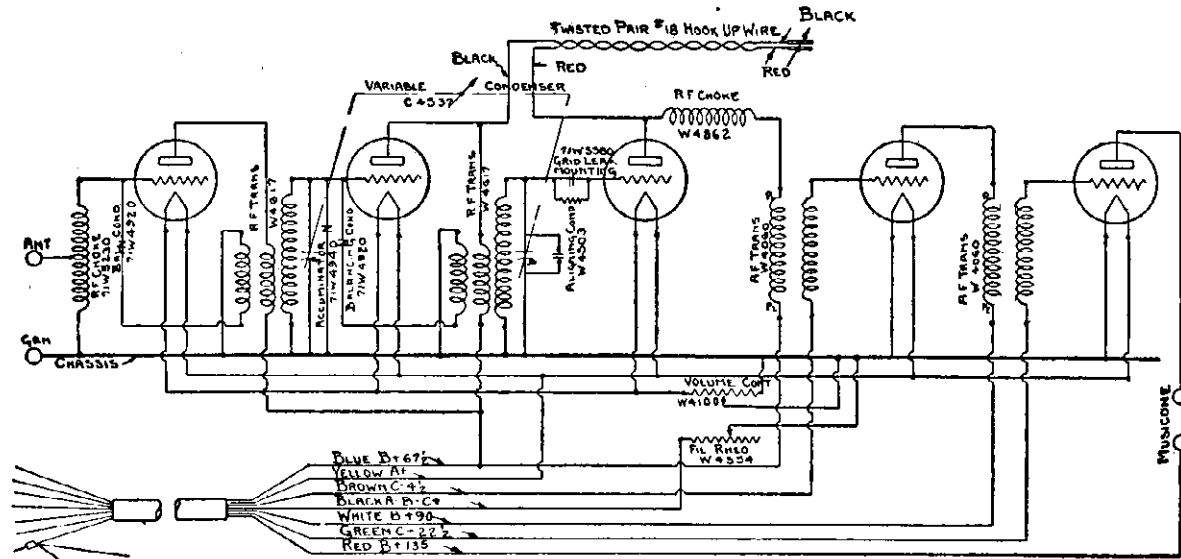
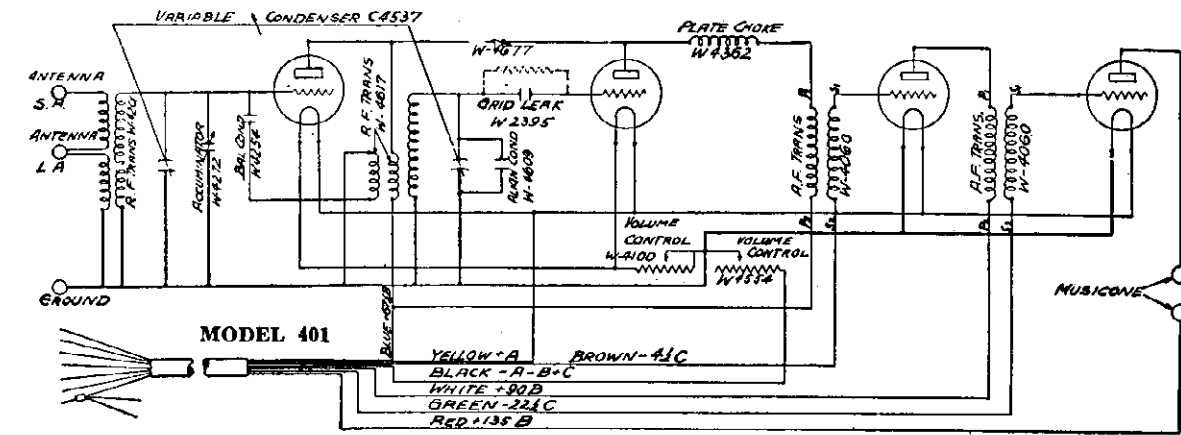
CX-301A or CX-112A	CX-301A	CX-300A	CX-301A	CX-301A or CX-300A or CX-112A
○	○	○	○	○
2nd A.F.	1st A.F.	2nd R.F.	3rd R.F.	Det.
CX-301A				
○				
1st R.F.				

CX-301A	*CX-112A or *CX-571A	CX-301A	CX-301A	CX-301A or CX-300A or CX-112A
○	○	○	○	○
1st R.F.	2nd A.F.	3rd R.F.	1st A.F.	Det.
	CX-301A			
	○			
	2nd R.F.			

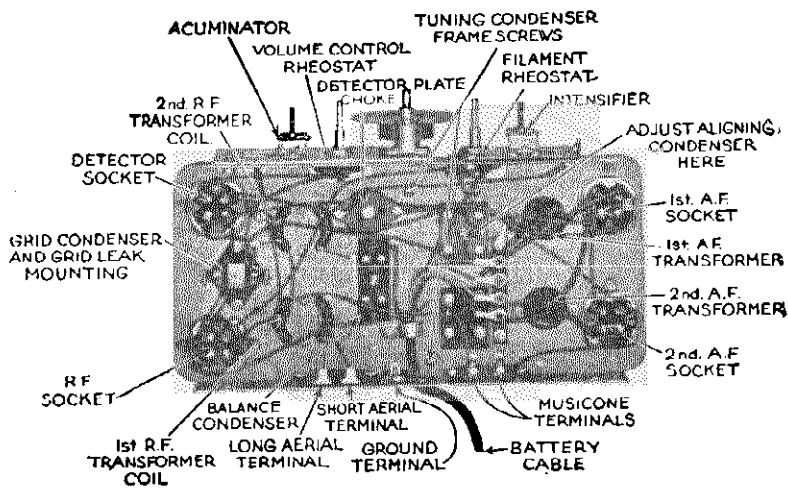
CROSLY 6-60 and 6-85.

MODEL 401
MODEL 401-A
Schematic

CROSLLEY RADIO CORP

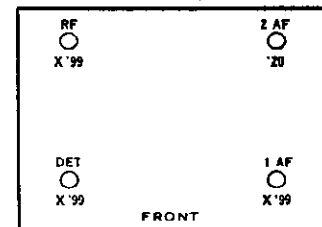


CIRCUIT, MODEL 401-A

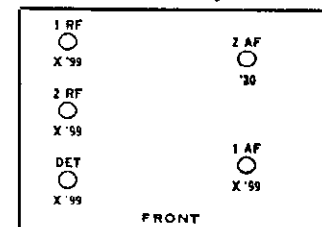


BOTTOM VIEW, MODEL 401 CHASSIS

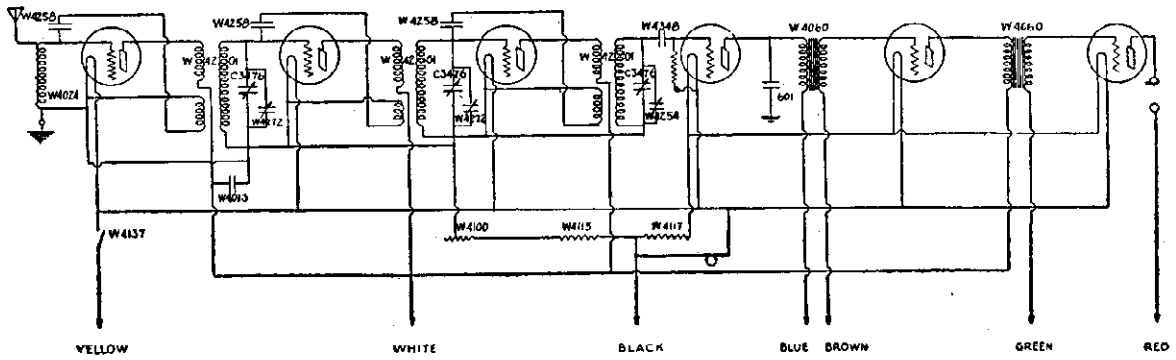
Model 401 Bandbox Jr.



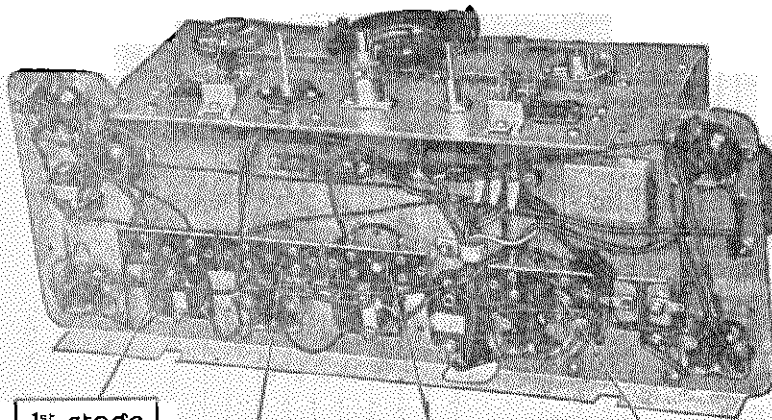
Model 401A Bandbox Jr.



CROSLY RADIO CORP. MODEL 601 A-C. Power Unit for A.C.7 Schematic



CIRCUIT OF MODEL 601



1st stage
Balance
Condenser

2nd stage
Balance
Condenser

3rd stage
Balance
Condenser

Aligning
Condenser

BOTTOM VIEW, MODEL 601 CHASSIS

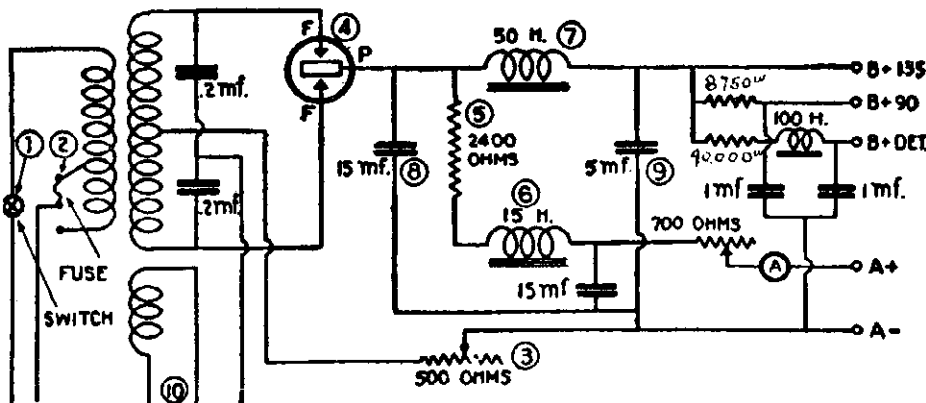
Loudspeaker.

1. Any model Crosley Musicone may be used with Bandbox, Model 601.
2. If a 171 output tube is used with 180 volts on the plate, Crosley Dynacone, Type E, is recommended for greatest volume and highest quality of reproduction. Type E, Dynacone must be used—Type F cannot be operated with this set.

Removing Indicator Dial And Replacing Belts.

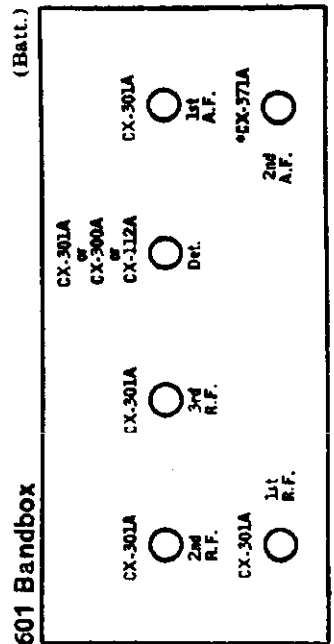
1. Take out three screws attaching indicator dial to center pulley and remove dial.
2. Loosen screws which control tension of belts and take off belts. If center tuning condenser is to be replaced, remove also center pulley.
3. Replace in reverse order, being sure to put belts on pulleys with pulley drive pins through belt holes.

A.C. Power Unit for Model A.C.7 Receiver.



CROSLY—Model 601

TUBE IN ORDER	TYPE OF TUBE	POSITION OF TUBE (BY REF. DET. EYE)	TUBE DUTY					CATHODE VOLTS	PLATE IN A.C. CIRCUIT		
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS		NORMAL PLATE W. A. TEST	PLATE W. A. TEST	PLATE W. A. CAPACITOR
1.	201A	1st. R. F.	5.1	90	5	90	0.0	7.0	11.0	4.0	
2.	201A	2nd. R. F.	5.1	90	5	90	0.0	7.0	11.0	4.0	
3.	201	3rd. R. F.	5.1	90	5	90	0.0	7.0	11.0	4.0	
4.	201A	Detector	5.1	45	5	45	0.0	2.0	5.5	3.5	
5.	201A	1st. A. F.	5.1	90	5	90	4.5	5.0	7.0	2.0	
6.	171A	2nd. A. F.	5.1	135	5	135	22.5	20.0	26.0	6.0	

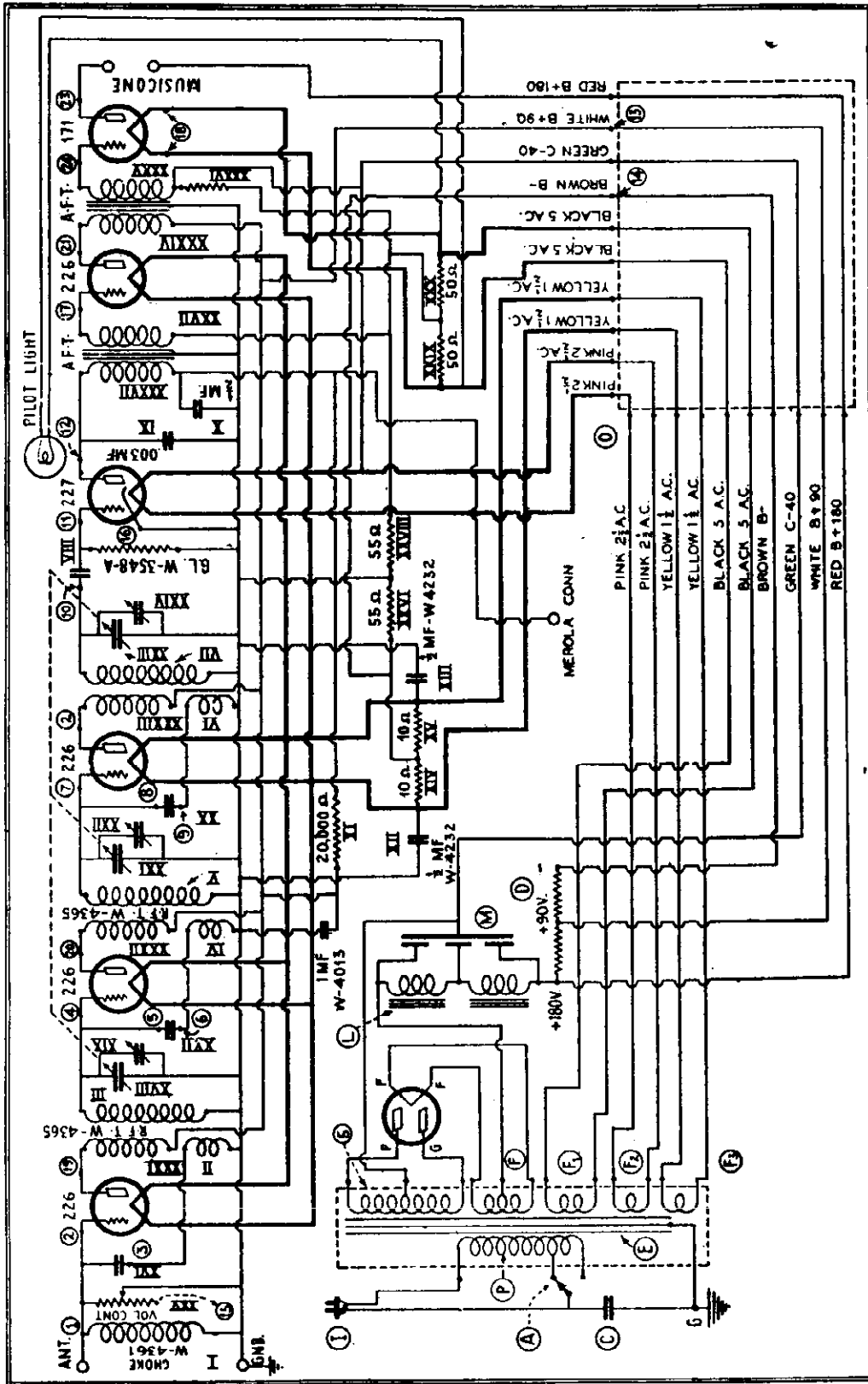


601 Bandbox

MODEL 602 A.C.
Power Converter for
MODELS 104,105,106
Schematic

CROSLLEY RADIO CORP

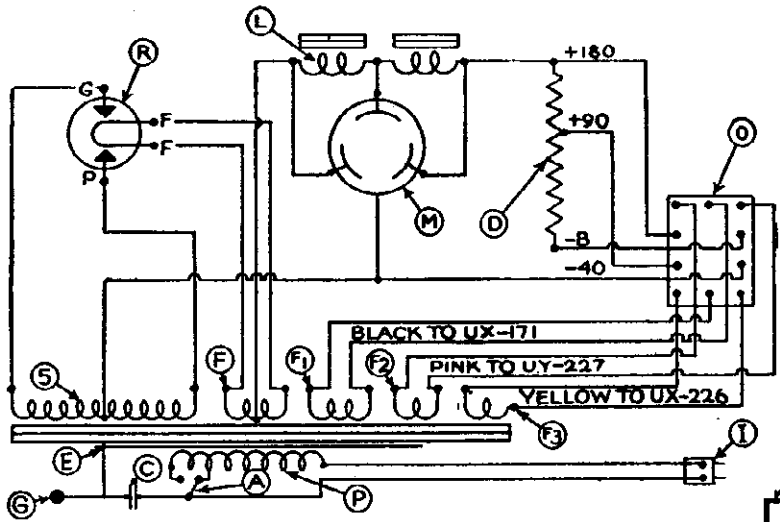
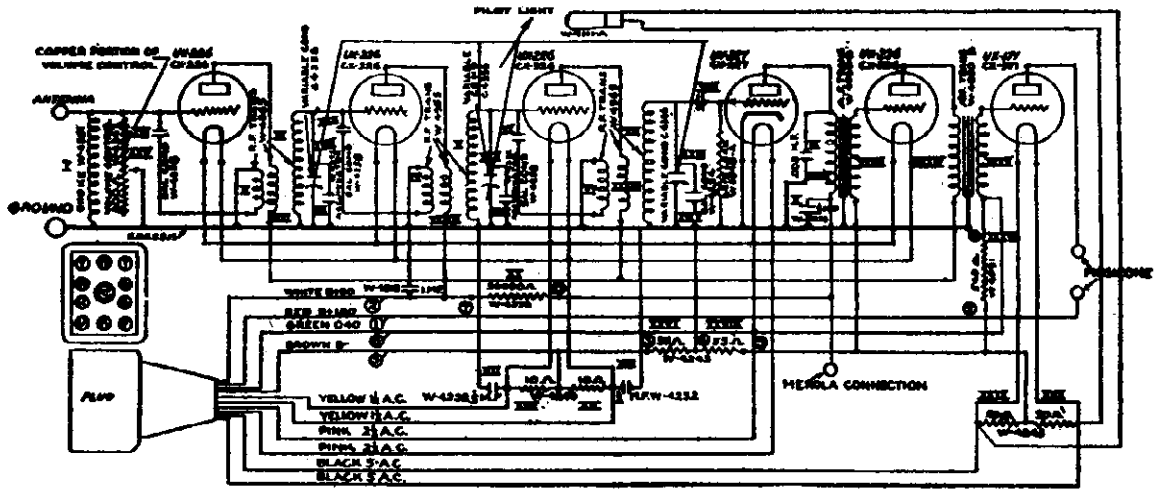
Circuits of the Crosley Model 602 A. C. Bandbox and Power Converter Models 104, 105 and 106. The dotted square at the lower right represents the plug by which the ten connections are made.



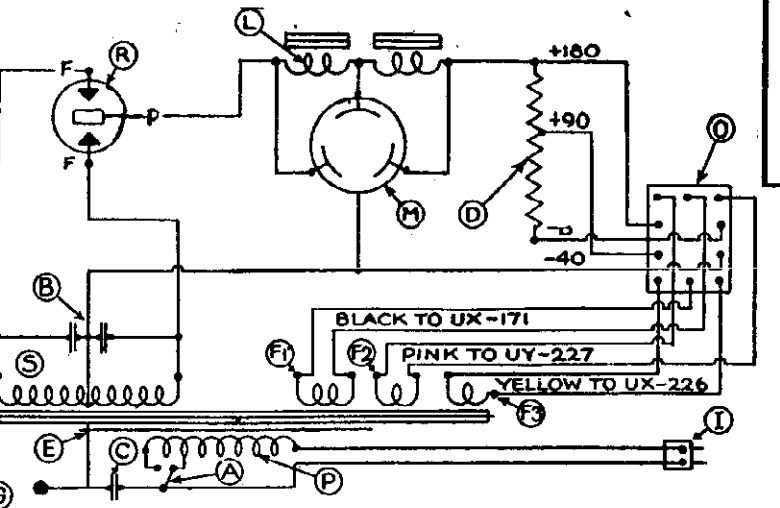
Values and Numbers Not Specified in Diagram.
 Grid Leak—2 megohms.
 VI-VII—R.F. Transformer, W4365.
 X—By-Pass Condenser, W4233.
 XI—Detector Plate Resistor, W4376.
 XIV-XV—Center-Tap Resistor, W4240.
 XVI-XVII-XX—Bypassing Condensers, W4258.
 XIX-XXII—Acutinators, (Compensating Condensers) W4272.
 XXIII-XXI-XXIII—Tuning Condensers.
 XXIV—Balancing Condenser, W4254.
 XXV—Volume Control, 300 ohms, W4247.
 XXVII-XXXIV—A.F. Transformers, W4060B (A .0008-mf. by-pass condenser W4512 is shunted across the secondary XXXV).
 XXXVI—"C" Bypass Resistor, 540 ohms, W4391.

CROSLY RADIO CORP

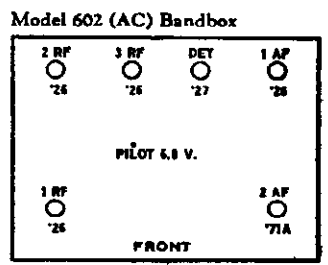
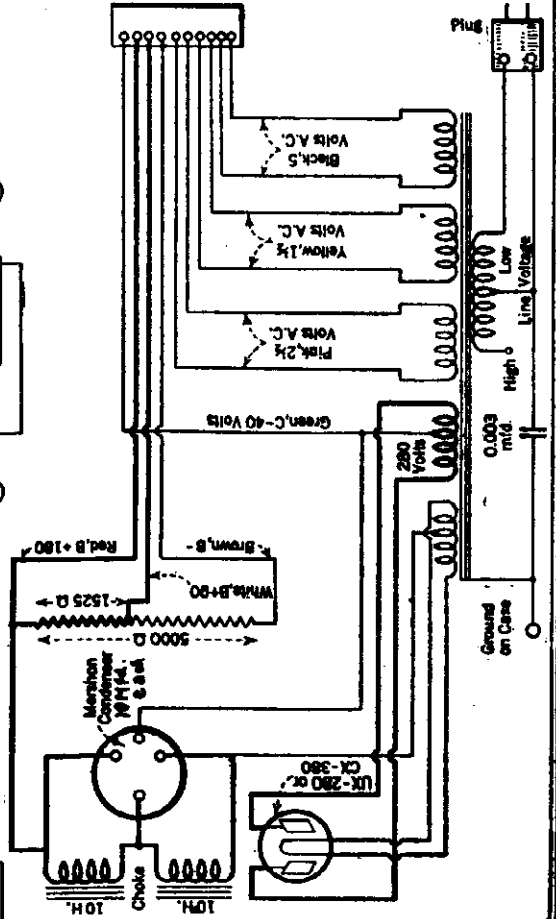
MODEL 602
 MODEL 602 Power Unit
 MODELS 104,105,106
 MODELS 104R,105R



CIRCUIT DIAGRAM OF MODELS 104, 105, AND 106 POWER CONVERTER.

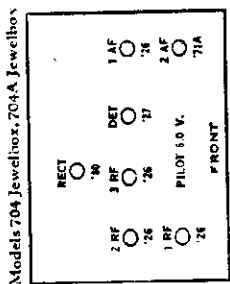
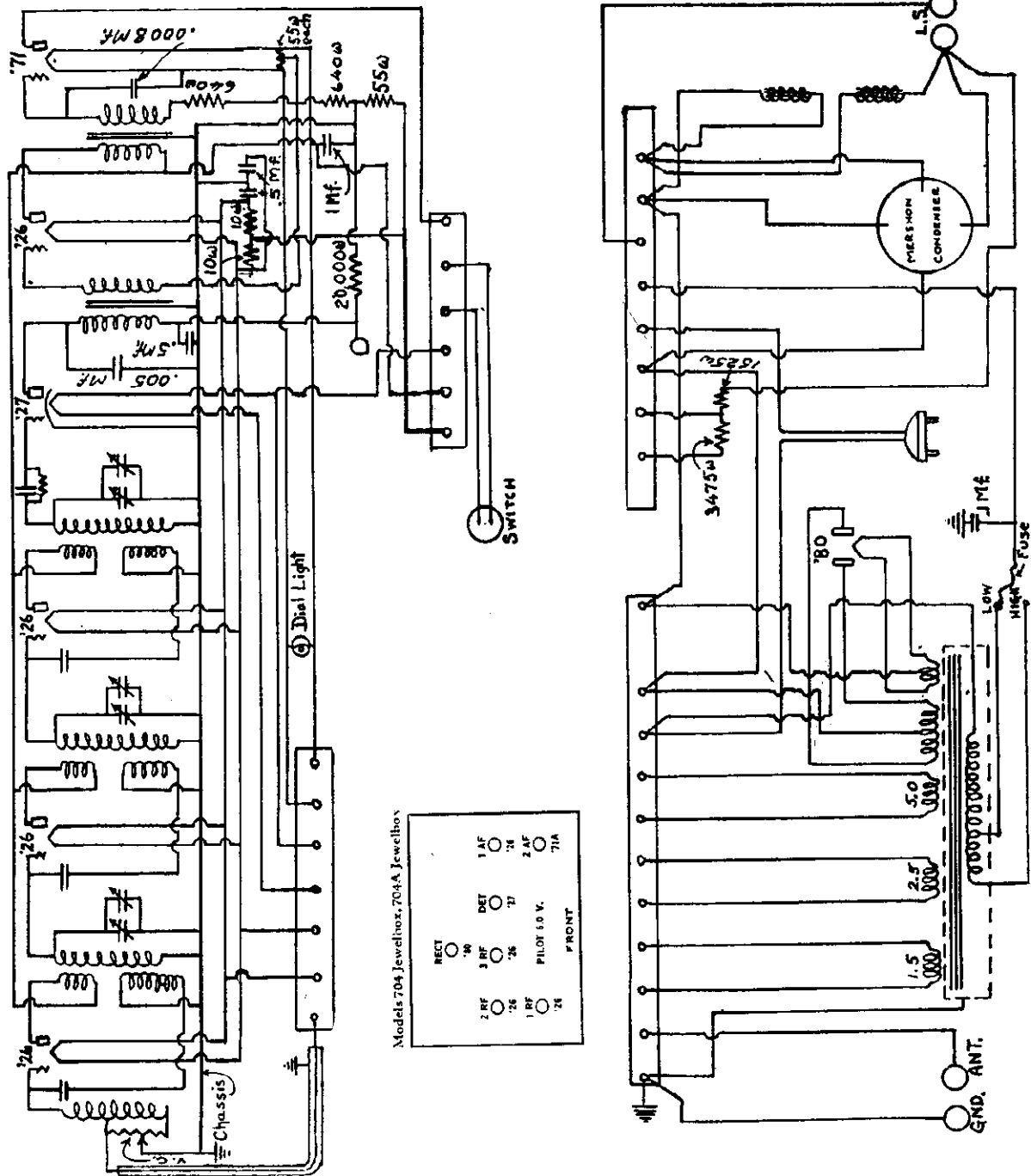


CIRCUIT DIAGRAM OF MODELS 104R AND 105R POWER CONVERTER.



MODEL 704
 MODEL 704 Power Unit
 Schematic
 MODEL 704-A Voltage

CROSLEY RADIO CORP.



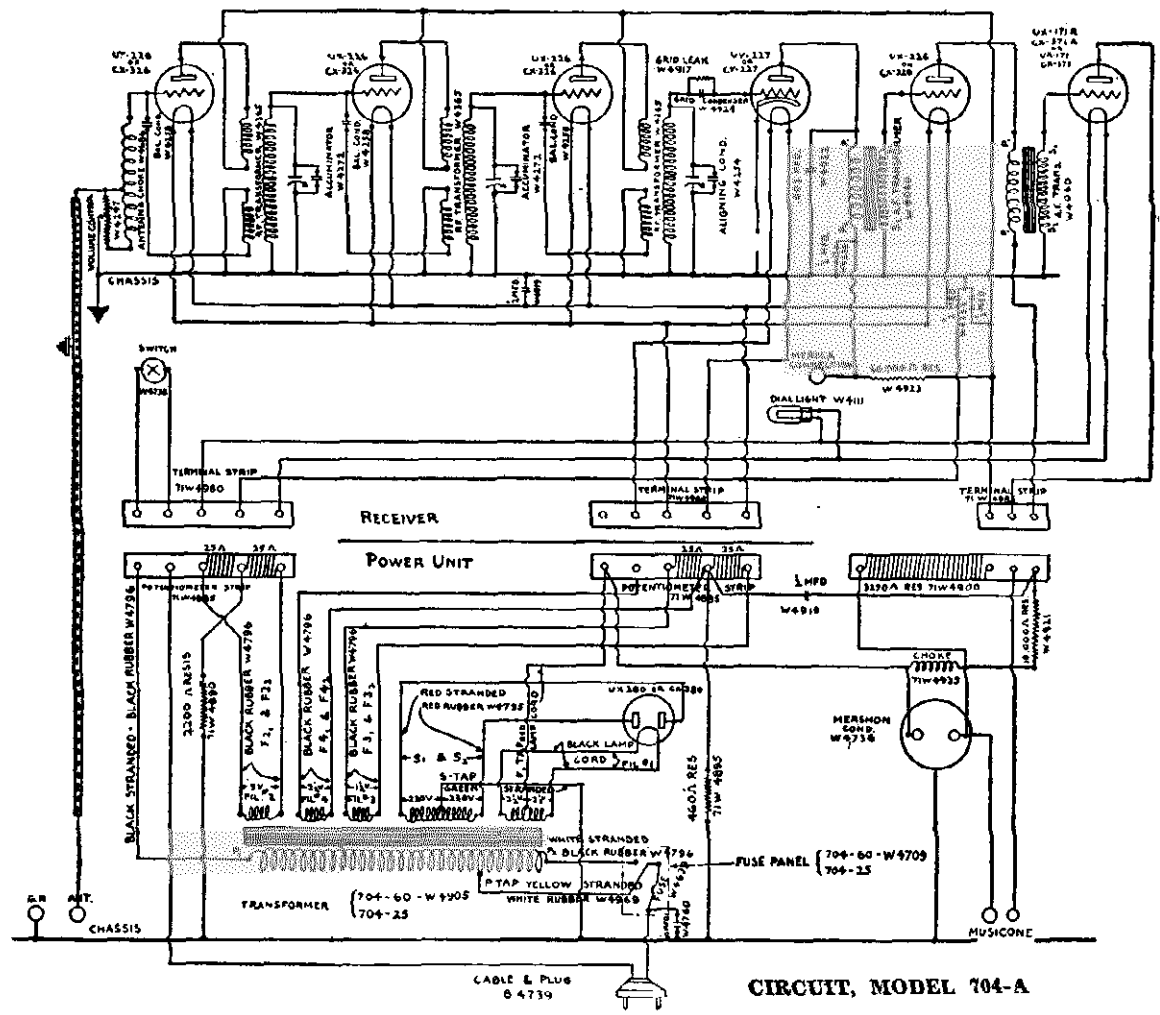
Tube	Fil. Vol.	Plate Vol.	Grid Bias.	Plate Cur.
RF1	1.3	98	3.	7. ma
RF2	1.3	98	3.	7.
RF3	1.3	98	3.	7.
Det	1.7	42	-	2.5
AF1	1.3	96	5.	3.2
AF2	4.8	159	35.	17.
Rec.	4.5.			

Voltage Data For Crosley 704-A

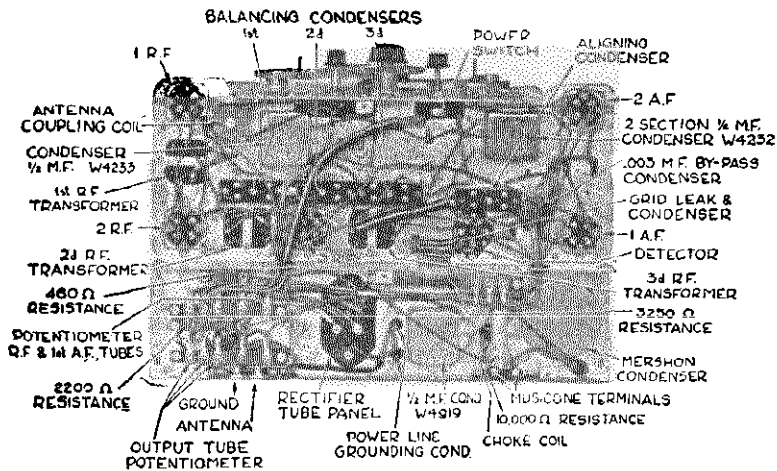
CROSLY RADIO CORP

MODEL 704-A

Schematic, Bottom View



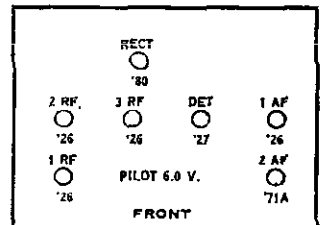
CIRCUIT, MODEL 704-A



BOTTOM VIEW, MODEL 704-A CHASSIS

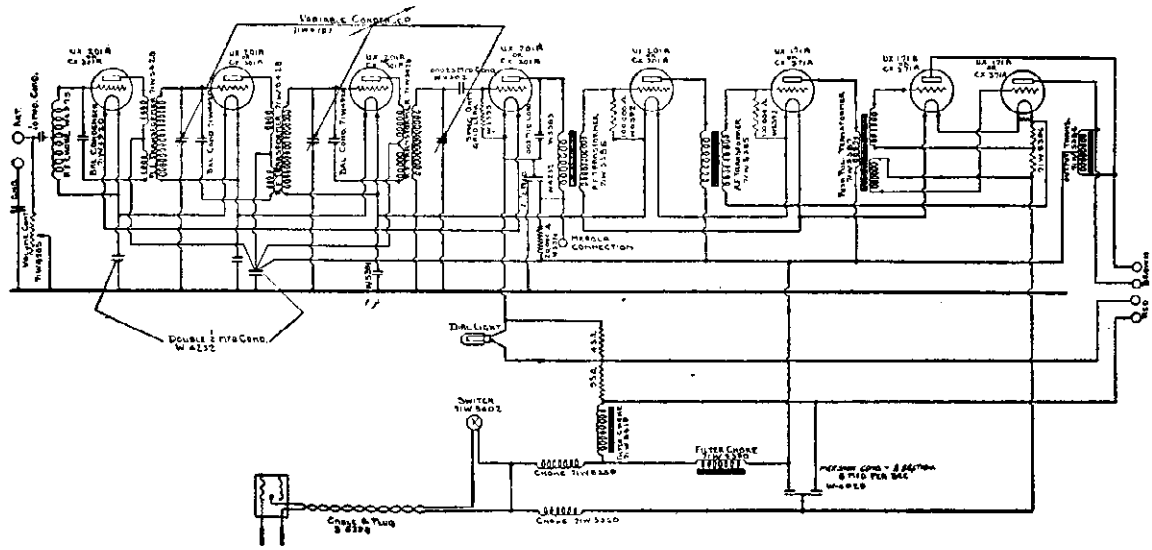
NOTE:—This service sheet applies to all Jewelbox Model 704 sets having seven tubes, including rectifier (single output tube only) numbered from GJD 16,000 to 21,000.

Models 704 Jewelbox, 704A Jewelbox

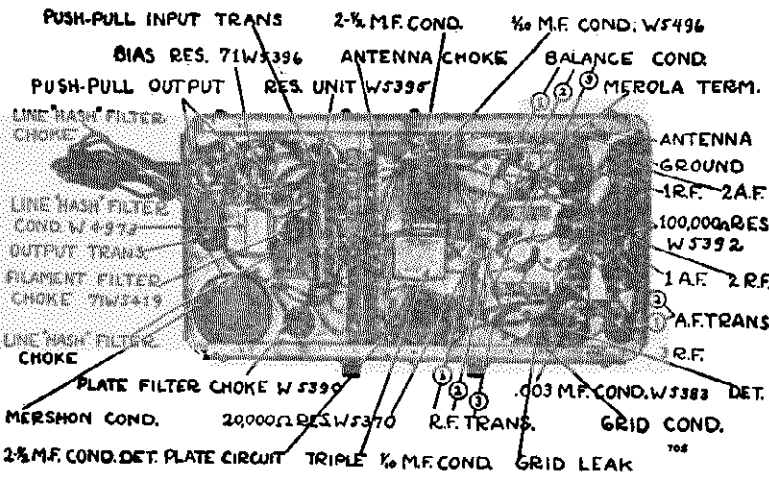


CROSLY RADIO CORP.

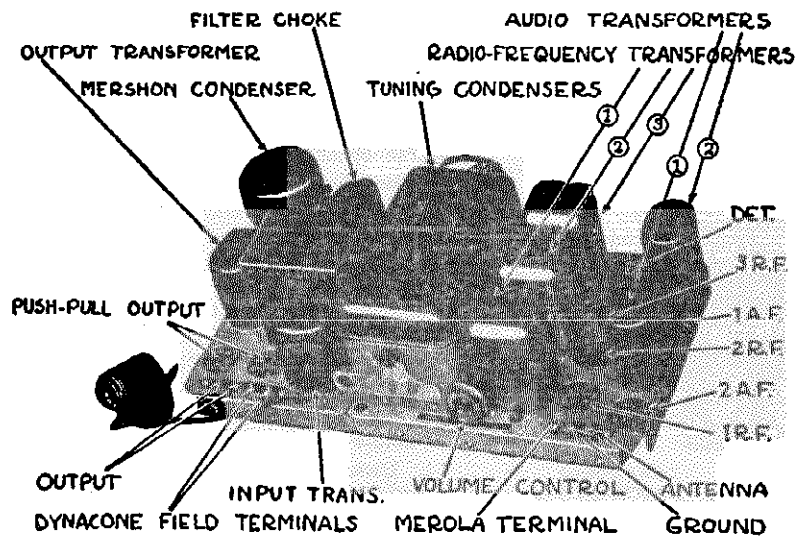
MODEL 705
Schematic,
Bottom and Rear View



CIRCUIT, MODEL 705

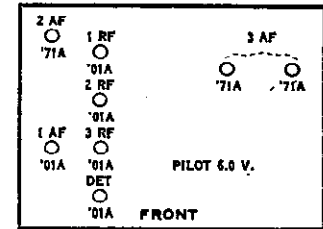


BOTTOM VIEW, MODEL 705 CHASSIS



REAR VIEW, MODEL 705 CHASSIS

Models 705 Showbox (DC), 61, 62



Repairing and Replacing Parts
Replacing Parts.

1. In replacing parts on Model 705 the bottom must be removed.

Tuning Condensers.

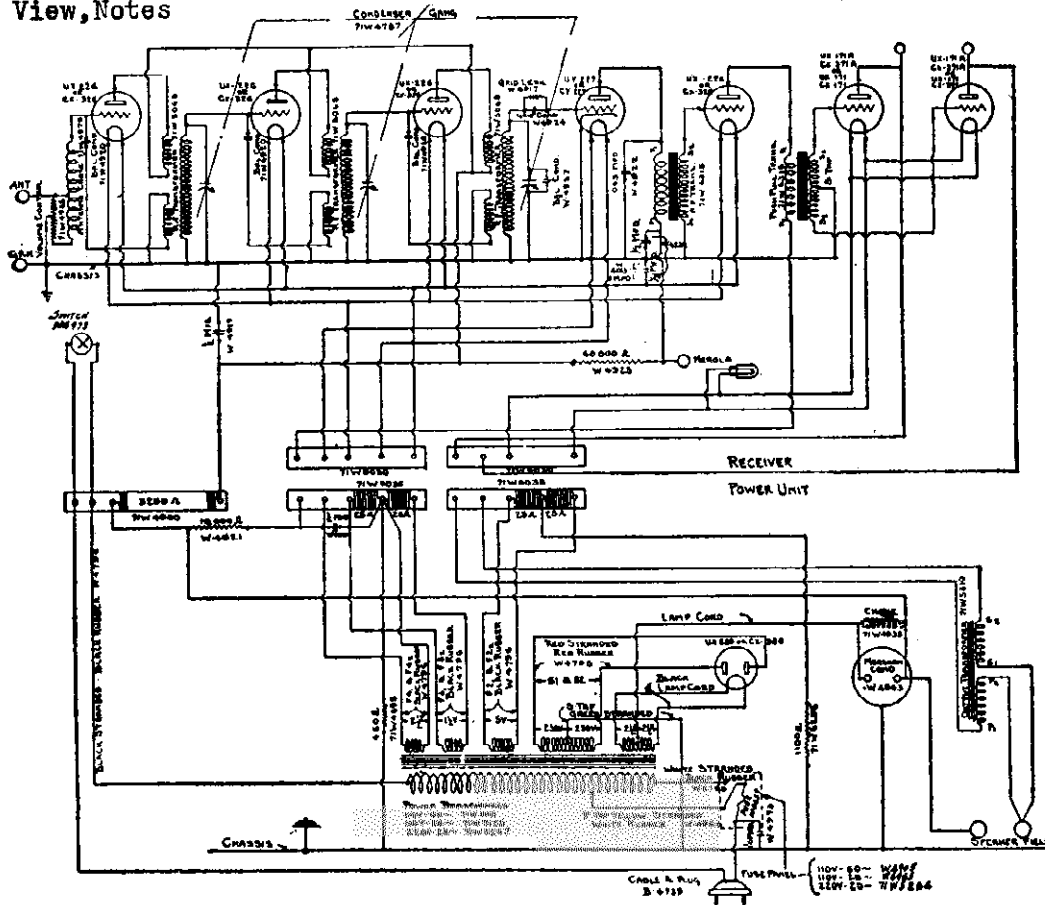
1. The complete condenser gang should be removed and replaced as a unit.
2. Take off knobs and remove leads from pilot light socket and volume control first. Next remove tuning condenser leads and remove assembly. Replace in reverse order.

Radio-Frequency Transformers.

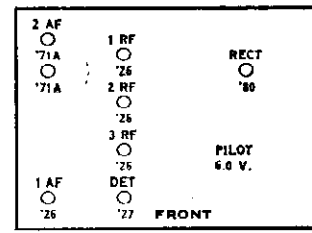
1. Unsolder leads first. Then remove shield can. Finally take off transformer colls. Replace in reverse order.
2. Mark all leads and terminals.

MODEL 706
Schematic, Voltage
Bottom View, Notes

CROSLLEY RADIO CORP.



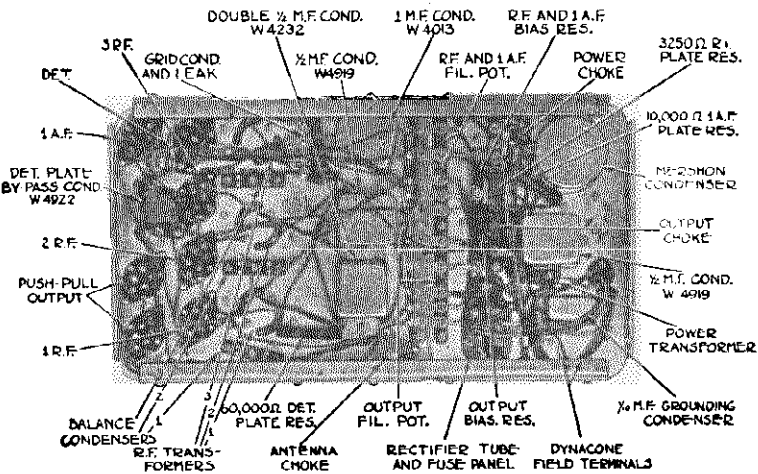
Models 706 Showbox.



CROSLLEY- 706

Line Voltage 117.5—227 Emitter Based 11 Volts Negative with Respect to Filament. Detector Grid Test Made with Grid Leak Shorted

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (BY REF. DET. STD.)	READINGS PLUS IN SOCKET OF SET						TUBE IN TESTER		
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE RES.	PLATE RES. TEST	PLATE RES. CHANGE
1	226	1st. R.F.	1.6	150	1.5	150	11.0	6.5	12.0	5.5	
2	226	2nd. R.F.	1.6	160	1.5	150	11.0	6.5	13.4	6.9	
3	226	3rd. R.F.	1.6	150	1.5	150	11.0	6.5	13.4	6.9	
4	227	Detector	2.50	150	2.25	30	0.0	2.2	2.75	5.5	
5	226	1st. A.F.	1.6	220	1.5	120	9.0	6.2	8.0	1.8	
6	171A	2nd. A.F.	5.3	185	5.0	170	37.5	20.0	23.0	3.0	
7	171A	2nd. A.F.	5.3	185	5.0	170	37.5	20.0	23.0	3.0	
8	200	Rectifier	5.3		4.9						



BOTTOM VIEW, MODEL 706 CHASSIS

Audio-Frequency Transformers.

- Both audio transformers are mounted in a single can. They must be removed as a single unit.
- Unsolder leads. Remove nuts holding assembly in position and take off transformers. Replace in reverse order.

Tuning Condensers.

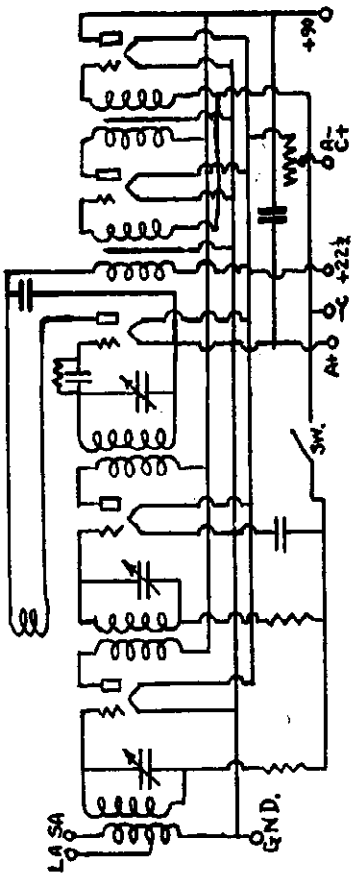
- The complete condenser gang should be removed and replaced as a unit.
- Take off knobs and remove leads from pilot light socket and volume control first. Next remove switch from holder. Then unsolder condenser leads and remove assembly. Replace in reverse order.

Radio-Frequency Transformers.

- Unsolder leads first. Then remove shield can. Finally take off transformer coils. Replace in reverse order.

MODEL TRIRDYN
 MODEL 51
 MODEL 5-38
 Schematic

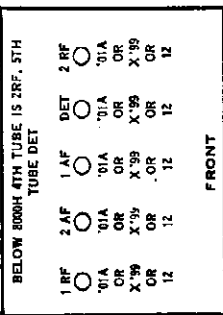
CROSLY RADIO CORP.



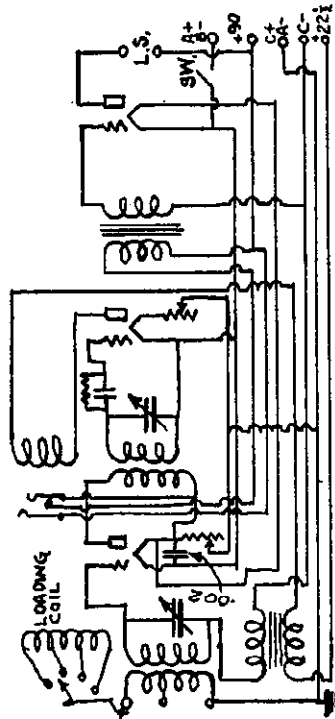
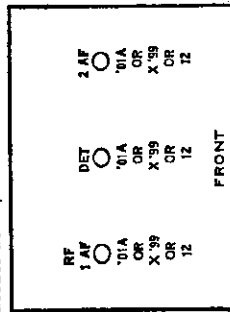
MODEL 5-38

Model 5-38, Series 2 (Serial No. 8089H & Above)

BELOW 8089H 4TH TUBE IS 2RF, 5TH TUBE DET

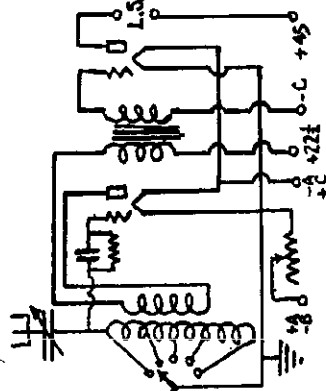
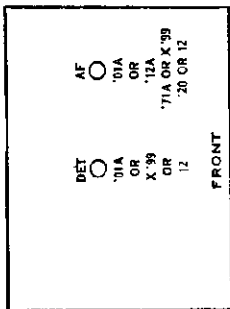


Model Trirdyn

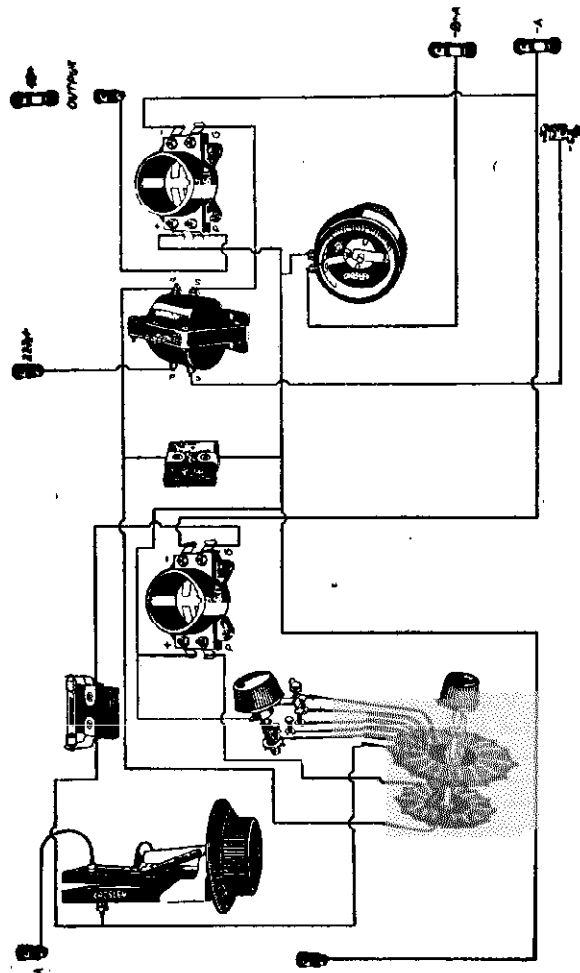


MODEL TRIRDYN

Model 51



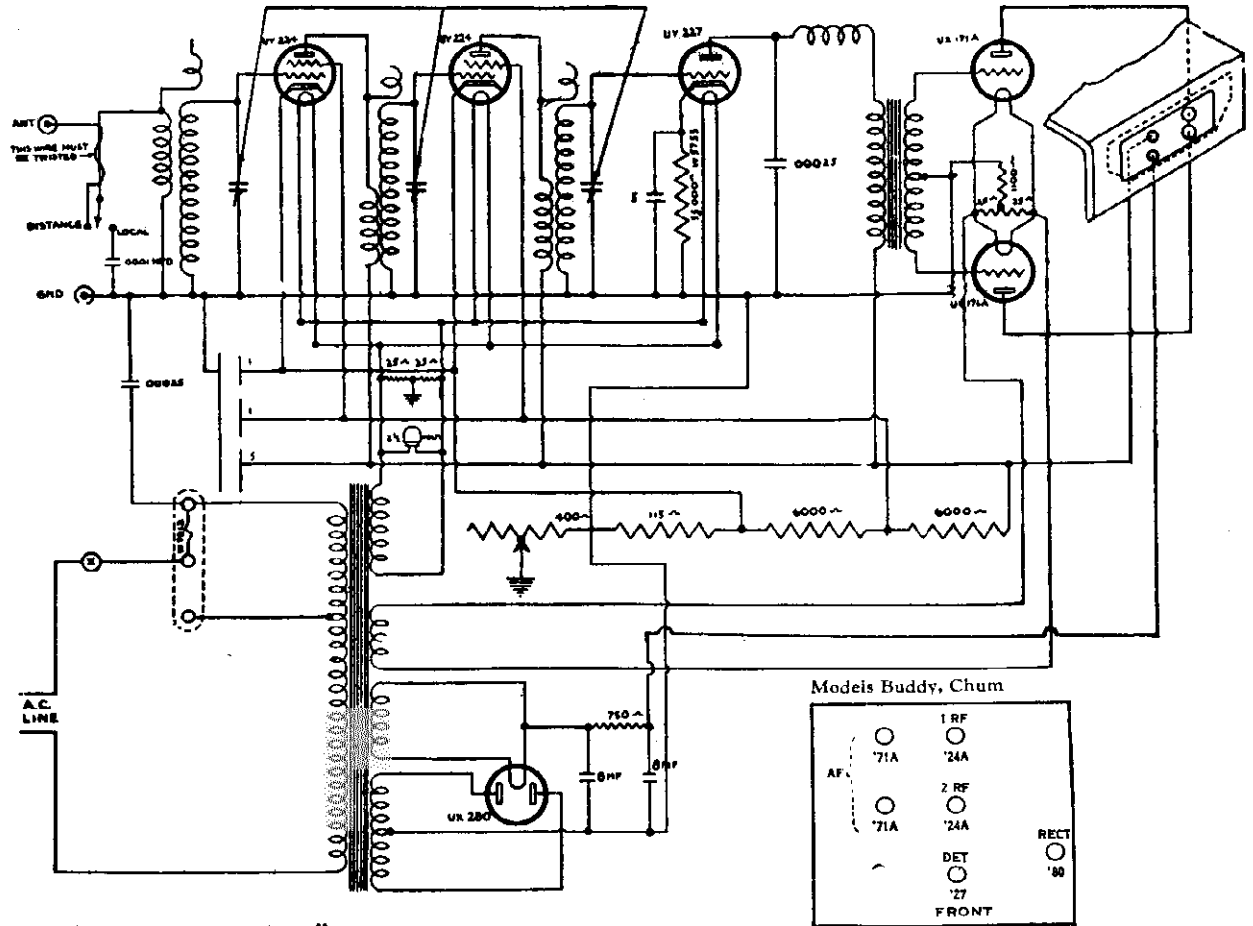
MODEL 51



Crosley Model 51 Circuit

MODEL BUDDY, CHUM
Schematic, Voltage

CROSLY RADIO CORP



"BUDDY and CHUM"

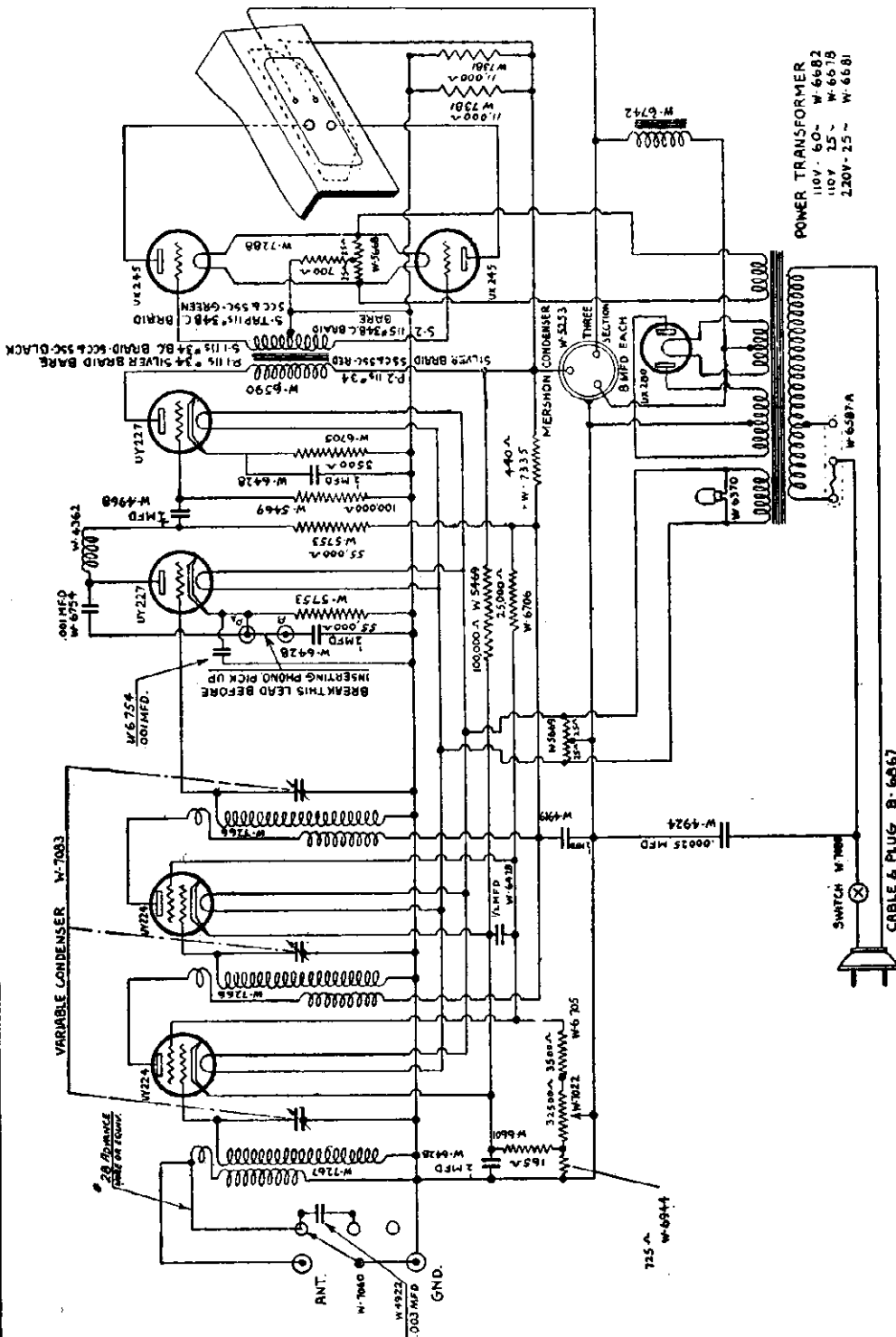
VOLTAGE LIMITS

	Volume Control	
	On Full	
Filament Voltages		
R.F. and Detector tubes	2.4	
A.F. and Rectifier tubes	4.8	
- - -	- - -	
Plate Voltages		
All tubes but Rectifier	170	
Rectifier tube	250 each	
- - -	- - -	
Control Grid Voltages		
R.F. tubes	2.8	
Detector tube	12.0	16.0
A.F. tubes	38.0	
- - -	- - -	
Screen Grid Voltages		
R.F. tubes	85.0	

The above readings are to be taken with the receiver in full operating condition, with the volume control on full, and with a line voltage of 117.5 when the fuse is in the "High" position or of 107.5 when the fuse is on the "Low" position. In the case of 220 volt receivers, the line voltages should be, respectively 235 and 215. Measure plate and grid voltages with a high-resistance D.C. voltmeter (at least 800 ohms per volt.) These voltages are to be measured from the plate or grid socket contact to the emitter contact or negative filament contact, unless otherwise noted in the table. The contacts must be reached from the bottom of the receiver (unless a set tester is used) with tubes, dial light, and speaker in place. Use a low-range A.C. voltmeter to measure the filament voltages.

MODELS 30S, 31S, 33S, 34S
Schematic, Voltage, Notes

CROSLLEY RADIO CORP.



ampere cartridge type automobile light fuse (two ampere fuses are also used on recent chassis of the 40S series)

Installation of Model 30S Unitrad chassis, which is the chassis with front panel only for console mounting, is similar to that described on page 29 for Model 40S. Model 31S is in a metal, table type case. Model 33S and 34S are mounted in wooden consoles, with built-in speakers

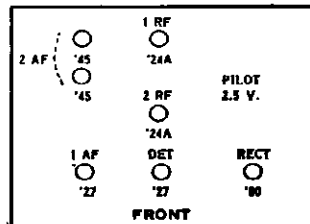
The line voltage should be checked and the chassis fuse inserted in the proper clips as described on page 29 in connection with the 40S series of receivers. If the owner of the receiver complains of tubes burning out too often check the line voltage and see that the fuse is inserted in its proper clips. If the dial light burns out, replace it with a 2 1/2 volt Mazda miniature base bulb No. 41. If the fuse requires to be replaced use a two

Installation These receivers are designed for operation with Type M Dynacoil speakers. The chassis is equipped with a socket into which a plug on the end of the speaker cord fits. Although not shown on page 29, the more recently built chassis of the 40S series are equipped with sockets for Type M Dynacoil speakers instead of with terminals for Type M Dynacoils.

CROSLLEY—63 Chassis
Models 30S, 31S, 33S, 34S and Playmate.

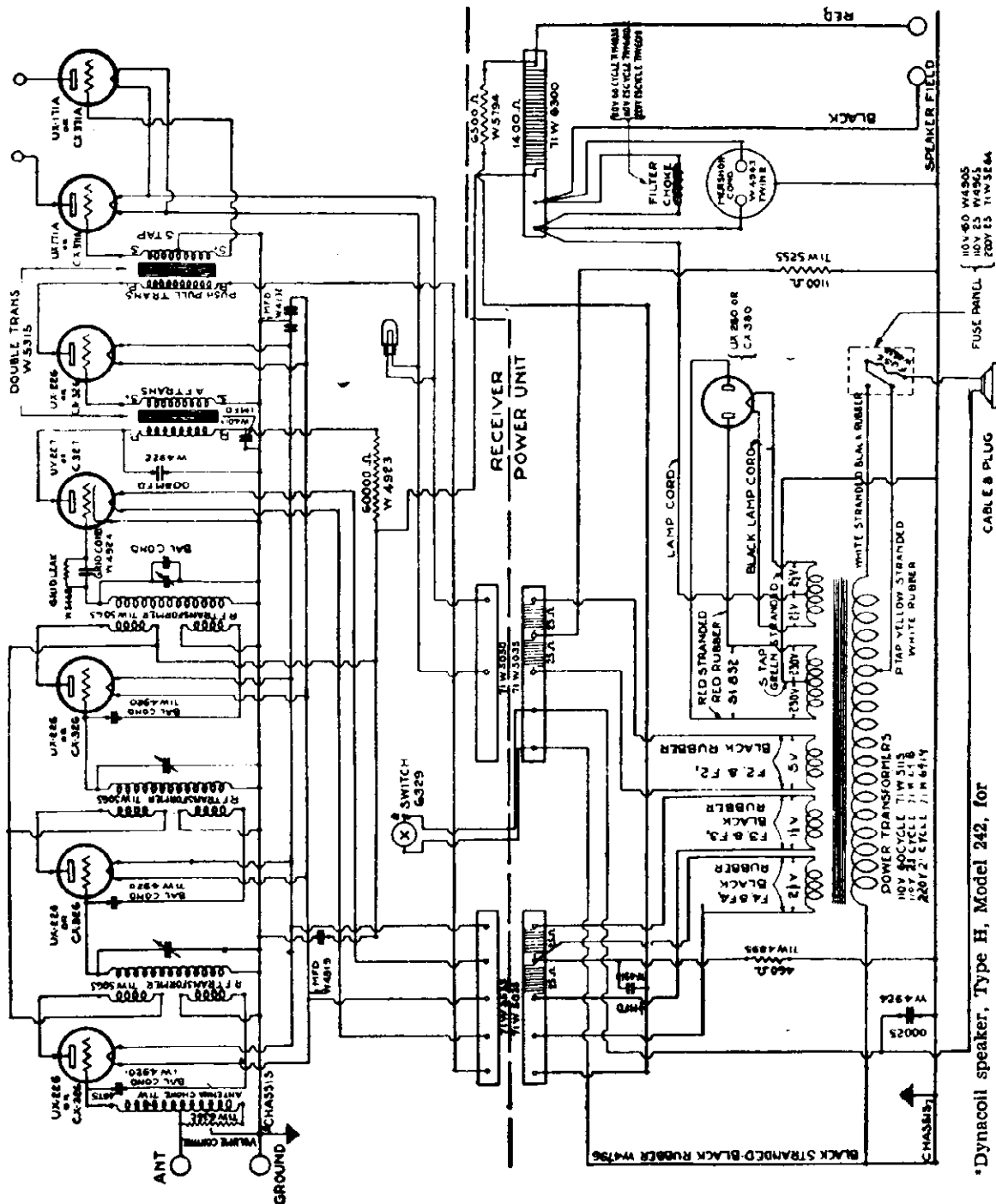
TUBE NO. IN CHASSIS (TYPE)	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET									
			OPERATING VOLTAGES					MILLIAMPERES				
(1)	(2)	(3)	FILAMENT OR HEATER (4) (5) (6)	PLATE OR ANODE (7)	CONTROL GRID (8) (9)	SCREEN GRID (10) (11)	CATHODE (12)	SCREEN (13) (14)	PLATE (15) (16)	TUBE CURRENT (17) (18)	PLATE CURRENT (19) (20)	
224	1 R.F.	8,43	153	-1.4	65	1.2	-	2,95	6	3.03		
224	2 R.F.	8,43	153	-1.4	65	1.2	-	2,85	5,85	8,4		
227	Det.	2,4	114	-	-10,9	11,8	-	.3	.39	.9		
227	1 A.F.	2,45	140	-	-4	10	-	2,85	3,6	.75		
245	2 A.F.	2,35	224	-	-42,5	-	-	30	33,6	4,6		
245	2 A.F.	2,35	224	-	-42,5	-	-	30	33,6	4,6		
280	Rect.	5,1	-	-	-	55	-	-	-	-		

Models 30-S, 31-S, 33-S, 34-S



MODELS 41, 41A, 42
Schematic, Voltage

CROSLLEY RADIO CORP.



*Note—Merphon Condenser in set will probably be ruined if speaker field circuit is opened while set is in operation.

*Dynacoil speaker, Type H, Model 242, for Model 41A receiver Model 42 receiver is equipped with built-in Dynacoil speaker, Type H, Model 243.

CROSLLEY—Models 41-41A-42-704-706
Line Voltage 117.5—227 Emitter Based 11 Volts Negative with Respect to Filament. Detector Grid Test Made with Grid Leak Shorted

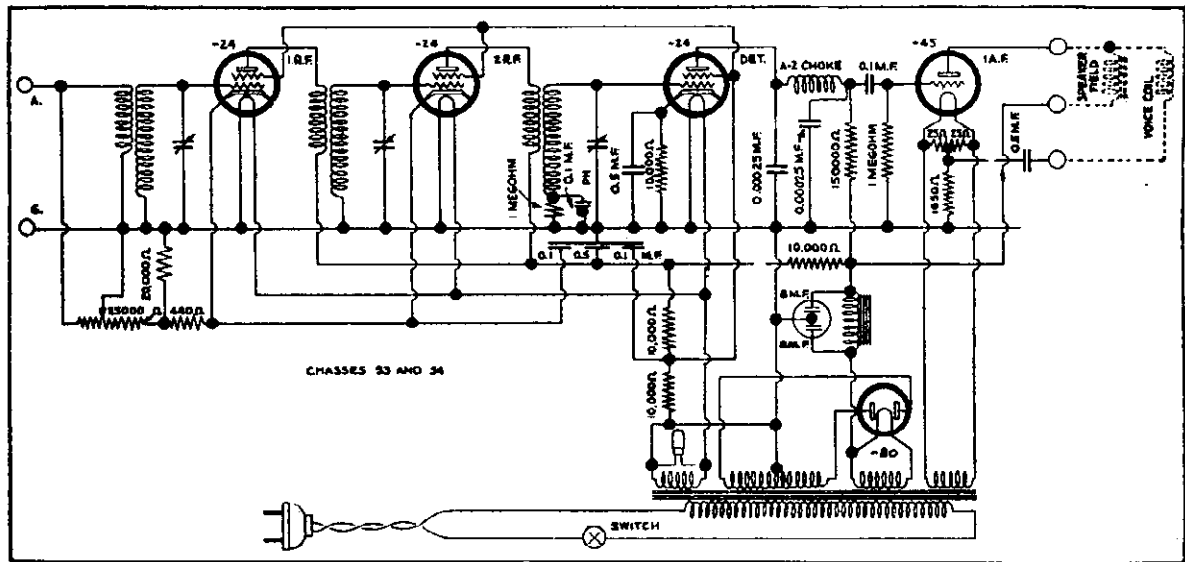
TUBE NO.	TYPE OF TUBE	POSITION IN SET	RECOMMENDED PLATE VOLTAGES (V)									
			A	B	C	CATHODE	HEATER	PLATE	PLATE	PLATE	PLATE	
226	1st. A.F.	1st. A.F.	1.6	160	1.5	150	11.0	6.5	12.0	6.5	12.0	
226	2nd. R.F.	2nd. R.F.	1.6	160	1.5	150	11.0	6.5	12.0	6.5	12.0	
226	3rd. A.F.	3rd. A.F.	1.6	160	1.5	150	11.0	6.5	12.0	6.5	12.0	
227	Detector	Detector	2.80	150	2.25	30	0.0	2.2	2.7	2.7	2.7	
228	1st. A.F.	1st. A.F.	1.6	160	1.5	150	11.0	6.5	12.0	6.5	12.0	
41A	2nd. A.F.	2nd. A.F.	5.3	185	5.0	170	37.5	5.0	5.0	5.0	5.0	
41A	2nd. A.F.	2nd. A.F.	5.3	185	5.0	170	37.5	5.0	5.0	5.0	5.0	
280	Rectifier	Rectifier	5.3	185	5.0	170	37.5	5.0	5.0	5.0	5.0	

32, 40, 41, 41A, 42 (A.C.)

CX-371A	2nd A.F.	CX-326	1st R.F.	CX-380	Rect.
CX-371A	2nd A.F.	CX-326	2nd R.F.		
		CX-326	3rd R.F.		
CX-326	1st A.F.	C-327	0+1		

MODEL 53, 54, 57
Schematic, Voltage

CROSLLEY RADIO CORP.



Circuit Model 53 (see note below regarding Models 54 and 57)

Circuit, Models 54 and 57

Model 54 circuit differs from that shown in the diagram in the following particulars: The "PH" terminals are between the r. f. transformer coil and the 0.1 m. f. condenser, instead of between this condenser and ground, as shown. The triple unit condenser near the center of the diagram has values, from right to left, of 0.1, 0.1, 0.5 microfarads, instead of those shown. There is no dial light on Model 54.

Model 57 differs in circuit from the above description in the following particulars: An additional condenser of 0.25 m. f. capacity is shunted across the filter choke. The primary of the speaker output transformer is connected in the position in which the speaker field is shown in the above diagram. Instead of being connected to the 1650 ohm resistor through a condenser, as shown in the above diagram, the bottom speaker terminal is connected to ground. The speaker field is connected from this grounded terminal to the middle speaker terminal on the diagram, so that current from the positive "B" circuit flows through the speaker field to ground. A fixed condenser is shunted across the 1650 ohm output biasing resistor.

Voltage Limits

Filament Voltages

R. F. and Detector Tubes.....	2.1 to 2.3
A. F. Tube.....	2.2 to 2.4
Rectifier Tube.....	4.1 to 4.3

Plate Voltages

R. F. Tubes.....	160 to 180
Detector Tube.....	215 to 245
A. F. Tube.....	230 to 260
Rectifier Tube (A. C. Voltage).....	340 to 370 each plate

Control Grid Voltages

R. F. Tubes.....	3.1 to 3.5
Detector Tube.....	9.0 to 10.0
A. F. Tube.....	45.0 to 50.0

Screen Grid Voltages

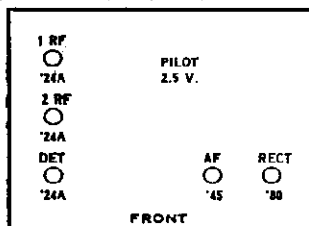
R. F. and Detector Tubes.....	.85 to .95
-------------------------------	------------

Approximate Plate Current Values

R. F. Tubes	0.0032
Detector Tube	0.00035
A. F. Tube	0.0335
Rectifier Tube	0.045

To be measured with speaker connected, tubes in place, and line voltage of 117½ (235 for 220 volt receivers) with fuse in "High" position or of 107½ (215 for 220 volt receivers) with fuse in "Low" position. Measure plate and grid voltages with a high-resistance D. C. voltmeter (600 ohms or more per volt) from plate or grid tube contact to emitter contact, except in the case of the grid voltages of the detector and audio tubes, which should be measured from the emitters to the chassis. The filaments of the output and rectifier tubes serve as the emitters, while the other tubes have heaters and separate emitters. Measure filament voltages with a low-range A. C. voltmeter.

Models 53E, 53F, 53M, 57V

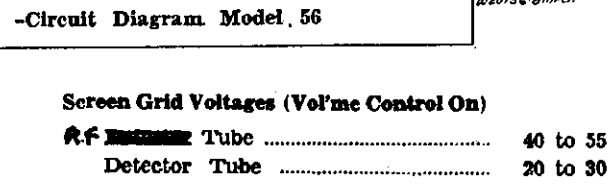
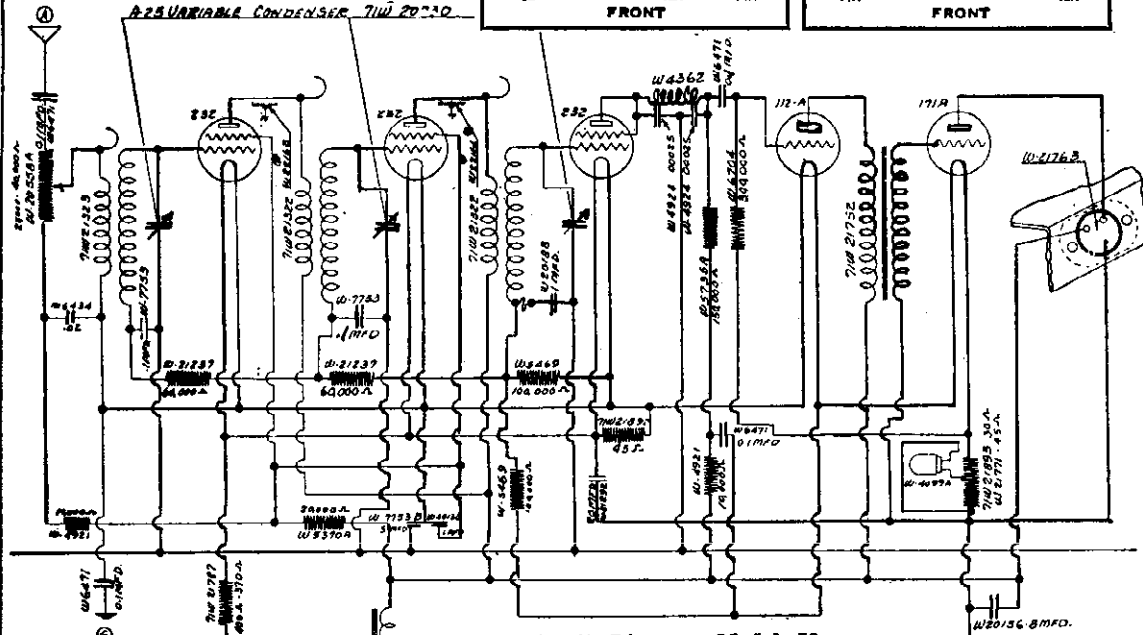
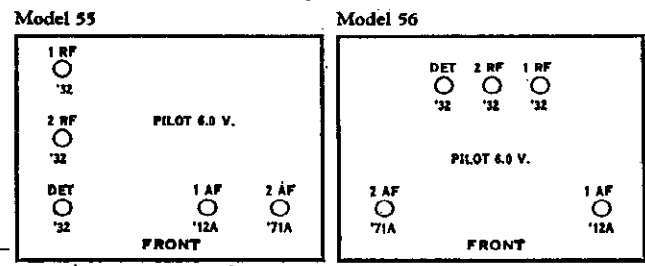
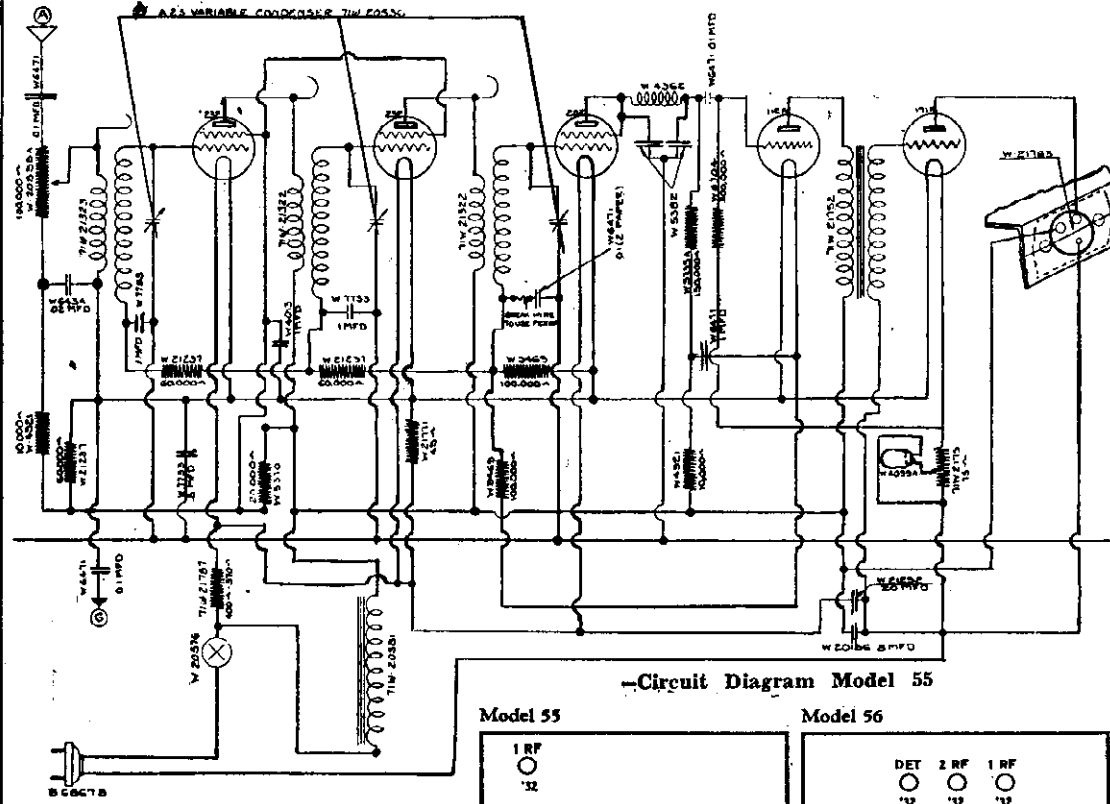


- Black0 Orange3 Violet7
- Brown1 Yellow4 Gray8
- Red2 Green5 White9
- Blue6

For example, a resistor with orange body color, green end color, and a red dot has a resistance of 3500 ohms.

CROSLY RADIO CORP.

MODEL 55
MODEL 56
Schematic
Voltage



Screen Grid Voltages (Volume Control On)
R.F. ~~Detector~~ Tube 40 to 55
Detector Tube 20 to 30

Plate Voltages	
R. F. Tubes	80 to 90
Detector Tube	20 to 30
1st A. F. Tube	75 to 90
Output Tube	85 to 100

Control Grid Voltages	
R. F. and Detector Tubes	1.2 to 1.8
1st A. F. Tube	4.0 to 5.0
Output Tube	10.0 to 15.0

Filament Voltages	
R. F. and Detector Tubes	1.5 to 2.0
A. F. Tubes	4.2 to 5.0

MODEL 55
MODEL 56
Parts Lists

CROSLLEY RADIO CORP.

Parts List Model 55

INSTRUCTIONS FOR ORDERING—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts.

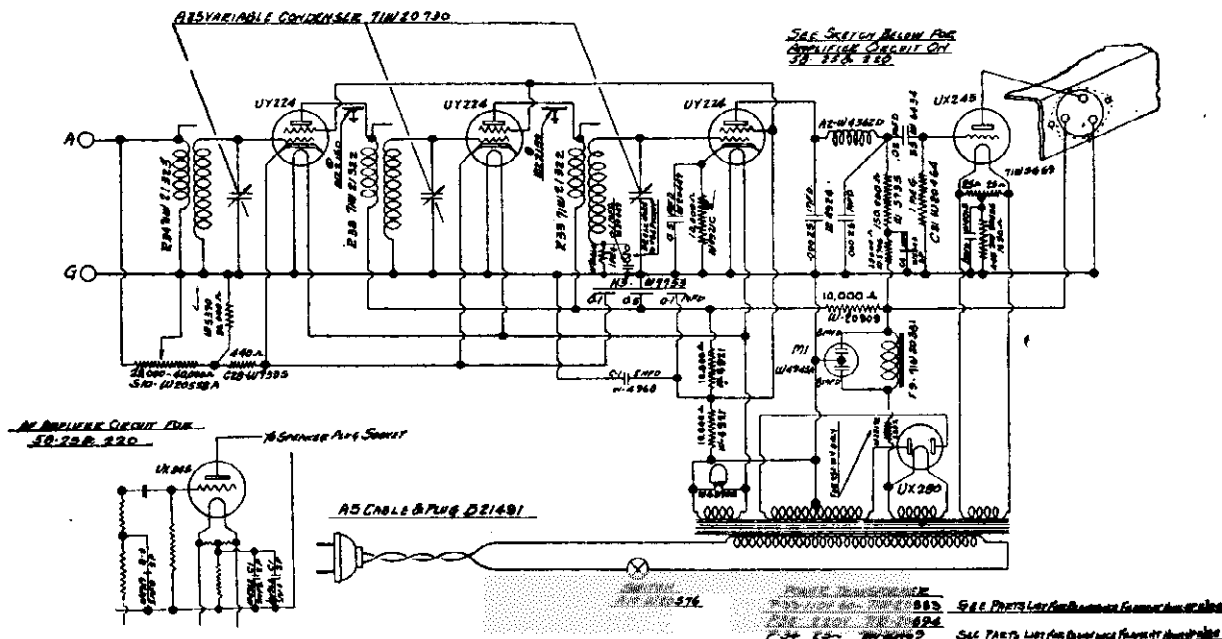
Qty.	Part No.	Description	List Price Each	Qty.	Part No.	Description	List Price Each
1	D-21761	Chassis	2.00	2	W-5382	0.00025 Mfd. Fixed Condenser	.35
5	W-7871	Socket (4 Prong)	.25	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00
5	W-7874	Socket Guide	.10	1	W-5469	Resistor 100,000 ohms (brown, black, yellow spot)	.60
2	W-21322	R. F. Transformer	2.50	2	W-21237	Resistor 60,000 ohm	.60
1	W-21323	R. F. Transformer (Ant.)	2.50	1	W-6434	0.02 Mfd. Fixed Condenser	.60
3	W-21739	Grid Connectors	.25	1	W-20940	Resistor Assembly	1.00
3	B-21174	R. F. Coil Shield	.50	1	W-5713	Mounting Strip	.25
1	W-20658	Volume Control	1.75	1	W-4921	Resistor 10,000 ohms	.60
1	W-20630	Variable condenser gang	18.00	1	W-4362	Plate Choke	.50
1	W-20981	Spider	.30	1	W-7753	0.1-0.5-0.1 Mfd. Fixed Condenser	2.00
1	W-7154	Dial Gear	.15	1	W-4013	1. Mfd. Fixed Condenser (2 paper)	1.35
1	W-5596	Set Screw	.05	1	W-6471	0.1 Mfd. Fixed Condenser	1.00
1	W-5354D	Dial Indicator	.25	1	W-21754	Resistor Assembly	3.13
1	W-4899	Pinion	.35	1	W-21771	Mounting Strip & Resistance (45 ohm)	.45
1	W-20594	Pinion Bracket (inner)	.15	1	W-5735	Resistor 150,000 ohms (brown, green, yellow spot)	.60
1	W-20595	Pinion Bracket (outer)	.15	1	W-4921	Resistor 10,000 ohms (brown, black, orange spot)	.60
1	W-4907	Spring Washer	.05	1	W-5469	Resistor 100,000 ohms (brown, black, yellow spot)	.60
1	W-20722	Dial Light Bracket	.25	1	W-6704	Resistor 300,000 ohms (orange black, yellow spot)	.60
1	W-20578	Power Switch	.75	1	W-20630	Bottom Bracket	.10
1	B-21762	Chassis Plate	.15	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00
1	W-20150	8 Mfd. Condenser	5.00	1	W-21751	Resistance Assembly (45-30 ohms)	.40
1	W-21760	Filament drop resistor (400-370 ohms)	1.00	1	W-21798	Junction Block	.10
1	W-21770	Filament drop resistor bracket	.10	1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00
2	W-4435	Asbestos Washer	.05	1	W-20853	Terminal (A. G. & P. H.)	.50
1	W-20381	Filter Choke	3.25	1	W-21763	Speaker Terminal Socket	.40
1	W-21292	Electrolytic Condenser (20 mfd.)	2.00	1	B-8967	Cable	1.50
1	W-21752	A. F. Transformer	5.00	1	C-21581	R. F. Shield Assembly	1.25
PARTS UNDER CHASSIS				1	C-20838	Chassis Bottom	.50
1	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00	1	W-20167	Knob (large)	.40
1	W-21109	Resistor Assembly	1.00	2	W-20482	Knob (small)	.35
1	W-5713	Mounting Strip	.25				
1	W-5370	Resistor 20,000 ohms (red, black, orange spot)	.60				
1	W-21237	Resistor 60,000 ohms (blue, black, orange spot)	.60				

Parts List Model 56

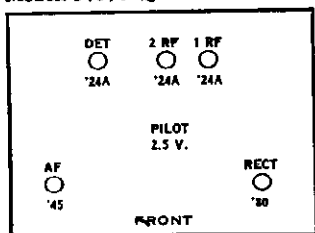
Qty.	Part No.	Description	List Price Each	Qty.	Part No.	Description	List Price Each
1	C-21900	Chassis	1.75	1	W-6434	0.02 Mfd. Fixed Condenser	.60
5	W-7871	Socket (4 prong)	.25	1	W-7753	0.1-0.5-0.1 Mfd. Fixed Condenser	2.00
5	W-7874	Socket Guide	.10	1	W-4013	1. Mfd. Fixed Condenser (2 paper)	1.35
1	W-20658	Volume Control	1.75	1	W-21237	Resistor (60,000 ohms) Blue, black, orange	.60
1	W-21752	A. F. Transformer	5.50	1	W-5469	Resistor 100,000 ohms Brown, black, yellow	.60
1	W-21760	Filament Drop Resistor (400-370 ohms)	1.00	1	W-21237	Resistor (60,000 ohms)	.60
1	W-21770	Filament Drop Resistor Bracket	.10	3	W-21127	Stiffened Sleeving (3-8"x2")	.65
2	W-4435	Asbestos Washer	.05	1	W-20873	Bottom Bracket	.10
1	W-20730	Variable Condenser Gang	18.00	2	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00
1	W-20681	Spider	.30	1	W-21895	Fixed Resistance Assembly	2.50
1	W-22093	Dial	.25	1	W-21771	Resistance and mounting strip (45 ohms)	.45
1	W-22094	Dial Strip	.25	1	W-5735	Resistor 150,000 ohms (Brown, green, yellow)	.60
1	W-20977	Dial Band	.20	1	W-6704	Resistor 300,000 ohms (Orange, black, yellow)	.60
2	W-21322	R. F. Transformers	2.50	1	W-4921	Resistor 10,000 ohms (Brown, black, orange)	.60
1	W-21251	R. F. Transformers (antenna)	2.50	1	W-21894	Resistance Assembly	2.35
3	W-21739	Grid Connectors	.25	1	W-6028	Mounting Strip	.30
3	W-21257	R. F. Coil Shields	.50	1	W-4921	Resistor (10,000 ohm Brown, black, orange)	.60
1	C-20871	R. F. Shield	1.25	1	W-5469	Resistor (100,000 ohm) Brown, black, yellow	.60
1	W-20578	Power Switch	.75	1	W-5370	Resistor (20,000 ohm) Red, black, orange	.60
1	W-22090	Dial Light Bracket	.25	1	W-21292	20 Mfd. Condenser	2.00
1	W-21901	Chassis Plate	.15	1	B-21491	Cable	1.50
1	W-20381	Filter Choke	3.25	1	C-20872	Chassis Bottom	.50
1	W-20156	Condenser (8 Mfd. 2 paper)	5.00	2	W-20482	Knob (Small)	.35
1	W-21763	Speaker Terminal	.40				
1	W-20883	Terminal A. G. & P. H.	.50				
PARTS UNDER CHASSIS							
1	W-21893	Fixed Resistance (30 ohm)	.40				
1	W-21892	Fixed Resistance (45 ohm)	.40				
1	W-20188	0.1 Mfd. Fixed Condenser	.60				
1	W-4362	Plate Choke	.50				
2	W-4924	0.00025 Mfd. Fixed Condenser	.35				
2	W-6471	0.1 Mfd. Fixed Condenser (2 paper)	1.00				

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MODEL 58
Schematic
Parts List



Models 54G, 58Q *



Circuit Diagram Model 58

For Voltage Data See Model 54

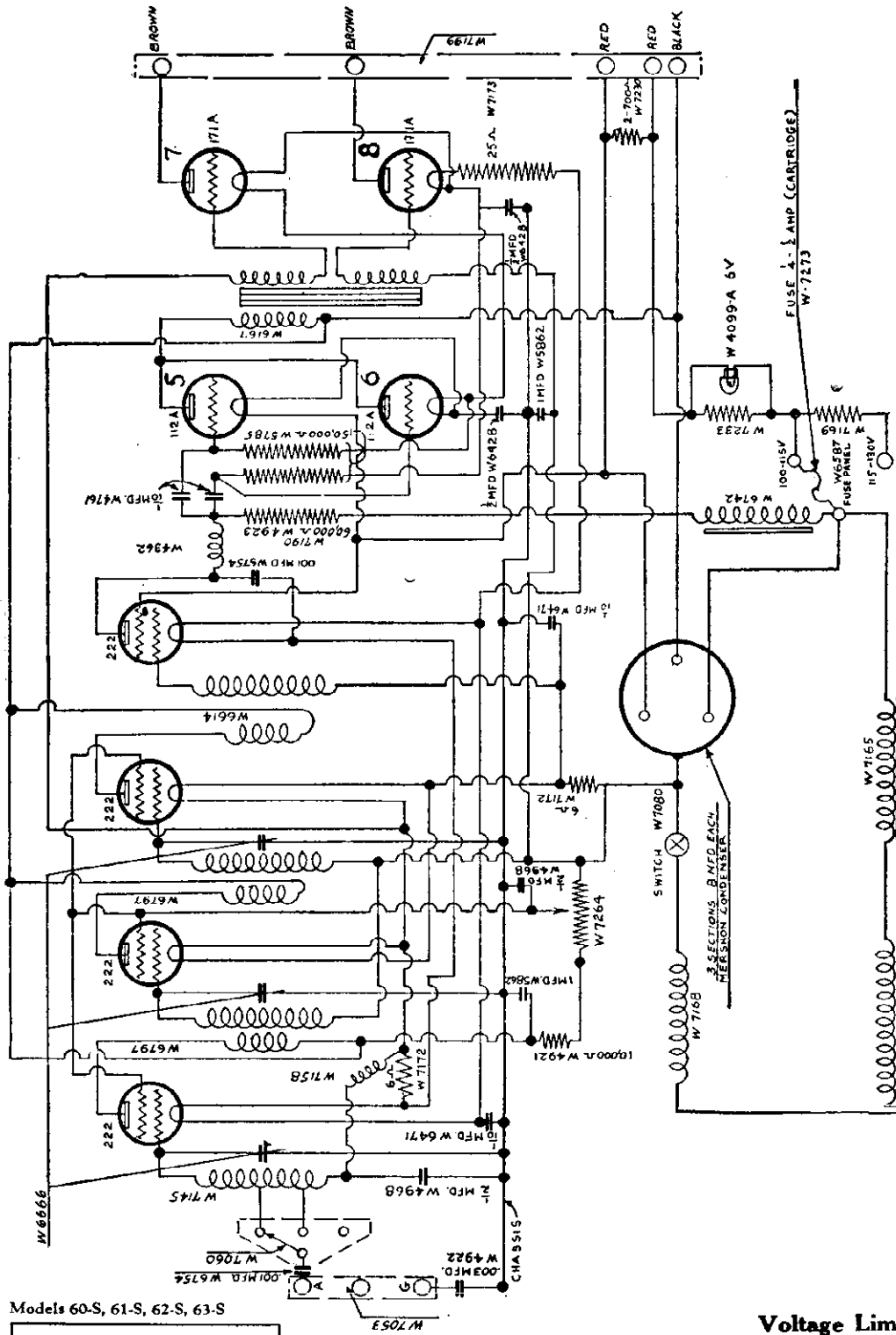
Parts List—Model 58

INSTRUCTIONS FOR ORDERING—Give part number, description of part, and serial number of receiver on which part is to be used. If article wanted is not listed separately, then that part of complete assembly containing this article should be ordered. Goods shipped on open account to Crosley Wholesale Distributors only. Cash must accompany Dealer and Consumer orders. Prices are subject to the usual trade discounts.

Qty.	Part No.	Description	List Price Each	Qty.	Part No.	Description	List Price Each				
1	W-21509	Chassis	1.75	PARTS UNDER CHASSIS							
3	W-7873	Socket (5 Prong)	.30					1	W-5069	25 -25 ohm Resistance	.40
2	W-7871	Socket (4 Prong)	.25					1	W-20556	1950 ohm Resistance	.35
1	W-21518	Speaker Socket	.40					1	W-5943	.1 Mfd. Fixed Condenser	1.10
4	W-7874	Socket Guide	.10					2	W-4924	.00025 Mfd. Fixed Condenser	.35
1	W-21297	Socket Guide (280)	.10					1	W-4962	Plate Choke	.50
1	W-20683	Terminal Board (A. G. & Ph.)	.50					1	W-6434	.02 mfd. Fixed Condenser	.60
1	W-20658	Volume Control	1.75					1	W-4013	1. mfd. Fixed Condenser	1.35
1	W-20381	Filter Choke	3.25					1	W-20440	.5 - .1 mfd. Fixed Condenser	1.25
1	W-4943	Merchon Condenser	4.25					1	W-7753	.1 - .5 - .1 mfd. Fixed Condenser	2.00
2	W-5083	Condenser Clamp	.15					1	W-4968	.5 mfd. Fixed Condenser	1.20
1	W-4946	Condenser Cap	.25					1	W-21955	3250 ohm Candohm Resistance (2 Section)	.80
1	W-20730	Variable Condenser Gang	18.00					1	W-21956	3160 ohm Pandohm Resistance	.30
1	W-22090	Dial Light Bracket Assembly	.40					1	W-22043	Mounted Resistor Assembly	2.35
1	W-22095	Dial Drum Assembly	.80					1	W-20000	Mounting Strip	.30
1	W-22094	Dial Indicator Cover	.25					1	W-3735	150,000 ohm Resistor	.60
2	W-20977	Dial Band	.20					1	W-5370	20,000 ohm Resistor	.60
1	W-21322	R. F. Transformer	2.50					1	W-6706	25,000 ohm Resistor	.60
2	W-21323	R. F. Transformer (Antenna)	2.50	1	W-22062	Mounted Resistor Assembly	3.00				
3	W-21739	Grid Connector	.25	1	W-20080	Mounting Strip	.30				
3	W-21257	R. F. Coil Shield	.50	1	W-4921	10,000 ohm Resistor	.60				
1	W-20676	Power Switch	.75	2	W-20464	1 Meg. Resistor	.60				
1	W-22025	Power Transformer (110 V. 60 Cycle)	13.00	1	W-7335	440 Ohm Resistor	.60				
2	W-21567	Tie Straps	.10	1	B-21491	Cable	1.50				
1	C-20671	R. F. Shield	1.25	1	C-20672	Chassis Bottom	.50				
				1	W-20873	Bottom Bracket	.10				
				2	W-20462	Knob	.35				
					W-7947	Knob Spring	.06				

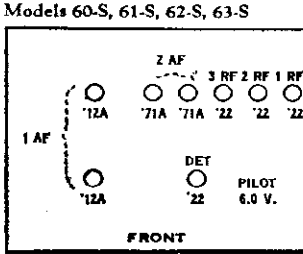
MODELS 60S, 61S, 62S, 63S
Schematic, Voltage

CROSLLEY RADIO CORP.



Control Grid Voltages	
R. F. Tubes	1.4 to 2.3
Detector tube	4.0 to 5.5
112A A. F. tubes (measured to low side of grid resistor)	4.2 to 5.5
Output tubes	14.0 to 19.0
Screen Grid Voltages	
1st R. F. tube	47 to 67
2nd and 3rd R. F. tubes	50 to 70
Detector	14 to 34

Plate Voltages	
1st R. F. tube	90 to 100
2nd R. F. tube	93 to 103
3rd R. F. tube	95 to 105
Detector tube	64 to 74
A. F. Tube No. 5 (see circuit diagram for this and following tube numbers)	66 to 76
A. F. tube No. 6	72 to 82
Output tube, No. 7	77 to 87
Output tube, No. 8	81 to 91



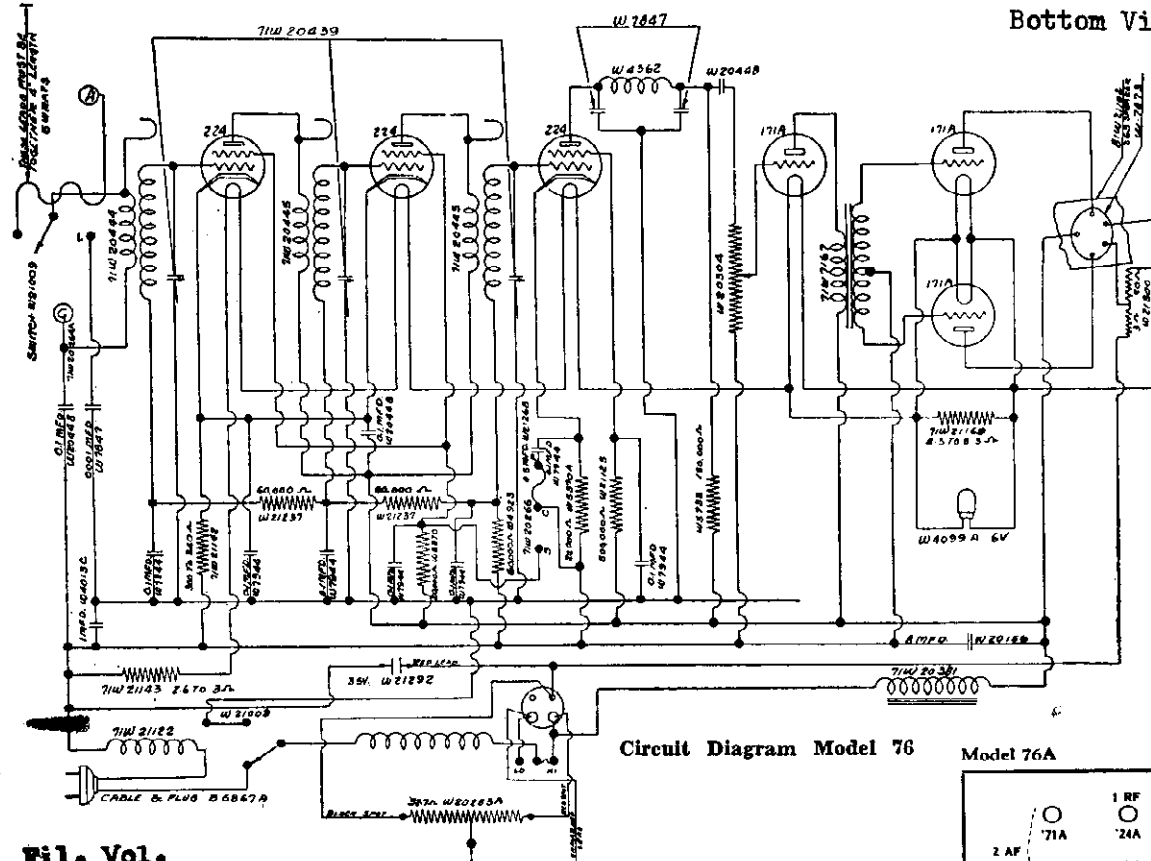
Voltage Limits

Filament Voltages	
R. F. and Detector tubes	2.6 to 3.4
All A. F. tubes	4.2 to 5.5

Volume Control on Full	
1st R. F. tube	90 to 100
2nd R. F. tube	93 to 103
3rd R. F. tube	95 to 105
Detector tube	64 to 74
A. F. Tube No. 5 (see circuit diagram for this and following tube numbers)	66 to 76
A. F. tube No. 6	72 to 82
Output tube, No. 7	77 to 87
Output tube, No. 8	81 to 91

CROSLY RADIO CORP.

MODEL 76
Schematic, Voltage
Bottom View

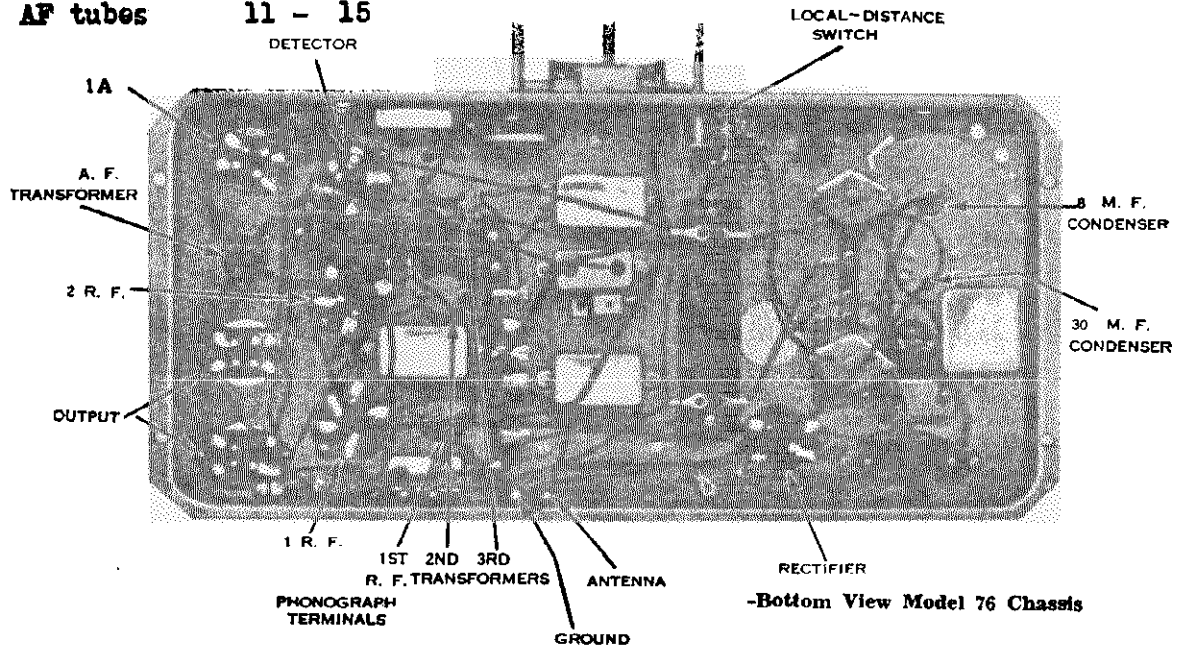
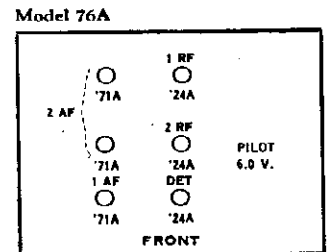


Vol. Vol.

RF and Det	2.3- 2.6
AF tubes	4.6- 5.2
Plate Vol.	
RF tubes	90 - 110
Det	60 - 70
AF tubes	80 - 100
Control Grid	
RF tubes	2 - 3.0
Det	3 - 3.5
AF tubes	11 - 15

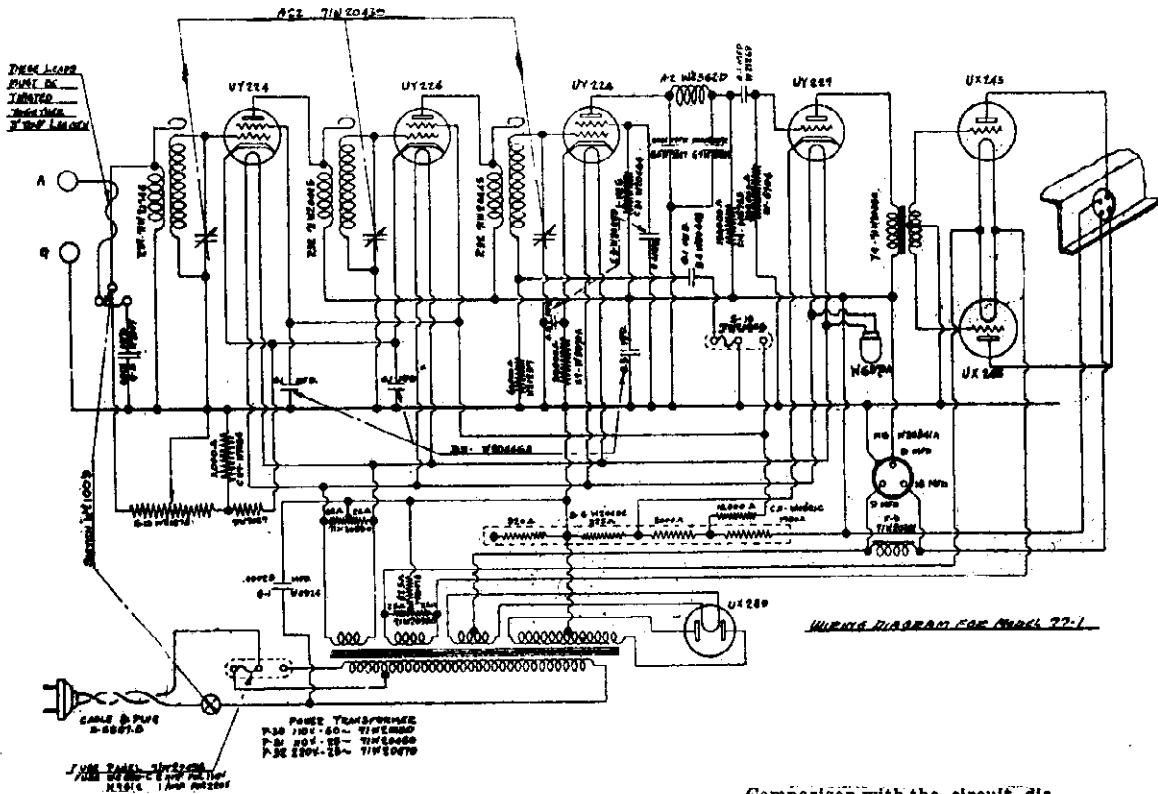
Screen Grid	
RF tubes	60 - 80
Det	9 - 11

To be measured with speaker in circuit. Fuse in "high" for 117.5 line voltage and in "low" position for 107.5 line voltage.

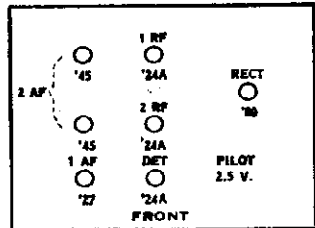


MODEL 77-1
Schematic
Bottom View, Notes

CROSLLEY RADIO CORP.

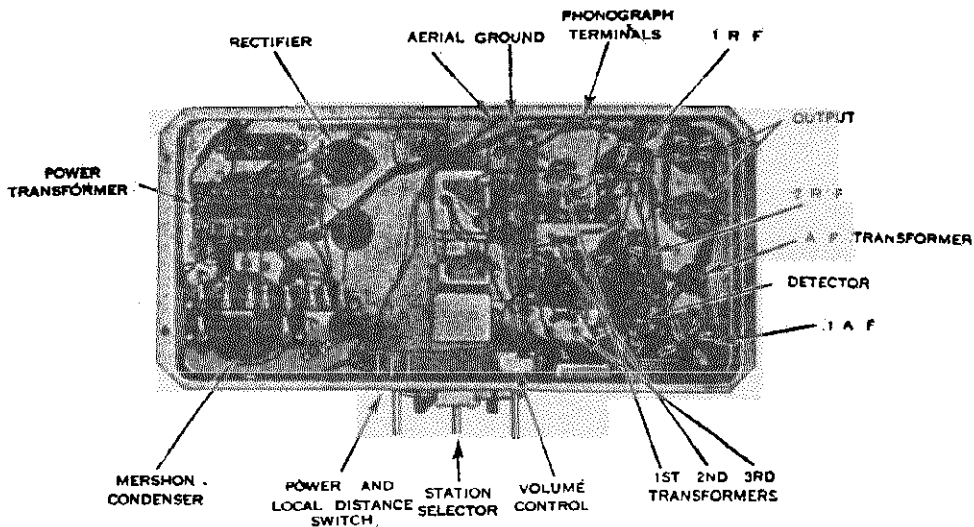


Models 77A, 77B, 77L



Comparison with the circuit diagram of Model 77.

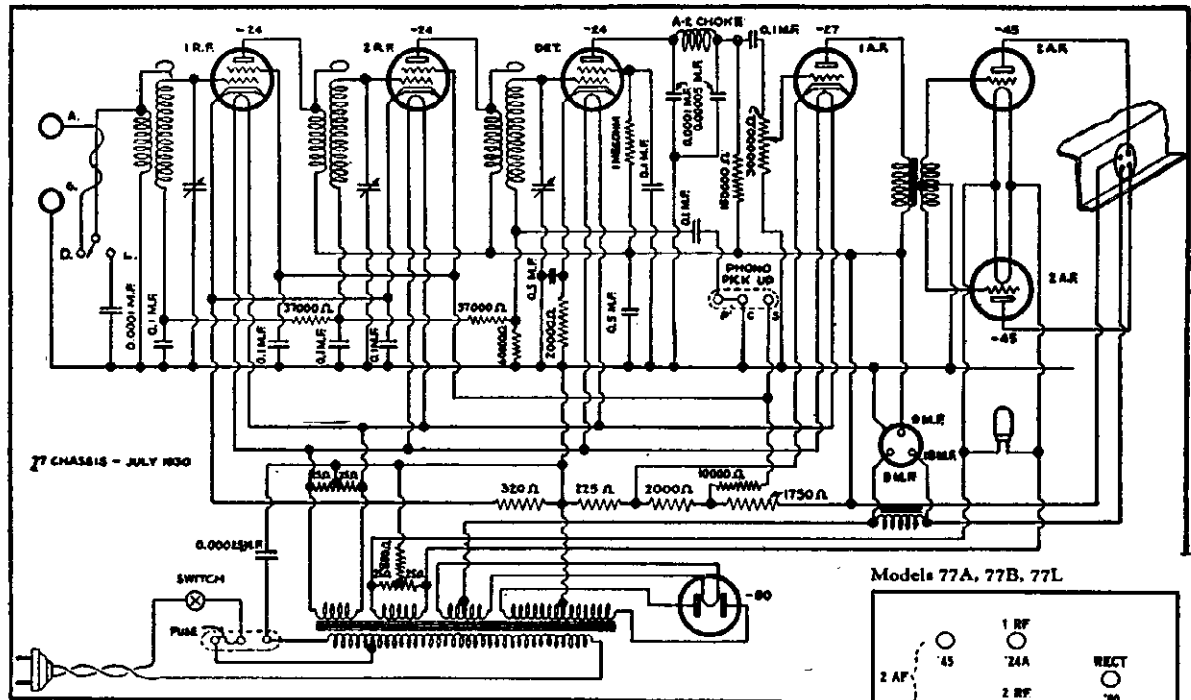
will show that the 37,000 ohm and 16,000 ohm isolating resistors, and the 0.1 micro-farad isolating condensers have been removed from the radio-frequency circuit. In addition a new type of volume control is used, located in the first stage r. f. instead of in the audio frequency circuit. The antenna coil has a low-impedance primary, and is not interchangeable with that on Model 77. These are the essential differences.



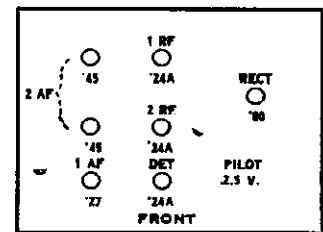
-Bottom View Model 77-1

CROSLEY RADIO CORP.

MODELS 77A, 77B, 77L
Schematic, Voltage



Models 77A, 77B, 77L



Voltage Limits

Filament Voltages	
All tubes but rectifier	2.3 to 2.6
Rectifier tube	4.6 to 5.2
Plate Voltages	
R. F. tubes	140 to 160
Detector tube	85 to 110
1st Audio tubes	125 to 150
Output tubes	230 to 260
Rectifier tube (A. C. Voltage)	250 to 280 each plate
Control Grid Voltages	
R. F. tubes	1.6 to 3.2
Detector tube	2.0 to 3.2
1st Audio tube	8.0 to 10.0
Output tubes	45. to 65.
Screen Grid Voltages	
R. F. tubes	75 to 90
Detector tube	35 to 55

To be measured with speaker connected and line voltage of 117½ (235 for 220 volt receivers) with fuse in "High" position or of 107½ (215 for 220 volt receivers) with fuse in "Low" position. Measure plate and grid voltages with a high-resistance, D. C. voltmeter (600 ohms or more per volt) from plate or grid tube contact to emitter contact, except in the case of the grid voltage of the first audio tube, which should be measured from the emitter to the chassis. The filaments of the output and rectifier tubes serve as the emitters, while the other tubes have heaters and separate emitters. Measure filament voltages with a low-range, A. C. voltmeter.

All voltage readings are to be taken with the speaker connected and the tubes in place.

Installation Notes

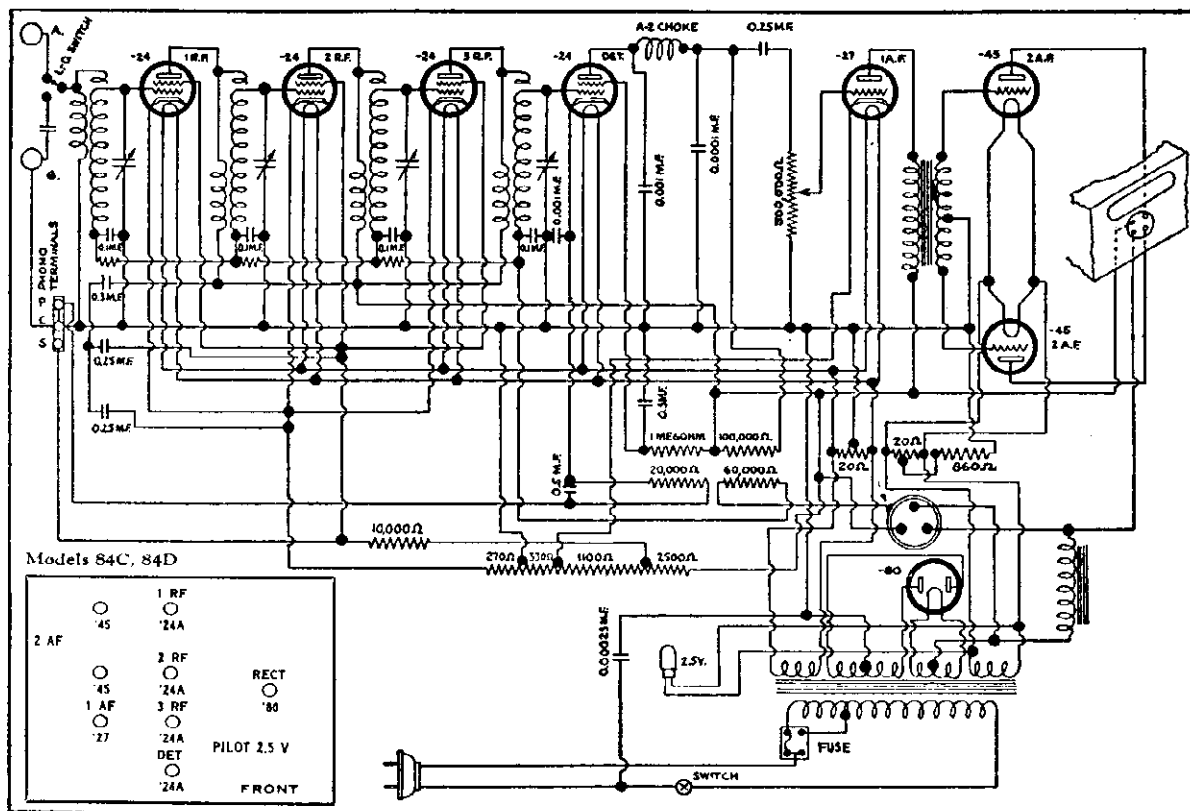
Recommended aerial length: 50 feet or more for outdoor aerial, 20 to 50 feet for indoor aerial.

There are three terminals at the rear of the chassis, marked "P", "C", and "S", for phonograph pick up devices. Instructions for connecting these in Crosley phono-radio combinations will be found in the instruction books accompanying the receivers. To connect other types of phonograph pick up, a single-pole double-throw switch is required. Cut the wire between terminals "P" and "C". Connect the center pole of the switch to terminal "C". Connect the end poles of the switch to terminals "P" and "S". Connect the two leads from the phonograph pick up to the switch poles which are connected to "P" and "C" (terminal "C" is grounded to the chassis). For phonograph reproduction, throw the switch so that the terminals "C" and "S" are connected together. For radio reproduction, throw the switch so that the terminals "P" and "C" are connected together. The volume of phonograph reproduction may be controlled by the volume control on the radio receiver.

If the phonograph attachment is disconnected from the receiver at any time and it is desired to obtain radio reception, it will be necessary to connect a wire from "P" to "C."

MODELS 84C, 84D
Schematic, Voltage
Notes

CROSLLEY RADIO CORP.



INSTALLATION NOTES

Recommended aerial length, 50 feet or more for outdoor installations; 20 feet or more for indoor installations.

Terminals are provided for phonograph pick-up devices. When such a device is connected, the wire between terminals "P" and "C" must be out. If the pick-up device is afterwards disconnected, a wire must be connected between "P" and "C" before the receiver may be operated.

To connect a phonograph pick-up a double throw, single-pole switch must be used. Connect the middle pole of the switch to terminal "C" and the end poles to terminals "P" and "S". Connect the pick-up to the switch poles which are connected to "P" and "C", and cut the wire between "P" and "C", as described above. Throw switch toward "P" pole for radio reproduction or toward "S" pole for phonograph reproduction.

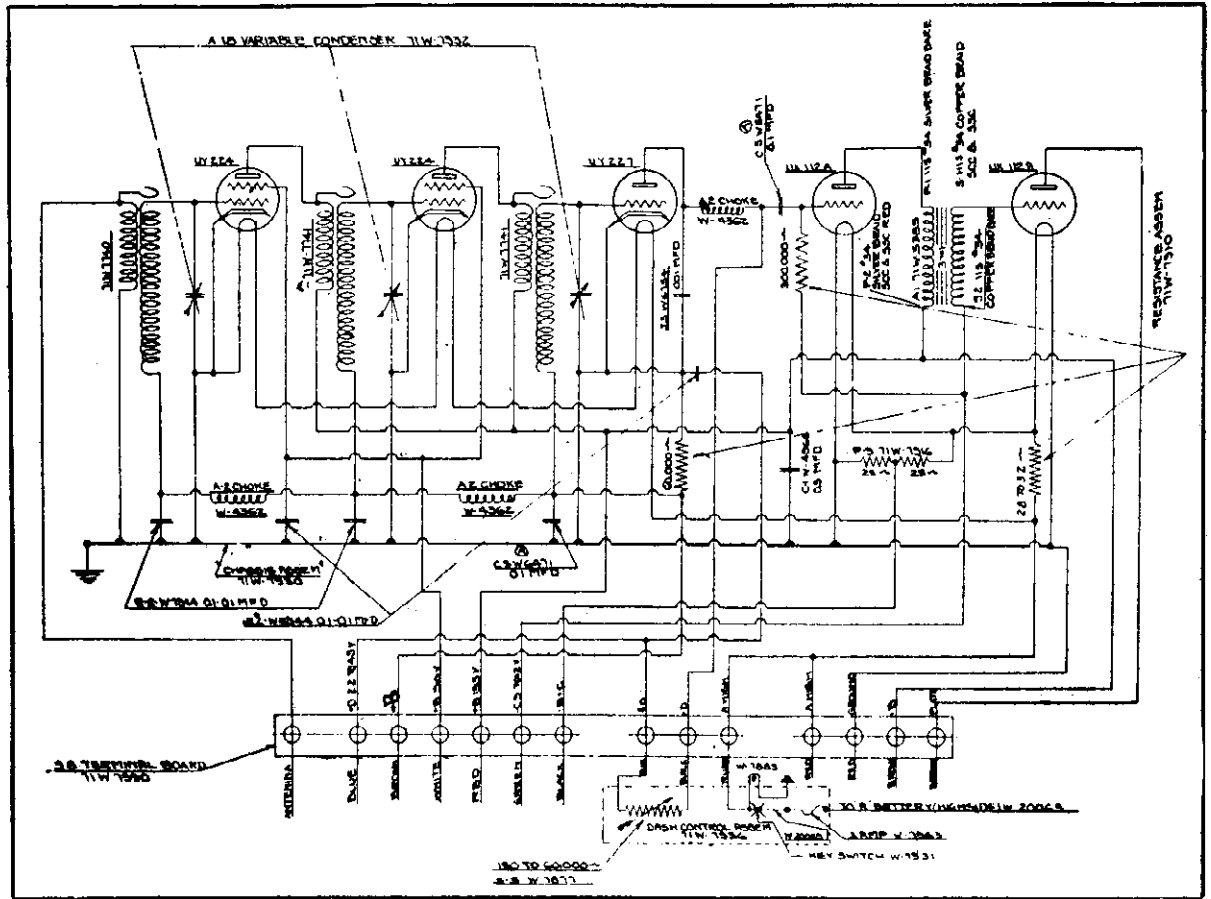
Voltage Limits

Filament Voltages	
All tubes but rectifier	2.3 to 2.6
Rectifier tube	4.6 to 5.2
Plate Voltages	
R. F. tubes	170 to 190
Detector tube	95 to 105
1st Audio tube	130 to 150
Output tubes	220 to 250
Rectifier tube (A. C. voltage)	250 to 280 each plate
Control Grid Voltages	
R. F. tubes	2.5 to 3.5
Detector tube	4.0 to 7.0
1st Audio tube	8.0 to 11.0
Output tubes	40.0 to 50.0
Screen Grid Voltages	
R. F. tubes	60 to 75
Detector tube	35 to 55

To be measured with speaker connected and line voltage of 117½ (235 for 220 volt receivers) with fuse in "High" position or of 107½ (215 for 220 volt receivers) with fuse in "Low" position. Measure plate and grid voltages with a high-resistance, D. C. voltmeter (600 ohms or more per volt) from plate or grid tube contact to emitter contact, except in the case of the grid voltage of the first audio tube, which should be measured from the emitter to the chassis.

CROSLY RADIO CORP.

MODEL 90 AUTO
Schematic, Voltage



Filament Voltages

R. F. and Detector Tubes.....	2.0
A. F. Tubes.....	4.7

Plate Voltages

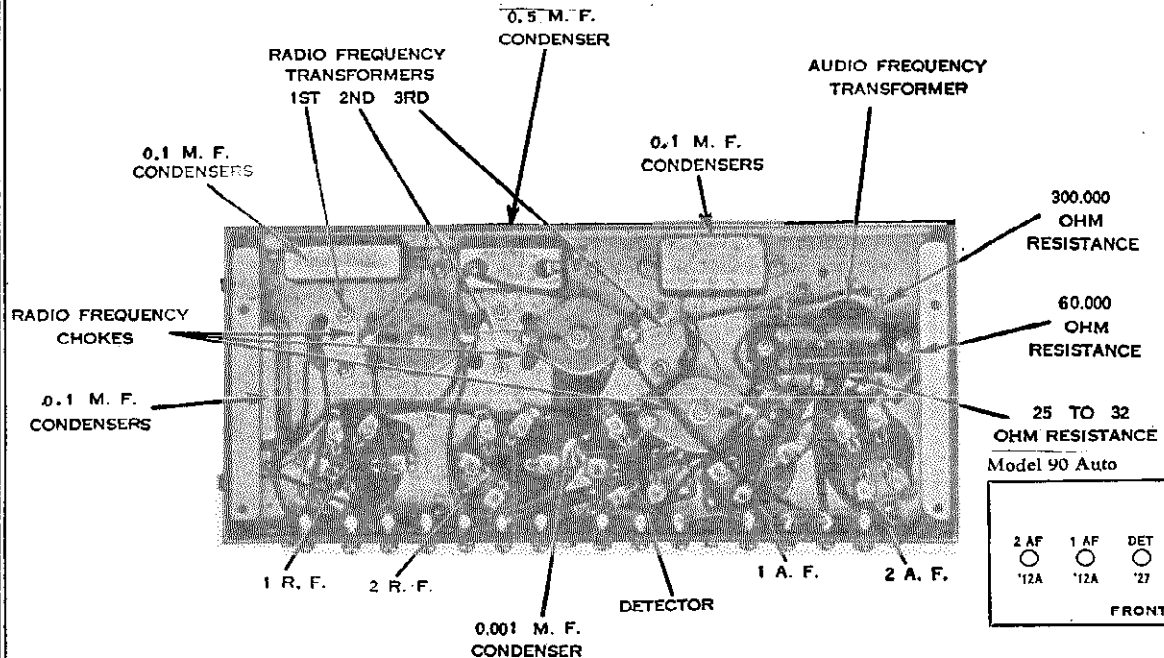
All Tubes but Detector.....	135
Detector Tube.....	22½

Control Grid Voltages

R. F. Tubes.....	2.5
Detector Tube.....	3.0
A. F. Tubes.....	12.0

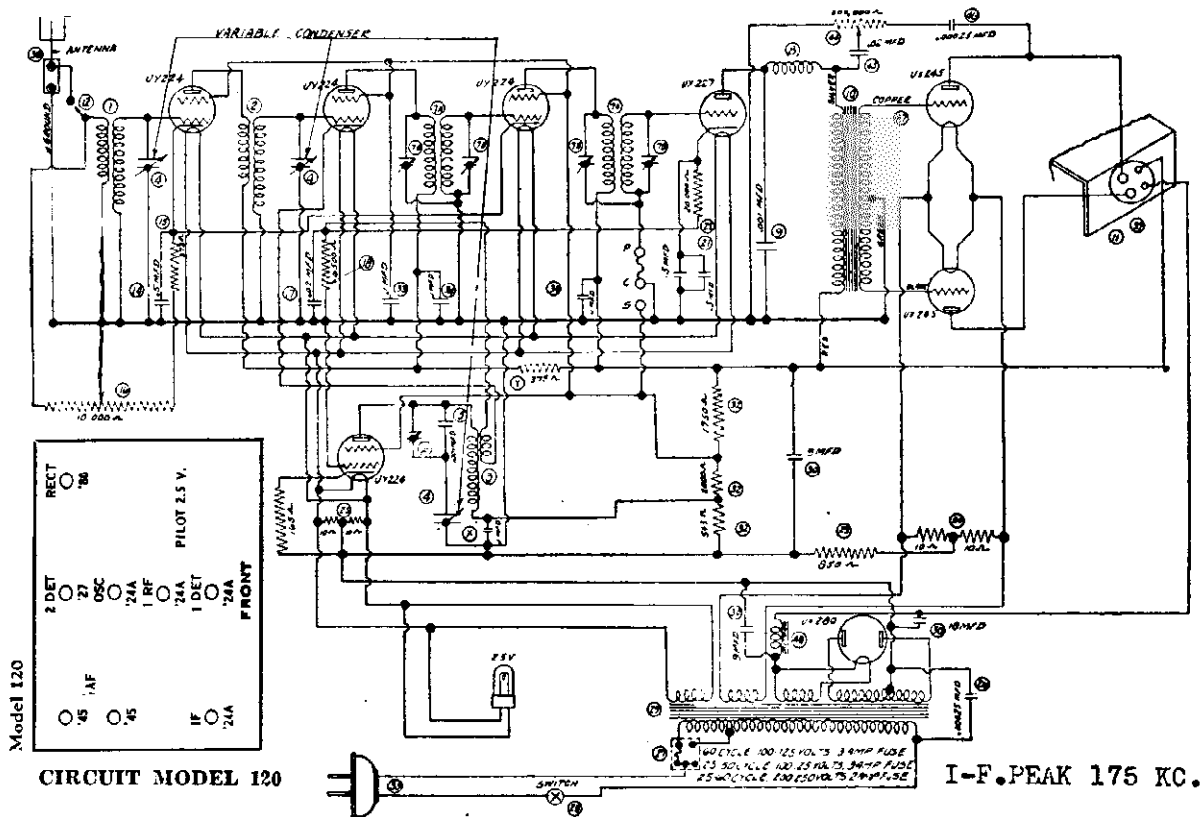
Screen Grid Voltages

R. F. Tubes.....	90
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MODEL 120
Schematic
Voltage, Notes

CROSLLEY RADIO CORP.



CIRCUIT MODEL 120

I-F. PEAK 175 KC.

Voltage Limits

Filament Voltages	
All tubes but output and rectifier ..	2.4 to 2.6
Output tubes	2.3 to 2.5
Rectifier tube	2.6 to 5.2
Plate Voltages	
1st R. F. and Intermediate Amplifiers	150 to 170
Oscillator	16 to 25
1st Detector	145 to 165
2nd Detector	135 to 155
Output	245 to 275
Rectifier (A. C. voltage)	260 to 290 each plate
Screen Grid Voltages	
All screen grid tubes	85 to 95
Control Grid Voltages	
1st R. F. and Intermediate Amplifiers ..	2.5 to 3.5
Oscillator	0.5 to 1.5
1st Detector	6.0 to 8.0
2nd Detector	13.0 to 17.0
Output tubes	50 to 58.0

To be measured with speaker connected, volume control on full, and line voltage of 117½ (235 for 220 volt receivers) with fuse in "High" position, or of 107½ (215 for 220 volt receivers) with fuse in "Low" position.

To Compensate For Long Aerial
With 120 Chassis

Model 120 is so sensitive that a long aerial may give undesirably great pick-up. To reduce the pick-up, connect a 0.0025 mfd. condenser from the antenna terminal to the ground terminal of the receiver, and a 0.00005 mfd. condenser in the antenna lead.

Changes In 120 Chassis

Service Bulletin No. A1 of March 15th covers the A. B. J. A. series of the 120 Chassis. Sets having serial prefix letters A. B. J. B. contain the following changes. Prices of parts remain the same.

W-22017 I. F. Transformer Assembly is replaced by W-22017-E I. F. Transformer Assembly.

W-21989 Coil Assembly is replaced by W-21989-B Coil Assembly.

W-21295 I. F. Transformer Assembly is replaced by W-21295-B I. F. Transformer Assembly.

W-21964 Flexible Resistor (165 ohms) is omitted.

W-21965 Flexible Resistor (375 ohms) is added.

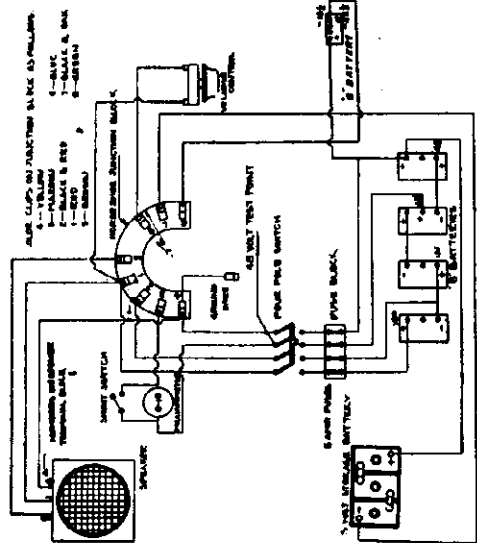
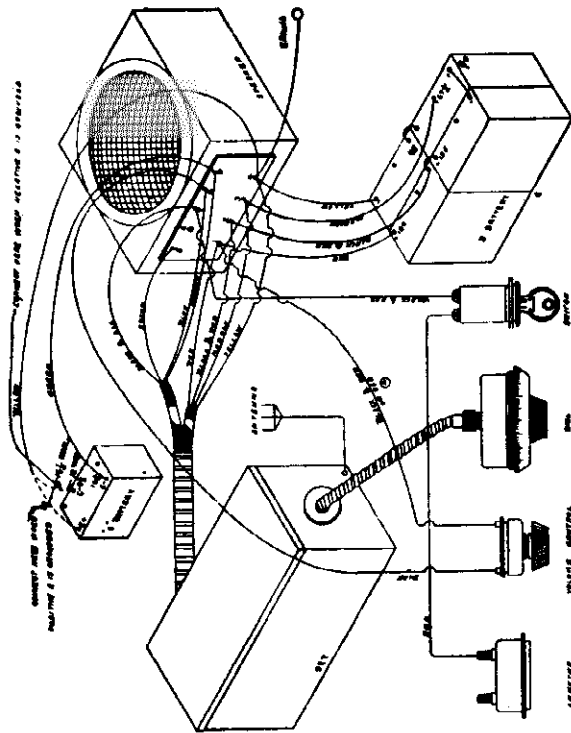
W-21995 R. F. Transformer (oscillator) (Rear) is replaced by W-22589 R. F. Transformer (oscillator).

New type I. F. Coil Assemblies are marked with a dot of red paint.

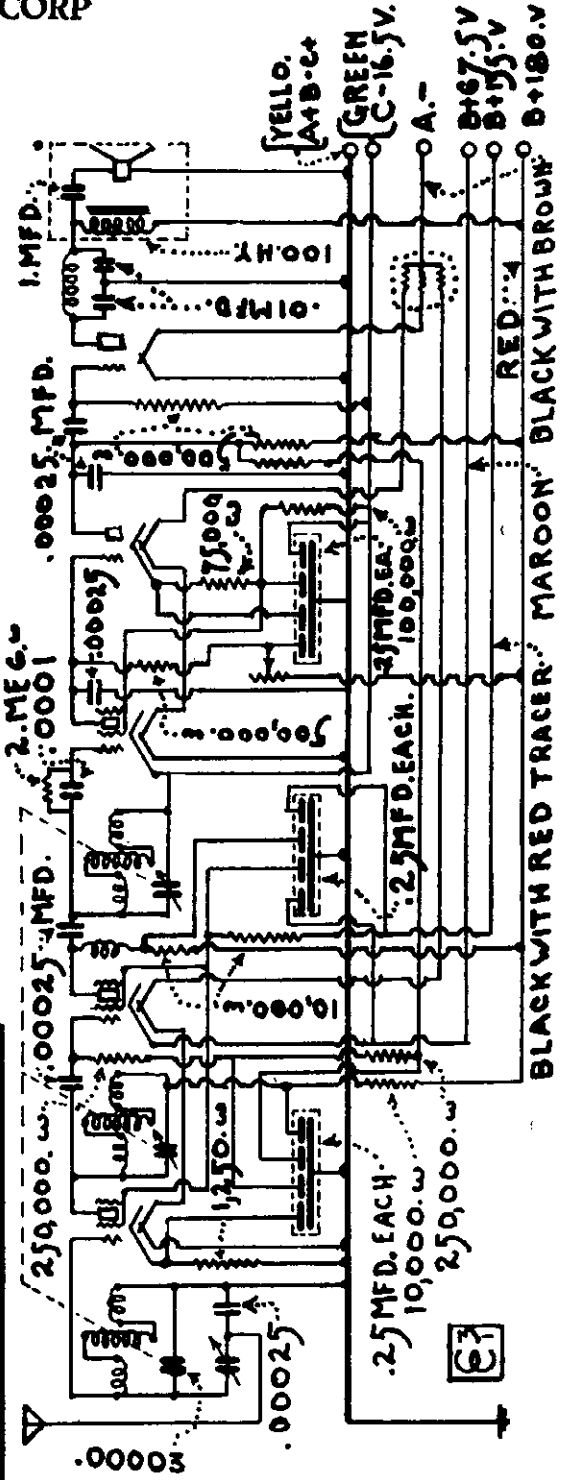
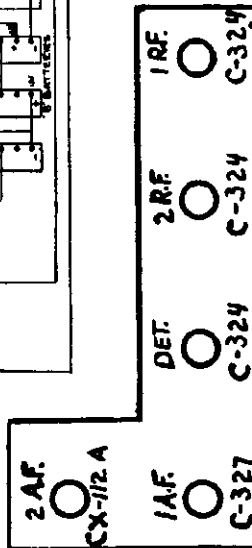
New type R. F. Transformer (oscillator), W-22589, has five connections instead of four

DELCO RADIO CORP

MODEL 3002



WIRE COLORS AND CONNECTIONS TO BE AS FOLLOWS:
 1—BLACK
 2—GREEN
 3—RED
 4—YELLOW
 5—MARRON
 6—BLACK WITH RED TRACER



YELLOW. A+B-C+
 GREEN C-16.5V.
 A.-
 B+67.5V
 B+55.5V
 B+180.V

BLACK WITH RED TRACER. MAROON. BLACK WITH BROWN. RED. A.

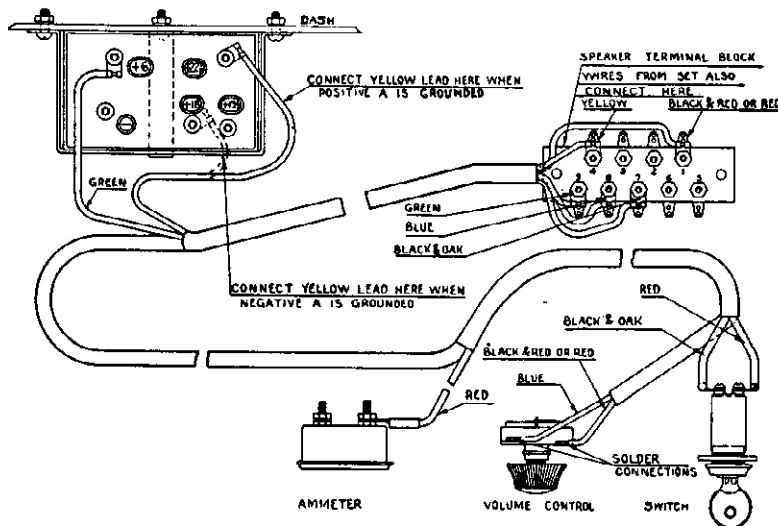
Delco Radio Model 3002

Type of Tube	Position of Tube	Tube in Test Kit					
		Filament Volts	Plate Volts	Control Grid Volts	Screen Volts	Plate M.A. Current	Plate Grid Test
224	1—R. F.	1.9	125	4.8	100	3.2	5.4
224	2—R. F.	1.9	72	0	42	2.2	2
224	Detector	1.9	15	0	10	.13	0
227	1—A. F.	1.9	45	1	-	.19	.27
212-A	2—A. F.	3.9	137	.2	-	5.5	10.5

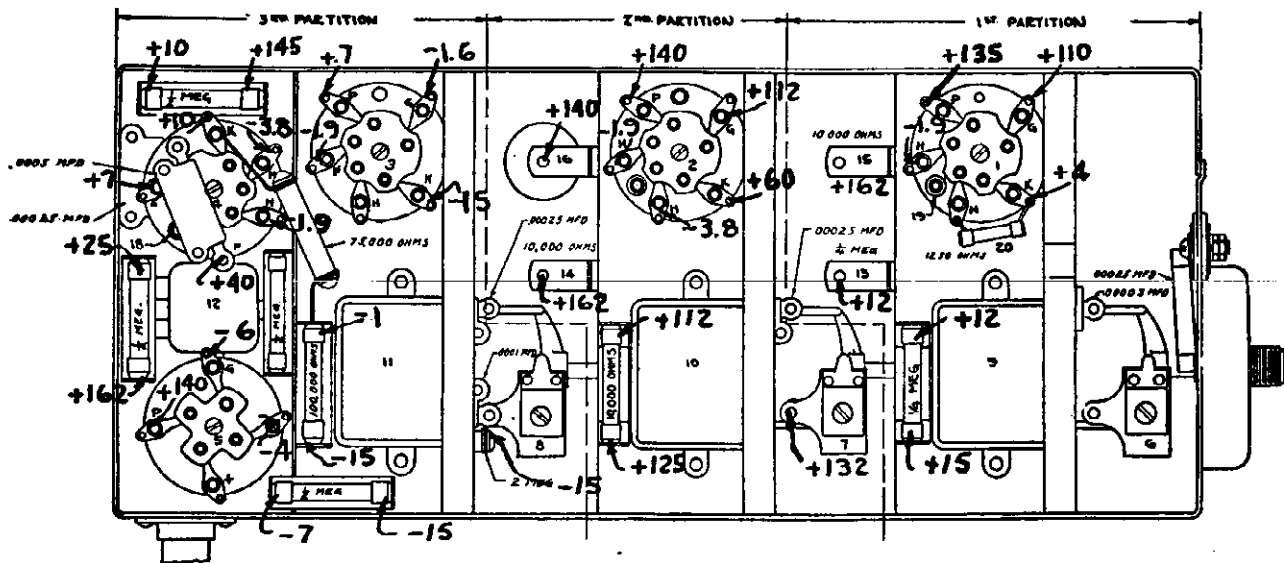
MODEL 3002
Notes
Parts Layout

DELCO RADIO CORP

After the set is in operation on a powerful signal, it will be necessary to tune the antenna circuit so that weaker signals will be received with the maximum volume. The best way to do this is to connect a milliammeter, with a zero to ten milliamper scale, in series with the B Plus 67.5 volt maroon lead. (Connect positive side of meter to set.) Insert a small screw driver in the hole in the bottom of the receiver located nearest the antenna terminal and adjust the large screw on the first balancing condenser. This is located about two inches above the hole. Adjustments should be made by turning the screw until the minimum reading on the meter is obtained. While this adjustment is being made, the station selector should be turned slightly in either way to determine whether or not the reading can be further decreased. This adjustment is a very delicate operation and requires only a slight movement in either direction, not to exceed one full turn. If a meter is not available, a weaker signal should be selected and the set adjusted to maximum volume by varying the position of the screw. Care should be taken not to apply excessive pressure in making this adjustment. While it will do no damage to ground the screw driver to the set while adjusting the screw, the signals will be cut out whenever the screw driver touches the case. A little tape wound around the screw driver will prevent this. It is impossible to receive a shock while making this adjustment. Make above adjustment only through the hole located nearest the aerial connection. After installation is complete, check all connections for correct locations and tightness.



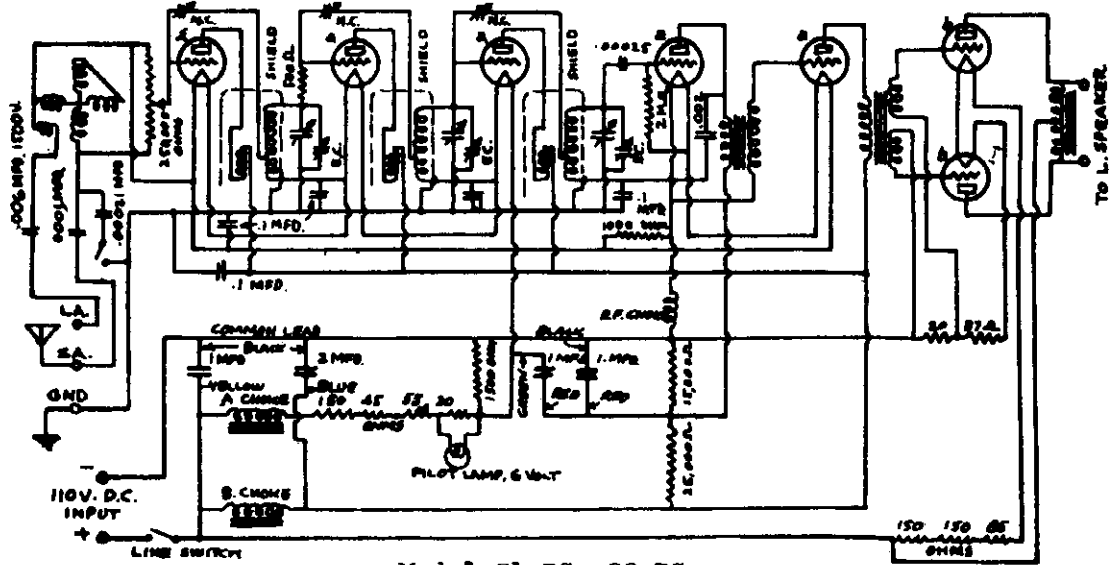
-Control Wiring Harness Connections.



EARL RADIO CORP.

MODEL 21 DC, 22 DC
MODEL 121

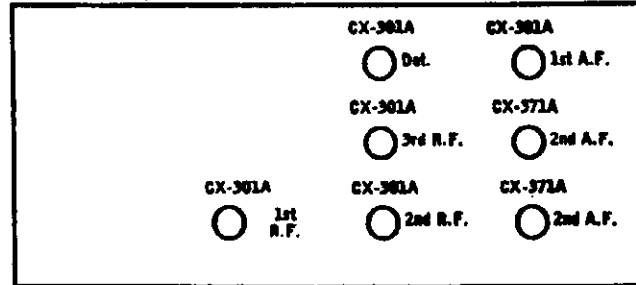
B = CX-301-A OR UX-201-A
b = CX-371-A OR UX-171-A



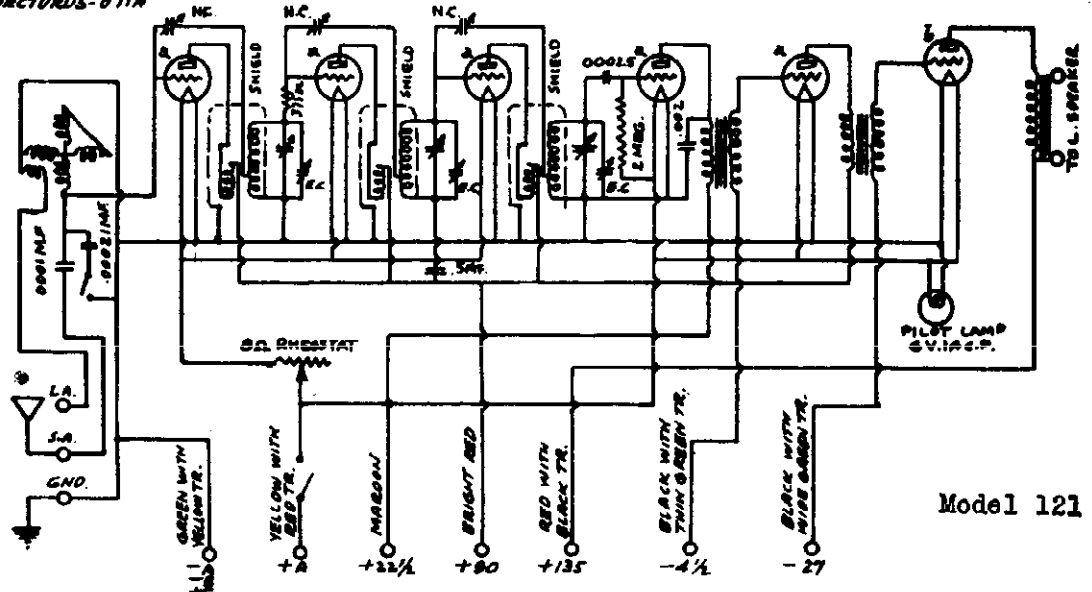
Model 21 DC, 22 DC

Earl 21DC, 22DC

(D.C.)



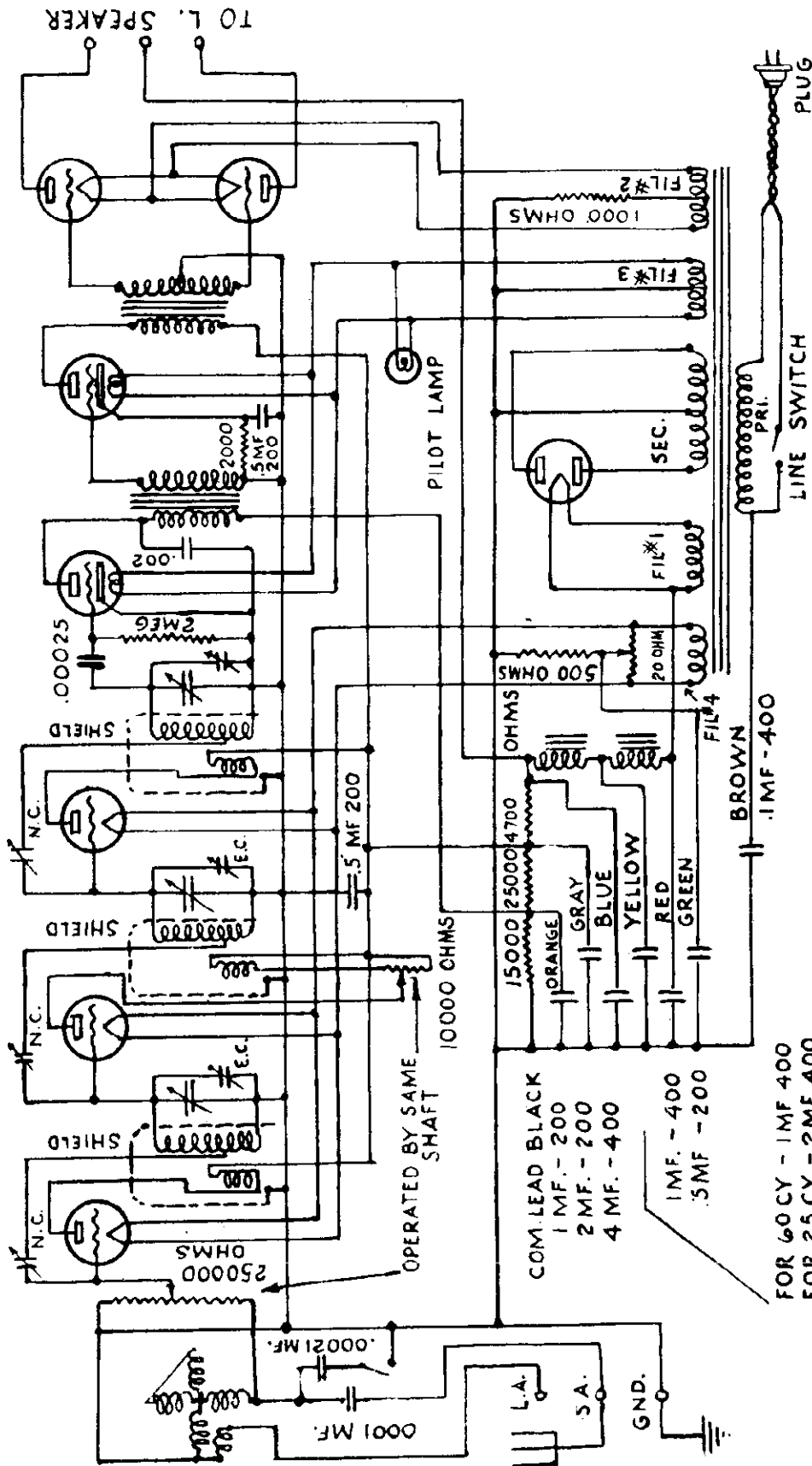
B: ARCTURUS -101A.
b: ARCTURUS-071A



Model 121

MODEL 21, 22 AC
Schematic

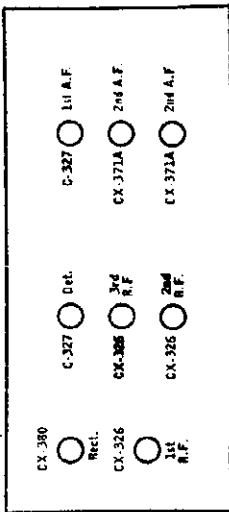
EARL RADIO CORP.



FRESHMAN—Earl—Model 21-22
Line Voltage 116—Volume Control Position On

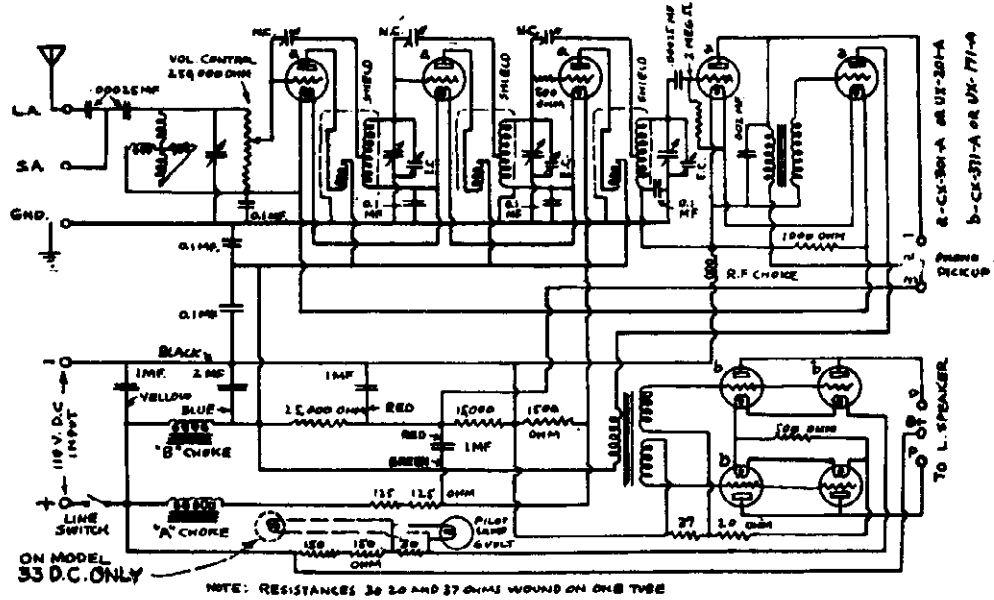
Point	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
2	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
3	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
4	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
5	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50

Earl 21, 22 (A.C.)



MODEL 24 DC
 MODEL 31 DC, 32 DC
 MODEL 33-S AC
 Schematic

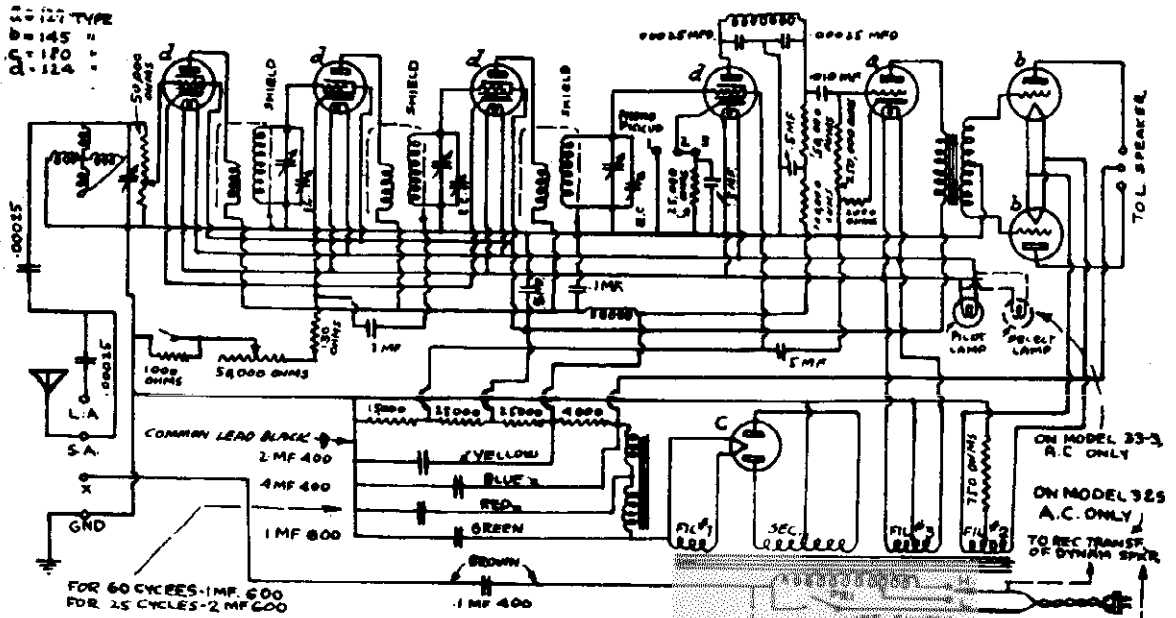
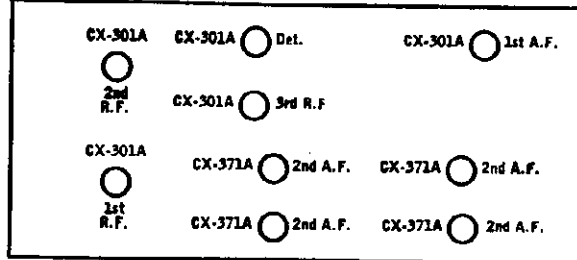
EARL RADIO CORP.



Model 24 DC, 31 DC, 32 DC

31DC, 32DC

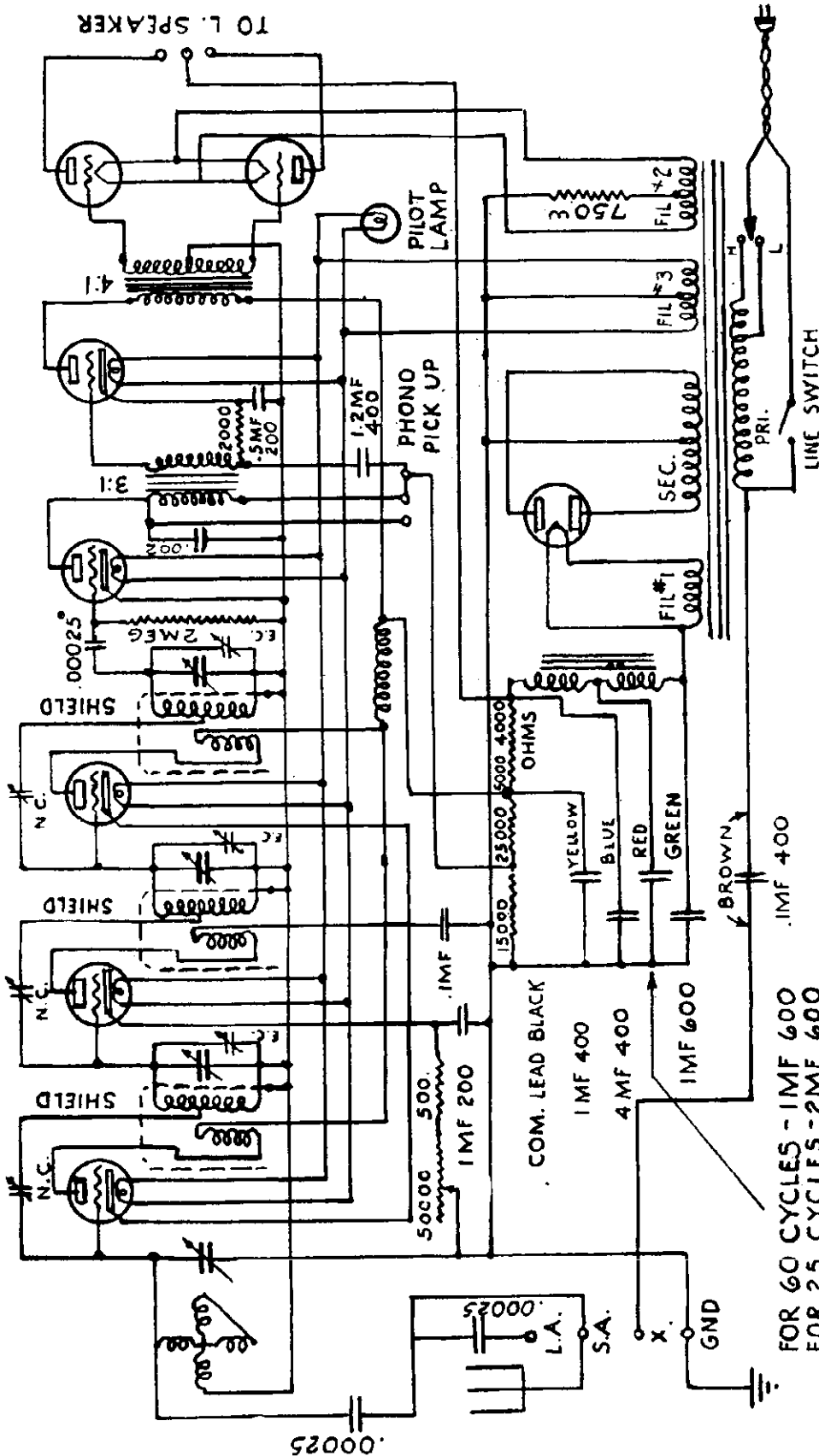
(D.C.)



Model 33-S AC

MODEL 31, 32 AC
Schematic

EARL RADIO CORP.



FRESHMAN—Earl—Model 31-32
Line Voltage 116—Set on High Volt Tap—Volume Control Position On

EARL MODELS 31 and 32

FOR 60 CYCLES - IMF 600
FOR 25 CYCLES - 2MF 600
NC - NEUTRALIZING CONDENSER
EC - EQUALIZING CONDENSER (A.C.)

Earl 31, 32

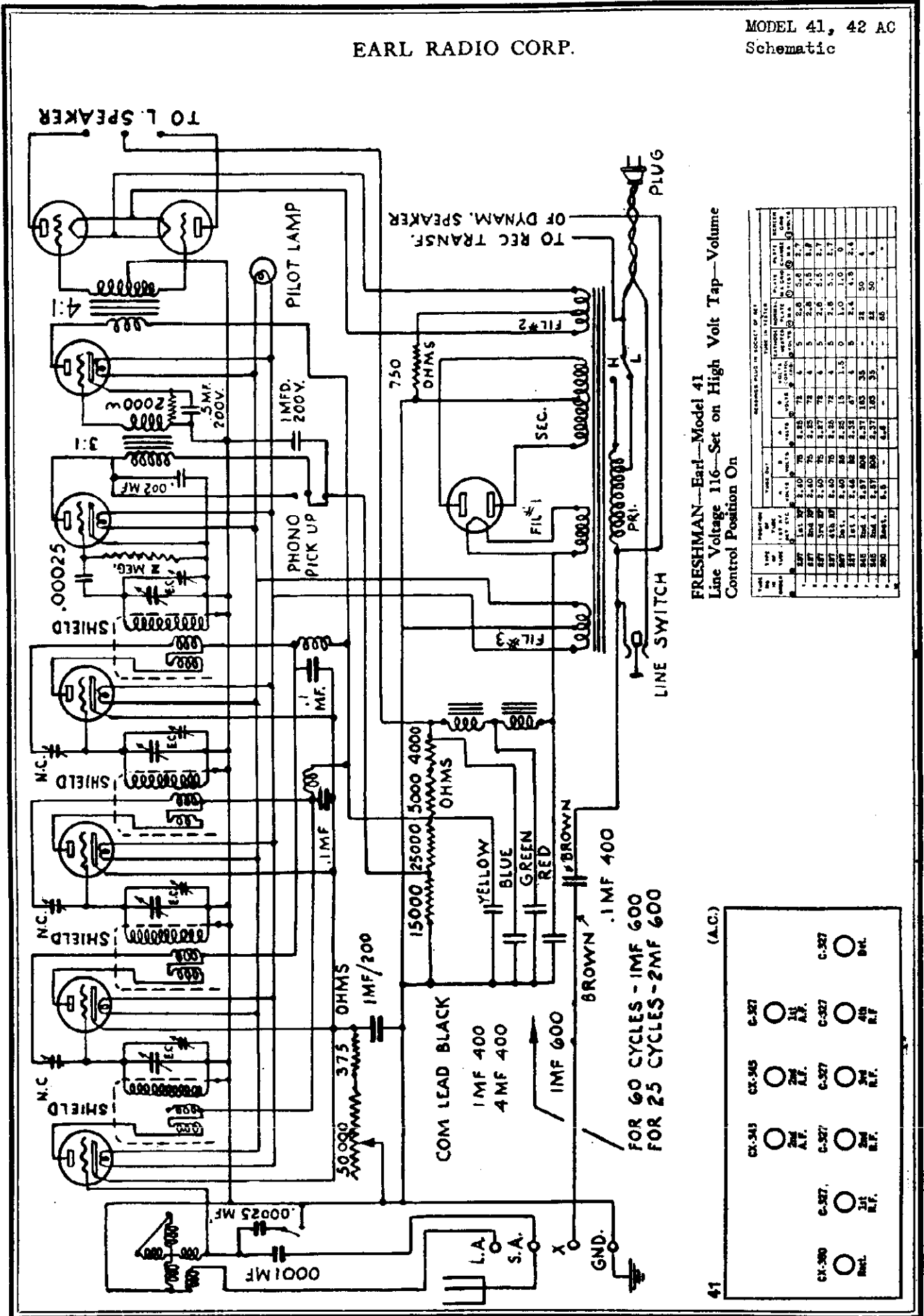
TUBE	TYPE	WATTS	VOLTAGE	RATED VALUE IN OHMS AT 116V			
				RESISTOR	WINDING	WINDING	WINDING
6X4	Diode	0.1	500	100	500	500	500
6X5	Detector	0.1	500	100	500	500	500
6X6	Volume	0.1	500	100	500	500	500
6X45	Rectifier	0.1	500	100	500	500	500
6X50	Rectifier	0.1	500	100	500	500	500

Component list for EARL MODELS 31 and 32:

- CX-380 Rect.
- C-327 2nd R.F.
- CX-345 2nd A.F.
- C-327 1st R.F.
- CX-345 2nd A.F.
- C-327 2nd R.F.
- C-327 1st R.F.
- C-327 1st A.F.

EARL RADIO CORP.

MODEL 41, 42 AC
Schematic



FRESHMAN—Earl—Model 41
Line Voltage 116—Set on High Volt Tap—Volume Control Position On

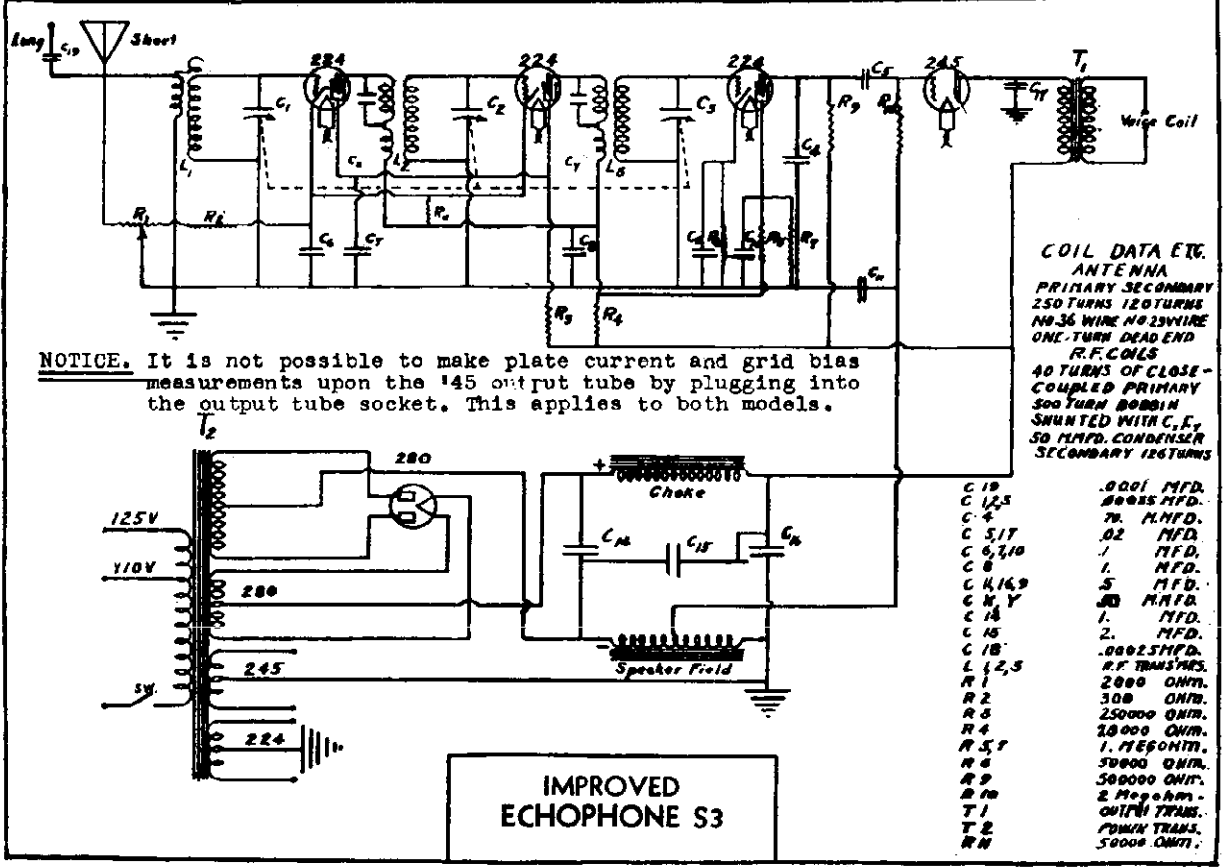
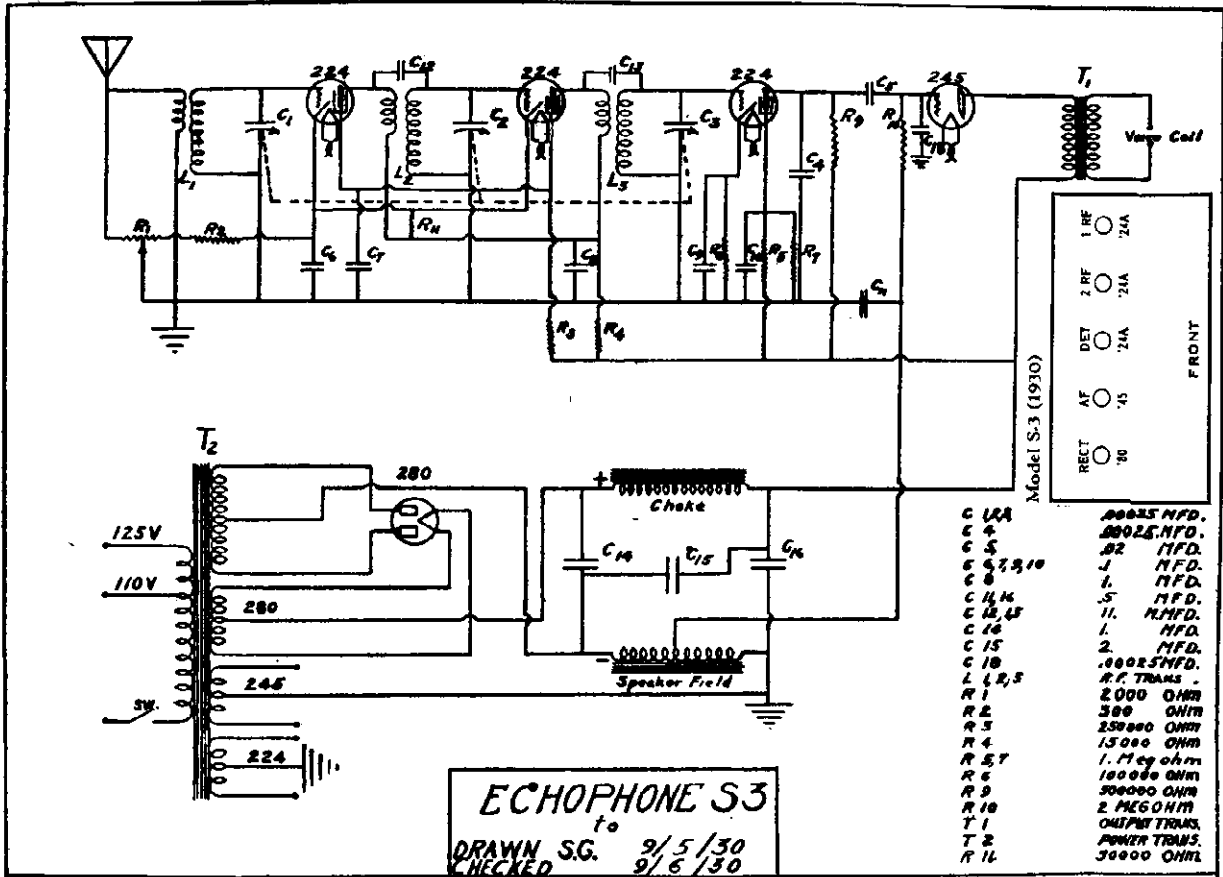
RECOMMEND PLUS IN SOCKET OF NET											
TYPE	WATTAGE	TUBE	VOLTAGE	CURRENT	RESISTANCE	TAP			WATTAGE	TUBE	
						1	2	3		TYPE	WATTAGE
5000	100	5000	5.0	70	1000	1	2	3	50	5000	100
375	100	375	5.0	70	1000	1	2	3	50	375	100
1500	100	1500	5.0	70	1000	1	2	3	50	1500	100
2500	100	2500	5.0	70	1000	1	2	3	50	2500	100
5000	100	5000	5.0	70	1000	1	2	3	50	5000	100

41 (A.C.)

CX-343	20m A.F.	C-327	20m A.F.
CX-345	20m A.F.	C-327	20m A.F.
CX-347	20m A.F.	C-327	20m A.F.
CX-349	20m A.F.	C-327	20m A.F.
CX-351	20m A.F.	C-327	20m A.F.

ECHOPHONE RADIO MFG. CO.

MODEL S-3
 MODEL S-3 (Rev.)
 Schematic



NOTICE. It is not possible to make plate current and grid bias measurements upon the '45 output tube by plugging into the output tube socket. This applies to both models.

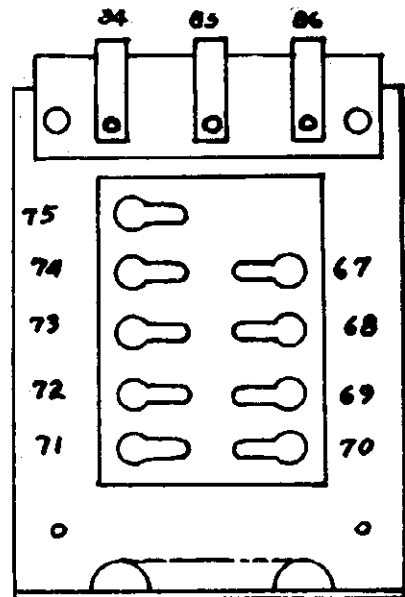
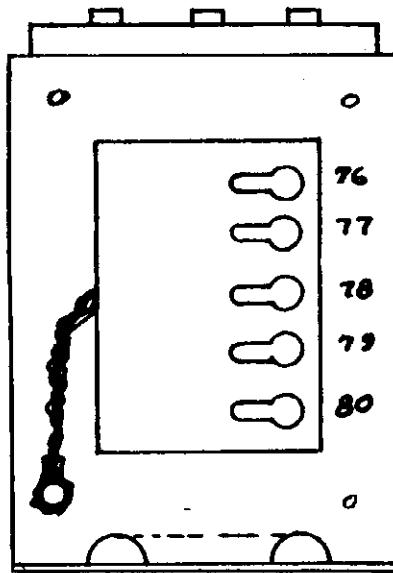
COIL DATA ETC.
 ANTENNA
 PRIMARY SECONDARY
 250 TURNS 120 TURNS
 NO. 36 WIRE NO. 25 WIRE
 ONE-TURN DEAD END
 R.F. COILS
 40 TURNS OF CLOSE-
 COUPLED PRIMARY
 500 TURN BOBBIN
 SHUNTED WITH C, F,
 50 MFD. CONDENSER
 SECONDARY 126 TURNS

ECHOPHONE RADIO MFG. CO.

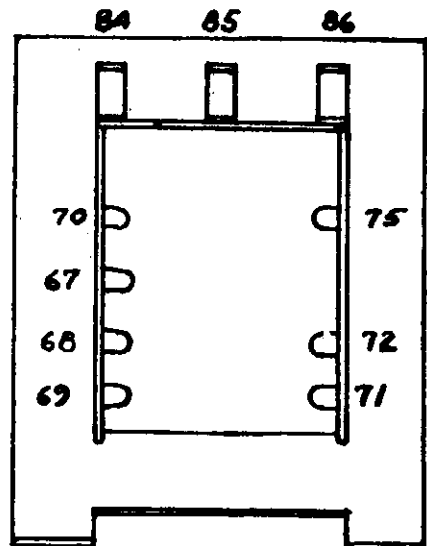
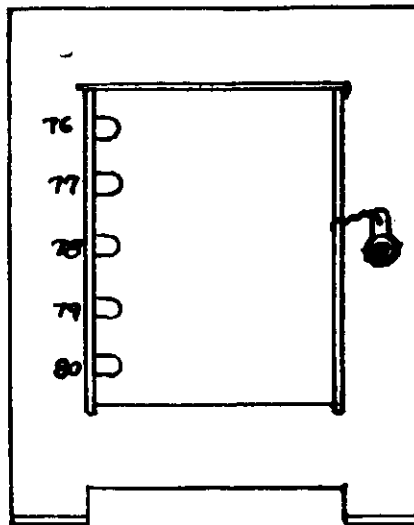
MODEL S-3
Voltage
Notes

Model S-3

1. Plate of 245 Tube
#5 to ground
Normal 250 volts
Low 235 volts
High 275 volts
2. R. F. Plate
#25 to ground
Normal 140 volts
Low 120 volts
High 160 volts
3. R. F. Screen
#14 to ground
Normal 60 volts
Low 50 volts
High 75 volts
4. Detector Plate
#13 to ground
Normal 80 volts
Low 70 volts
High 90 volts
5. Detector Screen
#9 to ground
Normal 25 volts
Low 20 volts
High 30 volts
6. Detector Cathode
#10 to ground
..... 5 to 10 volts
7. R. F. Cathode
#15 to ground
..... 1.5 to 2.5 volts
8. 245 Bias
#48 to ground
Normal 50 volts
Low 40 volts
High 55 volts

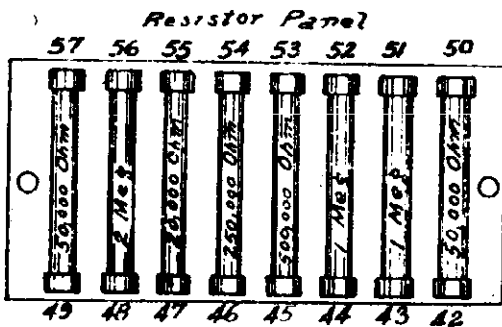


TYPE HA



TYPE JE

Drawing showing corresponding terminal positions on two types of power transformers used on S-3.

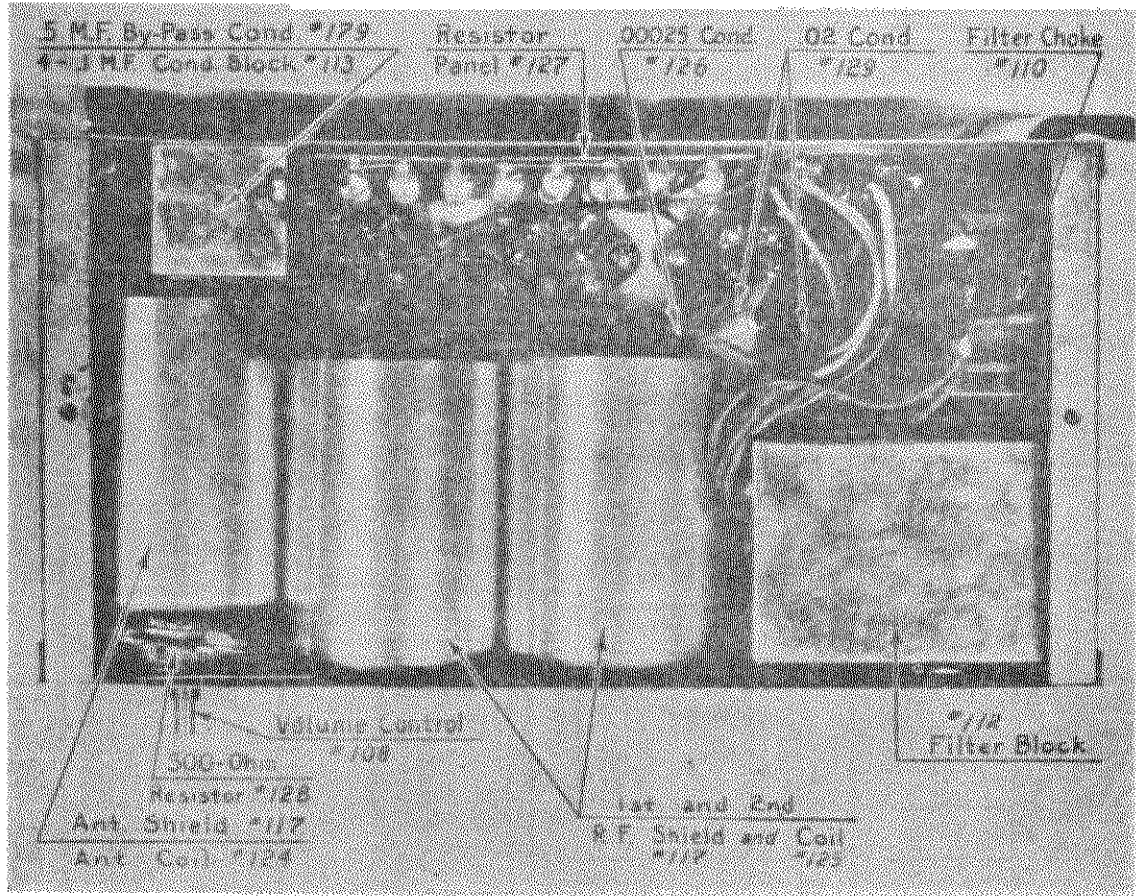


Power Transformer

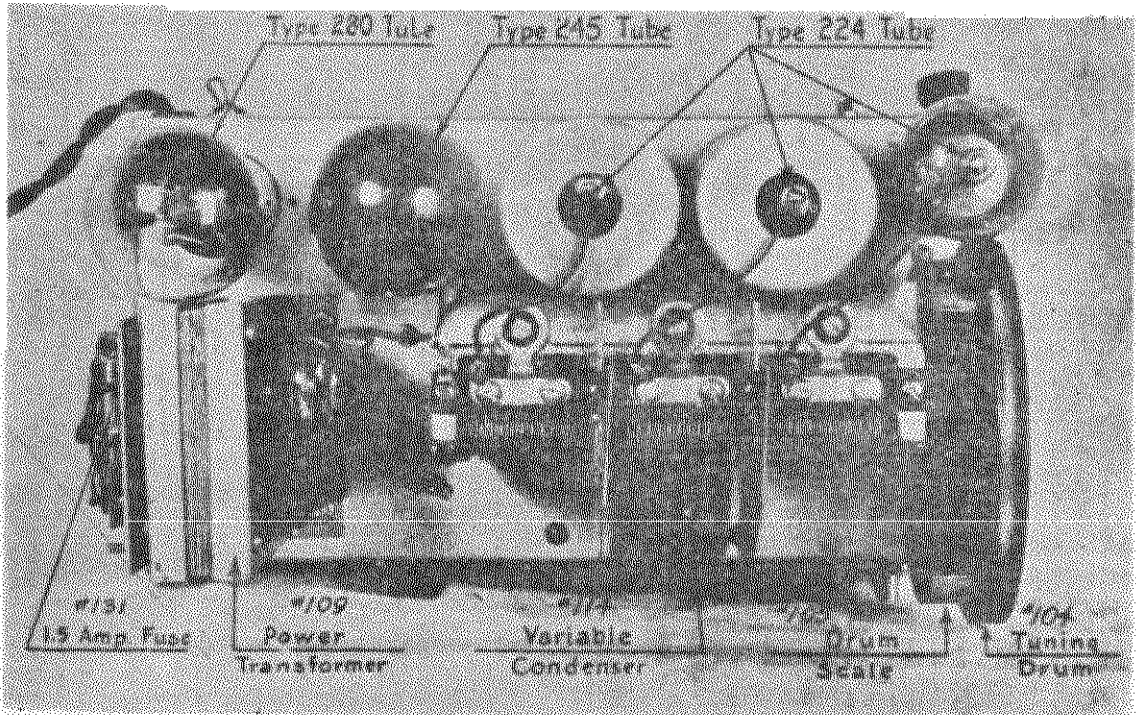
- 75-73 Pri. winding 74 low voltage tap.
- 72-71 Fil. winding 280 tube 70 center tap.
- 69-67 High voltage Sec. 68 center tap.
- 76-80 Fil. winding for 224 tubes.
- 77-79 Fil. winding for 245 tube 78 center tap.

ECHOPHONE RADIO MFG. CO.

MODEL S-3
Chassis



ECHOPHONE -- Model S-3



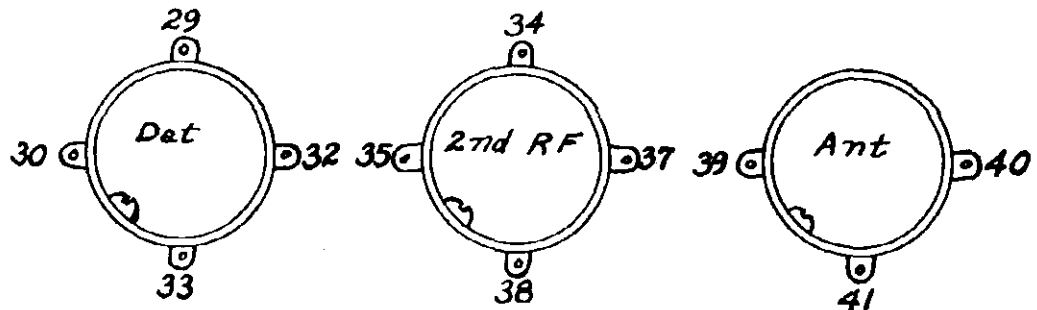
ECHOPHONE -- Model S-3

ECHOPHONE RADIO MFG. CO.

MODEL S-4
Voltage
Data

The Antenna coil has a bobbin primary and also a single close-coupled incomplete turn around grid end of secondary coil. The R. F. coils have a bobbin primary and also a close-coupled primary. A .00005 condenser is connected across the bobbin primary.

In some of the later S-4 models bank-wound "Litz" wire coils are used. These R. F. coils have a small honey-comb primary coil mounted in the ground end of the secondary coil and a capacitor across the plate and grid terminals of the coil. The "Litz" antenna coil has a tight-coupled primary wound over the ground end of the secondary coil.



Continuity Chart For
Litz Wire Bank Wound Coils
Echophone
Model - S4

1. Plate of 245 Tube.

#5 to ground
Normal—225 volts
Low— 200 volts
High— 250 volts

2. R. F. Plate.

#25 to ground
Normal—110 volts
Low— 100 volts
High— 120 volts

3. R. F. Screen.

#14 to ground
Normal—50 volts
Low— 40 volts
High— 60 volts

4. Detector Plate.

#13 to ground
Normal—30 volts
Low— 25 volts
High— 50 volts

5. Detector Screen.

#9 to ground
Normal—20 volts
Low— 15 volts
High— 30 volts

6. Detector Cathode

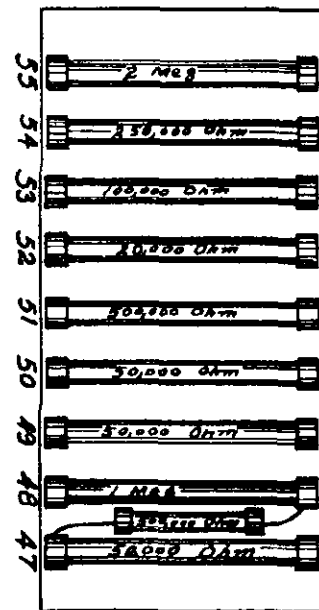
#10 to ground
3 to 6 volts

7. R. F. Cathode.

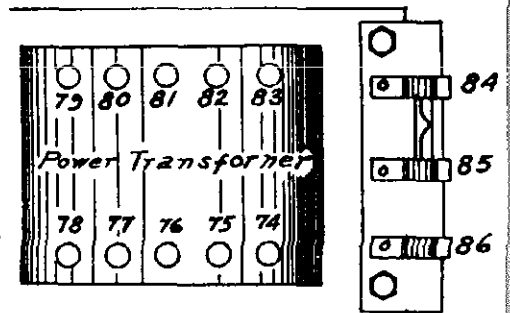
#15 to ground
1.5 to 2.5 volts

8. 245 Bias.

#48 to ground
Normal—50 volts
Low— 40 volts
High— 55 volts

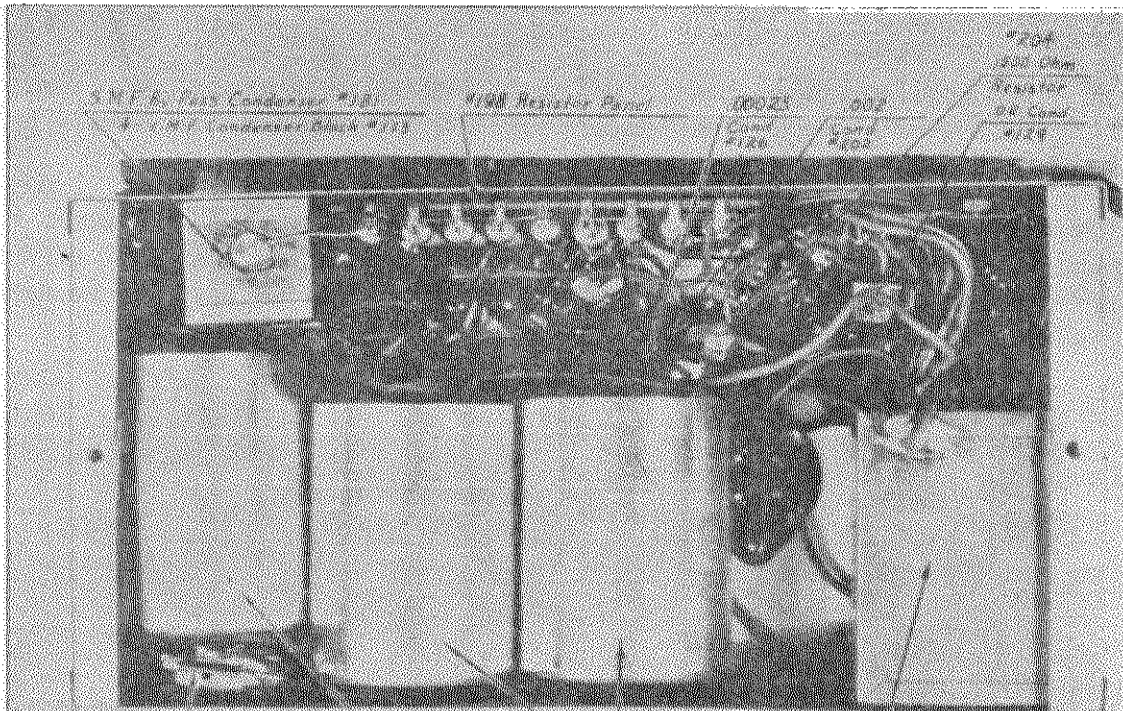


Resistor Panel

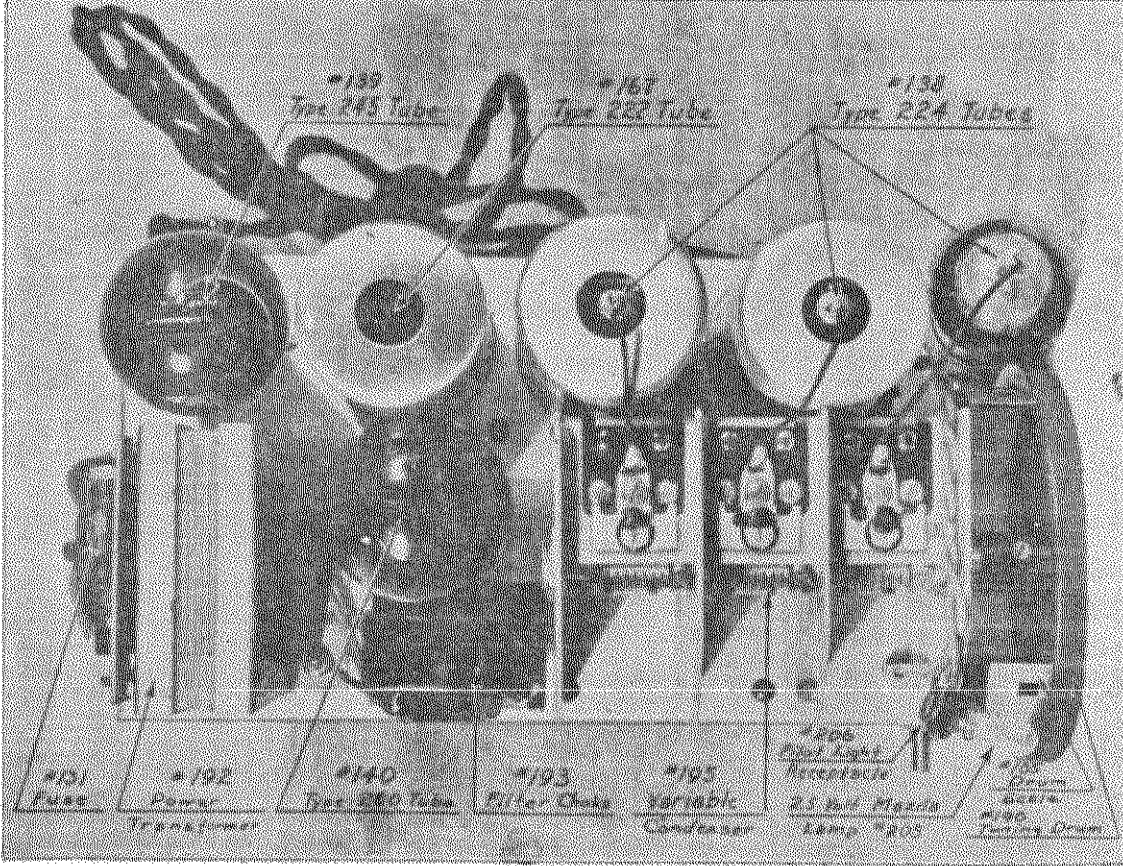


MODEL S-4
Chassis

ECHOPHONE RADIO MFG. CO.



#118 500 Ohm Resistor
#119 Volume Control
#120 Ant. Coil #17 Shield
R.F. Coil #187 #117 Shield
Filter Slack #124



#121 Fuse
#122 Power Transformer
#123 Type 224 Tube
#124 Type 224 Tube
#125 Type 224 Tube
#126 500 Ohm Resistor
#127 2.5 Mfd. Mica Condenser
#128 Drum
#129 Drum
#130 Tuning Drum

ECHOPHONE Model S-4

ECHOPHONE RADIO MFG. CO.

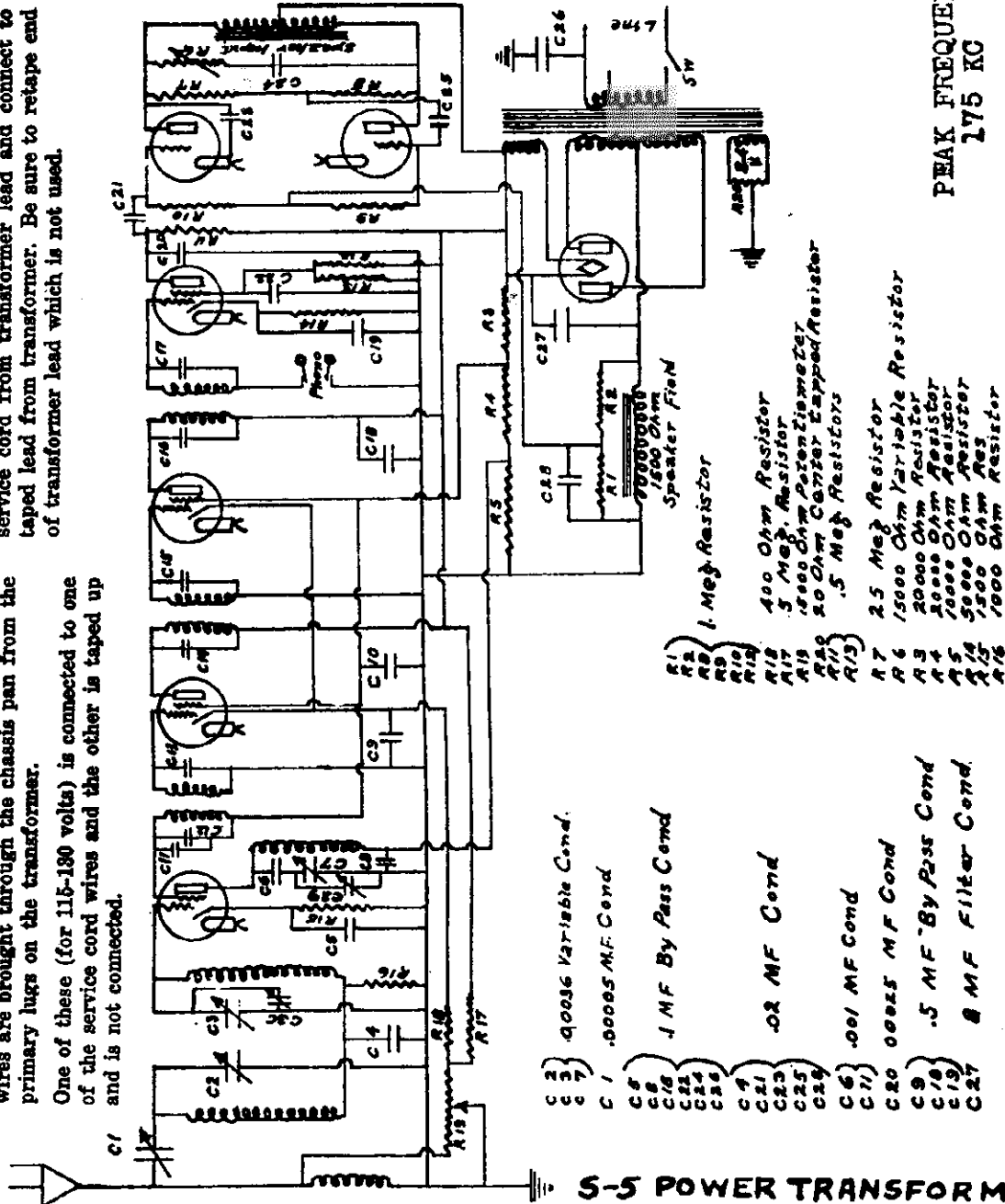
MODEL S-5
(Dynatron)
Schematic

PEAK FREQUENCY
175 KC

To change set for 100 to 115 volts, disconnect the service cord from transformer lead and connect to taped lead from transformer. Be sure to retape end of transformer lead which is not used.

On all sets having serial numbers above 100050, two wires are brought through the chassis pan from the primary lugs on the transformer.

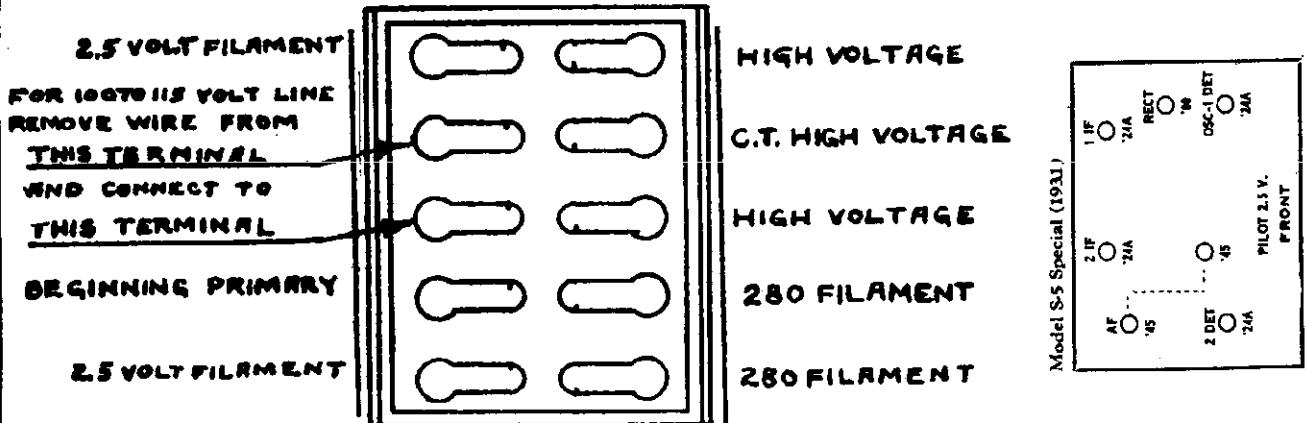
One of these (for 115-180 volts) is connected to one of the service cord wires and the other is taped up and is not connected.



- C 2 } .0005 Variable Cond.
- C 3 } .0005 M.F. Cond
- C 7 } .0005 M.F. Cond
- C 8 } .0005 M.F. Cond
- C 9 } .0005 M.F. Cond
- C 10 } .0005 M.F. Cond
- C 11 } .0005 M.F. Cond
- C 12 } .0005 M.F. Cond
- C 13 } .0005 M.F. Cond
- C 14 } .0005 M.F. Cond
- C 15 } .0005 M.F. Cond
- C 16 } .0005 M.F. Cond
- C 17 } .0005 M.F. Cond
- C 18 } .0005 M.F. Cond
- C 19 } .0005 M.F. Cond
- C 20 } .0005 M.F. Cond
- C 21 } .0005 M.F. Cond
- C 22 } .0005 M.F. Cond
- C 23 } .0005 M.F. Cond
- C 24 } .0005 M.F. Cond
- C 25 } .0005 M.F. Cond
- C 26 } .0005 M.F. Cond
- C 27 } .0005 M.F. Cond
- R 1 } 1 Meg. Resistor
- R 2 } 400 Ohm Resistor
- R 3 } 5 Meg. Resistor
- R 4 } 1500 Ohm Potentiometer
- R 5 } 20 Ohm Center Tapped Resistor
- R 6 } .5 Meg. Resistor
- R 7 } 25 Meg. Resistor
- R 8 } 1500 Ohm Variable Resistor
- R 9 } 20000 Ohm Resistor
- R 10 } 2000 Ohm Resistor
- R 11 } 2000 Ohm Resistor
- R 12 } 5000 Ohm Resistor
- R 13 } 1500 Ohm Resistor
- R 14 } 1500 Ohm Resistor
- R 15 } 1500 Ohm Resistor
- R 16 } 1500 Ohm Resistor

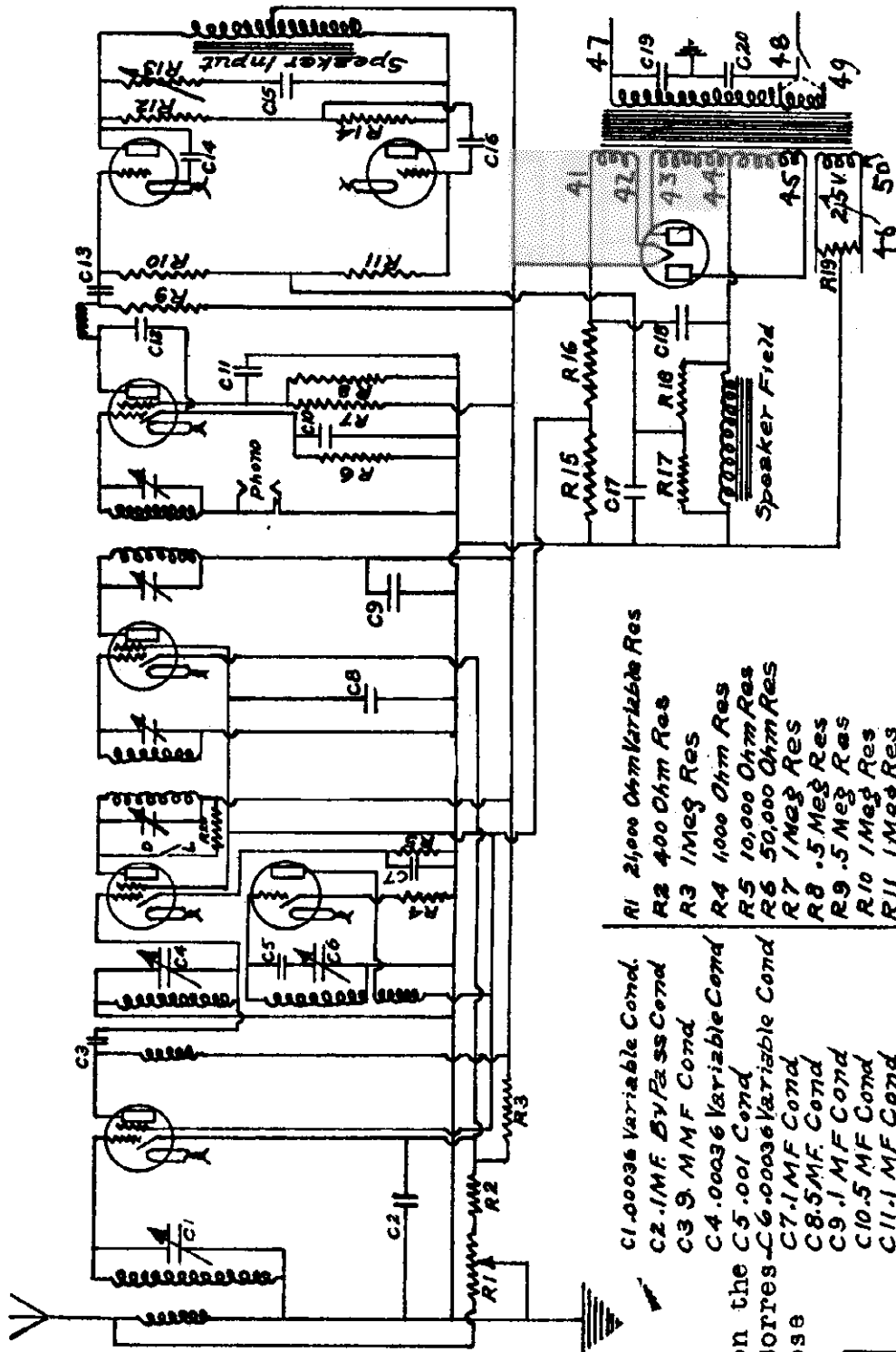
ECHOPHONE SUPERHETERODYNE S-5—CIRCUIT DIAGRAM

With DYNATRON Oscillator



MODEL S-5 (Rev.)
Schematic

ECHOPHONE RADIO MFG. CO.



Echophone Superheterodyne
Model S-5

CIRCUIT DIAGRAM

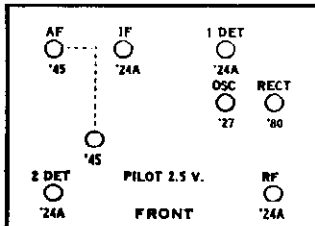
- R1 2,000 Ohm Variable Res
- R2 400 Ohm Res
- R3 1Meg Res
- R4 1000 Ohm Res
- R5 10,000 Ohm Res
- R6 50,000 Ohm Res
- R7 1Meg Res
- R8 .5 Meg Res
- R9 .5 Meg Res
- R10 1Meg Res
- R11 1Meg Res
- R12 .25 Meg Res
- R13 15,000 Ohm Variable Res
- R14 1Meg Res
- R15 50,000 Ohm Res
- R16 20,000 Ohm Res
- R17 1 Meg Res
- R18 1 Meg Res
- R19 20 Ohm Center Tapped Res
- R20 5,000 Ohm Res.

- C1 .00036 Variable Cond.
- C2 .1MF Bypass Cond
- C3 9. MMF Cond
- C4 .00036 Variable Cond
- C5 .001 Cond
- C6 .00036 Variable Cond
- C7 .1 MF Cond
- C8 .5 MF Cond
- C9 .1 MF Cond
- C10 .5 MF Cond
- C11 .1 MF Cond
- C12 .00025 Cond
- C13 .02 MF Cond
- C14 .02 MF Cond
- C15 .1 MF Cond
- C16 .02 MF Cond
- C17 .02 MF Cond
- C18 .8 MF Cond
- C19 .05 MF Cond
- C20 .05 MF Cond

The numbers on the Pwr. Trans. correspond with those shown below.

④	460
④	470
④	480
④	490
④	500
④	Power Transformer

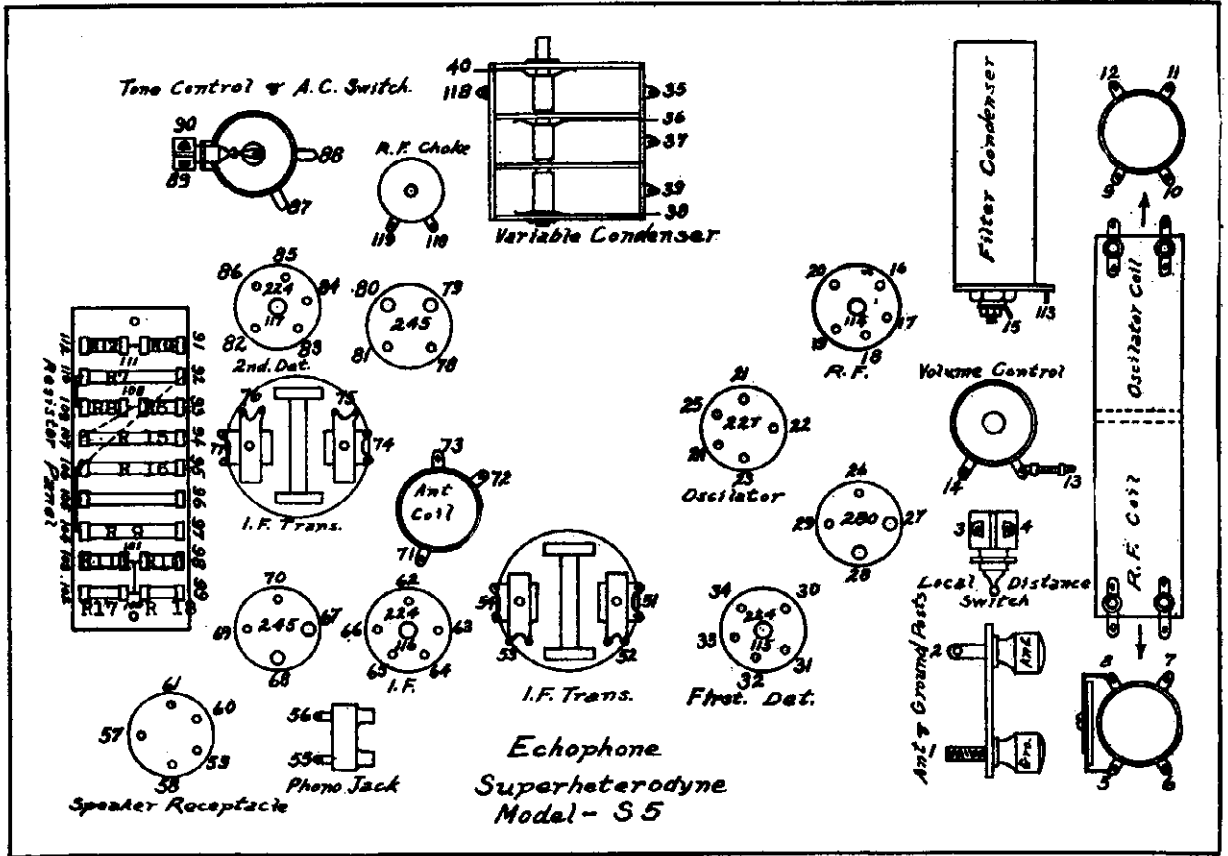
Model S-5 (1931)



PEAK
FREQUENCY
175 KC

ECHOPHONE RADIO MFG. CO.

MODEL S-5
Voltage
Data



Echophone
Superheterodyne
Model- S 5

Model S-5

VOLTAGE TESTS

Voltages given are tested on 250-volt scale of 1000 ohms, per volt meter.

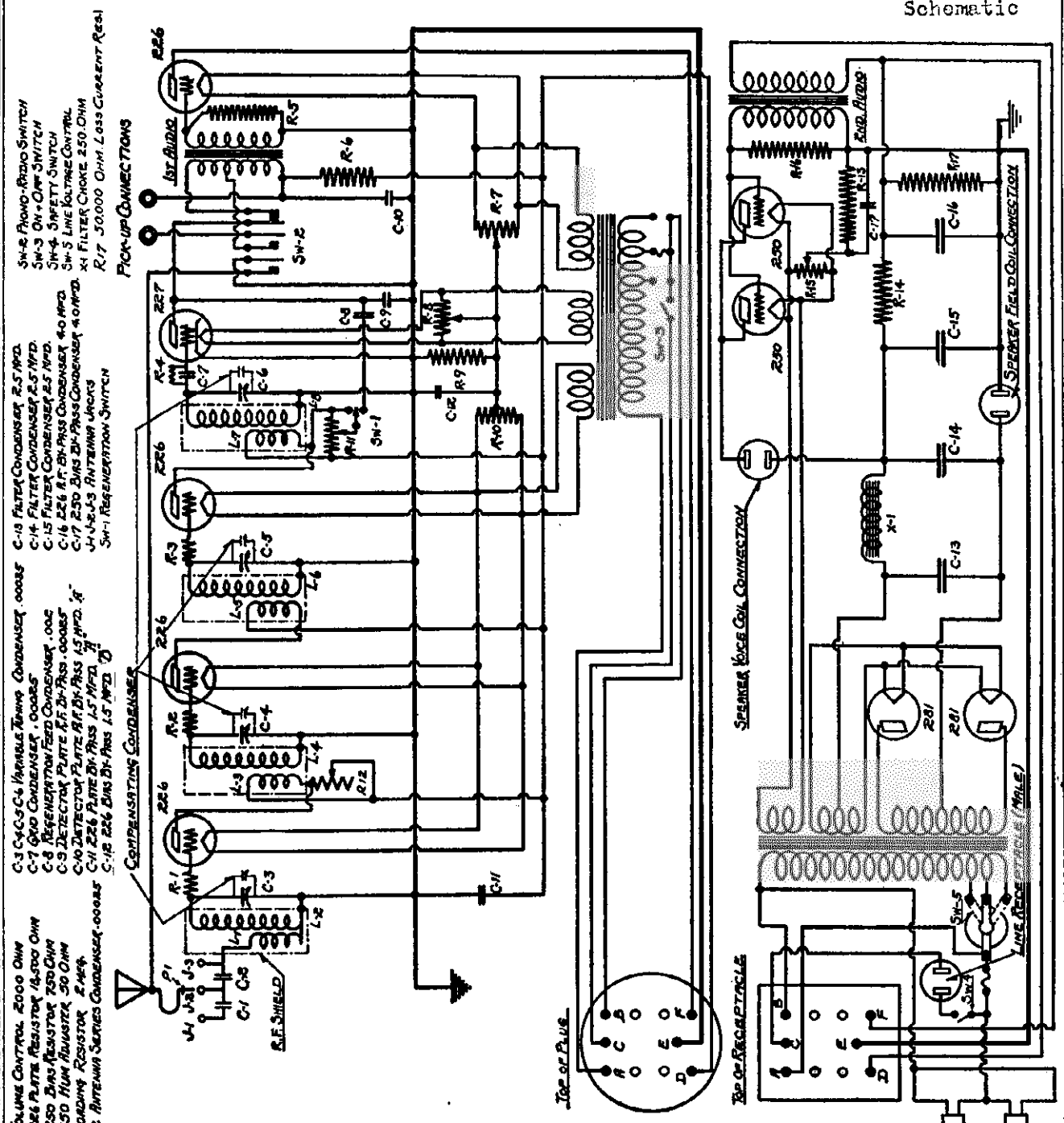
All voltage tests were made with volume control on full and tone control in off position, no signal in receiver, line voltage 115 volts with A. C. line connected to terminals 47-49 on power transformer.

Speaker must be connected to receiver.

R. F. Plate #19 to ground	Low 210 volts Normal 220 volts High 230 volts	First Detector Screen #80 to ground	Low 75 volts Normal 80 volts High 90 volts
R. F. Screen #20 to ground	Low 75 volts Normal 80 volts High 90 volts	First Detector Cathode #81 to ground	5 to 7 volts
R. F. Cathode #16 to ground	1.5 to 3 volts	Second Detector Plate #88 to ground	60 to 80 volts
Oscillator Plate #21 to ground	Low 75 volts Normal 80 volts High 90 volts	Second Detector Screen #82 to ground	Low 25 volts Normal 30 volts High 35 volts
Oscillator Cathode #23 to ground	4 to 6 volts	Second Detector Cathode #86 to ground	5 to 7 volts
L. F. Plate #66 to ground	Low 210 volts Normal 220 volts High 230 volts	245 Plates #61-58 to ground	Low 210 volts Normal 220 volts High 230 volts
L. F. Screen #62 to ground	Low 75 volts Normal 80 volts High 90 volts	245 Bias #101 to ground	Neg. 20 to 40 volts
L. F. Cathode #68 to ground	1.5 to 3 volts	Speaker Field Voltage Drop #60-59	Low 90 volts Normal 100 volts High 110 volts
First Detector Plate #84 to ground	Low 210 volts Normal 220 volts High 230 volts	280 Filament #27-28	4.5 to 5.2 volts
		Filaments for All 2.5 Volt Tubes #87-88	2.2 to 2.5 volts

THOMAS A. EDISON, INC.

MODEL C-1
CHASSIS 3C
Schematic



PICK-UP CONNECTIONS
 SW-2 PHONO-RADIO SWITCH
 SW-3 ON-OFF SWITCH
 SW-4 SAFETY SWITCH
 SW-5 LINE VOLTAGE CONTROL
 X1 FILTER CHOKE 250 OHM
 R17 50,000 OHM LOSS CURRENT RES.

COMPENSATING CONDENSERS
 C1 226 .0005
 C2 226 .0005
 C3 226 .0005
 C4 226 .0005
 C5 226 .0005
 C6 226 .0005
 C7 226 .0005
 C8 226 .0005
 C9 226 .0005
 C10 226 .0005
 C11 226 .0005
 C12 226 .0005
 C13 226 .0005
 C14 226 .0005
 C15 226 .0005
 C16 226 .0005
 C17 226 .0005

RESISTORS
 R1 226 100K
 R2 226 100K
 R3 226 100K
 R4 226 100K
 R5 226 100K
 R6 226 100K
 R7 226 100K
 R8 226 100K
 R9 226 100K
 R10 226 100K
 R11 226 100K
 R12 226 100K
 R13 226 100K
 R14 226 100K
 R15 226 100K
 R16 226 100K
 R17 226 100K

CAPACITORS
 C1 226 .0005
 C2 226 .0005
 C3 226 .0005
 C4 226 .0005
 C5 226 .0005
 C6 226 .0005
 C7 226 .0005
 C8 226 .0005
 C9 226 .0005
 C10 226 .0005
 C11 226 .0005
 C12 226 .0005
 C13 226 .0005
 C14 226 .0005
 C15 226 .0005
 C16 226 .0005
 C17 226 .0005

INDUCTORS
 L1 226 .0005
 L2 226 .0005
 L3 226 .0005
 L4 226 .0005
 L5 226 .0005
 L6 226 .0005
 L7 226 .0005

SWITCHES
 SW-1 REGENERATION SWITCH
 SW-2 PHONO-RADIO SWITCH
 SW-3 ON-OFF SWITCH
 SW-4 SAFETY SWITCH
 SW-5 LINE VOLTAGE CONTROL

TRANSFORMER
 X1 FILTER CHOKE 250 OHM

OTHER COMPONENTS
 S1 226 100K
 S2 226 100K
 S3 226 100K
 S4 226 100K
 S5 226 100K
 S6 226 100K
 S7 226 100K
 S8 226 100K
 S9 226 100K
 S10 226 100K
 S11 226 100K
 S12 226 100K
 S13 226 100K
 S14 226 100K
 S15 226 100K
 S16 226 100K
 S17 226 100K

RESISTORS
 R1 226 100K
 R2 226 100K
 R3 226 100K
 R4 226 100K
 R5 226 100K
 R6 226 100K
 R7 226 100K
 R8 226 100K
 R9 226 100K
 R10 226 100K
 R11 226 100K
 R12 226 100K
 R13 226 100K
 R14 226 100K
 R15 226 100K
 R16 226 100K
 R17 226 100K

CAPACITORS
 C1 226 .0005
 C2 226 .0005
 C3 226 .0005
 C4 226 .0005
 C5 226 .0005
 C6 226 .0005
 C7 226 .0005
 C8 226 .0005
 C9 226 .0005
 C10 226 .0005
 C11 226 .0005
 C12 226 .0005
 C13 226 .0005
 C14 226 .0005
 C15 226 .0005
 C16 226 .0005
 C17 226 .0005

INDUCTORS
 L1 226 .0005
 L2 226 .0005
 L3 226 .0005
 L4 226 .0005
 L5 226 .0005
 L6 226 .0005
 L7 226 .0005

SWITCHES
 SW-1 REGENERATION SWITCH
 SW-2 PHONO-RADIO SWITCH
 SW-3 ON-OFF SWITCH
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 SW-5 LINE VOLTAGE CONTROL

TRANSFORMER
 X1 FILTER CHOKE 250 OHM

OTHER COMPONENTS
 S1 226 100K
 S2 226 100K
 S3 226 100K
 S4 226 100K
 S5 226 100K
 S6 226 100K
 S7 226 100K
 S8 226 100K
 S9 226 100K
 S10 226 100K
 S11 226 100K
 S12 226 100K
 S13 226 100K
 S14 226 100K
 S15 226 100K
 S16 226 100K
 S17 226 100K

EDISON, Inc.—Phonograph Combination C-1
 Line Voltage 102—Set on 102.5 Volt Tap
 Volume Control Position Max

TUBE	TYPE	VOLTAGE	RESISTANCE VALUE IN OHMS AT SET				RESISTANCE VALUE IN OHMS AT MAX			
			Grid	Plate	Screen	Control	Grid	Plate	Screen	Control
226	1 A.P.	250	1.49	180	9.5	3.5	10	6.5		
226	2 A.P.	250	1.45	180	9.5	3.5	10	6.5		
250	3 A.P.	250	1.45	180	9.5	3.5	10	6.5		
251	251	250	1.45	180	9.5	3.5	10	6.5		
257	257	250	1.45	180	9.5	3.5	10	6.5		
257	257	250	1.45	180	9.5	3.5	10	6.5		
257	257	250	1.45	180	9.5	3.5	10	6.5		
257	257	250	1.45	180	9.5	3.5	10	6.5		

EDISON RADIO MODEL C-1
CHASSIS 3C.

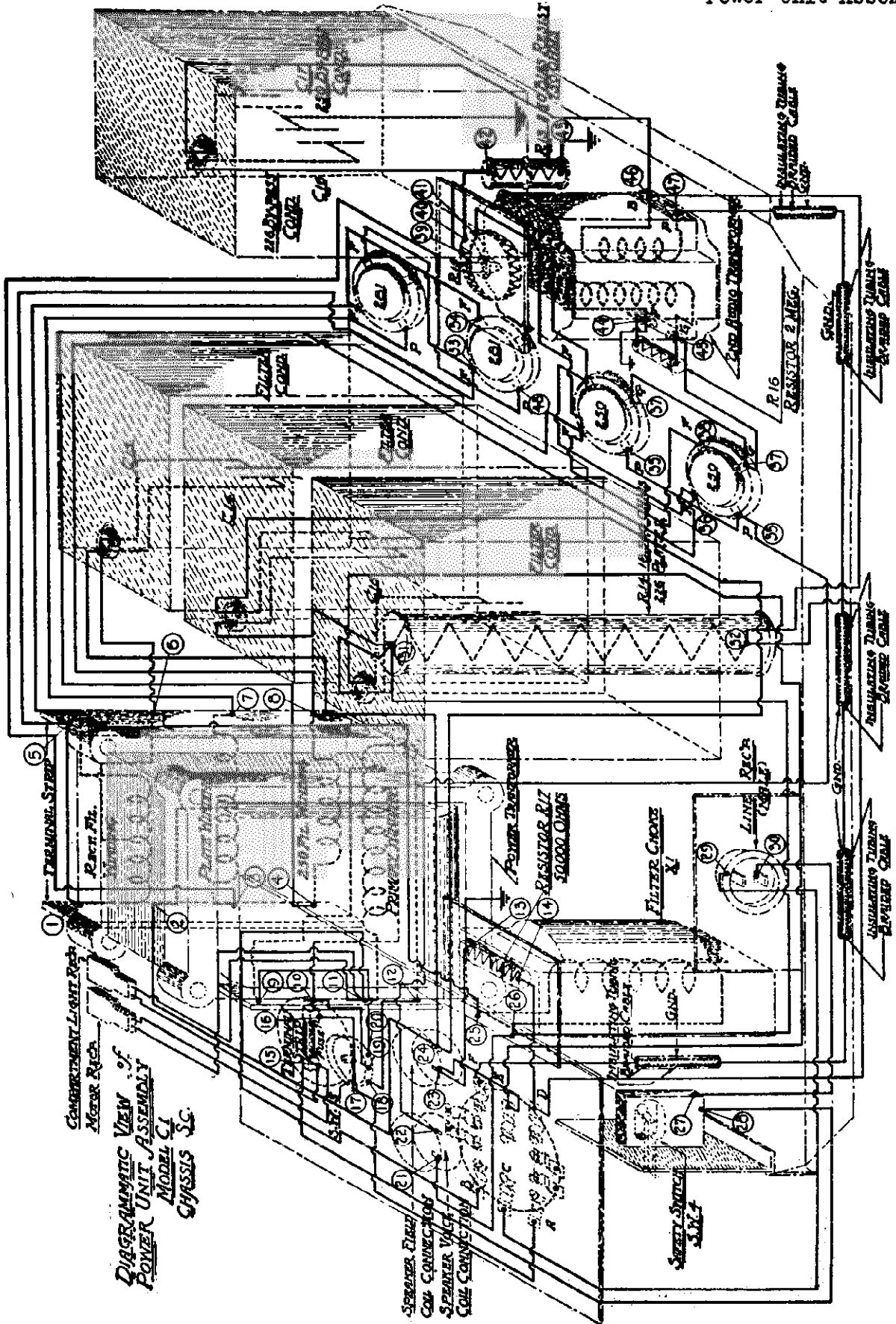
Also
 C-1 Model Splitdorf M-6

CX-326 1st A.F.	CX-326 2nd R.F.	CX-350 2nd A.F.
C-927 Del.	CX-326 3rd R.F.	CX-381 Rect.
		CX-381 Rect.

MOTOR RECT.
 COMPARTMENT LIGHT RECEPTACLE

THOMAS A. EDISON, INC.

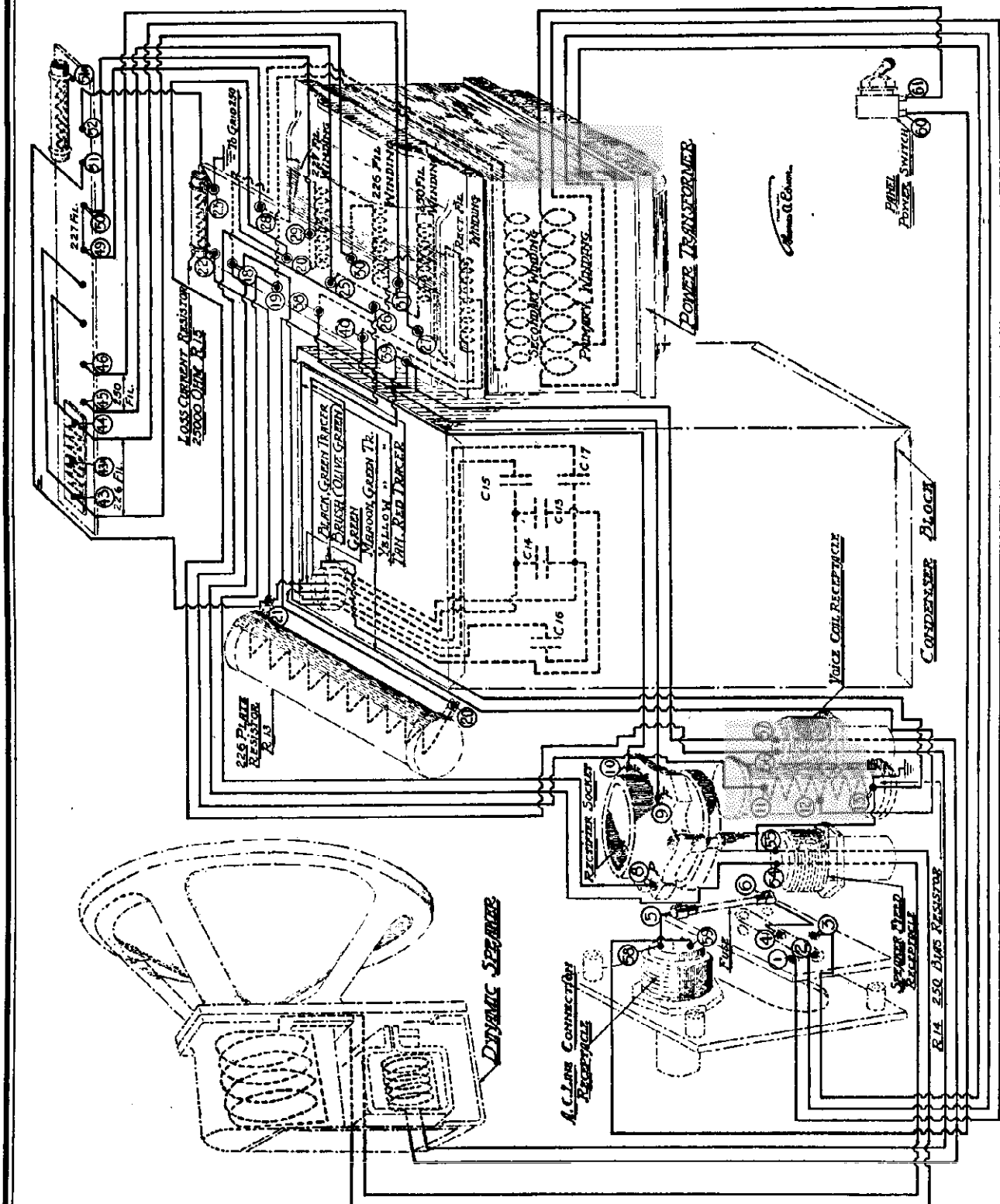
MODEL C-1
CHASSIS SC
Power Unit Assembly



DIAGRAMMATIC VIEW OF POWER UNIT ASSEMBLY MODEL C-1 CHASSIS SC

THOMAS A. EDISON, INC.

MODELS R1, R2, C2
CHASSIS Jr and Jc
Power Unit Assembly

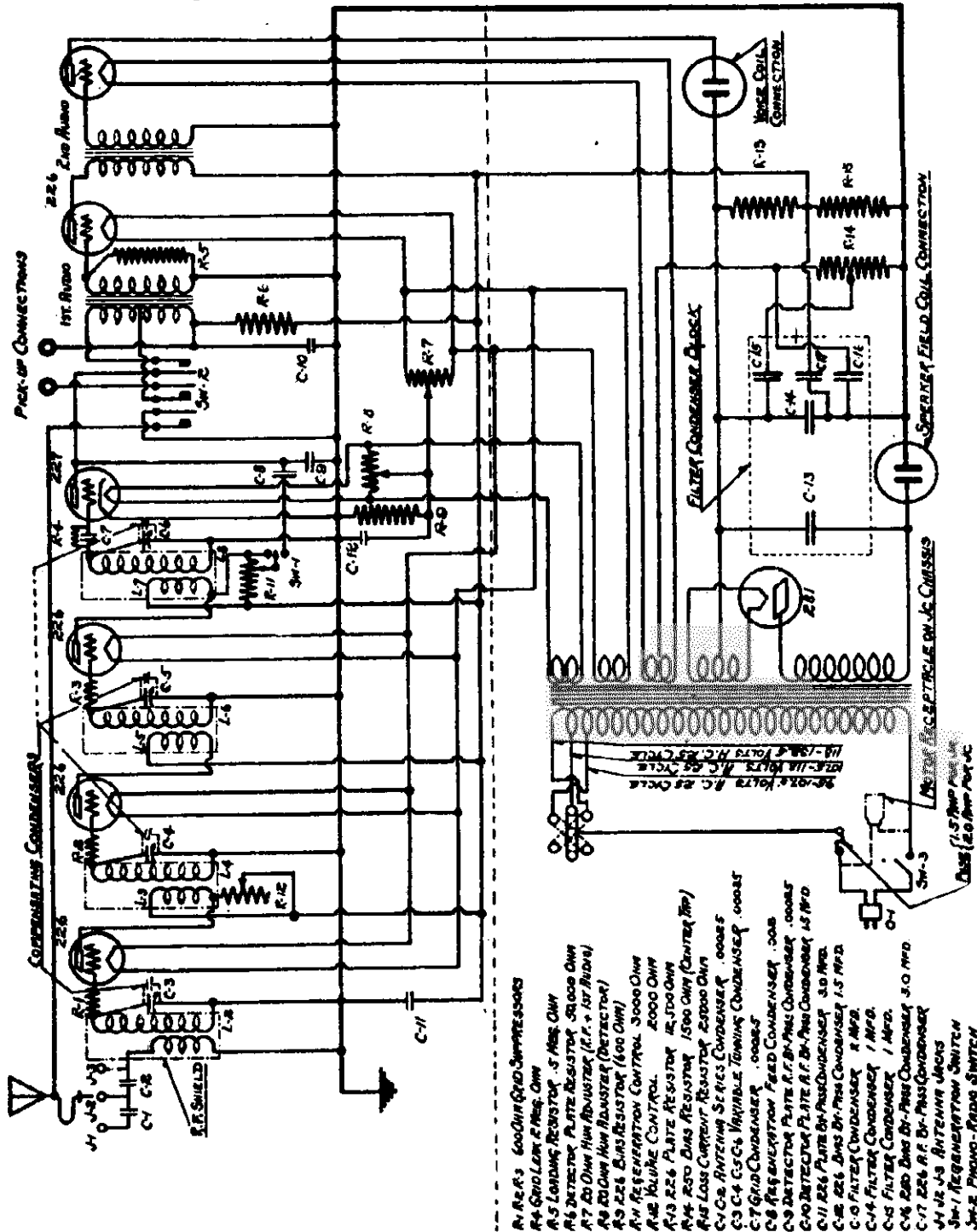


DIAGRAMMATIC VIEW OF POWER UNIT, DYNAMIC SPEAKER CONNECTED.

MODELS R1, R2 AND C2
CHASSIS JR AND JC
25 CYCLE

MODELS R1, R2, C2
CHASSIS Jr and Jc
Schematic Voltage

THOMAS A. EDISON, INC.

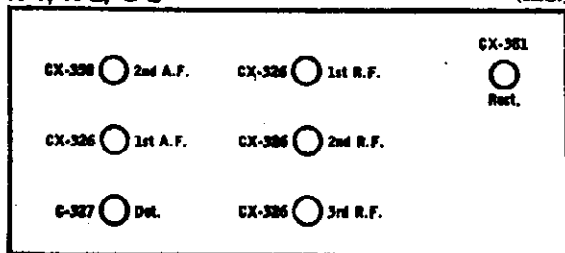


EDISON R1, R2 and C2
Chassis Jr and Jc (25 cycle)

- R1 R.F. 3 600 Ohm 50 Ohm Impedance
- R2 Grid Leak 2 Meg. Ohm
- R3 Loading Resistor .5 Meg. Ohm
- R4 Detector Plate Resistor 50,000 Ohm
- R5 50 Ohm Hum Inductor (A.C. + 1st Filter)
- R6 20 Ohm Hum Inductor (Detector)
- R7 226 Bias Resistor (500 Ohm)
- R8 Regeneration Control 3,000 Ohm
- R9 Volume Control 2,000 Ohm
- R10 226 Plate Resistor 20,000 Ohm
- R11 250 Ohm Bias Resistor 1500 Ohm (Control Imp)
- R12 Loss Current Resistor 2,500 Ohm
- R13 Antenna Series Condenser .0005
- R14 50 Ohm Variable Tuning Condenser .0005
- R15 Grid Condenser .0005
- R16 Regeneration Feed Condenser .005
- R17 Detector Plate R.F. Di-Pass Condenser .0005
- R18 226 Plate R.F. Di-Pass Condenser 15 MFD
- R19 226 Bias Di-Pass Condenser 3.0 MFD
- R20 226 Bias Di-Pass Condenser 1.5 MFD
- R21 Filter Condenser 1 MFD
- R22 Filter Condenser 1 MFD
- R23 226 Bias Di-Pass Condenser 3.0 MFD
- R24 226 R.F. Di-Pass Condenser
- R25 Regeneration Switch
- R26 Phono-Audio Switch
- R27 On + Off Switch
- R28 Line Receptacle (Ph.S.)

R-1, R-2, C-2

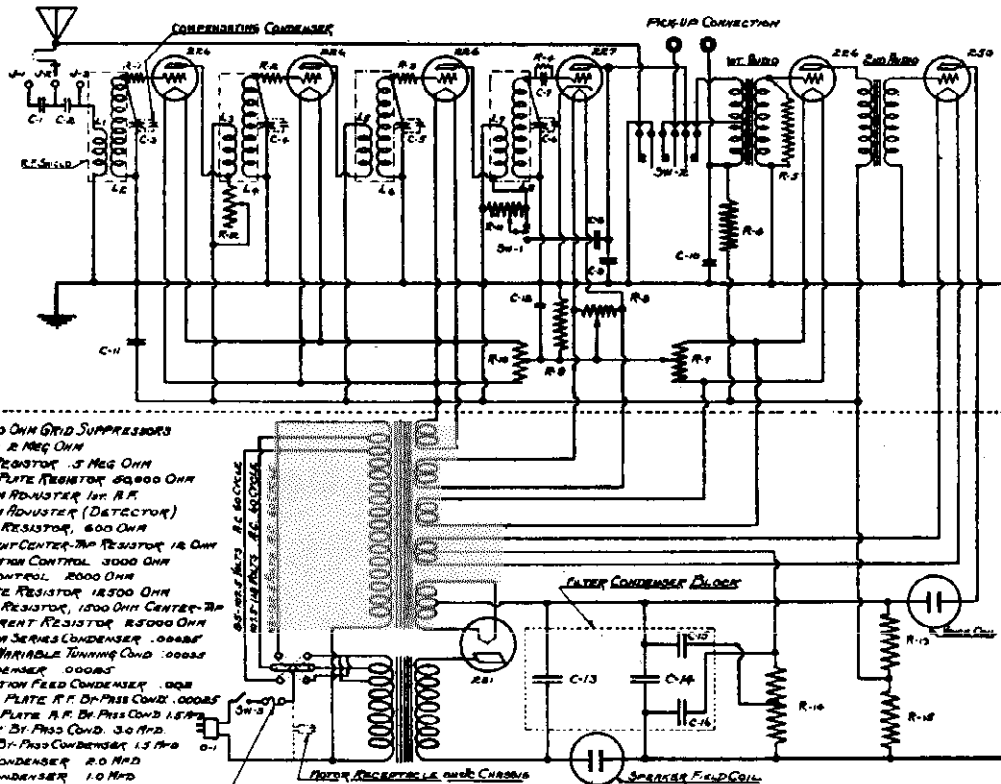
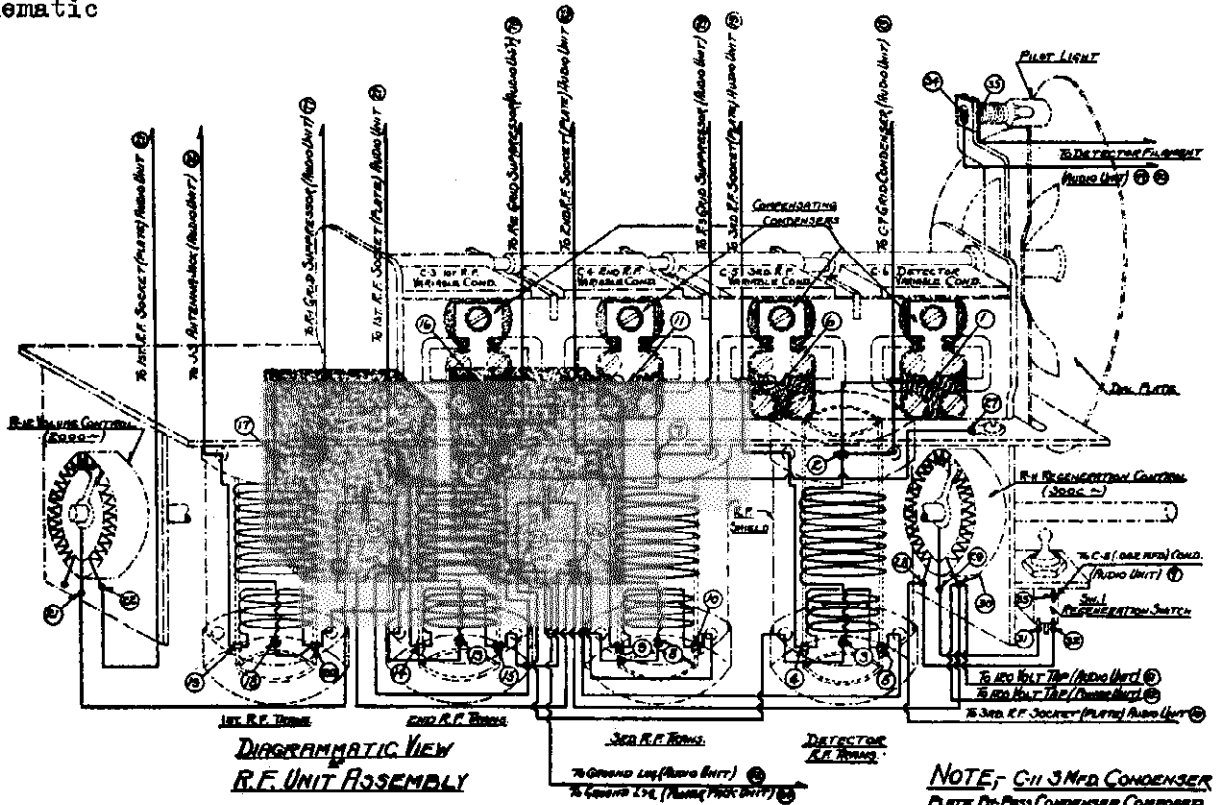
(A.C.)



EDISON, Inc.—Models R-1, R-2 and Edison Radio
Phonograph Combination C-2
Line Voltage 102—Set on 102.5
Volume Control Position Max

TYPE	TUBE	POSITION	RECEPTOR PLUG IN ORDER OF SET											
			1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH	9TH	10TH		
1	226	1 R.F.	-	-	1.45	1.80	2.0	-	3.5	10	6.5	-	-	-
2	226	2 R.F.	-	-	1.45	1.80	2.0	-	3.5	10	6.5	-	-	
3	226	3 R.F.	-	-	1.45	1.80	2.0	-	3.5	10	6.5	-	-	
4	227	Det.	-	-	1.2	1.5	1.5	-	1.5	-	-	-	-	
5	226	1 A.F.	-	-	1.35	1.15	0.6	-	2.0	10	7.5	-	-	
6	226	2 A.F.	-	-	1.2	1.50	0.8	-	3.0	10	6.5	-	-	
7	221	Rect.	-	-	7.4	-	-	-	100	-	-	-	-	

MODELS R1,R2,C2(60 cyc.) THOMAS A. EDISON, INC.
Diagram Schematic

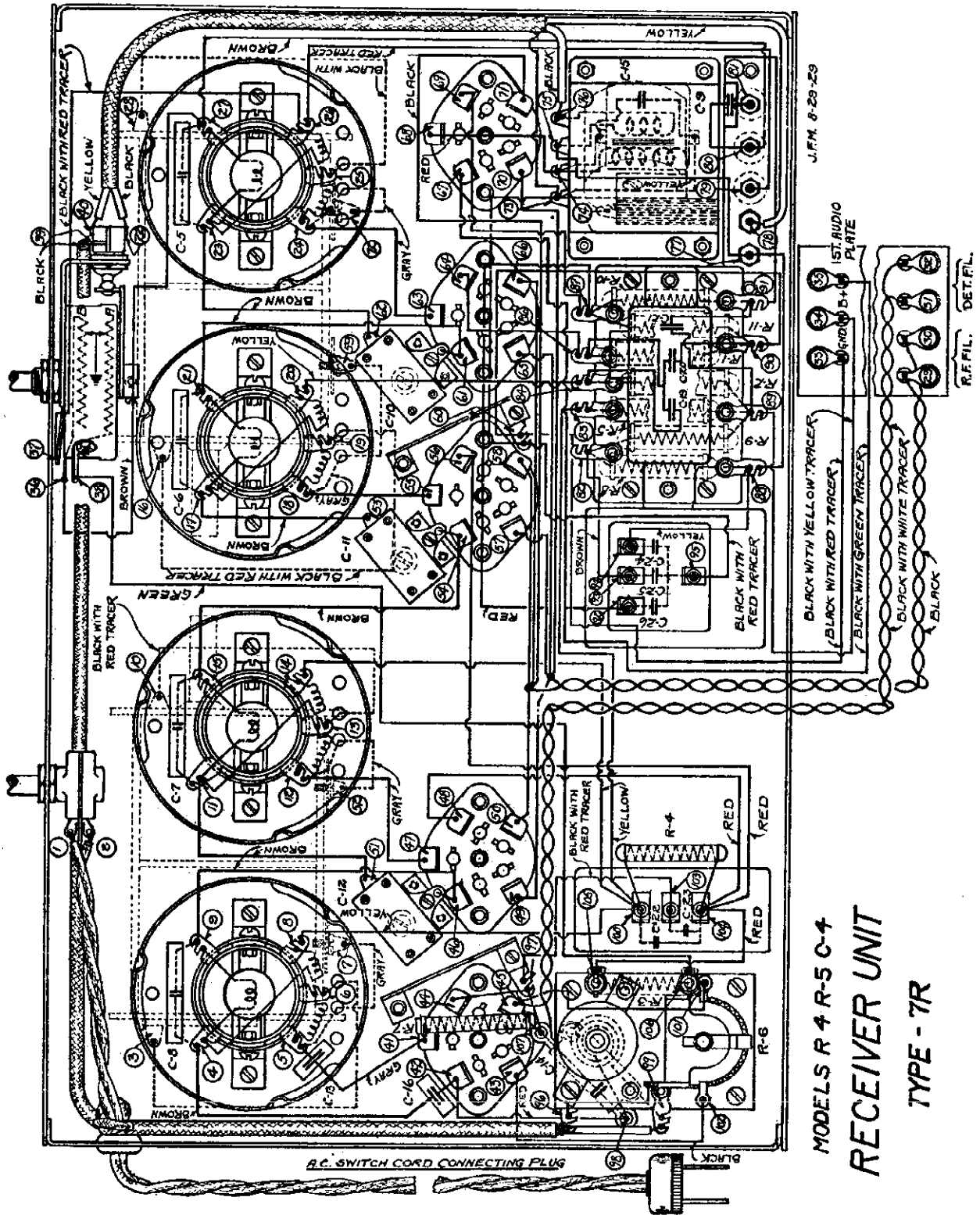


- R1, R2, R3 500 OHM GRID SUPPRESSORS
- R4 GRID LEAK 2 MEG OHM
- R5 LOADING RESISTOR .5 MEG OHM
- R6 DETECTOR PLATE RESISTOR 25000 OHM
- R7 200 OHM HUI RESISTOR 1st R.F.
- R8 200 OHM HUI RESISTOR (DETECTOR)
- R9 250 OHM RESISTOR, 500 OHM
- R10 R.F. FILAMENT CENTER-TAP RESISTOR 12 OHM
- R11 REGENERATION CONTROL 3000 OHM
- R12 VOLUME CONTROL 2000 OHM
- R13 250 OHM PLATE RESISTOR 12500 OHM
- R14 250 OHM RESISTOR, 1500 OHM CENTER-TAP
- R15 LOAD CURRENT RESISTOR 25000 OHM
- C1-C4 ANTENNA SERIES CONDENSER .0005
- C5-C6 C-3 C-4 VARIABLE TUNING COND .0005
- C7 GRID CONDENSER .0005
- C8 REGENERATION FIELD CONDENSER .002
- C9 DETECTOR PLATE R.F. BY-PASS COND. 0.0005
- C10 DETECTOR PLATE A.R. BY-PASS COND. 125PF
- C11 3 MFD BY-PASS COND. 30 MFD
- C12 250 OHM BY-PASS CONDENSER 15 MFD
- C13 FILTER CONDENSER 2.0 MFD
- C14 FILTER CONDENSER 1.0 MFD
- C15 FILTER CONDENSER 1.0 MFD
- C16 250 OHM BY-PASS CONDENSER 3.0 MFD

MODELS R4, R5, C4

Receiver Chassis Wiring

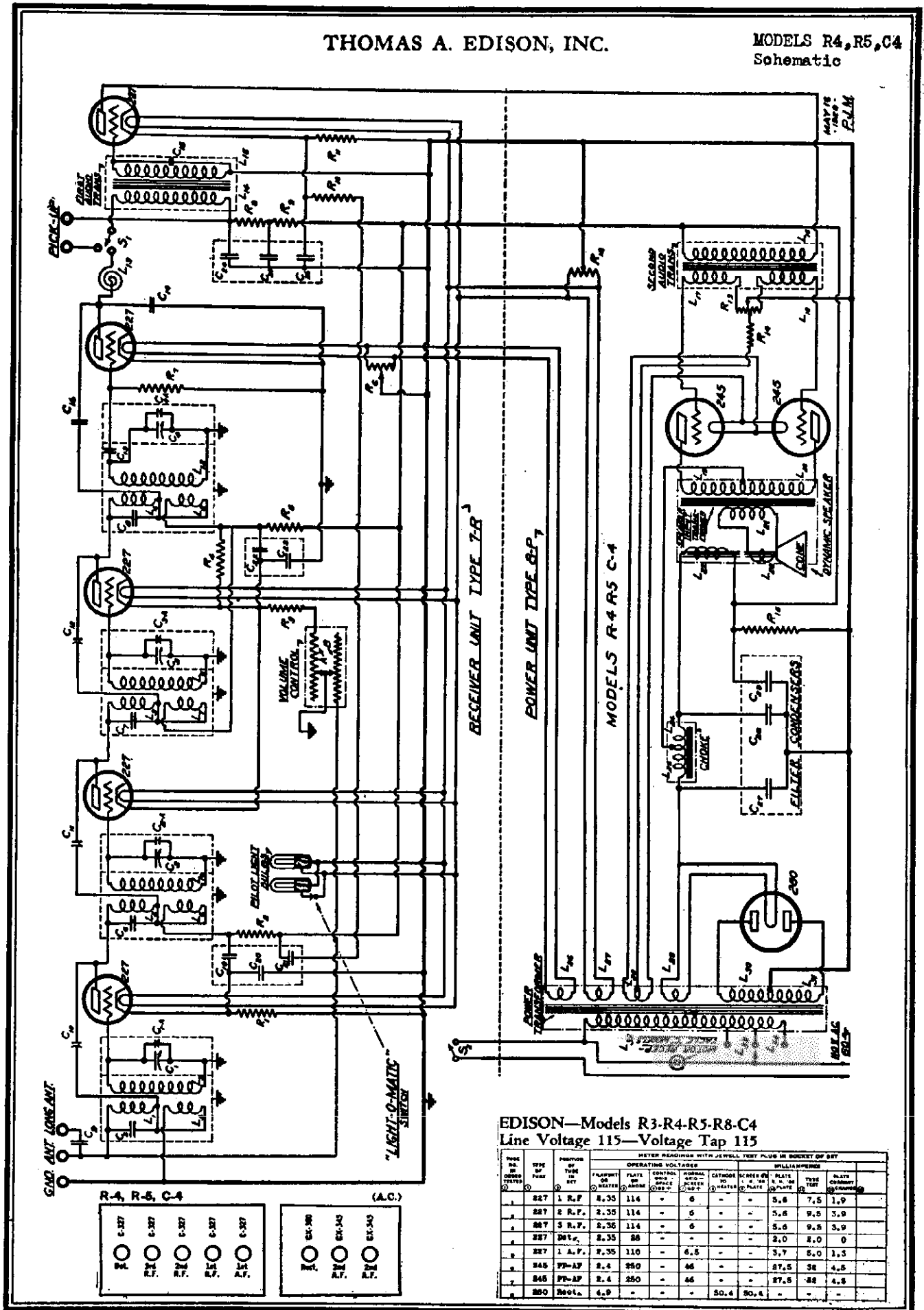
THOMAS A. EDISON, INC.



MODELS R4 R5 C4
RECEIVER UNIT
TYPE - 7R

THOMAS A. EDISON, INC.

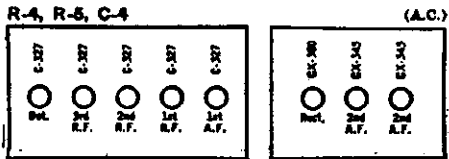
MODELS R4, R5, C4
Schematic



EDISON—Models R3-R4-R5-R8-C4
Line Voltage 115—Voltage Tap 115

METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET

TUBE NO. OR ORDER TEST	TYPE OF TUBE	POSITION OF TUBE IN SET	OPERATING VOLTAGES				MILLIAMPERES			
			PLATE OR HEATER	CONTROL GRID OR SPACE	SCREEN AND BIAS	CATHOD. TO HEATER	SCREEN OR PLATE	PLATE	TYPE TEST	PLATE CURRENT
1	2B7	1 R.F.	2.35	114	-	6	-	5.6	7.5	1.9
2	2B7	2 R.F.	2.35	114	-	6	-	5.6	9.5	3.9
3	2B7	3 R.F.	2.35	114	-	6	-	5.6	9.8	3.9
4	2B7	Det.	2.35	86	-	-	-	2.0	8.0	0
5	2B7	1 A.F.	2.35	110	-	6.5	-	3.7	5.0	1.3
6	2A5	PP-AP	2.4	250	-	46	-	27.5	38	4.5
7	2A5	PP-AP	2.4	250	-	46	-	27.5	38	4.5
8	200	Rect.	4.9	-	-	50.4	50.4	-	-	-



MODELS R4, R5, C4
Parts List

THOMAS A. EDISON, INC.

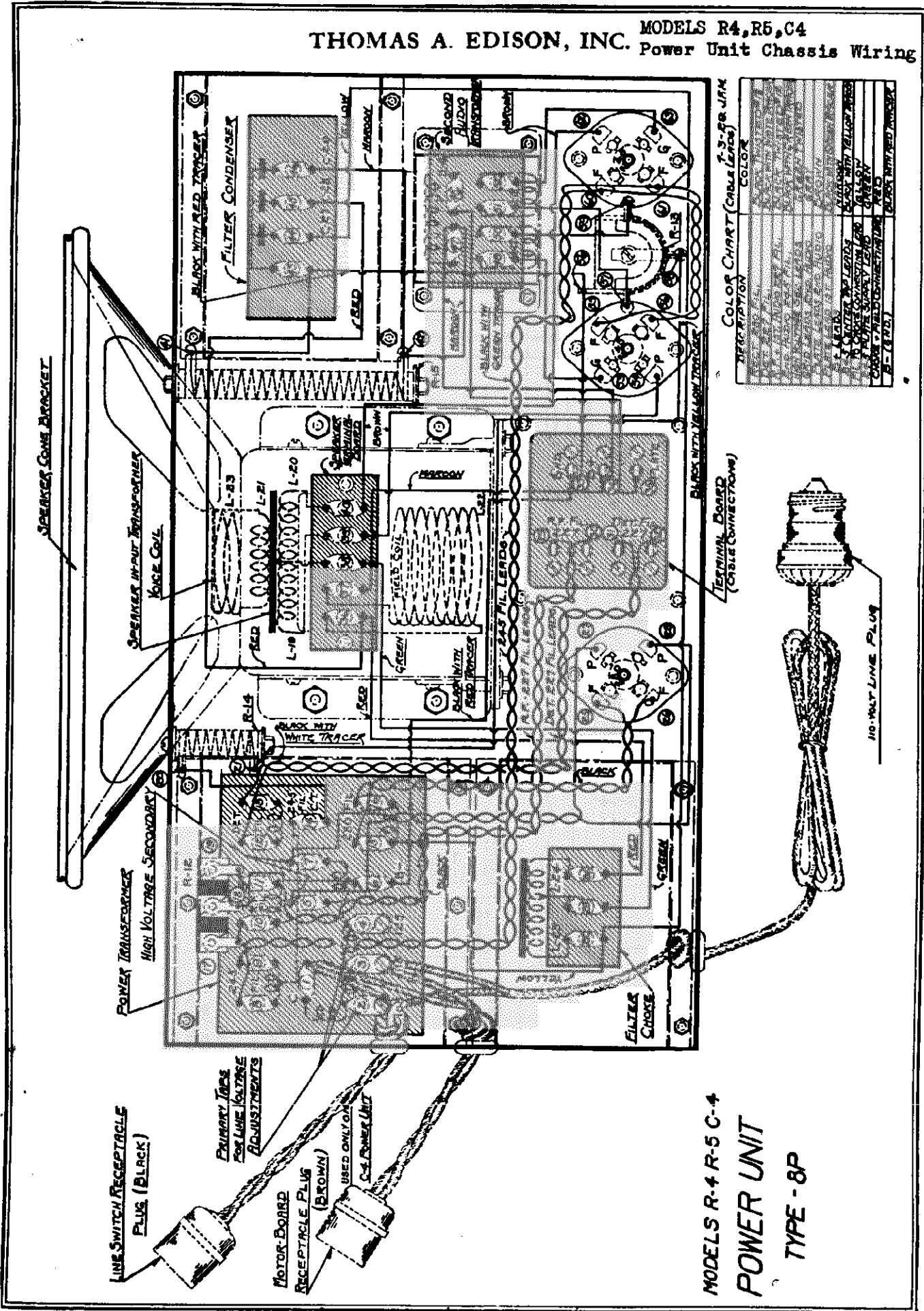
IDENTIFICATION OF PARTS (Continued)

NO.	NAME AND FUNCTION	ELECTRICAL VALUE
R-10	Hum balance resistor (1st a. f.)	6,000 ohm resistance, 1 watt.
R-11	Bias resistor, 1st a. f. stage.	2,000 ohm resistance, 1 watt.
R-12	R. f. and a. f. heater center tapped resistor.	20 ohm fixed center-tapped resistance.
R-13	Push-pull balancing resistor.	200 ohm center-tapped potentiometer.
R-14	Bias resistor, 2nd a. f. stage.	.780 ohm, 5 watt resistance.
R-15	Power supply loss current resistor.	10,000 ohm, 5 watt resistance.
L-1	Long wave primary, 1st r. f. transformer.	Each a 500 microhenry coil.
L-2	Long wave primary, 2nd r. f. transformer.	
L-3	Long wave primary, 3rd r. f. transformer.	
L-4	Long wave primary, detector input transformer.	
L-5	Short wave primary, 1st r. f. transformer.	Each a 7/8 turn coil.
L-6	Short wave primary, 2nd r. f. transformer.	
L-7	Short wave primary, 3rd r. f. transformer.	
L-8	Short wave primary, detector input transformer.	Each a 245 microhenry coil, (measured in shield).
L-9	Secondary, 1st r. f. transformer.	
L-10	Secondary, 2nd r. f. transformer.	
L-11	Secondary, 3rd r. f. transformer.	
L-12	Secondary, detector input transformer.	50 to 65 millihenry choke.
L-13	Detector plate r. f. choke.	
L-14	Primary, 1st a. f. transformer.	4:1 ratio a. f. transformer.
L-15	Secondary, 1st a. f. transformer.	
L-16	Primary, 2nd a. f. transformer.	5:1 ratio a. f. transformer with separate secondaries connected in series by variable resistance R-13.
L-17	Secondary, 2nd a. f. transformer.	
L-18	Secondary, 2nd a. f. transformer.	Speaker input transformer, mounted in speaker frame, utilizing center tapped primary.
L-19	Half primary, speaker input transformer.	
L-20	Half primary, speaker input transformer.	4,500 ohm field coil.
L-21	Secondary, speaker input transformer.	
L-22	Field coil, dynamic speaker.	20 henry, 375 ohm choke.
L-23	Voice coil, dynamic speaker.	
L-24	Inside third of filter choke.	Power transformer.
L-25	Outside two-thirds of filter choke.	
L-26	Detector heater secondary winding.	Additional section of primary winding for medium voltage.
L-27	R. f. and a. f. heater secondary winding.	
L-28	and a. f. fil. secondary winding.	
L-29	Rectifier fil. secondary winding.	
L-30	Half high voltage secondary winding.	
L-31	Half high voltage secondary winding.	
L-32	Low line voltage primary winding.	
L-33	Additional section of primary winding for medium voltage.	
L-34	Additional section of primary winding for high line voltage.	
S-1	Radio-phonos. switch.	
S-2	Line switch.	S. P. S. T. toggle switch.
	Light-O-Matic Switch.	Located in dial mechanism, operating Light-O-Matic pilot light.
	Motor Receptacle (Brown).	This plug provides 110 volts A. C. for operation of phonograph motor in radio phonograph combination model.
	Volume Control	{ A—Wire wound, 5,000 ohms. B—Graphite, 10,000 ohms.

IDENTIFICATION OF PARTS
TO ACCOMPANY PLATE No. 1-A
'LIGHT-O-MATIC' MODELS R-4, R-5 and C-4

NO.	NAME AND FUNCTION	ELECTRICAL VALUE
C-1	Tuning condenser, 1st r. f. stage.	{ 2-gang variable condenser, maximum capacity. each section 355 mmfd.
C-2	Tuning condenser, 2nd r. f. stage.	
C-3	Tuning condenser, 3rd r. f. stage.	{ 2-gang variable condenser, maximum capacity. each section 355 mmfd.
C-4	Tuning condenser, detector stage.	
C-5	Each a fixed condenser tuning the long wave primary circuit of the associated transformer to approximately 450 kilocycles.	Each a .00025 mfd. fixed moulded mica condenser.
C-6		
C-7		.000125 mfd. fixed moulded mica condenser.
C-8		
C-9	Long antenna series condenser.	Each an adjustable condenser, 40 to 80 mmfd.
C-10	Neutralizing condensers, 1st, 2nd and 3rd r. f. stages, respectively.	
C-11		.0001 mfd. fixed moulded mica condenser.
C-12		
C-13	Detector grid condenser.	.001 mfd. fixed moulded mica condenser.
C-14	Detector plate condenser.	
C-15	High frequency cut-off condenser.	.00045 mfd. fixed moulded mica condenser.
C-16	Detector Neutralizing Condenser	
C-19	Plate by-pass condenser, 1st r. f. stage.	.1 mfd. 300v. paper condenser. .1 mfd. 300v. paper condenser. .16 mfd. 300v. paper condenser. (C-19, 20 and 21 in same can.)
C-20	Bias by-pass condenser, 1st r. f. stage.	
C-21	Hum balance condenser (1st a. f.)	
C-22	Plate by-pass condenser, 2nd and 3rd r. f.	.1 mfd. 300v. paper condenser. 1. mfd. 150v. paper condenser. (C-22 and 23 in same can.)
C-23	Bias by-pass condenser, 2nd and 3rd r. f.	
C-24	A. f. by-pass condenser, detector plate.	.1 mfd. 300v. paper condenser. .5 mfd. 300v. paper condenser. 1. mfd. 150v. paper condenser. (C-24, 25 and 26 in same can.)
C-25	Filter condenser, detector plate supply	
C-26	Bias by-pass condenser, 1st a. f. stage.	
C-27	1st filter condenser.	2. mfd. 600v. paper condenser. 2. mfd. 600v. paper condenser. 1. mfd. 300v. paper condenser. (C-27, 28 and 29 in same can.)
C-28	2nd filter condenser.	
C-29	3rd filter condenser.	
C-3A	Tuning compensator, 1st r. f.	Each an adjustable air and mica dielectric condenser mounted on side of variable condenser section which it abuts.
C-3B	Tuning compensator, 2nd r. f.	
C-3C	Tuning compensator, 3rd r. f.	
C-3D	Tuning compensator, detector.	
R-1	Bias resistor, 1st r. f. stage.	1,000 ohm resistance, 1 watt.
R-2	Isolating resistor, 1st r. f.	1,000 ohm resistance, 1 watt.
R-3	Minimum bias resistor, 2nd and 3rd r. f.	400 ohm resistance, 1 watt.
R-4	Bleeder resistor.	40,000 ohm resistance, 1 watt.
R-5	Isolating resistor, 2nd and 3rd r. f.	400 ohm resistance, 1 watt.
R-6	Detector heater hum adjuster.	20 ohm potentiometer.
R-7	Detector grid leak.	1.5 megohm resistance, 1 watt.
R-8	2nd section detector filter resistor.	25,000 ohm resistance, 1 watt.
R-9	1st section detector filter resistor.	25,000 ohm resistance, 1 watt.

THOMAS A. EDISON, INC. MODELS R4, R5, C4
Power Unit Chassis Wiring

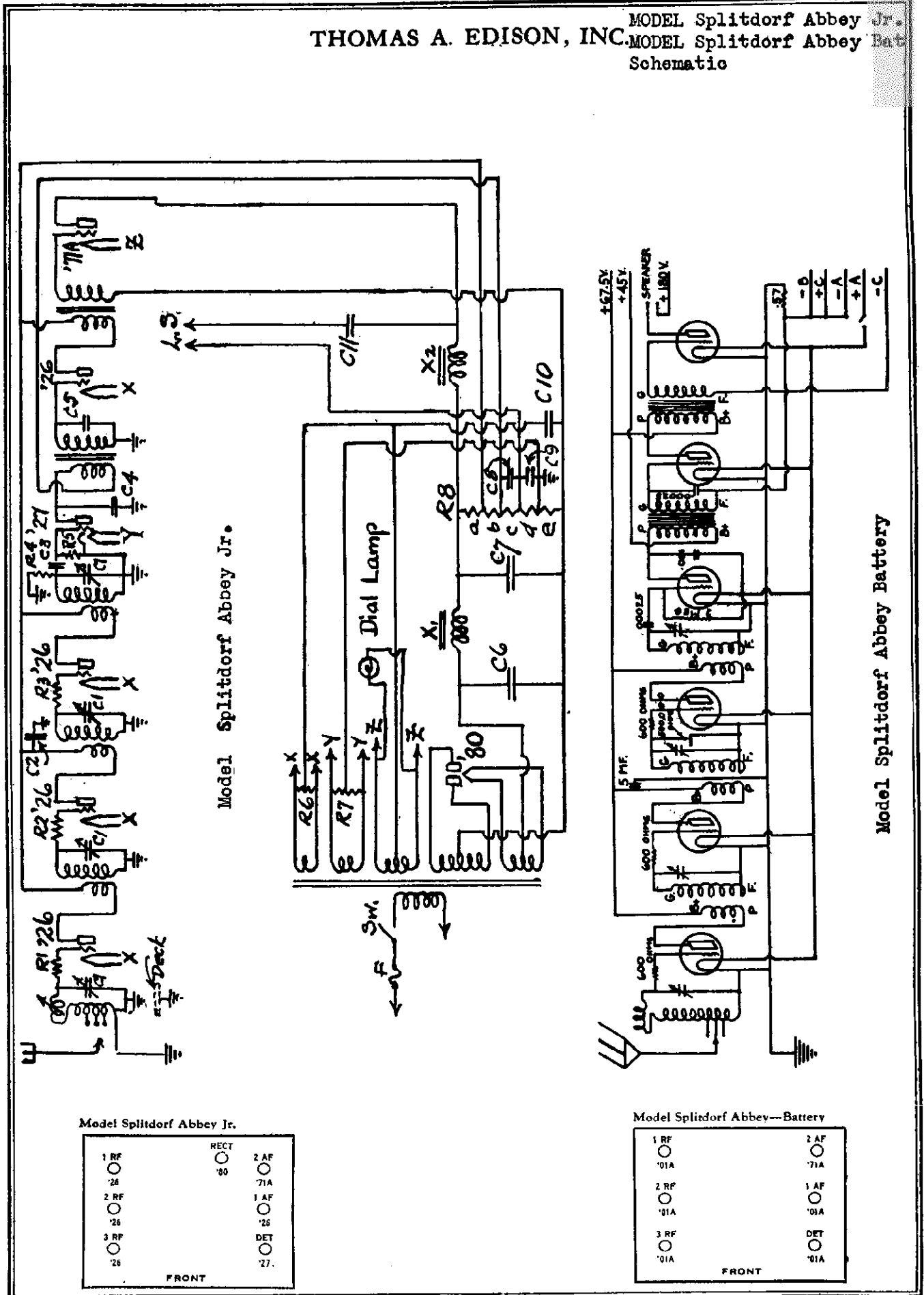


COLOR CHART (CABLE LEADS)
DEFINITION COLOR

1. GREEN	BLACK WITH RED TRACKER
2. RED	BLACK WITH YELLOW TRACKER
3. BLACK	BLACK WITH WHITE TRACKER
4. GREEN	GREEN
5. RED	RED
6. BLACK	BLACK
7. BLACK	BLACK
8. BLACK	BLACK
9. BLACK	BLACK
10. BLACK	BLACK
11. BLACK	BLACK
12. BLACK	BLACK
13. BLACK	BLACK
14. BLACK	BLACK
15. BLACK	BLACK
16. BLACK	BLACK
17. BLACK	BLACK
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20. BLACK	BLACK
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43. BLACK	BLACK
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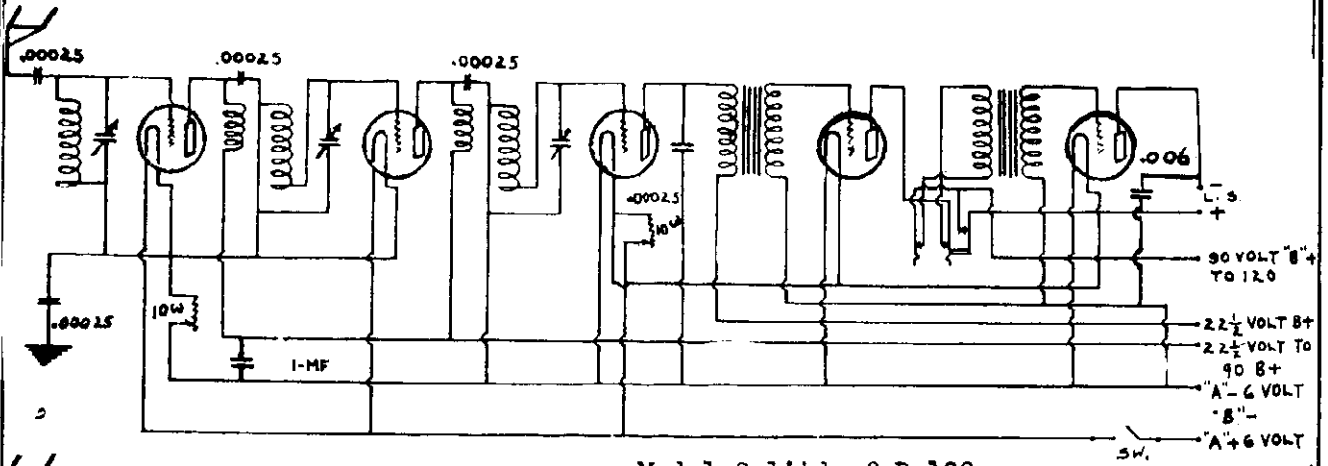
MODELS R-4 R-5 C-4
POWER UNIT
TYPE - 8P

THOMAS A. EDISON, INC. MODEL Splitdorf Abbey Jr. Bat Schematic

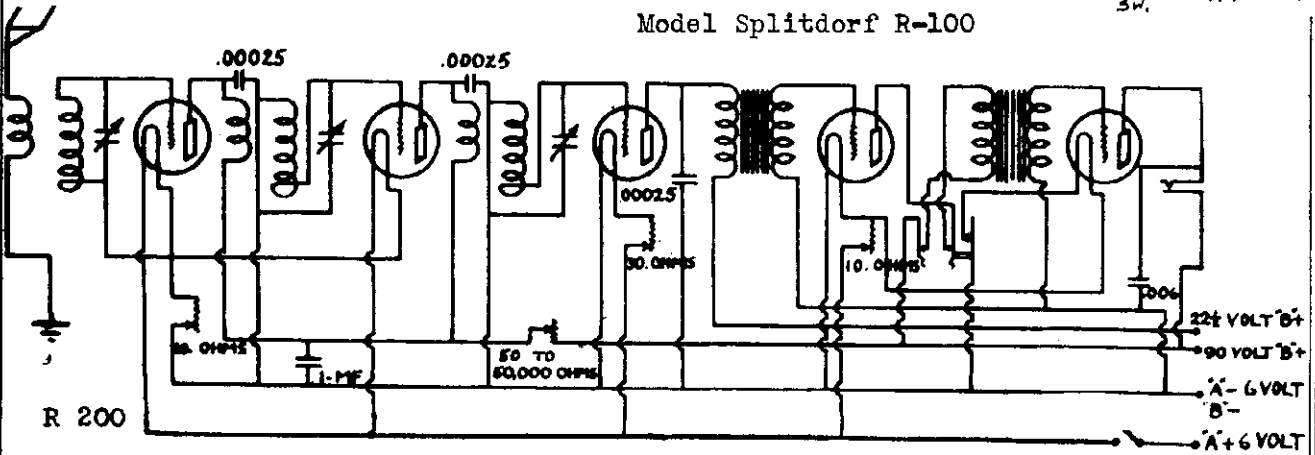


MODEL Splitdorf R-100
 MODEL Splitdorf R-200
 MODEL Splitdorf RV-695
 Schematic

THOMAS A. EDISON, INC.



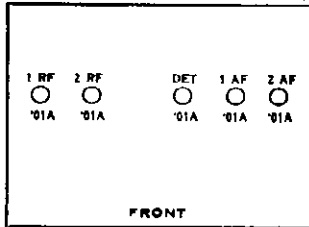
Model Splitdorf R-100



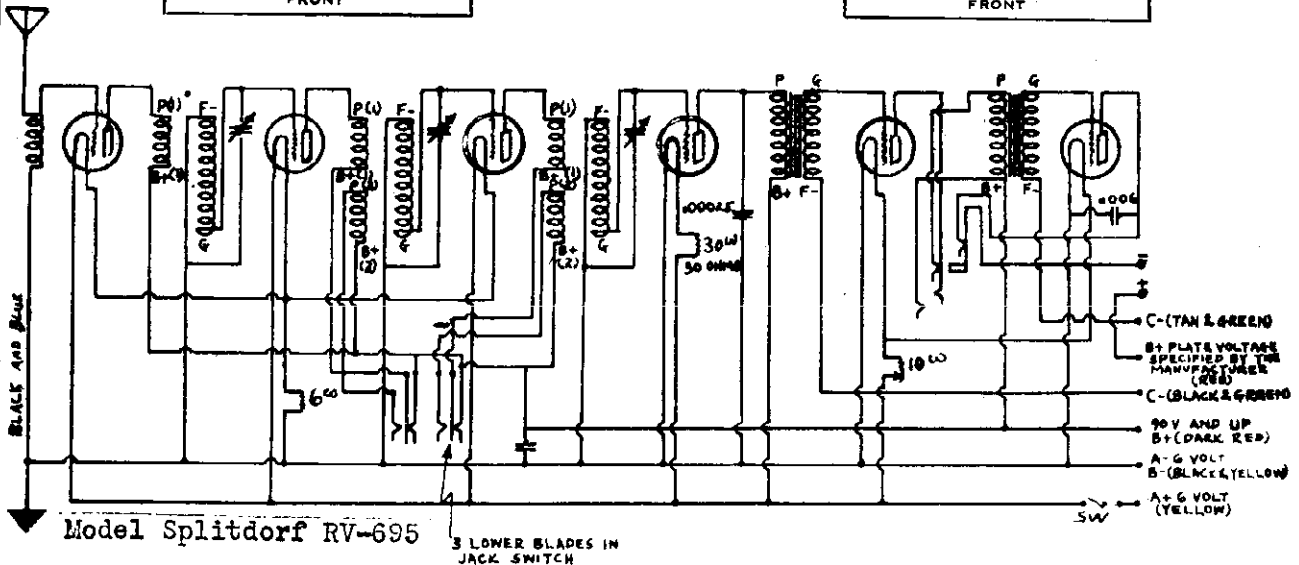
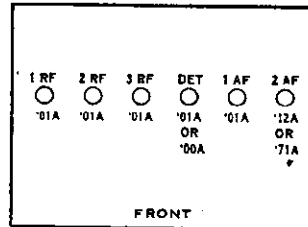
R 200

Model Splitdorf R-200

Models Splitdorf R100, R200.



Model Splitdorf RV695

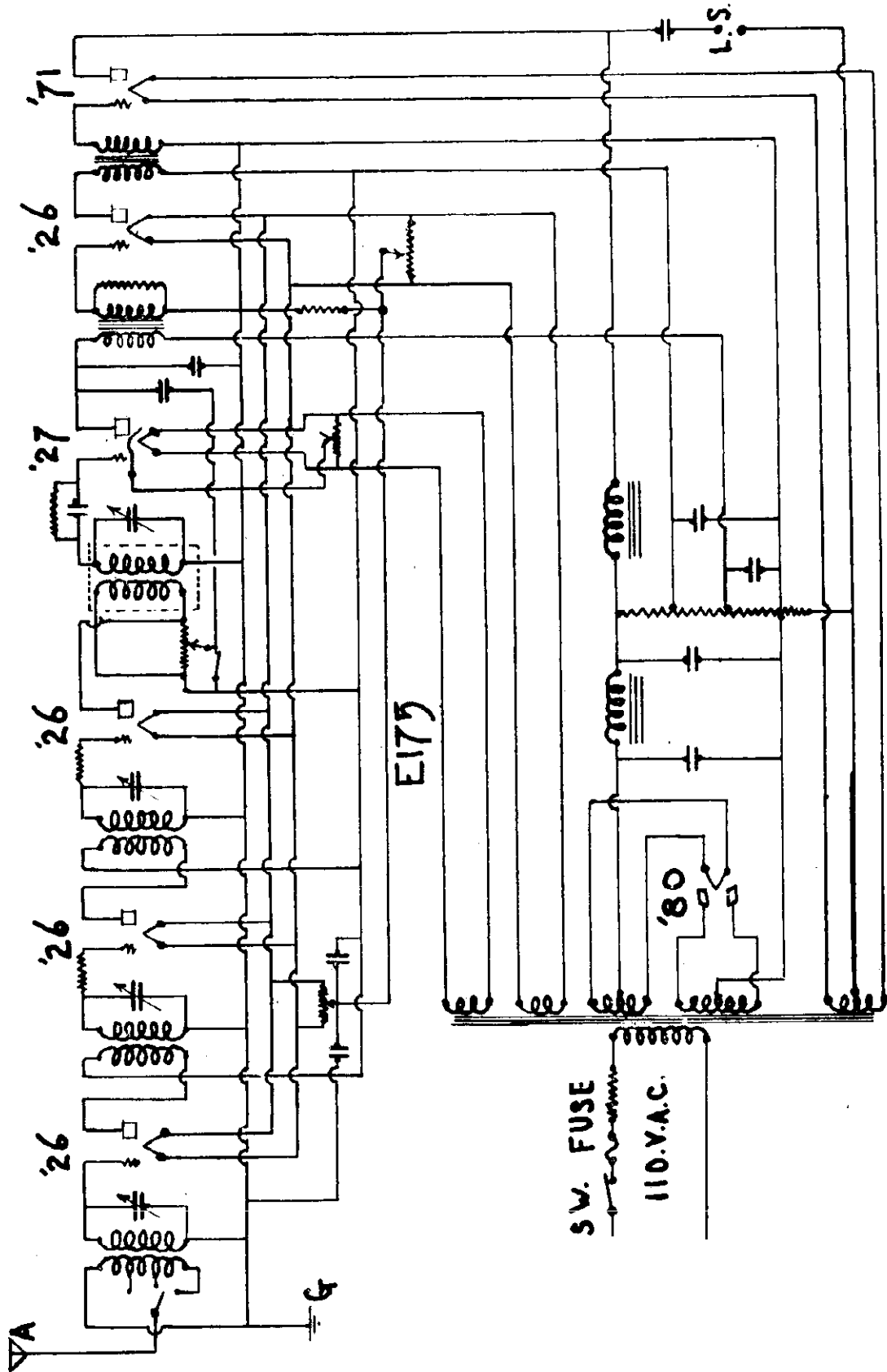


Model Splitdorf RV-695

3 LOWER BLADES IN JACK SWITCH

MODEL Splitdorf E-175
Schematic

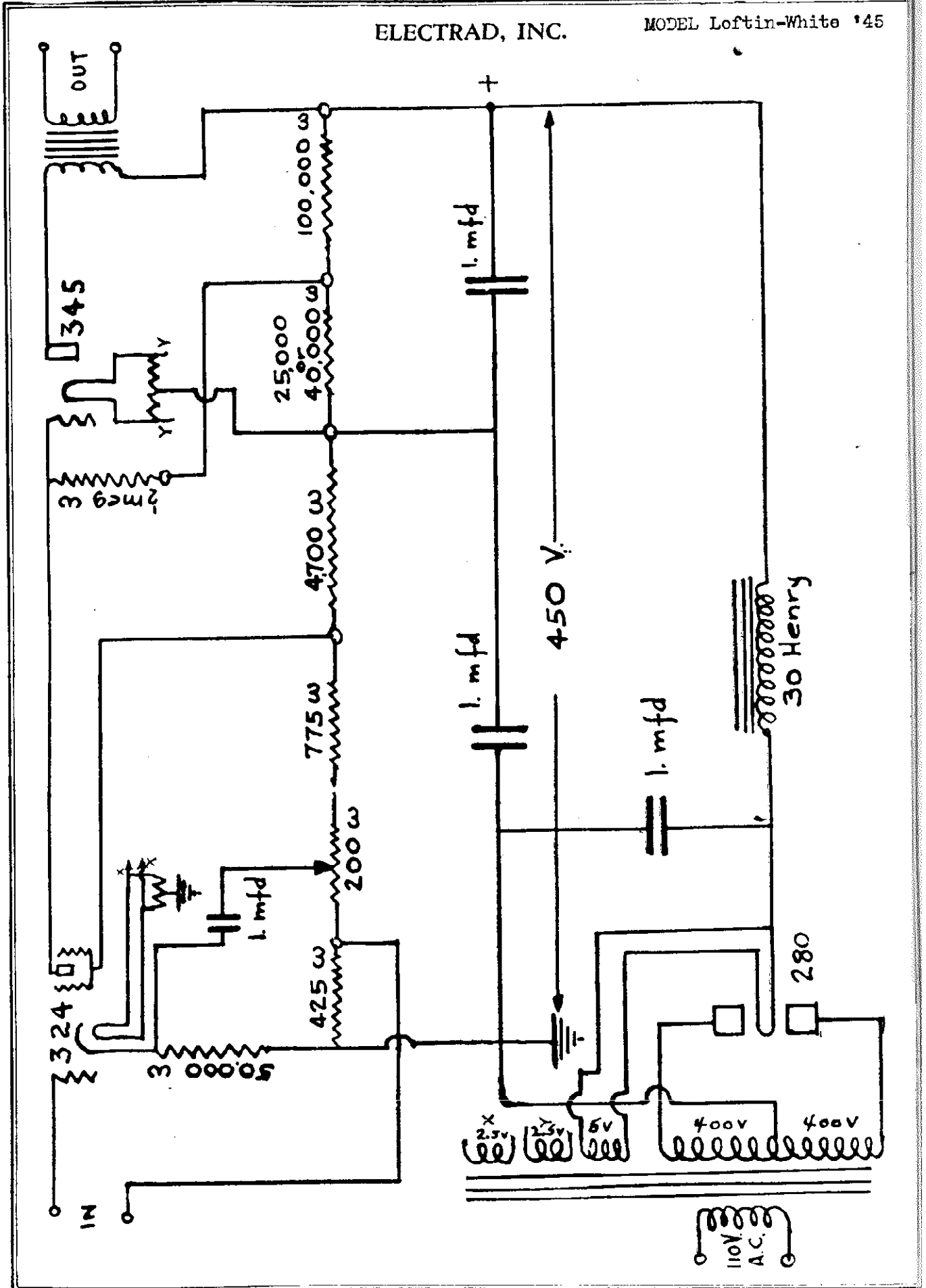
THOMAS A. EDISON, INC.



Model Splitdorf E-175

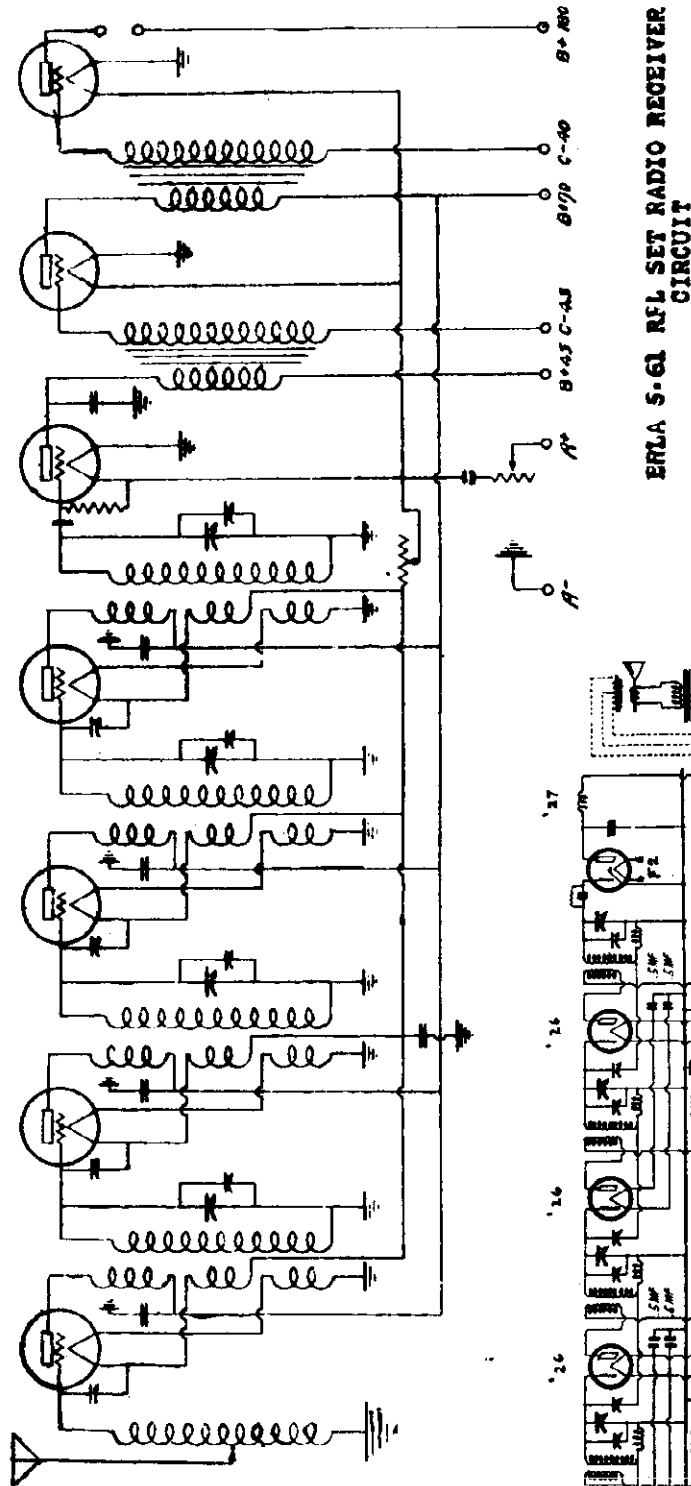
ELECTRAD, INC.

MODEL Loftin-White '45

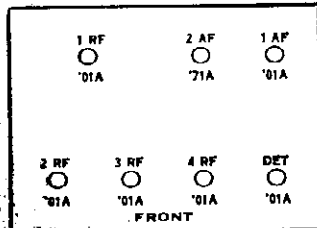


ELECTRICAL
RESEARCH LABORATORIES, Inc.

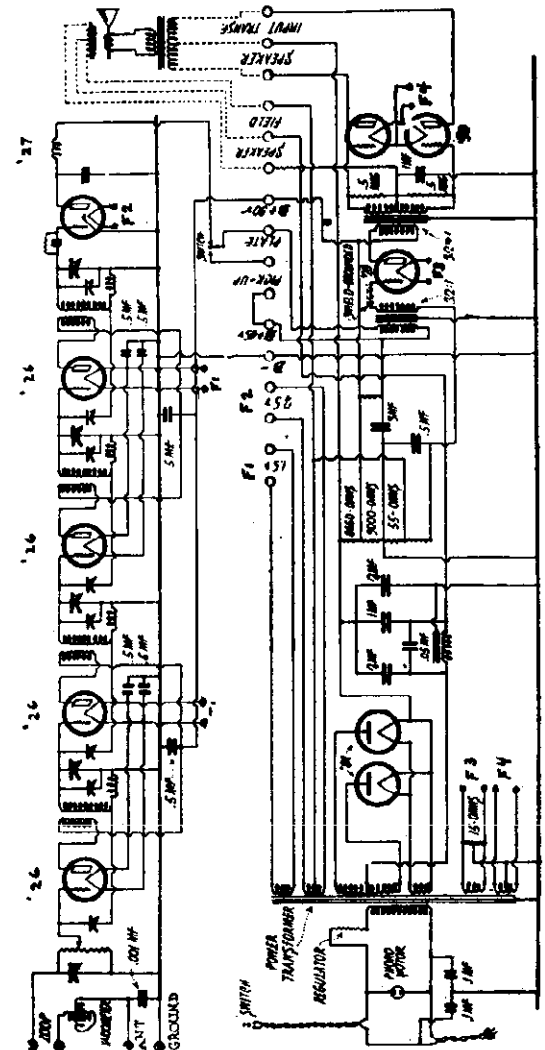
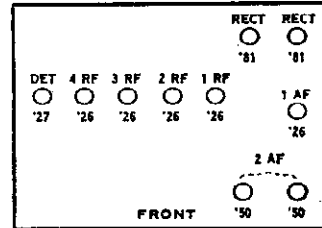
MODEL S-61
MODEL R-1
Schematic



Model Eria S61 (1927)



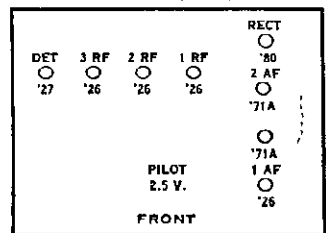
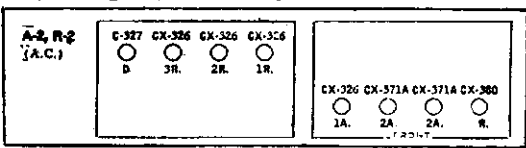
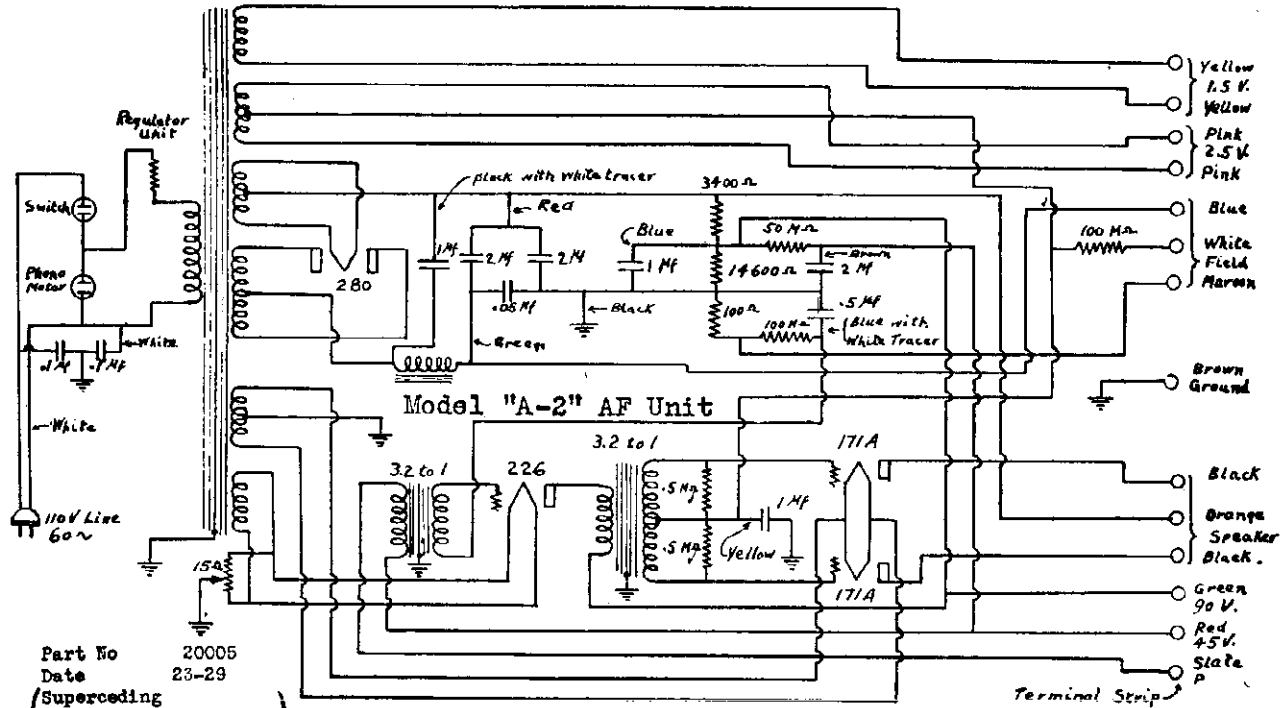
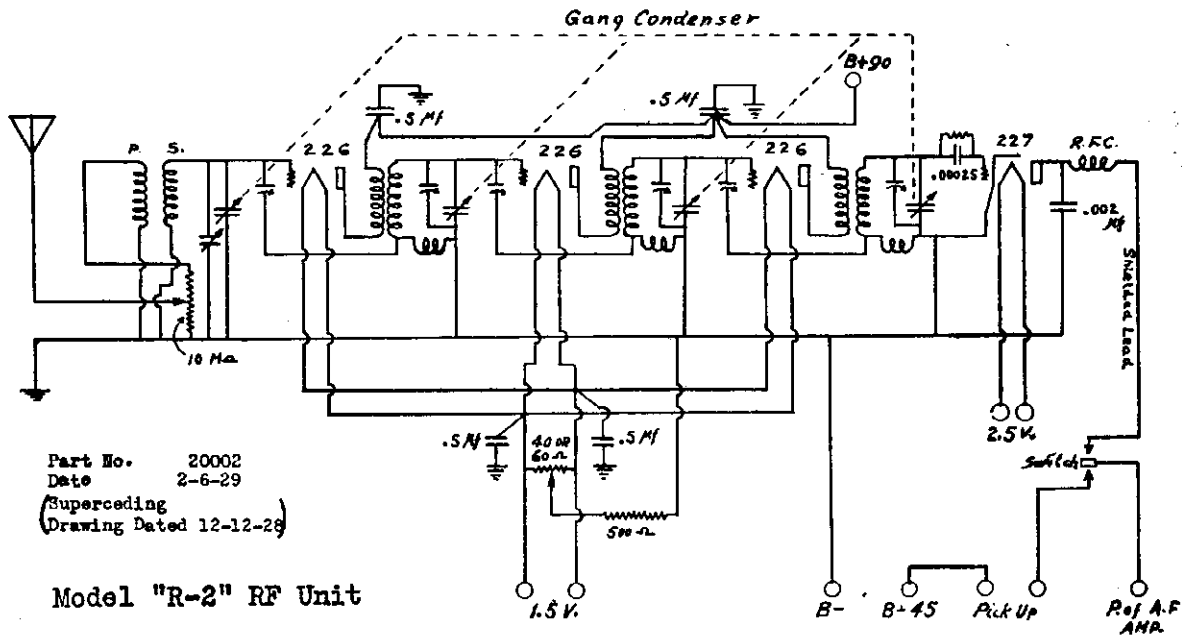
Model Eria R1-A (1928)



ERLA Model R-1 and Model A Power Unit

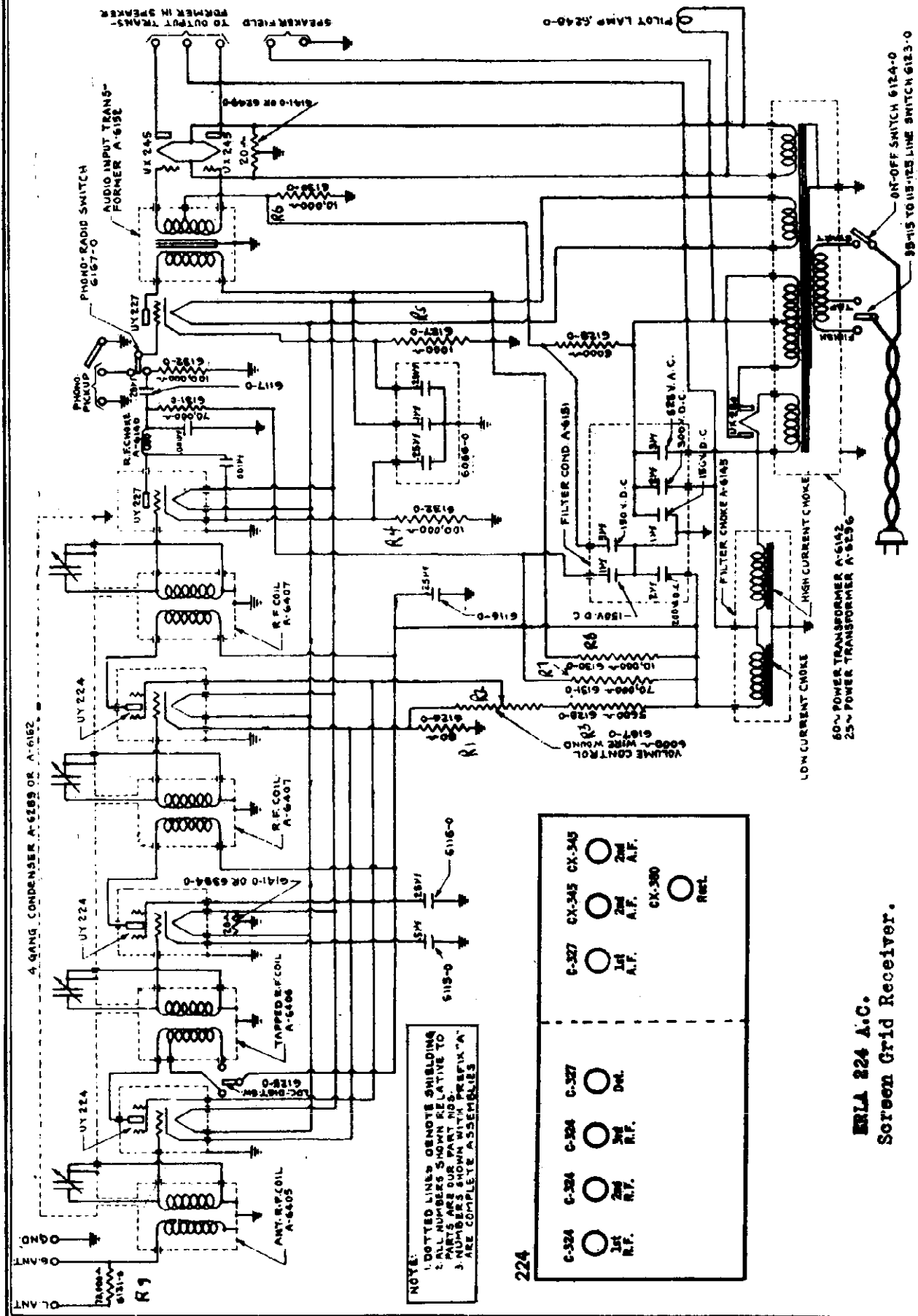
MODEL RF Unit
 MODEL AF Unit
 Schematic

ELECTRICAL
 RESEARCH LABORATORIES, Inc.



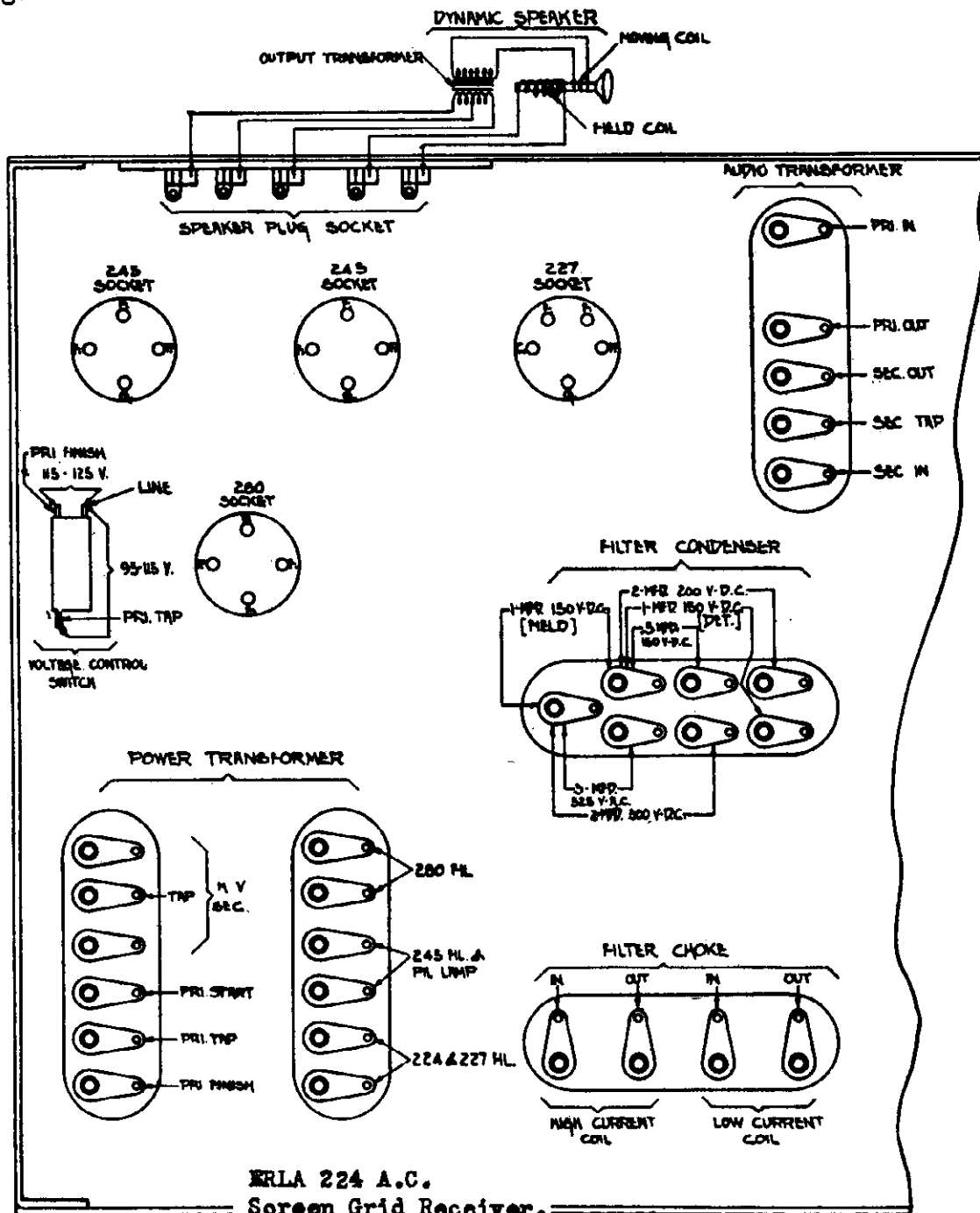
ELECTRICAL
RESEARCH LABORATORIES, Inc.

MODEL 224 AC
Schematic



MODEL 224 AC
Chassis
Voltage

ELECTRICAL
RESEARCH LABORATORIES, Inc.



ERLA 224 A.C.
Screen Grid Receiver.

Details of Power Supply Terminal Connections

Tube	Fil.	Screen Grid to cathode	Plate to cathode	Ground to cathode	Grid to Filament
280	4.8 to 5v AC		340 to 360v DC		
245	2.4 to 2.5v AC		240 to 250v DC		
Audio 227	2.35 to 2.4v AC		90 to 100v DC	4.5v DC	
DET. 227	2.35 to 2.4v AC		60 to 75v DC	6 to 7.5v DC	45 to 50v DC
224	2.35 to 2.4v AC	75 to 80v DC	160 to 170v DC	1.5 to 2v DC	

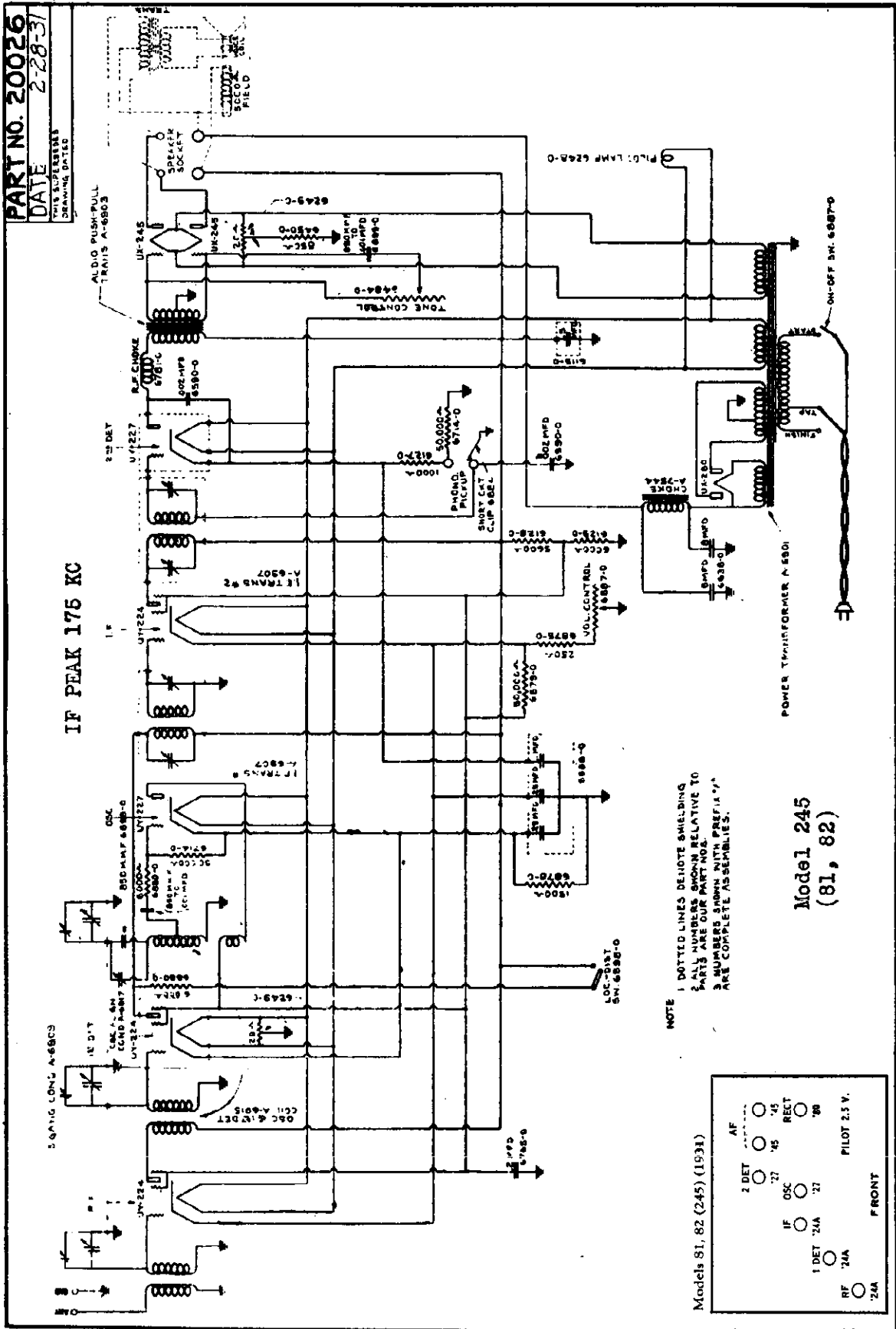
(The above are based on line voltage of 110 volts and the switch in the 95-115 position.)

(Volume control set to full volume position.)

ELECTRICAL
RESEARCH LABORATORIES, Inc.

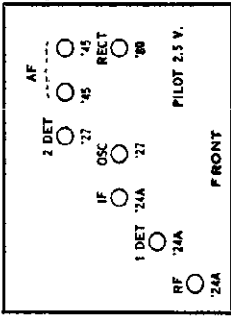
MODEL 81, 82 (245)
Schematic

PART NO. 20026
DATE 2-28-37
REVISION
DRAWING OFFICE



NOTE 1. DOTTED LINES DENOTE SHIELDING
2. ALL NUMBERS SHOWN RELATIVE TO
3. NUMBERS SHOWN WITH PREFIX 'A'
ARE COMPLETE ASSEMBLIES.

Models 81, 82 (245) (1531)



Model 245
(81, 82)

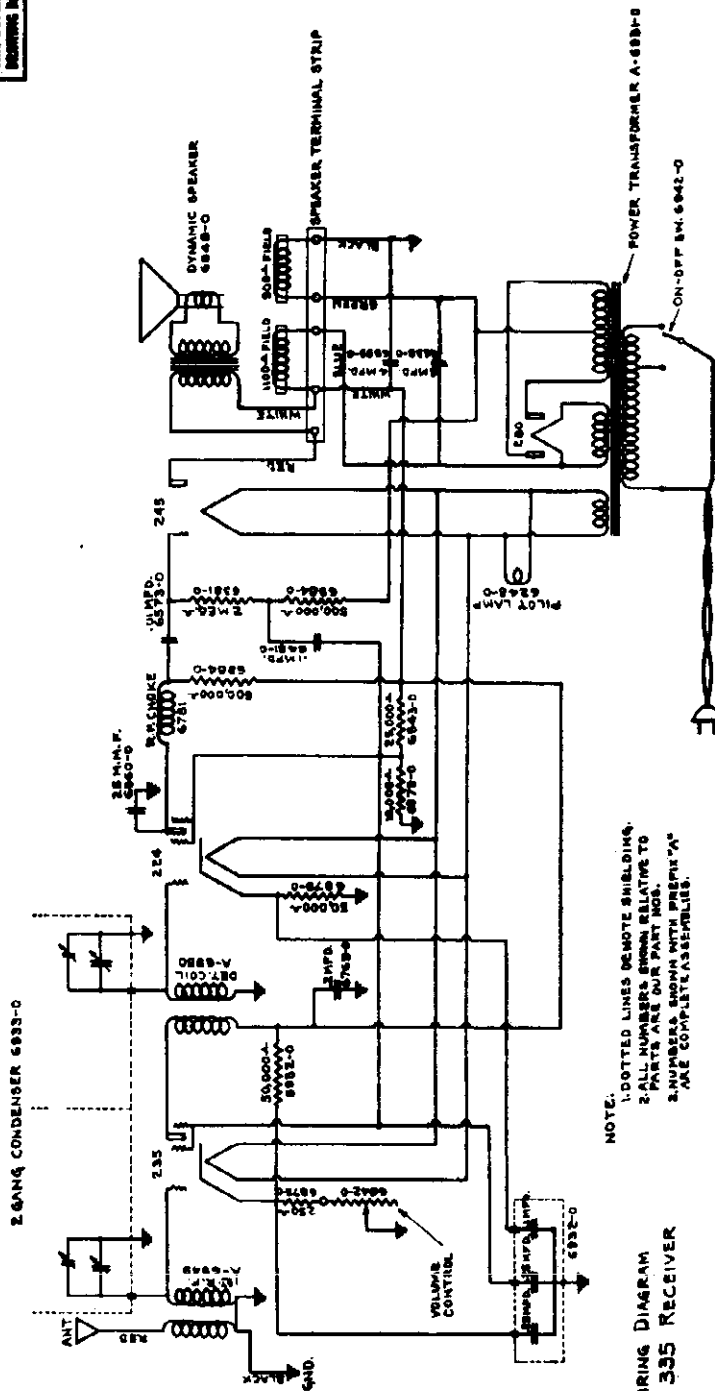
ELECTRICAL RESEARCH LABORATORIES, Inc.

MODEL 335 Schematic

PART No. 20027
DATE 4-8-31
 THIS SUPERSEDES PREVIOUS MATR

NAME-

CHANGES	DATE



NOTE:
 1. DOTTED LINES DENOTE SHIELDING.
 2. ALL NUMBERS SHOWN RELATIVE TO PARTS ARE OUR PART NOS.
 3. NUMBERS SHOWN WITH PREFIX "A" ARE COMPLETE ASSEMBLIES.

WIRING DIAGRAM MODEL 335 RECEIVER

24 1RF	27 1AF	45 2AF	80 RECT
271	271-A		

27 1AF	45 2AF	80 RECT
24 1RF	24 2RF	24 3RF
27 DET		
271	271-A	
245 SUPER		

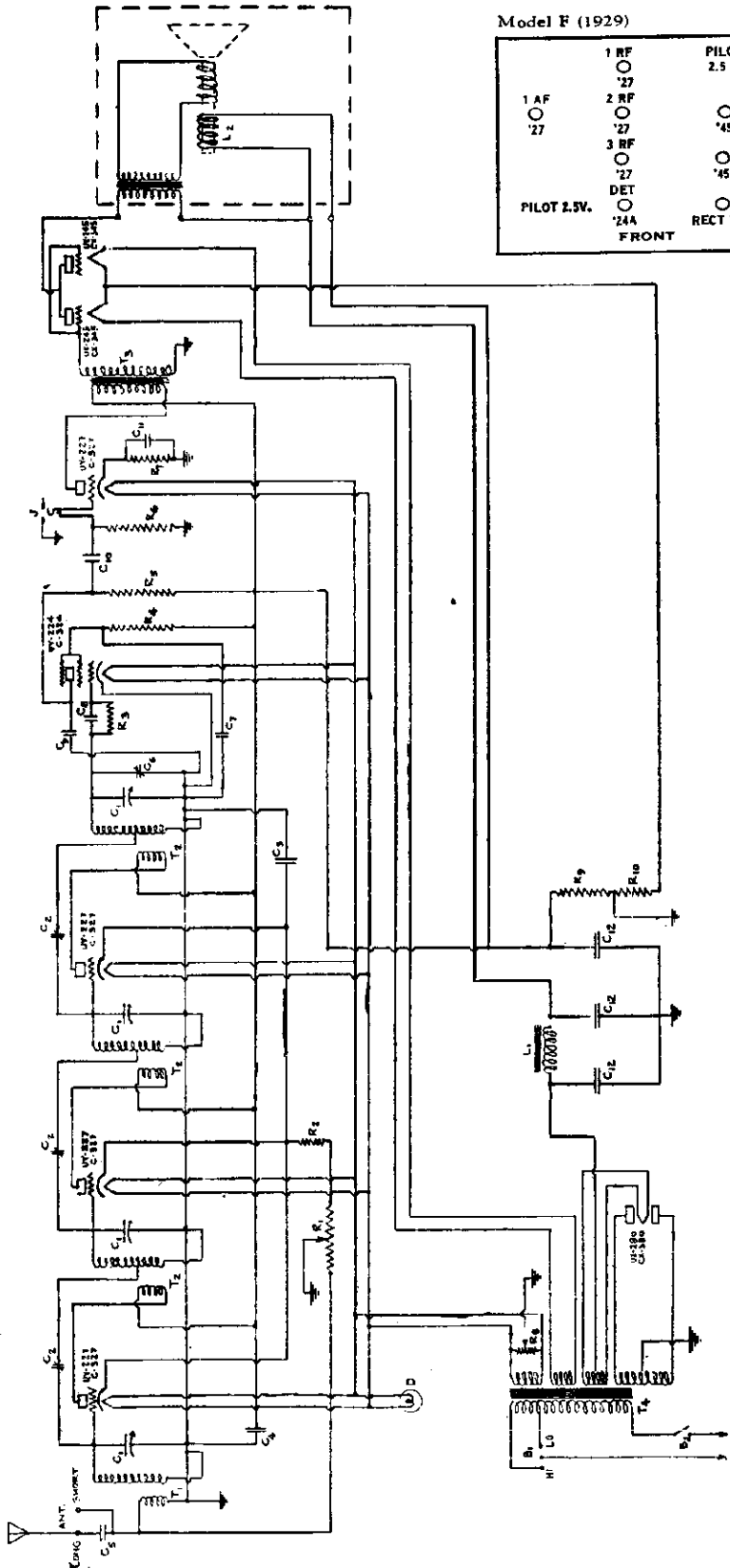
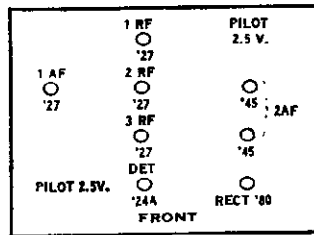
DO NOT SCALE THIS DRAWING WORK TO DIMENSIONS SHOWN

DIMENSION TOLERANCES		MATERIAL	
PRECISIONS AND LIMITS A TOL. OF .001	GENERAL	ERLA	RESEARCH
MILL SHAPE PASSES HAVE A TOL. OF .001-.002	USED ON	ELECTRICAL	LABORATORIES, INC. CHICAGO
FLAT SURFACES HAVE A TOL. OF .001-.002	FINISH	SCALE	DESIGNER P. G.
ALL DIMENSIONS ARE TO UNLESS OTHERWISE SPECIFIED		CHECKED	DATE 4-8-31

MODEL F
Schematic
Data

EMERSON RADIO AND PHONOGRAPH
CORPORATION

Model F (1929)



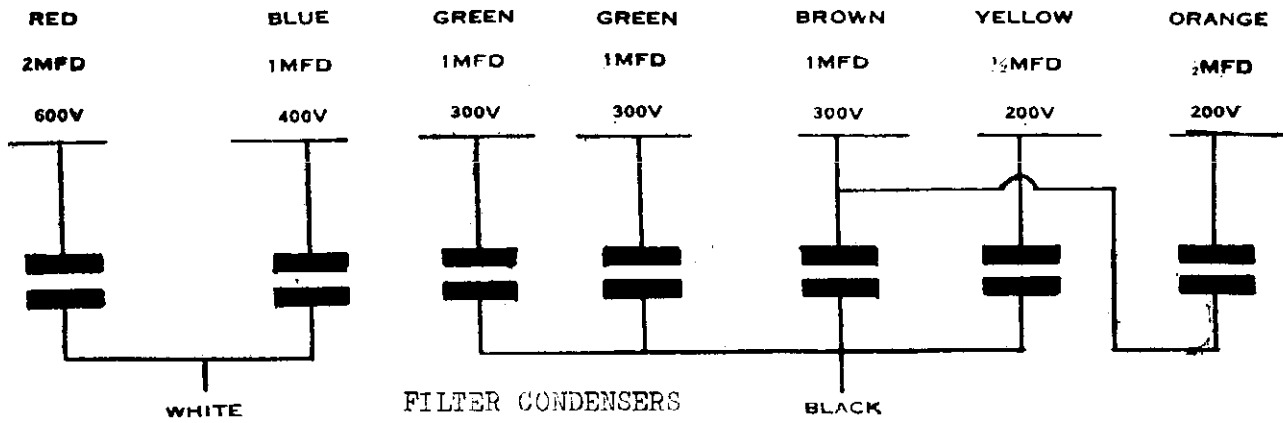
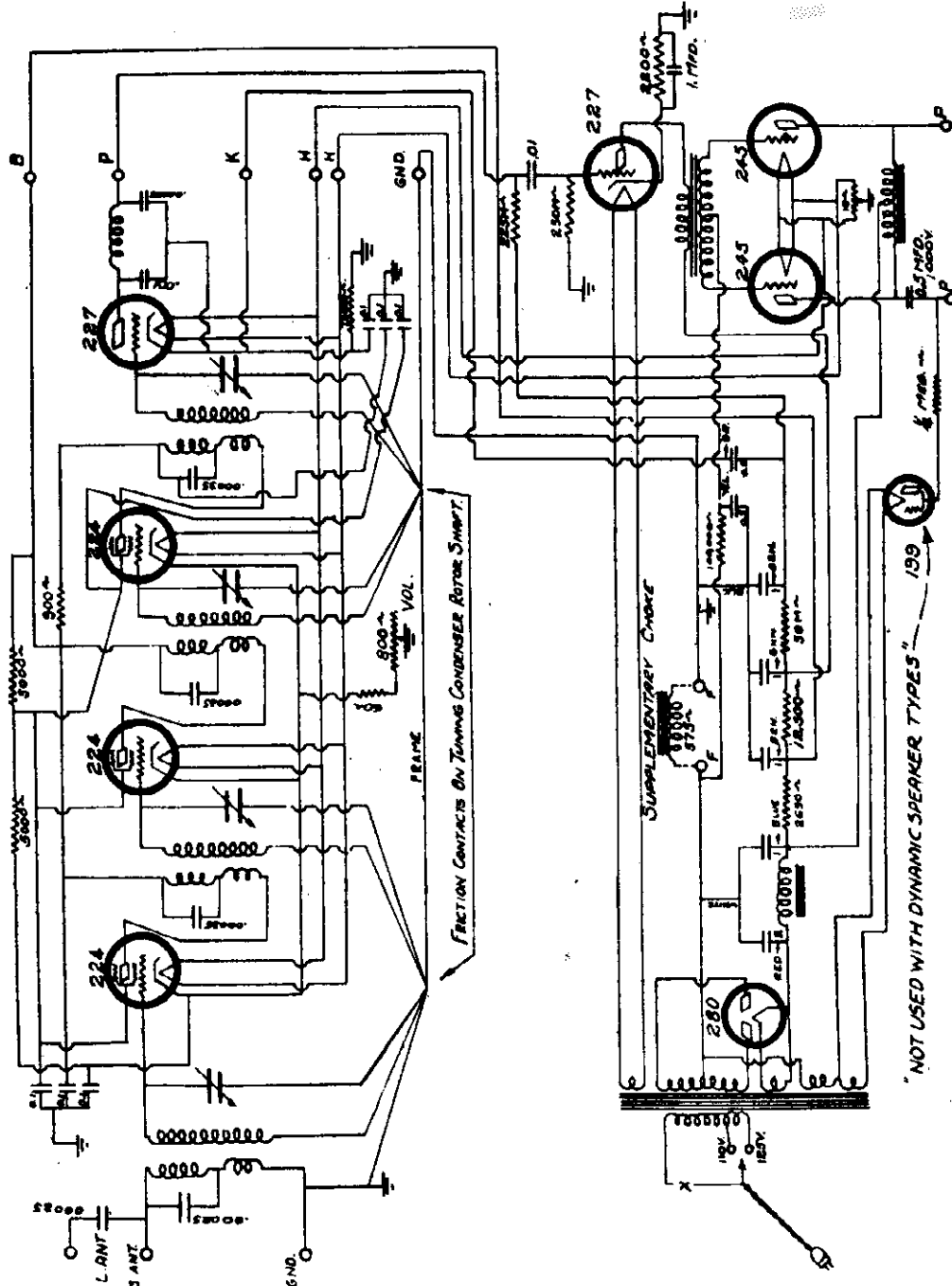
Model "F"
Line Voltage 115—Set on High Volt Tap—Volume
Control Position Full On *Last Stage Is 2 No. 245 in
Parallel

Type in Order	Type of Tube	Voltage at Base	Voltage at Grid	Voltage at Plate	Time Constant		Resonance		Frequency		Notes		
					A	B	A	B	A	B			
1	227	185	115	245	2.4	119	2.3	115	7	7	3.6	4.6	.0
2	227	185	115	245	2.4	119	2.3	115	7	7	3.6	4.6	.0
3	227	185	115	245	2.4	119	2.3	115	7	7	3.6	4.6	.0
4	227	185	115	245	2.4	119	2.3	115	7	7	3.6	4.6	.0
5	227	185	115	245	2.4	119	2.3	115	7	7	3.6	4.6	.0
6	227	185	115	245	2.4	119	2.3	115	7	7	3.6	4.6	.0
7	245	245	245	245	5.8	290	8.4	175	31	31	84	88	4
8	245	245	245	245	5.8	290	8.4	175	31	31	84	88	4
9	245	245	245	245	5.8	290	8.4	175	31	31	84	88	4
10	245	245	245	245	5.8	290	8.4	175	31	31	84	88	4

- C₁ Tuning Condenser.
- C₂ Neutralizing Condenser.
- C₃ R.F. Grid Bias Condenser .25 MF.
- C₄ R.F. Plate By-Pass Condenser .25 MF.
- C₅ Antenna Condenser .00025 MF.
- C₆ Det. Padding Condenser.
- C₇ Det. Screen Grid Bias Condenser .25 MF.
- C₈ Det. Control Grid Condenser .0001 MF.
- C₉ Det. Plate Condenser .0005 MF.
- C₁₀ 1st Audio Coupling Condenser 0.1 MF.
- C₁₁ 1st Audio Grid Condenser 0.5 MF.
- C₁₂ Filter Condensers 8.0 MF Each.
- L₁ Filter Choke.
- L₂ Speaker Field 2500 Ohms.
- J Phonograph Jack.
- D Dial Lamp.
- R₁ Volume Control 15,000 Ohms.
- R₂ R.F. Grid Bias Resistance 620 Ohms.
- R₃ Det. Control Grid Resistance .5 Megohm.
- R₄ Det. Screen Grid Resistance .5 Megohm.
- R₅ 1st Audio Coupling Resistance .1 Megohm.
- R₆ 1st Audio Grid Resistance .5 Megohm.
- R₇ 1st Audio Grid Bias Resistance 1750 Ohms.
- R₈ Hum Control 20 Ohms.
- R₉ Loss Current Resistance 4500 Ohms.
- R₁₀ 245 Grid Bias Resistance 650 Ohms.
- T₁ Antenna Transformer.
- T₂ R.F. Inter stage Transformer.
- T₃ Input Audio Transformer.
- T₄ Power Transformer.
- B₁ Hi-Lo S.P.D.T. Toggle Switch.
- B₂ S.P.S.T. Toggle Switch.

MODEL 65
Schematic

EMERSON RADIO AND PHONOGRAPH
CORPORATION

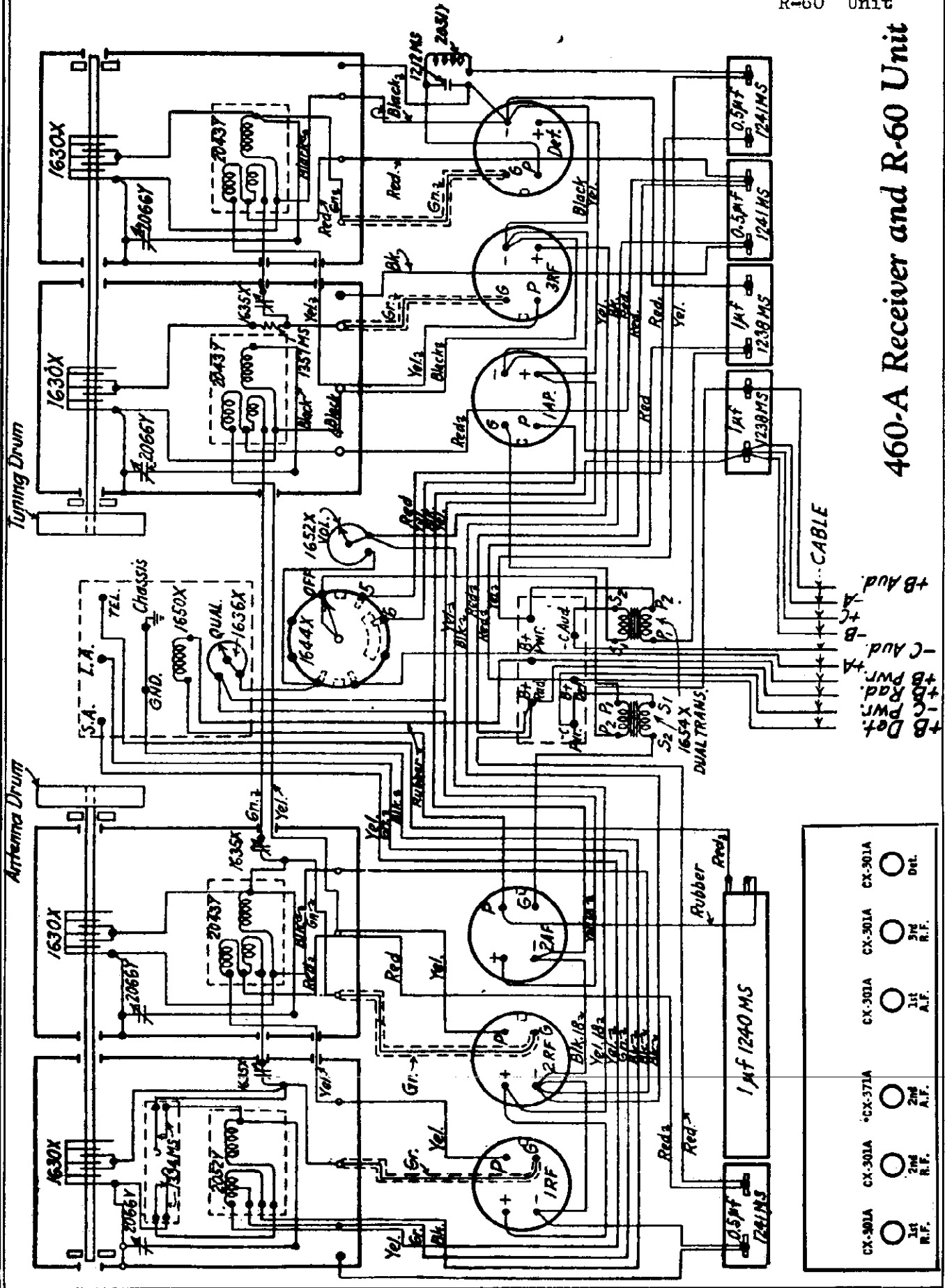


Voltage Data On Next Page

NOT USED WITH DYNAMIC SPEAKER TYPES 199

FADA RADIO & ELECTRIC CORP.

MODEL 460-A Receiver
R-60 Unit



460-A Receiver and R-60 Unit

CX-301A	CX-301A	CX-371A	CX-301A	CX-301A	CX-301A
1st R.F.	2nd R.F.	2nd A.F.	1st A.F.	5th R.F.	Det.

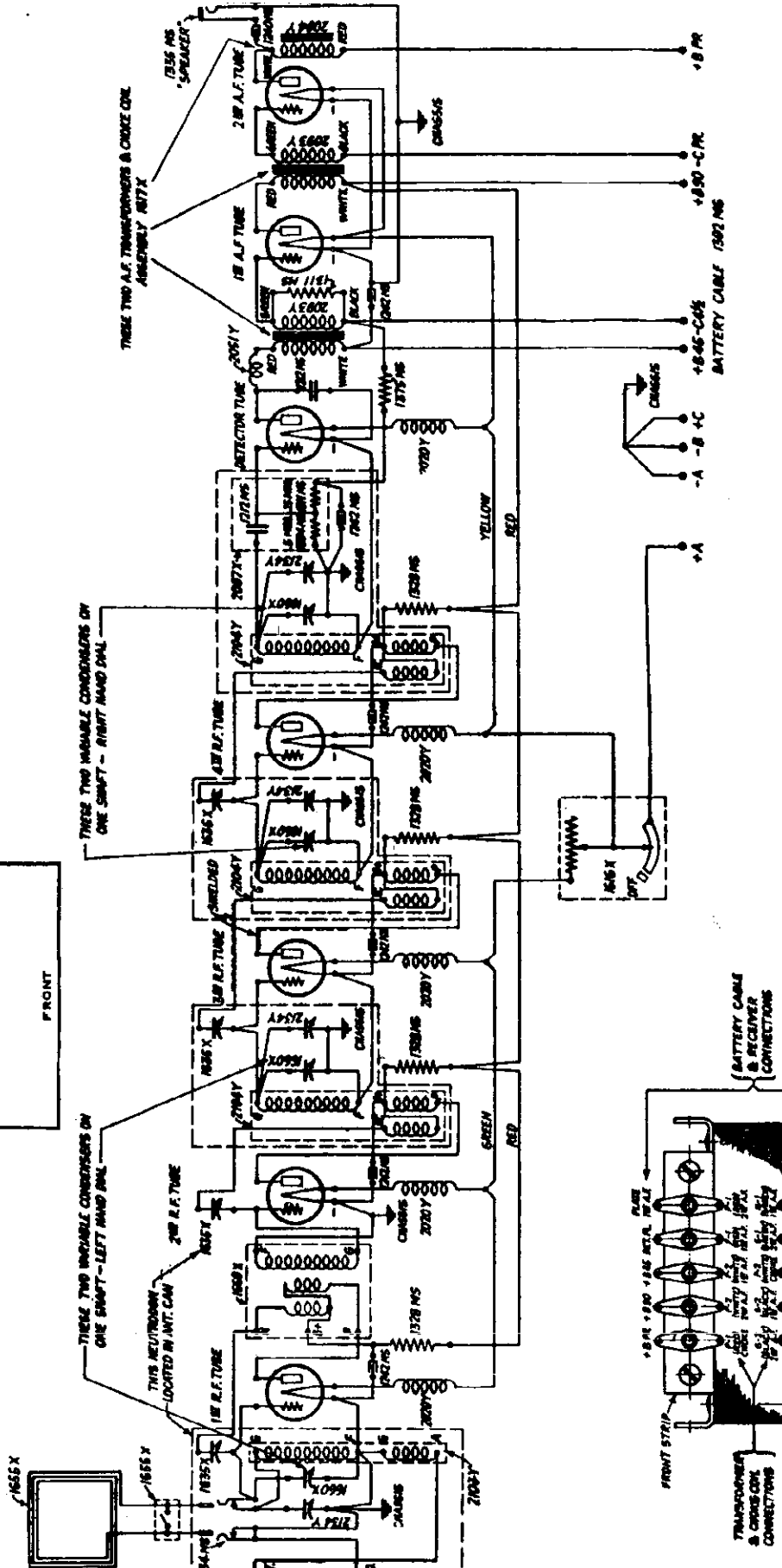
MODEL 475-A
SF 45/75
Schematic

FADA RADIO & ELECTRIC CORP

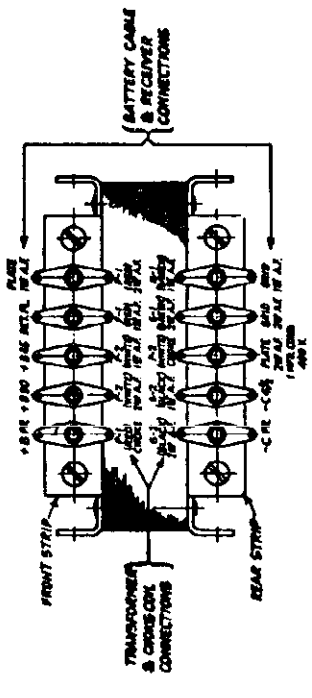
Models Fada's 475A, 45-75A

1 1/2" 30P 30P	2 1/2" 1A1	4 1/2" 1W	DET
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0

FRONT



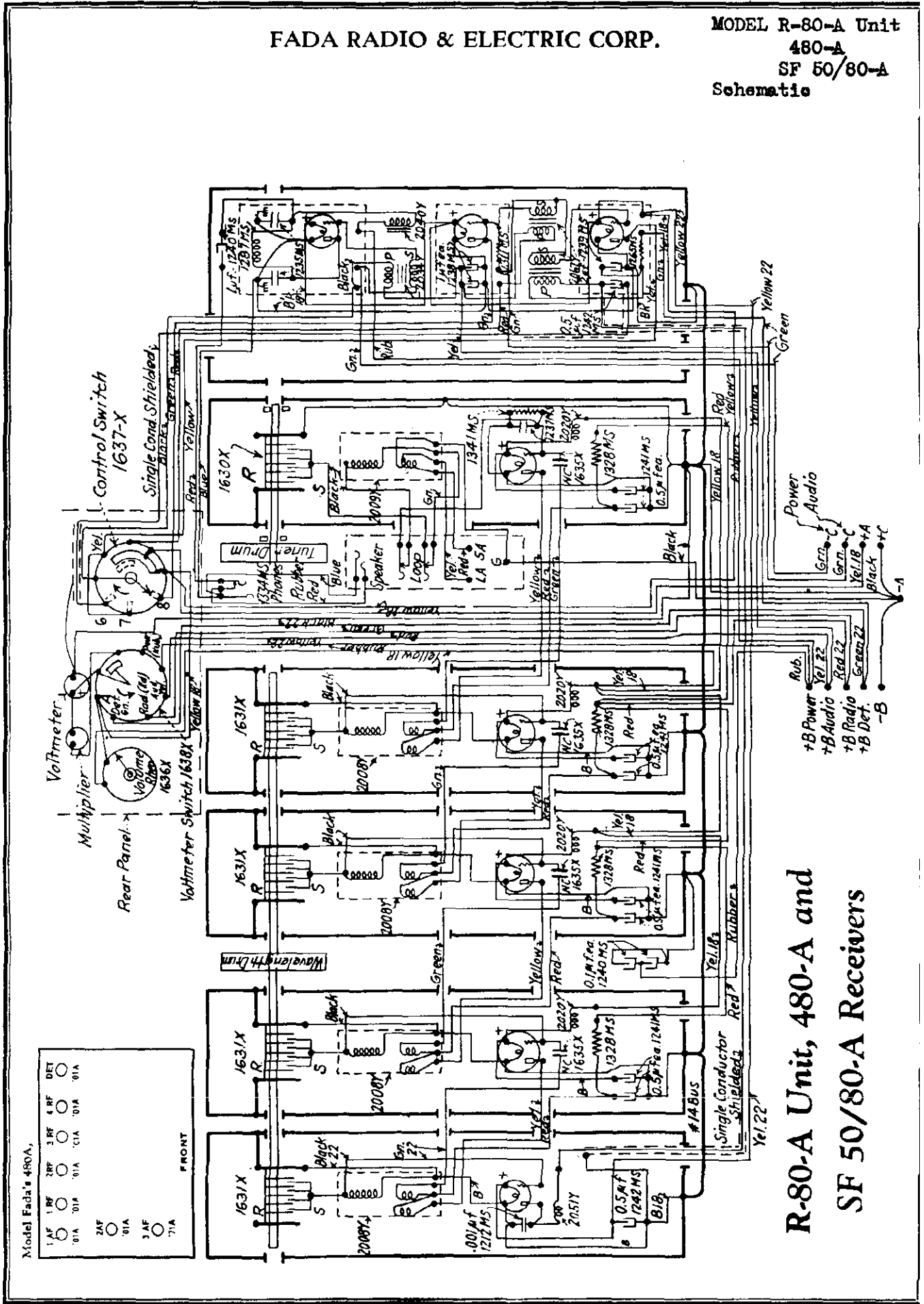
475-A and SF 45/75 Receivers



TRANSFORMER TERMINAL STRIP CONNECTIONS

FADA RADIO & ELECTRIC CORP.

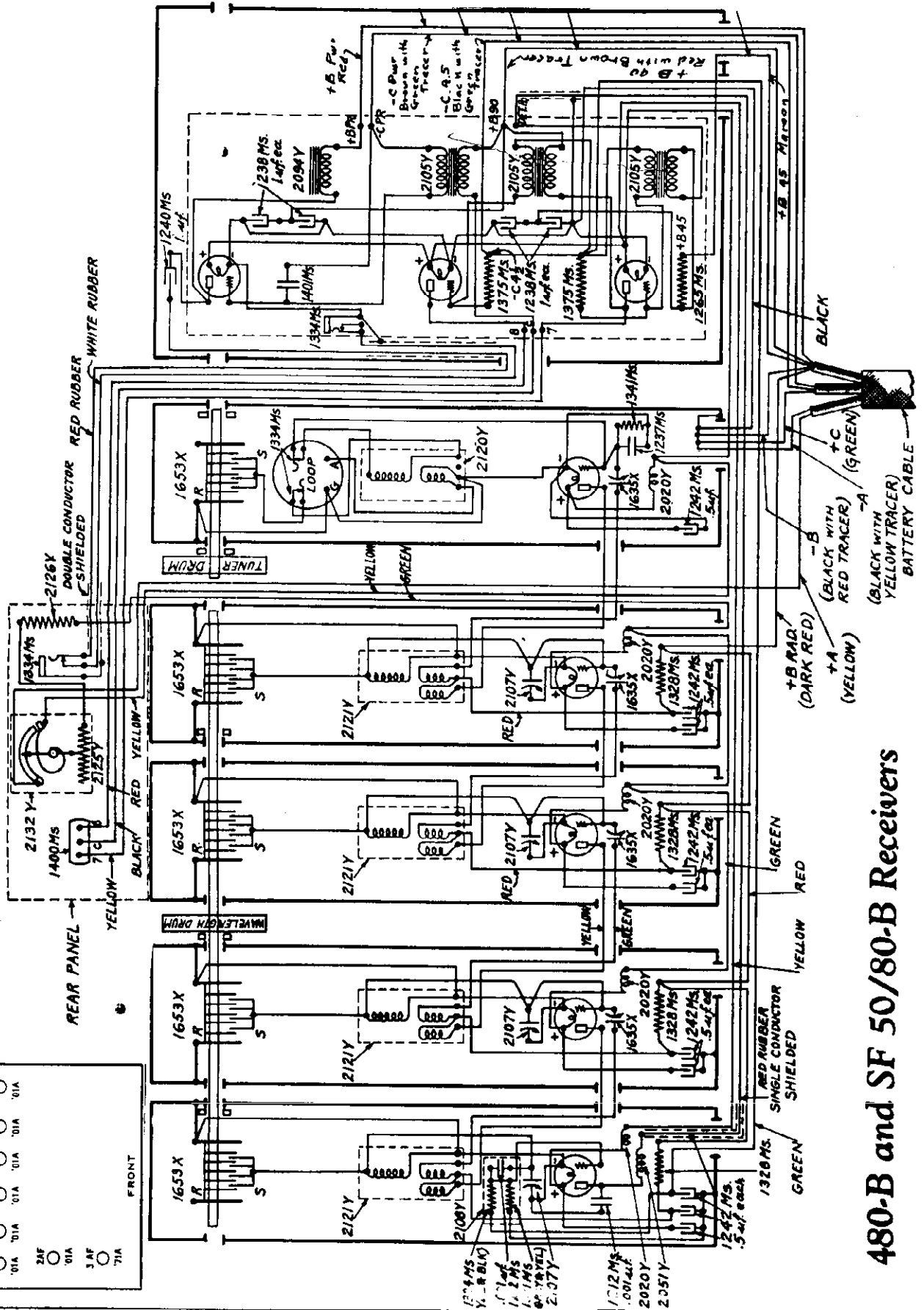
MODEL R-80-A Unit
480-A
SF 50/80-A
Schematic



R-80-A Unit, 480-A and
SF 50/80-A Receivers

MODEL 480-B
SF 50/80-B
Schematic

FADA RADIO & ELECTRIC CORP.



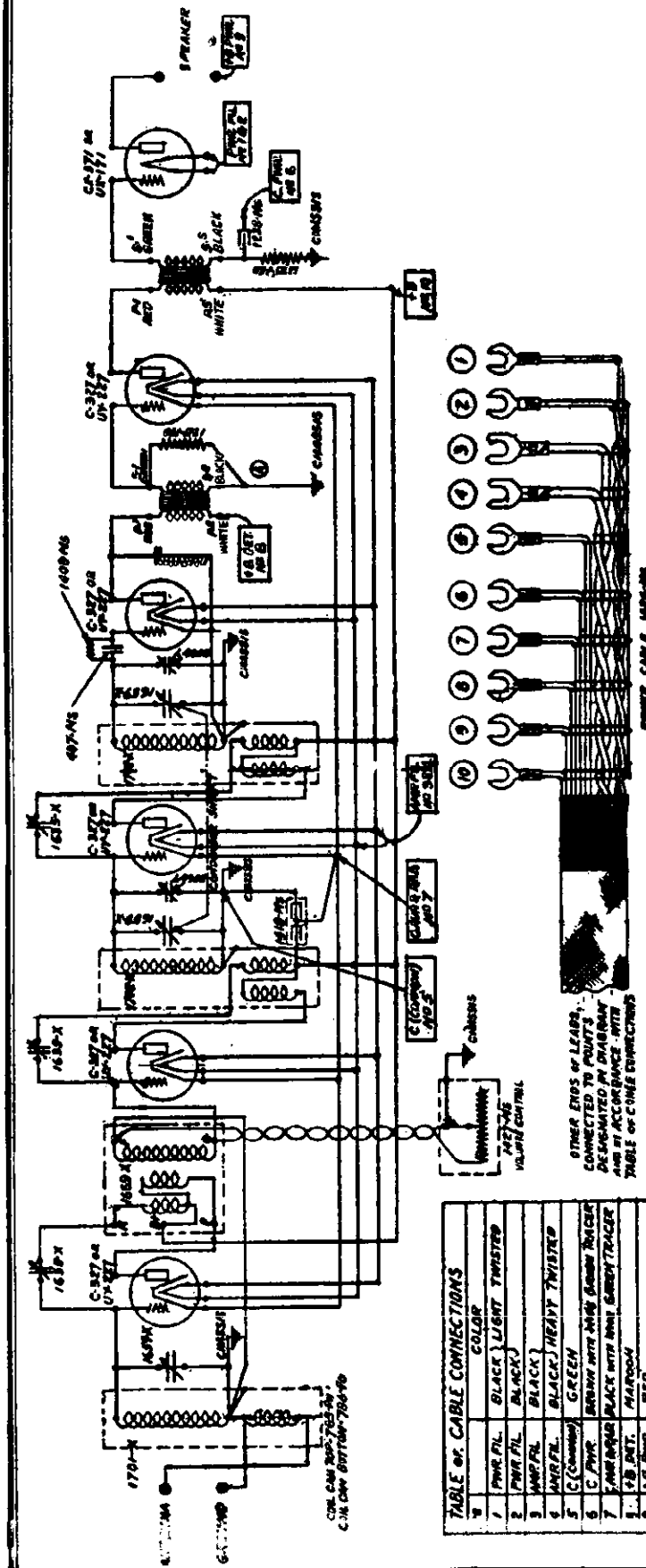
480-B and SF 50/80-B Receivers

Model Fada 480B

1 AF	2 RF	3 RF	4 RF	5 RF	6 RF	7 RF
01A	01A	01A	01A	01A	01A	01A
2 AF	3 AF	4 AF	5 AF	6 AF	7 AF	
01A	01A	01A	01A			

FADA RADIO & ELECTRIC CORP.

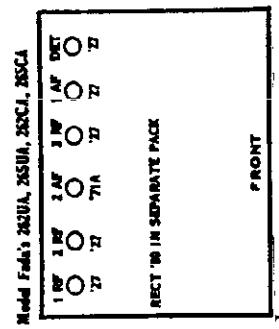
MODEL 475UA
472UA
475CA
472CA



"Special" A, C, Receiver 265-UA or CA and RP-65-UA or CA 262-UA or CA and RP-62-UA or CA

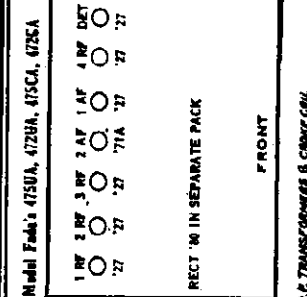
- 1212-MS Condenser - Detector filter - .001 mfd
- 1258-MS Condenser - By-pass - 1.0 mfd - 200 Volts (small)
- 1242-MS Condenser - By-pass - 0.5 mfd - 200 Volts (small)
- 1311-MS Resistance - carbon - 250,000 ohms (yellow)
- 1375-MS Resistance - carbon - 125,000 ohms (grey)
- 1407-MS Grid Condenser - .000125 mfd
- 1408-MS Grid Leak - 2 meg
- 1418-MS Condenser - By-pass - 0.25 - 0.25 mfd 200-400V.
- 1341-MS Resistance - carbon (green) 20,000 ohms
- 1410-MS Main filter condenser block - 10 1/2 mfd
- 1414-MS Resistance - W.W. (yellow & white) - 250 ohms
- 1416-MS Resistance - W.W. (green & white) - 2,000 ohms
- 1416-MS Resistance - W.W. (white & white) - 3,000 ohms
- 1417-MS Resistance - carbon (blue) - 50,000 ohms
- 1419-MS Condenser (line buffer) - 0.5 mfd - 400 volts

For Power Unit See Model "C"



MODEL 262UA, 262CA
265UA, 265CA

FADA RADIO & ELECTRIC CORP.



- 1212-Ms .001 mfd
- 1238-Ms 1.0 mfd
- 1240-Ms 1.0 mfd
- 1242-Ms 0.5 mfd
- 1311-Ms 250,000 ohms (yellow)
- 1357-Ms W.W. 180 ohms
- 1375-Ms Carbon - 125,000 ohms (grey)
- 1407-Ms .000125 mfd
- 1408-Ms 2 mfd
- 1418-Ms .25-.26 mfd 200-400V. (3 term)
- 2-1334-Ms Carbon - 1,200 ohms (dark green)

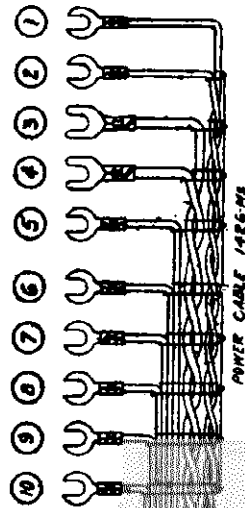
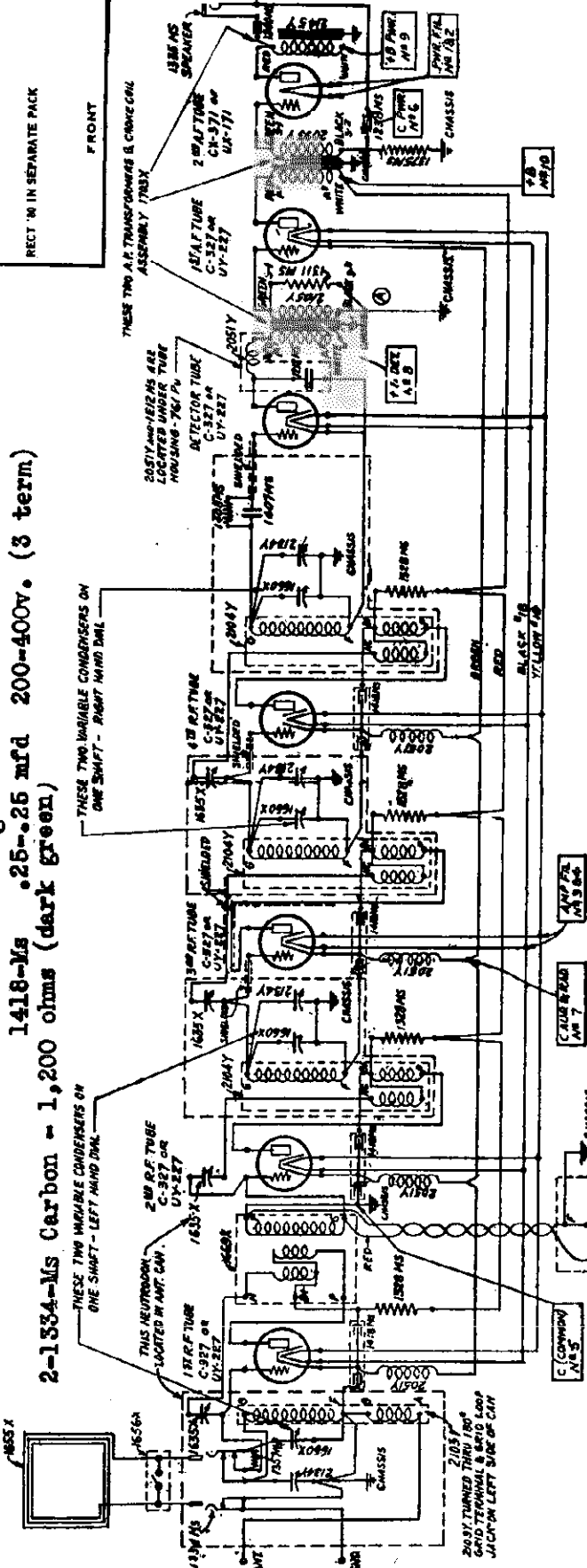
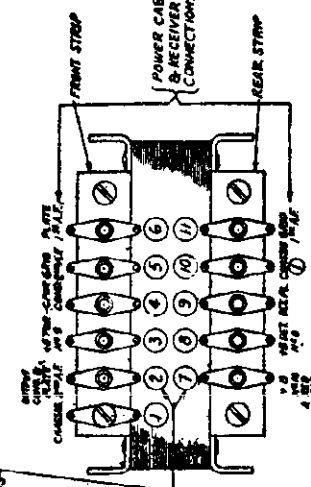


TABLE OF CABLE CONNECTIONS

NO	WIRE COLOR	COLOR
1	PR. FIL.	BLACK
2	PR. FIL.	BLACK
3	AMP. FIL.	BLACK
4	AMP. FIL.	BLACK
5	C (COMMON)	GREEN
6	C (COMMON)	GREEN
7	C (COMMON)	GREEN
8	C (COMMON)	GREEN
9	5.8 DET.	RED
10	5.8 DET.	RED



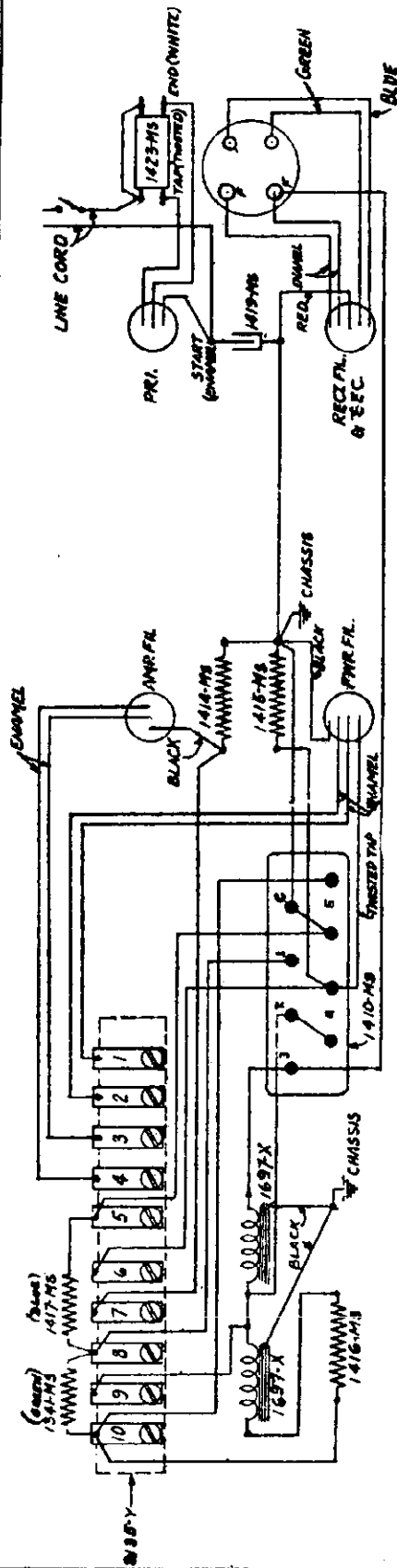
For Power Unit See Model "C"

"7" AC Receiver
475-UA or CA and SF45/75-UA or CA
472-UA or CA and SF45/72-UA or CA

- *RESISTANCES TRANSFORMERS & CHOKE COIL CONNECTIONS
- 1 GREEN CONNECTION
- 2 P (WHITE) CHOKE
- 3 P (BLACK) CHOKE
- 4 P (BLACK) CHOKE
- 5 P (GREEN) CHOKE
- 6 P (RED) CHOKE
- 7 P (WHITE) CHOKE
- 8 P (WHITE) CHOKE
- 9 P (RED) CHOKE
- 10 P (BLACK) CHOKE
- 11 P (GREEN) CHOKE
- 12 P (BLACK) CHOKE
- 13 P (RED) CHOKE
- 14 P (WHITE) CHOKE
- 15 P (WHITE) CHOKE
- 16 P (RED) CHOKE
- 17 P (BLACK) CHOKE
- 18 P (GREEN) CHOKE
- 19 P (BLACK) CHOKE
- 20 P (RED) CHOKE
- 21 P (WHITE) CHOKE
- 22 P (WHITE) CHOKE
- 23 P (RED) CHOKE
- 24 P (BLACK) CHOKE
- 25 P (GREEN) CHOKE
- 26 P (BLACK) CHOKE
- 27 P (RED) CHOKE
- 28 P (WHITE) CHOKE
- 29 P (WHITE) CHOKE
- 30 P (RED) CHOKE
- 31 P (BLACK) CHOKE
- 32 P (GREEN) CHOKE
- 33 P (BLACK) CHOKE
- 34 P (RED) CHOKE
- 35 P (WHITE) CHOKE
- 36 P (WHITE) CHOKE
- 37 P (RED) CHOKE
- 38 P (BLACK) CHOKE
- 39 P (GREEN) CHOKE
- 40 P (BLACK) CHOKE
- 41 P (RED) CHOKE
- 42 P (WHITE) CHOKE
- 43 P (WHITE) CHOKE
- 44 P (RED) CHOKE
- 45 P (BLACK) CHOKE
- 46 P (GREEN) CHOKE
- 47 P (BLACK) CHOKE
- 48 P (RED) CHOKE
- 49 P (WHITE) CHOKE
- 50 P (WHITE) CHOKE
- 51 P (RED) CHOKE
- 52 P (BLACK) CHOKE
- 53 P (GREEN) CHOKE
- 54 P (BLACK) CHOKE
- 55 P (RED) CHOKE
- 56 P (WHITE) CHOKE
- 57 P (WHITE) CHOKE
- 58 P (RED) CHOKE
- 59 P (BLACK) CHOKE
- 60 P (GREEN) CHOKE
- 61 P (BLACK) CHOKE
- 62 P (RED) CHOKE
- 63 P (WHITE) CHOKE
- 64 P (WHITE) CHOKE
- 65 P (RED) CHOKE
- 66 P (BLACK) CHOKE
- 67 P (GREEN) CHOKE
- 68 P (BLACK) CHOKE
- 69 P (RED) CHOKE
- 70 P (WHITE) CHOKE
- 71 P (WHITE) CHOKE
- 72 P (RED) CHOKE
- 73 P (BLACK) CHOKE
- 74 P (GREEN) CHOKE
- 75 P (BLACK) CHOKE
- 76 P (RED) CHOKE
- 77 P (WHITE) CHOKE
- 78 P (WHITE) CHOKE
- 79 P (RED) CHOKE
- 80 P (BLACK) CHOKE
- 81 P (GREEN) CHOKE
- 82 P (BLACK) CHOKE
- 83 P (RED) CHOKE
- 84 P (WHITE) CHOKE
- 85 P (WHITE) CHOKE
- 86 P (RED) CHOKE
- 87 P (BLACK) CHOKE
- 88 P (GREEN) CHOKE
- 89 P (BLACK) CHOKE
- 90 P (RED) CHOKE
- 91 P (WHITE) CHOKE
- 92 P (WHITE) CHOKE
- 93 P (RED) CHOKE
- 94 P (BLACK) CHOKE
- 95 P (GREEN) CHOKE
- 96 P (BLACK) CHOKE
- 97 P (RED) CHOKE
- 98 P (WHITE) CHOKE
- 99 P (WHITE) CHOKE
- 100 P (RED) CHOKE

FADA RADIO & ELECTRIC CORP.

MODEL "C" Electric Unit

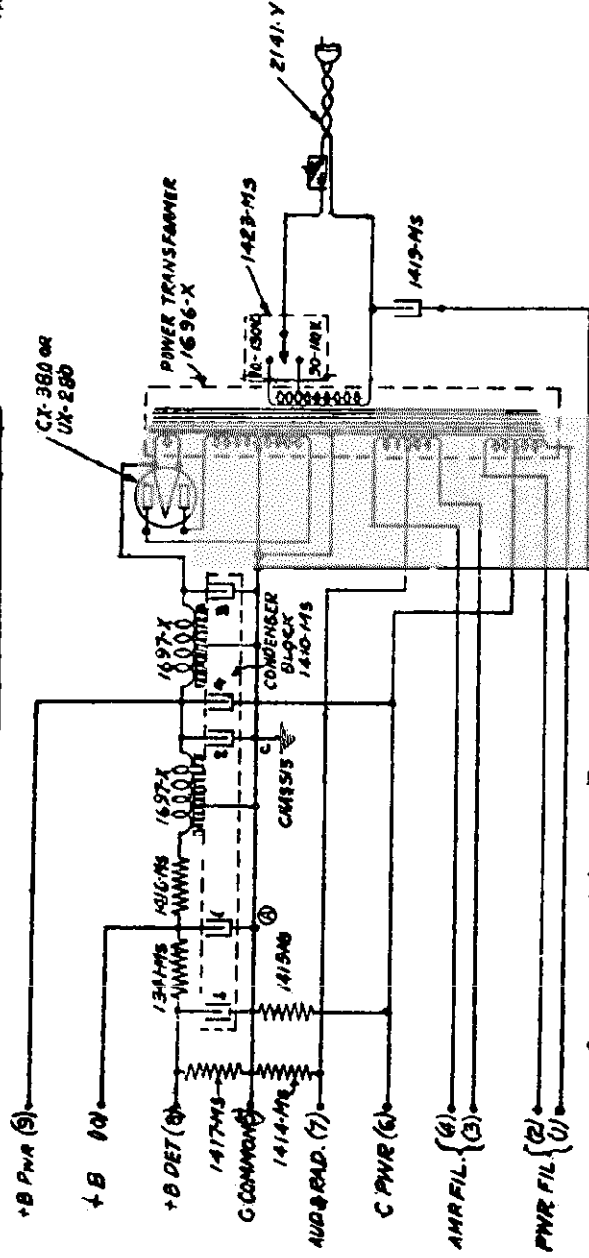


ACTUAL WIRING DIAGRAM

TABLE OF CABLE CONNECTIONS

- 1 } POWER FILAMENT
- 2 }
- 3 } AMP FILAMENT
- 4 }
5. C. COMMON
6. C. PWR
7. C. AUD. & RAD.
8. +B DET.
9. +B PWR
10. +B

Type "J" unit for 25 cycle current is similar, except that a 1706X power transformer is used instead of the 1696X transformer as indicated on the type "C" unit for 60 cycles.



SCHEMATIC WIRING DIAGRAM

1341 Ms	Carbon	20,000 ohms	red and green or green only
1414 Ms	Wire	250 ohms	yellow and white
1415 Ms	Wire	2,000 ohms	green and white
1416 Ms	Wire	3,000 ohms	white and white
1417 Ms	Carbon	50,000 ohms	blue

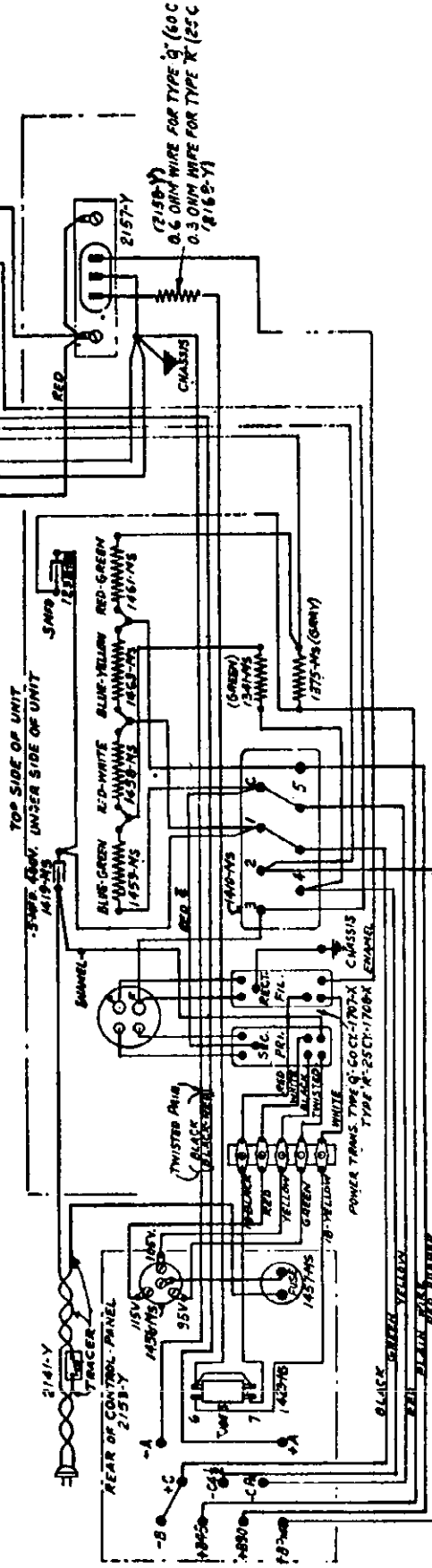
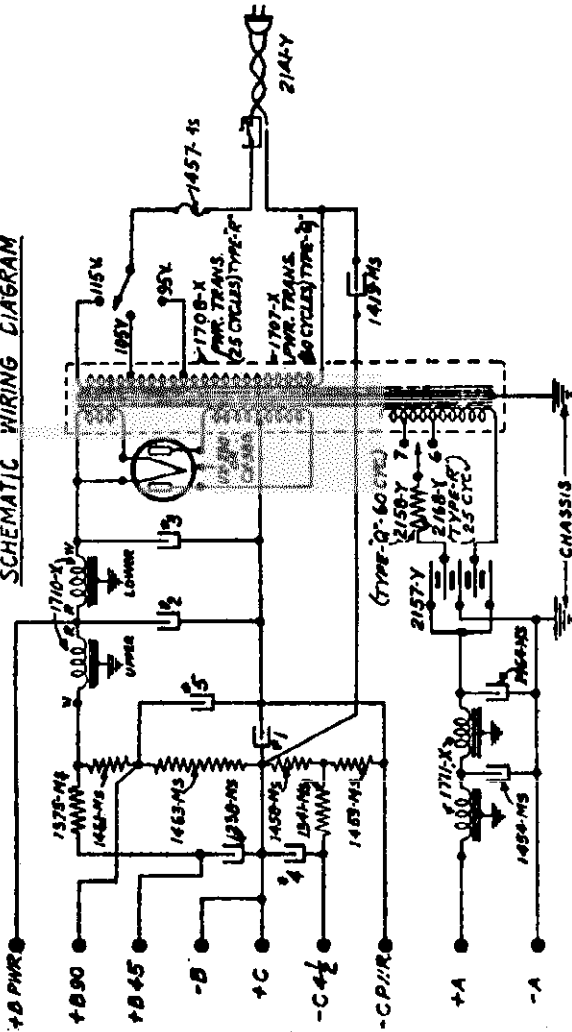
Type "C" Electric Unit, used with "Special" and "7" AC Receivers

MODEL ABC S.P.U.
66-Q, 62-R

FADA RADIO & ELECTRIC CORP.

- 1375 Ms Grey 125,000 ohms
- 1341 Ms Green 20,000 ohms
- 1458 Ms Red-White 75 ohms
- 1459 Ms Blue-Green 500 ohms
- 1461 Ms Red-Green 750 ohms
- 1463 Ms Blue-Yellow 10,000 ohms

SCHEMATIC WIRING DIAGRAM



ACTUAL WIRING DIAGRAM

“ABC” Six Volt Tube Supply Unit — Types 66-Q and 62-R

MODEL 10, 11, 30, 31
 MODEL 10Z, 11Z, 30Z, 31Z FADA RADIO & ELECTRIC CORP.
 Schematic

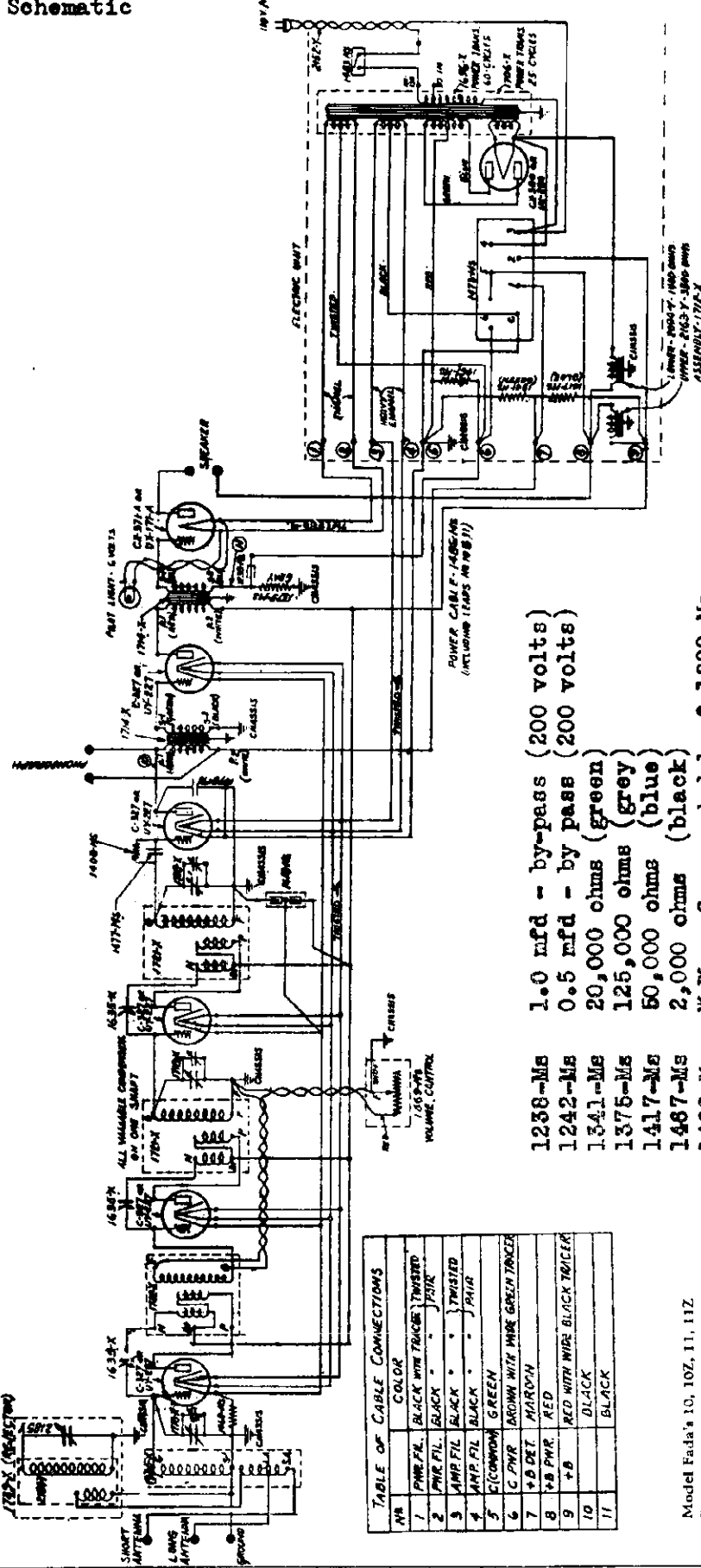
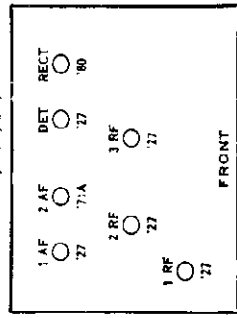


TABLE OF CABLE CONNECTIONS

NO	COLOR
1	1 PWR FIL. BLACK WITH TRACER (TWISTED PAIR)
2	2 PWR FIL. BLACK - - - PAIR
3	3 AMP FIL. BLACK - - - TWISTED PAIR
4	4 AMP FIL. BLACK - - - PAIR
5	5 (COMMON) GREEN
6	6 C PWR. BROWN WITH WIRE GREEN TRACER
7	7 +B DET. MAROON
8	8 +B PWR. RED
9	9 +B RED WITH WIRE BLACK TRACER
10	10 BLACK
11	11 BLACK

Model Fada's 10, 10Z, 11, 11Z.

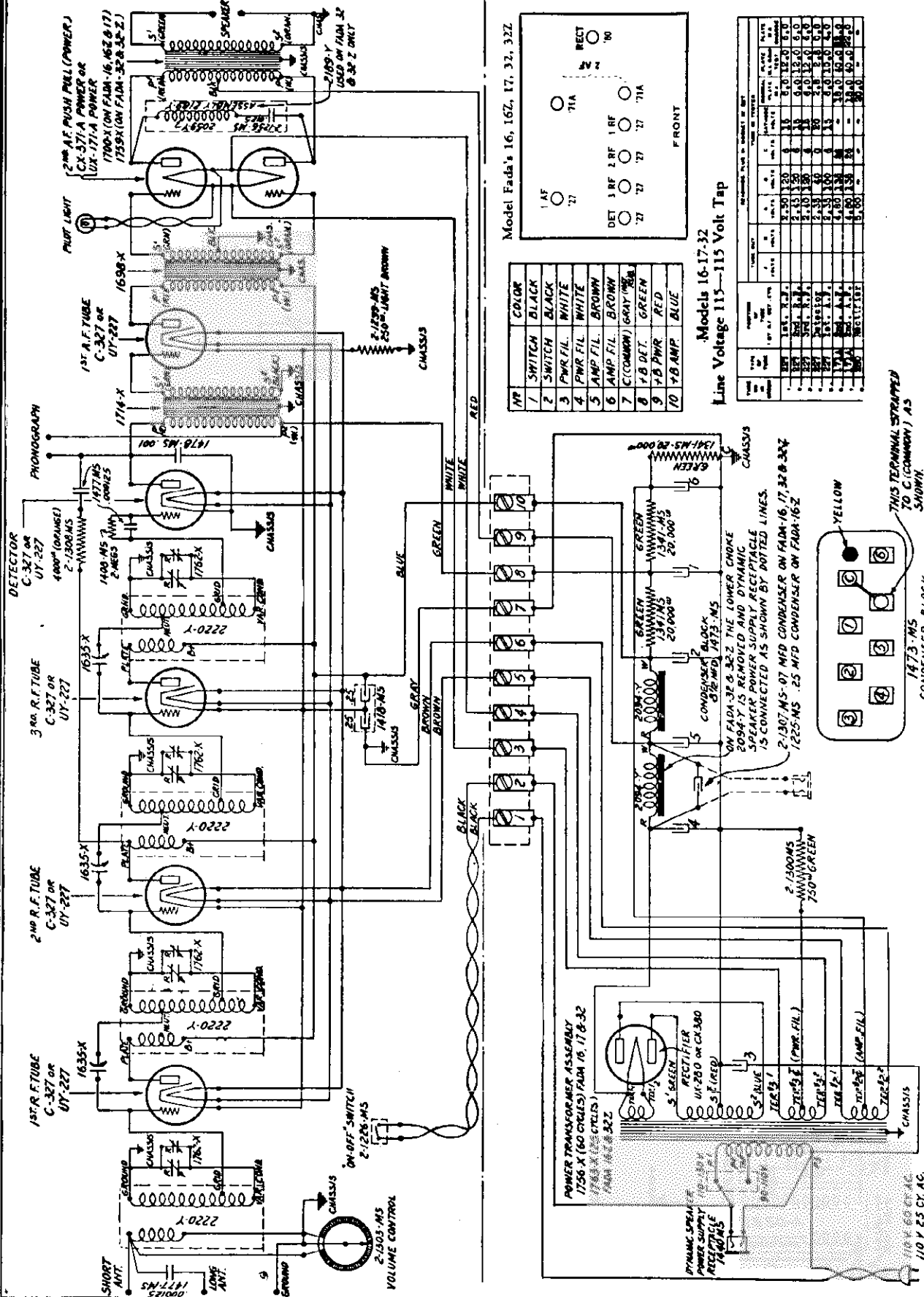


- 1238-Ms 1.0 mfd - by-pass (200 volts)
- 1242-Ms 0.5 mfd - by pass (200 volts)
- 1341-Me 20,000 ohms (green)
- 1375-Ms 125,000 ohms (grey)
- 1417-Ms 50,000 ohms (blue)
- 1467-Ms 2,000 ohms (black)
- 1468-Ms W.W. - Superseded by 2-1299-Ms
- 1469-Ms Volume control - 20,000 ohms
- 1477-Ms .000125 mfd moulded mica (green dot)
- 1478-Ms Condenser - .001 mfd moulded mica (yellow)
- 1485-Ms Pilot lamp - 6 volts (orange)
- 2-1299-Ms Resistor - 250 ohms (light brown)
- 2094-Y Choke - 1,400 ohms
- 2165-Y Choke - 3,500 ohms

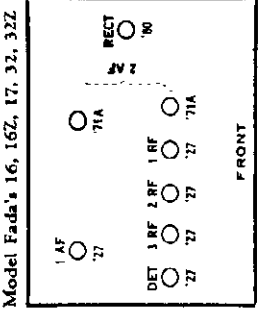
10, 11, 30 and 31 Receivers—60 cycles
 10Z, 11Z, 30Z and 31Z Receivers—25 cycles

MODEL 16,17,32
MODEL 16Z,32Z
Schematic

FADA RADIO & ELECTRIC CORP.

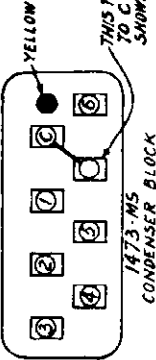


NO	COLOR	1	2	3	4	5	6	7	8	9	10
1	SWITCH	BLACK	BLACK	WHITE	WHITE	BROWN	BROWN	C (COMMON)	GRAY (PUB)	Y.B. PWR	RED
2	SWITCH	BLACK	BLACK	WHITE	WHITE	BROWN	BROWN	C (COMMON)	GRAY (PUB)	Y.B. PWR	RED
3	PWR FIL.	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
4	PWR FIL.	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
5	PWR FIL.	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
6	PWR FIL.	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE	WHITE
7	AMP FIL.	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN
8	AMP FIL.	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN	BROWN
9	Y.B. DET.	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN	GREEN
10	Y.B. PWR.	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED
11	Y.B. AMP.	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE	BLUE



Models 16-17-32
 Line Voltage 115—115 Volt Tap

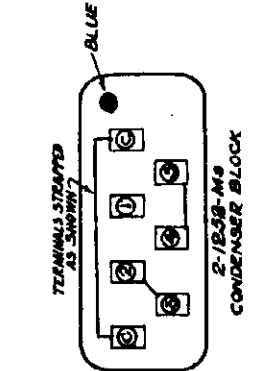
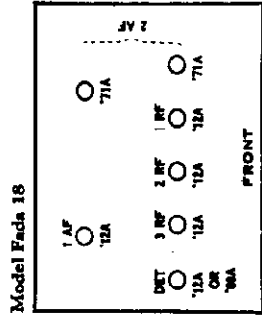
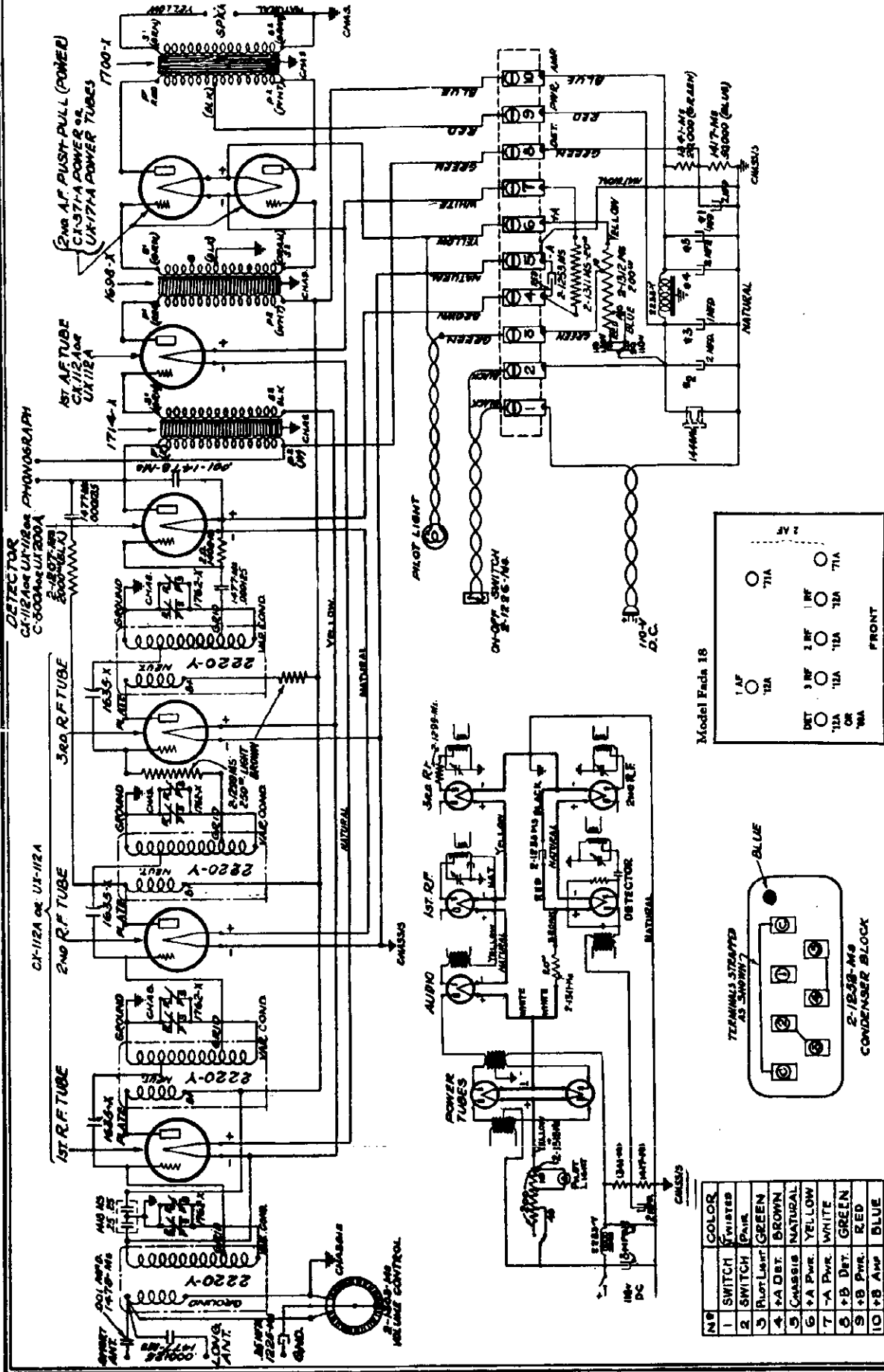
LINE VOLTAGE	RECT	1 AF	2 RF	3 RF	4 RF	5 RF	6 RF	71A	RECT
115	10	27	27	27	27	27	27	27	10
110	10	27	27	27	27	27	27	27	10
105	10	27	27	27	27	27	27	27	10
100	10	27	27	27	27	27	27	27	10
95	10	27	27	27	27	27	27	27	10
90	10	27	27	27	27	27	27	27	10
85	10	27	27	27	27	27	27	27	10
80	10	27	27	27	27	27	27	27	10
75	10	27	27	27	27	27	27	27	10
70	10	27	27	27	27	27	27	27	10



16, 17 and 32 Receivers - 60 cycles **16-Z and 32-Z Receivers - 25 cycles**

MODEL 18 DC
Schematic

FADA RADIO & ELECTRIC CORP.

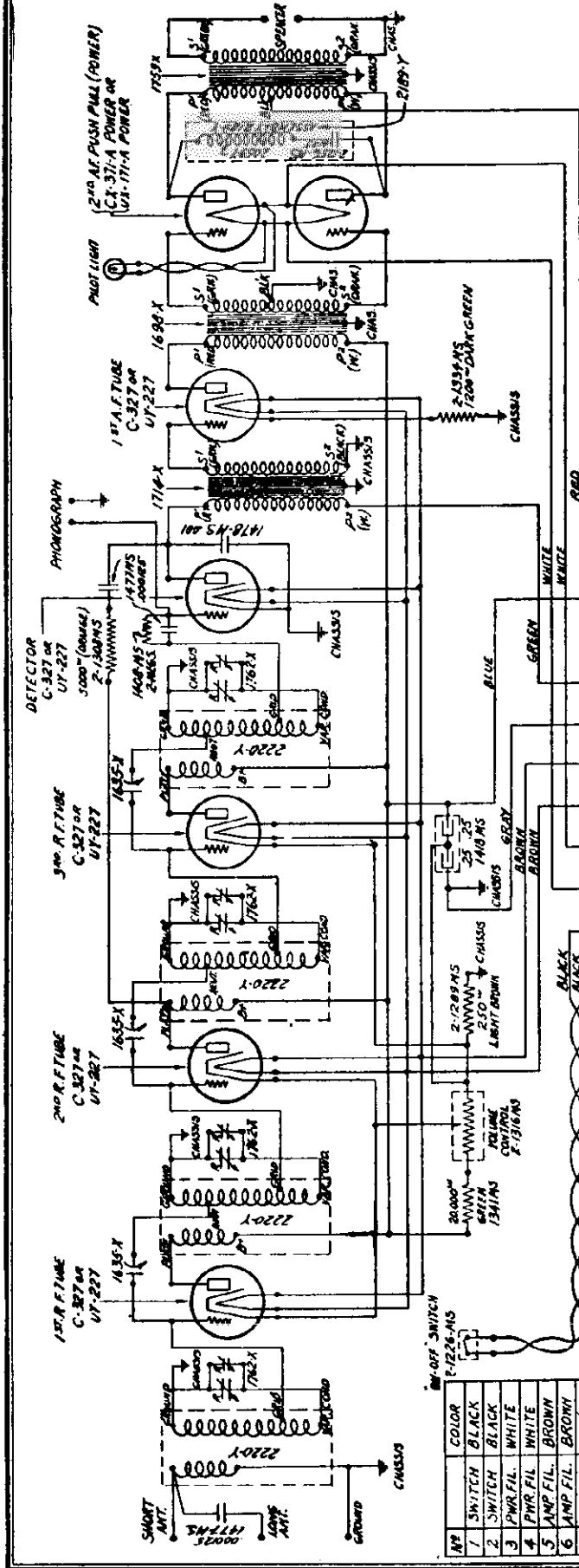


NO	COLOR
1	SWITCH (WIA)
2	SWITCH (PWR)
3	PILOT LIGHT (GREEN)
4	+A DET. (BROWN)
5	CHASSIS (NATURAL)
6	+A PWR. (YELLOW)
7	+A PWR. (WHITE)
8	+B DET. (GREEN)
9	+B PWR. (RED)
10	+B AWP. (BLUE)

18 DC Receiver
for use with direct current only

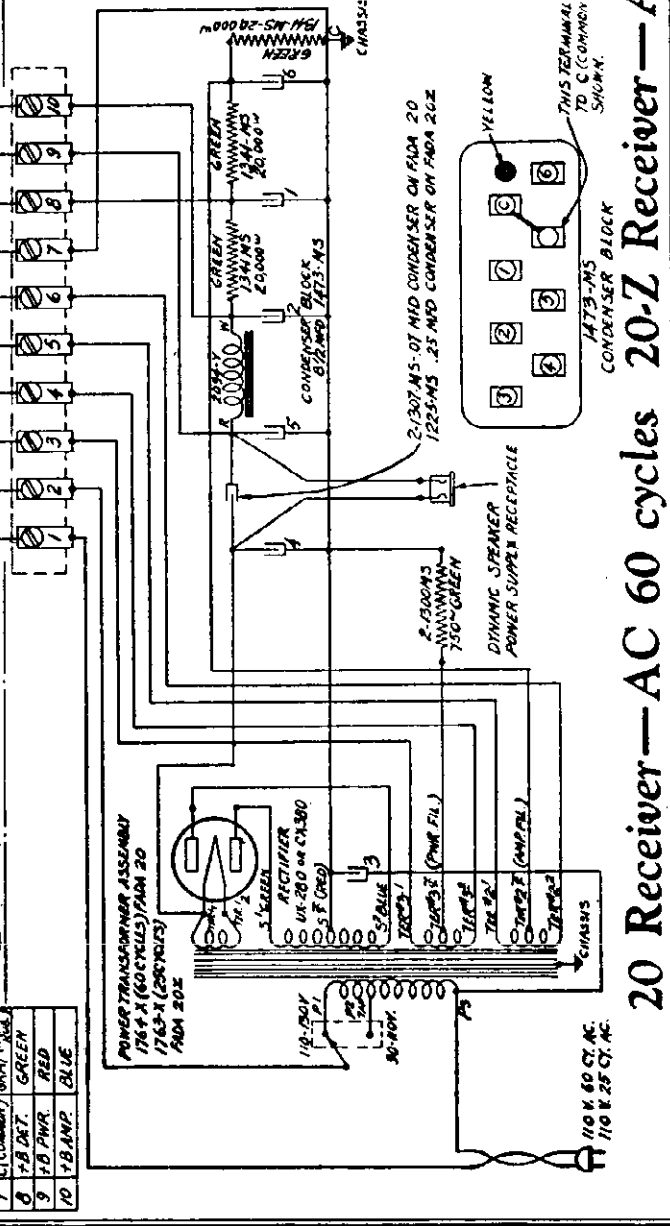
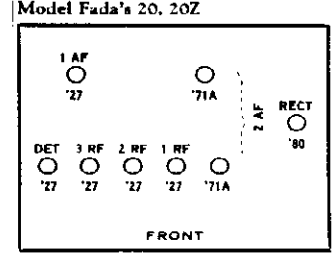
FADA RADIO & ELECTRIC CORP.

MODEL 20,
MODEL 20Z
Schematic



Line Voltage 115—Set on High Voltage—Volume Control Position Max

TUBE NO	TYPE	POSITION OF TUBE IN SET OR SET ETC.	TUBE DATA					REARINGS PLUG IN SOCKET OF SET					
			A VOLTS	G VOLTS	B VOLTS	C VOLTS	D VOLTS	CATHODE HEATER VOLTS	NO. OF PINNACLES	PLATE CHARGE	SCREEN CHARGE	SCREEN SUPPLY	
1	327	1st AF	2.5	14.8	2.4	140	7	18	6.8	11.0	4.8	-	-
2	327	2nd AF	2.5	14.8	2.4	140	7	18	6.8	11.0	4.8	-	-
3	327	3rd AF	2.5	14.8	2.4	140	7	18	6.8	11.0	4.8	-	-
4	327	4th AF	2.5	14.8	2.4	140	7	18	6.8	11.0	4.8	-	-
5	327	DET.	2.5	4.6	2.4	46	0	21	5.4	8.0	1.6	-	-
6	327	1st AF	2.5	14.8	2.4	140	7	18	5.0	8.7	1.7	-	-
7	371	2nd AF	5.1	186	5.0	184	53	-	80.0	85.0	5.8	-	-
8	371	3rd AF	5.1	186	5.0	184	53	-	80.0	85.0	5.8	-	-
9	380	Rect.	5.1	-	5.0	-	-	-	84	-	-	-	-



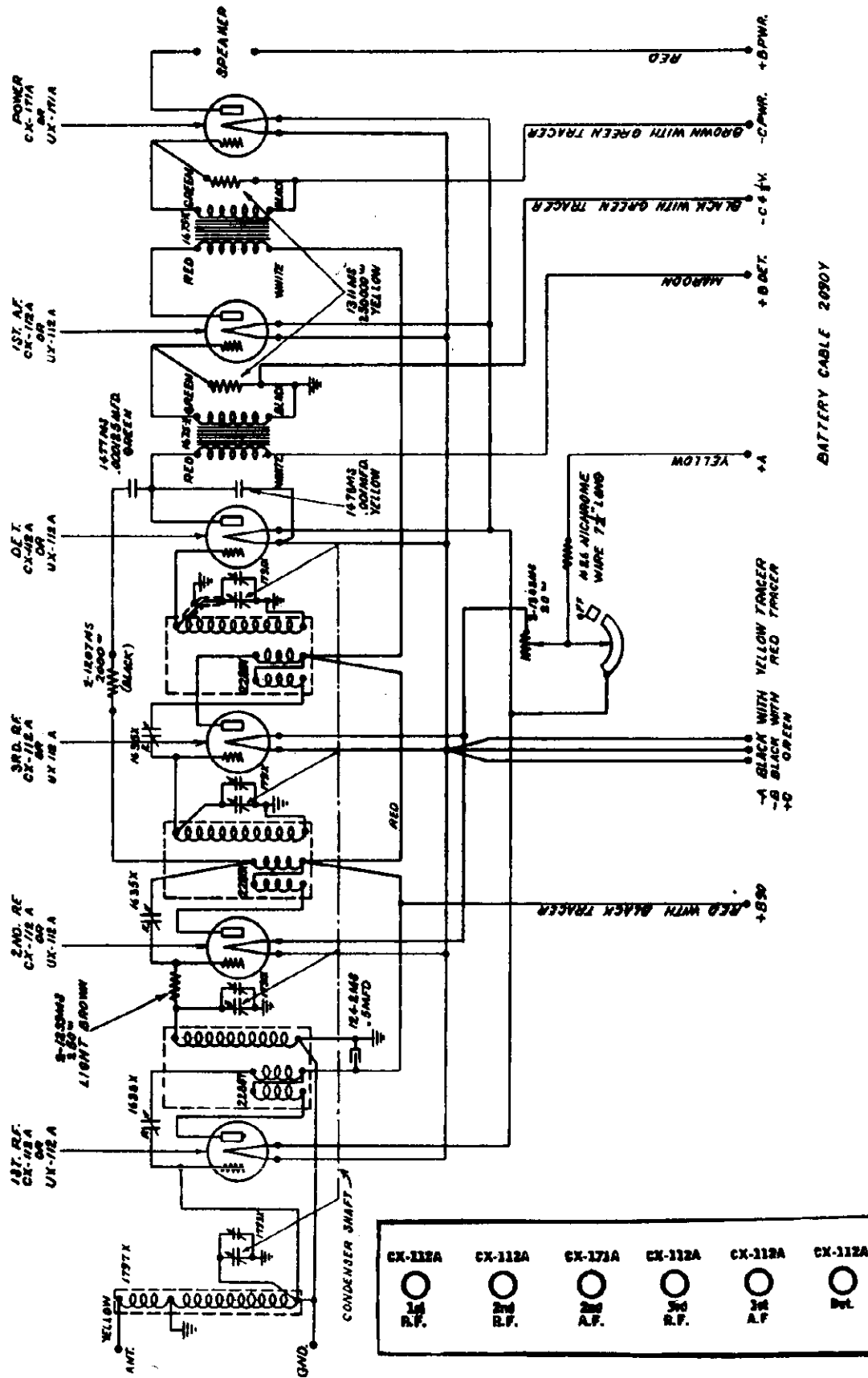
NO	COLOR
1	SWITCH BLACK
2	SWITCH BLACK
3	PWR. FIL. WHITE
4	PWR. FIL. WHITE
5	AMP. FIL. BROWN
6	AMP. FIL. BROWN
7	C (COMMON) GRAY (RES.)
8	P.B. DRT. GREEN
9	P.B. PWR. RED
10	P.B. AMP. BLUE

20 Receiver—AC 60 cycles 20-Z Receiver—AC 25 cycles

110 V. 50 CY. AC.
110 V. 25 CY. AC.

MODEL 22 Battery Schematic

FADA RADIO & ELECTRIC CORP.

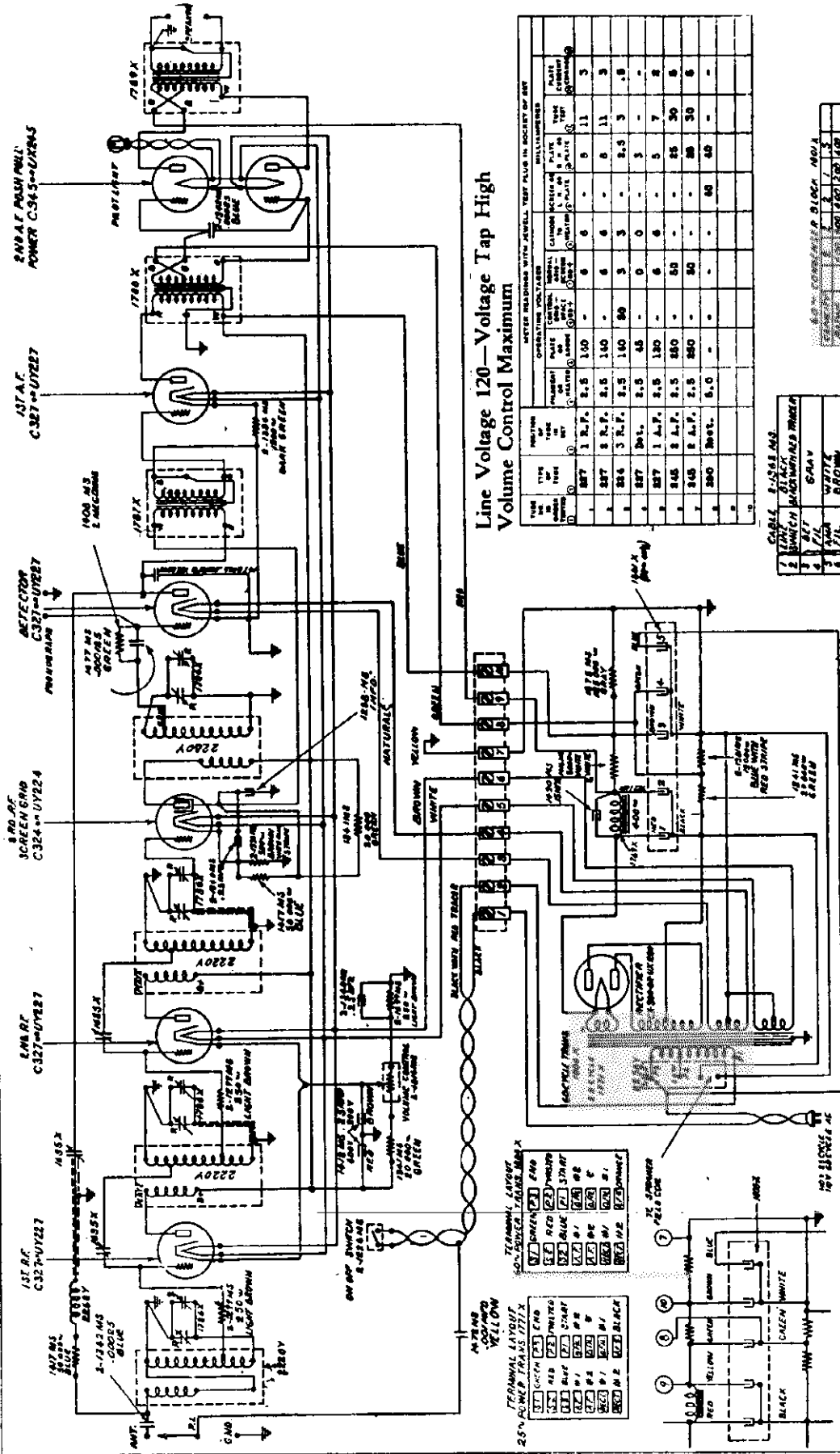


BATTERY CABLE 2090Y



22 Battery Model Receiver

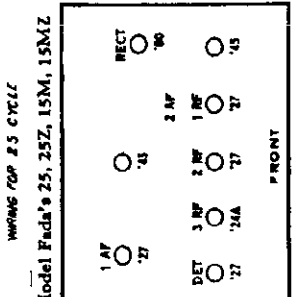
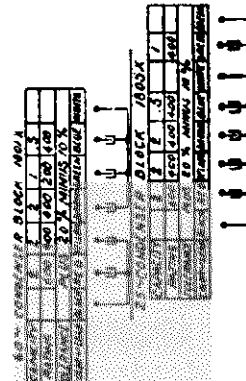
MODEL 25 and 25Z
M-250 and M-250Z units FADA RADIO & ELECTRIC CORP.



Line Voltage 120—Voltage Tap High
Volume Control Maximum

LINE VOLTAGE	TAP	OPERATING POINTS		RELATIVE VOLUME		RELATIVE TONE	RELATIVE DISTORTION	RELATIVE EFFICIENCY
		POWER	CURRENT	TO 100%	TO 100%			
110	1	1.00	1.00	100	100	100	100	100
115	2	1.10	1.10	110	110	110	110	110
120	3	1.20	1.20	120	120	120	120	120
125	4	1.30	1.30	130	130	130	130	130
130	5	1.40	1.40	140	140	140	140	140
135	6	1.50	1.50	150	150	150	150	150
140	7	1.60	1.60	160	160	160	160	160
145	8	1.70	1.70	170	170	170	170	170
150	9	1.80	1.80	180	180	180	180	180
155	10	1.90	1.90	190	190	190	190	190
160	11	2.00	2.00	200	200	200	200	200
165	12	2.10	2.10	210	210	210	210	210
170	13	2.20	2.20	220	220	220	220	220
175	14	2.30	2.30	230	230	230	230	230
180	15	2.40	2.40	240	240	240	240	240
185	16	2.50	2.50	250	250	250	250	250
190	17	2.60	2.60	260	260	260	260	260
195	18	2.70	2.70	270	270	270	270	270
200	19	2.80	2.80	280	280	280	280	280
205	20	2.90	2.90	290	290	290	290	290
210	21	3.00	3.00	300	300	300	300	300
215	22	3.10	3.10	310	310	310	310	310
220	23	3.20	3.20	320	320	320	320	320
225	24	3.30	3.30	330	330	330	330	330
230	25	3.40	3.40	340	340	340	340	340
235	26	3.50	3.50	350	350	350	350	350
240	27	3.60	3.60	360	360	360	360	360
245	28	3.70	3.70	370	370	370	370	370
250	29	3.80	3.80	380	380	380	380	380
255	30	3.90	3.90	390	390	390	390	390
260	31	4.00	4.00	400	400	400	400	400
265	32	4.10	4.10	410	410	410	410	410
270	33	4.20	4.20	420	420	420	420	420
275	34	4.30	4.30	430	430	430	430	430
280	35	4.40	4.40	440	440	440	440	440
285	36	4.50	4.50	450	450	450	450	450
290	37	4.60	4.60	460	460	460	460	460
295	38	4.70	4.70	470	470	470	470	470
300	39	4.80	4.80	480	480	480	480	480
305	40	4.90	4.90	490	490	490	490	490
310	41	5.00	5.00	500	500	500	500	500

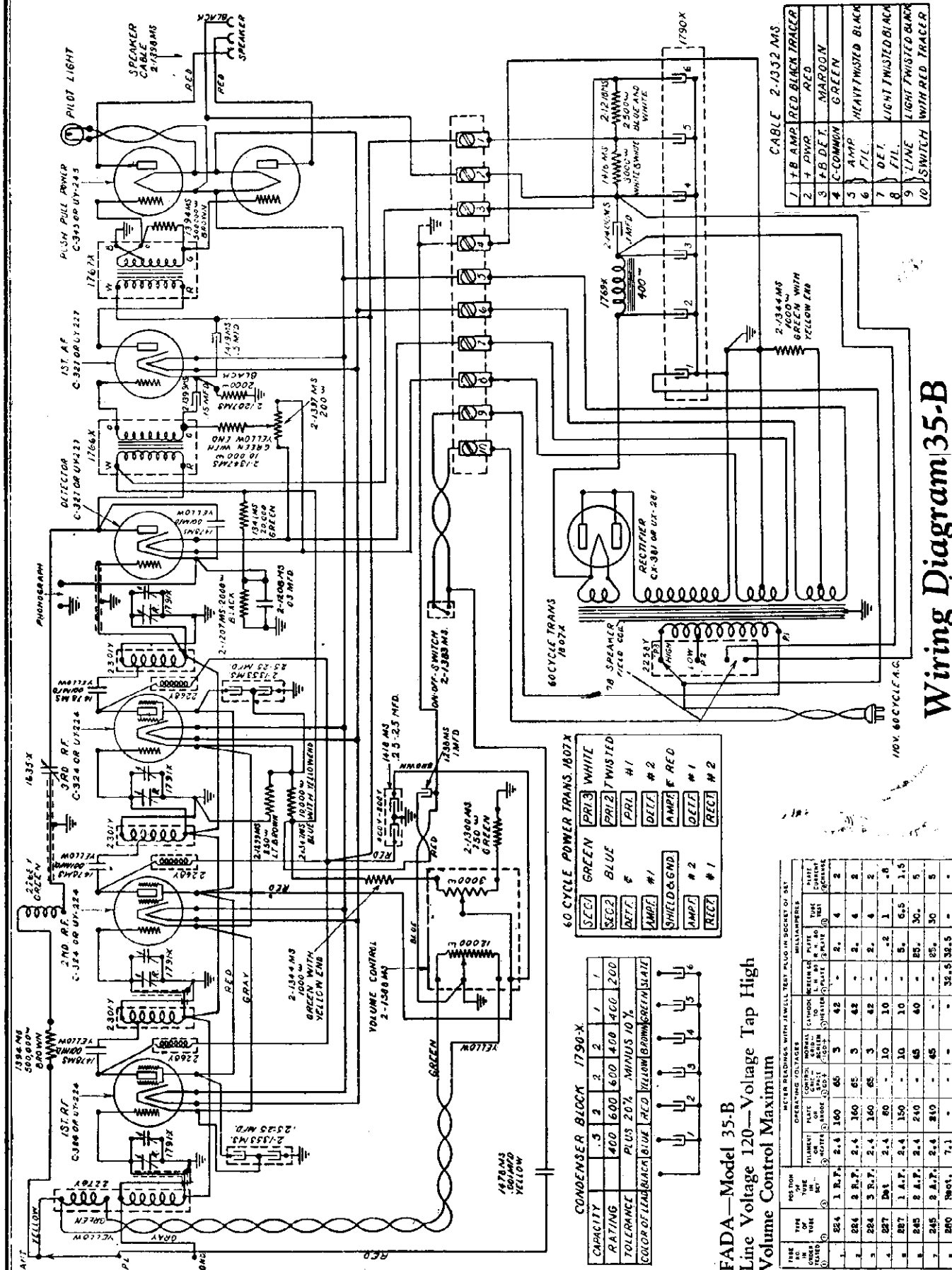
25 and 25-Z Receivers
used with
M-250 and M-250-Z Electric Units



Model Fada's 25, 25Z, 15M, 15MZ

FADA RADIO & ELECTRIC CORP.

MODEL 35-B
Schematic, Voltage



CABLE 2-1332 MS

1	1 B AMP	RED	BLACK TRACER
2	4 DIOD	RED	
3	1 B DET	MAROON	
4	C-COMMON	GREEN	
5	AMP	HEAVY TWISTED BLACK	
6	FILE	LIGHT TWISTED BLACK	
7	DET	LIGHT TWISTED BLACK	
8	FILE	LIGHT TWISTED BLACK	
9	LINE	LIGHT TWISTED BLACK	
10	SWITCH	WITH RED TRACER	

60 CYCLE POWER TRANS. 1807X

SECT	GREEN	PR1	3	WHITE
SECT	BLUE	PR2	2	TWISTED
DETT	PR	1	H	1
AMP	PR	2	DELTA	# 2
SHIELD & GND	PR	1	DELTA	# 1
RECT	PR	2	DELTA	# 2

CONDENSER BLOCK 1790-X

CAPACITY	.5	2	2	2	1	1
RATING	400	600	600	400	400	200
TOLERANCE	PLUS 20% MINUS 10%					
COLOR OF LEAD	BLACK	BLUE	RED	YELLOW	BROWN	GREEN

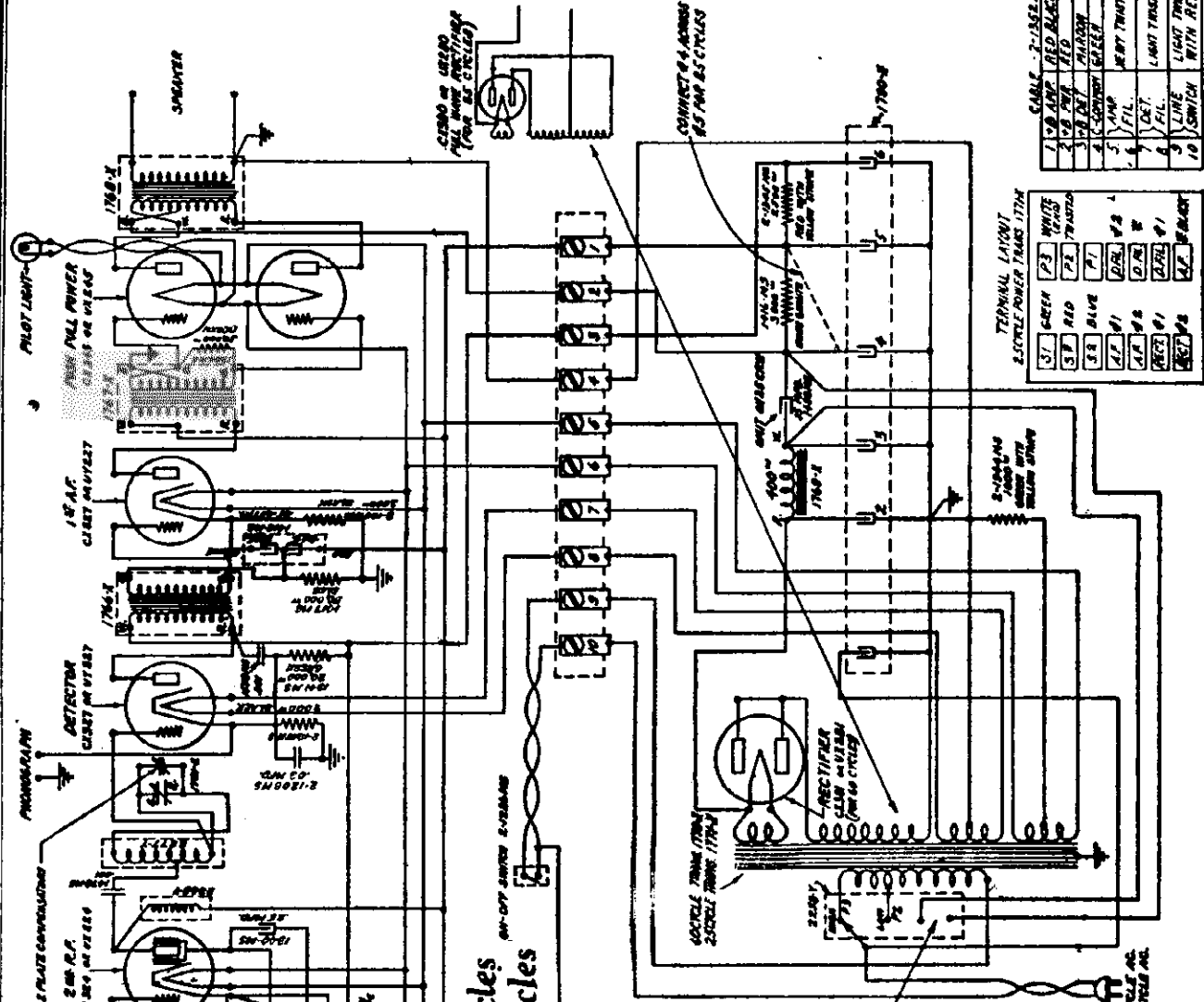
FADA—Model 35-B
Line Voltage 120—Voltage Tap High
Volume Control Maximum

TUBE	TYPE	POS. IN TUBE	OPERATING VOLTAGE		HEATER VOLTAGE		MILLIAMPERES						
			①	②	③	④	⑤	⑥					
1	6X4	1	100	250	2.4	160	65	5	42	-	2	4	2
2	6X4	2	100	250	2.4	160	65	5	42	-	2	4	2
3	6X4	3	100	250	2.4	160	65	5	42	-	2	4	2
4	6X4	4	100	250	2.4	160	65	5	42	-	2	4	2
5	6X4	5	100	250	2.4	160	65	5	42	-	2	4	2
6	6X4	6	100	250	2.4	160	65	5	42	-	2	4	2
7	6X4	7	100	250	2.4	160	65	5	42	-	2	4	2
8	6X4	8	100	250	2.4	160	65	5	42	-	2	4	2
9	6X4	9	100	250	2.4	160	65	5	42	-	2	4	2
10	6X4	10	100	250	2.4	160	65	5	42	-	2	4	2

Wiring Diagram 35-B

MODEL 35
MODEL 35Z
Schematic

FADA RADIO & ELECTRIC CORP.



CABLE - 7-15E-143

1	10 AMP	RED BLACK TRACER
2	5 AMP	RED
3	5 AMP	YELLOW
4	5 AMP	GREEN
5	AMP	NEUT TRINATED BLACK
6	AMP	NEUT TRINATED BLACK
7	AMP	NEUT TRINATED BLACK
8	AMP	NEUT TRINATED BLACK
9	AMP	NEUT TRINATED BLACK
10	AMP	NEUT TRINATED BLACK

TERMINAL LAYOUT
2-CYCLE POWER TRANSFORMER 1770-X

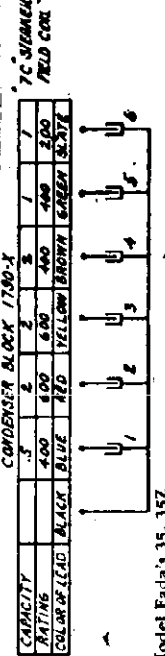
1	GREEN	P3	WHITE
2	RED	P2	TRINATED
3	BLUE	P1	BLACK
4	YELLOW	P4	GREEN
5	NEUT	P5	BLACK
6	NEUT	P6	BLACK
7	NEUT	P7	BLACK
8	NEUT	P8	BLACK
9	NEUT	P9	BLACK
10	NEUT	P10	BLACK

35 Receiver—AC 60 cycles
35-Z Receiver—AC 25 cycles

Line Voltage 115—Set on High Volt Tap—Volume Control Position Max
Note: When taking screen grid tube readings ground control grid.

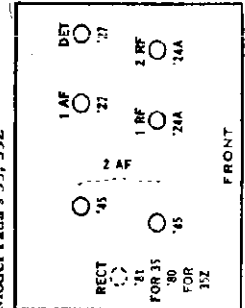
CONDENSER BLOCK 1740-X

POSITION	TUBE OUT	VOLTS	RESISTANCE	REMARKS
1	6X4	2.5	100	Screen Grid
2	6X5	2.5	100	Screen Grid
3	6X6	2.5	100	Screen Grid
4	6X7	2.5	100	Screen Grid
5	6X8	2.5	100	Screen Grid
6	6X9	2.5	100	Screen Grid
7	6X10	2.5	100	Screen Grid
8	6X11	2.5	100	Screen Grid
9	6X12	2.5	100	Screen Grid
10	6X13	2.5	100	Screen Grid
11	6X14	2.5	100	Screen Grid
12	6X15	2.5	100	Screen Grid
13	6X16	2.5	100	Screen Grid
14	6X17	2.5	100	Screen Grid
15	6X18	2.5	100	Screen Grid
16	6X19	2.5	100	Screen Grid
17	6X20	2.5	100	Screen Grid
18	6X21	2.5	100	Screen Grid
19	6X22	2.5	100	Screen Grid
20	6X23	2.5	100	Screen Grid
21	6X24	2.5	100	Screen Grid
22	6X25	2.5	100	Screen Grid
23	6X26	2.5	100	Screen Grid
24	6X27	2.5	100	Screen Grid
25	6X28	2.5	100	Screen Grid
26	6X29	2.5	100	Screen Grid
27	6X30	2.5	100	Screen Grid
28	6X31	2.5	100	Screen Grid
29	6X32	2.5	100	Screen Grid
30	6X33	2.5	100	Screen Grid
31	6X34	2.5	100	Screen Grid
32	6X35	2.5	100	Screen Grid
33	6X36	2.5	100	Screen Grid
34	6X37	2.5	100	Screen Grid
35	6X38	2.5	100	Screen Grid
36	6X39	2.5	100	Screen Grid
37	6X40	2.5	100	Screen Grid
38	6X41	2.5	100	Screen Grid
39	6X42	2.5	100	Screen Grid
40	6X43	2.5	100	Screen Grid
41	6X44	2.5	100	Screen Grid
42	6X45	2.5	100	Screen Grid
43	6X46	2.5	100	Screen Grid
44	6X47	2.5	100	Screen Grid
45	6X48	2.5	100	Screen Grid
46	6X49	2.5	100	Screen Grid
47	6X50	2.5	100	Screen Grid
48	6X51	2.5	100	Screen Grid
49	6X52	2.5	100	Screen Grid
50	6X53	2.5	100	Screen Grid
51	6X54	2.5	100	Screen Grid
52	6X55	2.5	100	Screen Grid
53	6X56	2.5	100	Screen Grid
54	6X57	2.5	100	Screen Grid
55	6X58	2.5	100	Screen Grid
56	6X59	2.5	100	Screen Grid
57	6X60	2.5	100	Screen Grid
58	6X61	2.5	100	Screen Grid
59	6X62	2.5	100	Screen Grid
60	6X63	2.5	100	Screen Grid
61	6X64	2.5	100	Screen Grid
62	6X65	2.5	100	Screen Grid
63	6X66	2.5	100	Screen Grid
64	6X67	2.5	100	Screen Grid
65	6X68	2.5	100	Screen Grid
66	6X69	2.5	100	Screen Grid
67	6X70	2.5	100	Screen Grid
68	6X71	2.5	100	Screen Grid
69	6X72	2.5	100	Screen Grid
70	6X73	2.5	100	Screen Grid
71	6X74	2.5	100	Screen Grid
72	6X75	2.5	100	Screen Grid
73	6X76	2.5	100	Screen Grid
74	6X77	2.5	100	Screen Grid
75	6X78	2.5	100	Screen Grid
76	6X79	2.5	100	Screen Grid
77	6X80	2.5	100	Screen Grid
78	6X81	2.5	100	Screen Grid
79	6X82	2.5	100	Screen Grid
80	6X83	2.5	100	Screen Grid
81	6X84	2.5	100	Screen Grid
82	6X85	2.5	100	Screen Grid
83	6X86	2.5	100	Screen Grid
84	6X87	2.5	100	Screen Grid
85	6X88	2.5	100	Screen Grid
86	6X89	2.5	100	Screen Grid
87	6X90	2.5	100	Screen Grid
88	6X91	2.5	100	Screen Grid
89	6X92	2.5	100	Screen Grid
90	6X93	2.5	100	Screen Grid
91	6X94	2.5	100	Screen Grid
92	6X95	2.5	100	Screen Grid
93	6X96	2.5	100	Screen Grid
94	6X97	2.5	100	Screen Grid
95	6X98	2.5	100	Screen Grid
96	6X99	2.5	100	Screen Grid
97	6X100	2.5	100	Screen Grid



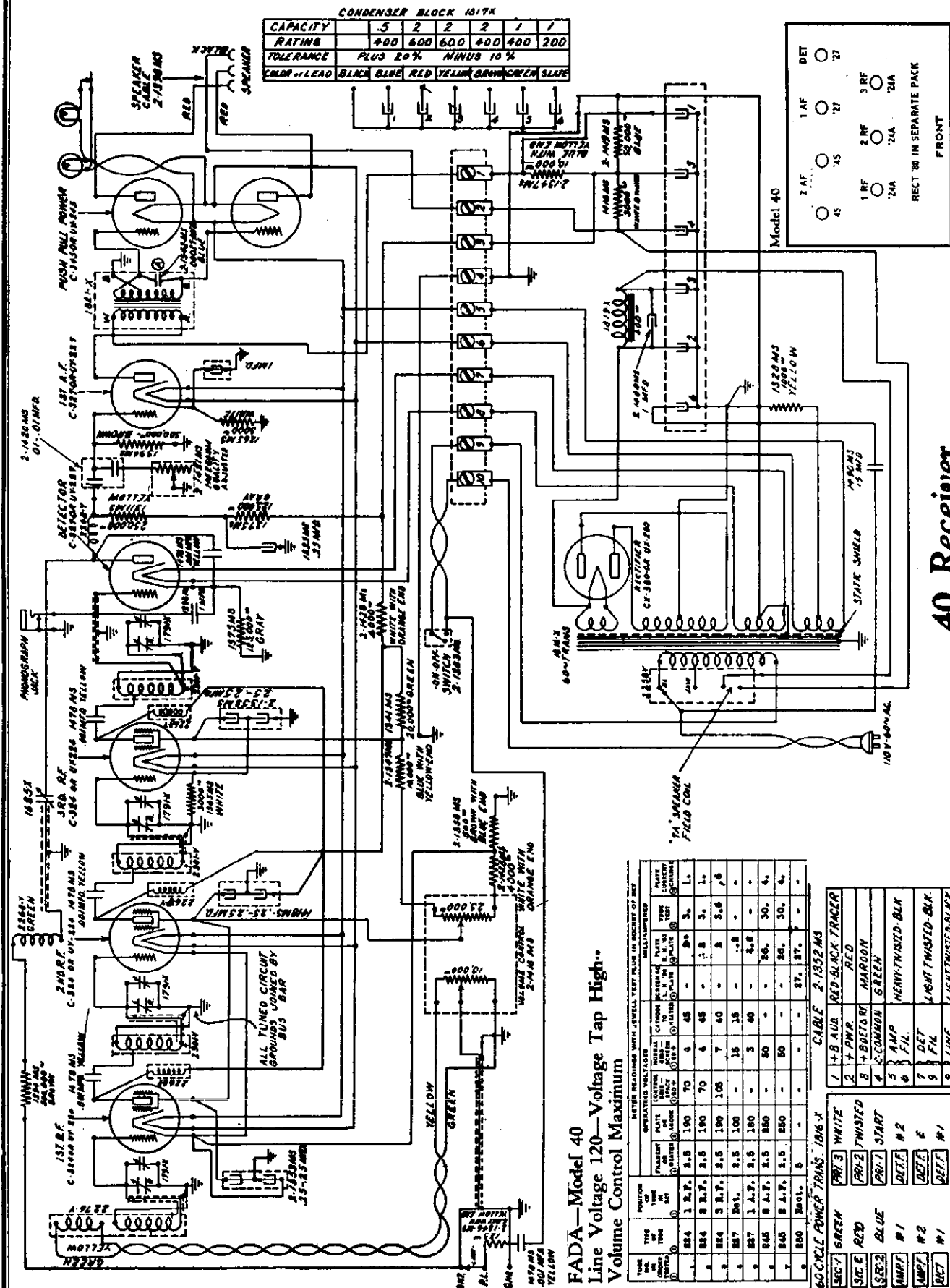
TERMINAL LAYOUT
60 CYCLE POWER TRANSFORMER 1770-Y

1	GREEN	P3	WHITE (ENH)
2	RED	P2	TRINATED
3	BLUE	P1	BLACK
4	YELLOW	P4	GREEN
5	NEUT	P5	BLACK
6	NEUT	P6	BLACK
7	NEUT	P7	BLACK
8	NEUT	P8	BLACK
9	NEUT	P9	BLACK
10	NEUT	P10	BLACK



MODEL 40
Schematic

FADA RADIO & ELECTRIC CORP.



40 Receiver

FADA—Model 40
Line Voltage 120—Voltage Tap High—
Volume Control Maximum

METER READINGS WITH JEWELL TEST PLATE IN SOCKET OF DET		MILLIAMPERES	
PLATE VOLTAGE	GRID VOLTAGE	PLATE CURRENT	GRID CURRENT
1 254	1 2.5	100	1.0
2 254	2 2.5	100	1.0
3 254	3 2.5	100	1.0
4 254	4 2.5	100	1.0
5 254	5 2.5	100	1.0
6 254	6 2.5	100	1.0
7 254	7 2.5	100	1.0
8 254	8 2.5	100	1.0
9 254	9 2.5	100	1.0
10 254	10 2.5	100	1.0

60-CYCLE POWER TRANS. 10/6-X	CABLE 2-1352 M3
1 + 8 AUR. RED-BLACK-TRACER	1 + 8 AUR. RED-BLACK-TRACER
2 + 8 DET. MAROON	2 + 8 DET. MAROON
3 + 8 DET. MAROON	3 + 8 DET. MAROON
4 + 8 DET. MAROON	4 + 8 DET. MAROON
5 + 8 DET. MAROON	5 + 8 DET. MAROON
6 + 8 DET. MAROON	6 + 8 DET. MAROON
7 + 8 DET. MAROON	7 + 8 DET. MAROON
8 + 8 DET. MAROON	8 + 8 DET. MAROON
9 + 8 DET. MAROON	9 + 8 DET. MAROON
10 + 8 DET. MAROON	10 + 8 DET. MAROON

CONDENSER BLOCK 1017X	
CAPACITY	5 2 2 2 1 1
RATINGS	400 600 600 400 400 200
TOLERANCE	PLUS 20% MINUS 10%
COLOR OF LEAD	BLACK BLUE RED YELLOW BROWN GREEN SLATE

Model 40	
1 AF	27
2 AF	27
3 AF	27
4 AF	27
5 AF	27
6 AF	27
7 AF	27
8 AF	27
9 AF	27
10 AF	27

Model 40	
1 RF	27
2 RF	27
3 RF	27
4 RF	27
5 RF	27
6 RF	27
7 RF	27
8 RF	27
9 RF	27
10 RF	27

Model 40	
1 DET	27
2 DET	27
3 DET	27
4 DET	27
5 DET	27
6 DET	27
7 DET	27
8 DET	27
9 DET	27
10 DET	27

Model 40	
1 AF	27
2 AF	27
3 AF	27
4 AF	27
5 AF	27
6 AF	27
7 AF	27
8 AF	27
9 AF	27
10 AF	27

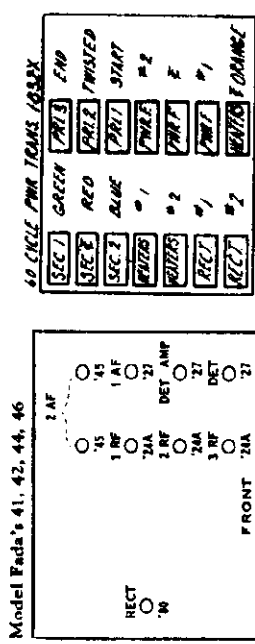
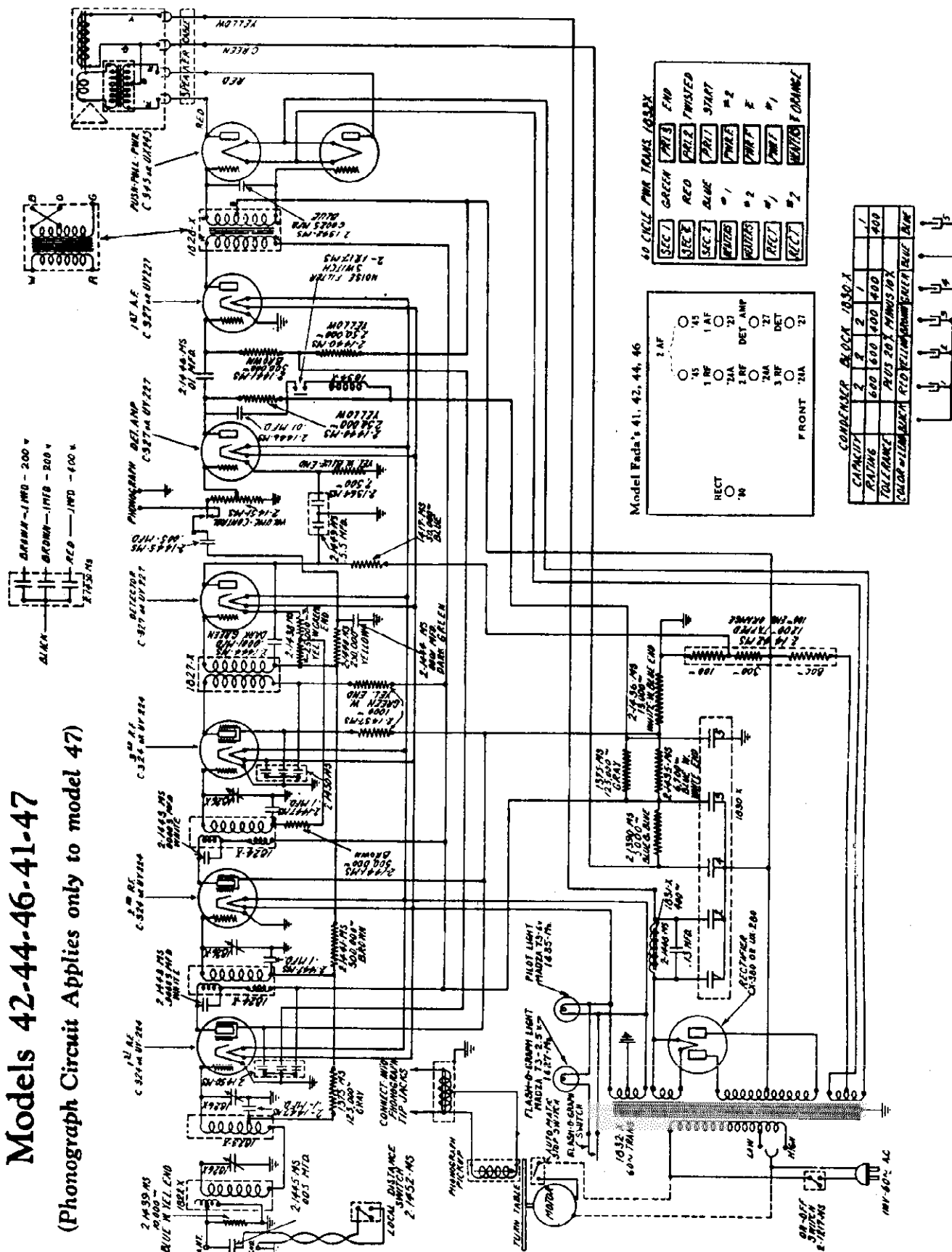
Model 40	
1 RF	27
2 RF	27
3 RF	27
4 RF	27
5 RF	27
6 RF	27
7 RF	27
8 RF	27
9 RF	27
10 RF	27

Model 40	
1 DET	27
2 DET	27
3 DET	27
4 DET	27
5 DET	27
6 DET	27
7 DET	27
8 DET	27
9 DET	27
10 DET	27

MODEL 42,44,46,41,47
Schematic

FADA RADIO & ELECTRIC CORP.

Models 42-44-46-41-47
(Phonograph Circuit Applies only to model 47)

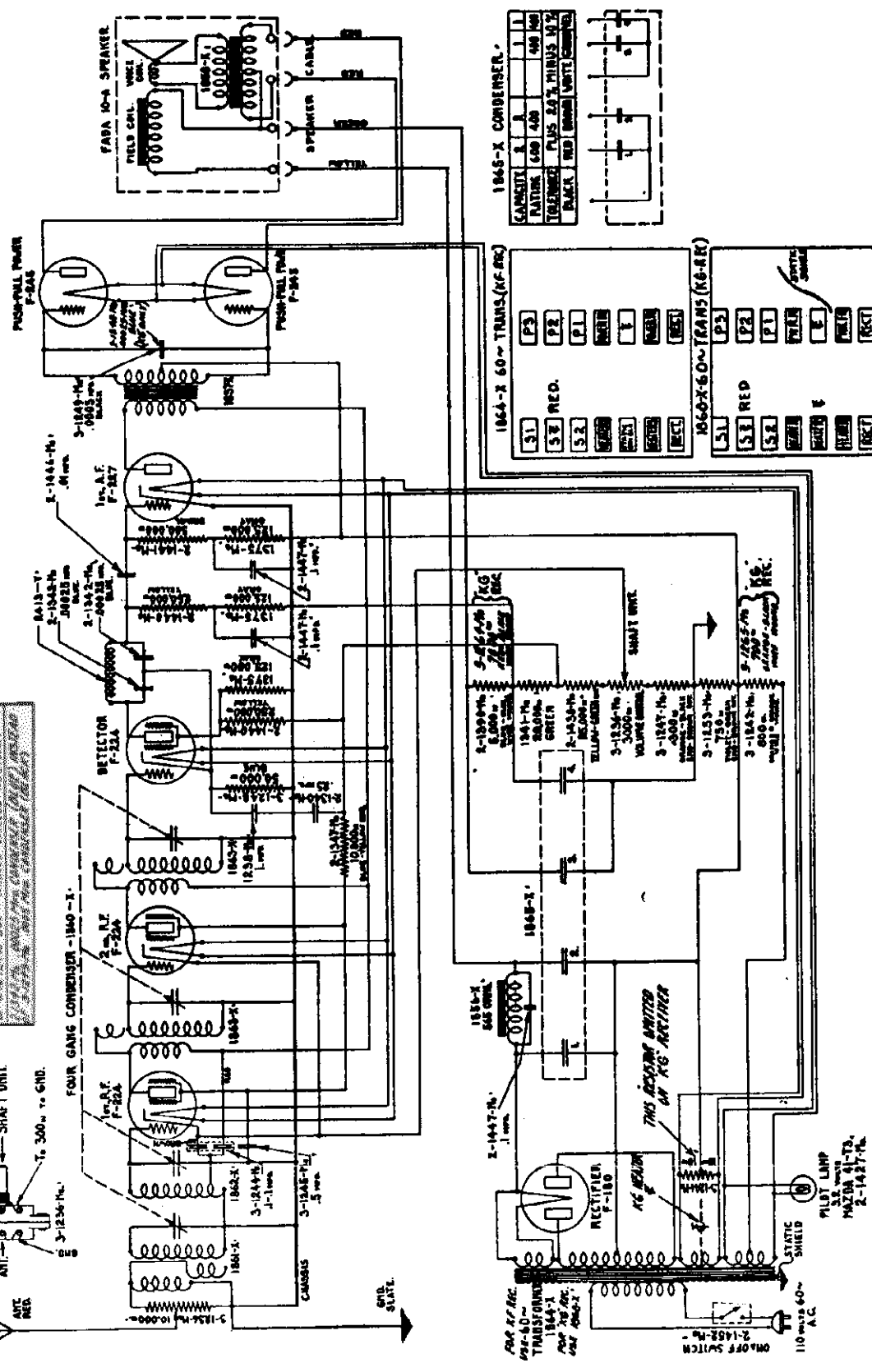
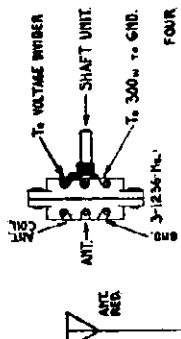


FADA RADIO & ELECTRIC CORP.

MODEL "KF", (43)
 MODEL "KG", (761,762,
 764,766)
 Schematic

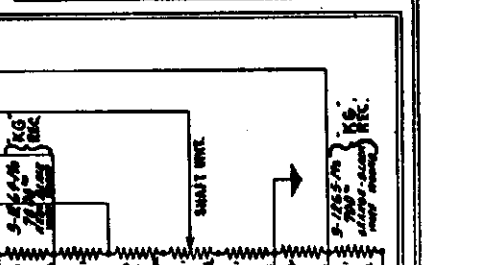
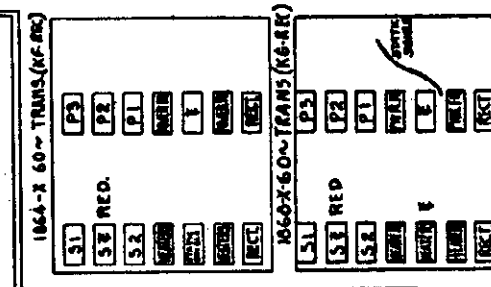
"KF" & "KG" RECEIVERS (60 CYCLES)

60~KG RECEIVERS REQUIRES:-
 PHR TRANS. #1060X INSTEAD OF 1061X
 PHR TRANS. #1060X INSTEAD OF 1061X
 PHR TRANS. #1060X INSTEAD OF 1061X
 PHR TRANS. #1060X INSTEAD OF 1061X



1845-X CONDENSER

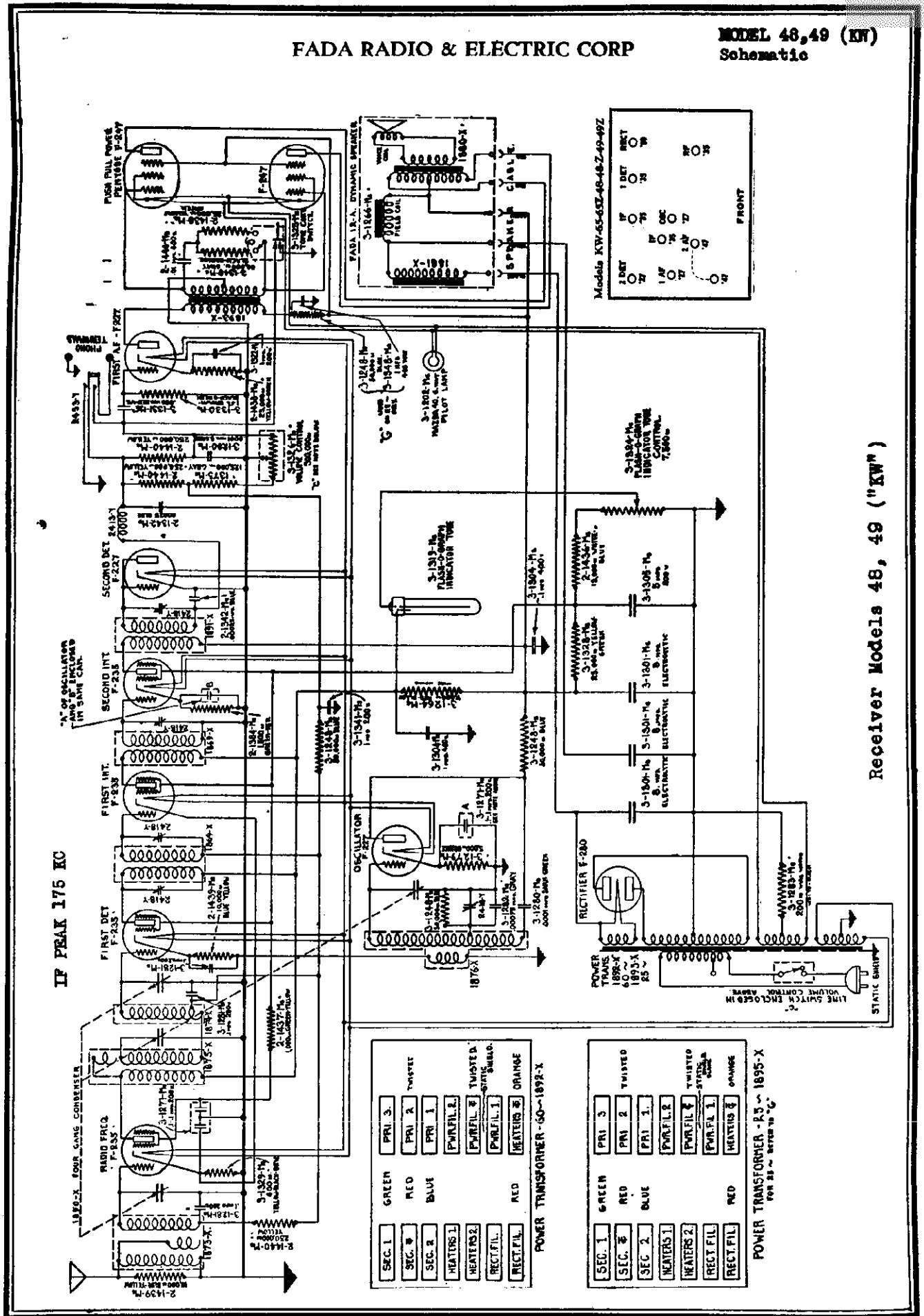
GAUSSITE	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	
RATING	600	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	400	
TOLERANCE	PLUS 2.0%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	MINUS 10%	
PLATE	RED	BROWN	WHITE	GREEN	BLACK	RED	BROWN	WHITE	GREEN	BLACK	RED	BROWN	WHITE	GREEN	BLACK	RED	BROWN	WHITE	GREEN	BLACK	RED	BROWN



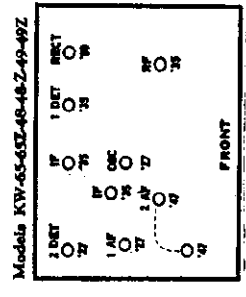
Model "KF" Chassis. Receiver model 43
 Model "KG" Chassis. Receiver model 761,762,764,766

FADA RADIO & ELECTRIC CORP

MODEL 48,49 (KW)
Schematic



IF PEAK 175 KC



Models KW-65-63E-48-48Z-49-49Z

Receiver Models 48, 49 ("KW")

POWER TRANSFORMER - 50-1892-X

SEC. 1	GREEN	PRI. 3	TWISTED
SEC. 2	RED	PRI. 2	TWISTED
SEC. 3	BLUE	PRI. 1	TWISTED
HEATERS 1		PWR.FIL. 2	
HEATERS 2		PWR.FIL. 1	
RECT.FIL.		HEATERS 3	
RECT.FIL.	RED		

POWER TRANSFORMER - R5-1895-X
FOR 25 ~ across to C.

SEC. 1	GREEN	PRI. 3	TWISTED
SEC. 2	RED	PRI. 2	TWISTED
SEC. 3	BLUE	PRI. 1	TWISTED
HEATERS 1		PWR.FIL. 2	
HEATERS 2		PWR.FIL. 1	
RECT.FIL.		HEATERS 3	
RECT.FIL.	RED		

MODEL 45,48,49
Service Notes

FADA RADIO & ELECTRIC CORP.

SPECIAL DATA FOR MODELS 45, 48 and 49 RECEIVERS

Trimmer adjustment frequencies are 175 KC, 600 KC and 1400 KC. The trimmer condensers on the model 45 receiver are located in the rear right hand corner of the chassis looking at the chassis from the front. Two of the IF trimmers are on the right hand side, near the rear and the third trimmer condenser (IF) is that most distant from the right hand rear corner of the chassis. The trimmer upon the rear of the chassis, near the right hand corner is the oscillator series condenser.

In the models 48 and 49, the oscillator series condenser control is accessible from the top of the chassis, on the left end of the chassis to the left of the shields. The four IF trimmers are accessible through the rear of the chassis, one the left end, looking at the chassis from the front.

The suggested output meter is of the type suitable for connection across the speaker voice coil. The 1st detector control grid must be disconnected for the IF trimmer adjustments and the oscillator "A" lead is connected to the 1st detector control grid cap upon the tube.

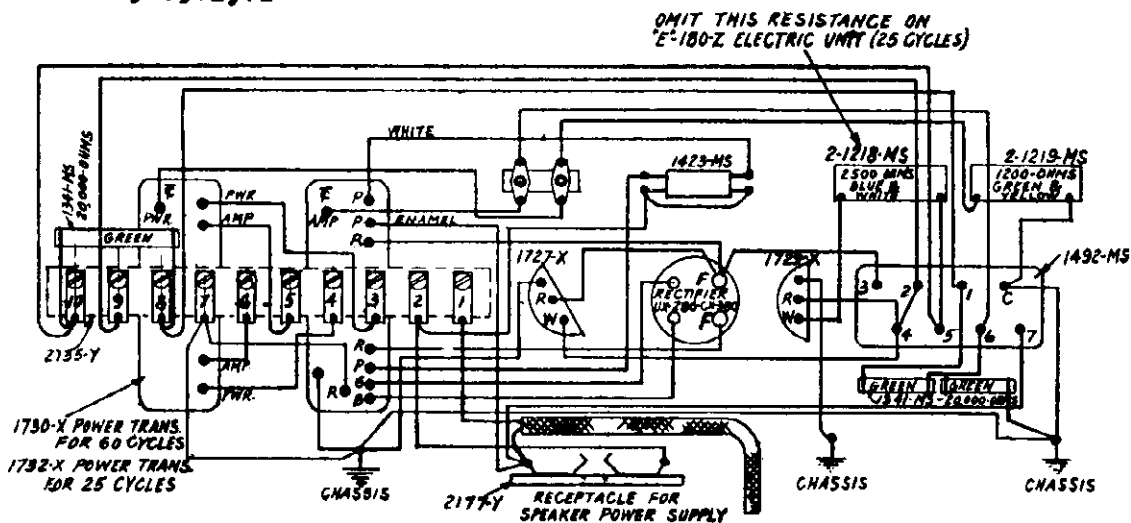
The variable gang condenser compensators for the model 45 are located on top of their respective tuning condenser sections. They can be adjusted with a screw driver. The compensator adjusting screws are at ground potential. The adjustment is made at 1400 KC without disturbing the main tuning sections. The suggestion is made to connect the antenna circuit of the receiver through a dummy antenna or a 250 mmfd condenser. The oscillator series condenser is adjusted at 600 KC

The main tuning condenser compensators are located at the top of their main tuning sections in the 48 and 49 models. They can be adjusted with a screw driver and since the screws are at ground potential and insulated screw driver is not required. There are four holes in the overall condenser and tube housing cover. The screw driver is inserted through these holes.

The tuning condenser compensators are adjusted at 1400 KC. The oscillator series condenser is adjusted at 600 KC. The intermediate trimmers are adjusted at 175 KC. Due to the physical location of the oscillator series condenser it is permissible to remove the overall condenser and tube shield housing cover to permit the insertion of the standard #4 socket wrench for adjustment purposes.

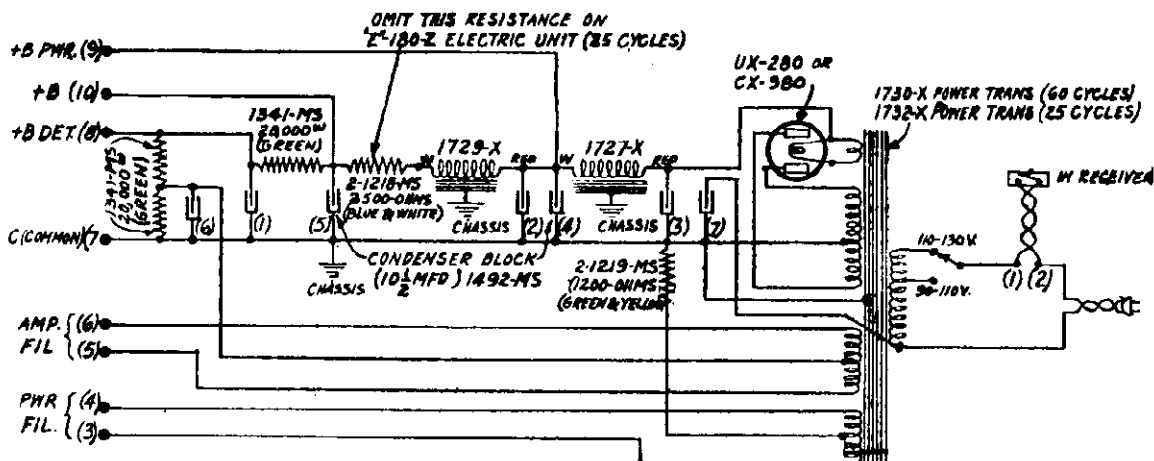
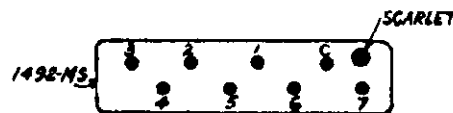
The suggestion is made to check the 175 KC adjustment of the test oscillator by beating that signal against one of its harmonics represented by the carrier frequency of a broadcasting station of correct frequency which is tuned in with the receiver operated in normal manner. Some of the harmonics of a 175 KC signal are 1400 KC., 1225 KC., 1050 KC., 875 KC., and 700 KC.

MODEL E-180, E-180Z
 Electric Unit FADA RADIO & ELECTRIC CORP.
 for 50, 70, 71, 72



ACTUAL WIRING DIAGRAM OF E-180 & E-180Z ELECTRIC UNIT

Nor should it be a difficult matter to keep in mind that all "E-180" sets can be identified by their having two round cans in the "rear row" (the power pack). This immediately identifies the set as requiring a 280 rectifier tube and type 171-A amplifier tubes.



SCHEMATIC WIRING DIAGRAM OF E-180 & E-180Z ELECTRIC UNIT

ELECTRICAL VALUES

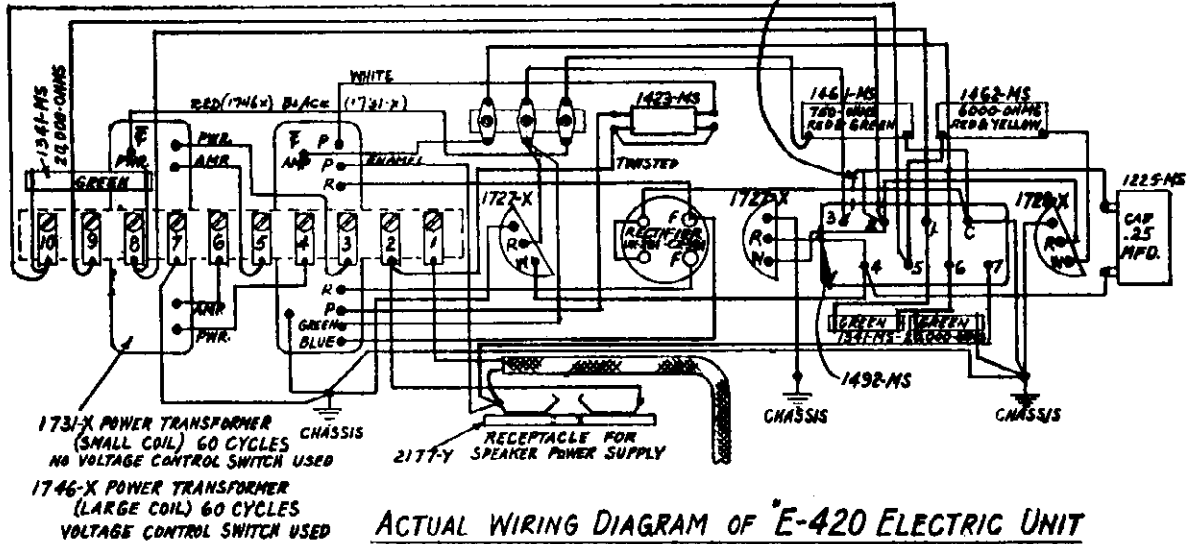
ELECTRIC UNIT TYPE E-180

1225-MS	.25 mfd	400 volts
1341-MS	carbon	20,000 ohms (green)
1461-MS	wire	750 ohms red-green
1462-MS	wire	6000 ohms red-yellow
1492-MS	condenser block	10.5 mfd
2-1218-MS	wire	2500 ohms blue-white
2-1219-MS	wire	1200 ohms green-yellow
1727-X	choke	600 ohms
1729-X	choke	3500 ohms

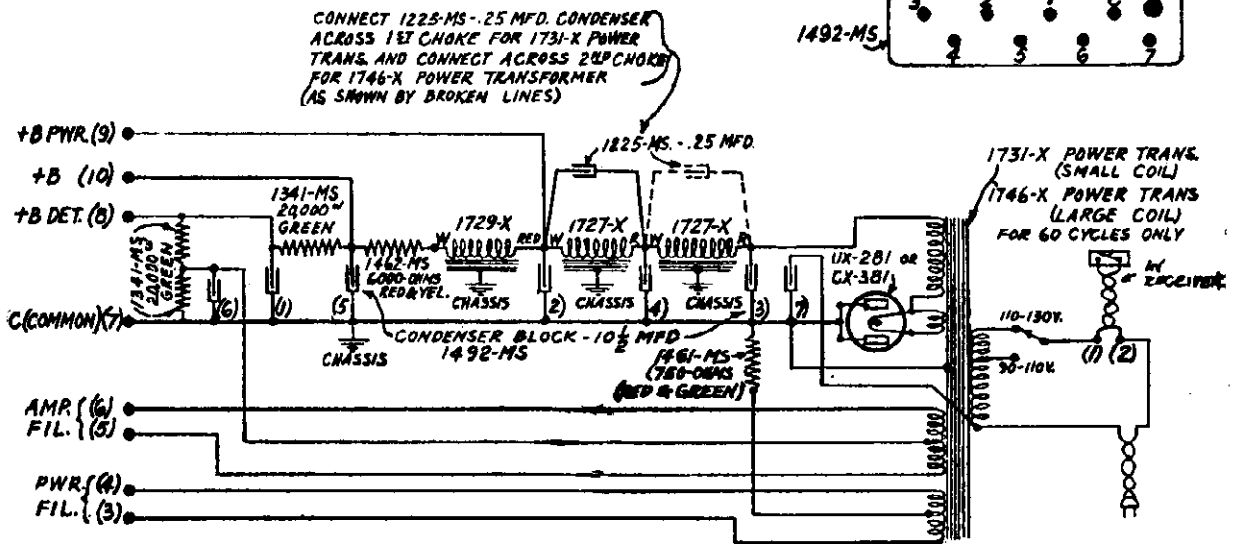
FADA RADIO & ELECTRIC CORP.

MODEL E-420, E-420Z
Electric Unit
for 50, 60, 71, 72

CONNECT *1225-MS .25 MFD CONDENSER TO *3 LUG FOR 1731-X POWER TRANS, AND CONNECT *1225-MS TO *2 LUG FOR 1746-X POWER TRANSFORMER.



Now it should not be a difficult matter to keep in mind that all "E-420" sets can be identified by their having three round cans in the "rear row" (the power pack). This immediately identifies the set as requiring a 281 rectifier tube and type 210 amplifier tubes.

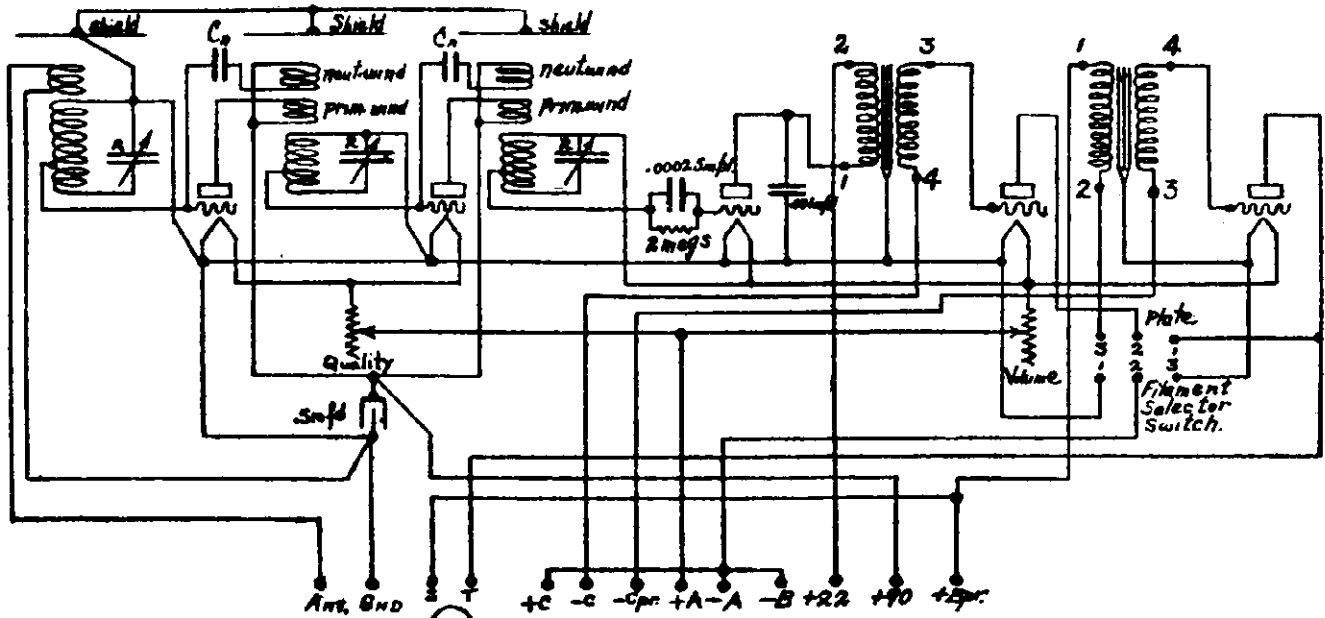


ELECTRICAL VALUES
ELECTRIC UNIT TYPE E-420

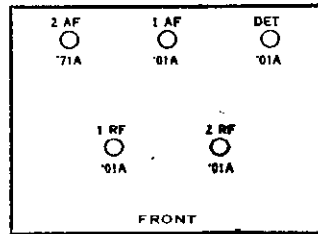
1225-MS	.25 mfd 400 volts	2-1218-MS	wire 2500 ohms blue-white
1341-MS	carbon 20,000 ohms green	2-1219-MS	wire 1200 ohms green-yellow
1461-MS	wire 750 ohms red-green	1727-X	choke 600 ohms
1462-MS	wire 8000 ohms red-yellow	1729-X	choke 3500 ohms
1492-MS	condenser block 10.5 mfd		

MODEL 192-A Receiver
 192-S
 192-BS Units
 MODEL 160 Neutrodyne

FADA RADIO & ELECTRIC CORP.

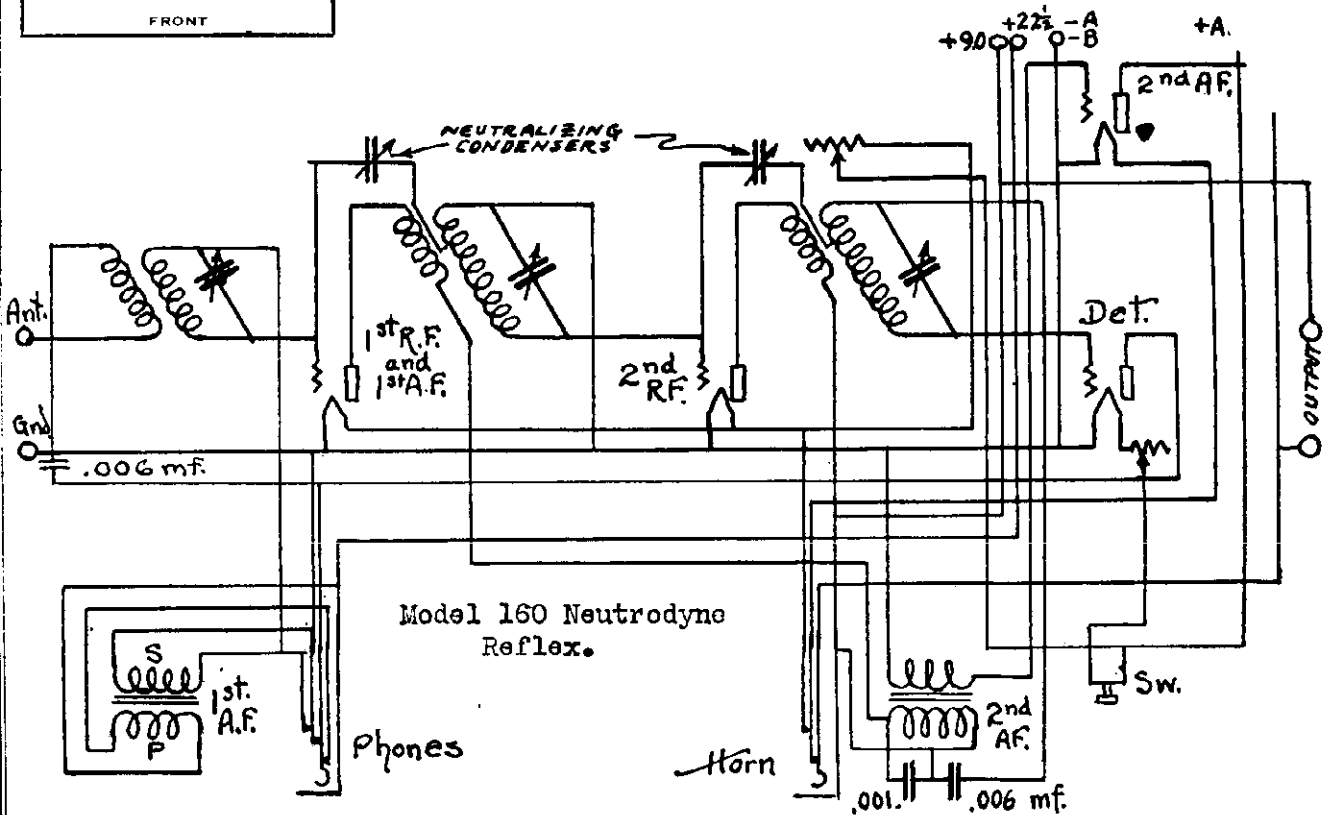


Model Fada's 170A, 192A



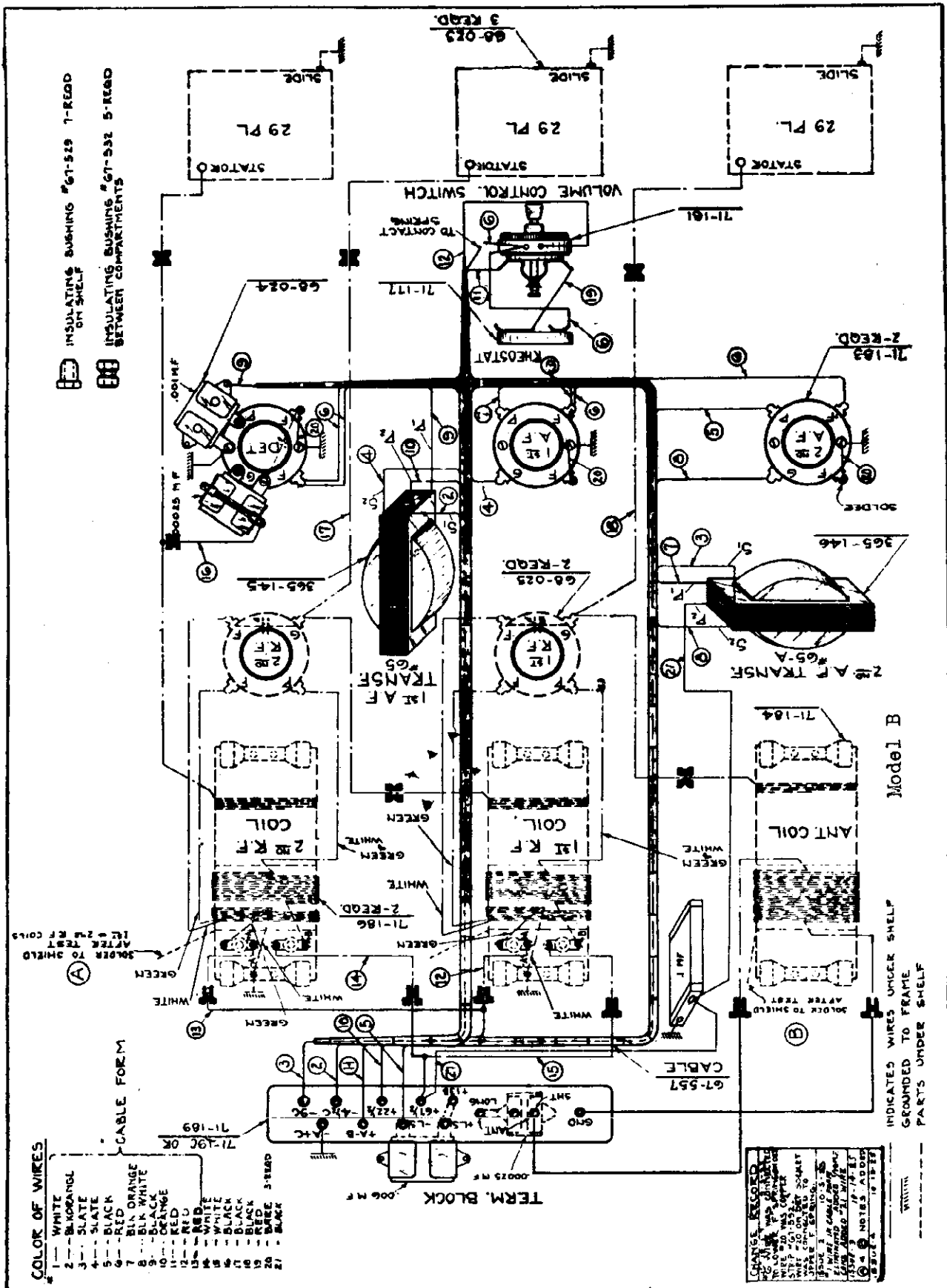
(Note S = Sleeve
 T = Tip
 connections to jack) 192-A Receiver, 192-S and 192 BS Units

Model 192-A Receiver, 192-S and 192-BS Units



MODEL B
Wiring Diagram

FEDERAL RADIO CORP.



- COLOR OF WIRES**
- 1 - WHITE
 - 2 - BLACK/ANG
 - 3 - SLATE
 - 4 - SLATE
 - 5 - BLACK
 - 6 - RED
 - 7 - BLACK/ORANGE
 - 8 - BLACK/WHITE
 - 9 - BLACK
 - 10 - ORANGE
 - 11 - RED
 - 12 - RED
 - 13 - WHITE
 - 14 - WHITE
 - 15 - BLACK
 - 16 - BLACK
 - 17 - BLACK
 - 18 - RED
 - 19 - RED
 - 20 - BARE 3-STRIP
 - 21 - BLACK

CABLE FORM

CHANGE RECORD

NO. OF WIRING CHANGES
 BY
 DATE
 REASON
 APPROVED BY
 DATE

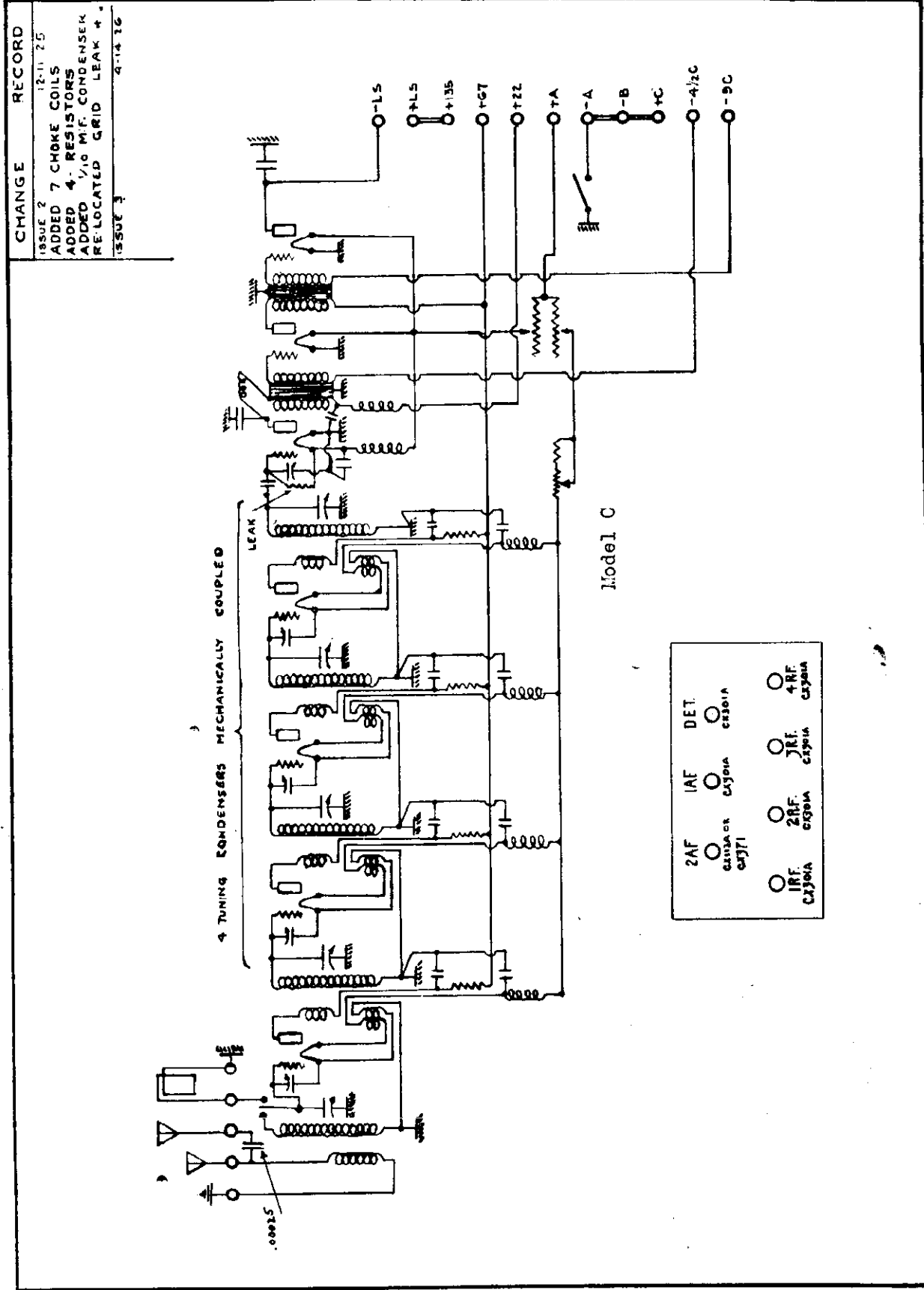
NOTES: 1. IN CASE OF A CHANGE IN THE WIRING, THE WIRING SHOULD BE RECHECKED TO BE SURE IT IS CORRECT.
 2. IN CASE OF A CHANGE IN THE WIRING, THE WIRING SHOULD BE RECHECKED TO BE SURE IT IS CORRECT.
 3. IN CASE OF A CHANGE IN THE WIRING, THE WIRING SHOULD BE RECHECKED TO BE SURE IT IS CORRECT.

Model B

INDICATES WIRES UNDER SHELF
 GROUNDED TO FRAME
 PARTS UNDER SHELF

FEDERAL RADIO CORP.

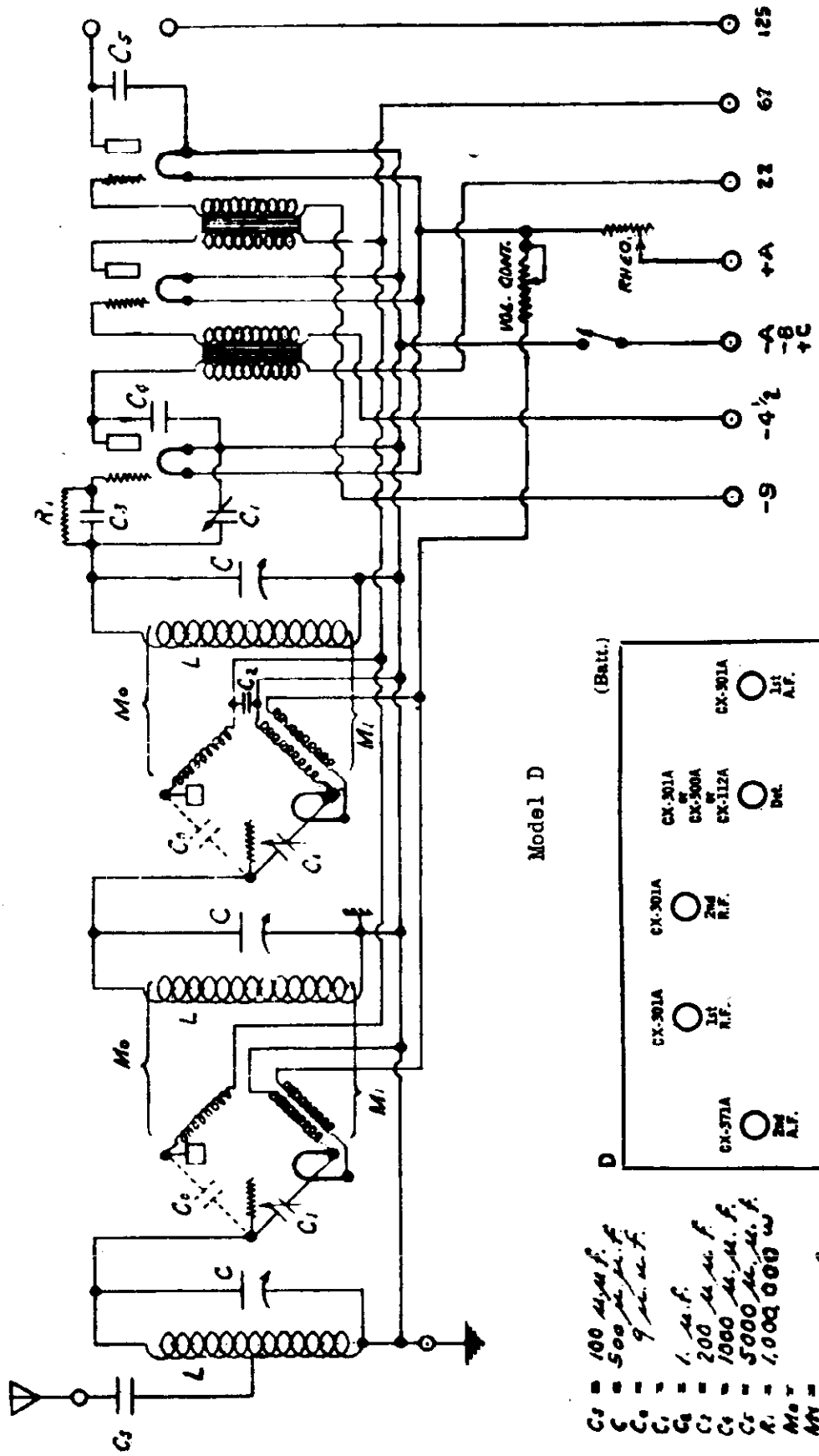
MODEL C
Schematic



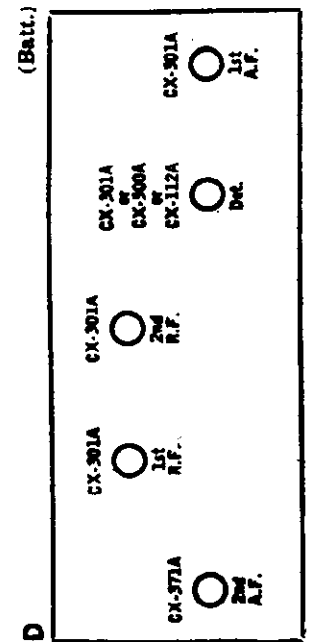
SUPERSEDES DMC 3954 DATED 10-19-25

FEDERAL RADIO CORP.

MODEL D, CODE 68-070
Schematic



Model D

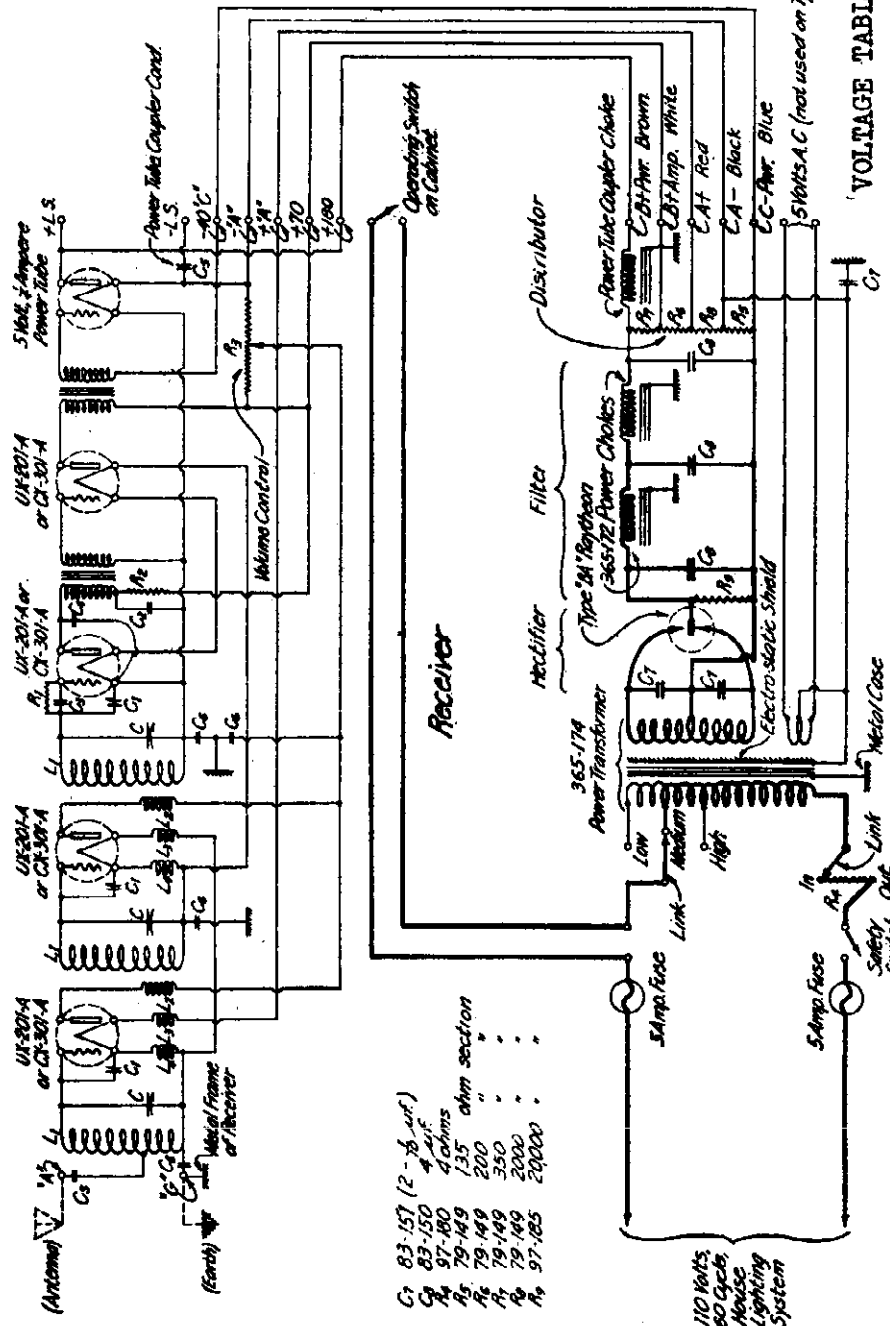


- C1 = 100 μ m. f.
- C2 = 500 μ m. f.
- C3 = 9 μ m. f.
- C4 = 1 μ m. f.
- C5 = 200 μ m. f.
- C6 = 1000 μ m. f.
- C7 = 5000 μ m. f.
- C8 = 1,000,000 μ m.
- R1 = 165 μ m.

FEDERAL RADIO CORP.

MODEL D CODE 79-070
Schematic

- 73-130 Balance Cond
- 83-184 1uf
- 73-287 .0002 uf
- 72-299 .001 "
- 83-195 1uf
- 83-189 and 83-190 5uf each
- 72-238 .0001 uf
- 1 Meg ohm (not shown on 10667)
- 97-116 160,000 ohms
- 79-155 50,000 ohms
- 71-223 and 79-124
- Plate Coil (Green, Single Winding)
- 1-F Coil (Green, Double Winding)
- 1-F Coil (White, Double Winding)



- C₁ 83-157 (2 - 16 uf)
- C₂ 83-150 4 uf
- A₁ 97-180 4 ohms
- A₂ 79-149 135 ohm section
- A₃ 79-149 200 "
- A₄ 79-149 350 "
- A₅ 79-149 2000 "
- A₆ 97-165 20000 "

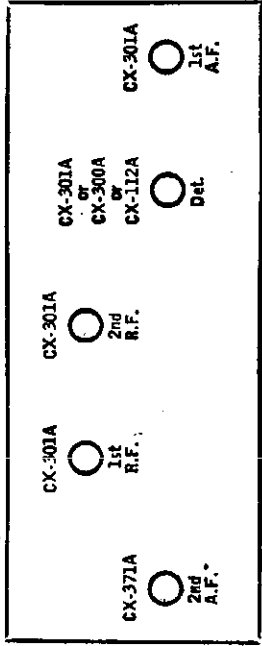
VOLTAGE TABLE

Plate voltages are measured between -F and the tube elements.

- 1st RF Plate 60 volts
 - 2nd RF Plate 65 volts
 - Detector Plate 21*volts
 - 1st AF Plate 70 volts
 - Output Plate 187 volts
- Measured with low resistance voltmeter. When high resistance meter is used, voltage may be 50 volts.

Model D

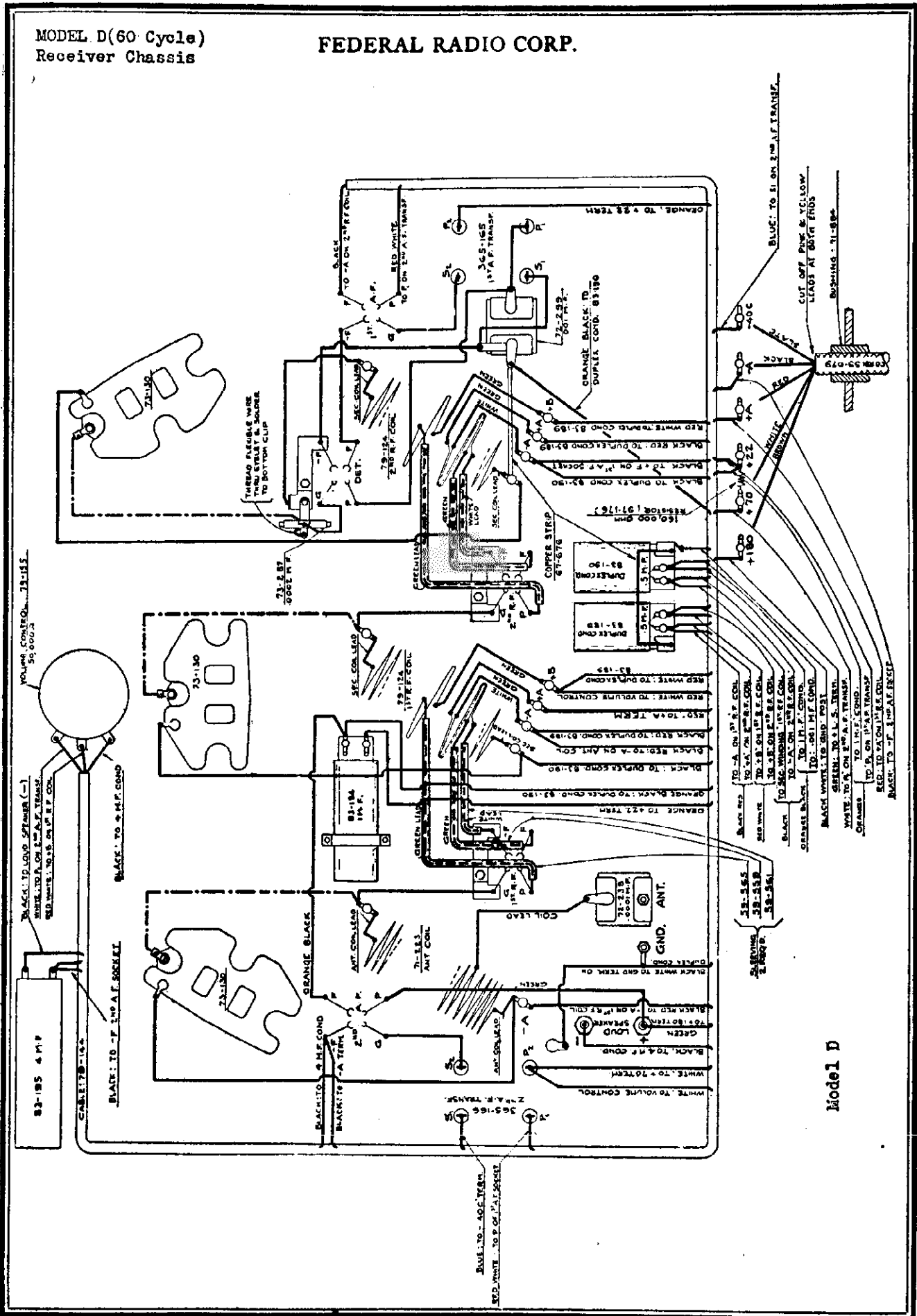
D-10-60, D-40-60



60 Cycle Power Supply Unit, Code 79-001

MODEL D (60 Cycle)
Receiver Chassis

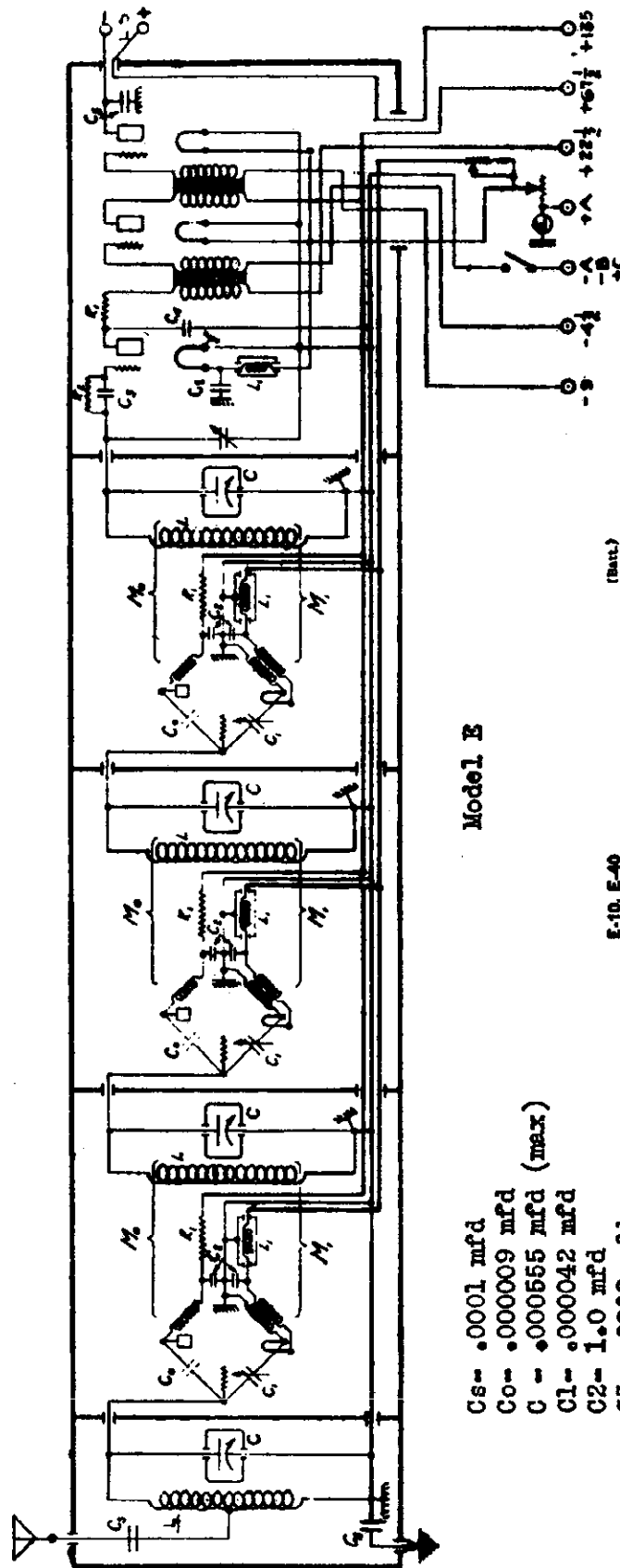
FEDERAL RADIO CORP.



Model D

FEDERAL RADIO CORP.

MODEL E CODE 68-060
Schematic



Model E

- Cs = .0001 mfd
- Co = .000009 mfd
- C = .000555 mfd (max)
- C1 = .000042 mfd
- C2 = 1.0 mfd
- C3 = .0002 mfd
- C4 = .001 mfd
- C5 = .005 mfd
- M0 = 25.5 microhenrys
- M1 = 5.25 microhenrys
- R1 = 200 ohms (low capacity)
- R2 = 1.0 megohm
- L = 100 microhenry
- L1 = 360 microhenry

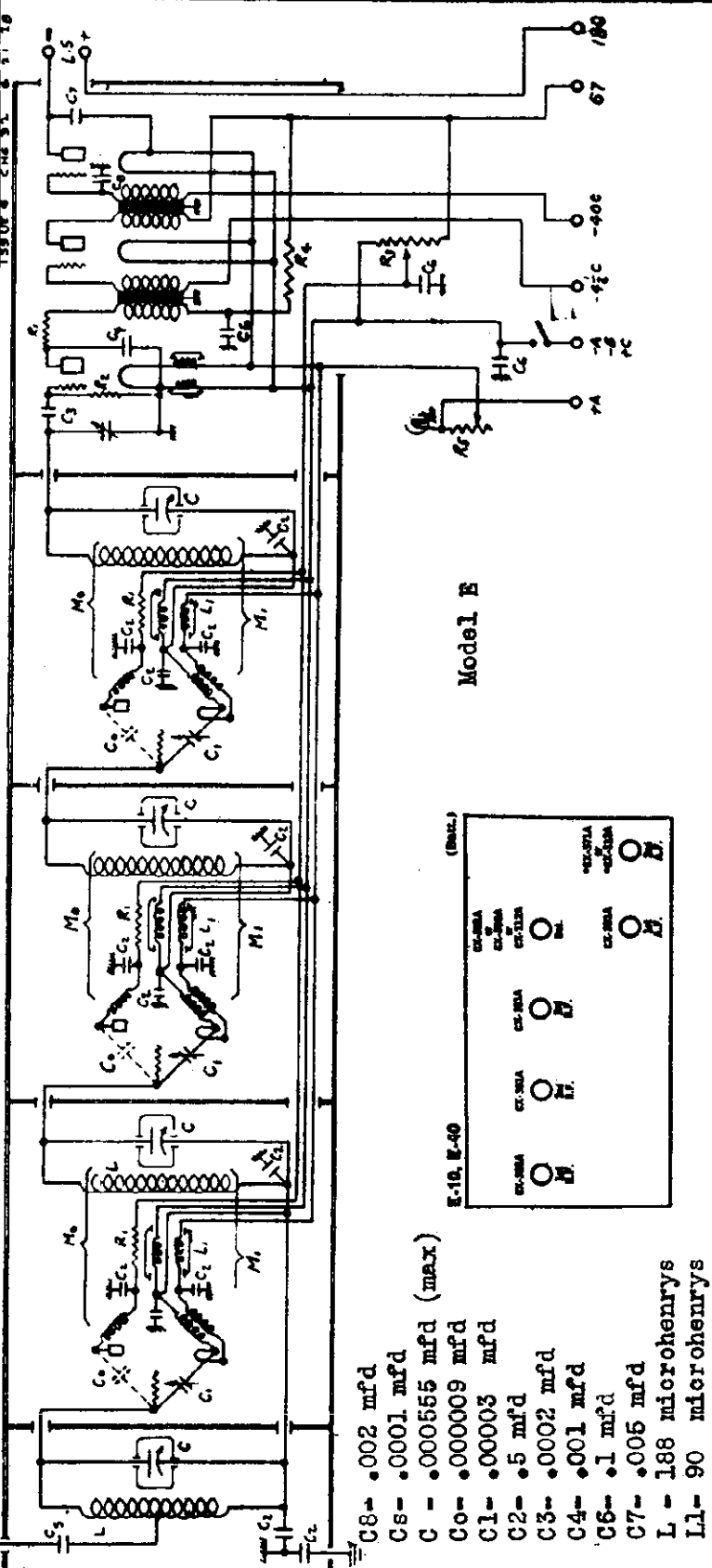
(Batt.)

EX-301A	EX-301A	EX-301A	EX-301A	EX-301A	EX-301A
EX-301B	EX-301A	EX-301A	EX-301A	EX-301A	EX-301A
EX-301C	EX-301A	EX-301A	EX-301A	EX-301A	EX-301A
EX-301D	EX-301A	EX-301A	EX-301A	EX-301A	EX-301A

MODEL E DC
Schematic

FEDERAL RADIO CORP.

CHANGE RECORD
 ISSUE 1 9-11-27
 ISSUE 2 10-00-28
 ISSUE 3 10-00-28
 ISSUE 4 10-00-28
 ISSUE 5 10-00-28
 ISSUE 6 10-00-28
 ISSUE 7 10-00-28
 ISSUE 8 10-00-28
 ISSUE 9 10-00-28
 ISSUE 10 10-00-28



Model E

E-10, E-40 (INCHES)

CS-0001	CS-0002	CS-0003	CS-0004	CS-0005	CS-0006	CS-0007	CS-0008	CS-0009	CS-0010	CS-0011	CS-0012	CS-0013	CS-0014	CS-0015	CS-0016	CS-0017	CS-0018	CS-0019	CS-0020
○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○

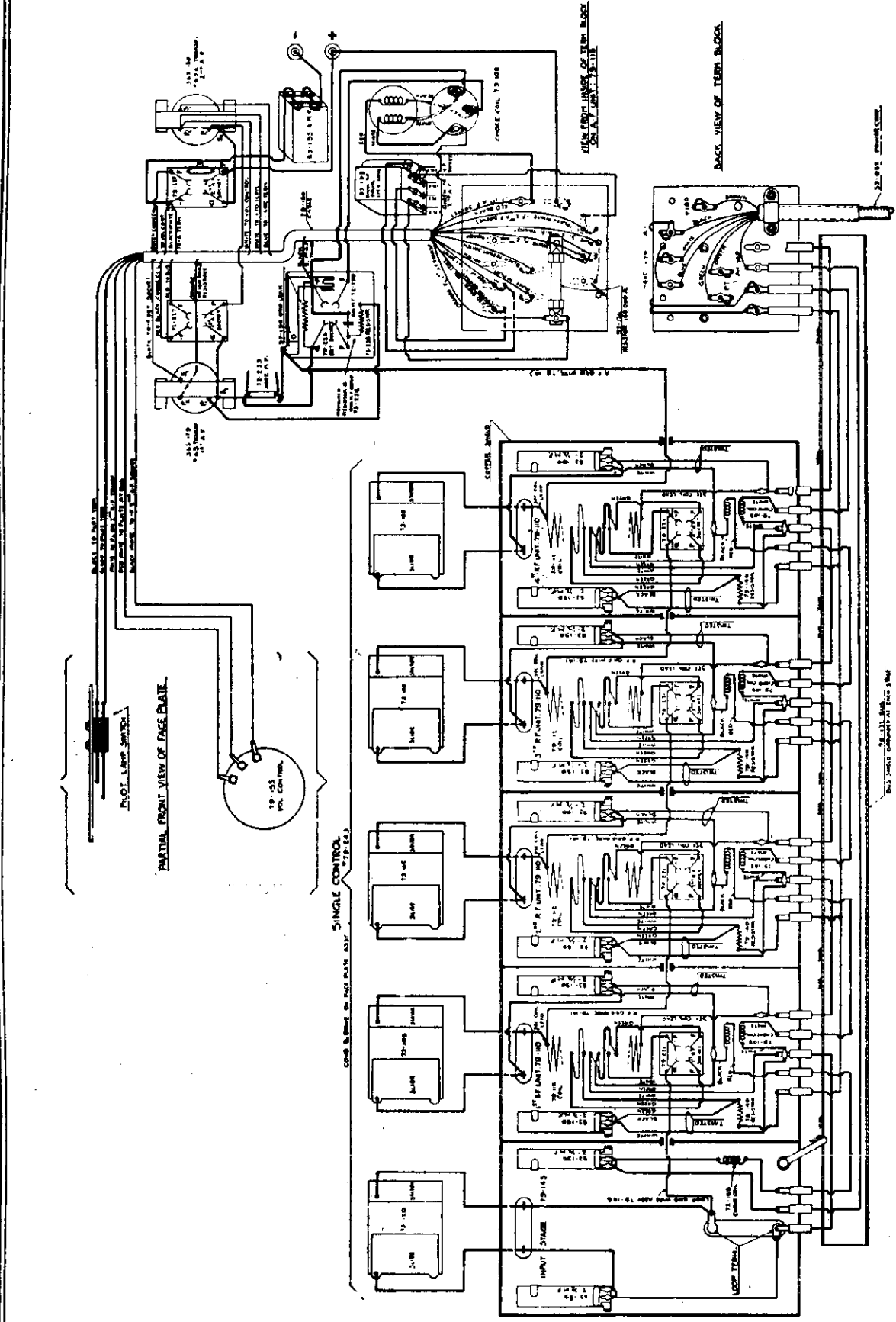
- C8 - .002 mfd
- C5 - .0001 mfd
- C - .000555 mfd (max)
- C0 - .000009 mfd
- C1 - .00003 mfd
- C2 - .5 mfd
- C3 - .0002 mfd
- C4 - .001 mfd
- C6 - .1 mfd
- C7 - .005 mfd
- L - 188 microhenrys
- L1 - 90 microhenrys
- R1 - 200 ohms
- R2 - 1.0 megohm
- R3 - 50,000 ohms
- R4 - 20,000 ohms for dynamic
- R4 - 50,000 ohms for magnetic

3978

NAME: SCHEMATIC 1927 E-DC
 MAT. NO. 60-092
 DRAWN BY: [Signature]
 TRACED BY: [Signature]
 APPROVED BY: [Signature]
 FEDERAL TEL. MFG. CO.
 BUFFA O. N. Y.
 3978

FEDERAL RADIO CORP.

MODEL F, CODE 79-080
Receiver Chassis



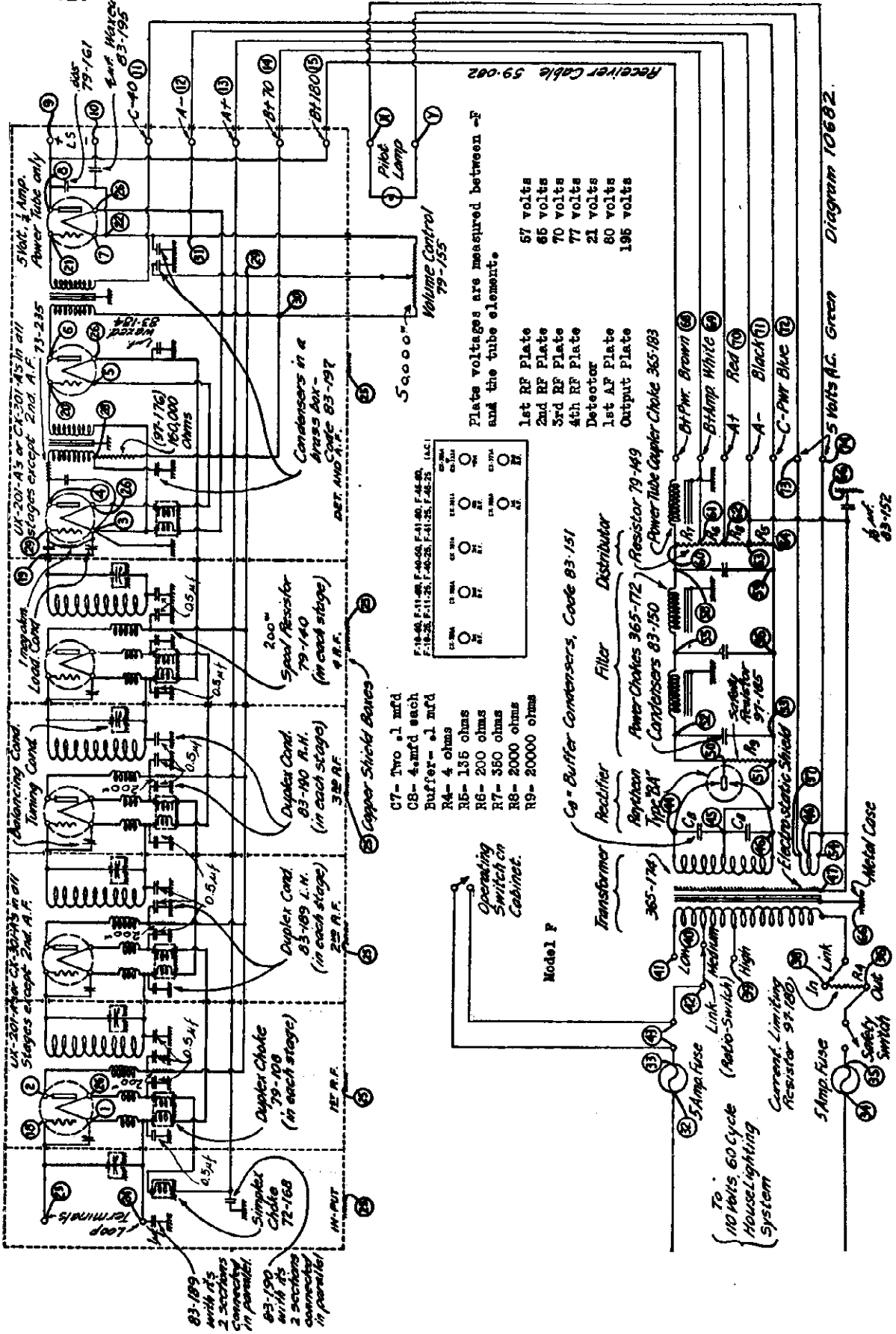
Model F Receiver View

For Power Unit Chassis Wiring
See Index

GROUND TO FRAME

MODEL F, CODE 79-080
Schematic

FEDERAL RADIO CORP.



Plates voltages are measured between -E and the tube element.

1st RF Plate	67 volts
2nd RF Plate	65 volts
3rd RF Plate	70 volts
4th RF Plate	77 volts
Detector	21 volts
1st AF Plate	80 volts
Output Plate	196 volts

11 WMA	11 WMA	11 WMA	11 WMA	11 WMA	11 WMA
12 WMA	12 WMA	12 WMA	12 WMA	12 WMA	12 WMA
13 WMA	13 WMA	13 WMA	13 WMA	13 WMA	13 WMA
14 WMA	14 WMA	14 WMA	14 WMA	14 WMA	14 WMA
15 WMA	15 WMA	15 WMA	15 WMA	15 WMA	15 WMA
16 WMA	16 WMA	16 WMA	16 WMA	16 WMA	16 WMA
17 WMA	17 WMA	17 WMA	17 WMA	17 WMA	17 WMA
18 WMA	18 WMA	18 WMA	18 WMA	18 WMA	18 WMA
19 WMA	19 WMA	19 WMA	19 WMA	19 WMA	19 WMA
20 WMA	20 WMA	20 WMA	20 WMA	20 WMA	20 WMA

Co = Buffer Condensers, Code 83-151

Model F

Receiver Cable 59-082

Volume Control 79-155

5000-ohm

5000-ohm

5000-ohm

5000-ohm

5000-ohm

5000-ohm

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Diagram 10682

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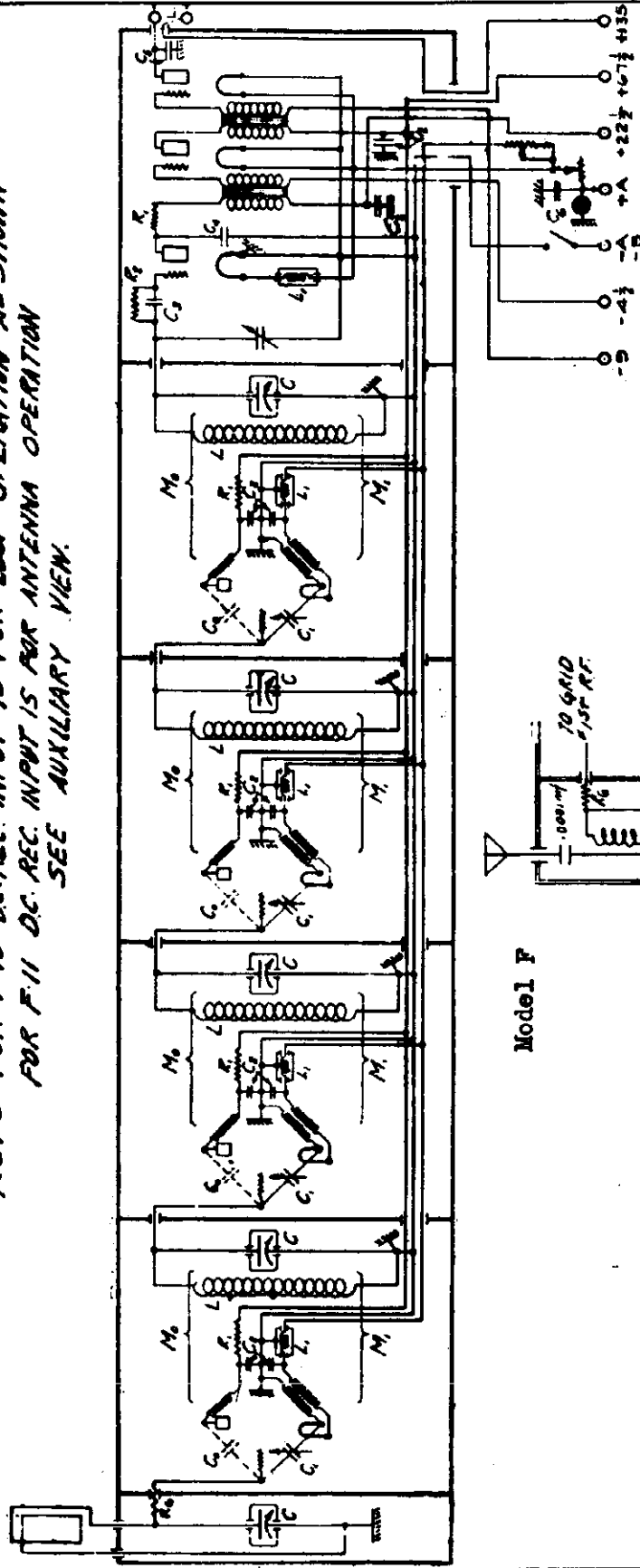
5000-ohm

5000-ohm

FEDERAL RADIO CORP.

MODEL F-10 DC
F-11 DC

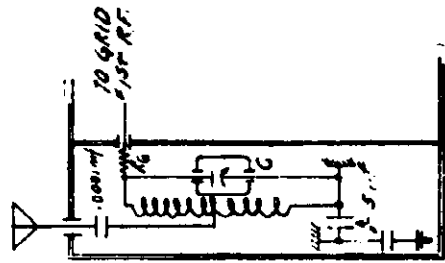
NOTE FOR F-10 DC REC. INPUT IS FOR LOOP OPERATION AS SHOWN
FOR F-11 DC REC. INPUT IS FOR ANTENNA OPERATION
SEE AUXILIARY VIEW.



F-10, F-11, F-40 (Batt.)

6X300A	6X300A	6X300A	6X300A	6X300A	6X300A
6X300A	6X300A	6X300A	6X300A	6X300A	6X300A
6X300A	6X300A	6X300A	6X300A	6X300A	6X300A
6X300A	6X300A	6X300A	6X300A	6X300A	6X300A
6X300A	6X300A	6X300A	6X300A	6X300A	6X300A
6X300A	6X300A	6X300A	6X300A	6X300A	6X300A

6X300 tubes with a 6X300 in socket No. 7 may be used from storage battery or eliminator operation is not practical.



Model F

- L = 100 μH
- C1 = 500 pF (MAX)
- C2 = 5 "
- C3 = 45 "
- M1 = 56.5 μH
- M2 = 5.25 μH
- C4 = 1 pF
- R1 = 200 Ω (VERY LOW CONDUCT)
- R2 = 1,000 Ω
- C5 = 500 pF
- C6 = 1,000 μF
- C7 = 5,000 μF
- L1 = 200 μH
- C8 = 2 μF
- R3 = 500 Ω

1.25 DC - 10-3 CB
AMP. UNIT ADDED FOR F-11 DC
MODEL - 2 0-21-28
ADDED 86 TO LOOP STAGE
MODEL - 2 0-10-26
C. Trans. Primary 1000
R. A. Bell Co. 2838 (lead. 1/2 in. dia.)

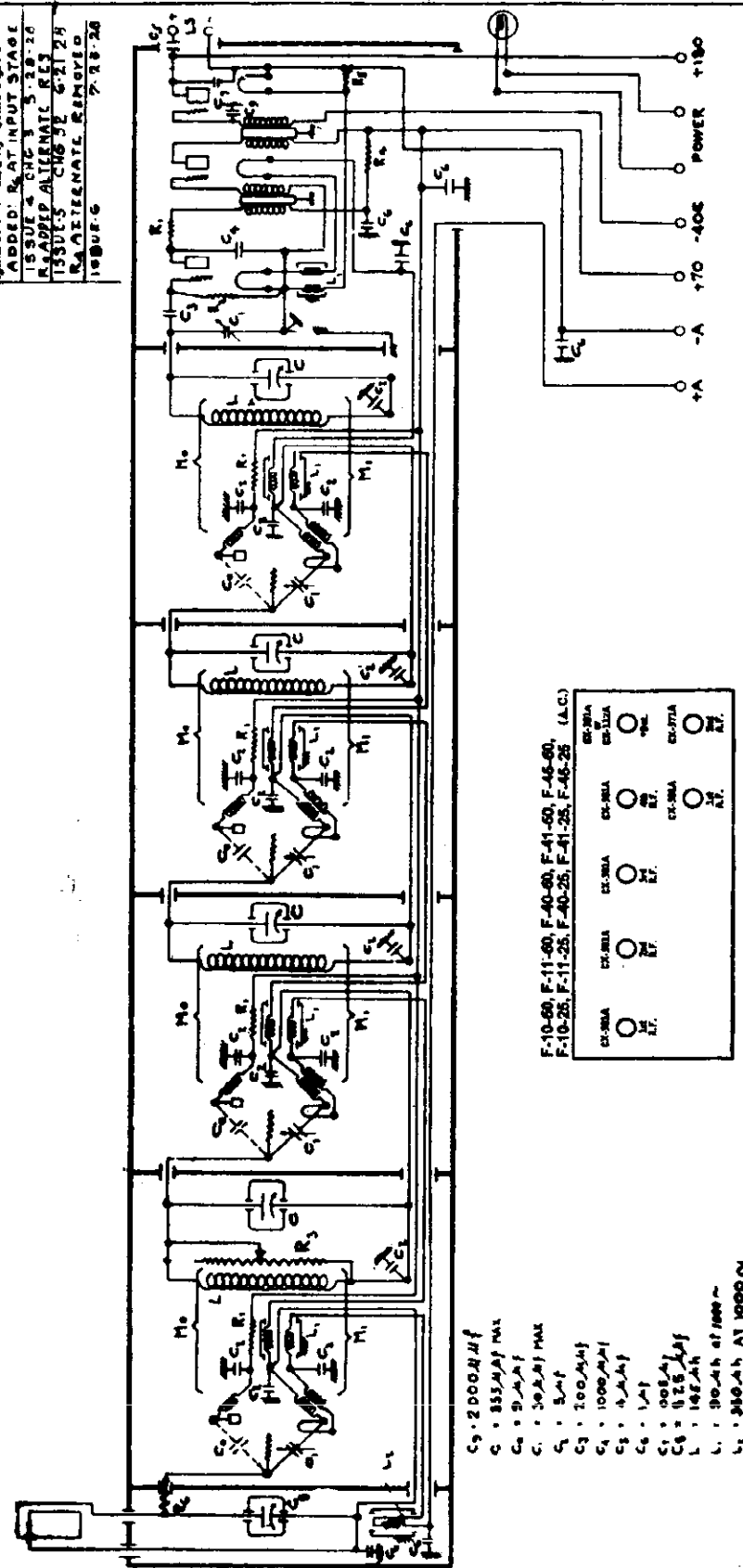
3964

MODEL F (25 Cycle)

FEDERAL RADIO CORP.

CHANGE RECORD

ISSUE 1	10-18-37
C ₉ (2000 μmf) ADDED	
ISSUE 2	2-11-38
R ₄ WAS 150,000 Ω	
ISSUE 3	8-9-38
Grid Amps (12-4) Added Input	
ADDED S ₁ AT INPUT STAGE	
ISSUE 4 CHG 3	5-28-38
REMOVED ALTERNATE R ₁	
ISSUE 5 CHG 3	6-21-38
ALTERNATE REMOVED	
ISSUE 6	7-28-38



DESIGNED FOR

SCHEMATIC

FOR 25 CYCLE TYPE F REC. SUB ASSY

DRAWN BY *WBS* 10/10

TRACED BY *WBS* 7/28/37

CHECKED BY *WBS*

APPROVED BY *WBS*

FEDERAL TEL. MFG. CO.
BUFFALO, N. Y.

3982

F-10-60, F-11-60, F-40-60, F-41-60, F-45-60, F-46-60,
F-10-25, F-11-25, F-40-25, F-41-25, F-45-25, F-46-25 (A.C.)

CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A
CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A
CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A	CR-300A

Model F

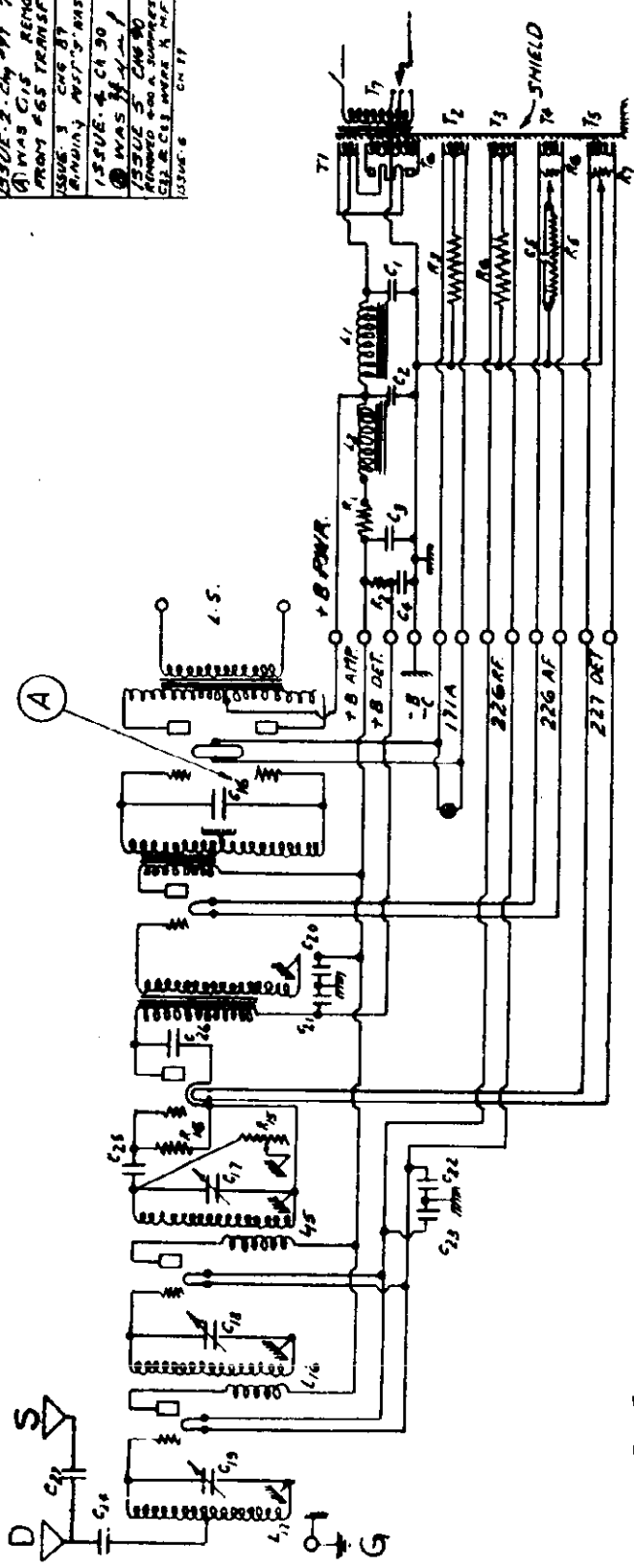
- C₉ = 2000 μmf
- C₁ = 833 μmf MAX
- C₂ = 5 μmf
- C₃ = 30 μmf MAX
- C₄ = 5 μmf
- C₅ = 100 μmf
- C₆ = 1000 μmf
- C₇ = 4 μmf
- C₈ = 1 μmf
- C₁₀ = 0.05 μmf
- C₁₁ = 0.25 μmf
- L₁ = 148 μH
- L₂ = 300 μH AT 1000 ~
- L₃ = 300 μH AT 1000 ~
- M₁ = 125 μH AT R.F.
- M₂ = 100 Ω
- M₃ = 1,000,000 Ω
- M₄ = 500,000 Ω
- M₅ = 10,000 Ω
- M₆ = 100 Ω
- M₇ = 900 Ω

FEDERAL RADIO CORP.

MODEL G (25 Cycle)

CHANGE RECORD
 ISSUE 1 6-29-28
 ISSUE 2 8-15-28
 ISSUE 3 8-15-28
 ISSUE 4 8-15-28
 ISSUE 5 8-15-28
 ISSUE 6 8-15-28

MAKE NO CHANGES. REPORT ALL ERRORS
 FRACTIONAL DIMENSIONS MAY VARY .005
 UNLESS OTHERWISE NOTED



- PARTS LIST FOR POWER UNIT**
 T1 = 3800
 T2 = 13000
 T3 = 1300
 T4 = 1400
 T5 = 2500
 T6 = 40
 T7 = 40
 T8 = 3860 TAP 1600
 T9 = 727 TAPS 668 @ 10

- PARTS LIST FOR RECEIVER**
 C1 = 2 MFD
 C2 = 4
 C3 = 4
 C4 = 1
 C5 = .5
 (A.C.)
 G-10-60, G-40-60, G-41-60,
 G-10-25, G-40-25, G-41-25

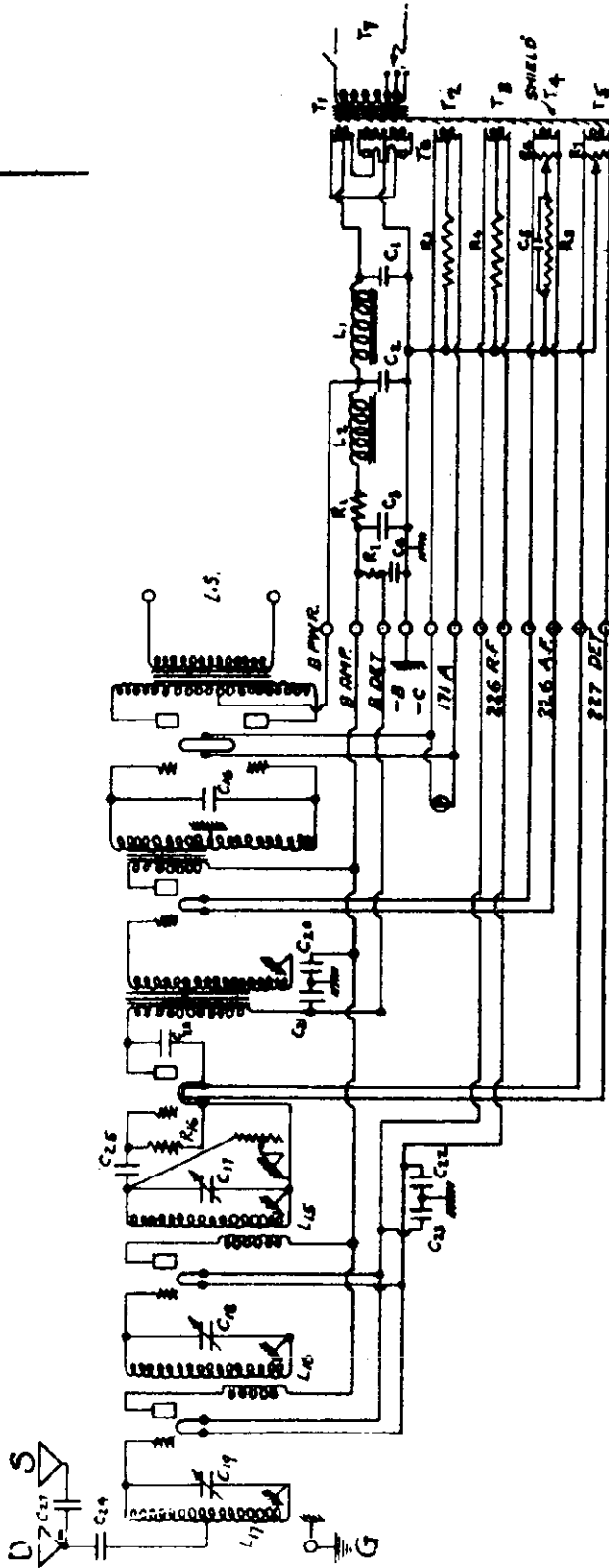
Model G

NAME: SCHEMATIC
 DATE: 6-29-28
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 TRACED BY: [Signature]
 APPROVED BY: [Signature]
 SCALE: 1/8" = 1"

3985

FEDERAL TEL. MFG. CO.
 BUFFALO, N. Y.

CHANGE RECORD
1330E-1 8-17-32

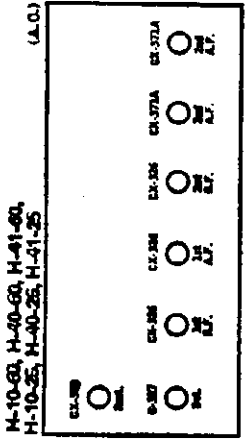


- PARTS LIST FOR POWER UNIT**
- $C_1 = 1 \mu f$
 - $C_2 = 1 \mu f$
 - $C_3 = 2 \mu f$
 - $C_4 = 1 \mu f$
 - $C_5 = \frac{1}{2} \mu f$
 - $R_1 = 3500 \Omega$
 - $R_2 = 13,000 \Omega$
 - $R_3 = 1300 \Omega$
 - $R_4 = 1400 \Omega$
 - $R_5 = 2500 \Omega$
 - $R_6 = 40 \Omega$
 - $R_7 = 40 \Omega$
 - $L_1 = 154-285 \mu H$
 - $L_2 = 557-1600 \mu H$
 - $L_3 = 8$
 - $L_4 = 8$
 - $T_1 = 24$
 - $T_2 = 8$
 - $T_3 = 12$
 - $T_4 = 2590$
 - $T_5 = 573$

- PARTS LIST FOR SET.**
- $C_{16} = .0002 \mu f$
 - $C_{17} = .0003 \mu f$
 - $C_{18} = .0003 \mu f$
 - $C_{19} = .0003 \mu f$
 - $C_{20} = \frac{1}{2} \mu f$
 - $C_{21} = \frac{1}{2} \mu f$
 - $C_{22} = \frac{1}{2} \mu f$
 - $C_{23} = \frac{1}{2} \mu f$
 - $C_{24} = .0001 \mu f$
 - $C_{25} = .0002 \mu f$
 - $C_{26} = .001 \mu f$
 - $C_{27} = 50 \mu f$
 - $L_{15} = 262 \mu H$
 - $L_{16} = 162 \mu H$
 - $L_{17} = 802 \mu H$
 - $R_{14} = 500,000 \Omega$
 - $R_{15} = 2 \text{ Meg}$

plate voltages are measured between the chassis and the respective tube plates.

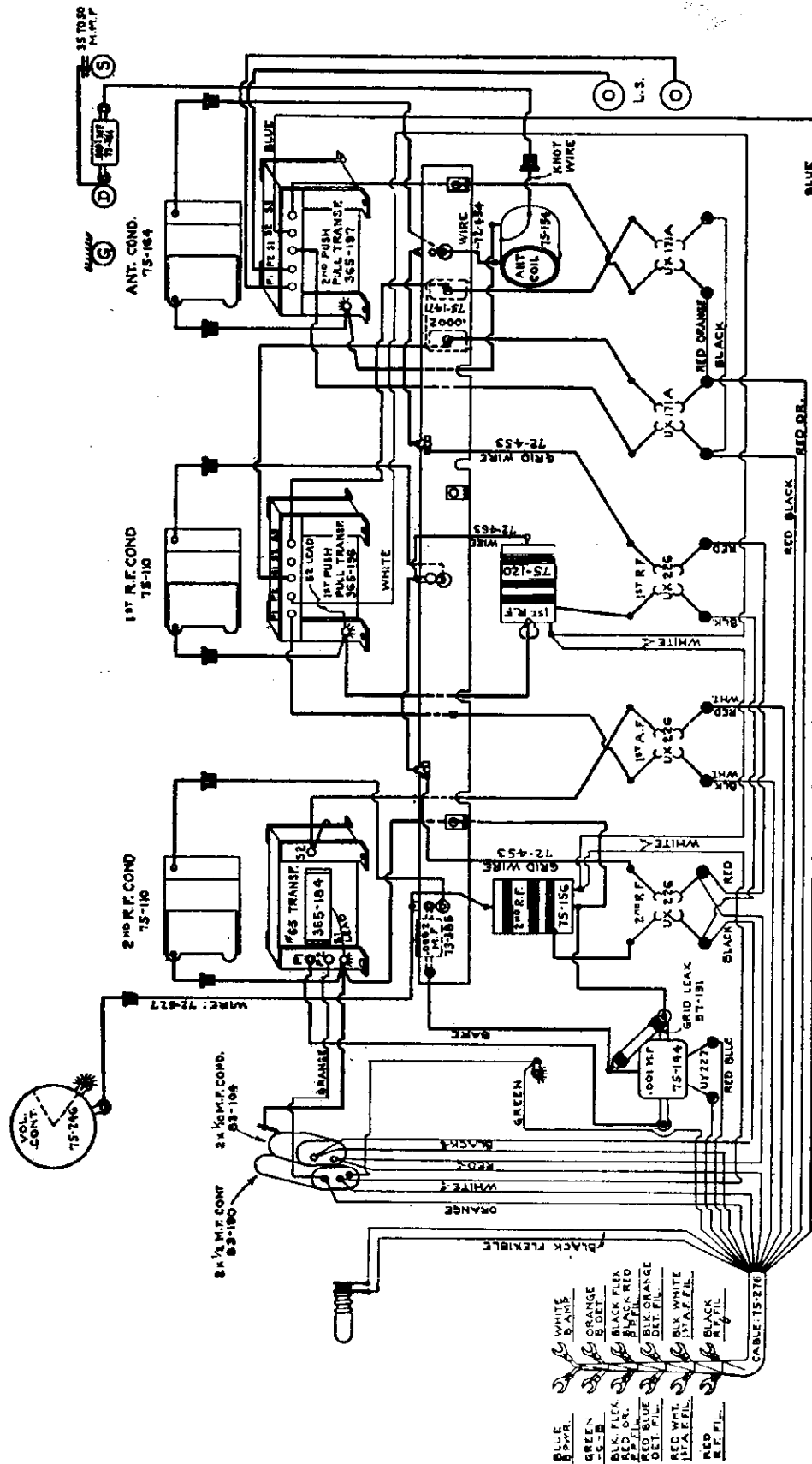
- | | | | |
|--------------------|-----------|--------------|------------|
| 1st RF Plate | 125 volts | 1st RF Fil. | 1.45 volts |
| 2nd RF Plate | 125 volts | 2nd RF Fil. | 1.45 volts |
| Detector Plate | 62 volts | Detector Fil | 2.25 volts |
| 1st AF Plate | 125 volts | 1st AF Fil. | 1.45 volts |
| Output Plates | 190 volts | Output Fil. | 5.1 volts |
| Grids and Cathodes | 0 volts | | |



M-10-G3, H-40-G3, H-41-40,
H-10-25, H-40-25, H-41-25

FEDERAL RADIO CORP.

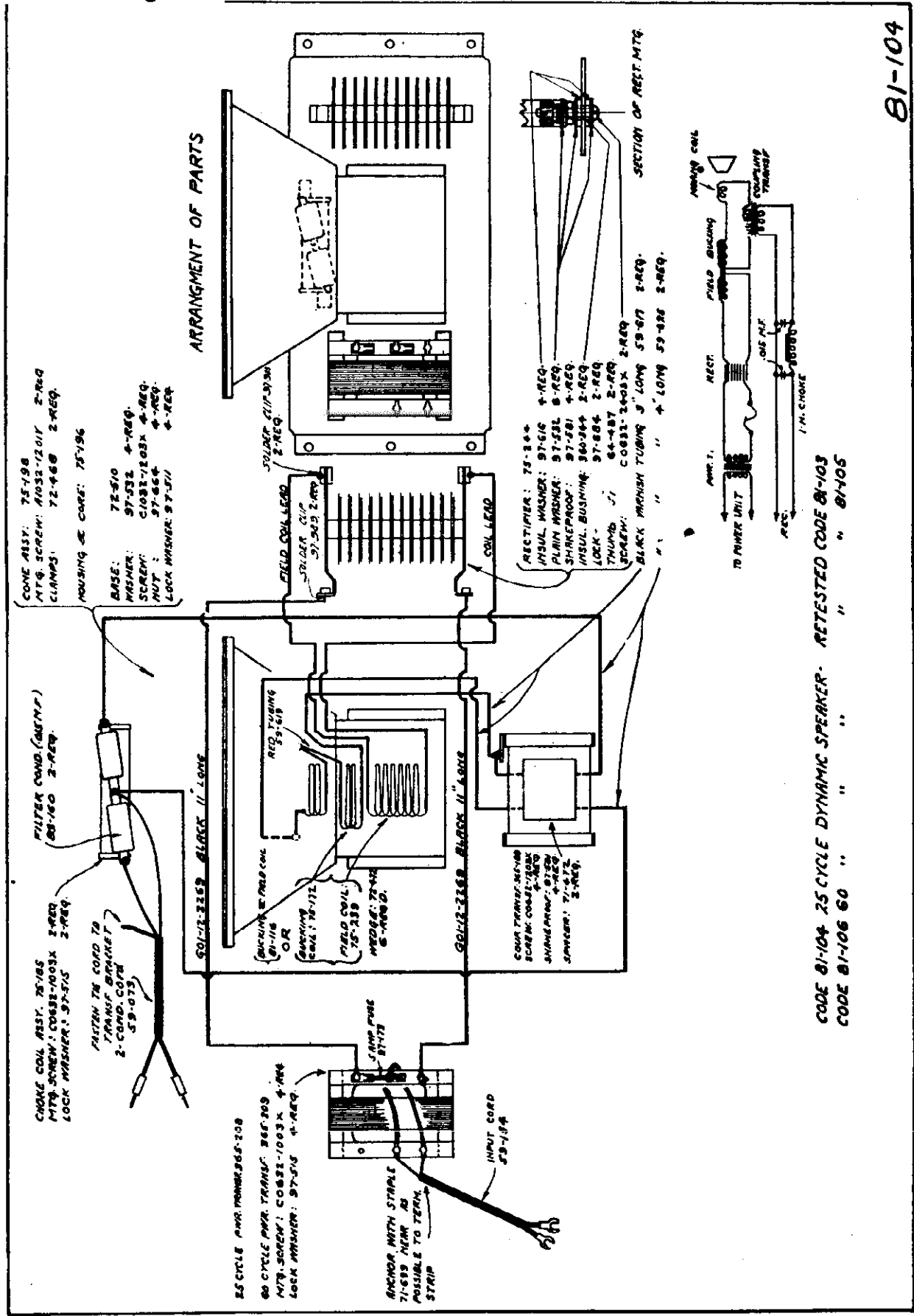
MODEL H Receiver
Chassis Wiring



BOTTOM VIEW OF CHASSIS

MODEL H Power Unit
Chassis Wiring

FEDERAL RADIO CORP.

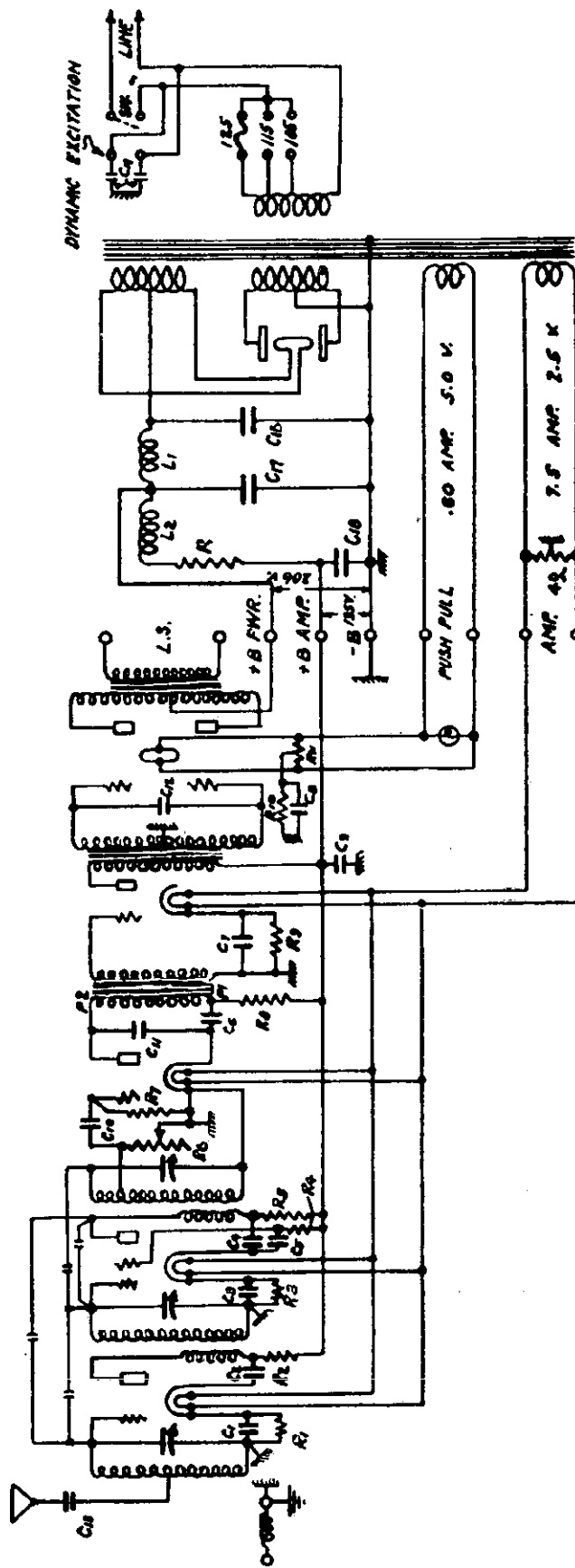


81-104

CODE 81-104 25 CYCLE DYNAMIC SPEAKER - RETESTED CODE 81-103
CODE 81-106 60 " " " " " " 81-105

FEDERAL RADIO CORP.

MODEL K



Model K

25 CYCLE		60 CYCLE	
R	1000 Ω	R	1200 Ω
R1	2000 Ω	R1	1500 Ω
R2	4000 Ω	R2	1800 Ω
R3	8000 Ω	R3	2200 Ω
R4	16000 Ω	R4	2800 Ω
R5	32000 Ω	R5	3500 Ω
R6	64000 Ω	R6	4500 Ω
R7	128000 Ω	R7	6000 Ω
R8	256000 Ω	R8	8000 Ω
R9	512000 Ω	R9	11000 Ω
R10	1024000 Ω	R10	15000 Ω
C	.001 μF	C	.002 μF
C1	.002 μF	C1	.005 μF
C2	.005 μF	C2	.01 μF
C3	.01 μF	C3	.02 μF
C4	.02 μF	C4	.05 μF
C5	.05 μF	C5	.1 μF
C6	.1 μF	C6	.2 μF
C7	.2 μF	C7	.5 μF
C8	.5 μF	C8	1 μF
C9	1 μF	C9	2 μF
C10	2 μF	C10	5 μF
L	100 μH	L	200 μH
L1	200 μH	L1	400 μH
L2	400 μH	L2	800 μH
L3	800 μH	L3	1600 μH
L4	1600 μH	L4	3200 μH
L5	3200 μH	L5	6400 μH
L6	6400 μH	L6	12800 μH
L7	12800 μH	L7	25600 μH
L8	25600 μH	L8	51200 μH
L9	51200 μH	L9	102400 μH
L10	102400 μH	L10	204800 μH

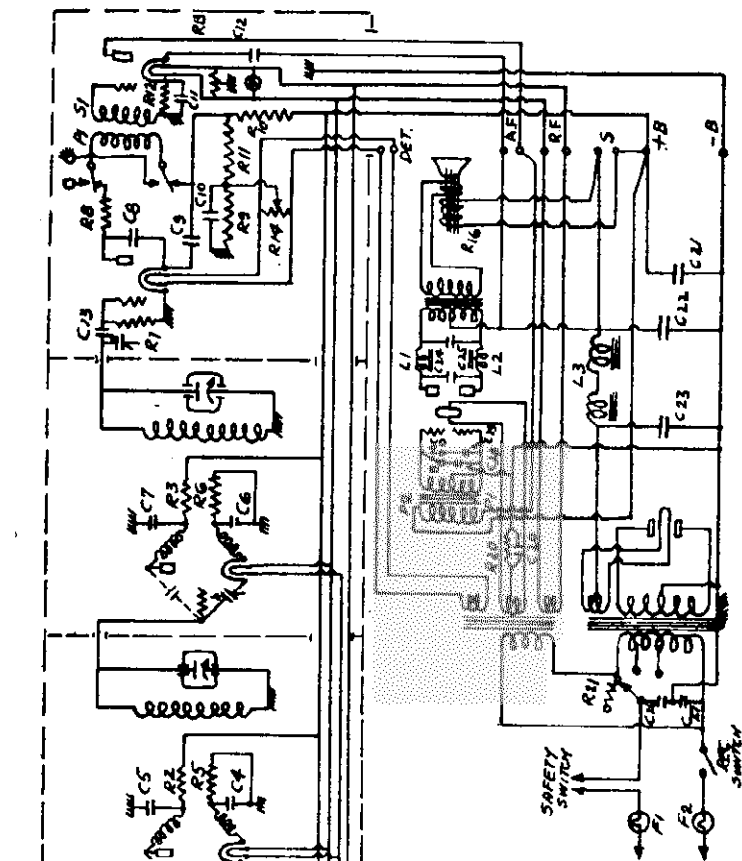
(A.C.)

CX-380	Rect.	CX-371A	2nd A.F.
C-324	2nd R.F.	C-327	1st R.F.
C-327	1st A.F.	CX-371A	2nd A.F.
C-327	2nd R.F.	C-327	1st A.F.
C-327	1st R.F.	CX-380	Rect.

K-10-60, K-40-60, K-41-60,
K-10-25, K-40-25, K-41-25

MODEL M

FEDERAL RADIO CORP.



Type M

FEDERAL—Type M
Line Voltage 113—Set on 113 Volt Tap—Volume Control Position Off

TYPE OF TUBE	TYPE OF TUBE	POSITION	TUBE OUT		TUBE IN TESTER		REMARKS
			WATTS	PERCENT	WATTS	PERCENT	
6X4	113 V. A.C.	113	1.0	100	1.0	100	
6X4	113 V. A.C.	113	1.0	100	1.0	100	
6X4	113 V. A.C.	113	1.0	100	1.0	100	
6X4	113 V. A.C.	113	1.0	100	1.0	100	
6X4	113 V. A.C.	113	1.0	100	1.0	100	
6X4	113 V. A.C.	113	1.0	100	1.0	100	
6X4	113 V. A.C.	113	1.0	100	1.0	100	
6X4	113 V. A.C.	113	1.0	100	1.0	100	
6X4	113 V. A.C.	113	1.0	100	1.0	100	
6X4	113 V. A.C.	113	1.0	100	1.0	100	

- REC. PARTS**
- DC VOLT UNIT CAP. DIELECTRIC RATING
- C1 .25 " 200
 - C2 .25 " 200
 - C3 .25 " 200
 - C4 .25 " 200
 - C5 .25 " 200
 - C6 .25 " 200
 - C7 .25 " 200
 - C8 .001 MICA
 - C9 .001 MICA
 - C10 .001 MICA
 - C11 .001 MICA
 - C12 .001 MICA
 - C13 .00005 " 1400
- RESISTORS
- R1 200 OHMS
 - R2 200
 - R3 200
 - R4 1500
 - R5 1500
 - R6 1500
 - R7 5700
 - R8 200 OHMS
 - R9 13000
 - R10 13000
 - R11 49,000
 - R12 1500
 - R13 40
 - R14 20
 - R15 5700
 - R16 5700
- POWER UNIT PARTS
- C10 1 200
 - C11 1 600
 - C12 1 600
 - C13 1 600
 - C14 .015 1400
 - C15 .015 1400
 - C16 .015 1400
 - C17 .015 1400
 - C18 .015 1400

M-35-60, M-40-60, M-41-60, M-45-60, M-46-60, M-35-25, M-40-25, M-41-25, M-45-25, M-46-25 (A.C.)

CX-390 CX-345 CX-345

Rect. 1st A.F. 2nd A.F.

C-327 Det.

C-327 1st R.F. 2nd R.F. 3rd R.F.

C-327 1st A.F.

MODEL 35, 40

Data

MODEL "Cathedral Tone"

Schematic

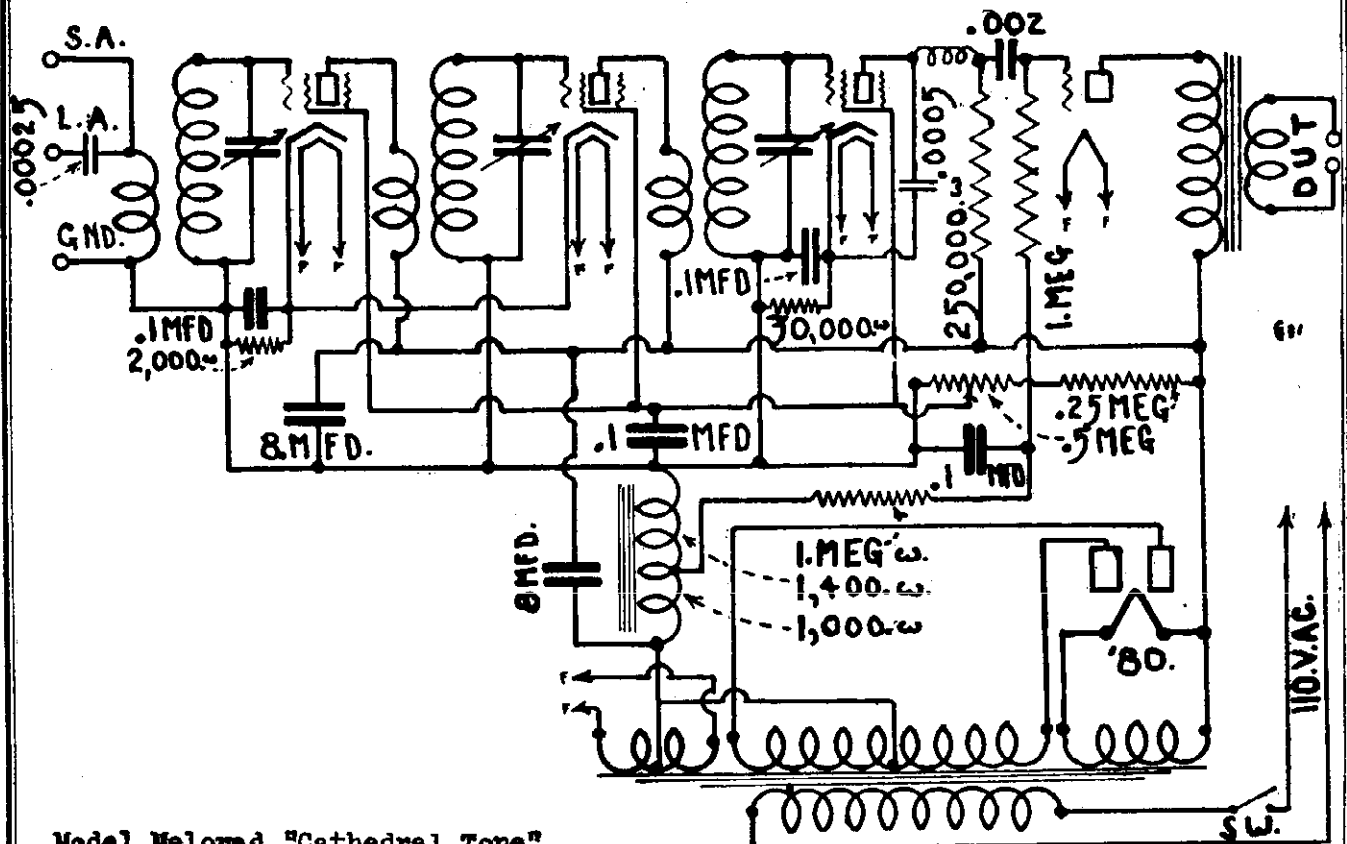
FEDERATED PURCHASER

Model 35, 40

ADJUSTMENTS The 175 kc. oscillator must be accurately tuned to 175 kc. and only 175 kc. If this precaution is not observed it will be impossible to align the oscillator to the rest of the set and the set will not operate correctly as the oscillator is designed for exact 175 kc. operation.

The second intermediate frequency amplifier transformer shield can is removed and one side of the small variator condenser is disconnected from the primary coil. This coil is connected so that it still is in the plate circuit of the tube but the tuning condenser is not connected in the circuit. Now remove the grid cap from the intermediate amplifier tube and connect a 3 megohm resistor from the control grid to ground. Now connect the output from the 175 kc. oscillator to the grid of the intermediate frequency amplifier tube and tune the secondary for maximum deflection of the output meter. (Low voltage alternating current meter, 0 to 3 volts, connected across the voice coil of speaker). Now remove the shield can and connect the small tuning condenser that was previously removed back across the primary coil. With the 175 kc. oscillator connected the same as before, tune the primary for a maximum deflection of the output meter. (Caution: Do not under any circumstances try to retune the secondary after having tuned the primary. This is important.) After having tuned this stage proceed to the next intermediate frequency:

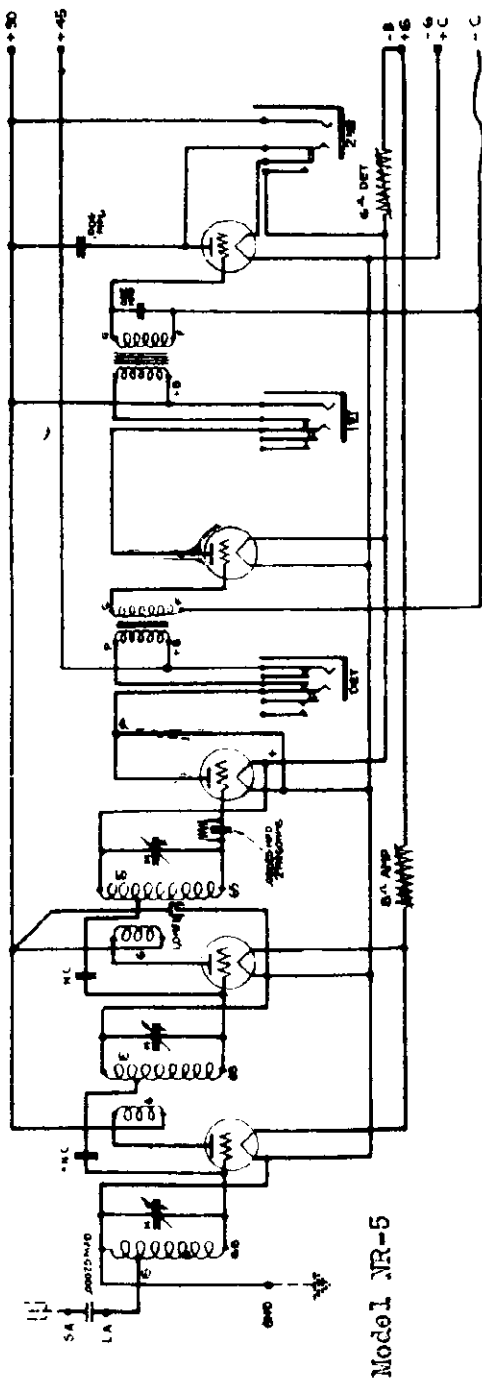
(b) Replace the grid cap on the intermediate frequency amplifier and proceed to the first detector tube. Remove this tube cap and connect the 175 kc. oscillator as before, being sure to connect the 3 megohm resistor from control grid to ground. Now proceed to tune the intermediate frequency transformer by tuning the secondary first for maximum deflection of the output meter and then tuning the primary for maximum deflection. Tuning this transformer must be done very carefully as the selectivity of the whole receiver depends entirely on the tuning of this transformer.



Model Melorad "Cathedral Tone"

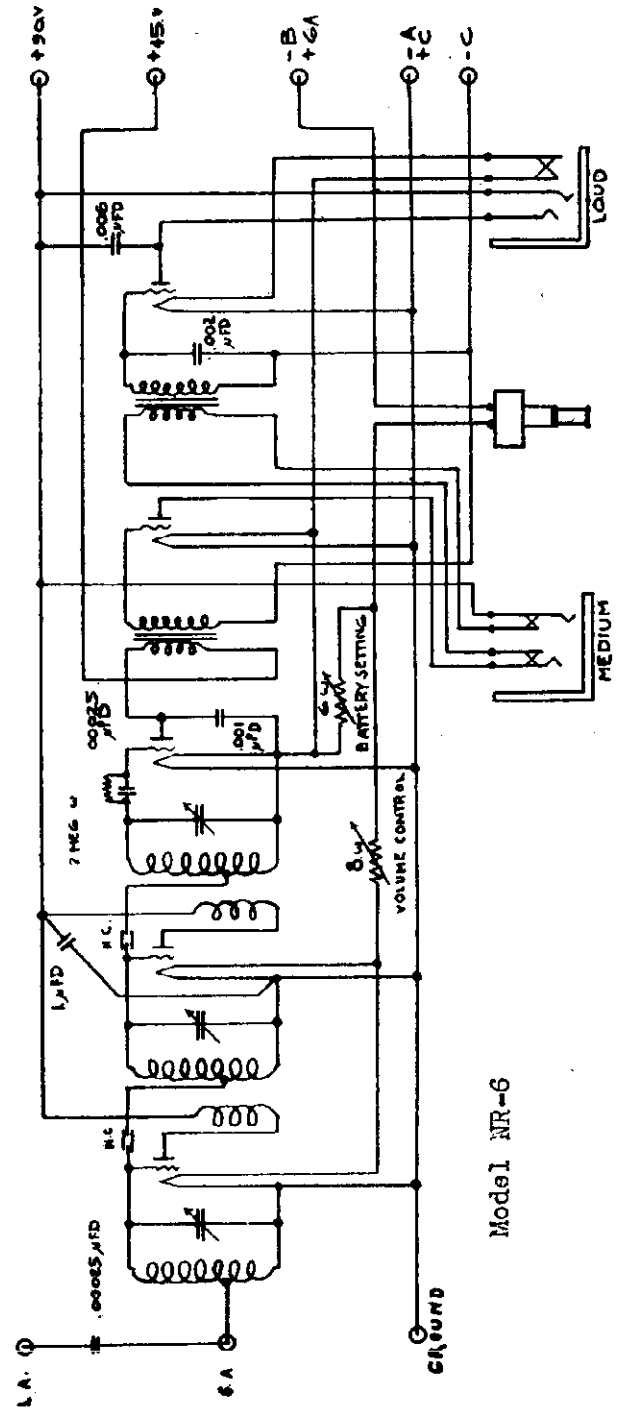
FREED RADIO AND TELEVISION CORP.

MODEL NR-5
MODEL NR-6



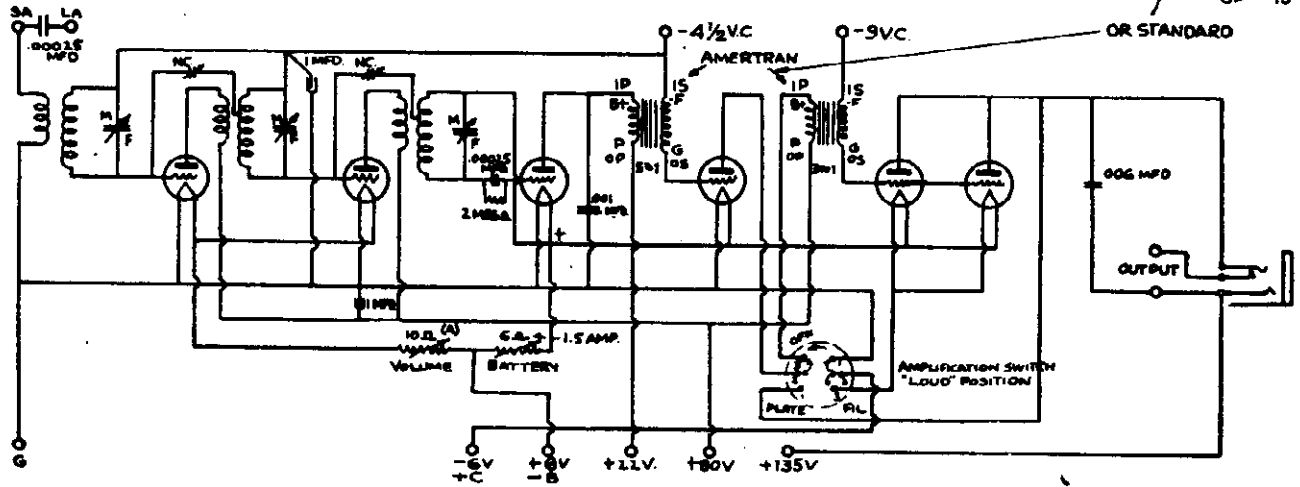
ALTERNATION TABLE			
REVISION	DATE	BY	REASON
1	10/15/57	US	DESIGN
2	11/15/57	US	DESIGN
3	12/15/57	US	DESIGN
4	1/15/58	US	DESIGN
5	2/15/58	US	DESIGN
6	3/15/58	US	DESIGN
7	4/15/58	US	DESIGN
8	5/15/58	US	DESIGN
9	6/15/58	US	DESIGN
10	7/15/58	US	DESIGN
11	8/15/58	US	DESIGN
12	9/15/58	US	DESIGN
13	10/15/58	US	DESIGN
14	11/15/58	US	DESIGN
15	12/15/58	US	DESIGN
16	1/15/59	US	DESIGN
17	2/15/59	US	DESIGN
18	3/15/59	US	DESIGN
19	4/15/59	US	DESIGN
20	5/15/59	US	DESIGN
21	6/15/59	US	DESIGN
22	7/15/59	US	DESIGN
23	8/15/59	US	DESIGN
24	9/15/59	US	DESIGN
25	10/15/59	US	DESIGN
26	11/15/59	US	DESIGN
27	12/15/59	US	DESIGN
28	1/15/60	US	DESIGN
29	2/15/60	US	DESIGN
30	3/15/60	US	DESIGN
31	4/15/60	US	DESIGN
32	5/15/60	US	DESIGN
33	6/15/60	US	DESIGN
34	7/15/60	US	DESIGN
35	8/15/60	US	DESIGN
36	9/15/60	US	DESIGN
37	10/15/60	US	DESIGN
38	11/15/60	US	DESIGN
39	12/15/60	US	DESIGN
40	1/15/61	US	DESIGN
41	2/15/61	US	DESIGN
42	3/15/61	US	DESIGN
43	4/15/61	US	DESIGN
44	5/15/61	US	DESIGN
45	6/15/61	US	DESIGN
46	7/15/61	US	DESIGN
47	8/15/61	US	DESIGN
48	9/15/61	US	DESIGN
49	10/15/61	US	DESIGN
50	11/15/61	US	DESIGN
51	12/15/61	US	DESIGN
52	1/15/62	US	DESIGN
53	2/15/62	US	DESIGN
54	3/15/62	US	DESIGN
55	4/15/62	US	DESIGN
56	5/15/62	US	DESIGN
57	6/15/62	US	DESIGN
58	7/15/62	US	DESIGN
59	8/15/62	US	DESIGN
60	9/15/62	US	DESIGN
61	10/15/62	US	DESIGN
62	11/15/62	US	DESIGN
63	12/15/62	US	DESIGN
64	1/15/63	US	DESIGN
65	2/15/63	US	DESIGN
66	3/15/63	US	DESIGN
67	4/15/63	US	DESIGN
68	5/15/63	US	DESIGN
69	6/15/63	US	DESIGN
70	7/15/63	US	DESIGN
71	8/15/63	US	DESIGN
72	9/15/63	US	DESIGN
73	10/15/63	US	DESIGN
74	11/15/63	US	DESIGN
75	12/15/63	US	DESIGN
76	1/15/64	US	DESIGN
77	2/15/64	US	DESIGN
78	3/15/64	US	DESIGN
79	4/15/64	US	DESIGN
80	5/15/64	US	DESIGN
81	6/15/64	US	DESIGN
82	7/15/64	US	DESIGN
83	8/15/64	US	DESIGN
84	9/15/64	US	DESIGN
85	10/15/64	US	DESIGN
86	11/15/64	US	DESIGN
87	12/15/64	US	DESIGN
88	1/15/65	US	DESIGN
89	2/15/65	US	DESIGN
90	3/15/65	US	DESIGN
91	4/15/65	US	DESIGN
92	5/15/65	US	DESIGN
93	6/15/65	US	DESIGN
94	7/15/65	US	DESIGN
95	8/15/65	US	DESIGN
96	9/15/65	US	DESIGN
97	10/15/65	US	DESIGN
98	11/15/65	US	DESIGN
99	12/15/65	US	DESIGN
100	1/15/66	US	DESIGN

Model NR-5



Model NR-6

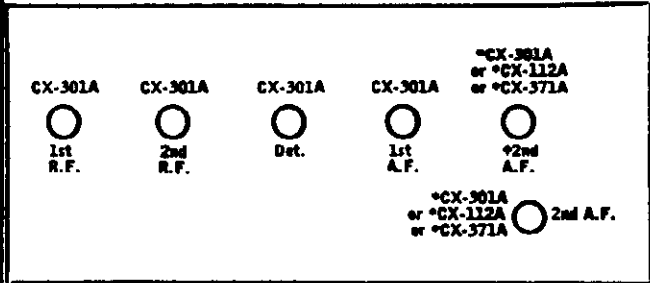
MODEL NR-7
 MODEL NR-8, NR-8A FREED RADIO AND TELEVISION CORP.



Model NR-7

NR-7

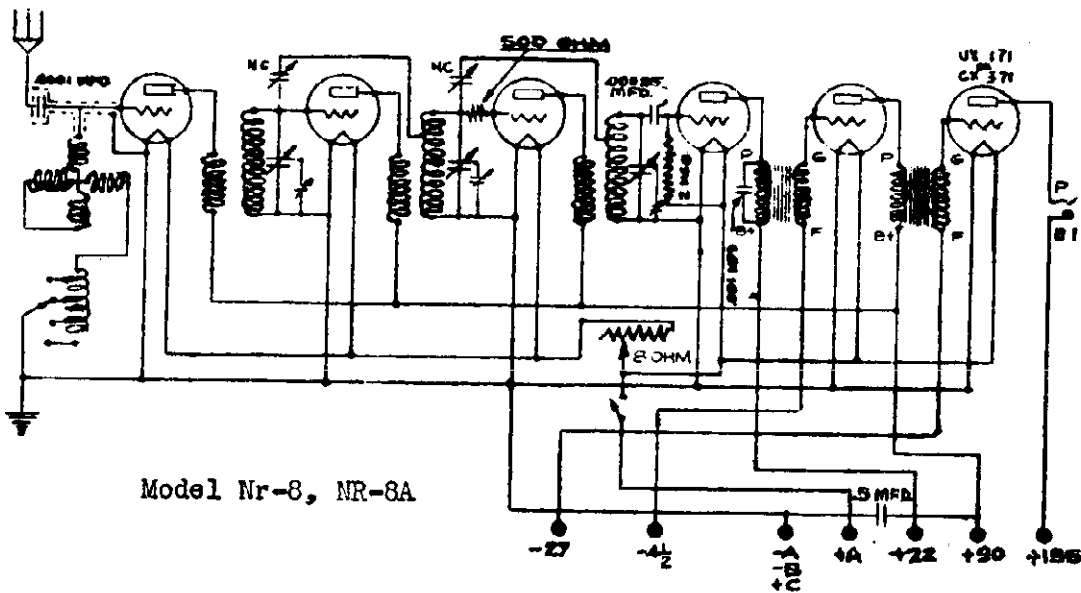
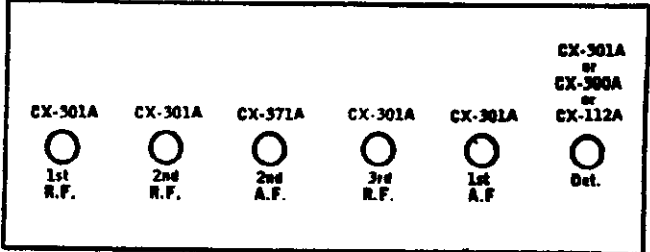
(Batt.)



† If CX-301A's are used, use both stages in parallel. If power tubes are used, one tube in either 2nd A. F. socket is sufficient.

NR-8,

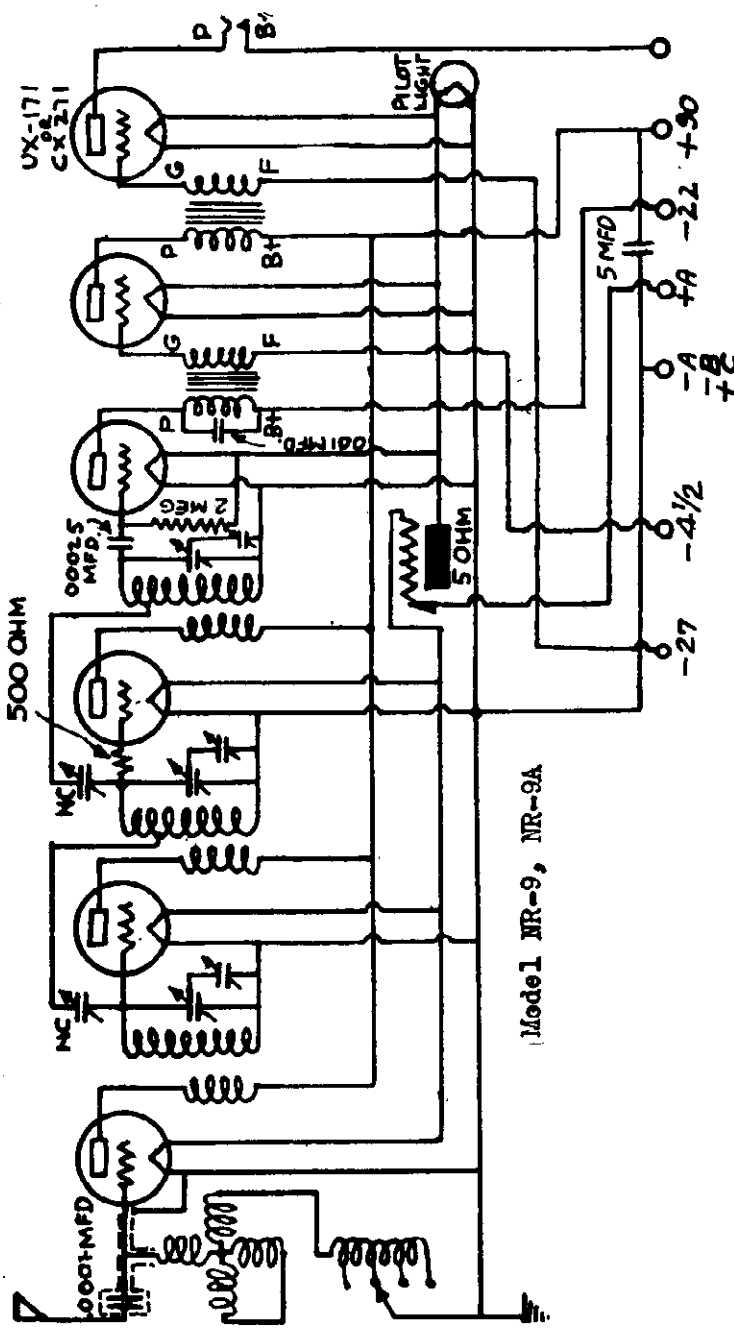
(Batt.)



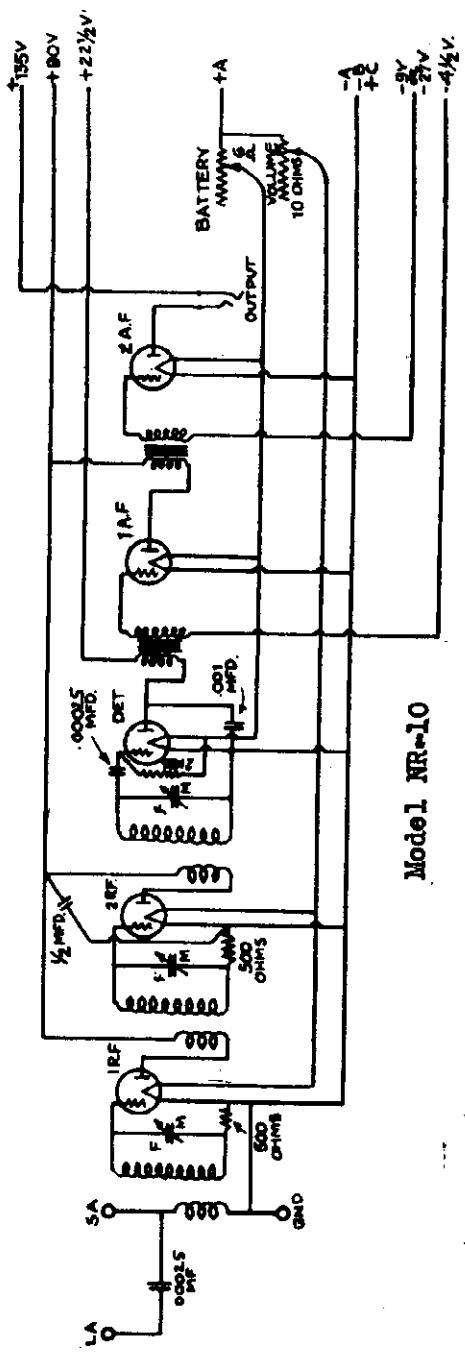
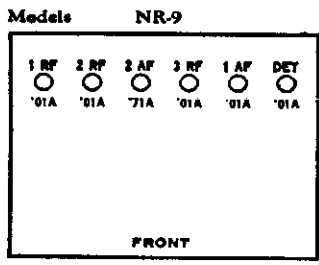
Model Nr-8, NR-8A

FREED RADIO AND TELEVISION CORP.

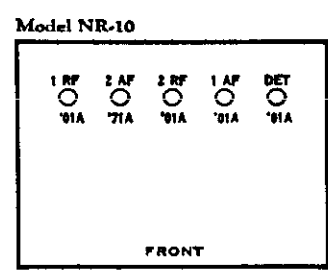
MODEL NR-9, NR-9A
MODEL NR-10



Model NR-9, NR-9A

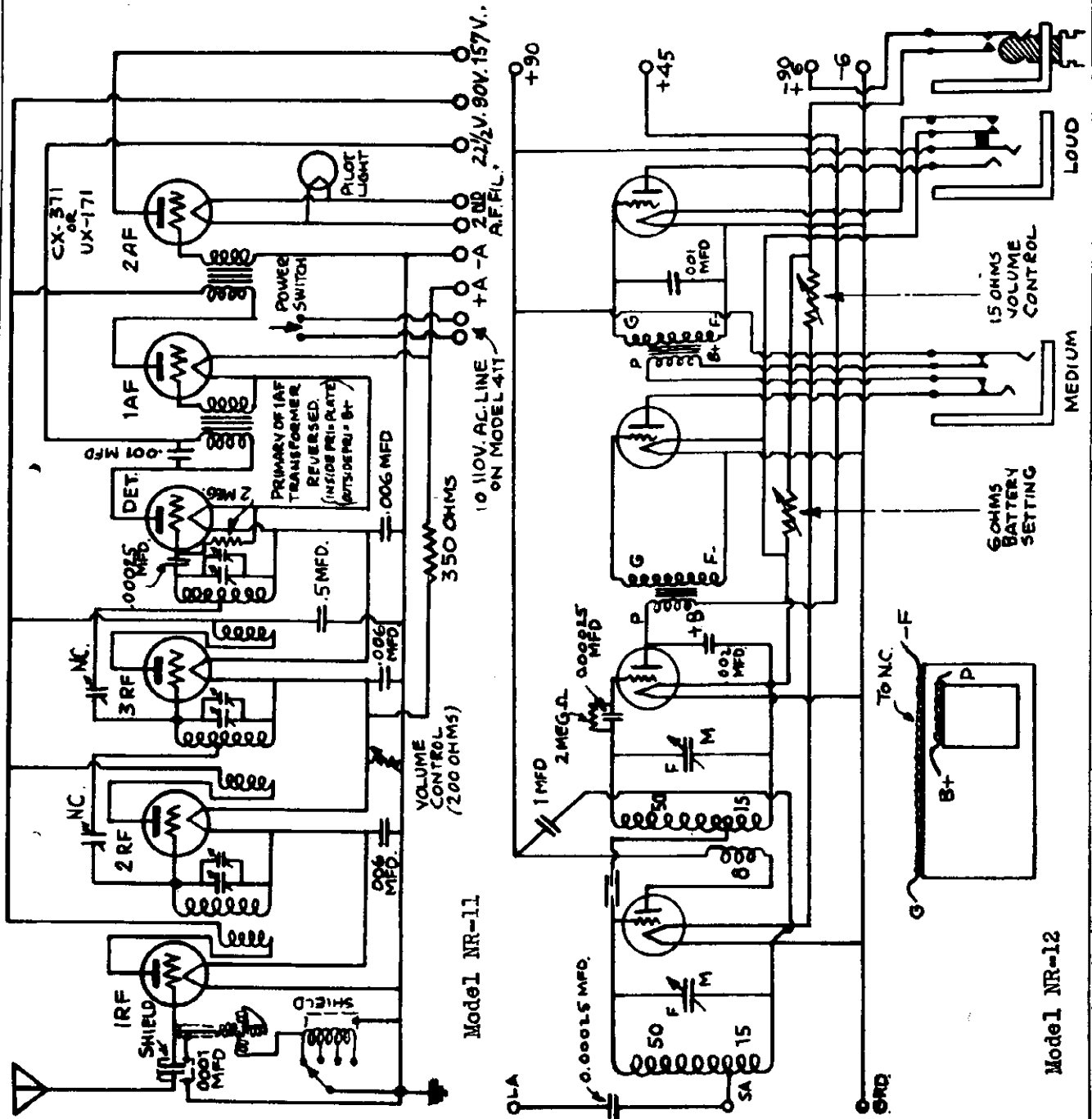


Model NR-10



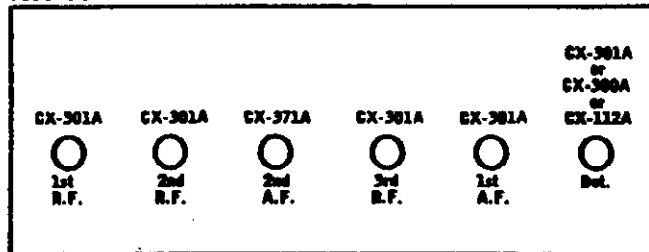
MODEL NR-11
 MODEL NR-12

FREED RADIO AND TELEVISION CORP.



Power Pack For NR-11 On Next Page

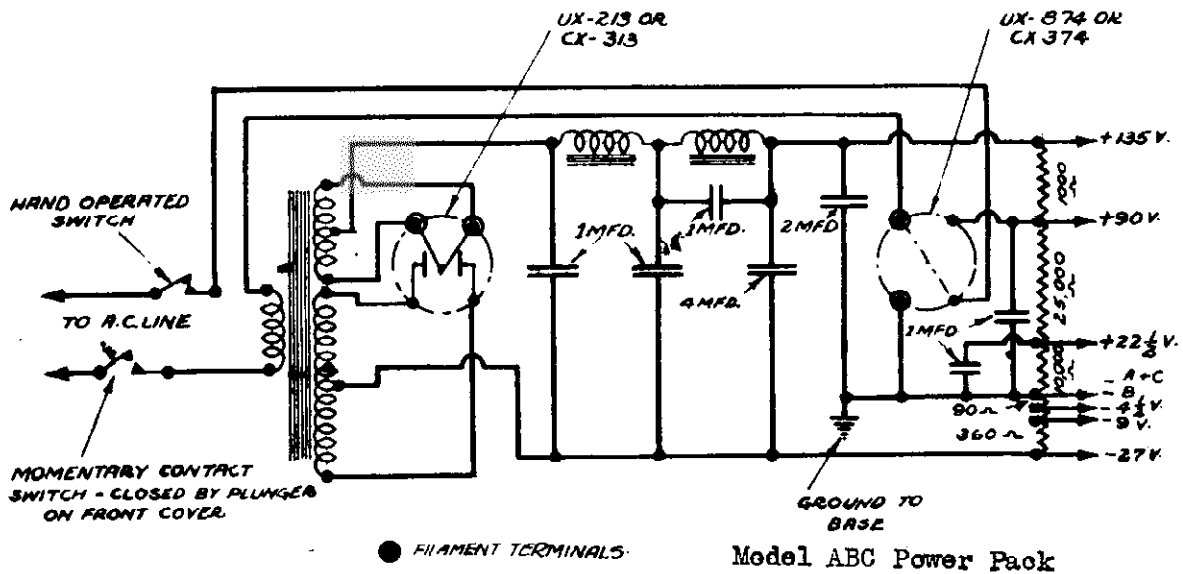
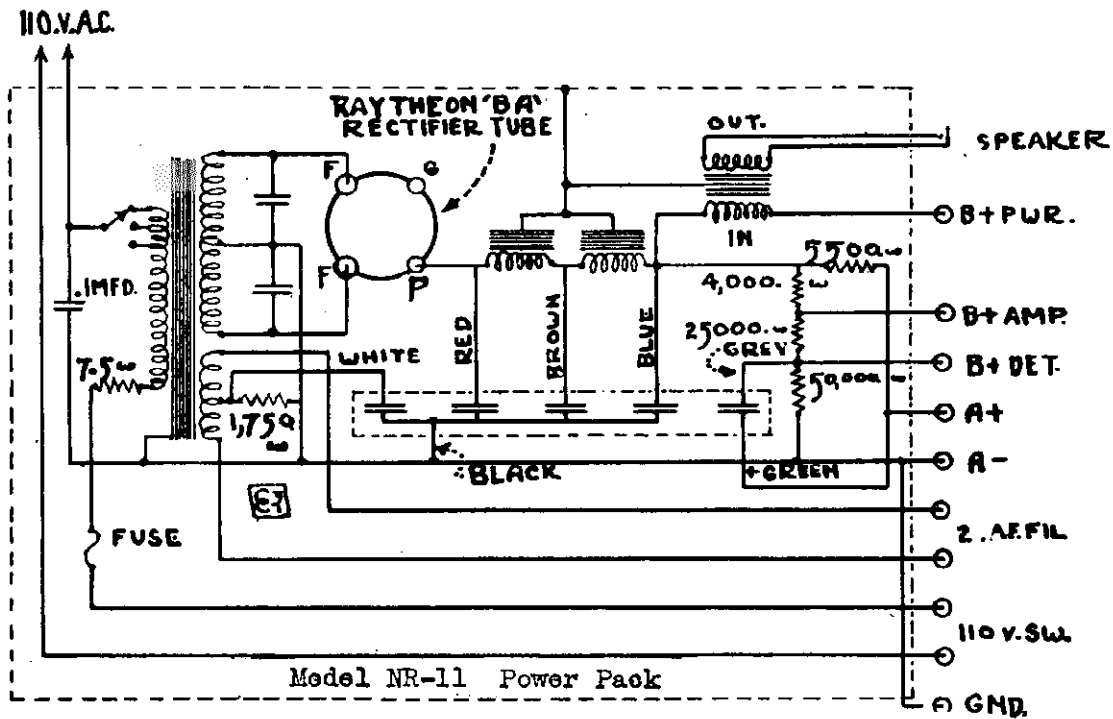
NR-11



This is an A.C. series filament receiver. All tubes except the 2nd A.F. stage tube must be 1/4 ampere tubes.

FREED RADIO AND TELEVISION CORP.

MODEL NR-11
Power Pack
MODEL ABC
Power Pack



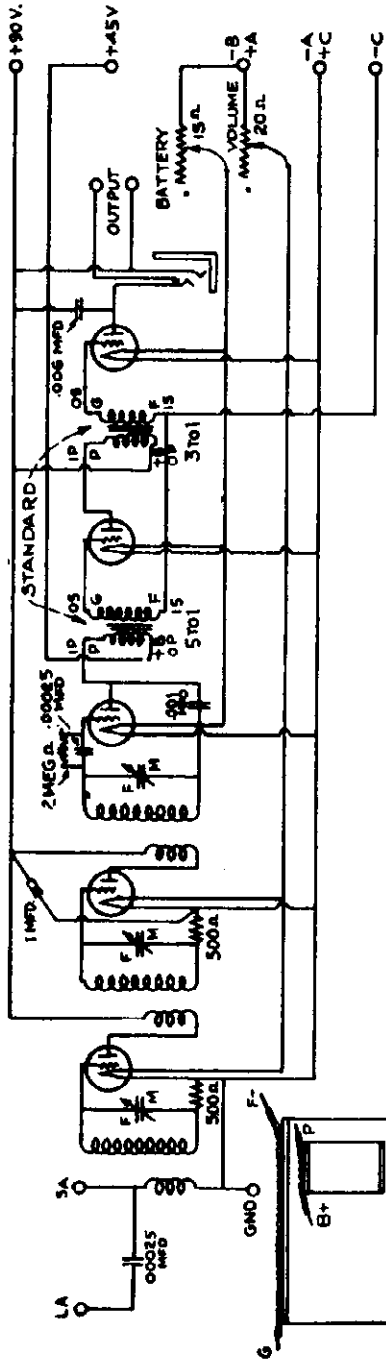
ALTERATION TABLE					DEFINITION	APPROVAL
ALT. LIST	REMARKS	DATE	BY	SP. B.	TRACER	
C	ADD	10-4	J. I.	1937	CHECKER	<p><i>Freed-Cisemann</i></p> <p>SPERRY BUILDING BROOKLYN NEW YORK</p> <p>SCHMATIC CIRCUIT DIAGRAM OF B' AND 'C' ELIMINATOR SCALE DATE 4-12-27</p>
					CHIEF ENGINEER	

949

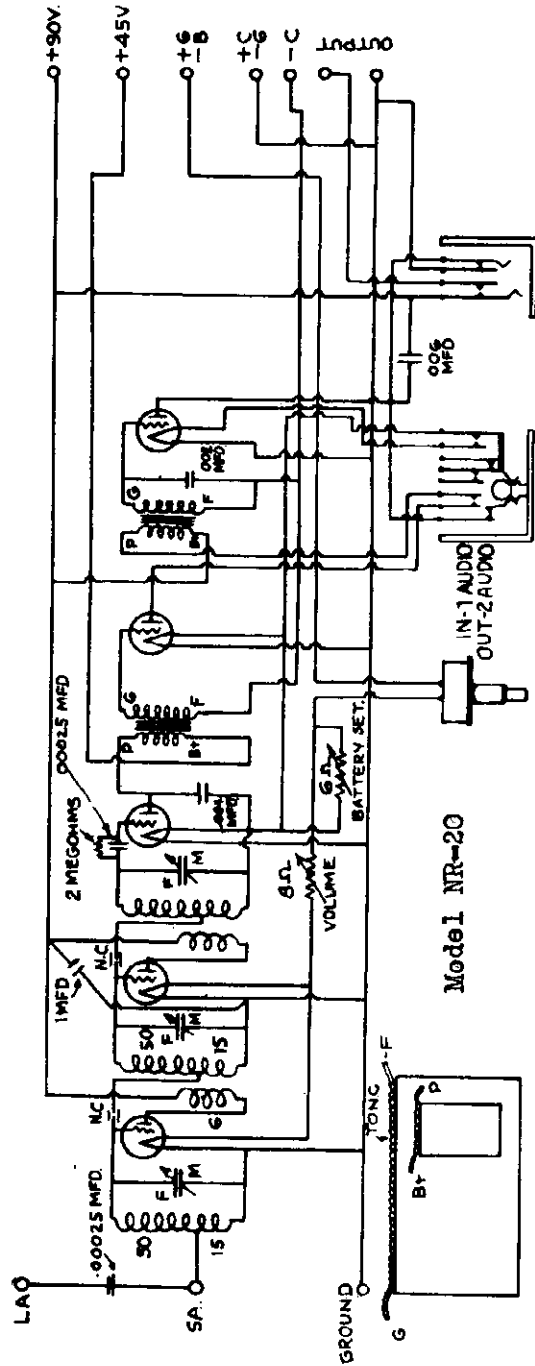
DRAWING NUMBER W.D.-16

FREED RADIO AND TELEVISION CORP.

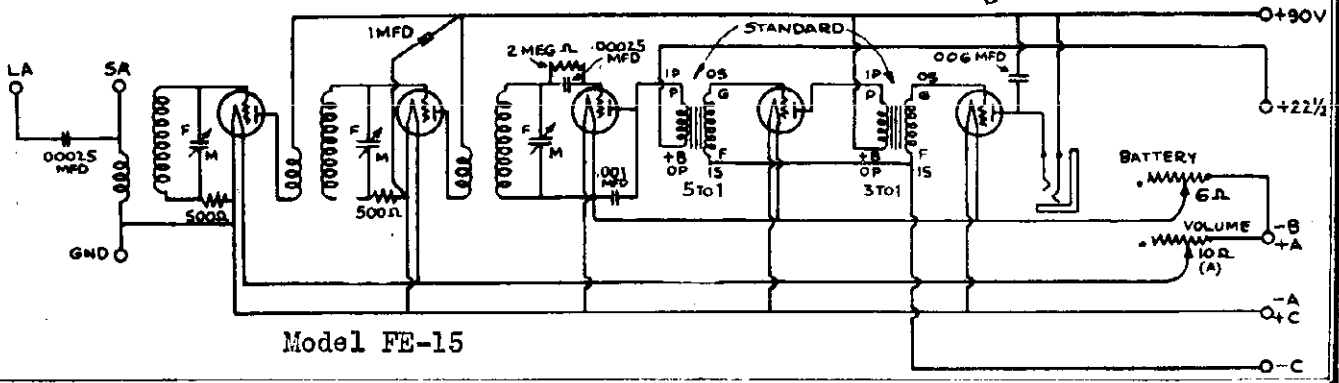
MODEL FE-15
 MODEL FE-18
 MODEL NR-20



Model FE-18



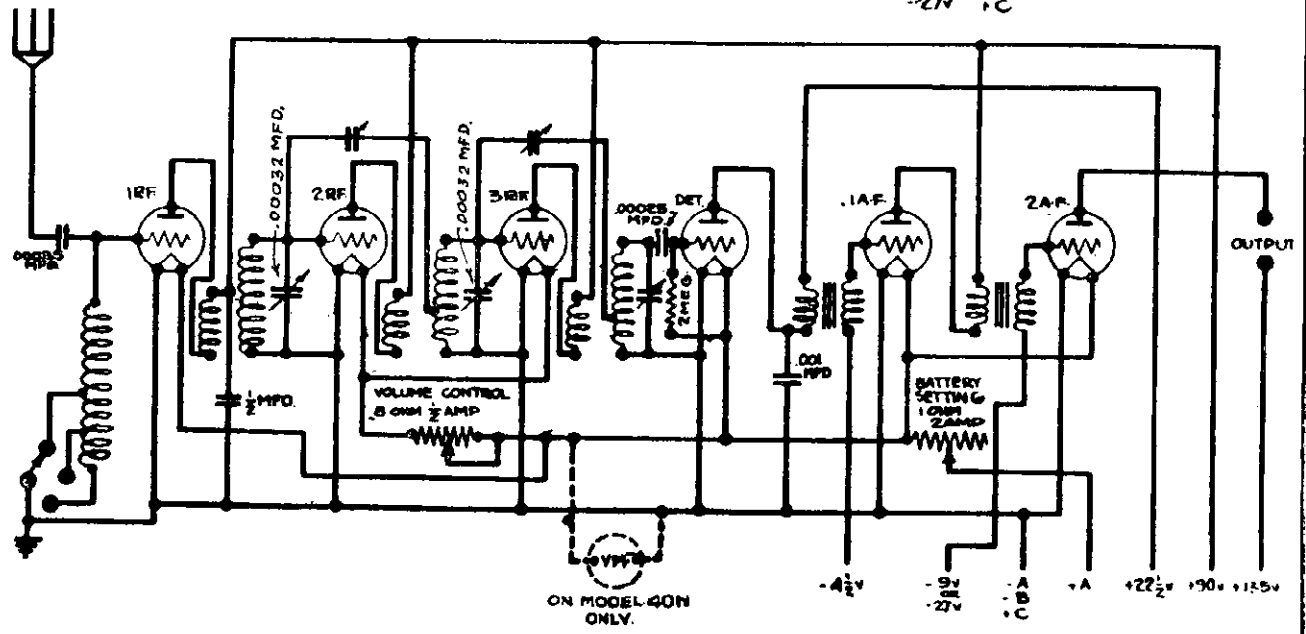
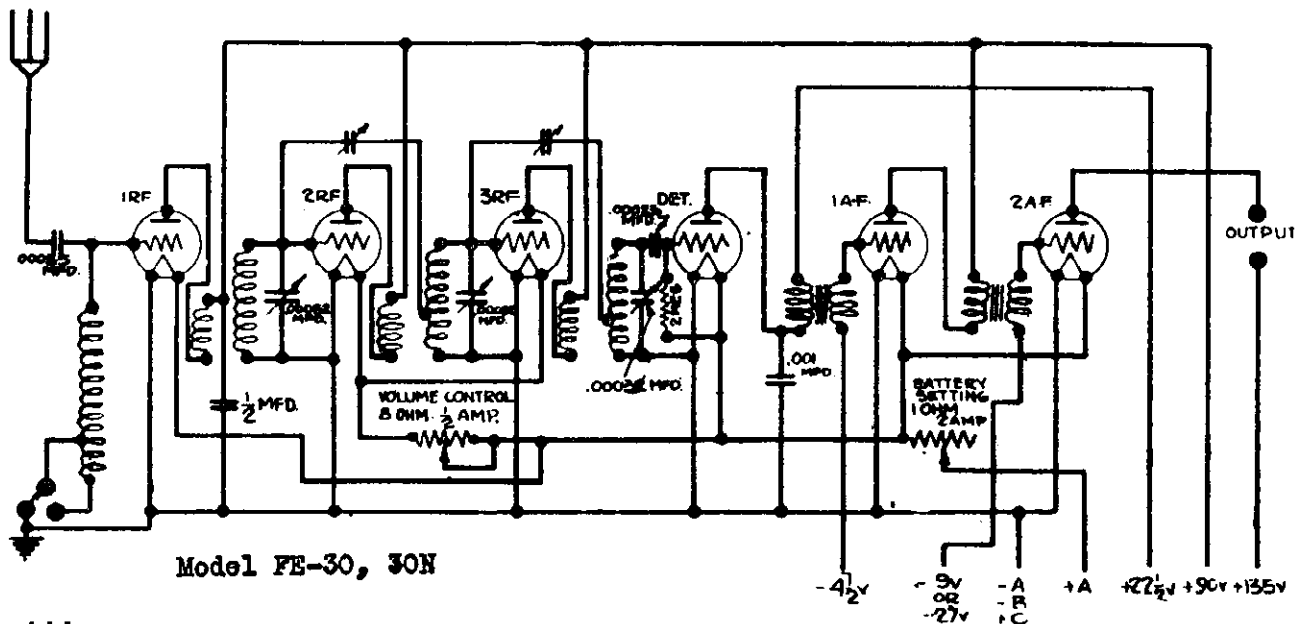
Model NR-20



Model FE-15

FREED - EISEMANN RADIO CORP.

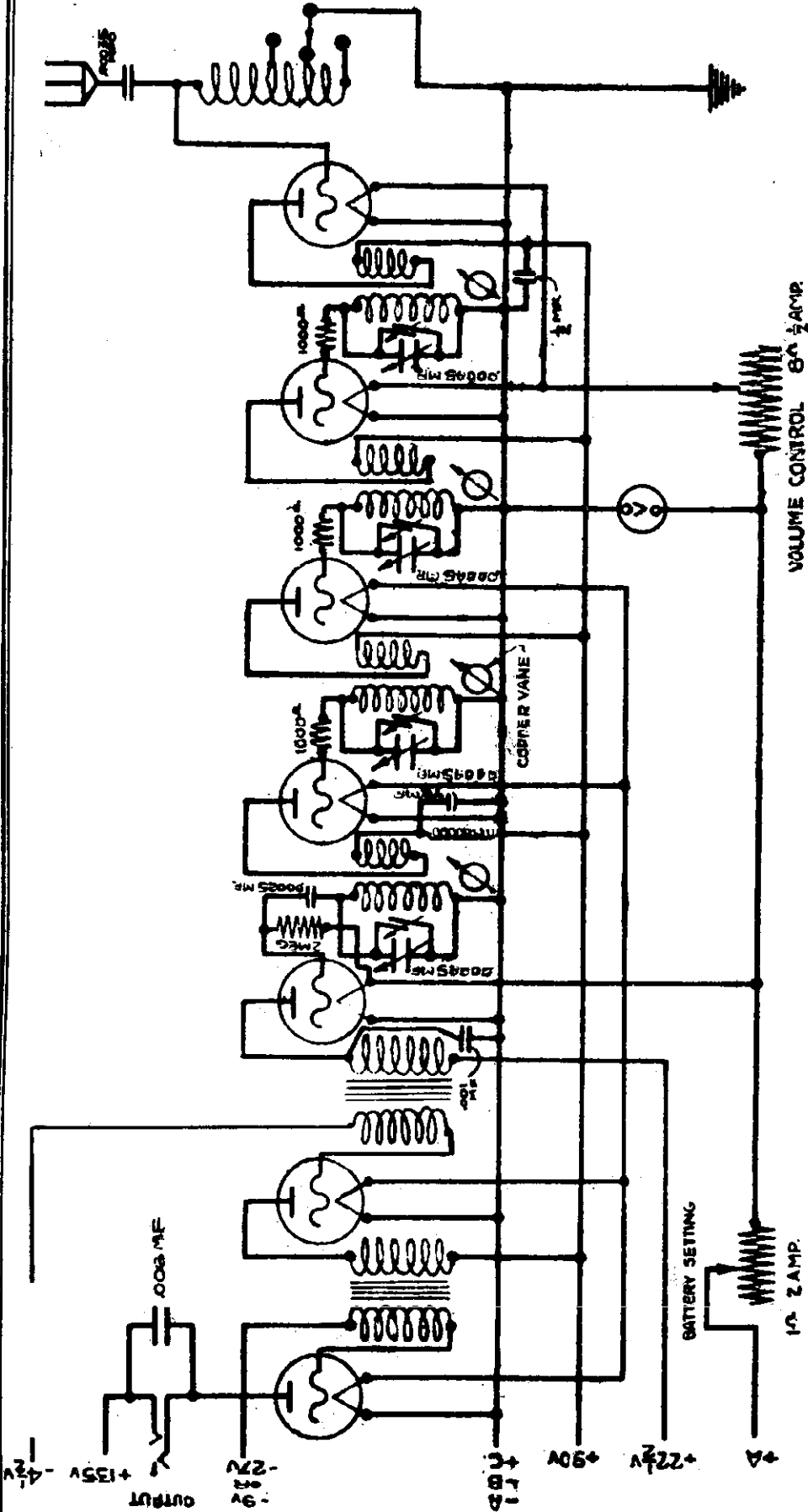
MODEL FE-30, 30N
MODEL 40N, 48N



Model 40N, 48N

FREED RADIO AND TELEVISION CORP.

MODEL 50



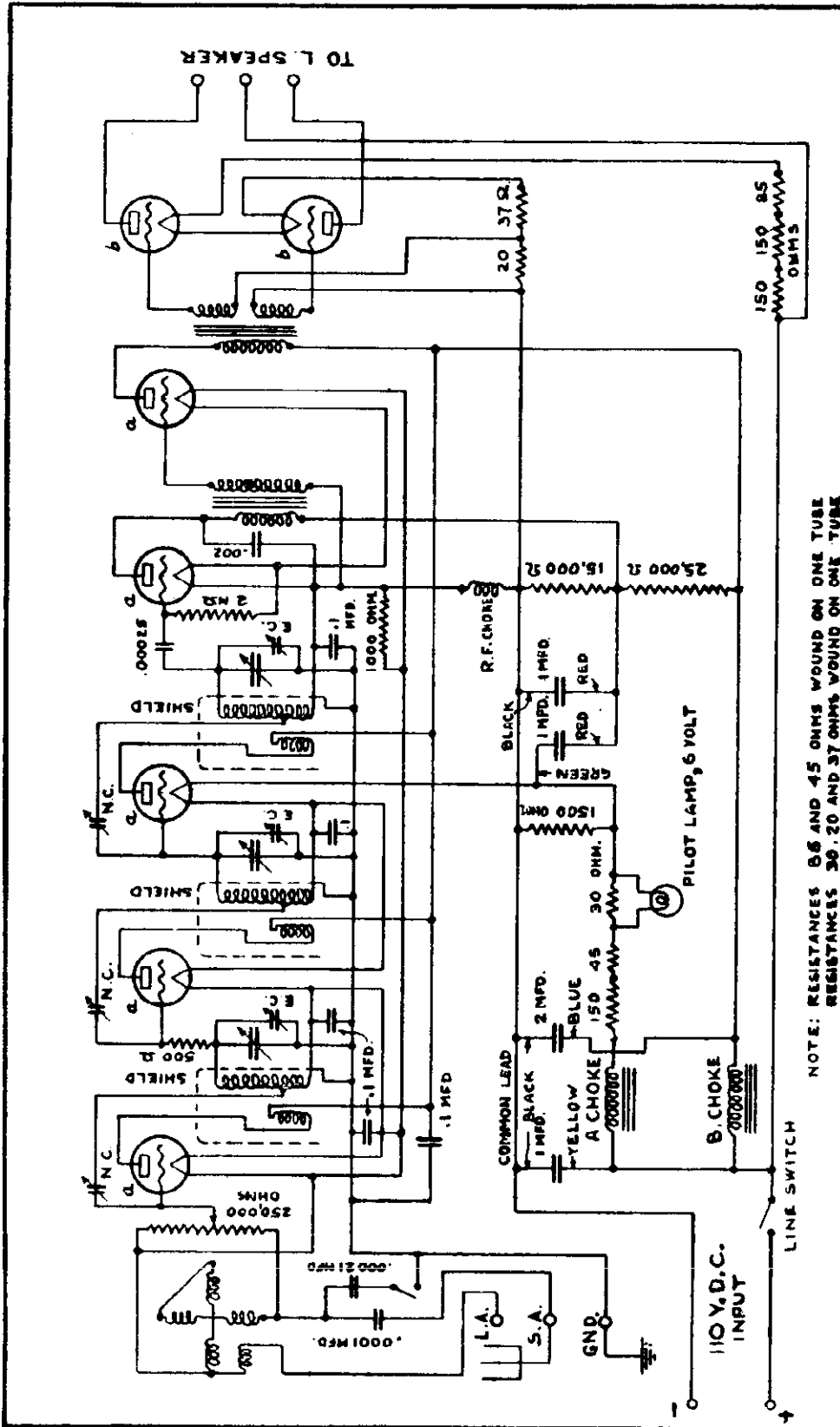
Freed-Euromann
 SPERRY BUILDING BROOKLYN NEW YORK
MODEL 50 RECEIVER
SCHEMATIC WIRING
 DATE: 4-15-27
 SCALE

ALTERATION TABLE		DATE	BY	REASON

DESIGNATOR	W
TRACER	
CHECKER	
APPROVAL	
DATE	
CHIEF ENGINEER	

FREED RADIO AND TELEVISION CORP.

MODEL NR-55 DC



NOTE: RESISTANCES 86 AND 45 OHMS WOUND ON ONE TUBE
RESISTANCES 36, 20 AND 37 OHMS WOUND ON ONE TUBE

NR-55DC, NR-56DC

Freed-Ciemann
PASSAIC N.J.

SCHEMATIC WIRING DIAGRAM
TYPE NR-55 D.C.

DATE 5-6-29

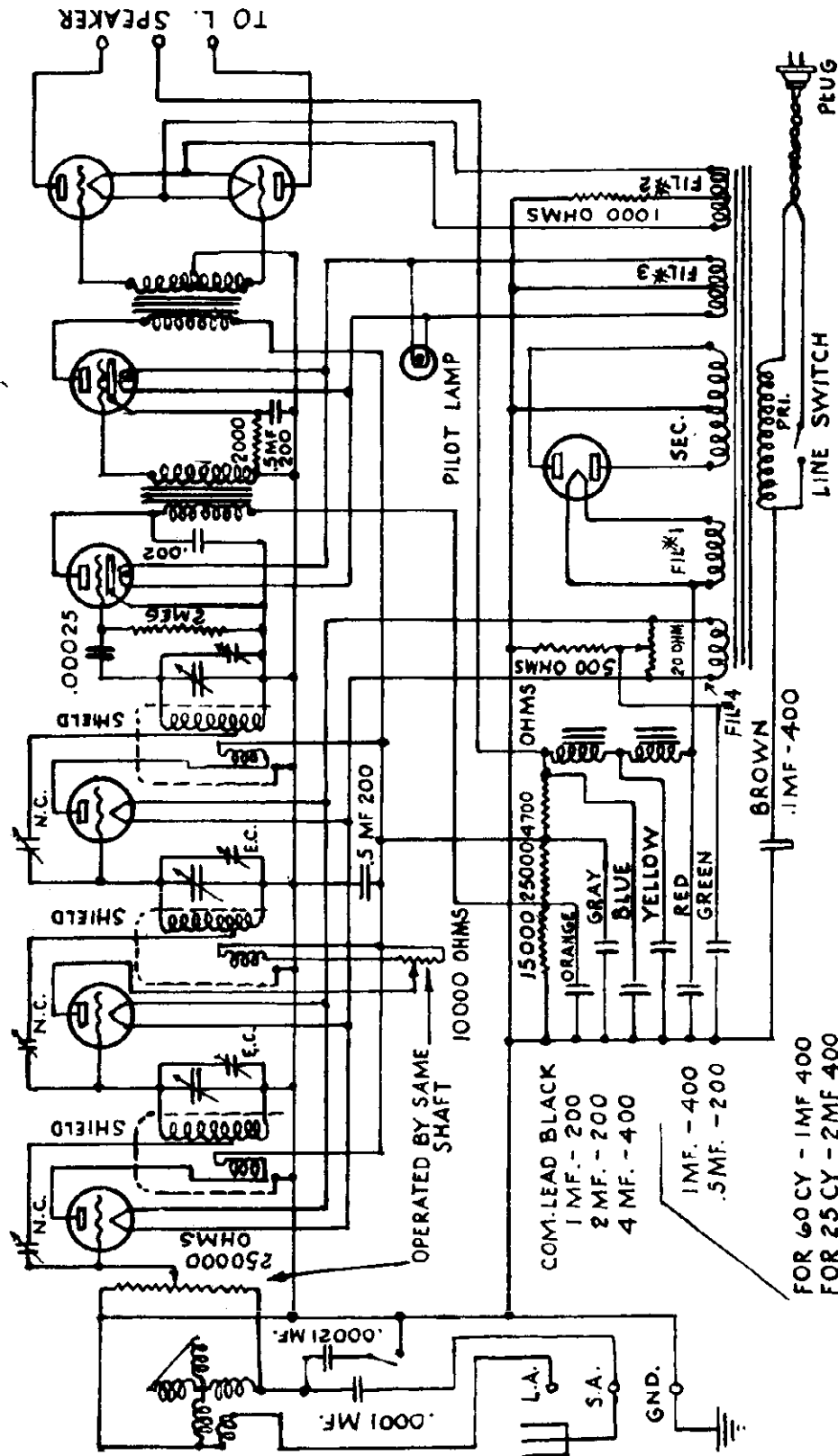
SCALE

(D.C.)RATION TABLE		DELINATOR	S.S.
TRACER	5.5.		
CHECKER			
APPROVAL			
DATE			
CHIEF ENGINEER			

RESISTOR LIST:

- CX-301A ○ DEL.
- CX-301A ○ 1st A.F.
- CX-301A ○ 3rd R.F.
- CX-371A ○ 2nd A.F.
- CX-301A ○ 2nd R.F.
- CX-371A ○ 2nd A.F.
- CX-301A ○ 1st R.F.

MODEL NR-55, NR-56 AC FREED RADIO AND TELEVISION CORP.

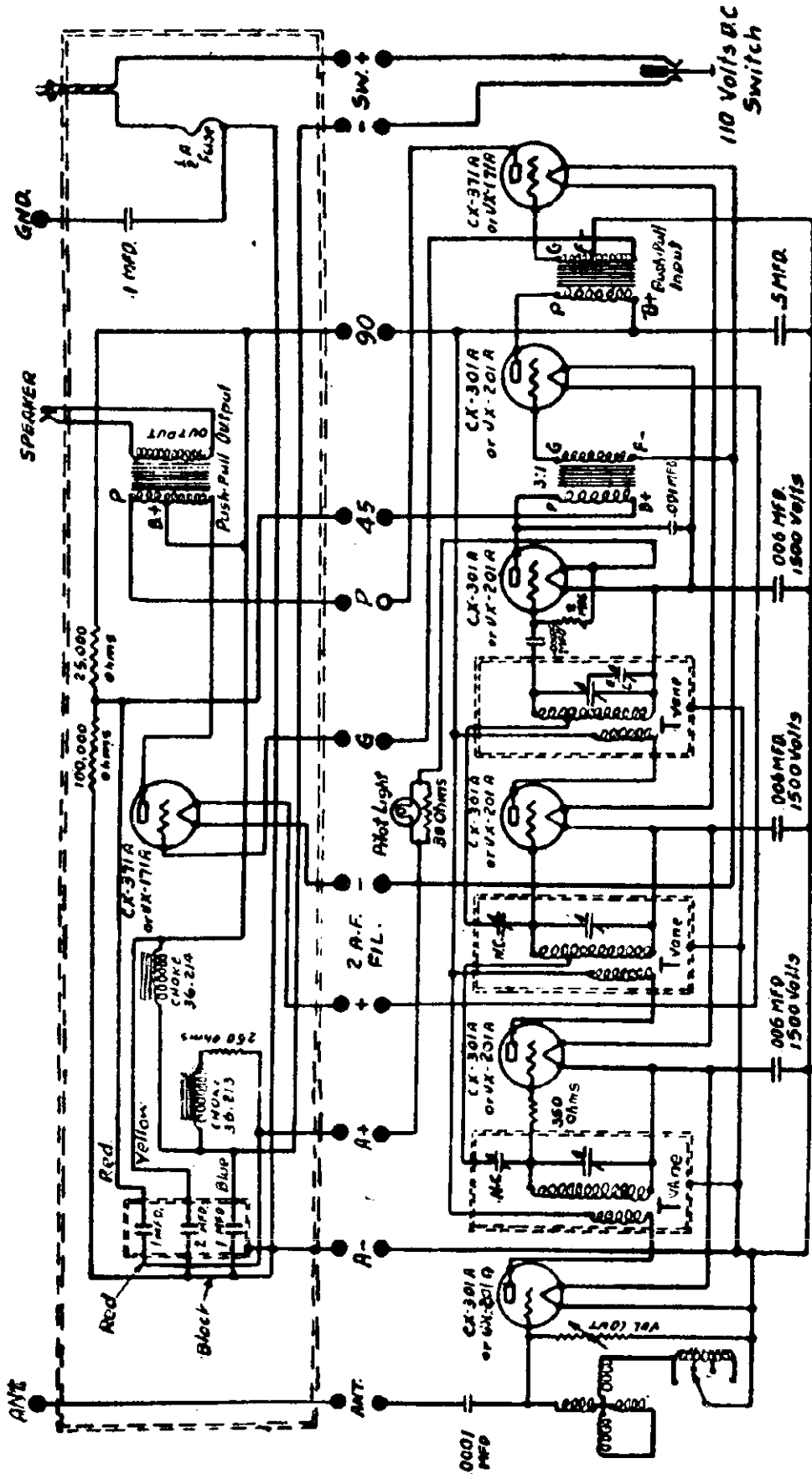


NR-55, NR-56 (A.U.)

○ CX-380	○ Det.	○ C-327	○ 1st A.F.
○ Incl.	○ 3rd R.F.	○ CX-371A	○ 2nd A.F.
○ CX-326	○ 2nd R.F.	○ CX-326	○ 2nd A.F.
○ 1st R.F.			

FREED-EISEMANN—Model 55
Line Voltage 116—Volume Control Position Full On

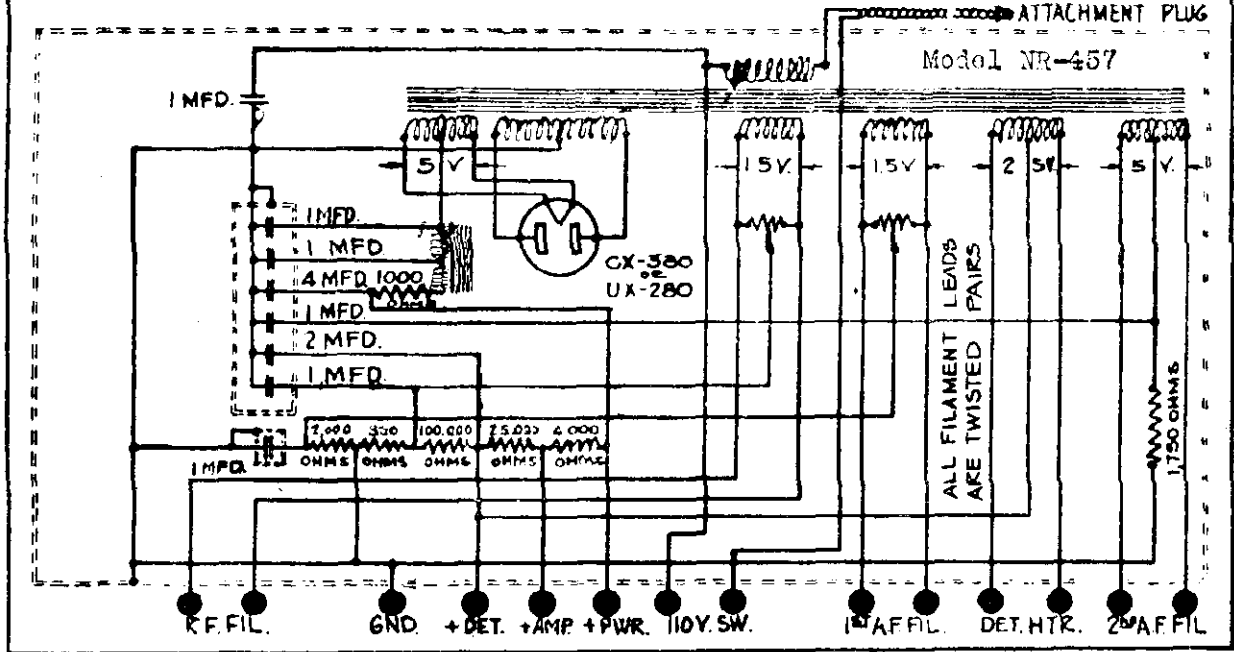
TUBE NO.	TYPE OF TUBE	TUBE IN TEST				TUBE IN TEST				PLATE RESISTANCE (OHMS)	GRID RESISTANCE (OHMS)	SCREEN RESISTANCE (OHMS)	BIAS RESISTANCE (OHMS)
		1	2	3	4	1	2	3	4				
1	6BQ6	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
2	6X25	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
3	6AV6	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
4	6X4	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
5	6X30	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
6	6X26	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
7	6X27	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
8	6X28	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
9	6X29	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
10	6X30	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
11	6X31	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
12	6X32	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
13	6X33	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
14	6X34	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
15	6X35	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
16	6X36	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
17	6X37	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
18	6X38	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
19	6X39	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-
20	6X40	1.5	80	1.05	70	5	-	2.6	4.5	2.2	-	-	-



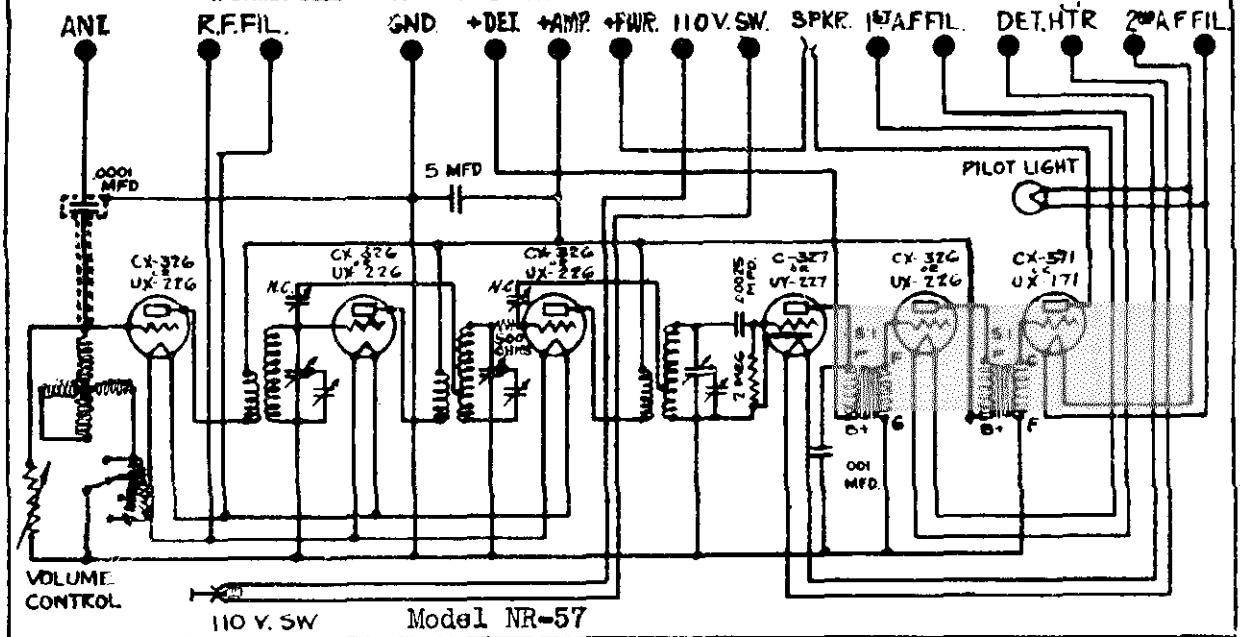
FREED RADIO AND TELEVISION CORP.

MODEL NR-57
Schematic
MODEL NR-457
Power Unit

A STRICT OBSERVANCE OF THE CONFIDENTIAL CHARACTER OF THIS DRAWING IS REQUIRED

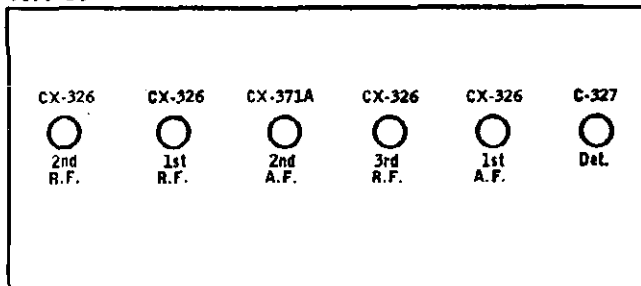


A STRICT OBSERVANCE OF THE CONFIDENTIAL CHARACTER OF THIS DRAWING IS REQUIRED



NR-57

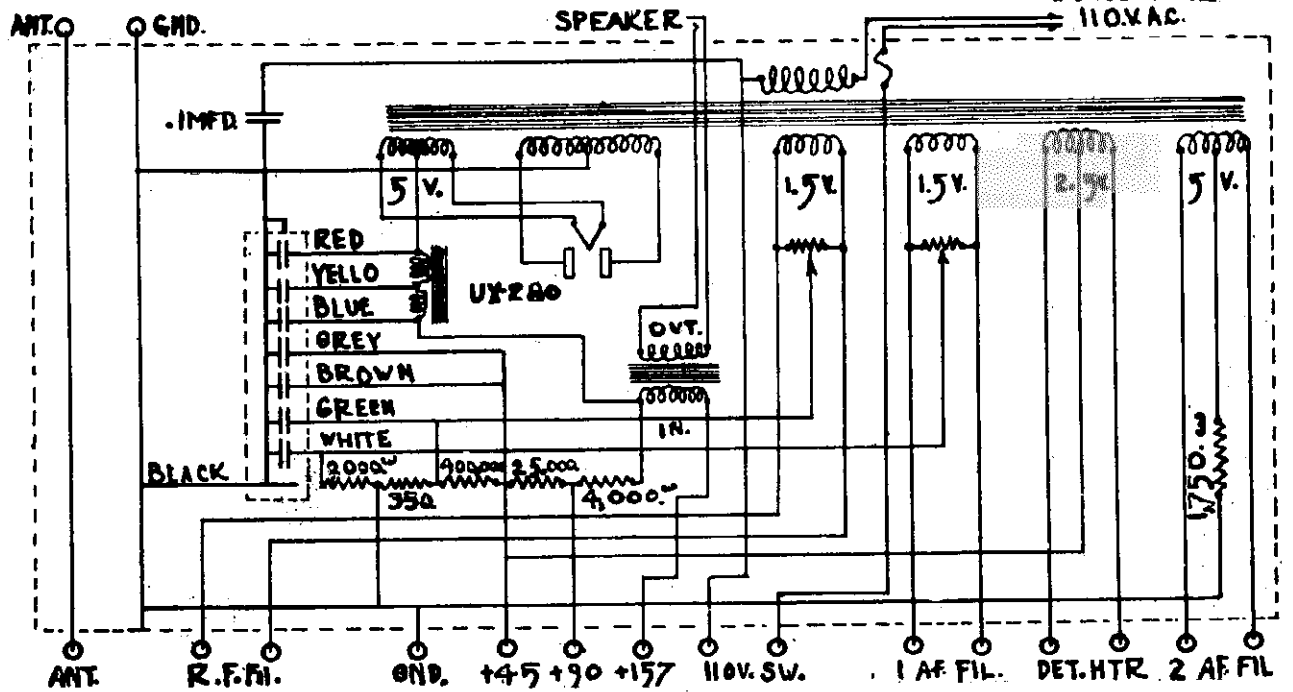
(A.C.)



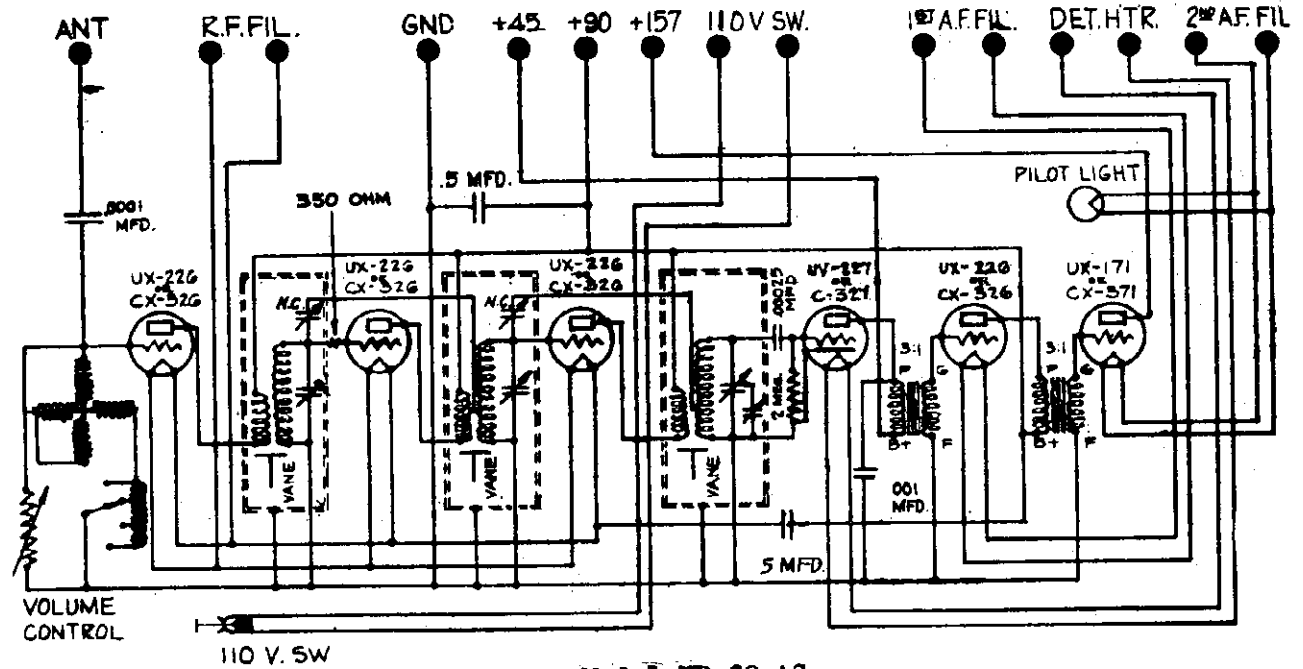
Power unit uses CX-380.

FREED RADIO AND TELEVISION CORP.

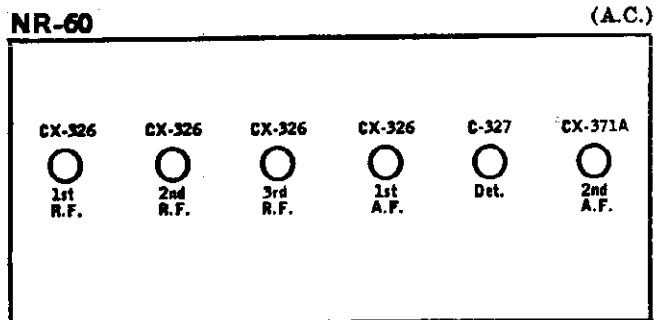
MODEL NR-60 AC
Schematic
MODEL NR-460 AC
Power Pack
110V AC.



Model NR-460 AC.

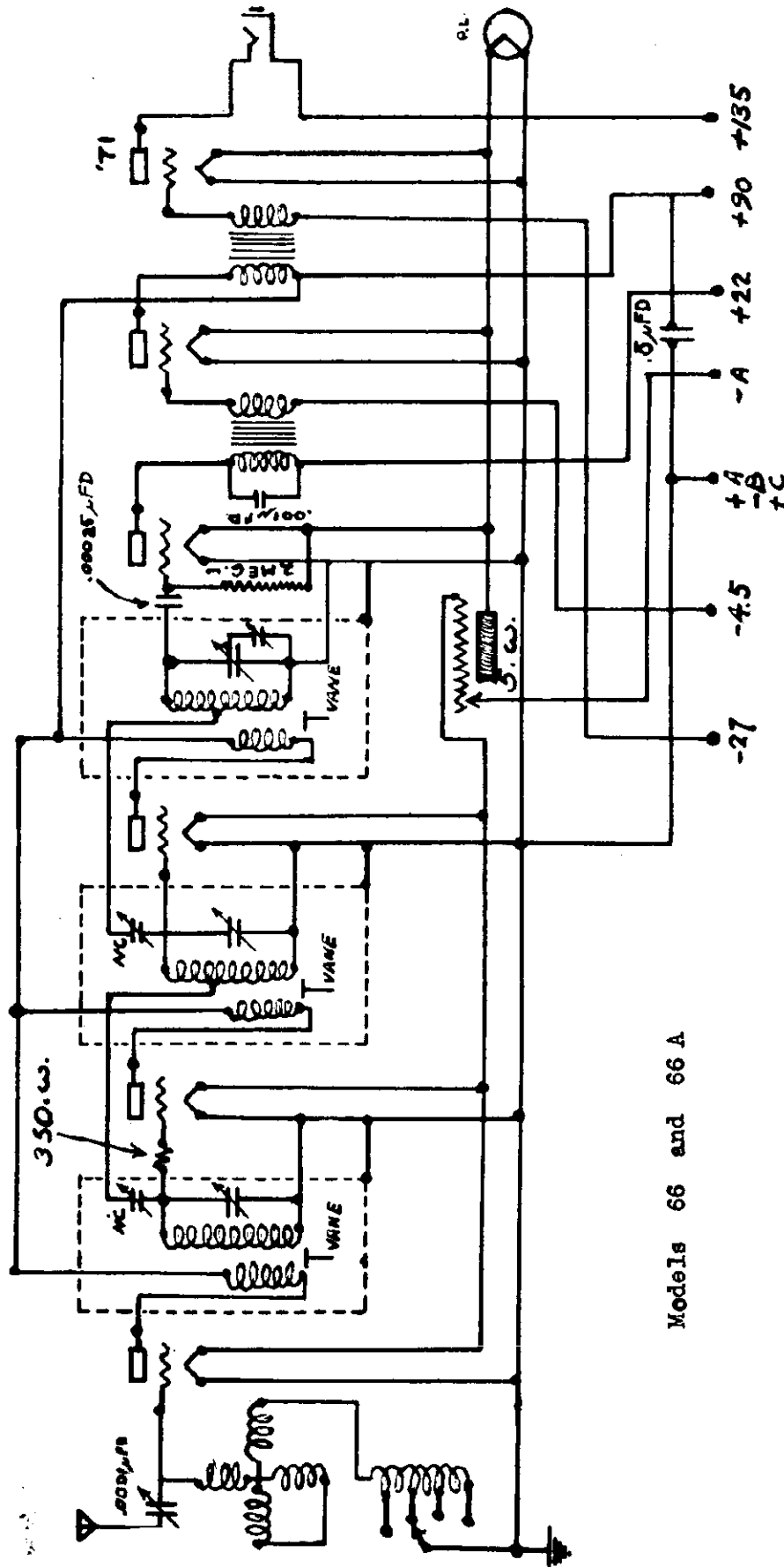


Model NR-60 AC

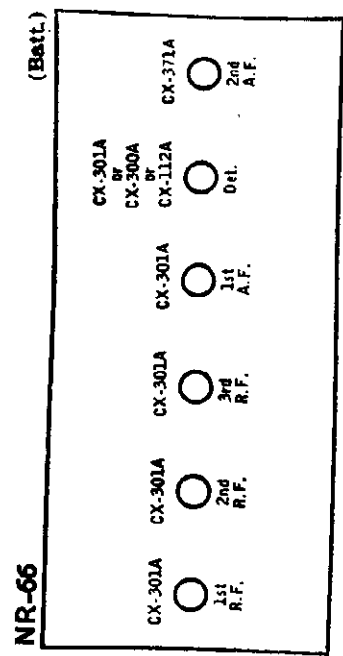


MODEL NR-66, 66A

FREED RADIO AND TELEVISION CORP.



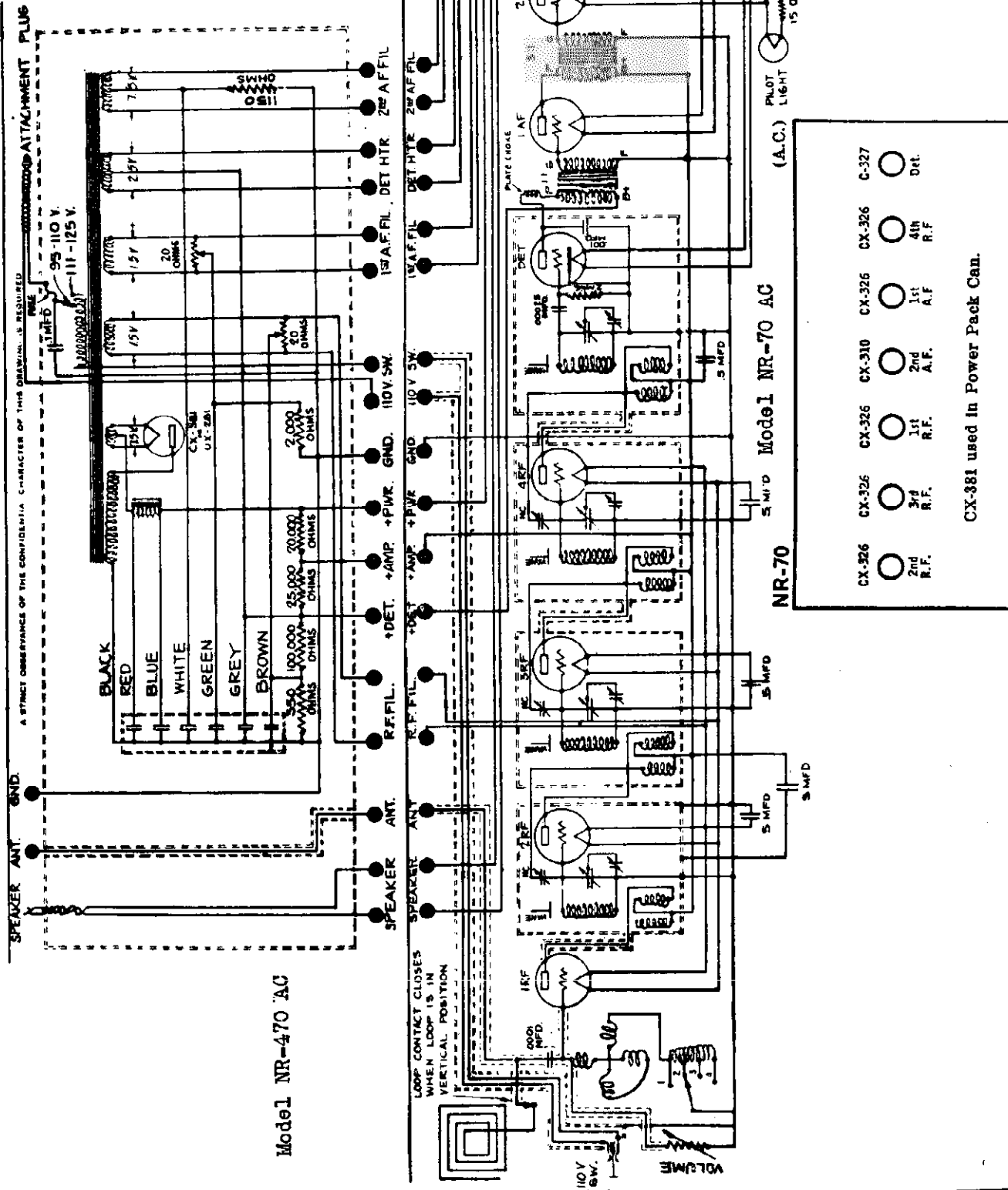
Models 66 and 66 A



FREED RADIO AND TELEVISION CORP.

MODEL NR-70 AC Receiver
 MODEL NR-470 AC Power Pack

NOTE:-
 2,000, 500 & 100 OHM RESISTANCES WOUND ON SAME TUBE.
 20,000 OHM RESISTANCE COMPOSED OF 2-10,000 OHM RESISTANCES CONNECTED IN SERIES



A STRICT OBSERVANCE OF THE CONFIDENTIAL CHARACTER OF THIS DRAWING IS REQUIRED

Model NR-470 AC

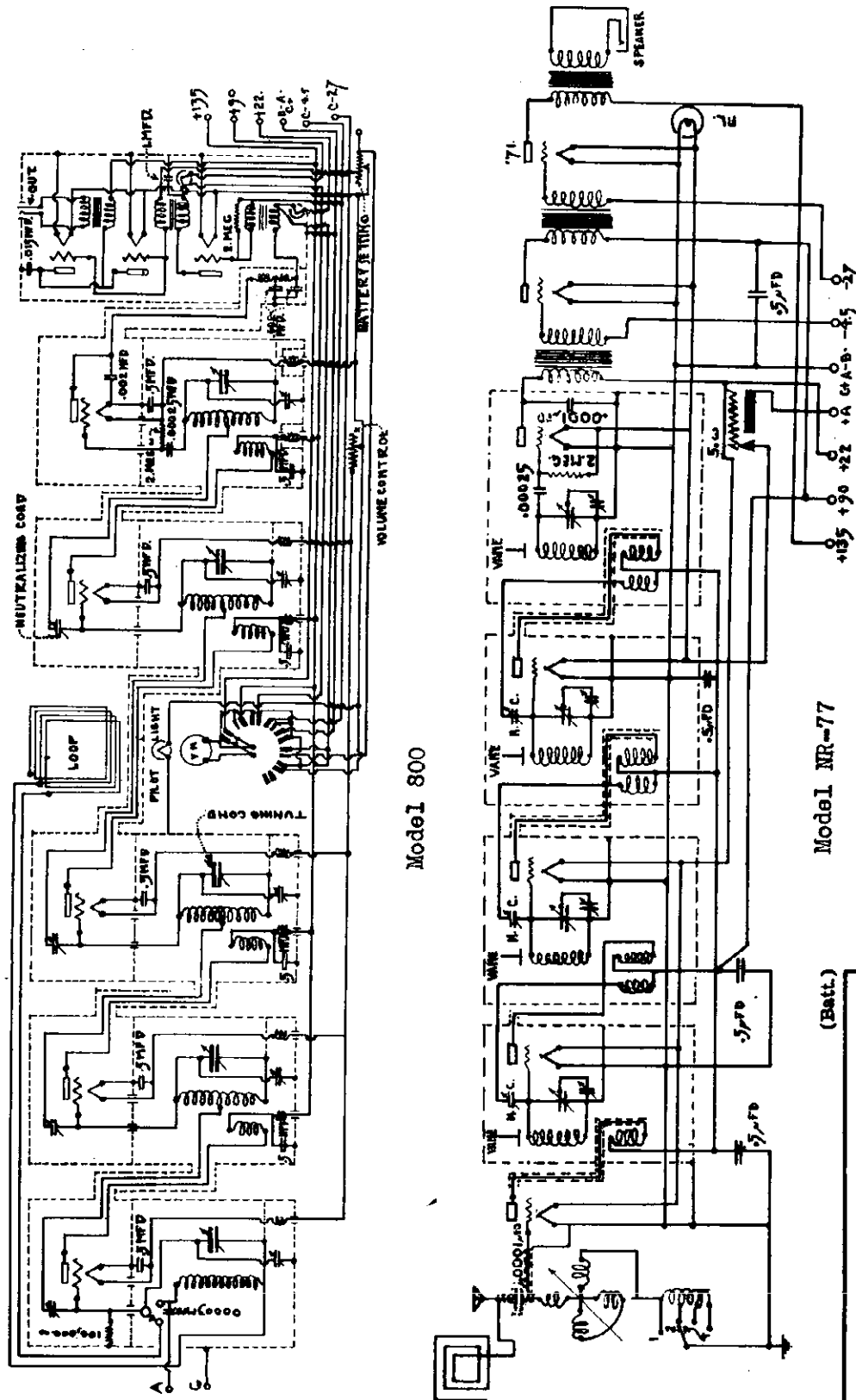
NR-70 Model NR-70 AC

- CX-326 2nd R.F.
- CX-326 3rd R.F.
- CX-326 1st R.F.
- CX-310 2nd A.F.
- CX-326 1st A.F.
- CX-326 4th R.F.
- CX-326 C-327 Det.

CX-381 used in Power Pack Can.

MODEL NR-77
MODEL 800

FREED RADIO AND TELEVISION CORP.



Model 800

Model NR-77

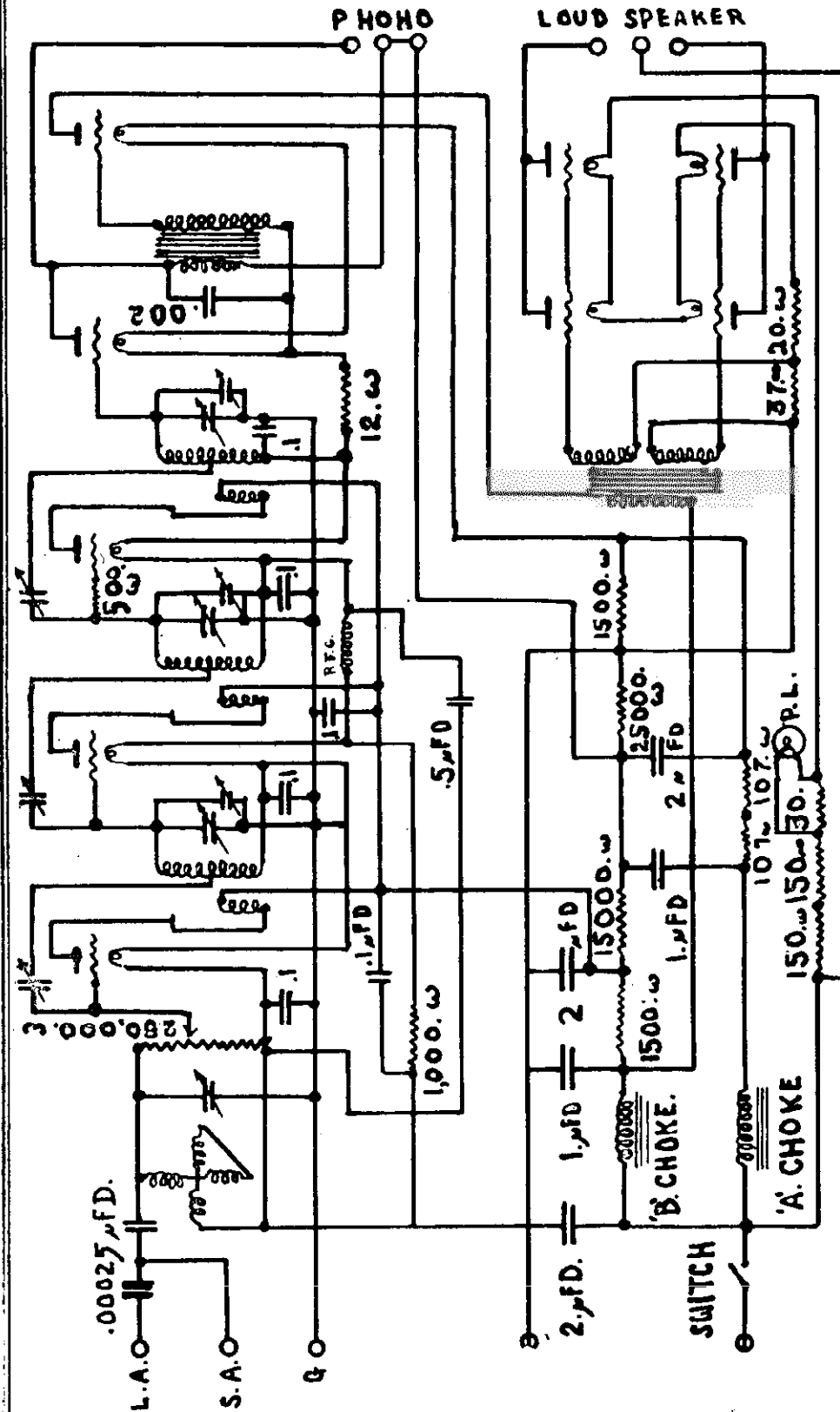
NR-77

(Batt.)

CX-301A	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A
or	or	or	or	or	or	or	or
CX-300A	CX-377A	CX-301A	CX-301A	CX-301A	CX-301A	CX-115A	
or							
CX-115A							
2nd	1st	1st	1st	1st	1st	1st	Bat.
R.F.	R.F.	R.F.	A.F.	A.F.	A.F.	A.F.	R.F.

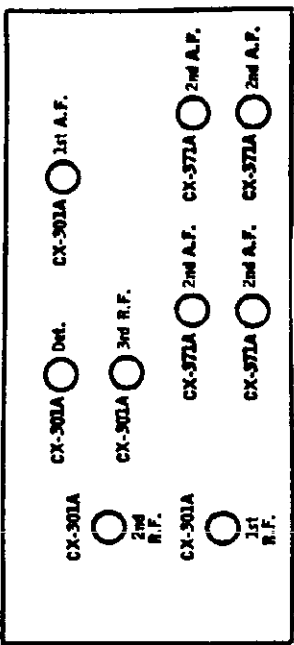
FREED RADIO AND TELEVISION CORP.

MODEL NR-78 DC
NR-79 DC



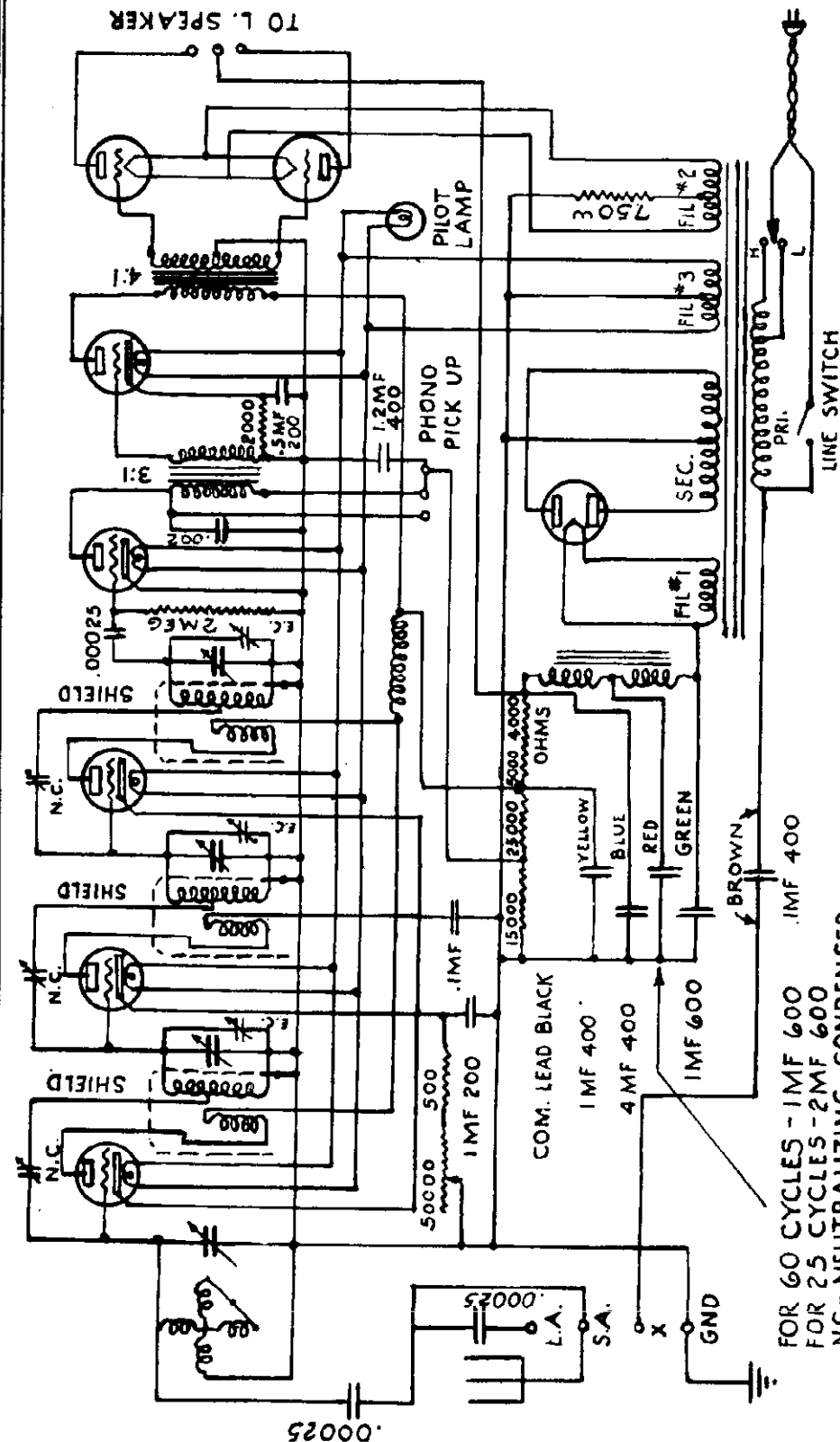
FREED-EISEMANN—Model 78 D. C.
Line Voltage 110 D. C.—Set on D. C. Volt Tap—Volume Control Position Full On

NR-78DC, NR-79DC (D.C.)



TUBE NO. (CHECK)	TYPE OF TUBE	POSITION OF TUBE	TUBE CHART		TUBE IN TESTER		TUBE DATA		TUBE DATA		
			1st R.F.	2nd R.F.	1st A.F.	2nd A.F.	VOLTS	MA	WATTS	MA	
1	201A	1st R.F.	—	—	4.5	75	4.5	—	3.7	4.0	—
2	201A	2nd R.F.	—	—	4.5	75	4.2	—	3.7	4.0	—
3	201A	3rd R.F.	—	—	4.5	75	0	—	3.7	4.0	—
4	201A	1st A.	—	—	4.5	75	4.0	—	3.0	3.5	2.5
5	171A	2nd A.	—	—	4.5	75	15	—	5.0	24	18.0
6	171A	2nd A.	—	—	4.5	75	15	—	5.0	24	18.0
7	171A	2nd A.	—	—	4.5	75	15	—	5.0	24	18.0
8	171A	2nd A.	—	—	4.5	75	15	—	5.0	24	18.0

MODEL NR-78 AC
NR-79 AC
FREED RADIO AND TELEVISION CORP.



FREED-BISEMANN—Model: 78-79
Line Voltage 116—Set on High Volt Tap—Volume Control Position Full On

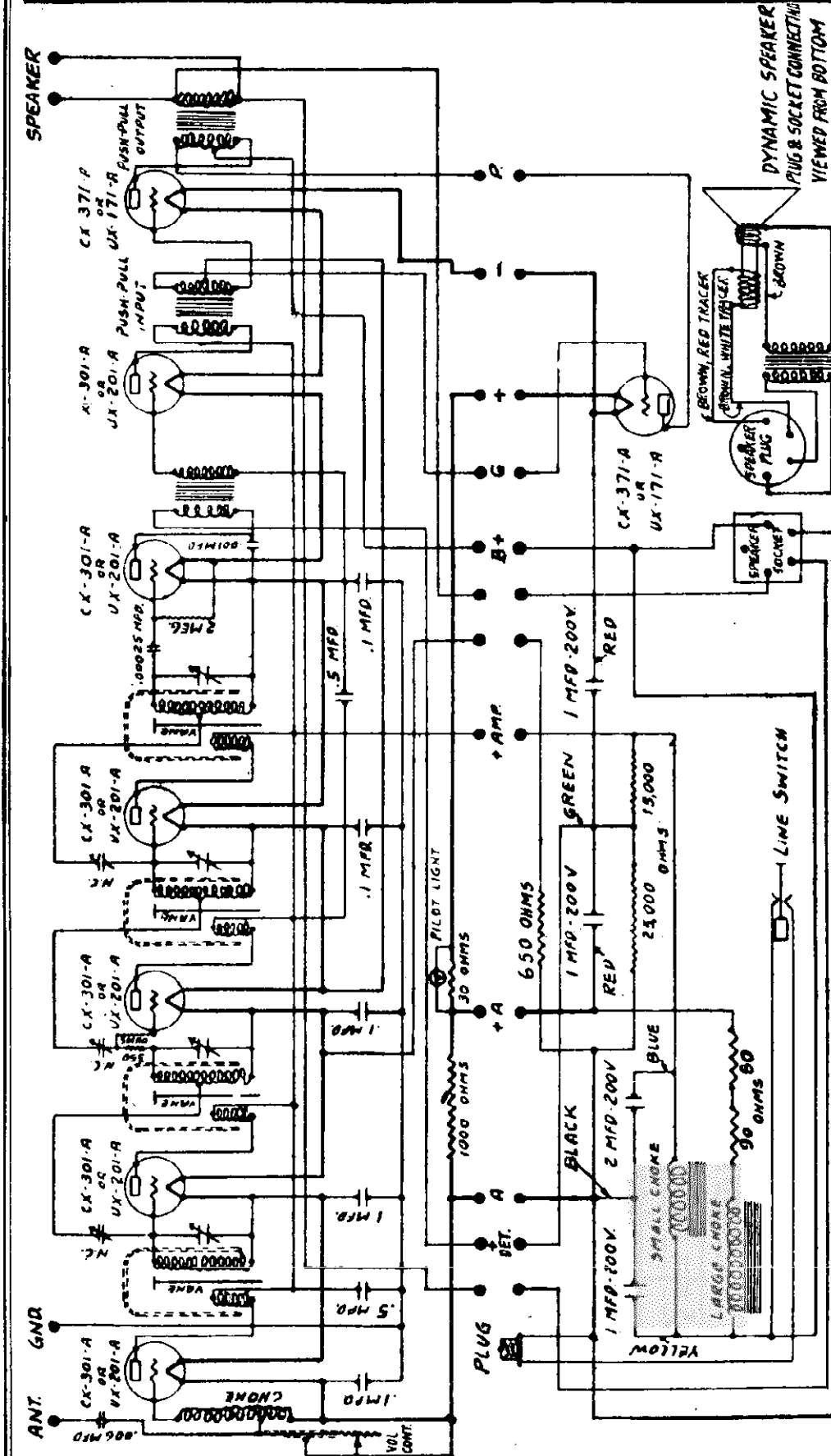
WAVELENGTH (Meters)	WAVELENGTH (Feet)	LOW TAP (Volts)	MID TAP (Volts)	HIGH TAP (Volts)	PERCENTAGE OF FULL ON	PERCENTAGE OF FULL OFF
150	492	110	116	122	85	15
160	525	110	116	122	85	15
170	558	110	116	122	85	15
180	591	110	116	122	85	15
190	624	110	116	122	85	15
200	657	110	116	122	85	15
220	720	110	116	122	85	15
240	783	110	116	122	85	15
260	846	110	116	122	85	15
280	909	110	116	122	85	15
300	972	110	116	122	85	15
320	1035	110	116	122	85	15
340	1098	110	116	122	85	15
360	1161	110	116	122	85	15
380	1224	110	116	122	85	15
400	1287	110	116	122	85	15
420	1350	110	116	122	85	15
440	1413	110	116	122	85	15
460	1476	110	116	122	85	15
480	1539	110	116	122	85	15
500	1602	110	116	122	85	15

FOR 60 CYCLES - 1MF 600
FOR 25 CYCLES - 2MF 600
NC - NEUTRALIZING CONDENSER
EC - EQUALIZING CONDENSER

- NR-78, NR-79 (A.C.)
- EX-302 Del.
 - EX-303 2M A.F.
 - EX-304 2M R.F.
 - EX-305 2M A.F.
 - EX-306 1M A.F.
 - EX-307 2M R.F.
 - EX-308 1M R.F.

FREED RADIO AND TELEVISION CORP.

MODEL NR-80 DC



Freed-Oivemann
 JUNIUS ST. B. LIBERTY AVE. BROOKLYN NEW YORK
SCHEMATIC WIRING DIAGRAM
NR-80 D.C. TYPE
 SCALE DATE 6-20-20

ON TABLE		DELINATOR	
DATE	BY	TRACER	CHECKED
6-20-20	SAP		
7-14-20	ETP		
6-6-20	RP		
7-7-20	TH		
7-21-20	TH		

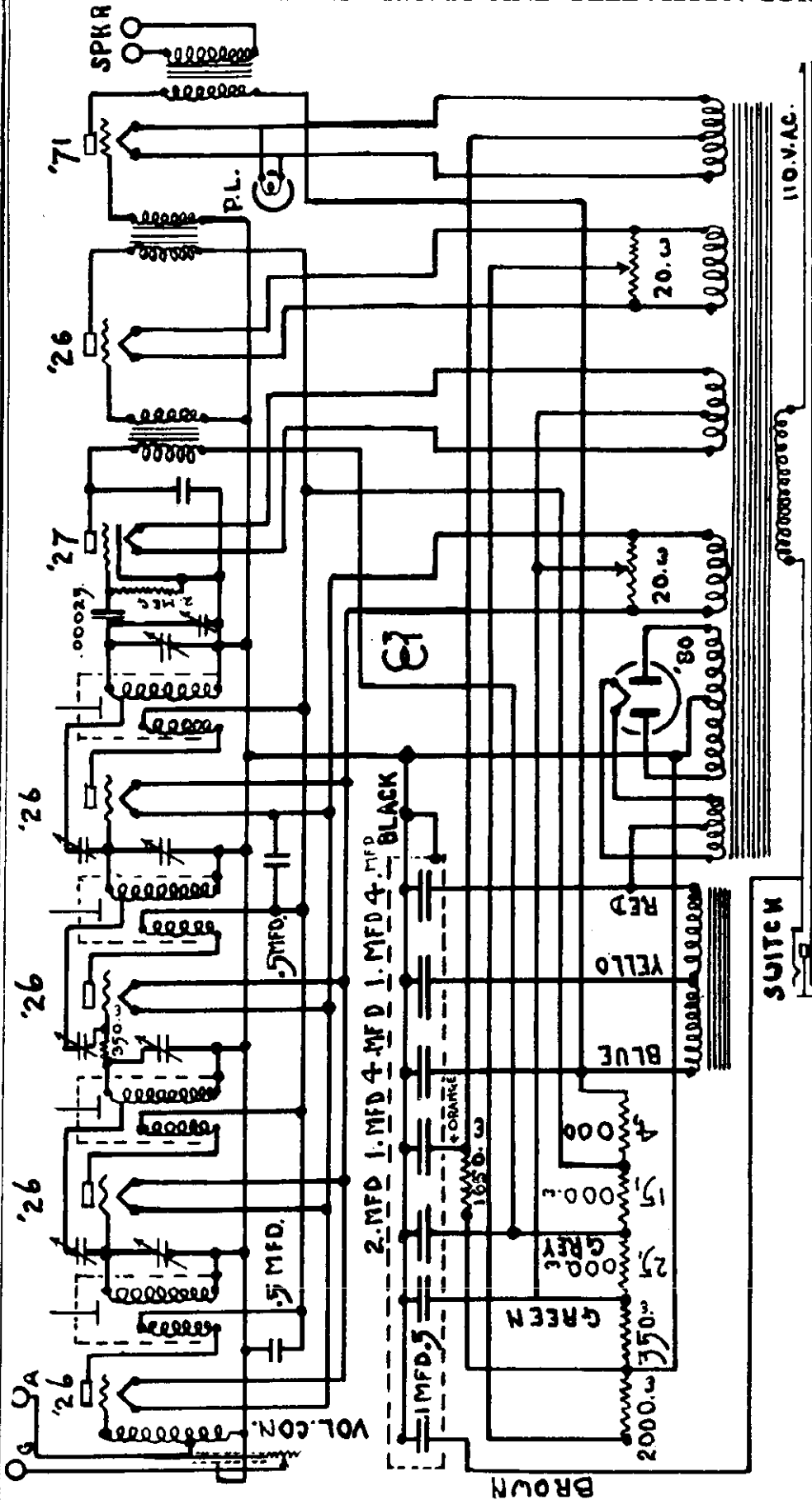
APPROVAL: [Signature]
 DATE: [Blank]
 CHIEF ENGINEER: [Blank]

NR-80DC (D.C.)

CX-301A	<input type="radio"/>	CX-301A	<input type="radio"/>
CX-371A	<input type="radio"/>	CX-301A	<input type="radio"/>
CX-112A	<input type="radio"/>	CX-301A	<input type="radio"/>
1st A.F.	<input type="radio"/>	1st A.F.	<input type="radio"/>
2nd A.F.	<input type="radio"/>	2nd A.F.	<input type="radio"/>
3rd A.F.	<input type="radio"/>	3rd A.F.	<input type="radio"/>
4th A.F.	<input type="radio"/>	4th A.F.	<input type="radio"/>
5th A.F.	<input type="radio"/>	5th A.F.	<input type="radio"/>
6th A.F.	<input type="radio"/>	6th A.F.	<input type="radio"/>
7th A.F.	<input type="radio"/>	7th A.F.	<input type="radio"/>
8th A.F.	<input type="radio"/>	8th A.F.	<input type="radio"/>
9th A.F.	<input type="radio"/>	9th A.F.	<input type="radio"/>
10th A.F.	<input type="radio"/>	10th A.F.	<input type="radio"/>

MODEL NR-80 AC

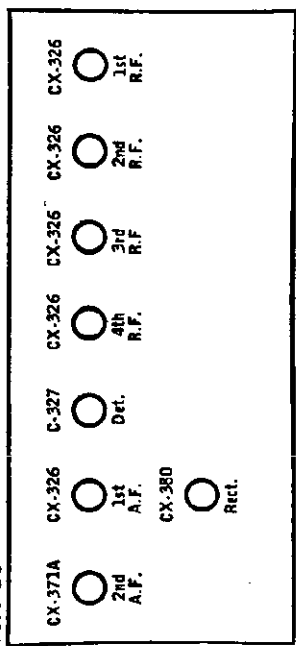
FREED RADIO AND TELEVISION CORP.



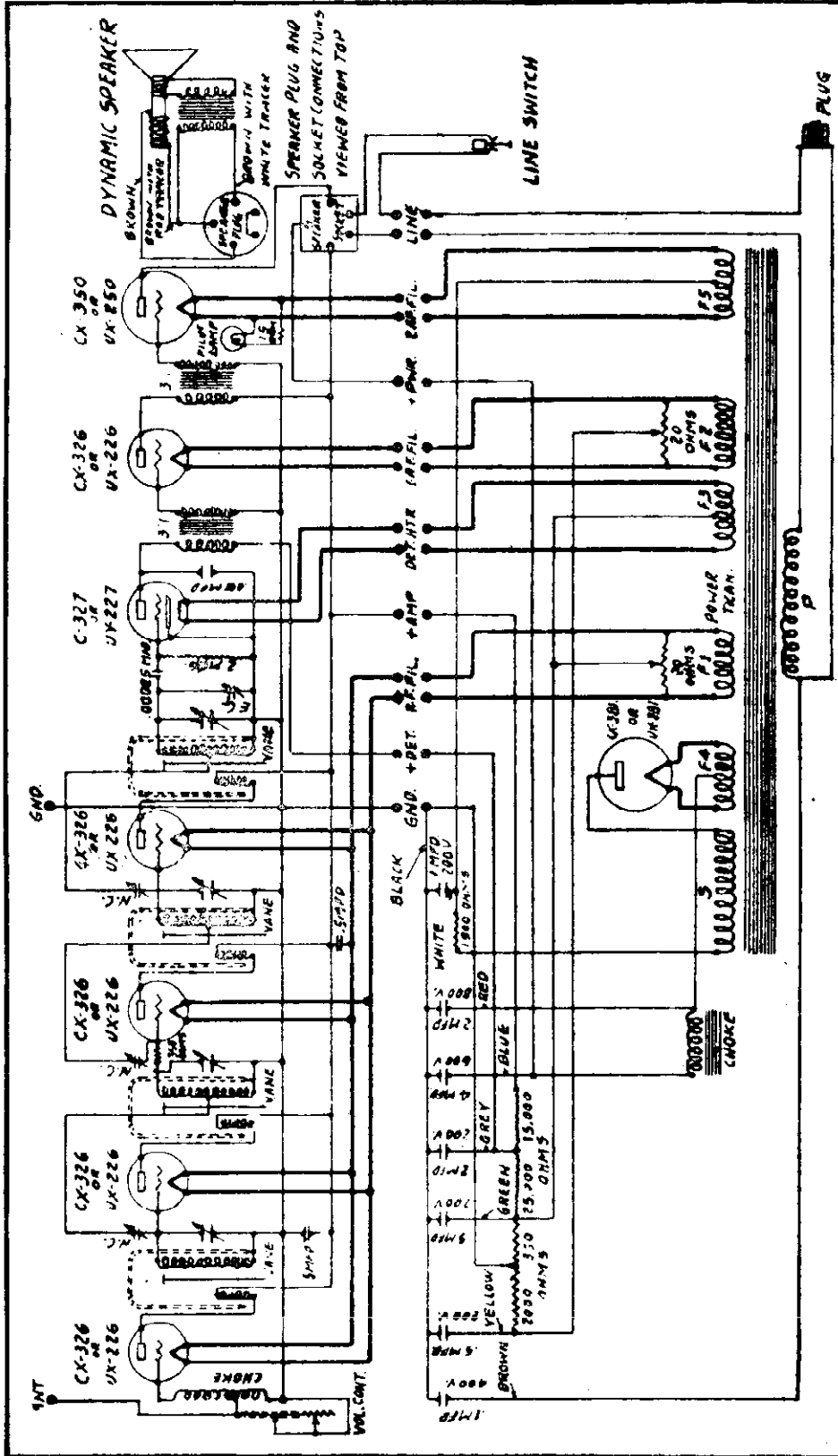
FREED-EISEMANN—Model NR-80
Line Voltage 120

TYPE NO. OR CODE	TYPE OF TUBE	FUNCTIONS OF TUBE	TUNE SW.		DET.		A.F.		P.A.		IMPEDANCE MATCHING	TEST CHARGE
			IN VOLTS	OUT VOLTS	IN VOLTS	OUT VOLTS	IN VOLTS	OUT VOLTS	IN VOLTS	OUT VOLTS		
226	6BE6	1st R.F.	1.5	1.45	50	50	—	—	3.5	7.7	5.2	—
226	6BE6	2nd R.F.	1.5	1.45	50	50	—	—	3.5	7.7	5.2	—
226	6BE6	3rd R.F.	1.5	1.45	50	50	—	—	3.5	7.7	5.2	—
226	6BE6	4th R.F.	1.5	1.45	50	50	—	—	3.5	7.7	5.2	—
227	6BE6	Detector	2.45	2.10	45	0.0	—	—	3.0	2.0	0.0	—
226	6BE6	1st A.F.	1.5	1.45	50	5.5	—	—	3.0	7.2	4.0	—
171	6BE6	2nd A.F.	5.2	5.00	150	30.0	—	—	17.0	13.5	1.0	—
280	6BE6	Rectifier	5.2	5.00	—	—	—	—	20.0	—	—	—

NR-80 (A.C.)



FREED RADIO AND TELEVISION CORP.



Freed-Hisemann
 110 W 91.8 LIBERTY AVE. BROOKLYN NEW YORK
SCHEMATIC WIRING DIAGRAM
NR-85 TYPE
 SCALE DATE 6-14-28

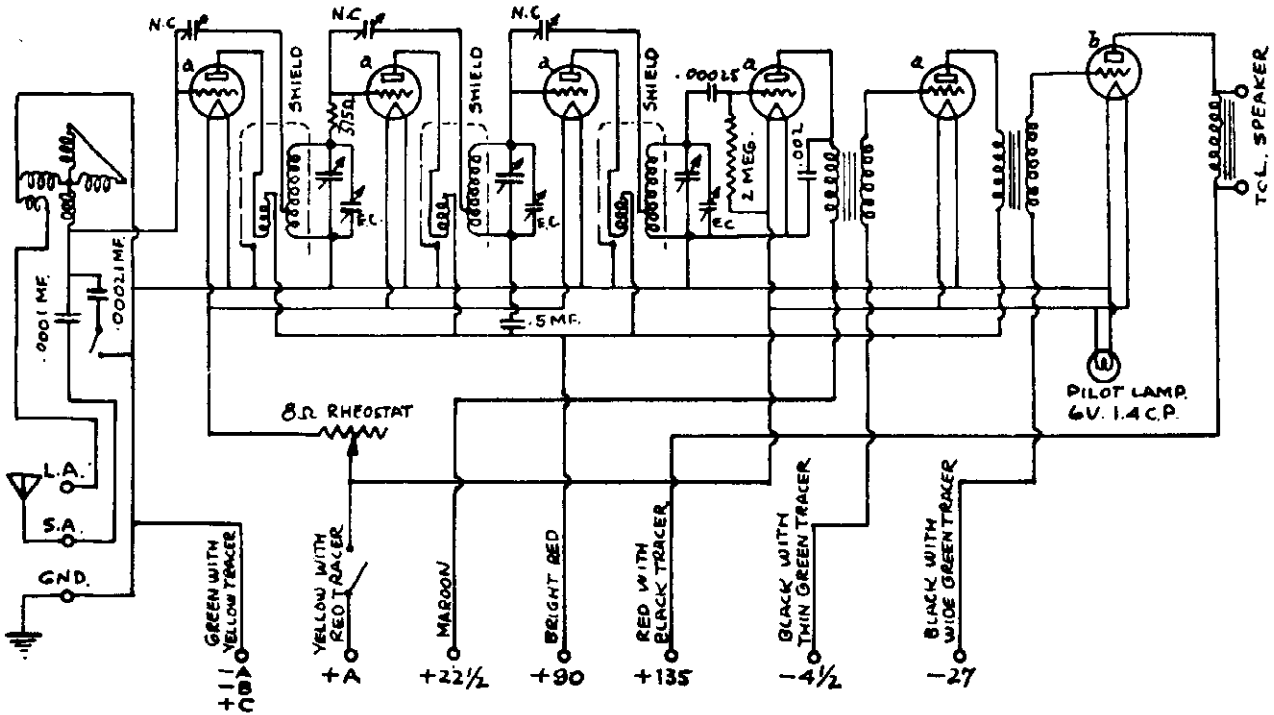
(A.C.) FREED-HISEMANN—Model NR-85
 Line Voltage 120

TUBE	TYPE	RESISTANCE		INDUCTIVE REACTANCE		CAPACITIVE REACTANCE	
		Ω	Ω	Ω	Ω	Ω	Ω
CX-326	1A5	1000	1000	75	75	20	20
CX-327	6X4	1000	1000	75	75	20	20
CX-350	6X4	1000	1000	75	75	20	20

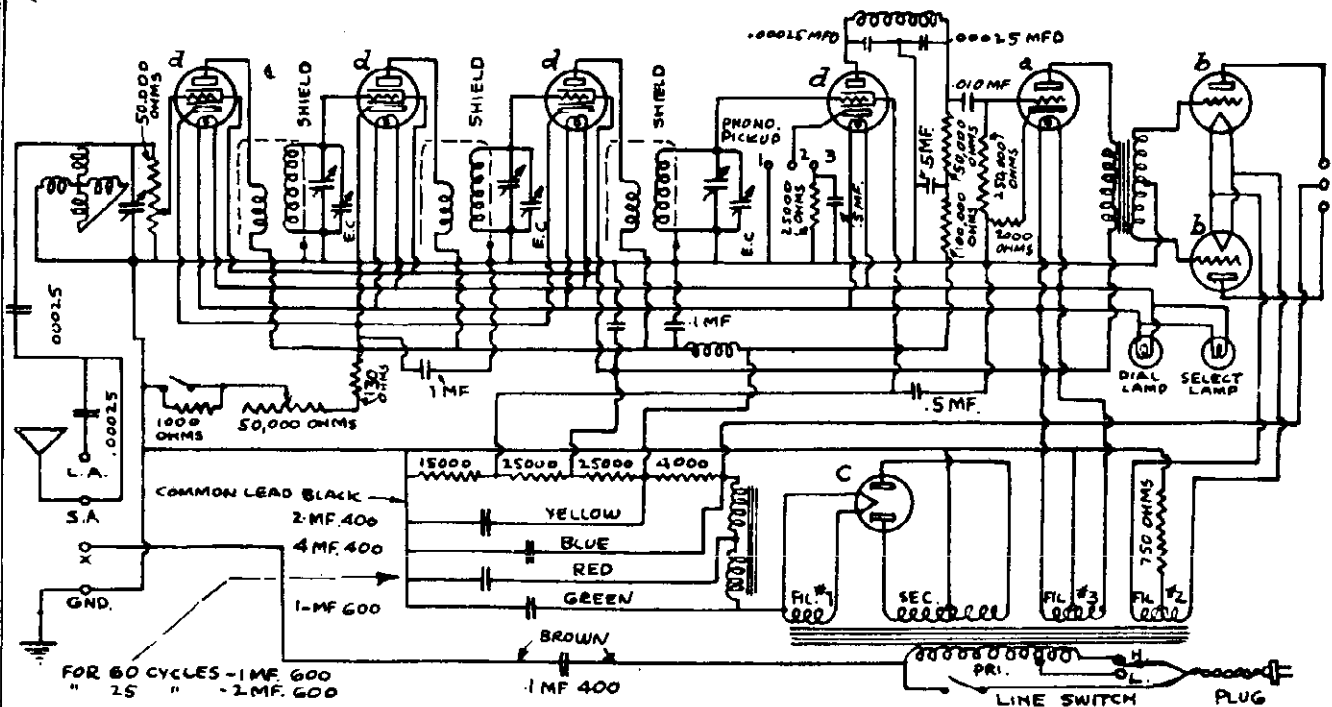
- NR-85**
- CX-326 1st A.F.
 - CX-326 2nd R.F.
 - CX-326 3rd R.F.
 - CX-326 4th R.F.
 - CX-327 Det.
 - CX-350 1st A.F.
 - CX-350 2nd R.F.
 - CX-350 3rd R.F.
 - CX-350 4th R.F.

MODEL NR-53
MODEL NR-90-S

FREED RADIO AND TELEVISION CORP.



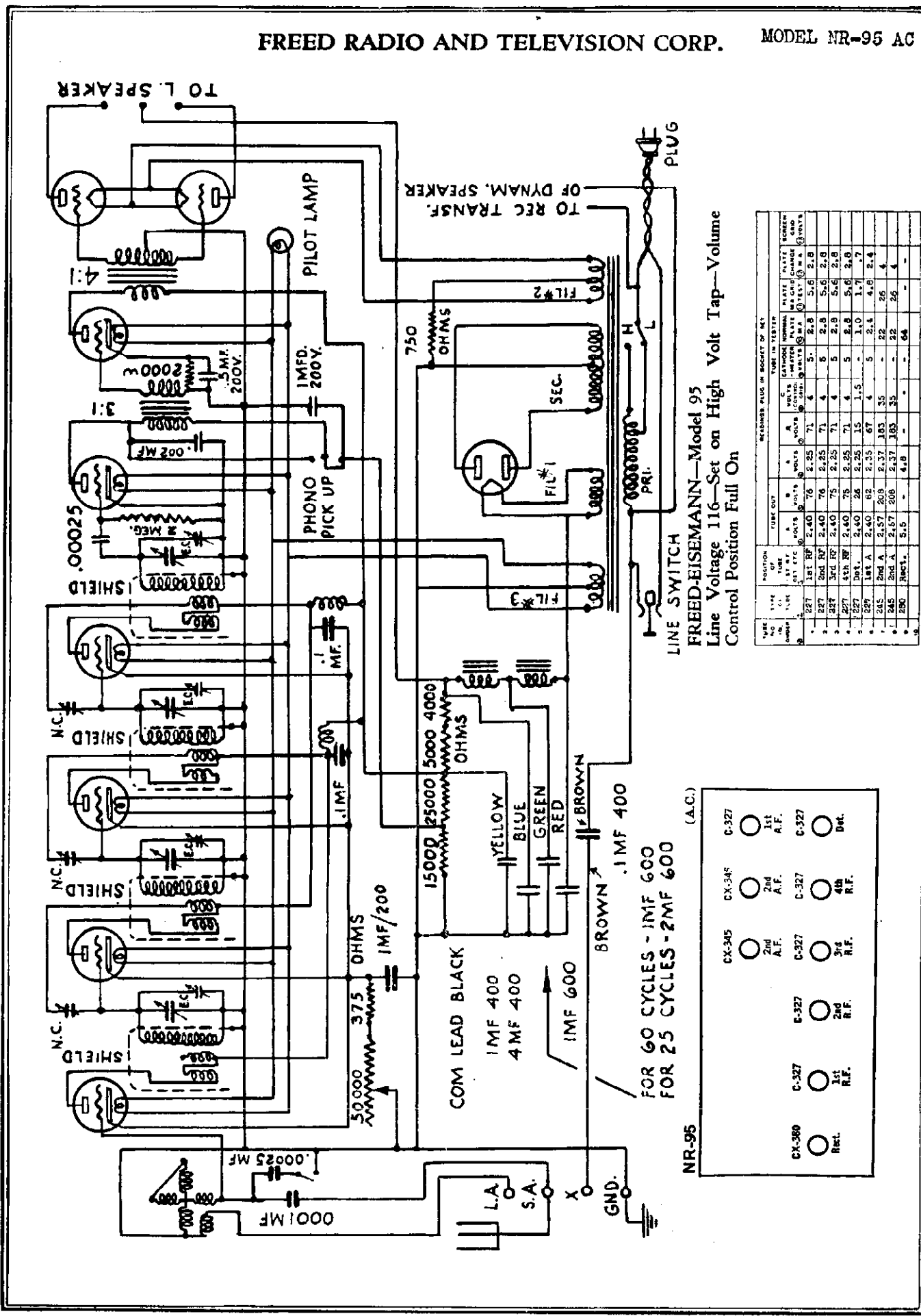
Model NR-53



Model NR-90-S

FREED RADIO AND TELEVISION CORP.

MODEL NR-95 AC



FREED-EISEMANN—Model 95
Line Voltage 116—Set on High Volt Tap—Volume
Control Position Full On

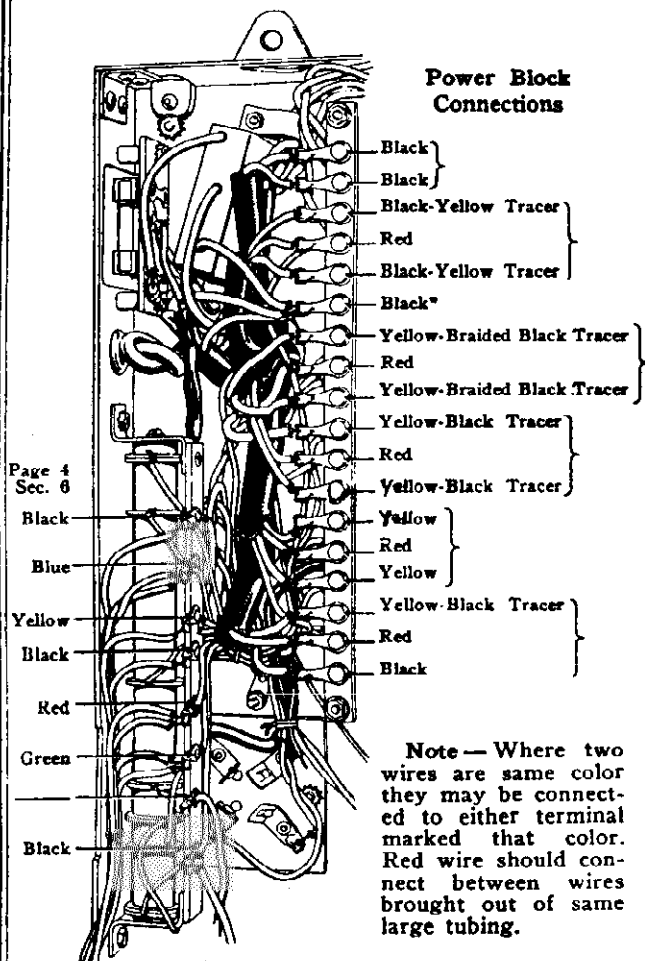
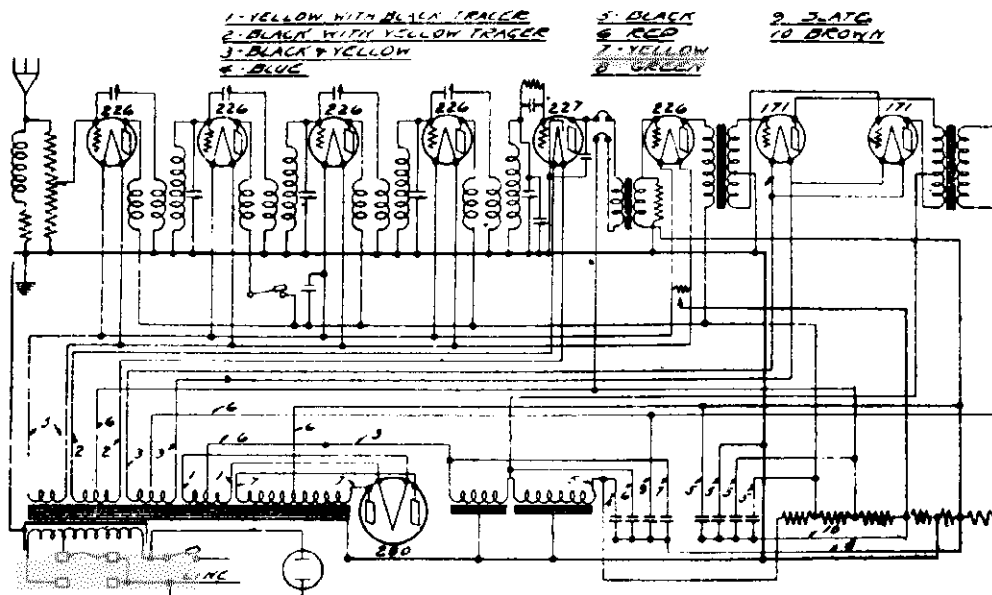
TUBE NO.	TYPE	POSITION	TUBE OUT					REDUCED PLUG IN SOCKET OF SET			
			VOLTS CUT OFF	VOLTS AT BY	WELLS IN VOLTS	CATHODE CONTROL. MA	NORMAL CONTROL. MA	WELLS IN VOLTS	CATHODE CONTROL. MA	PLATE SCREEN	
1	2D5	1st A.F.	2.40	76	2.25	71	4	5	2.8	5.6	2.8
2	2D5	2nd A.F.	2.40	76	2.25	71	4	5	2.8	5.6	2.8
3	2D5	3rd A.F.	2.40	75	2.25	71	4	5	2.8	5.6	2.8
4	6X4	Rect.	2.40	75	2.25	71	4	5	2.8	5.6	2.8
5	6X4	Det.	2.40	75	2.25	71	4	5	2.8	5.6	2.8
6	285	2nd A.	2.40	62	2.25	57	4	5	2.1	4.8	2.4
7	285	2nd A.	2.57	209	2.37	185	35	-	22	56	4
8	285	2nd A.	2.57	206	2.37	185	35	-	22	56	4
9	285	Rect.	5.5	-	4.8	-	-	-	64	-	-

- NR-95 (A.C.)
- CX-345 2nd A.F. C-327 2nd R.F.
 - CX-345 1st A.F. C-327 Det.
 - CX-380 Rect. C-327 1st R.F.
 - CX-327 2nd A.F. C-327 4th R.F.
 - CX-327 2nd R.F.

FOR 60 CYCLES - 1MF 600
FOR 25 CYCLES - 2MF 600

JESSE FRENCH & SONS PIANO CO.

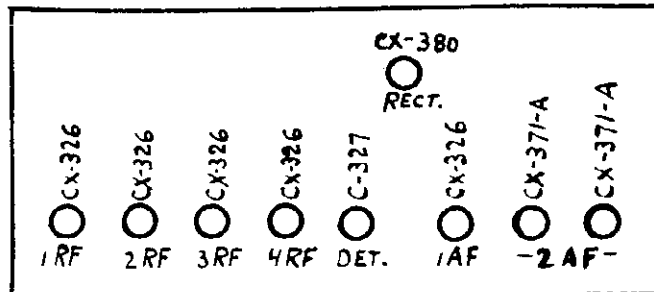
MODEL 8 Tube AC



JESSE FRENCH
 8 - A.C. Power Set.

Line Voltage 116—2nd A. F. Stage—2 Tubes Push Pull

TUBE NO. OR ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RT DET ETC	TUBE OUT					TUBE IN TESTER			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	OUTHOOD VOLTS	NORMAL PLATE MA GRID TEST	PLATE MA GRID TEST	PLATE MA CHARGE
226	1st. R.F.		1.55	117	1.5	110	5.5	-	6.5	10.5	4.0
226	2nd. R.F.		1.55	117	1.5	110	5.5	-	6.5	10.5	4.0
226	3rd. R.F.		1.55	117	1.5	110	5.5	-	6.5	10.5	4.0
226	4th. R.F.		1.55	117	1.5	110	5.5	-	6.5	10.5	4.0
2-7	Detector		2.40	125	2.2	25	45	-	1.4	1.4	0.0
226	1st. A.F.		1.55	107	1.5	100	7.5	-	3.5	7.0	3.5
171A	2nd. A.F.		5.30	170	5.0	158	33	-	18.0	21.0	3.0
171A	2nd. A.F.		5.30	170	5.0	158	33	-	18.0	21.0	3.0



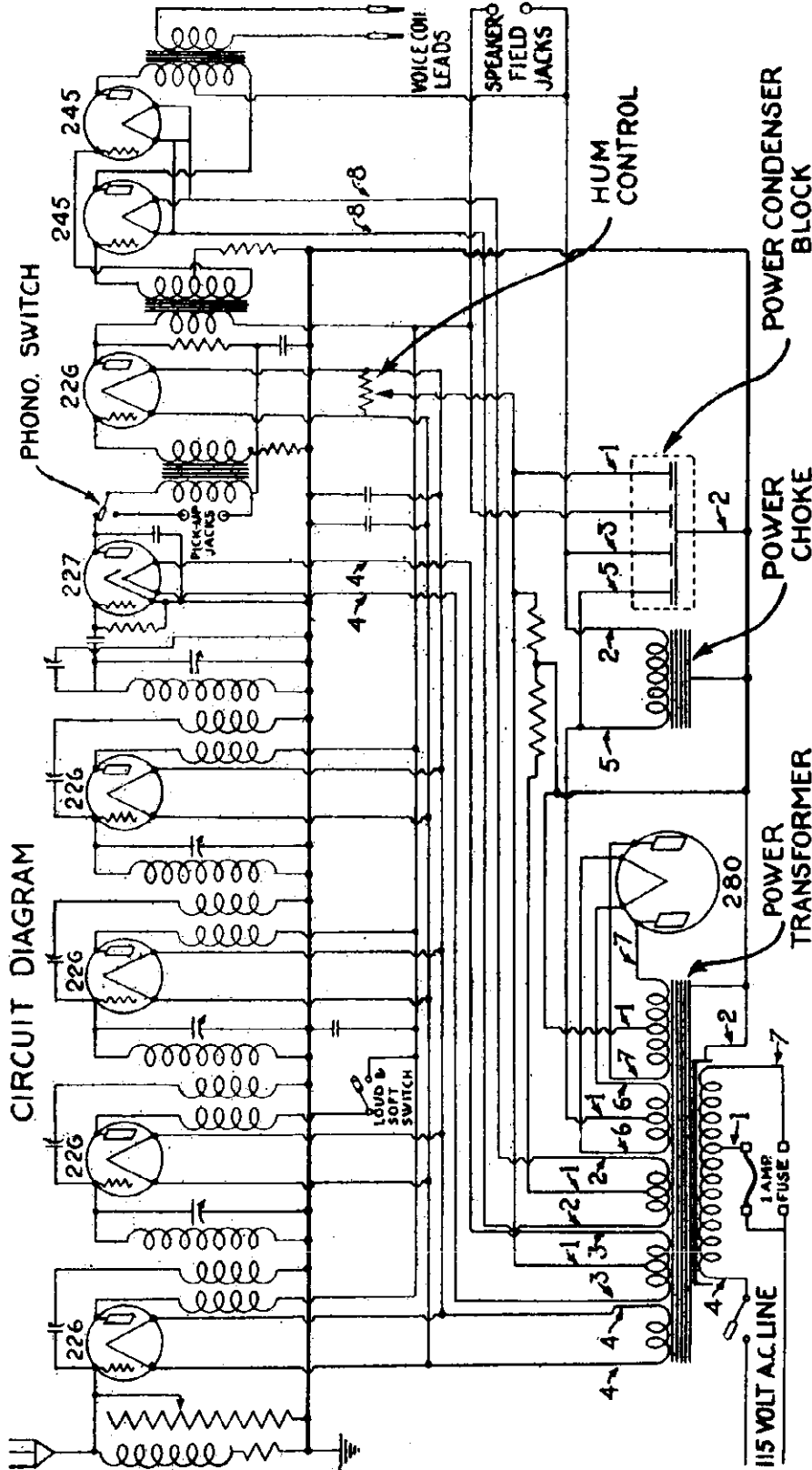
Note—Where two wires are same color they may be connected to either terminal marked that color. Red wire should connect between wires brought out of same large tubing.

JESSE FRENCH & SONS PIANO CO.

MODEL 5-093

JESSE FRENCH

Model 5-093



Component list for Model 5-093:

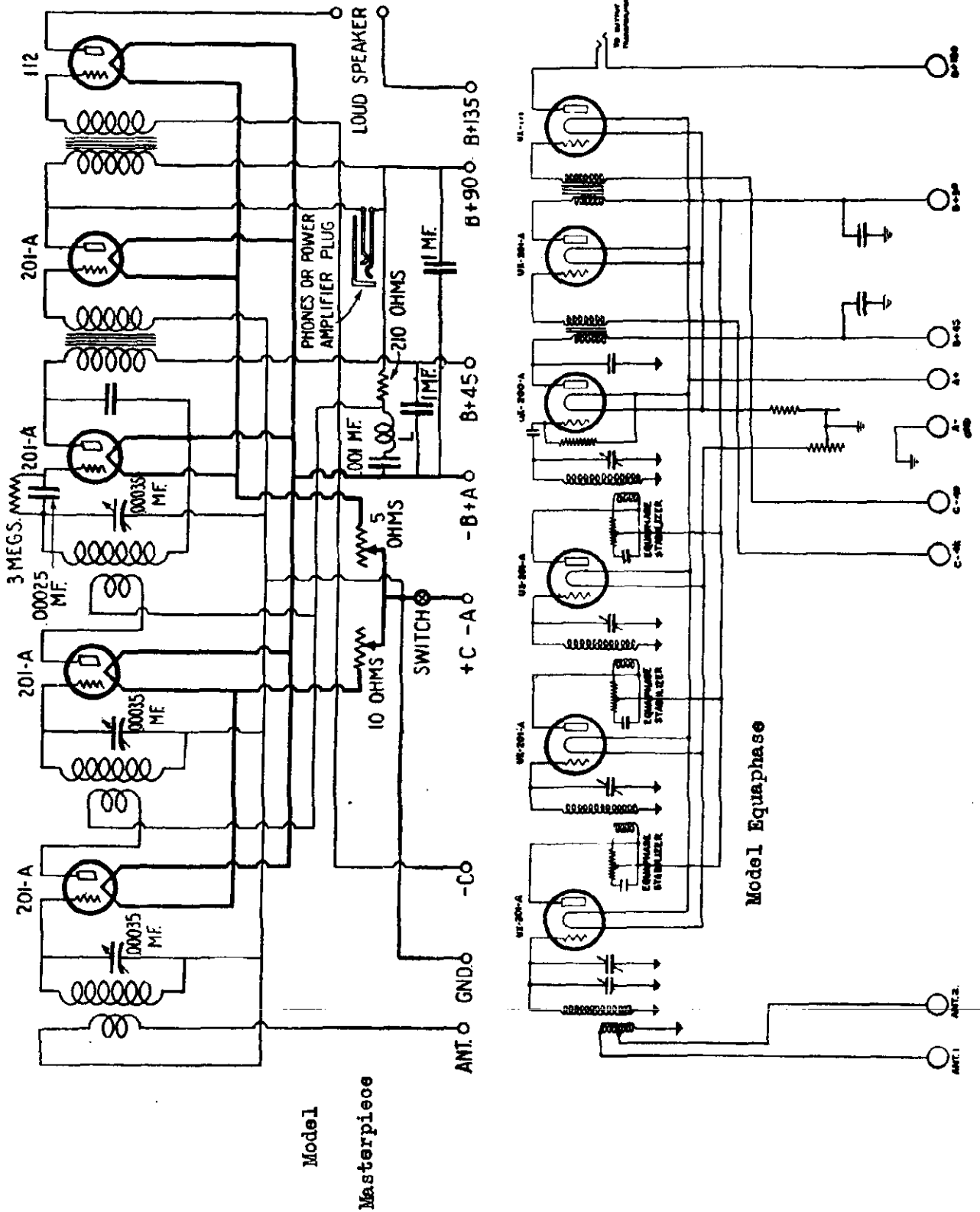
- CX-326 1st A.F.
- CX-345 2nd A.F.
- CX-326 3rd R.F.
- CX-326 4th R.F.
- CX-326 1st R.F.
- CX-326 2nd R.F.
- C-327 D.H.
- DX-380 Rect.

Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Max
 Note: "C" Bias Voltage Reading on Audio tubes is low due to the current draw of the set tester and high resistances in the set.

TUBE NO.	TYPE	POSITION	TUBE OUT		TUBE IN TESTER		NORMAL PLATE VOLTAGE (V)	NORMAL GRID VOLTAGE (V)	NORMAL SCREEN VOLTAGE (V)	NORMAL BIAS VOLTAGE (V)	SOCKET
			1	2	1	2					
1	226	1st AF	1.5	1.0	1.4	1.0	250	0	250	0	9
2	226	2nd AF	1.5	1.0	1.4	1.0	250	0	250	0	9
3	226	3rd AF	1.5	1.0	1.4	1.0	250	0	250	0	9
4	226	4th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
5	226	5th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
6	226	6th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
7	226	7th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
8	226	8th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
9	226	9th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
10	226	10th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
11	226	11th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
12	226	12th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
13	226	13th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
14	226	14th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
15	226	15th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
16	226	16th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
17	226	17th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
18	226	18th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
19	226	19th AF	1.5	1.0	1.4	1.0	250	0	250	0	9
20	226	20th AF	1.5	1.0	1.4	1.0	250	0	250	0	9

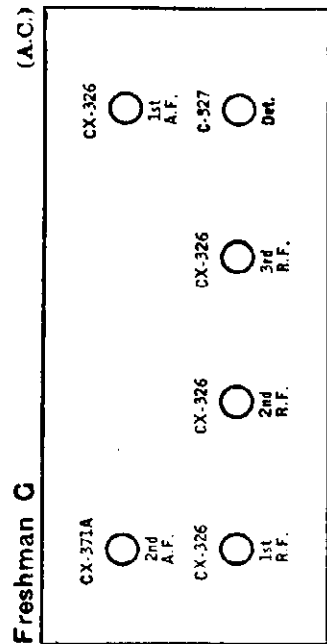
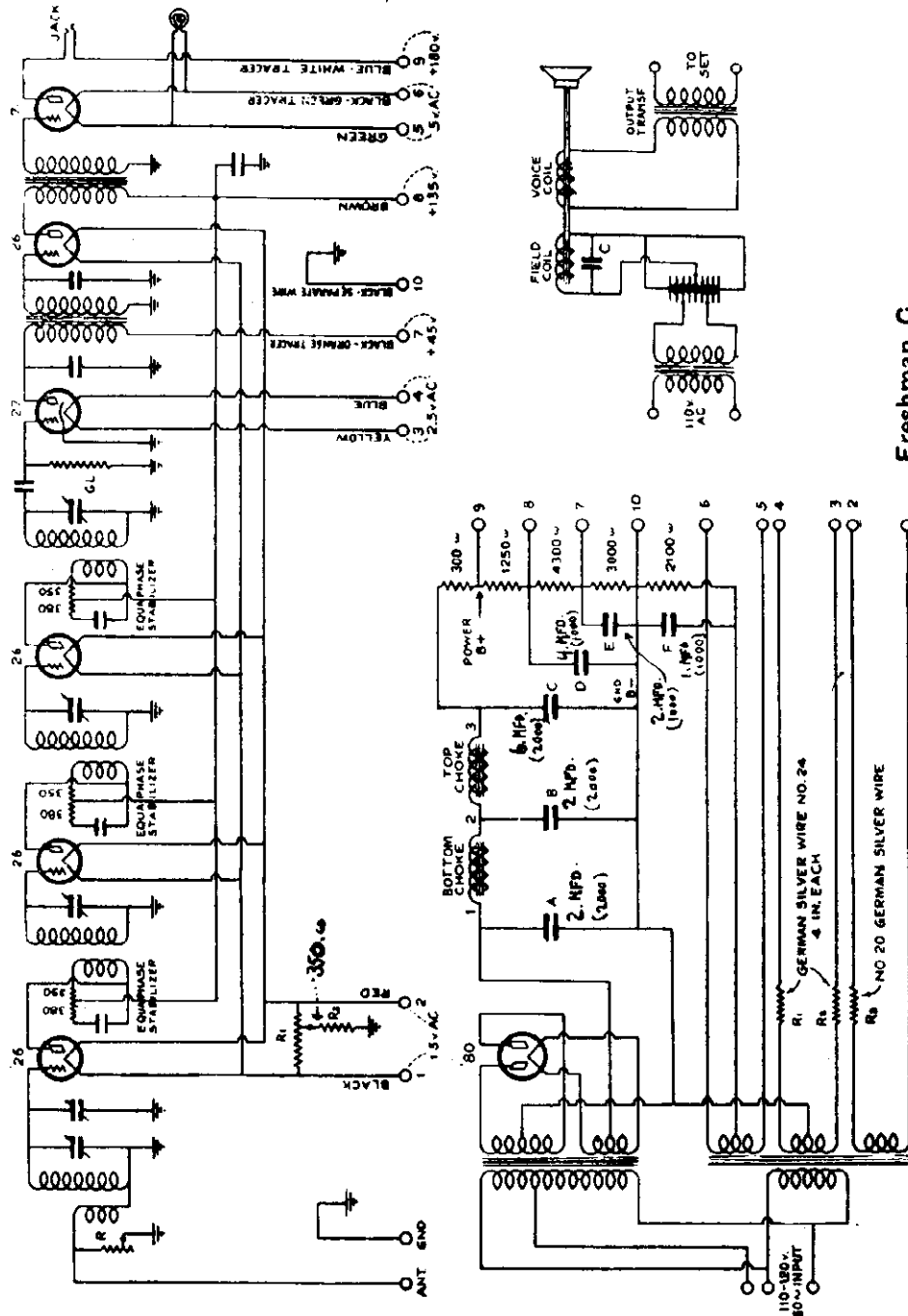
CHARLES FRESHMAN CO., INC.

MODEL Masterpiece
MODEL Equaphase



MODEL G

CHARLES FRESHMAN CO., INC.



(A.C.)
Freshman G

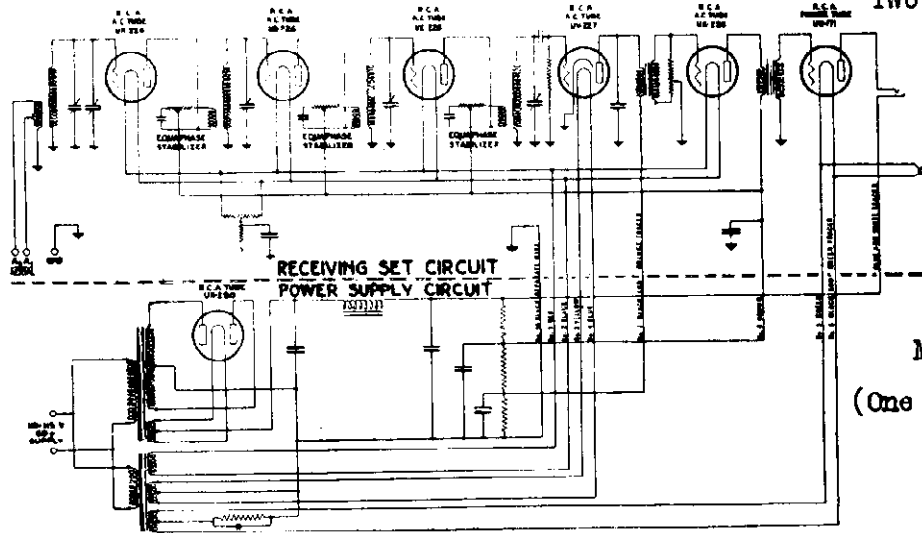
A. C. operated. To be used with model 9-60-5 Power Supply Unit using a CX-380.

FRESHMAN—Model "G"
Line Voltage 120—120 Volt Tap

TYPE OF TUBE	APPLY TO SOCKET OF SET	TUBE IN TERTER			WARMING PLUG IN SOCKET OF SET		
		VOLTS	WOLTS	PLATE VOLTS	CATHODE HEAT	PLATE HEAT	PLATE CURRENT
226	1st. R.F.	145	140	135	5	0	4
226	2nd. R.F.	145	140	135	5	0	4
226	3rd. R.F.	145	140	135	5	0	4
227	Detector	2.5	140	2.00	50	0	3.1
226	1st. A.F.	145	140	135	5	0	4
226	2nd. A.F.	5.5	200	5.10	175	87	16.0
226	Rectifier	—	5.20	—	—	—	2.0

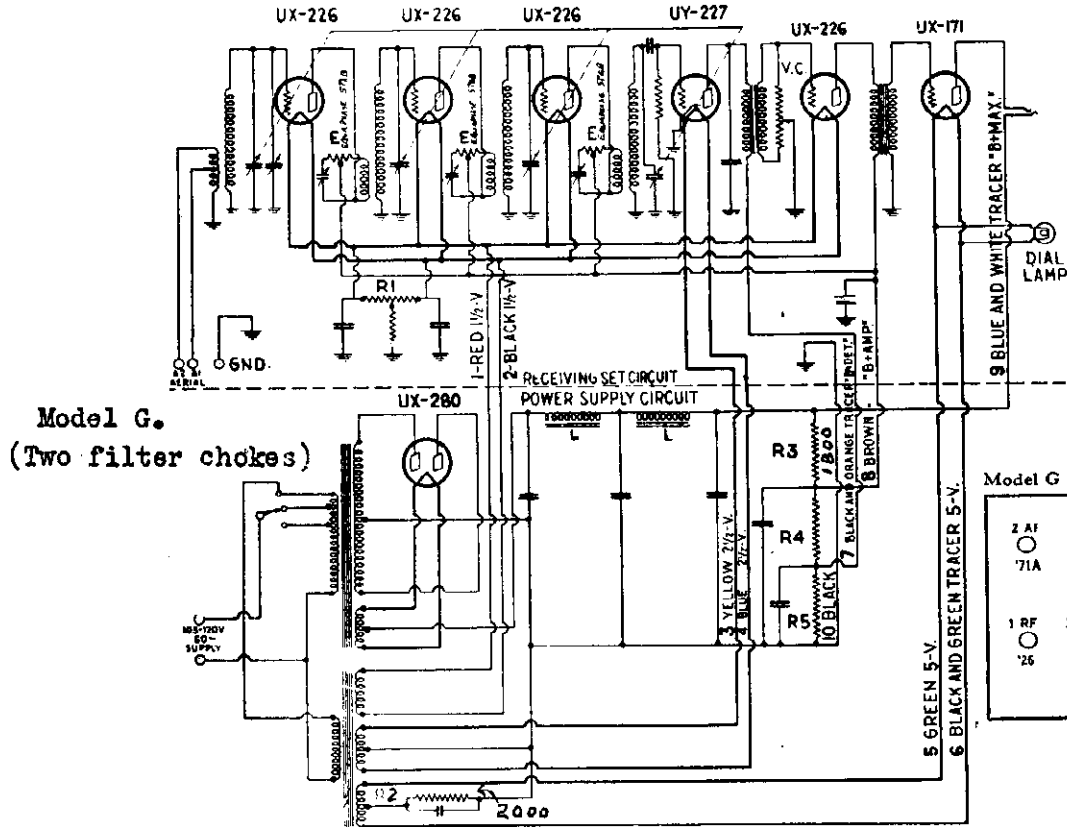
CHARLES FRESHMAN CO., INC.

MODEL G, with
G-60-S Power Unit
Two Types.

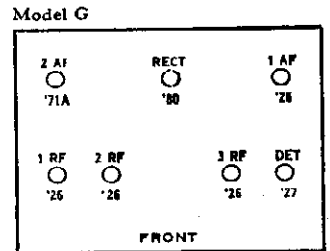


Model G.
(One filter choke)

Schematic diagram of Model "G" Chassis and Model G-60-S Power Supply.
Note the one choke coil in Power Supply Circuit.



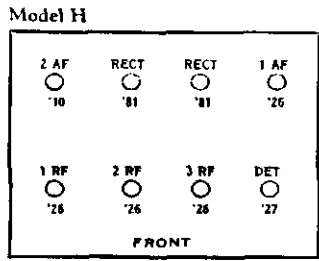
Model G.
(Two filter chokes)



Circuits of the Freshman "Model G" Equiphase and the "Model G-60-S" Power Supply Unit.

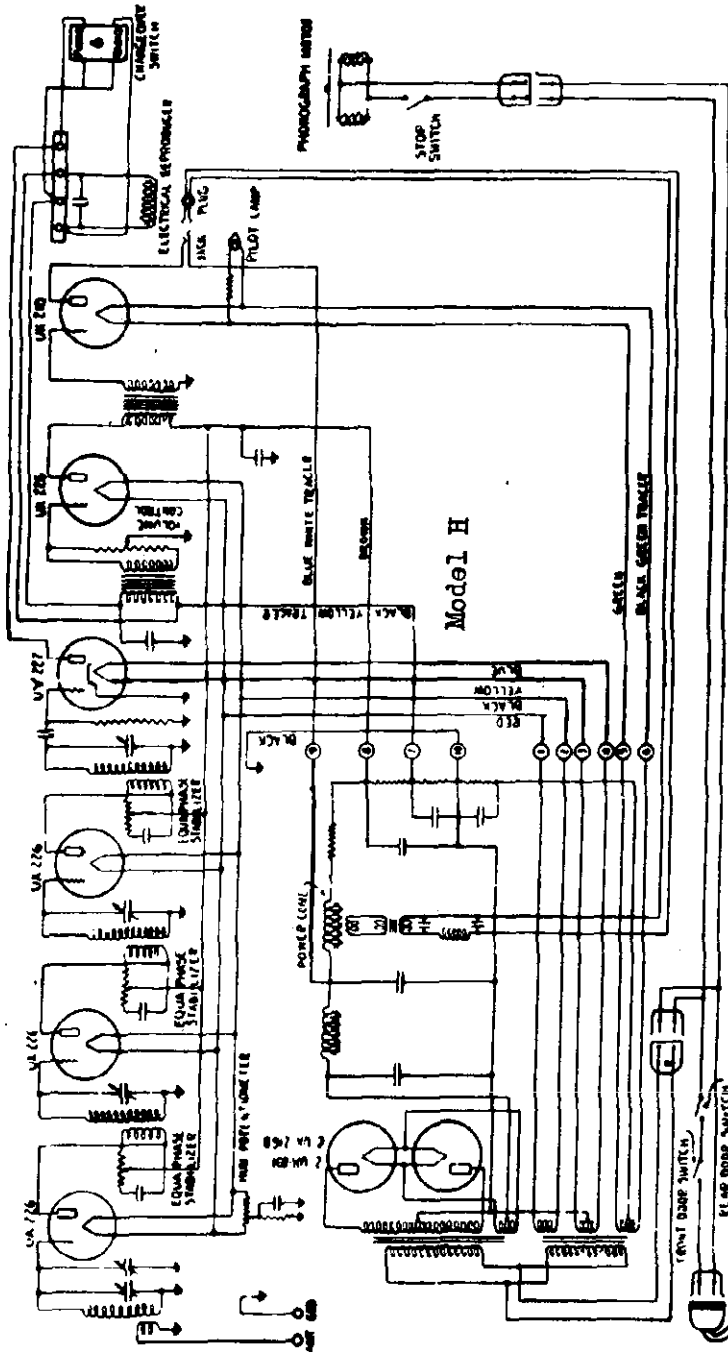
Tube	Fil. Voltage.	Plate Voltage.	Grid Voltage
RF1	1.5	130	7.
RF2	1.5	130	7.
RF3	1.5	130	7.
Det.	2.5	50	0.
AF1	1.5	130	7.
AF2	5.0	180	40.

MODEL H
 MODEL ABC Power Unit CHARLES FRESHMAN CO., INC.

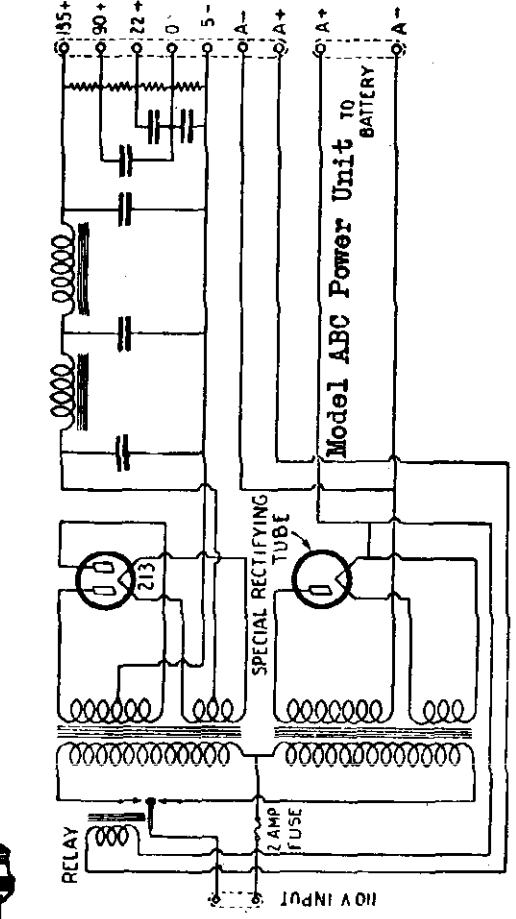


FRESHMAN—Model "H"
 Line Voltage 120—120 Volt Tap

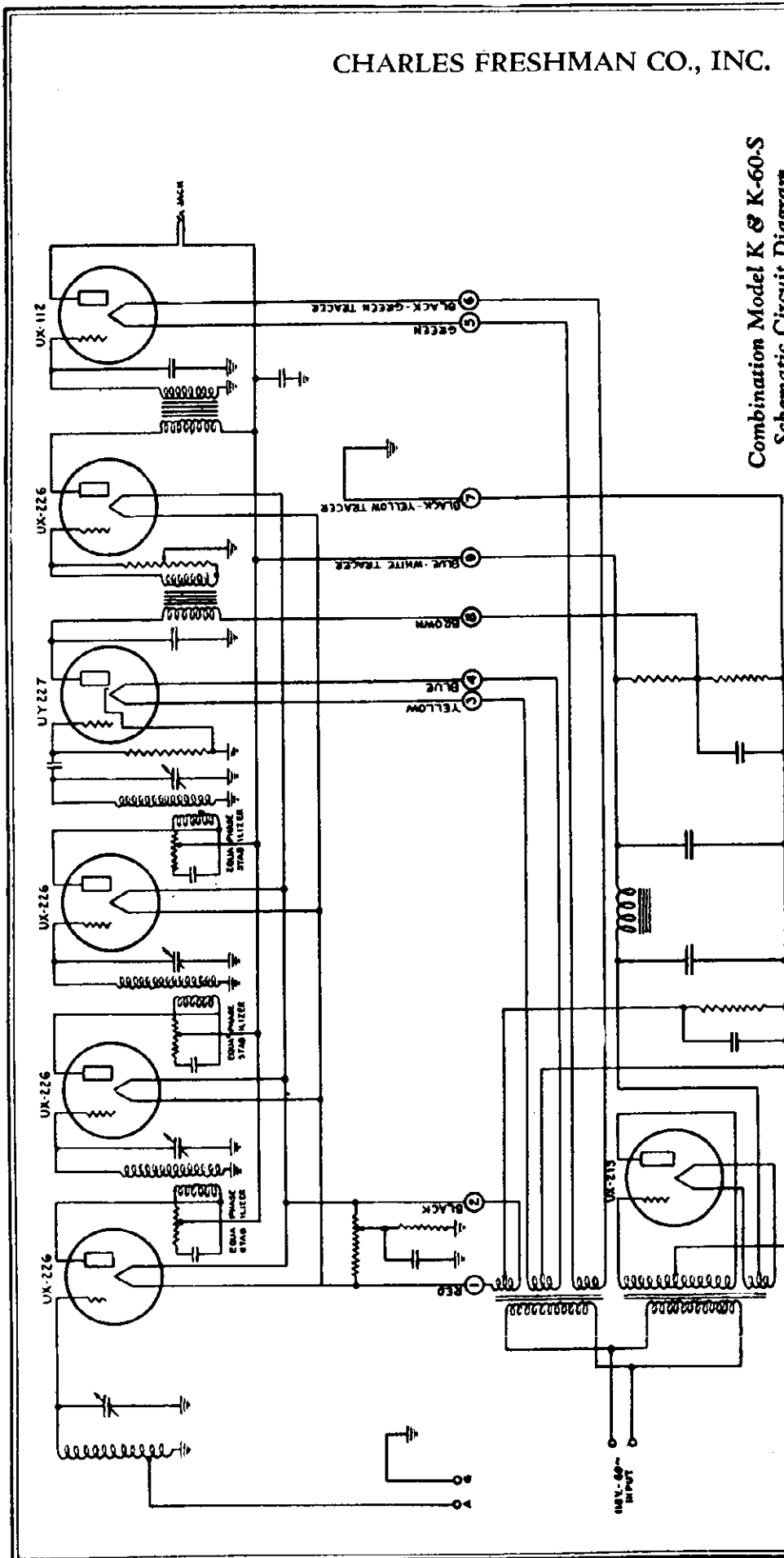
TYPE OF TUBE	POSITION	TUBE DATA		RESISTANCE VALUE IN MODEL OF SET		TUBE IF FILTER		PLATE		
		1ST A.P. RES. (K)	2ND A.P. RES. (K)	RES. (K)	RES. (K)	RES. (K)	RES. (K)	RES. (K)	RES. (K)	
225	1B1, R.F.	1.45	1.48	1.35	1.40	10	—	5.3	9.6	4.3
226	2nd. R.F.	1.45	1.48	1.35	1.40	10	—	5.3	9.6	4.3
227	3rd. R.F.	1.45	1.48	1.35	1.40	10	—	5.3	9.6	4.3
228	DETECTOR	2.35	1.40	2.00	50	10	—	2.75	2.75	0.0
229	1st. A.P.	1.45	1.48	1.35	1.40	10	—	5.3	9.6	4.3
230	2nd. A.P.	1.45	1.48	1.35	1.40	10	—	5.3	9.6	4.3
231	RECTIFIER	—	—	—	—	—	—	—	—	—
232	—	—	—	—	—	—	—	—	—	—
233	—	—	—	—	—	—	—	—	—	—
234	—	—	—	—	—	—	—	—	—	—
235	—	—	—	—	—	—	—	—	—	—
236	—	—	—	—	—	—	—	—	—	—
237	—	—	—	—	—	—	—	—	—	—
238	—	—	—	—	—	—	—	—	—	—
239	—	—	—	—	—	—	—	—	—	—
240	—	—	—	—	—	—	—	—	—	—
241	—	—	—	—	—	—	—	—	—	—
242	—	—	—	—	—	—	—	—	—	—
243	—	—	—	—	—	—	—	—	—	—
244	—	—	—	—	—	—	—	—	—	—
245	—	—	—	—	—	—	—	—	—	—
246	—	—	—	—	—	—	—	—	—	—
247	—	—	—	—	—	—	—	—	—	—
248	—	—	—	—	—	—	—	—	—	—
249	—	—	—	—	—	—	—	—	—	—
250	—	—	—	—	—	—	—	—	—	—



H-60 5 POWER SUPPLY UNIT



CHARLES FRESHMAN CO., INC.

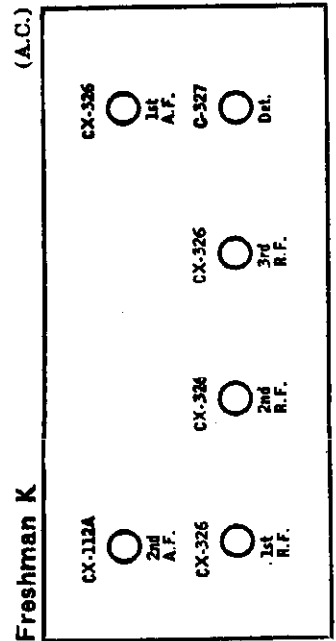


Combination Model K & K-60-S
Schematic Circuit Diagram.

FRESHMAN—Model "K"
Line Voltage 120—120 Volt Tap

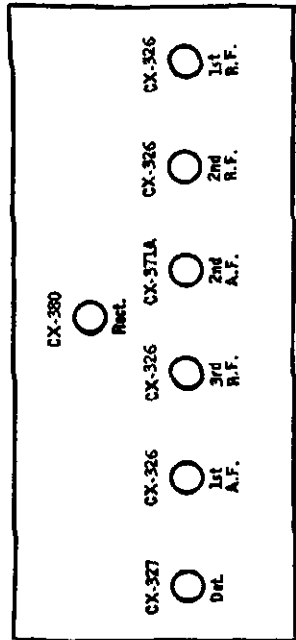
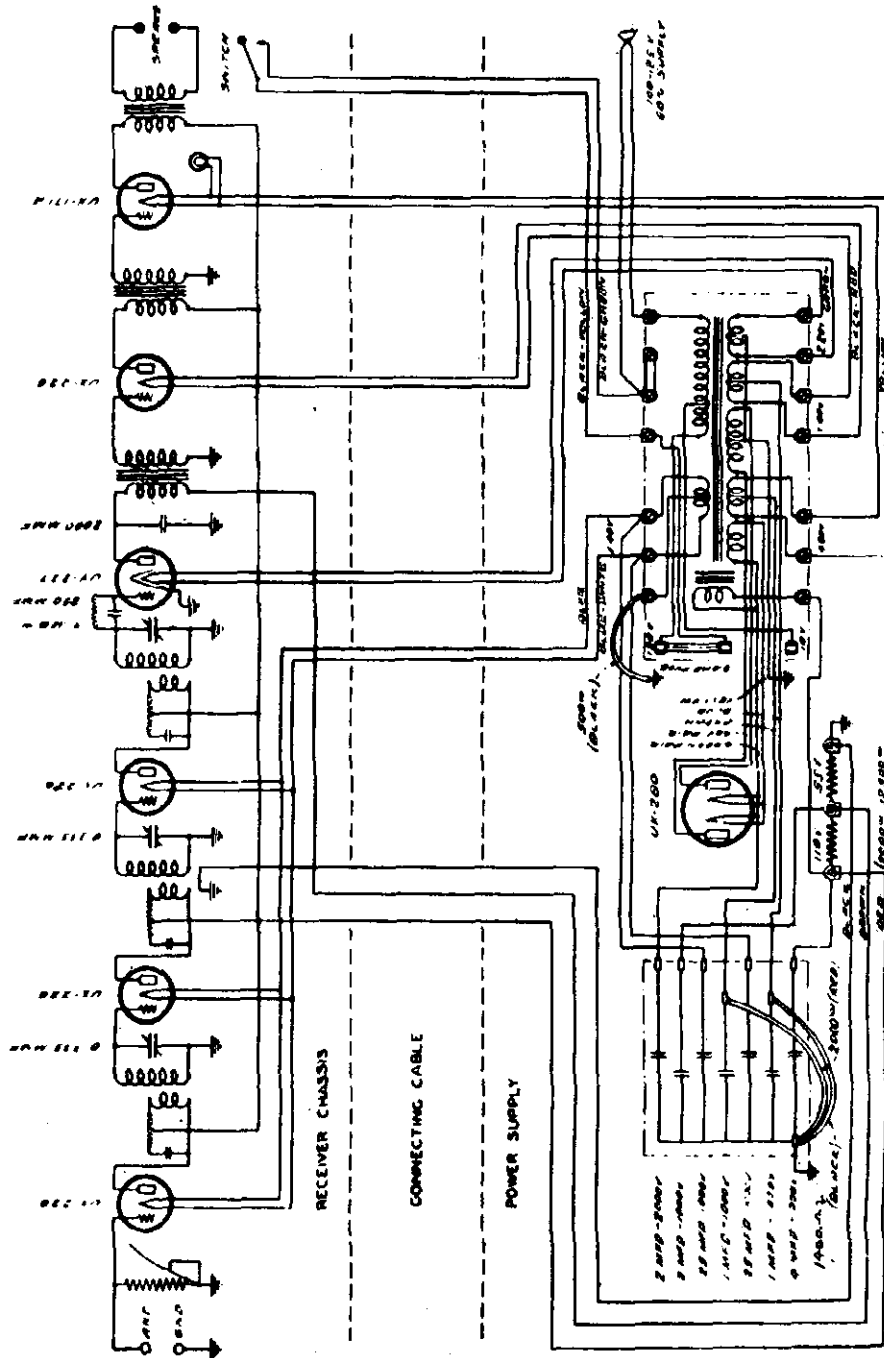
TYPE	VOLTAGE	TRANSFORMER		CURRENT		RESISTANCE		INDUCTIVE REACTANCE		CAPACITIVE REACTANCE		WATTAGE	
		1st A.P.	2nd A.P.	1st A.P.	2nd A.P.	1st A.P.	2nd A.P.	1st A.P.	2nd A.P.	1st A.P.	2nd A.P.	1st A.P.	2nd A.P.
226	12V	1.45	1.45	1.35	1.40	9	—	8.2	—	9.4	—	5.2	—
226	20V A.P.	1.45	1.45	1.35	1.40	8	—	5.2	—	8.4	—	5.2	—
227	12V A.P.	1.45	1.45	1.35	1.40	8	—	5.2	—	8.4	—	5.2	—
226	12V A.P.	1.45	1.45	1.35	1.40	8	—	5.2	—	8.4	—	5.2	—
112A	250V A.P.	3.0	3.0	1.40	1.35	8	—	5.2	—	8.4	—	5.2	—
250	REGULATOR	—	—	—	—	—	—	20.0	—	20.0	—	—	—

(A.C.)



MODEL M

CHARLES FRESHMAN CO., INC.

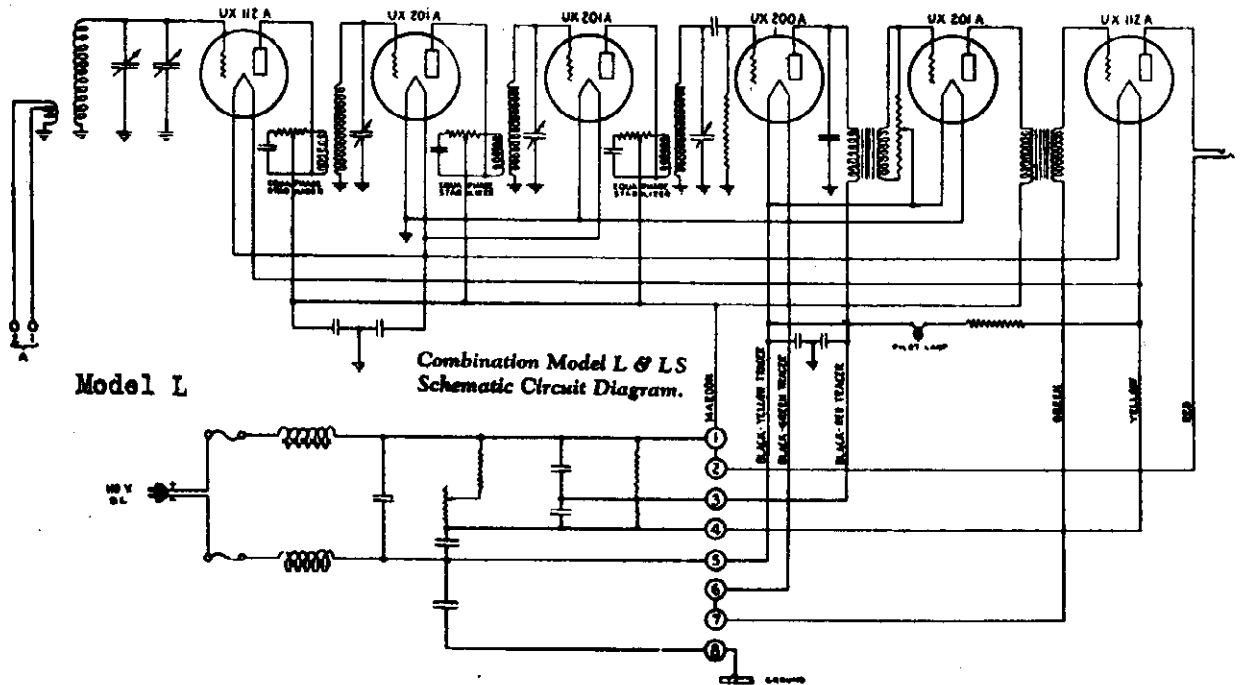


FRESHMAN—Model "M"
Line Voltage 120—120 Volt Tap

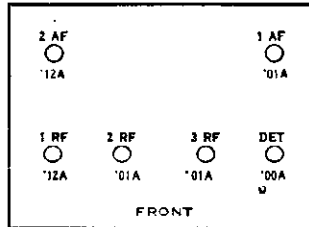
TUBE NO.	TUBE TYPE	POSITION IN SET		TAP IN SET		TAP IN SET		TAP IN SET		TAP IN SET	
		1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
226	6A5	Rectifier		1.45	1.58	1.35	1.50	1.2		5.3	9.7
226	6X4	Diode		1.45	1.58	1.35	1.50	1.2		5.3	9.7
226	6X57A	1st A.F.		1.45	1.58	1.35	1.50	1.2		5.3	9.7
226	6X57A	2nd A.F.		1.45	1.58	1.35	1.50	1.2		5.3	9.7
226	6X57A	3rd A.F.		1.45	1.58	1.35	1.50	1.2		5.3	9.7
226	6X57A	2nd R.F.		1.45	1.58	1.35	1.50	1.2		5.3	9.7
226	6X57A	1st R.F.		1.45	1.58	1.35	1.50	1.2		5.3	9.7
226	6X57A	Rectifier		1.45	1.58	1.35	1.50	1.2		5.3	9.7

CHARLES FRESHMAN CO., INC.

MODEL L
MODEL N



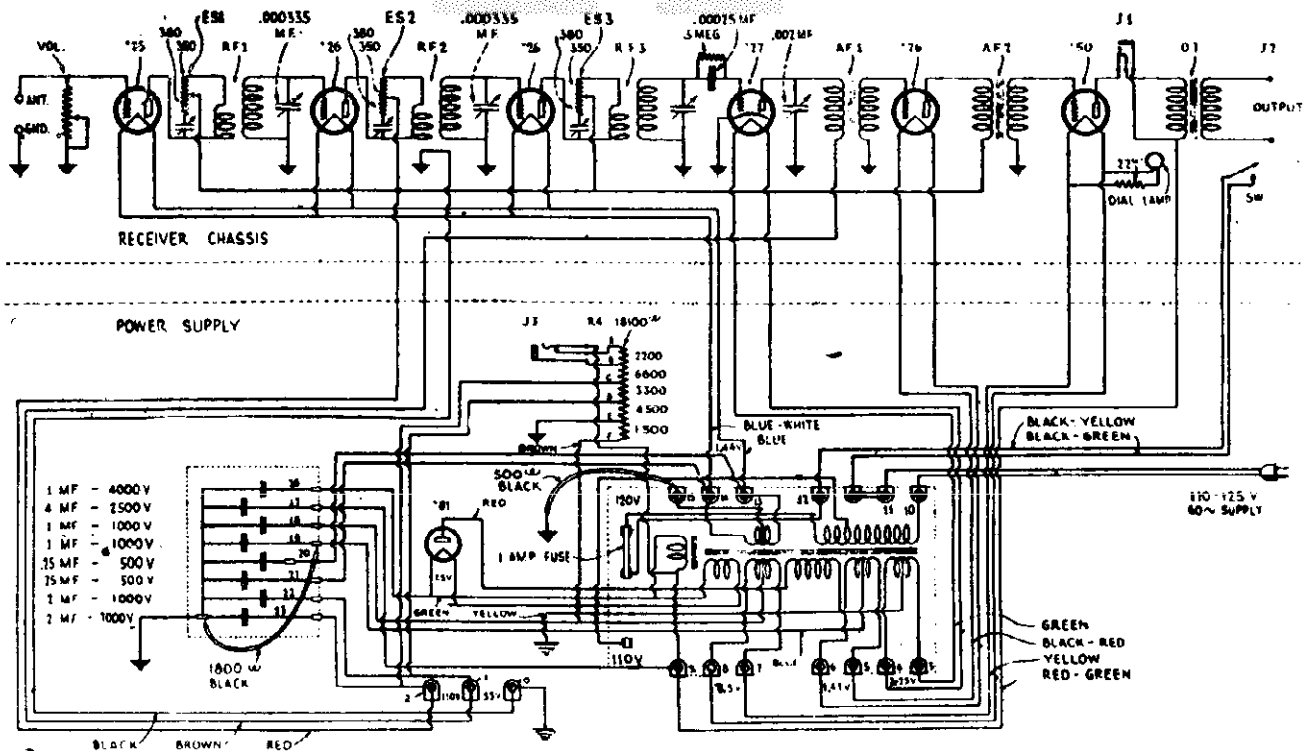
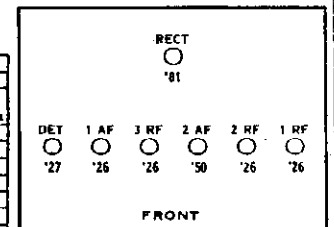
Model L



FRESHMAN—Model "N"
Line Voltage 119—120 Volt Tap

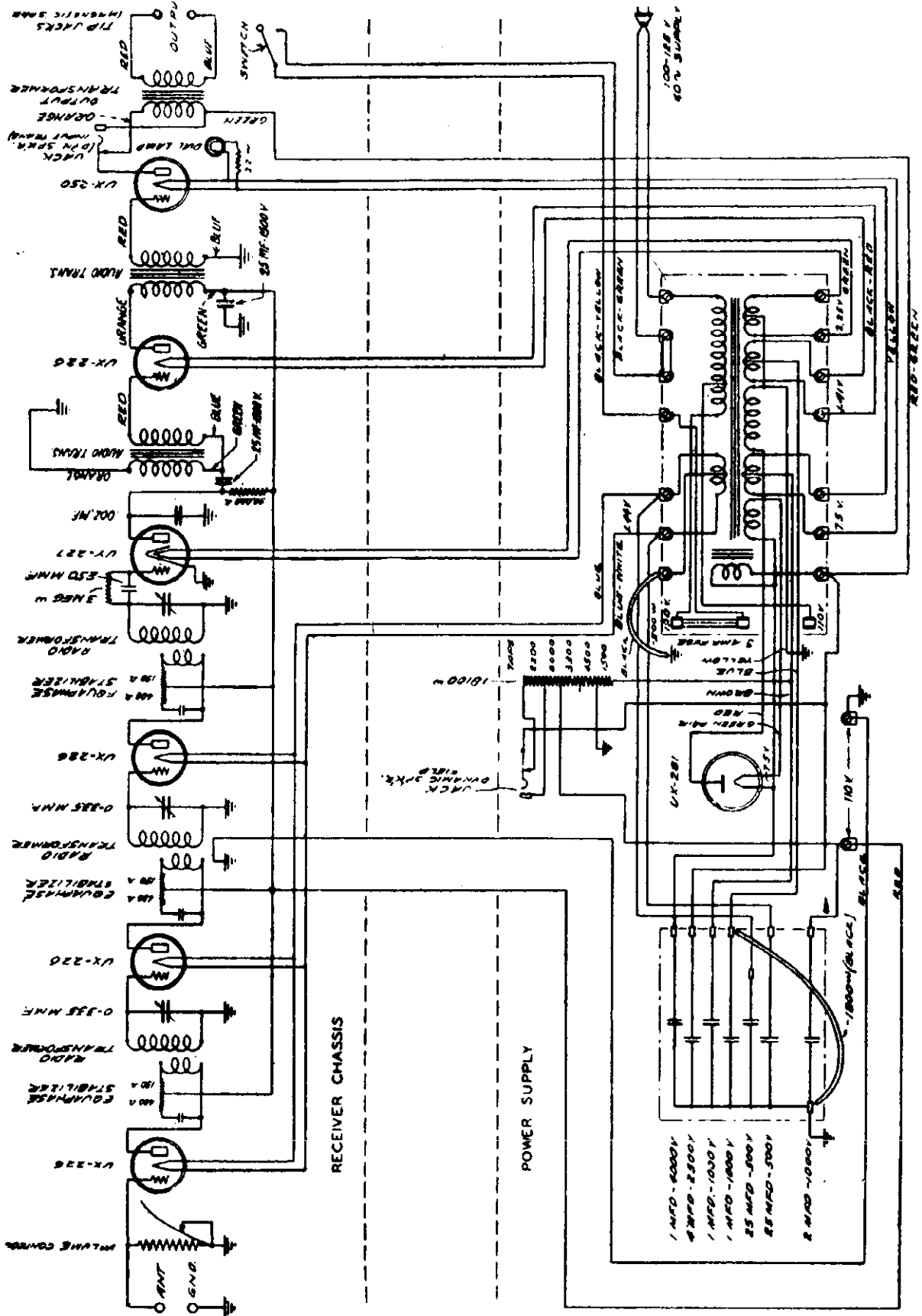
TUBE NO. IN CHASSIS	TYPE OF TUBE	POSITION OF TUBE (BY R.F. DET., ETC.)	TUBE DATA					RECOMMENDED PLATE IN SOCKET OF SET			
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	OUTBOARD VOLTS	NORMAL PLATE CURR. MA	PLATE CURR. TEST MA	PLATE CURR. MAX. CHORDS
226	1st. R.F.		1.45	100	1.35	90	6	—	3.2	7.4	4.2
226	2nd. R.F.		1.45	100	1.35	90	6	—	3.2	7.4	4.2
226	3rd. R.F.		1.45	100	1.35	90	6	—	3.2	7.4	4.2
227	Detector		2.40	100	2.55	50	0	—	2.2	2.2	0.0
228	1st. A.F.		1.45	100	1.35	90	0	—	3.2	7.4	4.2
250	2nd. A.F.		1.45	100	1.35	90	0	—	3.2	7.4	4.2
881	Rectifier		—	—	—	—	—	—	36.0	45.5	7.8
									48.0	—	—

Model N



MODEL 2N with
2N-60-S Power Unit

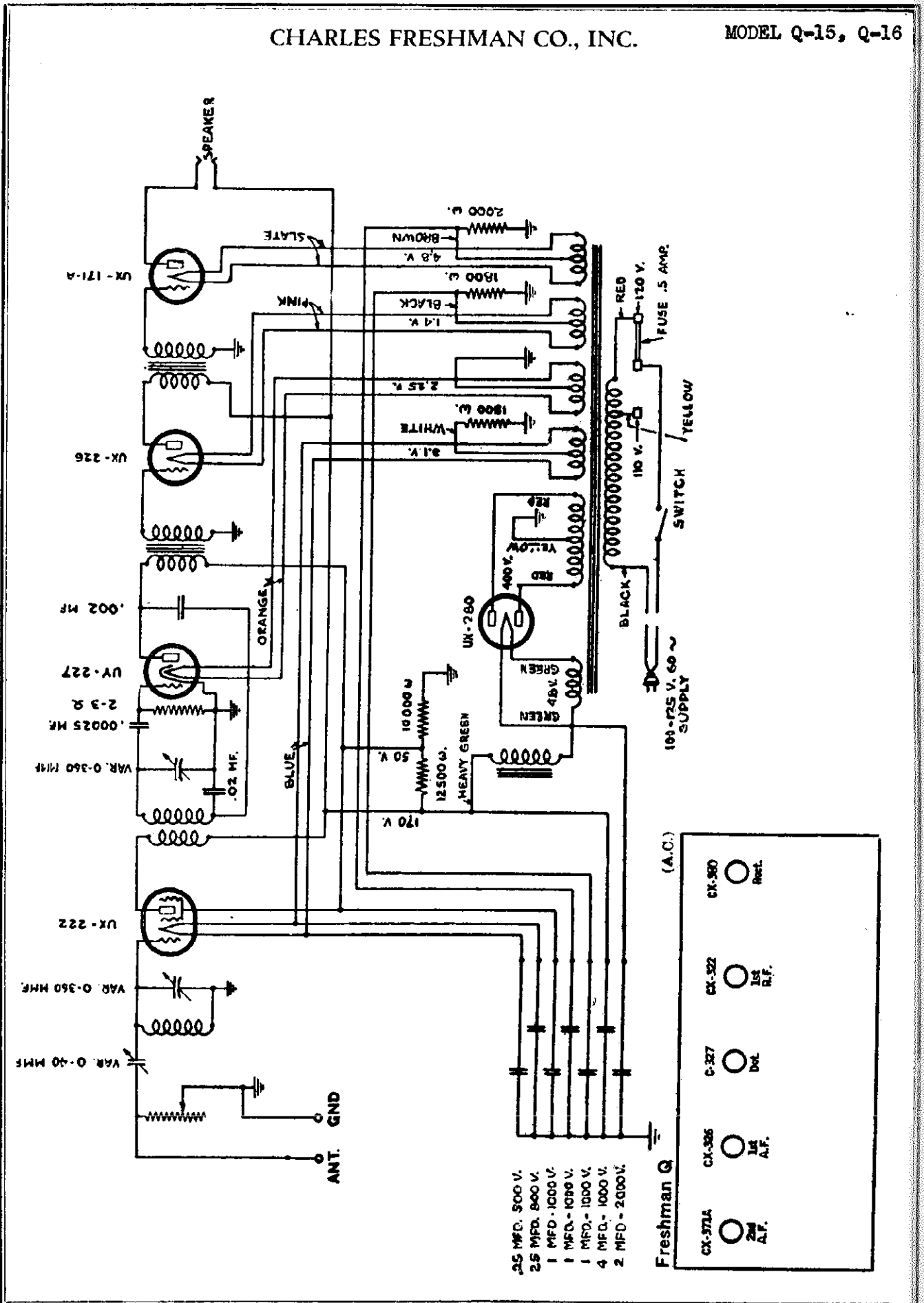
CHARLES FRESHMAN CO., INC.



SEE

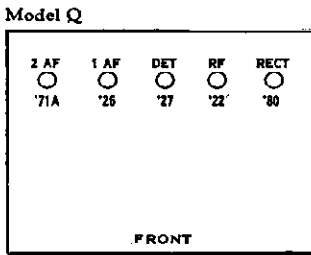
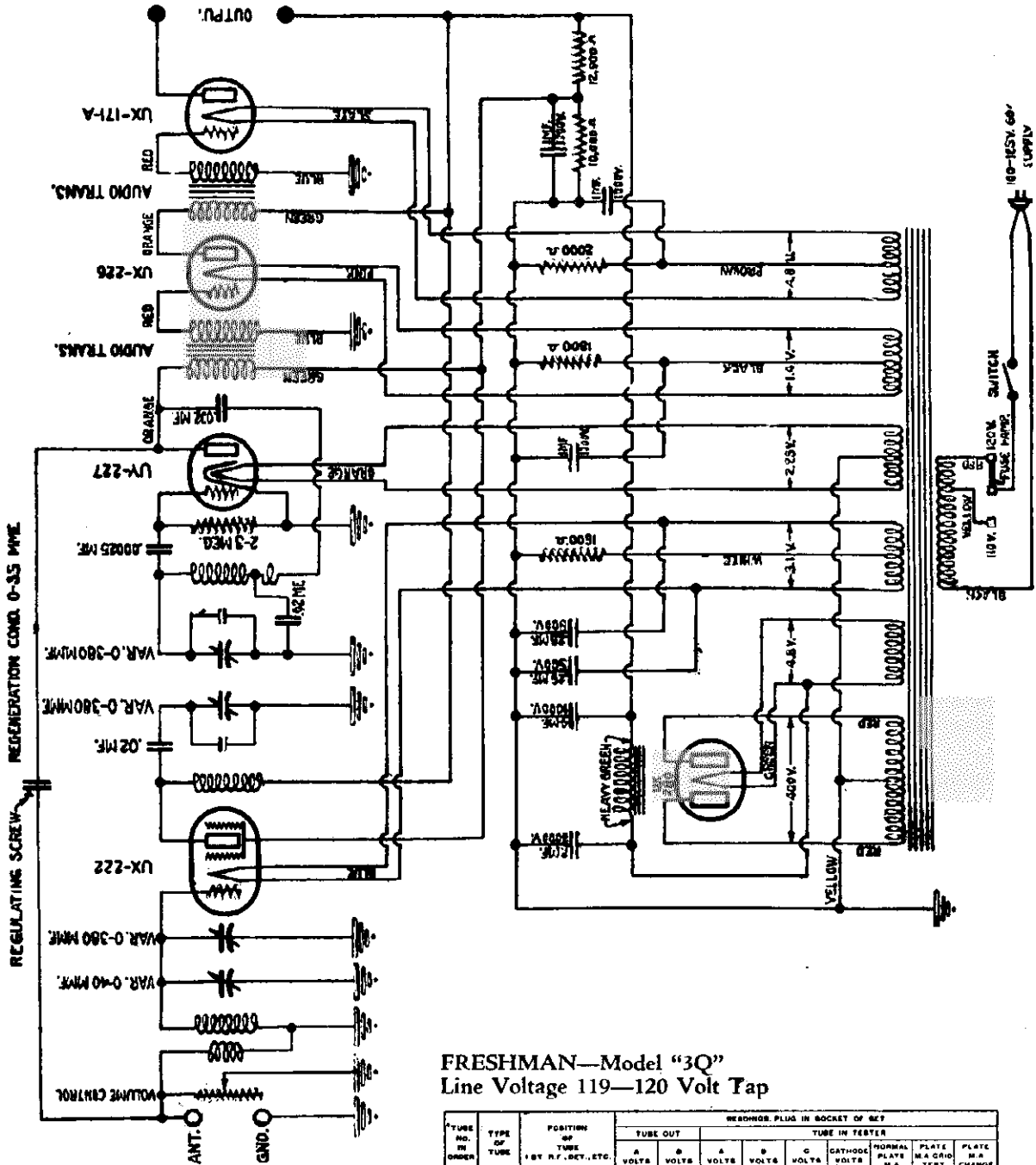
CHARLES FRESHMAN CO., INC.

MODEL Q-15, Q-16



MODEL 3-Q-15
3-Q-16

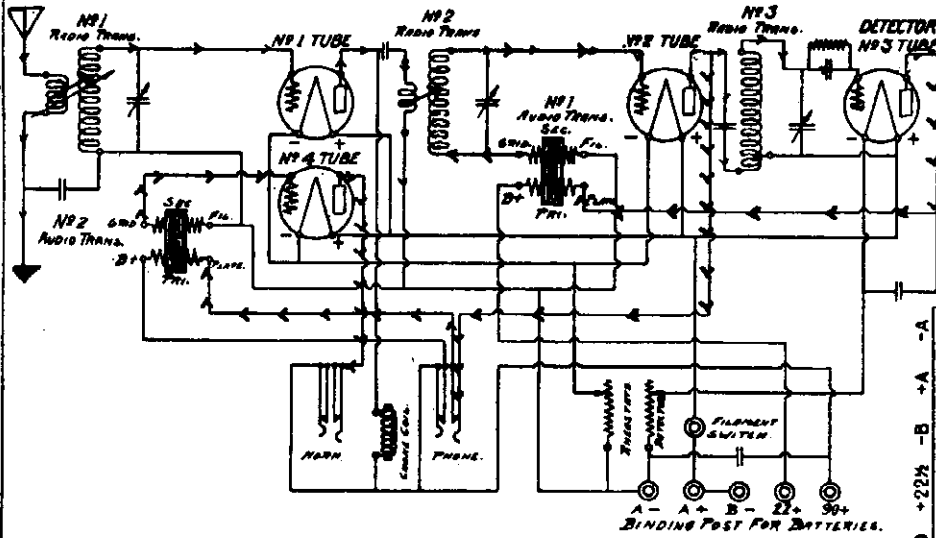
CHARLES FRESHMAN CO., INC.



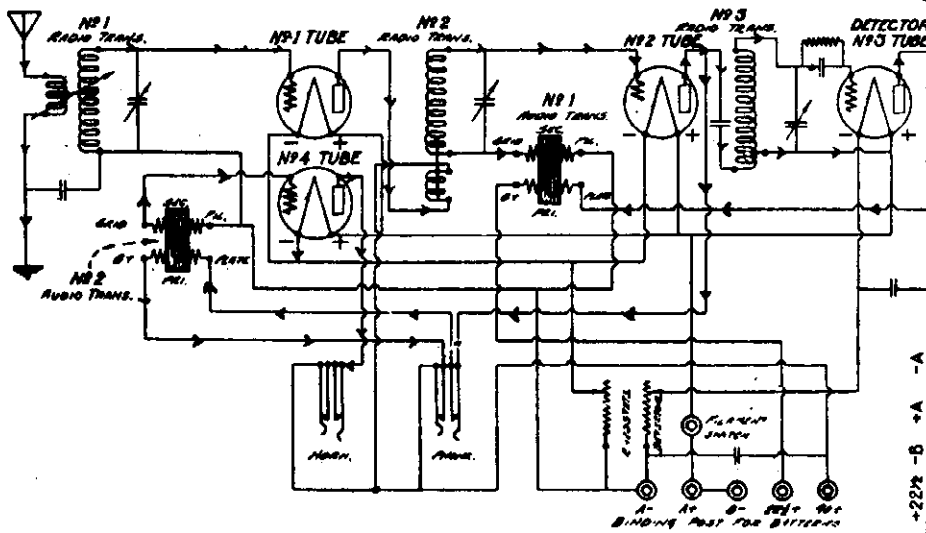
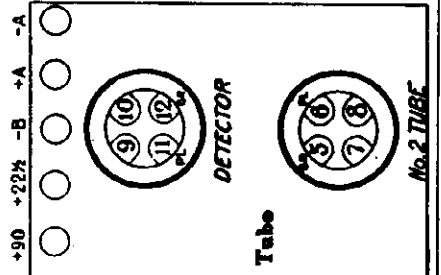
FRESHMAN—Model "3Q"
Line Voltage 119—120 Volt Tap

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (BY R.F., DET., ETC.)	WINDING PLUG IN SOCKET OF SET					TUBE IN TESTER					
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	CATHODE VOLTS	NORMAL PLATE M.A. TEST	PLATE M.A. GRID TEST	PLATE M.A. CHANGE		
1	222	1st. R.F.	3.10	162	3.00	150	5.0						
2	227	Detector	2.35	150	2.10	50	0.0				2.75	2.75	0.0
3	226	1st. A.F.	1.45	150	1.36	140	10				4.2	8.6	4.4
4	171A	2nd. A.F.	4.90	140	4.60	125	25				16.5	18.0	1.5
5	280	Rectifier	-	-	4.60	-	-				24.0	-	-

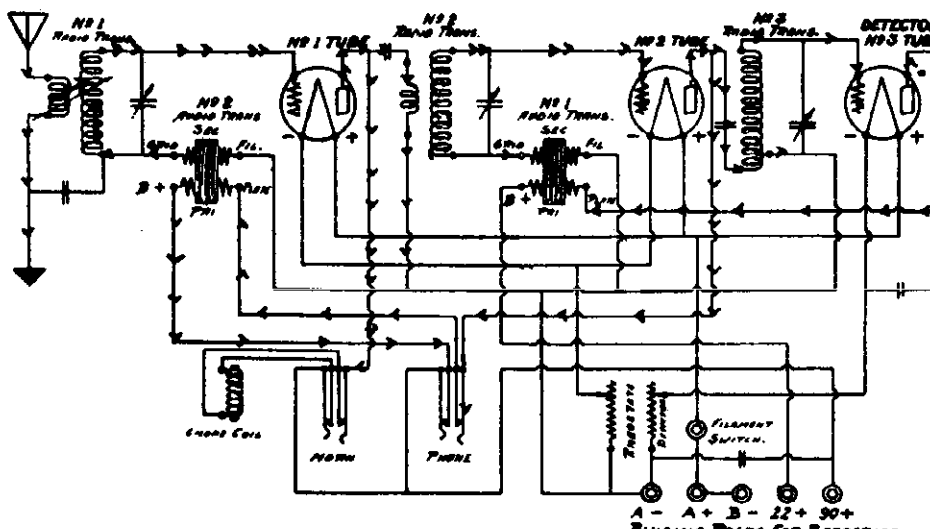
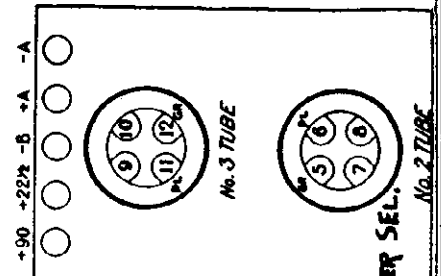
GENERAL MOTORS RADIO CORP. MODEL OEM-7 4 Tube
 MODEL OEM-7 Super-SEL.
 MODEL OEM-11 3 Tube



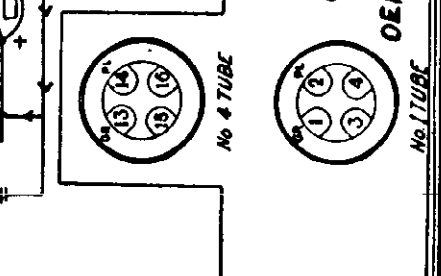
OEM-7 — 4-Tube



OEM-7 — Super-Selective



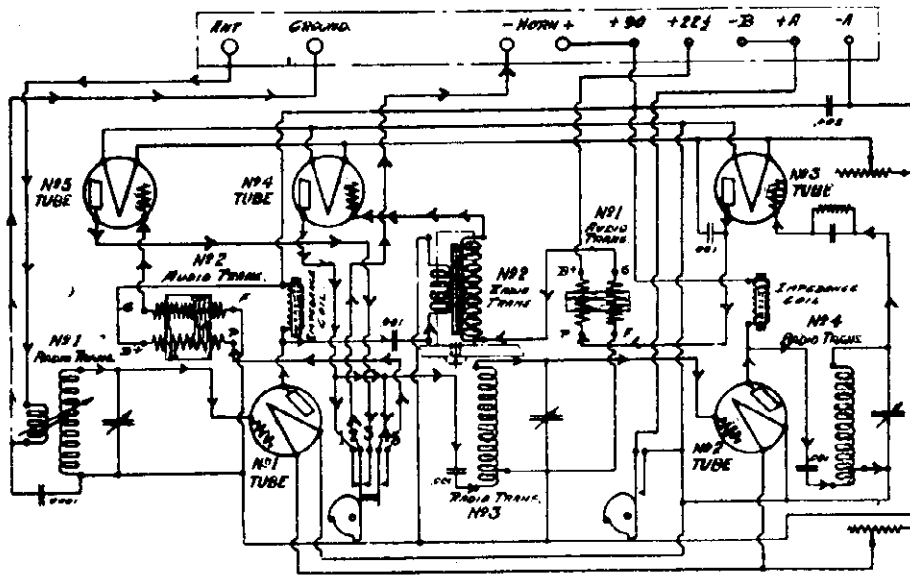
OEM-11 — 3-Tube



OEM-7 AND
 OEM-7 SUPER SEL.

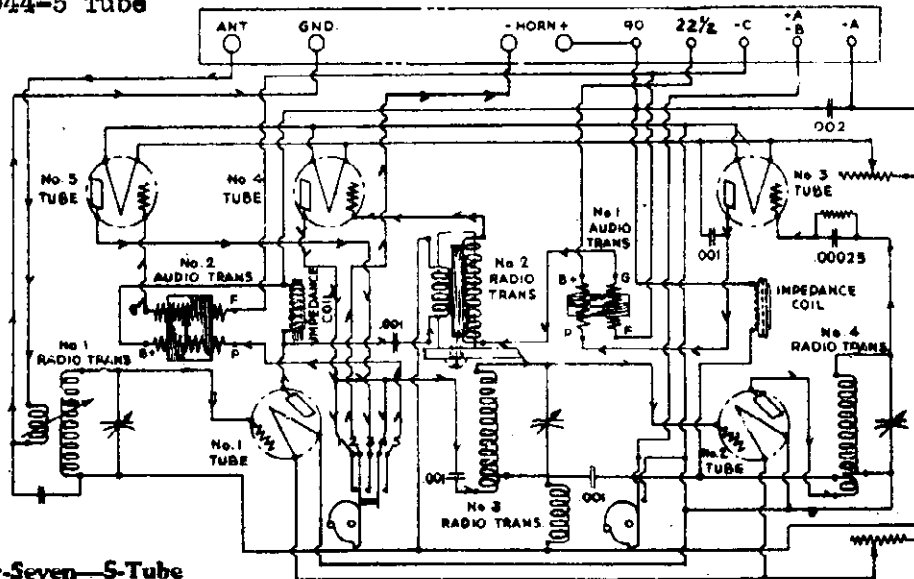
MODEL 5044-5 Tube
MODEL 527-5 Tube

GENERAL MOTORS RADIO CORP.

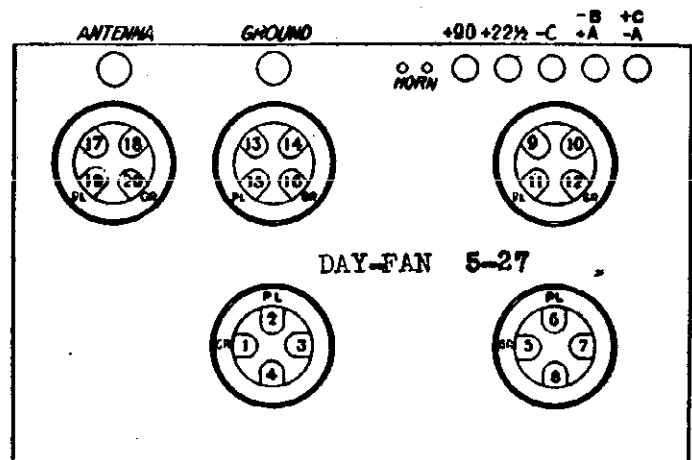
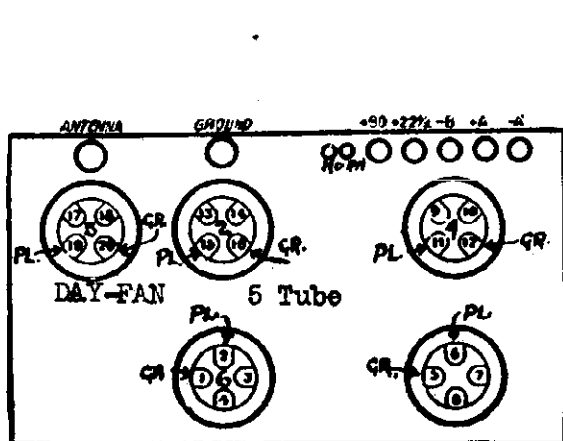


DAY-FAN FIVE

Model 5044-5 Tube

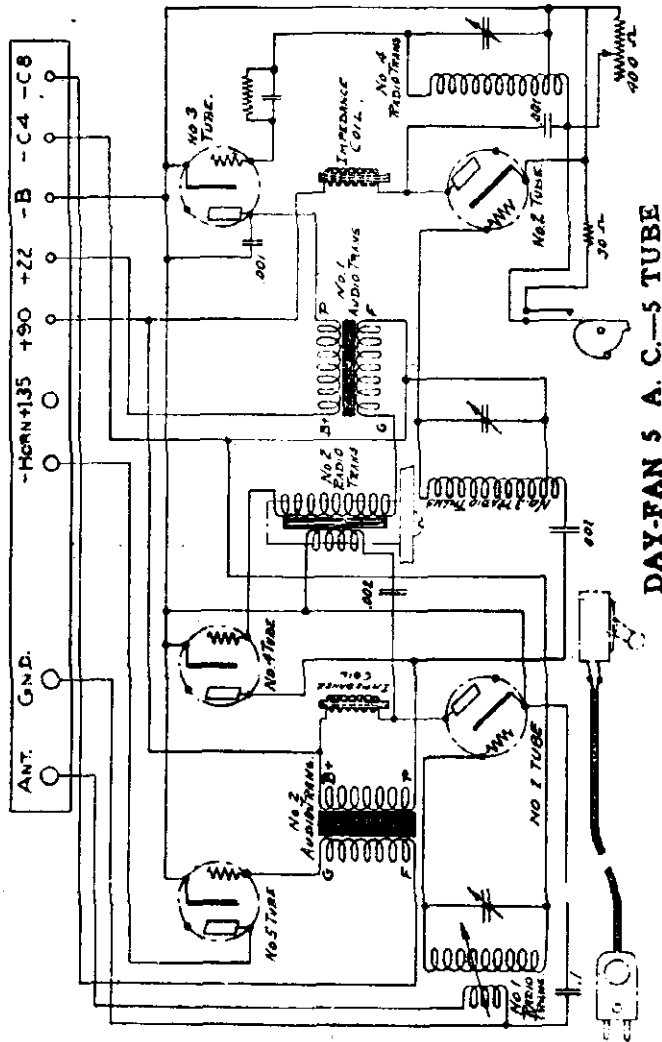


Day-Fan Five Twenty-Seven—5-Tube

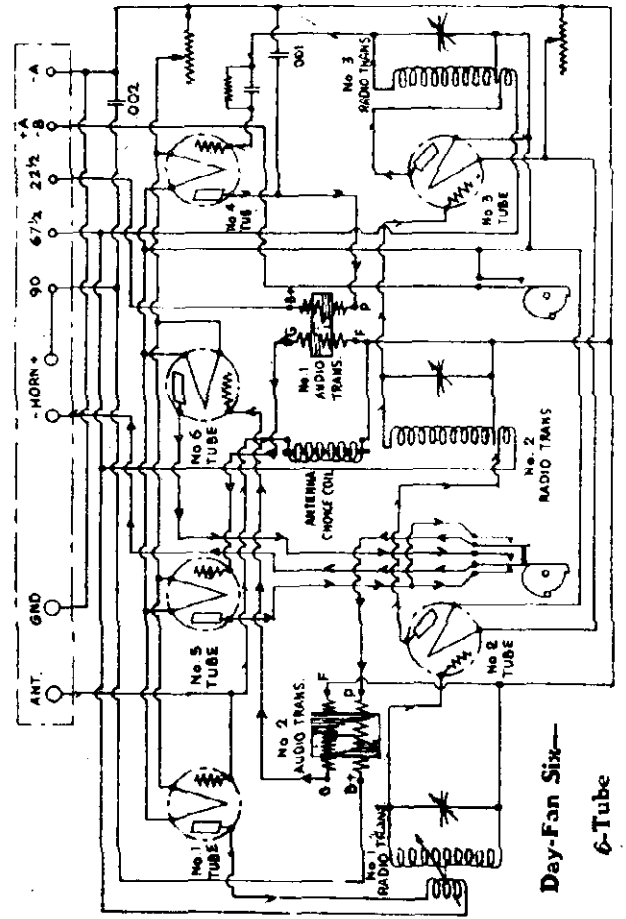


GENERAL MOTORS RADIO CORP.

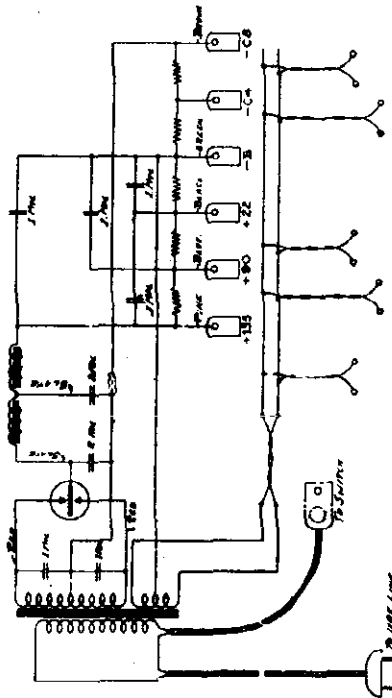
MODEL Day-Fan 5-AC
 MODEL Day-Fan 5
 MODEL Day-Fan 5-AC SPU



DAY-FAN 5 A. C. 5 TUBE



Day-Fan Six—
6-Tube

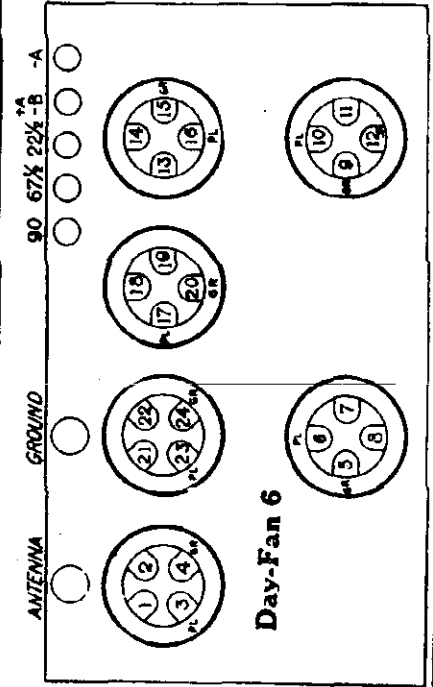


POWER SUPPLY FOR 5 TUBE A. C. SET

SUB-PANEL OF DAY-FAN 5 TUBE A. C.

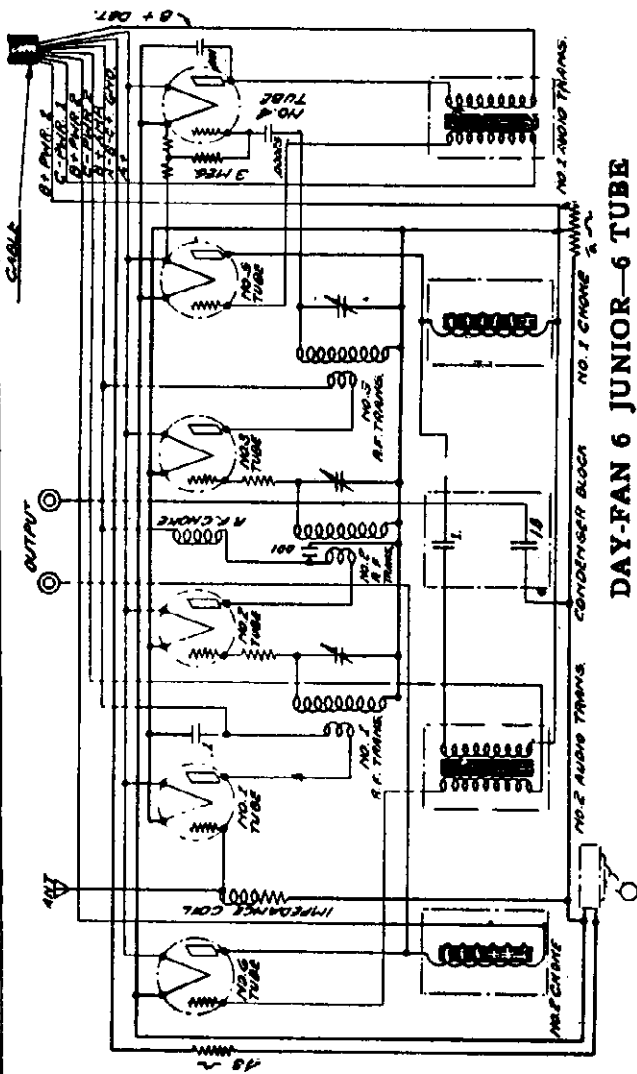
CABLE COLOR CODE

Terminal	Wire Color	Power
Horn +	Red	135
No. 1	Maroon	90
No. 2	Red and Black	22
No. 3	Black	B + C
No. 4	Yellow and Black	C4
No. 5	Yellow Solid	C8

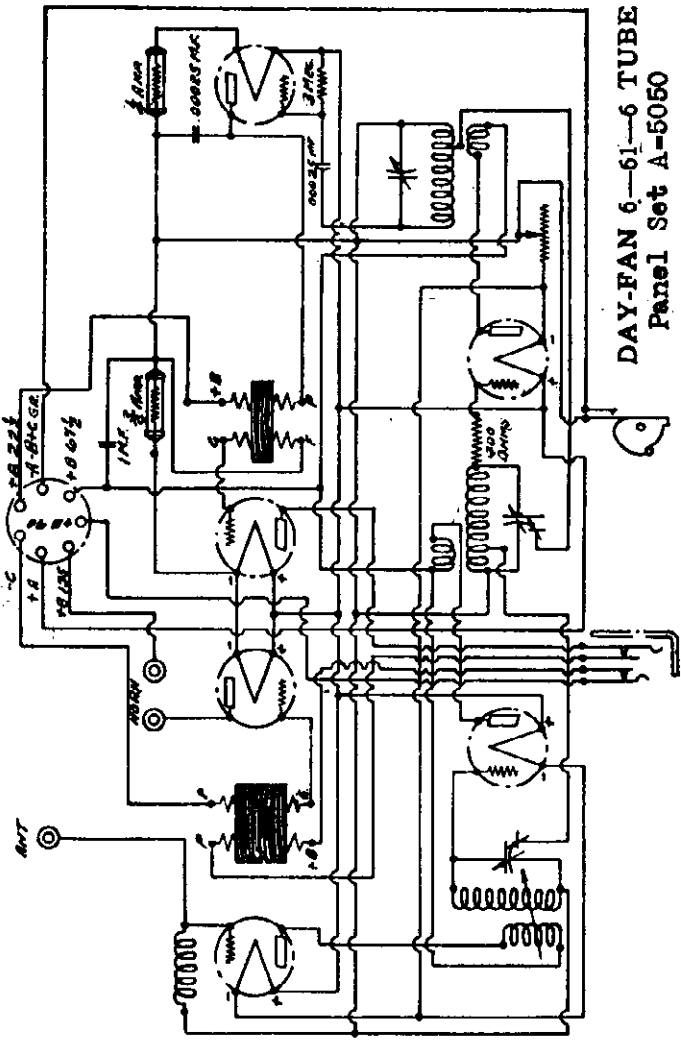


Day-Fan 6

MODEL Day-Fan 6 Jr. GENERAL MOTORS RADIO CORP.
 MODEL Day-Fan 6-61
 (5050)



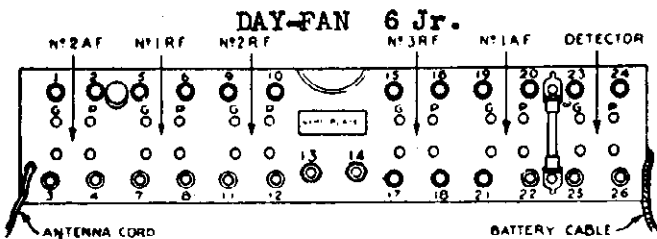
DAY-FAN 6 JUNIOR-6 TUBE



DAY-FAN 6-61-6 TUBE
 Panel Set A-5050

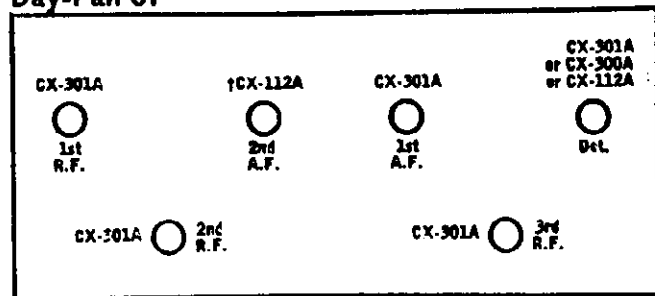
STANDARD, BATTERY CABLE CONNECTIONS

Color of Wire	(DAY-FAN 6 Jr.)	N. E. M. A. Rating
Red	-----	B + Pwr. 2.
Red and White	-----	B + Pwr. 1.
Red and Maroon	-----	B + Amp.
Maroon	-----	B + Det.
Yellow	-----	A +
Green with Red and Yellow tracers	-----	B -, A -, C +.
Black and Green	-----	C - Pwr. 1.
Black and White	-----	C - Pwr. 2.



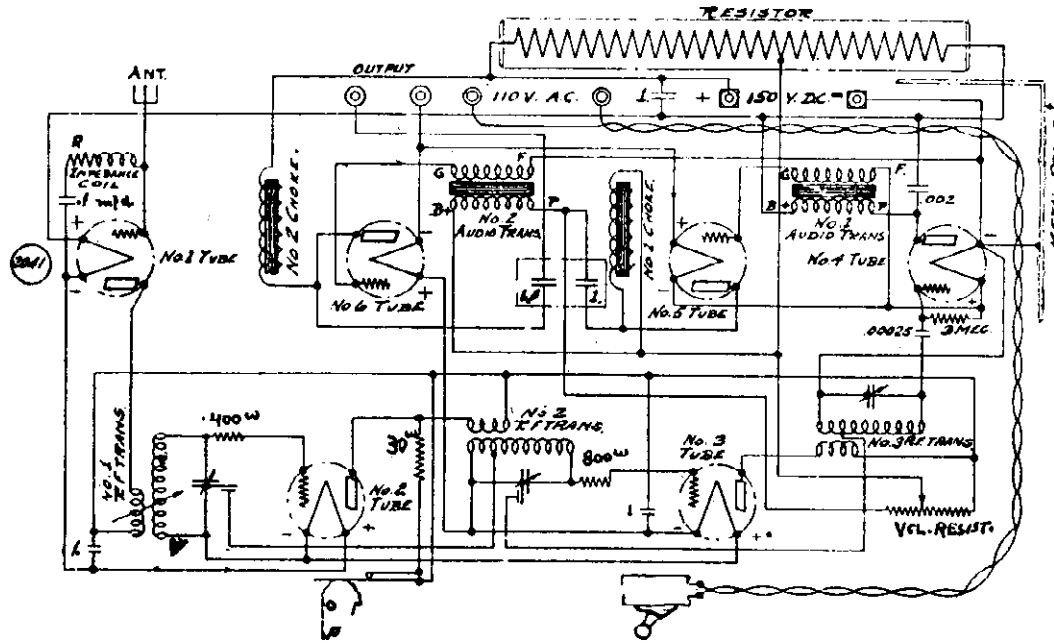
Day-Fan 61

(Batt.)

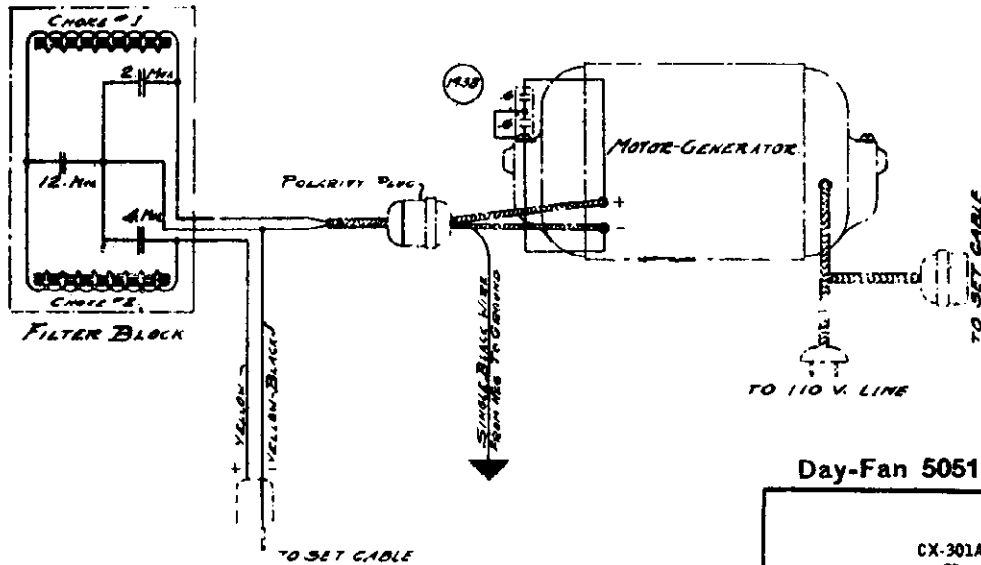


GENERAL MOTORS RADIO CORP.

MODEL Day-Fan 5051
(MG Set)
Motor-Generator

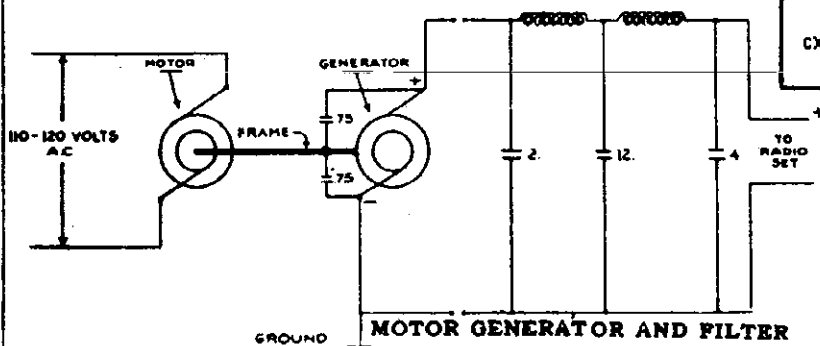
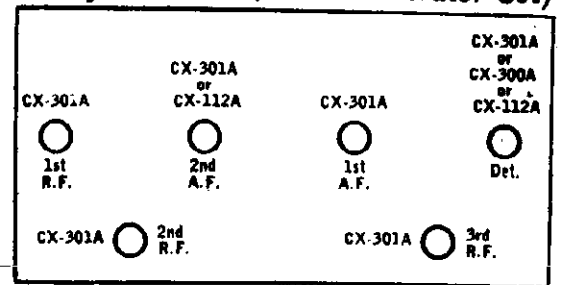


MOTOR GENERATOR SET—6 TUBE



MOTOR GENERATOR AND FILTER

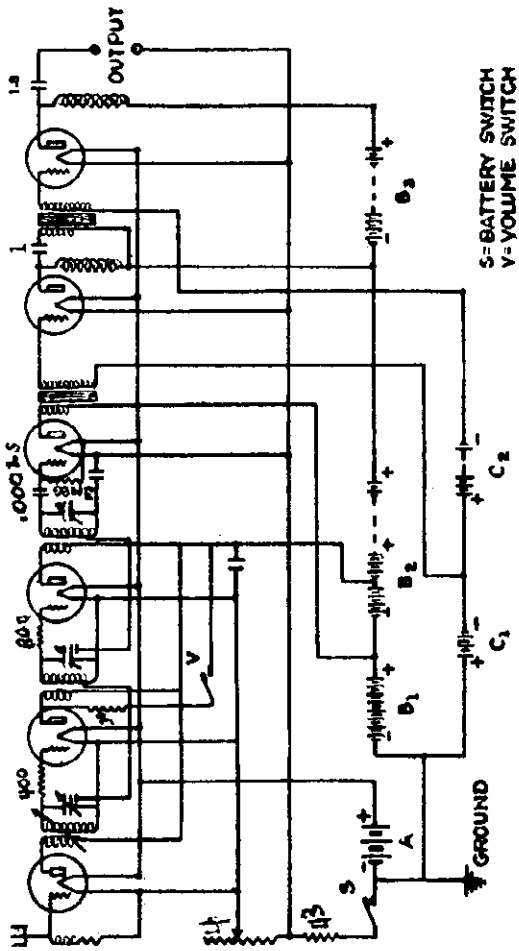
Day-Fan 5051 (Motor Generator Set)



MOTOR GENERATOR AND FILTER

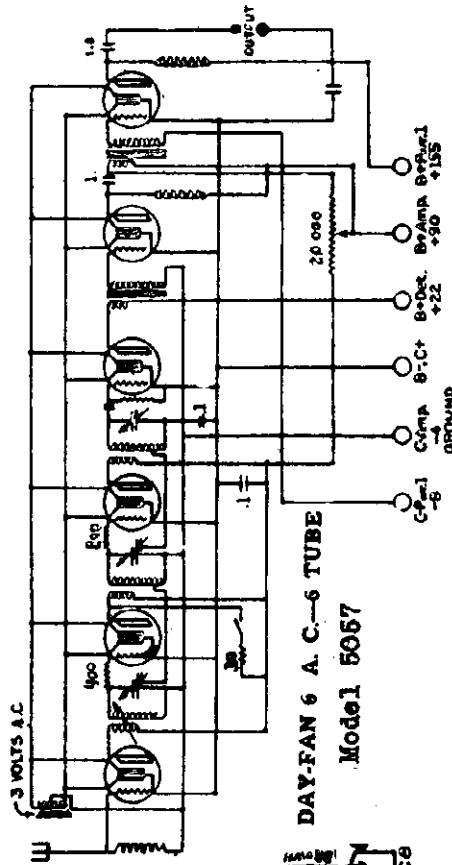
GENERAL MOTORS RADIO CORP.

MODEL Day-Fan 5053.
 MODEL Day-Fan 5057
 MODEL Day-Fan 5057SPU



S=BATTERY SWITCH
 V=VOLUME SWITCH

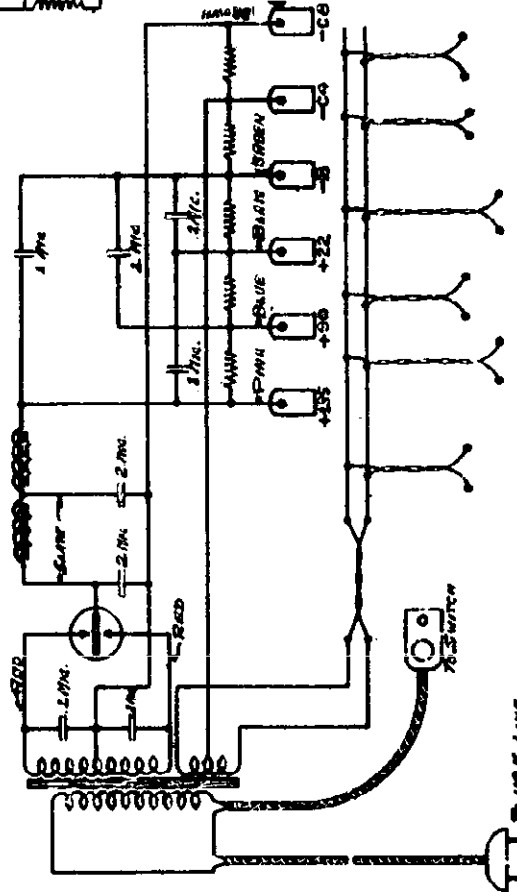
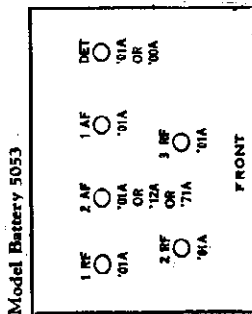
DAY-FAN 6 B-6 TUBE Model 5053



DAY-FAN 6 A. C.-6 TUBE Model 5057

POWER CABLE COLOR CODE

Color of Wire	N. E. M. A. Rating
Red and White	B + Pwr. 1
Red and Maroon	B + Amp.
Maroon	B + Det.
Green with Red and Yellow	B, C +
Black and Green	B, C -
Black and White	C - Amp. and Ground
	C - Pwr. 1

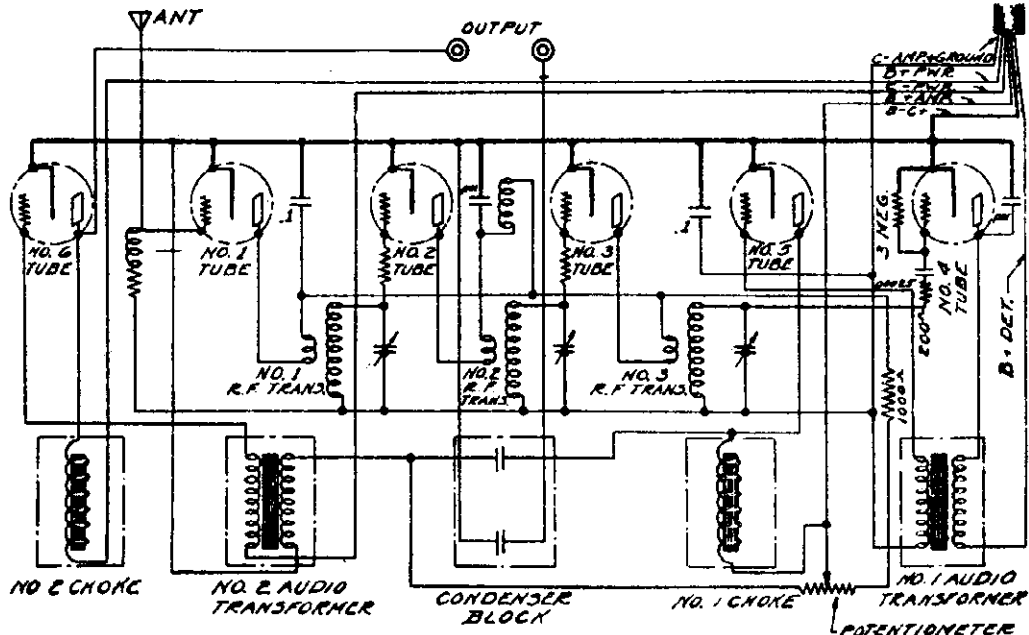


POWER SUPPLY FOR 6 TUBE A. C. SET Model 5057

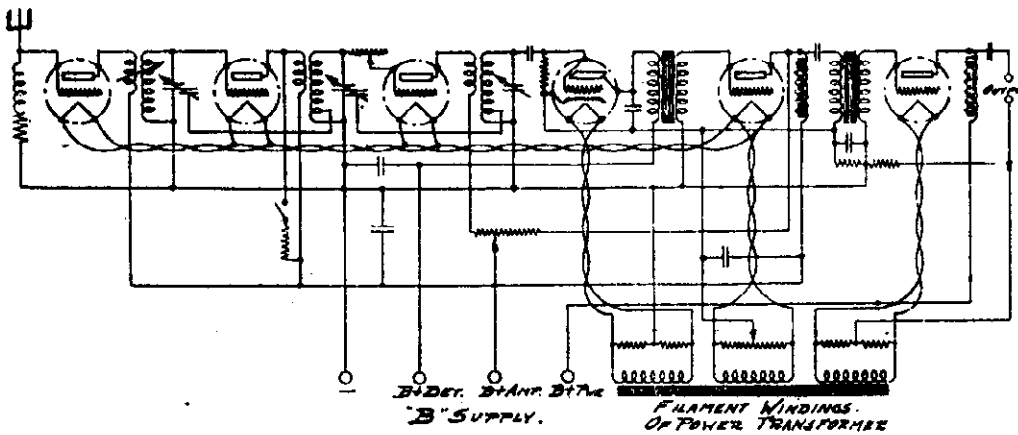
70 110 P. LONG

GENERAL MOTORS RADIO CORP.

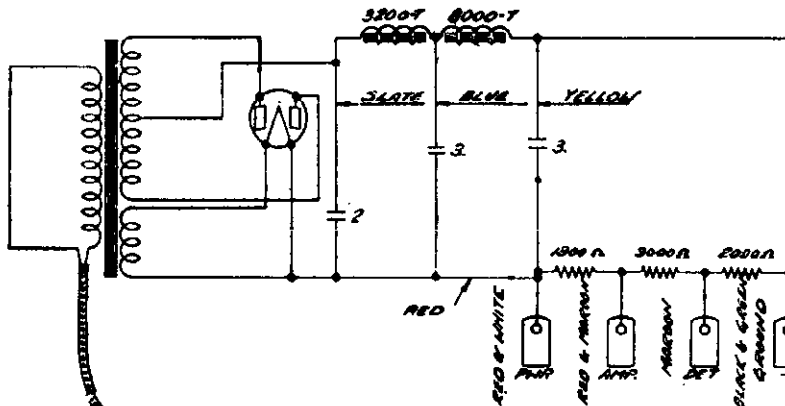
MODEL Day-Fan 5068
 MODEL Day-Fan 5065
 MODEL 5524, 5525,
 SPU For 5065



DAY-FAN 6 JUNIOR A C POWER SET
 Model 5066



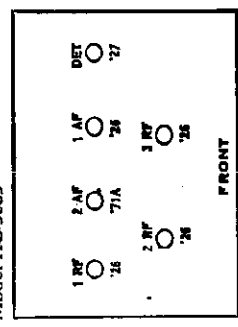
DAY-FAN 6 A.C. (R.C.A. TUBE) POWER SET Model 5065



Radio "B" Power Supply - Model Nos. 5524 and 5525.
 (For 6 tube (R.C.A.) A.C. Set.)

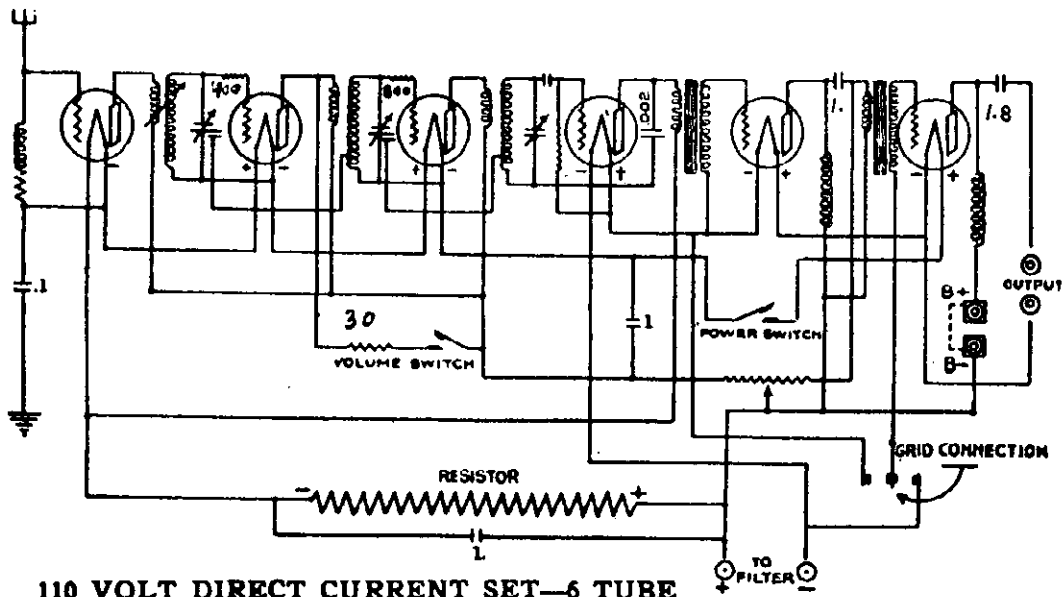
POWER CABLE COLOR CODE:		Model 5066
N. E. M. A. Rating	Color of Wire	
B + Power	Red and White	
B + Amp.	Red and Maroon	
B + Det.	Maroon	
B - C +	Green with Red and Yellow Tracers	
B - Amp., and Gr.	Black and Green	
C - Power	Black and White	

POWER CABLE COLOR CODE:		Model 5065
N. E. M. A. Rating	Color of Wire	
B + Power	Red and White	
B + Amp.	Red and Maroon	
B + Det.	Maroon	
B - and Ground	Black with Green tracer	



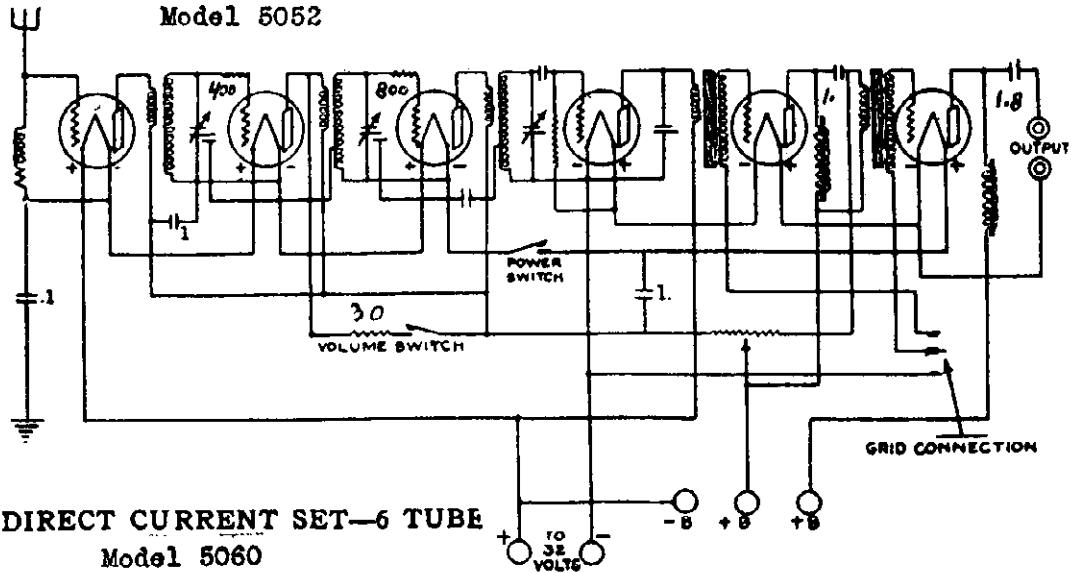
GENERAL MOTORS RADIO CORP.

MODEL Day-Fan 5052
 MODEL Day-Fan 5060



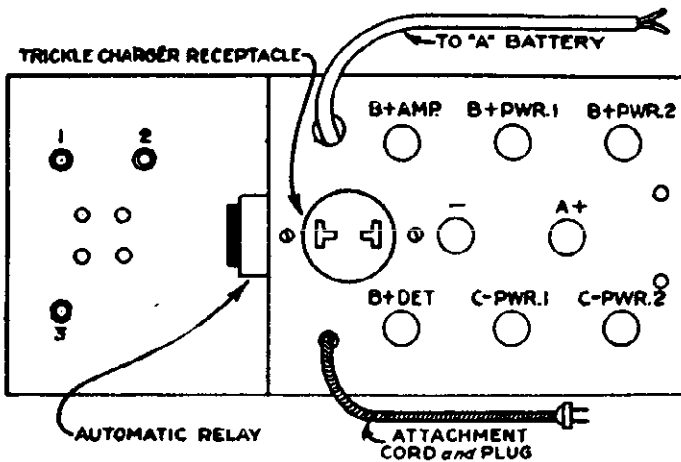
110 VOLT DIRECT CURRENT SET—6 TUBE

Model 5052



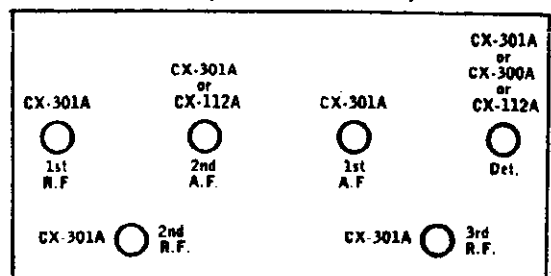
32 VOLT DIRECT CURRENT SET—6 TUBE

Model 5060



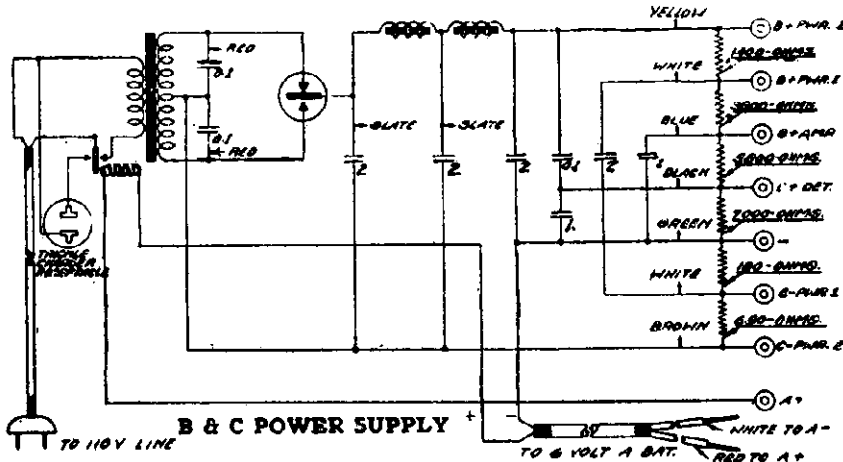
B & C POWER SUPPLY

Day-Fan 5060 (D.C. 32V. Set)
 " " 5052 (D.C. 110V. Set)



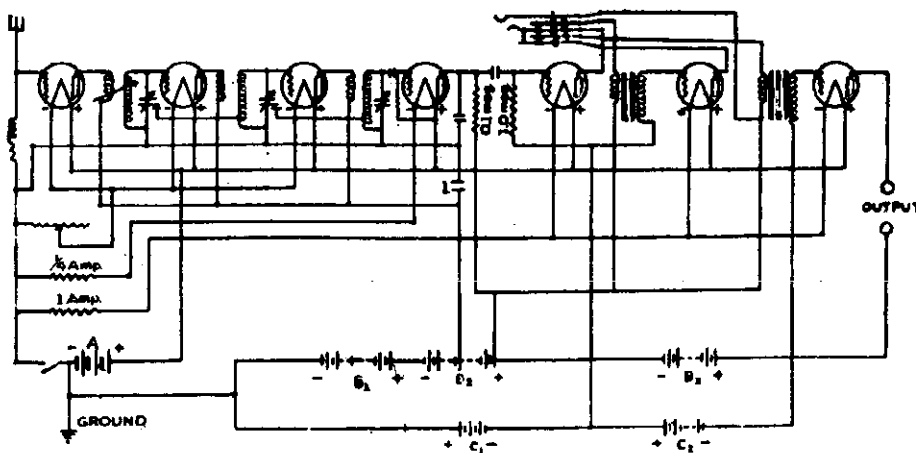
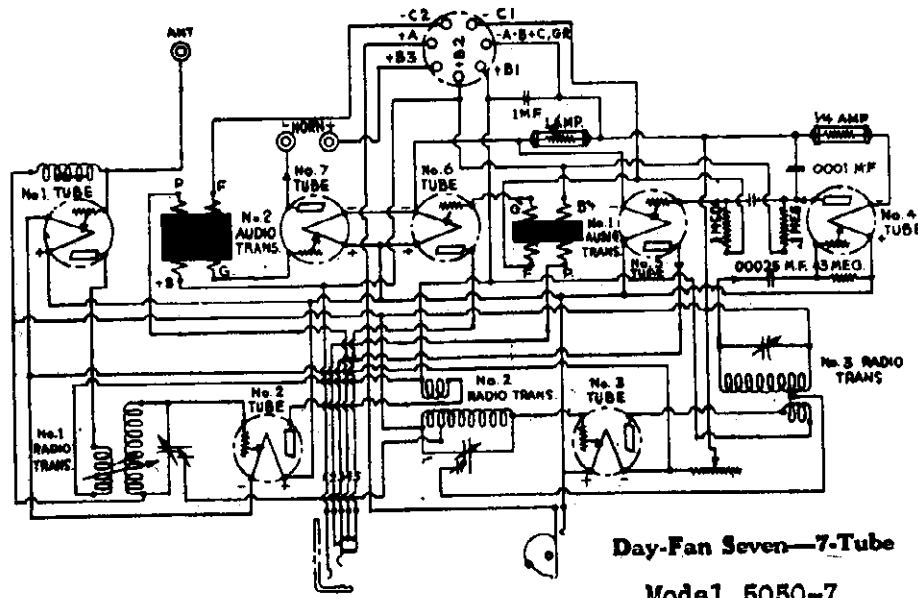
GENERAL MOTORS RADIO CORP.

MODEL Day-Fan 5050-7
MODEL "B & C" SPU



STANDARD BATTERY CONNECTIONS TO DAY-FAN 7 (5050)

Color of Cable Wire	Voltage
Pink	B + Power
Blue	B + 90
Yellow	B + 67½
Red	A + 6
Green	B - A - C +
Black	C - 4
Brown	C - Power



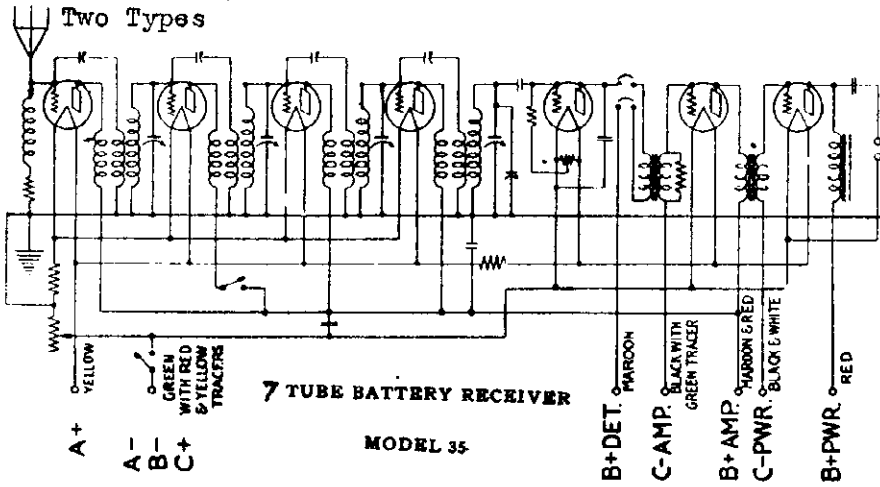
DAY-FAN 7—7 TUBE
Model 5050

Day-Fan 5050 (Batt.)

CX-301A or CX-300A	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A
CX-340	CX-301A	CX-301A	CX-301A	CX-301A	CX-301A
Def.	111 A.F.	2M A.F.	3/4 A.F.	3/4 A.F.	2M R.F.
	111 R.F.				

MODEL Day-Fan 35
 MODEL Day-Fan 25, 26,
 27, 28, 43, 48
 Two Types

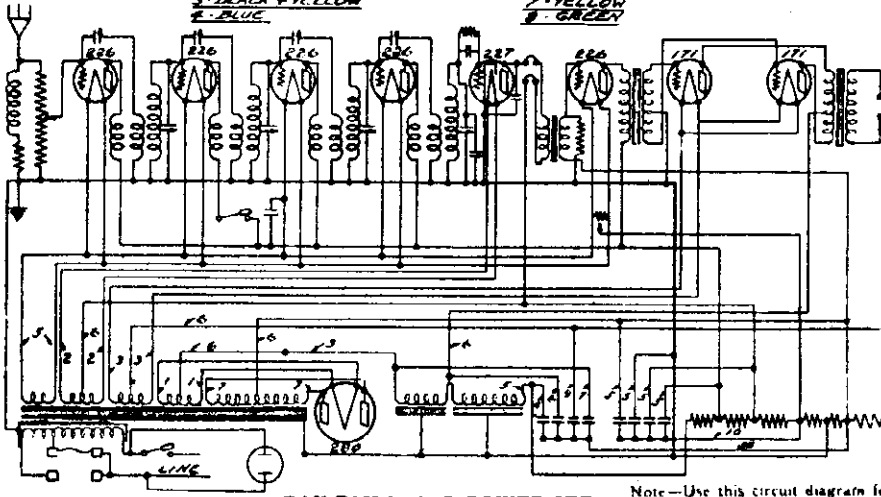
GENERAL MOTORS RADIO CORP.



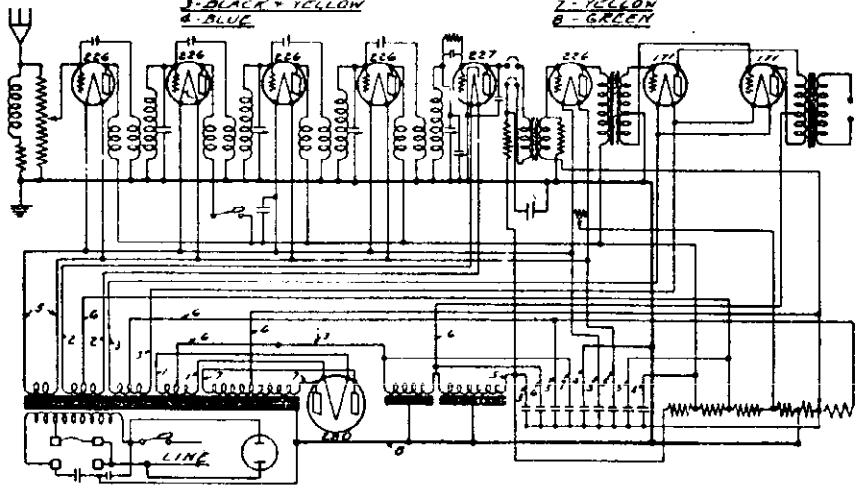
A+
 A-
 B-
 C+

B+DET. MAROON
 C-AMP. BLACK WITH GREEN TRACER
 B+AMP. MAROON & RED
 C-PWR. BLACK & WHITE
 B+PWR. RED

1-YELLOW WITH BLACK TRACER
 2-BLACK WITH YELLOW TRACER
 3-BLACK & YELLOW
 4-BLUE
 5-BLACK
 6-RED
 7-YELLOW
 8-GREEN
 9-SLATE
 10-BROWN



1-YELLOW WITH BLACK TRACER
 2-BLACK WITH YELLOW TRACER
 3-BLACK & YELLOW
 4-BLUE
 5-BLACK
 6-RED
 7-YELLOW
 8-GREEN

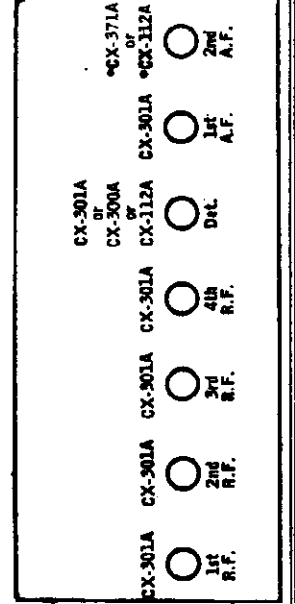


DAY-FAN 8—A. C. POWER SET

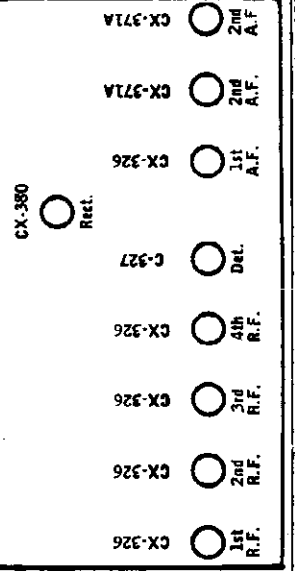
Note—Use this circuit diagram for receivers equipped with sealed power blocks, or condenser blocks not having brown nor slate colored leads.

DAY-FAN—Models 25-26
 Line Voltage 116—2nd A. F. Stage—2 Tubes Push Pull

TUBE NO. (BY MANUFACTURER)	TYPE OF TUBE (BY A. F. DET. ETC.)	TUBE OUT		TUBE IN CENTER		TUBE IN		TUBE IN CHANGE
		VOLTS	AMPS	VOLTS	AMPS	VOLTS	AMPS	
226	1st. R.F.	1.55	117	1.5	110	5.5	6.5	10.6
226	2nd. R.F.	1.55	117	1.5	110	5.5	6.5	10.6
226	3rd. R.F.	1.55	117	1.5	110	5.5	6.5	10.6
226	4th. R.F.	1.55	117	1.5	110	5.5	6.5	10.6
227	Detector	2.40	124	2.2	110	5.5	1.4	1.4
226	1st. A.F.	1.55	107	1.5	100	7.5	2.5	7.0
226	2nd. A.F.	5.30	170	5.0	158	33	18.0	21.0
226	2nd. A.F.	5.30	170	5.0	158	33	18.0	21.0



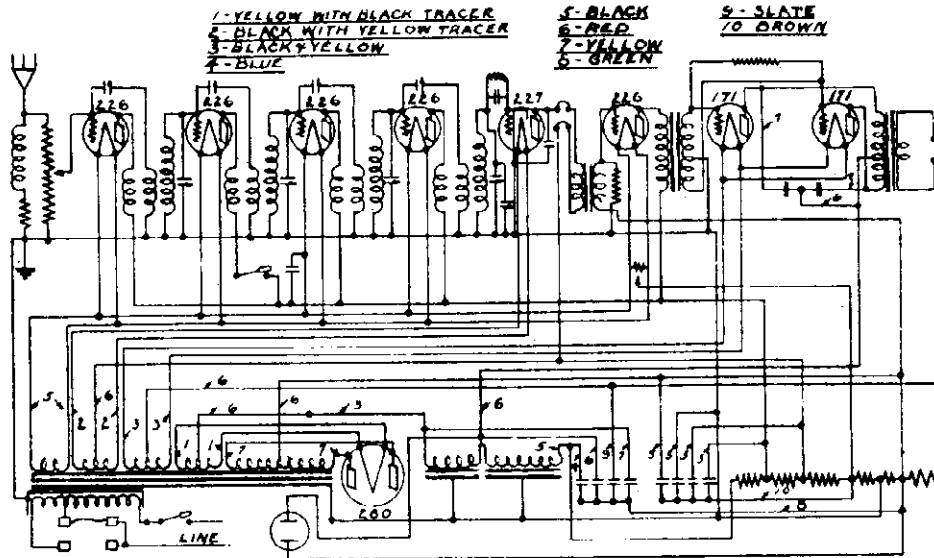
MODEL 35



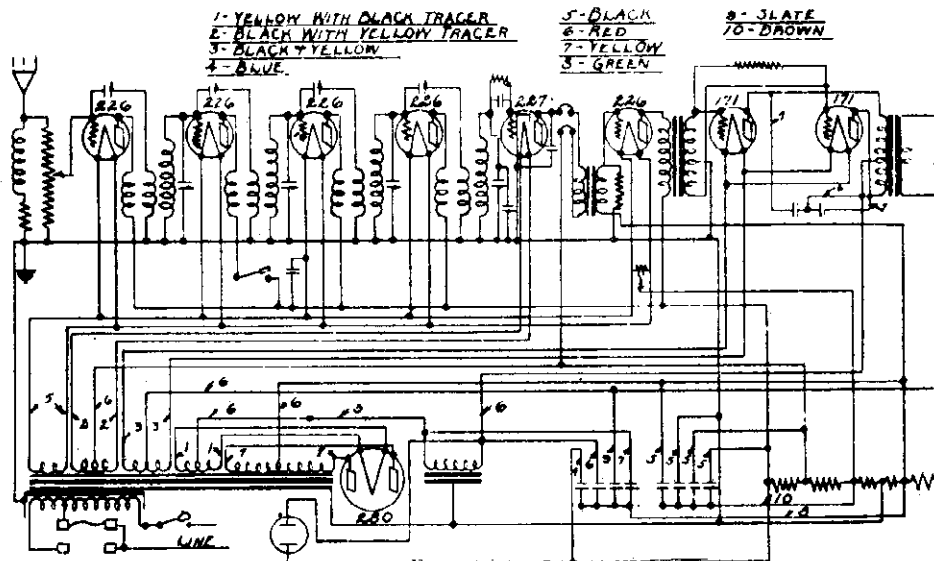
8-AC. MODELS-25, 26, 27, 28, 43, 48

GENERAL MOTORS RADIO CORP.

MODEL Day-Fan 5077
MODEL Day-Fan 5080



DAY-FAN 8-TUBE — MODEL 5077
(For Use with 200-Volt D. C. Dynamic Speaker)



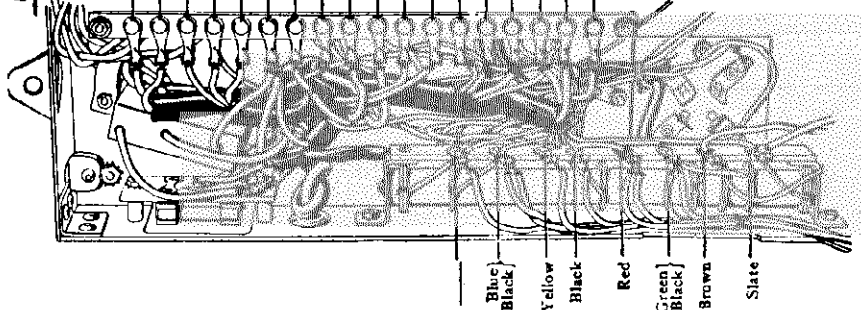
DAY-FAN 8-TUBE — MODEL 5080
(For Use with 110-Volt D. C. Dynamic Speaker)

MODEL 5080

Power Block Connections

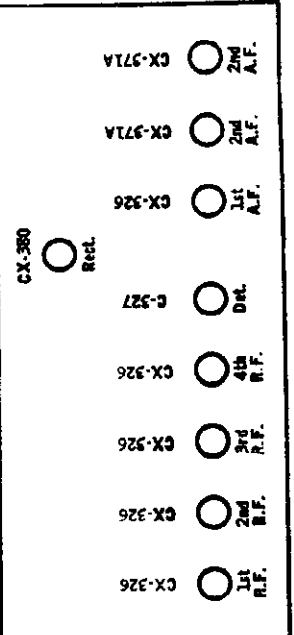
- Black
- Black
- Black-Yellow Tracer
- Red
- Black-Yellow Tracer
- Black*
- Yellow-Braided Black Tracer
- Red
- Yellow-Braided Black Tracer
- Yellow-Black Tracer
- Red
- Yellow-Black Tracer
- Yellow
- Red
- Yellow
- Yellow-Black Tracer
- Red**
- Green (To Receptacle)

Note — Where two wires are same color they may be connected to either terminal marked that color. Red wire should connect between wires brought out of same large tubing.



(A.C.)

Day-Fan 5069, 5080.



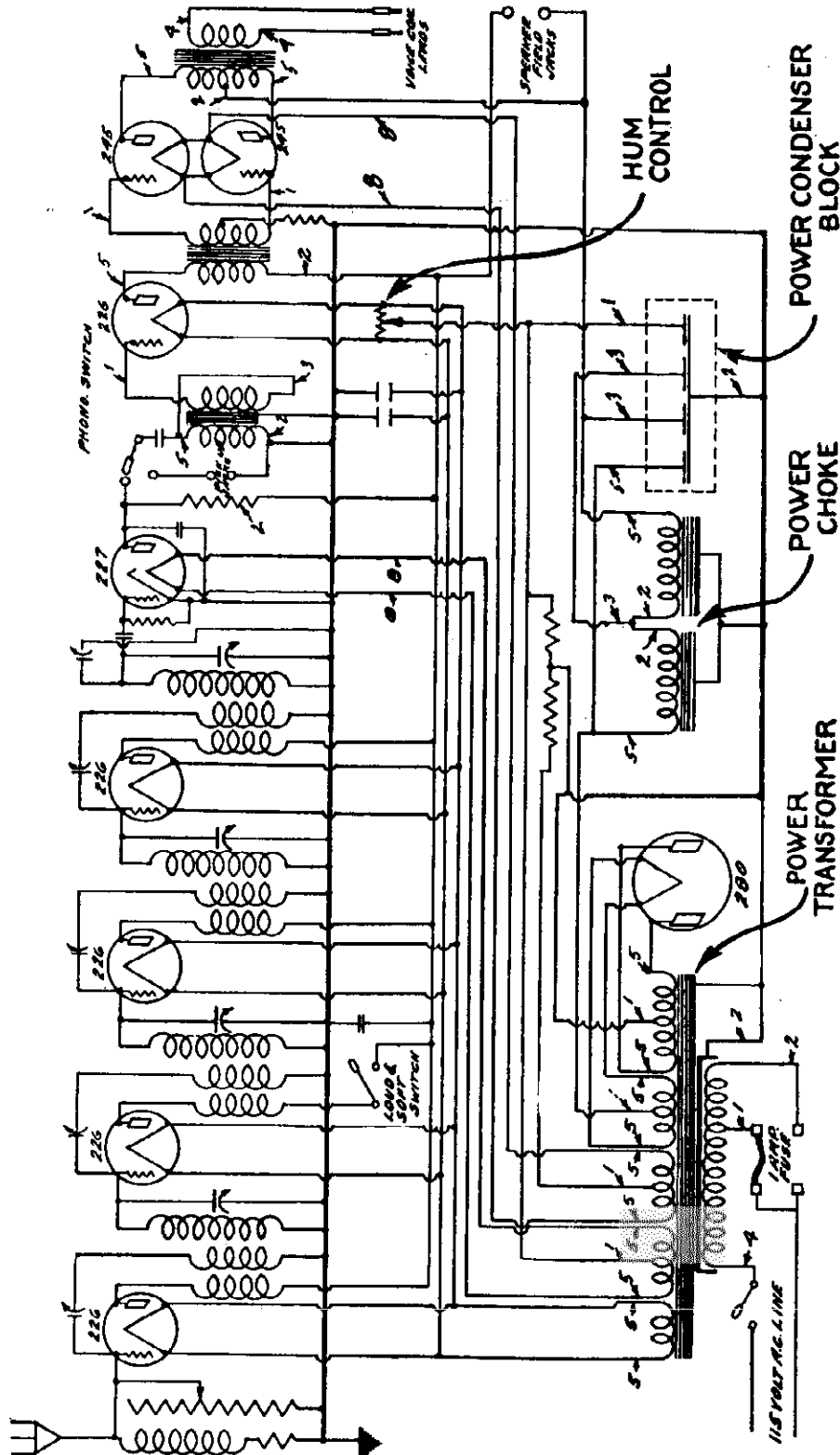
Tube Fil. Vol. Plate Vol. Grid Vol. Plate Current

RF1	1.3	150	9	4.5
RF2	1.3	150	9	4.5
RF3	1.3	150	9	4.5
RF4	1.3	150	9	4.5
Det	2.2	30	**	1.7
AD1	1.3	130	5	4.5
PF1	2.25	235	7	see note 27.5
PF2	2.25	235	7	see note 27.5

Low output tube bias due to resistance in grid circuit.

GENERAL MOTORS RADIO CORP.

MODEL Day-Fan A-5003
A-5010

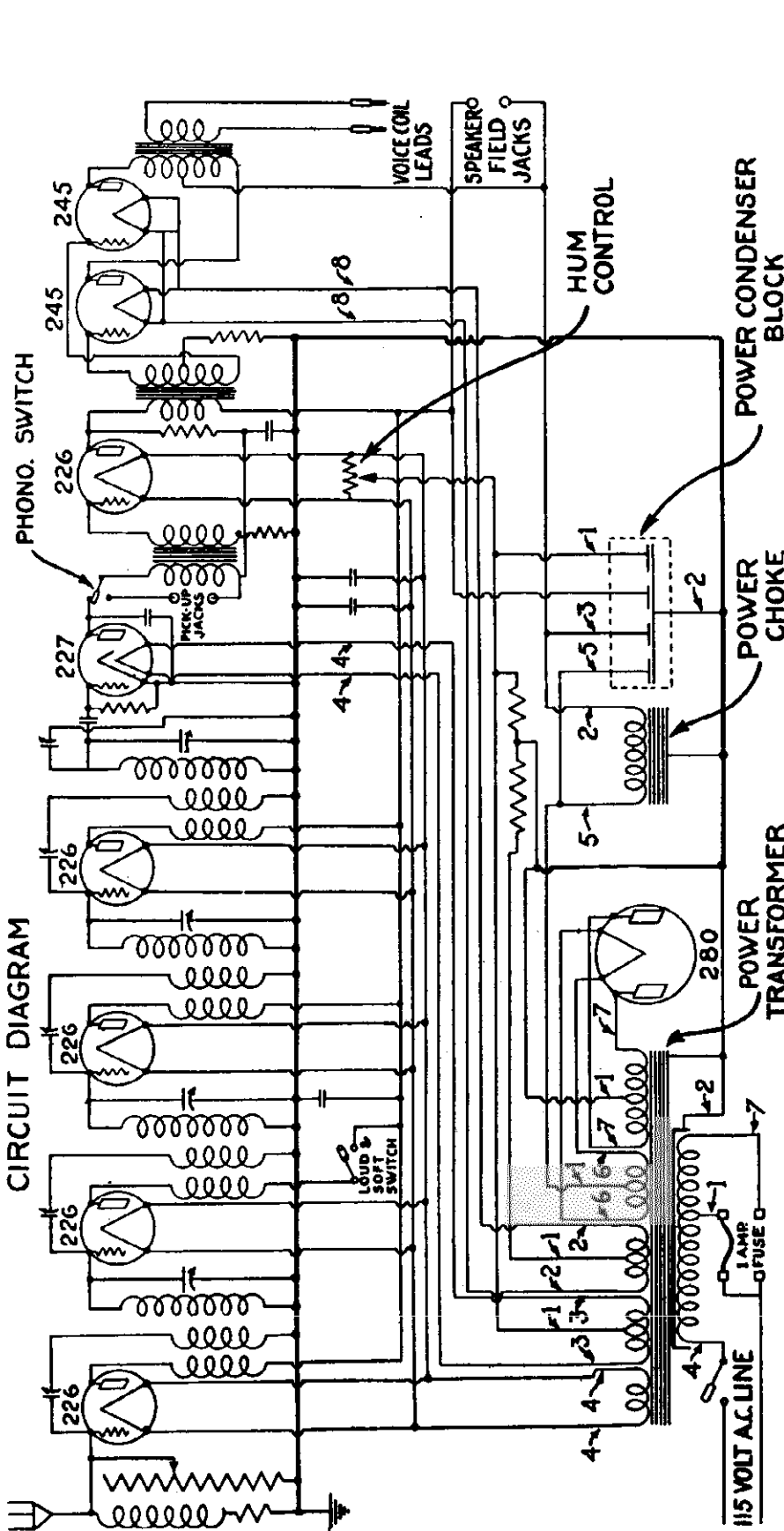


- 1-RED
- 2-GREEN
- 3-BLUE
- 4-BLACK
- 5-YELLOW
- 6-BROWN
- 7-WHITE

Model A-5003, A-5010

CX-326	1st A.F.	CX-345	2nd A.F.
CX-326	CX-326	CX-345	CX-345
CX-326	1st R.F.		2nd A.F.
Del.	2nd R.F.		
	4th R.F.		
			CX-380
			Rect.

GENERAL MOTORS RADIO CORP. MODEL Day-Fan 5091



DAY-FAN—Model 5091
 Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Max
 Note: "C" Bias Voltage—Reading on Audio tubes is low due to the current draw of the set tester and high resistances in the set.

- 1—RED
- 2—GREEN
- 3—BLUE
- 4—BLACK
- 5—YELLOW
- 6—BROWN
- 7—WHITE

DAY-FAN
CHASSIS MODEL 5091
 1929 - 1930

TUBE	TYPE	POSITION	TUBE DATA				TYPICAL CHARACTERISTICS					
			W	H	V	A	C	I	P	M		
		NO.	W	H	V	A	C	I	P	M	REMARKS	
226	226	1st AF	1.8	1.60	1.4	138	30	-	5	9	4	-
226	226	2nd AF	1.8	1.60	1.4	138	30	-	5	9	4	-
226	226	3rd AF	1.8	1.60	1.4	138	30	-	5	9	4	-
226	226	4th AF	1.8	1.60	1.4	138	30	-	5	9	4	-
227	227	AFC	2.6	2.3	2.0	10	10	10	2	0	0	-
245	245	1st AF	1.6	1.57	1.4	117	8.5	-	4.5	6.5	3	-
245	245	2nd AF	1.6	1.57	1.4	117	8.5	-	4.5	6.5	3	-
280	280	Rect.	2.6	2.6	2.6	845	11.5	-	55	29	4.5	-
280	280	Rect.	2.6	2.6	2.6	845	11.5	-	55	29	4.5	-
280	280	Rect.	2.6	2.6	2.6	845	11.5	-	55	29	4.5	-
280 Mark.			2.6	2.6	2.6	845	11.5	-	55	29	4.5	-

REMARKS PLUG IN BOARD OF SET

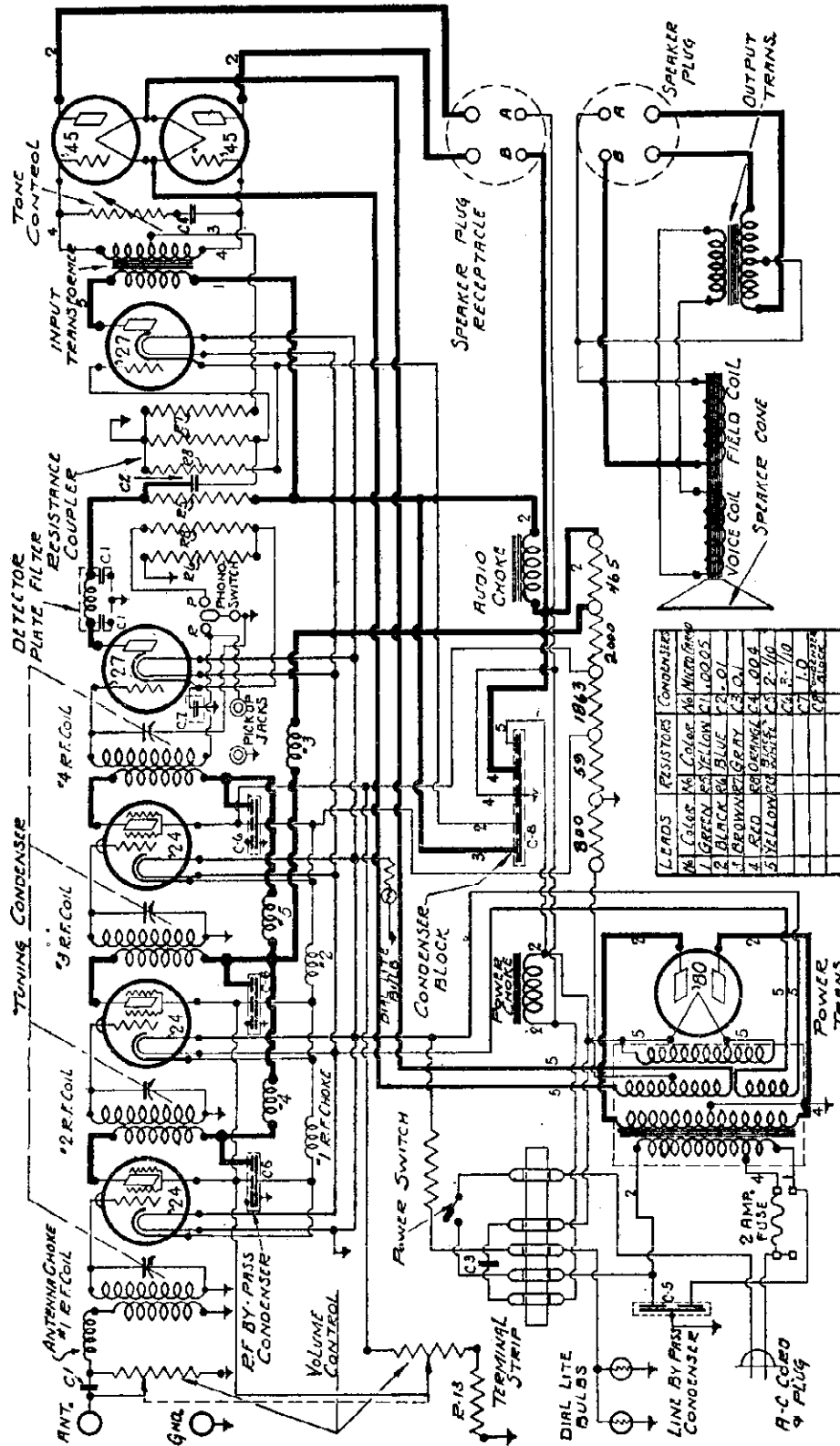
(A.C.)

Day-Fan 5091

- CX-327 4th R.F.
- CX-326 3rd R.F.
- CX-345 2nd A.F.
- CX-326 2nd R.F.
- CX-326 1st R.F.
- CX-380 Rect.

MODEL 120,130,140
Below Serial
29100A-1700B

GENERAL MOTORS RADIO CORP



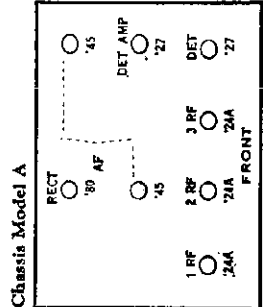
LEADS RESISTORS CONDENSERS

1	RED	200K	10	100
2	BROWN	100K	11	100
3	YELLOW	50K	12	100
4	RED	200K	13	100
5	YELLOW	50K	14	100
6	RED	200K	15	100
7	RED	200K	16	100
8	RED	200K	17	100
9	RED	200K	18	100
10	RED	200K	19	100
11	RED	200K	20	100
12	RED	200K	21	100
13	RED	200K	22	100
14	RED	200K	23	100
15	RED	200K	24	100
16	RED	200K	25	100
17	RED	200K	26	100
18	RED	200K	27	100
19	RED	200K	28	100
20	RED	200K	29	100
21	RED	200K	30	100

TYPE OF TUBE	NUMBER IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET				MILLIAMPERES				
		PLATE	GRID	SCREEN	DIODE					
1	24	2.2	1.40	-2	-60	+2	1.5	2.5	1	
2	24	2 R.F.	2.2	1.40	-2	-60	+2	1.5	2.5	1
3	24	3 R.F.	2.2	1.40	-2	-60	+2	1.5	2.5	1
4	27	2A1	2.2	1.00	-	-15	+15	-	-	2
5	27	1 A1	2.2	1.35	-	-2	+8	-	4.5	3.3
6	45	2 A1	2.2	2.55	-	-25	-	-	25	29
7	45	2 A1	2.2	2.55	-	-25	-	-	25	29
8	20	Rect.	4.5	-	-	-	-	-	45	45

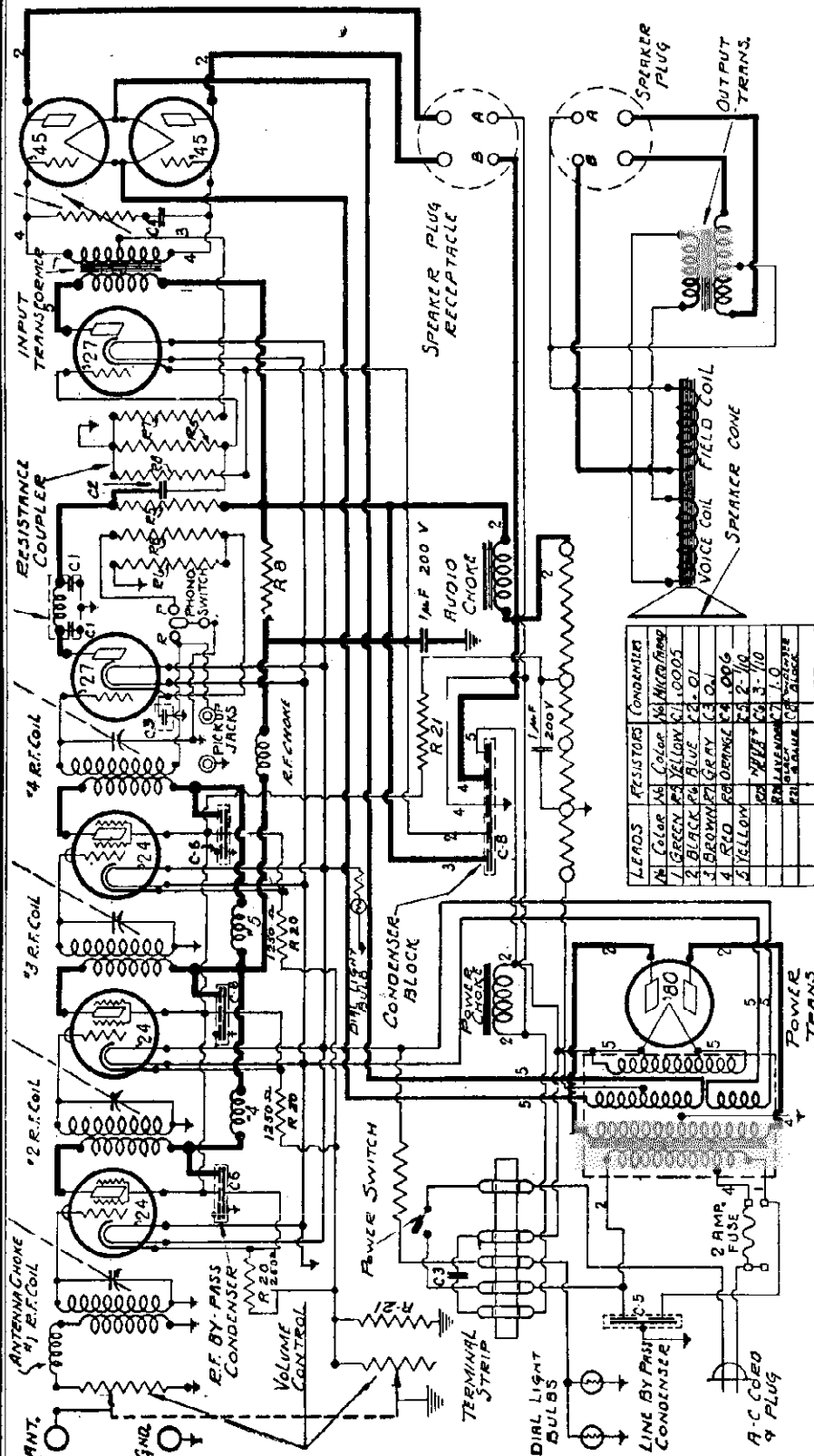
Circuit Diagram of Chassis with Serial Numbers Below 29100A and 1700B.

Models 120, 130 & 140
(Chassis Models "A" and "B")



MODEL 120,130,140
Between Serial
29100A-62100A
1700B-1946B

GENERAL MOTORS RADIO CORP.



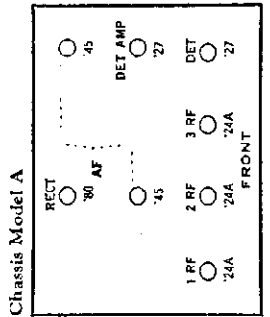
Models 120, 130 & 140
(Chassis Models "A" and "B")

Circuit Diagram of Chassis with Serial Numbers 29100A and 1700B and 1946B.

Tube	Fil. V.	Pl. V.	C.G. Volts	S.G. Volts	Catn. Volts	(MA)
RF-1	2.3	150	- 3	55	3	2.
RF-2	2.3	150	- 3	55	3	2.
RF-3	2.3	150	- 3	55	3	2.
Det.	2.3	100	- 8	..	10	.2
AF-1	2.3	140	- 3	..	10	4.
AF-2	2.3	220	-12	..	..	30.
AF-2	2.3	220	-12	..	..	30.
Rect	4.5	..	..	..	..	100.

Line Voltage - 110 Volume Control on Full

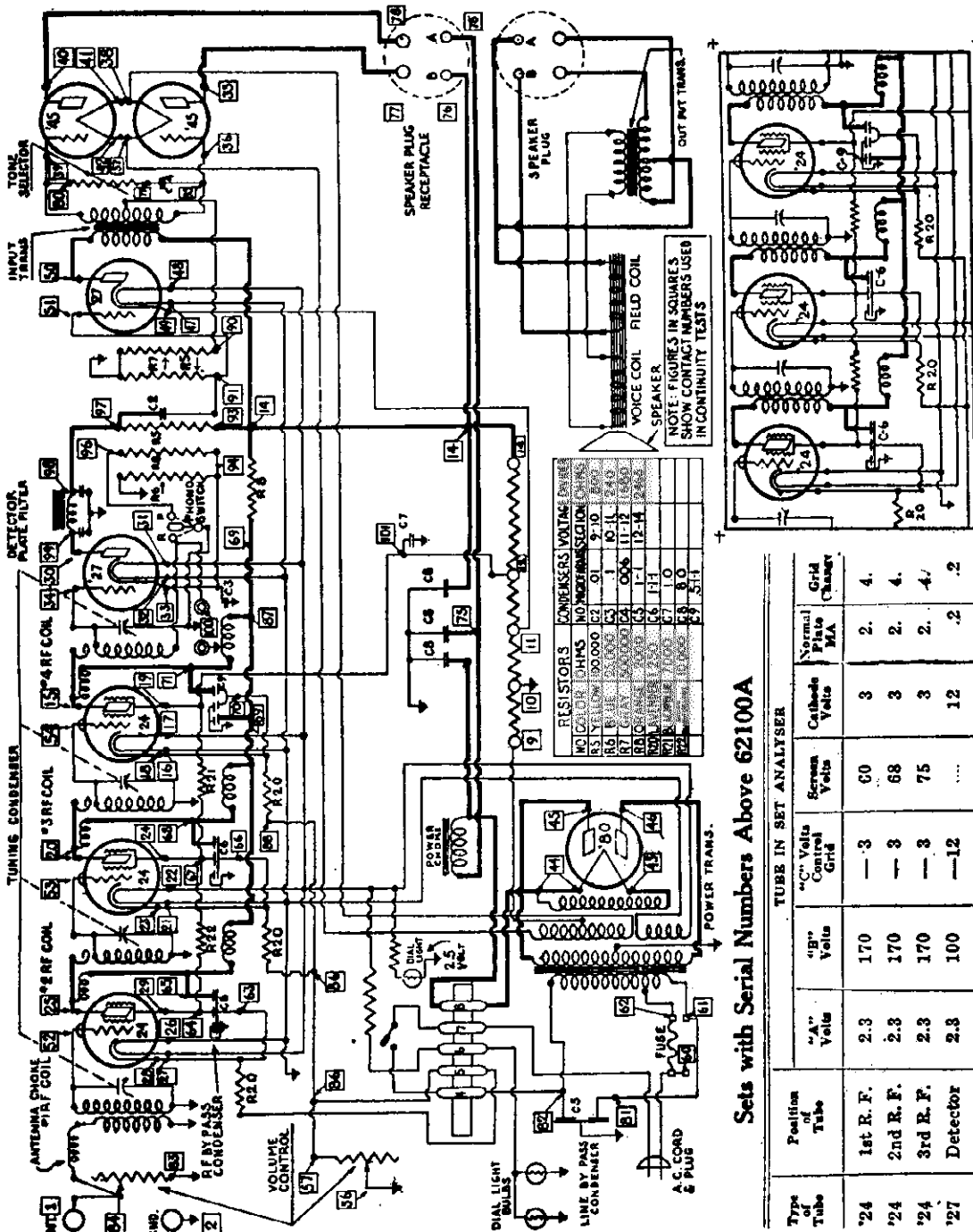
LEADS	RESISTORS	CONDENSER
14	Color: 14	Color: 14
1	GREEN	1/2 MICRO
2	BLACK	1/2 MICRO
3	BROWN	1/2 MICRO
4	RED	1/2 MICRO
5	YELLOW	1/2 MICRO



Chassis Model A

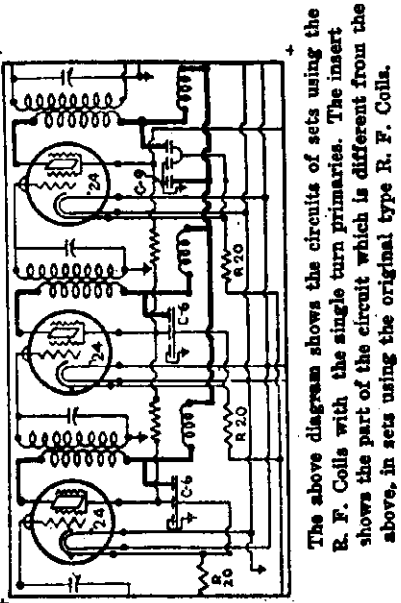
MODEL 120,130,140
Above Serial
62100A-1964B

GENERAL MOTORS RADIO CORP.



RESISTORS CONVERSION TABLE

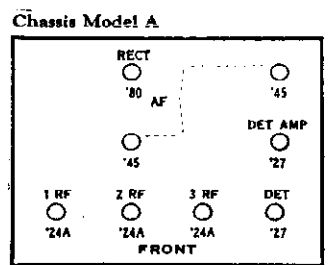
NO. COILS	OHMS	NO. METERS	SCALE
R1	50000	0-1	7-10
R2	50000	0-1	7-10
R3	50000	0-1	7-10
R4	50000	0-1	7-10
R5	50000	0-1	7-10
R6	50000	0-1	7-10
R7	50000	0-1	7-10
R8	50000	0-1	7-10
R9	50000	0-1	7-10
R10	50000	0-1	7-10
R11	50000	0-1	7-10
R12	50000	0-1	7-10
R13	50000	0-1	7-10
R14	50000	0-1	7-10
R15	50000	0-1	7-10
R16	50000	0-1	7-10
R17	50000	0-1	7-10
R18	50000	0-1	7-10
R19	50000	0-1	7-10
R20	50000	0-1	7-10
R21	50000	0-1	7-10
R22	50000	0-1	7-10
R23	50000	0-1	7-10
R24	50000	0-1	7-10
R25	50000	0-1	7-10
R26	50000	0-1	7-10
R27	50000	0-1	7-10
R28	50000	0-1	7-10
R29	50000	0-1	7-10
R30	50000	0-1	7-10
R31	50000	0-1	7-10
R32	50000	0-1	7-10
R33	50000	0-1	7-10
R34	50000	0-1	7-10
R35	50000	0-1	7-10
R36	50000	0-1	7-10
R37	50000	0-1	7-10
R38	50000	0-1	7-10
R39	50000	0-1	7-10
R40	50000	0-1	7-10
R41	50000	0-1	7-10
R42	50000	0-1	7-10
R43	50000	0-1	7-10
R44	50000	0-1	7-10
R45	50000	0-1	7-10
R46	50000	0-1	7-10
R47	50000	0-1	7-10
R48	50000	0-1	7-10
R49	50000	0-1	7-10
R50	50000	0-1	7-10



The above diagram shows the circuits of sets using the R. F. Coils with the single turn primaries. The insert shows the part of the circuit which is different from the above, in sets using the original type R. F. Coils.

Sets with Serial Numbers Above 62100A

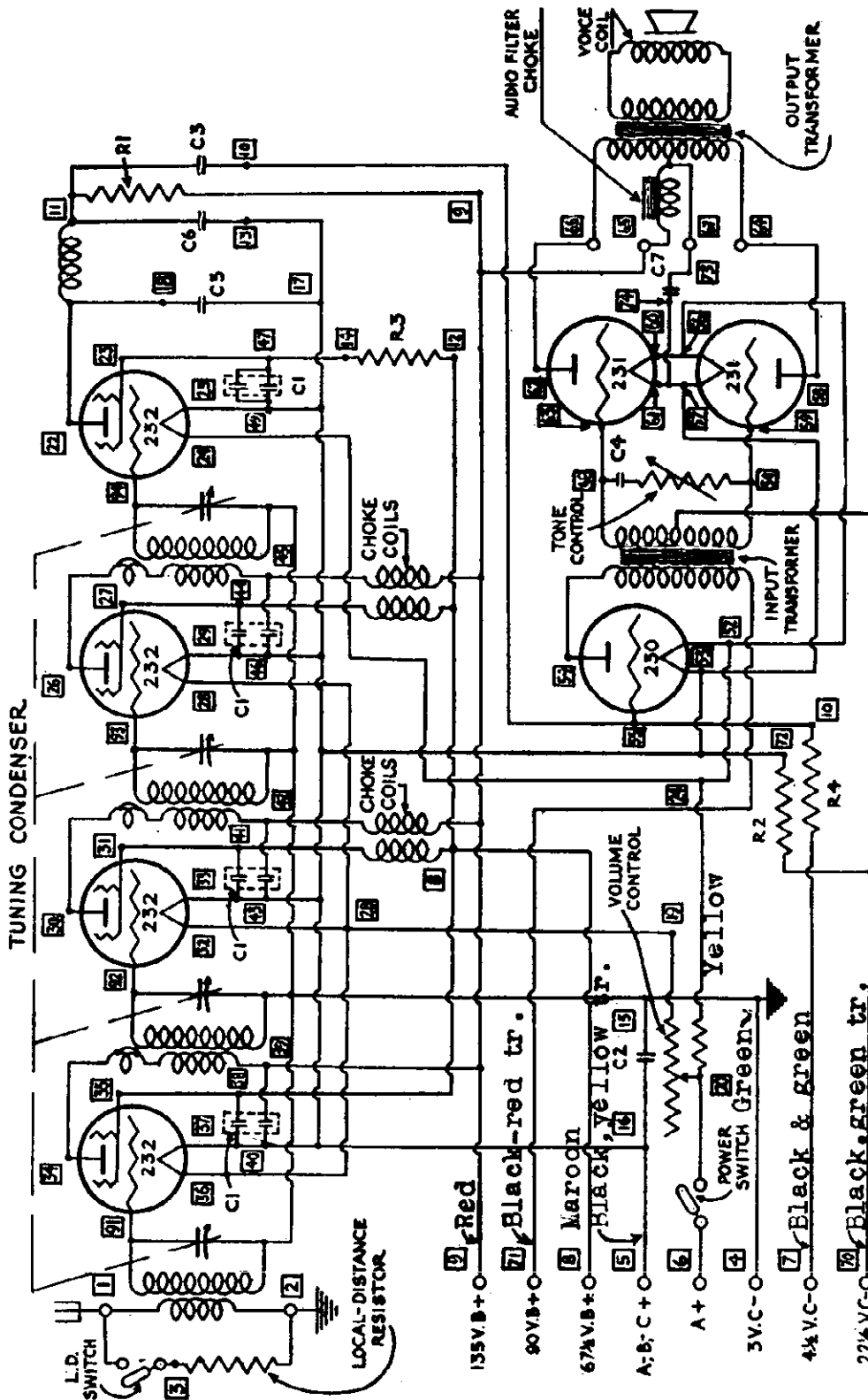
Type of Tube	Position of Tube	TUBE IN SET ANALYSER					Line Voltage	Volume Control on Full
		"A" Volts	"B" Volts	"C" Volts Control Grid	Screen Volts	Cathode Volts		
'24	1st R. F.	2.3	170	-3	60	3	2.	4.
'24	2nd R. F.	2.3	170	-3	68	3	2.	4.
'24	3rd R. F.	2.3	170	-3	75	3	2.	4.
'27	Detector	2.3	100	-12	...	12	.2	.2
'27	1st A. F.	2.3	165	-3	...	12	4.	7.
'45	2nd A. F.	2.3	235	-12	...	...	30.	35.
'45	2nd A. F.	2.3	235	-12	...	...	30.	35.
'80	Rectifier	4.5	...	...	...	...	100.	...



Models 120, 130 & 140
(Chassis Models "A" and "B")
Circuit Diagram of Chassis with Serial
Numbers Above 62100A and 1964B.

GENERAL MOTORS RADIO CORP.

MODEL 170-(E)
Schematic



Tube	Fil	Plate	Screen	Plate Crrt.
1 RF	1.7	140	68	1.2 ma.
2 RF	1.7	140	68	1.4
3 RF	1.7	140	68	1.5
Det	1.7	80	10	.2
1 AF	1.7	85	-	1.5
2 AF	1.7	135	-	7.

RESISTORS			CONDENSERS			
NO.	BODY	END	BAND	OHMS	NO	MICROFARADS
R1	BROWN	BLACK	YELLOW	100,000	C1	.1-1
R2	RED	BLACK	YELLOW	200,000	C2	.5
R3	GREEN	BLACK	YELLOW	500,000	C3	.01
R4	RED	BLACK	GREEN	2,000,000	C4	.002
					C5	.0003
					C6	.0001
					C7	1.0

Model 170, Battery Powered Receiver
(Chassis Model E)

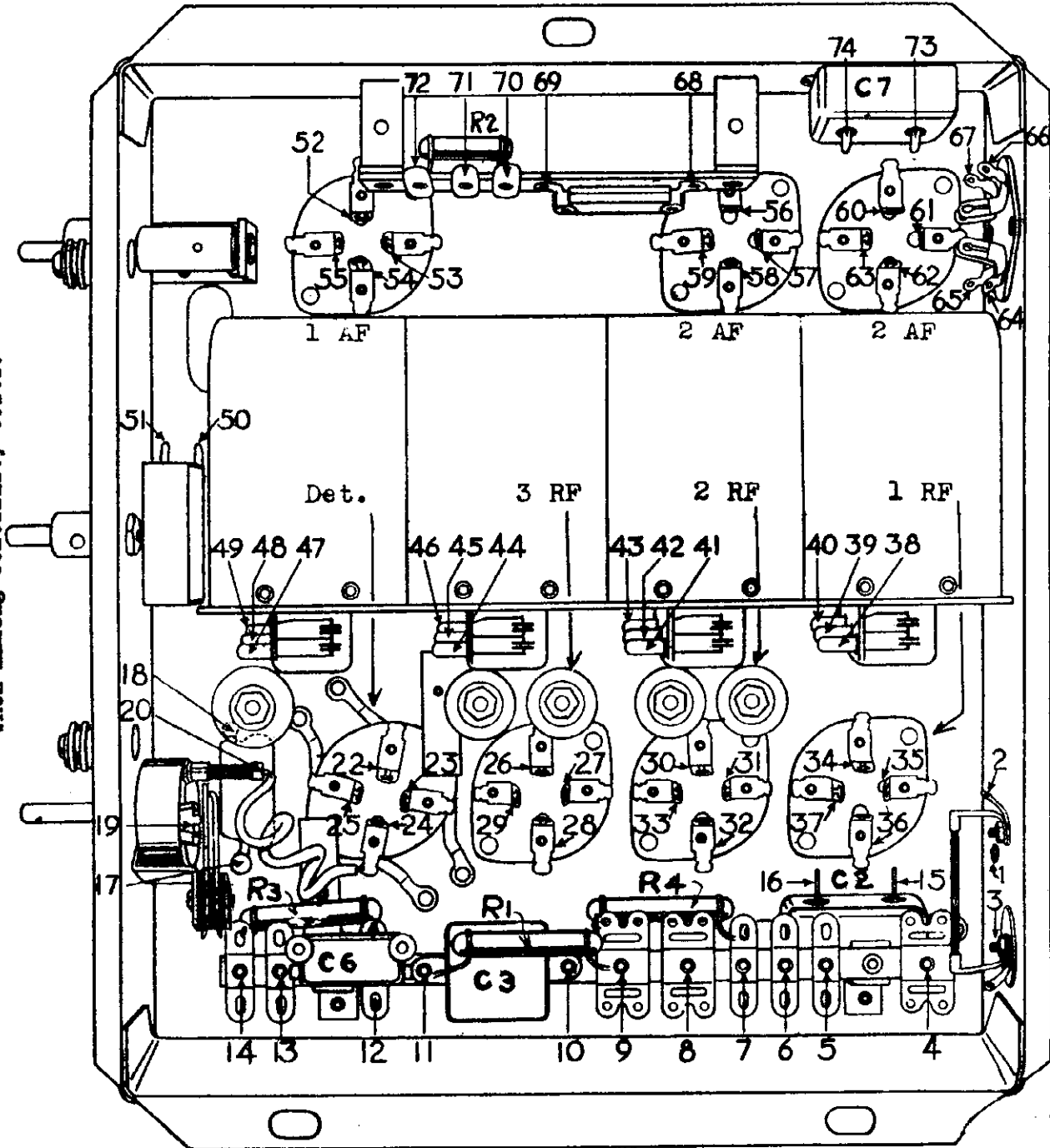
Model 170-E

FRONT

MODEL 170-(E)
Chassis

GENERAL MOTORS RADIO CORP.

Chart showing contact numbers used when making continuity tests.



NOTE: NOS. 91, 92, 93 & 94
ARE GRID CAPS OF 1ST, 2ND & 3RD
R.F. TUBES AND DETECTOR TUBE.

Model 170 Receiver
Chassis Model E
(PIONEER BATTERY POWERED RECEIVER)

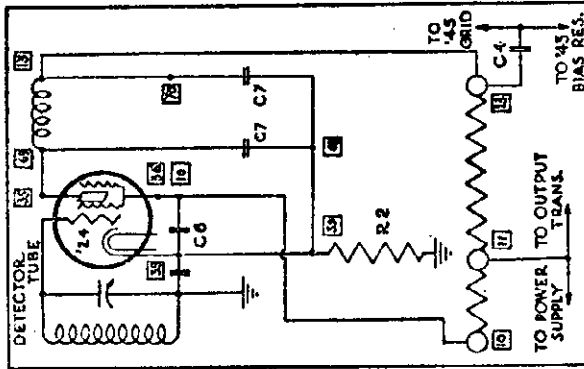
FILTER UNIT

Filter Units, Part No. 1202735, have been supplied to the field with instructions for installation on Model "E" Chassis with Serial Nos. below 3205-E only. All receivers above 3205-E have the Filter Units incorporated in the chassis and speaker. These parts include the Audio Filter Choke which is mounted on the speaker and one 1 Mfd. condenser located in the Chassis. On sets with Serial Numbers below 3205-E, use No. 1951 Speaker. Sets with Serial Numbers above 3205-E use Speaker No. 1952.

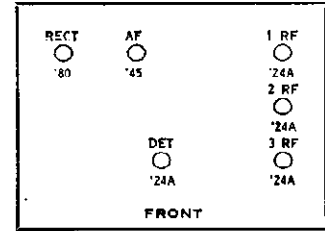
GENERAL MOTORS RADIO CORP.

MODEL 110,180,190
Little General

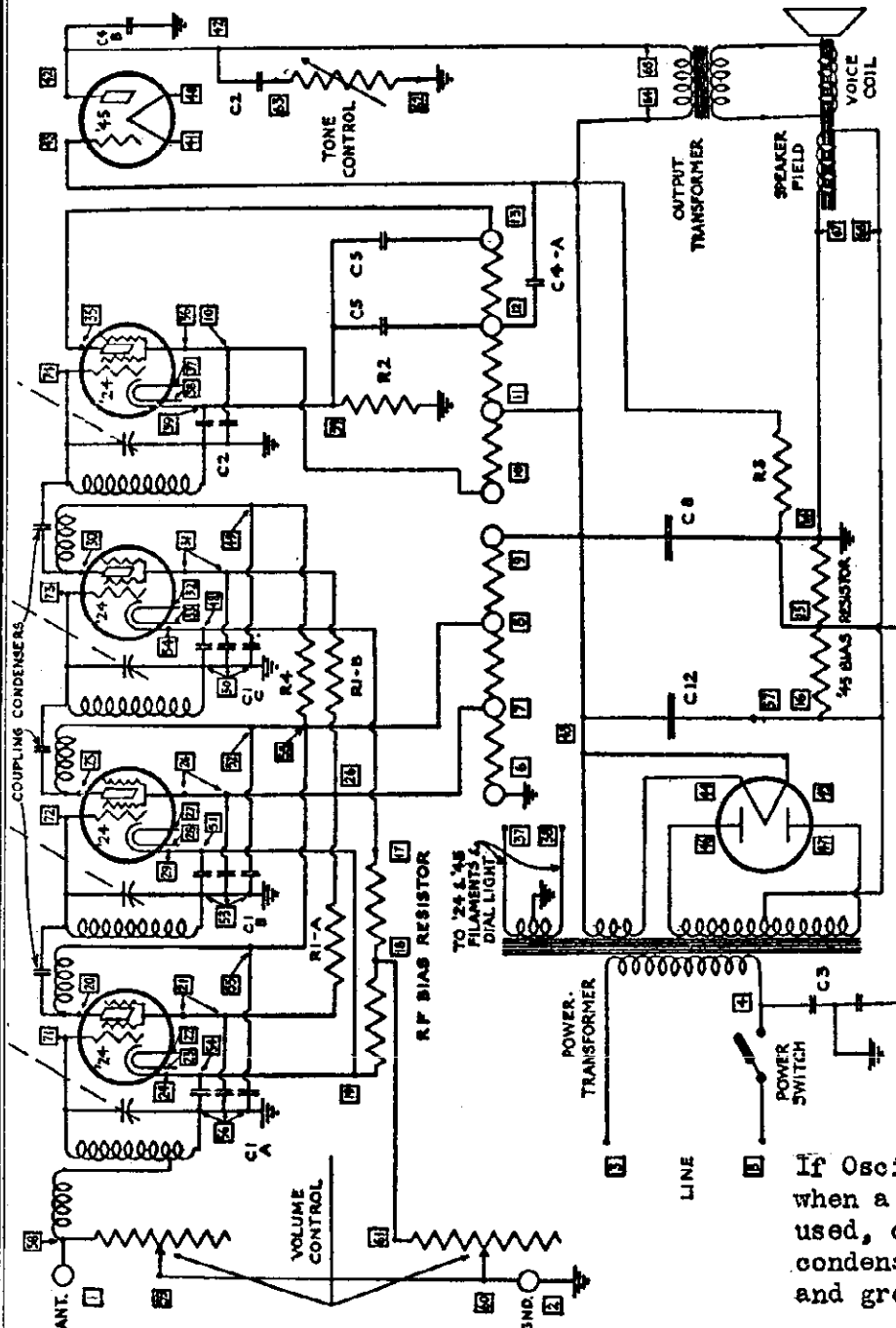
Models 110, 180, 190



The above insert shows a part of the Detector Circuit for Chassis with serial numbers above 23156 M A and 1611 M B — In the Chassis with Circuits as shown above, the Detector Plate Filter Circuit includes a choke coil in the Plate Circuit instead of one section of the Voltage Divider as in previous Chassis



NOTE: In Chassis with serial numbers above 23156 M A and 1611 M B, the Tone Control Condenser and the Line By-Pass Condenser are included in the same can, with capacities as shown for Condenser No. C 2.



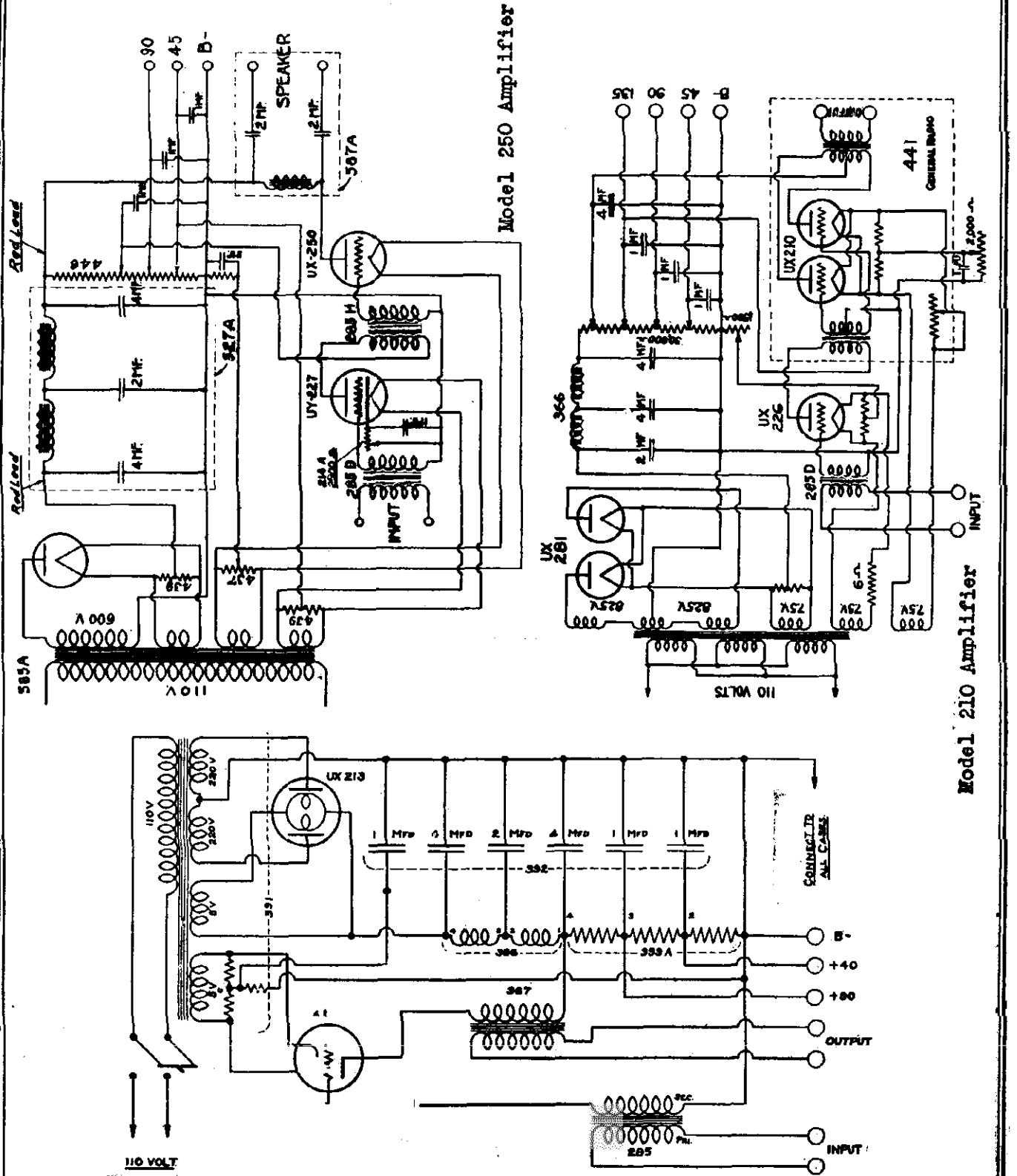
FIXED CONDENSERS	SINGLE FIXED RESISTORS	VARIABLE RESISTORS
NO.	NO.	NO.
CAPACITY	OHMS	SECTION RESISTANCE
C-1	1-1 LMfd	1-1 2000 Ohms
C-2	2-1 22 Mfd	2-1 2000 Ohms
C-3	2-1 1 Mfd	2-1 2000 Ohms
C-4	0-1 Mfd	0-1 2000 Ohms
C-5	0-0027 Mfd	0-1 2000 Ohms
C-6	5-5 Mfd	0-1 2000 Ohms
C-7	0-001 Mfd	0-1 2000 Ohms
C-8	8-0 Mfd	0-1 2000 Ohms
C-12	1-20 Mfd	0-1 2000 Ohms

TUBE TYPE	FIL.	PLATE	CON.	GRID	S.GRID	CATHODE	NORMAL	MA.	GRID CHANGE
124	1R5	2-4	165	3-1	80	3	2-5	2-5	2-5
124	2RF	2-4	165	3-1	92	3	2-5	2-5	2-5
124	3RF	2-4	160	3-1	82	3	2-5	2-5	2-5
124	DET	2-5	100	6-5	12	10	.2	.1	.1
145	1AF	2-4	225	3-0		20		40	40
180	RECT	4-5	360						20

If Oscillation persists when a small aerial is used, connect a .0001 mfd condenser across the aerial and ground posts.

GENERAL RADIO CO

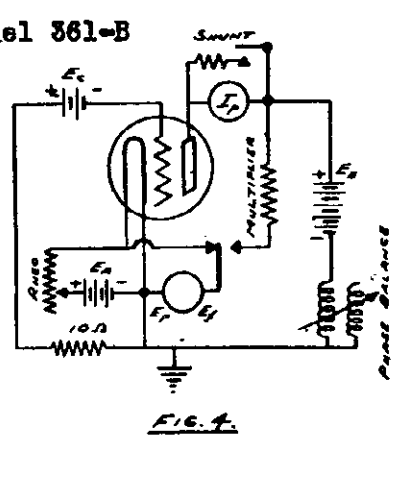
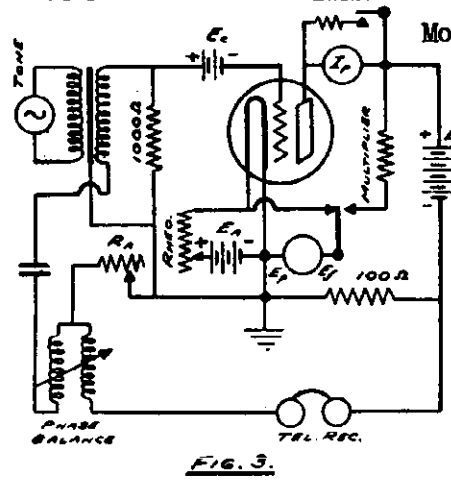
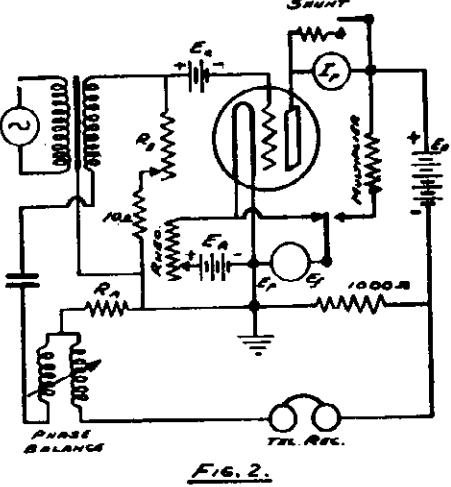
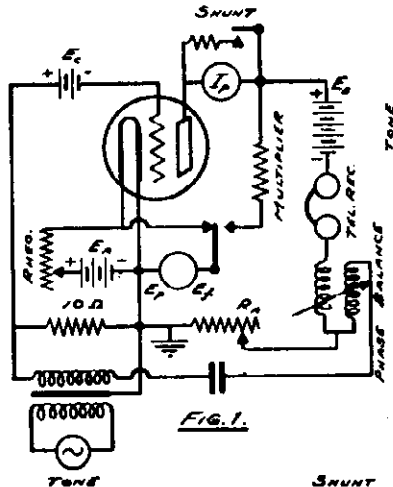
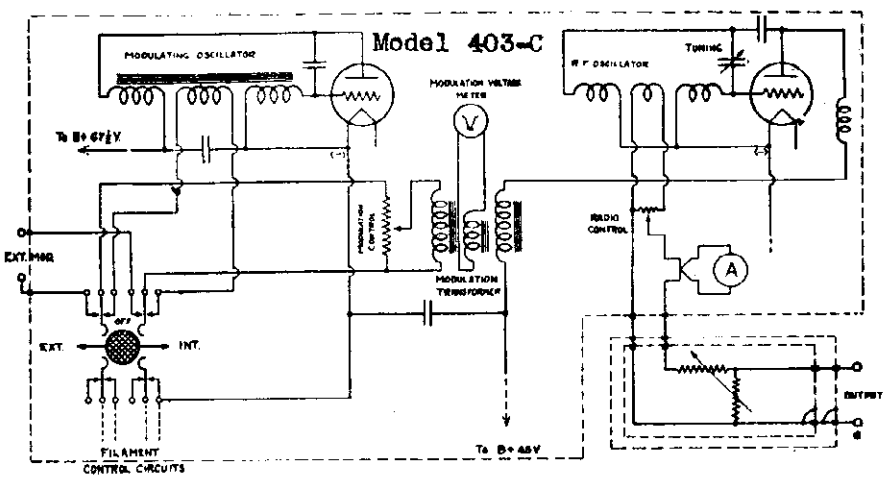
MODEL 250 Amplifier
 MODEL 210 Amplifier
 MODEL 390 Eliminator



(Showing the schematic diagram of the Type 390 Rectron "B" Eliminator and Power Amplifier)

MODEL 403-C
MODEL 361-B

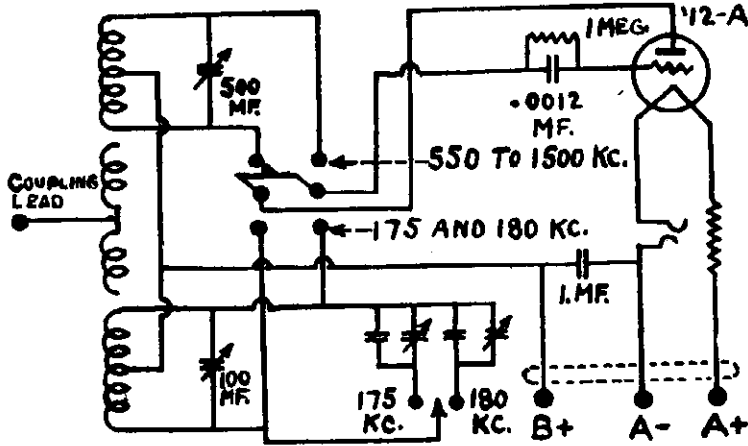
GENERAL RADIO CO



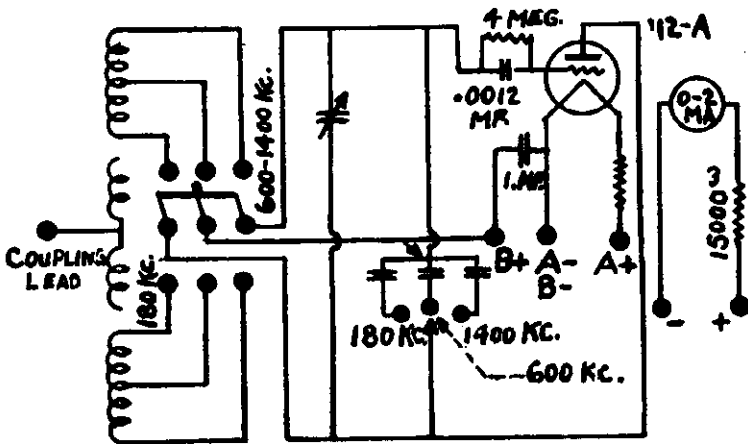
- Figure 1 Amplification Constant.
 - Figure 2 Plate Resistance
 - Figure 3 Mutual Conductance
 - Figure 4 Static characteristics
- Special adaptors are available for conversion and application of the 361-B bridge to AC tubes.

GENERAL RADIO CO

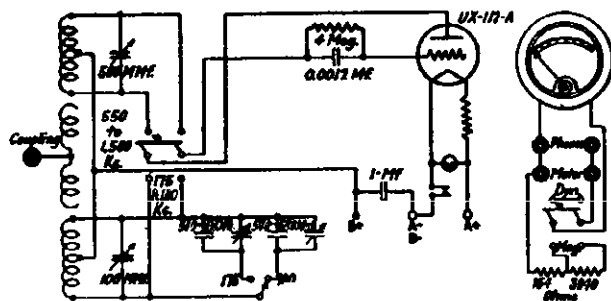
MODEL 360 Oscillator
MODEL 360-A Oscillator
MODEL 320 Oscillator



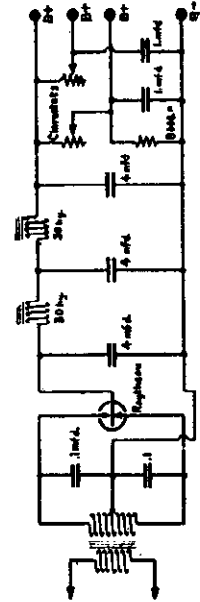
Model 360 Oscillator



Model 320 Oscillator



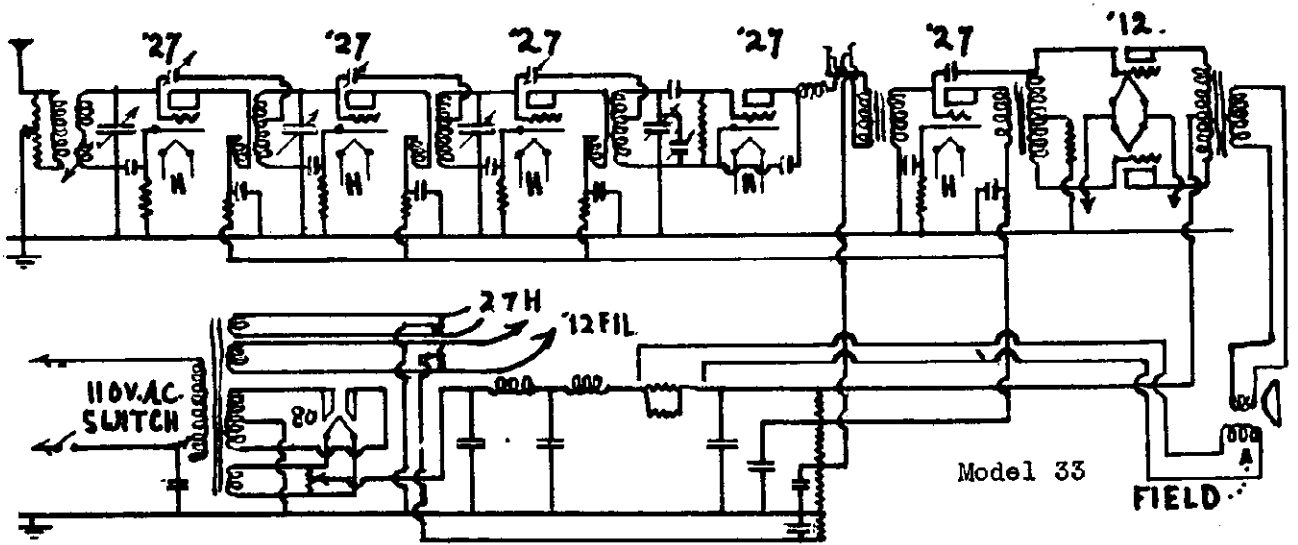
Model 360-A Oscillator



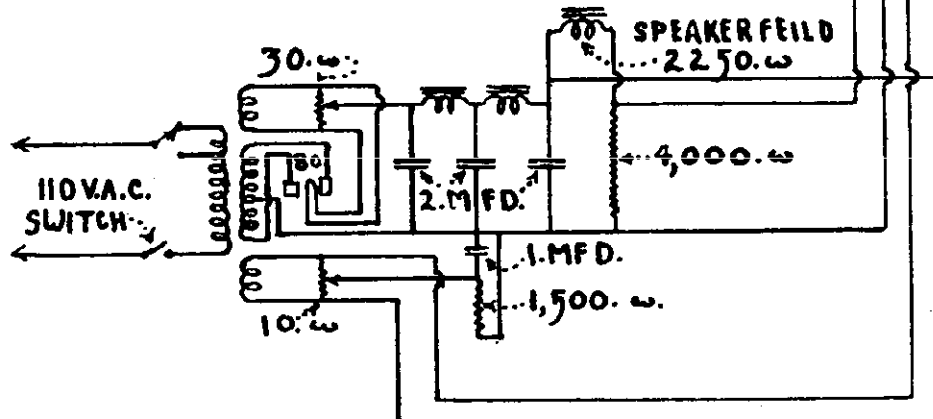
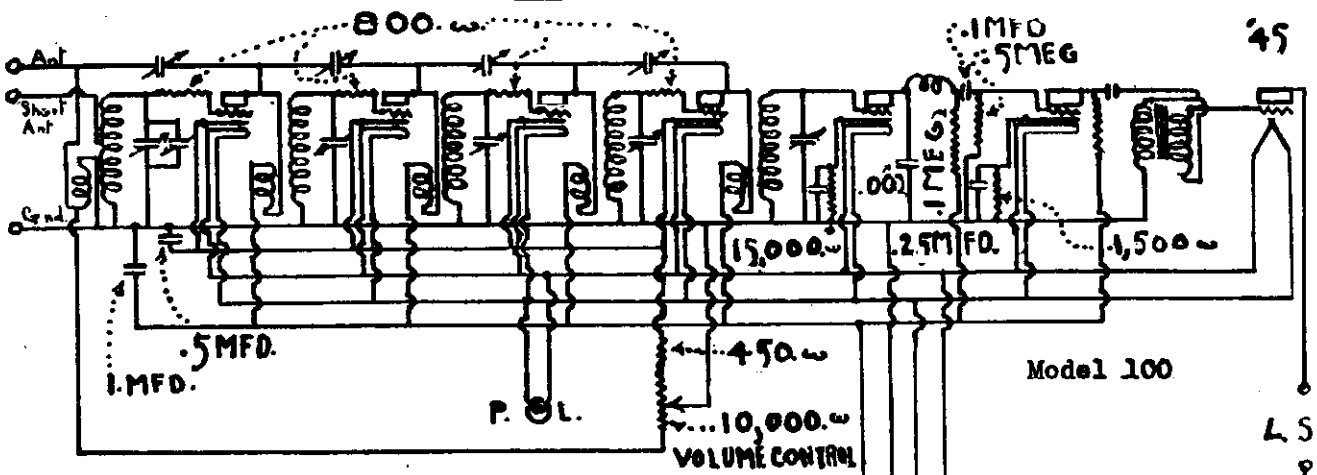
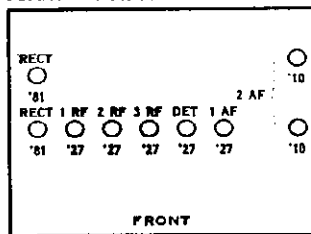
GENERAL RADIO ELIMINATOR

GILFILLAN BROS.

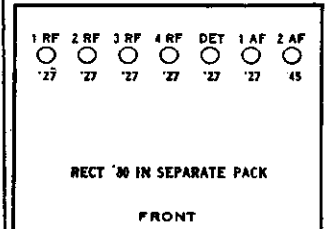
MODEL 33
MODEL 100



Models 33, 44, 77

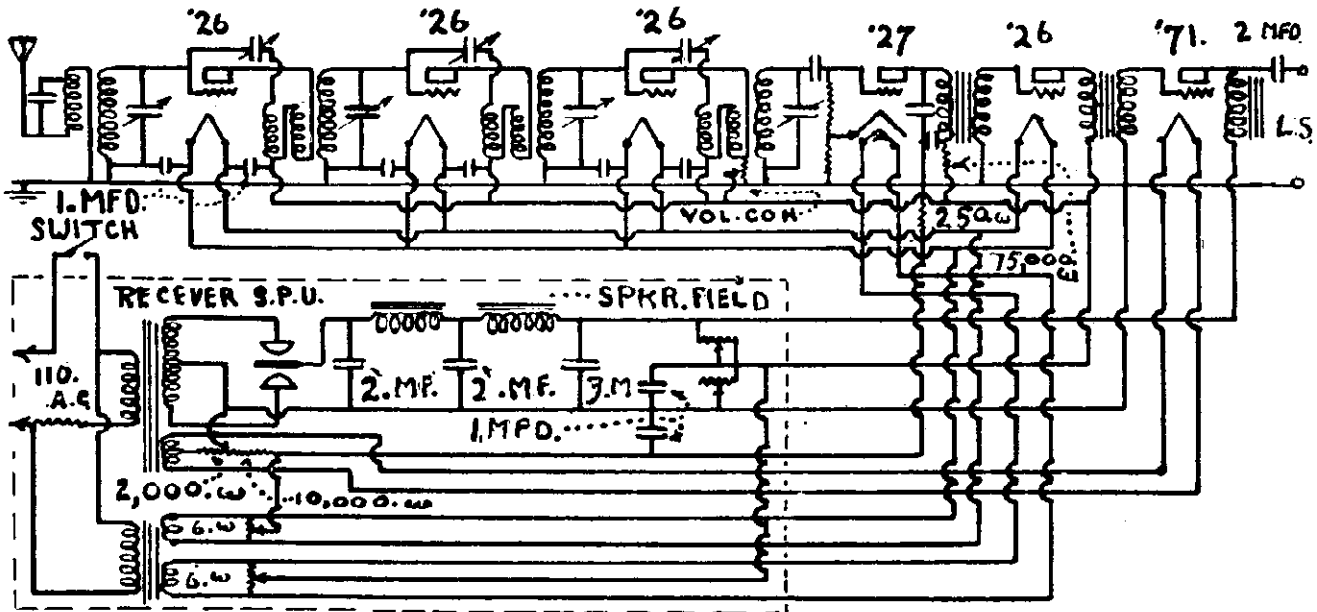


Model 100 Chassis

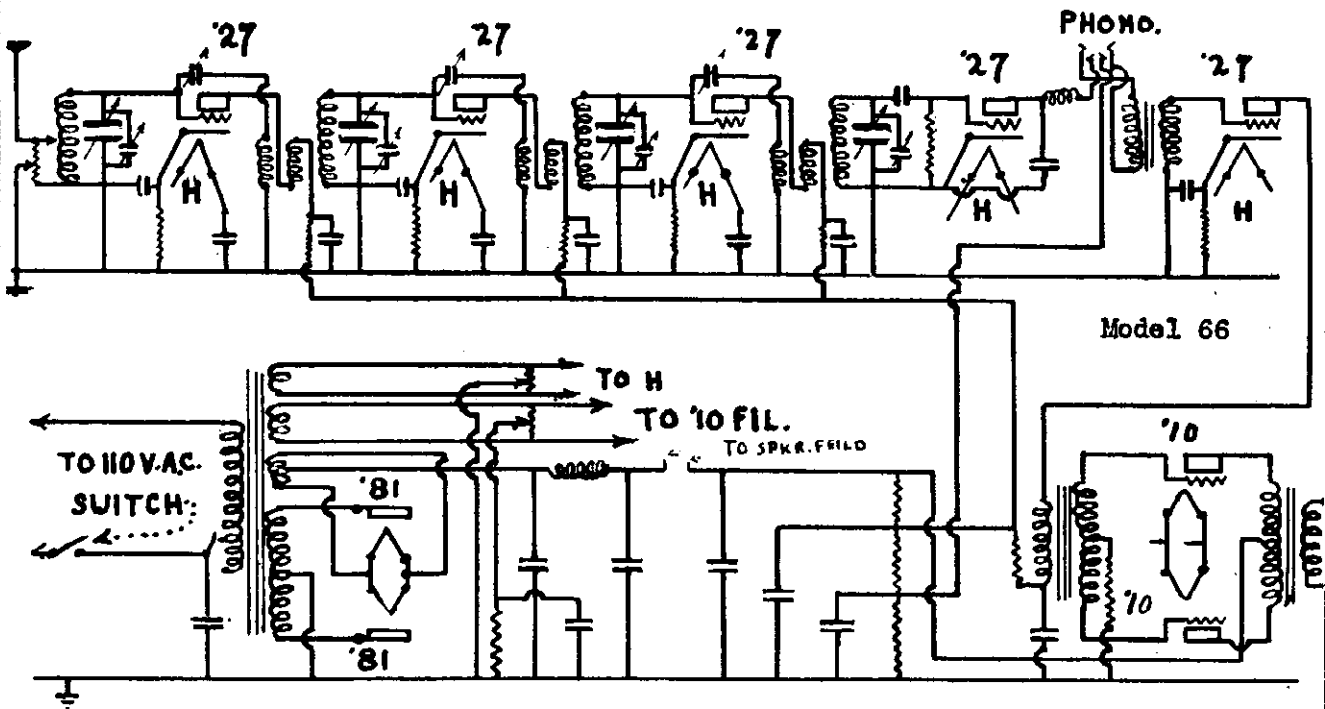


MODEL 60
MODEL 66

GILFILLAN BROS.

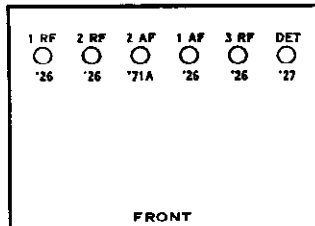


Model 60

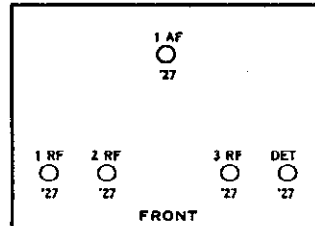


Model 66

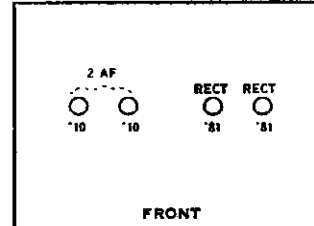
Models 55, 60, 65, 70



Model 66 Chassis

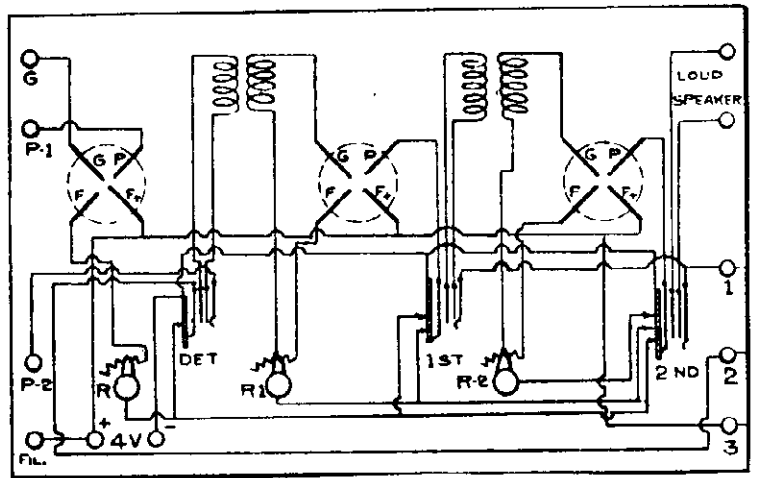
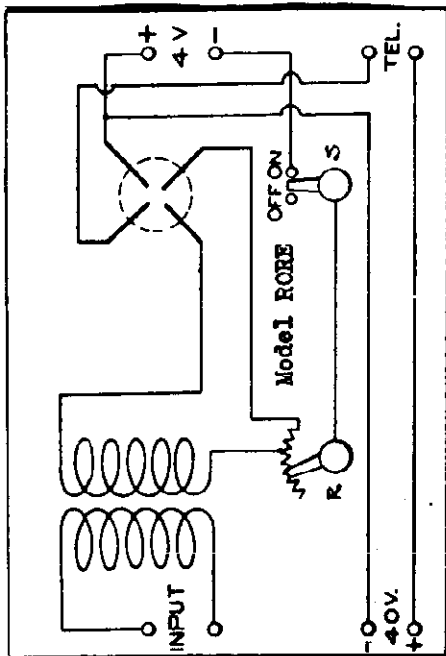
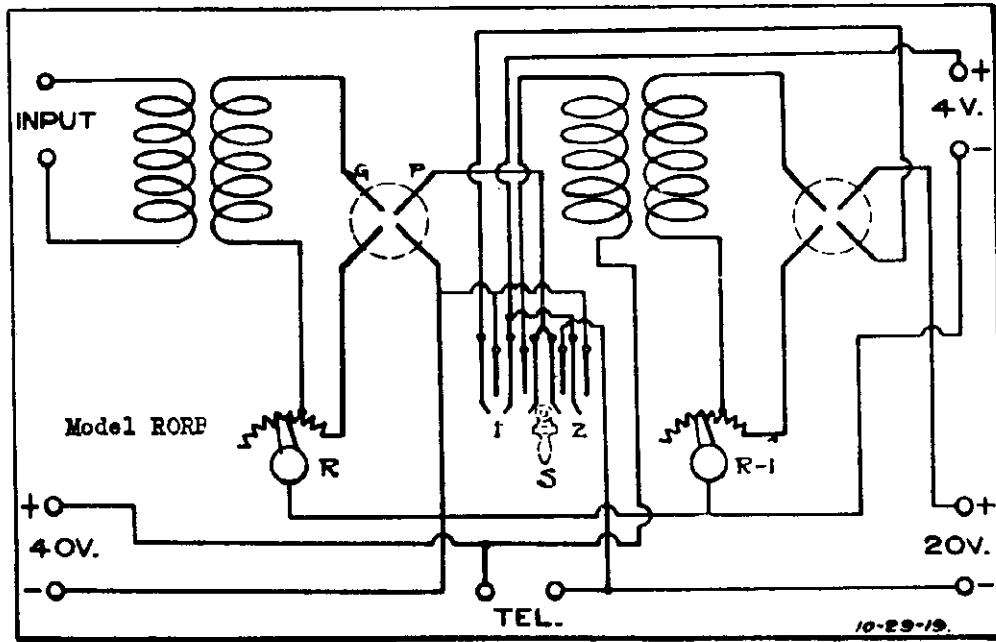


Model 66 Pack

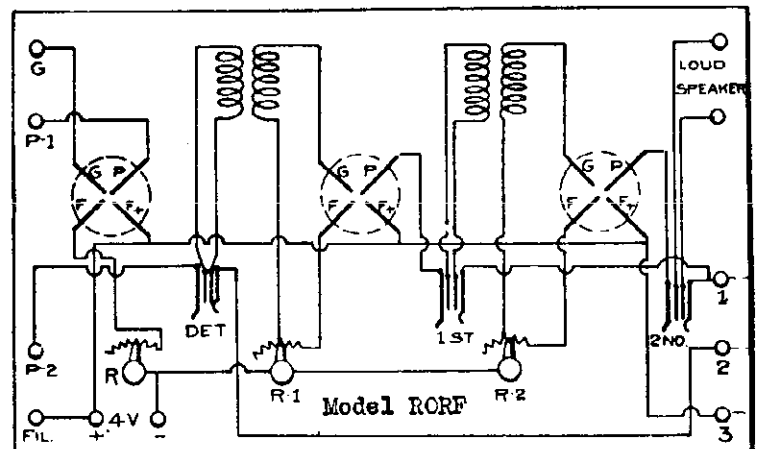


A. H. GREBE & CO.

MODEL RORF
 MODEL RORD
 MODEL RORE
 MODEL ROEF



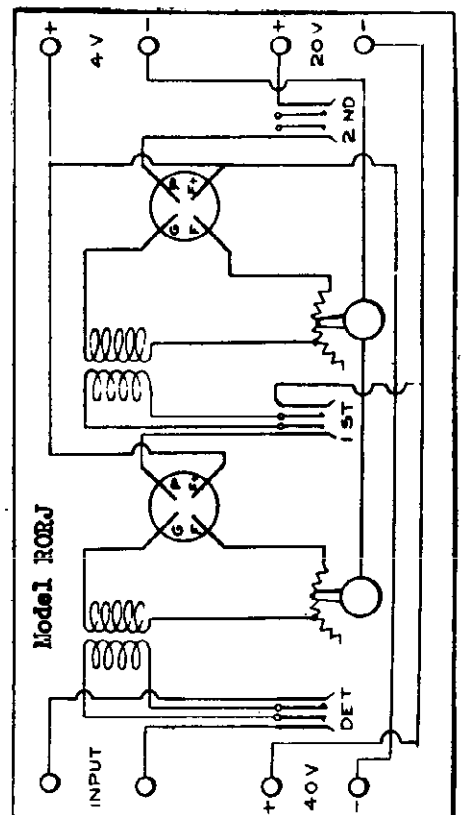
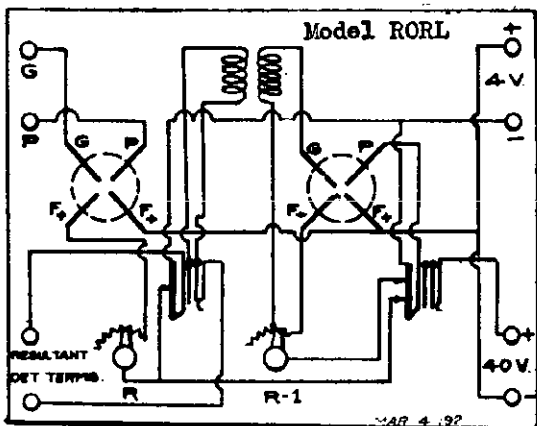
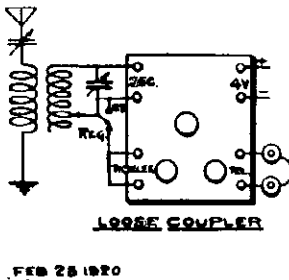
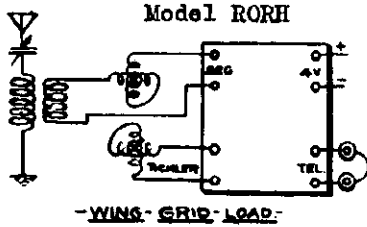
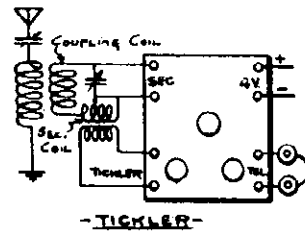
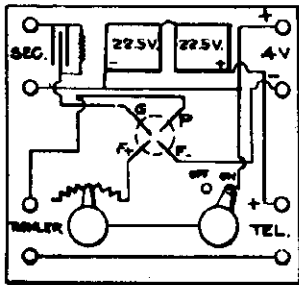
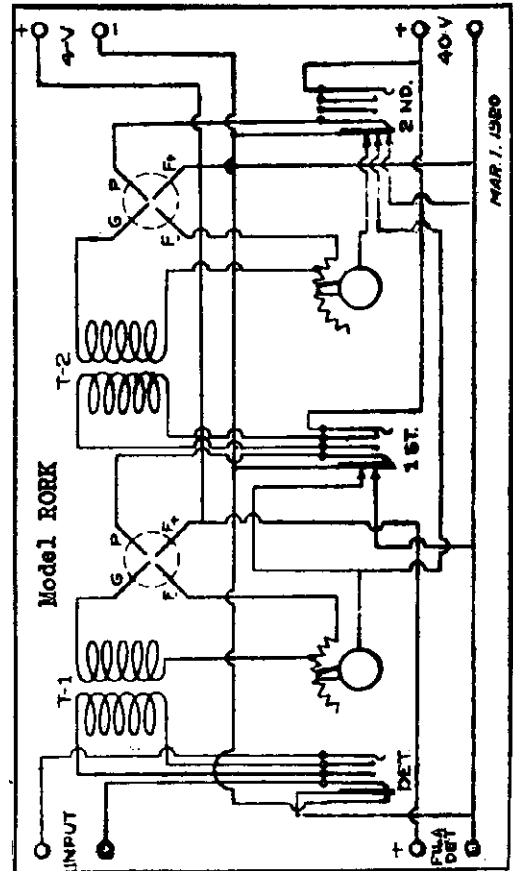
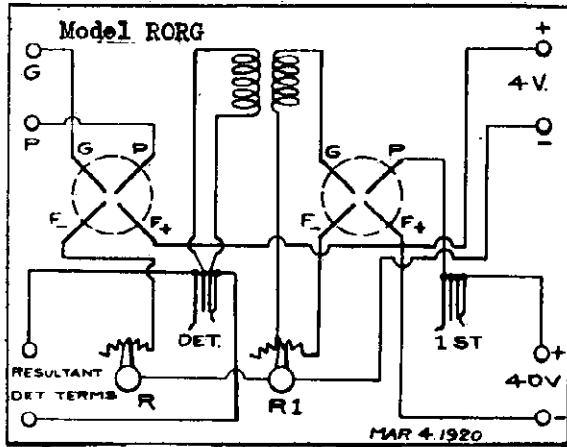
Model RORD



Model ROEF

MODEL RORG
 MODEL RORH
 MODEL RORJ
 MODEL RORK
 MODEL RORL

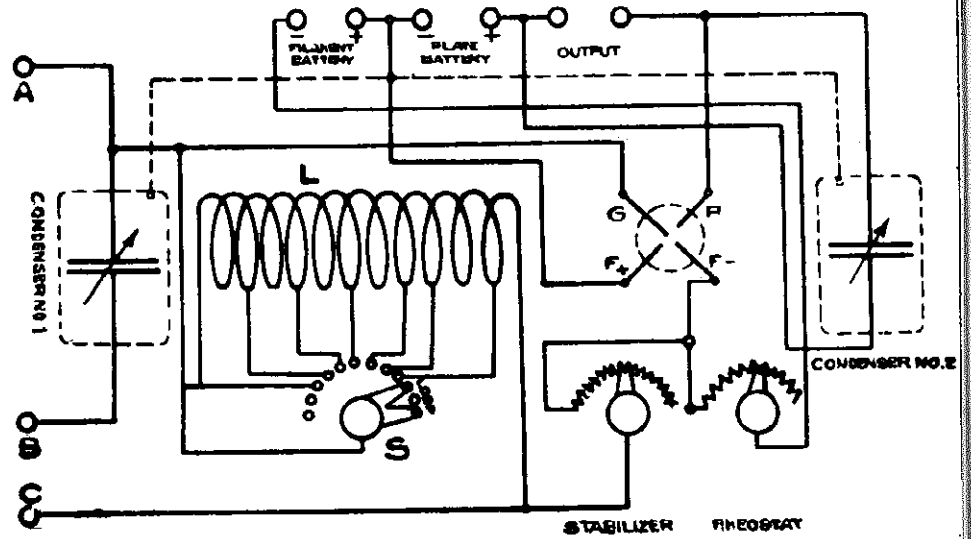
A. H. GREBE & CO.



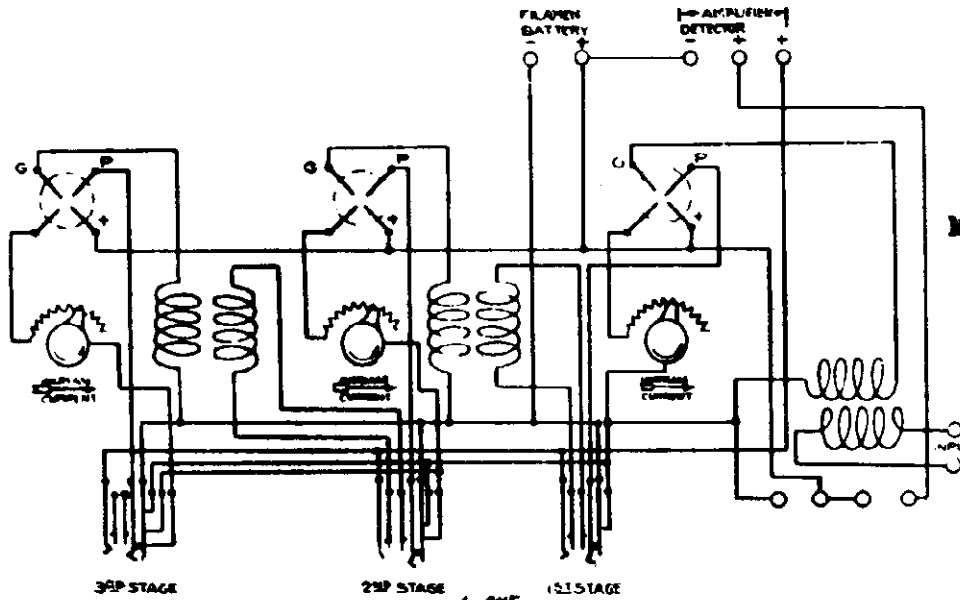
A. H. GREBE & CO.

MODEL RORN
MODEL RORO
MODEL RORQ

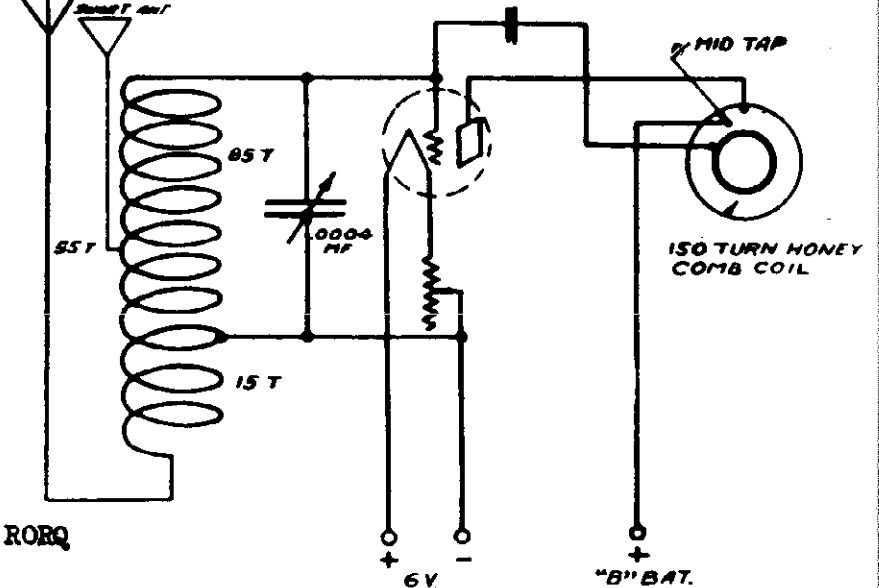
Model RORN



Model RORO



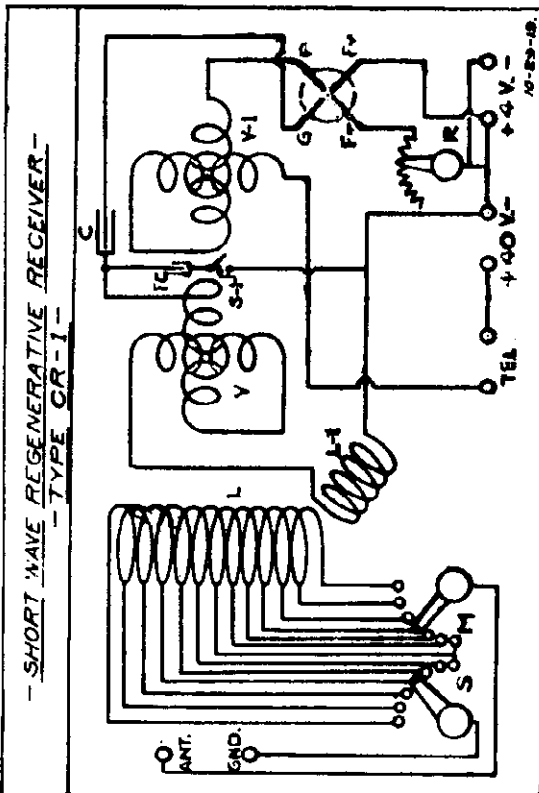
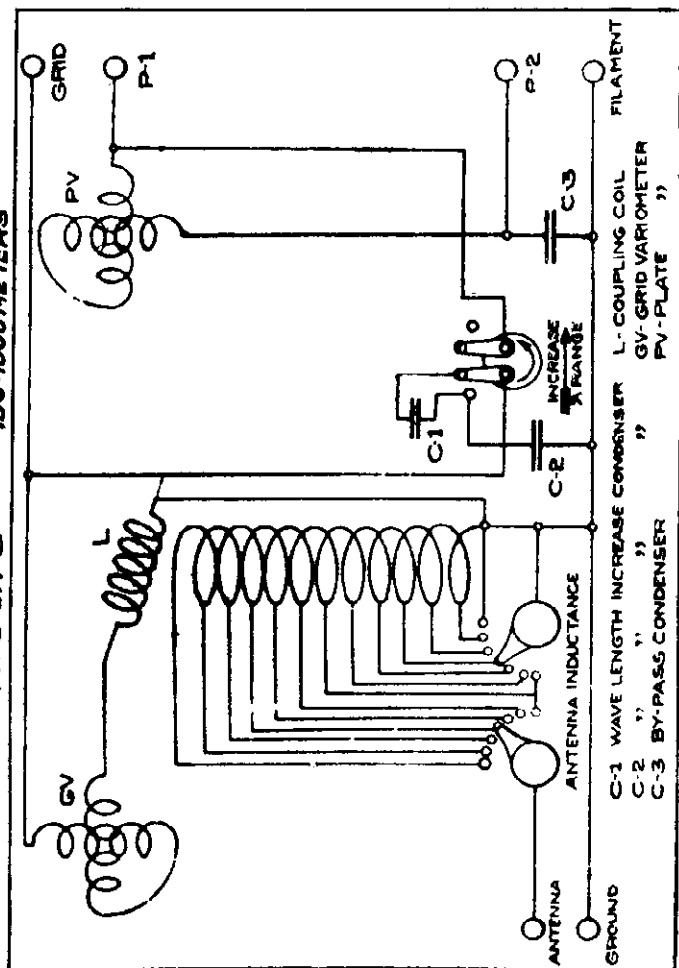
Model RORQ



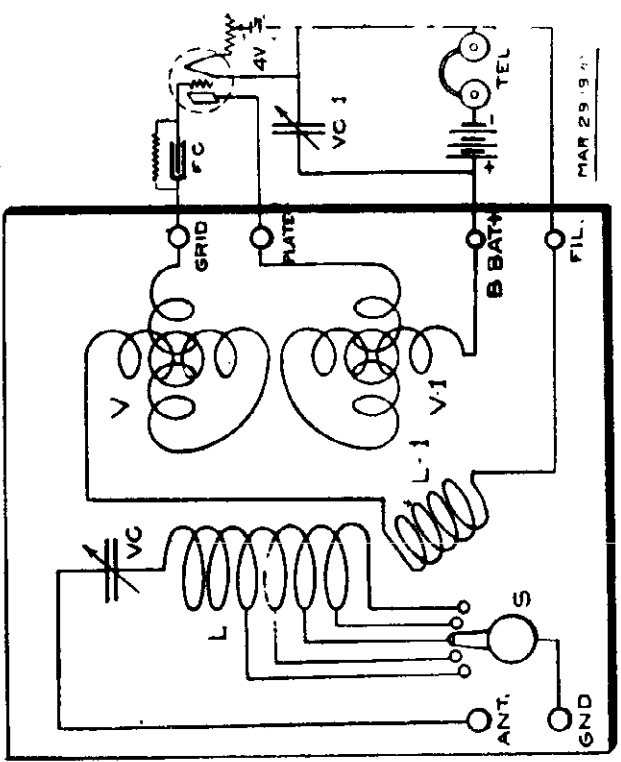
MODEL CR-1 MODEL CR-3
MODEL CR-2 MODEL CR-4

A. H. GREBE & CO.

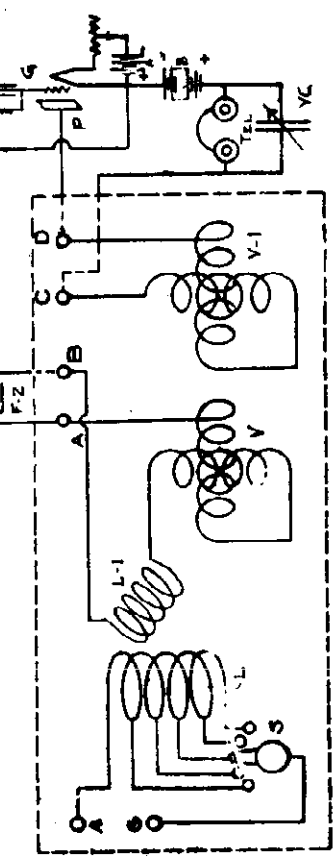
GREBE SHORT-WAVE REGENERATIVE RECEIVER
- TYPE CR-3 -
150-1000 METERS



- SHORT WAVE REGENERATIVE RECEIVER -
- TYPE CR-4 -



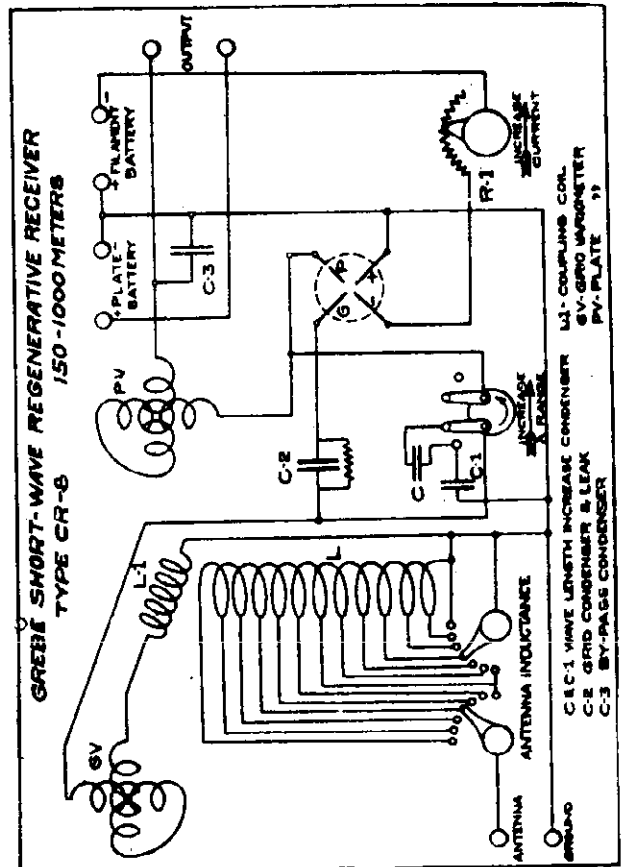
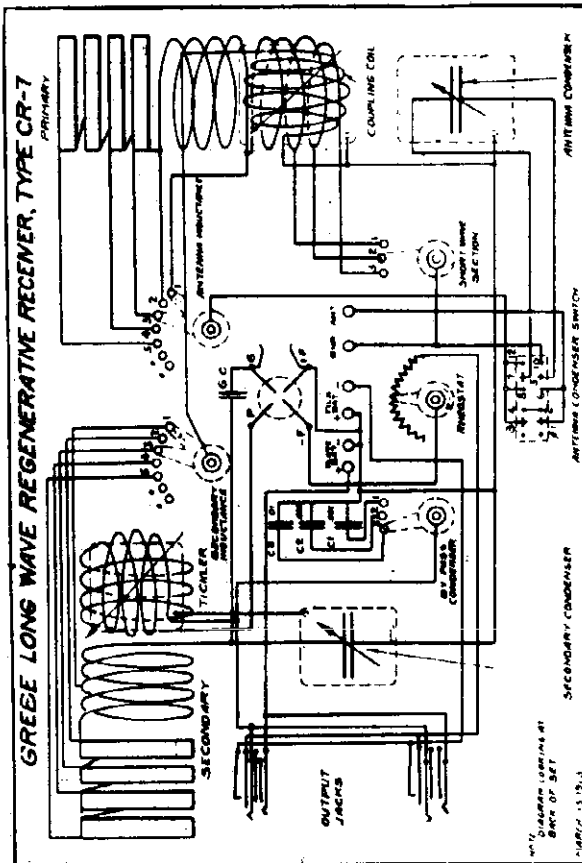
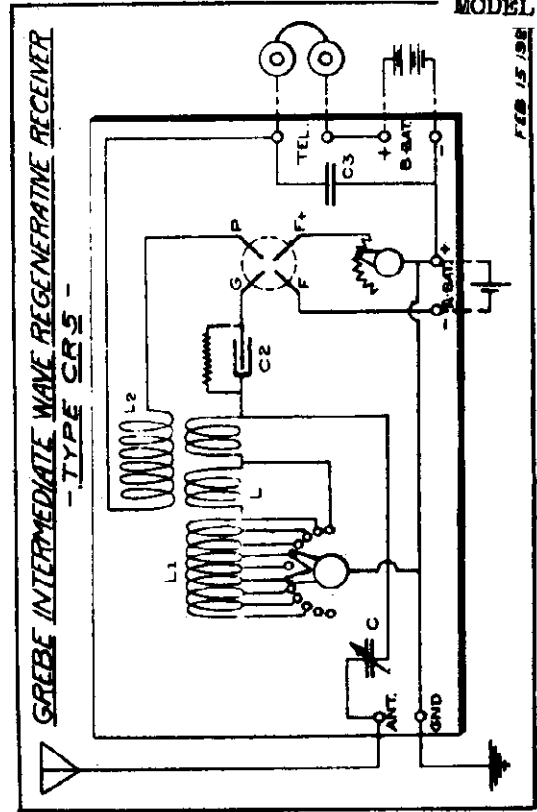
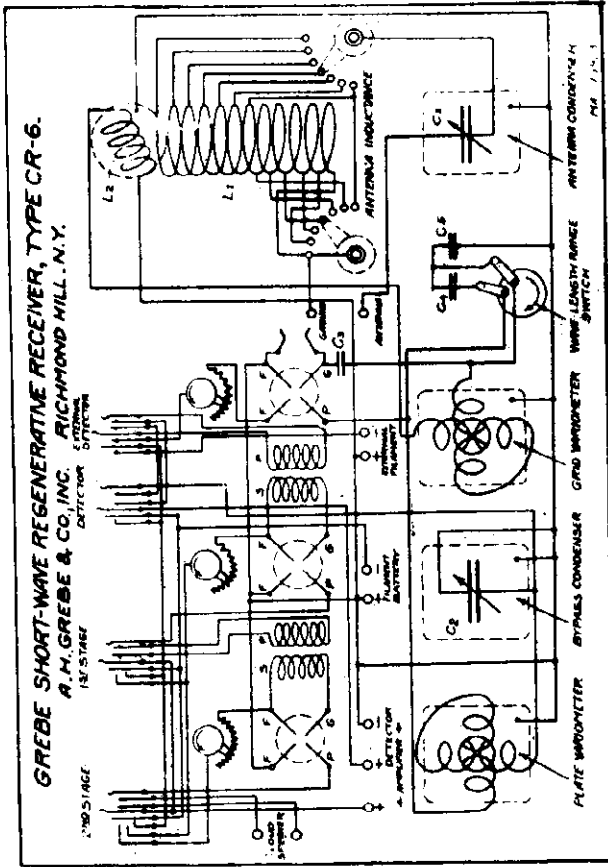
SHORT WAVE REGENERATIVE RECEIVER -
- TYPE CR-2 -



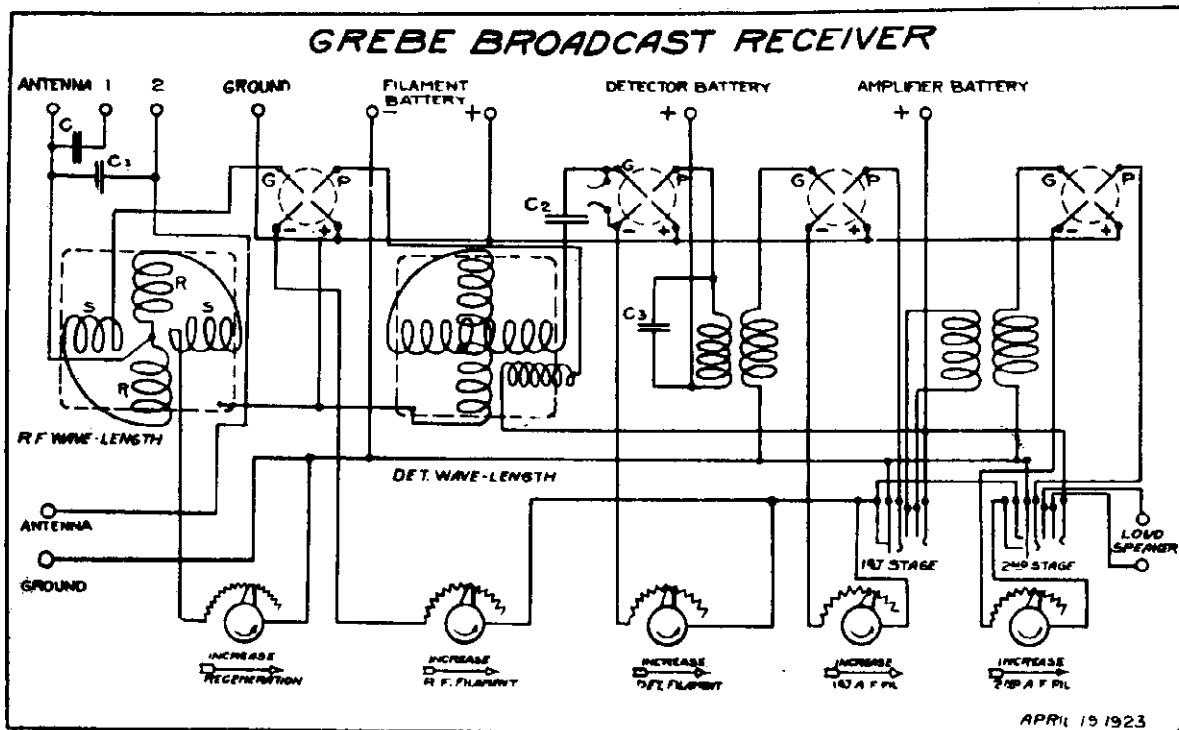
10-23-18

A. H. GREBE & CO.

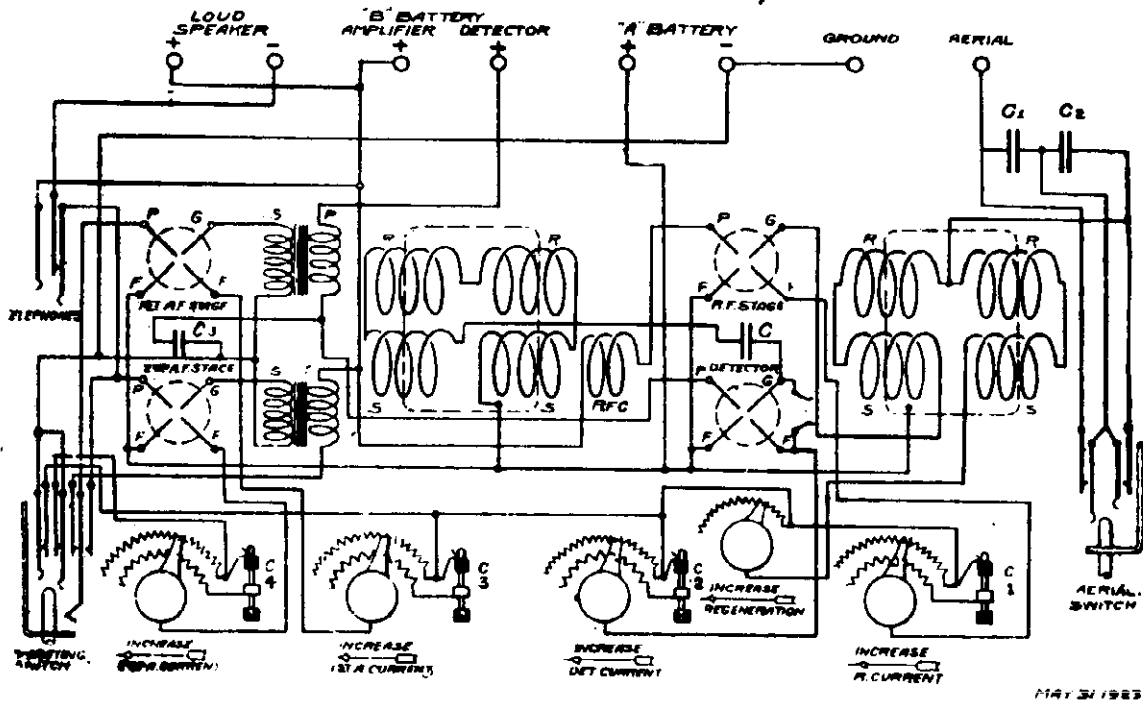
- MODEL CR-5
- MODEL CR-6
- MODEL CR-7
- MODEL CR-8



MODEL Broadcast Receiver A. H. GREBE & CO.,
MODEL CR-12



GREBE BROADCAST RECEIVER, TYPE CR-12.



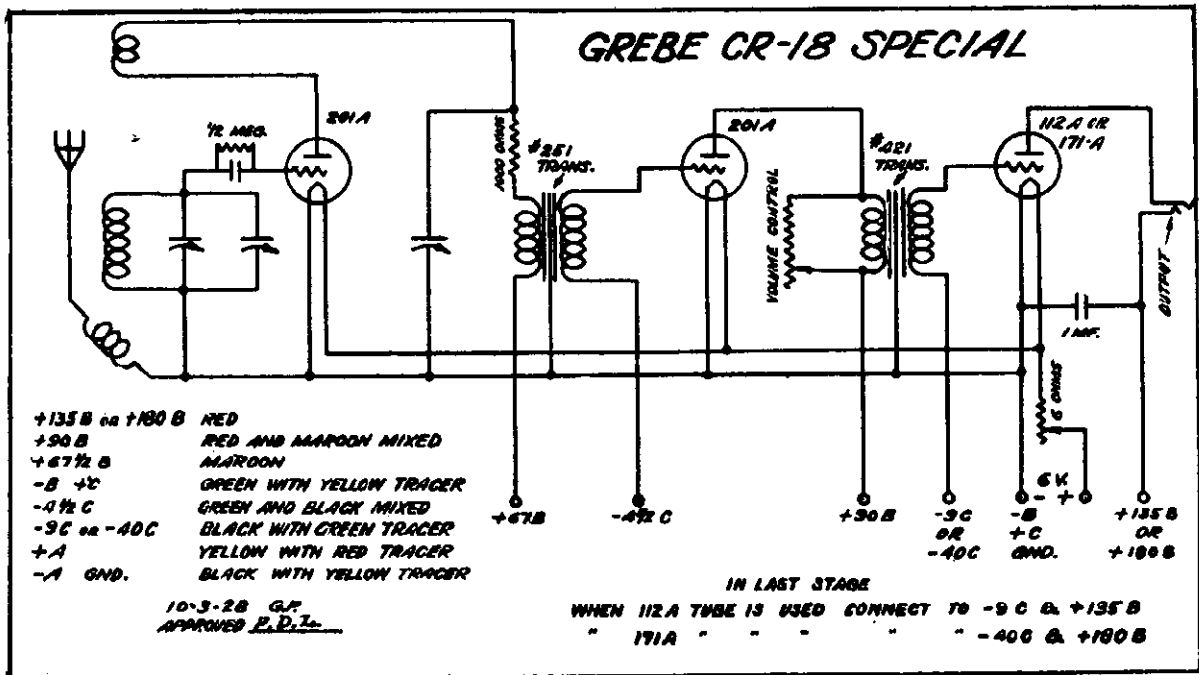
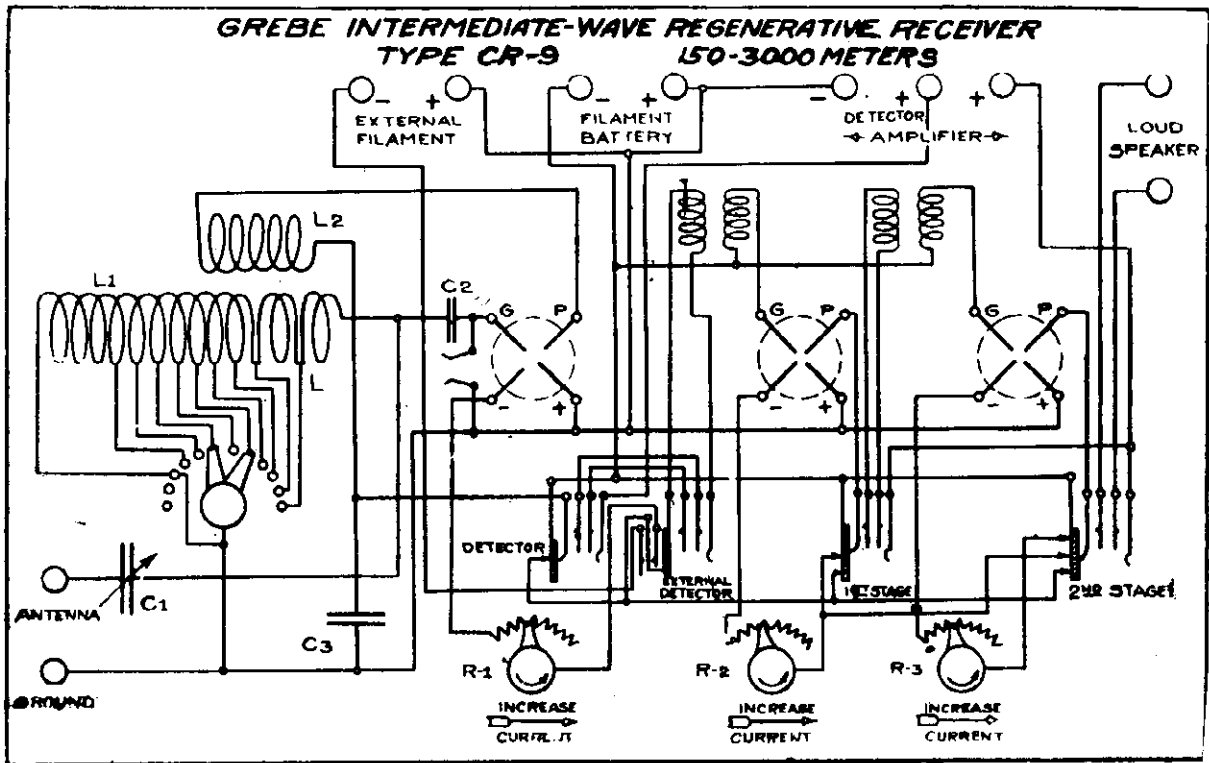
CR-12

(Batt.)

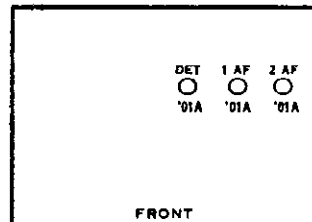
*CX-301A or *CX-299	○	1st R.F.	*CX-301A or *CX-299	○	1st A.F.
*CX-301A or *CX-300A or *CX-299	○	Det.	*CX-301A or *CX-312A or *CX-299	○	2nd A.F.

A. H. GREBE & CO.

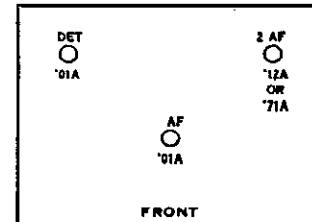
MODEL CR-9
MODEL CR-18(Special)



Model CR9



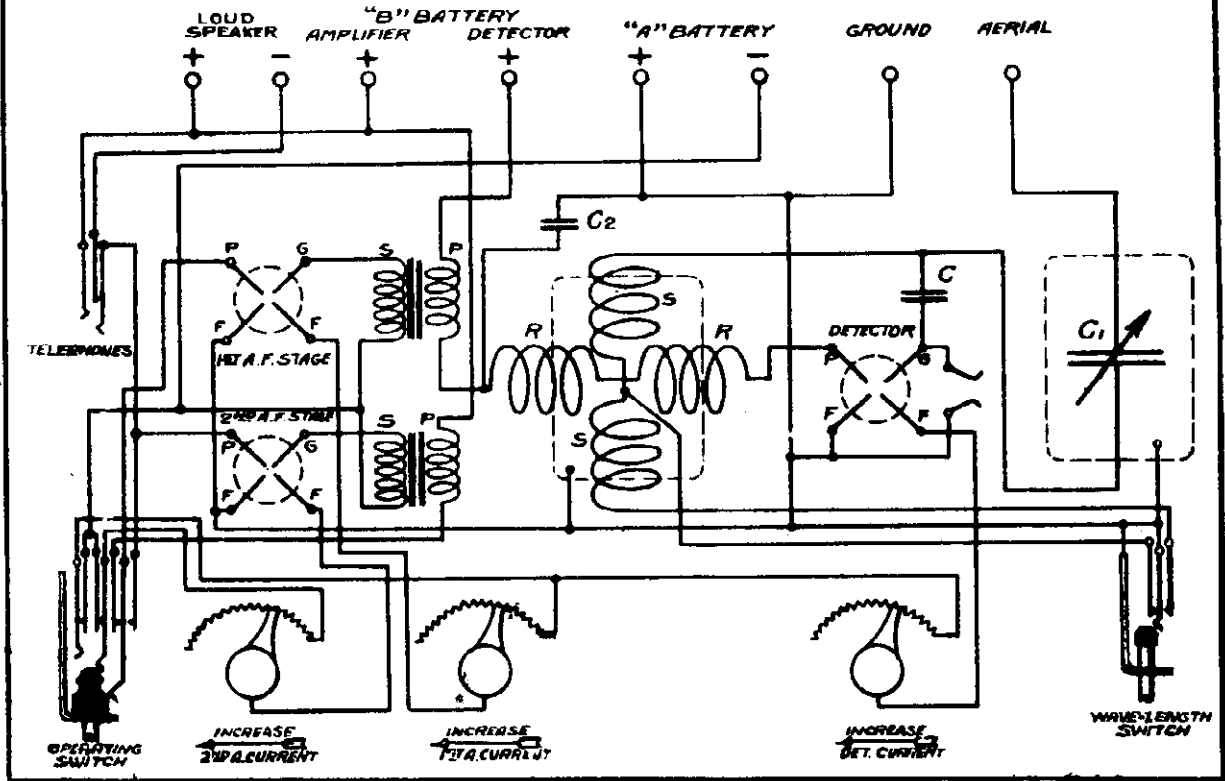
Model CR18 Special



MODEL CR-13
MODEL CR-14

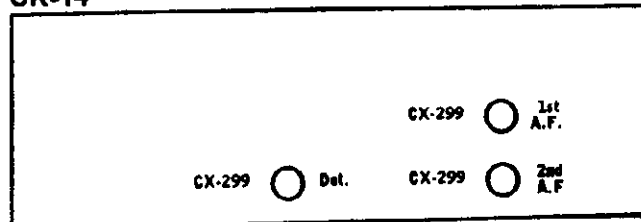
• A. H. GREBE & CO.,

GREBE BROADCAST RECEIVER, TYPE CR-14.



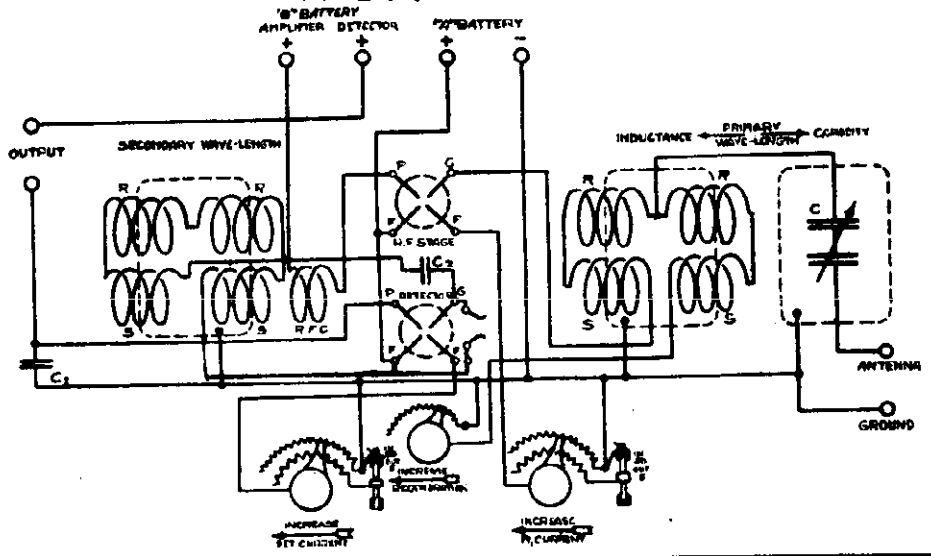
CR-14

(Batt.)



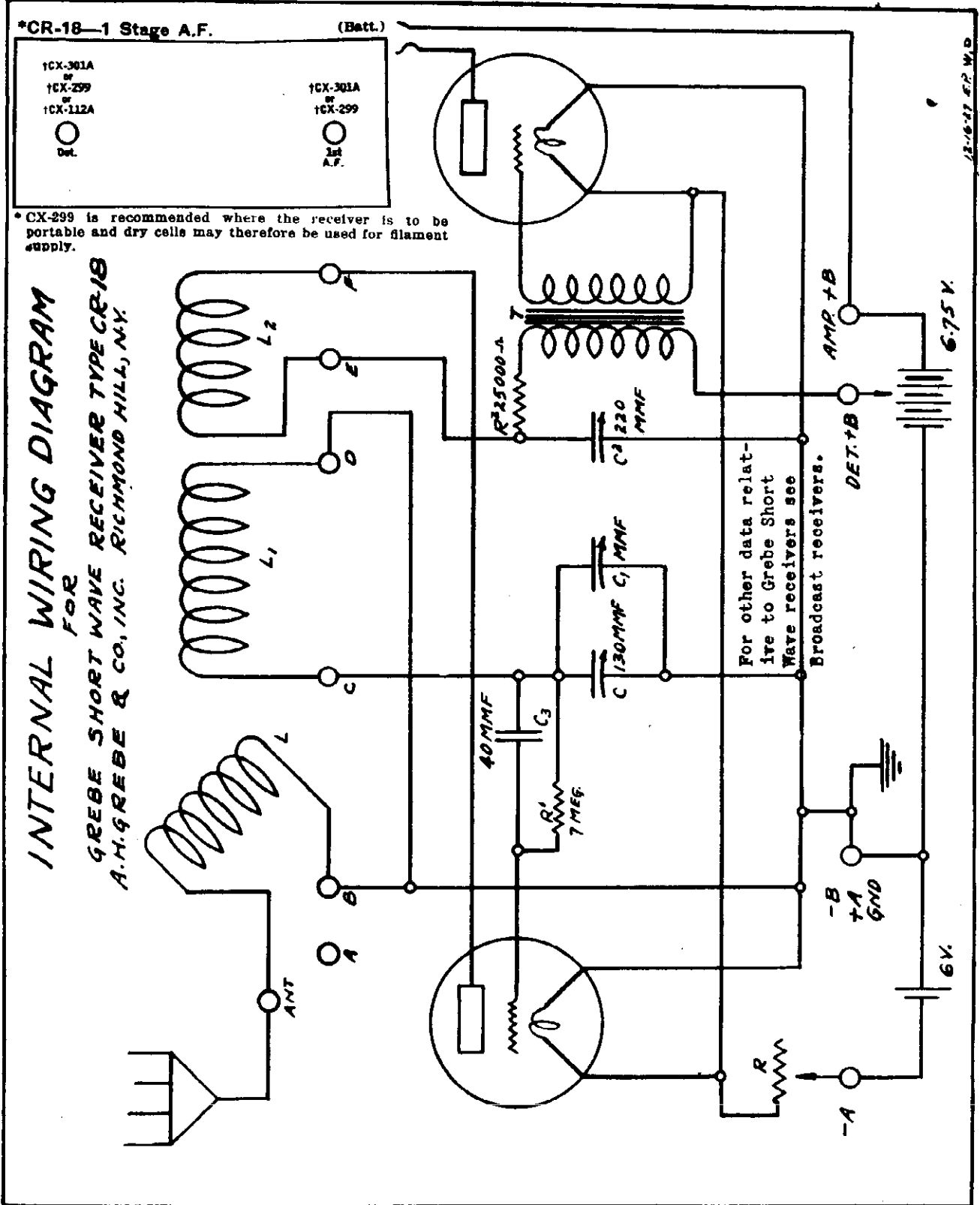
GREBE "13" REGENERATIVE RECEIVER, 80 TO 300M.

TYPE CR-13



A. H. GREBE & CO.

MODEL CR-18

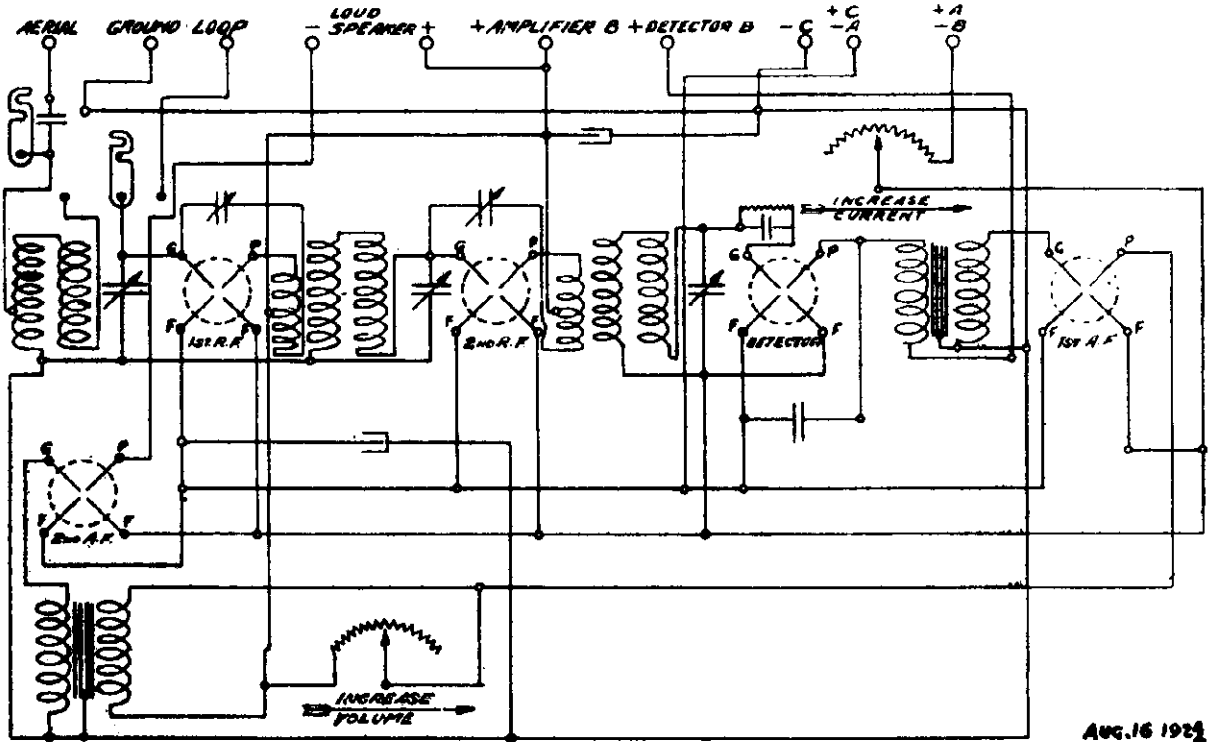


12-6-27 S.P. W.D.

MODEL Synchrophase 5
With 671 Socket Power

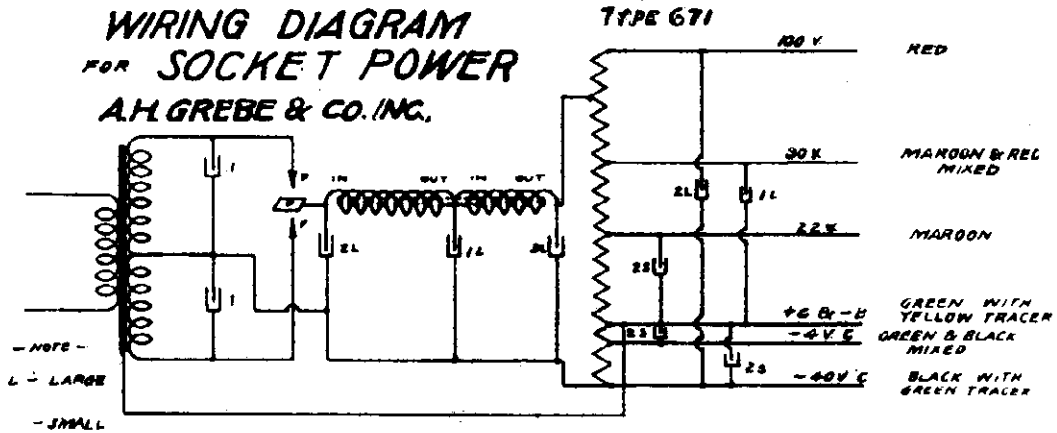
A. H. GREBE & CO.,

GREBE SYNCHROPHASE RECEIVER
A. H. GREBE & CO., INC. RICHMOND HILL, N.Y.



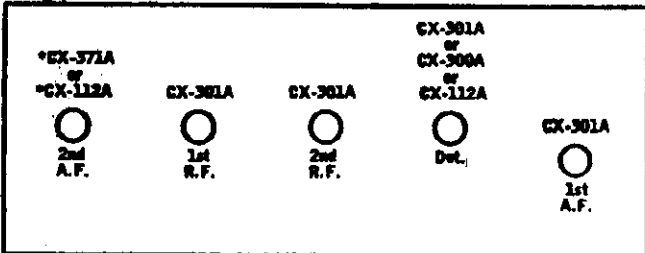
AUG. 16 1925

WIRING DIAGRAM FOR SOCKET POWER
A. H. GREBE & CO. INC.



SYNCHROPHASE "5"

(Batt.)

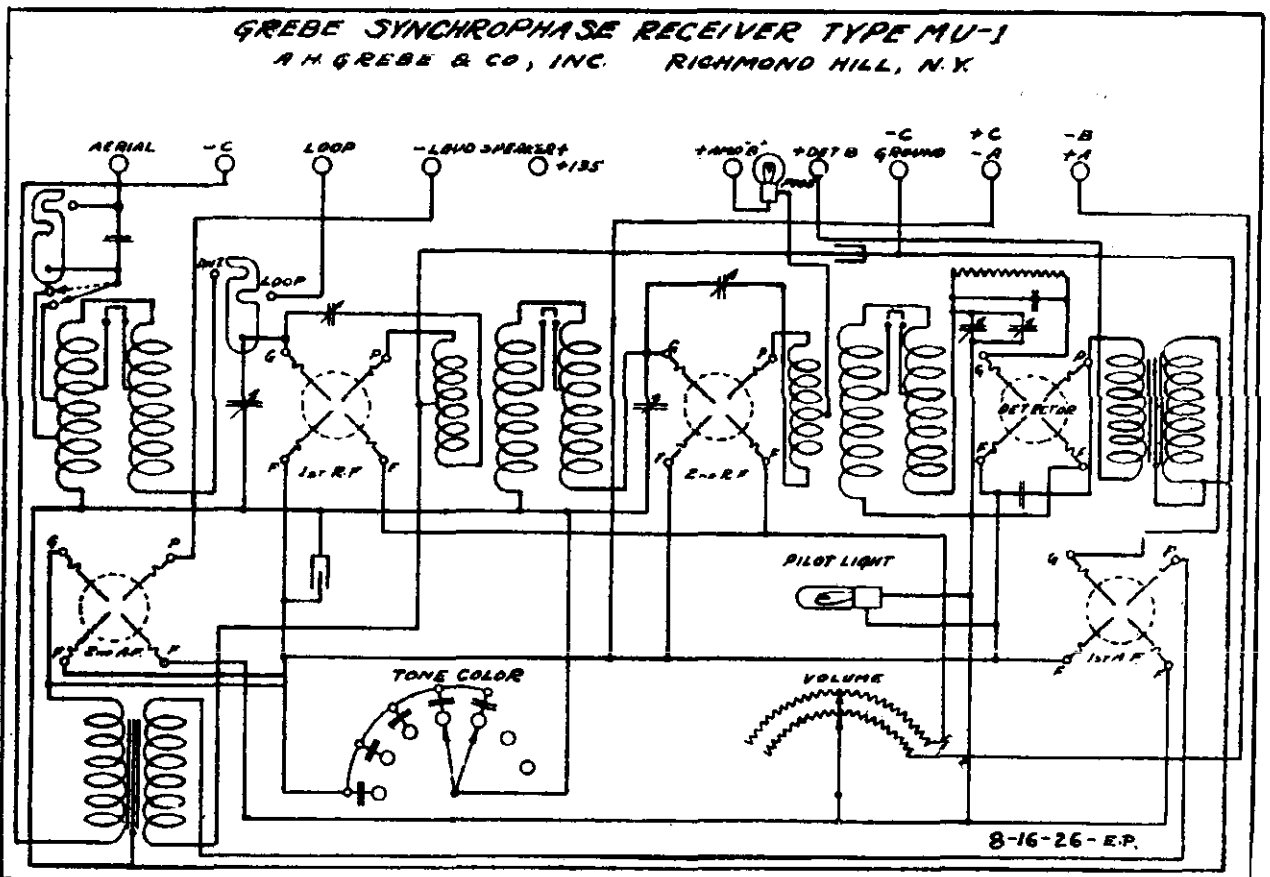
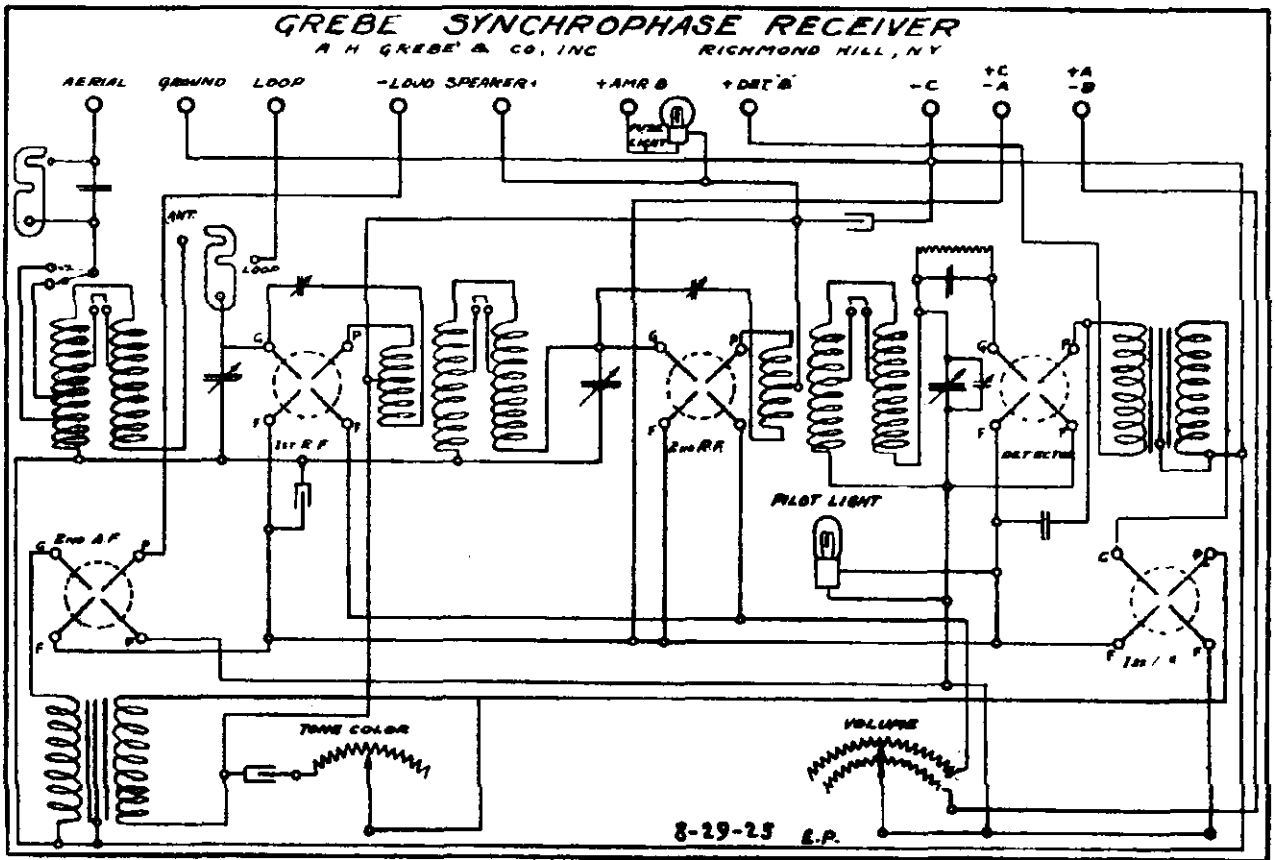


GREBE SYNCHROPHASE "5" with 671 Socket Power

TUBE NO.	TYPE OF TUBE	NUMBER OF TUBE 1ST. PL. 2ND. PL. 3RD. PL.	TUBE OUT					TUBE IN TESTER			
			A VOLTS	C VOLTS	B VOLTS	D VOLTS	E VOLTS	CATHODE VOLTS	NORMAL PLATE (MAX. WARM) D.C.	PLATE (MAX. WARM) D.C.	PLATE (MAX. WARM) D.C. CHANGE
1	201A	1st. R.F.	0	115	0	105	0	7.0			
2	201A	2nd. R.F.	0	115	0	105	0	7.0			
3	201A	Detector	0	40	0	28	0				
4	201A	1st. A.F.	0	115	0	105	0				
5	171A	2nd. A.F.	0	200	0	180	40				

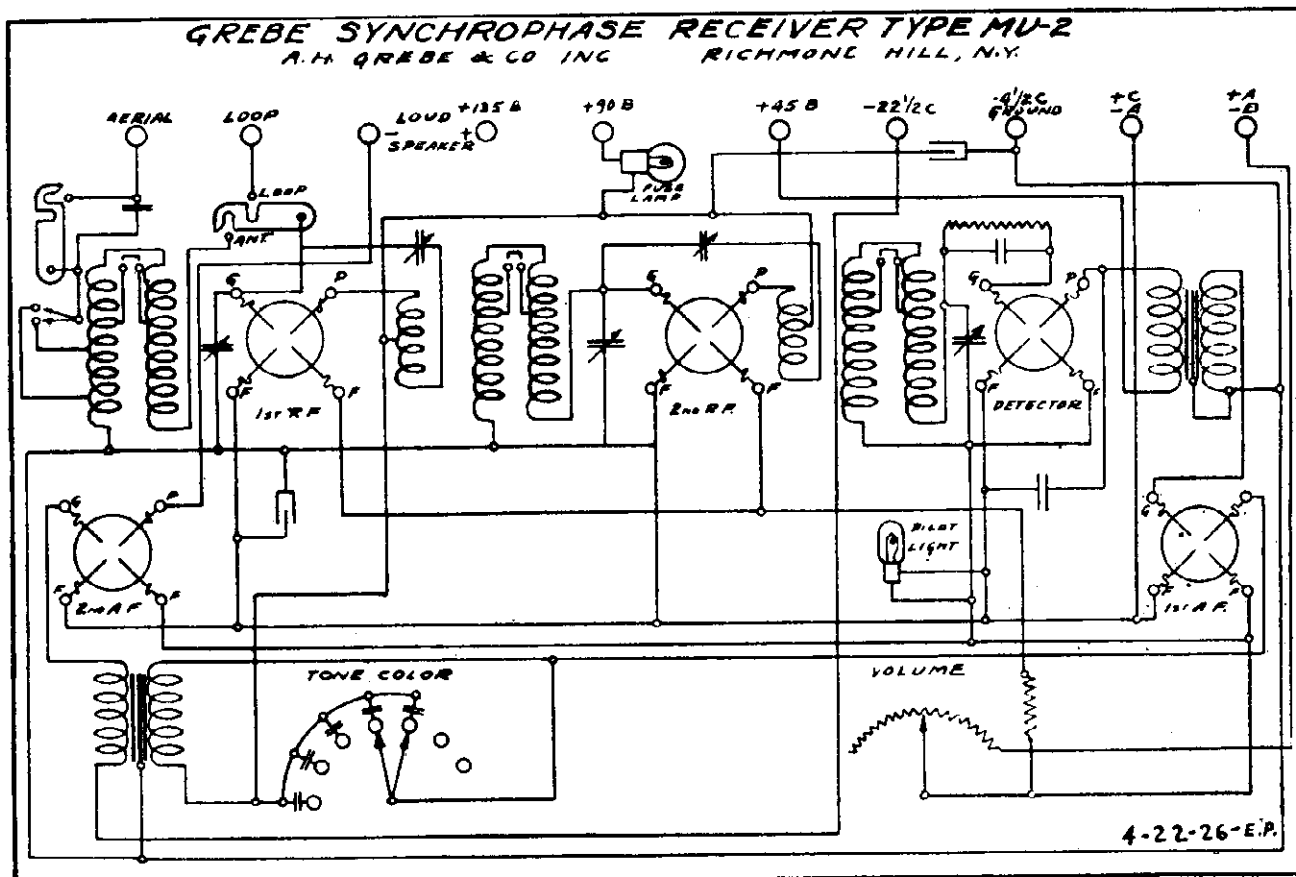
A. H. GREBE & CO., Inc.

MODEL Synchrophase 1925
MODEL Synchrophase MU-1



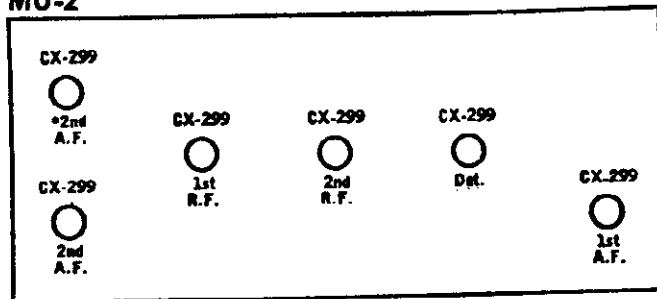
MODEL Synchrophase MU-2

A. H. GREBE & CO., Inc.



MU-2

(Batt.)



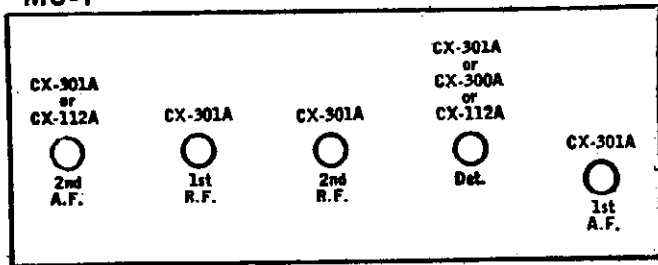
* 2nd Audio Frequency tubes are in parallel.

GREBE SYNCHROPHASE "5" or "MU-1"

Tube No. 5 Used in 1925 Models
 Tube No. 6 Used in Early 1927 Models
 Tube No. 7 Used in Late 1927 Models

MU-1

(Batt.)



TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1st R.F. DET. ETC.	TUBE DATA					TUBE IN TESTER			
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. TEST	PLATE M.A. OUTSIDE
1	201A	1st. R.F.	6	100	5	90	4.5		5.0	7.5	2.5
2	201A	2nd. R.F.	6	100	5	90	4.5		5.0	7.5	2.5
3	201A	Detector	6	25	5	90	5.0		5.0	5.5	3.5
4	201A	1st. A.F.	6	100	5	90	4.5		5.0	7.5	2.5
5	201A	2nd. A.F.	6	100	5	90	4.5		5.0	7.5	2.5
6	112	2nd. A.F.	6	150	5	135	9		9.0	13.0	4.5
7	271A	2nd. A.F.	6	200	5	180	40		20.0	26.0	6.0

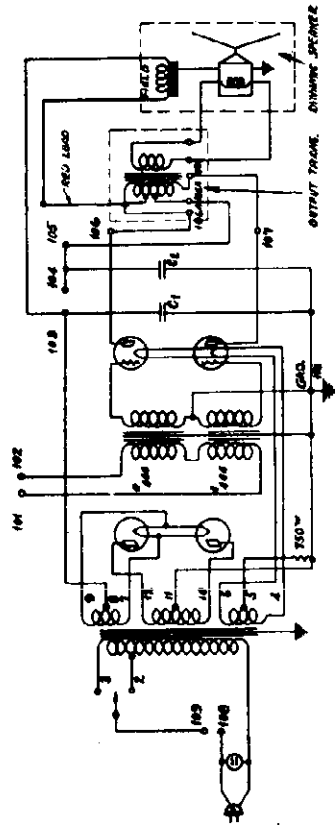
A. H. GREBE & CO., Inc.

MODEL 412
Push-Pull Amplifier

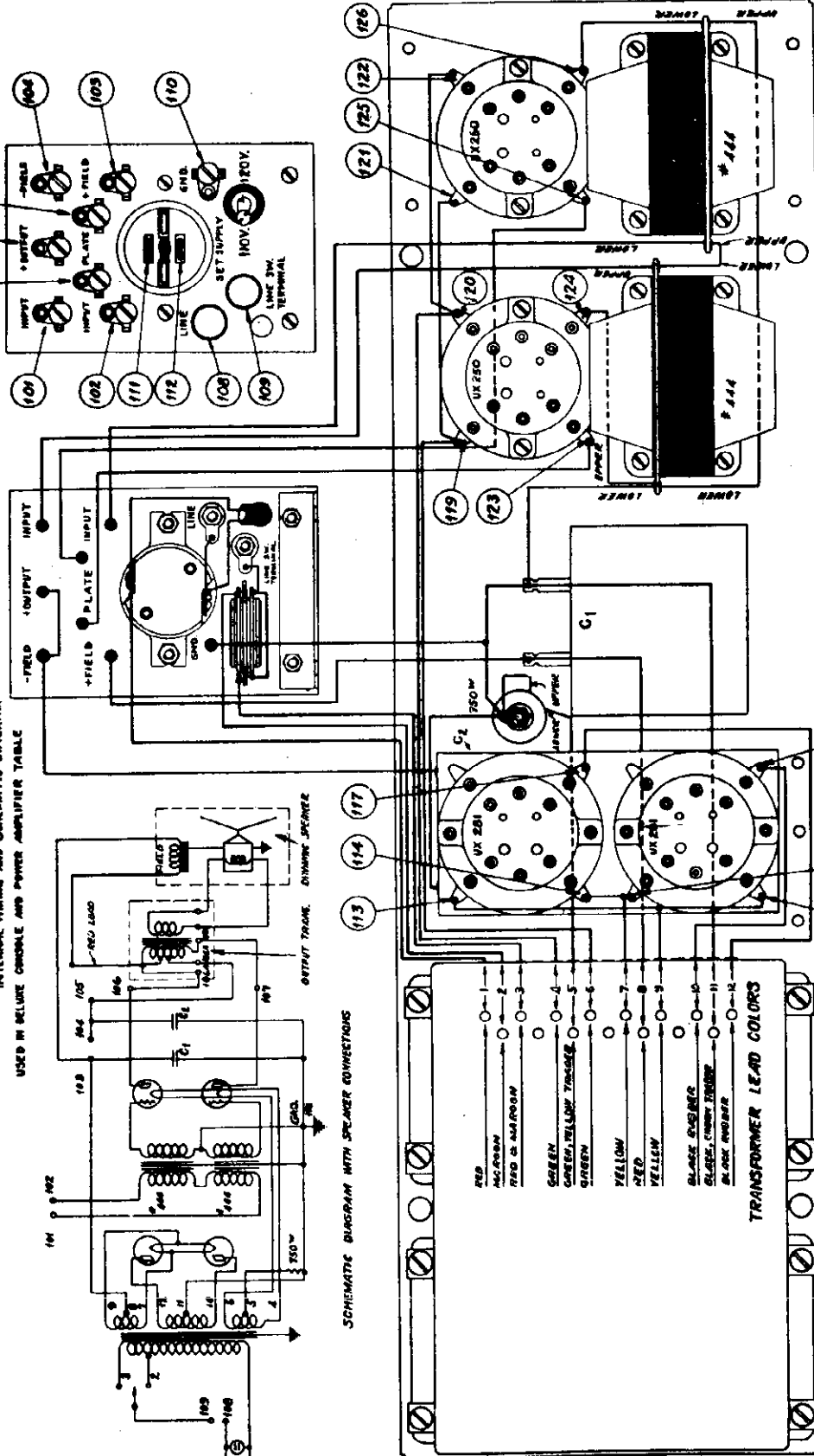
GREBE PUSH-PULL AMPLIFIER

TYPE 412
INTERNAL WIRING AND SCHEMATIC DIAGRAM

USED IN BELMUE CHROME AND POWER AMPLIFIER TABLE



SCHEMATIC DIAGRAM WITH SPEAKER CONNECTIONS



TRANSFORMER LEAD COLORS

1	RED
2	NO. GREEN
3	RED & NO. GREEN
4	GREEN
5	GREEN, YELLOW, TANGER
6	CYAN
7	YELLOW
8	RED
9	YELLOW
10	BLACK OVERBINDER
11	BLACK, CEMENT, TANGER
12	BLACK OVERBINDER

TRACING No. SE-728

MODEL 412
TYPE 412
INTERNAL WIRING

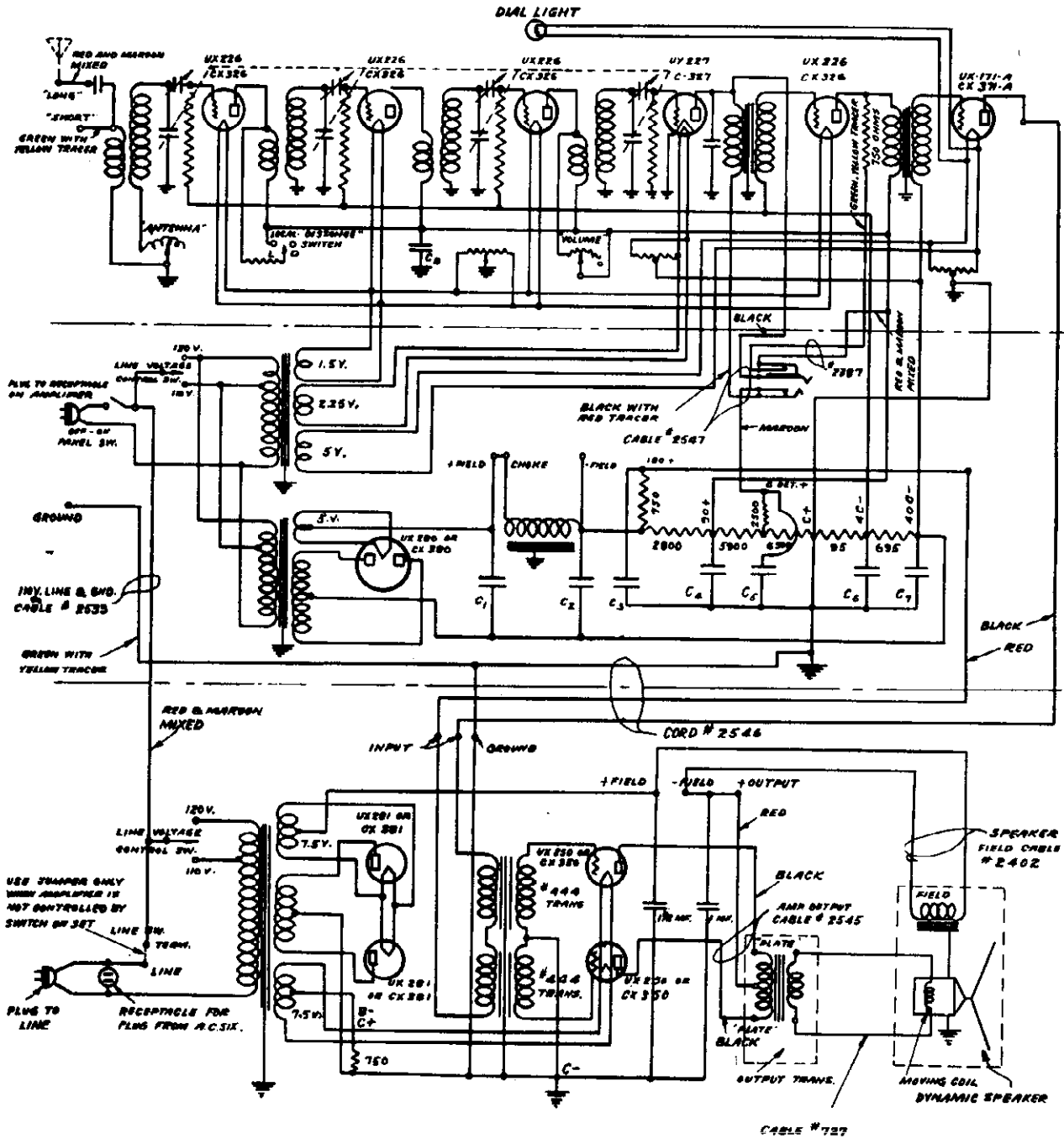
MODEL 428
DeLux Console

A. H. GREBE & CO.

WIRING DIAGRAM FOR GREBE DELUXE CONSOLE TYPE 428

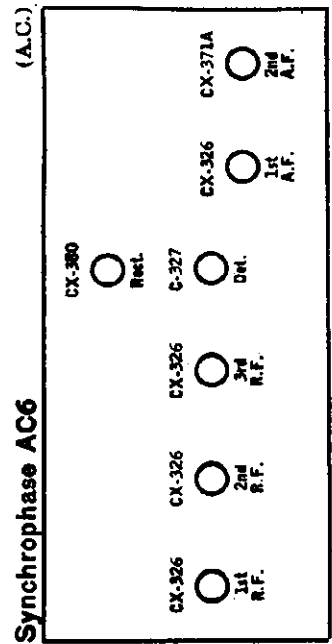
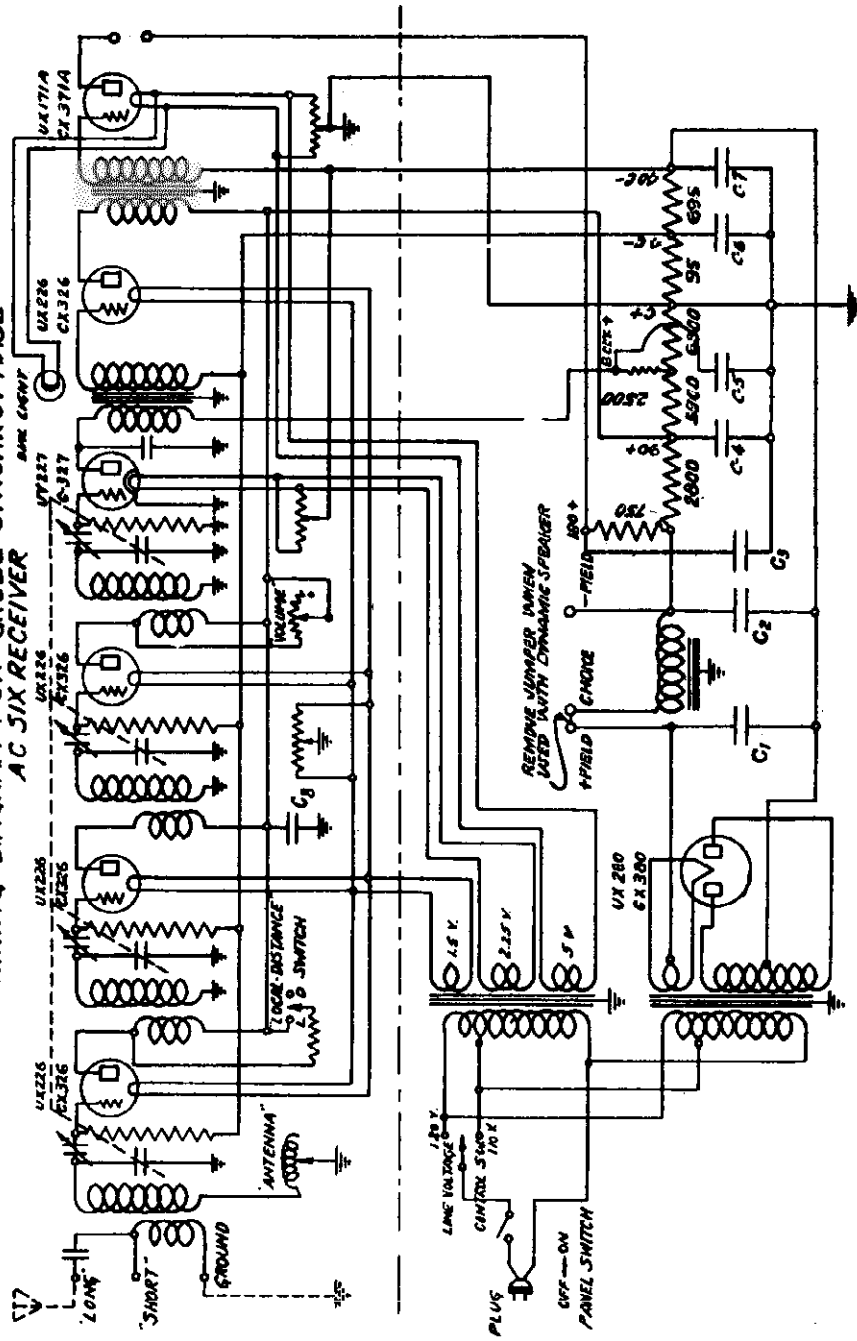
A.C. SIX RECEIVER, PUSH PULL AMPLIFIER TYPE 412
OUTPUT TRANS. TYPE 415 AND DYNAMIC SPEAKER TYPE 400

A.H.GREBE & CO., INC.
RICHMOND HILL, N.Y.



A. H. GREBE & CO., Inc. MODEL Synchrophase AC-6 Schematic

WIRING DIAGRAM FOR GREBE SYNCHROPHASE AC SIX RECEIVER

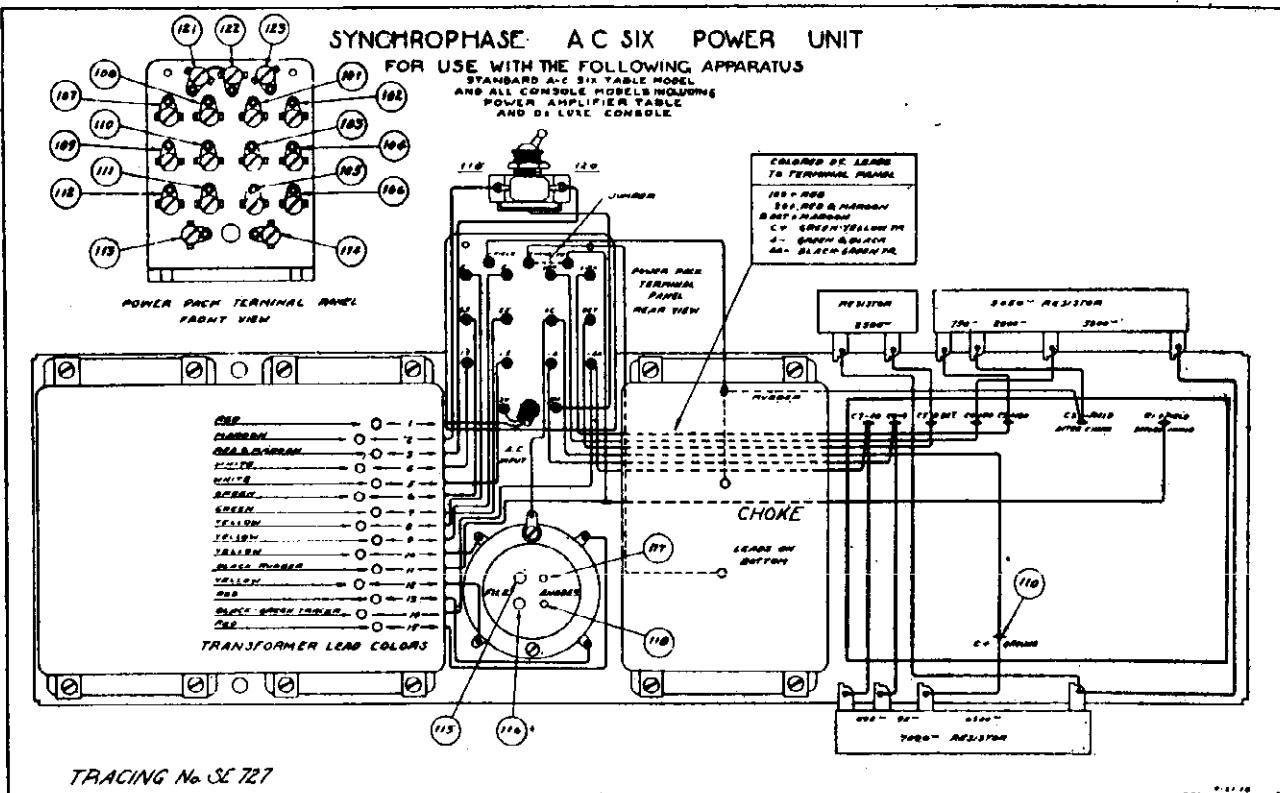
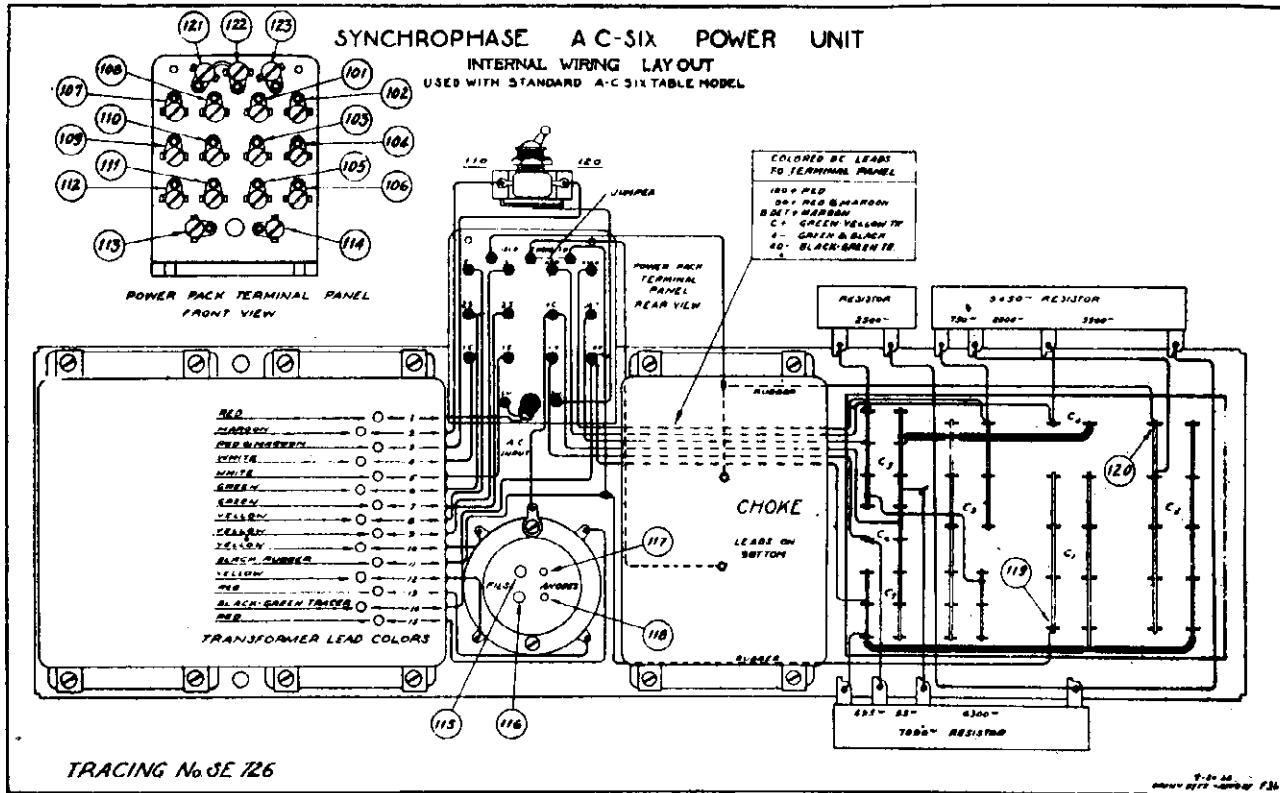


GREBE—Type A. C. 6
Line Voltage 120—Set on 120 Volt Tap

TYPE OF TUBE	POSITION IN SET	TAP ON		TAP IN TUBES		CATHODE NORMAL PLATE		PLATE		SCREEN	
		1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND	1ST	2ND
280	1st AF	1.5	1.5	1.5	1.5	7.5	7.5	0	0	0	0
326	2nd AF	1.5	1.5	1.5	1.5	7.5	7.5	0	0	0	0
326	3rd AF	1.5	1.5	1.5	1.5	7.5	7.5	0	0	0	0
326	1st AF	1.5	1.5	1.5	1.5	7.5	7.5	0	0	0	0
326	2nd AF	1.5	1.5	1.5	1.5	7.5	7.5	0	0	0	0
326	3rd AF	1.5	1.5	1.5	1.5	7.5	7.5	0	0	0	0
371A	2nd AF	1.5	1.5	1.5	1.5	7.5	7.5	0	0	0	0
300	Rect.	5.5	5.5	5.5	5.5	40.0	40.0	5.0	5.0	5.0	5.0

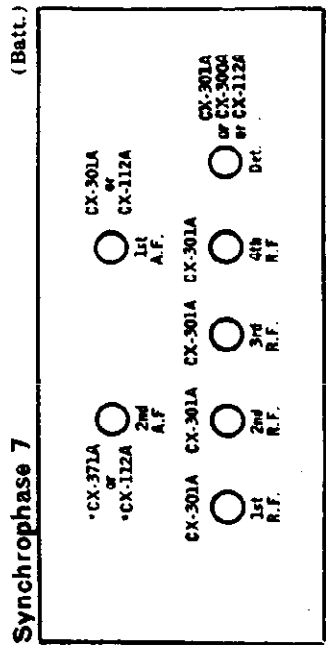
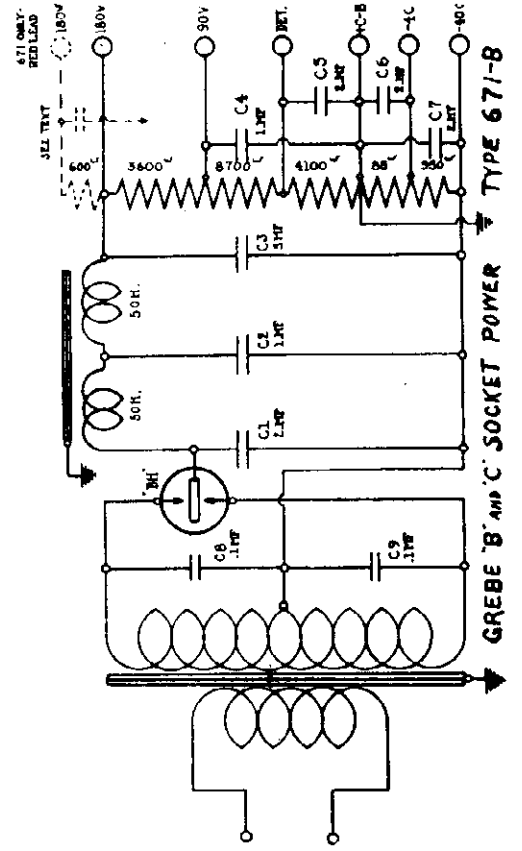
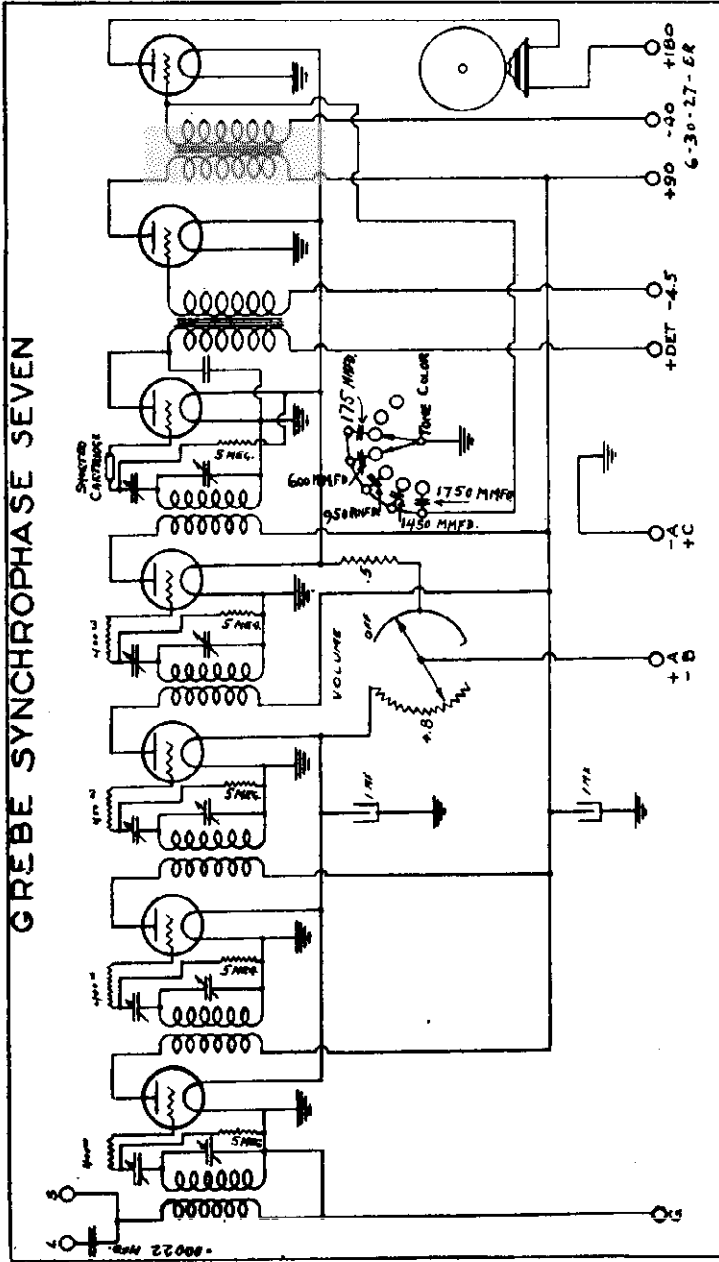
**MODEL Synchrophase AC-6
Power Unit
Chassis
Two Types**

A. H. GREBE & CO., Inc.



A. H. GREBE & CO.

MODEL Synchrophase 7
 Battery Type
 Socket Power Unit 671-B



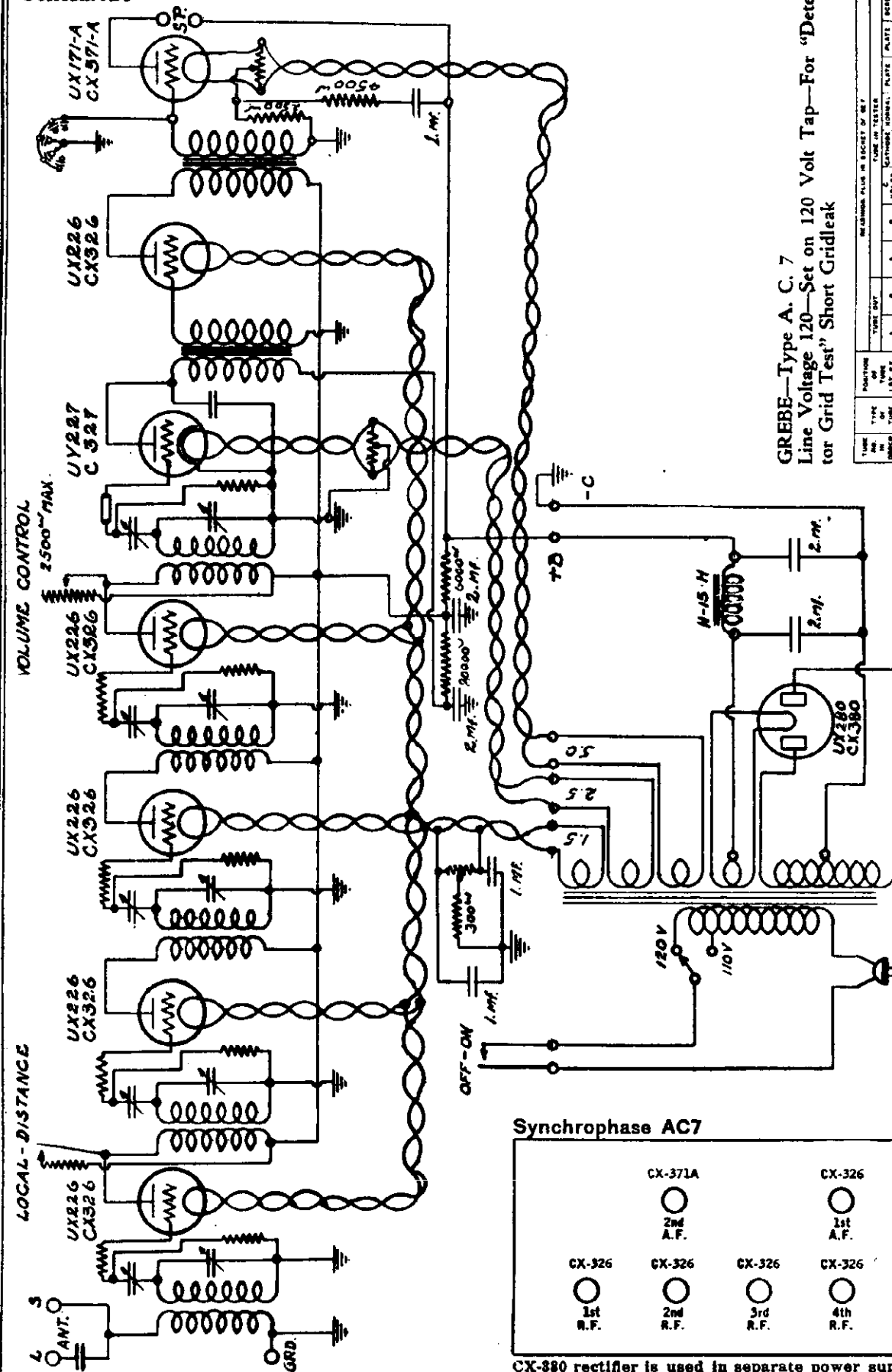
GREBE SYNCHROPHASE SEVEN

GREBE 'B' AND 'C' SOCKET POWER

Synchrophase 7

MODEL Synchrophase 7
Schematic

A. H. GREBE & CO.

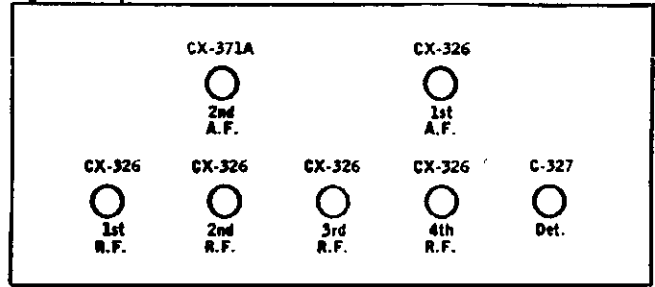


GREBE—Type A. C. 7
Line Voltage 120—Set on 120 Volt Tap—For "Detector Grid Test" Short Gridleak

TUBE NO.	TUBE TYPE	FUNCTION	TUNE DIAL		TUNE IN TESTER		TUNING RANGE (K.C.)	TUNING RANGE (M.C.)
			MIN.	MAX.	MIN.	MAX.		
1	6X371A	ANT. & 1st R.F.	1.5	1.5	1.5	1.5	100	0
2	6X326	2nd R.F.	1.5	1.5	1.5	1.5	100	0
3	6X326	3rd R.F.	1.5	1.5	1.5	1.5	100	0
4	6X326	4th R.F.	1.5	1.5	1.5	1.5	100	0
5	6X227	DETECTOR	1.5	1.5	1.5	1.5	100	0
6	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
7	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
8	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
9	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
10	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
11	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
12	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
13	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
14	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
15	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
16	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
17	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
18	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
19	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0
20	6X280	AMPLIFIER	1.5	1.5	1.5	1.5	100	0

SYNCHROPHASE SEVEN A. C. RECEIVER

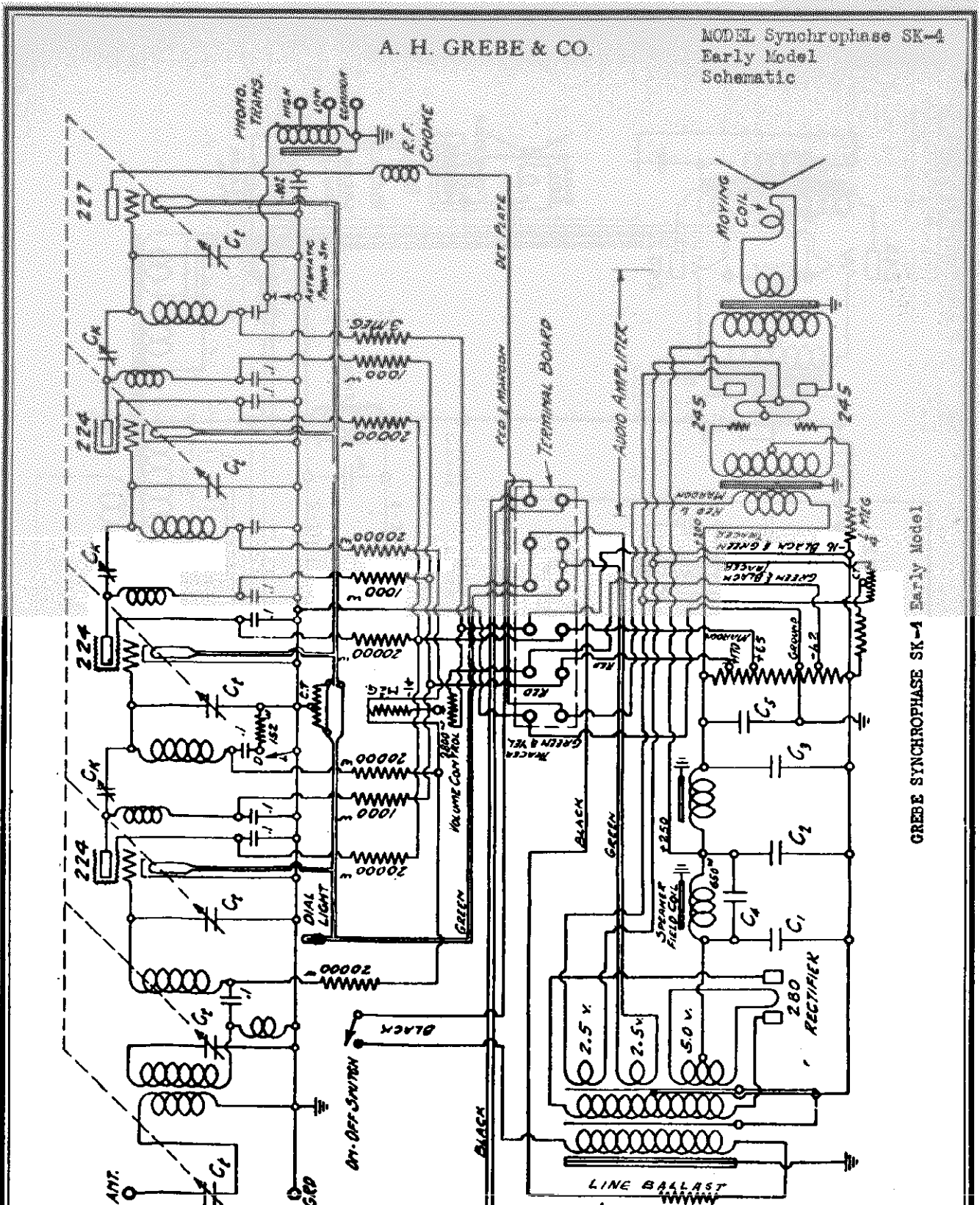
Synchrophase AC7



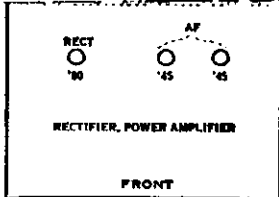
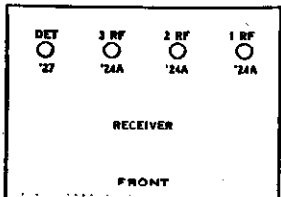
CX-380 rectifier is used in separate power supply unit.

A. H. GREBE & CO.

MODEL Synchrophase SK-4
Early Model
Schematic



Models Super-synchrophase SK4,
21950, 270, 285, 450, 265



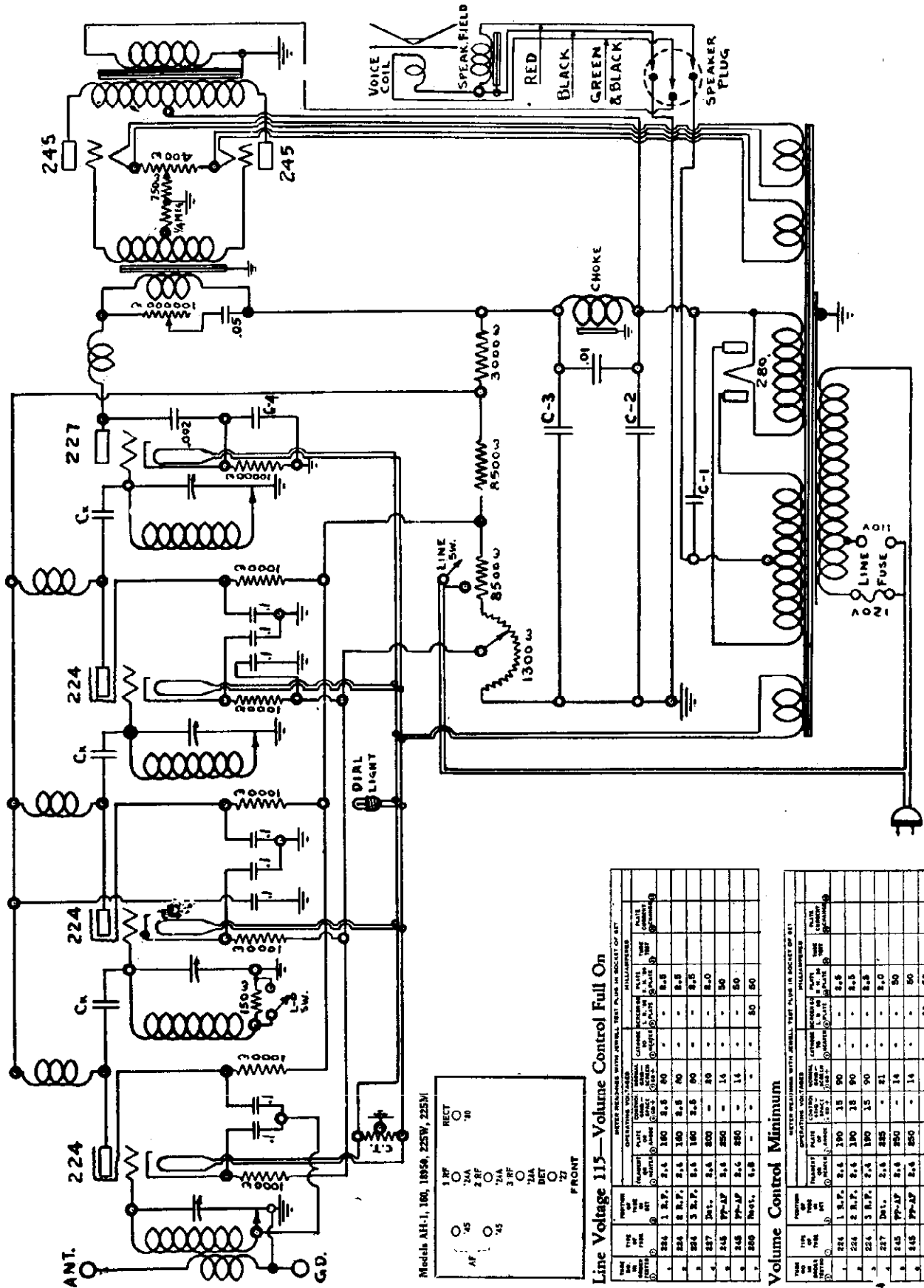
Line Voltage 120—Volume Control Position Min.*
Note: x Resistors in circuit prevent readings.
Note: *224 plate current read with volume control at maximum position.

Tube No.	Pin	Position	TUBE DATA										TUBE IN TEST			
			W	H	A	B	C	D	E	F	G	H	I	J	K	L
224	1st RF	2,7	195	2,35	100	16	0	2	2	57						
224	2nd RF	8,7	195	2,35	100	16	0	2	2	57						
224	3rd RF	8,7	195	2,35	100	16	0	2	2	57						
227	Det.	2,7	195	2,35	210	x	0	0	0	0						
245	1st AF	2,7	270	2,35	245	x	30	34	4							
245	2nd AF	2,7	270	2,35	245	x	30	34	4							
280	Rect.	7	5,2			x	90									

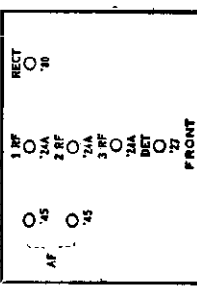
GREBE SYNCHROPHASE SK-4 Early Model

MODEL AH-1
Schematic

A. H. GREBE & CO.



Models AH-1, 100, 185S, 225W, 225VI



Line Voltage 115—Volume Control Full On

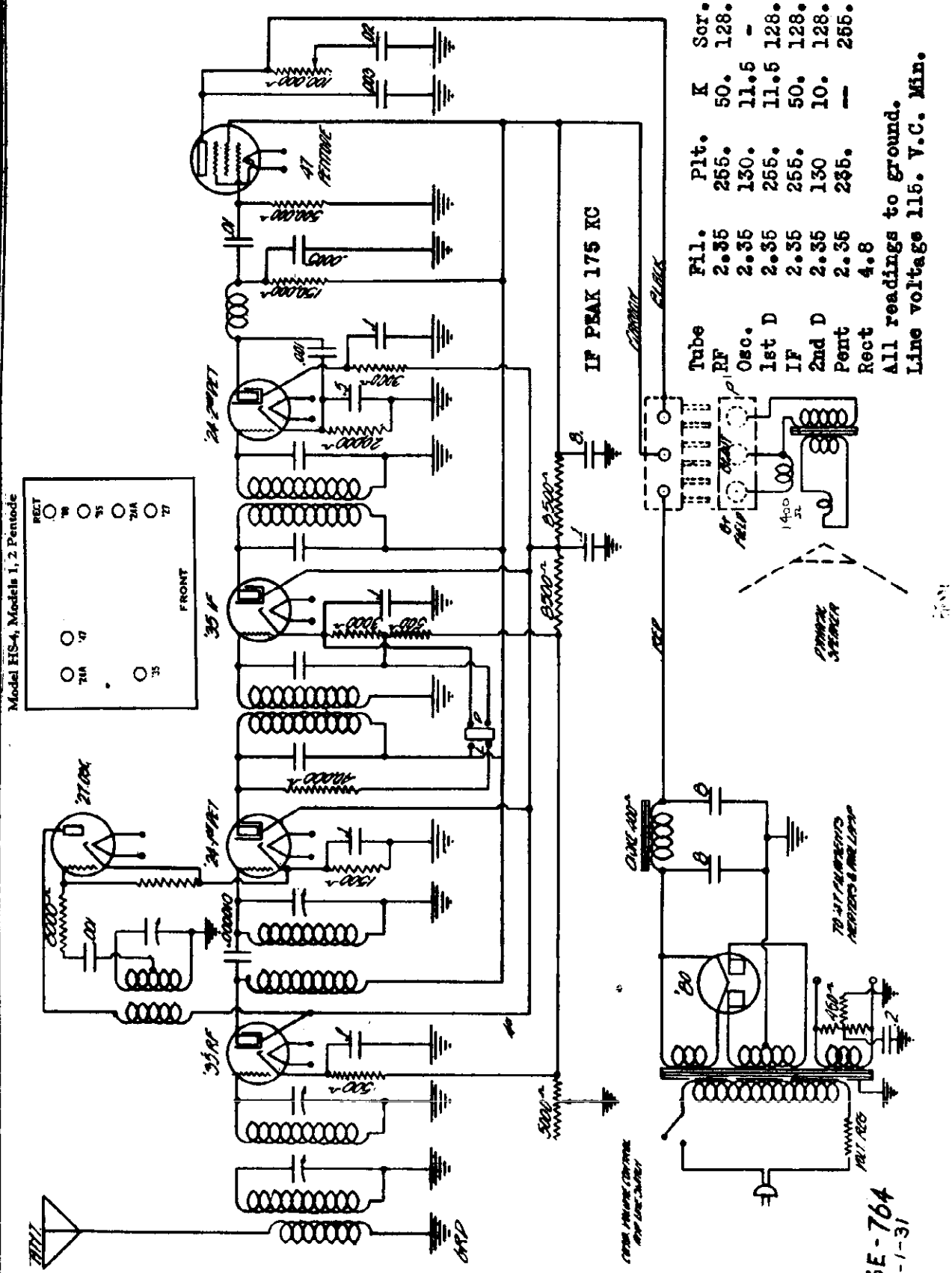
TYPE OF SET	TUBE NO.	TUBE	OPERATING VOL./WATTS				MILLIAMPERES		
			PLATE	SCREEN	GRID	CATHODE	PLATE	GRID	
1	224	1	2.5	1.6	1.5	80	-	8.5	80
	224	2	2.5	1.6	1.5	80	-	8.5	80
	224	3	2.5	1.6	1.5	80	-	8.5	80
	227	201	2.5	1.6	1.5	80	-	8.5	80
2	245	PP-1P	2.5	1.6	1.5	80	-	8.5	80
	245	PP-1P	2.5	1.6	1.5	80	-	8.5	80
3	280	Rect.	4.5	-	-	-	-	50	50
	280	Rect.	4.5	-	-	-	-	50	50

Volume Control Minimum

TYPE OF SET	TUBE NO.	TUBE	OPERATING VOL./WATTS				MILLIAMPERES		
			PLATE	SCREEN	GRID	CATHODE	PLATE	GRID	
1	224	1	1.0	1.5	1.5	90	-	2.5	90
	224	2	1.0	1.5	1.5	90	-	2.5	90
	224	3	1.0	1.5	1.5	90	-	2.5	90
	227	201	1.0	1.5	1.5	90	-	2.5	90
2	245	PP-1P	1.0	1.5	1.5	90	-	2.5	90
	245	PP-1P	1.0	1.5	1.5	90	-	2.5	90
3	280	Rect.	1.5	-	-	-	-	50	50
	280	Rect.	1.5	-	-	-	-	50	50

A. H. GREBE & CO.

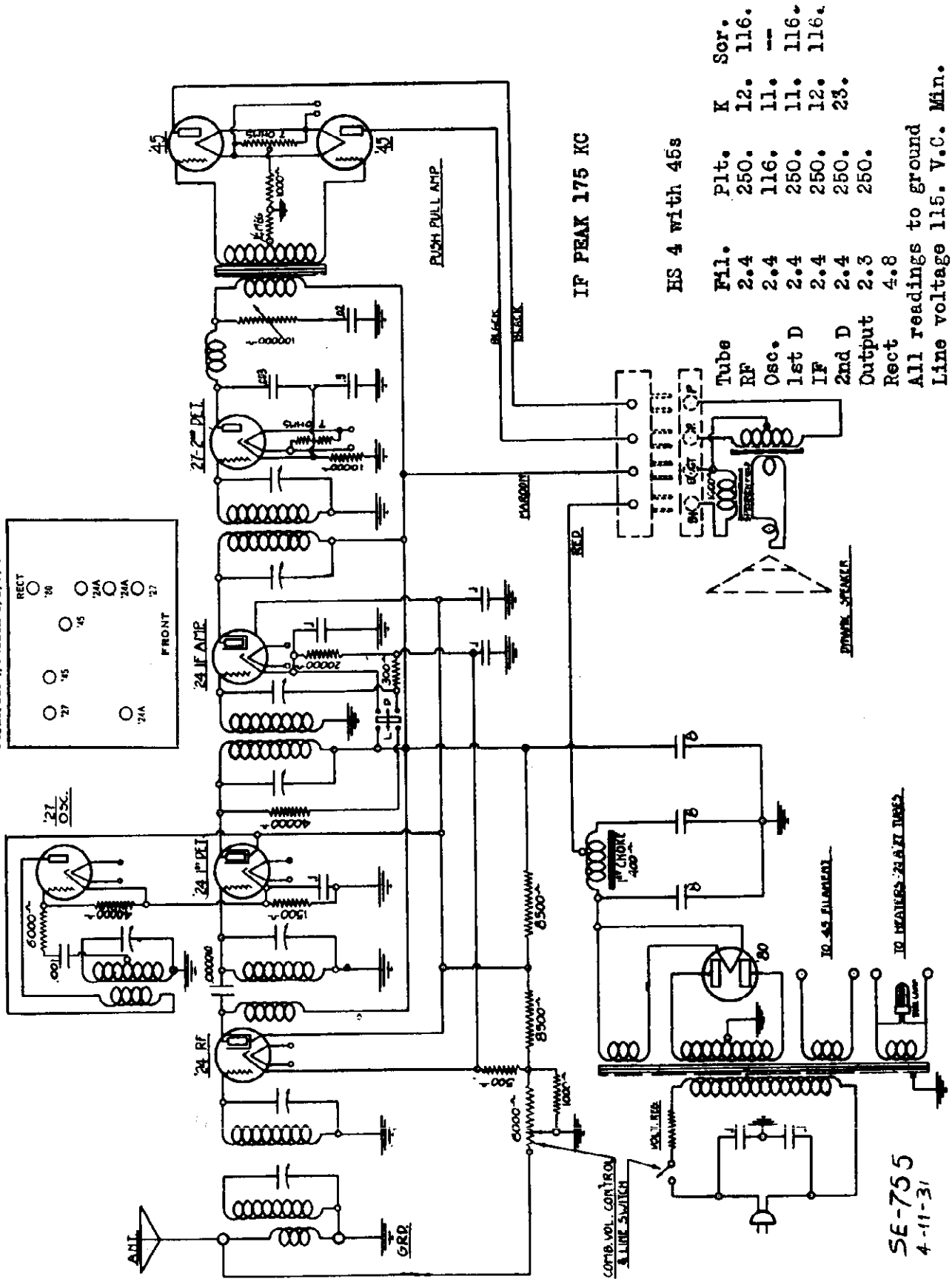
MODEL HS-4
1 Pentode



SE-764
6-1-31

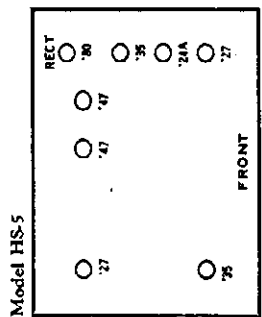
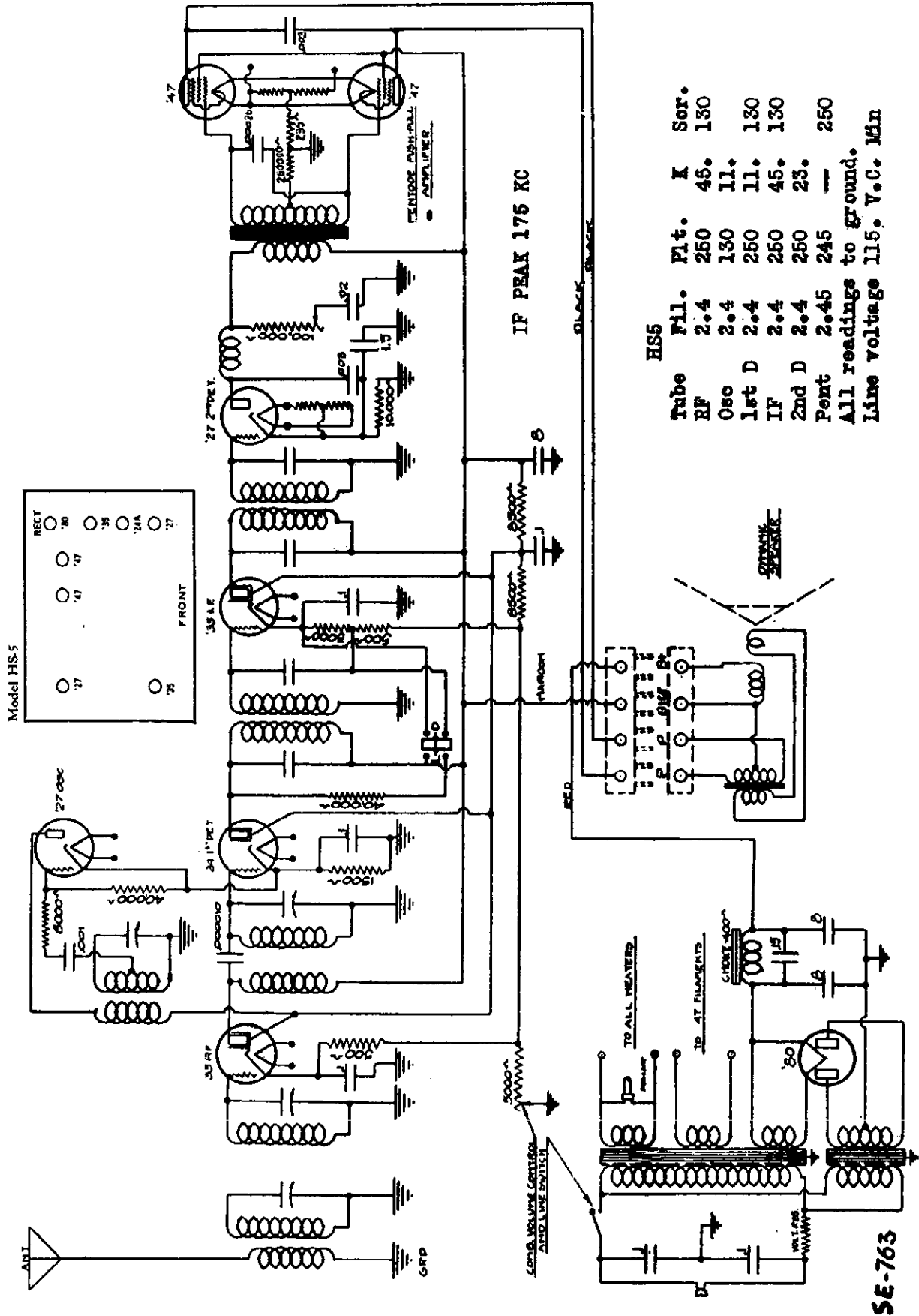
MODEL HS-4
With 45 P.P.

A. H. GREBE & CO.



MODEL HS-5

A. H. GREBE & CO.



HS5		
Tube	Fit.	K Ser.
RF	2.4	45. 130
Osc	2.4	11. 130
1st D	2.4	11. 130
IF	2.4	45. 130
2nd D	2.4	23. 250
Pent	2.45	245

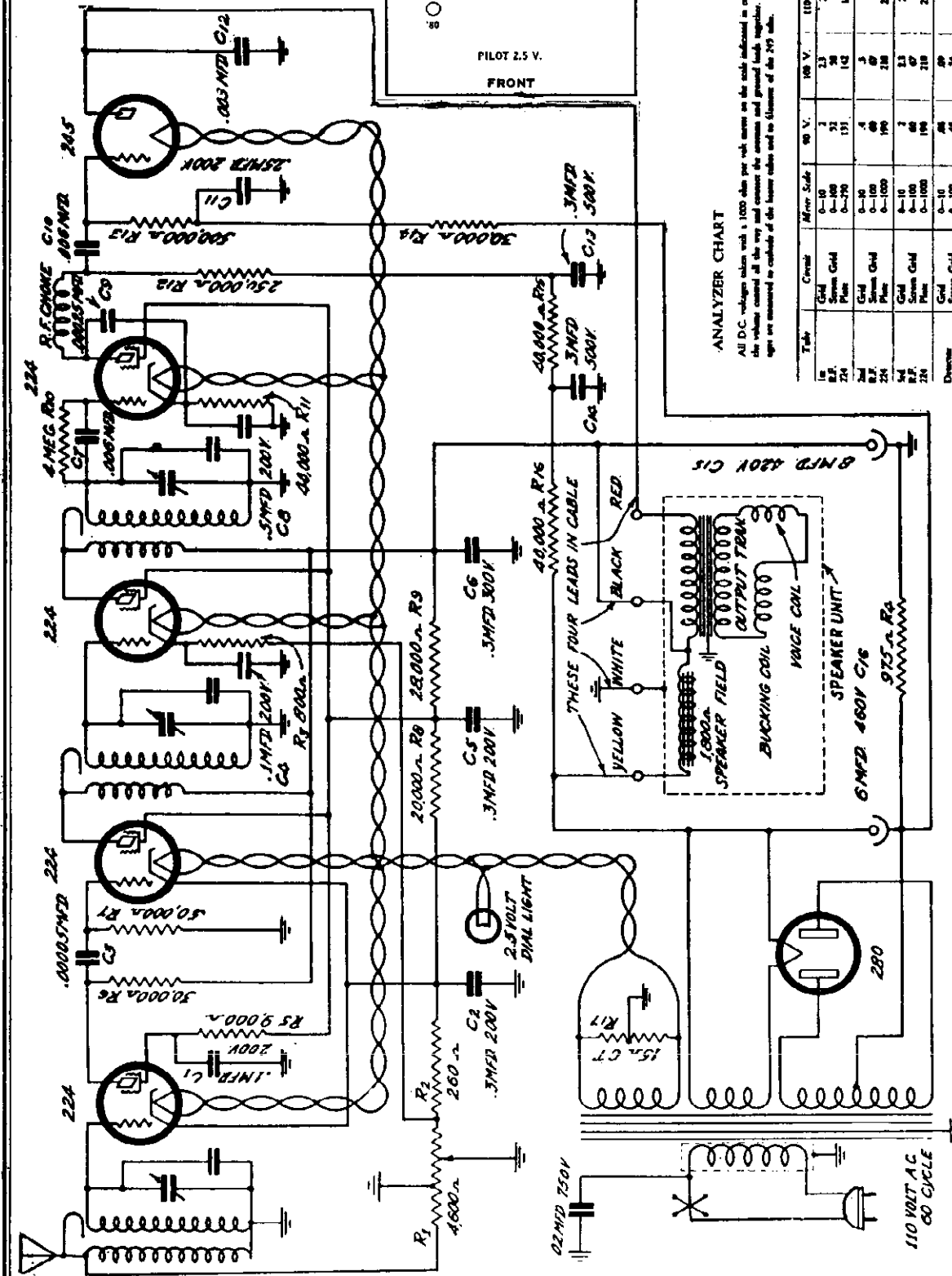
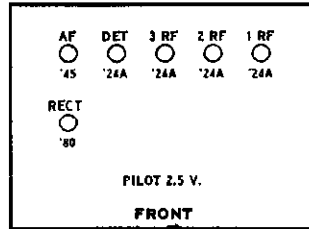
All readings to ground.
Line voltage 115. V.C. Min

SE-763

GULBRANSEN CO.

MODEL 60, 63
Schematic
Voltage

Model 63-33 (1930)



ANALYZER CHART

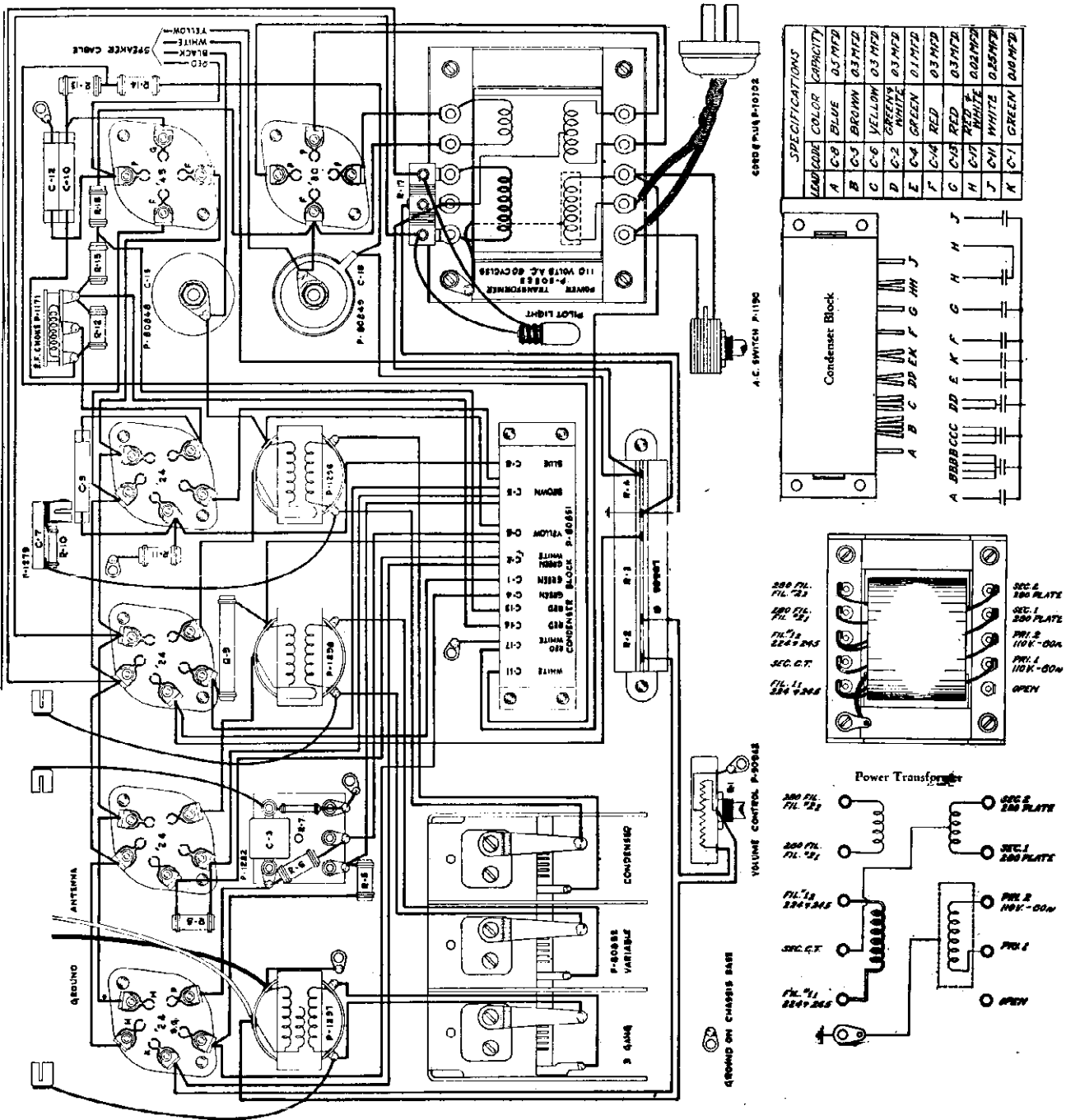
All D.C. voltages taken with a 1000 ohm per volt meter on the scale indicated in column headed "Meter Scale." Turn on the volume control all the way and connect the antenna and ground leads together. The grid, plate, and screen grid voltages are measured in outside of the lower tubes and in filament of the 2A5 tube.

Tube	Control	Meter Scale	90 V.	100 V.	110 V.	120 V.	128 V.	138 V.
1B	Grid	0-10	3	2.3	2.6	2.8	3	3.3
1B	Screen	0-100	31	38	43	48	51	55
2A5	Plate	0-250	131	142	151	160	170	178
2A5	Grid	0-10	4	5	5	5	5	5
2A5	Screen	0-100	48	49	49	49	49	49
2A5	Plate	0-1000	190	218	236	256	276	296
5A4	Grid	0-10	2	2.3	2.6	2.8	3	3.3
5A4	Screen	0-100	46	47	47	47	47	47
5A4	Plate	0-1000	198	218	236	256	276	296
Detector	Grid	0-10	48	49	49	49	49	49
Detector	Screen	0-100	48	48	48	48	48	48
Detector	Plate	0-1000	202	222	242	262	282	302
280	Plate	0-100	49	49	49	49	49	49
280	Control	0-100	49	49	49	49	49	49
280	Filament	0-1000	285	296	310	314	314	314
280	Ground	0-1000	285	296	310	314	314	314

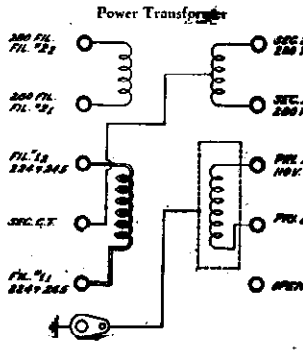
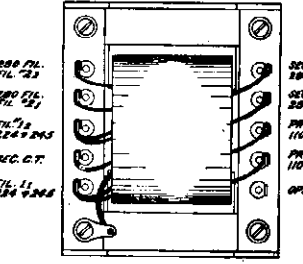
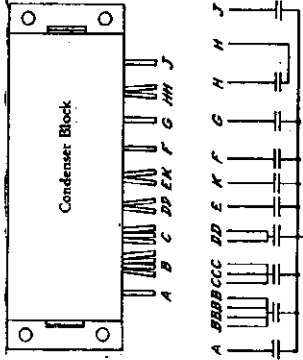
MODEL 60163 SCHEMATIC WIRING DIAGRAM

MODEL 60, 63
Chassis

GULBRANSEN CO.



SPECIFICATIONS	
LAND CODE	CAPACITY
A	0.5 MFD
B	0.5 MFD
C	0.5 MFD
D	0.5 MFD
E	0.5 MFD
F	0.5 MFD
G	0.5 MFD
H	0.5 MFD
J	0.5 MFD
K	0.5 MFD



COND. P-1190

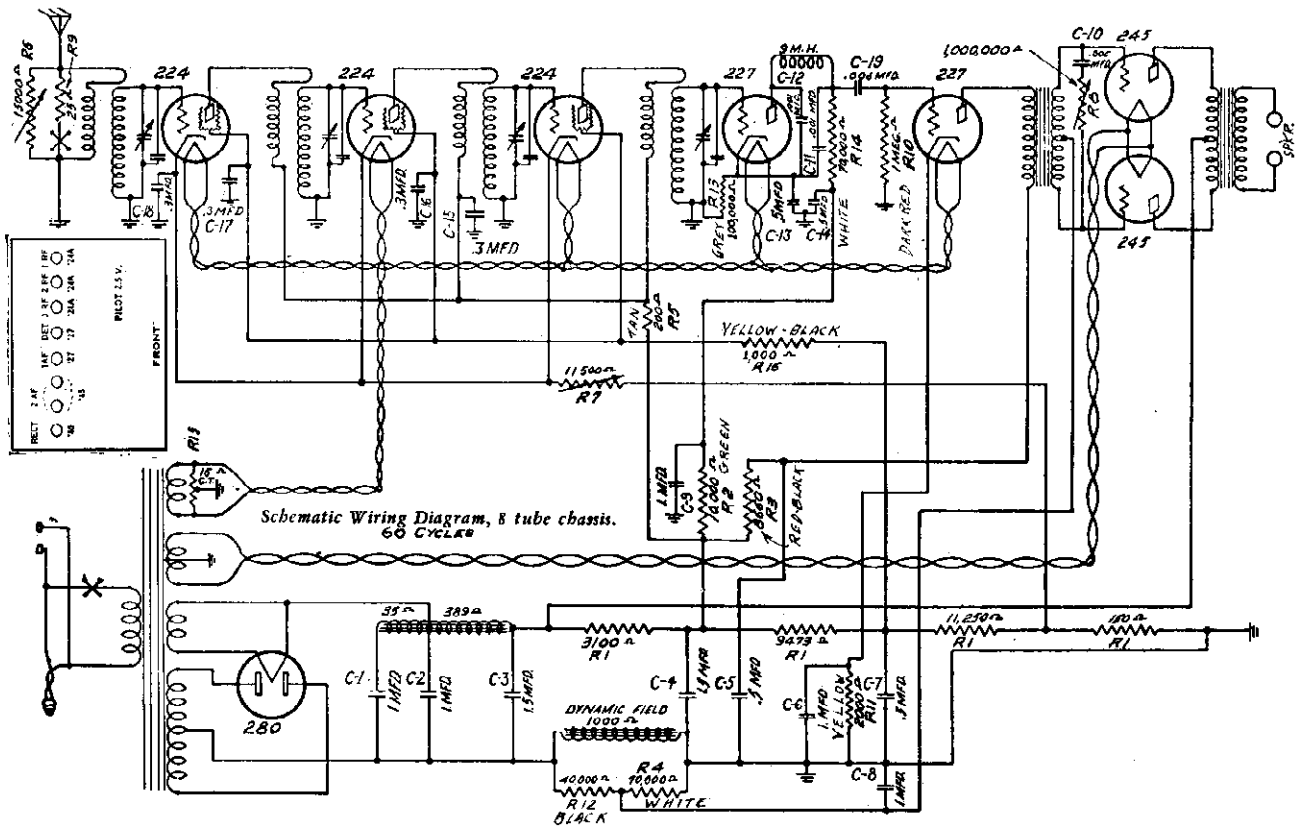
A.C. SWITCH P-1190

VOLUME CONTROL P-2084B

GROUND ON CHASSIS BASE

GULBRANSEN CO.

MODEL 160, 161
60 Cycles
Schematic-Data



CAPACITY	
CODE	60 CYCLE 25 CYCLE
A	1.0 MF.C2
B	1.0 MF.C1
C	1.5 MF.C3
D	1.0 MF.C9
E	1.0 MF.C6
F	0.5 MF.C7
G	1.0 MF.C8
H	0.5 MF.C5
K	1.5 MF.C4
X	COMMON
Y	COMMON

Filter Condenser (60 and 25 cycle receivers).

FIXED CONDENSERS

Condensers C1 to C9 inclusive are in the filter block. C1, C2, C3, C4, and C7 are in the main filter circuits. C5 bypasses R3, which is the 8,660 ohm resistor in the first audio plate circuit. C6 by-passes R11, the cathode bias resistor on the first audio stage. C8 by-passes the grid bias on the 245 tubes, (obtained through R4 and R12) and C9 bypasses the 10,000 ohm resistor R2 in the detector plate circuit.

C10 and C19 are located on the resistor-condenser terminal strip (See Fig. 4) and are both .006 mfd. moulded condensers. C10 is in the tone control circuit, while C19 is the coupling condenser in the resistance coupled amplifier.

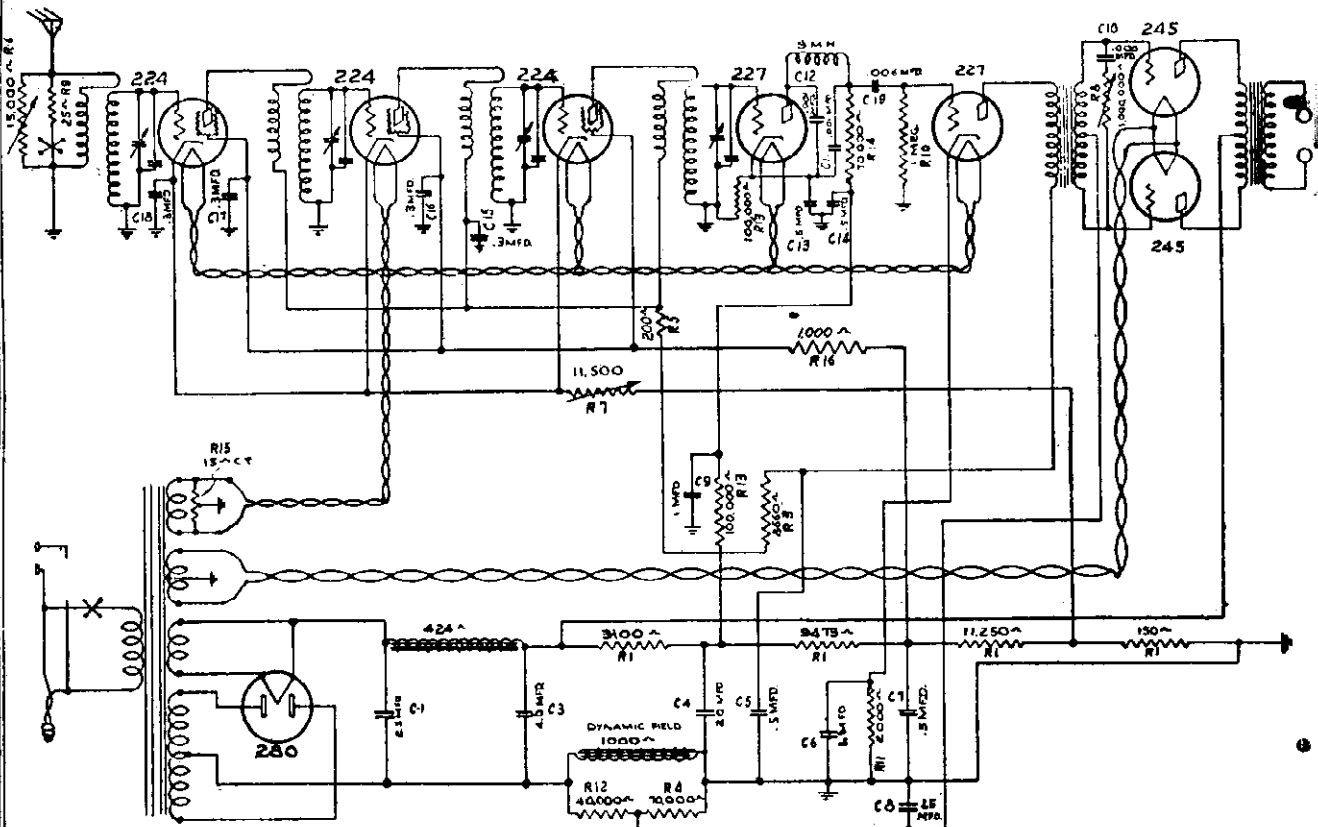
C11 and C12 are .001 mfd. moulded condensers, and are used in the detector plate circuit filter. C13 and C14 are the two units in the dual 1/2 mfd. by-pass condenser.

C15, C16 and C18 are located in the triple 3 mfd. condenser case. C17 is a single .3 mfd. condenser, and is mounted alongside of the triple 3 mfd. condenser case.

Code Fig. 1	Stock No.	Capacity
C1 to C9 inclusive	80818	9 Mfds. total. Filter block.
C10 and C19	80822	.006 Mfd. White paint spot.
C11 and C12	80821	.001 Mfd. Grey paint spot.
C13 and C14	80826	Dual .5 Mfd. Metal case.
C15, C16, C18	80817	Triple 3 Mfd. Metal case.
C17	80820	.3 Mfd. Metal case.

GULBRANSEN CO.

MODEL 160, 161
25 Cycles
Schematic
Voltage



Schematic Wiring Diagram, 25 Cycle Model.

The filter system of the 25-cycle chassis shown above is somewhat different than that in the 60-cycle chassis, and the detector plate circuit resistor has been changed from 10,000 ohms to 100,000 ohms.

All servicing data, with the exception of the tube voltages, is the same for both the 25 and 60-cycle chassis.

APPROXIMATE OPERATING VOLTAGES

A. C. LINE VOLTAGE—117. VOLUME CONTROL FULL ON *

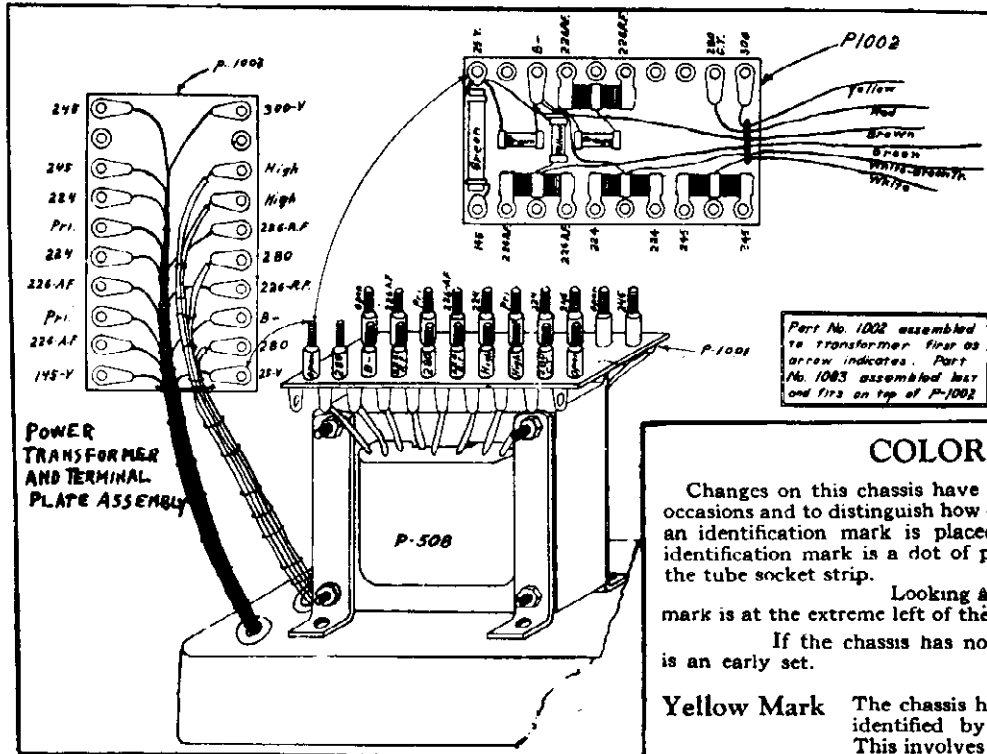
Tube	Position	Filament	Plate	Screen	Grid*	Cathode
224	1st R.F.	2.3	178	90	- 3.0*	3.0
224	2nd R.F.	2.3	178	90	- 3.0*	3.0
224	3rd R.F.	2.3	178	90	- 3.0*	3.0
227	Detector	2.3	100		-10.5*	10.5
227	1st Audio	2.3	130			9.0
245	2nd Audio	2.4	250		51.0	
245	2nd Audio	2.4	250		51.0	
280	Rectifier	4.7				

* Grid voltages on the 224 R.F. and 227 detector tubes are taken from grid to cathode and not from grid to ground. The grid voltage on the first audio tube is measured from cathode to ground.

GULBRANSEN CO.

MODEL 200, 291, 292
295, 9950

Voltage
Data



COLOR CODE

Changes on this chassis have been made on several different occasions and to distinguish how one chassis differs from another, an identification mark is placed on each one changed. This identification mark is a dot of paint found on the end rivet of the tube socket strip.

Looking At the chassis from the back the mark is at the extreme left of the 226 tube socket

If the chassis has no mark it is understood that it is an early set.

Yellow Mark The chassis having the first changes may be identified by the yellow indicating mark. This involves four changes.

1. A "dual volume control" in place of the single type. The new volume control is made in two sections, with five lugs. The section nearest the chassis, having two lugs, operates exactly the same as the single volume control. The section behind the first, having three lugs, is placed in the first audio circuit to reduce the audio amplification and operates in tandem with the antenna volume control.

2. An interchange of position of the two audio transformers. The re-arrangement of the audio transformers has not altered their connections in the circuit.

3. An addition of a "dual half microfarad condenser" and two carbon resistors in the "B" circuit of the detector and first audio tubes. The 40,000 ohm black resistor with one section of the dual condenser is placed in the detector circuit (224) and the 15,000 ohm blue resistor with the other section of the dual condenser is placed in the first audio circuit (226). You will note that the yellow and blue leads in the cable connecting to the terminal strip have been interchanged.

4. A change in the location of the grounding of No. 1 lug on the condenser block. This lug is now grounded to the condenser case with a short piece of bare wire.

Red Mark All chassis having a red mark on the rivet of the tube socket strip have all of the changes mentioned above and in addition, have a one-tenth microfarad condenser connected from ground to one side of the 110 volt line

A peculiarity that may be experienced by the addition of this condenser is a loud hum on every station tuned in only when the antenna wire coming from the set is connected to ground. This can be eliminated by reversing the plug in the socket. Also be sure your antenna is not grounded, either by some other set being connected to your aerial or through any other means.

Green Mark All Chassis with a green mark on the rivet of the tube socket strip contain the above changes and in addition have a change in the "combination phonograph switch" circuit. This changed circuit makes use of only the audio system of the set for phonograph reproduction, whereas the original circuit included the detector tube

The Phonograph, Radio, On, and Off positions of the switch are the same as in the early sets. To obtain maximum volume and best tone quality a pick-up coupling transformer should be used to match the pick-up used.

OPERATING VOLTAGES

Type of Tube	Position of Tube	TUBE IN TEST SET							Grid Test Ma.
		"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Screen Current	Cathode Volts	Normal Ma.	
226	1st R.F.	1.35	116	8.5				4.7	8.7
226	2nd R.F.	1.35	116	8.5				4.7	8.7
226	3rd R.F.	1.35	116	8.5				4.7	8.7
226	4th R.F.	1.35	116	8.5				4.7	8.7
224	Det.	2.2	80	1.3	15				
226	1st A.F.	1.4	110	1.0				4.0	5.0
245	2nd A.F.	2.2	232	42				27	32
245	2nd A.F.	2.2	232	42				27	32
280	Rect.	4.6							84

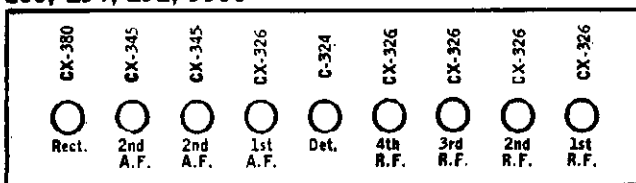
Line Voltage During Test—115 Volts

REVISION OF OPERATING VOLTAGES

Type of Tube	Position of Tube	TUBE IN TEST SET							Grid Test Ma.
		"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Screen Current	Cathode Volts	Normal Ma.	
224	Det.	2.2	75	1.3	15				
226	1st A.F.	1.4	77	1.0				4	5

200, 291, 292, 9950

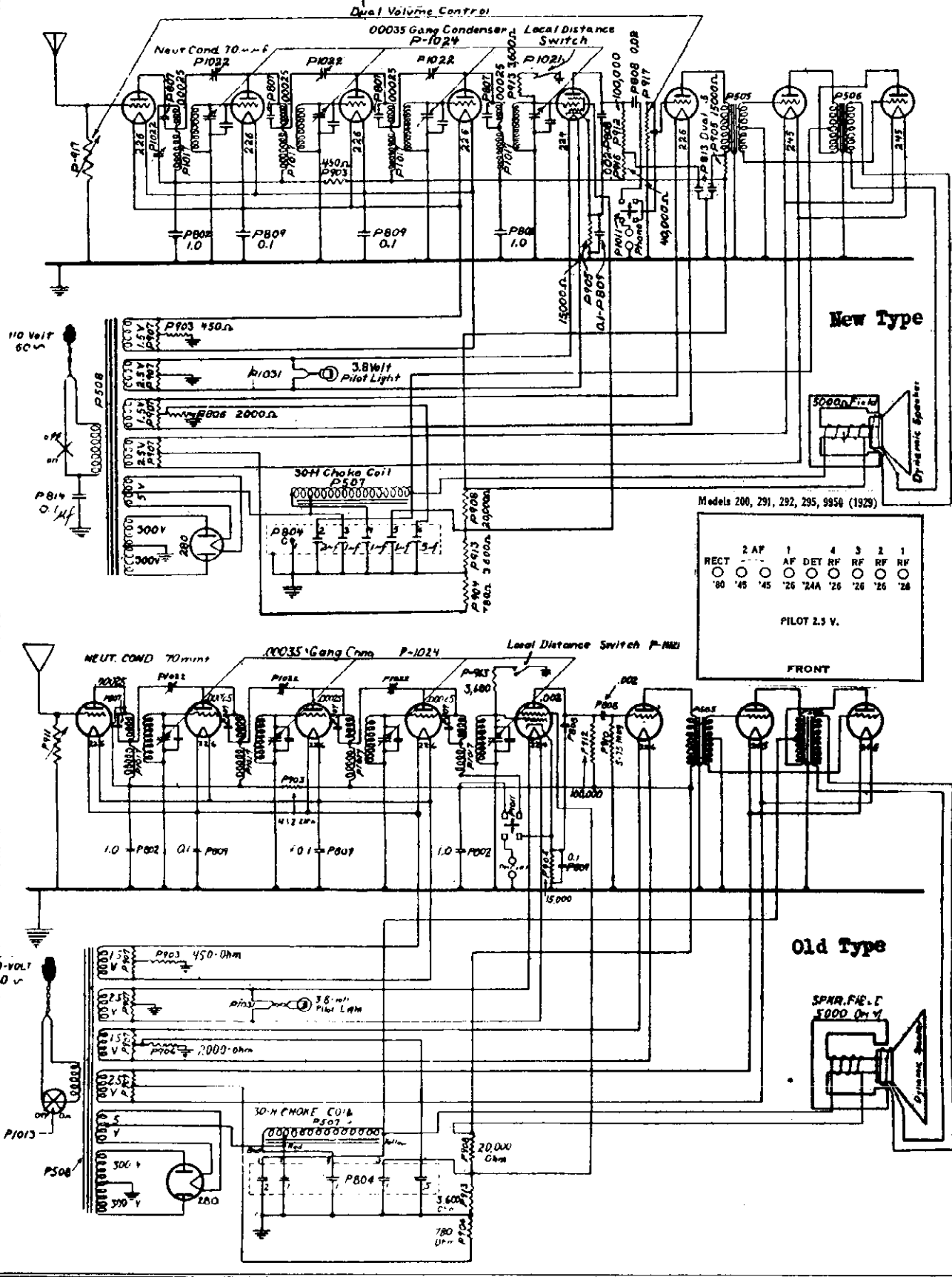
(A.C.)



MODEL 200, 291, 292,
295, 9950

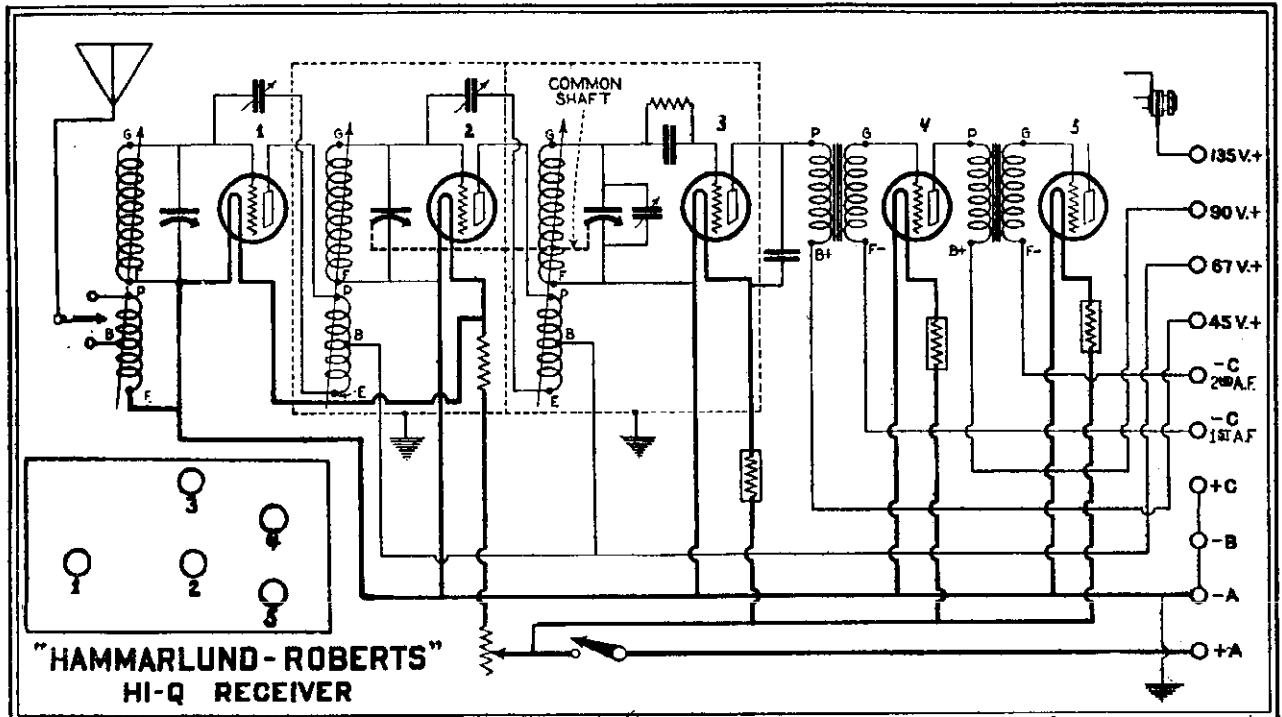
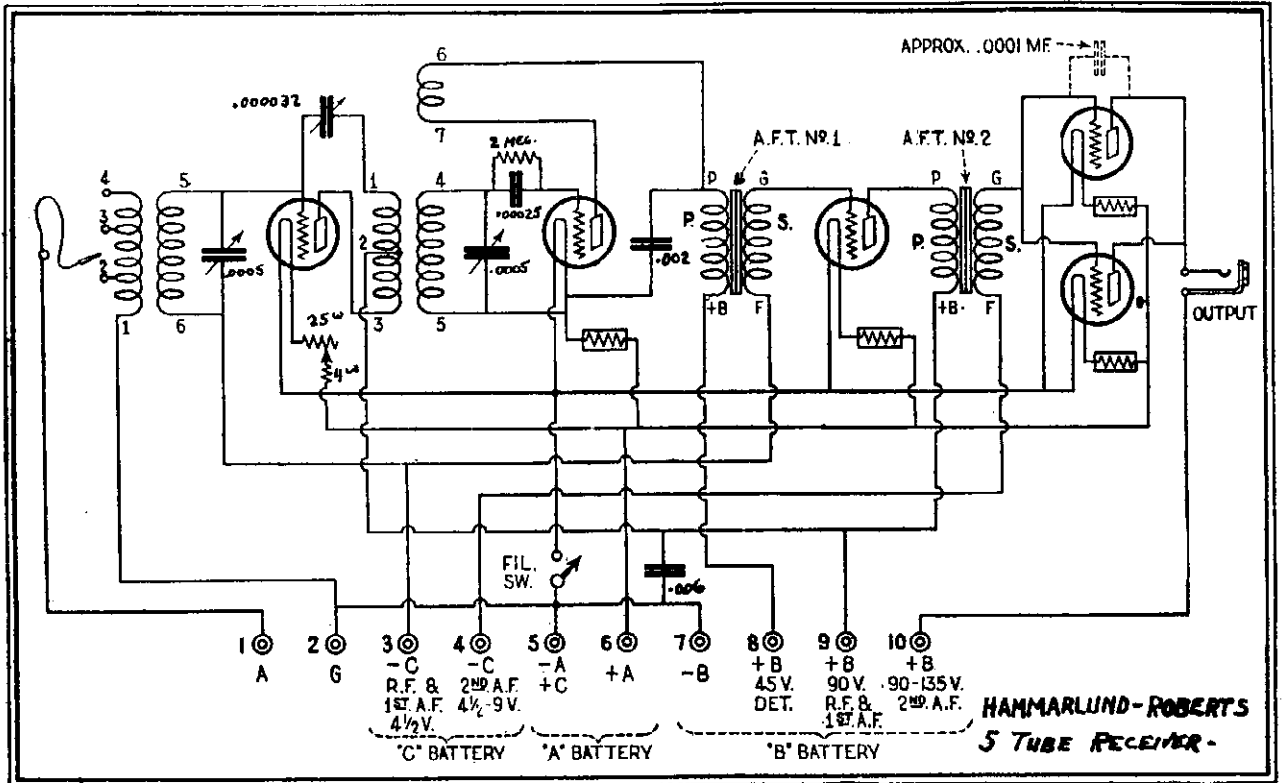
GULBRANSEN CO.

Schematic
Two Types



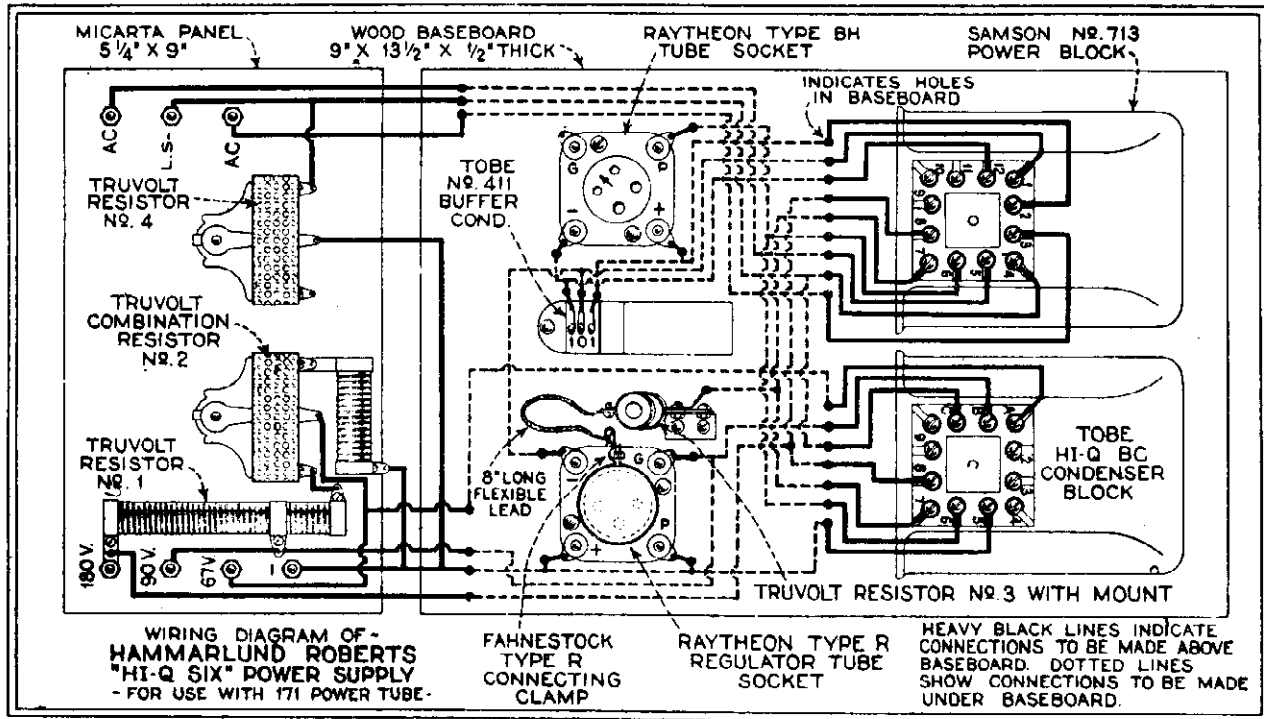
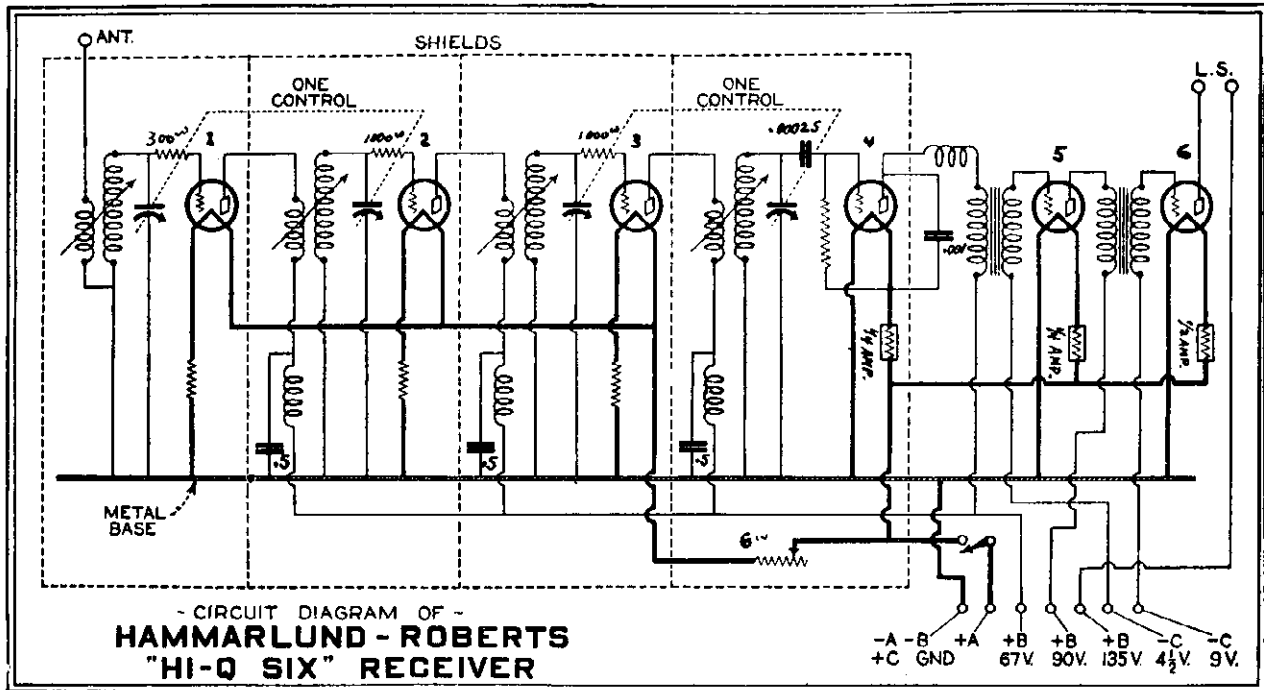
HAMMARLUND-ROBERTS, INC.

MODEL H-R 5 Tube
MODEL H-R "HI-Q"

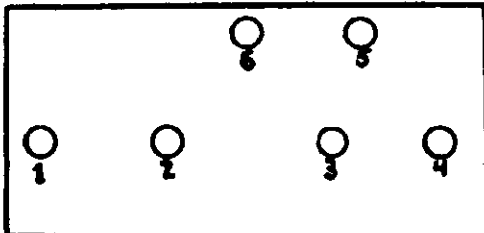


MODEL H-R "HI-Q" 6

HAMMARLUND-ROBERTS, INC.



SOCKET LAYOUT



Battery Cable

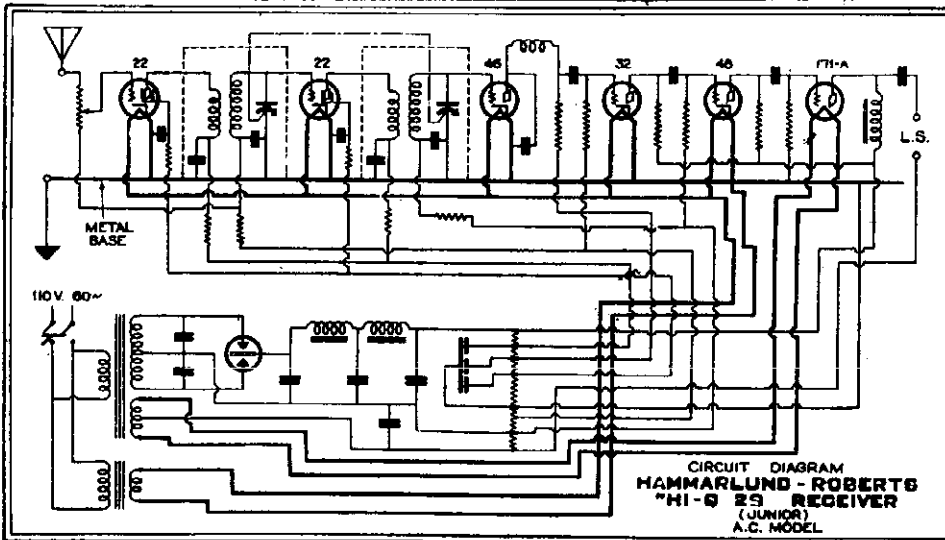
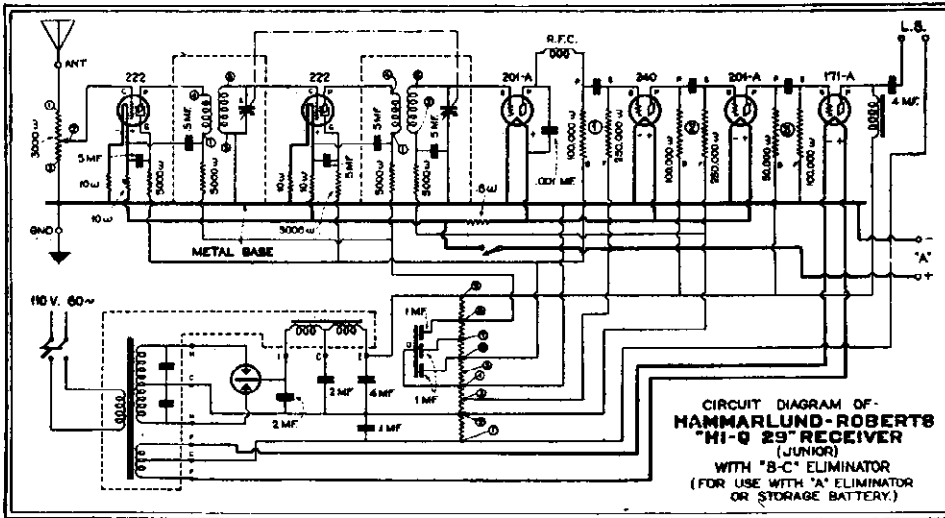
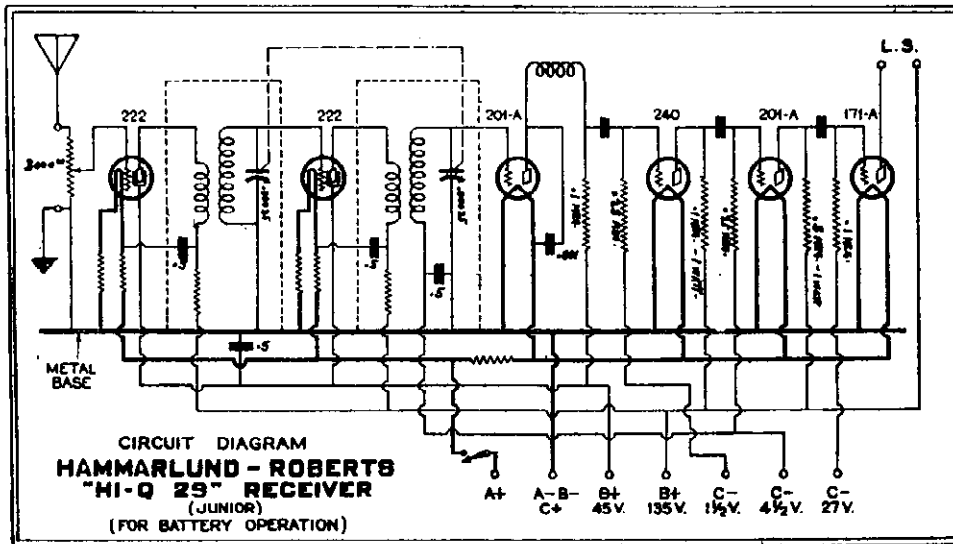
To B+	135	Gray
" B+	90	Yellow
" B+	67	Blue
" B-	C+	A- Black
" C-	4.5	Green
" C-	9.	Brown
" A+		Red

Power Cable

To B+	180	Gray
" B+	90	Yellow
" B+	67	Blue
" B-		Black
" C-		Green
" Fil. center tap		Brown

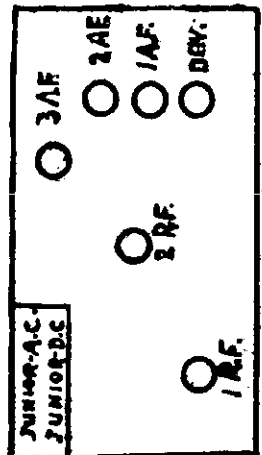
HAMMARLUND-ROBERTS, INC.

MODEL H-R "HI-Q" 29
Junior-Three Types



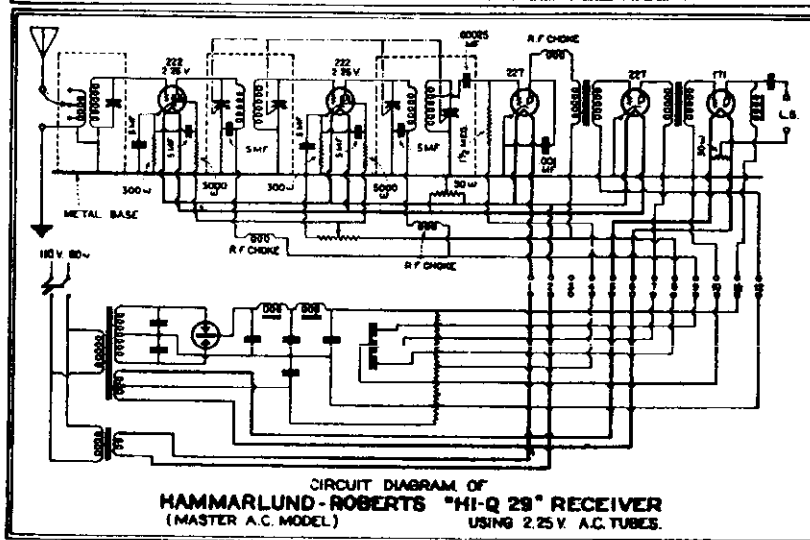
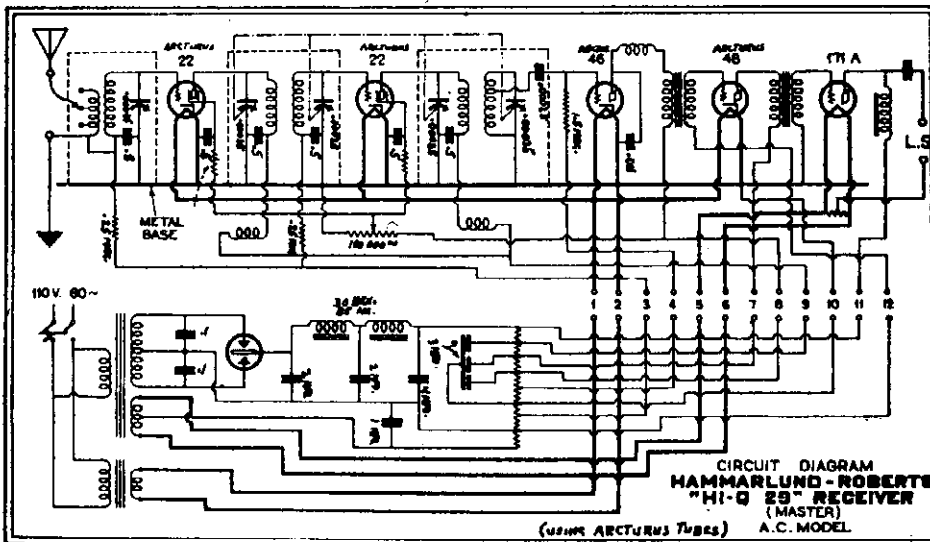
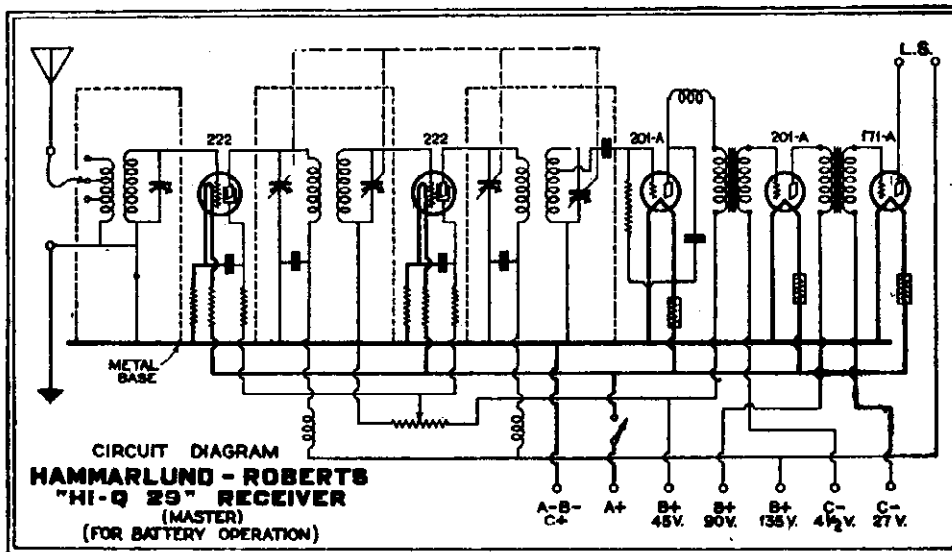
HI-Q 29 Jr. Battery cable.

To	B	+	135	-	Gray
"	B	+	45	-	Blue
"	B	-	A, C	+	Black
"	C	-	1.5		Yellow
"	C	-	4.5		Green
"	C	-	27.		Brown
"	A				Red

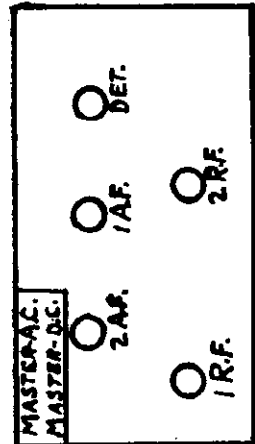


MODEL H-R "HI-Q" 29
Master-Three Types

HAMMARLUND-ROBERTS, INC.



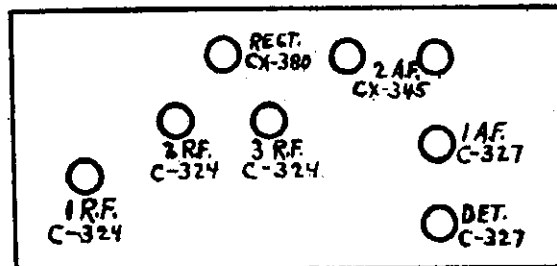
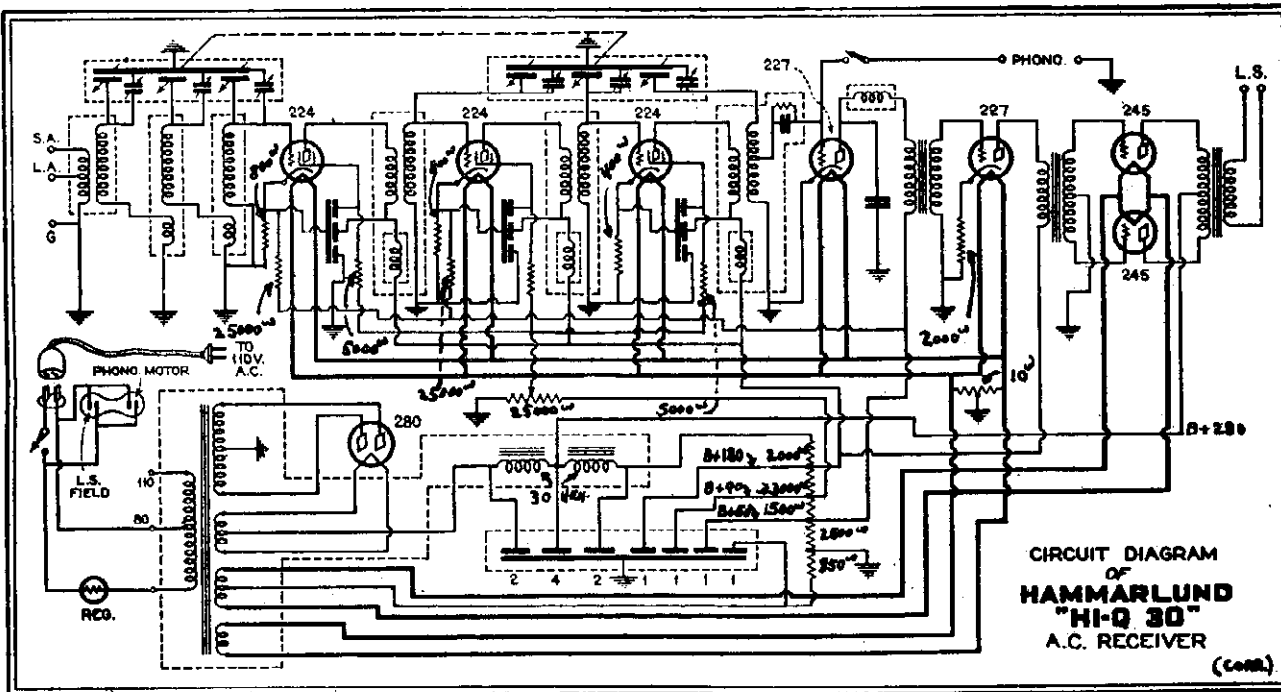
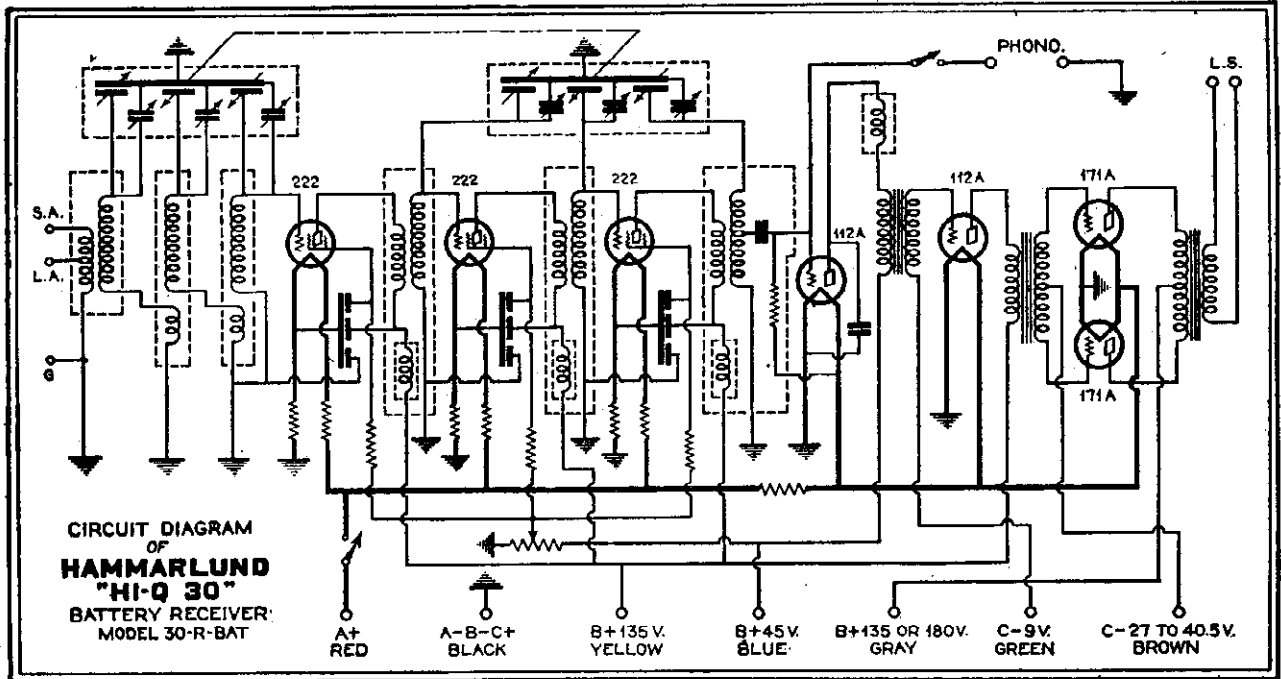
- MASTER A.C. - POWER CABLE**
- 1-RED } 15 V. A.C.
 - 2-BLACK } 15 V. A.C.
 - 3-RED-GREEN TRACER, C- } 1 VOLT
 - 4-BLACK-GREEN TRACER, C+4.5V } 5 V. A.C.
 - 5-RED-YELLOW TRACER } 5 V. A.C.
 - 6-BLACK-YELLOW TRACER } 5 V. A.C.
 - 7-YELLOW, B+ 90V.
 - 8-BLUE, B+ 45V.
 - 9-SLATE, B+ 135V.
 - 10-GREEN, B-C+
 - 11-BROWN, B+ 180V
 - 12-WHITE, C-4.5V



- Master D.C. - Batt. cable.**
- To B+ 135 Gray
 - " B+ 90 Yellow
 - " B+ 45 Blue
 - " B-, C+, A-, Black
 - " C-, 4.5 Green
 - " C-, 27. Brown
 - A+ Red

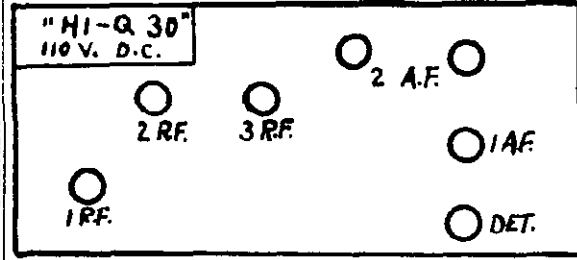
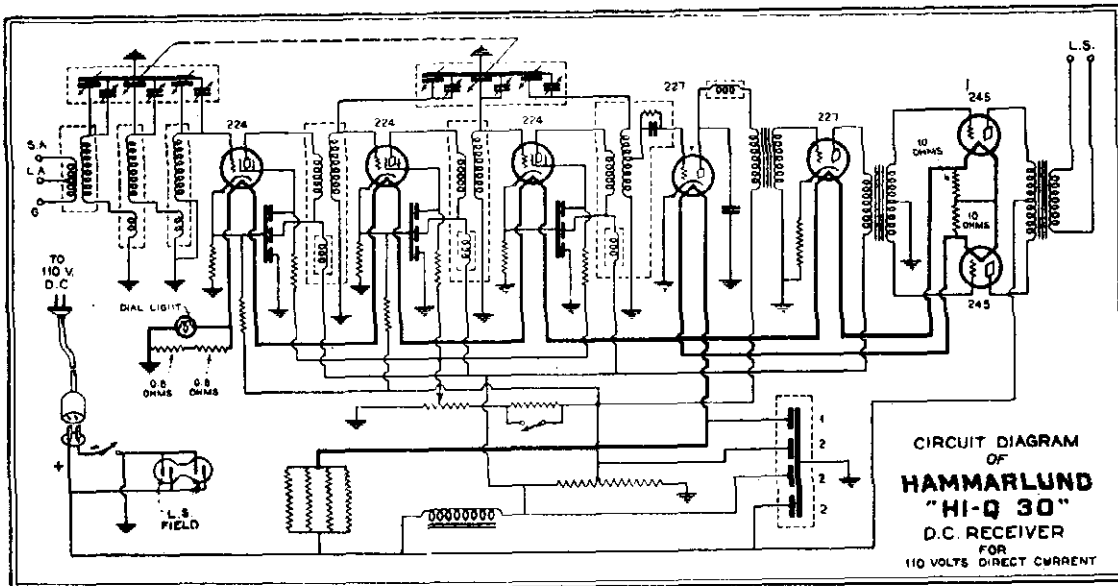
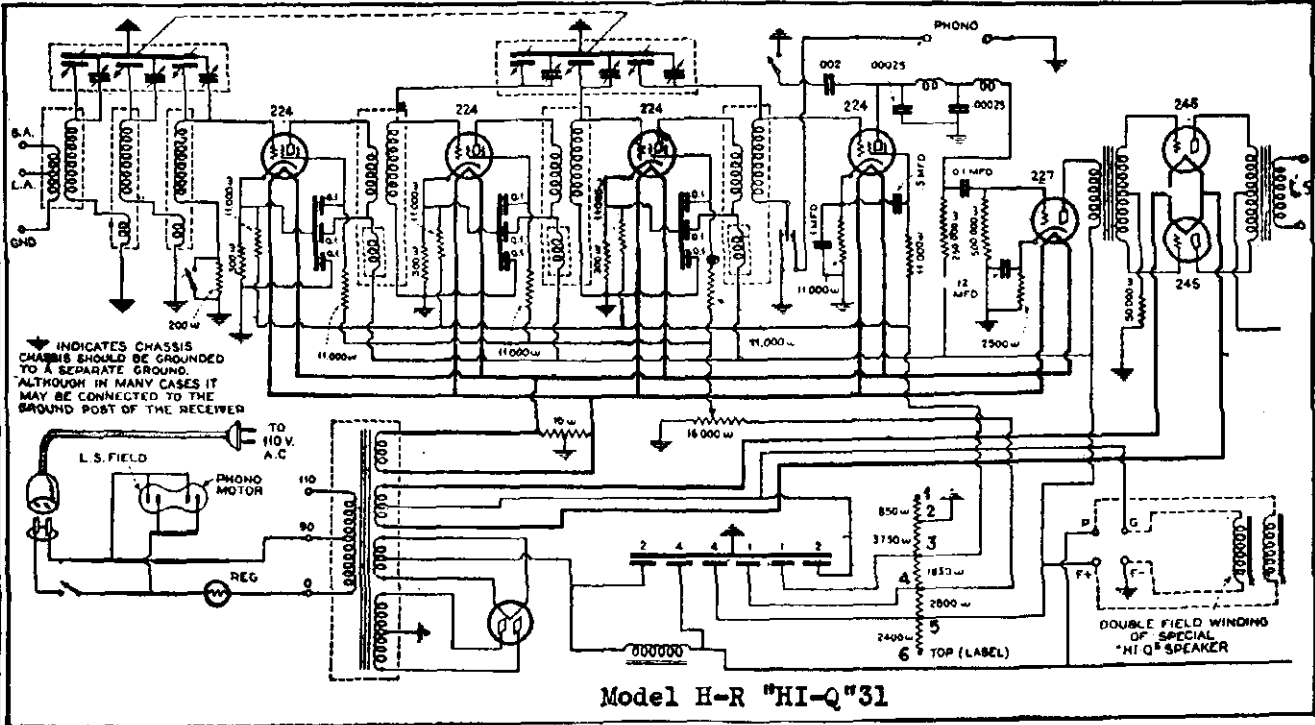
HAMMARLUND-ROBERTS, INC.

MODEL H-R "HI-Q" 30
A.C.-Battery



MODEL H-R "HI-Q"30
 D.C.
 MODEL H-R "HI-Q"31

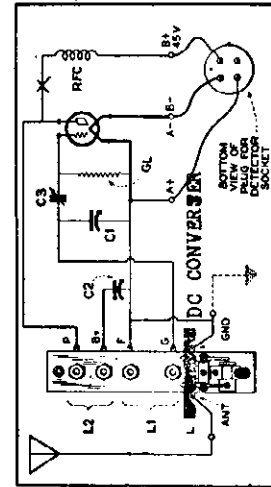
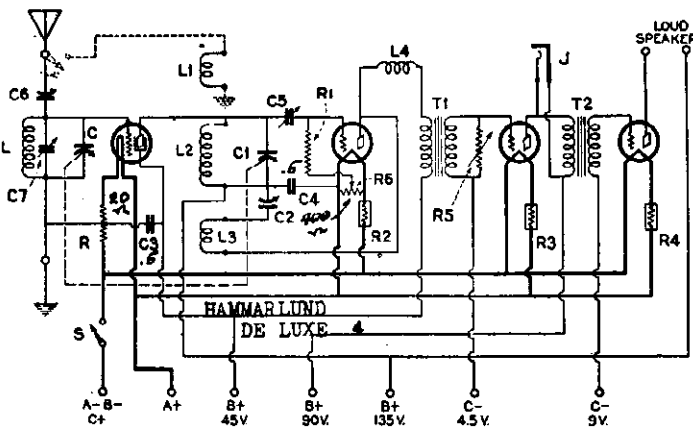
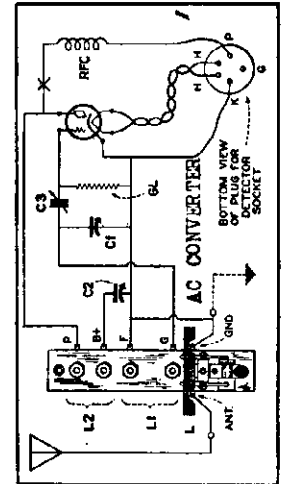
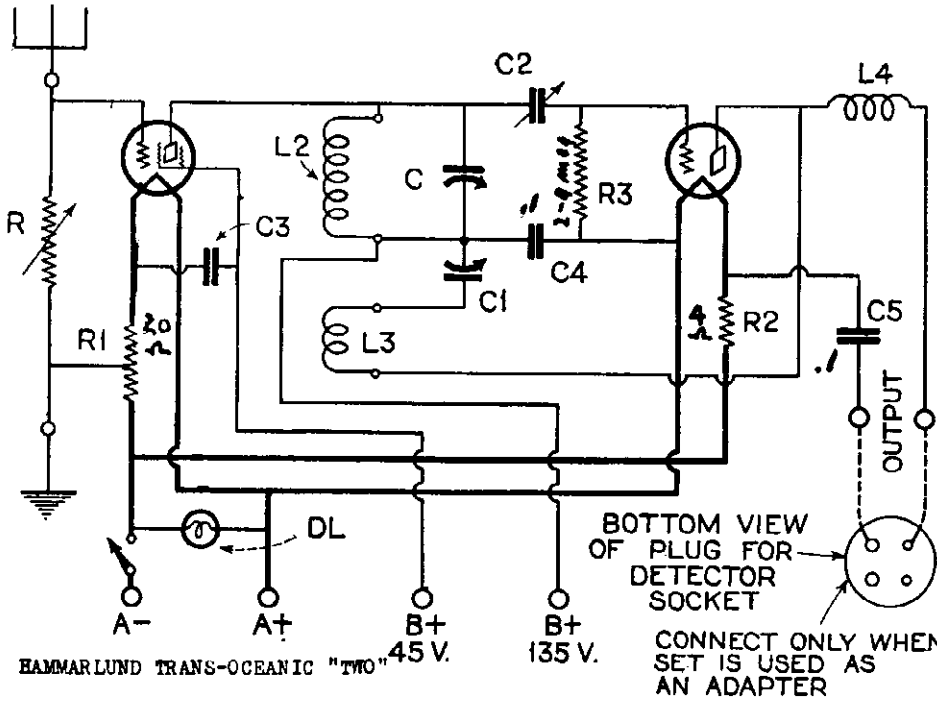
HAMMARLUND-ROBERTS, INC.



HI-Q 30 D.C.		
Voltmeter readings from chassis to:		
Top of voltage divider		- 110 V.
Middle tap		- 60 "
(P) term. of socket # 1, 2, 3 and 5		- 100 "
(P) " " " # 4		- 50 "
(P) " " " # 6 and 7		- 110 "
(G) " " " # 1, 2 and 3		- 20 "
(K) " " " # 1, 2 and 3		- 1-2 "
(K) " " " # 5		- 6 "

MODEL Hawk
 MODEL DeLuxe
 MODEL Z4 Commander
 MODEL Trans-Oceanic Two
 MODELS AC & DC Converters

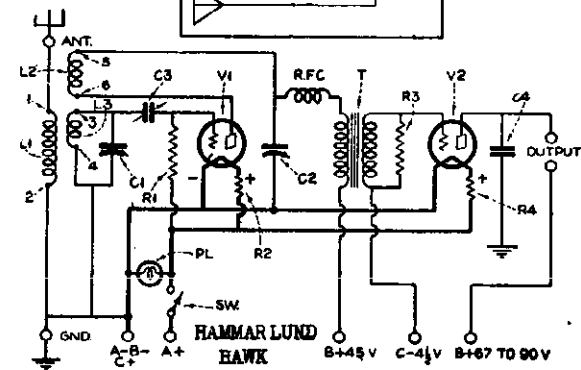
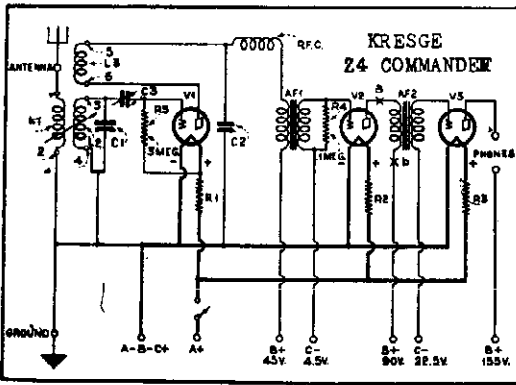
HAMMARLUND MFG. CO.



Coil Table

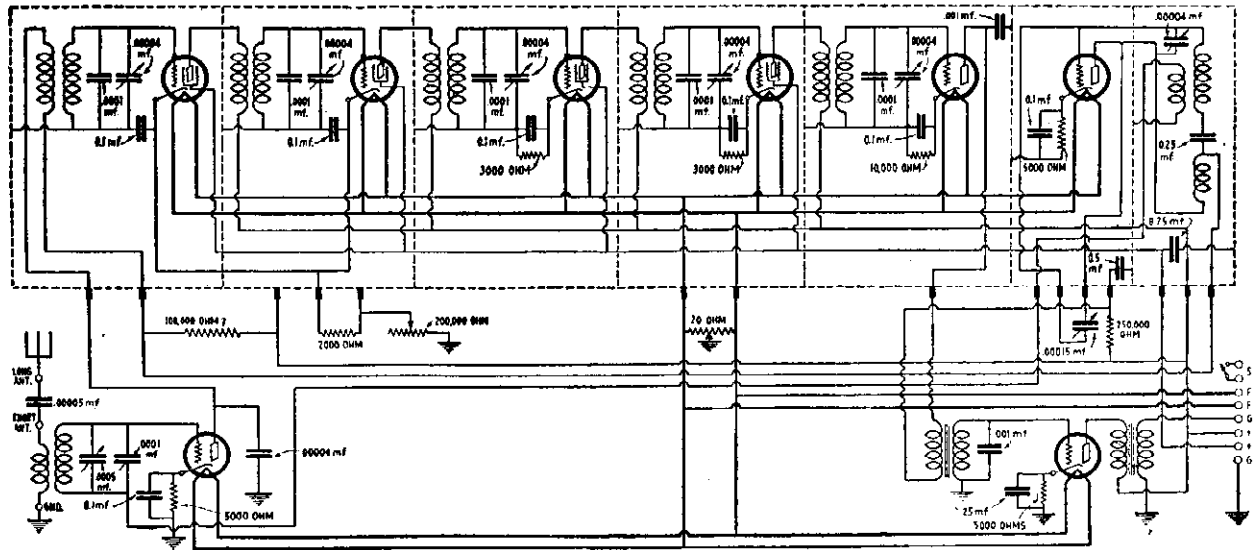
Wave Band (Meters)	Secondary Turns	Tickler Turns
14 to 24	3	3
22 to 40	7	5
36 to 65	15	6
60 to 110	24	12

HAMMARLUND HAWK

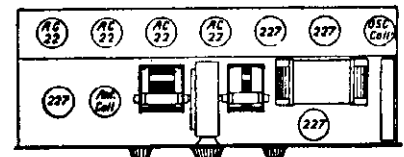
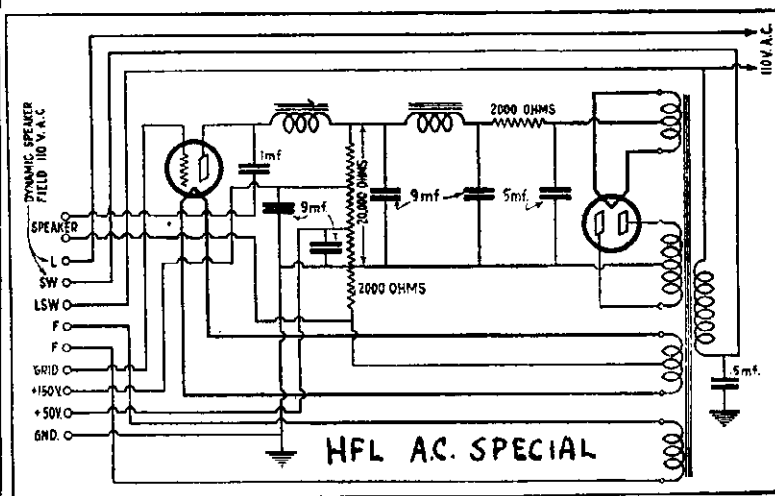


HIGH FREQUENCY LABORATORIES

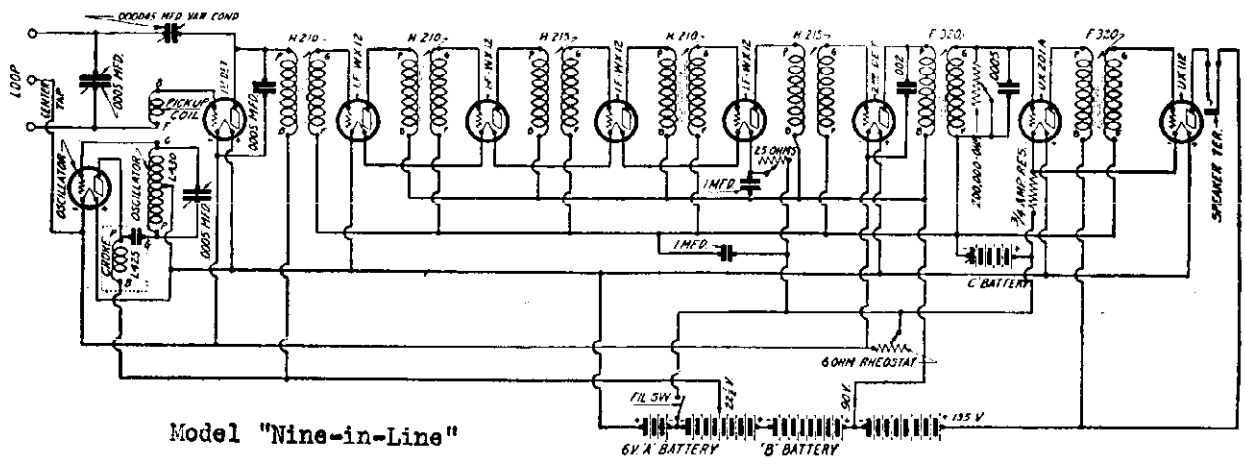
MODEL A.C. Special
MODEL 9-in-Line



Model "A.C. Special"



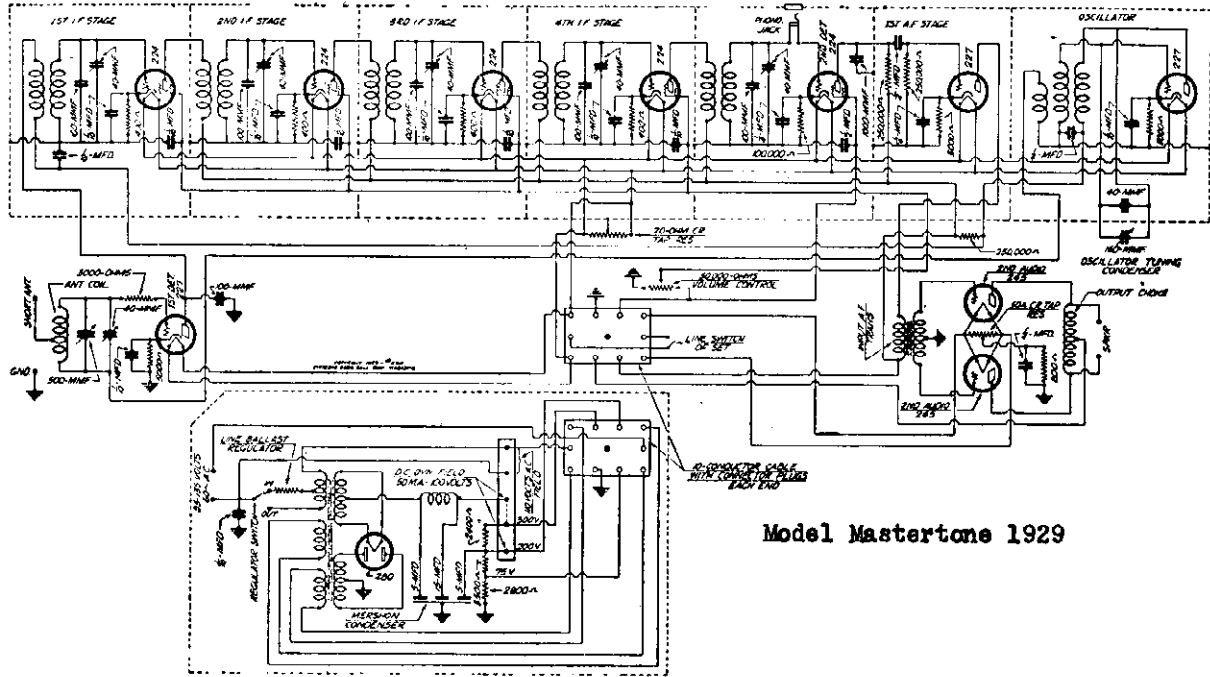
Tube layout showing position of respective tubes.



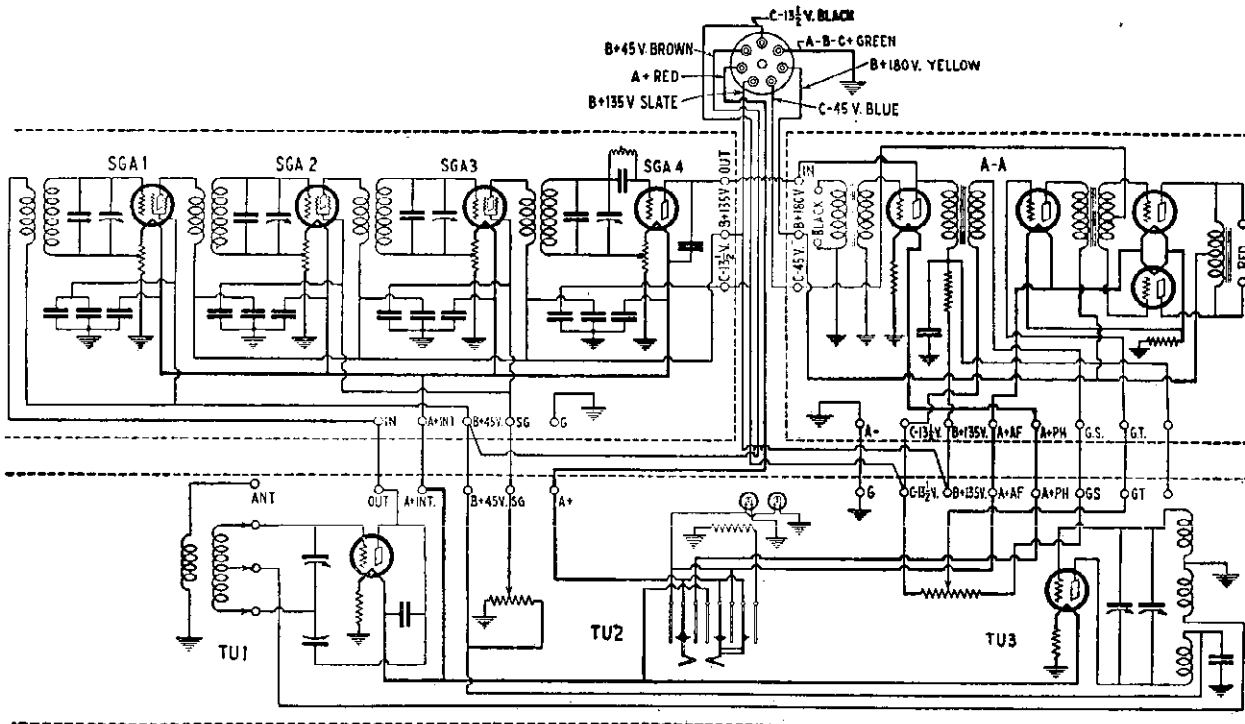
Model "Nine-in-Line"

MODEL Mastertone 1929
MODEL Isotone 10

HIGH FREQUENCY LABORATORIES



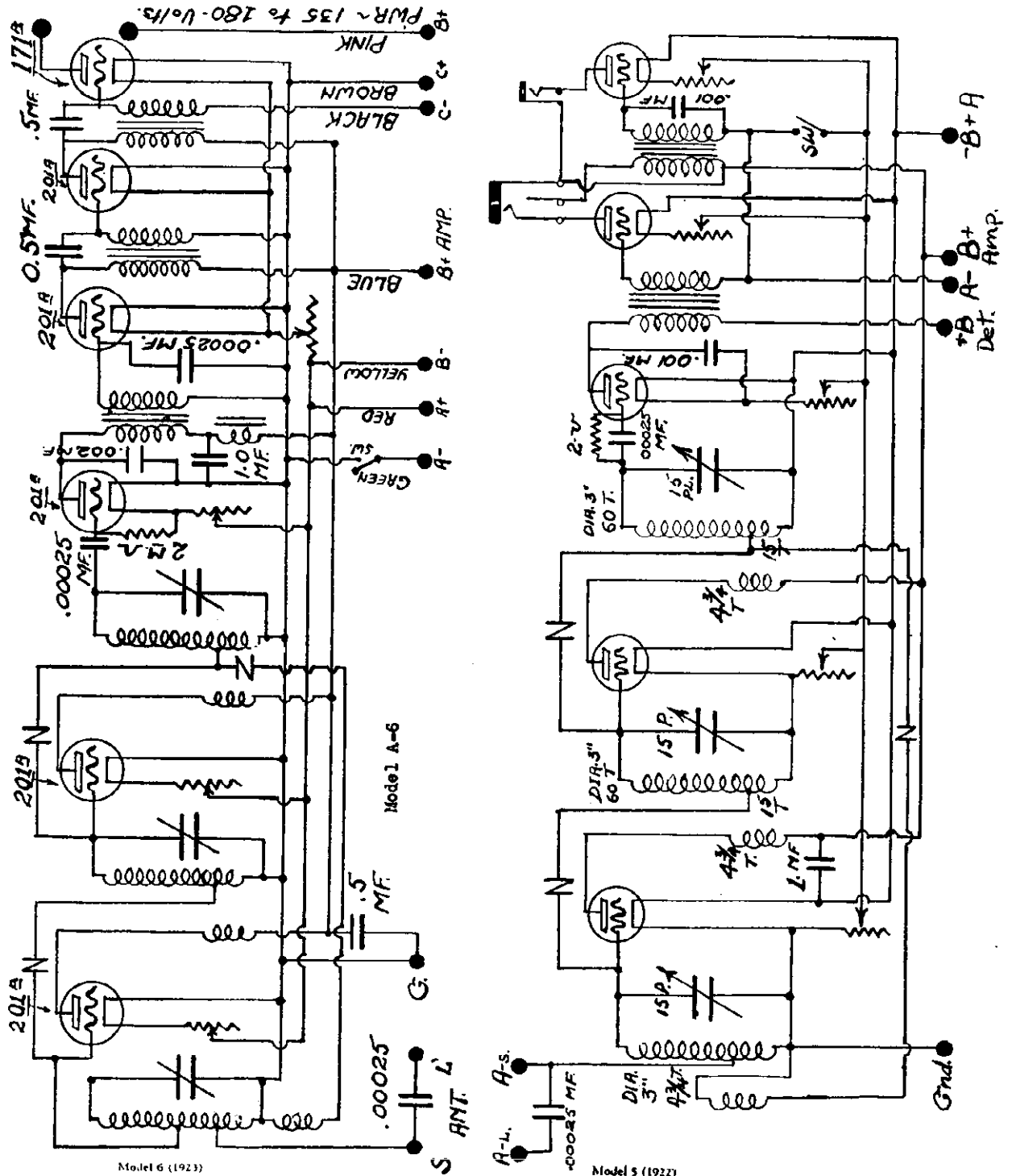
Model Mastertone 1929



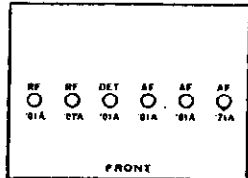
Model Isotone 10

HOWARD RADIO CO.

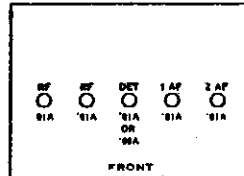
MODEL A-5
MODEL A-6



Model 6 (1923)

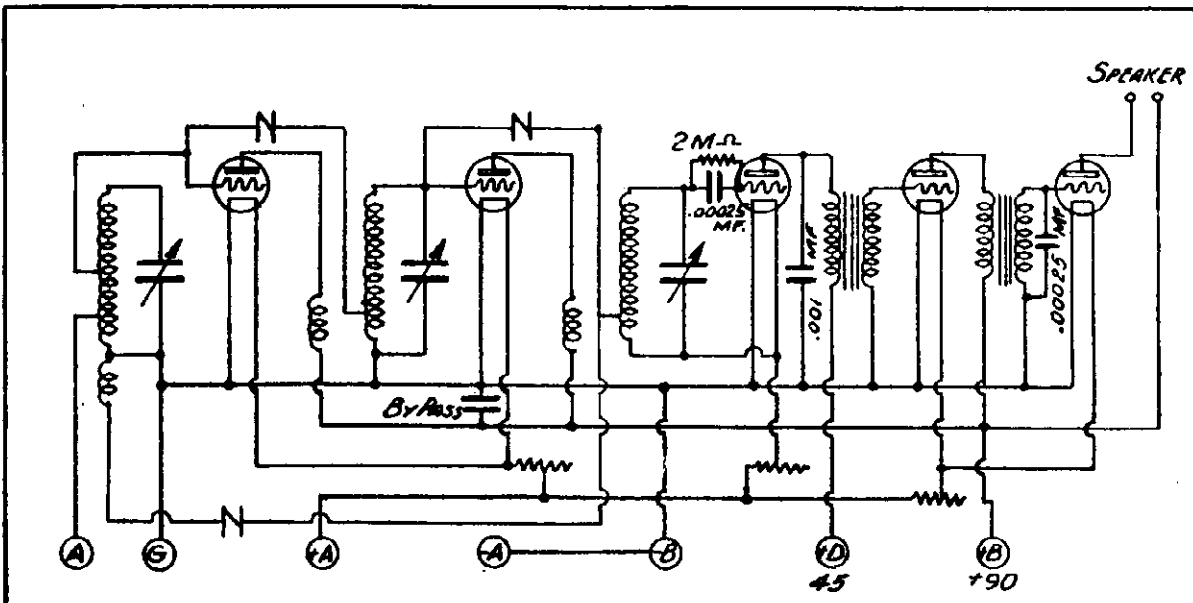
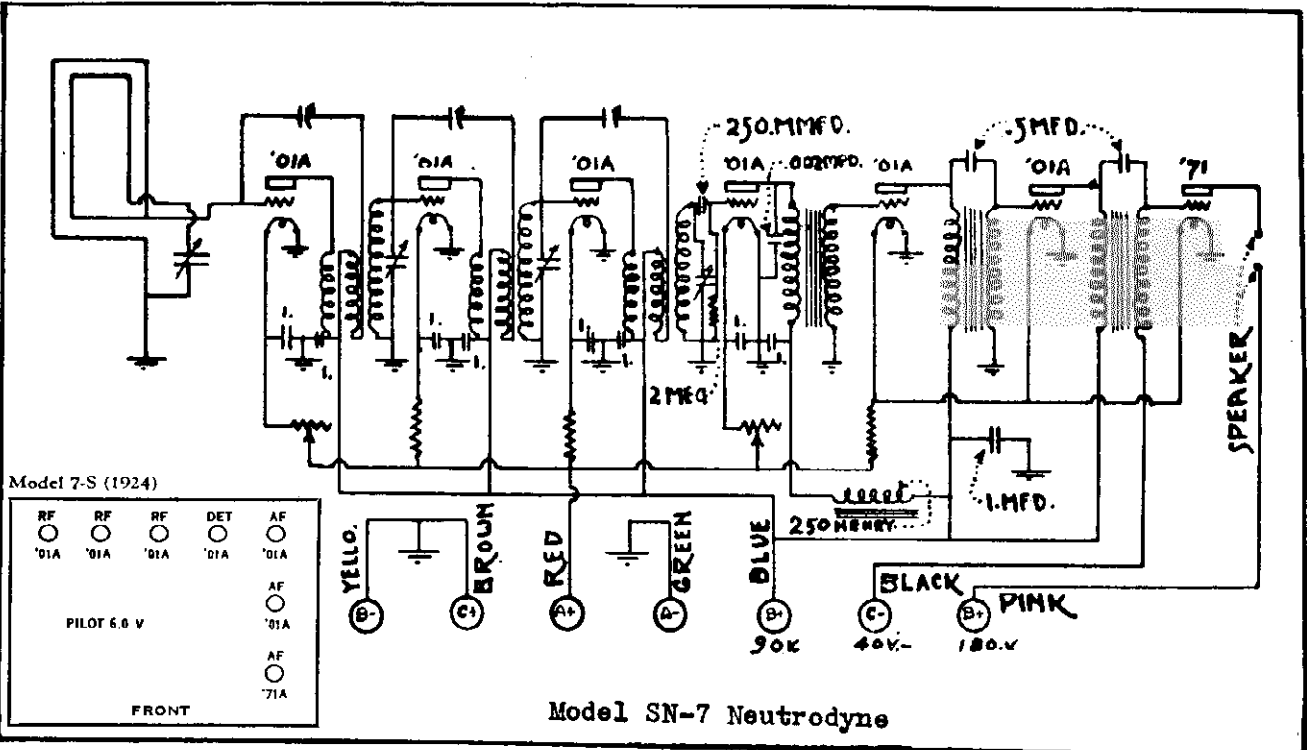


Model 5 (1922)



MODEL SN-7
MODEL K

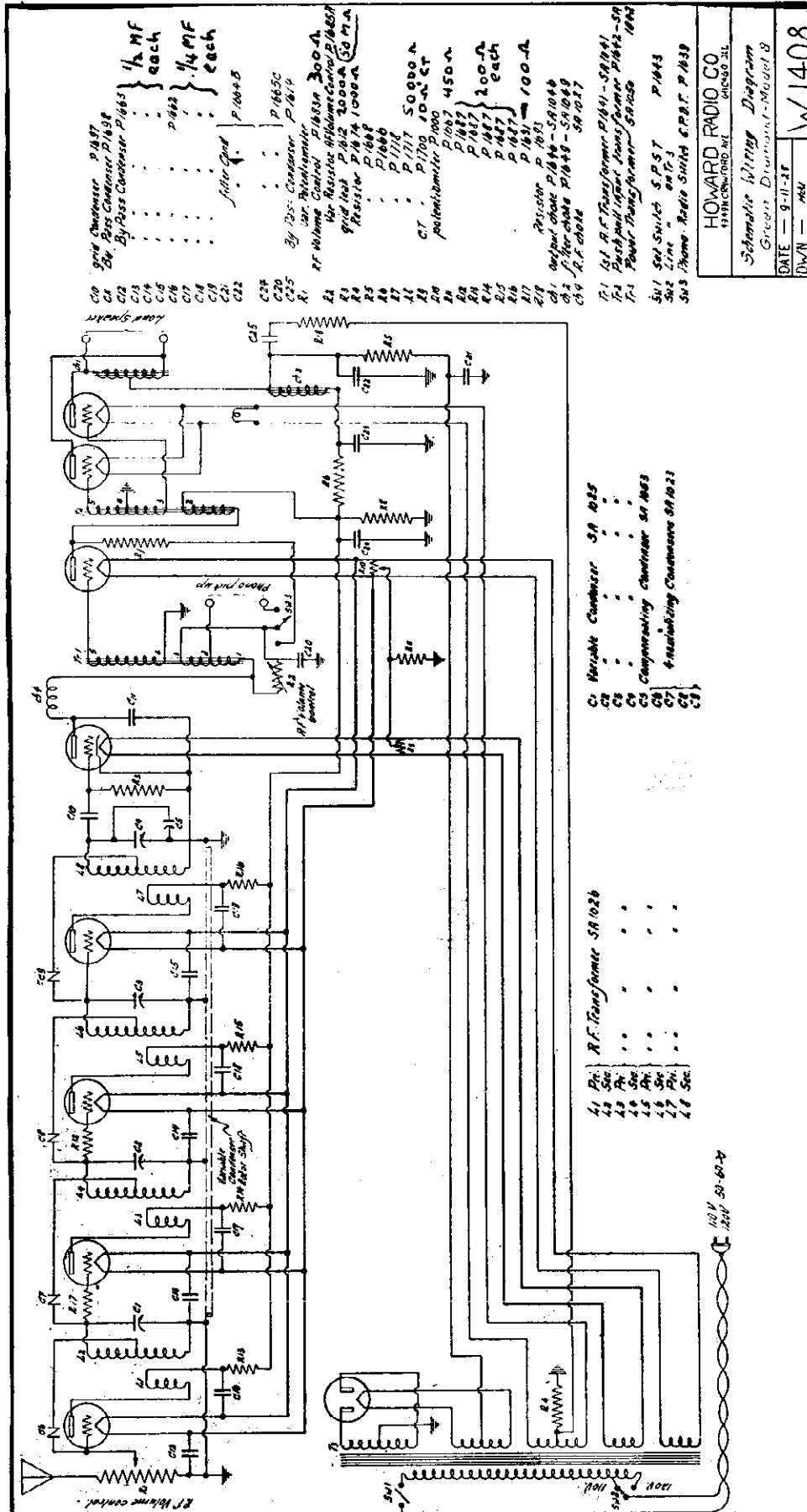
HOWARD RADIO CO



PAR No	HOWARD RADIO CO.	
DATE	SOUTH HAVEN MICHIGAN	
REVISED	NAME SCHEMATIC DIAGRAM	
	OF HOWARD RECEIVER MODEL K	
MATERIAL	WRH	
FINISH		

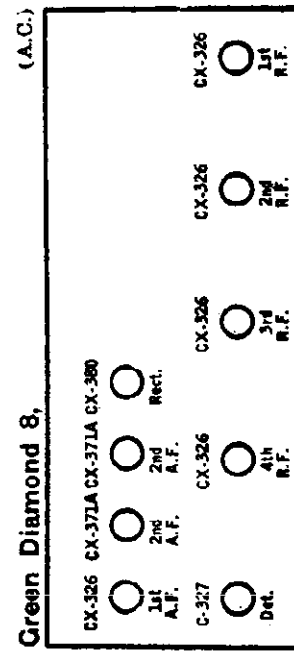
HOWARD RADIO CO.

MODEL Green Diamond 8
(Magnetic Speaker)



HOWARD—Green—Diamond 8
Line Voltage 115—2nd A. F. 2 Tubes—Push Pull

TYPE OF TUBE	POSITION OF TUBE	TUBE OUT		TUBE IN TESTER		C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	
		VOLTS	AMPERES	VOLTS	AMPERES																									
226	1st A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
226	2nd A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
226	1st A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
226	2nd A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
226	1st A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
226	2nd A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
226	1st A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
226	2nd A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
226	1st A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
226	2nd A.F.	1.5	1.2	132	9	4.4	8.2	3.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—



HOWARD RADIO CO.
1518 CHRYSLER BLDG.
CHICAGO, ILL.

Schematic Wiring Diagram
Green Diamond-Model 8

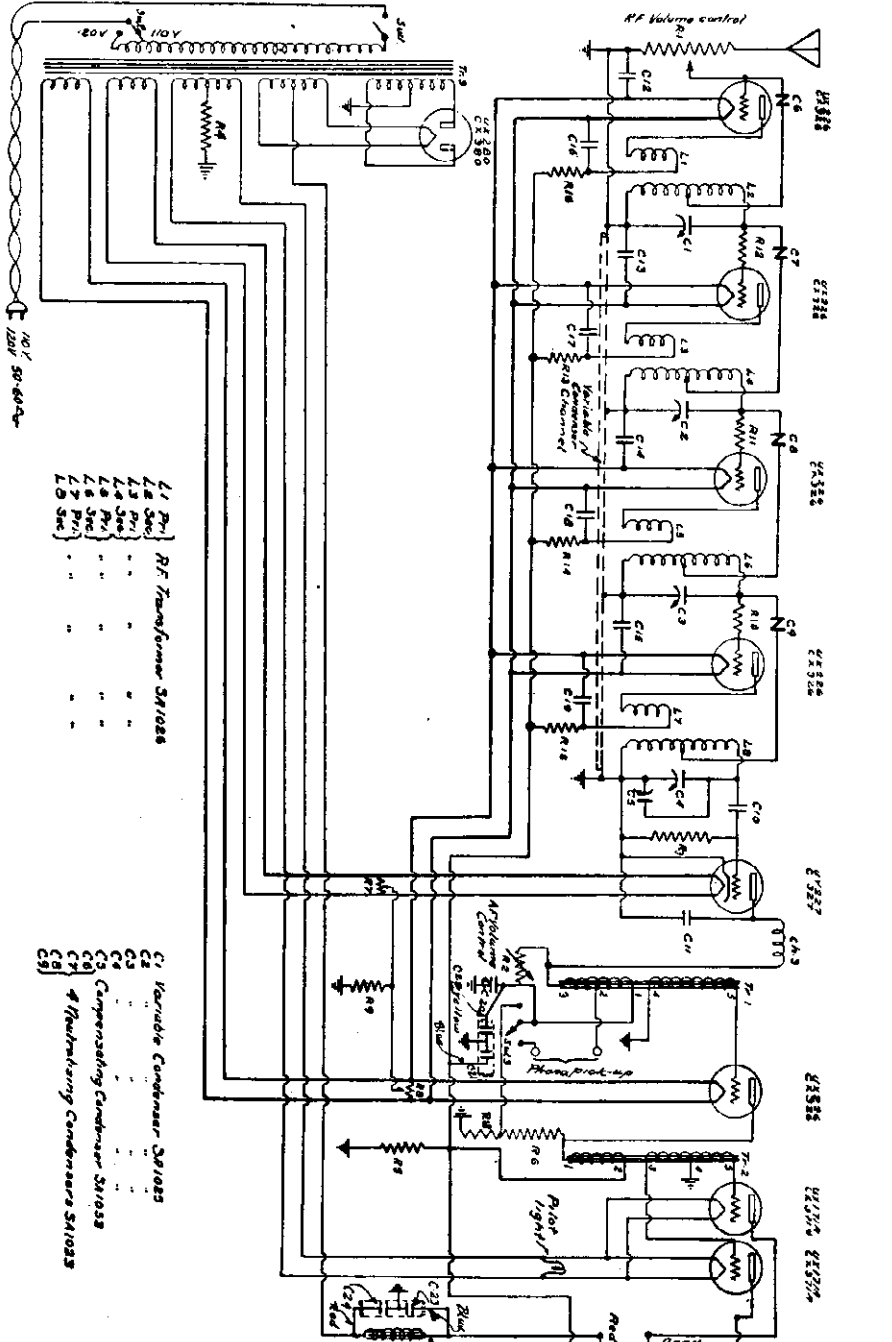
DATE — 9-11-37
DWN — ASU

W 1408

- C1 Variable Condenser SA 1025
- C2
- C3
- C4
- C5 Compressing Condenser SA 1023
- C6
- C7
- C8
- C9
- C10
- C11
- C12
- C13
- C14
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- C96
- C97
- C98
- C99
- C100

HOWARD—Green—Diamond 8
Line Voltage 115—2nd A. F. 2 Tubes—Push Pull

TUBE TYPE	TUBE	TUBE DATA				RESISTANCE PLUG IN POSITION OF SET				TUBE IN CIRCUIT	REMARKS
		A	B	C	D	A	B	C	D		
225	1st. R.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
226	2nd. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
227	1st. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
228	2nd. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
229	1st. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
230	2nd. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
231	1st. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
232	2nd. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
233	1st. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
234	2nd. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
235	1st. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
236	2nd. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
237	1st. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
238	2nd. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
239	1st. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	
240	2nd. A.F.	1.3	1.36	1.32	0	4.8	8.2	3.8	3.8	5.0	



- L1 20V
 - L2 50V
 - L3 10V
 - L4 10V
 - L5 10V
 - L6 10V
 - L7 10V
 - L8 10V
 - L9 10V
- RF Transformer 50/1000

- C1 Variable Condenser 50/1000
- C2 "
- C3 "
- C4 "
- C5 Compensating Condenser 50/1000
- C6 "
- C7 "
- C8 "4 Reactor Condensers 50/1000
- C9 "
- C10 "

- T1 1st. R.F. Transformer 50/1000
- T2 2nd. R.F. Transformer 50/1000
- T3 Push Pull Input Transformer 50/1000
- T4 Speaker Input Trans 50/1000
- S1 300 Ohm Switch 30/50
- S2 100 Ohm Switch 30/50
- S3 50 Ohm Switch 30/50
- S4 20 Ohm Switch 30/50
- S5 10 Ohm Switch 30/50
- S6 5 Ohm Switch 30/50
- S7 2 Ohm Switch 30/50
- S8 1 Ohm Switch 30/50
- S9 0.5 Ohm Switch 30/50
- S10 0.2 Ohm Switch 30/50
- S11 0.1 Ohm Switch 30/50
- S12 0.05 Ohm Switch 30/50
- S13 0.02 Ohm Switch 30/50
- S14 0.01 Ohm Switch 30/50
- S15 0.005 Ohm Switch 30/50
- S16 0.002 Ohm Switch 30/50
- S17 0.001 Ohm Switch 30/50
- S18 0.0005 Ohm Switch 30/50
- S19 0.0002 Ohm Switch 30/50
- S20 0.0001 Ohm Switch 30/50

- R1 100 Ohm
- R2 200 Ohm
- R3 500 Ohm
- R4 1000 Ohm
- R5 1500 Ohm
- R6 2000 Ohm
- R7 2500 Ohm
- R8 3000 Ohm
- R9 3500 Ohm
- R10 4000 Ohm
- R11 4500 Ohm
- R12 5000 Ohm
- R13 5500 Ohm
- R14 6000 Ohm
- R15 6500 Ohm
- R16 7000 Ohm
- R17 7500 Ohm
- R18 8000 Ohm
- R19 8500 Ohm
- R20 9000 Ohm
- R21 9500 Ohm
- R22 10000 Ohm
- R23 10500 Ohm
- R24 11000 Ohm
- R25 11500 Ohm
- R26 12000 Ohm
- R27 12500 Ohm
- R28 13000 Ohm
- R29 13500 Ohm
- R30 14000 Ohm
- R31 14500 Ohm
- R32 15000 Ohm
- R33 15500 Ohm
- R34 16000 Ohm
- R35 16500 Ohm
- R36 17000 Ohm
- R37 17500 Ohm
- R38 18000 Ohm
- R39 18500 Ohm
- R40 19000 Ohm
- R41 19500 Ohm
- R42 20000 Ohm
- R43 20500 Ohm
- R44 21000 Ohm
- R45 21500 Ohm
- R46 22000 Ohm
- R47 22500 Ohm
- R48 23000 Ohm
- R49 23500 Ohm
- R50 24000 Ohm
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- R63 30500 Ohm
- R64 31000 Ohm
- R65 31500 Ohm
- R66 32000 Ohm
- R67 32500 Ohm
- R68 33000 Ohm
- R69 33500 Ohm
- R70 34000 Ohm
- R71 34500 Ohm
- R72 35000 Ohm
- R73 35500 Ohm
- R74 36000 Ohm
- R75 36500 Ohm
- R76 37000 Ohm
- R77 37500 Ohm
- R78 38000 Ohm
- R79 38500 Ohm
- R80 39000 Ohm
- R81 39500 Ohm
- R82 40000 Ohm
- R83 40500 Ohm
- R84 41000 Ohm
- R85 41500 Ohm
- R86 42000 Ohm
- R87 42500 Ohm
- R88 43000 Ohm
- R89 43500 Ohm
- R90 44000 Ohm
- R91 44500 Ohm
- R92 45000 Ohm
- R93 45500 Ohm
- R94 46000 Ohm
- R95 46500 Ohm
- R96 47000 Ohm
- R97 47500 Ohm
- R98 48000 Ohm
- R99 48500 Ohm
- R100 49000 Ohm
- R101 49500 Ohm
- R102 50000 Ohm

Green Diamond 8,

CX-326 1st A.F.
 CX-371A 2nd A.F.
 CX-380 2nd A.F.
 CX-326 1st R.F.
 CX-325 2nd R.F.
 CX-326 1st R.F.
 CX-326 2nd R.F.

(A.C.)

HOWARD RADIO CO
 494 VERNON AVENUE
 CHICAGO, ILL.

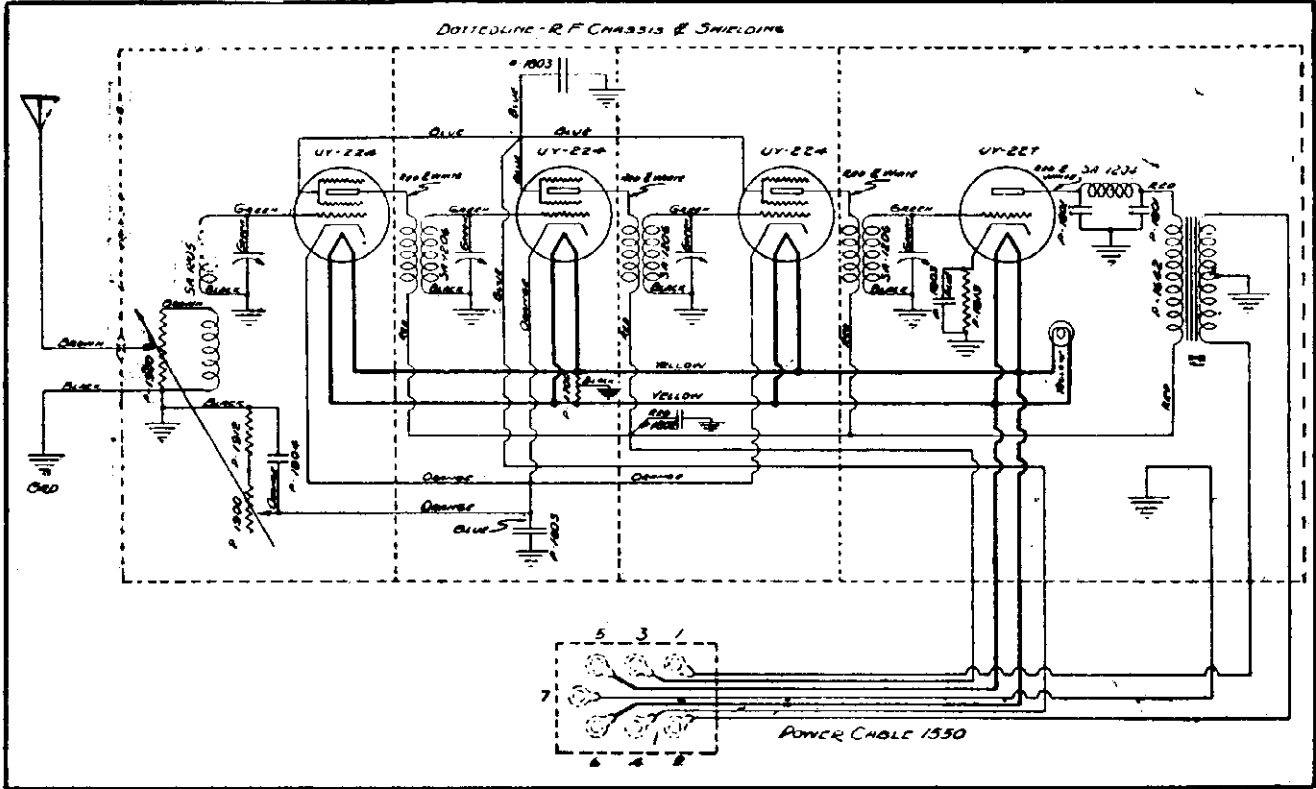
Schema Diagram
 Revised Green Diamond Model 8
 DATE - 8-1-38
 DWN - MRA

W-1409-AB

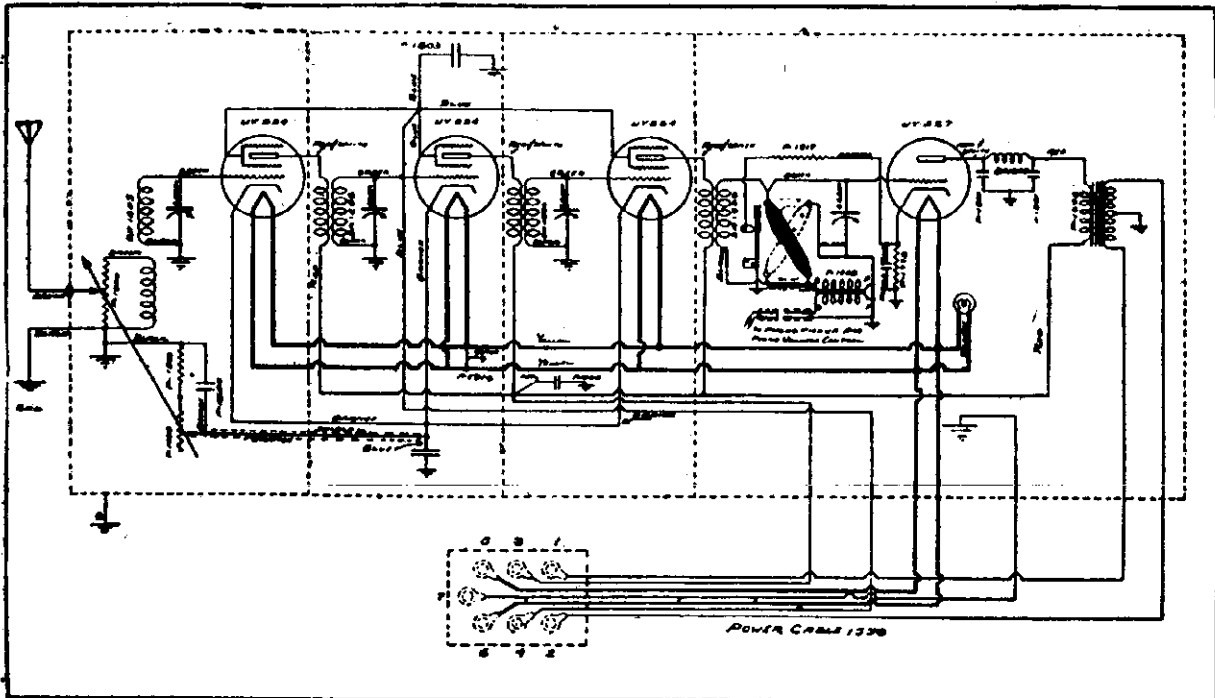
MODEL SG "A"
RF Chassis
MODEL SG "C"
RF Chassis

HOWARD RADIO CO.

DOTTEDLINE - R.F. CHASSIS & SHIELDING



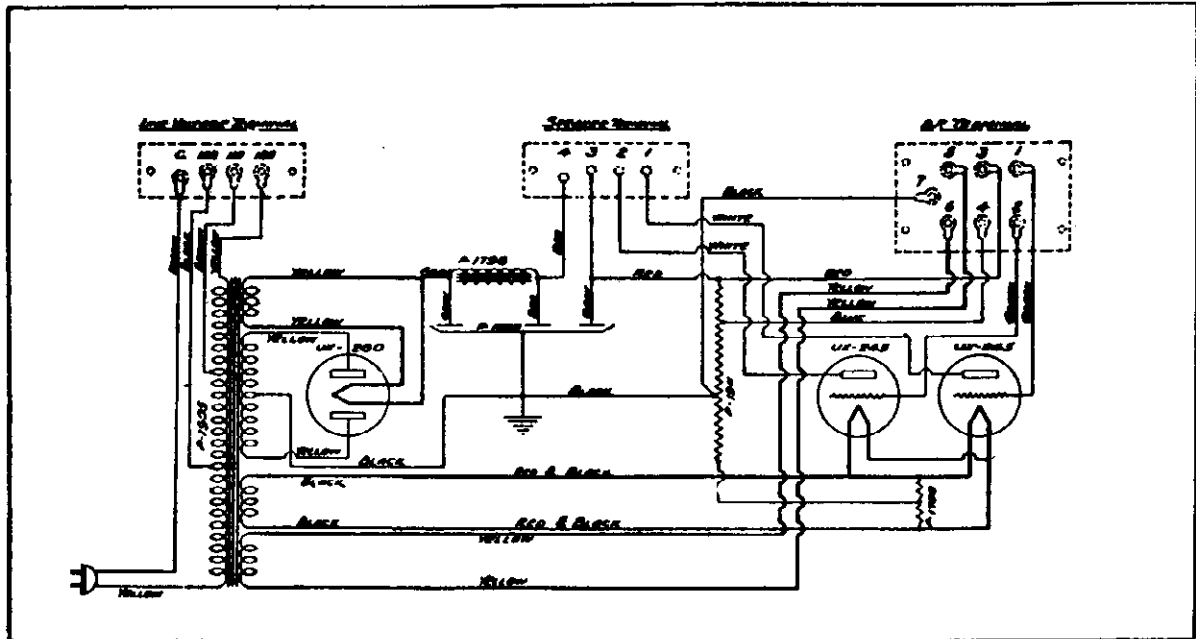
R.F. Chassis Model S.G. "A"



R.F. Chassis Model S.G. "C"

HOWARD RADIO CO

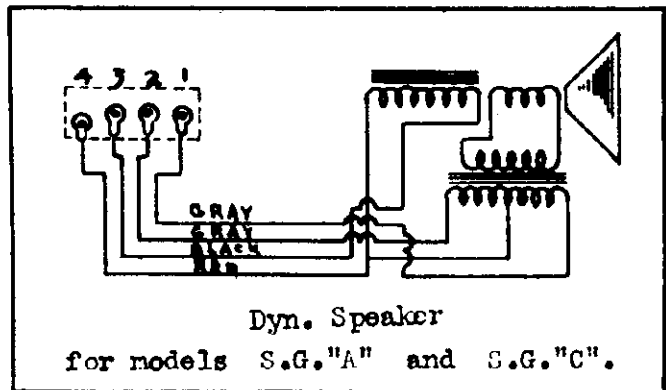
MODEL SG "A"
AF Chassis
MODEL SG "C"
AF Chassis
Voltage



Power Unit and A.F. Amplifier for HOWARD Models S.G. "A" and S.G. "C"

R.F. Chassis Term. Plate.

- | | | |
|---|--------|---------------|
| 1 | Gray | Audio Grid |
| 2 | Gray | Audio Grid |
| 3 | Red | B + 175 Volts |
| 4 | Blue | B - 70 " |
| 5 | Yellow | Fil. 2.25 " |
| 6 | Yellow | Fil. 2.25 " |
| 7 | Black | B - Ground |



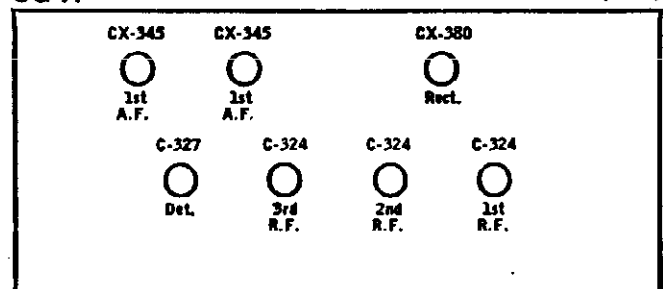
Dyn. Speaker
for models S.G. "A" and S.G. "C".

HOWARD RADIO—Model A—Screen Grid
Line Voltage 110—Set on 110 Volt Tap
Volume Control Position Max
*Detector Plate Voltage on Phone Combination

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE IN SET, ETC.	TUBE DATA				TUBE IN TESTER					
			A VOLTS	G VOLTS	B VOLTS	C VOLTS	CATHODE HEATEN VOLTS	NORMAL PLATE MA	PLATE CHANGE MA	SCREEN GRID VOLTS		
1	224	1 R.F.	2.40	171	8.36	164	2.7	1.9	3.3	4.3	1.0	64
2	224	2 R.F.	2.40	171	2.26	164	2.7	1.9	3.3	4.3	1.0	64
3	224	3 R.F.	2.40	171	2.26	164	2.7	1.9	3.3	4.3	1.0	64
4	227	Det.	2.45	161	2.32	*150	15.12	11.6	1.1	1.4	0.3	-
5	245	P. P.	2.33	272	2.21	251	47.0	-	26	30	4.0	-
6	255	P. P.	2.33	272	2.21	251	47.0	-	26	30	4.0	-
7	280	Rect.	5.54	-	4.65	-	-	-	64	-	-	-

SG-A

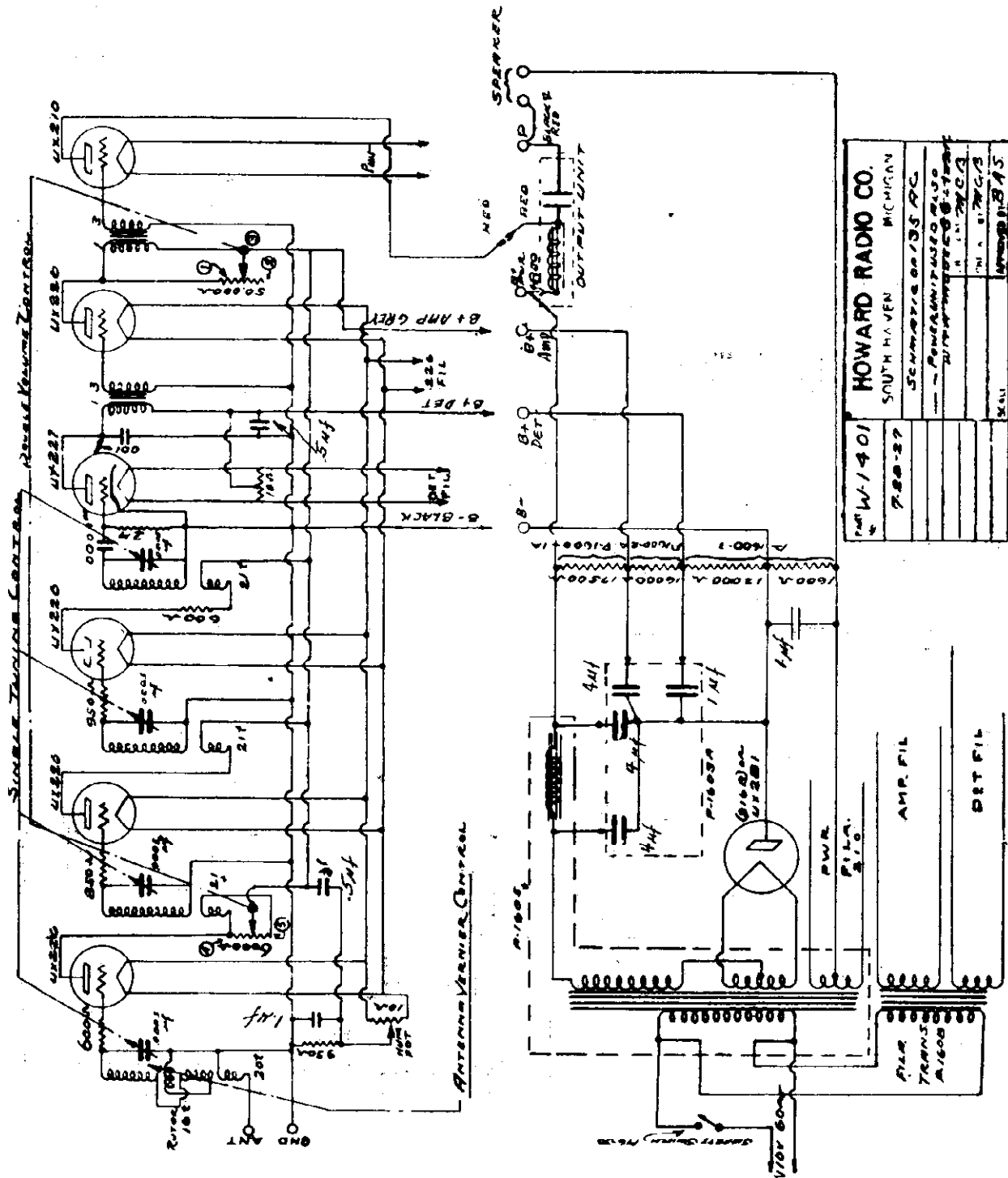
(A.C.)



*Detector coil shorted to give correct voltage when measuring detector

MODEL 395, 445, 470, 495
(135-AC Chassis)

HOWARD RADIO CO.



W-1401
7-89-27
HOWARD RADIO CO.
SOUTH HAVEN MICHIGAN
SCHEMATIC 00135 AC
PENNSYLVANIA ALSO
INCORPORATED
U.S. P.O. REG.
NO. 8-3745
3-14-35

Models 135, 395, 445, 470. (1927)

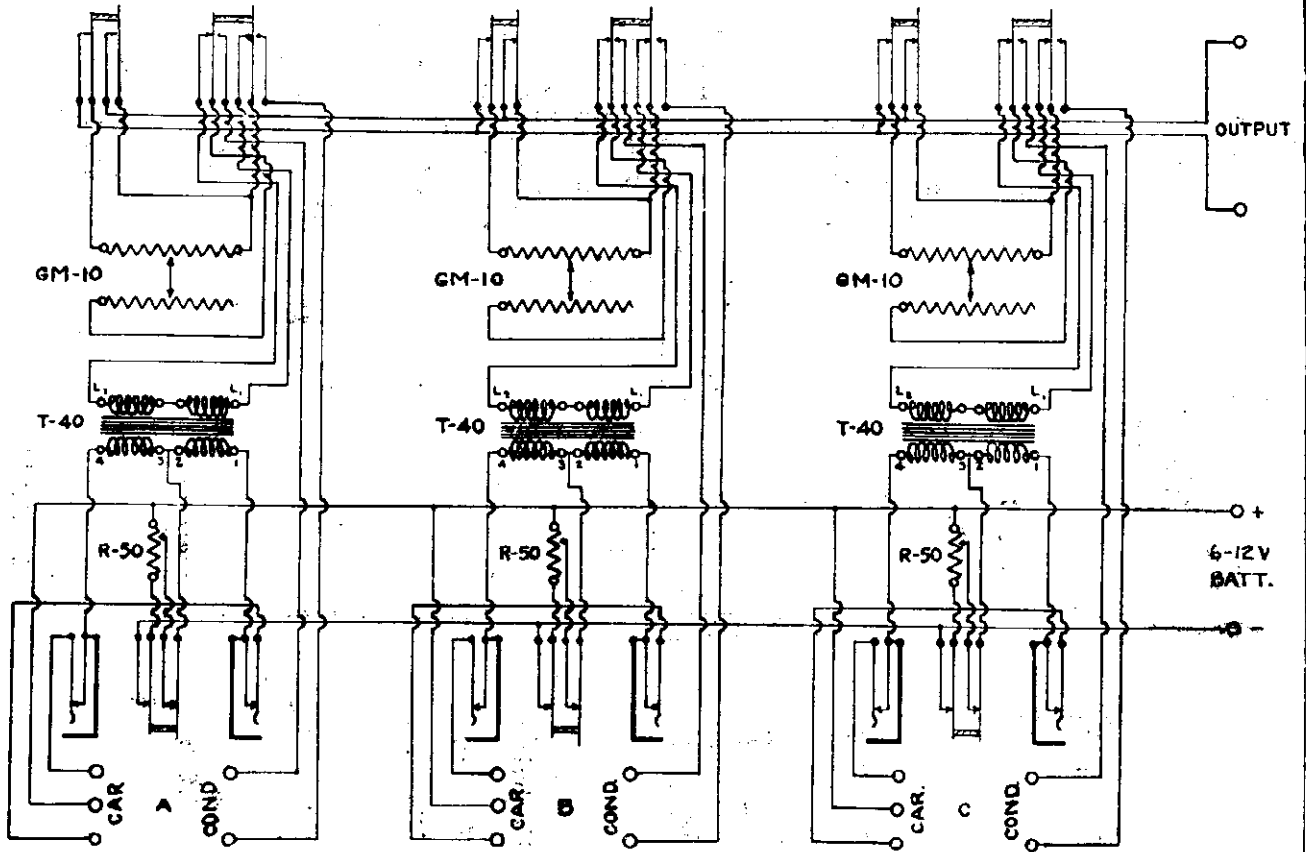
PILOT 8.0 V		
DET 27	1 AF 26	2 AF 26
RF 26	RF 26	RF 26

1- 31 RECT IN POWER UNIT

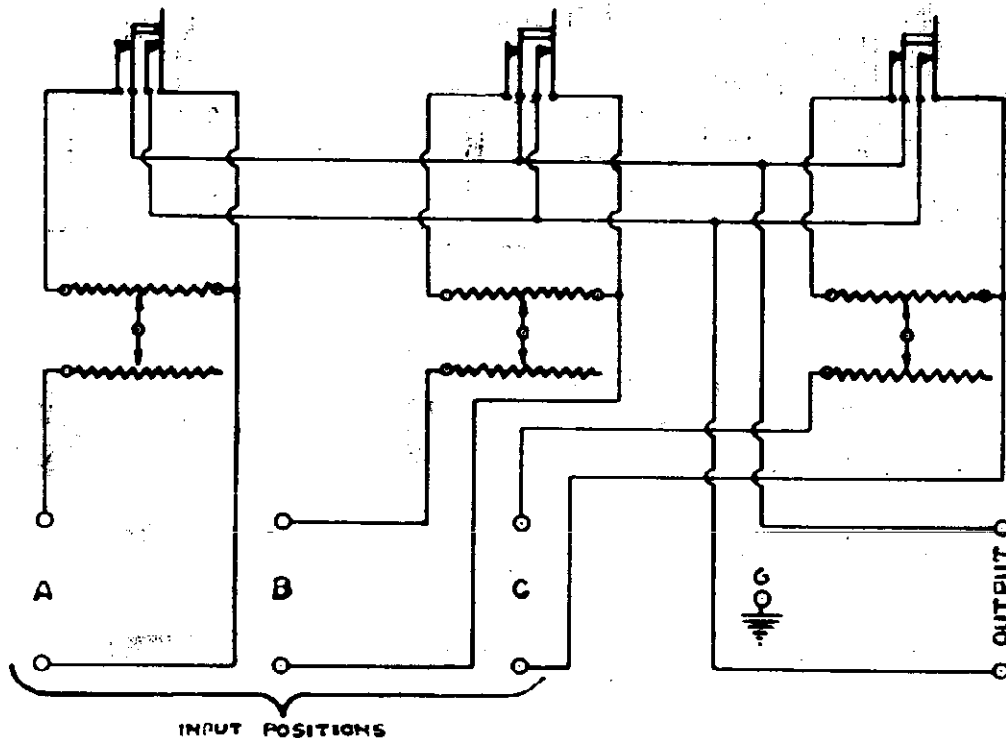
FRONT

J. E. JENKINS AND S. E. ADAIR

MODEL 3B Mixing Panel
MODEL 3C Mixing Panel



Schematic of: 3B MIXING PANEL

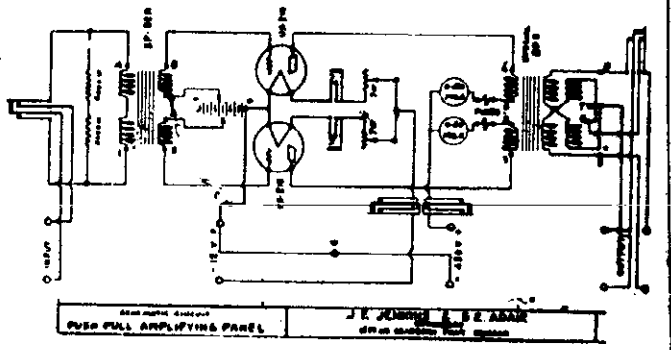
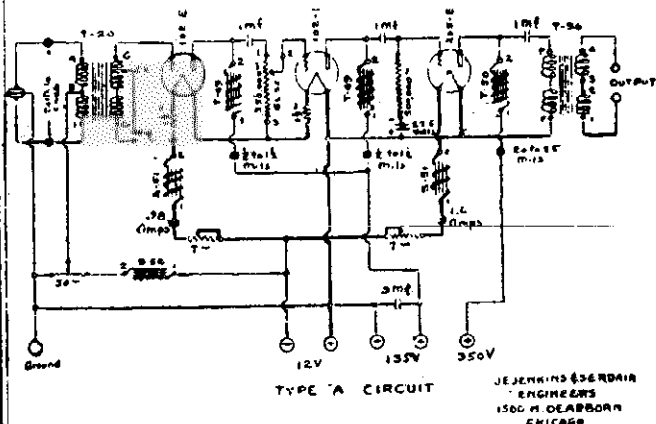
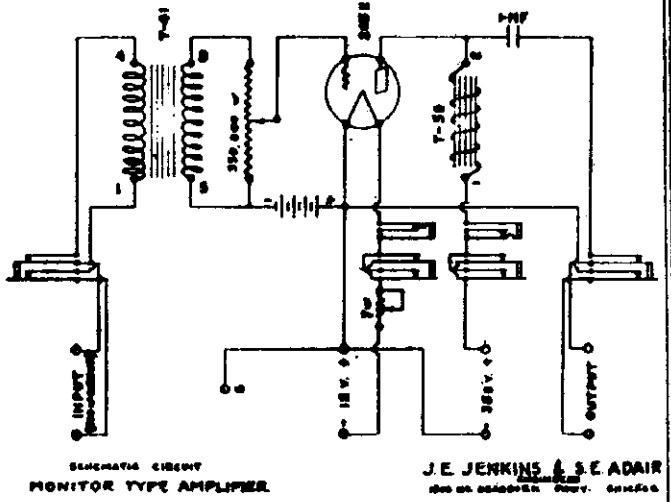
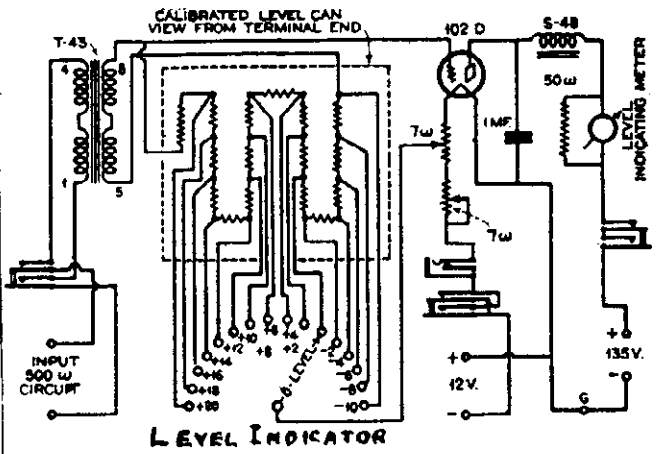
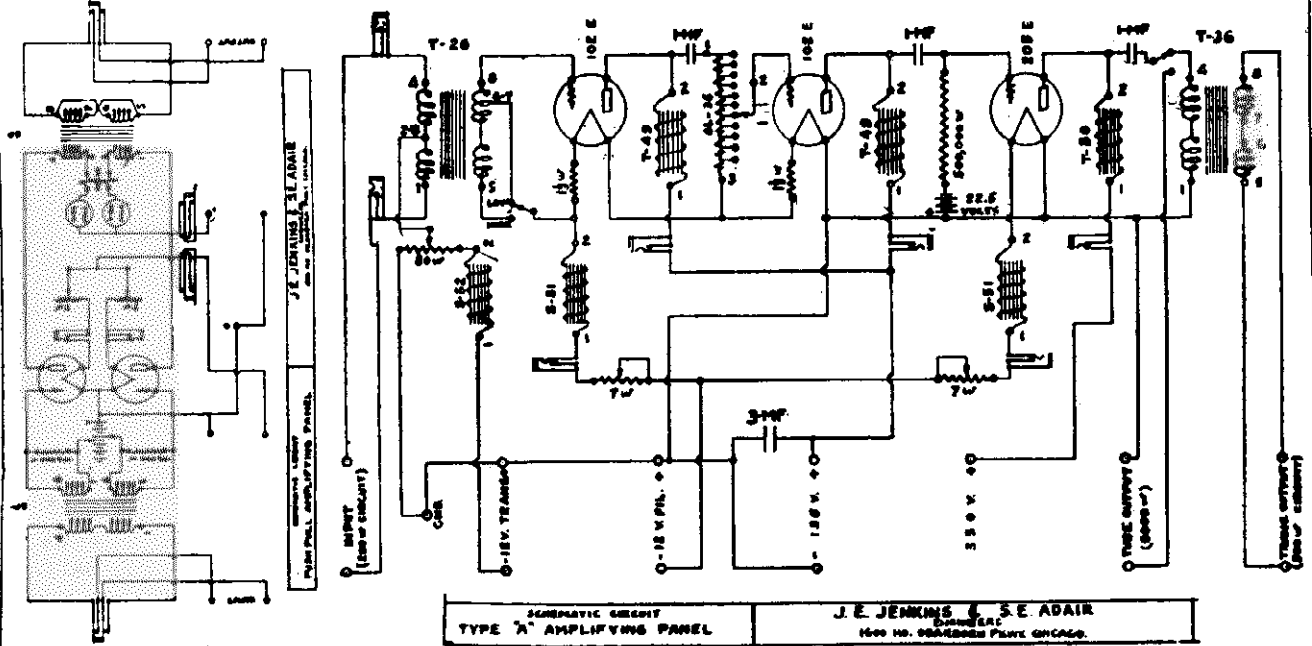


SCHEMATIC CIRCUIT
3-C MIXING PANEL

J. E. JENKINS & S. E. ADAIR
ENGINEERS
1500 NO. DEARBORN PKWY. CHICAGO.

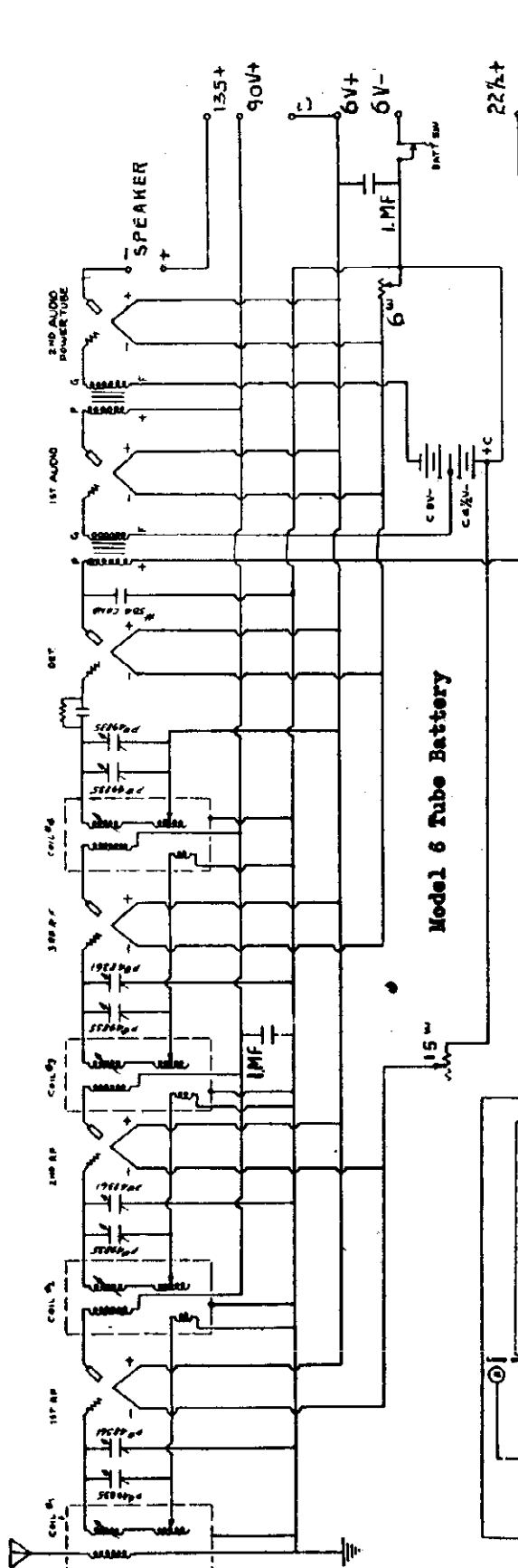
MODEL A Two Types
 MODEL PushPull Amp.
 MODEL Monitor Amp.
 MODEL Level Indicator

J. E. JENKINS AND S. E. ADAIR

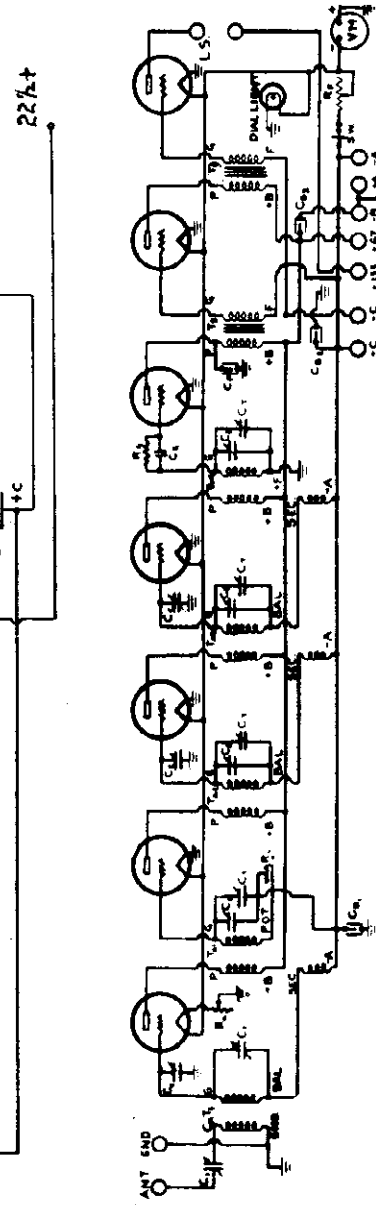


KELLOGG SWITCHBOARD & SUPPLY CO.

MODEL 6 Tube Battery
 MODEL 7 Tube Cascade
 MODEL Wave Master

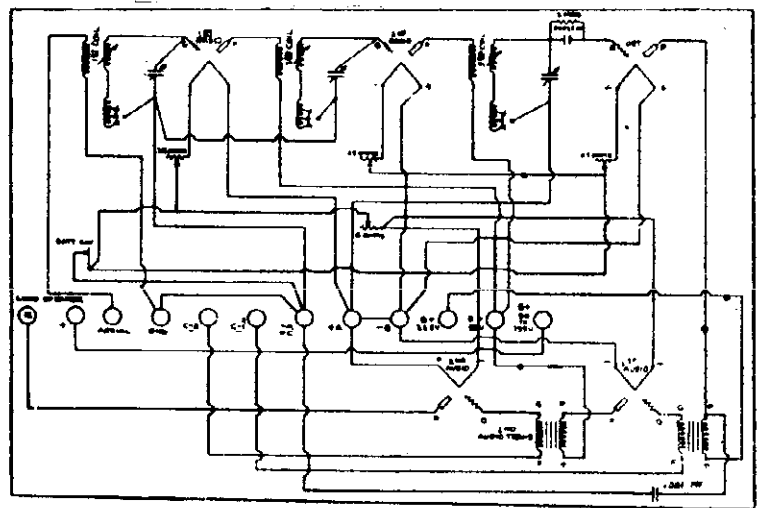


Model 6 Tube Battery



- G1 ANTENNA EQUALIZER .00027 MF
- C1 TUNING ALIGNMENT CONDENSER
- C2 BYPASS CONDENSER .1MF
- C3 BALANCING CONDENSER .00006 MF
- C4 GRID CONDENSER .0025 MF
- C5 BYPASS CONDENSER .001MF
- C6 GANG CONDENSER .005MF UNITS [STATION SELECTOR]
- L DIAL LIGHT
- R ROTOR PLATES OF VARIABLE CONDENSER
- R1 FILAMENT RHEOSTAT 4 OHMS
- R2 GRID LEAK 2 1/2 MEGOHMS.
- R3 NON-INDUCTIVE WIRE RESISTANCE 200 OHMS.
- R4 RHEOSTAT 20 OHMS.
- S STATIONARY PLATES OF VARIABLE CONDENSER.
- SW FILAMENT SWITCH
- T1 RADIO FREQUENCY TRANSFORMER
- T2 INPUT TRANSFORMER
- T3 KELLOGG AUDIO TRANSFORMER
- VM FILAMENT VOLTMETER
- ⊕ GROUND TO SHIELD

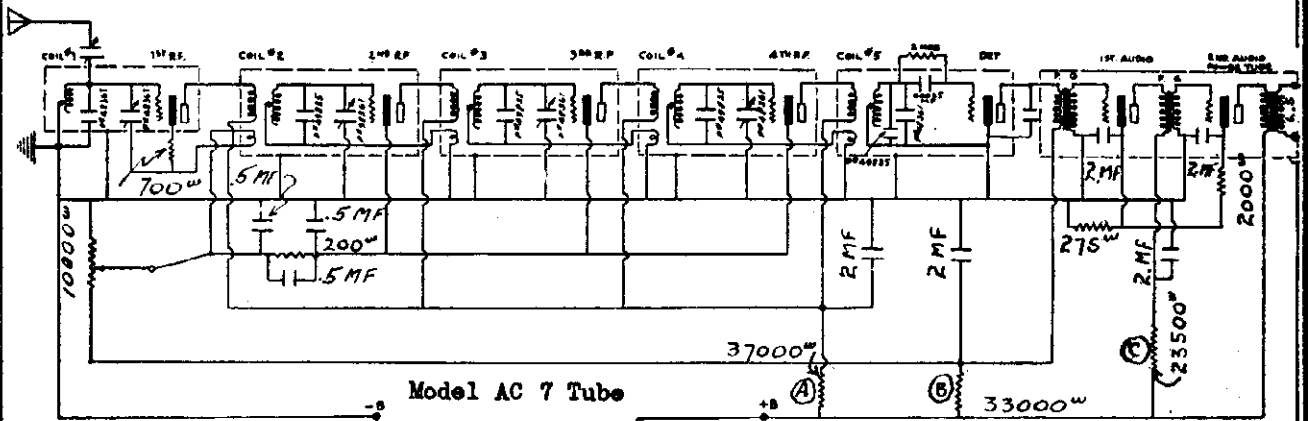
Model 7 Tube Cascade



Model Wave Master

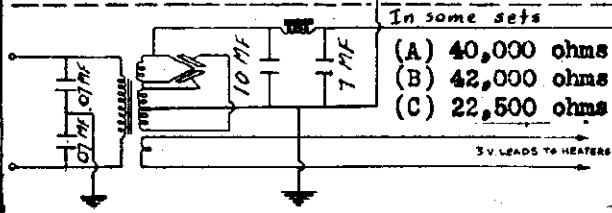
MODEL RFL 701
MODEL AC 7 Tube
MODEL Chassis B

KELLOGG SWITCHBOARD & SUPPLY CO.



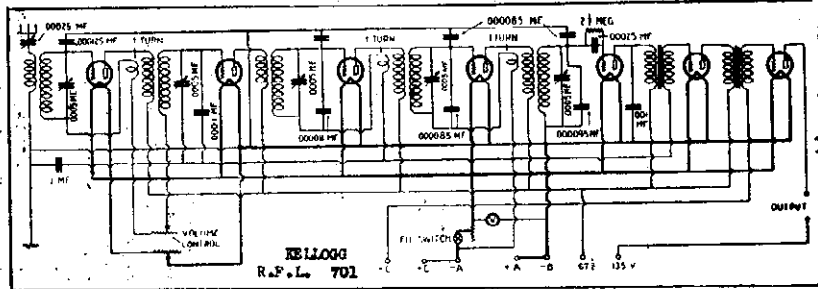
Model AC 7 Tube

KELLOGG—7 Tube "A" Chassis
Line Voltage 115—Volume Control Full

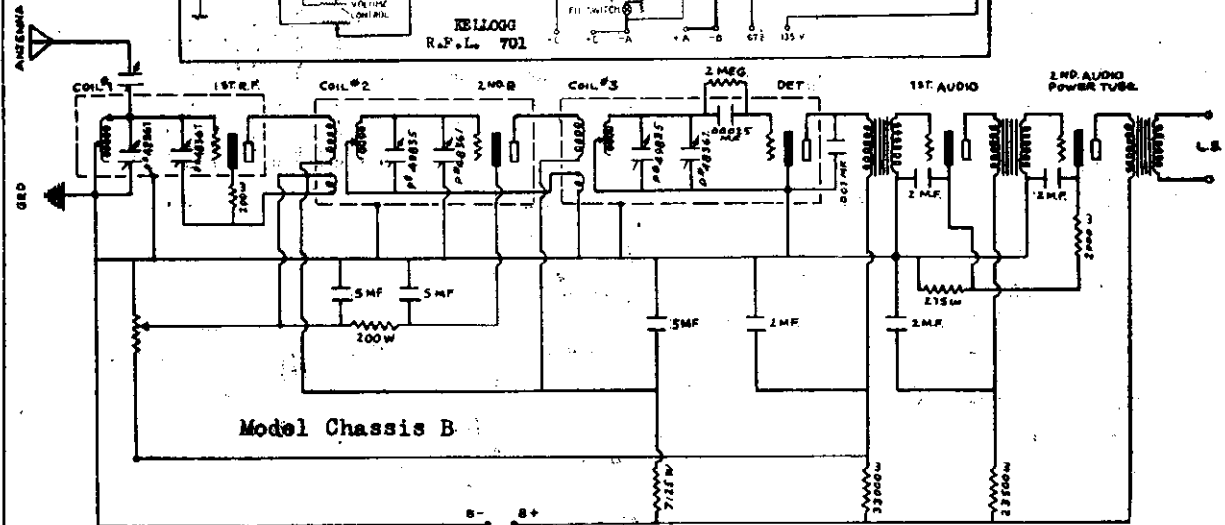


- (A) 40,000 ohms
- (B) 42,000 ohms
- (C) 22,500 ohms

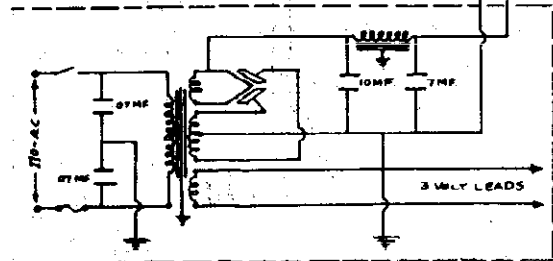
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1ST BY DET. ETC.)	TUBE OUT					TUBE IN TESTER			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE V.A.	PLATE TEST V.A.	PLATE TEST OHMS
1	401	1st. R.F.	2.75	115	2.75	108	3.5	-	6.2	10.5	4.3
2	401	2nd. R.F.	2.75	115	2.75	108	4.0	-	6.2	10.5	4.3
3	401	3rd. R.F.	2.75	115	2.75	108	4.0	-	6.2	10.5	4.3
4	401	4th. R.F.	2.75	115	2.75	108	4.0	-	6.2	10.5	4.3
5	401	Detector	2.75	28	2.75	83	0.0	-	1.4	1.5	1.2
6	401	1st. A.F.	2.75	115	2.75	108	5.0	-	6.2	10.5	4.3
7	405	2nd. A.F.	2.75	165	2.75	153	55.9	-	13.2	15.2	2.0
8	280	Rectifier	-	-	4.60	-	-	-	20.0	-	-



Model RFL 701



Model Chassis B



KELLOGG—5 Tube "B" Chassis
Line Voltage 115—Volume Control Full

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1ST BY DET. ETC.)	TUBE OUT					TUBE IN TESTER			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE V.A.	PLATE TEST V.A.	PLATE TEST OHMS
1	401	1st. R.F.	2.75	113	2.75	105	3.5	-	6.0	9.5	3.5
2	401	2nd. R.F.	2.75	113	2.75	105	4.2	-	6.0	9.5	3.5
3	401	Detector	2.75	28	2.75	25	0.0	-	1.4	1.5	1.2
4	401	1st. A.F.	2.75	115	2.75	105	4.8	-	6.0	9.5	3.5
5	405	2nd. A.F.	2.75	113	2.75	105	4.8	-	6.0	1.7	-
6	280	Rectifier	-	-	4.60	-	-	-	20.0	-	-

MODEL 523, 526
Power Unit
Schematic

KELLOGG SWITCHBOARD & SUPPLY CO.

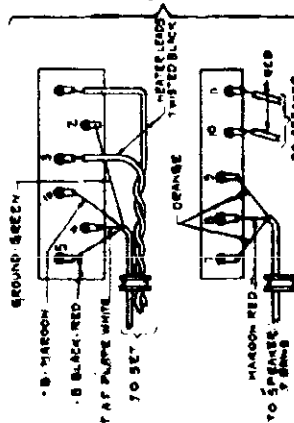
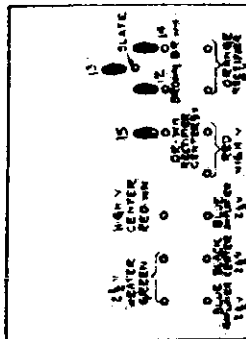
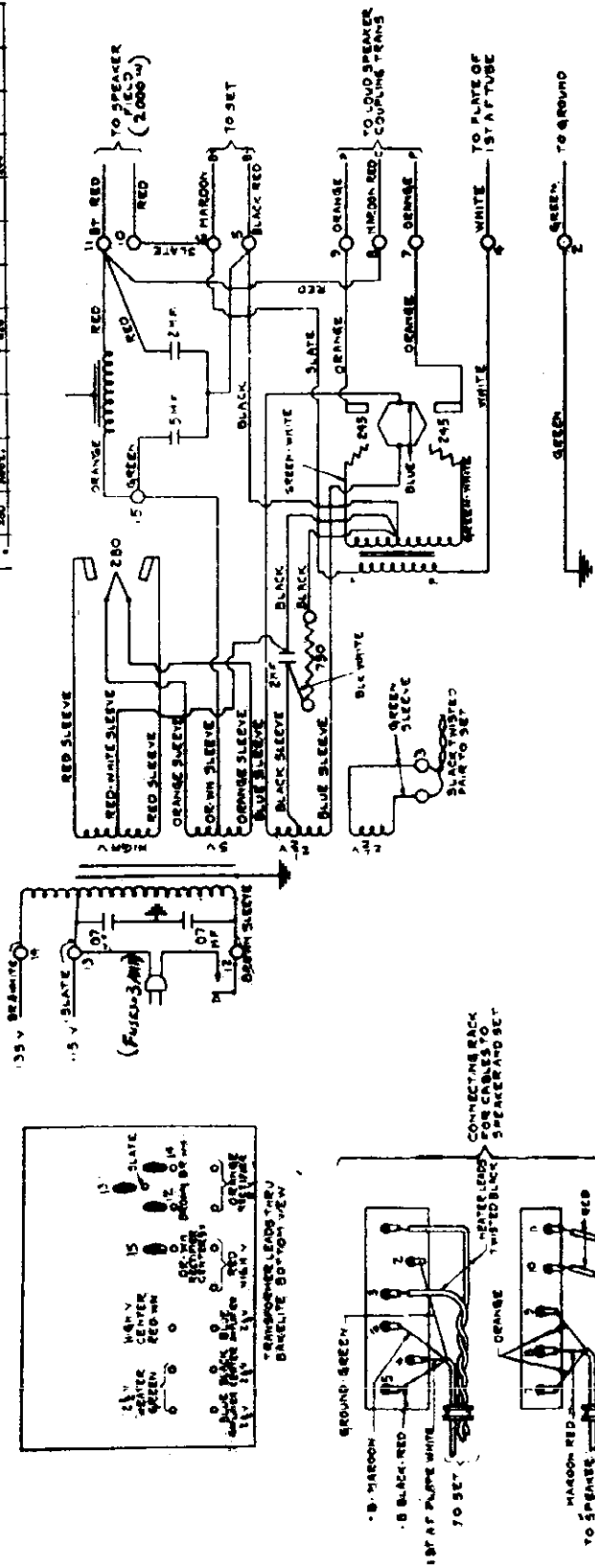
KELLOGG—Model 526-25 Cycle
Line Voltage 112—Volume Control Position Full On
Volume Control Tube

POWER UNIT CIRCUIT
245 TYPE

FOR SETS 523, 526

RESISTANCE TUBE IN SERIES WITH SET

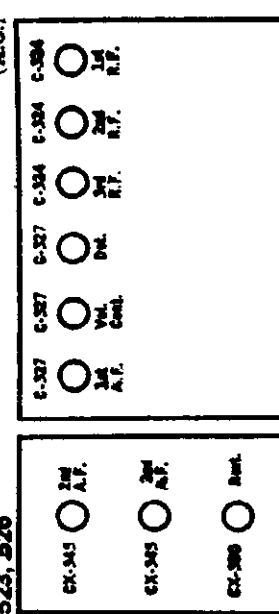
TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE																																																									
523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600



KELLOGG—Model 523-60 Cycle
Line Voltage 112—Volume Control Position Full On
Volume Control Tube

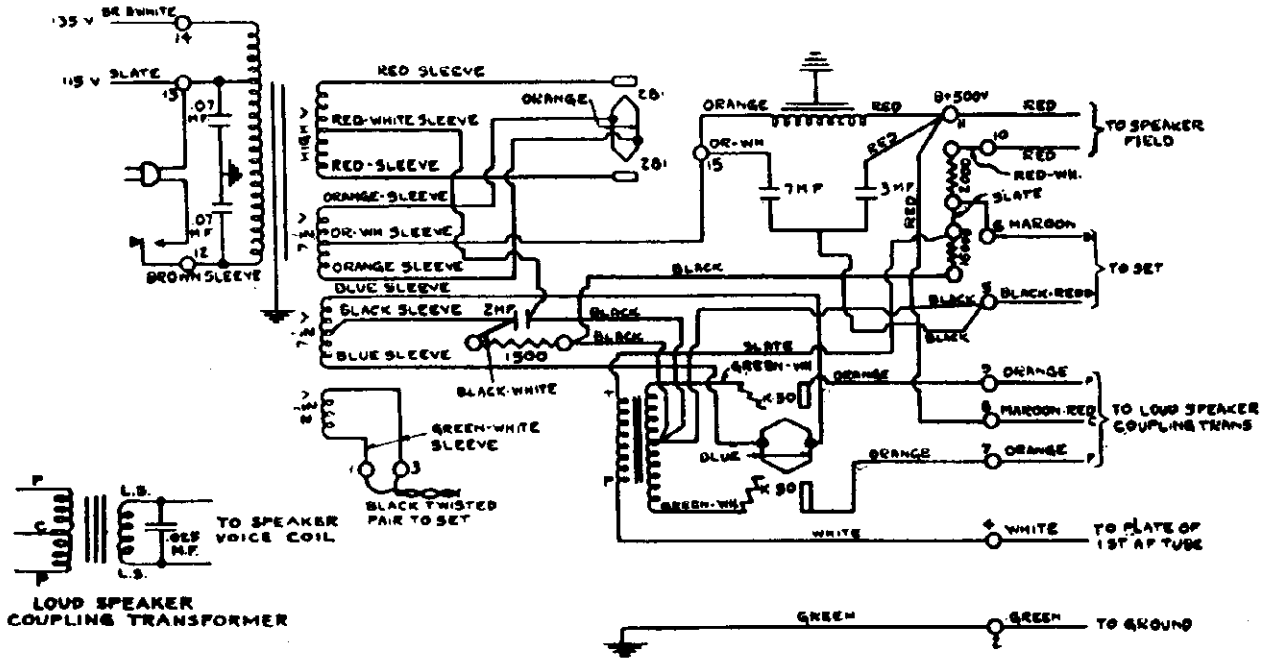
RESISTANCE TUBE IN SERIES WITH SET

TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE	TYPE																																																									
523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600

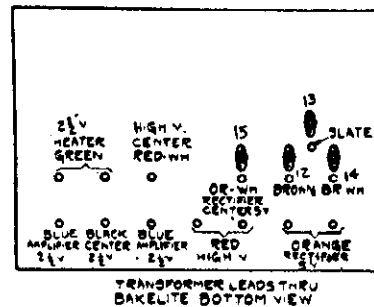
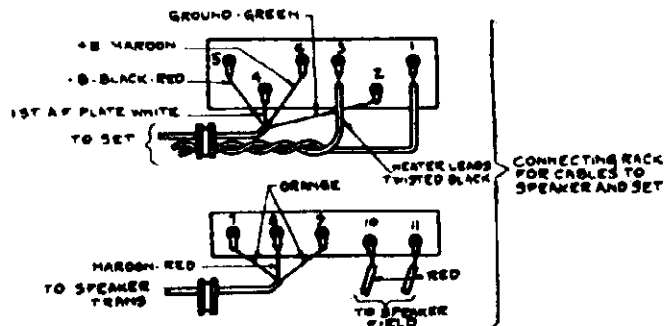


KELLOGG SWITCHBOARD & SUPPLY CO.

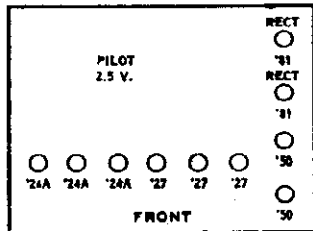
**MODEL 524, 525,
527, 528
Power Unit
Schematic**



**LOUD SPEAKER
COUPLING TRANSFORMER**



Models 524, 525, 527, 528



**POWER UNIT CIRCUIT
K-50 TYPE
FOR SETS 524, 525, 527, 528**

**KELLOGG—527-528-25 Cycle
Line Voltage 112—*Volume Control Tube**

**KELLOGG—524-525-60 Cycle
Line Voltage 112—*Volume Control Tube**

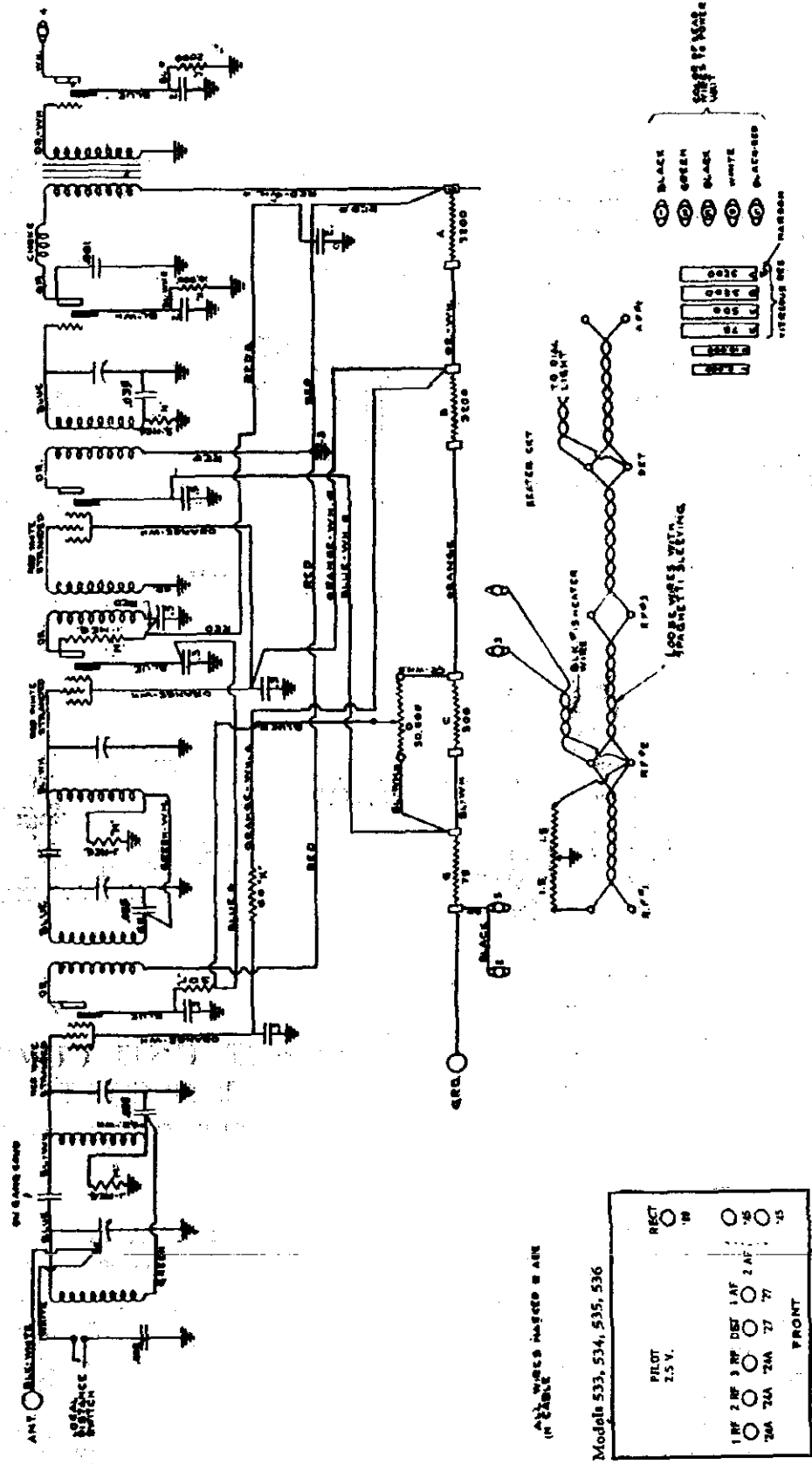
TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE	READINGS, PLUG IN SOCKET OF SET											
			TUBE OUT						TUBE IN TESTER					
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	F VOLTS	G VOLTS	H VOLTS	I VOLTS	J VOLTS	K VOLTS	
1	884	1st RF	2.4	164	2.25	160	2	2	1.4	1.6	.8	46		
2	284	2nd RF	2.4	164	2.25	160	2	2	1.4	1.6	.8	66		
3	284	3rd RF	2.4	164	2.25	160	2	2	1.4	1.6	.8	46		
4	227	Det.	2.4	200	2.25	180	17	17	1.8	—	—	—	—	
5	227	"	2.4	200	2.25	180	17	17	1.8	—	—	—	—	
6	227	"	2.4	200	2.25	180	17	17	1.8	—	—	—	—	
7	250	1st A	7.5	440	7.4	420	66	—	30	—	—	—	—	
8	250	2nd A	7.5	440	7.4	420	66	—	30	—	—	—	—	
9	281	Rect.	7.5	—	7.4	—	—	—	60	—	—	—	—	
10	281	Rect.	7.5	—	7.4	—	—	—	60	—	—	—	—	

TUBE NO IN ORDER	TYPE OF TUBE	POSITION OF TUBE	READINGS, PLUG IN SOCKET OF SET											
			TUBE OUT						TUBE IN TESTER					
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	F VOLTS	G VOLTS	H VOLTS	I VOLTS	J VOLTS	K VOLTS	
1	884	1st RF	2.4	164	2.25	160	2	2	1.4	1.6	.8	46		
2	284	2nd RF	2.4	164	2.25	160	2	2	1.4	1.6	.8	66		
3	284	3rd RF	2.4	164	2.25	160	2	2	1.4	1.6	.8	46		
4	227	Det.	2.4	200	2.25	180	17	17	1.8	—	—	—	—	
5	227	"	2.4	200	2.25	180	17	17	1.8	—	—	—	—	
6	227	"	2.4	200	2.25	180	17	17	1.8	—	—	—	—	
7	250	1st A	7.5	440	7.4	420	66	—	30	—	—	—	—	
8	250	2nd A	7.5	440	7.4	420	66	—	30	—	—	—	—	
9	281	Rect.	7.5	—	7.4	—	—	—	60	—	—	—	—	
10	281	Rect.	7.5	—	7.4	—	—	—	60	—	—	—	—	

MODEL 533, 534
535, 536
R.F. Chassis
Schematic

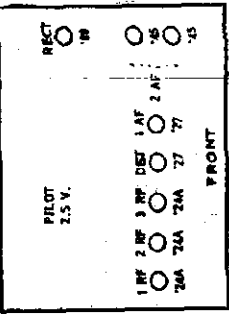
KELLOGG SWITCHBOARD & SUPPLY CO.

RADIO CIRCUIT KELLOGG SCREEN GRID RECEIVER

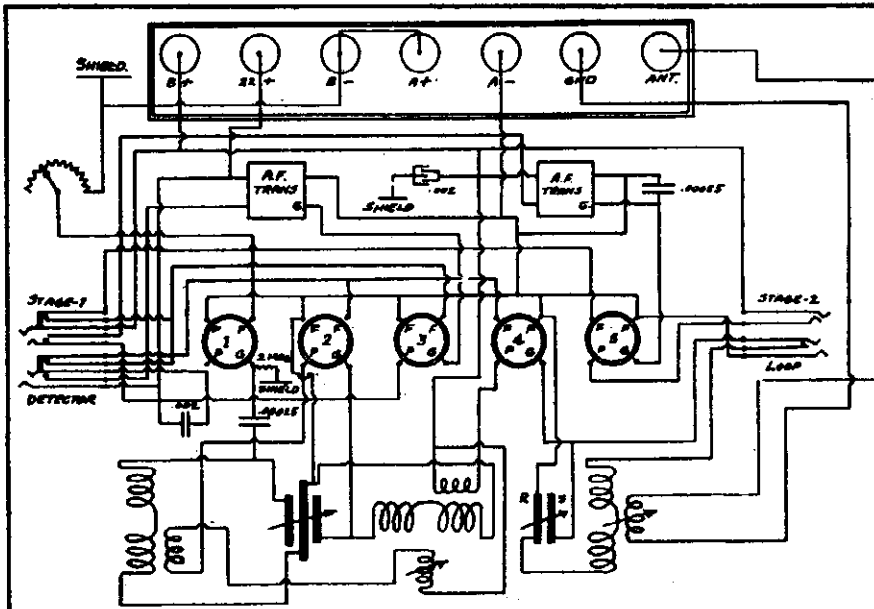


FOR POWER UNITS SEE INDEX

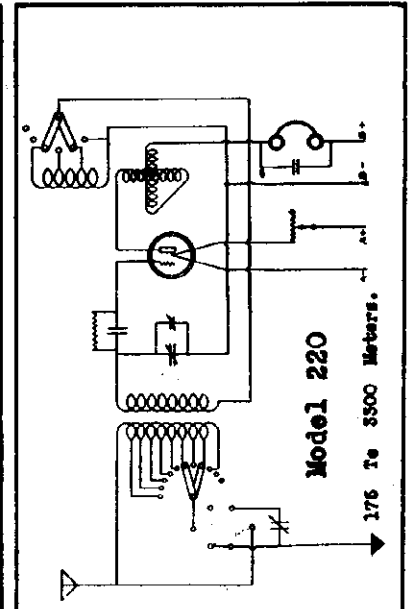
Models 533, 534, 535, 536



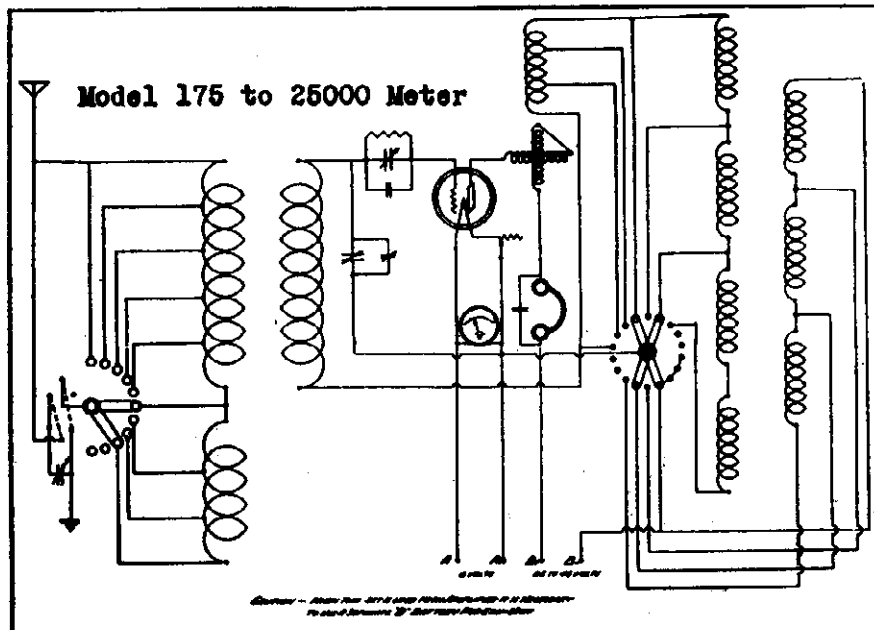
COLIN B. KENNEDY CORP. MODEL 220
 MODEL 281
 MODELS 15,16(Type 430-43)
 MODEL 175 to 25000 Meter



Models 15,16(Type 430-43) Tube orders 4, - 2, - 1, - 3, - 5.

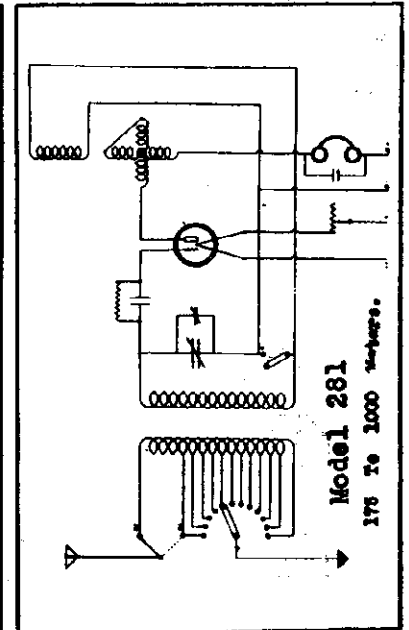


Model 220
 175 to 5500 Meters.



Model 175 to 25000 Meter

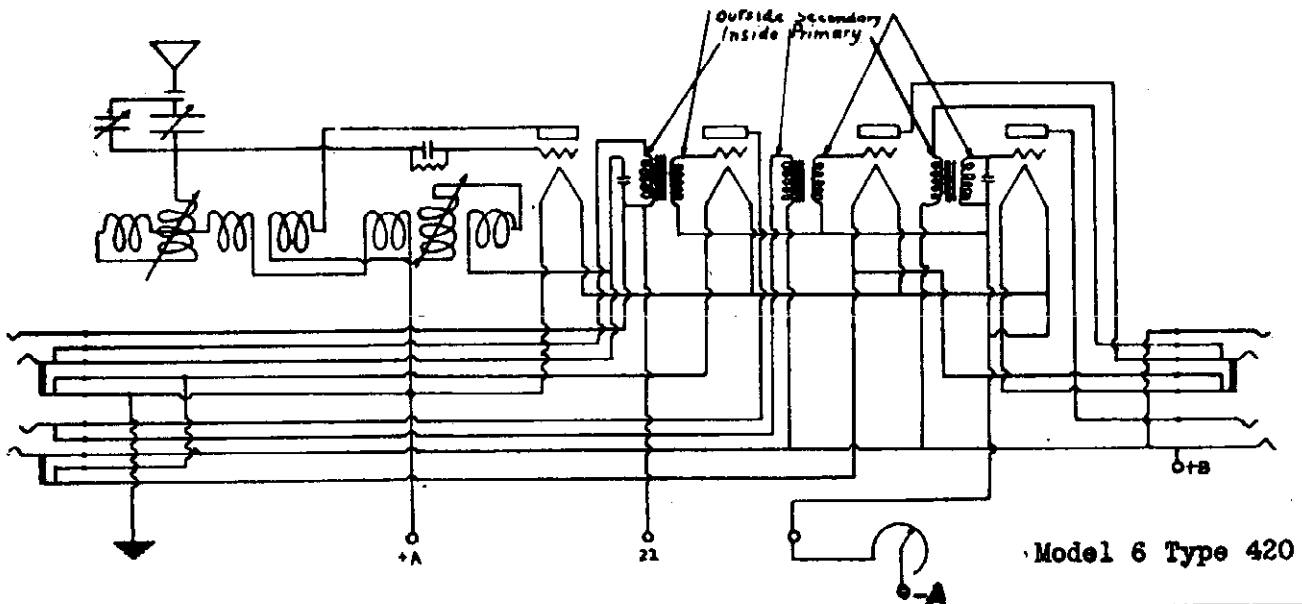
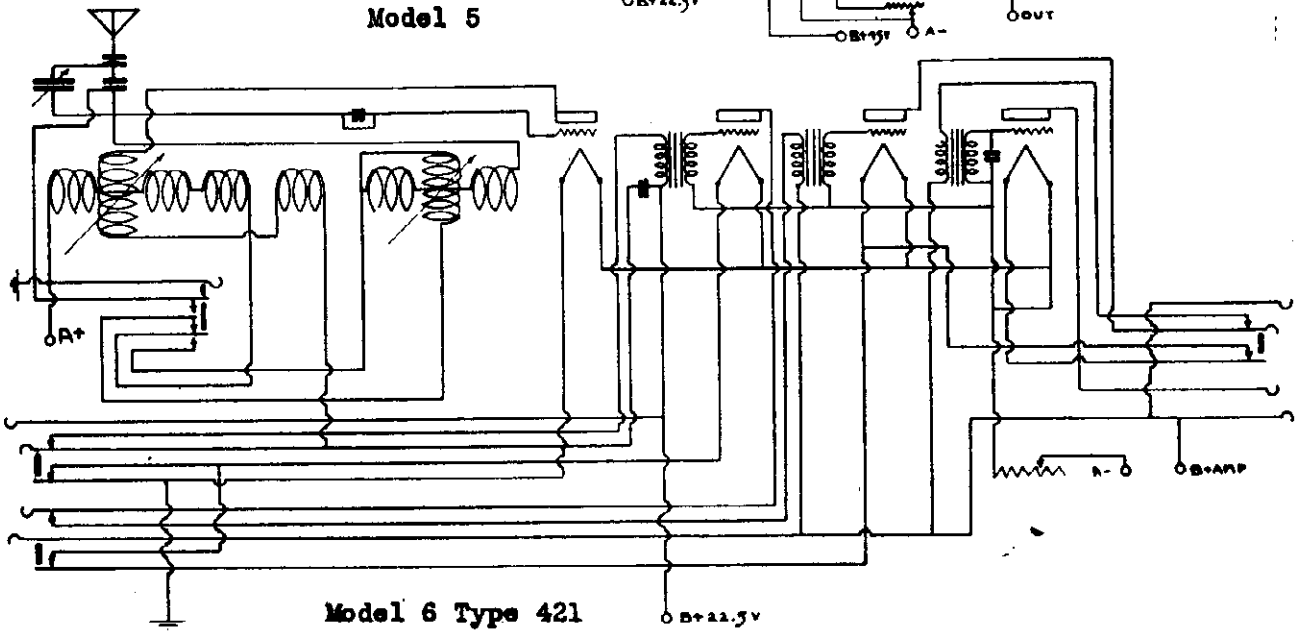
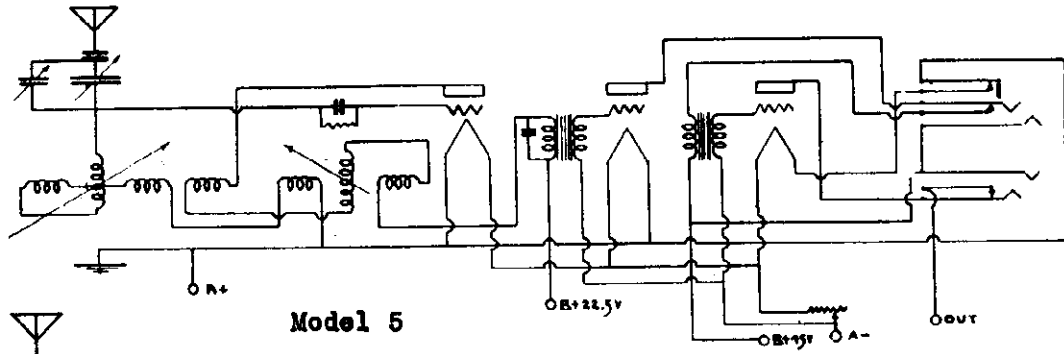
Caution - When the 25000 Meter Model is used, the 25000 Meter Model must be used.



Model 281
 175 to 3000 Meters.

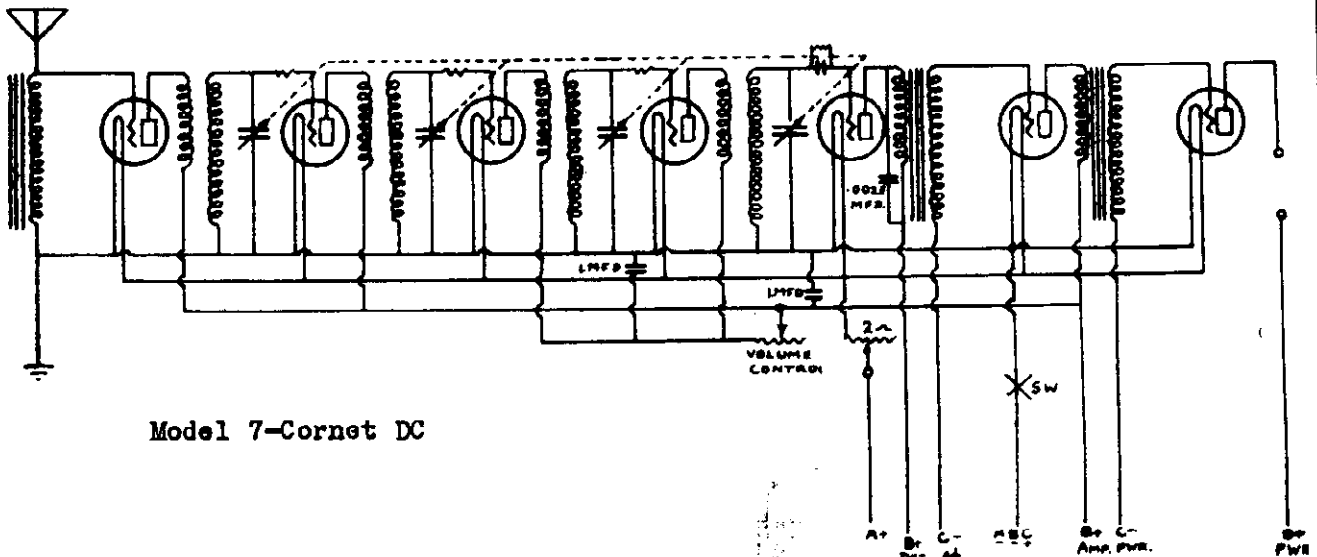
MODEL 5
MODEL 6 Type 421
MODEL 6 Type 42C

COLIN B. KENNEDY CORP.

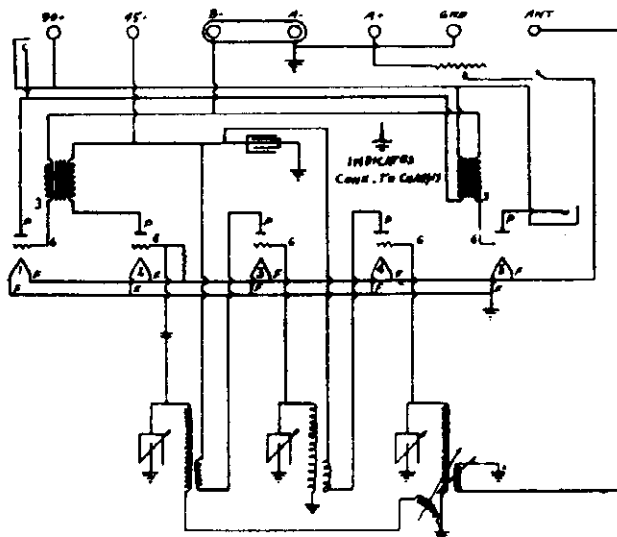


COLIN B. KENNEDY CORP.

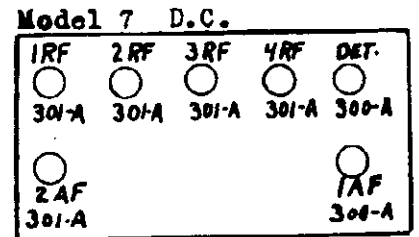
MODEL 7-Cornet DC
 MODEL 20 Type 440
 MODEL 30 Type 435



Model 7-Cornet DC



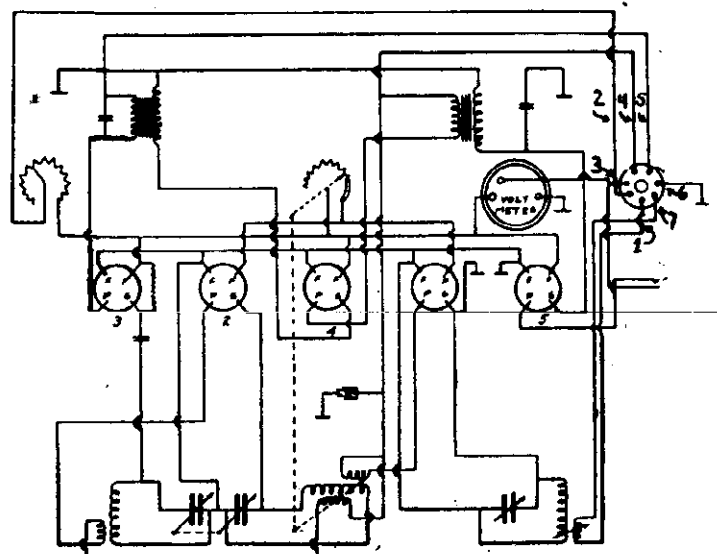
Model 20
 Type 440
 Tube Order
 4,-3,-2,-1,-5.



Model 30
 Type 435

Wiring Connections
 and
 Cable Colors

- 1 Antenna - Green
- 2 +A - Red
- 3 +B - Blue
- 4 +C - Black
- 5 PWR - Yellow
- 6 -B - Green
- 7 Ground - Black

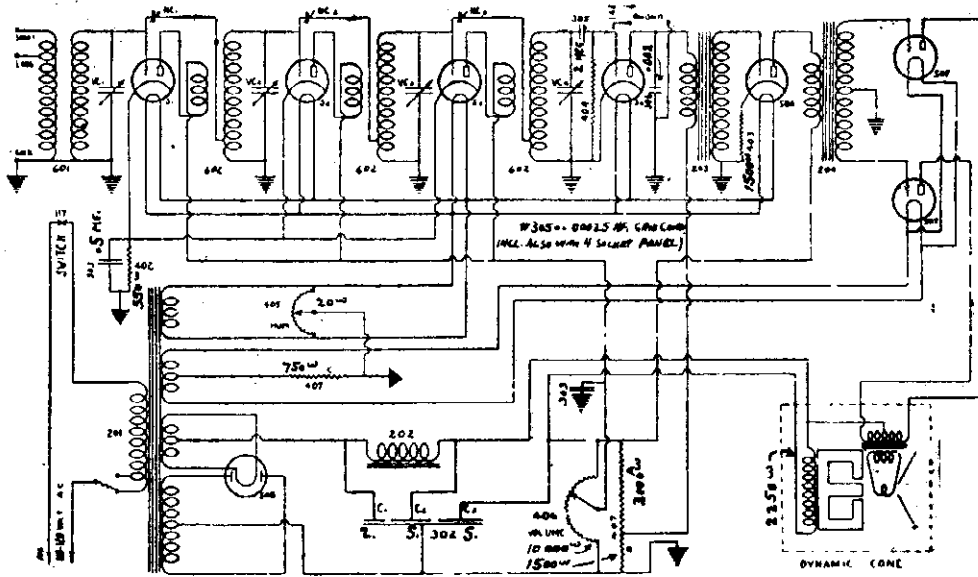


KENNEDY—Model 30-32
 Line Voltage 120—Volume Control Full Or

TUBE NO. IN ORDER LISTED	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET					FLUORESCENT LAMP	TUBE TEST
			FLUORESCENT LAMP	PLATE OR HEATER	CONTROL GRID - SPACE	NORMAL GRID - SCREEN	CATHODE TO HEATER			SCREEN GR. PLATE	PLATE
1	224	1 R.F.	2,3	160	3,5	60	-	-	2,2
2	224	2 R.F.	2,3	160	3,5	60	-	-	2,2
3	224	3 R.F.	2,3	160	3,5	60	-	-	2,2
4	227	Det.	2,3	180	-	10	-	-	1,5
5	227	1 A.F.	2,3	180	-	9	-	-	2,2
6	245	PP-AF	2,3	230	-	45	-	-	20
7	245	PP-AF	2,3	230	-	45	-	-	20
8	250	Rect.	4,8	-	-	-	-	45	45

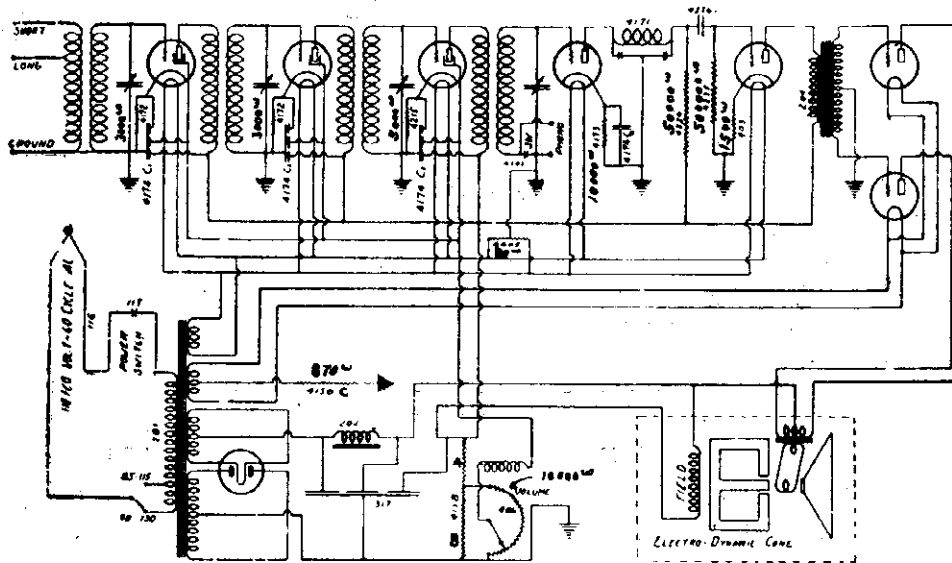
MODEL 10
MODEL 20

COLIN B. KENNEDY CORP.



497 - A, B, C - VOLTAGE DIVIDER RESISTOR - 5250 W TOTAL

Model 10



4158 - A, B, C - VOLTAGE DIVIDER RESISTOR - 5750 W TOTAL

Model 20

KENNEDY—Model 10
Line Voltage 112—Set on 120 Volt Tap

TYPE OF SET	TUNE IN VOLTAGE		TUNE IN VOLTAGE		TUNE IN VOLTAGE		TUNE IN VOLTAGE		TUNE IN VOLTAGE		REAR PANEL PLUG IN SOCKET OF SET
	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING		
1-1	112	112	112	112	112	112	112	112	112	112	112
1-2	112	112	112	112	112	112	112	112	112	112	112
1-3	112	112	112	112	112	112	112	112	112	112	112
1-4	112	112	112	112	112	112	112	112	112	112	112
1-5	112	112	112	112	112	112	112	112	112	112	112
1-6	112	112	112	112	112	112	112	112	112	112	112
1-7	112	112	112	112	112	112	112	112	112	112	112
1-8	112	112	112	112	112	112	112	112	112	112	112
1-9	112	112	112	112	112	112	112	112	112	112	112
1-10	112	112	112	112	112	112	112	112	112	112	112
1-11	112	112	112	112	112	112	112	112	112	112	112
1-12	112	112	112	112	112	112	112	112	112	112	112
1-13	112	112	112	112	112	112	112	112	112	112	112
1-14	112	112	112	112	112	112	112	112	112	112	112
1-15	112	112	112	112	112	112	112	112	112	112	112
1-16	112	112	112	112	112	112	112	112	112	112	112
1-17	112	112	112	112	112	112	112	112	112	112	112
1-18	112	112	112	112	112	112	112	112	112	112	112
1-19	112	112	112	112	112	112	112	112	112	112	112
1-20	112	112	112	112	112	112	112	112	112	112	112

KENNEDY—Model 20—Screen Grid
Line Voltage 112—Set on 120 Volt Tap

TYPE OF SET	TUNE IN VOLTAGE		TUNE IN VOLTAGE		TUNE IN VOLTAGE		TUNE IN VOLTAGE		TUNE IN VOLTAGE		REAR PANEL PLUG IN SOCKET OF SET
	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING	TYPE OF TUNING		
20-1	112	112	112	112	112	112	112	112	112	112	112
20-2	112	112	112	112	112	112	112	112	112	112	112
20-3	112	112	112	112	112	112	112	112	112	112	112
20-4	112	112	112	112	112	112	112	112	112	112	112
20-5	112	112	112	112	112	112	112	112	112	112	112
20-6	112	112	112	112	112	112	112	112	112	112	112
20-7	112	112	112	112	112	112	112	112	112	112	112
20-8	112	112	112	112	112	112	112	112	112	112	112
20-9	112	112	112	112	112	112	112	112	112	112	112
20-10	112	112	112	112	112	112	112	112	112	112	112
20-11	112	112	112	112	112	112	112	112	112	112	112
20-12	112	112	112	112	112	112	112	112	112	112	112
20-13	112	112	112	112	112	112	112	112	112	112	112
20-14	112	112	112	112	112	112	112	112	112	112	112
20-15	112	112	112	112	112	112	112	112	112	112	112
20-16	112	112	112	112	112	112	112	112	112	112	112
20-17	112	112	112	112	112	112	112	112	112	112	112
20-18	112	112	112	112	112	112	112	112	112	112	112
20-19	112	112	112	112	112	112	112	112	112	112	112
20-20	112	112	112	112	112	112	112	112	112	112	112

20,

(A.C.)

10

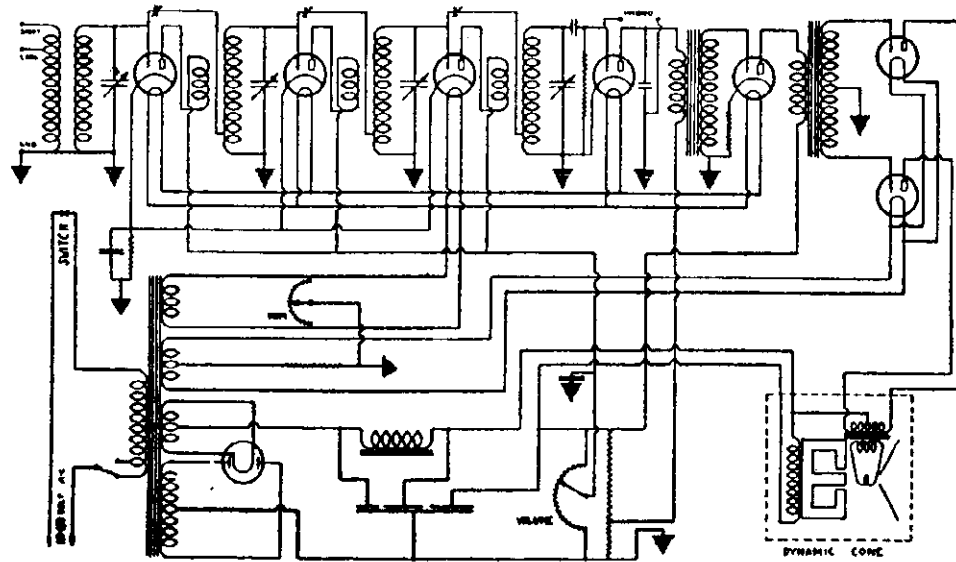
(A.C.)

CX-380	Rect.	C-324	1st R.F.	C-327	3rd A.F.
CX-345	2nd A.F.	C-324	2nd R.F.		
CX-345	2nd A.F.	C-324	3rd R.F.		
		C-327	Det.		

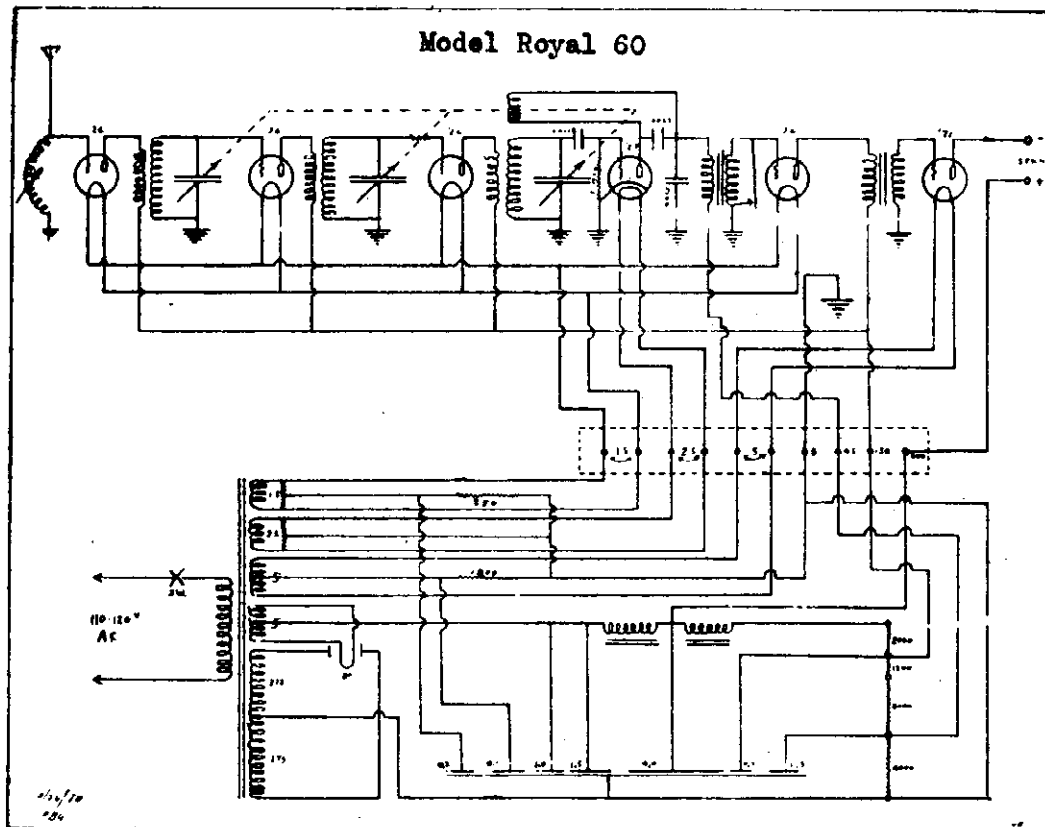
	1 RF	RECT. CX-380
	C-327	
	2 RF	2AF CX-345
	C-327	
1AF	3RF	
C-327	C-327	
	DET. C-327	

COLIN B. KENNEDY CORP.

MODEL Royal
MODEL Royal 60



Model Royal



1 RF 26	DET 27	2 AF 71A	RECT 80
2 RF 26	3 RF 26	1 AF 26	

PILOT 5.0 V
FRONT

MODEL 26
Schematic
Chassis, Notes

COLIN B. KENNEDY CORP.

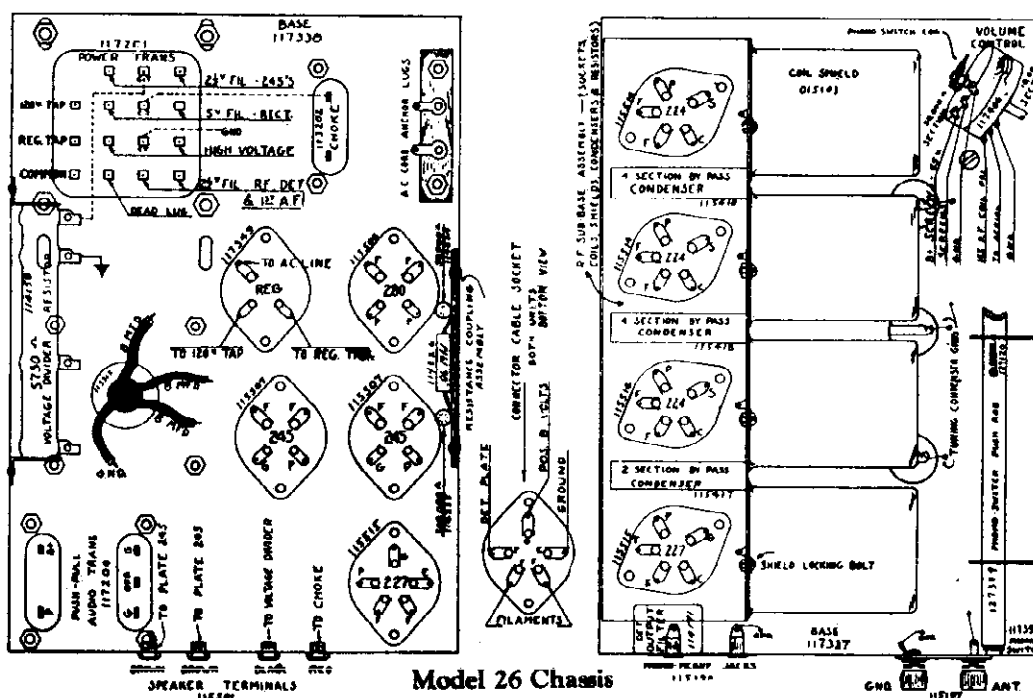
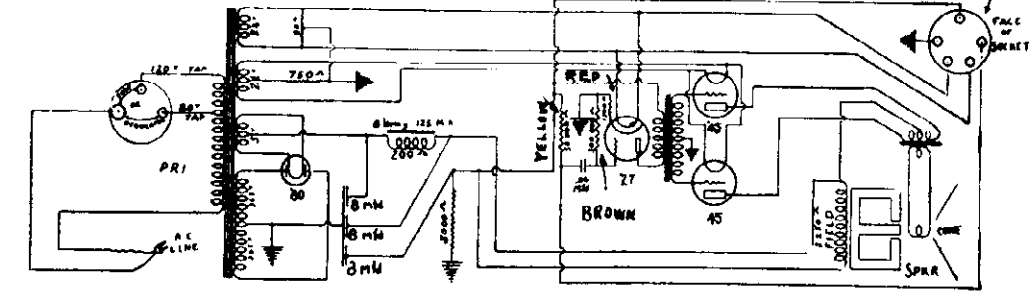
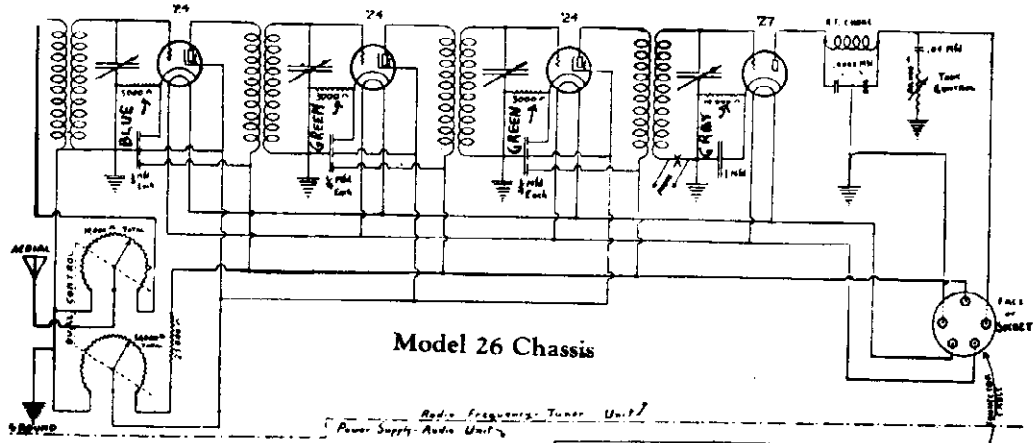
Special Note—Regulator Tubes

The Duarente type 415 line voltage regulator tube has been recommended for Kennedy Model 26 receivers. This tube is unsatisfactory for the model 826-B, however, as the short wave receiver adds to the current draw. The proper Duarente regulator tube for the long wave-short wave chassis only (model 826-B) is type 449.

The chassis model 26 is provided with an extra socket for a voltage regulator tube. Receivers are shipped with a plug in this socket which contains a line fuse. The plug automatically connects the line through the fuse, onto the 120 volt primary tap. This transformer tap will provide sufficiently accurate voltages to the set between line voltages of about 108 to 125

The resistance values of the various colored biasing resistors employed are as follows:

Green	3,000 ohms	Yellow	50,000 ohms
Blue	5,000 ohms	Brown	50,000 ohms
Grey	10,000 ohms	Red	1,500 ohms

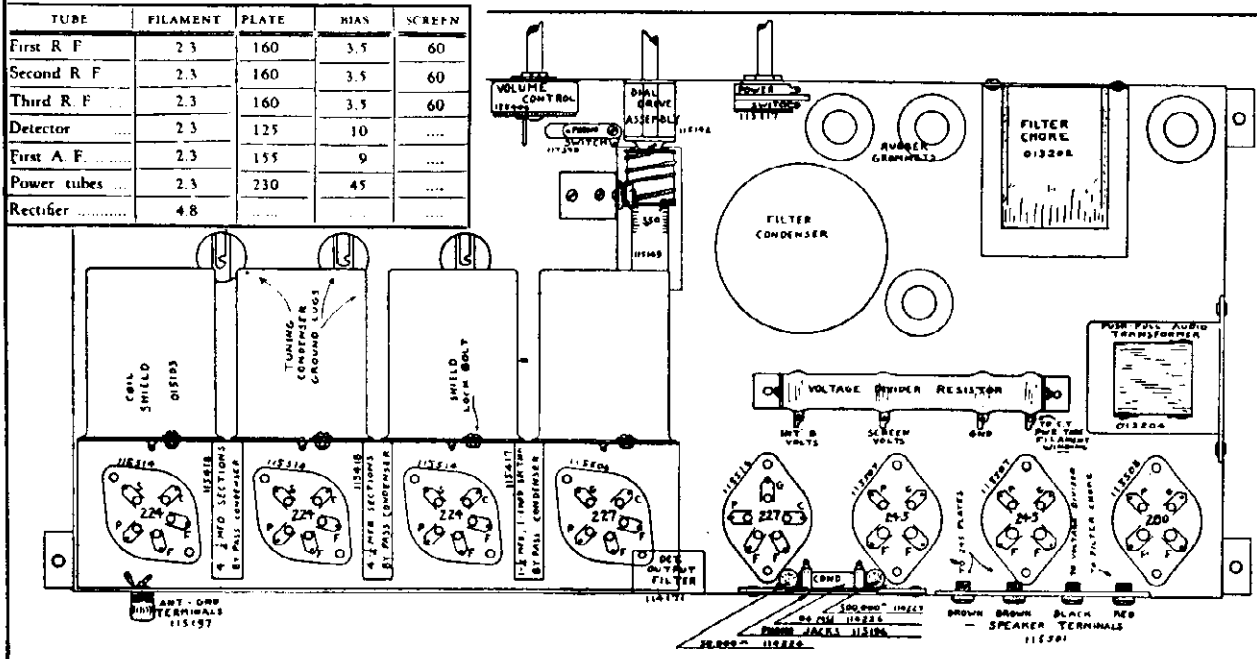


Model 26 Chassis

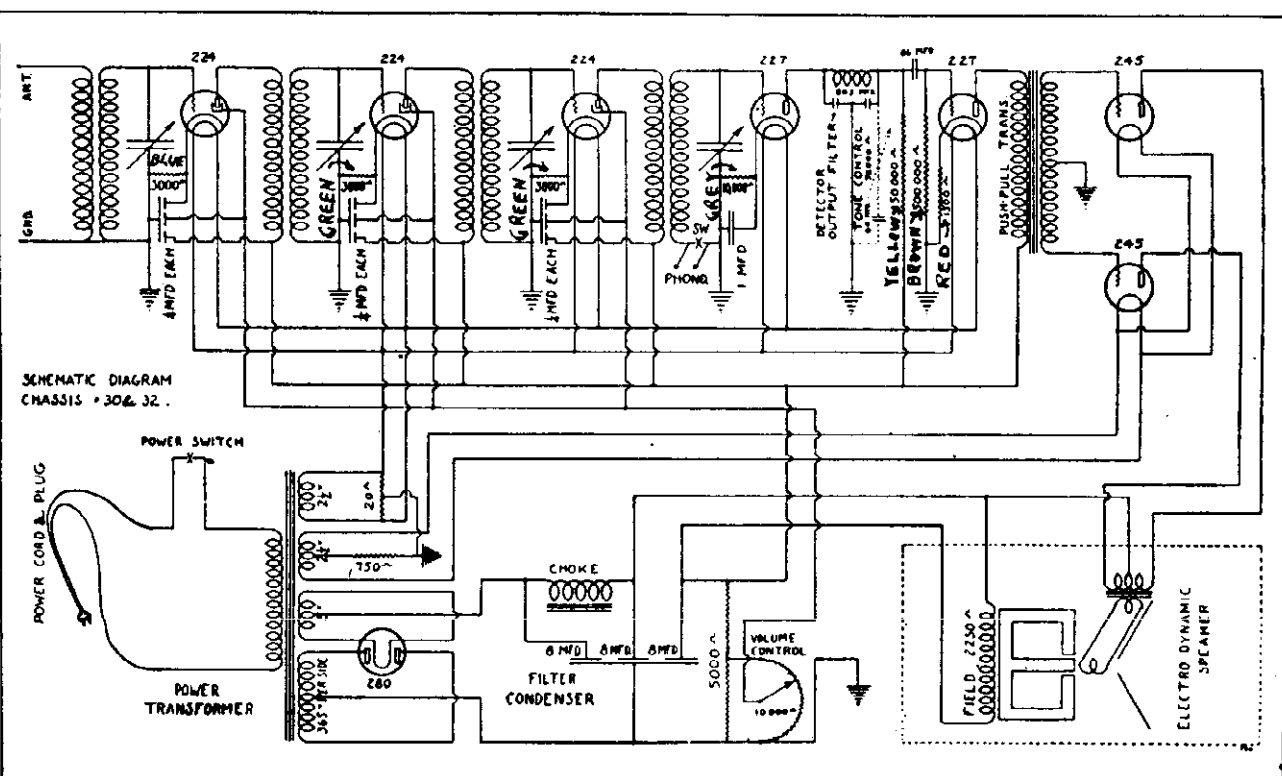
COLIN B. KENNEDY CORP.

MODEL 30 & 32
Schematic
Chassis

Socket and Transformer Terminal Diagram of Model 30 and 32 Chassis



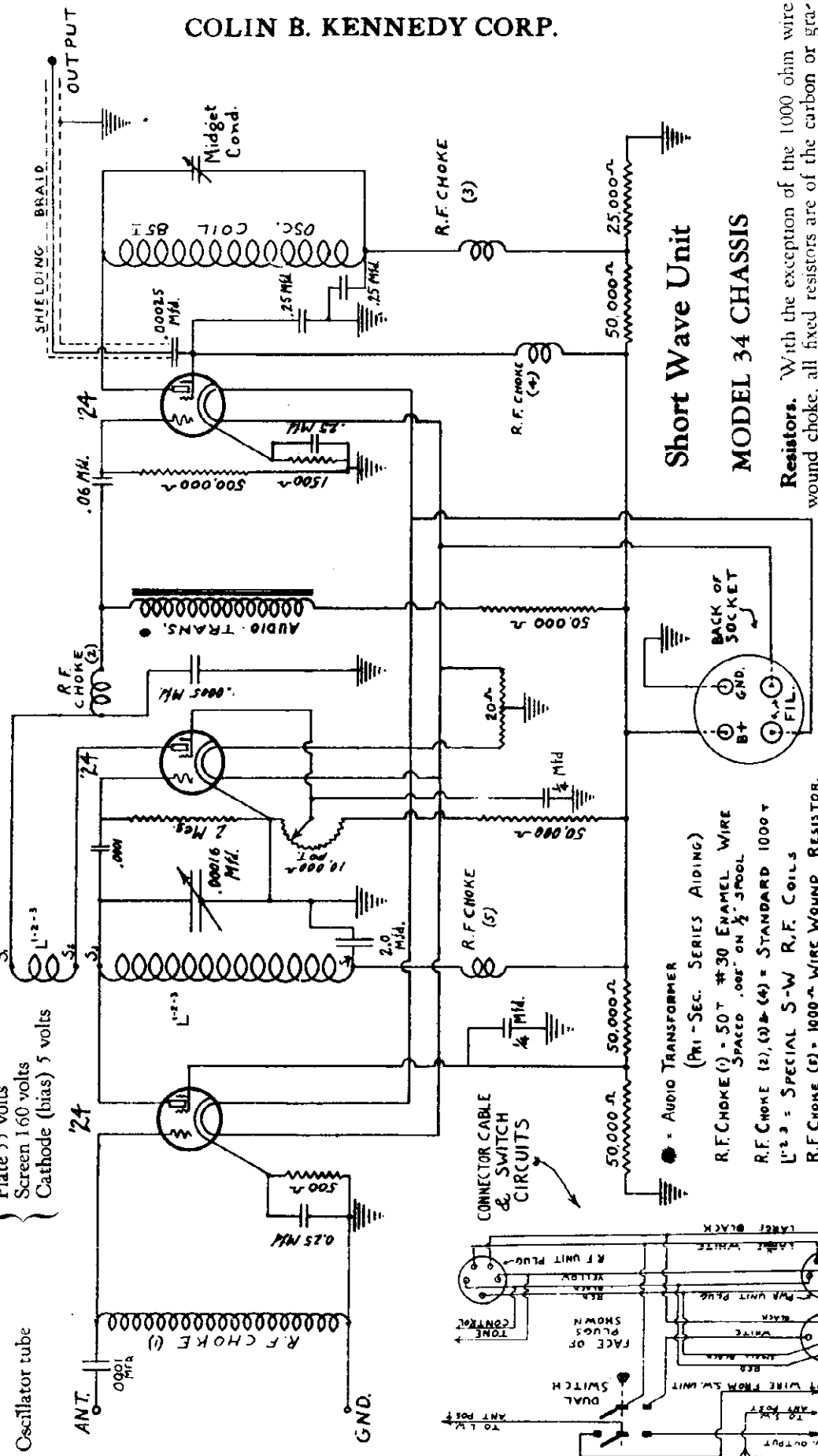
Schematic Circuit Diagram of Model 30 and 32 Chassis



MODEL 34
Schematic
Voltage

COLIN B. KENNEDY CORP.

- Radio frequency tube:
- Yellow 50,000 ohms
 - Red 1,500 ohms
 - Red (large) 2 megohms
 - Grey 25,000 ohms
 - Brown 500,000 ohms
 - Black 500 ohm
- (Flexible covered resistor)
- Detector tube:
- Plate 160 volts
 - Screen 70 volts
 - Cathode (bias) 1.1 volts
- Oscillator tube:
- Plate 140 volts
 - Screen 30 volts
 - (Volume on Maximum)
- Plate 55 volts
- Screen 160 volts
- Cathode (bias) 5 volts



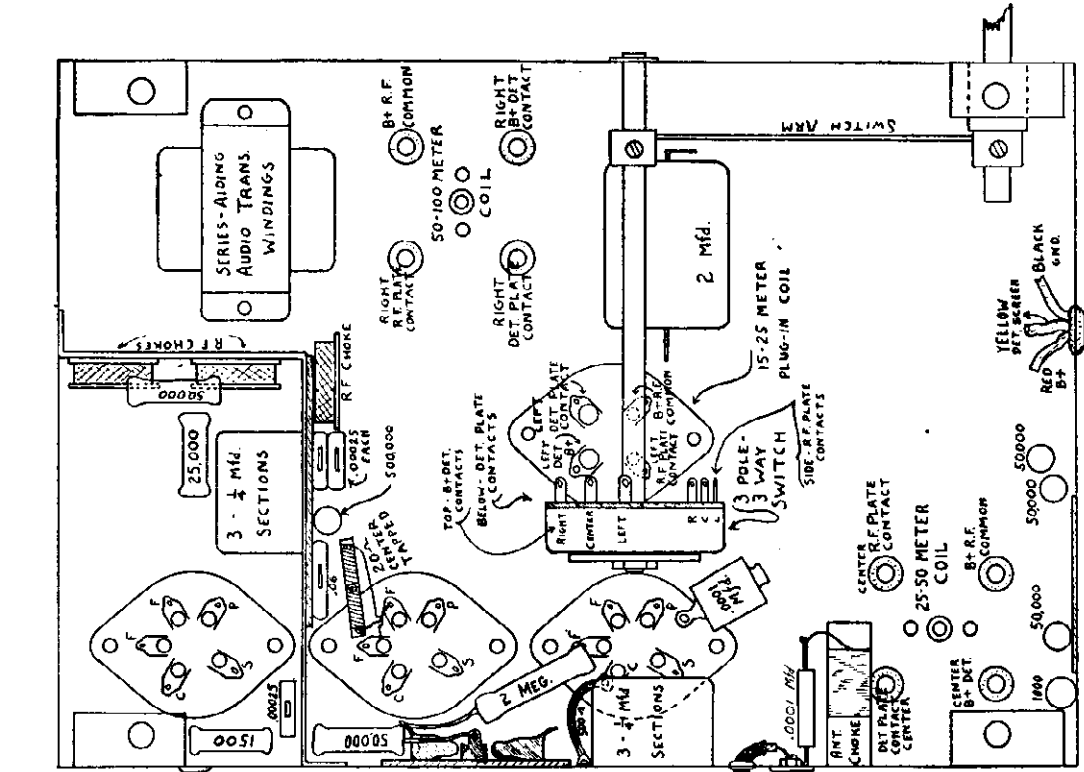
Resistors. With the exception of the 1000 ohm wire wound choke, all fixed resistors are of the carbon or graphite type.

Short Wave Unit
MODEL 34 CHASSIS

- - Audio Transformer (PRI - SEC. SERIES AIDING)
- R.F. CHOKES (1) - 50T #30 ENAMEL WIRE SPACED .008" ON 1/2" SPOOL
- R.F. CHOKES (2), (3), (4) - STANDARD 1000T
- L1-2-3 - SPECIAL S-W R.F. COILS
- R.F. CHOKES (5) - 1000T WIRE WOUND RESISTOR.
- 514-3 - COIL LEADS SWITCHED, 54. COMMON.

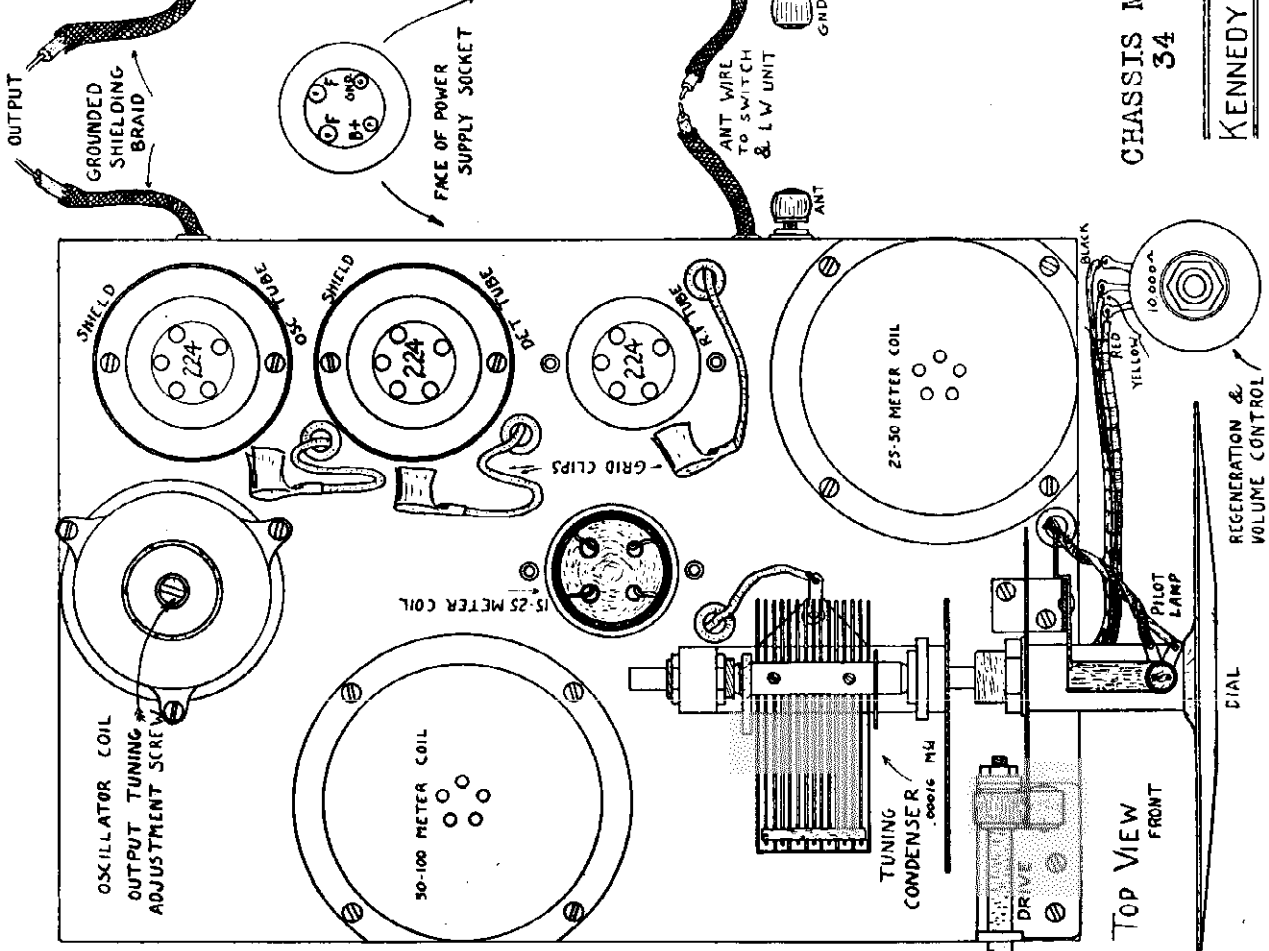
COLIN B. KENNEDY CORP.

MODEL 34
Chassis



BOTTOM VIEW
FRONT

CHASSIS MODEL
34
TO REGENERATION &
VOLUME CONTROL



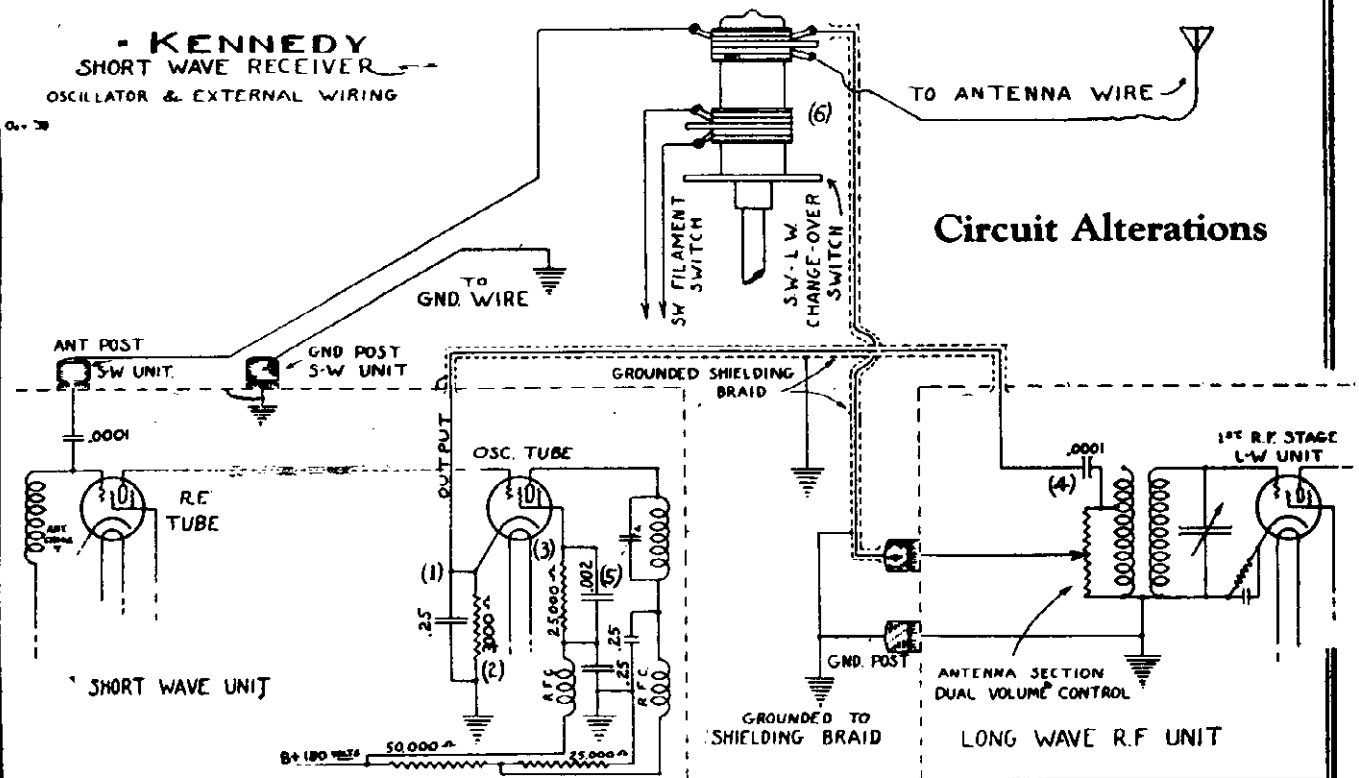
TOP VIEW
FRONT

KENNEDY SHORT WAVE RECEIVER

MODEL 34
Oscillator
Data

COLIN B. KENNEDY CORP.

- KENNEDY
SHORT WAVE RECEIVER
OSCILLATOR & EXTERNAL WIRING



Circuit Alterations

Short Wave Chassis Model 34

Certain minor alterations in wiring, as well as the addition of a few small parts, have been made in the production of the short wave chassis, model 34.

These changes have been made as they increase the ease in handling and the efficiency of the unit, but are not recommended for units built prior to the time of their adoption in production.

Variations in the circuit diagram in this booklet are shown in the illustration on this page. It will be noted that the changes have been made in the oscillator and external wiring circuits only—the short wave radio frequency stage and detector remaining entirely as previously indicated. The changes are as follows, numbers corresponding to those on illustration.

- (1) The short wave, oscillator output is now taken from the cathode of the oscillator tube instead of the screen.
- (2) A 3,000-ohm biasing resistor replaces the 1,500-ohm resistor previously indicated at the oscillator cathode.
- (3) A 25,000-ohm graphite resistor has been placed in the screen circuit between the R. F. choke and screen.
- (4) A .0001 mfd. condenser has been placed in the long wave R. F. unit, at the ungrounded end of the volume control.
- (5) A .002 mfd. condenser is placed across the 25,000-ohm screen grid series resistor.
- (6) The long wave-short wave change over switch is rewired as indicated in the accompanying diagram. The portion of the switch utilized

in turning the filaments of the S-W unit on and off remains unchanged. The other portion, single pole-double throw, is now rewired so that the antenna is thrown to either short wave or long wave units as required, being entirely disconnected from the unit it is not intended to connect to. The antenna is now connected to the center pole of this switch, as per diagram.

It will be noted that the short wave unit output now connects permanently to the long wave antenna coil primary through the .0001 mfd. condenser located in the long wave R. F. unit, without being cut in and out by the change over switch, as formerly. This does not add a noticeable load to this circuit, for long wave reception, so does not need to be switched.

Shielding braid is used over the short wave output wire, and the wire from the switch to the antenna post of the long wave unit.

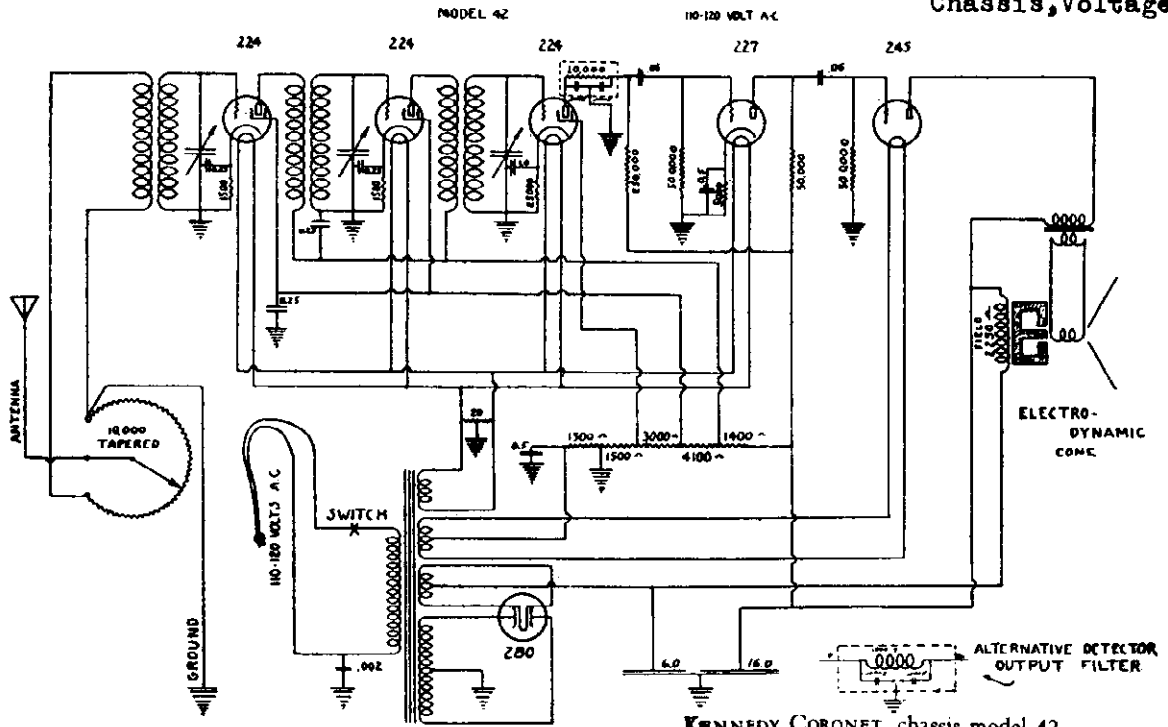
The 10,000-ohm wire wound regeneration and volume control, in the short wave unit, has been replaced by a 10,000-ohm graphite control. This provides a smooth control—less inclined to be noisy.

The ground wire is connected to the ground post of the short wave unit, as formerly indicated.

The antenna is now connected to the wire leading from the changeover switch.

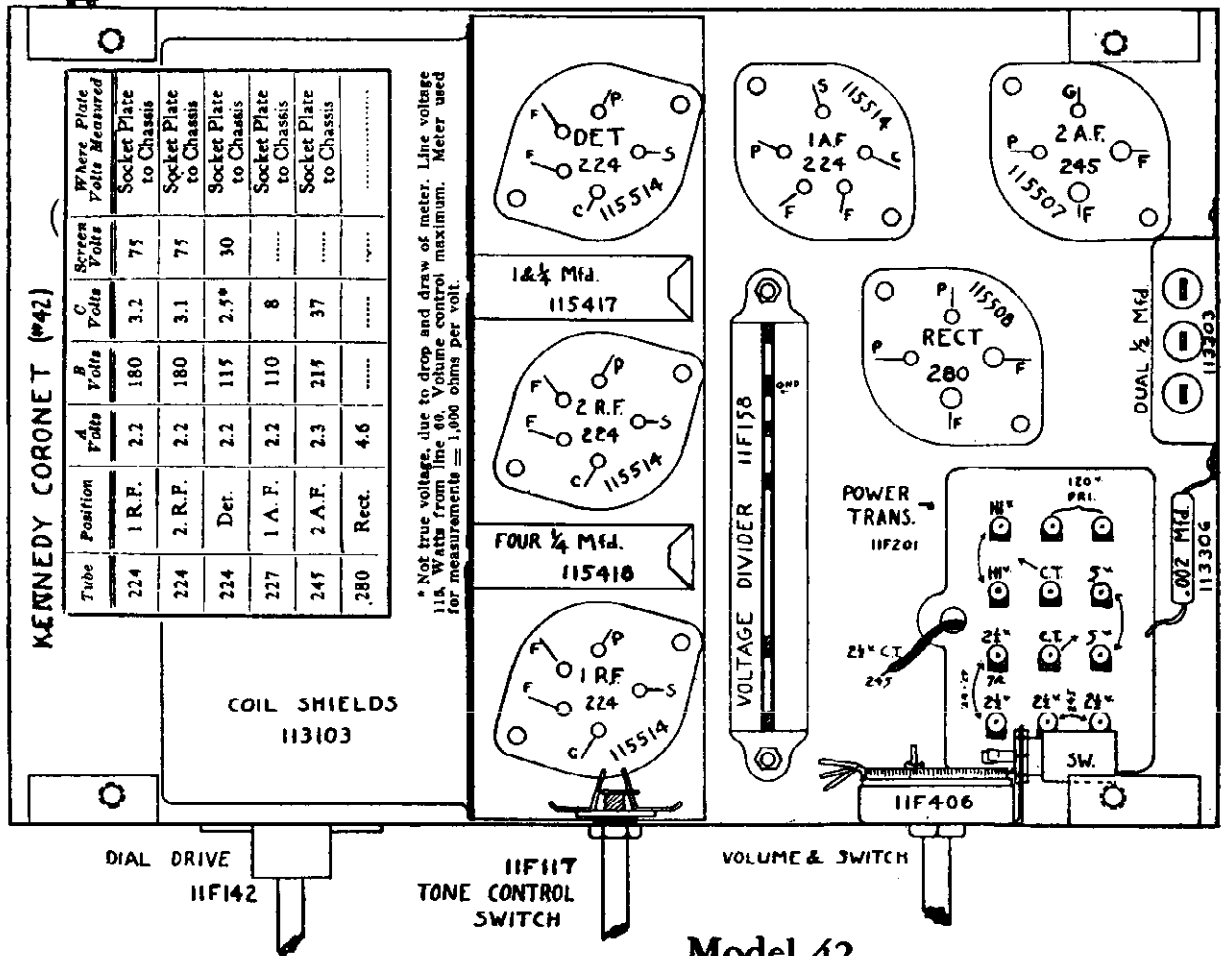
COLIN B. KENNEDY CORP

MODEL Coronet 42
Schematic
Chassis, Voltage



KENNEDY CORONET, chassis model 42

ANT-GND POSTS 115197

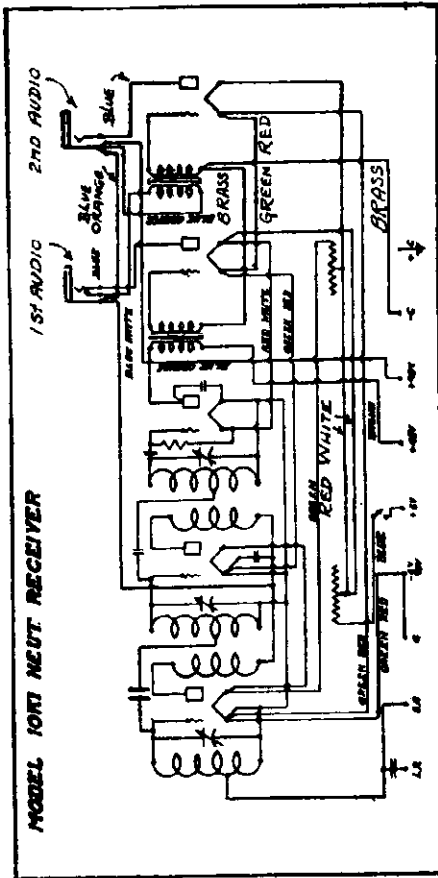


Model 42

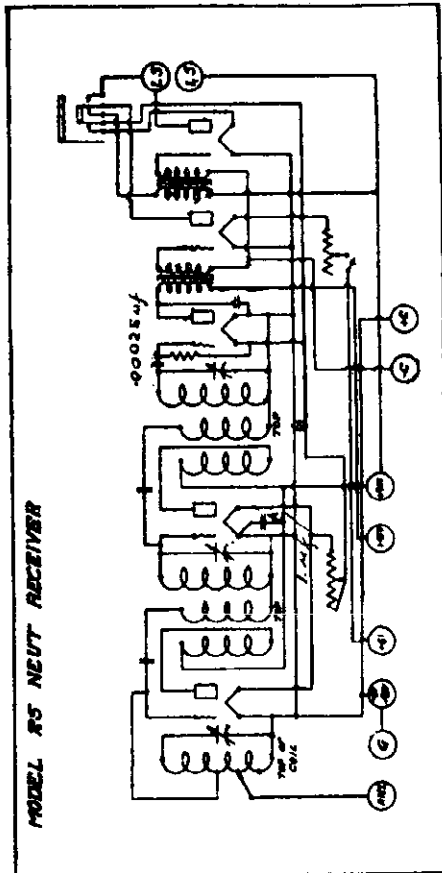
KING MFG. CORP.

MODEL 10 KI, 10 SK
 MODEL 25
 MODEL 30

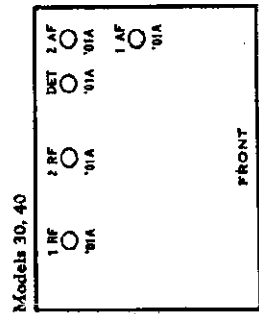
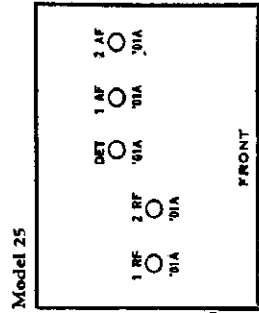
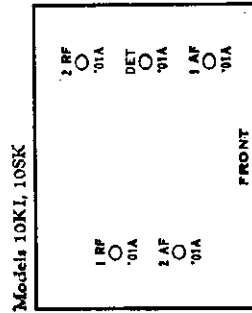
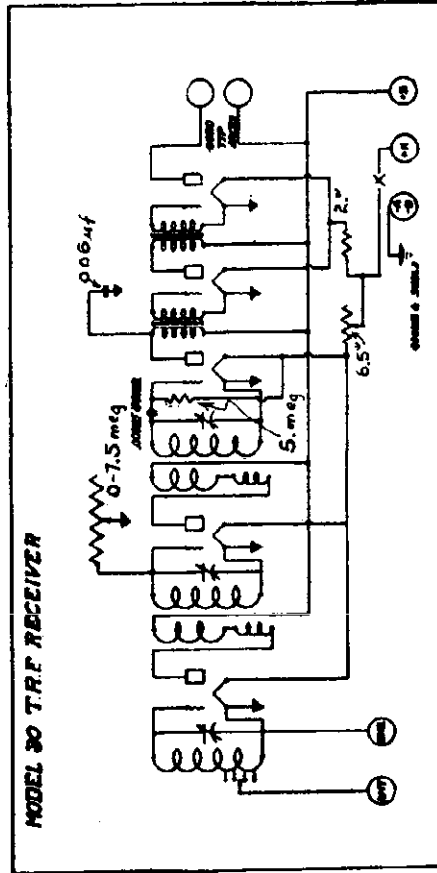
MODEL 10KI NEUT. RECEIVER



MODEL RS NEUT. RECEIVER

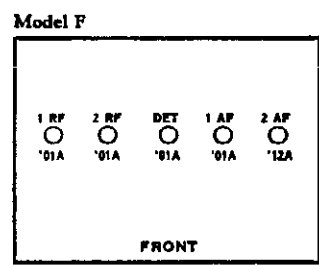
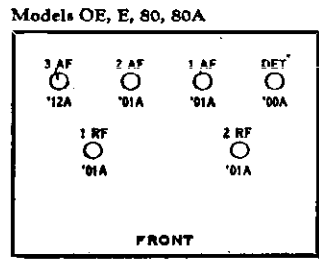
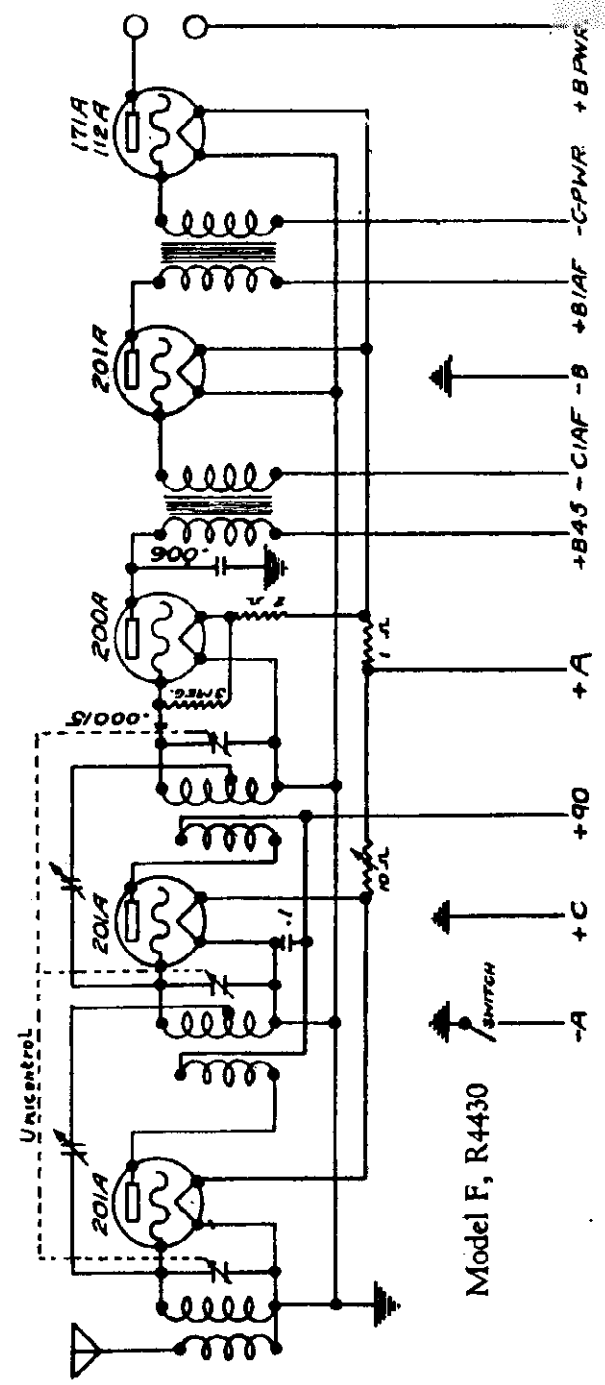
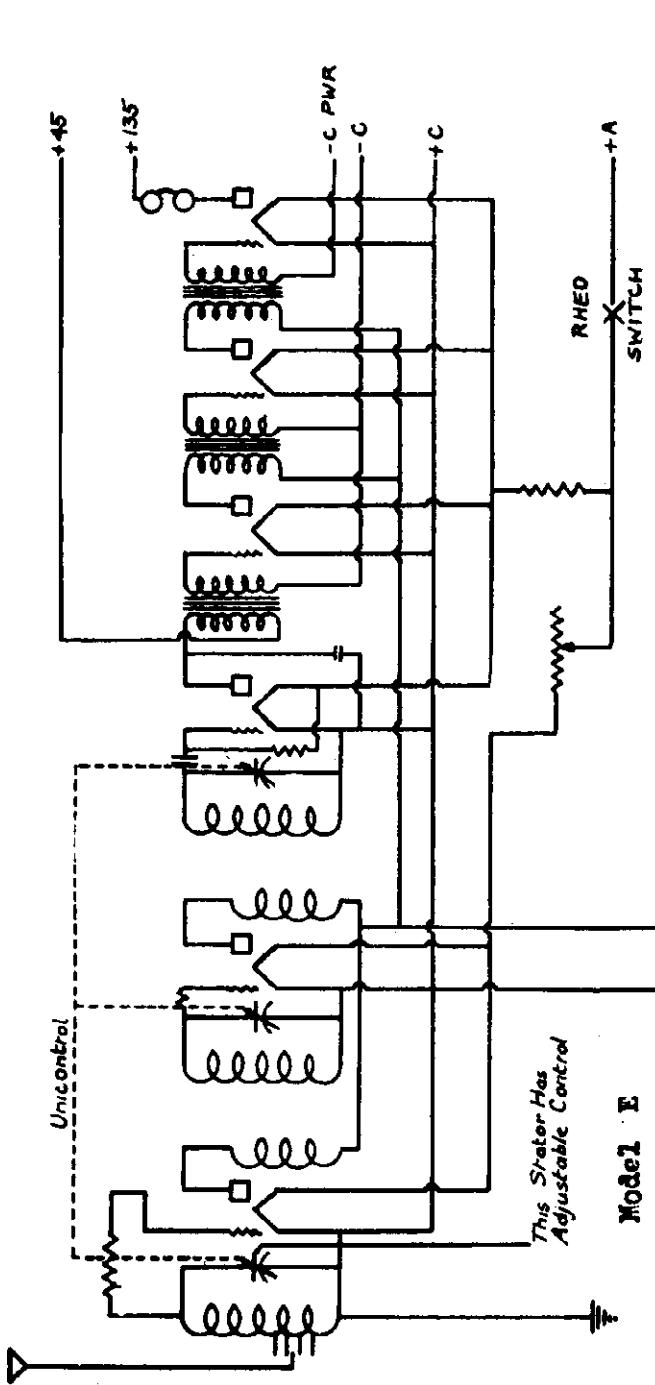


MODEL 30 T.R.F. RECEIVER



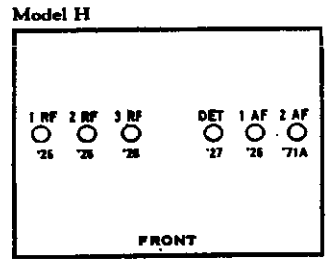
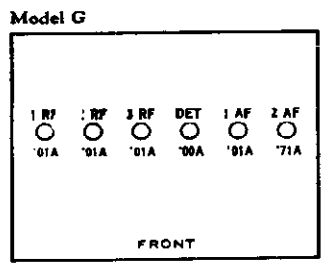
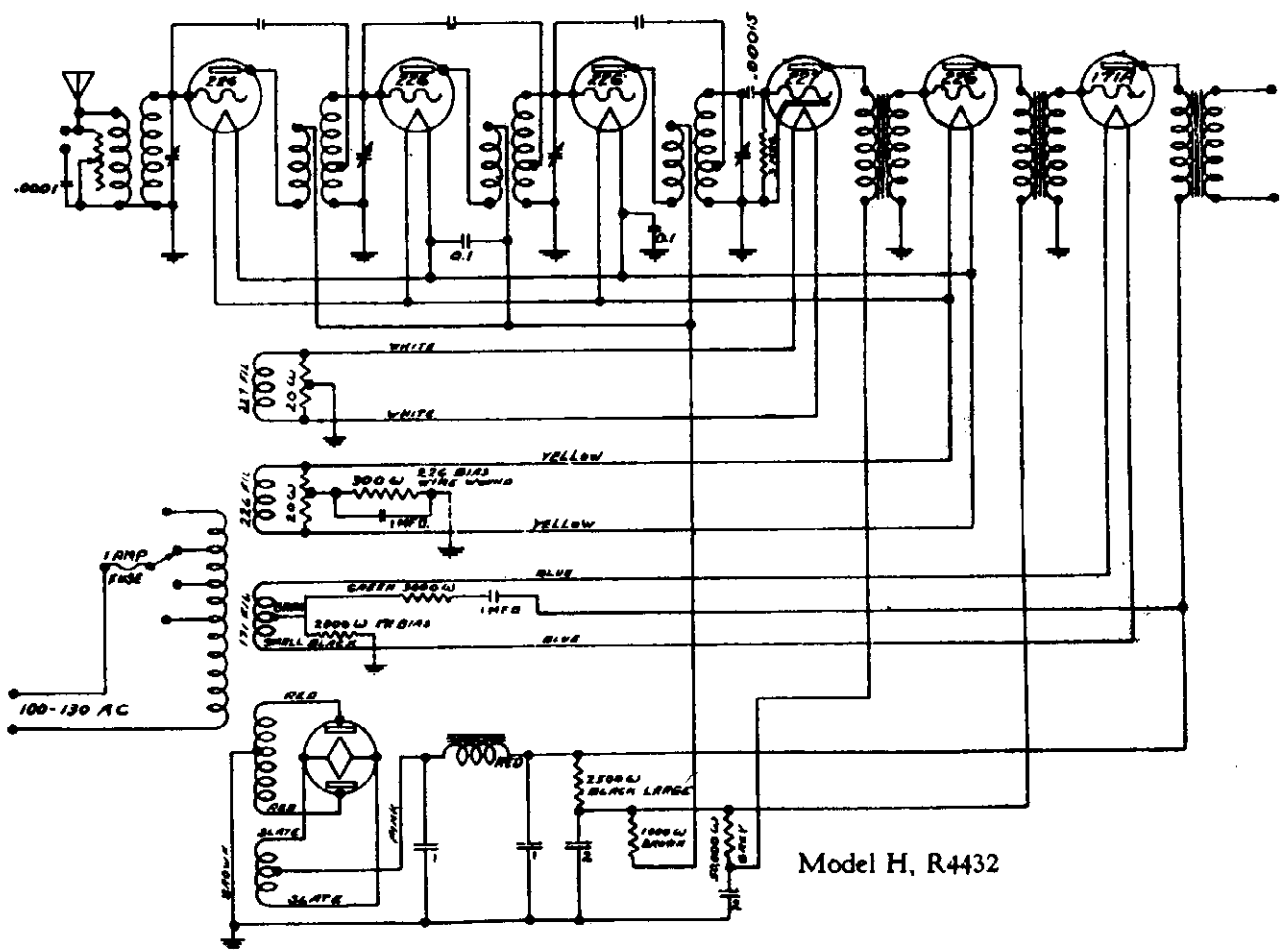
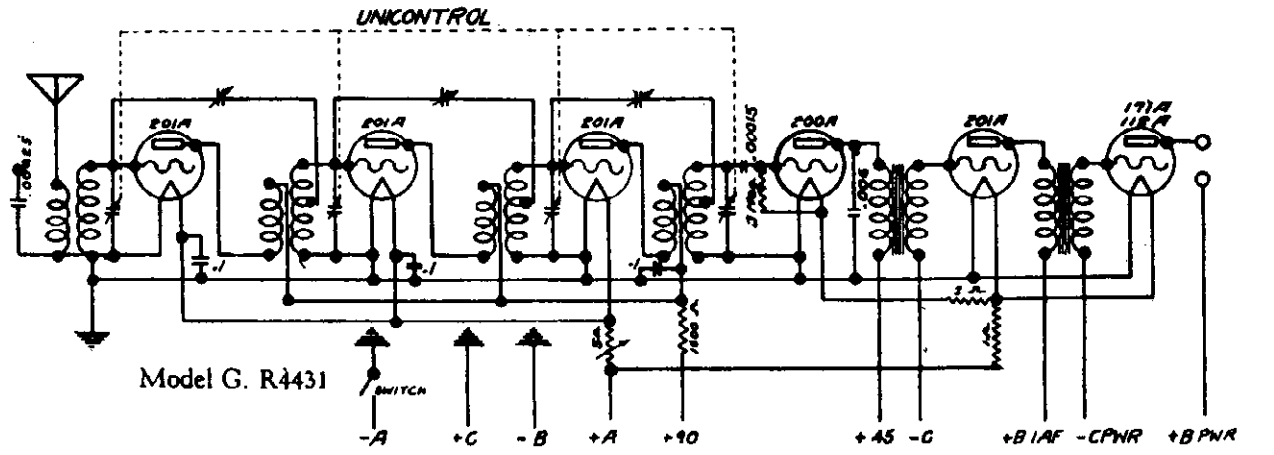
KING MFG. CORP.

MODEL E
MODEL F



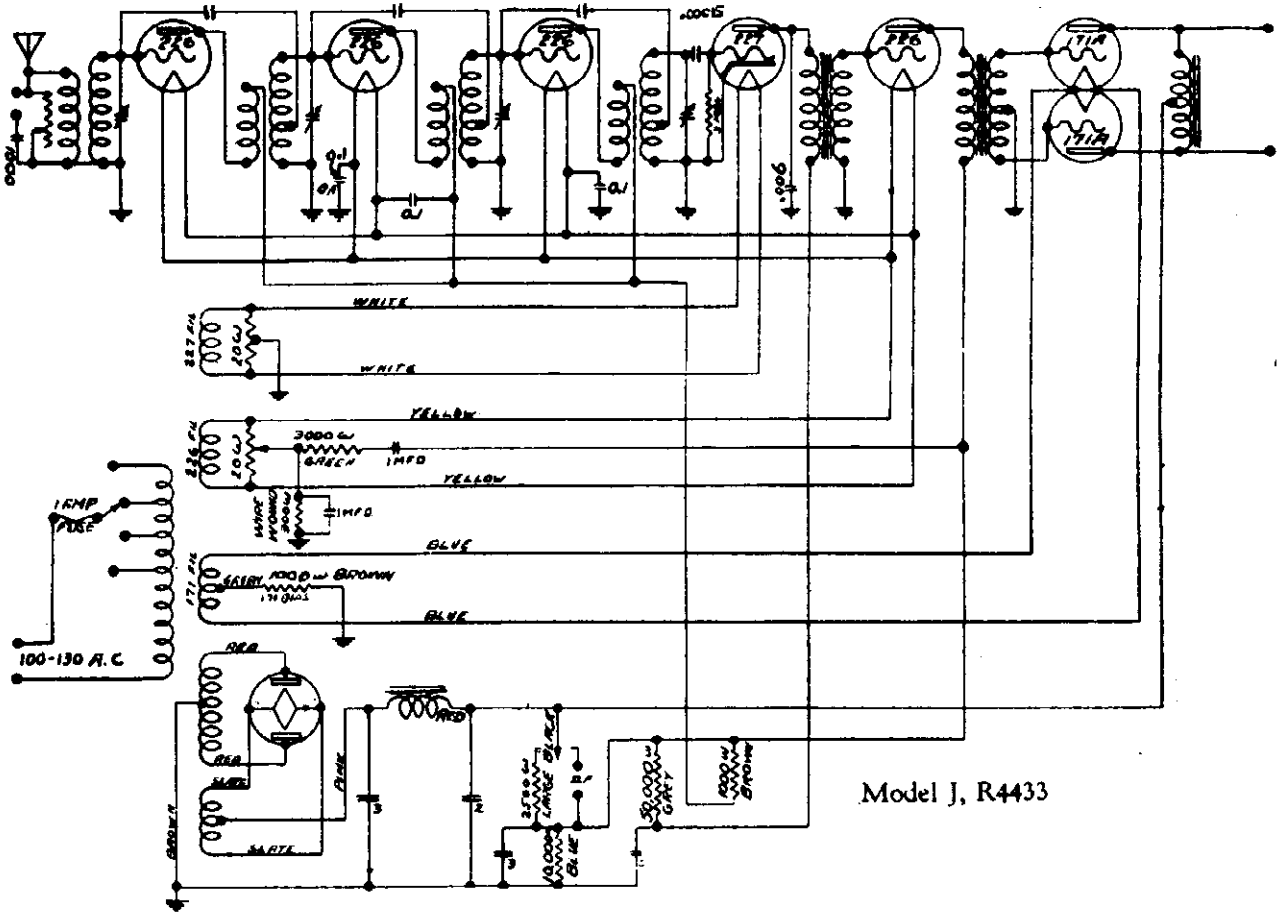
KING MFG. CORP.

MODEL G
MODEL H

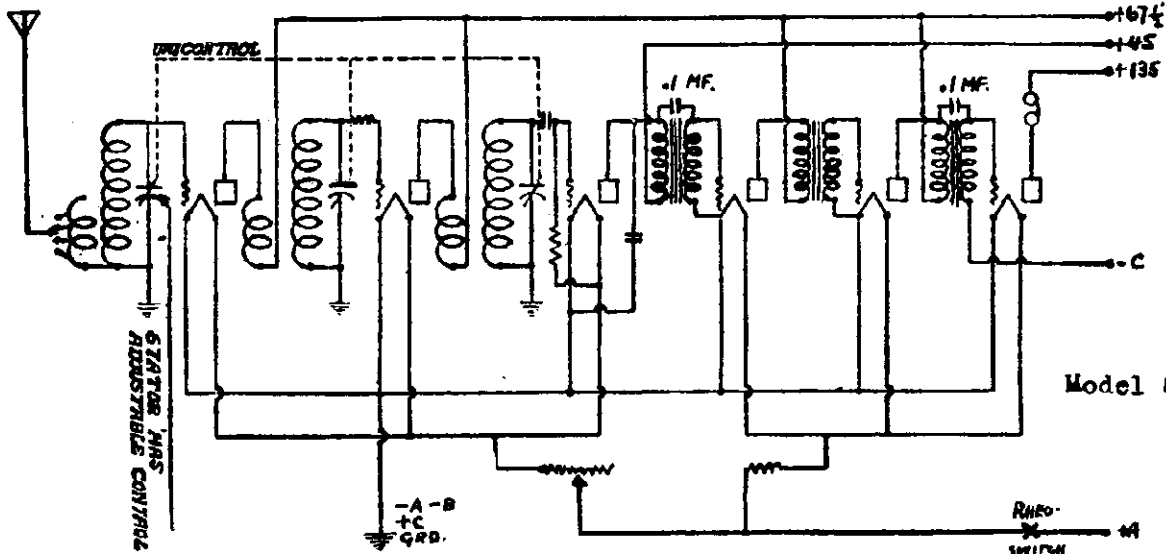


MODEL J
MODEL 80

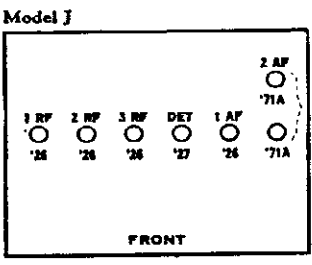
KING MFG. CORP.



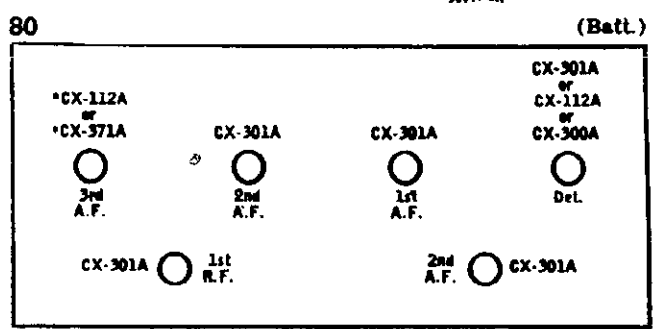
Model J, R4433



Model 80



Model J

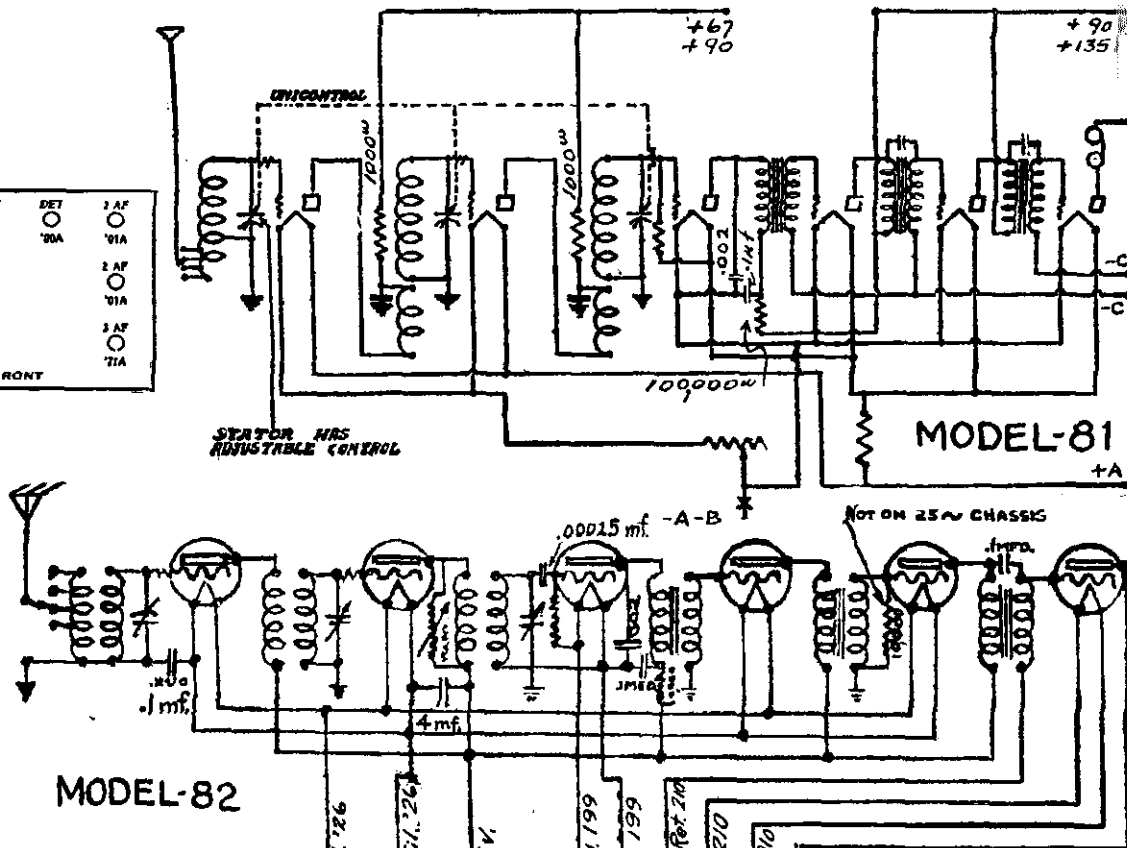
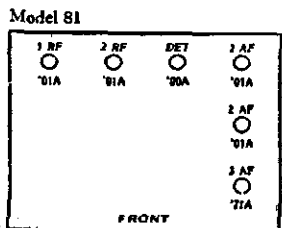


80

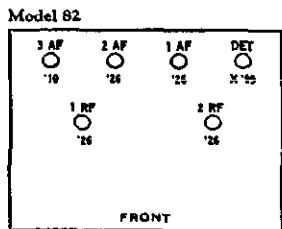
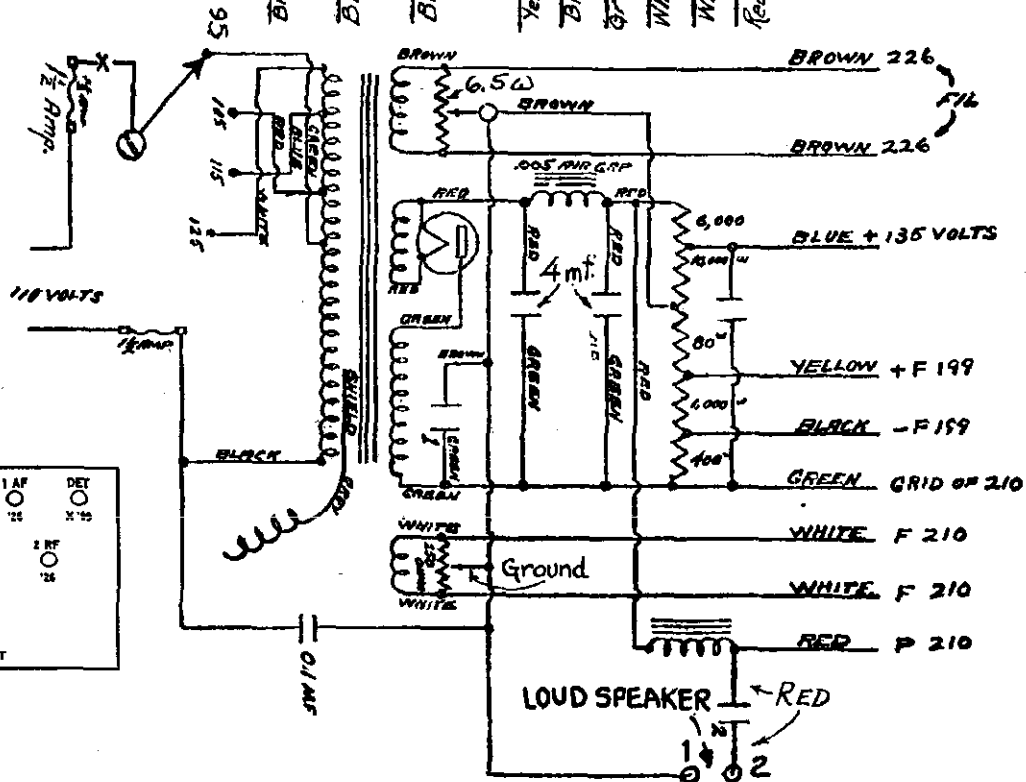
(Batt.)

KING MFG CORP.

MODEL 81
MODEL 82

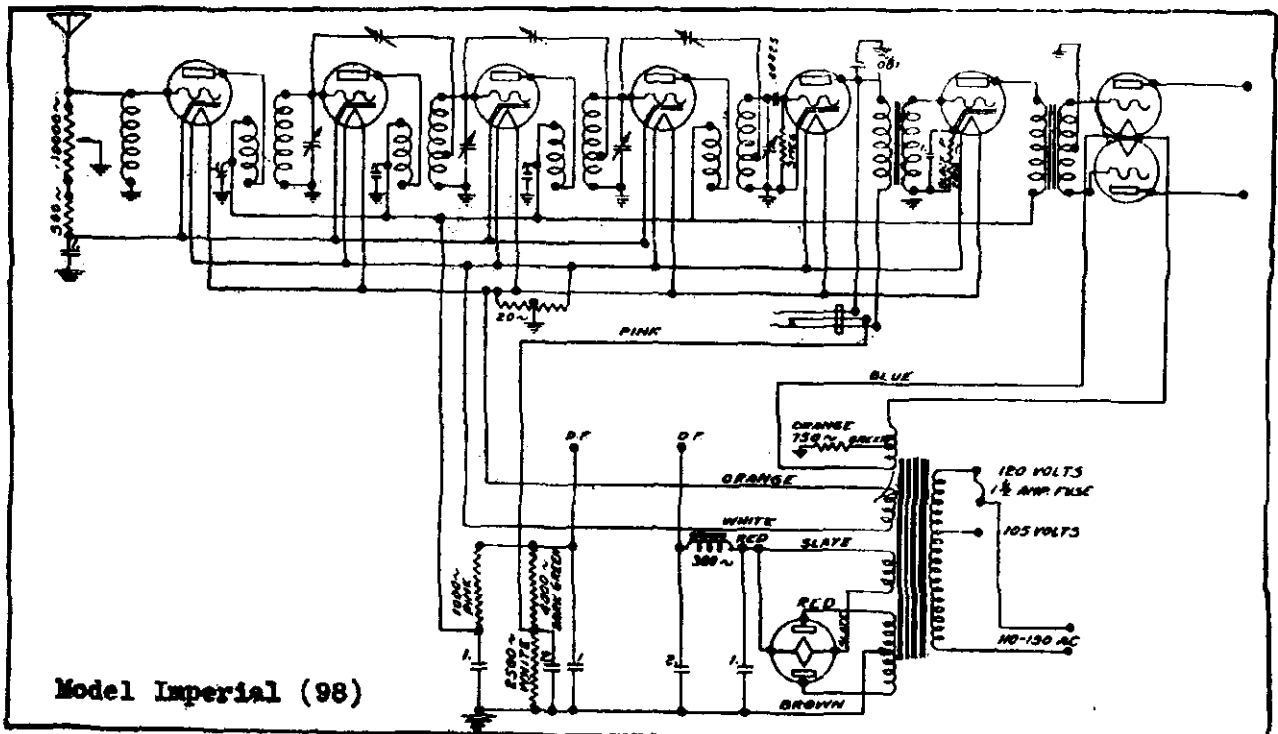
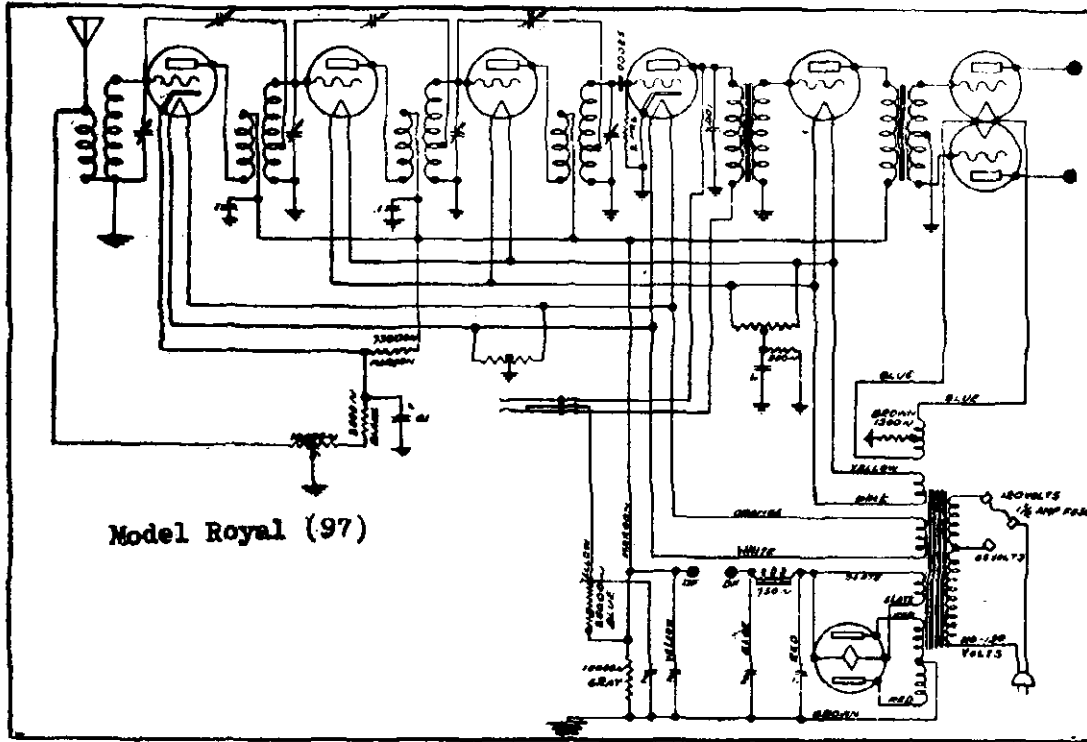


MODEL-82



MODEL ROYAL (97)
MODEL IMPERIAL (98)

KING MFG. CORP.



97

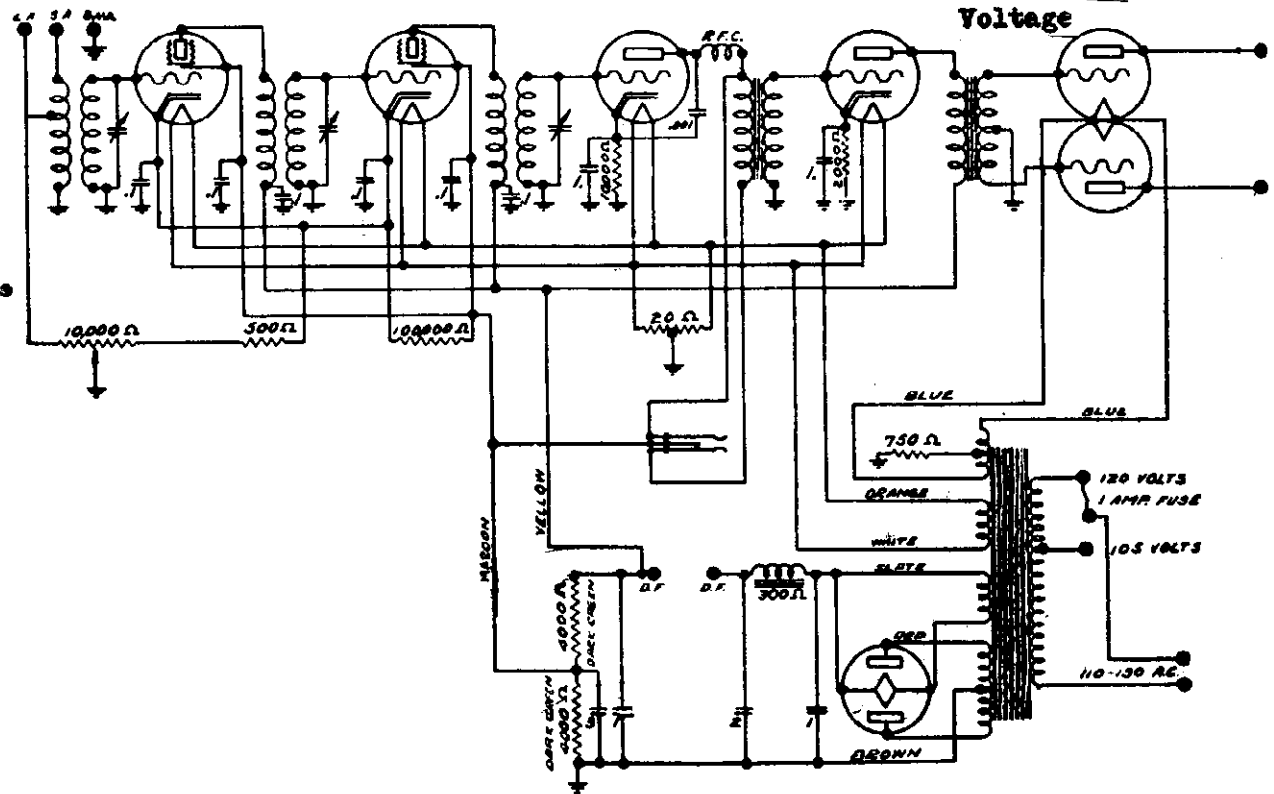
(A.C.) 98

(A.C.)

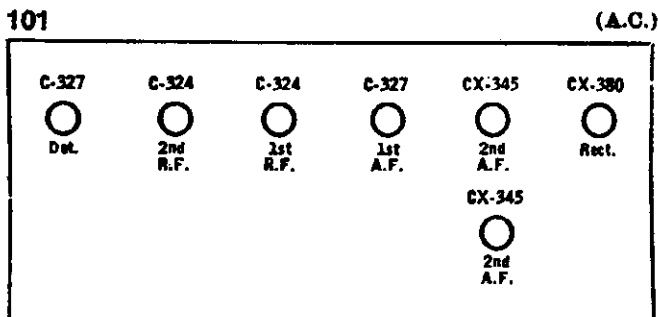
C-327	CX-326	CX-326	C-327	CX-326	CX-371A	C-327	C-327	C-327	C-327	C-327	CX-345
1st R.F.	2nd R.F.	3rd R.F.	Det.	1st A.F.	2nd A.F.	1st R.F.	2nd R.F.	3rd R.F.	Det.	1st A.F.	2nd A.F.

KING MFG. CORP.

MODEL Monarch (101)
Schematic - Voltage
MODEL Royal (97)
Voltage



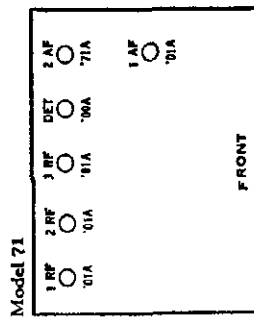
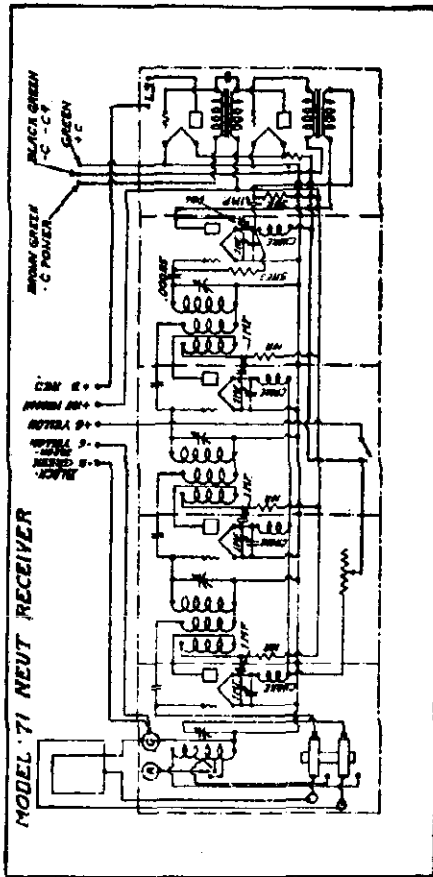
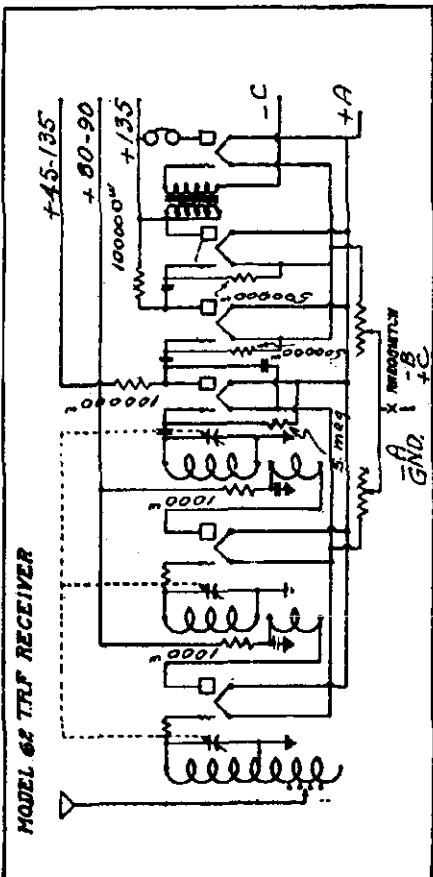
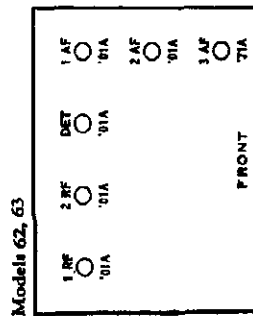
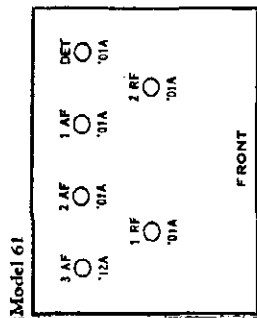
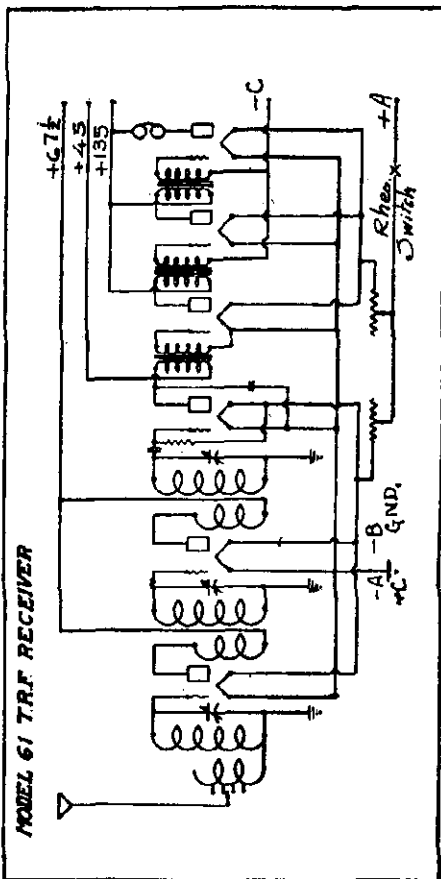
MONARCH Model 101.						
Tube	Stage	Fil. V.	Plate V.	Screen. Grid V.	Control Grid V.	
'24	1 R.F.	2.5	180	85	3.5	
'24	2 R.F.	2.5	180	85	3.5	
'27	Det.	2.5	90	-----	10.	
'27	1 A.F.	2.5	170	-----	13.	
'45	2 A.F.	2.5	220	-----	50.	
'45	2 A.F.	2.5	220	-----	50.	



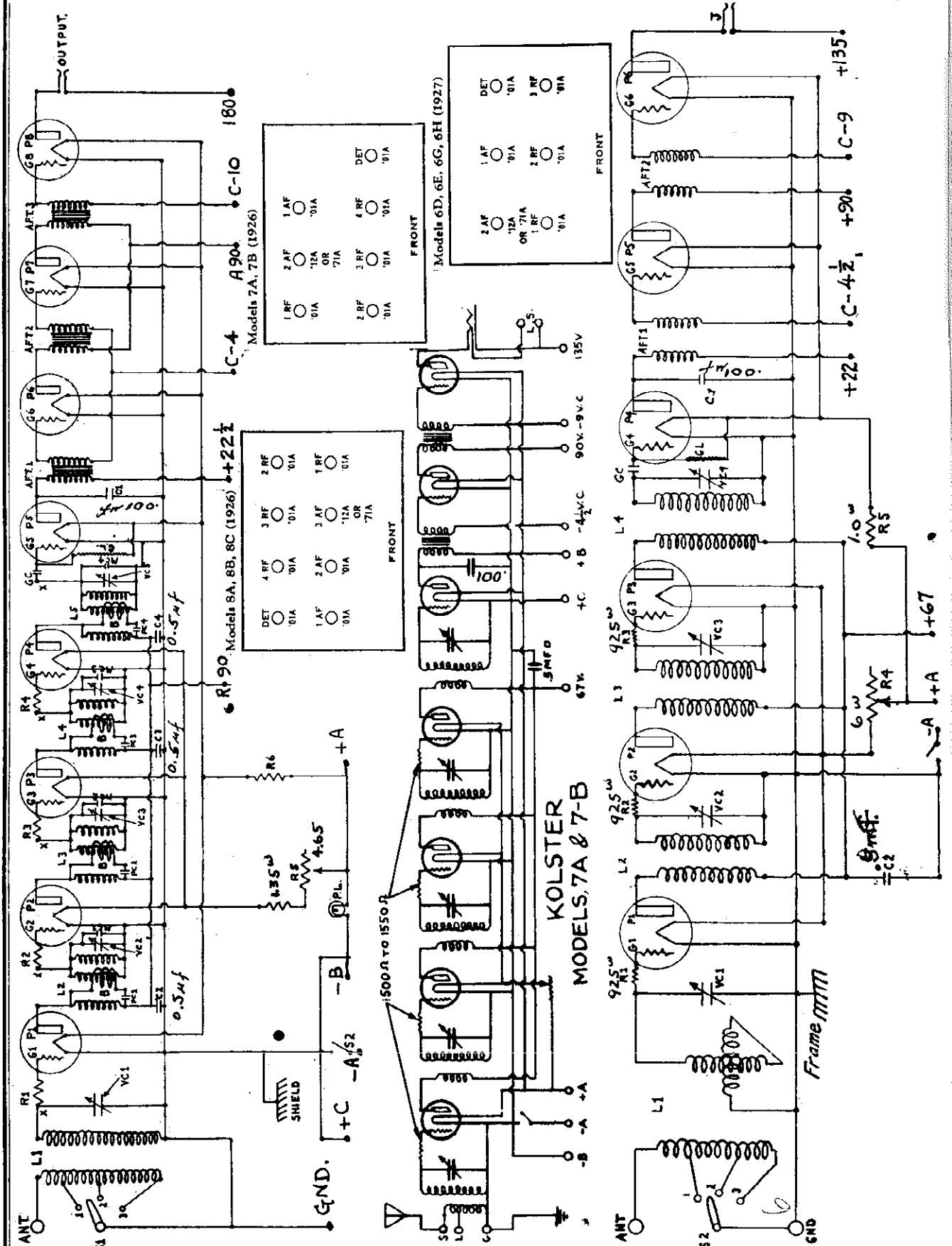
Model 97 Line: 105 Volts.						
Tube	Stage	Fil. V.	Plate V.	Grid V.	Cath. V.	
'27	1 R.F.	2.4	136	11.	-----	
'26	2 R.F.	1.6	136	10		
'26	3 R.F.	1.6	136	10		
'27	Det.	2.4	52	-----	-----	
'26	1 A.F.	1.6	127	8.		
'71	2 A.F.	5.1	184	36		
'71	2 A.F.	5.1	184	36		

MODEL 61
 MODEL 62,63
 MODEL 71

KING MFG. CORP.

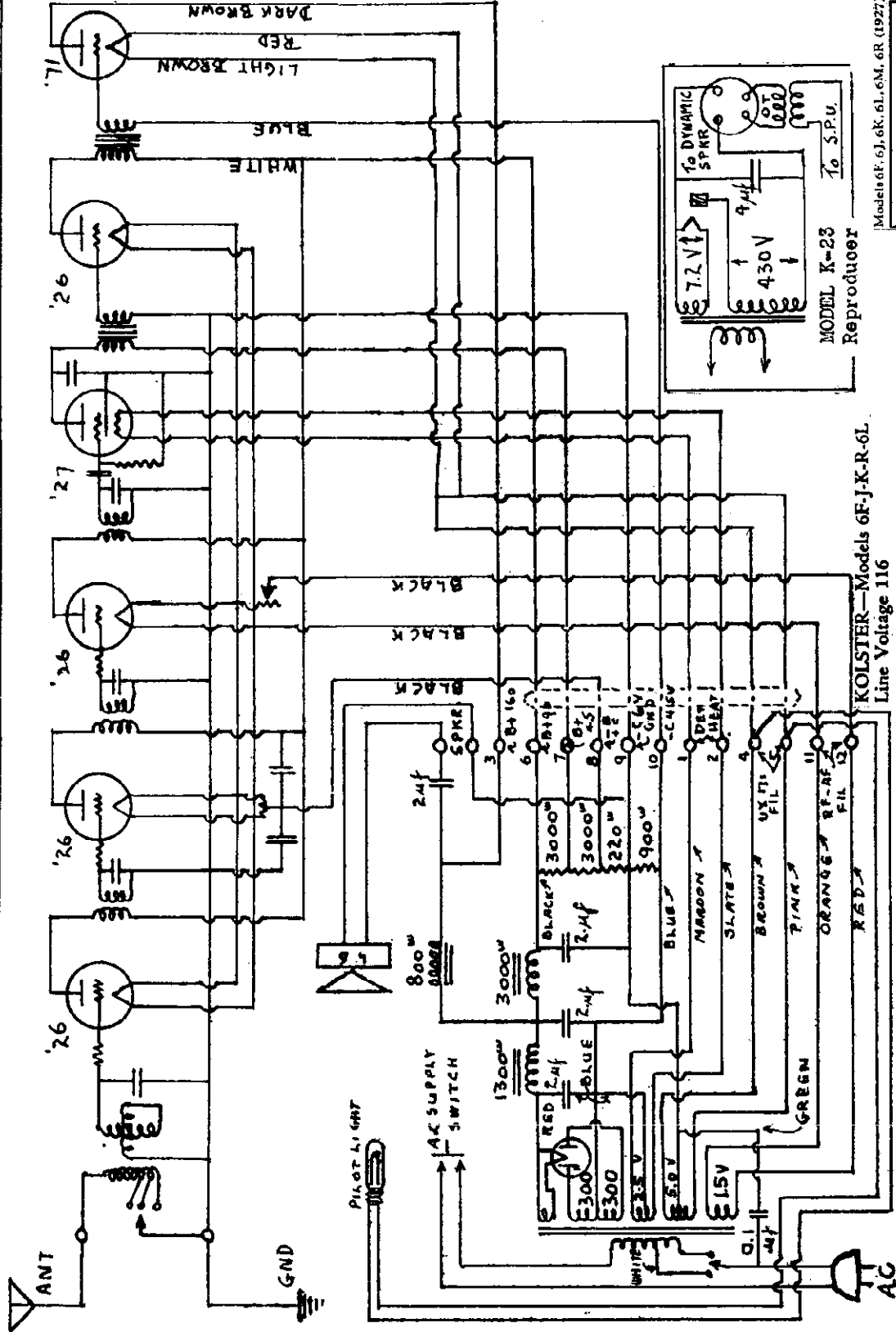


KOLSTER RADIO, INC. MODELS 6D, 6E, 6G, 6H (1927)
MODELS 7A, 7B (1926)
MODELS 8A, 8B, 8C (1926)



KOLSTER RADIO, INC.

MODEL 6-F,6-J,6-K
6-L,6-M,6-R
MODEL K-23
Reproducer
Schematic

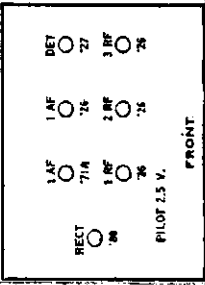


Models 6-F, 6-J, 6-K, 6-L, 6-M, 6-R (1927)

REPRODUCER PARTS BY MODEL OF SET

TYPE	TYPE NO.	QTY.	RES.	RES. NO.	RES. VOLT.	RES. WATT.	RES. PART NO.
1	27A	1	125	104	1.25	20	7.2
2	27B	1	1.5	104	1.5	50	7.2
3	27C	1	1.5	104	1.5	50	7.2
4	27D	1	1.5	104	1.5	50	7.2
5	27E	1	1.5	104	1.5	50	7.2
6	27F	1	1.5	104	1.5	50	7.2
7	27G	1	1.5	104	1.5	50	7.2
8	27H	1	1.5	104	1.5	50	7.2
9	27I	1	1.5	104	1.5	50	7.2
10	27J	1	1.5	104	1.5	50	7.2
11	27K	1	1.5	104	1.5	50	7.2
12	27L	1	1.5	104	1.5	50	7.2
13	27M	1	1.5	104	1.5	50	7.2
14	27N	1	1.5	104	1.5	50	7.2
15	27O	1	1.5	104	1.5	50	7.2
16	27P	1	1.5	104	1.5	50	7.2
17	27Q	1	1.5	104	1.5	50	7.2
18	27R	1	1.5	104	1.5	50	7.2
19	27S	1	1.5	104	1.5	50	7.2
20	27T	1	1.5	104	1.5	50	7.2

KOLSTER—Models 6-F-J-K-R-6L
Line Voltage 116



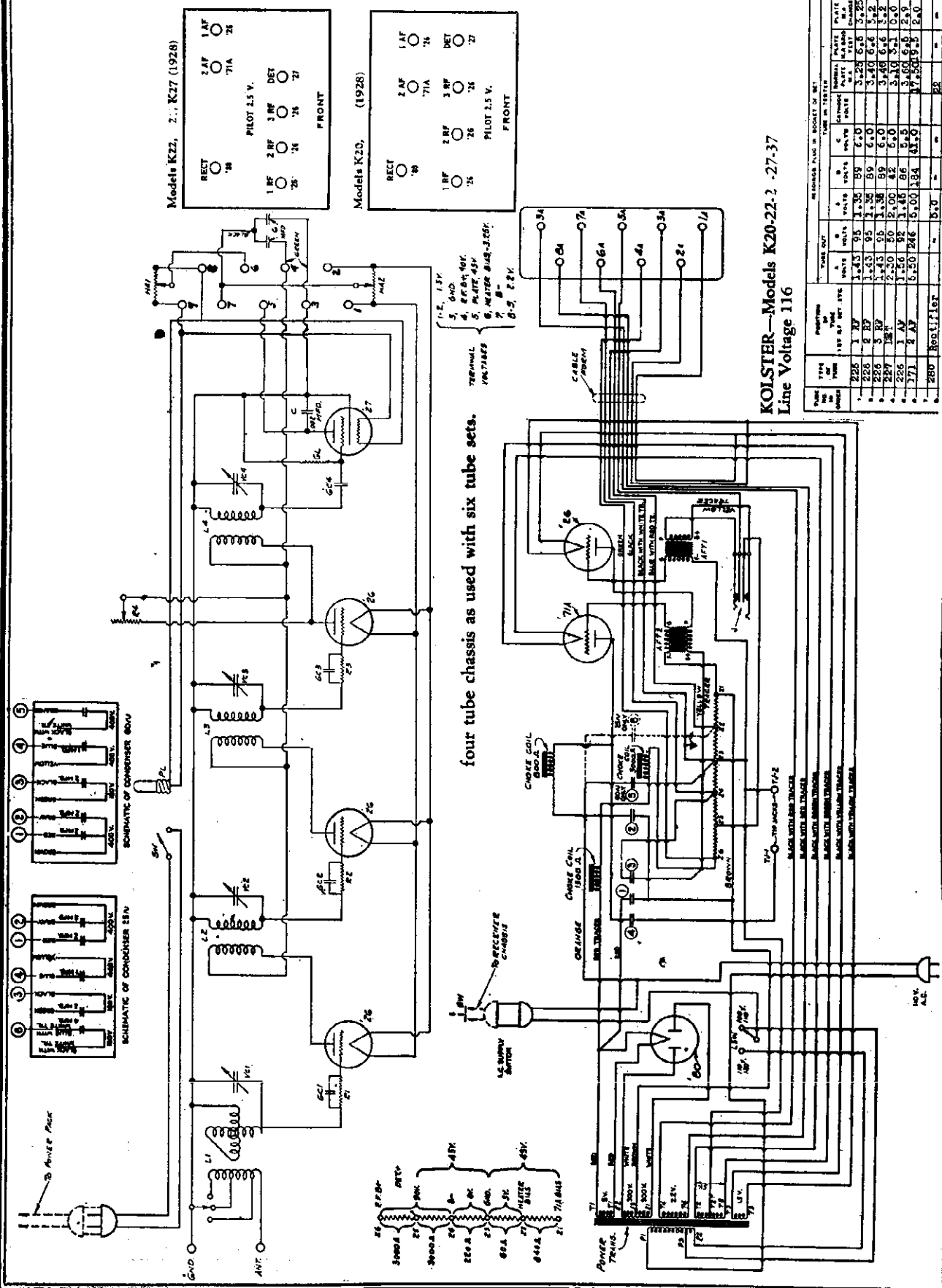
MODEL K-23 Reproducer

TYPE	TYPE NO.	QTY.	RES.	RES. NO.	RES. VOLT.	RES. WATT.	RES. PART NO.
1	76	1	2.0	104	2.0	50	7.2
2	77	1	2.0	104	2.0	50	7.2
3	78	1	2.0	104	2.0	50	7.2
4	79	1	2.0	104	2.0	50	7.2
5	80	1	2.0	104	2.0	50	7.2
6	81	1	2.0	104	2.0	50	7.2
7	82	1	2.0	104	2.0	50	7.2
8	83	1	2.0	104	2.0	50	7.2
9	84	1	2.0	104	2.0	50	7.2
10	85	1	2.0	104	2.0	50	7.2
11	86	1	2.0	104	2.0	50	7.2
12	87	1	2.0	104	2.0	50	7.2
13	88	1	2.0	104	2.0	50	7.2
14	89	1	2.0	104	2.0	50	7.2
15	90	1	2.0	104	2.0	50	7.2
16	91	1	2.0	104	2.0	50	7.2
17	92	1	2.0	104	2.0	50	7.2
18	93	1	2.0	104	2.0	50	7.2
19	94	1	2.0	104	2.0	50	7.2
20	95	1	2.0	104	2.0	50	7.2

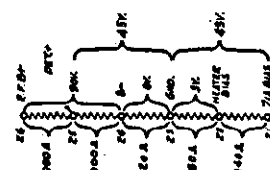
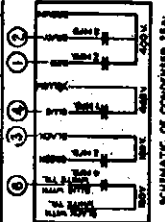
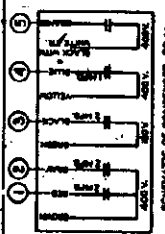
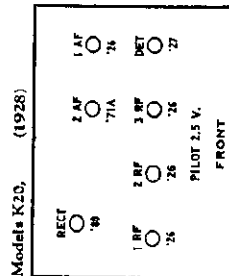
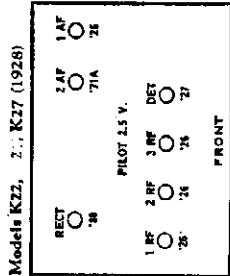
Model 6-F, 6-J, 6-K
6-L, 6-M, 6-R

MODEL K-20, K-22, K-27
Schematic, Voltage

KOLSTER RADIO, INC.



four tube chassis as used with six tube sets.

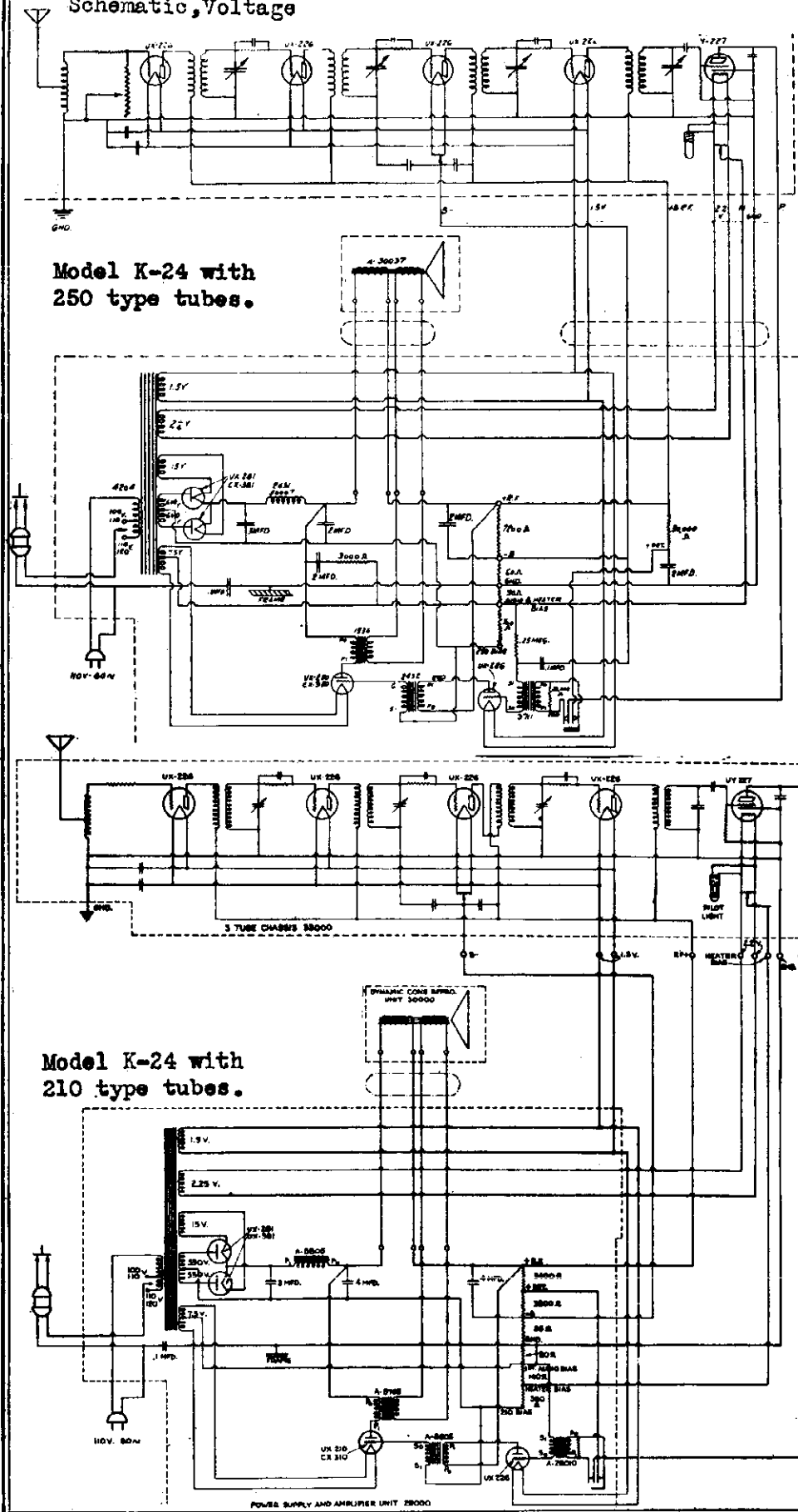


KOLSTER—Models K20-22-27-37
Line Voltage 116

TYPE	TUBE	NO.	110V	120V	130V	140V	150V	160V	170V	180V	190V	200V	210V	220V	230V	240V	250V	260V	270V	280V	290V	300V	310V	320V	330V	340V	350V	360V	370V	380V	390V	400V	410V	420V	430V	440V	450V	460V	470V	480V	490V	500V	510V	520V	530V	540V	550V	560V	570V	580V	590V	600V	610V	620V	630V	640V	650V	660V	670V	680V	690V	700V	710V	720V	730V	740V	750V	760V	770V	780V	790V	800V	810V	820V	830V	840V	850V	860V	870V	880V	890V	900V	910V	920V	930V	940V	950V	960V	970V	980V	990V	1000V	1010V	1020V	1030V	1040V	1050V	1060V	1070V	1080V	1090V	1100V	1110V	1120V	1130V	1140V	1150V	1160V	1170V	1180V	1190V	1200V	1210V	1220V	1230V	1240V	1250V	1260V	1270V	1280V	1290V	1300V	1310V	1320V	1330V	1340V	1350V	1360V	1370V	1380V	1390V	1400V	1410V	1420V	1430V	1440V	1450V	1460V	1470V	1480V	1490V	1500V	1510V	1520V	1530V	1540V	1550V	1560V	1570V	1580V	1590V	1600V	1610V	1620V	1630V	1640V	1650V	1660V	1670V	1680V	1690V	1700V	1710V	1720V	1730V	1740V	1750V	1760V	1770V	1780V	1790V	1800V	1810V	1820V	1830V	1840V	1850V	1860V	1870V	1880V	1890V	1900V	1910V	1920V	1930V	1940V	1950V	1960V	1970V	1980V	1990V	2000V	2010V	2020V	2030V	2040V	2050V	2060V	2070V	2080V	2090V	2100V	2110V	2120V	2130V	2140V	2150V	2160V	2170V	2180V	2190V	2200V	2210V	2220V	2230V	2240V	2250V	2260V	2270V	2280V	2290V	2300V	2310V	2320V	2330V	2340V	2350V	2360V	2370V	2380V	2390V	2400V	2410V	2420V	2430V	2440V	2450V	2460V	2470V	2480V	2490V	2500V	2510V	2520V	2530V	2540V	2550V	2560V	2570V	2580V	2590V	2600V	2610V	2620V	2630V	2640V	2650V	2660V	2670V	2680V	2690V	2700V	2710V	2720V	2730V	2740V	2750V	2760V	2770V	2780V	2790V	2800V	2810V	2820V	2830V	2840V	2850V	2860V	2870V	2880V	2890V	2900V	2910V	2920V	2930V	2940V	2950V	2960V	2970V	2980V	2990V	3000V	3010V	3020V	3030V	3040V	3050V	3060V	3070V	3080V	3090V	3100V	3110V	3120V	3130V	3140V	3150V	3160V	3170V	3180V	3190V	3200V	3210V	3220V	3230V	3240V	3250V	3260V	3270V	3280V	3290V	3300V	3310V	3320V	3330V	3340V	3350V	3360V	3370V	3380V	3390V	3400V	3410V	3420V	3430V	3440V	3450V	3460V	3470V	3480V	3490V	3500V	3510V	3520V	3530V	3540V	3550V	3560V	3570V	3580V	3590V	3600V	3610V	3620V	3630V	3640V	3650V	3660V	3670V	3680V	3690V	3700V	3710V	3720V	3730V	3740V	3750V	3760V	3770V	3780V	3790V	3800V	3810V	3820V	3830V	3840V	3850V	3860V	3870V	3880V	3890V	3900V	3910V	3920V	3930V	3940V	3950V	3960V	3970V	3980V	3990V	4000V	4010V	4020V	4030V	4040V	4050V	4060V	4070V	4080V	4090V	4100V	4110V	4120V	4130V	4140V	4150V	4160V	4170V	4180V	4190V	4200V	4210V	4220V	4230V	4240V	4250V	4260V	4270V	4280V	4290V	4300V	4310V	4320V	4330V	4340V	4350V	4360V	4370V	4380V	4390V	4400V	4410V	4420V	4430V	4440V	4450V	4460V	4470V	4480V	4490V	4500V	4510V	4520V	4530V	4540V	4550V	4560V	4570V	4580V	4590V	4600V	4610V	4620V	4630V	4640V	4650V	4660V	4670V	4680V	4690V	4700V	4710V	4720V	4730V	4740V	4750V	4760V	4770V	4780V	4790V	4800V	4810V	4820V	4830V	4840V	4850V	4860V	4870V	4880V	4890V	4900V	4910V	4920V	4930V	4940V	4950V	4960V	4970V	4980V	4990V	5000V
280	Rectifier	1	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440	450	460	470	480	490	500																																																																																																																																																																																																																																																																																																																																																																																																																																																																		

● MODEL K-24(250)
 MODEL K-24(210)
 Schematic, Voltage

KOLSTER RADIO, INC.

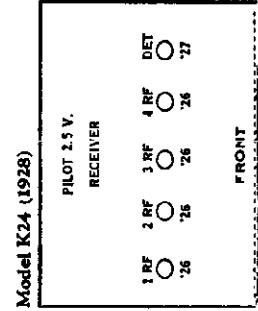
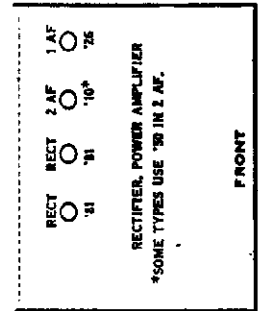


Model K-24 with 250 type tubes.

Model K-24 with 210 type tubes.

Line Voltage 116

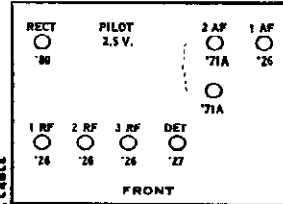
TUBE NO. IN CHASSIS	TUBE TYPE	POSITION IN SET BY R.F. SETTING	TUBE OUT		REPLACE PLUG IN SOCKET OF SET		TUBE IN TESTER		NORMAL PLATE VOLTAGE	
			VOLTS	AMPS	VOLTS	AMPS	VOLTS	AMPS	VOLTS	AMPS
1	226	1st. R.F.	1.48	30	1.4	84	2.5	5.8	9.8	1.0
2	226	2nd. R.F.	1.48	30	1.4	84	2.5	5.8	9.8	1.0
3	226	3rd. R.F.	1.48	30	1.4	84	2.5	5.8	9.8	1.0
4	226	4th. R.F.	1.48	30	1.4	84	2.5	5.8	9.8	1.0
5	227	DET.	2.5	24	2.0	36	2.5	3.8	14.0	0
6	226	1st. A.	1.256	88	1.4	72	2.0	4.8	7.8	3.0
7	210	2nd. A.	7.9	430	7.4	32.5	24.0	28.0	28.0	0
8	231	RECT.	0	0	7.0	0	0	28.0	0	0
9	231	3RD. A.	0	0	7.4	0	0	28.0	0	0



MODEL K-42
Schematic
Voltage

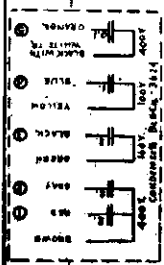
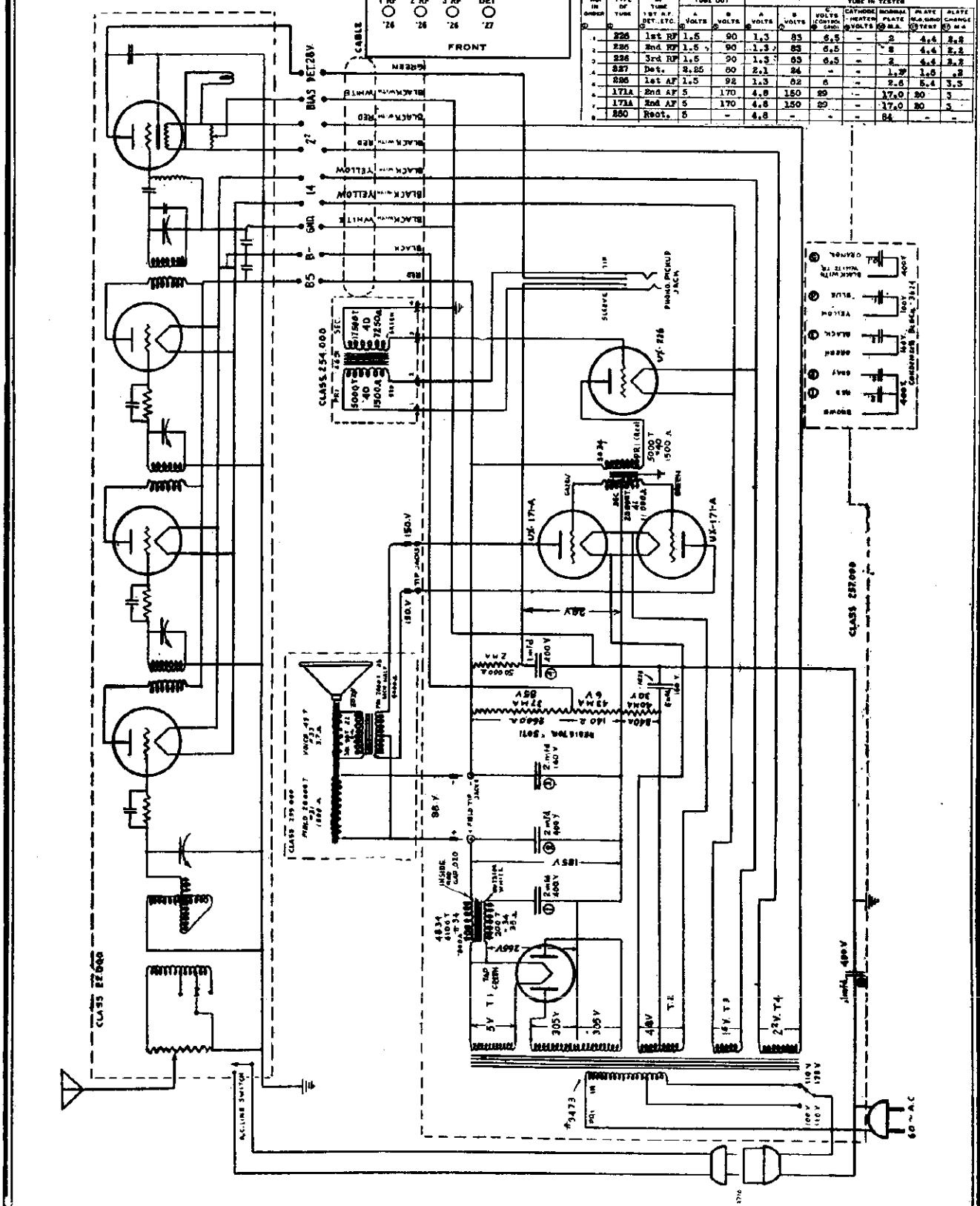
KOLSTER RADIO, INC.

Model K42 (1930)



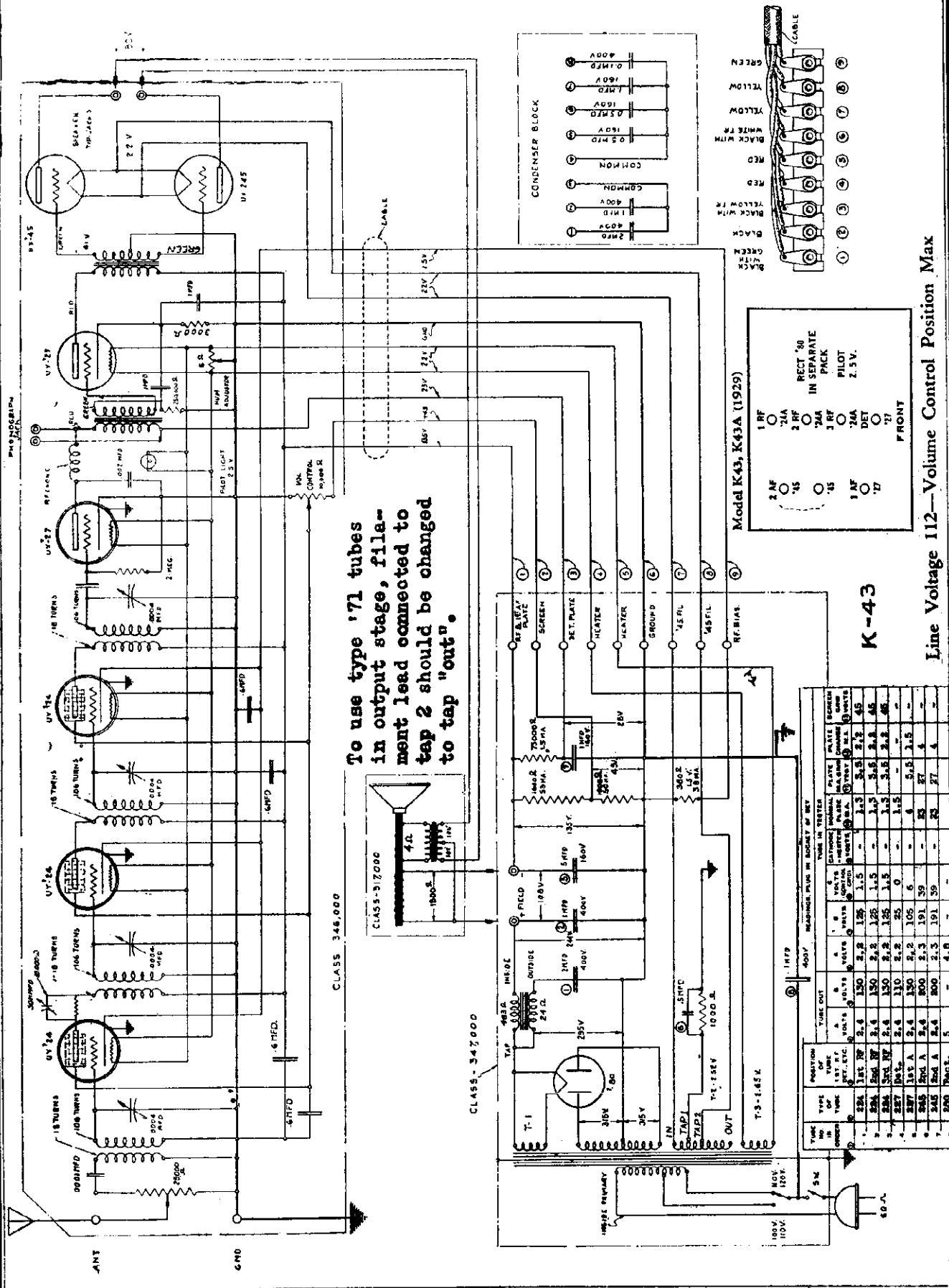
KOLSTER—Model 42
Line Voltage 112—Volume Control Position Max
*Grid Leak Shorted

TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION OF TUBE IN SET, ETC.	TUBE OUT				TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS (CONTROL)	CATHODE HEATERS (VOLTS)	PLATE (VOLTS)	PLATE CHANGE (MA)	
1	226	1st RF	1.5	90	1.3	83	6.5	—	2	2.5	2.2
2	226	2nd RF	1.5	90	1.3	83	6.5	—	2	4.4	2.2
3	226	3rd RF	1.5	90	1.3	83	6.5	—	2	4.4	2.2
4	227	Det.	2.25	90	2.1	84	—	—	1.2	1.8	2
5	226	1st AF	1.5	92	1.3	82	6	—	2.6	5.4	3.5
6	171A	2nd AF	5	170	4.8	160	89	—	17.0	80	3
7	171A	2nd AF	5	170	4.8	160	89	—	17.0	80	3
8	220	Rect.	5	—	4.8	—	—	—	84	—	—

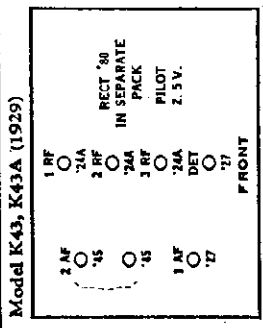
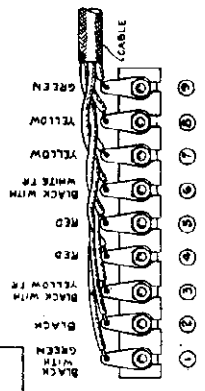
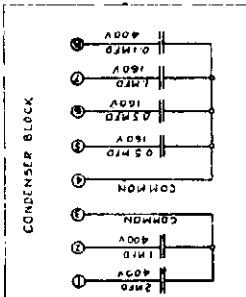


KOLSTER RADIO, INC.

MODELS K-43, K-43A (1929)
Schematic, Voltage



To use type '71 tubes in output stage, filament lead connected to tap 2 should be changed to tap 'out'.



K-43

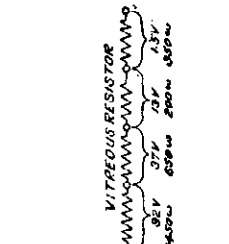
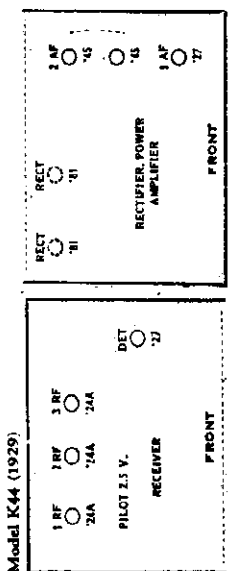
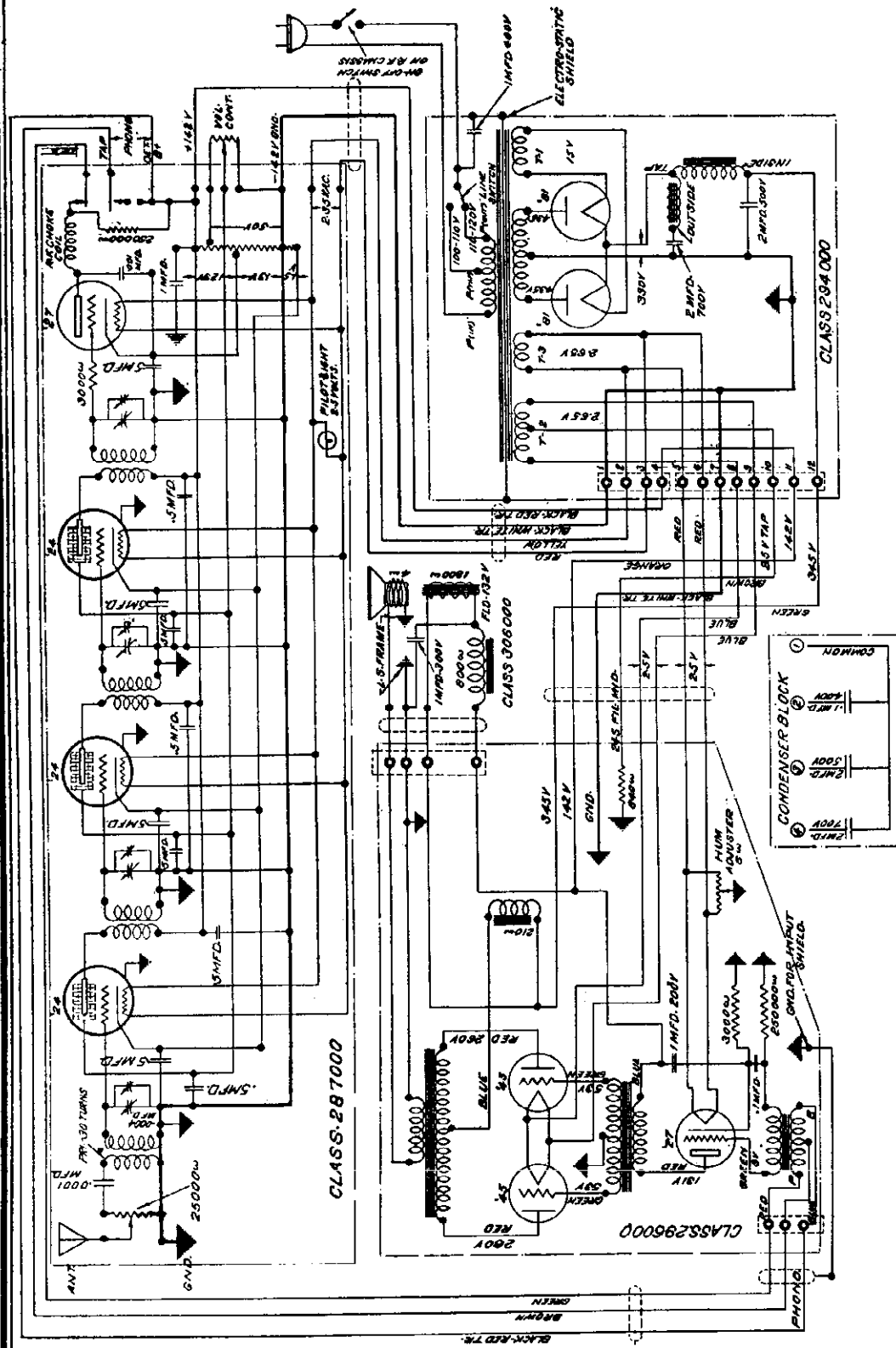
Line Voltage 112—Volume Control Position Max

TUBE NO. IN CHASSIS	TYPE	POSITION				TUBE OUT				TUBE IN				TUBE OUT				TUBE IN				
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
1	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
3	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
4	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
6	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
7	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
8	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
9	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
10	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
11	2A	150	2.2	1.25	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

Line Voltage 112—Volume Control Position Max

MODEL K-44 (1929)
Schematic
Voltage

KOLSTER RADIO, INC.



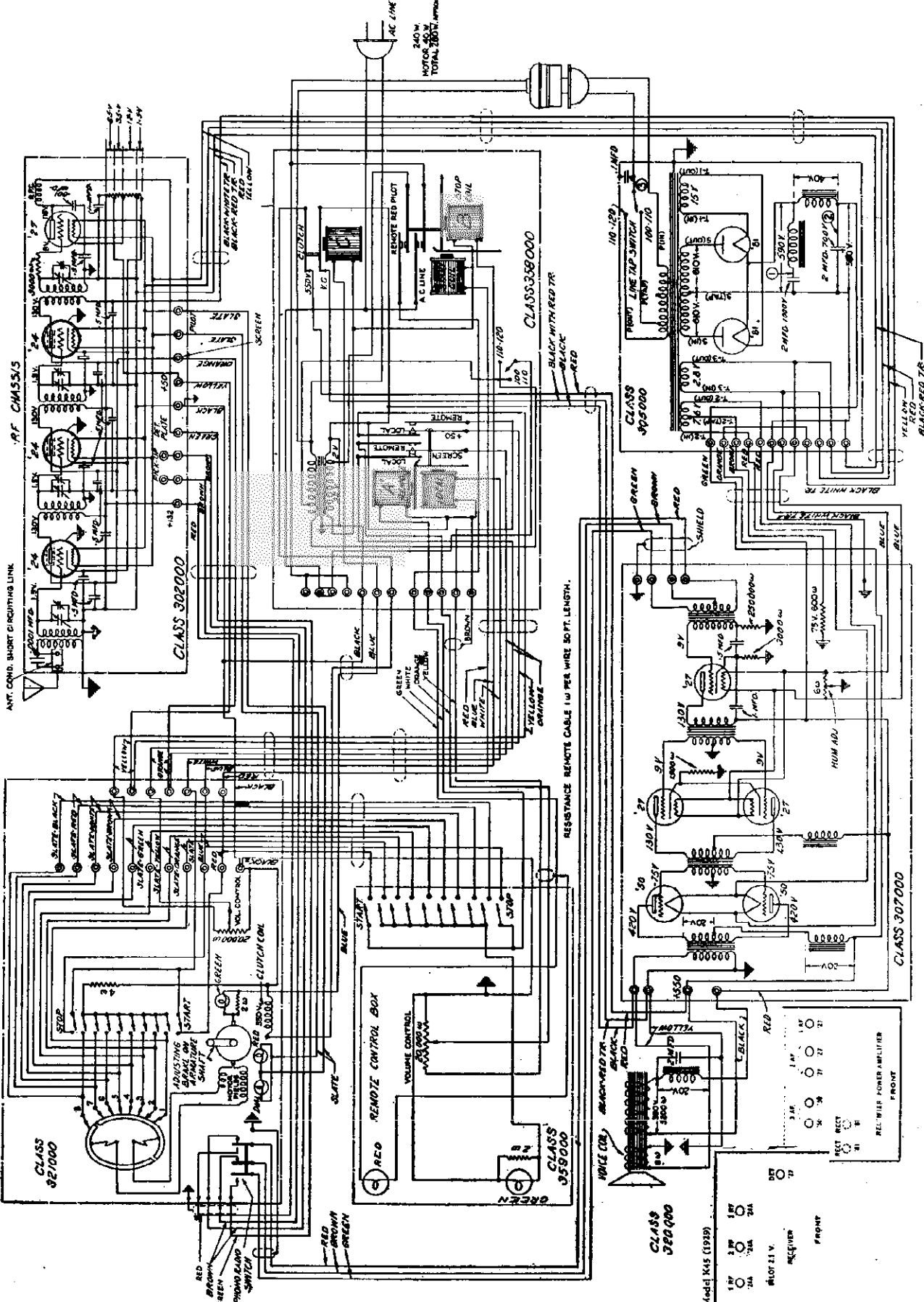
Model K44 (1929)

Line Voltage 112—Volume Control Position Max

TYPE	WAVE	FORM	TYPE	TIME OUT		REARER PLUG IN SOCKET OF SET		TIME IN TESTER		PLATE	BATTERY
				WAVE	FORM	WAVE	FORM	WAVE	FORM		
284	112	35	2.4	1.35	2.2	1.30	1.5	1.2	3	2.2	45
284	204	35	2.4	1.35	2.2	1.30	1.5	1.2	3	2.2	45
284	304	35	2.4	1.35	2.2	1.30	1.5	1.2	3	2.2	45
227	112	A	2.4	1.25	2.2	1.30	1.0	1.2	4	1.5	4
227	112	A	2.4	1.35	2.2	1.30	1.0	1.2	4	1.5	4
245	204	A	2.4	2.00	2.3	2.00	50	35	39	4	4
245	204	A	2.4	2.00	2.3	2.50	50	35	39	4	4
241	204	A	2.4	1.75	2.3	1.75	50	55	55	4	4
241	204	A	2.4	1.75	2.3	1.75	50	55	55	4	4

KOLSTER RADIO, INC.

MODEL K-45



Model K45 (1939) RECEIVER FRONT

10	20	100	1000	5000	10000	50000	100000
1	10	100	1000	10000	100000	1000000	10000000
100	1000	10000	100000	1000000	10000000	100000000	1000000000
1000	10000	100000	1000000	10000000	100000000	1000000000	10000000000

RECT RECT 50 0 10
RECT RECT 50 0 10

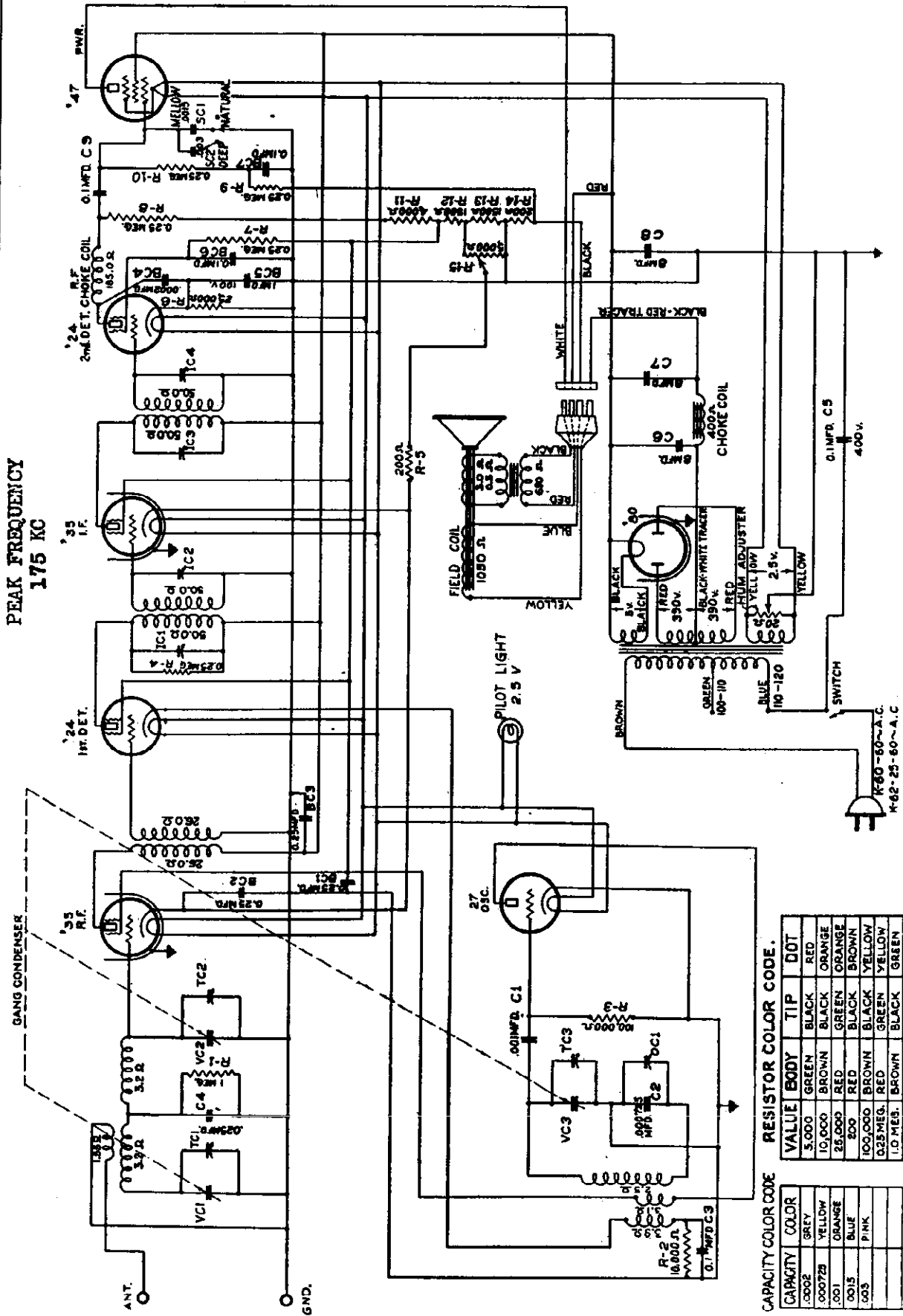
REAR VIEW POWER-AMPLIFIER FRONT

1	10	100	1000	10000	100000	1000000	10000000
10	100	1000	10000	100000	1000000	10000000	100000000
100	1000	10000	100000	1000000	10000000	100000000	1000000000
1000	10000	100000	1000000	10000000	100000000	1000000000	10000000000

MODEL K-60, K-62

KOLSTER RADIO, INC.

PEAK FREQUENCY
175 KC



CAPACITY COLOR CODE		RESISTOR COLOR CODE	
CAPACITY	COLOR	VALUE	TIP
.0002	GREY	5,000	BLACK
.000725	YELLOW	10,000	BROWN
.001	ORANGE	25,000	RED
.0015	BLUE	200	RED
.003	PINK	100,000	BROWN
		525 MEG.	RED
		1.0 MEG.	BROWN
			BLACK
			GREEN
			RED
			ORANGE
			ORANGE
			GREEN
			BLACK
			BLACK
			GREEN

KOLSTER — INTERNATIONAL RADIO MODELS K-60—K-62 — 1931—

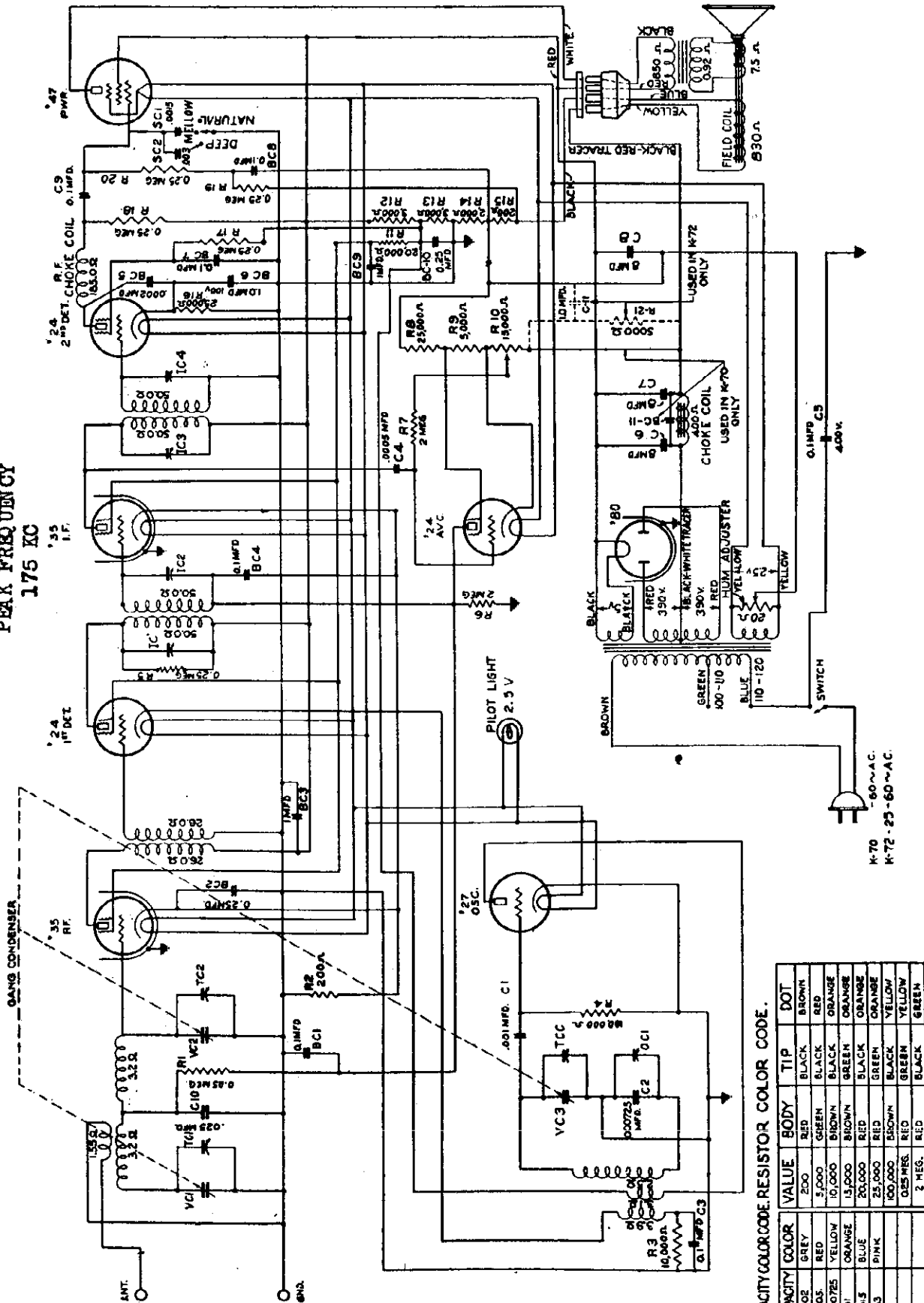
Power Consumption 95 Watt

KOLSTER RADIO, INC.

-1931-

MODEL K-70, K-72

PEAK FREQUENCY
175 KC



CAPACITY COLOR CODE. RESISTOR COLOR CODE.

CAPACITY	COLOR	VALUE	BODY	TIP	DOT
.0005	GREY	200	RED	BLACK	BROWN
.0005	RED	200	BLACK	BLACK	RED
.00075	YELLOW	3,000	BROWN	BLACK	ORANGE
.001	ORANGE	10,000	BROWN	BROWN	ORANGE
.0015	ORANGE	15,000	BROWN	BLACK	ORANGE
.002	PINK	20,000	RED	BLACK	ORANGE
.0025	GREEN	25,000	RED	GREEN	ORANGE
.005	GREEN	100,000	BROWN	BLACK	YELLOW
.005	BROWN	100,000	BROWN	GREEN	YELLOW
.025 MEG.	RED	2 MEG.	RED	BLACK	GREEN

Power Consumption 95 Watt

KOLSTER — INTERNATIONAL RADIO MODELS K-70—K-72

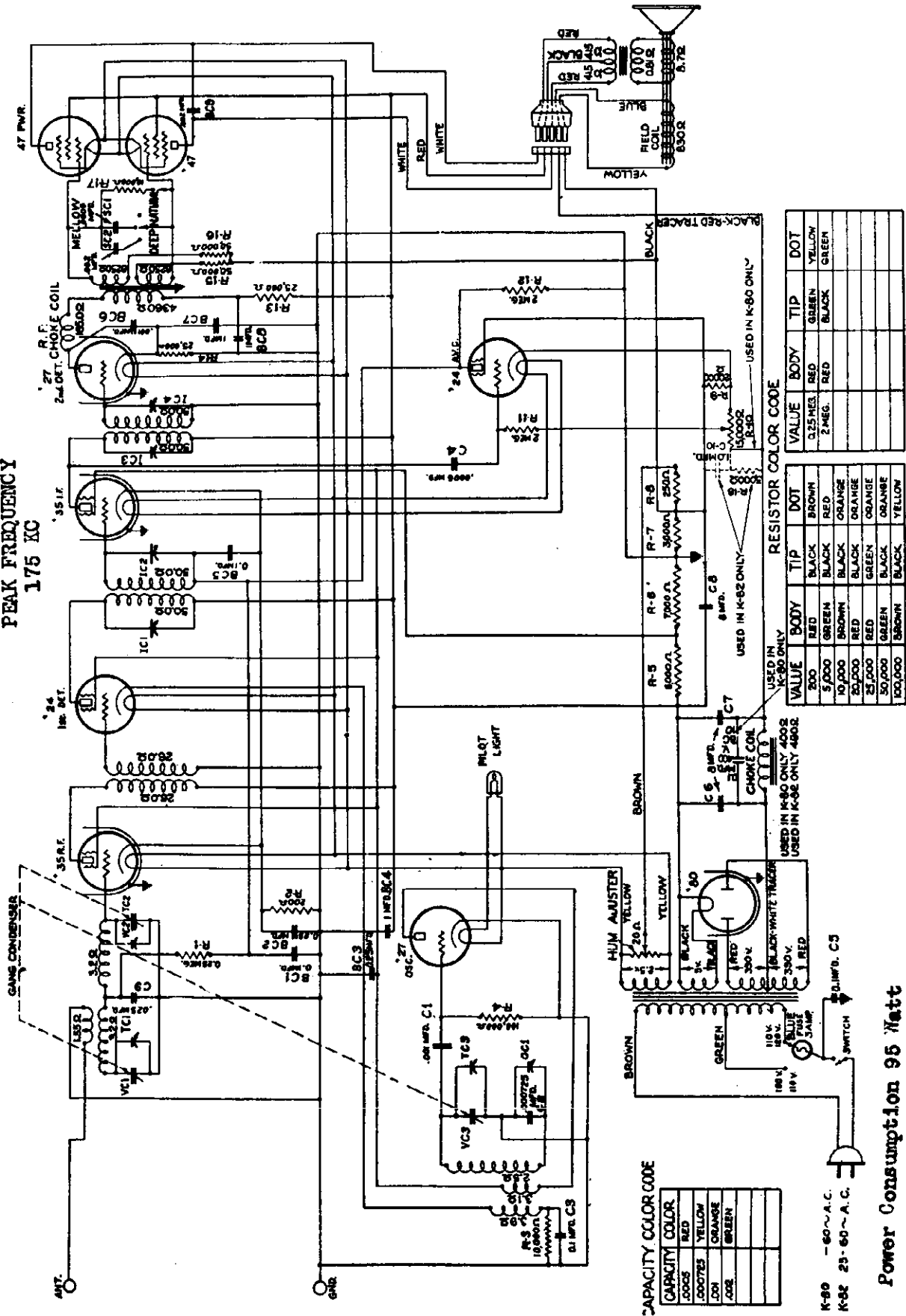
K-70
K-72 - 60 V.A.C.
K-72 - 25 - 60 V.A.C.

MODEL K-80, K-82

KOLSTER RADIO, INC.

- 1931 -

PEAK FREQUENCY
175 KC



CAPACITY COLOR CODE

CAPACITY	COLOR
0.005	RED
0.00075	YELLOW
0.001	ORANGE
0.002	GREEN

RESISTOR COLOR CODE

VALUE	TIP	BODY	TIP	DOT
200	RED	BROWN	BLACK	BROWN
5,000	GREEN	BLACK	BLACK	YELLOW
10,000	BROWN	BLACK	RED	GREEN
50,000	RED	BLACK	ORANGE	
100,000	RED	GREEN	ORANGE	
200,000	GREEN	BLACK	ORANGE	
500,000	BROWN	BLACK	ORANGE	
1,000,000	BROWN	BLACK	YELLOW	

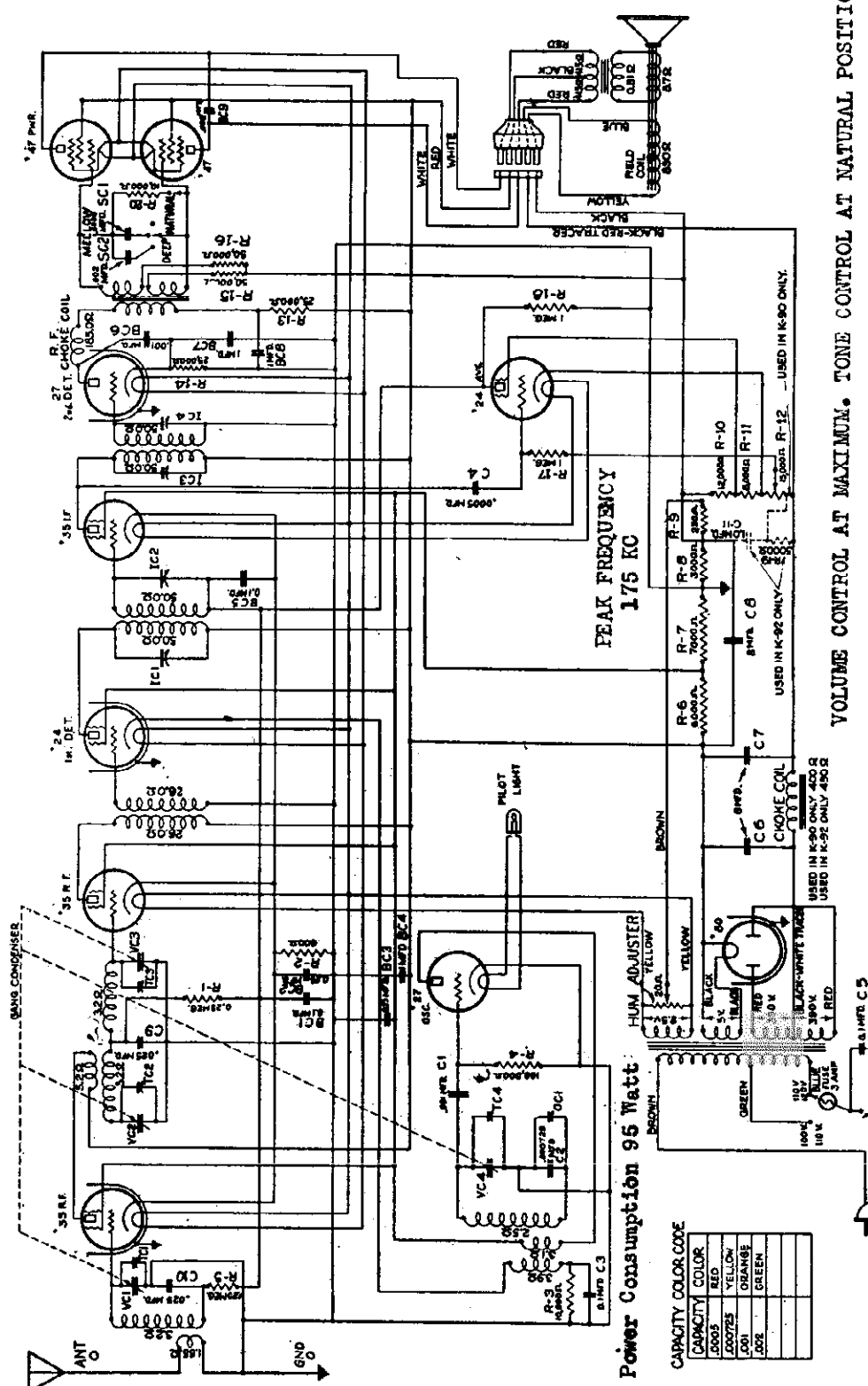
K-80 - 60~A.C.
K-82 23-60~A.C.

Power Consumption 95 Watt

KOLSTER — INTERNATIONAL RADIO MODELS K-80—K-82

MODEL K-90, K-92
Schematic
Voltage

KOLSTER RADIO, INC.



Power Consumption 95 Watt

CAPACITY COLOR CODE

CAPACITY	COLOR
5005	RED
5000	YELLOW
500725	ORANGE
5001	GREEN
5002	GREEN

K-90 - 40 ~ A.C.
K-92 25 - 60 ~ A.C.

RESISTOR COLOR CODE

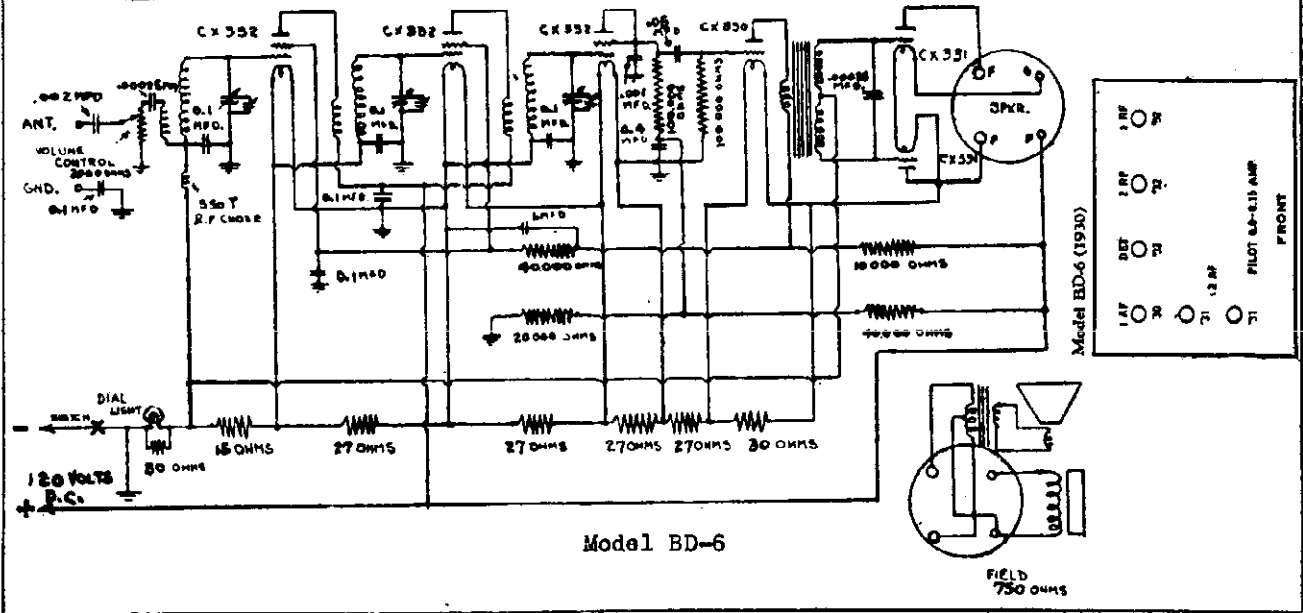
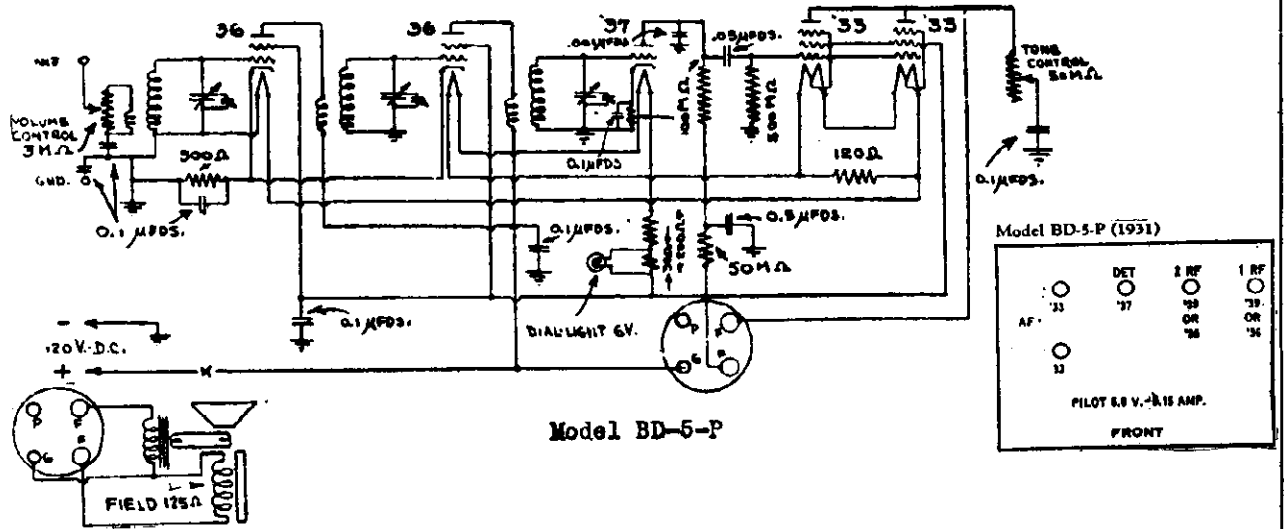
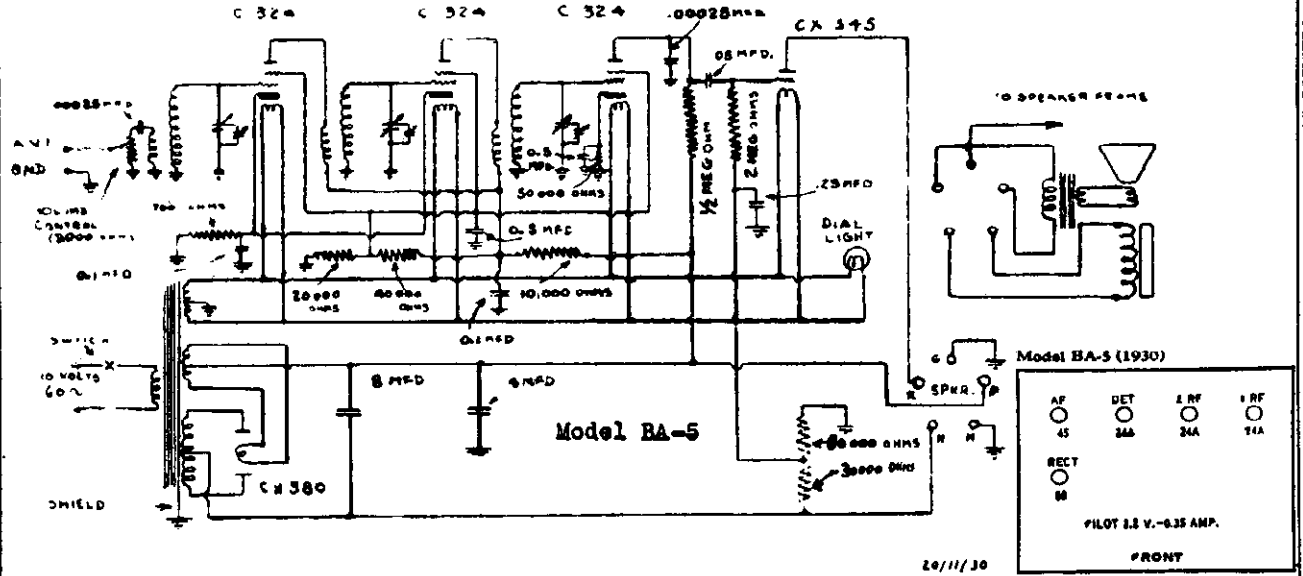
VALUE	BODY	TIP	DOT
500	BLUE	BLACK	BROWN
5000	JURAY	BLACK	BROWN
50000	BROWN	BLACK	BROWN
10,000	BROWN	RED	ORANGE
12,000	BROWN	RED	ORANGE
15,000	RED	GREEN	ORANGE
50,000	GREEN	BLACK	ORANGE
100,000	BROWN	BLACK	YELLOW

VOLUME CONTROL AT MAXIMUM. TONE CONTROL AT NATURAL POSITION.

TUBE	CGV	SGV	KV	FV	P.M.A.
RF	-0.2	75	68	176	3
Osc.	0	-	62	73	5.5
1st.Det.	-5.6	72	68	175	.52
IF	-0.4	75	68	177	2.6
2nd.Det.	-1.5	-	76	145	.65
AVC	-0.5	44	-58	67	0
Power.	-1.2	250	-	228	28
Rect.	-	-	-	-	47

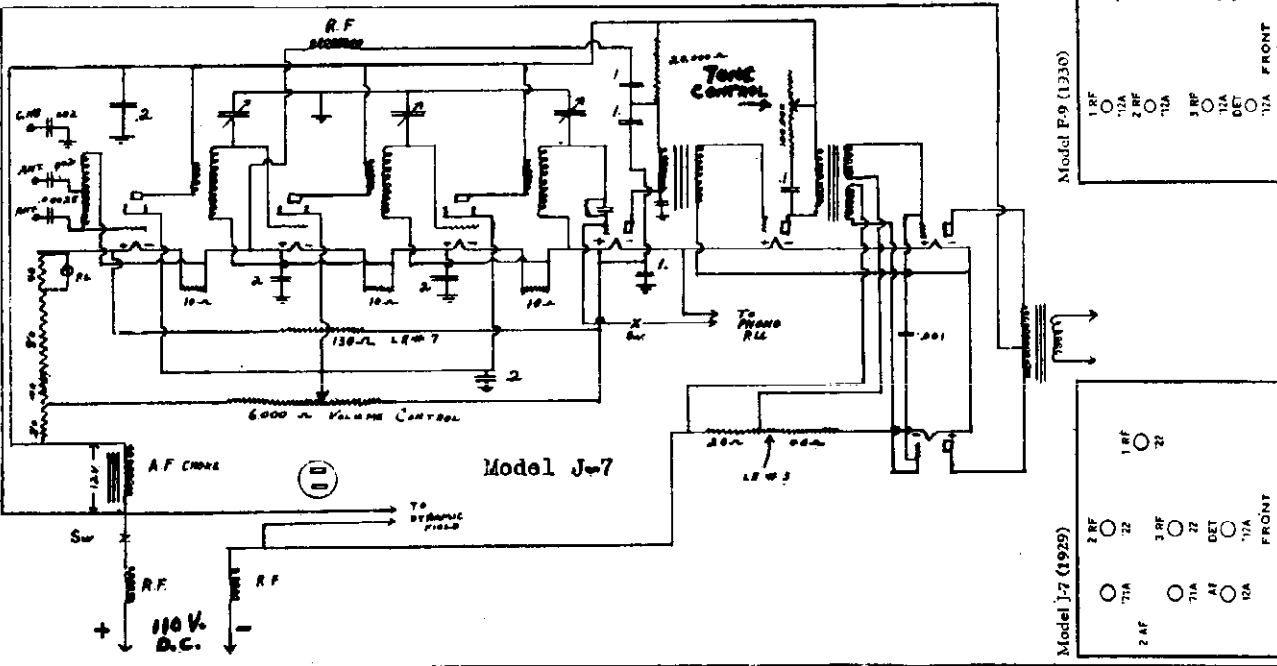
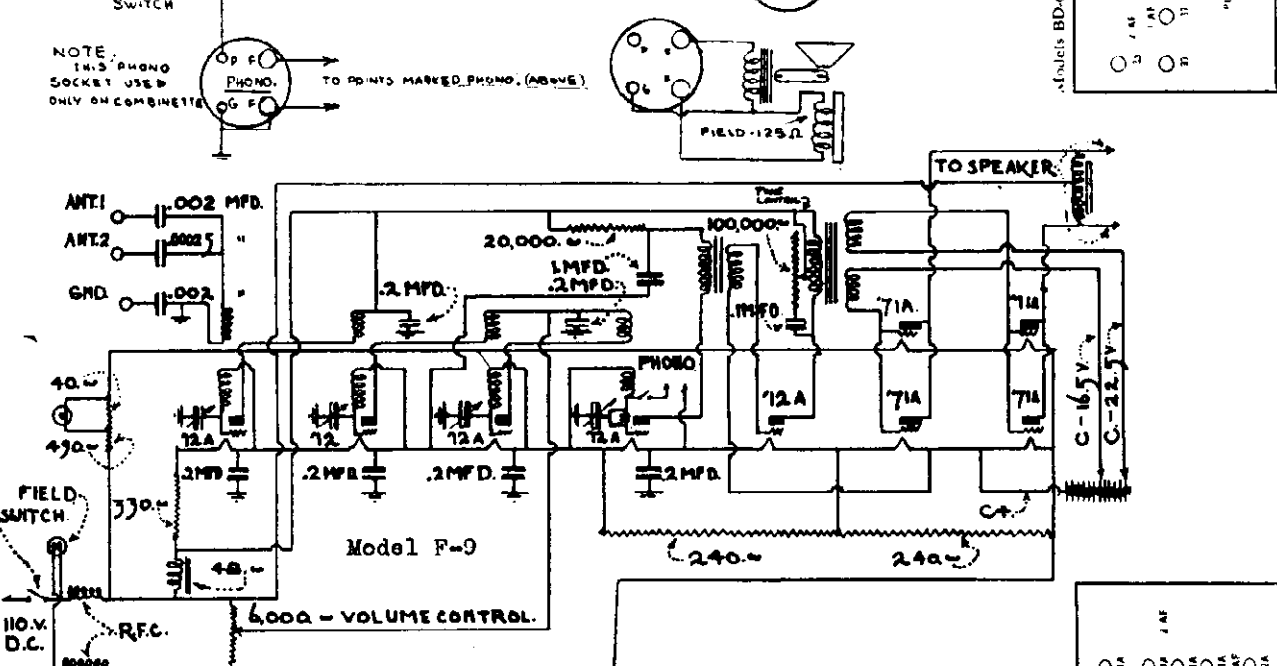
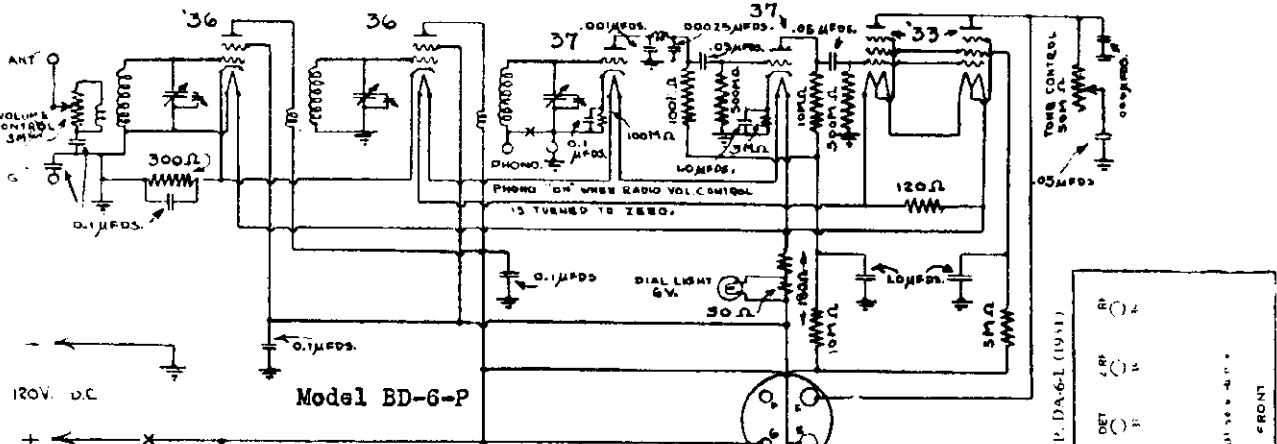
LANG RADIO CC

MODEL BA-5
 MODEL BD-5-P
 MODEL BD-6



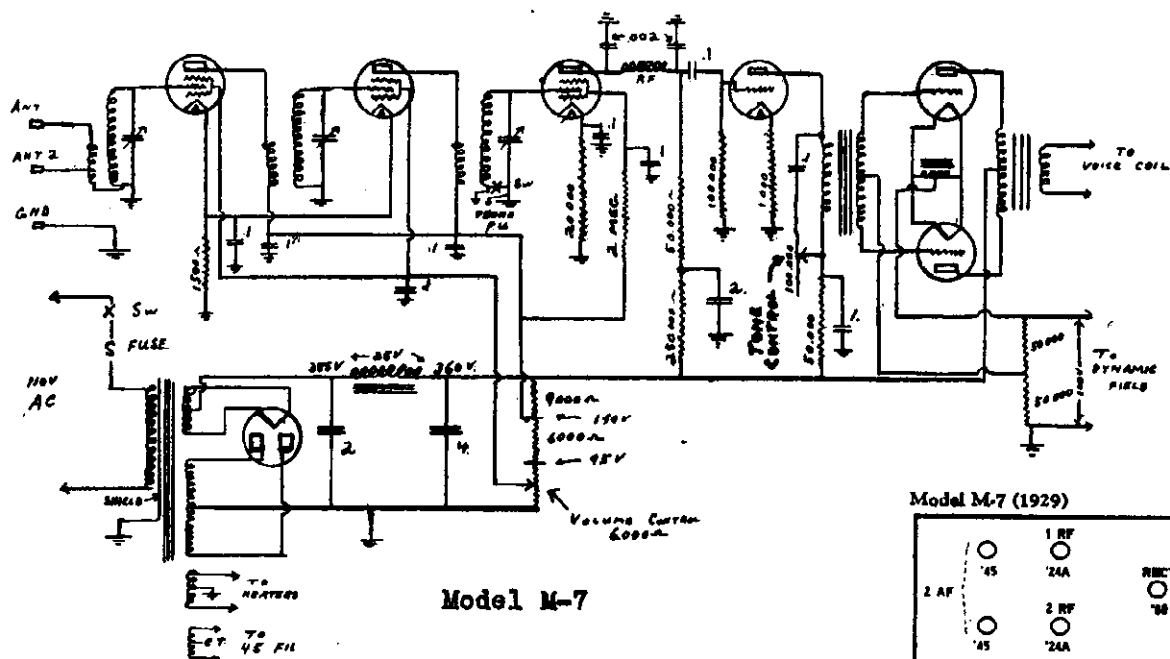
MODEL BD-6-P
MODEL F-9
MODEL J-7

LANG RADIO CO



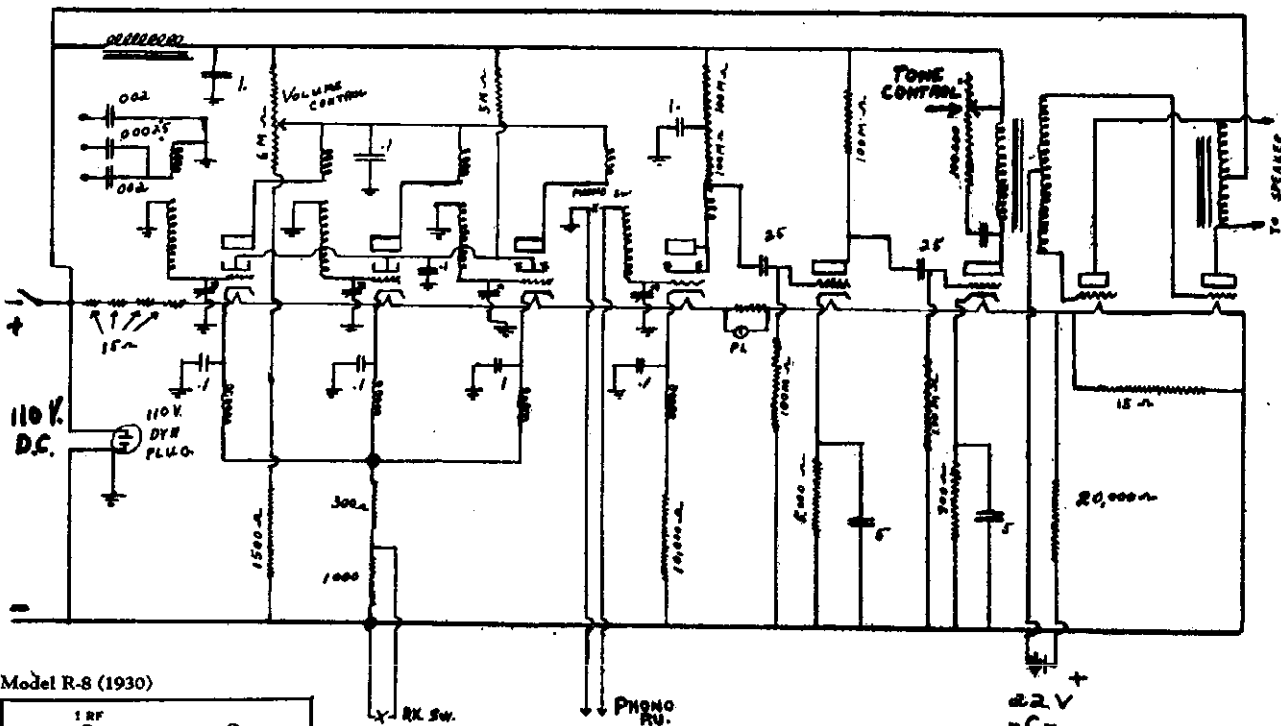
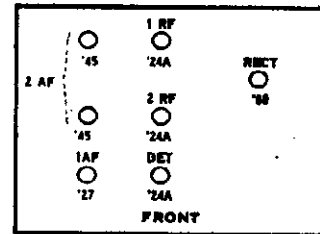
LANG RADIO CO.

MODEL M-7
MODEL R-8

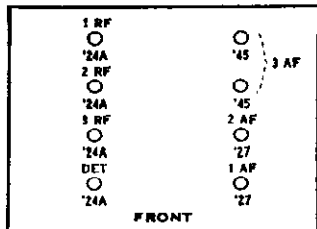


Model M-7

Model M-7 (1929)



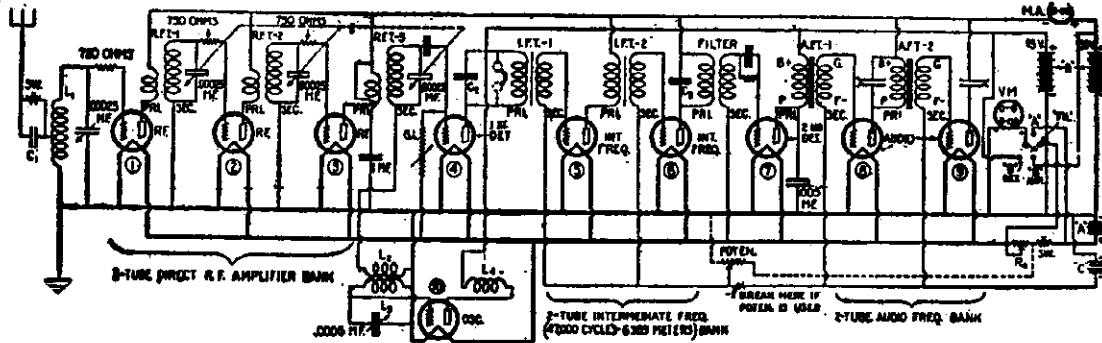
Model R-8 (1930)



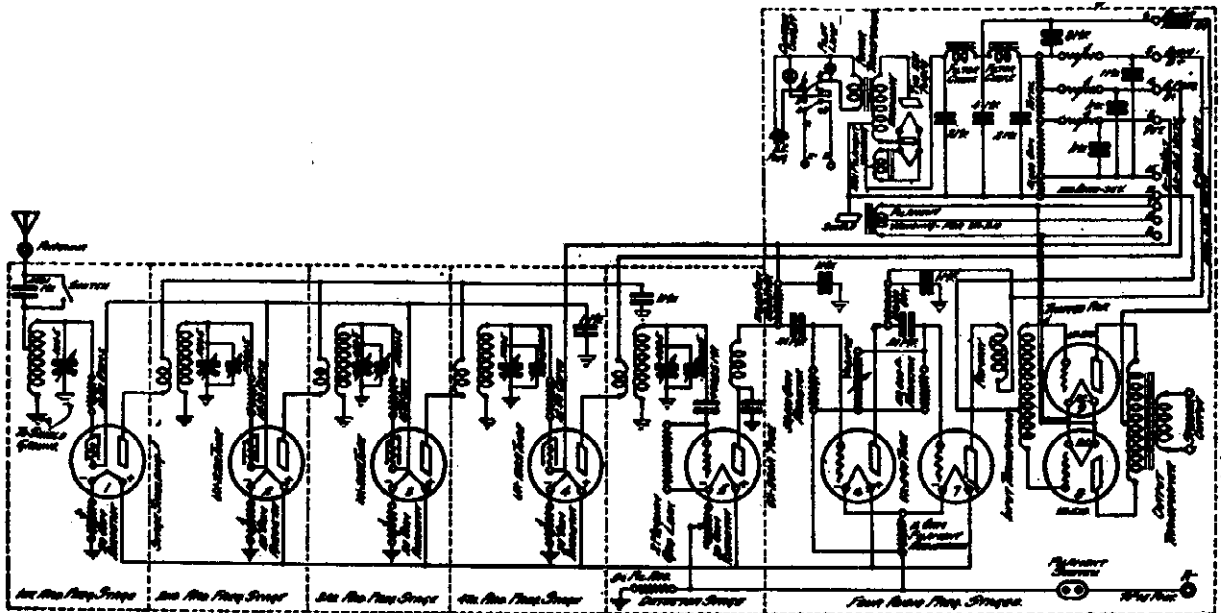
Model R-8

C. R. LEUTZ, INC.

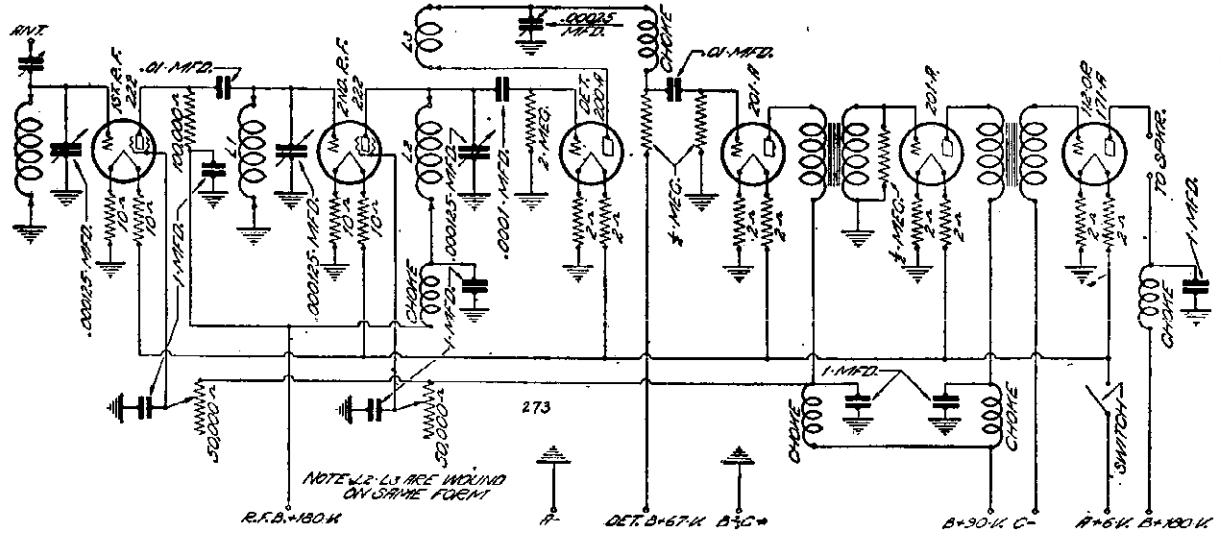
MODEL C-10
MODEL Silver-Ghost
MODEL C



The Experimenters' Information Service Navy Model C-10 superheterodyne designed for a wave-length range from 600 meters down to 50 meters, the band being covered through the use of interchangeable coils.

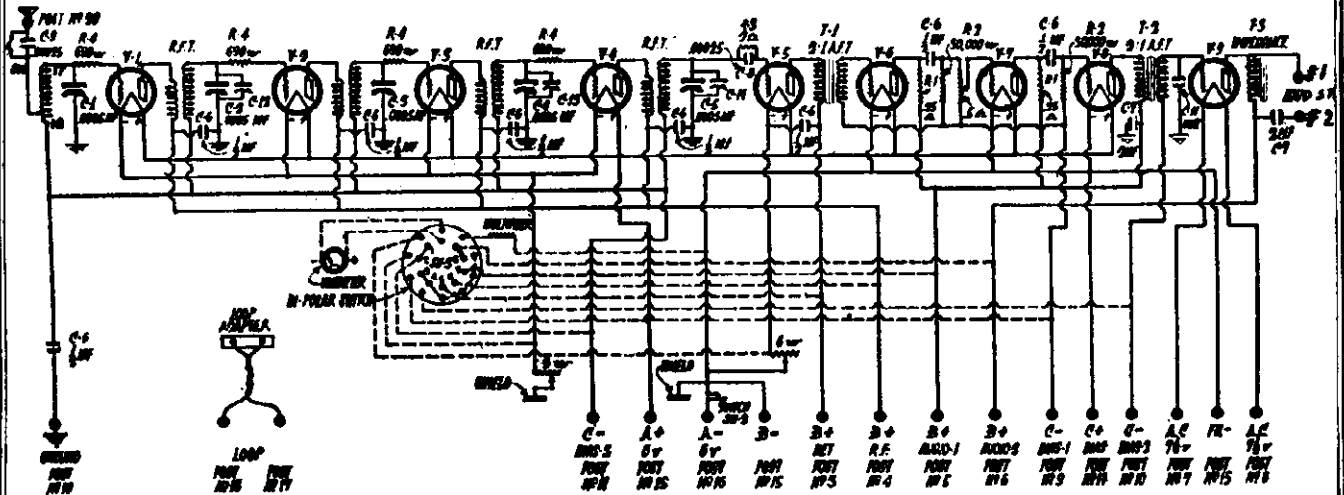


Circuit Diagram of New "Silver Ghost" Receiver

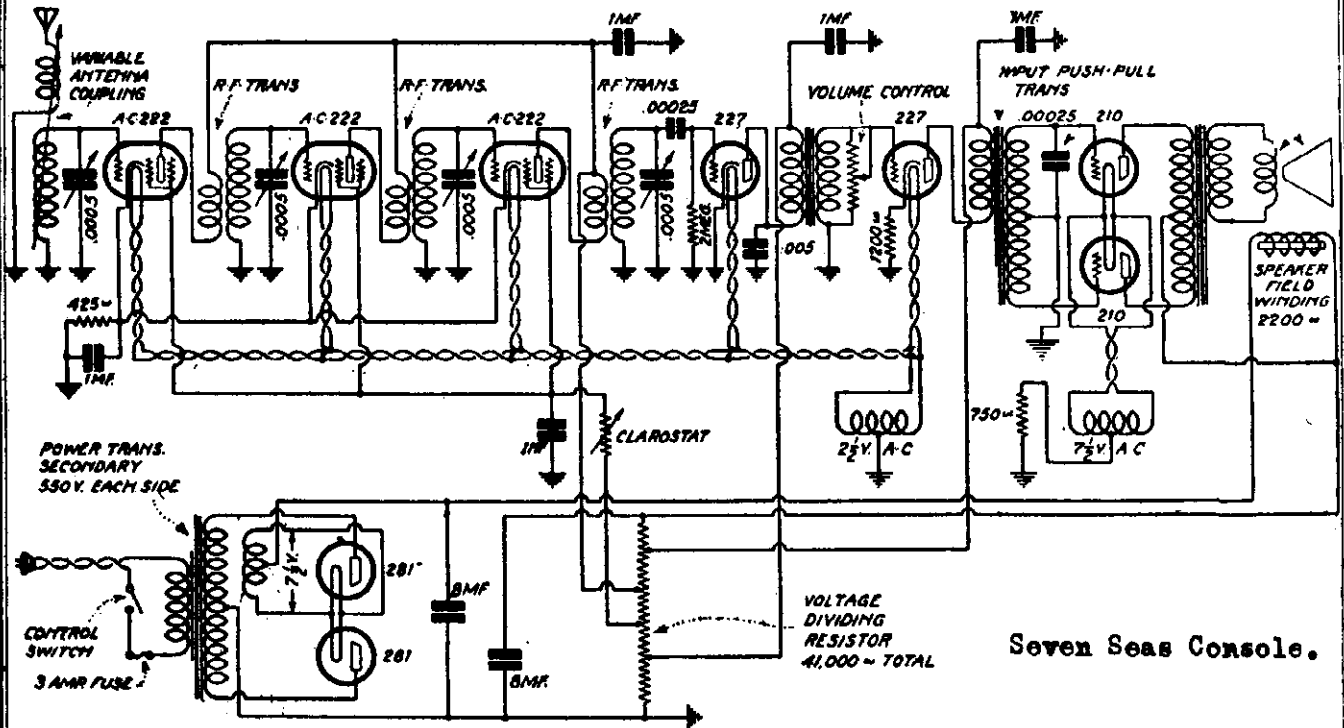


MODEL Trans-Oceanic
MODEL Seven Seas

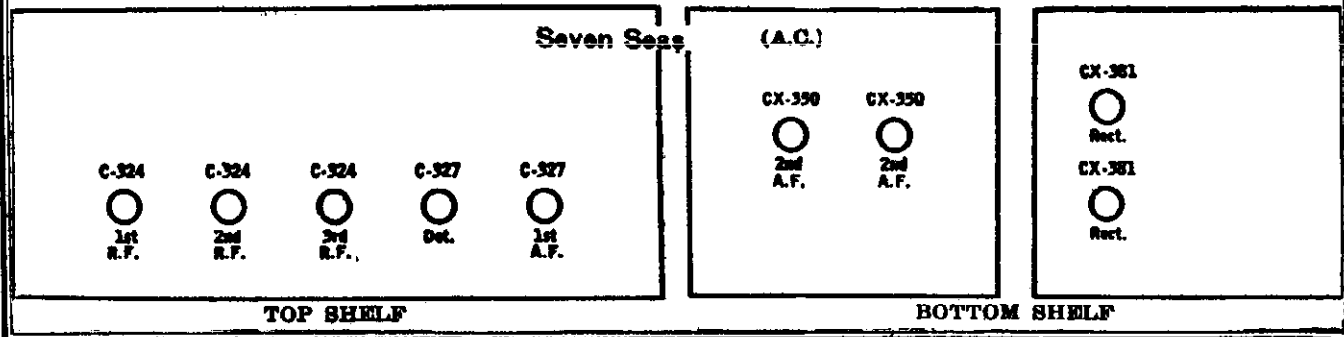
C. R. LEUTZ, INC.



Universal Trans-Oceanic Receiver.

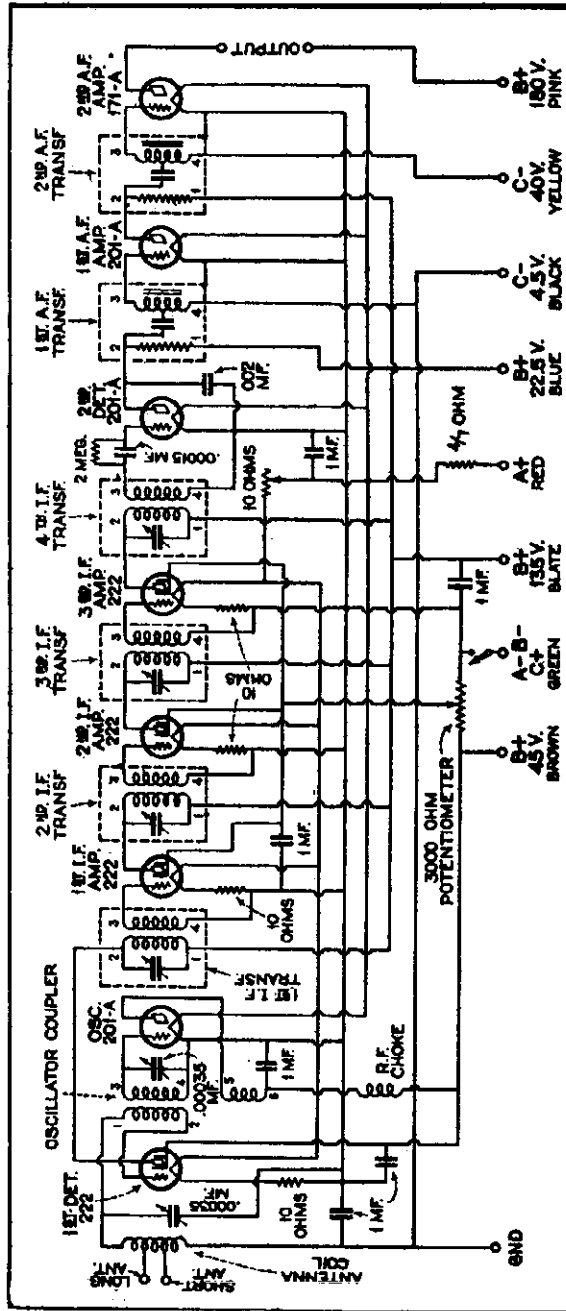


Seven Seas Console.

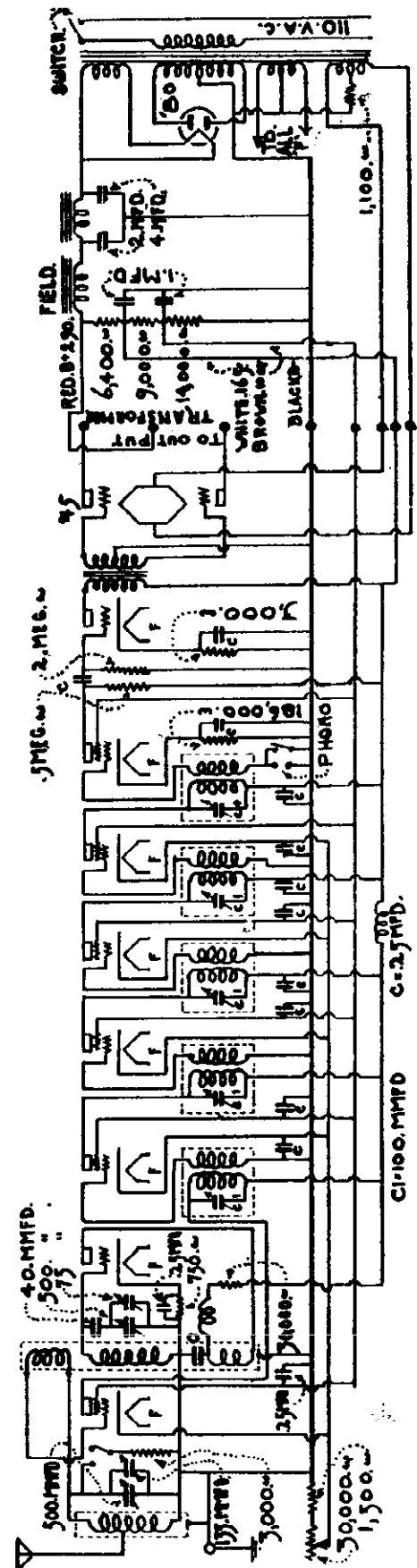


LINCOLN RADIO CORP.

MODEL 8-80
MODEL 81



Model 8-80

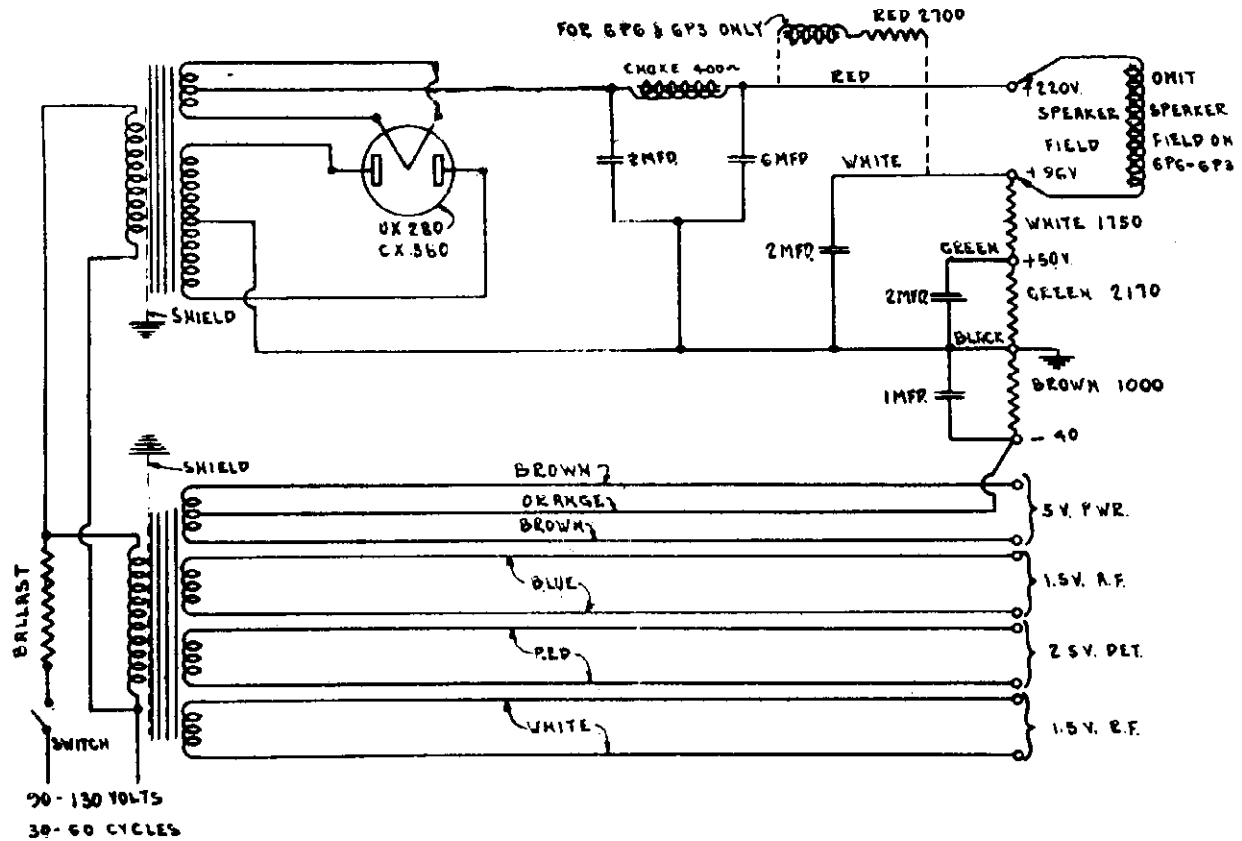


Model 81

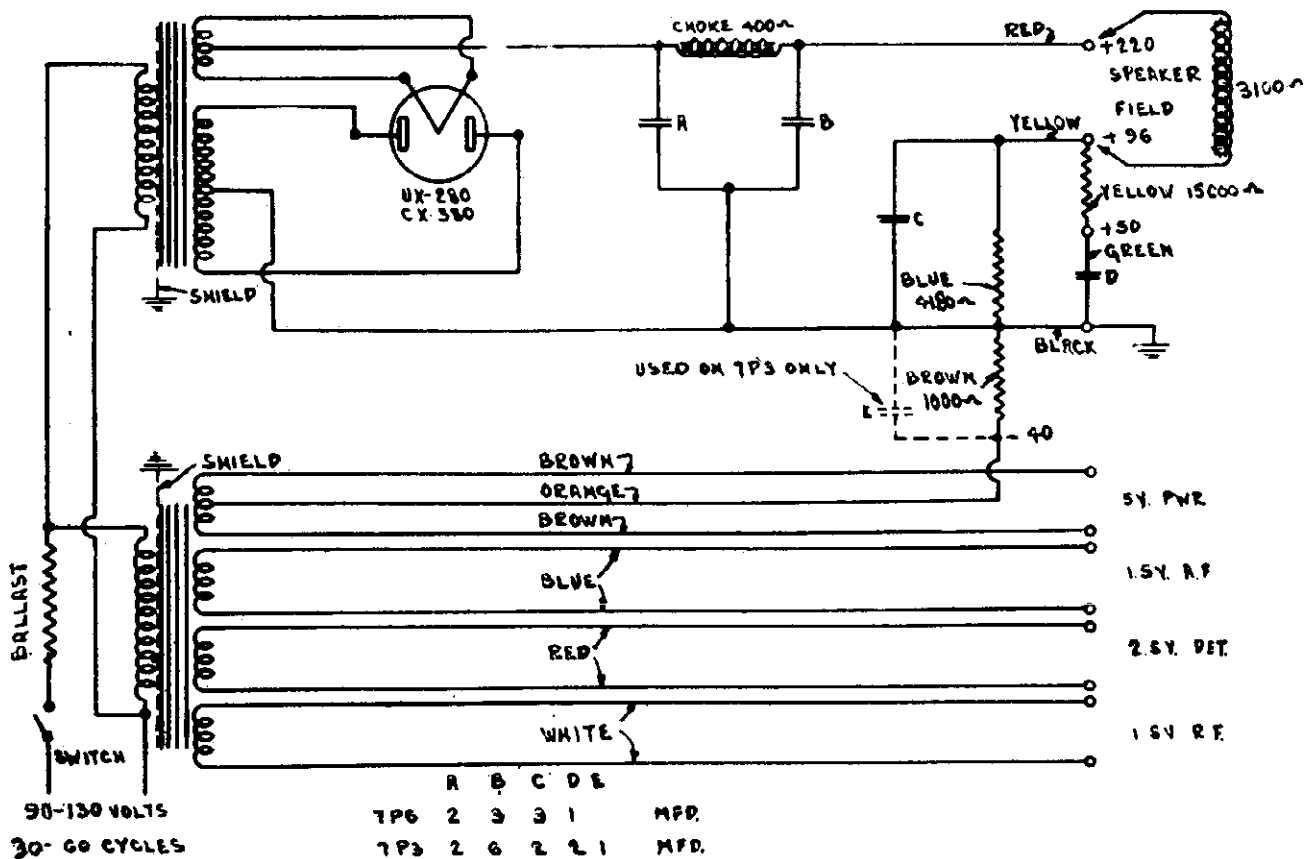
MODEL 7-P-6, 7-P-3
Two Types

GRIGSBY-GRUNOW CO.

SCHEMATIC DIAGRAM OF 7P6-7P3 POWER PACK (OLD VIKING)

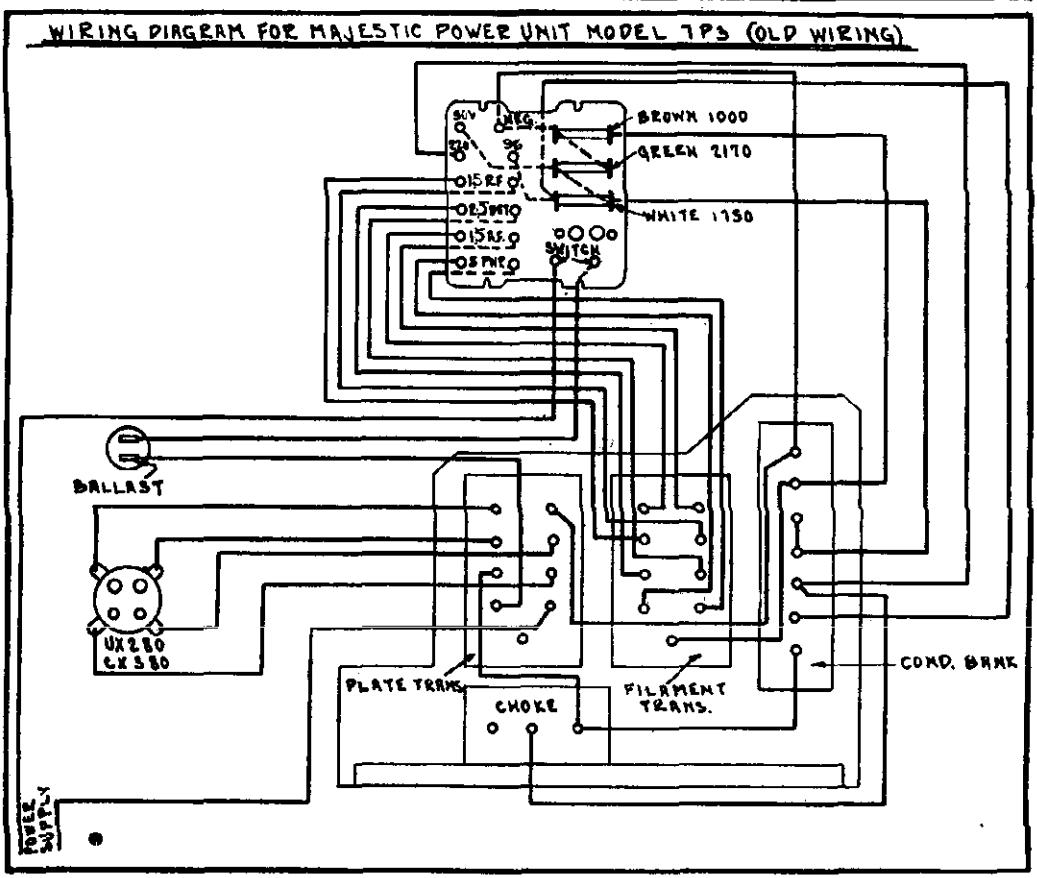
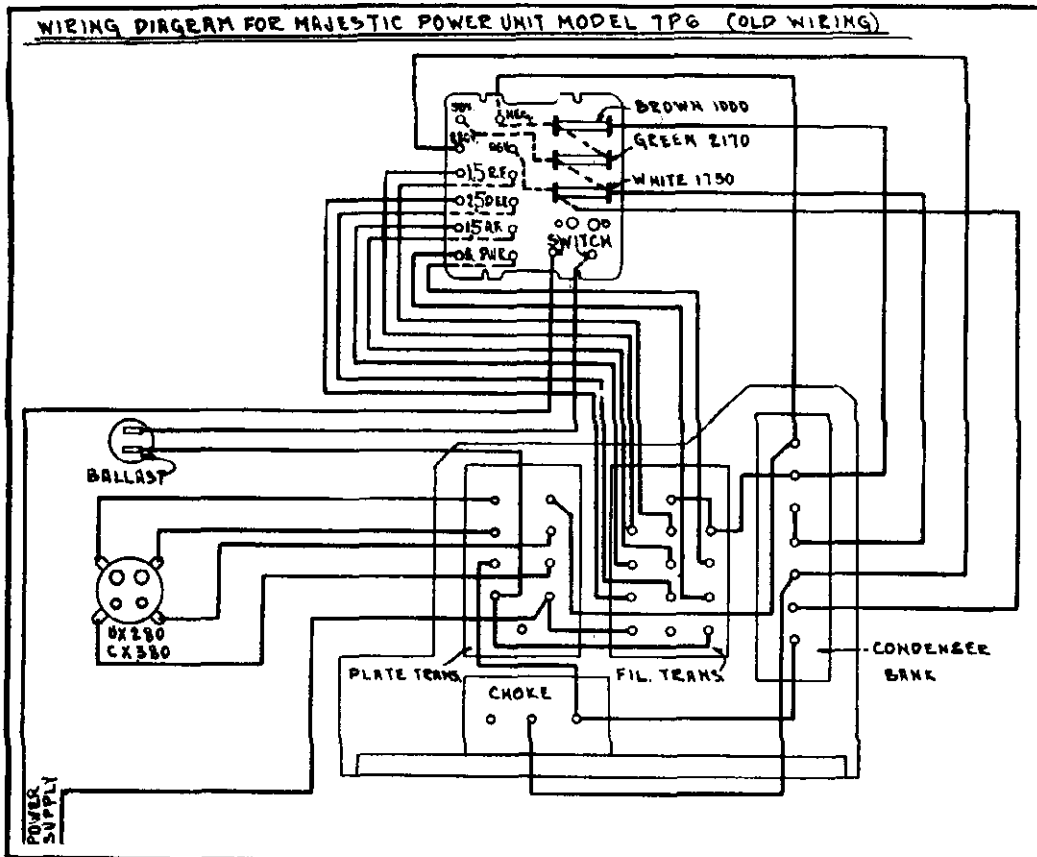


SCHEMATIC DIAGRAM OF 7P6-7P3 POWER PACK



GRIGSBY - GRUNOW CO.

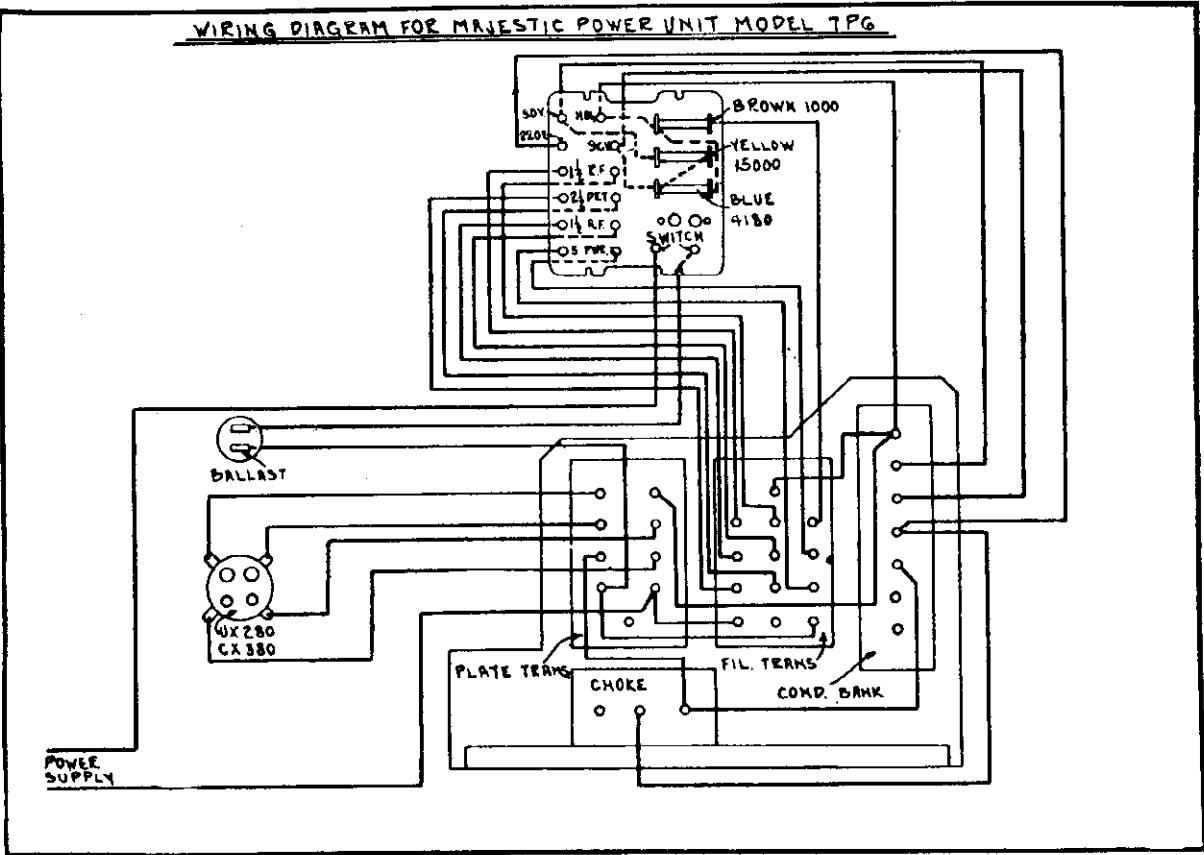
MODEL 7-P-6, 7-P-3
Wiring Diagram
Old Wiring



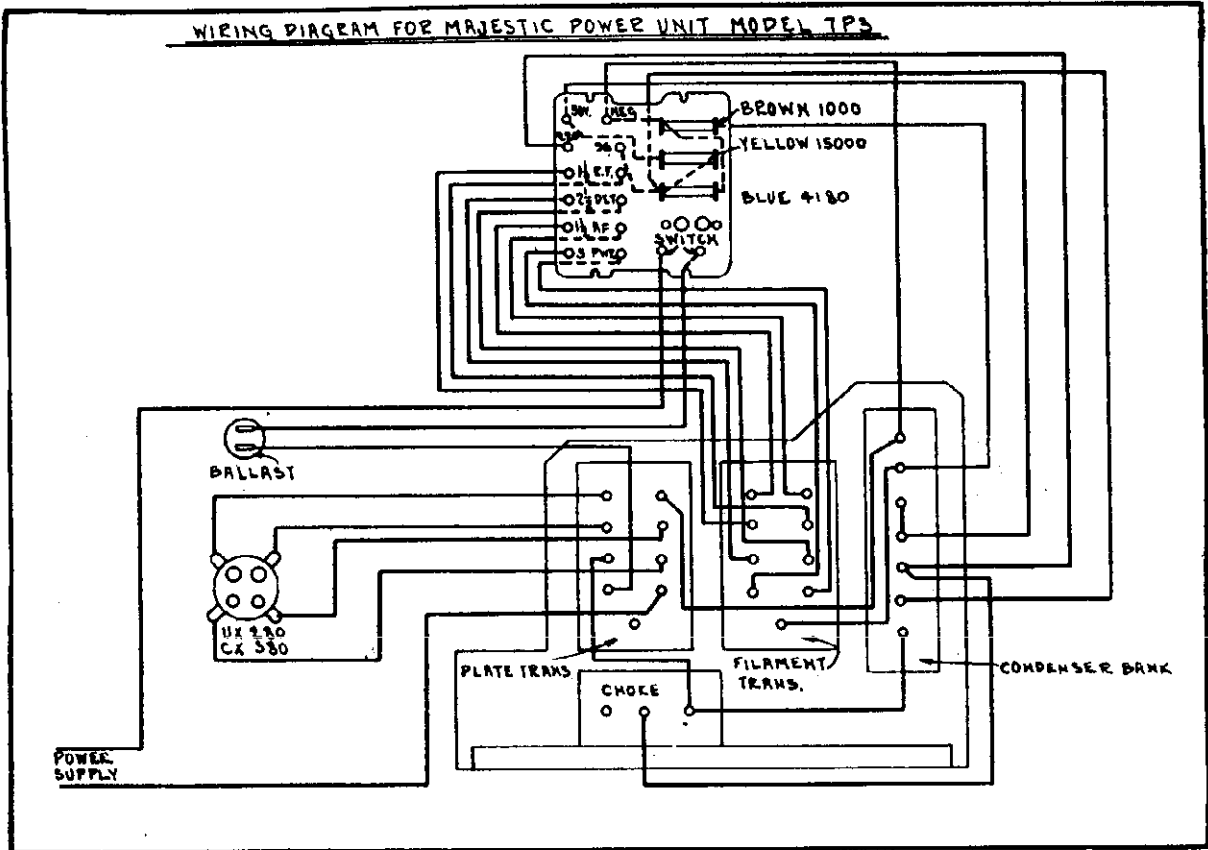
MODEL 7-P-6, 7-P-3
Wiring Diagram

GRIGSBY - GRUNOW CO.

WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 7P6

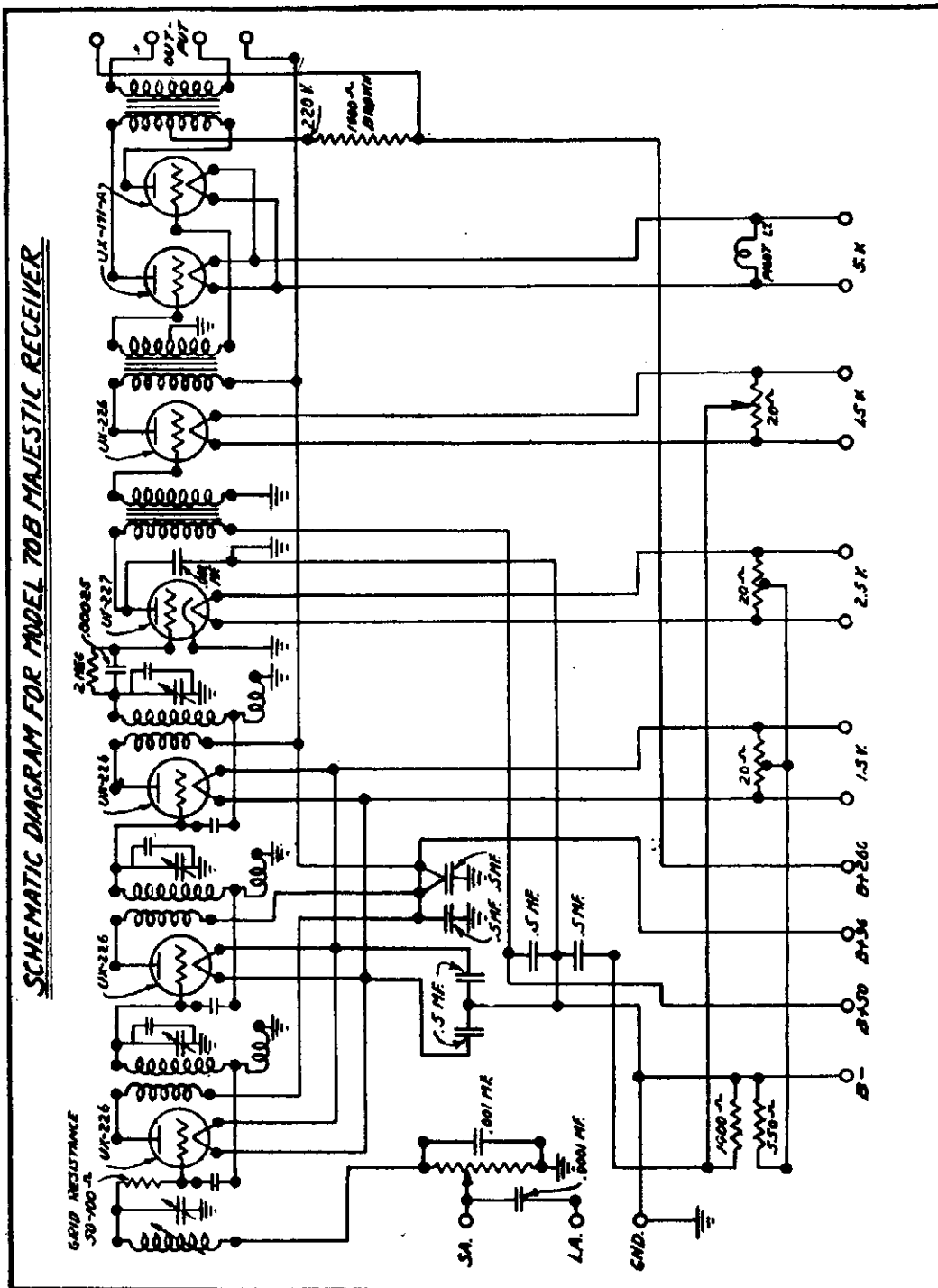


WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 7P3



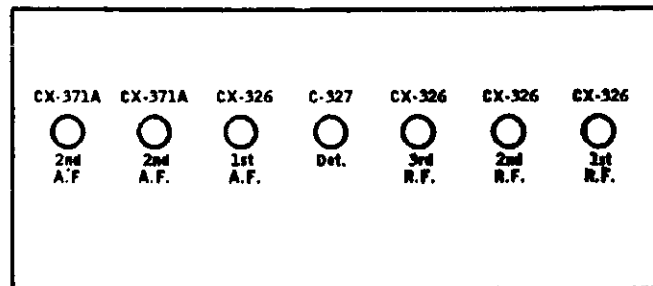
GRIGSBY - GRUNOW CO.

MODEL 70-B



Line Voltage 112—Volume Control Full
2nd A. F. Stage—2 Tubes Push Pull

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1ST BY SET STA.)	HEADINGS PLUS IN SOCKET OF SET												
			TUBE OUT						TUBE IN TESTER						
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE R.F. OHMS TEST	PLATE R.F. OHMS	PLATE R.F. OHMS			
•	226	2nd. A.F.	1.5	102	1.4	96	5	-	3.5	8.5	5.0				
•	226	3rd. R.F.	1.5	102	1.4	96	5	-	3.5	8.5	5.0				
•	227	Detector	2.4	100	2.2	40	0	-	3.0	3.0	0				
•	226	1st. A.F.	1.5	100	1.4	83	4	-	3.5	8.0	4.5				
•	171A	2nd. A.F.	5.0	192	4.8	180	40	-	20.0	25.0	3.0				
•	171A	2nd. A.F.	5.0	192	4.8	180	40	-	20.0	25.0	3.0				
•	300	Rectifier	-	-	2.8	-	-	-	20.0	-	-				

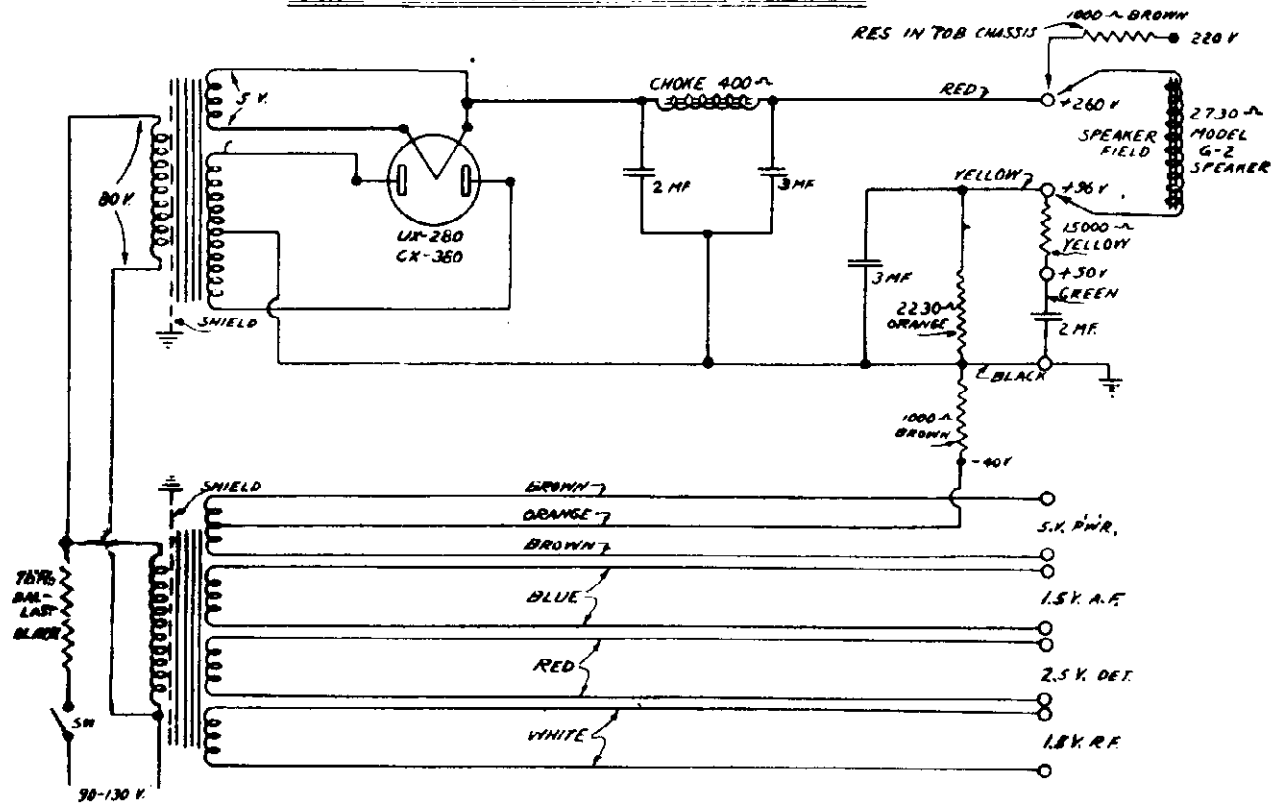


Separate Power Unit uses CX-380.

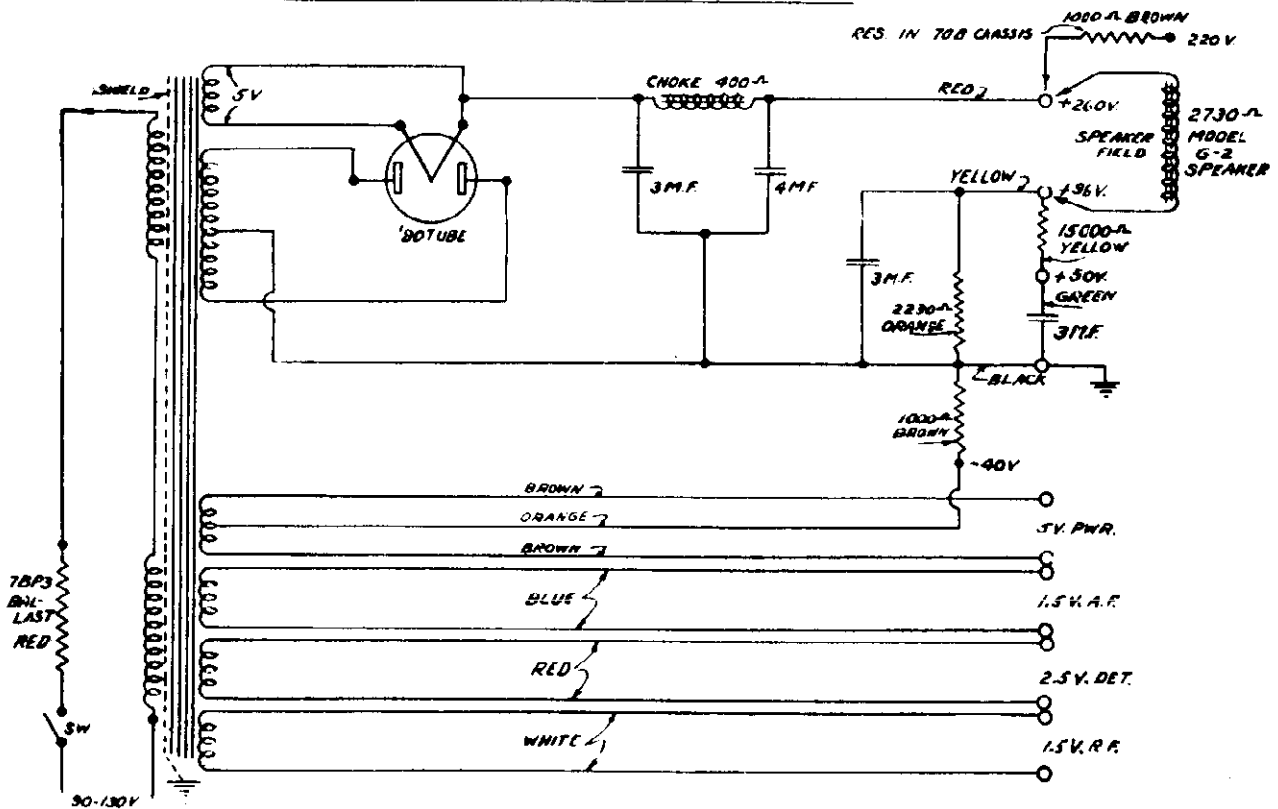
MODEL 7-BP-6,7-BP-3
Schematic

GRIGSBY - GRUNOW CO.

SCHEMATIC DIAGRAM OF 7BP6 POWER UNIT



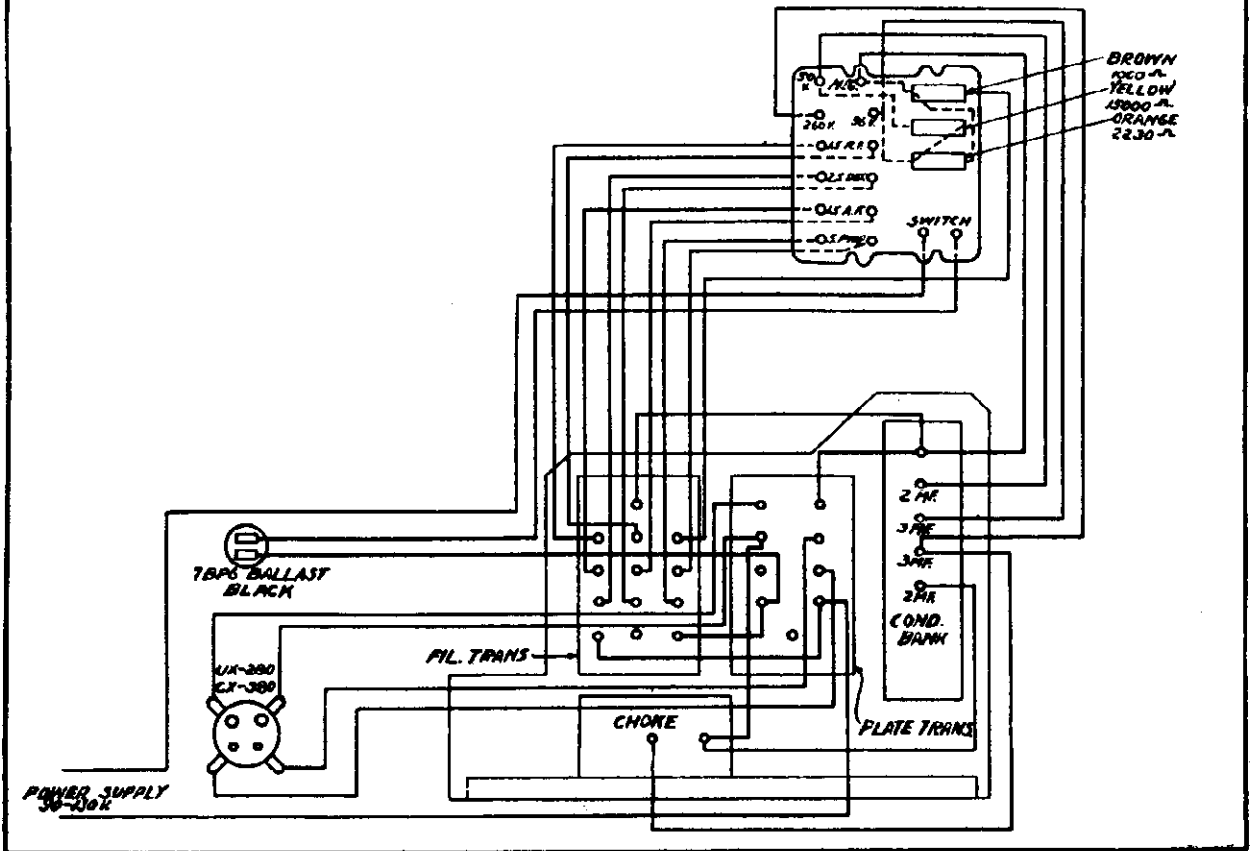
SCHEMATIC DIAGRAM OF 7BP3 POWER UNIT



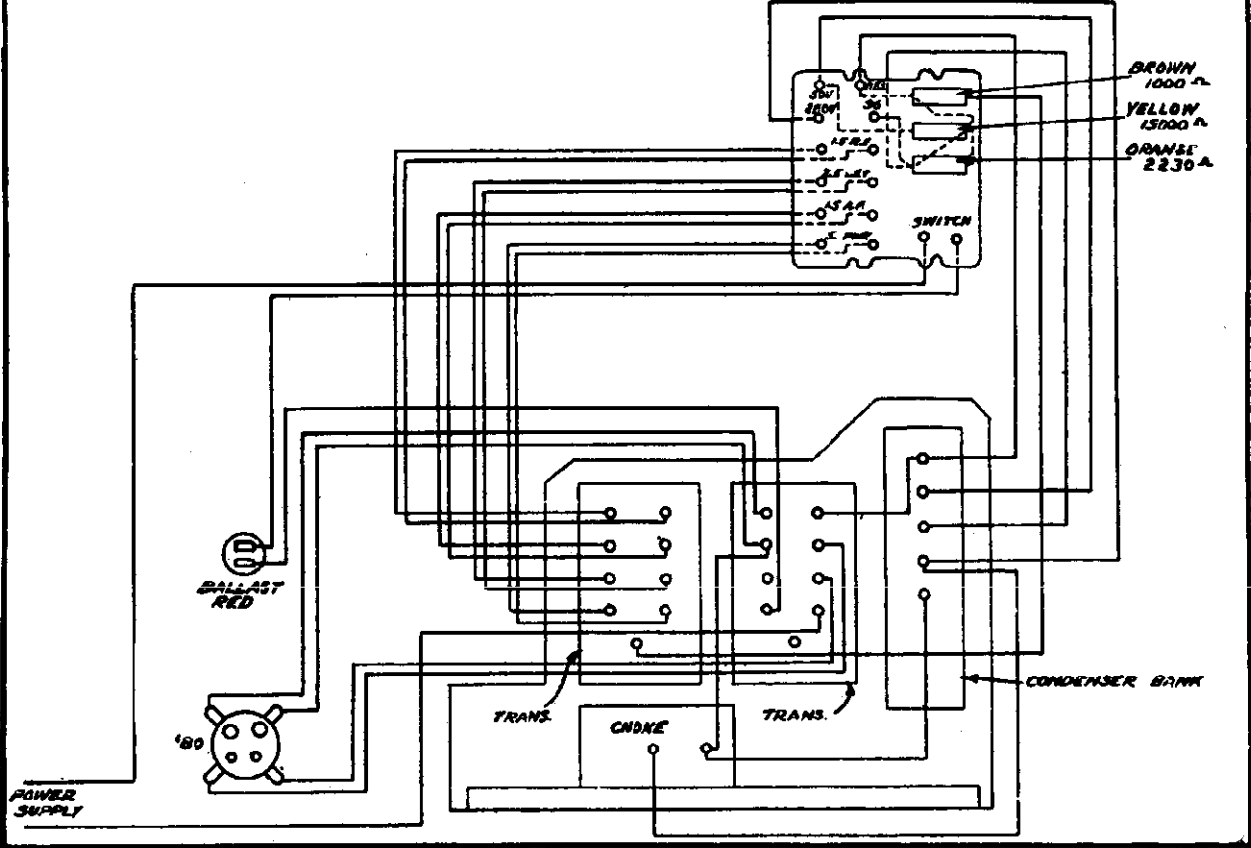
GRIGSBY - GRUNOW CO.

MODEL 7-BP-6, 7-BP-3
Wiring Diagram

WIRING DIAGRAM FOR MAJESTIC POWER UNIT - MODEL 7BP6



WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 7BP3



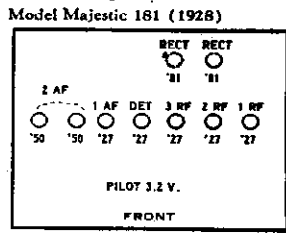
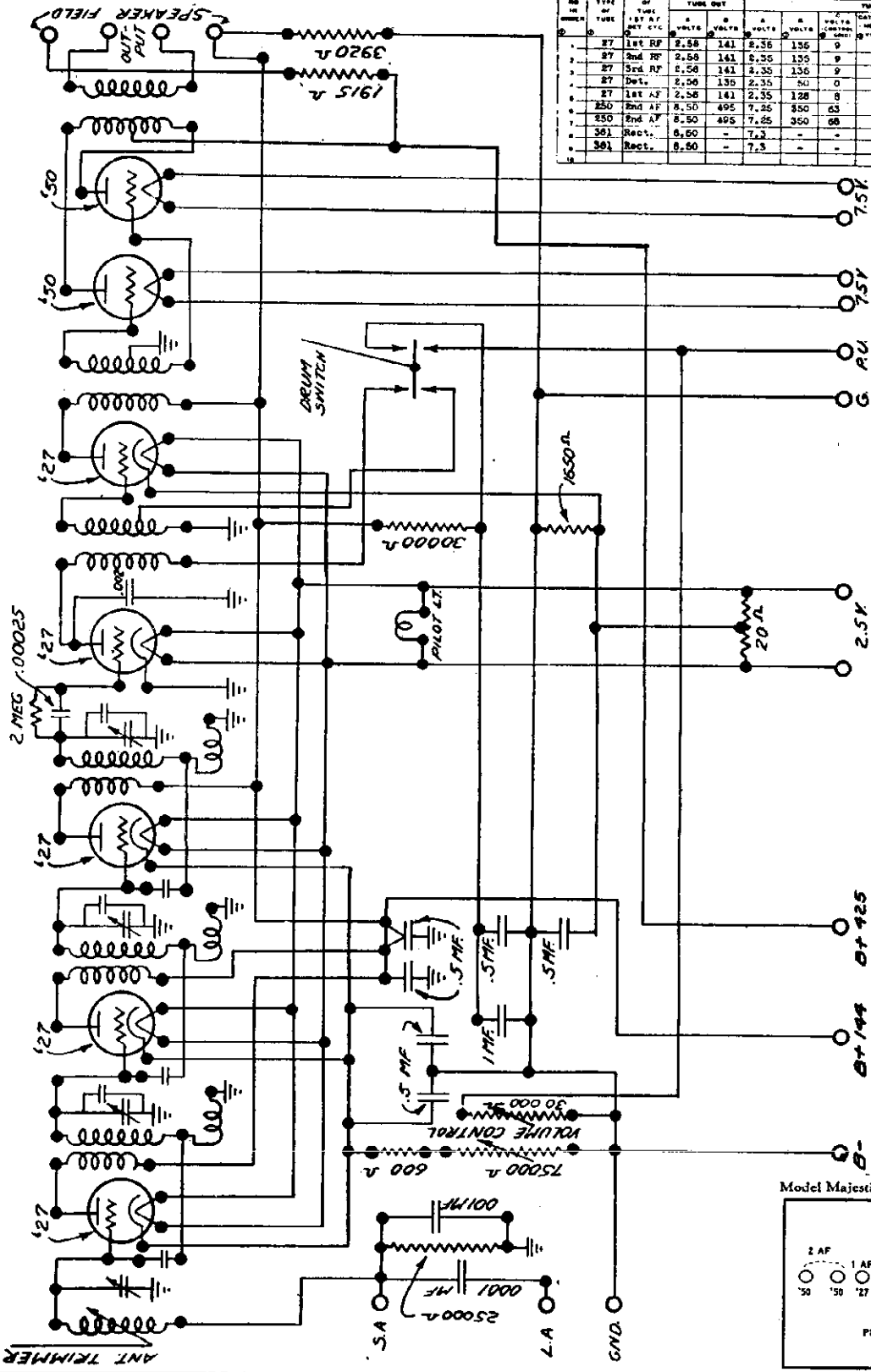
MODEL 180

GRIGSBY - GRUNOW CO.

MAJESTIC—Model 181
 Line Voltage 112—Set on *Volt Tap—Volume Control
 Position Full On
 *Voltage Regulator Is Used

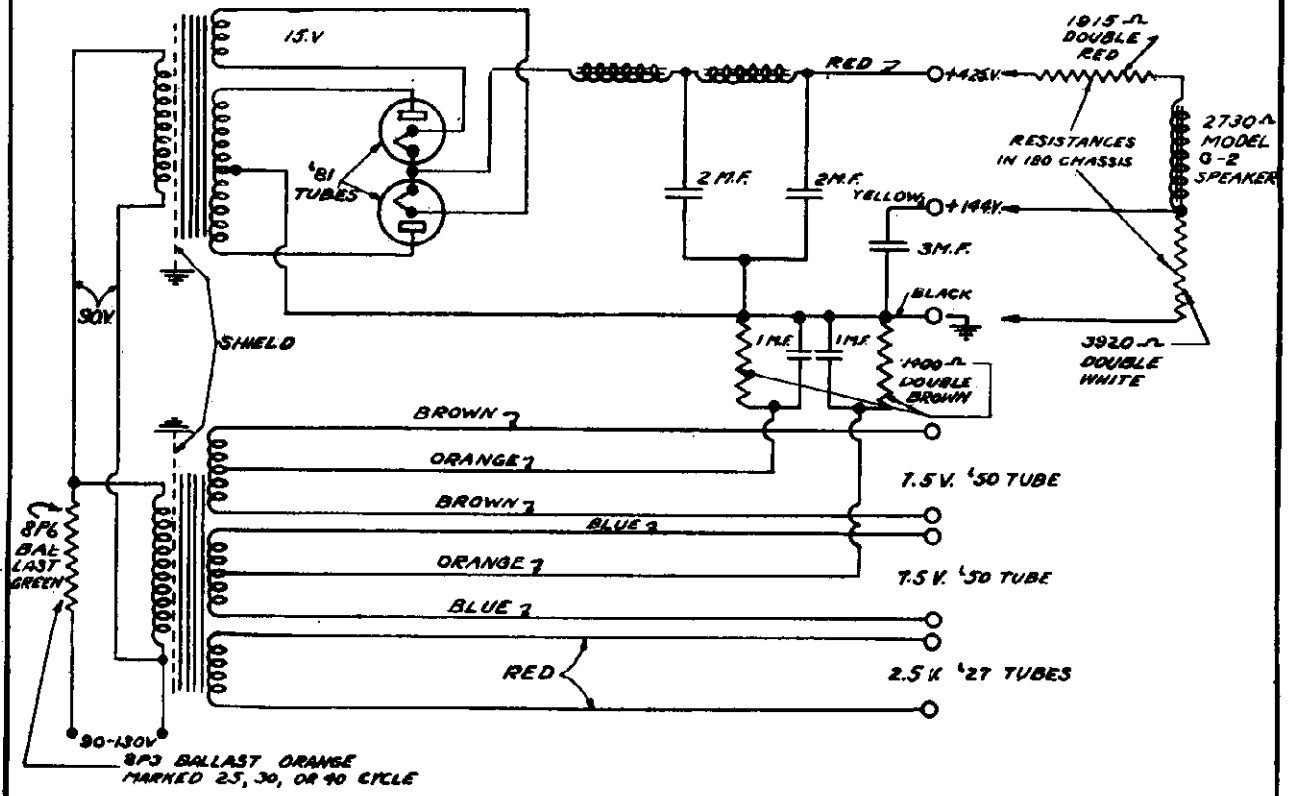
TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION OF TUBE 1ST AF DET. ETC.	TUBE OUT						TUBE IN TESTER					
			VOLTS		MA		WATTS		VOLTS		MA		WATTS	
1	27	1st RF	2.58	141	2.58	155	9	—	5	8	3	—	—	
2	27	2nd RF	2.58	141	2.58	155	9	—	5	8	3	—		
3	27	3rd RF	2.58	141	2.58	155	9	—	5	8	3	—		
4	27	Det.	2.58	135	2.35	50	0	—	4	5.3	1.5	—		
5	27	1st AF	2.58	141	2.35	128	8	—	4	47	2	—		
6	250	2nd AF	8.50	495	7.25	350	68	—	45	47	2	—		
7	301	Rect.	6.60	—	7.2	—	—	—	68	—	—	—		
8	301	Rect.	6.60	—	7.3	—	—	—	68	—	—	—		

SCHEMATIC DIAGRAM FOR MODEL 180 MAJESTIC RECEIVER

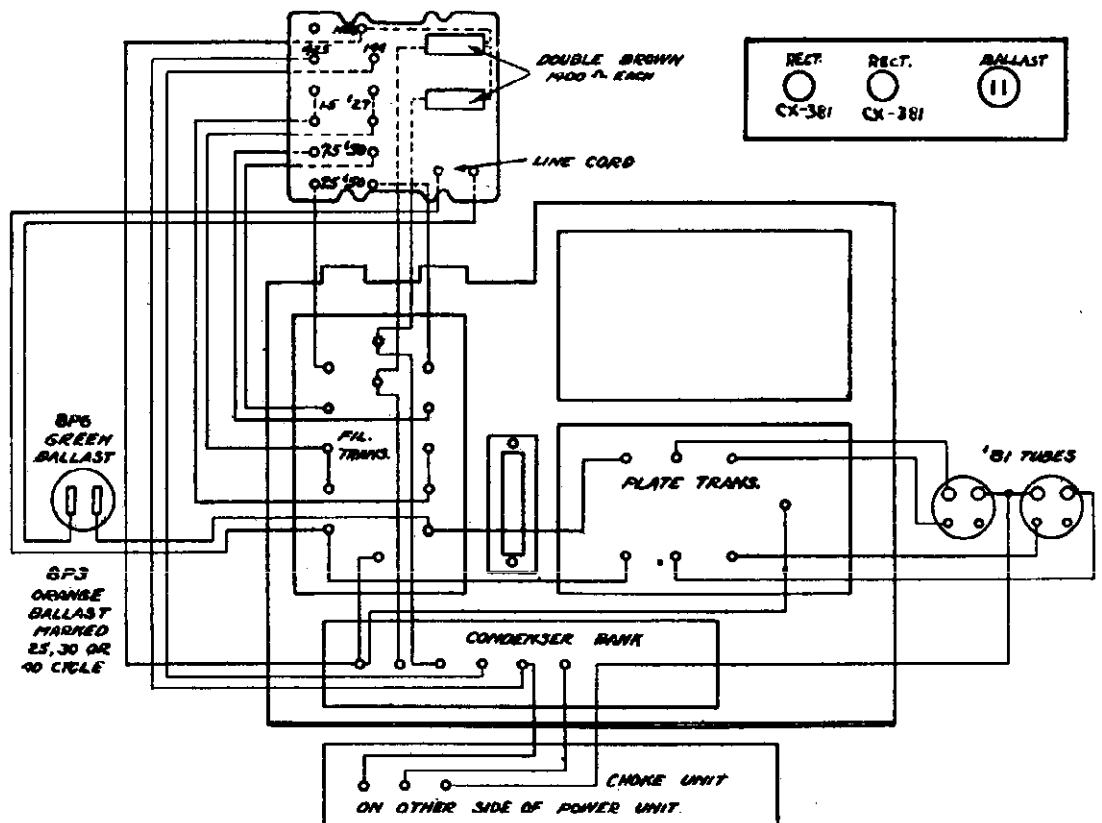


GRIGSBY - GRUNOW CO. MODEL 8-P-6, 8-P-3 Schematic, Wiring Diagram

SCHEMATIC DIAGRAM OF 8P6 & 8P3 POWER UNITS
(FOR MODEL 180 CHASSIS)



WIRING DIAGRAM FOR MAJESTIC POWER UNIT MODEL 8P6 & 8P3

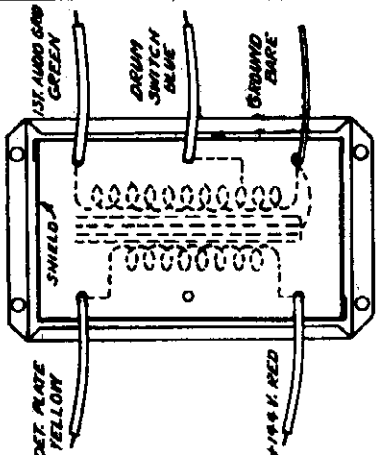


GRIGSBY GRUNOW CO.

MODELS 70-B, 180
Data

FIRST STAGE AUDIO TRANS 6-28
FOR MODEL 180 CHASSIS

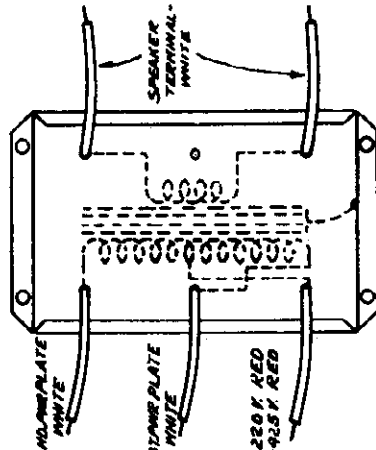
(VIEW LOOKING AT BOTTOM OF CAN)



THIS END GOES AWAY FROM TUBE SOCKETS

PUSH PULL OUTPUT TRANS 6-4
FOR MODEL 70-B & 180 CHASSIS

(VIEW LOOKING AT BOTTOM OF CAN)

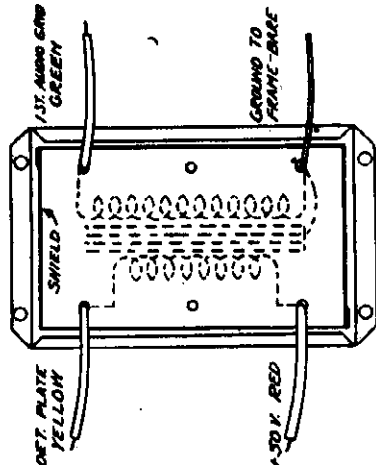


THIS END GOES AWAY FROM TUBE SOCKETS

GRIGSBY GRUNOW CO
JAN-DEC

FIRST STAGE AUDIO TRANS 6-38
FOR MODEL 70-B CHASSIS

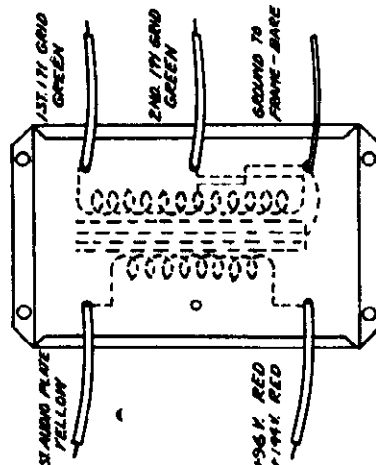
(VIEW LOOKING AT BOTTOM OF CAN)



THIS END GOES AWAY FROM TUBE SOCKETS

PUSH PULL INPUT TRANS 6-3
FOR MODEL 70-B & 180 CHASSIS

(VIEW LOOKING AT BOTTOM OF CAN)



THIS END GOES AWAY FROM TUBE SOCKETS

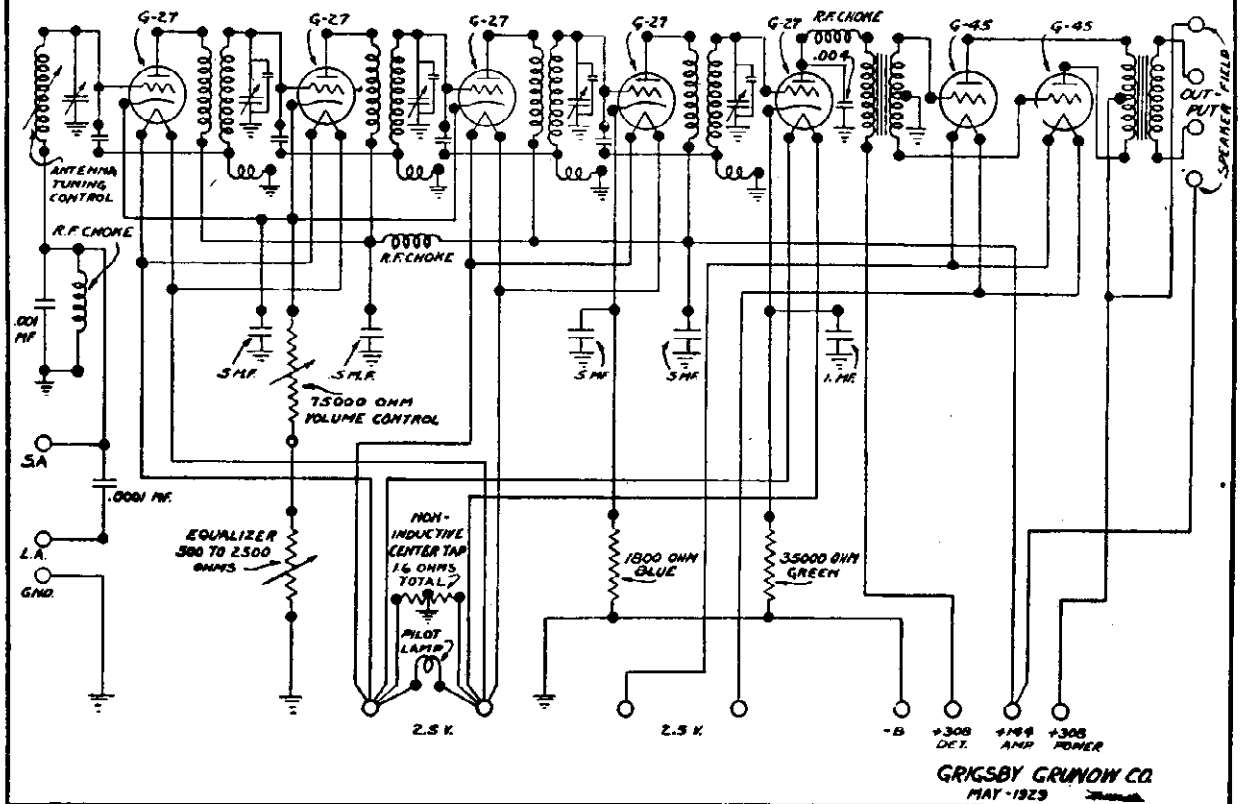
BALLAST SPECIFICATIONS FOR THE VARIOUS TYPES OF MAJESTIC ELECTRIC POWER UNITS

POWER UNIT TYPE	FREQUENCY CYCLES PER SECOND	BALLAST MARKING	BALLAST COLOR	LINE VOLTAGE	PRIMARY VOLTS
1P6	60	B	BLACK	115	80
7P3	25-30-40	B	BLACK	115	60
7BP6	60	7BP6	BLACK	115	80
7BP6	60	7BP6	BLUE	230	160
7BP3	25	7BP3 25	RED	115	80
7BP3	30	7BP3 30	RED	115	80
7BP3	40	7BP3 40	RED	115	80
8P6	60	8P6	GREEN	115	90
8P6	60	8P6	YELLOW	230	180
8P3	25	8P3 25	ORANGE	115	90
8P3	30	8P3 30	ORANGE	115	90
8P3	40	8P3 40	ORANGE	115	90

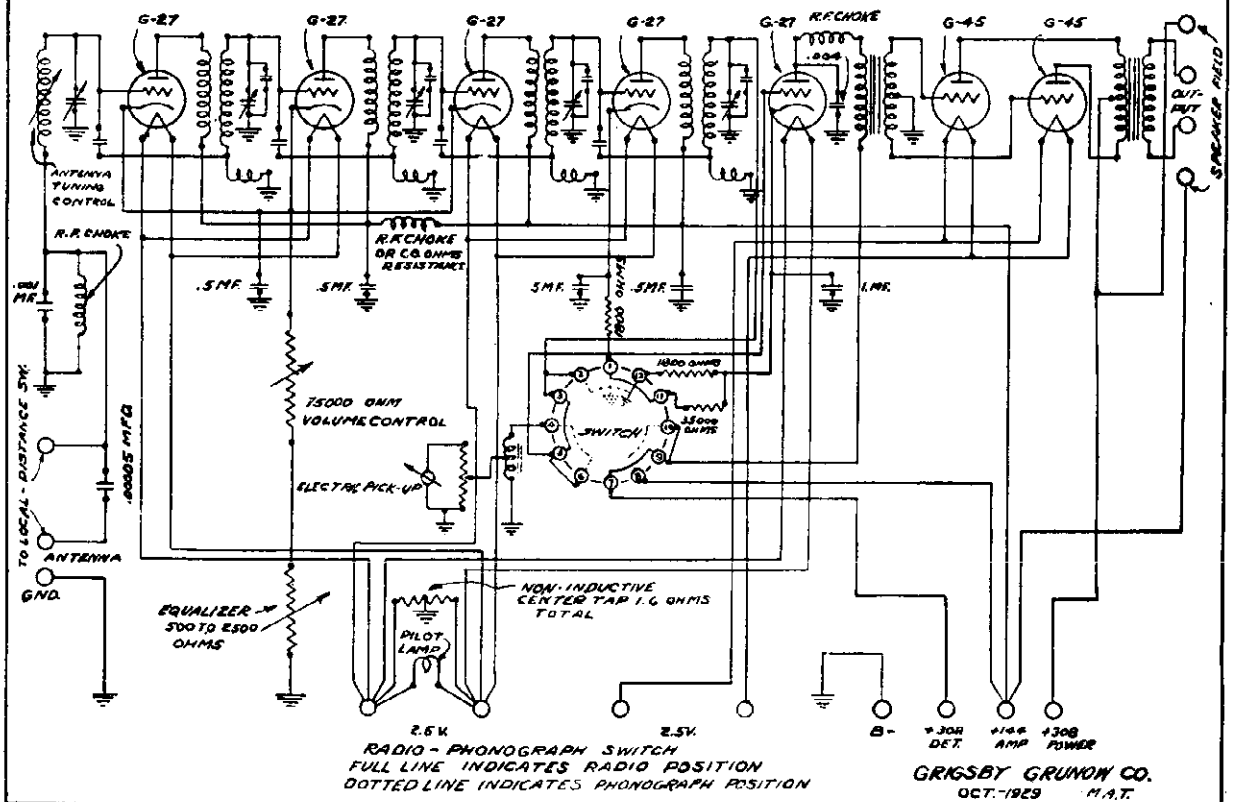
GRIGSBY - GRUNOW CO.

MODEL 90,100
Schematic

SCHEMATIC DIAGRAM FOR MODEL 90 MAJESTIC RECEIVER

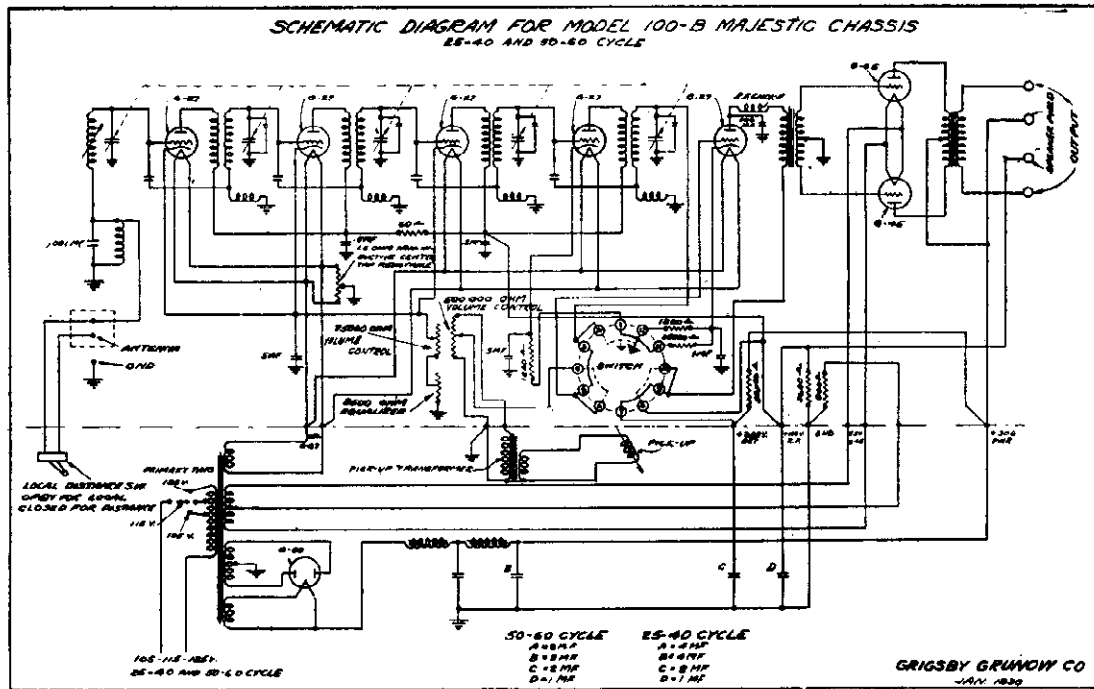
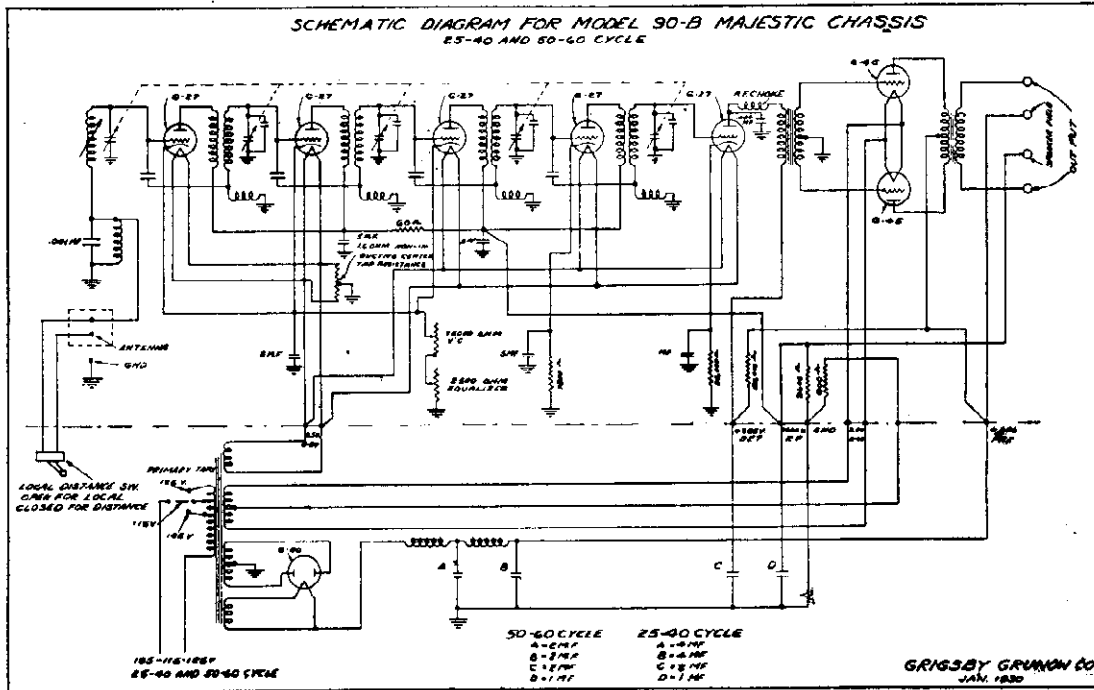


SCHEMATIC DIAGRAM FOR MODEL 100 MAJESTIC RECEIVER



MODEL 90-B
MODEL 100-B

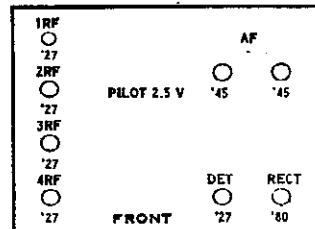
GRIGSBY - GRUNOW CO.



Line Voltage 112—Set on *Volt Tap—Volume Control
Position Full On
*Voltage Regulator Is Used

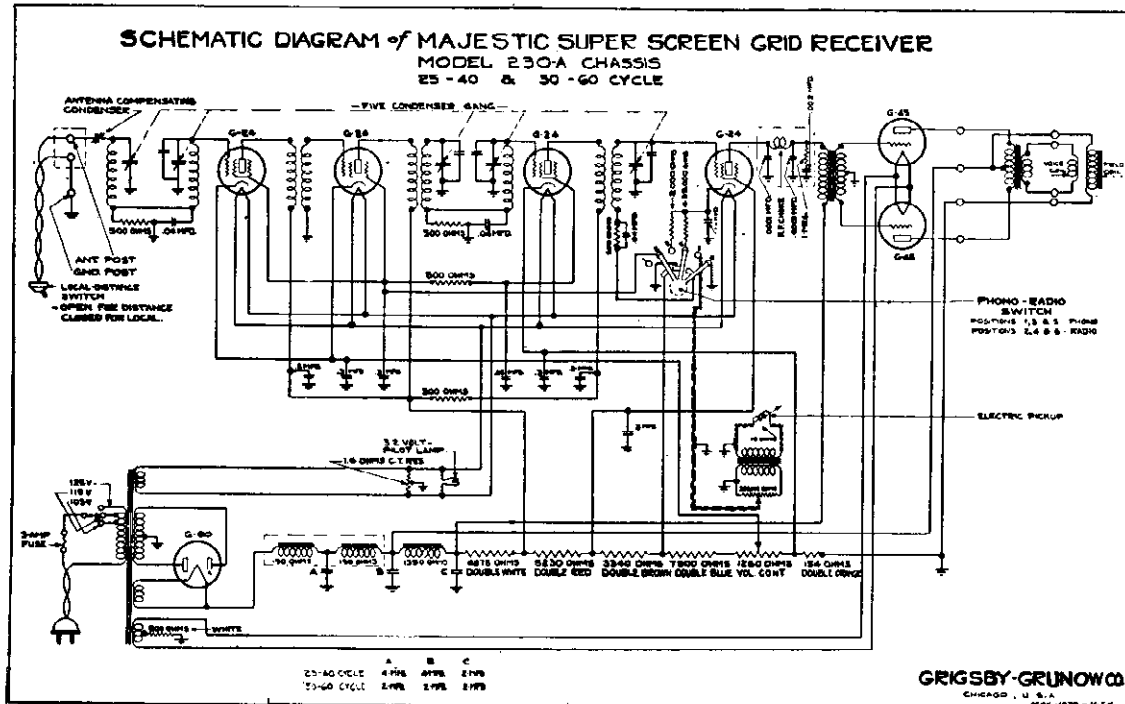
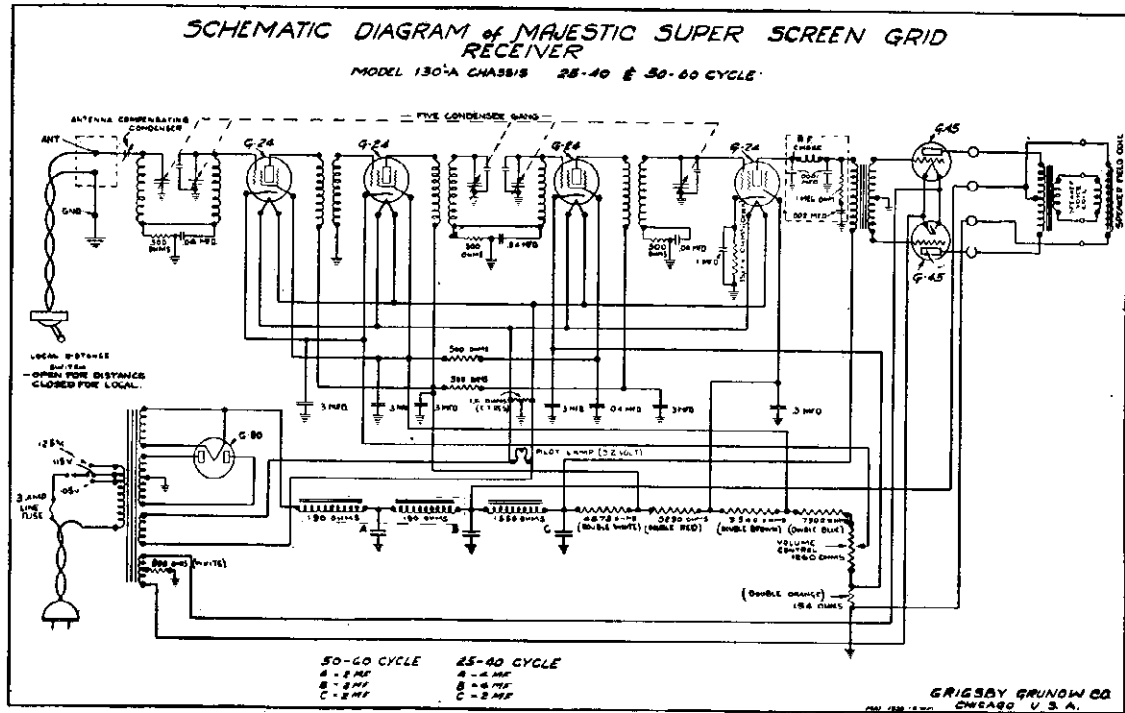
Models Majestic 90, 91, 92, 101 (1929)

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST R.F. DET. ETC.	READING PLUG IN SOCKET OF SET									
			TUBE OUT		TUBE IN TESTER				TUBE IN TESTER			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS CONTROL GRID	CATHODE HEATER VOLTS	NORMAL PLATE M.A.	PLATE TEST M.A.	PLATE CHARGE M.A.	SCREEN GRID VOLTS
1	27	1st RF	2.55	145	2.35	130	8	8	5.5	7.8	2.3	-
2	27	2nd RF	2.55	145	2.35	130	8	8	5.5	7.8	2.3	-
3	27	3rd RF	2.55	148	2.35	130	8	8	5.5	7.8	2.3	-
4	27	4th RF	2.55	148	2.35	130	9	9	5	7.2	2.2	-
5	27	DET.	2.55	306	2.35	270	30	30	1	1	1	-
6	245	Power	2.65	275	2.45	250	50	-	32	37	5	-
7	245	Power	2.65	275	2.45	250	50	-	32	37	5	-
8	360	-	-	-	-	-	-	-	100	-	-	-



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MODEL 130-A
MODEL 230-A

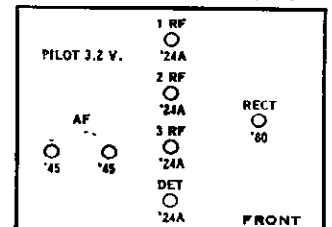
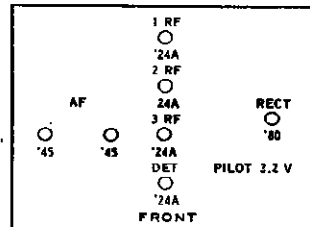


MAJESTIC—Models 130, 131, 132 and 233
Line Voltage 115—Voltage Tap 115
Volume Control Maximum

Models 130A, 230A(1930)

Models Majestics 130, 131, 132, 233 (1930)

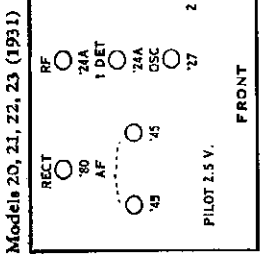
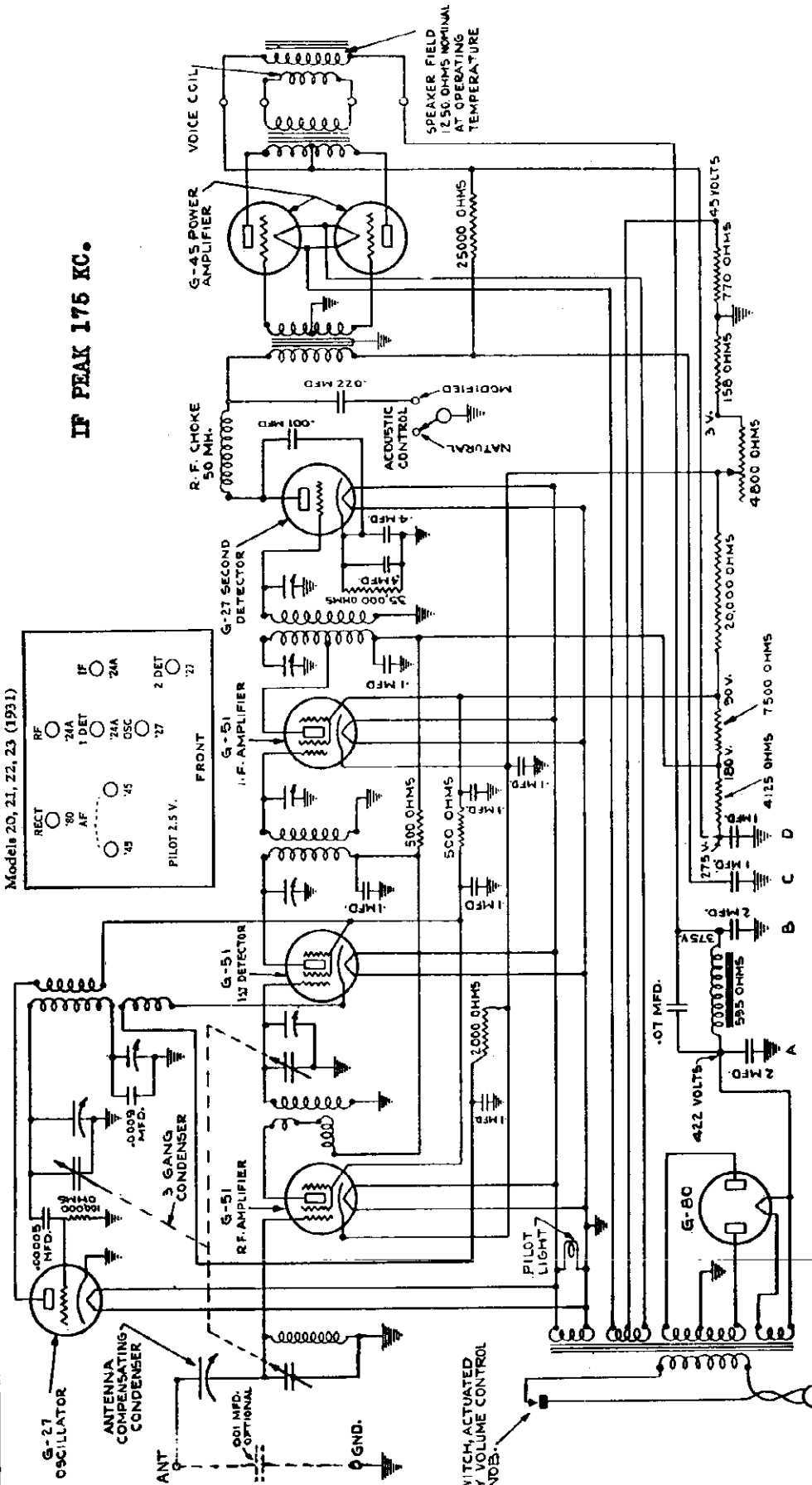
TYPE OF TUBE	POSITION OF TUBE IN SET	FILAMENT OR HEATER	OPERATING VOLTAGES				MILLIAMPERES			
			PLATE	CONTROL GRID TO SPACE	NORMAL GRID TO HEATER	CATHODE SCREEN OR PLATE	PLATE	1930 TEST	PLATE CURRENT	REMARKS
G-24	1 R. F.	2.56	180	3	90	3	3			
G-24	2 R. F.	2.56	180	3	90	3	3			
G-24	3 R. F.	2.56	180	3	90	3	3			
G-24	DET.	2.56	263	12	185	12	5			
G-45	PP-AF	2.45	250	-	60	-	38			
G-45	PP-AF	2.45	250	-	60	-	38			
G-80	Rect.	4.8	-	-	-	-	48	48		



MODEL 20, 21, 22, 23

GRIGSBY - GRUNOW CO.

IF PEAK 175 KC.



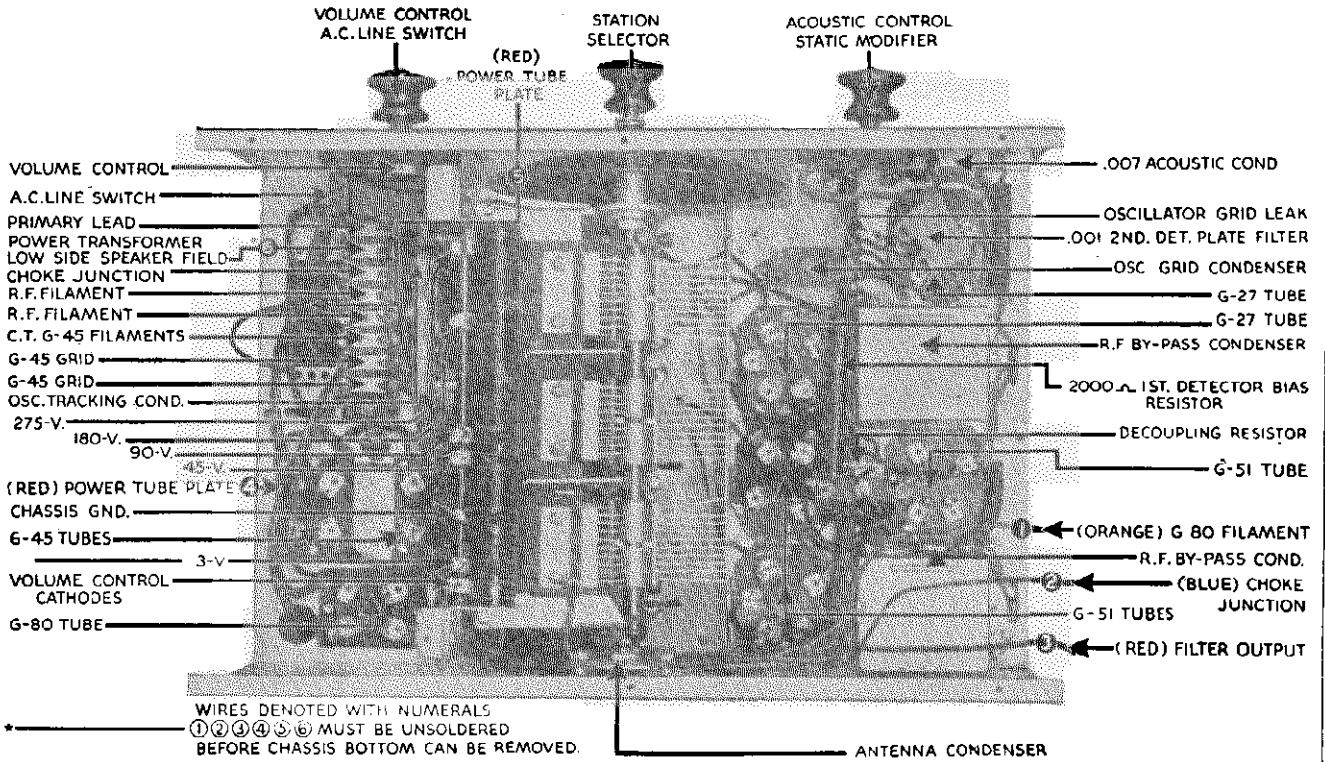
Tube	Plt. V.	Grd. V.	Cath. V.	Se. Grd. V.	Plt. Crnt.
IRF	2.32	180.	3.	90.	5. ma
Osc.	2.32	90.	0.	90.	4.
1Det.	2.32	180.	8.	90.	1.
1IF	2.32	180.	3.	90.	5.
2Det	2.32	255.	21		8.
PPAF	2.36	275.	45.		28.
PPAF	2.36	275.	45.		28.
Rec.	4.88	410.			80.

CONDENSER COLOR CODE
 25-40 CYCLE
 A = 4 MFD
 B = 2 MFD
 C = 1 MFD
 D = 1 MFD

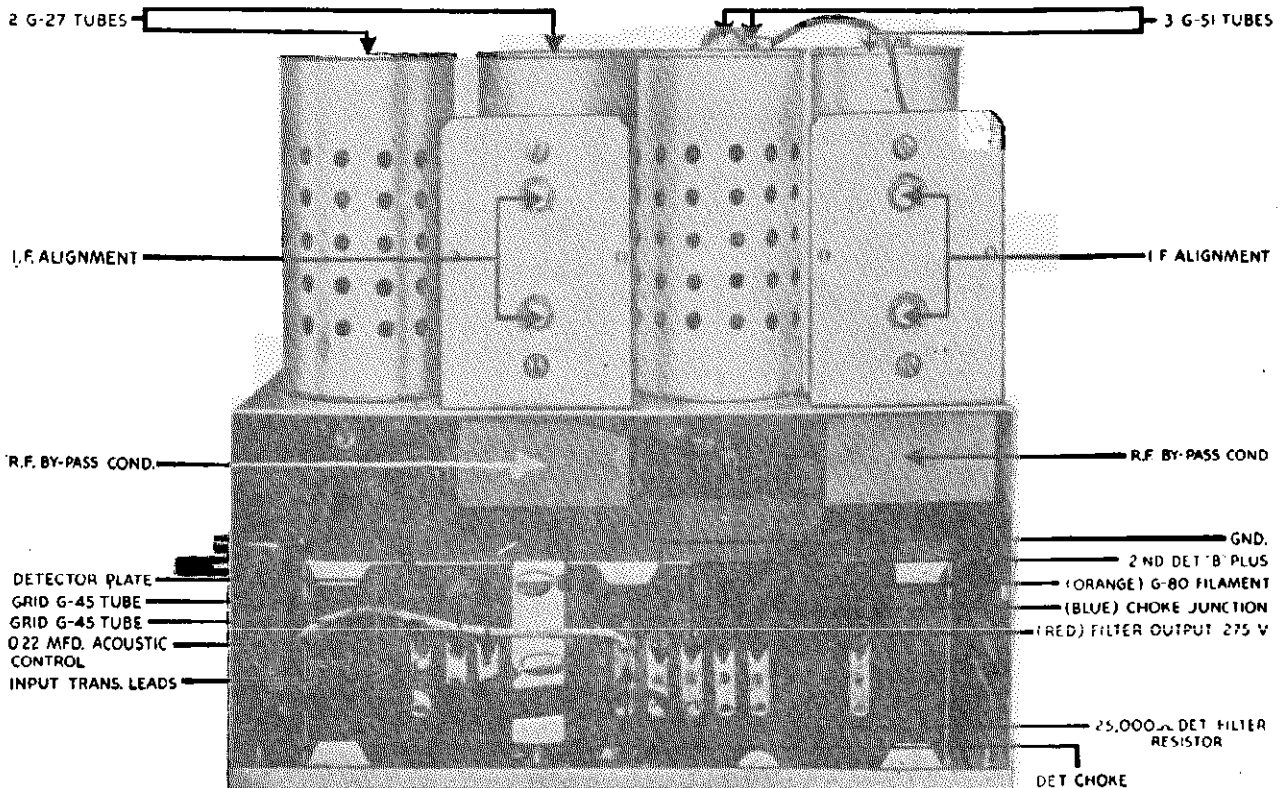
CONDENSER COLOR CODE
 2 mfd condenser- Orange, stranded
 2 mfd condenser- Blue, stranded
 1 mfd condenser- Red, stranded
 1 mfd condenser- Green, stranded
 Condenser comm.- Black stranded
 .07 mfd condenser- White stranded.

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MODEL 20
Chassis



Bottom View of Model 20 Chassis

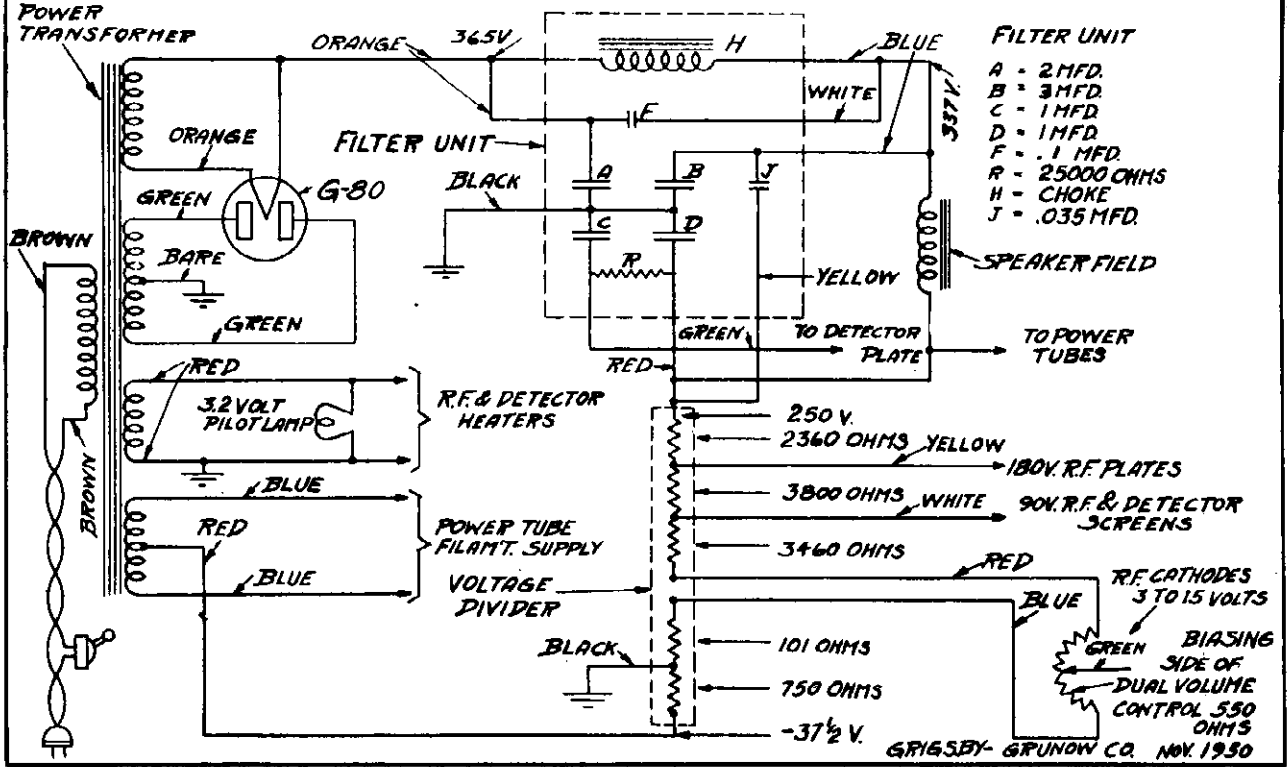


End View of Model 20 Chassis

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MODEL 30
Voltage-Data

SCHEMATIC DIAGRAM OF POWER UNIT AND VOLTAGE DIVIDER SYSTEM
MODEL 30 MAJESTIC SCREEN GRID CHASSIS 50-60 CYCLE.



FILTER UNIT

- | | |
|--------------|---------------------------------------|
| From: | Connect to: |
| Orange | G-80 Socket (Filament) |
| Blue | Junction of Speaker Field and Choke |
| Green | Start of Primary of Input Transformer |
| Red | Free end of 2360 ohm resistor |
| Yellow | Free end of 3800 ohm resistor |
| White | Junction of Speaker Field and Choke |
| Black | Ground |
-
- | | |
|--------|-------------------------------------|
| Orange | Choke |
| Blue | (1-40 socket (Filament)) |
| | Junction of speaker field and choke |

Caution

Under no condition, attempt to use a ground connection on the antenna binding posts. Be certain that the antenna and ground wires are on their respective posts. Under no circumstances should a gas pipe be used for a ground.

Model G-6 Dynamic Speaker

The Model G-6 Dynamic Speaker used on the Model 30 receiver is a highly efficient speaker. The field construction is of the improved "U" Type. The field coil is treated in an impregnating compound that keeps it weatherproof and allows air cooling. The field coil resistance is 1,000 ohms. The G-6 speaker uses a nine inch cone of waterproof lacquered bakram made by the same process as the Super-Colortone G-5 cone. The G-6 Dynamic Speaker has been designed to give a uniform response over the audio frequency range. The cone coil is the same as used on Model G-5 Speaker.

Speaker Cables

During the periods of production of the G-6 Speaker, different colored wires will be used for the field and voice coil leads, in the cable. So that the service man may easily check the circuits, we are listing below the three groups which will be used:

Standard Cable	Reversed Cable	Chassis Connections		Speaker Terminal Connections	
		Secondary of Output Transformer	"B" Maximum on Multiple Resistor	White - Voice Coil	White - Field
Blue	Red	White	White	White	White
Blue	Red	White	White	White	White
Red	Yellow	Blue	Blue	Red	Red
Black	Green	Blue	Blue	Blue	Blue

For example you may be called upon to check a Receiver and Speaker, and upon examination you find that the leads are two White wires, and a Red and a Blue wire. Refer-ence to the group above will eliminate any trouble, you might experience in determining whether the leads in question are voice coil or field coil leads.

Table of Voltages

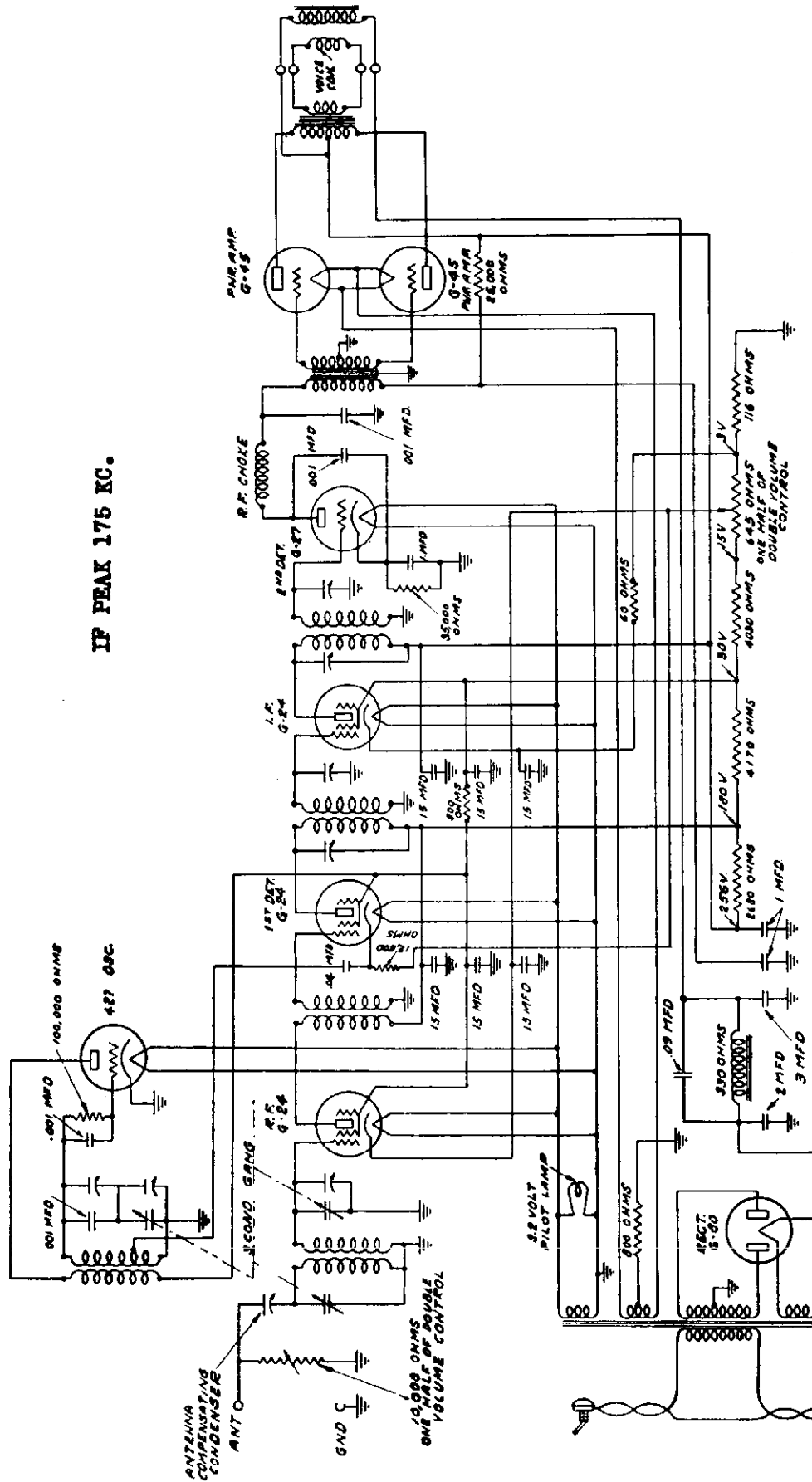
Stage	Tube	Fil. Volts	Plate Volts	Grid Volts	Cath. Volts	Normal Plate M. A.	Screen Volts
1st R. F.	G-24	2.35	180	3	3	3	90
2nd R. F.	G-24	2.35	180	3	3	3	90
Detector	G-24	2.35	225	10	10	3	90
1st Pwr.	G-45	2.35	250	37.5	37.5	25	
2nd Pwr.	G-45	2.35	250	37.5	37.5	25	
Rect.	G-80	4.80	336			40	

NOTE: All Plate, Screen Grid, Control Grid, and Cathode Voltages are measured from Ground (chassis) with a standard 1,000 ohm per volt, voltmeter.

MODEL 50,52

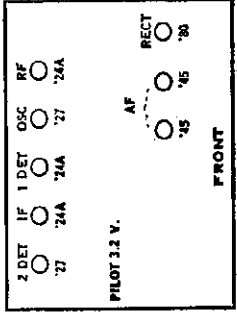
GRIGSBY - GRUNOW CO.

IP PEAK 175 KC.



MAJESTIC—Model 52
Line Voltage 110 — Volume Control Full On

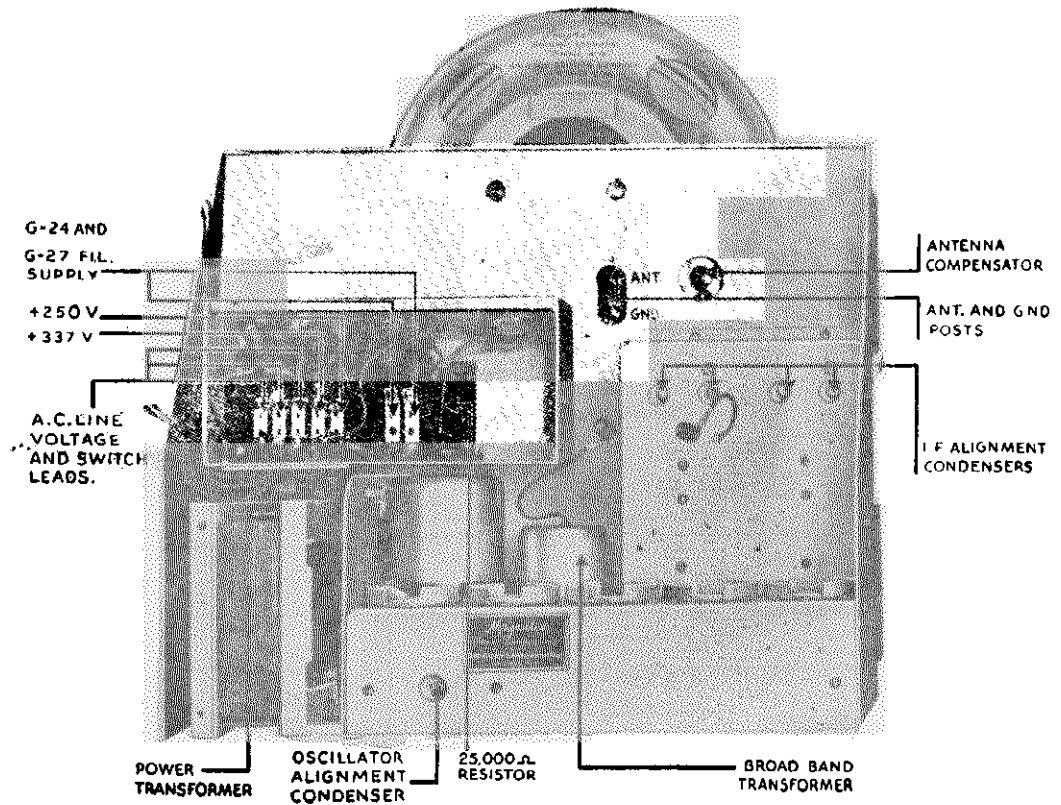
TYPE OF OPTION	OPERATING VOLTAGES		CURRENTS		PILOT LAMP		METER	
	LINE VOLTAGE	PLATE VOLTAGE	PLATE CURRENT	GRID CURRENT	TYPE	VOLTAGE	TYPE	VOLTAGE
0	110	250	0.05	0.05	3.2	110	0	0
1	110	250	0.05	0.05	3.2	110	0	0
2	110	250	0.05	0.05	3.2	110	0	0
3	110	250	0.05	0.05	3.2	110	0	0
4	110	250	0.05	0.05	3.2	110	0	0
5	110	250	0.05	0.05	3.2	110	0	0
6	110	250	0.05	0.05	3.2	110	0	0
7	110	250	0.05	0.05	3.2	110	0	0
8	110	250	0.05	0.05	3.2	110	0	0
9	110	250	0.05	0.05	3.2	110	0	0



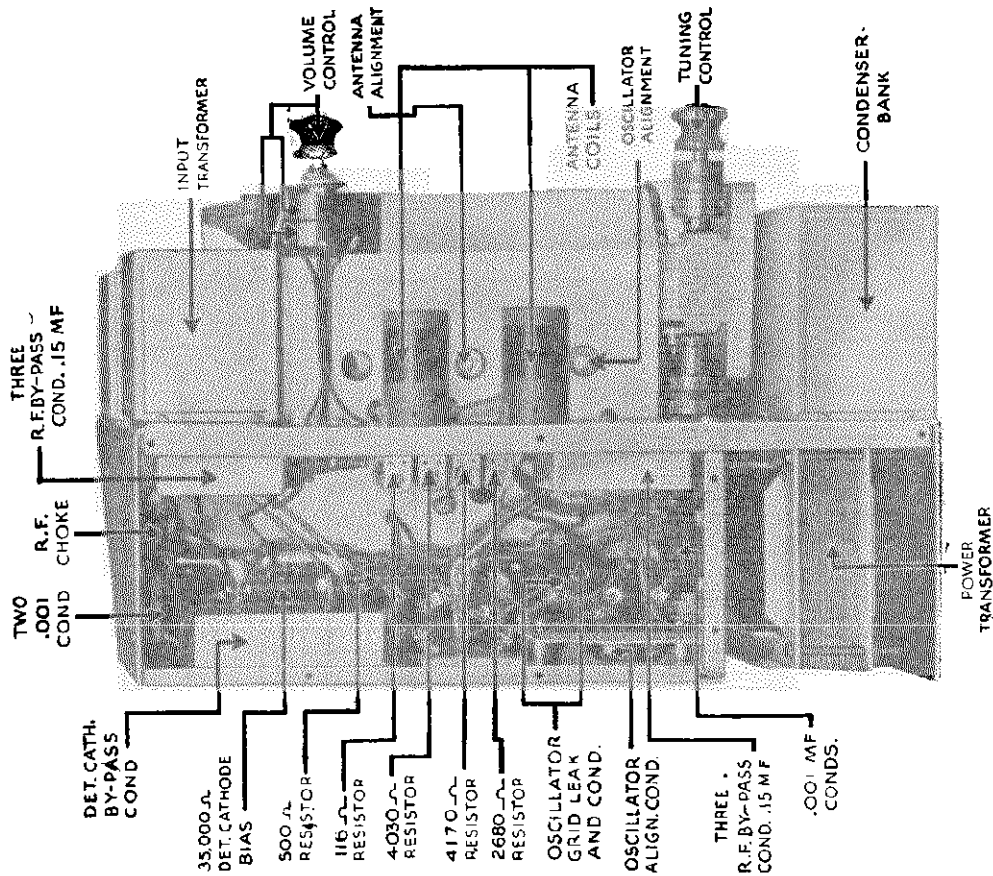
Models 50, 52 (1930)

GRIGSBY - GRUNOW CO.

MODEL 50
Chassis Views



Rear View of Model 50 Chassis, Showing Voltage Taps, Etc.



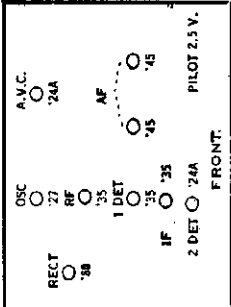
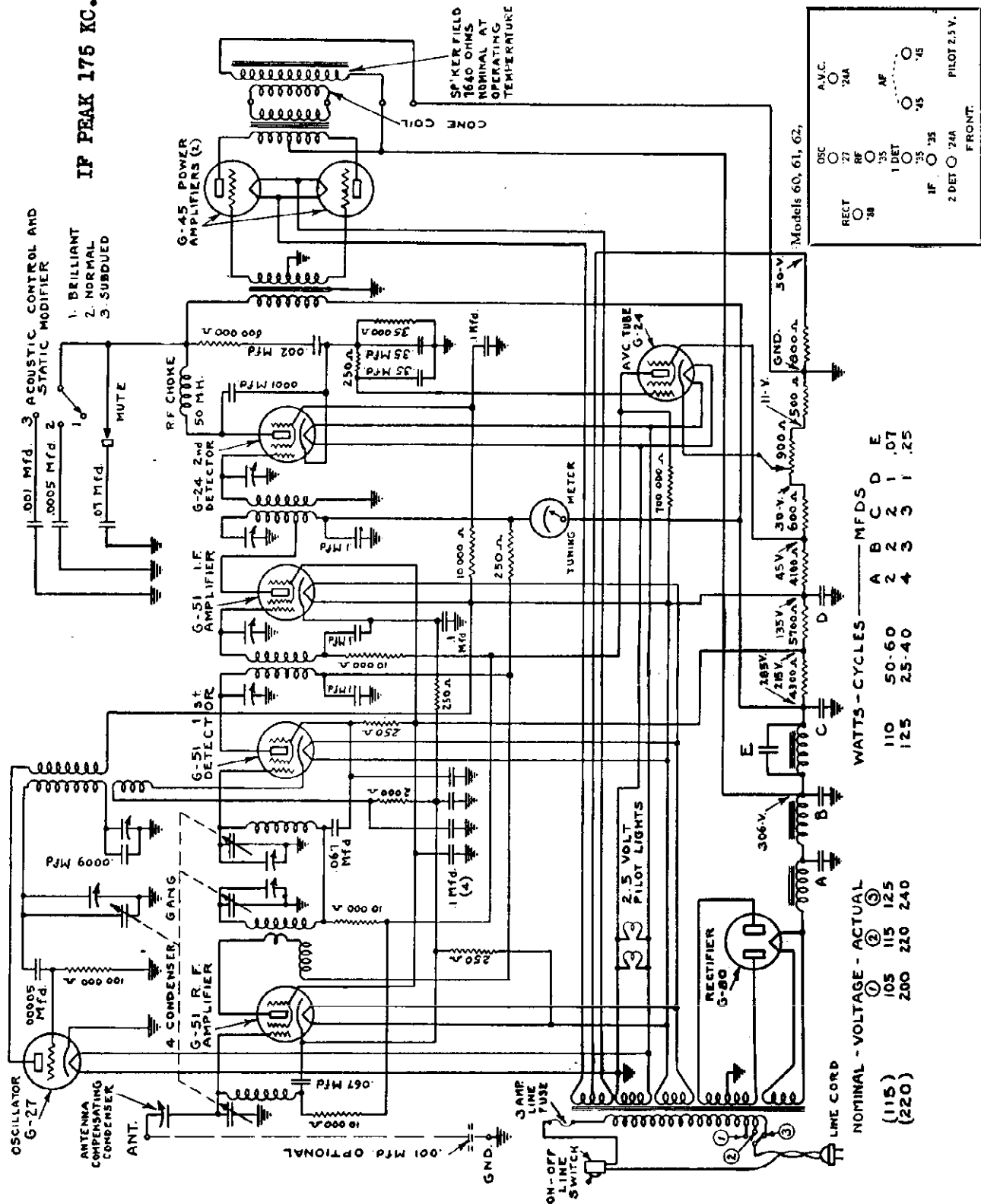
Bottom View of Model 50 Chassis

MODEL 60, 61, 62
Schematic

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Additional data on pages following

IP PEAK 175 KC.



WATTS - CYCLES

	A	B	C	D	E
110	50-60	2	2	1	.07
125	25-40	4	3	3	1.25

NOMINAL - VOLTAGE - ACTUAL

	①	②	③
(115)	105	115	125
(220)	200	220	240

GRIGSBY GRUNOW CO.

MODEL 60,61,62
MODEL 160,163
Data

OPERATING VOLTAGES FOR MODEL 60 and 160 CHASSIS OR 61,62,163 Receivers

		Fil.	Plate.	Screen.	Con.Grd.	Cathode	Plate Crnt.
1st RF	G-51	2.35	285	215		3	4.5 ma
Osc.	G-27	2.35	135				4.0
1st Det	G-51	2.35	285	215		8	4.5
IF Amp	G-51	2.35	285	215		3	4.5
2nd Det	G-24	2.35	275	135		12	.25
1st PA	G-45	2.4	300		50.		32.5
2nd PA	G-45	2.4	300		50		32.5
AVC	G-24	2.35	+	45		11	0.
Rect	G-80	4.88	490				90. Per anode

+ Readings of the automatic volume control tube plate terminal will be erratic because of the 700000 ohm resistance which is in series with the plate supply lead.

Note.. All plate, screen grid, control and cathode voltages are measured from Ground (chassis) with a standard 1000 ohms per volt meter. Voltage readings with volume control setting at maximum.

COLOR CODING DATA

Power Transformer. Start of winding of primary Red
105 volts Red and white
115 volts Yellow
125 volts Green

Filament 45 Blue. Centre tap 45 Red
Filament 80 Brown. Rectifier anodes Green. Centre tap anodes Bare
Heater 2nd Det.,AVC, and Osc. Red
Heater white (135 volts above ground)

Filter Unit.

2 mfd condenser Green. 2 mfd condenser Red. 2 mfd condenser Blue. 1 mfd condenser Yellow. .07 mfd condenser White. Condenser common Black.

Choke

Filter output Red. Detector choke low side Green. Junction of chokes Blue.

General

The antenna compensator control is located adjacent to the antenna terminal. A 3 ampere fuse is used.

Resistances.

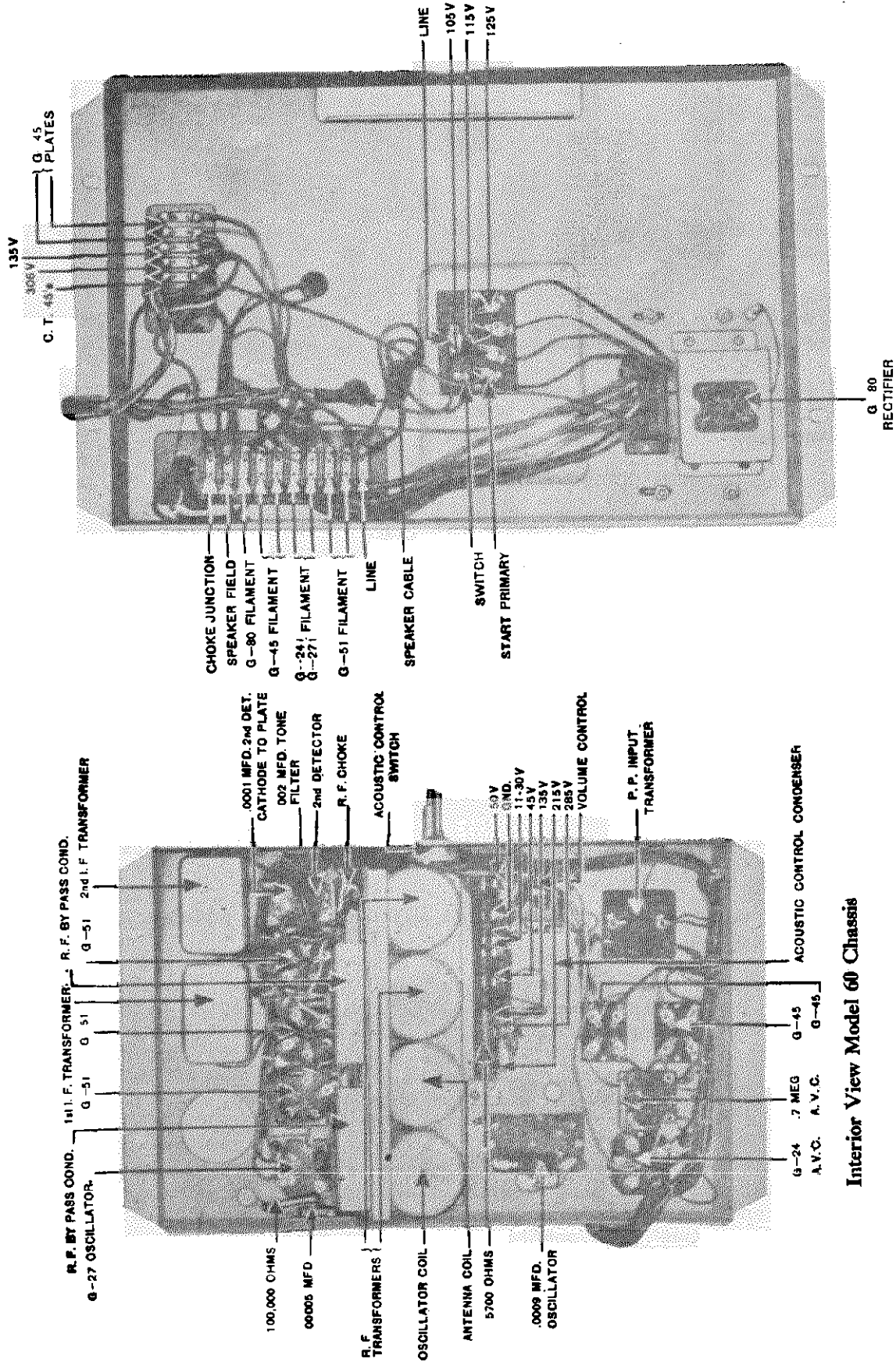
100000 ohm oscillator grid leak - Orange. 600000 ohm Acoustic control- Red.
700000 ohm AVC plate resistor - Yellow. 35000 ohm 2nd detector cathode bias- Green.
5700 ohm section of voltage divider- Blue. 10000 ohm 2nd detector screen decoupler- Orange. 250 ohm 1st detector screen, 1st detector plate, 2nd detector cathode, AVC grid, RF and 1st detector decoupler- Green. 250 ohm RF, 1st detector, IF auto bias- Yellow. 2000 ohm 1st detector auto bias- Blue.

Model - 163

The radio circuit and performance of the model 163 is identical to that of the model 60 chassis. The front panel controls of the 163 combination are radio controls only, and are the same as that of the model 61 and 62 radio receivers. The second detector tube grid comprises the audio frequency input circuit, that is when the phono switch is in phono position. The second detector tube becomes an audio amplifier, the grid bias and input circuit being changed accordingly.

MODEL 60,61
Chassis Views

GRIGSBY - GRUNOW CO.



View Showing Power Supply Circuit Model 60 Chassis

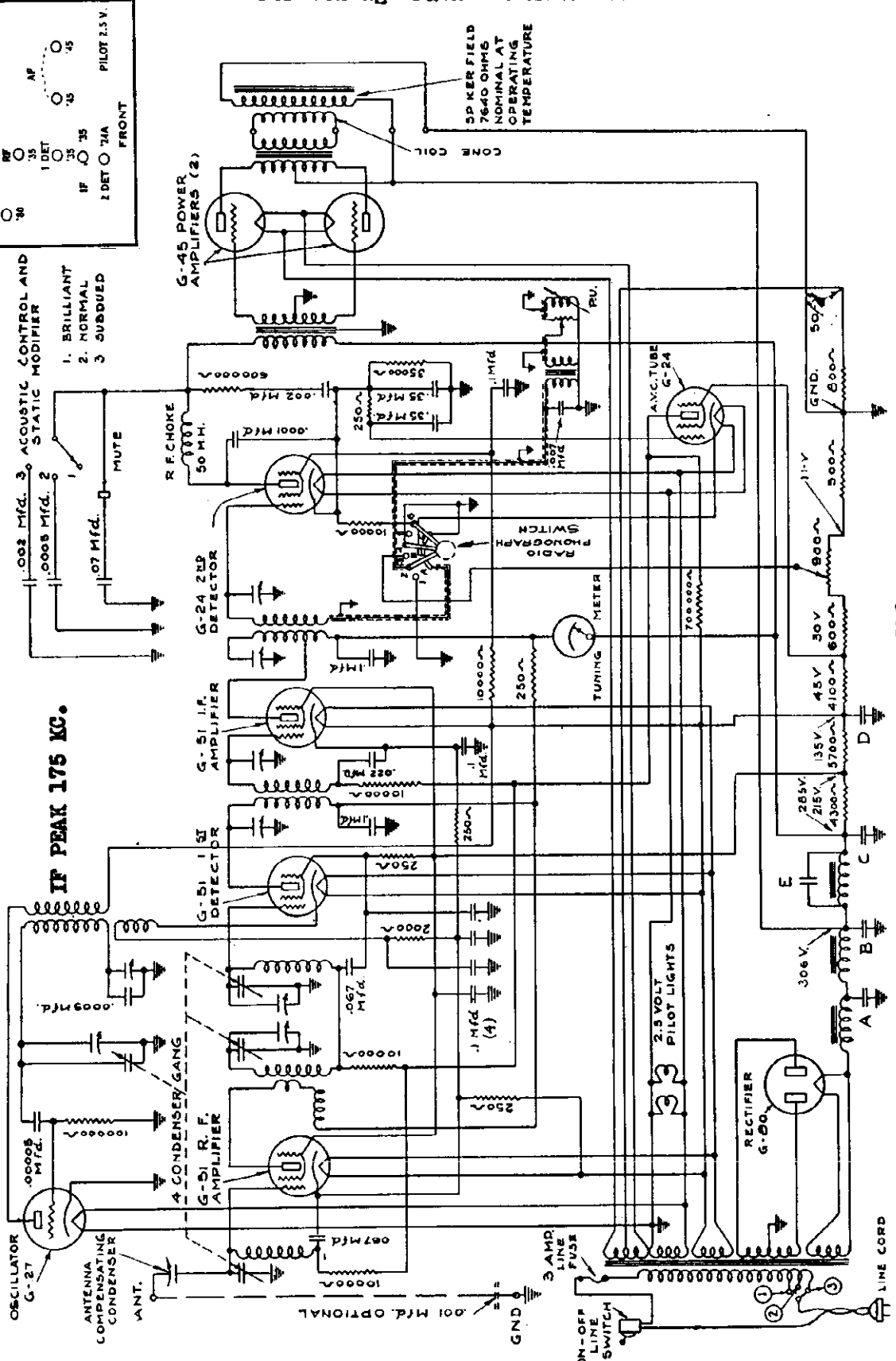
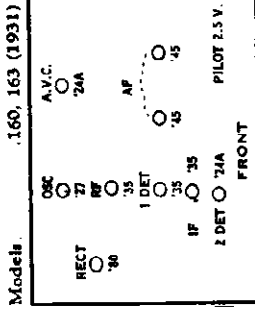
Interior View Model 60 Chassis

GRIGSBY - GRUNOW CO.

MODEL 160,163
Schematic

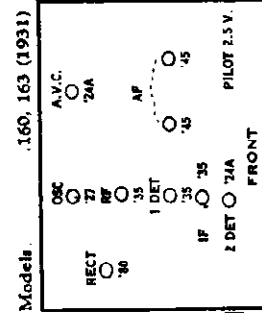
For Voltage Data See Model 60

SCHEMATIC DIAGRAM OF MAJESTIC SCREEN GRID SUPERHETERODYNE AUTOMATIC VOLUME CONTROL RECEIVER AND ELECTRIC PHONOGRAPH COMBINATION MODEL 160 CHASSIS 115 AND 220 VOLTS, 25 - 40 AND 50 - 60 CYCLES.



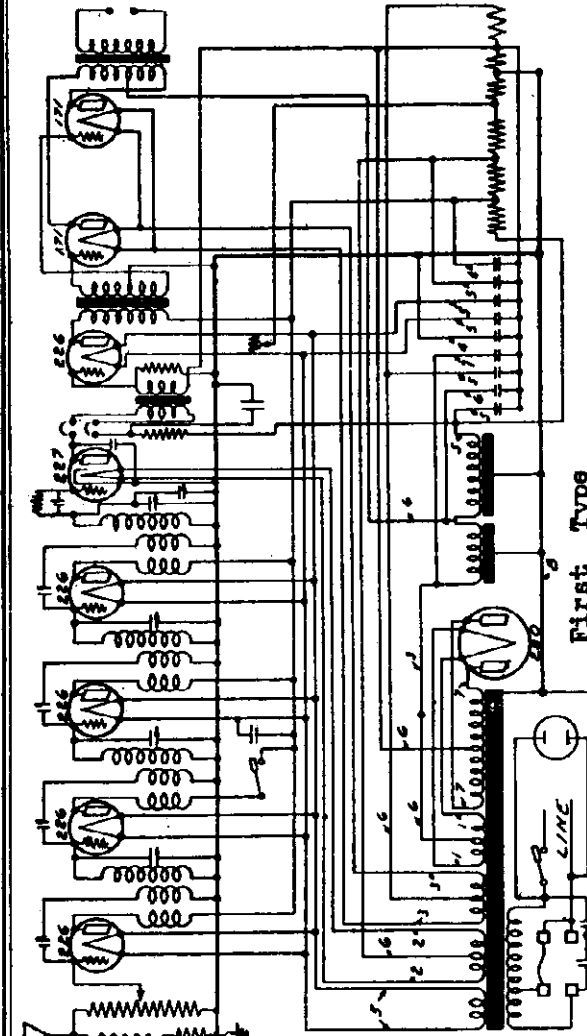
IF PEAK 175 KC.

NOMINAL - VOLTAGE - ACTUAL	WATTS - CYCLES				
	A	B	C	D	E
(115)	150	50-60	2 2 2 1	.07	
(220)	160	25-40	4 3 3 1		.25



McMILLAN RADIO CO.

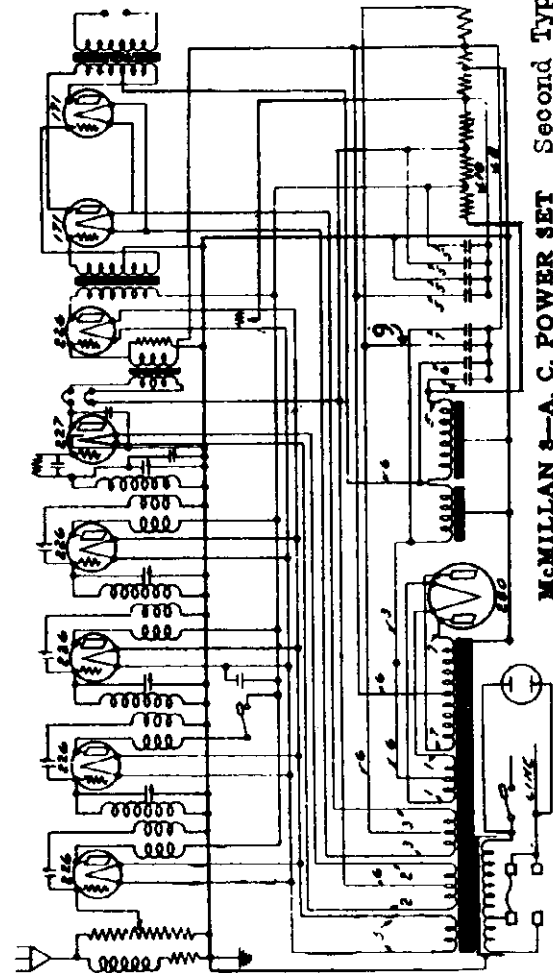
MODEL 8ⁿ
Two Types



First Type

McMILLAN 8-A. C. POWER SET

Use this circuit diagram for all receivers equipped with a sealed power transformer block, or condenser block not having any brown or slate colored leads.



McMILLAN 8-A. C. POWER SET Second Type

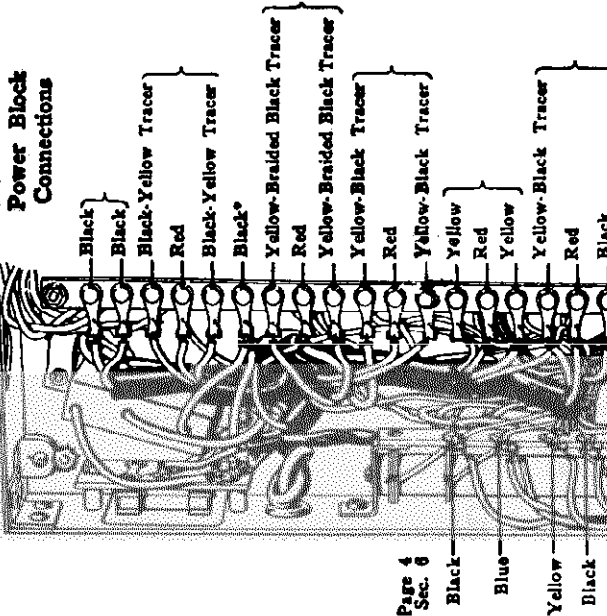
Note—Use this circuit diagram for receiver equipped with power blocks having removable covers or condenser blocks having one brown and one slate colored lead

- 1- YELLOW WITH BLACK TRACER
- 2- BLACK WITH YELLOW TRACER
- 3- BLACK & YELLOW
- 4- BLUE

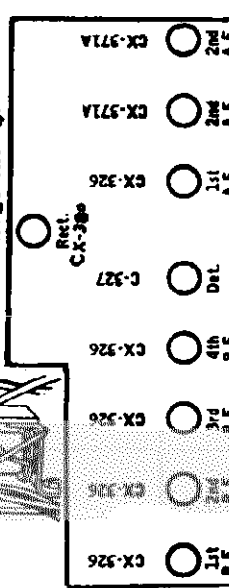
- 5- BLACK
- 6- RED
- 7- YELLOW
- 8- GREEN

- 9- 3-ATC
- 10- BROWN

Power Block Connections



Note — Where two wires are same color they may be connected to either terminal marked that color. Red wire should connect between wires brought out of same large tubing.

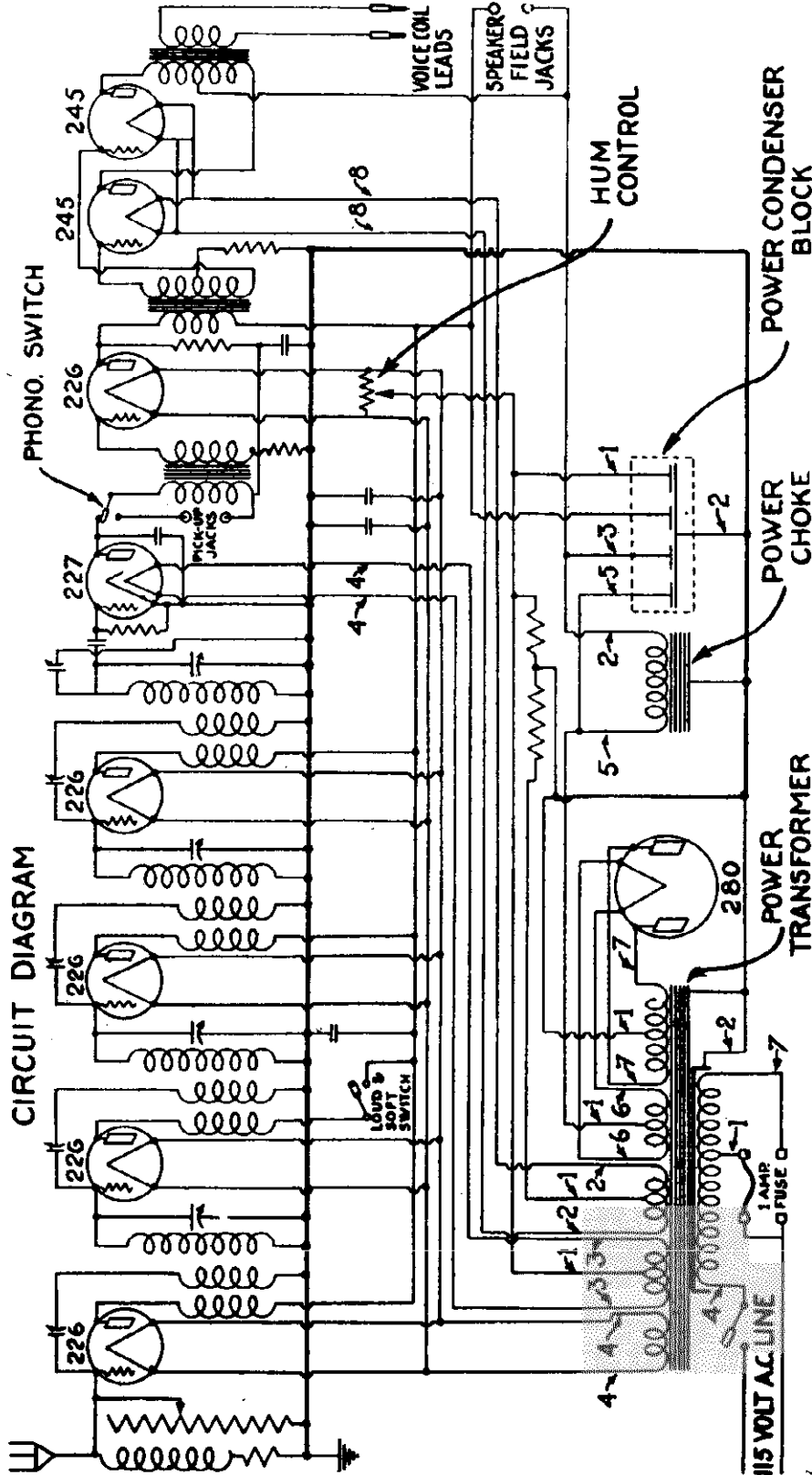


Line Voltage 116—2nd A. F. Stage—2 Tubes Push Pull

TUBE TYPE	TUBE TYPE	TUBE CHART		TUBE CHART		TUBE CHART		TUBE CHART		TUBE CHART	
		1st A.F.	2nd A.F.	1st A.F.	2nd A.F.	1st A.F.	2nd A.F.	1st A.F.	2nd A.F.	1st A.F.	2nd A.F.
226	1st A.F.	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75
226	2nd A.F.	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75
226	3rd A.F.	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75
226	4th A.F.	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75
226	Detector	2.40	1.58	2.40	1.58	2.40	1.58	2.40	1.58	2.40	1.58
226	1st A.F.	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75
226	2nd A.F.	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75
226	3rd A.F.	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75
226	4th A.F.	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75	1.55	1.75

McMILLAN RADIO CO.

MODEL Series 900

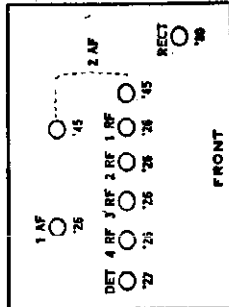


- 1—RED
- 2—GREEN
- 3—BLUE
- 4—BLACK
- 5—YELLOW
- 6—BROWN
- 7—WHITE

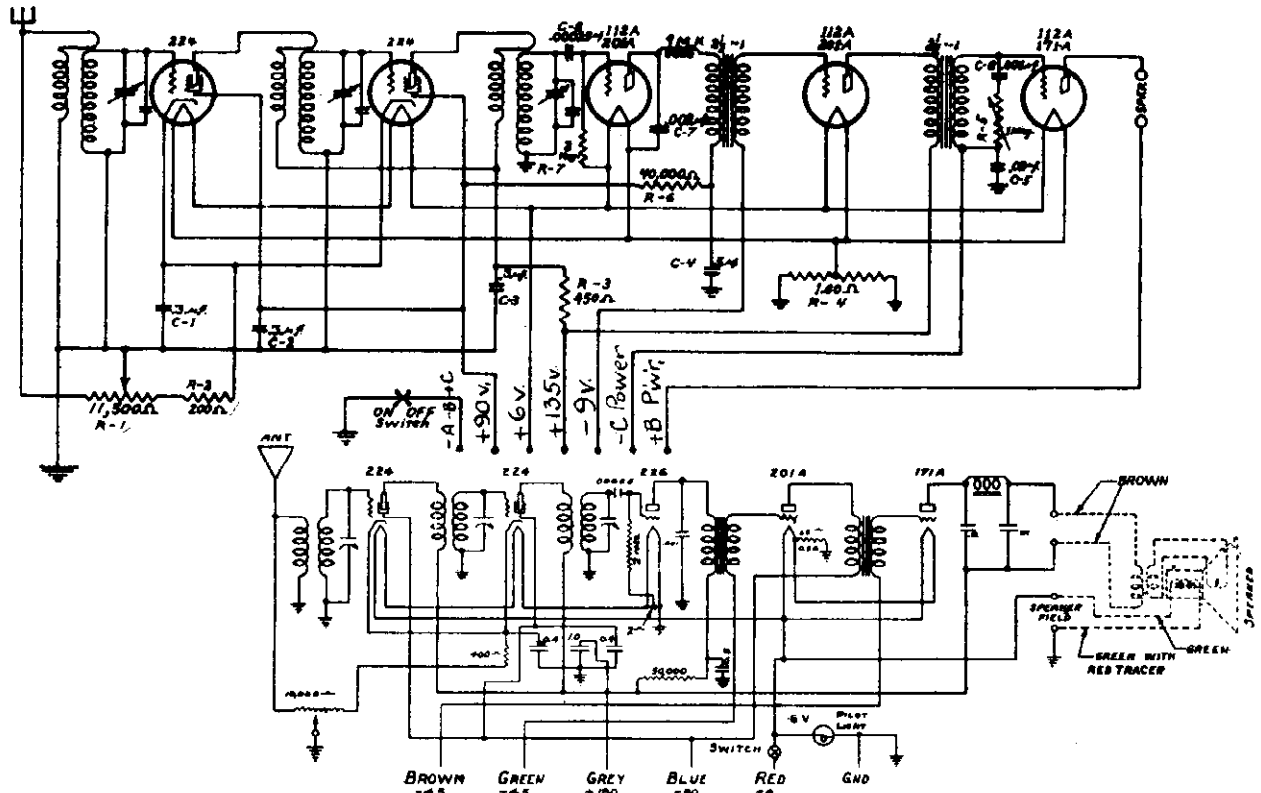
Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Max
 Note: "C" Bias Voltage Reading on Audio tubes is low due to the current draw of the set tester and high resistances in the set.

TUBE IN CONNECTION	TYPE OF TUBE	POSITION	TUBE OUT		TUBE IN		BIAS VOLTAGE		TUBE TEST			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	MA	TEST	MA		
1	5Y4	Rect.	1.5	1.5	1.5	1.5	1.5	1.5	5	9	4	-
2	6X4	Rect.	1.5	1.5	1.5	1.5	1.5	1.5	5	9	4	-
3	6AR5	AF	1.5	1.5	1.5	1.5	1.5	1.5	5	9	4	-
4	6AV6	AF	1.5	1.5	1.5	1.5	1.5	1.5	5	9	4	-
5	6X4	Rect.	1.5	1.5	1.5	1.5	1.5	1.5	5	9	4	-
6	6X4	Rect.	1.5	1.5	1.5	1.5	1.5	1.5	5	9	4	-
7	6X4	Rect.	1.5	1.5	1.5	1.5	1.5	1.5	5	9	4	-
8	6X4	Rect.	1.5	1.5	1.5	1.5	1.5	1.5	5	9	4	-
9	6X4	Rect.	1.5	1.5	1.5	1.5	1.5	1.5	5	9	4	-

Model AC-5091



MONTGOMERY-WARD & CO. MODELS 62-055, 49, 1522, 1922
 MODELS 1522, 1562
 Voltage, Schematic
 Chassis, Bottom View



General Description

Not many of these chassis were put out. Because of the high "A" battery consumption, certain changes were suggested that could be made to reduce "A" battery consumption.

Diagram No. 1 gives the original circuit and it will be seen that the tube circuit consists of—

2—224's; 1—201A; and 1—171A.

Diagram No. 2 shows the changes to be made so the set will consume less "A" battery current. The tubes are now:

2—NY 64's, or 236's; 2—201A; and 1—112A

The NY 64 tubes are screen-grid battery operated tubes which were designed for use in automobile radio sets. Their current consumption is small, their amplification factor quite high and they are rugged and very long lived.

The "A" and "B" batteries are not changed to convert the receiver for lower "A" battery consumption.

Make the changes shown on the diagram. Connect the storage battery to black (neg.) and red (pos.) leads. Insert two NY 64 tubes in sockets marked 224. Place a 201A in socket marked 226, and one 112A in socket marked 201A. Use a 112A in socket marked 171A. Turn on filament switch and see if tubes light—if so connect "B" batteries as tagged, except "B + 180" lead—connect this to "B + 135" terminal.

Connect two 4½ Volt "C" batteries in series. The "C — 4½" Volt lead goes to the connection between the 4½ Volt "C" batteries. The "C — 45" goes to the 4½ Volt part of the second battery.

It is recommended that these changes not be made on sets where the customer is entirely satisfied with the operation and the life of the "A" battery. The operation with the 224 tubes is very highly satisfactory. The sensitivity is extremely high, and the tone quality very good.

NOTE— Small dotted lines show original placing and hookup of parts

FIG. 2

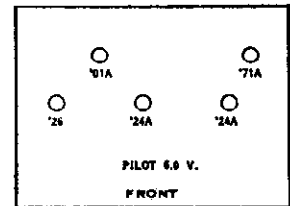
DIAGRAM SHOWING CHANGES TO BE MADE IN AIRLINE RADIO CIRCUIT

- Break connection from I to E
- Break connection at A
- Connect B-C
- Connect D-E
- Connect F-G

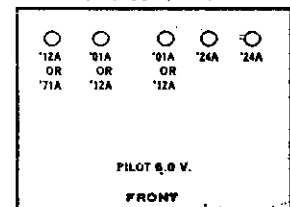
- Connect resistor from K to J instead of from K to M as originally
- Connect that part of resistor N, marked H-O, to connections I-E, leaving end connection L open

Bottom View of Chassis

Models 62-055, 49, 1522, 1922 (1930)

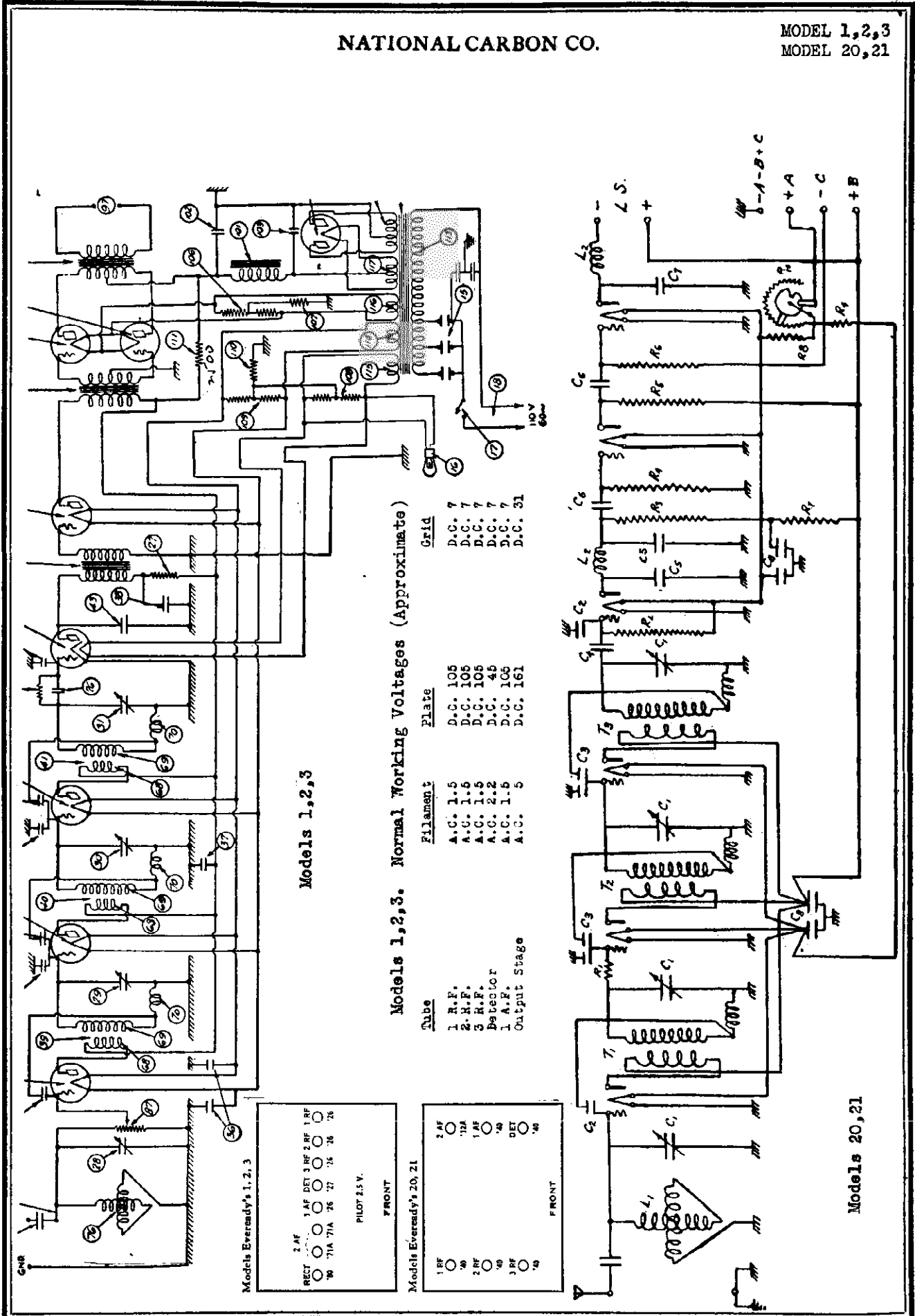


Models 1522, 1562 (1930)



NATIONAL CARBON CO.

MODEL 1,2,3
MODEL 20,21

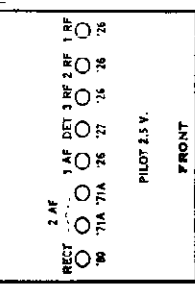


Models 1,2,3. Normal Working Voltages (Approximate)

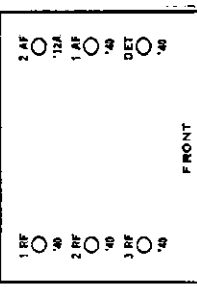
Tube	Filament	Plate	Grid
1 R.F.	A.C. 1.5	D.C. 105	D.C. 7
2 H.F.	A.C. 1.5	D.C. 105	D.C. 7
3 H.F.	A.C. 1.5	D.C. 105	D.C. 7
Detector	A.C. 2.2	D.C. 45	D.C. 7
1 A.F.	A.C. 1.5	D.C. 105	D.C. 7
Output Stage	A.C. 5	D.C. 161	D.C. 31

Models 1,2,3

Models Eveready's 1, 2, 3



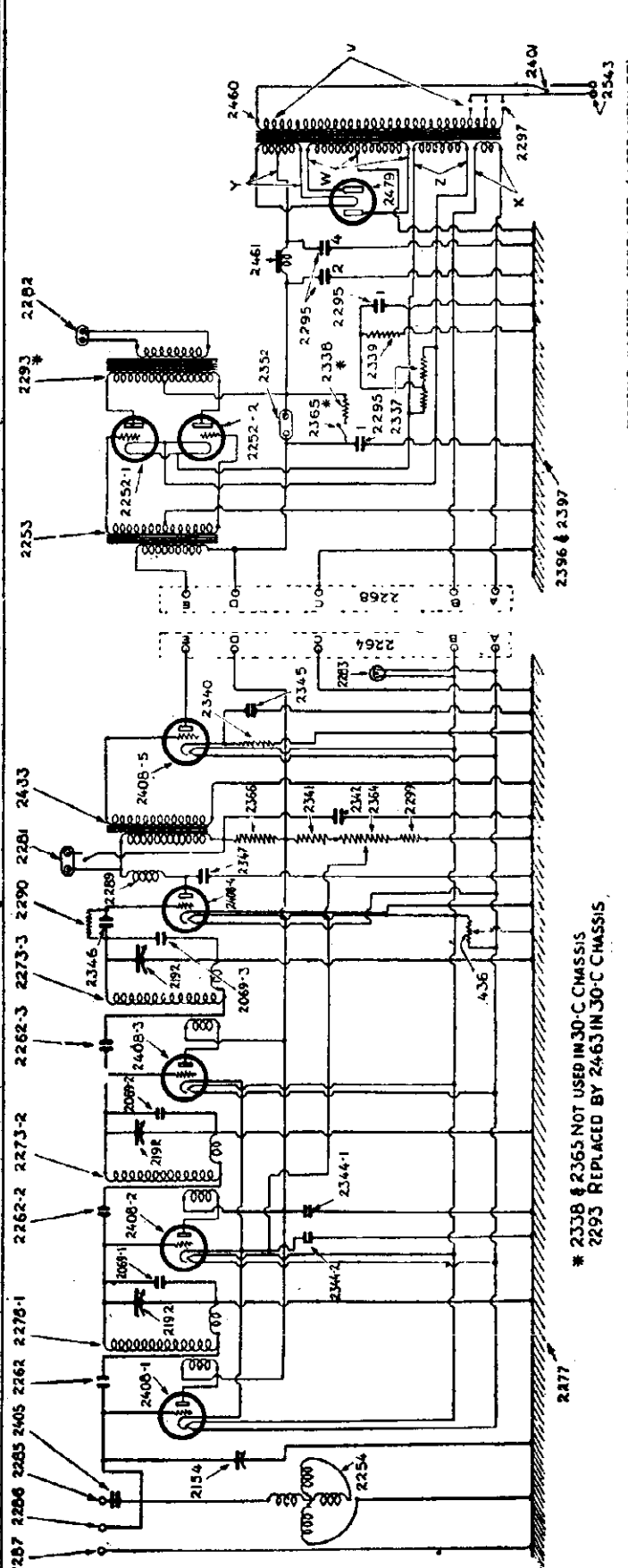
Models Eveready's 20, 21



Models 20,21

MODEL 31, 32, 33, 34
Eveready

NATIONAL CARBON CO.



NORMAL WORKING VOLTAGES (APPROXIMATE)

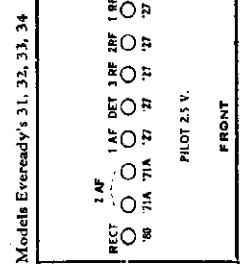
Tube	Plate	Grid
1 R.F.	D.C. 100	D.C. 6
2 R.F.	D.C. 100	D.C. 6
3 R.F. Detector	D.C. 100	D.C. 6
1 A.F.	D.C. 50	-
Output stage	D.C. 100	D.C. 4.5
Rectifier receiver	A.C. 5.1	D.C. 175

(Line Voltage 119. Set on 115 Volt Tap. Volume Control on Full.)

* 2338 & 2365 NOT USED IN 30-C CHASSIS
2295 REPLACED BY 2463 IN 30-C CHASSIS

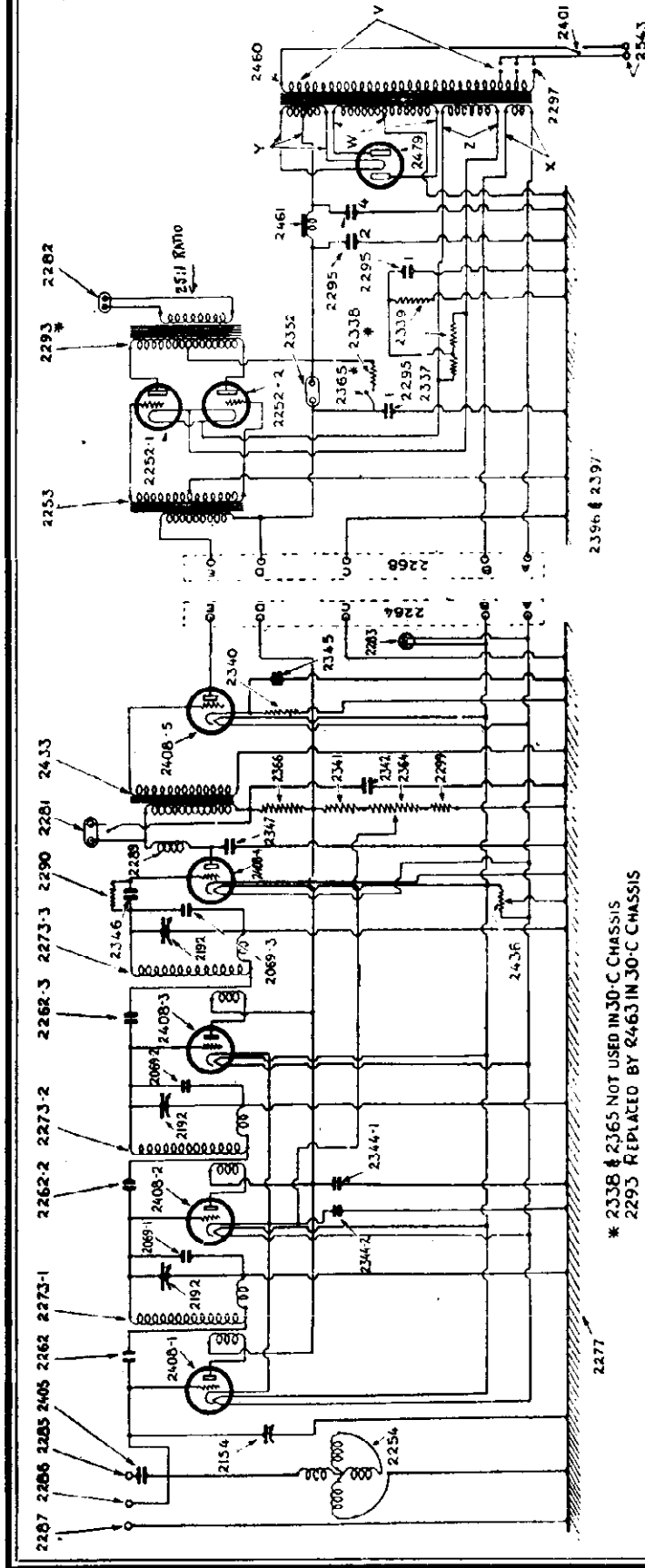
* Not used in 30-C chassis.

PART NO.	ELECTRICAL VALUE	PART NO.	ELECTRICAL VALUE
2290	2 megohms	2344-1	.5 mfd
2366	17500 ohms	2344-2	.5 mfd
2299	175 ohms	2405	.0001 mfd
2340	1750 ohms	2346	.0001 mfd
2341	3500 ohms	2347	.00025 mfd
2436	10 ohms	2343	2
2364	600 ohms	2345	1
2339	1000 ohms		
2388	2500 ohms*		



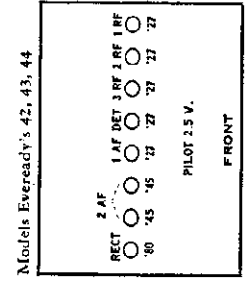
NATIONAL CARBON CO.

MODEL 42, 43, 44
Eveready



Part No.	Value	Unit	Tube	Grid
2344-1	.5	mfd	1 R. F.	D. C. 6
2344-2	.5	mfd	2 H. F.	D. C. 6
2405	.0001	mfd	5 R. F.	D. C. 6
2346	.0001	mfd	Detector	D. C. 6
2347	.00025	mfd	1 A. K.	D. C. 4.5
2343	2	mfd	Output Stage	D. C. 50
2345	1	mfd		
2290	2	megohms		
2366	17500	ohms		
2299	175	ohms		
2340	1750	ohms		
2341	3500	ohms		
2436	10	ohms		
2364	600	ohms		
2707	replaces 2339	900		

* 2338 & 2365 NOT USED IN 30-C CHASSIS
2295 REPLACED BY 2463 IN 30-C CHASSIS

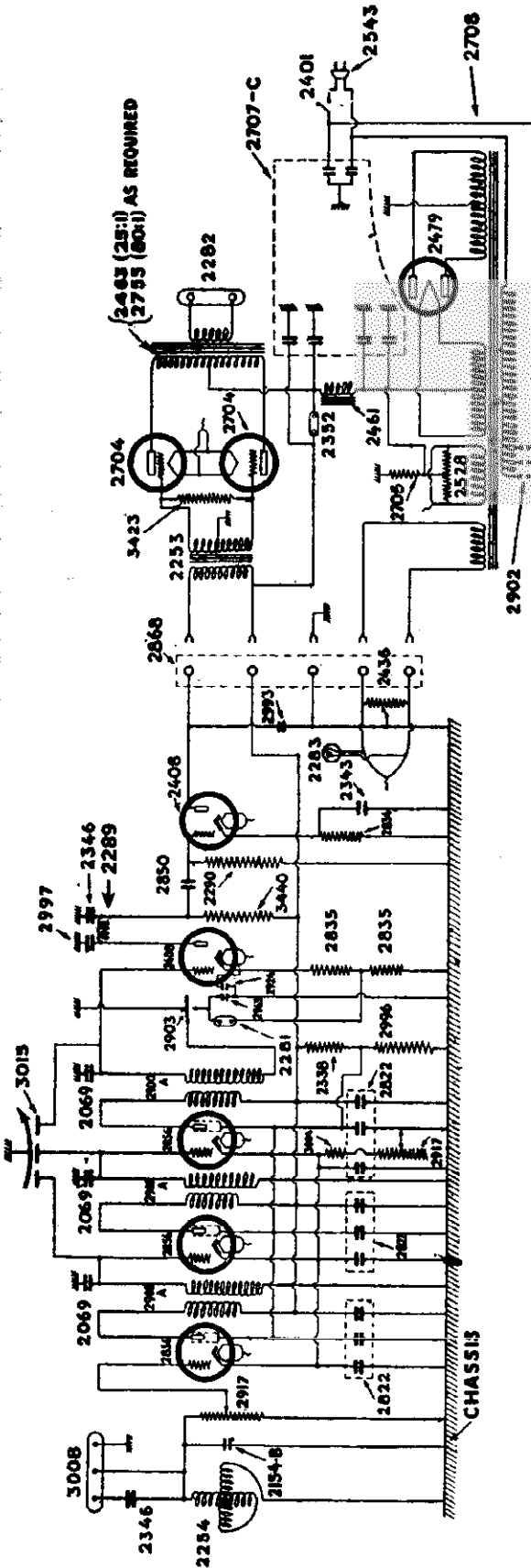


Models Eveready's 42, 43, 44

Series 40 Receivers employ a 5000 ohm field coil.

MODEL 52,53,54
Eveready

NATIONAL CARBON CO.

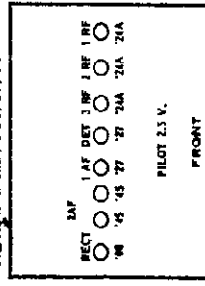


2290	2.0	megohms	* 3 in one can		
2835	4000	ohms			
3440	125000	ohms			
3004	200	ohms		.0001	mfd*
2834	3000	ohms		.5	mfd*
2338	2500	ohms		1	mfd
2996	2250	ohms		.01	mfd
2917*		ohms		2.	mfd
2528	50	ohms		.002	mfd
2705	900	ohms		.004	mfd
3423	100000	ohms		.0005	mfd

Tube	Filament	Plate	Grid	Screen
1 R.F.	A.C. 2.3	D.C. 160	D.C. 2.2	D.C. 70
2 R.F.	A.C. 2.3	D.C. 160	D.C. 2.2	D.C. 70
3 R.F.	A.C. 2.3	D.C. 160	D.C. 2.2	D.C. 70
Detector	A.C. 2.3	D.C. 160	D.C. 2.2	D.C. 70
1 A.F.	A.C. 2.3	D.C. 160	D.C. 2.2	D.C. 70
Output Stage	A.C. 2.3	D.C. 160	D.C. 2.2	D.C. 70
Rectifier	A.C. 2.3	D.C. 160	D.C. 2.2	D.C. 70

(Line Voltage 117. Set on 115 Volt Tap. Volume Control Position on Full.)

* Two sections
R-f section is 500,000 ohms
Screen voltage section is 10,000 ohms

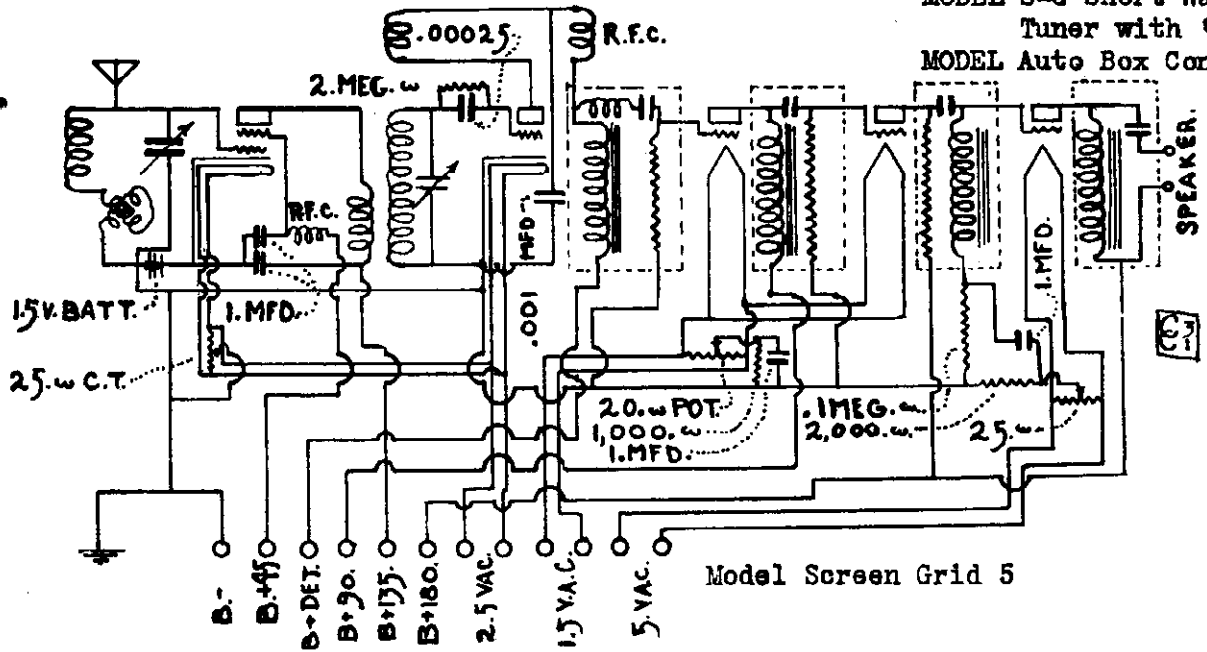


Model Eveready's 52, 53, 54

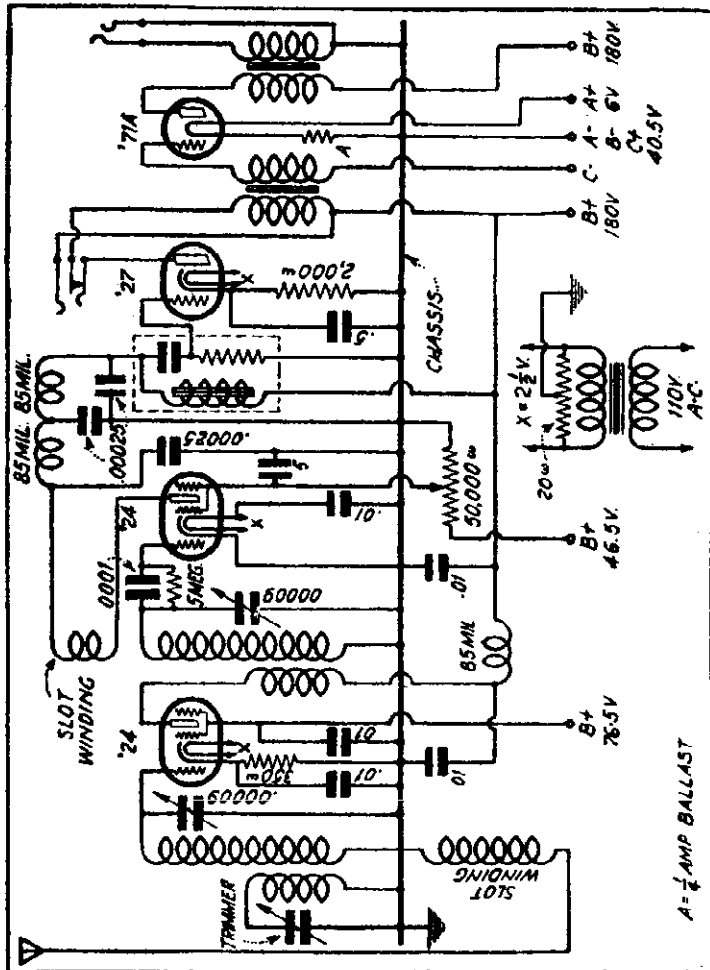
NORMAL WORKING VOLTAGES (APPROXIMATE)

THE NATIONAL COMPANY

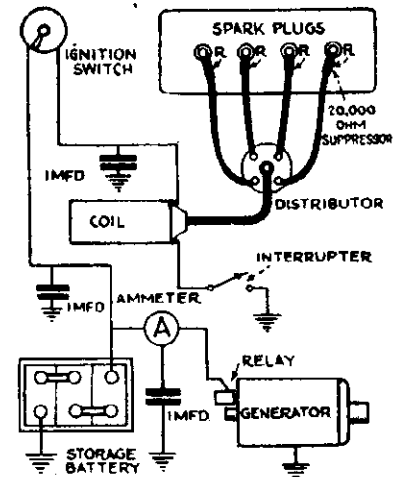
MODEL S-G 5
 MODEL S-G
 Short Wave Tuner
 MODEL S-G Short Wave
 Tuner with '71
 MODEL Auto Box Conn.



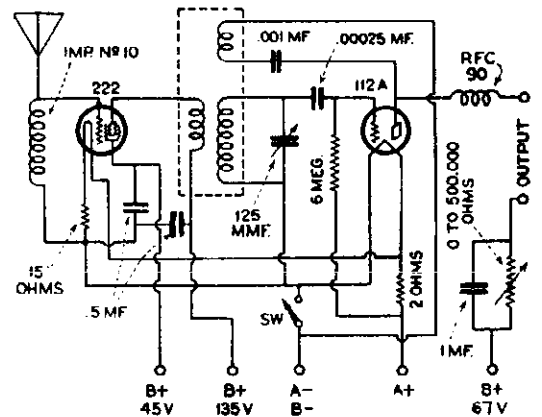
Model Screen Grid 5



Model Screen Grid Short Wave (71)



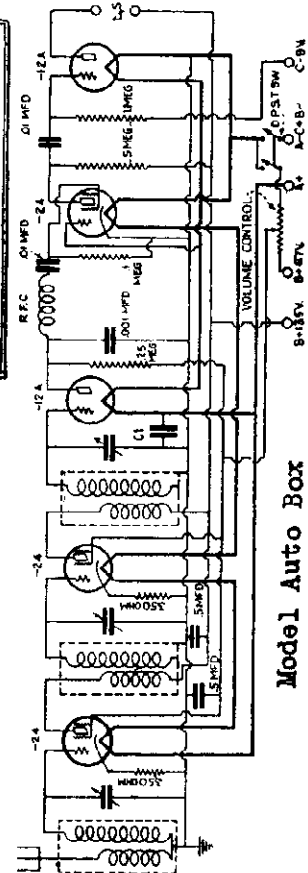
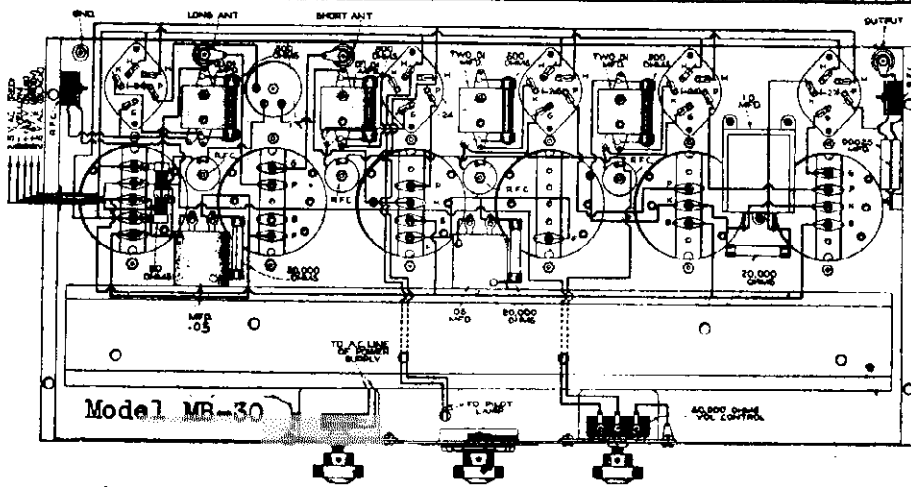
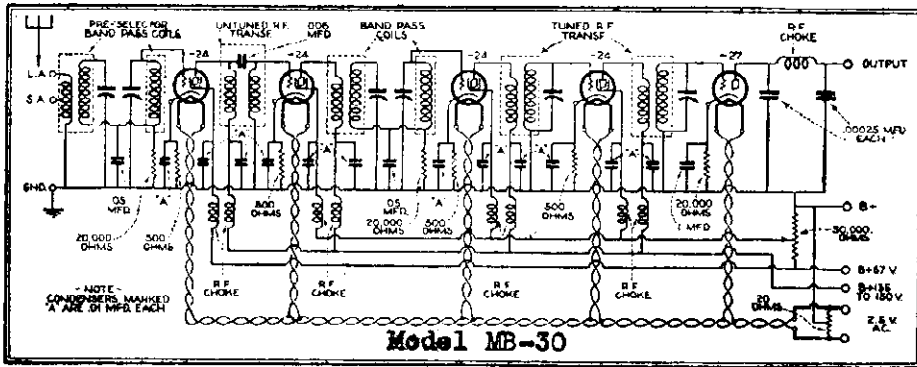
Model Auto Box Connections



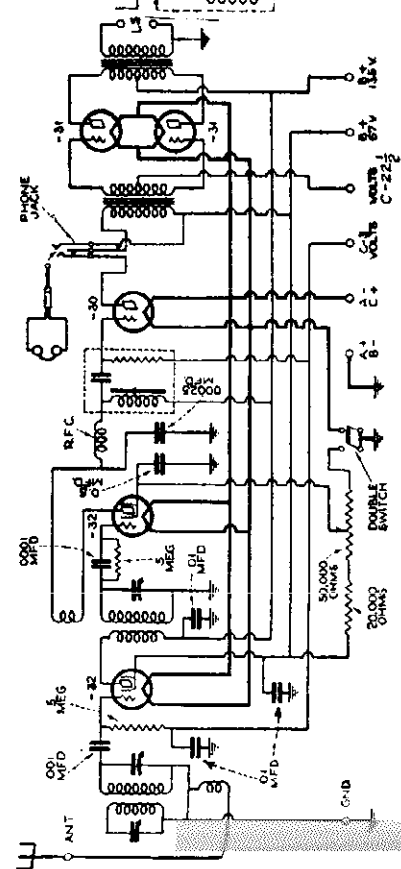
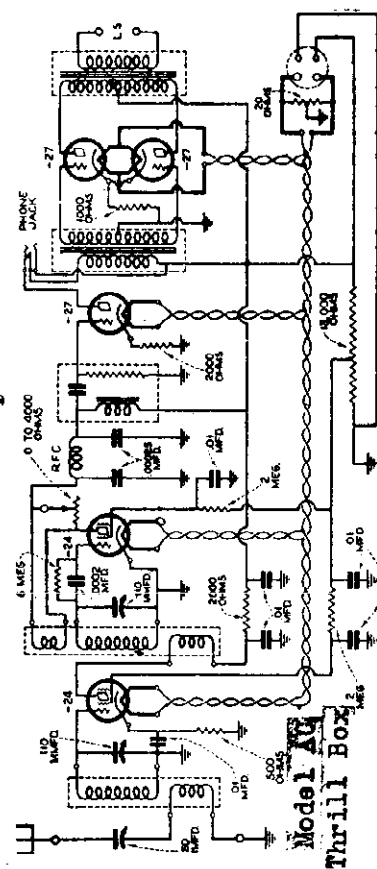
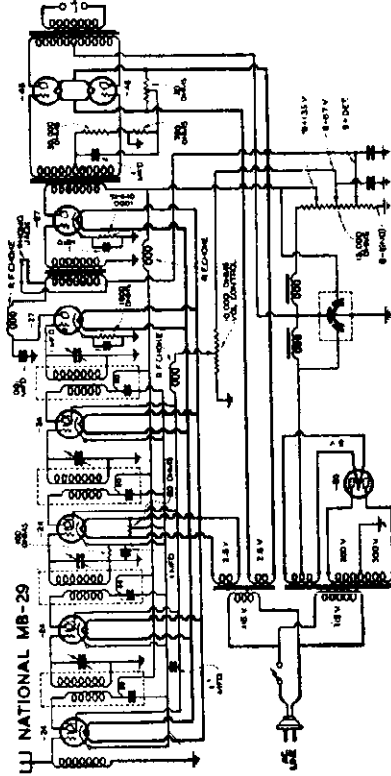
Model Screen Grid S.W. Tuner

MODEL MB-30
 Schematic, Chassis
 MODEL MB-29
 MODELS Thrill Box AC, Short Wave
 MODEL Auto Box

THE NATIONAL COMPANY



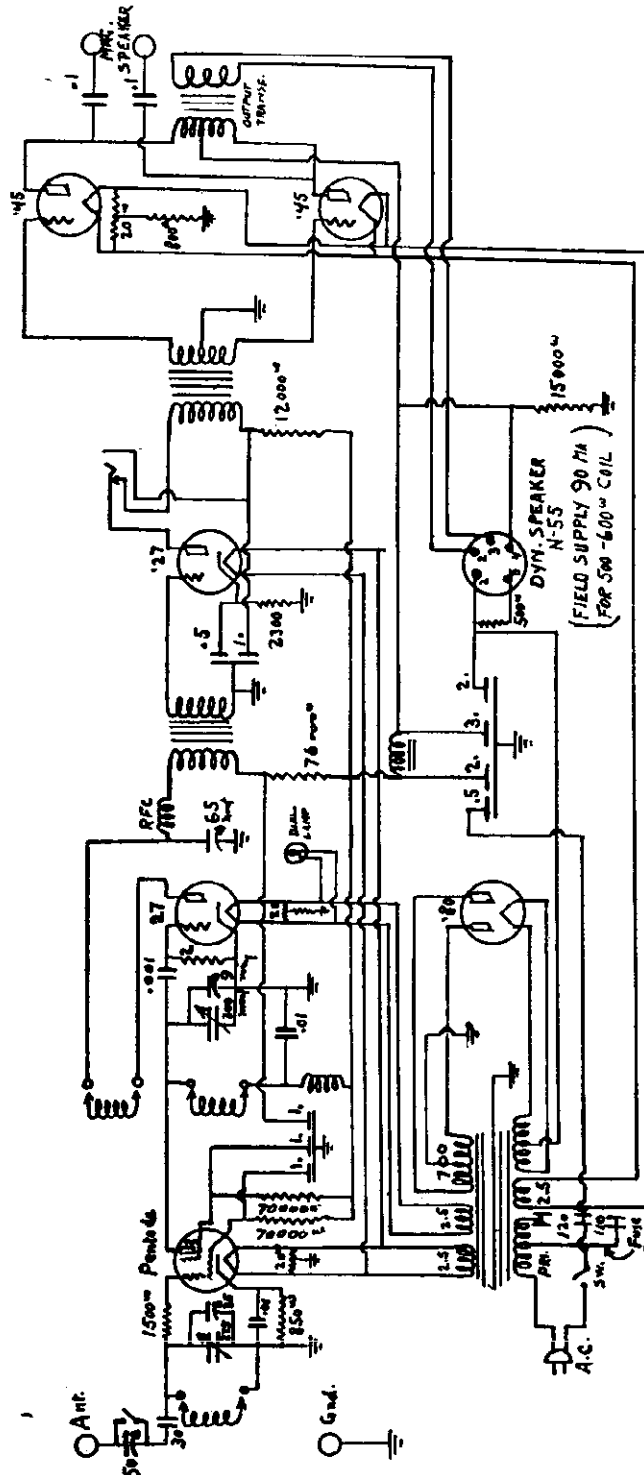
See preceding page for battery connections.



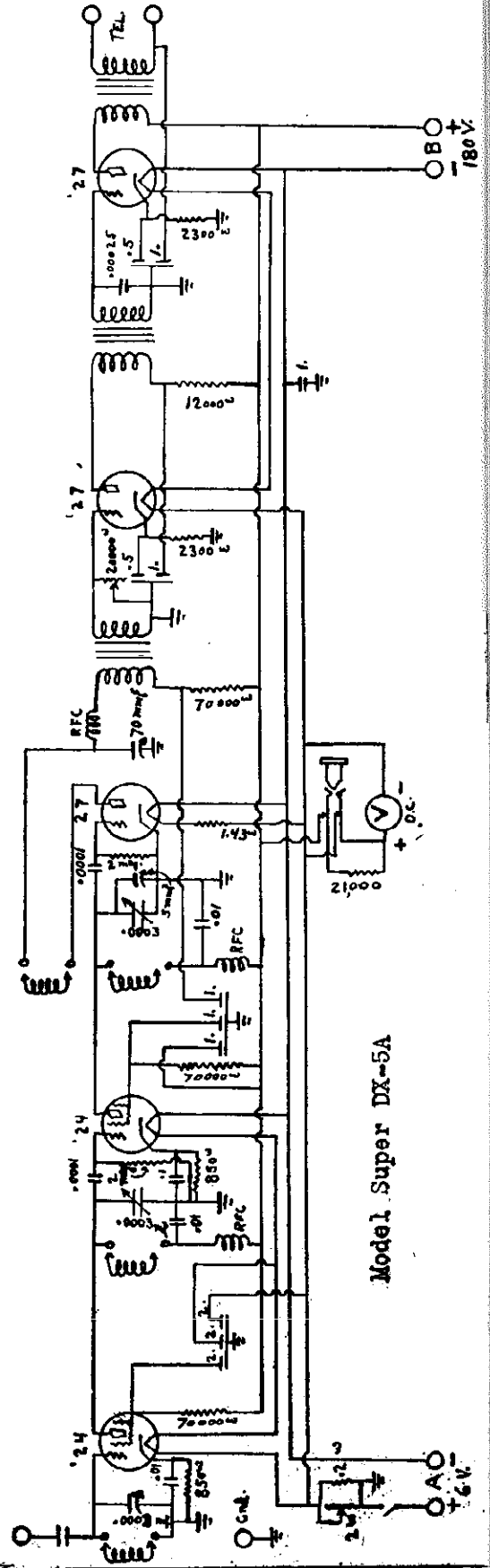
2-volt Tubes

MODEL Super DX-5
 MODEL Super DX-5A

NORDEN-HAUCK, INC.



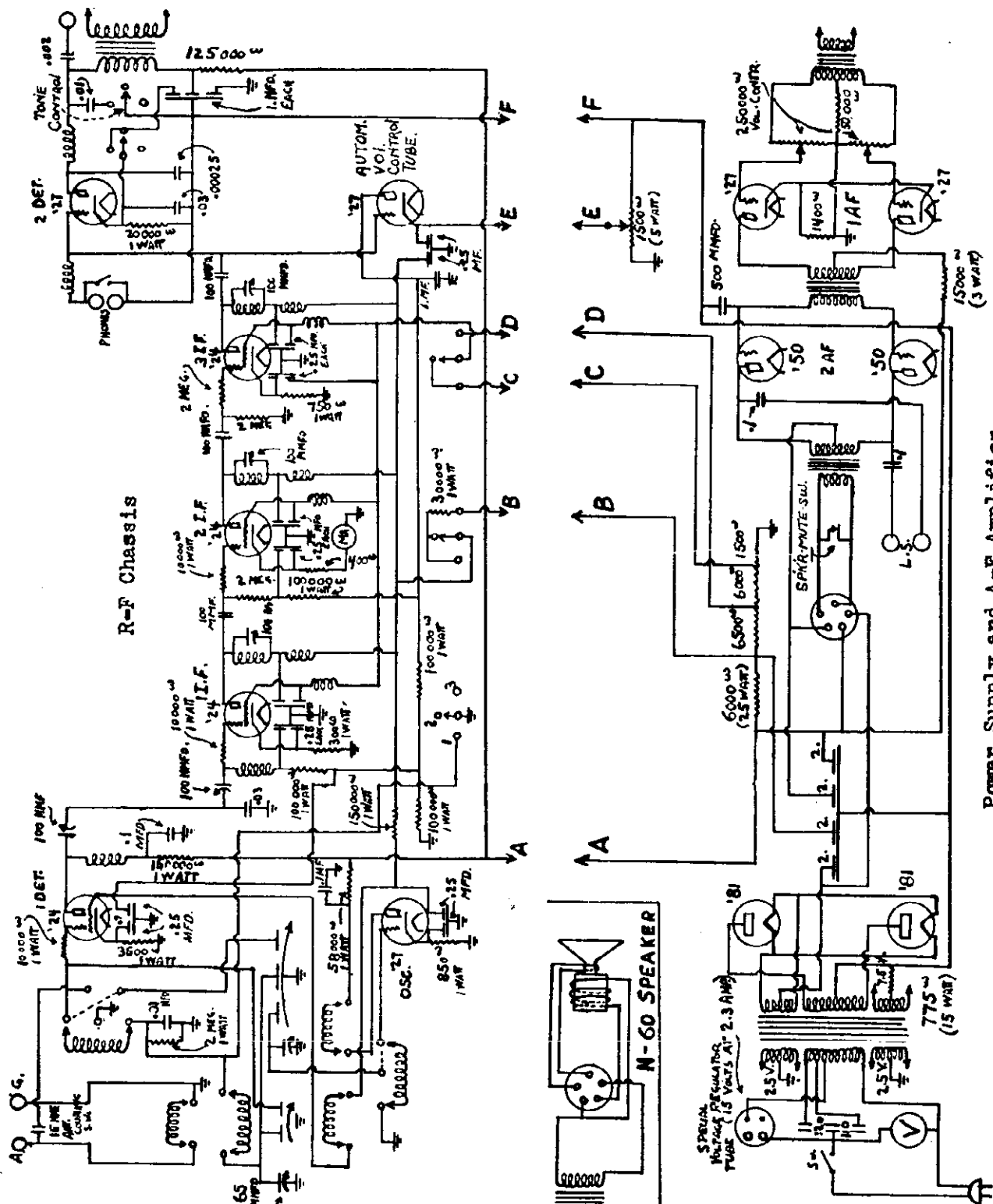
Model Super DX-5



Model Super DX-5A

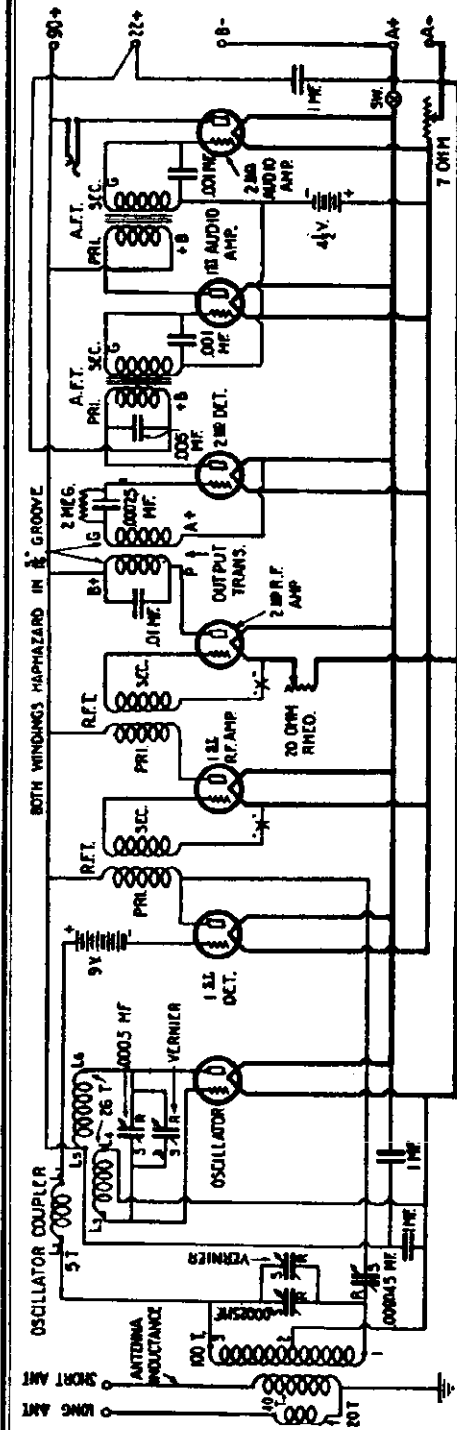
MODEL Admiralty Super 12

NORDEN-HAUCK, INC.

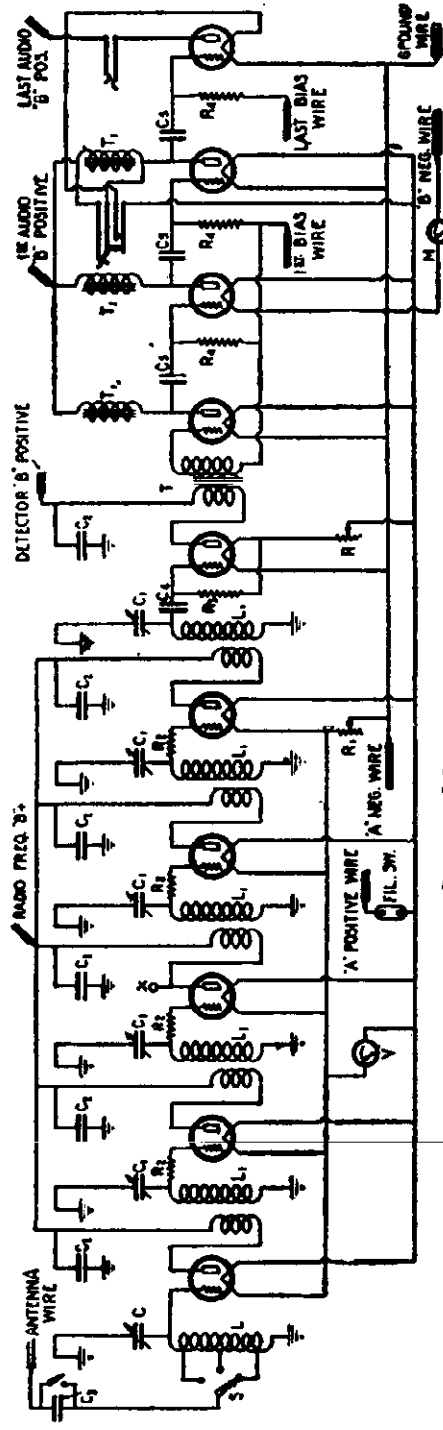


NORDEN-HAUCK, INC.

MODEL C-7
MODEL Super 10



Model C-7 Norden Hauck super-heterodyne receiver.

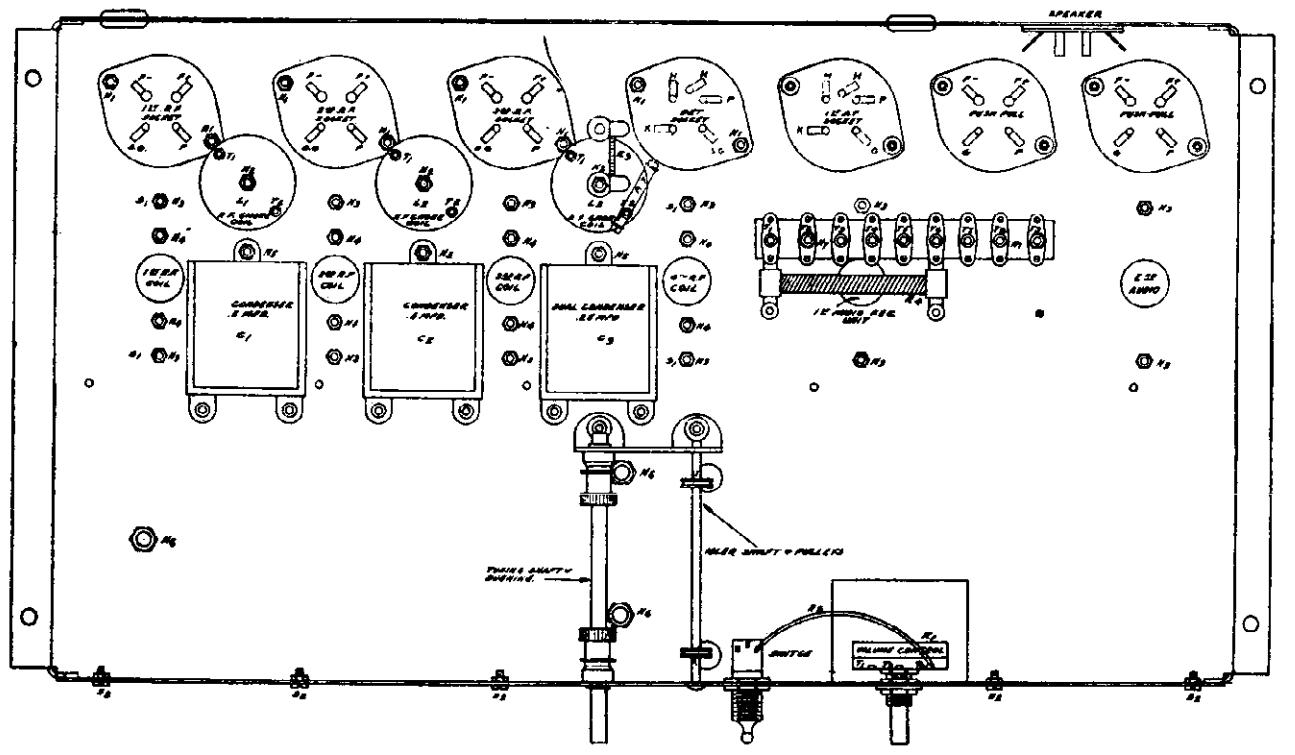
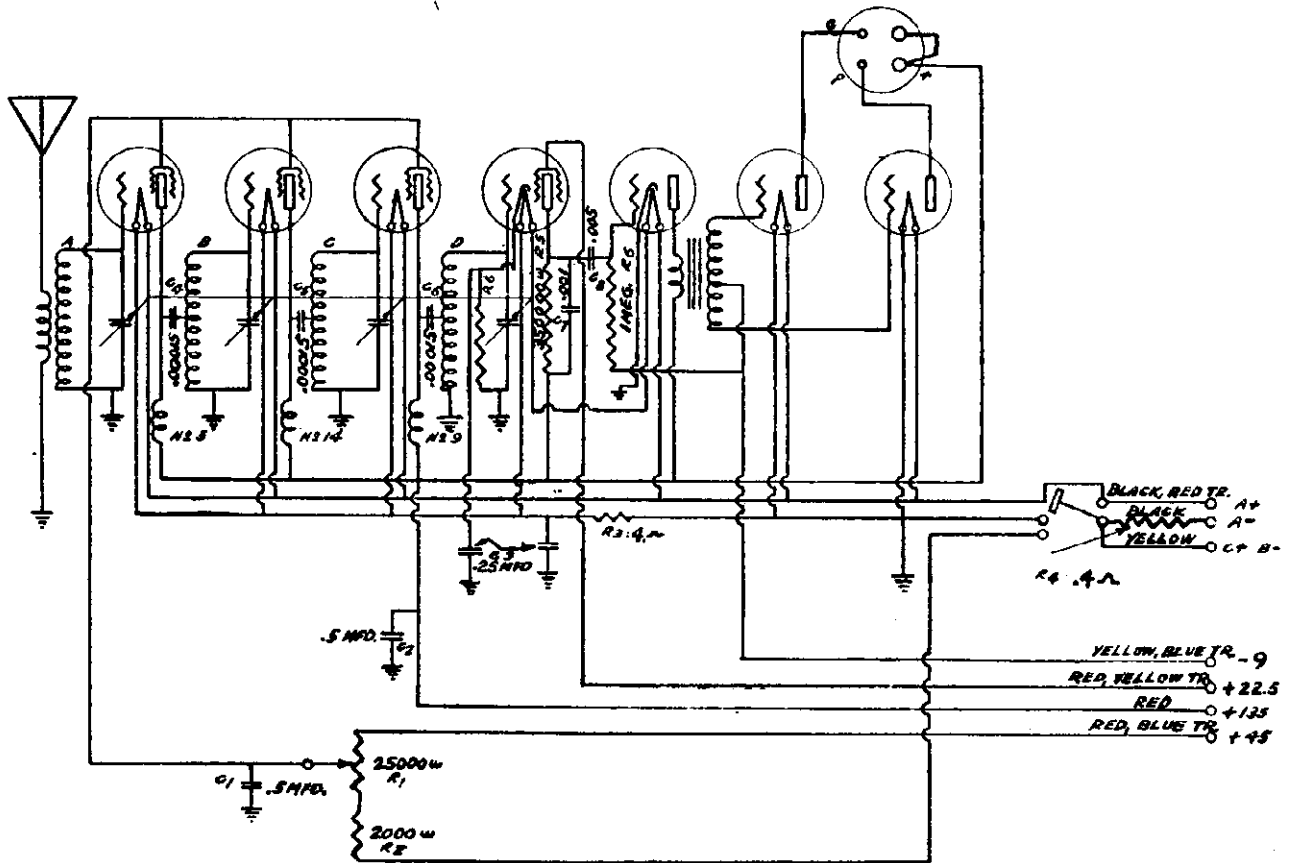


Super 10.

R 1 is 20 ohms. R 2 is 7 ohms. R 3 is 750 ohms. R 4 is 2 megohms.
R 5 is 30000 ohms. C 1 is .00025 mfd. C 2 is .00025 mfd. C 3 is .00025 mfd. C 4 is .00025 mfd. C 5 is .1 mfd.

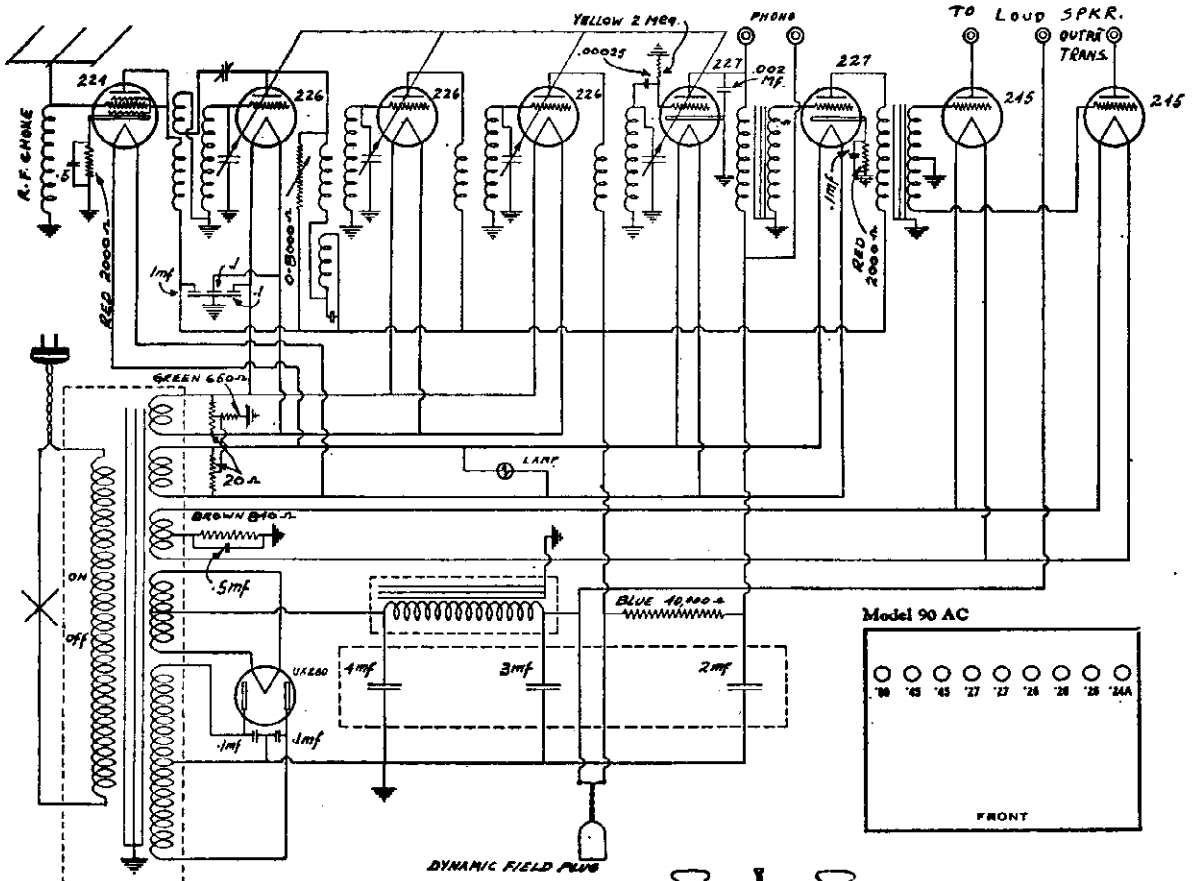
OZARKA, INC.

MODEL 91 - Battery
Schematic, Chassis



MODEL 90
Schematic, Chassis
Voltage

OZARKA, INC.

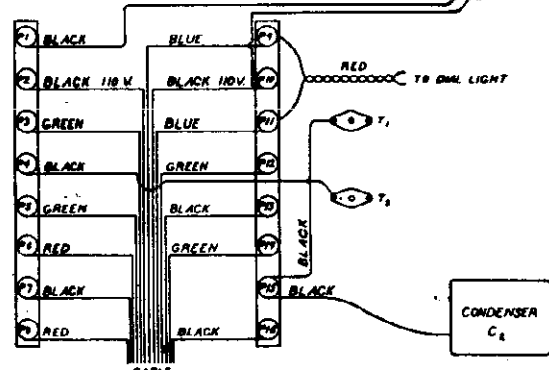
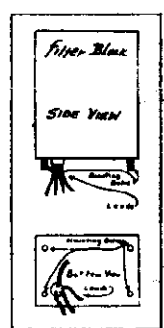
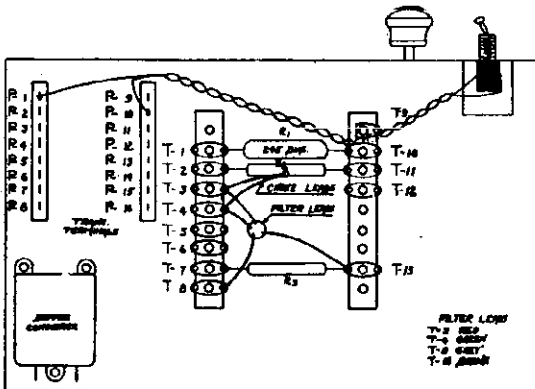
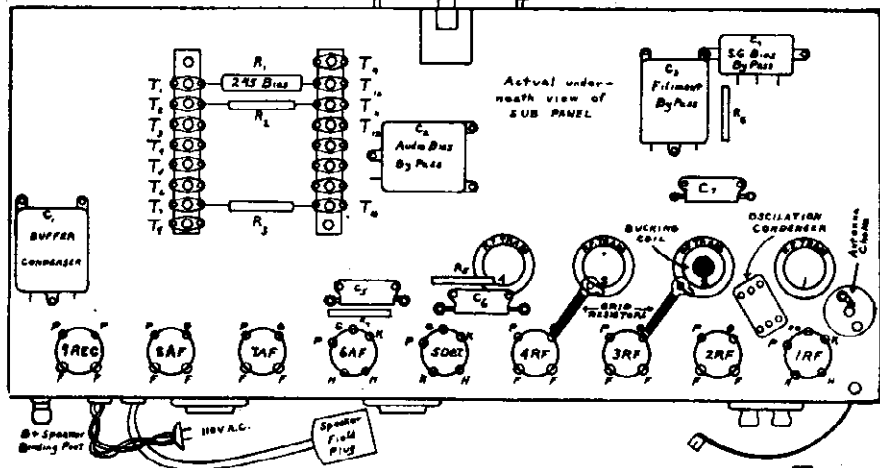


MODEL 90

Tube Type Plate Grid

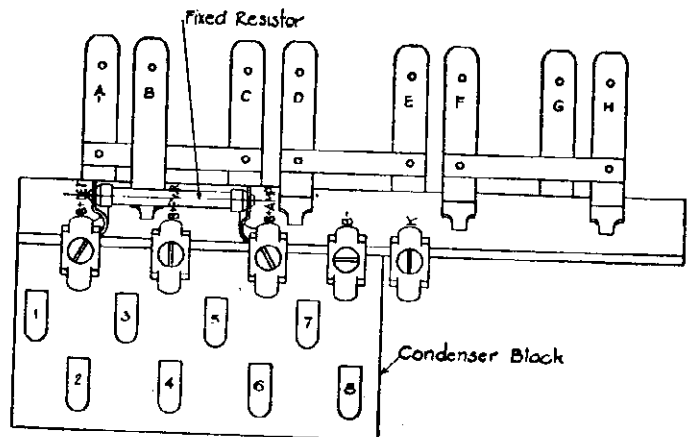
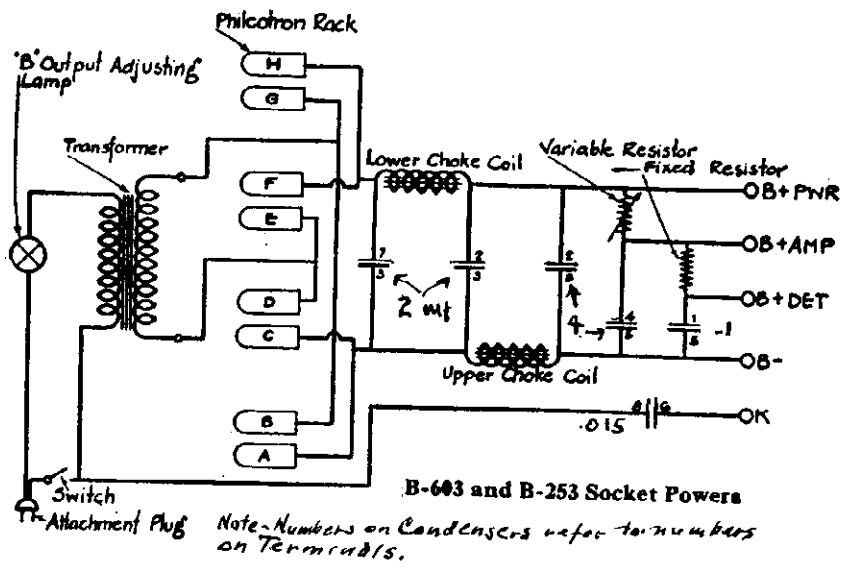
Tube	Type	Plate	Grid
R.F.	'24	160	160
R.F.	'26	160	
R.F.	'26	160	
R.F.	'26	160	
Det.	'27	40	
A.F.	'27	150	
Pwr.	'45	300	
Pwr.	'45	300	

Volume Max.
All Volts to Ground.
Grid Volts Fil. To Grd.



PHILCO RADIO & TELEVISION CORP.

MODEL B-253
 MODEL B-603
 Power Units



Socket Power B, Type B-603

Supplies B power for sets having one to ten tubes—any standard type—including a power tube such as UX-171, UX-112 or UX-120.

For use on 50- or 60-cycle, 105-125-volt alternating current.
 Full-wave Philco electrolytic rectifier.

Average voltage at amplifier terminals:
 B+ PWR 135-150 volts, depending on load.
 B+ AMP 50-100 volts, adjustable.

Maximum continuous current rating: 50 milliamperes.
 Average current consumption: 12 A.C. watts.
 Overall dimensions: Length (front to back) 8³/₈" ; width 8¹/₈" ; height 7⁷/₈" .

Socket Power B, Type B-253

Same as type B-603 except with special transformer and extra large filter for use on 25-, 30- or 40-cycle current as well as on 50 or 60 cycles for exceptional sets which may require the 25-cycle super-filter.

MODEL 180 B
 MODEL "B" Part of
 AB Unit

PHILCO RADIO & TELEVISION CORP.

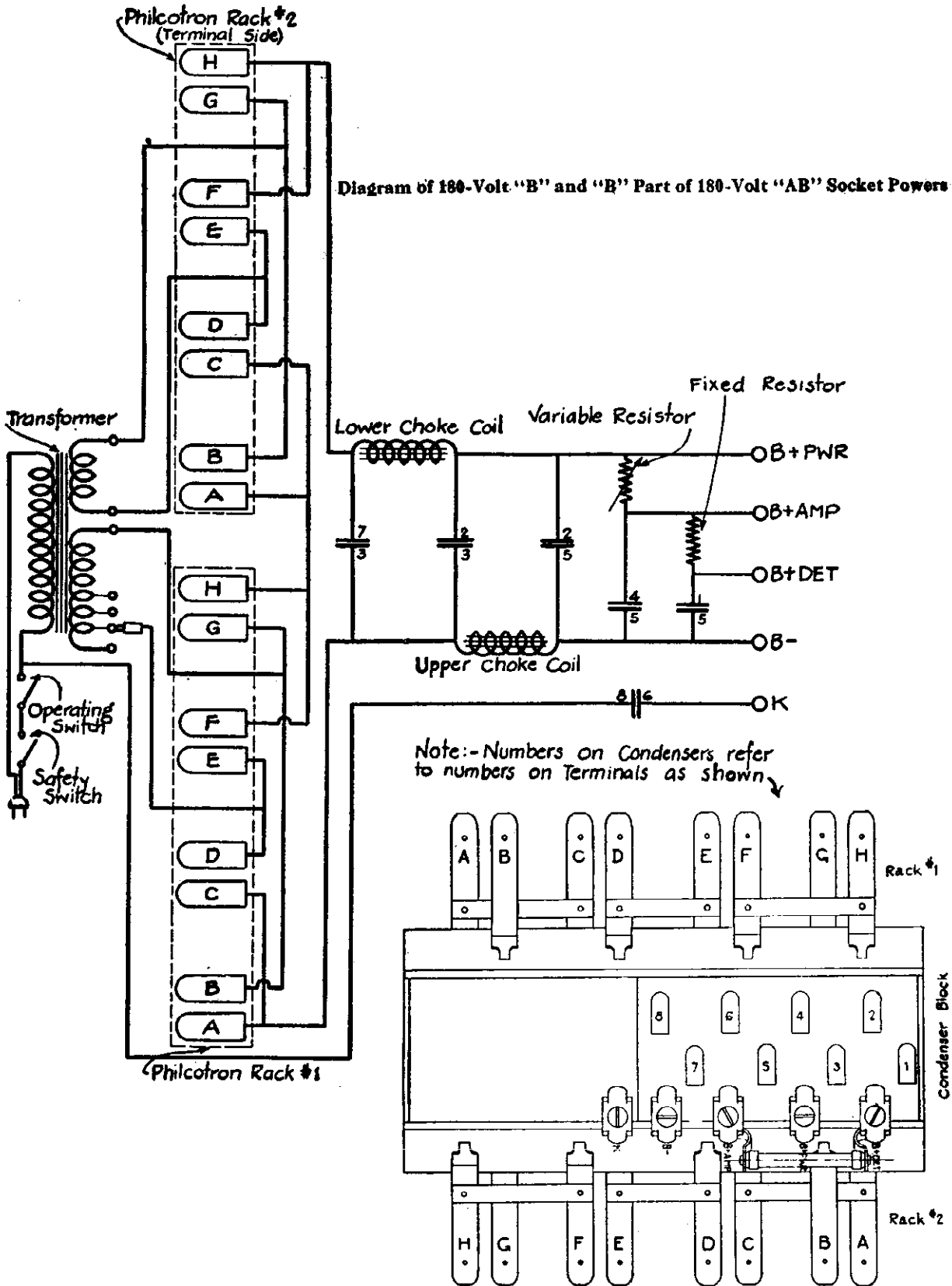
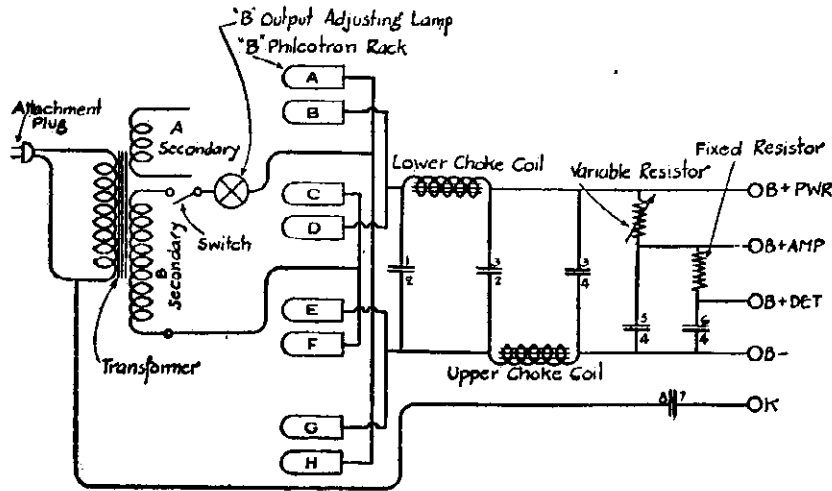


Diagram of 180-Volt "B" and "B" Part of 180-Volt "AB" Socket Powers

Philcofron Racks and Condenser Lugs Marked for Testing for 180-Volt "B" and "B" Part of 180-Volt "AB" Socket Powers

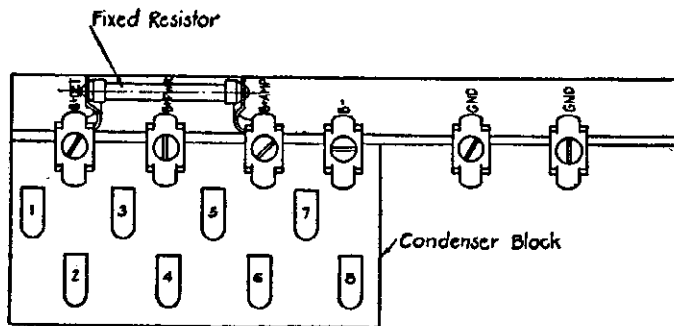
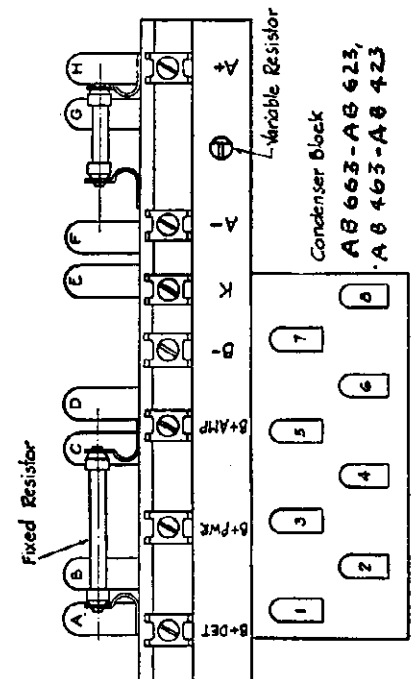
PHILCO RADIO & TELEVISION CORP.

MODEL AB-423, AB-463
 AB-623, AB-663
 Power Units

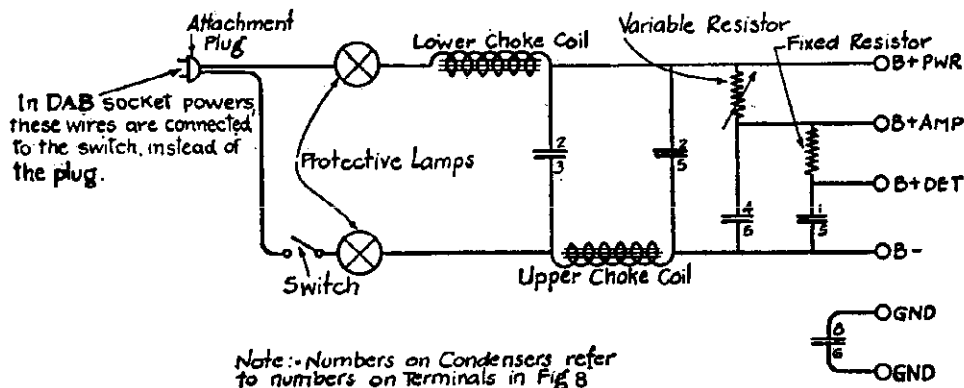


Note:--Numbers on Condensers refer to Terminal

Schematic Wiring Diagram of Types AB-663, AB-623, AB-463, AB-423 Socket Powers



Terminal Strip and Condenser Block of "DB" and "DAB" Socket Powers



Note:--Numbers on Condensers refer to numbers on Terminals in Fig 8

Wiring Diagram of "DB" and "B" Part of "DAB" Socket Powers

MODEL DB
 MODEL AB-463,
 AB-623,
 AB-663

PHILCO RADIO & TELEVISION CORP.

Specifications

Socket Power B, Type DB

Similar to type B-603 for use on 105-125-volt *direct current*.

Supplies B power at detector and two amplifier voltages for sets having one to ten tubes of any standard type.

Maximum continuous current rating: 50 milliamperes.

Average current consumption: 3 D.C. watts.

Dimensions same as type B-603.

Socket Power AB, Type AB-663

Supplies A power at 6 volts and B power at detector and two amplifier voltages for receiving sets having from one to eight 5-volt storage battery tubes including a power tube such as type UX-171 or UX-112. For use on 50- or 60-cycle, 105-125-volt alternating current.

A battery: Philco type UD-86

A rectifier: Extra large, type AA Philcotron.

	LOW	MEDIUM	HIGH
A trickle charge rates, D.C. afaps.	.2	.4	.8
A current consumption, A.C. watts.	15	25	45

B rectifier: Full-wave Philco electrolytic

Average B voltage at amplifier terminals:

B+ PWR 135-150 volts, depending on load.

B+ AMP 50-100 volts, adjustable.

Maximum continuous B current rating: 50 milliamperes.

Average B current consumption: 12 A.C. watts.

Overall dimensions: Length (front to back) 12 $\frac{3}{4}$ " ; width 13 $\frac{5}{8}$ " ; height 8 $\frac{1}{2}$ " .

Socket Power AB, Type AB-623

Same as type AB-663 except with special transformer and extra large B current filter for use on 25-, 30- or 40-cycle current as well as on 50 or 60 cycles for exceptional sets which may require the 25-cycle super-filter.

Socket Power AB, Type AB-463

Supplies A power at 4 volts and B power at detector and two amplifier voltages for sets having from one to ten 3-volt dry cell tubes, including Radiolas. For use on 50- or 60-cycle, 105-125-volt alternating current.

A battery: Philco Type UD-44

A rectifier: Large, type A Philcotron

	LOW	MEDIUM	HIGH
A trickle charge rates, D.C. amps:	.075	.15	.30
A current consumption, A.C. watts:	9	12	18

B rectifier: Full-wave Philco electrolytic

Average B voltage at amplifier terminals

B+ PWR 135 volts.

B+ AMP 50-90 volts, adjustable.

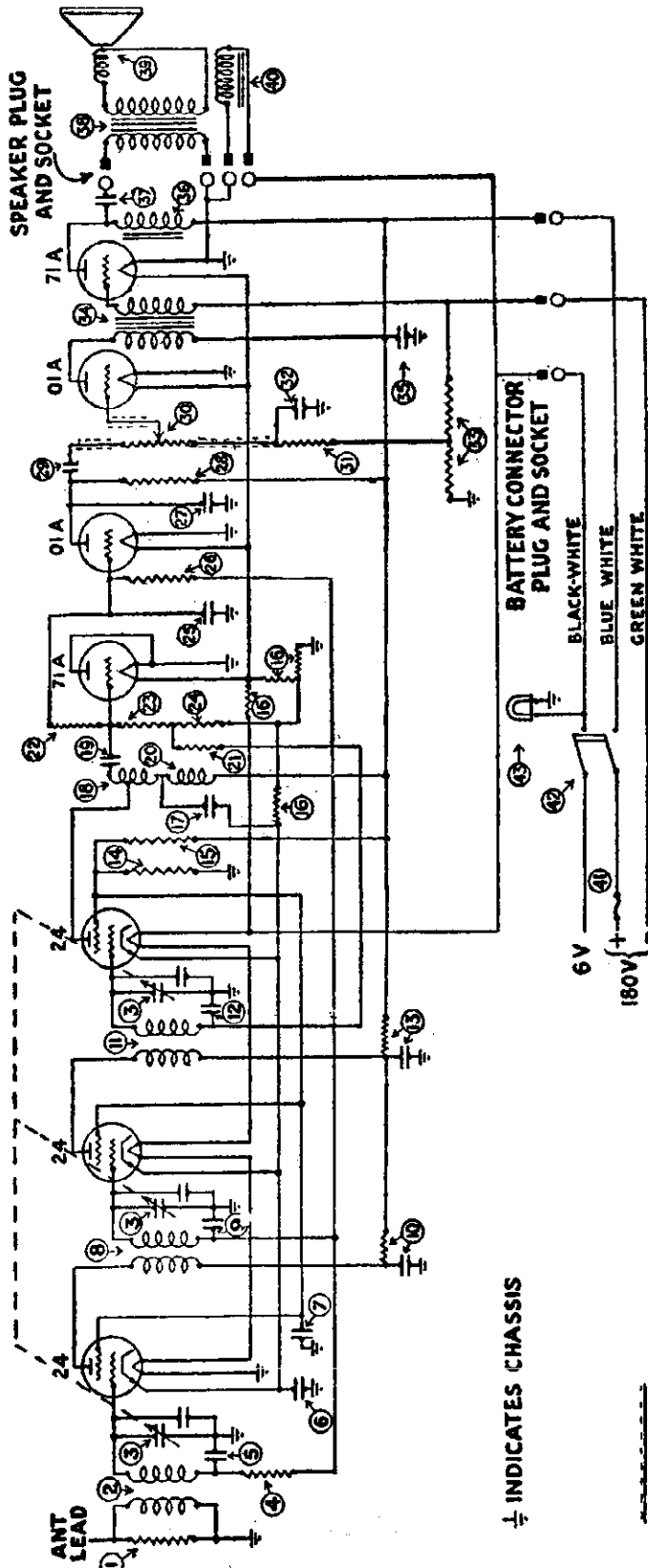
Maximum continuous B current rating: 50 milliamperes.

Average B current consumption: 10 A.C. watts.

Overall dimensions: Length (front to back) 12 $\frac{3}{4}$ " ; width 13 $\frac{5}{8}$ " ; height 8 $\frac{1}{2}$ " .

MODEL 3
Transitone
Schematic
Parts List

PHILCO RADIO & TELEVISION CORP.



⊥ INDICATES CHASSIS

▨ INDICATES GROUNDED SHIELDING

①	Resistor (100,000 ohms — 1/2 watt)	4410
②	Resistor (100,000 ohms — 1/2 watt)	4411
③	Resistor (250,000 ohms — 1/2 watt)	4410
④	Resistor (1,000,000 ohms — 1/2 watt)	4409
⑤	R. F. Choke	3258-A
⑥	Condenser (.00005 mfd)	3774
⑦	Fourth R. F. Transformer	3775-B
⑧	Condenser (.00025 mfd)	3082
⑨	Resistor (4-section)	4407
⑩	Resistor (25,000 ohms — 1 watt)	3656
⑪	Resistor (50,000 ohms — 1 watt)	4237
⑫	Condenser and Resistor (.05 mfd with 250 ohms)	3615-C

COMPENSATING

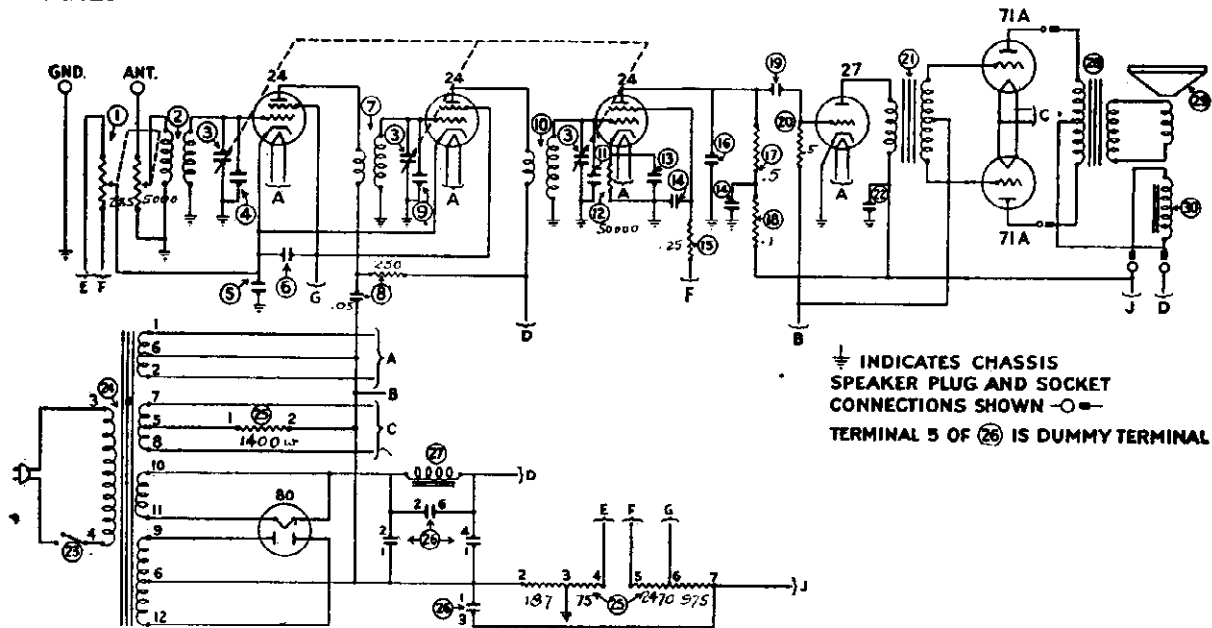
Compensating condensers in all Philco Transitone Receivers are carefully adjusted at the factory, and ordinarily need not be readjusted. If necessary to readjust, a good oscillator should be used. With the Receiver and oscillator set up for operation, and the volume control of the Receiver turned on full—adjust the oscillator signal to a frequency between 1000 and 1200 kilocycles, or 100 and 120 on the Receivers. Tune the Receiver sharply to the signal and then reduce the oscillator signal so that it is barely audible in the Speaker. Using the special fibre wrench, adjust the third compensating condenser to that point at which the maximum signal is heard in the Speaker, then adjust the second and finally the first condenser in the same manner, always adjusting for that position which gives the maximum signal.

After the adjustments are completed tune the Receiver to several broadcast programs to make sure that the stations are tuned in at the proper place on the tuning scale.

⑬	Volume Control	4463
⑭	Condenser (.015 mfd)	3793-D
⑮	Watt	4411
⑯	Resistor (100,000 ohms — 1/2 watt)	4411
⑰	Condenser (.00025 mfd)	3082
⑱	Resistor (1,000,000 ohms — 1 watt)	4414
⑲	Condenser (.00025 mfd)	3082
⑳	Resistor (250,000 ohms — 1/2 watt)	3082
㉑	Resistor (250,000 ohms — 1/2 watt)	4410
㉒	Resistor (250,000 ohms — 1/2 watt)	4410
㉓	Resistor (250,000 ohms — 1/2 watt)	4410
㉔	Resistor (250,000 ohms — 1/2 watt)	4410
㉕	Resistor (250,000 ohms — 1/2 watt)	4410
㉖	Resistor (250,000 ohms — 1/2 watt)	4410
㉗	Resistor (250,000 ohms — 1/2 watt)	4410
㉘	Resistor (250,000 ohms — 1/2 watt)	4410
㉙	Resistor (250,000 ohms — 1/2 watt)	4410
㉚	Resistor (250,000 ohms — 1/2 watt)	4410
㉛	Resistor (250,000 ohms — 1/2 watt)	4410
㉜	Resistor (250,000 ohms — 1/2 watt)	4410
㉝	Resistor (250,000 ohms — 1/2 watt)	4410
㉞	Resistor (250,000 ohms — 1/2 watt)	4410
㉟	Resistor (250,000 ohms — 1/2 watt)	4410
㊱	Resistor (250,000 ohms — 1/2 watt)	4410
㊲	Resistor (250,000 ohms — 1/2 watt)	4410
㊳	Resistor (250,000 ohms — 1/2 watt)	4410
㊴	Resistor (250,000 ohms — 1/2 watt)	4410
㊵	Resistor (250,000 ohms — 1/2 watt)	4410
㊶	Resistor (250,000 ohms — 1/2 watt)	4410
㊷	Resistor (250,000 ohms — 1/2 watt)	4410
㊸	Resistor (250,000 ohms — 1/2 watt)	4410
㊹	Resistor (250,000 ohms — 1/2 watt)	4410
㊺	Resistor (250,000 ohms — 1/2 watt)	4410
㊻	Resistor (250,000 ohms — 1/2 watt)	4410
㊼	Resistor (250,000 ohms — 1/2 watt)	4410
㊽	Resistor (250,000 ohms — 1/2 watt)	4410
㊾	Resistor (250,000 ohms — 1/2 watt)	4410
㊿	Resistor (250,000 ohms — 1/2 watt)	4410

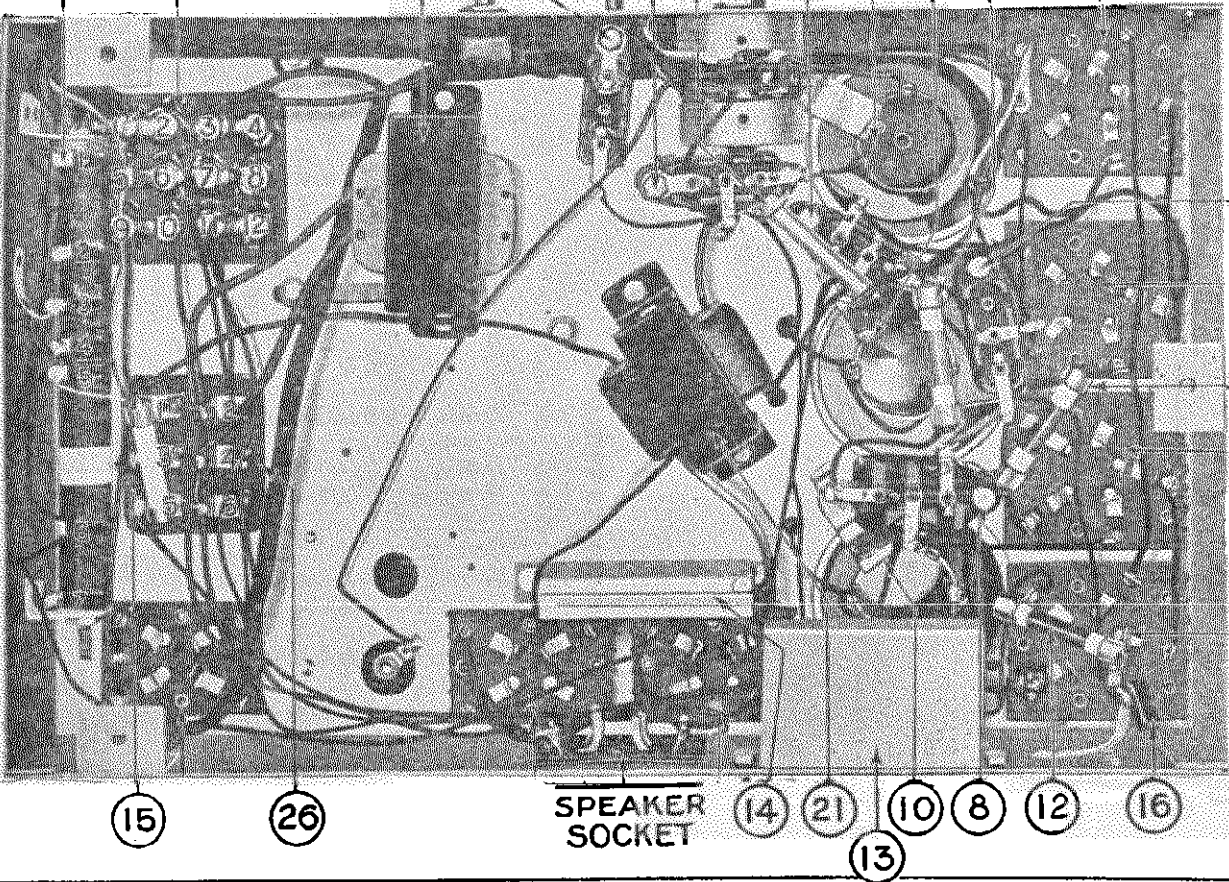
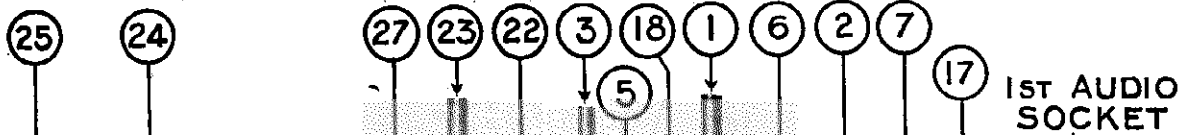
MODEL 20, 20-A
Chassis
Schematic

PHILCO RADIO & TELEVISION CORP.



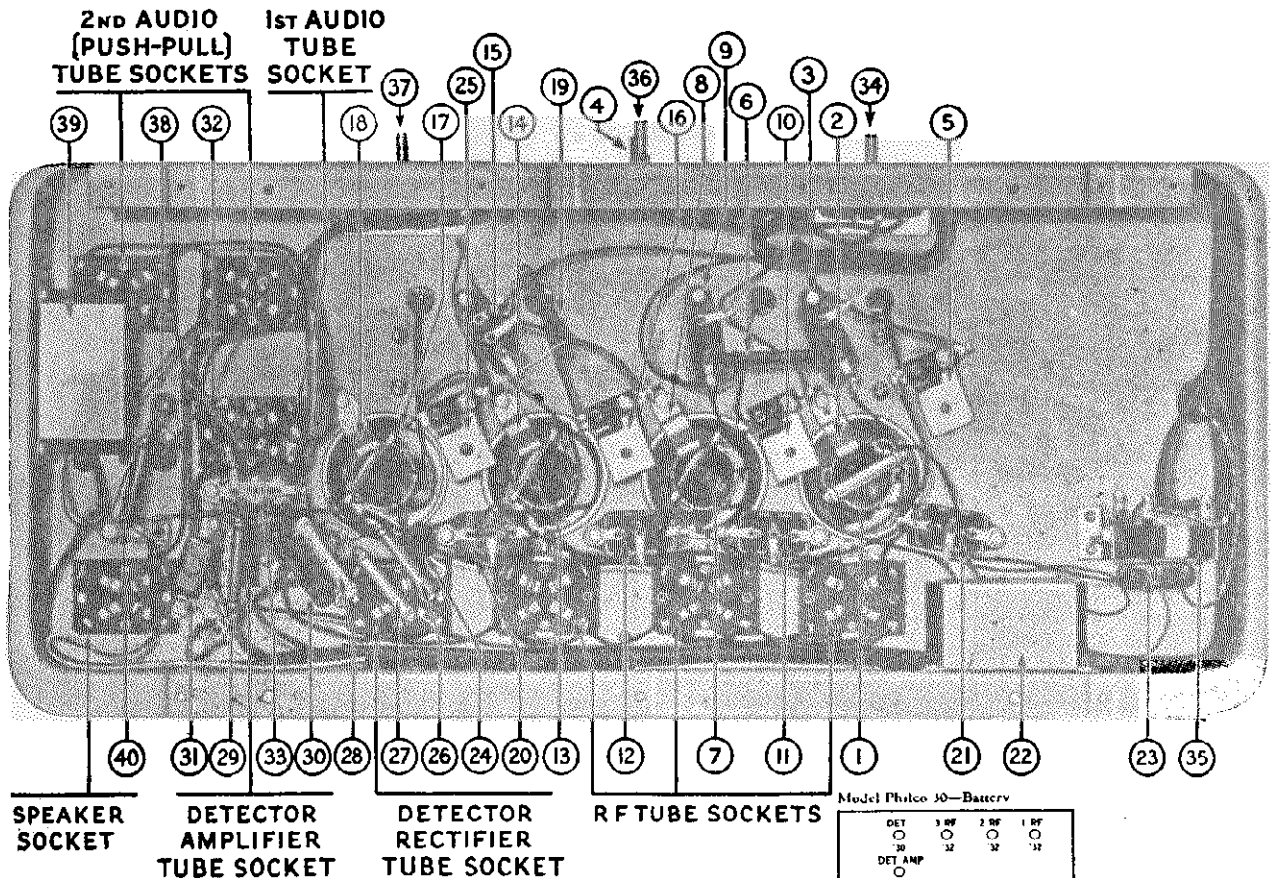
DIFFERENT CIRCUIT ARRANGEMENT FOR MODEL 20-A

Model 20-A for use on 25-60 cycle lines is wired differently than the Model 20. The plate supply lead for the two 24 R. F. Tubes is taken from the low side of the Speaker field Coil. The lead "D" to the 24 tubes should be changed to "J" for the Model 20-A only. This will change the plate voltage from 250 volts to 115-125 volts. The plate current readings will also be lower than those given in the table.

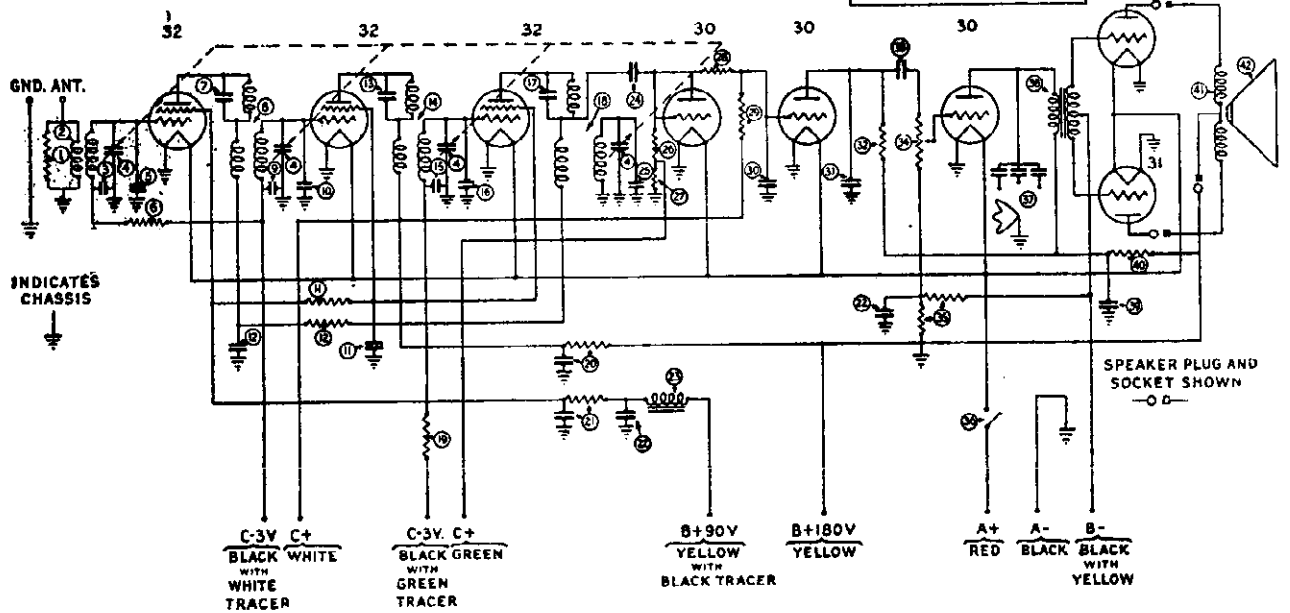
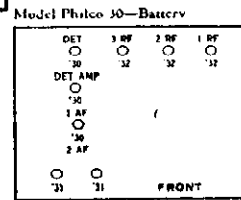


MODEL 30
Chassis
Schematic

PHILCO RADIO & TELEVISION CORP.

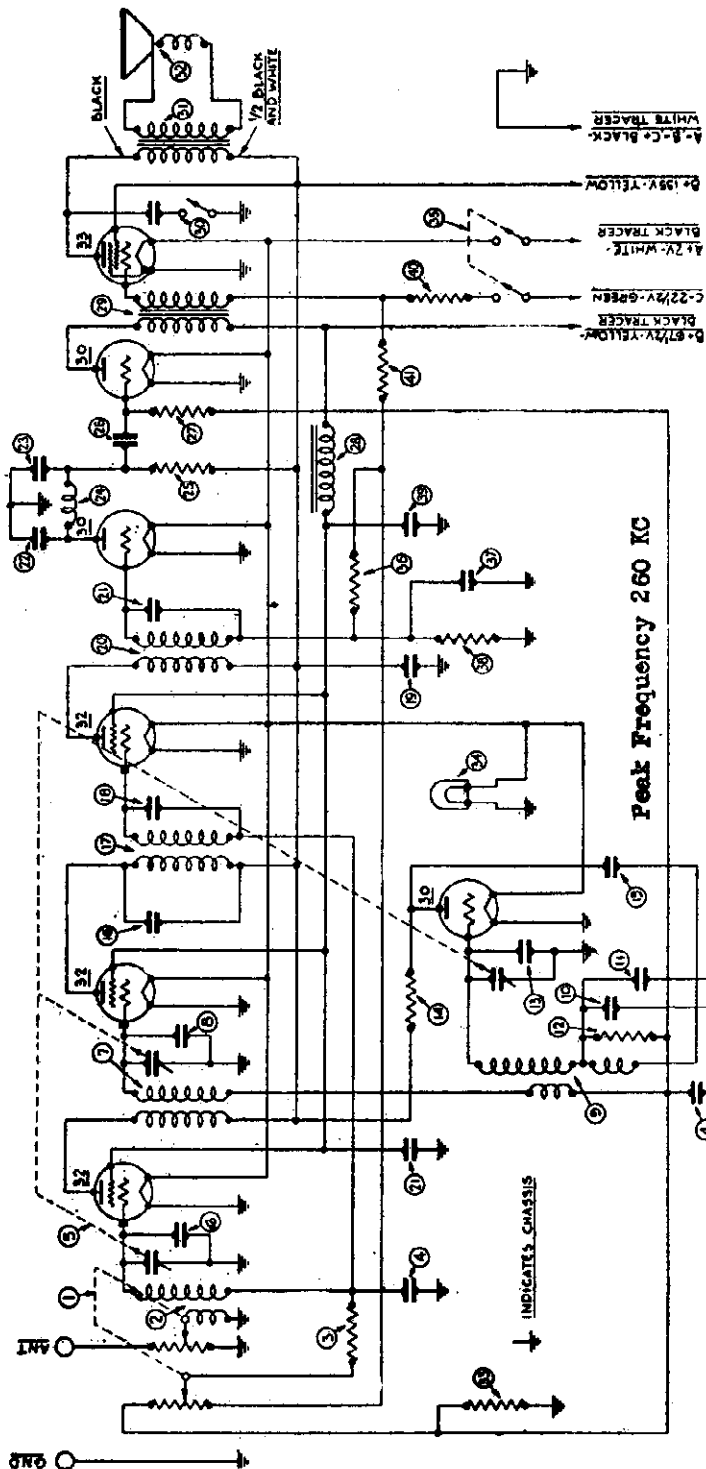


Model 30



PHILCO RADIO & TELEVISION CORP.

MODEL 35
Schematic
Voltage



Model 35-B is similar to Model 35 except that the pilot light is omitted. Furthermore, a resistor # 5792 is supplied with Model 35-B. The Model 35-B is intended for use with the Air-Cell battery.

Tube Socket Readings Taken with Set Tester.

Tube	Circuit	Filament Volts	Plate Volts	Grid Volts	Plate Current Milliamperes	Screen Grid Volts
32	R. F.	1.9	133		3.0	60
32	1st Det.	1.9	133		3.0	63
30	Osc.	1.9	60		1.5	60
32	I. F.	1.9	133	2.5	3.5	60
30	2nd Det.	1.9	55		.05	
30	1st Audio	1.9	65		.05	
33	Output	1.9*	125*	7*	12.*	135*

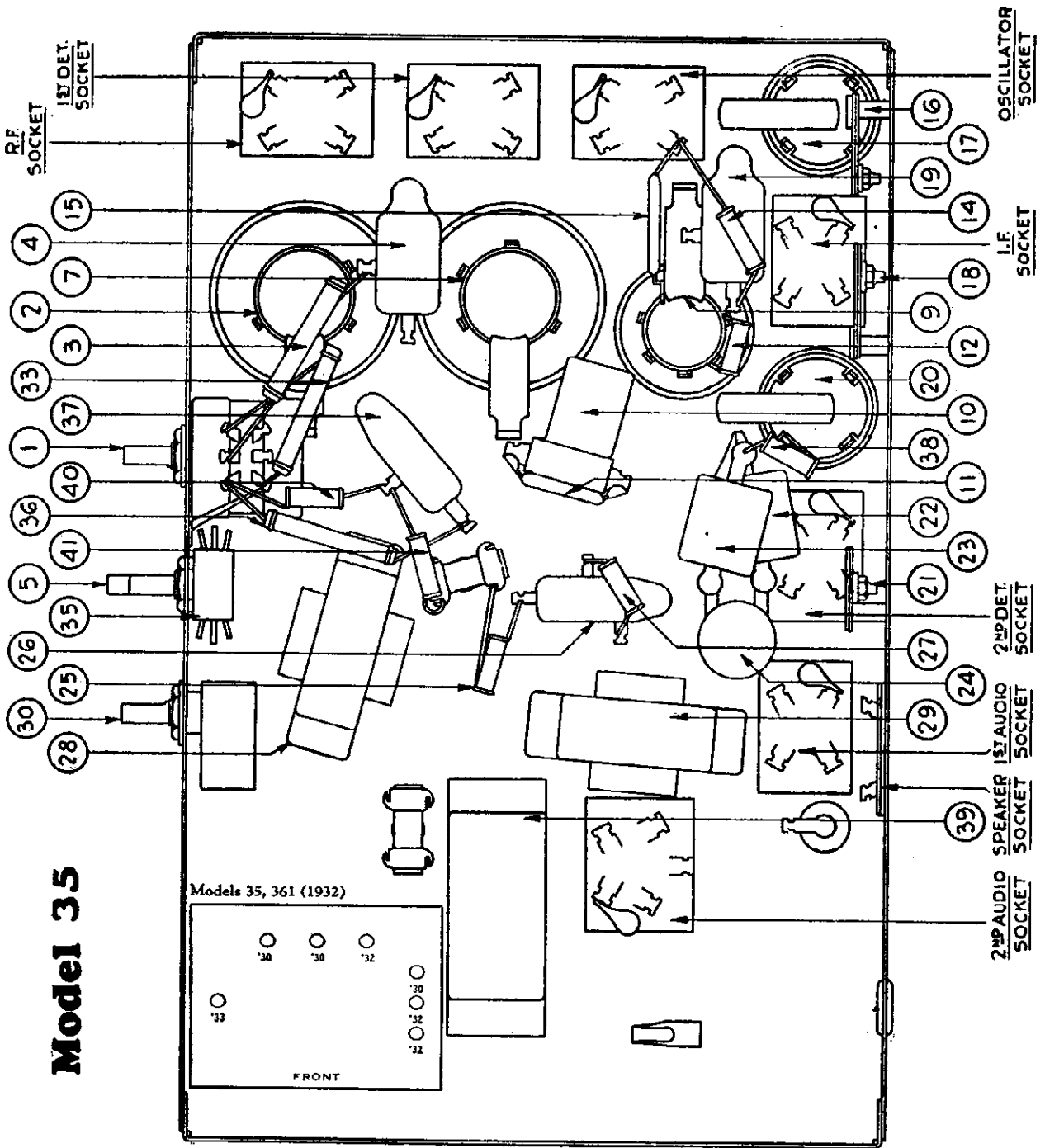
All readings taken with volume control at maximum, antenna disconnected, and ground connected.
*These readings must be taken from the under side of the chassis using test prods and leads unless the set checker is specially equipped for testing pentode tubes.

Always use high-resistance voltmeter, preferably 1000 ohms per volt, when checking voltages in the Receiver. For reading plate and screen voltages, use a 250- or 300-volt scale. Voltage readings taken with meters having less than 250,000 ohms resistance will be lower than voltages given in the

The Model 35 Receiver is designed for use with the latest 2-volt filament type tubes only.

MODEL 35
Chassis
Data

PHILCO RADIO & TELEVISION CORP.



Model 35

Resistor Data

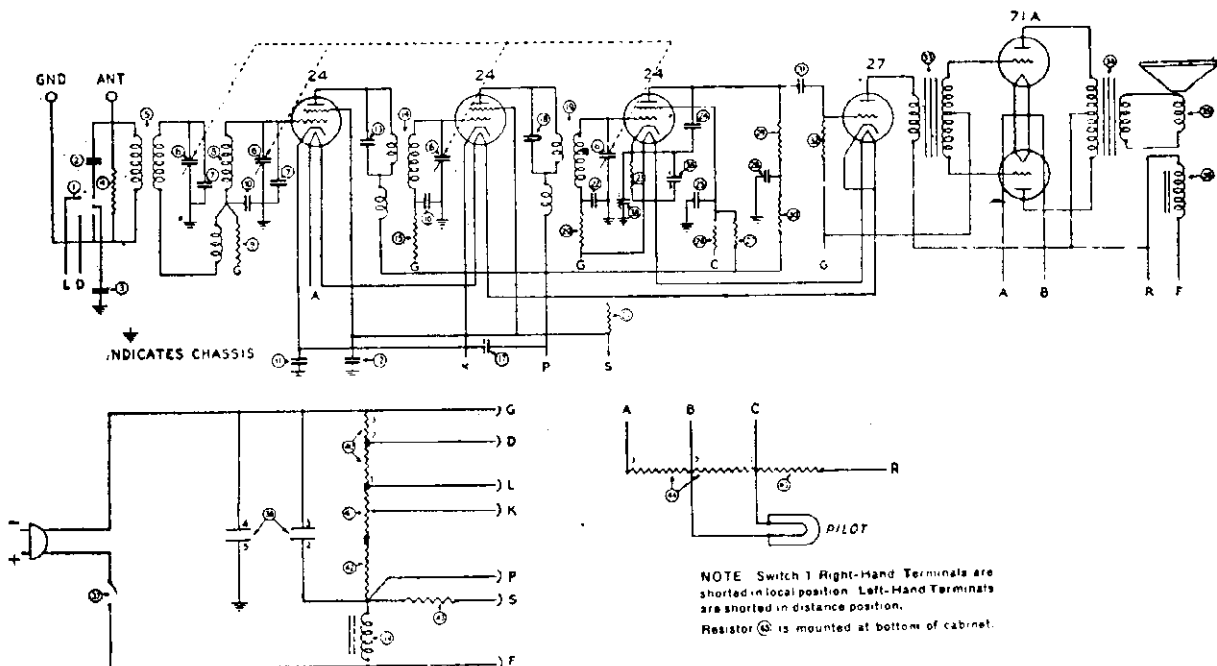
Condenser Data

No. on Figs. 1 and 2	COLOR			Resistance Ohms
	Body	Tip	Dot	
①	Red	Yellow	Yellow	240,000
②	Green	Brown	Orange	51,000
③	Yellow	White	Yellow	490,000
④	Orange	Black	Red	3,000
⑤	Orange	Red	Orange	32,000
⑥	White	White	Orange	99,000
⑦	Green	Black	Red	5,000
⑧	Brown	Black	Orange	10,000

No. on Figs. 1 and 2	Capacity—MFD
⑨	.09
⑩	.000410
⑪	.000110
⑫	.002
⑬	.01
⑭	2.

MODEL 40 DC

PHILCO RADIO & TELEVISION CORP.



NOTE Switch 1 Right-Hand Terminals are shorted in local position. Left-Hand Terminals are shorted in distance position.
Resistor 40 is mounted at bottom of cabinet.

TUBE SOCKET READINGS

Line Voltage 115

Tube	Circuit	Filament	Plate	Screen Grid	Control Grid	Plate Mills
24	1 R. F.	2.1	100	75	.4	2.7
24	2 R. F.	2.1	100	75	.4	2.7
24	Detector	2.1	45	15	1.8	....
27	1 A. F.	2.4	87	..	.2	2.7
71-A	2 A. F.	5	85	..	13	15
71-A	2 A. F.	5	85	..	13	15

Readings must be taken with volume control on full and local distance switch in distance position.

Always use high-resistance voltmeter, preferably 1000 ohms per volt, when checking voltages in the Receiver. For reading plate and screen voltages, use a 250- or 300-volt scale. Voltage readings taken with meters having less than 250,000 ohms resistance will be lower than voltages given in the table.

RESISTOR VALUES

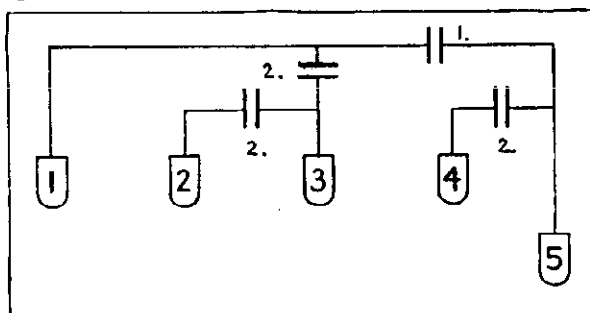
No. on Fig. 2	Terminals	Ohms Resistance
4-20-45	.. . . . .	5,000
9-15	.. . . . .	33,000
21-42	.. . . . .	25,000
23-30	.. . . . .	100,000
26	.. . . . .	13,000
27	.. . . . .	70,000
28-32	.. . . . .	500,000
40	{ 1-2	800
	{ 2-3	250
44	{ 1-2	2
	{ 2-3	4
45	(Note: 20-inch-External)	53

CONDENSER CAPACITIES

No. on Fig. 2	Capacity
2	.002
3-31	.01
10-16-17-22	.05
11-12-25-28	.25
24	.0005

38 Filter Condenser

Part No. 4067



PHILCO RADIO & TELEVISION CORP.

MODEL 41 DC, 42 DC
Schematic
Voltage
Values

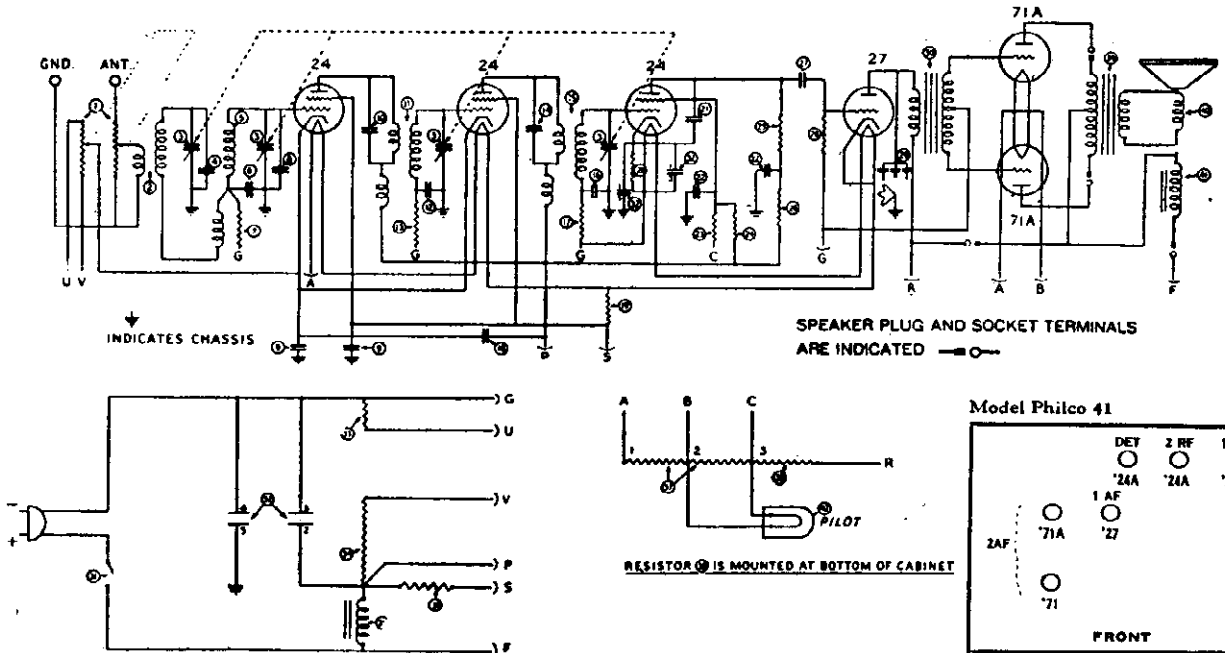


Table 1—TUBE SOCKET READINGS
Line Voltage 115

Tube	Circuit	Filament	Plate	Screen Grid	Control Grid	Plate Mils
24	1 R. F.	2.1	100	75	.4	2.7
24	2 R. F.	2.1	100	75	.4	2.7
24	Detector	2.1	45	15	1.8	...
27	1 A. F.	2.4	87	..	.2	2.7
71-A	2 A. F.	5	85	..	13	15
71-A	2 A. F.	5	85	..	13	15

Readings must be taken with volume control on full.

Always use high-resistance voltmeter, preferably 1000 ohms per volt, when checking voltages in the Receiver. For reading plate and screen voltages, use a 250- or 300-volt scale. Voltage readings taken with meters having less than 250,000 ohms resistance will be lower than voltages given in the table.

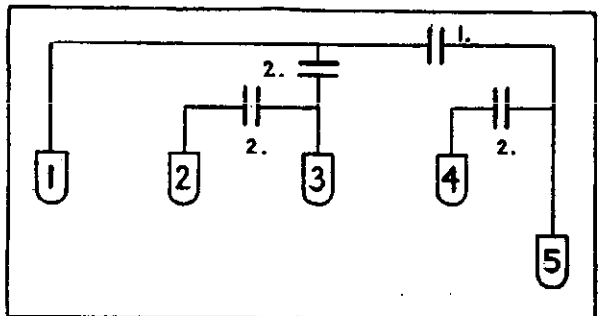
Table 2—RESISTOR VALUES

No. on Figs. 2 and 3	Terminals	Ohms Resistance
17-20	5,000
28	18,000
19-24	25,000
7-12	33,000
24	70,000
20-26	100,000
25-28	500,000
32	250
37	4
38	2
	(Note: 20-inch—External)	53

Table 3—CONDENSER CAPACITIES
(Other than Filter Condenser)

No. on Figs. 2 and 3	MFD. Capacity
27	.01
8-13-16-18	.05
9-27	.25
21	.0005

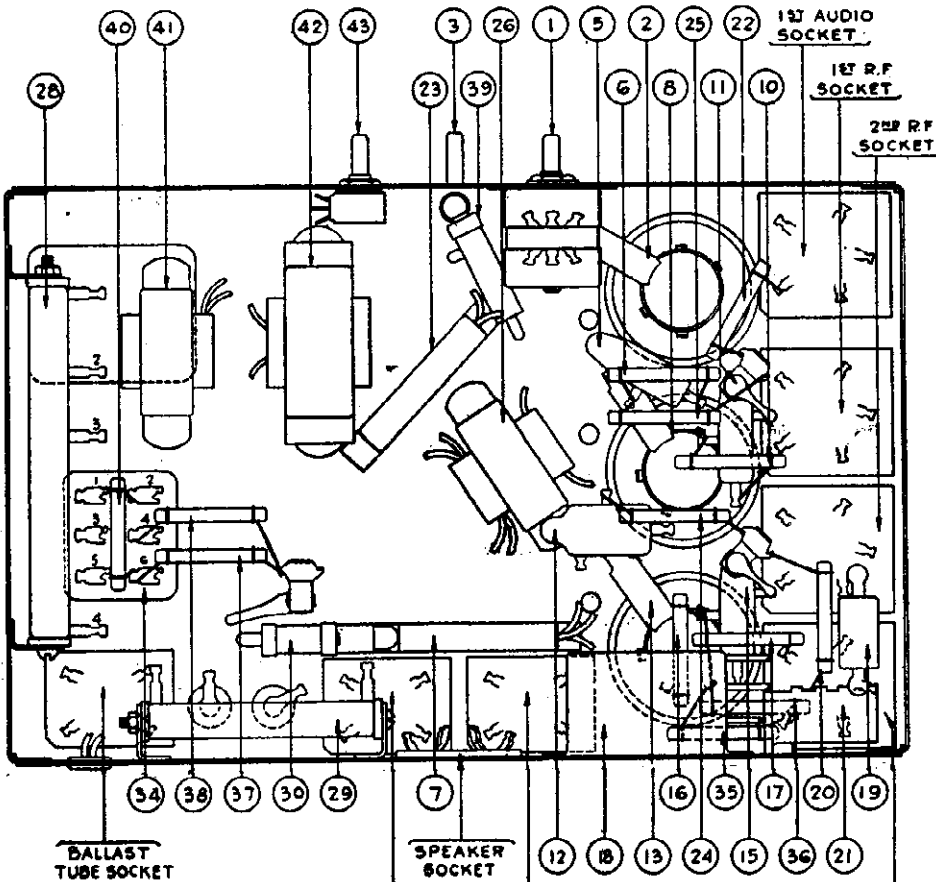
32 Filter Condenser Part No. 4067



MODEL 46, 46-E DC
Chassis
Resistor Data

PHILCO RADIO & TELEVISION CORP.

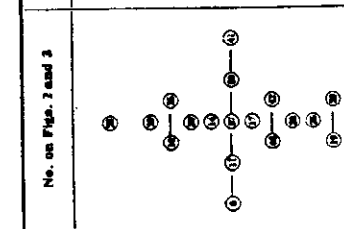
Models 46 and 46-E



-Resistor Data

Resistance	Color	
	Tip	Dot
16	Tubular	
105	Tubular	
1500	Flat Wire Wound	
200	Flat Wire Wound	
250	Flat Wire Wound	
350	Flat Wire Wound	
5,000	Black	Red
32,000	Red	Orange
51,000	Green	Orange
70,000	Green	Jade Green
99,000	White	White
240,000	Red	Yellow
490,000	Yellow	White

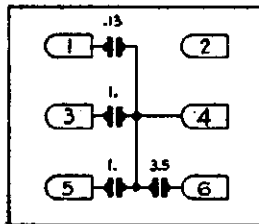
Terminal	Resistor Data for Model 46-E
1-2	Resistor Data for Model 46-E
2-3	
3-4	
3-4	



Condenser Data
(Other than Filter Condensers) PUSH-PULL SOCKETS

No. on Figs. 2 and 3	Capacity MFD	For
②	.0005	Model 46-E DC
②	.01	
①-②	.05	
⑦	.05 and 250-ohm resistor	
②-②	.25 (two sections)	

Part No.—4860



DETECTOR SOCKET

Color	Tip
Tubular	
Tubular	
Flat Wire Wound	
Flat Wire Wound	
Yellow	
Belgium Blue	Yellow Tip
Belgium Blue	Yellow Tip
Jade Green	
White	
Battle Gray	

Tube Socket Readings Taken with Set Tester, DC Line, 240 Volts

Type	Circuit	Filament Voltage	Plate Voltage	Grid Voltage	Screen Grid Voltage	Cathode Voltage (Measured with Prod)	
						Plate	Milliamperes
14	1st R. F.	13.5	190	.4	80	3.5	5.5
14	2nd R. F.	13.5	190	.4	75	3.5	5.5
14	Detector	13.0	0	0	20	9.5	.3
17	1st Audio	12.5	60	0		3.0	2.5
71-A	Second Audio	5.5	180	53			12.0
71-A	Push-Pull	5.5	185	53			12.0
3	Ballast	128					

All readings taken with antenna disconnected and ground on. Volume Control on full.

The majority of set testers are not equipped to measure a DC filament voltage as high as 14 volts. In this case the volt meter binding post prods will have to be used. This method must also be used in checking cathode voltages across resistances No. 17, No. 35, No. 28 and No. 29.

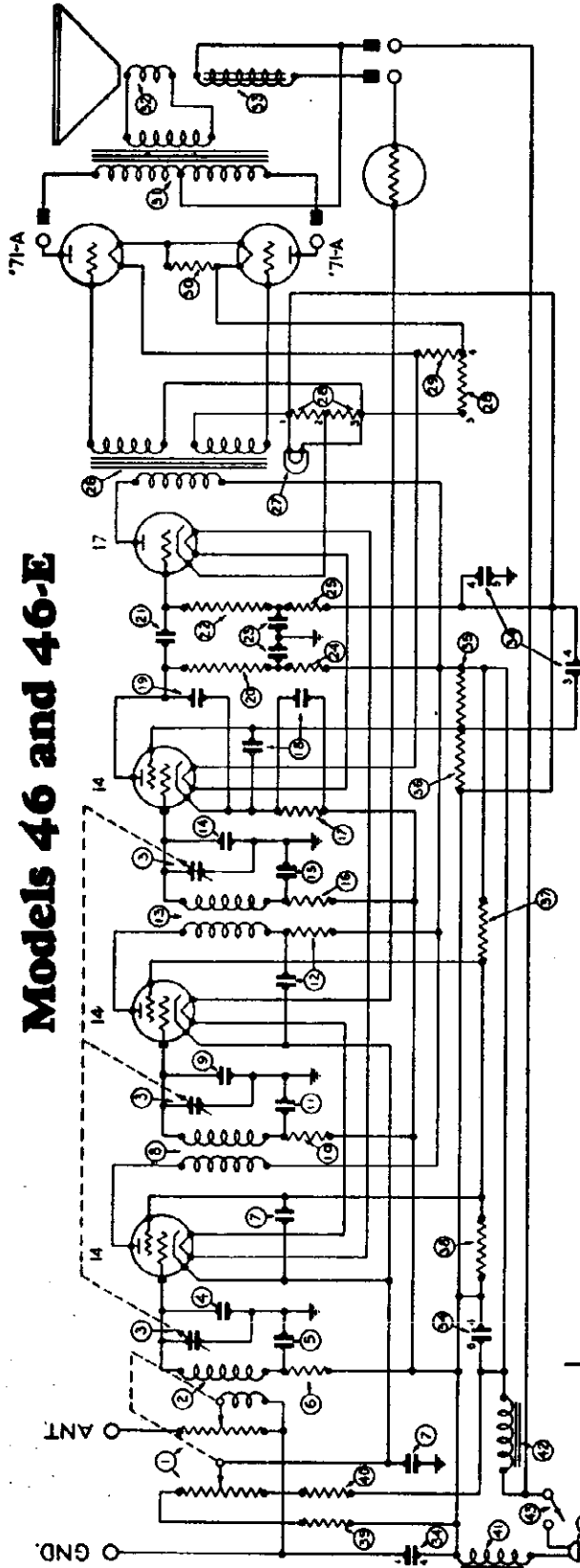
The field coil of the Speaker used with this Receiver is of low resistance. It is not the same as the field coil used with the AC Electric Receiver. If, by mistake, a speaker from an AC Electric Receiver is plugged into the DC Receiver no damage will result.

Reference	Terminal	No. on Figs. 2 and 3
10	2-3 1-2 3-4	
14		
29		
200		
210		
250		
5,000		
13,000		
33,000		
70,000		
100,000		
250,000		
500,000		

PHILCO RADIO & TELEVISION CORP.

MODEL 46, 46-E DC
Schematic
Voltage
Condenser

Models 46 and 46-E



INDICATES CHASSIS SPEAKER PLUG AND SOCKET CONNECTIONS SHOWN

Model 46 for operation on 110-120 Volts DC

Model 46-E for operation on 210-240 Volts DC.

Table 1—Tube Socket Readings Taken with Set Tester, DC Line, 115 Volts

Tube Type	Circuit	Filament Voltage	Plate Voltage	Grid Voltage	Screen Grid Voltage	Cathode Voltage (Measured with Prod)	Plate Milliamperes
14	2nd R. F.	13.5	100	1.5	60	2.5	2
14	Detector	13.5	30	1.0	25	2.5	.1
17	1st Audio	13.5	100	.25	..	4.5	5
71-A	2d Audio	4.5	90	15.5	..	..	11.5
71-A	Push-Pull	4.5	90	15.5	..	..	11.5
2	Ballast	8	..	..	..	..	..
3	Ballast	128	..	..	..	..	..

All readings taken with antenna disconnected and ground on. Volume Control on full. The majority of set testers are not equipped to measure a DC filament voltage as high as 14 volts. In this case the volt meter binding post prods will have to be used. This method will also have to be used in checking cathode voltages across resistances No. 17—No. 39 and No. 28 and No. 29. The field coil of the Speaker used with this Receiver is of low resistance. It is not the same as the field coil used with the AC Electric Receiver. If, by mistake, a speaker from an AC Electric Receiver is plugged into the DC Receiver no damage will result.

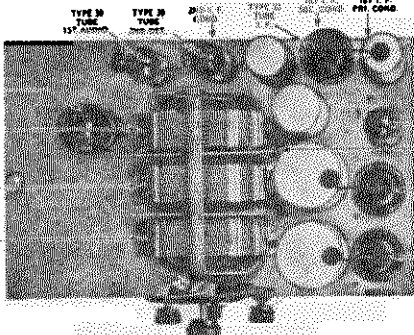
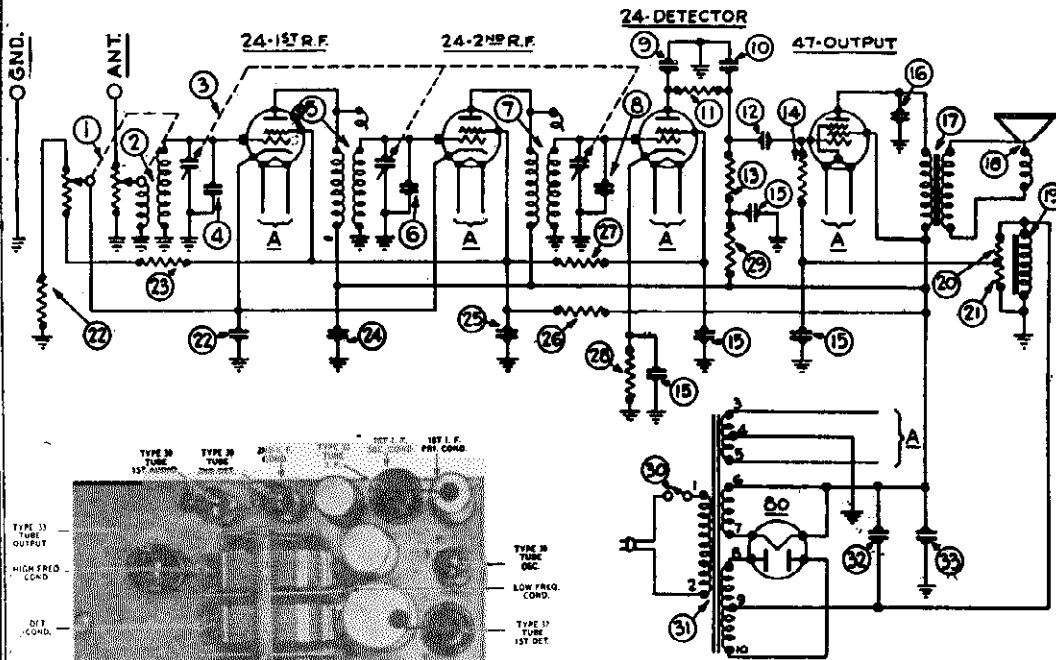
Table 2—Condenser Data
(Other than Filter Condenser)

No. on Figs. 2 and 3	Capacity MFD
①	.0005
②	.01
③	.05
④	.05 and 250-ohm resistor
⑤	.25
⑥	.25 (two sections)

MODEL 50, 50-A
Schematic
Chassis

PHILCO RADIO & TELEVISION CORP.

PHILCO MODELS 50 AND 50-A

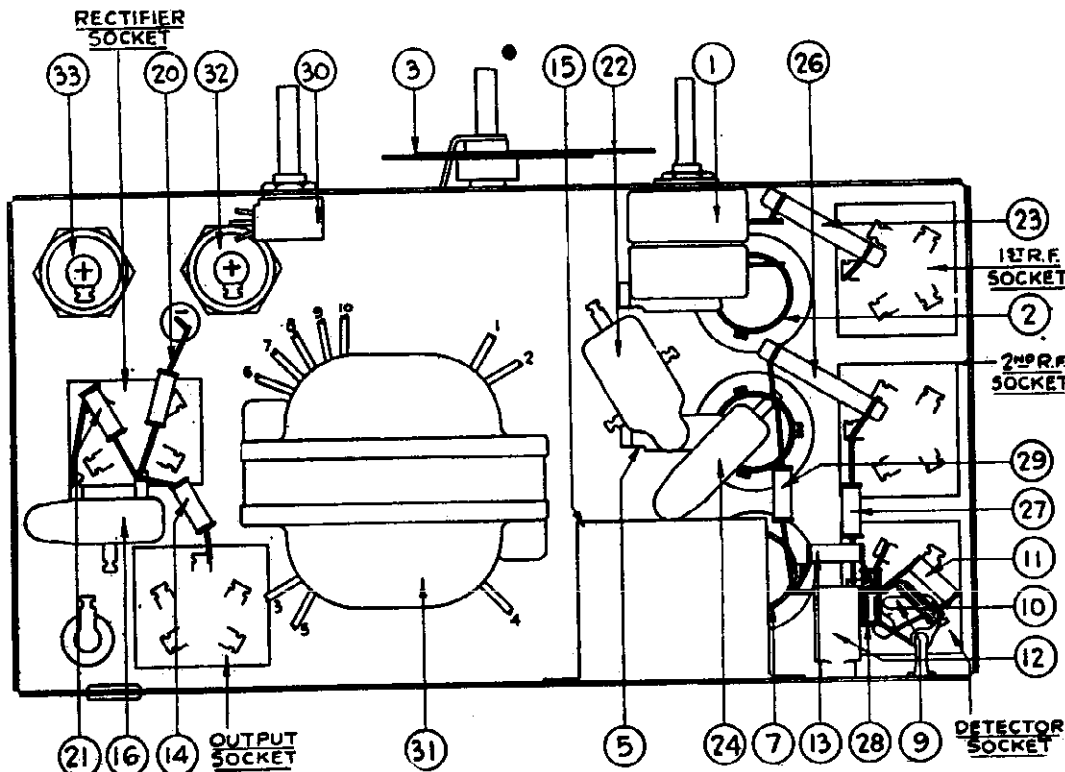


ADJUSTMENT OF MODELS 50 AND 50-A

With the volume control advanced to maximum, and using a weak oscillator signal, tune the receiver sharply to the oscillator note.

Adjust the third R. F. compensating condenser by means of the Philco fibre wrench, part 3184, for maximum output signal. If an output meter is being used, adjust for maximum reading.

Next adjust the second R. F. compensating condenser and finally the first. In each case, always adjust for maximum signal or reading.



Adjustment of the compensating condensers in the model 50 should be done with the aid of a good oscillator for the R. F. signal. The oscillator lead should be connected to the "ANT" terminal of the receiver. A good ground connection must be made from the receiver to the grounded side of the oscillator and to a water or radiator pipe.

Either the ear method or an output meter, connected across the speaker voice coil terminals can be used while adjusting.

When the Receiver is set up for operation, adjust the oscillator signal to a frequency which is approximately 1400 kilocycles.

PHILCO RADIO & TELEVISION CORP.

MODEL 50,50-A
Voltage
Resistor Data
Condenser Data

Models 50 and 50-A Receivers

Model 50 Receivers are for operation on 100-130 volt, 50-60 cycle AC lines
Model 50-A Receivers are for operation on 100-130 volt, 25-60 cycle AC lines

Table 1—Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

Tube		Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts	Plate Milli-amperes
Type	Circuit						
24	1st R.F.	2.4	245	90	2.5	3.0	4.5
24	2nd R.F.	2.4	250	90	2.5	3.0	5.5
24	Det.	2.4	100	42	8.0`	8.0	0
47	Output	2.4	175*	190*	1.0*	...	2.7*
80	Rect.	5.0	...	...	...	...	30/

Note—Volume Control on full; Station Selector turned to Low Frequency End.

*These readings must be taken from the underside of the chassis, using test prods and leads unless the set checker is specially equipped for testing pentode tubes.

Table 2—Power Transformer Voltages

Terminals	A.C. Volts		Color
1-2	105 to 125	Primary	Black (Small Gauge)
3-5	2.5	Filament of 24 and 47	Black
6-7	5.	Filament of 80	Light Blue
8-10	700.	Plates of 80	Yellow
4	.....	Center Tap of 3-5	Black, Yellow Tracer
9	.....	Center Tap of 8-10	Yellow, Green Tracer

Table 3—Condenser Data

No. on Figs. 2 and 3	Capacity MFD	Container
10	.00025	Yellow
12	.01	Black Bakelite Container
13	.05	Black Bakelite Container
14	.05 and 150 Ohm resistor	Black Bakelite Container
15	.1, .15, .25, 2-.5 (50-60 cycles)	Metal Container
16	.05, .15, .25, 2-.5 (25-40 cycles)	
17	.05	
18	(50 to 60 cycles) 6.	Electrolytic
19	(25 to 40 cycles) 10.	Electrolytic
20	6.	Electrolytic

Table 4—Resistor Data

No. on Figs. 3 and 4	Power (Watts)	Resistance	Color		
			Body	Tip	Dot
21	...	150 and .05 Mfd.	Black	Bakelite Con	tainer
22	.5	10,000	Brown	Black	Orange
23	1.	15,000	Brown	Green	Orange
24	1.	25,000	Red	Green	Orange
25	.5	32,000	Orange	Red	Orange
26	.5	99,000	White	White	Orange
27	.5	160,000	Brown	Blue	Yellow
28	.5	240,000	Red	Yellow	Yellow
29	.5	490,000	Yellow	White	Yellow

MODEL 65

PHILCO RADIO & TELEVISION CORP.

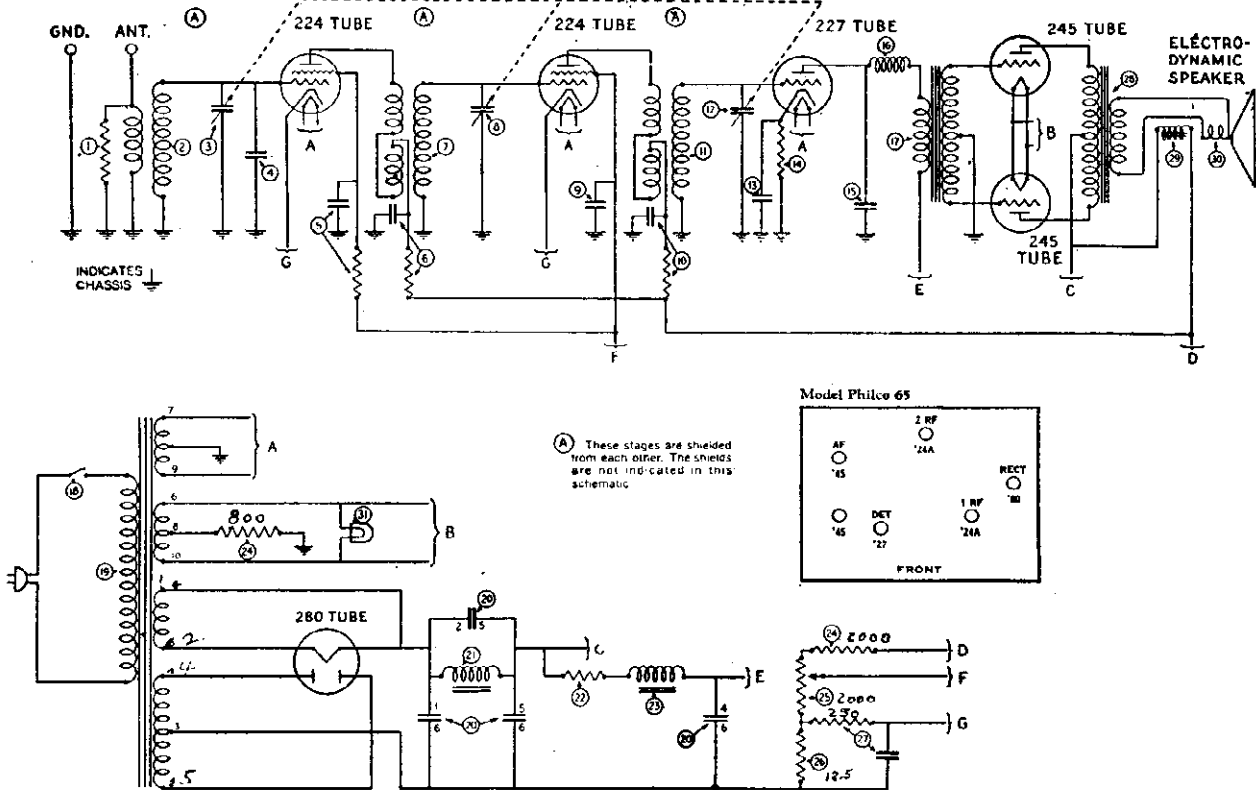


Table 8
Tube Socket Readings

TYPE TUBE	"A" Volts	"B" Volts	"B" VOLTS (SCREEN GRID)	"C" VOLTS (CONTROL GRID)	MA PLATE	CATHODE
224	2.5	150	*2 to 75	1.5	1.5	+1.5
227	2.5	250	.....	28	1.8 to 3.5	+28
245	2.5	250	.....	50	32	.....
280	5.0	350-V. A.C.	.....	50	55	.....

*The voltage varies from 75 volts with the volume control turned for full volume to .2 volts with the control turned for minimum volume.

†When there is no signal being reproduced the detector plate current will be about .8 MA. Strong signals will cause a rise in current to 3.5 MA.

Table 9
Power Transformer Voltage [AC]

TERMINALS	A.C. VOLTS	SECONDARY
1-2	700	A.C. Supply to Plates of Rectifier Tube
3		Center Tap of Rectifier Plate Secondary
4-5	5.0	Rectifier Filament
6-10	2.5	Filament 245 Tubes
8		Center Tap of 245 Tube Secondary
7-9	2.5	Heater 224 and 227 Tubes

Green lead - Center Tap for Secondary 7-9
Current Consumption - 125 V. A.C. 95 Watts

Table 10
D. C. Voltage Across Filter Condenser Block

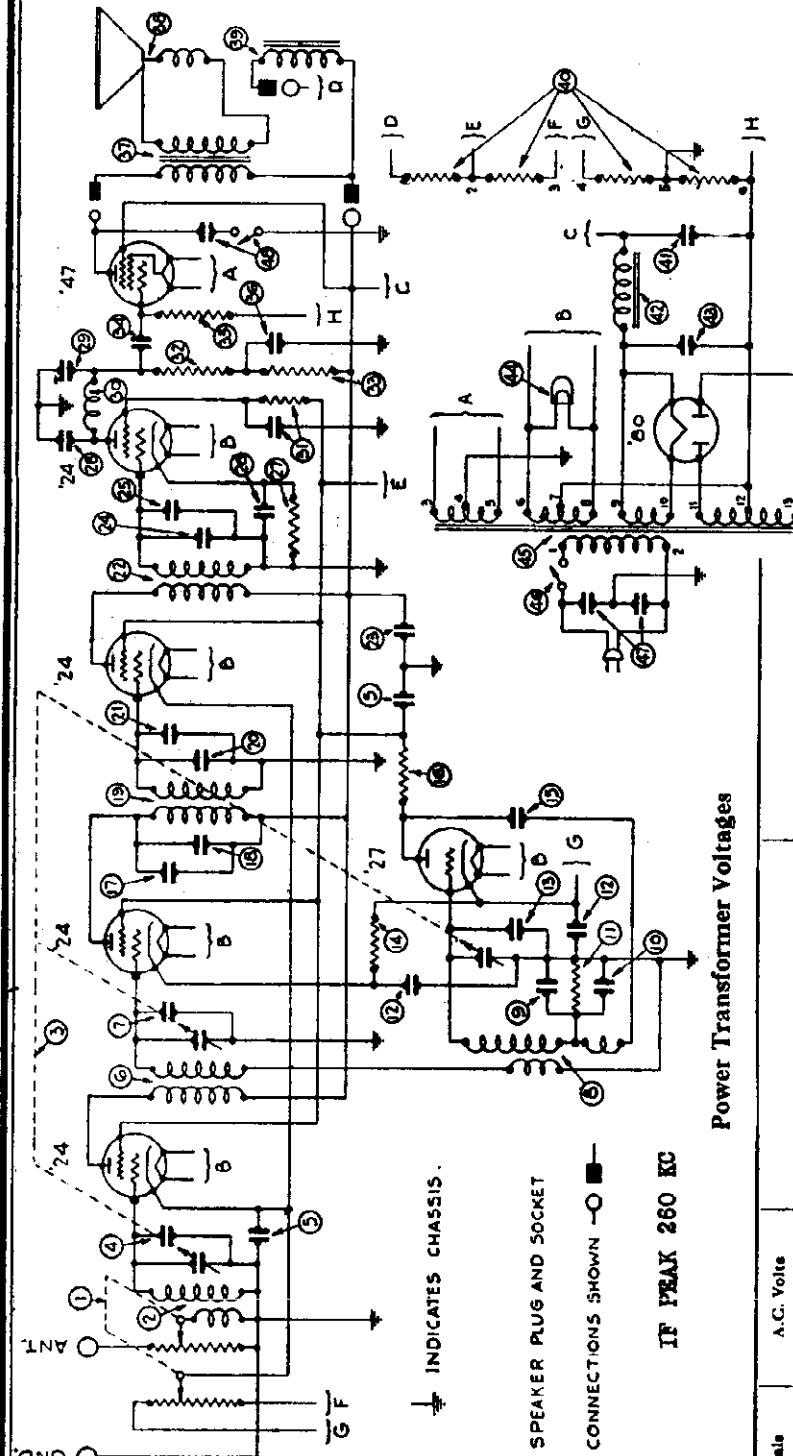
TERMINALS	D.C. VOLTS	CAPACITY	CIRCUIT
1-6	325	2.0 Mfd.	First Filter Section, Ground to 280 Filament
2-5	20	.15 Mfd.	Parallel with First Choke Coil
3	.....	.....	Blank Terminal for Detector Plate Resistor
4-6	280	1.0 Mfd.	Last Filter Section, Gnd. to Det. Plate Lead
5-6	305	2.0 Mfd.	2d Filter Section, Gnd. to End of First Choke

Table 11
Voltage Across Resistors

RESISTOR NUMBER	RESISTOR TERMINAL	VOLTAGE DROP	CIRCUIT
①	1-2	45-50	Grid Bias for the 245 Tubes
②	3-4	75-80	Reduces B Voltage for the Screen Grid
③	1-2	4-10	Detector Plate Voltage
④	1-2	28	Detector Grid Bias
Field Coil of Speaker		135-140	Supplies Field Energy of Dynamic Speaker

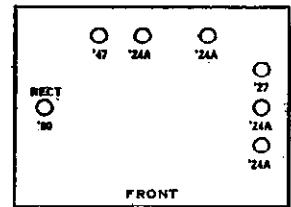
PHILCO RADIO & TELEVISION CORP.

MODEL 70, 70-A
 Below B-22,000
 Voltage
 Schematic
 MODEL 570
 Grandfather Clock



If electrolysis occurs on the insulation of the wire between the filter choke and the electrolytic condenser, unsolder the wire and cover with spaghetti.

Models 70, 70A, 70E, 270, 270A



MODEL 570 Grandfathers Clock contains the same radio equipment as Model 70

Power Transformer Voltages

Terminals	A.C. Volts	Primary	Black (Small Gauge)
1-2	105 to 125	Filament of 47	Dark Green
3-5	2.5	Filament of 24	Black (Heavy Gauge)
6-8	2.5	Filament of 80	Light Blue
9-10	5	Plates of 80	Yellow
11-13	700	Center Tap of 3-5	Black, Green Tracer
4	.....	Center Tap of 6-8	Black, Yellow Tracer
7	.....	Center Tap of 11-13	Yellow, Green Tracer
12	.....	

Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

Tube Type	Circuit	Filament Volts	Plate Volts	Screen Grid Volts	Control Grid Volts	Cathode Volts	Plate Milli-amperes
24	1st R. F.	2.25	250	85	3	19.5	3
24	1st Det.	2.25	250	87	5.5	21.5	.5
27	Osc.	2.25	.85	87	2	19.5	2.5
24	1st I. F.	2.25	250	87	3	19.5	3
24	2nd Det.	2.25	105	75	6	22	.1
47	Audio	2.25	245	255	1	.....	.....
80	Rectifier	4.7	.....	.....	.....	.....	40/plate

Note—Volume Control Off; Station Selector turned to Low Frequency End.

MODEL 70,70-A
 Chassis- Data
 MODEL 570
 Grandfather Clock

PHILCO RADIO & TELEVISION CORP.

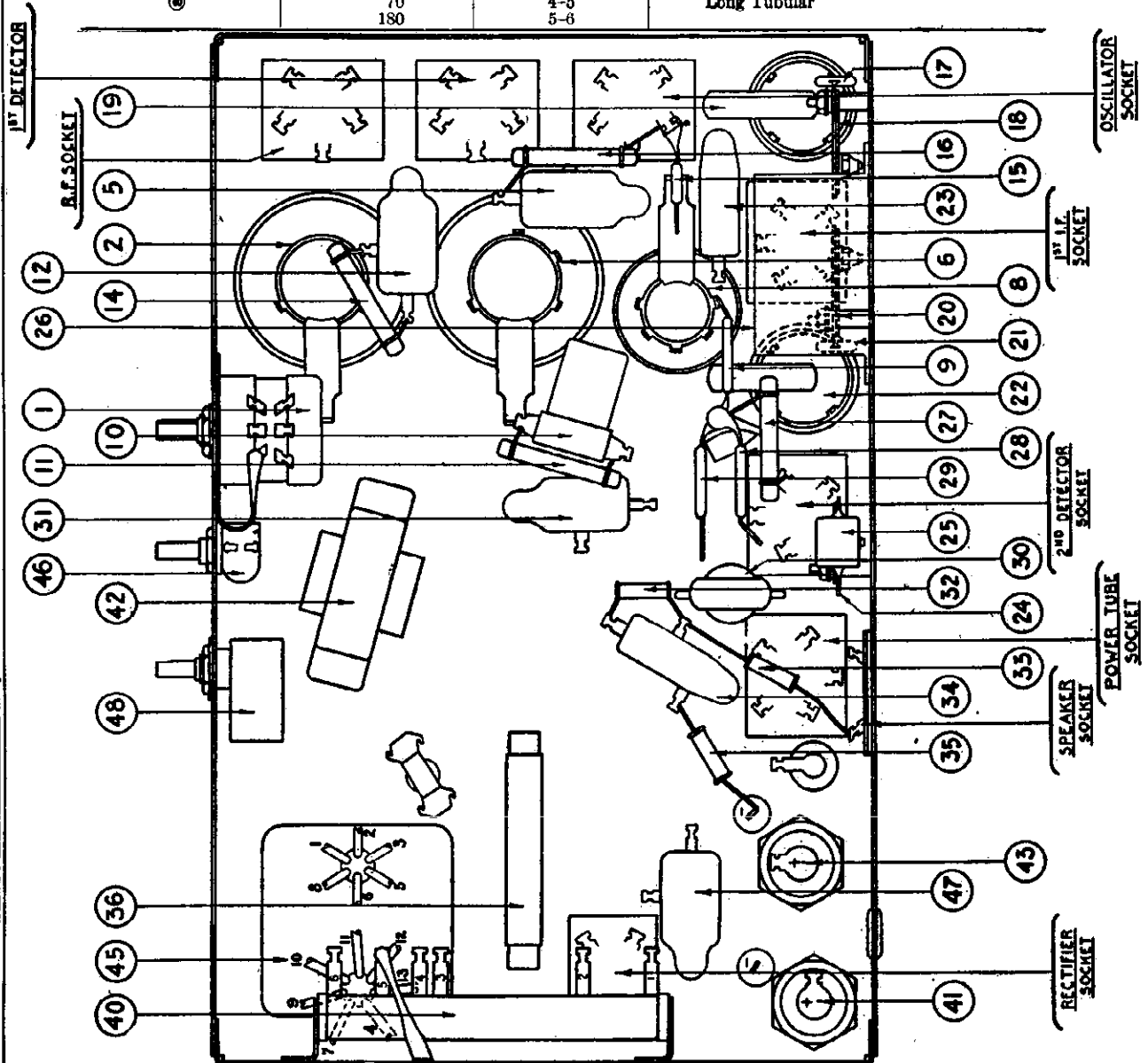
No. on Figs. 3 and 4	Capacity MFD	Color
19	.09	Yellow Orange
21	.00041	Blue, Golden Yellow
22	.09	Light Blue, White
23	.00011	Green
24	.05	Yellow
25	.00005	
26	.5	
27	.0005	
28	.00025	
29	.00 and 250 Ohm Resistor	
30	.01	
31	.25	
32	(25 to 40 cycles) 10.	
33	(50 to 60 cycles) 6.	
34	6.	

Condenser Data

No. on Figs. 3 and 4	Resistance	Terminal	Body	Color Tip	Dot
19	50,000	...	Green	Brown	Orange
21	5,000	...	Green	Black	Red
22	13,000	...	Brown	Orange	Orange
23	250,000	...	Red	Yellow	Yellow
24	100,000	...	White	White	Orange
25	1,060	1-2			
26	2,300	2-3			
27	70	4-5			
28	180	5-6			

Resistor Data

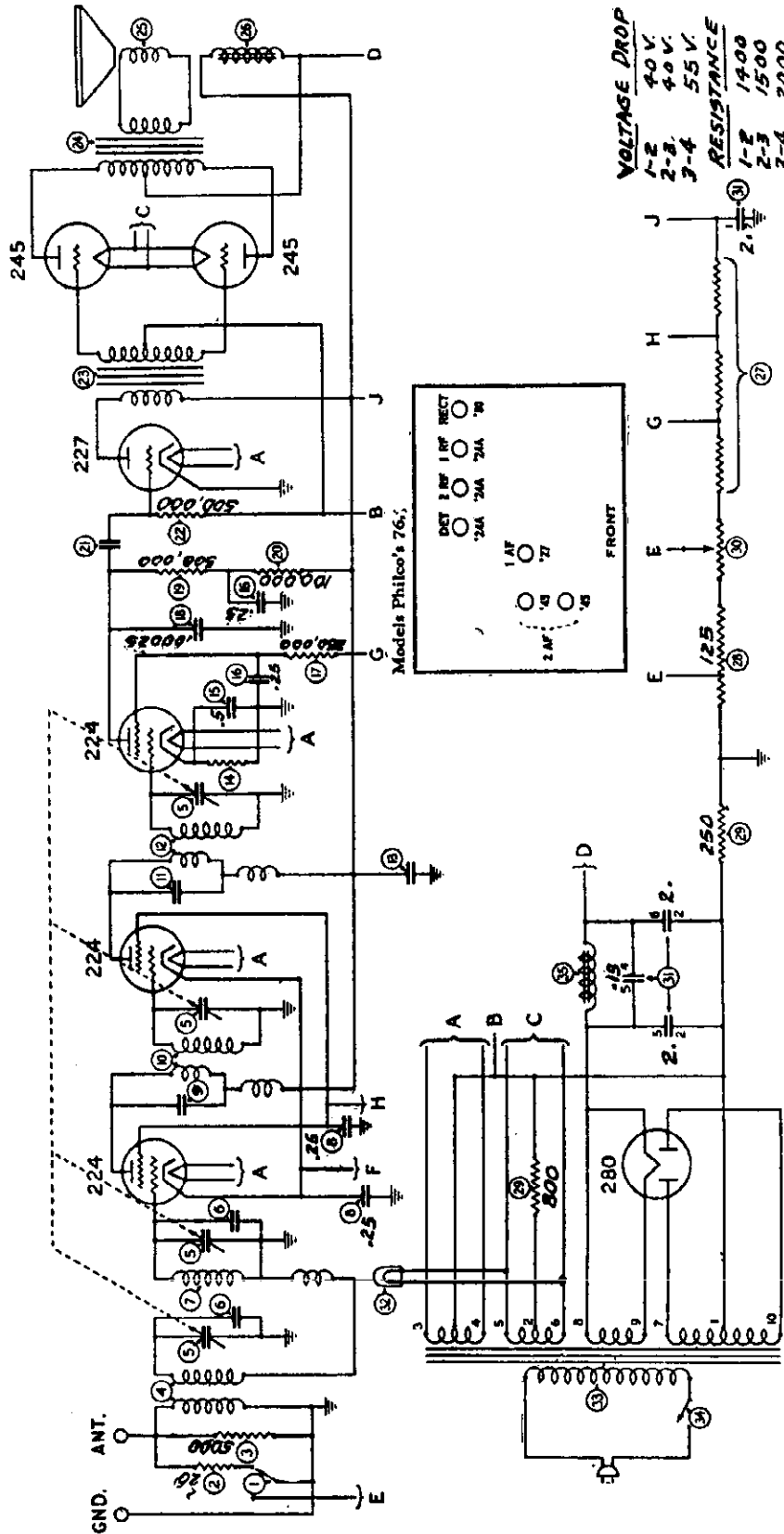
Long Tubular



PHILCO RADIO & TELEVISION CORP.

MODEL 76

Philco Model 76



Power Transformer Voltages

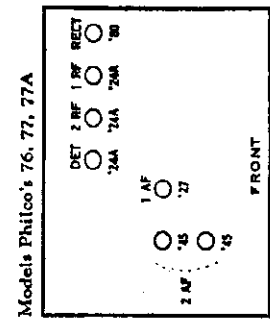
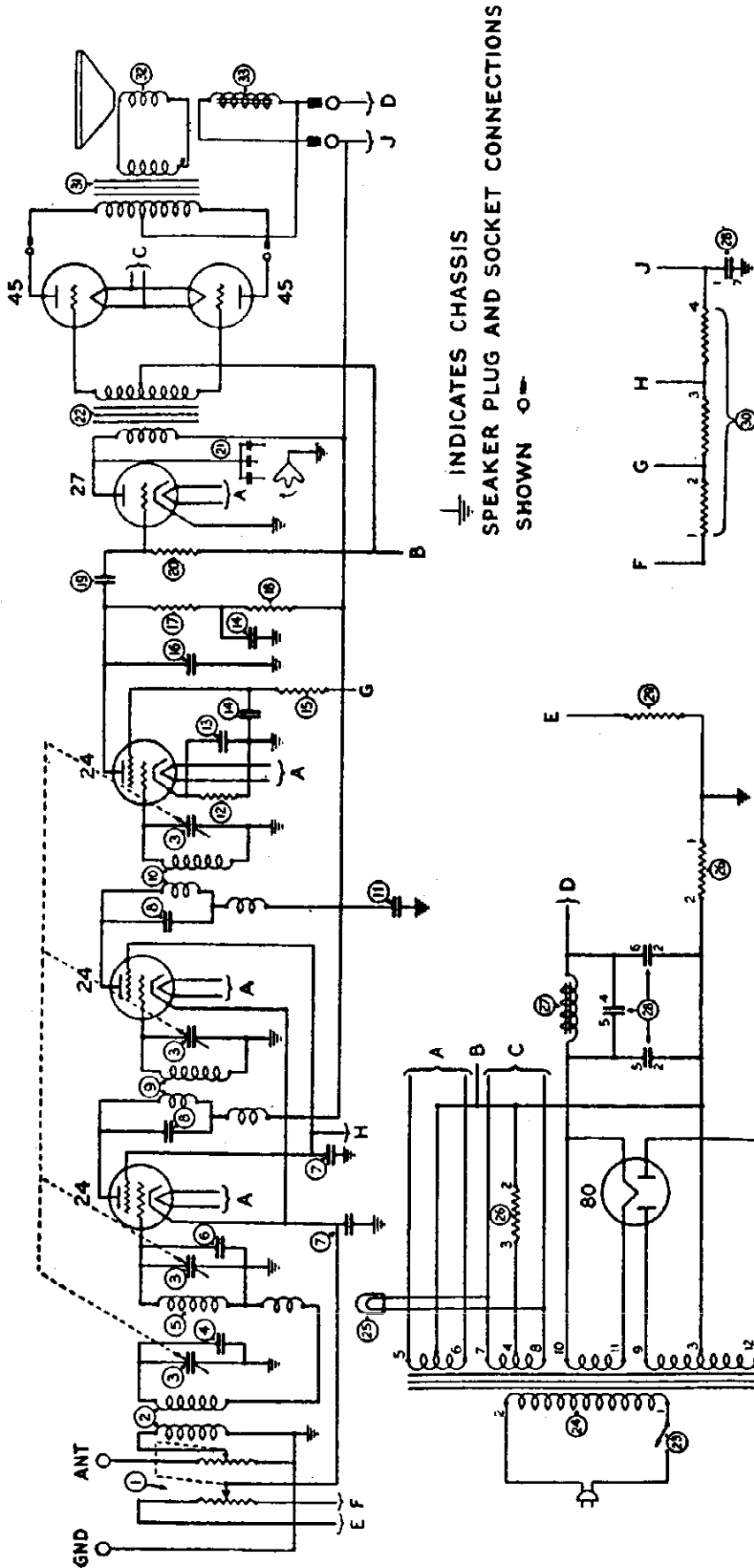
TERMINALS	A.C. VOLTS	SECONDARY
1		Center Tap for 280 Tube
2	2.67	Center Tap for 245 Tubes
3-4	2.68	Heaters of 224 and 227 Tubes
5-6	5.00	Filaments of 245 Tubes
8-9	7.50	Filament of 280 Tube
7-10		Plate of 280 Tube
Red Wire		Center Tap for 224 and 227 Tubes
Red Wire		Primary
Red Wire		Primary } Through panel together

Model 76.

Vol. Contr. set to max. - Line Volts: 115			
Tube	Location	Plate S.G. Volts	Cathode Plate Ma.
224	1 R.F.	2.3	3.5
224	2 R.F.	2.3	3.5
224	Det.	2.3	0.
227	1 A.F.	2.3	3.
245	2 A.F.	2.2	30
245	2 A.F.	2.2	30
280	Rect.	4.5	50

PHILCO RADIO & TELEVISION CORP.

MODEL 77, 77-A
Schematic



COMPENSATING

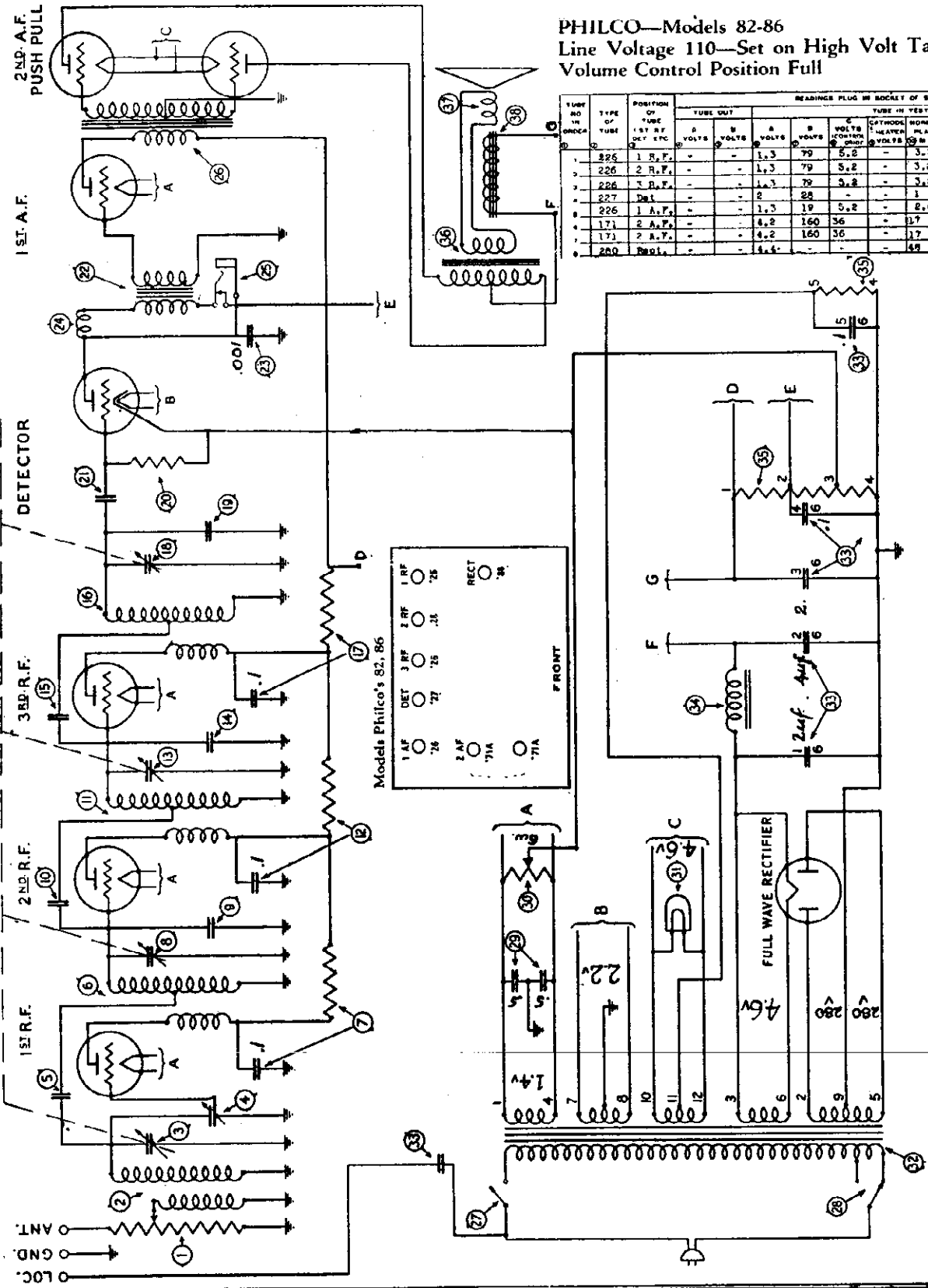
Always use an oscillator signal when adjusting compensating condensers. With the Receiver set up for operation, adjust the oscillator and Receiver so the signal is turned in between 120 and 140 on the tuning scale. Have the Receiver volume control turned on full. Adjust the oscillator so that the received signal is very weak. Using a fibre wrench turn down on the adjusting nut of the first compensating condenser until it is quite tight. This purposely throws the first stage out of balance while adjusting the second stage.

After tightening this first adjusting nut compensate the second condenser in the usual manner, that is, tune the Receiver very carefully to the oscillator signal and adjust the compensating condenser for the maximum signal. After this adjustment has been made, adjust the first compensating condenser in the same manner.

MODEL 82,86

PHILCO RADIO & TELEVISION CORP.

PHILCO—Models 82-86
Line Voltage 110—Set on High Volt Tap
Volume Control Position Full

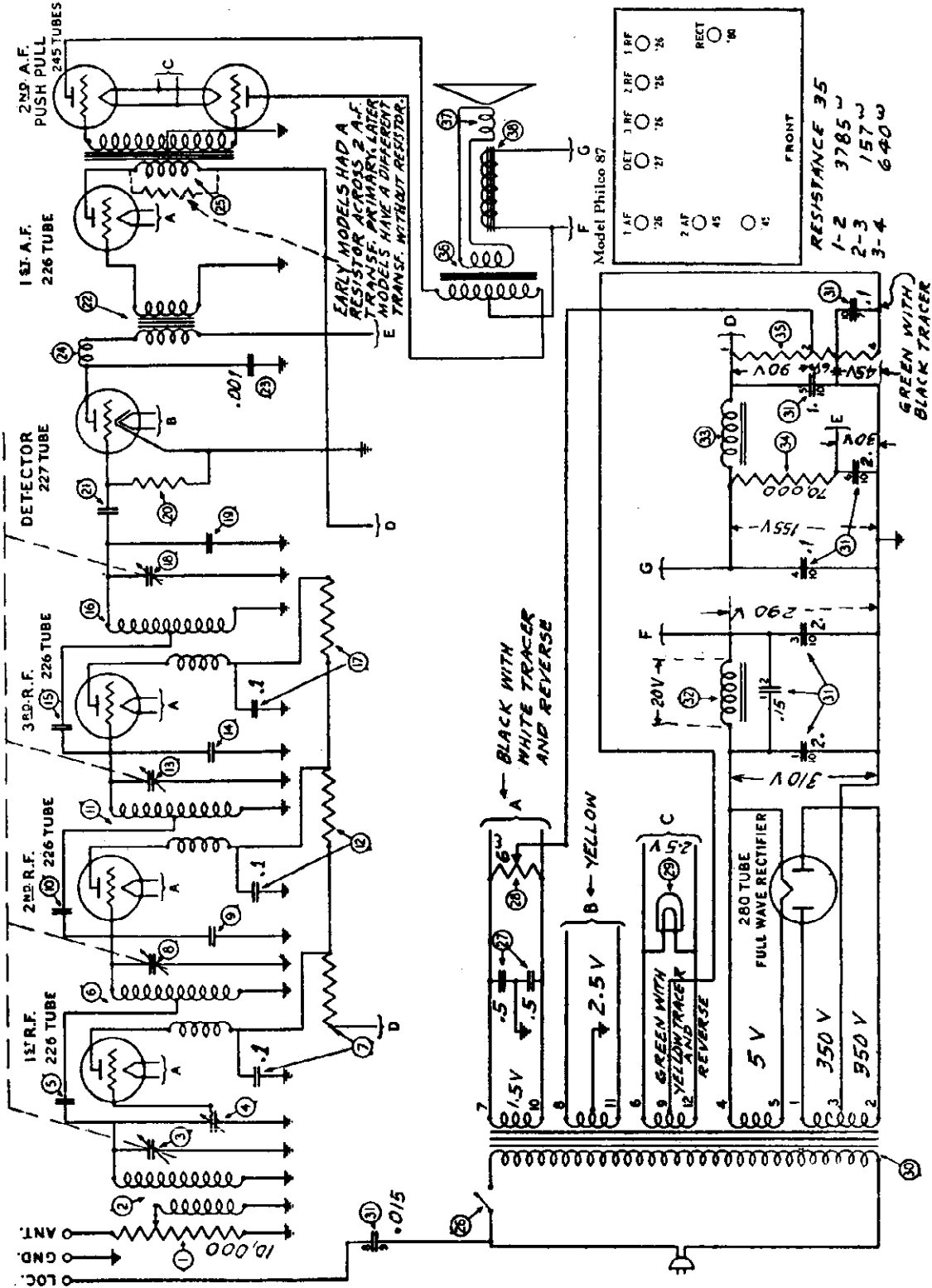


TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION OF TUBE DET. ETC.	TUBE OUT					TUBE IN SOCKET			
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS COMMON CHARGE	GRID LEAKAGE VOLTS	NOMINAL PLATE MA	PLATE MA TEST	PLATE CHANGE M.A.
1	226	1 R.F.	-	-	1.3	79	5.2	-	3.2	5	2
2	226	2 R.F.	-	-	1.3	79	5.2	-	3.2	5	2
3	226	3 R.F.	-	-	2	88	-	-	1	-	-
4	227	DET	-	-	1.5	19	5.2	-	2.6	6	3.4
5	226	1 A.F.	-	-	4.2	160	36	-	17	20	3
6	171	2 A.F.	-	-	4.2	160	36	-	17	20	3
7	250	500V	-	-	4.5	-	-	-	48	-	-

PHILCO RADIO & TELEVISION CORP.

MODEL 87
Schematic
Socket

Philco Model 87



PHILCO RADIO & TELEVISION CORP.

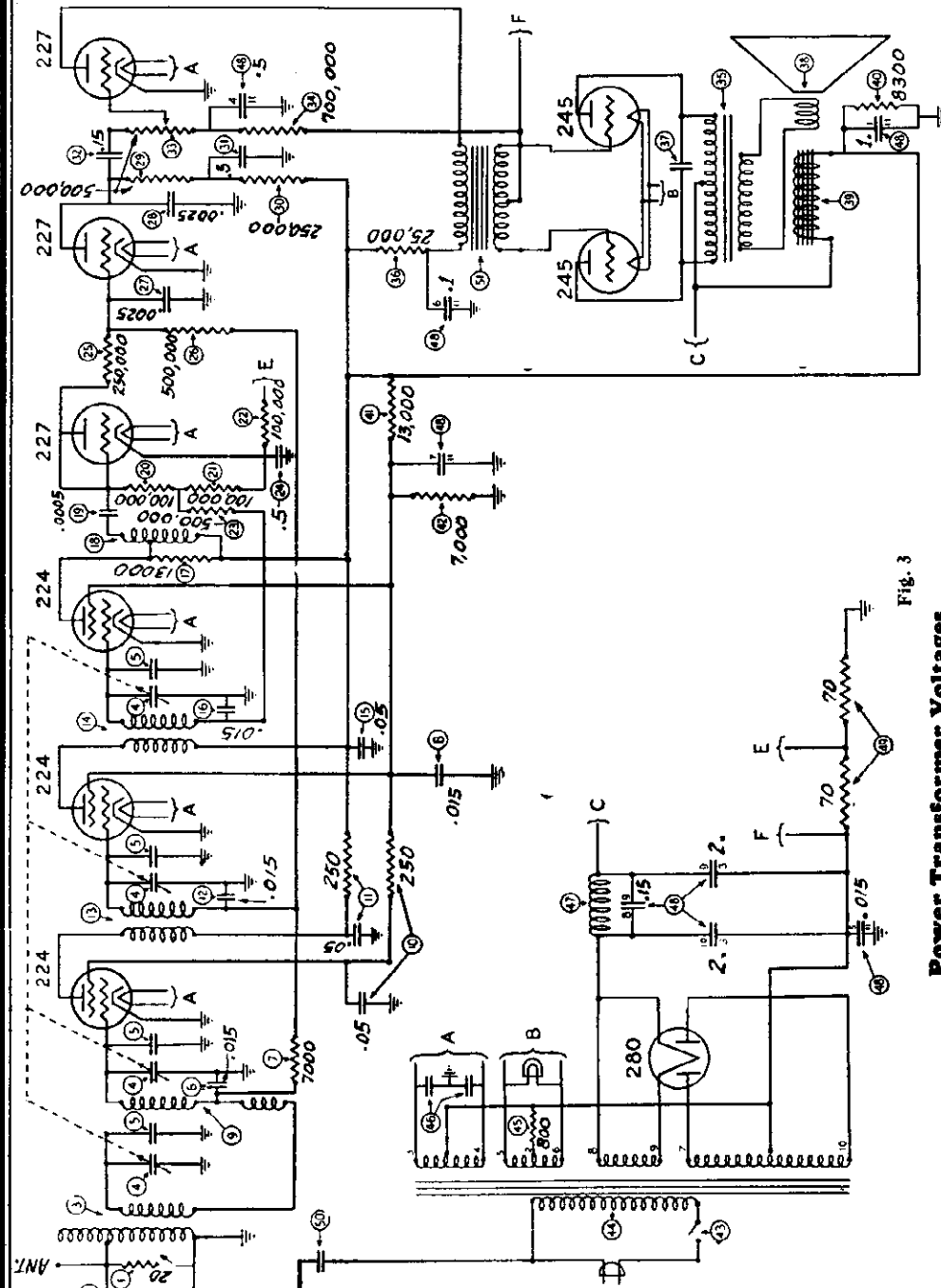


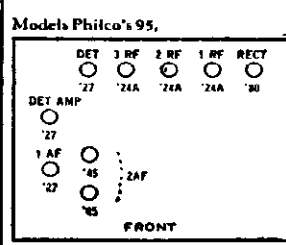
Fig. 3

Power Transformer Voltages

TERMINALS	A.C. VOLTS	SECONDARY
3-4	2.67	Heaters of 224 and 227 Tubes
5-6	2.68	Filaments of 245 Tubes
2	5.00	Center Tap for 245 Tubes
8-9	7.50	Filament of 280 Tube
7-10		Plate of 280 Tube
1		Center Tap for 280 Tube
		Center Tap for 224 and 227 Tubes
		Primary
		Primary

Voltages Read with A.C. Set Tester. A.C. Line 115 Volts.

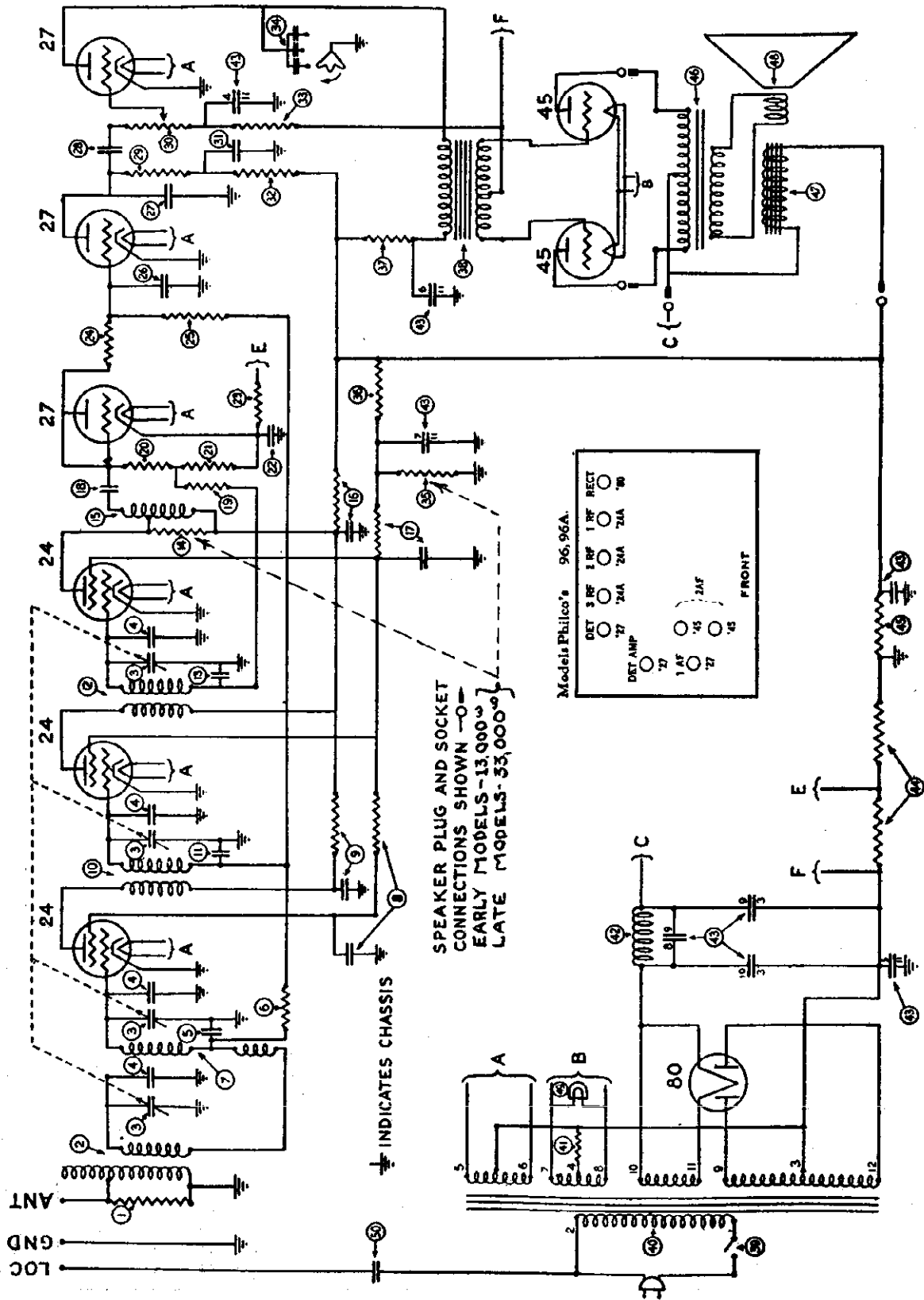
TUBE	TYPE	CIRCUIT	FILAMENT VOLTS	PLATE VOLTS	SCREEN GRID VOLTS	CONTROL GRID VOLTS	CATHODE VOLTS	PLATE MILLI-AMPERE
280		Rectifier	4.5					43/Plate
224		1st R. F.	2.15	155	95	0	5.3	4
224		2d R. F.	2.15	155	95	0	5.3	4
224		3d R. F.	2.15	155	95	0	5.3	4
227		Det.	2.15	0		-.5	.7	0
227		Det. Amp.	2.15	27		-.5	5.5	0
227		1st A. F.	2.15	85		-2.0*	5.5	2.5
245		2d A. F.	2.2	250		41		28
245		2d A. F.	2.2	250		41		28



*This is read with Volume Control off. With it on the reading will be .2 volt.

PHILCO RADIO & TELEVISION CORP.

MODEL 96,96-A
Schematic



PHILCO RADIO & TELEVISION CORP.

MODEL 112, 112-A
Below 174,001
Voltage
Electrical Values

Models 112 and 112-A Receivers

Model 112 Receivers are for operation on 100-130 volt, 50-60 cycle AC lines
Model 112-A Receivers are for operation on 100-130 volt, 25-60 cycle AC lines

Table 1—Tube Socket Readings Taken with AC Set Tester AC Line—115 volts

Tube		Filament Volts	Plate Volts	Screen Grid Volts*	Control Grid Volts	Cathode Volts	Plate Milli-Amperes	Screen-Grid Milli-Amperes †
Type	Circuit							
24	1st R. F.	2.1	190	60	.2	5	1.7	1.75
27	Osc.	2.1	45	..	.7	7	1.6	...
24	1st Det.	2.1	180	62	4.6	8	.5 ‡	.15
24	1st I. F.	2.1	185	65	...	5	1.5	1.7
24	2nd I. F.	2.1	190	82	2.2	5	3	1.85
27	Det. Rect.	2.2	...	..	.4	.5	.....	....
27	Det. Amp.	2.2	35	..	.4	5	.20 ‡	....
27	1st A. F.	2.1	95	..	1.2	5	4	....
45	2nd A. F.	2.2	255	..	50	...	32.5	....
45	2nd A. F.	2.2	255	..	50	...	32.5	....
80	Rect.	4.9	...	..	...	...	50/Plate	....

*Read with C 100 Scale.
†Read with 20 Mil. Scale.
‡Read with 2 Mil. Scale.

Note—Volume Control Off; Station Selector turned to Low Frequency End; Range Switch set in "Normal" Position.

Table 2—Power Transformer Voltages

Terminals	A.C. Volts	
1—2		Primary Center Tap 80 Tube Center Tap 45 Tubes Heaters for 24 and 27 Tubes Filaments for 45 Tubes Plates 80 Tube Filament 80 Tube Center Tap for 24 and 27 Tubes
3		
4		
5—6	2.67	
7—8	2.68	
9—12	750.	
10—11	5.0	
Rubber Covered Lead		

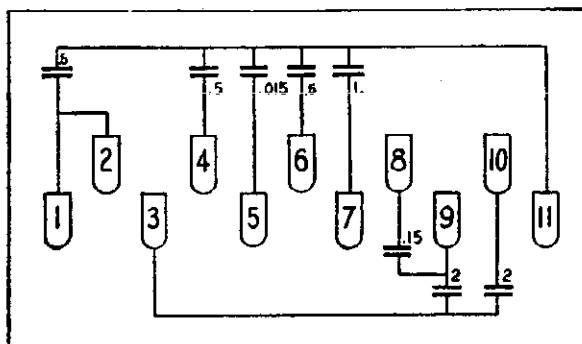
Table 3—Condenser Data
(Other Than Filter Condenser)

No. on Figs.	CAPACITY	COLOR
8	.05	Bakelite Container
10 11	.05 and 250 Ohm Resistor	Bakelite Container
17	.25 (two sections)	Metal Container
19 23 27 33 35	.00011	Blue, Golden Yellow
21	.0007	White, Golden Yellow
26	.05	Bakelite Container
29	.05 and 250 Ohm Resistor	Bakelite Container
38	.00005	Light Blue, White
40	.5	Metal Container
43	.00025	Yellow
44	.015	Bakelite Container
46	.05	Bakelite Container
61	.015 (two sections)	Bakelite Container
67	.05	Bakelite Container

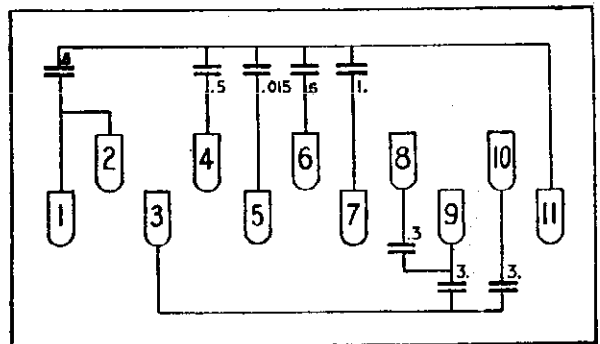
Table 4—Resistor Data

No. on Figs.	Power (Watts)	Resist-ance	Body	COLOR Tip	Dot
20	1.	1,000	Brown	—Black	—Red
1	.5	10,000	Brown	—Black	—Orange
18	1.	13,000	Brown	—Orange	—Orange
31 32	1.	25,000	Red	—Green	—Orange
16 25 29	.5	50,000	Green	—Brown	—Orange
36 37	1.	70,000	Violet	—Black	—Orange
3 41 45 48	.5	100,000	White	—White	—White
42	1.	250,000	Red	—Yellow	—Yellow
54	.5	500,000	Yellow	—White	—Yellow
44	1.	500,000	Yellow	—White	—Yellow
60		70	Flat Wire Wound (two sections)		
50		800	Short Tubular		
57		10,000	Long Tubular		

Model 112 Condenser Block Part No. 3754

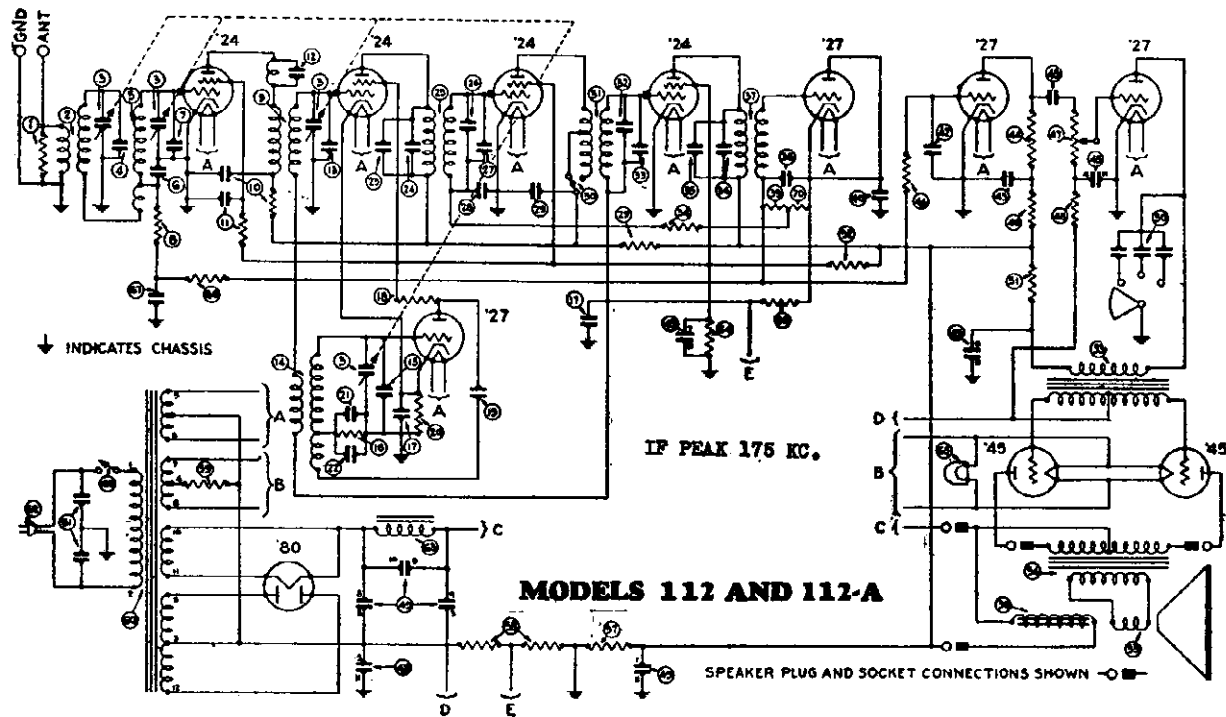


Model 112-A Condenser Block Part No. 3755



PHILCO RADIO & TELEVISION CORP.

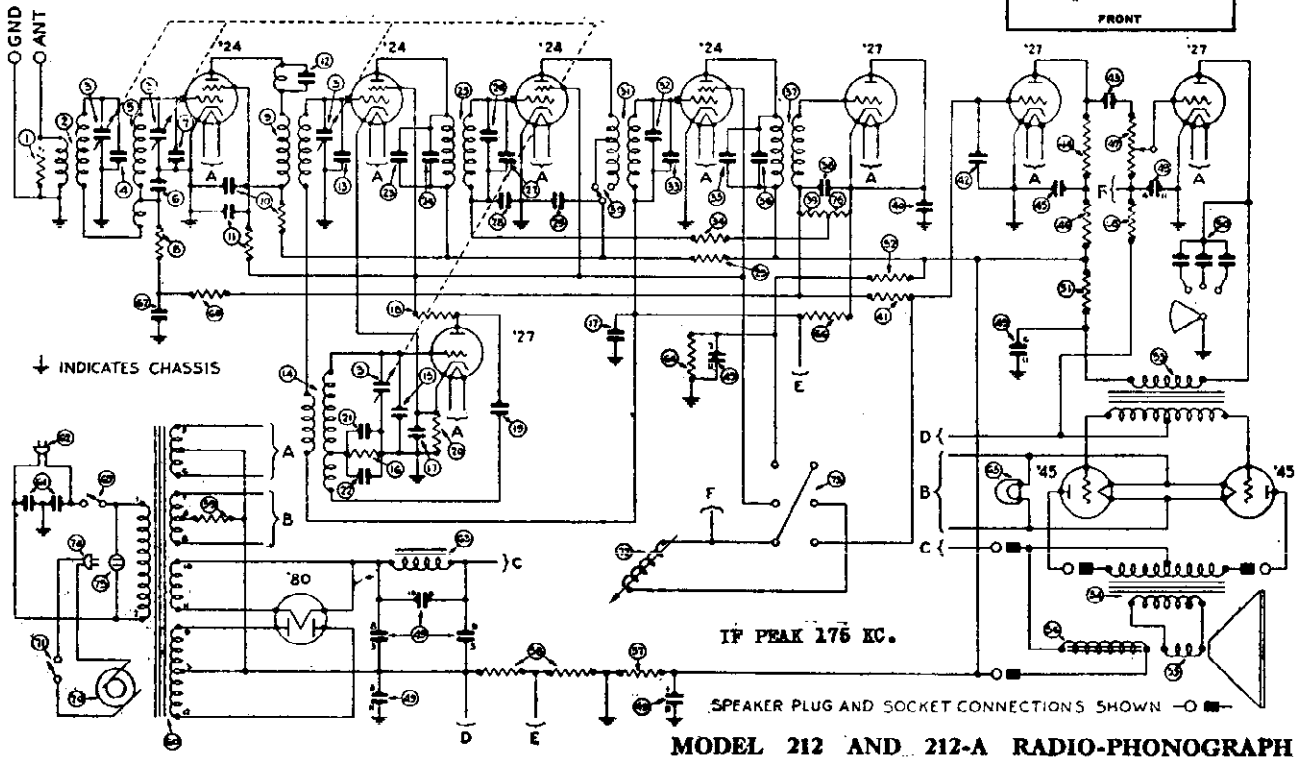
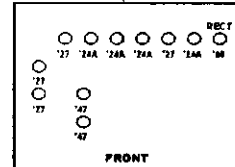
MODEL 112, 112-A
 Below #174,001
 MODEL 212, 212-A
 Schematics



SPECIAL NOTE
 Resistor (70) in models 112, 112-A
 is (76) in models 212, 212-A

For voltage data and other
 values applying to models 212, 212-A, see
 data for models 112, 112-A

Models 112, 112A, 112E, 212, 212E



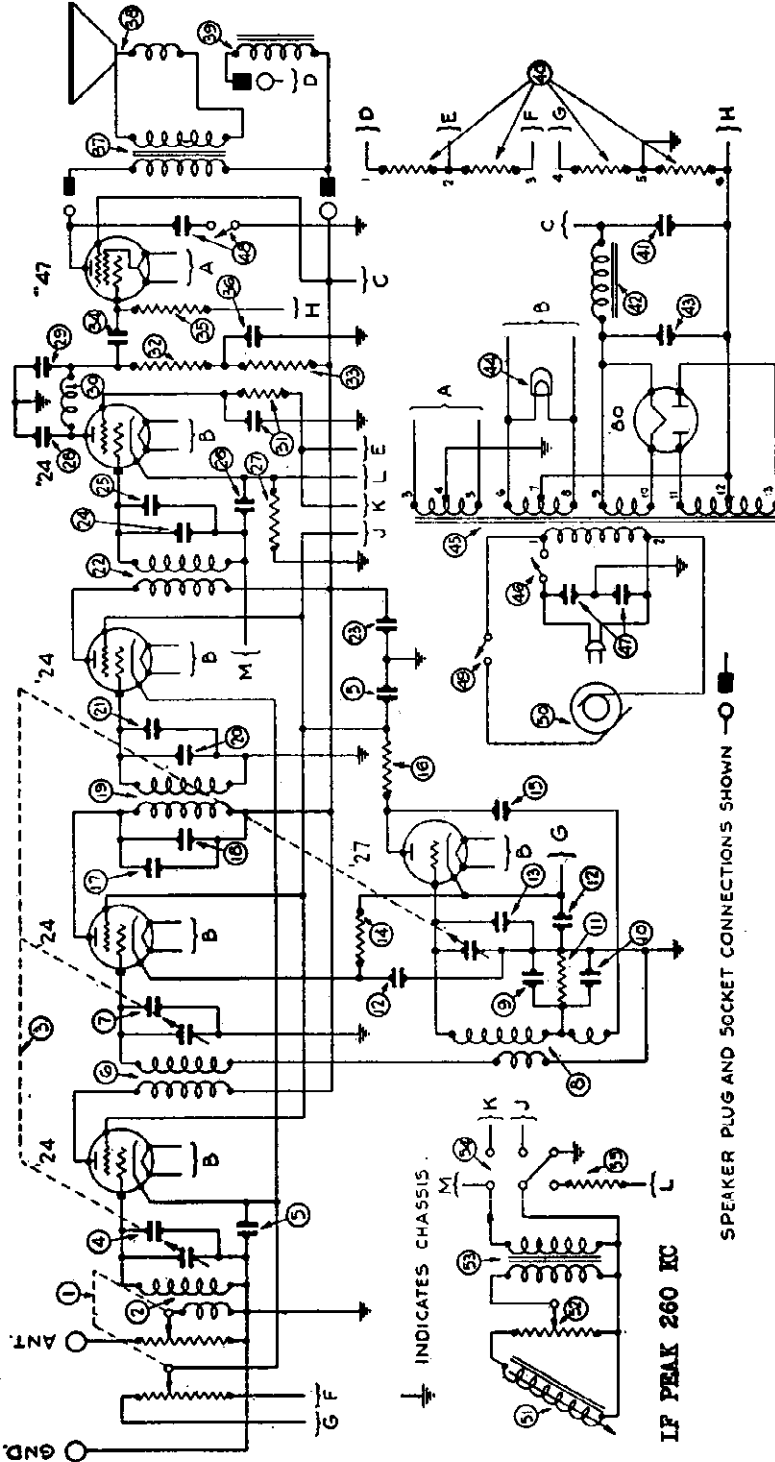
PHILCO RADIO & TELEVISION CORP.

MODEL 270, 270-A
Schematic

MODEL 270 AND 270-A RADIO-PHONOGRAPH

MODEL 70 IS FOR USE ON 50-60 CYCLE 105-125 VOLT AC LINES
MODEL 70-A IS FOR USE ON 25 CYCLE 105-125 VOLT AC LINES

The chassis of the 270 and 270-A are the same as the chassis for the 70 and 70-A except for the additional wiring to the radio-phono switch and the electric turntable and pick-up.



ADDITIONAL PARTS LIST - MODELS 270 AND 270-A

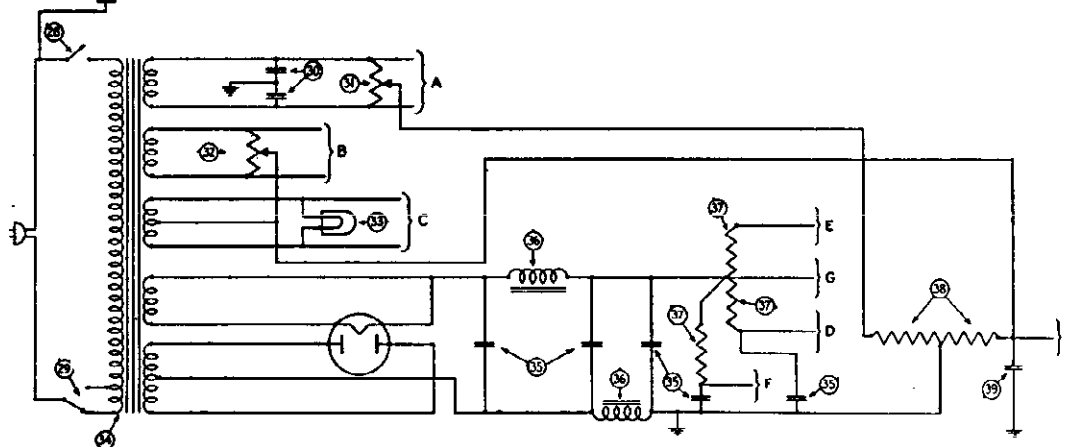
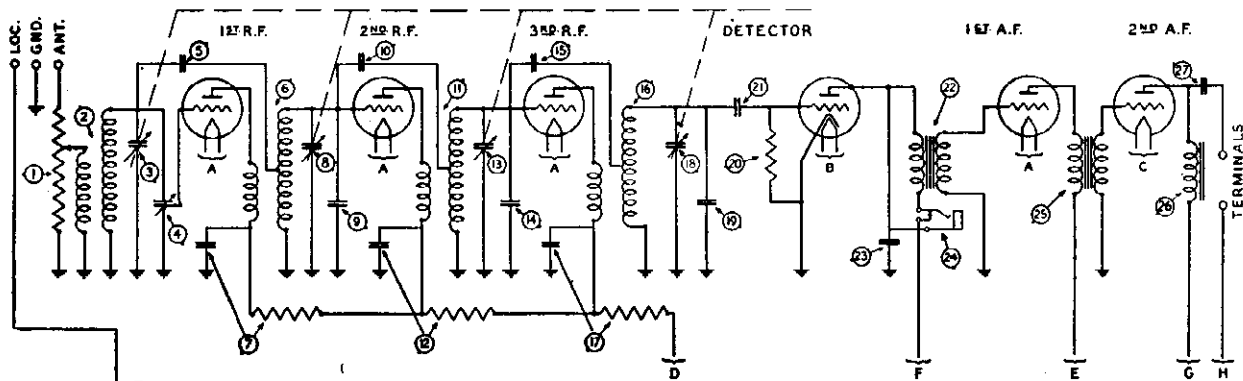
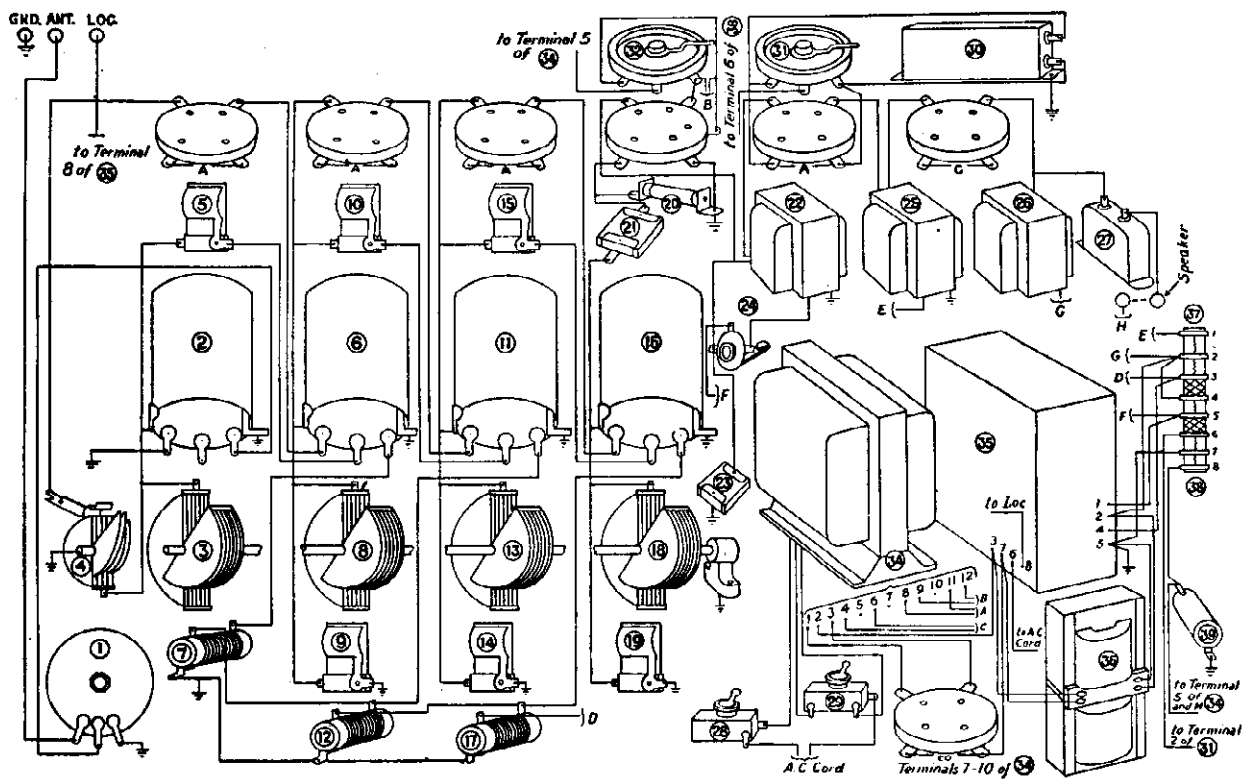
Part No.	Description
1	Switch (for motor) 5168
2	Motor (50 to 60 cycle) 4543
3	Motor (25 cycle) 4561
4	Pick-Up Head 5251
5	Volume Control 5117
6	Pick-Up Coupling Transformer 5167
7	Phono-Radio Switch 5170
8	Resistor (33000 ohms) 3525
9	Turntable 4547
10	Cord Connector Plug 4091
11	Cord Connector Socket 4124
12	Needle Cup 4101
13	Needle Box 4102

In case of audio howl and the shipping screws have been properly loosened, the condition can usually be eliminated by placing a metal tube shield over the detector tube

Do not attempt repair work on the turntable motor. Should this part become defective, replace with another motor and return it to the factory. The pick-up should be handled in the same way. If it doesn't operate properly, - remove the mounting bolt which holds the pick-up head to the tone arm, - replace with another and return it to the factory.
Grease the worm gear of the motor with a clear petroleum jelly or a commercially pure vaseline. In order to oil the bearings of the motor it is necessary to remove the turntable.
There is an oil cup located at the top of the motor board, in which a few drops of light machine oil may be added as needed.

PHILCO RADIO & TELEVISION CORP.

MODEL 500 Series Schematic Chassis



MODEL 296, 296-A

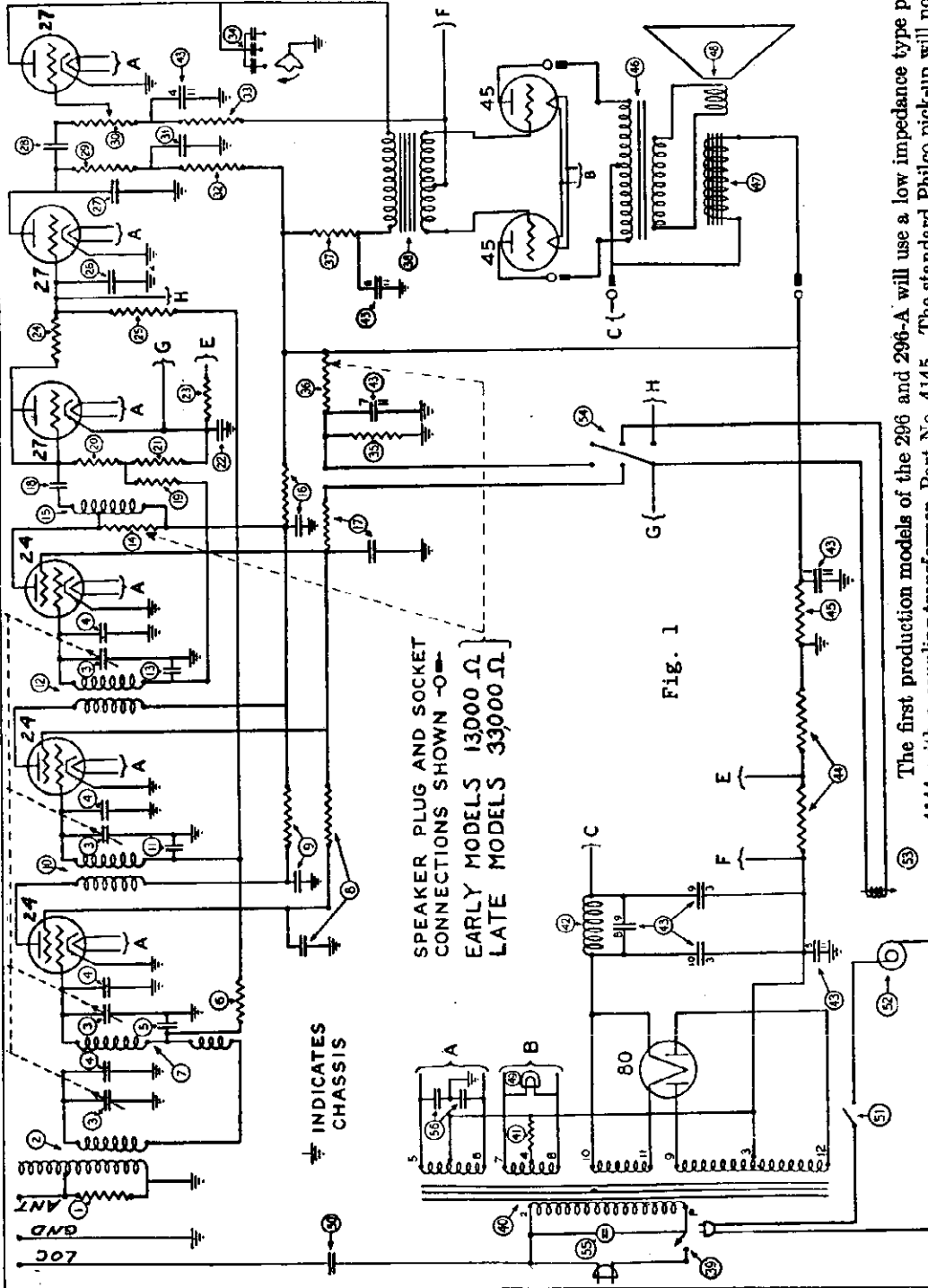
PHILCO RADIO & TELEVISION CORP.

Installation Hints on Model 296 Radio-Phonograph

Cardboard packing is placed between the motor disc and the field coils to protect the disc in shipping. Be sure that this packing is removed before placing in service.

There are three causes for complaints such as "distorted," "fuzzy" or "noisy" reproduction when playing records on the Model 296.

Usually the trouble is caused by the turntable motor board being in contact with the cabinet. It is absolutely necessary that the four bolts holding the motor board in place be loosened when the Model 296 is put into service. Pure gum washers are between the motor board and the cabinet, so that when the bolts are loosened the motor board is freely floating on the gum washers.



The first production models of the 296 and 296-A will use a low impedance type pick-up, Part No. 4144, with a coupling transformer, Part No. 4145. The standard Philco pick-up will not be used for the first few weeks.

Whenever the low impedance type pick-up, Part No. 4144 is used be sure the coupling transformer Part No. 4145 is used also. The transformer, however, must not be used with the standard pick-up.

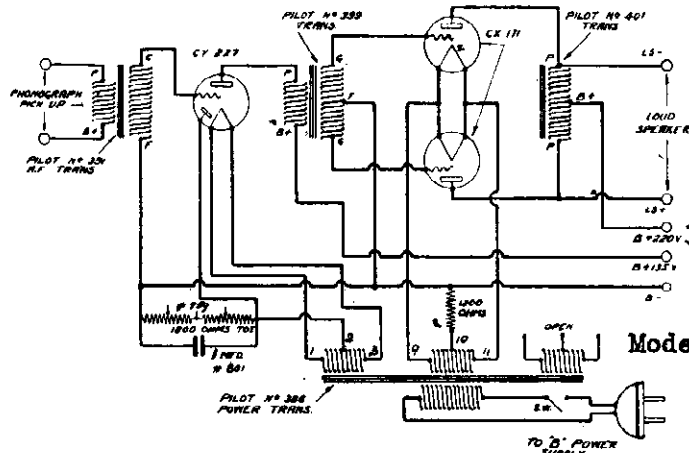
A heater by-pass condenser has been added to the 296 and 296-A chassis. The number in Fig. 1 is 66 and the part number is 3557. This condenser prevents any tendency of the Receiver to oscillate, which may have been noticed on the first few Radio-Phonograph Receivers.

The chassis of the 296 and 296-A are the same as the chassis for the 96 and 96-A except for the additional wiring to the radio-phonograph switch and the electric turntable and pickup.

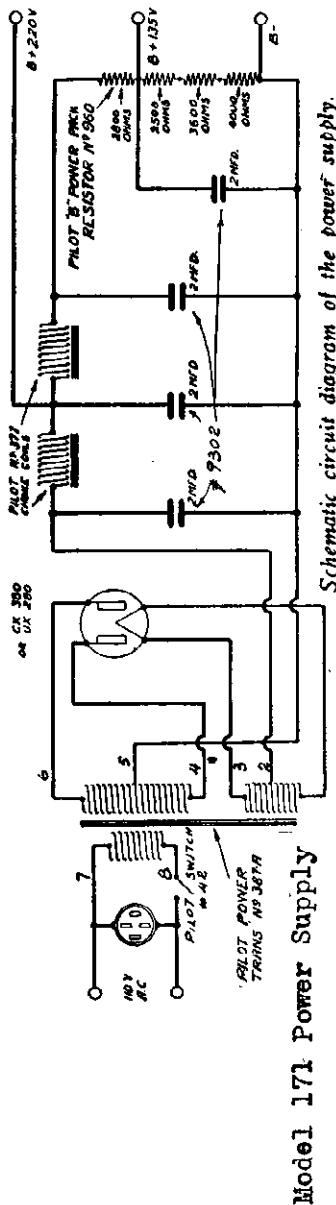
Models Philco's	
296, 296A	
DET	3 RF 2A5
2	RF 2A5
1	RECT 2A5
FRONT	
DET. AMP	2A5
1A5	50
2A5	50
77	50

PILOT RADIO & TUBE CORP.

MODEL "171"
Power Amplifier
MODEL "Pilot"
Public Address
System

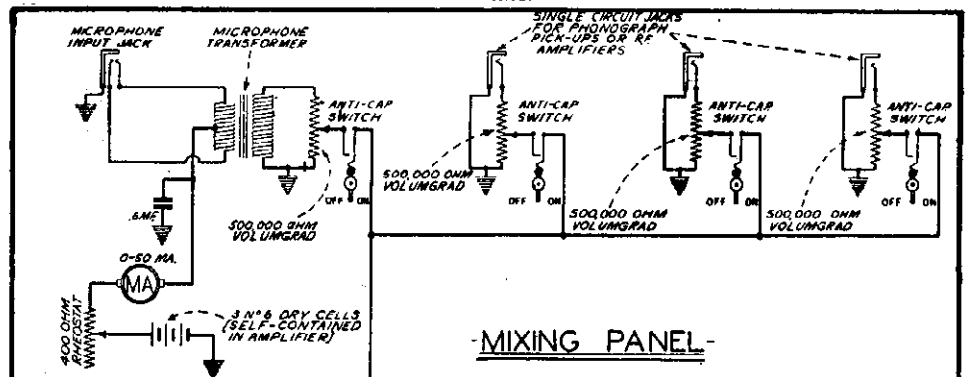


Model 171 Amplifier



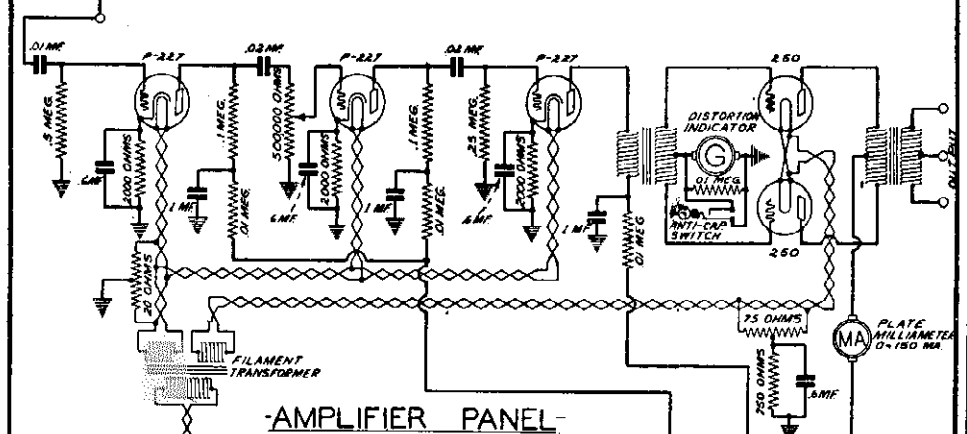
Schematic circuit diagram of the power supply.

Model 171 Power Supply

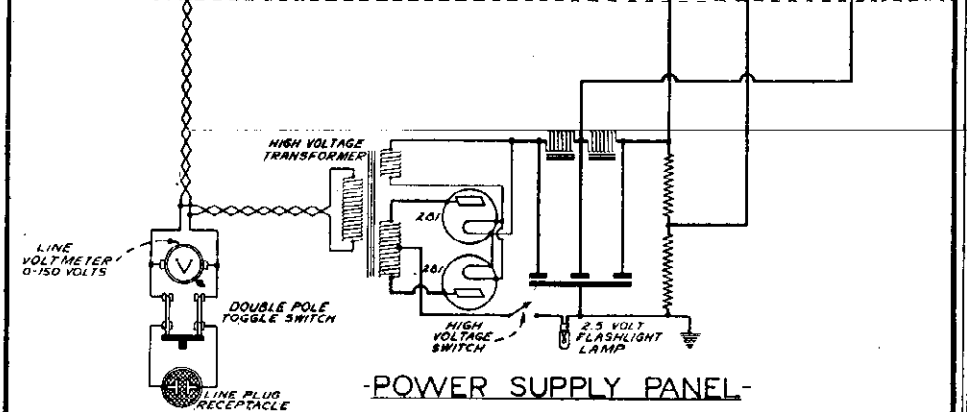


MIXING PANEL

Model "Pilot" Public Address System



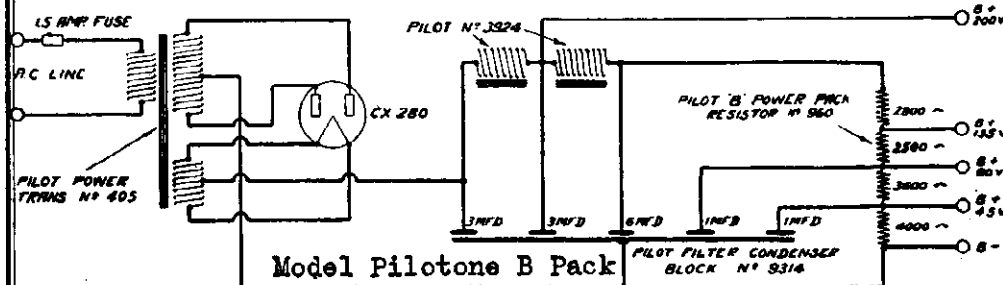
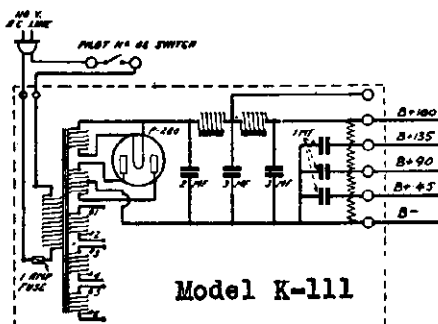
AMPLIFIER PANEL



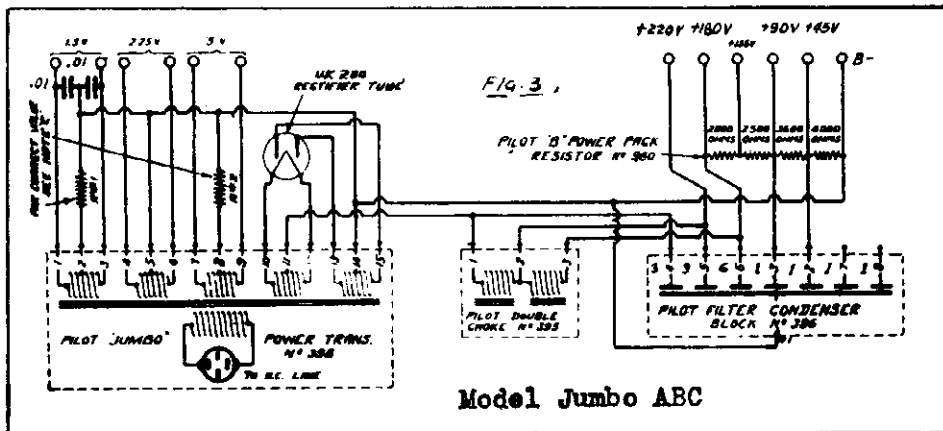
POWER SUPPLY PANEL

MODEL K-111 ABC Pack
 MODEL Pilotone B Pack
 MODEL ABC Pack for SP5
 MODEL Jumbo Power Pack
 MODEL Jumbo ABC

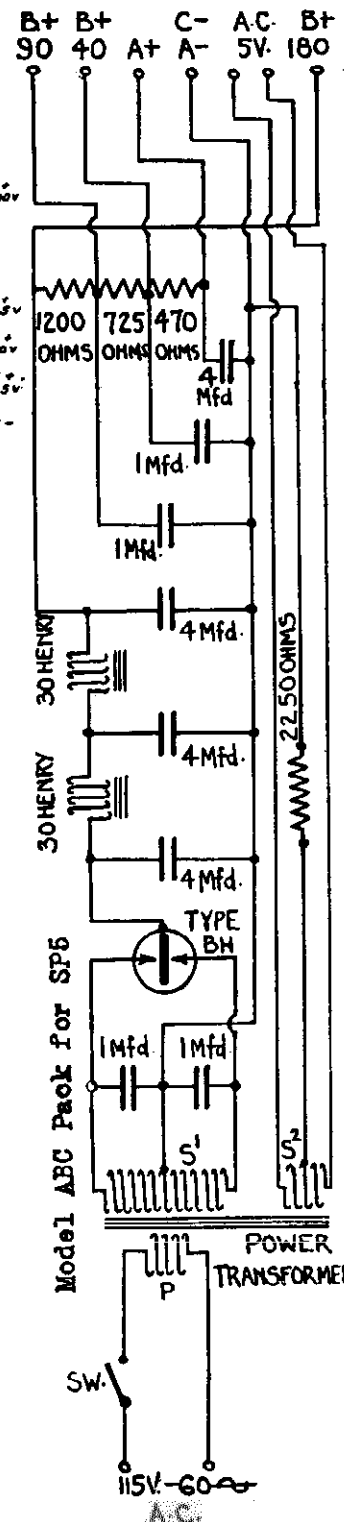
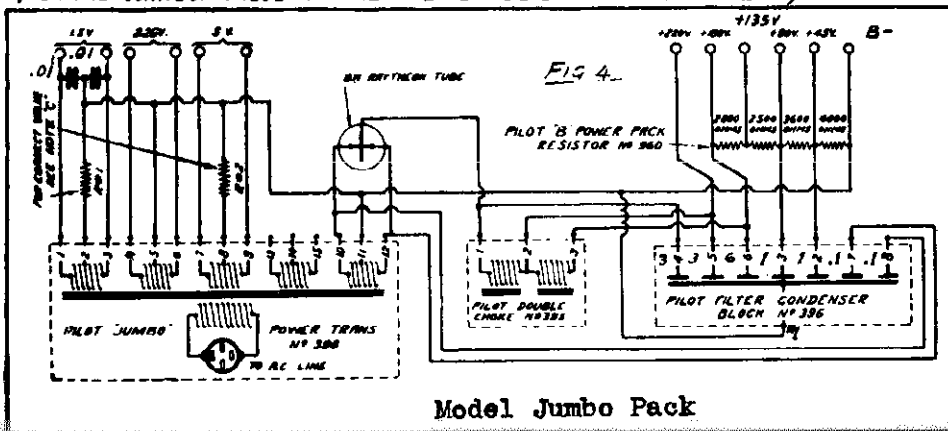
PILOT RADIO & TUBE CORP.



— SCHEMATIC DIAGRAM OF A PILOT 'Jumbo' ABC ELIMINATOR USING THE UX 280 RECTIFIER TUBE FOR THE PLATE SUPPLY —
 (FOR THE CORRECT VALUE OF THE 'C' BIAS RESISTANCE SEE NOTE C)

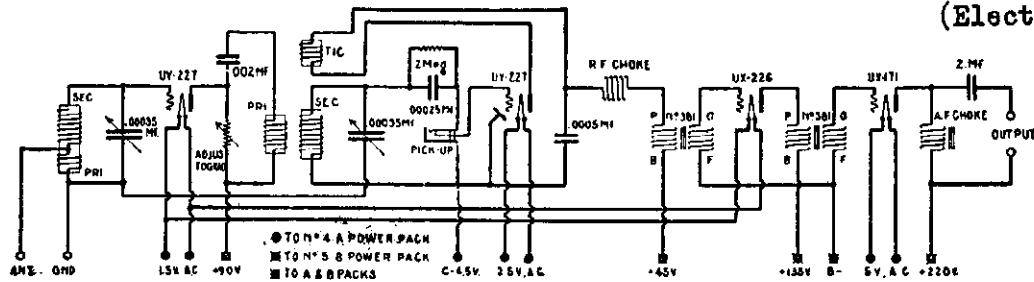


— SCHEMATIC DIAGRAM OF A PILOT 'Jumbo' ABC ELIMINATOR USING THE 6N RAYTHEON GAS RECTIFIER TUBE FOR PLATE SUPPLY —
 (FOR THE CORRECT VALUE OF THE 'C' BIAS RESISTANCE SEE NOTE C)

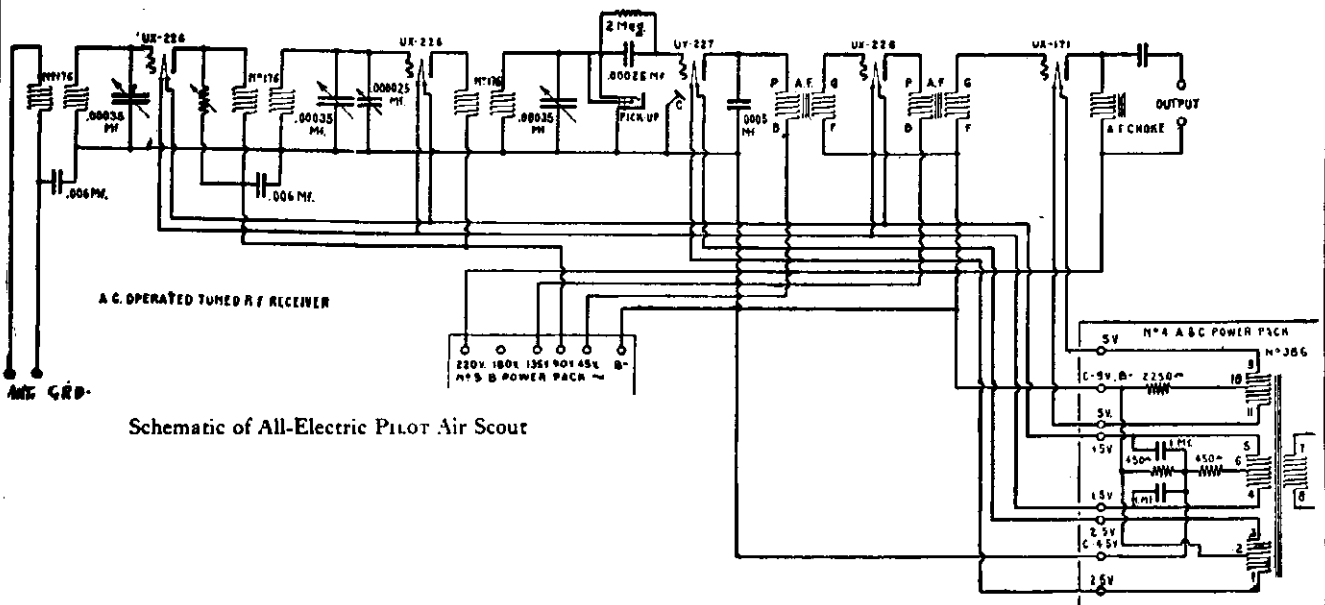


PILOT RADIO & TUBE CORP.

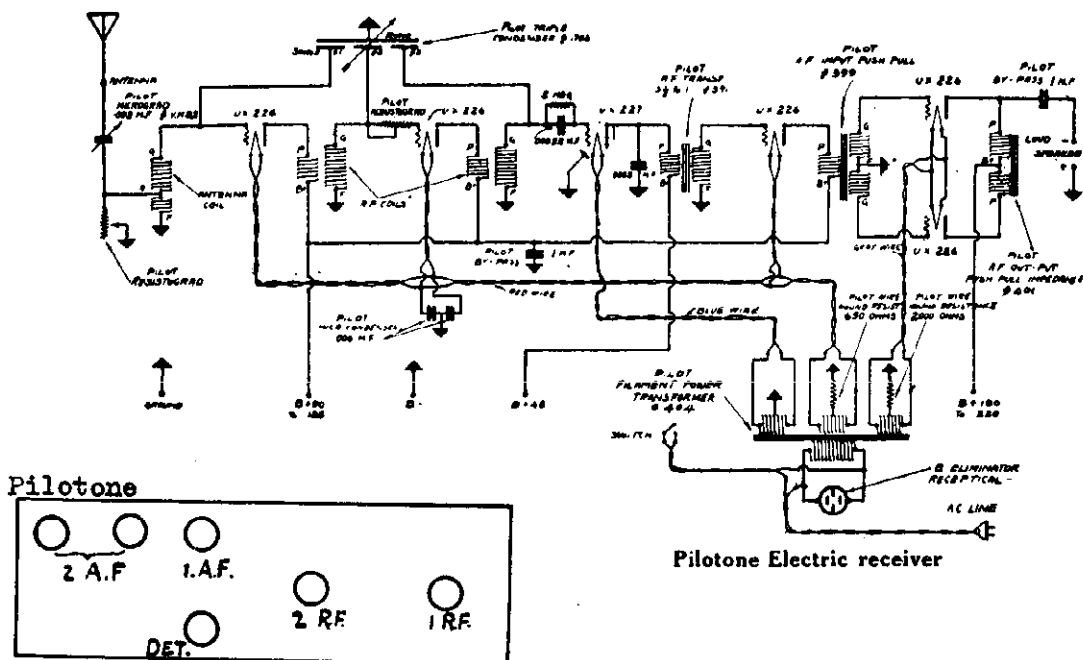
MODEL Air Hound
(All-Electric)
MODEL Air Scout
(All-Electric)
MODEL Pilotone
(Electric)



The Air Hound All-Electric Receiver, One Stage R.F., Detector, Two Stages A.F.



Schematic of All-Electric Pilot Air Scout

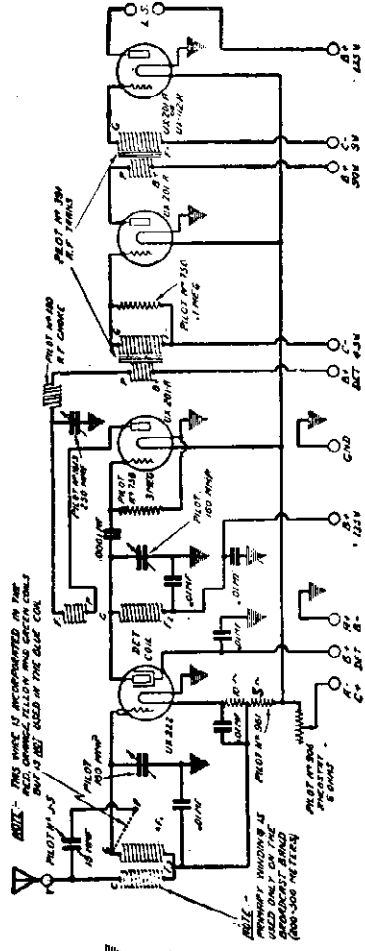


Pilotone Electric receiver

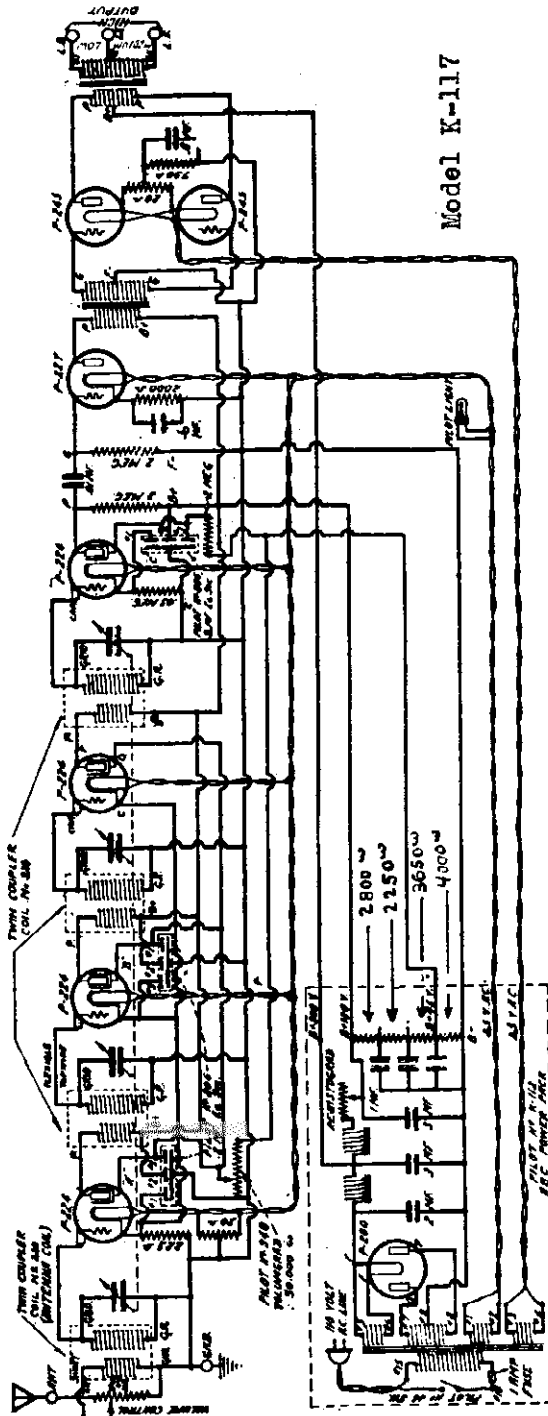
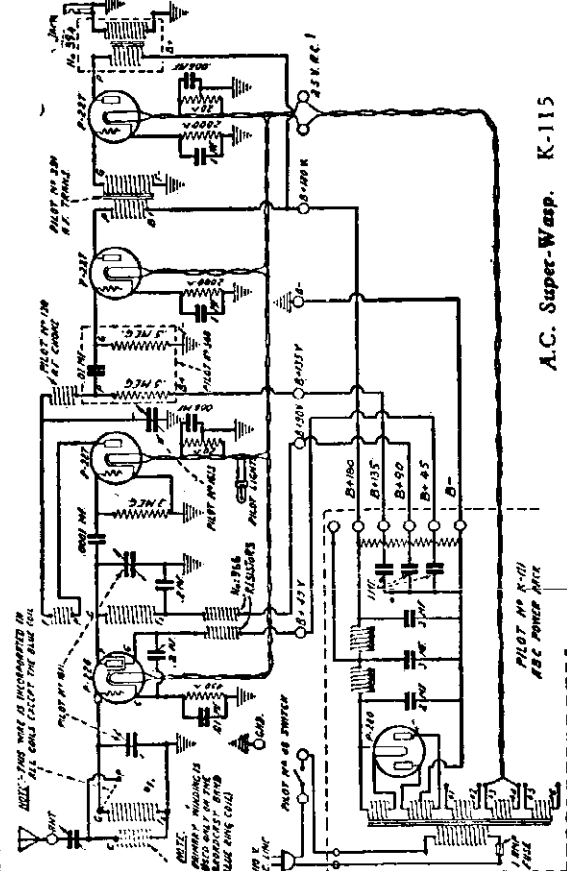
PILOT RADIO & TUBE CORP.

MODEL K-110
 MODEL K-115
 MODEL K-117

PILOT "SUPER-WASP" Battery Model, K-110



A.C. Super-Wasp. K-115
 14-500 Meter Wavelength Range.

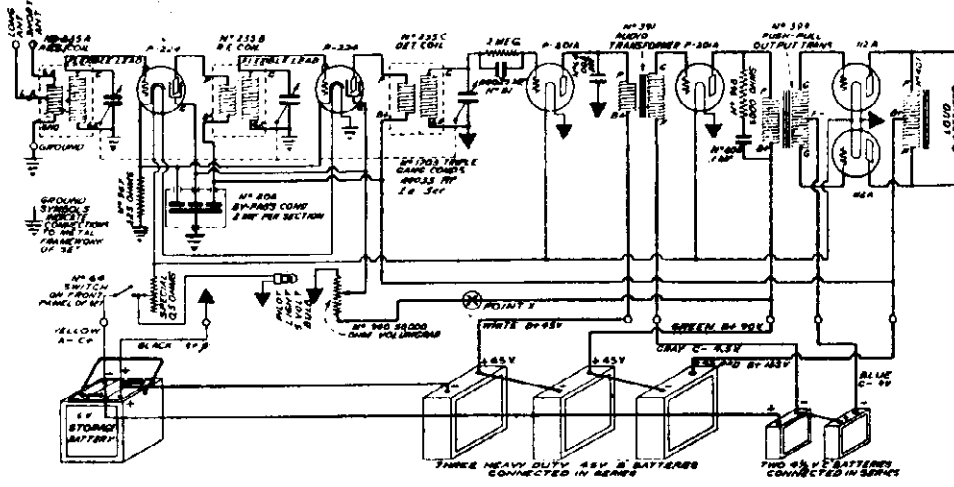


"Pilot Twin Screen - Grid 8"

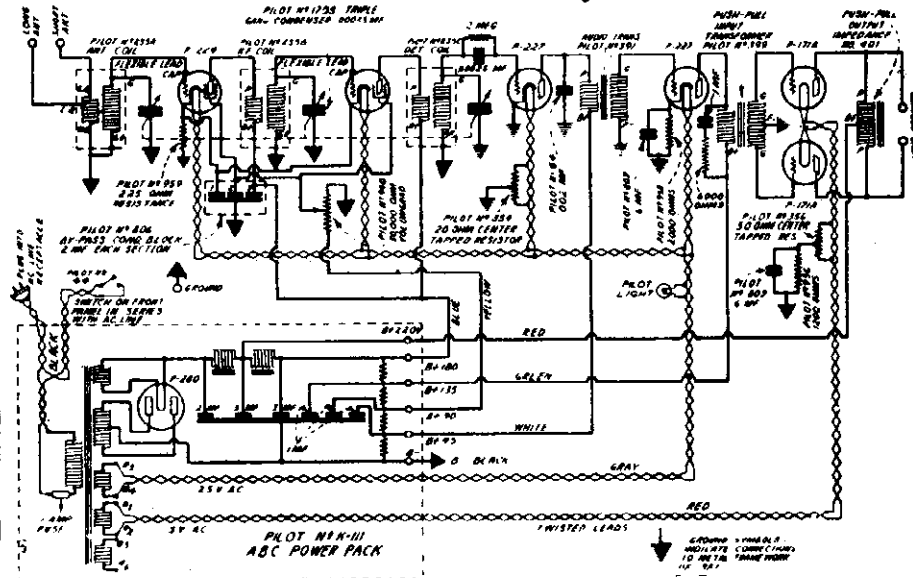
K110		K115	
○ 2AF '01-A	○ 1AF '01-A	○ 2AF '27	○ 1AF '27
○ R.F. '22	○ DET. '01-A	○ R.F. '24	○ DET. '27
FRONT		FRONT	

MODEL K-121, K-121X
 MODEL PE-6 SG, K-122,
 K-123, K-124
 MODEL K-126, K-128

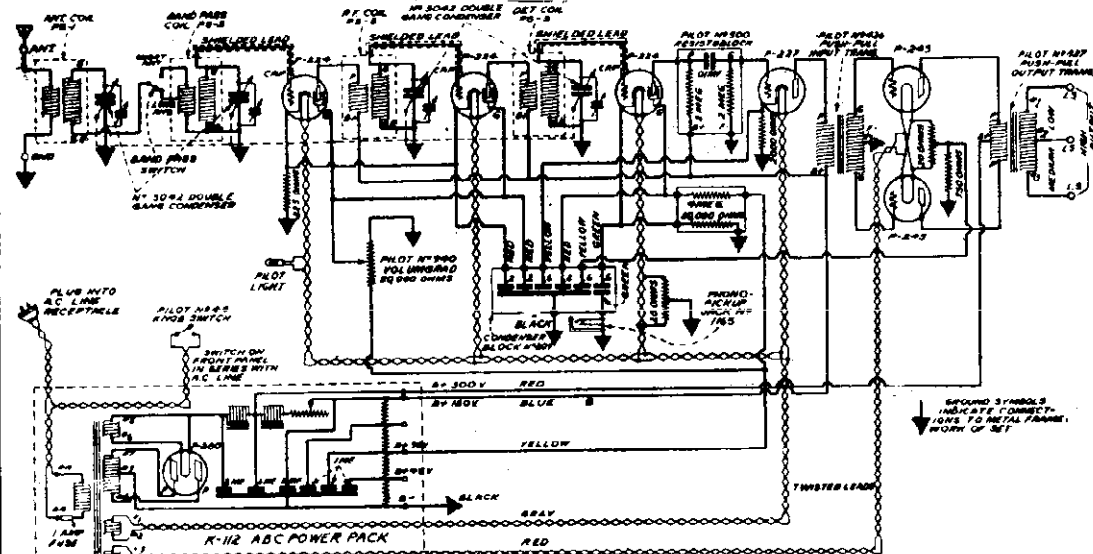
PILOT RADIO & TUBE CORP.



Model K-121, K-121 X



Model PE 6 SG, K-122, K-123, K-124



Model K-126, K-128

COUNTRY SPECIAL

1RF '24 2RF '24

1AF '01-A DET. '01-A

2AF '12-A (FRONT)

1RF '24 2RF '24

1AF '12 DET. '12

2AF. (FRONT)

1AF '27

2AF. '43 DET. '24

RECT. '180 1RF '24 2RF '24 DET. '24

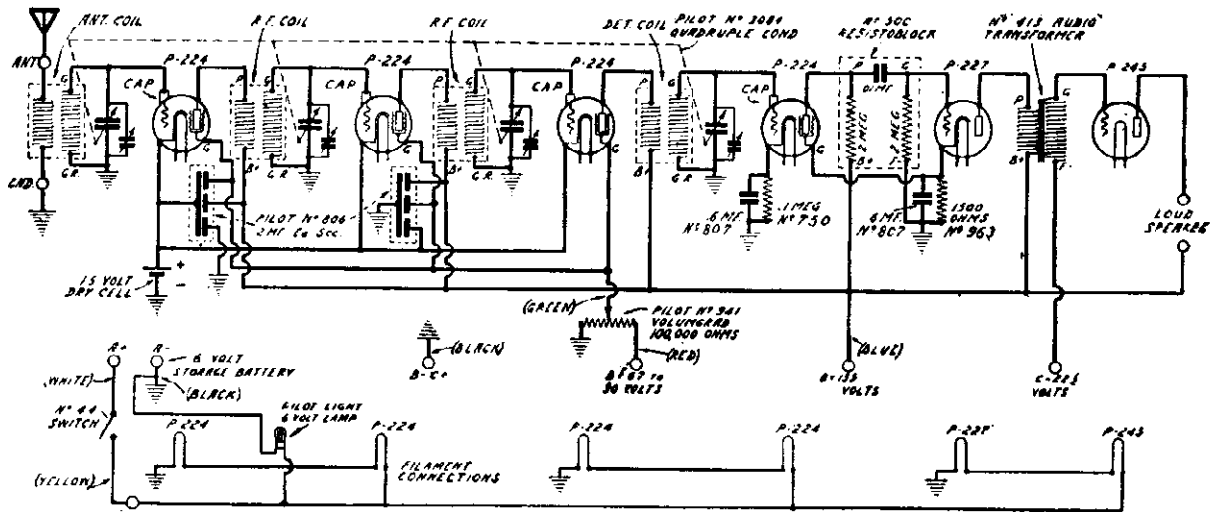
(FRONT)

K 122

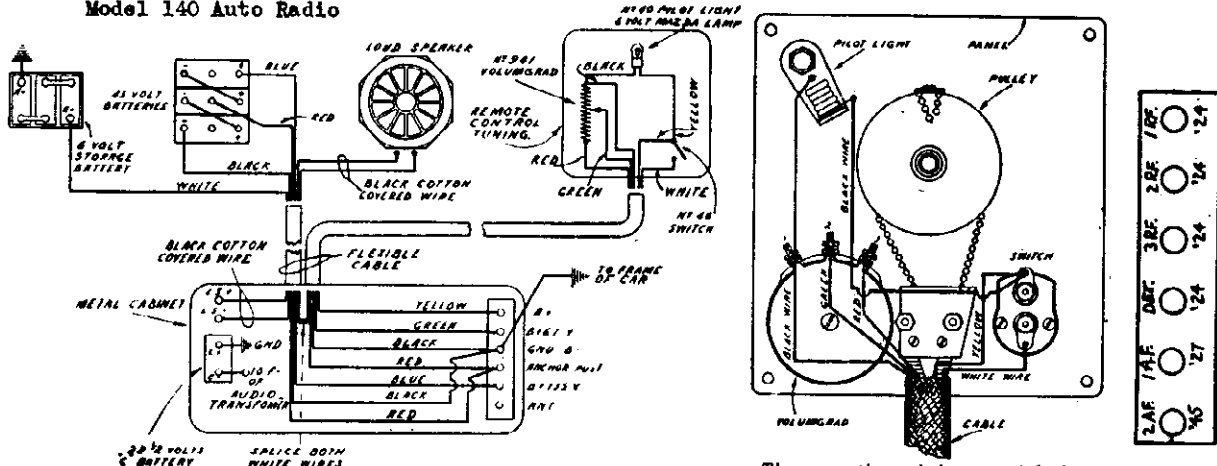
K 126 - K 128

PILOT RADIO & TUBE CORP.

MODEL 140 Auto Radio
MODEL S.W. Converter

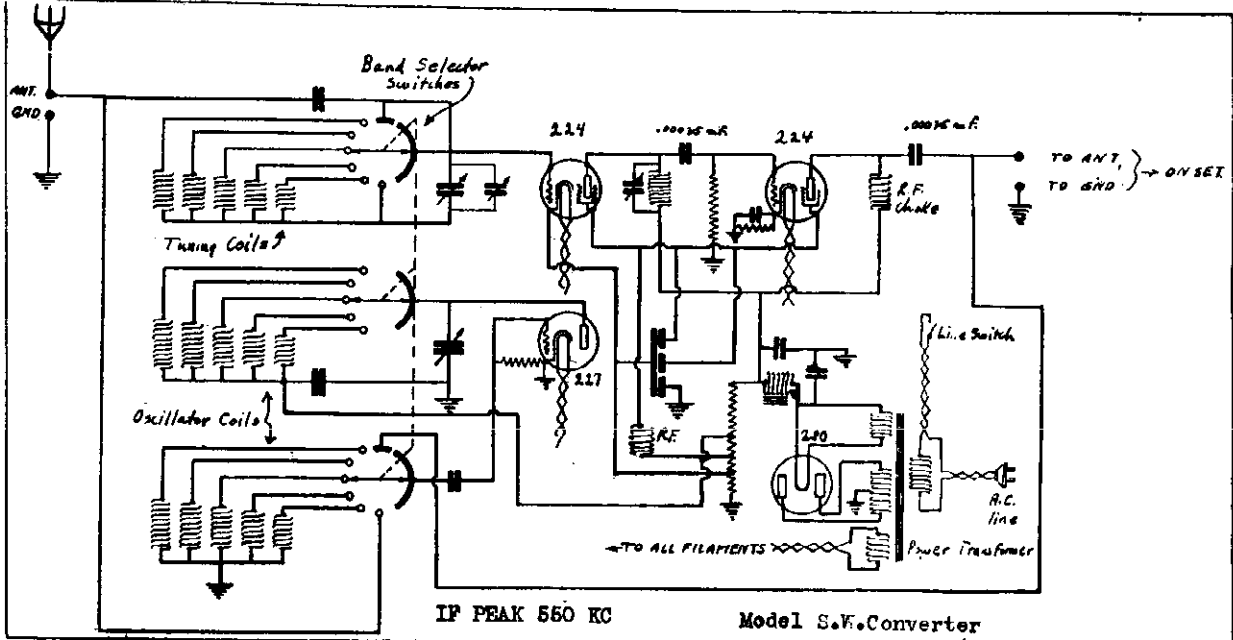


Model 140 Auto Radio



Complete diagram of connections of the "Auto Pilot," showing the receiver proper, the control panel, the loud speaker, and the "A" and "B" batteries.

The connections of the control devices in picture form.

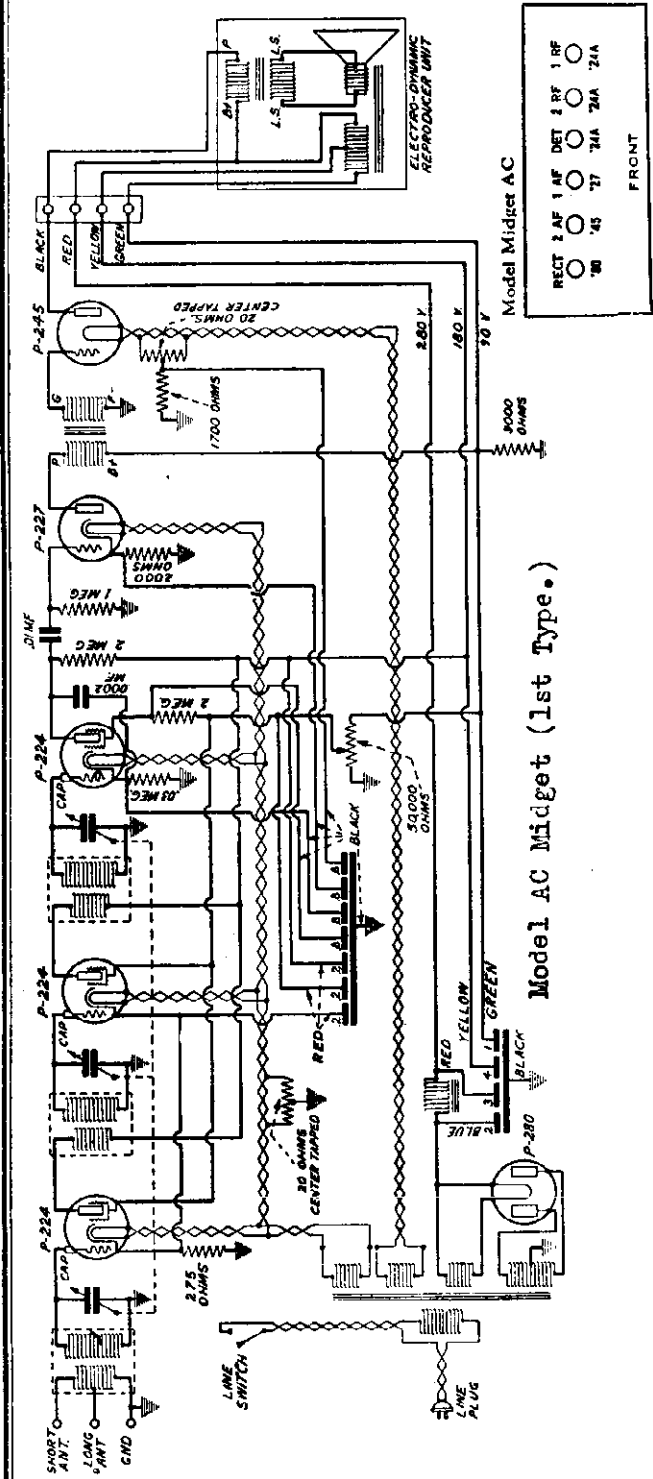


IF PEAK 560 KC

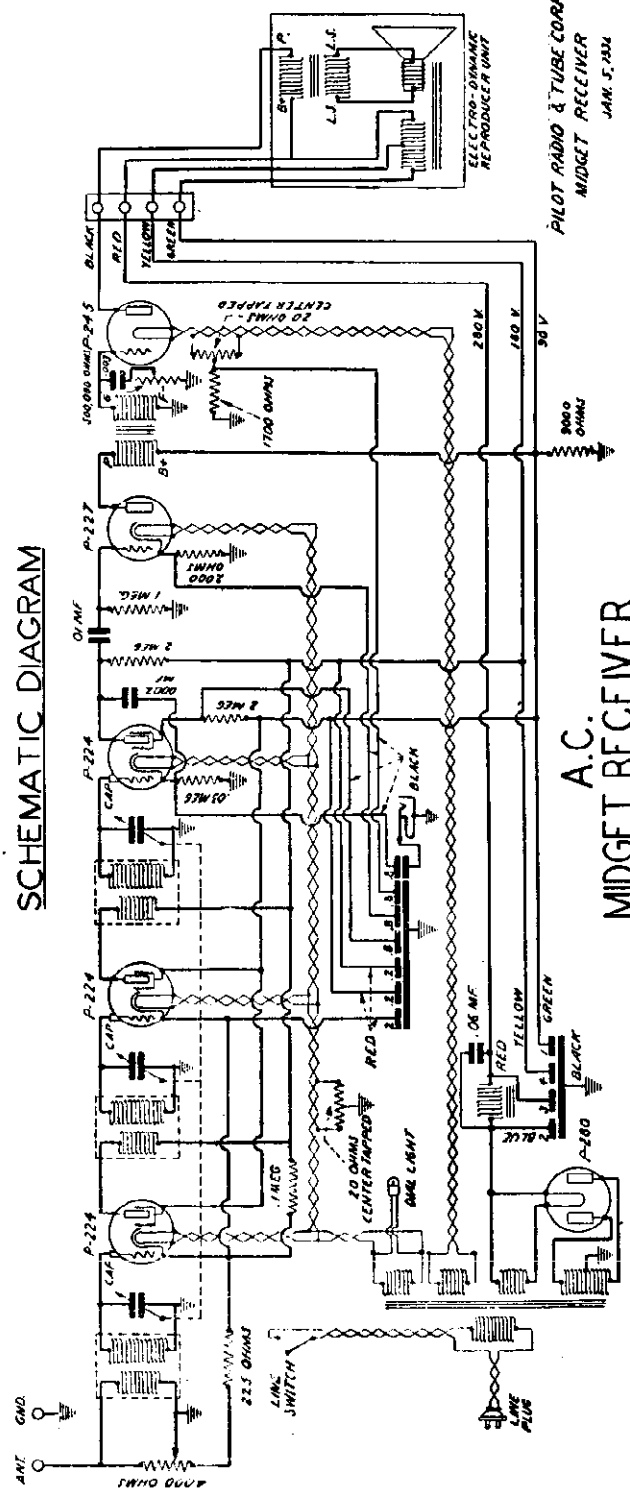
Model S.W. Converter

PILOT RADIO & TUBE CORP.

MODEL AC Midget
 S-155, S-155-A,
 S-155-B, S-155-F,
 C-157, C-157-A,
 C-157-B, C-157-F



SCHEMATIC DIAGRAM



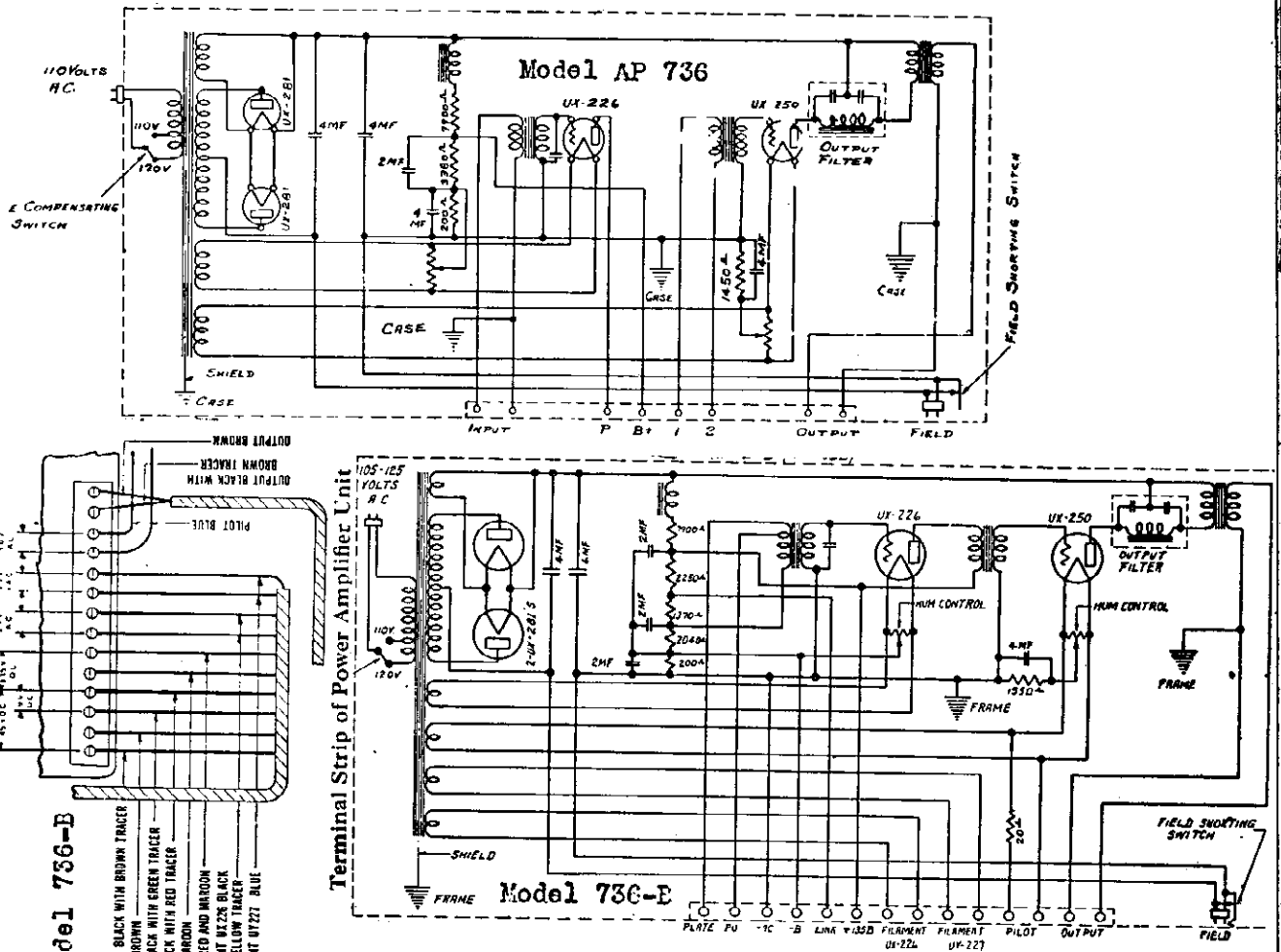
A.C. MIDGET RECEIVER

Model AC Midget (2nd Type)

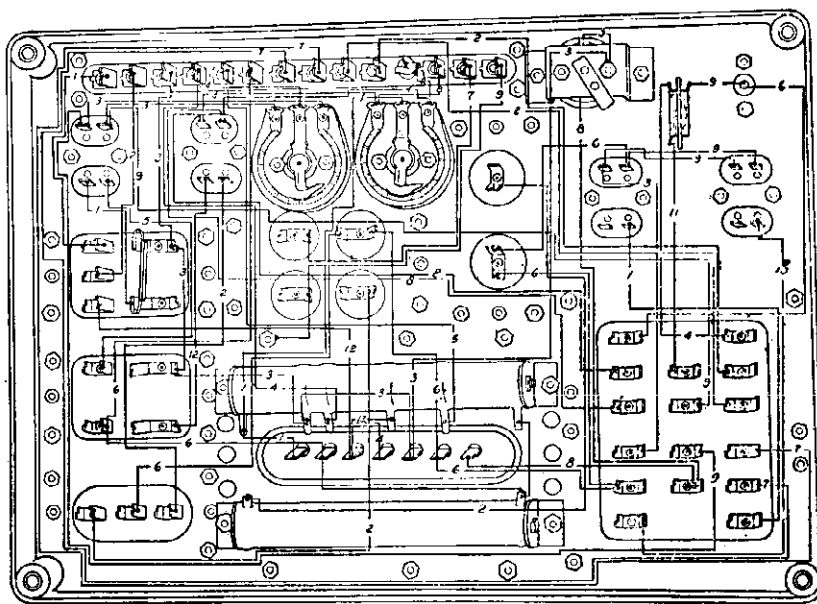
PILOT RADIO & TUBE CORP.
 MIDGET RECEIVER
 JAN. 5, 1934

R. C. A. VICTOR CO., INC.

MODEL AP-736
MODEL AP-736-B



Wiring Diagram of Power Amplifier Unit AP-736-B



Color Code

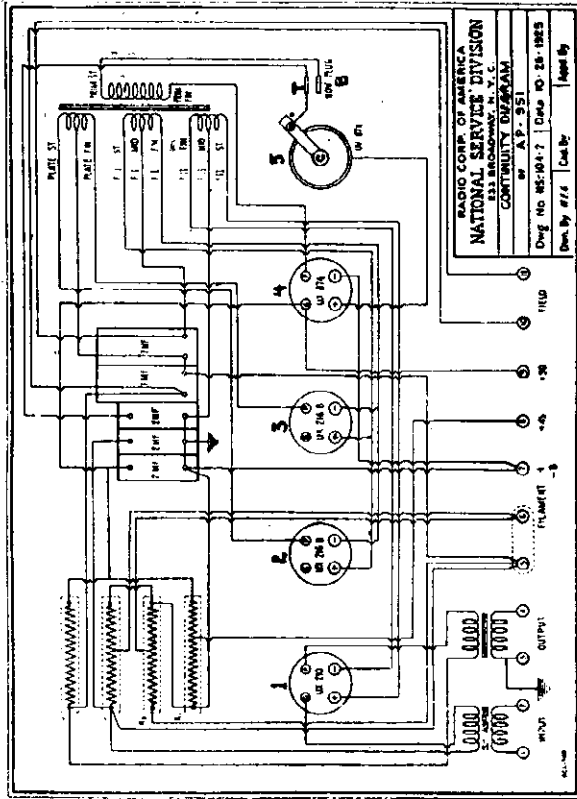
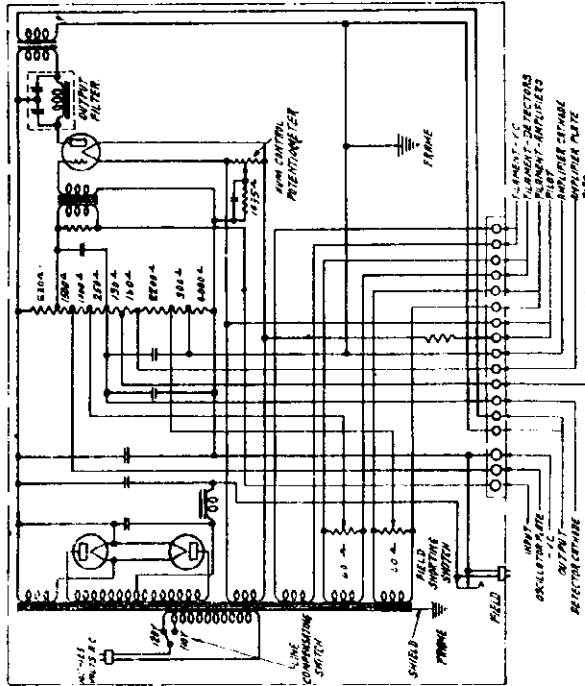
1. Brown
2. Blue
3. Yellow
4. Black with Red Tracer
5. Red and Maroon
6. Red
7. Black with Yellow Tracer
8. Green
9. Black
10. Light Brown
11. Red and Black
12. Maroon

Bottom of Power Amplifier Unit AP-736-B, showing wiring between terminals

MODEL AP-777-C
 MODEL AP-947
 MODEL AP-951
 MODEL AP-951-A, 974-A
 AP-997-A

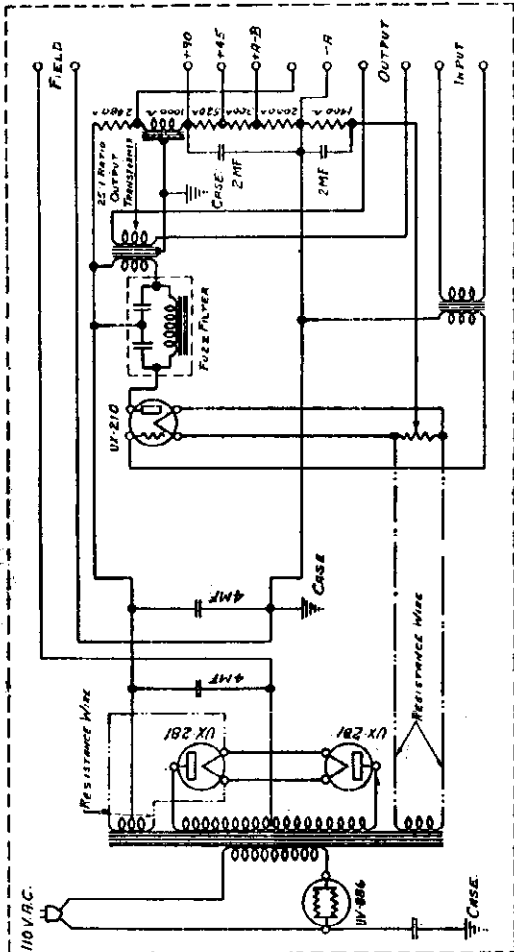
R. C. A. VICTOR CO., INC.

Model AP-777-C



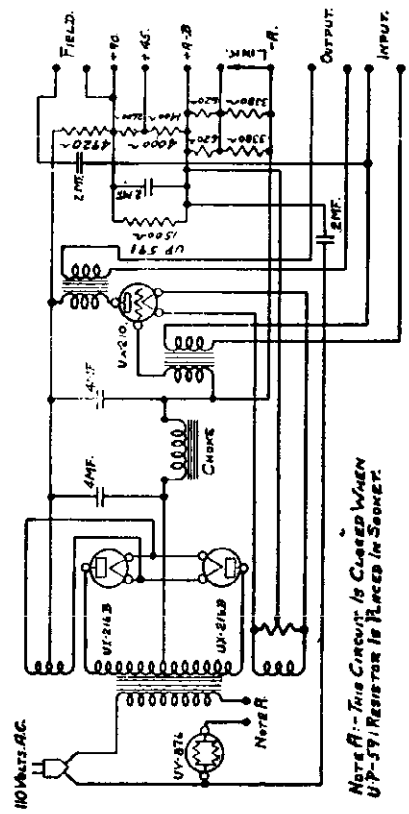
Model AP 951

RADIO CORP. OF AMERICA
 NATIONAL SERVICE DIVISION
 133 BROADWAY, N. Y. C.
 CONTINUITY DIVISION
 AP-951
 Desg. No. 95-104-2 Date 10-28-1953
 Drawn by: [] Checked by: []



Wiring Diagram of Power Amplifier Units AP-974-A, 951-A and 997-A

Used on Victor 9-25, 9-55

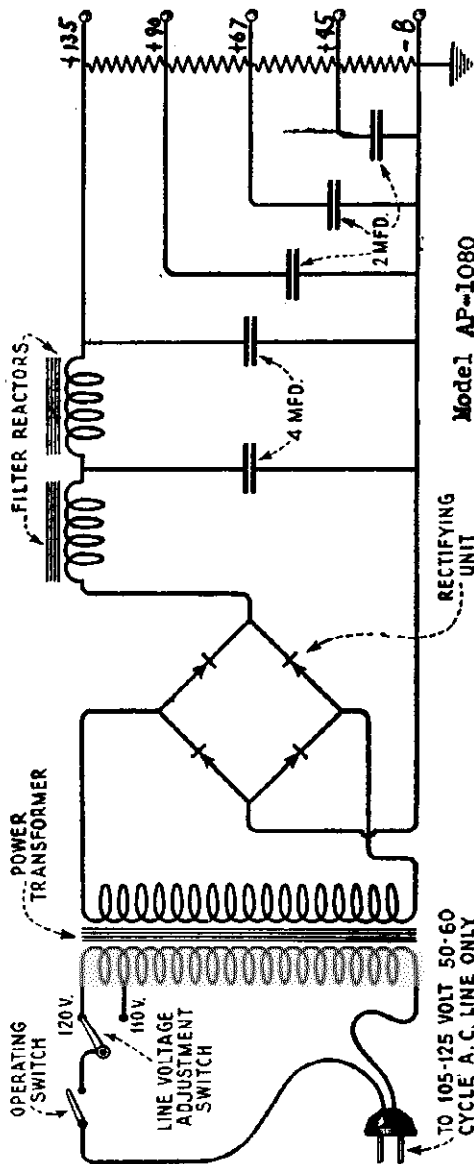


Victor designation RPA 1A
 Used on 3-20, Borgia II, Hyperion
 Model AP-947

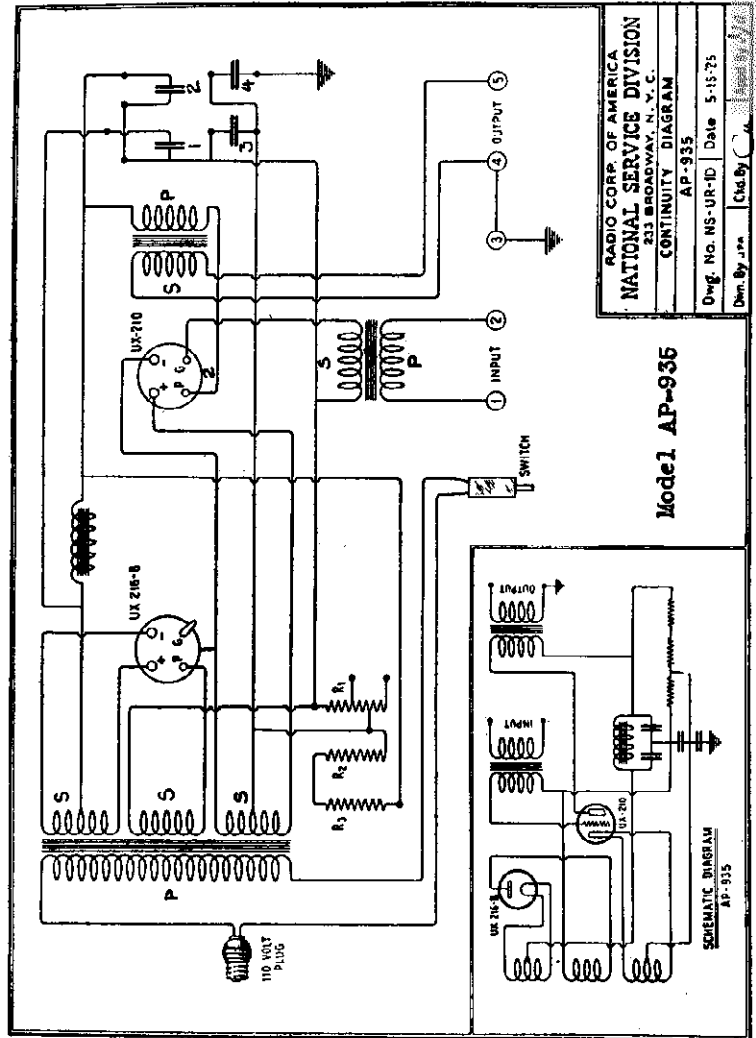
Note: R-100 Resistor is Closed when U-7-57 Resistor is Placed in Socket.

R. C. A. VICTOR CO., INC.

MODEL AP-937
 MODEL AP-935
 MODEL AP-1080

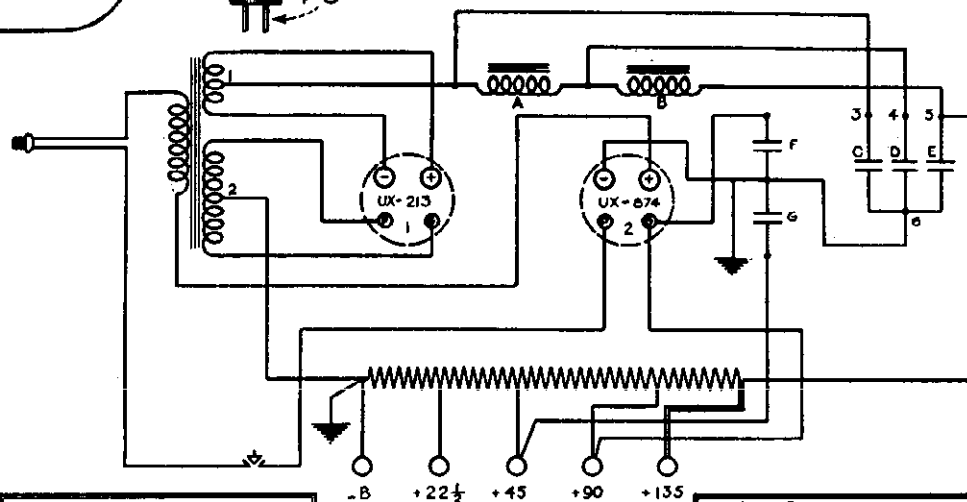


Model AP-1080



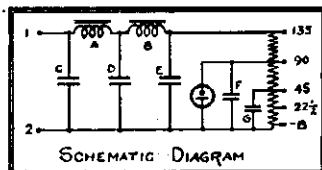
Model AP-935

RADIO CORP. OF AMERICA
 NATIONAL SERVICE DIVISION
 233 BROADWAY, N. Y. C.
 CONTINUITY DIAGRAM
 AP-935
 Dwg. No. NS-UR-1D Date 5-15-75
 Des. By J.M. [Signature]



CONTINUITY DIAGRAM

Model AP-937

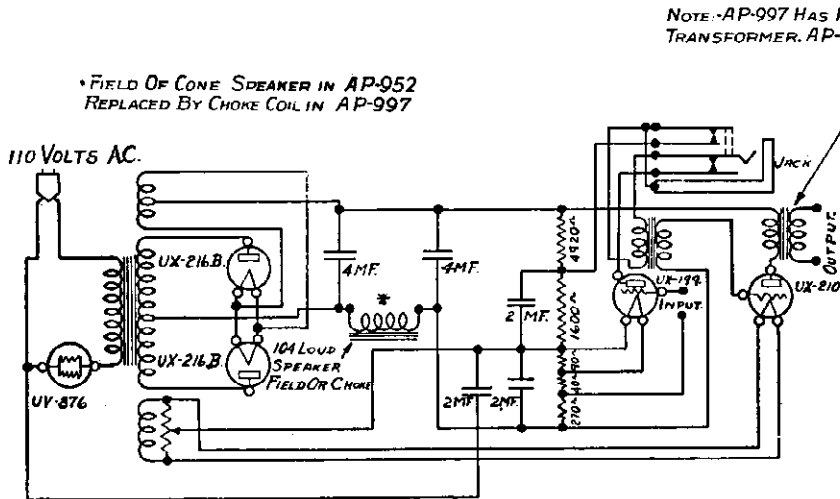


SCHEMATIC DIAGRAM

RADIO CORP. OF AMERICA
 NATIONAL SERVICE DIVISION
 233 BROADWAY, N.Y.C.
 RCA DUO-RECTRON
 MODEL AP-937
 Dwg NS-DR-1D DATE 4-9-26
 Des. by J.M. [Signature]

MODEL AP-995
 MODEL AP-952
 MODEL AP-997-C
 MODEL 12-25 Tuscany
 MODEL 8-60

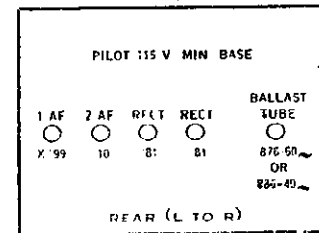
R. C. A. VICTOR CO., INC.



Wiring Diagram AP 952, and AP 997

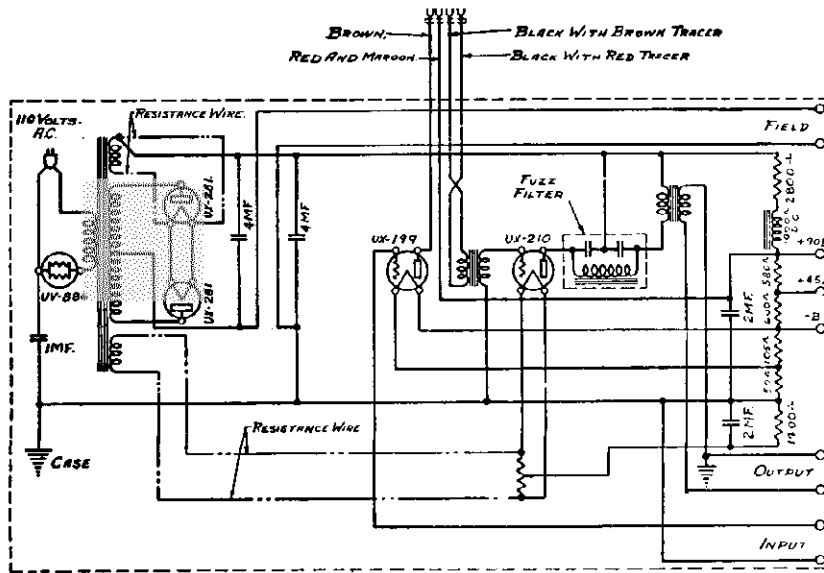
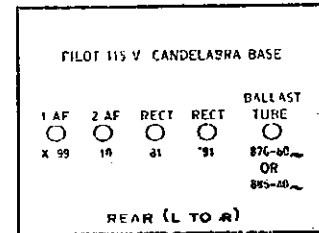
Victor designation RPA-5 Spec.
 Used on 8-60.

Model Electrola Tuscany (1926)



Victor designation RPA 5
 Used on 12-25, Tuscany

Models Victors 8-60, 12-2, 12-25 (1926)



Wiring Diagram of Power-Amplifier Unit AP-997-C

Used on Victor 12-15.

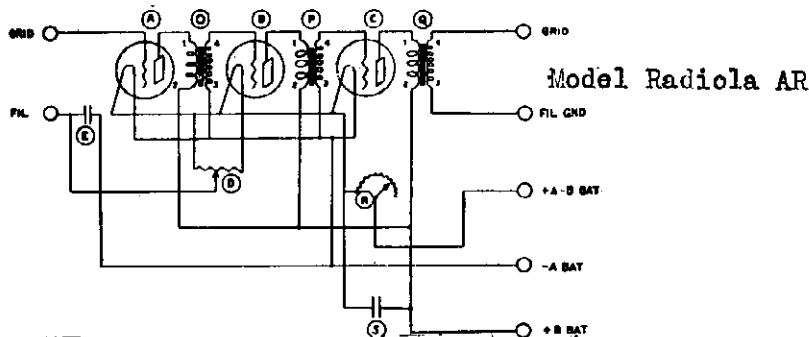
- a. The AP-947-X differs from the AP-947 in that it has a 25 to 1 output transformer and no filter choke.
- b. The AP-997-X differs from the AP-997 in this same manner.
- c. The AP-952-Y differs from the AP-952 only in the substitution of a terminal strip for the input jack.
- d. The AP-997-Y differs from the AP-997 in that it has a 25 to 1 output transformer, a fuzz filter, a terminal strip instead of a jack, and no filter choke.
- e. The AP-947-A, AP-951-B, and AP-997-A differ from the AP-947 in that they require the UX-281 and UV-886 Radiotrons instead of the UX-216-B and UV-876; a 25 to 1 output transformer is used; the resistors are of different values; resistance wire is used in the UX-281 and UX-210 filament leads; and the filter choke instead of being connected in the filter circuit is used in the voltage drop circuit to stabilize the amplifier.
- f. The AP-997-C differs from the AP-997 in the same respects as described in (e) above.

The list below for Victor power-amplifier units contained in new instruments since June 1, 1927 gives the RCA symbol number, the Victor part number, and the instrument on which each unit is used.

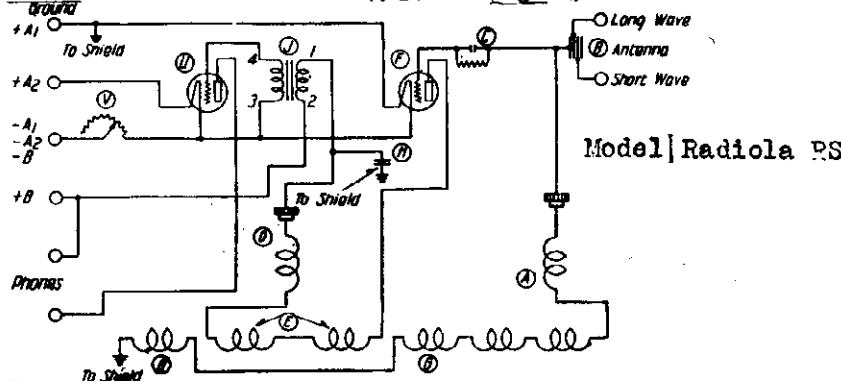
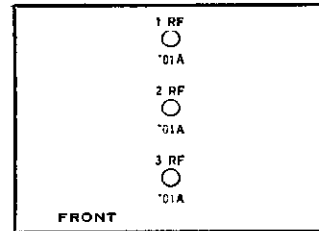
RCA SYMBOL	VICTOR PART NO.	USED ON
AP-947-X	20652	9-40*
AP-997-X	18575	10-51
AP-952-Y	18569	10-70
AP-997-Y		
AP-947-A	18891	9-25
AP-997-A	18574	9-55
AP-951-B		
AP-997-C	20564	12-15

R. C. A. VICTOR CO., INC.

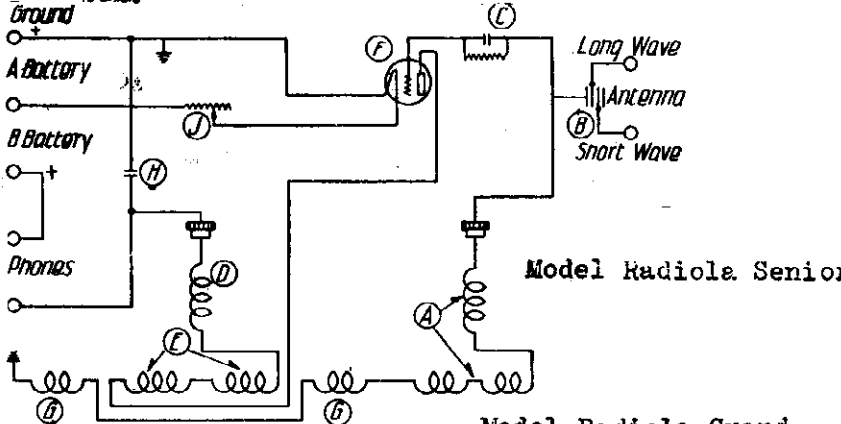
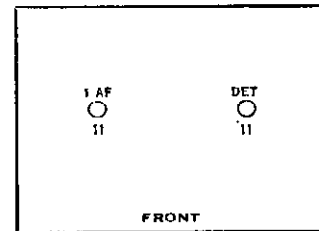
MODEL Radiola Grand
 MODEL Radiola Senior
 MODEL Radiola AR
 MODEL Radiola RS



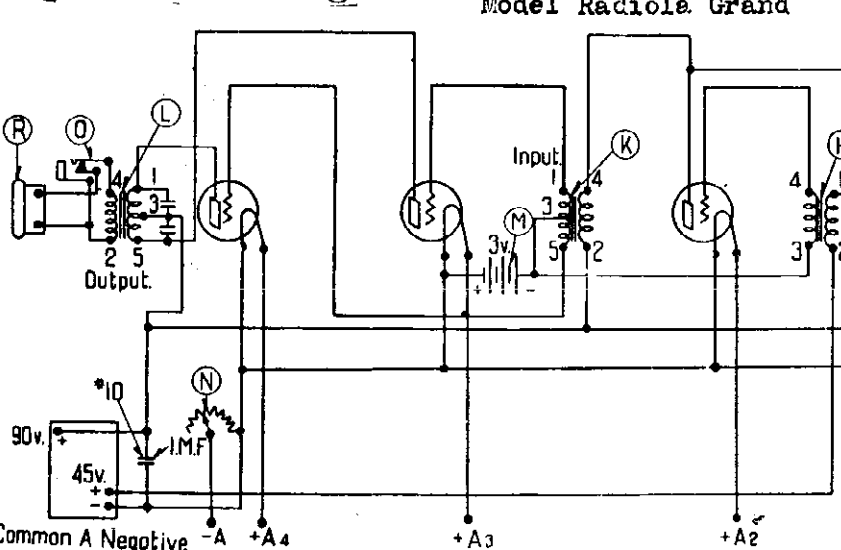
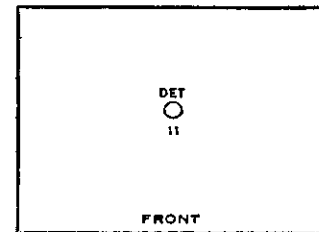
Model Radiola AR (1922)



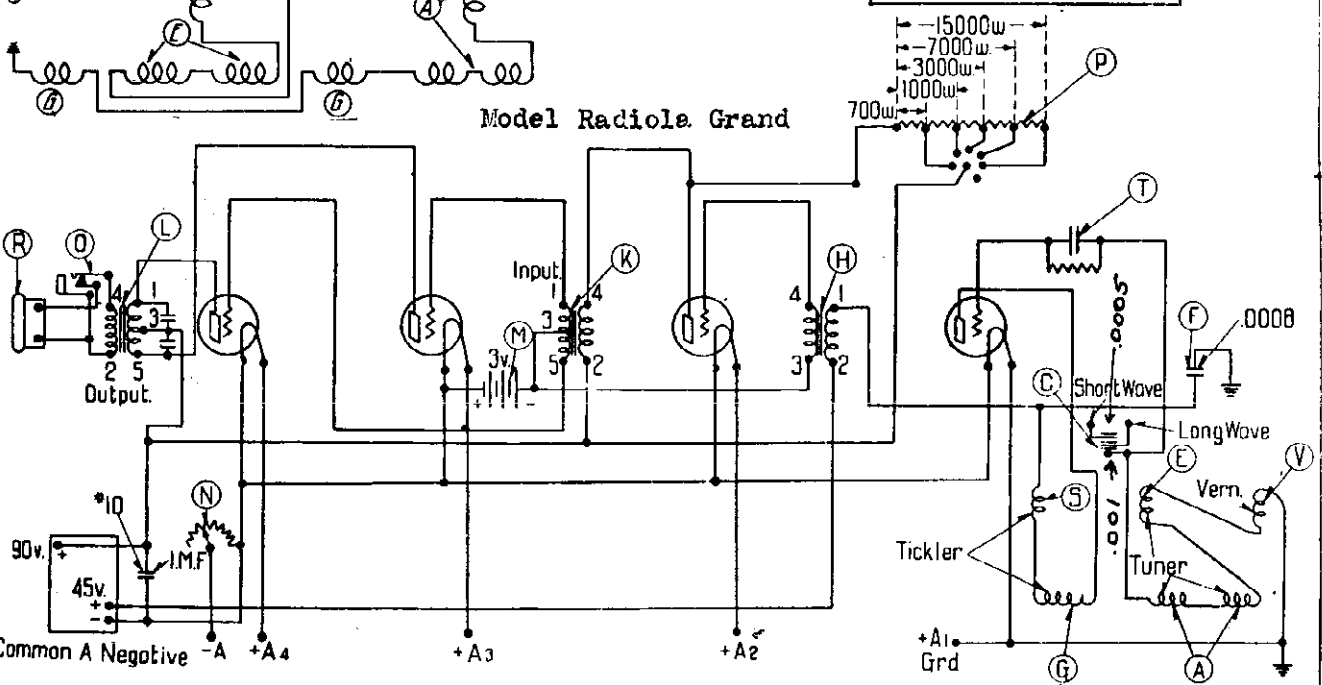
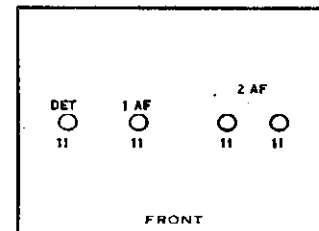
Model Radiola RS (1922)



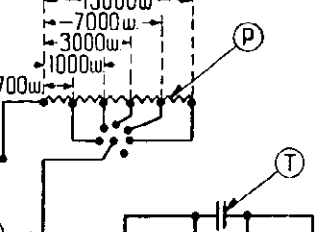
Model Radiola Senior (1922)



Model Radiola Grand (1922)

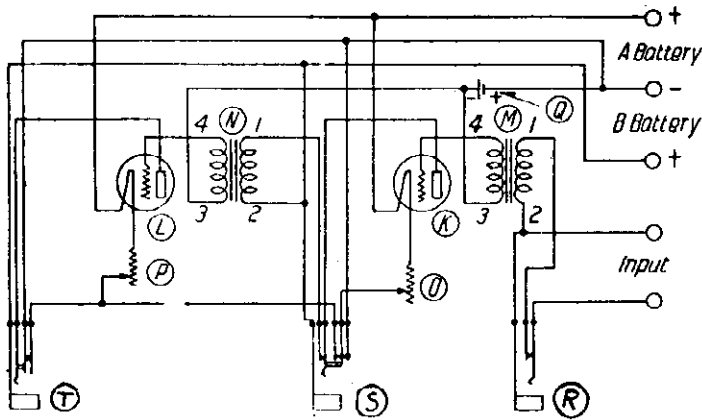


Model Radiola Grand (1922)



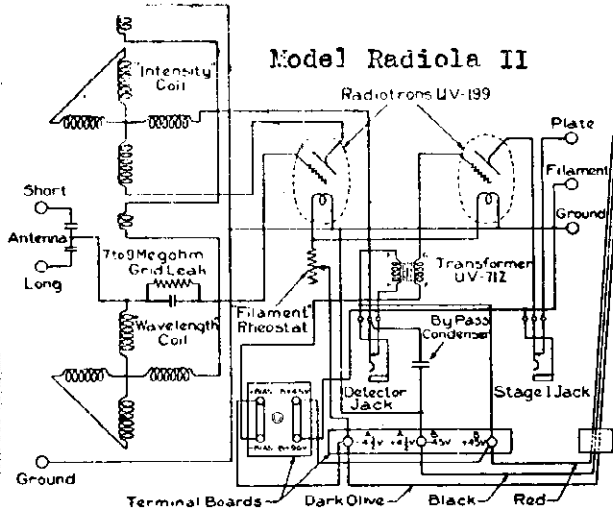
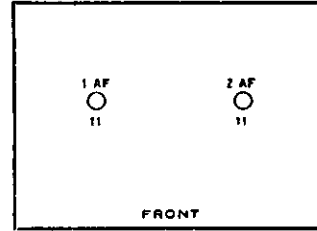
MODEL Radiola II
 MODEL Radiola III
 MODEL Radiola
 Balanced Amp.
 MODEL Radiola Sen. Amp.

R. C. A. VICTOR CO., INC.

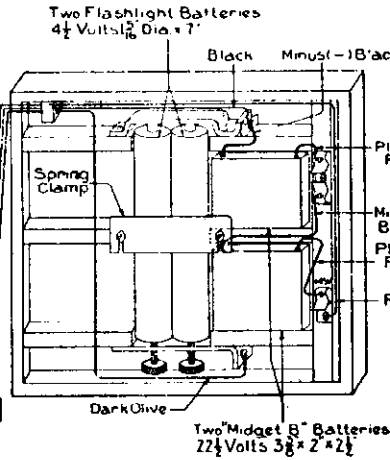


Model Senior Amp.

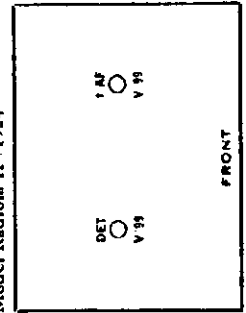
Model Radiola Senior Amplifier (1922)



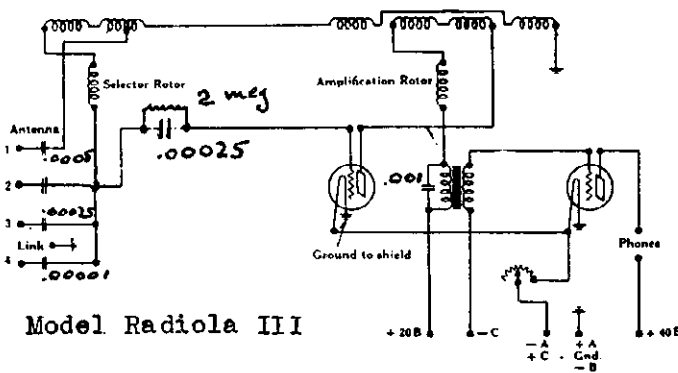
Model Radiola II



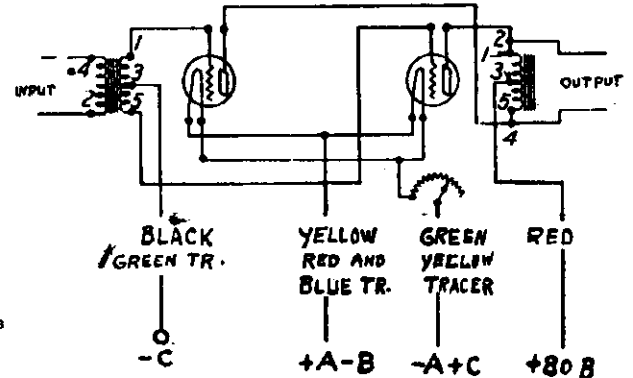
Model Radiola II (1924)



Model Balanced Amp.

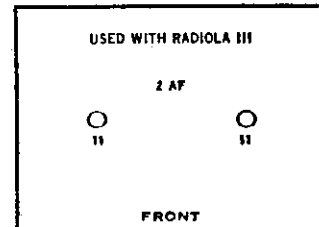
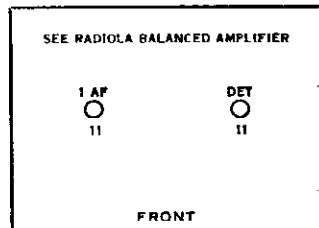


Model Radiola III



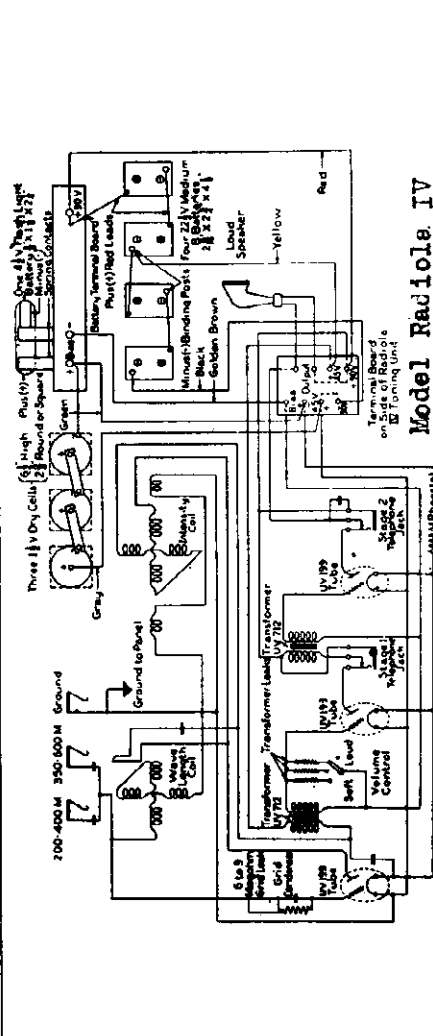
Model Radiola Balanced Amplifier (1924)

Model Radiola III (1924)

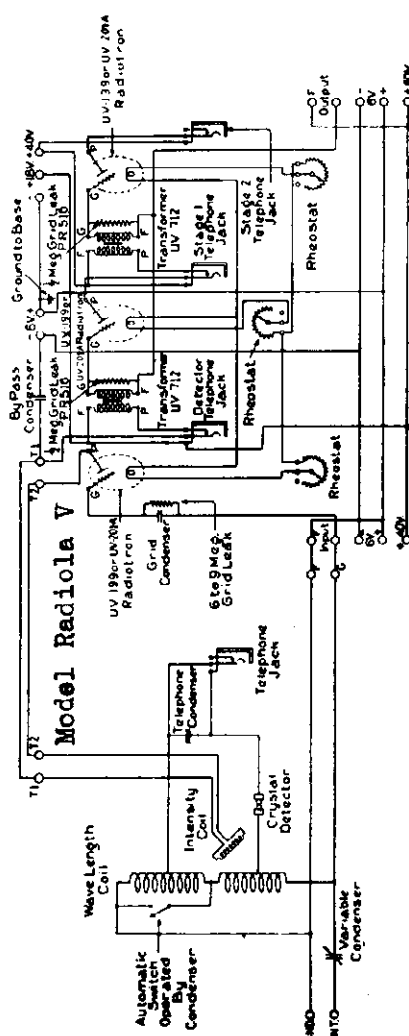


R. C. A. VICTOR CO., INC.

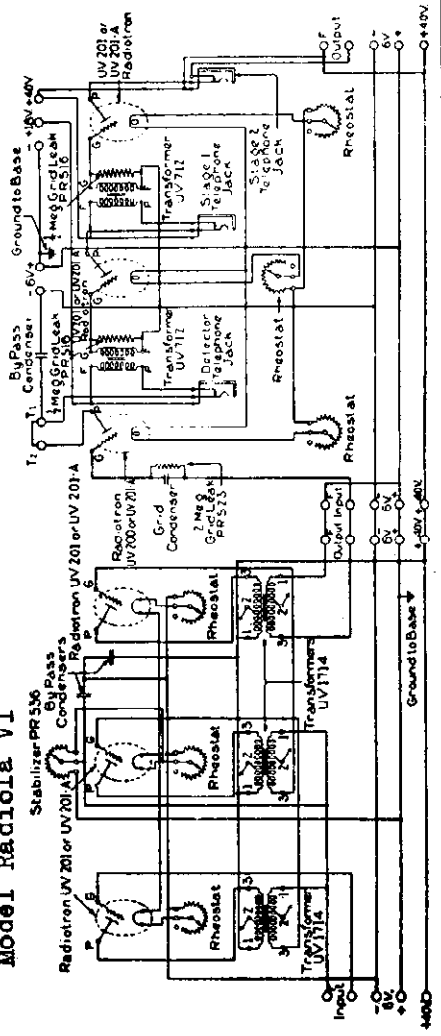
MODEL Radiola III-A
 MODEL Radiola IV
 MODEL Radiola V
 MODEL Radiola VI



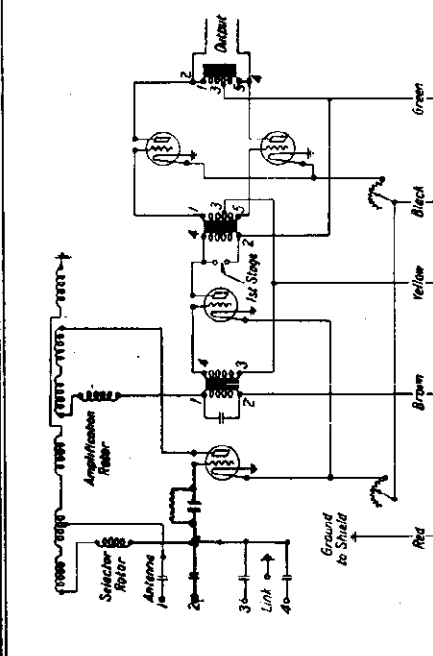
Model Radiola IV



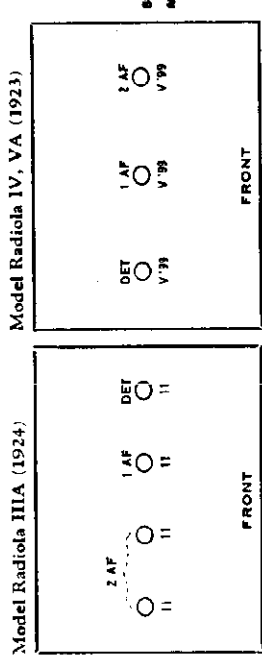
Model Radiola V



Model Radiola VI

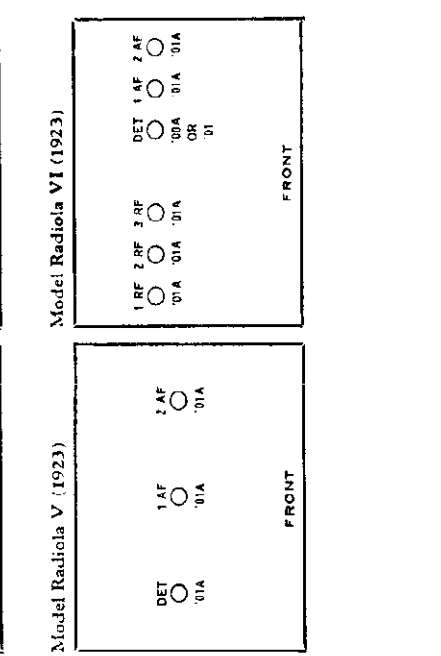


Model Radiola III-A



Model Radiola IIIA (1924)

Model Radiola IV, VA (1923)

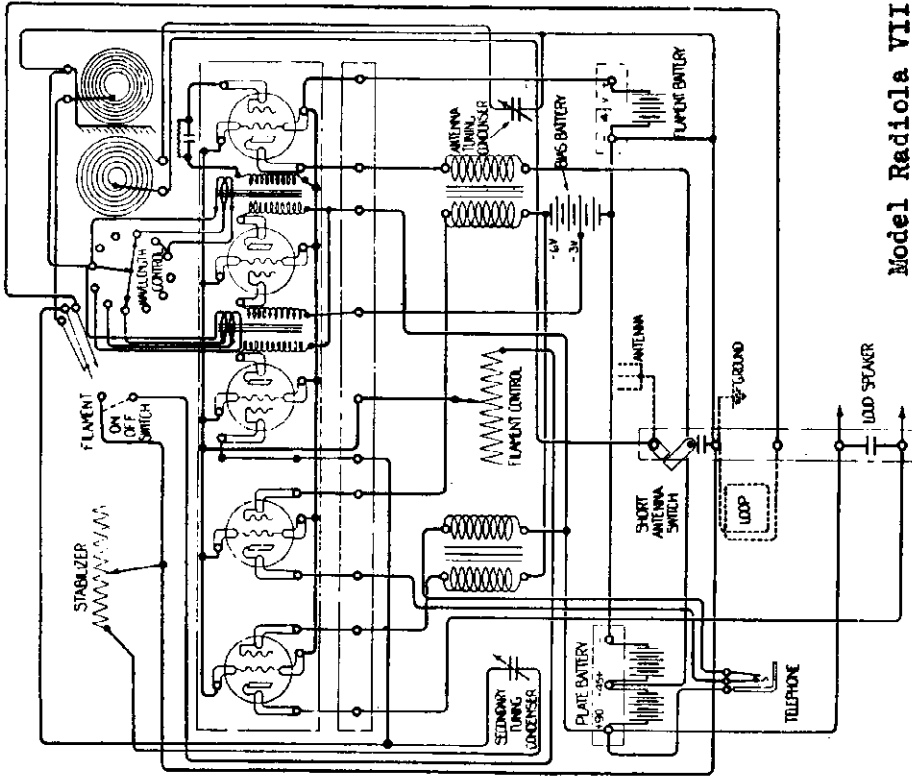


Model Radiola V (1923)

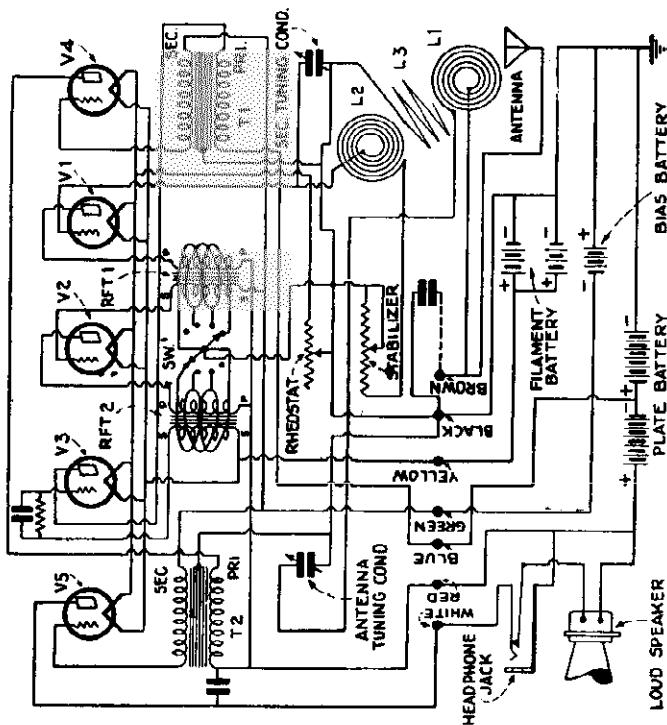
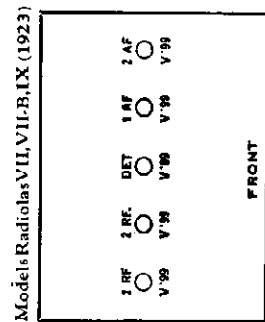
Model Radiola VI (1923)

MODEL Radiola VII
 MODEL Radiola VII-B
 MODEL Radiola IX

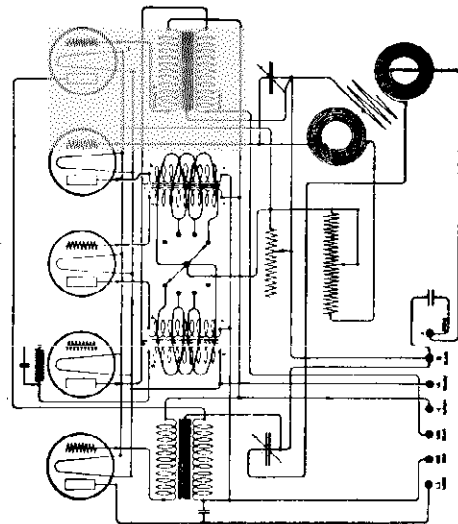
R. C. A. VICTOR CO., INC.



Model Radiola VII



Model Radiola VII-B

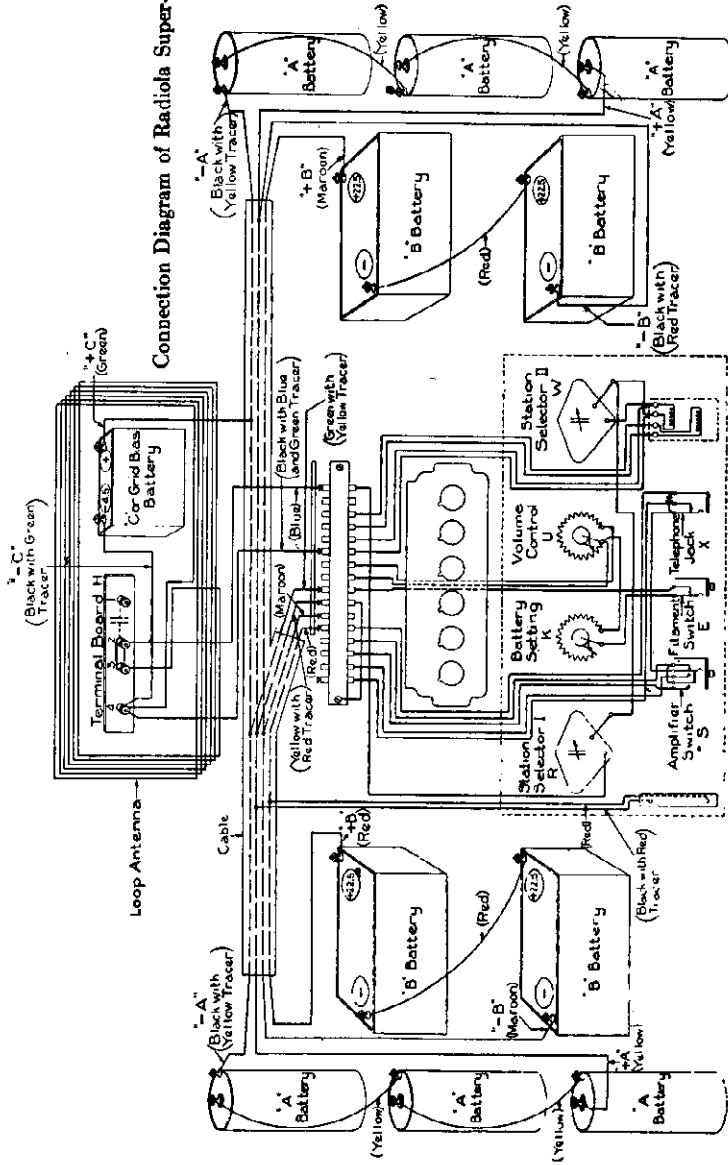


Model Radiola IX

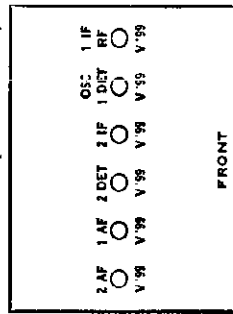
R. C. A. VICTOR CO., INC.

MODEL Radiola Super VIII

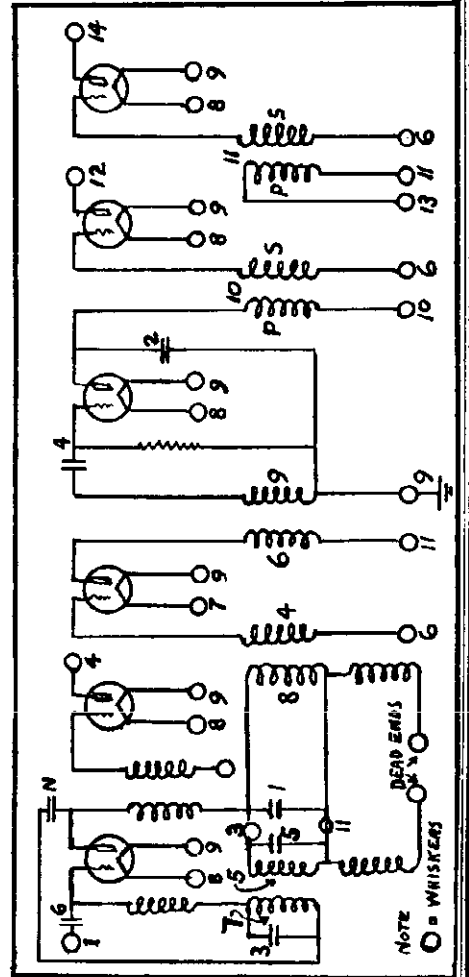
Connection Diagram of Radiola Super-Heterodyne



Model Radiola Super-VIII (1925)



Continuity Test Circuit Of Standard Six Tube Catacomb. Radiolas 24, Super-Heterodyne, Super-VIII.



- Term No.
 From 6 to 9 Maximum 4.5 volts. Minimum 4 volts
 9 to 10 Maximum 4.5 volts. Minimum 3 volts with all tubes lighted.
 10 to 11 Maximum 45 volts. Minimum 34 volts.
 11 to 12 Maximum 45 volts. Minimum 34 volts.
 8 to 10 Maximum 3 volts when the volume control rheostat is at 100, and the battery setting rheostat is properly adjusted.

The numbers refer to terminals on the catacomb terminal board starting at the right when looking at the front of the panel.

MODEL R-5 AC
Parts List
Notes

R. C. A. VICTOR CO., INC.

RCA Victor Radiolette R-5

The RCA Victor Radiolette R-5 is a tuned circuit R.F. type radio receiver. Compact construction together with good sensitivity, selectivity and high output are features of this receiver.

The receiver uses four Radiotrons, two UY-224, one UX-280, and one RCA-247 Power-Output Pentode. Referring to Figure 1 and tracing a signal through the various stages we find the following action taking place.

The antenna and ground are connected to each side of a 20,000 Ohm potentiometer. The moving contact of the potentiometer is connected to the primary of the first R.F. transformer through a .00013 MFD. condenser, the other side of the transformer being connected to ground. The action of the potentiometer, reducing the voltage applied to the grid of the first R.F. tube, constitutes that of a volume control. The secondary of the R.F. transformer is connected to the grid circuit of the R.F. Radiotron UY-224, which is tuned by one unit of the gang condenser. The plate circuit of this tube works into the primary coil of the 2nd R.F. transformer.

The detector is of the regenerative, grid bias type and its output is coupled by means of resistance coupling to the output Radiotron RCA-247. The regenerative feature of the detector is un-

usual in that it uses two regeneration coils. One of these resonates at a low frequency and improves the sensitivity at that end, while the other has but few turns and brings up the sensitivity at the high frequency end.

The output stage uses the RCA-247 Output Pentode which gives a high undistorted output—2.5 watts—together with a high gain in the stage.

The grid bias for this tube is obtained by using a portion of the drop across the reproducer field. Due to the fact that the plate current of the RCA-247 represents the greatest portion of the total plate current, using the drop across the field acts as a semi-self biasing arrangement.

Plate and grid supply to all tubes is supplied through the use of Radiotron UX-280. The filter is of the "brute force" type. The reproducer unit field coil functions as the reactor. One electrolytic 10 MFD. capacitor and one paper 2 MFD. capacitor act as filter capacitors.

LINE-UP CAPACITOR ADJUSTMENTS

Two adjustable capacitors are provided for aligning the two tuned circuits at the high frequency end of the scale. The following procedure may be used for making any readjustments that may be necessary.

A. Procure an Oscillator giving a modulated signal at exactly 1400 K.C. Also procure a special socket wrench such as RCA Victor Stock No. 3007.

B. An output indicator is necessary. This may be a current squared thermogalvanometer connected to the secondary of the output transformer in place of the cone coil or other types of output indicators.

C. Turn the station selector until the knob reads exactly 0. Then remove the chassis from the cabinet being careful not to disturb the setting of the dial. The gang condenser rotor plates should be fully meshed with the stator plates. If not, then the dial drum must be adjusted until such a condition exists. Replace the chassis in the cabinet.

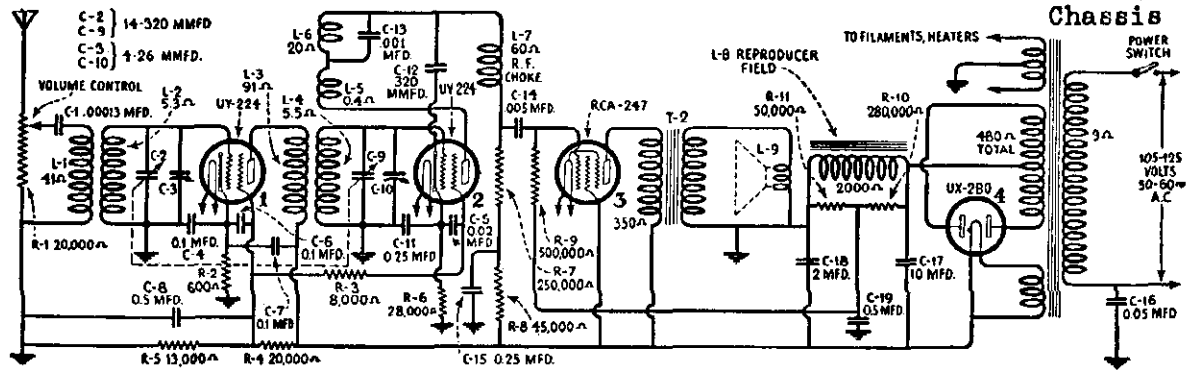
D. Place the oscillator in operation at exactly 1400 K.C. and couple its output to the antenna lead. Set the dial scale at 85 and place the Radiolette in operation. Place a soft pad on its side. Now with the special wrench, adjust each line-up capacitor until maximum output is obtained in the output meter. Be careful to adjust the volume control or oscillator output so that an excessive reading is not obtained. Go over each adjustment a second time to compensate for any interlocking of adjustments.

REPLACEMENT PARTS

Part No.	DESCRIPTION	List Price	Part No.	DESCRIPTION	List Price
2549	Resistor—250,000 Ohms—Carbon type—Package of 5	\$3.00	3006	Capacitor .001 Mfd.—Used across low frequency tickler coil	\$0.50
2747	Cap Control grid contactor cap—Package of 5	.50	3007	Wrench—Special wrench for R.F. line-up condenser adjustments	1.00
2954	Capacitor—By-pass capacitor pack containing three 0.1 Mfd. capacitors	.75	5817	Resistor—20,000 Ohms—Carbon type	.90
2955	Transformer—First R.F. transformer complete with mounting washer and nut	1.50	7054	Cord—Power cord complete with male connector plug	1.00
2956	Transformer—Second R.F. transformer complete with mounting washer and nut	2.00	7229	Socket—Five prong Radiotron socket complete with insulating shield—3 used—Package of 2	.50
2957	Capacitor 10 Mfd. electrolytic type—Complete with terminal, insulating washer, mounting nut and lock washer	3.00	7230	Socket—Four prong Radiotron socket complete with insulating shield—1 used—Package of 2	.50
2958	Switch—Operating switch complete with mounting washers and nut	.60	7231	Capacitor Filter and by-pass capacitor pack—Comprising one 0.05 mfd., two 0.5 mfd., two 0.25 mfd. and one 2.0 mfd. condensers	2.50
2959	Volume control—20,000 Ohm Volume control complete with mounting washers and nut	1.50	7232	Capacitor—2 gang variable tuning capacitor	5.00
2960	Dial—Dial scale complete with set screws—Package of 2	.50	7233	Transformer—Output transformer—With fibre terminal board	1.50
2961	Coil—Detector plate R.F. choke coil	.50	7236	Cone—Reproducer cone complete with voice coil and paper ring	1.50
2962	Capacitor—0.005 Mfd. audio coupling capacitor	.75	8669	Transformer—Power transformer—105-125 volt, 50-60 cycle—Complete with mounting washers and nuts	6.00
2963	Resistor—8000 Ohms—Carbon type—Package of 5	2.50	8670	Transformer—Power transformer—105-125 volt, 25-40 cycle—Complete with mounting washers and nuts	9.00
2964	Resistor—13000 Ohms—Carbon type—Package of 5	2.50	8671	Transformer—Power transformer—220 volts, 50-60 cycles—Complete with mounting washers and nuts	8.00
2965	Resistor—600 Ohms—Carbon type—Package of 5	2.50	10434	Resistor—Mid-tapped filament resistor—Used on early models only	.50
2966	Resistor—28,000 Ohms—Carbon type—Package of 5	2.50	SPECIAL PARTS SUPPLIED ON ORDER ONLY (Not to be stocked)		
2967	Resistor—45,000 Ohms—Carbon type—Package of 5	2.50	2979	Board—Baffle board complete with grille cloth	.75
2969	Resistor—50,000 Ohms—Carbon type—Package of 5	2.50	2980	Escutcheon—Station selector escutcheon complete with mounting screws	.75
2970	Resistor—500,000 Ohms—Carbon type—Package of 5	2.50	7233	Board—Resistor mounting board—Less all resistors, capacitors and coils	1.00
2971	Resistor—280,000 Ohms—Carbon type—Package of 5	2.50	7235	Coil—Field coil complete with bracket and cone ring	2.00
2972	Shield—Radiotron shield complete with mounting screw, washer and nut	.50	9321	Cabinet—Cabinet complete—Less all equipment	7.25
2975	Rivet—Eyelet rivet for mounting cone—Package of 100	.50	9339	Chassis—Receiver chassis complete—Less reproducer unit, knobs and Radiotrons	27.50
2976	Knob—Volume control or operating switch knob—Package of 5	1.50	9340	Reproducer unit—Reproducer unit complete	4.75
2977	Knob—Station selector knob—Package of 5	2.50			
2978	Screw assembly—Loudspeaker mounting screw assembly comprising four screws, four washers, four lock washers, eight nuts and four eyelets	.60			
2981	Capacitor—320 Mmfd. detector plate R.F. by-pass capacitor	.50			

R. C. A. VICTOR CO., INC.

MODEL R-5 AC
Schematic
Voltage
Chassis



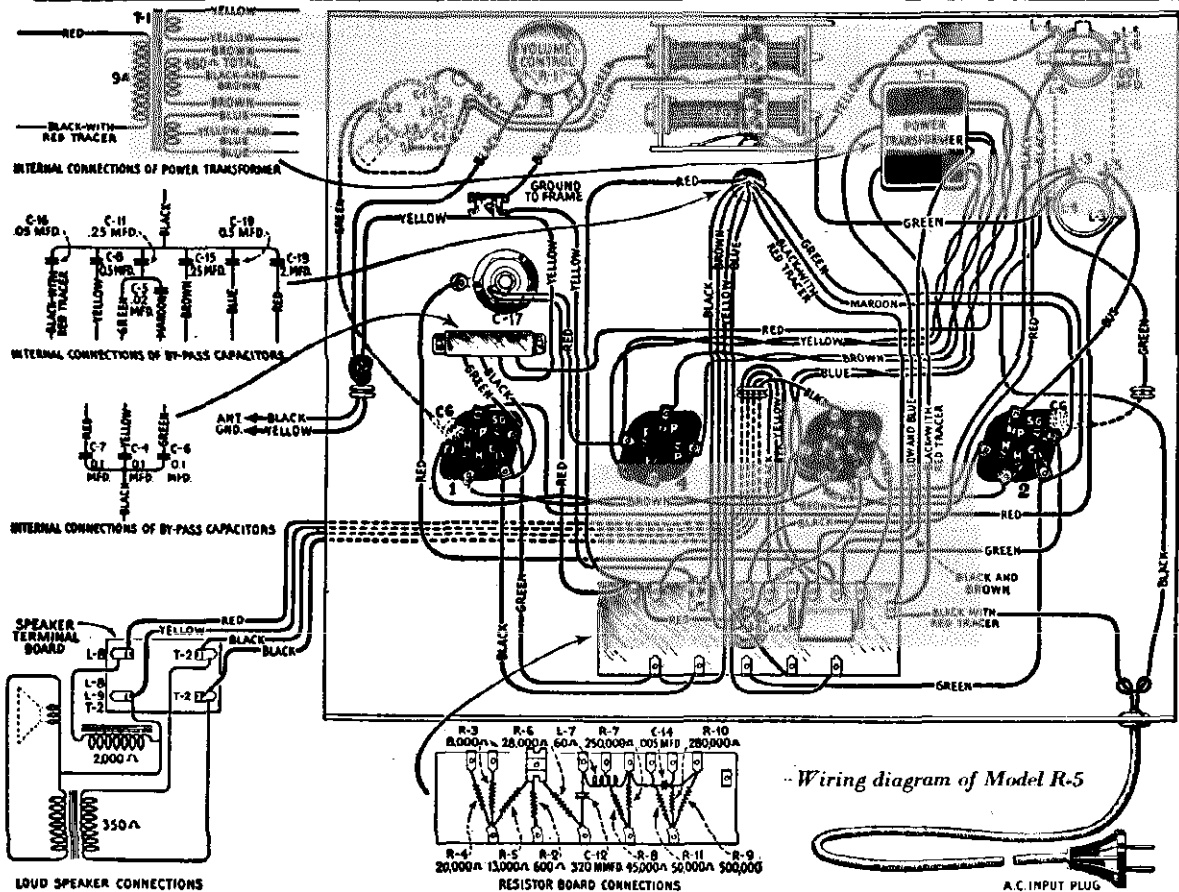
-Schematic Circuit Diagram of Model R-5

SOCKET VOLTAGE READINGS

110-VOLT LINE

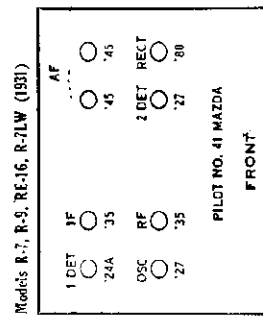
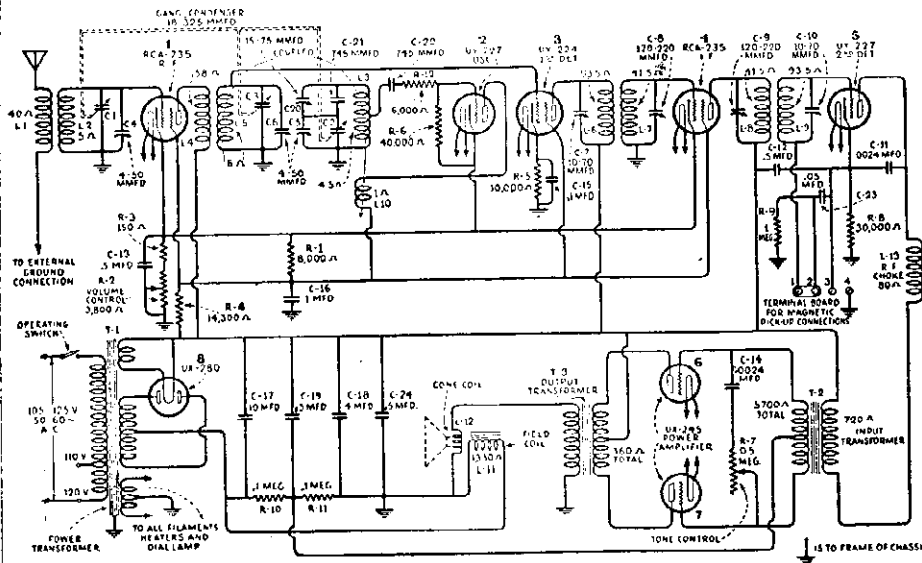
These are readings obtained with the usual Set Analyzers and are not true readings of the voltages at which the Radiotrons operate.

Radiotron No.	Heater to Cathode Volts	Cathode or Filament to Control Grid Volts	Cathode or Filament to Screen Grid Volts	Cathode or Filament to Plate Volts	Plate Current M. A.	Heater Volts
1	3.0	3.0	85	225	4.0	2.2
2	7.0	7.0	65	100	0.25	2.2
3	—	2.0	225	215	30.0	2.2



R. C. A. VICTOR CO., INC.

MODEL R-7, R-9 AC
Supernote
Schematic



Models R-7, R-9, RE-16, R-7LW (1931)

PILOT NO. 41 MAZDA

IF PEAK 175 KC

RADIOLA SUPERNOTE

SERVICE NOTES ***

The can at the extreme center rear of the top of the chassis is AF transformer assembly. Directly in front of it is the RF bypass capacitor pack. The can at the left front facing the chassis is the 10 mfd electrolytic condenser. Directly to the rear of this can is the 4 mfd electrolytic condenser. To the right of this can, towards the center of the chassis is the RF transformer. The 600 KC trimming condenser is accessible by means of a screw adjustment located on top of the chassis, to the right of the electrolytic condenser cans, between the cans and the RF transformer.

The 1400 KC line-up condensers are accessible through three holes in the bottom of the cabinet. With the cabinet tilted away from the operator and the rear of the chassis to the right of the operator, the extreme left hand hole is for the RF condensers, the middle hole for the detector condenser and the extreme right hand hole is for the oscillator condenser.

The IF transformer tuning condensers are accessible from the rear of the chassis. The two holes near the magnetic pickup terminal board are for the 2nd IF transformer. With the cabinet on its side, the upper hole is for the Primary circuit and the lower hole is for the Secondary circuit. The lower pair of holes, near the edge of the chassis are for the 1st IF transformer. The upper hole is for the Secondary circuit adjustment and the lower hole is for the Primary circuit adjustment.

The tone control can is opened by pressing with a pin or sharp instrument through the hole in the side of the can.

For 110 volt operation interchange the black and red lead with the folded over and tapped end, with the black with red-tracer lead connected to one of the terminals. When the change has been made tape up the black-red lead.

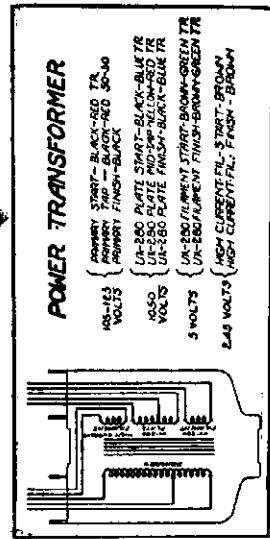
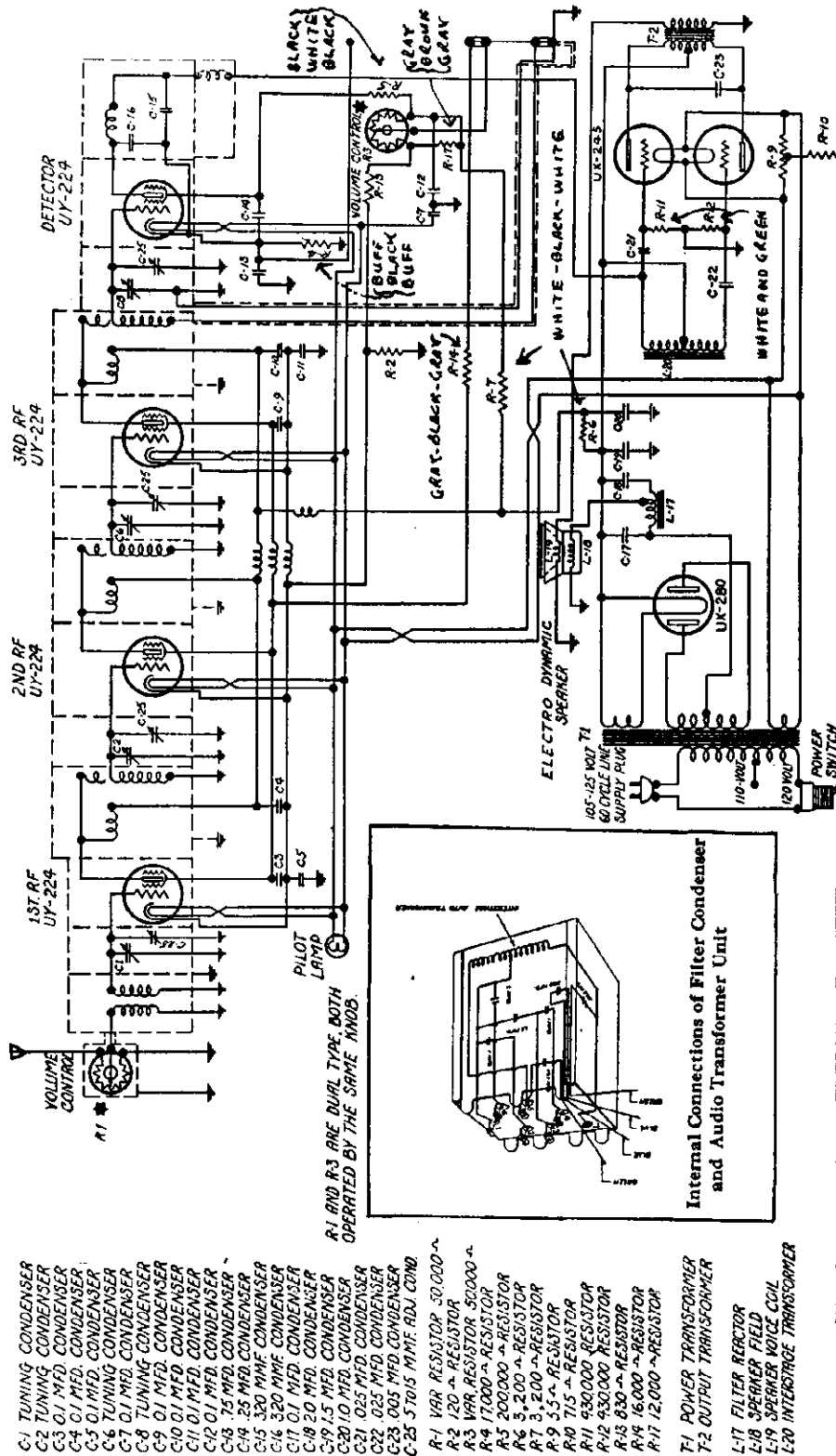
Volume Control Maximum

Tube	Cathode-Heater	Cathode-Grid	Cathode-Screen	Cathode-Plate	Plate Current	Fil.
RF	2.5	2.5	65	225	4.0 ma	2.4
Osc.	2.5	0.		55	5.0	2.4
1Det	5.0	5.0	60	215	0.5	2.4
IF	2.5	2.5	65	225	4.0	2.4
2Det	60.	*10.		200	0.5	2.4
AF		*20.		215	20.	2.4
AF		*20.		215	20.	2.4

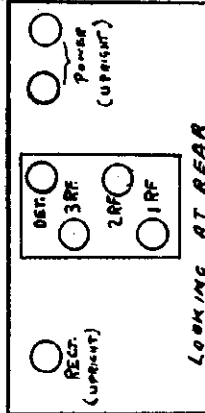
* Not true reading because of resistance in circuit.

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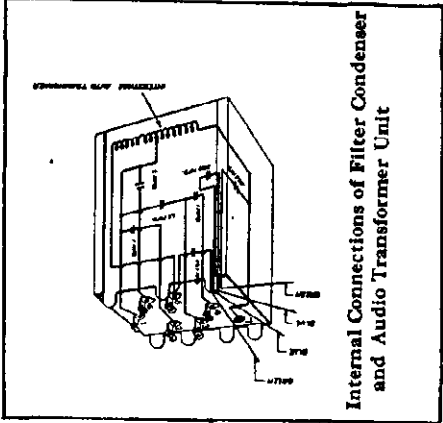
MODEL Victor R-15
Schematic



POWER TRANSFORMER
 105-115 VOLTS { PRIMARY START-BLACK-RED TR. PRIMARY TAP-BLACK-RED 50-40 PRIMARY FINISH-BLACK
 100-110 VOLTS { UK-280 PLATE START-BLACK-BLUE TR. UK-280 PLATE FINISH-BLACK-BLUE TR. UK-280 3RD PLATE MID-PAN-BLACK-RED TR. UK-280 5TH PLATE MID-PAN-BLACK-RED TR.
 5 VOLTS { UK-280 PLATE START-BROWN-GREEN TR. UK-280 PLATE FINISH-BROWN-GREEN TR.
 240 VOLTS { HIGH CURRENT FIL. 3 BERT. BROWN. HIGH CURRENT FIL. 2 BERT. BROWN.



LOOKING AT REAR



Internal Connections of Filter Condenser and Audio Transformer Unit

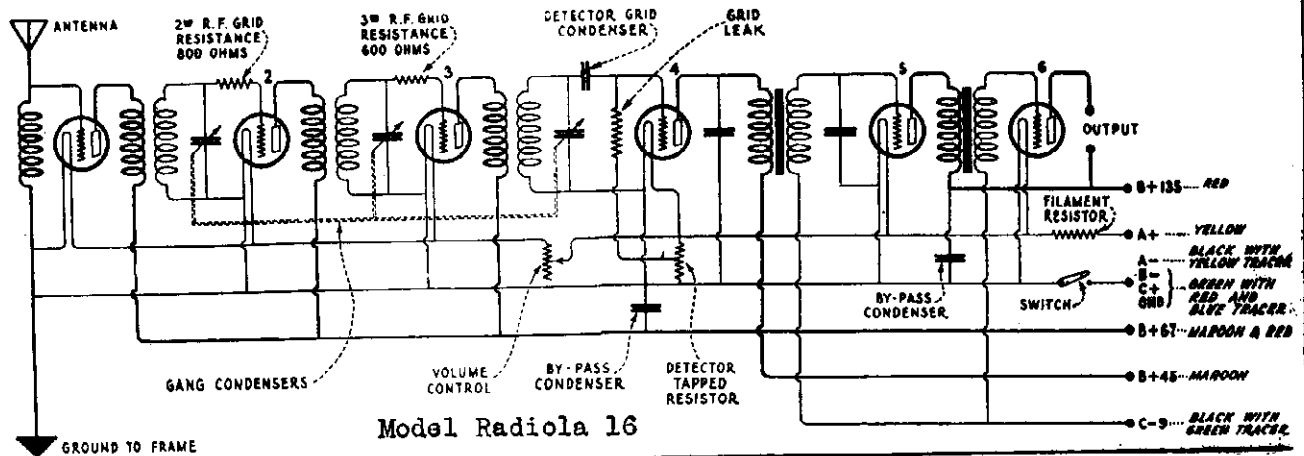
Schematic Wiring Diagram, Victor Radio R-15

- C-1 TUNING CONDENSER
- C-2 TUNING CONDENSER
- C-3 0.1 MFD. CONDENSER
- C-4 0.1 MFD. CONDENSER
- C-5 0.1 MFD. CONDENSER
- C-6 TUNING CONDENSER
- C-7 0.1 MFD. CONDENSER
- C-8 TUNING CONDENSER
- C-9 0.1 MFD. CONDENSER
- C-10 0.1 MFD. CONDENSER
- C-11 0.1 MFD. CONDENSER
- C-12 0.1 MFD. CONDENSER
- C-13 75 MFD. CONDENSER
- C-14 25 MFD. CONDENSER
- C-15 320 MHF. CONDENSER
- C-16 320 MHF. CONDENSER
- C-17 0.1 MFD. CONDENSER
- C-18 20 MFD. CONDENSER
- C-19 1.5 MFD. CONDENSER
- C-20 10 MFD. CONDENSER
- C-21 0.25 MFD. CONDENSER
- C-22 0.25 MFD. CONDENSER
- C-23 0.05 MFD. CONDENSER
- C-25 57015 MHF. ADJ. COND.
- R-1 VAR. RESISTOR 50,000 ~
- R-2 120 ~ RESISTOR
- R-3 VAR. RESISTOR 50,000 ~
- R-4 17,000 ~ RESISTOR
- R-5 200,000 ~ RESISTOR
- R-6 3,200 ~ RESISTOR
- R-7 3,200 ~ RESISTOR
- R-8 3.5 ~ RESISTOR
- R-9 3.5 ~ RESISTOR
- R-10 715 ~ RESISTOR
- R-11 630,000 RESISTOR
- R-12 430,000 RESISTOR
- R-13 830 ~ RESISTOR
- R-14 16,000 ~ RESISTOR
- R-17 12,000 ~ RESISTOR
- T-1 POWER TRANSFORMER
- T-2 OUTPUT TRANSFORMER
- L-17 FILTER REACTOR
- L-18 SPEAKER FIELD
- L-19 SPEAKER VOICE COIL
- L-20 INTERSTROKE TRANSFORMER

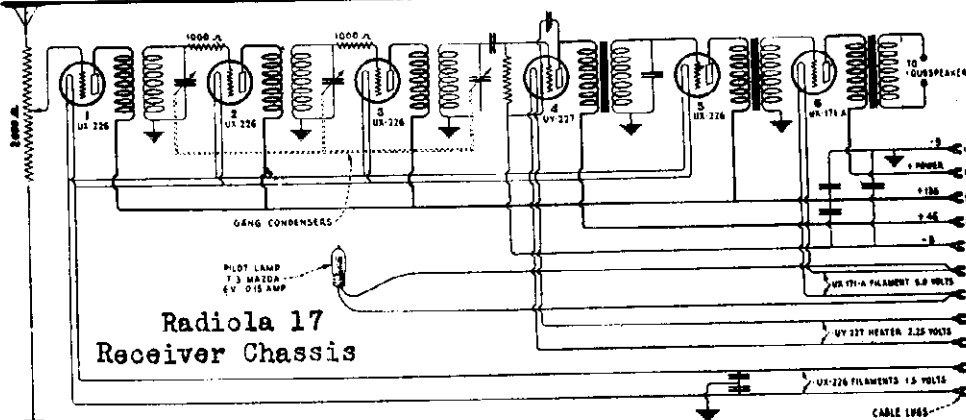
Tube	Fil.V.	Plt.V.	Grd.V.	S	Grd.V.	Plt.Crnt.
10F	2.1	153	2.7	78.	2.9	ma.
2RF	2.1	154	2.7	77.	3.4	
3RF	2.1	152	2.8	75.	3.1	
Det	2.1	215	4.6	34.	0.4	
PPAF	2.05	190	4.5		25.	
Rect	4.1					Plate current each Fil.36.

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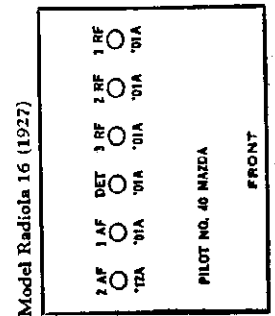
MODEL Radiola 16
MODEL Radiola 17



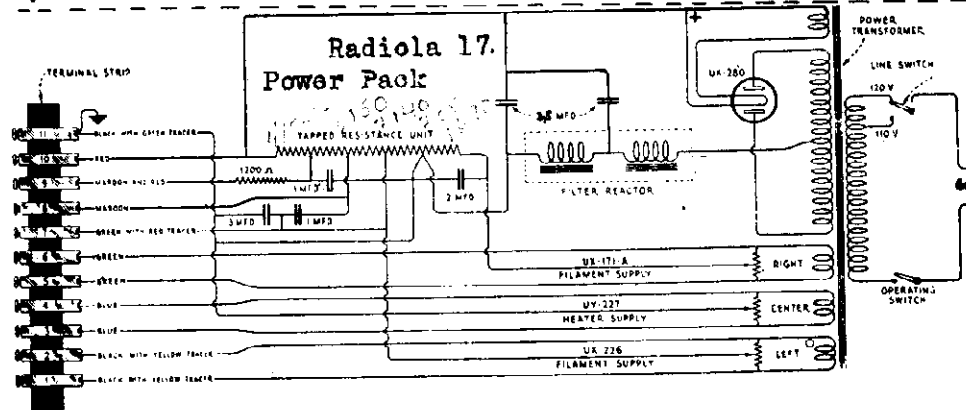
Model Radiola 16



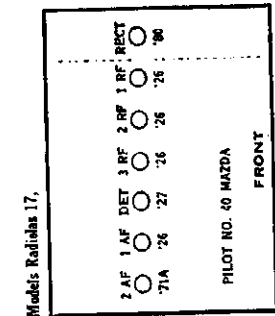
Radiola 17
Receiver Chassis



Model Radiola 16 (1927)

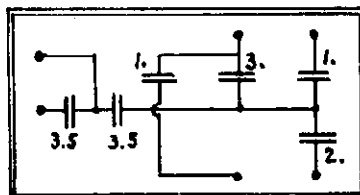


Radiola 17.
Power Pack



Model Radiola 17.

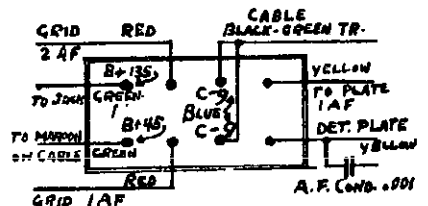
Internal Connections
of filter condenser
Radiola 17 Pack



RADIOLA—Models 17
Line Voltage 112—120 Volt Tap—Volume Control
Full

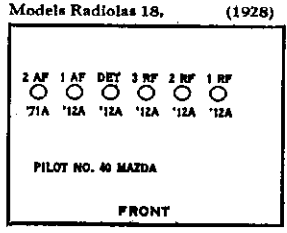
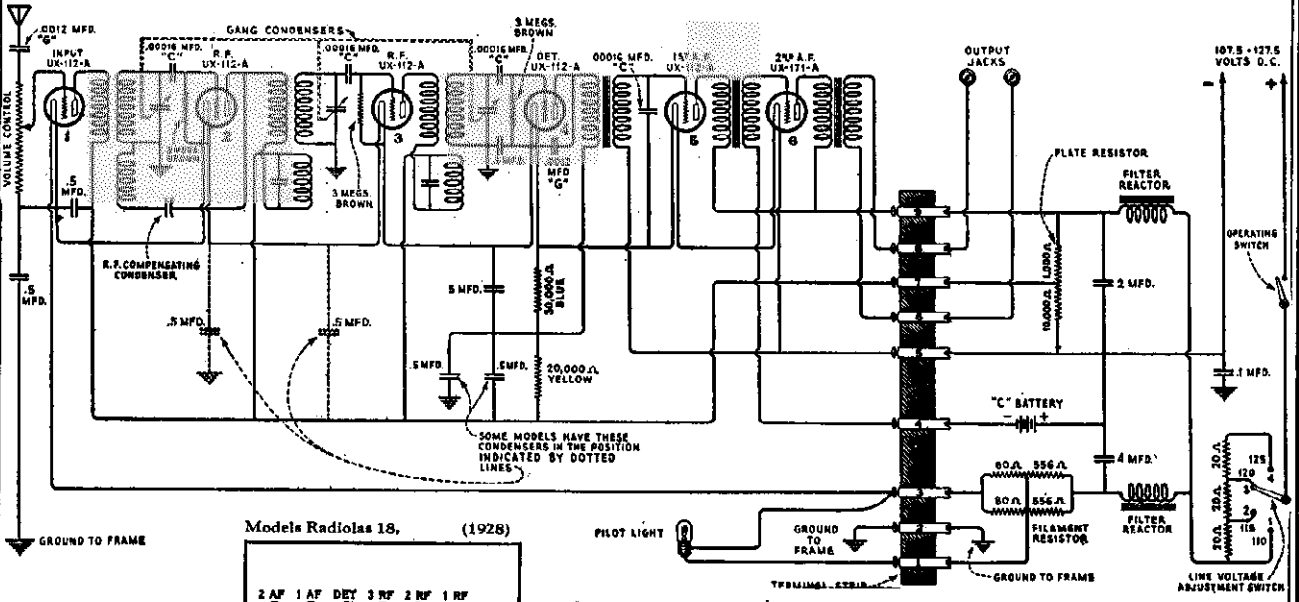
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1ST AF DET ETC)	READINGS PLUG IN SOCKET OF SET										
			TUBE OUT					TUBE IN TESTER					
			A VOLTS	B VOLTS	C VOLTS	L VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE			
1	226	1st. R.F.	1.4	126	1.3	122	8	—	4.5	8.5	4.0		
2	226	2nd. R.F.	1.4	126	1.3	122	8	—	4.5	8.5	4.0		
3	226	3rd. R.F.	1.4	126	1.3	122	8	—	4.5	8.5	4.0		
4	227	Detector	2.4	126	2.2	122	8	—	3.0	3.1	—		
5	226	1st. A.F.	1.4	126	1.3	120	8	—	4.0	7.8	3.8		
6	171A	2nd. A.F.	4.0	200	4.7	132	30	—	16.0	10.0	2.0		
7	260	Rectifier	—	—	—	—	—	—	—	—	—		

Connections to A.F. Transf
RADIOLA 16

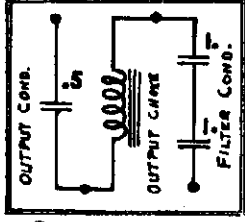


MODEL Radiola 18 DC
MODEL Radiola 18 AC

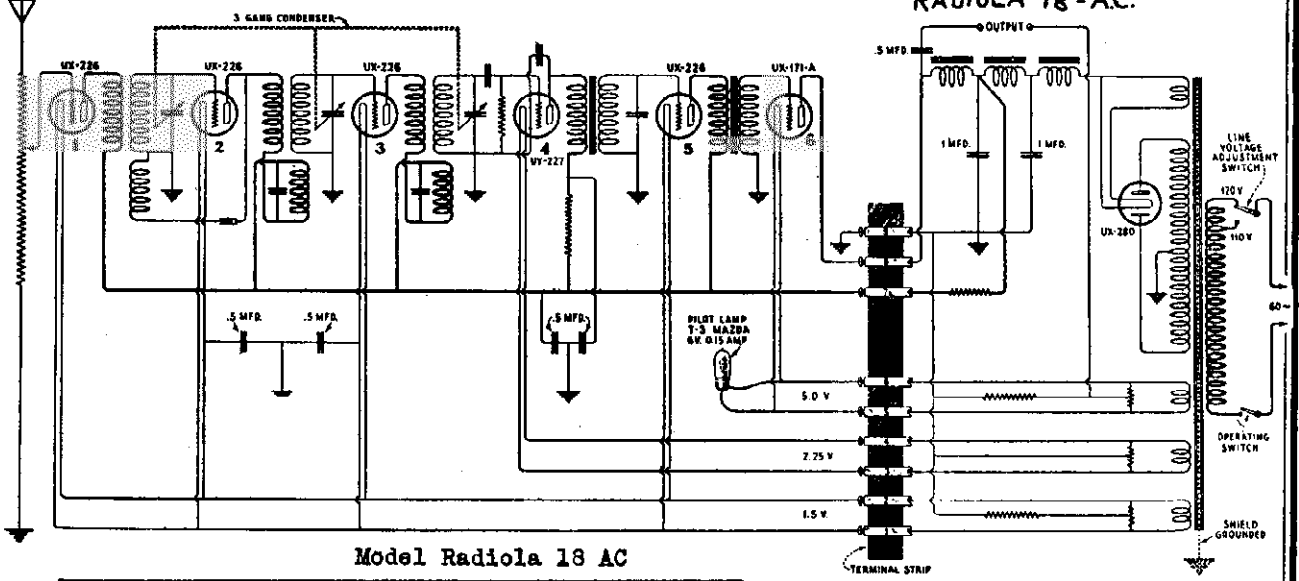
R. C. A. VICTOR CO., INC.



Model Radiola 18 DC

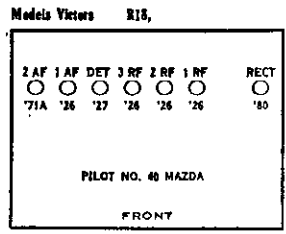


RADIOLA 18-AC.



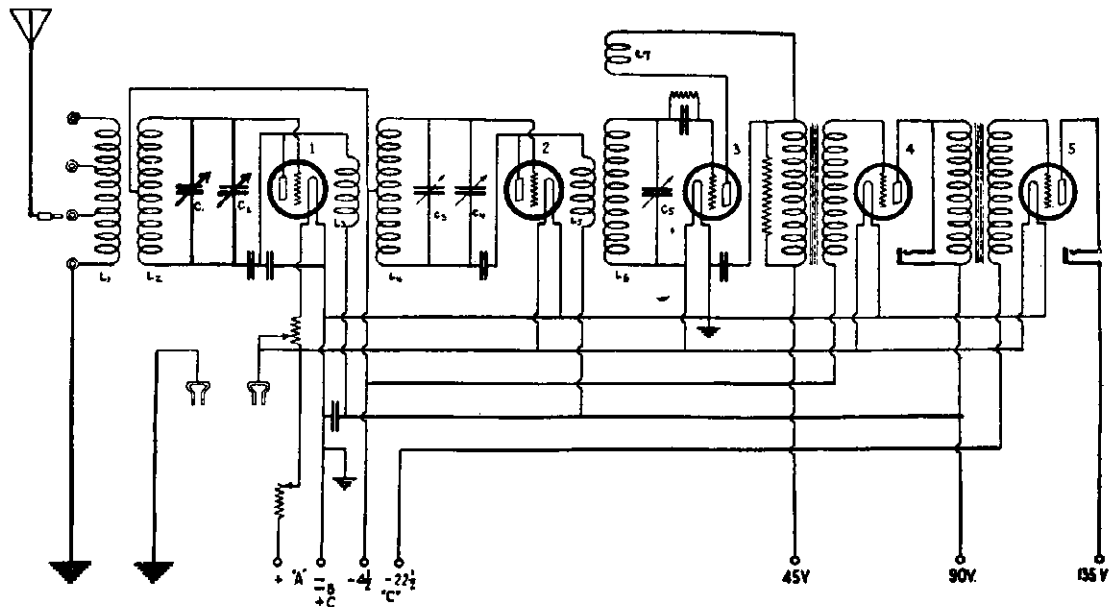
Model Radiola 18 AC

Model 18 D.C.				
Tube No.	Fil. to Grid Volts	Fil. to Plate Volts	Plate Ma.	Fil. Volts
1	5	45	4.5	4.7
2	4	50	8.	4.8
3	4	55	5.5	5.
4	4	21	1.	5.1
5	10	90	3.5	5.2
6	22.5	90	10.	5.3

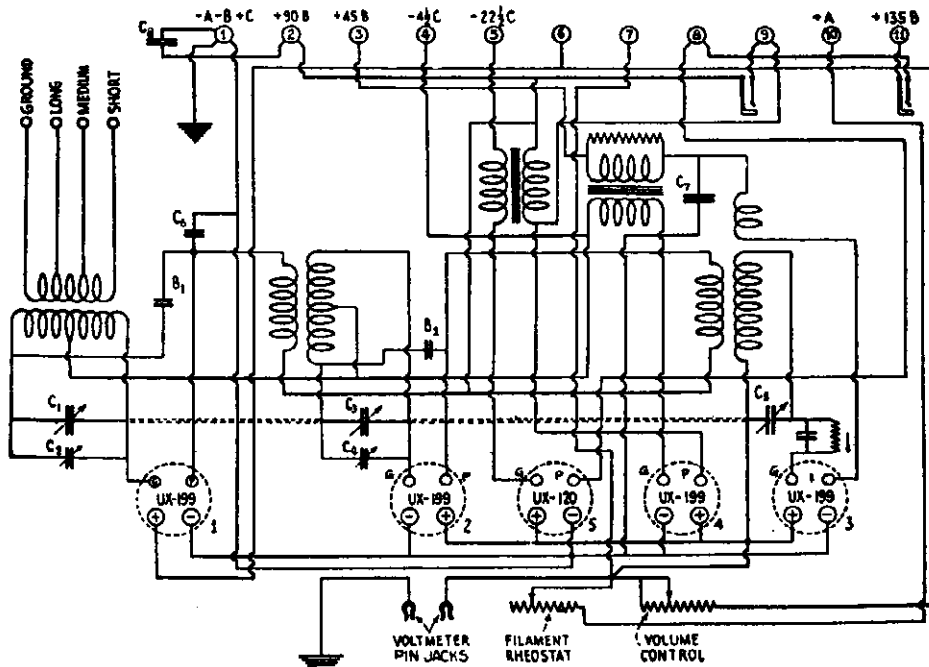


MODEL Radiola 20

R. C. A. VICTOR CO., INC.

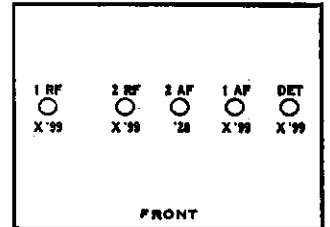


Radiola 20.

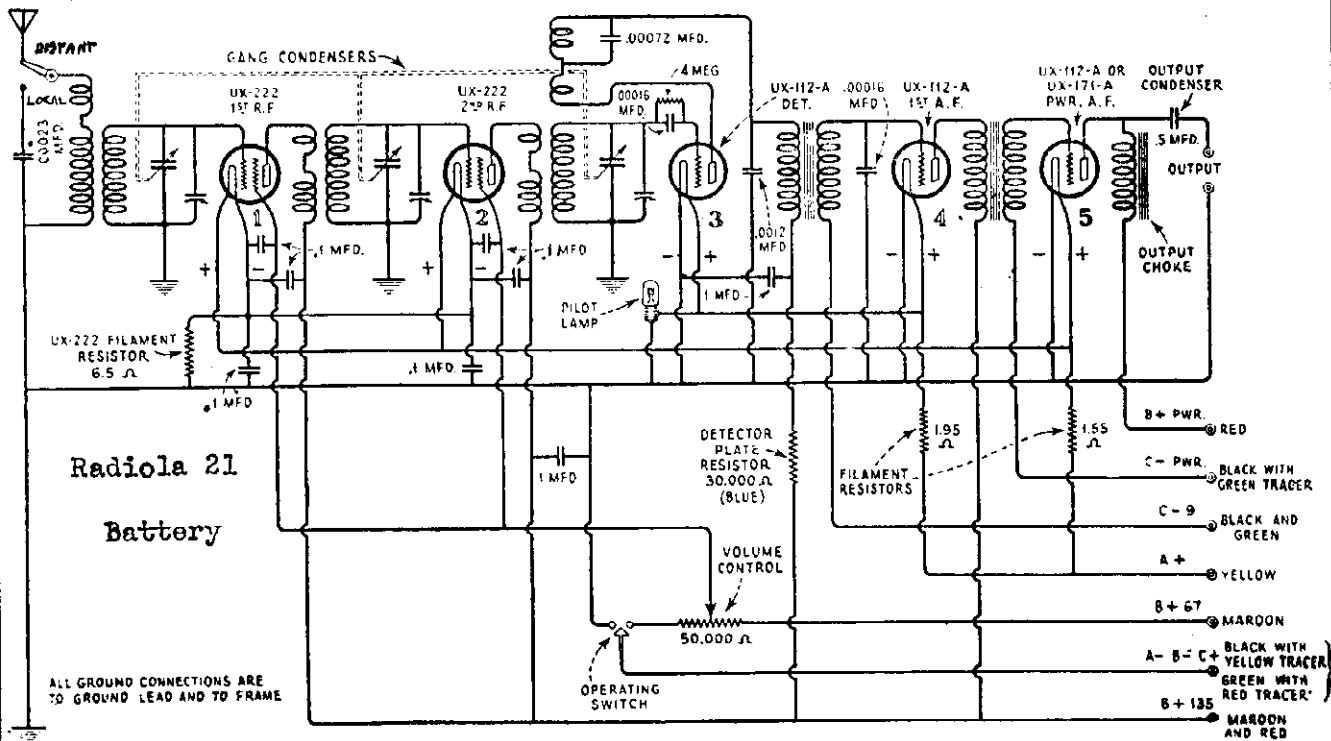


Continuity Diagram of the Radiola 20

Model Radiola 20 (1925)



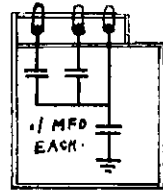
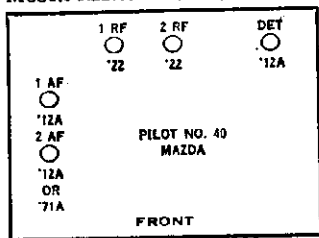
- | | |
|--------------|-----------------------------|
| B plus 135 | Red |
| B plus 90 | Maroon and Red |
| B plus 45 | Maroon |
| A- B- C plus | Green and Yellow-Red Tracer |
| -4.5 | Black and Green |
| -22.5 | Black with Green Tracer |
| A plus | Yellow |



Radiola 21
Battery

ALL GROUND CONNECTIONS ARE TO GROUND LEAD AND TO FRAME

Models Radiolas 21, 22 (1929)



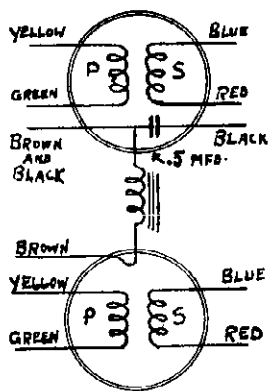
RF Bypass Unit

RADIOIA—Models 21 and 22
Volume Control at Minimum

TUBE NO. OR OTHER IDENTIFYING NO.	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET								
			OPERATING VOLTAGES			MILLIAMPERES					
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID (A) OR SCREEN GRID (B)	NORMAL GRID (C) OR SUPPLY (D)	CATHODE TO HEATER	SCREEN TO PLATE	PLATE TO PLATE (E)	TUBE TEST (F)	PLATE CURRENT (G) CHANGE (H)
222	1 R.F.	1	3.2	135	1.6	0	-	-	0		
222	2 R.F.	2	3.2	135	1.6	0	-	-	0		
112A	DET.	3	5.0	45	-	-	-	-	3.5		
112A	1 A.F.	4	5.0	125	-	9	-	-	6.5		
171A	PWR	5	5.0	130	-	27	-	-	15		

Volume Control at Maximum

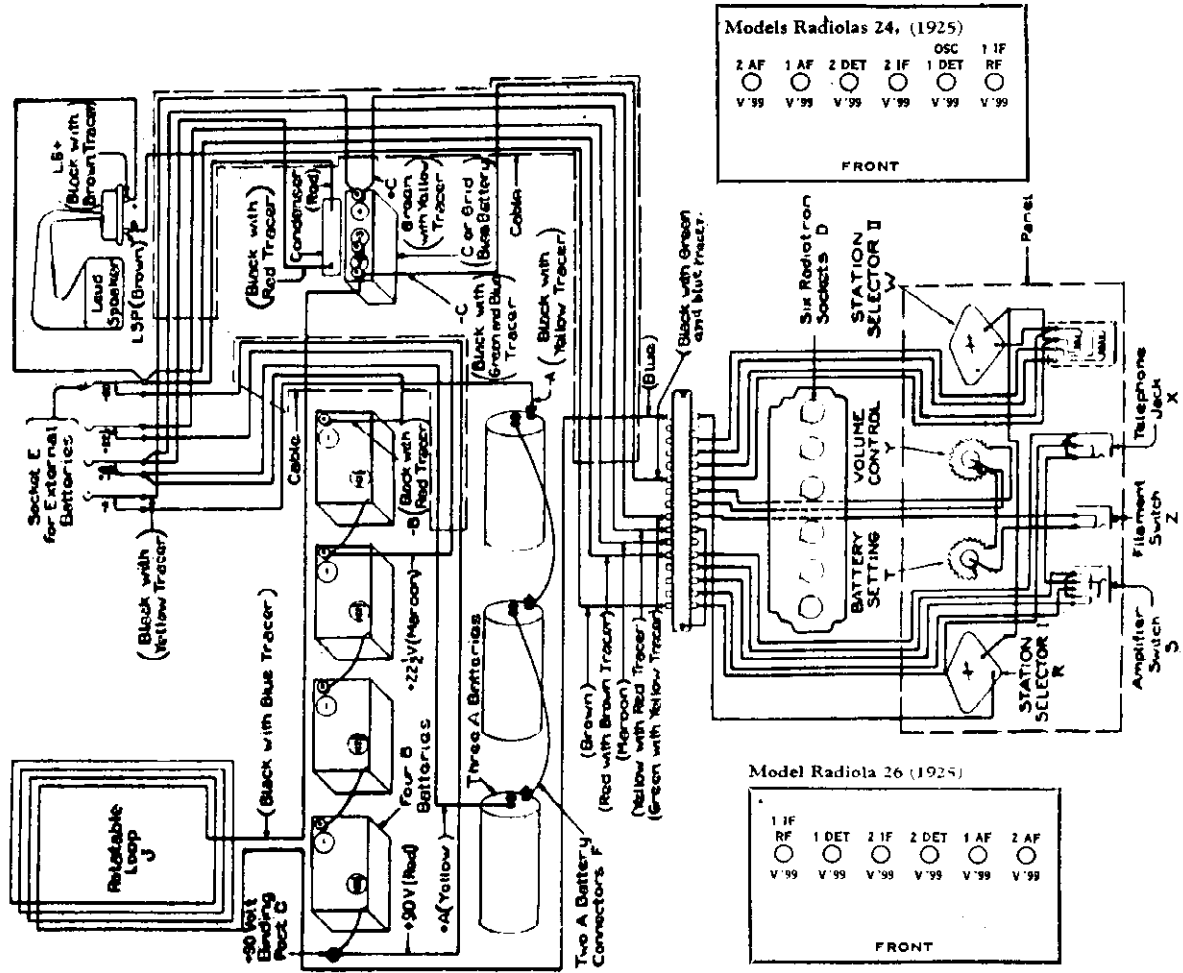
TUBE NO. OR OTHER IDENTIFYING NO.	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET								
			OPERATING VOLTAGES			MILLIAMPERES					
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID (A) OR SCREEN GRID (B)	NORMAL GRID (C) OR SUPPLY (D)	CATHODE TO HEATER	SCREEN TO PLATE	PLATE TO PLATE (E)	TUBE TEST (F)	PLATE CURRENT (G) CHANGE (H)
222	1 R.F.	1	3.2	135	1.6	67	-	-	5.0		
222	2 R.F.	2	3.2	135	1.6	67	-	-	5.0		
112A	DET.	3	5.0	45	-	-	-	-	3.5		
112A	1 A.F.	4	5.0	125	-	9	-	-	6.5		
171A	PWR	5	5.0	130	-	27	-	-	15		



Internal connections of A-F coupling unit.

R. C. A. VICTOR CO., INC.

MODEL Radiola 24
MODEL Radiola 26



Models Radiolas 24, (1925)

2 AF	1 AF	2 DET	2 IF	1 OSC	1 IF
V 99	V 99	V 99	V 99	V 99	V 99

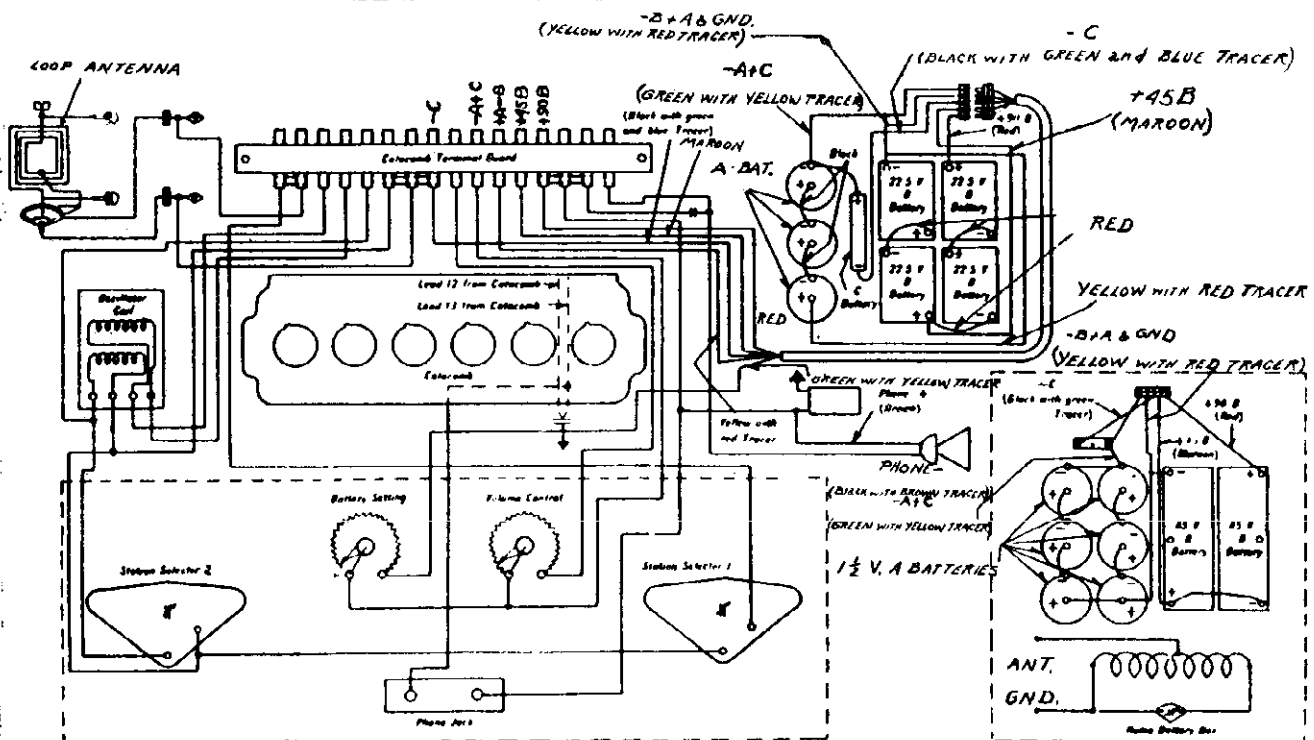
FRONT

Model Radiola 26 (1925)

1 IF	1 DET	2 IF	2 DET	1 AF	2 AF
V 99	V 99	V 99	V 99	V 99	V 99

FRONT

Model Radiola 24 Connection Diagram.



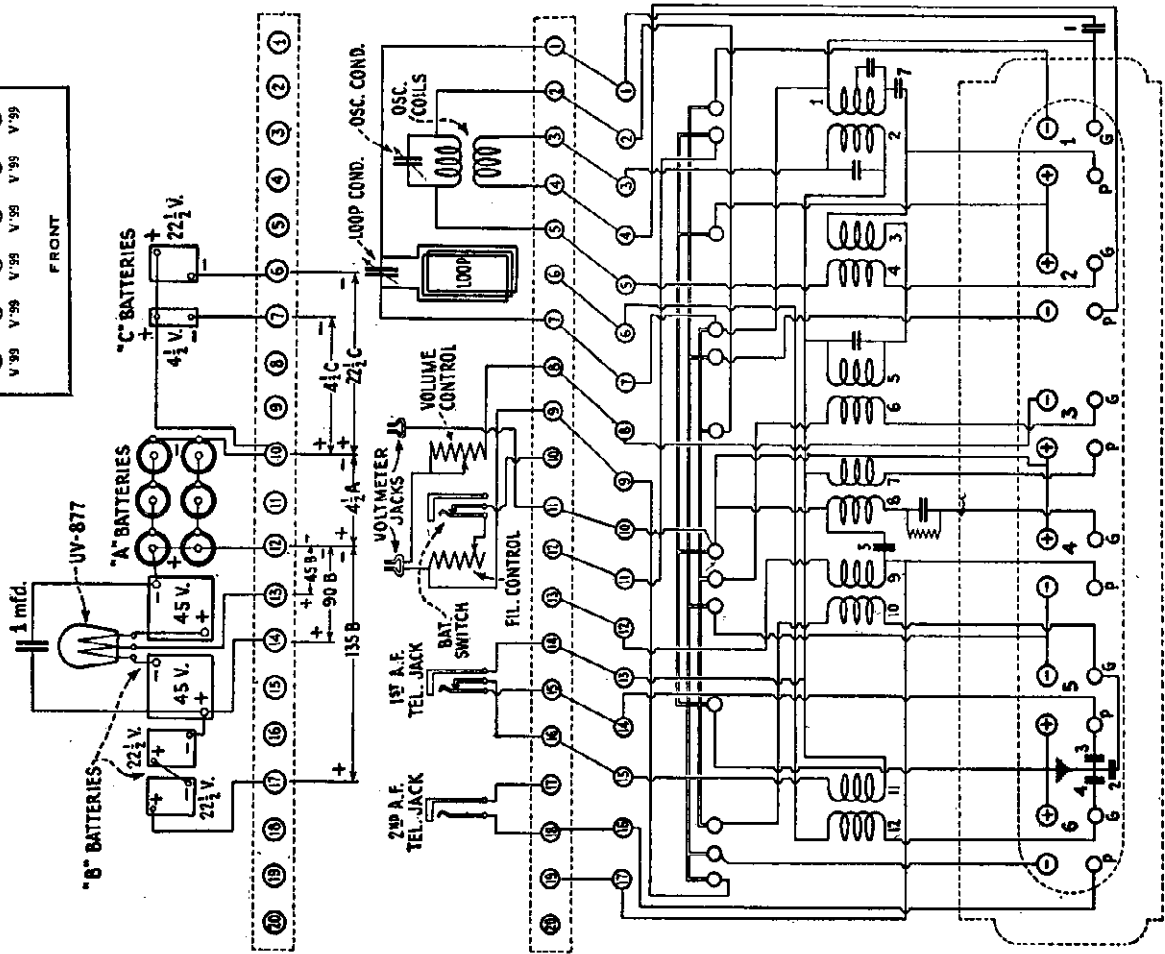
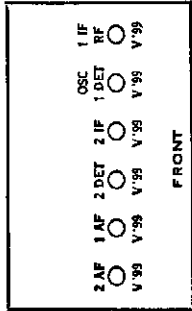
Model Radiola 26

Connection diagram

MODEL Radiola 25

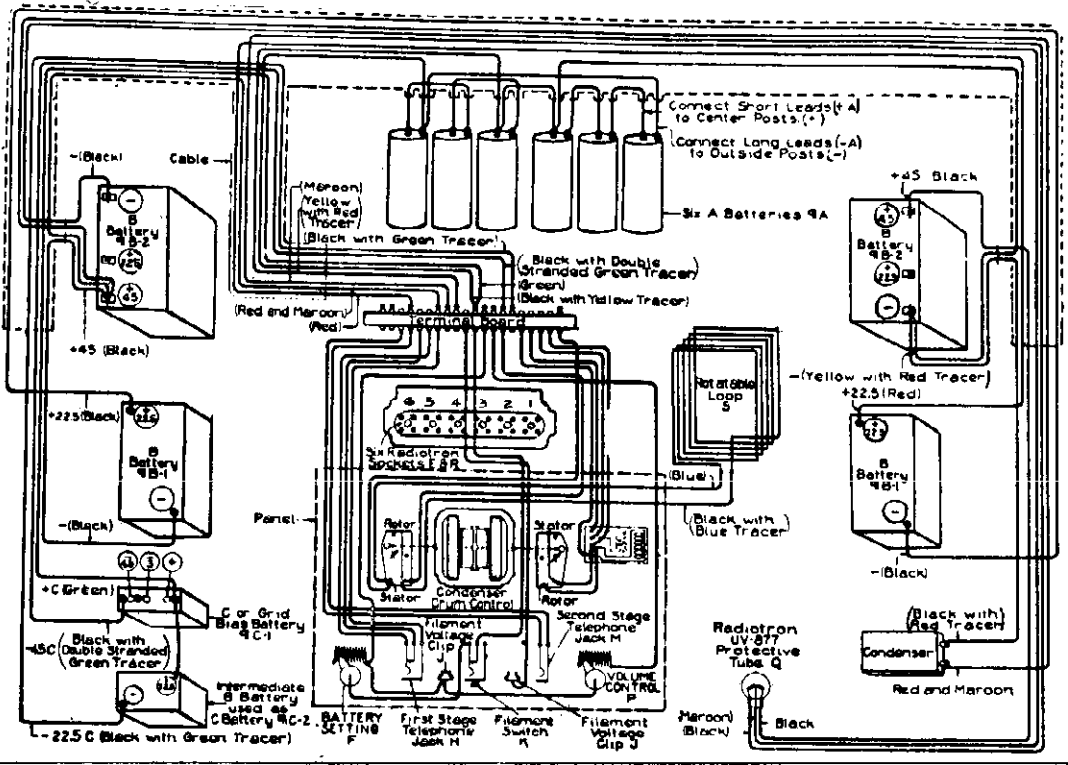
R. C. A. VICTOR CO., INC.

Models Radiolas 24, 25 (1925)



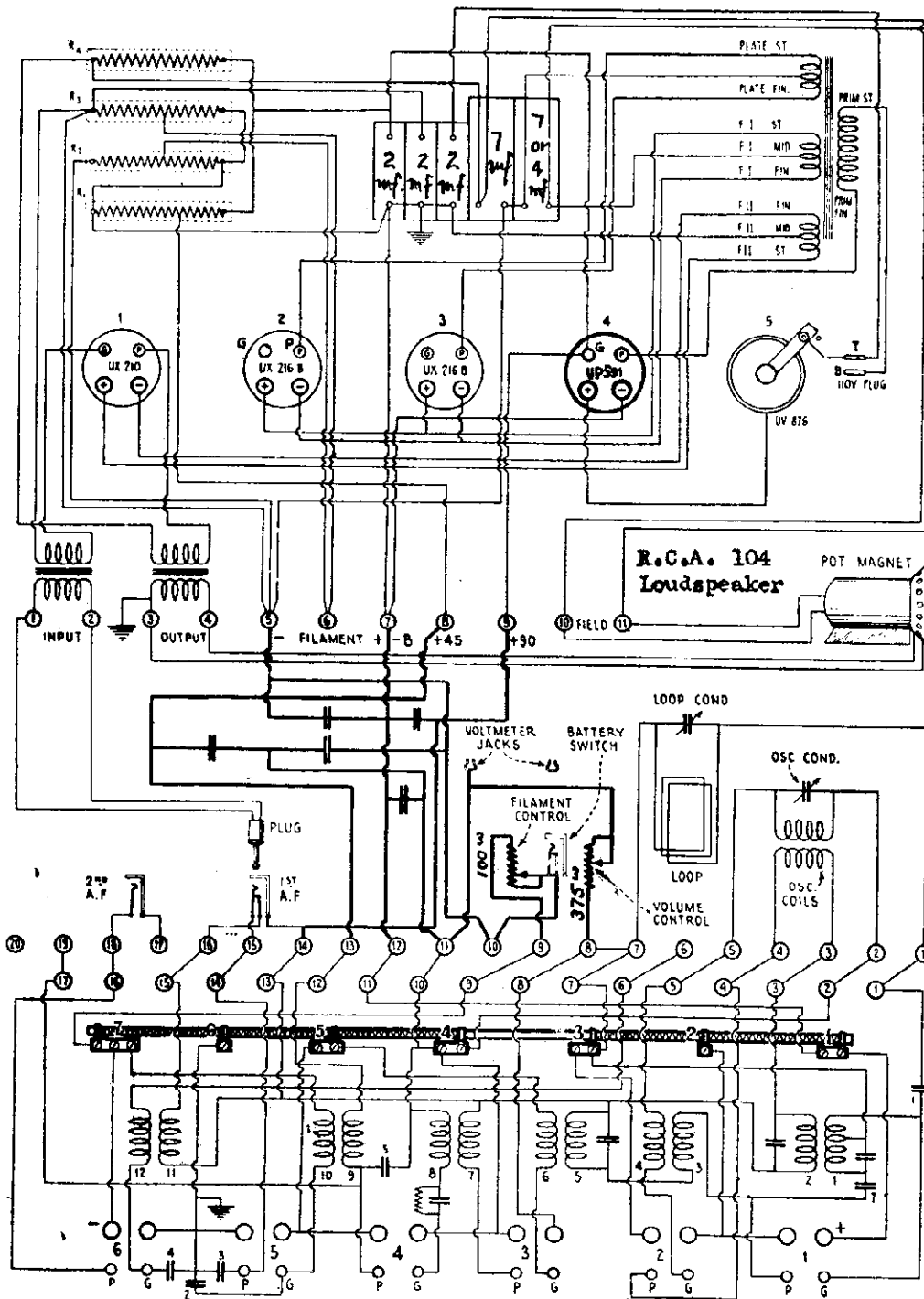
VOLTAGE READINGS TAKEN AT CATACOMB

VOLTS	TERMINAL	TERMINAL
135B	17	12
90B	14	12
45B	13	12
22½C	20	6
4½C	20	7
4½A	20	10



R. C. A. VICTOR CO., INC.

MODEL Radiola 25
With 104 Power Pack



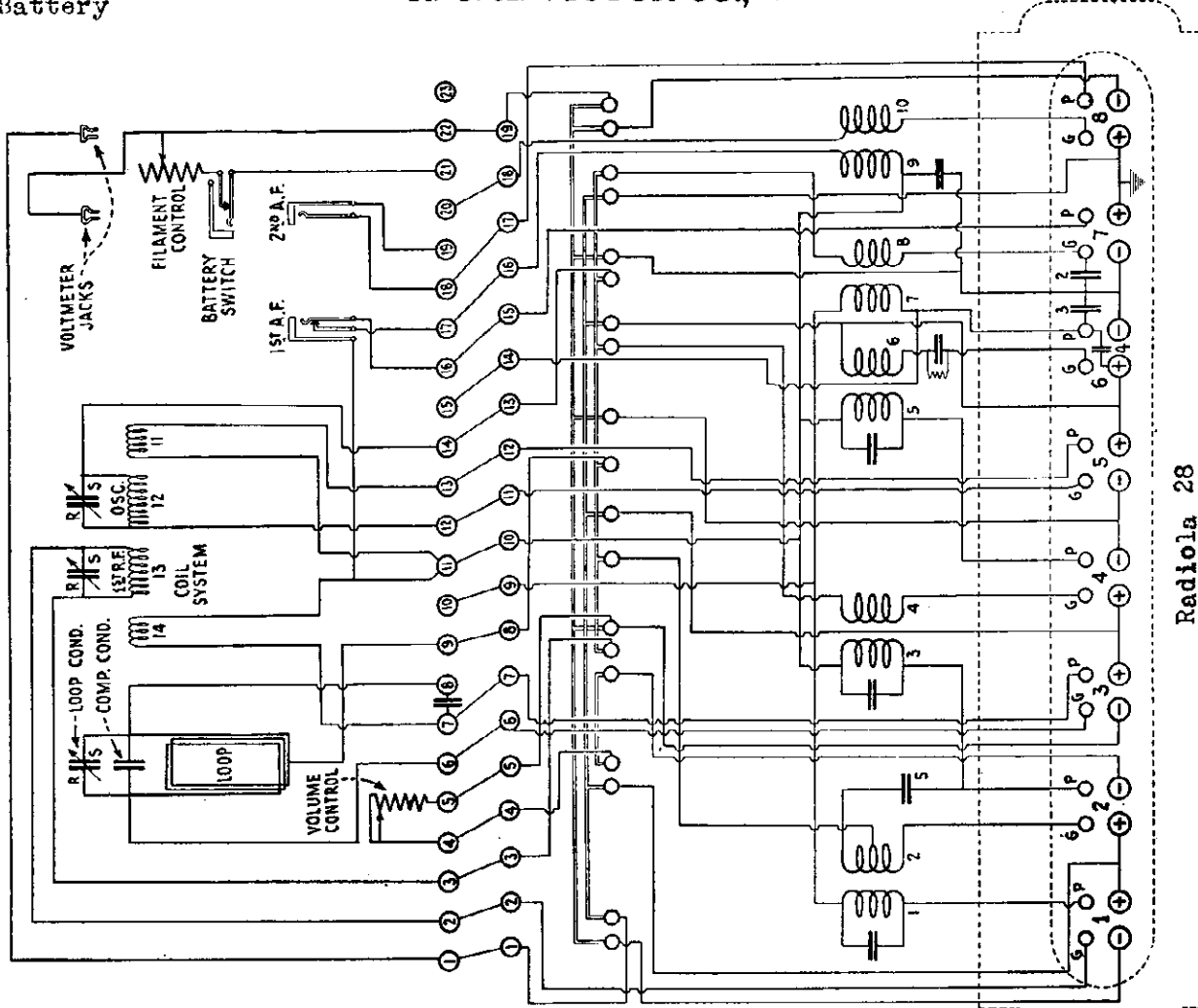
VOLTAGE READINGS OF RADIOLA 25
 31 volts with tubes lighted
 21.6 " normal
 41 volts normal
 Between terminals 10 and 12
 12 " 13
 13 " 14

RADIOLA 25 A.C. RESISTANCES			
Terminals	Lower limit	Normal	Upper limit
1 and 2	218.5 V.	230 V.	241.5 V.
2 and 3	192 "	201 "	208 "
3 and 4	open	open	open
4 and 5	151.9 "	155 "	158.1 "
5 and 6	143 "	150 "	153 "
6 and 7	44.75 "	50 "	55.25 "

RADIOLA 25
A.C. OPERATED
 With
 Model 104 Loudspeaker
 and Model UP-971 A.C.
 Package.
 (A.C. Package Changes
 Shown In Heavy Lines.)

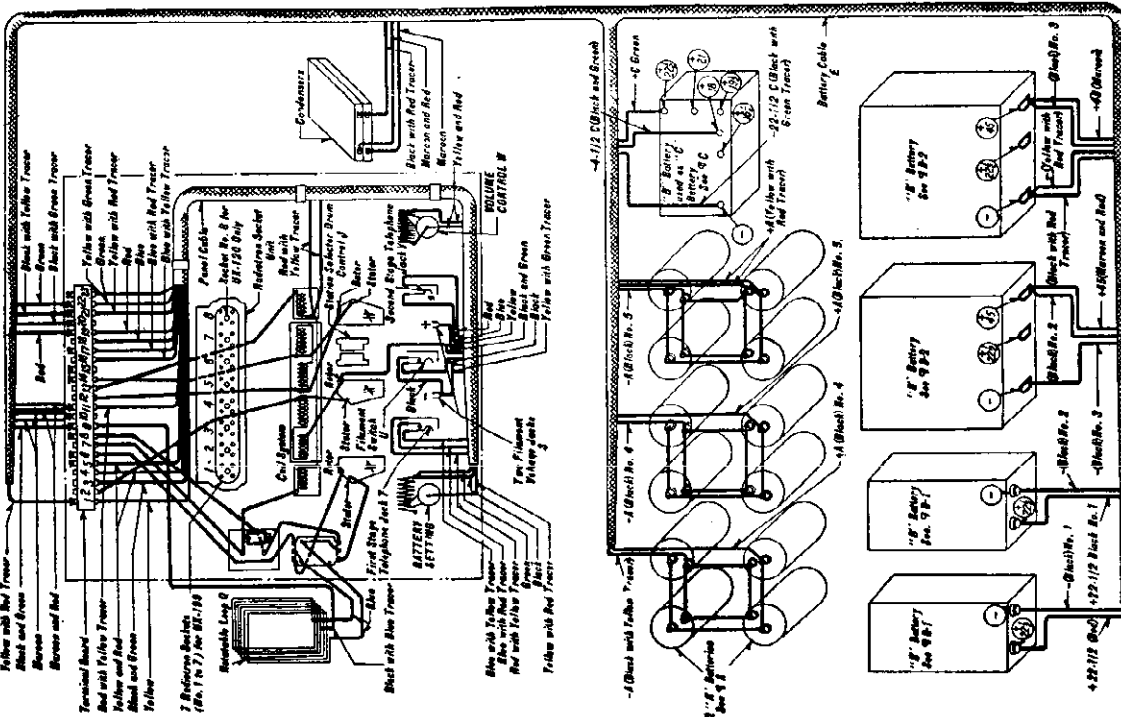
MODEL Radiola 28
Battery

R. C. A. VICTOR CO., INC.



Radiola 28

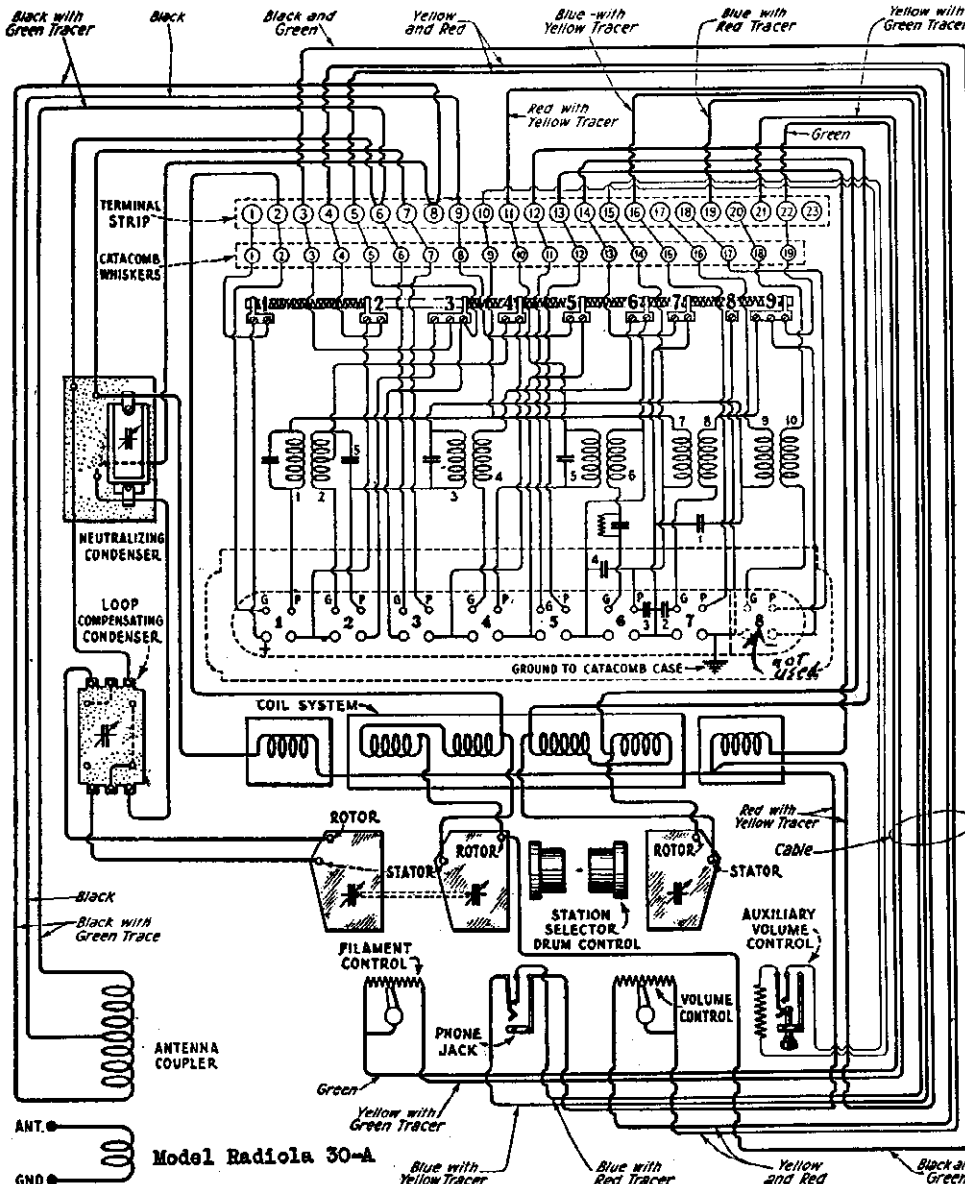
IF PEAK 40 KC.



WIRING DIAGRAM FOR RADIO 28
 In this wiring diagram, two or more leads of a like color contained in the same cable may be distinguished by the numeral following the color designation at each end of a green lead.

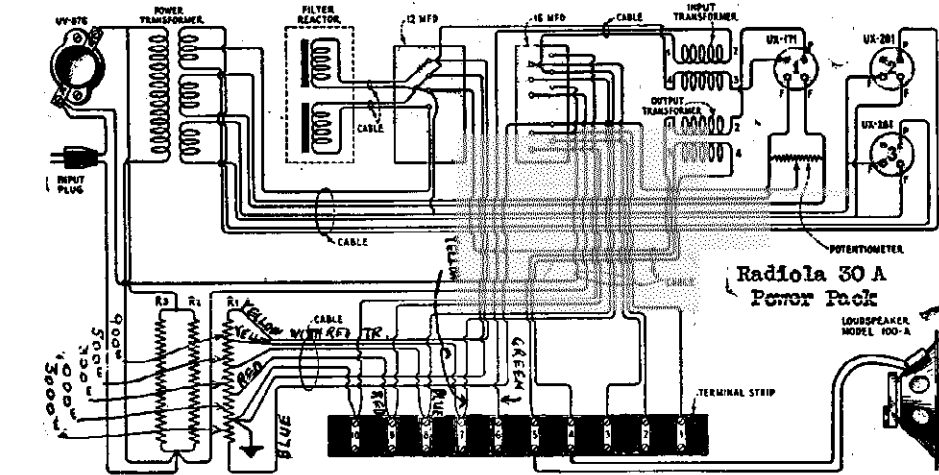
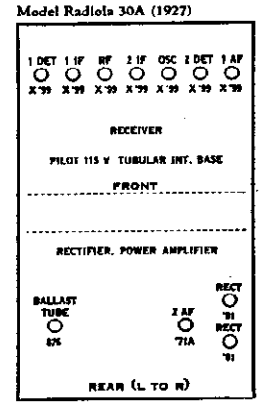
R. C. A. VICTOR CO., INC.

MODEL Radiola 30
MODEL Radiola 30-A AC
Power Pack



RESISTANCES AT RESISTANCE TERMINALS

Terminals	Low	Normal	High
1 and 2	260	271	282
2 and 3	open	open	open
3 and 4	230	236.5	243
4 and 5	191	197	203
5 and 6	176	183.5	191
6 and 7	146	154.5	163
7 and 8	137	145.5	154
8 and 9	45	50	55

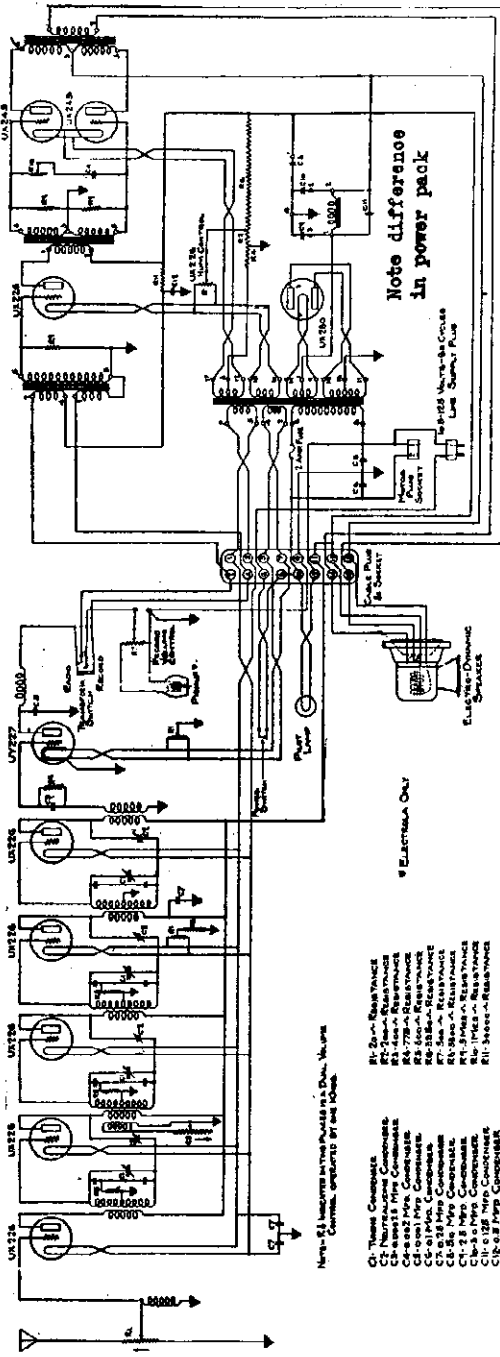


RADIOLA—Model 30A
Note: For "A" volt tests adjust controls on panel so that reading on first tube tested is that shown. This gives an average condition of operation and a margin of safety in all tests.

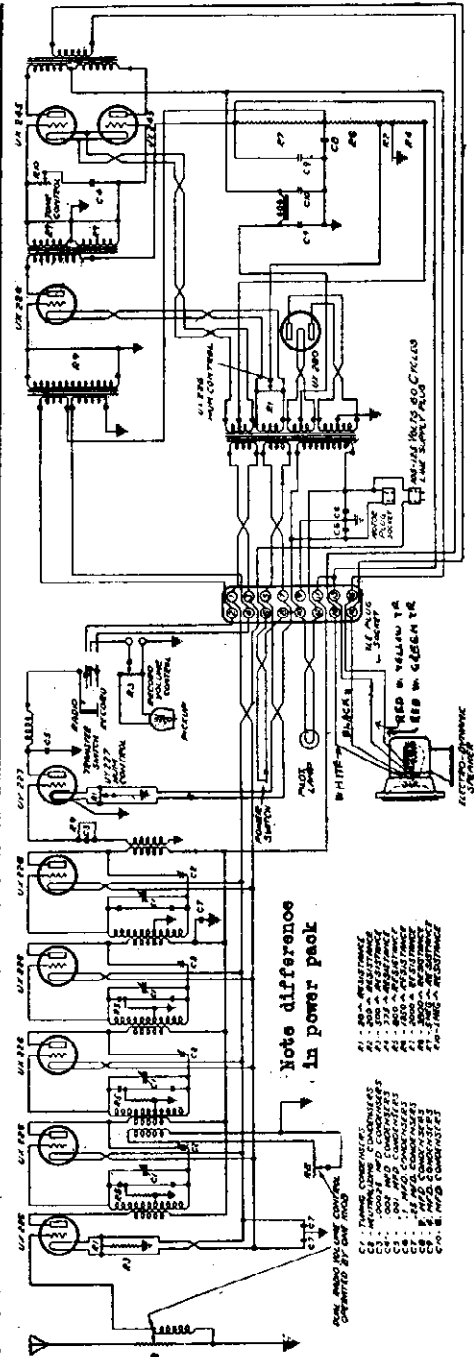
TEST	TEST POINT	TEST INSTRUMENT	TEST PROCEDURE	TEST RESULT
1	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
2	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
3	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
4	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
5	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
6	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
7	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
8	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
9	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
10	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
11	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
12	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
13	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
14	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
15	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
16	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
17	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
18	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
19	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
20	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
21	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%
22	115 V. AC	VOLTMETER	Apply 115 V. AC to input plug.	115 V. ± 5%

MODEL Victor R-32,
RE-45 and R-52

R. C. A. VICTOR CO., INC.



- Note: 6X8 sockets in the R-52 model are 6X8 sockets. Connect according to the diagram.
- 6X4 - 6X4 Vacuum Tube
 - 6X5 - 6X5 Vacuum Tube
 - 6X6 - 6X6 Vacuum Tube
 - 6X7 - 6X7 Vacuum Tube
 - 6X8 - 6X8 Vacuum Tube
 - 6X9 - 6X9 Vacuum Tube
 - 6X10 - 6X10 Vacuum Tube
 - 6X11 - 6X11 Vacuum Tube
 - 6X12 - 6X12 Vacuum Tube
 - 6X13 - 6X13 Vacuum Tube
 - 6X14 - 6X14 Vacuum Tube
 - 6X15 - 6X15 Vacuum Tube
 - 6X16 - 6X16 Vacuum Tube
 - 6X17 - 6X17 Vacuum Tube
 - 6X18 - 6X18 Vacuum Tube
 - 6X19 - 6X19 Vacuum Tube
 - 6X20 - 6X20 Vacuum Tube
 - 6X21 - 6X21 Vacuum Tube
 - 6X22 - 6X22 Vacuum Tube
 - 6X23 - 6X23 Vacuum Tube
 - 6X24 - 6X24 Vacuum Tube
 - 6X25 - 6X25 Vacuum Tube
 - 6X26 - 6X26 Vacuum Tube
 - 6X27 - 6X27 Vacuum Tube
 - 6X28 - 6X28 Vacuum Tube
 - 6X29 - 6X29 Vacuum Tube
 - 6X30 - 6X30 Vacuum Tube
 - 6X31 - 6X31 Vacuum Tube
 - 6X32 - 6X32 Vacuum Tube
 - 6X33 - 6X33 Vacuum Tube
 - 6X34 - 6X34 Vacuum Tube
 - 6X35 - 6X35 Vacuum Tube
 - 6X36 - 6X36 Vacuum Tube
 - 6X37 - 6X37 Vacuum Tube
 - 6X38 - 6X38 Vacuum Tube
 - 6X39 - 6X39 Vacuum Tube
 - 6X40 - 6X40 Vacuum Tube
 - 6X41 - 6X41 Vacuum Tube
 - 6X42 - 6X42 Vacuum Tube
 - 6X43 - 6X43 Vacuum Tube
 - 6X44 - 6X44 Vacuum Tube
 - 6X45 - 6X45 Vacuum Tube
 - 6X46 - 6X46 Vacuum Tube
 - 6X47 - 6X47 Vacuum Tube
 - 6X48 - 6X48 Vacuum Tube
 - 6X49 - 6X49 Vacuum Tube
 - 6X50 - 6X50 Vacuum Tube
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 - 6X62 - 6X62 Vacuum Tube
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 - 6X82 - 6X82 Vacuum Tube
 - 6X83 - 6X83 Vacuum Tube
 - 6X84 - 6X84 Vacuum Tube
 - 6X85 - 6X85 Vacuum Tube
 - 6X86 - 6X86 Vacuum Tube
 - 6X87 - 6X87 Vacuum Tube
 - 6X88 - 6X88 Vacuum Tube
 - 6X89 - 6X89 Vacuum Tube
 - 6X90 - 6X90 Vacuum Tube
 - 6X91 - 6X91 Vacuum Tube
 - 6X92 - 6X92 Vacuum Tube
 - 6X93 - 6X93 Vacuum Tube
 - 6X94 - 6X94 Vacuum Tube
 - 6X95 - 6X95 Vacuum Tube
 - 6X96 - 6X96 Vacuum Tube
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 - 6X98 - 6X98 Vacuum Tube
 - 6X99 - 6X99 Vacuum Tube
 - 6X100 - 6X100 Vacuum Tube

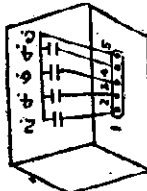


CABLE TERMINAL VOLTAGES

- Between 1 and 5 1.7 volts AC.
- 5 and 7 2.8volts AC.
- 2 and 9 39. volts DC.
- 9 and 11 105. volts DC.
- 13 and 15 185. volts DC.

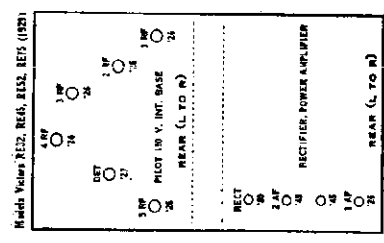
MULTI-PLUG TERMINALS

- #1. Brown-white tracer for 226 filament.
- #2. Blue for transfer switch.
- #3. Brown-white tracer for 226 filament.
- #4. White for transfer switch.
- #5. Brown-blue tracer for 227 filament.
- #6. Black-red tracer for power switch.
- #7. Brown-blue tracer for 227 filament.
- #8. Black-red tracer for power switch.
- #9. Braided copper shield to ground.
- #10. Brown-red tracer for pilot light.
- #11. Red-yellow tracer -B of 226.
- #12. Brown-red tracer for pilot light.
- #13. Red-yellow tracer for field.
- #14. White for voice coil.
- #15. Red-green tracer for speaker field.
- #16. Black for voice coil.



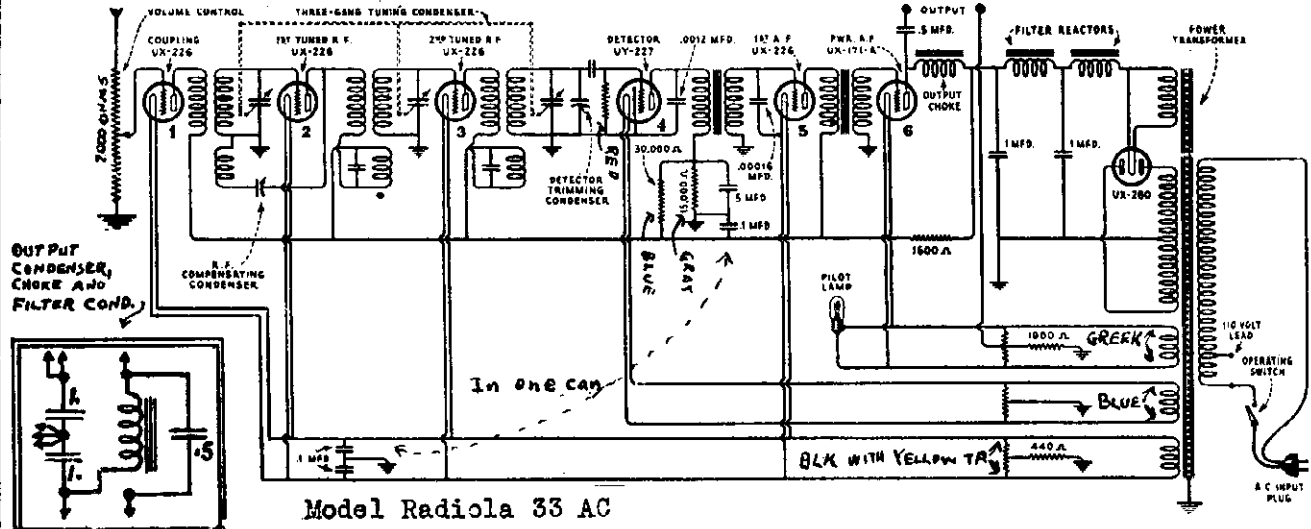
VICTOR—Model R-32
Line Voltage 115—Volume Control Position Max
*Antenna Coupling Stage

TYPE	PART NO.	POSITION	TYPICAL DATA			RESONANT POINT IN SOLELY BY SET			TYPICAL DATA		
			Q	SWR	ATTEN. DB	Q	SWR	ATTEN. DB	Q	SWR	ATTEN. DB
226	1st PP	1.2	11.2	1.4	11.2	1.4	11.2	1.4	11.2	1.4	
226	2nd PP	1.5	11.2	1.4	11.2	1.4	11.2	1.4	11.2	1.4	
226	3rd PP	1.5	11.2	1.4	11.2	1.4	11.2	1.4	11.2	1.4	
226	4th PP	1.5	11.2	1.4	11.2	1.4	11.2	1.4	11.2	1.4	
227	1st PP	2.45	5.2	2.3	4.4	5.2	2.3	4.4	5.2	2.3	
226	1st A	1.5	11.2	1.4	11.2	1.4	11.2	1.4	11.2	1.4	
245	1st A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	2nd A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	3rd A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	4th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	5th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	6th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	7th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	8th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	9th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	10th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	11th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	12th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	13th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	14th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	15th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	16th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	17th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	18th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	19th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	20th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	21st A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	22nd A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	23rd A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	24th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	25th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	26th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	27th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	28th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	29th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	30th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	31st A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	32nd A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	33rd A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	34th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	35th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	36th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	37th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	38th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	39th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	40th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	41st A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	42nd A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	43rd A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	44th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	45th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	46th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	47th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	48th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	49th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	
245	50th A	2.4	20.0	2.3	20.0	2.3	20.0	2.3	20.0	2.3	



MODEL Radiola 33 AC
MODEL Radiola 33 DC

R. C. A. VICTOR CO., INC.

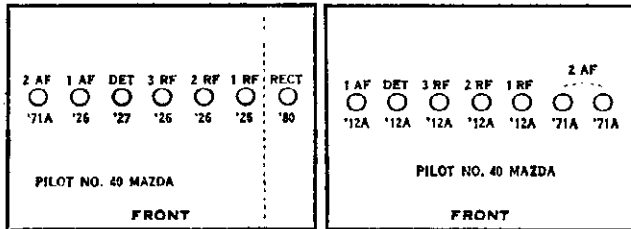


Model Radiola 33 AC

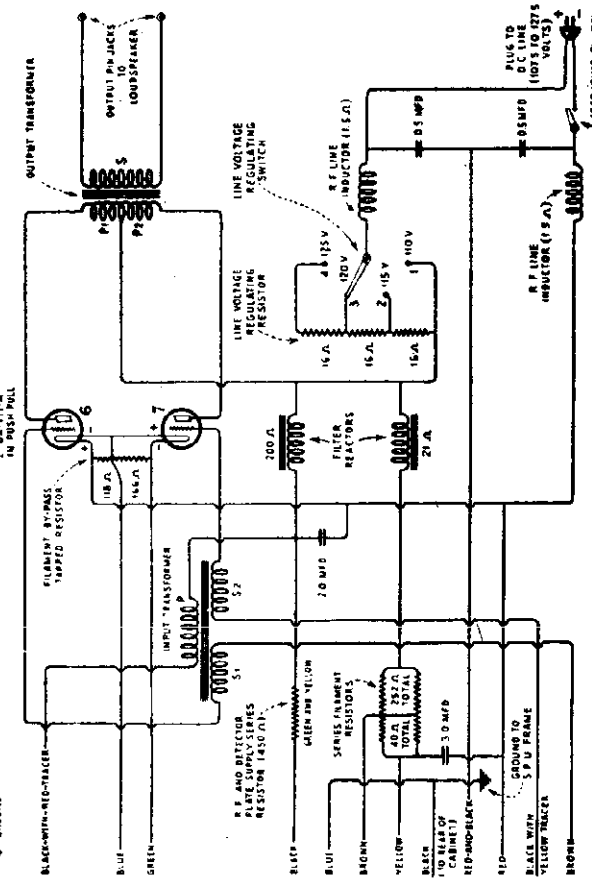
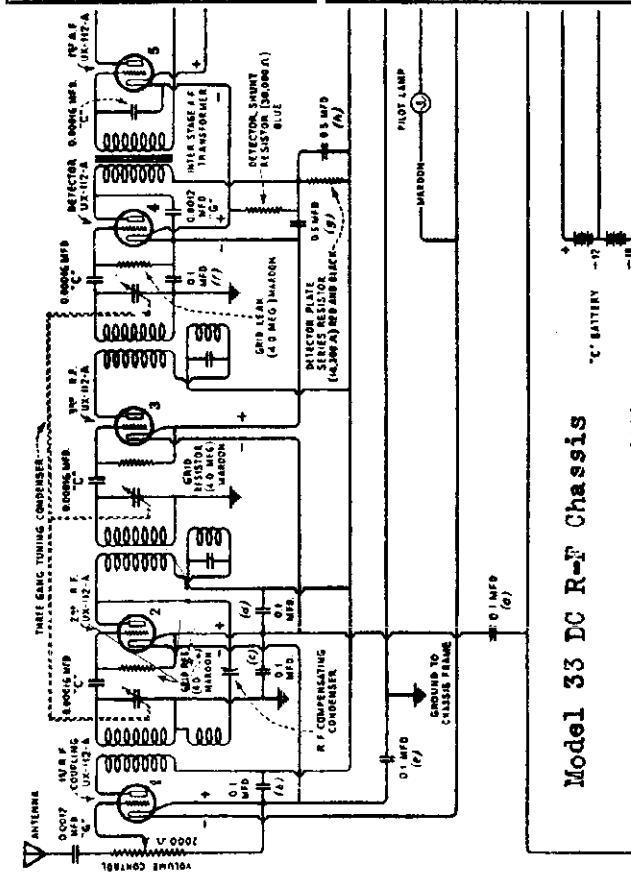
Output condenser,choke and filter condenser.

RADIOLA—Model-33 A.C.
Line Voltage 112—120 Volt Tap—Volume Control Full

Models Radiolas 33, (1927) Model Radiola 33 DC (1929)



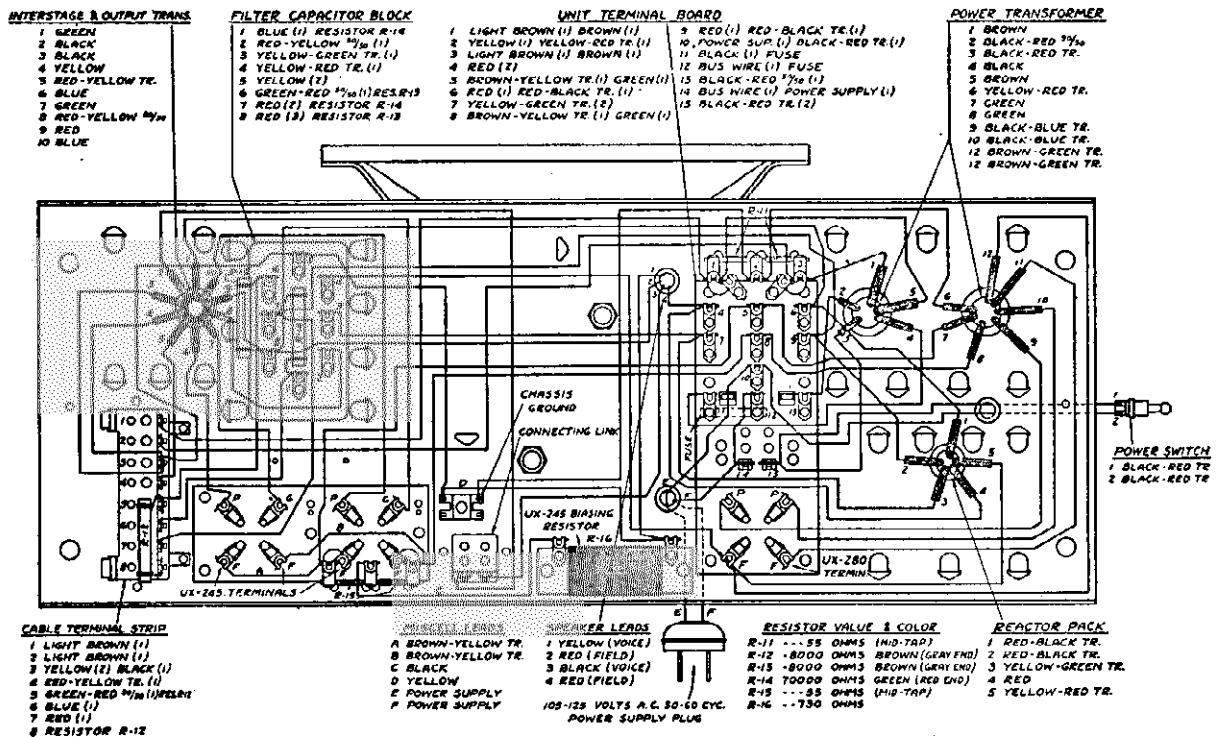
TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION OF TUBE (1ST R.F. DET. ETC.)	READINGS PLUG IN SOCKET OF SET									
			TUBE IN TESTER					TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHANGE	
1	226	1st. R.F.	1.4	125	1.3	122	8		4.5	8.5	4.0	
2	226	2nd. R.F.	1.4	125	1.3	122	8		4.5	8.5	4.0	
3	226	3rd. R.F.	1.4	125	1.3	122	8		4.5	8.5	4.0	
4	226	Detector	2.4	125	2.2	122	0		5.0	3.1	3.1	
5	226	1st. A.F.	1.4	125	1.3	120	8		4.0	7.8	3.8	
6	171A	2nd. A.F.	4.9	200	4.7	132	30		16.0	18.0	2.0	
7	200	Rectifier	-	-	4.8	-	-		20.0	-	-	



Model 33 DC A-F Chassis

R. C. A. VICTOR CO., INC.

MODEL Victor R-35, R-39,
RE-57
A-F Chassis, Voltage

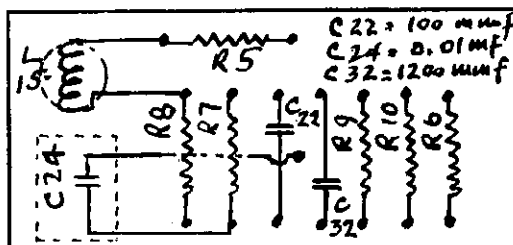
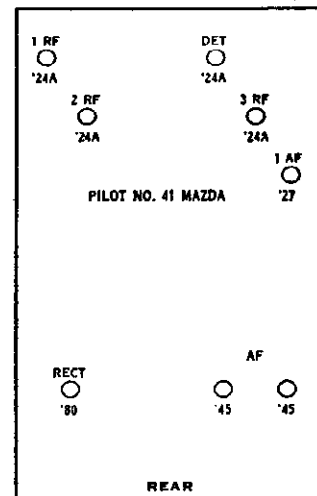


Bottom View of Amplifier-Speaker Unit, showing Wiring between Terminals.

VICTOR—Model “Micro-Synchronous”
Line Voltage 112—Voltage Tap 120—Volume Control Full

TUBE NO. IN ORDER TOWARD FRONT	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET						MILLIAMPERES		
			OPERATING VOLTAGES			FILAMENT			PLATE	TUBE TEST	PLATE CURRENT (50 OHMS)
			FILAMENT OF HEATER	PLATE IN ARCADE	CONTROL GRID—SPACE (50 V)	POWER GRID—SCREEN (50 V)	CATHODE TO HEATER	SCREEN TO PLATE	PLATE A. N. 50 (PLATE)	TUBE TEST	PLATE CURRENT (50 OHMS)
1	224	1 R.F.	2.15	172	2.5	80	-	-	2.5	5	2.5
2	224	2 R.F.	2.15	172	2.5	80	-	-	2.5	5	2.5
3	224	3 R.F.	2.15	172	2.5	80	-	-	2.5	5	2.5
4	224	Det.	2.15	75P	-	2.5	6	-	-	-	-
5	227	1 A.F.	2.15	55	-	0	-	-	1.5	1.0	.3
6	245	PP-AF	2.25	185	-	36	-	-	10	22	3.0
7	245	PP-AF	2.25	185	-	36	-	-	19	22	3.0
8	800	-	4.0	-	-	-	-	36	36	-	-

Models Victors R34, R35, R39, RE57, RE73 (1930)



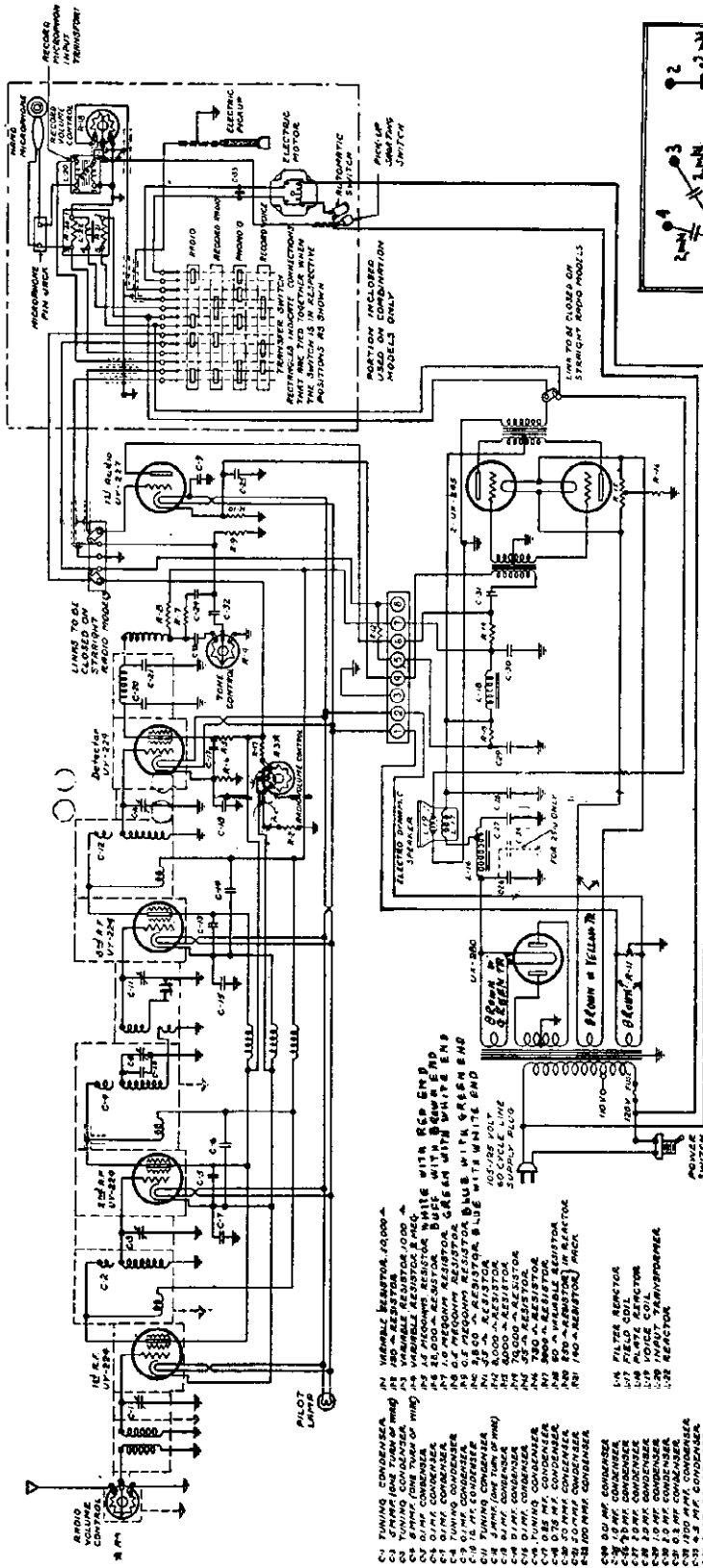
Resistor board on radio chassis.

VOLTAGES ACROSS AMPLIFIER TERMINAL STRIP

Between 1 and 2	2.6 volts AC	
3 and 7	300. volts DC	(The radio chassis is disconnected during these tests)
3 and 6	275. volts DC	
3 and 8	295. volts DC	

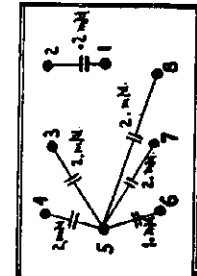
MODEL Victor R-35, R-39
RE-57
Schematic

R. C. A. VICTOR CO., INC.



- C-1 TUNING CONDENSER
- C-2 TUNING CONDENSER
- C-3 TUNING CONDENSER
- C-4 TUNING CONDENSER
- C-5 TUNING CONDENSER
- C-6 TUNING CONDENSER
- C-7 TUNING CONDENSER
- C-8 TUNING CONDENSER
- C-9 TUNING CONDENSER
- C-10 TUNING CONDENSER
- R-1 100K RESISTOR
- R-2 100K RESISTOR
- R-3 100K RESISTOR
- R-4 100K RESISTOR
- R-5 100K RESISTOR
- R-6 100K RESISTOR
- R-7 100K RESISTOR
- R-8 100K RESISTOR
- R-9 100K RESISTOR
- R-10 100K RESISTOR
- R-11 100K RESISTOR
- R-12 100K RESISTOR
- R-13 100K RESISTOR
- R-14 100K RESISTOR
- R-15 100K RESISTOR
- R-16 100K RESISTOR
- R-17 100K RESISTOR
- R-18 100K RESISTOR
- R-19 100K RESISTOR
- R-20 100K RESISTOR
- R-21 100K RESISTOR
- L-1 100MH INDUCTOR
- L-2 100MH INDUCTOR
- L-3 100MH INDUCTOR
- L-4 100MH INDUCTOR
- L-5 100MH INDUCTOR
- L-6 100MH INDUCTOR
- L-7 100MH INDUCTOR
- L-8 100MH INDUCTOR
- L-9 100MH INDUCTOR
- L-10 100MH INDUCTOR
- L-11 100MH INDUCTOR
- L-12 100MH INDUCTOR
- L-13 100MH INDUCTOR
- L-14 100MH INDUCTOR
- L-15 100MH INDUCTOR
- L-16 100MH INDUCTOR
- L-17 100MH INDUCTOR
- L-18 100MH INDUCTOR
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- L-93 100MH INDUCTOR
- L-94 100MH INDUCTOR
- L-95 100MH INDUCTOR
- L-96 100MH INDUCTOR
- L-97 100MH INDUCTOR
- L-98 100MH INDUCTOR
- L-99 100MH INDUCTOR
- L-100 100MH INDUCTOR

NOTE: Broken lines along red indicate grounded shielding.



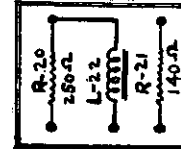
FILTER CONDENSER BANK.

INTERSTAGE AND OUTPUT TRANSFORMER COLOR CODES

Interstage transformer	Output transformer
Primary start-Red-yellow tracer	Primary start-Blue
Primary finish-Red-yellow tracer	Primary midtap-Red
Secondary start-Green	Secondary finish-Blue
Secondary midtap-Yellow	Secondary start-Yellow
Secondary finish-Green	Secondary finish-Black

POWER TRANSFORMER COLOR CODE

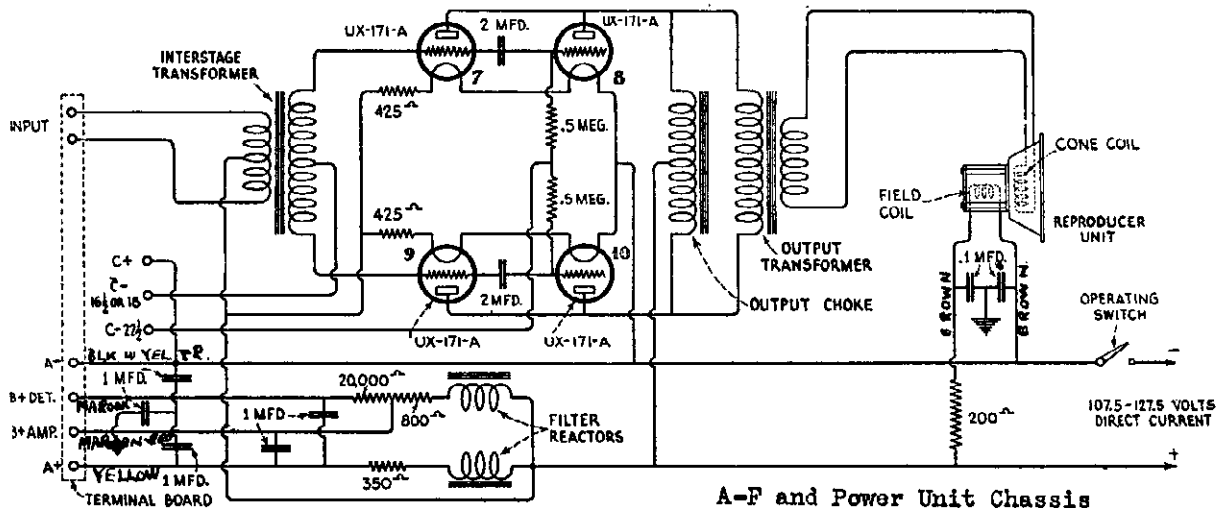
Primary-Black-red tracer	Plate winding-Black-blue tracer
Primary tap-Black-red, 50/50	Plate winding-Yellow-red tracer
Primary-Black	224-227 heaters-Black-Brown
250 filament-Brown-green tracer	224-227 heaters-Brown
245 filament-Brown-green tracer	
245 filament-Brown-yellow tracer	



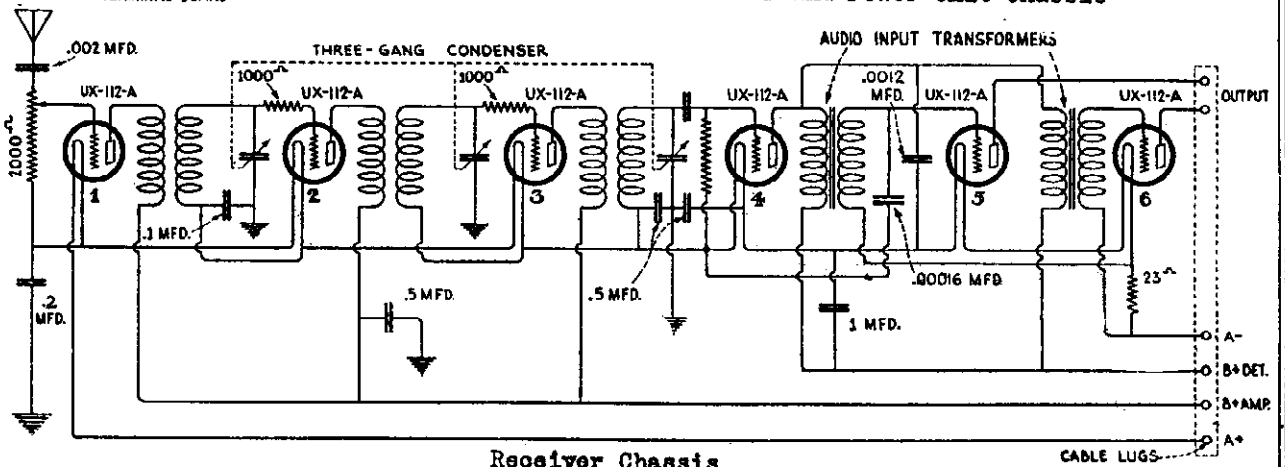
MICROPHONE REACTOR - TERMINALS AND CONNECTIONS.

R. C. A. VICTOR CO., INC.

MODEL Radiola 41 DC



A-F and Power Unit Chassis

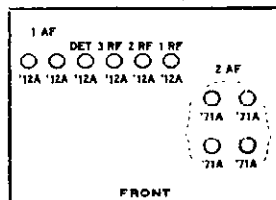


Receiver Chassis

VOLTAGES

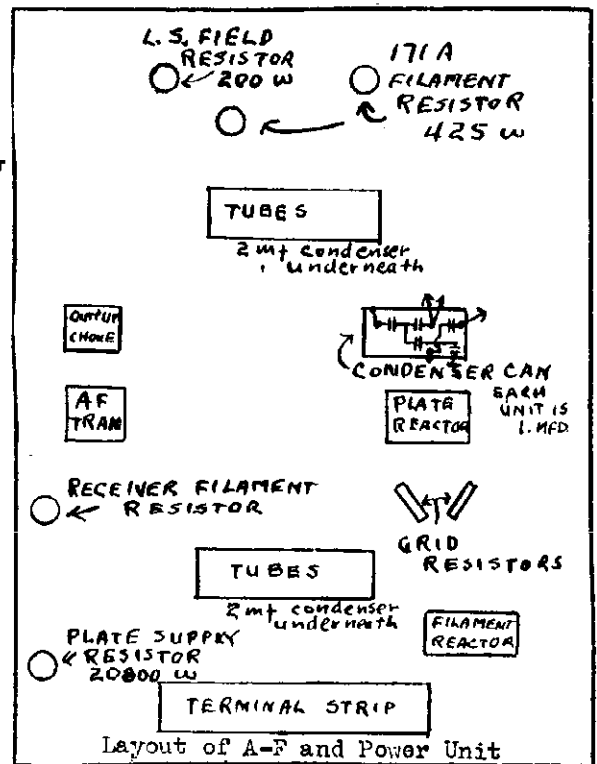
Tube	+Fil.-Grid	Fil.-Plt.	Pl.Crnt.	Fil. V
1	4.2	22	1.5 ma	4.3
2	4.1	26	2.0	4.4
3	4.2	31	2.4	4.5
4	4.0	15	1.0	4.6
5	10.	95	6.0	4.8
6	10.	100	7.0	5.0
9	27.	100	6.5	4.8
10	4.	95	6.5	5.0
7	27.	100	7.0	5.0
8	4.	95	6.5	5.0

Model Radiola 41 DC (1928)



TERMINAL VOLTAGES

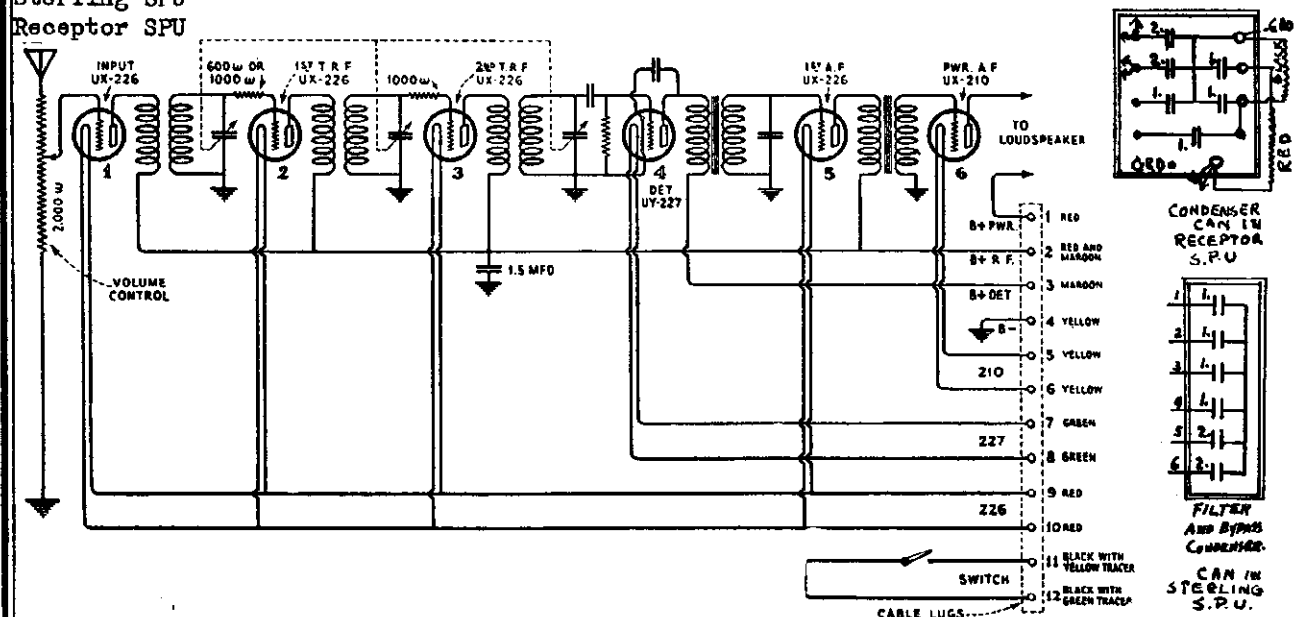
- 120 Volt DC Line
- A- to A+ 35 volts
- A+ to B+Det 5 volts
- A+ to B+AMP 21 volts



Layout of A-F and Power Unit

MODEL Radiola 41 AC
R-F Chassis
Sterling SPU
Receptor SPU

R. C. A. VICTOR CO., INC.

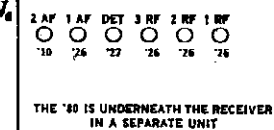


STERLING

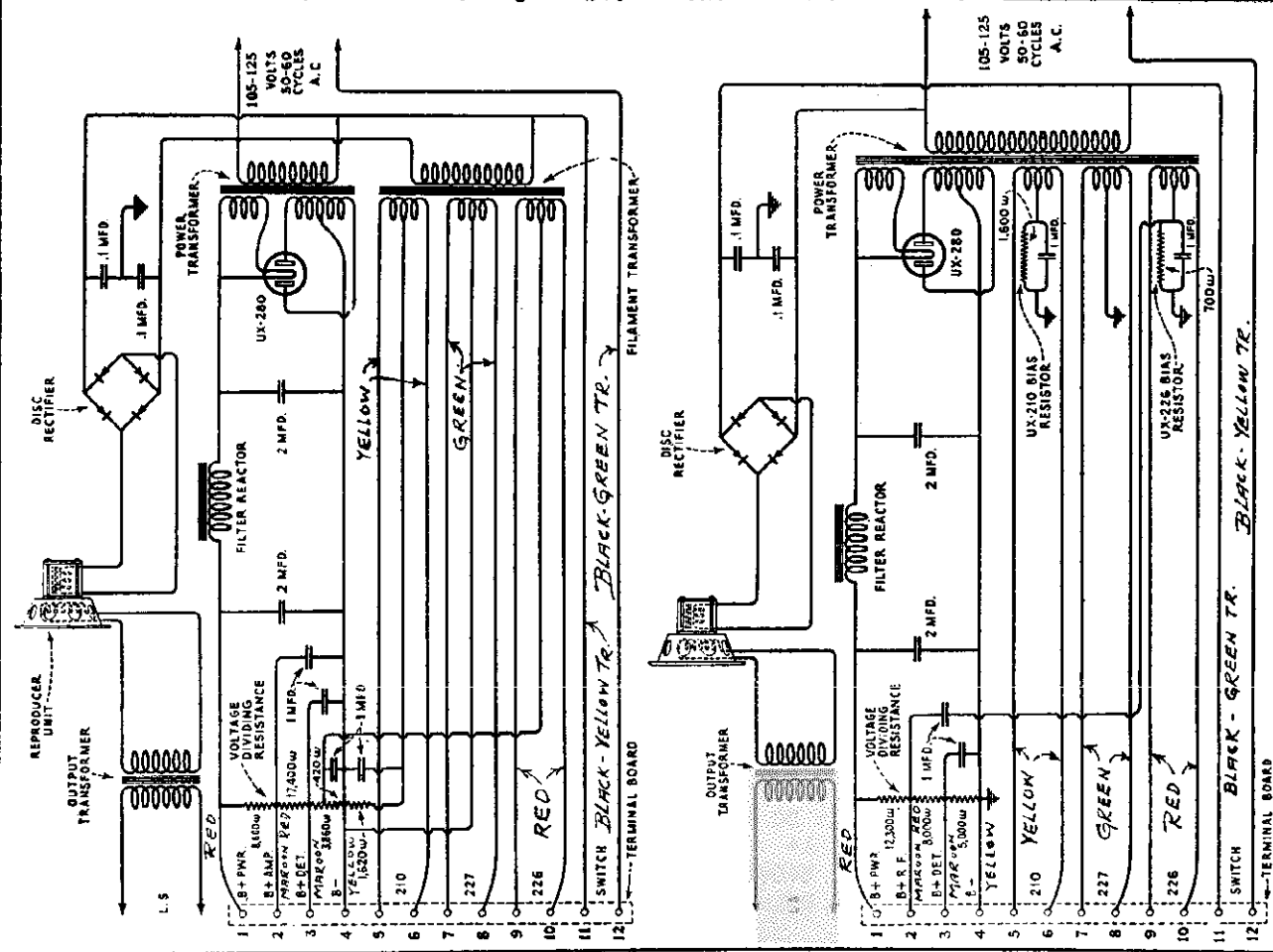
RECEPTOR

Tube	Grd. V.	Plt. V.	Plt. Crnt.	Fil. V.	Tube	Grd. V.	Plt. V.	Plt. Crnt.	Fil. V.
1	10	125	3.5 ma	1.5	1	7.	93	2.5 ma	1.5
2	10	125	3.5	1.5	2	7.	93	2.5	1.5
3	10	125	3.5	1.5	3	7.	93	2.5	1.5
4	-	25	2.0	2.5	4	-	33	2.0	2.5
5	10	125	3.5	1.5	5	7.	93	2.5	1.5
6	20	300	16.	7.5	6	22.	310	16.	7.5

Model Radiola 41 (1928)

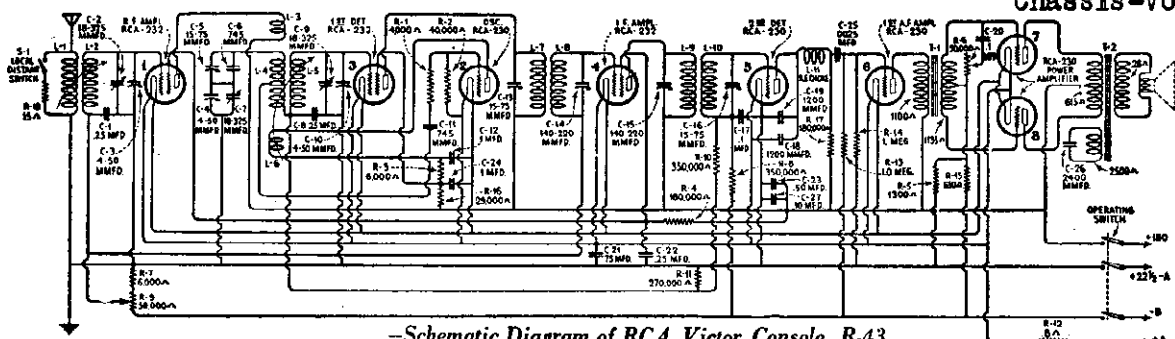


FRONT



R. C. A. VICTOR CO., INC.

MODEL R-43
Schematic
Chassis-Voltage



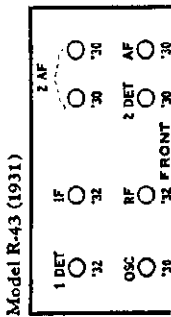
-Schematic Diagram of RCA Victor Console, R-43

IF PEAK 175 KC.

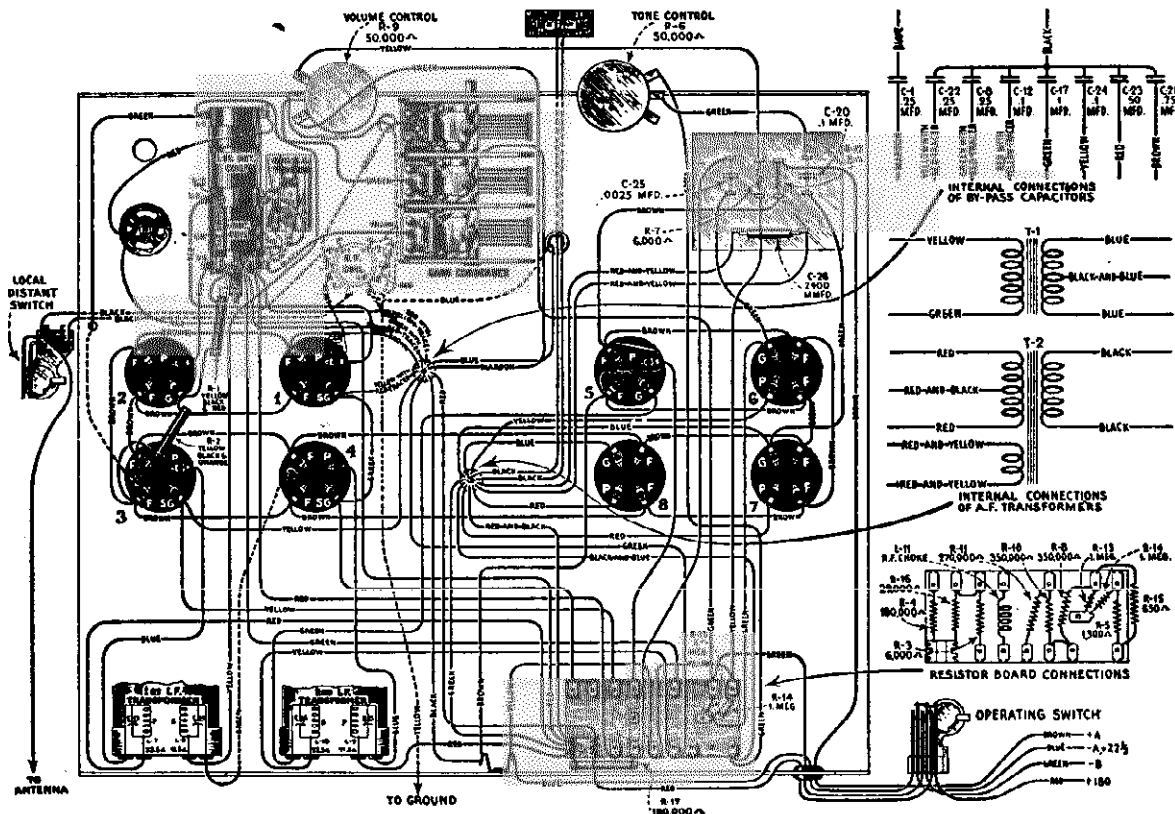
BATTERIES AT FULL VOLTAGE—NO SIGNAL BEING RECEIVED

These voltages are those obtained with one of the usual set analyzers. The values indicated, therefore, are not necessarily the voltages that actually appear at the Radiotron Sockets when the voltmeter is not connected.

Tube No.	Filament to Control Grid Volts	Filament to Screen Grid Volts	Filament to Plate Volts	Plate Current M. A.	Filament Volts
VOLUME CONTROL AT MINIMUM					
1	22	55	155	0	2.0
2	—	—	50	3.0	2.0
3	0.5	65	150	0.5	2.0
4	22	55	155	0	2.0
5	5.0	—	90	0	2.0
6	2.0	—	150	2.5	2.0
7	15.0	—	150	0.5	2.0
8	15.0	—	150	0.5	2.0
VOLUME CONTROL AT MAXIMUM					
1	1.5	45	150	2.5	2.0
2	—	—	50	3.0	2.0
3	0.5	60	150	0.5	2.0
4	1.5	45	150	2.5	2.0
5	5.0	—	90	0	2.0
6	2.0	—	150	2.5	2.0
7	15.0	—	150	0.5	2.0
8	15.0	—	150	0.5	2.0



Model R-43 (1931)

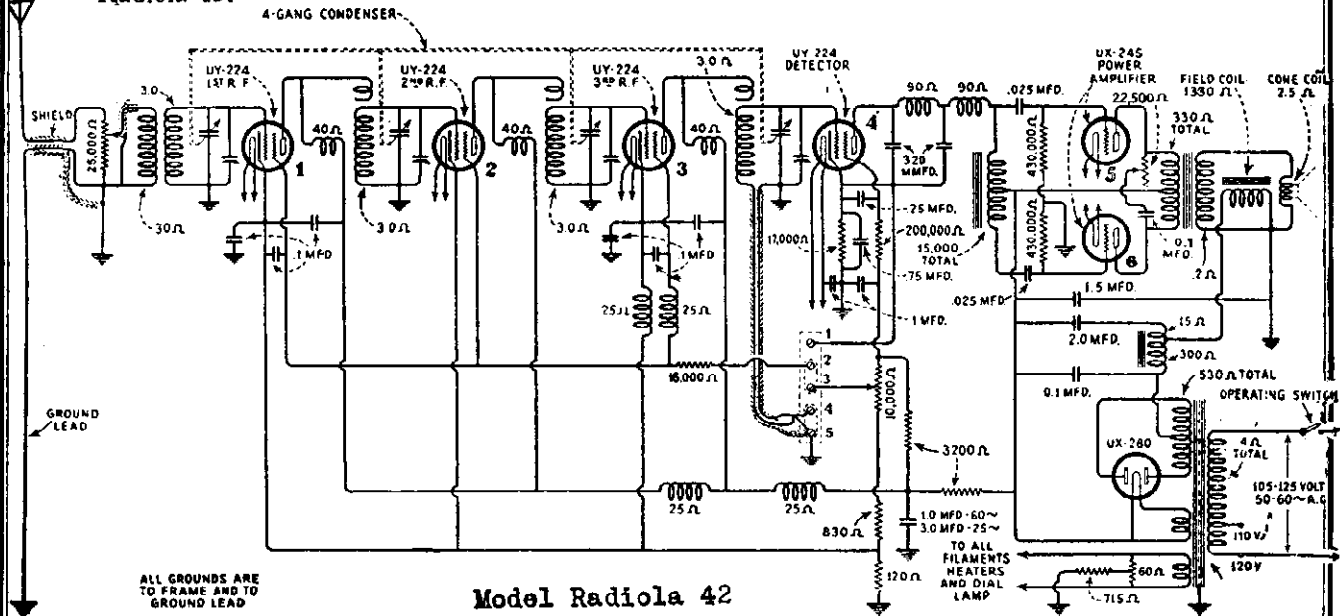


-Wiring Diagram of RCA Victor Console, R-43

Radiola 42 Schematic
Model R-43 Notes

R. C. A. - VICTOR CO., INC.

All the information contained in the Radiola 48 Service Notes will therefore apply to the Radiola 42.



Model Radiola 42

It will be noted that a new volume control is used. The antenna section of this unit has a value of 25,000 ohms instead of 50,000 ohms as used in the Radiola 48. This volume control is also being used as a replacement in Radiola 48. The screen grid voltage section has a value of 10,000 ohms and the 12,000 ohm shunt resistor is not used. The 0.005 mfd. condenser across the plates of Radiotrons UX-245 has been omitted due to the connection of the tone control in the same position. When making replacements of the condenser and reactor unit it will be necessary to clip the two leads that are connected to the .005 mfd. condenser close to the container. The reason for this is that the replacement unit supplied is suitable for either the Radiola 42 or 48.

Model R-43 Service Notes

The RCA Victor Console, R-43 is an eight tube screen grid battery operated Super-Heterodyne radio receiver.

Three Radiotrons RCA-232 are used in the R.F., 1st detector and I.F. stages respectively. Five Radiotrons RCA-230 are used in the Oscillator, 2nd detector, 1st audio and push-pull power stage.

A reference to the RCA Victor Radiola Superette Service Notes will give the details of circuit operation up to and including the second detector. The audio circuits of the R-43 are however, considerably different from the R-7. A discussion of their function follows:

The first audio stage operates in the usual manner, its output being fed into the grid circuit of the push-pull stage. The output stage is of the push-pull type, in which the tubes are biased to substantially plate current cut-off. The arrangement is such that the output stage may deliver substantially four times the output that would be obtained with the same tubes operated in the usual circuit. This system is very economical due to there being but a small amount of residual plate current flowing in the output stage.

Current is drawn only when a modulated signal is being received.

An extra winding, shunted by a capacitor, is placed on the output transformer. The purpose of this circuit is to provide a high frequency cut-off for the audio amplifier.

A tone control is provided, which consists of a 0.1 mfd. capacitor and a 50,000 Ohm variable resistor connected across one half of the secondary of the input transformer. This circuit functions to reduce the high frequency output as the resistance is decreased.

The permanent magnet dynamic loudspeaker used with this receiver is a new development and gives all the fine quality and life-like reproduction inherent in this type of reproducer.

The receiver is designed for use with the new Eveready Aircell "A" battery which provides a life in excess of 600 ampere hours. The receiver draws but .48 amperes, giving approximately 1200 hours life from a single filament battery.

The plate and grid supply for all Radiotrons is furnished from four heavy duty "B" batteries. Due to the

low current drain—8 to 15 M.A.—excellent life is obtained from this source of current.

SERVICE DATA

A reference to the RCA Victor Superette, R-7 Service Notes will give complete details on R.F., oscillator and I.F. adjustments as well as the usual service information required with this type of receiver.

BATTERIES

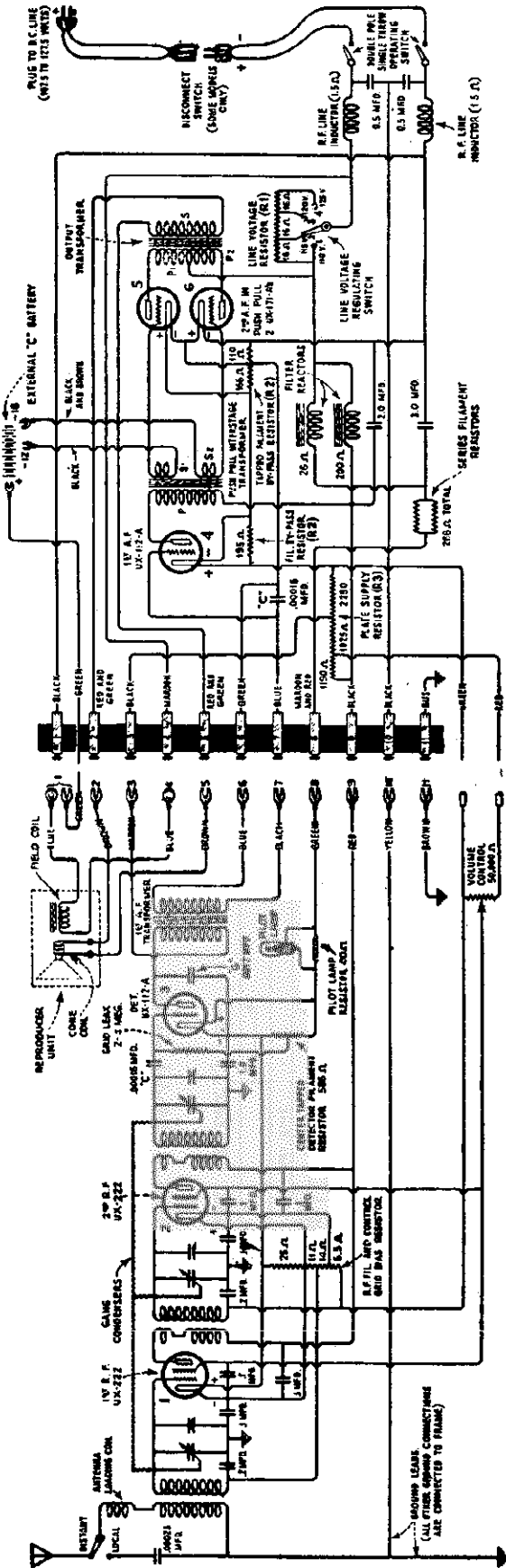
The Eveready Aircell "A" battery must be kept clean and the plates covered with water at all times. Operation at temperatures of 40 degrees Fahrenheit or lower is not recommended and if attempted will result in damage to the battery. Having the battery idle at this temperature does not in any way affect it. If it is essential that an installation be made where the receiver is to be operated at 40 degrees Fahrenheit or less, a single cell storage battery should be used. Due to the low current drain, excellent life from one charging will be obtained.

"B" batteries should be replaced when their output voltage has dropped 25% under load.

SPECIAL NOTE Material within border very important information**

R. C. A. VICTOR CO., INC.

MODEL Radiola 46 DC
 MODEL Radiola 44 AC
 Terminal Voltage
 MODEL Radiola 46 AC
 Terminal Voltage



Model 44 AC Terminal Voltage

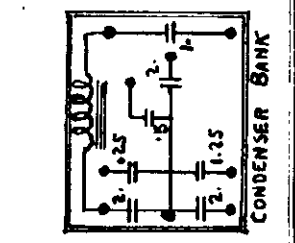
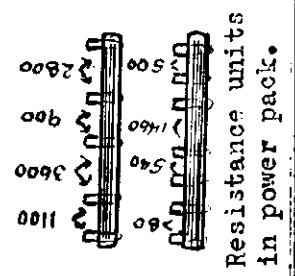
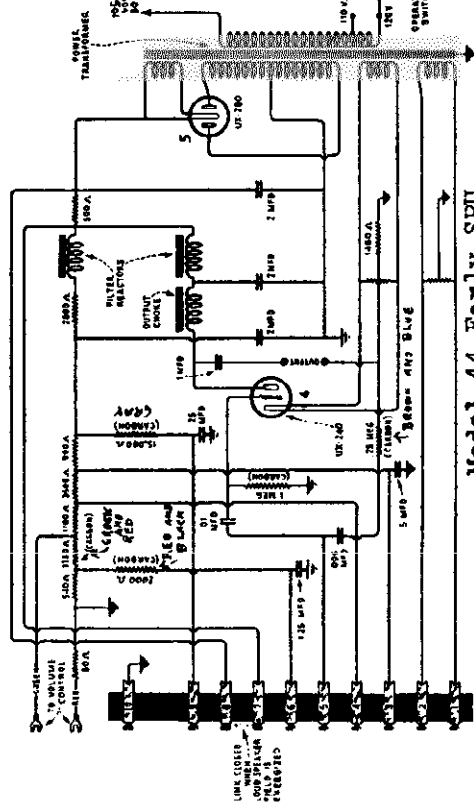
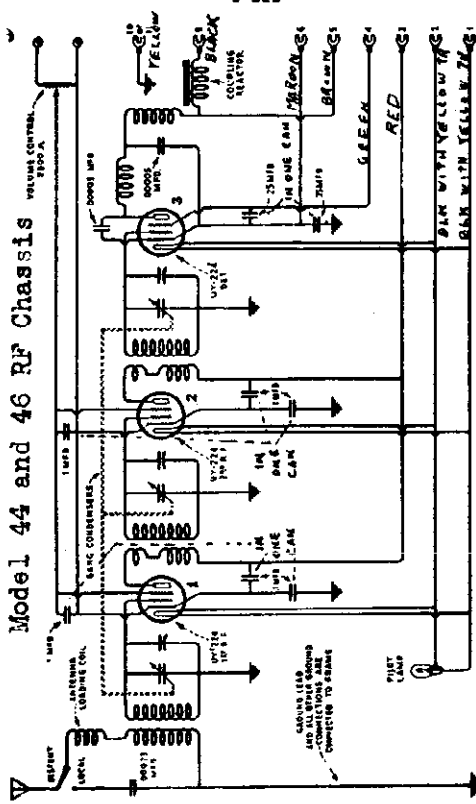
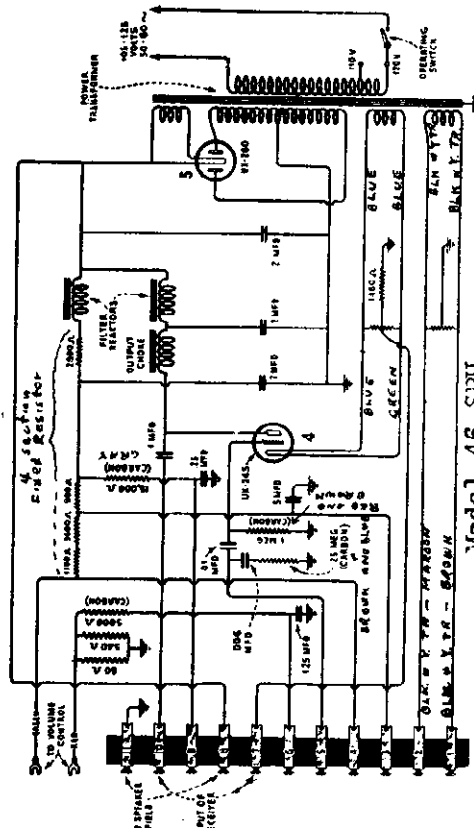
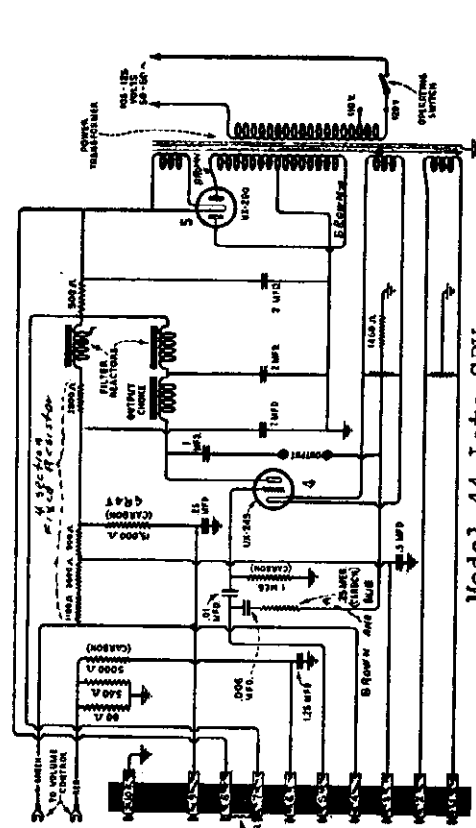
Terminals	Vol. Control at	
	Min.	Max.
1 to 2	2.5 A.C.	2.5 A.C.
3 to Red VC lead	185. D.C.	170. D.C.
4 to 5	70. D.C.	60. D.C.
6 to 9	195. D.C.	180. D.C.
6 to 10	5. D.C.	5. D.C.
8 to 10	330. D.C.	330. D.C.
Red VC lead to 10	2.1 D.C.	2.1 D.C.
Arm of VC lead to Red VC lead	0.	70. D.C.

Model 46 AC Terminal Voltage

Terminals	Voltage Control at	
	Min	Max
1 to 2	2.5 A.C.	2.5 A.C.
3 to Red VC lead	185. D.C.	170. D.C.
4 to 6	70. D.C.	65. D.C.
6 to 9	195. D.C.	180. D.C.
6 to 11	5. D.C.	5. D.C.
8 to 11	320. D.C.	320. D.C.
Red VC lead to 11	2.1 D.C.	2.1 D.C.
Arm of VC lead to Red VC lead	0.	70. D.C.

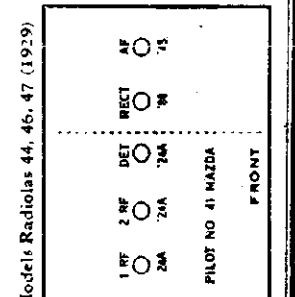
MODEL 44,46 RF Chassis
 MODEL 44 Early SPU
 MODEL 44 Late SPU
 MODEL 46 SPU

R. C. A. VICTOR CO., INC.



Model 44, 46 SPU

POSITION	TYPE OF TUBE	RETAINERS PLUS IN SOCKET OF NET	TYPE OUT	TYPE IN	TYPE	PLATE	PLATE	PLATE	PLATE
1	282A	1st RP	2.50	164	2.35	164	1.5	3.2	2.3
2	282A	2nd RP	2.50	164	2.35	164	1.5	3.2	2.3
3	282A	2nd RP	2.50	164	2.35	164	1.5	3.2	2.3
4	282A	2nd RP	2.50	164	2.35	164	1.5	3.2	2.3
5	282A	2nd RP	2.50	164	2.35	164	1.5	3.2	2.3
6	282A	2nd RP	2.50	164	2.35	164	1.5	3.2	2.3
7	282A	2nd RP	2.50	164	2.35	164	1.5	3.2	2.3
8	282A	2nd RP	2.50	164	2.35	164	1.5	3.2	2.3
9	282A	2nd RP	2.50	164	2.35	164	1.5	3.2	2.3
10	282A	2nd RP	2.50	164	2.35	164	1.5	3.2	2.3

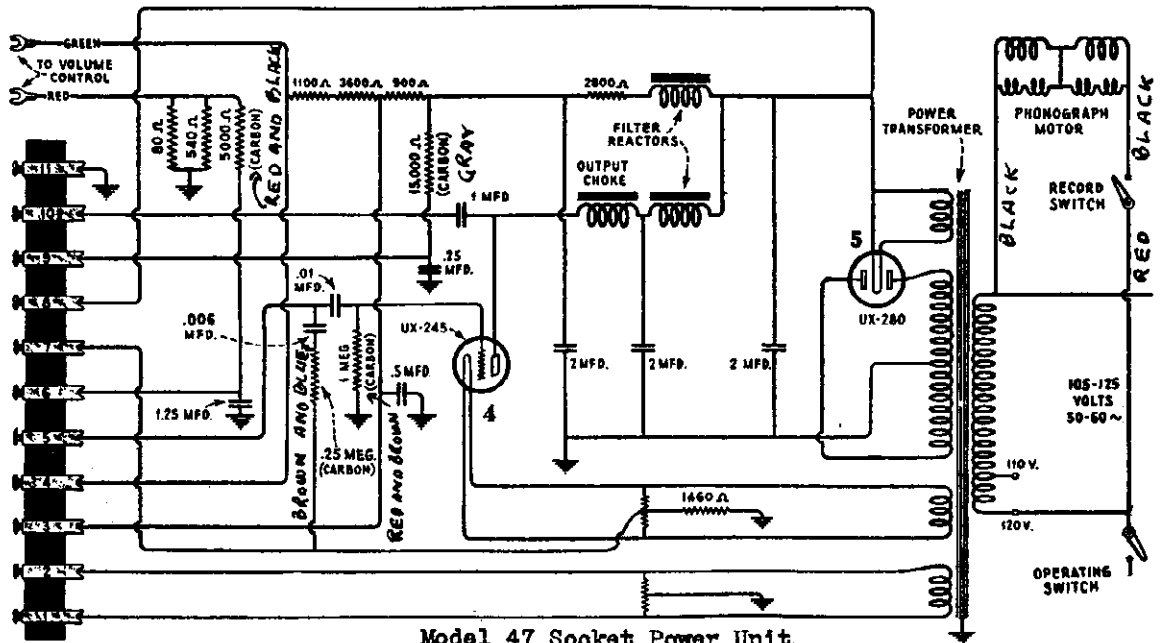
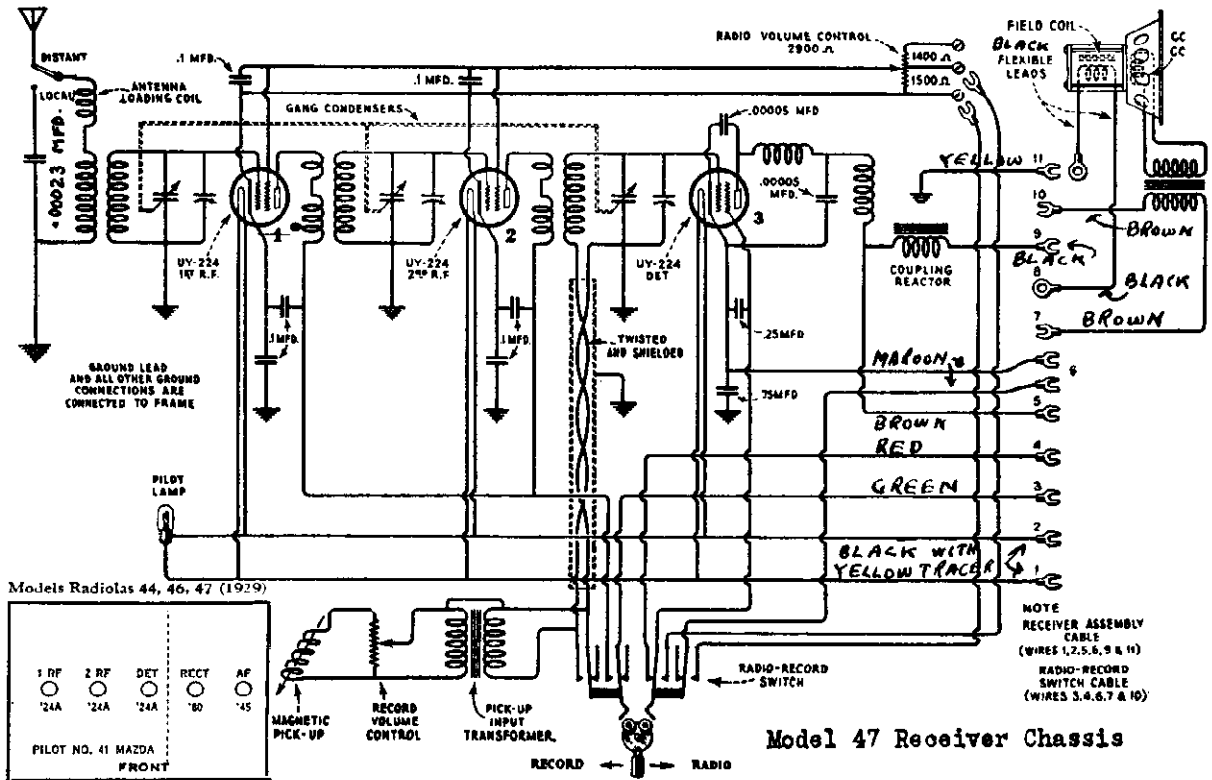


Models Radiolas 44, 46, 47 (1929)

RADIOLA—Models 44-46
 Line Voltage 120—Set on 120 Volt Tap—Volume Control Position Max

MODEL Radiola 47

R. C. A. VICTOR CO., INC.

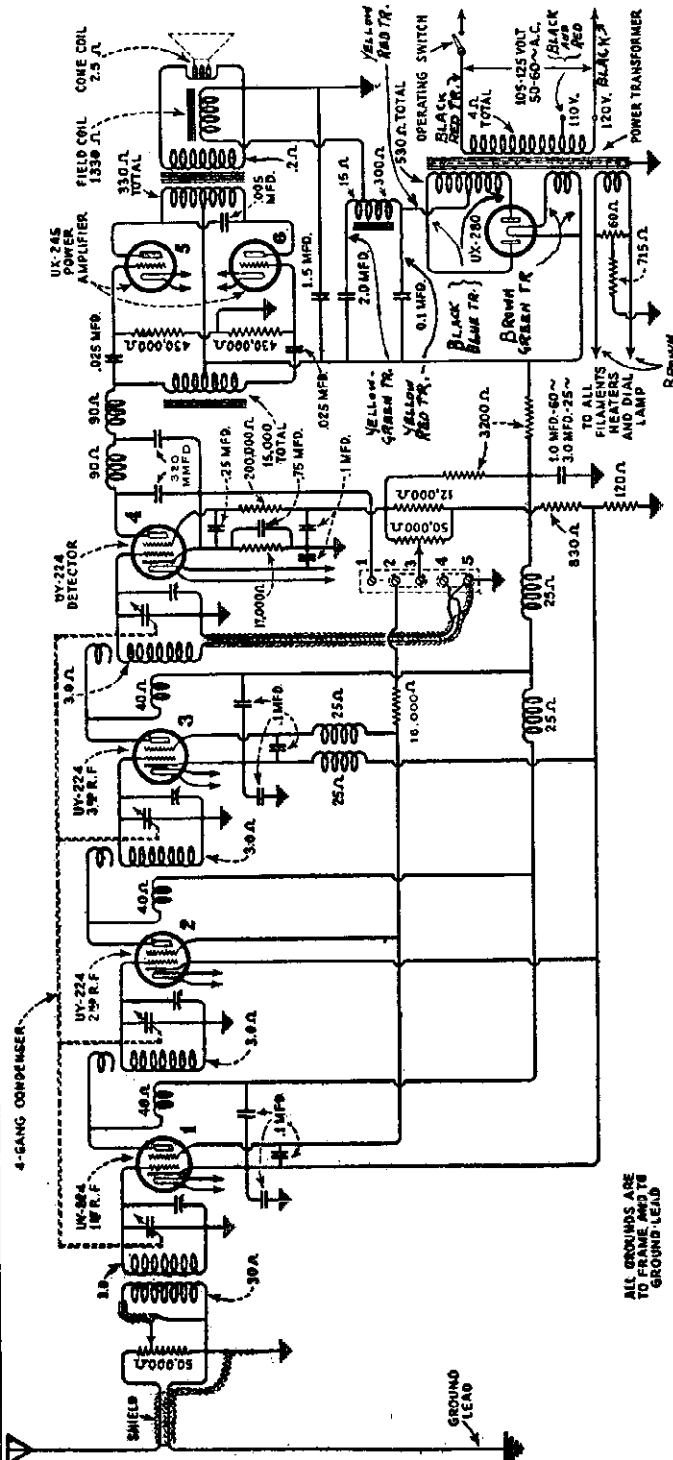
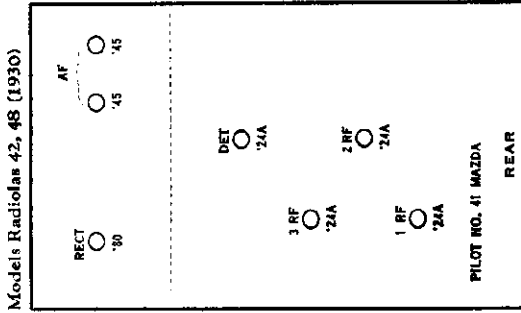


SOCKET VOLTAGES—RADIOLA 47

Volume Control at Minimum—Radio-Record Switch at "Radio"

Socket No.	Cathode to Heater Volts	Fil. to Control Grid Volts	Cathode or fil. to plate Volts	Plate Current Millamperes	Filament or Heater Volts
1	2.1	—	190	0	2.35
2	2.1	—	185	0	2.35
3	18	—	120	3.0	2.35
4	—	6.0	225	29.0	2.35

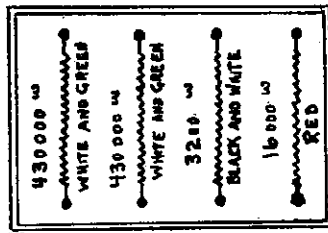
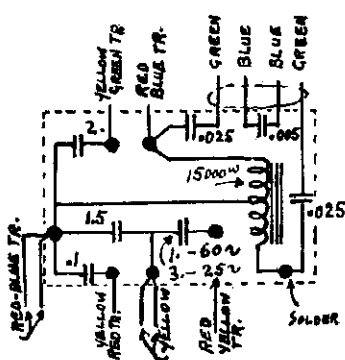
R. C. A. VICTOR CO., INC.



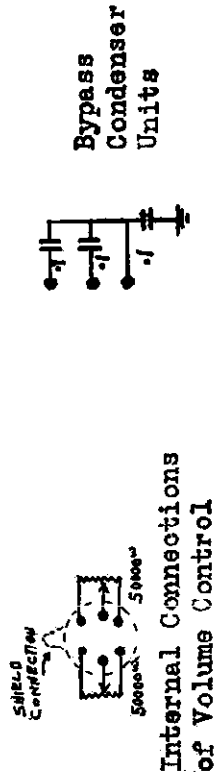
ALL GROUNDS ARE TO FRAME AND TO GROUND LEAD

Socket Voltages. (120 Volt Line.) VOL. CONTR. AT MAXIMUM.

Tube No.	Cath. to Heater V. D.C.	Cath. or Contr. Gr. V. D.C.	Cath. to Screen Gr. V. D.C.	Cath. to Fil. to Plate V. D.C.	Plate Current Ma.	S.G. Current Ma.	Heater or Fil. Volts.
1	-40	-2.5	+85	160	3.	0.2	2.3
2	-36	-2.5	+85	155	3.5	0.15	2.3
3	-36	-2.5	+75	155	3.5	0.15	2.3
4	-28	-7.5	+55	225	0.5	0.1	2.3
5	---	-1.	---	200	25.	---	2.3
6	---	-1.	---	200	25.	---	2.3



Internal connections
Resistor Mounting of Capacitor and Coup-
Board Connections ling Reactor Pack



Internal Connections
of Volume Control

Bypass
Condenser
Units

R. C. A. VICTOR CO., INC.

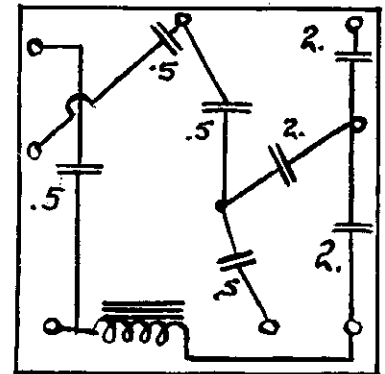
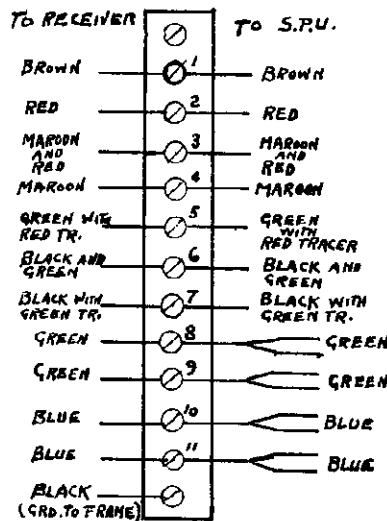
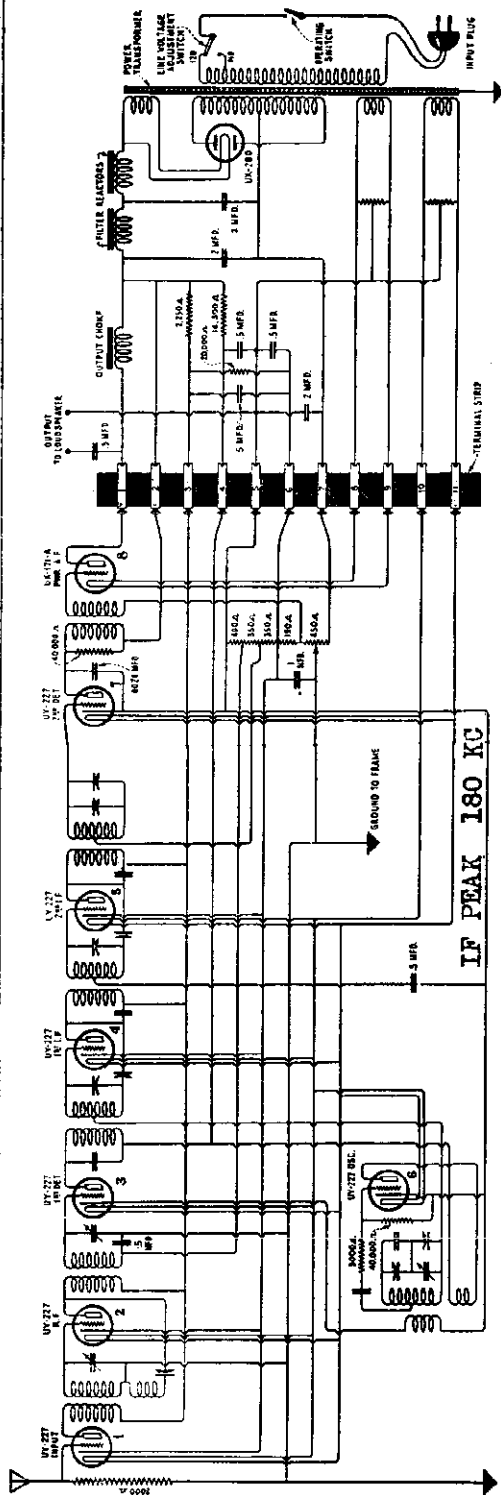
MODEL Radiola 60

RADIOLA 50

is the same as the Radiola 17 with the exception that it makes use of a 100-A speaker and the receiver is mounted in a console cabinet.

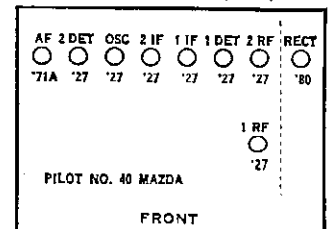
Radiola 51

is the same as the Radiola 18. The Radiola 51 AC is the same as the Radiola 18 AC, except that it is mounted in a console cabinet. The Radiola 51 DC is the same as the Radiola 18 DC, except that it is mounted in a console cabinet.



Filter, bypass condensers and output choke.

Models Radiolas 60, (1928)



Terminal Strip

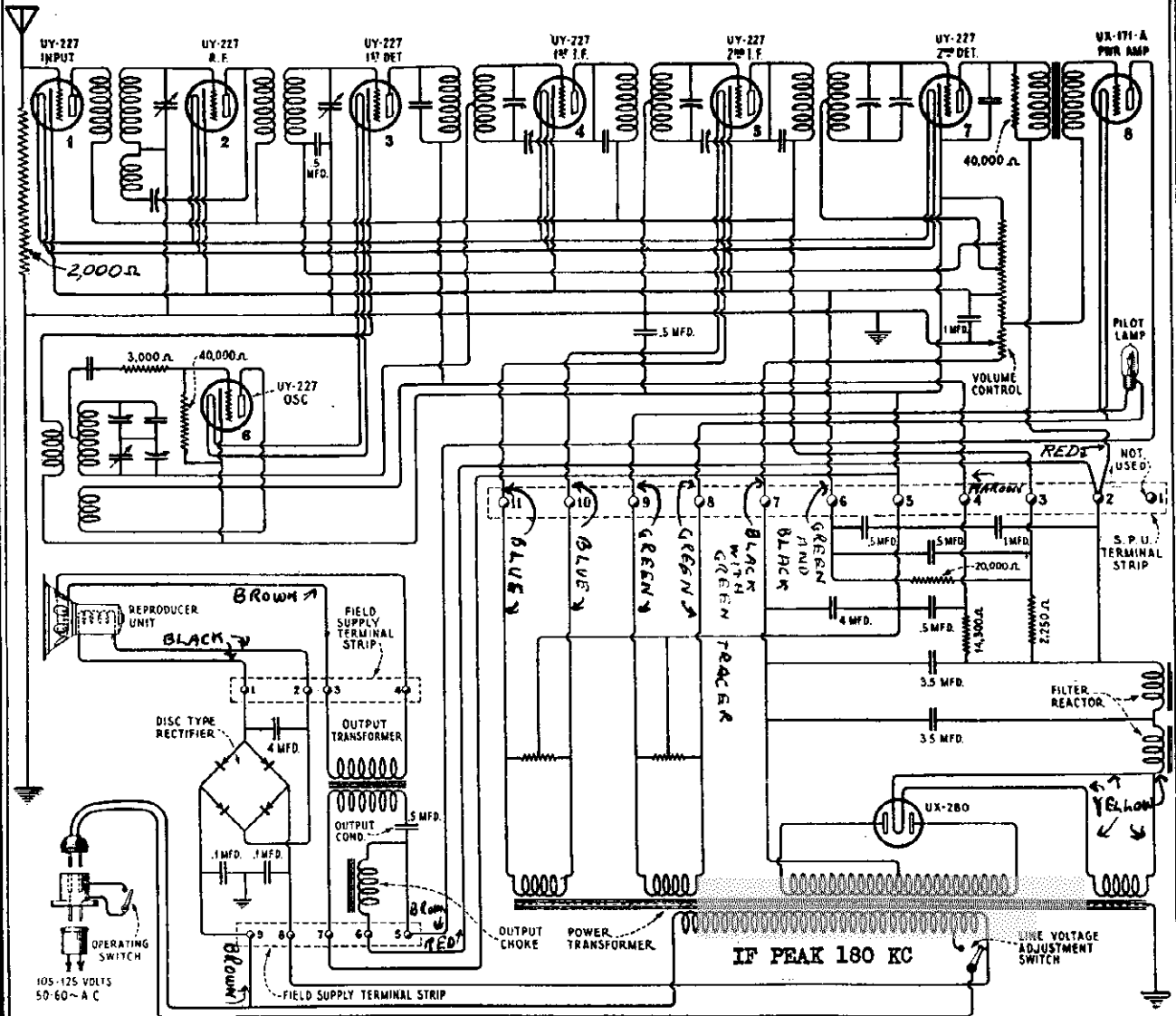
RADIOLA—Model 60

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (L, R, DET., ETC.)	READINGS PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	G VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. ORANGE TEST	PLATE M.A. ORANGE	
1	227	Ant. Coupl.	2.35	148	2.2	144	18.0	25	1.0	3.0	2.0	
2	227	1st. R.F.	2.35	148	2.2	144	18.0	25	1.0	3.0	2.0	
3	227	1st. Det.	2.35	84	2.2	70	9.0	0	1.0	3.0	2.0	
4	227	1st. I.F.	2.35	148	2.2	144	18.0	25	1.0	4.0	3.0	
5	227	2nd. I.F.	2.35	148	2.2	144	18.0	25	1.0	4.0	3.0	
6	227	Oscillator	2.35	118	2.2	70	0.0	0	7.0	7.0	0.0	
7	227	2nd. Det.	2.35	162	2.2	157	18.0	0	1.0	8.0	2.0	
8	171A	1st. Audio	2.00	178	4.8	157	31.5		15.0	17.0	2.0	
9	280	Rectifier	5.00		4.8				19.0			

Note: The above readings were taken with a line voltage of 117 volts. The volume control should be set centrally with the line vertical in order to get the above readings. The "C" voltage on tubes 1, 2, 4, and 5 will vary from 9 to 27 volts; depending on the position of this volume control, hence, these readings are taken at the middle point.

MODEL Radiola 62

R. C. A. VICTOR CO., INC.

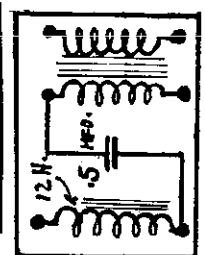
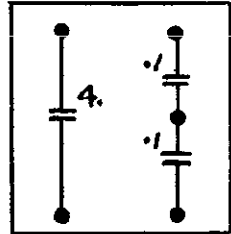
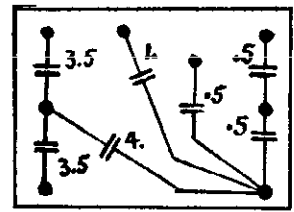
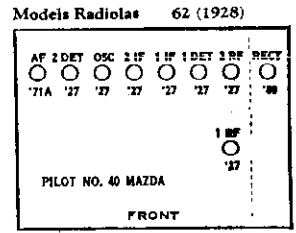


105-125 VOLTS
50-60~ A C

Tube	SOCKET VOLTAGES			
	Fil. V.	Plt. V.	Grid V.	Pl. Crnt
Coupling	2.05	130	8.	3.5 ma
RF	2.05	130	8.	3.5
1 Det	2.05	80	8.	.5
1 IF	2.05	130	8.	3.
2 IF	2.05	130	8.	3.5
Oscil	2.05	75	-	5.
2 Det	2.05	150	15.	-
AF	4.4	180 c	39.	15.

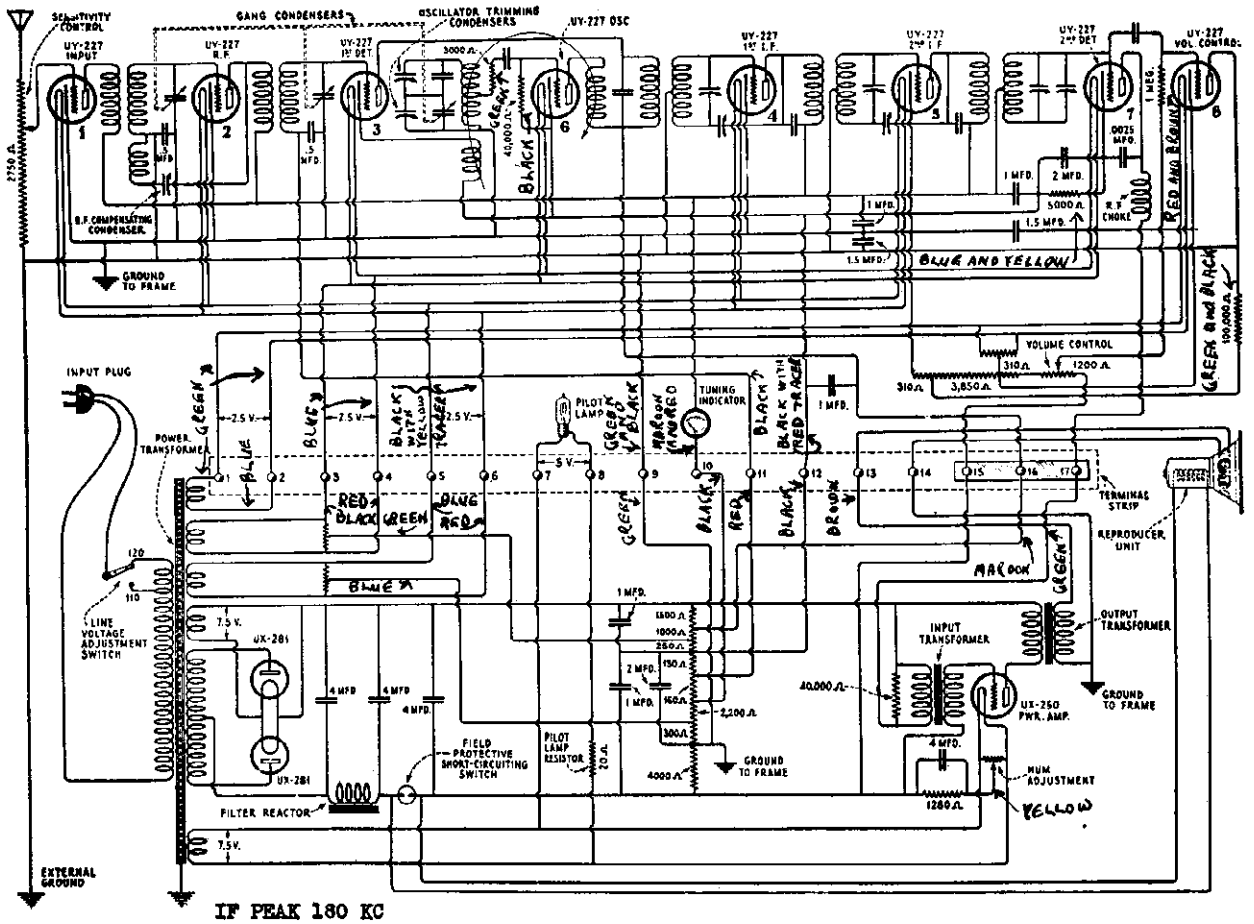
TERMINAL VOLTAGES	
Between 2 and 7	210 volts DC
3 and 7	160 volts DC
4 and 7	110 volts DC
8 and 9	5 volts AC
10 and 11	2.5 volts AC

Output voltage of disc rectifier with field connected should be 100 volts.



R. C. A. VICTOR CO., INC.

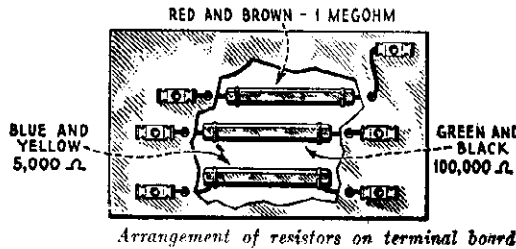
MODEL Radiola 64
Schematic
Voltage



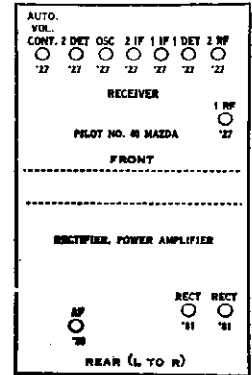
IF PEAK 180 KC

TERMINAL VOLTAGES

- 1 and 2 2.5 V. AC.
- 3 and 4 2.5 V. AC.
- 5 and 6 2.5 V. AC.
- 7 and 8 Light On 5.0 V. AC.
- 9 and 15 150. V. DC.
- 11 and 15 300. V. DC.
- 12 and 15 315. V. DC.
- 15 and 16 400. V. DC.
- 15 and 17 500. V. DC.

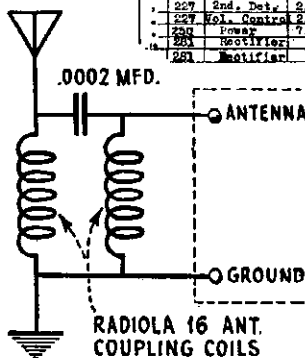


Model Radiola 64 (1928)



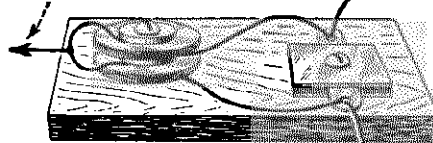
RADIOLA—Model 64
Line Voltage 112—Volume Control Full

TUBE NO.	TYPE OF TUBE	POSITION OF TUBE IN SET, ETC.	TUBE OUT					TUBE IN TESTER				
			VOLTS	VOLTS	VOLTS	VOLTS	VOLTS	NORMAL PLATE VOLTS	PLATE VOLTS	PLATE VOLTS	PLATE VOLTS	
227	Ant. Coupl. S.C.	2, 3	128	2, 4	124	25	15, 5	3, 4	7, 8	4, 5		
227	Tuned R.F.	2, 3	128	2, 4	124	25	15, 5	3, 4	7, 8	4, 5		
227	1st I.F.A.	2, 3	80	2, 4	75	25	15, 5	3, 4	7, 8	4, 5		
227	2nd I.F.A.	2, 3	120	2, 4	124	25	15, 5	3, 4	7, 8	4, 5		
227	Oscillator	2, 3	80	2, 4	75	25	15, 5	3, 4	7, 8	4, 5		
227	2nd. Det.	2, 3	180	2, 4	176	25	15, 5	3, 4	7, 8	4, 5		
227	Vol. Control	2, 3	80	2, 4	75	25	15, 5	3, 4	7, 8	4, 5		
228	Power	7, 8	554	2	592	65		52	55	57, 0		
281	Rectifier	7, 8						52	55	57, 0		
281	Rectifier	7, 8						52	55	57, 0		



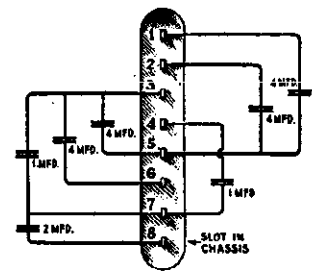
TO GROUND AND GROUND BINDING POST

TO ANTENNA BINDING POST

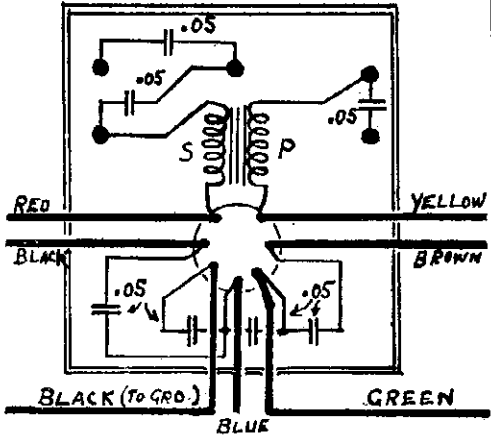
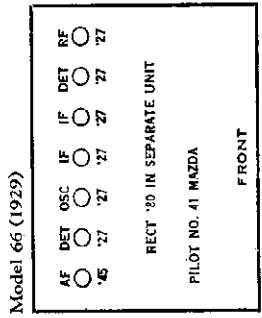
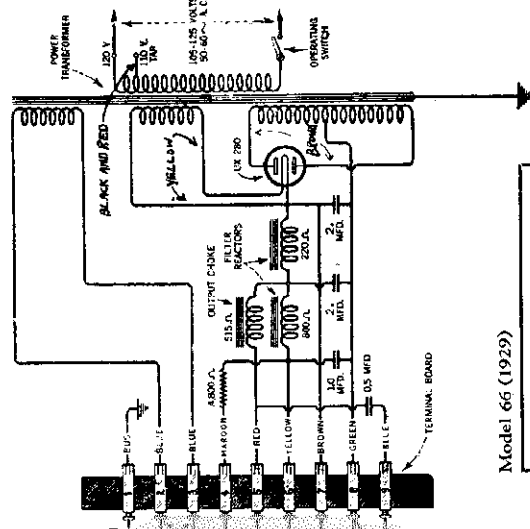


Long wave interference filter

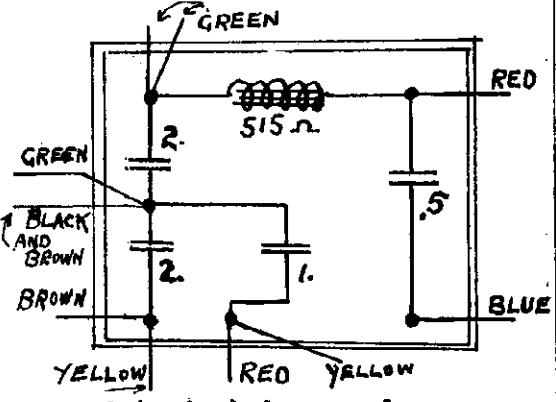
TO ANTENNA



Internal connections of filter condensers

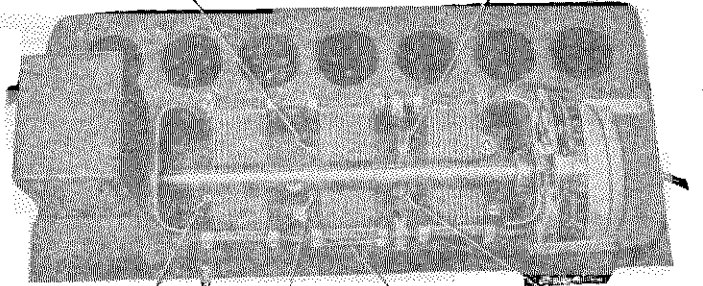


Audio transformer and bypass condenser



Output choke, condenser and filter condenser.

No. 2 I.F. NEUTRALIZING CONDENSER No. 1 I.F. NEUTRALIZING CONDENSER



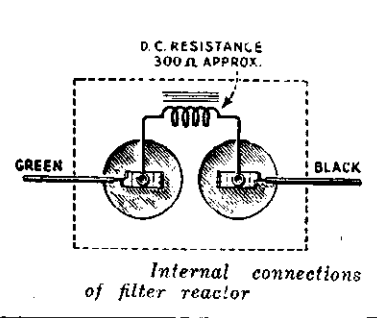
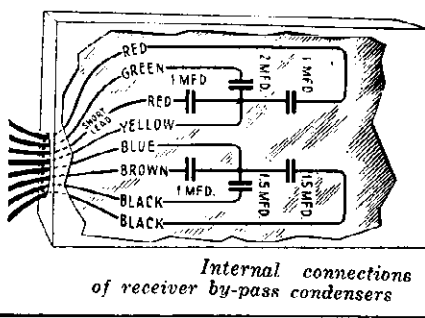
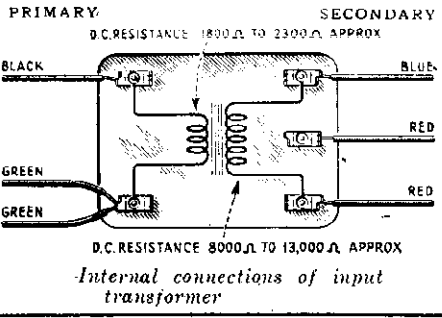
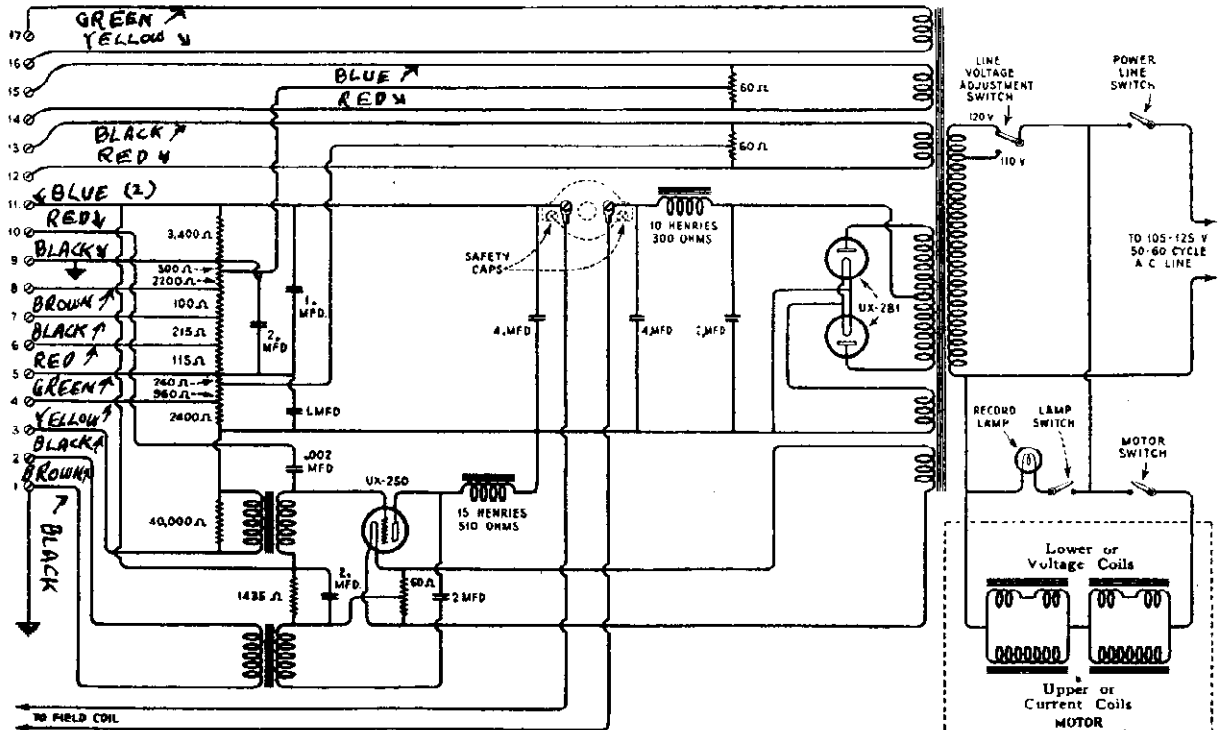
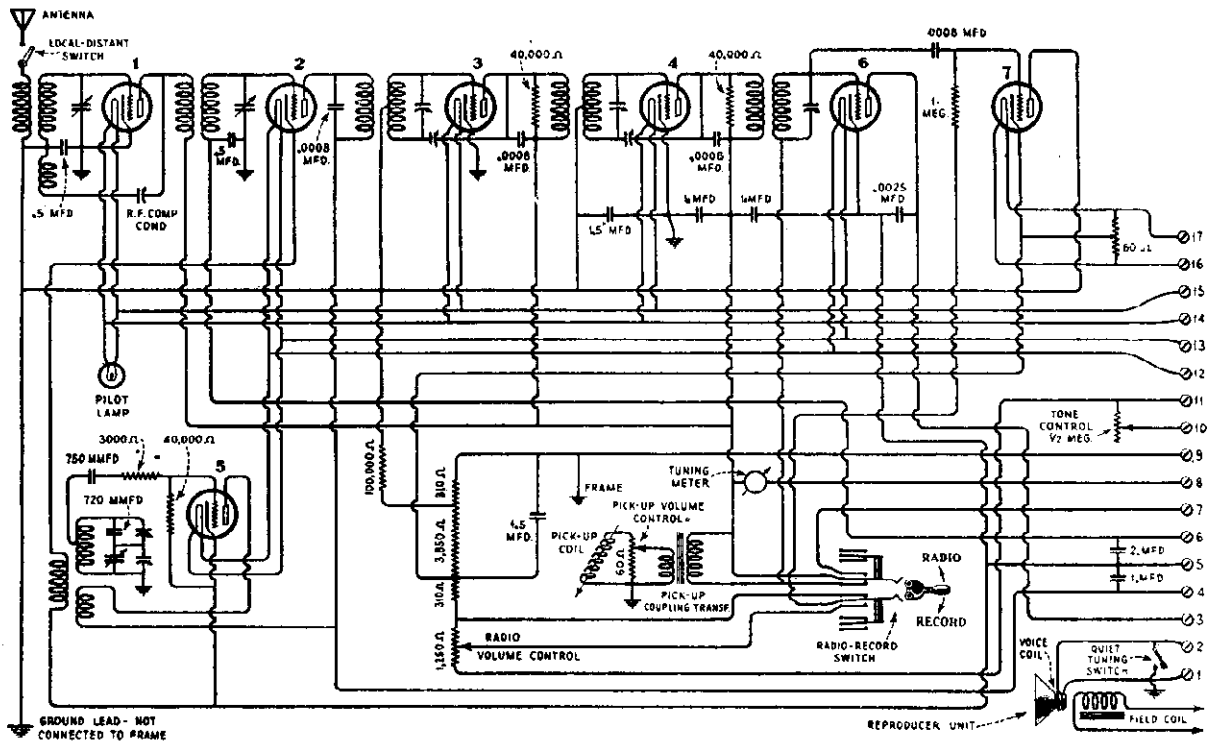
Condenser adjusting screws for I.F. transformers

RADIOLA—Model 66
Line Voltage 120.0—Set on 120.0 Volt Tap—Volume Control Position Max

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST AF SET, ETC.	SETTINGS, PLUG IN SOCKET OF SET									
			TUBE OUT				TUBE IN TESTER					
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	F VOLTS	G VOLTS	H VOLTS	I VOLTS	
1	227	RF	2.65	83.0	2.4	80.0	3.0	24.0	4.5	0.0	4.1	-
2	227	1st Det	2.65	83.0	2.4	72.0	7.0	17.0	2.0	3.5	1.5	-
3	227	1st IF	2.65	83.0	2.4	80.0	3.0	23.0	4.5	8.8	4.1	-
4	227	2nd IF	2.65	83.0	2.4	80.0	3.0	23.0	4.5	9.8	4.1	-
5	227	OSC.	2.65	83.0	2.4	66.0	0.0	16.0	6.4	6.8	4.4	-
6	227	2nd Det	2.65	237.0	2.4	836.0	87.0	17.0	.1	1.0	.9	-
7	245	AF	2.65	237.0	2.4	224.0	17.0	-	32.0	34.0	2.0	-
8	250	Rect.	5.2	-	5.0	850	-	-	52.0	-	-	-

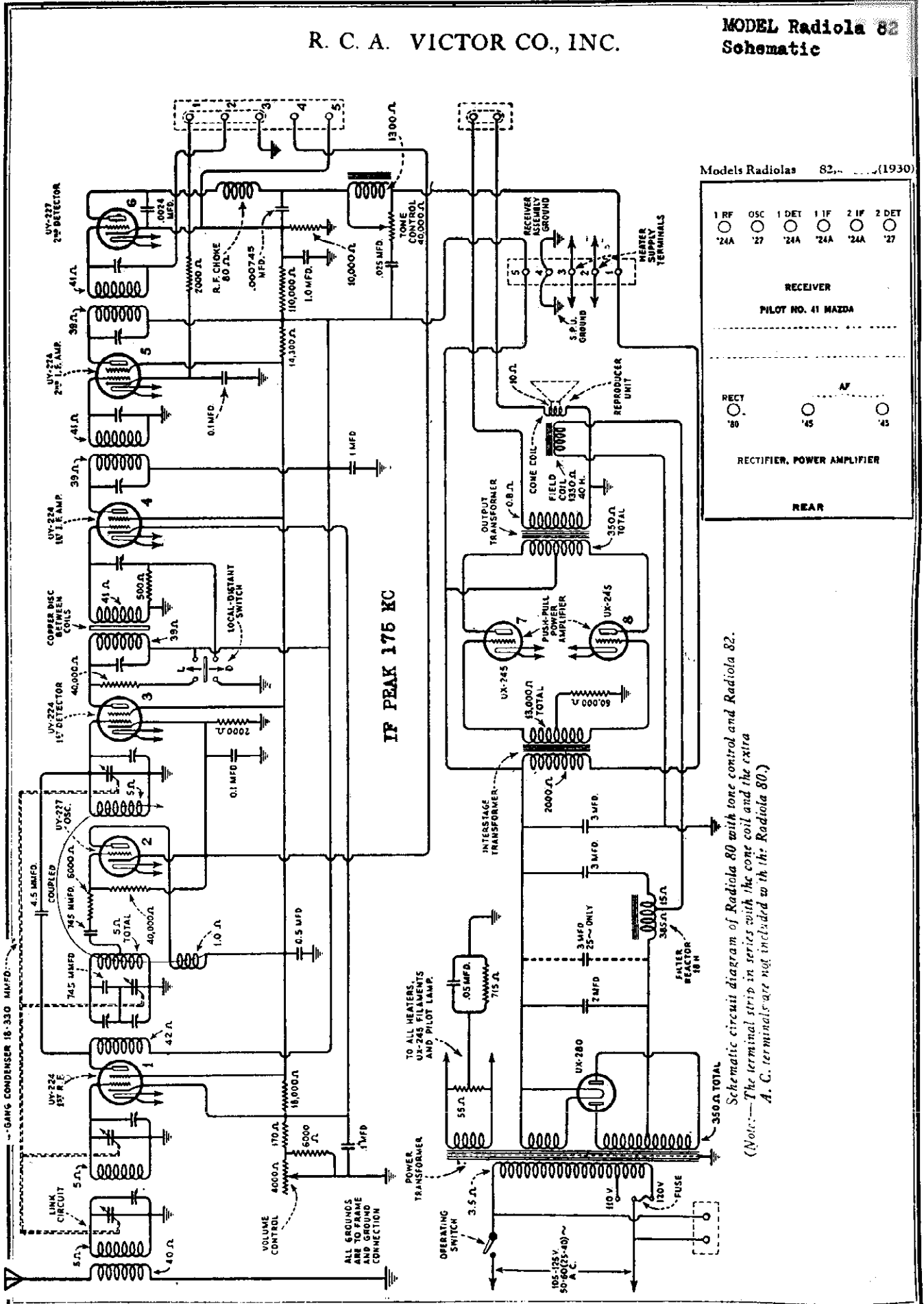
MODEL Radiola 67
Schematic

R. C. A. VICTOR CO., INC.



R. C. A. VICTOR CO., INC.

MODEL Radiola 82 Schematic



Models Radiolas 82, (1930)

1 RF	OSC	1 DET	1 AF	2 IF	2 DET
24A	27	24A	24A	24A	27

RECEIVER
PILOT NO. 41 MAZDA

RECT
50

AF
45

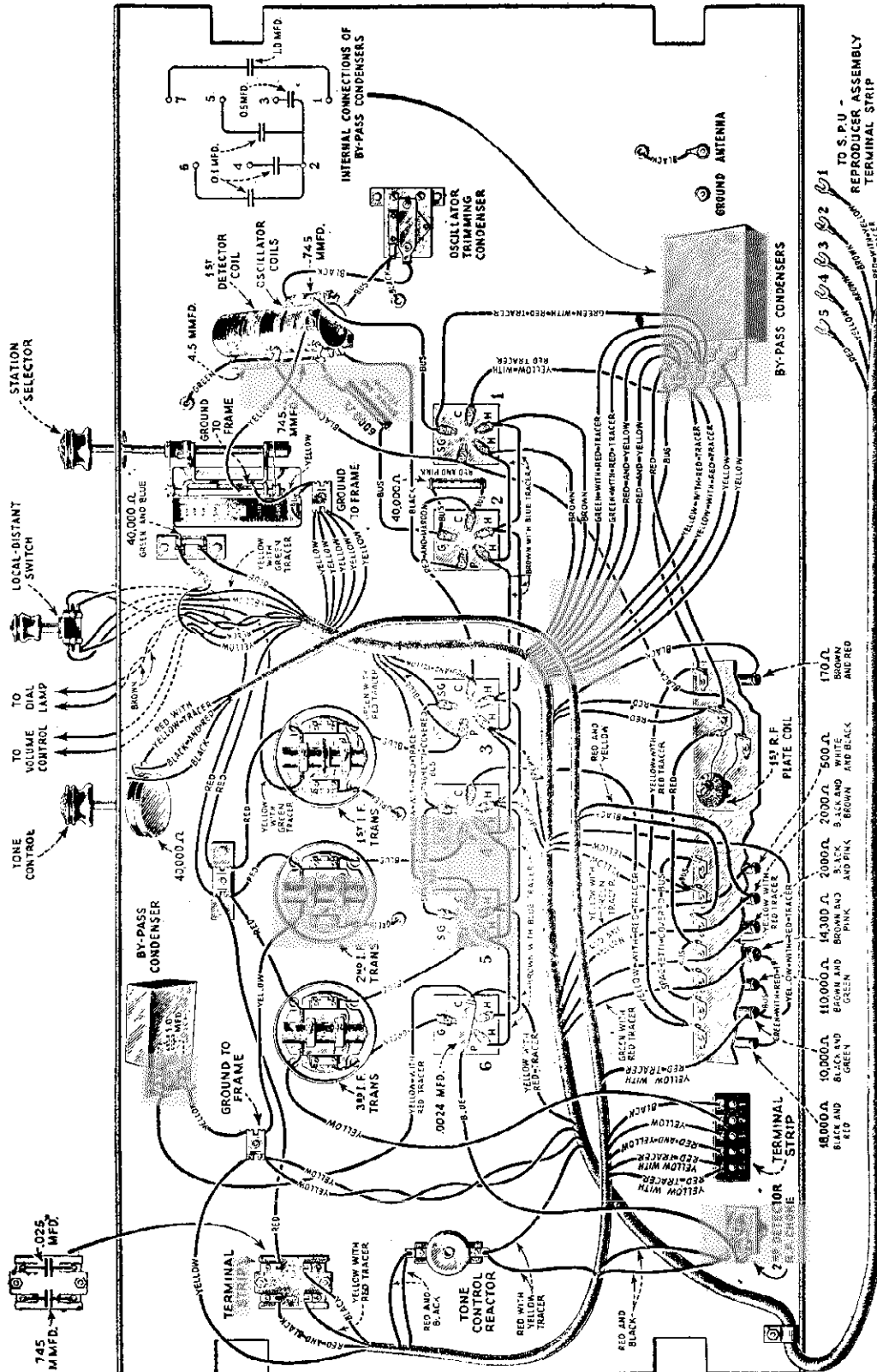
RECTIFIER, POWER AMPLIFIER

REAR

Schematic circuit diagram of Radiola 80 with tone control and Radiola 82. The terminal strip in series with the cone coil and the extra A. C. terminals are not included with the Radiola 80.

MODELS Radiola 82 and 86
with Remote Control
Assembly Wiring

R. C. A. VICTOR CO., INC.

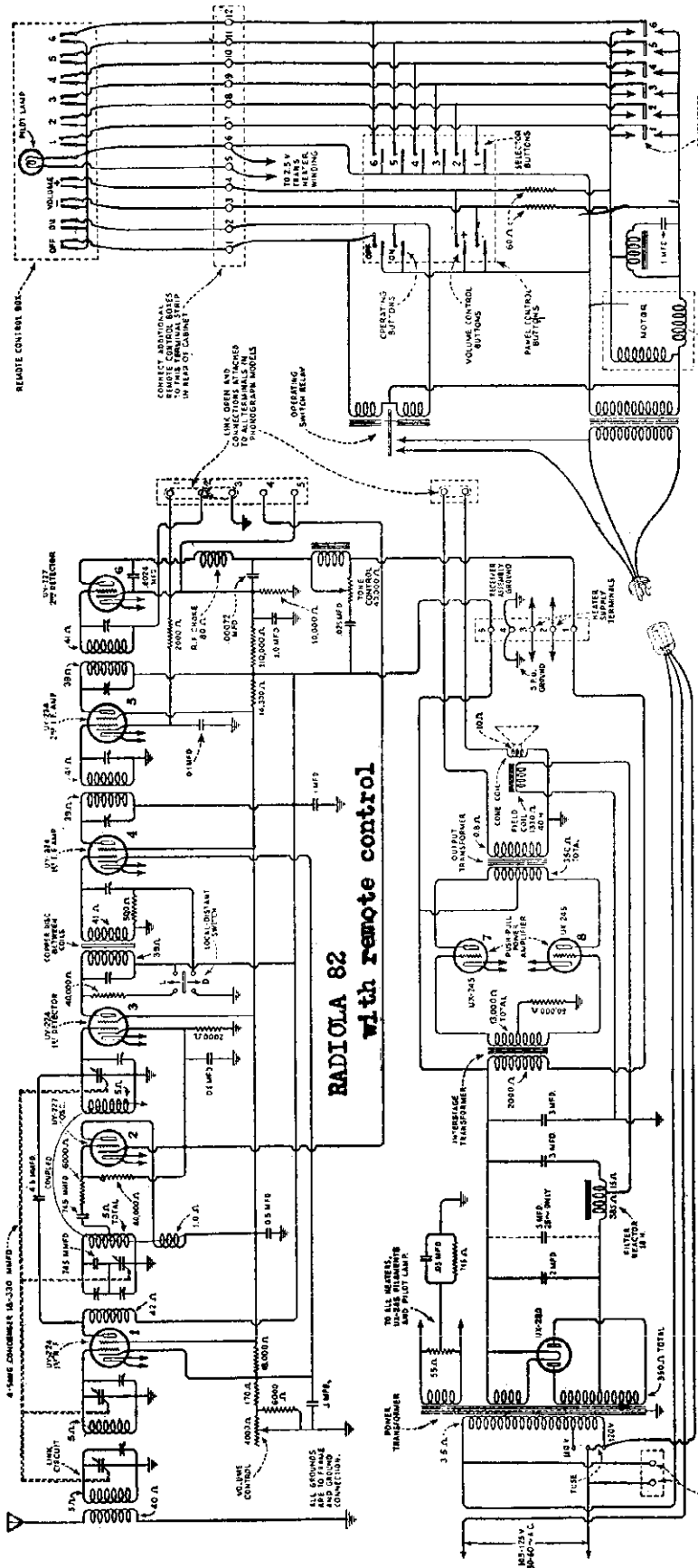


RECEIVER ASSEMBLY

RADIOLA 82 and 86 with Remote Control

R. C. A. VICTOR CO., INC.

MODEL Radiola 82
with Remote Control
Schematic



IF PEAK 175 KC

The cable to the remote control box supplied with the remote control models is twenty-five (25) feet in length. This is ample for most rooms as it is very rare that a person wishes to listen to a program at a greater distance from the loudspeaker.

If, however, it is desired to place the remote control box at a greater distance from the set, any twelve conductor cable, the wires of which are No. 14 or larger in size, may be used to splice onto the regular cable and increase the total length up to seventy-five (75) feet. Figure 8 shows the method recommended for adding this additional cable.

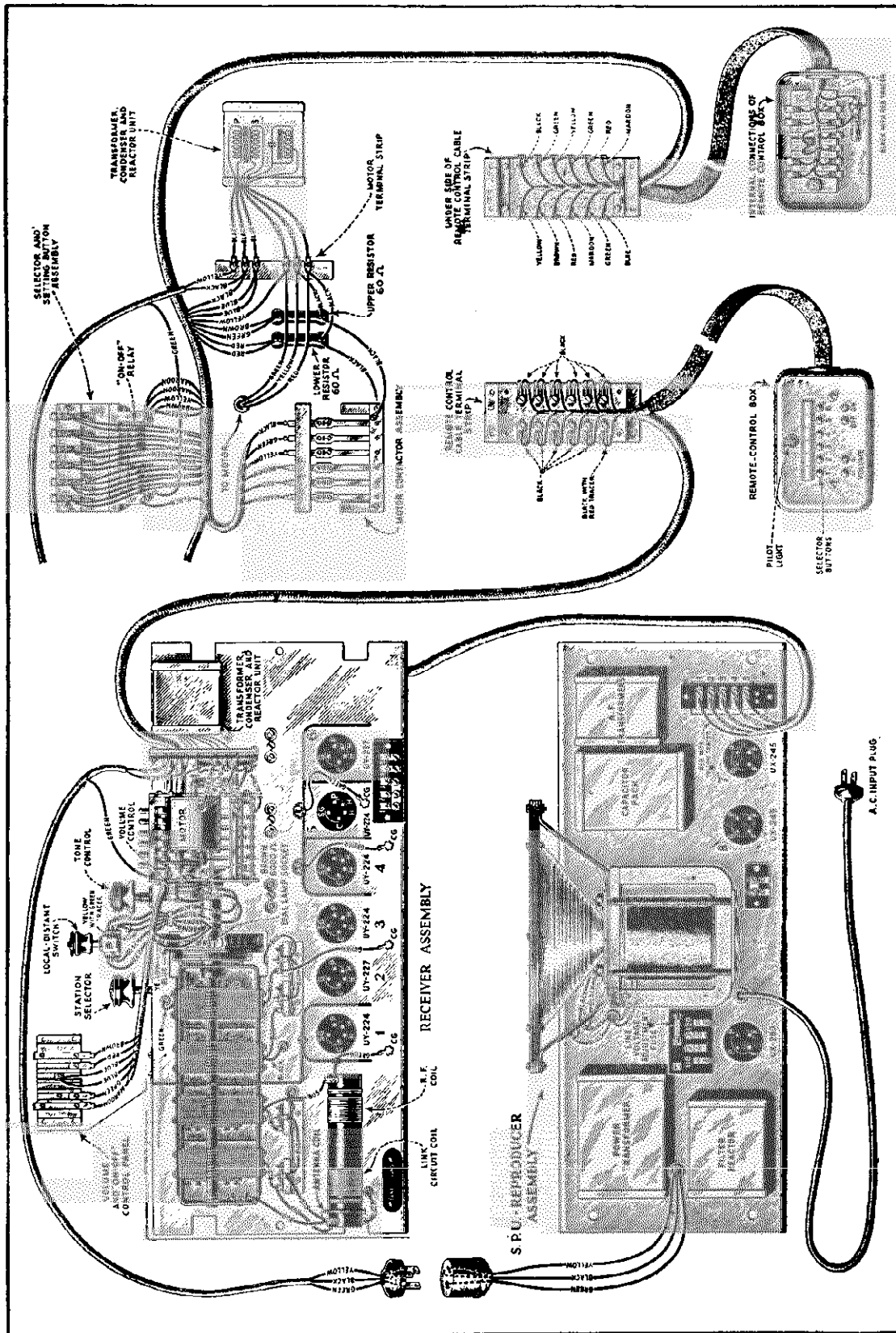
The setting of the drums is made by the pins on the front panel. These are known as the "setting buttons." The selector button is pressed and the drum is moved by the motor until the corresponding contactor is midway between the contacts. The pin will now fall in the hole in the drum if pushed in by the finger. See Figure 7. Holding the pin firmly in the hole, the desired station is then accurately tuned in by means of the manual station selector knob. After tuning the pin is then released. As the point on the opposite side of the

drum is where the diameter of the drum changes, the contactor is half way between the contacts. Pressing the selector buttons will therefore cause no movement of the motor. If another button is pressed and the drum moved, the current through the common lead will always bring the drum back to the position for which it was set.

Referring to the schematic diagram, it will be noted that a common lead is used for the pilot lamp and the selector buttons in the remote control box. By doing this, when a selector button on the box is pressed, the current through the common lead is increased, likewise the voltage drop in the lead is increased. The result is that while the motor is running the pilot lamp becomes very dim. As soon as the motor stops, the lamp flashes bright, thus indicating that the motor has stopped and the station is tuned in. If the station is not then heard, it is necessary to press the + volume control button a little at a time until the desired output level is obtained.

**MODELS Radiola 82 and 86
with Remote Control
Receiver Chassis**

R. C. A. VICTOR CO., INC.

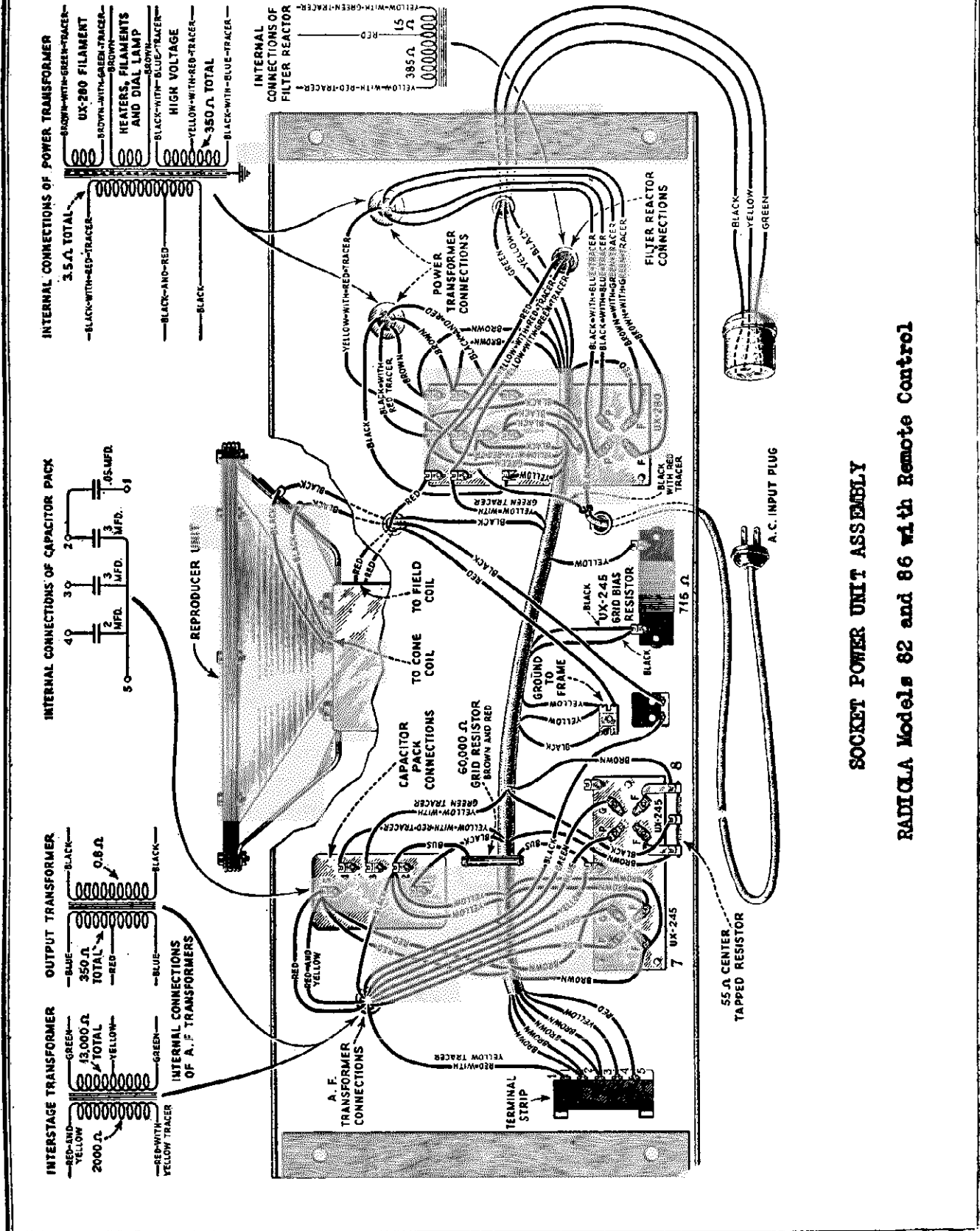


Assembly Wiring Diagram

Models Radiola 82 and 86 with Remote Control

R. C. A. VICTOR CO., INC.

MODELS Radiola 82 and 86
with Remote Control
Power Unit Chassis



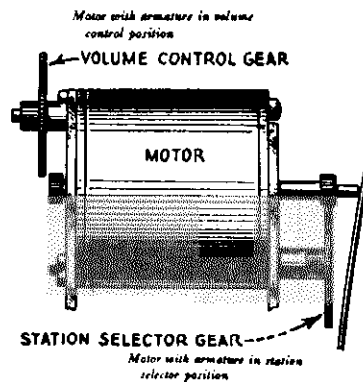
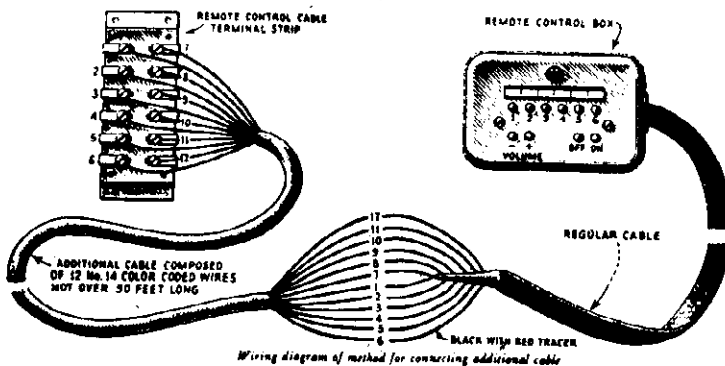
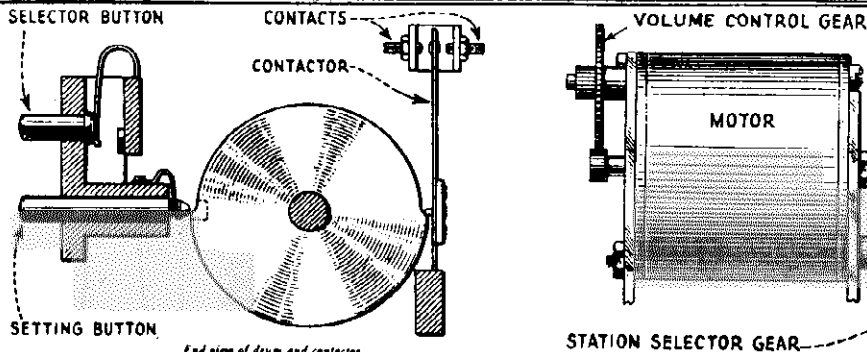
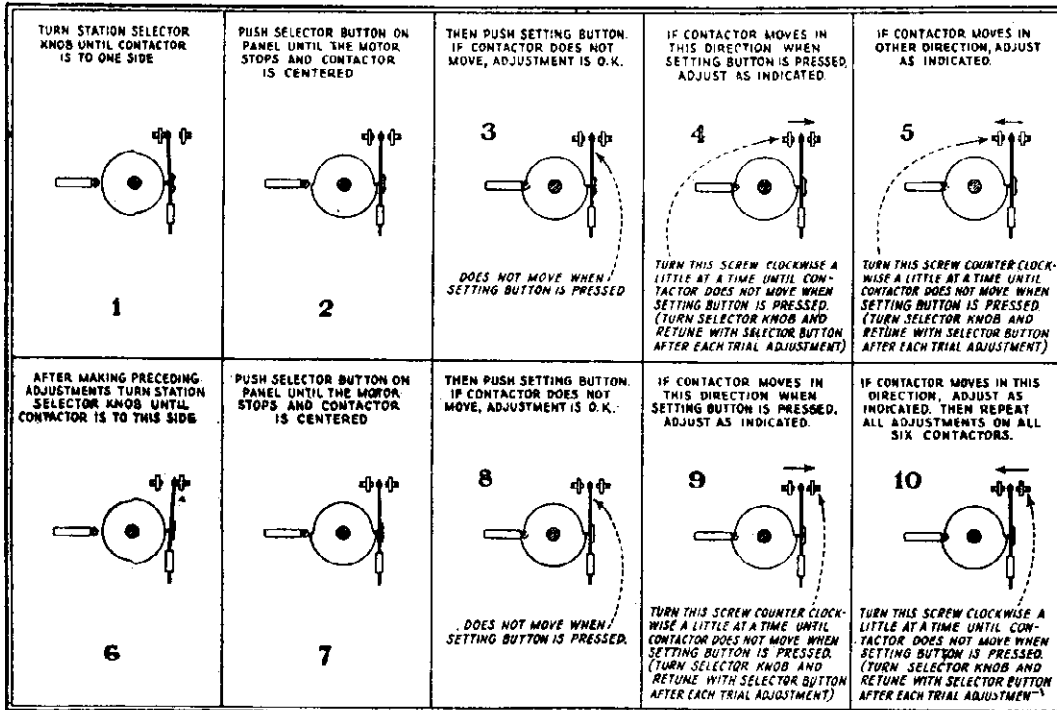
SOCKET POWER UNIT ASSEMBLY
RADIOLA Models 82 and 86 with Remote Control

R. C. A. VICTOR CO., INC.

MODELS Radiola 82 and 86
with Remote Control
Remote Control Units

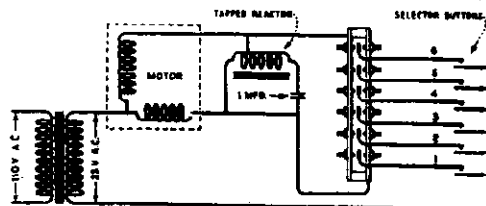
MOTOR CONTACTOR ADJUSTMENT CHART

Repeat Entire Procedure For All Contactors



This is figure 8 illustrating the method of increasing the length of the cable.

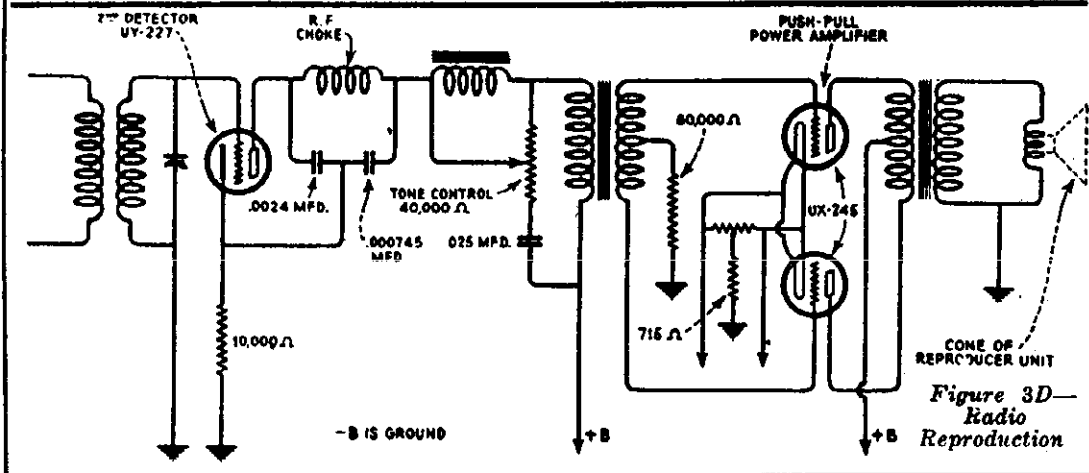
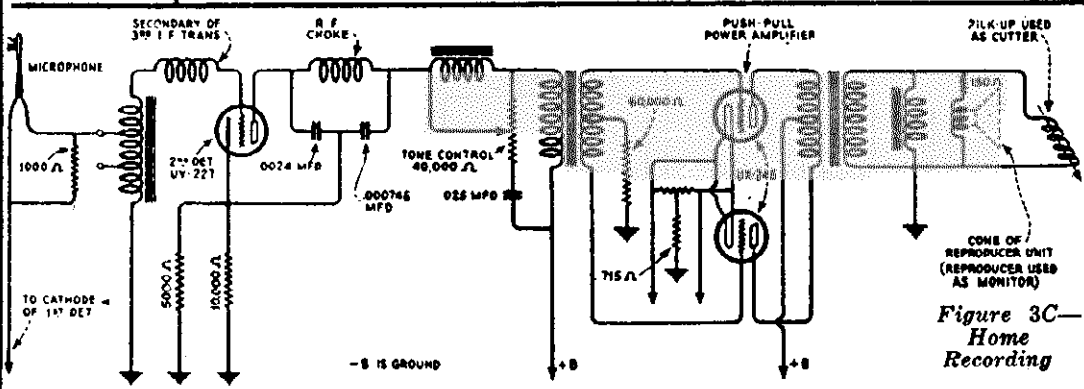
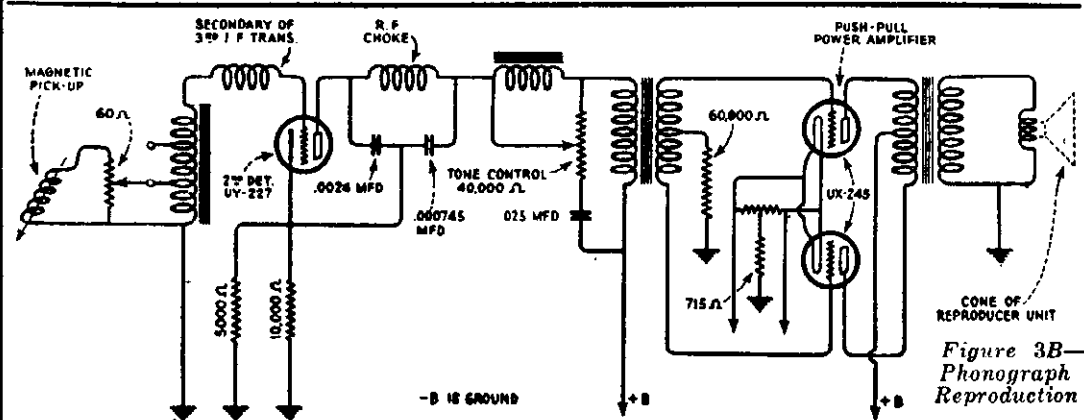
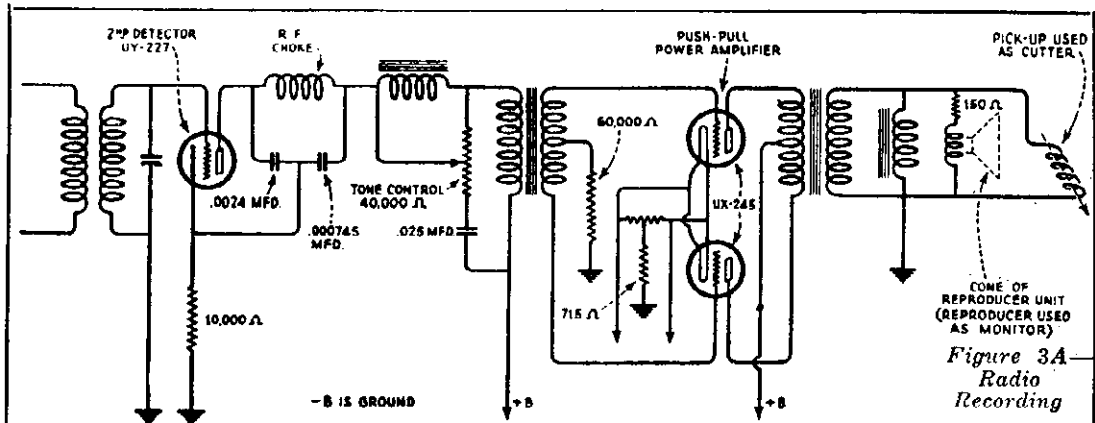
For additional remote control data, see RAE-79 service data.



Schematic diagram of motor circuit

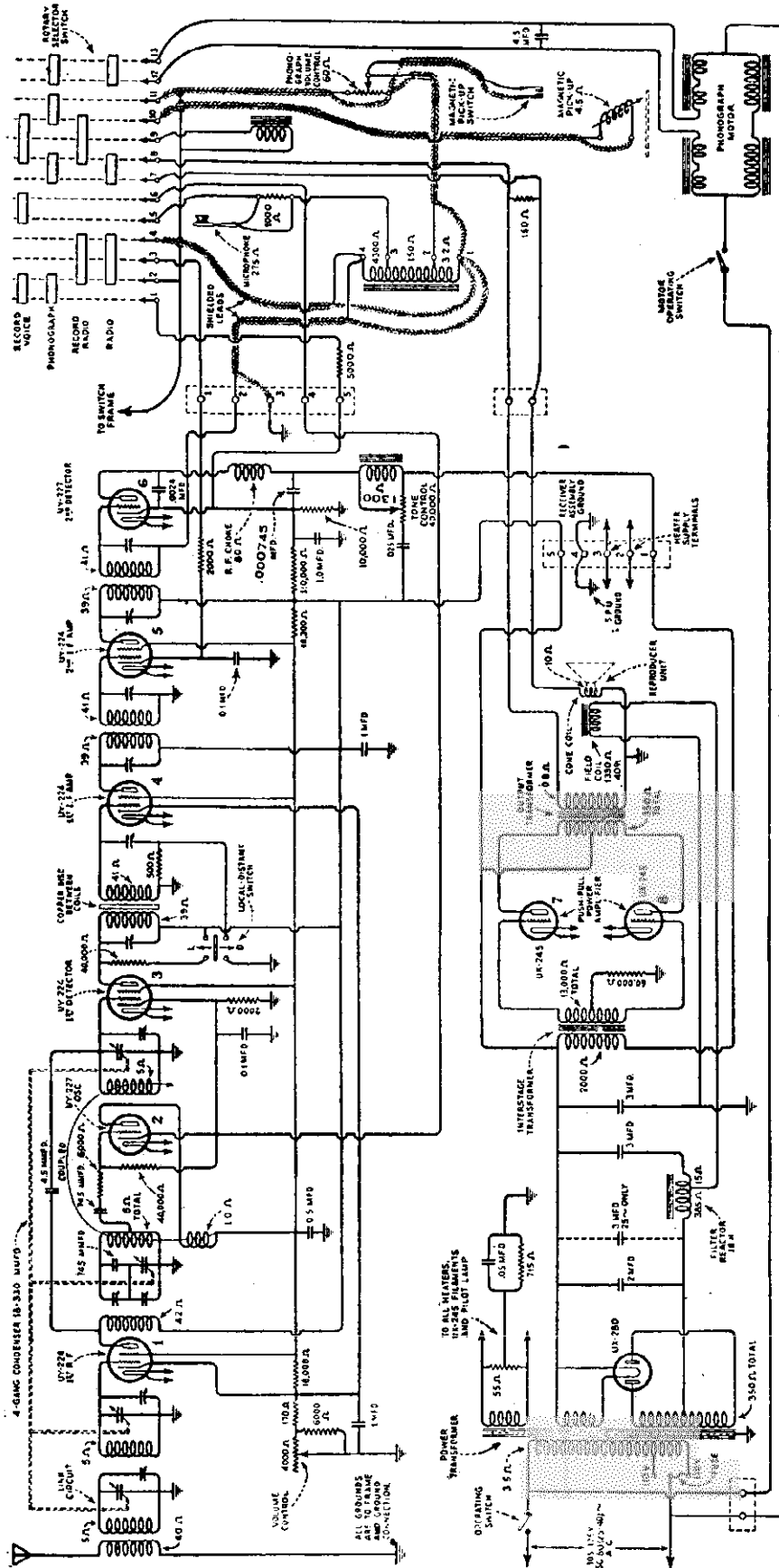
R. C. A. VICTOR CO., INC.

MODEL Radiola 86
Audio Circuit
Diagrams

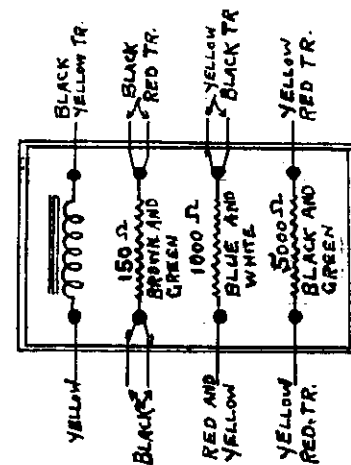


**MODEL Radiola 86
Schematic**

R. C. A. VICTOR CO., INC.



Rotary Switch Connections
 #1 Yellow w. Red Tr.
 #2 Yellow
 #3 Black w. Green Tr.
 #4 Yellow w. Green Tr.
 #5 Yellow w. Black Tr.
 #6 Red and Yellow
 #7 Black
 #8 Black w. Red Tr.
 #9 Black w. Yellow Tr.
 #10 Metal braid
 #11 Black and Yellow
 #12, #13 Black



Resistor and Reactor Unit

For socket layout
 see Model Radiola
 82

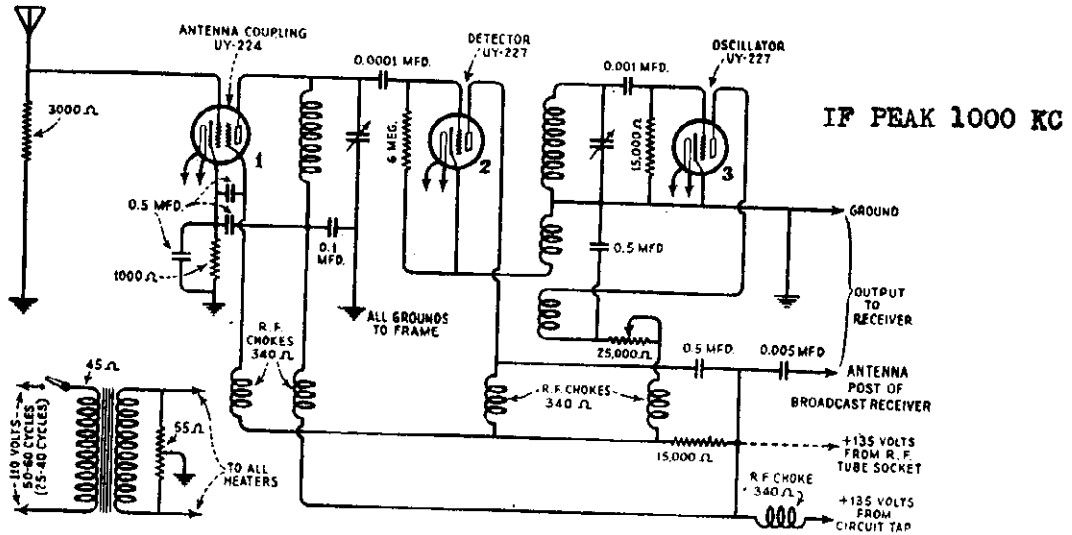
For voltage data,
 see Model Radiola
 82.

For chassis layouts
 see Model Radiola
 82 and also Models
 82-86 with remote
 control.

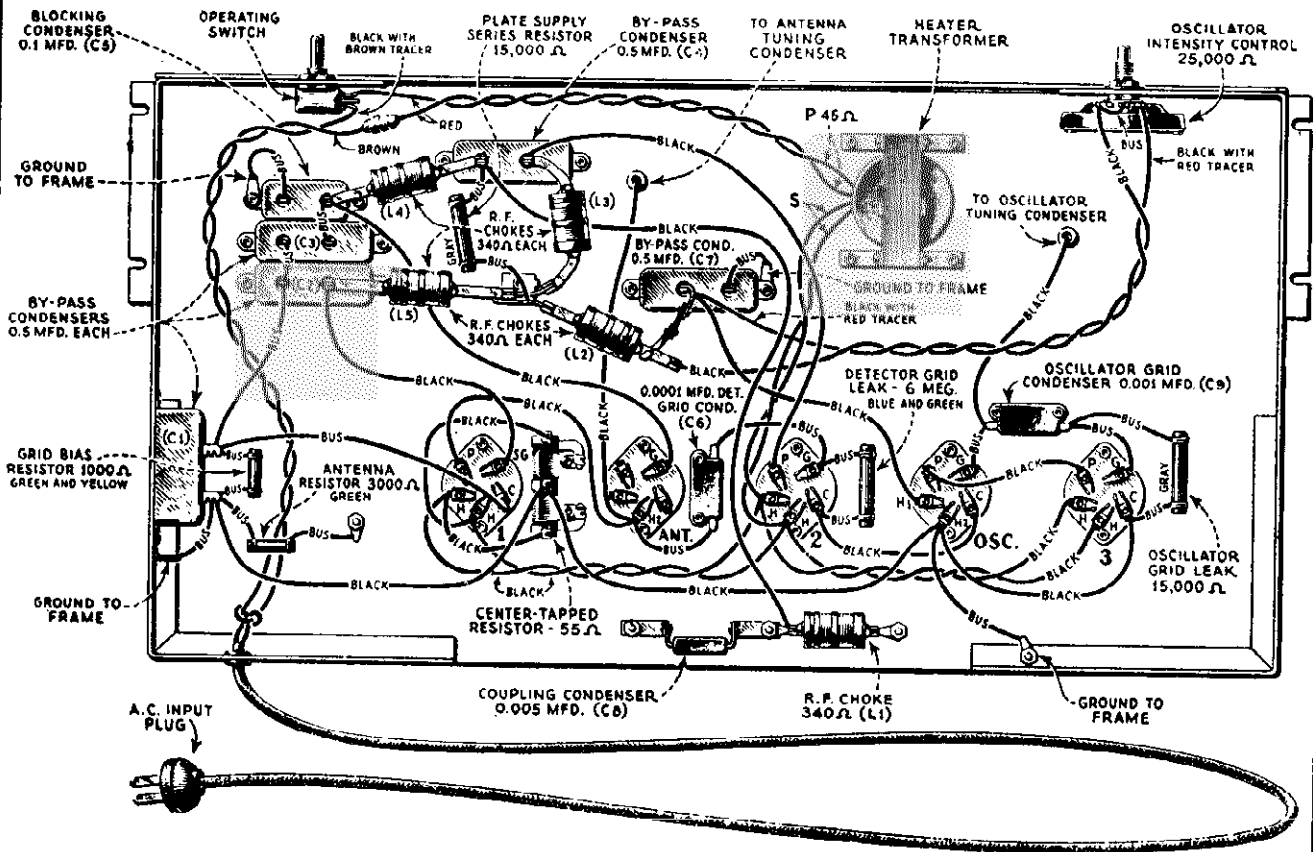
Power Consumption
 Radio alone 120 watts
 Combination 200 watts

R. C. A. VICTOR CO., INC.

MODEL RCA Short Wave
Adaptor
Victor SW-10
Schematic-Chassis

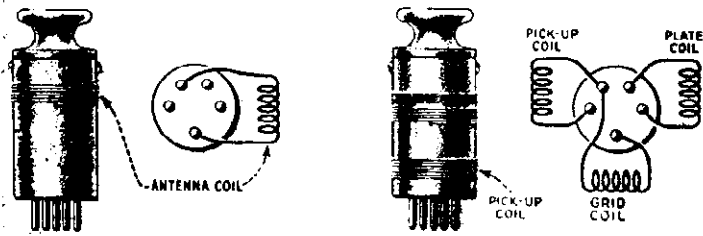


RCA RADIOLA SHORT WAVE ADAPTOR

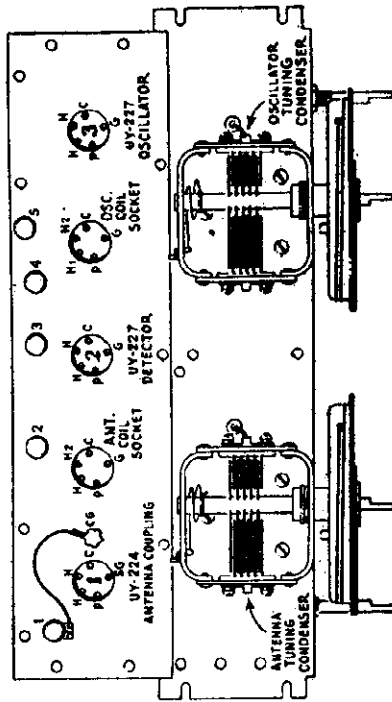
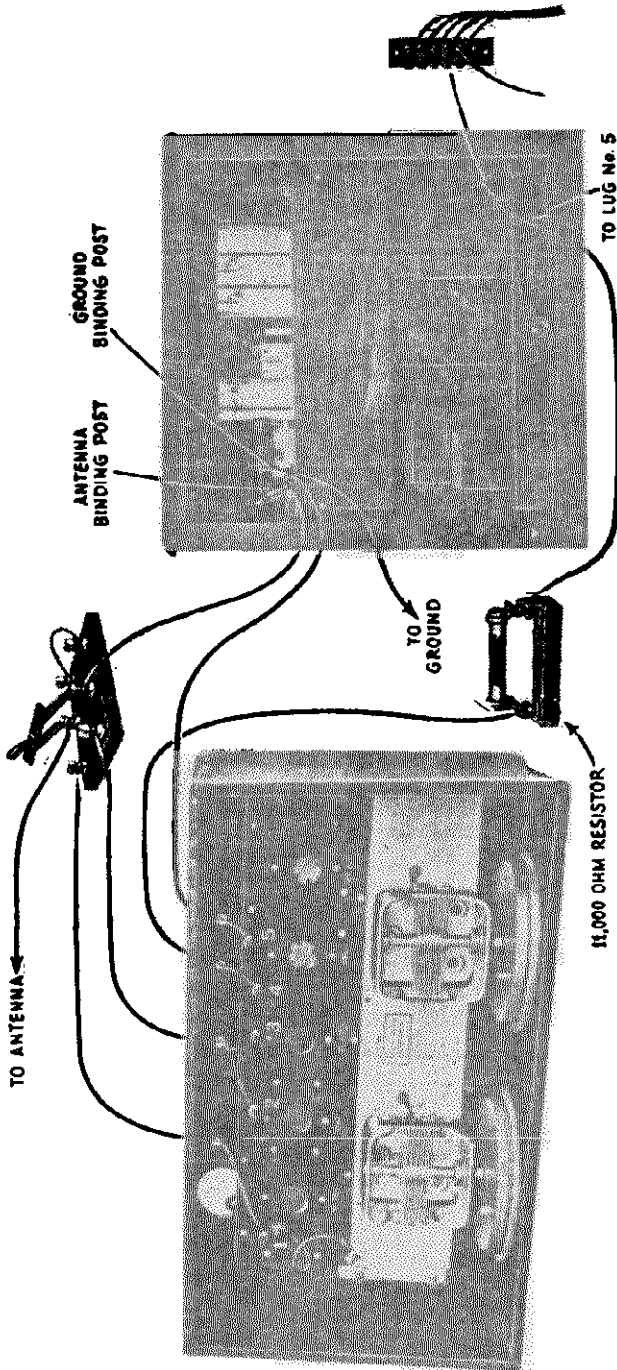


MODEL RCA Short Wave Adaptor
Victor SW-10
Voltage- Data

R. C. A. VICTOR CO., INC.



Internal connections of Plug-in Coils



- Test points of Short Wave Adaptor

Connections of Short Wave Adaptor to Radiola 80

OSCILLATOR INTENSITY CONTROL AT MAXIMUM

Socket No.	Cathode to Heater Volts D. C.	Cathode to Control Grid Volts D. C.	Cathode to Screen Grid Volts D. C.	Cathode to Plate Volts D. C.	Heater Volts A. C.	Plate Current M.A. D.C.	Screen Grid Current M.A. D.C.
1	-1	-1.3*	43	125	2.45	1.40	0.25
2	0	-1.3*	—	50	2.45	2.0	—
3	0	-0.4*	—	45	2.45	2.8	—

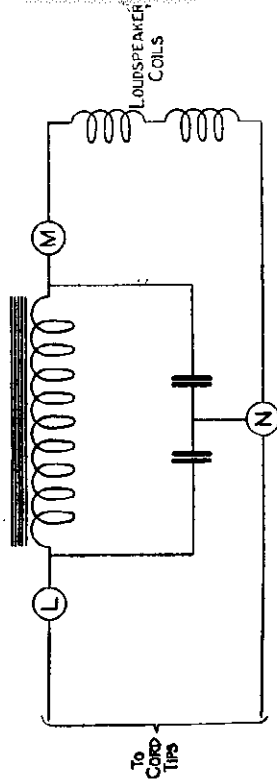
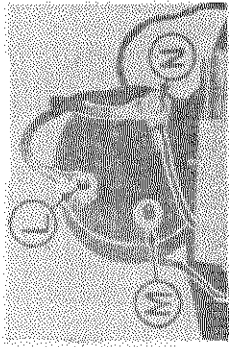
OSCILLATOR INTENSITY CONTROL AT MINIMUM

Socket No.	Cathode to Heater Volts D. C.	Cathode to Control Grid Volts D. C.	Cathode to Screen Grid Volts D. C.	Cathode to Plate Volts D. C.	Heater Volts A. C.	Plate Current M.A. D.C.	Screen Grid Current M.A. D.C.
1	-1.2	-1.2	54	127	2.45	1.25	0.28
2	0	—	—	56	2.45	3.0	—
3	0	-0.3*	—	23	2.45	1.7	—

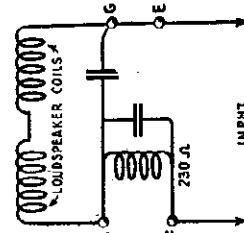
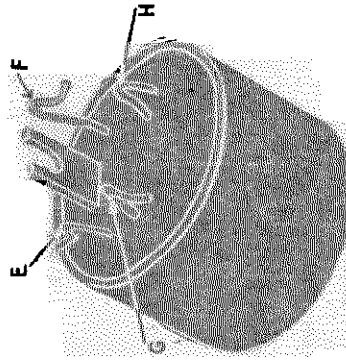
*Measured on 50 volt range. Is inaccurate because of voltmeter resistance in shunt with grid circuit resistance. Actual grid voltage is slightly higher than the readings.

R. C. A. VICTOR CO. INC.

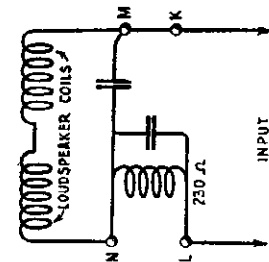
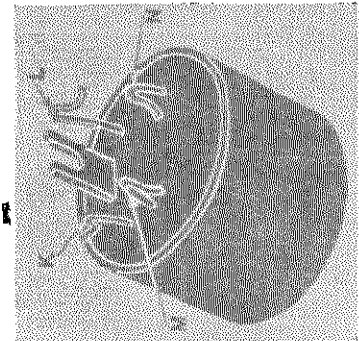
MODELS 100-A, 100-B,
103, 104-AC
speakers



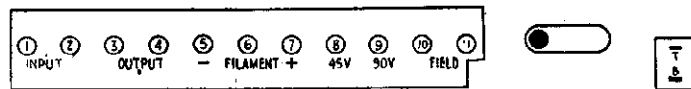
Schematic circuit diagram of RCA Loudspeaker Model 100A and photo of the filter unit



Schematic circuit of Loudspeaker 100B coils and filter unit



Schematic circuit of Loudspeaker 103 coils and filter unit photo of filter unit

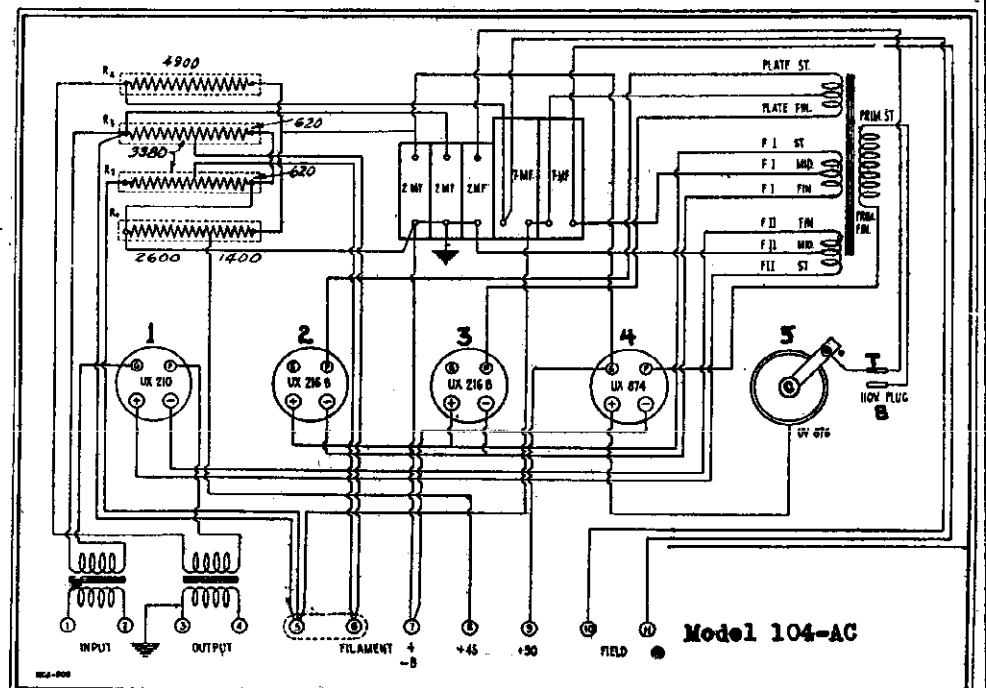


Terminal Layout

Model Radiola 104 Loudspeaker (1925)

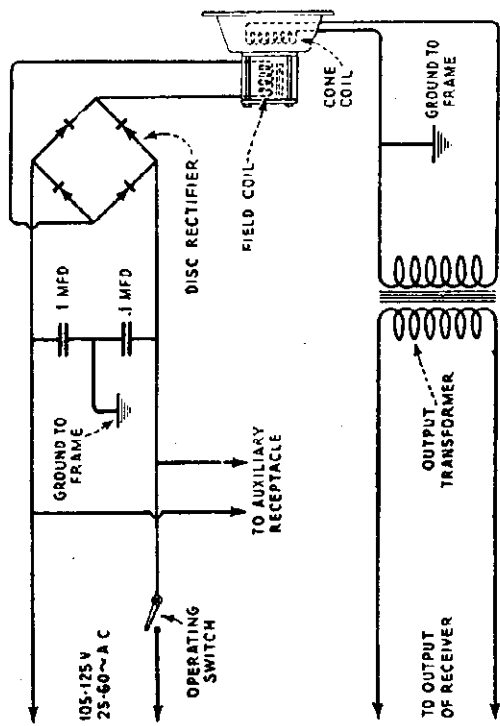
AF	RECT	RECT	VOLT. REG.	BALLAST	TUBE
'10	'11	'11	874	876	
			OR UP591	50 _~	
				886	
				40 _~	

REAR (L TO R)

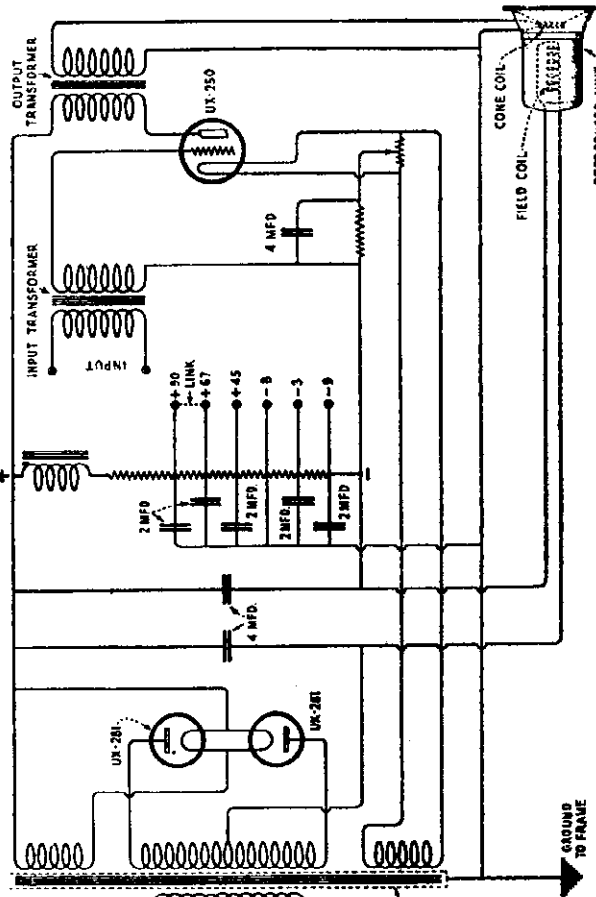


MODELS 105, 106
Speakers

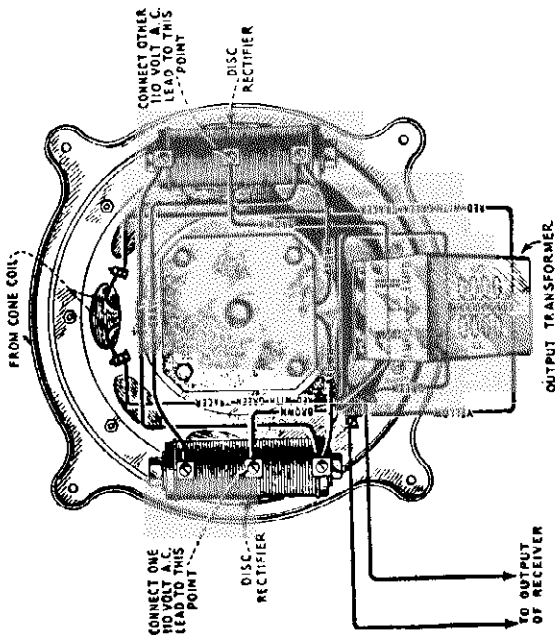
R. C. A. VICTOR CO., INC.



Schematic wiring diagram of Loudspeaker 106



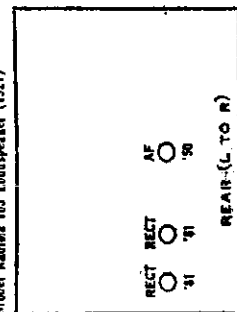
Schematic circuit diagram of RCA Loudspeaker 105.



Wiring diagram of reproducer unit 106

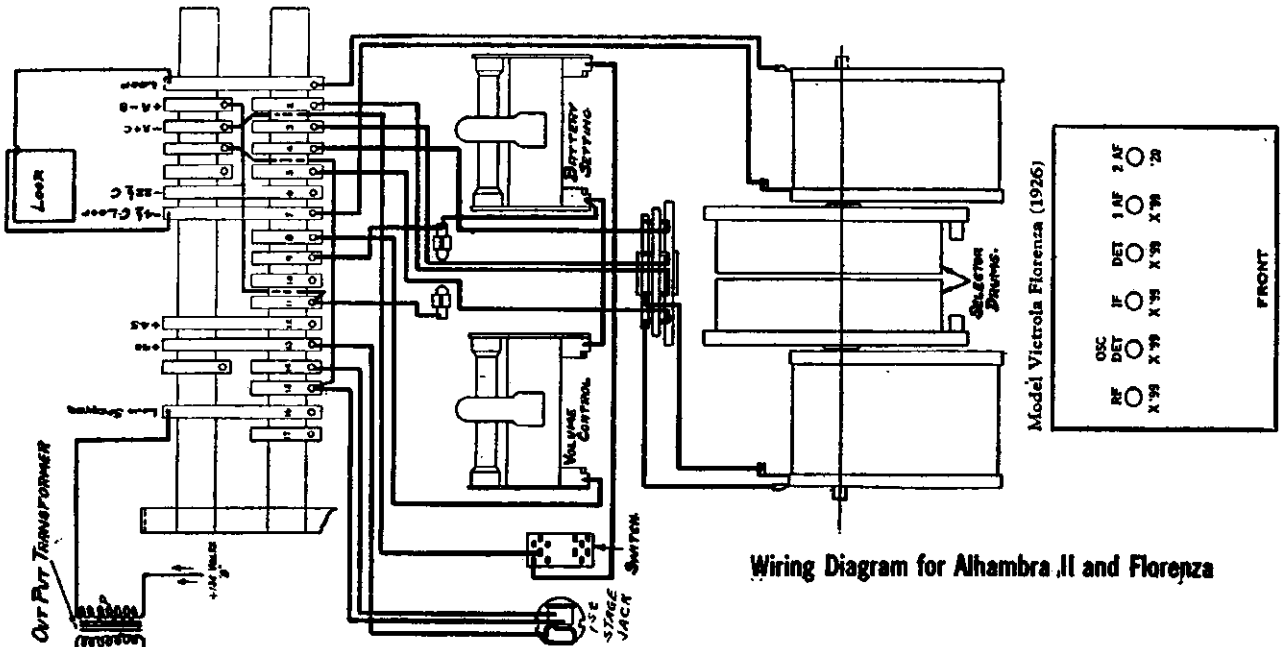
106 Speaker
Voltage across field coil.
With field connected 80 volts
With field disconnected 95 volts

Model Radio 105 Loudspeaker (1927)



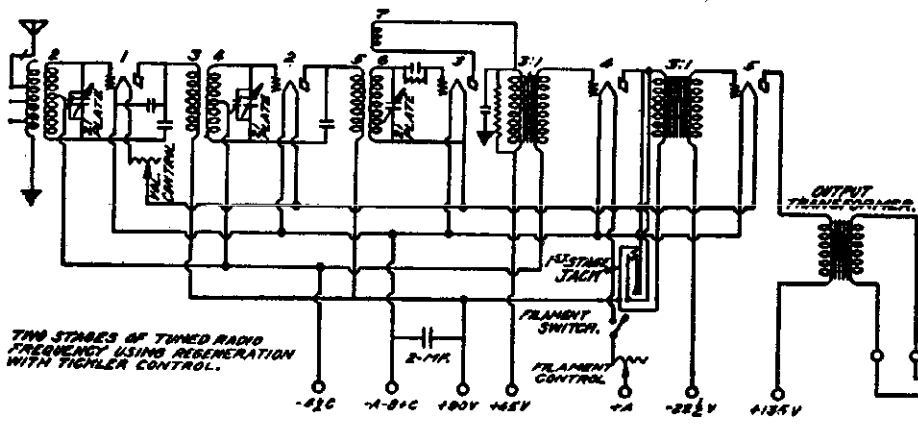
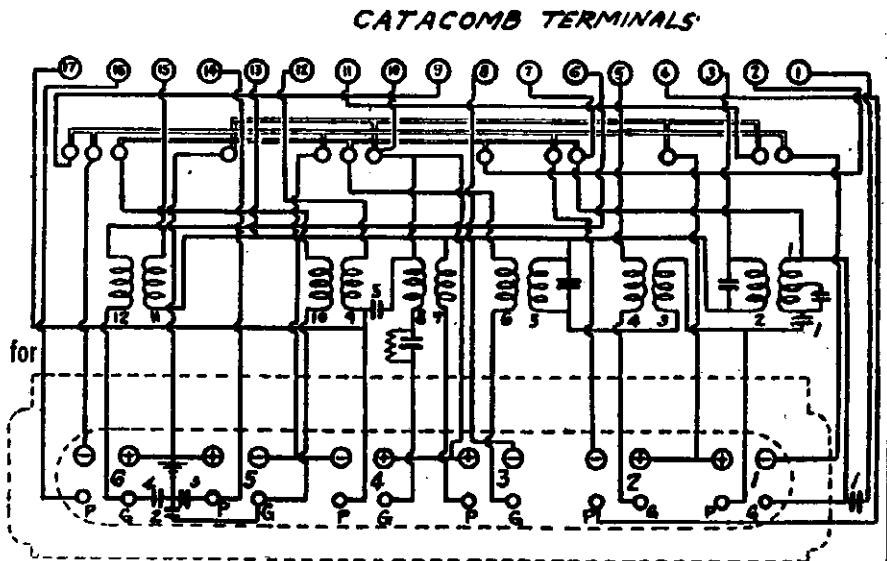
R. C. A. VICTOR CO., INC.

MODEL Victor Alhambra I (7-1)
 MODEL Victor Alhambra II
 MODEL Victor Florenza



Wiring Diagram for Alhambra II and Florenza

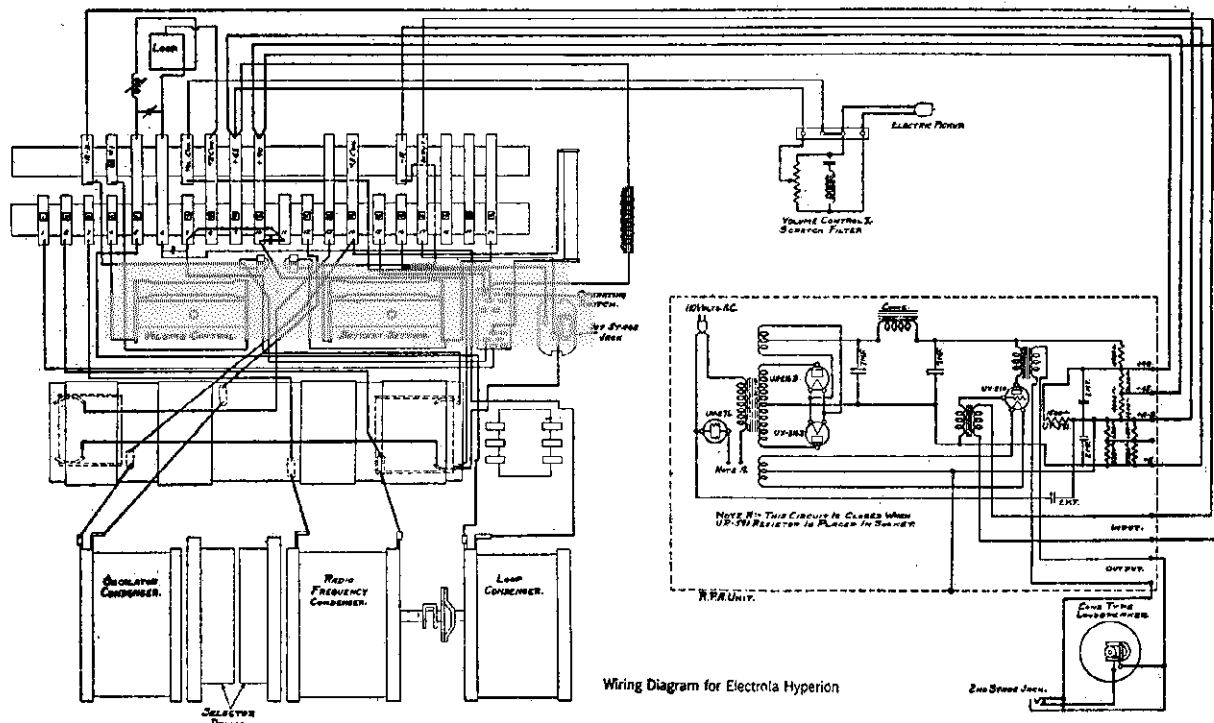
Radiola 25 Catacomb Continuity Diagram for Alhambra II (7-2) and Florenza (9-1)



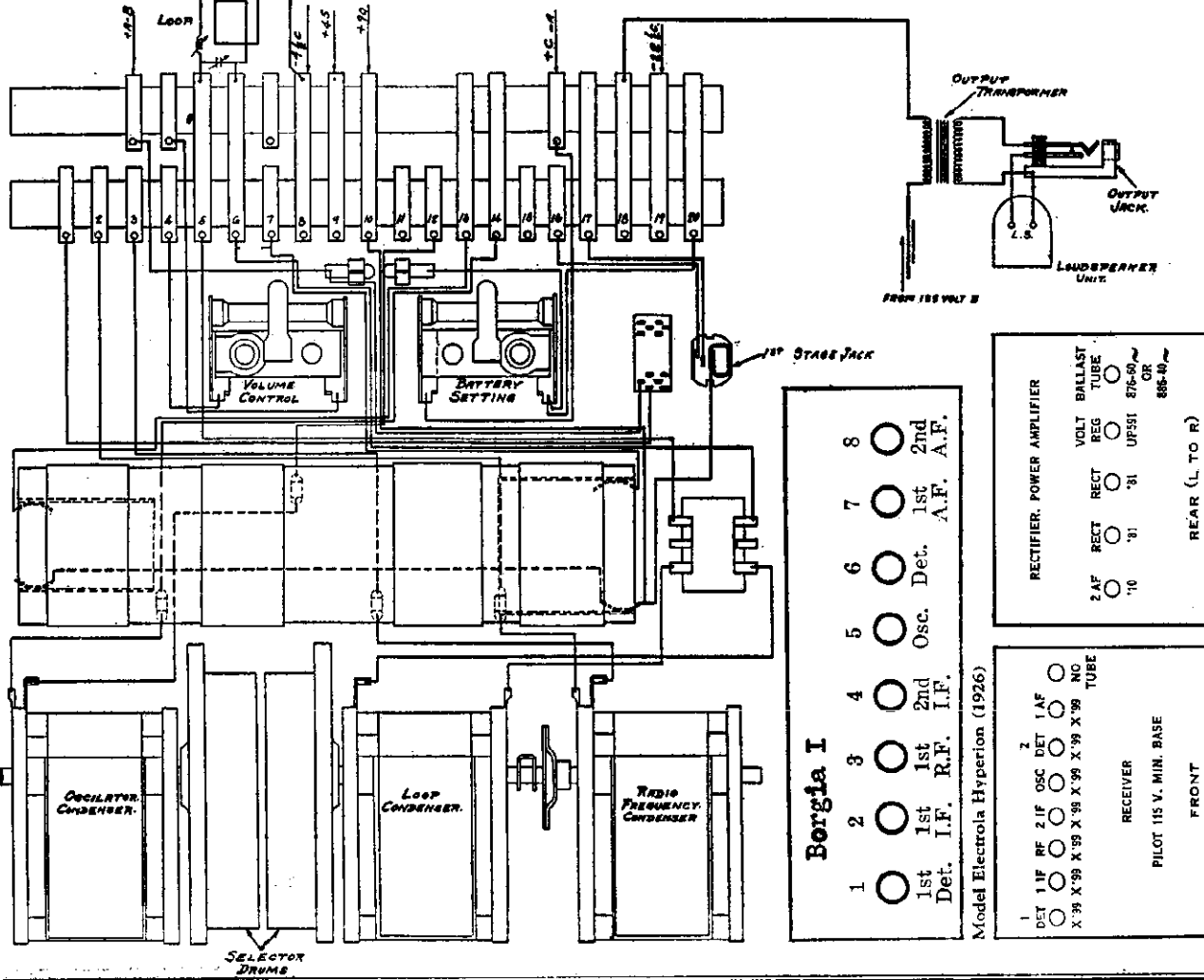
Wiring Diagram Alhambra I (7-1)

MODEL Victor Borgia I
MODEL Victor Hyperion
Electrola

R. C. A. VICTOR CO., INC.



Wiring Diagram for Electrola Hyperion



Borgia I

1	2	3	4	4	5	6	7	8
○	○	○	○	○	○	○	○	○
1st Det. I.F.	1st I.F.	1st R.F.	2nd I.F.	Osc.	Det.	1st A.F.	2nd A.F.	

Model Electrola Hyperion (1926)

1	2	3	4	5	6	7	8
○	○	○	○	○	○	○	○
DET	11P	RF	21F	OSC	DET	1A.F.	
○	○	○	○	○	○	○	○
X 99 X 99	X 99 X 99	X 99 X 99	X 99 X 99	X 99 X 99	X 99 X 99	X 99 X 99	NO TUBE

2AF	RECT	RECT	VOLT REG	BALLAST TUBE
'10	'81	'81	UP351	276-50 ^{mc} OR 886-40 ^{mc}

REAR (L TO R)

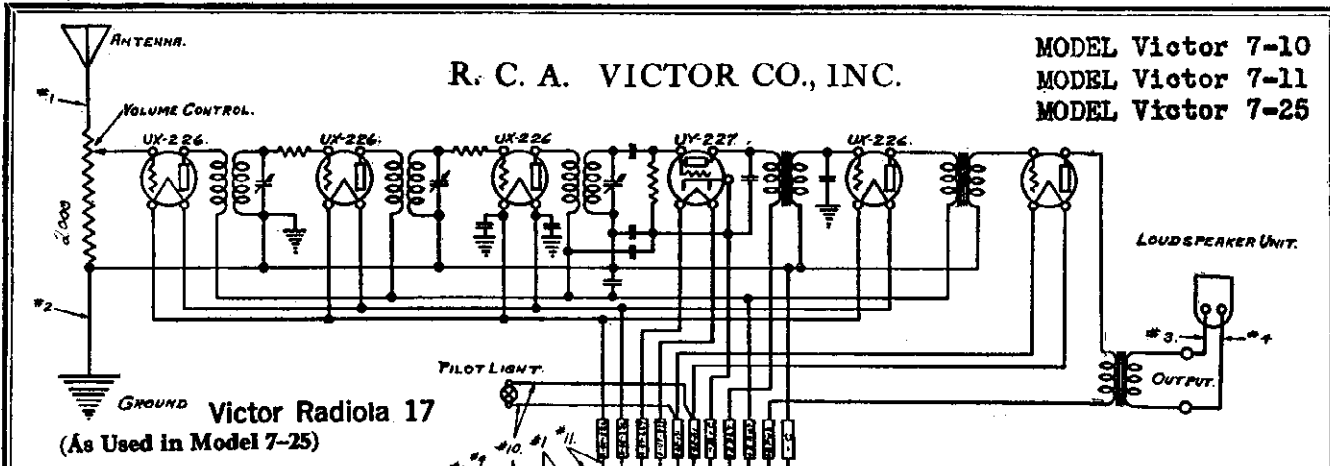
RECEIVER

FRONT

PILOT 115 V. MIN. BASE

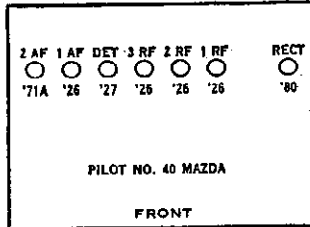
R. C. A. VICTOR CO., INC.

MODEL Victor 7-10
 MODEL Victor 7-11
 MODEL Victor 7-25

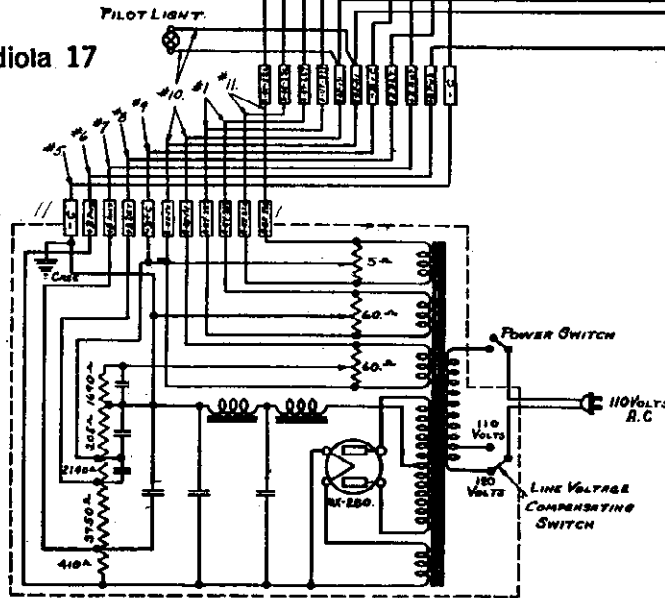


Victor Radiola 17
 (As Used in Model 7-25)

Models Victors 7-25,

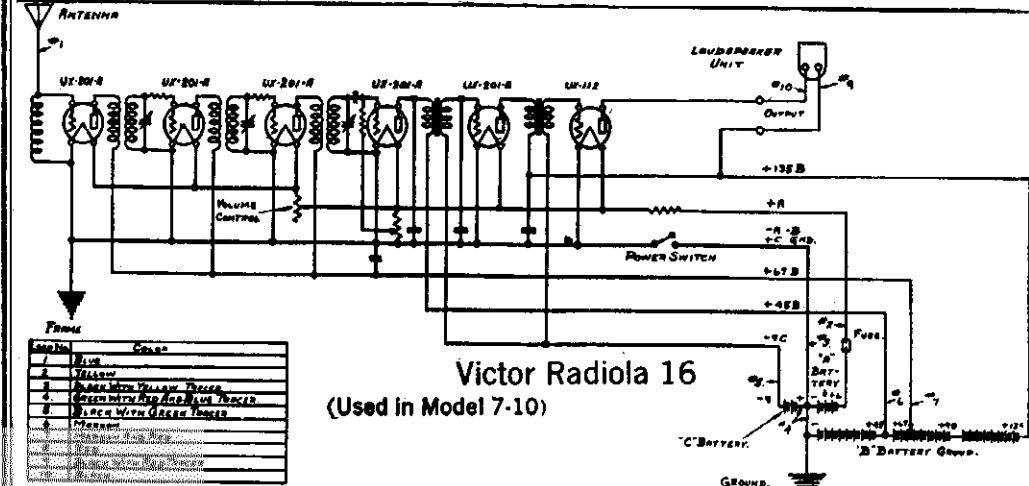


Color	Color
1 BLUE	
2 BLACK WITH BLUE TRACER	
3 BLACK	
4 GREEN WITH RED TRACER	
5 GREEN	
6 BLACK WITH GREEN TRACER	
7 BROWN	
8 BLACK WITH BROWN TRACER	
9 RED AND MAROON	
10 GREEN	
11 BLACK WITH YELLOW TRACER	



VICTOR—Models 9-16, 7-26, 7-11
 Line Voltage 112—120 Volt Tap—Volume Control Full

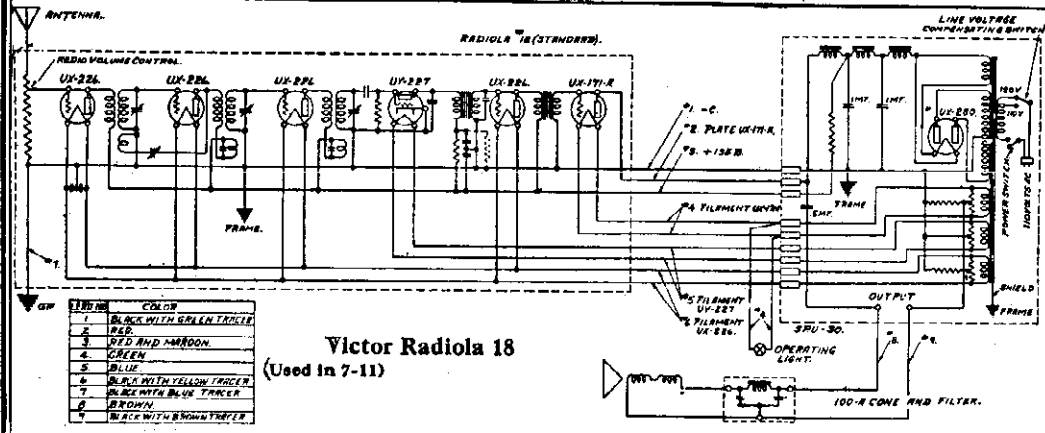
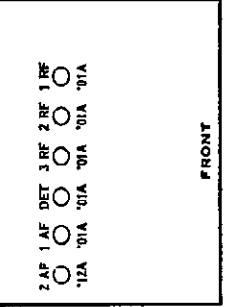
TYPE OF TUBE	PARTS OF TUBE	VOLTAGE		CURRENT		RESISTANCE	
		PLATE	GRID	PLATE	GRID	PLATE	GRID
226	1st. R.F.	1.5	125	1.5	122	8	4.5
226	2nd. R.F.	1.5	125	1.5	122	8	4.5
226	3rd. R.F.	1.5	125	1.5	122	8	4.5
226	Detector	2.4	125	2.2	122	8	4.5
226	1st. A.F.	1.5	125	1.5	122	8	4.5
271A	2nd. A.F.	4.5	200	4.7	132	30	16.0
280	Rectifier	—	—	4.8	—	—	20.0



Victor Radiola 16
 (Used in Model 7-10)

Color	Color
1 Blue	
2 Yellow	
3 BLACK WITH BLUE TRACER	
4 GREEN WITH RED TRACER	
5 BLACK WITH GREEN TRACER	
6 BROWN	
7 BLACK WITH BROWN TRACER	
8 RED AND MAROON	
9 GREEN	
10 BLACK WITH YELLOW TRACER	
11 BLACK WITH BLUE TRACER	
12 BROWN	
13 BLACK WITH BROWN TRACER	

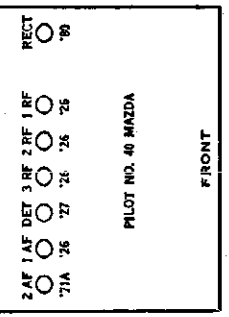
Models Victors R16, 7-10 (1925)



Victor Radiola 18
 (Used in 7-11)

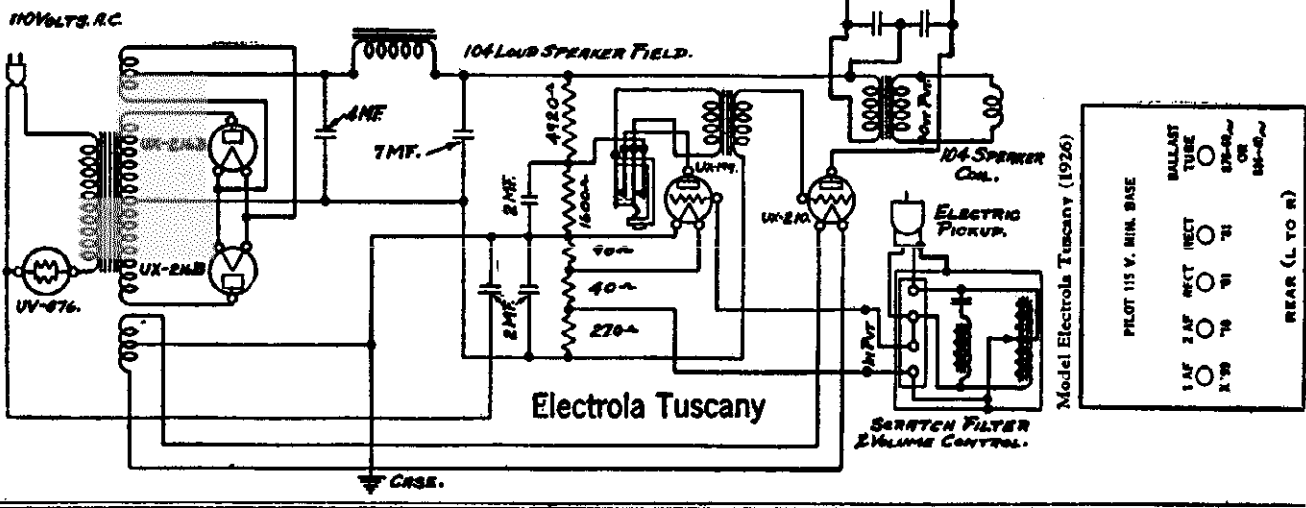
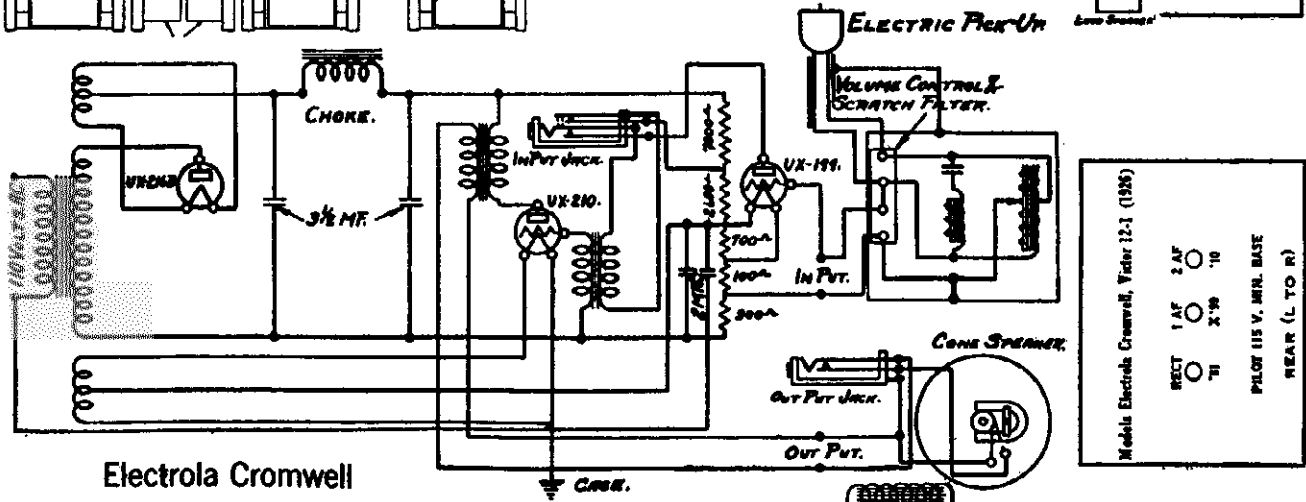
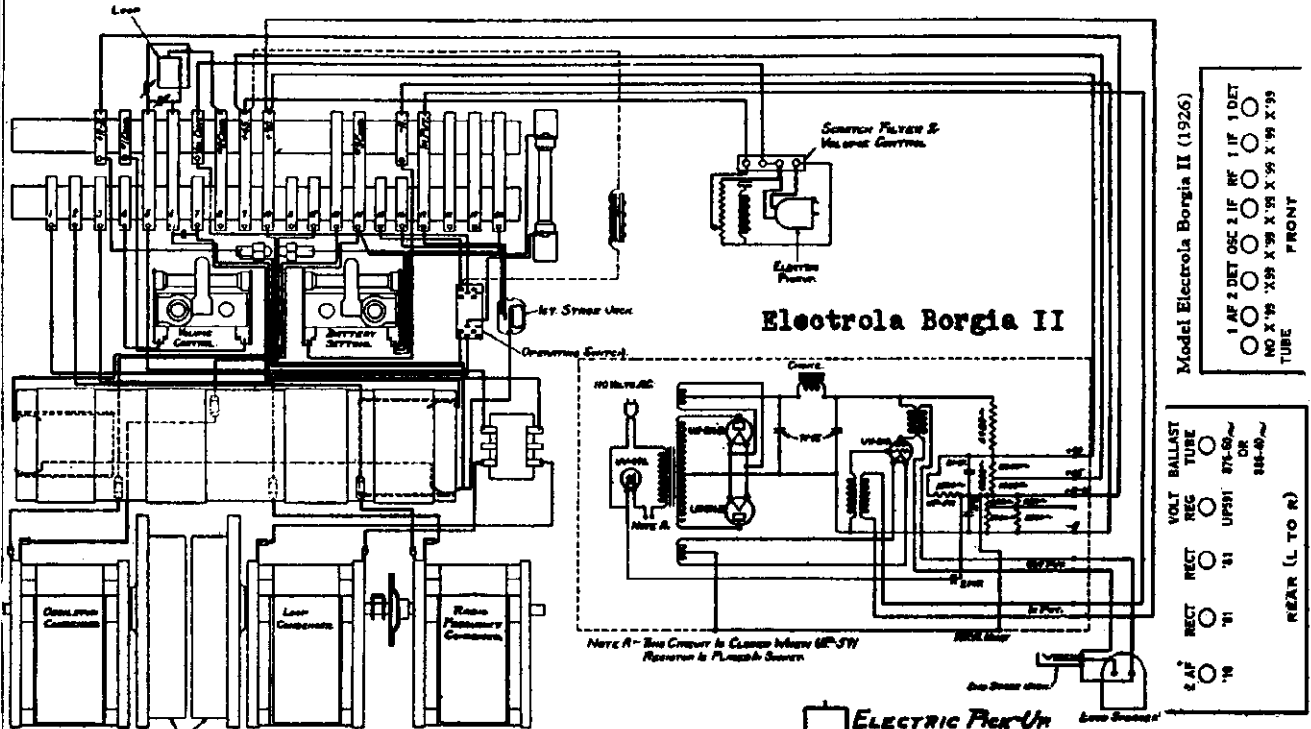
Color	Color
1 BLACK WITH GREEN TRACER	
2 RED	
3 RED AND MAROON	
4 GREEN	
5 BLUE	
6 BLACK WITH YELLOW TRACER	
7 BLACK WITH BLUE TRACER	
8 BROWN	
9 BLACK WITH BROWN TRACER	

Models Victor 7-11,



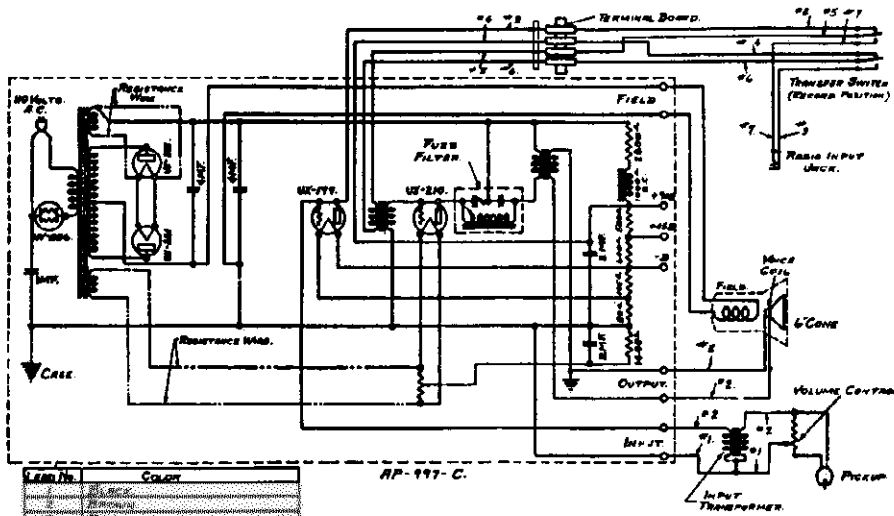
MODEL Victor Borgia II
 MODEL Victor Tuscany
 MODEL Victor Cromwell

R. C. A. VICTOR CO., INC.



R. C. A. VICTOR CO., INC.

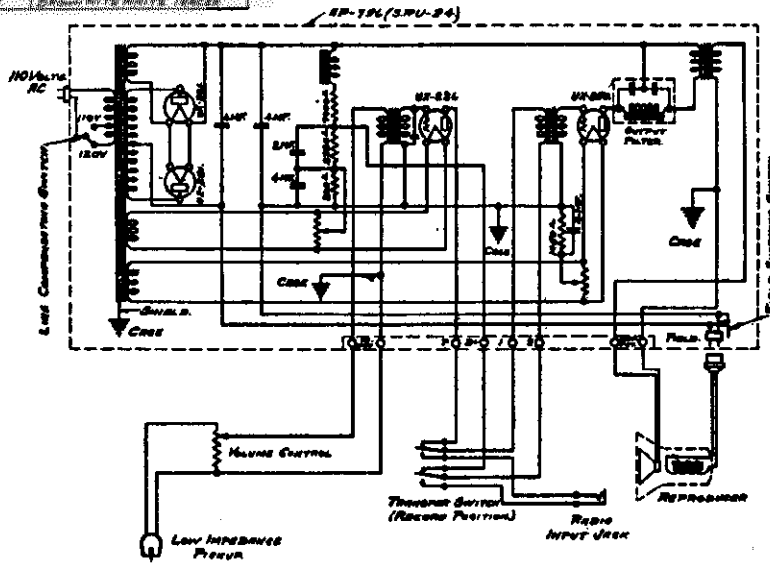
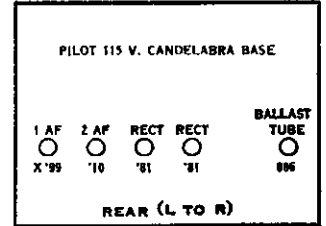
MODEL Victor 12-15
 MODEL Victor 12-15-C
 MODEL Victor E-35



Lead No.	Color
1	Red
2	Black
3	Blue
4	Green
5	White
6	Yellow
7	Red Yellow Trace
8	Red Yellow Trace
9	Red Yellow Trace
10	Red Yellow Trace
11	Red Yellow Trace
12	Red Yellow Trace
13	Red Yellow Trace
14	Red Yellow Trace
15	Red Yellow Trace
16	Red Yellow Trace
17	Red Yellow Trace
18	Red Yellow Trace
19	Red Yellow Trace
20	Red Yellow Trace
21	Red Yellow Trace
22	Red Yellow Trace
23	Red Yellow Trace
24	Red Yellow Trace
25	Red Yellow Trace
26	Red Yellow Trace
27	Red Yellow Trace
28	Red Yellow Trace
29	Red Yellow Trace
30	Red Yellow Trace
31	Red Yellow Trace
32	Red Yellow Trace
33	Red Yellow Trace
34	Red Yellow Trace
35	Red Yellow Trace
36	Red Yellow Trace
37	Red Yellow Trace
38	Red Yellow Trace
39	Red Yellow Trace
40	Red Yellow Trace
41	Red Yellow Trace
42	Red Yellow Trace
43	Red Yellow Trace
44	Red Yellow Trace
45	Red Yellow Trace
46	Red Yellow Trace
47	Red Yellow Trace
48	Red Yellow Trace
49	Red Yellow Trace
50	Red Yellow Trace
51	Red Yellow Trace
52	Red Yellow Trace
53	Red Yellow Trace
54	Red Yellow Trace
55	Red Yellow Trace
56	Red Yellow Trace
57	Red Yellow Trace
58	Red Yellow Trace
59	Red Yellow Trace
60	Red Yellow Trace
61	Red Yellow Trace
62	Red Yellow Trace
63	Red Yellow Trace
64	Red Yellow Trace
65	Red Yellow Trace
66	Red Yellow Trace
67	Red Yellow Trace
68	Red Yellow Trace
69	Red Yellow Trace
70	Red Yellow Trace
71	Red Yellow Trace
72	Red Yellow Trace
73	Red Yellow Trace
74	Red Yellow Trace
75	Red Yellow Trace
76	Red Yellow Trace
77	Red Yellow Trace
78	Red Yellow Trace
79	Red Yellow Trace
80	Red Yellow Trace
81	Red Yellow Trace
82	Red Yellow Trace
83	Red Yellow Trace
84	Red Yellow Trace
85	Red Yellow Trace
86	Red Yellow Trace
87	Red Yellow Trace
88	Red Yellow Trace
89	Red Yellow Trace
90	Red Yellow Trace
91	Red Yellow Trace
92	Red Yellow Trace
93	Red Yellow Trace
94	Red Yellow Trace
95	Red Yellow Trace
96	Red Yellow Trace
97	Red Yellow Trace
98	Red Yellow Trace
99	Red Yellow Trace
100	Red Yellow Trace

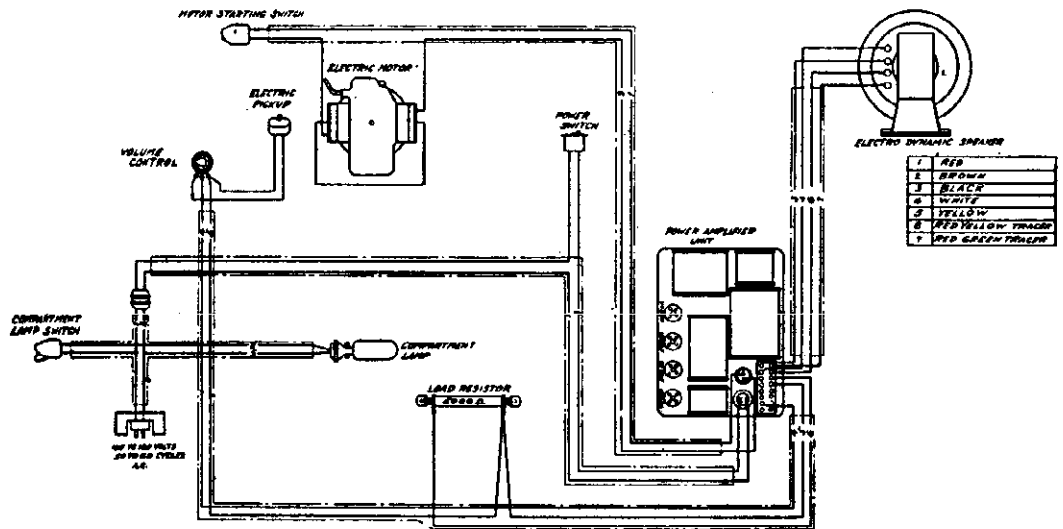
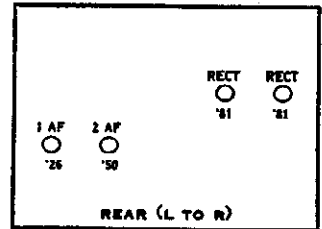
Wiring Diagram of 12-15

Models Victors 12-15 (1927)



Wiring Diagram 12-15 above serial No. 2600

Model Victor 12-15C (1928)



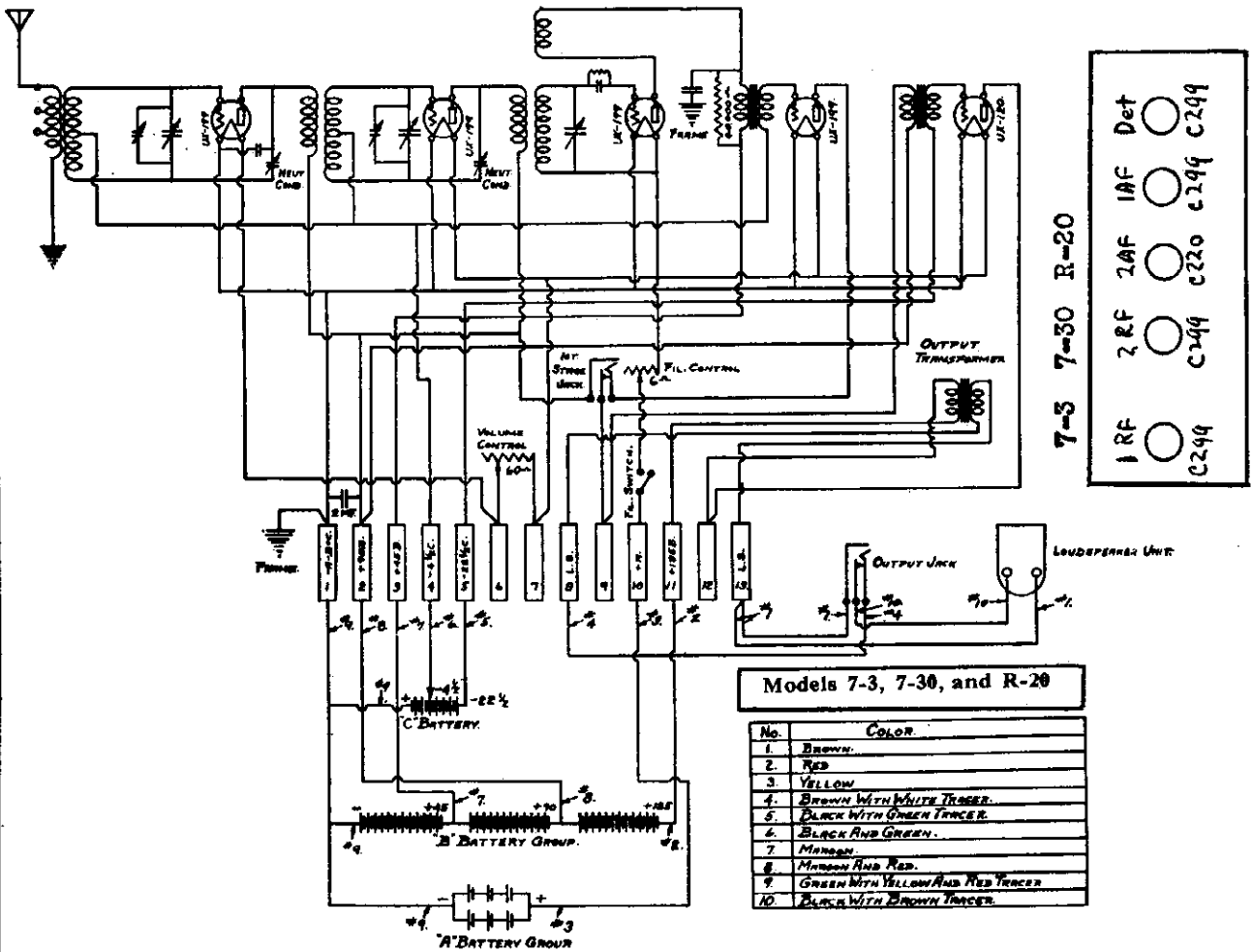
Cable Wiring Electrola E-35

ELECTRO DYNAMIC SPEAKER

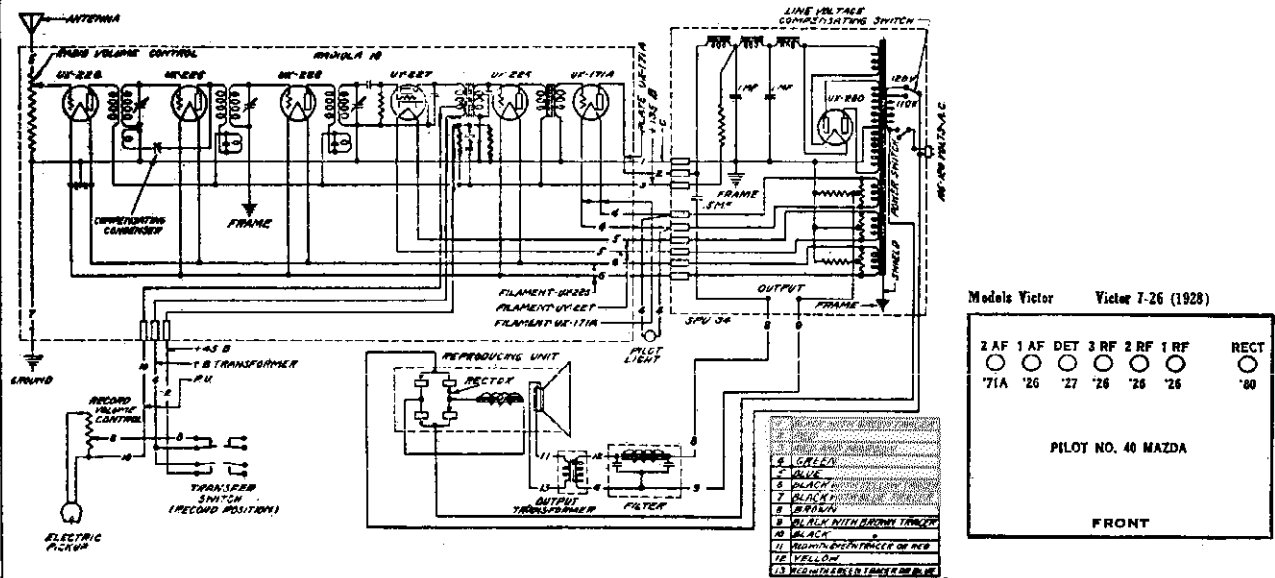
1	RED
2	BROWN
3	BLACK
4	WHITE
5	YELLOW
6	RED YELLOW TRACE
7	RED GREEN TRACE

MODEL Victor 7-3, 7-30, R-20
 MODEL Victor 7-26

R. C. A. VICTOR CO., INC.



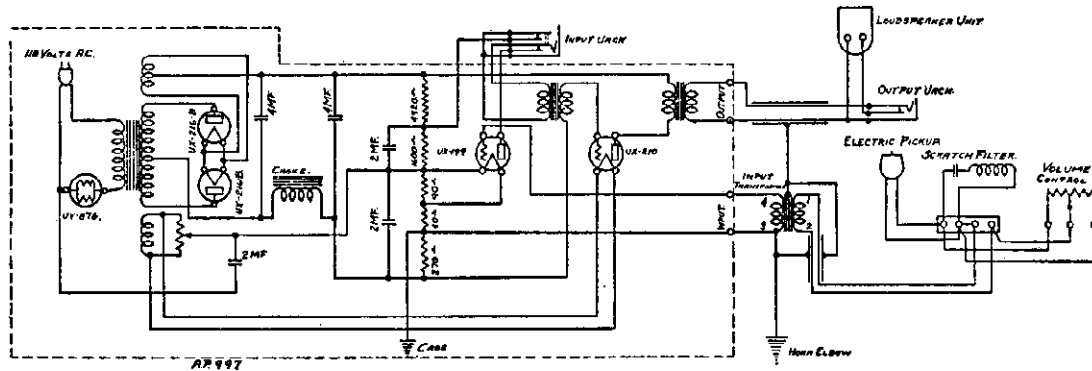
For 7-26 voltage data, see index.



Schematic Wiring Diagram Electrola Radiola 7-26 Above Serial No. 12000

R. C. A. VICTOR CO., INC.

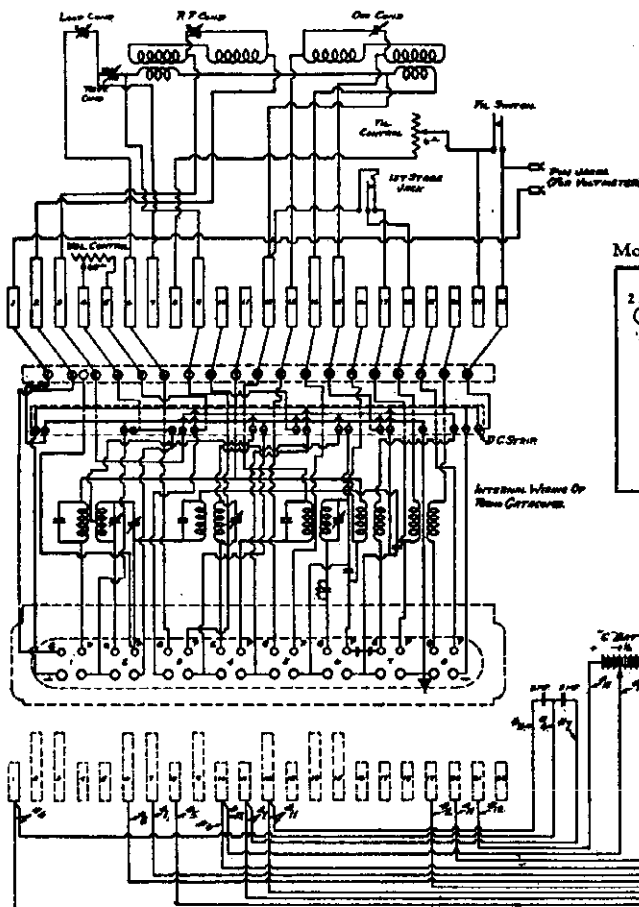
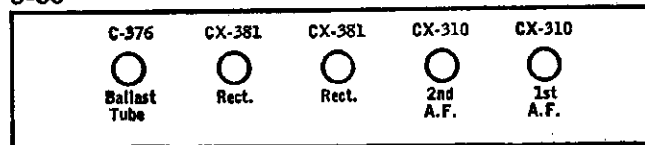
MODEL Victor 8-60
MODEL Victor 9-15



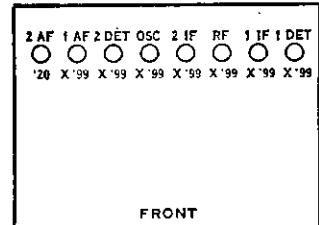
Wiring Diagram for Electrola 8-60

8-60

(A.C.)



Model Victor 9-15 (1926)

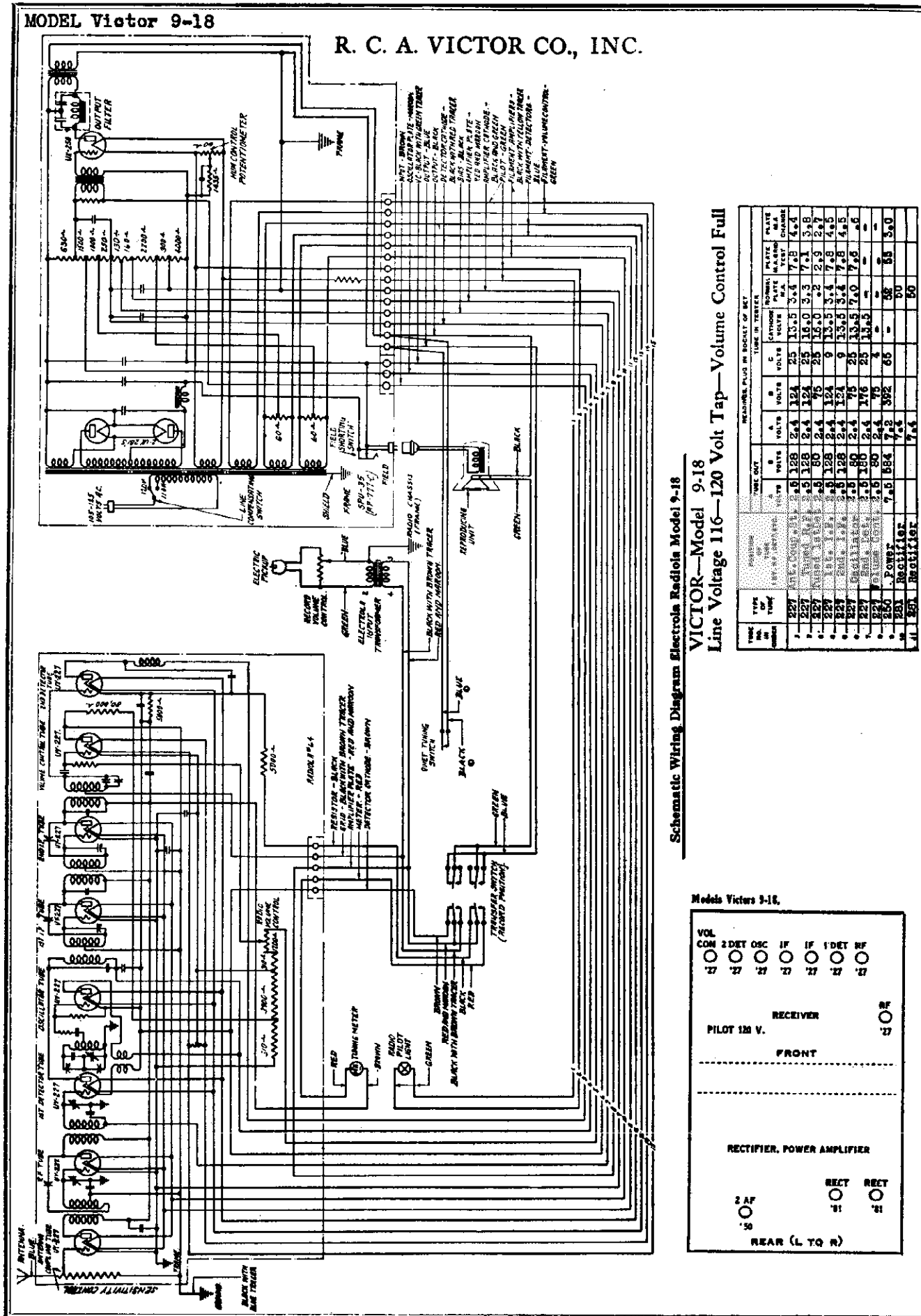


No.	Color
1	Black
2	Brown
3	Red
4	Yellow with Red Stripes
5	Orange with Yellow Stripes
6	Green
7	Purple
8	Black with Blue Stripes
9	Black with Green Stripes
10	Black with White Stripes
11	White and Red
12	Green and Black
13	White Green Stripes

Wiring Diagram for 9-15

MODEL Victor 9-18

R. C. A. VICTOR CO., INC.



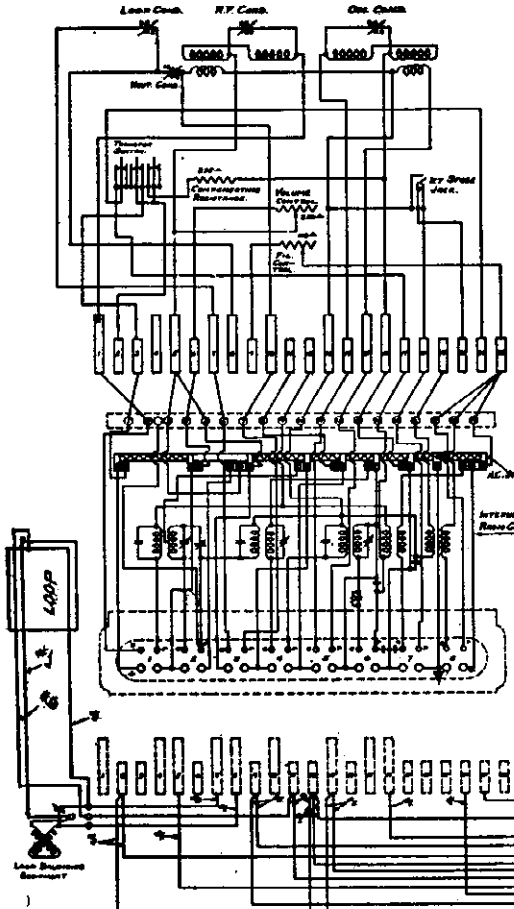
Schematic Wiring Diagram Electrola Radio Model 9-18
 VICTOR—Model 9-18
 Line Voltage 116—120 Volt Tap—Volume Control Full

TYPE	TYPE NO. IN SOCKET	TUBE OUT			TUBE IN TENSER				PLATE MAINT. CON. (M.A.)	GRID MAINT. CON. (M.A.)	FILAMENT (VOLTS CENTER)
		A	B	C	NO. IN TENSER	NO. MAINT. CON.	NO. MAINT. CON.				
5Y4	RECTIFIER				1	2	3	4	0.1	0.1	5.0
6X4	RF	1	2	3	4	5	6	7	8	9	10
6X5	IF	1	2	3	4	5	6	7	8	9	10
6X6	IF	1	2	3	4	5	6	7	8	9	10
6X8	DET	1	2	3	4	5	6	7	8	9	10
6X9	OSC	1	2	3	4	5	6	7	8	9	10
6X7	AF	1	2	3	4	5	6	7	8	9	10
6X4	AF	1	2	3	4	5	6	7	8	9	10

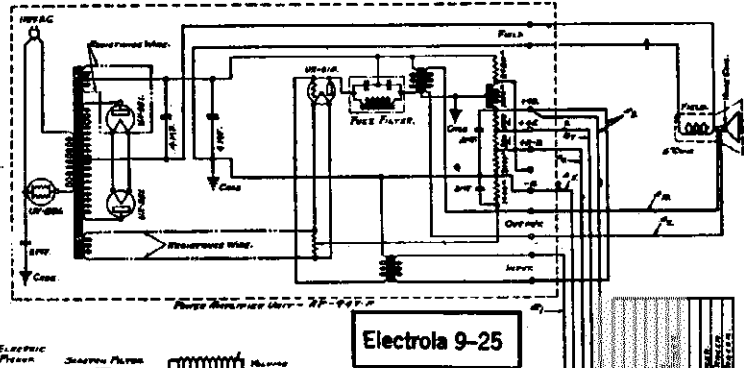
Models Victor 9-18

R. C. A. VICTOR CO., INC.

MODEL Victor 9-25
MODEL Victor 9-40

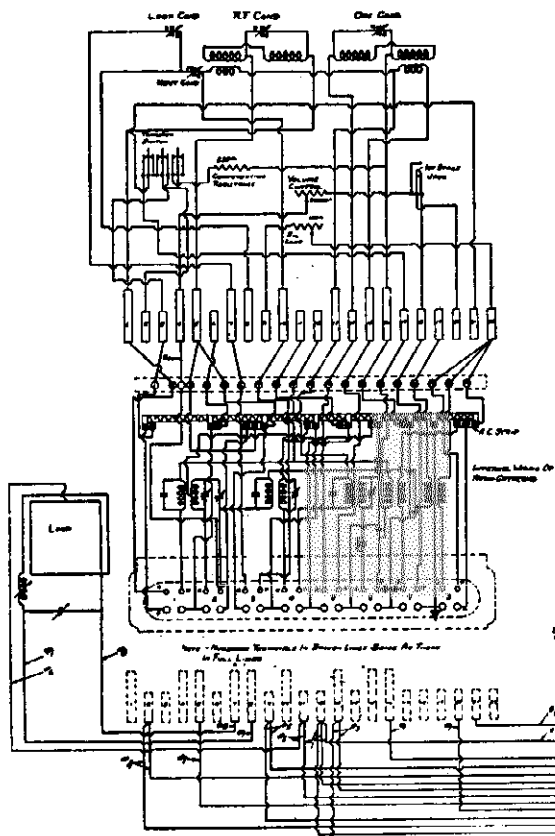


For Socket Layout see below

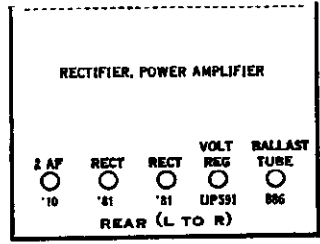
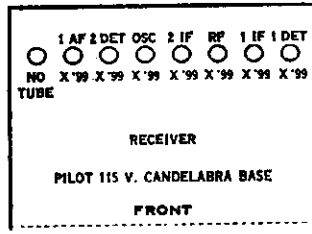


Electrola 9-25

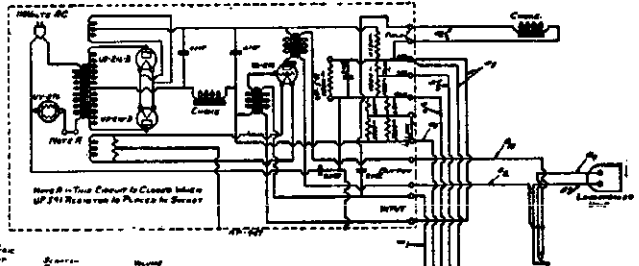
Note - Reconnect terminals to correct leads based on those in Pin List.



Models Victors 9-25, 9-40.



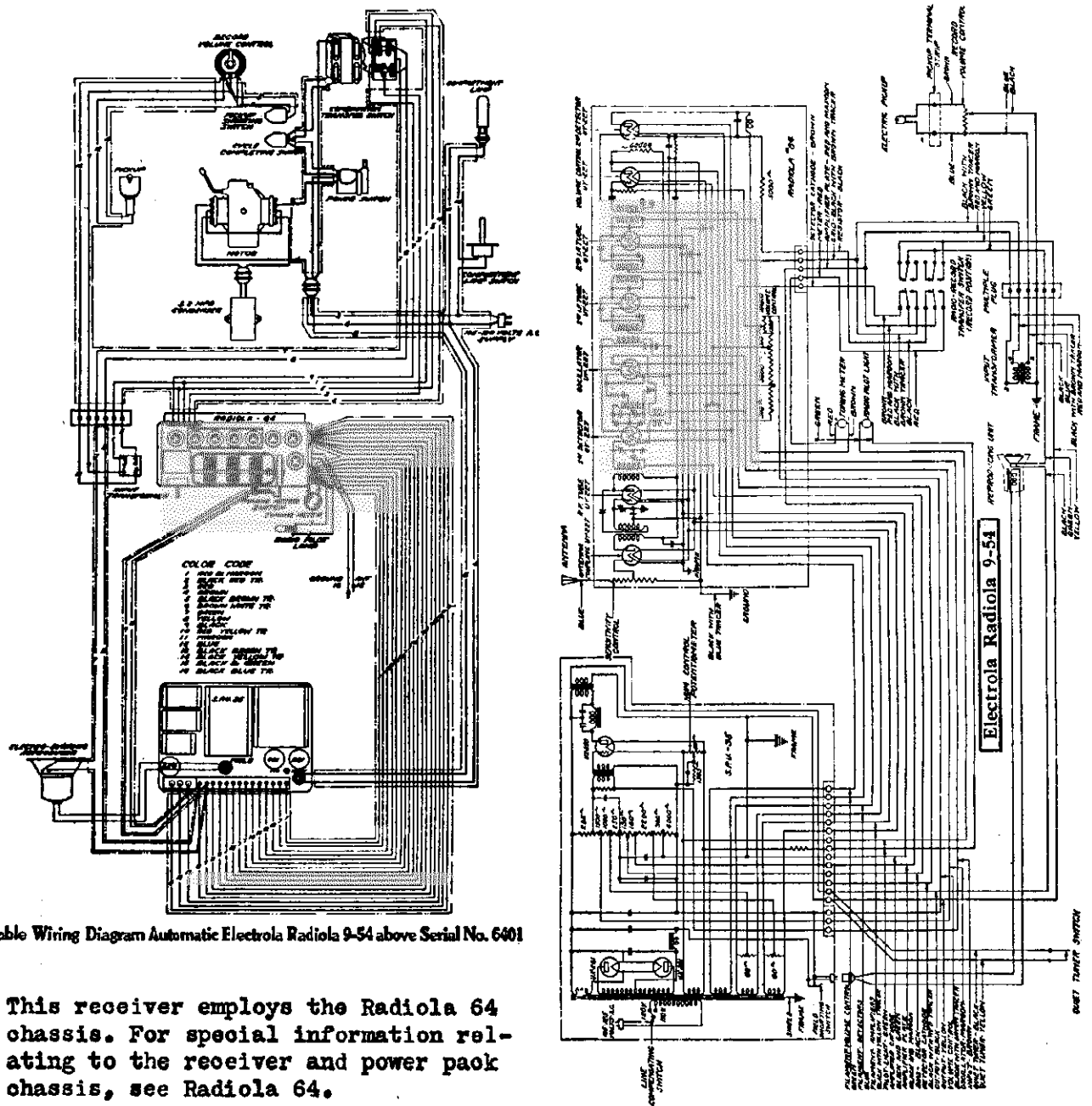
Electrola 9-40



Pin	Function
1	...
2	...
3	...
4	...
5	...
6	...
7	...
8	...
9	...
10	...
11	...
12	...
13	...
14	...
15	...
16	...
17	...
18	...
19	...
20	...
21	...
22	...
23	...
24	...
25	...
26	...
27	...
28	...
29	...
30	...

MODEL Victor 9-54

R. C. A. VICTOR CO., INC.

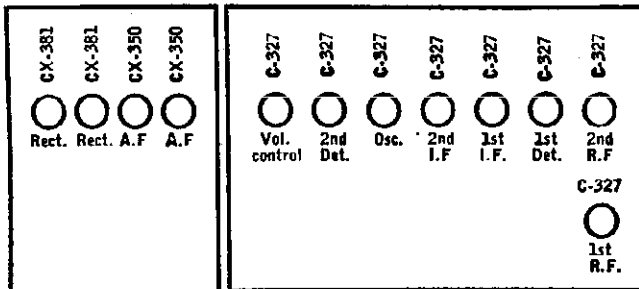


Cable Wiring Diagram Automatic Electrola Radiola 9-54 above Serial No. 6401

This receiver employs the Radiola 64 chassis. For special information relating to the receiver and power pack chassis, see Radiola 64.

9-54

(A.C.) VICTOR—Model 9-54
Line Voltage 116—120 Volt Tap—Volume Control Full



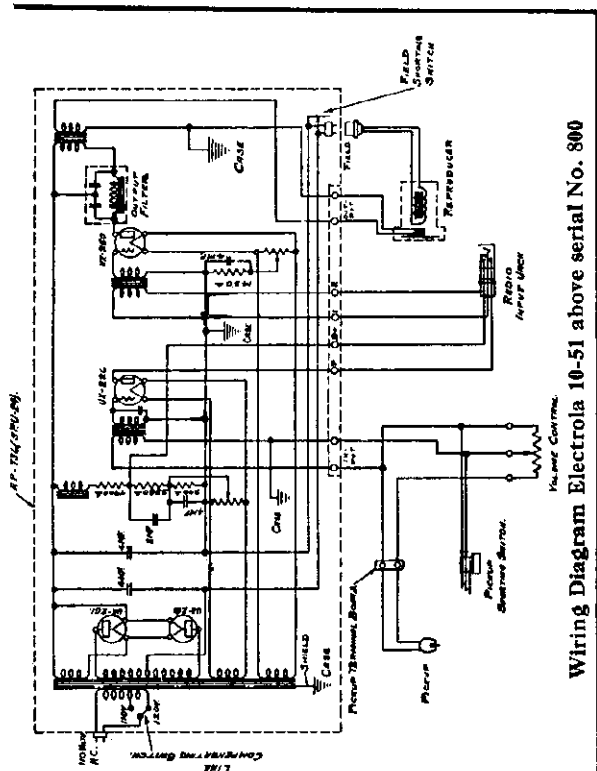
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1st, 2nd, etc.)	TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	0 VOLTS	CATHODE VOLTS	NORMAL PLATE VOLTAGE	PLATE R.A. OHMS	PLATE R.A. CHANGES	
1	227	Ant. Coup. St.	2.5	128	2.4	124	25	13.5	5.4	7.8	4.4	
2	227	Tuned R.F.	2.5	128	2.4	124	25	16.0	3.3	7.1	3.8	
3	227	Tuned 1st Det.	2.5	80	2.4	75	25	16.0	4.2	2.9	2.7	
4	227	1st. I.F.	2.5	128	2.4	124	9	13.5	3.4	7.8	4.5	
5	227	2nd. I.F.	2.5	128	2.4	124	9	13.5	3.4	7.8	4.5	
6	227	Oscillator	2.5	80	2.4	75	25	13.5	7.0	7.6	.6	
7	227	2nd. Det.	2.5	80	2.4	75	25	15.5	"	"	"	
8	227	Volume Cont.	2.5	80	2.4	75	4	"	"	"	"	
9	250	Power	7.5	584	7.2	392	65	"	52	55	3.0	
10	25A	Rectifier			7.4							
11	25B	Rectifier			7.4							

R. C. A. VICTOR CO., INC.

MODEL Victor 10-51A
MODEL Victor 9-55

Electrola 9-55 Receiver

CX-299 1st Det.
 CX-299 1st I.F.
 CX-299 1st R.F.
 CX-299 2nd I.F.
 CX-299 Osc.
 CX-299 2nd Det.
 CX-299 1st A.F.



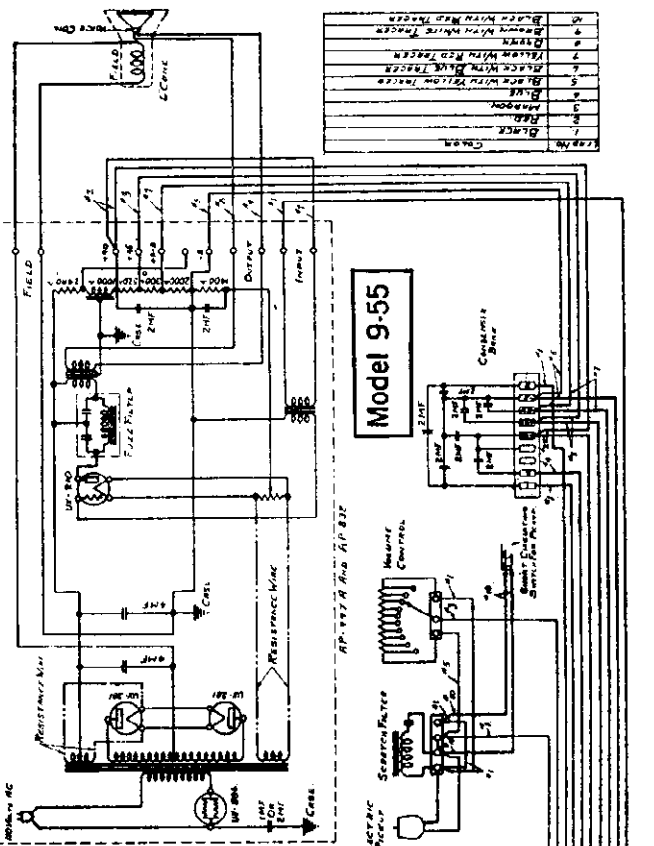
Models Victor 10-51A, (1928)

PILOT 120 V.

1 AF '26 2 AF '50

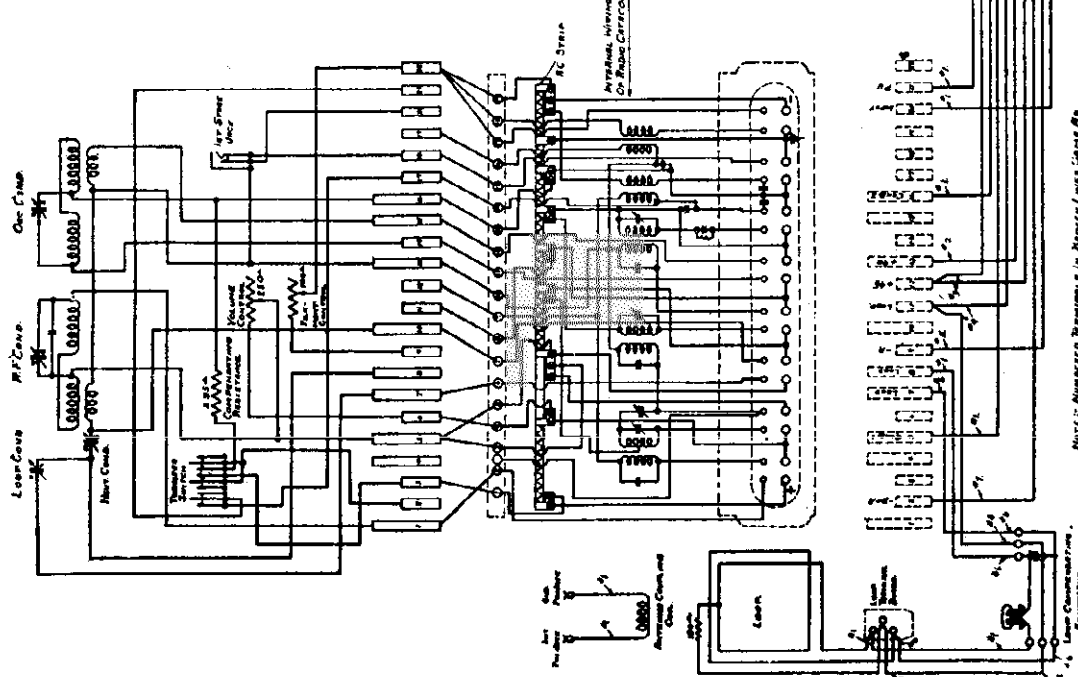
RECT '81 RECT '81

REAR (L TO R)



Electrola 9-55 Power Unit

BALLAST C-386 10L.T. RES. C-381 RECT. C-381 2 AF C-310

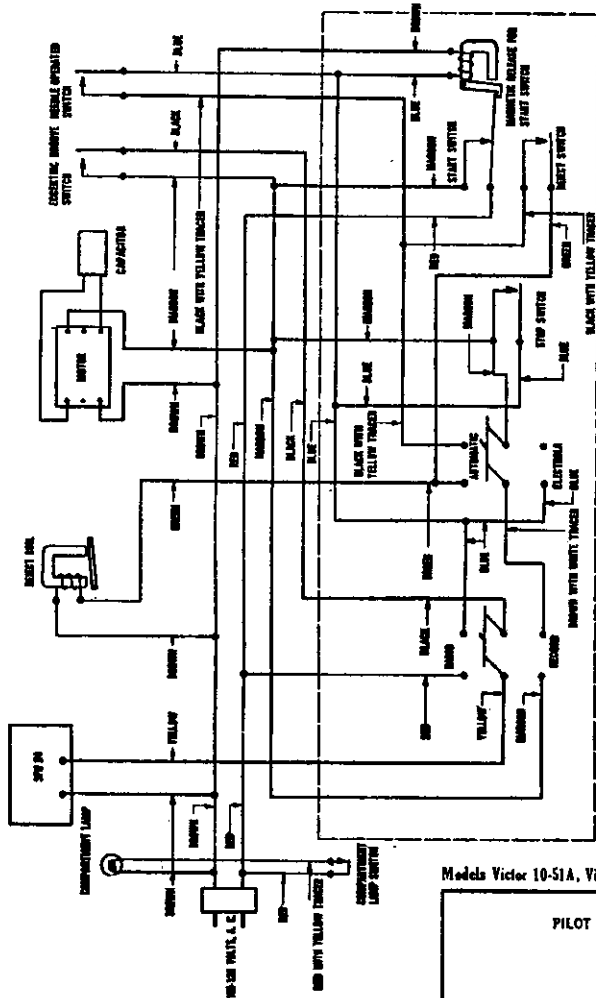


NOTE: Advanced Terminals in Direct Line Units Are Those in This Line.

NOTE: Lower Connections in Receiver.

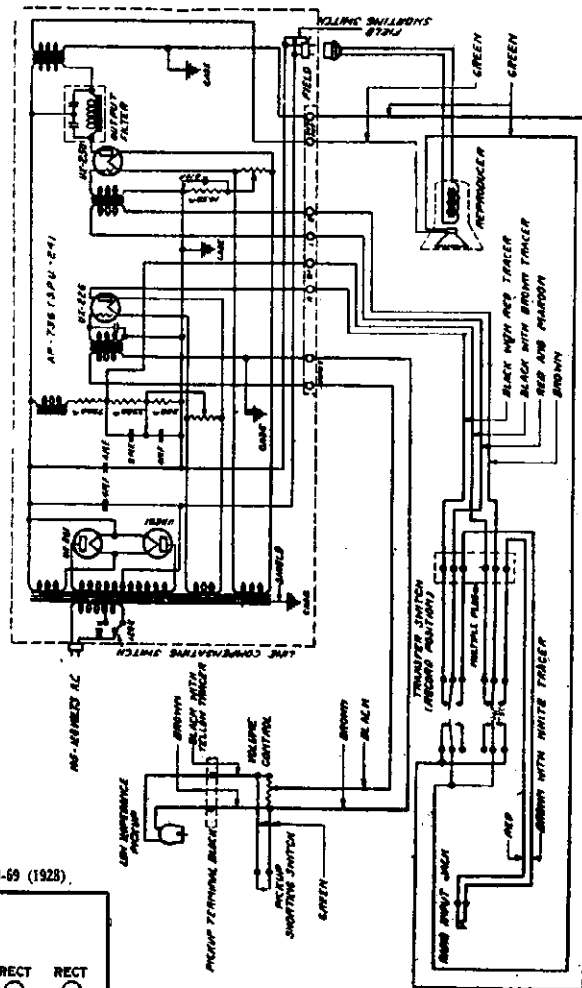
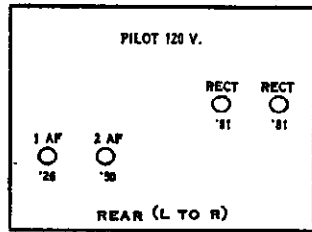
MODEL Victor 10-69

R. C. A. VICTOR CO., INC.

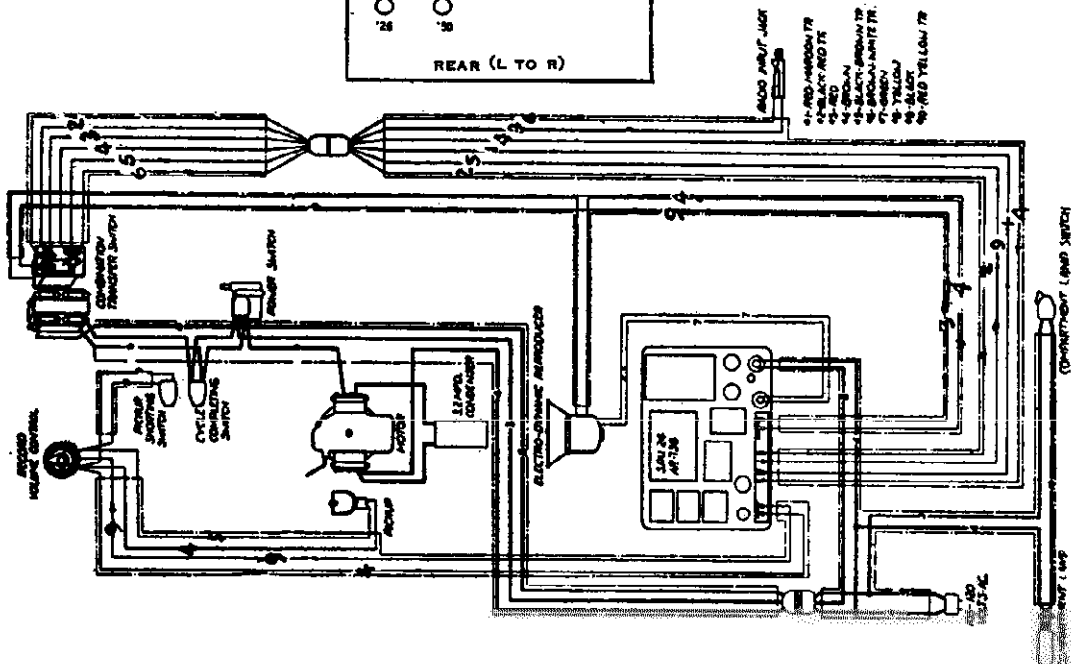


A. C. Power Wiring Diagram Automatic Electrola No. 10-69

Models Victor 10-51A, Victor 10-69 (1928)



Schematic Wiring Diagram Automatic Electrola No. 10-69

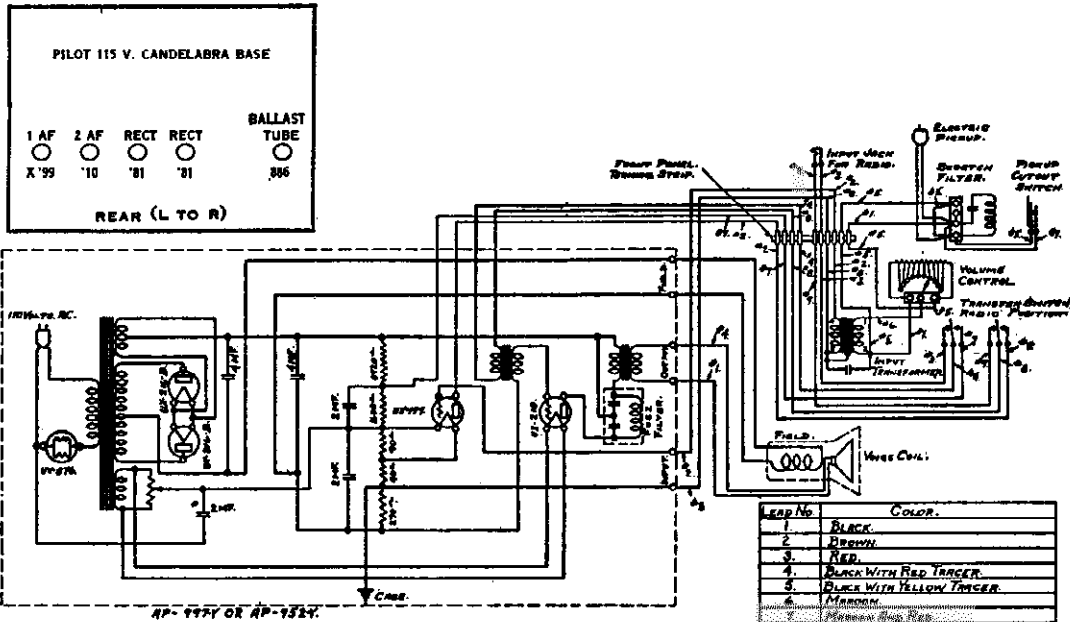


Cable Wiring Diagram Automatic Electrola 10-69, above Serial No. 5001

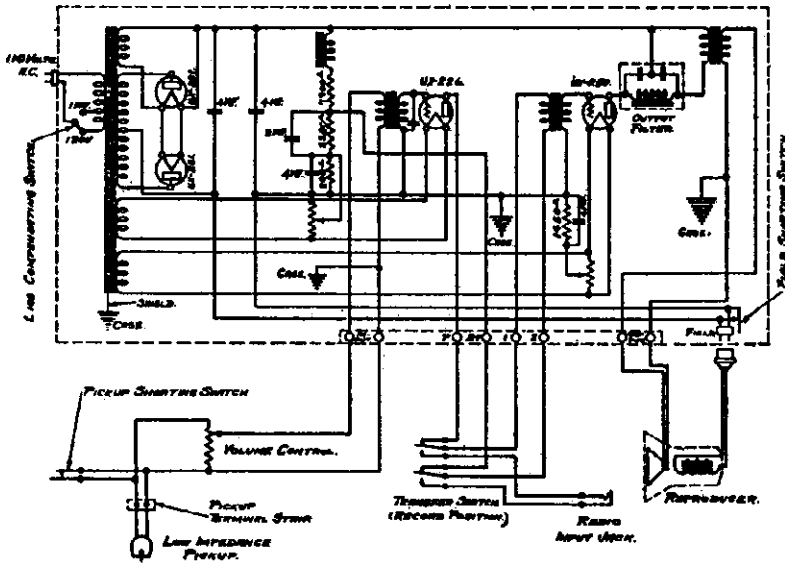
R. C. A. VICTOR CO., INC.

MODEL Victor 10-70
 MODEL Victor 10-70-A
 MODEL Victor 12-25

Models Victors 10-51, 10-70, 12-15 (1927)

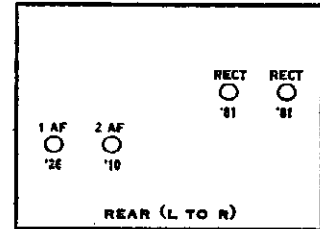


Wiring Diagram—Electrola 10-70

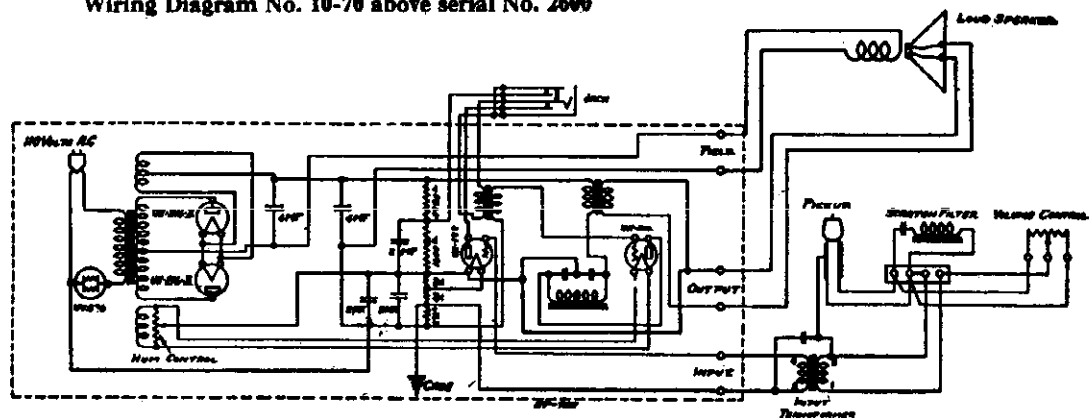
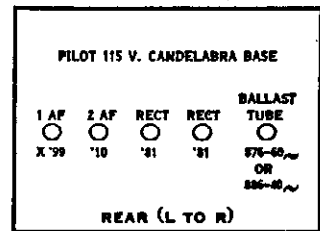


Wiring Diagram No. 10-70 above serial No. 2600

Models Victors 10-70A (1928)



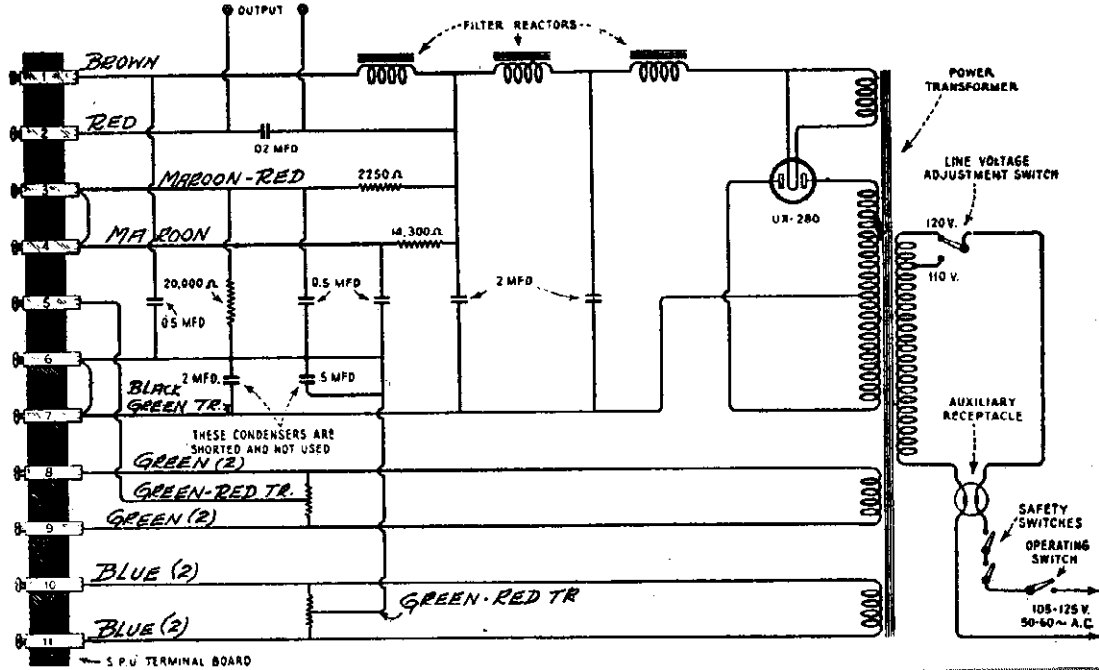
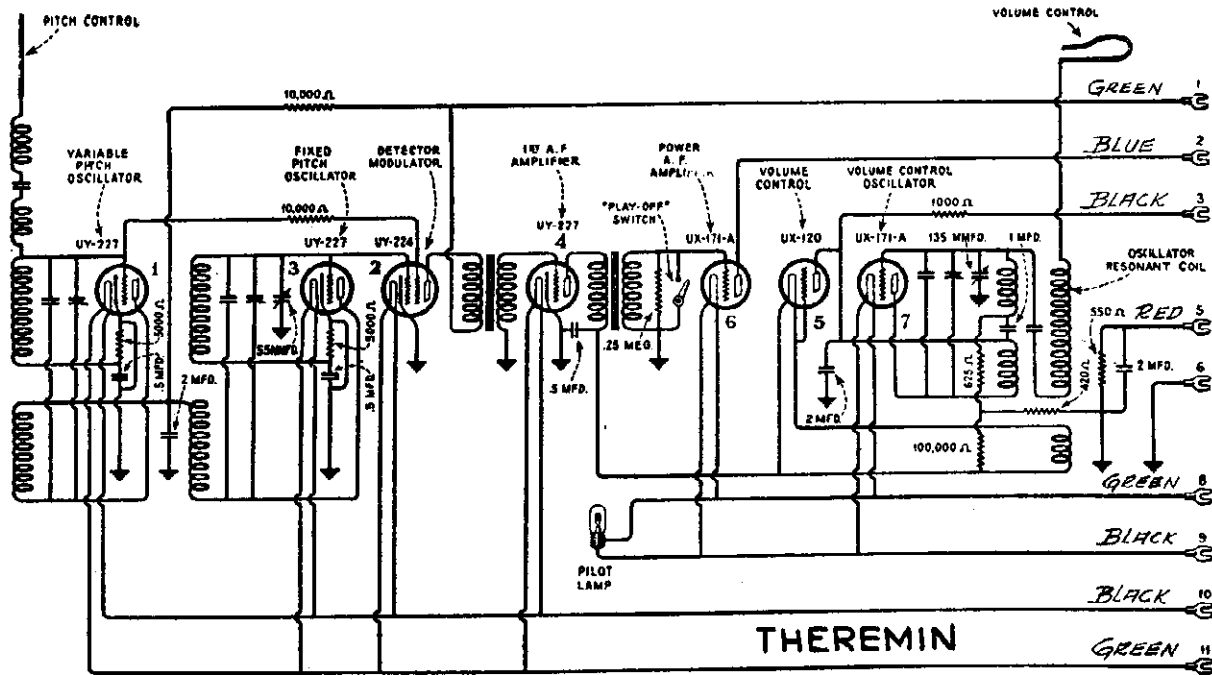
Models Victors 12-25 (1926)



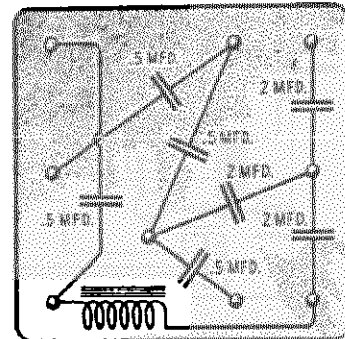
Electrola 12-25

MODEL Theremin

R. C. A. VICTOR CO., INC.



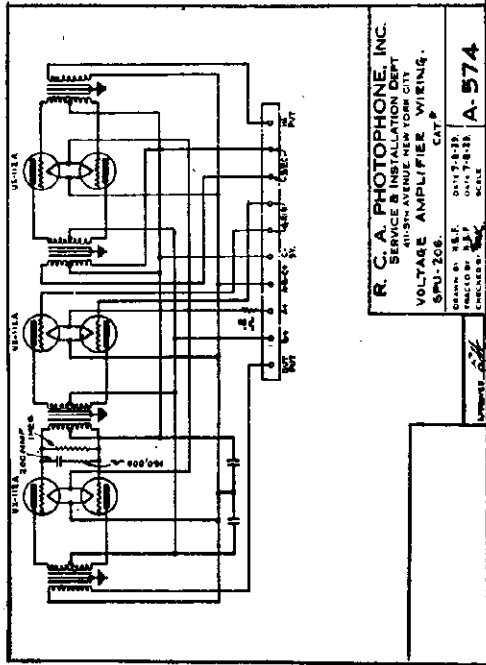
Terminals Nos.	Cable on Tubes Lighted Volts	Cable Off Volts
1 to 6 (D.C.)	190	260
2 to 6	190	260
3 to 6	140	230
5 to 6	29.0	0
8 to 9 (A.C.) rms	2.5	2.8
10 to 11 (A.C.) rms	4.7	5.0



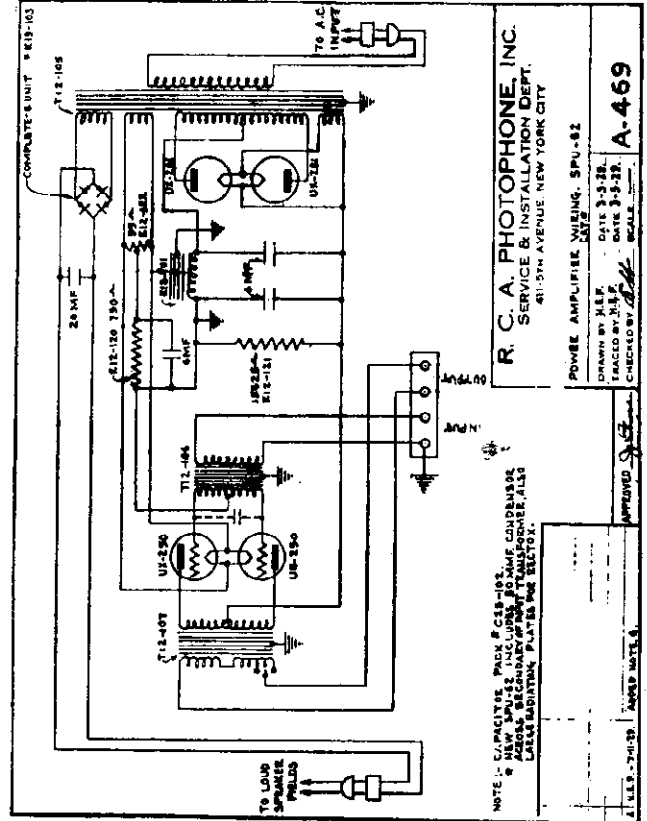
—Internal connections of filter and by-pass condensers, and filter reactor

MODEL Photophone SPU 62
 Schematic- Chassis
 MODEL Photophone SPU 63
 MODEL Photophone SPU 206

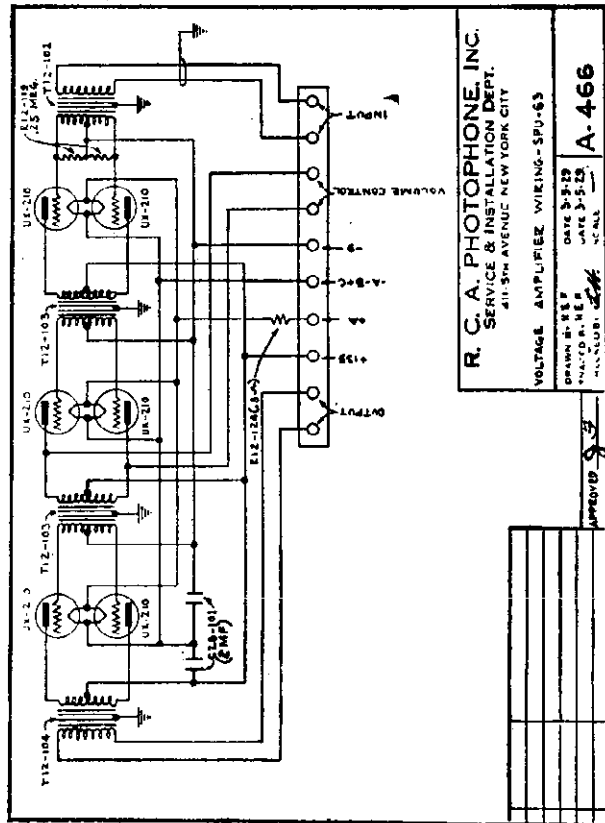
R. C. A. VICTOR CO., INC.



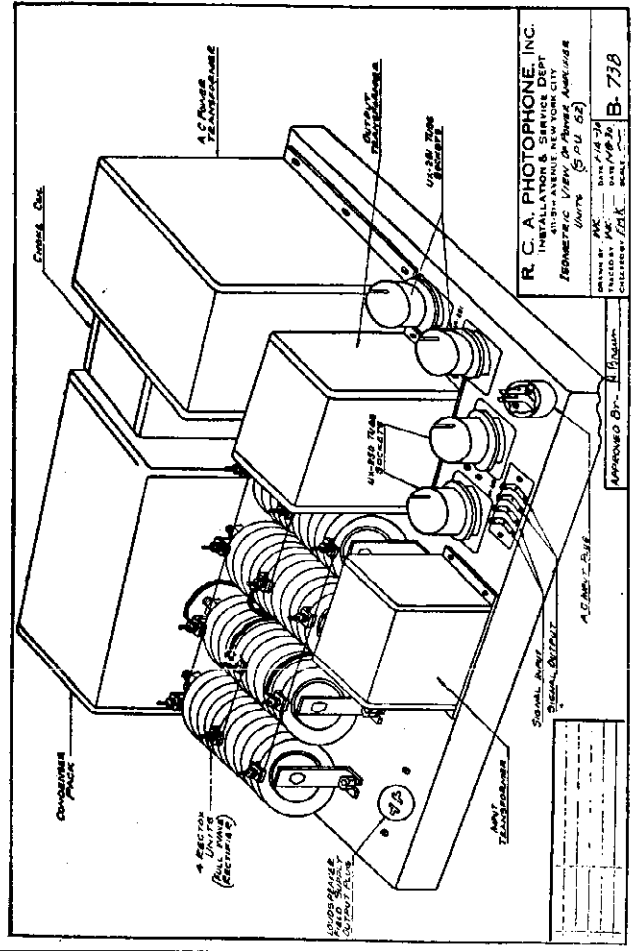
R. C. A. PHOTOPHONE, INC.
 SERVICE & INSTALLATION DEPT.
 411 5TH AVENUE NEW YORK CITY
 VOLTAGE AMPLIFIER WIRING
 SPU-206
 DRAWN BY H.E.P. DATE 3-3-39
 CHECKED BY J.M.P. SCALE A-574
 ENGINEER



R. C. A. PHOTOPHONE, INC.
 SERVICE & INSTALLATION DEPT.
 411 5TH AVENUE NEW YORK CITY
 POWER AMPLIFIER WIRING. SPU-62
 DRAWN BY H.E.P. DATE 3-3-39
 CHECKED BY J.M.P. SCALE A-469
 ENGINEER



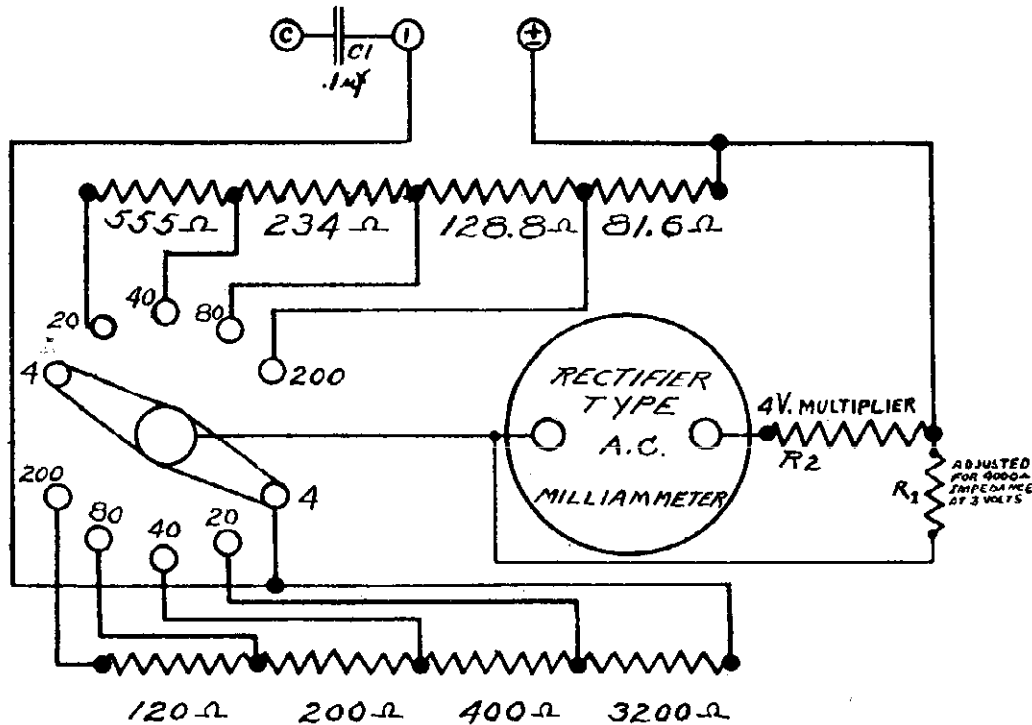
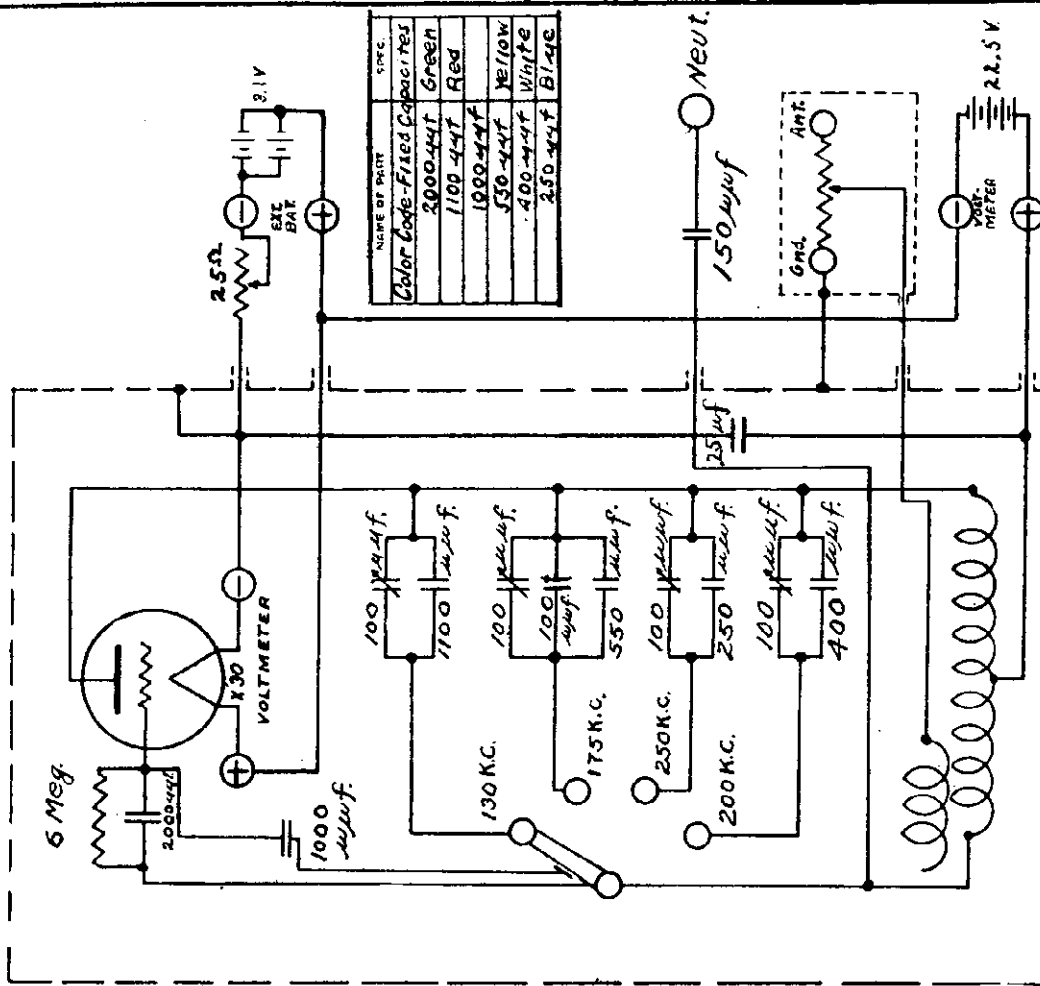
R. C. A. PHOTOPHONE, INC.
 SERVICE & INSTALLATION DEPT.
 411 5TH AVENUE NEW YORK CITY
 VOLTAGE AMPLIFIER WIRING-SPU-63
 DRAWN BY H.E.P. DATE 3-3-39
 CHECKED BY J.M.P. SCALE A-466
 ENGINEER



R. C. A. PHOTOPHONE, INC.
 INSTALLATION & SERVICE DEPT.
 411 5TH AVENUE NEW YORK CITY
 POWER AMPLIFIER WIRING. SPU-62
 DRAWN BY H.E.P. DATE 3-3-39
 CHECKED BY J.M.P. SCALE B-738
 ENGINEER

MODEL Dayrad 21
Output Meter
MODEL 330 mmf
Oscillator

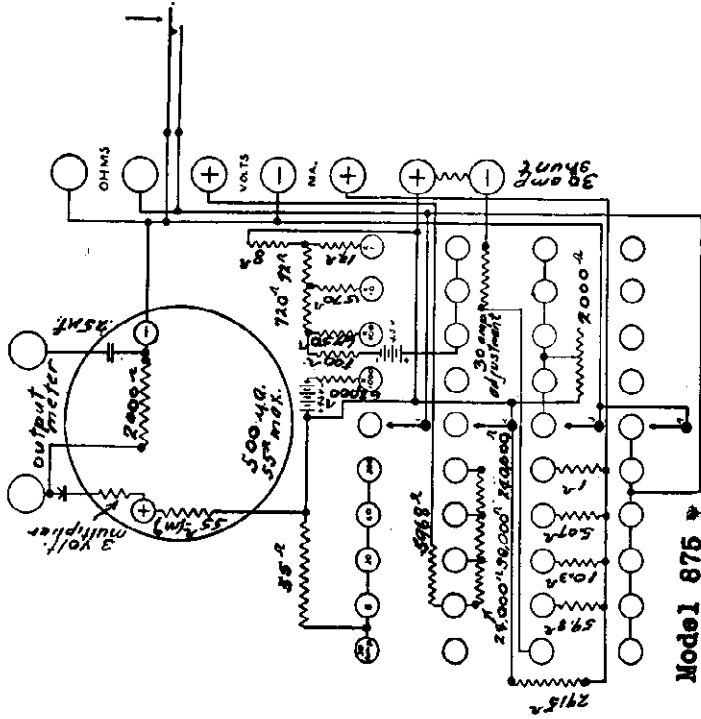
RADIO PRODUCTS CO.



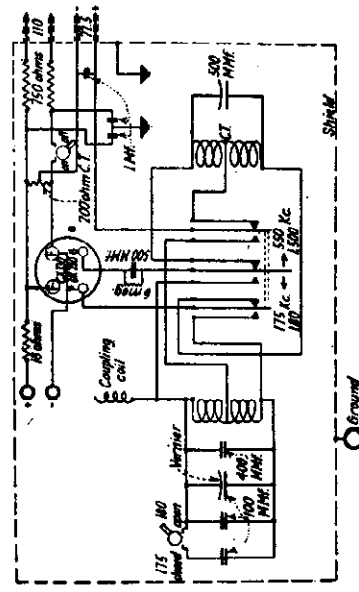
TITLE <i>Circuit Diagram</i>	DATE
NAME OF PART <i>Type 21</i>	DATE <i>10-31</i>
FOR <i>Output Meter</i>	CHECKED BY <i>GM</i>
ENGINEERING DEPARTMENT THE RADIO PRODUCTS CO. Dayton, Ohio	DATE <i>April 10, 1931</i>
Drawing No. <i>C-2047</i>	
For Previous Nos. See C-2039	
From Serial No.	
TYPE Circuit Diagram	
NAME OF PART <i>Type 330 M.F. Oscillator</i>	
FOR	
DRAWN BY <i>GM</i>	DATE <i>10-31</i>
CHECKED BY	

RADIO PRODUCTS CO.

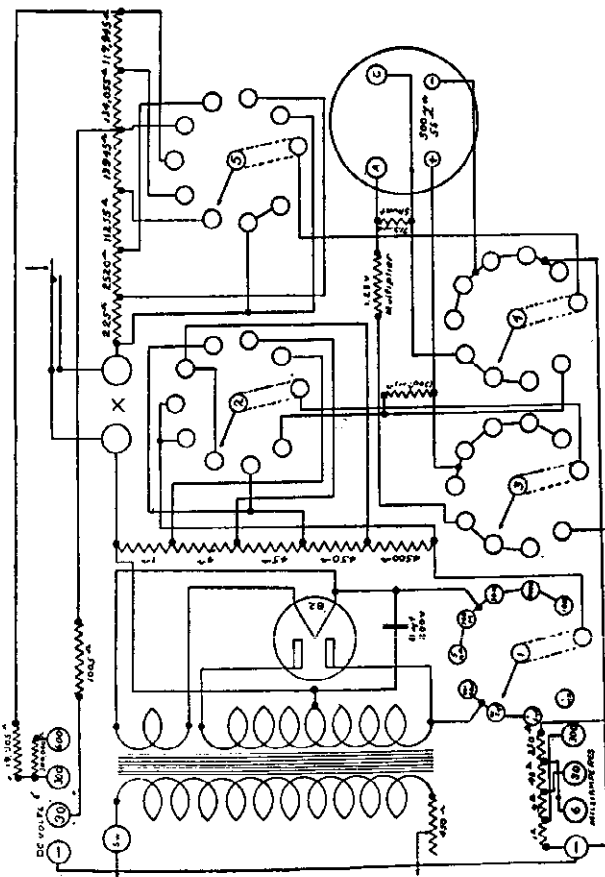
MODEL Dayrad 180
 MODEL Dayrad HR
 MODEL Dayrad 870
 MODEL Dayrad 875



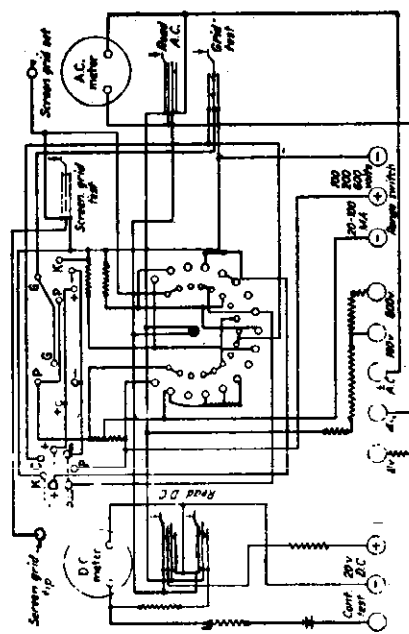
Model 875



DayRad (Type 180)



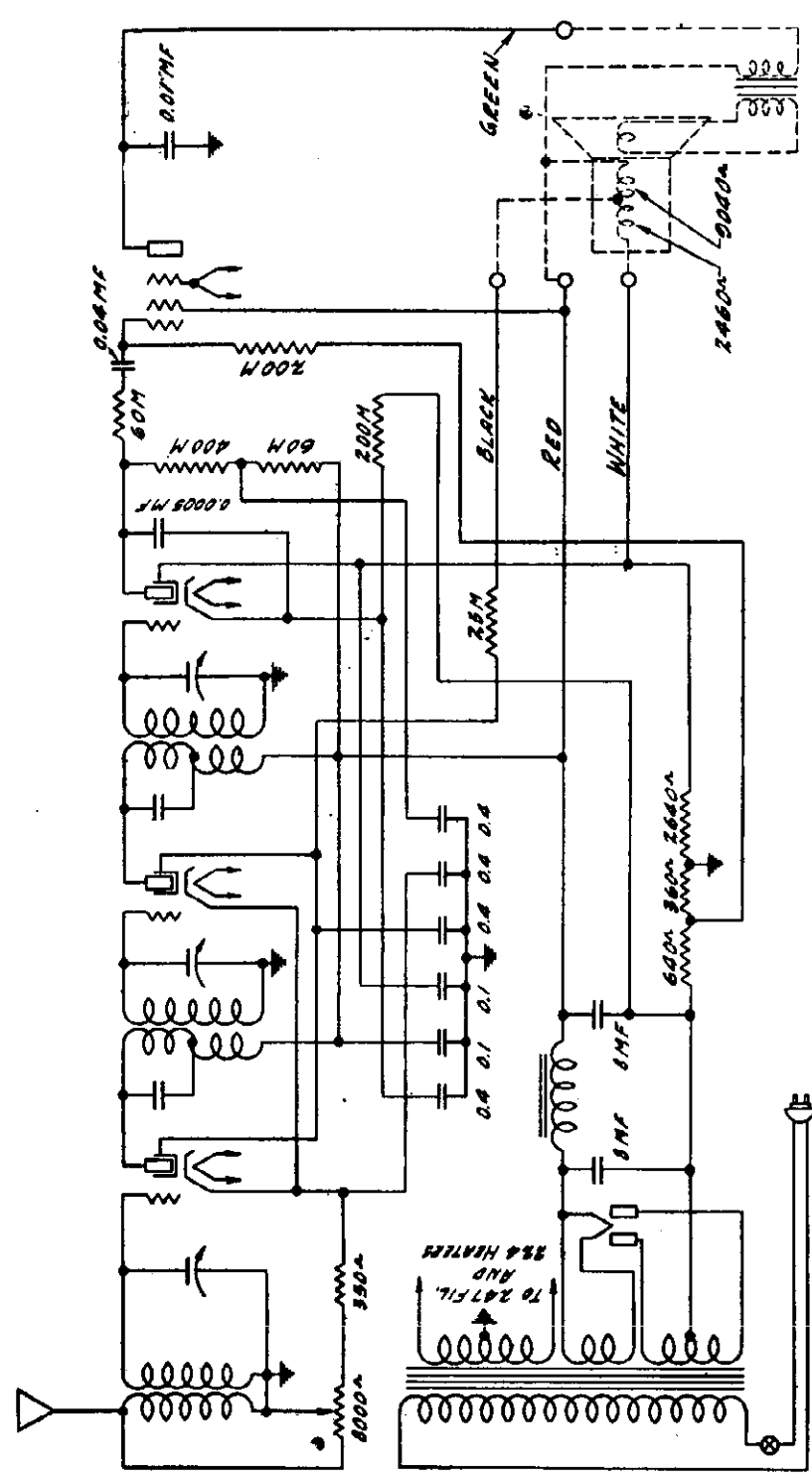
Schematic diagram of the Dayrad Type 870 Test Meter, which operates from the 110-volt, 60-cycle line. All values are given



Dayrad HR

RADIOTROPE

MODEL 74-R (2nd Type)

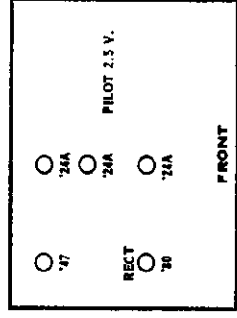


Volume Control at maximum. Line Voltage 115

Tube	"A"	"B"	"C"	Screen	Cathode	Plt. Crn't
1st RF	2.2	250	2.	55.*	2.	2.1 ma
2nd RF	2.2	250	2.	55.*	2.	2.1
Det	2.2	130	2.8	40.*	2.8	.25
AF	2.3	238	18.**	250.		27.
Rect	4.65					28 per anode

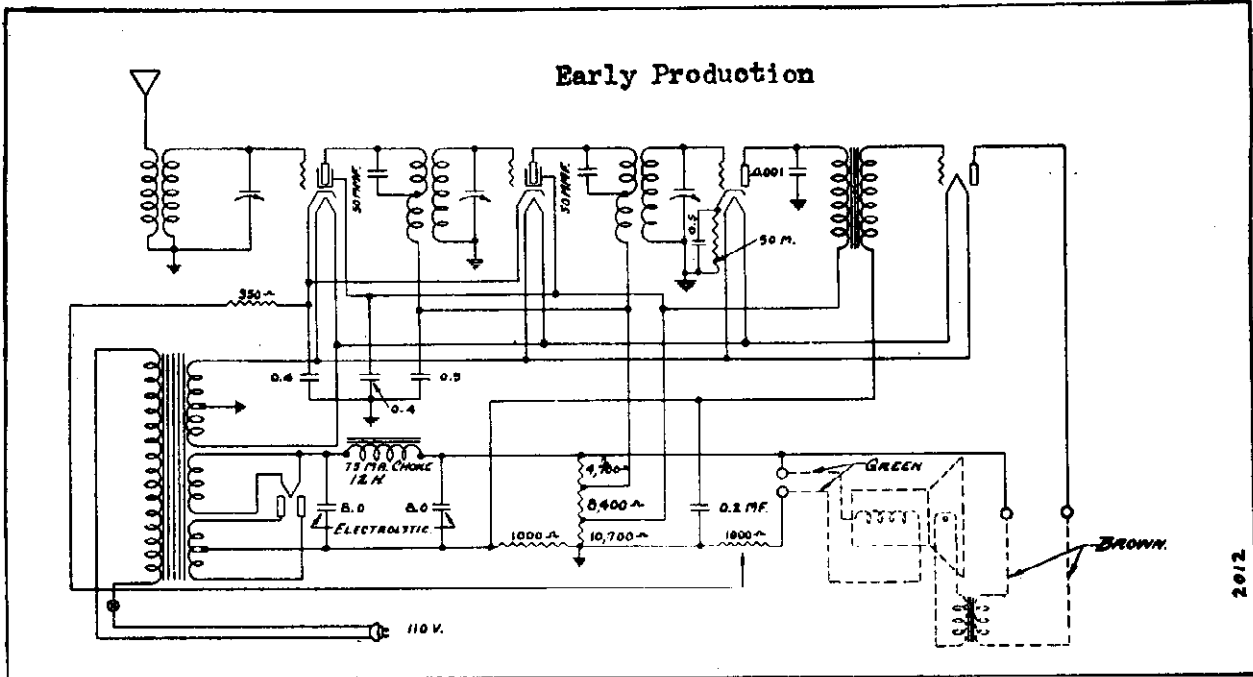
* Reading with 250000 ohm meter. Reading will be less with lower meters

**This voltage read across 360 ohm section of shunt resistance.

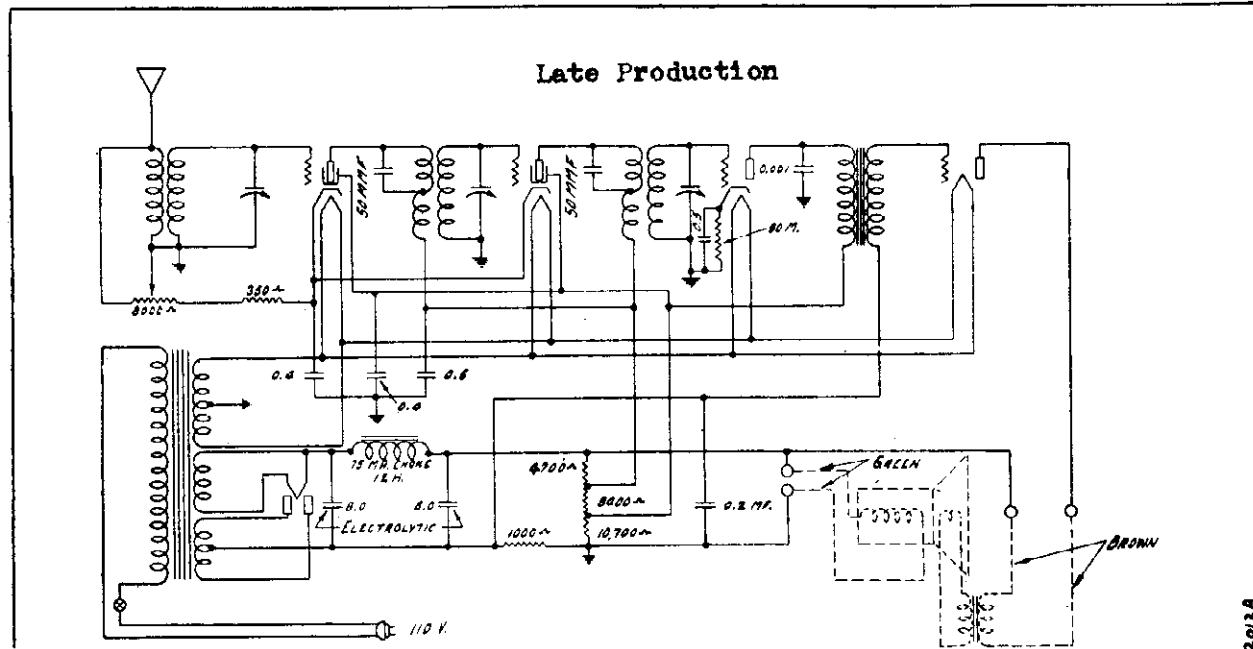


MODEL 27-R

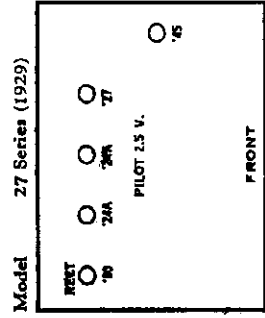
RADIOTROPE



2012



2012A

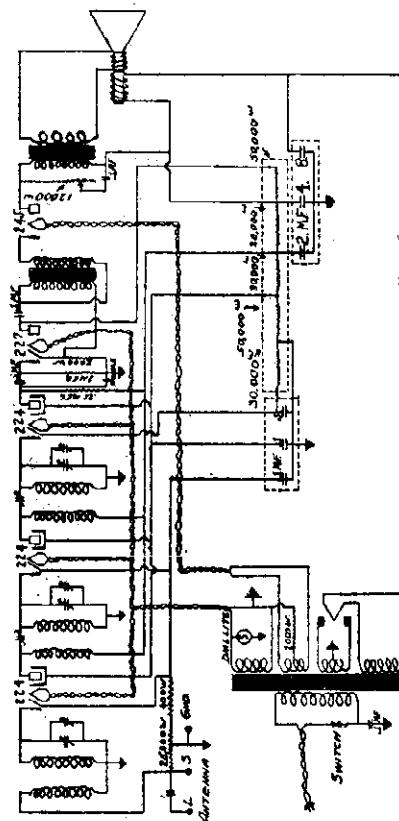
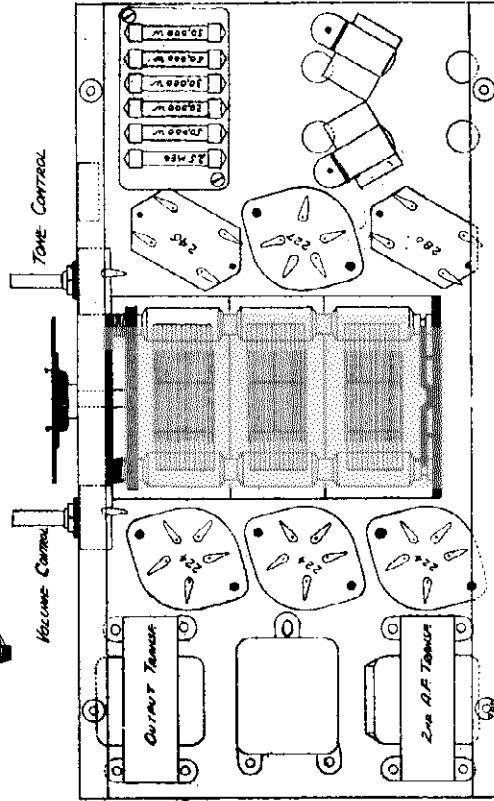
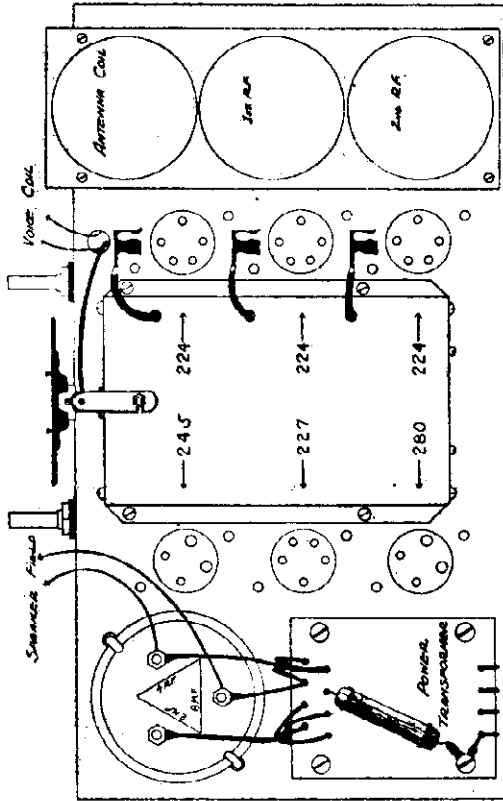


**VOLTAGES AT SOCKETS — VOLUME CONTROL AT MAXIMUM —
LINE VOLTAGE, 115 — PLUG IN SOCKET OF RECEIVER —
TUBE IN TEST SET**

Type of Tube	Position of Tube	Function	"A" Volts	"B" Volts	Control Grid "C" Volts	Screen Volts	Screen Current MA	Cathode Volts	Plate MA	Grid Test MA
224	1	1st Radio	2.25	160	2.5	80	.6	2.5	3.	5.1
224	2	2nd Radio	2.25	160	2.5	80	.6	2.5	3.	5.1
227	3	Detector	2.25	70	8.5			8.5	.1	.2
245	4	Audio	2.35	238	44.				19.	22.
280	5	Rectifier	4.8						26.5 per Plate	

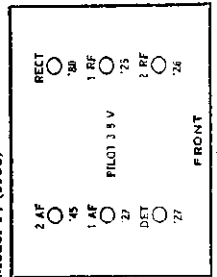
REMLER COMPANY, LTD.

MODEL 14



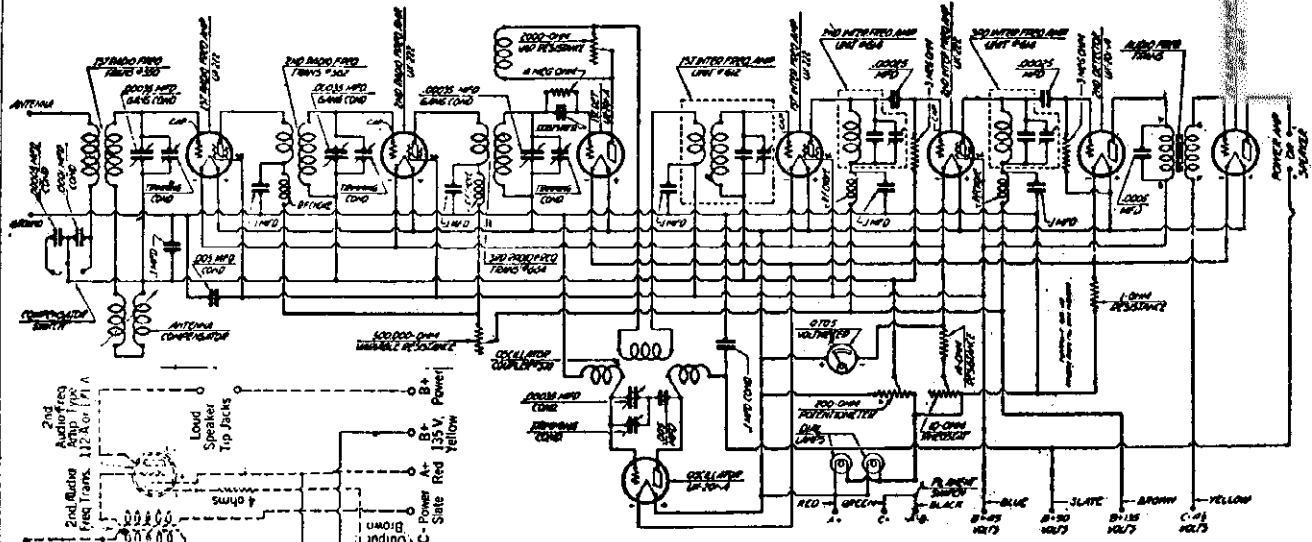
- WIRE COLOR CODE**
- RED - ALIMENT RECTIFIER - KATHODE AF - PLATE RF -
 - BLUE - FILAMENT POWER TUBE - SPEAKER FIELD
 - GREEN - KATHODE DETECTOR - GRID POWER TUBE
 - BROWN - FILAMENT RF TUBES AND DETECTOR
 - BLACK - FILAMENT 1st AF TUBE - DETECTOR KATHODE -
 - YELLOW - SHIELD GRID - PLATE 1st AF - ALATE RECTIFIER
- VOLTAGE TABLE**
- | TUBE | POSITION | FIL V | GRID V | PLATE V | SGMETS |
|------|-----------|-------|--------|---------|--------|
| 224 | 1st RF | 2.3 | 3-9 | 160-185 | 85-125 |
| 224 | 2nd RF | 2.3 | 3-9 | 160-185 | 85-125 |
| 224 | DET. | 2.3 | 4.0-8 | 75-115 | 85-125 |
| 227 | 1st AF | 2.3 | 7 | 110 | |
| 245 | POWER | 2.4 | 47 | 235 | |
| 280 | RECTIFIER | 4.9 | | | |

Model 14 (1930)

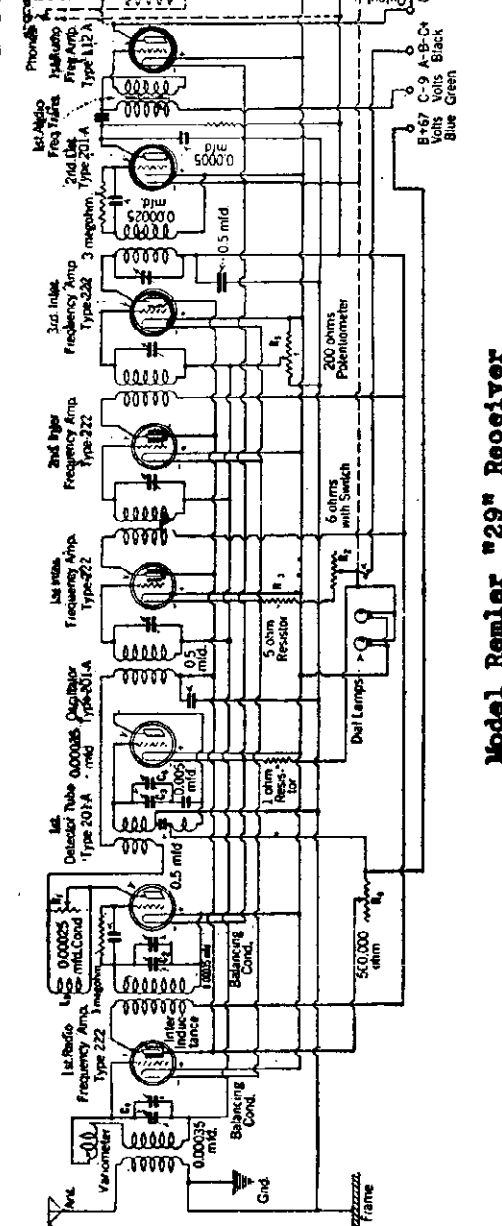


REMLER COMPANY, LTD.

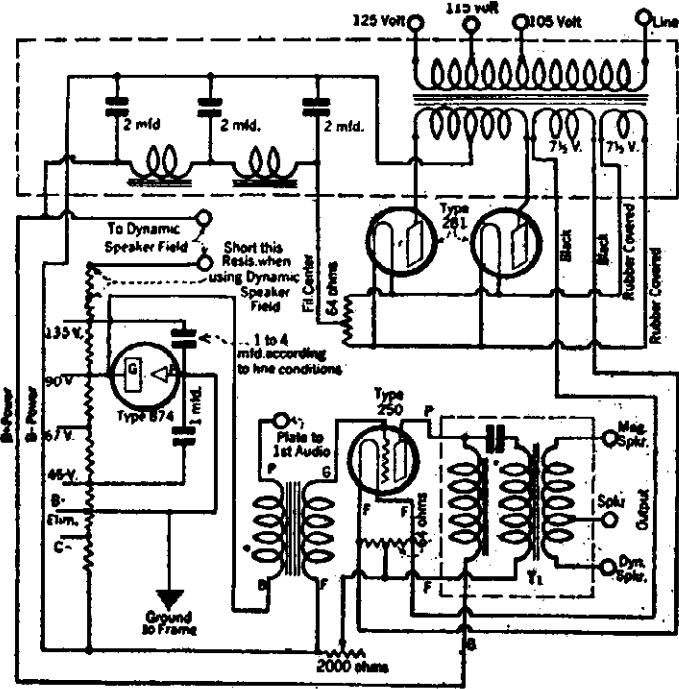
MODEL Best "115 KC"
MODEL Remler "29"



Model Best "115 KC"



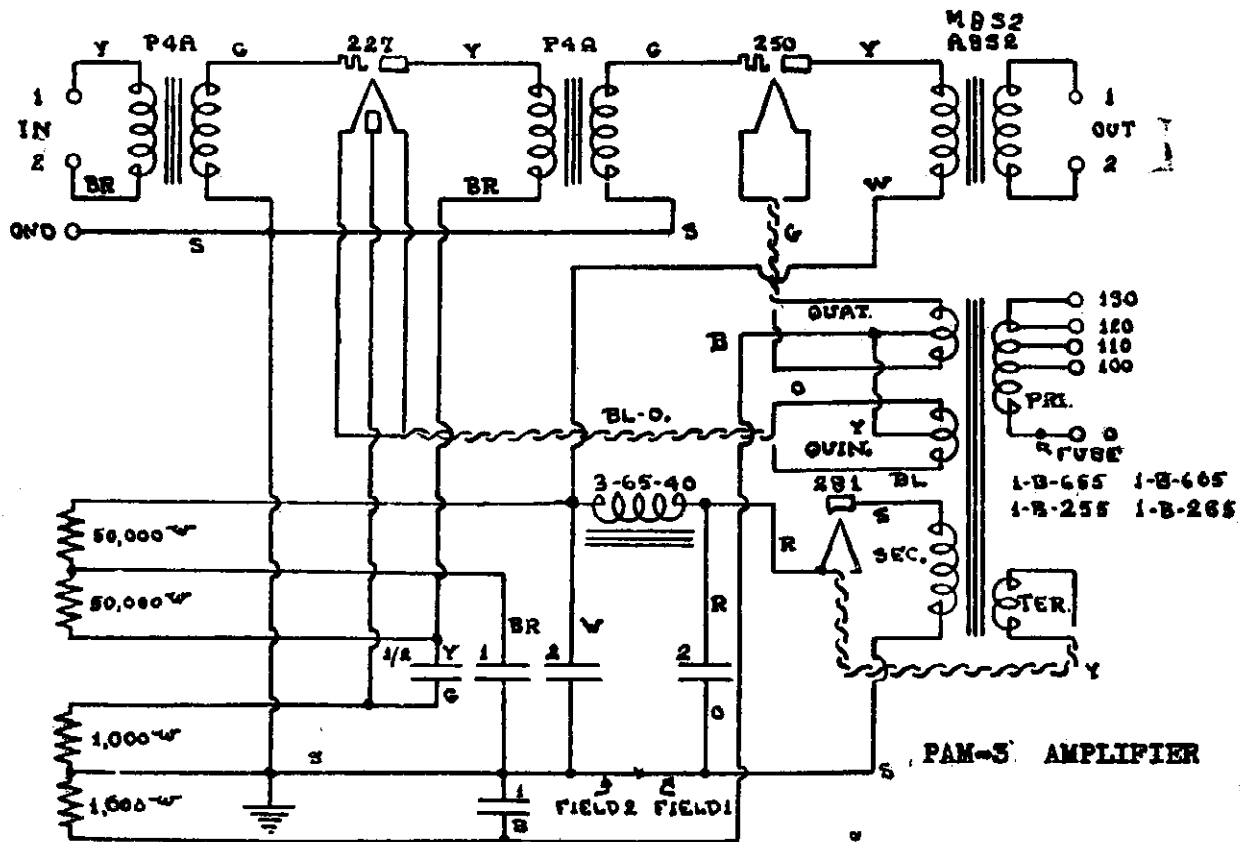
Model Remler "29" Receiver



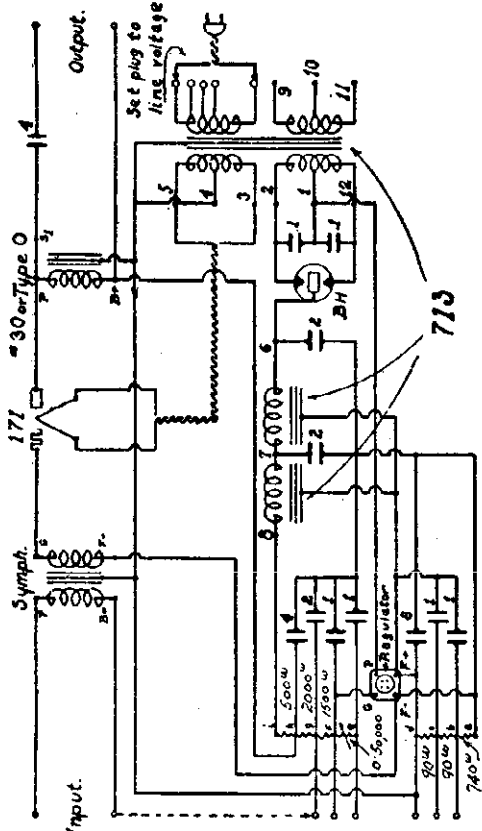
Model Remler "29" Power Pack

SAMSON ELECTRIC CO.

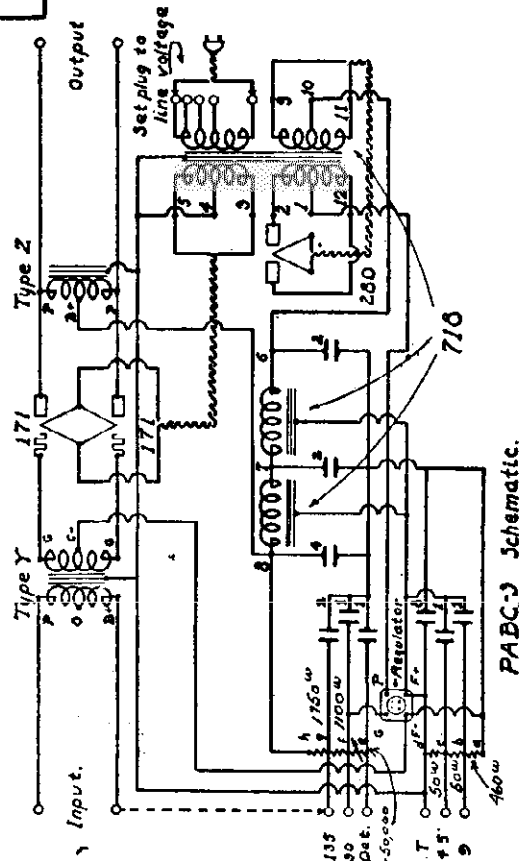
MODEL PABC-2
 MODEL PABC-3
 MODEL PAM-3



PAM-3 AMPLIFIER



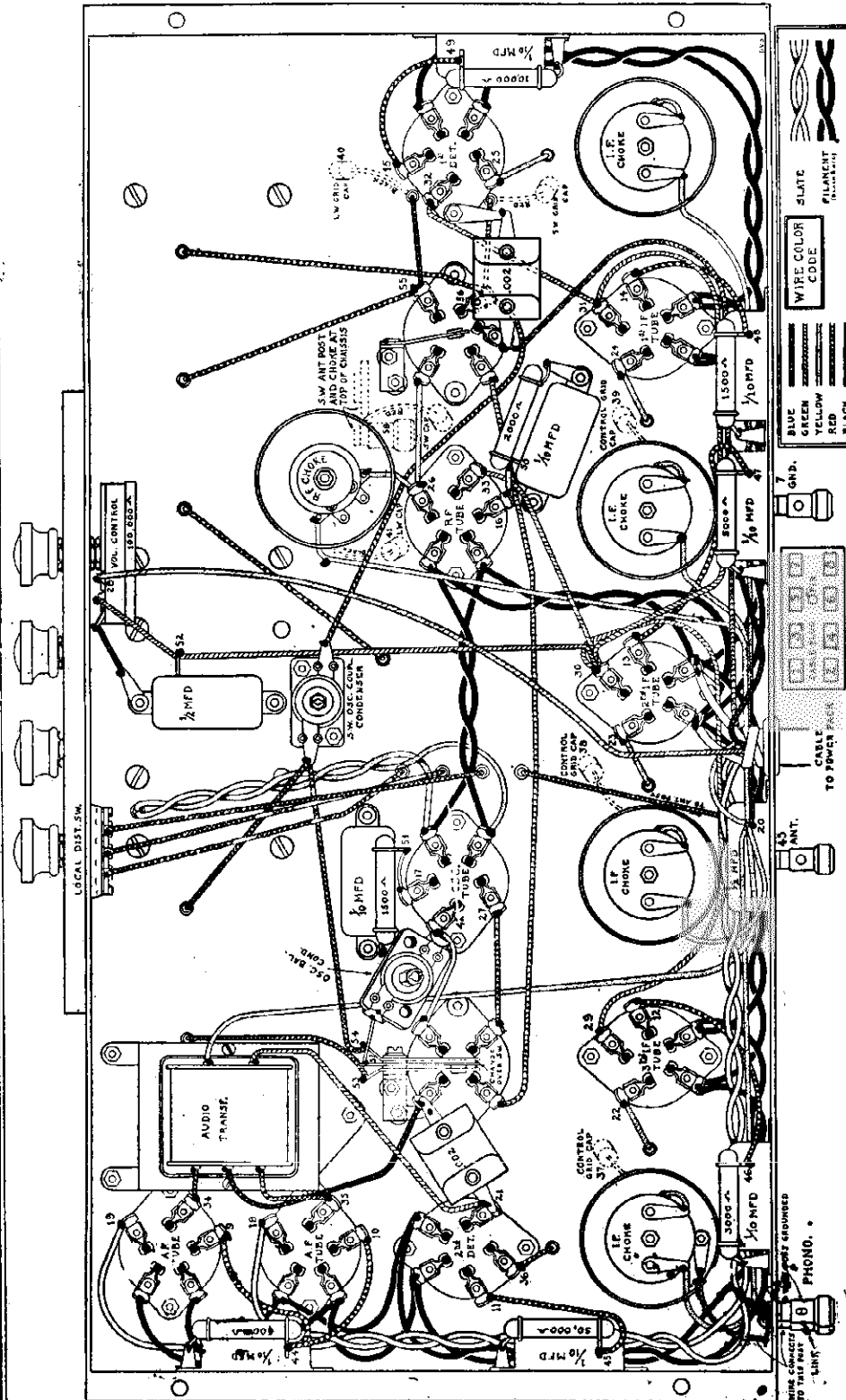
PABC-2 Schematic.



PABC-3 Schematic.

MODEL "All Wave" Super Receiver Chassis

SCOTT TRANSFORMER CO.



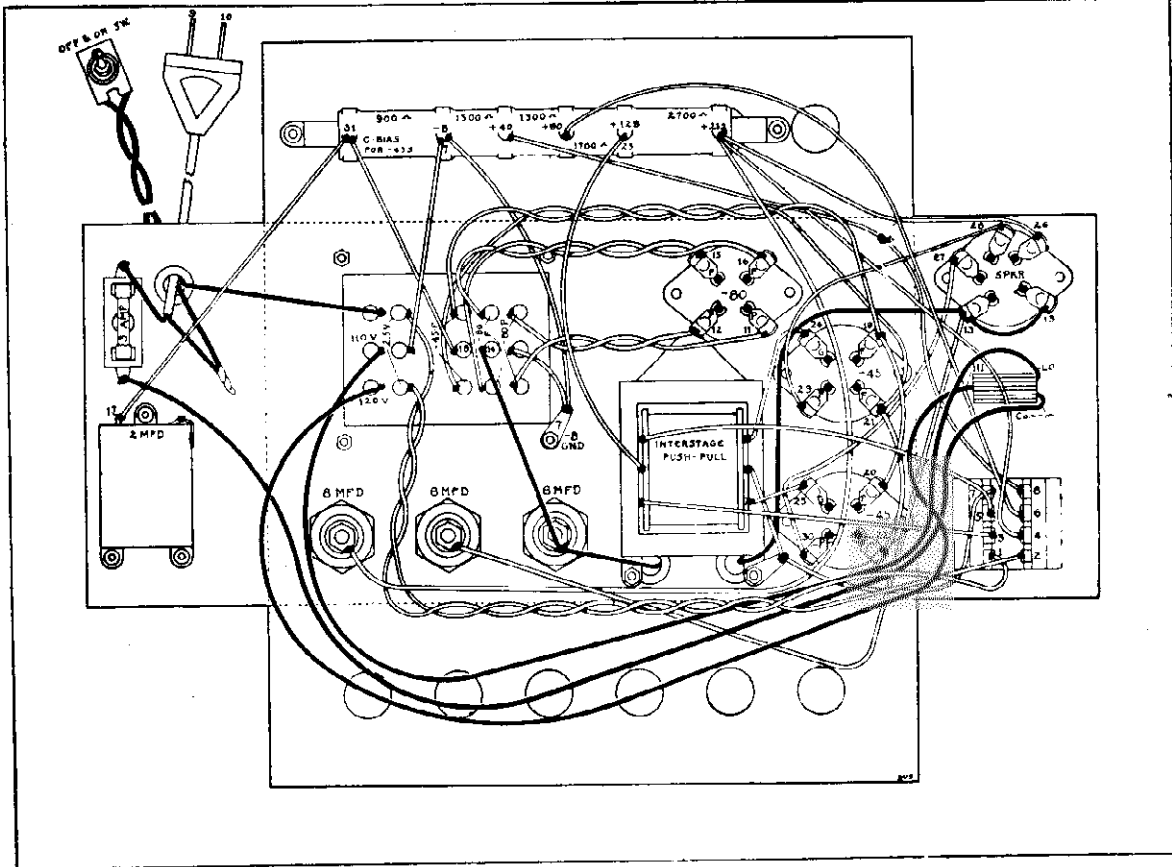
HOW TO DISTINGUISH OSCILLATOR FROM R. F. COIL

- | | |
|--------------------------|------------------------------|
| Oscillator Coil | R. F. Coil |
| Two Enamel Wire Windings | One Enamel Wire Winding |
| Two Enamel Wire Windings | One Enamel Wire Winding |
| Two Enamel Wire Windings | One Enamel Wire Winding |
| Two Enamel Wire Windings | One Enamel, One Silk Winding |
| Two Enamel Wire Windings | One Enamel, One Silk Winding |

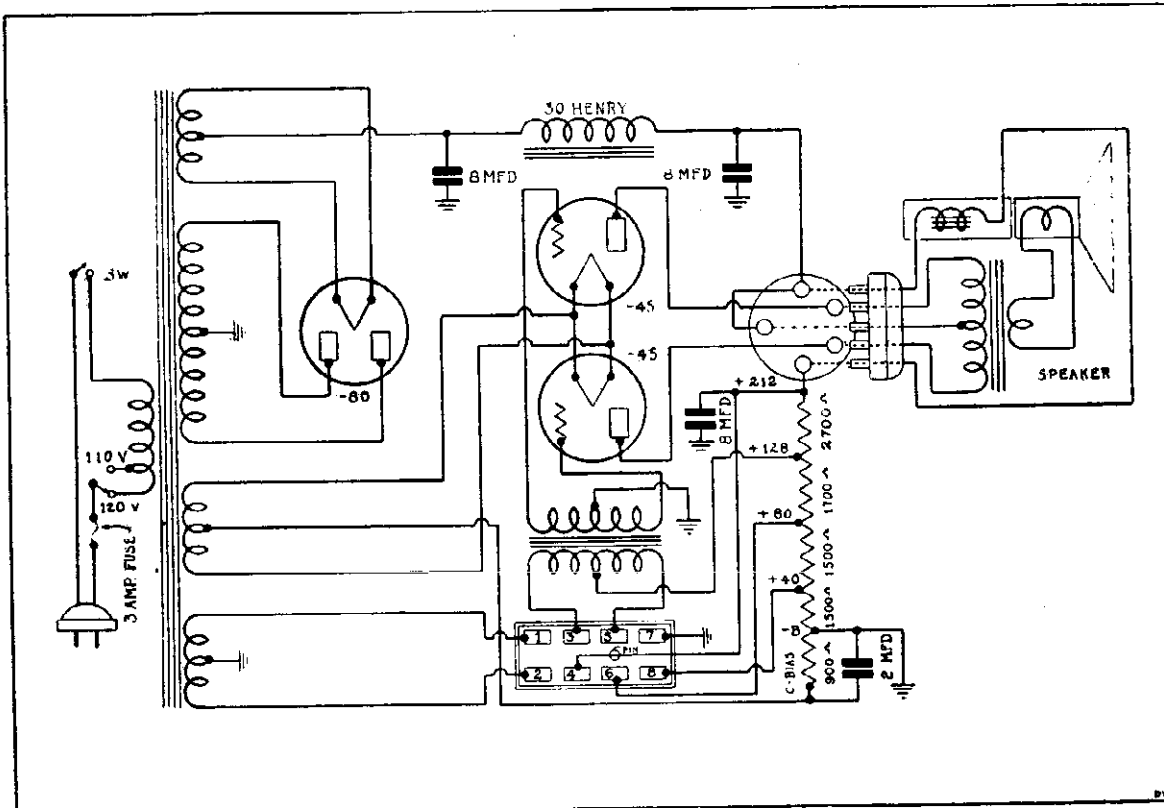
NOTE:—When tuning short wave stations the short wave coils must be left exposed (the aluminum covers should not be replaced). Be sure that both oscillator and R. F. coils are for the same wave length band. The tube on the extreme right of the chassis is the first detector

SCOTT TRANSFORMER CO.

MODEL "All Wave" Super
145 Power Pack
Schematic- Chassis



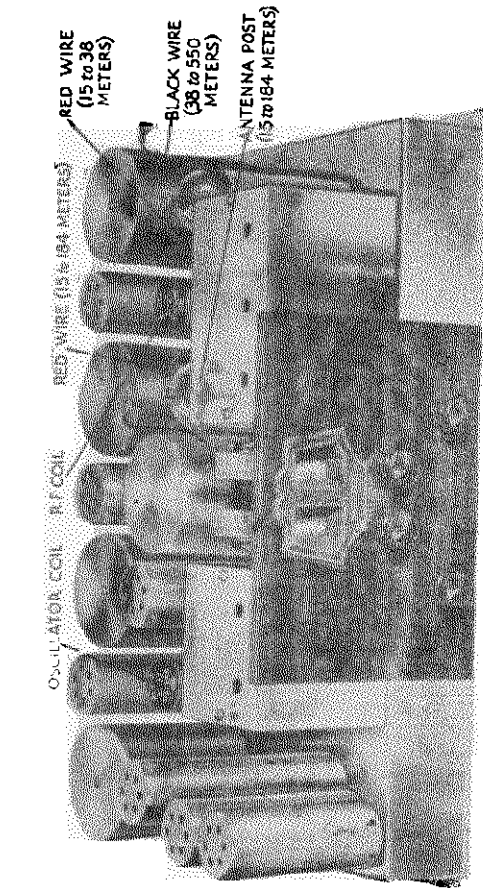
Wiring Diagram of 145 Power Pack



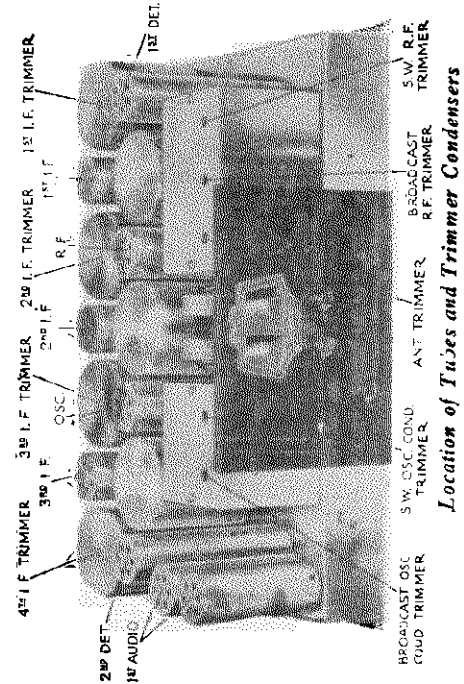
Schematic Diagram of 145 Power Pack

SCOTT TRANSFORMER CO.

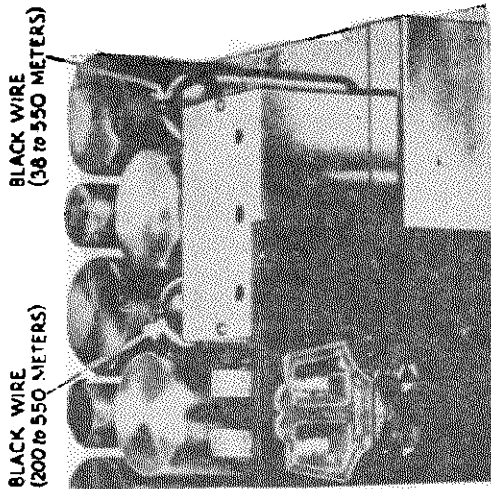
MODEL "All Wave" Super
150 Power Pack
Trimmer Locations
Control Box



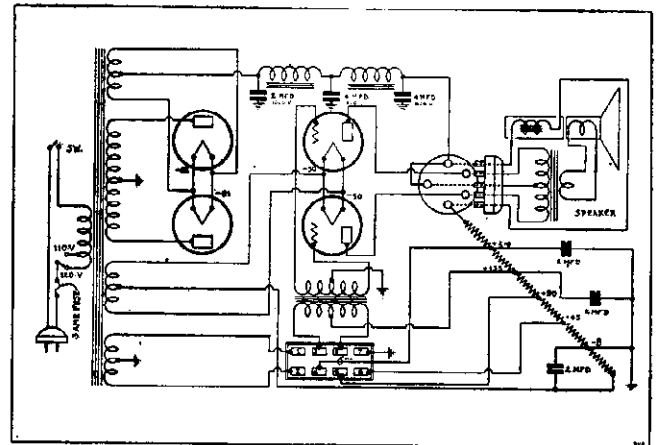
View of Screen Grid Cap Connections for Short Wave Reception



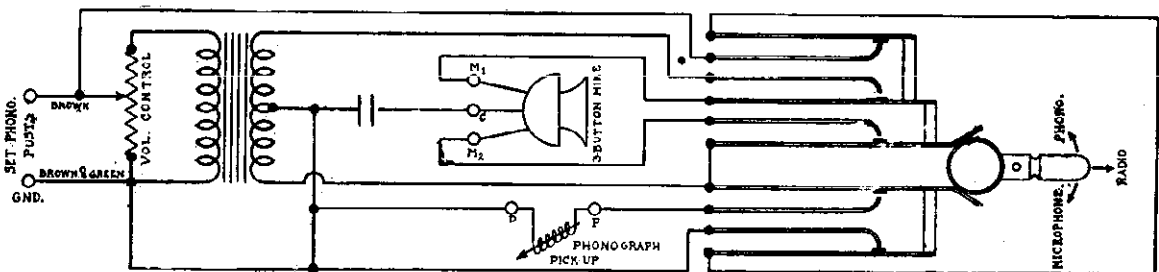
Location of Tubes and Trimmer Condensers



Screen Grid Connections for Broadcast Reception



Schematic Diagram for 150 Power Pack



Note - when single button mixe is used, connect between M_1 and C_2 is not used

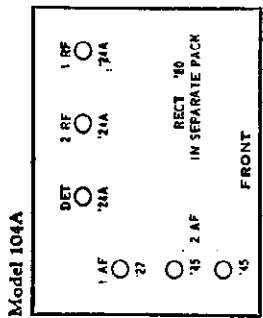
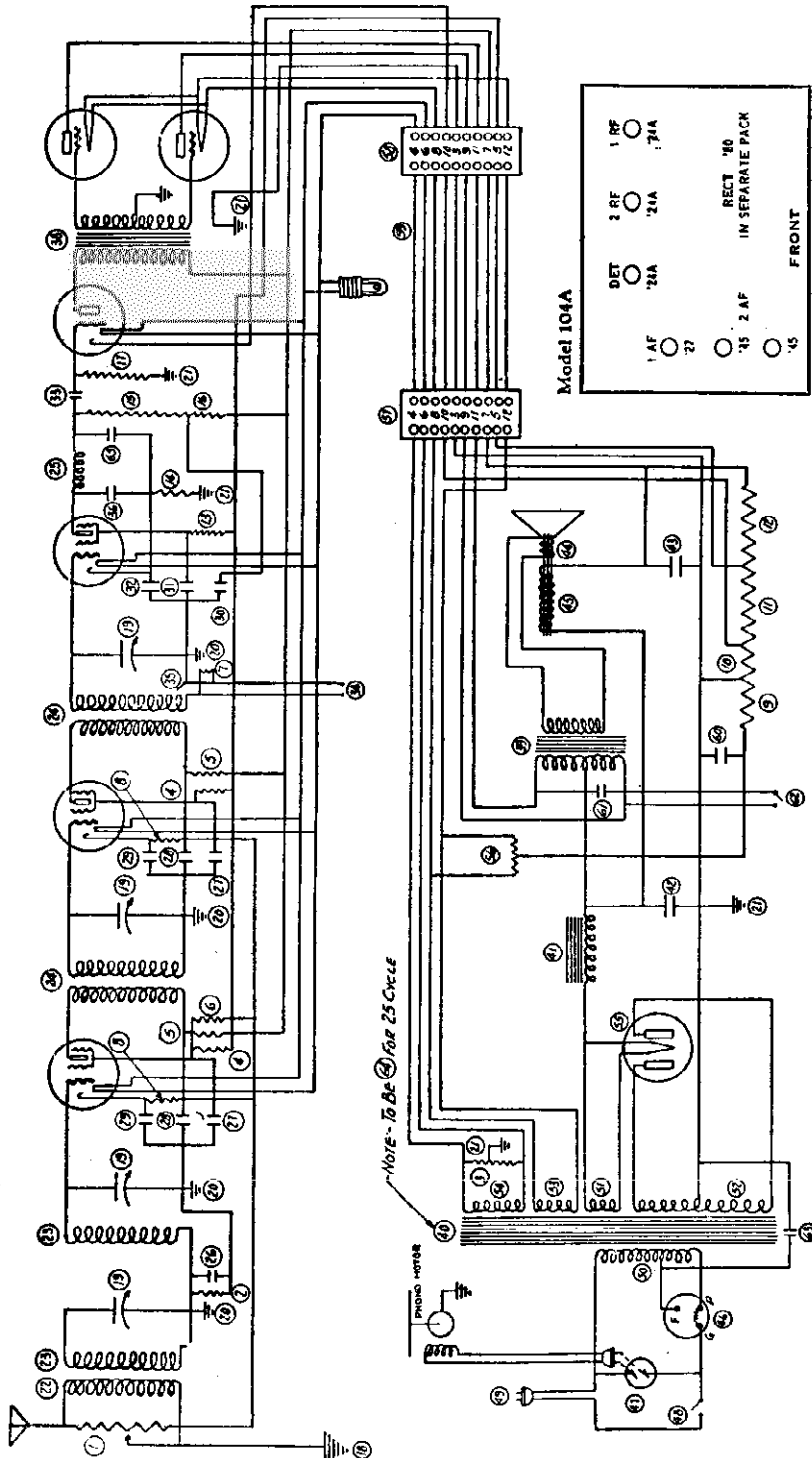
Schematic Diagram of Scott Control Box

MODEL 11,12,15,16
(104)

SENTINEL RADIO CORP.

SENTINEL—Models 11-12-15-16
Line Voltage 115—Volume Control Full On

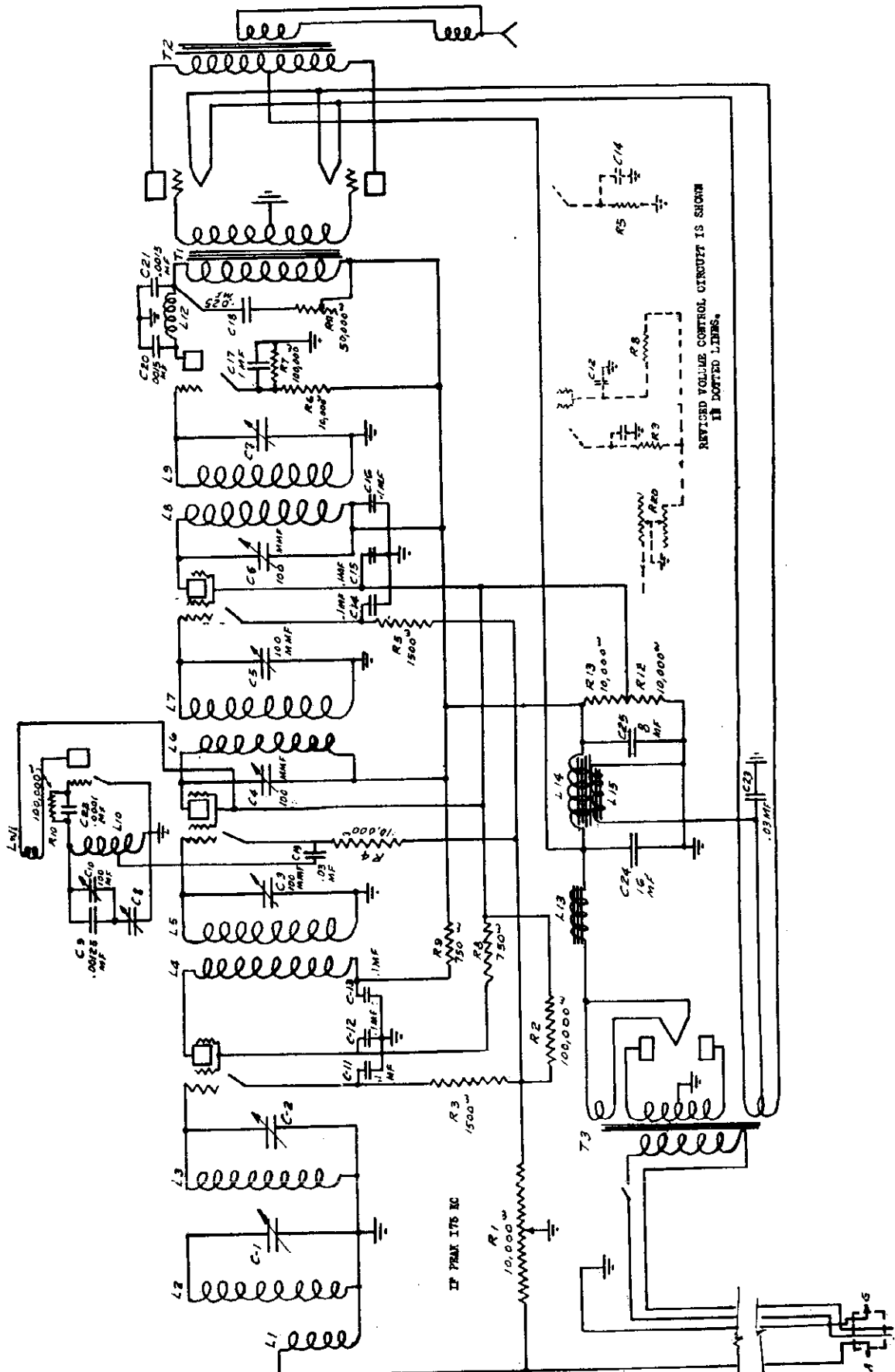
TUBE NO. IN ORDER TESTED	TYPE OF TUBE	POSITION OF TUBE IN SET	OPERATING VOLTAGES						MILLIAMPERES	
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID—SPACE	NORMAL GRID—SCREEN	CATHODE TO HEATER	SCREEN GRID TO PLATE	PLATE TO B+ OR PLATE	TUBE TEST	PLATE CURRENT CHARGER
224	1 R.F.	2,36	176	2.2	67	-	-	3		
224	2 R.F.	2,36	176	2.2	67	-	-	3		
224	Det.	2,37	62.5*	4.6	10*	-	-	.25		
227	1 A.F.	2,4	157	-	12.5	-	-	4.75		
245	PP-AF	2,5	235	-	46	-	-	32.5		
245	PP-AF	2,5	235	-	46	-	-	32.5		
260	Rect.	5.0	-	-	-	-	-	55	55	



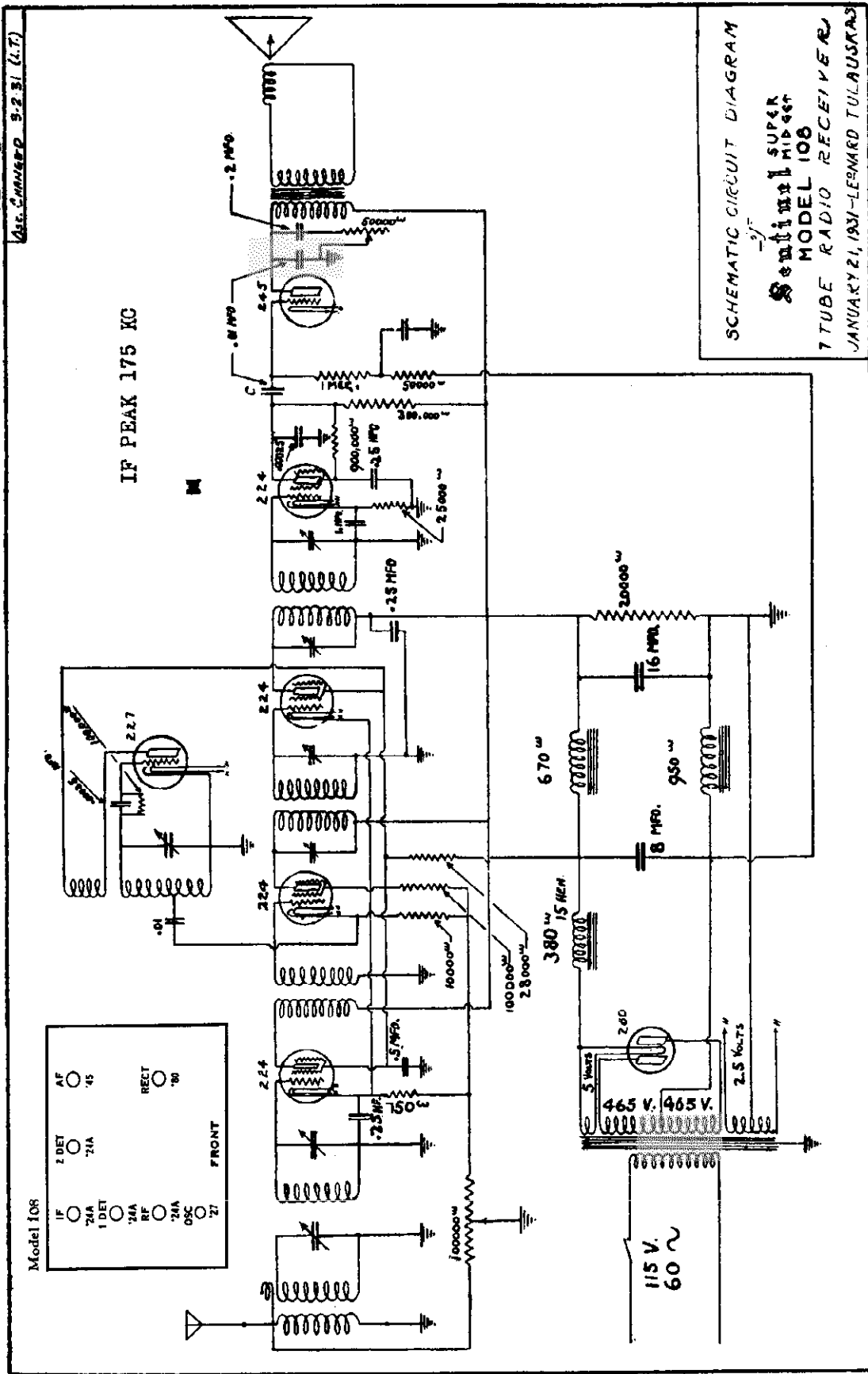
DESCRIPTION	R	I	E	W	DESCRIPTION	DESCRIPTION
1 VOLUME CONTROL	10M	0.0001	0	0	18	PHONOGRAPH SWITCH
2 COUPLING RESISTOR	750	0	0	0	19	SET EXTERNAL GROUND
3 CENTER TAP RESISTOR	20	125	25	3.15	20	ROTOR BRUSH GROUND
4 SCREEN FILTER RESISTANCE	750	1	75	0.007	21	CHASSIS GROUND
5 PLATE FILTER RESISTANCE	150	4	3	0.12	22	TUNING CONDENSER
6 BIAS RESISTOR	100M	1	93	0.9	23	PRIMARY COIL 650 μA-N'S
7 PICKUP LOAD RESISTANCE	2500	0	0	0	24	BAND PASS INDUCTANCES
8 CATHODE BIAS RESISTANCE	750	4	3	0.12	25	R.F. TRANSFORMERS
9 AUDIO BIAS RESISTANCE	715	62	44	12.5	26	POWER CHOKES 200 μ
10 SCREEN RESISTANCE	1850	46	80.5	3.4	27	15 MFD. ELECTROLYTIC CONDENSER
11 FIELD LOAD RESISTANCE	2100	46	93	4.3	28	5 MFD. ELECTROLYTIC CONDENSER
12 SCREEN BLEEDER RESISTANCE	15MM	0.35	110	0.006	29	FIELD 2000 μ - 15%
13 DETECTOR BIAS RESISTANCE	5M	38	75	0.007	30	BALLAST LAMP SOCKET
14 PLATE LOAD RESISTANCE	300M	32	36	0.3	31	PHONO MOTOR OUTLET
15 DETECTOR FILTER RESISTANCE	50M	32	16	0.03	32	LINE SWITCH
16 GRID RESISTANCE	1M	0	0	0	33	PLUG AND CORD (Belden)
					34	COUPLING COND. 0.05 μ - MIC
					35	POWER PRIMARY 82 μ - 115V
					36	200 FIL 2 μ - 5V

SENTINEL RADIO CORP.

MODEL 106-B
With Changes



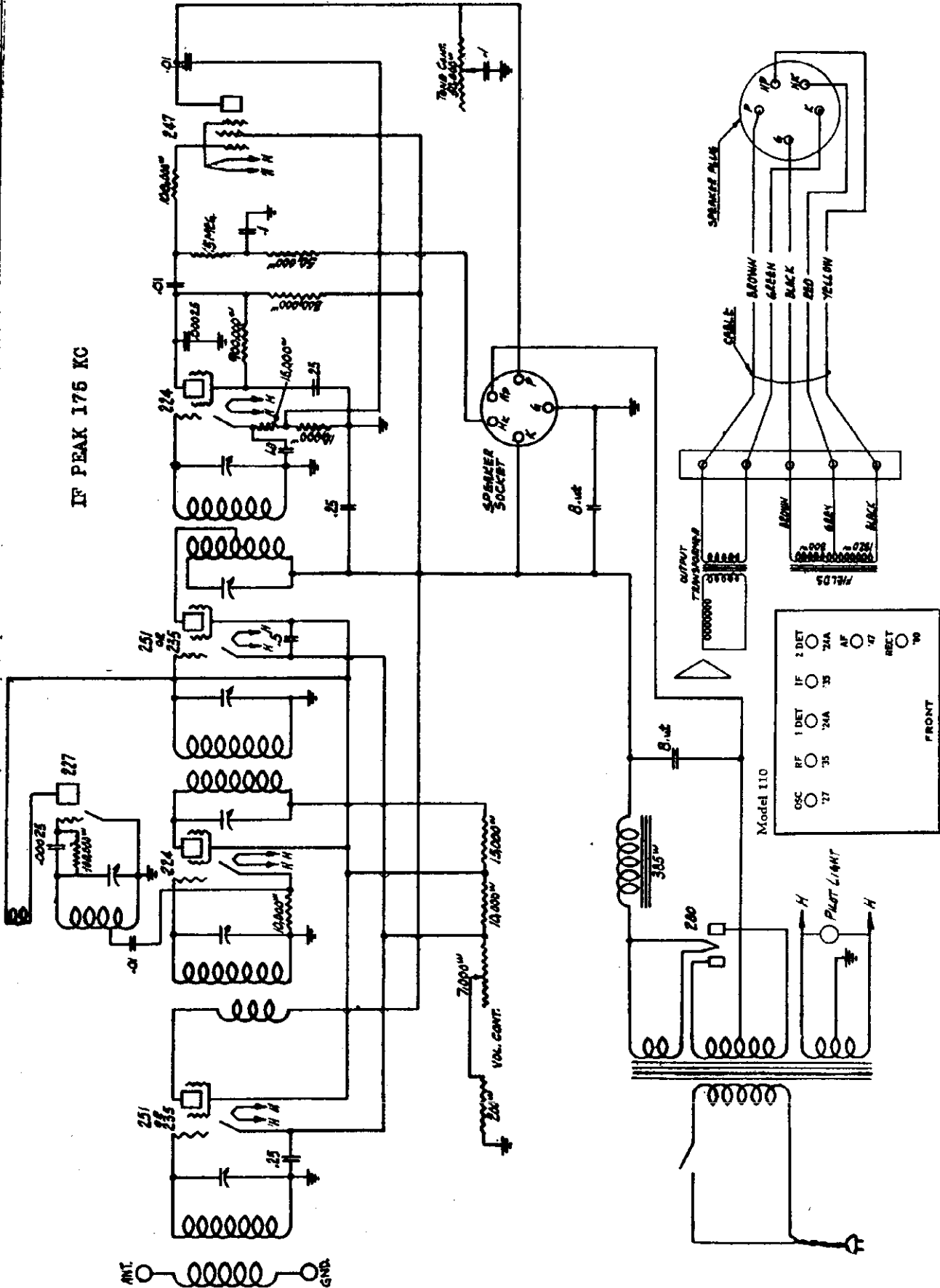
SENTINEL RADIO CORP.



SENTINEL RADIO CORP.

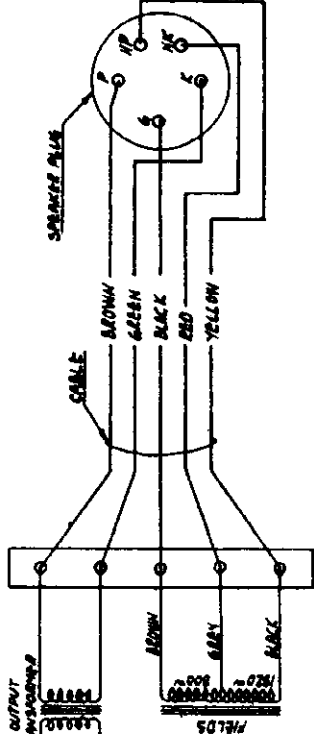
MODEL 108-A.110
Schematic

IF PEAK 175 KC



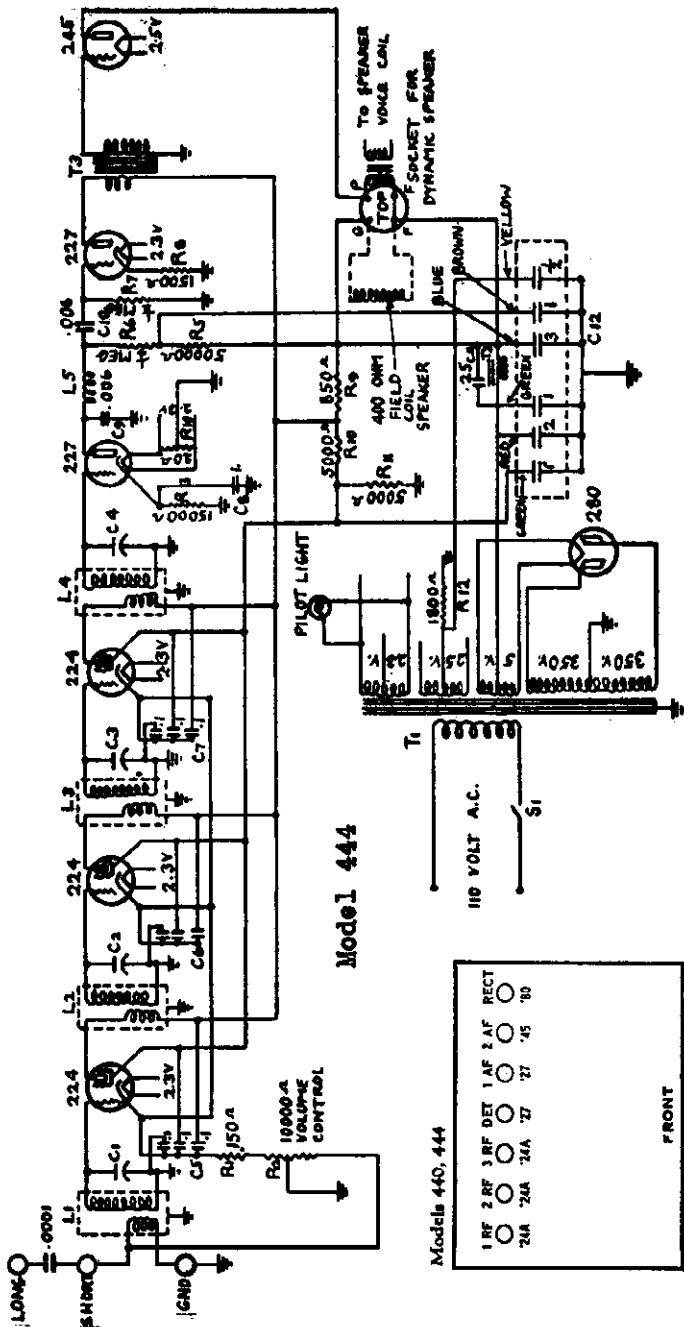
OSC	RF	1 DET	IF	2 DET
727	'35	'24A	'35	'24A
				AF
				'47
				RECT
				'70

FRONT



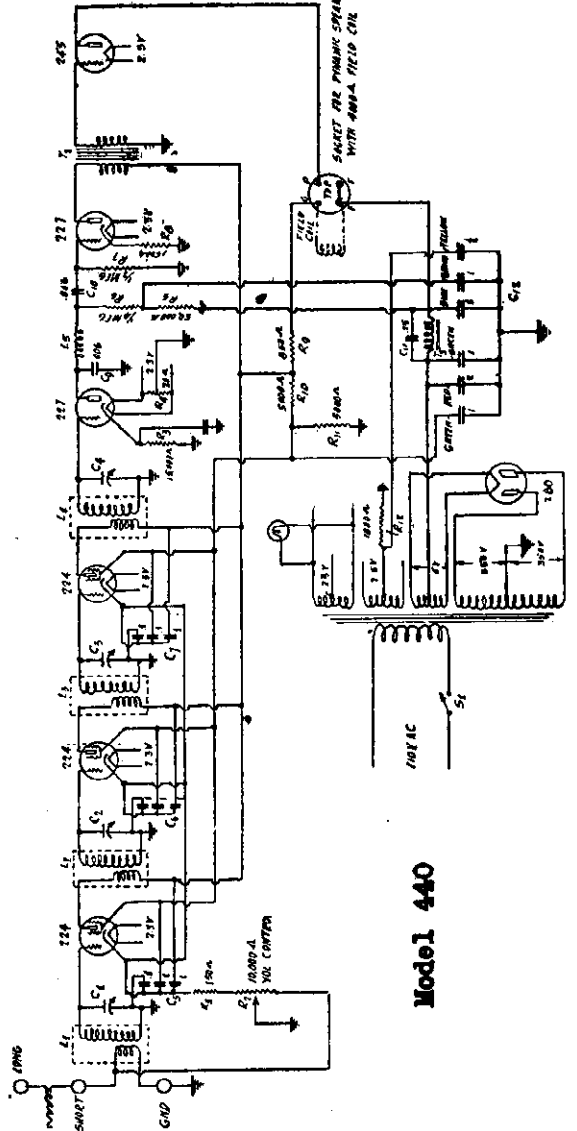
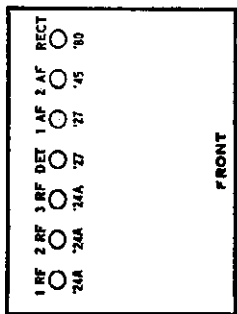
MODEL 440
MODEL 444

SENTINEL RADIO CORP.



Model 444

Models 440, 444



Model 440

TUBE VOLTAGES		FILAMENT	B	C	NORMAL	SCREEN
Type	of Position	VOLTS	VOLTS	VOLTS	PLATE M.A.	VOLTS
Tube	of Tube					
224	1st RF	2.35	155	2	3.5	75
224	2nd RF	2.35	155	2	3.5	75
224	3rd RF	2.35	155	2	3.5	75
227	Detector	2.35	110	18	.2	
227	1st Audio	2.35	122	8	10.5	
245	Output	2.4	245	50	27	
280	Rectifier	4.75		*55		

350 A.C. Volts each side high voltage secondary

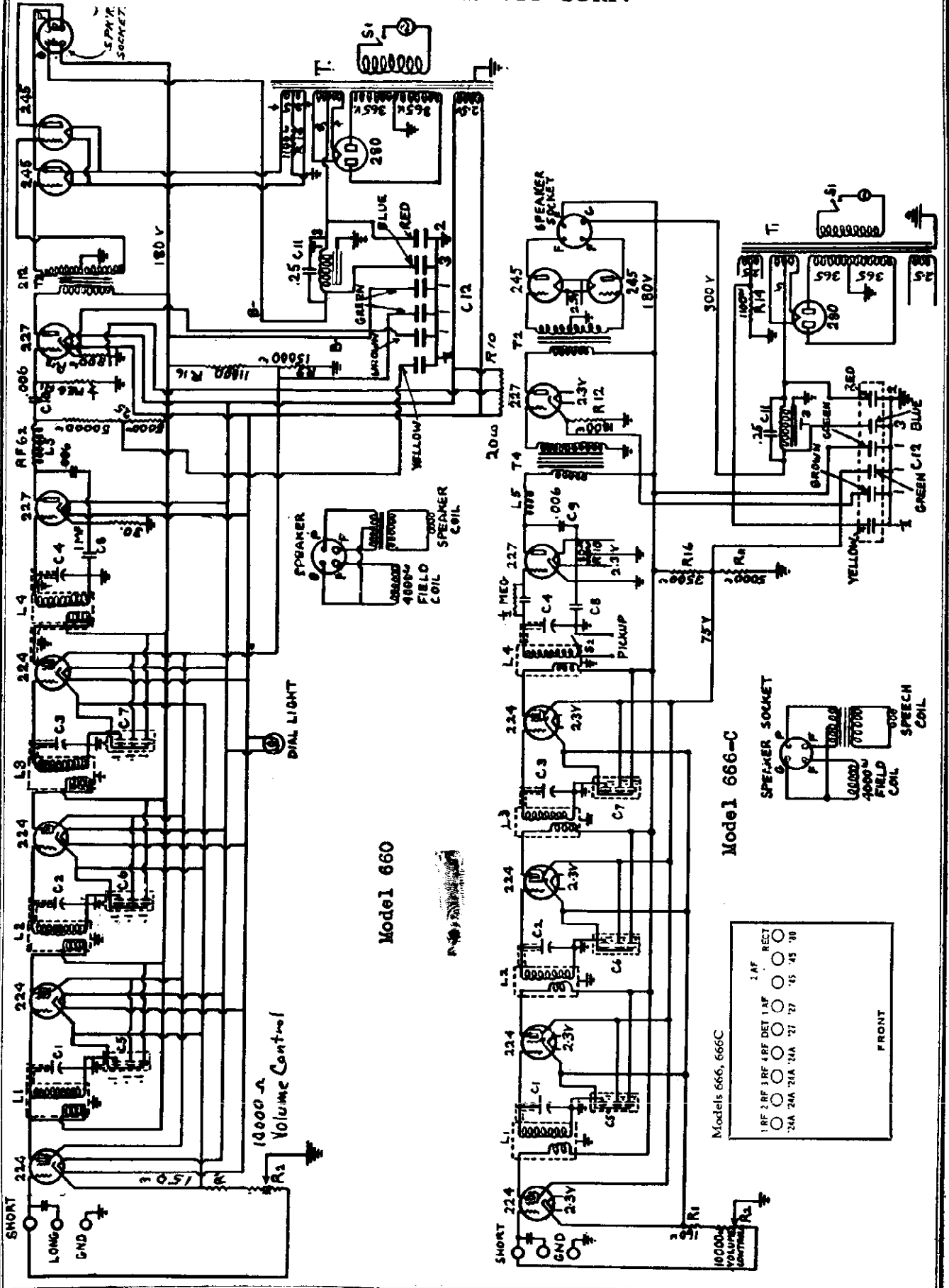
*51-55 M.A. each plate

115 volts line

With volume control to full on position

MODEL 660,
MODEL 666-C

SENTINEL RADIO CORP.



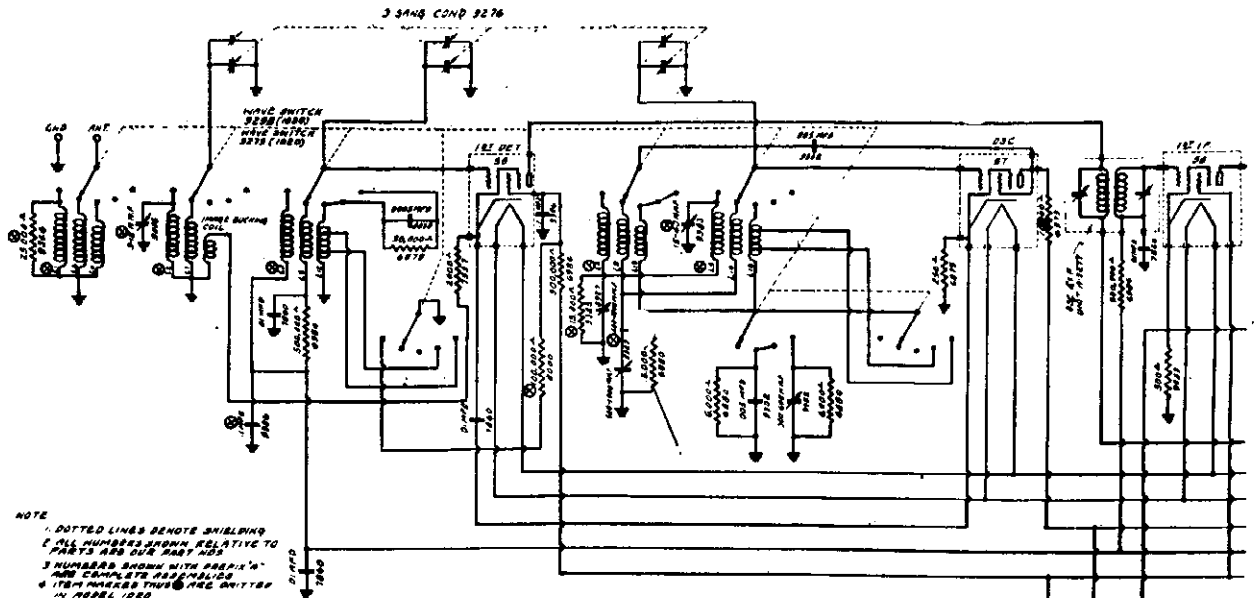
Model 660

Model 666-C

Models 666, 666C

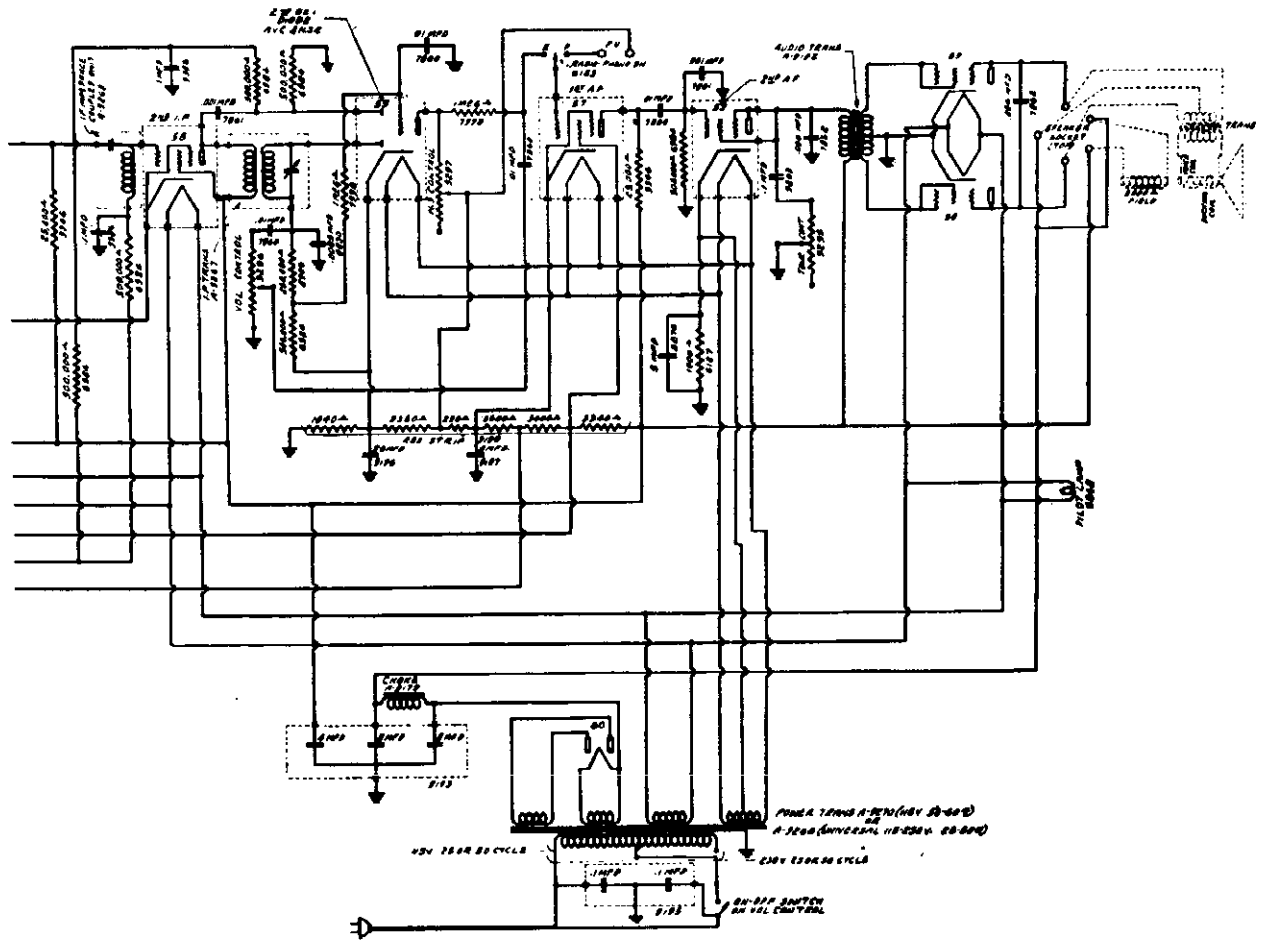
1BF 2BF 1RF 1RF DET 1AF RECT	<input type="radio"/>
2AF	<input type="radio"/>
25A 25A 25A 25A 27 27 '45 '45 '50	<input type="radio"/>
FRONT	<input type="radio"/>

SENTINEL RADIO CORP.



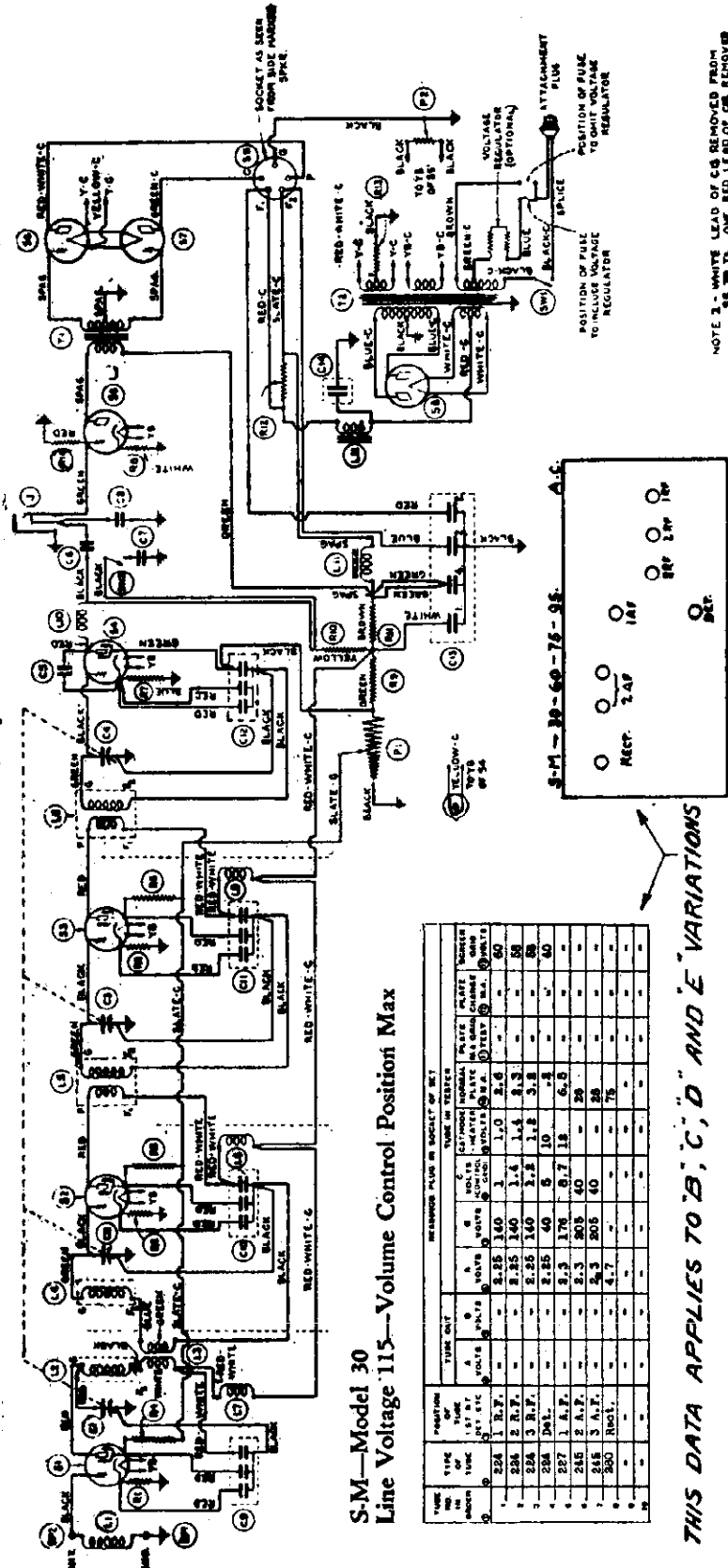
WIRING DIAGRAM
MODEL 1020 & 1030 RECEIVER

L1, L2, L3, L4 = 140-370 K.C. ANT. PROSECTOR, 1ST DET. & OSC. COIL ASSEMBLY 330 (IN MODEL 1030 ONLY)
 L1 COUPLED TO L2, L2 COUPLED TO L3
 L3, L4 = 800-1500 K.C. ANT. PROSECTOR, 1ST DET. COIL ASSEMBLY 324B
 L3 COUPLED TO L4, L4 COUPLED TO L5
 L5, L6 = 800-1500 K.C. OSC. COIL ASSEMBLY 400B
 L5, L6, L7 = 1.5-24.5 K.C. ANT., 1ST DET. & OSC. COIL ASSEMBLY 400B
 L7 COUPLED TO L8



SILVER - MARSHALL, INC.

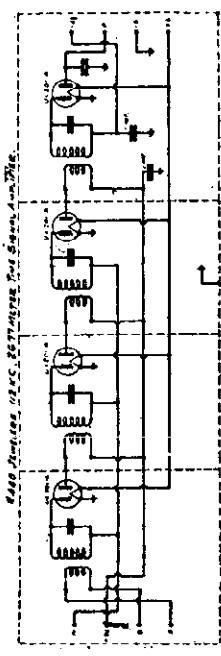
MODEL 30
Schematic, Voltage
MODEL 440



S.M.—Model 30
Line Voltage 115—Volume Control Position Max

TYPE OF TUBE	POSITION OF TUBE	TIME ONLY		WARMUP PLUG IN SOCKET OF SET		PLATE CURRENT (MA)	NORMAL PLATE VOLTAGE (VOLTS)	TUBE NUMBER
		A	B	A	B			
6X4	1	1.0	1.0	1.0	1.0	1.0	1.0	6X4
6AR5	2	1.0	1.0	1.0	1.0	1.0	1.0	6AR5
6AV6	3	1.0	1.0	1.0	1.0	1.0	1.0	6AV6
6BE6	4	1.0	1.0	1.0	1.0	1.0	1.0	6BE6
6BE7	5	1.0	1.0	1.0	1.0	1.0	1.0	6BE7
6BE8	6	1.0	1.0	1.0	1.0	1.0	1.0	6BE8
6BE9	7	1.0	1.0	1.0	1.0	1.0	1.0	6BE9
6BE9A	8	1.0	1.0	1.0	1.0	1.0	1.0	6BE9A
6BE9B	9	1.0	1.0	1.0	1.0	1.0	1.0	6BE9B
6BE9C	10	1.0	1.0	1.0	1.0	1.0	1.0	6BE9C
6BE9D	11	1.0	1.0	1.0	1.0	1.0	1.0	6BE9D
6BE9E	12	1.0	1.0	1.0	1.0	1.0	1.0	6BE9E
6BE9F	13	1.0	1.0	1.0	1.0	1.0	1.0	6BE9F
6BE9G	14	1.0	1.0	1.0	1.0	1.0	1.0	6BE9G
6BE9H	15	1.0	1.0	1.0	1.0	1.0	1.0	6BE9H
6BE9I	16	1.0	1.0	1.0	1.0	1.0	1.0	6BE9I
6BE9J	17	1.0	1.0	1.0	1.0	1.0	1.0	6BE9J
6BE9K	18	1.0	1.0	1.0	1.0	1.0	1.0	6BE9K
6BE9L	19	1.0	1.0	1.0	1.0	1.0	1.0	6BE9L
6BE9M	20	1.0	1.0	1.0	1.0	1.0	1.0	6BE9M
6BE9N	21	1.0	1.0	1.0	1.0	1.0	1.0	6BE9N
6BE9O	22	1.0	1.0	1.0	1.0	1.0	1.0	6BE9O
6BE9P	23	1.0	1.0	1.0	1.0	1.0	1.0	6BE9P
6BE9Q	24	1.0	1.0	1.0	1.0	1.0	1.0	6BE9Q
6BE9R	25	1.0	1.0	1.0	1.0	1.0	1.0	6BE9R
6BE9S	26	1.0	1.0	1.0	1.0	1.0	1.0	6BE9S
6BE9T	27	1.0	1.0	1.0	1.0	1.0	1.0	6BE9T
6BE9U	28	1.0	1.0	1.0	1.0	1.0	1.0	6BE9U
6BE9V	29	1.0	1.0	1.0	1.0	1.0	1.0	6BE9V
6BE9W	30	1.0	1.0	1.0	1.0	1.0	1.0	6BE9W
6BE9X	31	1.0	1.0	1.0	1.0	1.0	1.0	6BE9X
6BE9Y	32	1.0	1.0	1.0	1.0	1.0	1.0	6BE9Y
6BE9Z	33	1.0	1.0	1.0	1.0	1.0	1.0	6BE9Z

THIS DATA APPLIES TO B, C, D AND E VARIATIONS



440 JEWELLERS TIME-SIGNAL AMPLIFIER

NOTE 1 - WHITE LEAD OF C8 REMOVED FROM 5B AND 5A TO 5C
NOTE 2 - RED LEAD OF C13 MARKED FROM 1A TO 1B TO 1C
NOTE 3 - RED LEAD OF C13 MARKED FROM 1A TO 1B TO 1C
NOTE 4 - RED LEAD OF C13 MARKED FROM 1A TO 1B TO 1C
NOTE 5 - RED LEAD OF C13 MARKED FROM 1A TO 1B TO 1C

PART NO.	ASSEMBLY NO.
DATE	SCHEMATIC NO. 50
DRAWN BY	DATE
CHECKED BY	DATE

LEGEND

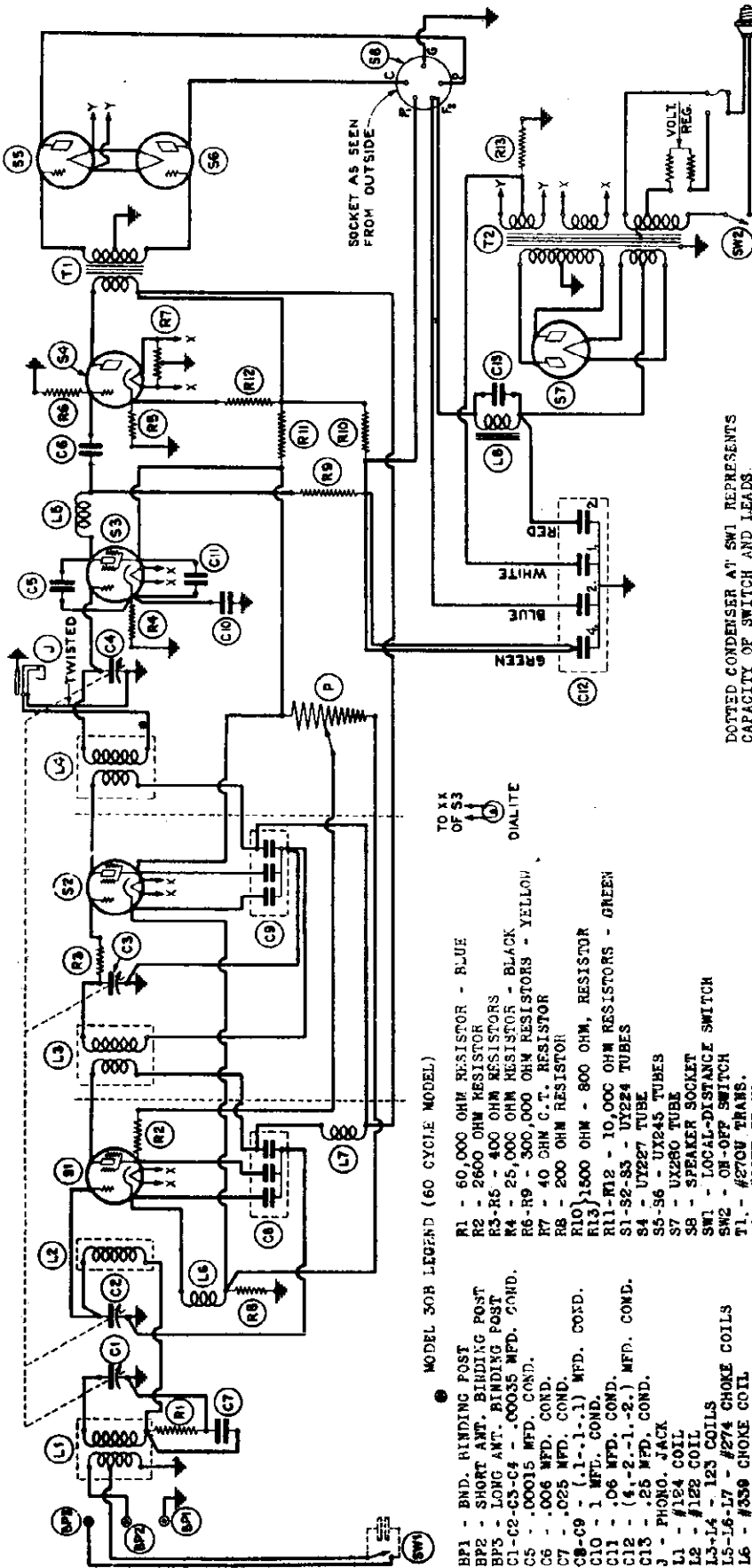
- 6X4-6BE6-6BE7-6BE8-6BE9-6BE9A-6BE9B-6BE9C-6BE9D-6BE9E-6BE9F-6BE9G-6BE9H-6BE9I-6BE9J-6BE9K-6BE9L-6BE9M-6BE9N-6BE9O-6BE9P-6BE9Q-6BE9R-6BE9S-6BE9T-6BE9U-6BE9V-6BE9W-6BE9X-6BE9Y-6BE9Z
- 6BE6-6BE7-6BE8-6BE9-6BE9A-6BE9B-6BE9C-6BE9D-6BE9E-6BE9F-6BE9G-6BE9H-6BE9I-6BE9J-6BE9K-6BE9L-6BE9M-6BE9N-6BE9O-6BE9P-6BE9Q-6BE9R-6BE9S-6BE9T-6BE9U-6BE9V-6BE9W-6BE9X-6BE9Y-6BE9Z
- 6BE6-6BE7-6BE8-6BE9-6BE9A-6BE9B-6BE9C-6BE9D-6BE9E-6BE9F-6BE9G-6BE9H-6BE9I-6BE9J-6BE9K-6BE9L-6BE9M-6BE9N-6BE9O-6BE9P-6BE9Q-6BE9R-6BE9S-6BE9T-6BE9U-6BE9V-6BE9W-6BE9X-6BE9Y-6BE9Z
- 6BE6-6BE7-6BE8-6BE9-6BE9A-6BE9B-6BE9C-6BE9D-6BE9E-6BE9F-6BE9G-6BE9H-6BE9I-6BE9J-6BE9K-6BE9L-6BE9M-6BE9N-6BE9O-6BE9P-6BE9Q-6BE9R-6BE9S-6BE9T-6BE9U-6BE9V-6BE9W-6BE9X-6BE9Y-6BE9Z
- 6BE6-6BE7-6BE8-6BE9-6BE9A-6BE9B-6BE9C-6BE9D-6BE9E-6BE9F-6BE9G-6BE9H-6BE9I-6BE9J-6BE9K-6BE9L-6BE9M-6BE9N-6BE9O-6BE9P-6BE9Q-6BE9R-6BE9S-6BE9T-6BE9U-6BE9V-6BE9W-6BE9X-6BE9Y-6BE9Z

COMPONENTS:

- P1-10000 μF POT TAPERED
- P2-20 μF DO1
- R1-100K
- R2-100K
- R3-100K
- R4-100K
- R5-100K
- R6-100K
- R7-100K
- R8-100K
- R9-100K
- R10-100K
- R11-100K
- R12-100K
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- R92-100K
- R93-100K
- R94-100K
- R95-100K
- R96-100K
- R97-100K
- R98-100K
- R99-100K
- R100-100K

MODEL 30B
Schematic, Voltage

SILVER - MARSHALL, INC.



- MODEL 30B LEGEND (60 CYCLE MODEL)
- BP1 - BND. BINDING POST
 - BP2 - SHORT ANT. BINDING POST
 - BP3 - LONG ANT. BINDING POST
 - C1 - C2 - C3 - C4 - .00035 MFD. COND.
 - C5 - .00015 MFD. COND.
 - C6 - .006 MFD. COND.
 - C7 - .025 MFD. COND.
 - C8 - C9 - (.1-.1-.1) MFD. COND.
 - C10 - 1 MFD. COND.
 - C11 - .06 MFD. COND.
 - C12 - (.1-.2-.1-.2.) MFD. COND.
 - C13 - .25 MFD. COND.
 - J - PHONO. JACK
 - L1 - #124 COIL
 - L2 - #122 COIL
 - L3-L4 - 123 COILS
 - L5-L6-L7 - #274 CHOKE COILS
 - L8 - #359 CHOKE COIL
 - P - 10,000 OHM POT.
 - R1 - 60,000 OHM RESISTOR - BLUE
 - R2 - 2600 OHM RESISTOR
 - R3-R6 - 400 OHM RESISTORS
 - R4 - 25,000 OHM RESISTOR - BLACK
 - R6-R9 - 300,000 OHM RESISTORS - YELLOW
 - R7 - 40 OHM C.T. RESISTOR
 - R8 - 200 OHM RESISTOR
 - R10 - 1500 OHM - 800 OHM, RESISTOR
 - R11-R12 - 10,000 OHM RESISTORS - GREEN
 - S1-S2-S3 - UY224 TUBES
 - S4 - UY227 TUBE
 - S5-S6 - UX245 TUBES
 - S7 - UX280 TUBE
 - S8 - SPEAKER SOCKET
 - SW1 - LOCAL-DISTANCE SWITCH
 - SW2 - ON-OFF SWITCH
 - T1 - #270V TRANS.
 - T2 - #3370 TRANS.

LEGEND FOR 25 CYCLE MODEL
SAME AS 60 CYCLE MODEL, EXCEPT
C11 - .04 MFD. COND.
C13 - 2 MFD. COND.
T2 - #337-250 TRANS.

SILVER-MARSHALL—No. 30B-60B-75B-90B
Line Voltage 115—Volume Control Position Max

TYPE OF TUBE	POSITION IN SOCKET	TIME OUT		RESISTOR VALUE IN SOCKET OF SET		TUBE IN TESTER		PLATE CURRENT (MA)	SCREEN CURRENT (MA)
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.		
5S4	1	1.5	2.5	100	100	1.5	1.5	100	100
5S5	2	1.5	2.5	100	100	1.5	1.5	100	100
5S6	3	1.5	2.5	100	100	1.5	1.5	100	100
5S7	4	1.5	2.5	100	100	1.5	1.5	100	100
5S8	5	1.5	2.5	100	100	1.5	1.5	100	100
5S9	6	1.5	2.5	100	100	1.5	1.5	100	100
5S10	7	1.5	2.5	100	100	1.5	1.5	100	100
5S11	8	1.5	2.5	100	100	1.5	1.5	100	100
5S12	9	1.5	2.5	100	100	1.5	1.5	100	100
5S13	10	1.5	2.5	100	100	1.5	1.5	100	100
5S14	11	1.5	2.5	100	100	1.5	1.5	100	100
5S15	12	1.5	2.5	100	100	1.5	1.5	100	100

(A.C.)

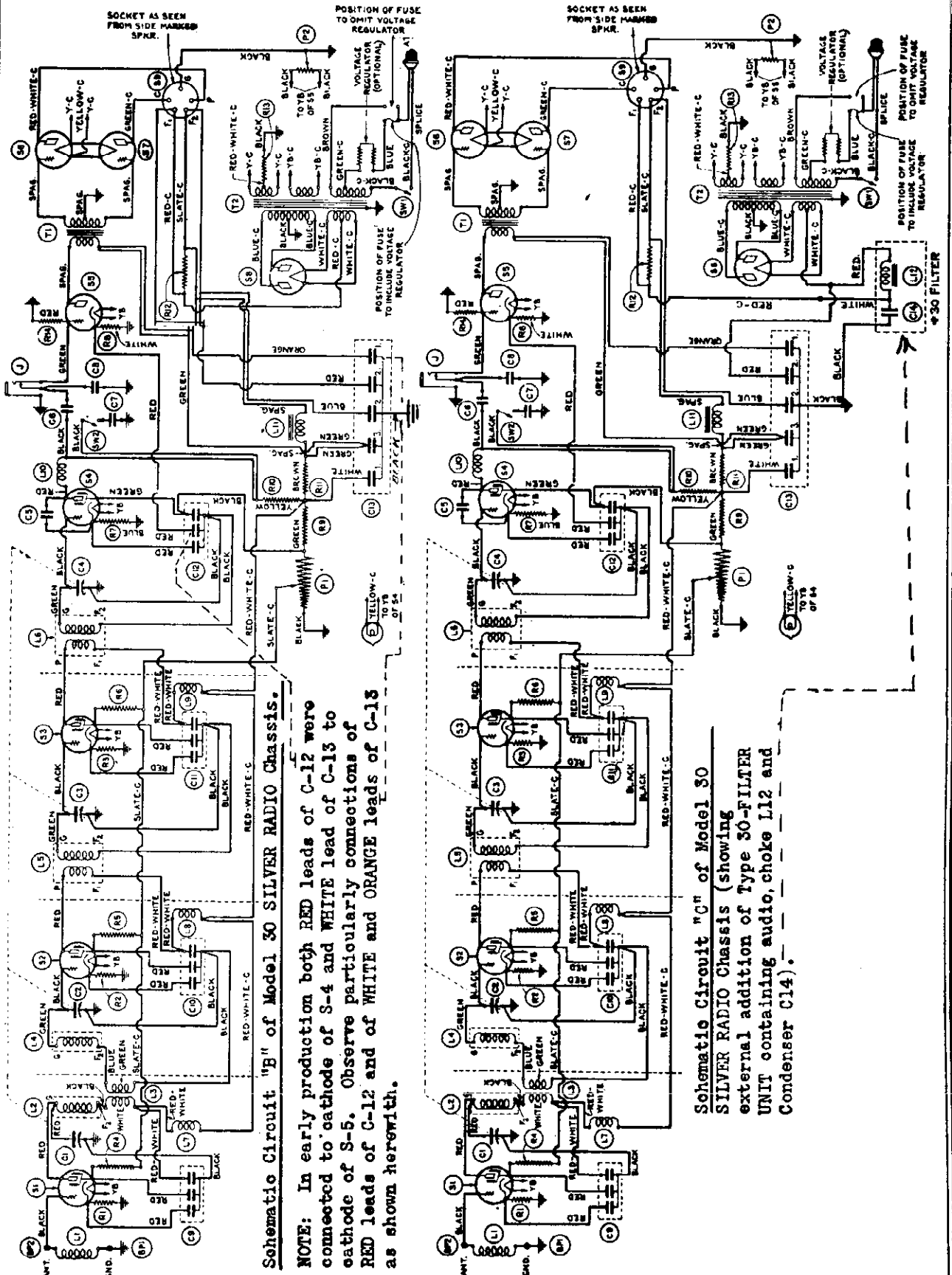
60-B, 75-B, 95-B-30B

- CX-380 Rect.
- CX-345 2nd A.F.
- CX-345 2nd A.F.
- C-327 1st A.F.
- C-324 2nd R.F.
- C-324 Det.
- C-324 1st R.F.

DOTTED CONDENSER AT SW1 REPRESENTS CAPACITY OF SWITCH AND LEADS.
NOTE - WHEN USING PHONOGRAPH JACK CONNECT LOW SIDE OF PHONOGRAPH VOLUME CONTROL TO SLEEVE OF PLUG.

SILVER - MARSHALL, INC.

MODEL 30
Schematic Circuit
Schematic Circuit



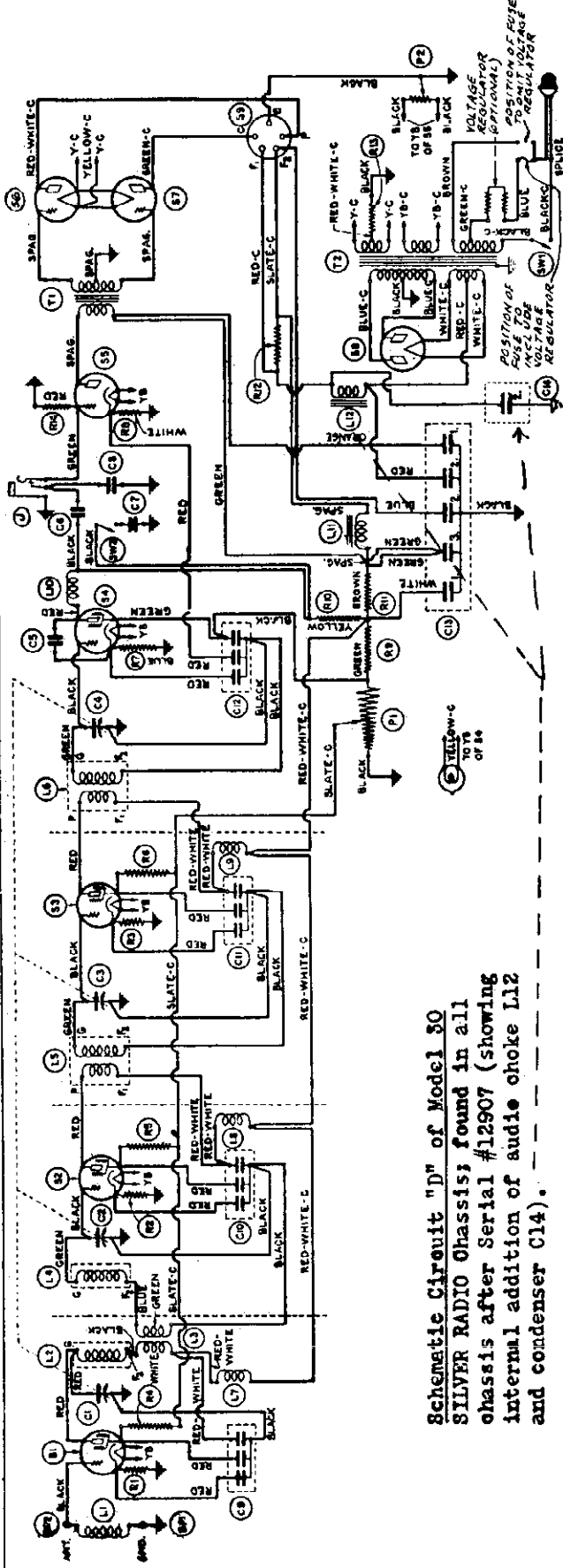
Schematic Circuit "B" of Model 30 SILVER RADIO Chassis.

NOTE: In early production both RED leads of C-12 were connected to cathode of S-4 and WHITE lead of C-13 to cathode of S-5. Observe particularly connections of RED leads of C-12 and of WHITE and ORANGE leads of C-13 as shown herewith.

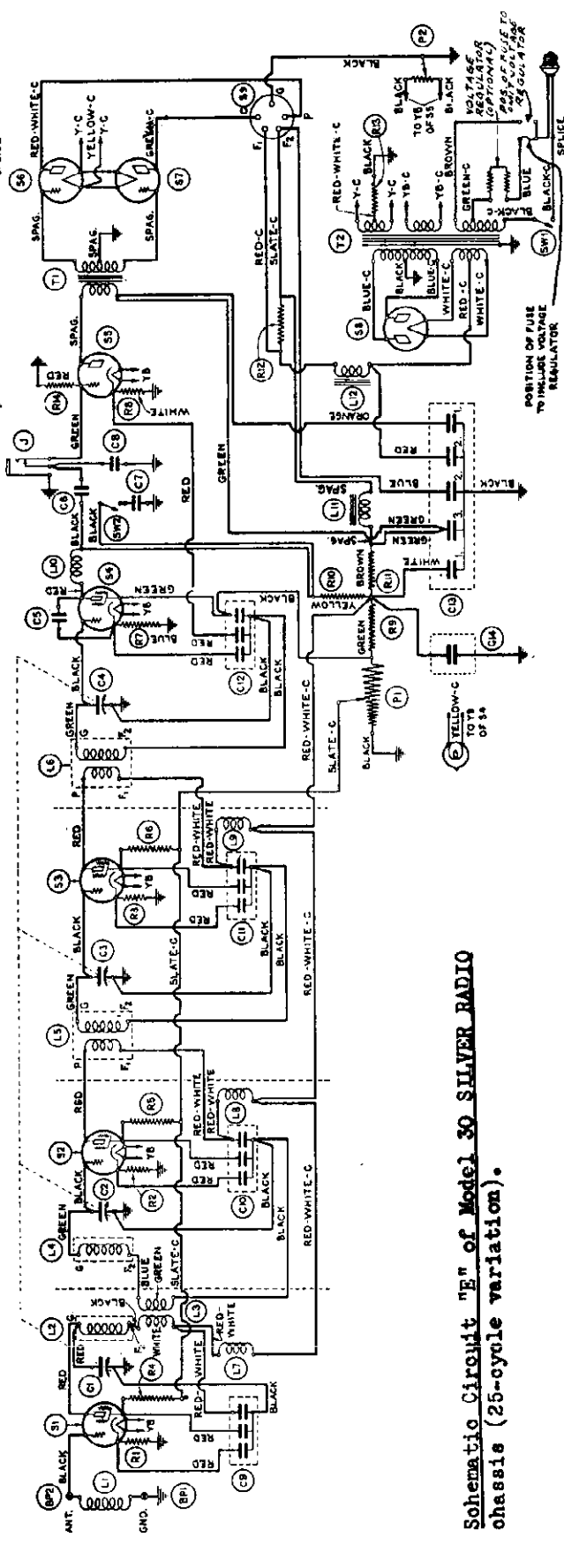
Schematic Circuit "C" of Model 30 SILVER RADIO Chassis (showing external addition of Type 30-FILTER UNIT containing audio choke L12 and Condenser C14).

MODEL 30
Schematic Circuit D
Schematic Circuit E

SILVER - MARSHALL, INC.

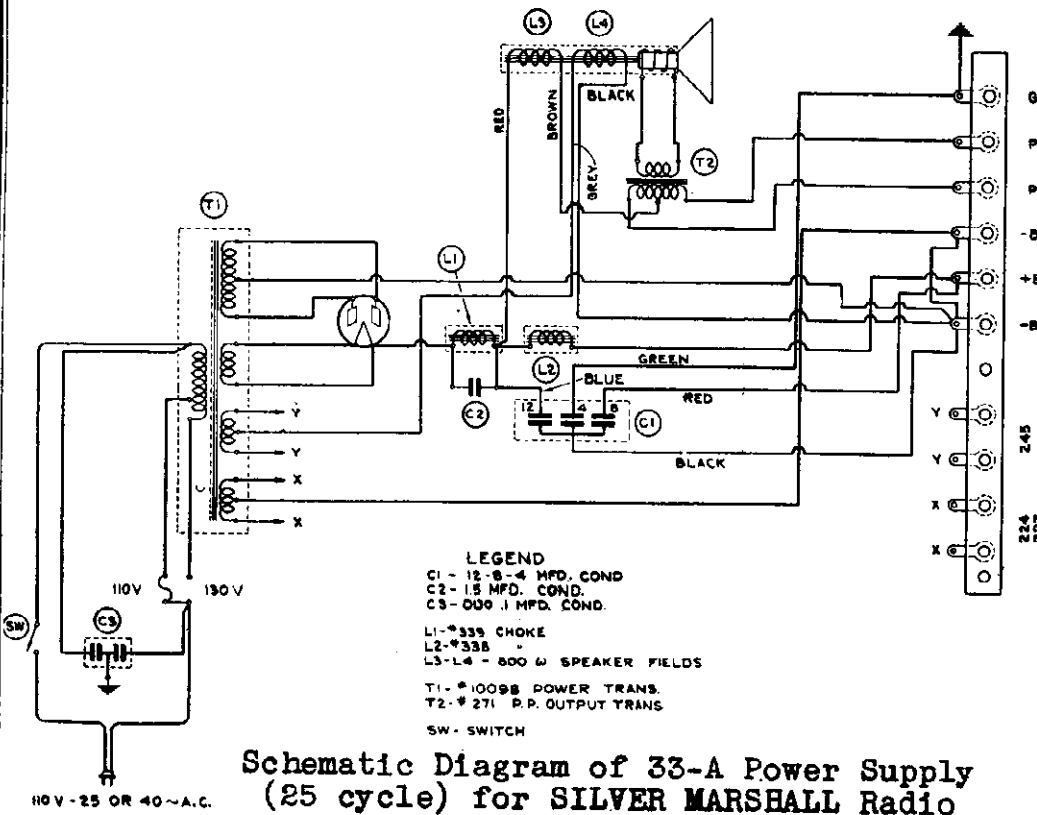


Schematic Circuit "D" of Model 30 SILVER RADIO chassis; found in all chassis after Serial #12907 (showing internal addition of audio choke L12 and condenser C14).



Schematic Circuit "E" of Model 30 SILVER RADIO chassis (25-cycle variation).

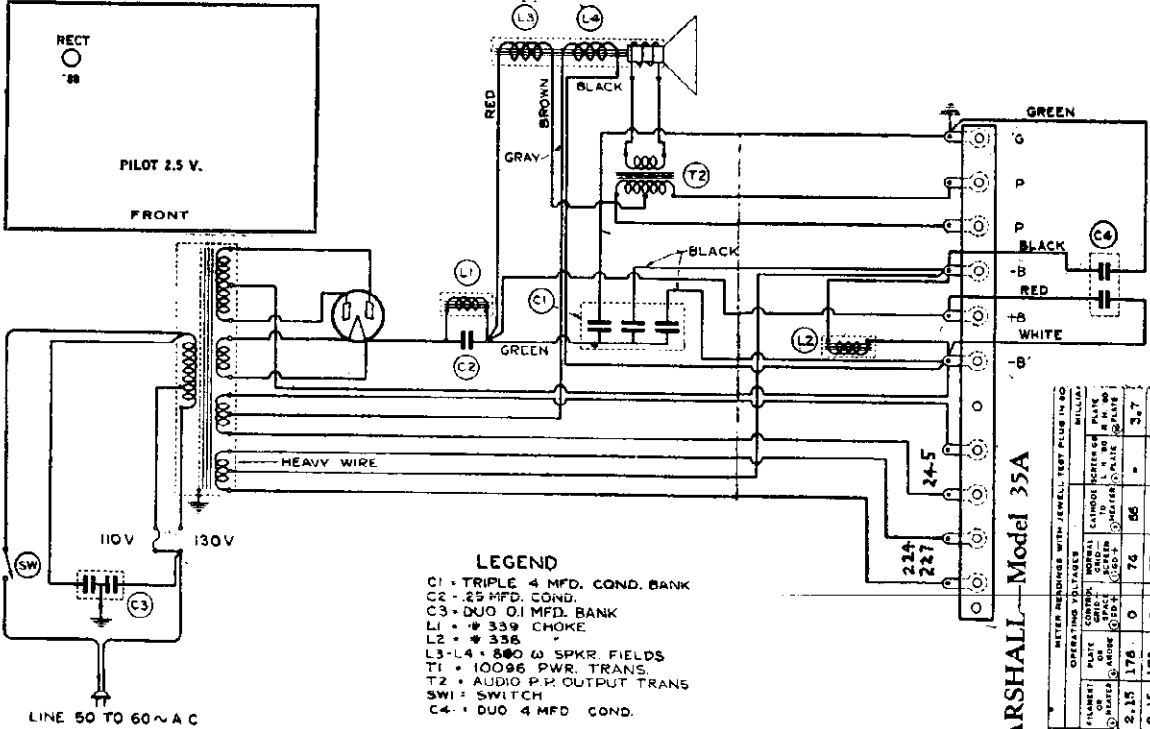
SILVER - MARSHALL, INC. MODEL 33-A Power Supply
25 and 60 cycles



- LEGEND**
 C1 - 12-8-4 MFD. COND.
 C2 - 15 MFD. COND.
 C3 - 000.1 MFD. COND.
 L1 - #339 CHOKE
 L2 - #338
 L3-L4 - 800 W SPEAKER FIELDS
 T1 - #10098 POWER TRANS.
 T2 - #271 P.P. OUTPUT TRANS.
 SW - SWITCH

Schematic Diagram of 33-A Power Supply
(25 cycle) for SILVER MARSHALL Radio
for 34A and 35A receivers

Models 32A, 33A Power Supply



- LEGEND**
 C1 - TRIPLE 4 MFD. COND. BANK
 C2 - 25 MFD. COND.
 C3 - DUO 0.1 MFD. BANK
 L1 - #339 CHOKE
 L2 - #338
 L3-L4 - 800 W SPKR. FIELDS
 T1 - #10098 PWR. TRANS.
 T2 - #271 P.P. OUTPUT TRANS.
 SW - SWITCH
 C4 - DUO 4 MFD. COND.

Schematic Diagram of 33-A Power Supply
(60 cycle) for SILVER MARSHALL Radio
for 34A and 35A receivers.

SILVER-MARSHALL—Model 34A

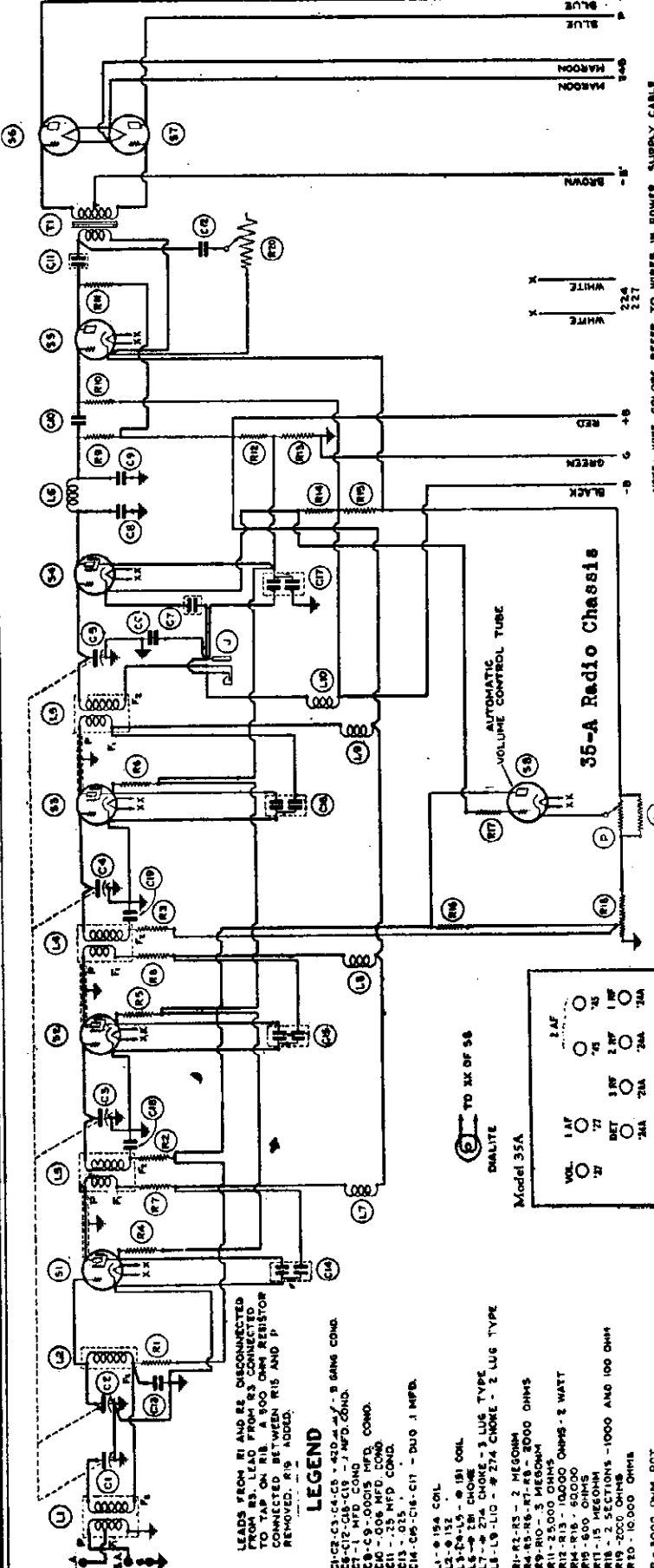
TUBE NO. IN ORDER TESTED	POSITION OF TUBE	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET	
		OPERATING CURRENT (MA)	WILLIAMPERS
1	2	3	4
224	1 R.P.	2.40	184
224	2 R.P.	2.40	165
224	Dr.C.	2.44	108
227	1 A.P.	2.46	140
245	2 A.P.	2.36	280
245	2 A.P.	2.36	280
240	Rect.	5.	-
			28 28

SILVER-MARSHALL—Model 35A

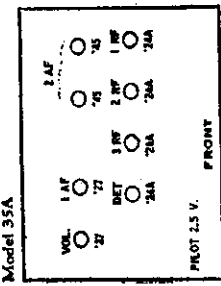
TUBE NO. IN ORDER TESTED	POSITION OF TUBE	METER READINGS WITH JEWELL TEST PLUG IN SO	
		OPERATING CURRENT (MA)	WILLIAMPERS
1	2	3	4
224	1 R.P.	2.15	176
224	2 R.P.	2.15	176
224	3 R.P.	2.17	168
224	Dr.C.	2.19	118
227	1 A.P.	2.20	176
245	2 A.P.	2.30	216
245	2 A.P.	2.30	216
240	Rect.	2.15	15
			28 28

MODEL 34-A
MODEL 35-A

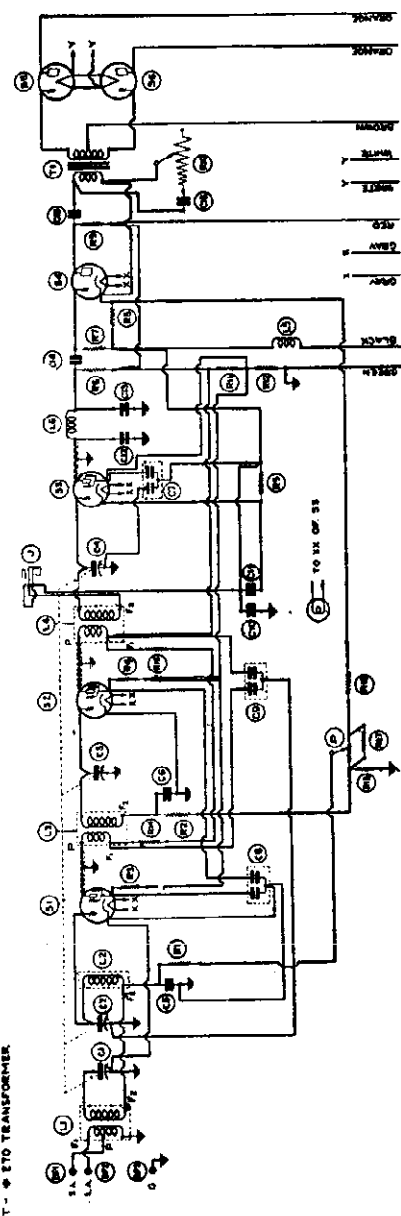
SILVER - MARSHALL, INC.



- LEADS FROM R1 AND R2 DISCONNECTED FROM 35-A R10 FROM 35-A 500 OHM RESISTOR CONNECTED BETWEEN R15 AND P. REMOVED. R1'S ADDED.
- LEGEND**
- ELC-C1-C4-C5 - 500 μ F - 5 BENS COND.
 - CR-C12-C13-C18 - 7 MFD. COND.
 - CT-1 - 1 MFD. COND.
 - CR-C9 - 0.00015 MFD. COND.
 - CR-C10 - 0.006 MFD. COND.
 - C11 - 0.01 MFD. COND.
 - C14-C6-C8-C11 - DUG 1 MFD.
 - L1 - 0.154 COIL
 - L2 - 0.152 " 181 COIL
 - L3-L6-L7 - 270 CHOKES
 - L7 - 270 CHOKES - 3 LUG TYPE
 - L8-L9-L10 - 274 CHOKES - 2 LUG TYPE
 - R1-R2-R3 - 2 MEGOHMS
 - R4-R5 - 2 MEGOHMS
 - R6-R10 - 3 MEGOHMS
 - R11 - 25,000 OHMS
 - R12-R13 - 10,000 OHMS - 2 WATT
 - R4-R18 - 50,000 OHMS
 - R19 - 500 OHMS
 - R15 - 2 SECTIONS - 1000 AND 100 OHMS
 - R19 - 2000 OHMS
 - REO - 10,000 OHMS
 - P - 3000 OHM POT.
 - S1-S2-S3-S4 - UV 234
 - S5-S6 - UV 227
 - S6-S7 - UV 245
 - T - ETO TRANSFORMER

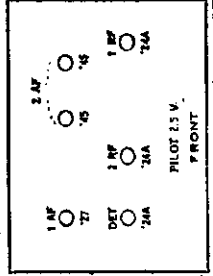


For Voltage Data See Index



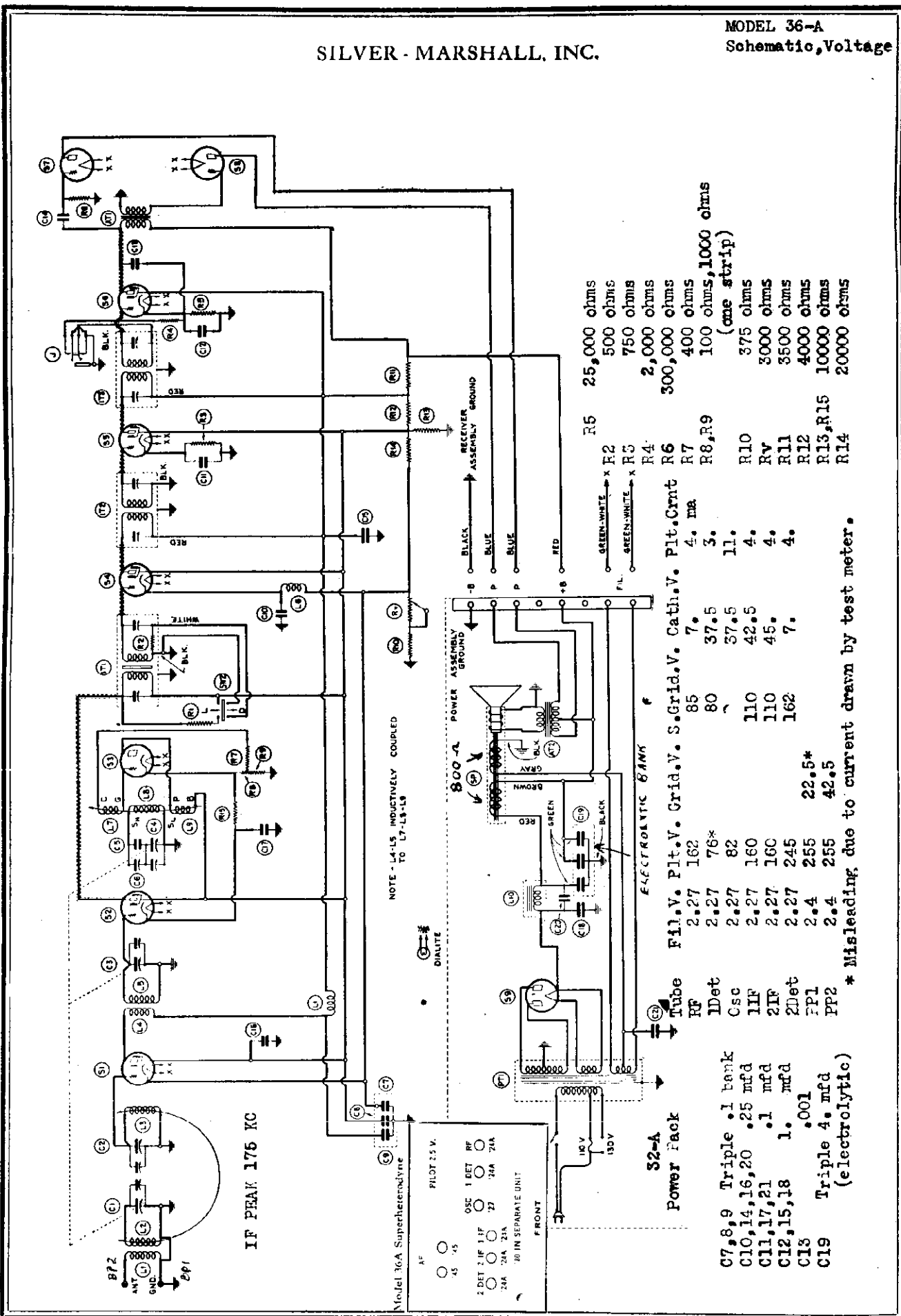
Model 34-A Radio Chassis

- LEGEND**
- L1 - 0.181 COIL
 - L2 - 0.181 " 181 COIL
 - L3-L4-L5 - US CR CHOKES L1-L22 OHMS
 - C1-C2-C3-C4 - 400 OHM WALE (NORMAL)
 - CR-C6 - 0.01 MFD. COND.
 - C11 - 10 μ F COND.
 - C12-C13 - 100 OHM WALE
 - CR-C8 - 25 μ F COND. C14 - 0.05
 - REO - 10,000 OHMS
 - R1 - 10,000 OHMS
 - R2 - 10,000 OHMS
 - R3 - 10,000 OHMS
 - R4 - 10,000 OHMS
 - R5 - 10,000 OHMS
 - R6-R7 - 10,000 OHMS
 - R8 - 10,000 OHMS
 - R9 - 10,000 OHMS
 - R10 - 10,000 OHMS
 - R11 - 10,000 OHMS
 - R12 - 10,000 OHMS
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 - R100 - 10,000 OHMS



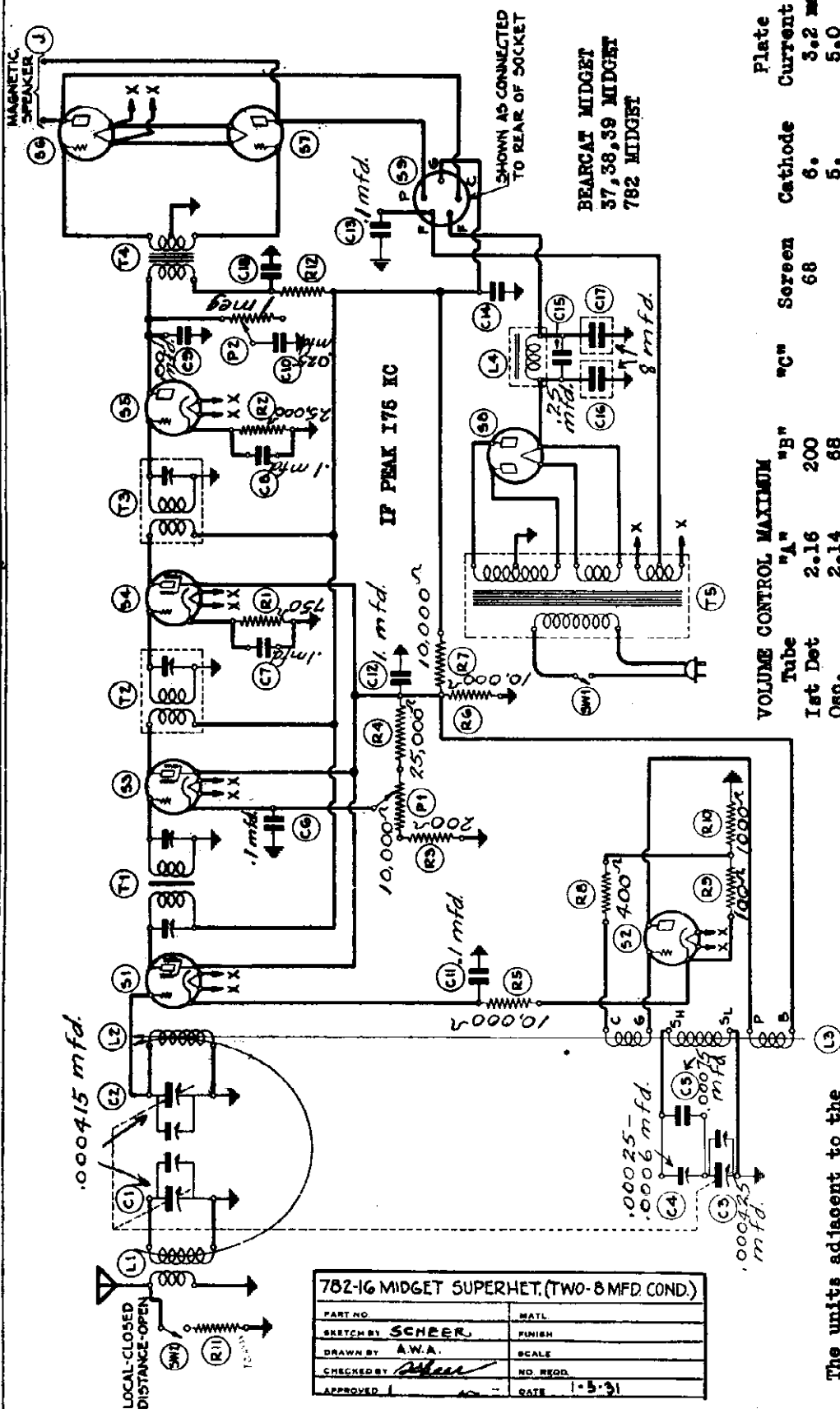
SILVER - MARSHALL, INC.

MODEL 36-A
Schematic, Voltage



MODEL Bearcat Midget
 MODEL 37, 38, 39 Midget
 MODEL 782 Midget

SILVER - MARSHALL, INC.



BEARCAT MIDGET
 37, 38, 39 MIDGET
 782 MIDGET

Tube	"A"	"B"	"C"	Screen	Cathode	Plate Current
Ist Det	2.16	200		68	6.	3.2 ma
Osc.	2.14	68			5.	5.0
Ist IF	2.18	200		68	1.6	5.7
2nd IF	2.19	200		68	2.3	5.6
2nd Det	2.20	200			20.	0.8
AF PF	2.25	245	47			29.0
AF PF	2.25	245	47			29.0
Rect.	5.1	400				Volts A.C. per anode

VOLUME CONTROL MAXIMUM

The units adjacent to the shielded IF and 2nd det. tubes are the IF transformers, with the 1st det. next to the 1st IF tube. The tuning condenser section most distant from the dial tunes the osc.

782-16 MIDGET SUPERHET. (TWO-8 MFD COND.)

PART NO.	MATL.
SKETCH BY SCHEER	FINISH
DRAWN BY A.W.A.	SCALE
CHECKED BY <i>[Signature]</i>	NO. RECD.
APPROVED <i>[Signature]</i>	DATE 1-5-31

.000415 mfd.

.00025-
.0006 mfd.

.00025
mfd.

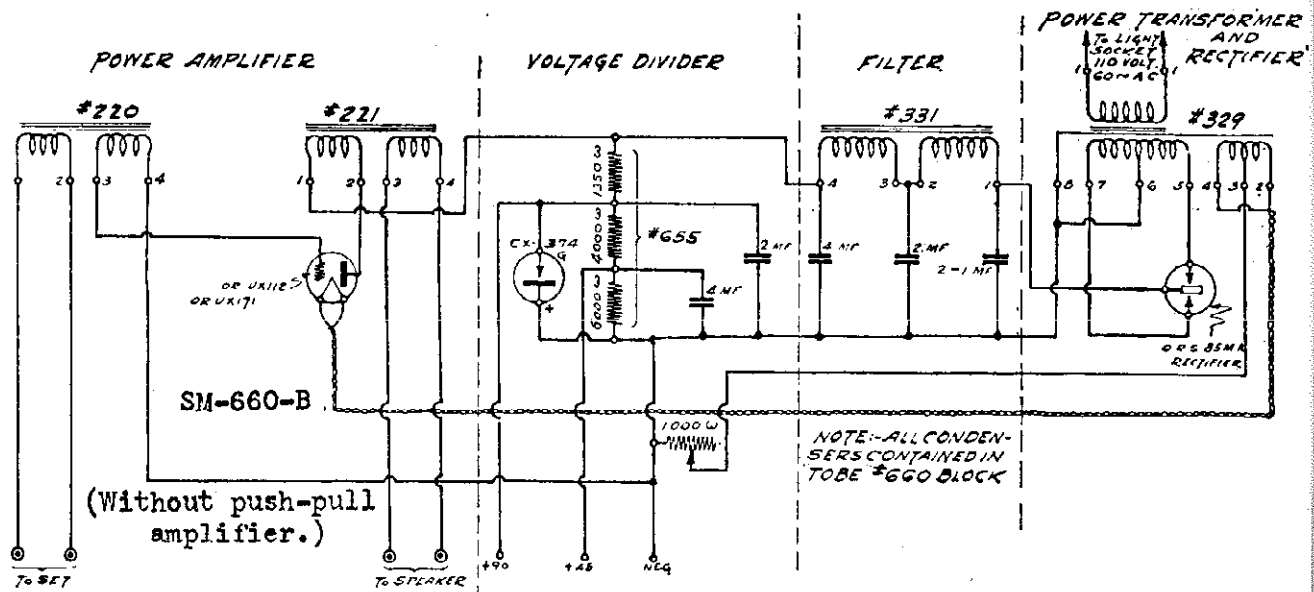
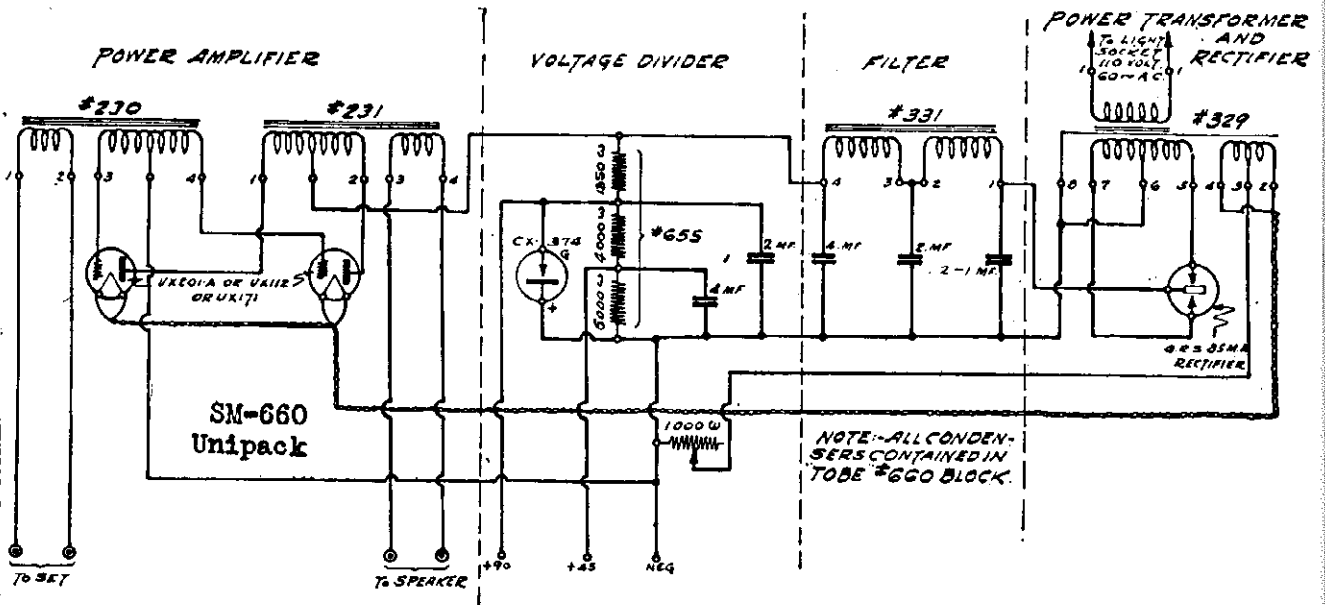
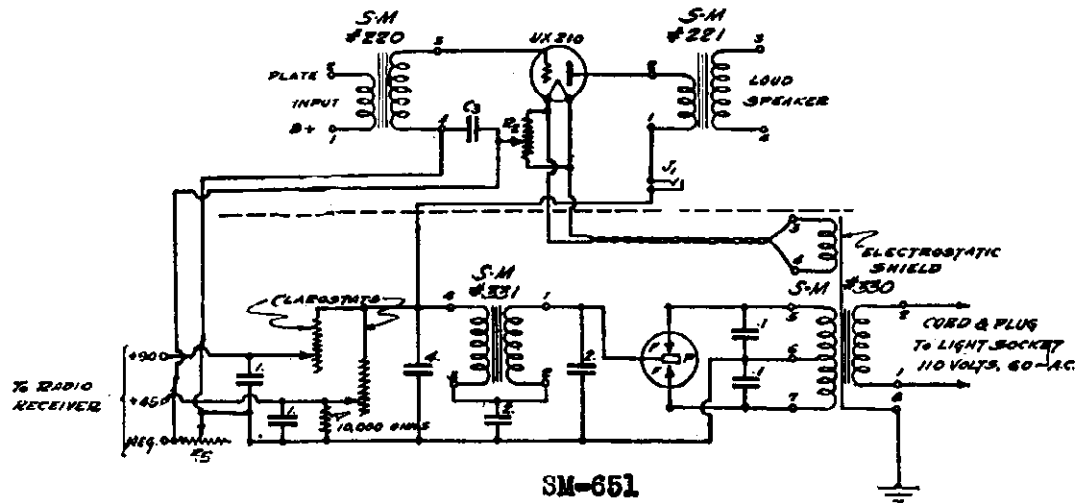
MAGNETIC SPEAKER

SHOWN AS CONNECTED TO REAR OF SOCKET

LOCAL-CLOSED
DISTANCE-OPEN

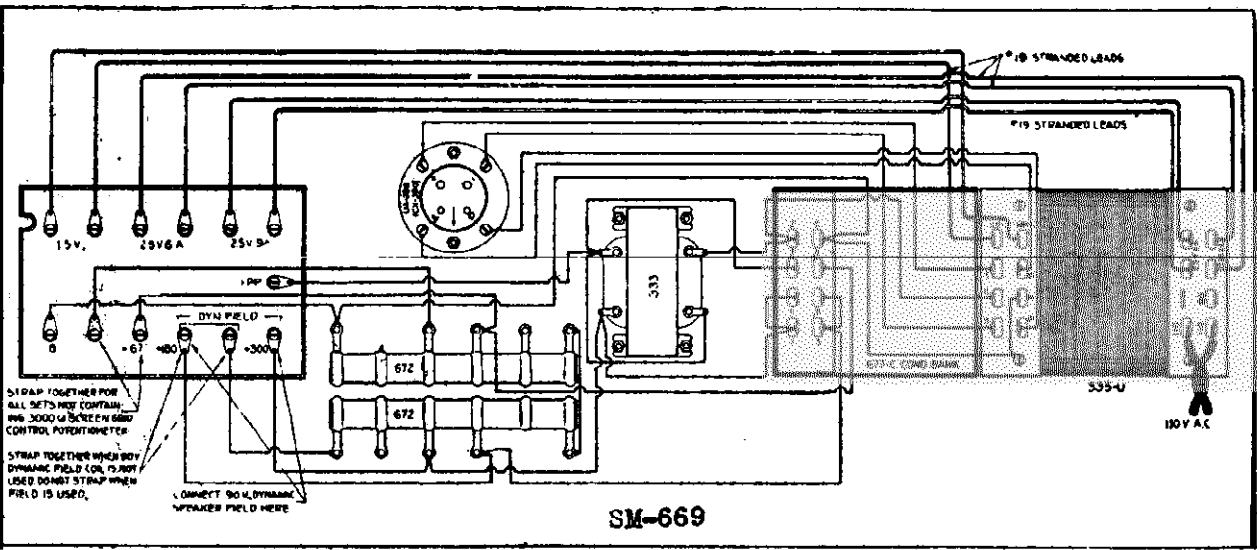
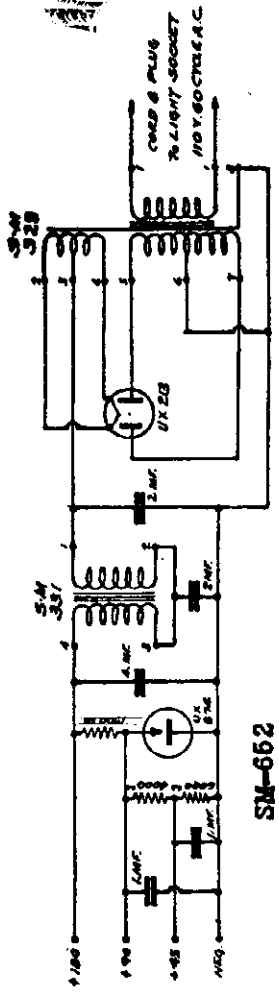
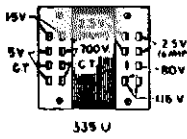
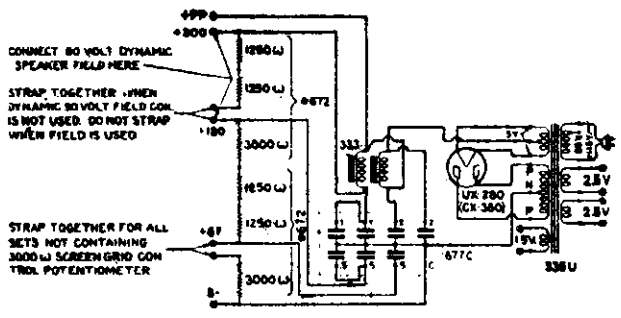
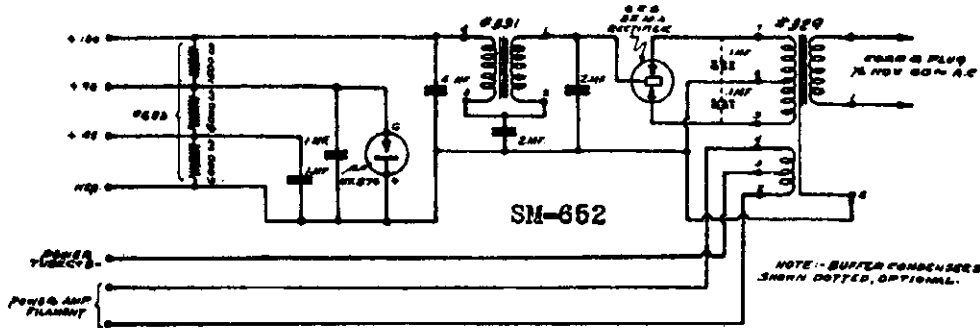
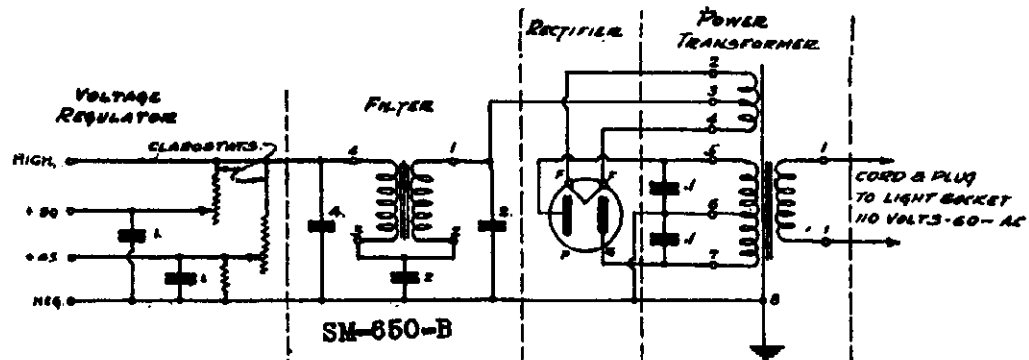
SILVER - MARSHALL, INC.

MODEL 651
 MODEL 660 Unipack
 MODEL 660-B



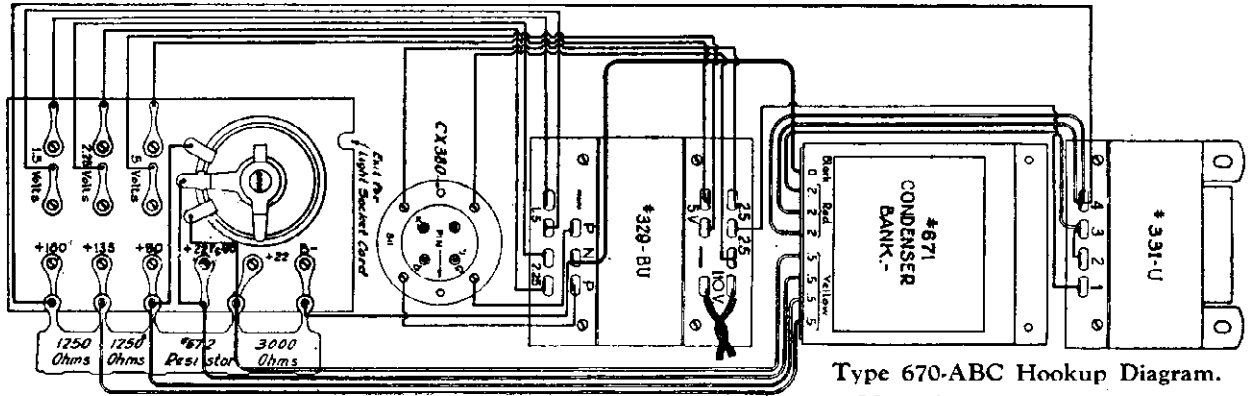
MODEL 650-B
 MODEL 652
 MODEL 669

SILVER - MARSHALL, INC.

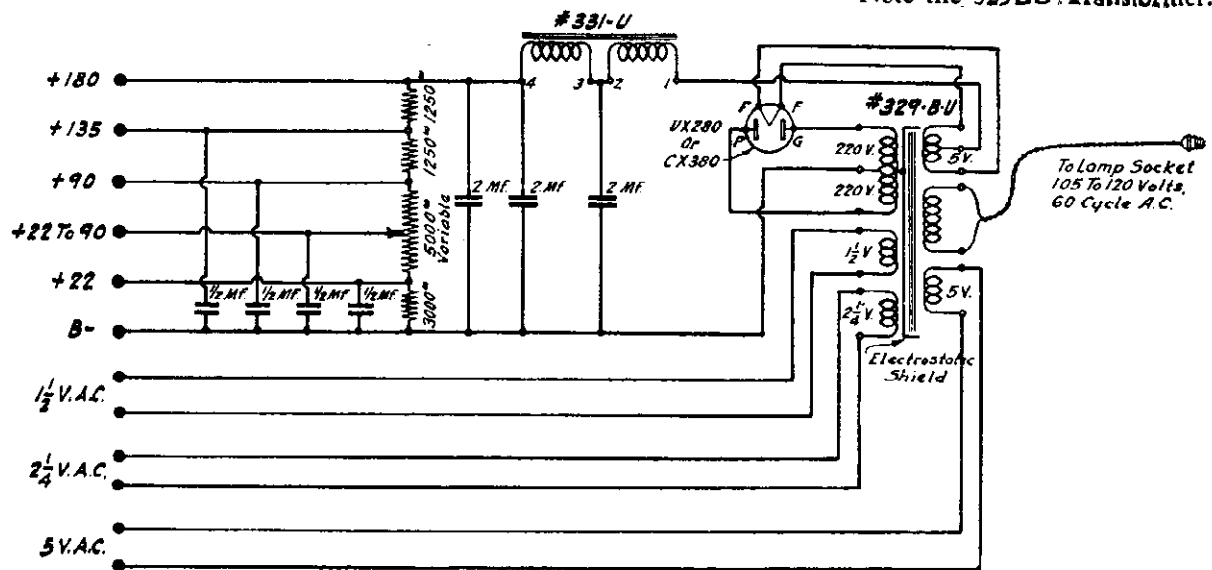


SILVER - MARSHALL, INC.

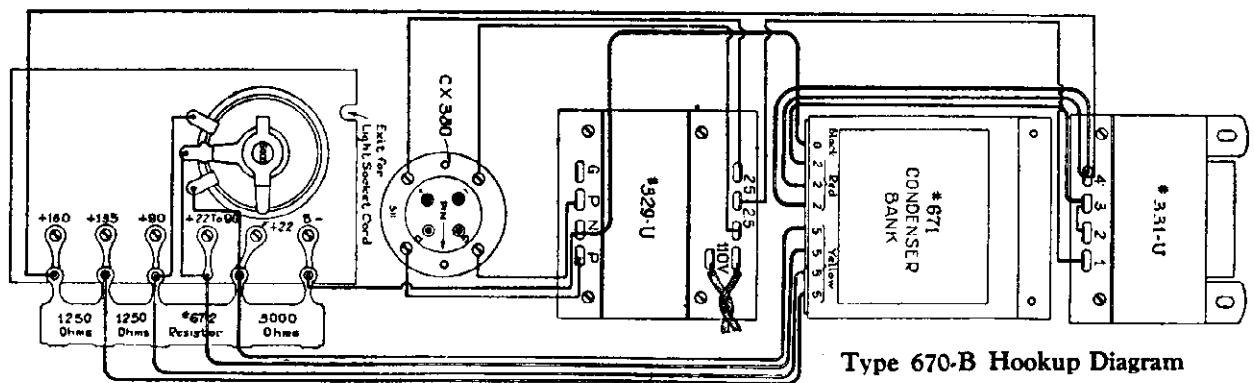
MODEL 670-ABC
MODEL 670-B
Schematic, Chassis



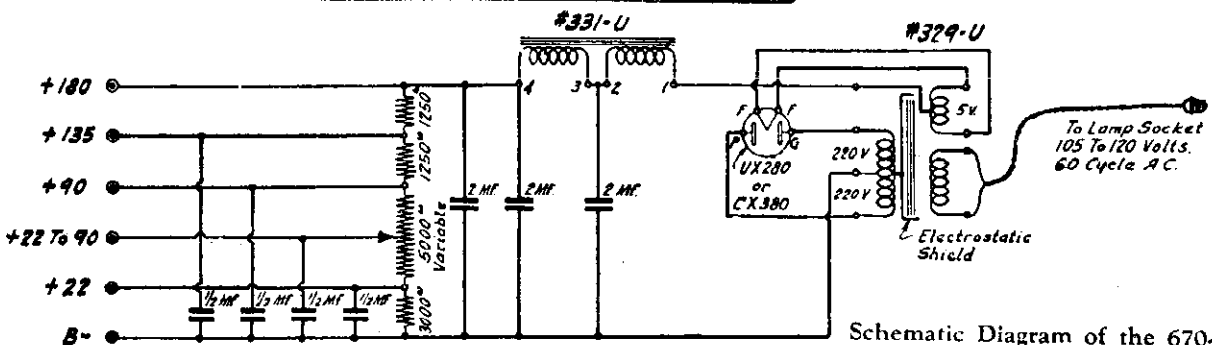
Type 670-ABC Hookup Diagram.
Note the 329BU Transformer.



Schematic Diagram of the 670-ABC



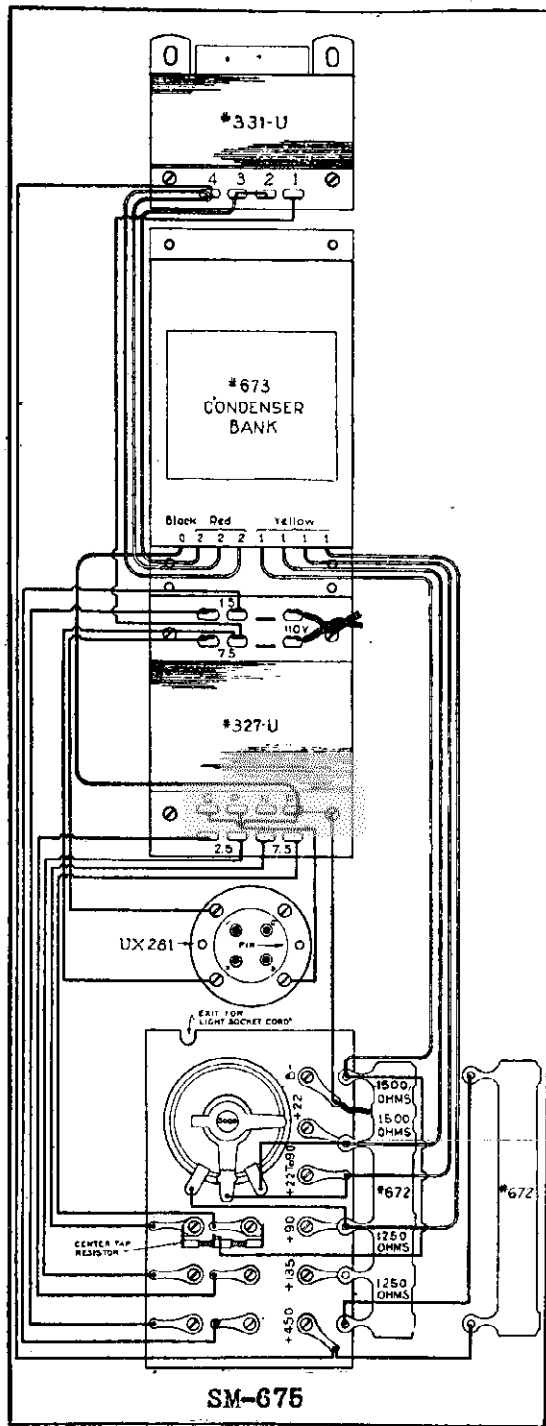
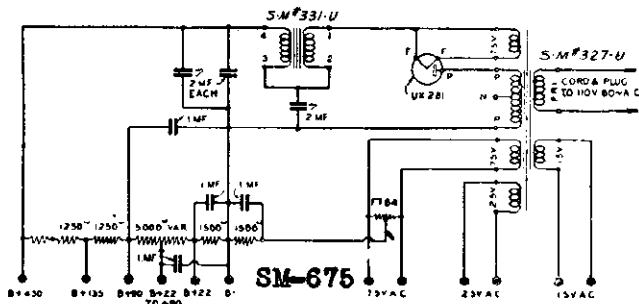
Type 670-B Hookup Diagram



Schematic Diagram of the 670-B

MODEL 675
Schematic
Chassis, Voltage

SILVER - MARSHALL, INC.

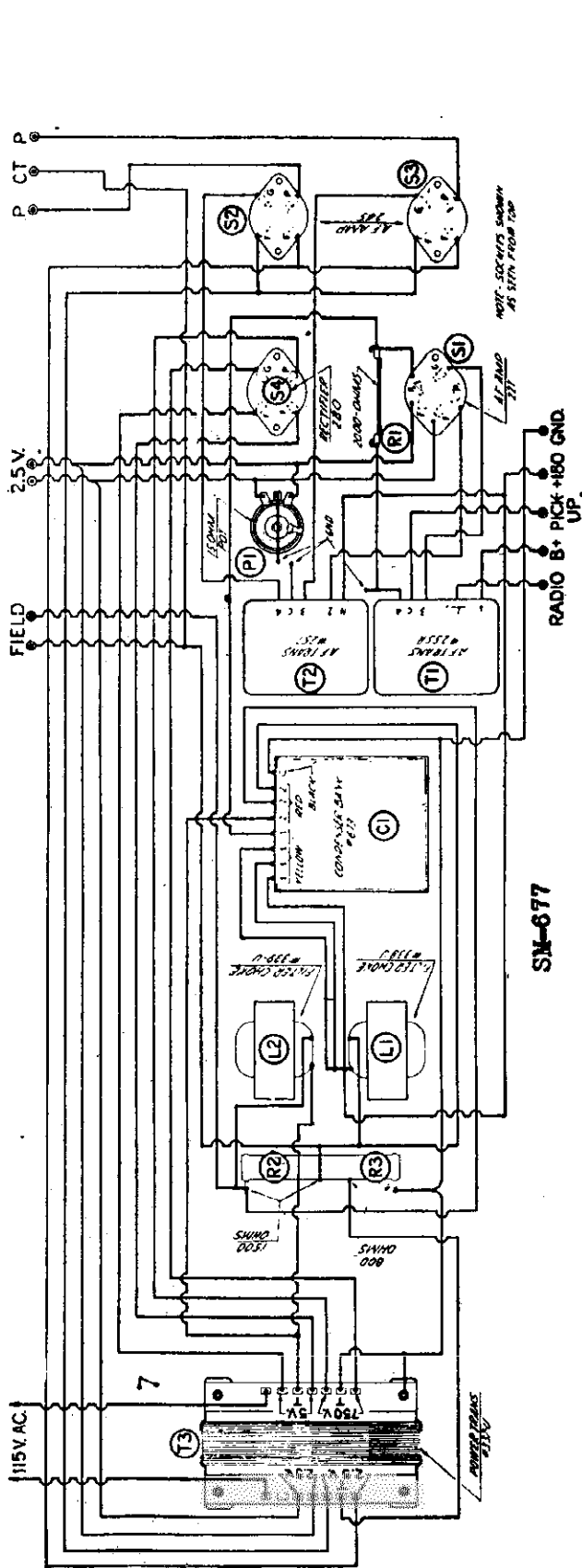


Type No.	Code Word	Secondary		Rectifier Tube	Filament Windings						Tubes (or Equivalent) Will Operate	Size, Inches			Shps. Wt., Lbs.	List Price
		Total Volts	M.A.		Volts	Amperes	Volts	Amperes	Volts	Amperes		High	Wide	Long		
328BU	Transall	1100	150	2-81	7½	2.5	2½	2	1½	2	2-50, 2-26, 1-27	4½	5½	4½	16½	\$25.00
337U*	Transaal	750	110	1-80	2½	9	2½	3	...	...	2-45, 5-24 or '27	4½	5½	4	12	16.00
33725U*	Transmute	750	110	1-80	2½	9	2½	3	...	...	2-45, 5-24 or '27	4½	5½	4	13	20.00
346	Transone	820	100	1-80	2½	10					5-24, 1-27, 2-45	4½	6½	4	13	15.00
3462S	Transax	820	100	1-80	2½	10					5-24, 1-27, 2-45	4½	6½	4	14	20.00
329BU	Transmount	440	85	1-80	5	2	2½	3.5	1½	5		4½	4½	4½	5	10.00
334	Transflow	300	50	1-80	...						120-volt speaker field	3½	2½	3½	2	7.00
336U	Transut	520	85	1-80	2½	3	2½	7.5	1½	4	2-45, 4-26, 4-24 or -27	4½	3½	3½	5	10.00
285	Transor	336	40	1-26	2½	3½	...	...	...	...	2-27 or '24	3½	3½	2½	3	7.00
2852S	Transcycle	338	40	1-26	2½	3½	...	...	...	...	2-27 or 24	3½	3½	3½	...	9.50
247	Transform	Filament only			1½	5	2½	3.5	5	1	2-27, 5-26, 2-27	3½	2½	2½	2½	5.00
249	Transfull	Filament only			2½	9	2½	3	...	...	2-45, 5-24 or '27	3½	2½	2½	2½	5.00
325**	Transduce	Special line voltage reducing transformer													7½	15.00

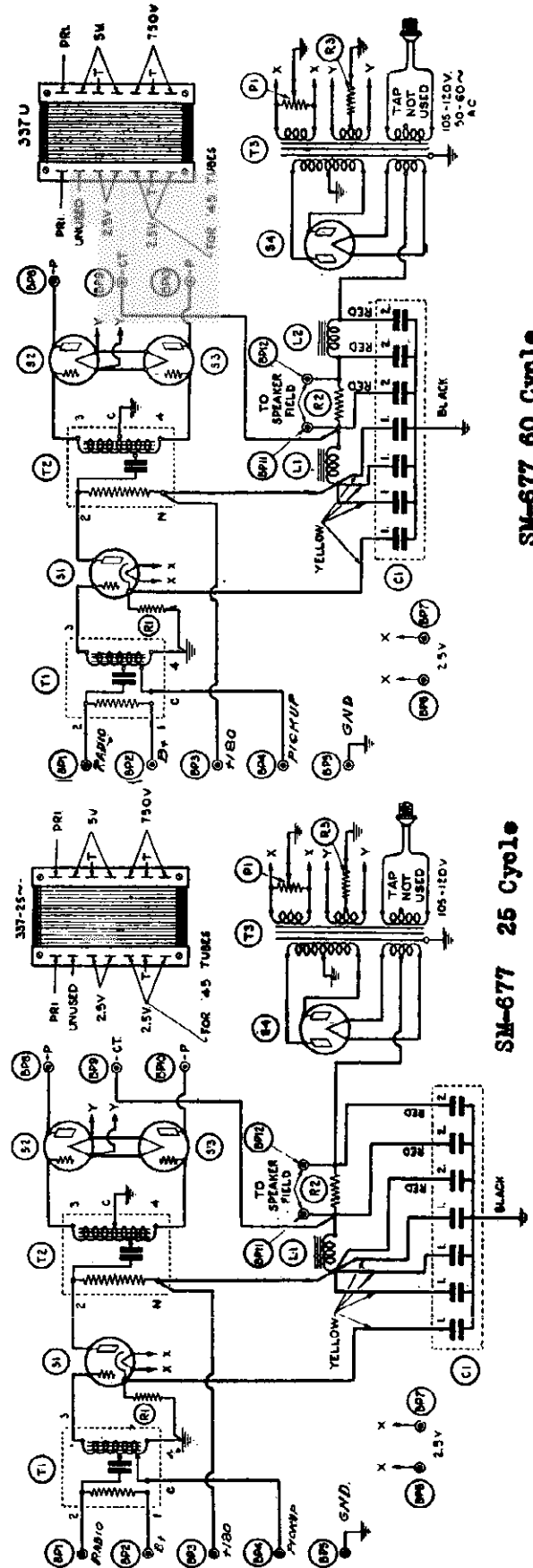
**26 line voltage reducing transformer is intended to reduce line voltages varying from 200 to 250 volts to 110 volts for the operation of 110 volt, 50 to 60 cycle receivers of amplifiers of up to 150 watt rating, or it may also be reversed and employed to step up a 110 volt line to 220 to 250 volts.
*Equipped with 80 volt primary tap for use with automatic voltage regulating device.

MODEL 677
25 and 60 cycles
Schematic, Chassis

SILVER - MARSHALL, INC.



SM-677

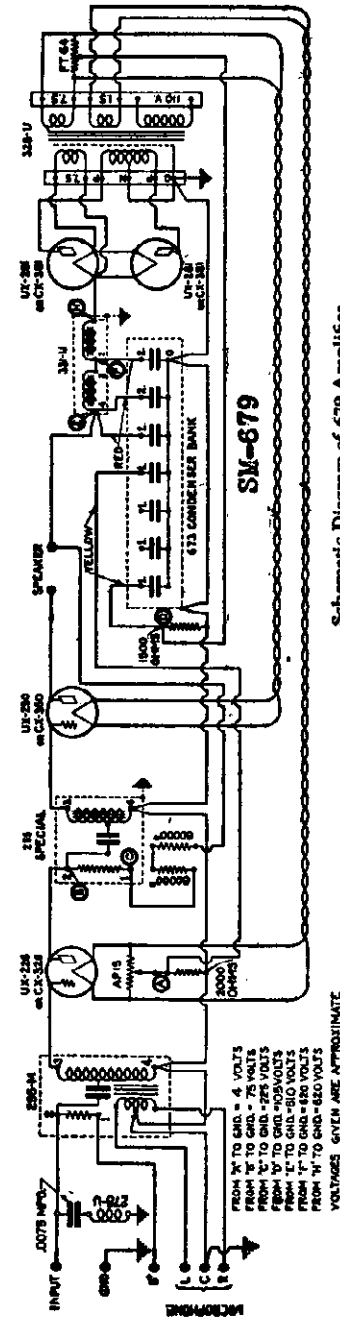
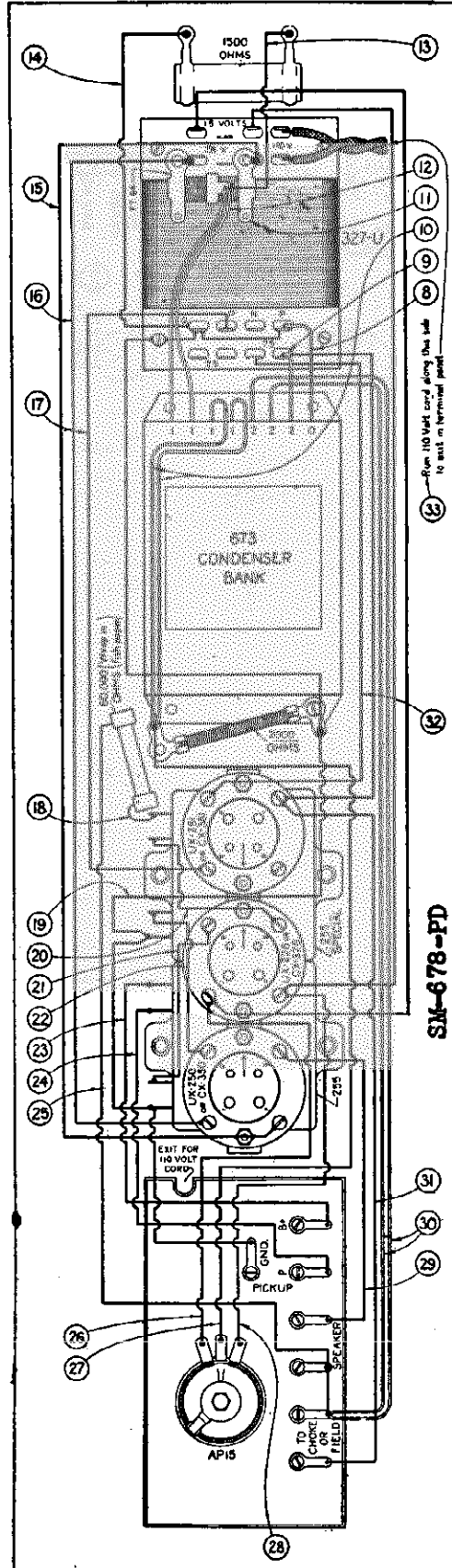
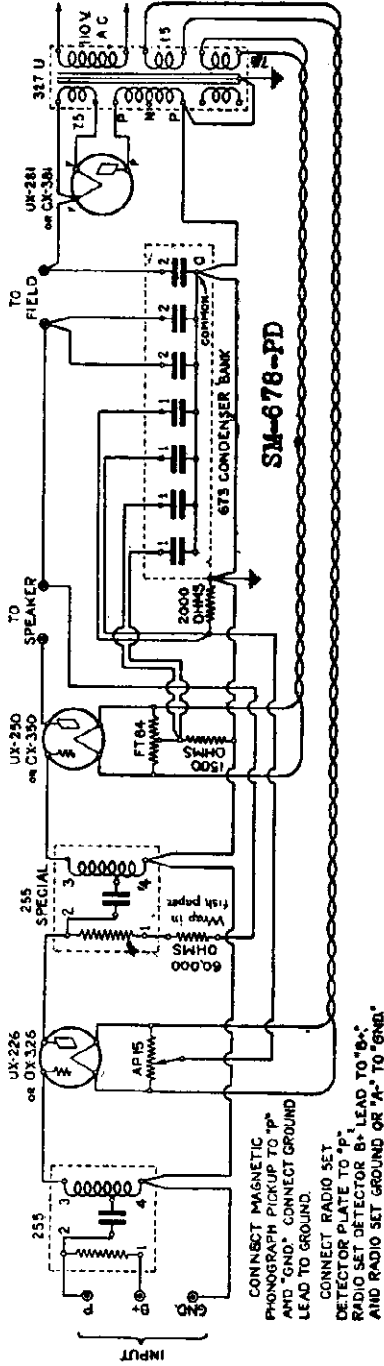


SM-677 60 Cycle

SM-677 25 Cycle

SILVER - MARSHALL, INC.

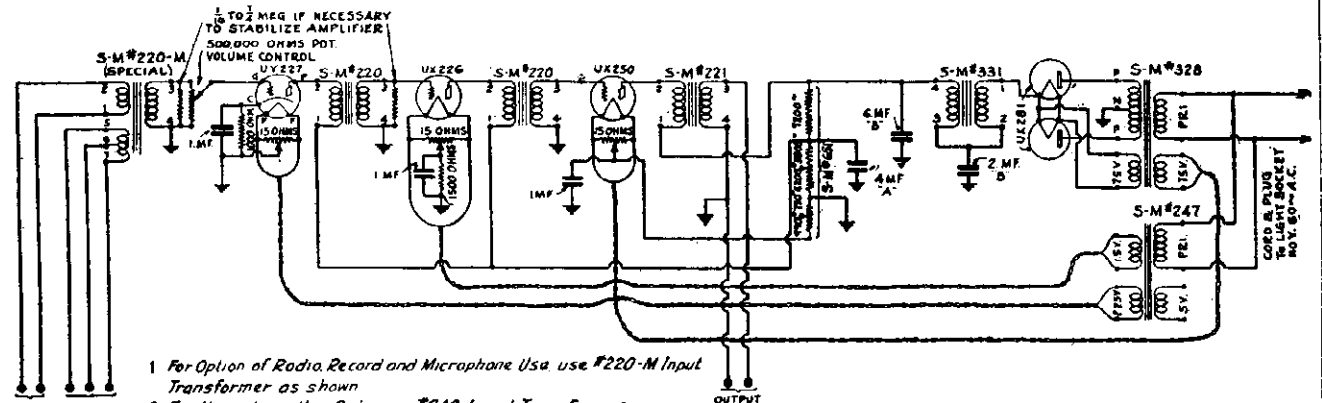
MODEL 678-PD
Schematic, Chassis
MODEL 679



Schematic Diagram of 679 Amplifier

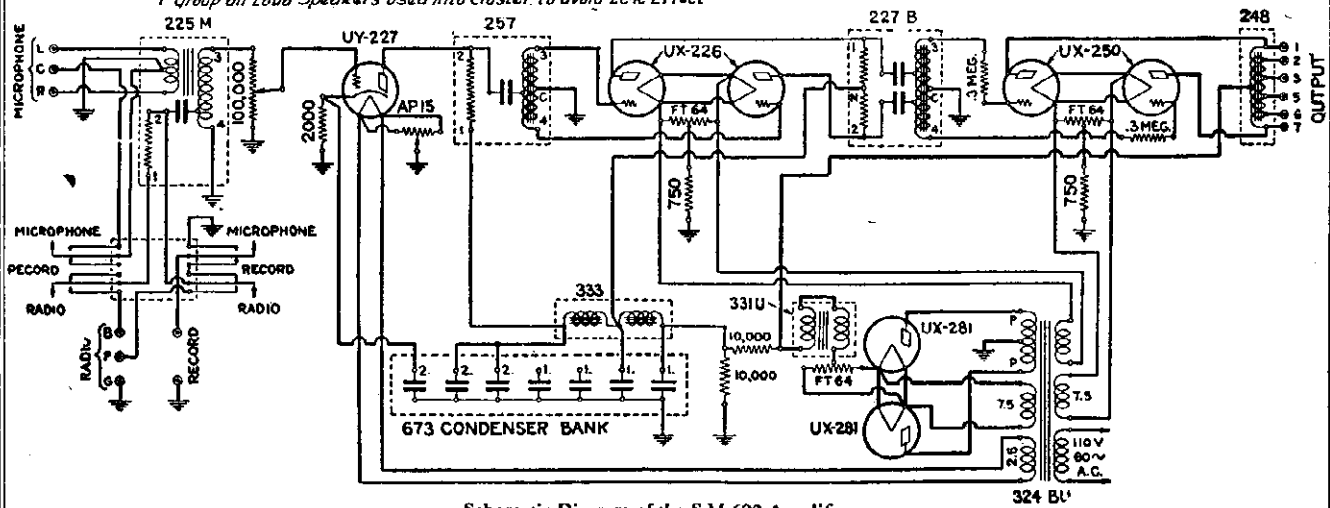
SILVER - MARSHALL, INC.

MODEL 685
MODEL 690
MODEL 692

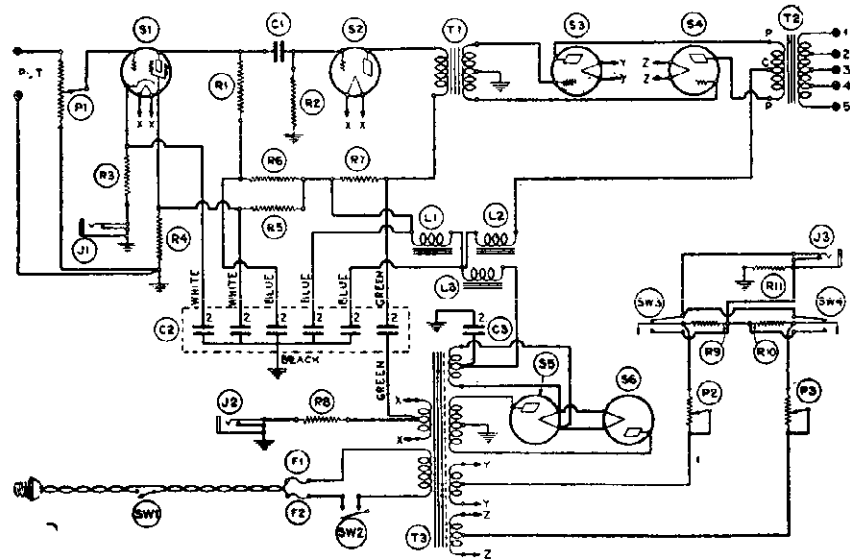


- 1 For Option of Radio, Record and Microphone Use, use #220-M Input Transformer as shown
- 2 For Microphone Use Only, use #242 Input Transformer
- 3 For Radio Use Only, use #220 Input Transformer
- 4 For Record-Pickup Use Only, Omit Input Transformer and Connect Record Pickup in place of Input Transformer. Secondary directly to Ends of 500,000 Ohm Volume-Control Potentiometer
- 5 When Using Microphone (Single or Double-Button Type Optional) keep well away from Loud Speakers to avoid "Singing"
- 6 Use 3 to 4½ Volts of Dry Battery for Microphone
- 7 Group all Loud Speakers Used into Cluster to avoid "Echo Effect"

Model 685



Schematic Diagram of the S-M 690 Amplifier

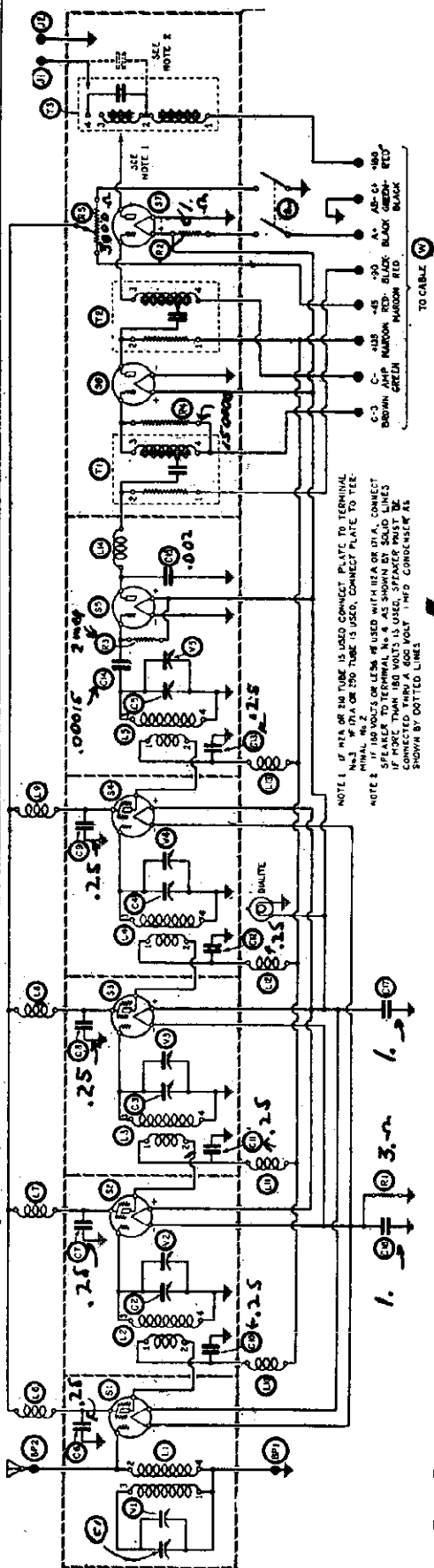


Model 692

- P1 No. 4491—Potentiometer
- P2 No. 4490—Potentiometer
- P3 No. 4490—Potentiometer
- R1 No. 4772—Resistor
- R2 No. 4700—Resistor
- R3 No. 4730—Resistor
- R4 No. 4771—Resistor
- R5 No. 4685—Resistor
- R6 No. 4698—Resistor
- R7 No. 4726—Resistor
- R8 No. 4689—Resistor
- R9 No. 4723—Resistor
- R11 No. 4776—Resistor

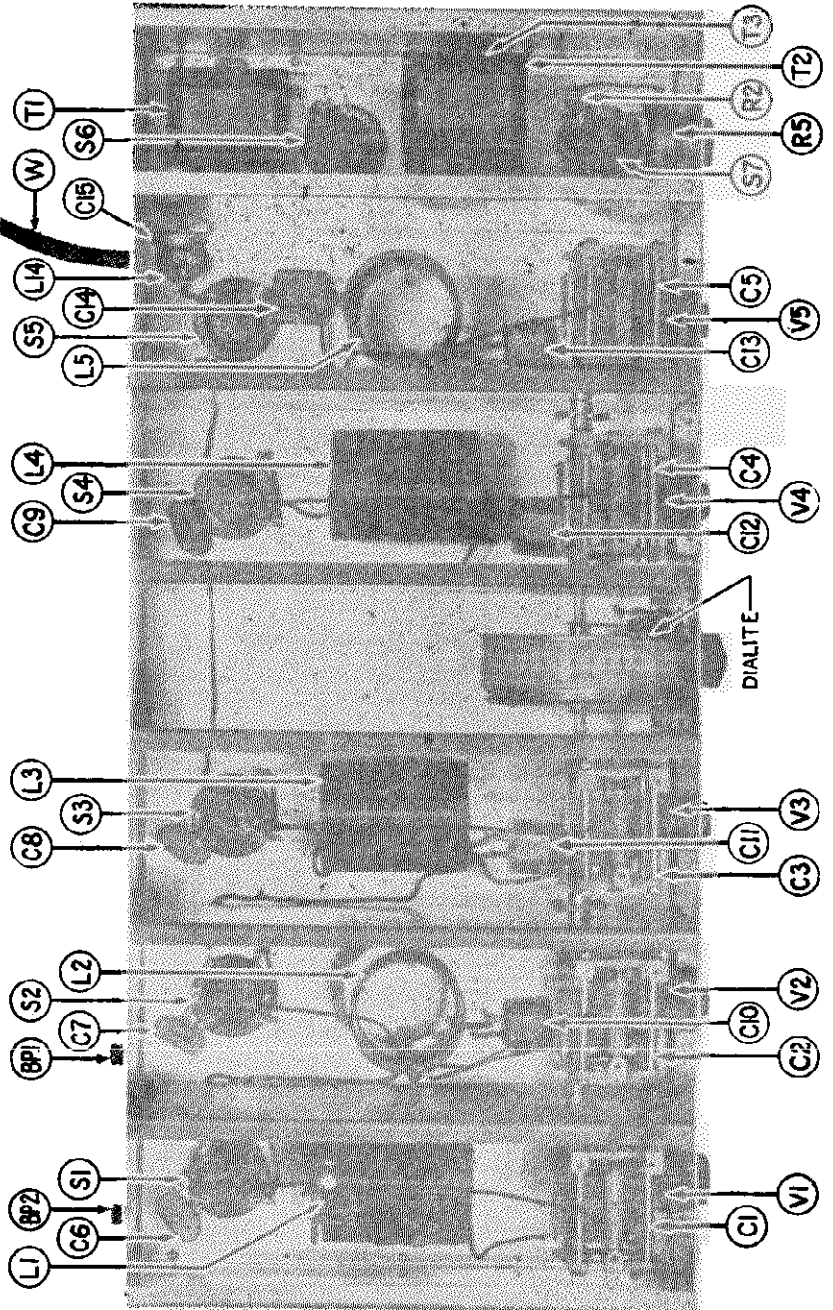
MODEL 710
Sargent-Raymond Seven
Schematic, Chassis

SILVER - MARSHALL, INC.



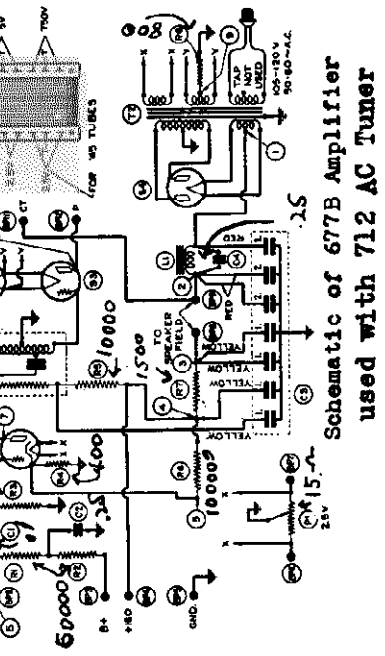
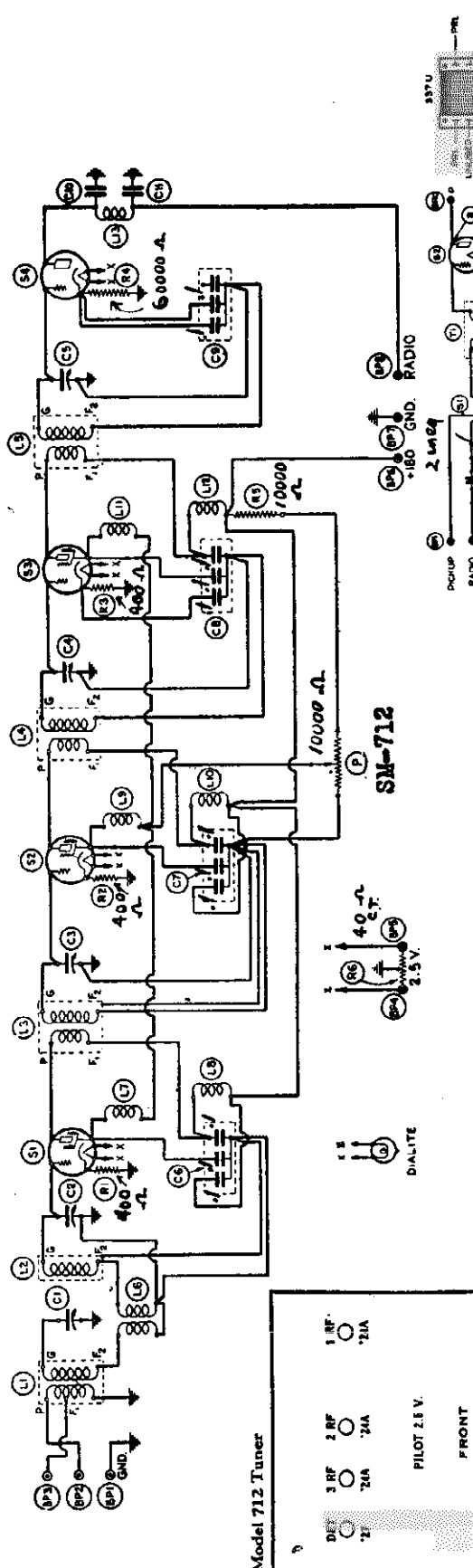
NOTE 1: IF WTA OR 2A5 TUBE IS USED, CONNECT PLATE TO TERMINAL No. 3. IF 2A5 OR 2A5 TUBE IS USED, CONNECT PLATE TO TEE. FINAL No. 2, 3, 4, 5, OR 6, AS SHOWN IN THIS SCHEMATIC, CONNECT SPEAKER TO TERMINAL No. 4 AS SHOWN BY SOLID LINES. IF MORE THAN 100 VOLTS IS USED, SPEAKER MUST BE CONNECTED THROUGH A 600 VOLT 1/2 HP CONDENSER AS SHOWN BY DOTTED LINES.

- L1 141 antenna coil
- L2-L3-L4-L5 142 RF transformer coils
- C1-C2-C3-C4 320R variable condensers, .00035 mfd.
- C5
- V1-V2-V3-V4 340 midget condensers, .000025 mfd.
- V5
- L6-L7-L8-L9- 275 RF chokes
- L10-L11-
- L12-L13-
- L14
- S1-S2-S3-S4- 511 tube sockets
- S5-S6-S7
- T1 255 first stage AF transformer
- T2 256 second stage AF transformer
- T3 251 output transformer
- W 708 ten lead battery cable



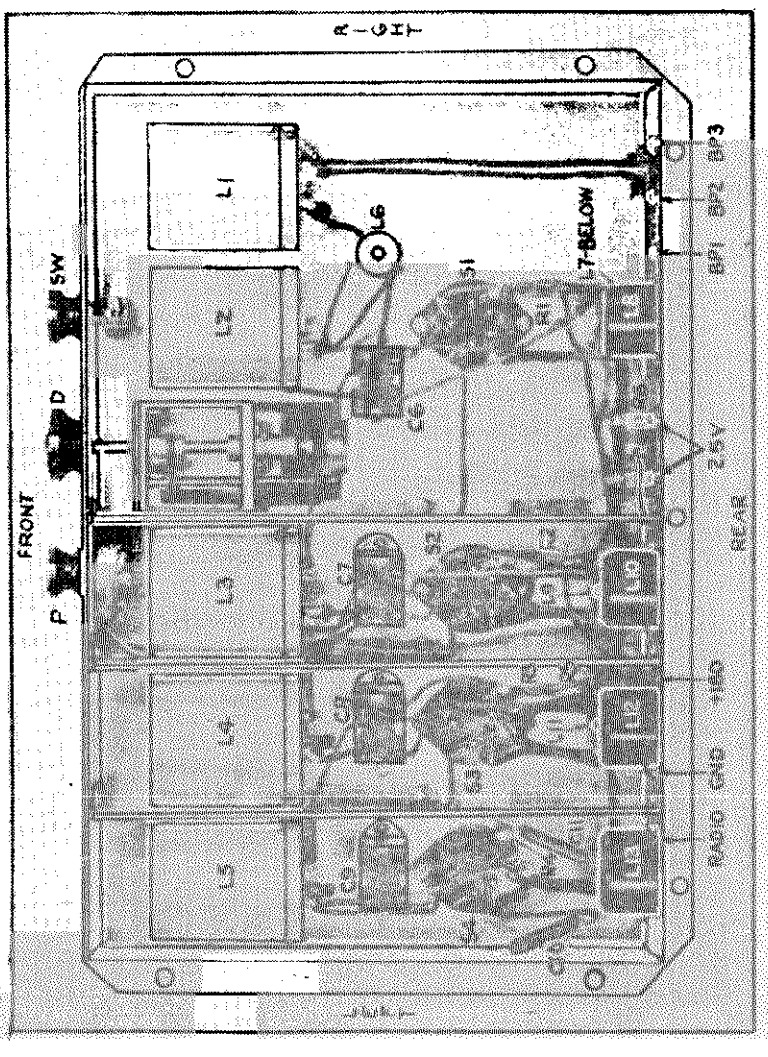
SILVER - MARSHALL, INC.

MODEL 712
Schematic
Chassis
MODEL 677-B



Representative voltages when 677B is connected to 712 Tuner with on-off volume control on full

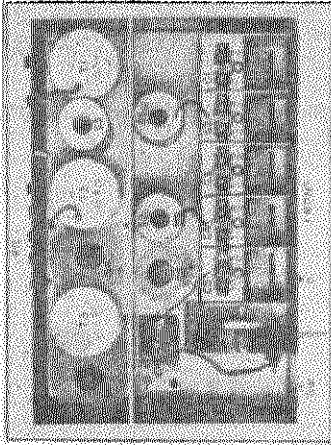
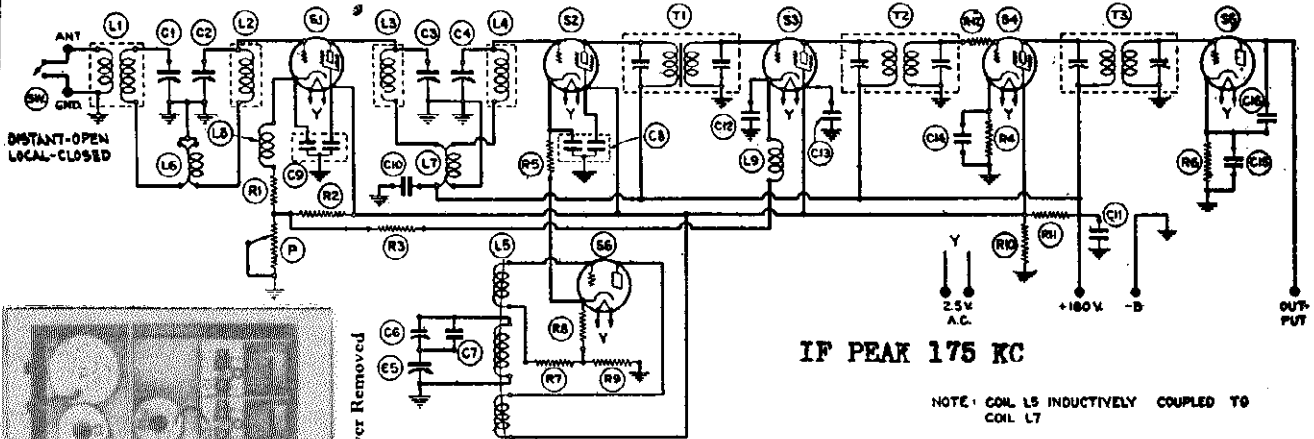
From (1) to Ground	-	320
" (2) "	"	310
" (3) "	"	230
" (4) "	"	160
" (5) "	"	8
" (6) "	"	110
" (7) "	"	100
" (8) "	"	300
" (9) "	"	50



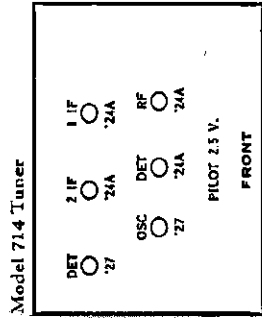
- Model 712 Tuner
- DEF 3 BF ○ 24A
 - 1 BF ○ 24A
 - 2 BF ○ 24A
 - 1 BF ○ 24A
- PILOT 2.5 V.
- FRONT

MODEL 714
Schematic
Chassis, Voltage

SILVER - MARSHALL, INC.



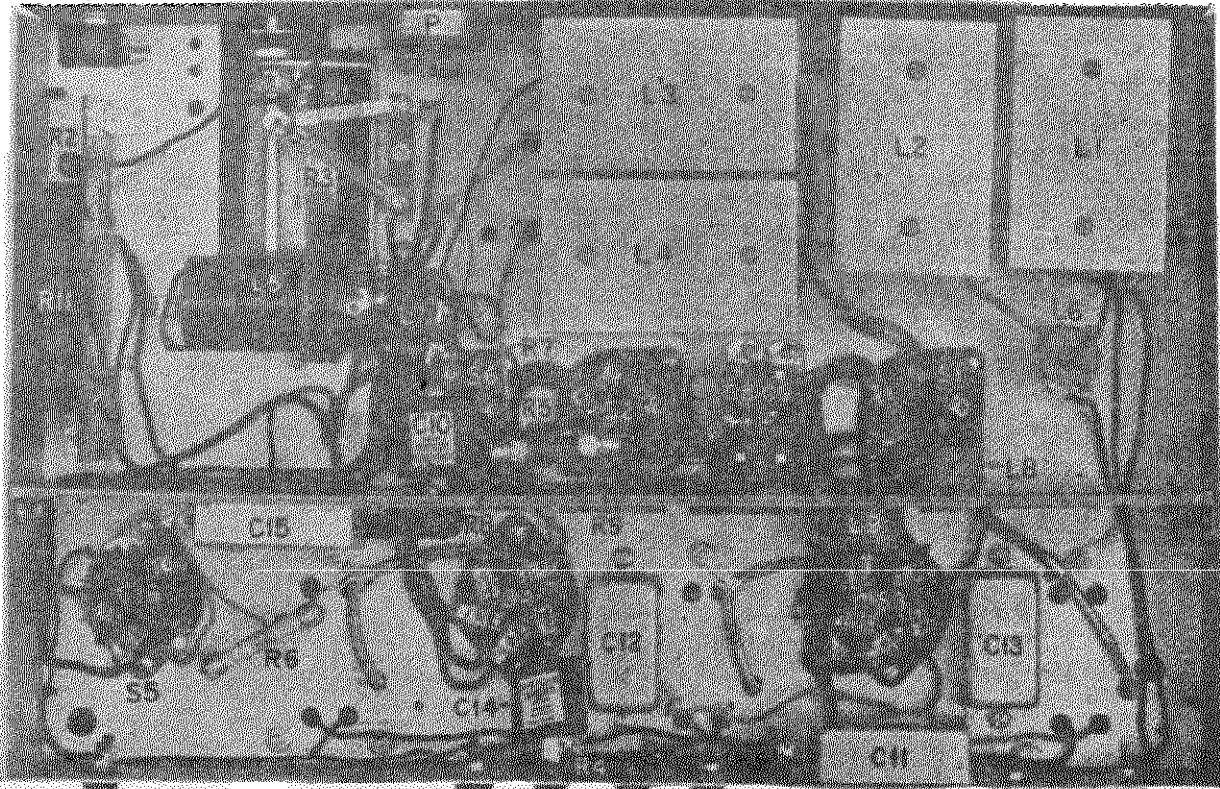
Top View of Tuner with Cover Removed



VOLTAGES WITH VOLUME CONTROL AT MAXIMUM

Tube Number	Type of Tube	"A" Volts	"B" Volts	Screen Volts	"C" Volts	Normal Plate Current, MA
R. F.	(S1)	24	160	80	5	3.0
1st Det.	(S2)	24	160	80	7	Note
Oscillator	(S3)	27	80	80	7	5.9
1st I. F.	(S4)	24	160	80	5	1.4
2nd I. F.	(S5)	24	160	80	3	1.7
2nd Det.	(S6)	27	128		17	0.2

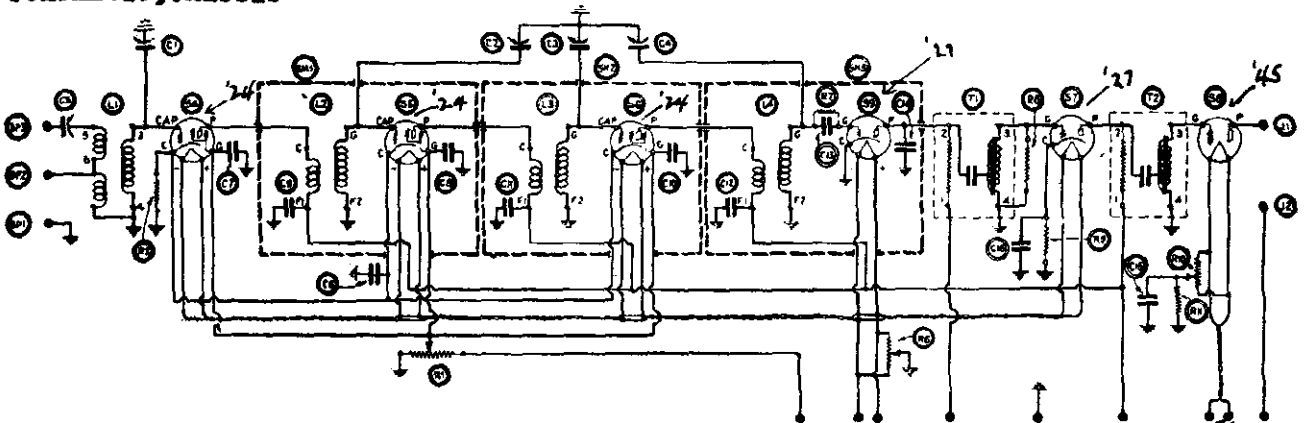
*Misleading



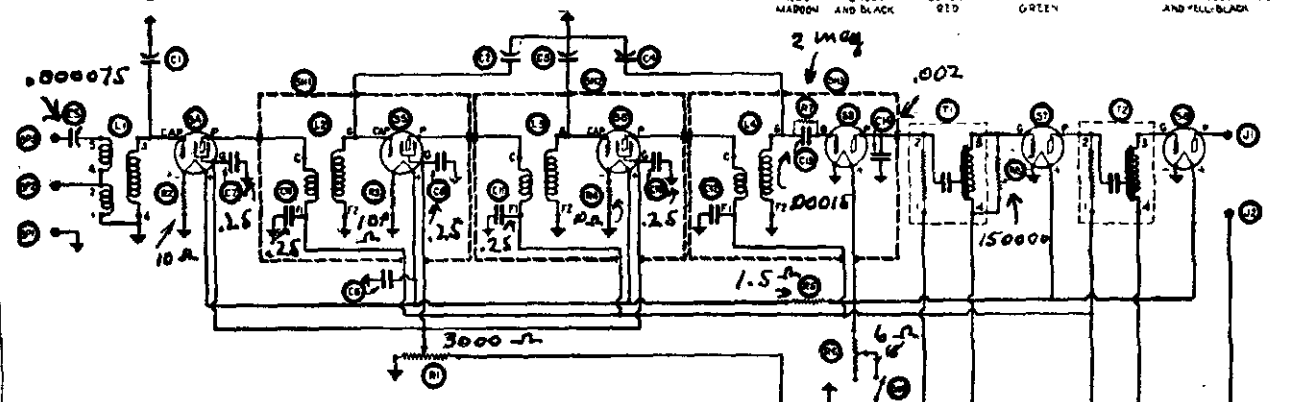
OUTPUT 180V 25V GND ANT

MODEL 720 AC
 MODEL 720 Battery
 Schematic, Chassis

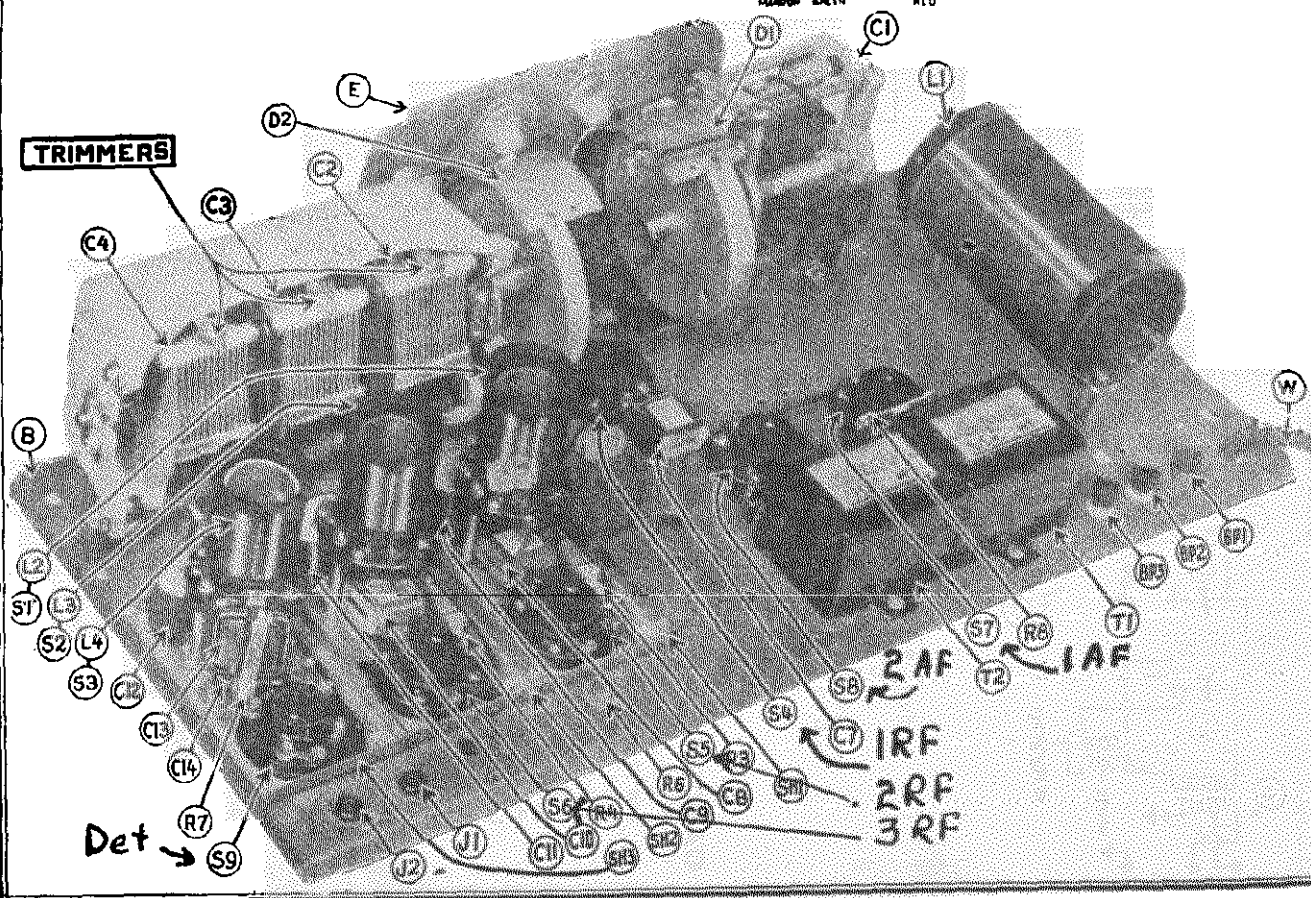
SILVER - MARSHALL, INC.



Schematic Diagram of the 720 A.C. Screen Grid Six.

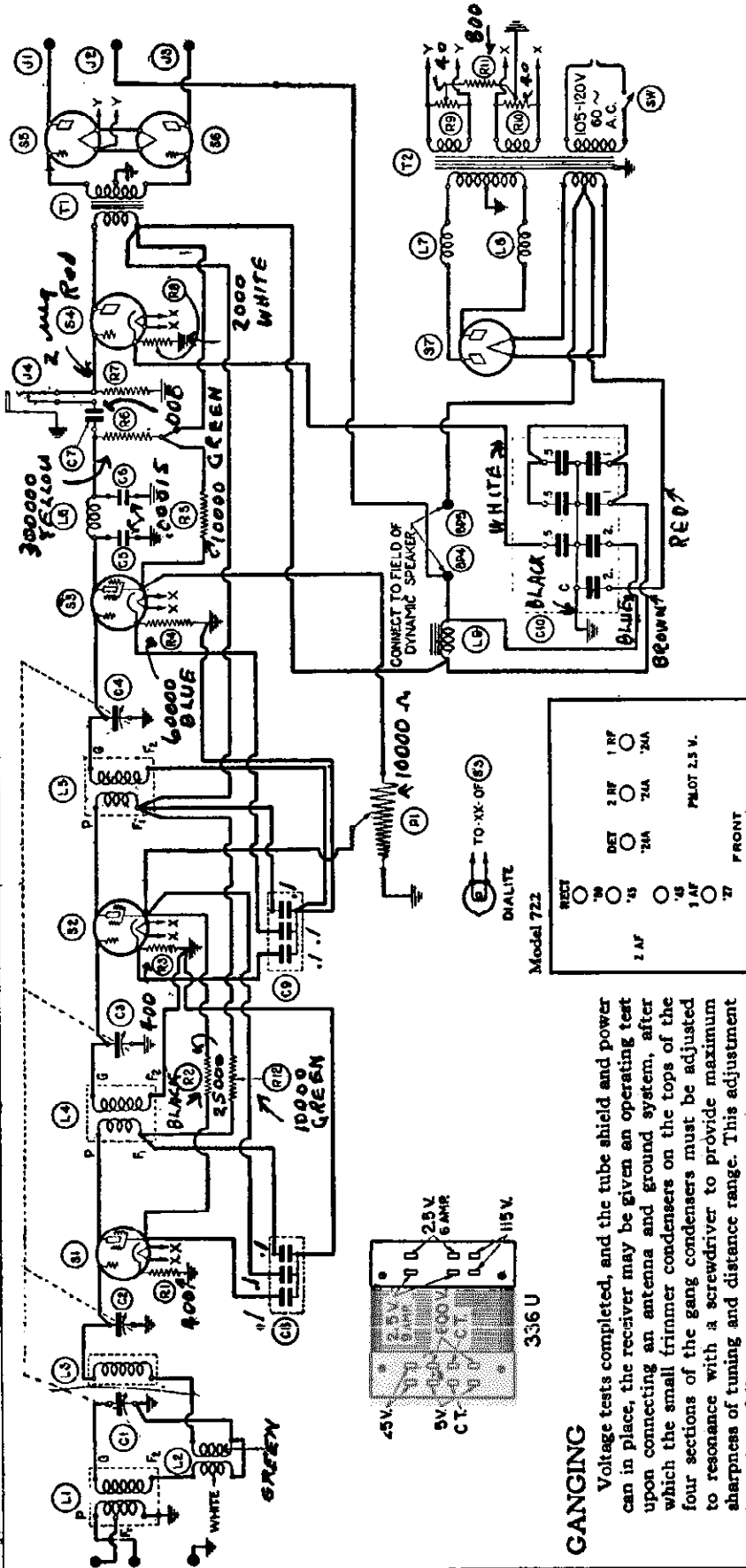


Model 720 Battery



SILVER - MARSHALL, INC.

MODEL 722
Schematic
Voltage, Data



TEST VOLTAGES

With rectifier tube only in socket; Voltage across F lugs of tubes S1 to S6 should be 2.45 volts. Across outside lug of P1 and across R5 should be 130 to 150 volts. Chassis -B to arm of P1 (fully right) should be 60 to 70 volts. Chassis to right rear of T1 should be 130, 142, 155 volts. Chassis to left rear of S4, 6 to 9 volts DC. Chassis to right rear lug of S2, 1.2 to 2.0 volts DC. Chassis to right rear lug of S1, (P1 turned fully right), 1.2 to 2.0 volts DC. Chassis to J1, 160 to 220 volts DC. Chassis to J2, 170 to 240 volts DC. Chassis to J3. 160 to 220 volts DC.

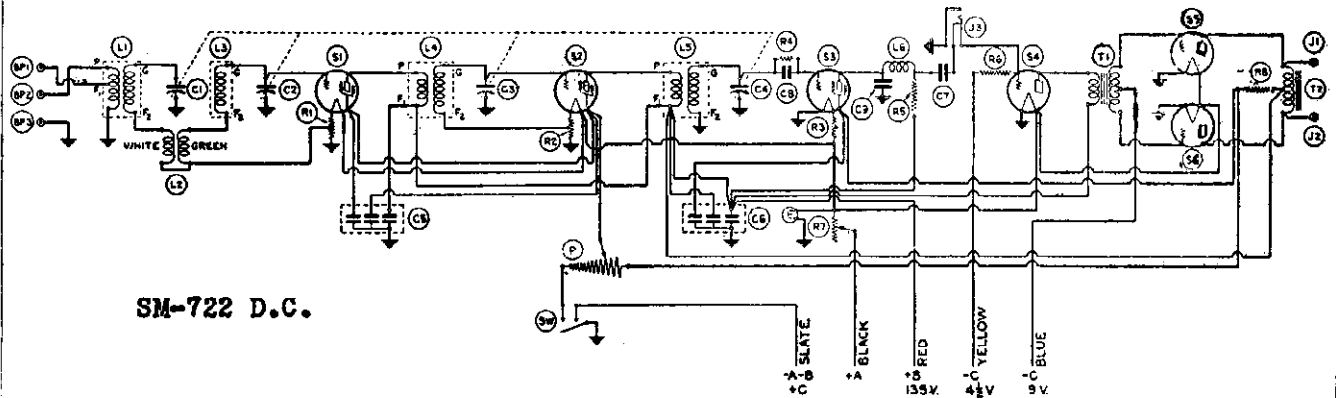
GANGING

Voltage tests completed, and the tube shield and power can in place, the receiver may be given an operating test upon connecting an antenna and ground system, after which the small trimmer condensers on the tops of the four sections of the gang condensers must be adjusted to resonance with a screwdriver to provide maximum sharpness of tuning and distance range. This adjustment is made as follows:

1. Unscrew trimmer condensers C2, C3, C4 two full turns. The three holes in the cover of the tube shield SH should be directly over the trimmer screws.
2. Connect small antenna to binding post BP1 (or artificially shorten a long one in order to produce a rather weak signal when volume control is turned full on or nearly full on).
3. Tune in a station at 230 to 250 meters.
4. Adjust trimmer C-4 for loudest signal.
5. Adjust trimmer C3 for loudest signal.
6. Adjust trimmer C2 for loudest signal.
7. Adjust trimmer C1 for loudest signal.
8. Re-tune receiver to a station at between 450 and 550 meters.
9. Re-check adjustment of trimmers C1 and C2. If any variation is present, adjust for maximum signal.
10. Re-tune to original short wave station and re-adjust trimmers C2 and then C1, for maximum signal strength.

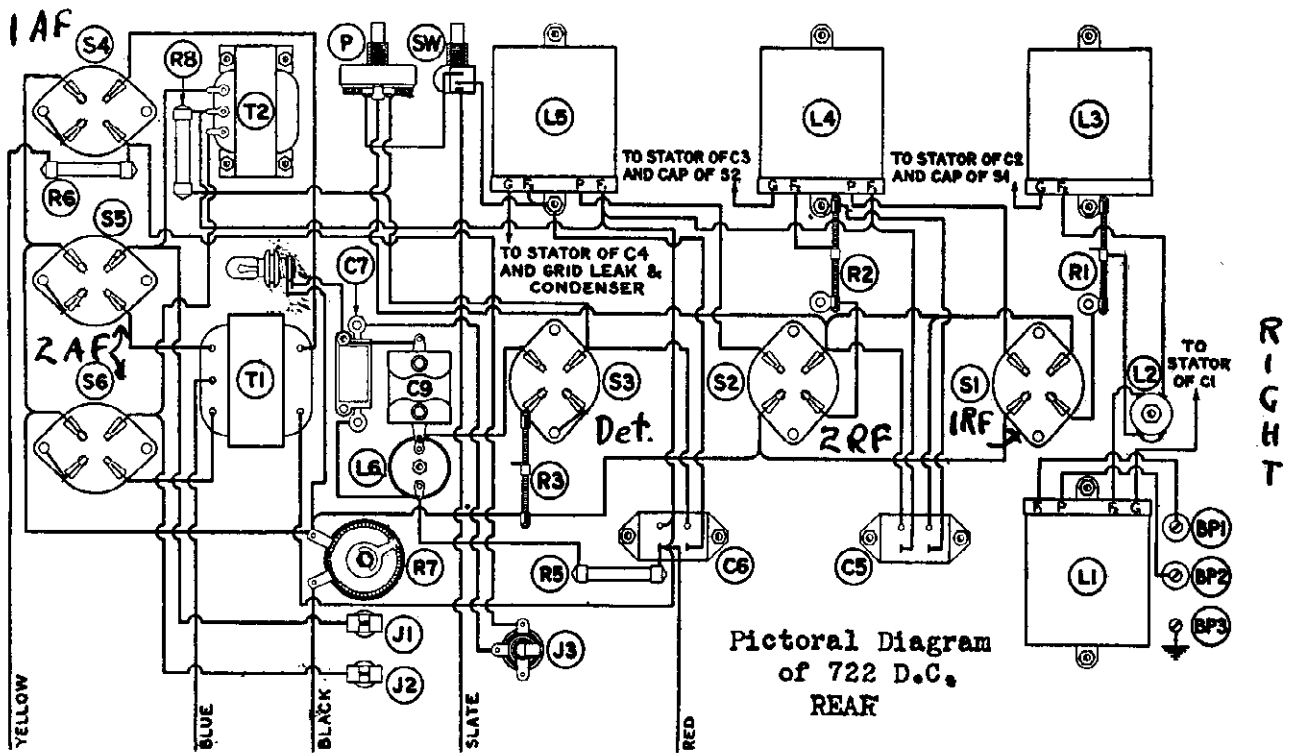
MODEL 722 DC
Schematic, Chassis

SILVER - MARSHALL, INC.



SM-722 D.C.

Schematic diagram of the 722DC, showing all parts keyed

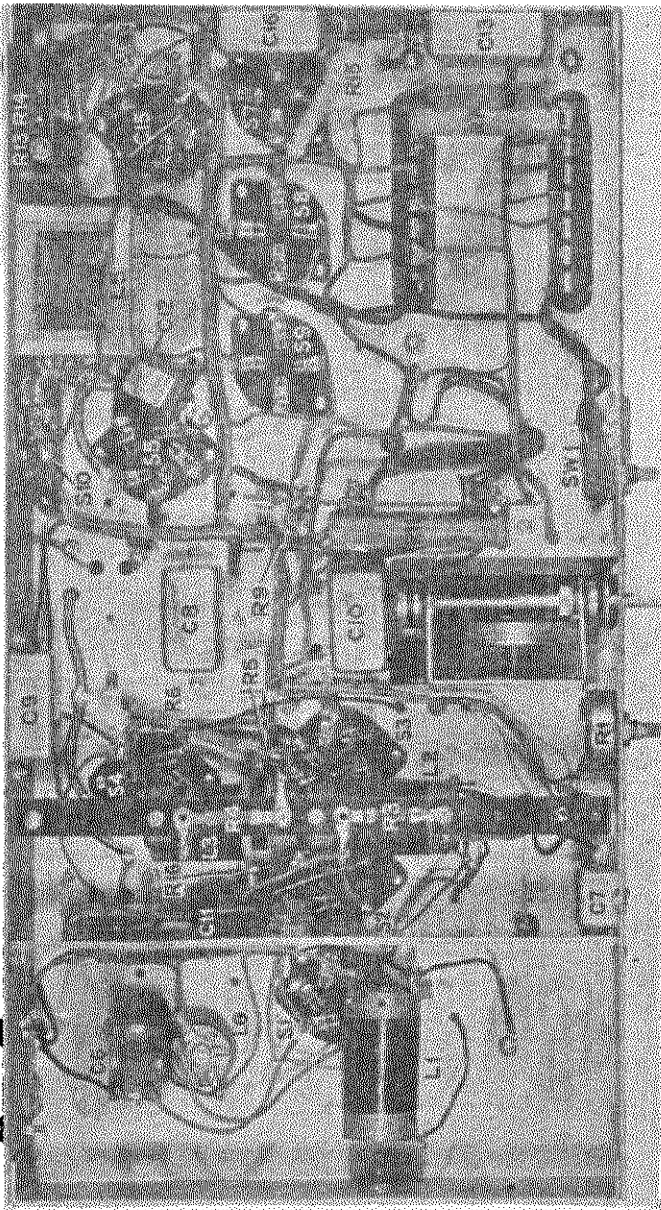
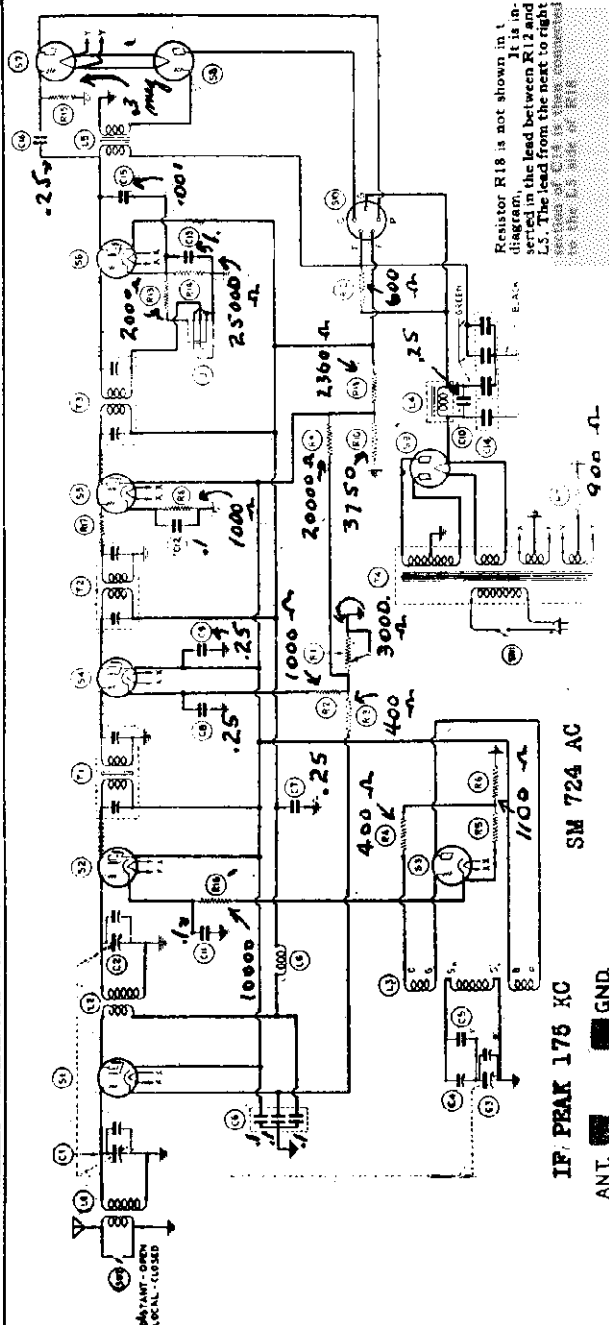


Pictorial Diagram
of 722 D.C.,
REAR

- | | |
|-----------|--|
| C1,2,3,4, | .00035 mfd 4 gang condenser |
| C5,6 | block condensers containing three .1 mfd units |
| C7 | .006 mfd. |
| C8 | .00015 mfd. |
| C9 | .0005 mfd. |
| P | 10000 ohm potentiometer. R7 |
| R1,2,3 | 15 ohm center tapped. |
| R4,6 | 2 megohm (one watt) Red |
| R5 | 60000 ohm (one watt) Blue |
| | R8 |
| | Rheostat (sub-base) |
| | 20000 ohms (one watt) |
| | Orange |

SILVER · MARSHALL, INC.

MODEL 724 AC
Schematic, Chassis
Voltage Data



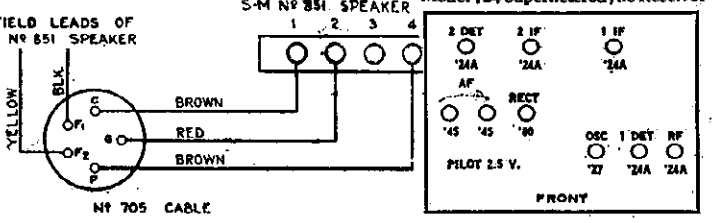
SM 724 AC

IF. PEAK 175 KC
ANT. GND.

VOLTAGES WITH VOLUME CONTROL AT MAXIMUM

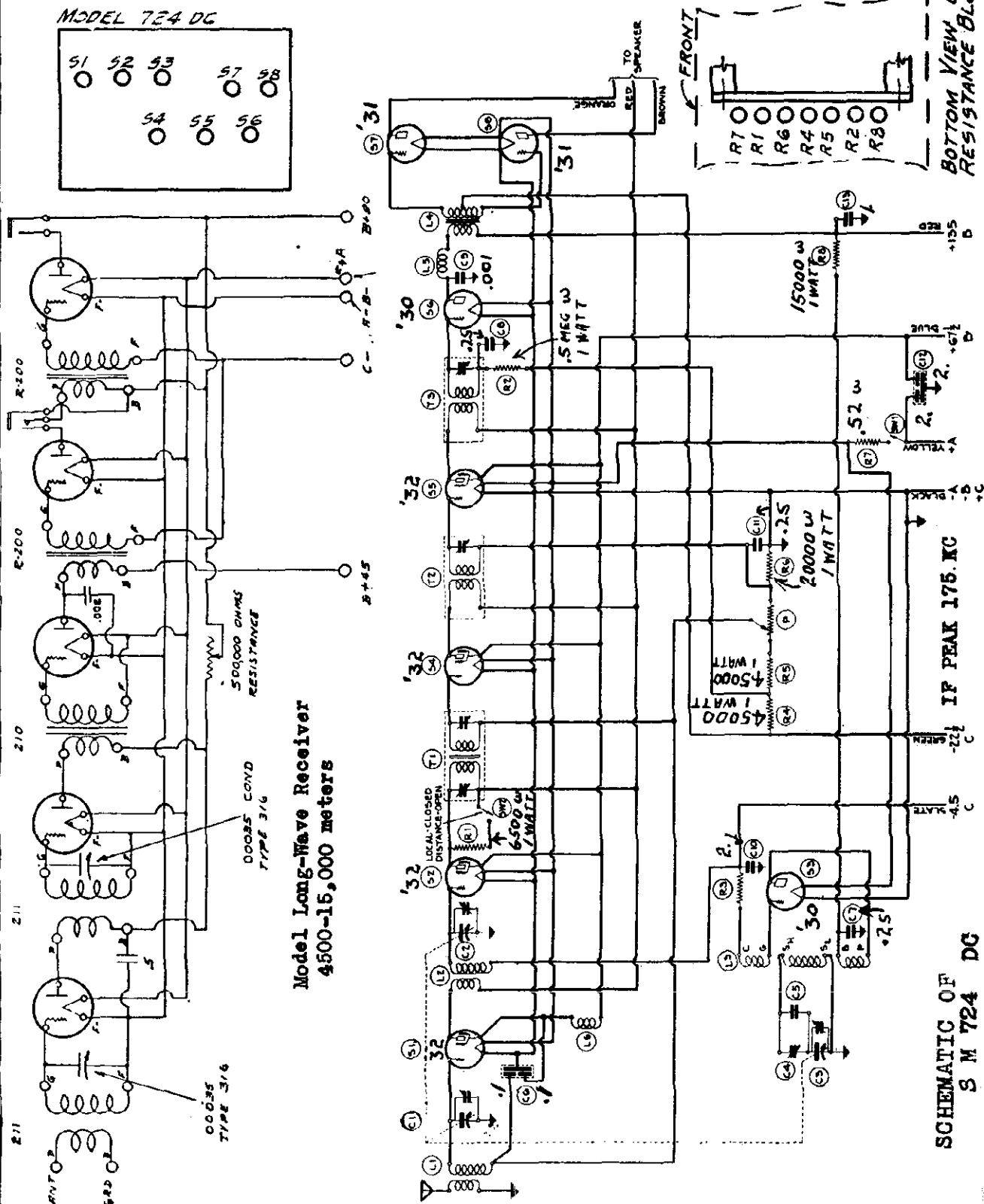
Tube Number	Type of Tube	"A" Volts	"B" Volts	Screen Volts	"C" Volts	Normal Plate Current MA
R.F.	(S1)	'24	2.15	168	84	1.3
1st Det.	(S2)	'24	2.16	75	84	9.3
Oscillator	(S3)	'27	2.20	78	...	6.0
1st I. F.	(S4)	'24	2.17	165	82	2.8
2nd I. F.	(S5)	'24	2.22	164	83	3.0
2nd Det.	(S6)	'24	2.19	208	160	15.0
Audio (Right)	(S7)	'45	2.57	235	...	48.0
Audio (Left)	(S8)	'45	2.57	235	...	20.0*
Rectifier	(S9)	'80	4.80	...	...	...

*Misleading due to current drawn by meter.



NO 705 CABLE

MODEL 724 DC
 MODEL Long-Wave Receiver SILVER-MARSHALL, INC.



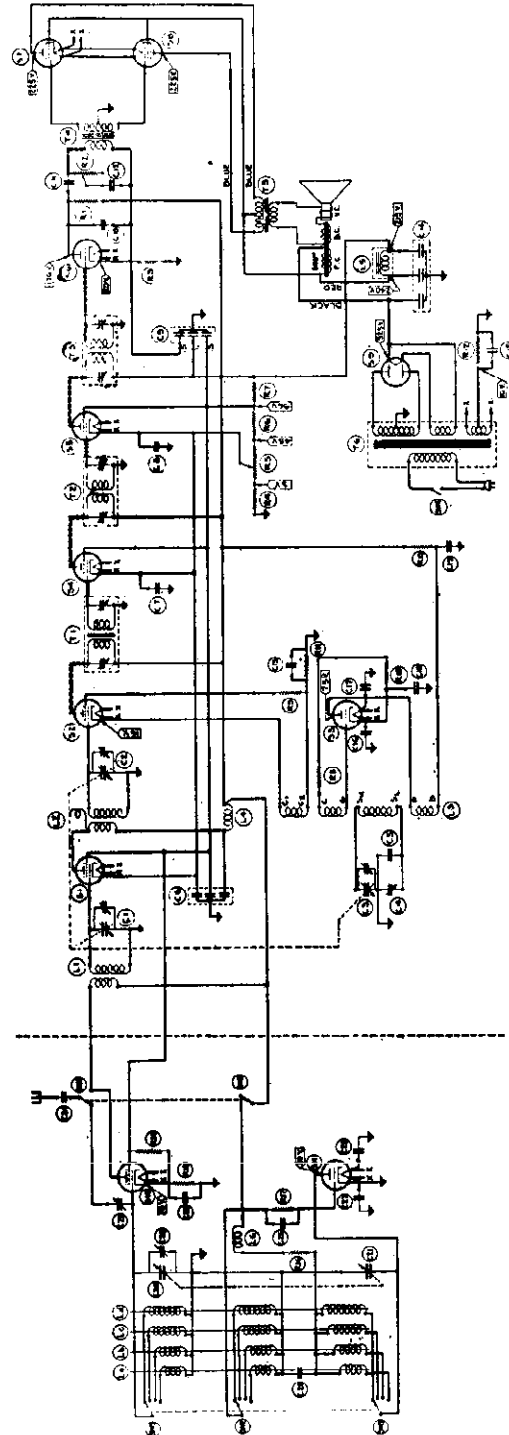
SILVER - MARSHALL, INC.

MODEL 726
Schematic
Voltage, Data

REPLACEMENT PARTS LIST FOR 726 SW & 726
SHORT WAVE-BROADCAST RECEIVERS

Code	Description	Piece Part No.
L1 - 167-S Coil	Model 726 (S.W. & Broadcast)	
L2 - 168-S Coil		
L3 - 175-S Coil		
L4 - 281 R.F. Choke		
L5 - 10145 Choke		
L6 - 277 R.F. Choke		
La - S.W. Coil 10-20 Meters		
Lb - S.W. Coil 20-40 "		
Lc - S.W. Coil 40-80 "		
Ld - S.W. Coil 80-200 "		
T1 - 1st I.F. Transformer B-1		
T2 - 2nd I.F. Transformer B-2		
T3 - 3rd I.F. Transformer B-3		
T4 - A-270 Input Transformer		
T5 - 10143 Output Transformer		
T6 - 10173-S Power Transformer		
C1-C2-C3 - 407 Mmfd. Max. (3-gang variable)		13124
C4 - Variable 250-600 Mmfd.		16035
C5 - 750 Mmfd. ± 10% (Mica)		
C6 - Triple 0.1 Mfd.		3216
C7 - .1 Mfd.		3220
C8 - .1 Mfd.		3220
C9 - .5, .5, 1.0 Mfd.		13140
C10 - .001 Mfd. (Mica)		7039
C11 - 0.15 Mfd.		13145
C12 - .025 Mfd.		3333
C13 - .1 Mfd.		3220
C14 - Three 4 Mfd. units (dry Electrolytic) Potter		13120
C15 - .1 Mfd.		3220
C16 - .006 Mfd.		3114
C17 - .006 Mfd.		3144
C18 - .1 Mfd.		3220
C19 - .1 Mfd.		3220
C20-C21 - 140 Mmfd. (2-gang variable)		13161
C22 - 80 Mmfd. (variable)		13162
C23 - Compensating Cond.		13182
C24 - .006 Mfd.		3144
C25 - .006 Mfd.		3144
C26 - .001 Mfd. (Mica)		7039
C27 - .006 Mfd.		3144
C28 - .006 Mfd.		3144
R1 - 30,000 ohms 1 watt		14693
R2 - 1/2 megohm tapered variable resistor		14268
R3 - 60,000 ohms 1 watt		4698
R4 - 100 ohms wire wound		4743
R5 - 4,500 ohms volume control (tapered)		14367
R6 - 13,500 ohms 1 watt		14694
R7 - 15,000 ohms 2 watt		14690
R8 - 400 ohms wire wound		4701
R9 - 60,000 ohms 1 watt		4698
R10 - 100 ohms wire wound		4743
R11 - 10,000 ohms 1 watt		14696
R12 - 220 ohms 2 watt		14692
R13 - 10,000 ohms 2 watt		4726
R14 - 60,000 ohms 1 watt		4698
R15 - 6,500 ohms 1 watt		14693
R16 - 10,000 ohms 2 watt		4726
R17 - 10,000 ohms 1 watt		14696
SW1-SW2-SW3 - S.W. Change-over switch		15115
SW4-SW5 - S.W.-BROADCAST SWITCH		15116
SW6 - ON-OFF SWITCH (Combination with Pot.)		
S2-S10 - '24 Tubes		
S3-S6-S11 - '27 "		
S7-S8 - '47 "		
S1-S4-S5 - '51 "		
S9 - '80 "		

As a short wave broadcast receiver, the circuit is as follows. By throwing a switch, the antenna is fed into the short wave detector circuit using a '24 type tube. A short wave oscillator of special design using a '27 tube, operating 650 kc. away from the short wave detector heterodynes the incoming signal to the frequency to which the r.f. stage of the broadcast receiver is tuned, the broadcast tuning dial being set on a clear channel at approximately 650 kc. for best results. As a short wave super, there are therefore three detectors and two oscillators, giving so-called double "suping"



Model 726 S.W. and Broadcast Superhet.

IP PEAK 176 KC

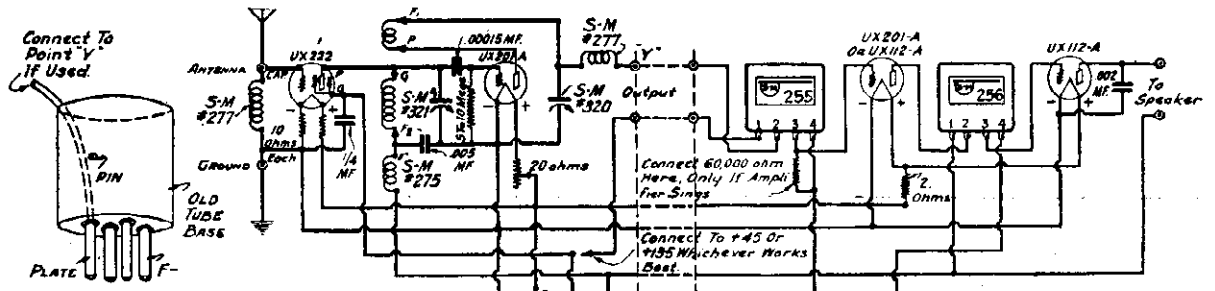
VOLTAGES WITH VOLUME CONTROL AT MAXIMUM

Tube Number	Type of Tube	"A" Volts	"B" Volts	Screen Volts	"C" Volts	Normal Plate Current Mills
S.W. Det	(S10)	2.2	216	96	18	.08
S.W. Osc.	(S11)	2.25	80	...	0	8.
R.F.	(S1)	2.25	216	96	3	6.
1st Det	(S2)	2.35	216	96	16	.1
Osc.	(S3)	2.35	75	...	1.1	10.
1st I.F.	(S4)	2.3	216	96	3	6.
2nd I.F.	(S5)	2.35	216	96	3	6.
End Det.	(S6)	2.35	178	...	20	.1
Audio (right)	(S7)	2.4	224	240	16	32.
Audio (left)	(S8)	2.4	220	240	16	32.
Rectifier	(S9)	5.1	.....	.....	.....	.....

As a broadcast receiver, the 726SW tunes from below 200 to above 550 meters and as a short wave receiver tunes from just under 10 meters to 200 meters without plug in coils.

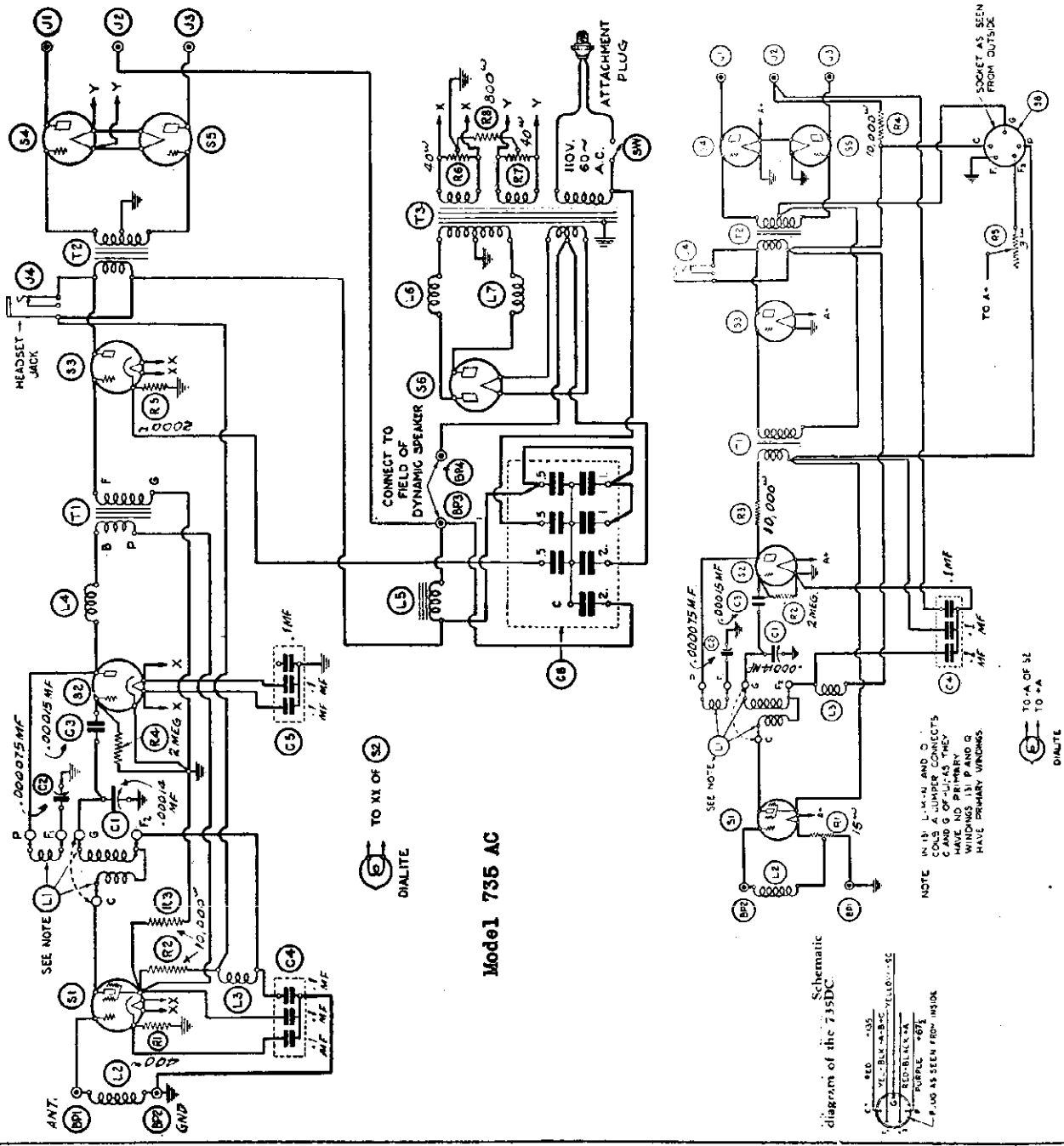
SILVER - MARSHALL, INC.

MODEL 730, 731
MODEL 735 AC
MODEL 735 DC



NOTE:—For two tube short wave adapter to be used with any standard radio set:—
A—Omit all parts to right of dotted lines.
B—Connect upper "output lead" (from No. 277 choke) to plate pin of old tube base.
C—Connect battery binding posts to radio set batteries.
D—Insert old tube base adapter in detector socket of regular radio set, which will join the two tube short wave adapter to the audio amplifier of set.

Schematic circuit of 730 and 731 kits, and details of adapter made from an old tube base.

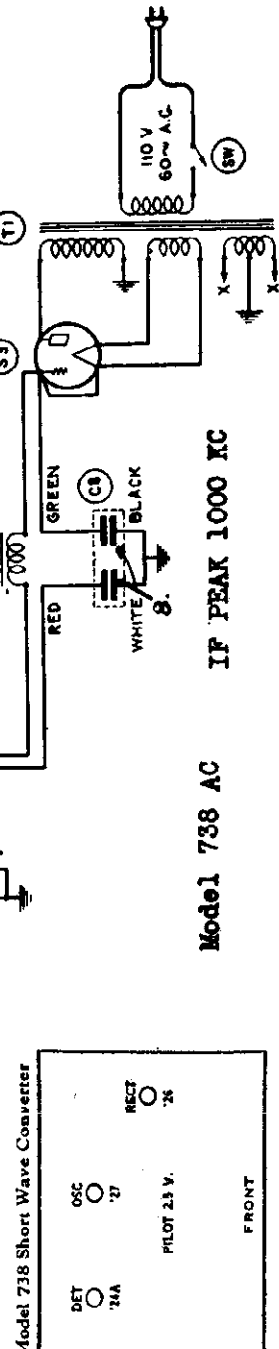
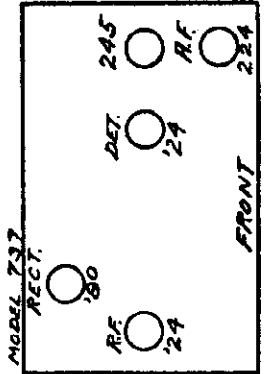
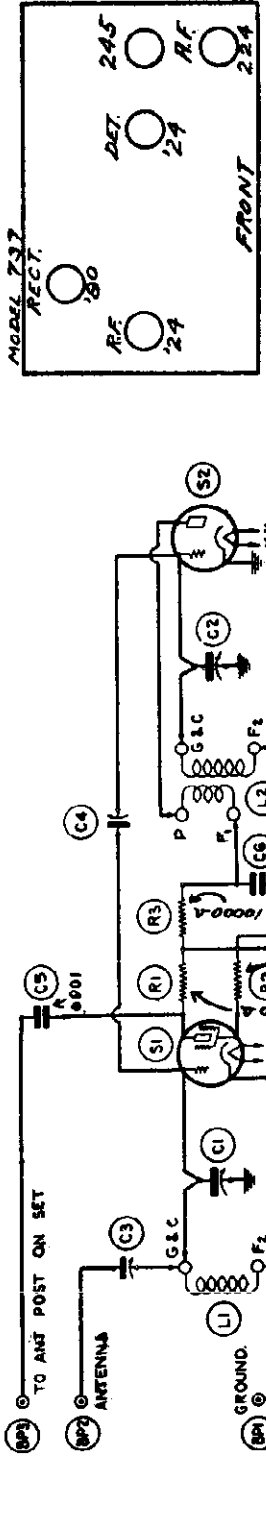
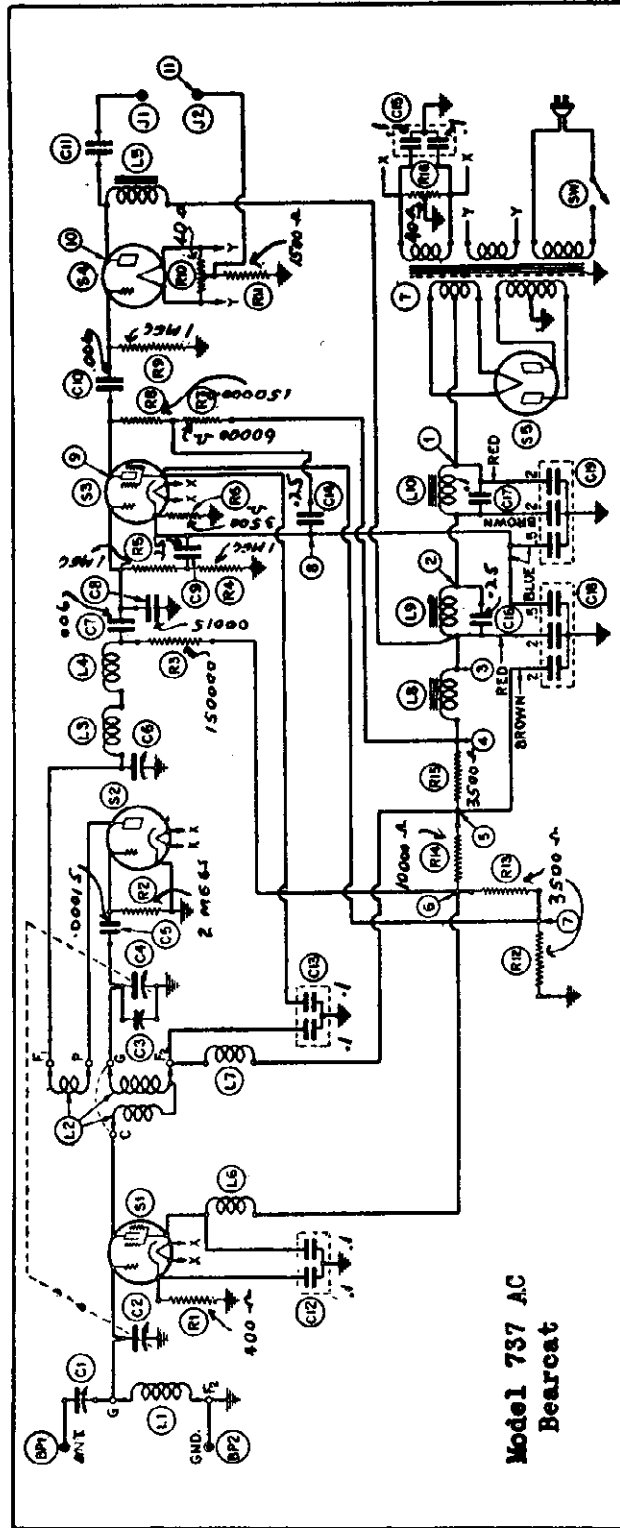


Model 735 AC

Schematic diagram of the 735DC

RED - .05
GREEN - .05
BLACK - .05
PURPLE - .05
LUG AS SEEN FROM INSIDE

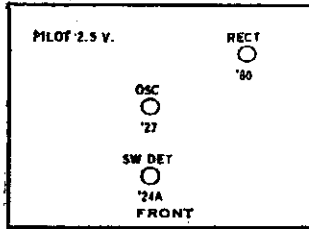
MODEL 737 AC Bearcat
 MODEL 738 AC SW Converter SILVER - MARSHALL, INC.



SILVER - MARSHALL, INC.

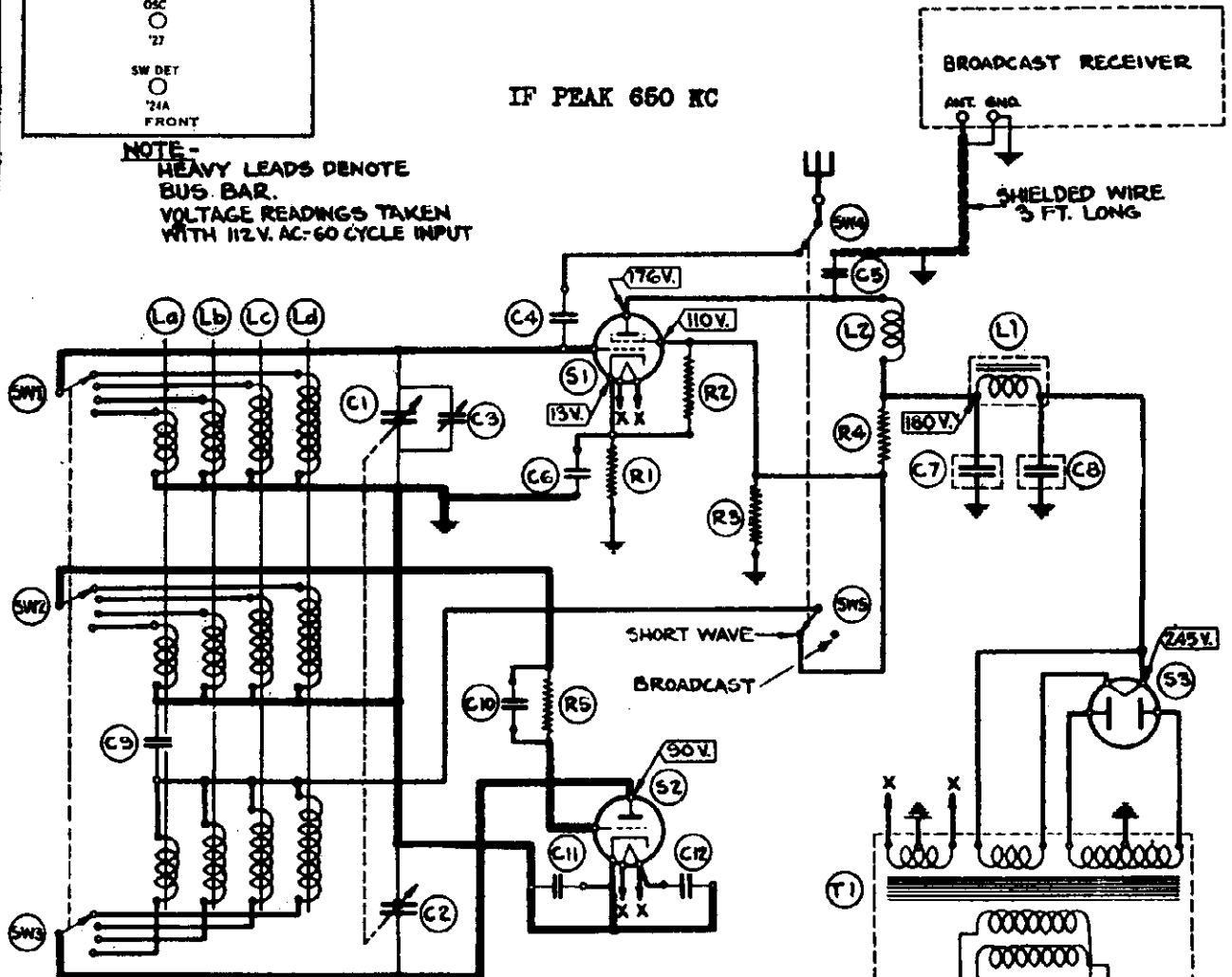
MODEL 739
SW Superhet Converter

Model 739 (Short Wave Converter) (1931)



IF PEAK 650 KC

NOTE -
HEAVY LEADS DENOTE
BUS BAR.
VOLTAGE READINGS TAKEN
WITH 112 V. AC-60 CYCLE INPUT

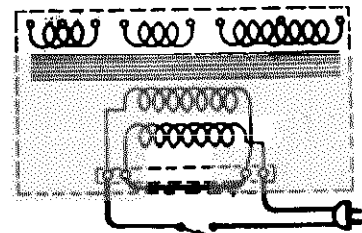


CONNECTIONS FOR
100-120 V. AC. 25 & 60 CYCLE

NOTE:-
PRIMARY NORMALLY WIRED &
SHIPPED FOR 100-120V. OPERATION

There is a small compensating condenser in series with the antenna lead to the detector circuit (on rear of panel, at top center). This condenser is adjusted at the factory for best operation on a test antenna. It will be found that a slight adjustment of this condenser can be made (with a screw driver) for realigning to the particular antenna-ground combination, on which the 739 is to be operated, to give maximum results. To make this adjustment, the receiver should be tuned to a short wave station and without adjusting any controls, this compensating condenser readjusted a slight fraction of a turn at a time until the station comes in at its best.

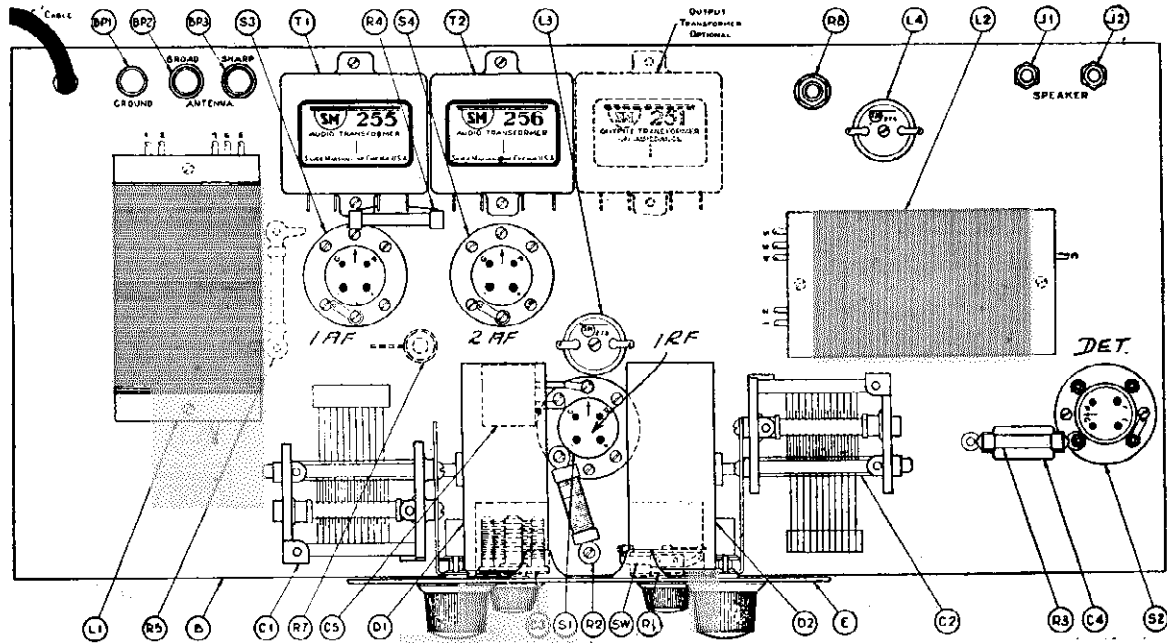
- C6, C11, C12 3 Polymet .006 condenser
- C5, C10 2 Polymet .0001 "
- C9 1 Sprague .1 mfd. condenser
- R5 1 Durham 10,000 ohm resistor
- R2 1 Durham 60,000 ohm resistor
- R1 1 Durham 6500 ohm resistor
- R3 1 Durham 6000 ohm resistor 2 watt.
- R4 1 Durham 3500 ohm resistor, 2 watt.



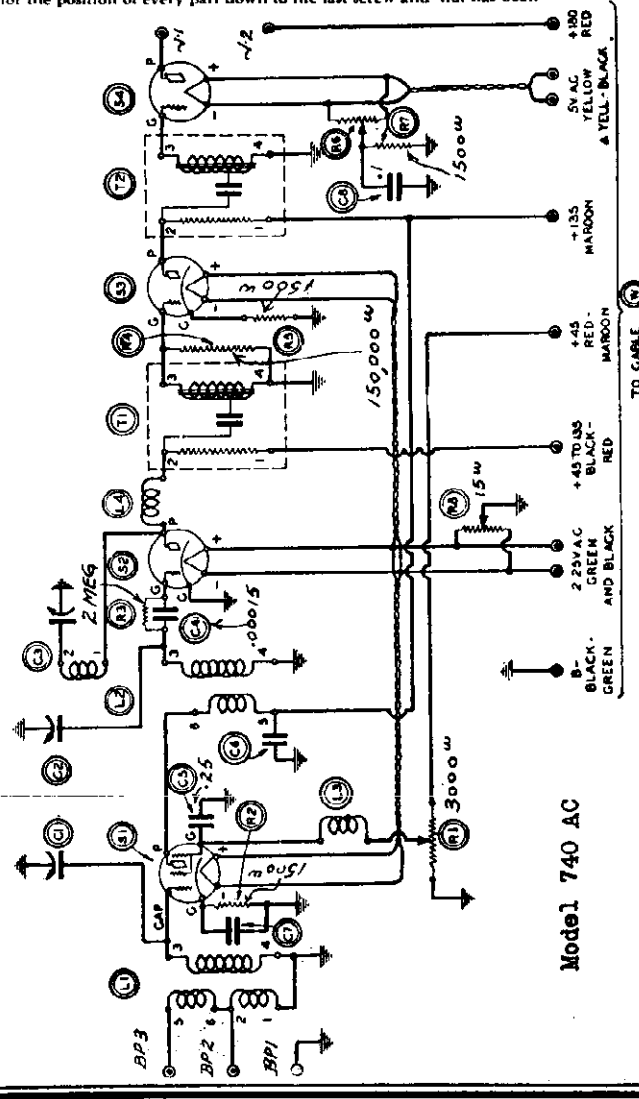
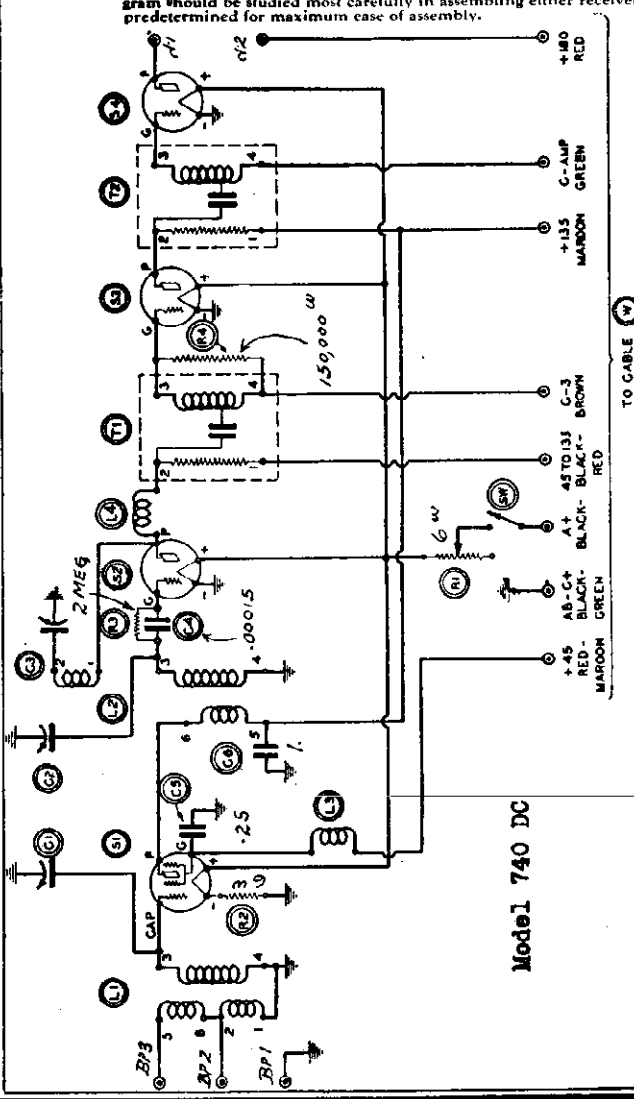
CONNECTIONS FOR
200-240 V. AC. 25 & 60 CYCLE

MODEL 740 DC
 MODEL 740 AC
 Schematic, Chassis

SILVER - MARSHALL, INC.



This layout drawing for the 740 (D.C. tube) Receiver shows the exact positions of all parts, positions of different mounting lugs, and just where screw heads or mounting nuts *and* additional parts for the 740 AC (A.C. tube) Receiver are shown in dotted lines. This diagram should be studied most carefully in assembling either receiver, for the position of every part down to the last screw and nut has been predetermined for maximum ease of assembly.

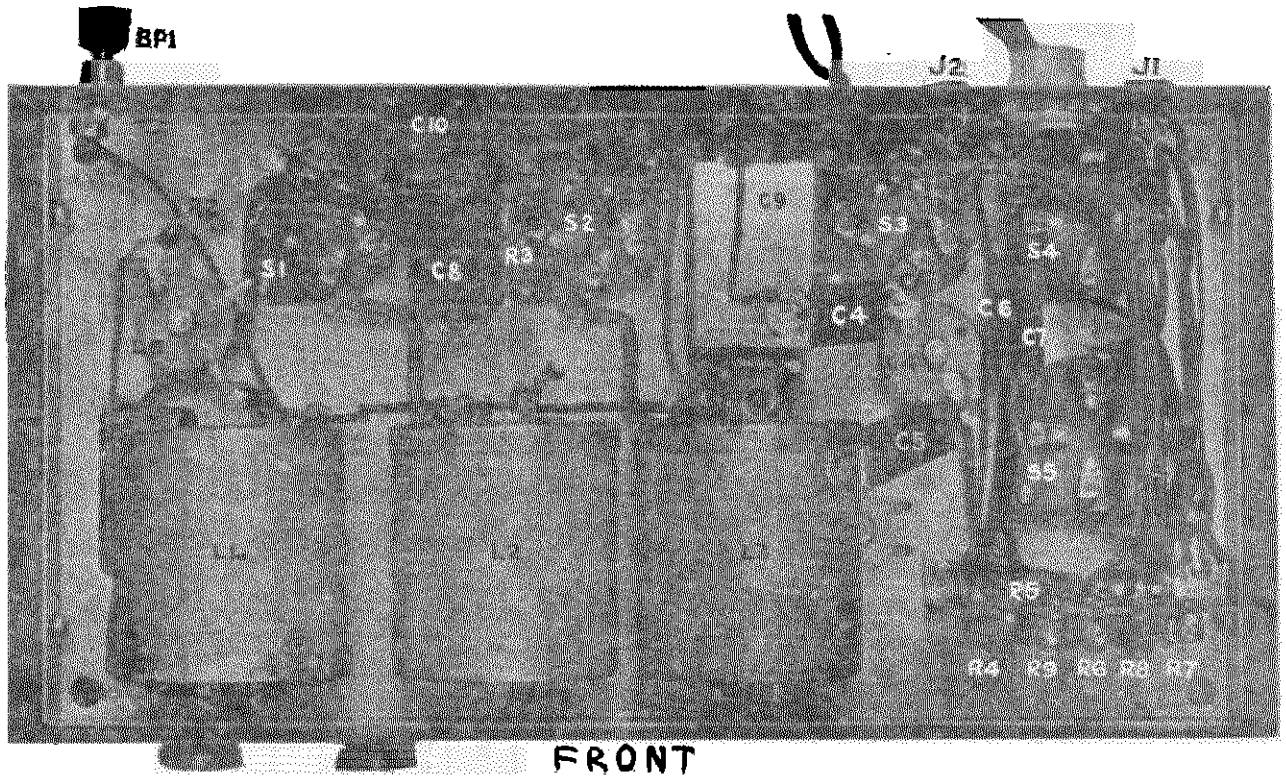


Model 740 DC

Model 740 AC

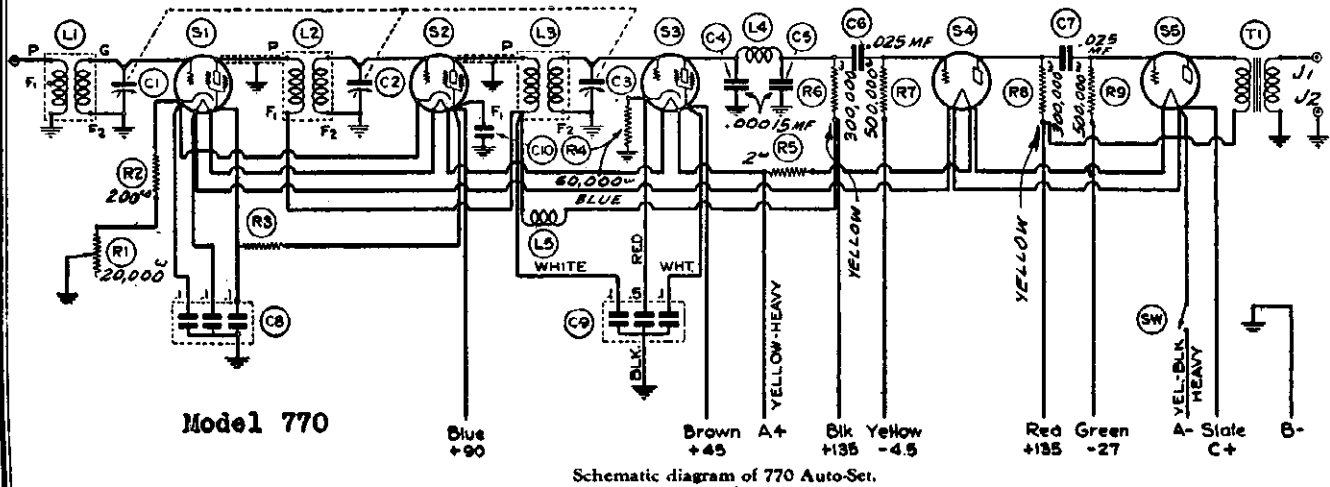
SILVER - MARSHALL, INC.

MODEL 770 Auto
Schematic, Chassis



FRONT

Bottom view of 770 chassis showing location of coils, resistors, and other material which will be of value in replacing parts.



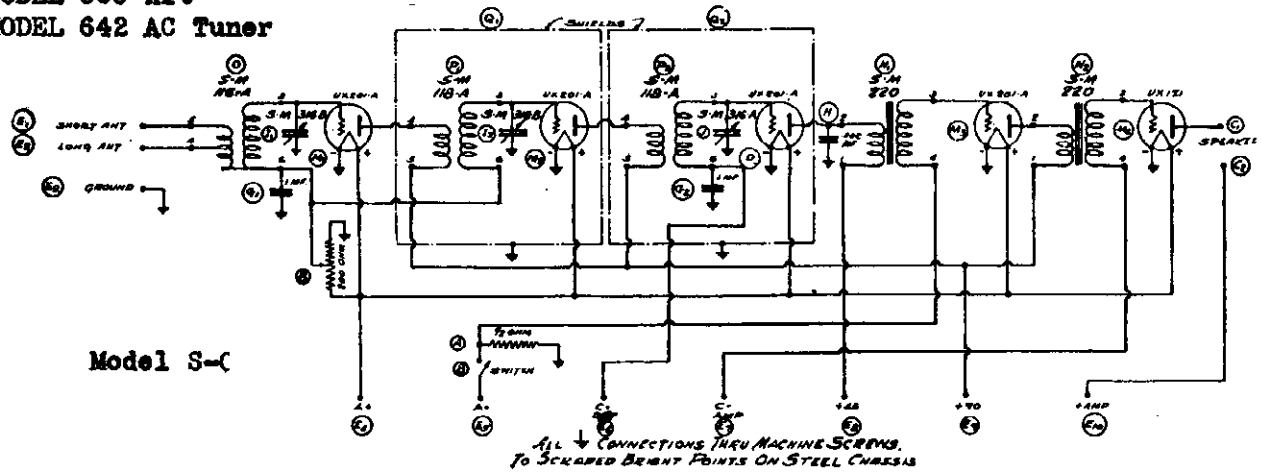
Model 770 Auto

1 AF	DET	2 RF	1 RF
12A	24A	24A	24A
2 AF			
71A			PILOT 2.5 V.

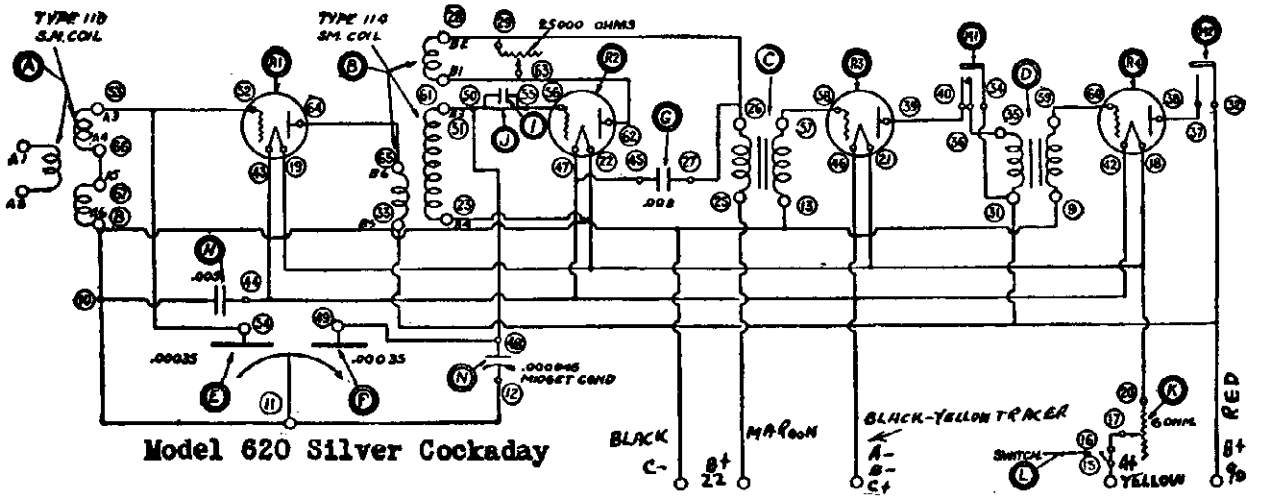
FRONT

MODEL S-C II
 MODEL 620 S-C
 MODEL 635 KIT
 MODEL 642 AC Tuner

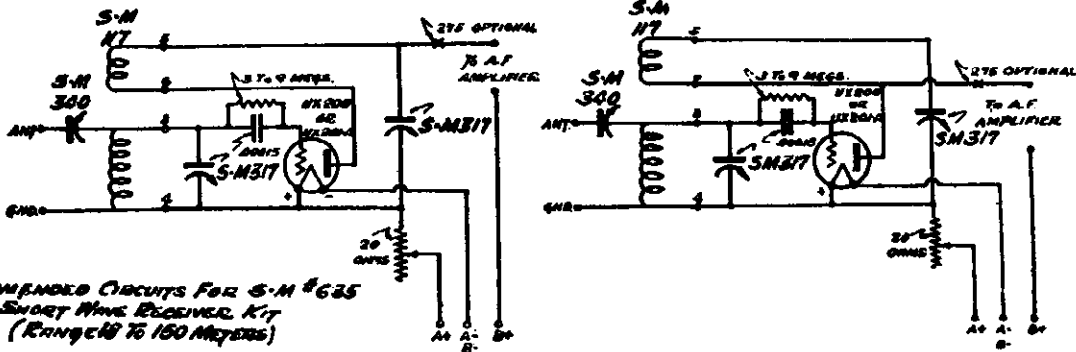
SILVER - MARSHALL, INC.



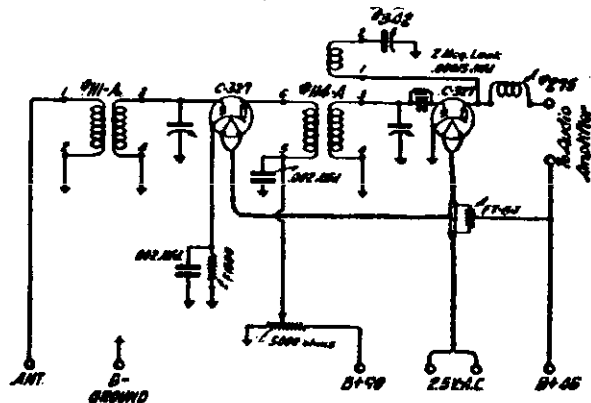
Model S-C



Model 620 Silver Cockaday



RECOMMENDED CIRCUITS FOR S-M #635
 SHORT WAVE RECEIVER KIT
 (RANGE TO 150 METERS)

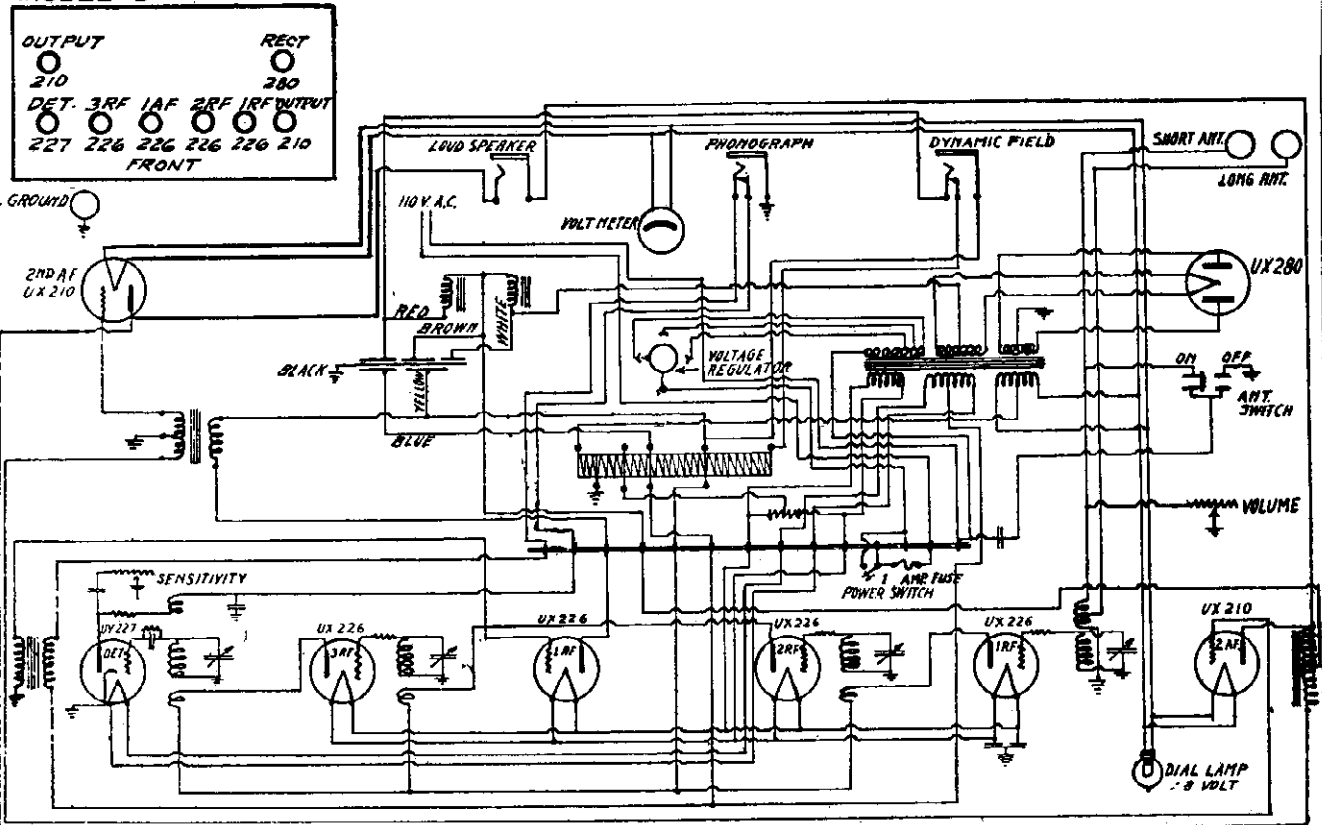


Schematic diagram of 624E Universal All Wave Tuner

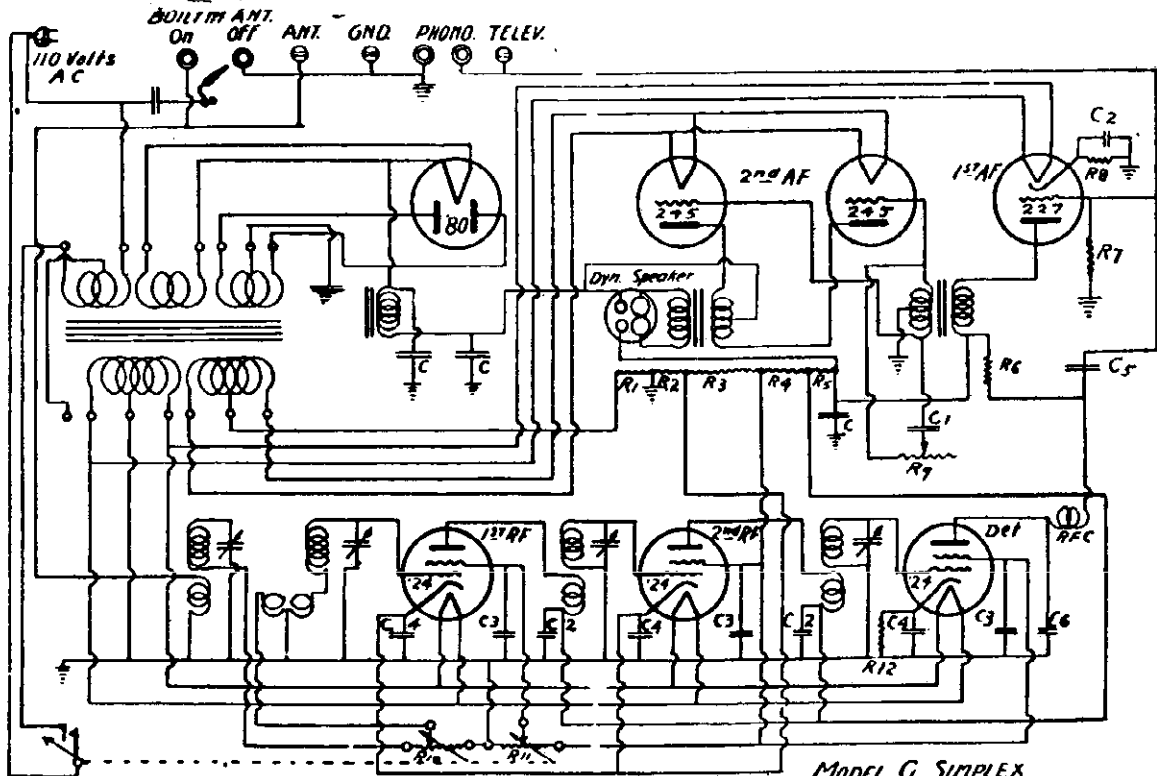
SIMPLEX RADIO CO.

MODEL D Schematic
MODEL G Schematic

MODEL D



CIRCUIT DIAGRAM, MODEL D, SIMPLEX ELECTRIC.

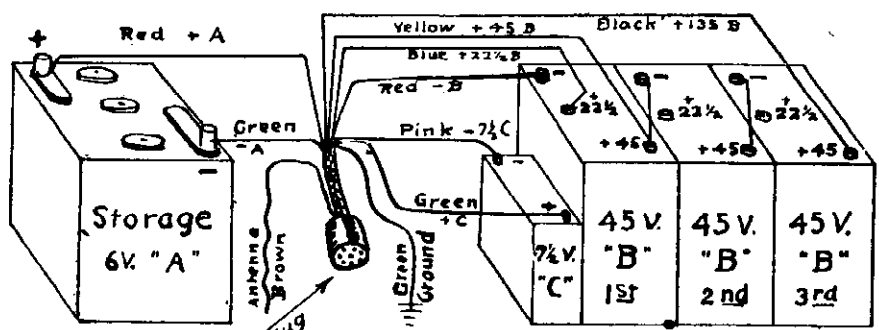
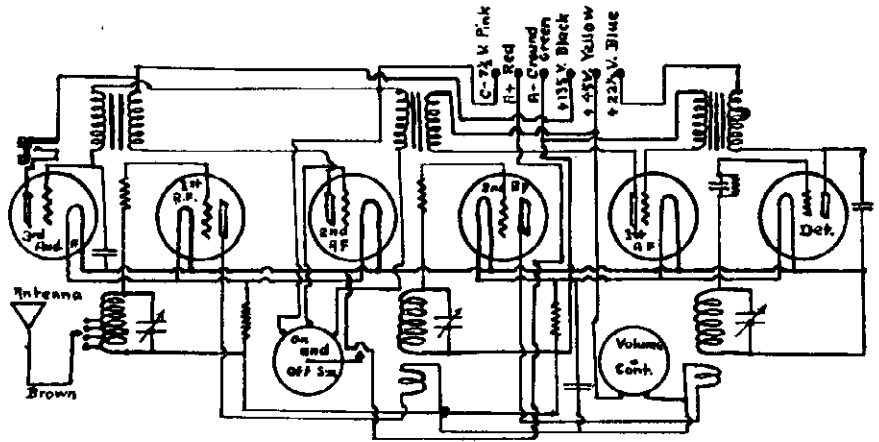
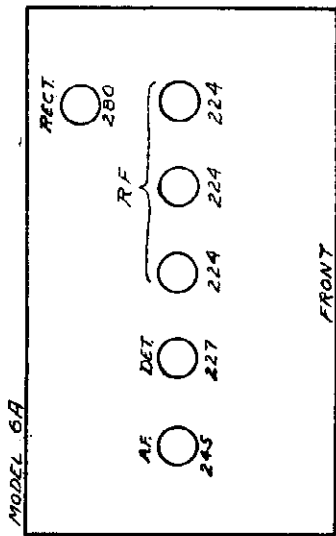


MODEL G SIMPLEX
CIRCUIT DIAGRAM

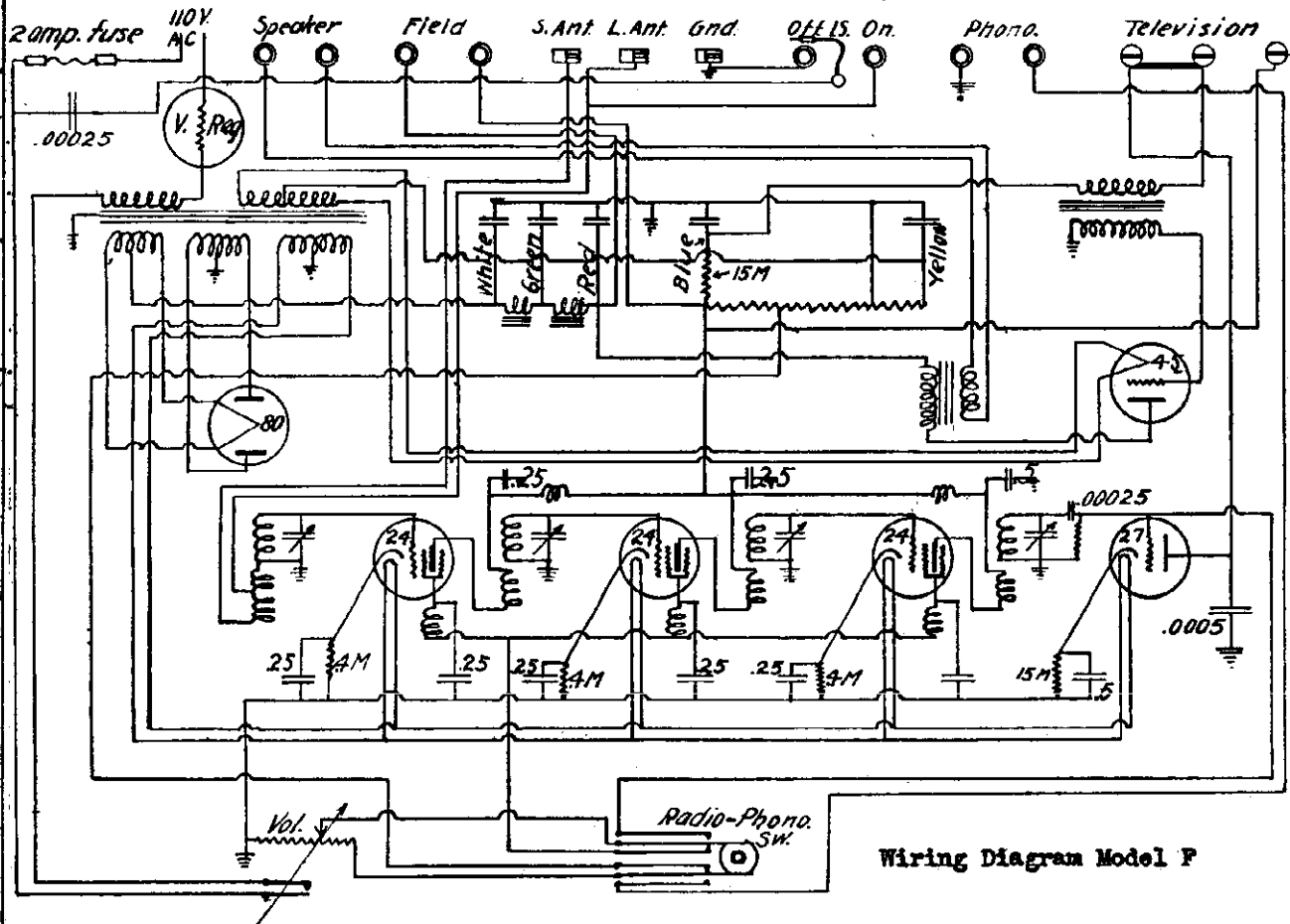
MODEL 6A
MODEL F

SIMPLEX RADIO CO.

Wiring Diagram Model 6A



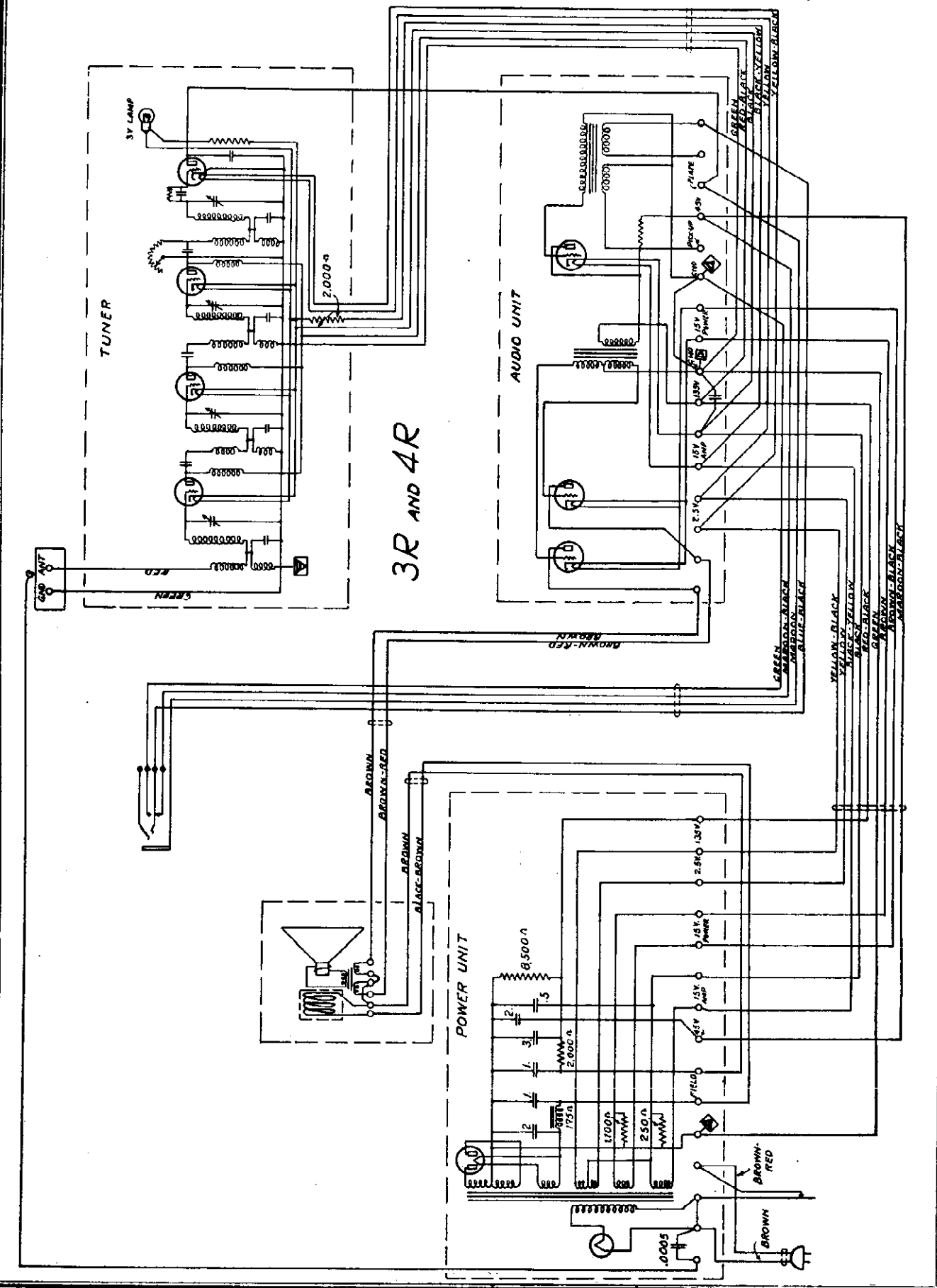
Wiring Diagram for Batteries



Wiring Diagram Model F

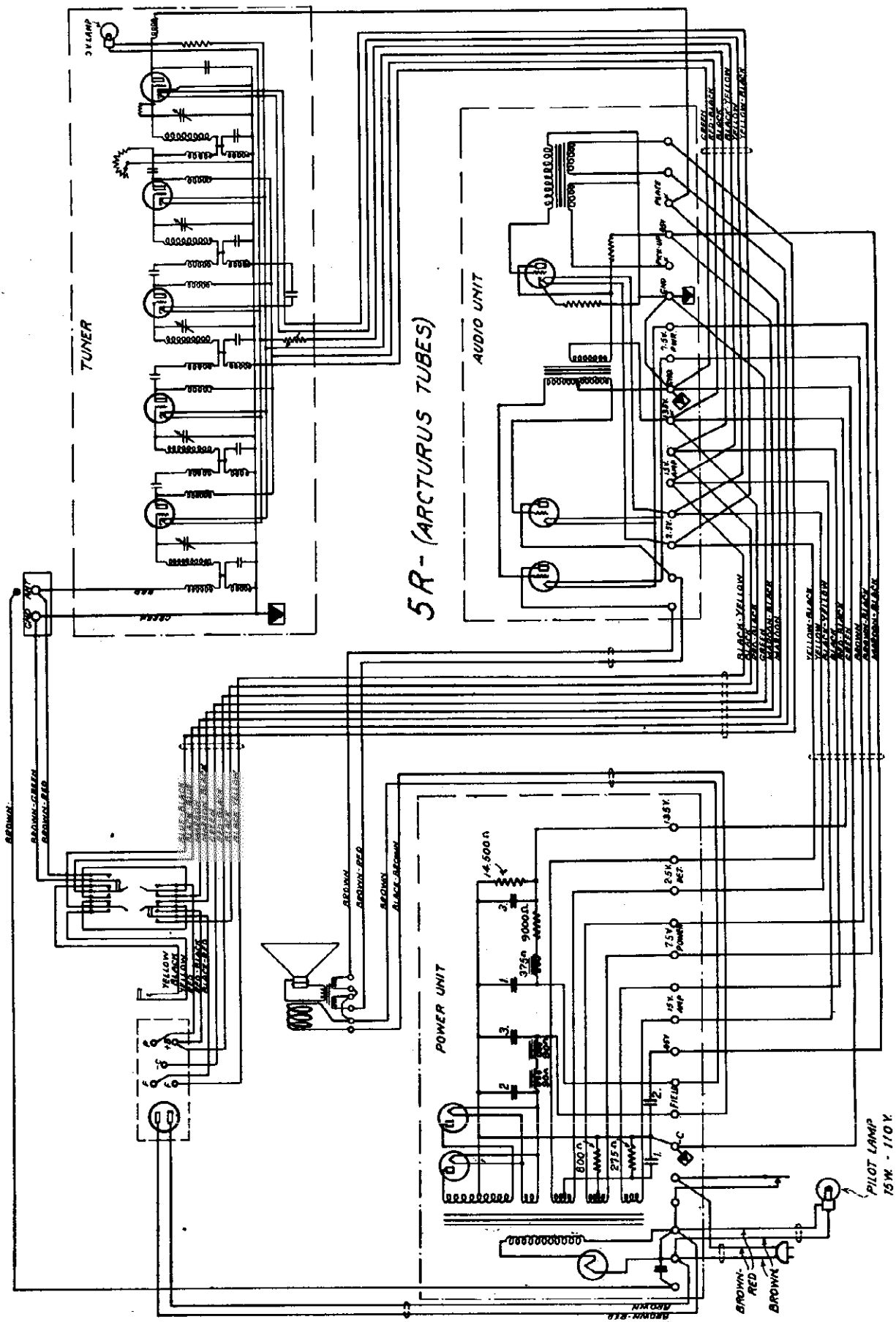
SONORA PHONOGRAPH CO.

MODEL 3R, 4R
Schematic



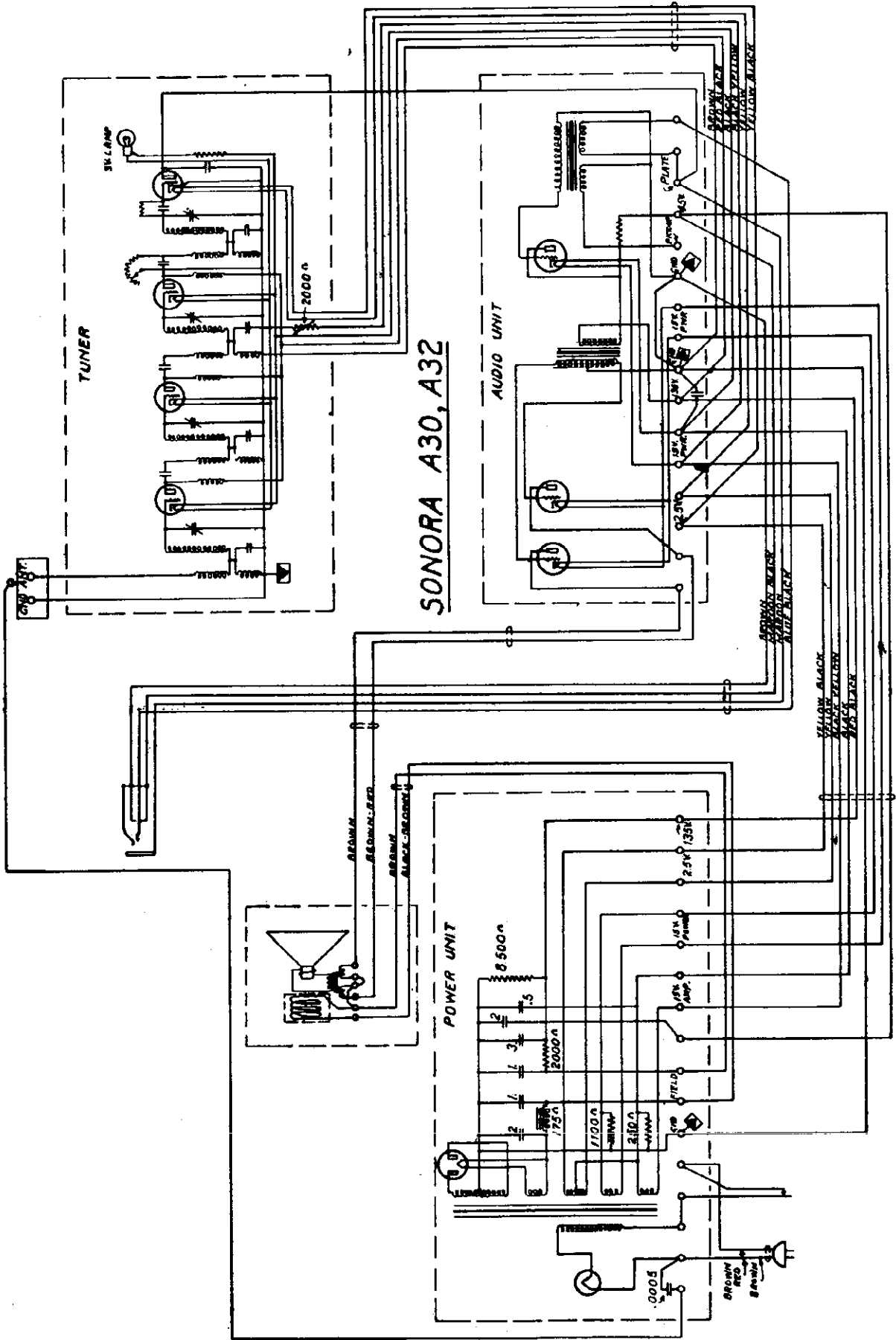
MODEL 5R
Schematic

SONORA PHONOGRAPH CO.



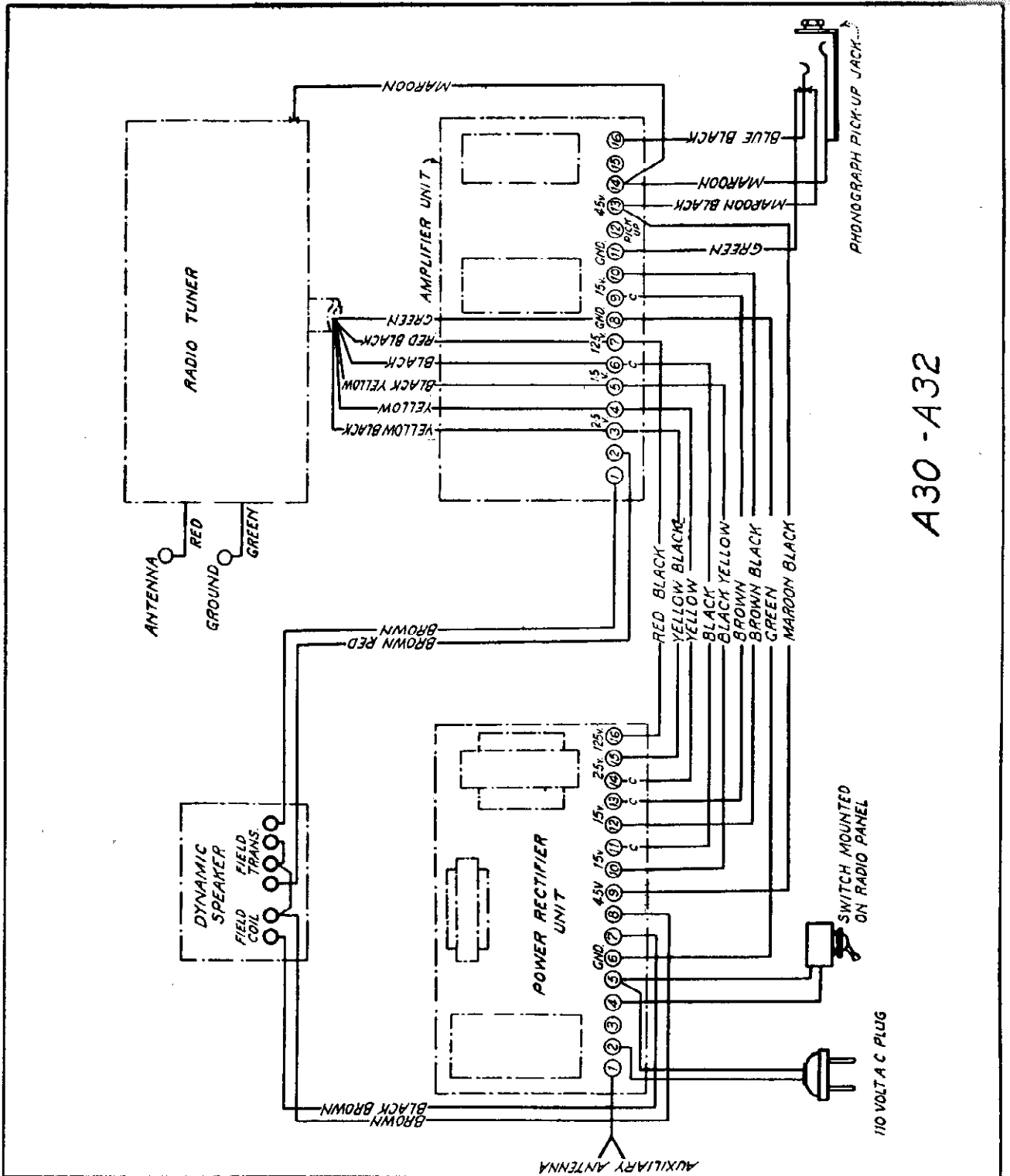
MODEL A30, A32
Schematic

SONORA PHONOGRAPH CO.



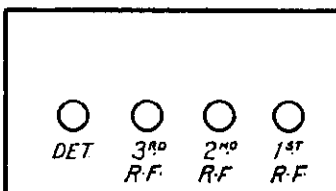
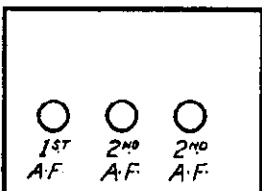
SONORA PHONOGRAPH CO.

MODEL A30, A32
Wiring Diagram



30, 32, 40

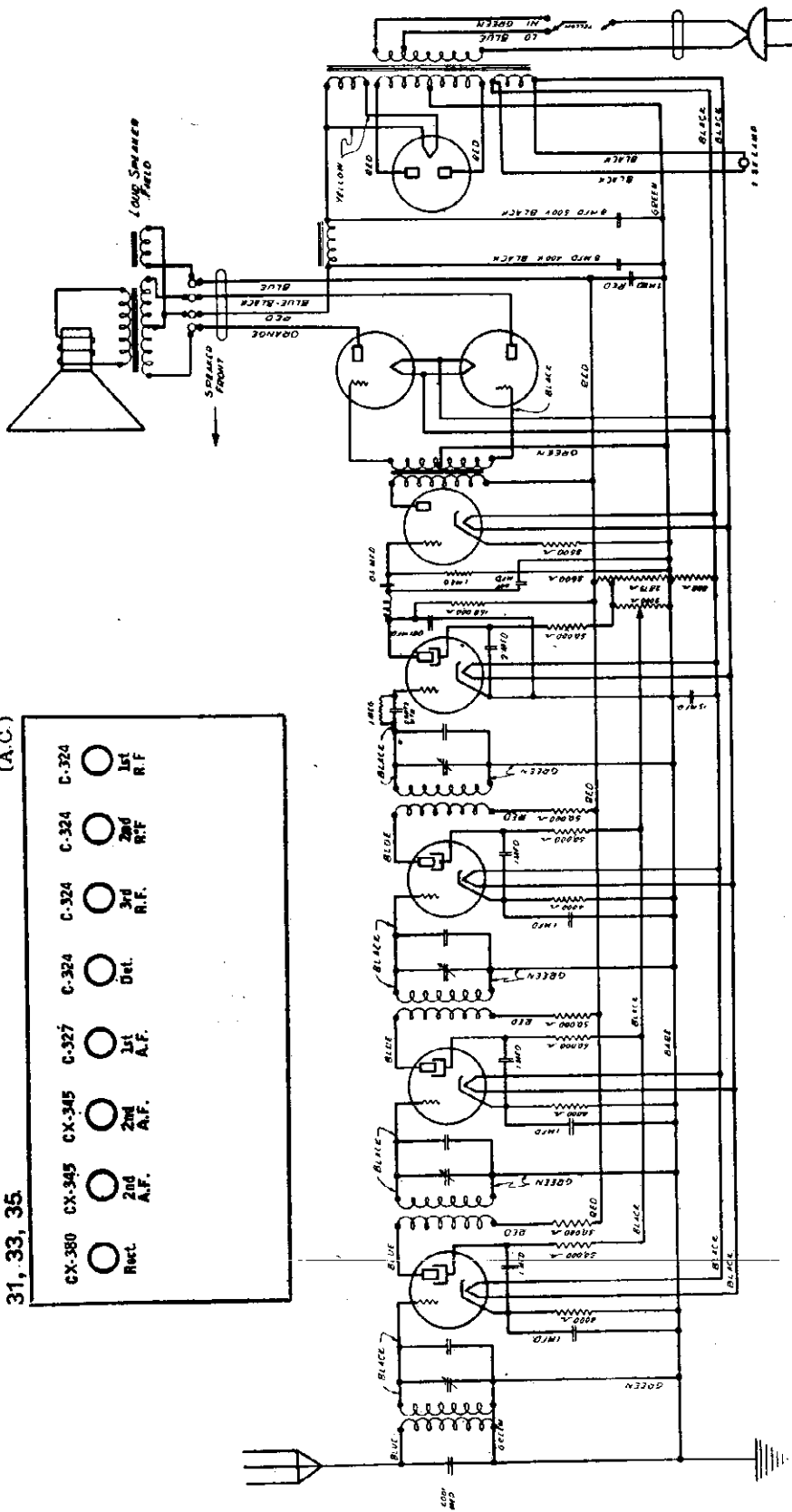
(A.C.)



TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST, R.F., DET., ETC.	READINGS, PLUG IN SOCKET OF SET					TUBE IN TESTER			
			A VOLTS	B VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHARGE	
1	RA-1	1st. R.F.	15.0	156	14.0	130	6	-	6.6		
2	RA-1	2nd. R.F.	15.0	136	14.0	130	6	-	6.6		
3	RA-1	3rd. R.F.	15.0	136	14.0	130	6	-	6.6		
4	DK-1	Detector	2.5	88	2.1	20	"	6	.8		
5	RA-1	1st. A.F.	15.0	130	14.0	120	6	-	6.6		
6	SO-1	2nd. A.F. Push	15.0	200	14.0	180	40	-	18.0		
7	SO-1	2nd. A.F. Pull	15.0	200	14.0	180	40	-	18.0	22.0	4.0

MODEL B31 25 Cycle
Schematic

SONORA PHONOGRAPH CO.



(A.C.)

31, 33, 35

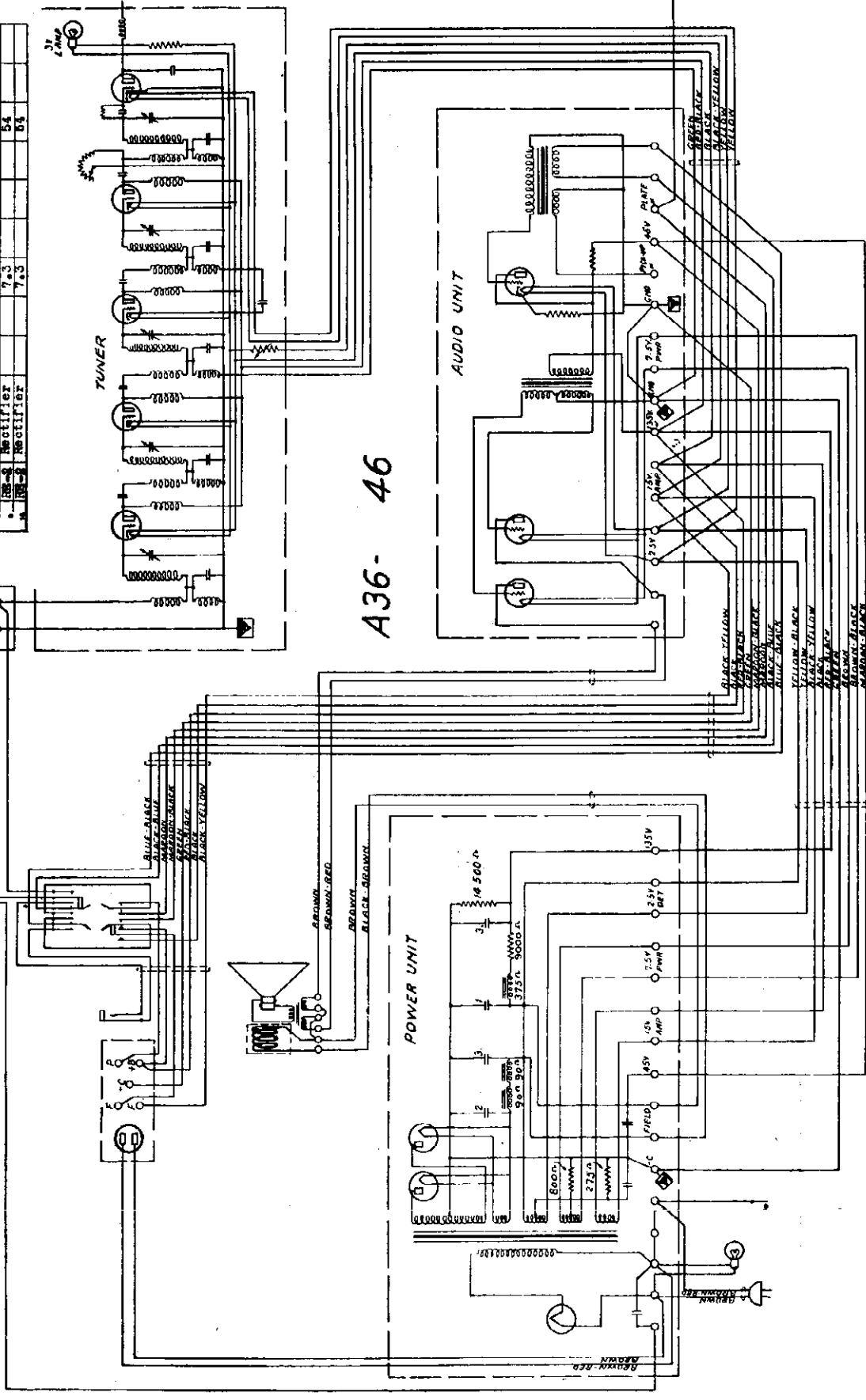
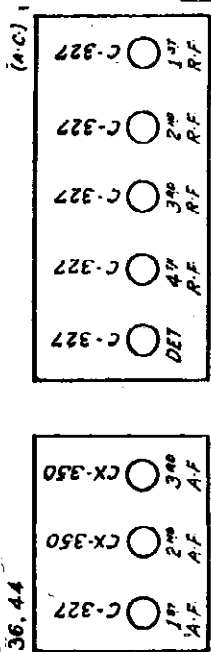
- CX-380 CX-345 CX-345 CX-324 CX-324 CX-324
- Rect. 1st A.F. 2nd A.F. Det. 1st R.F. 2nd R.F.

REV.	DATE	BY	CHKD.
ACOUSTIC PRODUCTS CO., INC.			
CIRCUIT DIAGRAM			
FOR MODEL No. B31			
DATE	DESIGNED	SCALE	

SONORA PHONOGRAPH CO.

MODEL A36, A46
Schematic

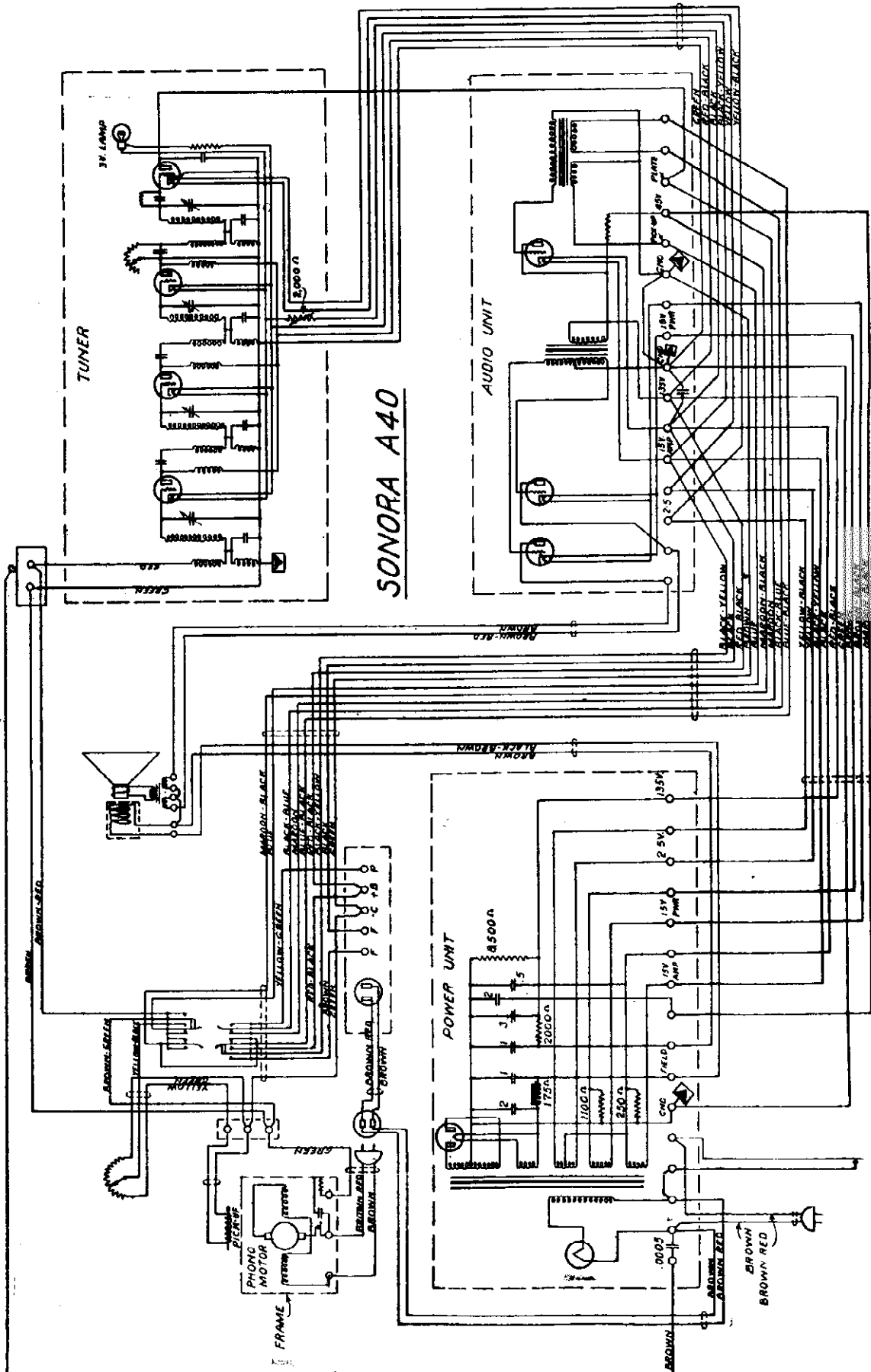
TYPE IN CHASSIS	TYPE IN TYPE	TUBE DATA		TUBE IN TESTER					PARTS PLATE VOLTAGE	PARTS GRID VOLTAGE	
		TYPE	REPLACE	TYPE	VOLTS	RESISTANCE	RESISTANCE	RESISTANCE			RESISTANCE
6X4	6X4	1st. R.F.	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	2nd. R.F.	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	3rd. R.F.	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	4th. R.F.	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	Detector	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	1st. A.F.	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	2nd. A.F.	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	3rd. A.F.	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	Rectifier	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	Rectifier	150	110	100	5	5000	5000	5000	5.4	5.4
6X4	6X4	Rectifier	150	110	100	5	5000	5000	5000	5.4	5.4



A36-46

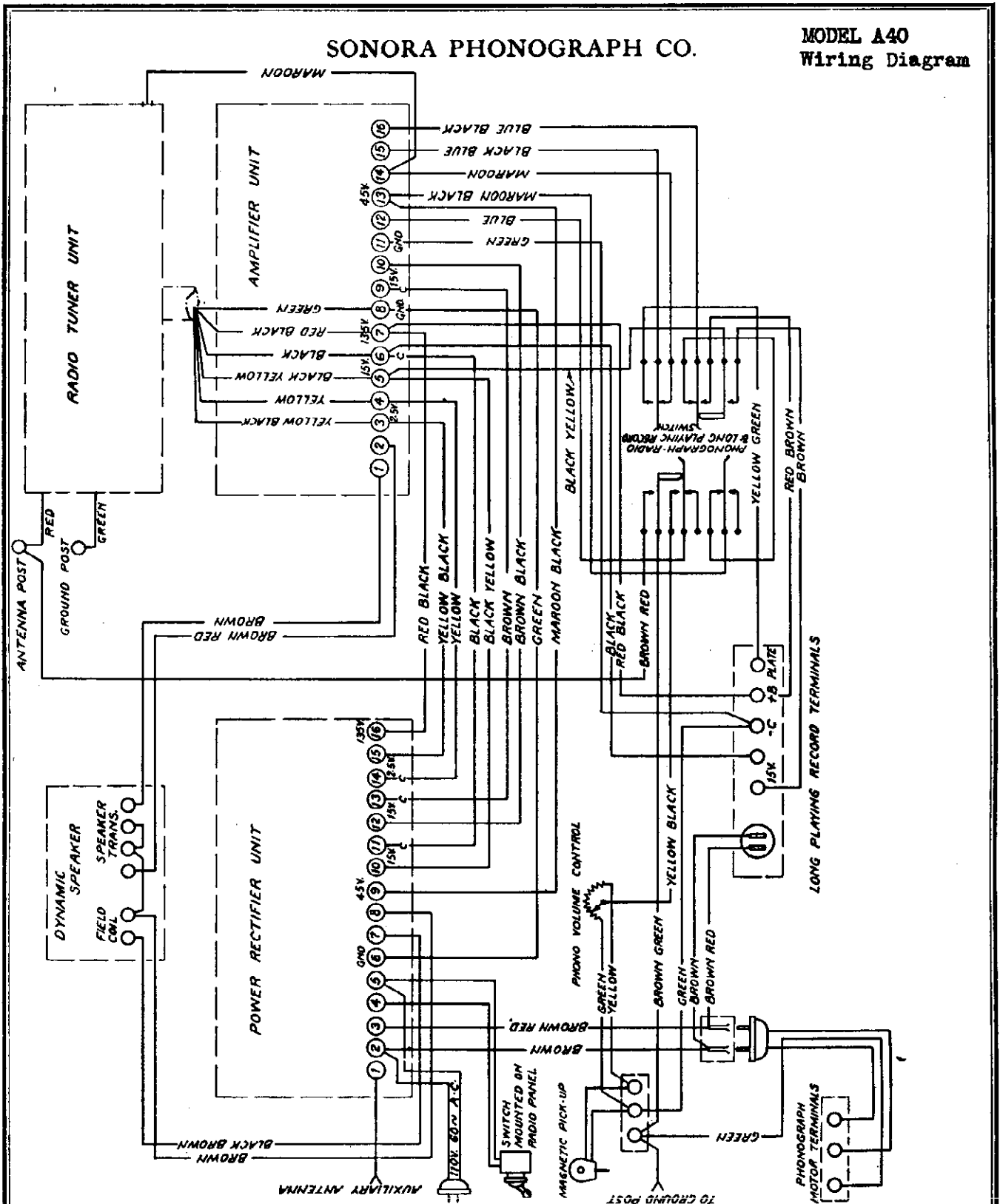
MODEL A40
Schematic

SONORA PHONOGRAPH CO.



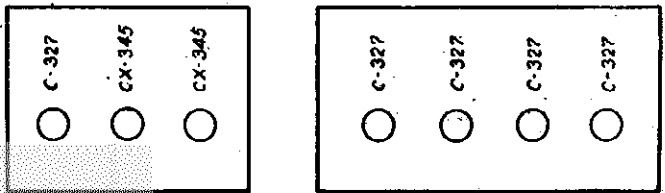
SONORA PHONOGRAPH CO.

MODEL A40
Wiring Diagram



TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1st, 2nd, 3rd, etc.	READINGS, PLUS IN SOCKET OF SET						CATHODE VOLTS	NORMAL PLATE M.A. G.M. TEST	PLATE M.A. CHANGE
			TUBE OUT			TUBE IN TESTER					
			A VOLTS	B VOLTS	C VOLTS	A VOLTS	B VOLTS	C VOLTS			
1	RA-1	1st. R.F.	15.0	136	14.0	130	6	-	6.6	12.0	5.0
2	RA-1	2nd. R.F.	15.0	136	14.0	130	6	-	6.6	12.0	5.0
3	RA-1	3rd. R.F.	15.0	136	14.0	130	6	-	6.6	12.0	5.0
4	DE-1	Detector	2.5	88	2.1	20	-	-	6.6	12.0	5.0
5	2A-1	1st. A.F.	15.0	130	14.0	120	6	-	6.6	12.0	5.0
6	80-1	2nd A.F. Push	15.0	200	14.0	180	40	-	18.0	22.0	4.0
7	80-1	2nd A.F. Pull	15.0	200	14.0	180	40	-	18.0	22.0	4.0

30, 32, 40

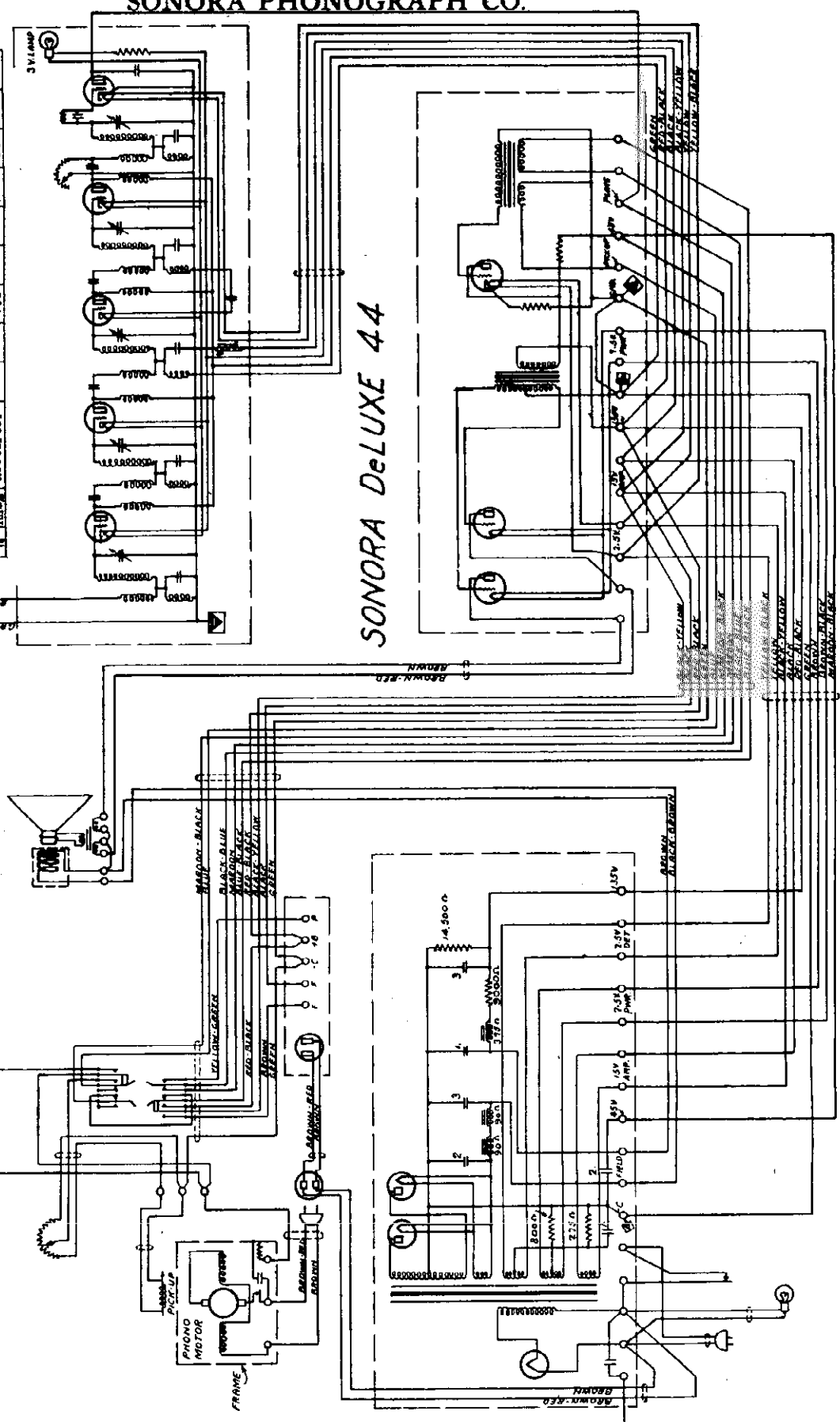


CX-380 USED IN SEPARATE POWER UNIT

MODEL De Luxe 44
Schematic

SONORA PHONOGRAPH CO.

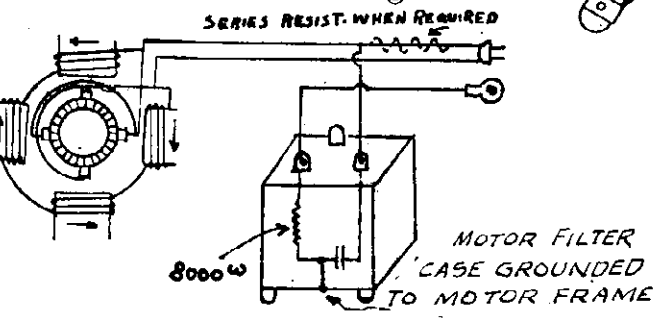
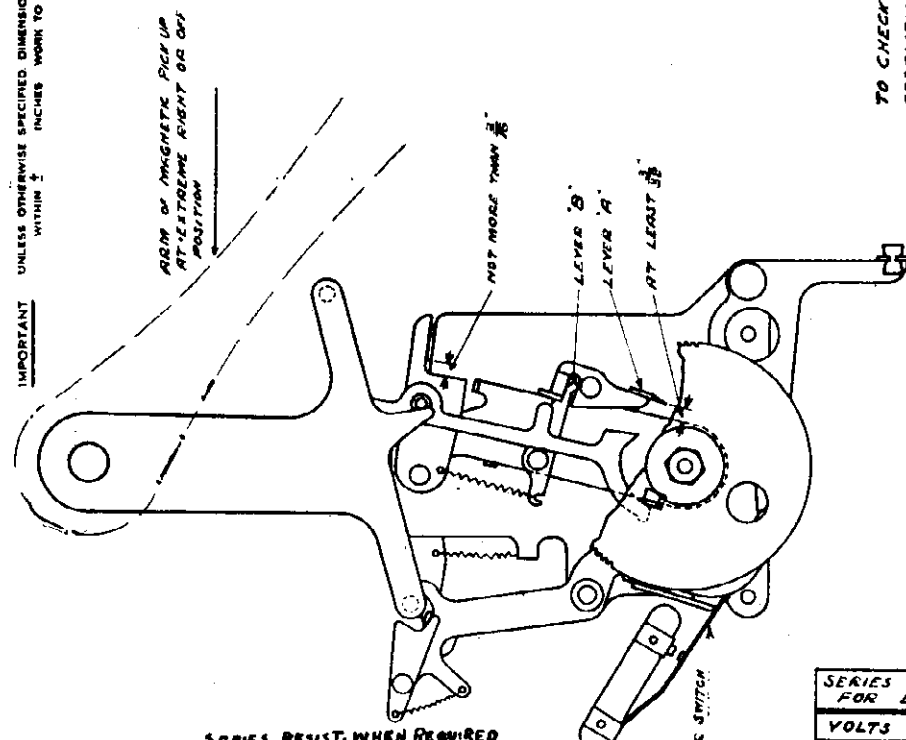
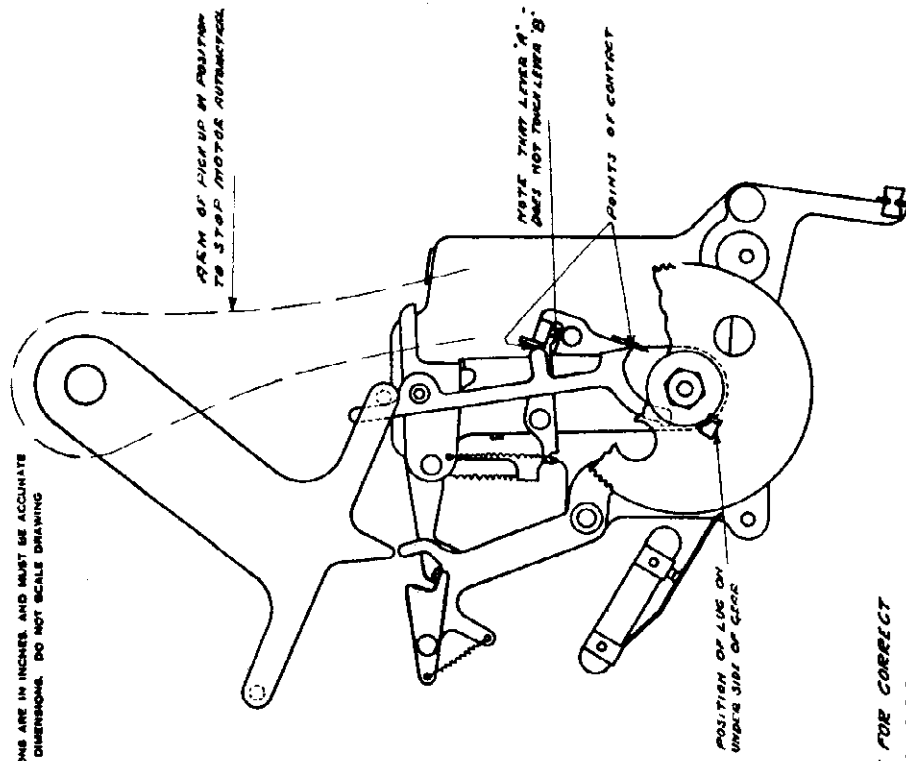
TUBE NO. IN CABINET	TYPE OR VARI- ATION	TUBE NO. IN CABINET	TIME OUT			TIME IN TESTER			PLATE VOLTAGE	SCREEN VOLTAGE	CONTROL VOLTAGE
			A	B	C	A	B	C			
1	6X4	1ST 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
2	6X4	2ND 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
3	6X4	3RD 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
4	6X4	4TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
5	6X4	5TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
6	6X4	6TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
7	6X4	7TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
8	6X4	8TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
9	6X4	9TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
10	6X4	10TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
11	6X4	11TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
12	6X4	12TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
13	6X4	13TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
14	6X4	14TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
15	6X4	15TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
16	6X4	16TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
17	6X4	17TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
18	6X4	18TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
19	6X4	19TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
20	6X4	20TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
21	6X4	21TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
22	6X4	22TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
23	6X4	23TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
24	6X4	24TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
25	6X4	25TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
26	6X4	26TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
27	6X4	27TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
28	6X4	28TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
29	6X4	29TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
30	6X4	30TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
31	6X4	31TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
32	6X4	32TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
33	6X4	33TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
34	6X4	34TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
35	6X4	35TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
36	6X4	36TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
37	6X4	37TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
38	6X4	38TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
39	6X4	39TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
40	6X4	40TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
41	6X4	41TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
42	6X4	42TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
43	6X4	43TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
44	6X4	44TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
45	6X4	45TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
46	6X4	46TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
47	6X4	47TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
48	6X4	48TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
49	6X4	49TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
50	6X4	50TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
51	6X4	51TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
52	6X4	52TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
53	6X4	53TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	
54	6X4	54TH 6X4	110	110	102	5	4.0	5.4	5.4	5.4	



SONORA DeLUXE 44

SONORA PHONOGRAPH CO.

MODEL 2M
Automatic Stop



TO CHECK FOR CORRECT
ASSEMBLY OF AUTOMATIC
STOP MECHANISM OF TYPE
2M MELOPHON MOTOR

MATERIAL AND SPECIFICATION		UNIT PRICE AND NO.	WEIGHT PER UNIT
AUTOMATIC STOP MECHANISM OF TYPE 2M MOTOR			
SONORA PHONOGRAPH CO. INC. NEW YORK, N.Y.		PART NO.	ED SERVICE DEPT DWG # 38
DATE	BY	CHK'D BY	APPROVED BY
11-18-37			

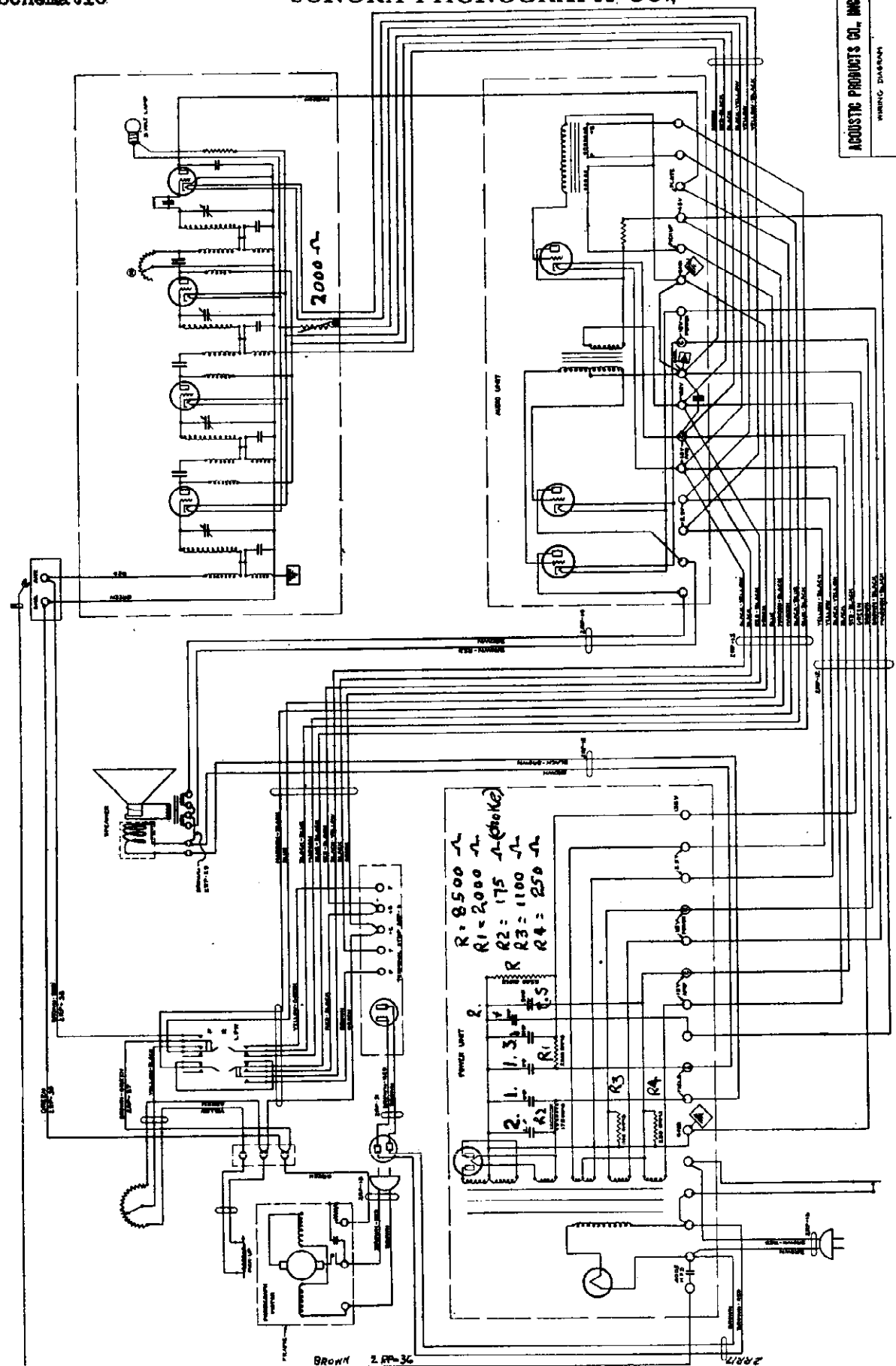
VOLTS	CYCLES	OHMS	WATTS
110	60	NONE	
110	50	25	100
110	40	60	100
110	25	110	100
110	DC.	165	100
220	60	210	200
220	25	330	200
32	DC.	NONE	

MODEL 2RP 25 Cycle
Schematic

SONORA PHONOGRAPH CO.,

ACOUSTIC PRODUCTS CO., INC.
WIRING DIAGRAM
FOR CONNECTION
MODEL NO. 2RP
DATE: APR 13 1934
DRAWN BY: J. H. BROWN
CHECKED BY: J. H. BROWN
SCALE: 1/8" = 1"

Model 2RP 25



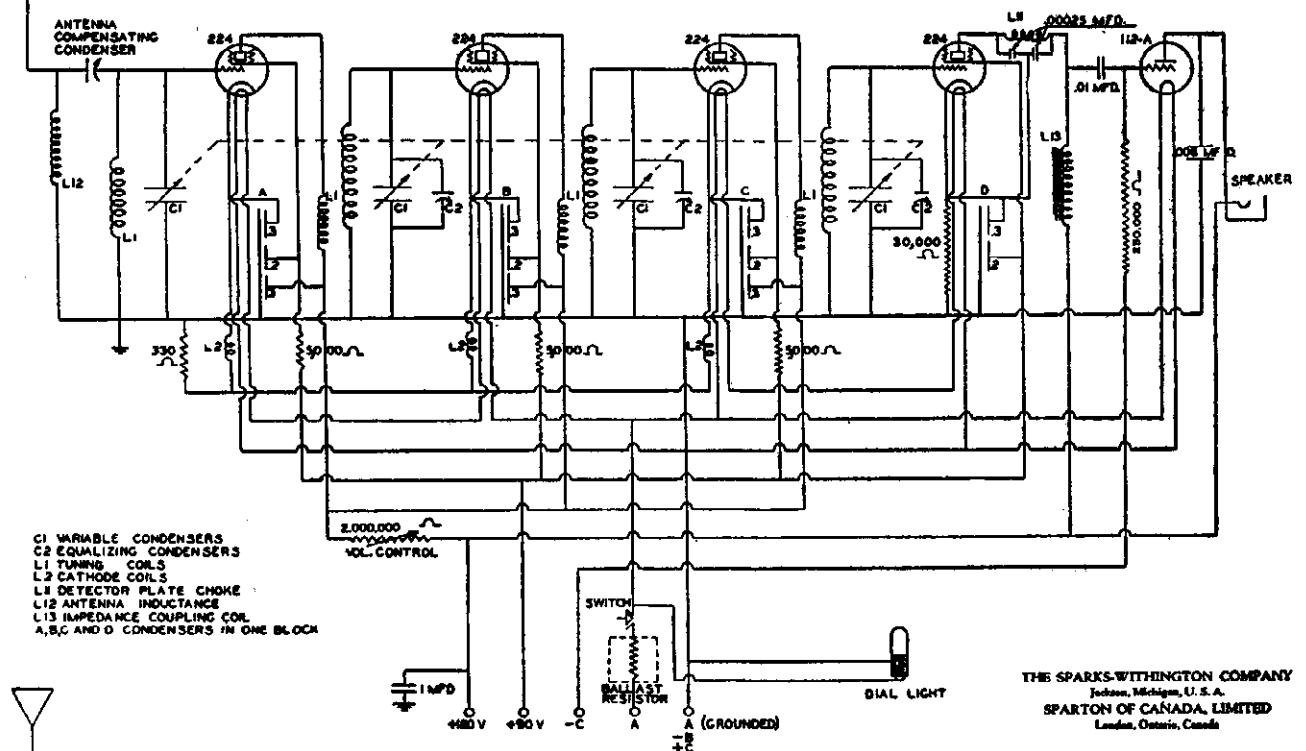
Brown 2RP-36

2RP-25

SPARKS WITHINGTON CO.

MODEL AR-19
 MODEL AR-50
 Schematic

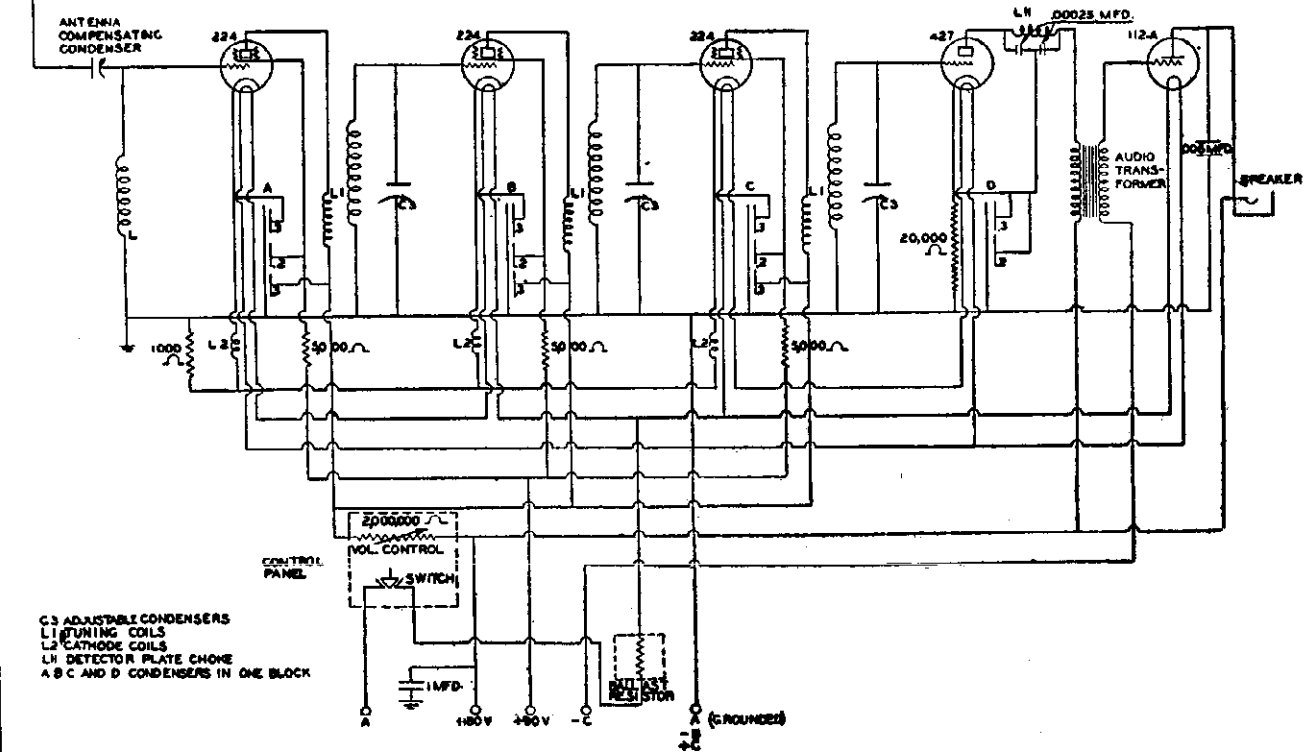
MODEL A.R.-19



- C1 VARIABLE CONDENSERS
- C2 EQUALIZING CONDENSERS
- L1 TUNING COILS
- L2 CATHODE COILS
- L1 DETECTOR PLATE CHOKE
- L12 ANTENNA INDUCTANCE
- L13 IMPEDANCE COUPLING COIL
- A, B, C AND D CONDENSERS IN ONE BLOCK

MODEL AR-50

POLICE AUTOMOBILE RADIO



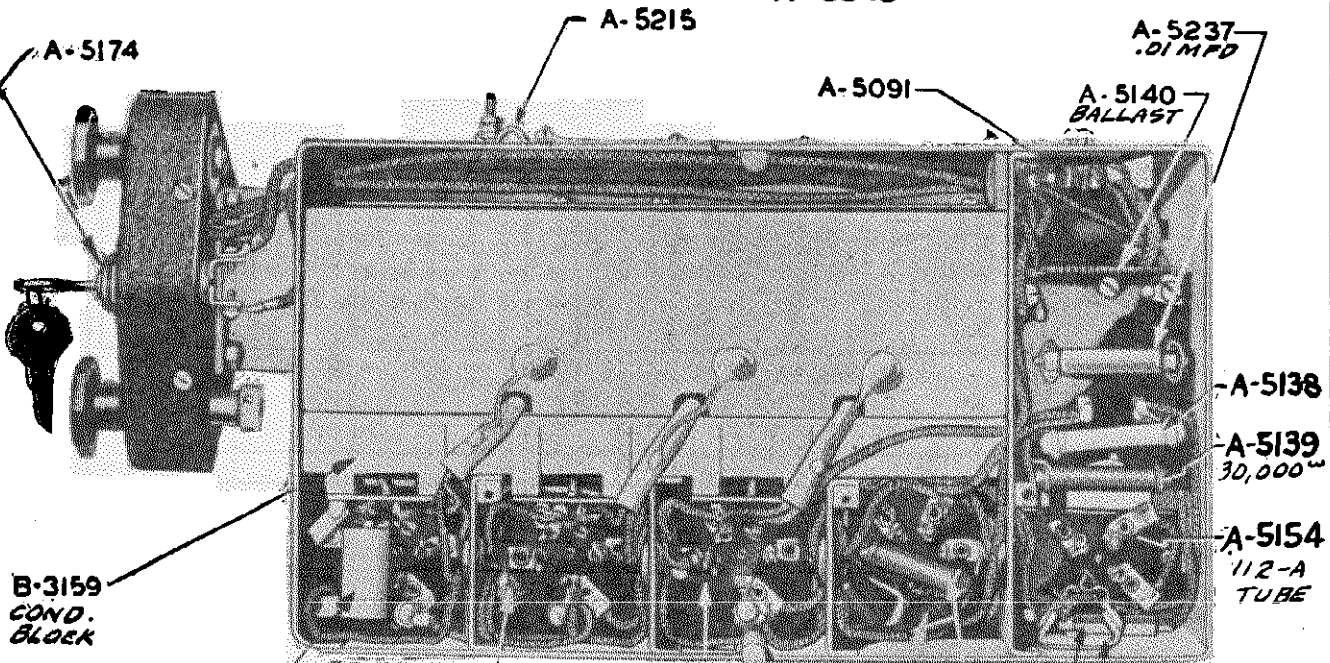
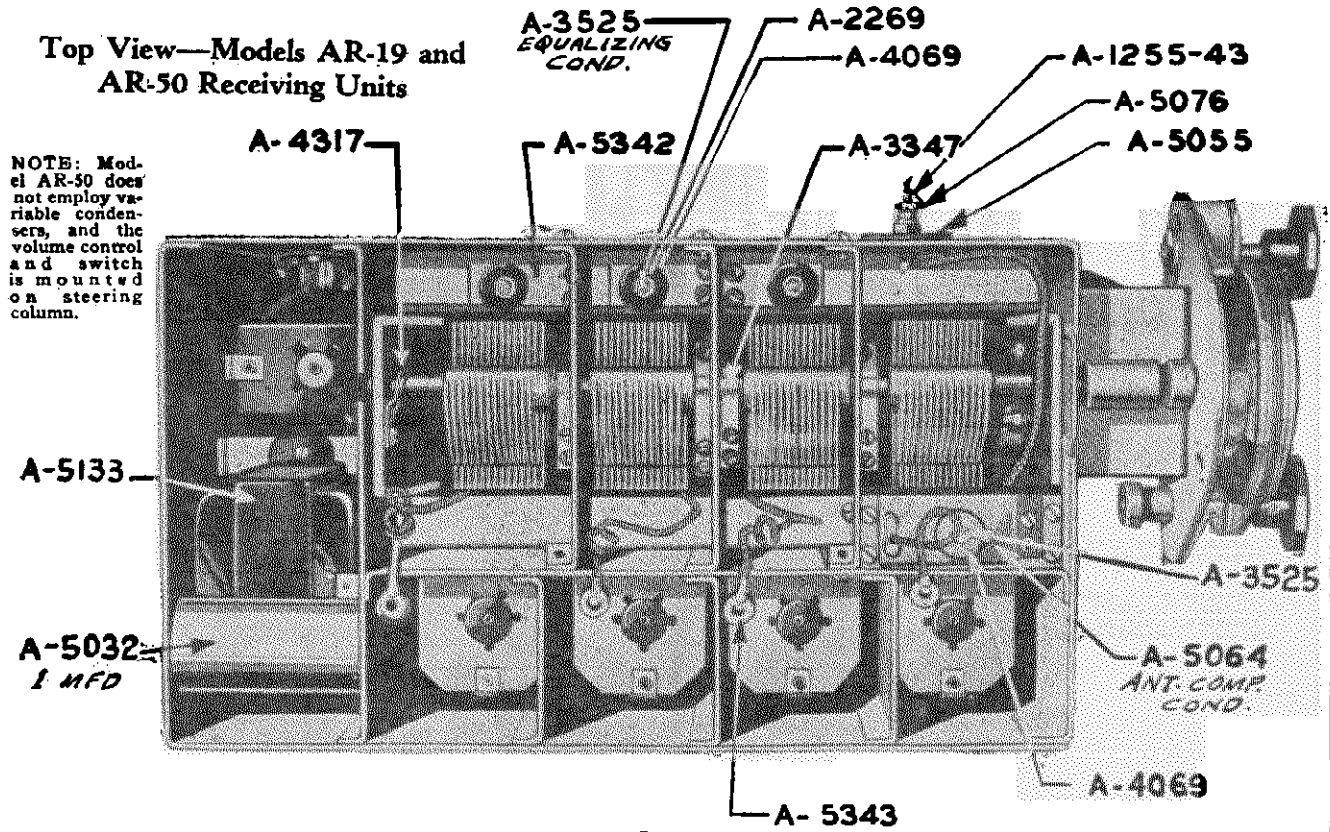
- C3 ADJUSTABLE CONDENSERS
- L1 TUNING COILS
- L2 CATHODE COILS
- L1 DETECTOR PLATE CHOKE
- A, B, C AND D CONDENSERS IN ONE BLOCK

MODEL AR-19
MODEL AR-50
Chassis

SPARKS WITHINGTON CO.

Top View—Models AR-19 and AR-50 Receiving Units

NOTE: Model AR-50 does not employ variable condensers, and the volume control and switch is mounted on a steering column.



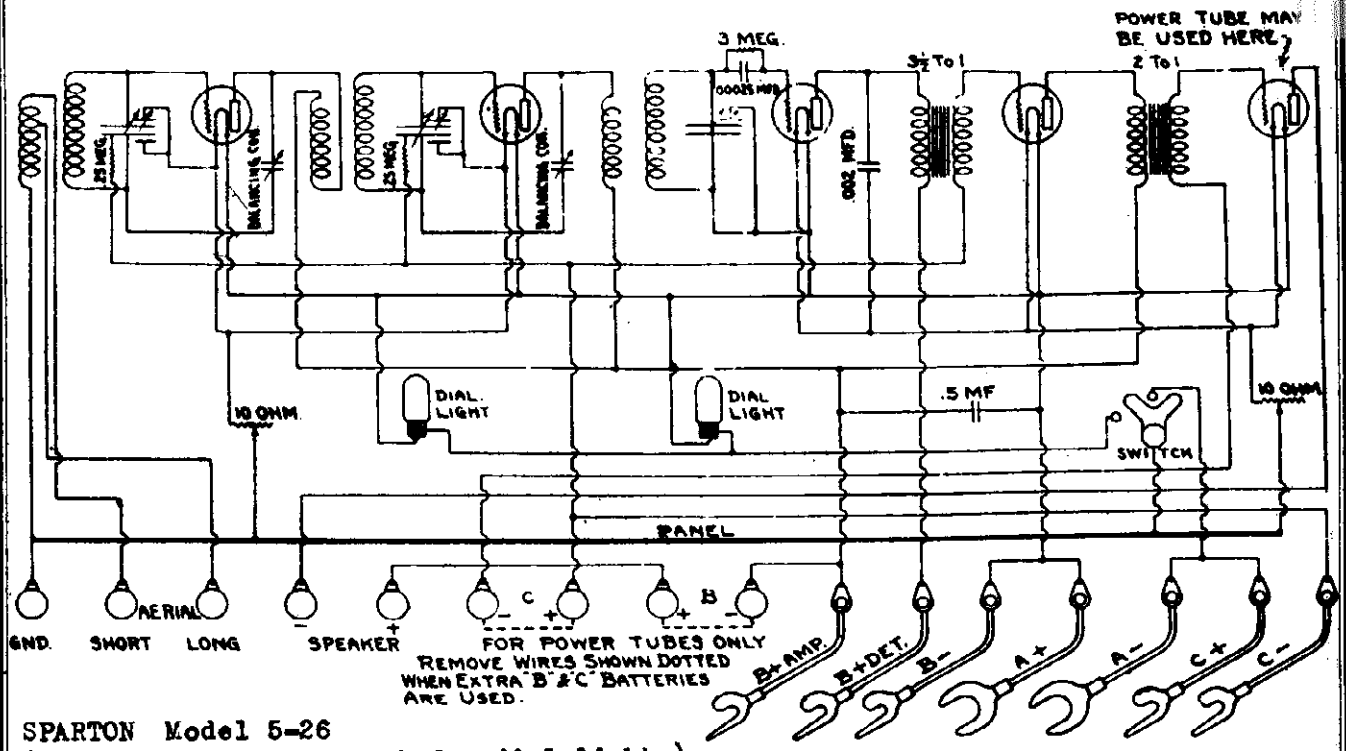
Bottom View
Models AR-19 and AR-50 Receiving Units

NOTE: In Model AR-50, A-5139 resistor is replaced with A-4261 resistor; A-5174 key switch is replaced with A-5903 toggle switch.

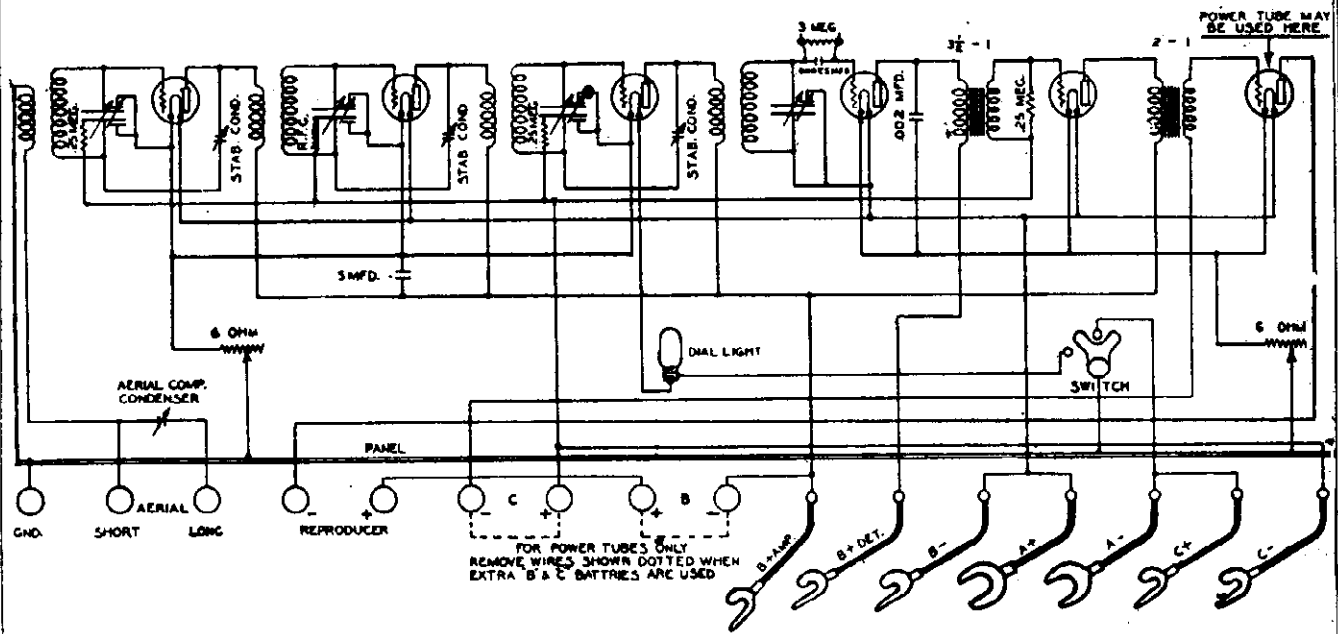
PART #A5217 FOR SPARK PLUG=.01 MFD
PART #A5258 FOR GENERATOR=.01 MFD

SPARKS WITHINGTON, CO.

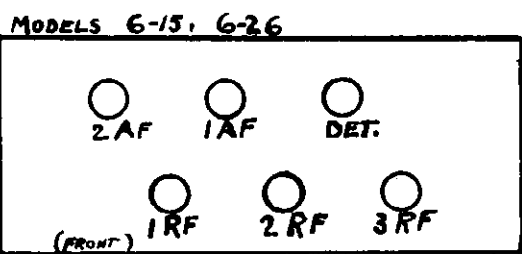
- MODEL 5-15
- MODEL 5-26
- MODEL 6-15
- MODEL 6-26



SPARTON Model 5-26
(Model 5-15 same except for dial light.)

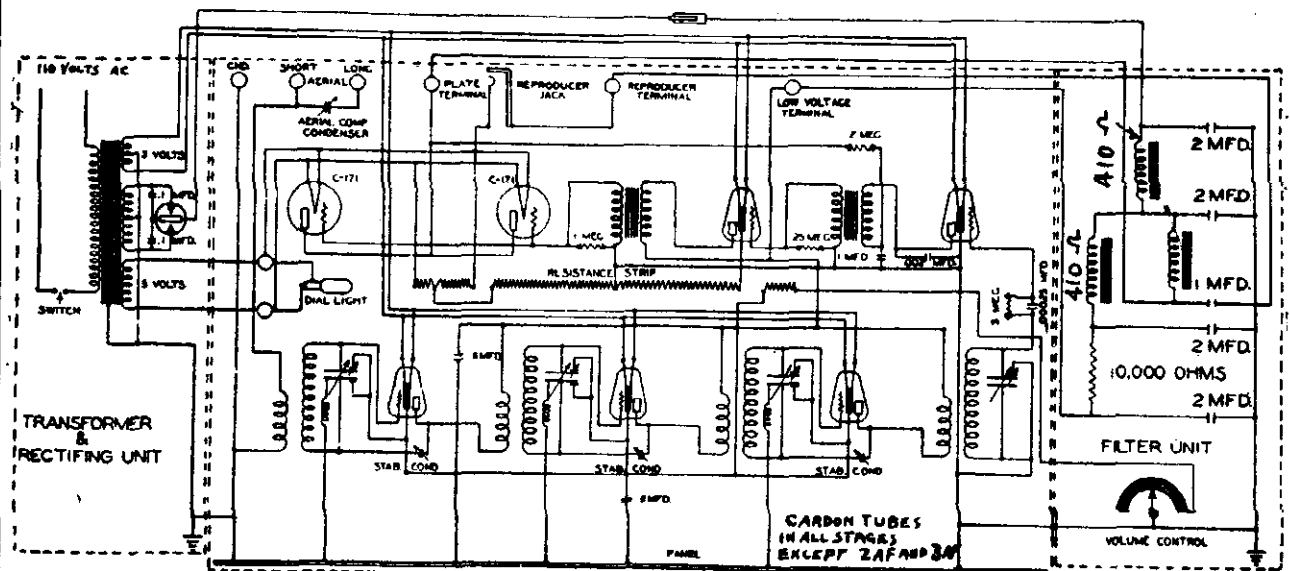
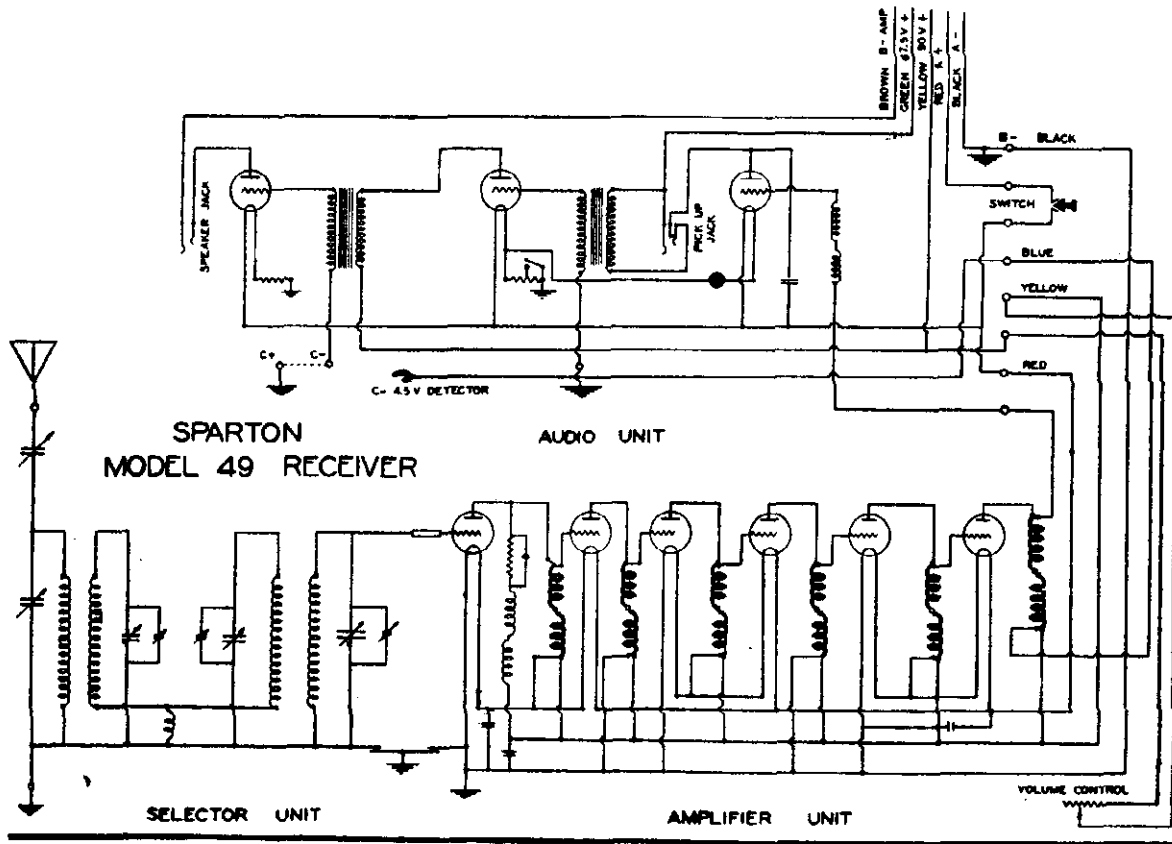


SPARTON MODEL 6-26
MODEL 6-15 SAME EXCEPT FOR
DIAL LIGHT & A.F. RHEOSTAT



SPARKS WITHINGTON CO.

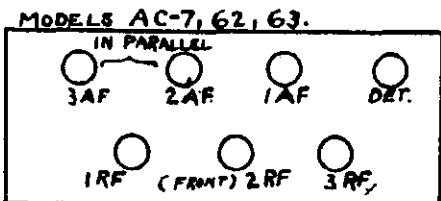
MODEL 49
MODEL AC-7, 62, 63
Schematic, Voltage



SPARTON AC 62, 62 and AC 7.

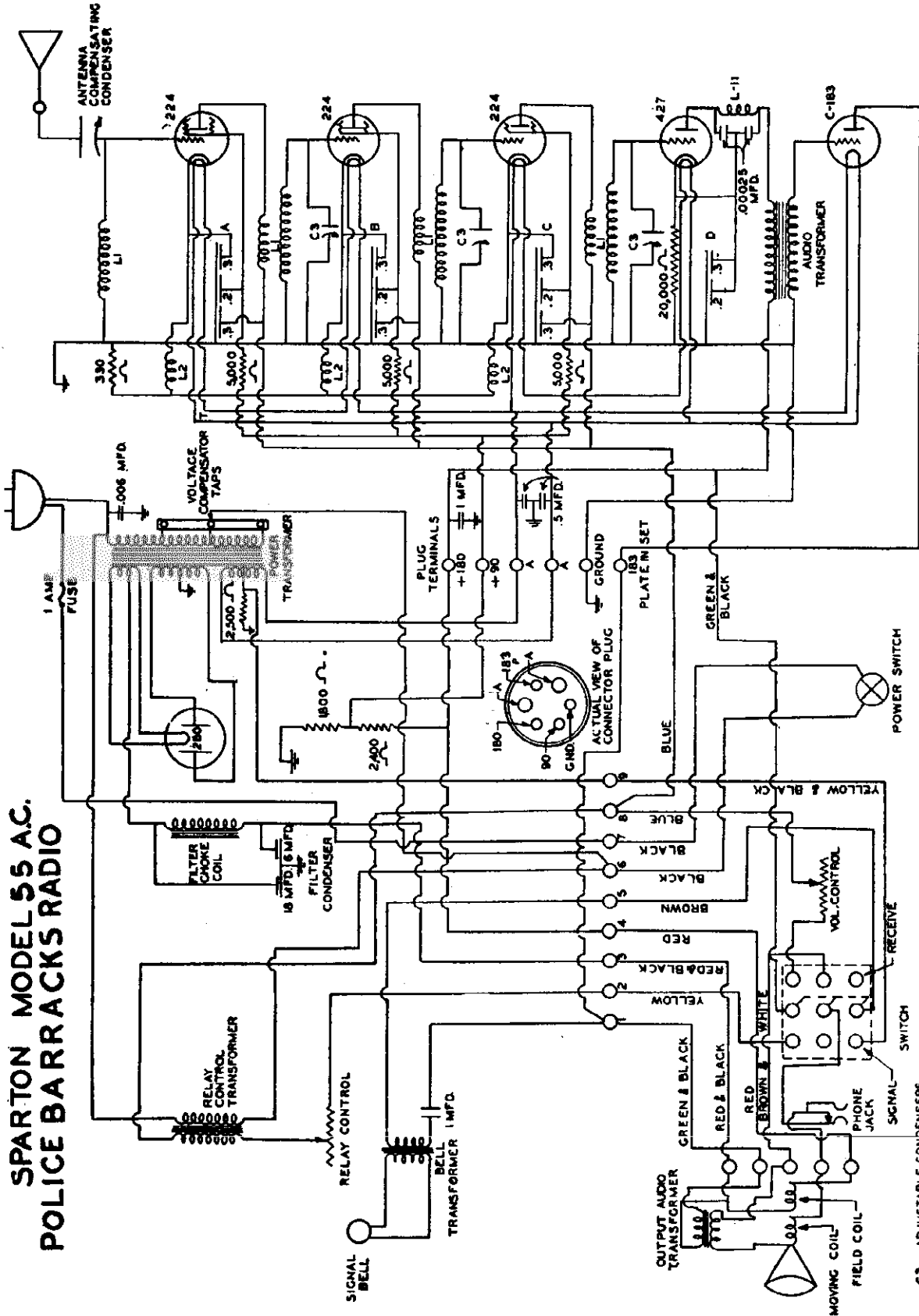
Tube	File V.	Grid V.	Plate V.
1RF	3	2	150
2RF	3	2	150
3RF	3	2	150
Det	3	-	30
1AF	3	6	150
2AFP	5	40	210
3AFP	5	40	210

SPARTON AC-62-63 AC-7 RECEIVER



MODEL 55
Police Desk
Schematic

SPARKS WITHINGTON CO.
SPARTON OF CANADA LTD.



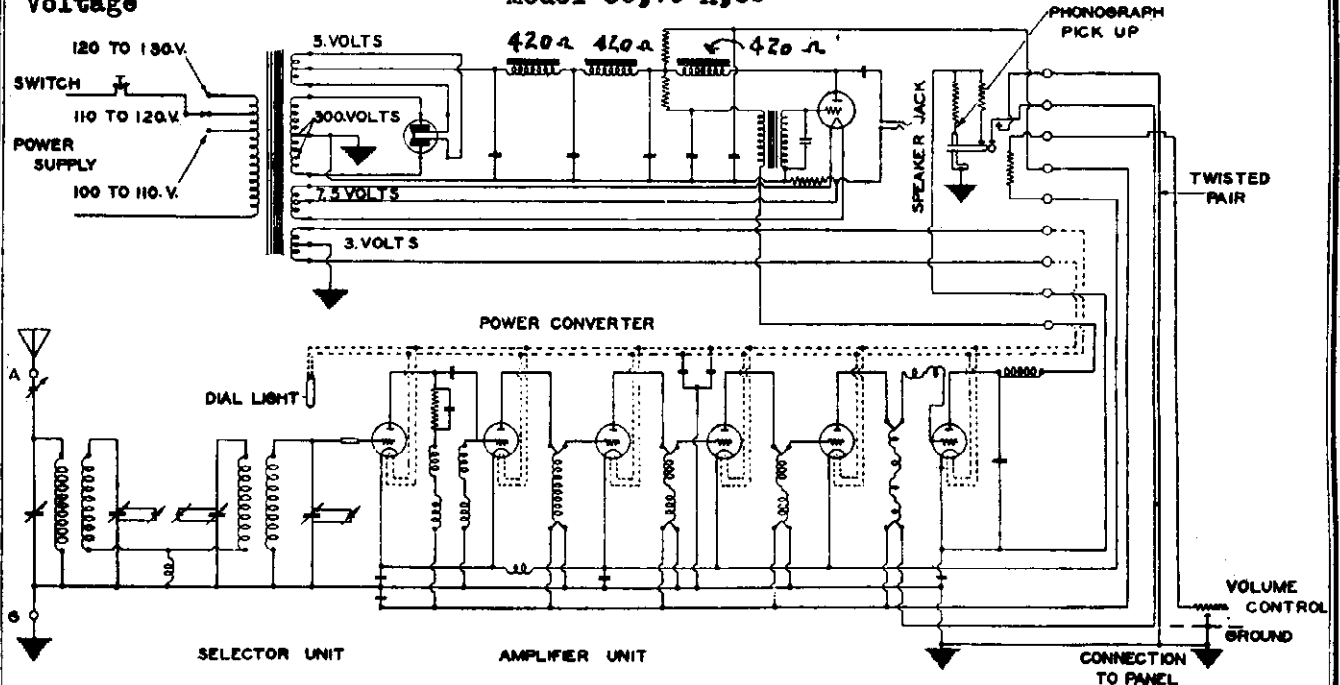
SPARTON MODEL 55 A.C.
POLICE BARRACKS RADIO

- C3 ADJUSTABLE CONDENSERS
- L1 TUNING COILS
- L2 CATHODE COILS
- L11 DETECTOR PLATE CHOKE
- A, B, C, D CONDENSERS IN ONE BLOCK

MODEL 69,79-A,89
Schematic
MODEL 89-A
Schematic
Voltage

SPARKS WITHINGTON CO.

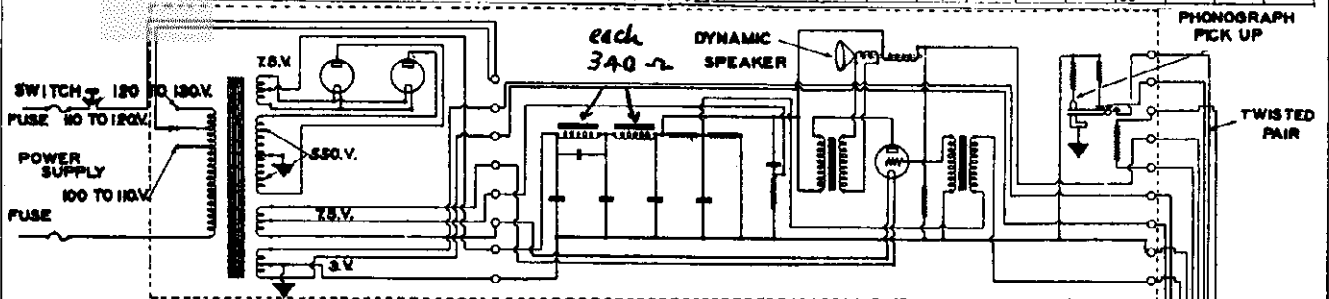
Model 69,79-A,89



SPARTON—Model 79-A.89 - 69
Line Voltage 120—Volume Control Full

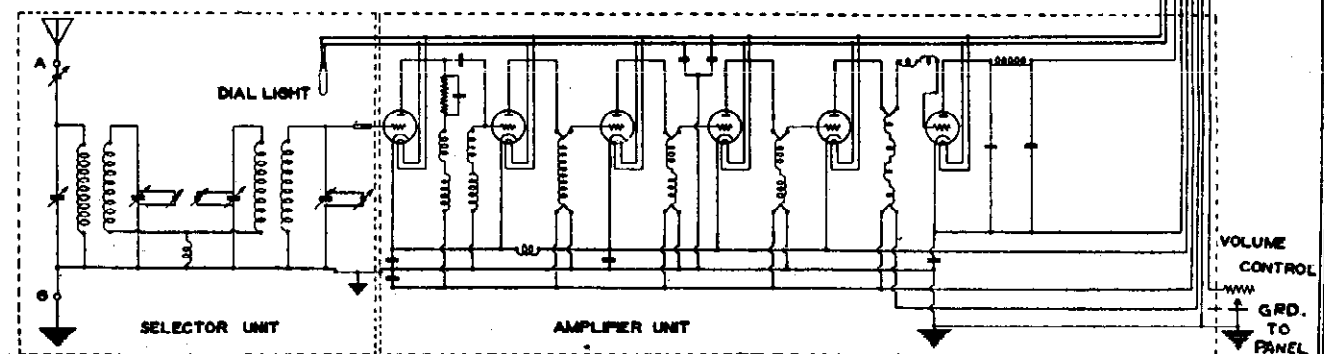
SPARTON—Model 89-A
Line Voltage 120—Volume Control Full

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST. R.F. DET. ETC.	READINGS, PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	CATHODE HEATER VOLTS	NORMAL PLATE M.A. TEST	PLATE M.A. CHANGE	SCREEN GRID VOLTS	PLATE M.A. TEST	PLATE M.A. CHANGE	SCREEN GRID VOLTS
1	C-484	1st RF	3.2	158	3	128	9	7.8	10.0	3.6		
2	C-484	2nd RF	3.2	158	3	158	9	7.8	13.	5.2		
3	C-484	3rd RF	3.2	158	3	158	9	5.5	10.8	5.3		
4	C-484	4th RF	3.2	160	3	158	9	7.9	14.4	6.5		
5	C-484	5th RF	3.2	160	3	158	9	7.4	13.2	5.8		
6	C-484	6th RF	3.2	245	3	220	10	1.7	6.	4.3		
7	585	Ph. Amp.	3.2	310	7.4	220	38	25	29	4		
8	280	Rect.	-	5.1	-	-	-	28	-	-		



POWER CONVERTER

Model 89-A



SELECTOR UNIT

AMPLIFIER UNIT

VOLUME CONTROL
GRD. TO PANEL

Resistor Data

SPARKS WITHINGTON CO.

STANDARD RESISTOR COLOR CODE AND RESISTORS USED IN SPARTON RADIO RECEIVING SETS AND SPARTON ENSEMBLES

Standard Resistor Color Code

- | | |
|----------|----------|
| 0—Black | 5—Green |
| 1—Brown | 6—Blue |
| 2—Red | 7—Violet |
| 3—Orange | 8—Gray |
| 4—Yellow | 9—White |

To determine the value of a resistor, the first significant figure of resistance value is represented by the color of the body of the resistor, and the second

figure of resistance value by the color of the tip of the resistor. The number of ciphers following the second figure is determined by the color of the dot or stripe in the center of the body of the resistor. For example, a 20,000 ohm resistor has a red body, black tip, with orange dot or orange stripe. A 2,200 ohm resistor would be red body, with red tip and red dot, or red stripe, and as all colors are the same, it would be a single color resistor.

CARBON RESISTORS

Part No.	Ohms	Watts	Body	Tip	Dot Stripe
B-4114-11	200	.5	Red	Black	Brown
B-4114-3	250	.5	Red	Green	Brown
B-4114-1	500	.5	Green	Black	Brown
B-4114-13	1,000	.5	Brown	Black	Red
A-3397	1,000	2	Light Brown		
A-3397	1,000	2	Brown	Black	Red
A-3750	1,250	3	Brown	Orange	Red
A-3750	1,250	3	Black	Silver	Orange
A-3750	1,250	3	Black		
A-3750	1,250	3	Slate		
A-3325	1,700	2	Dark Brown		
A-3639	1,700	5	Gray	Silver	
A-4613	1,700	1	Brown	Violet	Red
A-5550	2,000	.5	Red	Black	Red
B-4114-6	Use A-5550				
A-5622	2,500	3	Red	Green	Red
A-3232	2,800	.5	Black	Paper Label	
A-4122	2,800	.5	Gray		
A-4122	2,800	.5	Red		
A-4653	2,800	.5	Red	Gray	Red
A-5180	5,000	.5	Green	Black	Red
B-4114-16	Use A-5180				
B-4114-20	Use A-5180				
B-4114-25	7,000	.5	Violet	Black	Red
B-4114-2	8,000	.5	Gray	Black	Red
A-3764-C	10,000	4	Blue		
A-3735	10,000	5	Brown	Black	Orange
A-3735	10,000	5	Gray	Silver	Blue
A-4614	10,000	1	Brown	Black	Orange
B-4114-7	10,000	.5	Brown	Black	Orange
B-4114-5	10,000	.3	Brown	Black	Orange
A-4107	15,000	5	Brown	Green	Orange
A-4107	15,000	5	Gray	Silver	
B-4114-23	15,000	.5	Yellow	Black	Orange
A-2934	20,000	2	Green		
A-2934	20,000	2	Red	Black	Orange
A-3422	20,000	3	Gray		Green
A-3422	20,000	3	Red	Black	Orange
A-4261	20,000	5	Red	Black	Orange
A-4261	20,000	5	Gray	Silver	Blue
B-4114-14	20,000	.5	Red	Black	Orange
B-4114-24	Use B-4114-14				
A-7111	25,000	4.5	Red	Green	Orange

SPARKS WITHINGTON CO.

Resistor Data

CARBON RESISTORS—Continued

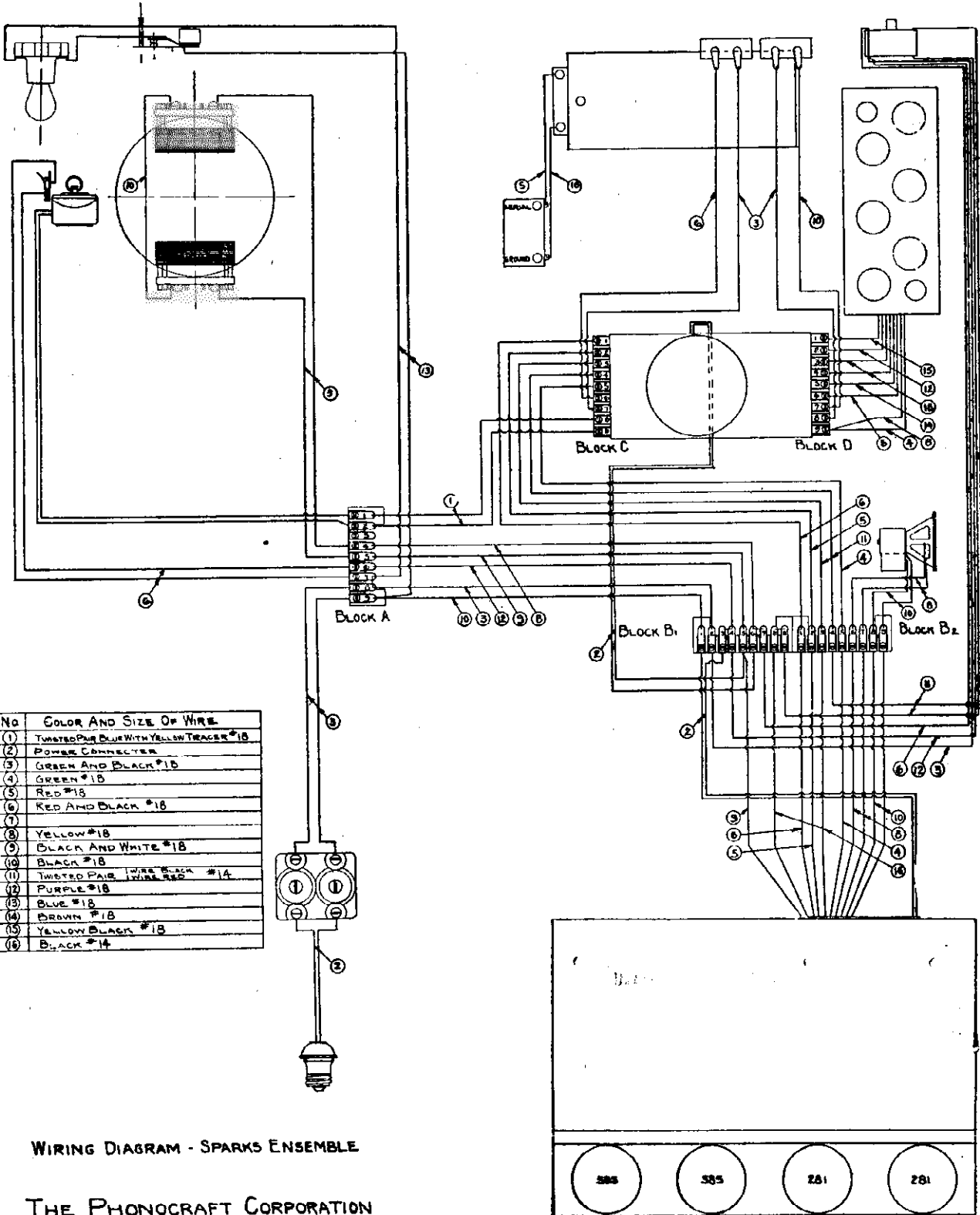
Part No.	Ohms	Watts	Body	Tip	Dot Stripe
B-4114-18	25,000	.5	Red	Green	Orange
A-5139	30,000	1	Orange	Black	
B-4114-19	30,000	.5	Orange	Black	Orange
B-4114-22	40,000	.5	Yellow	Black	Orange
A-3423	50,000	3	Gray		Red
A-3423	50,000	3	Green	Black	Orange
B-4114-12	50,000	.5	Green	Black	Orange
B-4114-15	60,000	.5	Blue	Black	Orange
A-5354	100,000	1	Brown	Black	Yellow
B-4114-10	100,000	.5	Brown	Black	Yellow
B-4114-8	150,000	.5	Brown	Green	Yellow
A-2702-5	200,000		Glass		
B-4114-17	200,000	.5	Red	Black	Yellow
A-1514	250,000		Glass		
A-4234	250,000	1	Red	Green	Yellow
A-5270	Use A-4234				
B-4114-4	250,000	.5	Red	Green	Yellow
A-2702-6	Use A-1514				
A-5269	500,000	1	Green	Black	Yellow
B-4114-9	500,000	.5	Green	Black	Yellow
A-5138	1,000,000	1	Brown	Black	Green
B-4114-21	1,000,000	.5	Brown	Black	Green
A-2702-11	1,000,000		Glass		
A-1515	3,000,000		Glass		
A-2702-13	Use A-1515		Glass		

WIRE WOUND RESISTORS

Part No.	Ohms	Watts	Color	Type	Part No.	Ohms	Watts	Color	Type
A-7411	.43			Special	A-7118	250	1	Blue	Wire Wound
A-6890	.54	2.5	5-23/32"	Wire	A-5137	330	1	Gray	Wire Wound
A-6889	.67	2.5	7-7/64"	Wire	A-3536	900	10	Black	Wire Wound
A-5863	2	5	Blue	Wire Wound	A-7119	1,050	7.5	Blue	Wire Wound
A-4363	7	20	Blue	Wire Wound	A-7018	1,250	4		Candohm
A-7509	8-9			Wire Wound	A-4974	1,250	5	Gray	Candohm
A-5140	(.11 ohms per ft. at 20° C.)			Wire	A-6617	1,500	2	Brown	Braided
A-5862	12	10	Blue	Wire Wound	A-3383	3,000	10	Black	Wire Wound
A-4364	12	30	Blue	Wire Wound	A-3535	7,000	10	Black	Wire Wound
A-5890	14	10	Blue	Wire Wound	A-4583	Use A-3535			
A-4366	15	50	Blue	Wire Wound	A-2043	10,000	6	Black	Wire Wound
A-7421	35	.25	Red	Braided	A-4356	20,000		Blue	Wire Wound
A-5889	54	175	Blue	Wire Wound	A-3811	30,000	.5	Black	Wire Wound
A-5861	57	175	Blue	Wire Wound	A-3642	(6.04 ohms per ft. at 20° C.)			Wire Wd. Tap.
A-4365	63	10	Blue	Wire Wound	A-4260	2,000-7,000	20	Black	Wire Wd. Tap.
A-3590	110	1	Black	Wire Wound	A-5426	1,800-2,400	8	Blue	Wire Wd. Tap.
A-4670	110	1	Black	Wire Wound	A-5870	Use A-5426			
A-4915	110	1	Black	Candohm	A-6619	2,900-3,000	15	Blue	Wire Wd. Tap.
A-7427	160	1	Blue	Wire Wound	A-7120	2,400-3,200	4.5	Blue	Wire Wd. Tap.
A-6618	200	.5	Red	Braided	A-7461	3,900-4,300		Blue	Wire Wd. Tap.
A-5502	200	1	Red	Candohm	A-6977	5,500-6,000	7	Blue	Wire Wd. Tap.
A-6976	230	3	Blue	Wire Wound	A-7462	60-220-2,100		Blue	Wire Wd. Tap.

MODEL 99
Ensemble
Assembly
Wiring

SPARKS WITHINGTON CO.



No	COLOR AND SIZE OF WIRE
(1)	TWISTED PAIR BLUE WITH YELLOW TRACER *18
(2)	POWER CONNECTER
(3)	GREEN AND BLACK *18
(4)	GREEN *18
(5)	RED *18
(6)	RED AND BLACK *18
(7)	
(8)	YELLOW *18
(9)	BLACK AND WHITE *18
(10)	BLACK *18
(11)	TWISTED PAIR (WIRE BLACK WIRE RED) *14
(12)	PURPLE *18
(13)	BLUE *18
(14)	BROWN *18
(15)	YELLOW BLACK *18
(16)	BLACK *14

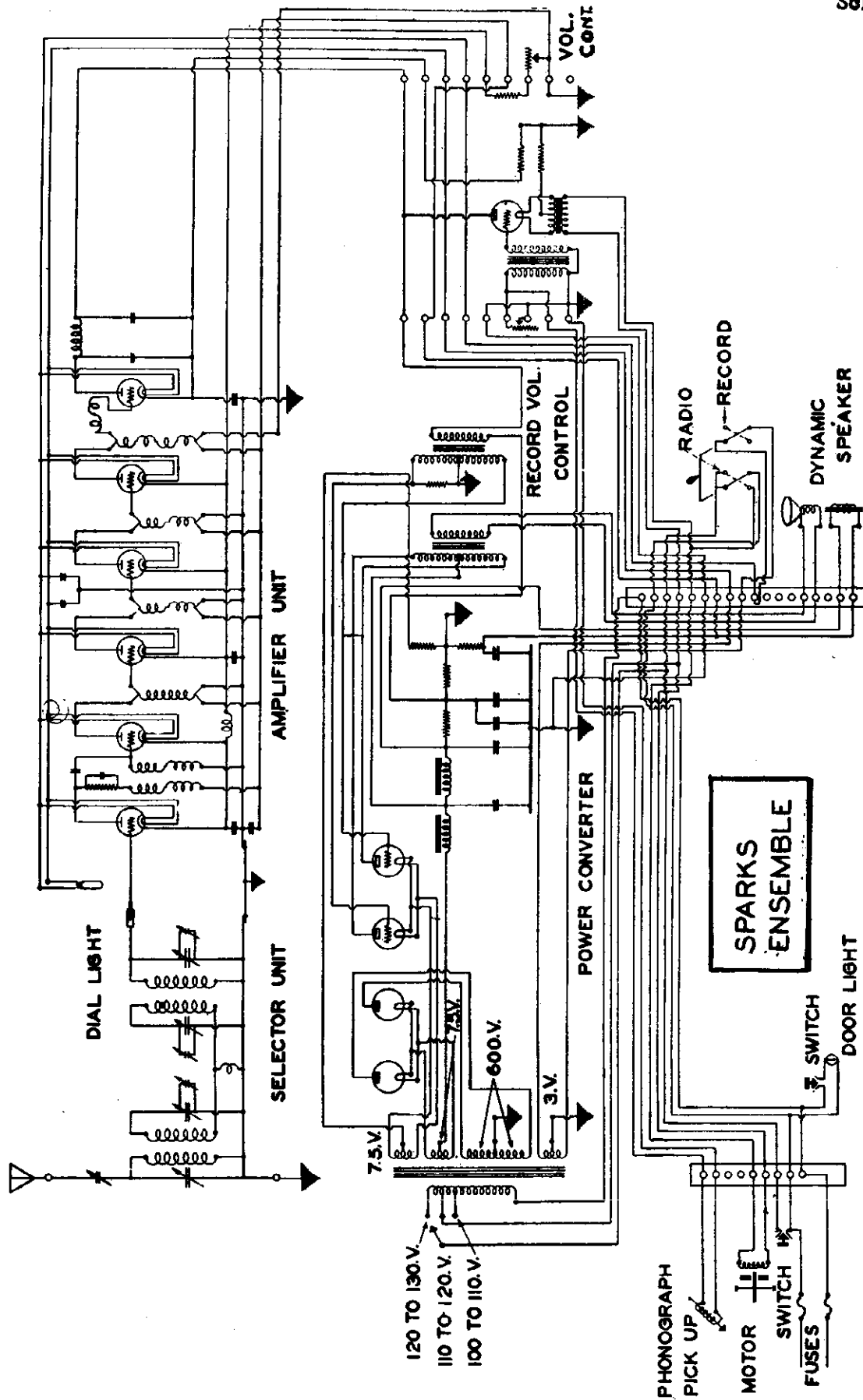
WIRING DIAGRAM - SPARKS ENSEMBLE

THE PHONOCRAFT CORPORATION

APPROVED BY: *[Signature]*

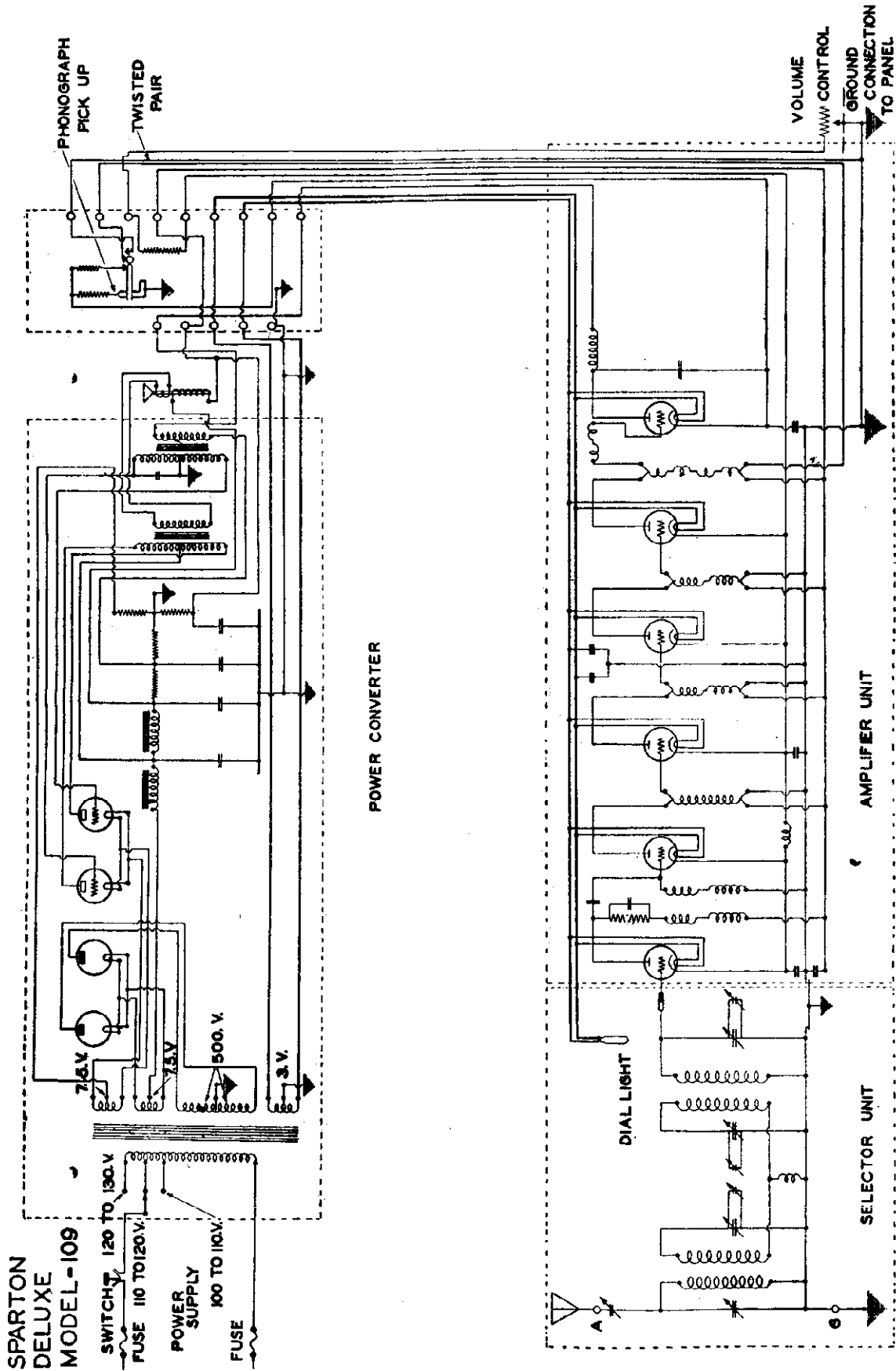
SPARKS WITHINGTON CO.

MODEL 99
Ensemble
Schematic



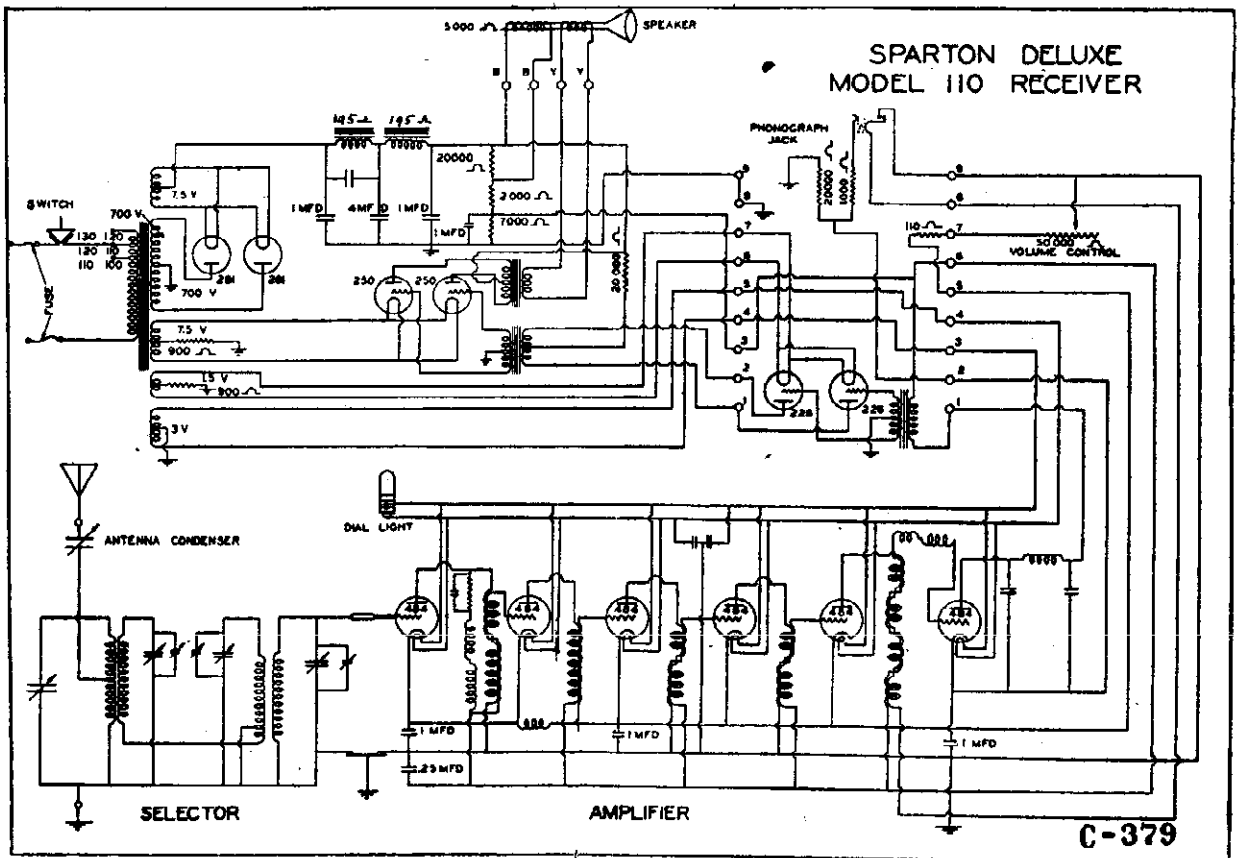
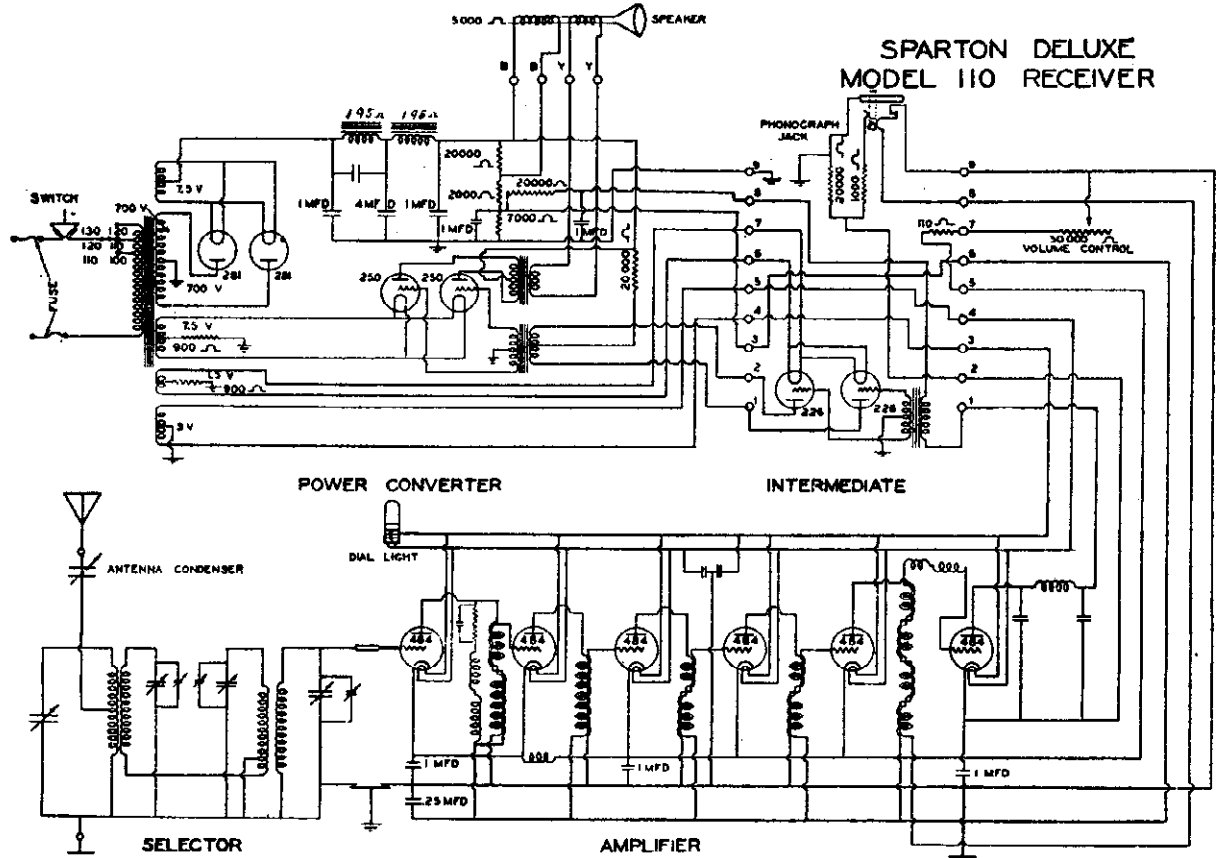
SPARKS WITHINGTON CO.

MODEL 109 DeLuxe
Schematic



SPARKS WITHINGTON CO.

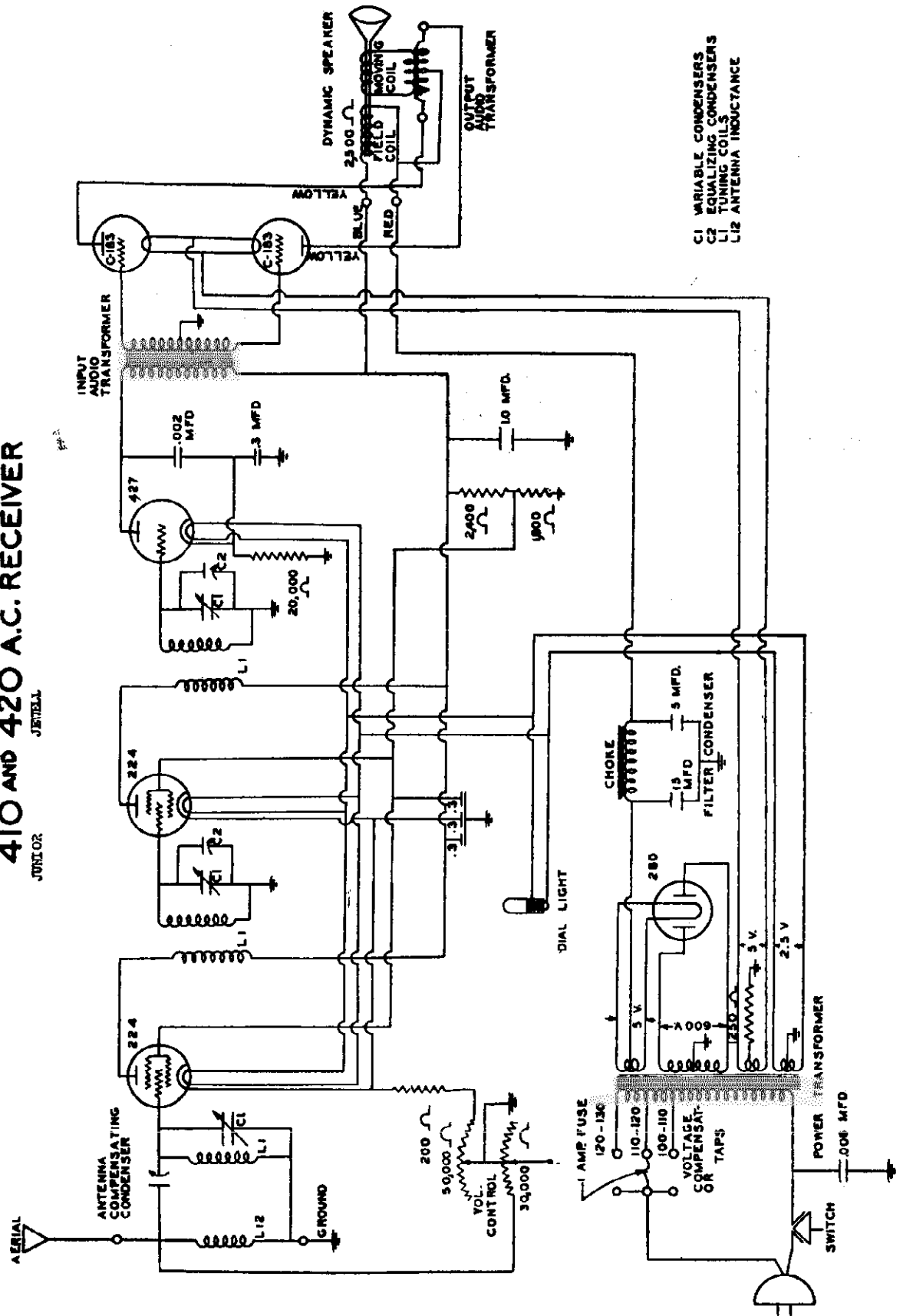
MODEL 110, 111 AC
Two Types
Schematics



SPARKS WITHINGTON CO.

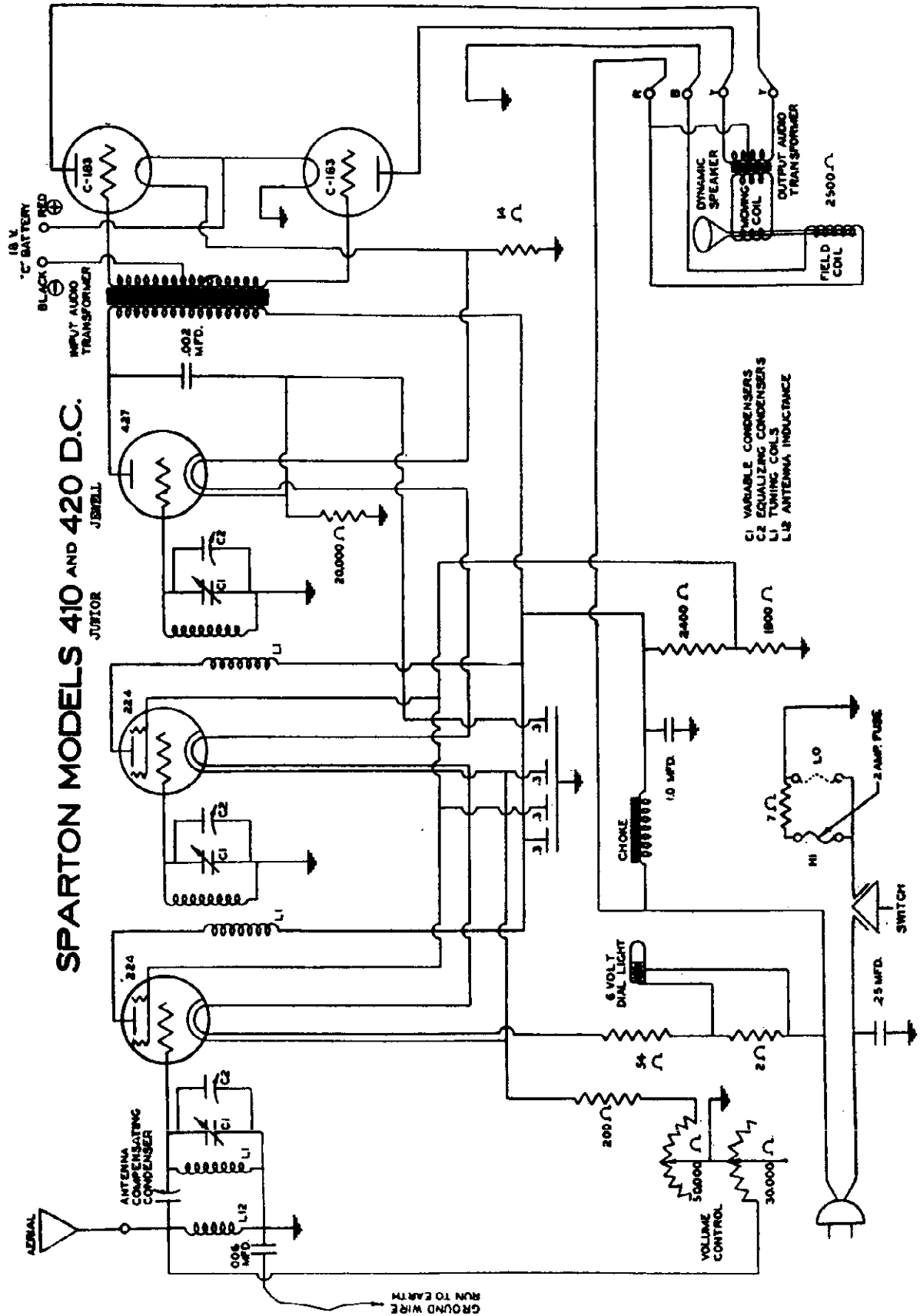
MODEL 420 AC
Schematic

SPARTON MODEL
410 AND 420 A.C. RECEIVER
JEWELL
JUNIOR



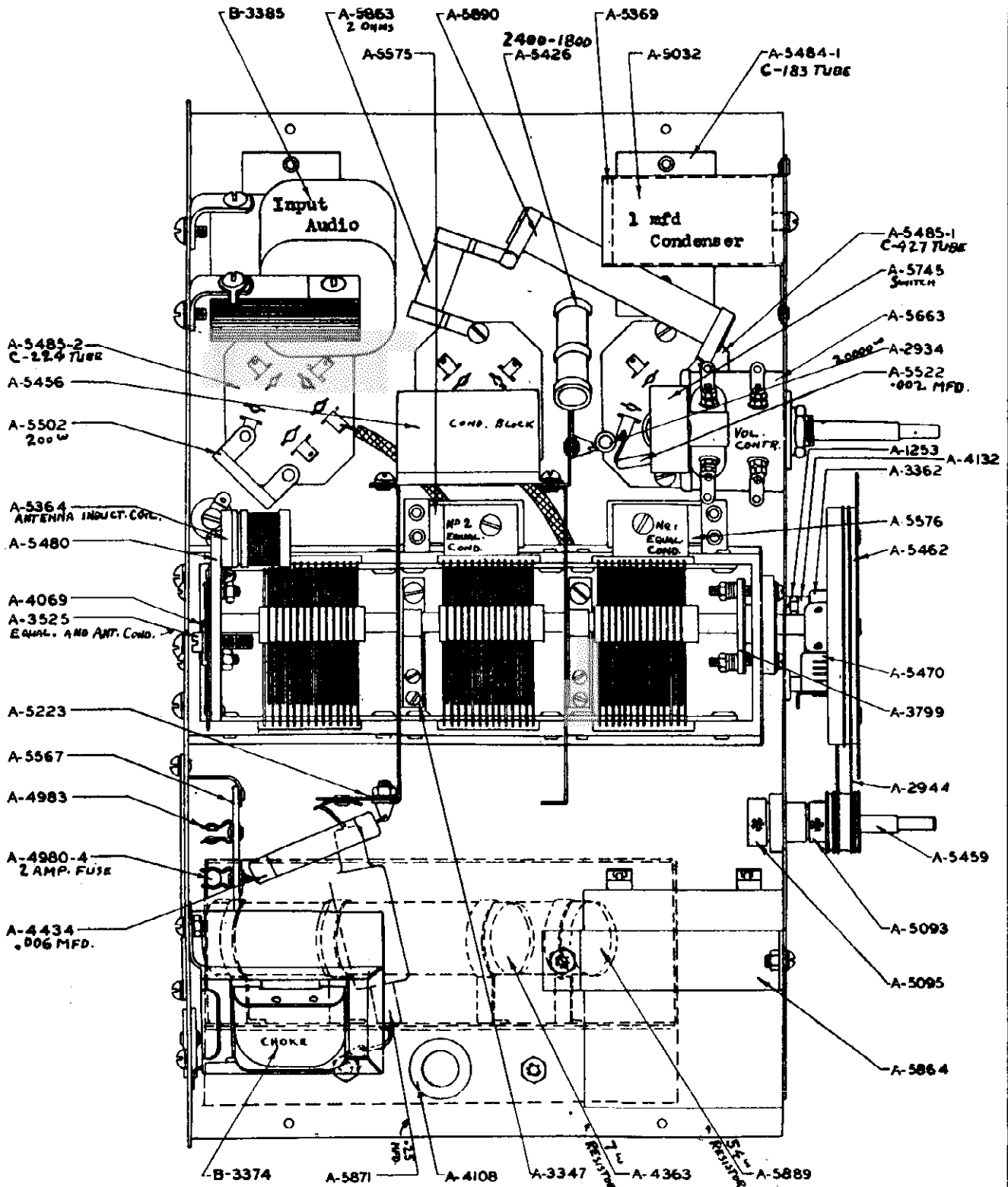
SPARKS WITHINGTON CO.

MODEL 420 DC
Schematic



MODEL 420 DC
Chassis

SPARKS WITHINGTON CO.

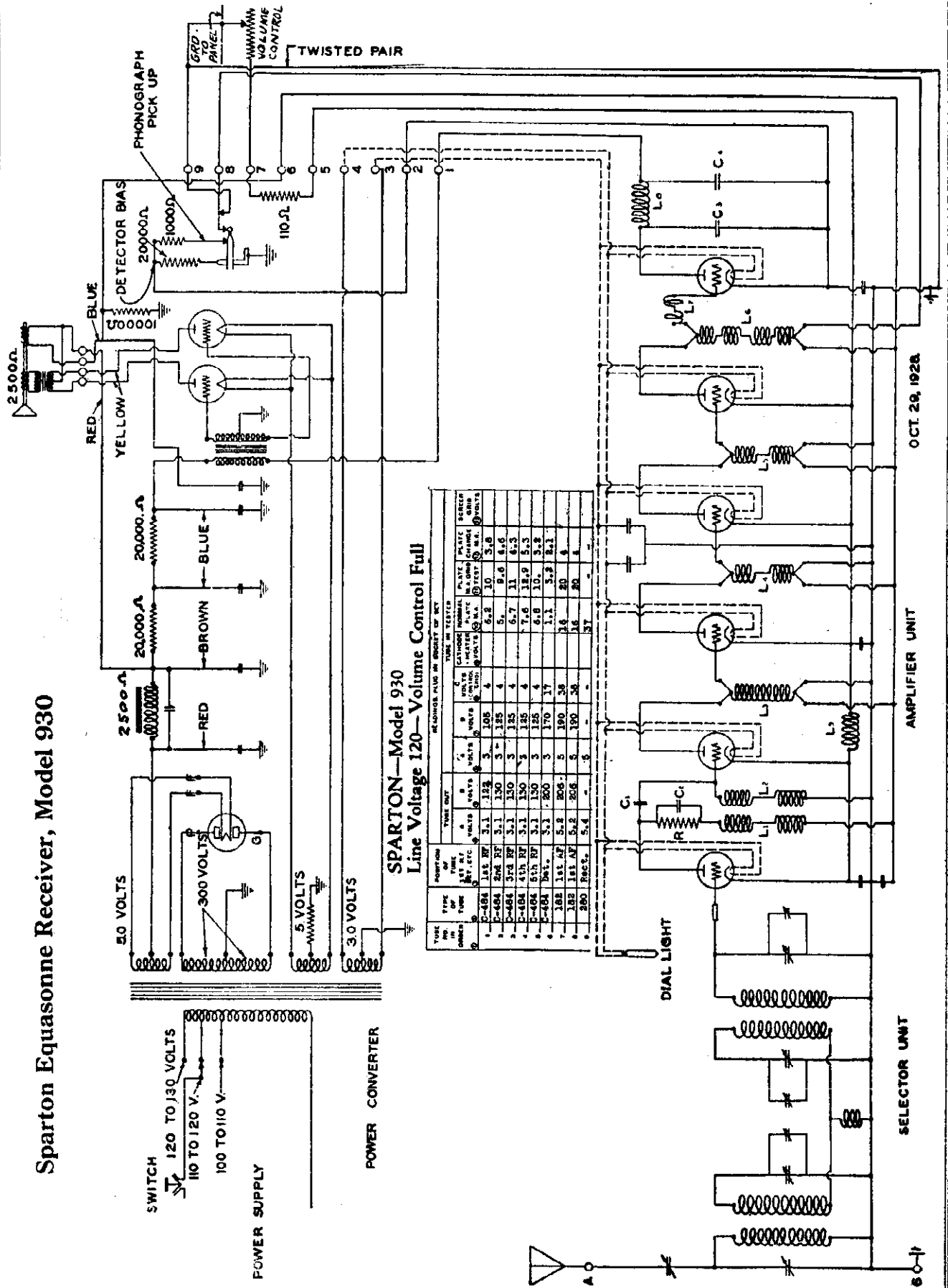


Bottom View—Model 410 and 420 D. C. Chassis

MODEL 930 AC

SPARKS WITHINGTON CO.

Sparton Equasonne Receiver, Model 930



SPARTON—Model 930
Line Voltage 120—Volume Control Full

TYPE OF TUBE	TYPE OF CHASSIS	VOLTAGE		CURRENT		WATTS	RESISTANCE IN OHMS	RESISTANCE IN MEG. OHMS	RESISTANCE IN M.M. OHMS	RESISTANCE IN M.M. OHMS
		PLATE	GRID	SCREEN	BIAS					
1-484	120 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
2-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
3-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
4-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
5-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
6-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
7-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
8-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
9-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
10-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
11-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
12-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
13-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
14-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
15-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
16-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
17-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
18-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
19-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
20-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
21-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
22-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
23-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
24-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
25-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
26-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
27-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
28-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
29-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
30-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
31-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
32-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
33-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
34-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
35-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
36-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0
37-484	250 V. AC	250	100	5	100	4	5.0	10	5.0	5.0

OCT. 29, 1928

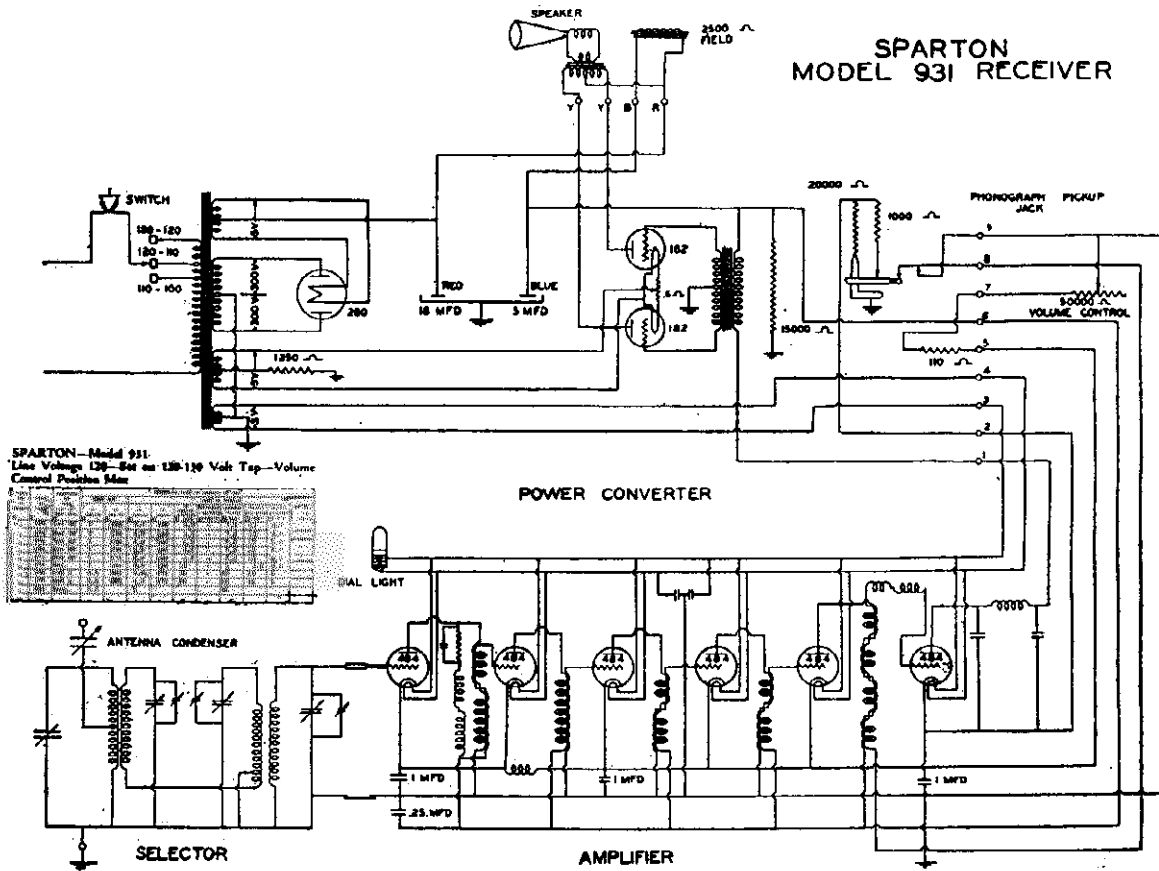
AMPLIFIER UNIT

SELECTOR UNIT

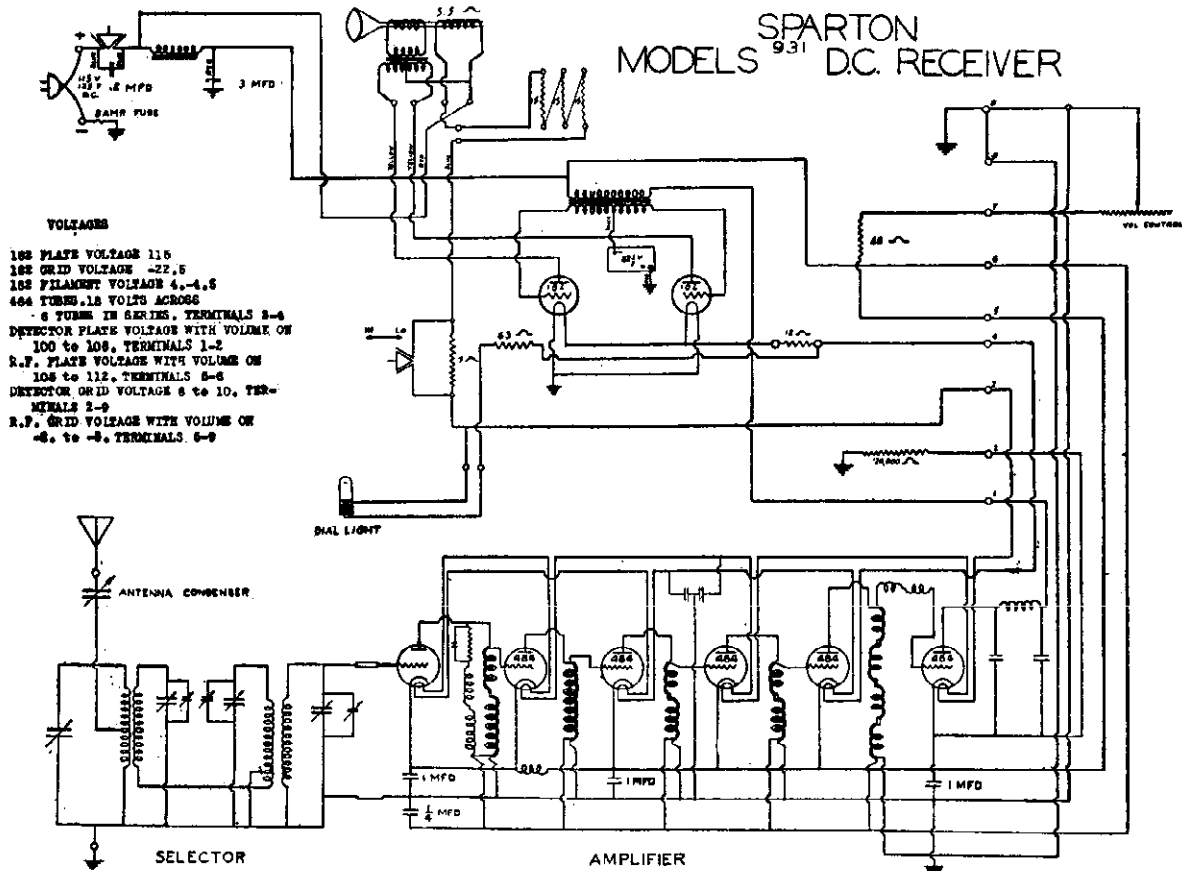
SPARKS WITHINGTON CO.

MODEL 931 AC
MODEL 931 DC

SPARTON
MODEL 931 RECEIVER

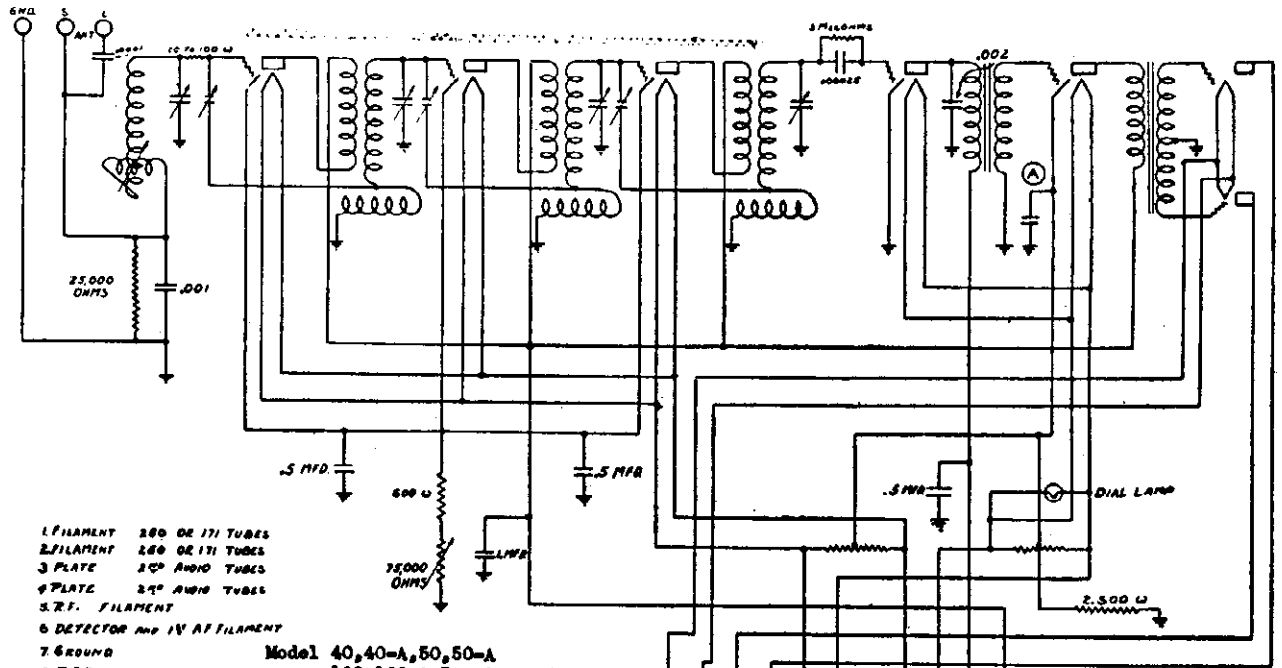


SPARTON
MODELS 931 DC RECEIVER



STEINITE RADIO CO.

MODEL 40,40-A,50,50-A,
102,102-A
Schematic

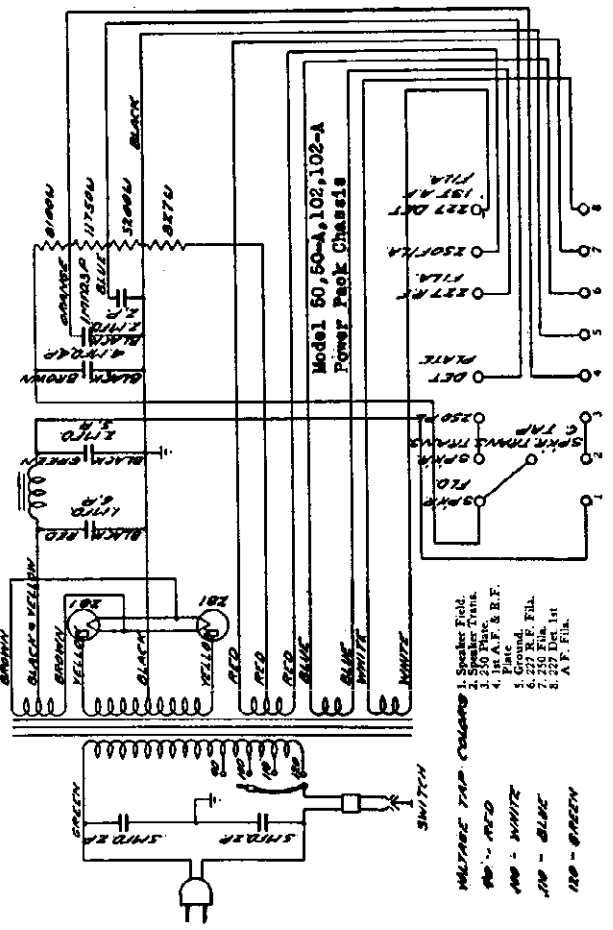


- 1 FILAMENT 200 OR 171 TUBES
- 2 FILAMENT 200 OR 171 TUBES
- 3 PLATE 20" AUDIO TUBES
- 4 PLATE 20" AUDIO TUBES
- 5 R.F. FILAMENT
- 6 DETECTOR AND 1st AF FILAMENT
- 7 GROUND
- 8 R.F. FILAMENT
- 9 DETECTOR AND 1st AF FILAMENT
- 10 DETECTOR
- 11 R.F. AND 1st AF B+

Model 40,40-A,50,50-A
102,102-A Receiver Chassis

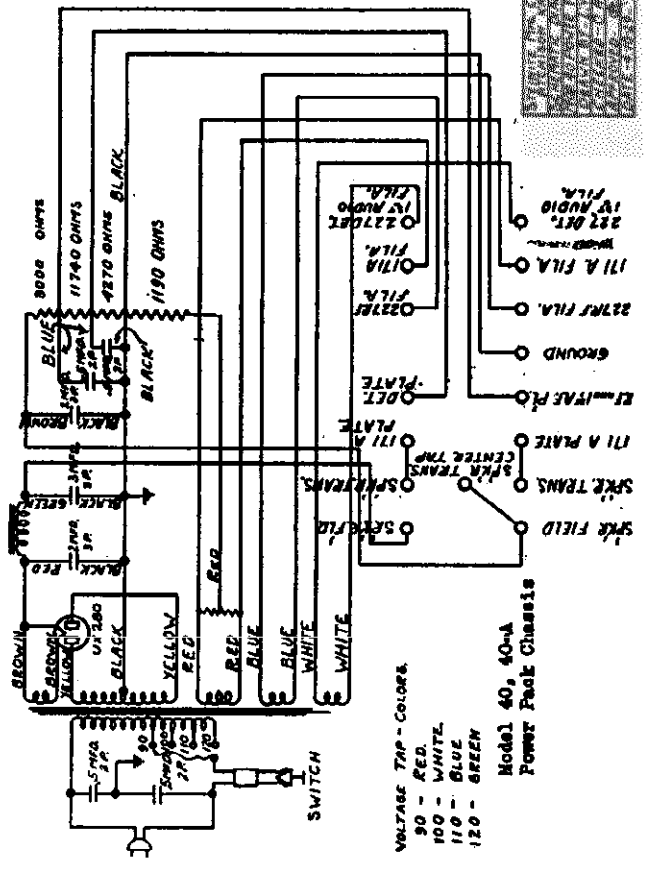
END OF CHASSIS.

TERMINAL STRIP IN CHASSIS



Model 50,50-A,102,102-A
Power Pack Chassis

- 1. Speaker Field
- 2. Speaker Trans.
- 3. 250 Ohm Res.
- 4. 1st A.F. & R.F.
- 5. Ground
- 6. 250 R.F. Fil.
- 7. 250 Ohm 1st
- 8. A.F. Fil.



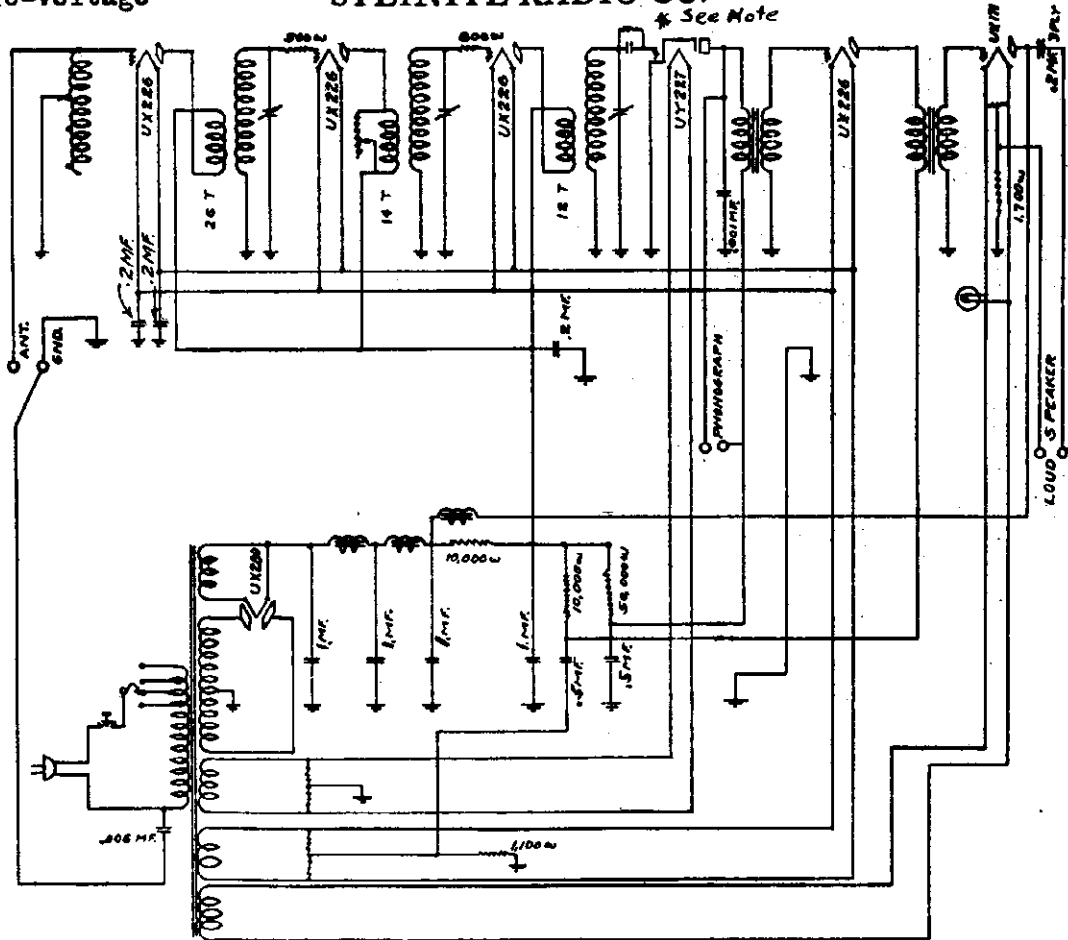
Model 40, 40-A
Power Pack Chassis

- VOLTAGE TAP - COLORS
- 90 - RED
- 100 - WHITE
- 110 - BLUE
- 120 - GREEN

MODEL 261, 262, 263, 264, 265
Schematic-Voltage
Socket

STEINITE RADIO CO.

* See Note



* A small capacity is connected between detector grid and the filament in the form of a spiral pair of twisted wires.

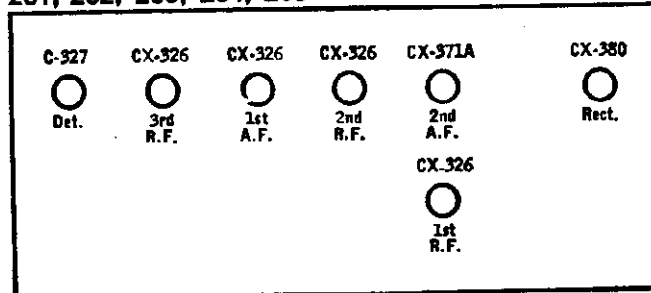
**Two bindings posts supplying 110V AC are included on all model 261 sets made since September 20, 1938. These are provided for supplying current to dynamic speakers, permitting complete control of the AC supply to both the set and speaker through the toggle switch

STEINITE—Models 261-262
Line Voltage 112—110 Volt Tap

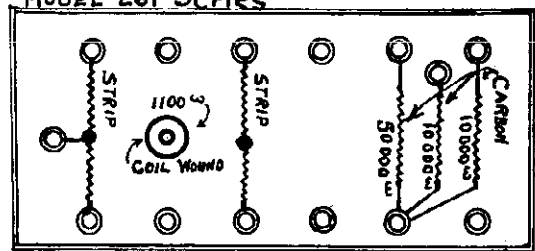
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST, R.F., DET., ETC.	READINGS, PLUG IN SOCKET OF SET										
			TUBE OUT			TUBE IN TESTER							
			A VOLTS	B VOLTS	C VOLTS	CATHOOD VOLTS	NORMAL PLATE M.A.	PLATE M.A. GRID TEST	PLATE M.A. CHARGE				
1	226	1st. R.F.	1.45	1.20	1.30	115	11	-	3.0	7.0	4.0		
2	226	2nd. R.F.	1.45	1.20	1.30	115	11	-	3.0	7.0	4.0		
3	226	3rd. R.F.	1.45	1.30	1.30	115	11	-	3.0	7.0	4.0		
4	227	Detector	2.30	1.16	2.15	44	-	-	2.0	2.0	0.0		
5	226	1st. A.F.	1.45	1.12	1.30	100	10	-	3.0	7.0	4.0		
6	171A	2nd. A.F.	4.80	3.20	4.60	176	33	-	22.0	24.0	12.0		
7	280	Rectifier	4.65	-	4.50	-	-	-	20.0	-	-		

261, 262, 263, 264, 265

(A.C.)



MODEL 261 Series



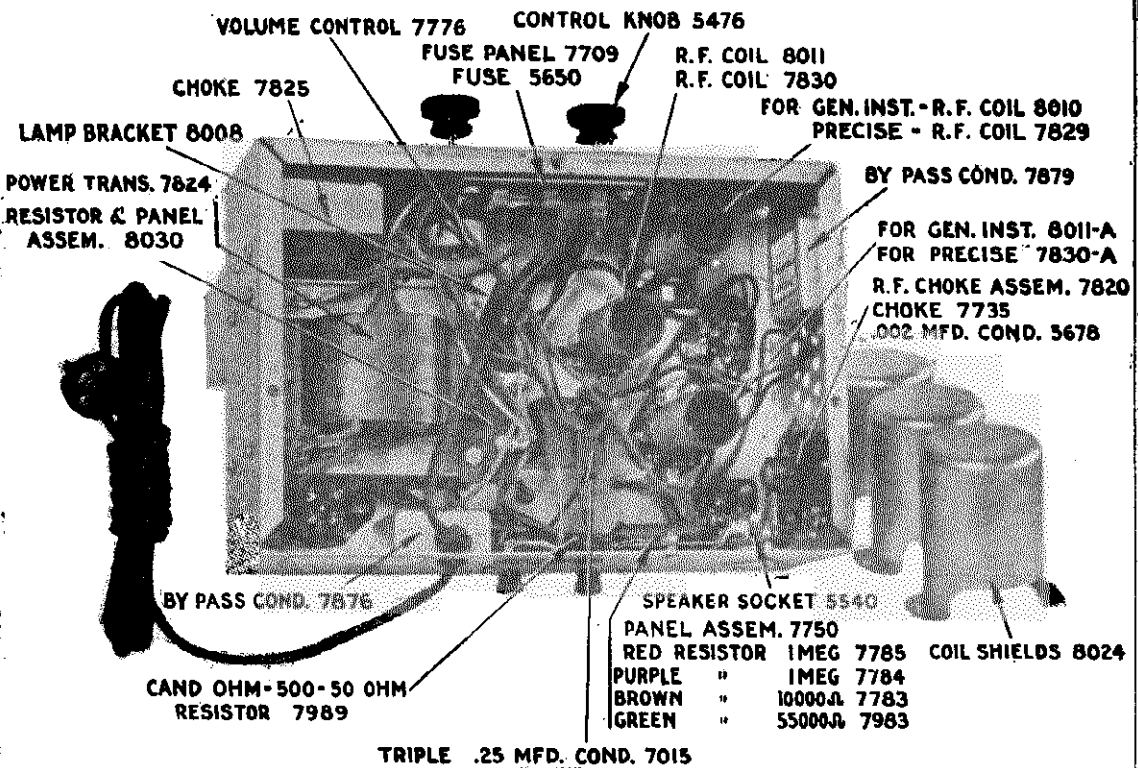
POWER PACK TERMINAL STRIP.

MODEL Miniature
Chassis Views

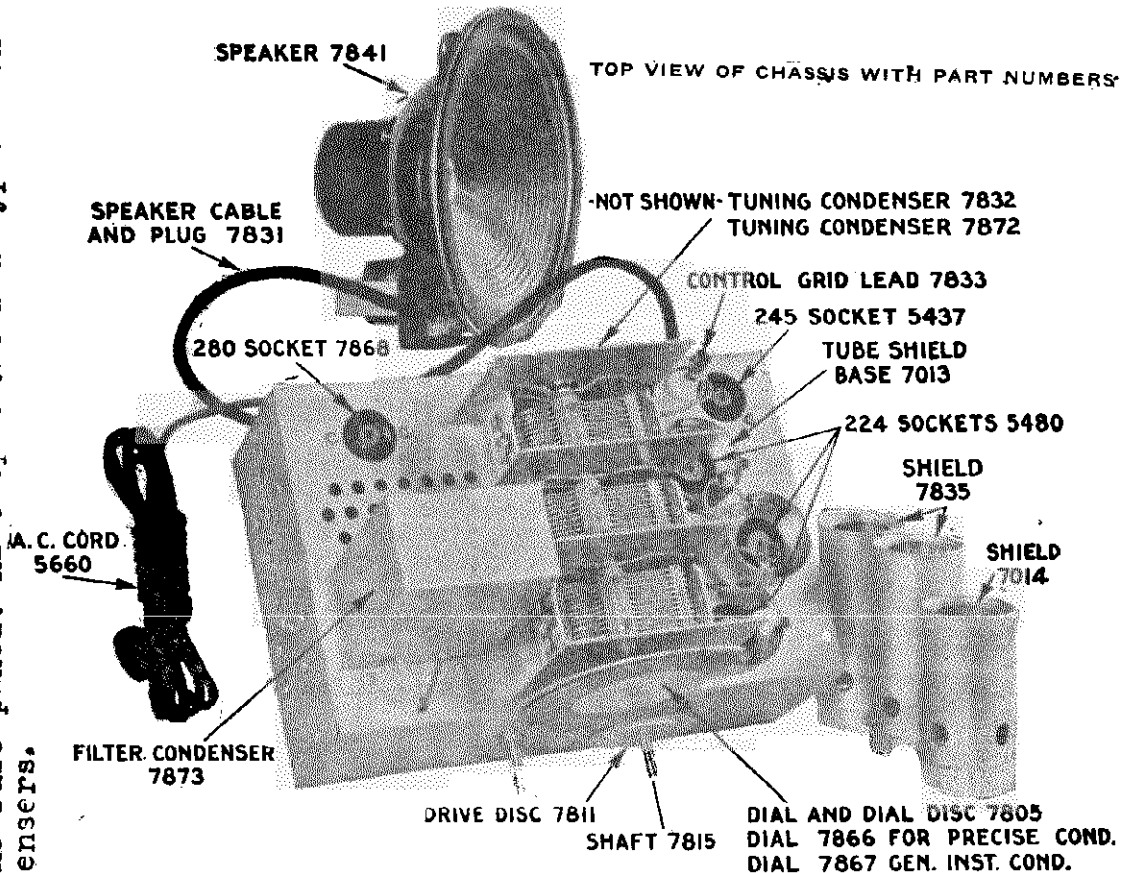
STERLING MFG. CO.

One possible remedy for excessive hum is some condition in the detector tube circuit. Try each of the '24 tubes in the detector socket. A tube that hums in the detector socket, may not hum in the other '24 sockets.

In the event of excessive regeneration difficulties, check the position of the grid wires. If too close together, this trouble is liable to occur. Check the .015 mfd condenser on the center of the fuse panel. Also open .25 mfd bypass condensers.

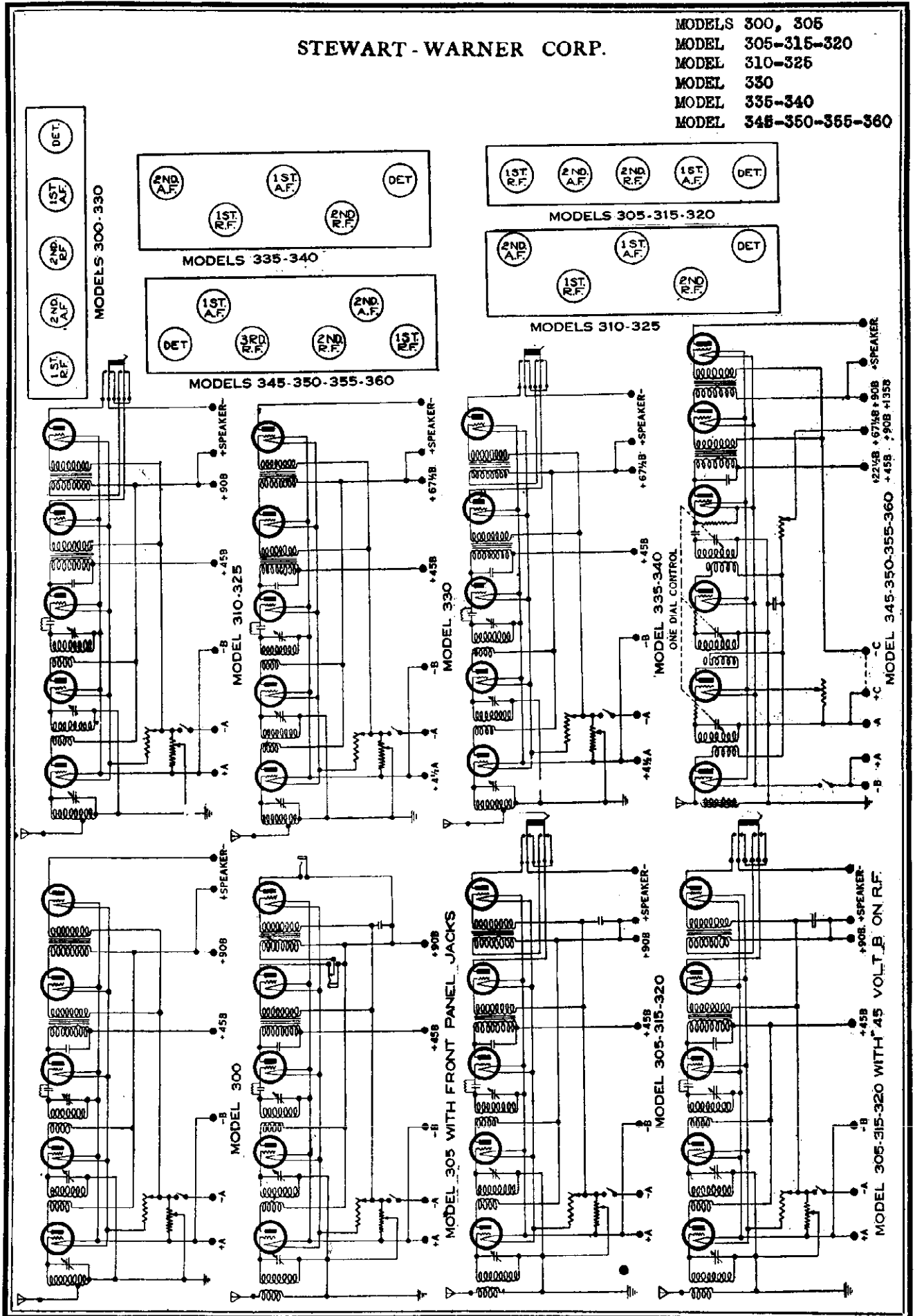


BOTTOM VIEW OF CHASSIS WITH PART NUMBERS



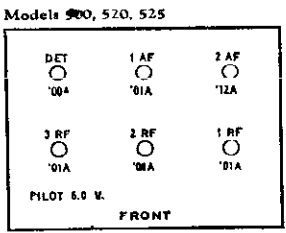
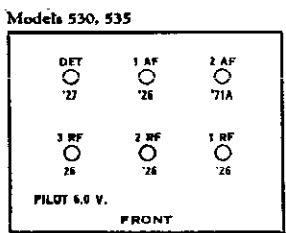
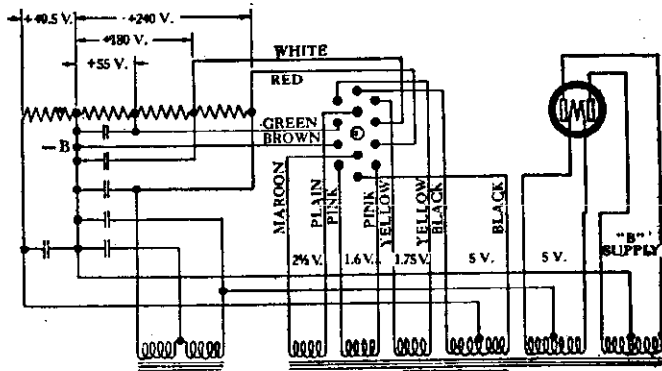
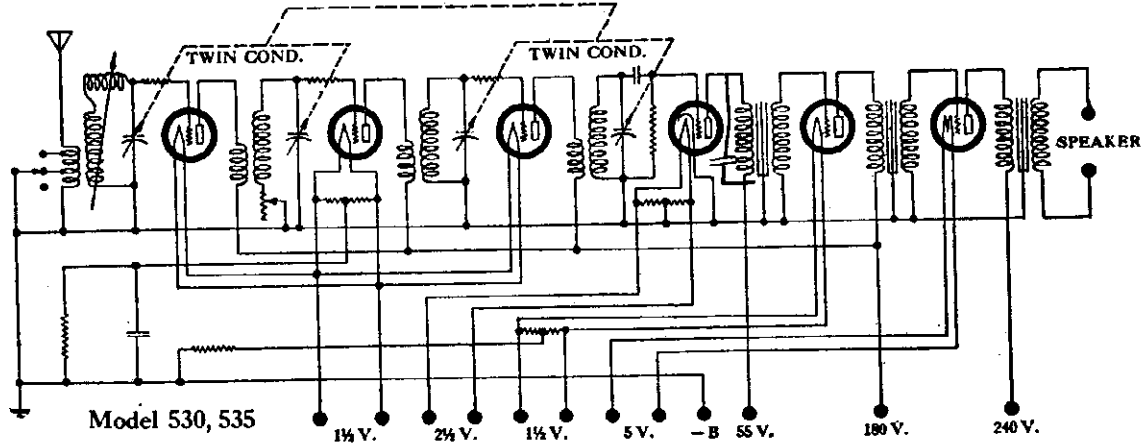
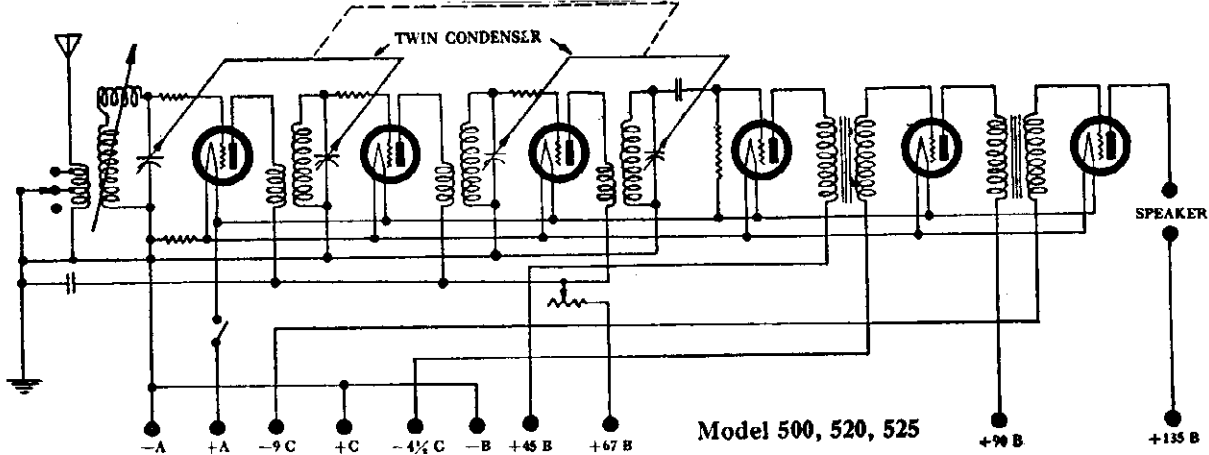
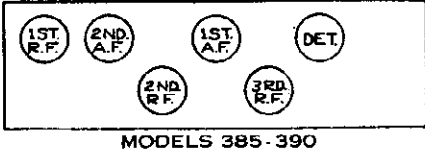
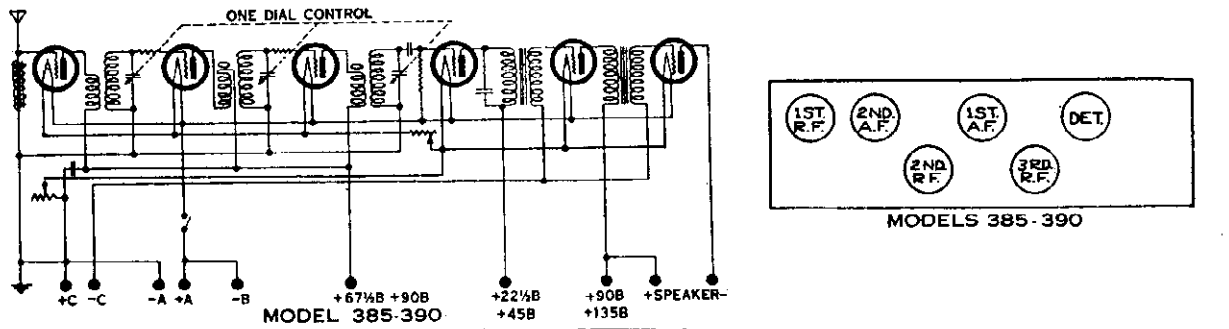
STEWART - WARNER CORP.

- MODELS 300, 305
- MODEL 305-315-320
- MODEL 310-325
- MODEL 330
- MODEL 335-340
- MODEL 345-350-355-360



MODEL 385-390
 MODEL 500, 520, 525
 MODEL 530, 535
 MODEL 530, 535, 715, 720

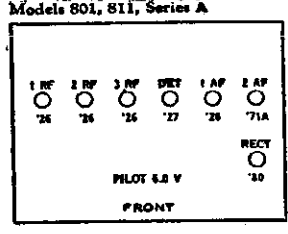
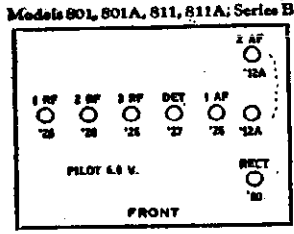
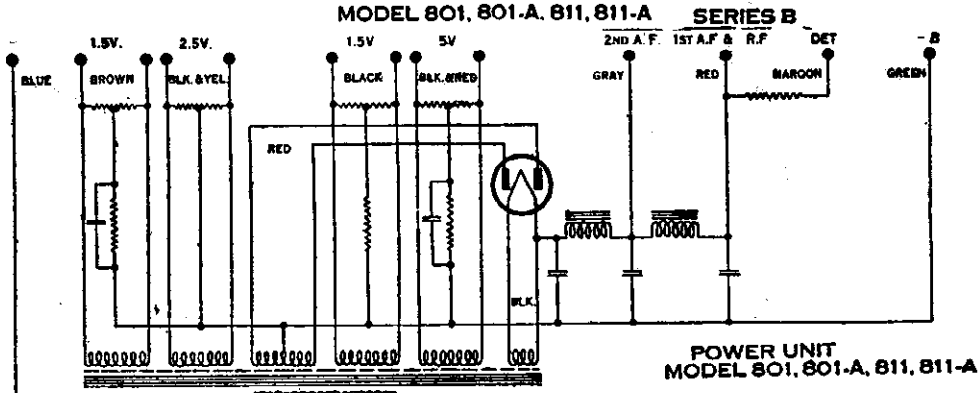
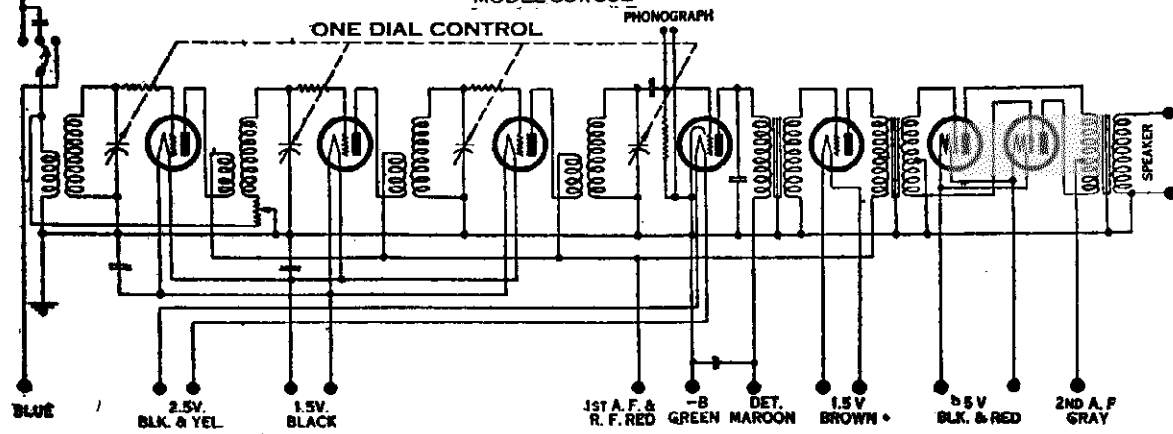
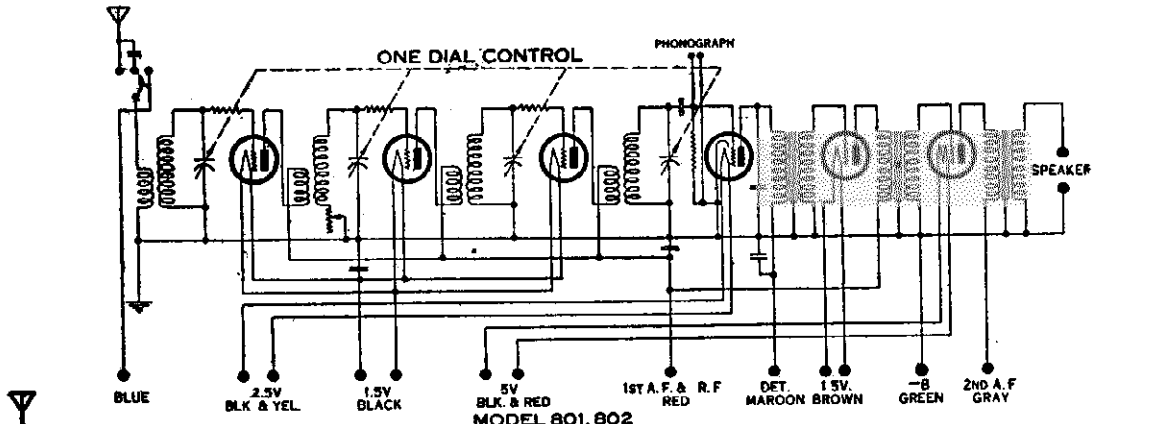
STEWART - WARNER CORP.



POWER UNIT
 MODELS 530, 535, 715, 720.

STEWART - WARNER CORP.

MODEL 801, 802
 MODEL 801, 801-A, 811, 811-A (Series B)
 MODEL PU 801, 801-A, 811, 811-A
 Schematic, Voltage



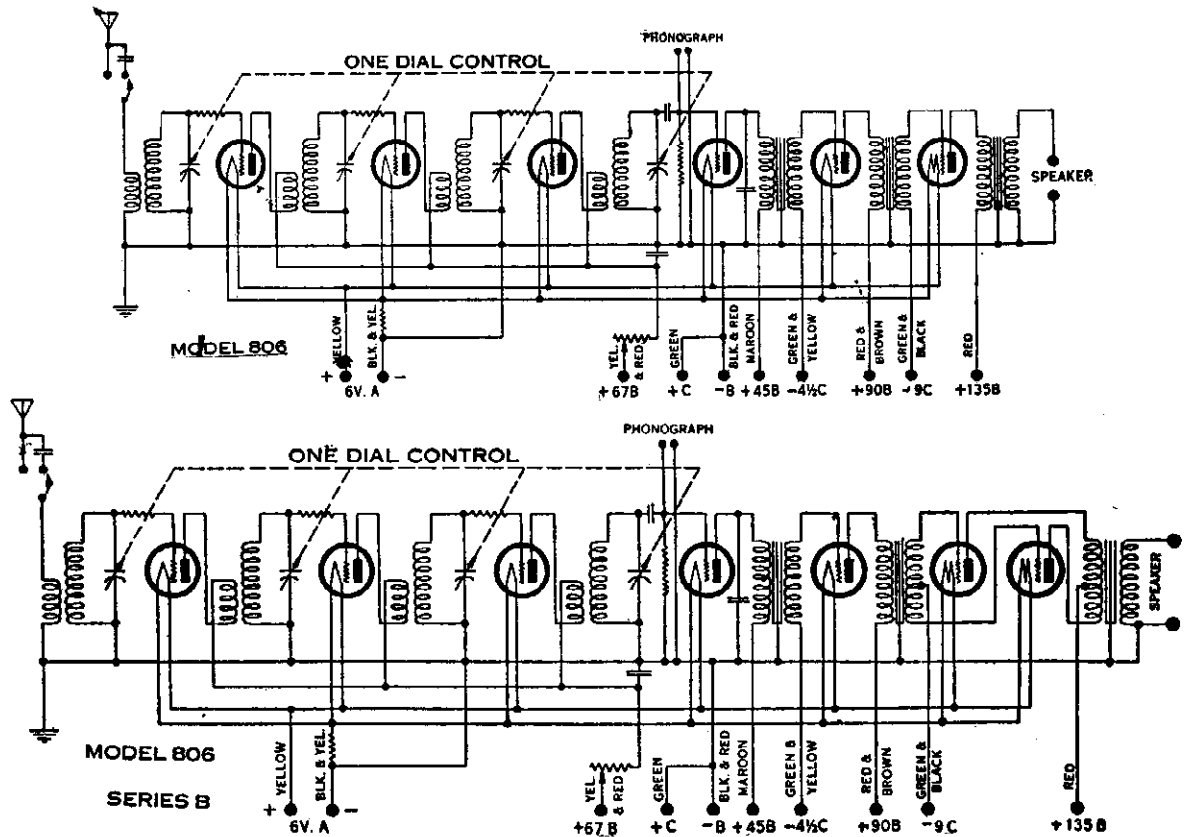
STEWART-WARNER—Model 801 SERIES B
 Line Voltage 115 801A-811-811A

TUBE NO. OR ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST, 2ND, 3RD, ETC.	TUBE DATA				NOMINAL PLATE VOLTAGE	NOMINAL PLATE CURRENT (M.A.)	PLATE RESISTANCE (OHMS)	PLATE TO GRID TEST	PLATE TO A GRID TEST
			1	2	3	4					
226	1A.F.	1	1.25	1.07	2.55	155	14.0	—	2.9	7.7	6.5
226	2A.F.	2	1.46	1.80	2.33	156	14.8	—	2.3	0.2	6.9
228	3R.F.	3	1.48	1.68	1.92	156	14.8	—	1.9	0.5	7.6
227	DET.	4	2.40	1.32	1.98	25	0	—	1.4	1.44	0.08
229	1A.F.	5	1.62	1.75	1.42	146	12.5	—	3.3	4.2	0.8
112A	2A.F.	6	5.1	1.75	4.93	168	12.0	—	9.0	14.0	5.0
112A	2A.F.	7	5.1	1.75	4.95	158	12.0	—	9.3	14.2	4.9
280	Rectifier	8	5.7	—	4.78	—	—	—	—	—	—

The values given apply to all Model 801 receivers, however, some of the early sets operated with lower "B" voltage than shown. On recent sets the "B" voltage has been increased approximately 10% (per cent) above values given in the chart.

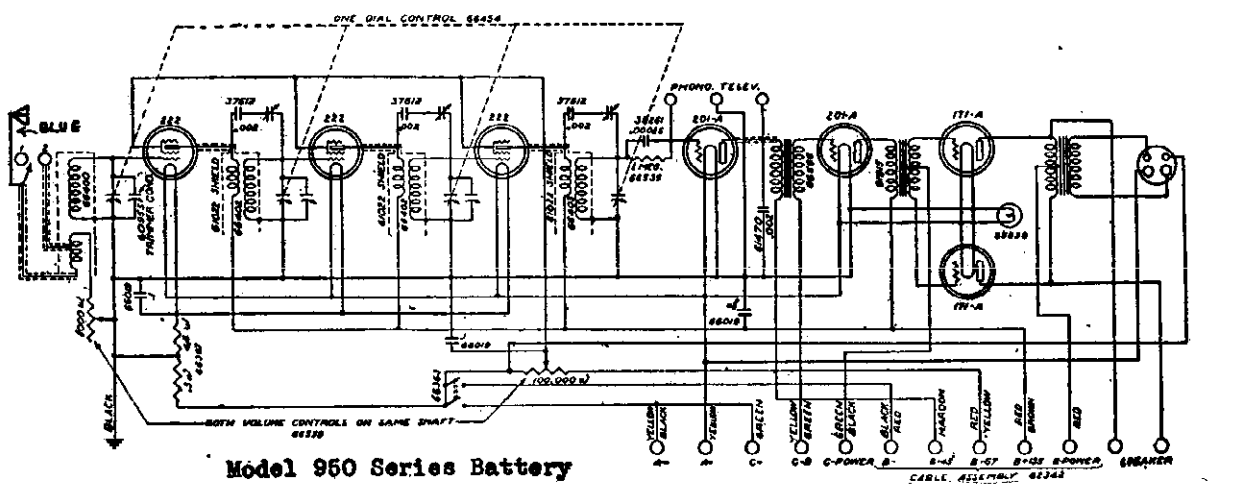
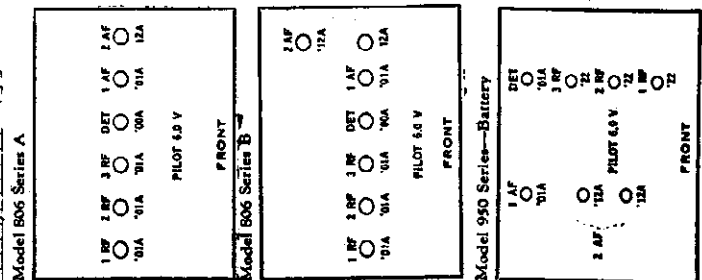
STEWART-WARNER CORP.

MODEL 806 (Series A)
 MODEL 806 (Series B)
 MODEL 950 Series (Battery)
 Schematic, Voltage



STEWART-WARNER—Model 950 A.C.
 Line Voltage 115—Volume Control Position Max

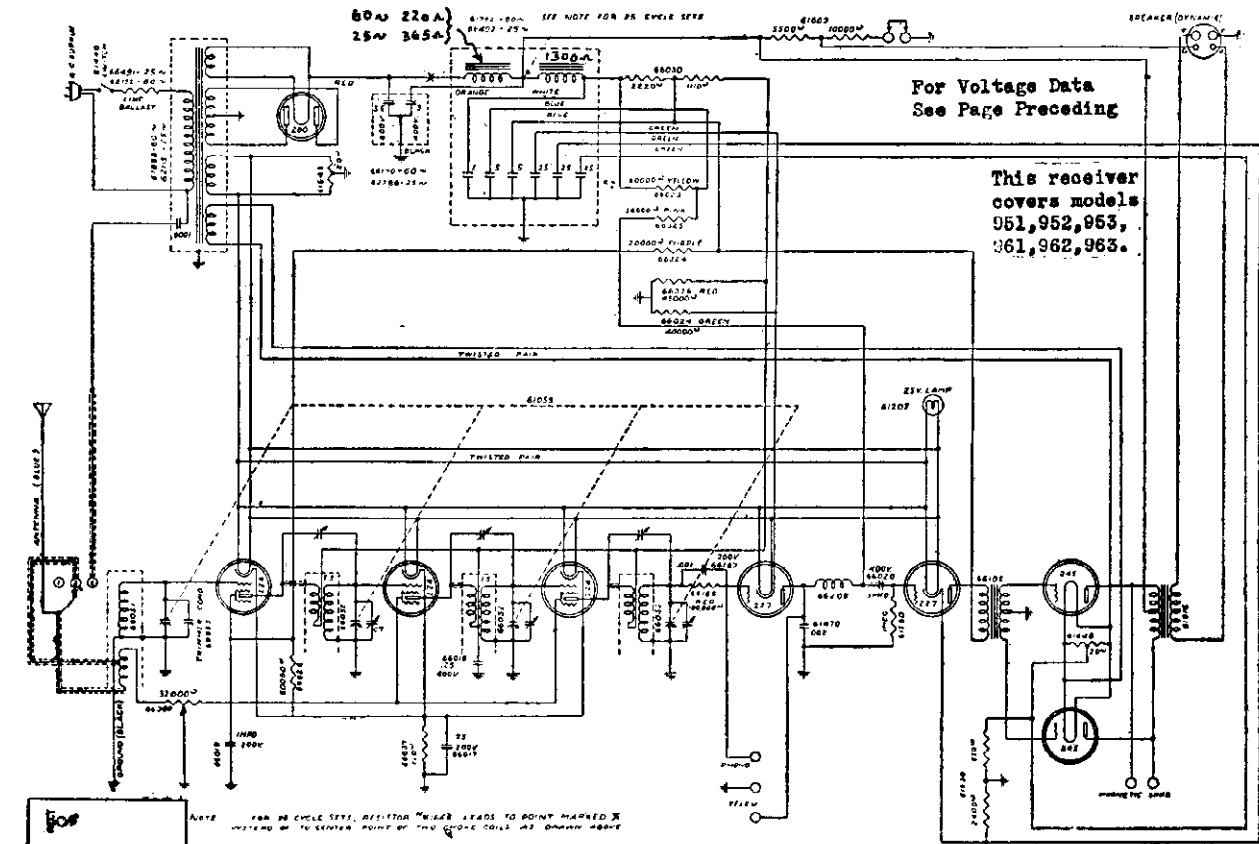
TUBE NO. IN ORDER	POSITION OF TUBE	TUNE BUTT		READINGS PLUG IN SOCKET OF SET				TUBE IN TESTER			
		A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	HEATER VOLTS	PLATE VOLTS	SCREEN VOLTS	GRID VOLTS	DIODE VOLTS
224	1st RF	-	-	2.2	166	2	2	3.7	9	6.1	74
224	2nd RF	-	-	2.2	166	2	2	3.7	9	6.1	74
224	3rd RF	-	-	2.2	166	2	2	3.7	9	6.1	74
227	DET.	-	-	2.2	188	18.2	18.2	4	-	-	-
227	1st AF	-	-	2.2	188	18.2	18.2	4	-	-	-
245	2nd AF	-	-	2.2	250	48	-	24	28	1	-
245	2nd AF	-	-	2.2	250	48	-	24	28	1	-
280	Rect.	-	-	4.7	-	-	-	20	-	-	-



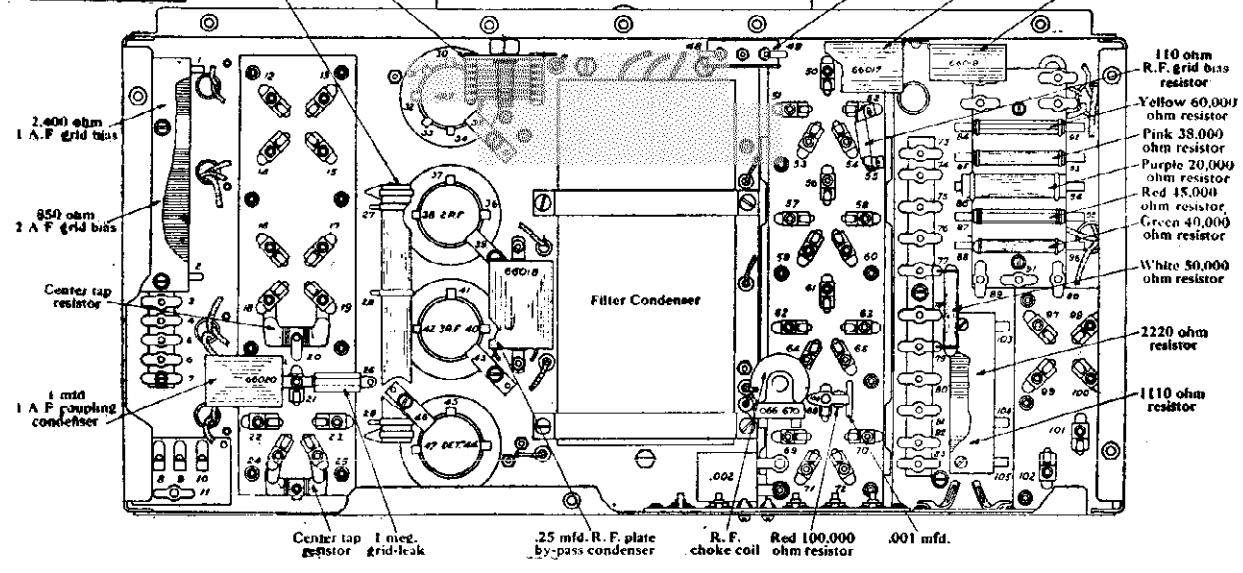
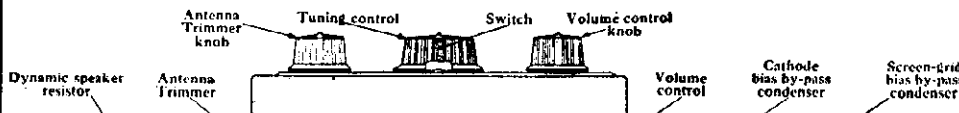
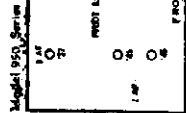
Model 950 Series Battery

MODEL 950 Series (AC)
Schematic, Chassis

STEWART-WARNER CORP.



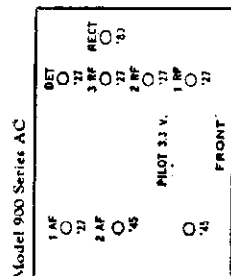
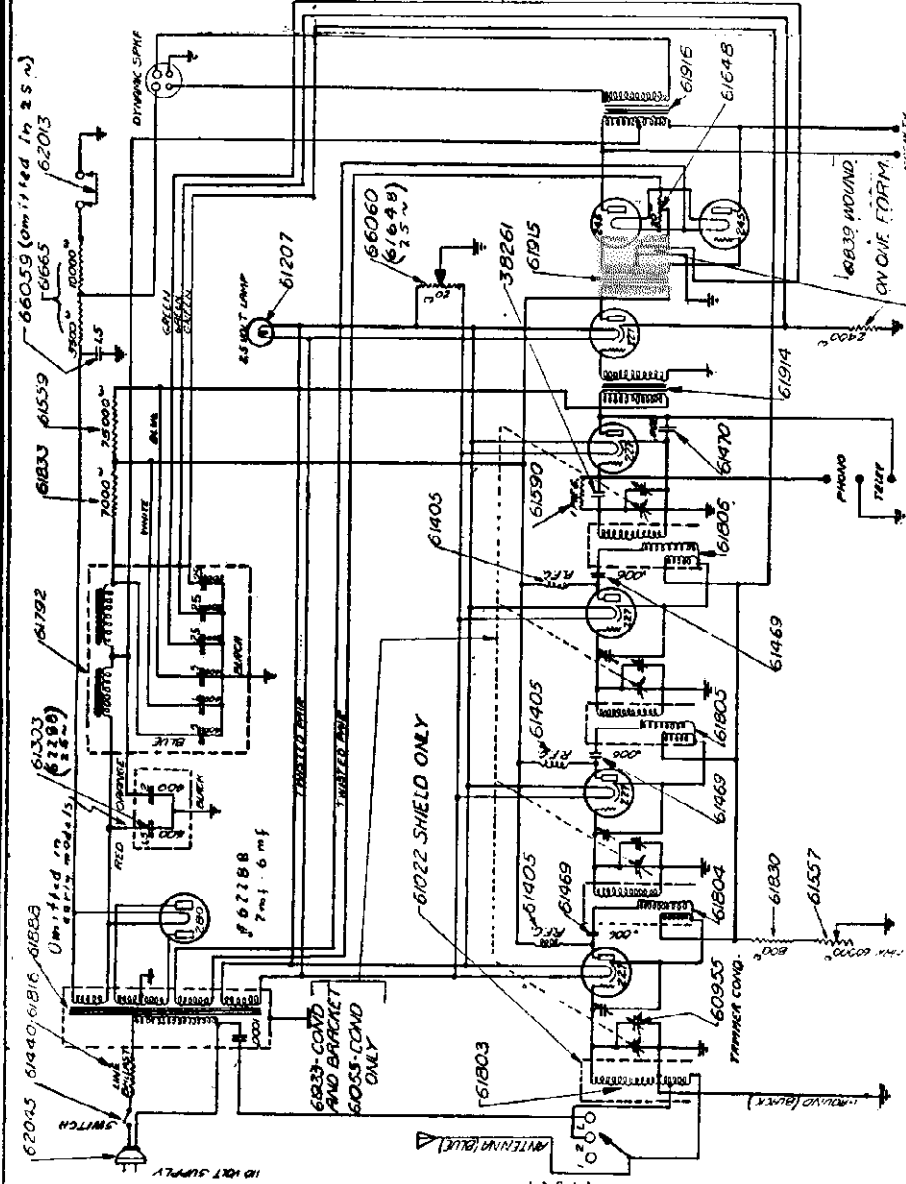
Circuit Diagram for Stewart-Warner 950 Series A. C. Receivers



Bottom View of Set

STEWART-WARNER CORP.

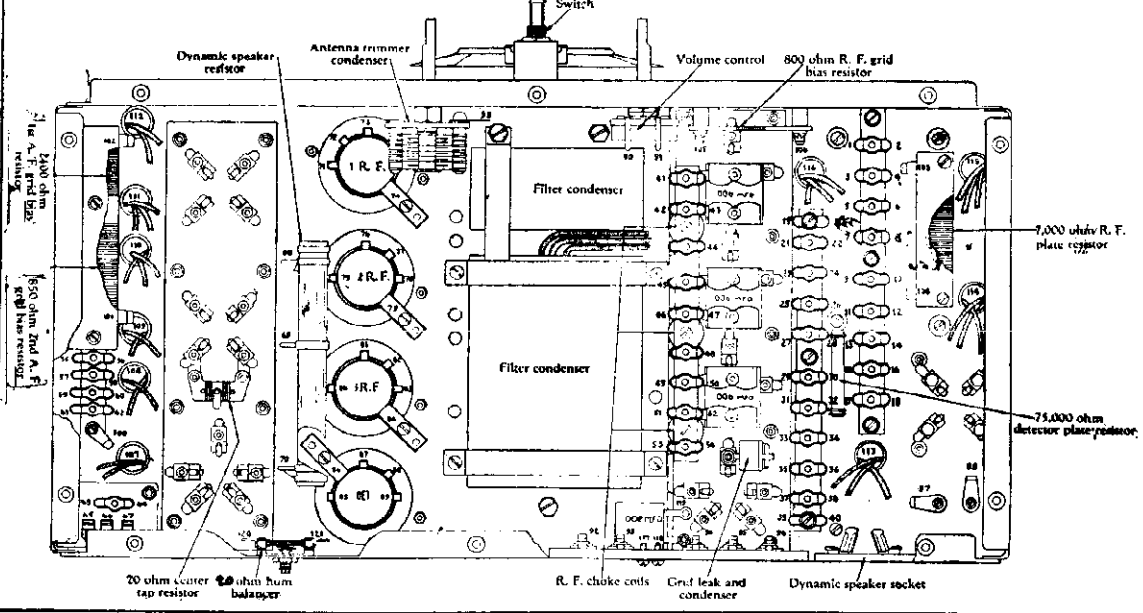
MODEL 901, 902, 903
911, 912, 913
Schematic, Chassis



901, 902, 903, 911, 912, 913

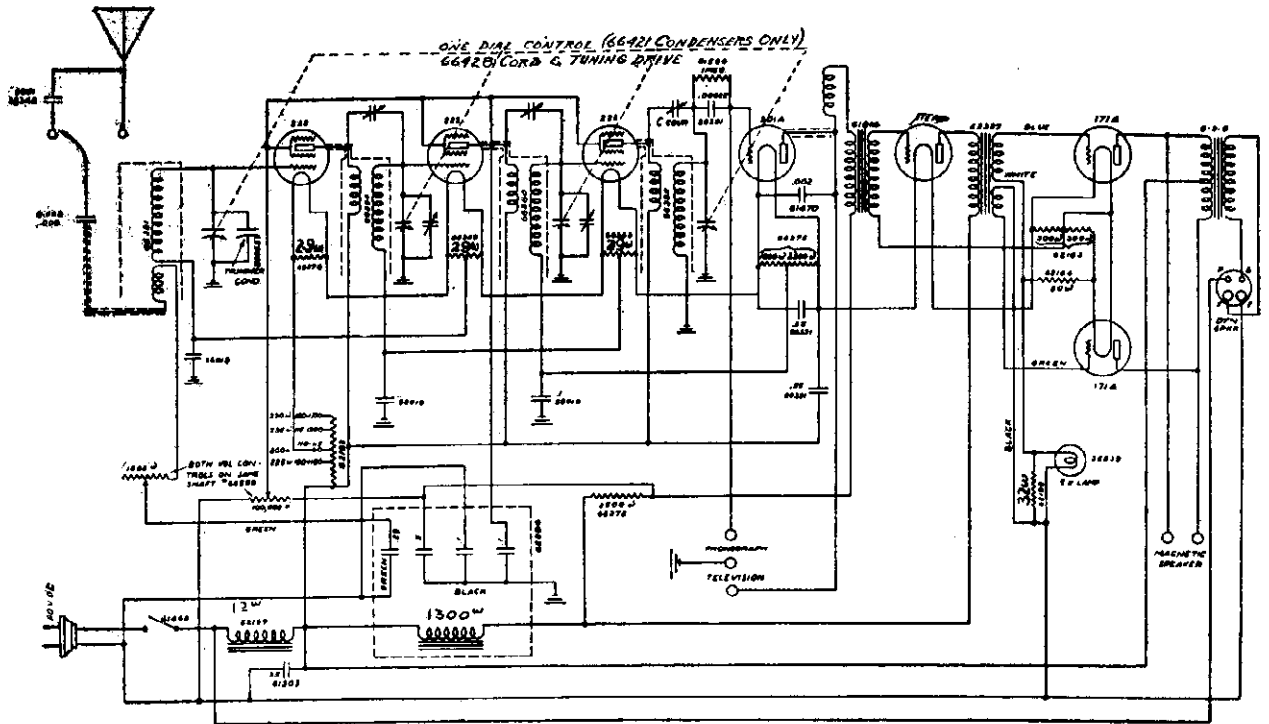
STEWART-WARNER—Series 900 A.C.
Line Voltage 115—Volume Control Position Max

TYPE	RATING	VALUE	RESISTANCE		CAPACITANCE		TUBE SOCKETS		TUBE TYPE		PARTS
			MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	
1	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
2	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
3	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
4	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
5	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
6	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
7	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
8	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
9	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
10	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
11	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
12	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
13	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
14	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
15	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
16	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
17	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
18	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
19	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
20	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
21	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
22	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
23	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
24	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
25	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
26	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
27	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
28	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
29	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
30	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
31	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
32	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
33	250	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000

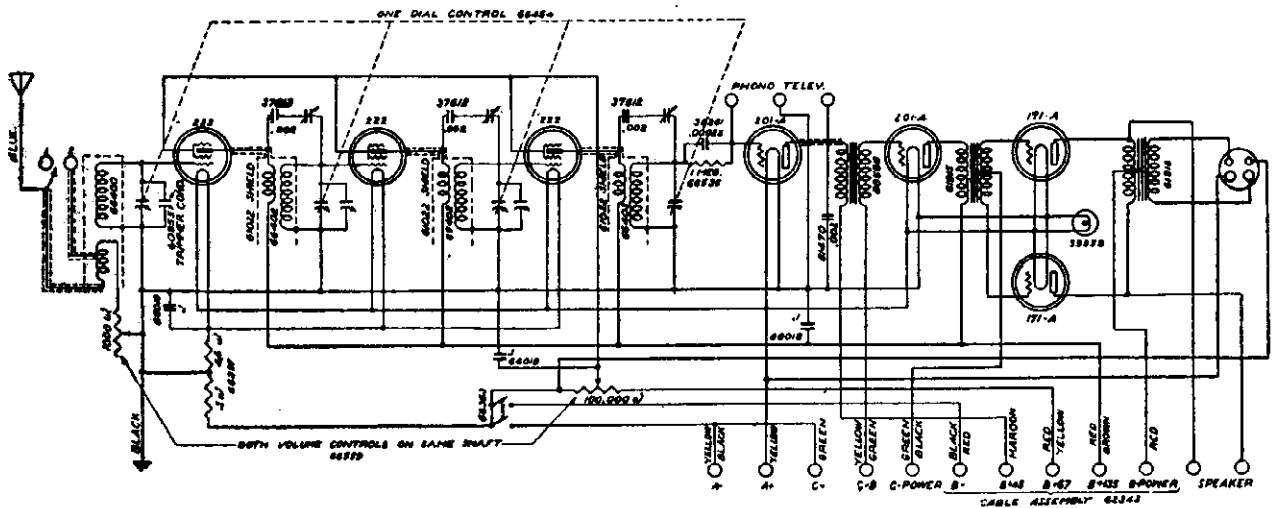


STEWART-WARNER CORP.

MODEL 971, 972, 973 DC
MODEL 980 Battery

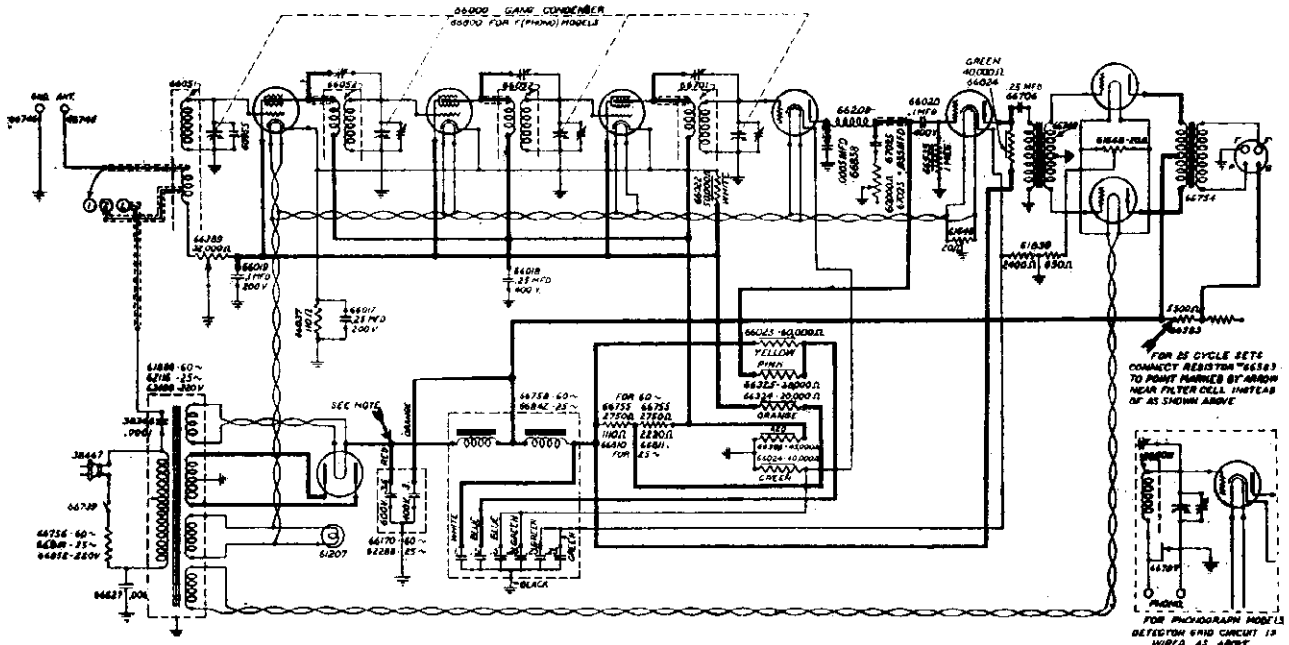


CIRCUIT DIAGRAM FOR STEWART WARNER SERIES 970 D.C. RADIO RECEIVERS

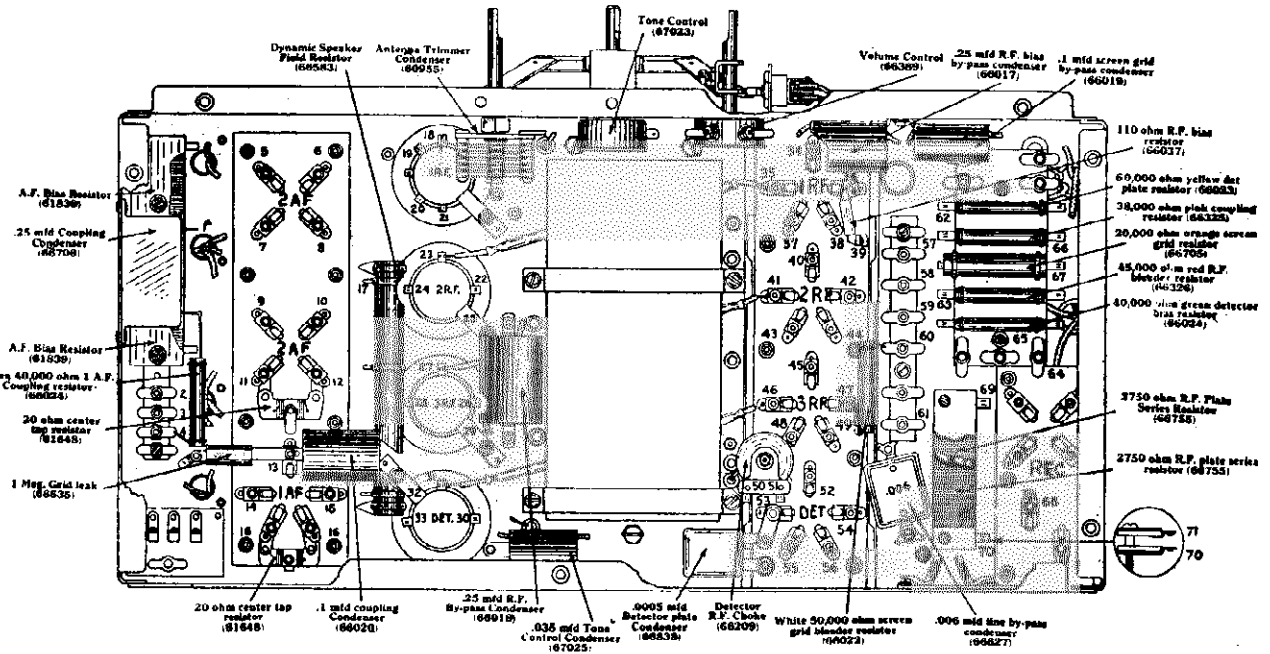


CIRCUIT DIAGRAM FOR STEWART WARNER 980 SERIES BATTERY RECEIVERS

MODEL R-100-A, B, E (AC) STEWART-WARNER CORP.
 MODEL R-100 Series Schematic, Chassis



Stewart-Warner Model R-100-A, B, and E, Alternating Current Sets



BOTTOM VIEW OF R-100 SERIES A. C. RADIO RECEIVERS

Tube	Position	Fil.	Plate	Grid	Screen	Plate Crnt.
224	1st RF	2.18	135	2.2	87	5.4
224	2nd RF	2.2	137	2.2	86	4.
224	3rd RF	2.22	136	2.2	86.5	4.9
227	Det	2.2	166	16.5	-	.6
227	1st AF	2.18	120	.6	-	3.6
245	Output	2.3	245	48.	-	27.
280	Rect	5.0	Plate current is 50 mls per anode			Line voltage 115 V.C. Fall

STEWART-WARNER CORP

MODEL R-100-A
Continuity Tests

RECEIVER CONTINUITY TESTS

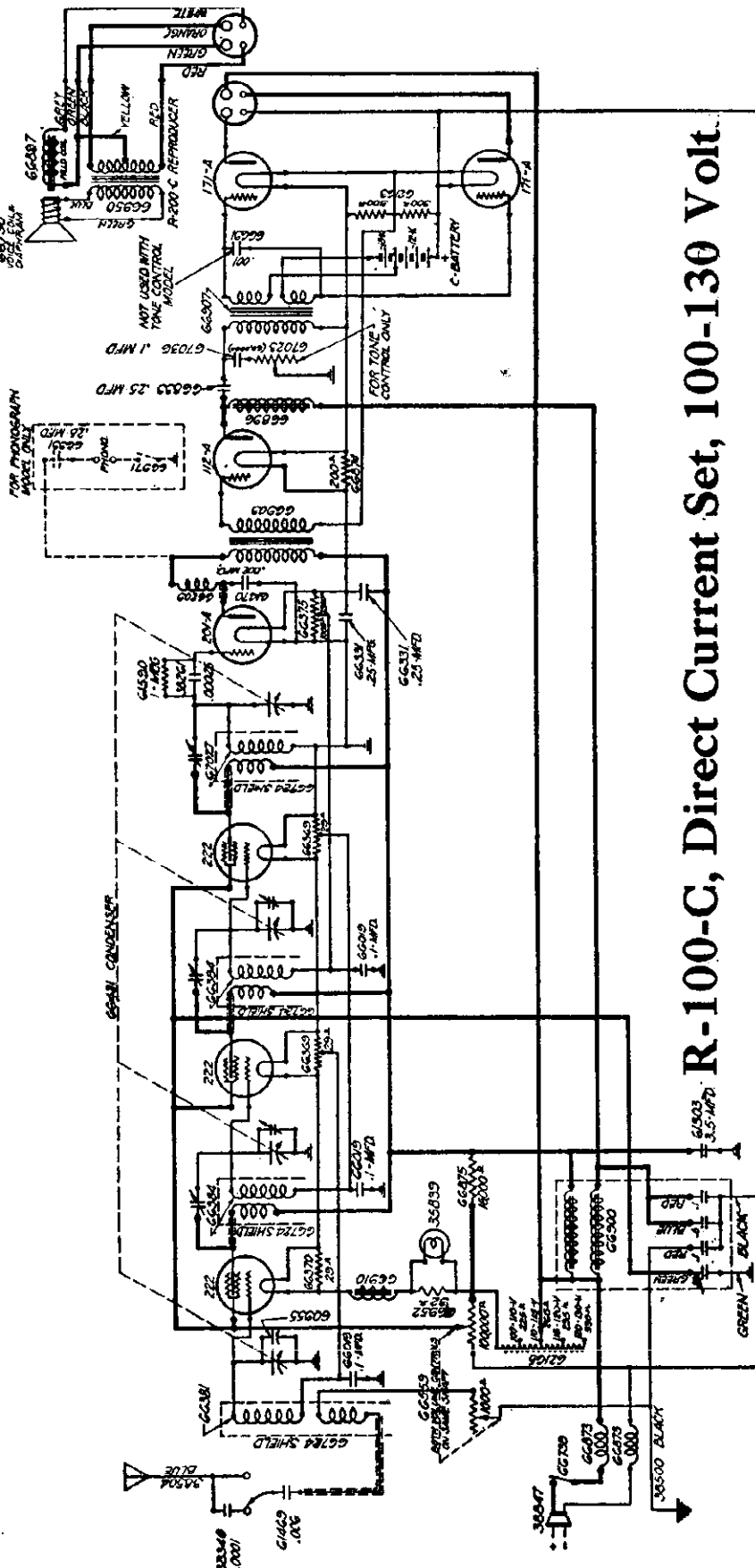
USE HIGH RESISTANCE VOLTMETER. TUBES AND SPEAKER MUST BE IN PLACE BUT SET DISCONNECTED AT SOCKET

CIRCUIT	TERMINALS	APPROX. NORMAL RESIST. READING	NO READING CAUSED BY	HIGH READING (LOW RESISTANCE) CAUSED BY
1 R.F. Plate	35 to 24	60 ohms*	Open 2 RF trans. primary	Shorted RF trans. primary
	35 to 63	17500 ohms*	Open red resistor	Grounded RF transformer primary Broken down or grounded red resistor
	35 to 70	5000 ohms*	Open plate resistor	Shorted 66755 series plate resistor
	35 to 57	6500 ohms	Open filter chokes	Shorted or grounded filter choke
1 R.F. Screen Grid	34 to 47	14000 ohms*	Open white resistor	Shorted or broken down white resistor
	Note: Above test must be made with volume control full on. Volume control is tested at this point by turning it back slowly while watching reading. Voltmeter should go to full reading slowly as control is rotated.			
	34 to 67	14000 ohms*	Open orange resistor	Shorted or defective orange resistor
1 R.F. Control Grid	Grid Wire to Ground	4 ohms	Open 1 RF transformer secondary	Shorted 1 R.F. transformer secondary
1 R.F. Cathode	30 to Grnd.	110 ohms	Open RF bias resistor	Short circuited RF bias resistor
2 R.F. Plate	41 to 28	50 ohms	Open primary 3d RF transformer	Short circuited RF trans. primary
2 R.F. Screen Grid	40 to 47	14000 ohms*	Open white resistor	Short circuited or broken down white resistor
2 R.F. Control Grid	Grid Wire to Ground	4 ohms	Open secondary 2 R.F. transformer	Shorted 2 R.F. transformer secondary
2 R.F. Cathode	42 to Grnd.	110 ohms	Open RF bias resistor	Shorted RF bias resistor
3 R.F. Plate	46 to 33	60 ohms	Open 4th RF trans. primary	Shorted RF transformer primary
3 R.F. Screen Grid	45 to 47	15000 ohms*	Open white resistor	Shorted or broken down white resistor
3 R.F. Control Grid	Grid Wire to Ground	4 ohms	Open 3d R.F. trans. secondary	Shorted 3d R.F. transformer secondary
3 R.F. Cathode	47 to Grnd.	110 ohms	Open RF bias resistor	Shorted RF bias resistor
Det. Plate	53 to 51	80 ohms	Open R.F. choke	Shorted RF trans. primary
	53 to 66	35000 ohms*	Open pink resistor	Shorted or defective pink resist.
	53 to 62	100000 ohms*	Open yellow resistor	Shorted or def. yellow resist.
	53 to 57	100000 ohms	Open filter choke	Shorted or def. yellow or pink resistors
Det. Grid	52 to Grnd.	4 ohms	Open 4th RF trans. secondary	Shorted 4th RF transformer secondary
Det. Cathode	54 to Grnd.	40000 ohms*	Open green resistor	Shorted or def. green resist.
1 A.F. Plate	14 to 4	40000 ohms	Open green plate resist.	Shorted or defective green plate resistor
	1 to Grnd.	1500 ohms	Open primary input trans.	Shorted input trans. primary
1 A.F. Grid	13 to Grnd.	Barely perceptible reading	Open grid leak	Shorted grid leak
1 A.F. Cathode	15 to Grnd.	2400 ohms	Open bias resistor	Shorted bias resistor
2 A.F. Plate	9 to 17	300 ohms 300 ohms	Open output transformer primary	Shorted output trans. primary
	5 to 17			
2 A.F. Grid	10 to Grnd.	5000 ohms 4500 ohms	Open input transformer secondary	Shorted input trans. secondary
	6 to Grnd.			

*The value obtained here is not the true resistance because of parallel resistance networks in the set. To obtain true resistance values, one side of the resistor must be unsoldered and then checked when out of the circuit.

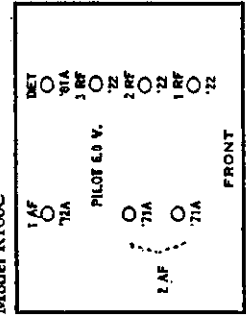
MODEL R-100-C (DC)
Schematic, Voltage

STEWART-WARNER CORP.



R-100-C, Direct Current Set, 100-130 Volt

Model R100C



VOLTAGE READINGS LINE VOLTAGE 112

Tube Position	Filament	Screen Grid	Plate	Control Grid
1 R.F.	3	44	68	- 1.5
2 R.F.	3	47	71	- 1.5
3 R.F.	3	51	74	- 1.5
Det.	4.25		69	+ 4.2 *
1 A.F.	4.25		92	- 3.7
2 A.F.	4.8		97	-14.8
2 A.F.	4.8		102	-15.2

All screen grid, control grid, and plate voltages are taken with respect to the NEGATIVE filament terminal of the tube.
 * This reading must be taken from negative filament to grid side of tuning coil because of the grid leak in this circuit.

VARIABLE RESISTORS: VOLUME CONTROLS AND RHEOSTATS

Model	Use in Set	Part No.	Resistance	Description
300	Filament Rheostat	18056	4.5 ohms	Wire-wound rheostat.
305	Volume Control	18057	200 ohms	Wire-wound potentiometer.
310	Filament Rheostat	31923	10 ohms	Wire-wound rheostat.
330	Volume Control	18057	200 ohms	Wire-wound potentiometer.
335	Filament Rheostat	34762	3.2 ohms	Wire-wound rheostat.
340	Volume Control	34763	100,000 ohms	Combination wire-wound and carbon strip variable resistor.
345	Filament Rheostat	18056	4.5 ohms	Wire-wound rheostat.
350	Volume Control	18056	4.5 ohms	Wire-wound rheostat.
520	Volume Control and Filament Switch	37040	175,000 ohms	Combination wire-wound and carbon strip variable resistor combined with filament switch.
530	Volume Control	37892	5,000 ohms	Combination wire-wound and carbon strip variable resistor.
705	Detector Rheostat	37211	20 ohms	Wire-wound rheostat.
710	Vol. Control & Switch	35947	175,000 ohms	Combination variable resistor and filament switch.
715	Volume Control	37995	5,000 ohms	Combination wire-wound and carbon strip variable resistor.
720	Volume Control	37995	5,000 ohms	Combination wire-wound and carbon strip variable resistor.
750	Volume Control	39256	10,000 ohms	Metal enclosed carbon strip variable resistor.
805	Volume Control	39725	175,000 ohms	Combination wire-wound and carbon strip variable resistor.
900 Series AC	Volume Control	61537	60,000 ohms	Metal enclosed carbon strip variable resistor.
930-1-3-3	Volume Control	62908	15,000 ohms	Metal enclosed carbon strip variable resistor.
950 Series AC	Volume Control	66389	31,000 ohms	Metal enclosed carbon strip potentiometer.
970-1-3-3	Volume Control	66539	1,000 ohms and 100,000 ohms	Double unit metal enclosed carbon strip variable resistor.
980-1-2-3	Volume Control	66559	1,000 ohms and 100,000 ohms	Double unit metal enclosed carbon strip variable resistor.
R100 A, B & F	Volume Control	66389	32,000 ohms	Metal enclosed carbon strip potentiometer.
R100C	Volume Control	67023	60,000 ohms	Metal enclosed carbon strip variable resistor.
	Volume Control	66539	1,000 ohms and 100,000 ohms	Double unit metal enclosed variable resistor.

VOLTAGE REGULATORS*

Model	Part No.	Description
900-1-2-3	61816 66547	Brown. Machine screw mounting. Brown. Two threaded contact pins for mounting.
910-1-2-3	66412	Brown. Plug in type.
940-1-2-3	62151	Brown. Plug in type.
950-1-2-3	62152	Brown. Plug in type.
960-1-2-3	66491	Brown. Plug in type.
990-1-2-3	66514	Brown. Plug in type.
R-100-A	66756	Gold. Plug in type.
R-100-B	66841	Gold. Plug in type.
R-100-E	66852	Gold. Plug in type.

* Note — No resistance values are given since the resistance of all voltage regulators varies widely with temperature and current flowing through the wire.

WIRE-WOUND RESISTORS

SHOW APPROXIMATELY HALF SIZE

38915
1000 ohms. Grid resistor. Used in 800 Series receivers.

60279
29 ohms. 1 R. F. filament about. Used in 900 and R-100 Series D. C.

60657
110 ohms. R. F. bias. Used in 900 and R-100 Series A. C.

37601
.20 ohms. Center tap resistor. Used in 900, 700, and 800 Series A. C. Used in 700 Series battery receivers.

60280
29 ohms. 2 R. F. filament about. Used in 900 and R-100 Series D. C.

61648
26 ohms. Center tap resistor. Used in 900, 900, and R-100 Series A. C.

37553
1.85 ohms. A. F. filament resistor. Used in 700 Series battery receivers.

34579
3.0 ohms. R. F. filament resistor. Used in 700 Series battery receivers.

32923
58 ohms. Filament resistor. Used in Model 800 only.

60297
10,000 ohms. 1 A. F. grid bias. Used in Model 811 only.

35379
4000 ohms. 1 A. F. grid bias. Used in Models 801 and 780.

32926
1000 ohms. 2 A. F. grid bias. Used in 800 A. C. Series B.

35499
2100 ohms. 2 A. F. grid bias in Model 811 and 800 Series A. Used also as R. F. grid bias in 800 A. C. A. C. receivers.

32925
1700 ohms. R. F. grid bias. Used in Model 780 only.

62106
32 ohms. Pilot light about. (3 A. F., grid bias.) Used in 800 D. C.

STEWART-WARNER CORP.

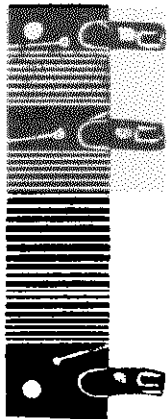
Resistor Data Part 1

Resistor Data
Part 2

STEWART - WARNER CORP.

WIRE-WOUND RESISTORS

SHOWN APPROXIMATELY HALF SIZE



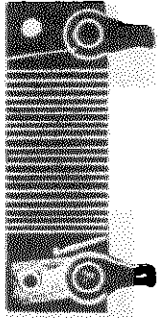
64039
2220 ohms and 1110 ohms. B supply resistor. Used in 900 and 900 Series A. C. receivers.



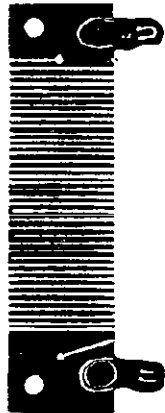
64037
4.4 ohms and 5 ohms. Filament resistor. Used in 900 Series battery receivers.



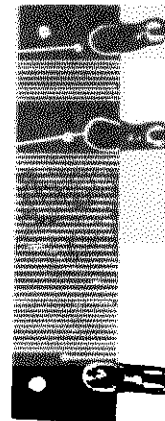
37569
56 ohms. Filament resistor. Used in 900 Series battery receivers.



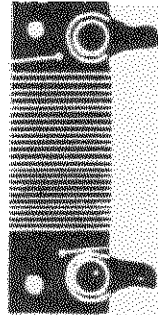
37737
5100 ohms. 1 A. F. grid bias. Used in 900 and 700 Series A. C. receivers.



61833
7000 ohms. Series plate resistor. Used in 900 Series A. C.



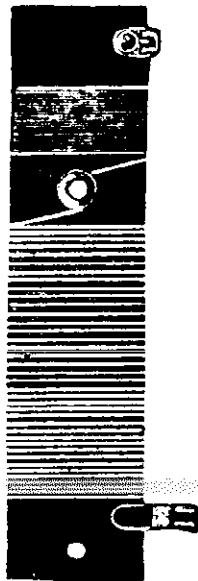
64876
2300 ohms and 1000 ohms. Detector filament shunt resistor. Used in 900 Series D. C. and R100C receivers.



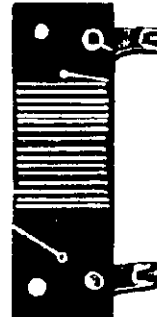
33733
1000 ohms. Grid resistor. Used in 1st B. F. of 900 Series A. C. and all B. F. of 900 Series Battery.



37794
1700 ohms. R. F. grid bias. Used in 900 and 700 Series A. C. receivers.



61839
900 ohms and 2400 ohms. A. F. grid bias. Used in 900, 960 and R-100 Series A. C.



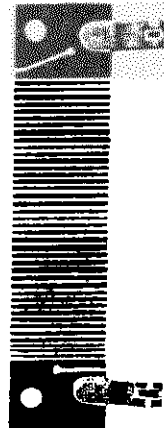
64872
2000 ohms. Detector plate resistor. Used in 900 Series D. C. receiver.



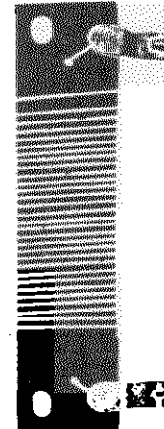
37763
1000 ohms. 2nd and 3rd B. F. grid resistor. Used in 900 Series A. C.



37639
20 ohms. Center tap. Used in 700 Series A. C. receivers.



64756
2750 ohms. B supply resistor. Used in R-100-A and E.
64834
1110 ohms. Screen Grid supply resistor. Used in R-100-R
64831
2220 ohms. B supply resistor. Used in R-100-E.



64833
32 ohms. Pilot light shunt resistor. Used in R-100-C.



37555
56 ohms. Filament resistor. Used in 900 Series battery receivers.



61836
900 ohms. B. F. grid bias. Used in 900 Series A. C.

A-F. Transformer Data

STEWART-WARNER CORP.

STEWART-WARNER AUDIO-TRANSFORMER DATA

Model Number	Circuit in Which Used	Transformer Finish	Approximate Turns Ratio		Primary	Secondary	Color Code of Wires	Approximate Resistance	Notes	Part Number	Price	Substitute Part Numbers
			Primary	Secondary								
300-345	Both Audio Stages	Brown	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
310-345	Both Audio Stages	Brown	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
320-345	Both Audio Stages	Brown	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
330-345	Both Audio Stages	Brown	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
570-525	First Audio	Black	2 to 1		2800 ohms	7500 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
705-719	Second Audio	Black	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
580-515	Output	Black	1 to 1		400 ohms	600 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
580-515	First Audio	Black	2 to 1		2800 ohms	7500 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
715-726	Second Audio	Black	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
750	Output	Black	1 to 1		400 ohms	600 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
810-811	First Audio	Black	2 to 1		2800 ohms	7500 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
810-811	Second Audio	Black	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
810-811	Output	Black	1 to 1		400 ohms	600 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	

Resistance values given here are only approximate. They will vary widely with date of manufacture and material used. Where two resistance values are given they apply to both halves of a winding. The color winding always has the higher resistance. The color code given applies only to the cotton insulation of the terminal wire and not to the color of the paperwrap or enameled tubing around the wire.

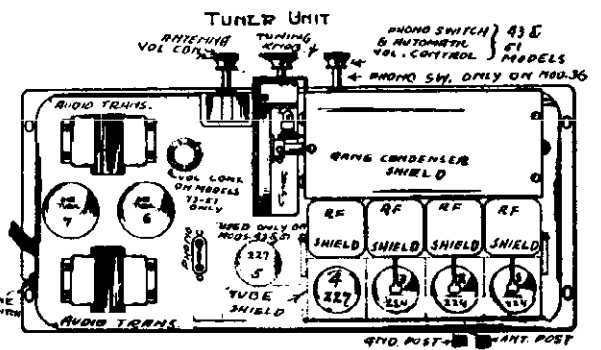
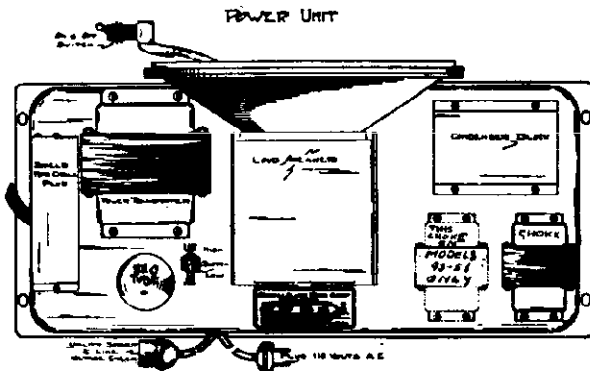
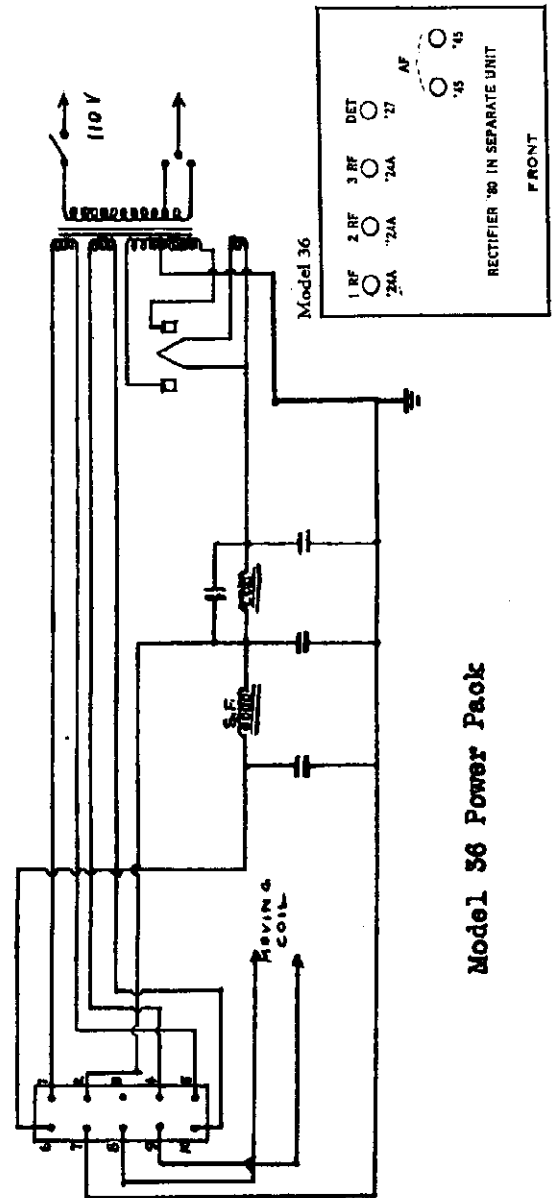
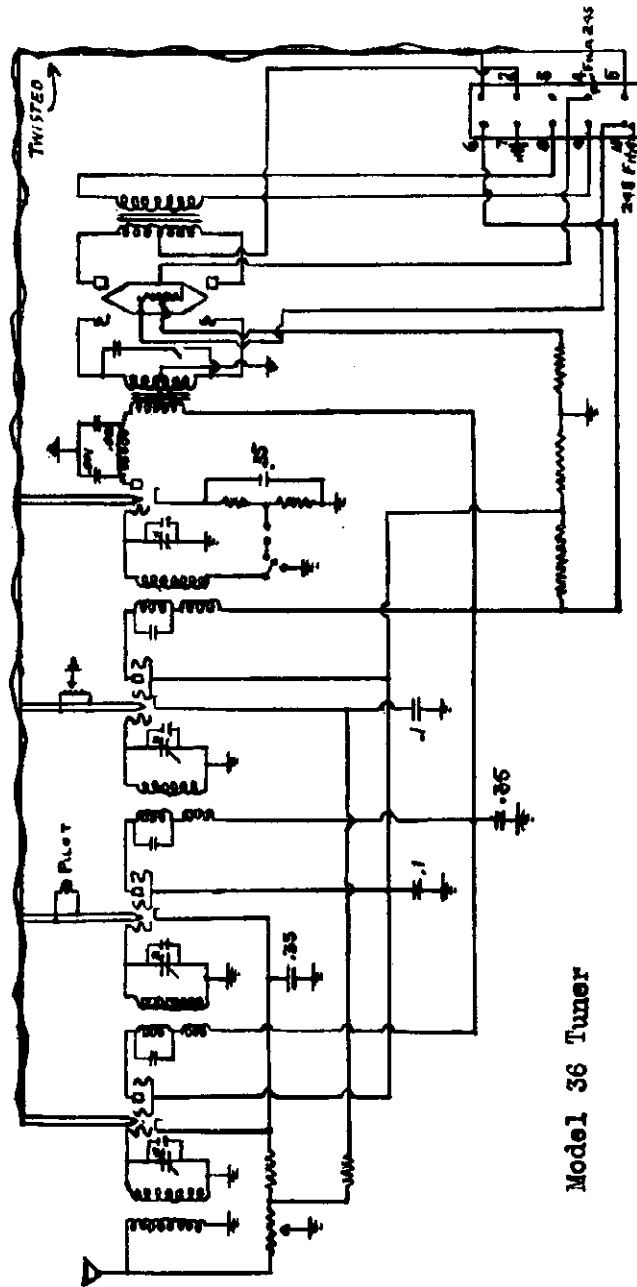
STEWART-WARNER AUDIO-TRANSFORMER DATA

Model Number	Circuit in Which Used	Transformer Finish	Approximate Turns Ratio		Primary	Secondary	Color Code of Wires	Approximate Resistance	Notes	Part Number	Price	Substitute Part Numbers
			Primary	Secondary								
300-345	Both Audio Stages	Brown	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.50	38977 61914 64566 64566	
310-345	Both Audio Stages	Brown	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
320-345	Both Audio Stages	Brown	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
330-345	Both Audio Stages	Brown	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
570-525	First Audio	Black	2 to 1		2800 ohms	7500 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
705-719	Second Audio	Black	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
580-515	Output	Black	1 to 1		400 ohms	600 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
580-515	First Audio	Black	2 to 1		2800 ohms	7500 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
715-726	Second Audio	Black	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
750	Output	Black	1 to 1		400 ohms	600 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
810-811	First Audio	Black	2 to 1		2800 ohms	7500 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
810-811	Second Audio	Black	3 to 1		2100 ohms	8000 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	
810-811	Output	Black	1 to 1		400 ohms	600 ohms	Plate-White B+ - Red	Grid #1-Green Grid #2-Blue	38977	\$5.00	38977 61914 64566 64566	

Resistance values given here are only approximate. They will vary widely with date of manufacture and material used. Where two resistance values are given they apply to both halves of a winding. The color winding always has the higher resistance. The color code given applies only to the cotton insulation of the terminal wire and not to the color of the paperwrap or enameled tubing around the wire.

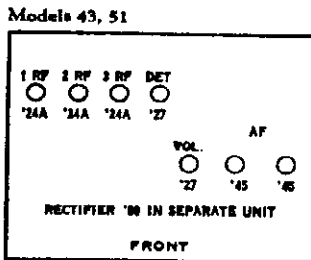
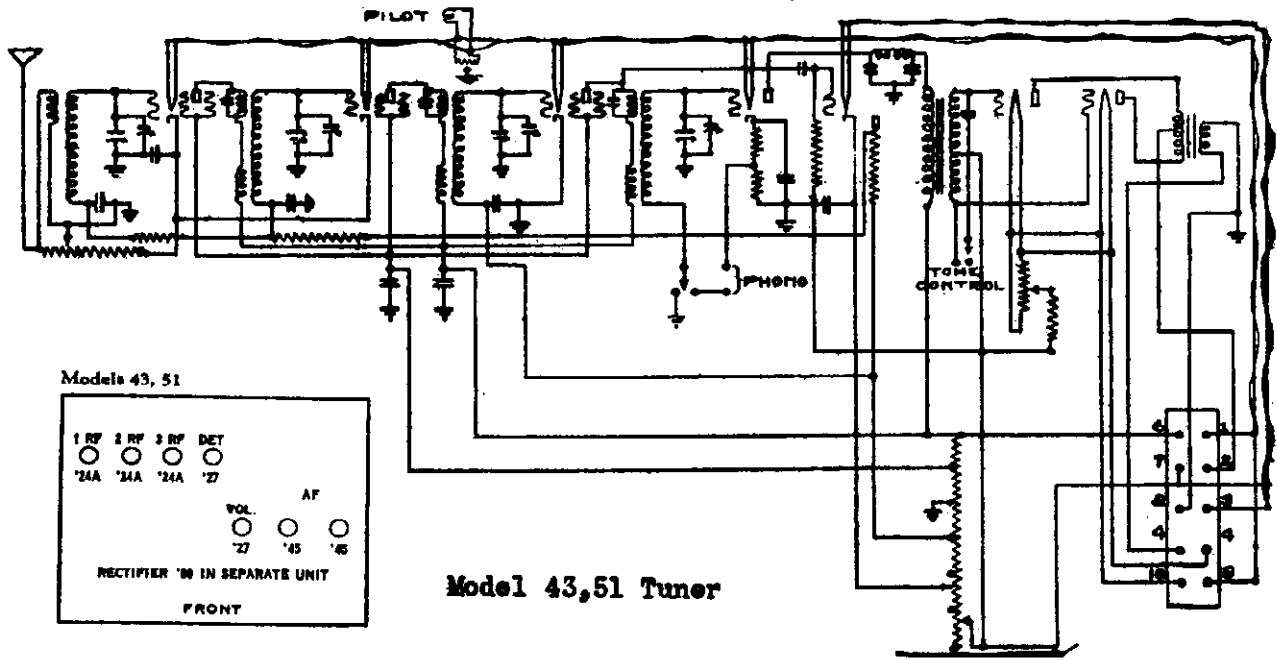
MODEL 36

STORY & CLARK RADIO CORP.

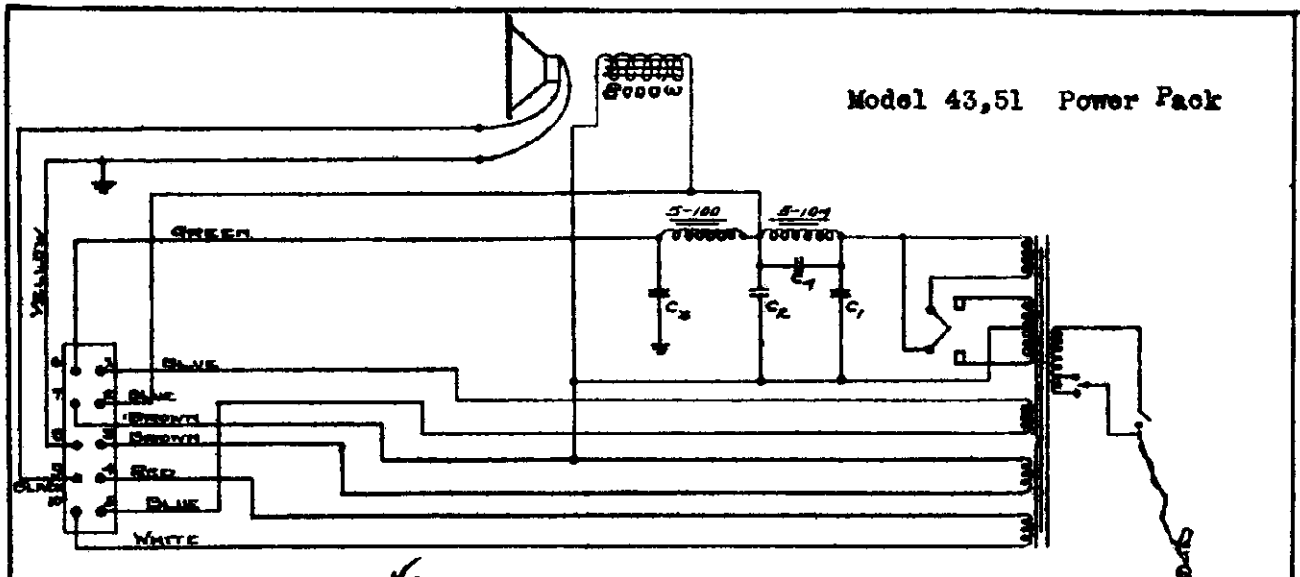


MODELS 43,51

STORY & CLARK RADIO CORP.



Model 43,51 Tuner



Model 43,51 Power Pack

+ NOTE +

COLORLED LEADS ARE CABLE CONNECTIONS FROM POWER PACK TO R.F. UNIT.
C₁ - 2 MFD, C₂ - 2 MFD, C₃ - 3 MFD C₄ - 16 MFD.

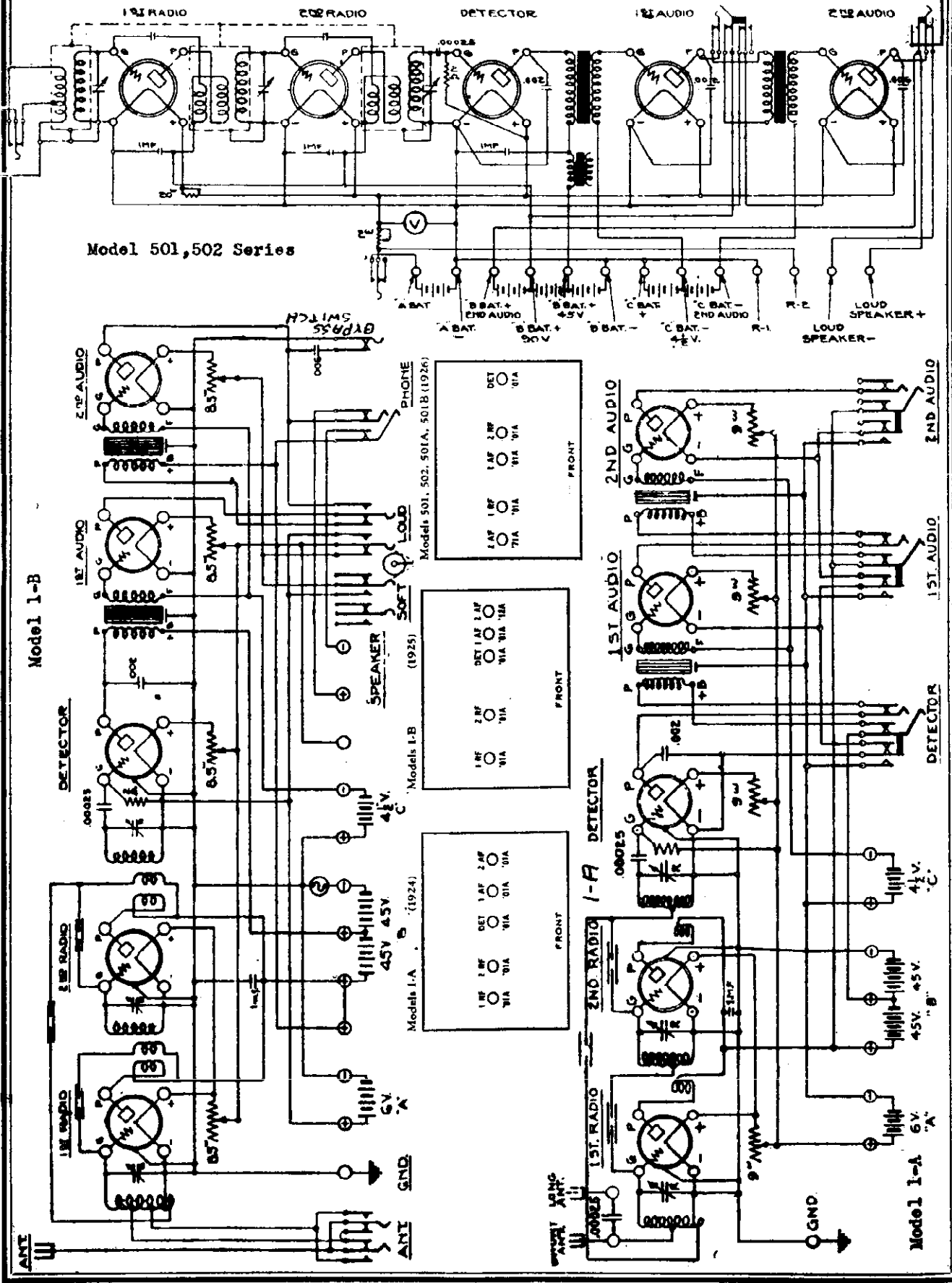
FOR 60 CYCLE SUPPLY, LOW POTENTIAL SIDE OF C₃ RETURNS TO -B, AS C₂ & C₁. ALSO CONDENSER C₄ HAS A TOTAL CAPACITY OF 5 MF

STORY & CLARK RADIO CORP.
173 N. MICHIGAN AVE.
CHICAGO, USA

DATE	6-13-30
DRAWN	WJZ
CHECKED	
APPROVED	

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 1-A
MODEL 1-B
MODEL 501,501-A,501-B
502,502-A,502-B



Model 501,502 Series

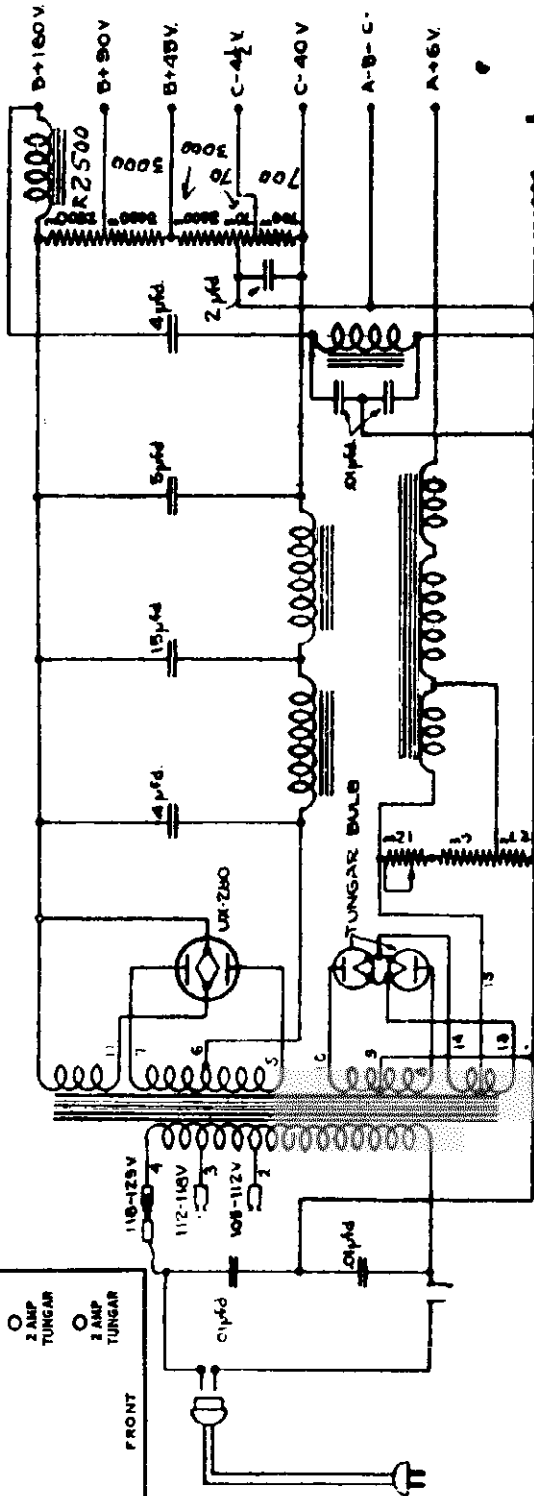
Model 1-B

Model 1-A

MODEL 403-AA

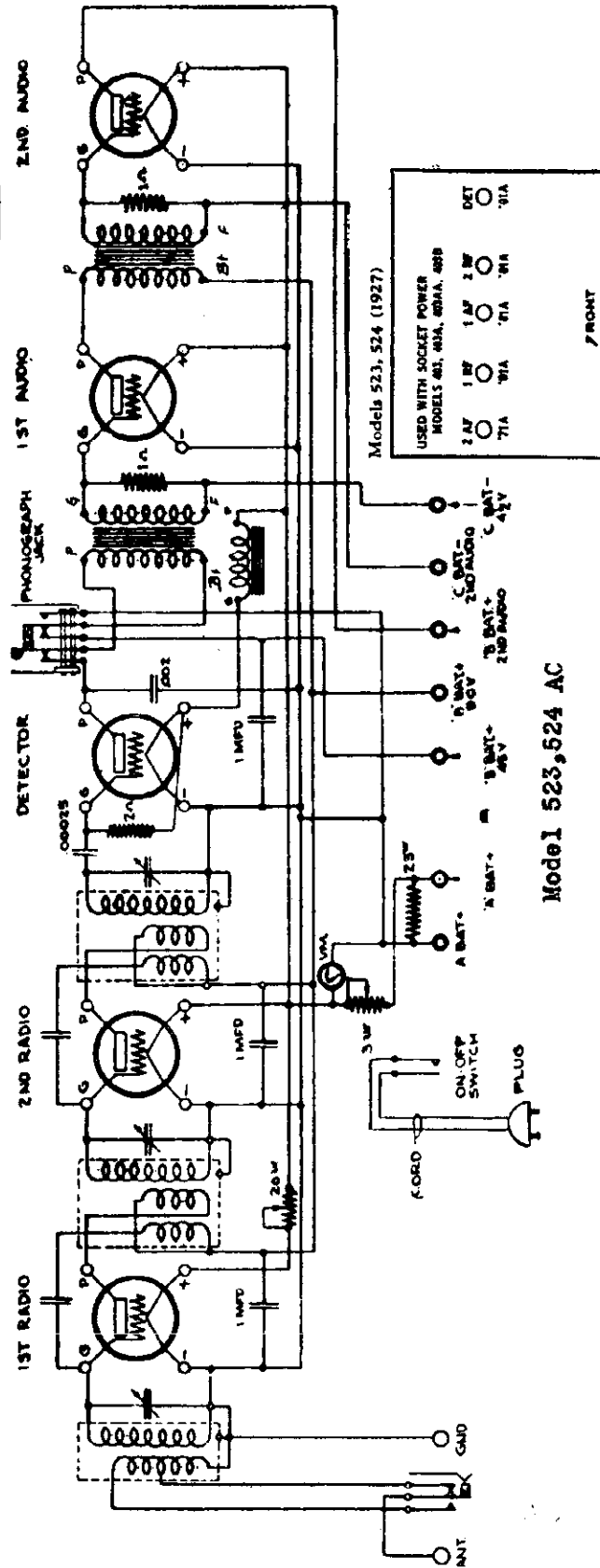
MODEL 523,524 AC STROMBERG - CARLSON TEL. MFG. CO.

Model 403-AA



Models 403, 403A, 403AA, 403B (1927)

SOCKET POWER USED WITH MODELS	
RECT	W
2 AMP TUNGAR	W
2 AMP TUNGAR	W



Models 523, 524 (1927)

USED WITH SOCKET POWER MODELS 403, 403A, 403AA, 403B	
2 A7	71A
1 B7	71A
1 A7	71A
2 W	71A
DET	71A

Model 523,524 AC

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 403,403-A
 MODEL 403-B
 MODEL 301-A

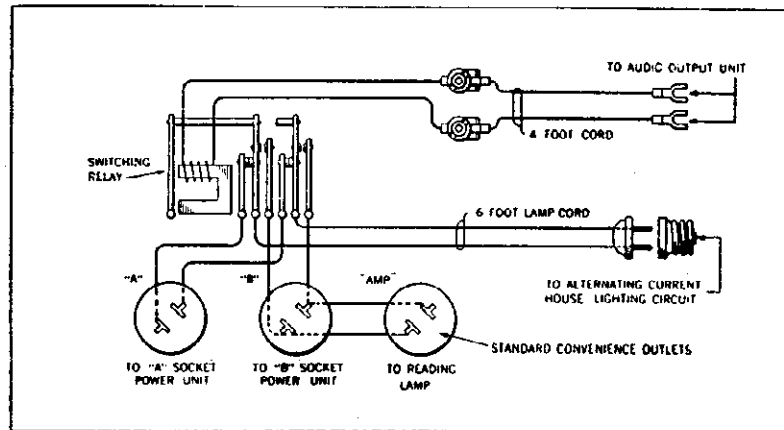
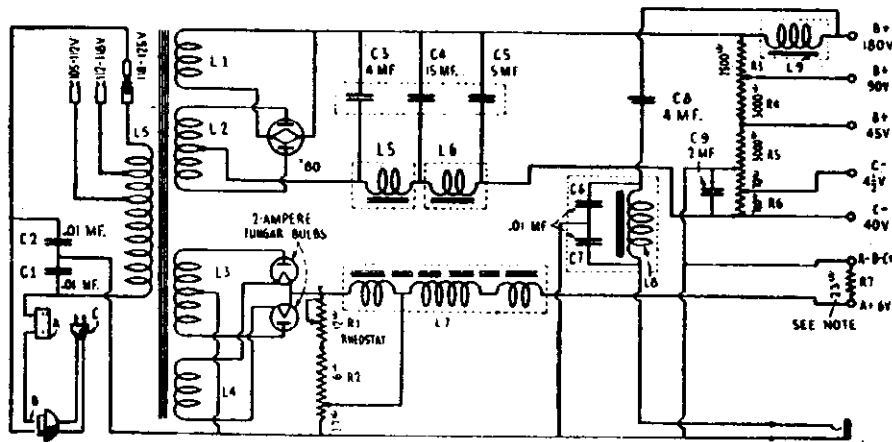
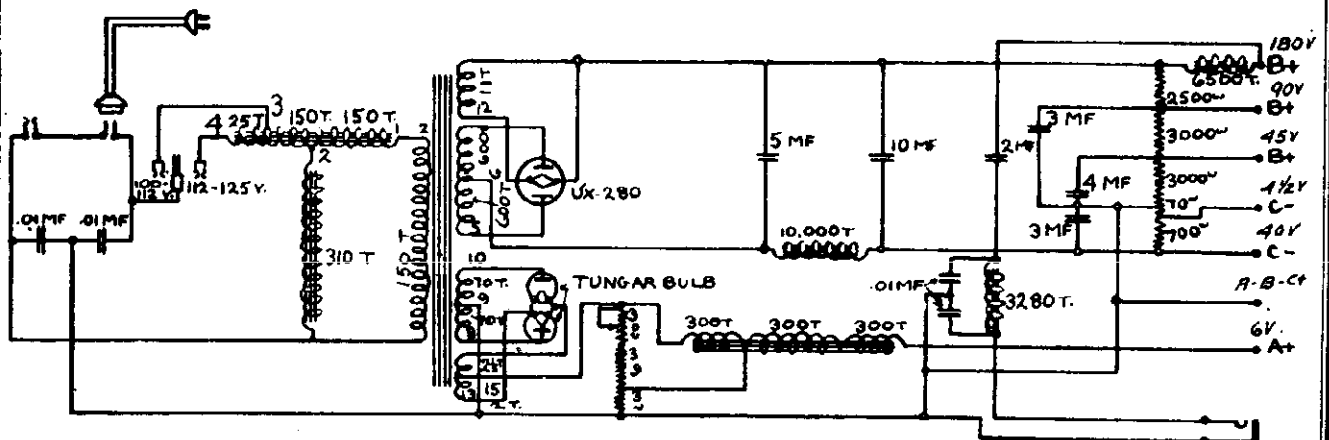


Diagram of Connections in No. 301-A Power Switching Relay



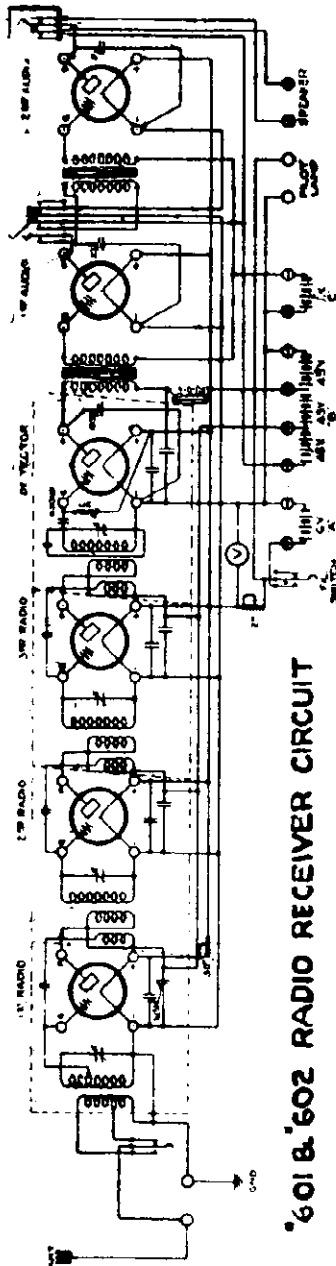
Model 403,403-A



Model 403-B

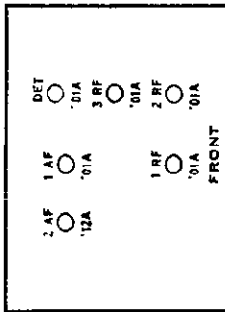
MODEL 601, 602
MODEL 633, 634

STROMBERG - CARLSON TEL. MFG. CO.

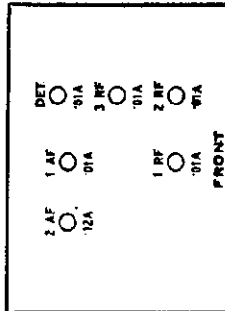


601 & 602 RADIO RECEIVER CIRCUIT

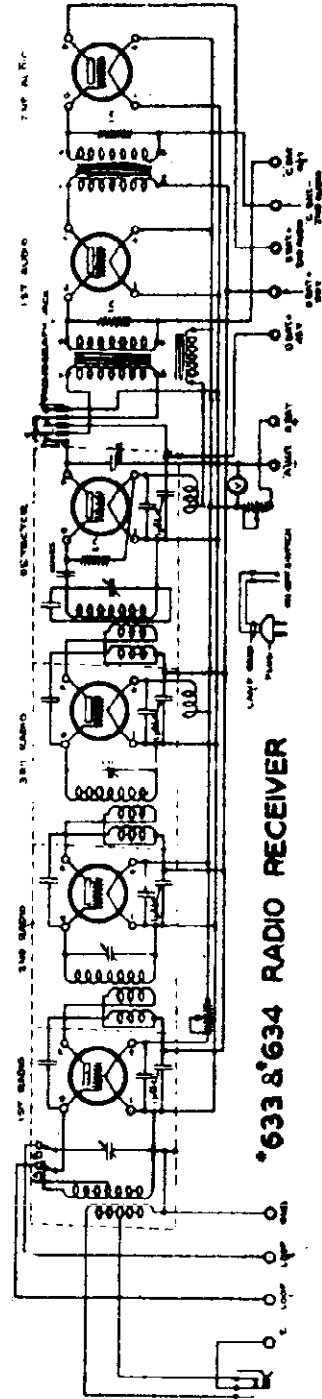
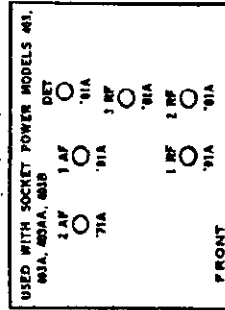
Models 601, 601A, 601B (1935-26)



Models 602A, 602B (1925-26)



Models 633, 634 (1927)



633 & 634 RADIO RECEIVER

MODEL 635, 636 AC

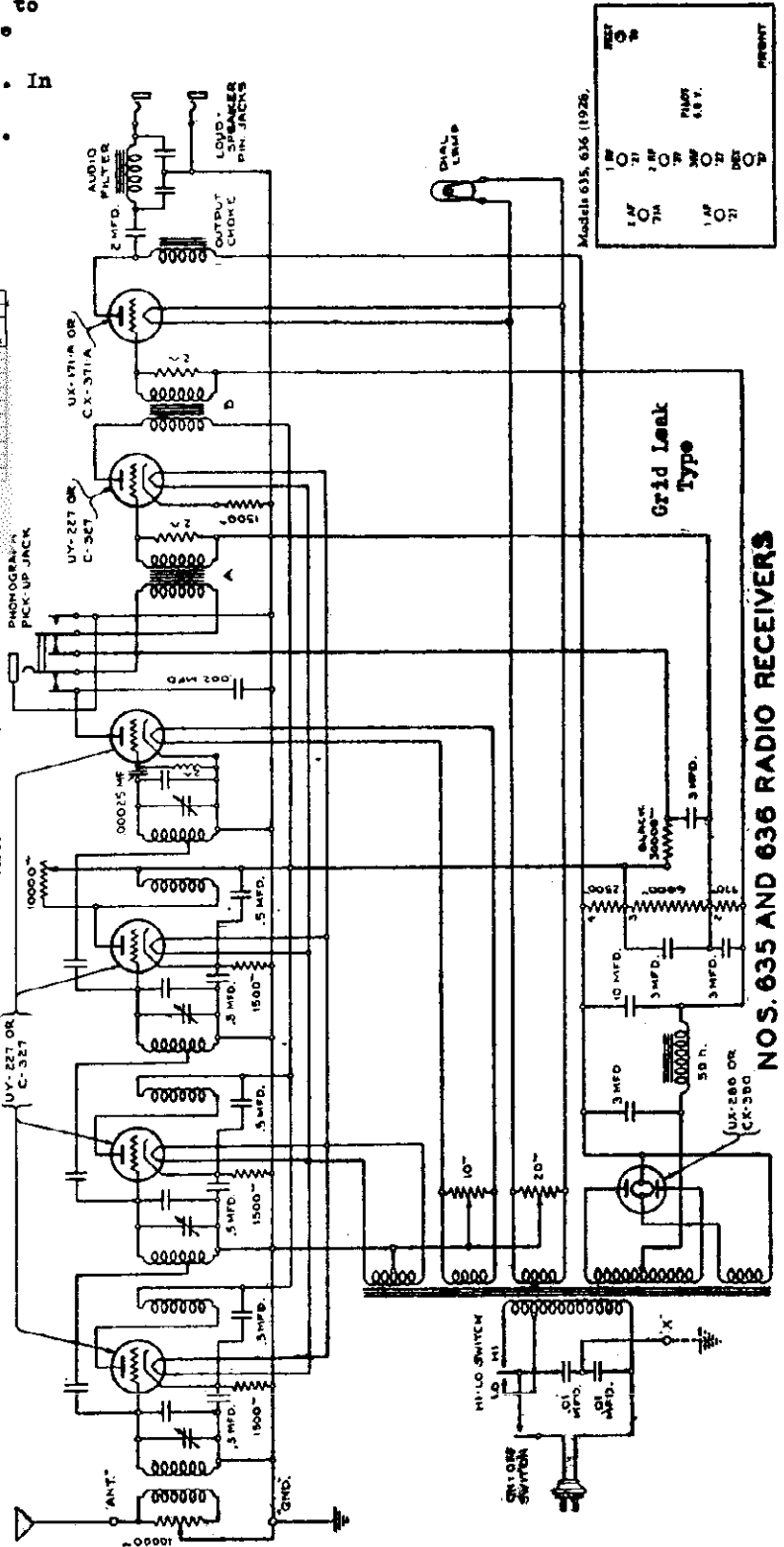
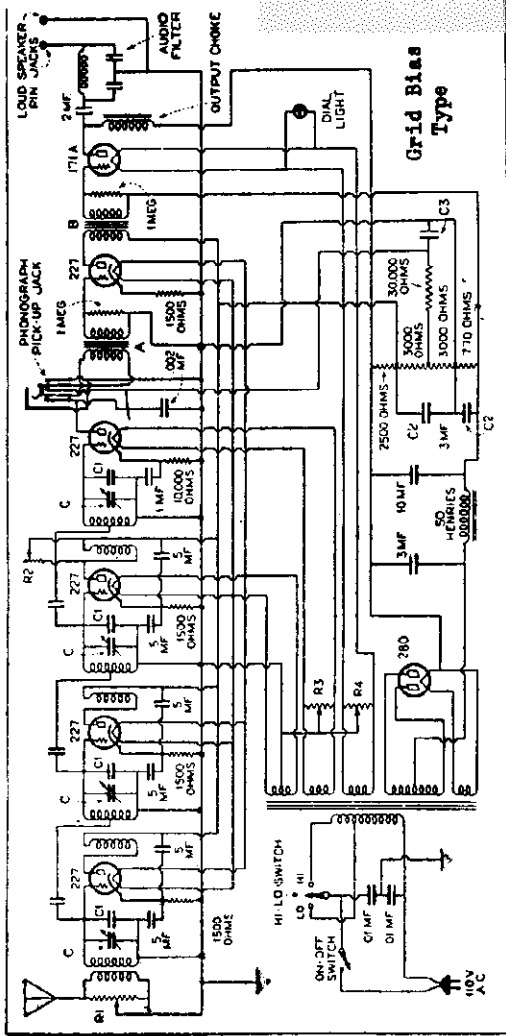
Two Types

STROMBERG - CARLSON TEL. MFG. CO.

The difference between the two types is to be found in the detector circuit. In one of the types, type 1, the detector tube secures its bias via a cathode resistor. In the other type, the detector circuit is equipped with a grid leak and condenser.

STROMBERG-CARLSON—Models 635-636
Line Voltage 115—High Volt Tap—Volume Control Full

TYPE	TUBE	RESISTOR VALUE IN OHMS OR MEG.		TUBE IN TESTER		PLATE	GRID	CATHODE	FILAMENT
		RESISTOR VALUE	RESISTOR VALUE	RESISTOR VALUE	RESISTOR VALUE				
1	6X4	100K	100K	100K	100K	100K	100K	100K	100K
2	6X4	100K	100K	100K	100K	100K	100K	100K	100K
3	6X4	100K	100K	100K	100K	100K	100K	100K	100K
4	6X4	100K	100K	100K	100K	100K	100K	100K	100K
5	6X4	100K	100K	100K	100K	100K	100K	100K	100K
6	6X4	100K	100K	100K	100K	100K	100K	100K	100K
7	6X4	100K	100K	100K	100K	100K	100K	100K	100K
8	6X4	100K	100K	100K	100K	100K	100K	100K	100K
9	6X4	100K	100K	100K	100K	100K	100K	100K	100K
10	6X4	100K	100K	100K	100K	100K	100K	100K	100K
11	6X4	100K	100K	100K	100K	100K	100K	100K	100K
12	6X4	100K	100K	100K	100K	100K	100K	100K	100K
13	6X4	100K	100K	100K	100K	100K	100K	100K	100K
14	6X4	100K	100K	100K	100K	100K	100K	100K	100K
15	6X4	100K	100K	100K	100K	100K	100K	100K	100K
16	6X4	100K	100K	100K	100K	100K	100K	100K	100K
17	6X4	100K	100K	100K	100K	100K	100K	100K	100K
18	6X4	100K	100K	100K	100K	100K	100K	100K	100K
19	6X4	100K	100K	100K	100K	100K	100K	100K	100K
20	6X4	100K	100K	100K	100K	100K	100K	100K	100K



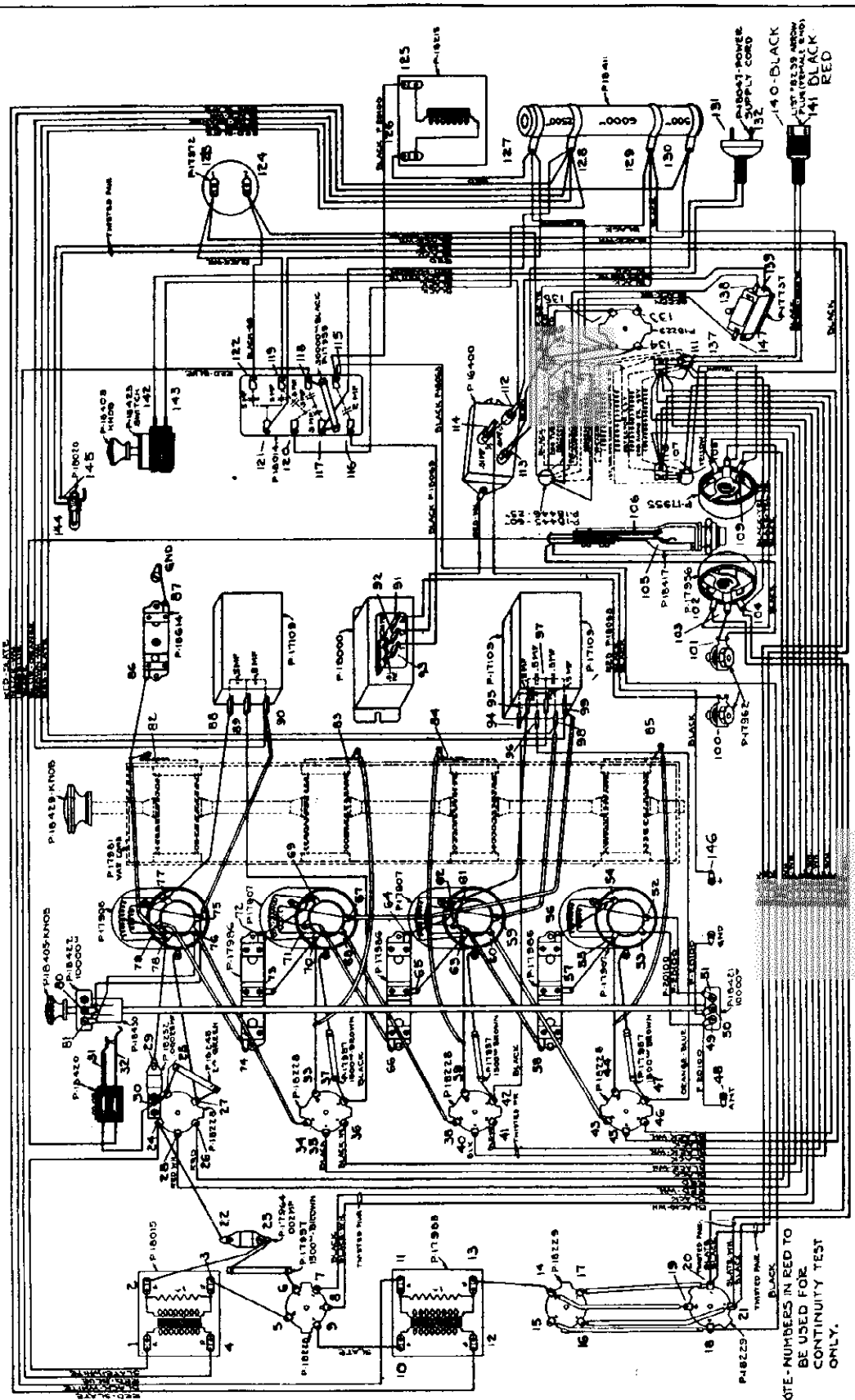
Models 635, 636 (1926)

NOS. 635 AND 636 RADIO RECEIVERS

MODEL 638 AC
Chassis Wiring

STROMBERG - CARLSON TEL. MFG. CO

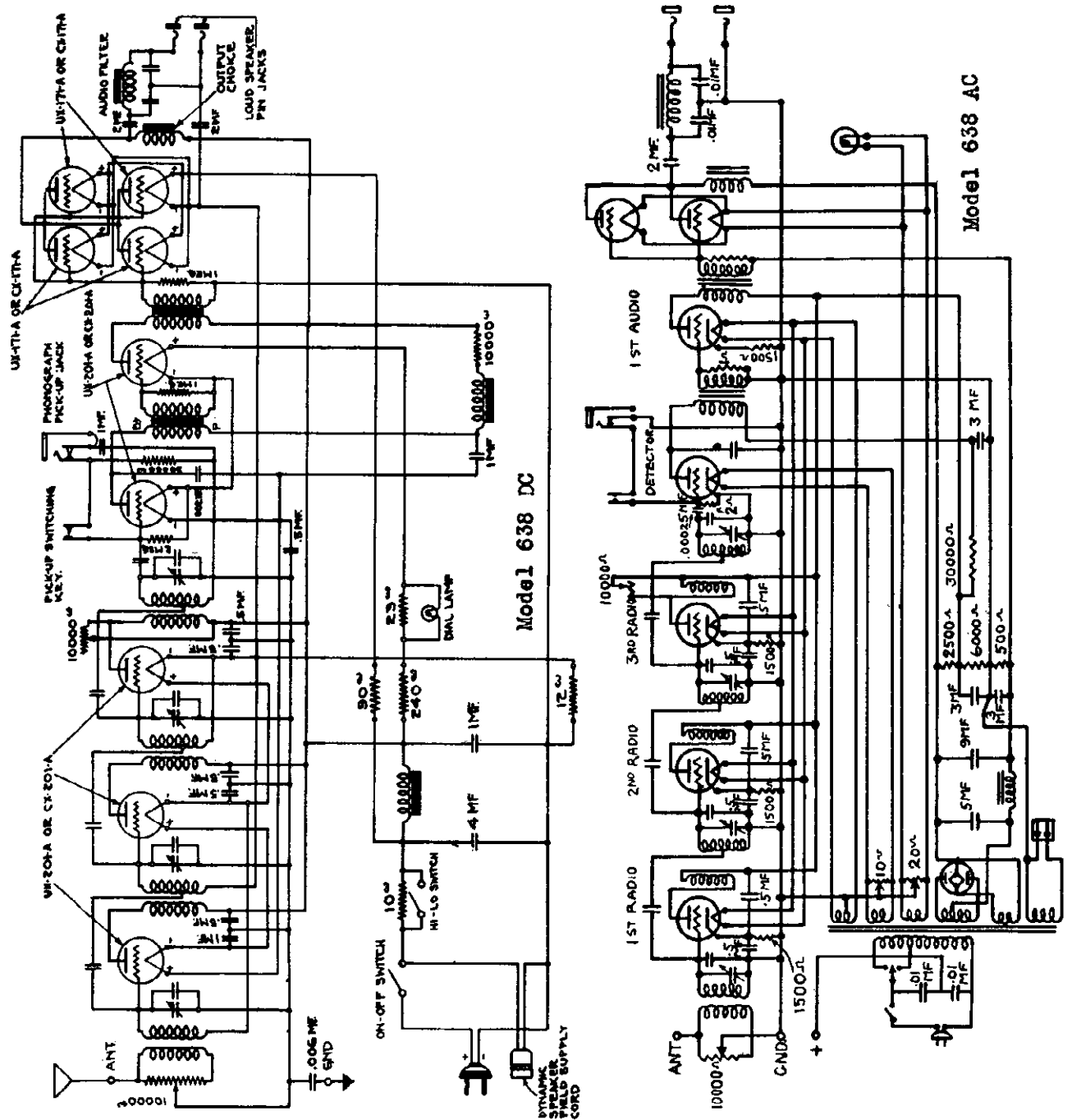
WIRING DIAGRAM OF NO. 638 A.C. RECEIVER



NOTE - NUMBERS IN RED TO BE USED FOR CONTINUITY TEST ONLY.

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 638 AC
MODEL 638 DC



Models. 638 DC (1928)

1 RF	2 AF
'01A	'71A
2 RF	'71A
'01A	'71A
3 RF	
'01A	
1 AF	PILOT 6.0 V.
'01A	
	FRONT

Model 638 AC (1929)

2 AF	1 RF	RECT
'71A	'27	'86
'71A	2 RF	
	'27	
	3 RF	PILOT 6.0 V.
1 AF	'27	
'27	DET	
	'27	
		FRONT

Model 638 Line 117 V. Vol. Maximum

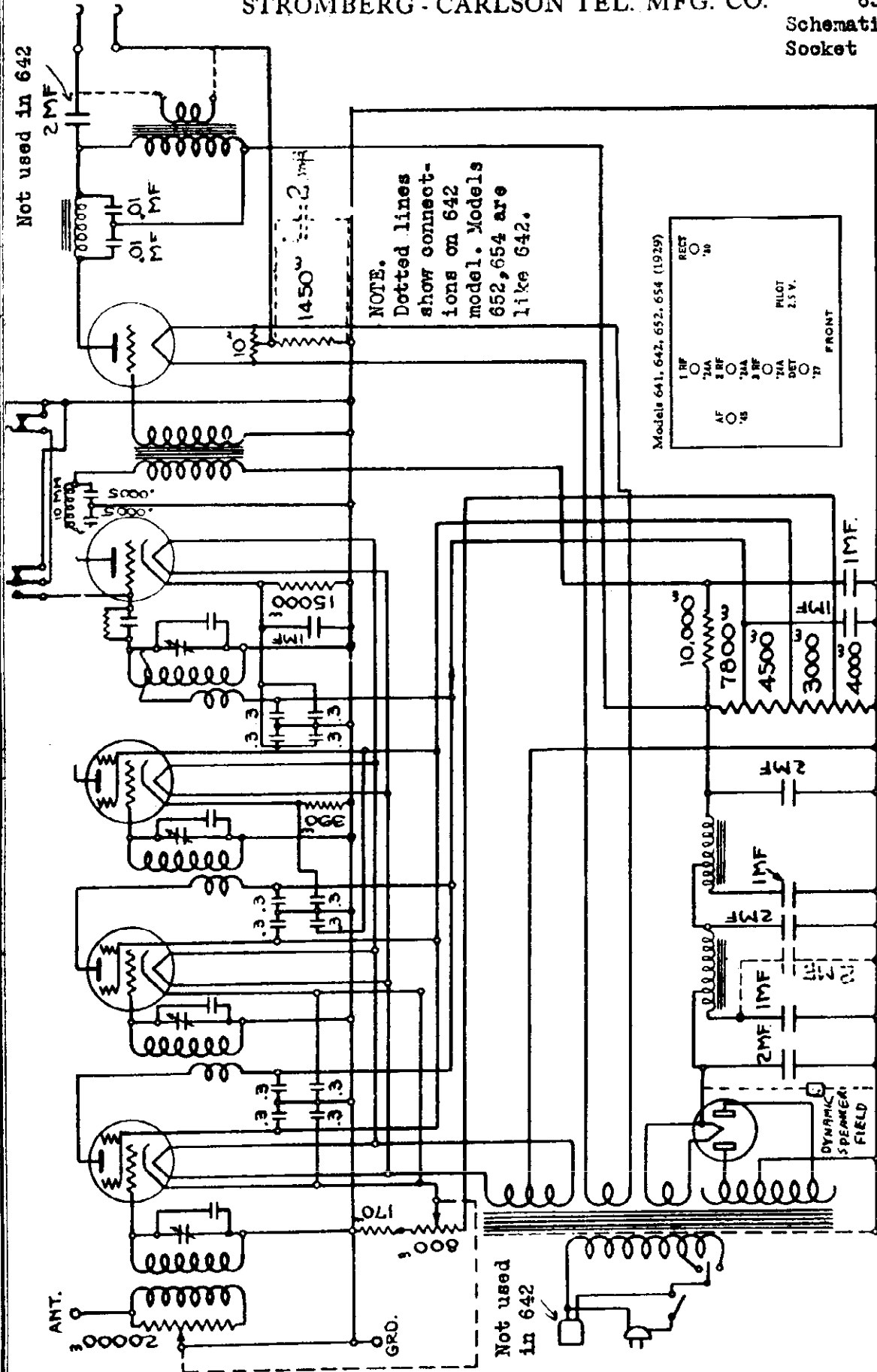
Tube Type	Stage	Fil Volts	Plate Volts	Grid Volts	Plate Ma.
'27	1 RF	2.1	90	4.	2.5
'27	2 RF	2.1	90	4.	2.8
'27	3 RF	2.1	90	4.	3.5
'27	Det.	2.	35	-	2.
'27	1 AF	2.	80	4.	3.5
'71A	2 AF	4.4	155	30.	22.
'71A	2 AF	4.4	155	30.	22.
'80	Rec.	4.4	---	-	37.*

* Per Anode

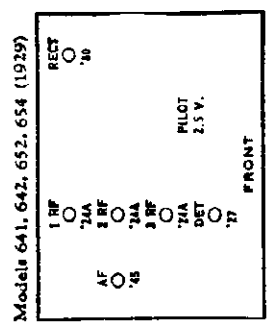
STROMBERG - CARLSON TEL. MFG. CO.

MODEL 641,642,
652,654

Schematic, Voltage
Socket



NOTE.
Dotted lines
show connect-
ions on 642
model. Models
652,654 are
like 642.



Receiver Code No.	Line Voltage 114--	Control Position	Frequencies
641-A	105-125	High Tap	60 Cycles
641-B	105-125	Max	25-60 Cycles
641-C	210-250	Max	25-60 Cycles

TUBE ORDER	TYPE	PART NO.	TUBE OUT				TUBE IN				REPLACE TUBE IN SOCKET OF SET
			A	B	C	D	A	B	C	D	
1	6X4	113 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5
2	6X4	200 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5
3	6X4	500 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5
4	6X4	500 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5
5	6X4	500 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5
6	6X4	500 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5
7	6X4	500 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5
8	6X4	500 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5
9	6X4	500 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5
10	6X4	500 RF	2.45	1.10	2.24	1.15	2.5	1.5	4	2.5	5

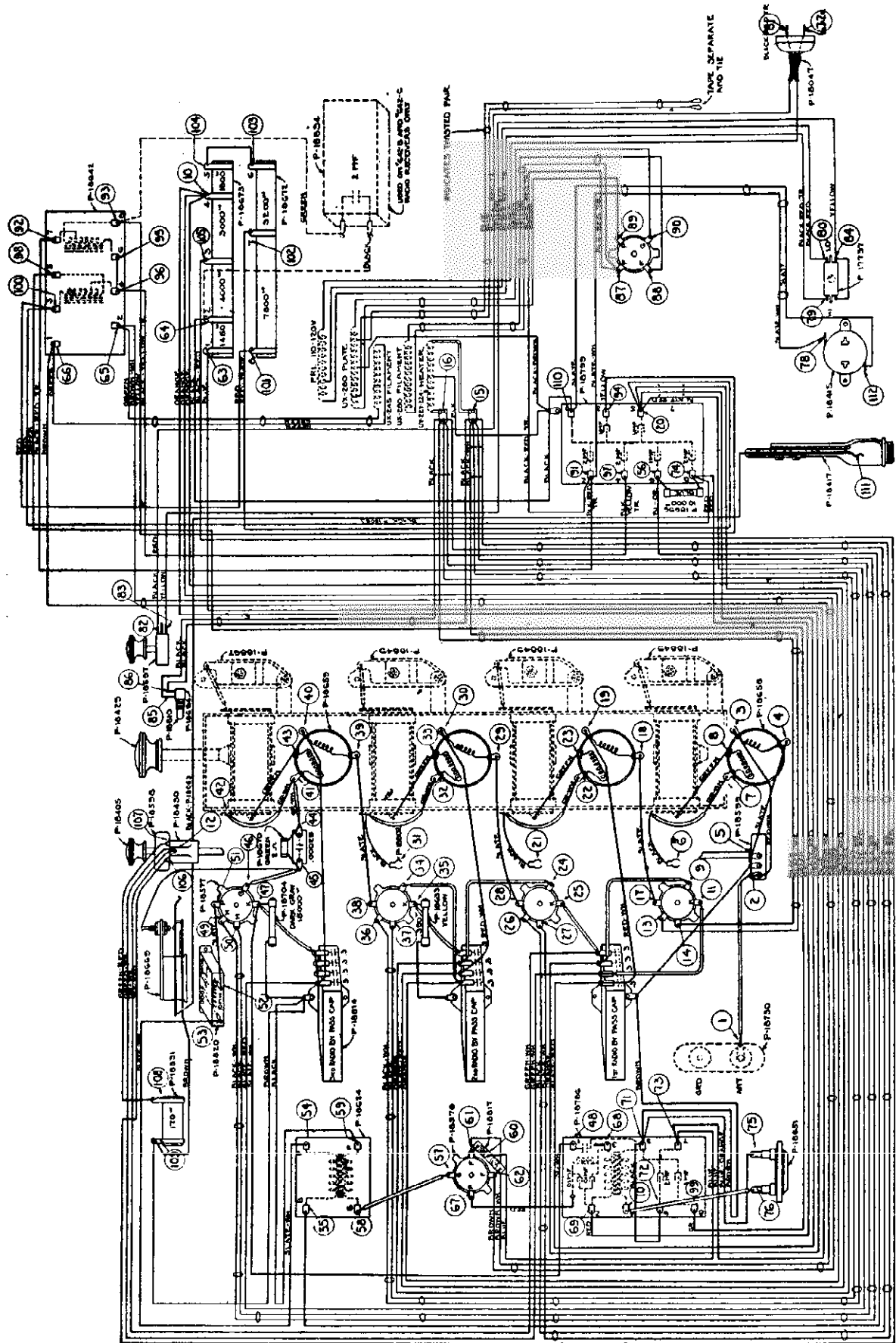
Not used in 642

Not used in 642

Line Voltage 114--
Set on High Volt Tap
Control Position Max

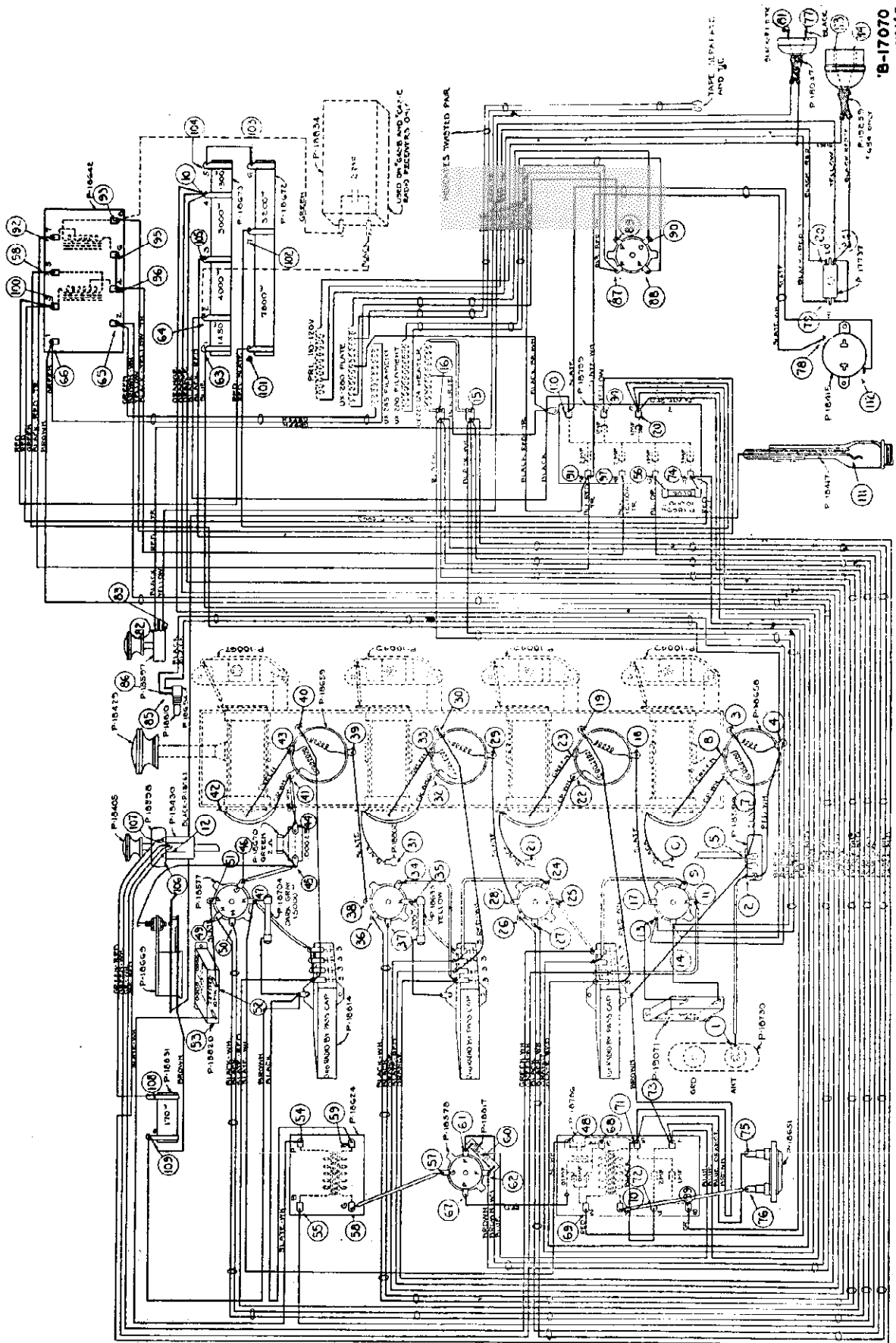
STROMBERG - CARLSON TEL. MFG. CO.

MODEL 642
Chassis Wiring



MODEL 652,654
Chassis Wiring

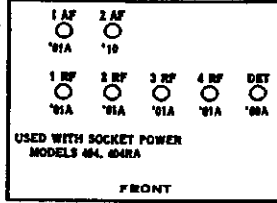
STROMBERG - CARLSON TEL. MFG. CO.



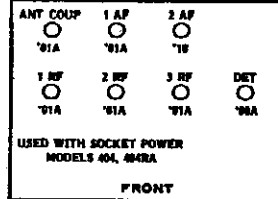
STROMBERG - CARLSON TEL. MFG. CO.

MODEL 734
MODEL 744
MODEL 404 RA

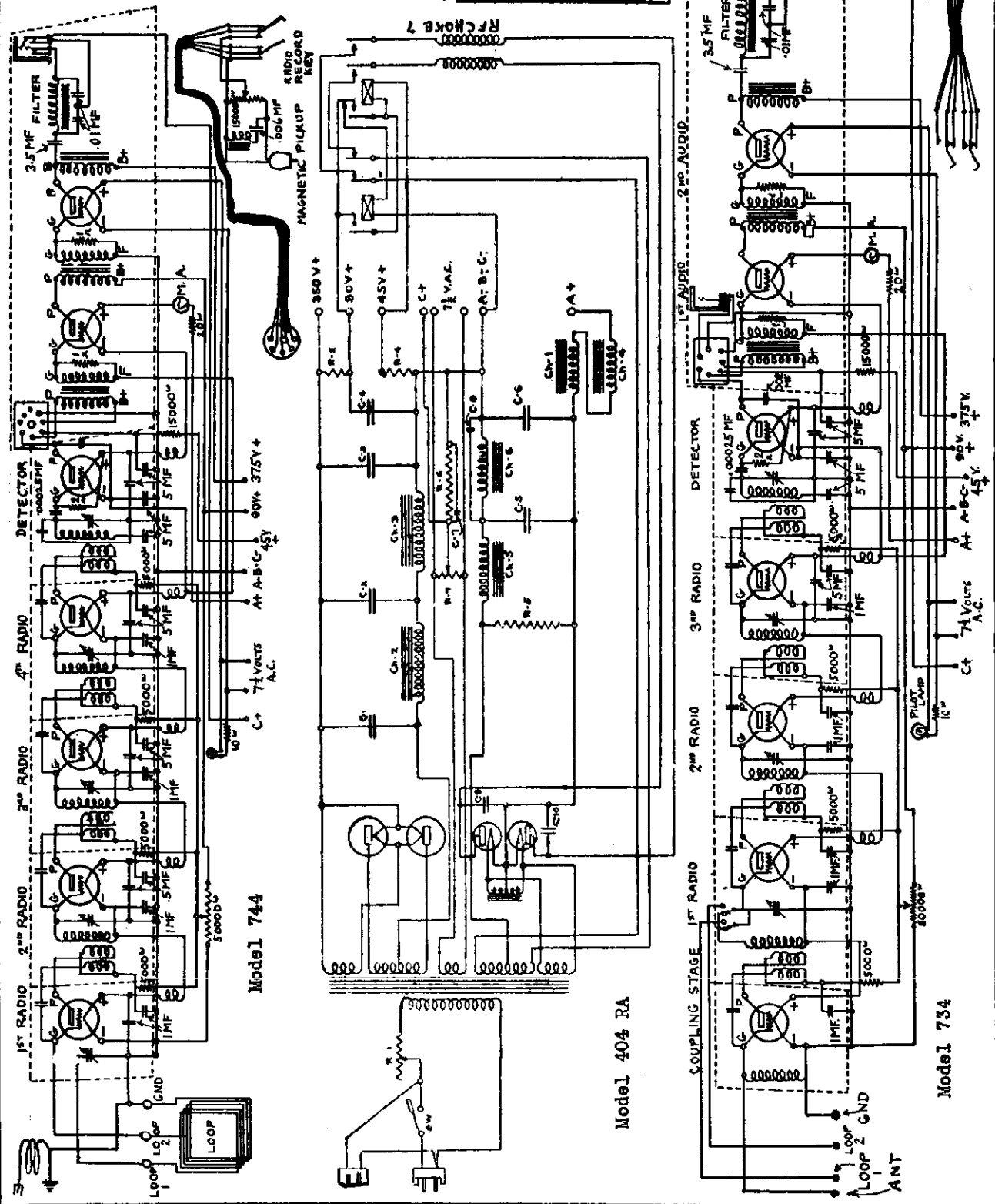
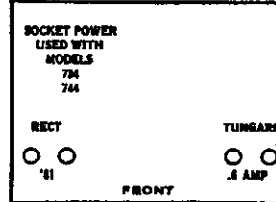
Model 744 (1927)



Model 734 (1927)

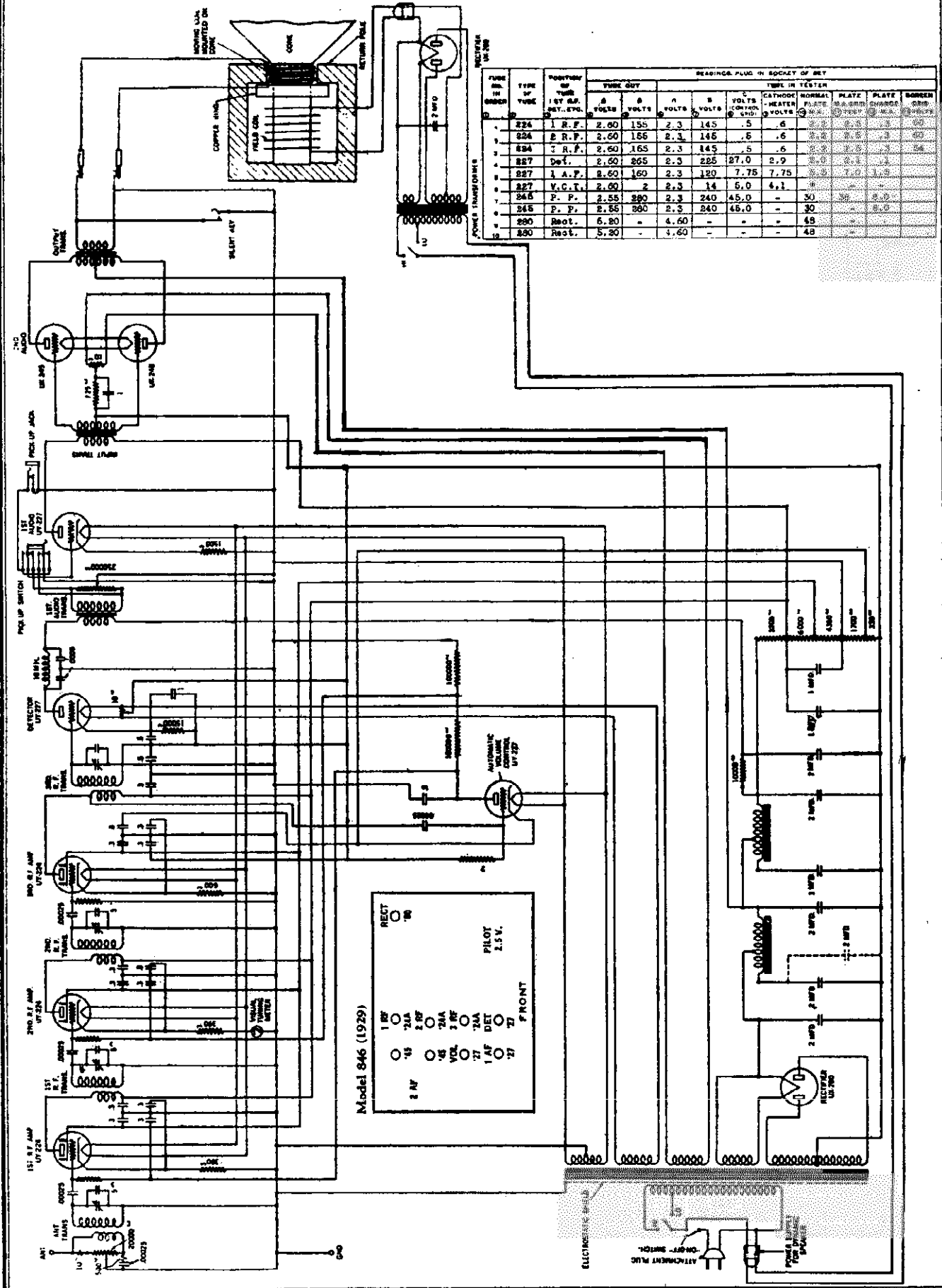


Model 404RA (1927)



MODEL 846 AC
Schematic

STROMBERG - CARLSON TEL. MFG. CO.



TUBE NO. IN SOCKET	TYPE OF TUBE	POSITION OF TUBE 1ST. ETC.	TUBE OUT				READINGS PLUG IN SOCKET OF MET. TIME IN TESTER				CATHODE HEATER VOLTS	NORMAL PLATE VOLTAGE	NORMAL GRID VOLTAGE	NORMAL SCREEN GRID VOLTAGE	
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	1	2	3	4					
224	1 R.F.	2.60	155	2.3	145	.5	.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
224	2 R.F.	2.60	166	2.3	146	.6	.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
224	3 R.F.	2.60	165	2.3	145	.5	.6	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
227	Det.	2.60	265	2.3	225	27.0	2.9	8.0	2.1	1.4	1.4	1.4	1.4	1.4	1.4
227	1 A.F.	2.60	160	2.3	120	7.75	7.75	8.8	7.0	1.9					
227	V.C.T.	2.60	2	2.3	14	5.0	4.1								
245	P. P.	2.55	290	2.3	240	45.0	-	30	30	3.0					
245	P. P.	2.55	260	2.3	240	46.0	-	30	30	3.0					
290	Rect.	5.80	-	4.60	-	-	-	45	-	-					
290	Rect.	5.80	-	3.60	-	-	-	48	-	-					

Model 846 (1929)

RECT 10

PILOT 2.5 V.

FRONT

1 1R7 15

2 2A 15

3 2A 15

4 2A 15

5 2A 15

6 2A 15

7 2A 15

8 2A 15

9 2A 15

10 2A 15

11 2A 15

12 2A 15

13 2A 15

14 2A 15

15 2A 15

16 2A 15

17 2A 15

18 2A 15

19 2A 15

20 2A 15

21 2A 15

22 2A 15

23 2A 15

24 2A 15

25 2A 15

26 2A 15

27 2A 15

28 2A 15

29 2A 15

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85 2A 15

86 2A 15

87 2A 15

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92 2A 15

93 2A 15

94 2A 15

95 2A 15

96 2A 15

97 2A 15

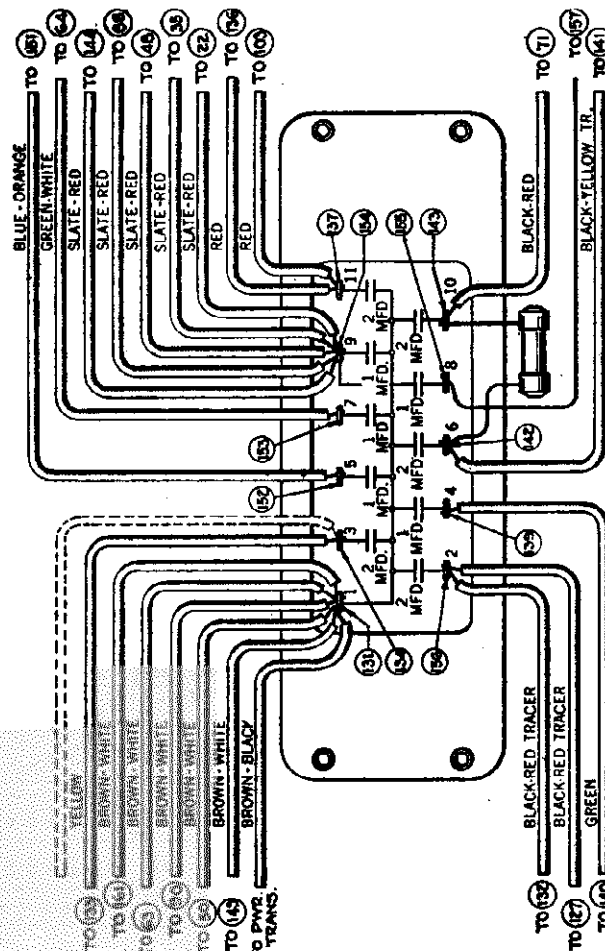
98 2A 15

99 2A 15

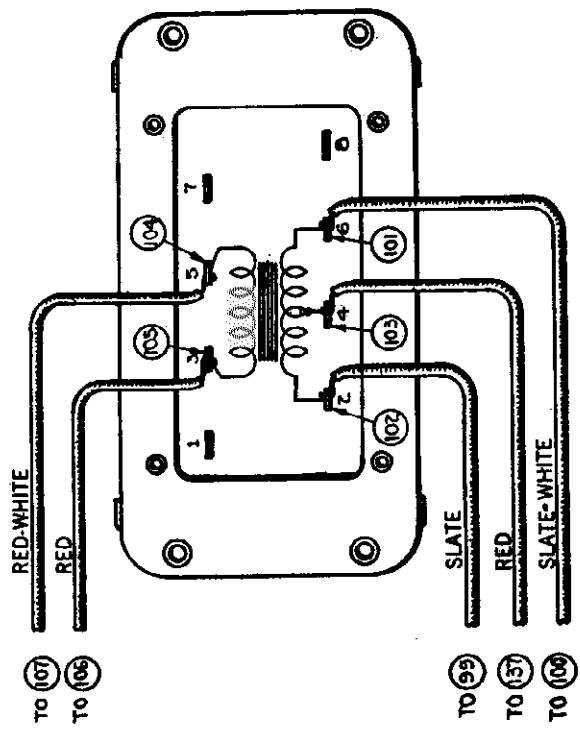
100 2A 15

MODEL 846

Internal Wiring STROMBERG-CARLSON TEL. MFG. CO.

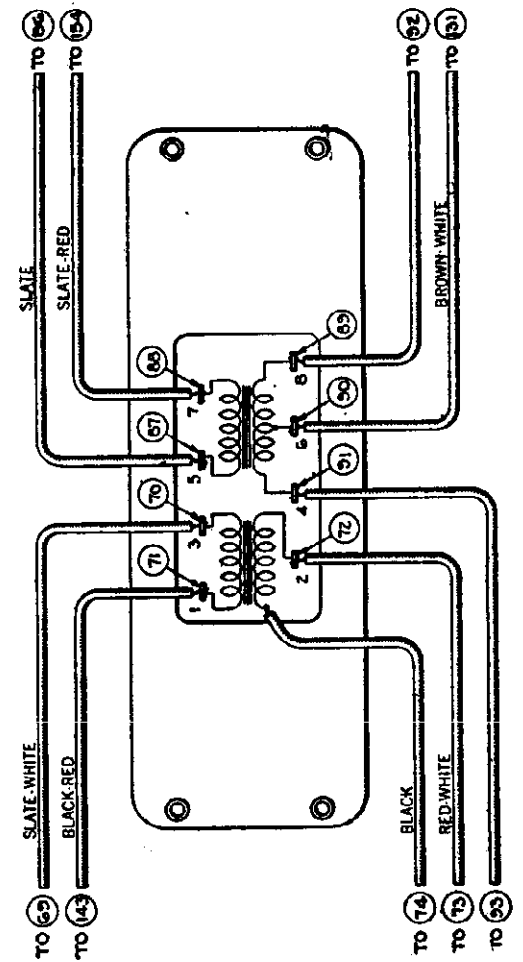


Detail of P-19038 Capacitor Assembly.



Detail of P-18781 Output Transformer.

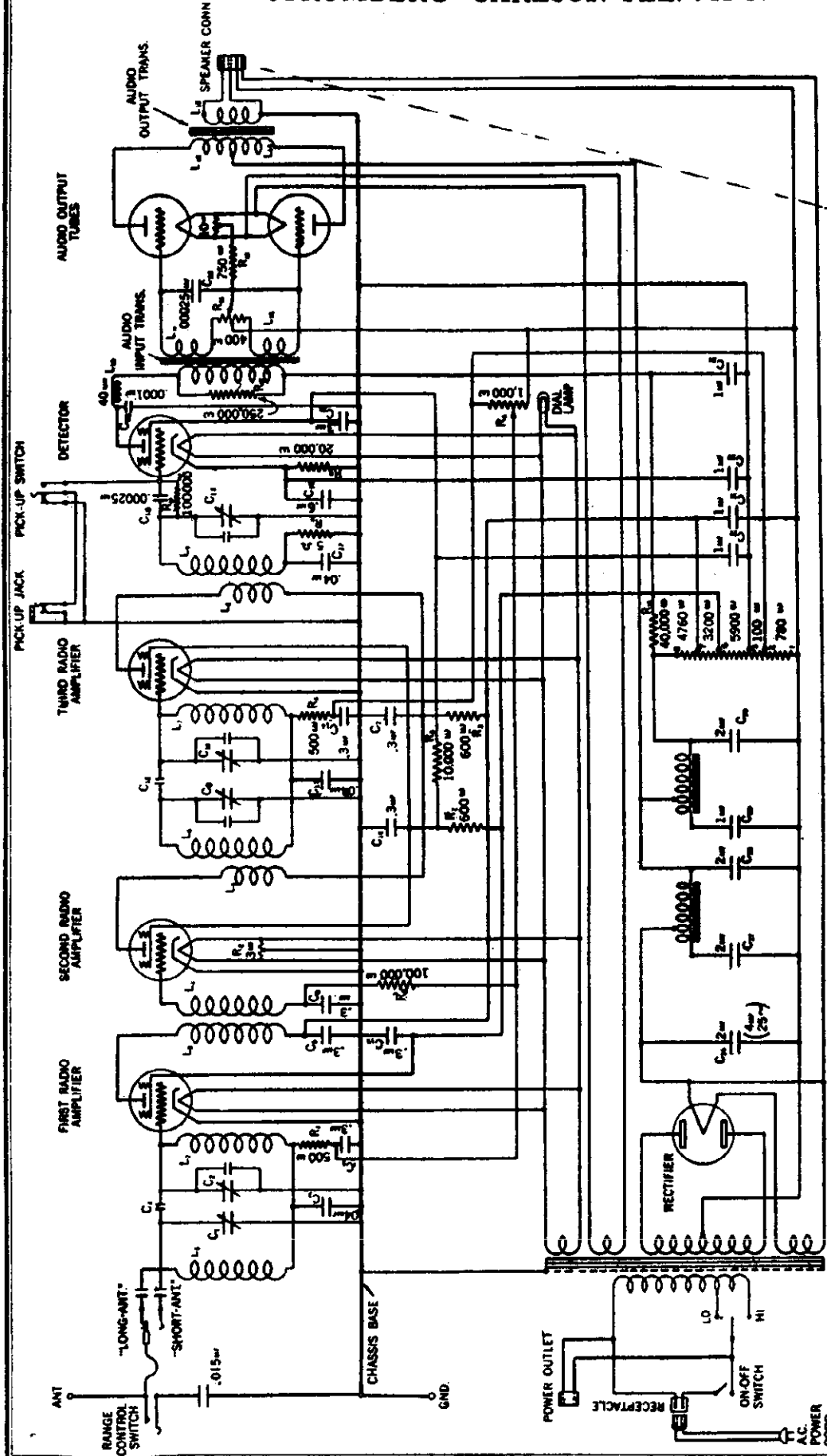
Detail of P-18200 Filter Inductor Assembly.



Detail of P-18780 Audio Transformers Assembly.

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 10-11
Schematic

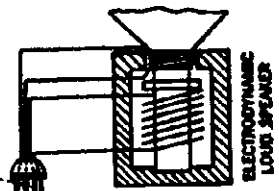
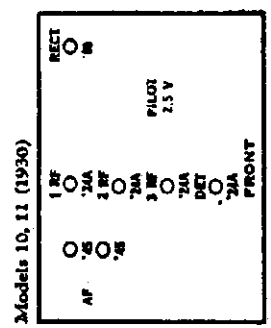


STROMBERG-CARLSON—Models 10 and 11
Line Voltage 120—Voltage Tap High

Models 10, 11 (1930)

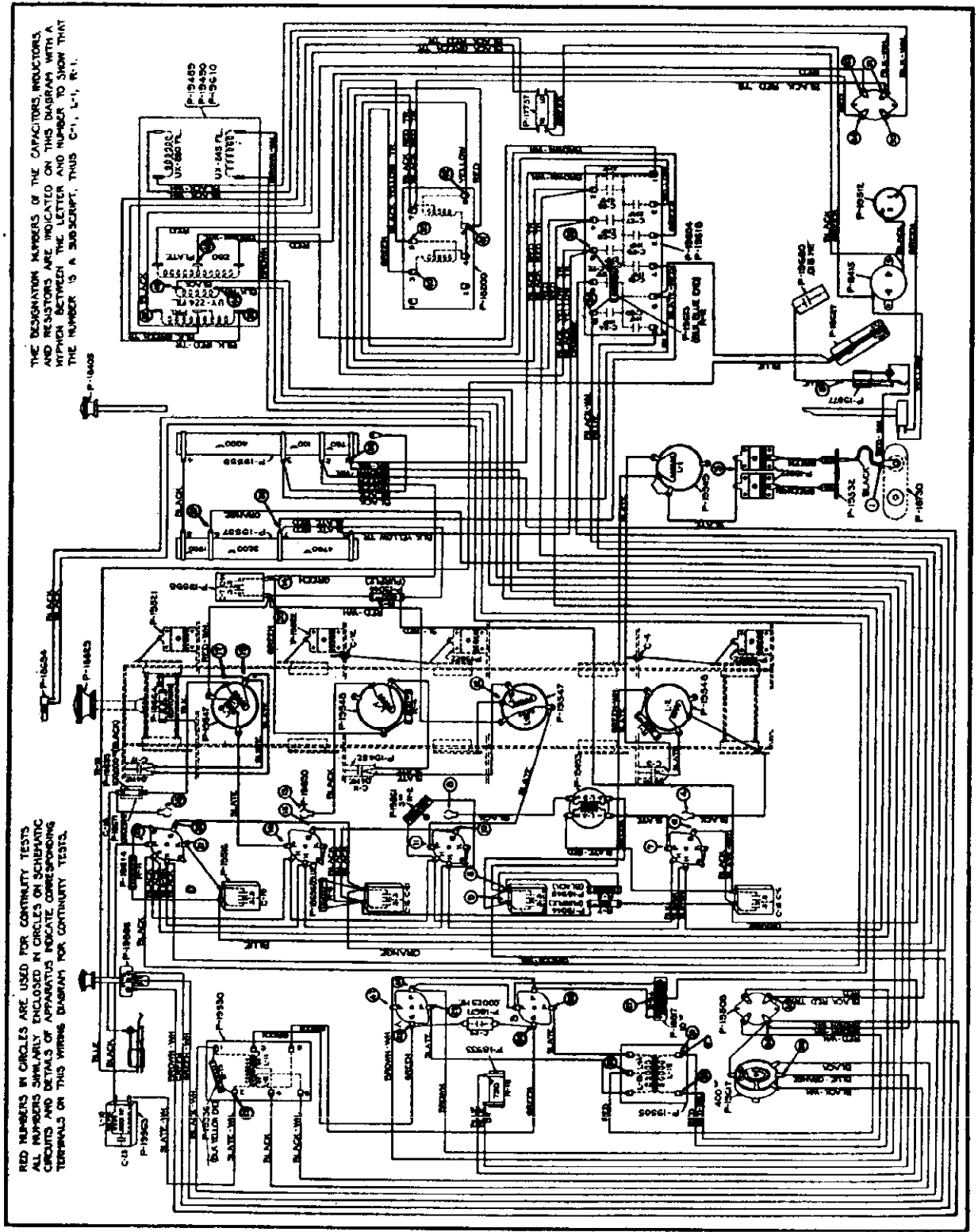
SELECT RELEASED PARTS AVAILABLE FROM STROMBERG-CARLSON

Part No.	Part Name	Quantity	Part No.	Part Name	Quantity
1	6X4	1	10	6X5	1
2	6X4	1	11	6X5	1
3	6X4	1	12	6X5	1
4	6X4	1	13	6X5	1
5	6X4	1	14	6X5	1
6	6X4	1	15	6X5	1
7	6X4	1	16	6X5	1
8	6X4	1	17	6X5	1
9	6X4	1	18	6X5	1
10	6X4	1	19	6X5	1
11	6X4	1	20	6X5	1
12	6X4	1	21	6X5	1
13	6X4	1	22	6X5	1
14	6X4	1	23	6X5	1
15	6X4	1	24	6X5	1
16	6X4	1	25	6X5	1
17	6X4	1	26	6X5	1
18	6X4	1	27	6X5	1
19	6X4	1	28	6X5	1
20	6X4	1	29	6X5	1
21	6X4	1	30	6X5	1
22	6X4	1	31	6X5	1
23	6X4	1	32	6X5	1
24	6X4	1	33	6X5	1
25	6X4	1	34	6X5	1
26	6X4	1	35	6X5	1
27	6X4	1	36	6X5	1
28	6X4	1	37	6X5	1
29	6X4	1	38	6X5	1
30	6X4	1	39	6X5	1
31	6X4	1	40	6X5	1
32	6X4	1	41	6X5	1
33	6X4	1	42	6X5	1
34	6X4	1	43	6X5	1
35	6X4	1	44	6X5	1
36	6X4	1	45	6X5	1
37	6X4	1	46	6X5	1
38	6X4	1	47	6X5	1
39	6X4	1	48	6X5	1
40	6X4	1	49	6X5	1
41	6X4	1	50	6X5	1
42	6X4	1	51	6X5	1
43	6X4	1	52	6X5	1
44	6X4	1	53	6X5	1
45	6X4	1	54	6X5	1
46	6X4	1	55	6X5	1
47	6X4	1	56	6X5	1
48	6X4	1	57	6X5	1
49	6X4	1	58	6X5	1
50	6X4	1	59	6X5	1
51	6X4	1	60	6X5	1
52	6X4	1	61	6X5	1
53	6X4	1	62	6X5	1
54	6X4	1	63	6X5	1
55	6X4	1	64	6X5	1
56	6X4	1	65	6X5	1
57	6X4	1	66	6X5	1
58	6X4	1	67	6X5	1
59	6X4	1	68	6X5	1
60	6X4	1	69	6X5	1
61	6X4	1	70	6X5	1
62	6X4	1	71	6X5	1
63	6X4	1	72	6X5	1
64	6X4	1	73	6X5	1
65	6X4	1	74	6X5	1
66	6X4	1	75	6X5	1
67	6X4	1	76	6X5	1
68	6X4	1	77	6X5	1
69	6X4	1	78	6X5	1
70	6X4	1	79	6X5	1
71	6X4	1	80	6X5	1
72	6X4	1	81	6X5	1
73	6X4	1	82	6X5	1
74	6X4	1	83	6X5	1
75	6X4	1	84	6X5	1
76	6X4	1	85	6X5	1
77	6X4	1	86	6X5	1
78	6X4	1	87	6X5	1
79	6X4	1	88	6X5	1
80	6X4	1	89	6X5	1
81	6X4	1	90	6X5	1
82	6X4	1	91	6X5	1
83	6X4	1	92	6X5	1
84	6X4	1	93	6X5	1
85	6X4	1	94	6X5	1
86	6X4	1	95	6X5	1
87	6X4	1	96	6X5	1
88	6X4	1	97	6X5	1
89	6X4	1	98	6X5	1
90	6X4	1	99	6X5	1
91	6X4	1	100	6X5	1



STROMBERG - CARLSON TEL. MFG. CO.

MODEL 10-11 Chassis Wiring

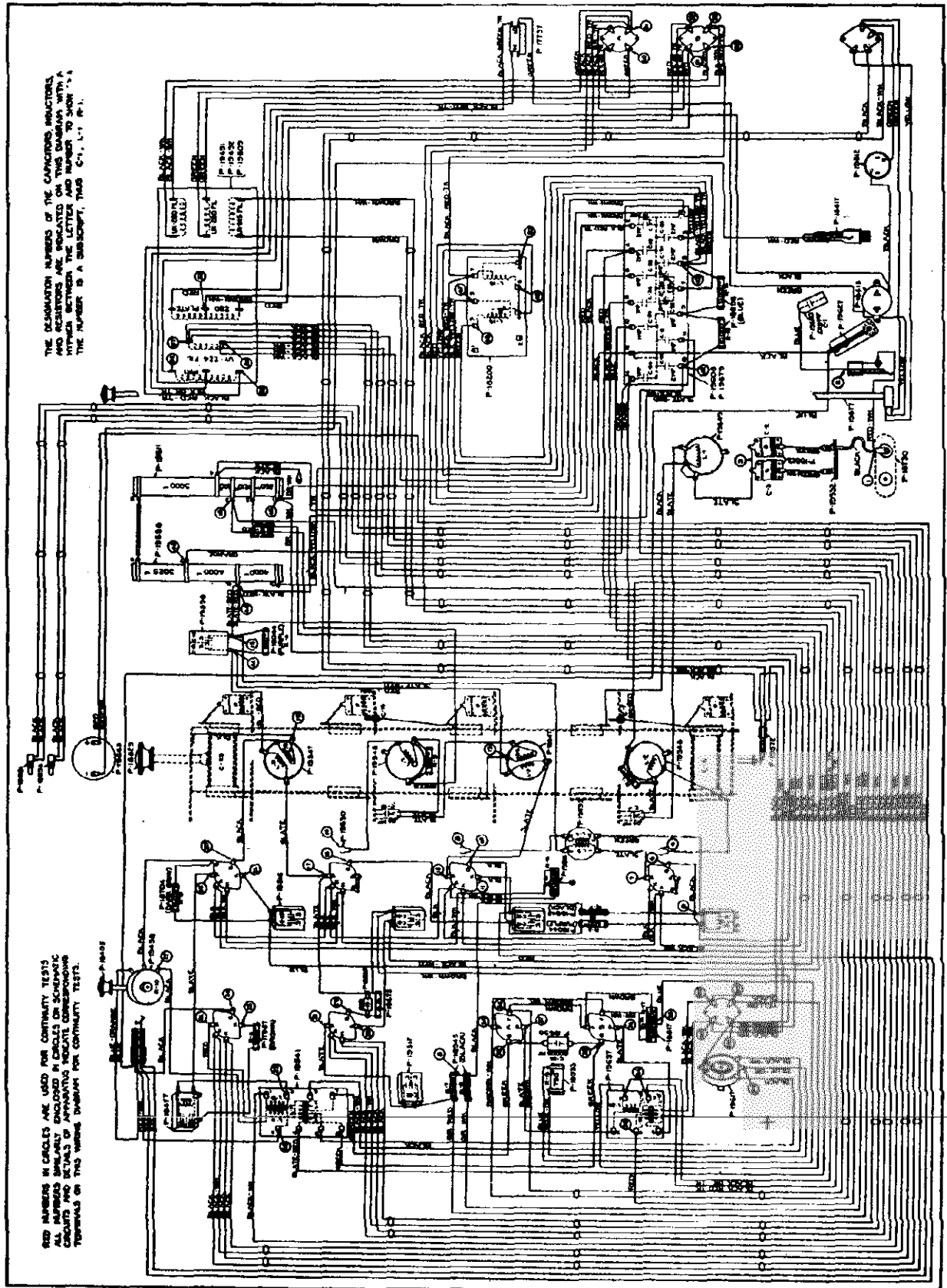


THE DESIGNATION NUMBERS OF THE CAPACITORS, INDUCTORS, AND RESISTORS ARE INDICATED ON THIS DIAGRAM WITH A PREFIX LETTER AND NUMBER TO SHOW THAT THE NUMBER IS A SUBSCRIPT, THUS C-1, L-1, R-1.

RED NUMBERS IN CIRCLES ARE USED FOR CONTINUITY TESTS. ALL NUMBERS SIMILARLY ENCLOSED IN CIRCLES ON SCHEMATIC CIRCUITS AND DETAILS OF APPARATUS INDICATE CORRESPONDING TERMINALS ON THIS WIRING DIAGRAM FOR CONTINUITY TESTS.

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 12-14
Chassis Wiring

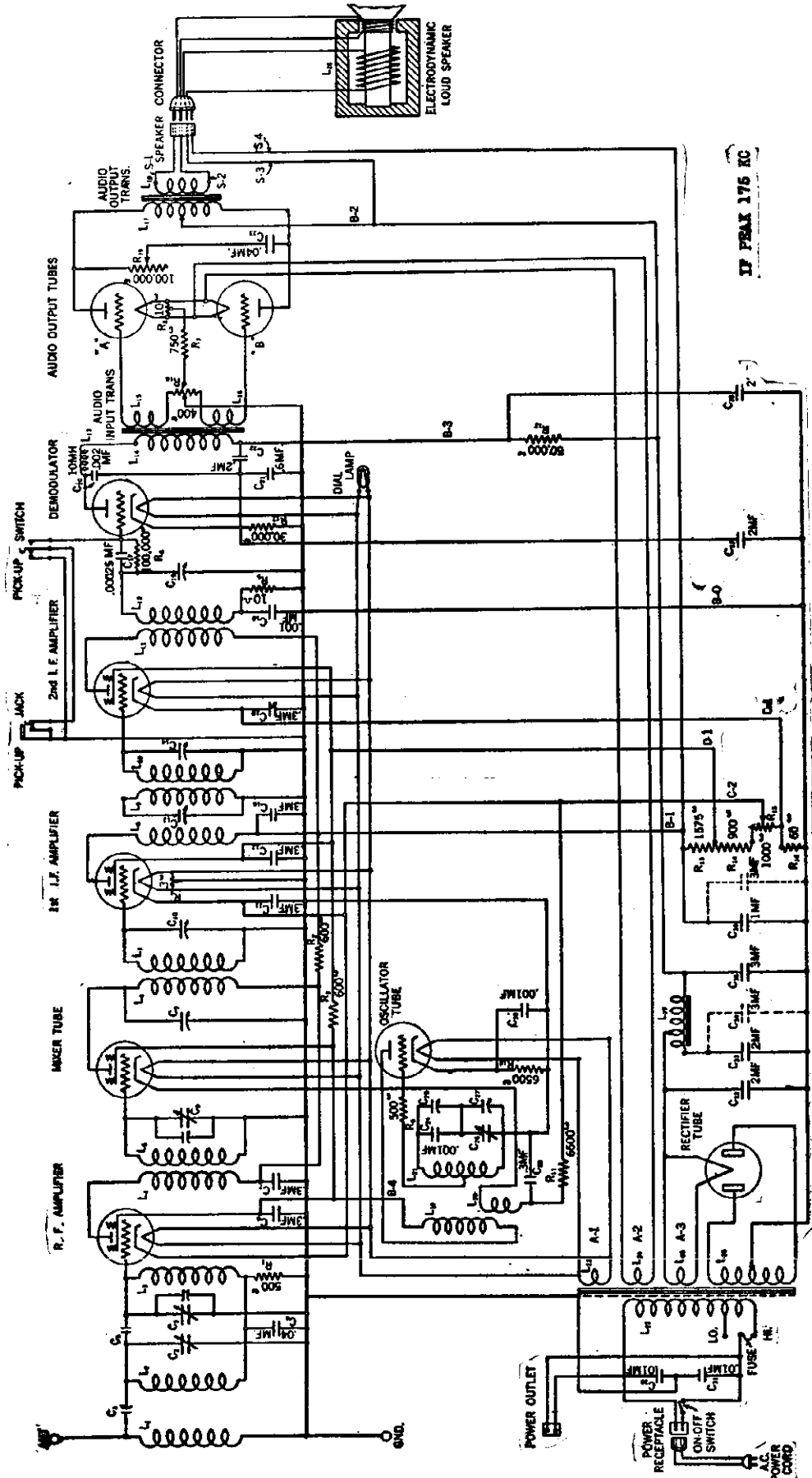


THE DENOMINATION NUMBERS OF THE CAPACITORS, INDUCTORS AND RESISTORS ARE INDICATED ON THIS DIAGRAM WITH A LETTER BETWEEN THE LETTER AND NUMBER TO SHOW THE NUMBER IS A SUBSCRIPT, THUS C₁, L₁, R₁.

RED NUMBERS IN CIRCLES ARE USED FOR CONTINUITY TESTS. ALL NUMBERS SIMILARLY ENCLOSED IN CIRCLES ON SCHEMATIC CIRCUITS AND DETAILS OF APPARATUS INDICATE CORRESPONDING TERMINALS ON THE WIRING DIAGRAM FOR CONTINUITY TESTS.

MODEL 19,20 AC
Schematic

STROMBERG CARLSON TEL. MFG. CO.



IF PEAK 175 KC

MODEL 19,20 AC
Voltage
Electrical Values

STROMBERG - CARLSON TEL. MFG CO.

INDUCTANCES

		No.
L1	.9 millihenry	R1
L2	215. microhenry	R2
L3	215. microhenry	R3
L4	5.5 millihenry	R4
L5	215. microhenry	R5
L6	5.5 millihenry	R6
L7	5.5 millihenry	R7
L8	5.5 millihenry	R8
L9	5.5 millihenry	R9
L10	5.5 millihenry	R10
L11	5.5 millihenry	R11
L12	5.5 millihenry	R12
L19	15. microhenry	R13
L20	5.5 microhenry	R14
L21	172. microhenry	R15
		R16
		R17
		R18
		R19

Value
500
600
600
3
10 megs
100,000
750
10
500
6,500
6,500
60,000
1,575
900
1,000
60
30,000
400
100,000

RESISTANCES

Body	Tip	Dot
Green	Blk	Brn
Blue	Blk	Brn
Blue	Blk	Brn
(Wire wound)		
Brn	Blk	Blue
Brn	Blk	Green
(Wire wound)		
(Wire wound)		
Green	Blk	Brn
Blue	Green	Red
Blue	Green	Red
Blue	Blk	Orange
(Wire wound)		
(Wire wound)		
(Wire wound)		
(Wire wound)		
Orange	Blk	Orange
(Wire wound)		
Carbon potentiometer		

CONDENSERS

C2	.0004 mfd	max.
C3	.0004 mfd	max.
C4	.04 mfd	
C5	.000001 mfd	app.
C6	.3 mfd	
C7	.3 mfd	
C8	.0004 mfd	max.
C11	.3 mfd	
C12	.3 mfd	
C15	.3 mfd	
C16	.3 mfd	
C17	.00025 mfd	
C18	.001 mfd	
C20	.002 mfd	
C21	.6 mfd	
C22	.2 mfd	
C23	.04 mfd	
C24	.001 mfd	
C26	.0004 mfd	max.
C28	.3 mfd	
C29	.001 mfd	
C30	.01 mfd	
C31	.01 mfd	
C32	2. mfd	
C33	2. mfd	
C34	3. mfd	
C35	3. mfd	
C36	1. mfd	
C36	4. mfd	(25 cy.)
C37	1. mfd	
C38	1. mfd	

TABLE 4.
Normal Voltage Readings

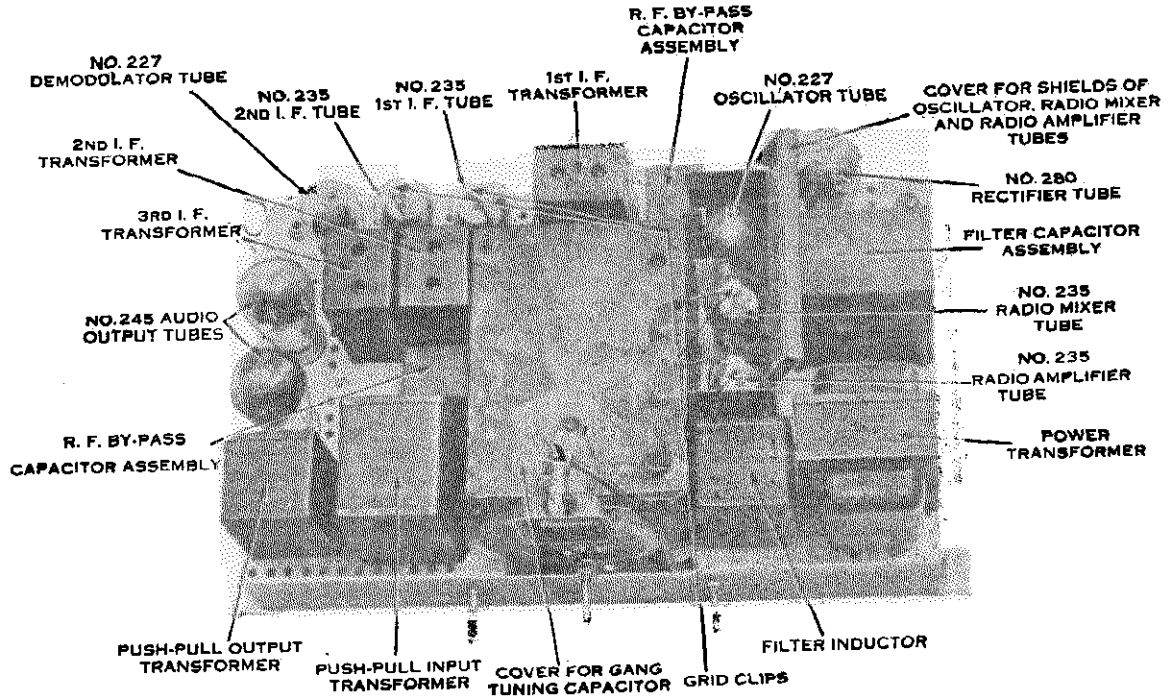
(Be sure to make these readings with the Meter and Scale indicated, otherwise the results will not agree with those tabulated. Alternating voltages are indicated by italics)

Voltage	Meter	Scale	Where Measured	Approx. Value in Volts
<i>Heater Voltage Nos. 227 & 235 Tubes</i>	A.C.	0-4	Across Heater Terminals of Sockets	2.1
<i>Filament Voltage No. 245 Tubes</i>	A.C.	0-4	Across Filament Terminals of Audio Output Sockets	2.1
<i>Filament Voltage No. 250 Tube</i>	A.C.	0-4	Across Filament Terminals of Rectifier Socket	4.5
<i>Plate Voltage Radio Amplifiers</i>	D.C.	0-200	Between Plate Terminal of R. F. Amplifier Socket (+) and Chassis Base (-)	100-170
<i>Plate Voltage Mixer Tube</i>	D.C.	0-200	Between Plate Terminal Mixer Tube Socket (+) and Chassis Base (-)	100-170
<i>Plate Voltage Oscillator</i>	D.C.	0-200	Between Plate Terminal of Oscillator Socket (+) and Chassis Base (-)	60-90
<i>Plate Voltage I.F. Tubes</i>	D.C.	0-200	Between Plate Terminals of I. F. Amplifier Sockets (+) and Chassis Base (-)	100-170
<i>Plate Voltage Demodulator</i>	D.C.	0-200	Between Plate Terminal of Demodulator Socket (+) and Chassis Base (-)	100-215
<i>Plate Voltage Audio Output Tubes</i>	D.C.	0-200	Between Plate Terminals Audio Output Socket (+) and 10 ohm Mid Tap Resistor R ₂ (-)	300
<i>Control Grid Voltage R.F. Amplifier</i>	D.C.	0-10	Between Control Grid Clip of R. F. Amplifier Tube (-) and Cathode (+) of R. F. Amplifier Tube	3
<i>Control Grid Voltage Mixer Tube</i>	D.C.	0-200	Between Control Grid Clip Mixer Tube (-) and Cathode (+) of Mixer Tube	10-12
<i>Control Grid Voltage 1st I.F. Amplifier</i>	D.C.	0-10	Between Control Grid Clip 1st I. F. Tube (-) to Cathode (+) of 1st I. F. Tube	3
<i>Control Grid Voltage 2nd I.F. Tube</i>	D.C.	0-10	Between Control Grid Clip 2nd I. F. Tube (-) to Cathode (+) of 2nd I. F. Tube	3
<i>Grid Voltage Oscillator</i>	D.C.	0-200	Across 6800 ohm Resistor R ₁₁	10-15
<i>Grid Voltage Demodulator</i>	D.C.	0-200	Across 30,000 ohm Resistor R ₁₂	20-25
<i>Grid Voltage Audio Tubes</i>	D.C.	0-200	Between Grids of Audio Tubes (-) to Mid Tap 10 ohm Resistor R ₂ (+)	40-60*
<i>Screen Voltage Radio Amplifier Mixer 1st & 2nd I.F. Tubes</i>	D.C.	0-200	Between Screen Terminals of Tubes (+) to Chassis Base (-)	20-30*
<i>B Voltage R.F. Amplifier and Mixer Tube</i>	D.C.	0-250	Between Tube Side of 800 ohm Resistor and Chassis Base	100-170*
<i>B Voltage 1st & 2nd I.F. and Mixer Tubes</i>	D.C.	0-250	Between "High" Side of Voltage Divider and Chassis Base	100-170*
<i>B Voltage Audio Tubes</i>	D.C.	0-200	Between Mid Tap of Audio Output Transformer (-) and Chassis Base (-)	300
<i>C Voltage Audio Output Tubes</i>	D.C.	0-200	Across 750 ohm Bypass Resistor R ₁	50
<i>Speaker Field Voltage</i>	D.C.	0-250	Across Small Pins of Speaker Connector Socket	100-170
<i>Plate Voltage A.C. Five Amode No. 200 Rectifier</i>	A.C.	See Remark.	Between P Terminals No. 200 Rectifier Socket and Chassis Base	225-200*

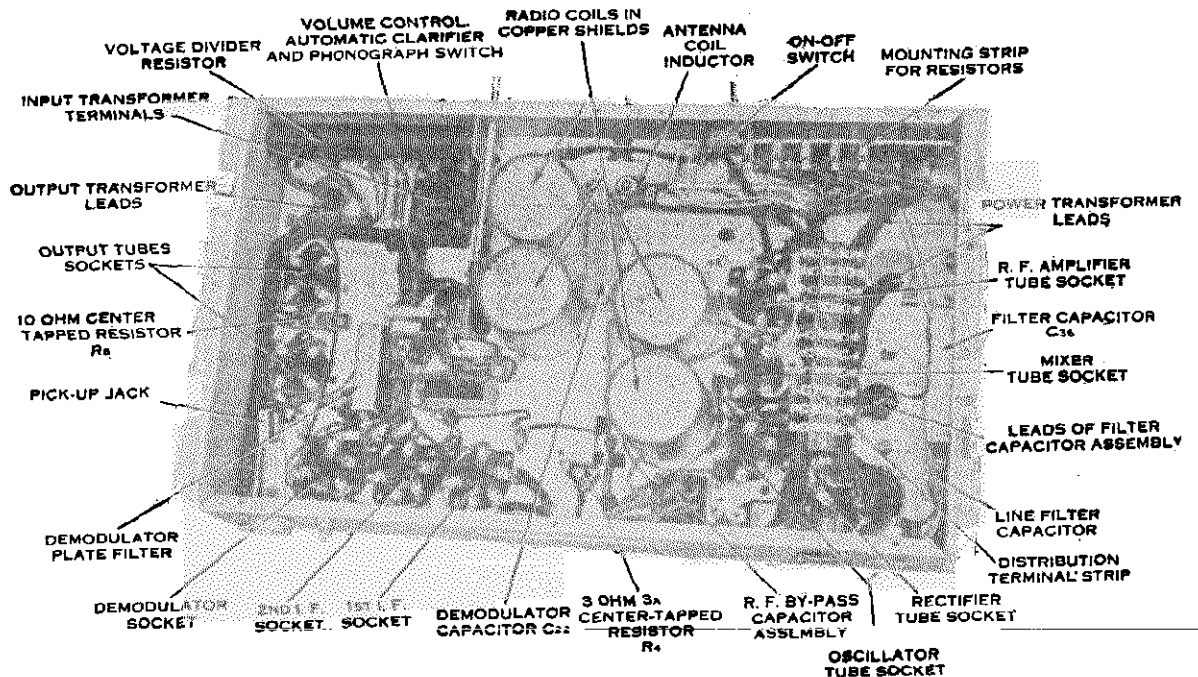
*These voltage vary with dial setting and position of volume control.
Cannot be measured on Weston Model 520 Meter unless multiplier is used.

STROMBERG - CARLSON TEL. MFG. CO.

MODEL 19,20 AC
Chassis Views



Top View of Chassis with Tubes in Place and Shields Removed.

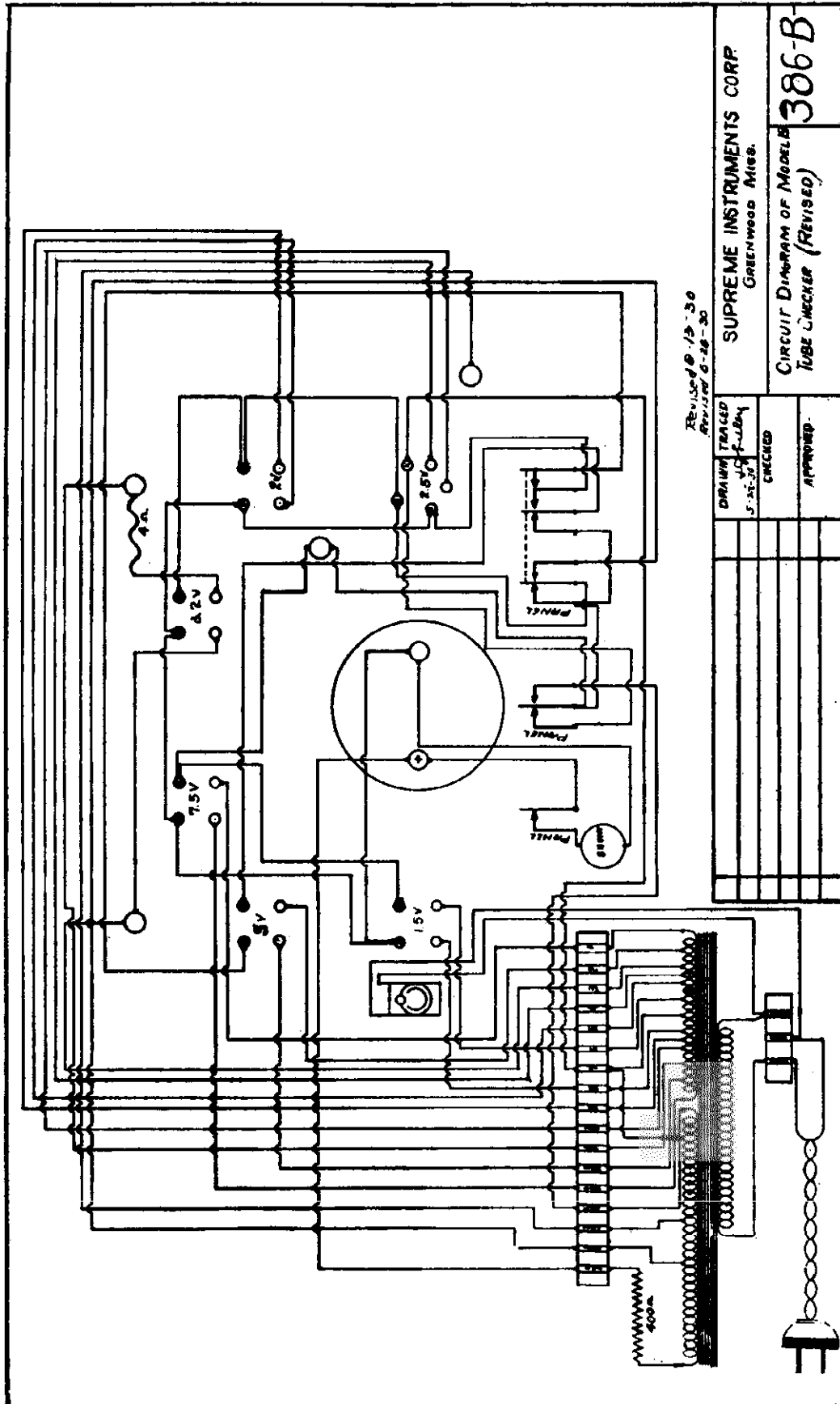


Bottom View of Chassis with Cover Removed.

The hum adjuster is next to the speaker connector receptacle which is at the rear left of the chassis looking at the chassis from the front. The fuse box is to the front of the rectifier tube socket looking at the chassis from the front. The two outlets near the rectifier tube socket are the power input and power output, the latter being nearest to the name and serial number plate. The pickup jack is to the rear of the audio output-tubes.

SUPREME INSTRUMENTS CORP.

MODEL 19
Revised
Tube Checker

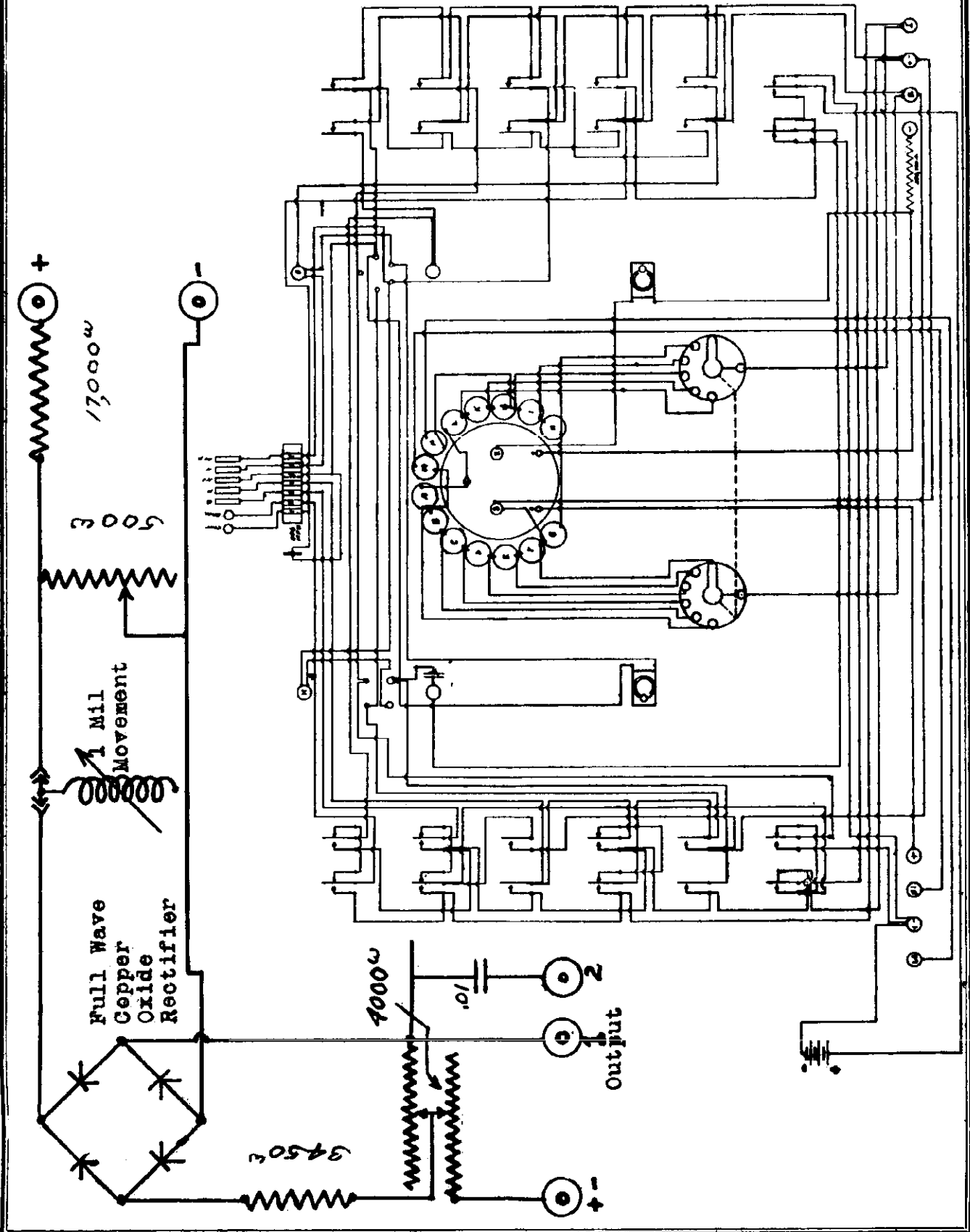


Revised B. 12-30
Revised 6-28-30

SUPREME INSTRUMENTS CORP. GREENWOOD MISS.		386-B
CIRCUIT DIAGRAM OF MODEL TUBE CHECKER (REVISED)		
DRAWING TRACED J. J. F. 1-28-34	CHECKED	
	APPROVED	

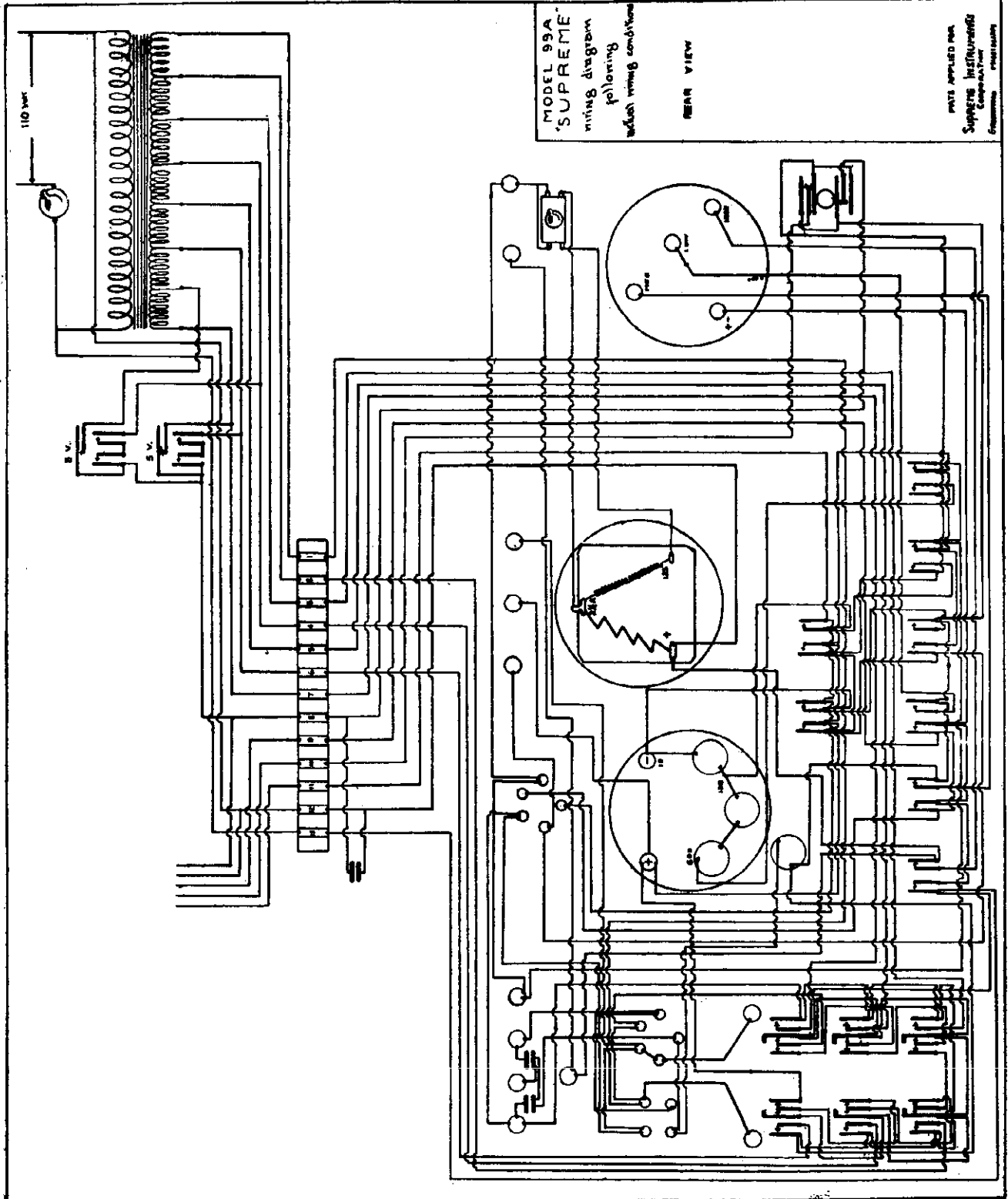
MODEL 90 Analyzer
MODEL Output Meter

SUPREME INSTRUMENTS CORP.



SUPREME INSTRUMENTS CORP.

MODEL 99-A Analyzer



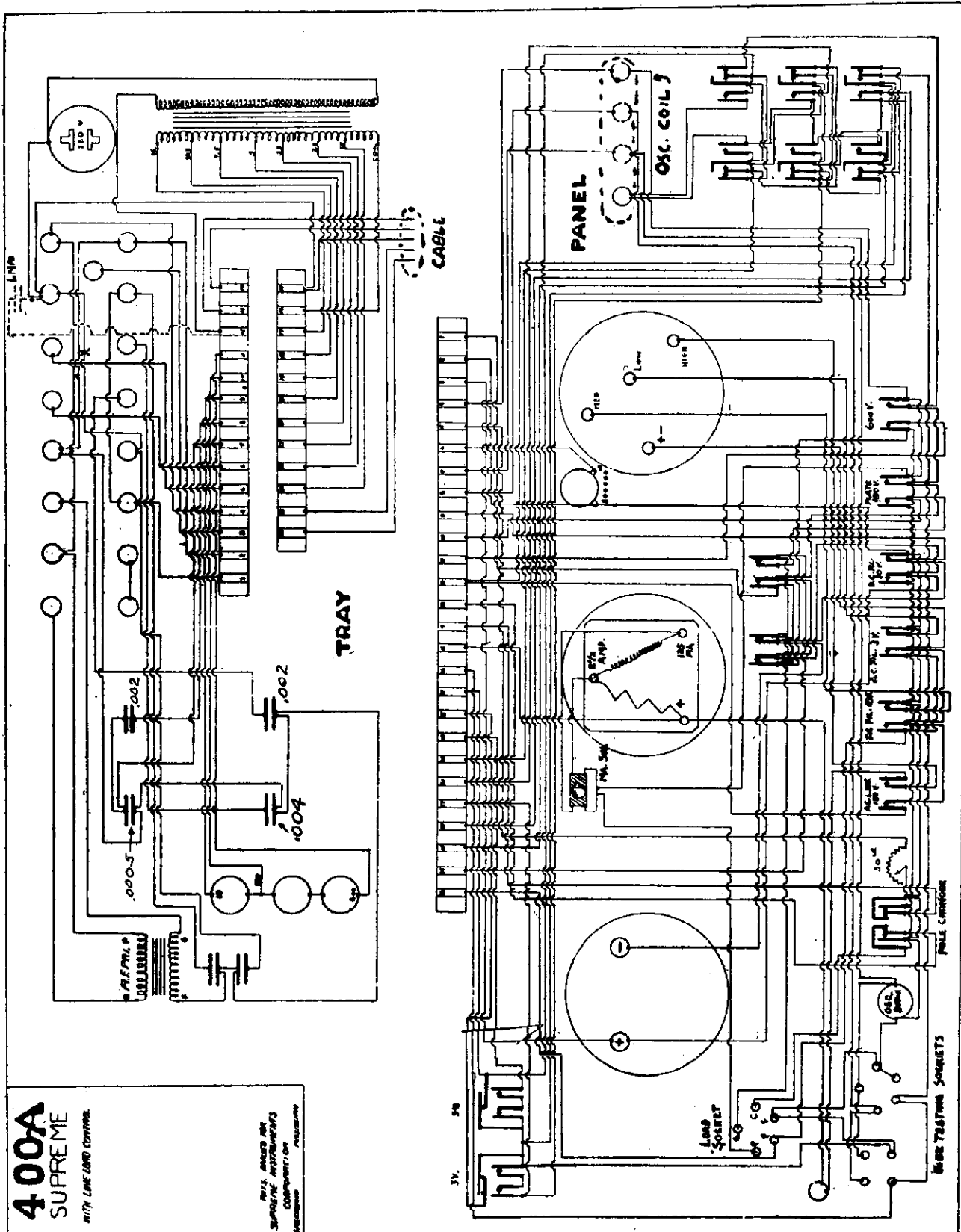
MODEL 99A
"SUPREME"
wiring diagram
following
actual wiring conditions

REAR VIEW

PARTS APPLIED FOR
SUPREME INSTRUMENTS
CORPORATION
CHICAGO, ILL.

MODEL 400-A
Diagnoser

SUPREME INSTRUMENTS CORP.

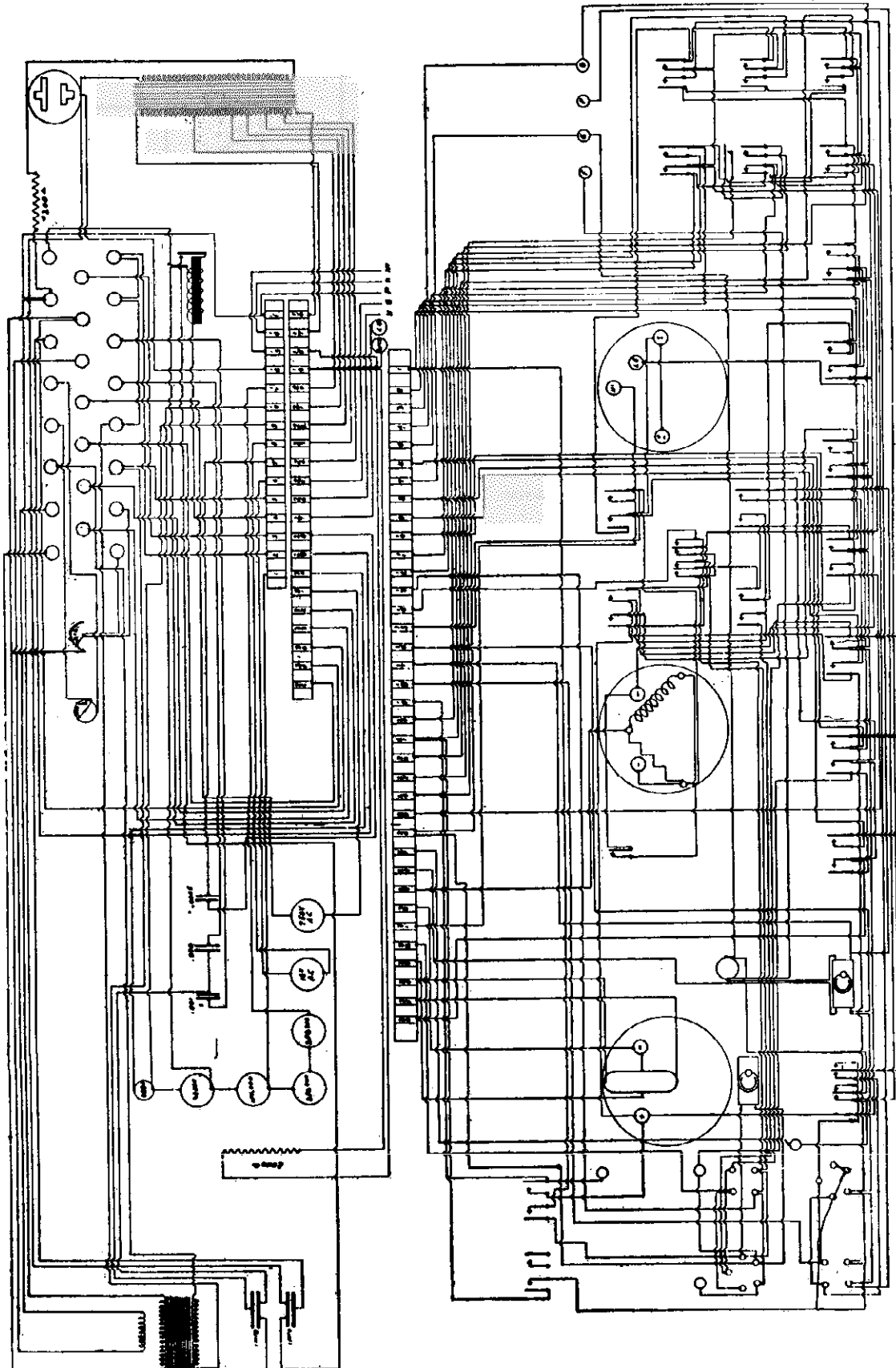


400A
SUPREME
WITH LINE CORD CONTROL

1017, 10000, 1000
SUPREME INSTRUMENTS
CORPORATION
PHILADELPHIA

SUPREME INSTRUMENTS CORP.

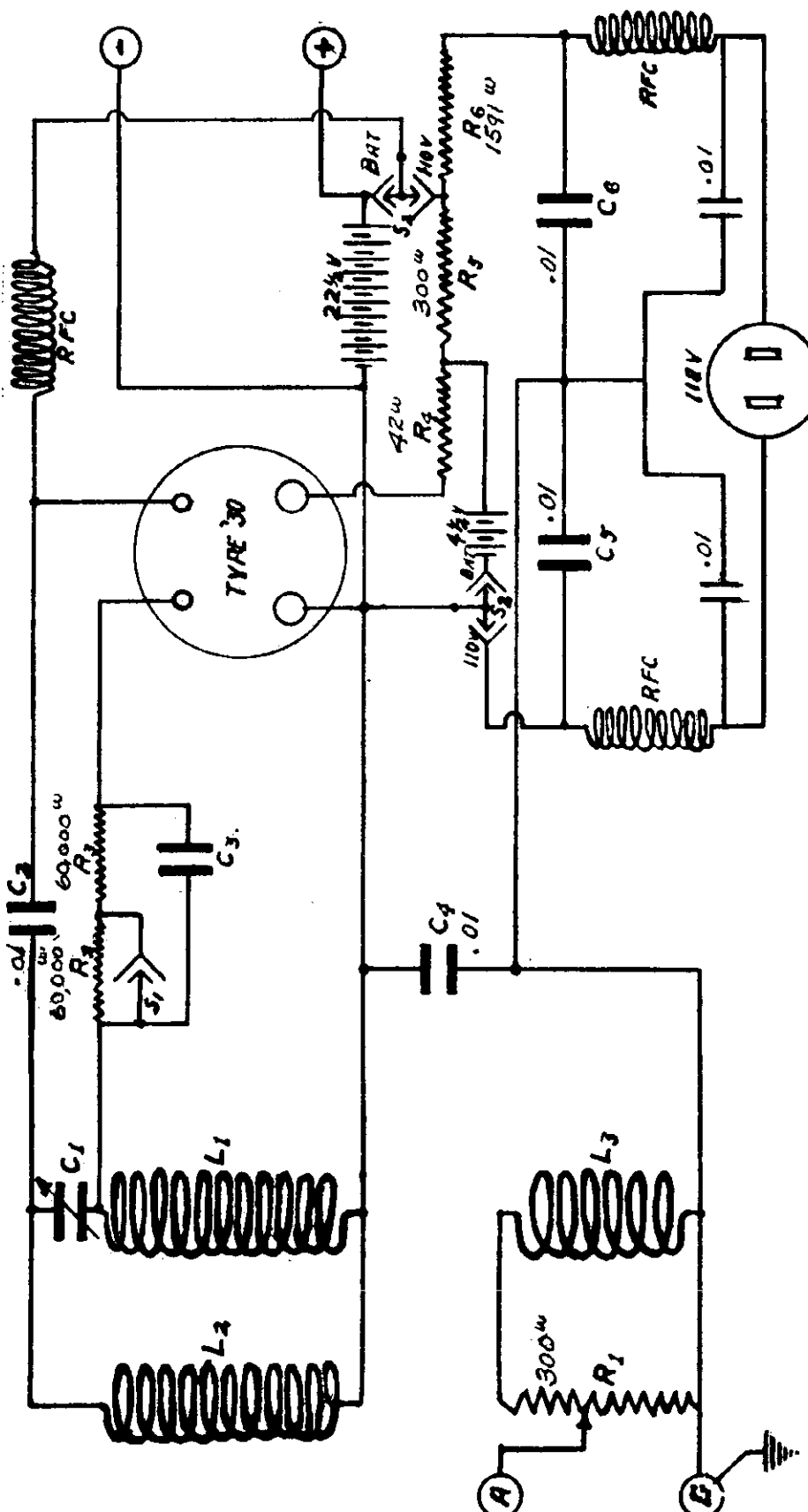
MODEL 400-B
#4 Series
Diagnoser



SUPREME INSTRUMENTS CORP.	
—Baltimore, Md.	
SUPREME #400	
#4 Series	
509D	
DATE	
BY	
CHKD	
APPROVED	

MODEL 70 Oscillator

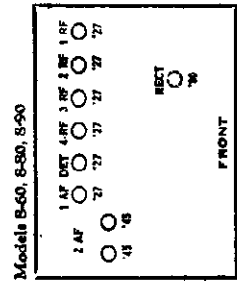
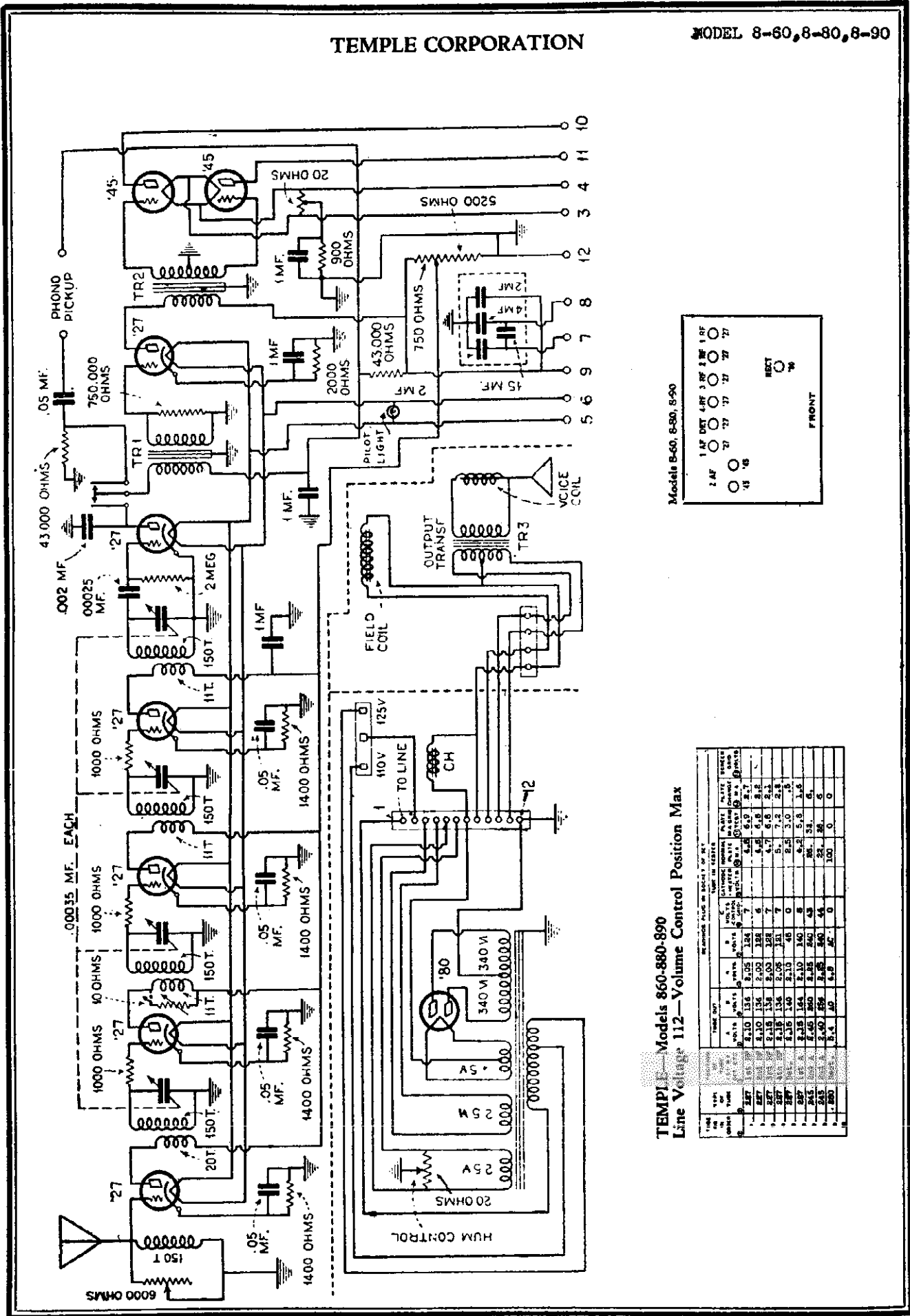
SUPREME INSTRUMENTS CORP.



DRAWN & TRACED <i>W. L. G.</i>	SUPREME INSTRUMENTS CORP. GREENWOOD - MISS.	496-A
	CHECKED <i>W. L. G.</i> APPROVED <i>W. L. G.</i>	

TEMPLE CORPORATION

MODEL 8-60, 8-80, 8-90



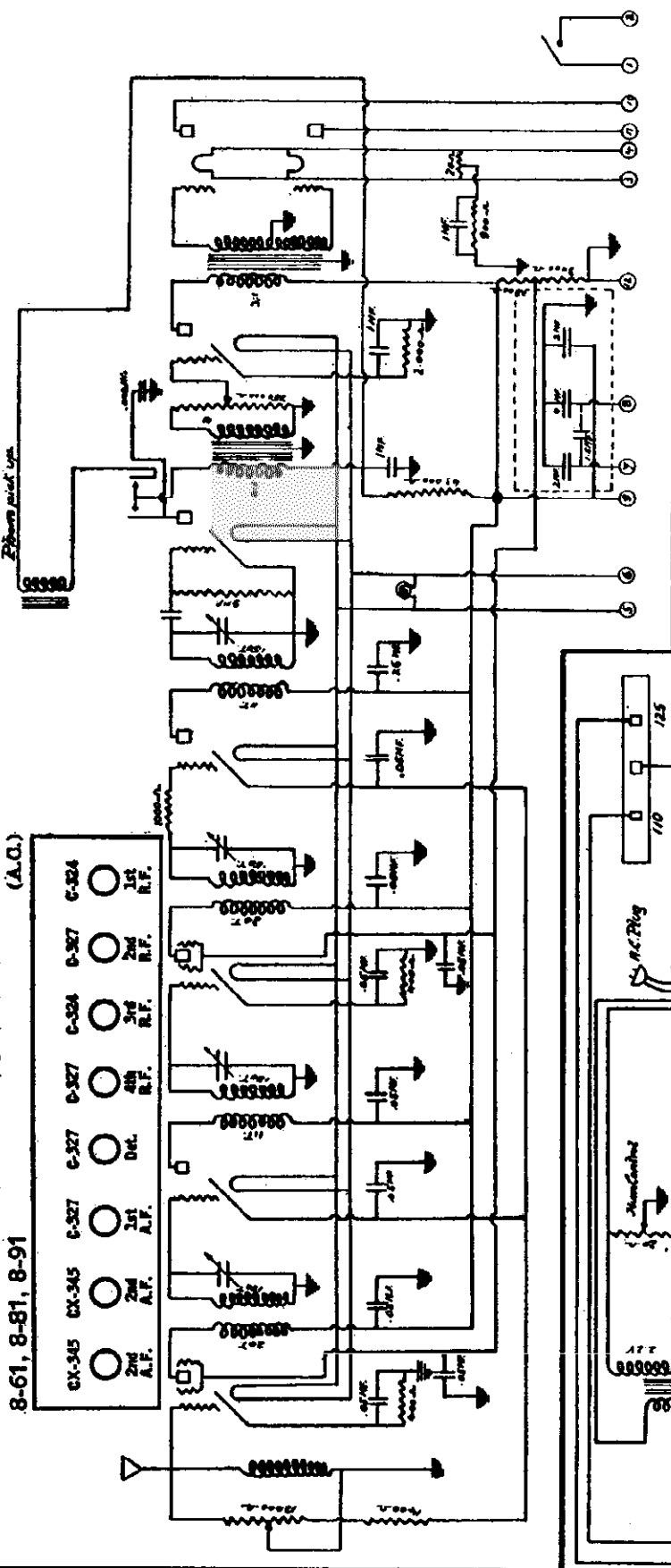
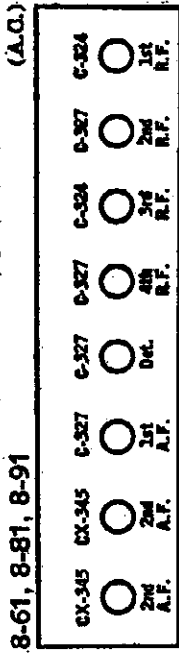
Models 8-60, 8-80, 8-90

TEMPLE Models 860-880-890
Line Voltage 112—Volume Control Position Max

LINE VOLTAGE	TEMPLE PART NO.		TEMPLE PART NO.		TEMPLE PART NO.		TEMPLE PART NO.	
	1	2	1	2	1	2	1	2
110V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
112V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
114V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
116V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
118V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
120V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
122V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
124V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
126V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
128V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
130V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
132V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
134V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
136V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
138V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
140V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
142V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
144V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
146V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
148V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05
150V	2.10	1.5	2.05	1.24	1.95	1.1	1.85	1.05

MODEL 8-61, 8-81, 8-91

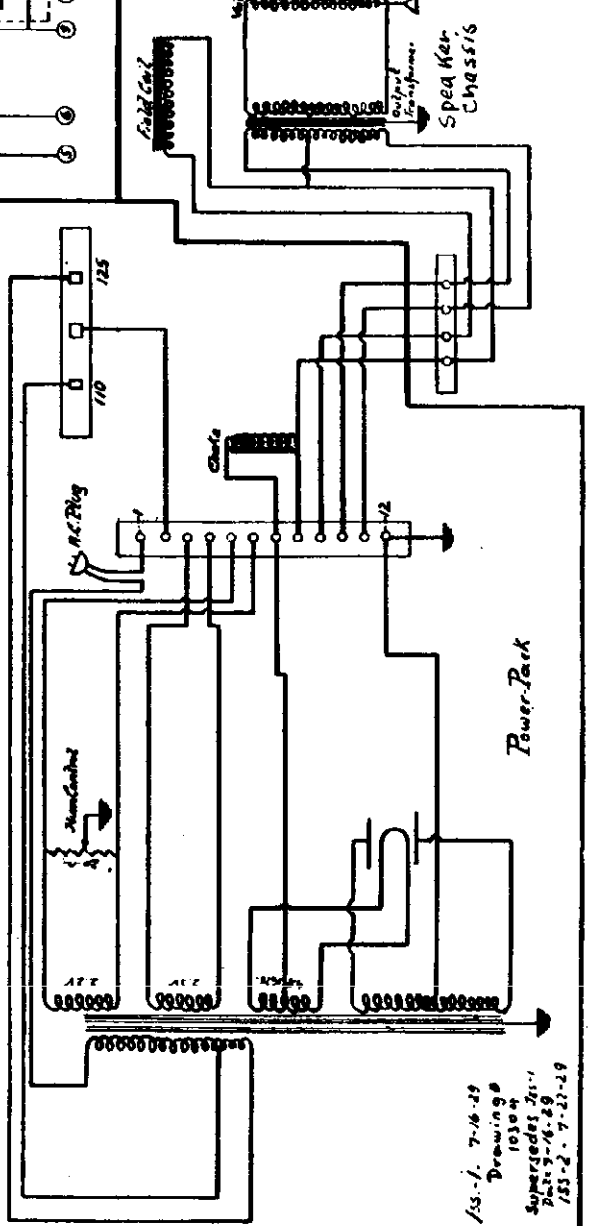
TEMPLE CORPORATION



18-61-881-891

TEMPLE—Screen Grid—Models 861-881-891
Line Voltage 110—Set on 110 Volt Tap—Volume Control Position Max

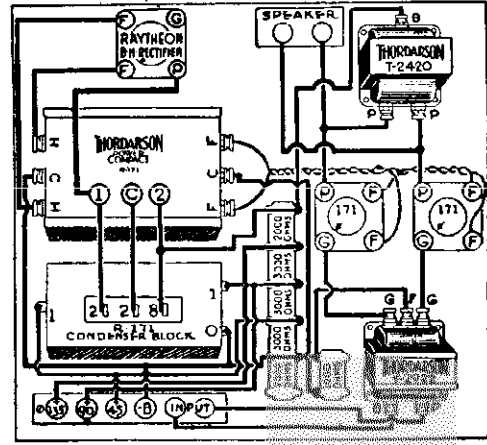
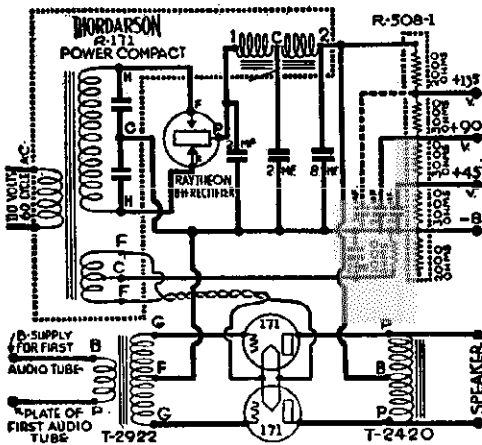
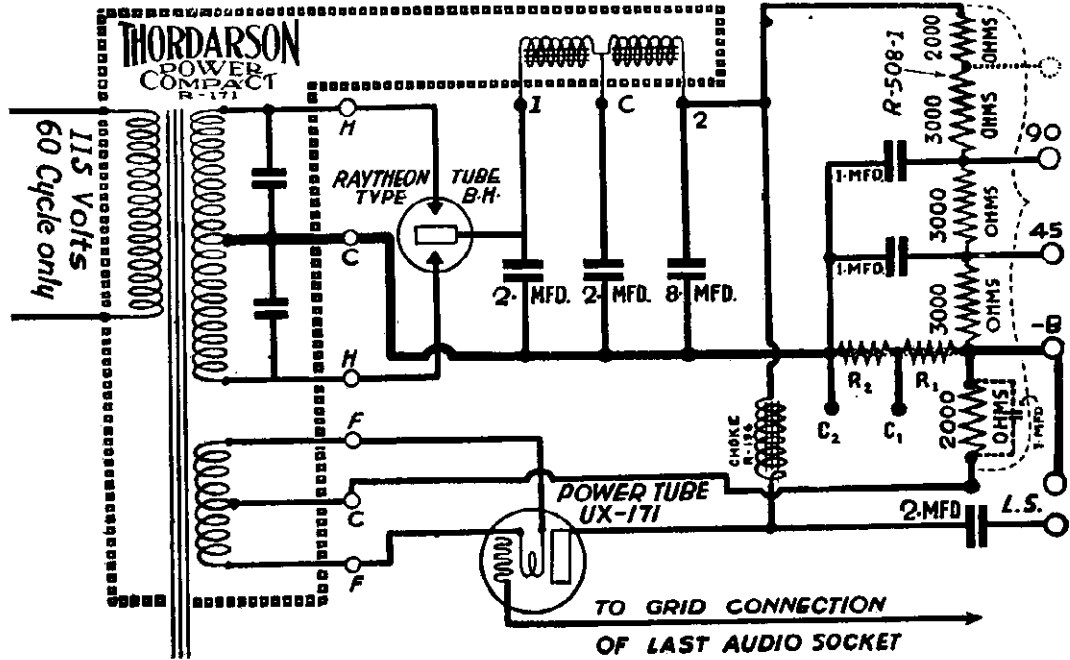
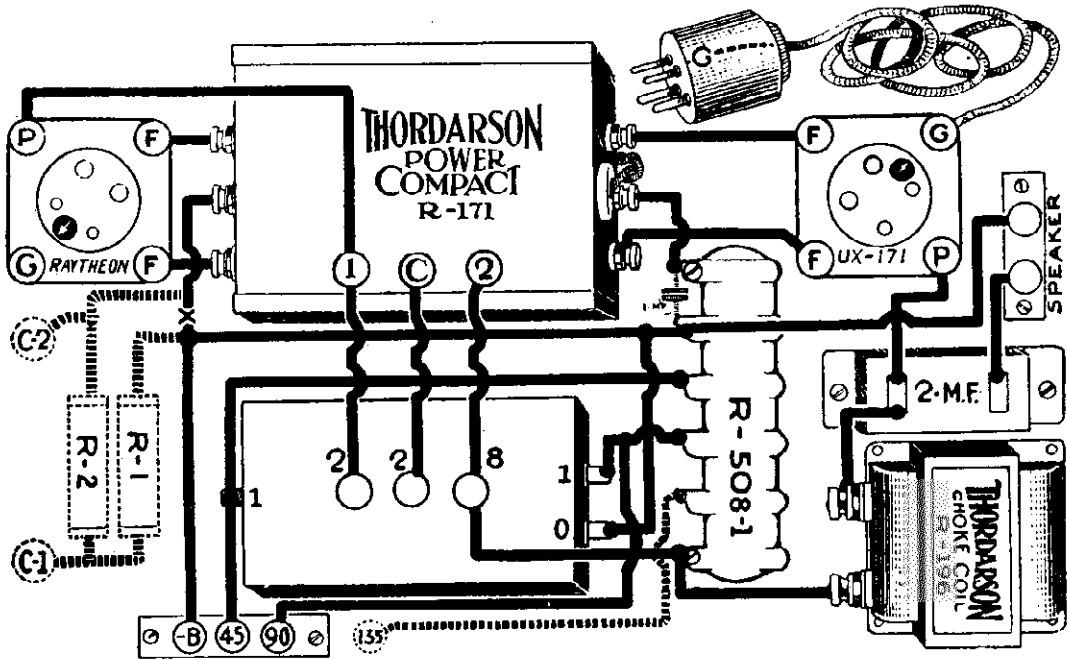
TUBE NO.	TYPE OF TUBE	POSITION IN SOCKET OF SET			TUBE IN TESTER			PLATE	WATER	MAGNET	WINDING
		1ST	2ND	3RD	VOLTS	RES.	RES.				
224	1E1 RP	2-2	150	2-15	148	1-75	3-8	6	2-2	72	
227	2E1 RP	2-2	150	2-15	148	1-75	3-8	6	2-2	72	
228	3E1 RP	2-2	150	2-15	148	1-75	3-8	6	2-2	72	
229	4E1 RP	2-2	150	2-15	148	1-75	3-8	6	2-2	72	
227	2A1	2-2	150	2-15	148	1-75	3-8	6	2-2	72	
227	1A1 A	2-2	150	2-15	148	1-75	3-8	6	2-2	72	
245	2nd A	2-5	248	2-5	248	2-5	248	40	28	26	4
245	1st A	2-5	248	2-5	248	2-5	248	40	28	26	4
220	Rect.	5-6									



15-1-7-16-29
Drawing # 10304
Supersedes 7-1-29
155-2-7-27-29

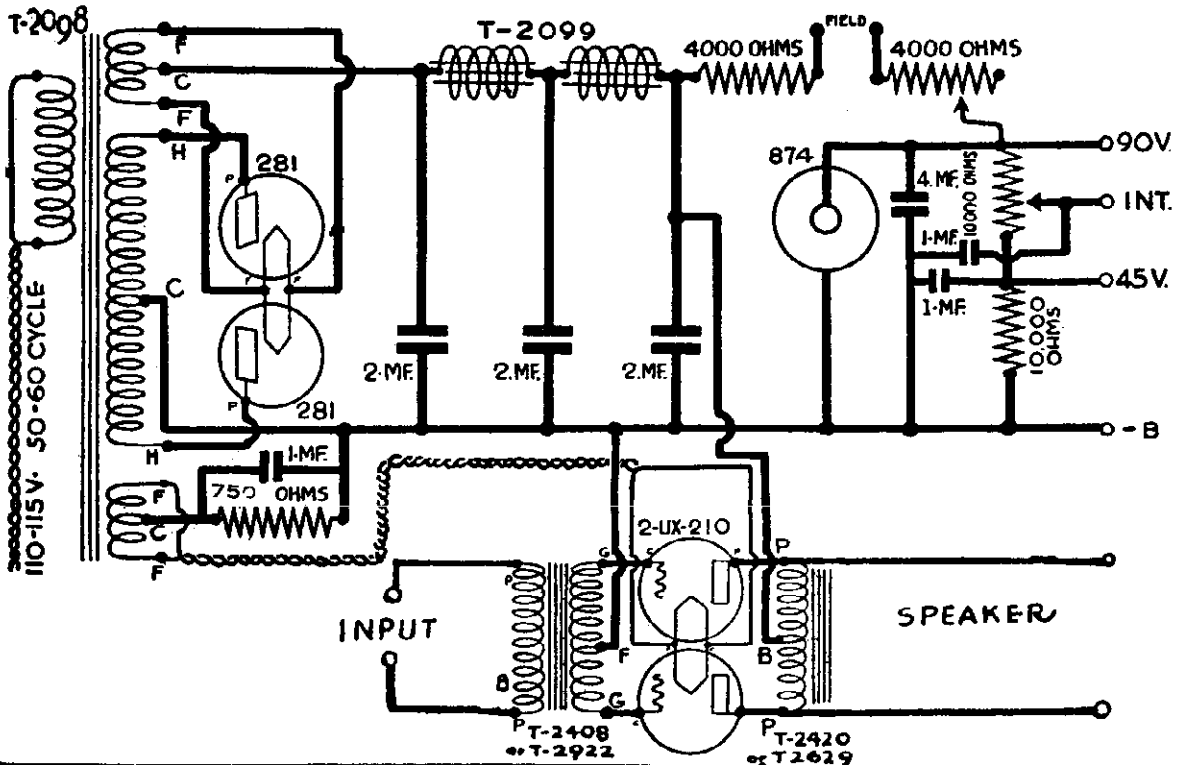
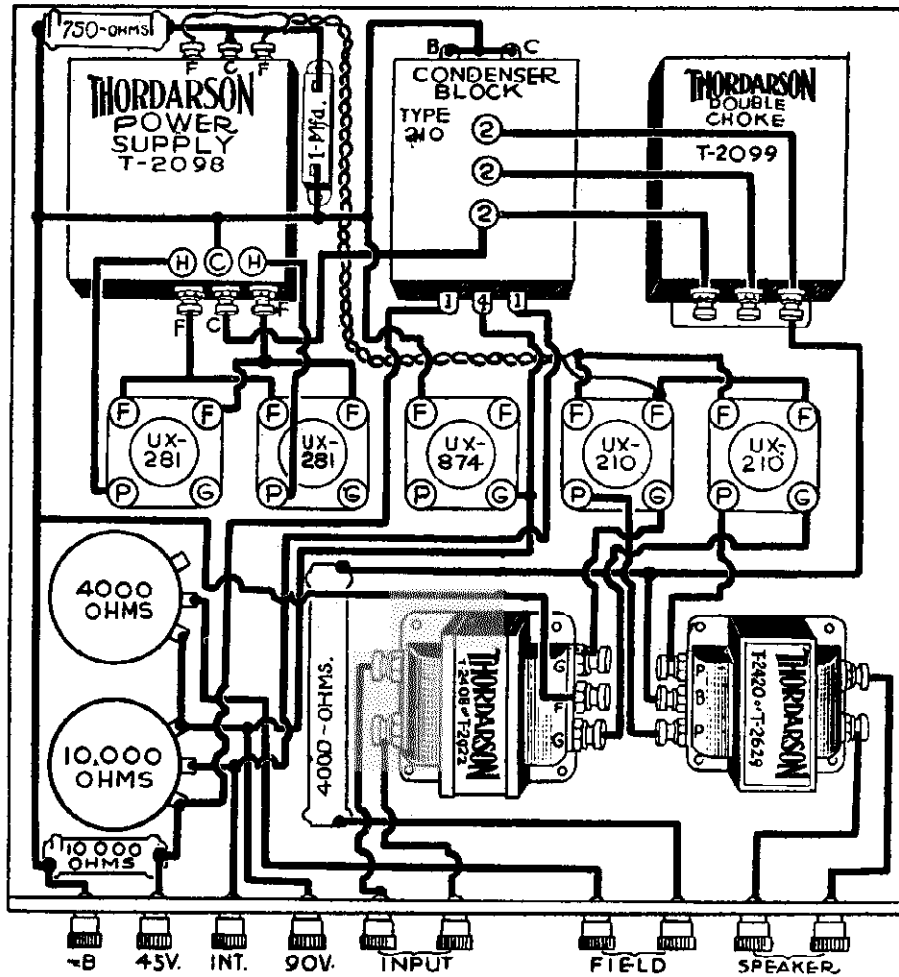
THORDARSON ELECTRIC MFG. CO.

MODEL R-171
MODEL PP-171



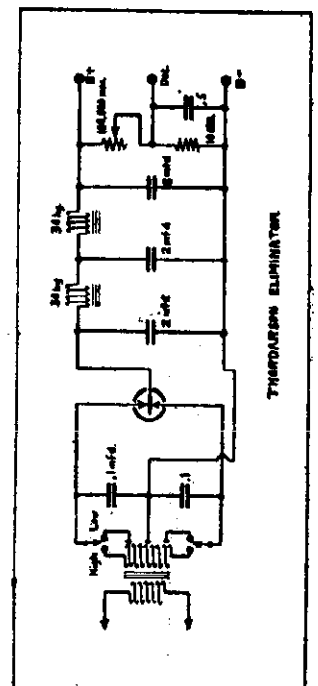
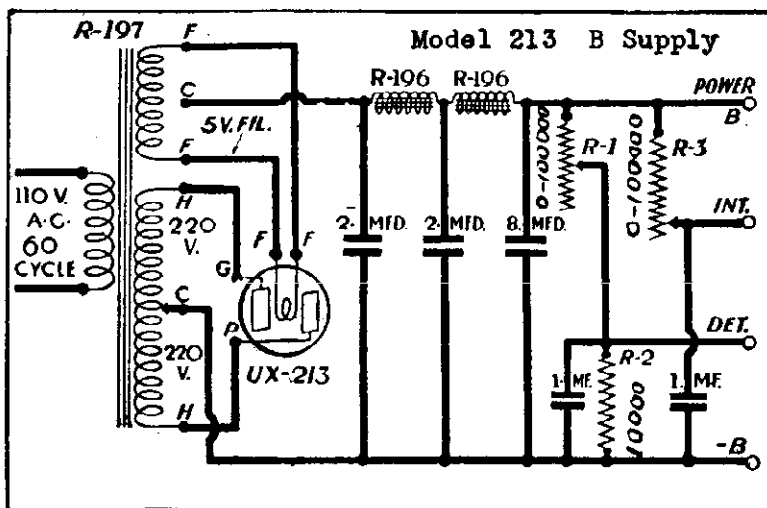
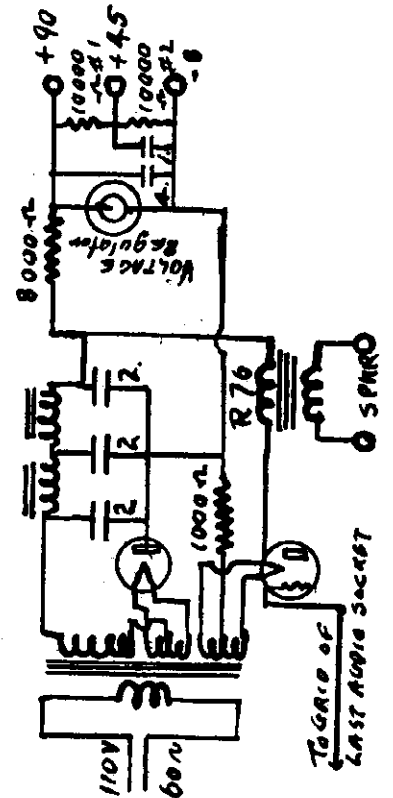
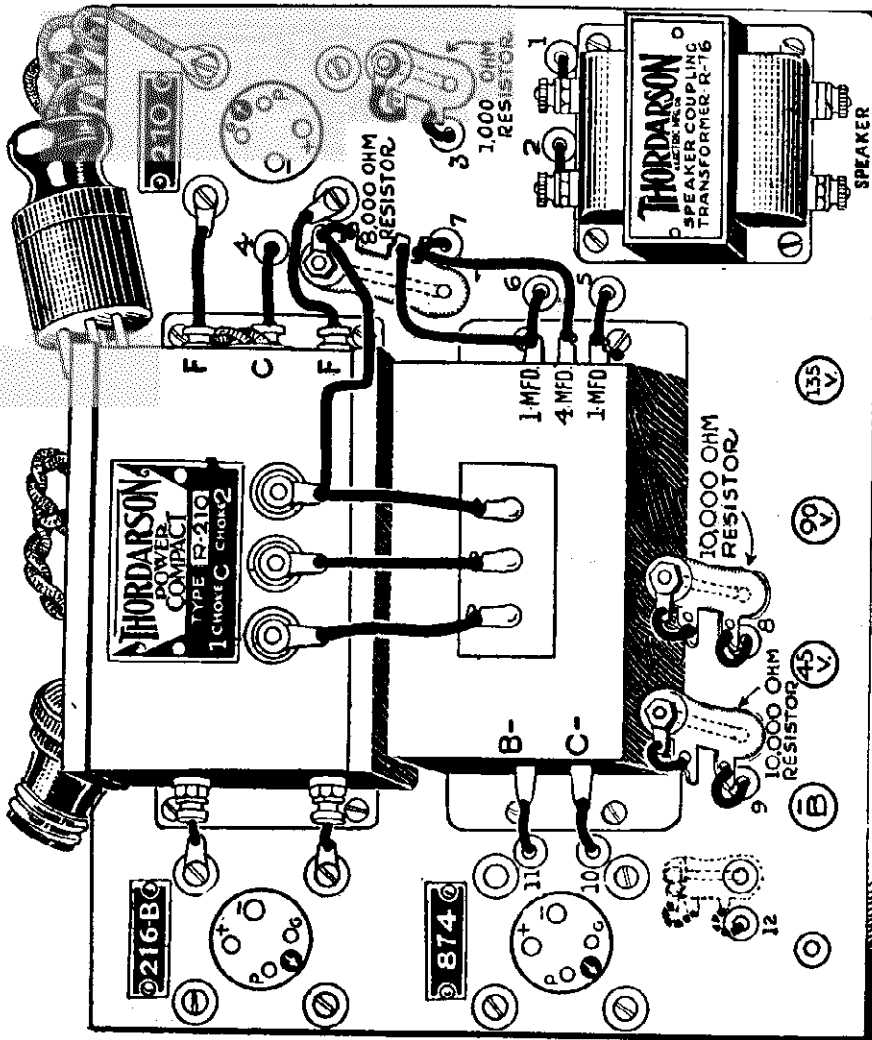
MODEL 210
Power Amplifier

THORDARSON ELECTRIC MFG. CO.



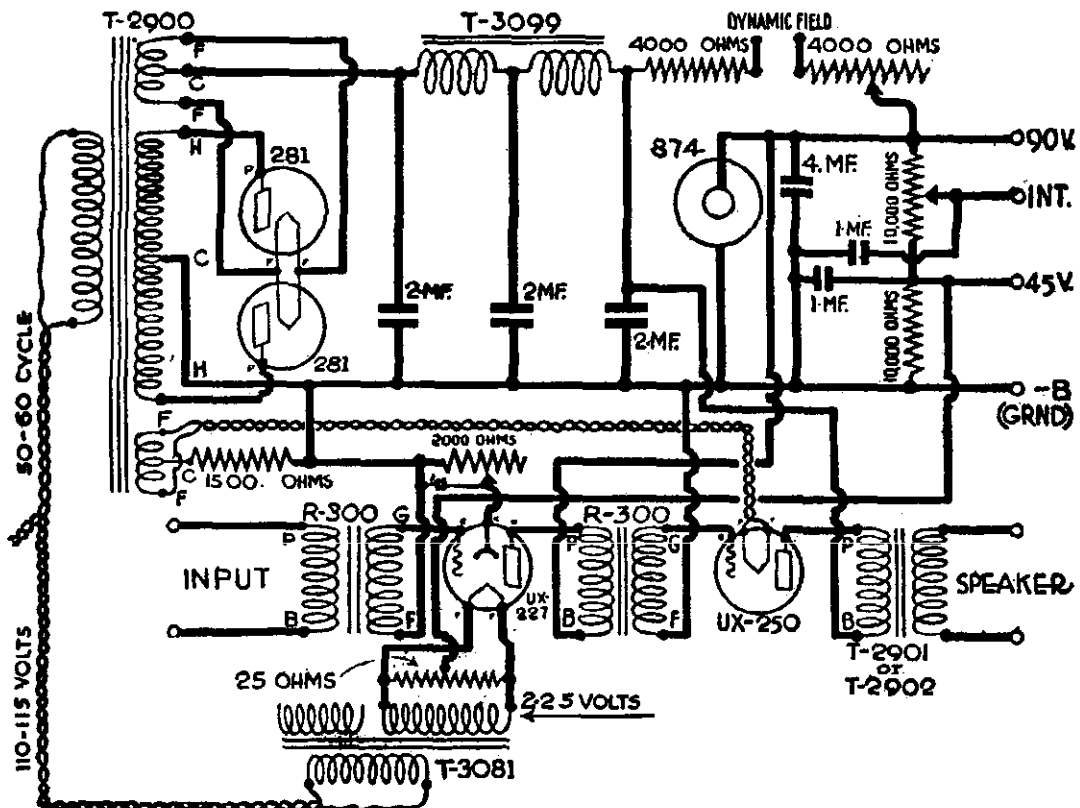
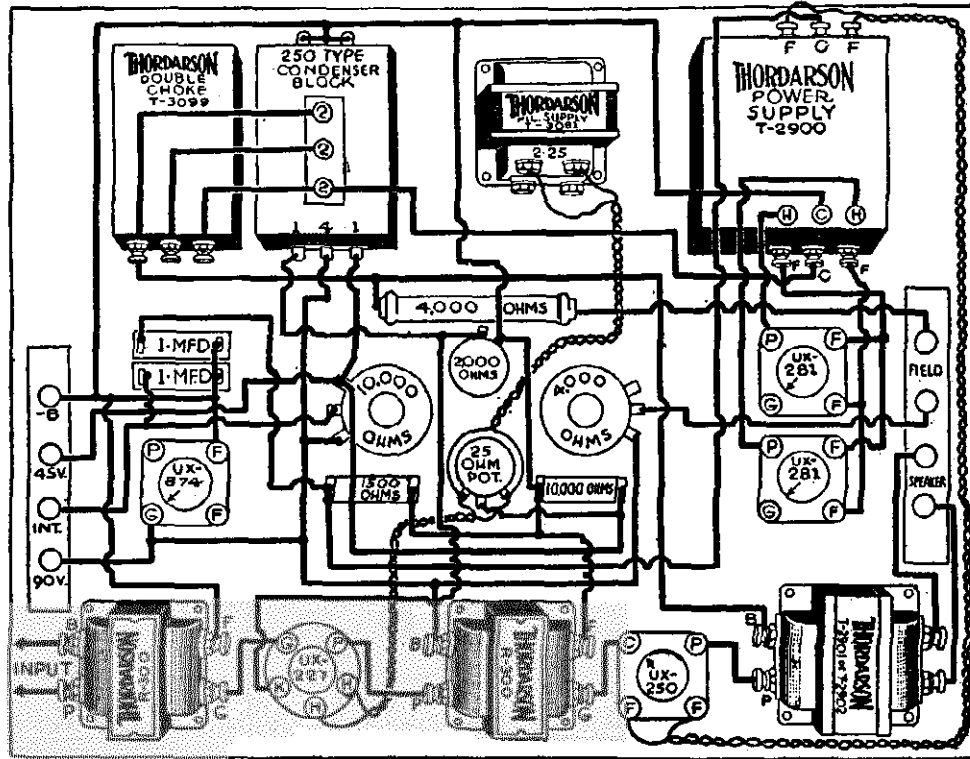
THORDARSON ELECTRIC MFG. CO.

MODEL R-210
 MODEL 213
 MODEL Eliminator



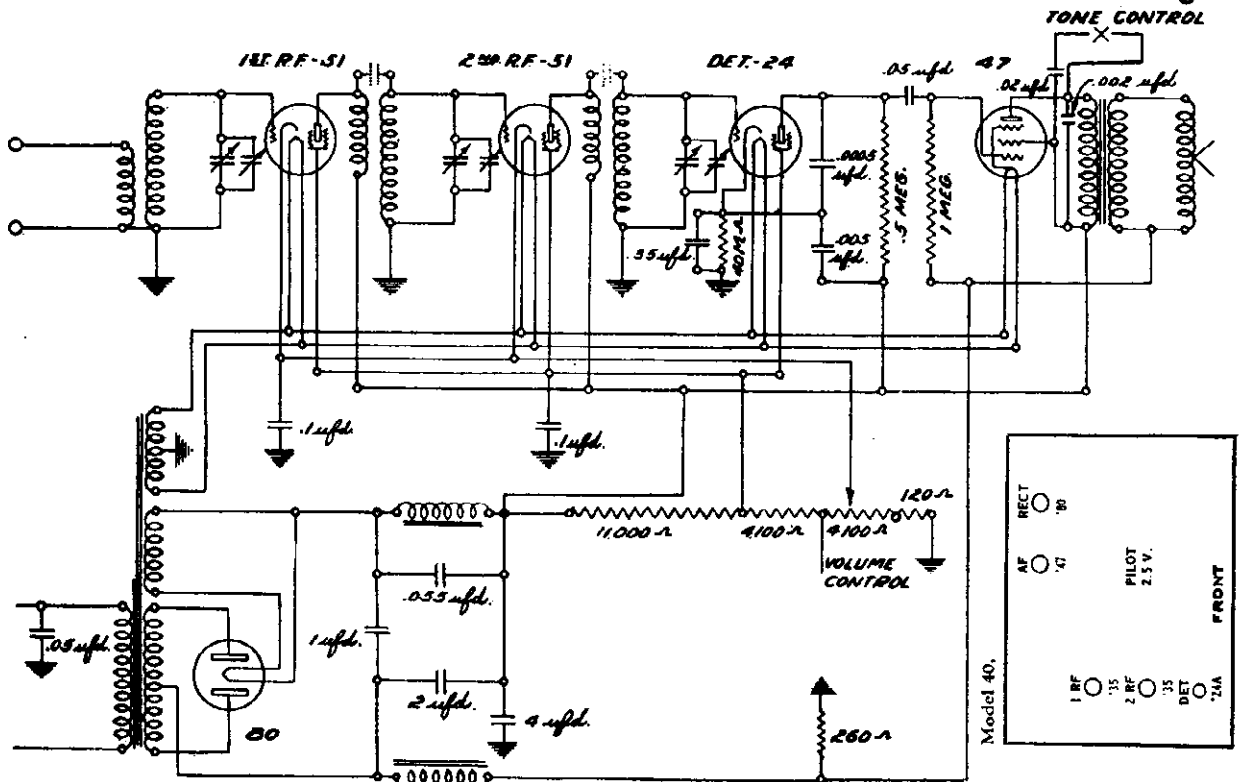
MODEL 250
Power Amplifier

THORDARSON ELECTRIC MFG. CO.



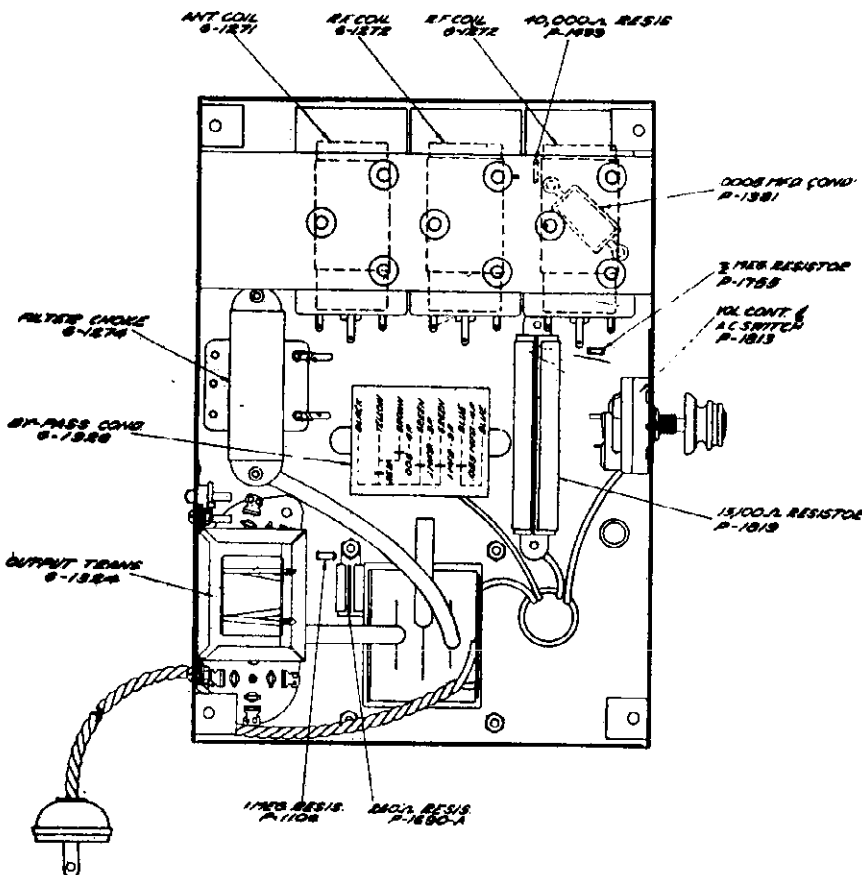
TRANSFORMER CORP. OF AMERICA

MODEL 40
Schematic
Voltage
Control



6-2-31

MODEL 40



VOLTAGE ANALYSIS

READINGS TAKEN WITH WESTON MODEL 565 ANALYZER MODEL 40

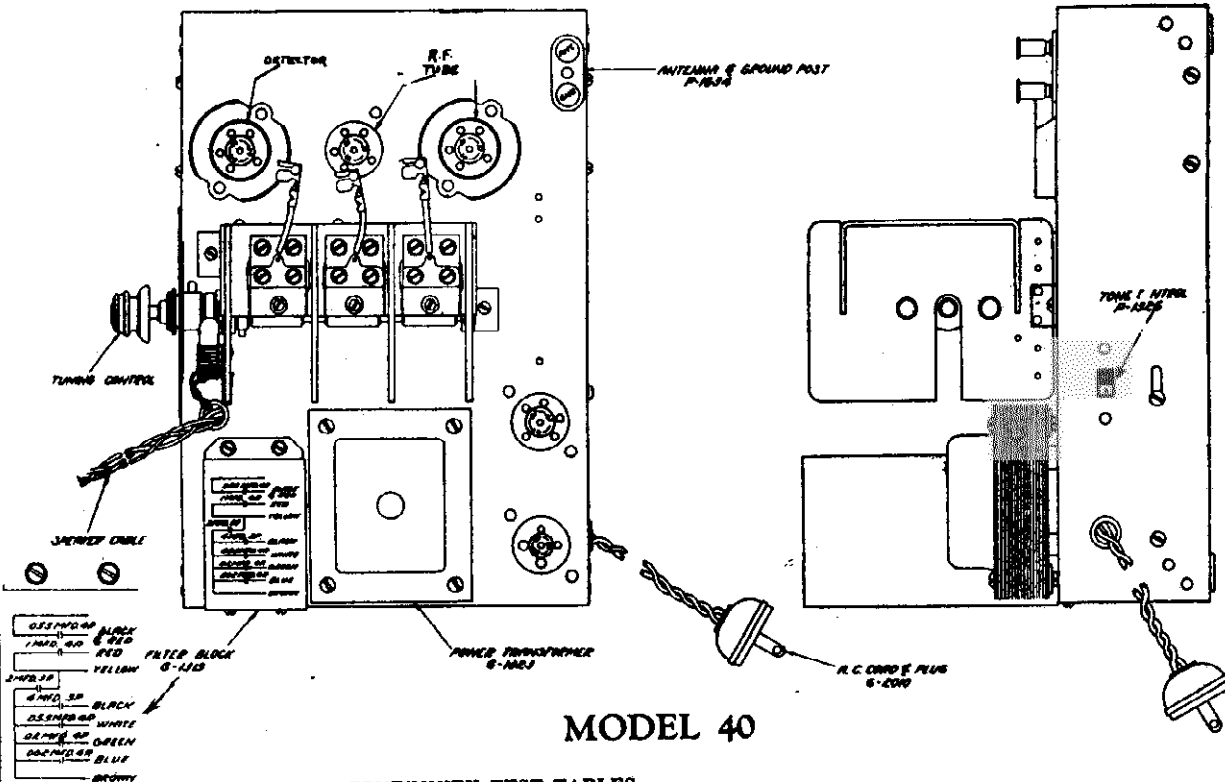
No.	Stage	Type Tube	Fil. Volts	Plate Volts	Cont. Grid Volts	Cath. Volts	S. G. Volts	I _p Normal
1	1st R. F.	C. L. 51	2.1	225	2.1	2	75	5
2	2nd R. F.	C. L. 51	2.1	230	2.2	2	75	4.5
3	Det.	C. L. 24	2.1	160	7	7.5	75	.02
4	Output	C. L. 47	2.1	215	5*	0	225	26.5
5	Rect.	C. L. 80	4.8	280				†30

*Reading dependant upon resistance of meter.

†Reading taken for one anode only: 60 milliamperes would be about correct. Volume control position full. Line voltage 115-60 cycle.

MODEL 40
Chassis
Data

TRANSFORMER CORP. OF AMERICA



RESISTANCE TABLE MODEL 40

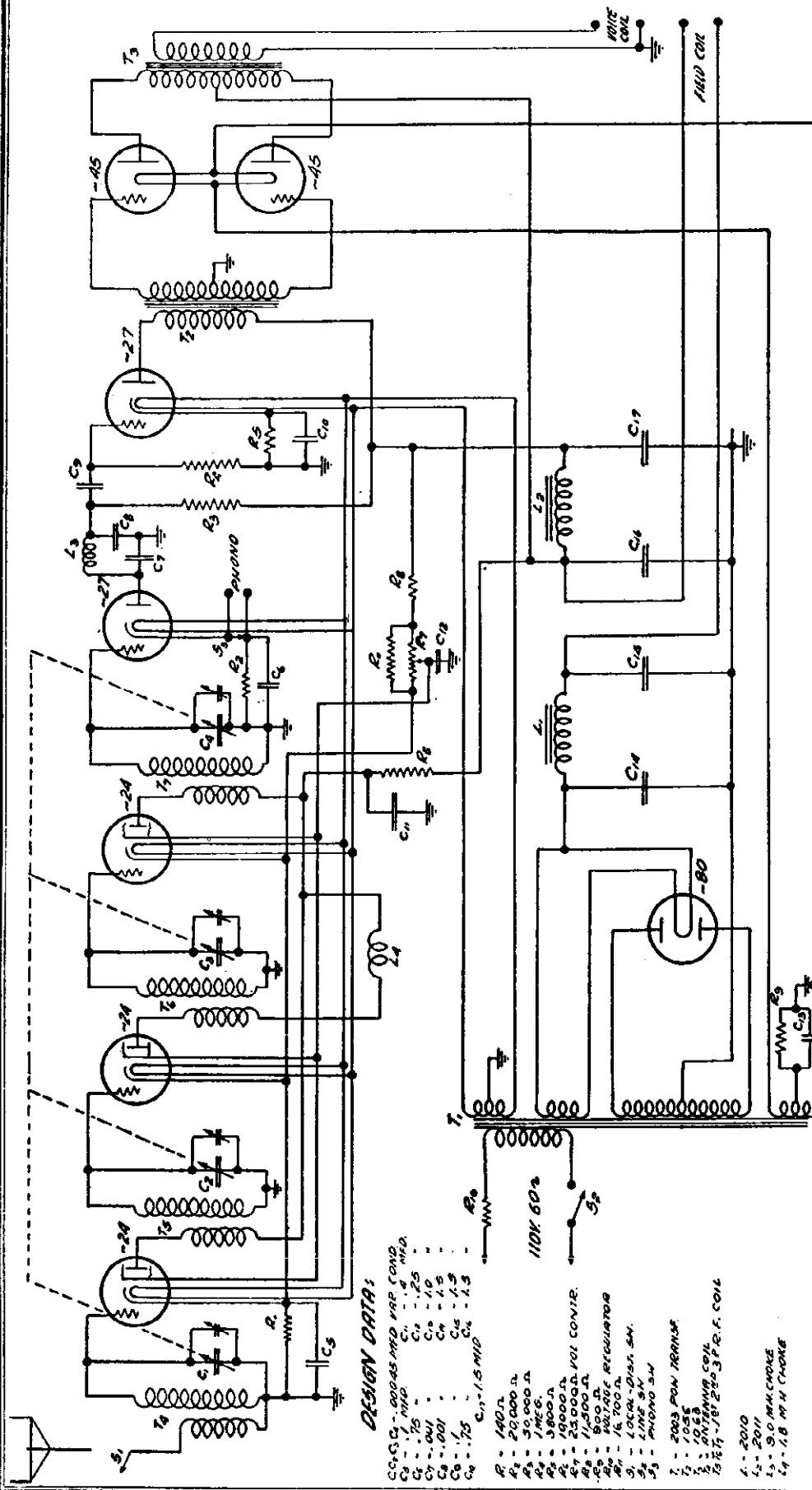
(Using 10-volt range meter 1,000 ohms per volt and 6-volt battery)

Item	Color Code*	From	To	Reading	Your Reading	Resistance in Ohms
Det. Cath. Resistor	Yel., Blk., Or.	Det. Cath.	Gnd.	1.3		40,000
Pent. Grid Resistor	Br. Blk., Green	Pent Grid	Spkr. Field	Slight Deflection		1,000,000
Wire Wound	Black	Voice Coil, Black	Gnd.	5.9		260
Voltage Divider, Short End	Black	Volume Cont. Green Lead	S. G. Ckt.	4.2		4,100
Voltage Divider, Long End	Black	Plate	S. G. Ckt.	3.		11,000
Det. Plate Resistor	Gr., Blk., Yellow	Det. Plate	Pent. Space Chg. Grid.	J		500,000
Vol. Control "on"		Gnd.	R. F. Cathode	4.2		4,100

*Color code: read body color first, tip second and dot last.

TRANSFORMER CORP. OF AMERICA

MODEL AC 51,53,55
Schematic
Voltage



DESIGN DATA:

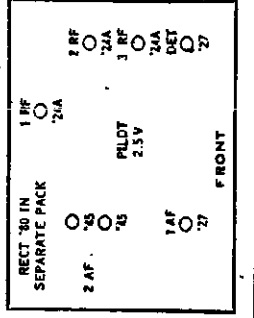
- C1, C2, C3 - .00045 MFD VAR COND
- C4 - .1 MFD
- C5 - .15 MFD
- C6 - .001
- C7 - .001
- C8 - .001
- C9 - .15
- C10 - 1.5
- C11 - 1.5 MFD
- R1 - 140 Ω
- R2 - 20,000 Ω
- R3 - 50,000 Ω
- R4 - 1MEG
- R5 - 3800 Ω
- R6 - 19000 Ω
- R7 - 25,000 Ω VOL CONTR.
- R8 - 1,500 Ω
- R9 - 500 Ω
- R10 - 16,700 Ω
- R11 - 100 Ω
- R12 - LOCAL-DIAL SW.
- S1 - 100 Ω
- S2 - 1MEG
- S3 - 500 Ω
- T1 - 2003 POW TRANSF.
- T2 - 105B
- T3 - 105B
- T4 - ANTENNA COIL
- T5 - 15% 17-18% 20-3 P.C. COIL
- L1 - 2010
- L2 - 2011
- L3 - 9.0 MM CHOKE
- L4 - 1.8 MM CHOKE

Line Voltage 105

CLARION—Models 51, 53, 55.
Line Voltage 125—Volume Control Full On

TYPE OF METER	TYPE OF METER	TYPE OF METER	OPERATING VOLTAGES		METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET		METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET		
			FLUORESCENT	INCANDESCENT	NORMAL TO 100% OF FULL SCALE	100% OF FULL SCALE	NORMAL TO 100% OF FULL SCALE	100% OF FULL SCALE	
1	284	1 R.P.	2.09	1.66	2.43	2.43	2.72	5.55	2.63
2	284	2 R.P.	2.09	1.61	2.43	2.43	2.95	5.65	3.10
3	284	3 R.P.	2.09	1.51	2.43	2.43	2.75	5.6	2.92
4	287	287	2.09	1.34	2.43	2.43	2.50	7.6	2.80
5	287	1 A.P.	2.14	1.70	2.43	2.43	3.31	4.08	3.71
6	245	PP-AF	2.14	1.95	2.43	2.43	20.4	24.5	3.9
7	245	PP-AF	2.14	1.95	2.43	2.43	23.4	27.3	3.8
8	280	280	4.51	-	-	-	35	35	-

TYPE OF METER	TYPE OF METER	TYPE OF METER	OPERATING VOLTAGES		METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET		METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET		
			FLUORESCENT	INCANDESCENT	NORMAL TO 100% OF FULL SCALE	100% OF FULL SCALE	NORMAL TO 100% OF FULL SCALE	100% OF FULL SCALE	
1	284	1 R.P.	2.47	1.58	3	3	3.1	6.5	3.4
2	284	2 R.P.	2.47	1.58	3	3	3.8	7.8	4.0
3	284	3 R.P.	2.47	1.66	3	3	3.5	7.9	4.1
4	287	287	2.47	1.37	3	3	2.8	8.8	4.05
5	287	1 A.P.	2.48	1.98	3	3	4.2	4.9	4.7
6	245	PP-AF	2.48	2.05	3	3	2.2	3.6	4
7	245	PP-AF	2.48	2.05	3	3	2.7	3.2	5
8	280	280	8.5	-	-	-	41	41	-

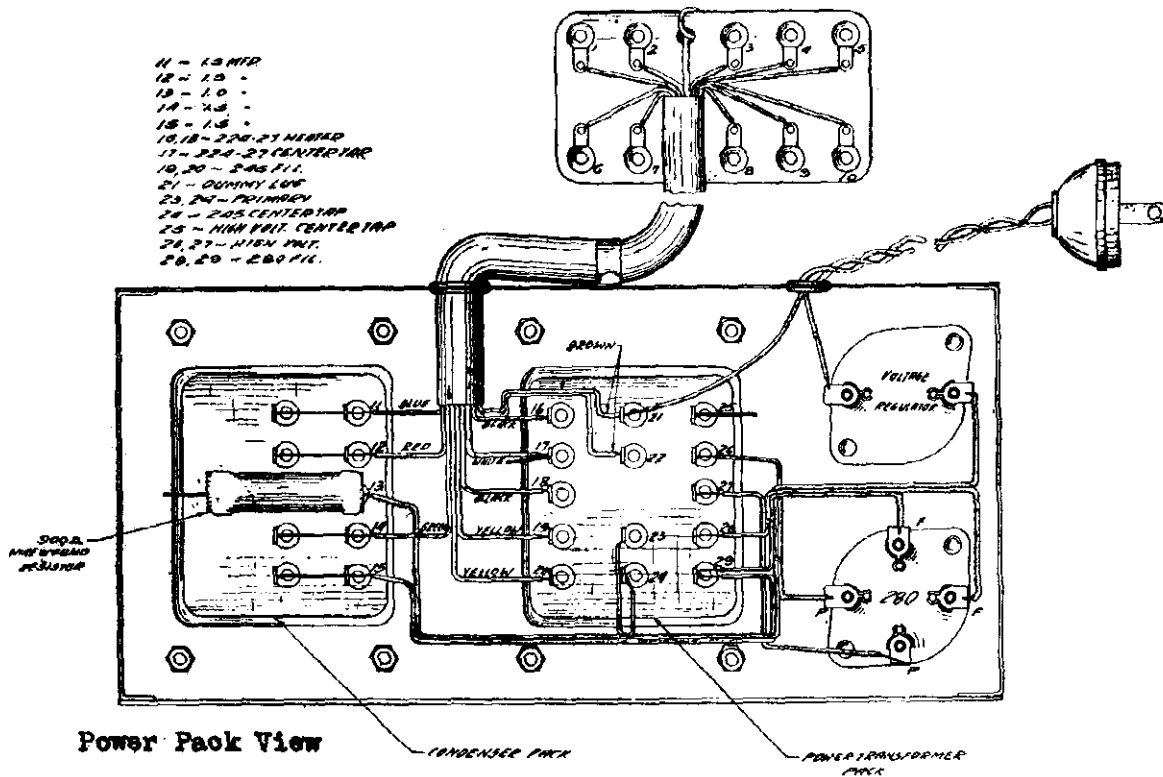


Models 25-51, 25-53, 25-55 (1930)

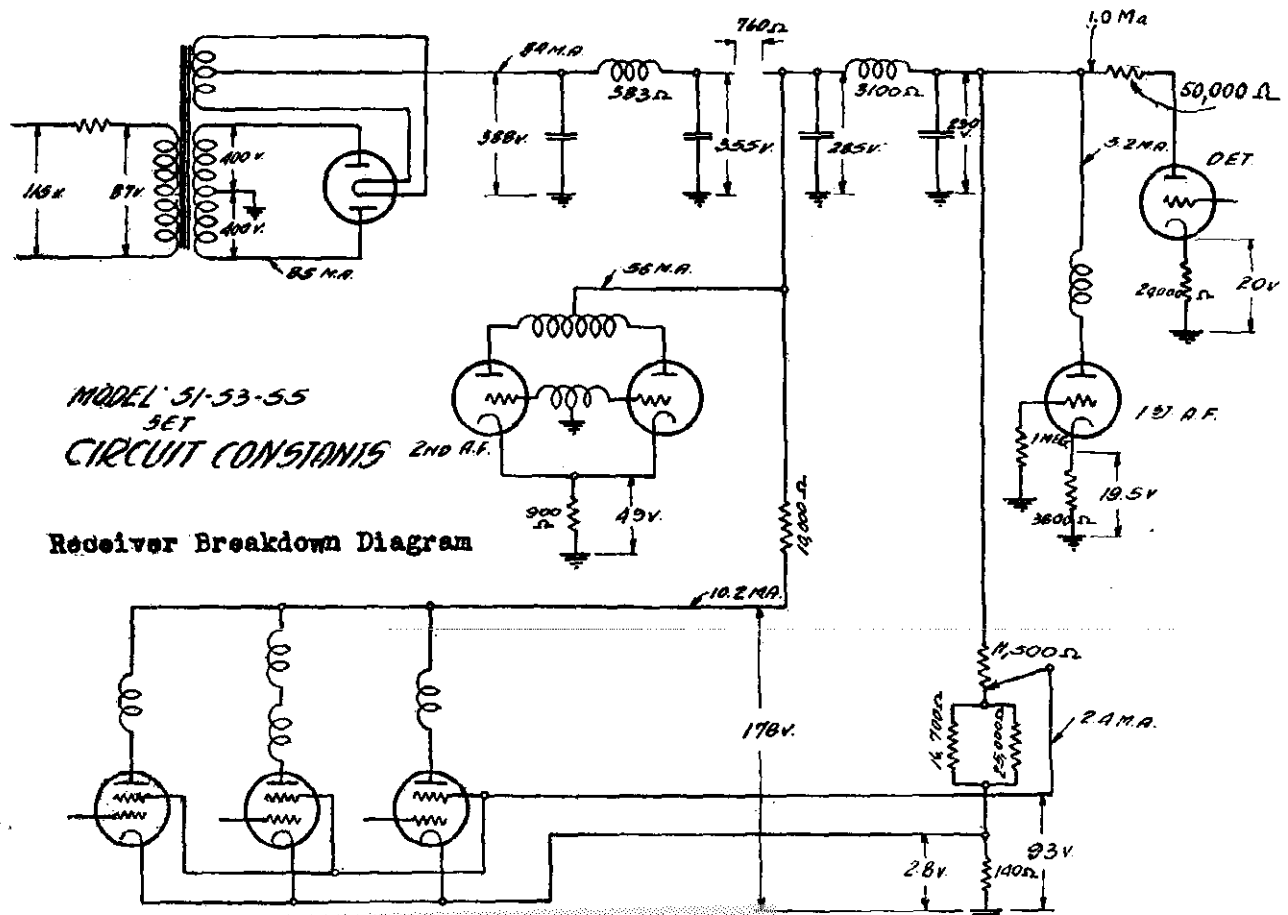
MODEL AC 51,53,55
 Power Pack View
 Receiver Breakdown

TRANSFORMER CORP. OF AMERICA

- 11 - 1.5 MFD
- 12 - 1.0 "
- 13 - 1.0 "
- 14 - 2.0 "
- 15 - 1.5 "
- 16, 18 - 2.20-2.7 MFD
- 17 - 330-27 CENTER TAP
- 19, 20 - 5.00 FIL.
- 21 - DUMMY LOAD
- 23, 24 - PRIMARY
- 25 - 2.05 CENTER TAP
- 26, 27 - HIGH VOLT. CENTER TAP
- 28, 29 - 2.00 FIL.



Power Pack View

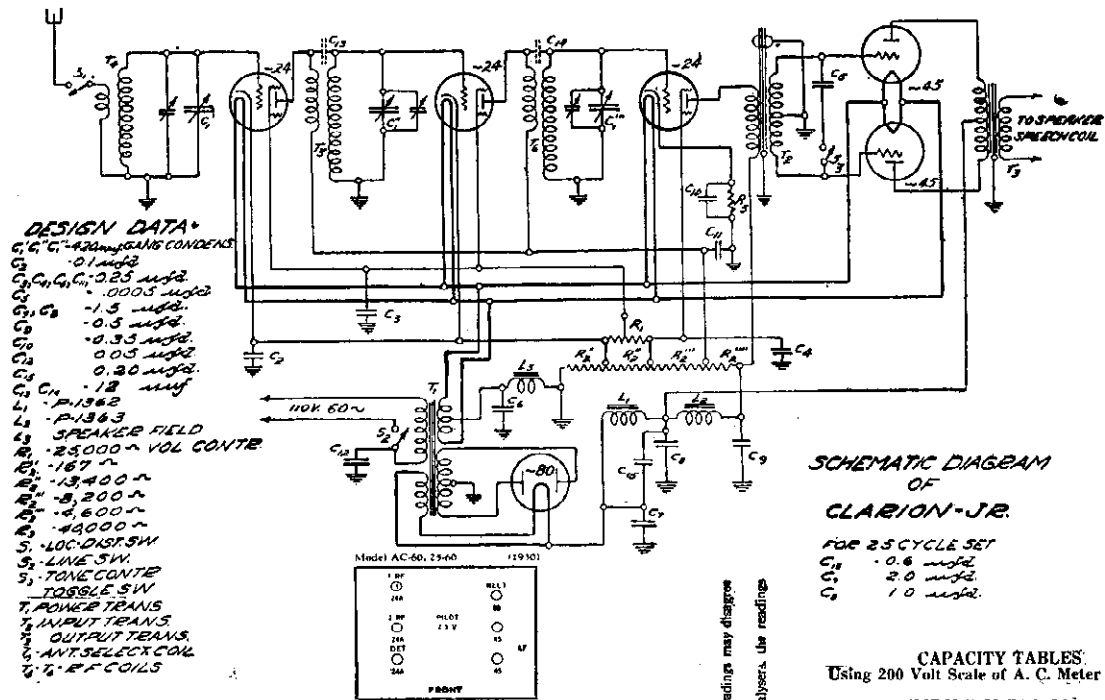


MODEL 51-53-55
 SET
 CIRCUIT CONSTANTS

Receiver Breakdown Diagram

TRANSFORMER CORP. OF AMERICA

MODEL AC-60, 25-60
Schematic
Voltage Data



SCHEMATIC DIAGRAM OF CLARION-JR.

FOR 25 CYCLE SET
 C₁ - 0.6 μf
 C₂ - 2.0 μf
 C₃ - 1.0 μf

CAPACITY TABLES
 Using 200 Volt Scale of A. C. Meter

(107 Volt 60 Cycle Line)

No.	Capacity	Reading	Your Reading	Part No.
C-2	0.10	45.0		G-1136
C-3	0.25	70.0		G-1136
C-11	0.35	87.0		G-1136
C-10	0.35	86.0		G-1108
C-4	0.25	78.0		G-1108
C-12	0.05	20.0		C-1108
C-15	0.20	67.0		G-1106
C-7	1.5	105.0		G-1106
C-8	1.5	105.0		G-1106
C-9	0.5	95.0		G-1106
C-6	0.25	75.0		G-1106

25 Cycle Filter Pack Readings on 107 Volt 30 Cycle

C-15	0.6	85.0		G-1132
C-7	2.0	103.0		G-1132
C-8	1.5	102.0		G-1132
C-9	1.0	97.0		G-1132
C-6	0.25	44.0		G-1132

Note: Above capacity values are for latest specifications. Previous production to Nov. 1st, 1930, will give higher values.

RESISTANCE TABLES
 Using 6 Volt Battery with 0-10 Voltmeter (1000 Ohms Per Volt)

Item tested	From	To	Reads	Your Reading	Resistance (ohms)
Voltage Divider with volume control connected across taps 1-2	Ground	Tap 1	6.0		167
	Ground	Tap 2	3.3		8900
	Ground	Tap 3	2.2		17000
	Ground	Tap 4	1.9		21600
Det. Bias resist.	Ground	Det. cath. prong	1.2		40000
Volume control	Across volume control (disconnected)		1.8		25000
L. 1. filter choke	Center Tap	280 fil. prong	5.9		226
L. 2. filter choke	Center Tap	Pit. prong	5.0		2000

L. 1. and L. 2. for 25 cycle same as above

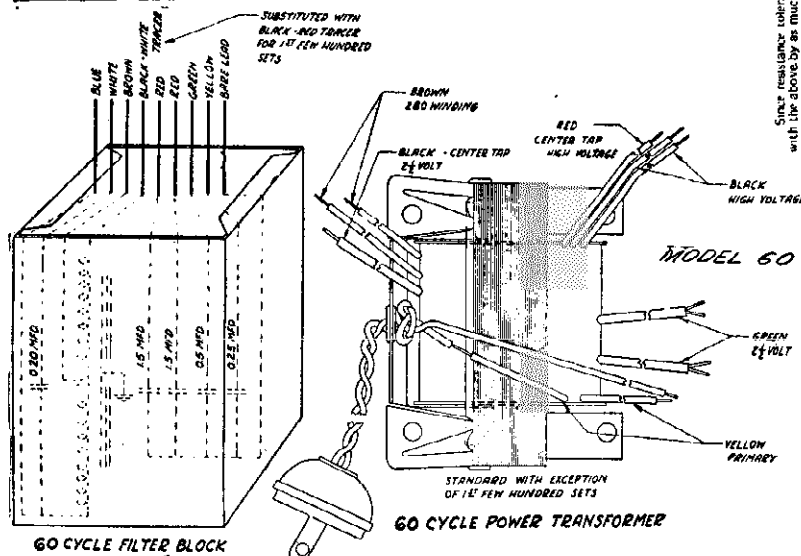
Line Volts—105 Volts

No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	I _p Norm.	I _p G.D.	I _p - I _p (Diff)	SG Volts
1	1st r f	24	2.05	165	2.6	44	2.1	3.6	1.5	76
2	2nd r f	24	2.05	165	2.6	44	2.3	3.8	1.5	76
3	Det.	24	2.06	196	*7.0	*26	*0.2	*1.3	*1.1	*70
4	AF	45	2.15	230	45.0		28	82	4.0	
5	AF	45	2.15	230	45.0		25	29	4.0	
6	Rect.	60	4.6							

Line Volts—125 Volts

No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	I _p Norm.	I _p G.D.	I _p - I _p (Diff)	SG Volts
1	1st r f	24	2.55	197	3.1	50	2.7	4.7	2.0	97
2	2nd r f	24	2.55	197	3.1	50	3.0	5.0	2.0	97
3	Det.	24	2.55	250	*8	*32	*0.2	*1.6	*1.4	*86
4	AF	45	2.65	276	52		35	40	5.0	
5	AF	45	2.65	276	52		31	35	5.0	
6	Rect.	80	5.4							

Since resistance tolerances in the set are plus or minus 40% and tubes may vary 10 to 20% your readings may disagree with the above by as much as 20% in rare cases.
 *Because of high resistance in the cathode circuit on the tube, together with the circuit used in most analyzers, the readings marked with an asterisk may vary over 100% when using different resist. scales.



MODEL AC-60, 25-60
Chassis View
Continuity Test

TRANSFORMER CORP. OF AMERICA

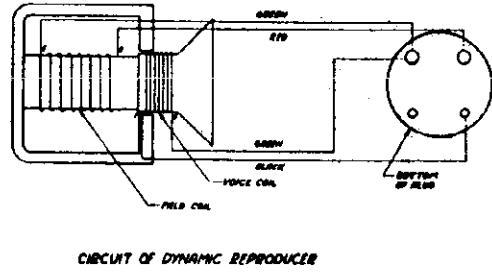
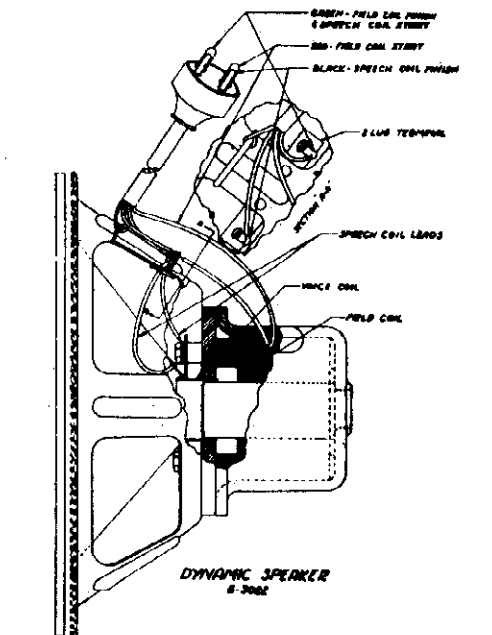
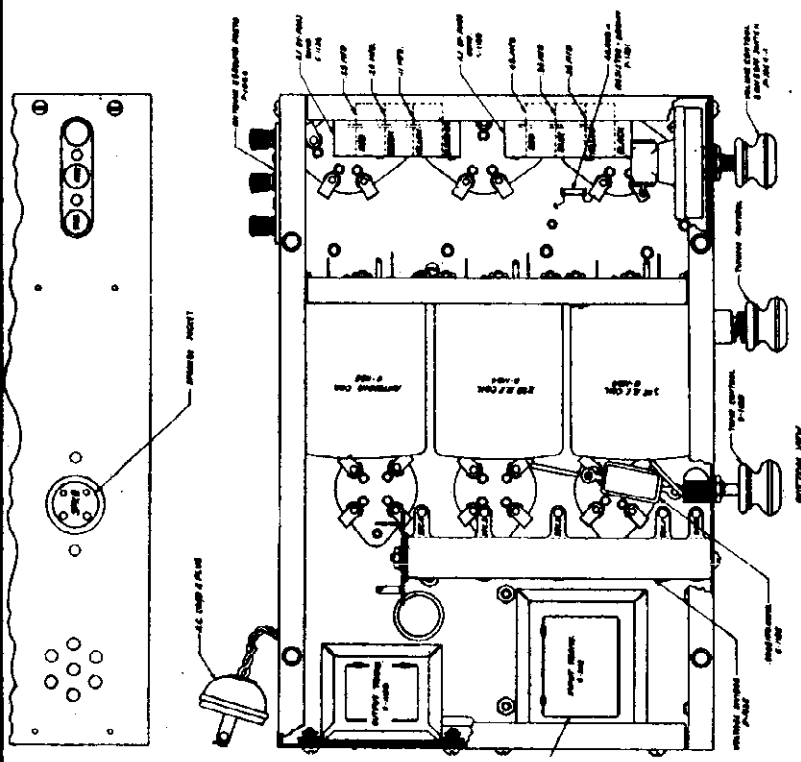
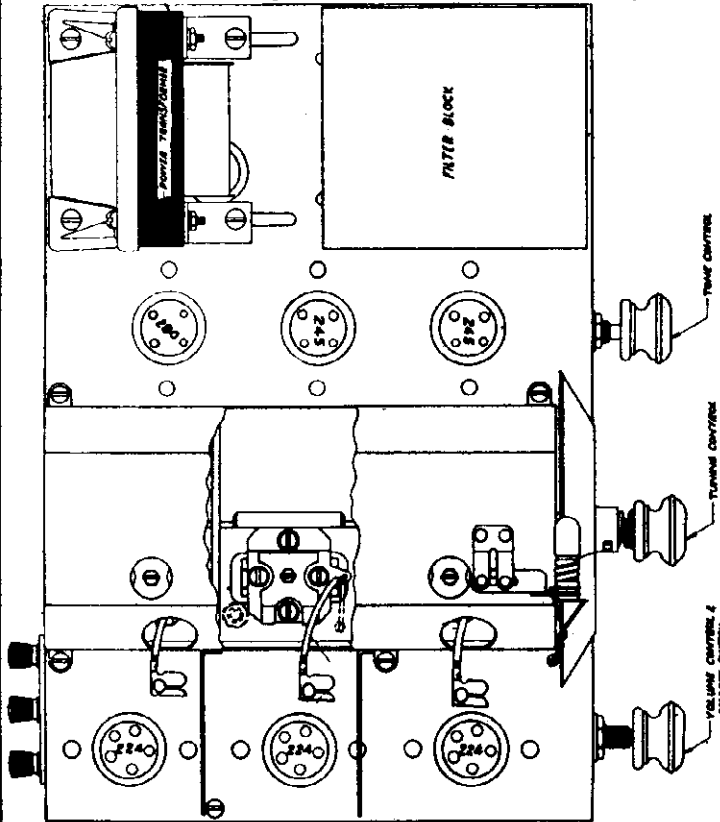
In some A.C. 60 models a phonograph jack was provided through which phonograph records may be reproduced. The phonograph pickup to be used with the set should have an impedance of 5000 ohms at 1000 cycles. We recommend Audak, Webster, Toman.

Model A. C. 60 receivers are designed for operation on 105 to 125 volt 50 to 60 cycle alternating current. The models 25-60 are to be operated on 105 to 125 volts 25 to 40 cycle alternating current only.

CONTINUITY TEST TABLES

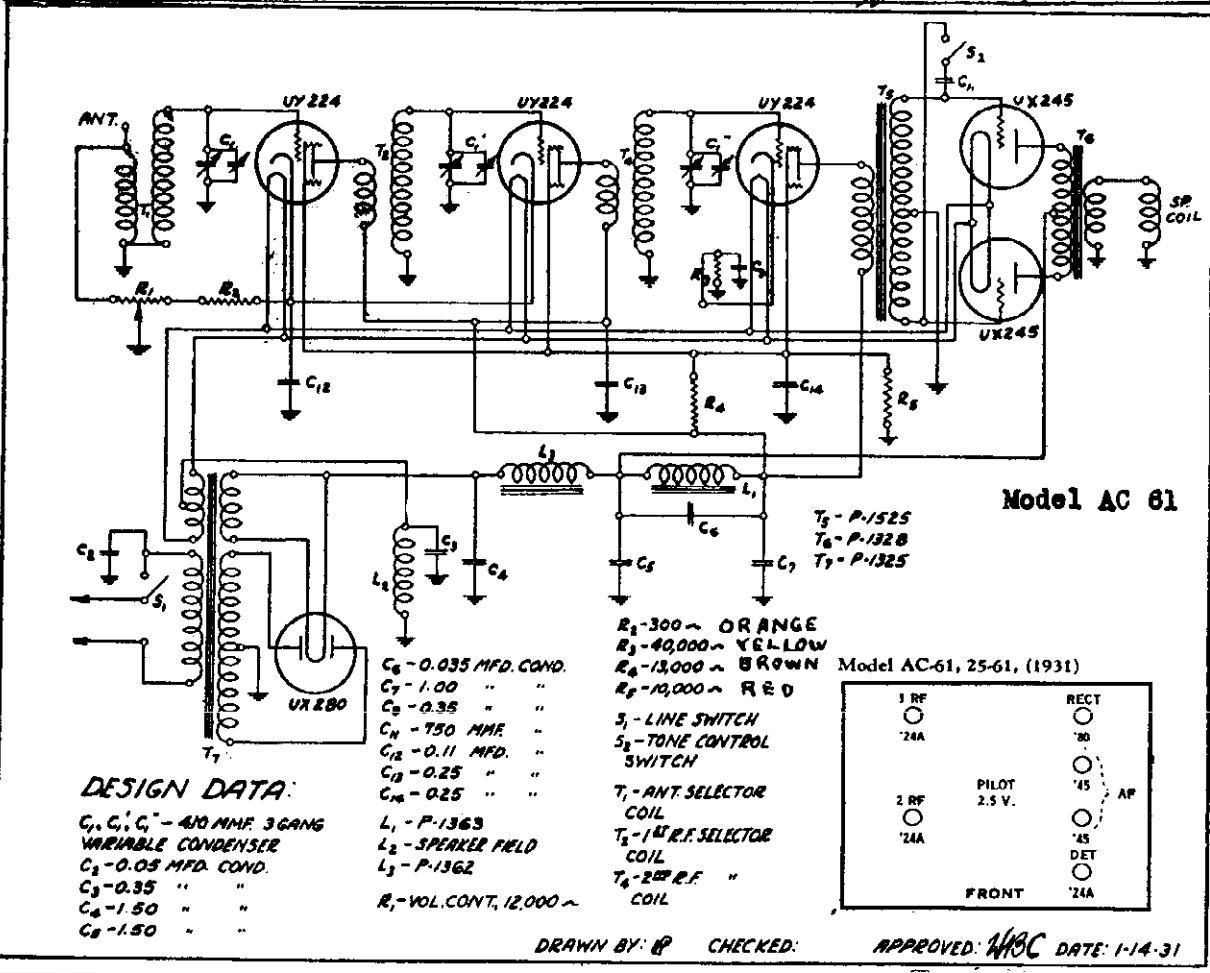
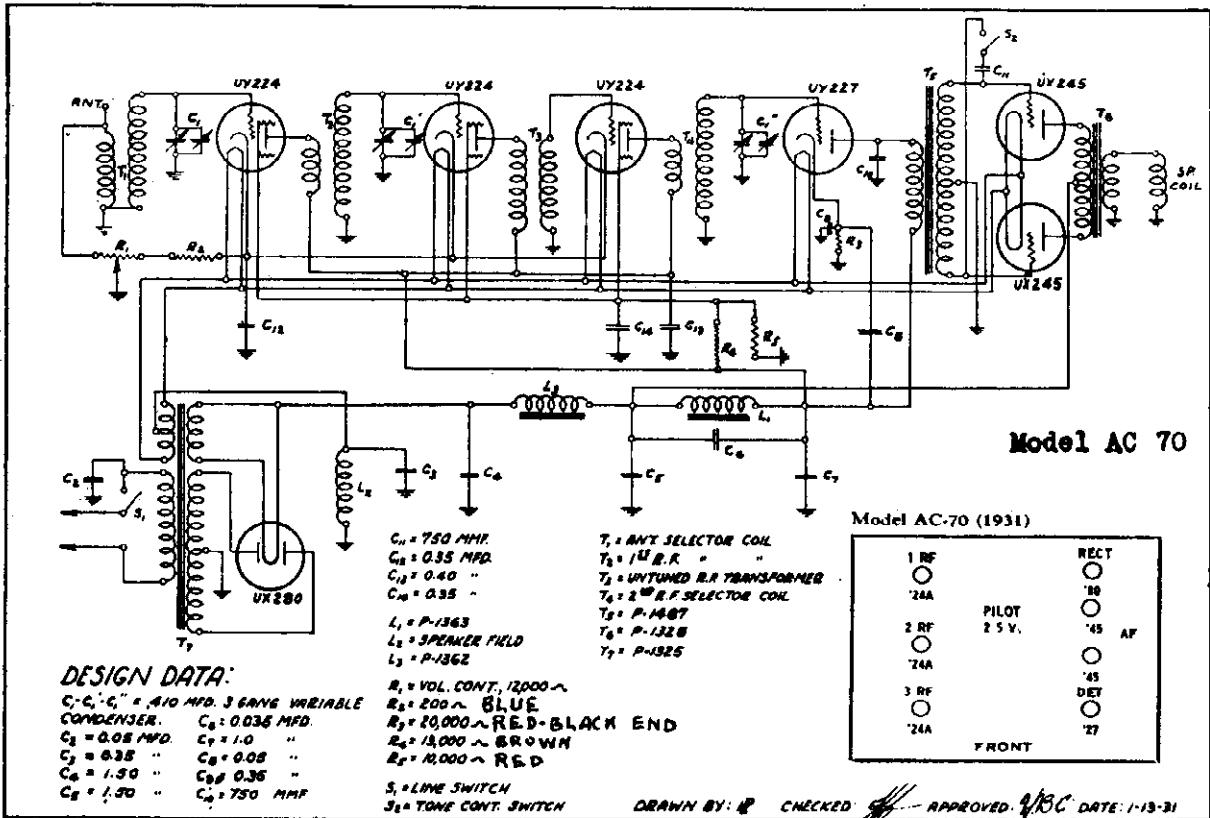
Using 6 Volt Battery with 0-10 Voltmeter (1000 Ohms Per Volt)

Circuit Tested	From	To	Resistance
Antenna coil	Blank binding post	Ground	6.0
1st r. f. grid ckt.	Grid cap 1st r. f.	Ground	6.0
1st r. f. plate ckt.	Plate prong at socket	3rd tap divider	6.0
2nd r. f. grid ckt.	Grid cap 2nd r. f.	Ground	6.0
2nd r. f. plate ckt.	Plt. prong at socket	3rd tap divider	6.0
Det. plt. ckt.	Plt. prong det. socket	4th tap divider	3.4
Det. grid ckt.	Grid cap det.	Ground	6.0
245 grid ckt.	Alternate grids	Ground	4.3-4.5
245 pit. ckt.	Alternate plates	Center tap output trans.	5.9
Output trans. sec.	Green lead spkr. socket	Ground	6.0
Speaker field	Spkr. socket	Ground	5.6
Prn. power trans.	Across AC line plug (switch on)		6.0
280 fil. sec.	Across 280 socket filament prongs		6.0
245-224 fil. sec.	Across 245 socket filament prongs		6.0
High voltage sec.	Across 280 plate prongs		5.8
L. 1, filter choke	Center tap output trans.	280 fil. prong	5.9
L. 2, filter choke	Center tap output trans.	Det. socket plate prong	5.0



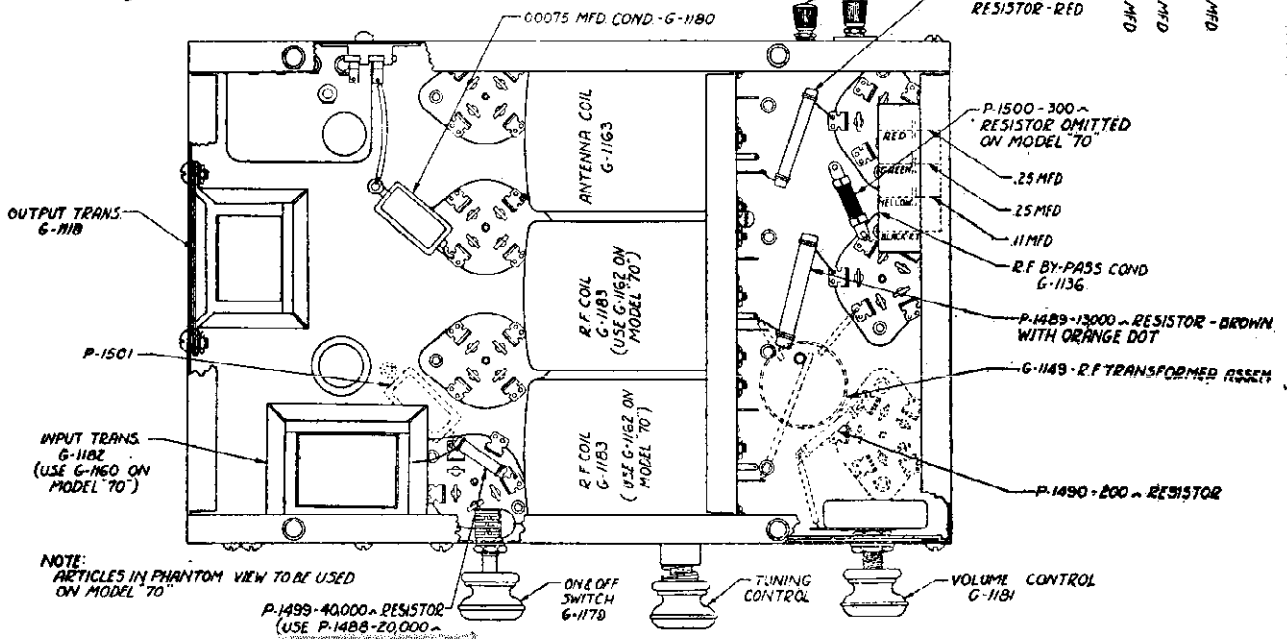
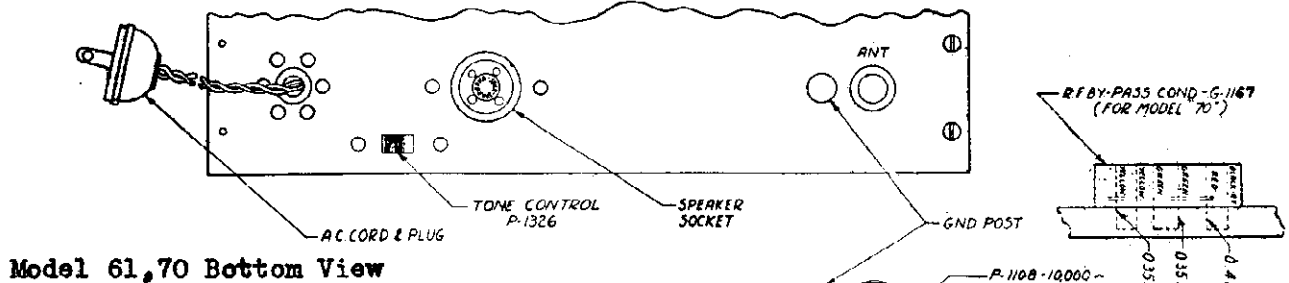
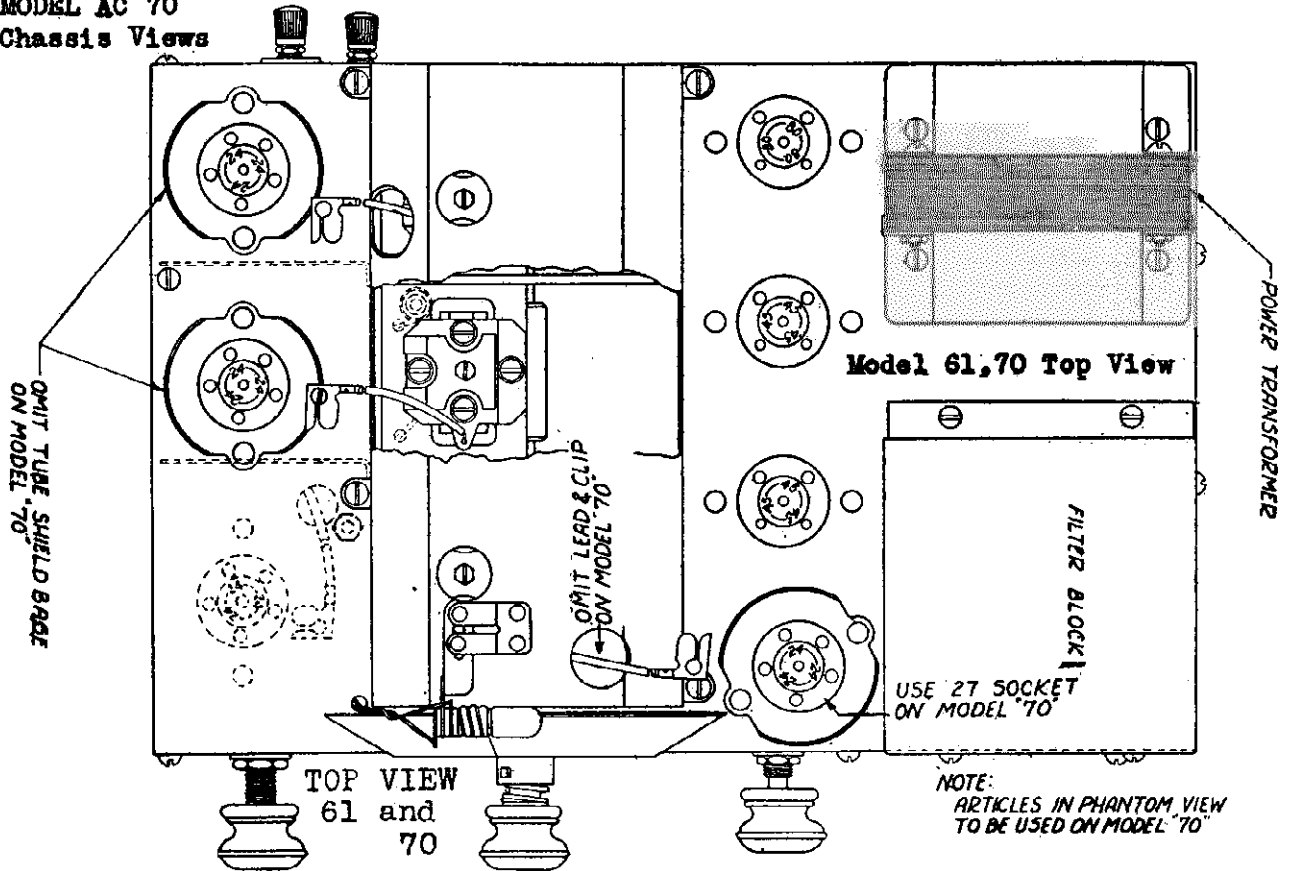
TRANSFORMER CORP. OF AMERICA

MODEL 61 AC
MODEL 70 AC



MODEL AC 61
Chassis Views
MODEL AC 70
Chassis Views

TRANSFORMER CORP. OF AMERICA



TRANSFORMER CORP. OF AMERICA

MODEL AC 61
Voltage - Data
MODEL AC 70
Voltage - Data

NOTE.. Continuity test is made with 6 volt battery, 10 volt meter rated at 1000 ohms per volt.

READINGS TAKEN WITH WESTON MODEL 565 ANALYSER
Model 61 Line 115 Volts

No.	Stage	Type Tube	A Volts	B Volts	Cent. Grid Volts	Cath. Volts	I _p Norm.	SG Volts
1	1st r. f.	224	2.40	260	3.2	50.0	4.3	100.0
2	2nd r. f.	224	2.35	260	3.2	50.0	4.3	100.0
3	Det.	224	2.40	260	8.0	42.0	0.200	100.0
	AF	245	2.42	290	53.0		34.0	
5	AF	245	2.43	290	53.0		34.0	
6	Rect.	280	5.00					

115 Volts { 280 Fil. to Gnd.—320 Volts D.C.
L1 & L2 Center tap to Gnd. 300 Volts D.C.
End of Choke L2 to Gnd. 260 Volts D.C.

Model 70 Line 115 Volts

No.	Stage	Type Tube	A Volts	B Volts	Cent. Grid Volts	Cath. Volts	I _p Norm.	SG Volts
1	1st r. f.	224	2.37	250	3.0	50.0	4.0	90
2	2nd r. f.	224	2.30	250	3.0	50.0	4.0	90
3	3rd r. f.	224	2.30	250	3.0	50.0	4.0	90
4	Det.	227	2.38	250	20.0	33.0	1.00	
5	AF	245	2.42	290	53.0		34.0	
6	AF	245	2.43	290	53.0		34.0	
7	Rect.	280	5.00					

115 Volts { 280 Fil. to Gnd.—320 Volts D.C.
L1 & L2 Center tap to Gnd.—300 Volts D.C.
End of Choke L2 to Gnd. 260 Volts D.C.

Note. Since Resistance tolerances in the set are plus or minus 10%, and tubes may vary over 20%, your readings may disagree with the above by plus or minus 30%.

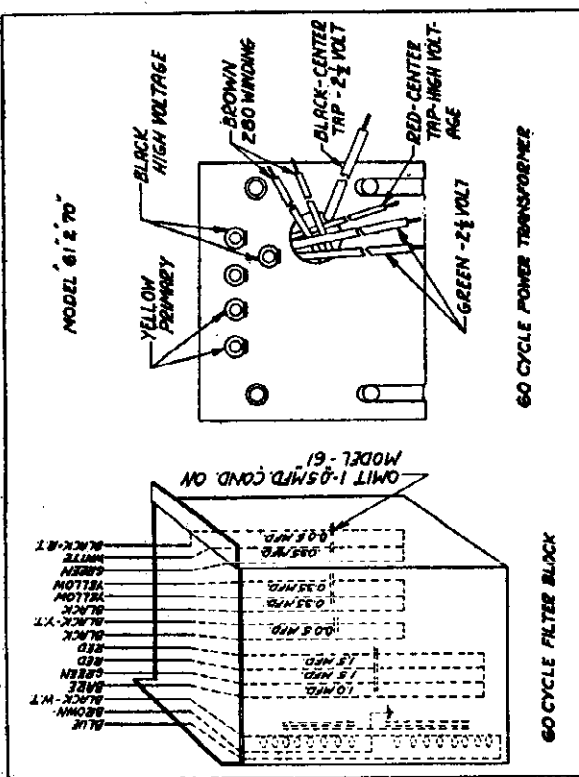
CAPACITY TABLES

Using 200 Volt Scale of A. C. Meter included in Weston No. 565 Analyser

No.	MODEL 61 (115 Volt 60 Cycle Line)		MODEL 70 (115 Volt 60 Cycle)	
	Capacity	Reading	Reading	True Reading
C-2	0.05	20.0	0.05	20.0
C-3	0.35	95.0	0.35	95.0
C-4	1.50	115.0	1.50	115.0
C-5	1.50	115.0	1.50	115.0
C-6	0.05	30.0	0.05	30.0
C-7	1.0	92.0	1.0	92.0
C-9	35	45.0	35	45.0
C-12	11	86.0	11	86.0
C-13	25	80.0	25	80.0
C-14	35	80.0	35	80.0

CONTINUITY TEST TABLES
Models 61 and 70

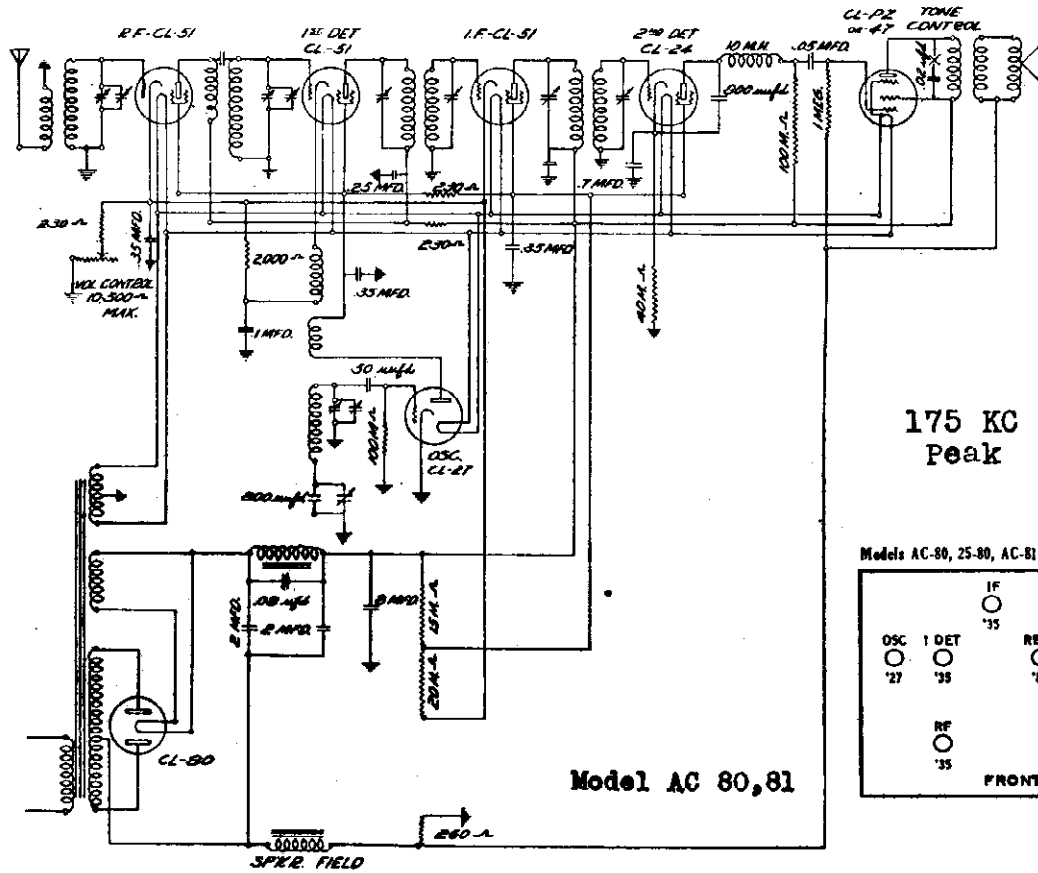
Circuit Tested	From	To	Reads	
			61	70
Antenna coil	Antenna post	Ground	6.0	6.0
1st r. f. grid ckt.	Grid cap 1st r. f.	Ground	6.0	6.0
1st r. f. plate ckt.	Plate prong at skt.	Upper term. input trans.	6.0	6.0
1st r. f. screen ckt.	Screen prong at skt.	B+ on r. f. trans. pri.	2.6	2.6
2nd r. f. grid ckt.	Grid cap 2nd r. f.	Ground	6.0	6.0
2nd r. f. plate ckt.	Plate prong at skt.	Upper term. input trans.	6.0	6.0
2nd r. f. screen ckt.	Screen prong at skt.	B+ on r. f. trans. pn.	2.6	2.6
3rd r. f. grid ckt.	Grid cap 3rd r. f.	Ground		6.0
3rd r. f. plate ckt.	Plate prong at skt.	Upper term. input trans.		6.0
3rd r. f. screen ckt.	Screen prong at skt.	B+ on r. f. trans. pri.		2.6
Det. grid ckt.	Grid cap or prong	Ground	6.0	6.0
Det. plate ckt.	Plate prong at skt.	Opposite term. input trans.	4.0	5.1
Det. screen ckt.	Screen prong at skt.	B+ on r. f. trans. pri.	2.6	
Any screen grid	Screen prong skt.	Ground	3.0	3.0
245 grid ckt.	Alternate grids	Ground	7.4	3-4.2
245 plate ckt.	Alternate plates	Center tap output trans.	5.8	5.8
Output trans. sec.	Green lead apr. skt.	Ground	6.0	6.0
Speaker field	Across green and red leads spkr. plug		5.6	5.6
Spkr. voice coil	Across green and black leads speaker		6.0	6.0
280 fil. sec.	Across fil. terms. 280 socket		6.0	6.0
245 and 224 fil. sec.	Across fil. terms. 245 socket		6.0	6.0
Pri. power trans.	Across AC line plug (switch on)		6.0	6.0
High voltage sec.	Across 280 plate terms.		5.8	5.8
L1 filter choke	Center tap output trans.	Upper term. input trans.	5.9	5.9
L3 filter choke	Center tap output trans.	280 fil. terms.	5.1	5.1



MODEL AC 80,81,90,
90-A, 91.

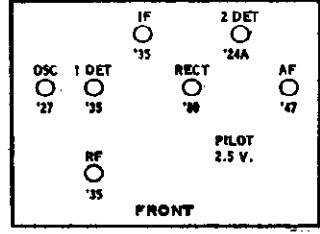
TRANSFORMER CORP. OF AMERICA

Schematic

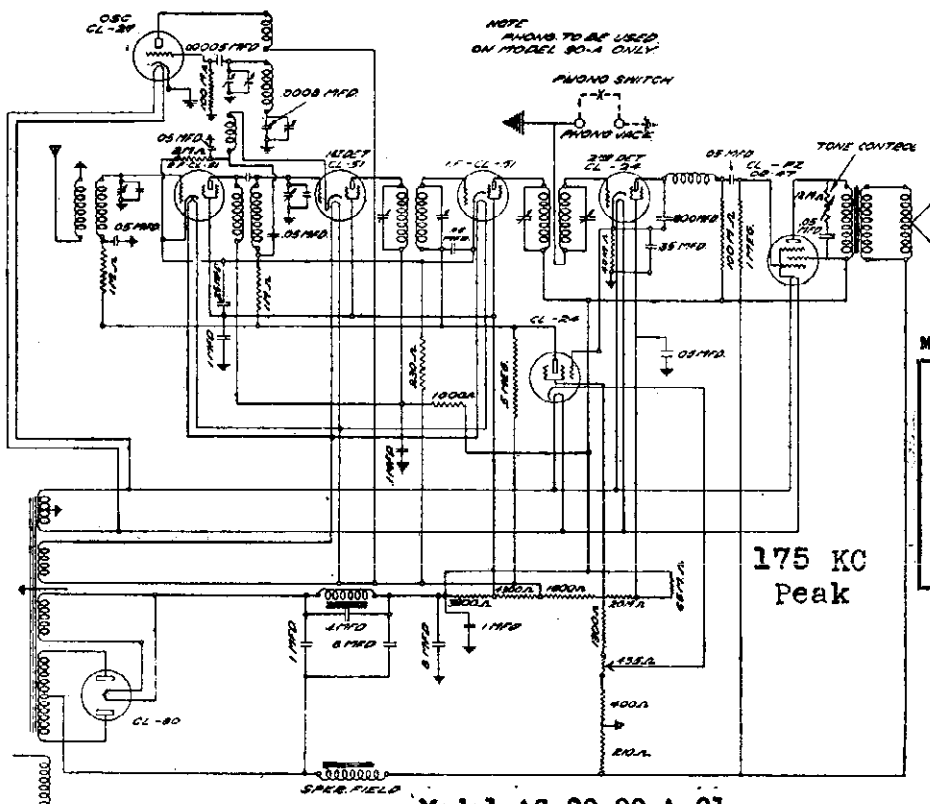


175 KC
Peak

Models AC-80, 25-80, AC-81, 25-81 (1931)

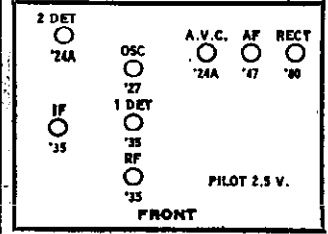


Model AC 80,81



175 KC
Peak

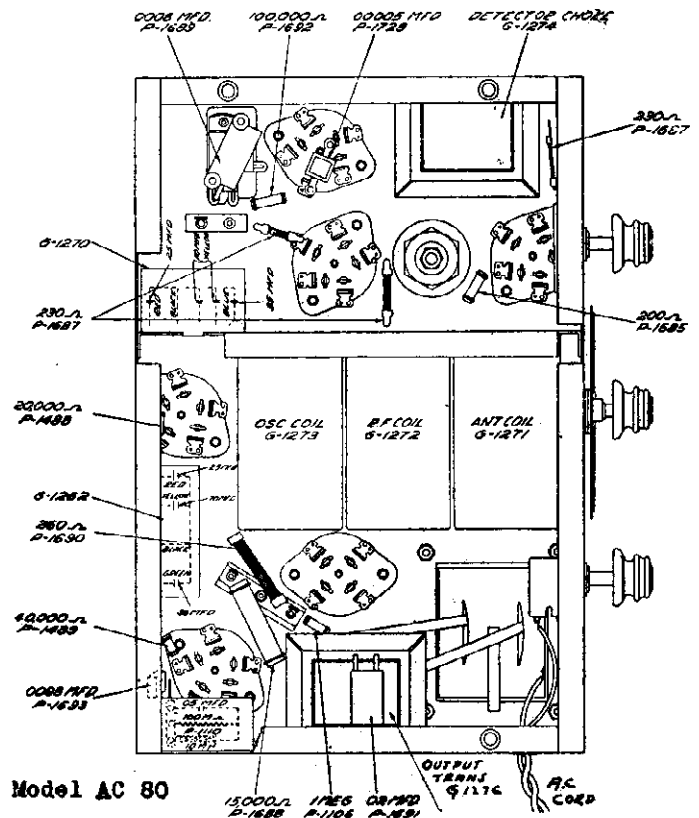
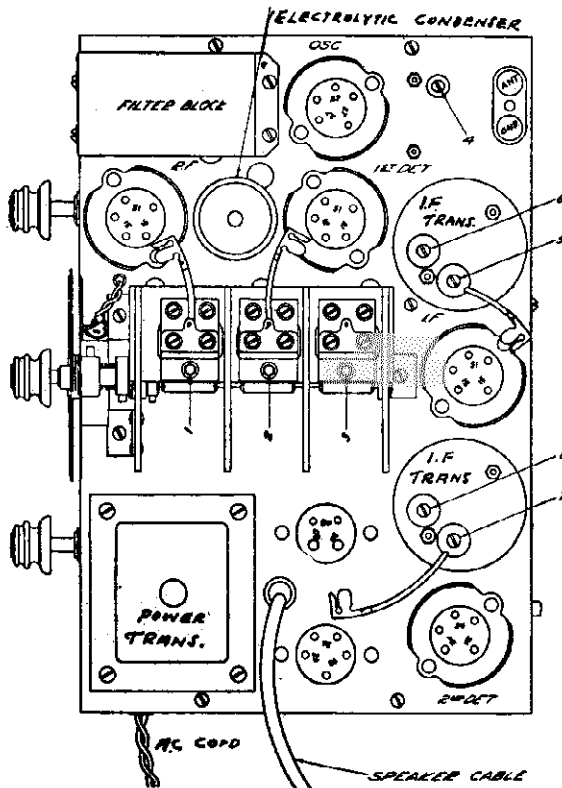
Models AC-90, 25-90, AC-91, 25-91, AC-90A (1931)



Model AC 90,90-A,91 SCHEMATIC DIAGRAM

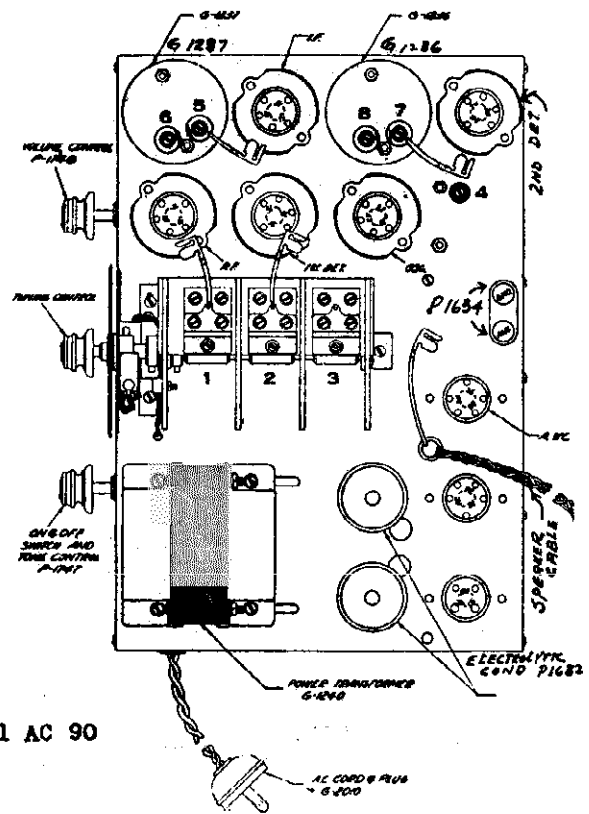
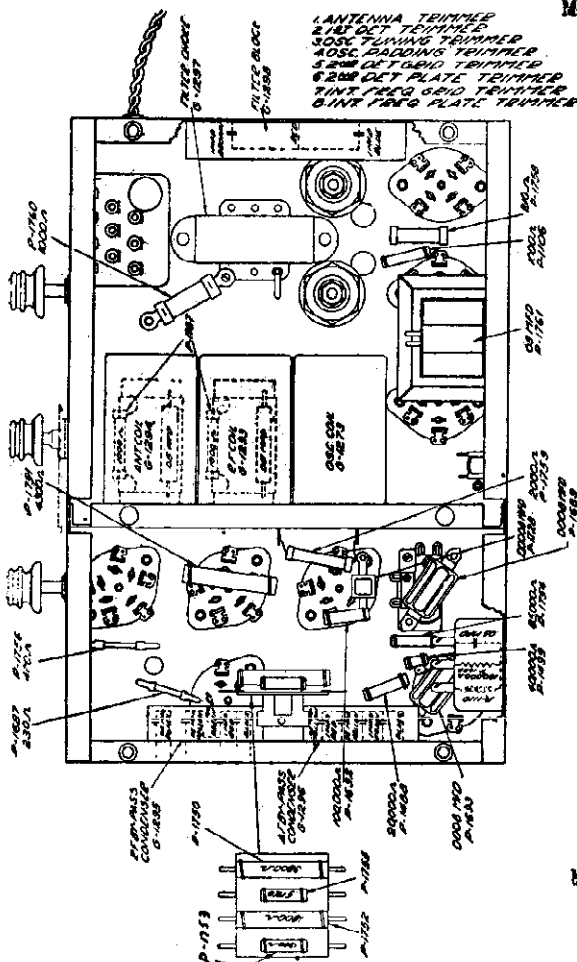
TRANSFORMER CORP. OF AMERICA

MODEL AC 80,81,90,
90-A,91
Chassis Views



- ANTENNA TRIMMER
- 21K DET TRIMMER
- 30SC TUNING TRIMMER
- 40SC BALDING TRIMMER
- 5.20M DET PLATE TRIMMER
- 6.20M DET PLATE TRIMMER
- 7INT FREQ GRID TRIMMER
- 8INT FREQ PLATE TRIMMER

NOTE
FOR MODEL 304 USE G-443
IN PLACE OF G-1273 AND G-1272
ALSO USE P-1106 IN PLACE
OF P-1104

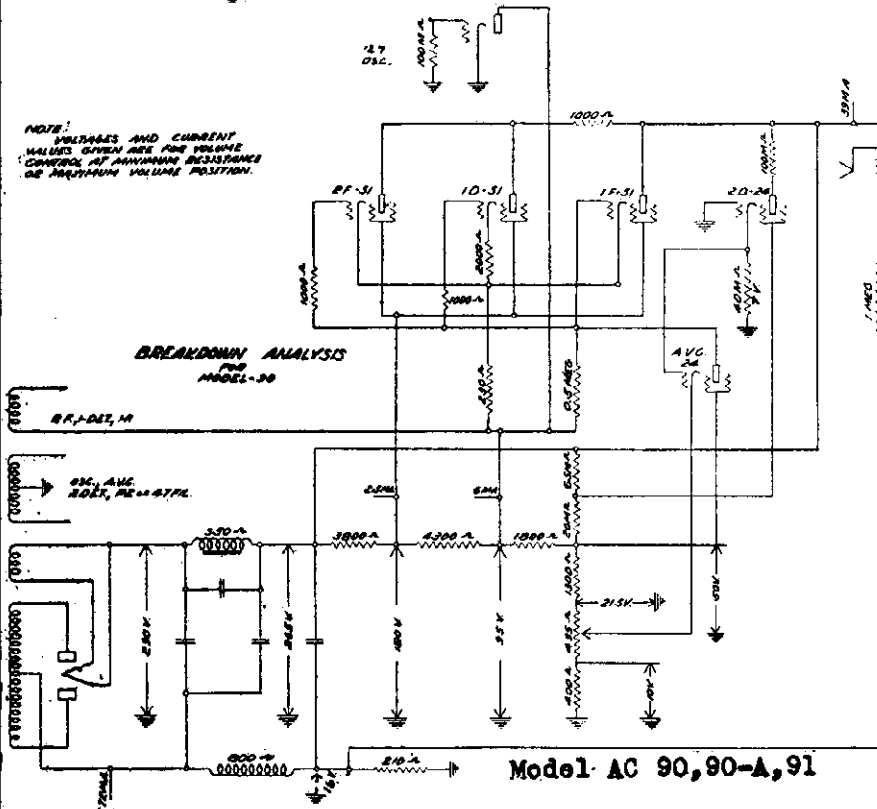


Model AC 90

**MODEL AC 80,81,80,
90-A,91**
**Voltage
Breakdown Diagrams**

TRANSFORMER CORP. OF AMERICA

*NOTE:
VOLTAGES AND CURRENT
VALUES GIVEN ARE FOR VOLUME
CONTROL AT MINIMUM RESISTANCE
OR MAXIMUM VOLUME POSITION.*



**READINGS TAKEN WITH WESTON MODEL 565 ANALYSER
MODEL 90**

No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Coth. Volts	I _p Norm.	SG Volts
1	r. f.	CL-51	2.2	233	3	3	5	66
2	1st det.	CL-51	2.2	233	7	7	2.3	73
3	Osc.	CL-27	2.2	80	0	0	4	0
4	I.F.	CL-51	2.2	233	3	3	5	77
5	2nd det.	CL-24	2.2	162	6.2	7.2	5	73
6	Output	CL-PZ	2.2	728	15	0	27	223
7	Rect.	CL-80	4.6	300	0	0	50	0

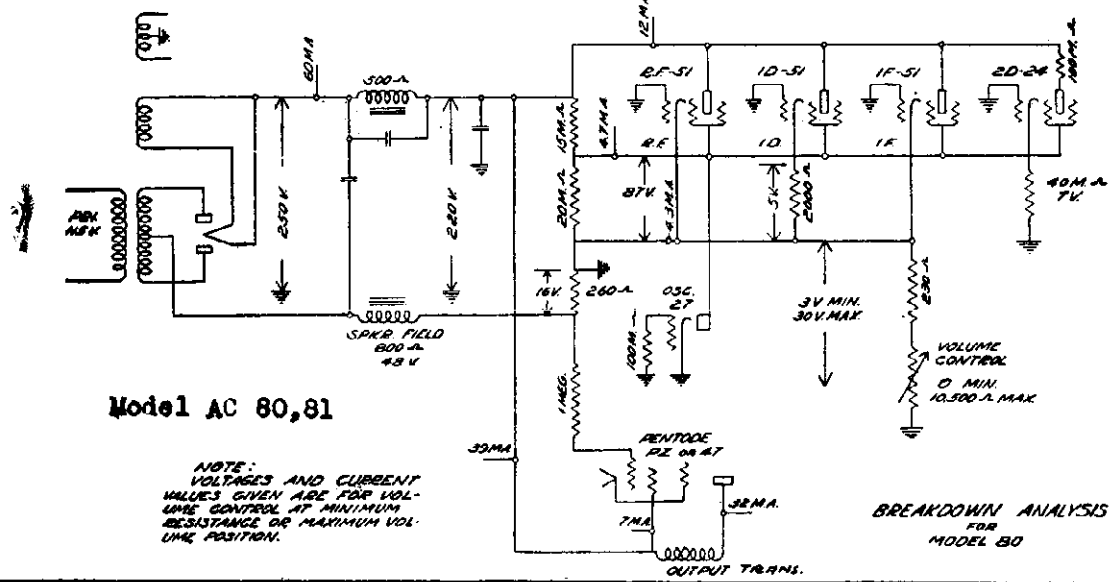
Volume control position Full Line Voltage 115-00 cycle.

**READINGS TAKEN WITH WESTON MODEL 565 ANALYSER
MODEL 80**

No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Coth. Volts	I _p Norm.	SG Volts
1	r. f.	CL-51	2.2	233	3	3	5	66
2	1st Det.	CL-51	2.2	233	7	7	2.3	73
3	Osc.	CL-27	2.2	80	0	0	4	0
4	I.F.	CL-51	2.2	233	3	3	5	77
5	2nd det.	CL-24	2.2	162	6.2	7.2	5	73
6	Output	CL-PZ	2.2	728	15	0	27	223
7	Rect.	CL-80	4.8	300	0	0	50	0

Volume control position Full Line Voltage 115 -

Note: Since resistance tolerances in the sets are plus or minus 10%, and tubes may vary over 20%, your readings may disagree with the above by plus or minus 30%. CL-PZ is also known as CL-47, the latter being the Pual type number.

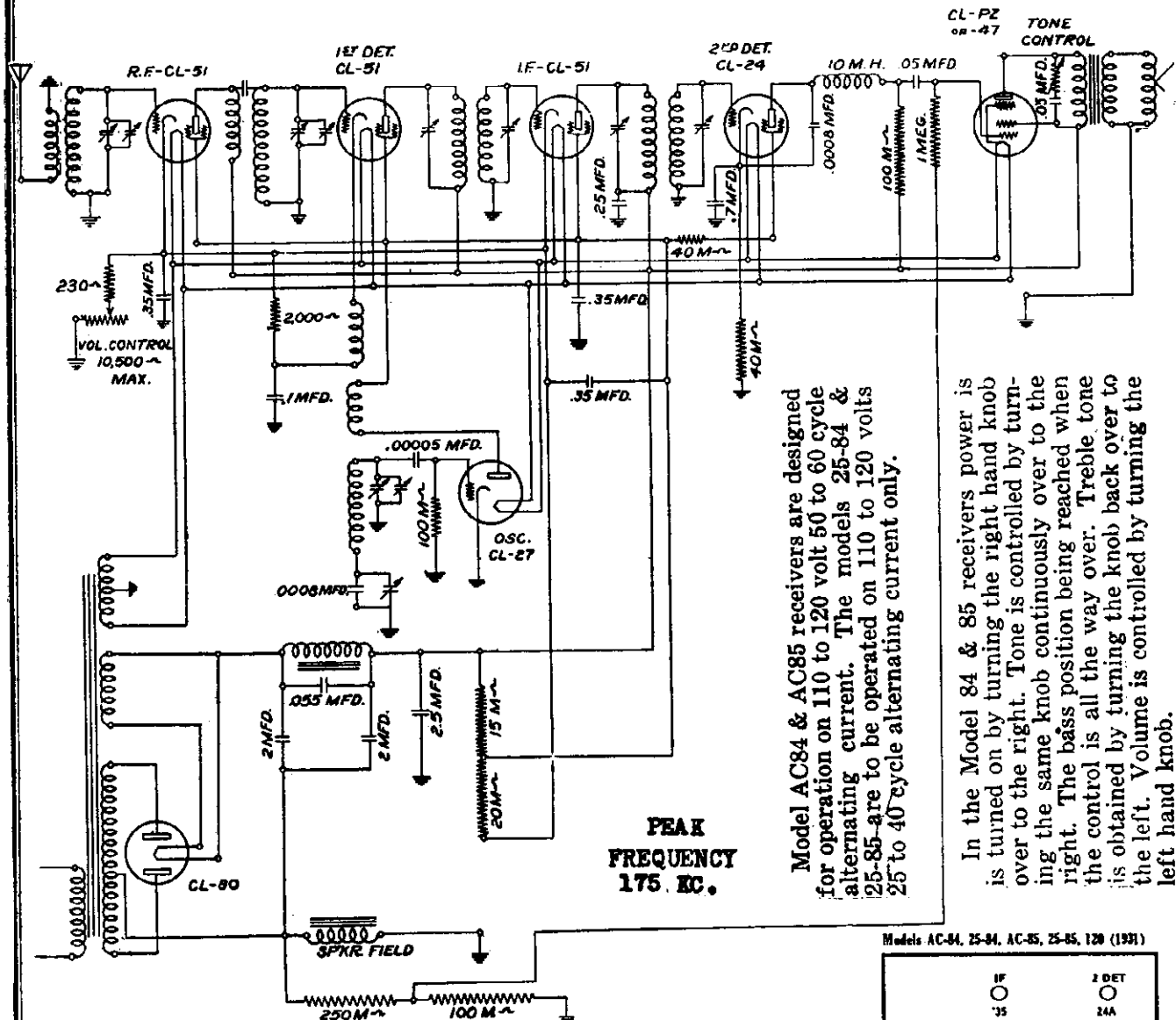


*NOTE:
VOLTAGES AND CURRENT
VALUES GIVEN ARE FOR VOL-
UME CONTROL AT MINIMUM
RESISTANCE OR MAXIMUM VOL-
UME POSITION.*

NOTE: Filaments and cathodes of R.F., I.F., and first detector are 95 volts positive with respect to ground on the model 90

TRANSFORMER CORP. OF AMERICA

MODEL AC84,85
Schematic
Voltage

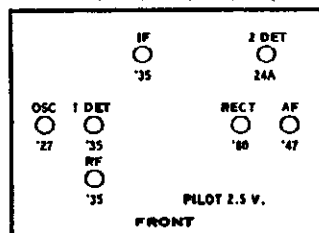


PEAK
FREQUENCY
175 KC.

Model AC84 & AC85 receivers are designed for operation on 110 to 120 volt 50 to 60 cycle alternating current. The models 25-84 & 25-85 are to be operated on 110 to 120 volts 25 to 40 cycle alternating current only.

In the Model 84 & 85 receivers power is turned on by turning the right hand knob over to the right. Tone is controlled by turning the same knob continuously over to the right. The bass position being reached when the control is all the way over. Treble tone is obtained by turning the knob back over to the left. Volume is controlled by turning the left hand knob.

Models AC-84, 25-84, AC-85, 25-85, 120 (1931)



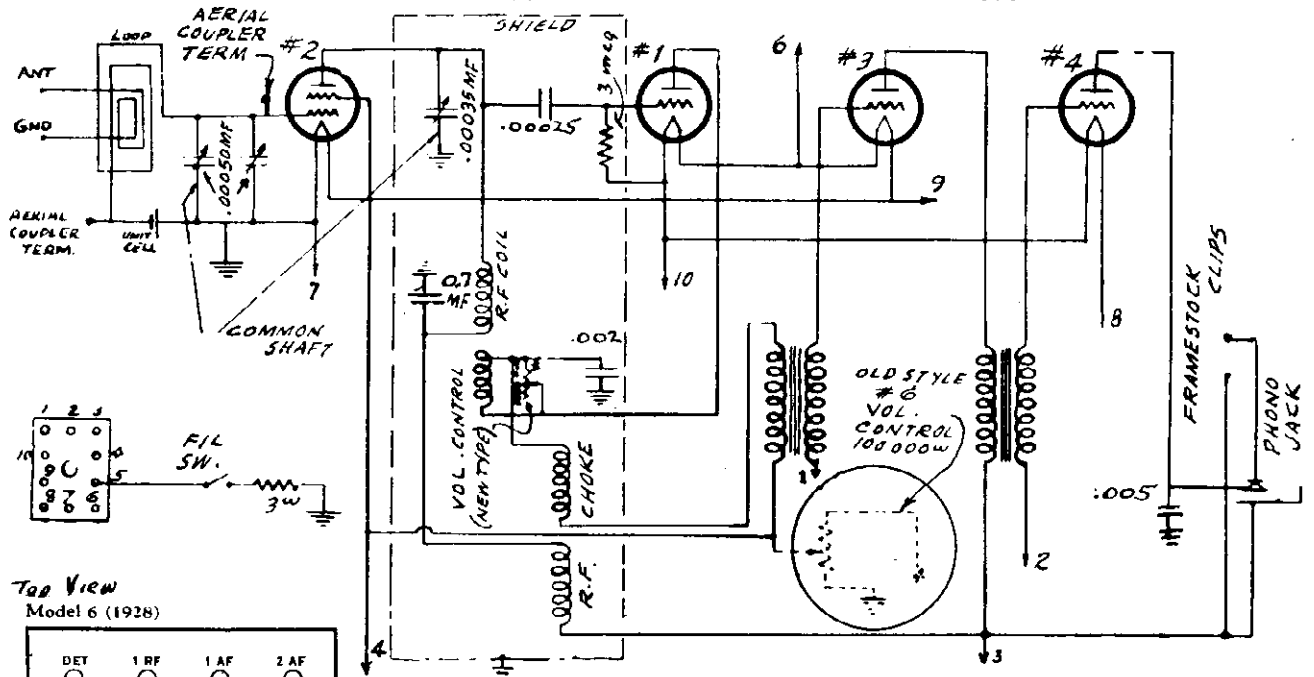
READINGS TAKEN WITH WESTON MODEL 565 ANALYSER

No.	Stage	Type Tube	A Volts	B Volts	Cont. Grid Volts	Cath. Volts	I _p Norm.	SG Volts
1	r. f.	51	2.1	255	3.5	3.5	3.5	.78
2	1st Det.	51	2.1	240	10.	10.	2	108
3	Osc.	27	2.1	135	0	0	6.	0
4	I. F.	51	2.1	250	3.5	3.5	3.5	77
5	2nd det.	24	2.2	190	6.0	6.0	.2	68
6	Output	47	2.2	228	14.	0	25	255
7	Rect.	80	4.4		0	0		0

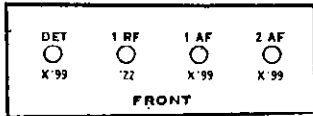
Volume control position Full Line Voltage 115

Note: Since resistance tolerances in the sets are plus or minus 10%, and tubes may vary over 20%, your readings may disagree with the above by plus or minus 30%.

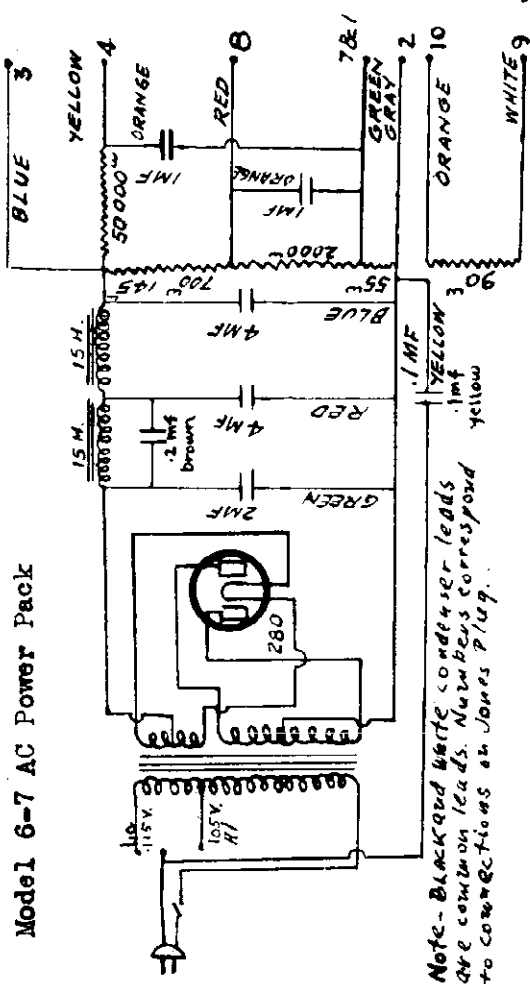
TRAV-LER RADIO & TELEVISION CORP.



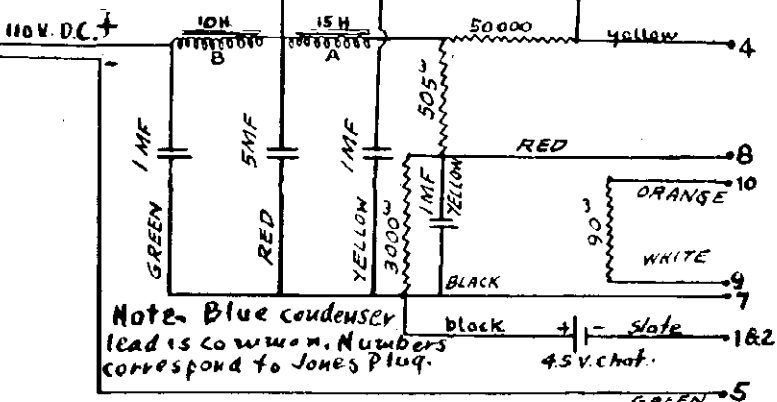
Top View Model 6 (1928)



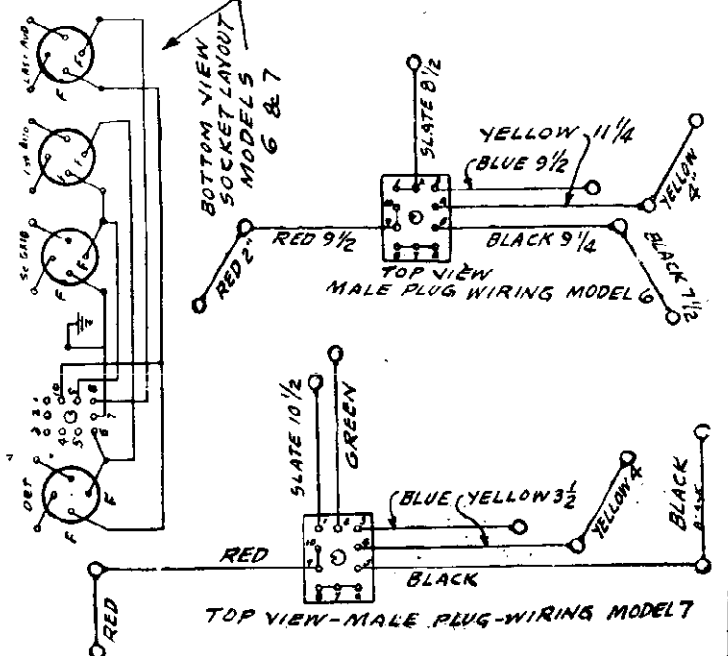
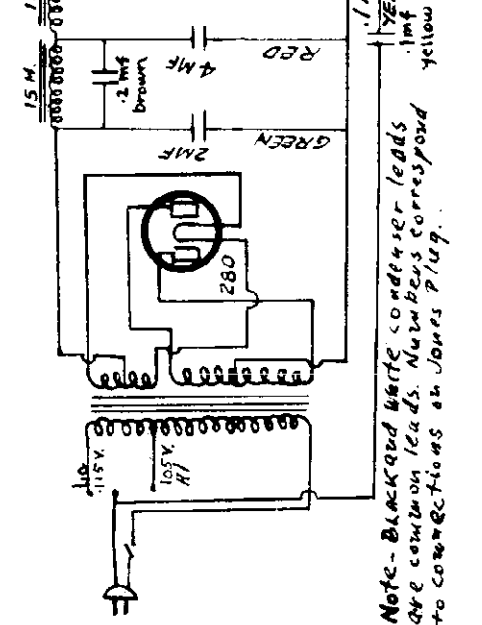
Model 6 - 7 Receiver Chassis



Model 6-7 DC Power Pack

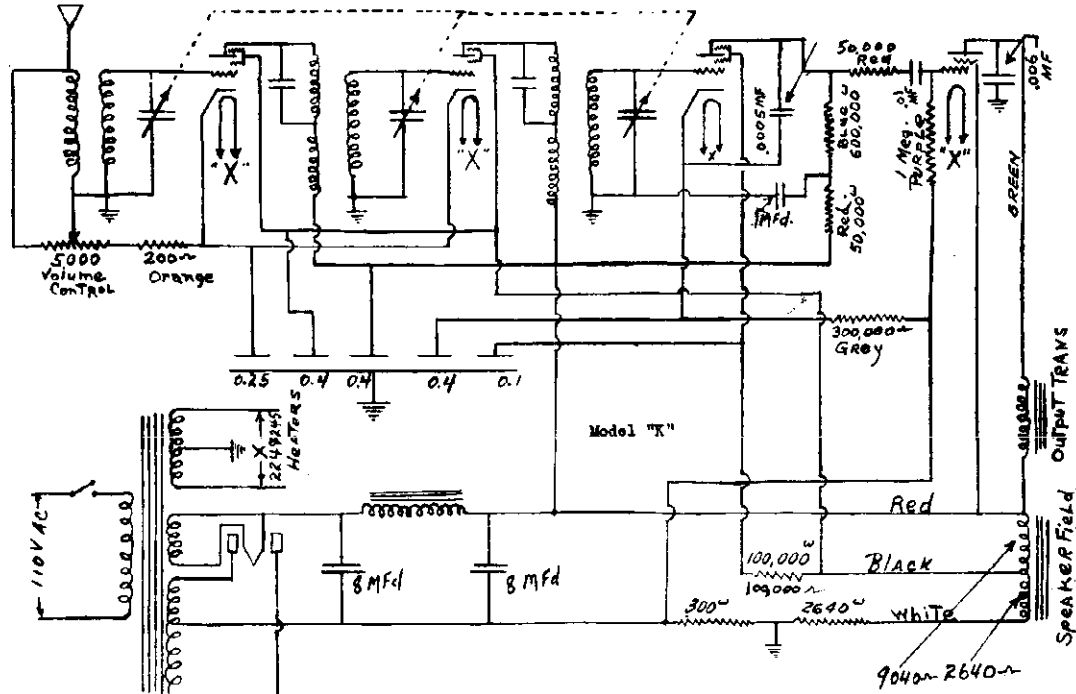
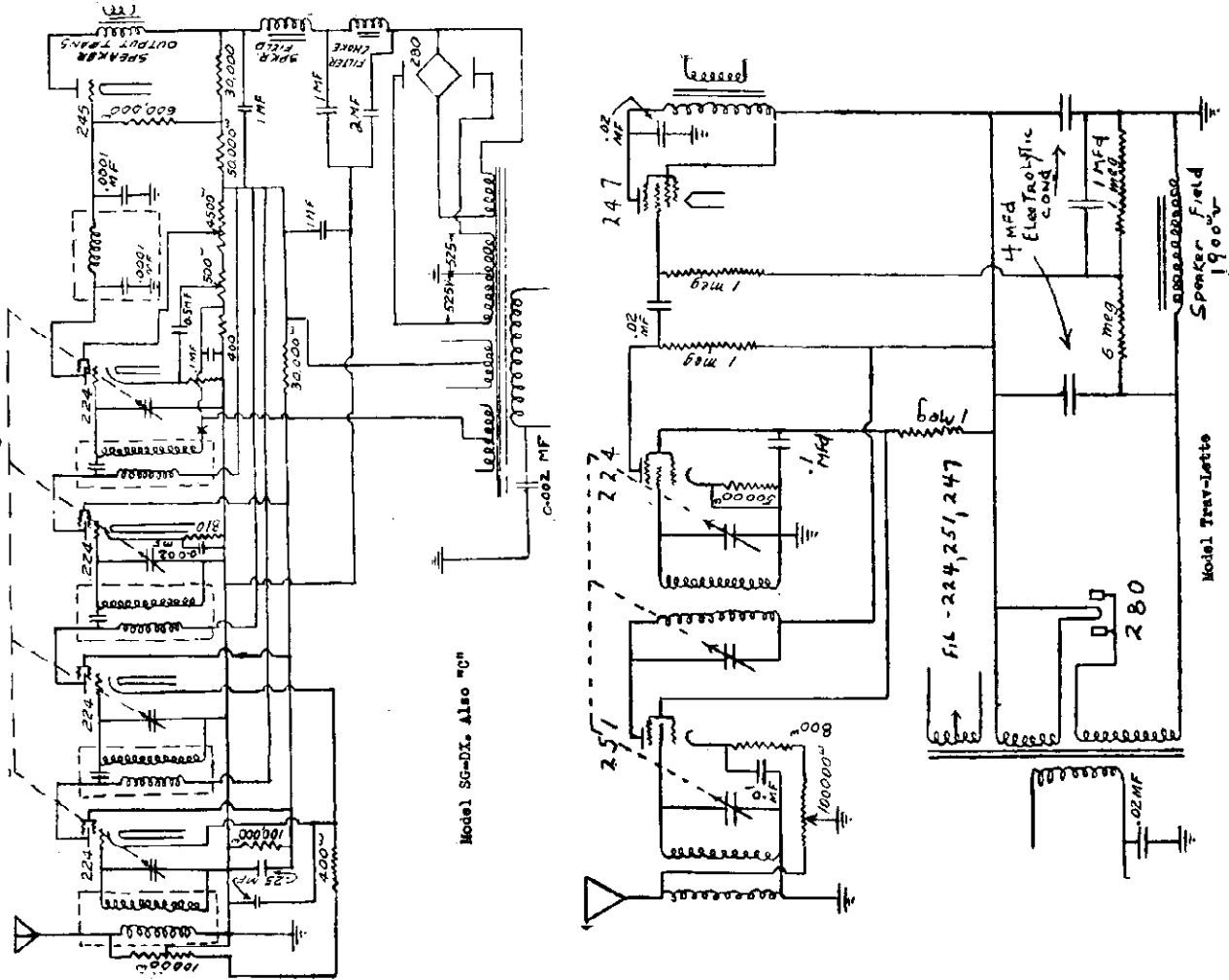


Model 6-7 AC Power Pack



MODEL SG-DX
 MODEL "C"
 MODEL "K"
 MODEL Trav-Lette

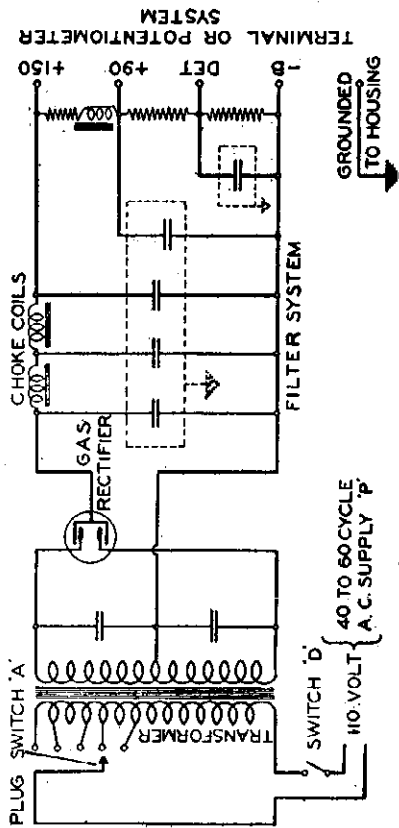
TRAV-LER RADIO & TELEVISION CORP.



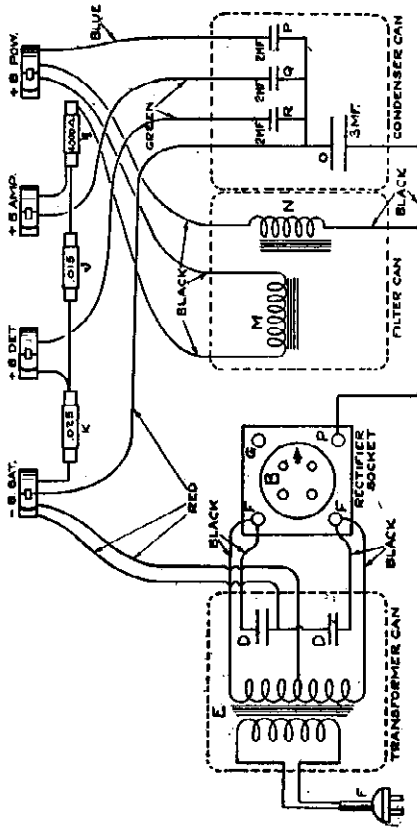
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MODEL BAN
"B" Power Units

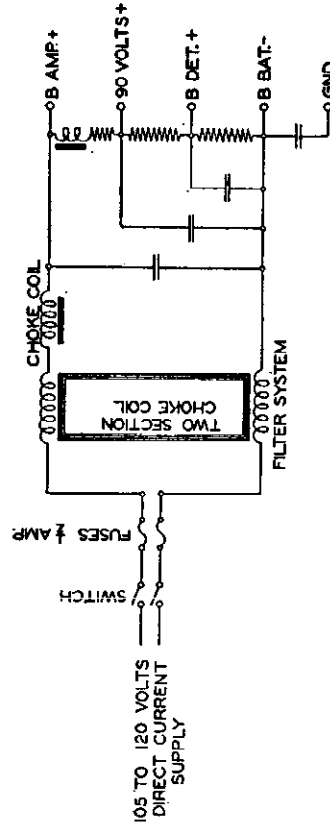
"B" POWER UNITS



Type BAN Edition 2 Nobattery

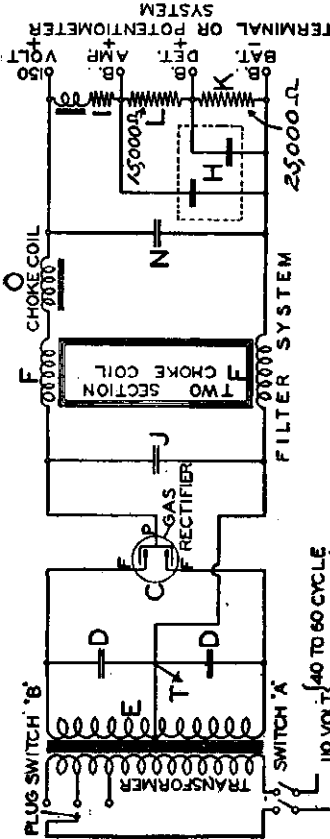


Type BAN Edition 6 Nobattery—Models 504 and 506

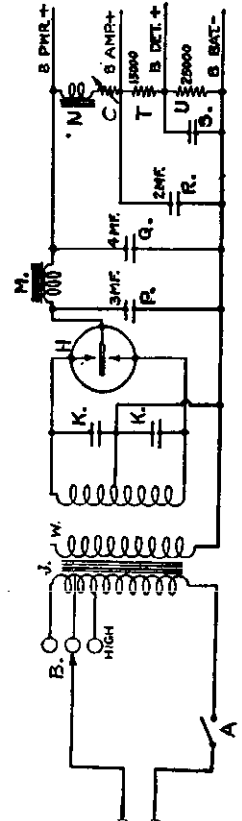


Type BDN Edition 1 Nobattery (for direct current)
Type BDN Edition 2 Nobattery (for 220 volts DC).

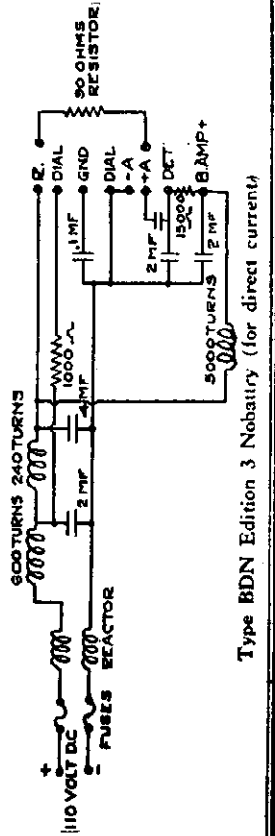
Note: A series resistance is connected between the switch and the fuse in the 220-volt unit. The Nobatteries are otherwise identical.



Type BAN Edition 3 Nobattery
Type BAN Edition 4 Nobattery (for 25 cycles)
Type BAN Edition 4 Model 505 Nobattery



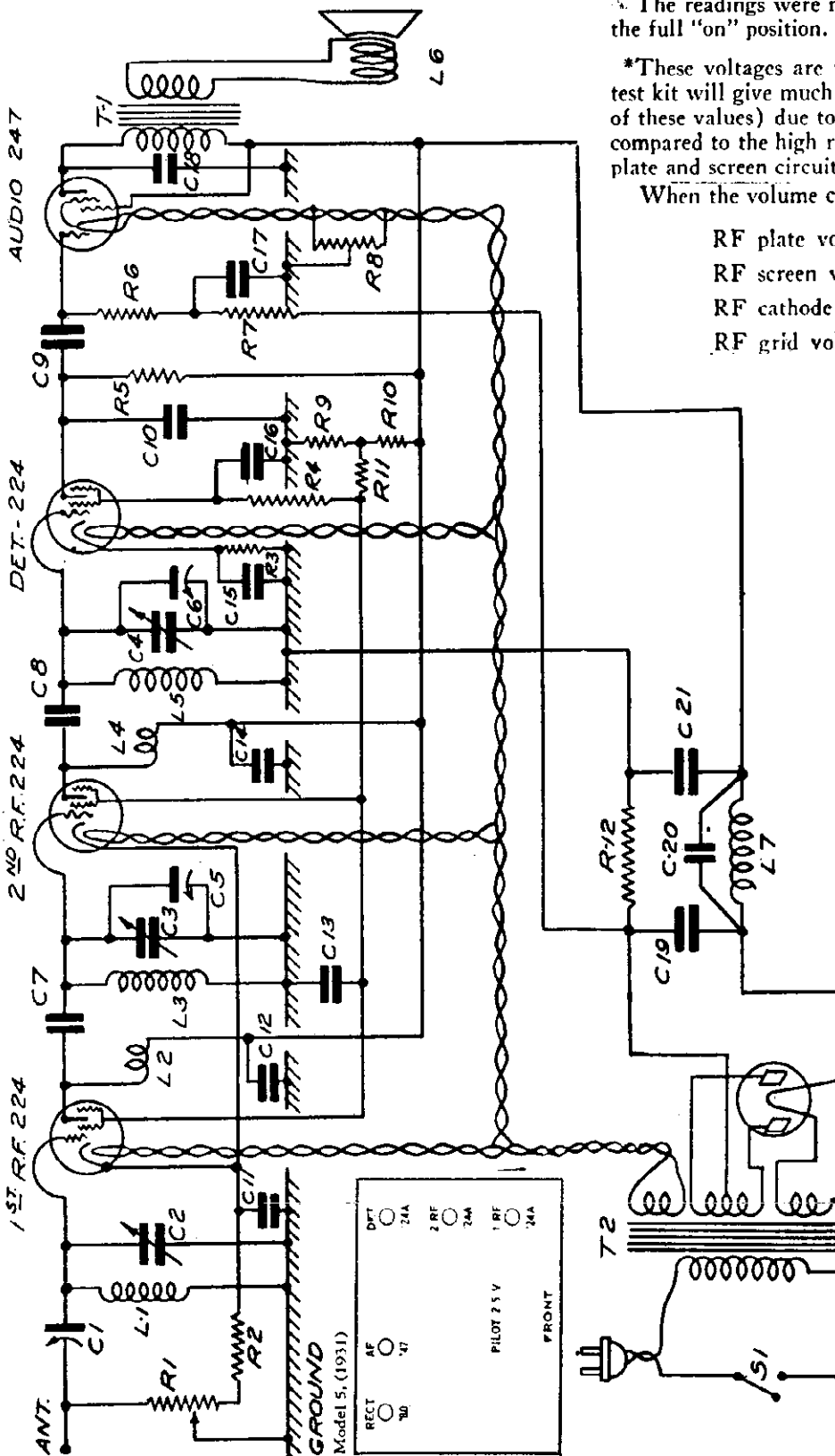
Type BAN Edition 5 Nobattery—Models 501, 502, 503



Type BDN Edition 3 Nobattery (for direct current)

MODEL 5 AC
Schematic
Voltage

UNITED AMERICAN BOSCH CORP.



The readings were made with the volume control in the full "on" position.

*These voltages are the correct values. The average test kit will give much lower readings, (as low as 1/10 of these values) due to the low resistance of the meters compared to the high resistance included in the detector plate and screen circuits and the audio grid circuit.

When the volume control is reduced the

- RF plate voltage remains constant
- RF screen voltage increases
- RF cathode voltage increases
- RF grid voltage increases

SOCKET VOLTAGES

Stage	Tube	Fil.	Plate	Screen	Cathode	Grid	Plate MA
1st RF	224	2.3	250	90	2.5	2.5	4.5
2nd RF	224	2.3	250	90	2.5	2.5	4.5
Det.	224	2.3	*150	*20	3.0	1.5	.5
Audio	247	2.3	250	250	*16	32
Rect.	280	4.8					

Plate current of each plate—20

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MODEL 5 AC
Electrical
Values

NOMENCLATURE

- C 1—Antenna Trimmer Condenser
 C 2—Tuning Condenser
 C 3—Tuning Condenser
 C 4—Tuning Condenser
 C 5—Alignment Condenser
 C 6—Alignment Condenser
 C 7—Coupling Capacity
 C 8—Coupling Capacity
 C 9—Audio Coupling Condenser .006 mfd.
 C 10—Det. plate By-pass .0001 mfd.
 C 11—RF Cathode By-pass .05 mfd.
 C 12—RF Plate By-pass .05 mfd.
 C 13—RF Screen By-pass .25 mfd.
 C 14—RF Plate By-pass .05 mfd.
 C 15—Det. Cathode By-pass 1.00 mfd.
 C 16—Det. Screen By-pass .25 mfd.
 C 17—Audio Grid By-pass .01 mfd.
 C 18—Audio Plate By-pass .01 mfd.
 C 19—Filter Condenser 4. mfd.
 C 20—Field Condenser .08 mfd.
 C 21—Filter Condenser 4. mfd.
 R 1—Volume Control 10,000 ohms
 R 2—RF Cathode Resistor 300 ohms
 R 3—Det. Cathode Resistor 50,000 ohms
 R 4—Det. Screen Resistor 2 megohms
 R 5—Det. Plate Resistor 1 megohm
 R 6—Audio Grid Resistor $\frac{1}{2}$ megohm
 R 7—Audio Grid Resistor 100,000 ohms
 R 8—Mid Tap Resistor
 R 9—Divider Resistor 50,000 ohms
 R 10—Screen Resistor 50,000 ohms
 R 11—Screen Resistor 10,000 ohms
 R 12—Audio Bias Resistor 400 ohms
 L 1—Antenna Coil
 L 2—Primary } of RF Coil
 L 3—Secondary }
 L 4—Primary } of RF Coil
 L 5—Secondary }
 L 6—Speaker Moving Coil
 L 7—Speaker Field Coil
 T 1—Audio Output Transformer
 T 2—Power Transformer

Filter Condenser

The three leads from the main filter condenser are connected as follows:

- Black—to center tap of 280 plate winding
 Green—to filament terminal of 280 socket
 Red—to +B connection on terminal strip

By-pass Condenser Assembly

The condensers incorporated in this unit are identified as follows:

- | | |
|----------|-----------------------|
| 1.0 mfd. | Green Leads |
| .01 mfd. | Green and White Leads |
| .05 mfd. | Black Leads |
| .25 mfd. | Red Leads |

Resistors

- 300 ohms—Orange, Black, Brown
 400 ohms—Yellow, Black, Brown
 10,000 ohms—Blue, Yellow
 50,000 ohms—Green, White
 100,000 ohms—Blue, White
 $\frac{1}{2}$ megohm—Gray
 1 megohm—Black
 2 megohm—Black, White

Power Transformer

Six leads are brought out of the transformer winding on the side next to the terminal strip. Three are located on the opposite side. The transformer is connected as follows:

- Primary Winding—Stranded wires, terminal strip side
 224 and 247 filaments—Heavy wires, terminal strip side
 280 filament—Small wires, terminal strip side
 280 plates—Two leads nearest front of set, opposite side
 280 center tap—Lead nearest back of set, opposite side

The trimmer condenser mounted on the loud speaker must be adjusted for maximum volume.

Some types of the 247 Pentode operate normally with a blue glow. This action does not, therefore, denote that the tube is defective due to gas.

It is very important that no tube is removed from its socket with the receiver "on" as to do this will damage the receiver or the Pentode tube.

Make sure that the lead from the top of each 224 tube to the variable condenser follows closely along the metal partition between the tubes. Oscillation may occur if this lead lies too close to the tube itself.

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MODEL 16
MODEL 27
MODEL 35
MODEL 46

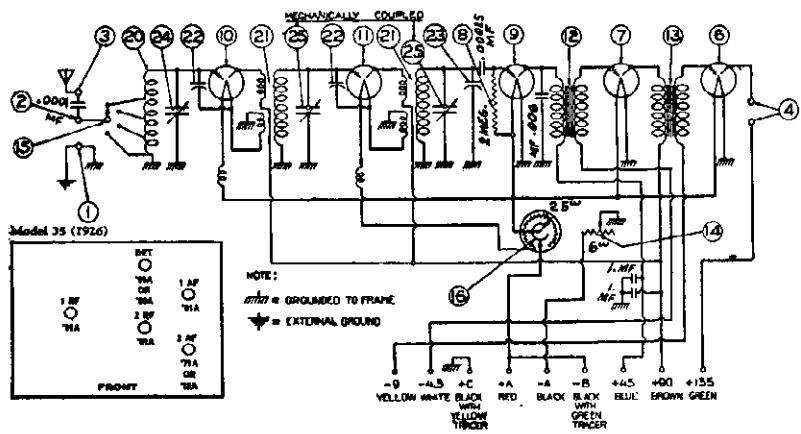
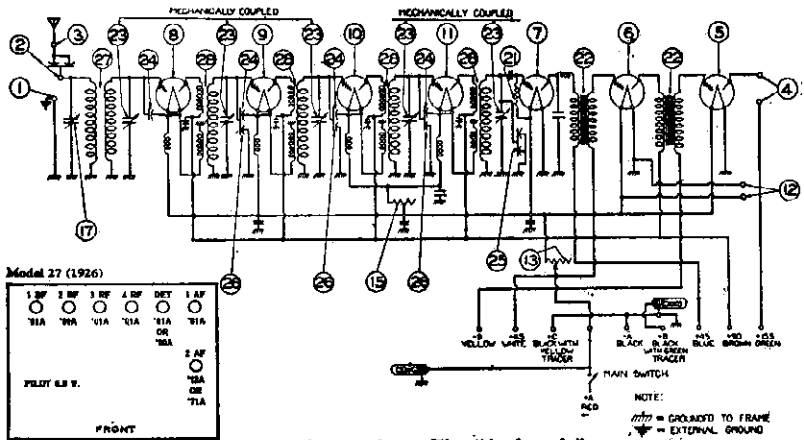
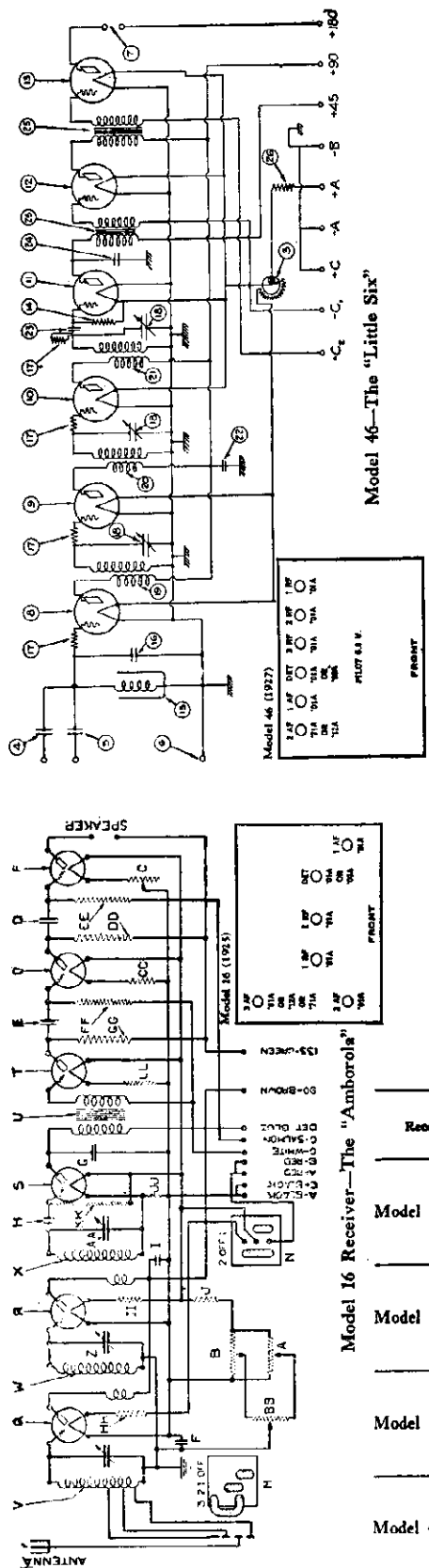
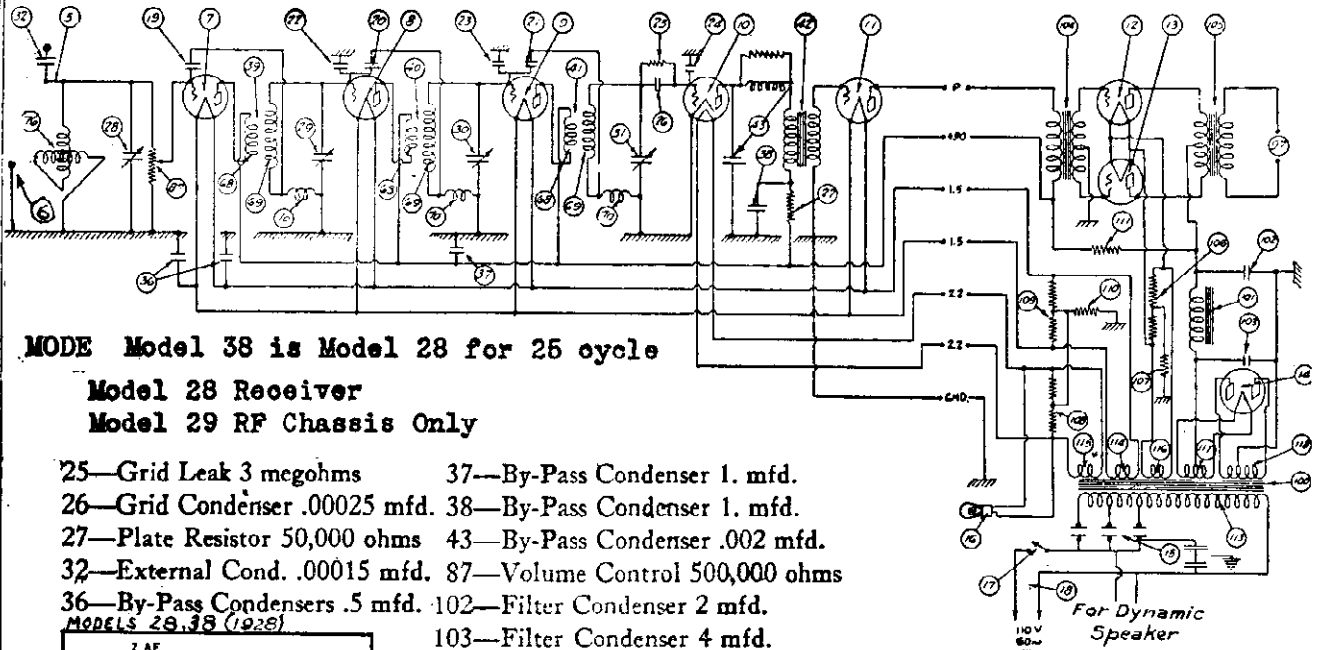


Table of Voltmeter Readings

Receiver	Circuit	Radio Frequency Stages				Detector Stage	Audio Stages		
		1	2	3	4		1	2	3
Model 16	Filament	5	5	—	—	5	5	5	5
	Plate	90	90	—	—	45	50	50	100
	Grid	2-4	2-4	—	—	0	Slight Movement of Needle		
Model 27	Filament	5	5	5	5	5	5	5	—
	Plate	90	90	90	90	45	80	100	—
	Grid	5	5	5	5	0	1	3	—
Model 35	Filament	5	5	—	—	5	5	5	—
	Plate	90	90	—	—	45	80	100	—
	Grid	5	5	—	—	0	1	3	—
Model 46	Filament	5	5	5	—	5	5	5	—
	Plate	90	90	90	—	45	80	100	—
	Grid	3	3	3	—	0	1	3	—

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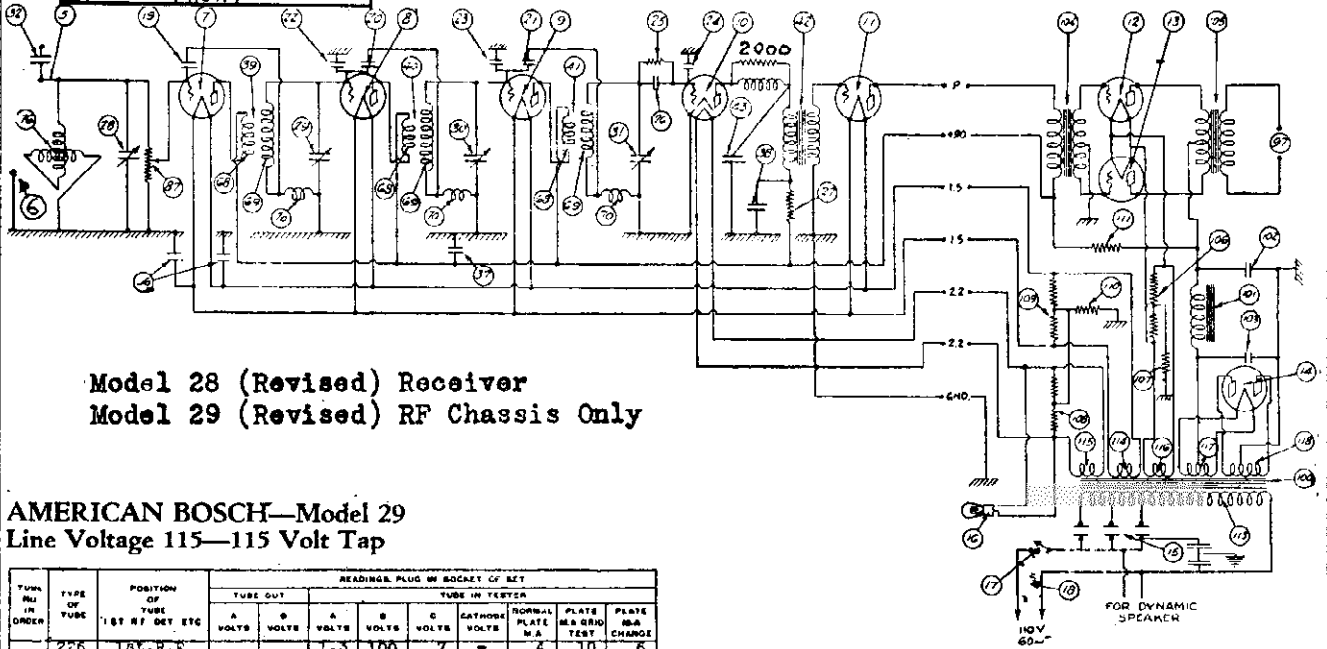
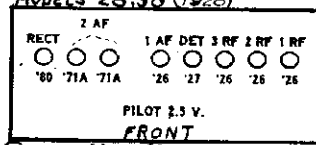
MODEL 28 AC
Two Types
MODEL 29 AC
RF Chassis



MODE Model 38 is Model 28 for 25 cycle

Model 28 Receiver
Model 29 RF Chassis Only

- 25—Grid Leak 3 megohms
- 26—Grid Condenser .00025 mfd.
- 27—Plate Resistor 50,000 ohms
- 32—External Cond. .00015 mfd.
- 36—By-Pass Condensers .5 mfd.
- 37—By-Pass Condenser 1. mfd.
- 38—By-Pass Condenser 1. mfd.
- 43—By-Pass Condenser .002 mfd.
- 87—Volume Control 500,000 ohms
- 102—Filter Condenser 2 mfd.
- 103—Filter Condenser 4 mfd.
- 107—Bias Resistor 1500 ohms
- 110—Bias Resistor 300 ohms
- 111—"B" Resistor 5000 ohms



Model 28 (Revised) Receiver
Model 29 (Revised) RF Chassis Only

AMERICAN BOSCH—Model 29
Line Voltage 115—115 Volt Tap

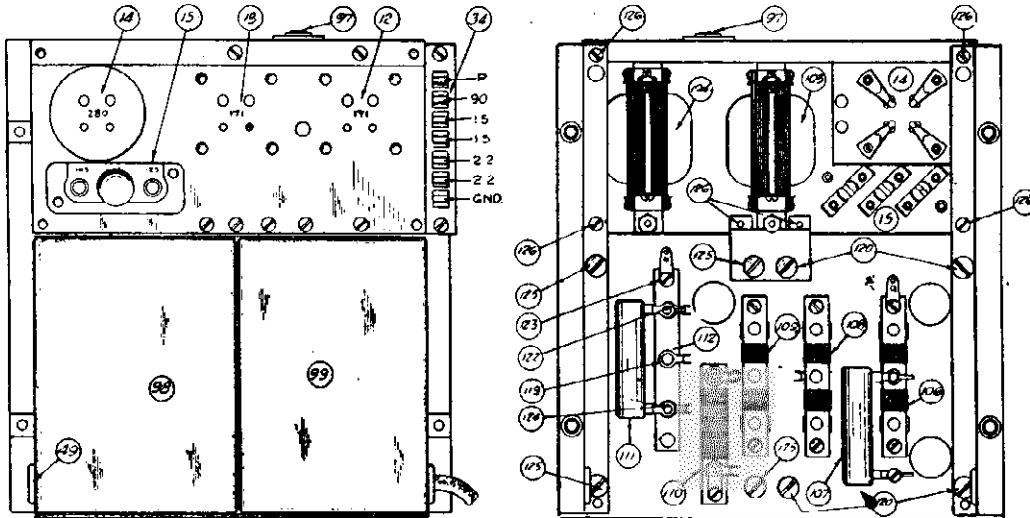
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RF DET ETC	READINGS PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A. TEST	PLATE M.A. CHARGE	PLATE M.A. CHARGE			
1	226	1st. R.F.	1.3	100	7	—	4	10	6			
2	226	2nd. R.F.	1.3	100	7	—	4	10	6			
3	226	3rd. R.F.	1.3	100	7	—	4	10	6			
4	227	Detector	2.3	45	—	—	2	2	0.0			
5	226	1st. A.F.	1.3	100	7	—	3	6.5	3.5			
6	210	2nd. A.F.	7.3	400	30	—	20	23	3			
7	281	Rectifier	7.3	—	—	—	23	—	—			
8	281	Rectifier	7.3	—	—	—	23	—	—			

AMERICAN BOSCH—Model 28
Line Voltage 115—115 Volt Tap

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RF DET ETC	READINGS PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NORMAL PLATE M.A. TEST	PLATE M.A. CHARGE	PLATE M.A. CHARGE			
1	226	1st. R.F.	1.3	100	7	—	4	10	6			
2	226	2nd. R.F.	1.3	100	7	—	4	10	6			
3	226	3rd. R.F.	1.3	100	7	—	4	10	6			
4	227	Detector	2.3	45	—	—	2	2	0.0			
5	226	1st. A.F.	1.3	100	7	—	3	6.5	3.5			
6	171	2nd. A.F.	5.0	150	35	—	10	14	4			
7	171	2nd. A.F.	5.0	150	35	—	10	14	4			

MODEL 28
Power Pack
Chassis - Data

UNITED AMERICAN BOSCH CORP.



Model 28 Power Pack, Top and Bottom View

POWER TRANSFORMER

The power transformer "100" is enclosed in the transformer can "98." Since the transformer is completely sealed, it is necessary to replace the entire unit.

The transformer has a single primary winding and five secondary windings, two of which have center taps. The colors of these leads, together with their points of attachment to the resistors and other parts, are given in the following paragraphs.

1.5 Volt Winding "114": Supplies filament current for RF and 1st AF tubes (7, 8, 9, 11). The two leads from this winding are *red* and connect to the two end terminals of resistor "109."

2.2 Volt Winding "115": Supplies filament current for the detector tube and dial lamp (10 and 16). The two leads from this winding are *black* and connect to the two end terminals of resistor "108."

5 Volt Winding "116": Supplies filament current for the two push-pull stages (11 and 12). The two leads from this winding are *blue* and connect to the two end terminals of resistor "106."

Single Brown Lead (Primary Lead) Cotton Covered: To one of the main switch "17" leads.

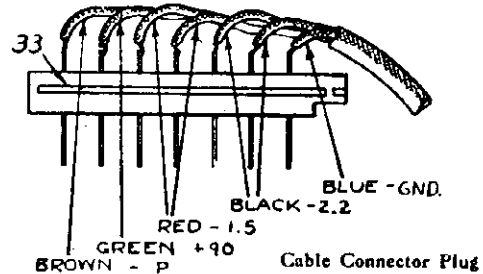
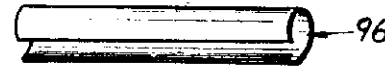
Twisted Leads (Primary Taps): Black with red tracer—to tap switch (15). "105" tap. Black—to tap switch (15), "115" tap. Black with yellow tracer—to tap switch (15), "125" tap.

Brown Twisted Leads (Plate Winding "118"): To plate contacts (small holes) of socket "14."

Brown Cable (Filament Winding "117"): To filament contacts (large holes) of socket "14."

Single Black Lead: To terminal "119" of strip "112." This lead is the center tap of rectifier filament winding "117."

Single Green Lead: To ground connection. This lead is the center tap of the rectifier plate winding "118."



FILTER CAN

The Filter Can "99" contains the two filter condensers "102" and "103," and the filter choke coil "101." These three units are sealed in the can, making it necessary to replace the entire filter can if any of these units become defective.

There are five leads from the filter can, connected as follows:

Black Fabric Covered Wires: These leads come from the choke coil "101" and connect to terminals "119" and "122" of terminal strip "112." These two leads are interchangeable.

Black Lead: This lead comes from filter condenser "103" and connects to terminal "119."

Blue Lead: This lead comes from filter condensers "102" and "103" and connects to ground terminal "123."

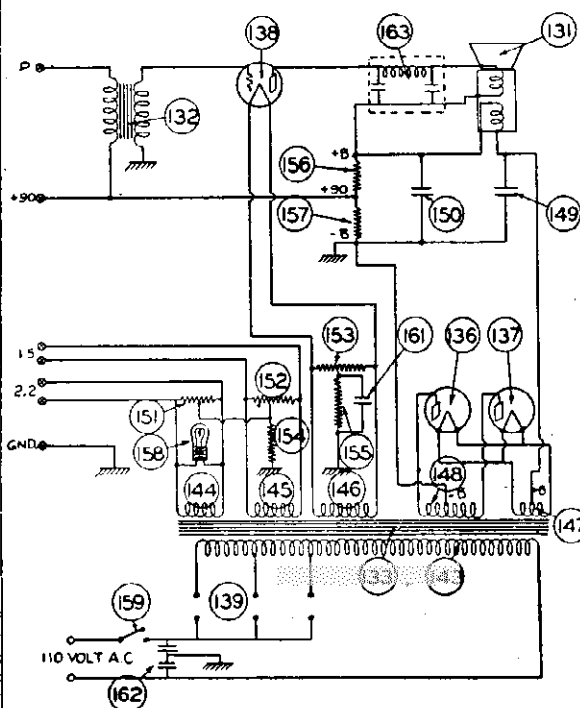
Red Lead: This lead comes from filter condenser "102" and connects to terminal "122."

Filter Can Replacement

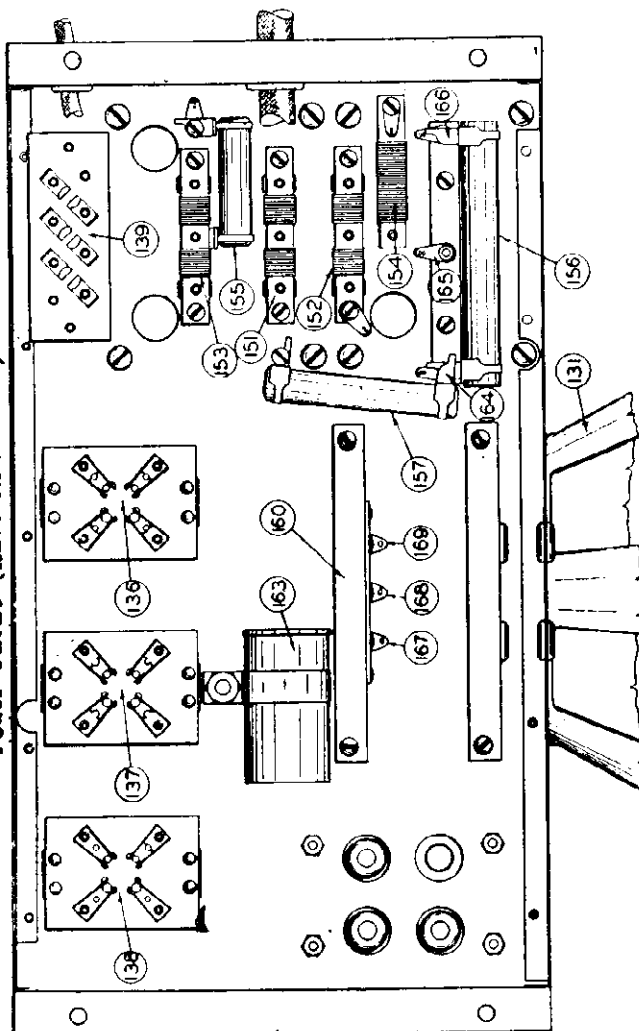
1. Unsolder the five leads of the filter can at their point of connection to the terminal strips.
2. Remove the 4 holding screws "125."
3. Mount the new can in place.
4. Connect the wires as indicated in the preceding paragraph.

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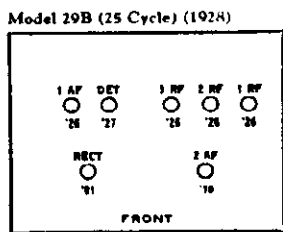
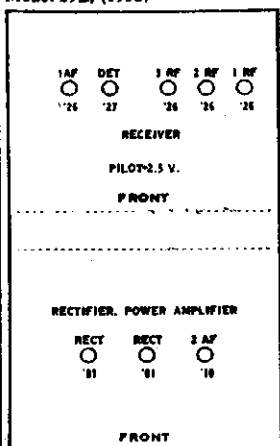
MODEL 29 AC, 825
Power Pack
Chassis - Schematic



Bottom View of Model 29 Dynamic Power Pack. (Also Model 825)



Model 825 Super Dynamic Power Pack. Used with Model 28 Chassis only to form Model 29 Receiver. Model 29B, (1928)

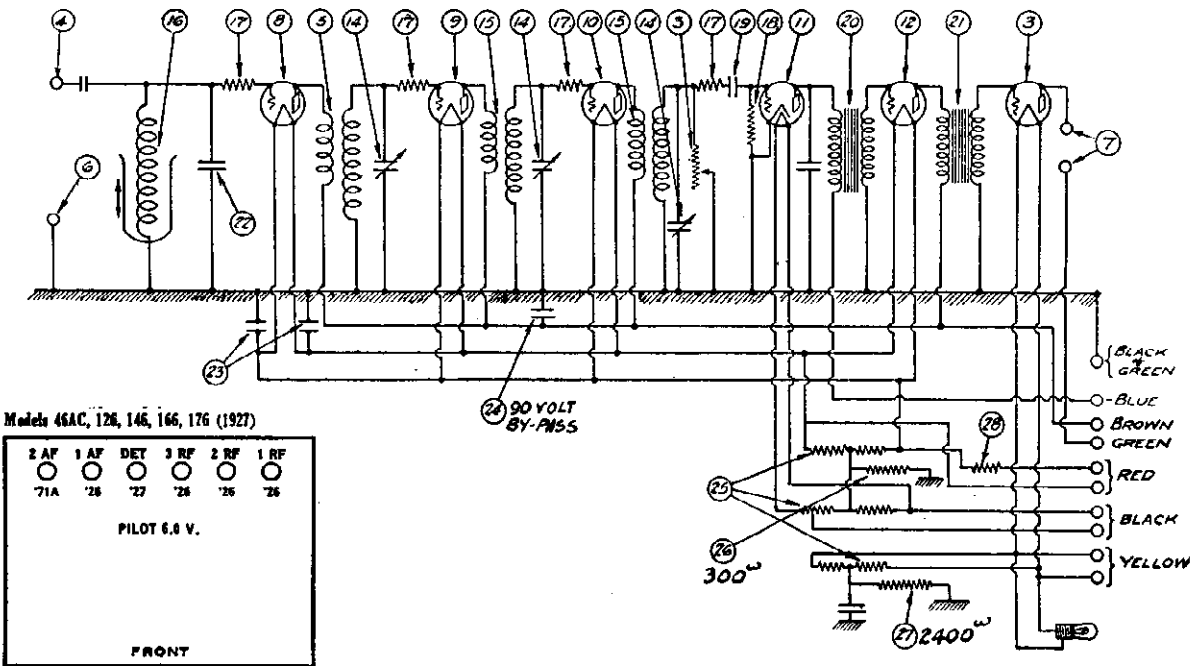


MODEL 825 POWER PACK

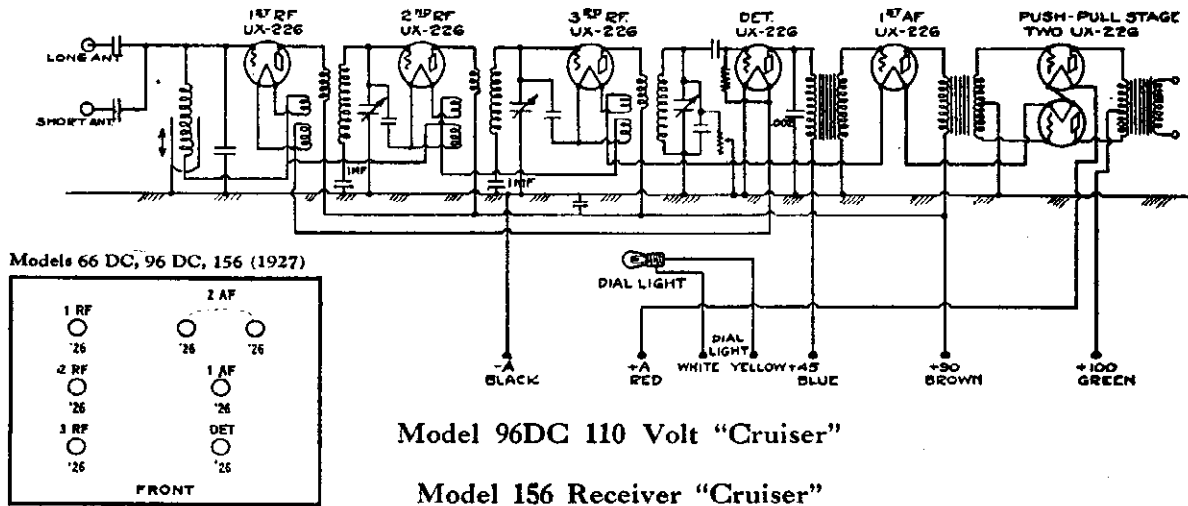
- 157—Plate Resistor 10,000 ohms
- 149—Filter Condenser 4 mfd.
- 161—By-Pass Condenser 1. mfd.
- 150—Filter Condenser 2 mfd.
- 162—Buffer Condensers
- 154—Bias Resistor 500 ohms
- 155—Bias Resistor 2000 ohms
- 163—Filter
- 156—Plate Resistor 10,000 ohms

	CHASSIS					MODEL 28		MODEL 29
	1 AF.	DET	3 RF	2 RF	1 RF	PUSH-PULL		POWER
A Volts	1.3	2.3	1.3	1.3	1.3	5	5	7.5
B Volts	100	45	100	100	100	150	150	400
C Volts	7	—	7	7	7	35	35	30
Plate M. A.	3	2	4	4	4	10	10	20
Tube Test	—	—	10	10	10	35	35	—

MODEL AC 46,126,146,
166,176 UNITED AMERICAN BOSCH CORP.
MODEL DC 96,156



Models 126, 146, 166, 176, 46AC (AC operation)



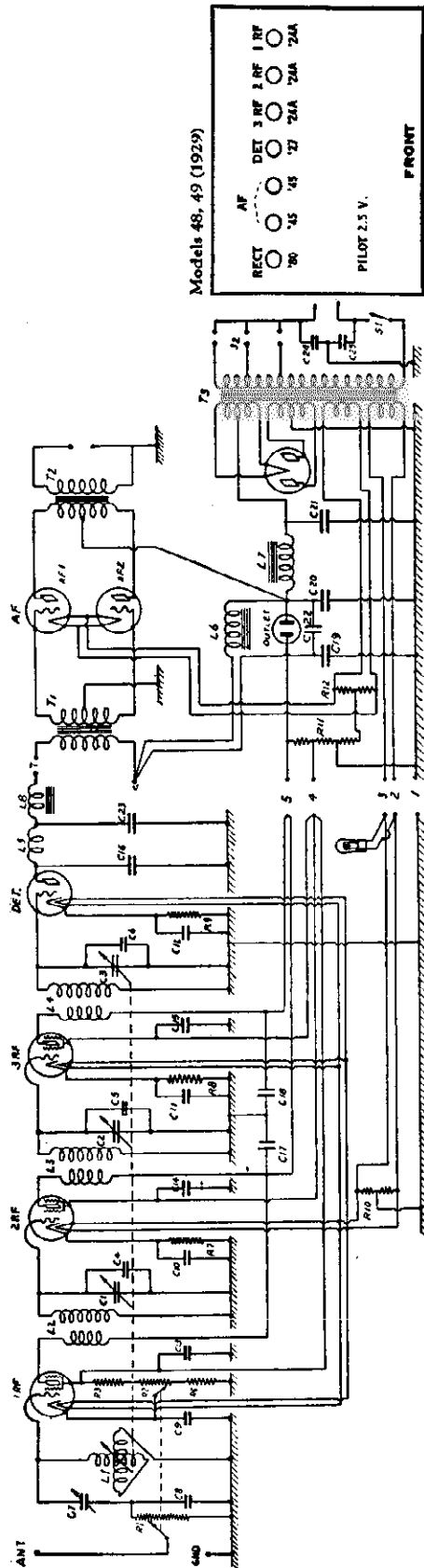
Model 96DC 110 Volt "Cruiser"

Model 156 Receiver "Cruiser"

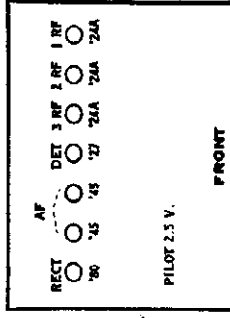
Receiver	Circuit	Radio Frequency Stage				Det. Stage	Audio Stages		
		1	2	3	4		1	2	3
96 DC 110V	Filament	1.4	1.4	1.4	—	1.4	1.4	Push Pull Stage	
66 DC 110V	Plate	95	100	95	—	45	80	75	75
156	Grid	-0.2	0.2	1.8	—	0	1.2	2.2	2.2
126, 146, 166, 176 (Little Six AC Chassis)	Filament	*1.4	*1.4	*1.4	—	*2.3	*1.4	*5	—
	Plate	90	90	90	—	45	70	130	—
	Grid	3	3	3	—	0	1	8 to 9	—

UNITED AMERICAN BOSCH CORP.

MODEL 48,49 AC Schematic, Voltage



Models 48, 49 (1929)



Model 48 Receiver (Model 49 for 25 Cycle Operation)

- T1—Audio Input Transformer
- T2—Audio Output Transformer
- T3—Power Transformer
- R1—Volume Control {10,000} ohms (Antenna)
- R2—Volume Control {5,000} ohms
- R3—1st RF Screen Resistor 25,000 ohms
- R4—2nd RF Grid Resistor 500 ohms
- R5—3rd RF Grid Resistor 500 ohms
- R6—1st RF Bias Resistor 1500 ohms
- R7—2nd RF Bias Resistor 1500 ohms
- R8—3rd RF Bias Resistor 15,000 ohms
- R9—Detector Bias Resistor 15,000 ohms
- R10—Voltage Divider Resistor
- R12—Audio Center Tap Resistor

- C7—Antenna Tuning Condenser
- C8—Antenna Condenser .001 mfd.
- C9—1st RF Cathode By-Pass Condenser .5 mfd.
- C10—2nd RF Cathode By-Pass Condenser .5 mfd.
- C11—3rd RF Cathode By-Pass Condenser .5 mfd.
- C12—Detector Cathode By-Pass Condenser .1 mfd.
- C13—1st RF Screen By-Pass Condenser .5 mfd.
- C14—2nd RF Screen By-Pass Condenser .5 mfd.
- C15—3rd RF Screen By-Pass Condenser .5 mfd.
- C16—Detector Plate By-Pass Condenser .001 mfd.
- C17—1st and 2nd RF Plate By-Pass Condenser .5 mfd.
- C18—3rd RF Plate By-Pass Condenser .5 mfd.
- C19—Filter Condenser 1 mfd.
- C20—Filter Condenser 2 mfd.
- C21—Filter Condenser 4 mfd.
- C22—By-Pass Condenser 160 cycles .05 mfd.
- C23—Detector Plate By-Pass Condenser .001 mfd.

- L1—Variometer
- L2—2nd RF Coil
- L3—3rd RF Coil
- L4—Detector Coil
- L5—Detector Plate Choke
- L6—Small Filter Choke
- L7—Large Filter Choke
- S1—Off and On Switch
- S2—Voltage Tap Switch
- C1—2nd RF Tuning Condenser
- C2—3rd RF Tuning Condenser
- C3—Detector Tuning Condenser
- C4—2nd RF Alignment Condenser
- C5—3rd RF Alignment Condenser
- C6—Detector Alignment Condenser

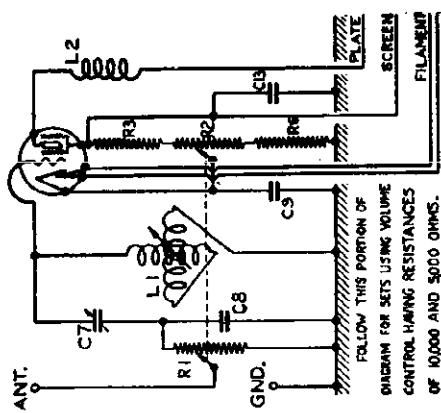


DIAGRAM FOR SETS USING VOLUME CONTROL HAVING RESISTANCES OF 10,000 AND 5000 OHMS.

BOSCH—Model 49-25 Cycle Line Voltage 112—Volume Control Position Full On

BOSCH—Model 48-60 Cycle Line Voltage 112—Volume Control Position Full On

TUBE NO. ORDER	TYPE	POSITION OF TUBE	TUBE OUT		TUBE IN TESTER		RECOMMENDED PLUG IN SOCKET OF SET	
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	A VOLTS	B VOLTS
1	22A	1st RF	2.4	175	2.5	2.5	2.5	2.5
2	22A	2nd RF	2.4	175	2.5	2.5	2.5	2.5
3	22A	3rd RF	2.4	175	2.5	2.5	2.5	2.5
4	227	DET.	2.4	200	27	27	27	27
5	245	AUD.	2.4	250	45	45	50	50
6	245	AUD.	2.4	250	45	45	50	50
7	250	RECT.	4.6	-	-	-	100	-

TUBE NO. ORDER	TYPE	POSITION OF TUBE	TUBE OUT		TUBE IN TESTER		RECOMMENDED PLUG IN SOCKET OF SET	
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	A VOLTS	B VOLTS
1	22A	1st RF	2.4	175	2.5	2.5	2.5	2.5
2	22A	2nd RF	2.4	175	2.5	2.5	2.5	2.5
3	22A	3rd RF	2.4	175	2.5	2.5	2.5	2.5
4	227	DET.	2.4	200	27	27	27	27
5	245	AUD.	2.4	250	45	45	50	50
6	245	AUD.	2.4	250	45	45	50	50
7	250	RECT.	4.6	-	-	-	100	-

MODEL 48,49 AC
Chassis Views

UNITED AMERICAN BOSCH CORP.

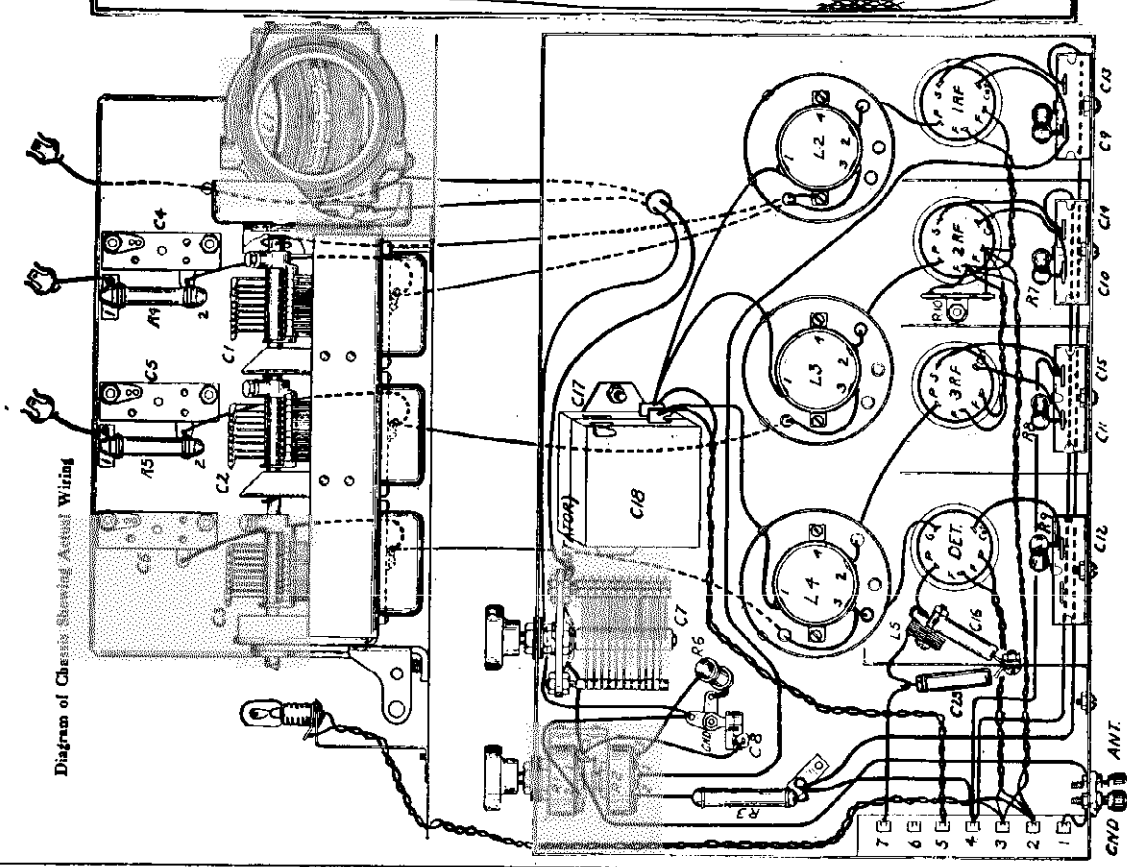


Diagram of Chassis Showing Actual Wiring

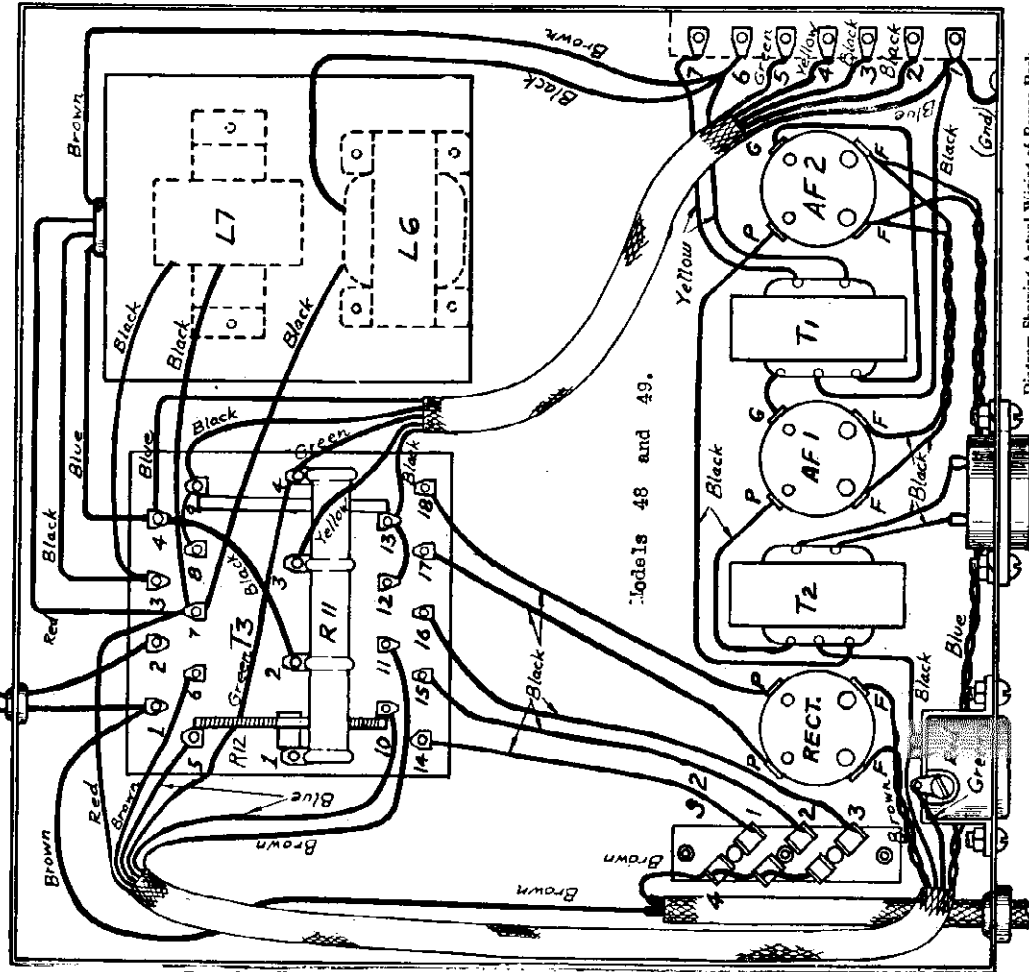


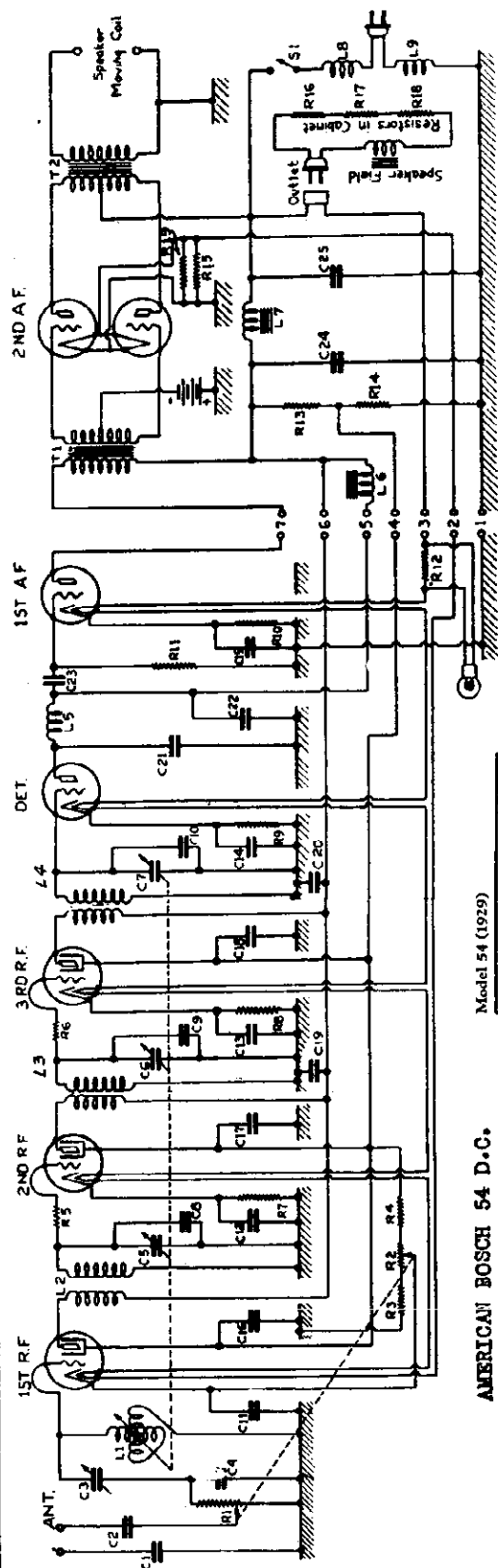
Diagram Showing Actual Wiring of Power Pack

Models 48 and 49.

NOTE: This diagram applies to sets having dual volume control of 10,000 and 5,000 ohms.

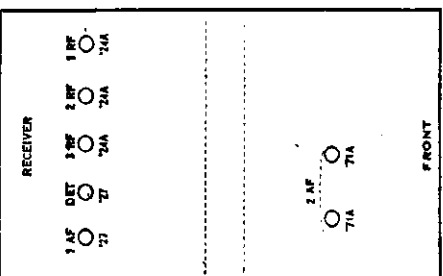
UNITED AMERICAN BOSCH CORP.

MODEL 54 DC
Schematic
Voltage



- C1-2nd R. F. cathode by-pass condenser 5 mfd.
- C2-3rd R. F. cathode by-pass condenser 5 mfd.
- C3-3rd R. F. tuning condenser 1 mfd.
- C4-3rd R. F. screen by-pass condenser 1 mfd.
- C5-1st A. F. grid condenser 5 mfd.
- C6-2nd R. F. screen by-pass condenser 5 mfd.
- C7-2nd R. F. screen by-pass condenser 5 mfd.
- C8-3rd R. F. screen by-pass condenser 5 mfd.
- C9-Plate by-pass condenser 5 mfd.
- C10-Plate by-pass condenser 5 mfd.
- C11-Detector plate by-pass condenser 001 mfd.
- C12-Detector plate by-pass condenser 001 mfd.
- C13-1st A. F. coupling condenser 001 mfd.
- C14-Filter condenser 4 mfd.
- C15-Filter condenser 4 mfd.
- R1-Volume control 5000 ohms
- R2-Volume control 1000 ohms
- R3-Screen resistor 90 ohms
- R4-Screen resistor 2000 ohms
- R5-2nd R. F. A. F. resistor 250 ohms
- L1-Variometer
- L2-2nd R. F. coil
- L3-3rd R. F. coil
- L4-Detector coil
- L5-Detector choke coil
- L6-Detector filter choke
- L7-Main filter choke
- L8-Line filter choke
- L9-Line filter choke
- T1-Ground condenser 001
- T2-Antenna condenser 001
- C1-3rd R. F. tuning condenser 00025 mfd.
- C2-3rd R. F. tuning condenser
- C3-3rd R. F. tuning condenser
- C4-3rd R. F. tuning condenser
- C5-3rd R. F. tuning condenser
- C6-3rd R. F. tuning condenser
- C7-3rd R. F. tuning condenser
- C8-3rd R. F. tuning condenser
- C9-3rd R. F. tuning condenser
- C10-3rd R. F. tuning condenser
- C11-3rd R. F. tuning condenser
- C12-3rd R. F. tuning condenser
- C13-3rd R. F. tuning condenser
- C14-3rd R. F. tuning condenser
- C15-3rd R. F. tuning condenser
- C16-3rd R. F. tuning condenser
- C17-3rd R. F. tuning condenser
- C18-3rd R. F. tuning condenser
- C19-3rd R. F. tuning condenser
- C20-3rd R. F. tuning condenser
- C21-3rd R. F. tuning condenser
- C22-3rd R. F. tuning condenser
- C23-3rd R. F. tuning condenser
- C24-3rd R. F. tuning condenser

Model 54 (1929)



Variometer: Variometer tuning of the first radio frequency stage is employed, thus assuring equal sensitivity on both high and low wave lengths. The variometer (shown at L1 on the schematic wiring diagram) is geared directly to the condenser gang and needs no separate control. Correct operation on any length of antenna is provided by the trimming condenser C3, which is operated by the "Clarifier" control.

Volume Control: The Volume Control is also located in the first radio frequency stage and consists of two resistance units operated by a single shaft. One resistance is used as a potentiometer in the antenna circuit and the other as a potentiometer to vary the grid voltage of the 1st RF tube. This type of control gives smooth variation in volume on either distant or local stations and at the same time maintains the exceptional quality of reproduction.

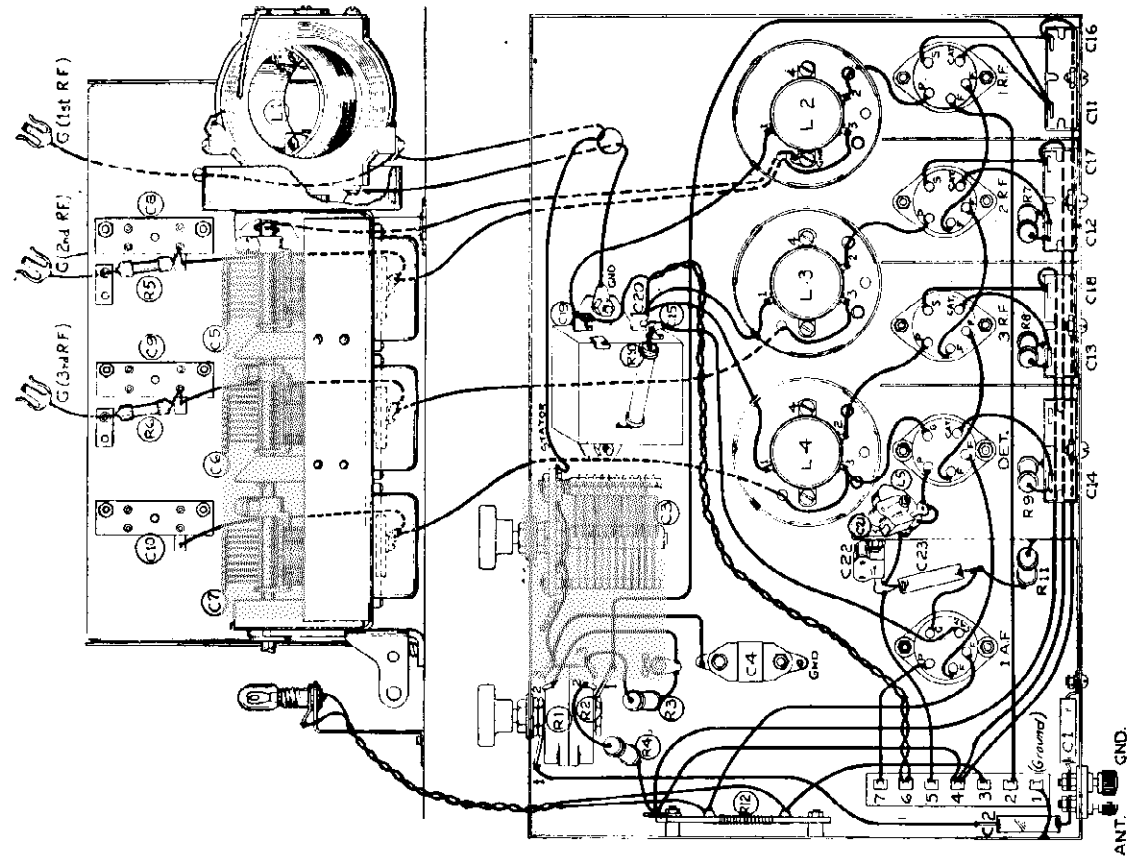
Reference to the schematic diagram will show that the entire radio frequency amplifier is properly designed and by-passed. Thorough shielding has been applied to the entire receiver to utilize the large gain of which the screen grid tubes are capable, and to eliminate the slightest possibility of oscillation.

*Variable

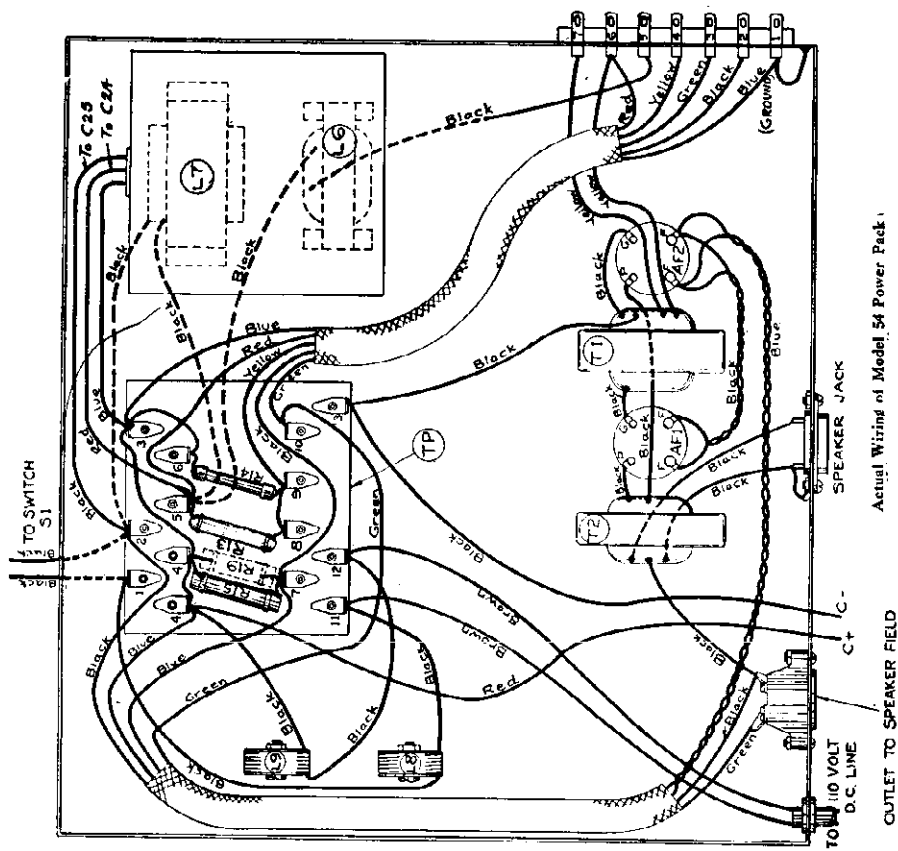
TYPE	PART NO.	TURNS	TURNS IN		TURNS OUT		TURNS IN TUNING		TURNS OUT TUNING		TURNS IN	TURNS OUT
			100	200	300	400	500	600	700	800		
1	254	3 R. F.	2.3	100	1	1	1	1	1	1	1	1
2	254	3 R. F.	2.3	100	1	1	1	1	1	1	1	1
3	254	3 R. F.	2.3	100	1	1	1	1	1	1	1	1
4	257	1st A. F.	2.3	100	1	1	1	1	1	1	1	1
5	131A	2nd R. F.	5	110	22.5	1	1	1	1	1	1	1
6	131A	2nd R. F.	5	110	22.5	1	1	1	1	1	1	1
7	131A	2nd R. F.	5	110	22.5	1	1	1	1	1	1	1
8	131A	2nd R. F.	5	110	22.5	1	1	1	1	1	1	1
9	131A	2nd R. F.	5	110	22.5	1	1	1	1	1	1	1
10	131A	2nd R. F.	5	110	22.5	1	1	1	1	1	1	1

MODEL 54 DC
Chassis Views

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Actual Wiring of Model 54 Chassis.



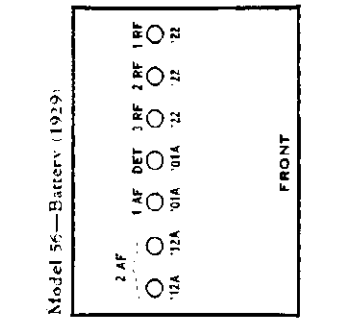
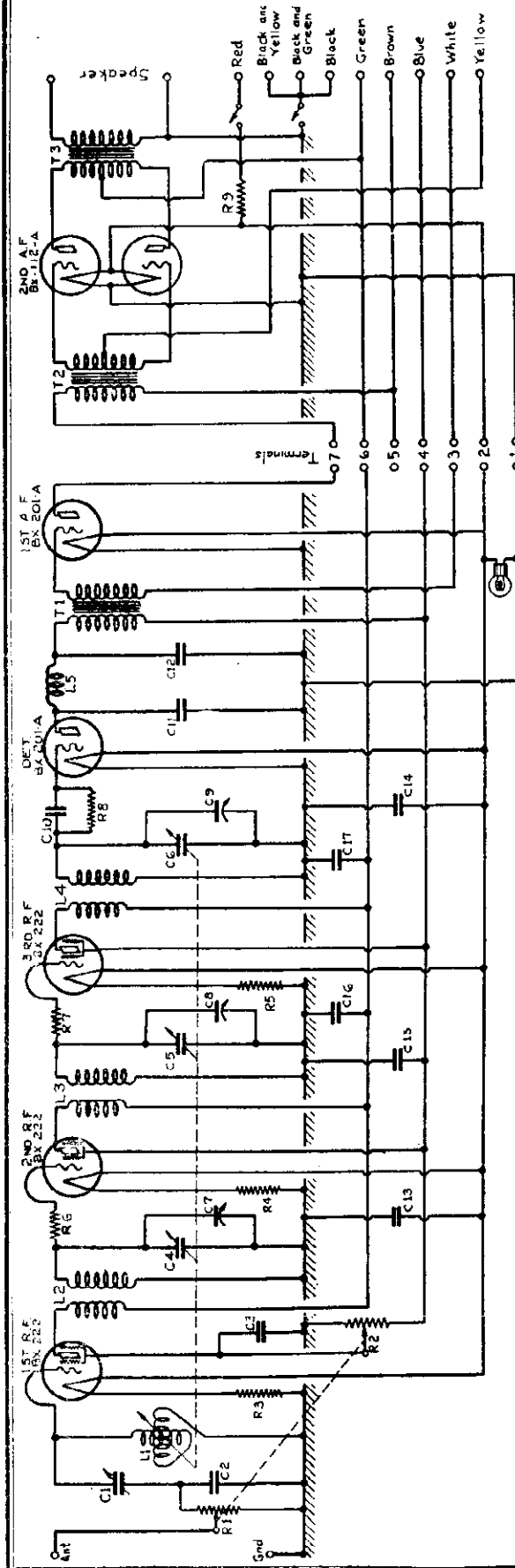
Note: Do not attempt to switch the receiver "on" until all tubes are in place, and aerial and ground are connected.
Connect the ground wire only to the terminal provided. Do not connect it to any other portion of the chassis.

Loud Speaker: The speaker used with the model 54 Bosch receiver is an electrodynamic type similar to the Bosch models 619 and 620 except that it embodies a special field winding having a resistance of 4 ohms.

Actual Wiring of Model 54 Power Pack.

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MODEL 56 Battery Schematic Parts List



- R7. 3rd RF Grid Resistor 250 ohms
- R8. Grid Leak 2 meg.
- R9. Main Filament Resistor .55 ohms
- T1. 1st Audio Transformer
- T2. 2nd Audio Input Transformer
- T3. 2nd Audio Output Transformer
- L1. Variometer
- L2. 2nd RF Coil
- L3. 3rd RF Coil
- L4. Detector Coil
- L5. Detector Choke Coil

- C13. Filament By-pass Condenser .5 mf.
- C14. Filament By-pass Condenser .5 mf.
- C15. Screen By-pass Condenser .5 mf.
- C16. Plate By-pass Condenser .5 mf.
- C17. Plate By-pass Condenser .5 mf.
- R1. Volume Control (Antenna) 10,000 ohms
- R2. Volume Control (Screen) 50,000 ohms
- R3. Filament Resistor 12.8 ohms
- R4. Filament Resistor 12.8 ohms
- R5. Filament Resistor 12.8 ohms
- R6. 2nd RF Grid Resistor 250 ohms

- C1. Trimming Condenser
- C2. Antenna Condenser .00025 mf.
- C3. Screen By-pass Condenser .5 mf.
- C4. 2nd RF Tuning Condenser
- C5. 3rd RF Tuning Condenser
- C6. Detector Tuning Condenser
- C7. 2nd RF Alignment Condenser
- C8. 3rd RF Alignment Condenser
- C9. Detector Alignment Condenser
- C10. Grid Condenser .00025 mf.
- C11. Detector By-pass Condenser .001 mf.
- C12. Detector By-pass Condenser .001 mf.

Model 56 Battery Operated

The table model is known as the model 56 and is to be used with the Bosch model 616 speaker. The console model (model 56AB) consists of the table model used in conjunction with the AB console. A type 612 speaker is used in the console.

MODEL 56 Battery
Chassis Views
Voltage

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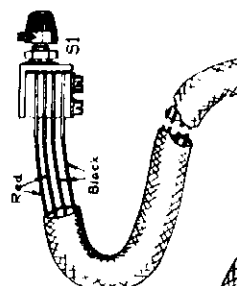
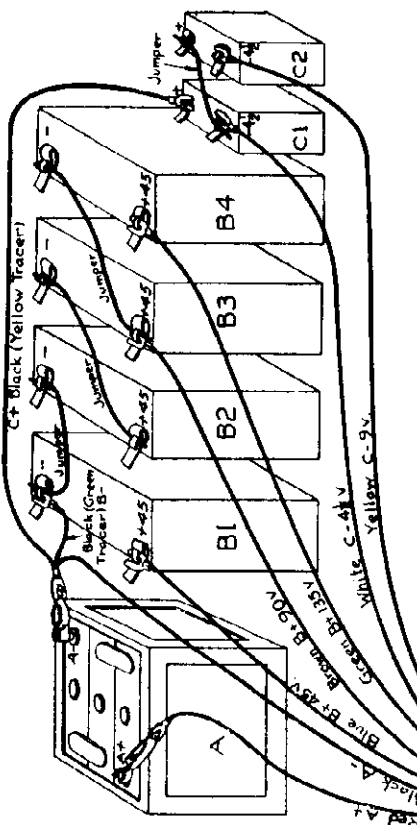
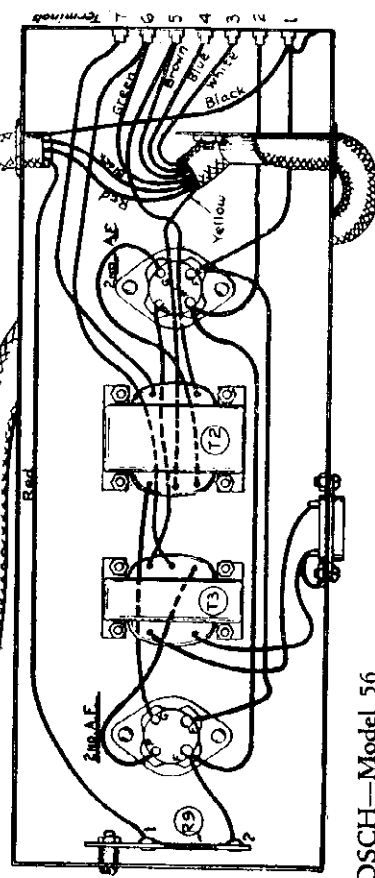
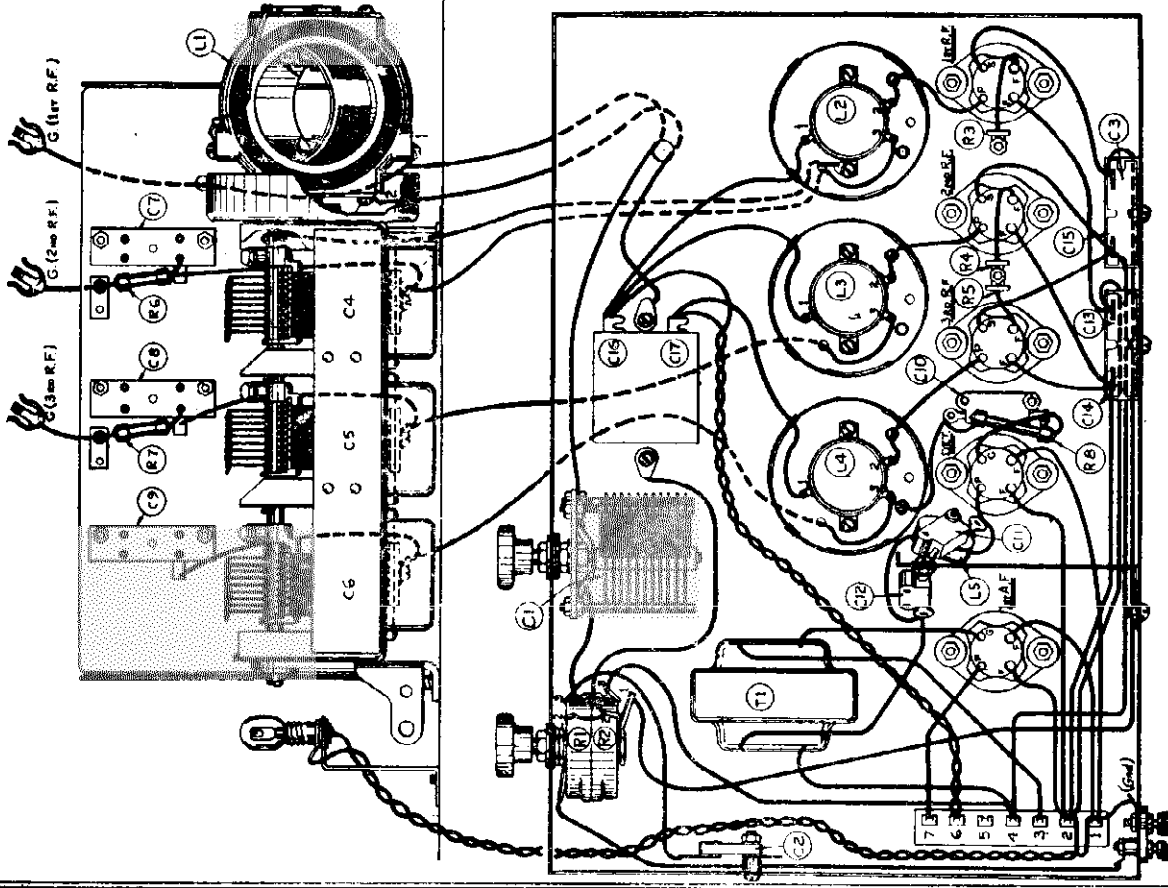


Diagram of Power Pack Wiring



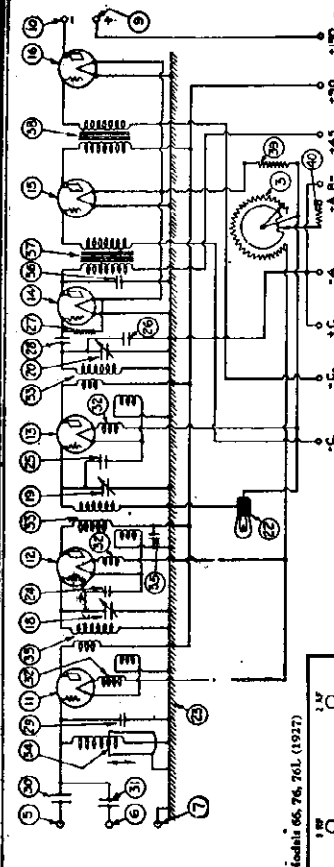
BOSCH—Model 56
All readings taken with tubes in sockets

TUBE NUMBER	TYPE	READING TAKEN IN SOCKET (V)											
		1	2	3	4	5	6	7	8	9	10	11	12
1	22B	1	1.15	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
2	222	2	1.35	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
3	222	3	1.35	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
4	201A	4	0.90	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
5	201A	5	0.90	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
6	112A	6	1.35	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
7	112A	7	1.35	1.7	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5

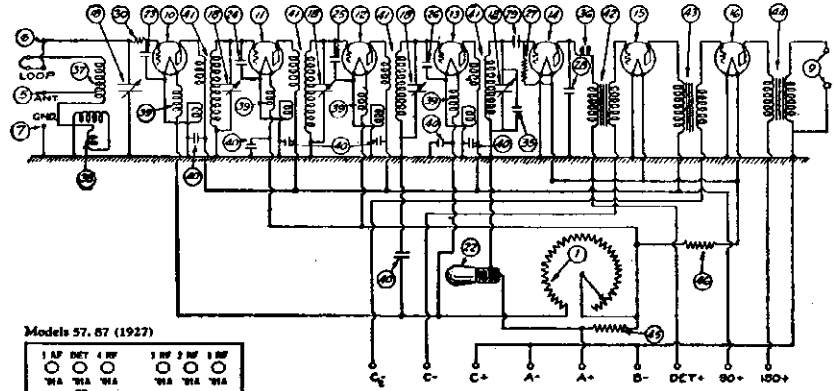


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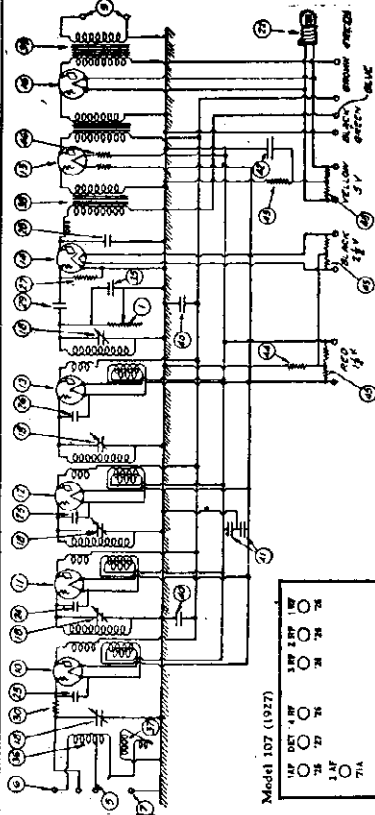
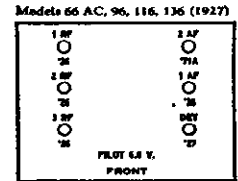
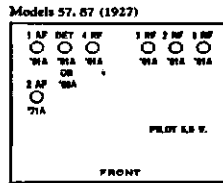
MODEL 57,87
 MODEL 66,76,76-L
 MODEL 66AC,96,116
 136. AC
 MODEL 107 AC



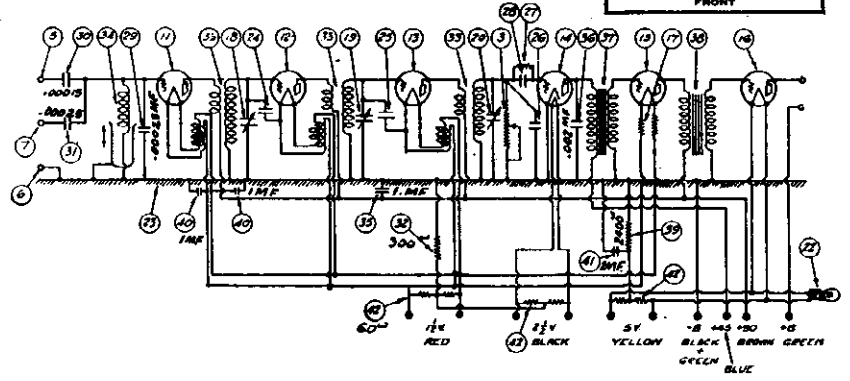
Models 66, 76, and 76L Receivers—The "Cruiser"



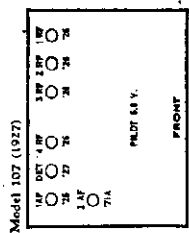
Models 57 and 87 Receivers



Model 107 Receiver (for AC operation)



Models 66AC, 96, 116, 136 Receivers (for AC operation)
 "CRUISER"

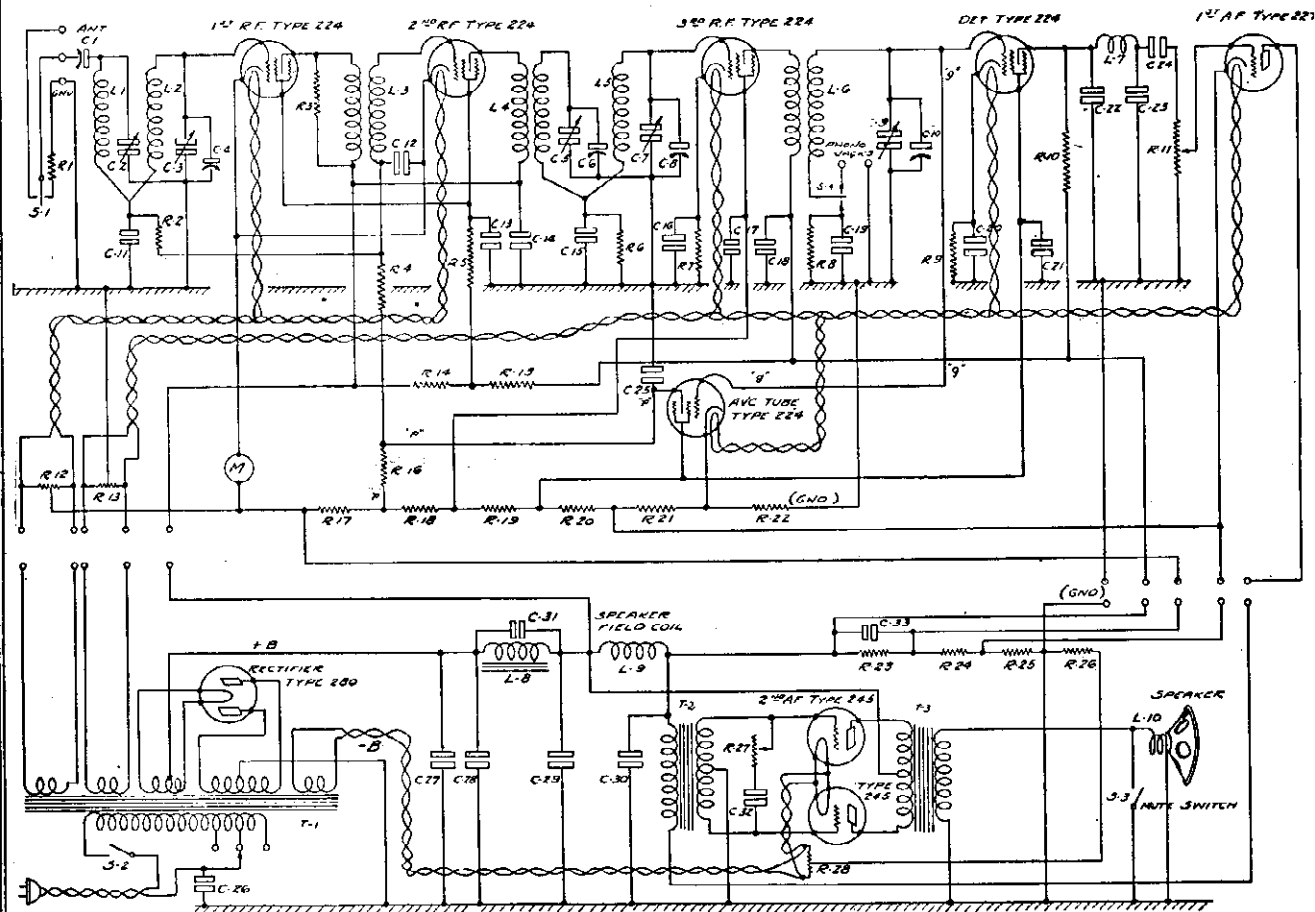


Receiver	Circuit	Radio Frequency Stages				Detector Stage	Audio Stages		
		1	2	3	4		1	2	3
66AC, 96, 116, 136, (Regular AC Six Tube Chassis)	Filament	*1.4	*1.4	*1.4	—	*2.3	*1.4	*5	—
	Plate	90	90	90	—	45	70	130	—
	Grid	5	5	5	—	0	1	8 to 9	—
Model {57, 87}	Filament	5	5	5	5	5	5	5	—
	Plate	90	90	90	90	45	80	100	—
	Grid	3	5	5	5	0	1	3	—
Model {66, 76}	Filament	5	5	5	—	5	5	5	—
	Plate	90	90	90	—	45	80	100	—
	Grid	5	5	5	—	0	1	3	—
107 (Seven Tube AC Chassis)	Filament	*1.4	*1.4	*1.4	*1.4	*2.3	*1.4	*5	—
	Plate	90	90	90	90	45	70	130	—
	Grid	3	5	5	5	0	1	8 to 9	—

MODEL 60, 60-D,
60-E, 61

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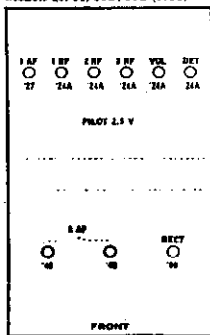
Schematic
Voltage
Parts List



Schematic Diagram of Model 60 Receiver.

- L1—1st RF Coil
- L2—1st RF Coil
- L3—2nd RF Coil (untuned)
- L4—3rd RF Coil
- L5—3rd RF Coil
- L6—Detector Coil
- L7—Detector Plate Choke
- L8—Power Pack Filter Choke
- L9—Speaker Field Coil
- L10—Speaker Voice Coil
- T1—Main Power Transformer
- T2—Audio Input Transformer
- T3—Audio Output Transformer
- C1—Antenna Trimmer Capacitor
- C2—1st RF Tuning Capacitor
- C3—1st RF Tuning Capacitor
- C4—1st RF Alignment Capacitor
- C5—3rd RF Tuning Capacitor
- C6—3rd RF Alignment Capacitor
- C7—3rd RF Tuning Capacitor
- C8—3rd RF Alignment Capacitor
- C9—Detector Tuning Capacitor
- C10—Detector Alignment Capacitor
- C11—1st RF Coupling Capacitor .04 mfd.
- C12—2nd RF Grid Return Capacitor .5 mfd.
- C13—1st and 2nd RF Screen Capacitor .25 mfd.

Models 60, 61, 60D, 60E (1930)

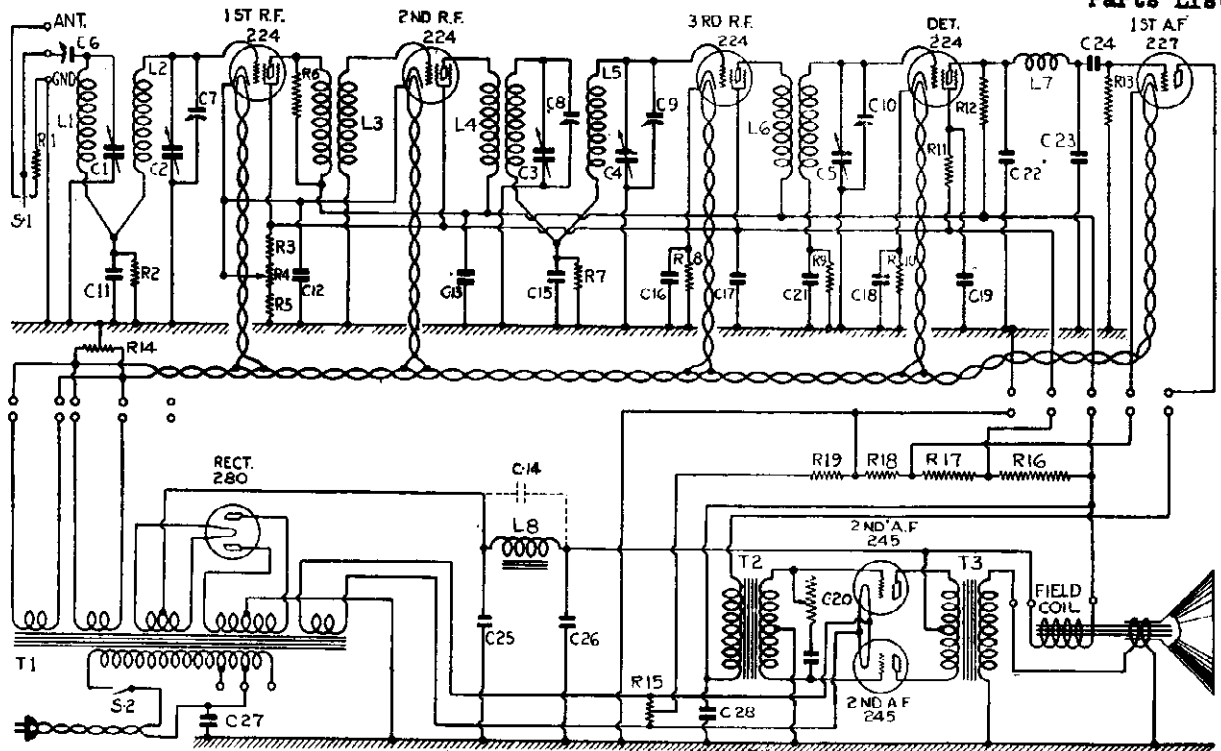


- C14—1st and 2nd RF Plate Capacitor .25 mfd.
- C15—3rd RF Coupling Capacitor .04 mfd.
- C16—3rd RF Cathode Capacitor .5 mfd.
- C17—3rd RF Screen Capacitor .5 mfd.
- C18—3rd RF Plate Capacitor .5 mfd.
- C19—Detector Grid Return Capacitor .04 mfd.
- C20—Detector Cathode Capacitor 1. mfd.
- C21—Detector Screen Capacitor .5 mfd.
- C22—Detector Plate By-pass Capacitor .0001 mfd.
- C23—Detector Plate By-pass Capacitor .0001 mfd.
- C24—Audio Coupling Capacitor .006 mfd.
- C25—AVC Plate By-pass Capacitor .006 mfd.
- C26—Buffer Capacitor .1 mfd.
- C27—Power Pack Filter Capacitor 2. mfd.
- C28—Power Pack Filter Capacitor 2. mfd.
- C29—Power Pack Filter Capacitor 4. mfd.
- C30—Power Pack Filter Capacitor 2. mfd.
- C31—Filter Choke Tuning Capacitor .075 mfd.
- C32—Tone Control Capacitor .006 mfd.
- C33—By-pass Capacitor 2. mfd.
- R1—Antenna Resistance 500 ohms
- R2—1st RF de-coupling Resistor 1000 ohms
- R3—Untuned Coil Resistor 50,000 ohms
- R4—1st and 2nd RF Grid Resistor .5 meg.

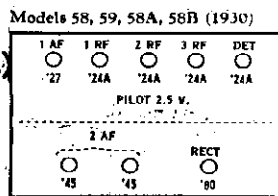
- R5—1st and 2nd RF Screen Resistor 18,000 ohms
- R6—3rd RF de-coupling Resistor 1,000 ohms
- R7—3rd RF Bias Resistor 1,000 ohms
- R8—Detector Grid Resistor 1,000 ohms
- R9—Detector Bias Resistor 50,000 ohms
- R10—Detector Plate Resistor .5 meg.
- R11—Volume Control .5 meg.
- R12—1st and 2nd RF Center Tap Resistor
- R13—Center Tap Resistor
- R14—1st and 2nd RF Screen Resistor 20,000 ohms
- R15—Resistor 10,000 ohms
- R16—AVC Resistor .5 megohms
- R17—Resistor 900 ohms
- R18—3rd RF Screen Resistor 5,000 ohms
- R19—AVC and Detector Screen Resistor 25,000 ohms
- R20—Resistor 5,000 ohms
- R21—1st AF Bias Resistor 2,000 ohms
- R22—AVC Bias Resistor 2,000 ohms
- R23—Voltage Divider Resistor 1,300 ohms
- R24—Voltage Divider Resistor 2,380 ohms
- R25—Voltage Divider Resistor 160 ohms
- R26—2nd Audio Bias Resistor 950 ohms
- R27—Tone Resistor .5 megohm
- R28—2nd Audio Center Tap Resistor

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MODEL 58 AC
Schematic
Voltage
Parts List



- L 1 -1st RF Coil
- L 2 -1st RF Coil
- L 3 -2nd RF Coil (untuned)
- L 4 -3rd RF Coil
- L 5 -3rd RF Coil
- L 6 -Detector Coil
- L 7 -Detector Plate Choke
- L 8 -Filter Choke
- T 1 -Main Power Transformer
- T 2 -Audio Input Transformer
- T 3 -Audio Output Transformer
- C 1 -1st RF Tuning Condenser
- C 2 -1st RF Tuning Condenser
- C 3 -3rd RF Tuning Condenser
- C 4 -3rd RF Tuning Condenser
- C 5 -Detector Tuning Condenser
- C 6 -Antenna Trimming Condenser
- C 7 -1st RF Alignment Condenser
- C 8 -3rd RF Alignment Condenser
- C 9 -3rd RF Alignment Condenser
- C 10 -Detector Alignment Condenser
- C 11 -1st RF Coupling Condenser .04 mfd.
- C 12 -Cathode By-pass Condenser .5 mfd.
- C 13 -Plate By-pass Condenser .5 mfd.
- C 14 -Filter Condenser .2 mfd. (25 cycle only)
- C 15 -3rd RF Coupling Condenser .04 mfd.
- C 16 -Cathode By-pass Condenser .5 mfd.
- C 17 -Screen By-pass Condenser .5 mfd.
- C 18 -Detector Cathode By-pass Condenser 1 mfd.
- C 19 -Detector Screen By-pass Condenser .5 mfd.
- C 20 -Tone Control Condenser .006 mfd.
- C 21 -Detector Condenser .04 mfd.
- C 22 -Detector Plate By-pass Condenser .0001
- C 23 -Detector Plate By-pass Condenser .0001
- C 24 -Audio Coupling Condenser .006 mfd.



- C 25 -Power Pack Filter Condenser 2 mfd.
- C 26 -Power Pack Filter Condenser 2 mfd.
- C 27 -Buffer Condenser 1 mfd
- C 28 -Audio By-pass Condenser 4 mfd.
- R 1 -Antenna Resistor 500 ohms
- R 2 -De-coupling Resistor 1,000 ohms
- R 3 -Screen Resistor 20,000 ohms
- R 4 -Volume Control 3,000 ohms
- R 5 -Screen Resistor 250 ohms
- R 6 -Untuned Transformer Resistor .1 megohm
- R 7 -3rd RF de-coupling Resistor 1,000 ohms
- R 8 -3rd RF Cathode Resistor 1,000 ohms
- R 9 -Detector Grid Resistor 1,000 ohms
- R 10 -Detector Cathode Resistor 50,000 ohms
- R 11 -Detector Screen Resistor 1 megohm
- R 12 -Detector Plate Resistor .25 megohm
- R 13 -1st Audio Grid Resistor 2 megohms
- R 14 -Center Tap Resistor (chassis)
- R 15 -Center Tap Resistor (power pack)
- R 16 -Screen Supply Resistor 2,050 ohms
- R 17 -Audio Cathode Resistor 1,950 ohms
- R 18 -Divider Resistor 180 ohms
- R 19 -Audio Bias Resistor 950 ohms
- R 20 -Tone Control 5 megohm

Line Voltage 115—Voltage Tap 115
Volume Control Full On

*Not true readings due to resistors in circuit.

TUBE NO. IN SOCKET TESTED	TYPE OF TUBE	POSITION OF TUBE IN SOCKET	OPERATING VOLTAGE						MILL
			FILAMENT (V. RANGE)	GRID-1 (V. RANGE)	GRID-2 (V. RANGE)	GRID-3 (V. RANGE)	CATHODE (V. RANGE)	PLATE (V. RANGE)	
1	224	1 R.F.	2.2	170	2.2	75	-	-	3
2	224	2 R.F.	2.2	170	2.2	75	-	-	3
3	224	3 R.F.	2.2	170	2.2	75	-	-	3
4	224	Det.	2.2	30*	1.5	10*	-	-	.1*
5	227	1 A.F.	2.2	150	-	8	-	-	5
6	245	PP-AF	2.4	250	-	50	-	-	30
7	245	PP-AF	2.4	250	-	50	-	-	30
8	280	Rect.	5.0	-	-	-	-	-	-

MODEL 62 DC

Electrical Values
Voltage

UNITED AMERICAN BOSCH CORP.

- R 1 -Antenna Resistor 500 ohms
- R 2 -De-coupling Resistor 1,000 ohms
- R 3 -Resistor 20,000 ohms
- R 4 -Volume Control 3,000 ohms
- R 5 -Resistor 150 ohms
- R 6 -Untuned Transformer Resistor .1 meg.
- R 7 -De-coupling Resistor 1,000 ohms
- R 8 -3rd RF Cathode Resistor 600 ohms
- R 9 -Resistor 1,000 ohms
- R10 -Detector Cathode Resistor 50,000 ohms
- R11 -Detector Screen Resistor 1 meg.
- R12 -Detector Plate Resistor .5 meg.
- R13 -1st Audio Grid Resistor 2 meg.
- R14 -Filament Resistor 1.8 ohms
- R15 - Filament Resistor 18 ohms
- R16 -Filament Resistor 18 ohms
- R17 -Filament Resistor 18 ohms
- R18 -Tone Selector Resistor .5 meg.
- R19 -Voltage Divider Resistor 1,400 ohms
- R20 -Voltage Divider Resistor 2,600 ohms
- R21 -Voltage Divider Resistor 250 ohms
- C 1 -1st RF tuning Condenser
- C 2 -1st RF Tuning Condenser
- C 3 -3rd RF Tuning Condenser
- C 4 -3rd RF Tuning Condenser
- C 5 -Detector Tuning Condenser
- C 6 -Antenna Trimming Condenser
- C 7 -1st RF Alignment Condenser
- C 8 -3rd RF Alignment Condenser
- C 9 -3rd RF Alignment Condenser
- C10 -Detector Alignment Condenser
- C11 -1st RF Coupling Condenser .04 mfd.
- C12 -Cathode By-pass Condenser .5 mfd.
- C13 -Plate By-pass Condenser .5 mfd.
- C14 -Screen By-Pass Condenser .5 mfd.
- C15 -3rd RF Coupling Condenser .04 mfd.
- C16 -3rd RF Cathode Condenser .5 mfd.
- C17 -Detector Condenser .04 mfd.
- C18 -Detector Cathode Condenser 1. mfd.
- C19 -Detector Screen Condenser .5 mfd.
- C20 -Detector Plate By-pass Condenser .0001 mfd.
- C21 -Detector Plate By-pass Condenser .0001 mfd.
- C22 -Audio Coupling Condenser .006 mfd.
- C23 -Ground Condenser .006 mfd.
- C24 -Filter Condenser 4 mfd.
- C25 -Filter Condenser 4 mfd.
- C26 -Tone Selector Condenser .002 mfd.
- S 1 -Local-Long Distance Switch
- S 2 -Off and On Switch
- B 1 -"C" Battery -22½ volts
- T 1 -Audio Input Transformer
- T 2 -Audio Output Transformer
- L 1 -1st RF Coil
- L 2 -1st RF Coil
- L 3 -Untuned Transformer
- L 4 -3rd RF Coil
- L 5 -3rd RF Coil
- L 6 -Detector Coil
- L 7 -Detector Plate Choke
- L 8 -Filter Choke
- L 9 -Filter Choke
- L10 -Filter Choke

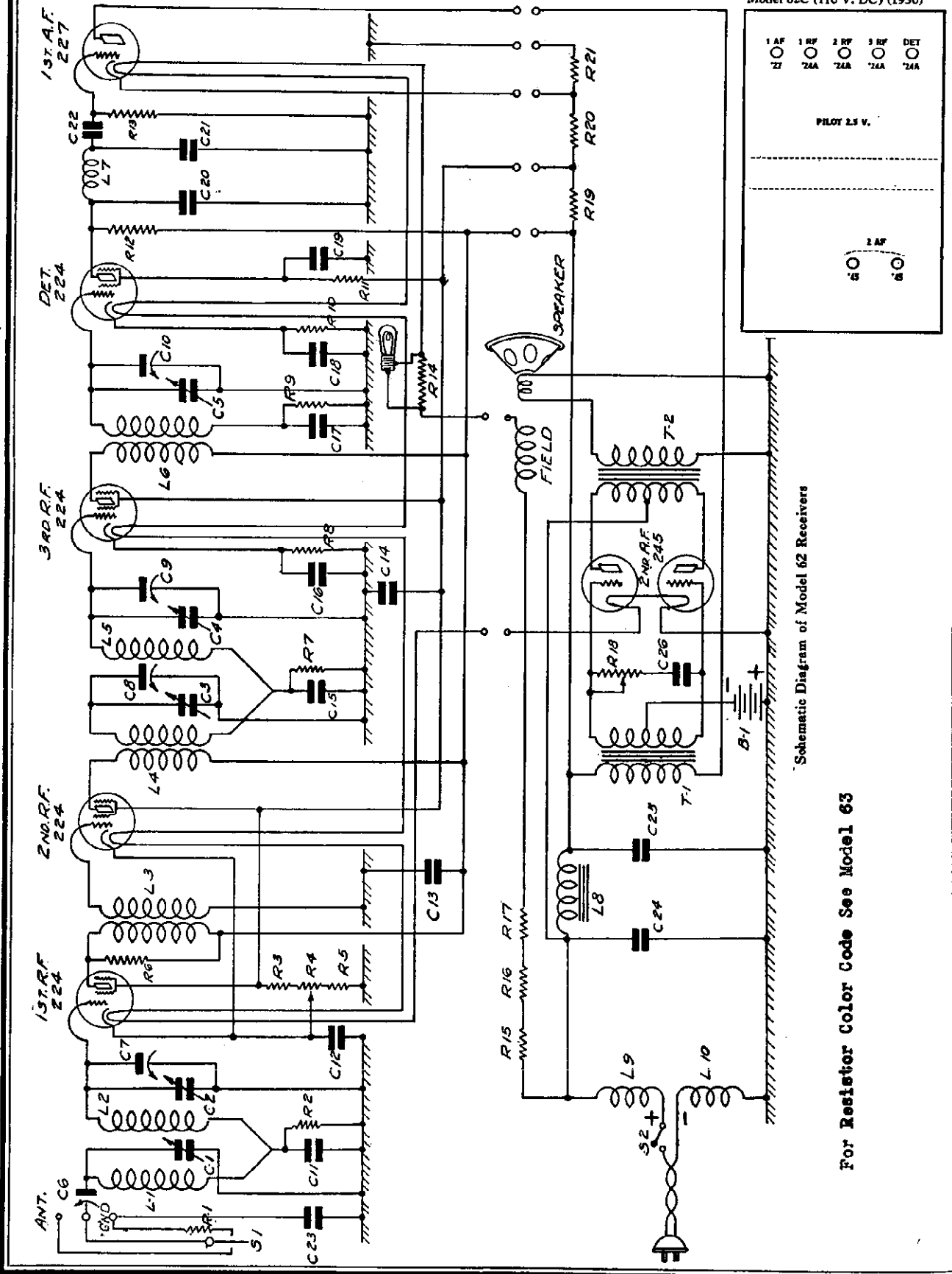
SOCKET VOLTAGES : MODEL 62

STAGE	Tube	Plate	Screen	Grid.	Fil.	Plate MA.
1st RF.....	224	100	60	10	2.1	1.5
2nd RF.....	224	100	60	9	2.1	1.5
3rd RF.....	224	100	60	8	2.1	1.5
Detector.....	224	30	15	*	2.1	*
1st AF.....	227	85	.	8	2.1	2.5
2nd AF.....	245	105	.	20	2.1	8
2nd AF.....	245	105	.	20	2.1	8

UNITED AMERICAN BOSCH CORP.

MODEL 62 DC
Schematic
Socket

Model 62C (110 V. DC) (1930)



Schematic Diagram of Model 62 Receivers

For Resistor Color Code See Model 63

MODEL 63 DC
 Values
 Resistor Code
 Voltage

UNITED AMERICAN BOSCH CORP.

Model 63 Receiver

- R 1—Antenna Resistor 500 ohms
- R 2—De-coupling Resistor 1,000 ohms
- R 3—Untuned Transformer Resistor 50,000 ohms
- R 4—De-coupling Resistor 1,000 ohms
- R 5—3rd RF Cathode Resistor 600 ohms
- R 6—Detector Resistor 1,000 ohms
- R 7—Detector Cathode Resistor 50,000 ohms
- R 8—Detector Plate Resistor .5 meg.
- R 9—Volume Control .5 meg.
- R10—1st and 2nd RF Bias Resistor 1 meg.
- R11—Bias Control Resistor 1 meg.
- R12—Filament Resistor 1.8 ohms
- R13—AVC Screen Resistor 20,000 ohms
- R14—Voltage Divider Resistor 150 ohms
- R15—Voltage Divider Resistor 900 ohms
- R16—Voltage Divider Resistor 5,000 ohms
- R17—Voltage Divider Resistor 20,000 ohms
- R18—Filament Resistor 18 ohms
- R19—Filament Resistor 18 ohms
- R20—Filament Resistor 18 ohms
- R21—Tone Control Resistor .5 meg.
- R22—Voltage Divider Resistor 1,400 ohms
- R23—Voltage Divider Resistor 2,600 ohms
- R24—Voltage Divider Resistor 250 ohms

- C 1—1st RF Tuning Condenser
- C 2—1st RF Tuning Condenser
- C 3—3rd RF Tuning Condenser
- C 4—3rd RF Tuning Condenser
- C 5—Detector Tuning Condenser
- C 6—Antenna Trimmer Condenser
- C 7—1st RF Alignment Condenser
- C 8—3rd RF Alignment Condenser

- C 9—3rd RF Alignment Condenser
- C10—Detector Alignment Condenser
- C11—Ground Series Condenser .0001 mfd.
- C12—1st RF Coupling Condenser .04 mfd.
- C13—2nd RF Condenser .5 mfd.
- C14—Cathode By-pass Condenser .5 mfd.
- C15—3rd RF Coupling Condenser .04 mfd.
- C16—3rd RF Cathode Condenser .5 mfd.
- C17—Detector Condenser .04 mfd.
- C18—Detector Cathode Condenser 1 mfd.
- C19—Detector Plate Condenser 1 mfd.
- C20—Detector Plate Condenser .0001 mfd.
- C21—Detector Plate Condenser .0001 mfd.
- C22—Audio Coupling Condenser .006 mfd.
- C23—Plate By Pass Condenser .25 mfd.
- C24—Screen By Pass Condenser .25 mfd.
- C25—Plate By Pass Condenser .5 mfd.
- C26—AVC Plate By Pass Condenser .006 mfd.
- C27—AVC Screen Condenser .5 mfd.
- C28—Filter Condenser 4 mfd.
- C29—Filter Condenser 4 mfd.
- C30—Tone Control Condenser .006 mfd.

- T 1—Input Transformer
- T 2—Output Transformer

- B 1—AVC Plate Battery 22½ volts
- B 2—2nd Audio "C" Battery 22½ volts

- S 1—Local Distance Switch
- S 2—Phono Switch
- S 3—Main Switch
- S 4—Mute Switch

The resistors used in the Models 62 and 63 receivers are marked in colors as a means of identification. The complete color code is as follows:

- 150 ohms — Red-black
- 250 ohms — White
- 500 ohms — Yellow
- 600 ohms — Blue-black
- 900 ohms — Black-brown
- 1,000 ohms — White-red
- 2,000 ohms — Brown-yellow
- 2,500 ohms — White-brown

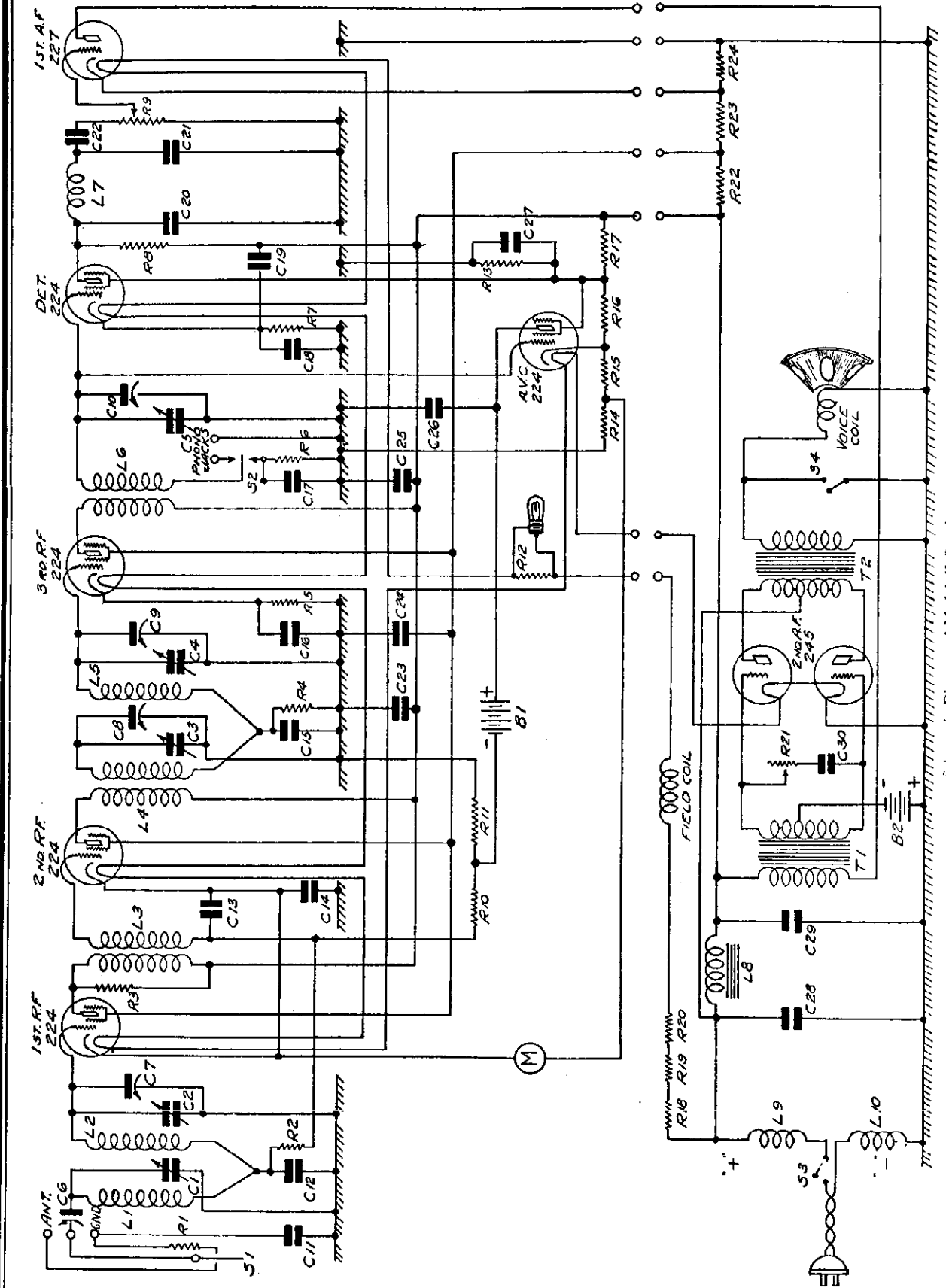
- 5,000 ohms — Black-yellow
- 10,000 ohms — Blue-yellow
- 18,000 ohms — White-gray
- 20,000 ohms — Green-yellow
- 25,000 ohms — Blue
- 50,000 ohms — Green-white
- .1 megohm — Blue-white
- .25 megohms — Brown
- .5 megohms — Grey
- 1. megohm — Black
- 2. megohms — Black-white

SOCKET VOLTAGES - MODEL 63

Stage	Tube	Plate	Screen	Grid.	Fil.	Plate MA.
1st RF.....	224	100	60	1	2.1	1.5
2nd RF.....	224	100	60	1	2.1	1.5
3rd RF.....	224	100	60	1	2.1	1.5
AVC.....	224	10	20	3	2.1	*
Detector.....	224	30	15	1	2.1	*
1st AF.....	227	85	-	8	2.1	2.5
2nd AF.....	245	105	-	20	2.1	8
2nd AF.....	245	105	-	20	2.1	8

UNITED AMERICAN BOSCH CORP

MODEL 63 DC
Schematic



Schematic Diagram of Model 63 Receivers

MODEL 73,74
Parts List
Voltage - Data

UNITED AMERICAN BOSCH CORP.

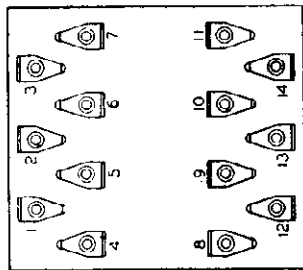


Fig. 4
Terminal Plate of Main Power Transformer T3

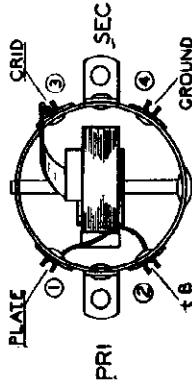
If the transformer is perfect - following readings will be obtained:

- Primary Winding 1500 ohms (See T1, pages 5 and 6)
- Secondary Winding (each half) 4000 ohms

AUDIO OUTPUT TRANSFORMER "T2"

This unit may be identified by the low resistance heavy secondary winding terminating at "1" and "2."

- Primary Winding (each half) 200 ohms full reading
- Secondary Winding



Top View of Coil

MAIN POWER TRANSFORMER "T3"

- No. 1. Start of Primary Wind
- No. 3. 116 Volt Tap
- No. 4. Center Tap of 280 Plate Winding
- No. 6. Filament Supply Winding
- No. 7. 120 Volt Tap
- No. 9. Filament Supply Winding
- Filament Supply to 280 tube are heavy wires direct from winding.
- Plate Supply to 280 tube are stranded wires direct from winding.

If the transformer is perfect the following readings will be obtained:

- Primary Winding 1 to 3—full reading
- 1 to 7—full reading
- Filament Supply Sec. 6 to 9—full reading
- 280 Filament Winding F to F of 280 socket—full reading
- 280 Plate Winding P to P of 280 socket—350 ohms
- 280 Center Tap 4 to P of 280 socket—175 ohms

AUDIO INPUT TRANSFORMER "T1"

This is a special unit having a ratio of 6 to 1. Under no circumstances may it be replaced by any other type of transformer, nor may it be used as a replacement in receivers of other models. It may be identified by the mounting for the small choke coil.

COIL TEST:

- Circuit Test—From 1 to 2—full reading
- From 3 to 4—full reading
- A reading from 1 or 2 to either 3 or 4 denotes a defective (short circuited) coil. In this case the primary coil may be replaced. It is very important that it is placed exactly in the center of the secondary, and that the wire on which it is mounted is perfectly straight.

The coupling units (C2, C3 and C4) are not ordinary condensers, but are formed of the capacity between the plate end (1) of the primary winding and the small bypass plate which is connected to the grid terminal 2.

As volume is decreased, Grid voltage increases.
1st end of Screen voltage increases
2nd RF Plate voltage decreases.

NOMENCLATURE

Resistors

- R1 Volume Control 10,000 ohms
- R2 2750 ohms) Tapped unit
- R3 250 ohms)
- R4 Cathode Resistor 750 ohms
- R5 Cathode Resistor 25,000 ohms
- R6 50,000 ohms
- R7 Tone Control 50,000 ohms
- R8 Plate Supply Resistor 5,000 ohms
- R9 Plate Supply Resistor 10,000 ohms
- R10 Screen Supply Resistor 750 ohms
- R11 Cathode Resistor 25,000 ohms
- R12 Screen Supply Resistor 30,000 ohms
- R13 Audio Bias Resistor 800 ohms
- R14 Center Tap Resistor 4.1 ohms

Condensers

- C1 Antenna Trimmer Condenser
- C2 Coupling Capacity
- C3 Coupling Capacity
- C4 Coupling Capacity
- C5 Tuning Condenser
- C6 Tuning Condenser
- C7 Tuning Condenser
- C8 Tuning Condenser
- C9 Alignment Condenser
- C10 Alignment Condenser
- C11 Alignment Condenser
- C12 Det. Plate By-pass .005 mfd.
- C13 Tone Control Condenser .05 mfd.

Coils and Inductances

- L1 Antenna Coil
- L2 2nd RF primary
- L3 2nd RF secondary
- L4 3rd RF primary
- L5 3rd RF secondary
- L6 Det. coil primary
- L7 Det. coil secondary
- L8 Degrerative choke
- L9 Det. Plate choke
- L10 Tone Control choke
- L11 Filter choke
- L12 Speaker Field
- L13 Speaker Voice Coil

Transformers

- T1 Audio Input Transformer
- T2 Audio Output Transformer
- T3 Main Power Transformer

Switches

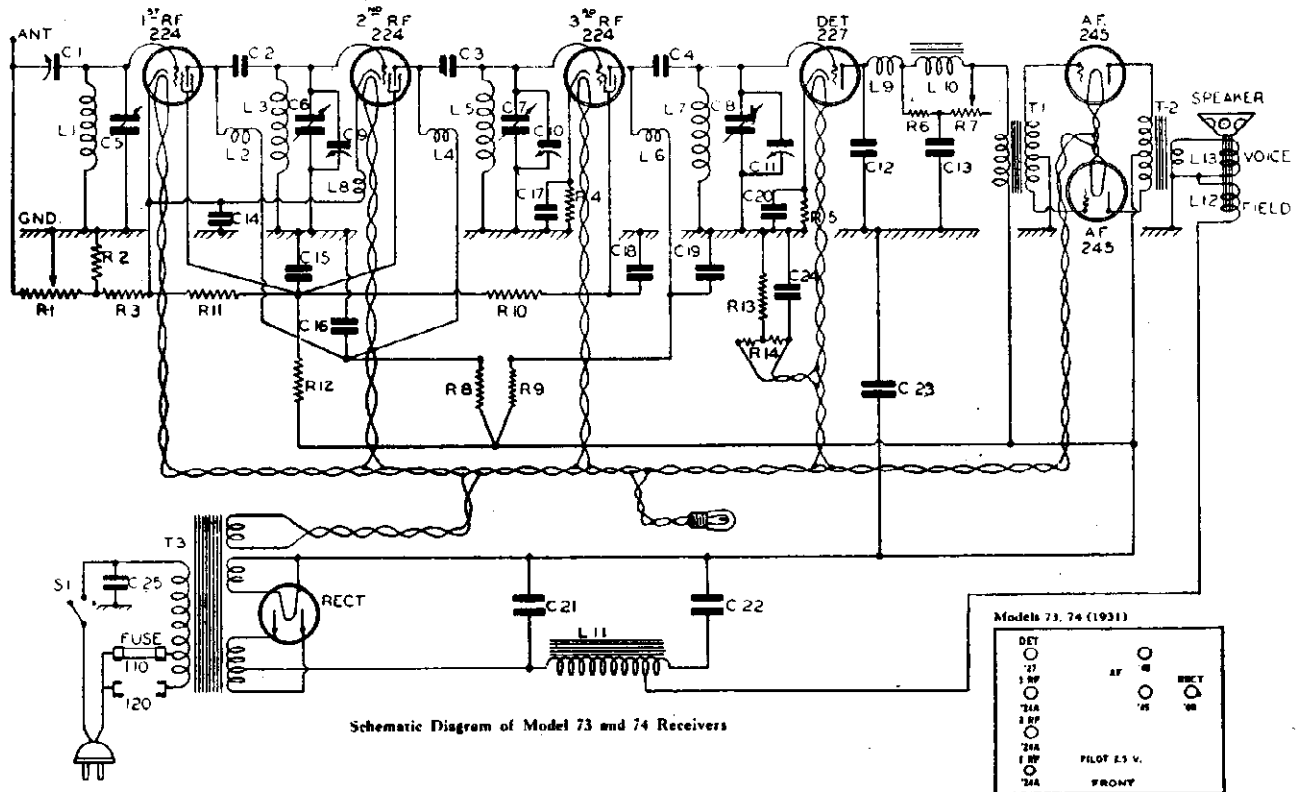
- S1 Main Switch

Model 73 and 74 Voltage Readings

Stage	Tube	Plate	Screen	Cathode	Grid	Fil.	Plate Current
1st RF	224	240	90	44	3	22	4
2nd RF	224	240	90	44	3	22	4
3rd RF	224	240	90	44	3	22	4
Det.	227	250	...	20	25	2.2	1
Audio	245	230	...	...	44	2.3	25
Audio	245	230	...	...	44	2.3	25
Rect.	280	...	...	...	...	4.8	30-30

UNITED AMERICAN BOSCH CORP.

MODEL 73, 74
Schematic
Chassis

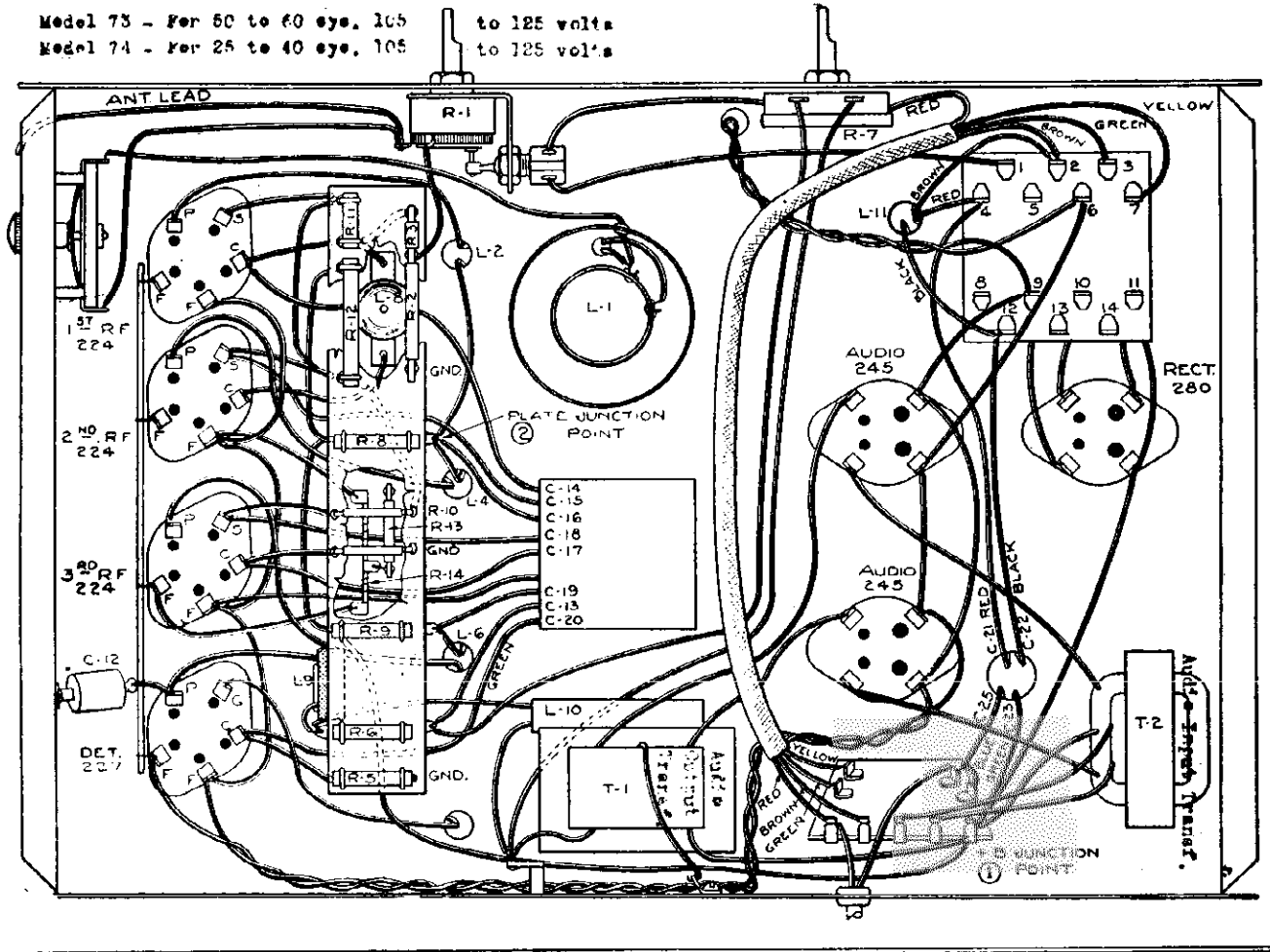


Schematic Diagram of Model 73 and 74 Receivers

Models 73, 74 (1931)

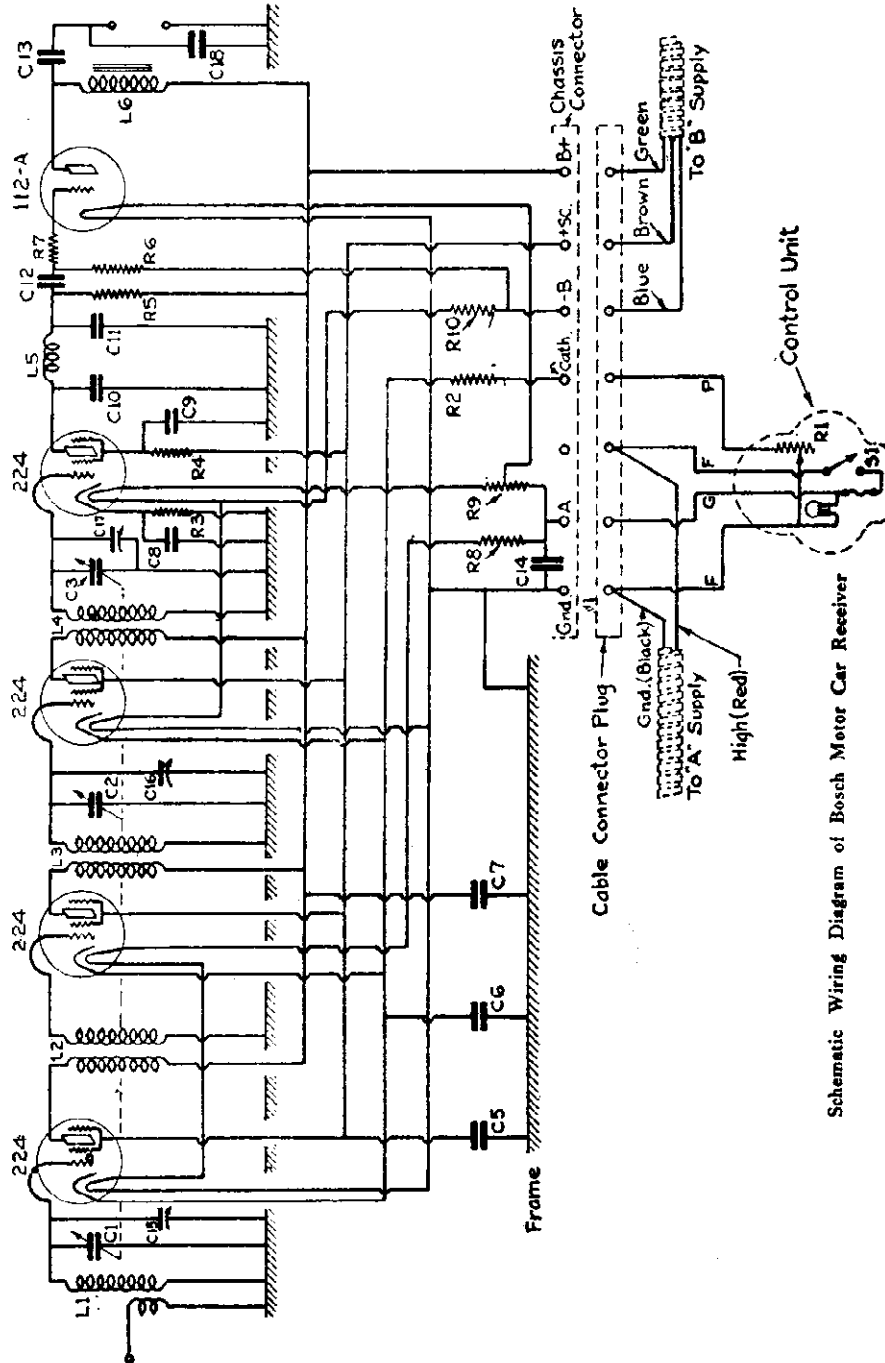
DET	227	AF	245	RECT	280
1 st RF	224				
2 nd RF	224				
3 rd RF	224				
250V					
110V					
250V					
PILOT 1.5 V.					
FRONT					

Model 73 - For 50 to 60 eye, 105 to 125 volts
 Model 74 - For 25 to 40 eye, 105 to 125 volts



UNITED AMERICAN BOSCH CORP.

MODEL 80
SCHEMATIC
VOLTAGE



Schematic Wiring Diagram of Bosch Motor Car Receiver

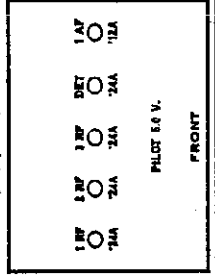
- C-8—Detector Cathode Condenser .5mf.
- C-9—Detector Screen Condenser .5mf.
- C-10—Detector Plate Condenser .0001mf.
- C-11—Detector Plate Condenser .0001mf.
- C-12—Coupling Condenser .002mf.
- C-13—Output Condenser 1mf.
- C-14—Filament By-pass Condenser
- C-15—1st RF Alignment Condenser
- C-16—3rd RF Alignment Condenser
- C-17—Det. Alignment Condenser
- C-18—Speaker Condenser

- R-6—Audio Grid Resistor 2 meg.
- R-7—Series Grid Resistor 250,000 ohms
- R-8—Filament Resistor 1.3 ohms
- R-9—Filament Resistor 1.1 ohms
- R-10—Audio Bias Resistor 900 ohms
- C-2—1st RF Tuning Condenser
- C-3—2nd RF Tuning Condenser
- C-5—Screen By-pass Condenser .5mf.
- C-6—Cathode By-pass Condenser .5mf.
- C-7—Plate By-pass Condenser 1mf.

- L-1—1st RF Coil
- L-2—2nd RF Coil
- L-3—3rd RF Coil
- L-4—Detector Coil
- L-5—Detector Choke
- L-6—Output Choke
- R-1—Volume Control 18,000 ohms
- R-2—1st RF Bias Resistor 500 ohms
- R-3—Detector Bias Resistor 25,000 ohms
- R-4—Detector Screen Resistor 500,000 ohms
- R-5—Detector Plate Resistor 500,000 ohms

TABLE OF SOCKET VOLTAGES

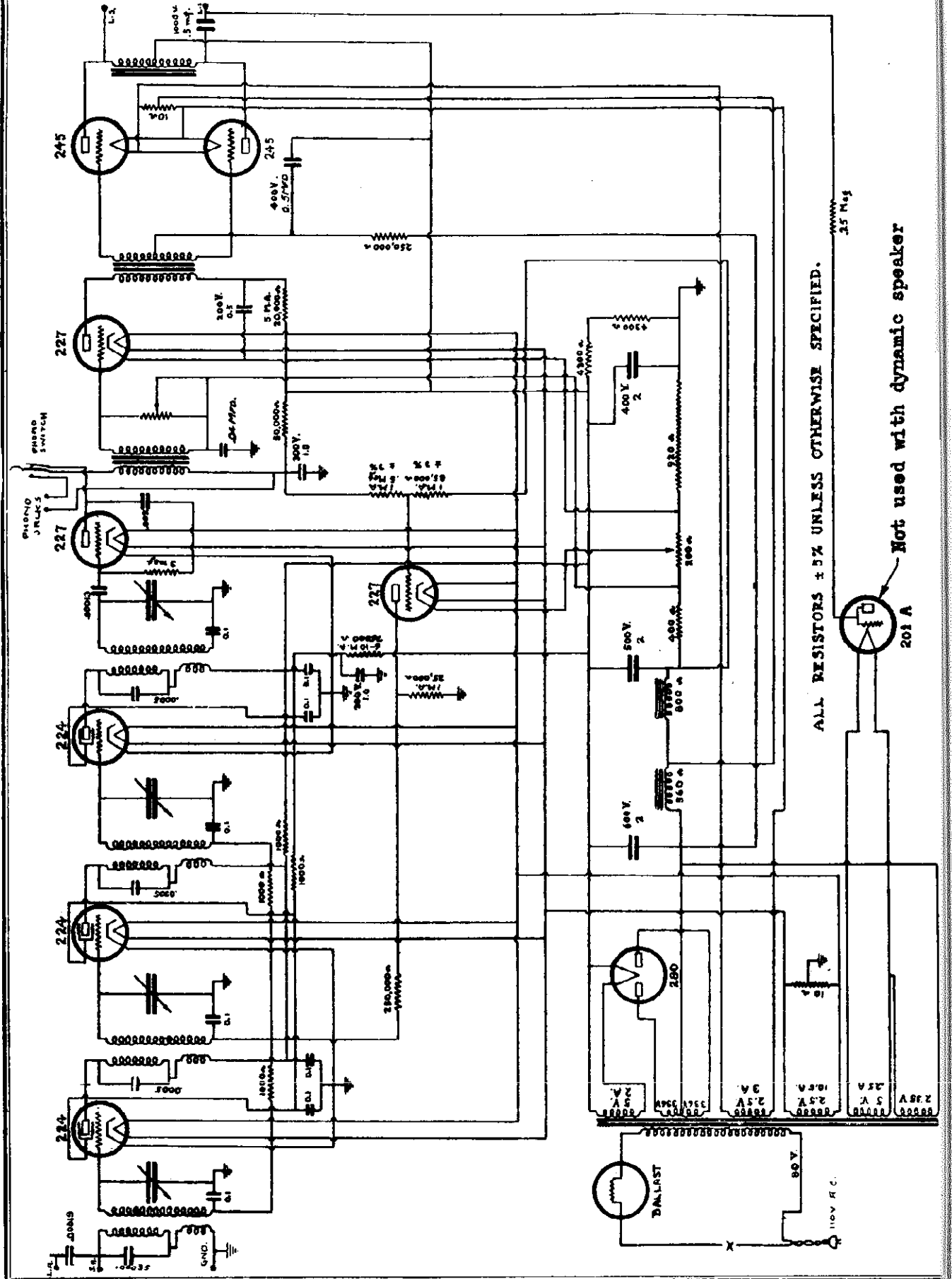
STAGE	TUBE	FIL.	PLATE	SCREEN	GRID	PLATE M.A.	
						Normal	Test
1st RF	224	2.0	170	75	3.5	3.0	5.00
2nd RF	224	2.0	170	75	3.5	3.0	5.00
3rd RF	224	2.0	170	75	3.5	3.0	5.00
Det.	224	2.0	50	15	1.0	3.0	5.00
Audio	112-A	4.8	165		0.1	6.5	9



Models 80, 84 (1930)

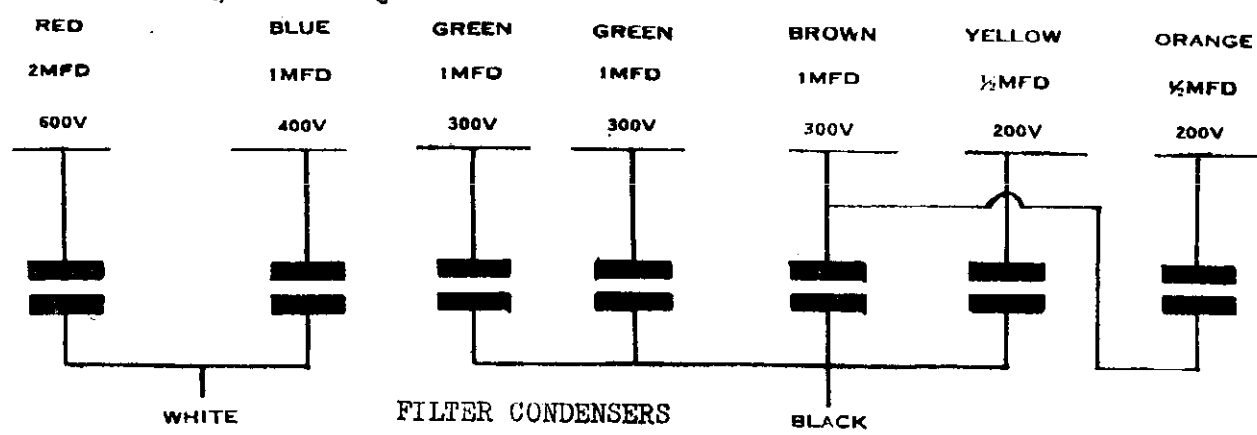
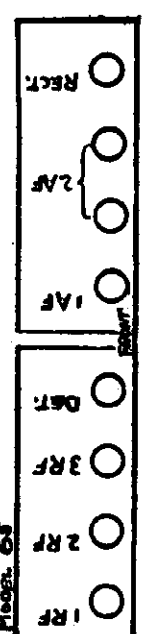
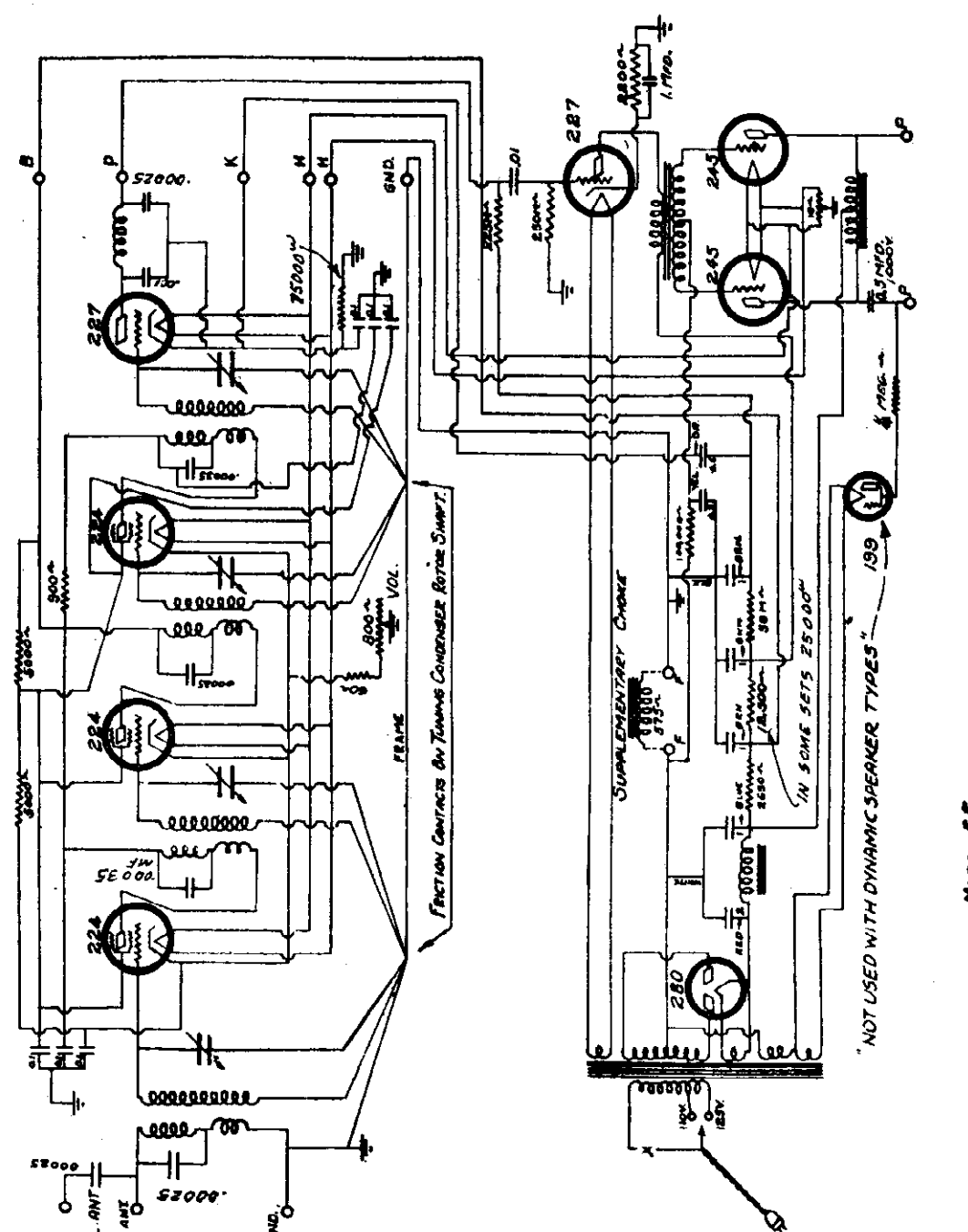
UNITED REPRODUCERS CORP.

MODEL 20 Series



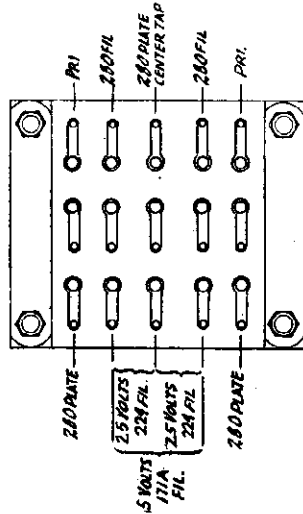
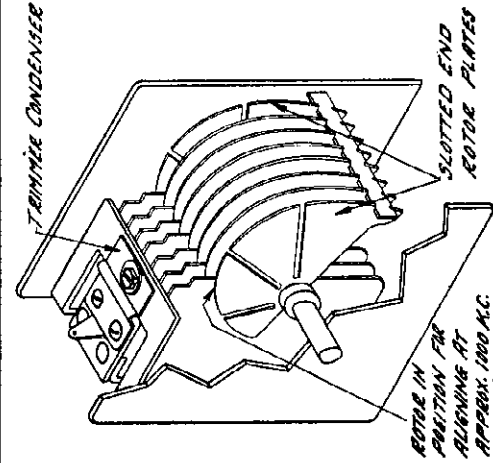
UNITED REPRODUCERS CORP

MODEL 65
Schematic



MODEL 20
Voltage - Data

U. S. RADIO & TELEVISION CORP.



AS CENTER ROW OF LUGS USED
Power Transformer Terminals

Electrodynamic Speaker

An especially designed electrodynamic speaker is supplied with the No. 20 chassis. The field of this speaker is energized by the power system of the chassis and is a part of the power system. For that reason no other speaker should be used with the No. 20 chassis than the one supplied with it. Care should be taken in servicing the No. 20 receiver not to reverse the leads to one of the field sections as the fields will then "back" and low signal strength will result. The field winding also acts as a filter choke.

No. 20 CHASSIS—VOLTAGES AT SOCKETS—VOLUME CONTROL AT MAXIMUM LINE VOLTAGE. 115—PLUG IN SOCKET OF RECEIVER—TUBE IN TEST SET

Type of Tube	Position of Tube	Function	"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Screen Current MA	Cathode Volts	Plate MA	Grid Test MA
224	1	1st Radio	2.5	196	2.2	85	1.4	2.2	5.	7.1
224	2	Detector	2.5	95(1)	2.3(2)	17(3)	.015		.1	.2
171A	3	1st Audio	5.1	191	43. (4)				18.	20.
280	4	Rectifier	5.1						23 Per Plate	

(1) Computed value. Reading with voltmeter will be lower.
 (2) This voltage read across 55 ohm section of shunt resistor.
 (3) This voltage read across 935 ohm section of speaker field and 55 ohm section of shunt resistor.
 (4) This voltage read across 935 ohm section of speaker field and 55 ohm section of shunt resistor.

Tuning Condenser Alignment

The tuning condensers are aligned at the factory with oscillators and output meters and the receiver will not normally lose its alignment unless mishandled or tampered with. When the condenser is out of alignment one or more of the stages are not in resonance and the receiver may tune broadly, lack volume at certain parts of the broadcast band, or tune in a signal at two or more points of the dial.

The chassis should be grounded but the antenna disconnected. In case a strong enough signal is not being received from the oscillator, connect a five or six foot length of wire to the antenna post and run it over towards the oscillator. First set the oscillator for a signal of 1,400 K.C. Then carefully tune to resonance by turning the tuning condenser rotor slowly back and forth until maximum output is obtained. Now adjust the trimmer condensers to resonance. Adjust the volume control until the pointer of the output meter is at about half scale. The oscillator signal should not be too great in intensity as distortion will be introduced. The trimmer condensers are adjusted by raising or lowering the center screw. Turn the screws down until the volume starts to drop. Then adjust the trimmers to resonance, raising or lowering the screws until maximum deflection is obtained. Adjustment may be made with a metal screw driver as the rotor is at ground potential.

An important point to remember in adjusting the trimmer condenser is that the screws should not be turned completely down. If they are screwed in too tightly the capacity of the trimmer

condenser which is added to the capacity of the tuning condenser will be so high that the receiver cannot be tuned to a high frequency signal.

After the trimmer condensers have been adjusted at 1,400 K.C., they should not be changed in any way when aligning the tuning condensers at different frequencies as explained below.

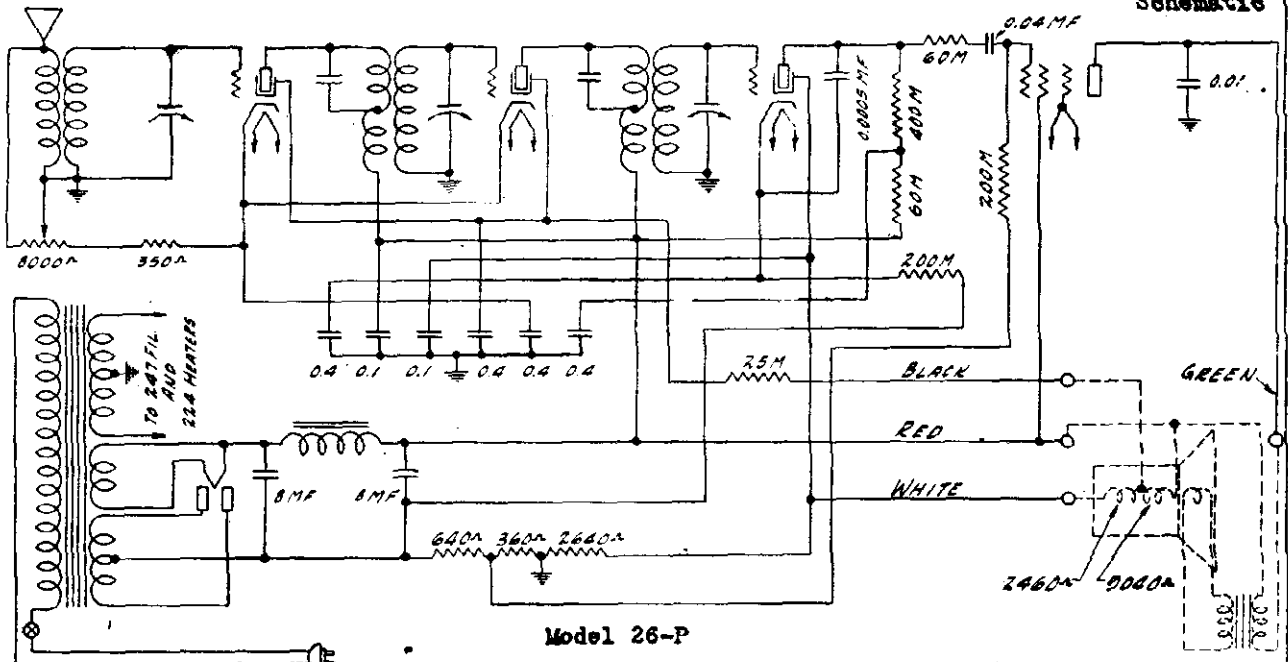
Next set the oscillator for a signal of 1,000 K.C. Then turn the tuning condenser rotor carefully until maximum deflection is obtained on output meter. The second slotted section of the rotor will be approximately half way in mesh with the stator as shown in Fig. 3. Bend this section of the two end rotor plates of the first section of the tuning condenser in or out until maximum reading is obtained on the output meter. Follow the same procedure with section two of the tuning condenser. The corresponding slotted section on both ends of any rotor section should be bent in or out about the same amount for each adjustment.

After each material adjustment of a slotted rotor plate section, the tuning or setting of rotor for resonance should be checked. In other words, after every bending turn the tuning knob back and forth until maximum deflection of output meter is obtained before proceeding to make the next adjustment.

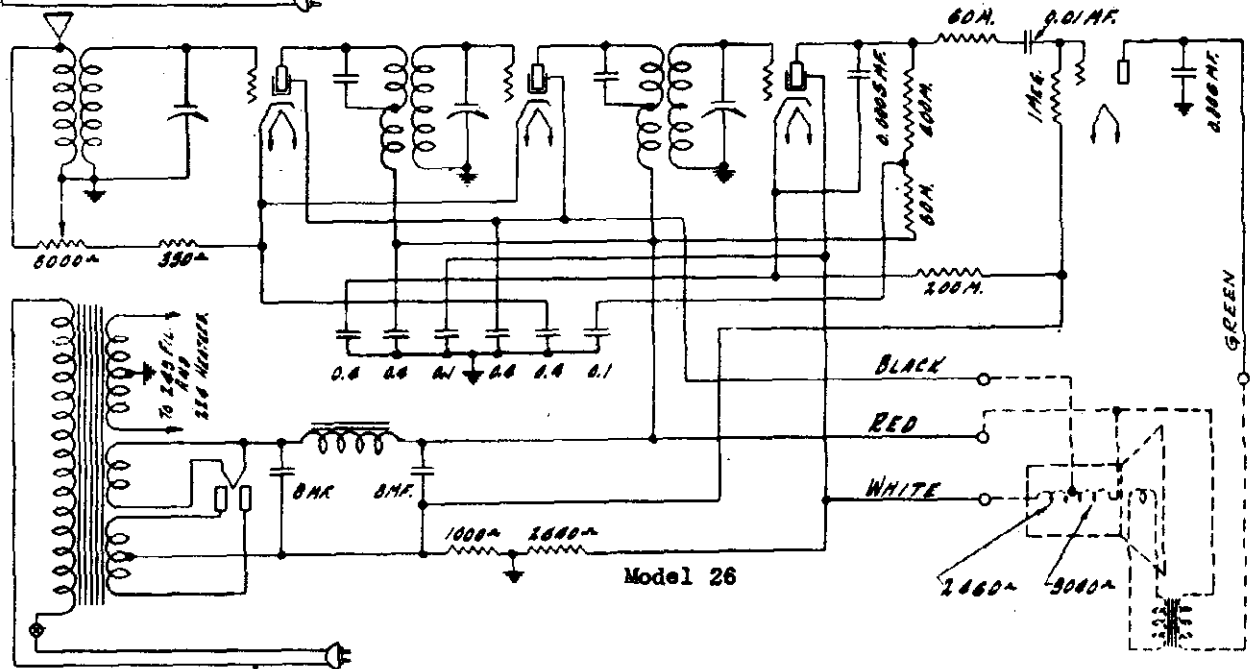
Next tune in a signal at 750 K.C. Follow the same procedure. Lastly, tune in a signal at 600 K.C. and again follow the same procedure. The condenser will then be properly aligned.

U. S. RADIO & TELEVISION CORP.

MODEL 26
Schematic
MODEL 26-P
Schematic



Model 26-P



Model 26

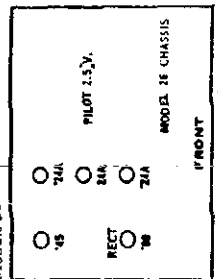
Type	Function	A	B	C	Screen	Plate Crnt.
224	1st RF	2.2	245	2.5	80	2.9 ma
224	2nd RF	2.2	245	2.5	80	2.9
224	Det.	2.2	130	3.	40	.25
245	Audio	2.35	245	50.		28.
280	Rect.	4.6				25.*

* Per anode. Line voltage 115 . V.C.Max.

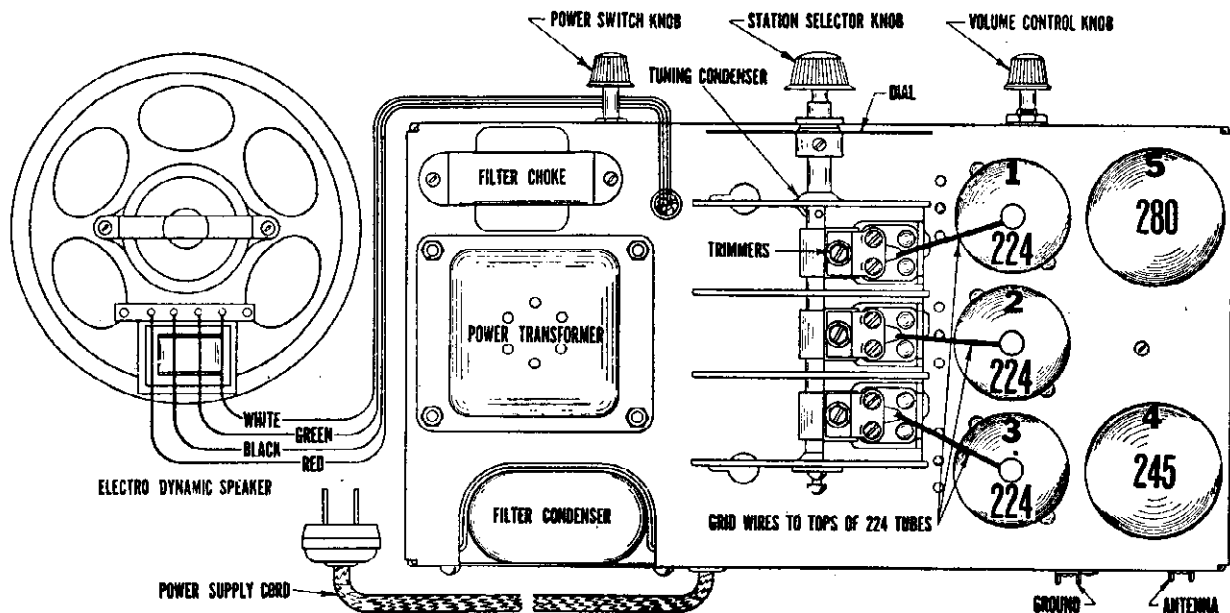
224	1st RF	2.2	250	2.	55."*	2.1
224	2nd RF	2.2	250	2.	55."*	2.1
224	Det.	2.2	130	2.8	40."*	.25
247	Audio	2.3	238	18.**	250	27.
280	Rect.	4.65				28. *

** Read across 360 ohms section of shunt resistor.

" Read with 250,000 ohm meter.



MODEL 26 Chassis
MODEL 26-P Parts List U. S. RADIO & TELEVISION CORP.



--Top View of No. 26 Chassis showing Tube Sequence and Speaker Connections

No. 26P Chassis Replacement Parts (Supplementing No. 26 List)

The following parts are used in addition to the parts listed for the No. 26 chassis.

Part No.	Description	No. Used in Set	List Price Each
2757	Tube Socket—247.....	1	.35
705	25,000 ohm Series Resistor, Carbon.....	1	.50
1358	.04 Mfd. Coupling Condenser.....	1	.60
1751	200,000 ohm Grid Leak Resistor, Carbon.....	1	.50
2303A	Shunt Resistor, 640—360—2640 ohms.....	1	.60
2767	Resistor & Condenser Panel Assembly complete.....	1	3.00
2678	8 Mfd. Electrolytic Condenser Unit complete, Dry type.....	2	2.25
2752	Chassis Cover Plate for Electrolytic Condensers.....	1	.15
2691	Mounting Plate for Electrolytic Condensers.....	1	.15
2763	Electrolytic Condenser Assembly complete, 2 Units and Mounting Plate.....	1	4.65
2756	Power Transformer, 115 Volt, 60 Cycles.....	1	7.50
2768	Chassis Harness.....	1	1.00
2771	Bottom Plate.....	1	.40
2758	Baffle Mtg. D.C. Electrodynamic Speaker for No. 26P Chassis.....	1	8.50
2796	Transformer for Speaker.....	1	3.50

The following parts listed for the No. 26 Chassis are not used in the No. 26P Chassis:

685	Tube Socket—245.....	1	.35
1612	.006 Mfd. Audio Plate By-pass Condenser.....	1	.80
2266	1 Megohm Grid Leak Resistor.....	1	.45
2303	Shunt Resistor, 1000—2640 ohms.....	1	.60
2316	Resistor & Condenser Panel Assy. complete.....	1	3.00
1942	8 Mfd. Electrolytic Condenser Unit.....	2	2.50
2223	Mounting Clamp for Electrolytic Condensers.....	1	.20
2328	Metal Cap for Electrolytic Condensers.....	1	.15
2251	Power Transformer, 115 Volts, 60 Cycles.....	1	7.50
2238	Cover Plate for Power Transformer.....	1	.30
2318	Chassis Harness.....	1	1.20
2467	Baffle Mtg. D.C. Electrodynamic Speaker No. 26 Chassis.....	1	8.50
2555	Transformer for Speaker.....	1	3.50

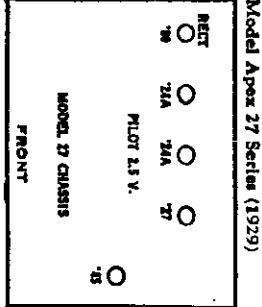
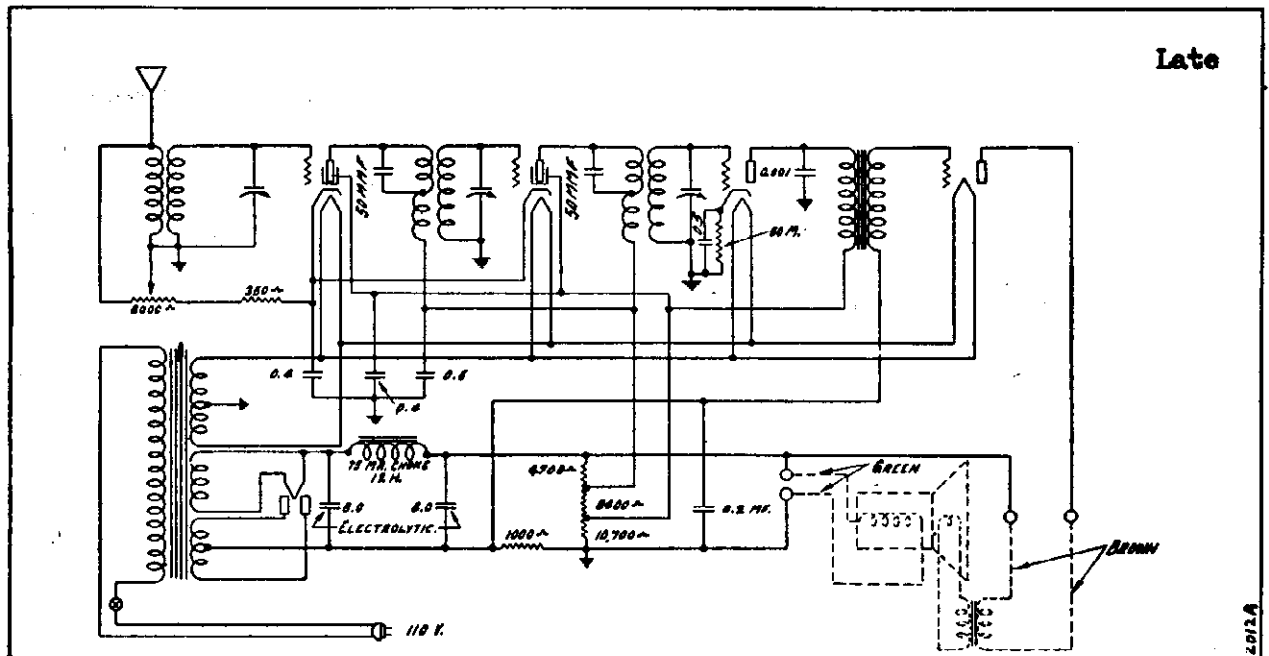
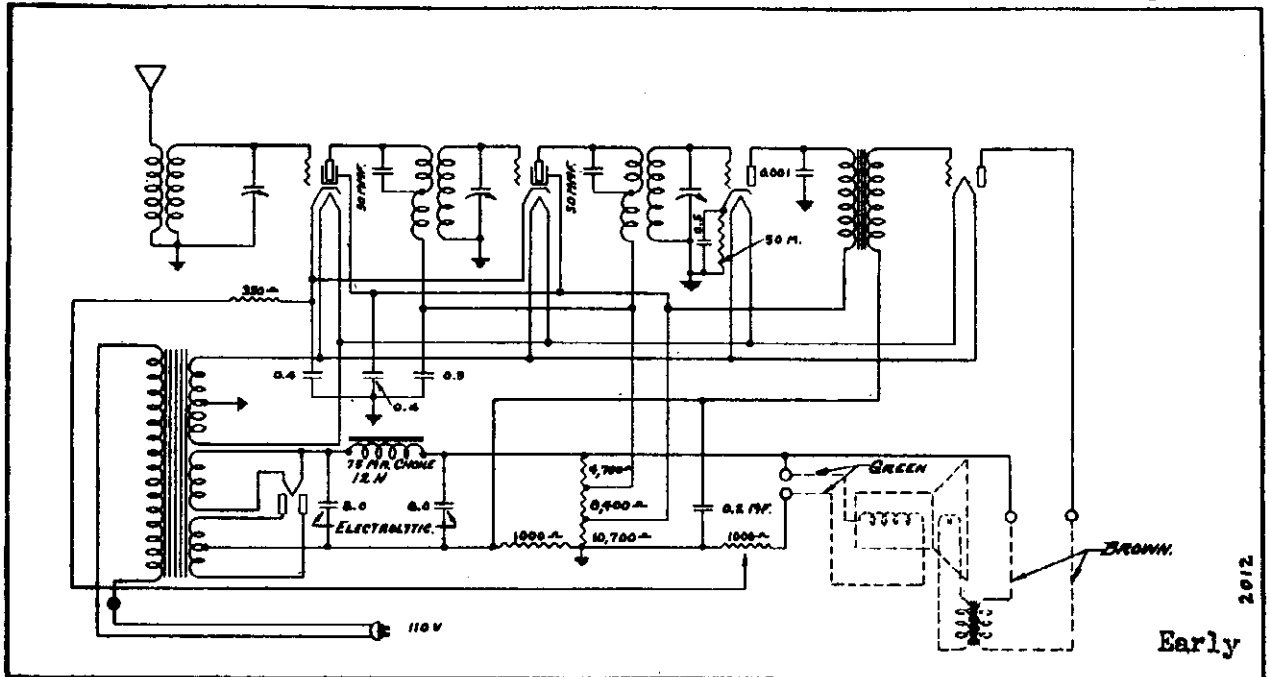
Making Pentode Current and Voltage Readings

Reading	Terminals	Meter
A Volts	Across filament terminals	0-4 A.C. Voltmeter
E Volts	Plate terminal to subpanel	0-300 D.C. Voltmeter
C Volts	Across 360 ohm resistor	0-50 D.C. Voltmeter
Screen Volts	Screen grid terminal to subpanel	0-300 D.C. Voltmeter
Screen M.A.	Insert milliammeter in screen grid line	0-25 D.C. Milliammeter
Plate M.A.	Insert milliammeter in plate line	0-50 D.C. Milliammeter

CAUTION:—Never operate the Pentode tube under any circumstances without plate voltage. This condition may arise if one of the speaker leads is disconnected opening the line to the primary of the output transformer. Without plate voltage the screen grid will become white hot due to the excessive current flowing through it and may become distorted or may evolve gas. Care should be taken, therefore, in servicing the No. 26P chassis or conducting experiments with the Pentode never to have this condition arise.

U. S. RADIO & TELEVISION CORP.

MODEL 27 (Early)
Schematic
MODEL 27 (Late)
Schematic

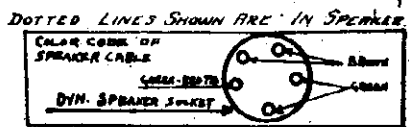
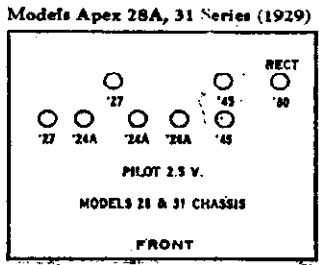
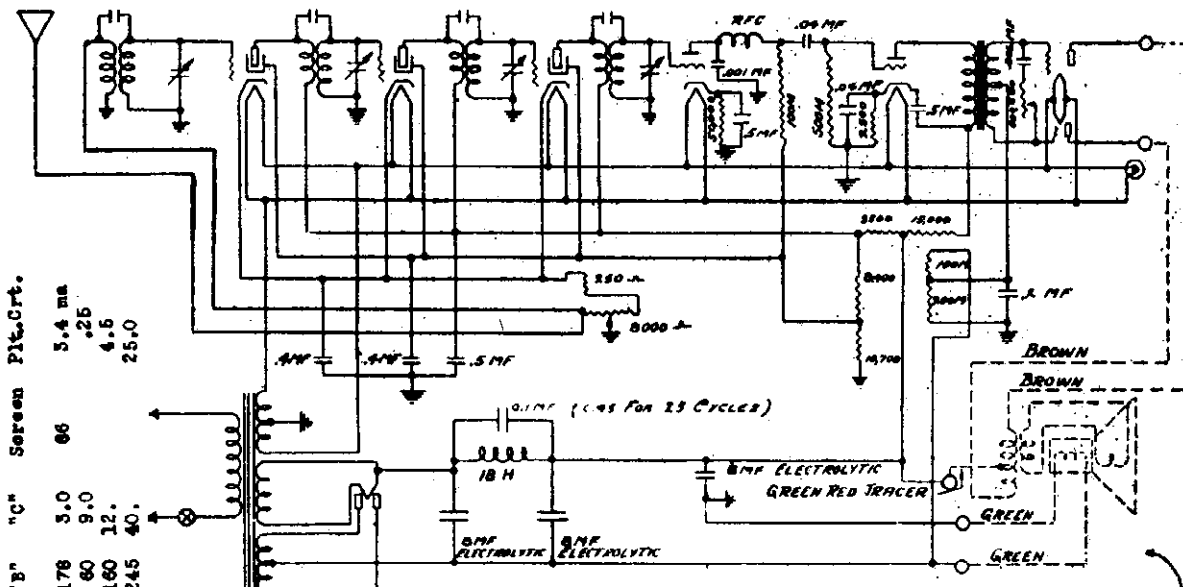


VOLTAGES AT SOCKETS — VOLUME CONTROL AT MAXIMUM —
LINE VOLTAGE, 115 — PLUG IN SOCKET OF RECEIVER —
TUBE IN TEST SET

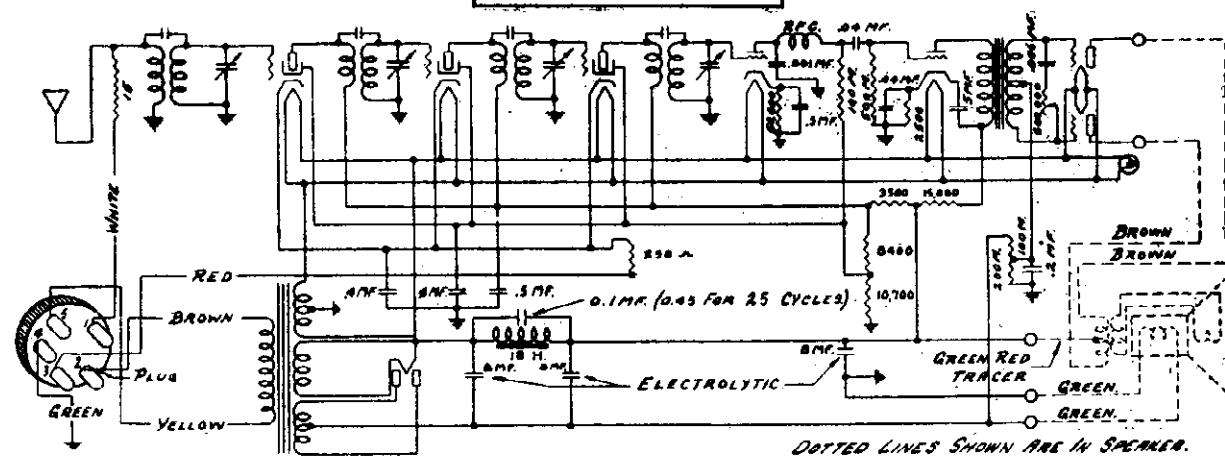
Type of Tube	Position of Tube	Function	"A" Volts	"B" Volts	Control Grid "C" Volts	Screen Volts	Screen Current MA	Cathode Volts	Plate MA	Grid Test MA
224	1	1st Radio	2.25	160	2.5	80	.6	2.5	3.	5.1
224	2	2nd Radio	2.25	160	2.5	80	.6	2.5	3.	5.1
227	3	Detector	2.25	70	8.5			8.5	.1	.2
245	4	Audio	2.35	238	44.				19.	22.
280	5	Rectifier	4.8						26.5 per Plate	

U. S. RADIO & TELEVISION CORP.

MODEL Apex 31-R



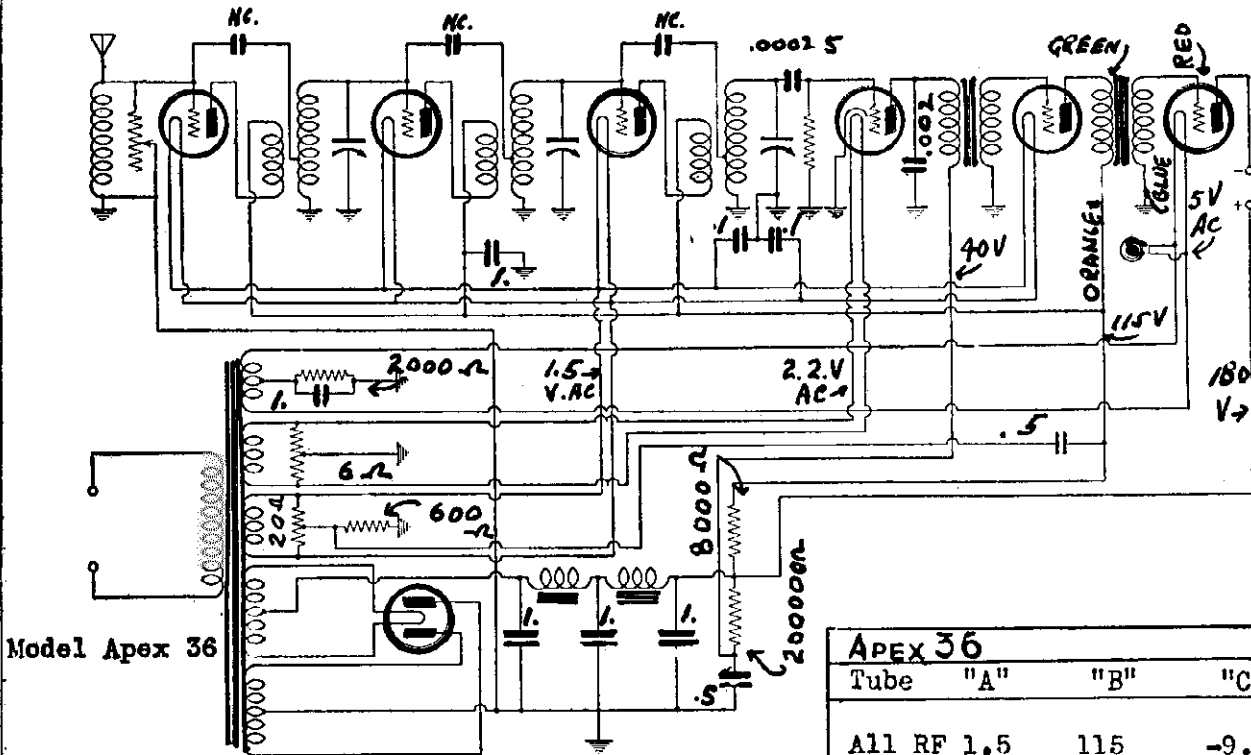
Model Apex 31



Model 31 Remote Control

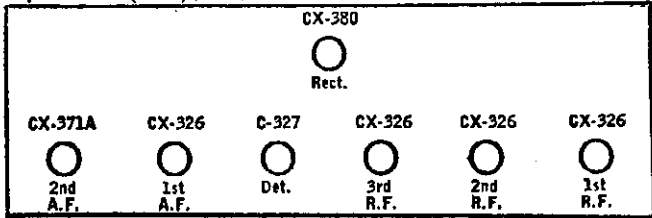
U. S. RADIO & TELEVISION CORP.

MODEL Apex 36
MODEL Apex 37



Model Apex 36

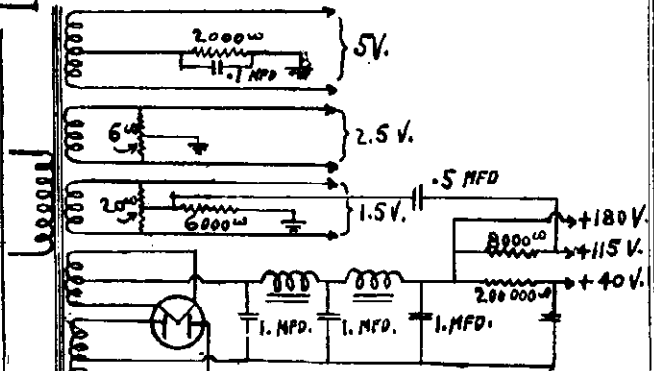
Apex 36 (AC), 50, 60 (A.C.)



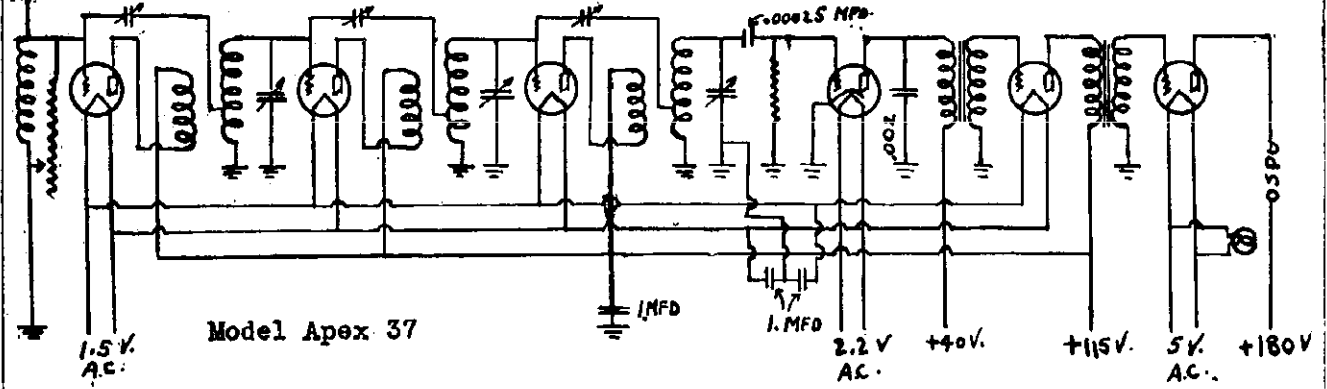
APEX 36			
Tube	"A"	"B"	"C"
All RF	1.5	115	-9.
Det	2.2	26	-
1AF	1.5	105	-9.
2AF	4.9	182	-37.
Rect	4.9		
Speaker terminals shorted			
Line voltage 115 volts			

Model 37. Line-115 V. (L.S.Coil shorted.)

Tube Type	Stage	Fil. Volts	Plate Volts	Grid Volts	Plate Ma.
'26	1 RF	1.5	115	9.	5.5
'26	2 RF	1.5	115	9.	5.5
'26	3 RF	1.5	115	9.	5.5
'27	Det.	2.2	25	---	1.5
'26	1 AF	1.49	105	9.	5.
'71-A	2 AF	5.	180	36.	20.
'71-A	2 AF	5.	180	36.	20.
'80	Rect	4.9			



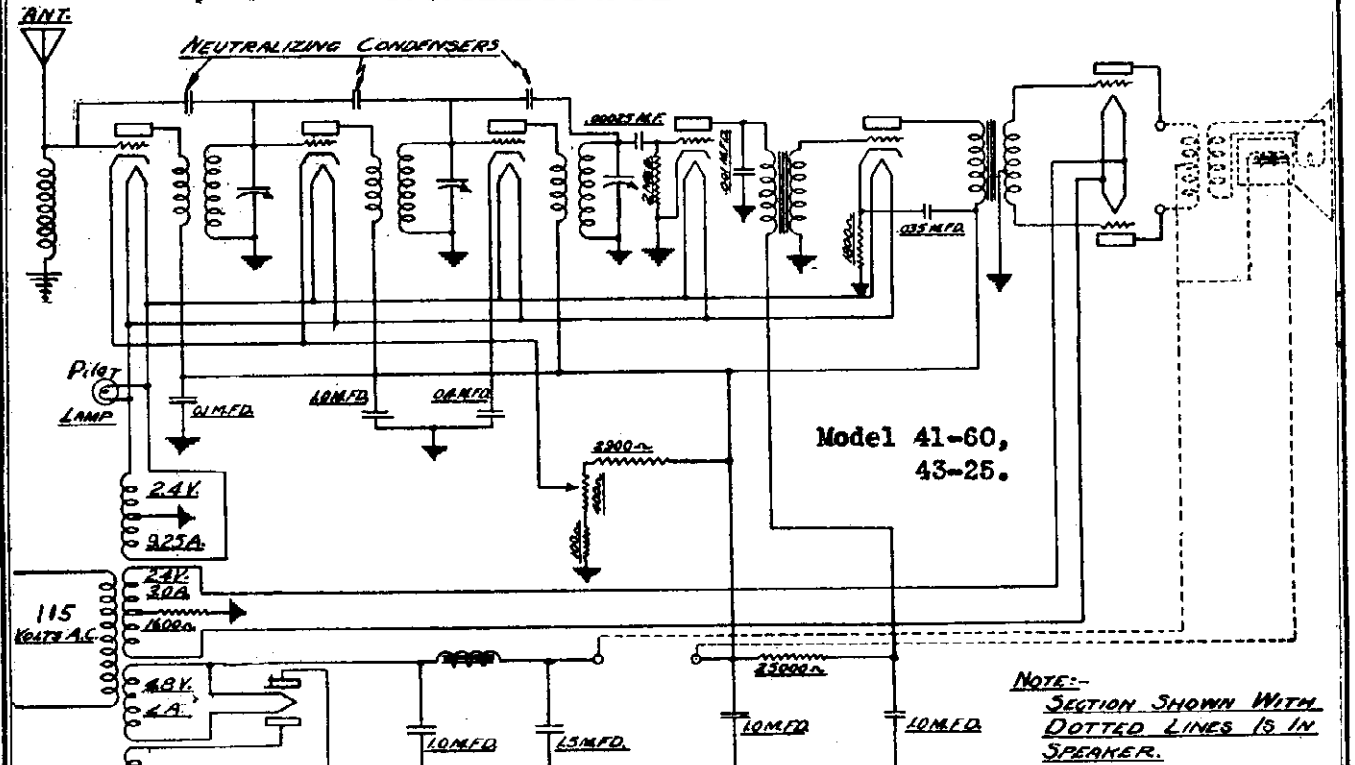
Model Apex 37 Power Unit



Model Apex 37

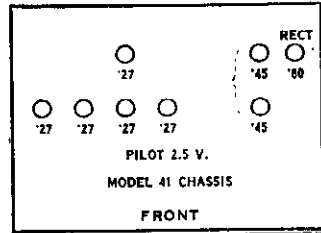
MODEL 41-60, 43-25
MODEL 42-60, 44-25

U. S. RADIO & TELEVISION CORP.

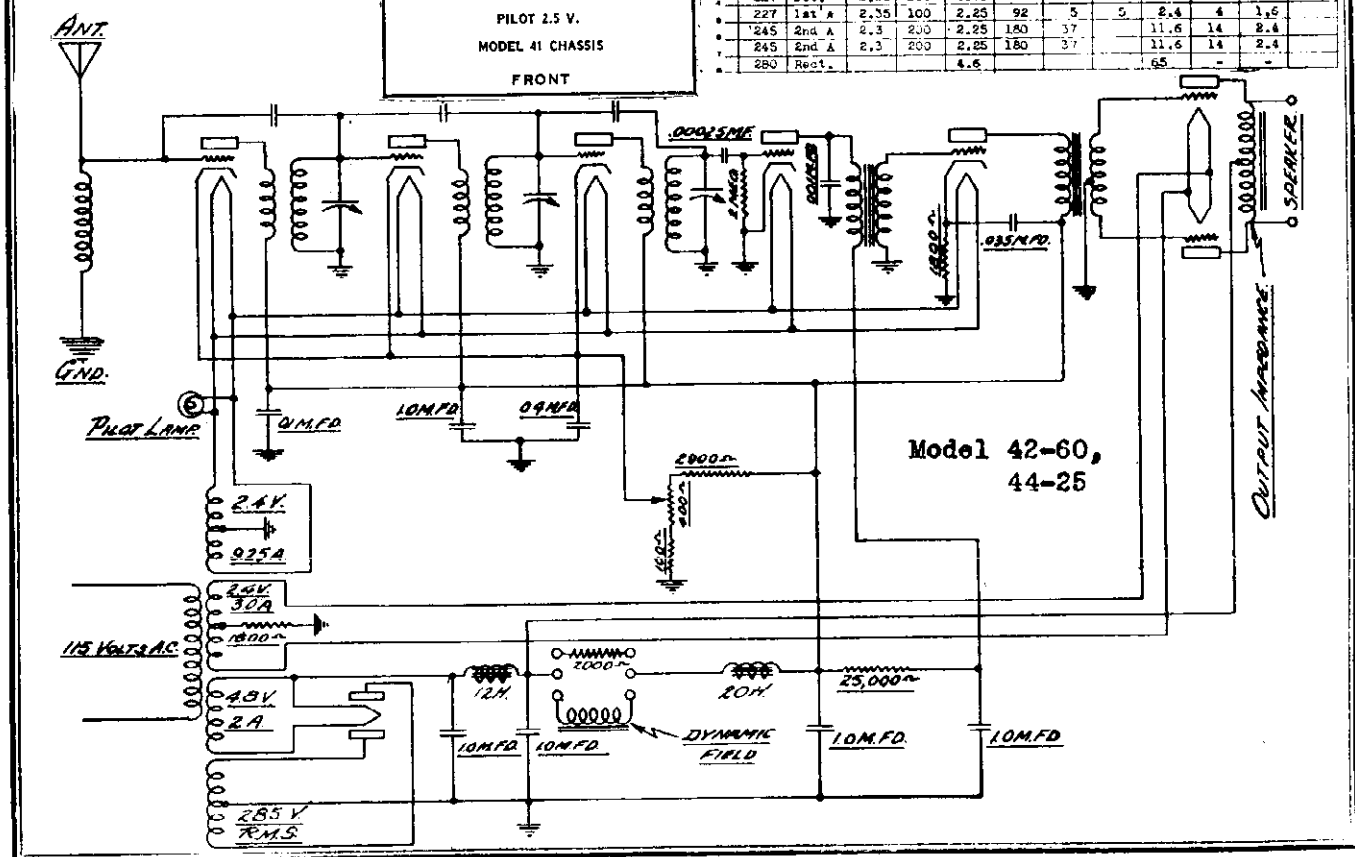


U. S. RADIO & TELEVISION—Model 41-60 Cycle Line Voltage 110—Volume Control Position Max

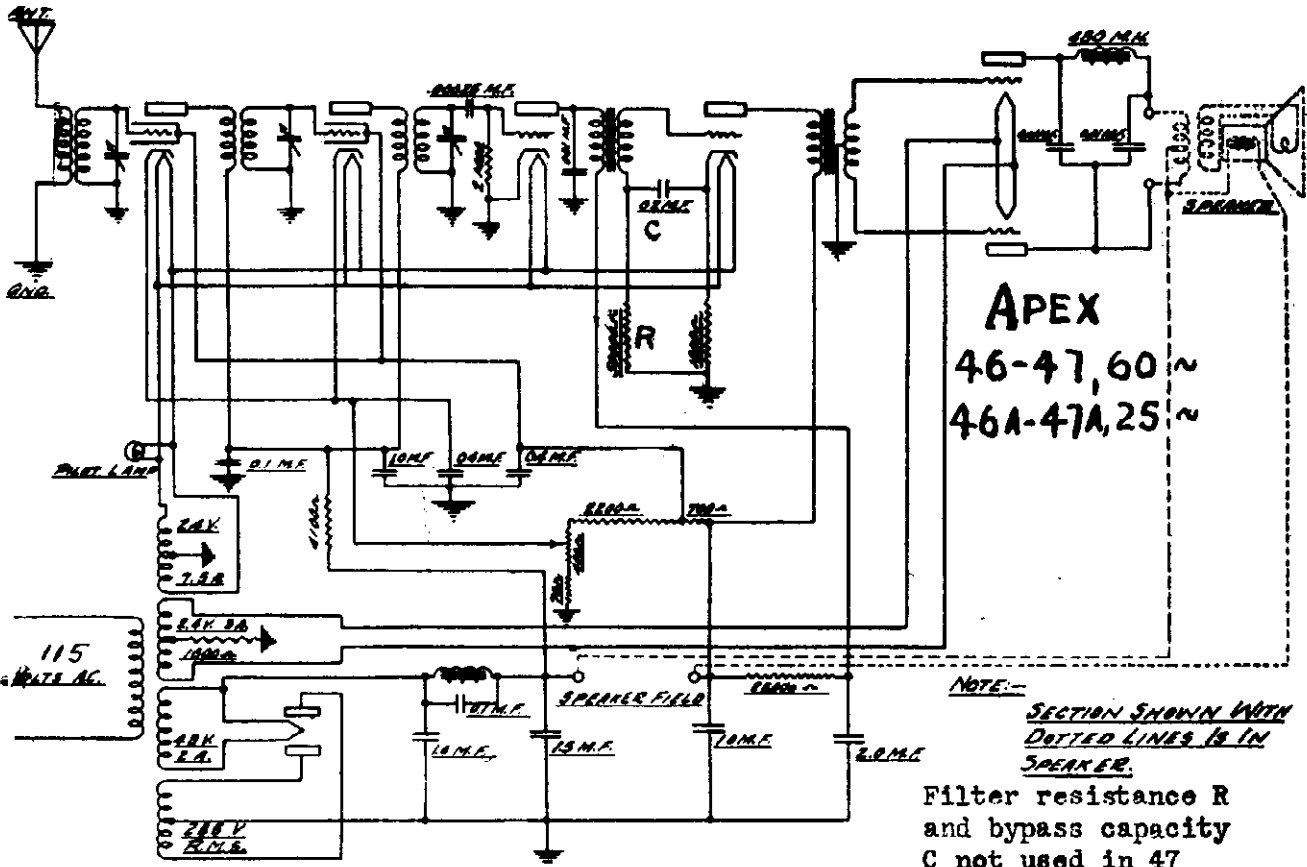
Models Apex 41, 42, 43, 44, 60, 60A (1929)



TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RT. 2ND RT. 3RD RT. 4TH RT.	TUBE OUT		READING PLUG IN SOCKET OF SET										
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE CENTER (V)	NORMAL HEATER (V)	PLATE (V)	GRID (V)	SCREEN (V)	CHANG. (V)		
1	227	1st RF	2.3	100	2.25	100	4	4	4.6	9	4.4				
2	227	2nd RF	2.3	100	2.25	100	4	4	4.6	9	4.4				
3	227	3rd RF	2.35	100	2.25	100	4	4	4.5	9	4.4				
4	227	Det.	2.35	100	2.25	60	-	-	2.4	-	-				
5	227	1st A	2.35	100	2.25	92	5	5	2.4	4	1.6				
6	245	2nd A	2.3	200	2.25	180	37	-	11.6	14	2.4				
7	245	2nd A	2.3	200	2.25	180	37	-	11.6	14	2.4				
8	250	Rect.	-	-	4.6	-	-	-	6.5	-	-				



U. S. RADIO & TELEVISION CORP. MODEL 46,47 Apex
MODEL 46-A,47-A Apex



APEX
46-47, 60 ~
46A-47A, 25 ~

NOTE:
SECTION SHOWN WITH
DOTTED LINES IS IN
SPEAKER.

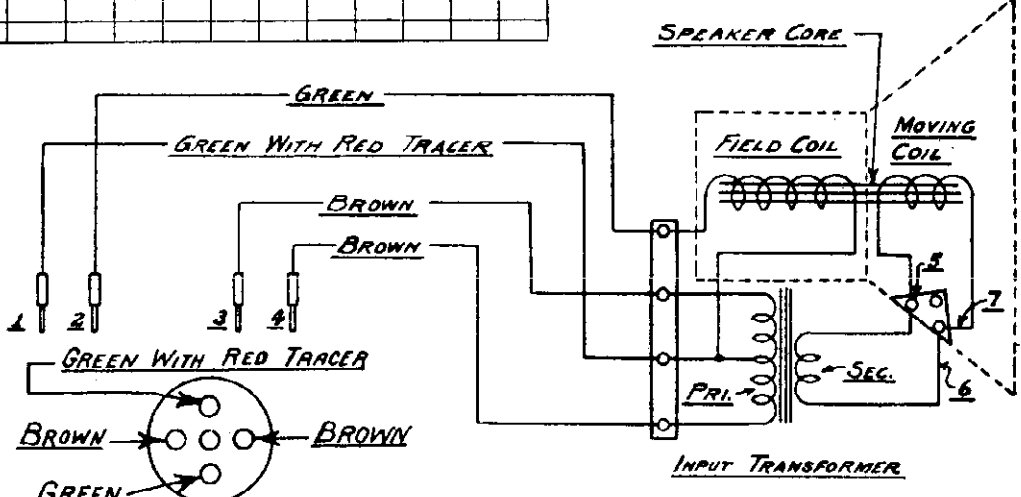
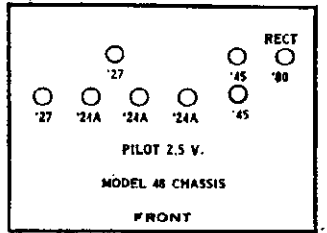
Filter resistance R
and bypass capacity
C not used in 47
and 47A

46 and 46-A

U. S. RADIO & TELEVISION—Models 47 and 47A

TUBE NO. OR ORDER LISTED	TYPE OF TUBE	POSITION OF TUBE IN SET	METER READINGS WITH JEWELL TEST PLUG IN SOCKET OF SET									
			OPERATING VOLTAGES			MILLIAMPERES						
①	②	③	FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID - SPACE GRID	NORMAL GRID - SCREEN GRID	CATHODE TO HEATER	SCREEN TO CATHODE	PLATE TO CATHODE	TUBE TEST	PLATE CURRENT (NO CHARGE)	
1	224	1 R.F.	2.56	173	2.72	66	2.78	.67	3.0			
2	224	2. R.F.	2.31	173	2.72	66	2.78	.81	3.0			
3	227	Det.	2.28	35	-	0	-	-	2.6			
4	227	1 A.F.	2.28	100	-	6.1	-	-	3.25			
5	245	2 A.F.	2.29	169	-	38	-	-	11.3			
6	245	2 A.F.	2.29	169	-	38	-	-	11.3			
7	880	Rect.	4.61	-	-	-	-	-	34.8	34.5		
8												
9												
10												

Models Apex 11, 11A, 14, 14A, 46, 47 (New Type) (29)



—Electrodynamic Speaker and Connections—

U. S. RADIO & TELEVISION CORP.

MODEL 80 Schematic.

CASE 80-81 —Line Voltage 115.
On Some Models There Will Be a Cathode Voltage of Approximately 27 Volts—Others 0

TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE (1ST R.F., DET., ETC.)	READINGS PLUG IN SOCKET OF SET									
			TUBE OUT					TUBE IN TESTER				
			A VOLTS	B VOLTS	A VOLTS	B VOLTS	C VOLTS	CATHODE VOLTS	NOMINAL PLATE M.A.	PLATE M.A. TEST	PLATE C.A. CHANGES	
226	1st. R.F.		1.25	110	8.5	-	3.3	6.3	3.0			
226	2nd. R.F.		1.25	110	8.5	-	3.3	6.3	3.0			
226	3rd. R.F.		1.25	110	8.5	-	3.3	6.3	3.0			
226	4th. R.F.		1.25	110	8.5	-	3.3	6.3	3.0			
227	Detector		2.00	27	0.0	0.0	1.4	1.4	0.0			
226	1st. A.F.		1.27	110	7.8	-	2.7	6.7	3.0			
171A	2nd. A.F.		1.80	165	37.0	-	17.0	19.5	2.5			
280	Rectifier		4.50	-	-	-	24.0	-	-			

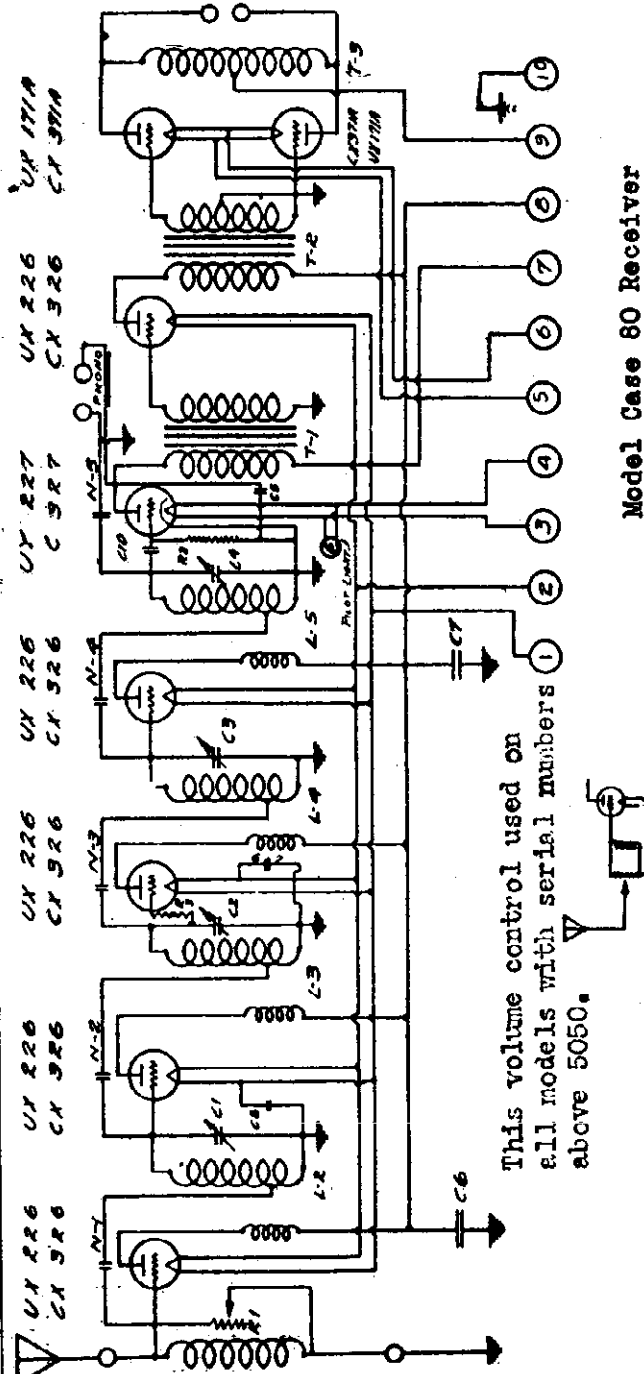
Case 81B, 81C

(A.C.)

CX-380

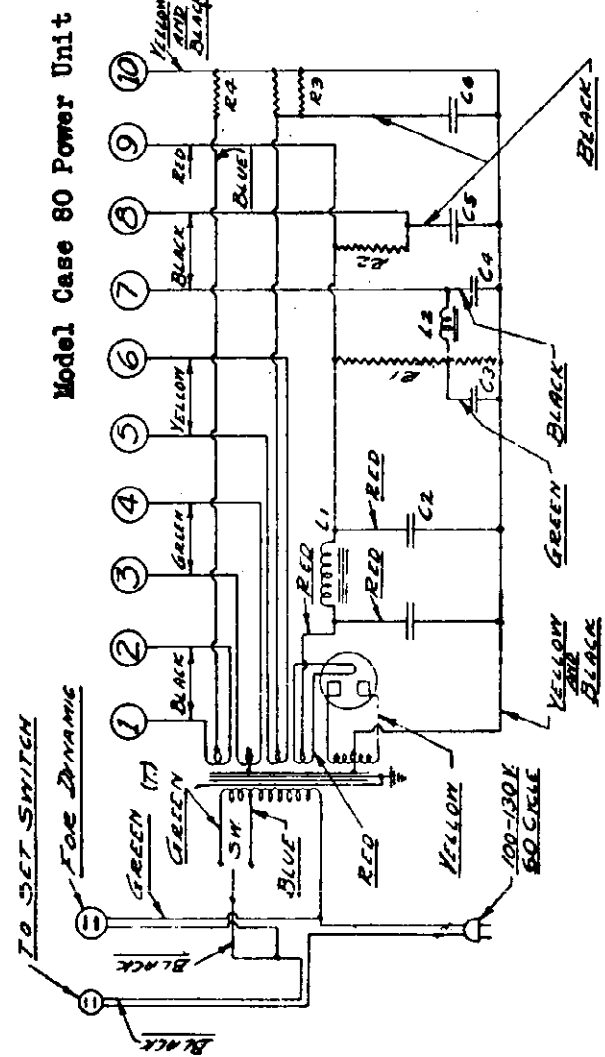


CX-326 CX-326 CX-326 CX-326 C-327 CX-326 CX-371A CX-371A



Model Case 80 Receiver

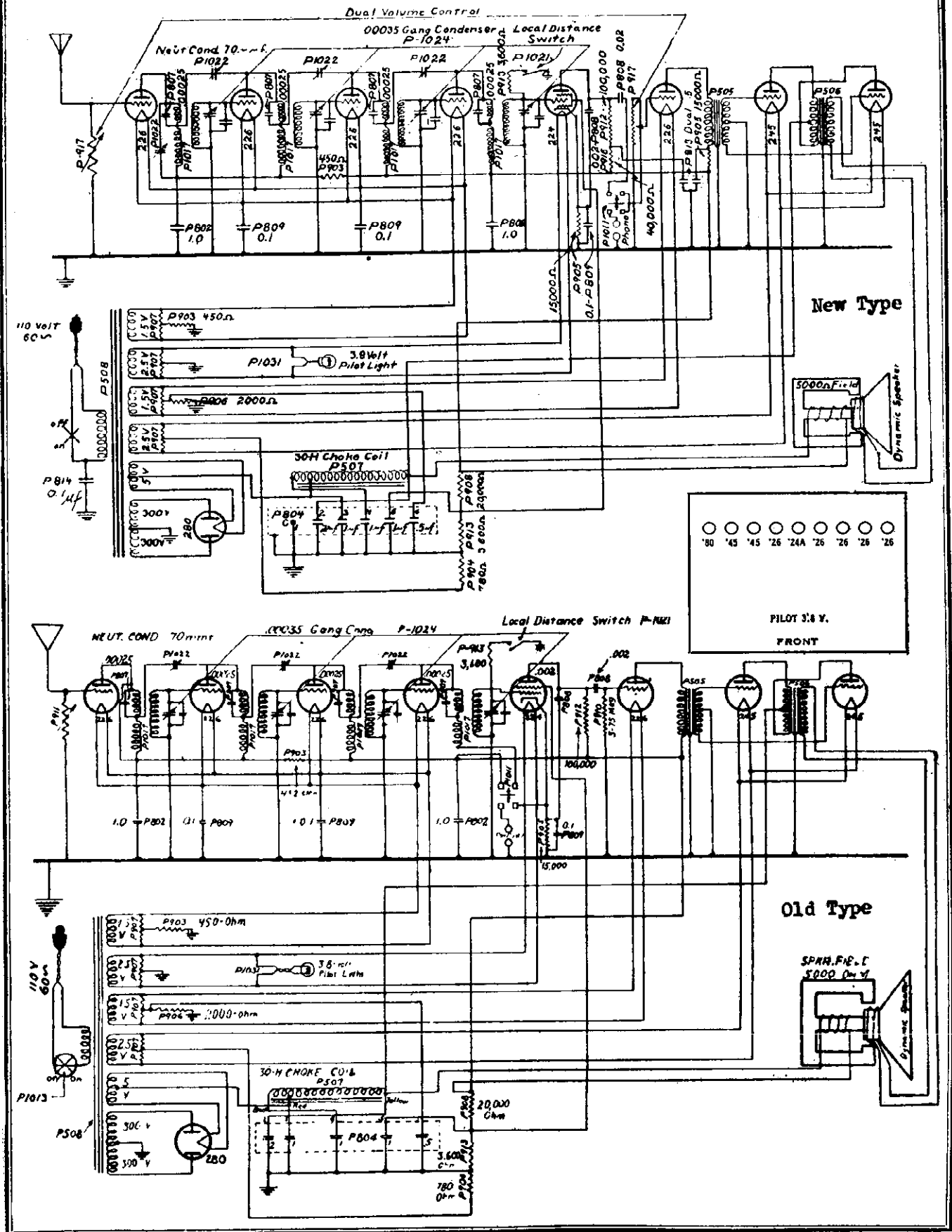
This volume control used on all models with serial numbers 1 above 5050.



Model Case 80 Power Unit

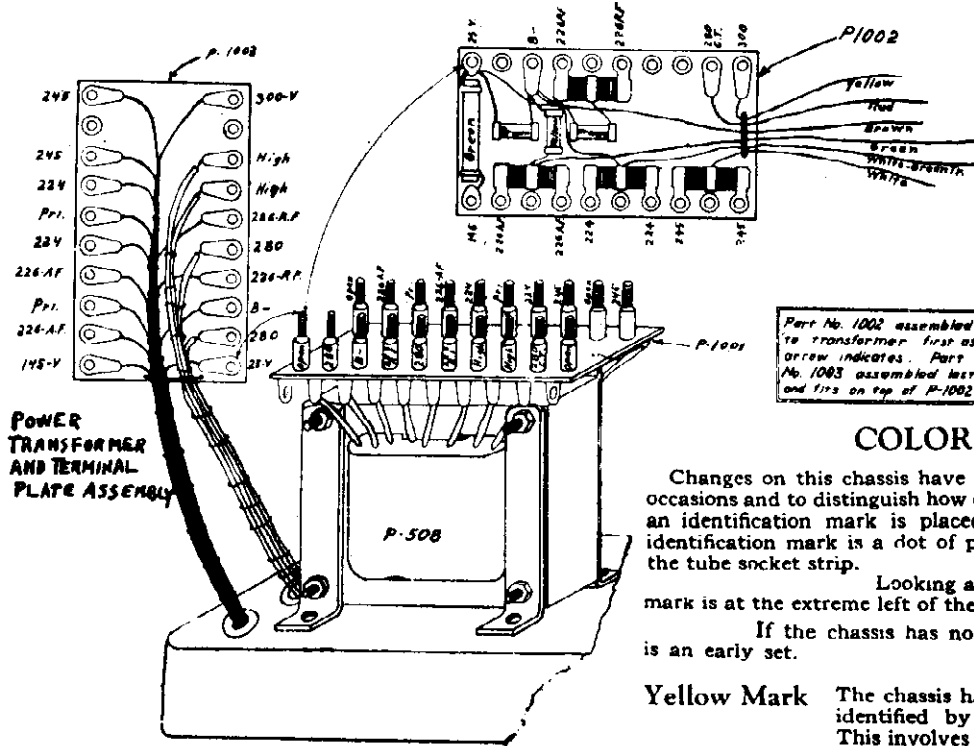
WELLS - GARDNER & CO.

MODEL C,CG
Schematic
1st & 2nd Types



MODEL C,CG
Voltage - Data
1st & 2nd Types

WELLS - GARDNER & CO.



COLOR CODE

Changes on this chassis have been made on several different occasions and to distinguish how one chassis differs from another, an identification mark is placed on each one changed. This identification mark is a dot of paint found on the end rivet of the tube socket strip.

Looking at the chassis from the back the mark is at the extreme left of the 226 tube socket

If the chassis has no mark it is understood that it is an early set.

Yellow Mark The chassis having the first changes may be identified by the yellow indicating mark. This involves four changes.

1. A "dual volume control" in place of the single type. The new volume control is made in two sections, with five lugs. The section nearest the chassis, having two lugs, operates exactly the same as the single volume control. The section behind the first, having three lugs, is placed in the first audio circuit to reduce the audio amplification and operates in tandem with the antenna volume control.

2. An interchange of position of the two audio transformers. The re-arrangement of the audio transformers has not altered their connections in the circuit.

3. An addition of a "dual half microfarad condenser" and two carbon resistors in the "B" circuit of the detector and first audio tubes. The 40,000 ohm black resistor with one section of the dual condenser is placed in the detector circuit (224) and the 15,000 ohm blue resistor with the other section of the dual condenser is placed in the first audio circuit (226). You will note that the yellow and blue leads in the cable connecting to the terminal strip have been interchanged.

4. A change in the location of the grounding of No. 1 lug on the condenser block. This lug is now grounded to the condenser case with a short piece of bare wire.

OPERATING VOLTAGES

Type of Tube	Position of Tube	TUBE IN TEST SET							
		"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Screen Current	Cathode Volts	Normal Ma.	Grid Test Ma.
226	1st R.F.	1.35	116	8.5				4.7	8.7
226	2nd R.F.	1.35	116	8.5				4.7	8.7
226	3rd R.F.	1.35	116	8.5				4.7	8.7
226	4th R.F.	1.35	116	8.5				4.7	8.7
224	Det.	2.2	80	1.3	15				
226	1st A.F.	1.4	110	1.0				4.0	5.0
245	2nd A.F.	2.2	232	42				27	32
245	2nd A.F.	2.2	232	42				27	32
280	Rect.	4.6							84

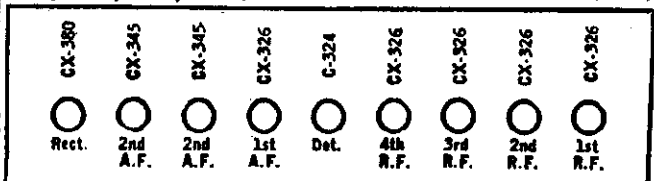
Line Voltage During Test—115 Volts.

REVISION OF OPERATING VOLTAGES

Type of Tube	Position of Tube	TUBE IN TEST SET							
		"A" Volts	"B" Volts	Control Grid ("C") Volts	Screen Volts	Screen Current	Cathode Volts	Normal Ma.	Grid Test Ma.
224	Det.	2.2	75	1.3	15				
226	1st A.F.	1.4	77	1.0				4	5

200, 291, 292, 9950

(A.C.)



Red Mark
(Serial Number 39,000-42,999)

All chassis having a red mark on the rivet of the tube socket strip have all of the changes mentioned above and in addition, have a one-tenth microfarad condenser connected from ground to one

side of the 110 volt line. A peculiarity that may be experienced by the addition of this condenser is a loud hum on every station tuned in only when the antenna wire coming from the set is connected to ground. This can be eliminated by reversing the plug in the socket. Also be sure your antenna is not grounded, either by some other set being connected to your aerial or through any other means.

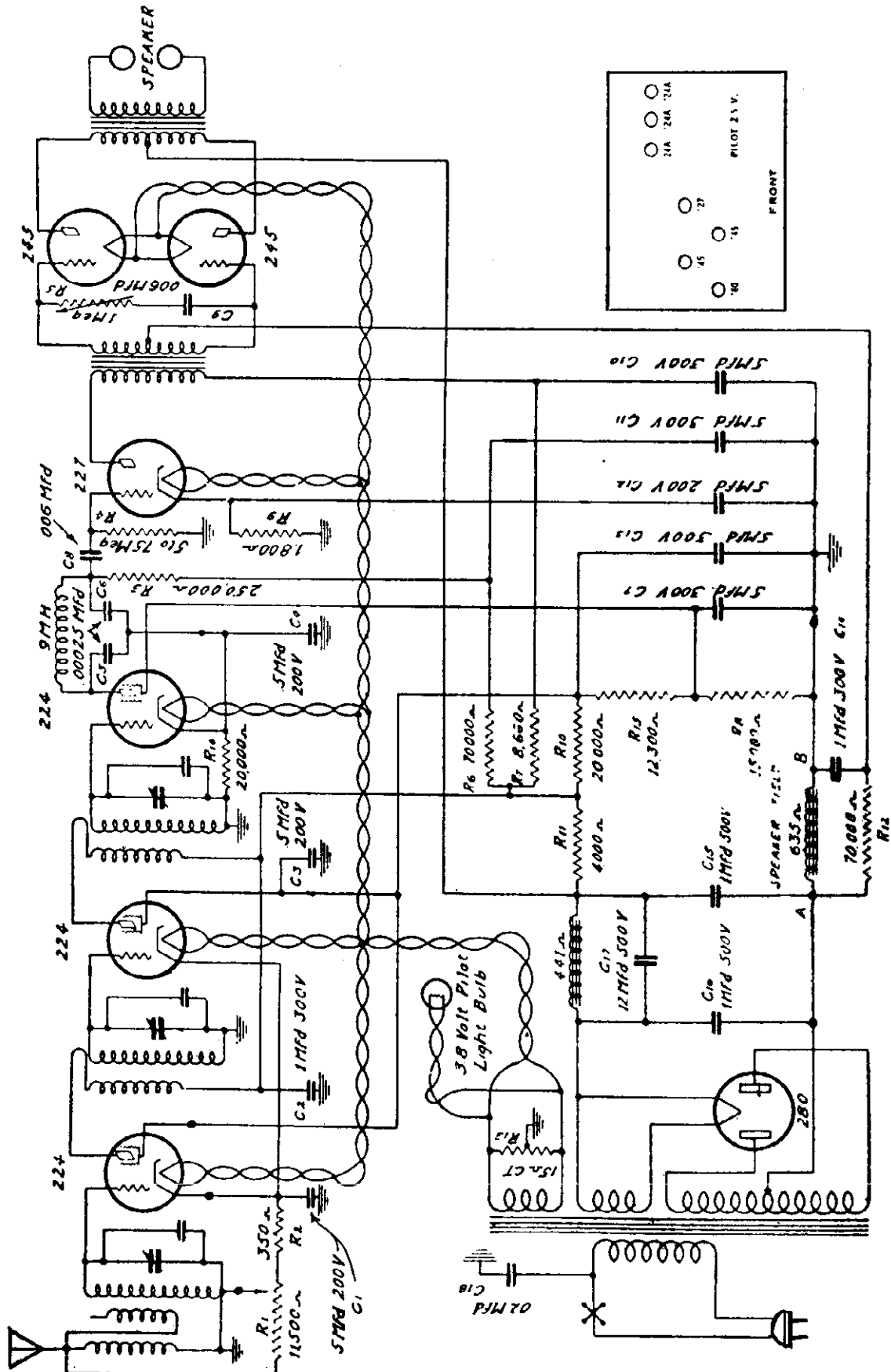
Green Mark
(Serial Number 43,000 and up)

All Chassis with a green mark on the rivet of the tube socket strip contain the above changes and in addition have a change in the "combination phonograph switch" circuit. This changed circuit makes use of only the audio system of the set for phonograph reproduction, whereas the original circuit included the detector tube

The Phonograph, Radio, On, and Off positions of the switch are the same as in the early sets. To obtain maximum volume and best tone quality a pick-up coupling transformer should be used to match the pick-up used.

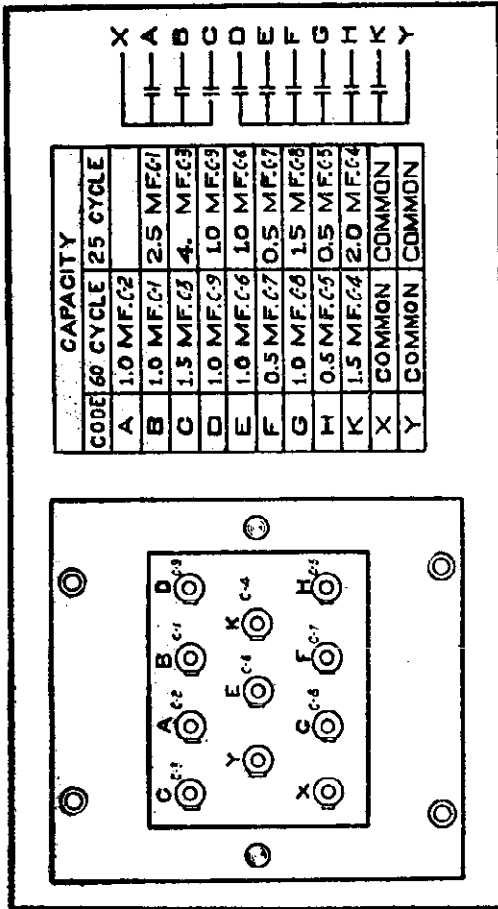
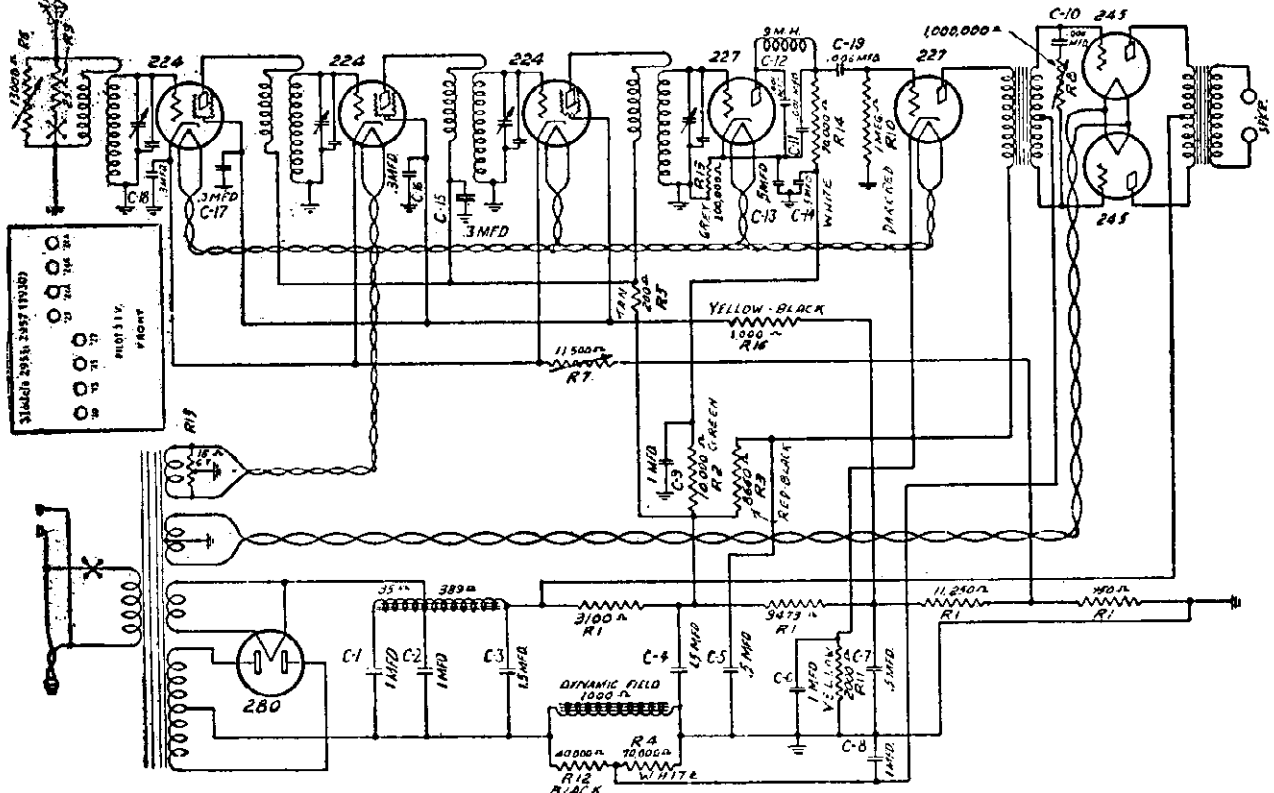
WELLS - GARDNER & CO.

MODEL 72
Schematic



WELLS - GARDNER & CO.

MODEL 80, 82 AC
60 cycle
Schematic
Data



Filter Condenser (60 and 25 cycle receivers).

FIXED CONDENSERS

Condensers C1 to C9 inclusive are in the filter block. C1, C2, C3, C4, and C7 are in the main filter circuits. C5 bypasses R3, which is the 8,660 ohm resistor in the first audio plate circuit. C6 by-passes R11, the cathode bias resistor on the first audio stage. C8 by-passes the grid bias on the 245 tubes, (obtained through R4 and R12) and C9 bypasses the 10,000 ohm resistor R2 in the detector plate circuit.

C10 and C19 are located on the resistor-condenser terminal strip (See Fig. 4) and are both .006 mfd. moulded condensers. C10 is in the tone control circuit, while C19 is the coupling condenser in the resistance coupled amplifier.

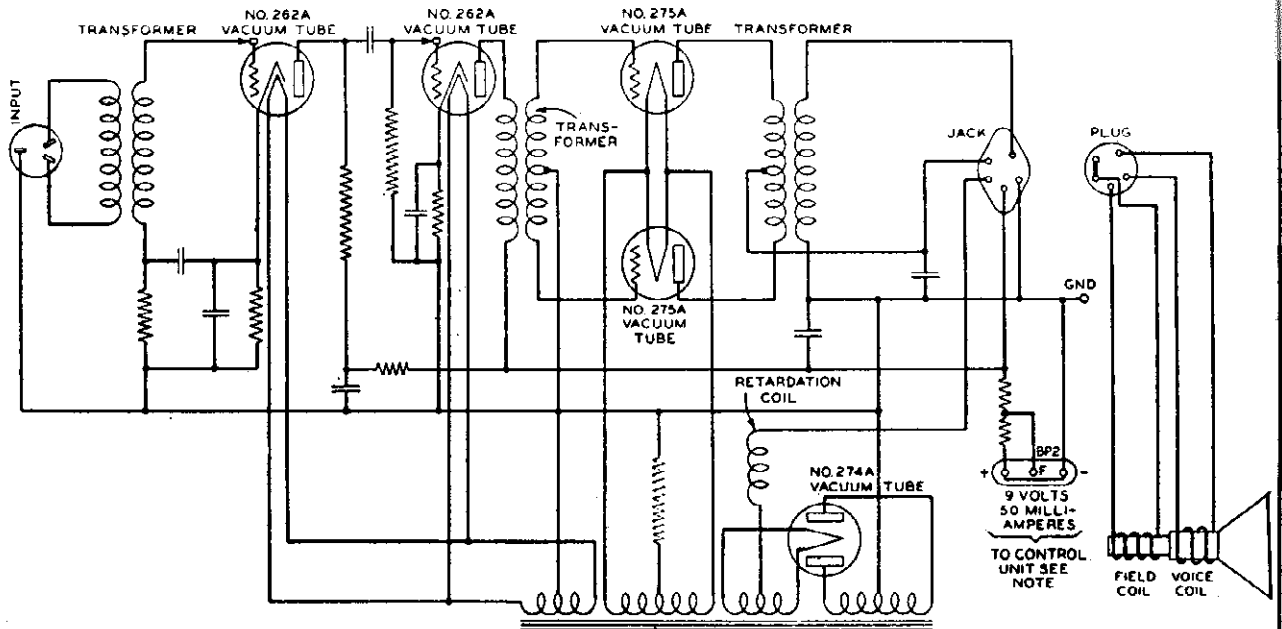
C11 and C12 are .001 mfd. moulded condensers, and are used in the detector plate circuit filter. C13 and C14 are the two units in the dual 1/2 mfd. by-pass condenser.

C15, C16 and C18 are located in the triple 3 mfd. condenser case. C17 is a single .3 mfd. condenser, and is mounted alongside of the triple .3 mfd. condenser case.

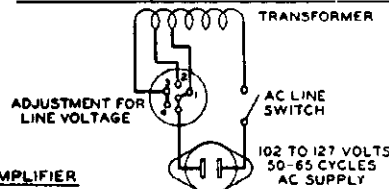
Code Fig. 1	Stock No.	Quantity
C1 to C9 inclusive	80818	9 Mfd. total. Filter block.
C10 and C19	80822	.006 Mfd. White paint spot.
C11 and C12	80821	.001 Mfd. Grey paint spot.
C13 and C14	80826	Dual .5 Mfd. Metal case.
C15, C16, C18	80817	Triple .3 Mfd. Metal case.
C17	80820	.3 Mfd. Metal case.

WESTERN ELECTRIC CO.

MODEL D-95508
MODEL 8
MODEL 8

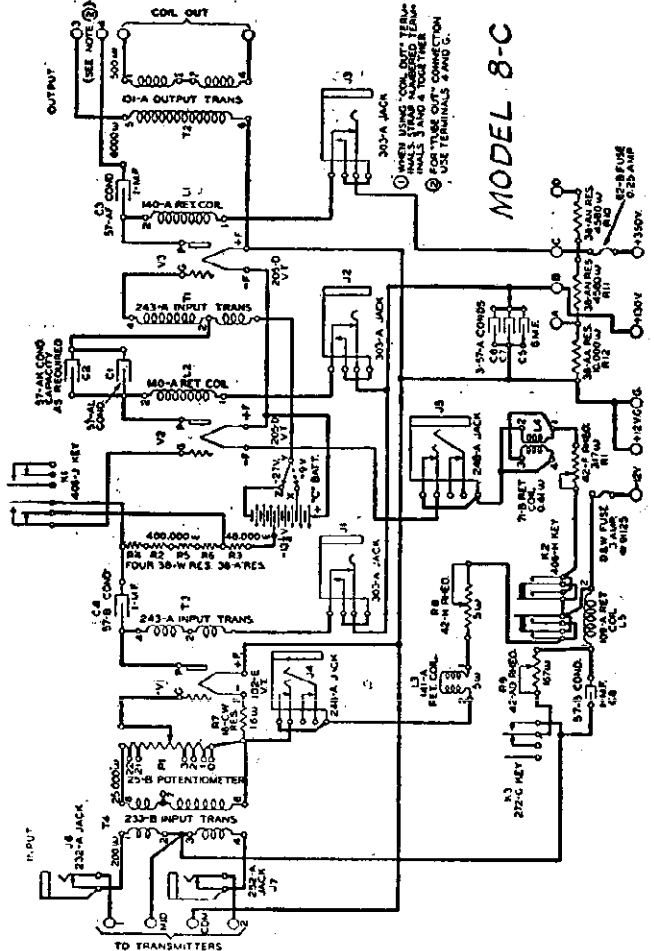
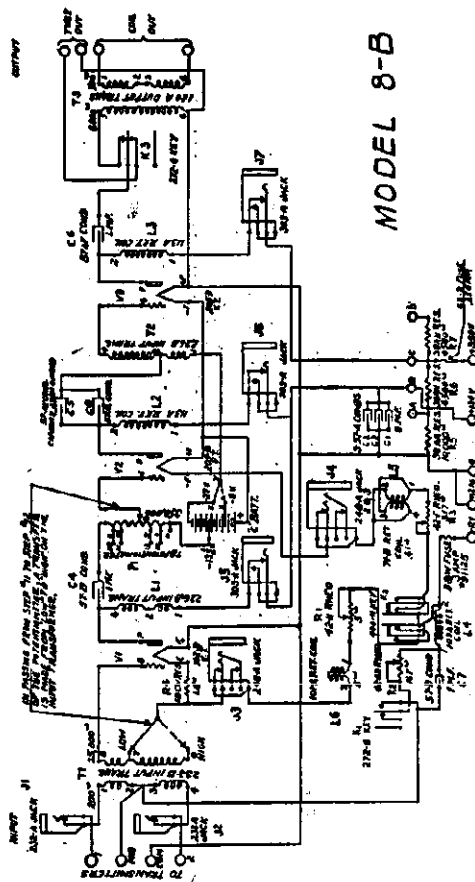


NOTE -
THE STRAP BETWEEN THE + AND - BINDING POSTS ON BP2 SHOULD BE REMOVED ONLY WHEN THESE POSTS ARE CONNECTED TO A CONTROL UNIT FOR SUPPLYING CURRENT TO OTHER APPARATUS



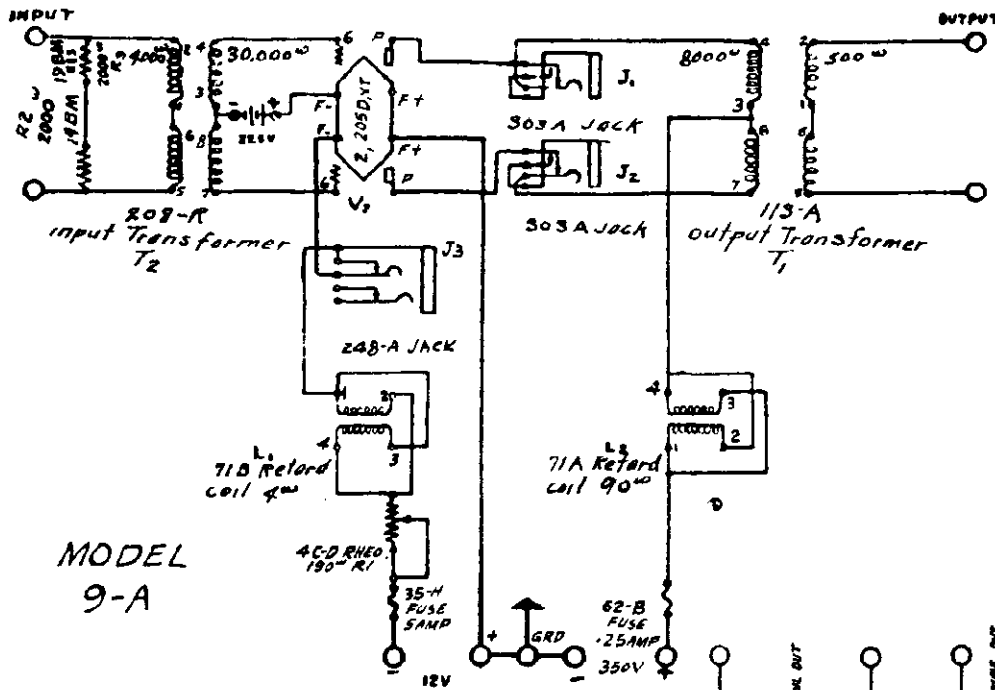
NO. KS-7109
LOUD SPEAKING TELEPHONE

NO. D-95508 AMPLIFIER

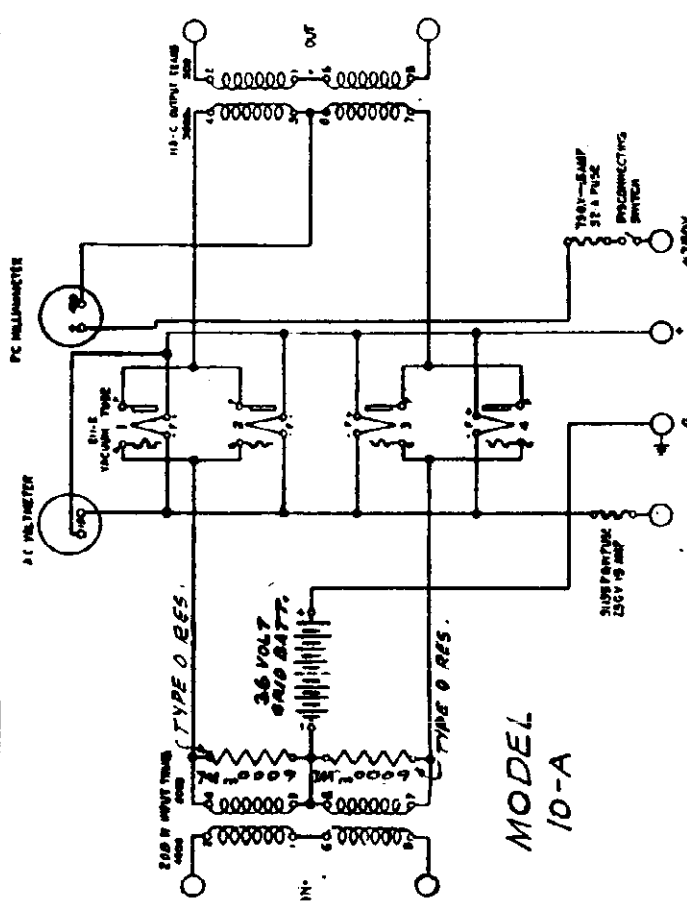


WESTERN ELECTRIC CO.

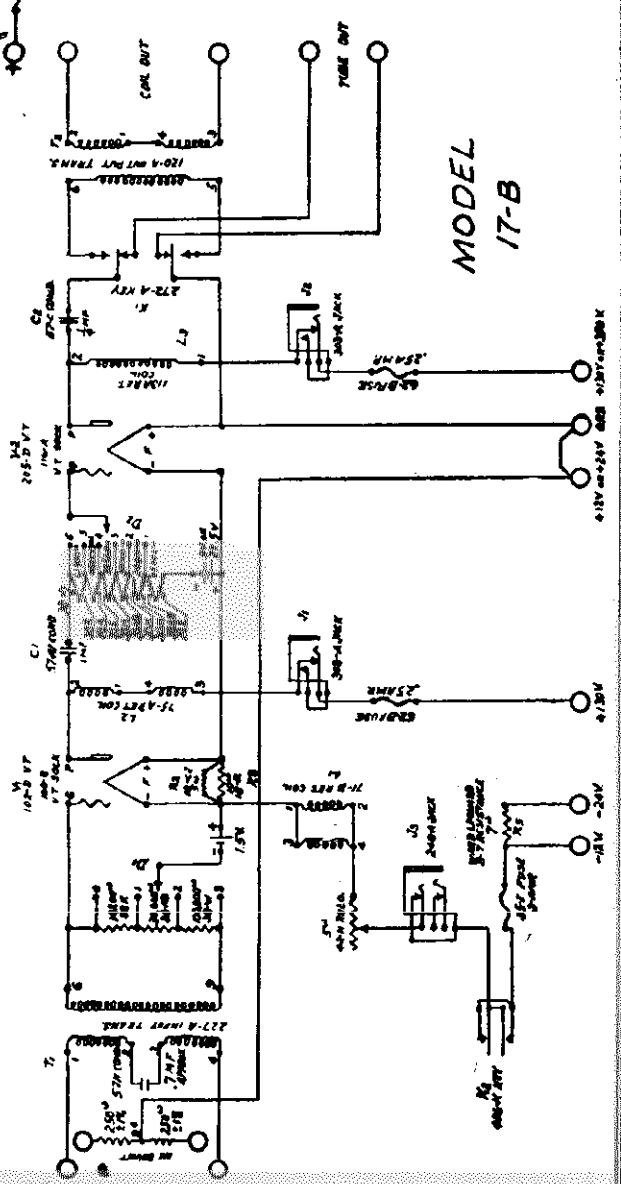
MODEL 9-A
MODEL 10-A
MODEL 17-B



MODEL 9-A



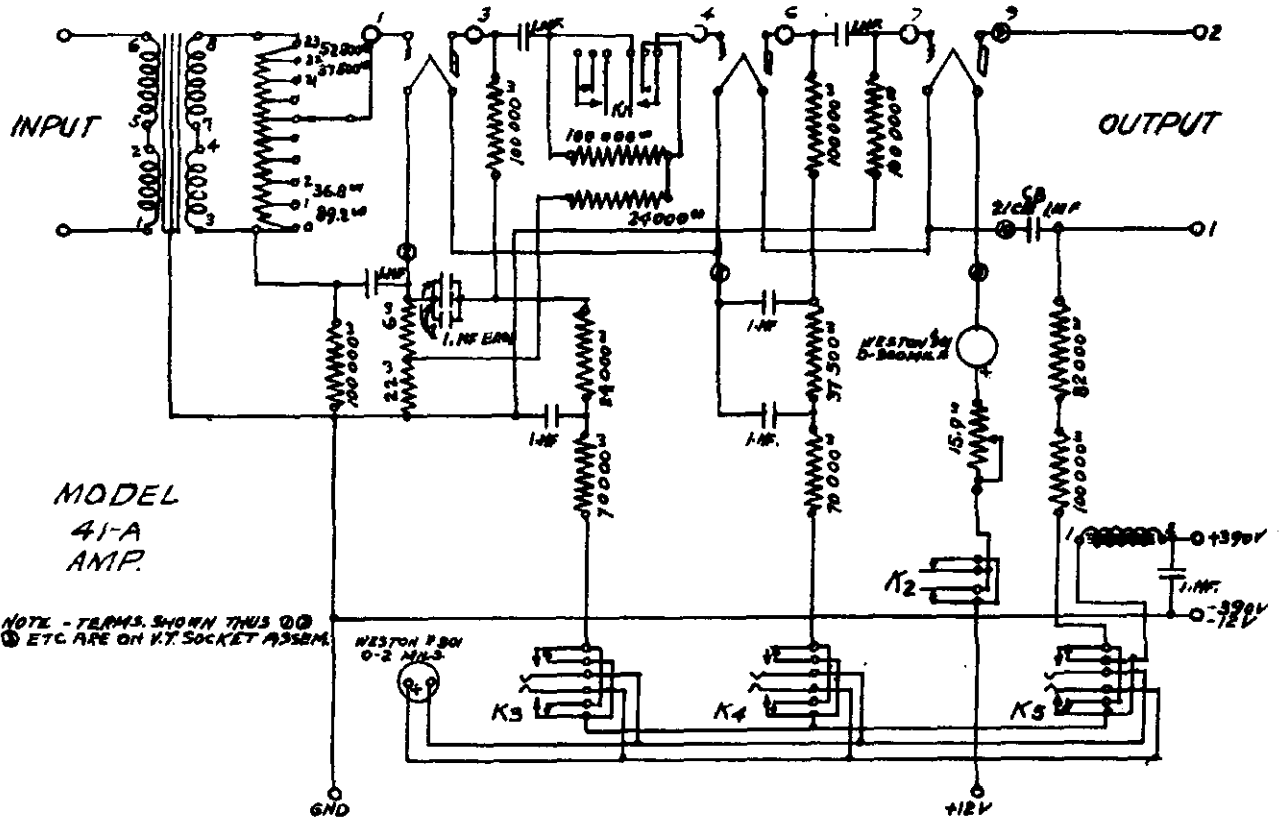
MODEL 10-A



MODEL 17-B

WESTERN ELECTRIC CO.

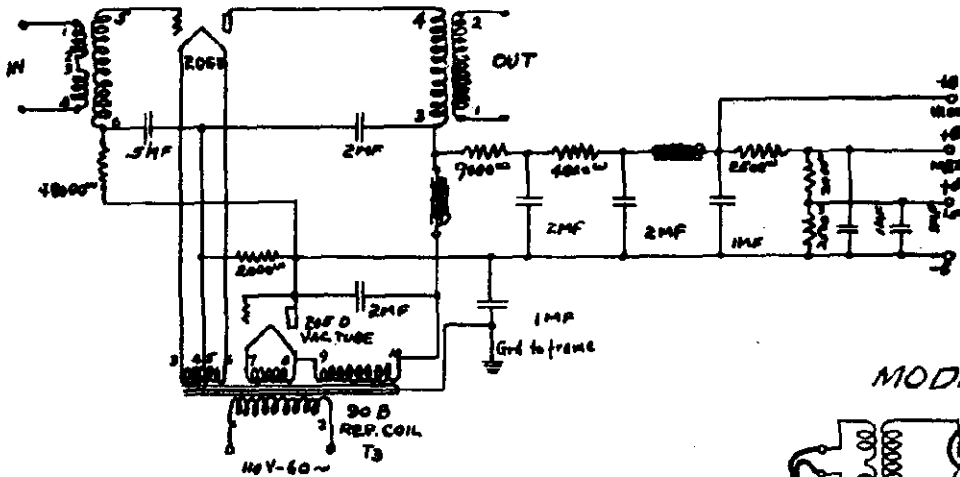
MODEL 41-A
 MODEL 45-A
 MODEL 25-B



MODEL
 41-A
 AMP.

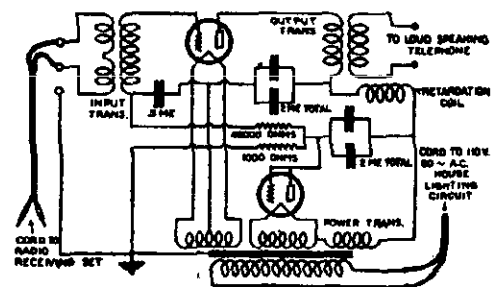
NOTE - TERMS SHOWN THIS @ @
 @ ETC ARE ON V.T. SOCKET ASSEM.

WESTON P.30V
 0-2 MILS



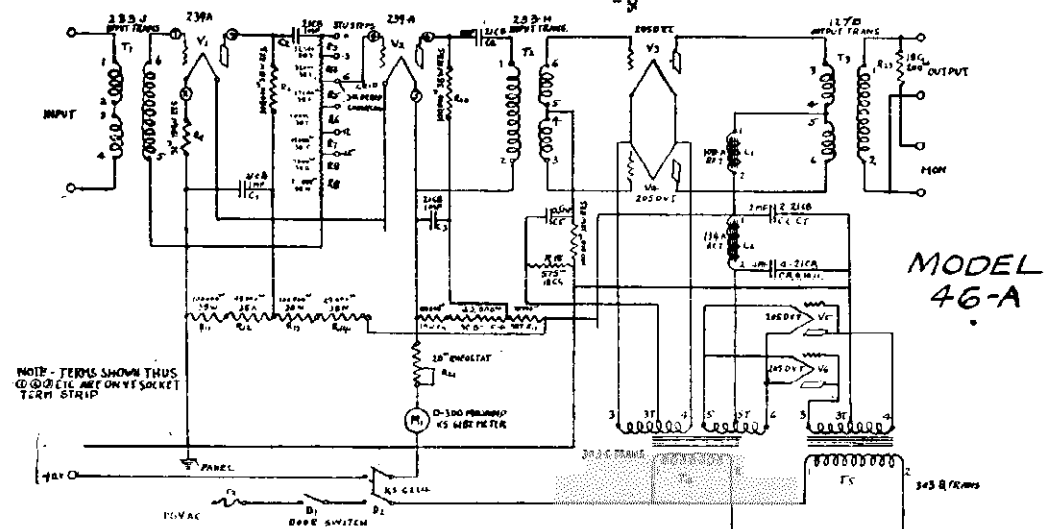
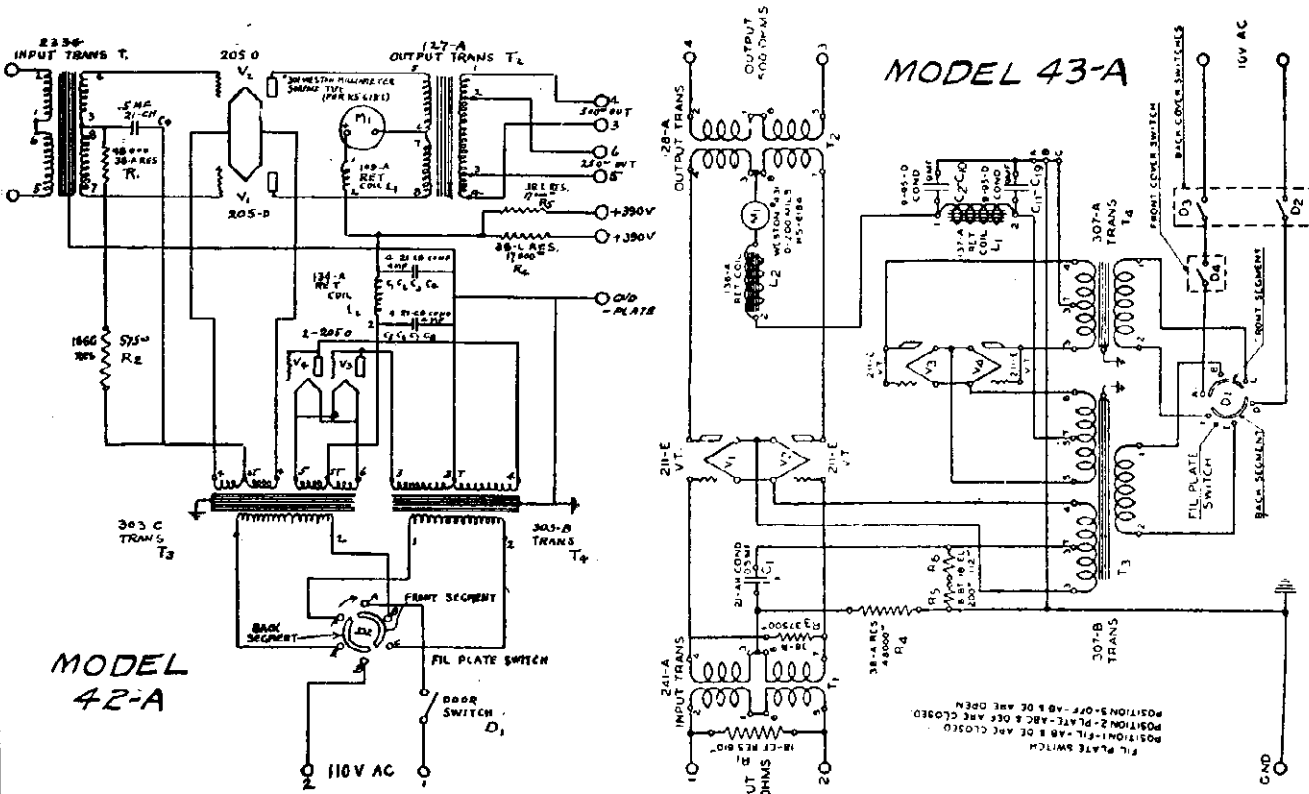
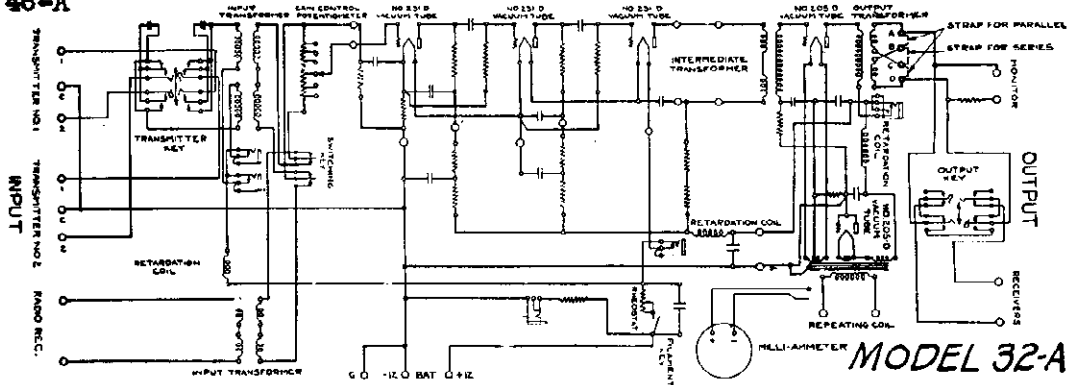
MODEL 45-A

MODEL 25-B



MODEL 32-A
 MODEL 42-A
 MODEL 43-A
 MODEL 46-A

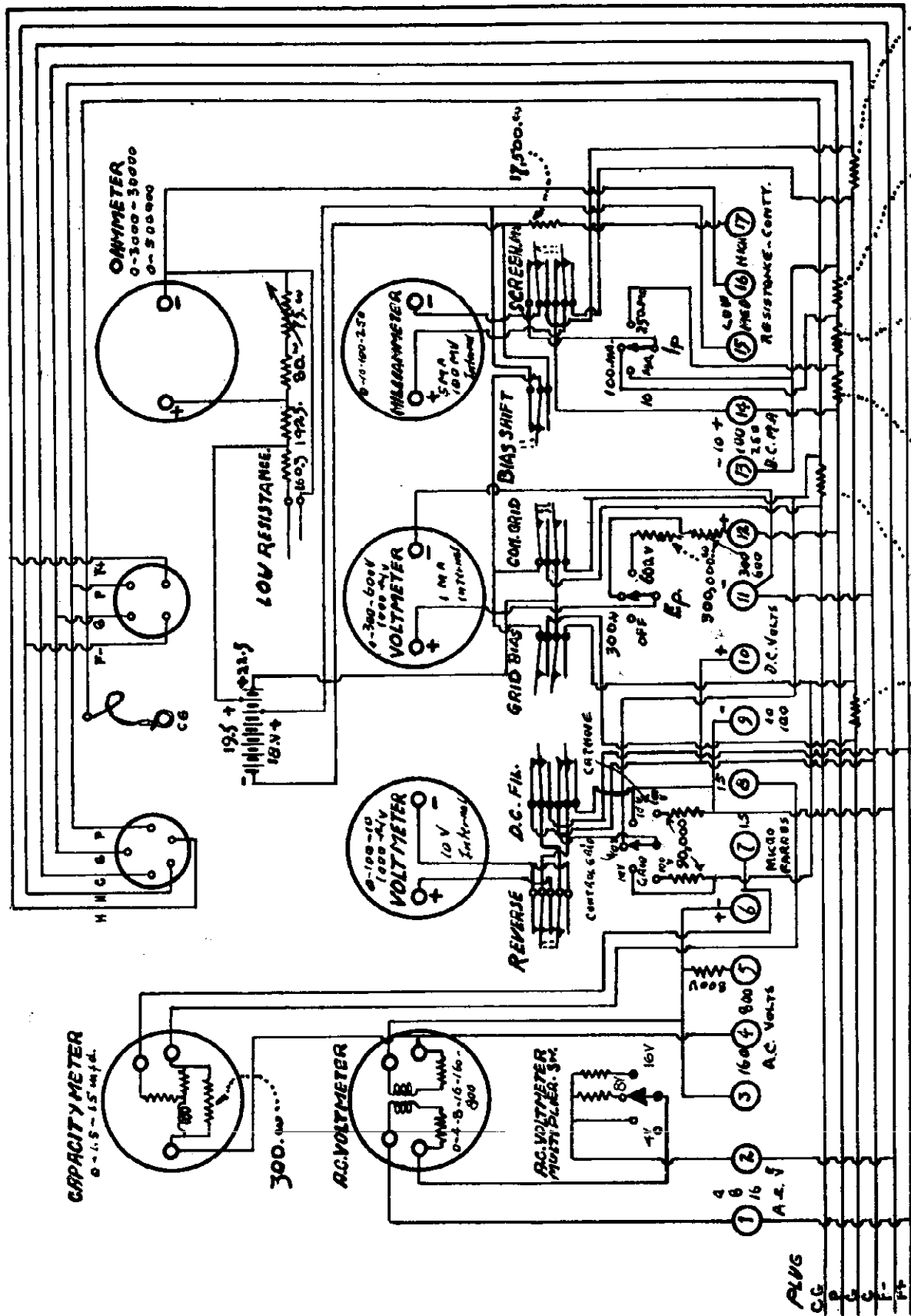
WESTERN ELECTRIC CO.



NOTE - TERMS SHOWN THUS
 (C) FIL. ARE ON Y-SOCKET
 TERM STRIP

WESTON ELECTRICAL INSTRUM'T CORP.

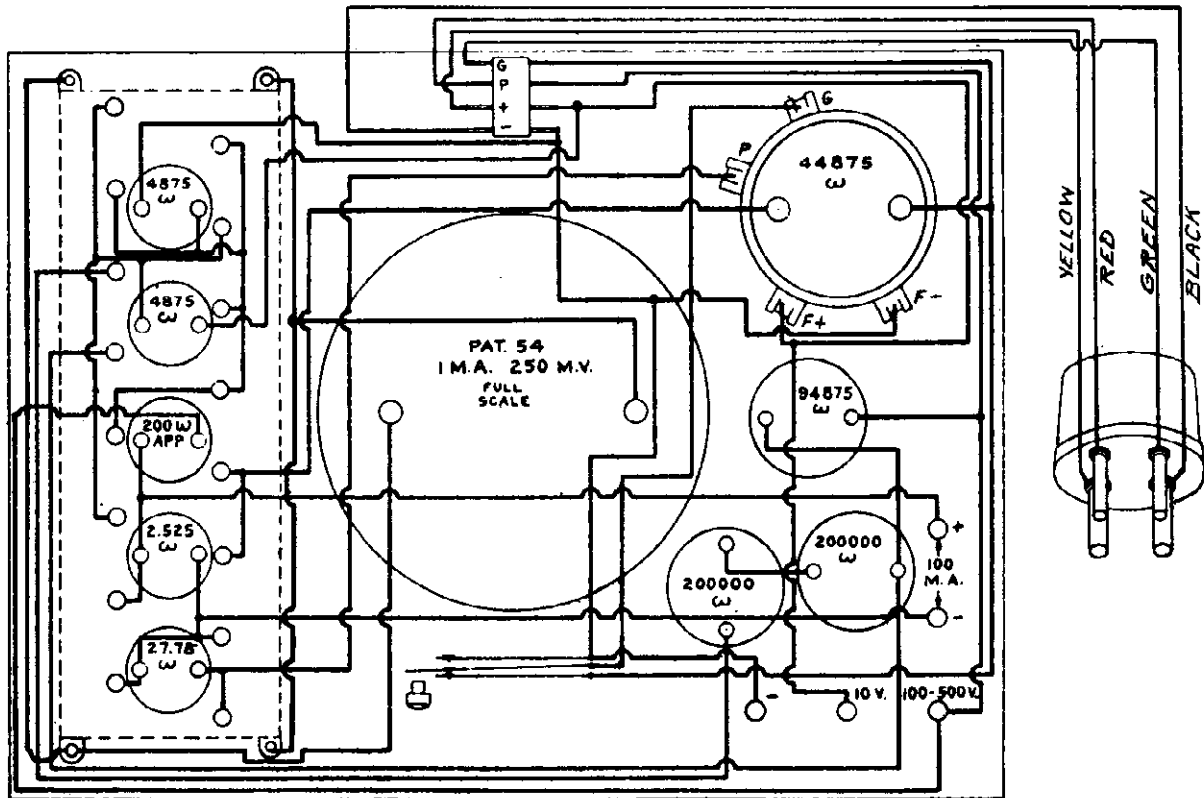
MODEL Jewell
Test Panel



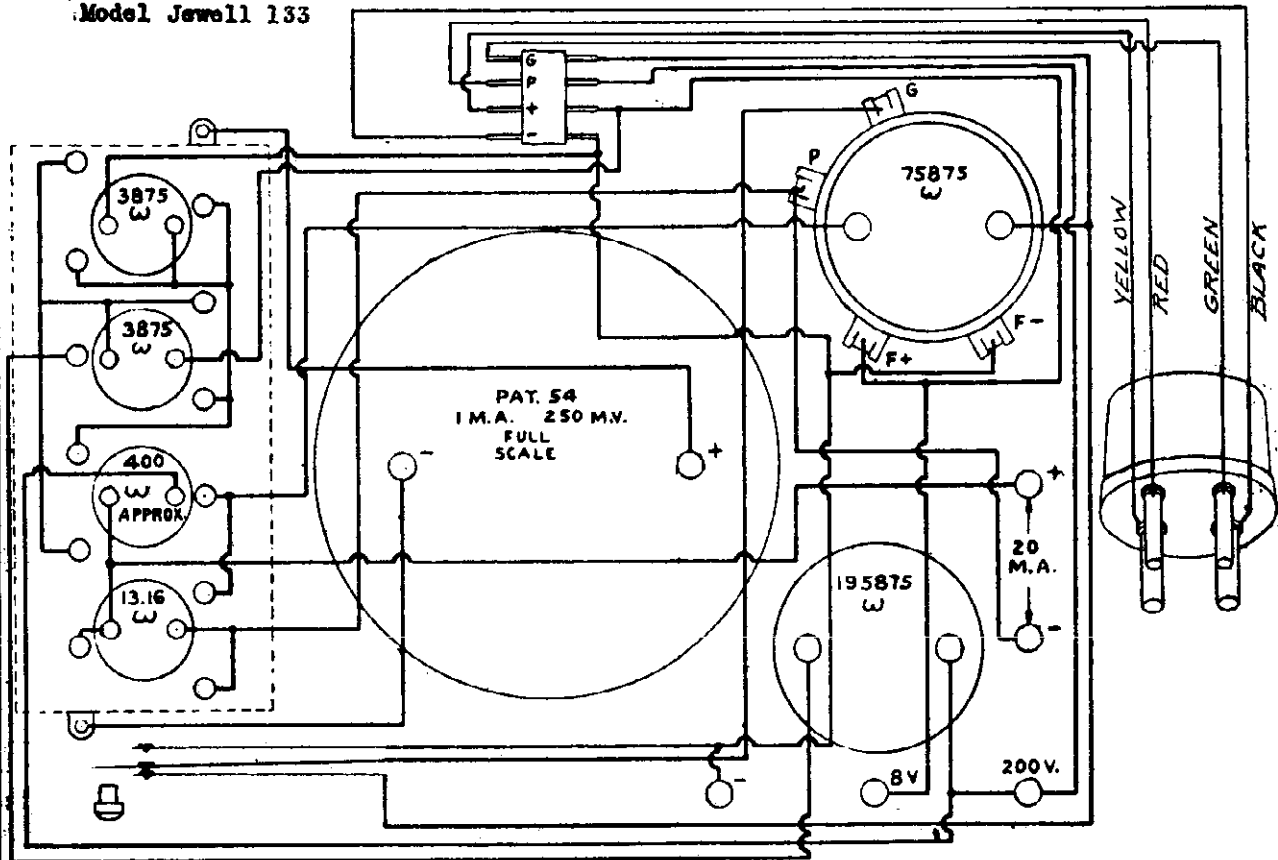
1,000.Ω 408.Ω 6440.Ω 18948.Ω 20,000.Ω

MODEL Jewell 133
MODEL Jewell 133-A

WESTON ELECTRICAL INSTRUM'T CORP.



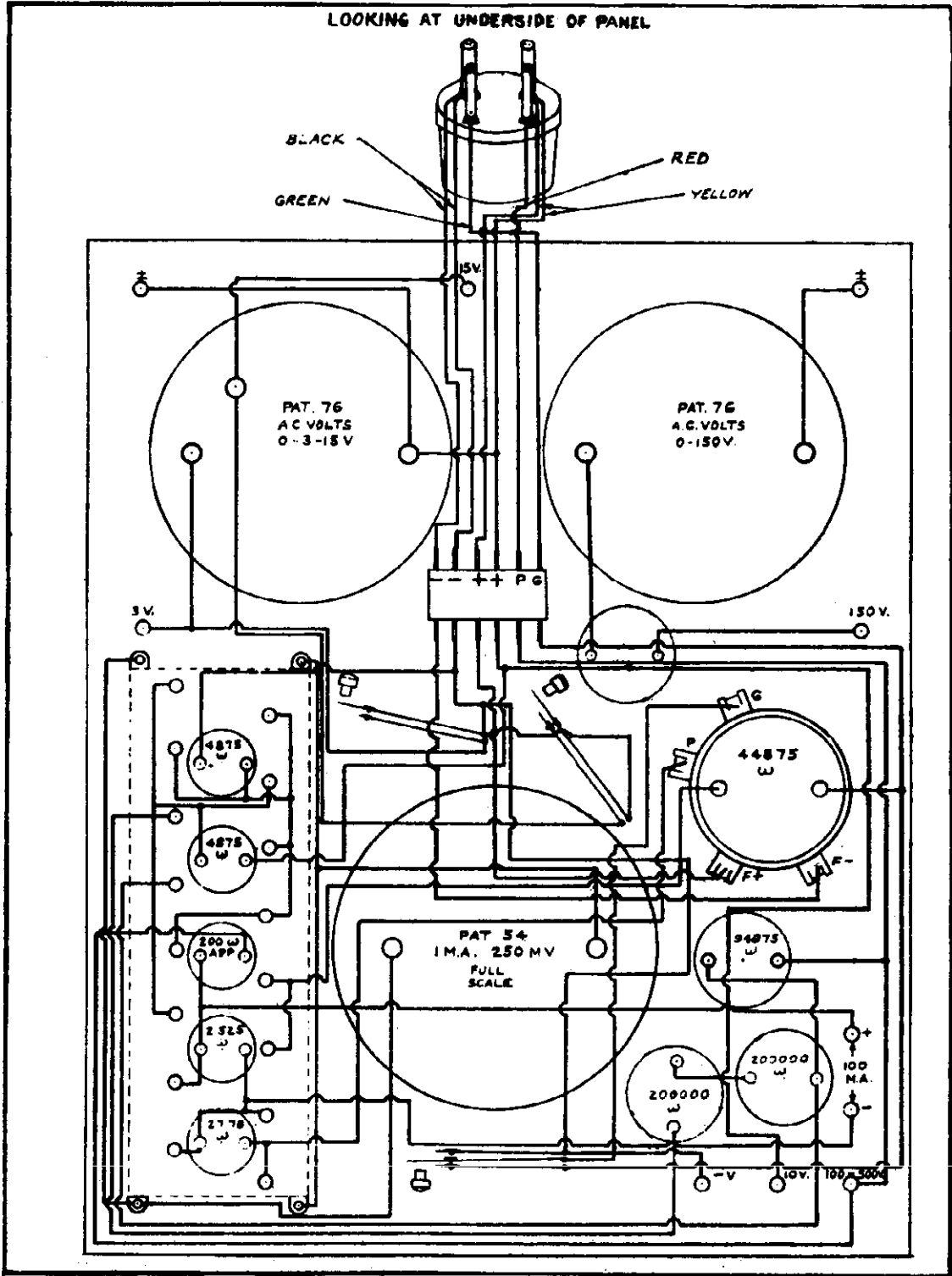
Model Jewell 133



Model Jewell 133-A

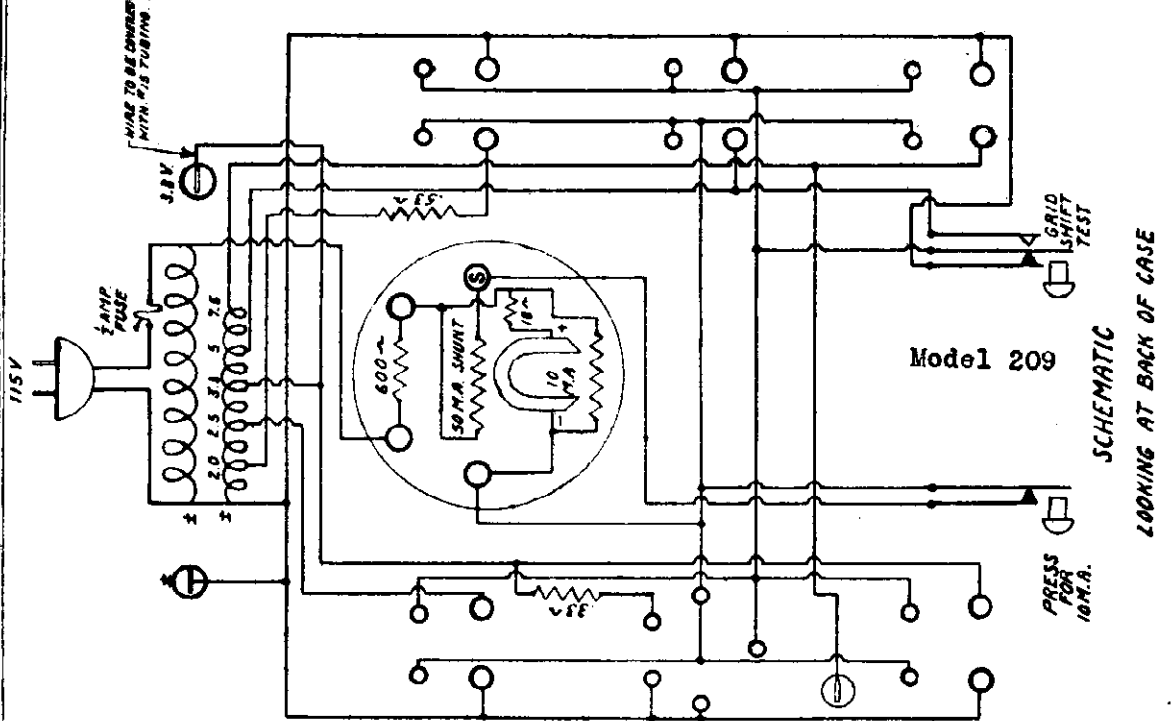
WESTON ELECTRICAL INSTRUM'T CORP.

MODEL Jewell 157

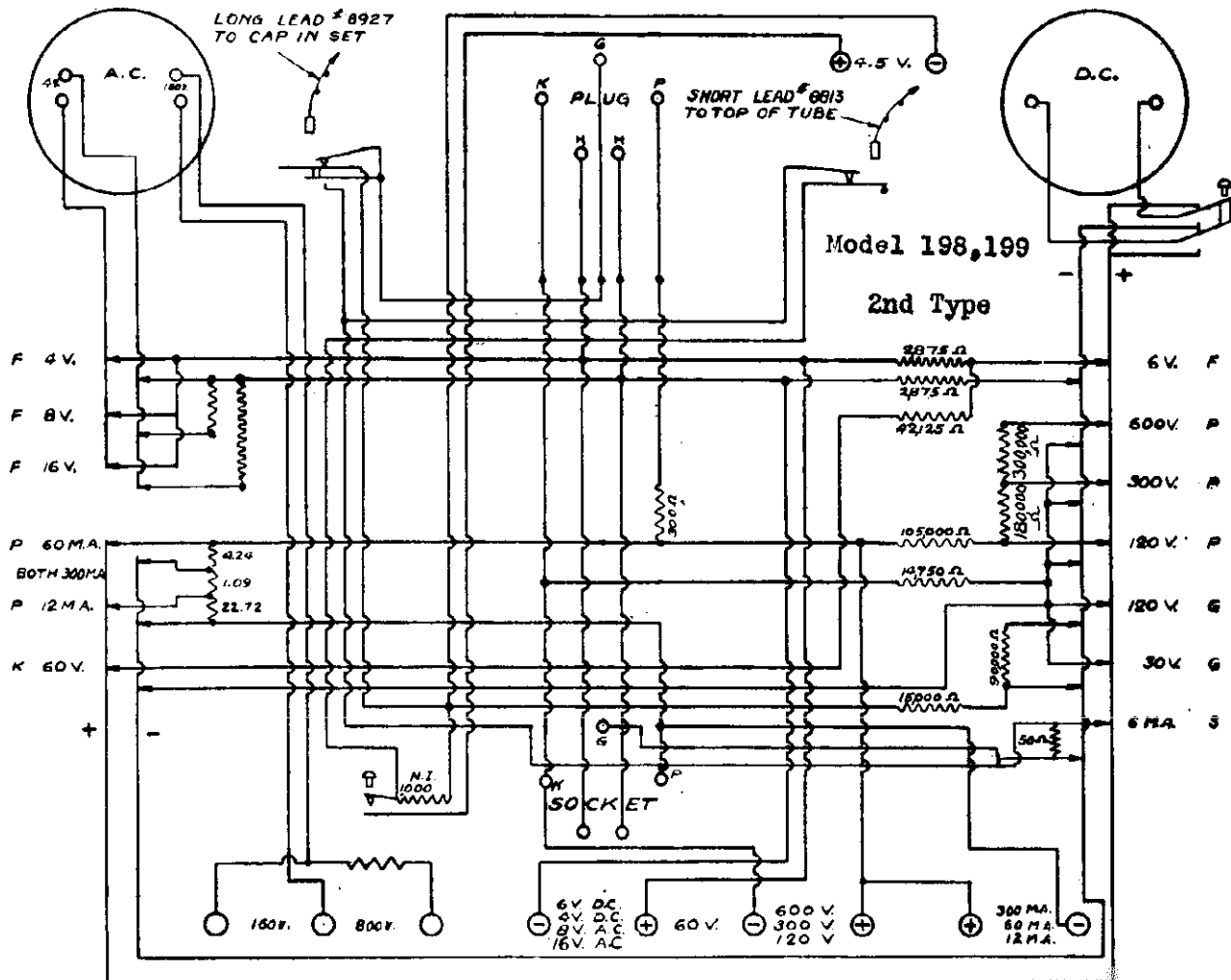


MODEL Jewell
198,199
2nd Type
MODEL Jewell 209

WESTON ELECTRICAL INSTRUM'T CORP.

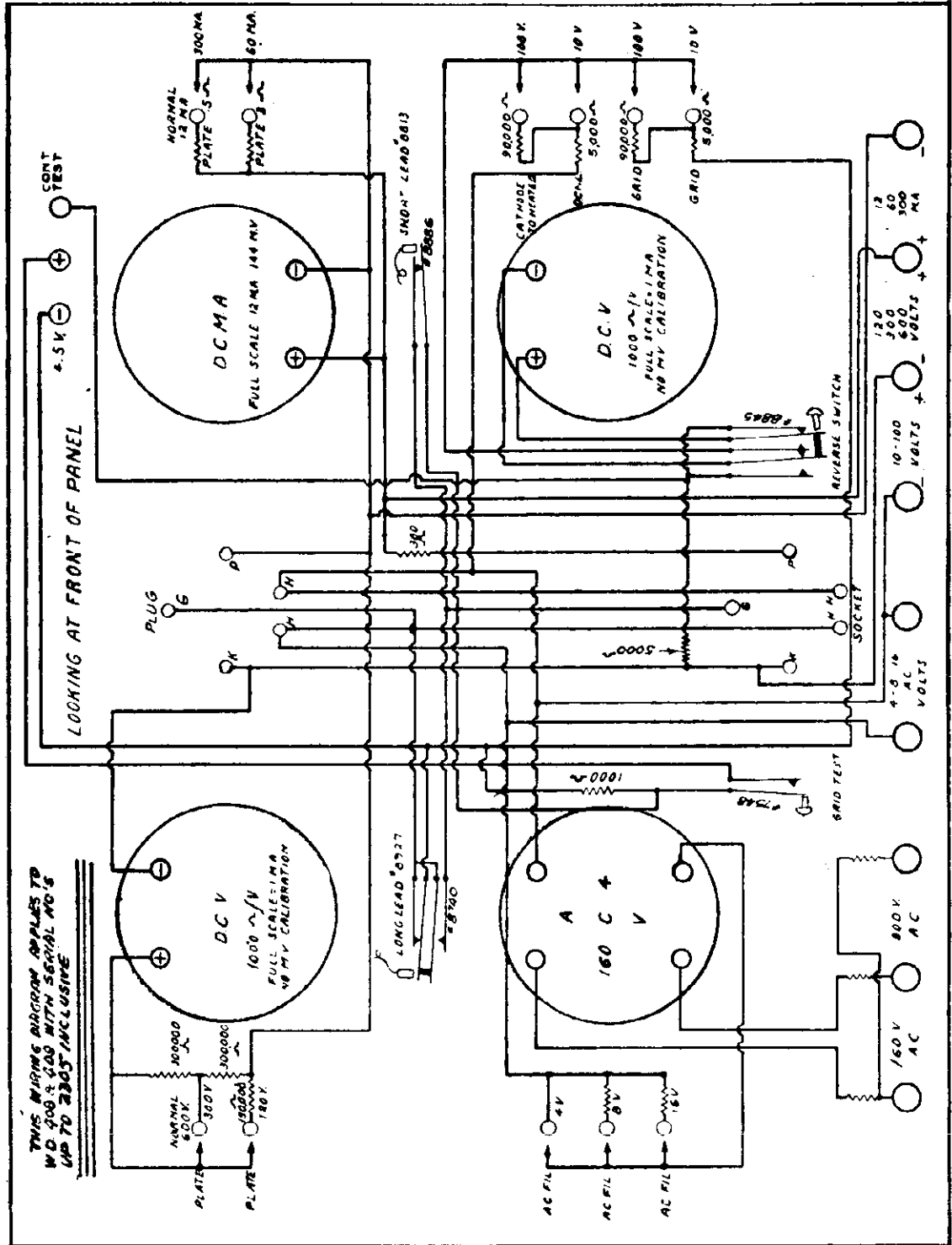


SCHEMATIC
LOOKING AT BACK OF CASE
THIS DIAGRAM APPLIES TO ALL PAT. 209 WITH SERIAL NO 8371 AND OVER FOR PAT. 209 WITH SERIAL NO 4972 TO SERIAL NO 6371 SEE W.D. 209 ISSUE 7.
FOR PAT. 209 WITH SERIAL NO UNDER 4972 SEE W.D. 209 ISSUE 5.



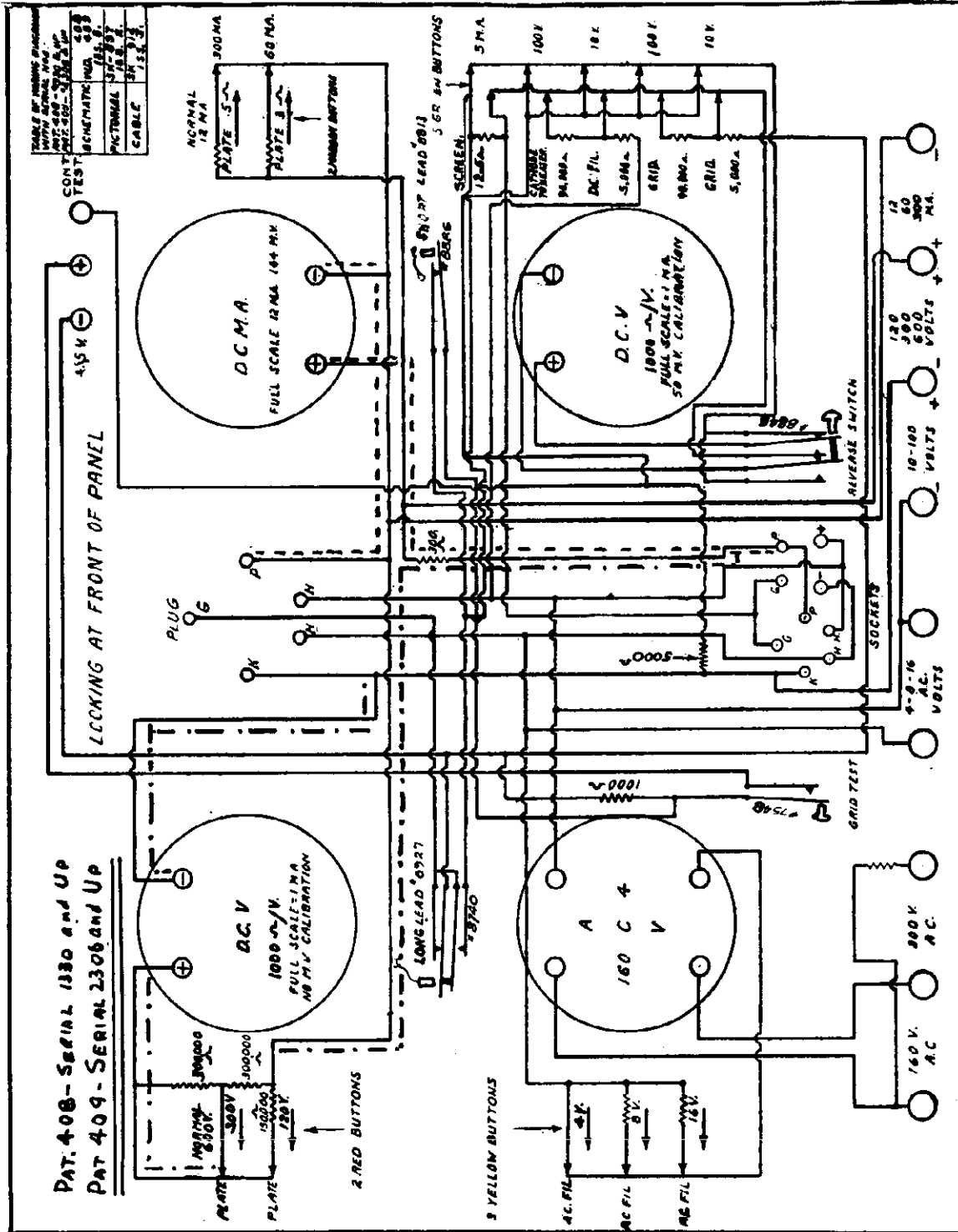
WESTON ELECTRICAL INSTRUM'T CORP.

MODEL Jewell
408,409
1st Type



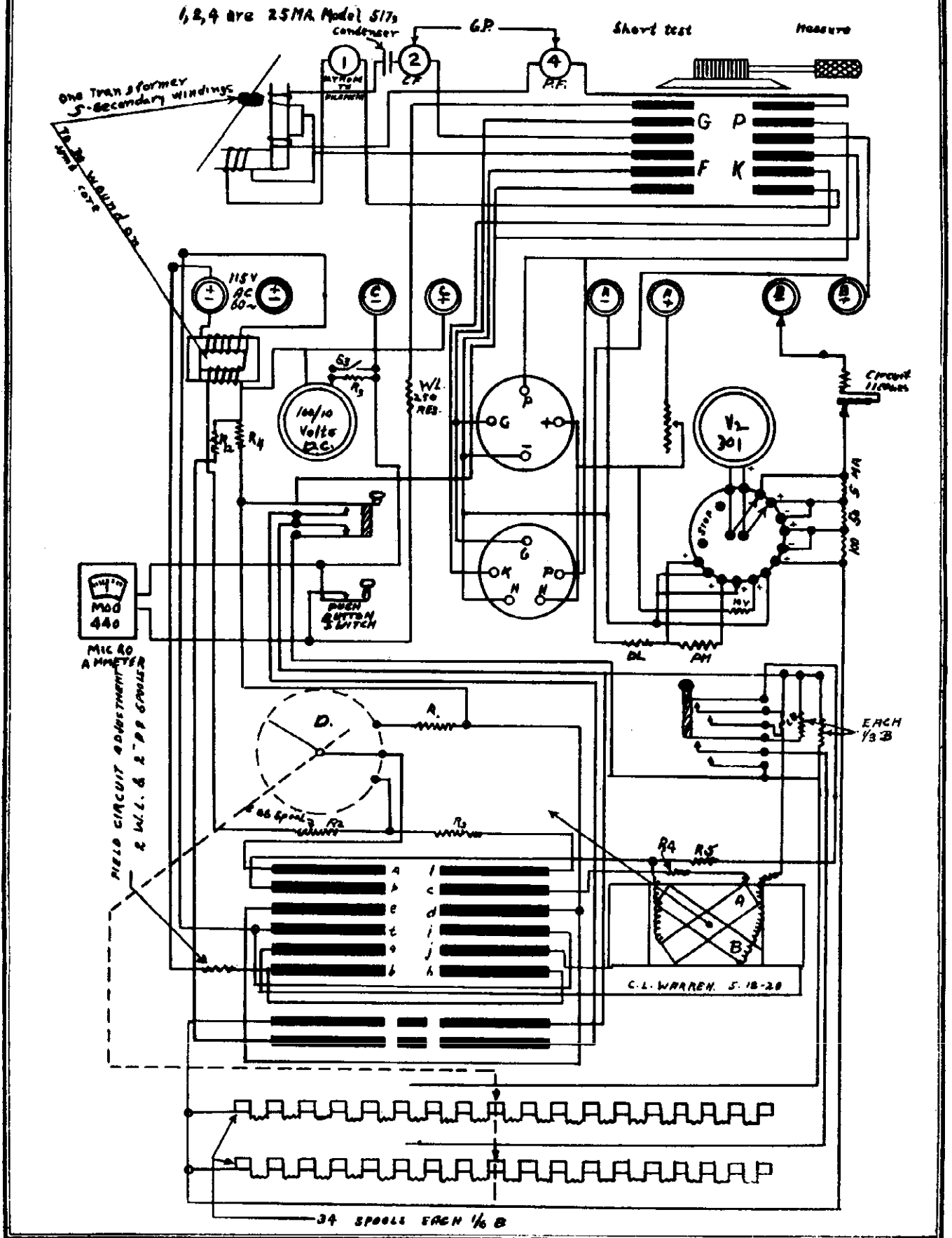
MODEL Jewell
408,409
2nd Type

WESTON ELECTRICAL INSTRUM'T CORP.



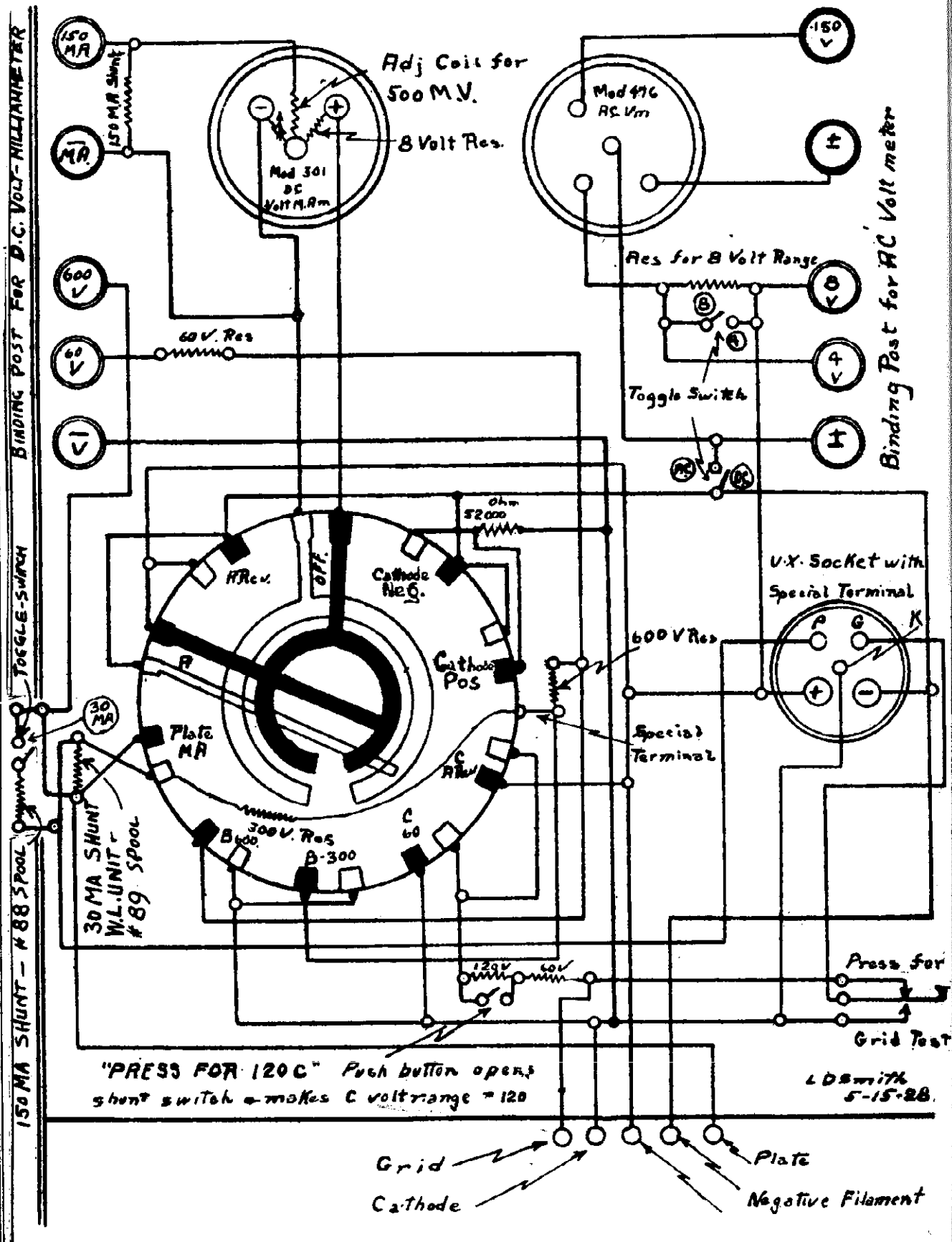
MODEL Weston.
526 Type 7

WESTON ELECTRICAL INSTRUM'T CORP.



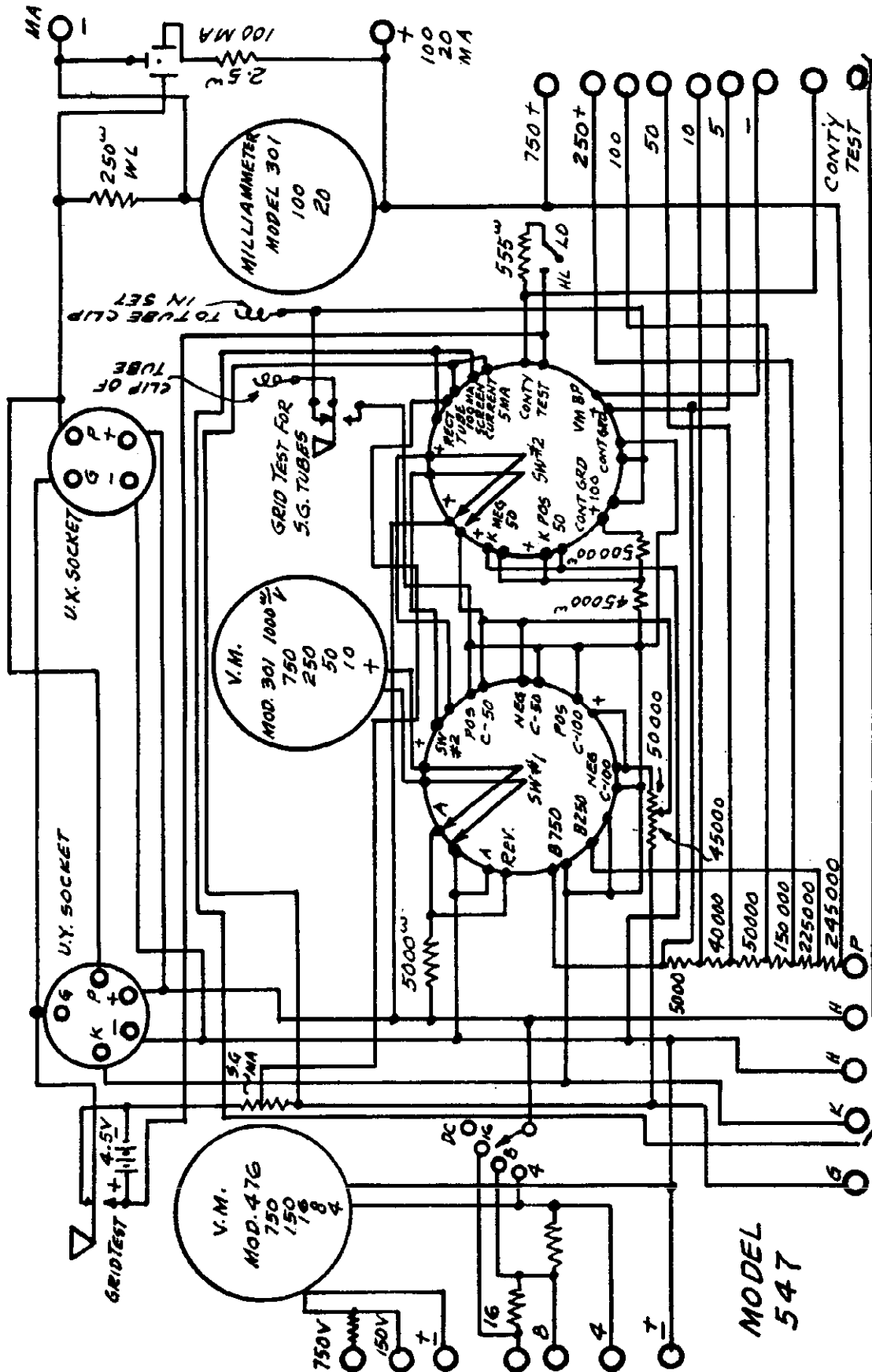
MODEL Weston
537

WESTON ELECTRICAL INSTRUM'T CORP.



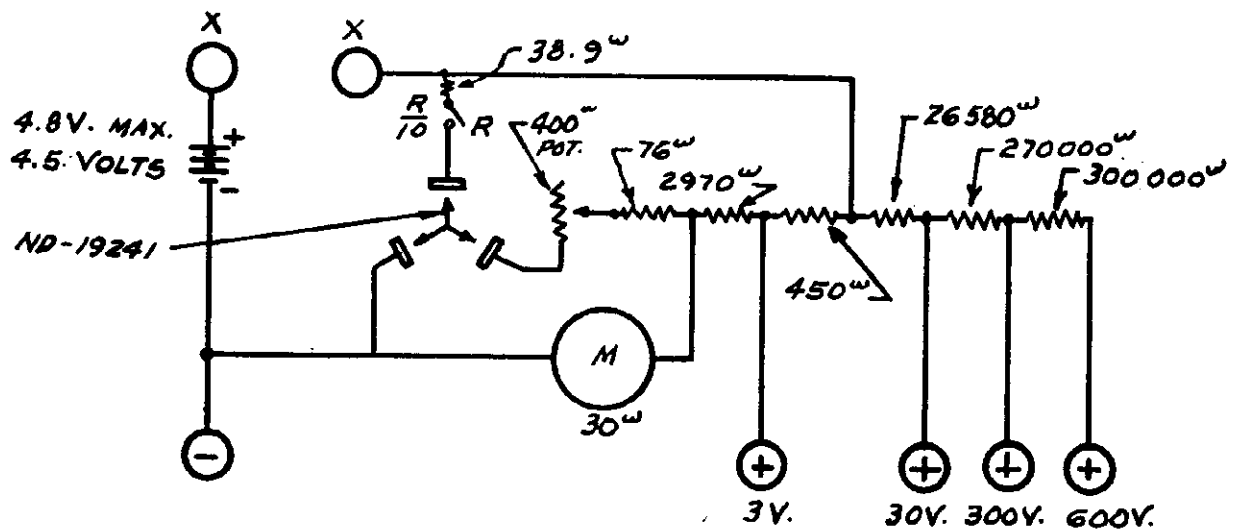
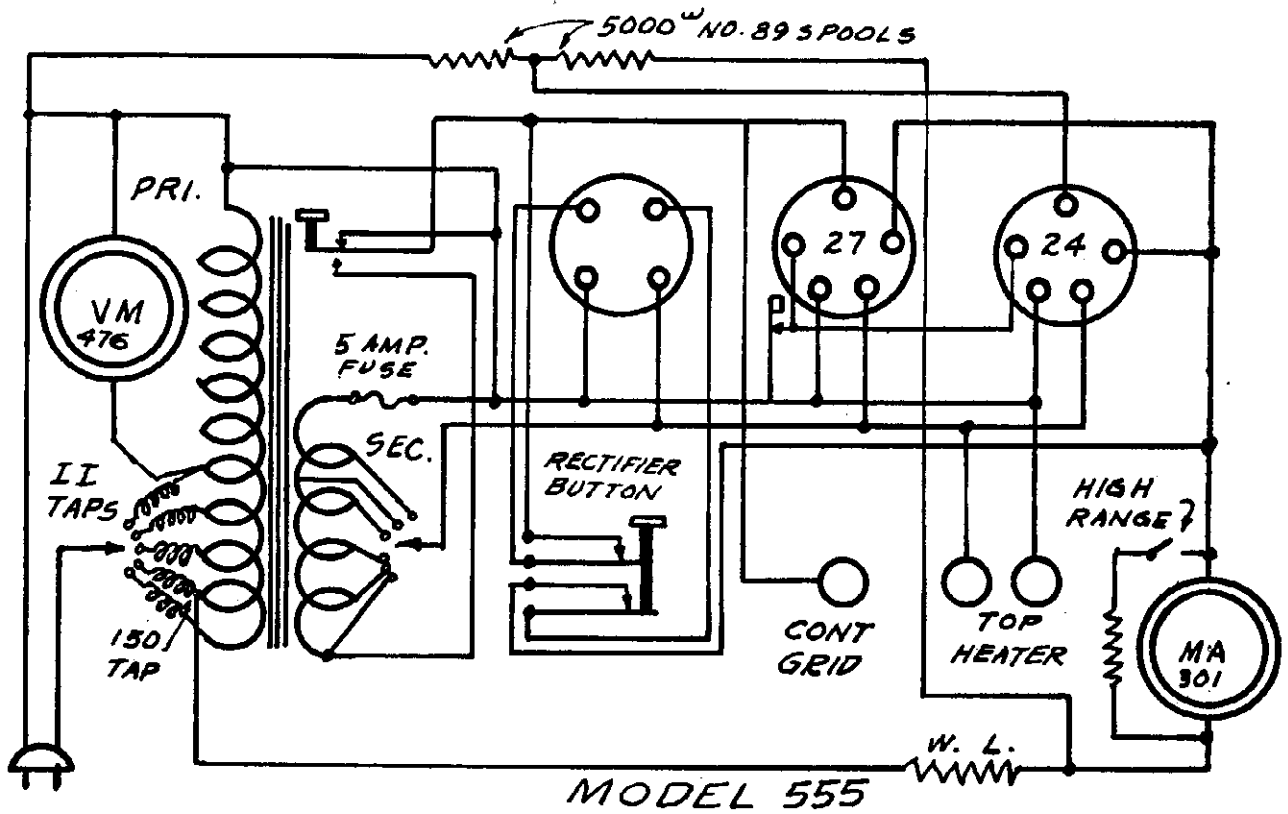
MODEL Weston
547

WESTON ELECTRICAL INSTRUM'T CORP.

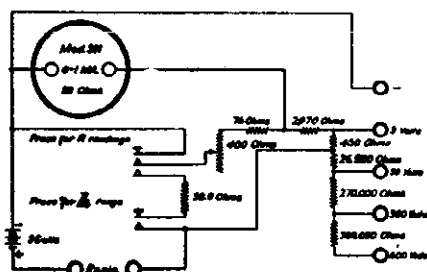


MODEL
547

MODEL Weston 555
 MODEL Weston 564 WESTON ELECTRICAL INSTRUM'T CORP.



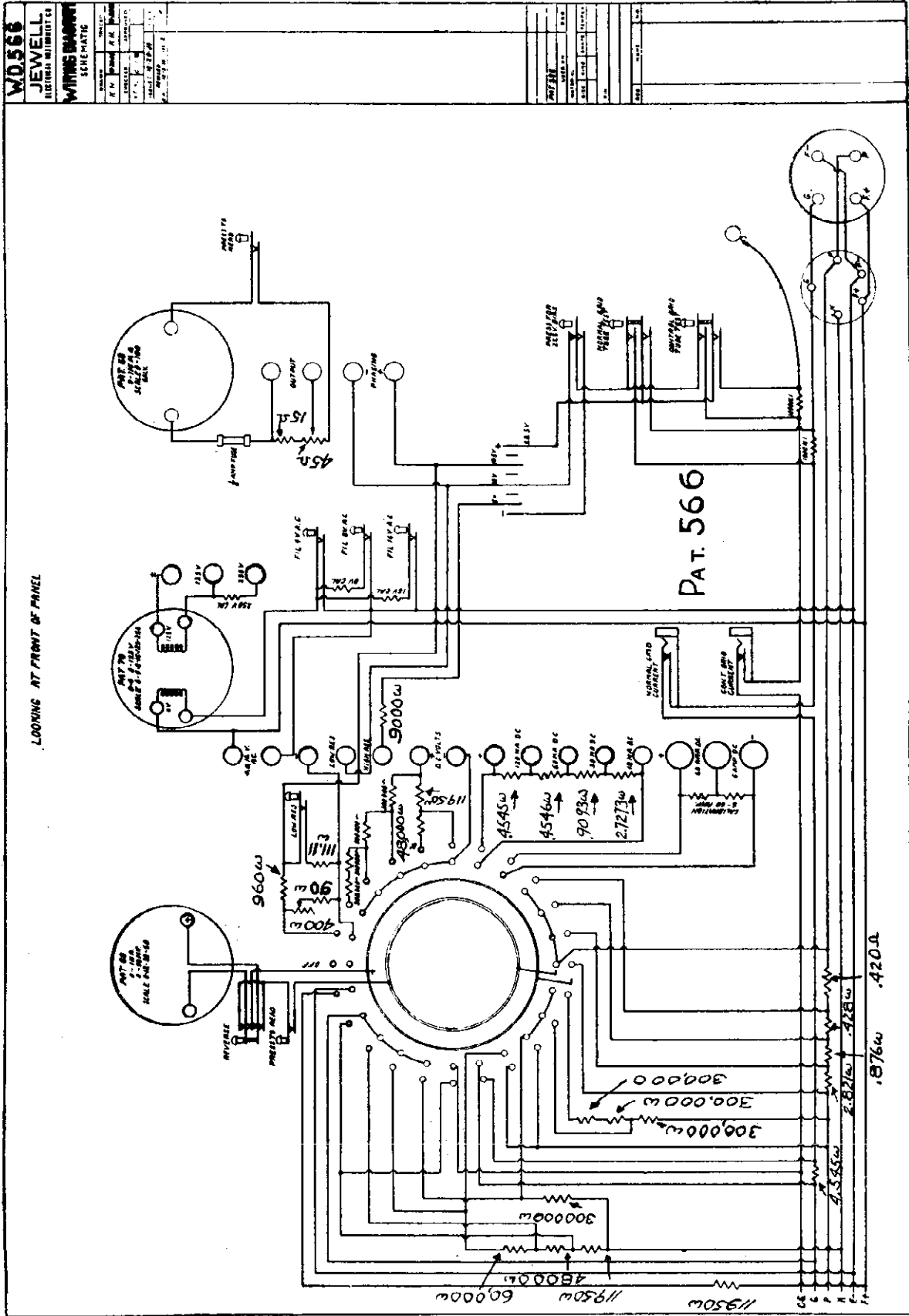
MODEL 564 OHMMETER & VOLTMETER



Schematic diagram of the Weston Model 564 Volt-Ohmmeter. Note the connections of the toggle switches in the center

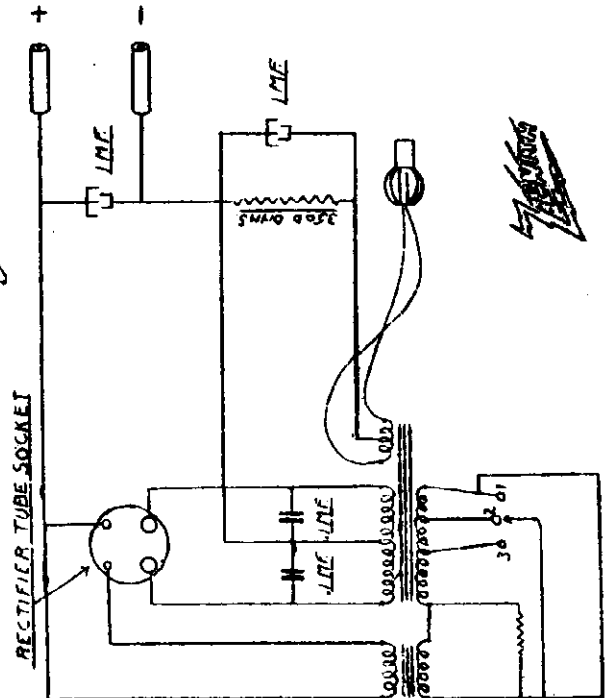
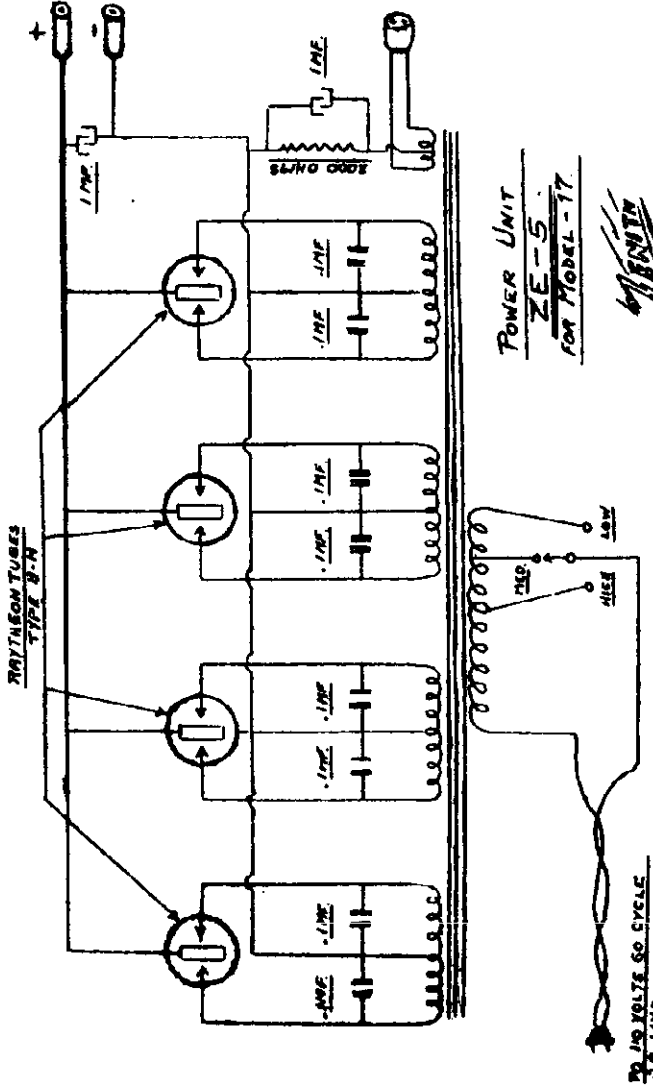
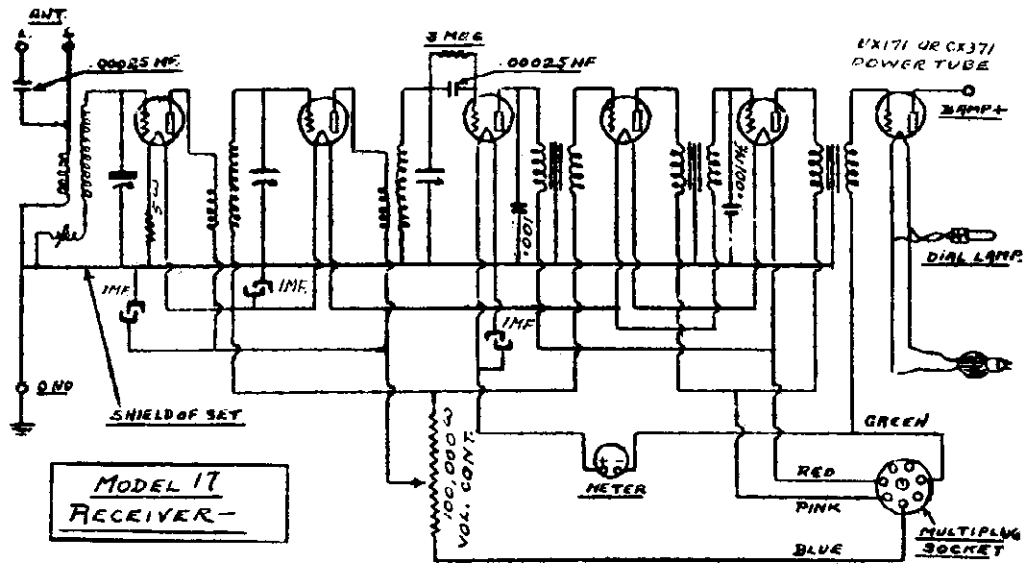
WESTON ELECTRICAL INSTRUM'T CORP.

MODEL Jewell
W D 566

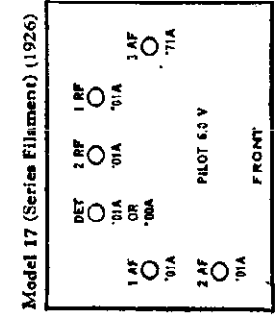


MODEL 17 Schematic
MODEL ZE-5 Power Units

ZENITH RADIO CORP.

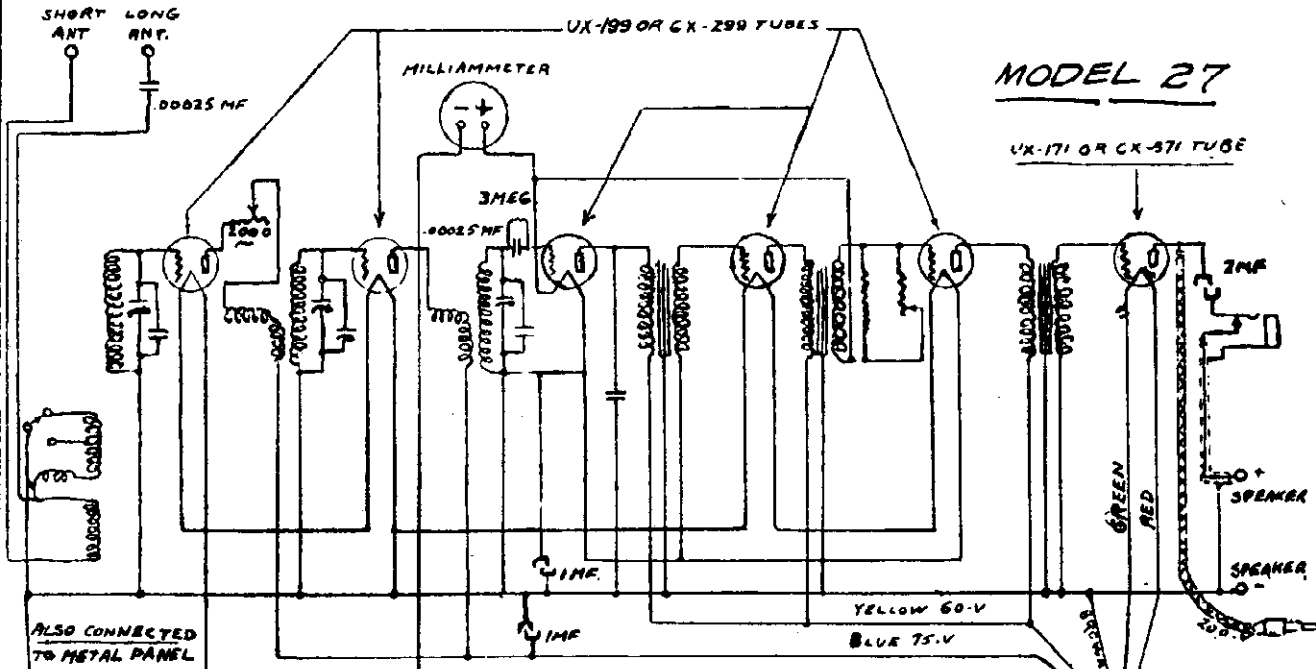


SPECIAL ZE-5
POWER SUPPLY
USING SINGLE
RECTIFYING TUBE

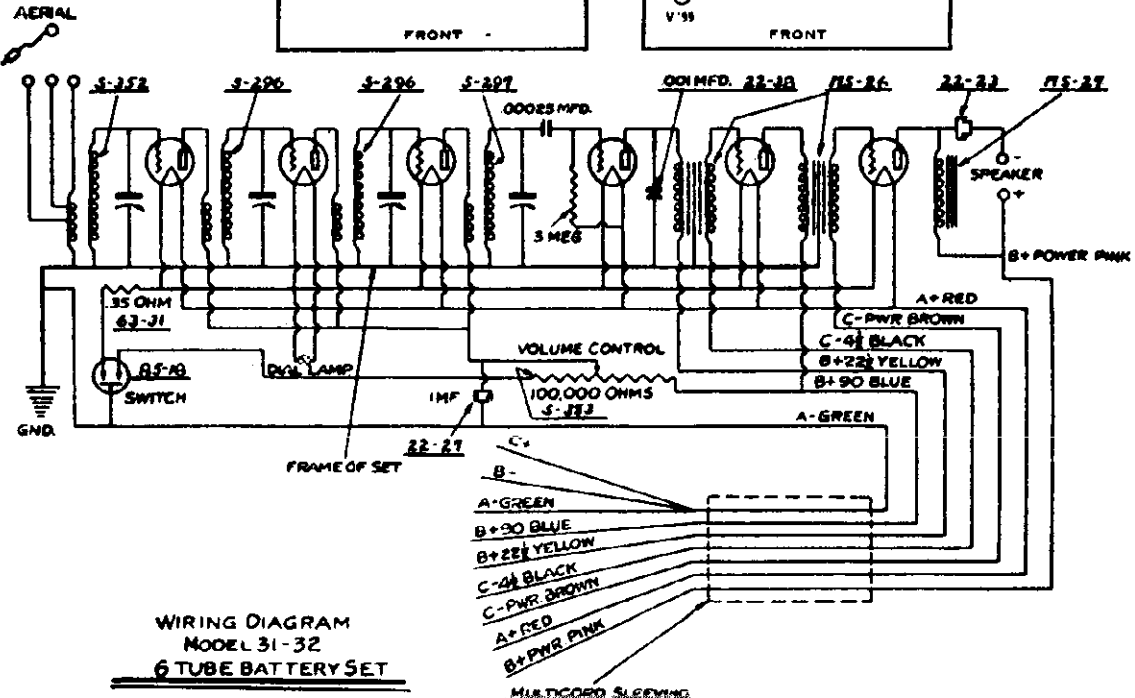
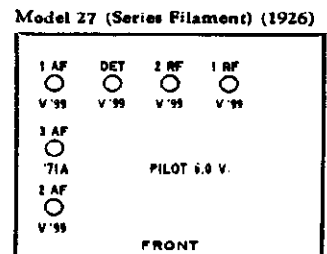
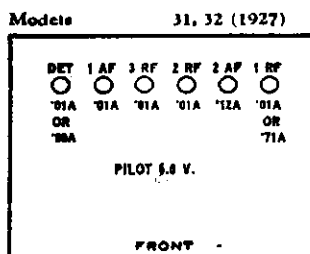


MODEL Super-Zenith 27
MODEL 31,32 Battery

ZENITH RADIO CORP.



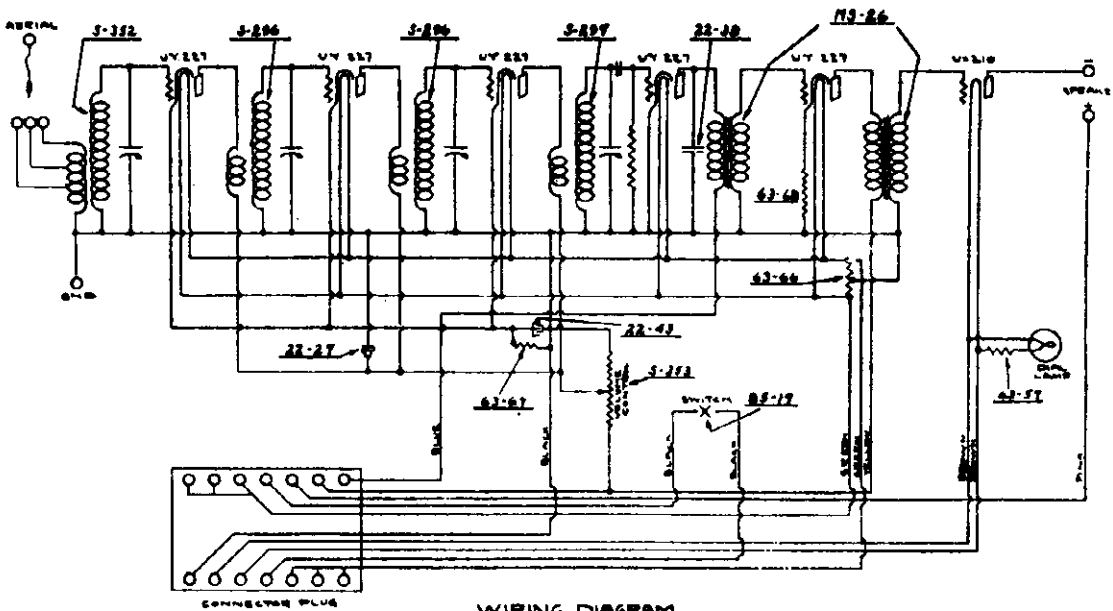
ALSO CONNECTED TO METAL PANEL



WIRING DIAGRAM
MODEL 31-32
6 TUBE BATTERY SET

MULTICORD SLEEVING

MODEL 35-F, 35-AP, 352-P, 352-AP
 MODEL ZE-11 for 35-F, 35-AP, 37-A ZENITH RADIO CORP.
 MODEL ZE-14 for 352-P, 352-AP

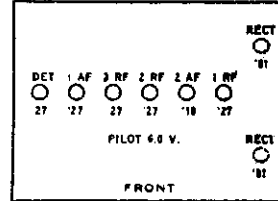


ZENITH—Models 35P-35AP-37A-352P-352AP
 Line Voltage 115

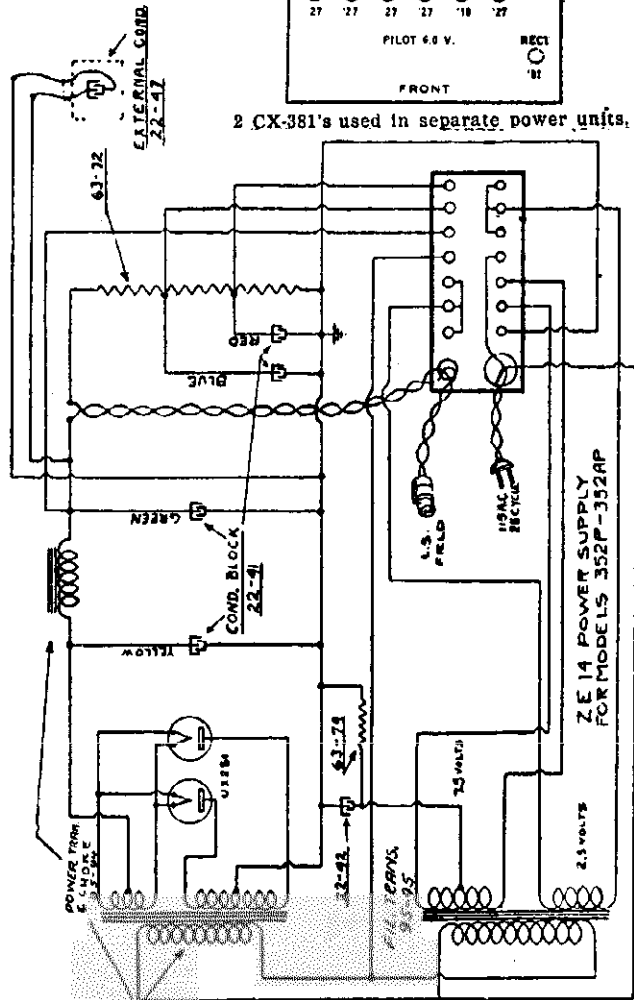
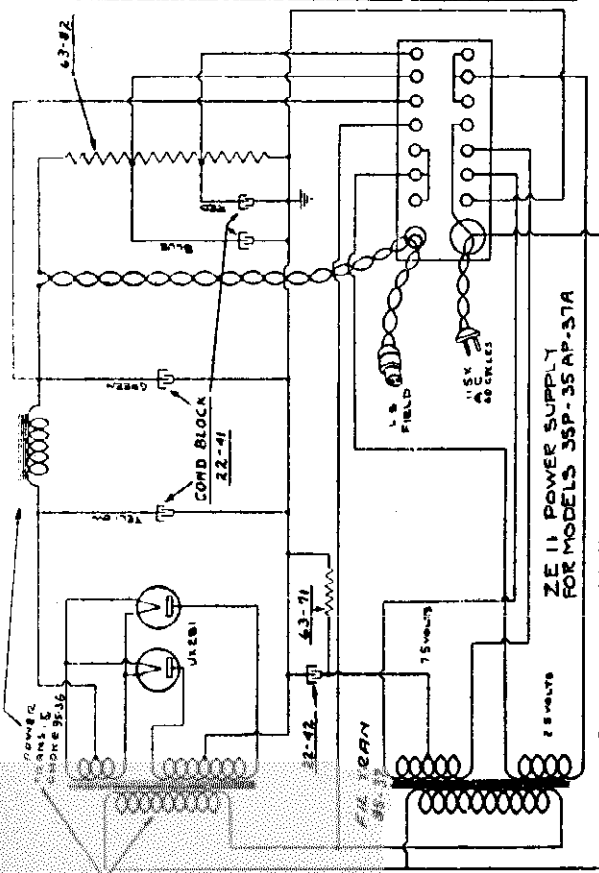
WIRING DIAGRAM
 MODELS 35P-35AP-352P-352AP
 6 TUBE ELECTRIC SET

Models 35AP, 35P, 37A, 352P, 352AP (1928)

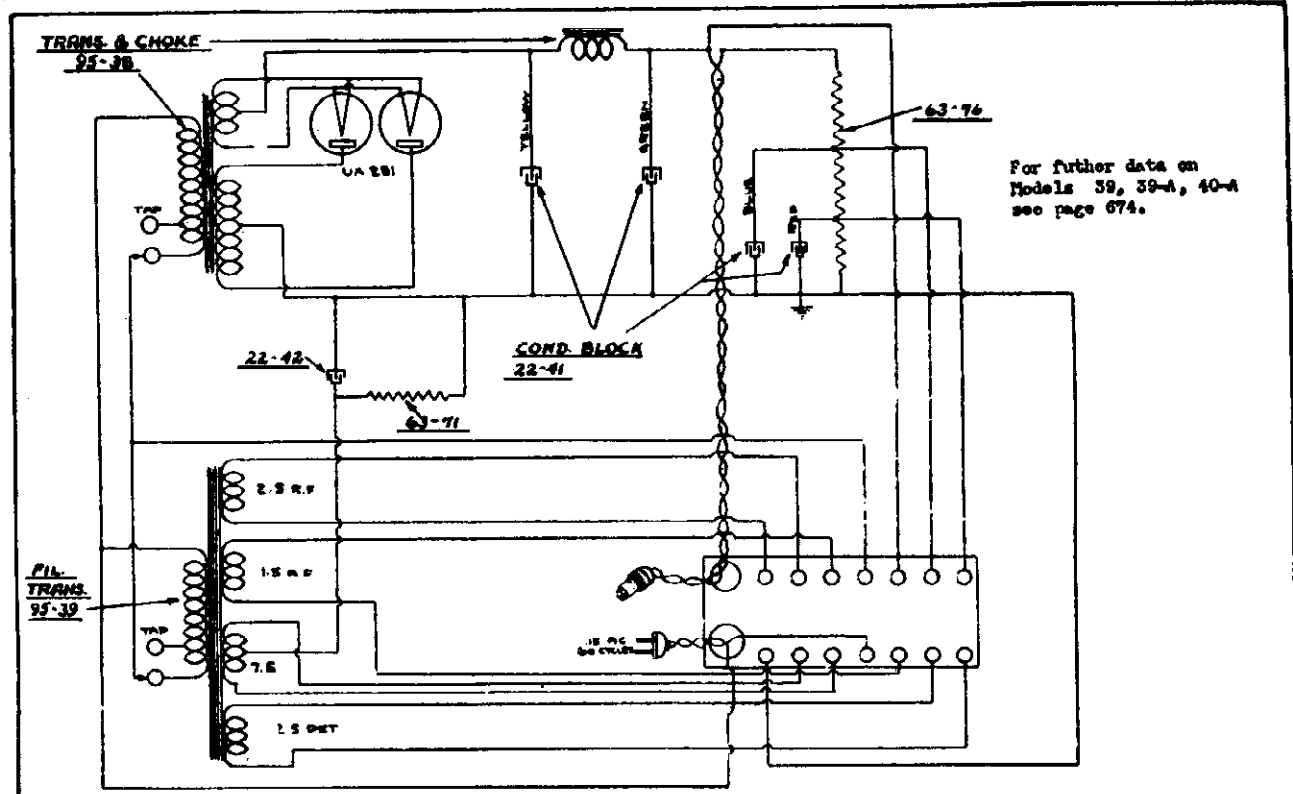
TUBE NO. IN ORDER	TYPE OF TUBE	POSITION OF TUBE 1ST RF DET ETC	READINGS PLUG IN SOCKET OF SET						TUBE IN TEST			
			A VOLTS	B VOLTS	C VOLTS	D VOLTS	E VOLTS	CATHODE VOLTS	PLURAL PLATE MA	PLATE MA	PLATE MA CHARGE	PLATE MA CHARGE
1	227	1st. R.F.	2.0	100	6	—	—	3.0	6.0	3.0		
2	227	2nd. R.F.	2.0	100	6	—	—	3.0	6.0	3.0		
3	227	3rd. R.F.	2.0	100	6	—	—	3.0	6.0	3.0		
4	227	DETECTOR	2.0	22	6	—	—	3.0	6.0	3.0		
5	227	1st. A.F.	2.0	100	6	—	—	3.0	6.0	3.0		
6	210	2nd. A.F.	7.25	400	32	—	—	20.0	22.0	4.0		
7	281	—	7.25	—	—	—	—	45.0	—	—		
8	281	—	7.25	—	—	—	—	45.0	—	—		



2 CX-381's used in separate power units.

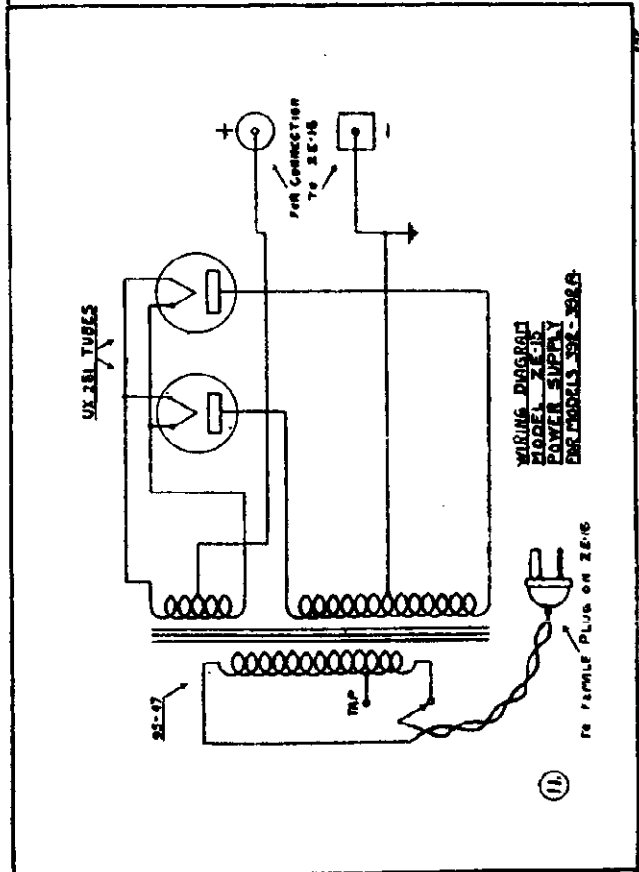


MODEL ZE-12 for 39, 39-A, 40-A
 MODEL ZE-15 for 392, 392-A ZENITH RADIO CORP.
 MODEL ZE-16 Filter for above

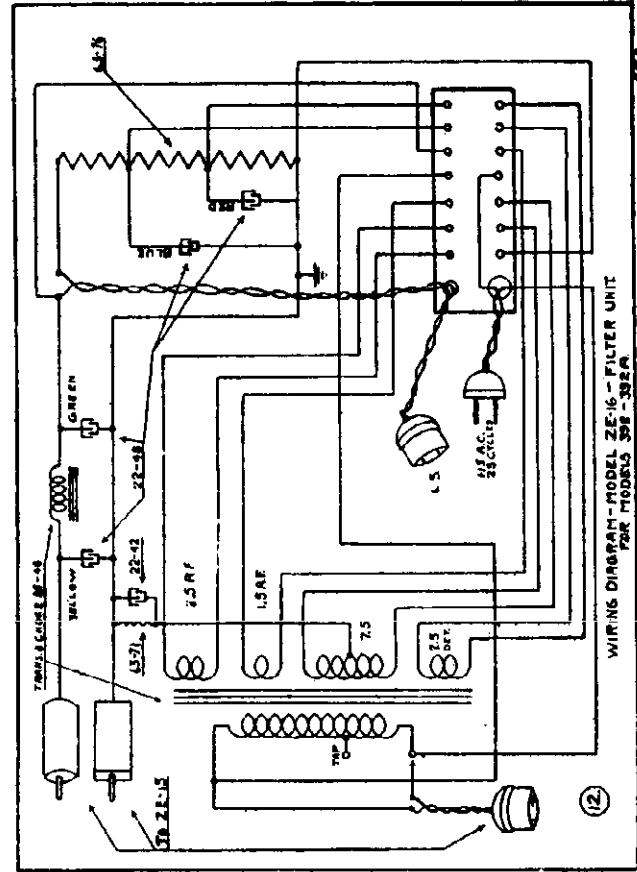


For further data on Models 39, 39-A, 40-A see page 674.

ZE-12 POWER SUPPLY FOR MODELS 39-39-A-40-A



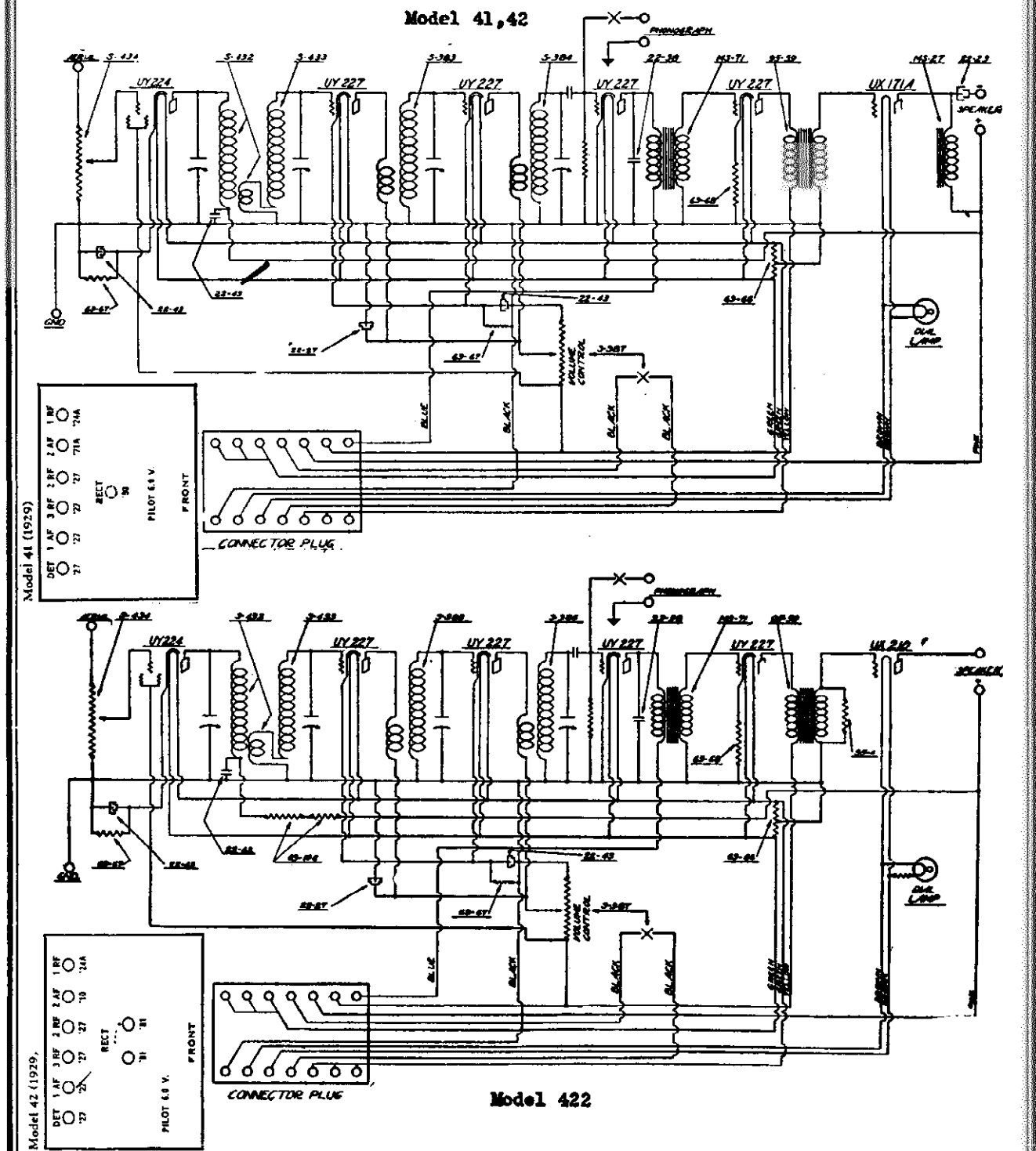
WIRING DIAGRAM MODEL ZE-15 POWER SUPPLY FOR MODELS 392-392-A



WIRING DIAGRAM MODEL ZE-16 FILTER UNIT FOR MODELS 392-392-A

ZENITH RADIO CORP.

MODEL 41,42
MODEL 422



Model 41 (1929)

Model 42 (1929)

Model 422

ZENITH—MODEL 42

Type Tube	Position of Tube	"A" Vts.	"B" Vts.	"C" Vts.	Plate MA.	Screen Grid	Cath. Volts
'24	1 R. F.	1.90	214	3	3.4	94	+2.2
'27	2 R. F.	1.90	80	4	3.5		+4
'27	3 R. F.	1.90	85	4	3.5		+4
'27	Det.	1.90	35		2.2		+4
'27	1 Aud.	1.90	78	4	2.5		+4
'10	2 Aud.	6.9	420	31	20		
'81	Rect.	6.9			45		
'81					45		

LV-115. Volume Control Max.

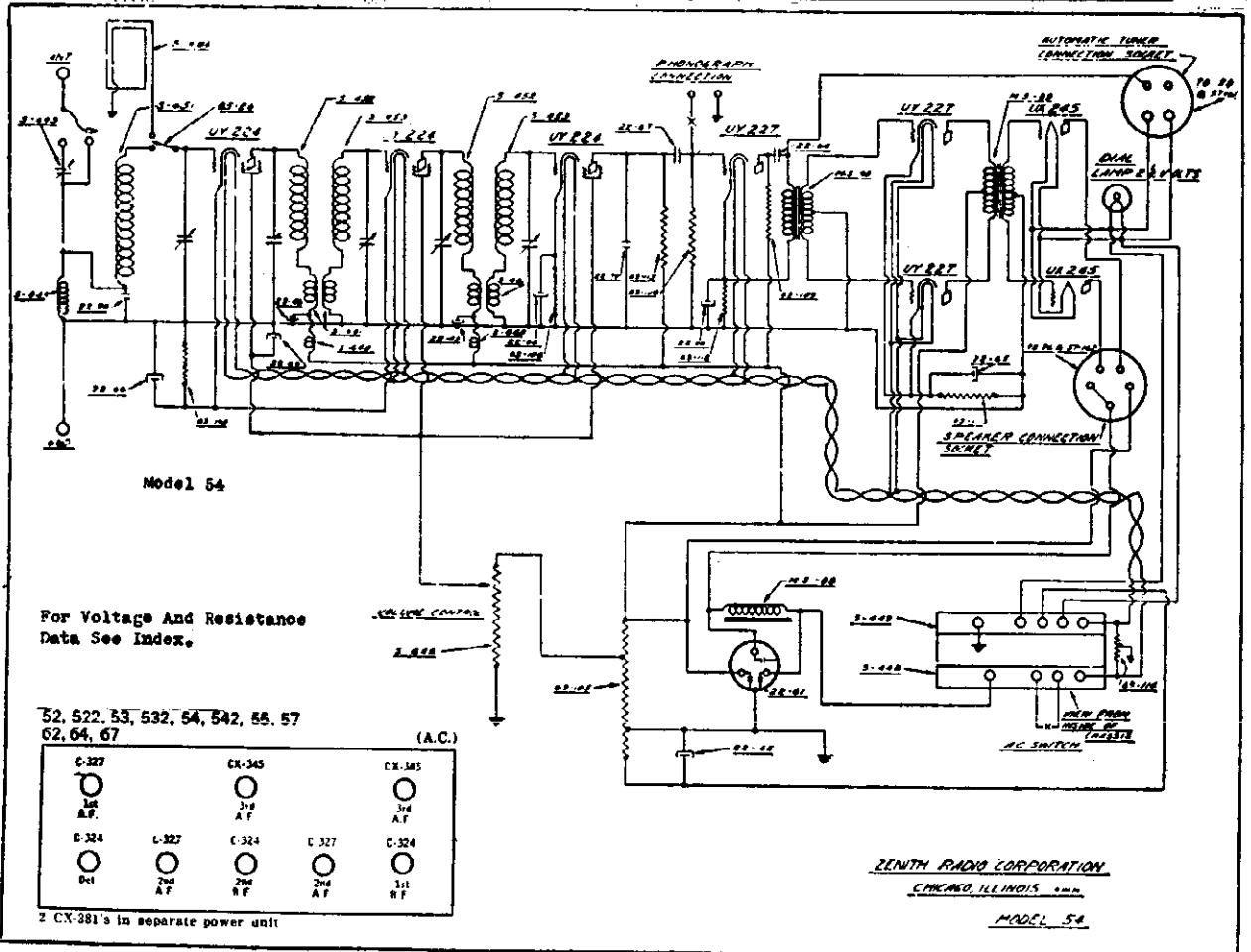
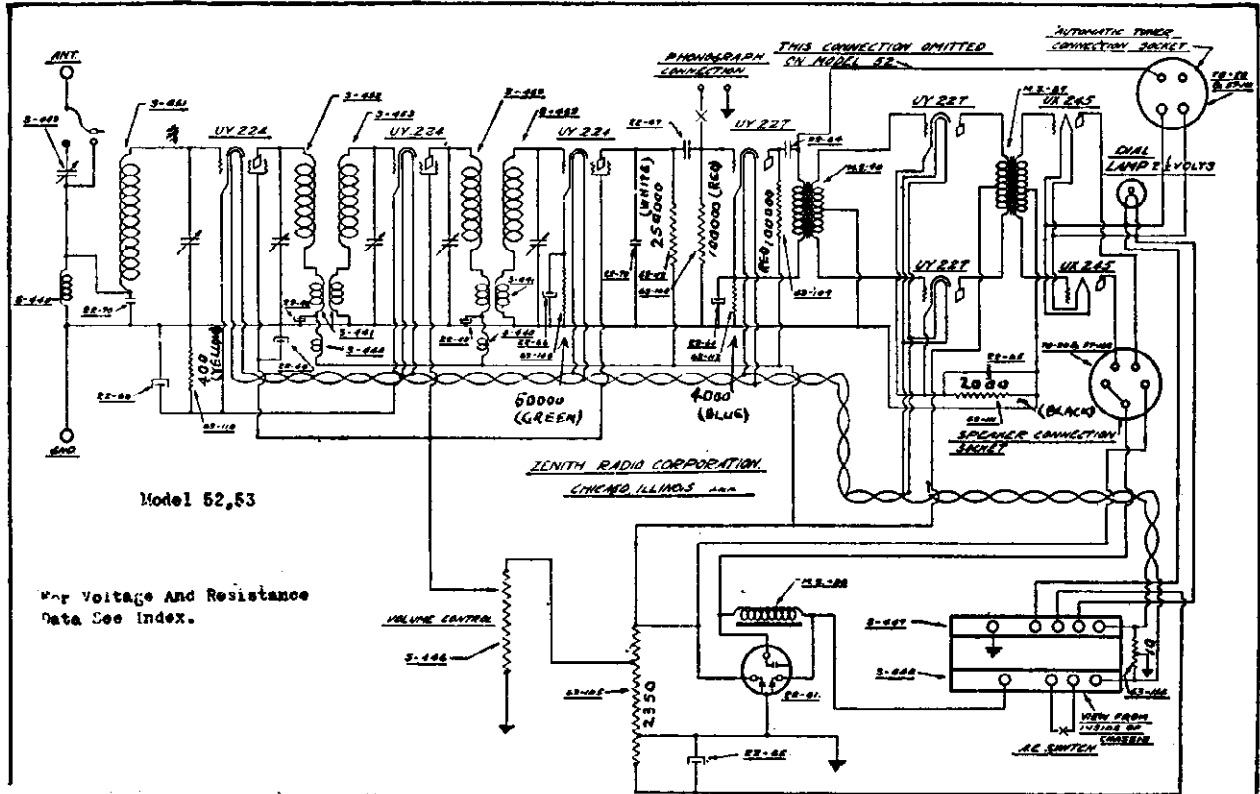
ZENITH—MODEL 41

Type Tube	Position of Tube	"A" Vts.	"B" Vts.	"C" Vts.	Plate MA.	Screen Grid	Cath. Volts
'24	1 R. F.	1.95	200	2	3	98	+2
'27	2 R. F.	2	95	4.5	4		+4.5
'27	3 R. F.	2	95	4.5	4		+4.5
'27	Det.	1.95	38		2.1		+4.5
'27	1 Aud.	2	89	4.5	3		+4.5
'71A	2 Aud.	4.2	145	29	14.5		
'80	Rect.	4.1			17.8		

LV-110. Volume Control Max.

MODEL 52,53
MODEL 54
Schematic

ZENITH RADIO CORP.



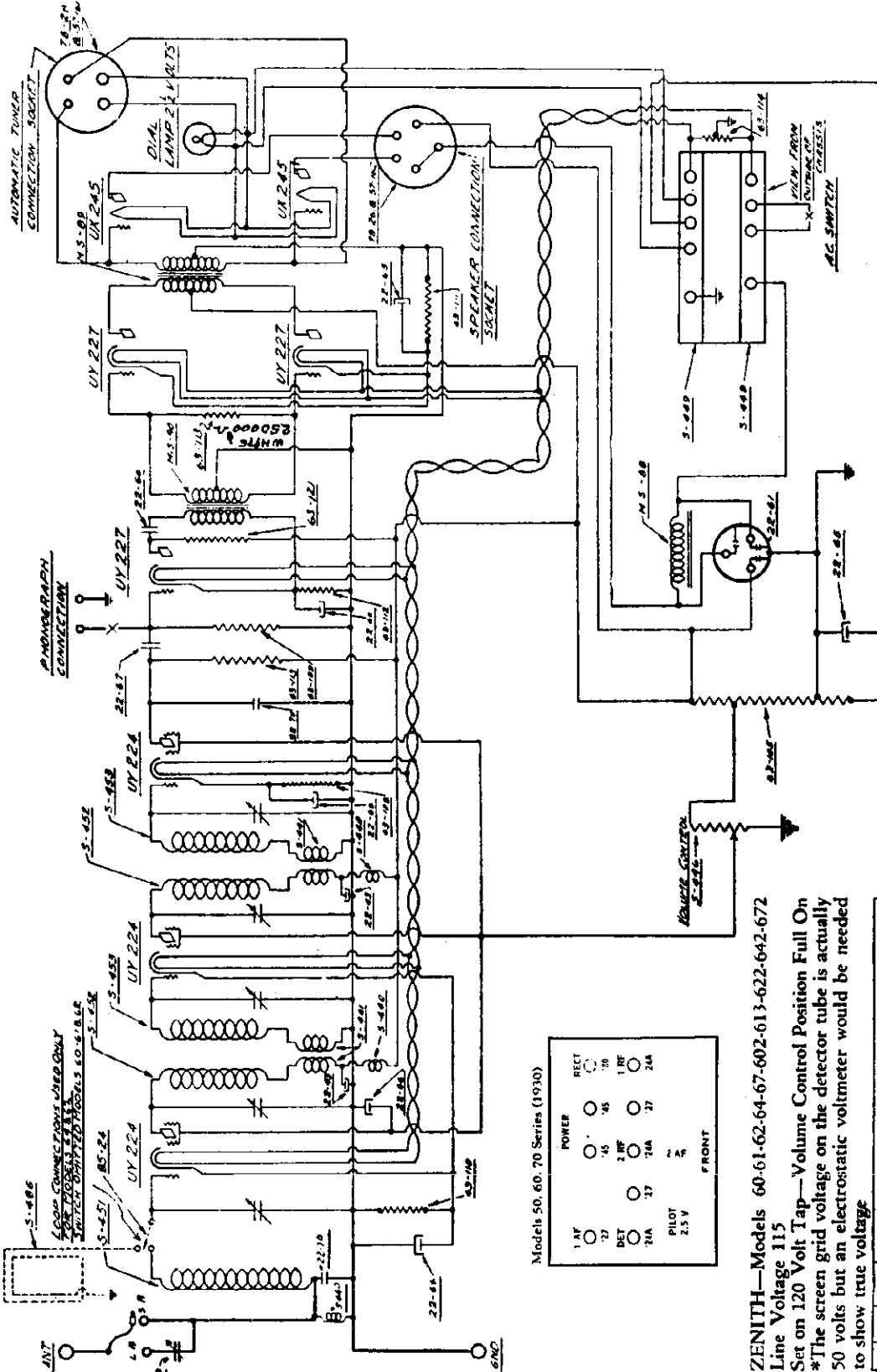
52, 522, 53, 532, 54, 542, 55, 57
62, 64, 67

(A.C.)				
C-327	CX-345	CX-345	CX-345	
1st A.F.	2nd A.F.	2nd A.F.	2nd A.F.	
C-324	C-327	C-324	C-327	C-324
Det	2nd A.F.	2nd R.F.	2nd A.F.	1st R.F.

2 CX-381's in separate power unit

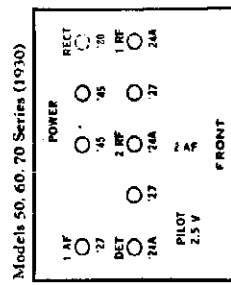
MODEL 60, 61, 62, 64, 67, 602,
613, 622, 642, 672
Schematic - Voltage

ZENITH RADIO CORP.



For wiring diagram of power supply ZE 60 used with the Series 60 receivers see index

SINGLE VOLUME CONTROL
MODELS 60, 61, 62, 64, 67 AND 672 WITHOUT LOOP
MODELS 60, 61, 62, 64, 67 AND 672 WITH LOOP

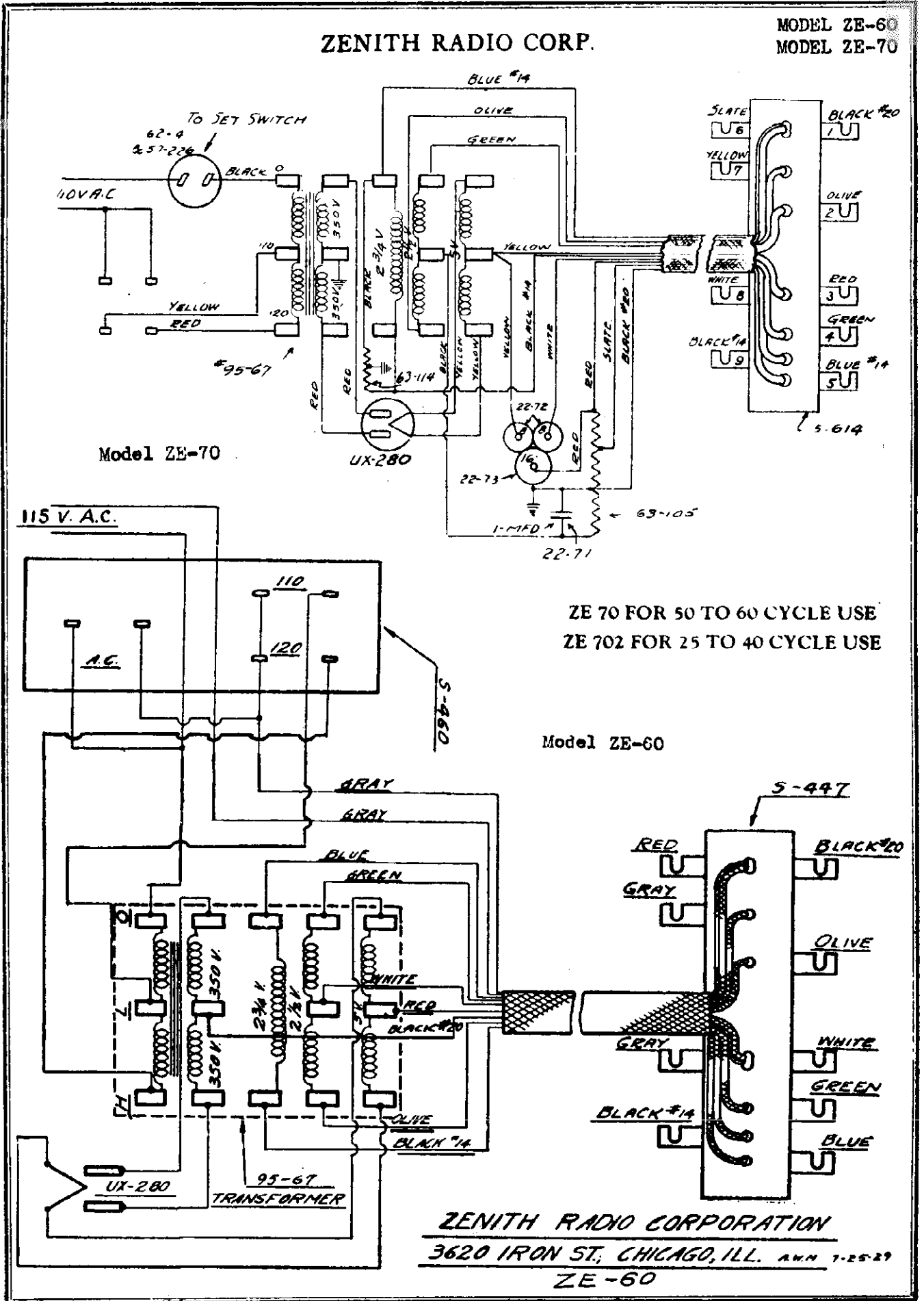


ZENITH—Models 60-61-62-64-67-602-613-622-642-672
Line Voltage 115
Set on 120 Volt Tap—Volume Control Position Full On
*The screen grid voltage on the detector tube is actually 50 volts but an electrostatic voltmeter would be needed to show true voltage

TYPE	NO.	WATTAGE	TYPE	RESISTANCE		VOLTAGE		CURRENT		REMARKS
				MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	
1	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP
2	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP
3	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP
4	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP
5	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP
6	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP
7	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP
8	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP
9	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP
10	24	2.5	115	27	27	1.0	2.0	1.2	80	PILOT LAMP

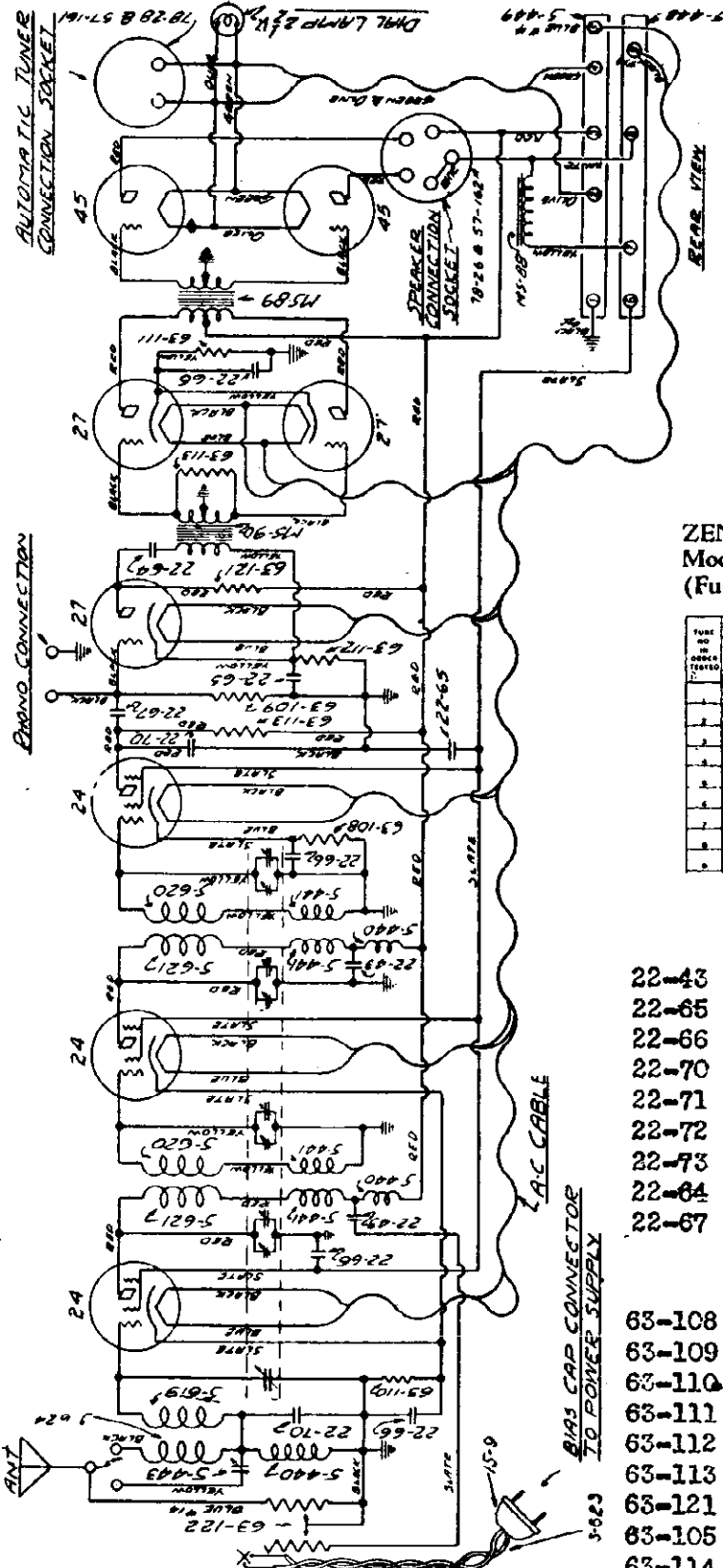
ZENITH RADIO CORP.

MODEL ZE-60
MODEL ZE-70

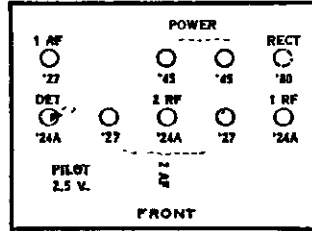


MODEL 71, 72, 73, 77, 712,
722, 732, 777
Schematic - Voltage
Electrical Values

ZENITH RADIO CORP.



Models 50, 60, 70 Series (1930)



For wiring diagram of
the power pack ZE-70
and ZE-702 for series
70 receivers see
Index

ZENITH—Models 71, 72, 73 and 77—60 Cycle
Models 712, 722, 732 and 777—25 Cycle
(Fuse in 110 Volt Clips—Line Volts 110)

TUBE NO. IN SOCKET (TYPE)	TYPE OF TUBE	PARTION OF TUBE IN SET	OPERATING VOLTAGES						MILLIAMPERES	TUBE TEST	PART. CONN. (CHANGES)
			FILAMENT OR HEATER	PLATE OR ANODE	CONTROL GRID—SPACE GRID—SCREEN GRID*	ADJ. GRID—SCREEN GRID*	CATHODE TO HEATER	SCREEN GRID TO PLATE			
1	224	1 R.F.	2.5	105	2	55	2.5	-	2.5		
2	224	2 R.F.	2.5	145	2	55	2.5	-	5.0		
3	224	Det.	2.5	100	-	5	5	-	.1		
4	227	1 A.F.	2.5	65	-	25	5	-	1.5		
5	227	PP-End	2.5	150	-	15	15	-	3.4		
6	227	PP-End	2.5	160	-	15	15	-	3.4		
7	245	PP-PWR	2.5	260	-	5E	-	-	3A		
8	245	PP-PWR	2.5	260	-	5E	-	-	3E		
9	200	Rect.	5.0	-	-	-	-	-	-		

CONDENSER SPECIFICATIONS

- 22-43 .25 mf (2)
- 22-65 1. (double)
- 22-66 .2 (quadruple)
- 22-70 .001 (2)
- 22-71 1.
- 22-72 8. (2)
- 22-73 16.
- 22-64 .03
- 22-67 .15

RESISTOR SPECIFICATIONS

- 63-108 50000 ohms Green
- 63-109 100000 ohms Red
- 63-110 400 ohms Yellow
- 63-111 2000 ohms Black
- 63-112 4000 ohms Blue
- 63-113 250000 ohms White
- 63-121 100000 ohms Pink
- 63-105 voltage divider
- 63-114 10 ohms Center Tap

INSTALLATION OF TONE CONTROL ON MODEL 70 SERIES

Remove variable condenser shield. Unsolder lead from lower terminal on rocking stator and pull this lead through the base to under side of chassis.

Turn chassis up side down; remove the two machine screws from rear side of coil assembly base on the first R. F. coil can only

With chassis inverted, multicoord terminal strip facing the operator, remove the one machine screw from right hand end of chassis which is screwed through the chassis frame and into the R. F. coil assembly base.

Unsolder the two remaining leads, coming from the first R. F. coil can; the one at the antenna choke terminal; the other at the S. A. tip jack; also the copper shielding on lead going through 1st R. F. coil can.

The R. F. coil assembly base may now be forced back about one-half inch and this will permit the 1st R. F. coil can and its base to be lifted upward from the chassis.

Measure off a point midway between the volume control shaft and the rocking stator shaft centers; and 15/16" from chassis bottom (base plate removed.)

Center punch and drill a .378" dia. hole to take the 500,000 ohm variable resistor tone control shaft, and mount so soldering terminals on same point toward, and are next to the volume control.

Be sure the Textolite Insulating Strip is attached to the back of the tone control unit to prevent the terminals from shorting out when the R. F. coil can is again installed.

Mount the .01 mfd. fixed condenser by soldering one of its terminals directly to one of the outside terminals of the six point audio transformer; be sure to get the secondary side, or grid of the 245 output tube.

This condenser will be self-supporting.

Wire from the remaining .01 fixed condenser terminal to any one of the two terminals on the variable resistance tone control unit

Wire from the remaining terminal on this unit to the other side of the same secondary winding direct on six point audio transformer, or grid of the other 245 output tube.

Technically speaking this produces a series circuit consisting of a .01 mfd. fixed condenser and a 500,000 ohm variable resistor in shunt to the secondary circuit of the six point audio transformer, or from grid to grid of the 245 output tubes.

Run your two twisted leads through the slot in the R. F. coil assembly base, behind and to the right of the 1st R.F. socket (still viewing the chassis as before - inverted.)

Press the Textolite Insulating Strip on the back of the tone control unit into place and inspect to see that no terminals are shorted.

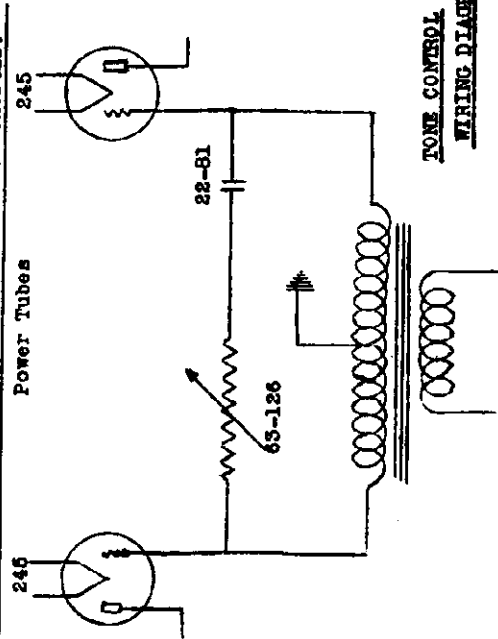
Replace the 1st R.F. coil can and base by first threading through the leads in the assembly base and work the coil can base in to place.

Insert the two screws you removed from this point on the base. Force the coil assembly base back into position, and insert the mesh screw into same through chassis end.

Resolder all leads previously removed and put condenser shield in place. Be sure to resolder the copper shielding on the lead from 1st R.F. coil can previously unsoldered.

Turning tone control knob clockwise produces the treble effect and counter-clockwise the bass.

A small tone control escutcheon plate will be included and should be mounted on the cabinet panel to read correctly, the cabinet panel having been drilled with a 5/8" hole 1 1/16" from base centrally located between the resonance and volume controls.

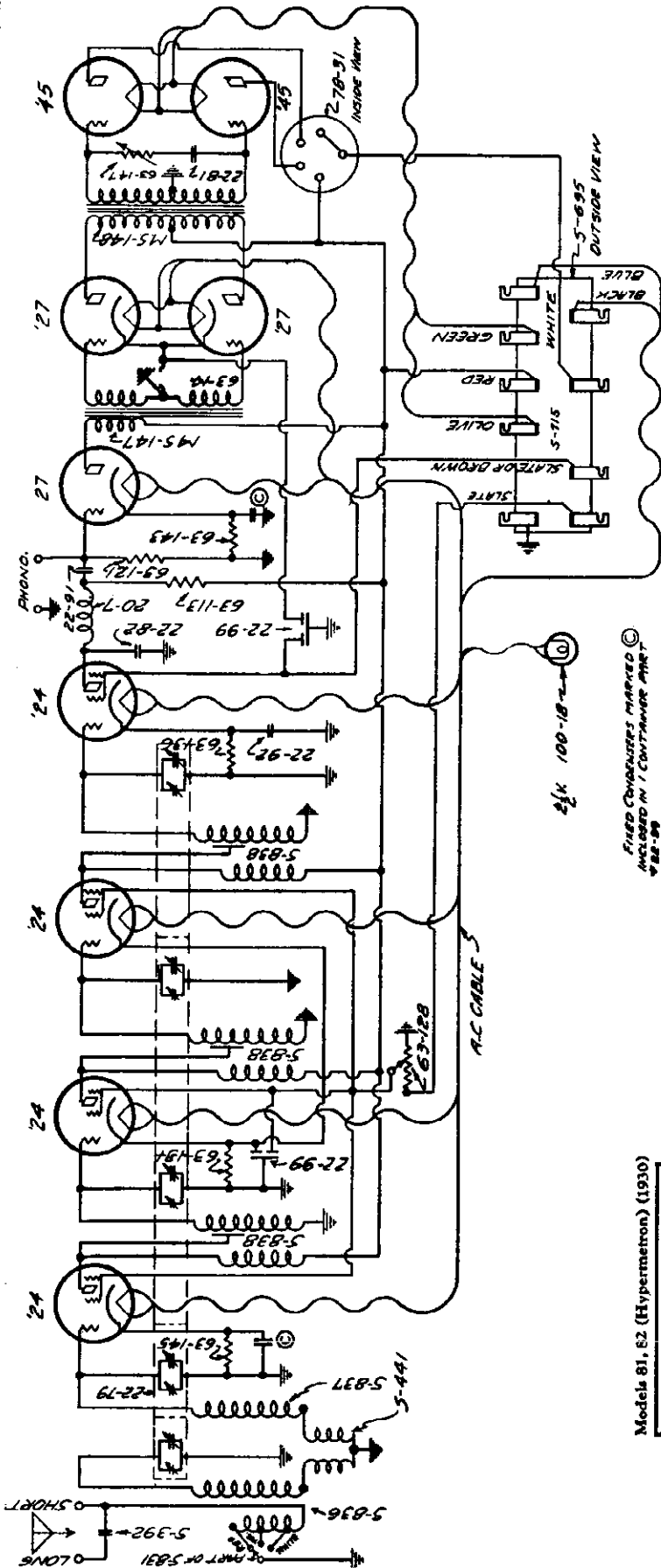


ZENITH RADIO CORP.

MODEL 70
Tone Control
Installation

MODEL 80 Hypermetron
Schematic

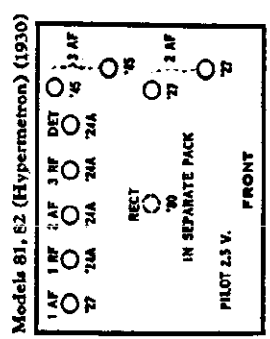
ZENITH RADIO CORP.



SIZE	COLOR	USED FOR
# 20	RED	+180. R.F. & R.F. PLATE LEAD.
# 20	WHITE	+250 FILTER CHOKE.
# 20	YELLOW	AUDIO CATHODES.
# 20	SLATE	SCREENS & CATHODES R.F.
# 20	BLACK	AUDIO GRID LEADS, GRID COMMON.
# 20	GREEN & OLIVE	POWER FILAS. & PILOT LIGHT.
# 14	BLACK	224 & 227 FILAMENTS.
# 14	"	"
# 20	BROWN OR SLATE	224 DET. SCREEN.

FILED CAPACITORS MARKED © INCLUDED IN 1 CONTAINER PART # 22-99

ZENITH RADIO CORP.
CHICAGO, ILL.
MODEL 80
HYPERMETRON



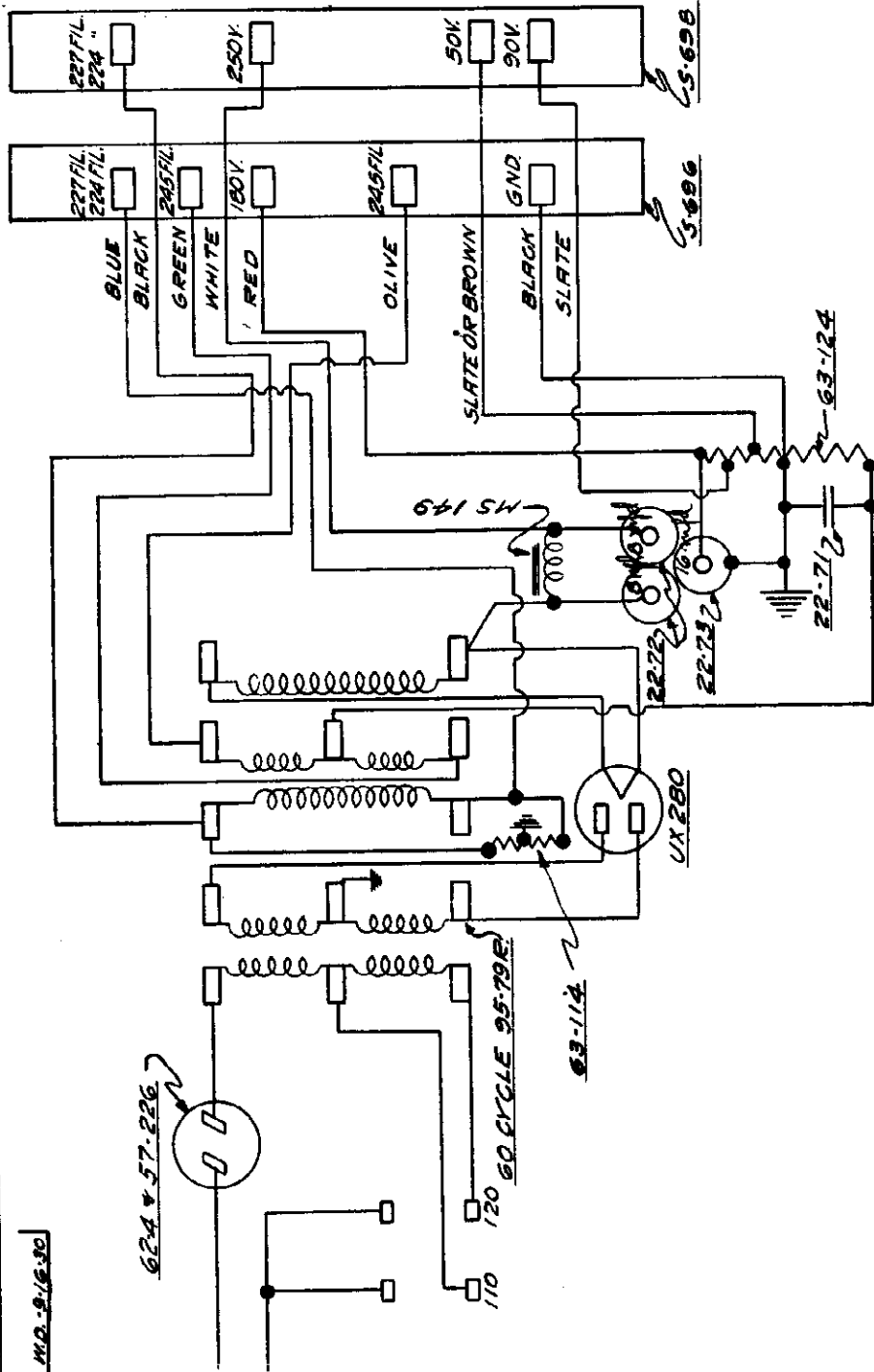
MODELS 81, 82 (60 cycle) and 822, 892 (25 cycle) ZENITH HYPER METRON RECEIVERS.

Models 81 and 82 Zenith Receivers operate on 105 to 125 volts, 50 to 60 cycle alternating current. Models 822 and 892 operate on 105 to 125 volts, 25 to 40 cycle alternating current (A. C.) The power supply ZE80 is used on 50 to 60 cycle current. The power supply ZE802 is used on 25 to 40 cycle current.

ZENITH RADIO CORP.

MODEL ZE-80
Schematic
Parts List

VIEW FACING OUTSIDE
OF POWER SUPPLY.



POWER SUPPLY - ZE 80

78-32	Four Prong Socket for Rectifier.....	.15
95-79	Power Transformer..... (60 Cycle).....	13.90
95-93	Power Transformer..... (25 Cycle).....	13.50
136-2	2 Amp Fuse.....	.10
S-696	Terminal Strip Assem..... (Five).....	.70
S-698	Terminal Strip Assem..... (Four).....	.70
S-700	Fuse Receptacle & A.C. Outlet Plate.....	.20
MS-149	Power Choke.....	3.50

22-71	1. mf Condenser..... (Power Bias).....	1.10
22-72	8. " " "..... (Electrolytic).....	2.50
22-73	16. " " "..... (Electrolytic).....	5.50
Note: 16 mf Condenser can be identified by Blue marking on anode		
63-114	10 Ohm Center Tap Resistor.....	.40
63-124	10,450 " Voltage Divider.....	1.60
57-226	Bias Plate.....	.04
57-242	Bias Socket & Guide Plate.....	.01

MODEL 80 Hypermetron
Parts List

ZENITH RADIO CORP.

HYPERMETRON

Variable Condenser Assembly

22-79	Five Gang Variable Condenser.....	20.00
S-829	Dial Drum Assembly.....	1.50
26-21	Calibrated Dial Strip.....	.20
S-703	Dial Lamp Bracket.....	.45
100-18	2½ Volt Dial Lamp.....	.25
11-2	Dial Control Cable.....	.05
80-70	Dial Control Cable Tension Spring.....	.01

Fixed Condensers

22-81	Single .01 mf Condenser.....(Tone Control Cond.)	.85
22-82	Single .001 " " .....	.30
22-91	Single .03 " " .....	.50
22-92	Single .5 " " .....	.75
22-99	Dual .1 " " .....	.75
S-392	Antenna Series Condenser.....	.10

Resistors

63-113	250M Ohm Resistor.....(Red, Green End, Yellow Dot) ..	.35
63-121	100M " " .....	.35
63-131	400 " " .....	.35
63-136	50M " " .....	.35
63-143	4M " " .....	.35
63-145	800 " " .....	.35
63-146	2000 " " .....	.35

R.F. Coils

S-441	R. F. Coupling Coil.....	1.00
S-836	Preselector Coil.....	1.40
S-837	1st R. F. Coil.....(Coil Only)	1.00
S-838	2nd, 3rd R. F. & Det. Coils.....(" ")	1.00
20-7	Detector Choke.....	.50
20-8	R. F. Choke.....	.50

Shields & Bases

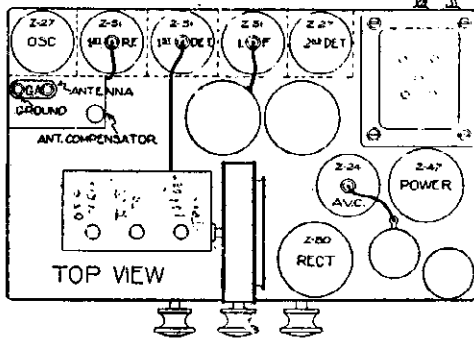
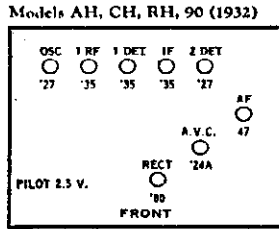
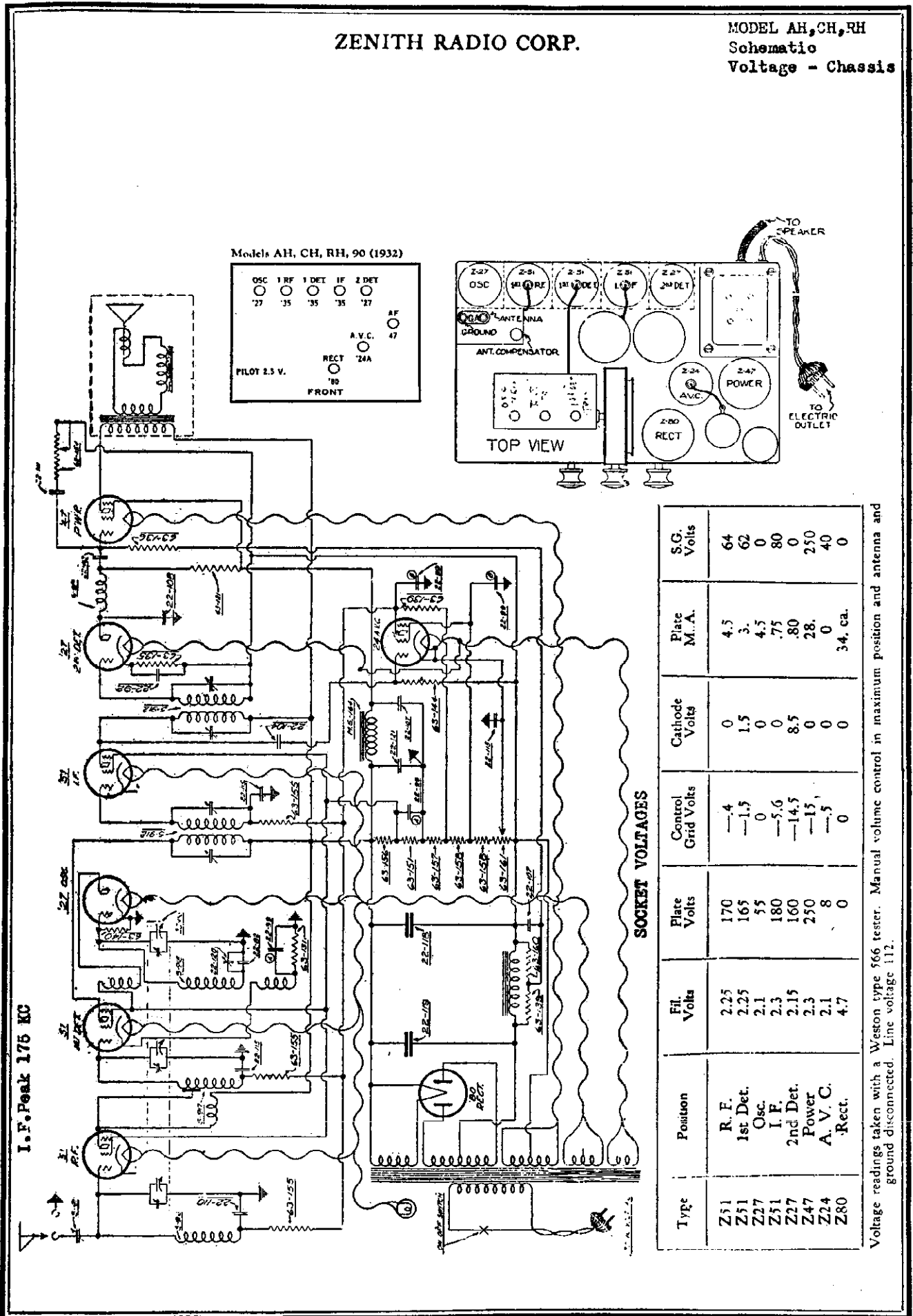
4-87	Tube Shield Can Base.....	.05
126-62	Coil " " " .....	.05
126-59	R. F. Coil Shield Can.....	.25
126-61	Tube Shield Can.....	.20
MS-153	Variable Condenser Shield.....	.75

Miscellaneous

44-4	Phono Connector Base.....	.30
78-30	Five Prong Floating Socket.....	.20
78-31	Five Prong Stationary Socket.....	.20
78-32	Four Prong Stationary Socket.....	.20
57-161	UY Socket Guide Plate.....	.01
57-242	Four & Five Prong Socket Guide Plates.....	.03
63-128	Volume Control.....	1.50
63-147	Tone Control.....	1.25
85-26	Three Point Switch Base Less Shaft.....	.45
143-9	Three Point Switch Bushing with Contact Arm.....	.35
117-31	Three Point Switch Lever Arm.....	.01
S-695	Multicord & Terminal Plate Assembly.....	2.00
S-715	Multicord Terminal Plate Only.....	.50
52-23	Multicord only.....	1.25
MS-147	1st Stage Push Pull Transformer...(5 Lead).....	5.50
MS-148	2nd Stage Push Pull Transformer...(6 Lead).....	5.50

ZENITH RADIO CORP.

MODEL AH, CH, RH
Schematic
Voltage - Chassis



I. F. Peak 175 KC

SOCKET VOLTAGES

Type	Position	Fil. Volts	Plate Volts	Control Grid Volts	Cathode Volts	Plate M. A.	S.G. Volts
Z51	R. F.	2.25	170	-4	0	4.5	64
Z51	1st Det.	2.25	165	-1.5	1.5	3.	62
Z27	Osc.	2.1	55	0	0	4.5	0
Z51	I. F.	2.3	180	-5.0	0	.75	80
Z27	2nd Det.	2.15	160	-14.5	8.5	0	0
Z47	Power	2.3	250	-15	0	28.	250
Z24	A. V. C.	2.1	8	-5	0	0	40
Z80	Rect.	4.7	0	0	0	3.4 ca.	0

Voltage readings taken with a Weston type 566 tester. Manual volume control in maximum position and antenna and ground disconnected. Line voltage 112.

MODELS AH, CH, RH
Parts List
 Servicing Data

ZENITH RADIO CORP.

I-F. ADJUSTMENT

The intermediate transformers employed between the 1st detector and I. F. tube and between the I. F. tube and 2nd detector have been accurately peaked to 175 kilocycles on a temperature controlled crystal oscillator before leaving the factory and unless the service man has an oscillator which is accurately calibrated at 175 kilocycles and feels that the intermediates are at fault, their adjustment should never be changed. However, in cases where it is necessary the test oscillator is first set to 175 kilocycles and coupled to the grid terminal of the first detector through a .00025 mf. fixed series condenser. The ground lead of the test oscillator is connected to the ground post of the receiver. (Indicated at point "A" in figure 2.) For this operation the oscillator tube of the receiver should be removed. Do not connect the test oscillator direct to grid of the first detector tube without the series condenser being in the grid lead, since by so doing, the bias resistor will be shorted out. Four adjusting screws are provided under the chassis (see figure 3). These verniers tune the plate circuit of the first detector, grid and plate circuits of the I. F. stage and grid circuit of the 2nd detector. (See wiring diagram.) Beginning at the second detector grid vernier, each adjusting screw is, in turn, set for maximum output. For best results the verniers should be gone over twice in the same rotation, always keeping the output from the test oscillator at the weakest possible strength.

BALANCING CHASSIS

Every Zenette Superheterodyne is carefully balanced on laboratory equipment before the set leaves the factory and should not require further attention. However, in the event that some part of the receiver has been changed or the adjustments shifted by mishandling it may be done as follows: Procure an oscillator which is calibrated to 1500 and 550 kilocycles. It is necessary that it be accurate, otherwise the receiver dial cannot be set properly. It will be best to remove the chassis from the cabinet for this operation in order to reach the oscillator padding condenser adjustment. (See figure 4.) The test oscillator should be coupled to the antenna and ground posts of the receiver by the two leads now being furnished by the manufacturers of commercial oscillators. Although very good results may be had simply by judging audibility from the speaker, a more accurate method is to employ an output meter attached to the speaker transformer.

Before balancing any Zenette Superheterodyne the tuning condenser gang should be turned to maximum mesh position, namely the 550 kilocycle end of the scale. When the condenser is turned as far as it will go in this direction the dial index light must point to a position one division or channel beyond the 550 kilocycle line on the dial. If this condition does not already exist the index bracket should be adjusted up or down as the case may be.

The test oscillator should first be set to exactly 1500 kilocycles and attached to the antenna and ground posts, after which the receiver dial is also set to the 1500 kilocycle marking. With the manual volume control set to maximum volume, the oscillator trimmer (see figure 3) is adjusted to give maximum response in the speaker or greatest deflection of the output meter, if one is used. This vernier is extremely sharp and, therefore, great care should be used in its adjustment. The first detector section is next (see figure 3). This is the right hand section from the front. Its trimmer must also be varied for maximum response.

It will be noted that the center section of the condenser gang does not have a vernier adjustment. This is provided by the antenna compensating condenser. This section will automatically resonate by adjusting the antenna compensator after the set is connected to the aerial which is to be permanently employed. It is done by tuning to a very weak station at between 1500 and 1300 kilocycles on the dial and turning the manual volume control to the position of maximum volume. The compensator knob varies the capacity of a small series condenser and should be turned for greatest signal strength by turning first to the right and then to the left and allowed to stay at a point of maximum volume.

After making the above adjustment at 1500 kilocycles it will be necessary to then set the test oscillator at 550 kilocycles. Tune the set to 550 kilocycles and rock the receiver dial back and forth over the test oscillator signal at the same time adjusting the oscillator paddler condenser (see figure 4). An adjustment of the paddler will be found which gives maximum output. When this has been done it is necessary to go back to 1500 kilocycles on both the test oscillator and the dial and readjust the oscillator vernier if necessary.

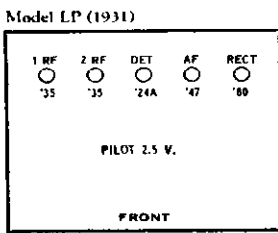
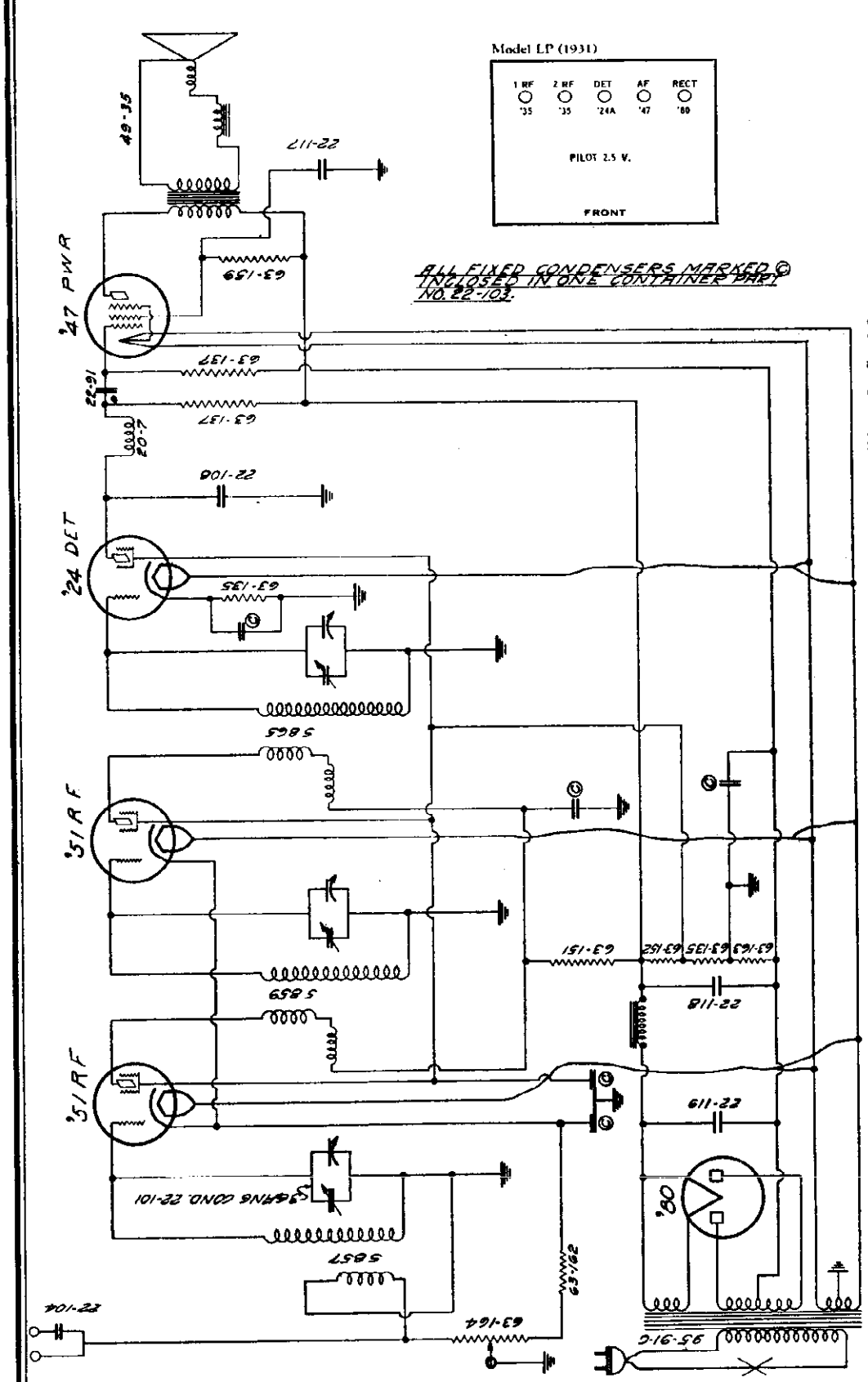
In case a test oscillator is not available the service man may use a weak station on the low frequency end and another station on the high frequency end with the manual volume control in the maximum position.

RESISTORS

No.	PART	DESCRIPTION	No.	PART
63-121	100M ohm	Detector Plate.....	22-82	.001 mf
63-131	400 ohm	1st Det. Cathode.....	22-92	.5 mf
63-135	25M ohm	Power Tube Grid.....	22-99	.1 mf (Dual)
63-136	50M ohm	A. V. C. Plate.....	22-104	.0001 mf
63-139	500M ohm	Power Tube Grid.....	22-107	.5 mf
63-140	1 meg. ohm	Osc. Grid.....	22-108	.001 mf
63-144	3 meg. ohm	A. V. C. Grid.....	22-110	.1 mf
63-151	15M ohm	Voltage Divider.....	22-111	.03 mf
63-155	1M ohm	R. F. 1st Det. I. F.....	22-112	.1 mf
63-156	10M ohm	Voltage Divider.....	22-115	1 mf
63-157	100 ohm	Voltage Divider.....	22-118	6. mf Electrolytic..A.V.
63-158	1700 ohm	Voltage Divider.....	22-119	6. mf Electrolytic..A.V.
63-160	100M ohm	Power Tube Bias.....	22-121	8. mf

ZENITH RADIO CORP.

MODEL LP
Schematic
Parts List



ALL FIXED CONDENSERS MARKED ©
INCLUDED IN ONE CONTAINER PART
NO. 22-103.

Fixed Condensers

22-91	.03 mfd. condenser
S-392	Antenna series condenser
22-103	Five section bypass condenser
22-108	.002 mfd. condenser
22-117	.5 " (bypass)
22-118	6. " (electrolytic low voltage)
22-119	6. " high

Resistors

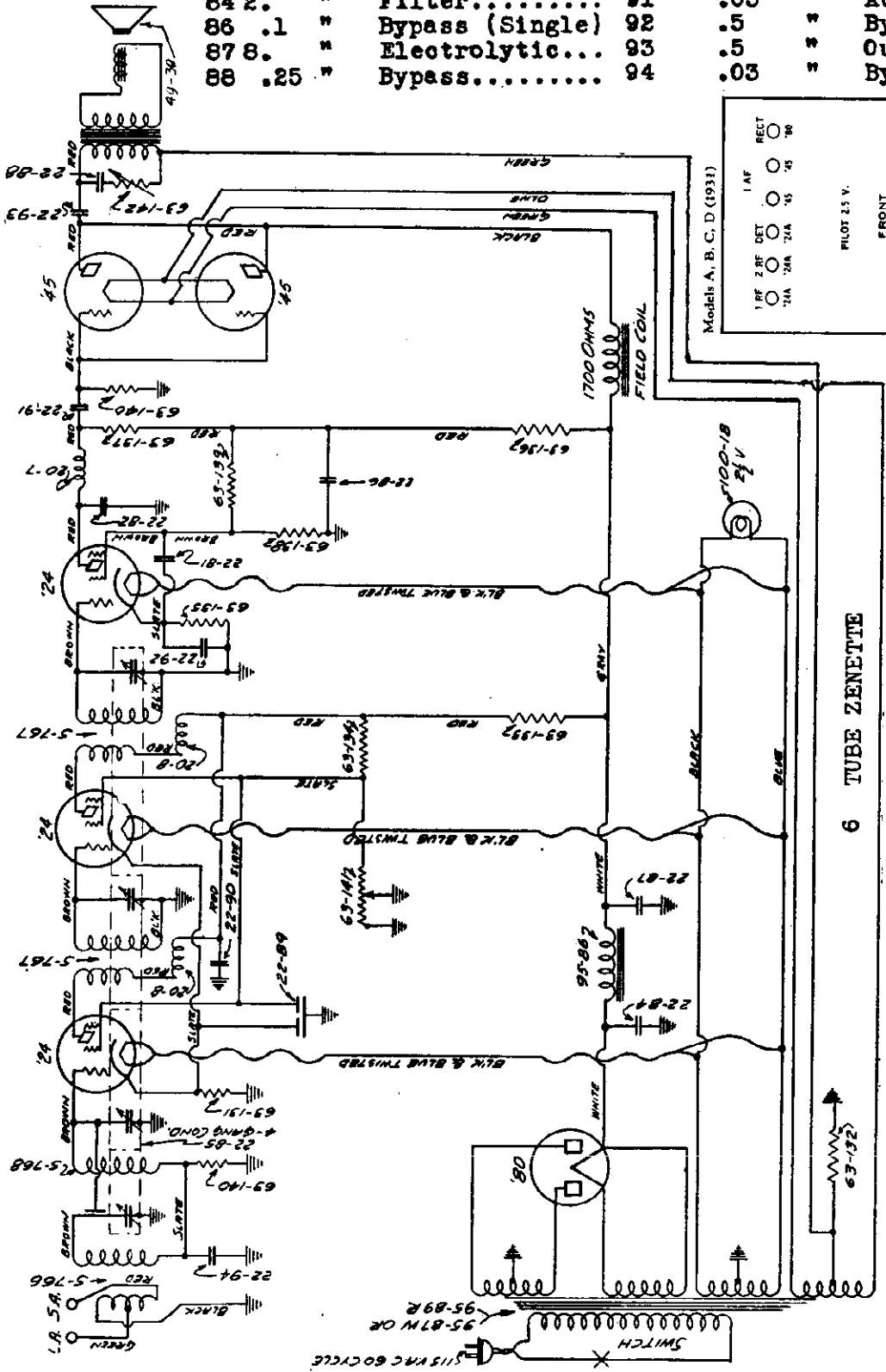
63-135	25M ohm resistor (Red, Green end, Or ange Dot)
63-137	" " " " Yellow " "
63-151	" " " " Brown " " (Orange)
63-152	" " " " Yellow Orange " "
63-159	" " " " Black end Red " "
63-162	" " " " Flat wire wound black " "
63-163	" " " " Red " "

MODEL 6 Tube Zenette
Chassis A,B,C,D (2004)
Schematic, Parts List

ZENITH RADIO CORP.

CONDENSERS

22-81	.01 mf	Bypass.....	89	.1	**	Bypass (Double)
82	.001"	".....	90	.1	**	Bypass (Single)
84	2.	Filter.....	91	.03	**	Audio Coupling.
86	.1	Bypass (Single)	92	.5	**	Bypass.....
87	8.	Electrolytic...	93	.5	**	Output.....
88	.25	Bypass.....	94	.03	**	Bypass.....



RESISTORS

63-131	400 ohm (Yellow Brown Dot)	137	250M
132	" (White " "	138	350M
133	" (Red " "	139	500M
134	" (Orange)	140	1 Meg
135	" (Red Orange Dot)Small	141	50M
136	" (Green)	142	50M

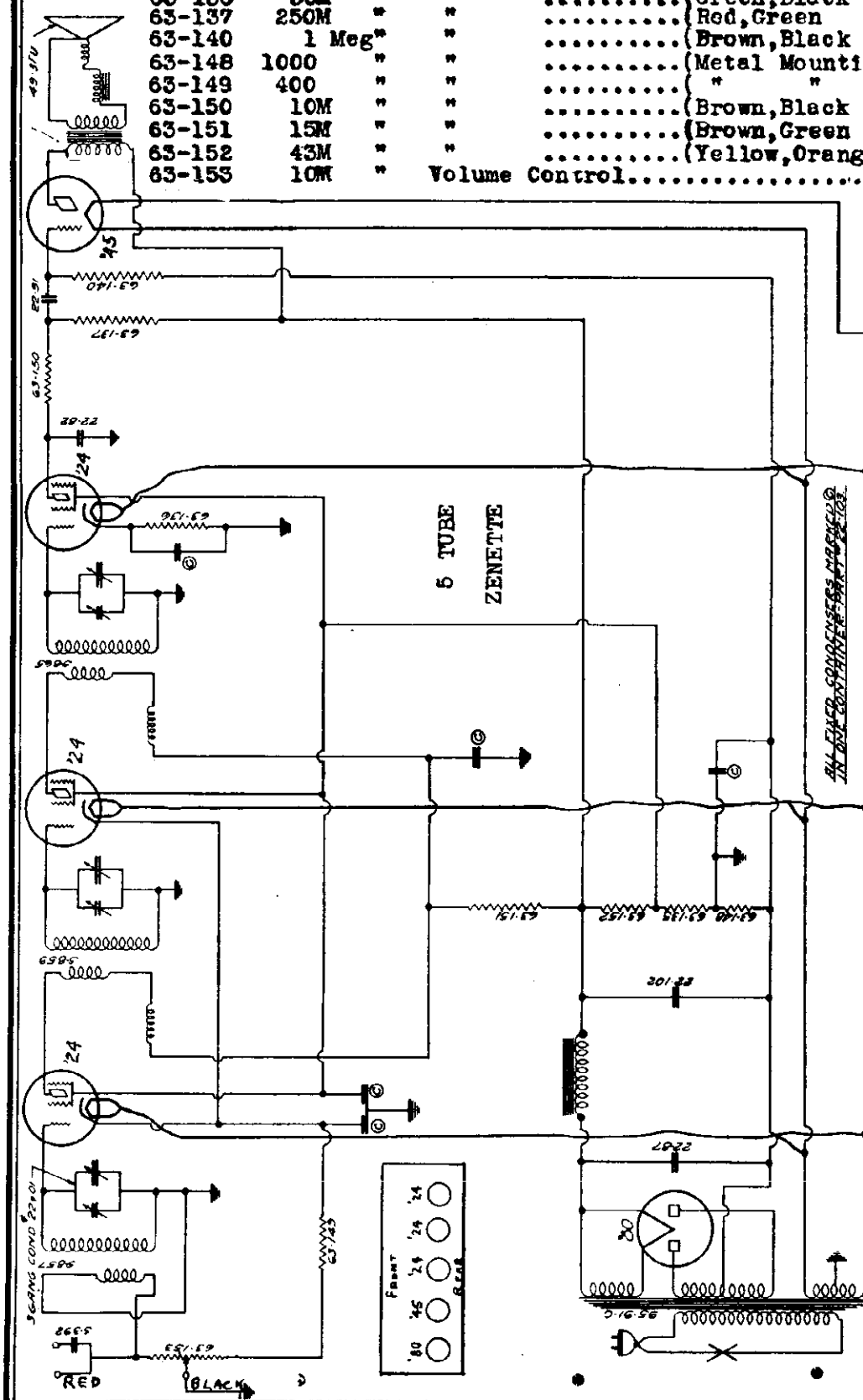
6 TUBE ZENETTE

(Red Yellow Dot).....
 (Orange Yellow").....
 (Green Yellow").....
 (Brown).....
 Volume Control.....
 Tone Control.....

ZENITH RADIO CORP.

MODEL 5 Tube Zenette
Type 2009-C
Schematic

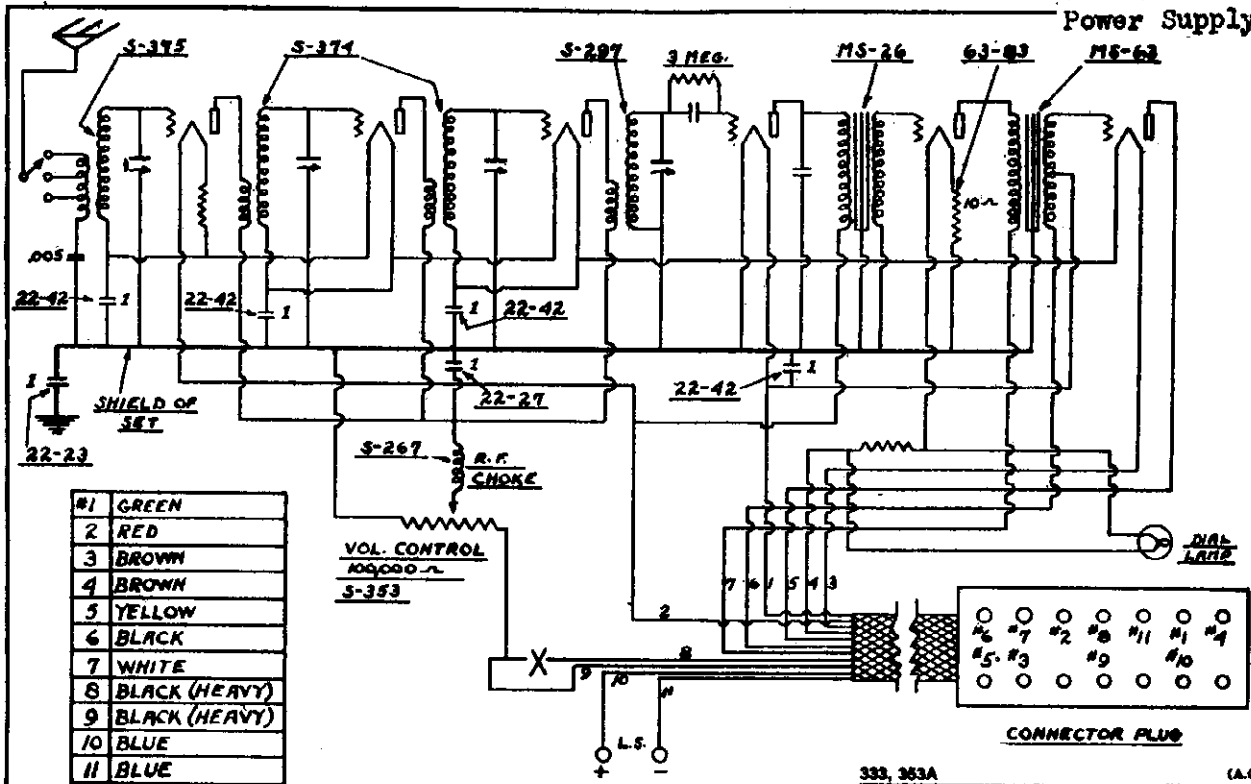
		Resistors		
63-135	25M	Ohm Resistor	.....	{ Red, Green End, Orange Dot }.
63-136	50M	"	"	{ Green, Black " " }
63-137	250M	"	"	{ Red, Green " Yellow " }
63-140	1 Meg	"	"	{ Brown, Black " Green " }
63-148	1000	"	"	{ Metal Mounting-Large }.....
63-149	400	"	"	{ " " -Small }.....
63-150	10M	"	"	{ Brown, Black End, Orange Dot }
63-151	15M	"	"	{ Brown, Green End " " }
63-152	43M	"	"	{ Yellow, Orange End " " }
63-153	10M	"	"	"
		Volume Control	.....	"



- Fixed Condensers
- 22-82 .001 mf Condenser..... (Detector Plate).....
 - 22-87 8. " " " (Electrolytic High Voltage)
 - 22-102 8. " " " (Electrolytic Low Voltage)
 - Note: High voltage condenser identified by red dot on anode
 - 22-91 .03 mf Condenser..... (Audio Coupling).....
 - 22-100 .08 " " " (Filter Condenser).....
 - 22-103 Five Section Bypass Condenser.....
 - S-392 Antenna Series Condenser.....

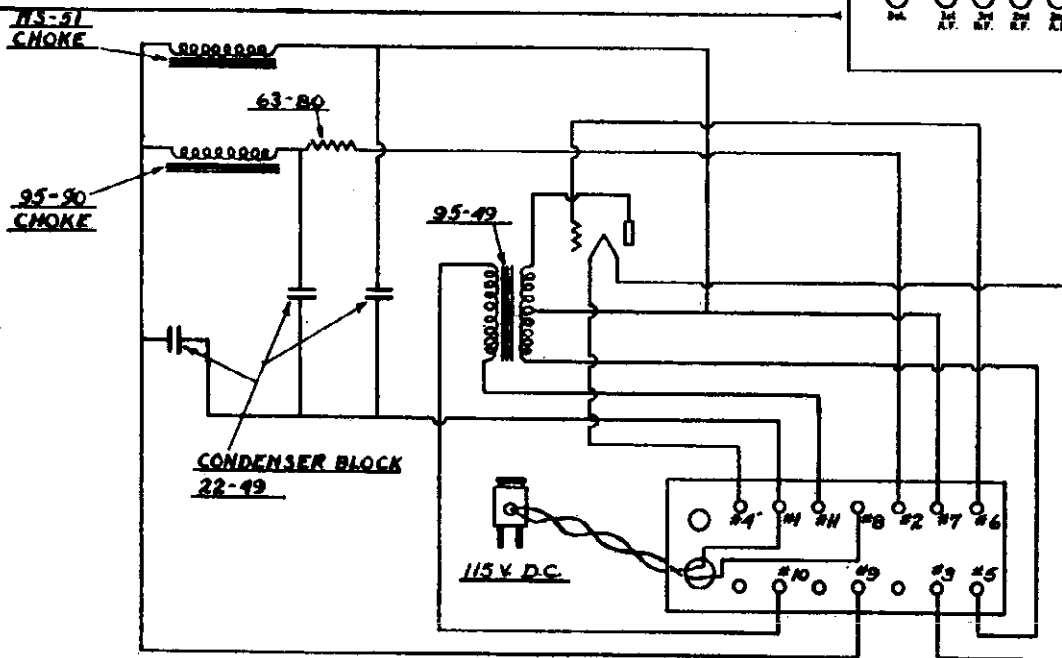
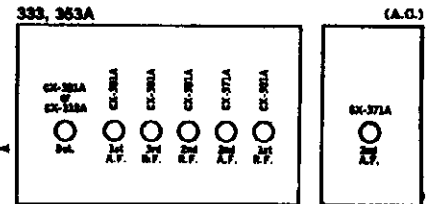
ZENITH RADIO CORP.

MODEL 333-353A
Schematic
MODEL ZE 17
Power Supply



WIRING DIAGRAM
MODEL 333-353A
6 TUBE D.C. SET.

(13)

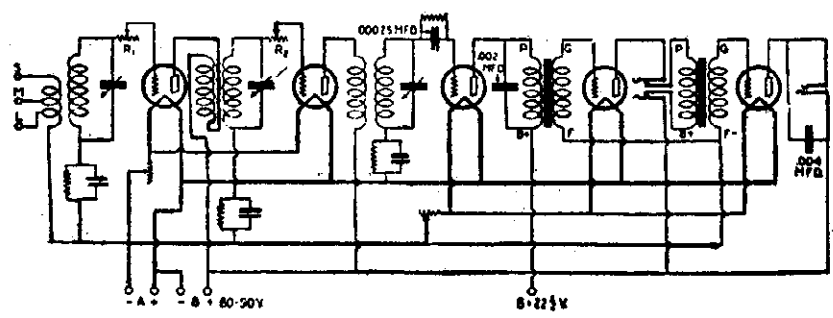


WIRING DIAGRAM
MODEL ZE 17
POWER SUPPLY FOR
MODELS 333-353A

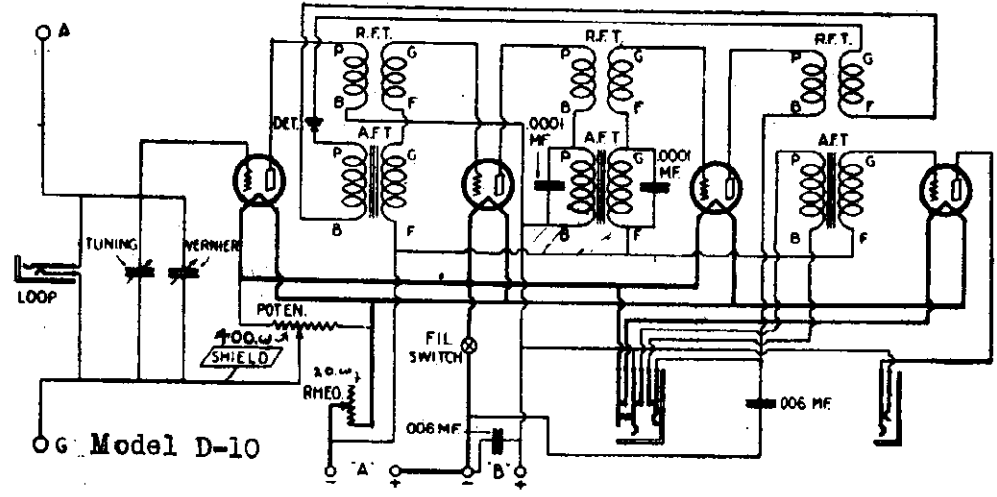
ZENITH RADIO CORPORATION
CHICAGO ILL.

DEFOREST RADIO CORPORATION

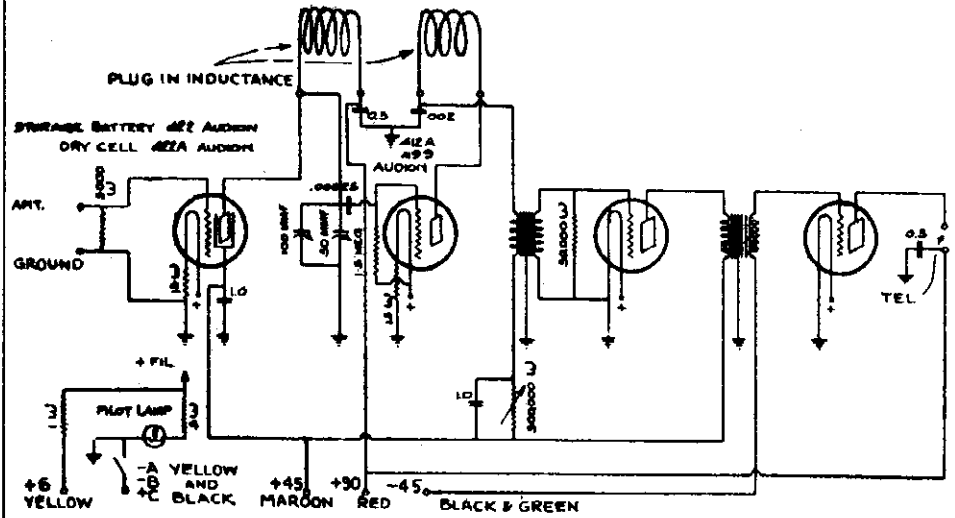
MODEL F-5
 MODEL D-10
 MODEL CS-5
 MODEL D-17



Model F-5

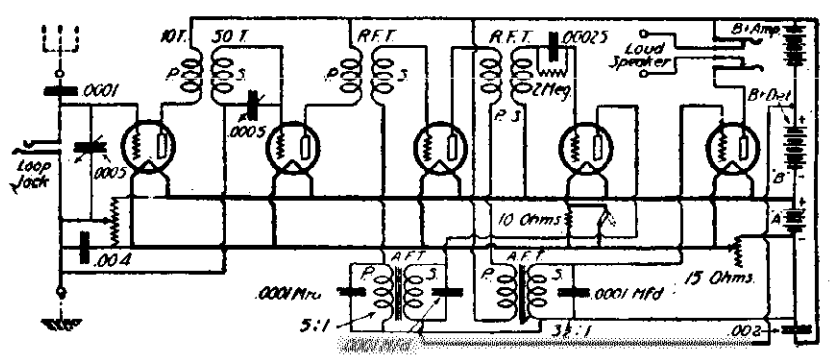


Model D-10

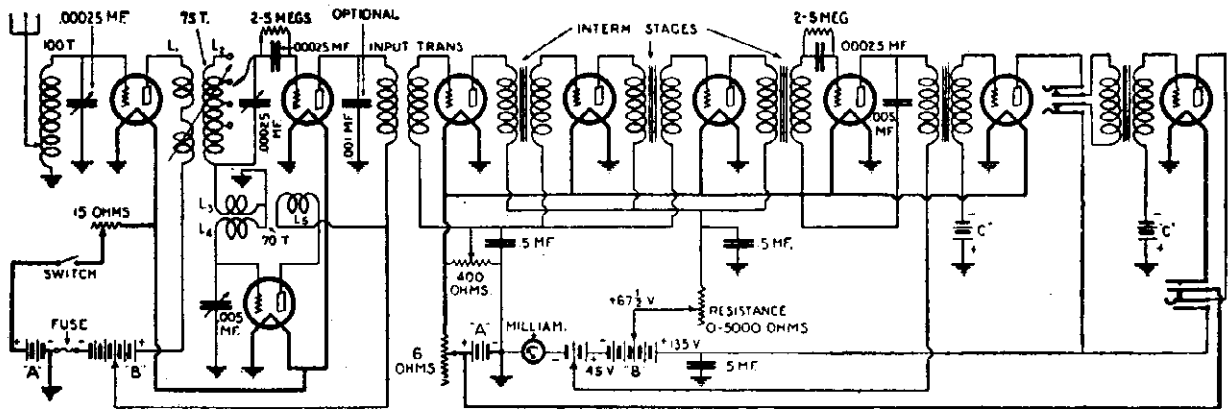


Model CS-5

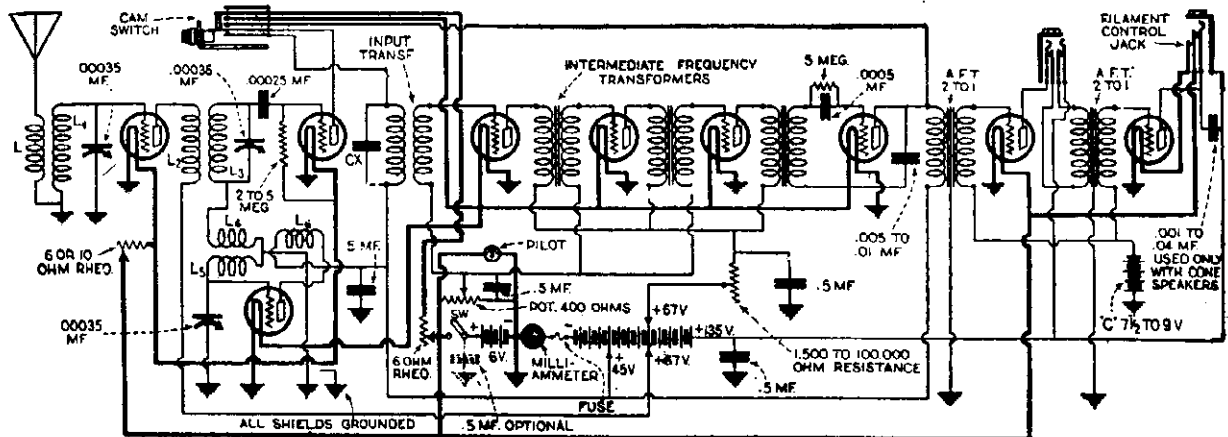
Model D-17



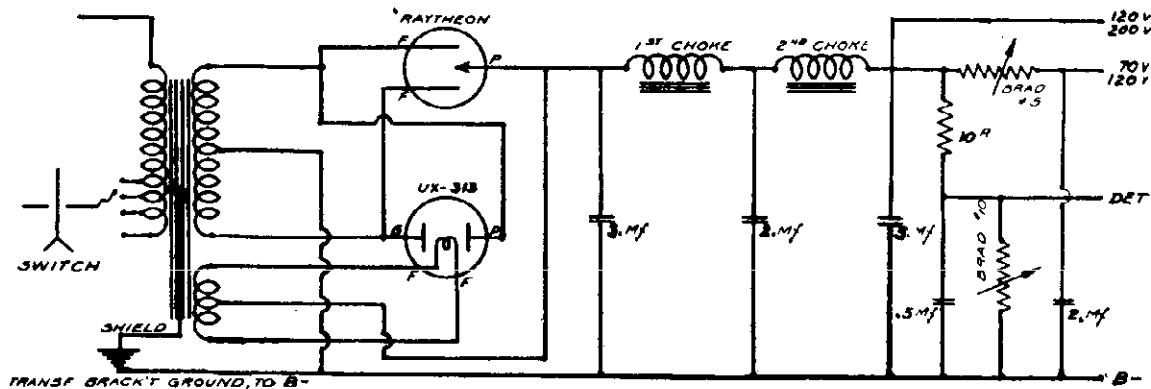
FARRAND FENWAY



Model Fenway Superheterodyne



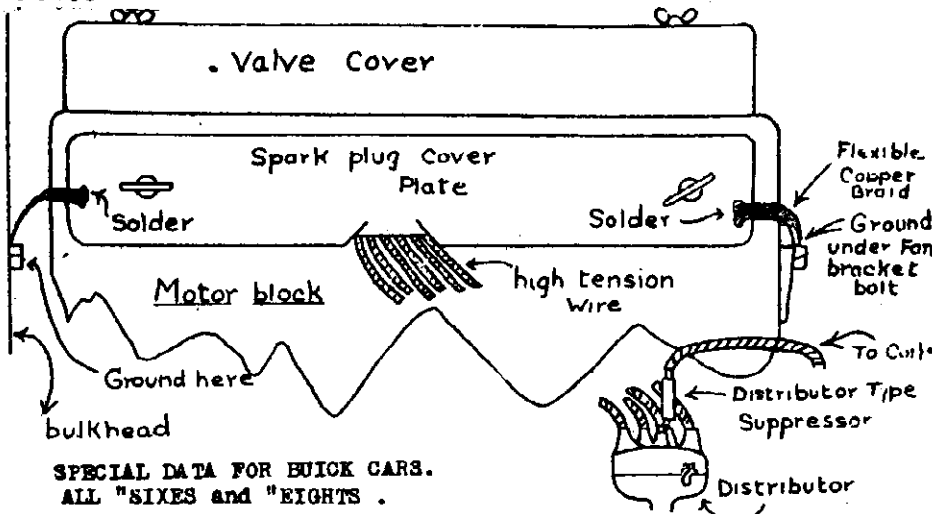
Model Fenway Superheterodyne



SCHEMATIC DIAGRAM

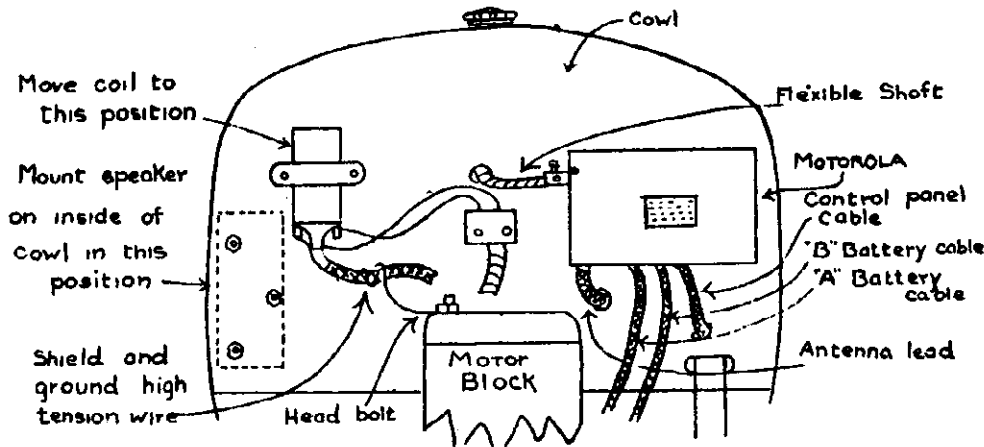
**MODEL Motorola
Auto Receiver
Notes**

GALVIN MFG. CO.



**SPECIAL DATA FOR BUICK CARS.
ALL "SIXES and "EIGHTS .**

- (a) The above illustrates a method of grounding the spark plug cover plate found on all Buick cars. Do not be misled by the fact that this plate is apparently grounded by the two aluminum wing nuts holding it to side of motor, for this is in no way a ground for the type of current radiating from spark plugs which cause radio interference. Soldering flexible jumpers to this cover plate and grounding same under motor or chassis bolts will in every case help eliminate motor noise in radio reception.
- (b) As a further help on the new Model Buick Eights, it will be found advisable to solder copper bonds to all the control shafts passing through bulkhead and grounding these to bulkhead. By "control shafts" we mean choke rods, carburetor heat control, motor temperature indicator, etc.



SPECIAL DATA FOR MODEL "A" FORD CARS

The above illustrates the proper mounting of a Motorola receiver on a Model "A" Ford car. On inspection you will note that it is necessary to move the ignition coil over to side of cowl. This is done for two reasons, one to make room for the flexible shaft to pass through cowl and the other to help in elimination of motor noise.

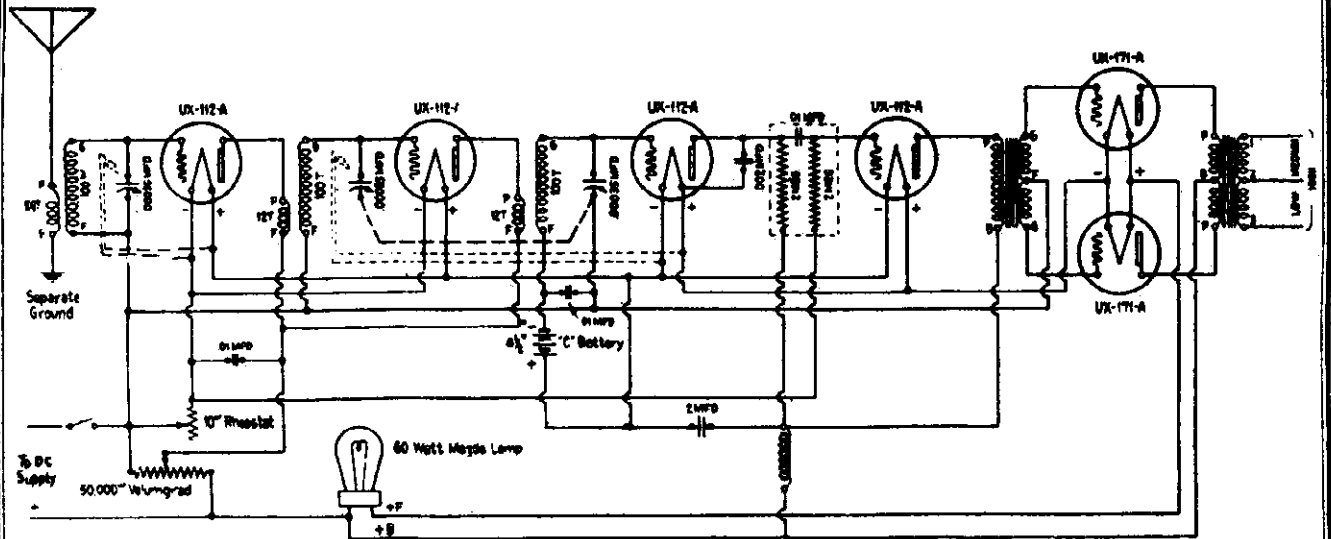
It is advisable to shield the high tension lead from coil to distributor and ground this shielding to motor block as per diagram.

The speaker will be found to mount best on the inside of cowl to the right side of car above foot board.

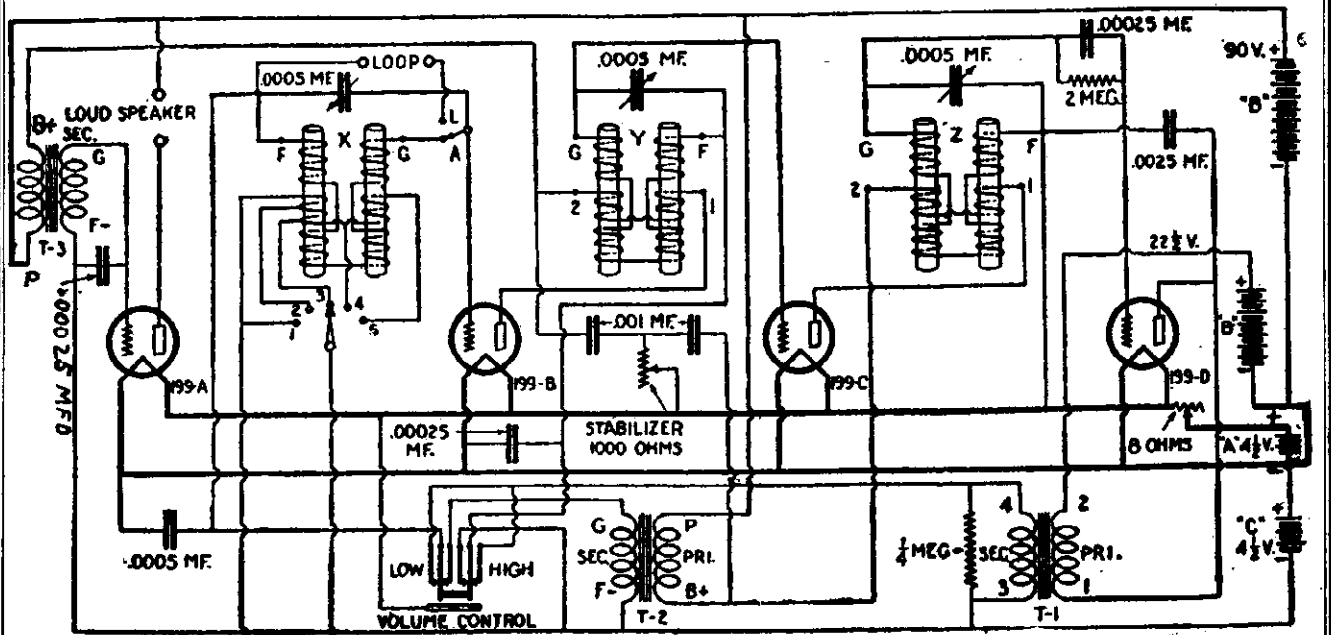
maximum signal obtainable. If operation is satisfactory to this point, the volume should be turned all the way on, the station selector knob turned to a point where no signal is received, the motor of car started and there should be no motor noise noticeable.

Different cars will have different types of antennae and their capacities with respect to the frame of the car will be different, therefore it will be necessary to phase the antenna with the set. Remove the four screws holding the set lid in place, turning the set on and tuning to a very weak station. Adjust with a screw driver the small trimming condenser, to t;

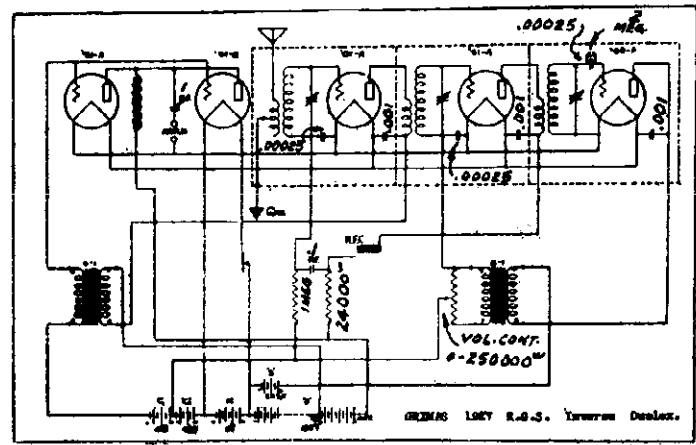
DAVID GRIMES, INC.



GRIMES 110 Volt D.C. - ("NEW YORKER")

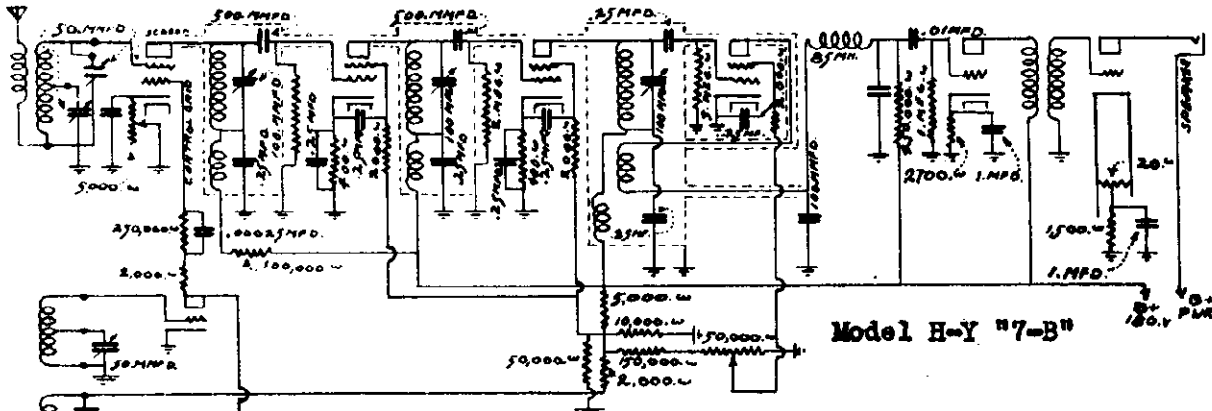
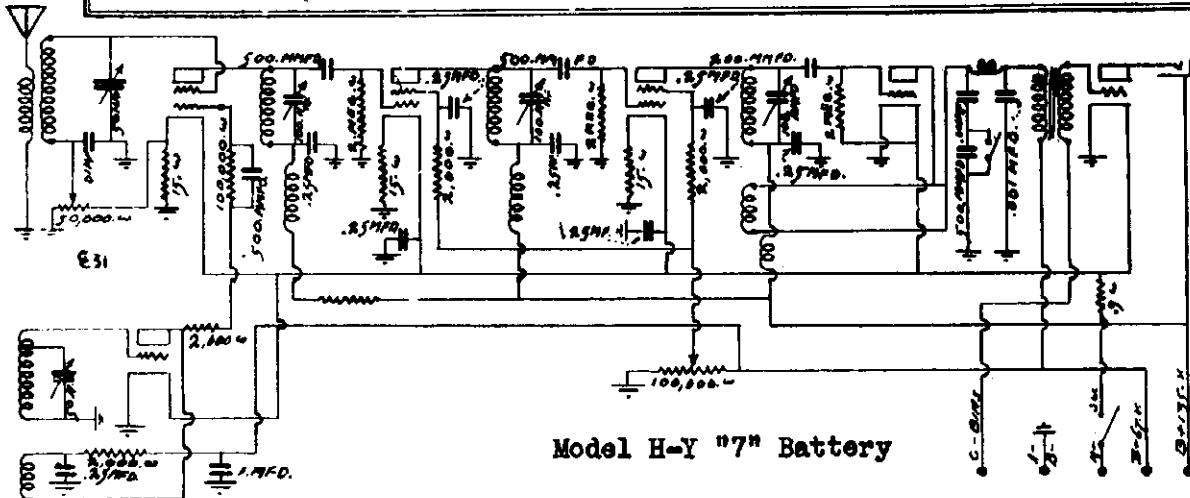
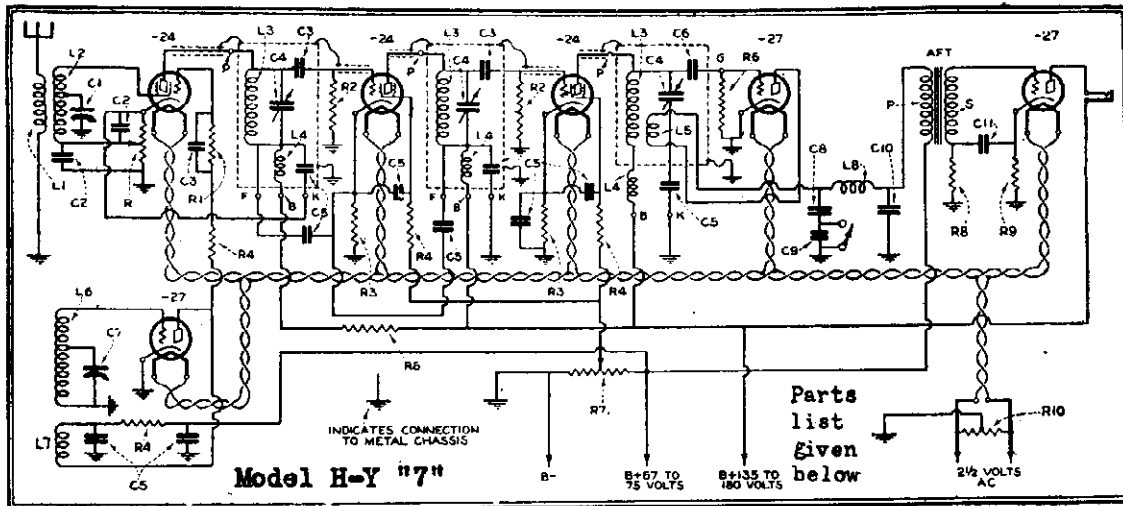


AERIAL G GROUND GRIMES Type 4-DL Inverse Duplex (Reflex) Circuit

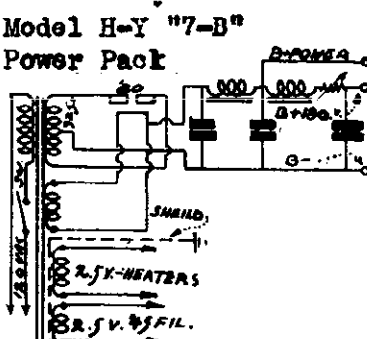


GRIMES LNEY R.D.S. Invention Dealer.

HATRY & YOUNG

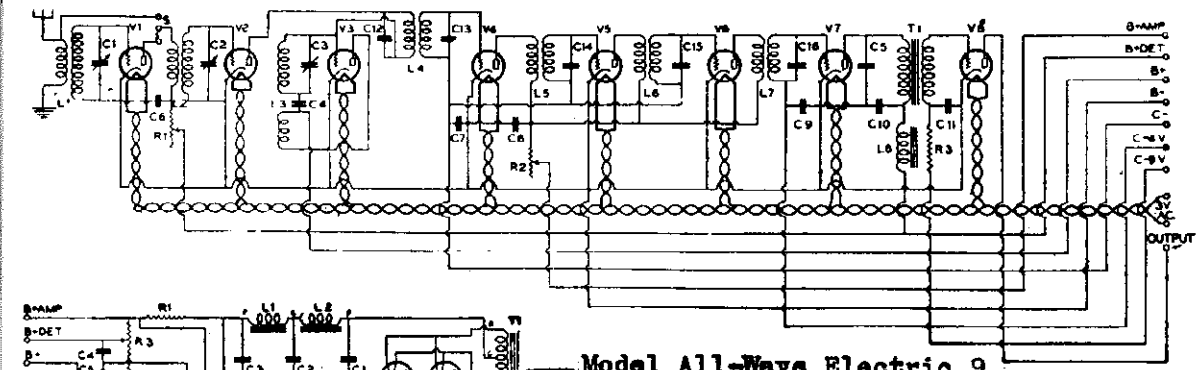


- R1—100,000-ohm Durham metallic leak.
- R2—2-megohm Durham metallic leak.
- R3—400-ohm Electrad suppressor resistance.
- R4—2,000-ohm Electrad suppressor resistance.
- R5—25,000-ohm Durham metallic.
- R6—3-megohm Durham metallic.
- R7—25,000-ohm Electrad royalty potentiometer.
- R8—50,000-ohm Durham metallic.
- R9—2,250-ohm Durham metallic.
- R10—10-ohm centre-tapped Yaxley.



- C1—50 mmfd. midget pilot.
- C2—.01 mfd. Sangamo fixed condenser.
- C3—.0005 mfd. Sangamo fixed condenser.
- C4—100 mmfd. Hammarlund equalizer, range with L3 about 1650-1475 kc.
- C5—.25 mfd. Sprague midget fixed condenser.
- C6—.0002 mfd. Sangamo fixed condenser.
- C7—Same as C1.
- C8—.00015 Sangamo.
- C9—.00005 mfd. Sangamo.
- C10—.001 mfd. Sangamo.
- C11—1 mfd. Flechthelm.
- R—5,000-ohm Electrad royalty potentiometer.

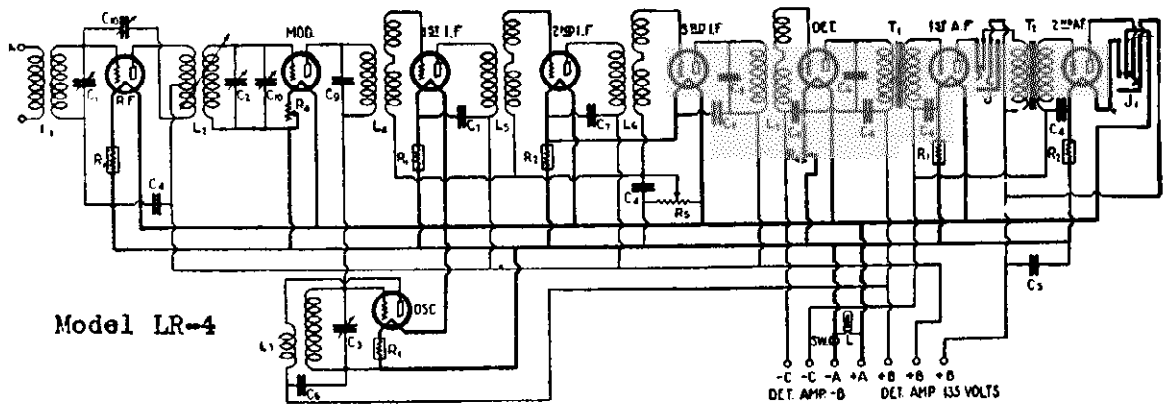
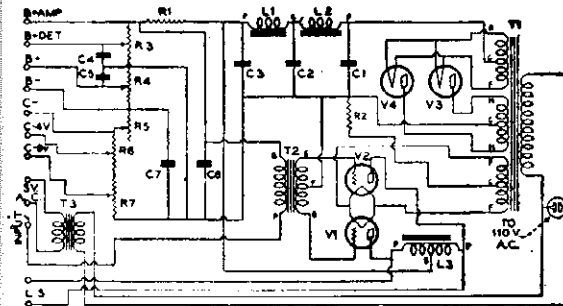
R. E. LACAULT



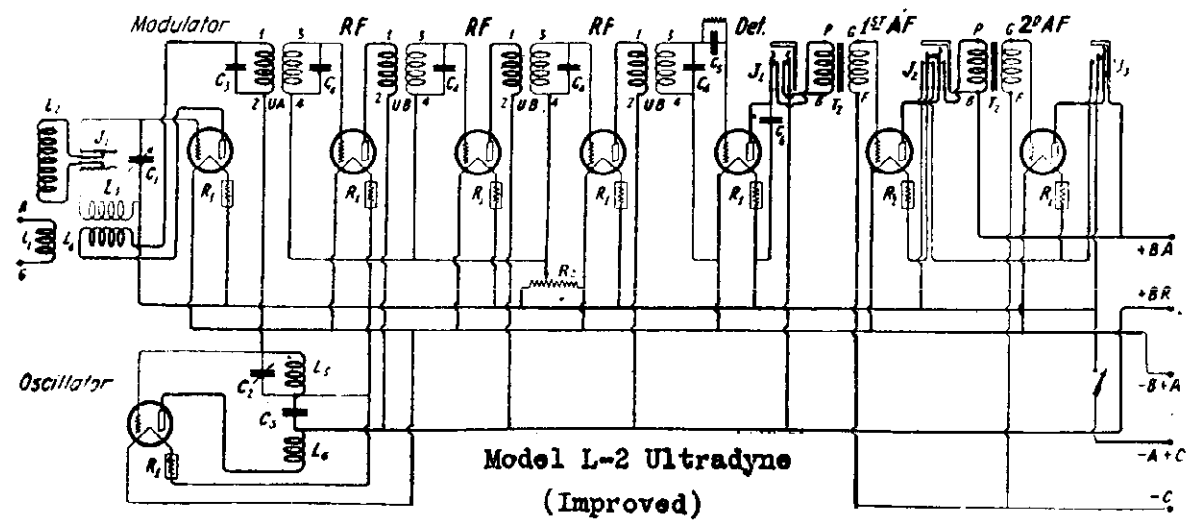
Model All-Wave Electric 9

- C1, C2 and C3—Variable condensers, .0001 mfd.
- L1 to L7—R.E.L. plug-in coils;
- L8—Audio-frequency choke;
- T1—Audio-frequency transformer;
- R1 and R2—Variable resistors;
- C4—Fixed condenser, .001 mfd.
- C5—Fixed condenser, .002 mfd.
- C6 to C9—By-pass condensers, .5 mfd., 100 volts;
- C10 and C11—By-pass condensers, 1 mfd., 400 volts;
- C12 to C16—Fixed condensers, .00025 mfd.
- V1 to V8—Heated cathode a.c. tubes;
- R3—Fixed resistor, 100,000 ohms;
- R4—Fixed resistor, 100,000 ohms;
- 1 Front panel;
- 1 Sub-base panel;
- 10 Binding posts;
- 2 Stage shields;
- 8 Coil sockets;
- 8 Tube sockets;
- 1 Drum dial;
- 1 Grid-leak mounting;
- 2 Condenser extension shafts;
- 2 Tip Jack and plugs;

- The parts required for building the amplifier-power unit are as follows:
- T1—Full-wave, power transformer;
- T2—Push-pull, audio-frequency transformer;
- T3—Filament transformer;
- L1 and L2—Audio frequency chokes;
- L3—Center-tapped, audio-frequency choke;
- C1, C2 and C3—Filter condensers, 2 mfd., 5,000 volts;
- R1—Fixed resistor, 4,000 ohms, 50 watts;
- R2—Fixed resistor, 750 ohms, 25 watts;
- R3 and R4—Variable resistors, 10,000 ohms;
- R5—Rheostat, 60 ohms;
- R6 and R7—Variable resistors, 500 ohms;
- C4 to C7—Fixed condensers, 1 mfd., 400 volts;
- V1 and V2—Power tubes, '10 type;
- V3 and V4—Rectifier tubes, '81 type;
- 4 Tube sockets;
- 12 Binding posts;
- 1 Front panel;
- 1 Sub-base panel;
- 1 110-volt receptacle.

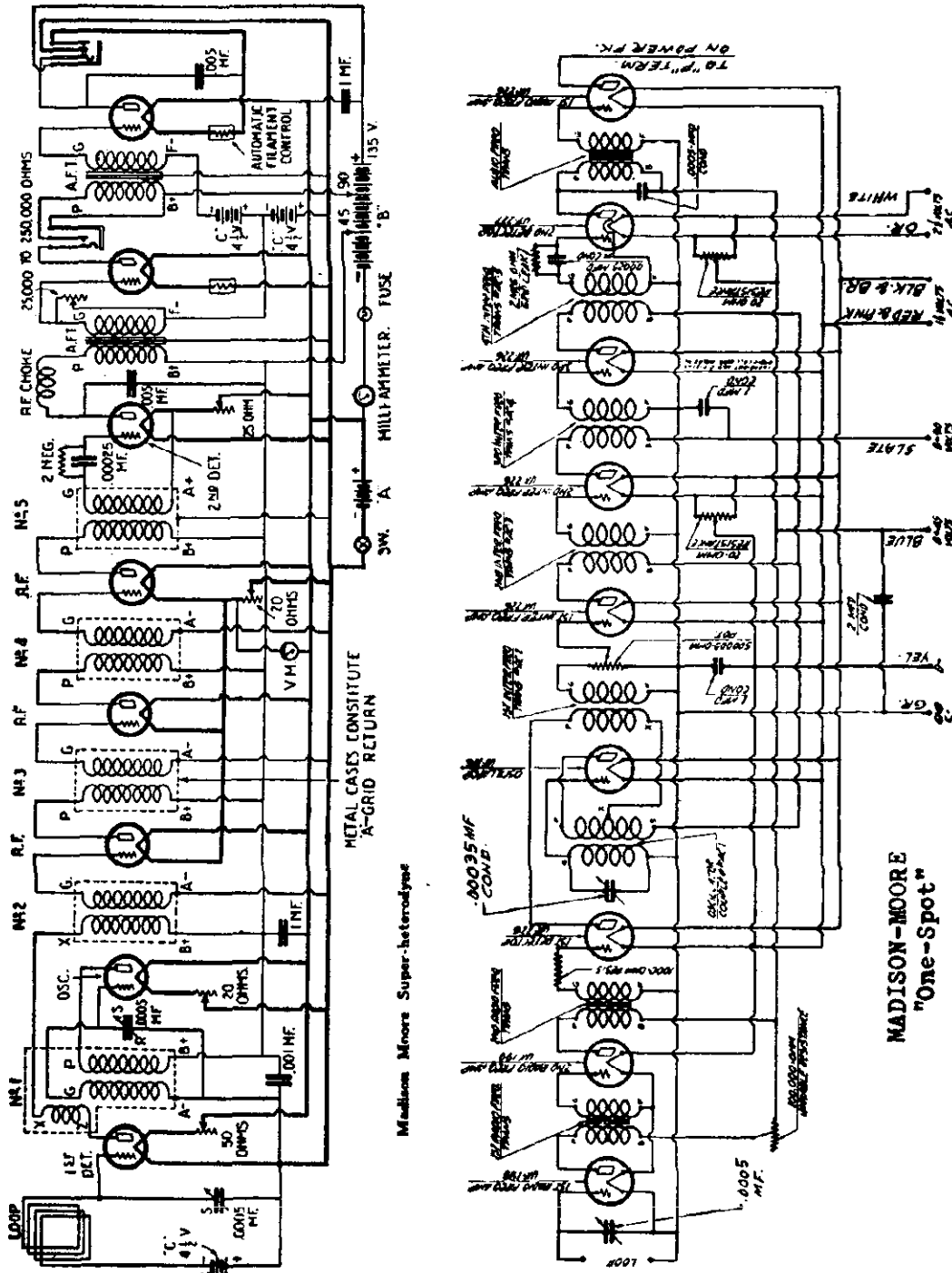


Model LR-4



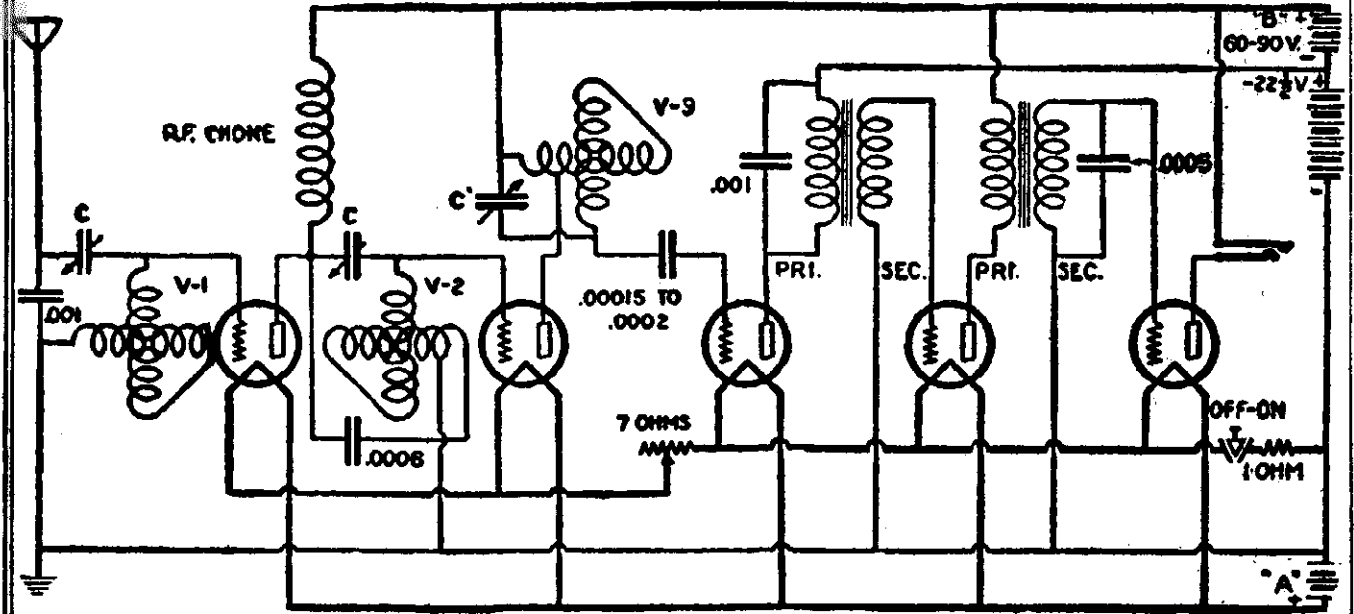
Model L-2 Ultradyne (Improved)

MADISON-MOORE

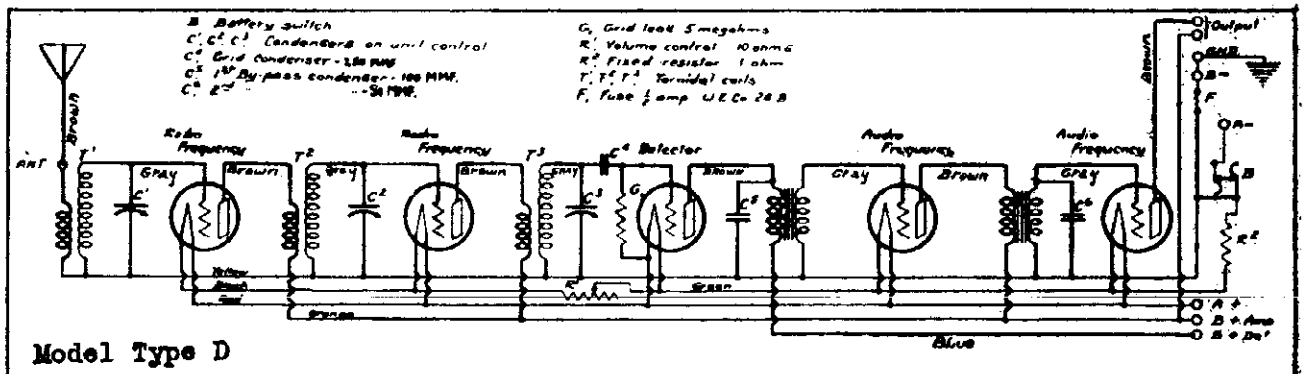
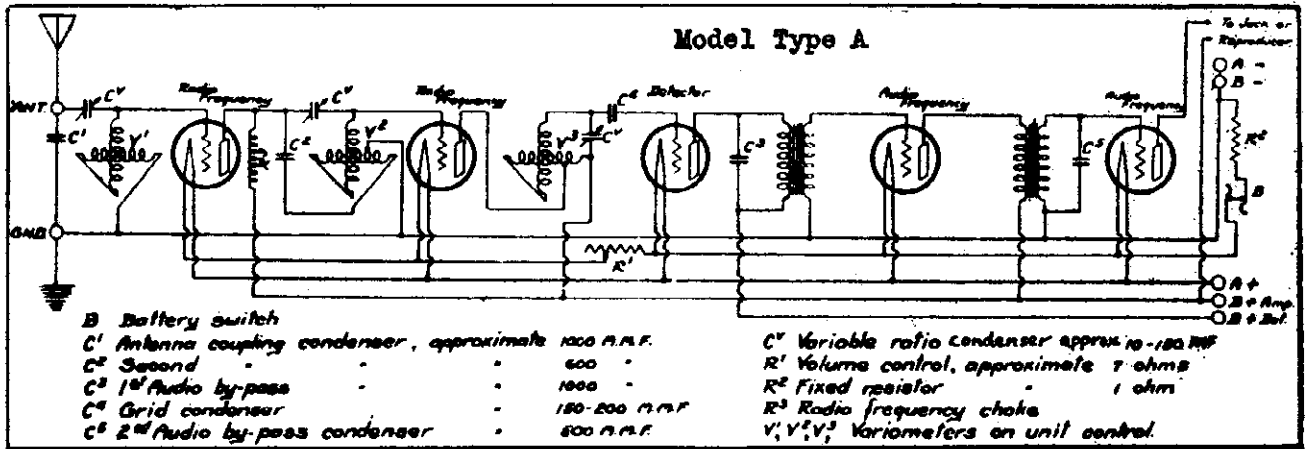


THE MAGNAVOX CO.

MODEL "One Dial"
 MODEL "A"
 MODEL "D"

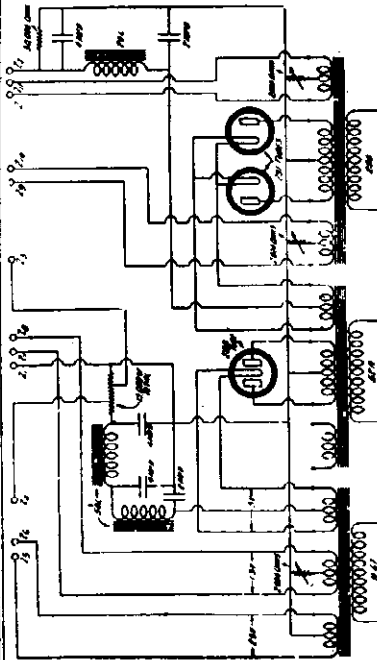


Model "One Dial"

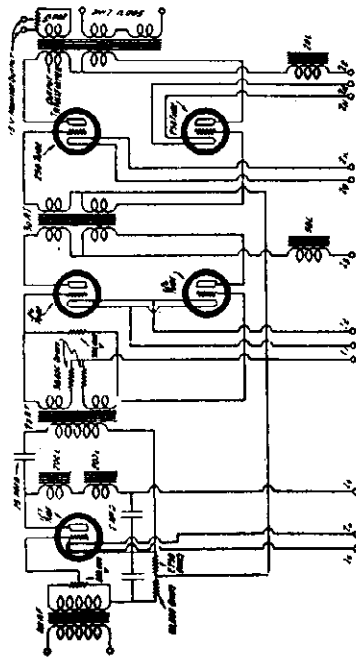


MAJOR LABORATORIES

Model 12



Model 250 Power Amplifier Power Supply.



Model 250 Amp

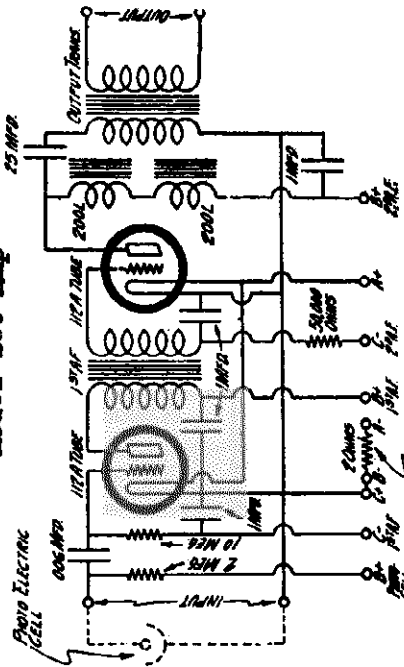
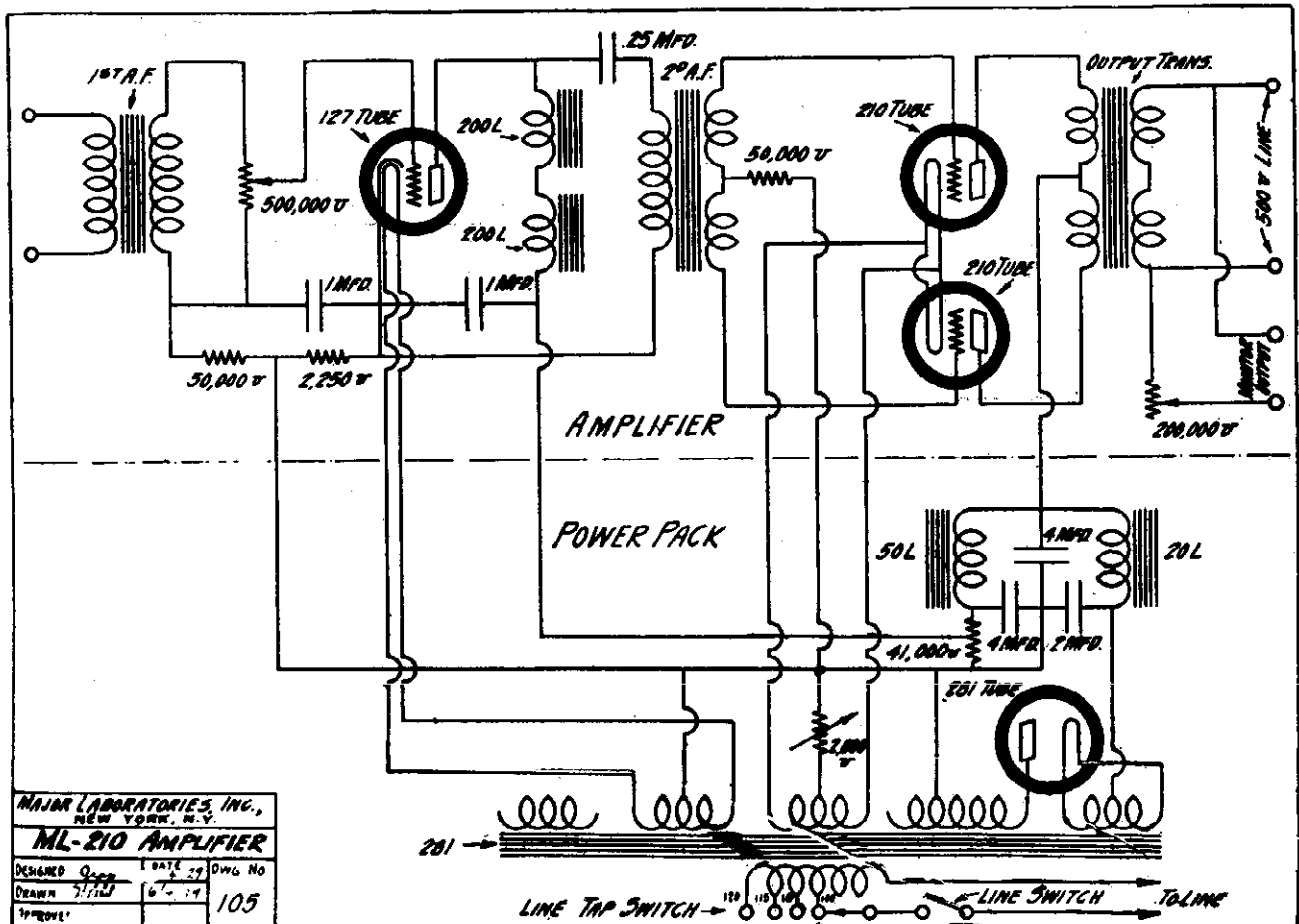


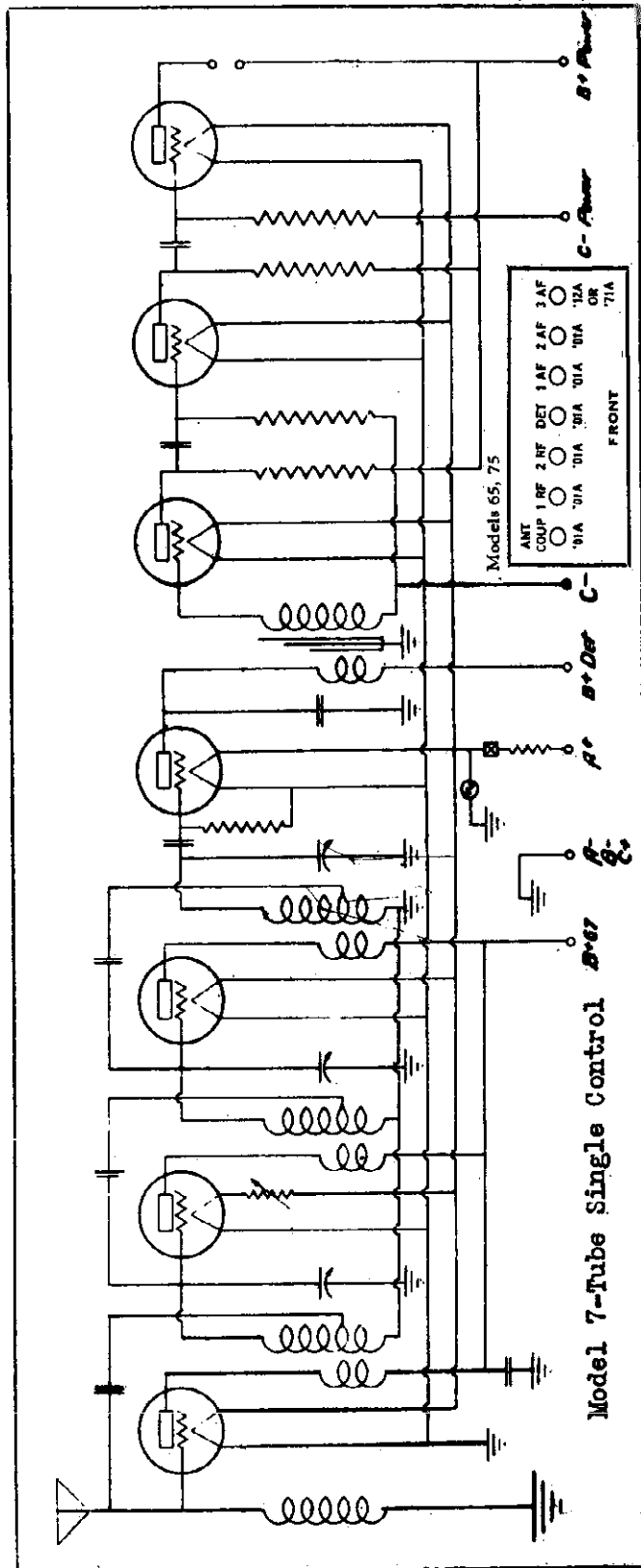
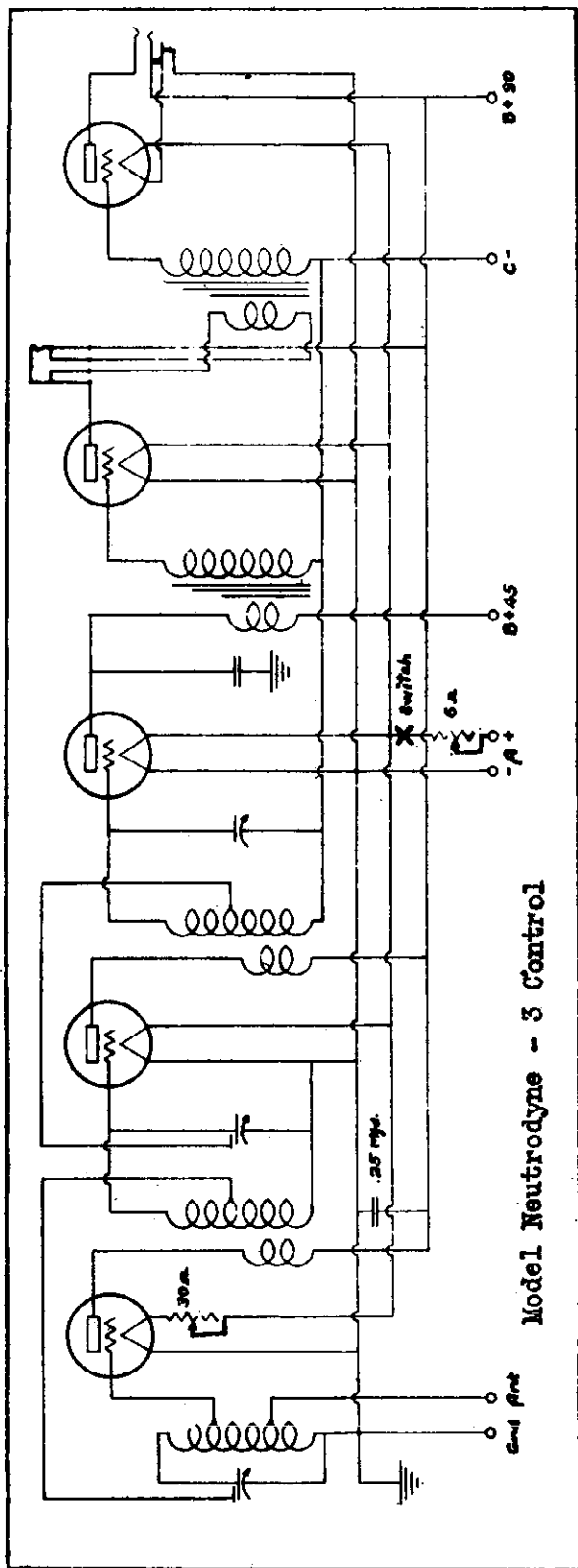
Photo Electric CELL
12V BATTERY



MAJOR LABORATORIES, INC.,
NEW YORK, N.Y.
ML-210 AMPLIFIER
DESIGNED *Q. J.* DATE *2-27* DWG No
DRAWN *J. J.* DATE *6-14* 105
APPROVE:

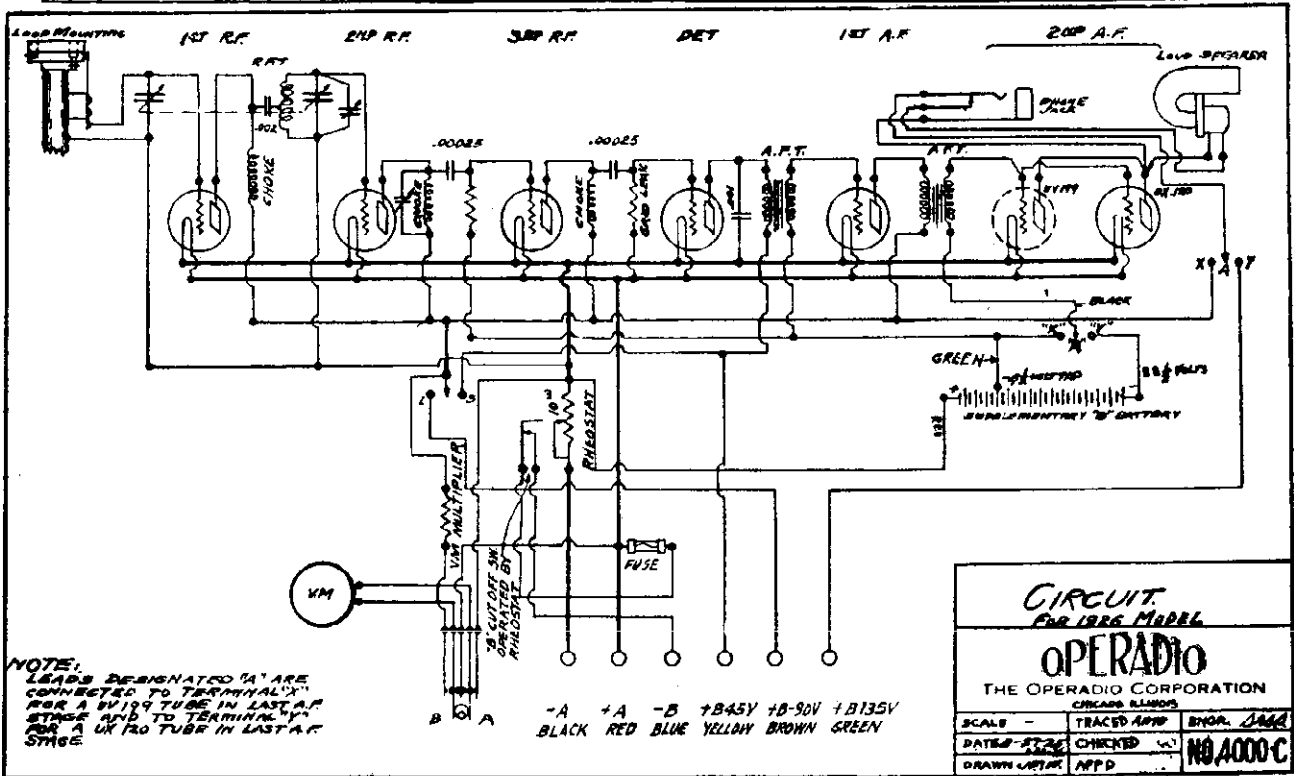
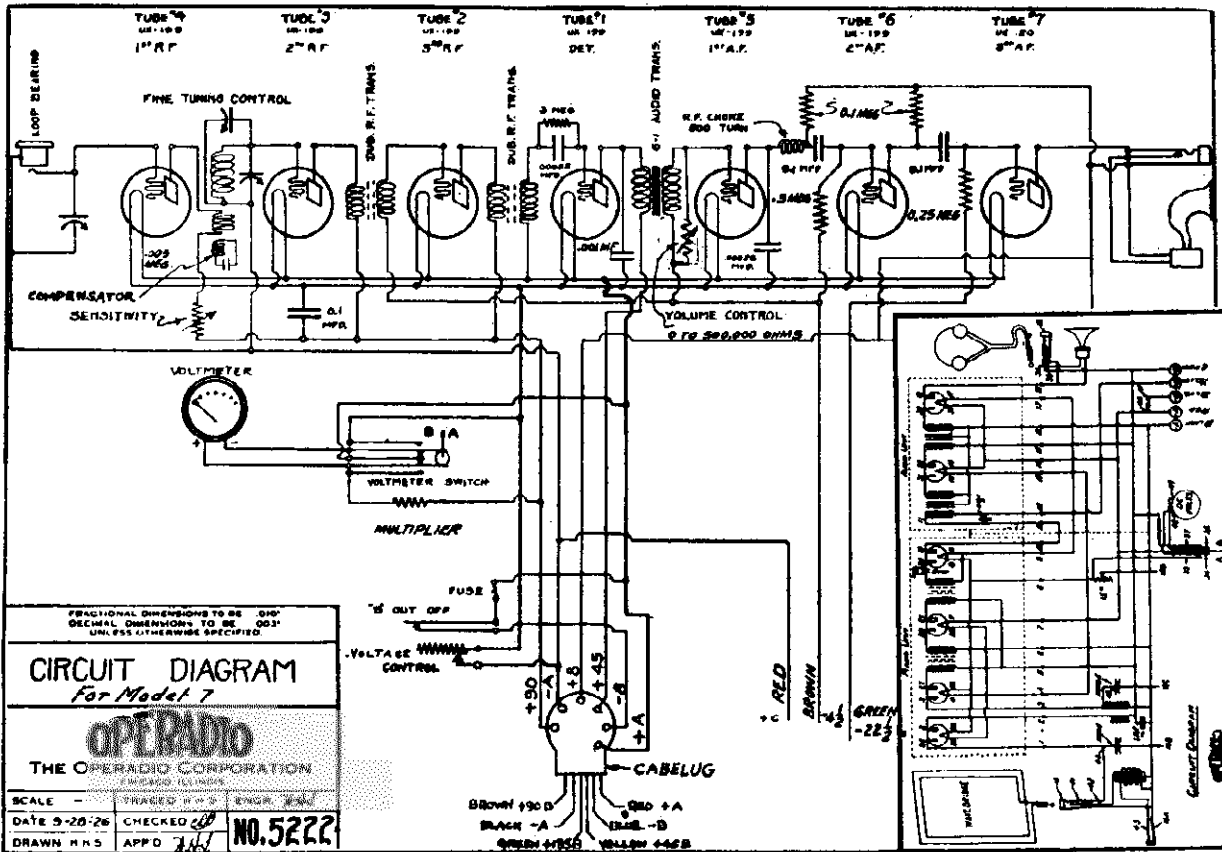
WILLIAM J. MURDOCK CO.

MODEL Neutrodyne
 3 Control
 MODEL 7 Tube
 Single Control



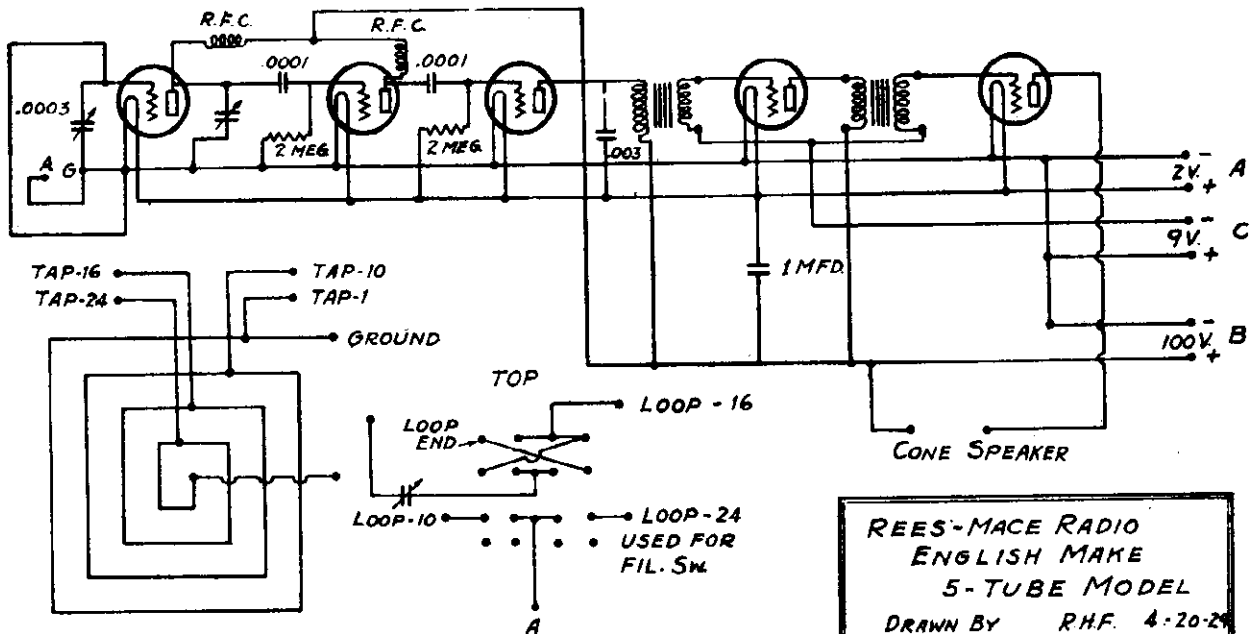
OPERADIO CORP.

MODEL 1926
 MODEL 1926
 MODEL 7



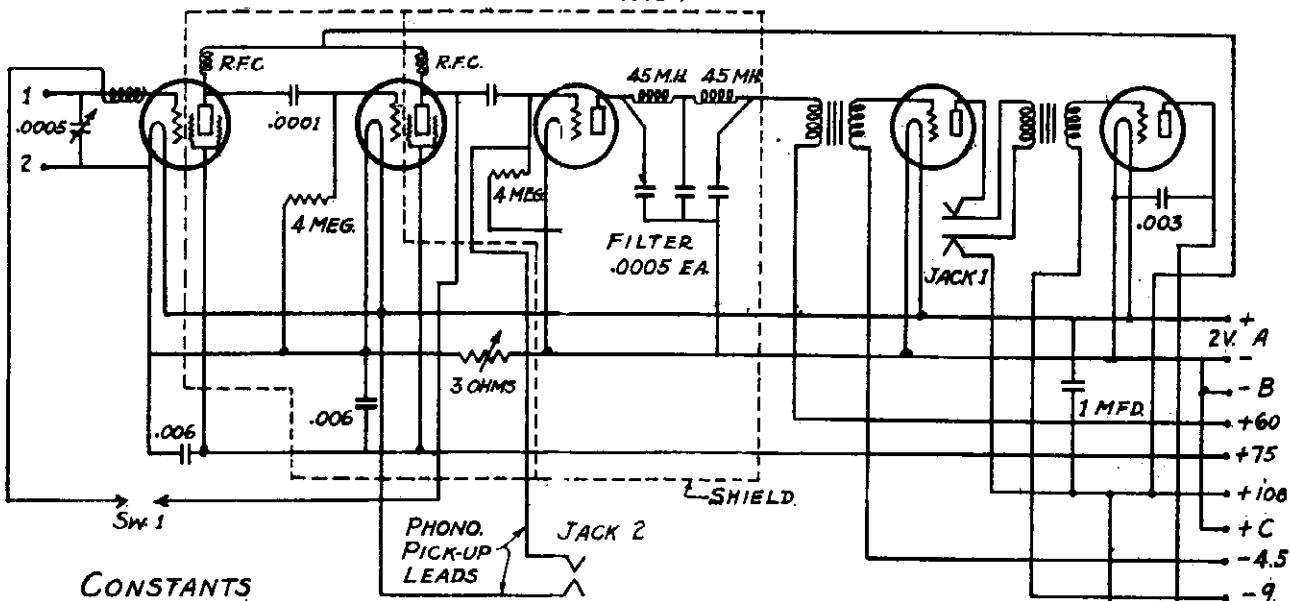
NOTE:
 LEADS DESIGNATED 'A' ARE
 CONNECTED TO TERMINAL 'X'
 FOR A 6V199 TUBE IN LAST A.F.
 STAGE AND TO TERMINAL 'Y'
 FOR A 6X150 TUBE IN LAST A.F.
 STAGE

REES-MACE



REES-MACE RADIO
 ENGLISH MAKE
 5-TUBE MODEL
 DRAWN BY R.H.F. 4-20-29
 CHECKED BY J.H.A. JR.

36T No. 24 D.C.C. WIRE The sets available only from John Wauerman N.Y.

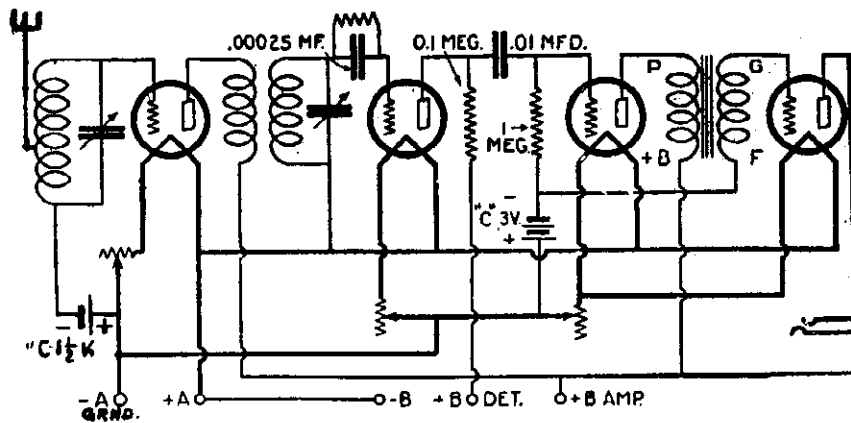


CONSTANTS
 No. 1 AND 2 LOOP CONNECTIONS
 SW.1 IS A PUSH PULL SWITCH WITH
 A VERY LOW CAPACITY
 TUBE SOCKET DATA

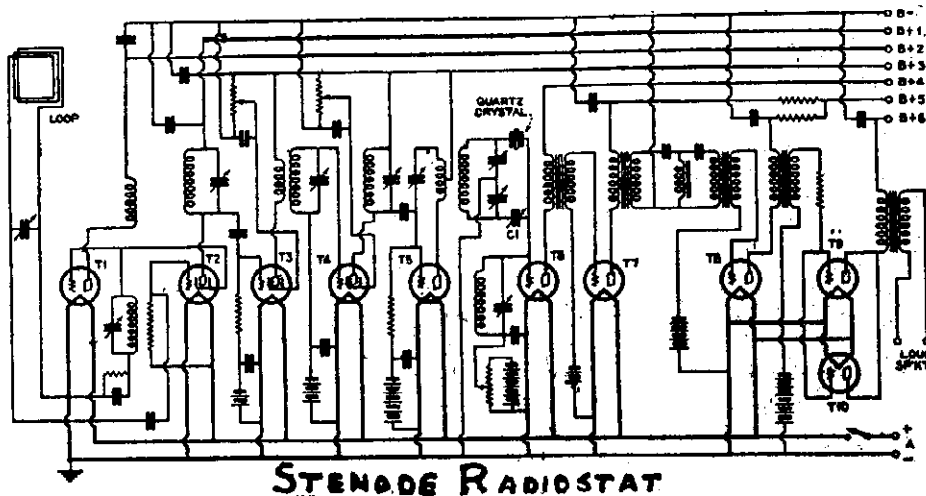
G F+ PLATE CONNECTION COMES
 F- S.G FROM TOP OF TUBE.

REES-MACE RECEIVER
 FIVE TUBE IMPROVED
 SCREEN GRID
 ENGLISH MAKE
 DRAWN BY R.H.F. 4-22-29
 CHECKED BY J.H.A. JR.

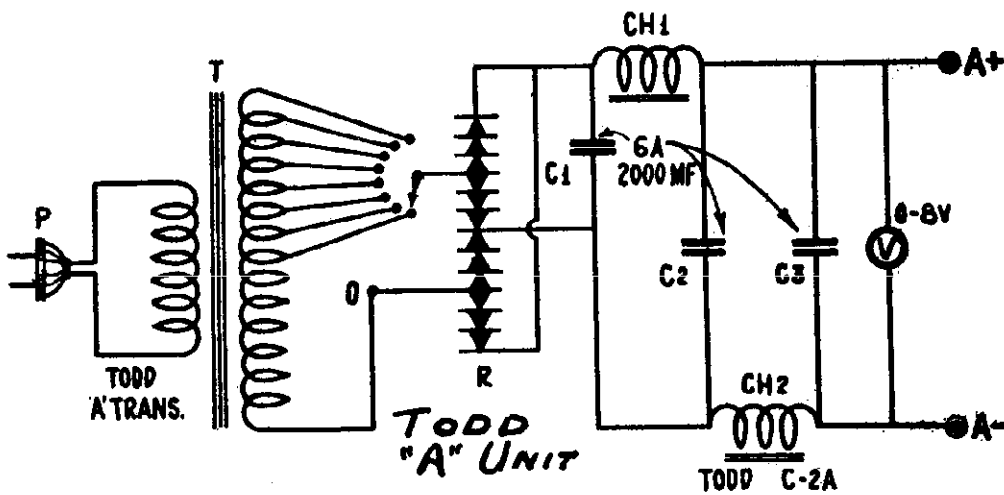
M. B. SLEEPER STENODE RADIOSTAT TODD ELECTRIC COMPANY



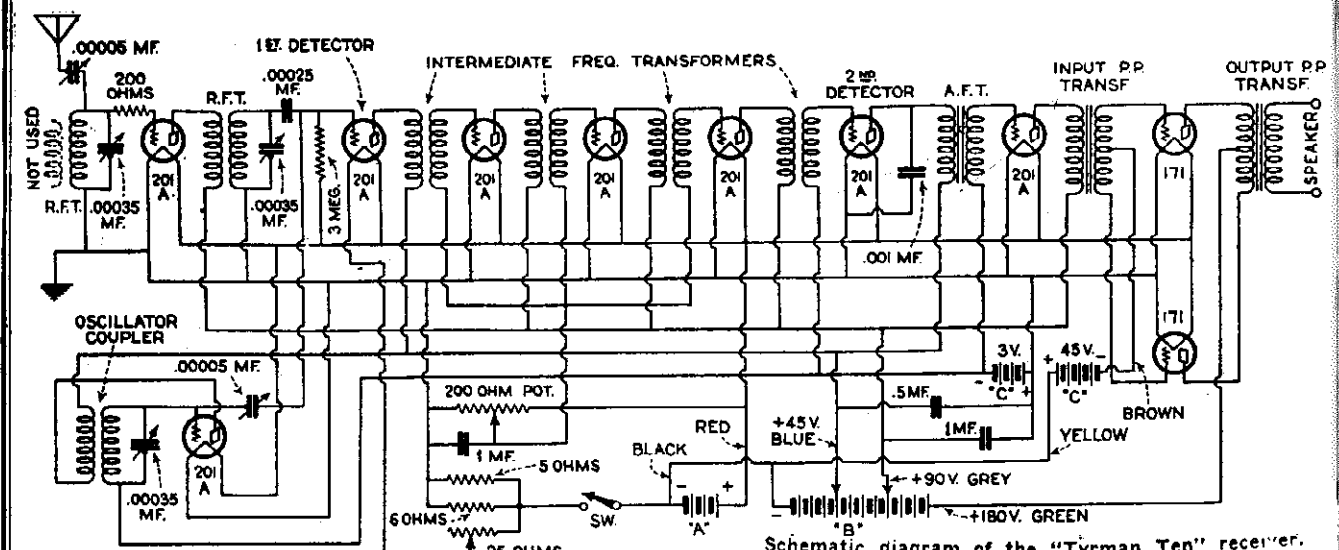
Sleeper RX-1 Receiving Circuit.



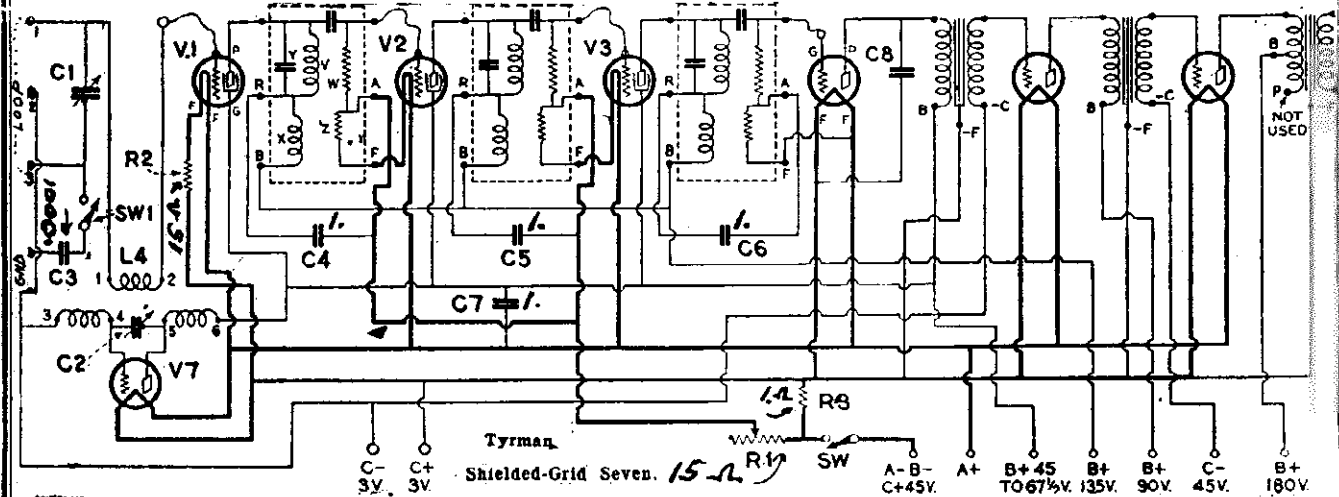
STENODE RADIOSTAT



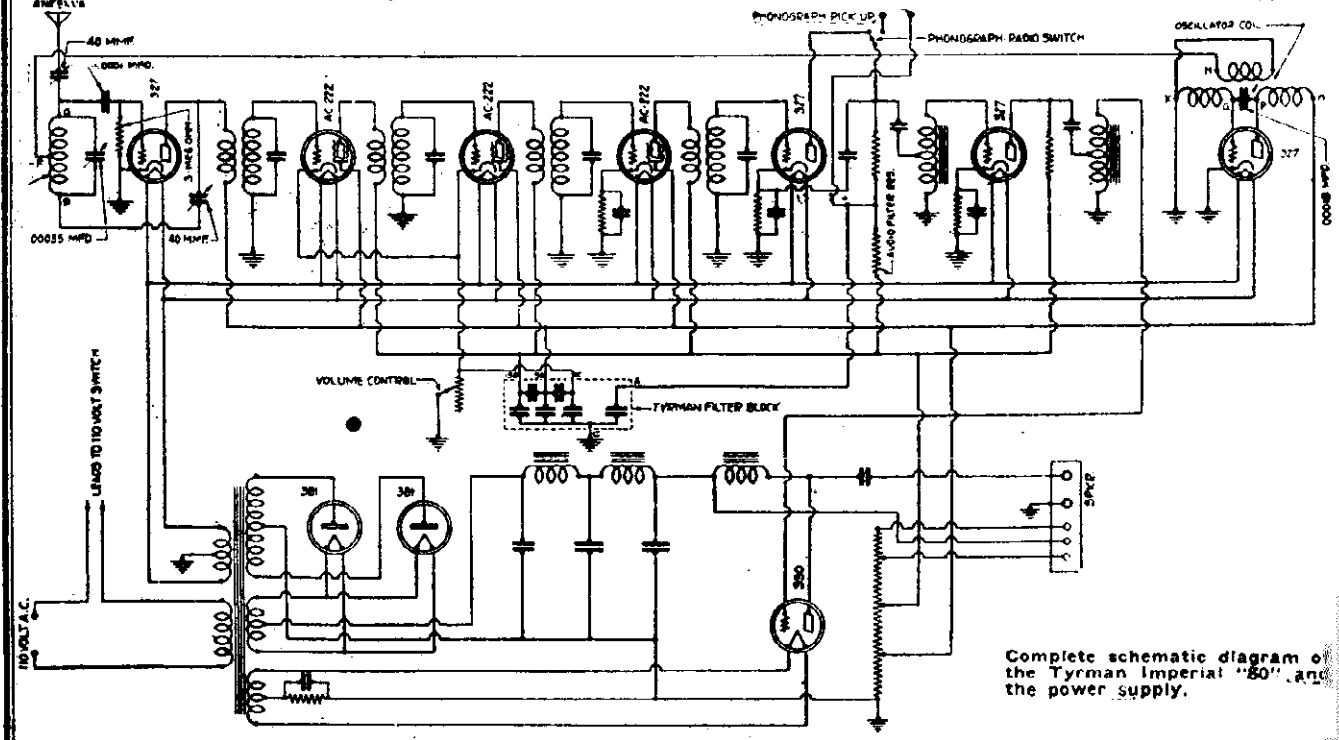
TYRMAN ELECTRIC CORP.



Schematic diagram of the "Tyrman Ten" receiver.



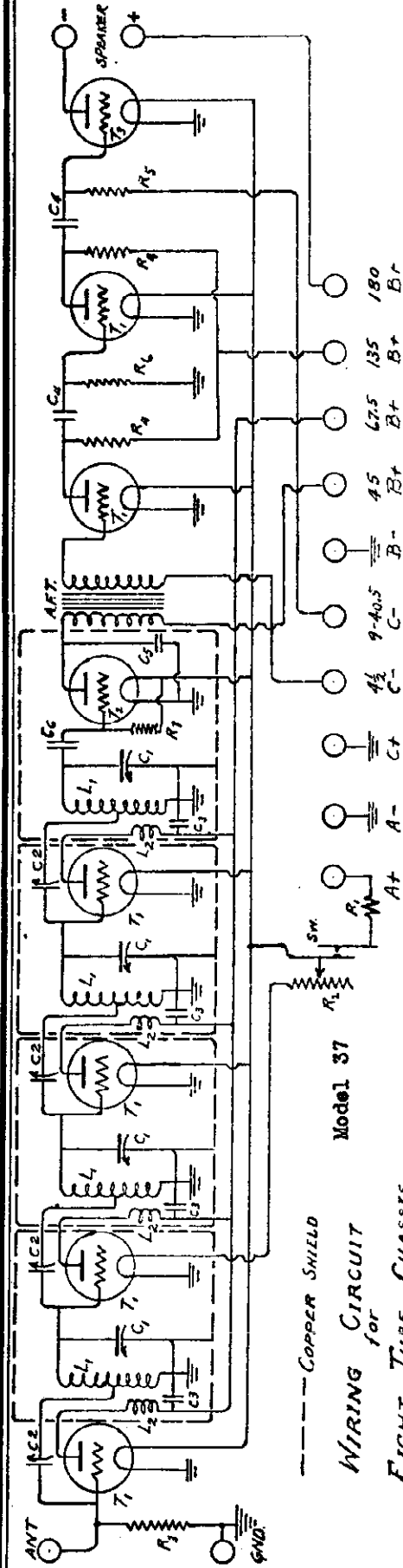
Tyrman Shielded-Grid Seven 15-A Receiver
 C- 3V, C+ 3V, A- B- C+45V, A+ B+45 TO 67 1/2V, 135V, B+ 90V, C- 45V, B+ 180V



Complete schematic diagram of the Tyrman Imperial "80" and the power supply.

U. S. ELECTRIC CORP.

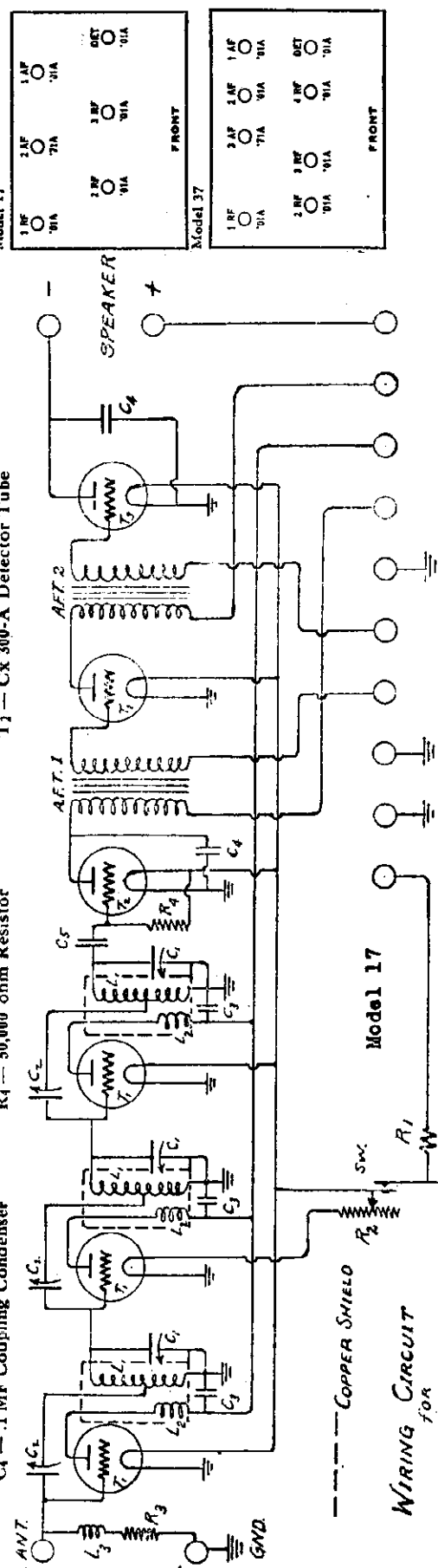
MODEL 17
MODEL 37
Schematic



WIRING CIRCUIT FOR EIGHT TUBE CHASSIS

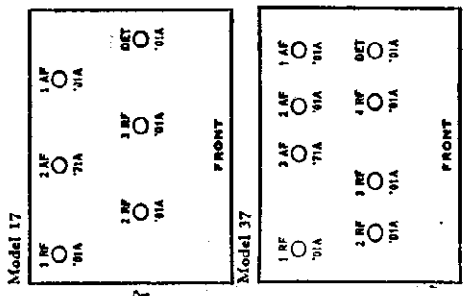
- L1 — Secondary of R. F. Transformer
- L2 — Primary of R. F. Transformer
- C1 — 500 MMF Variable Condenser
- C2 — Neutrodon Condenser
- C3 — 1. MF By Pass Condenser
- C4 — .1 MF Coupling Condenser
- C5 — .002 MF By Pass Condenser
- C6 — .0025 MF Grid Condenser
- R1 — 500 MMF Variable Resistor
- R2 — 25 ohm Rheostat-Switch
- R3 — 1. MF By Pass Resistor
- R4 — 50,000 ohm Resistor
- R5 — 100,000 ohm Resistor
- R6 — 500,000 ohm Resistor
- R7 — 2 Meg ohm Grid Leak
- A.F.T. — Audio Transformer
- T1 — Cx 301-A Vacuum Tube
- T2 — Cx 301-A Detector Tube
- T3 — CX 112 or CX 371 Power Tube
- Ant — Antenna Post
- Gnd — Ground Post
- SW — Switch

- R3 — 350 ohm Resistor
- R4 — 2 Meg ohm Grid Leak
- A.F.T.1 — 1st Audio Transformer
- A.F.T.2 — 2nd Audio Transformer
- T1 — Cx 301-A Vacuum Tube
- T2 — Cx 301-A Detector Tube
- T3 — CX 112 or CX 371 Power Tube
- Ant — Antenna Post
- Gnd — Ground Post
- SW — Switch



WIRING CIRCUIT FOR SIX TUBE CHASSIS

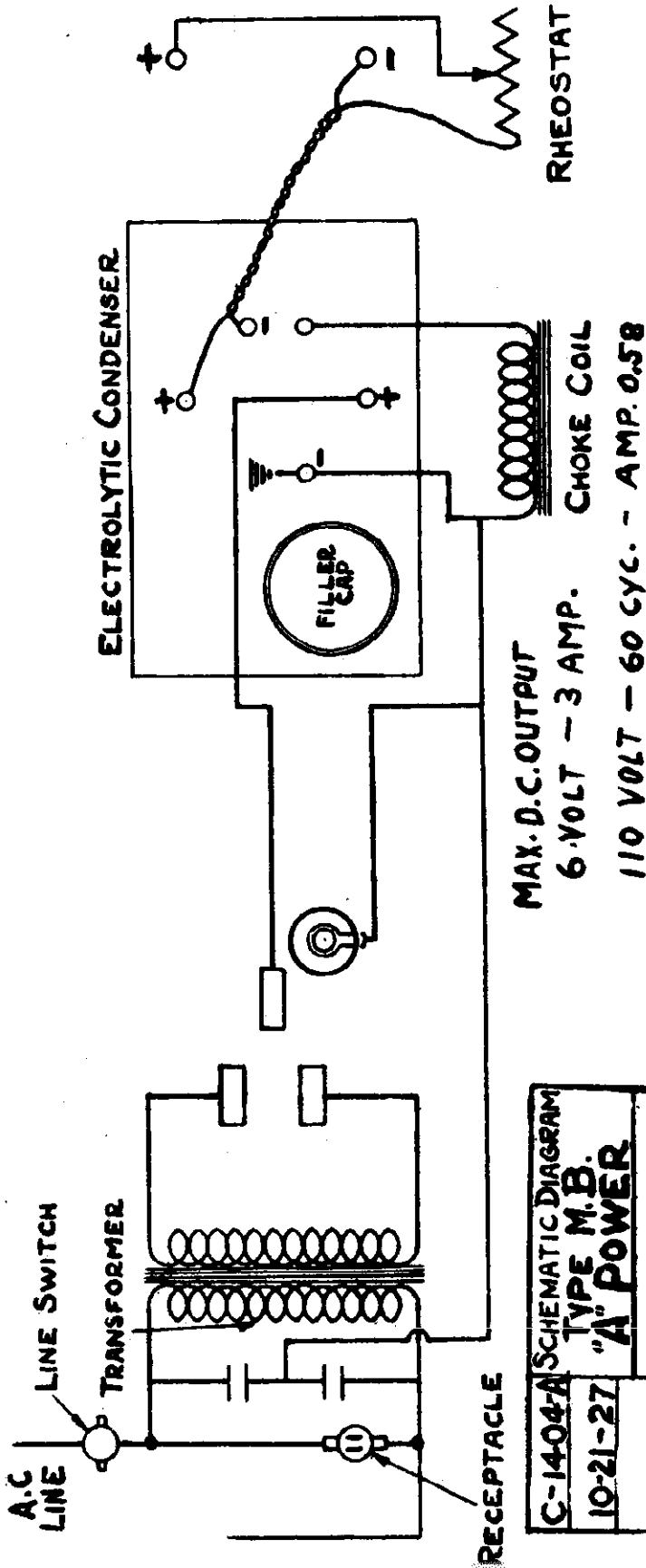
- L1 — Secondary of R. F. Transformer
- L2 — Primary of R. F. Transformer
- L3 — Antenna Choke Coil
- C1 — 350M MF Variable Air Condenser
- C2 — Neutrodon Condenser
- C3 — 1. MF By Pass Condenser
- C4 — .0025 MF Grid Condenser
- R1 — 500 MMF Variable Resistor
- R2 — 25 ohm Rheostat Switch
- R3 — 350 ohm Resistor
- R4 — 2 Meg ohm Grid Leak
- A.F.T.1 — 1st Audio Transformer
- A.F.T.2 — 2nd Audio Transformer
- T1 — Cx 301-A Vacuum Tube
- T2 — Cx 301-A Detector Tube
- T3 — CX 112 or CX 371 Power Tube
- Ant — Antenna Post
- Gnd — Ground Post
- SW — Switch



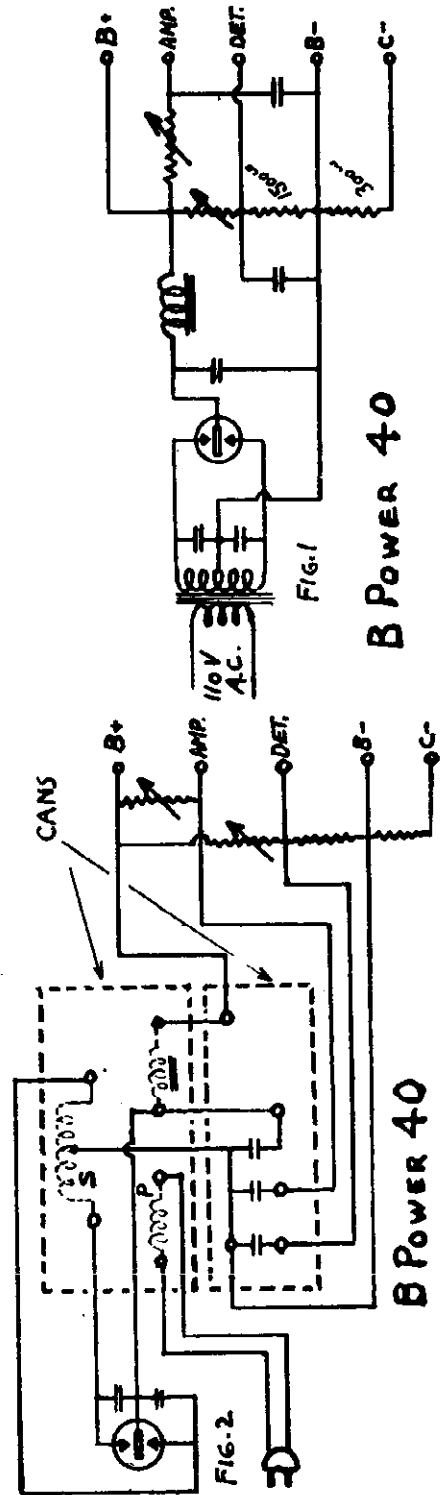
- T1 — Cx 300-A Detector Tube
- T2 — CX 112 or CX 371 Power Tube
- SW — Switch
- Ant — Antenna Post
- Gnd — Ground Post

- R3 — 350 ohm Resistor
- R4 — 2 Meg ohm Grid Leak
- A.F.T.1 — 1st Audio Transformer
- A.F.T.2 — 2nd Audio Transformer
- T1 — Cx 301-A Vacuum Tube
- T2 — Cx 301-A Detector Tube
- T3 — CX 112 or CX 371 Power Tube
- Ant — Antenna Post
- Gnd — Ground Post
- SW — Switch

VALLEY ELECTRIC CO.



C-1404-A SCHEMATIC DIAGRAM
TYPE M.B.
10-21-27
"A" POWER
CMT



GEORGE W. WALKER CO.

MODEL Victoreen
"Standard"
MODEL Victoreen
"Universal"

