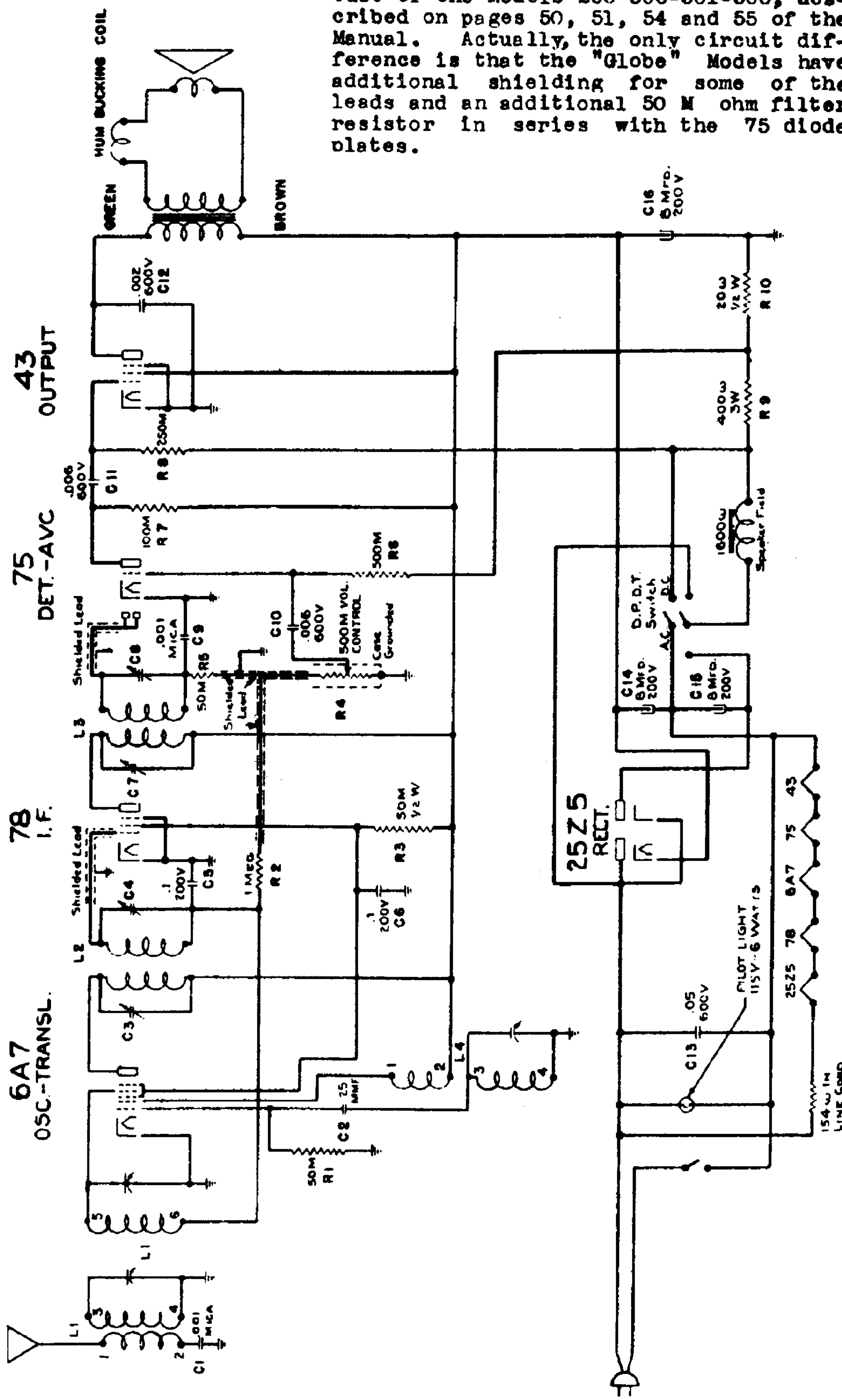




The circuit of these AC-DC "Globe" models is almost identical with the circuit of the Models 250-300-301-500, described on pages 50, 51, 54 and 55 of the Manual. Actually, the only circuit difference is that the "Globe" Models have additional shielding for some of the leads and an additional 50 M ohm filter resistor in series with the 75 diode plates.



Resistors Are 1/2 WATT Unless Otherwise Marked.
NUMBERING & LETTERING CORRESPONDS TO THAT
OF SERVICE ILLUSTRATIONS

FIG. 47. SCHEMATIC DIAGRAM - MODELS 700 - 701 - 702

MODEL 700,701,702

Chassis view

COLONIAL RADIO CORP.

Parts List

R-9168	Lamp - Pilot - 6 watt	R-7228	Resistor - 500 M ohms, 1/3 watt Carbon
R-9385BL	Lamp - Pilot - 3 watt (Ivory Globe only)	R-7584	Resistor - 250 M ohms, 1/3 watt carbon
R-8987	Nut - Globe mtg.	R-7586	Resistor - 100 M ohms, 1/3 watt carbon
R-9279	Nut - Globe Mtg. jam	R-6637	Resistor - 50 M ohms, 1/3 watt carbon
R-8983	Nut - Knurled	R-6445	Resistor - 50 M ohms, 1/2 watt carbon
R-9009	Nut - Base Mtg.		
R-8937	Nut - Cap		
R-8091	Plate - AC-DC switch		
R-7585	Resistor - 1 megohm, 1/3 watt carbon		

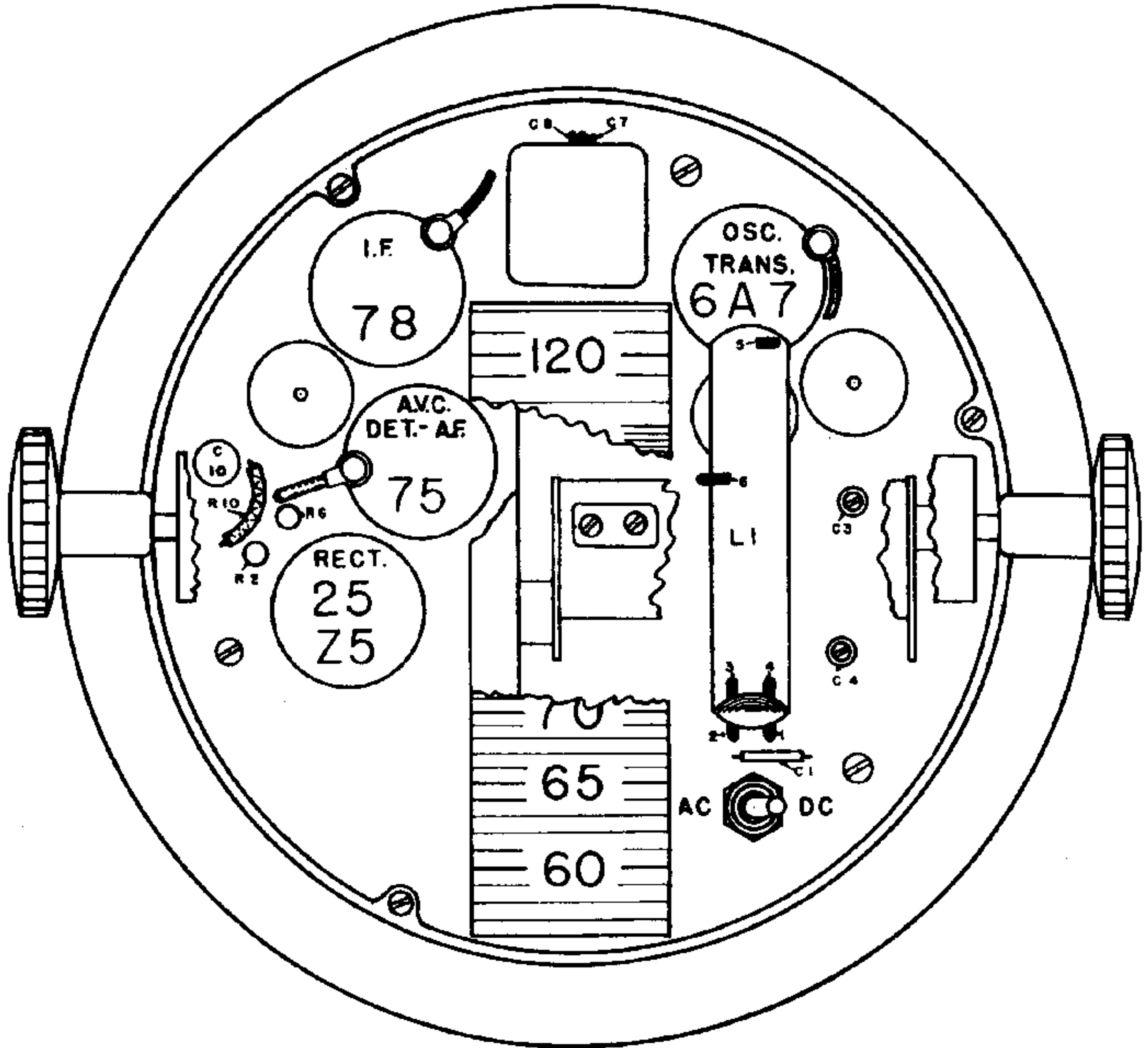


FIG. 48. TOP VIEW OF CHASSIS - MODELS 700 - 701 - 702

R-8990	Condenser - Variable tuning	R-9004	Cord - Maroon
R-8038	Condenser - IF tuning	R-9377	Cord - Ivory
R-9397	Condenser - 8 mfd. dry electro- lytic	R-9378	Cord - Black
R-8301	Condenser - .1 mfd. 200 volt, dual	R-9005A	Cover - Bottom
R-9145	Condenser - .05 mfd. 600 volt,	R-9064	Dial - Time
R-8056	Condenser - .006 mfd. 600 volt,	R-9012	Felt washer
R-8055	Condenser - .002 mfd. 600 volt,	R-9281	Foot - Felt covered, base
R-6759	Condenser - .001 mfd. mica	R-8927	Globe - Top, Maroon
R-8711	Condenser - .000025 mfd. mica	R-8925	Globe - Bottom, Maroon
R-8996	Control - Volume	R-9373	Globe - Top, Ivory
		R-9375	Globe - Bottom, Ivory
		R-9374	Globe - Top, Black
		R-9376	Globe - Bottom, Black

COLONIAL RADIO CORP.

MODEL 700,701,702

Notes on circuit
Mechanical notes

MODELS 700 - 701 - 702

THE AVC-DETECTOR-AF CIRCUIT

The AVC - Detector AF circuit is shown schematically in Fig. 45.

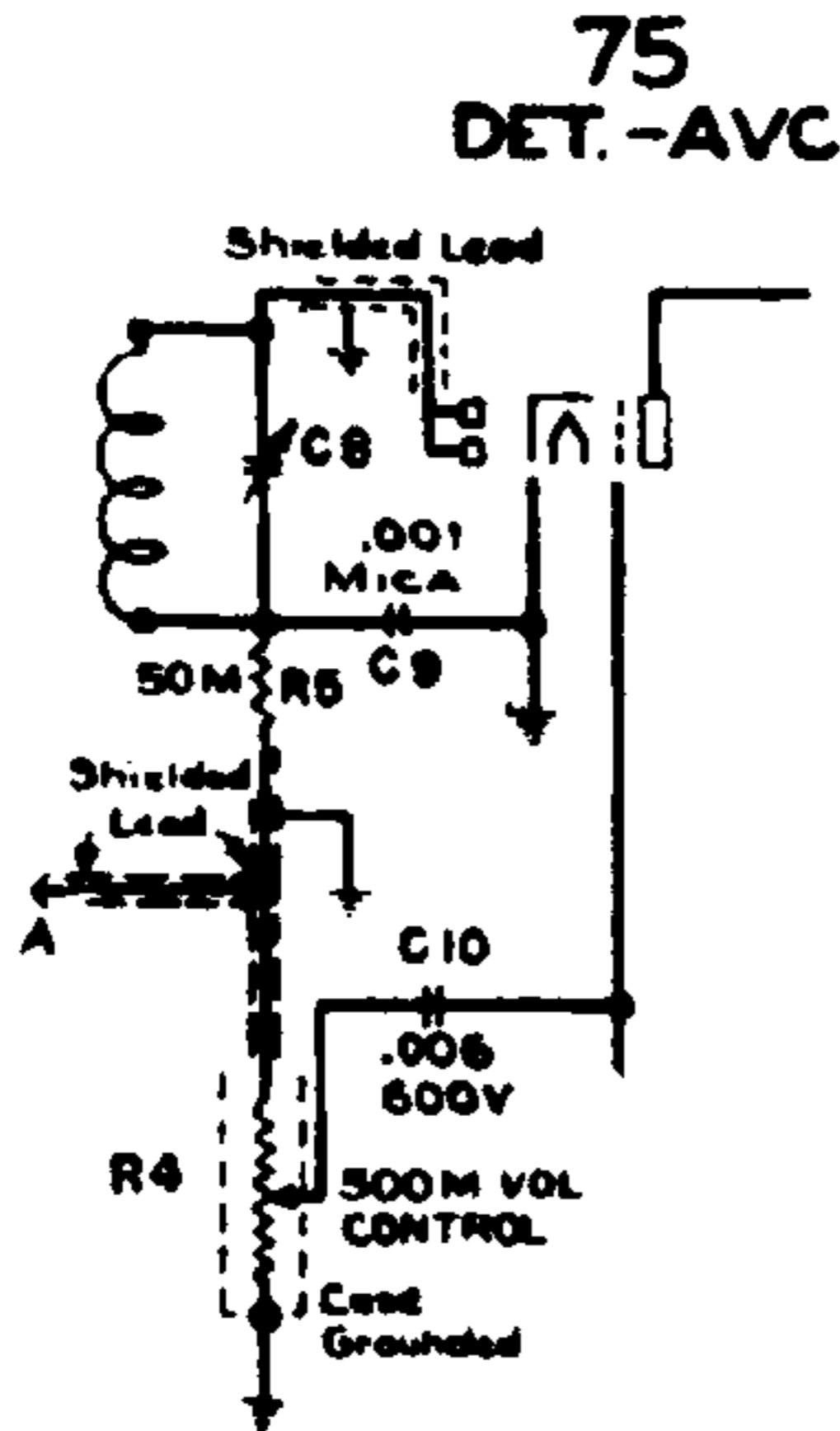


FIG. 45

The 175 kc signal at the IF output transformer secondary is impressed between the 75 tube's cathode and its diode plates, in series with the 500 M ohm volume control. Diode current flows, making point (A) negative with respect to ground. Since the translator and IF grid returns are connected to point (A), any increase in signal increases the drop across the volume control, increases

the negative control grid bias on the 6A7 and 78, reduces their amplification, and so tends to maintain the signal at the IF output at a constant value.

Any desired portion of the AF component across the volume control resistance is picked off by the moving arm of the control, fed through the .006 condenser to the grid of the triode portion of the 75 tube. It is there amplified and fed to the output tube and then to the dynamic loudspeaker.

When peaking the IF transformers, use a low enough output from the test oscillator to render the AVC action inoperative.

Some of these receivers use wet electrolytics for C14 and C15 (part No. R9204); others use dry electrolytics almost identical in appearance (part No. R9397). If replacement of either of these condensers ever becomes necessary, use the R9397. The pre-selector coil may be bent out of the way to permit removal of the condensers.

The chassis and shafts are above ground potential, making it necessary to insulate the knobs and the equatorial ring from the shafts by means of fibre bushings. Note that the bushing in the knob is closed in on one end to prevent the end of the shaft from touching the knob. Be sure these insulating bushings are properly replaced after dis-assembling the Globe.

MECHANICAL ASSEMBLY OF THE RECEIVER

The receiver consists of six parts;

1. The upper half globe
2. The lower half globe
3. The chassis assembly
4. The goose neck
5. The base
6. The loudspeaker assembly

The top half globe is removed by unscrewing the acorn shaped ornamental nut and the knurled nut that it covers. The half globe then can be lifted off. Do not neglect to replace the felt washer on the mounting stud when putting the top half globe back into position.

The chassis can be removed from the bottom half globe by unscrewing the three screws that hold the equatorial ring, removing it, and then taking out the screws which mount the chassis to the tapped bosses moulded in the bottom half globe. Then remove the cable clamp and unsolder the wires from the terminal board, releasing the chassis.

To remove the bottom half globe, proceed as follows:

1. Unscrew the round jam nut. This can be done readily by inserting the ends of a pair of long nose pliers in the holes in the nut.
2. Unscrew the hexagonal adjusting nut.
3. Pry up the keyed stop washer.
4. The bottom half globe then can be pulled off of the gooseneck.

Should replacement of the bottom half globe be made, be sure to put the bracket on in its proper position. The stop which is punched in the bracket should face the side of the globe which has the EQUATION OF TIME CHART. Tighten the hexagonal nut only enough to secure the amount of tension needed for proper turning of the globe. If it is made too tight, the globe can not be rotated. After the hexagonal nut has been adjusted, tighten the round jam nut down on it. Do not allow the hexagonal nut to be turned by the jam nut.

MODEL 700, 701, 702

Voltage

Mechanical notes

COLONIAL RADIO CORP.

When ordering replacement half globes mention the color of the dot of paint on the inside of the globe. This daub of paint identifies the classification of the globe for matching purposes.

To remove the speaker assembly from the globe base, unscrew the six felt covered screws that hold the bottom plate. Then remove the two screws that bind the speaker assembly to the tapped bosses in the globe base.

To dis-assemble the globe base from the gooseneck, loosen the set screw in the hexagonal nut and then remove the nut. If replacement of the globe base is made, be sure the gooseneck is mounted in its proper position. It should face left when the back grille opening faces you. (The back grille can be identified by the notch cut in it for the power cord.) After tightening the hexagonal nut, drill a shallow hole in the bakelite for the setscrew point and then replace and tighten the setscrew.

If light shines through the crack between the two half globes, paint the

pilot light bulb with black paint. Then scrape clear a window large enough and in the proper position to illuminate the dial.

If the terminal board on the chassis is removed, be sure to replace BOTH washers under the heads of each mounting screw when putting the board back in position. Otherwise the screws may project far enough to scrape the dial. Turn the dial slowly and carefully at first to be sure that it does not scrape.

The dial can be replaced without removing the drum from the chassis. Cut the celluloid away and clip the eyelets with a pair of diagonal pliers. Small screws and nuts can be used to mount the replacement dial. In a few cases it may be necessary to file some of the screw heads to insure sufficient clearance for the dial.

Do not use any kind of abrasive metal polish on any of the gold plated parts of the globe. Ordinary furniture polish, suggested in the Instruction Leaflet, will clean the metal parts as well as the moulded parts.

TUBE VOLTAGE AND CURRENT CHART

TUBE	PLATE VOLTS	SCREEN VOLTS	GRID VOLTS	PLATE M. A.	SCREEN M. A.
78 - IF	105	40	*	2.5	1
75 - AVC-Det-AP	55		*	.2	
43 - Output	90	105	-6*	19	3
6A7 - Osc-Transl	Ep=105v; Eg #2=105v; Eg #3&5=32v; Eg #4=*; Ip=.8ma; Ia #2=1.1ma; Ig #3&5=1ma.				
25Z5 - Rect.	Plate current - 38m.a. per plate				

* - Indicates high series resistance

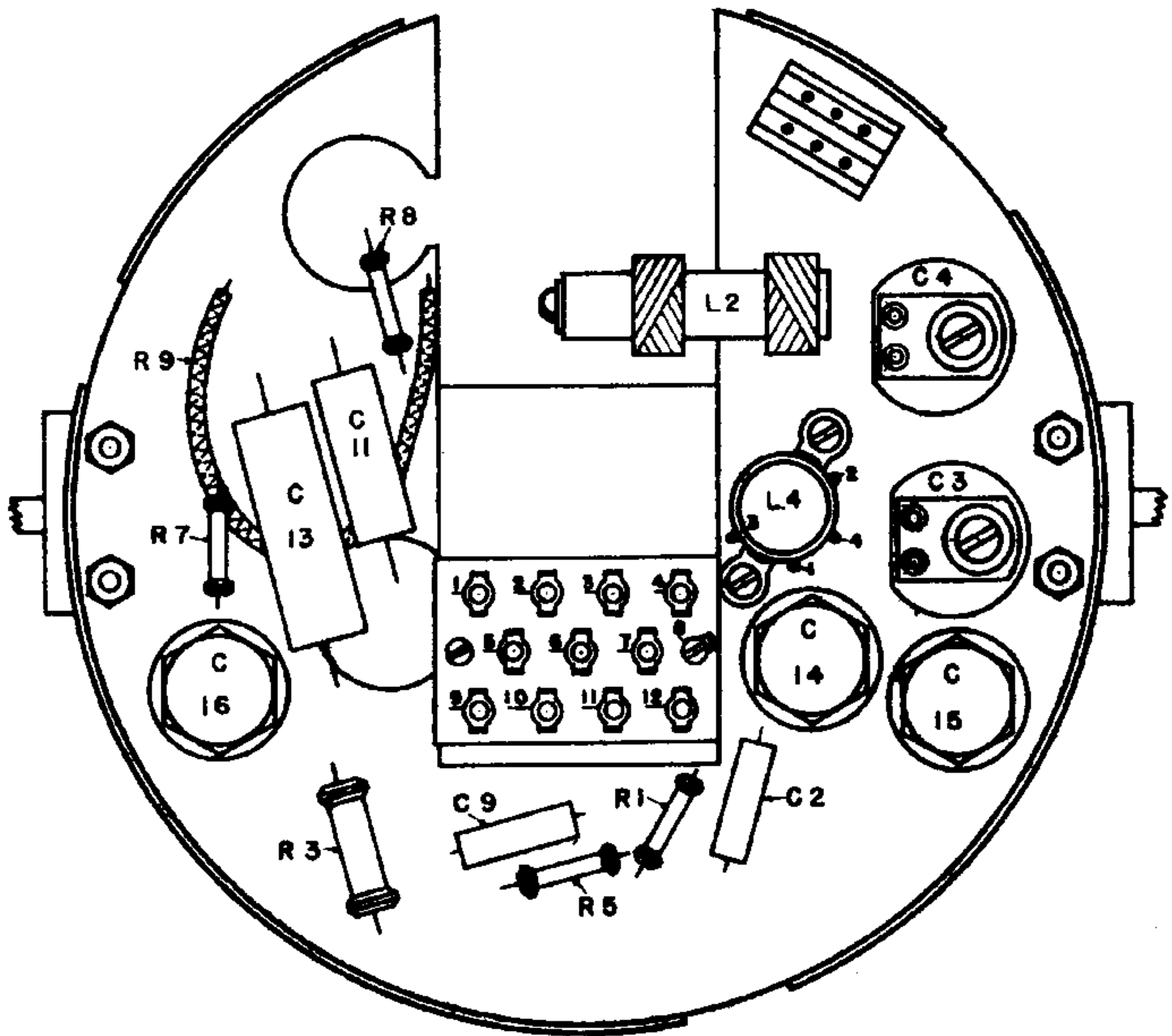
Care should be used when taking readings with a set analyzer as the capacity of the cables may cause circuits to oscillate, giving rise to erratic readings. Usually, touching the finger to grid or plate is sufficient to stop oscillation. If an analyzer is not used, the voltage readings can be taken with a 1000 ohms per volt voltmeter, from cathode to the respective elements of each tube. Ordinarily, a 20% deviation from the chart value may be allowed.

If an analyzer is used to measure heater voltages, be sure a tube with heater intact is in the analyzer socket. Otherwise, the full line voltage will be across the heater prongs, possibly damaging the analyzer voltmeter.

The heaters of the tubes are in series so that if one burns out, none will light. The others will light when the burned out tube is replaced.

An open power cord resistor also will prevent the tubes from lighting. This can be tested for by connecting a continuity meter between points 17 and 18 of the speaker terminal board. (The receiver must be disconnected from the line.) If no reading is obtained, the power cord is defective and should be replaced.

COLONIAL RADIO CORP.

MODEL 700,701,702
Parts location

- 1---- TO 43 TUBE HEATER
- 2--- TO 43 TUBE GRID
- 3-- + FIELD
- 4-- - FIELD
- 5--- TO JUNCTION OF PLATE & CATHODE OF 25Z5 TUBE
- 6--- GROUND & 43 TUBE'S CATHODE
- 7--- ANTENNA
- 8--- GROUND
- 9--- "ON-OFF" SWITCH
- 10--- OTHER SIDE OF "ON-OFF" SWITCH & OTHER 43 HEATER PRONG
- 11--- TO 25Z5 HEATER
- 12-- TO 43 TUBE'S SCREEN

FIG. 49. UNDER VIEW OF CHASSIS - MODELS 700 - 701 - 702

MODEL 700,701,702

Parts List

COLONIAL RADIO CORP.

Terminal board data

- R-9030A Antenna - Maroon
- R-9379A Antenna - Ivory
- R-9380A Antenna - Black
- R-8935 Base - Globe, Maroon
- R-9371 Base - Globe, Ivory
- R-9372 Base - Globe, Black
- R-8297A Board - Terminal, single
- R-8308A Board - Terminal, double
- R-8994A Board - Terminal, chassis
- R-9003 Bracket - Globe support
- R-9407 Cable - Chassis to Speaker
- R-6718 Clamp - Cable
- R-8048 Clip - Antenna
- R-6381 Clip - Grid
- R-6381AH Clip - Grid with shielded lead
- R-9057 Coil - Oscillator
- R-8995 Coil - Pre-Selector

- R-8940 Ring - Equatorial
- R-2284 Screw - Set, knobs
- R-9453 Screw - Set, dial
- R-8524 Shield - Electrolytic Condenser
- R-8092 Socket - 6 prong
- R-8072 Socket - 7 prong
- R-2414 Spacer - Terminal Board Mtg.
- R-8076 Switch - AC-DC
- S-9451 Speaker
- S-9080 Speaker field coil
- S-9450A Speaker - Cone & Voice Coil
- S-8640 Speaker - Clamping ring
- S-8641 Speaker - Clamping ring
- S-8666 Speaker - Suspension spacer
- S-8545A Speaker - Terminal board (3)
- S-9068A Speaker - Terminal board (8)
- S-8674 Speaker - Hum bucking coil
- S-9449A Speaker - Transformer
- R-9045 Sticker - Tube layout
- R-8039A Transformer - IF input
- R-9002A Transformer - IF output
- R-4794 Washer - Insulating - Volume Control
- R-8533 Washer - Insulating - Electrolytic Condenser

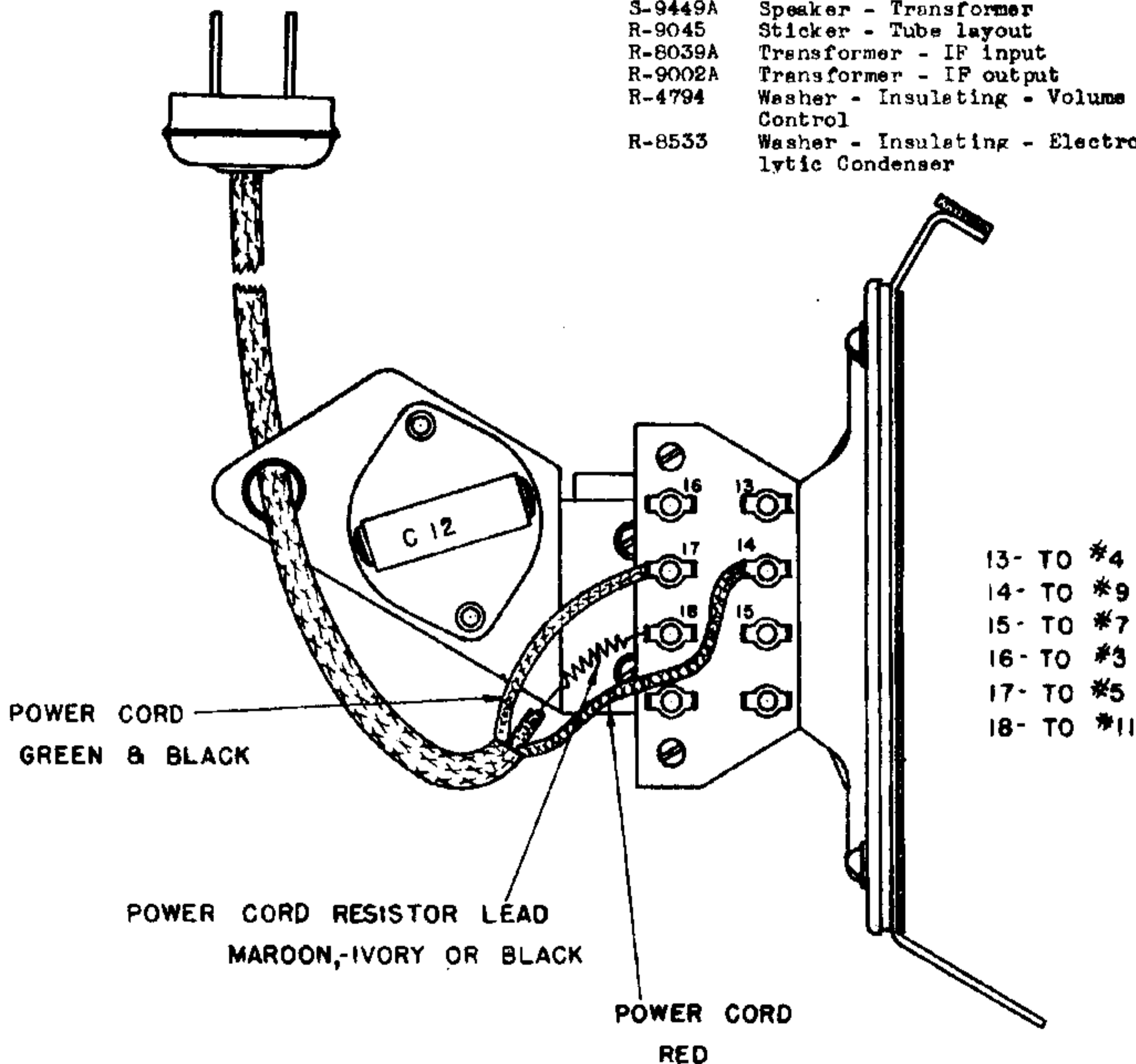


FIG. 50. SPEAKER TERMINAL BOARD CONNECTIONS - MODELS 700 - 701 - 702