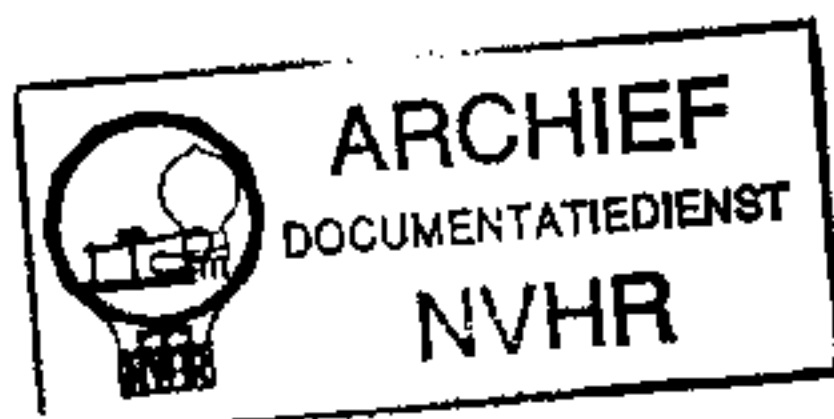


COLONIAL RADIO CORP.

MODEL 700 AC, 701 AC,
702 AC

Ned. Ver. v. Historie v/d Radio

Circuit notes
Voltage

SERVICE NOTES

MODELS 700AC - 701AC - 702AC

These AC "Globe" receivers are five tube superheterodynes with a frequency range extending to 2480 kc.

A 6A7 pentagrid converter fills the function of oscillator and of translator. The 175 kc signal created in its plate circuit is amplified by the 78 IF stage and then coupled to the 75 tube. Diode detection, AVC action and hi mu audio amplification are all obtained from the 75. Its audio output is amplified by the 41 power output pentode and then fed to the dynamic loudspeaker. An 84 rectifier is used.

THE 75 AVC - DETECTOR - AF CIRCUIT

The IF signal is impressed between the diode plates and the cathode of the 75 tube, in series with the 500 M ohm volume control and the 50 M ohm resistor. Diode current flows through the volume control and resistor creating a voltage drop across them with the grounded end of the volume control positive with respect to the grid return end of the 50 M

ohm resistor. Since 6A7 and 78 grid returns are connected to the 50 M ohm resistor, the negative potential due to diode current is impressed upon the grids of these tubes. An increase in signal strength increases the diode current, increases the negative bias on the 6A7 and 78, reduces their amplification and so tends to maintain the input to the detector at a constant value since signal strength increases are offset by tube amplification decreases.

The audio component across the volume control is picked off by the move-

The audio component across the volume control is picked off by the moveable arm and fed through the .006 condenser to the control grid of the triode portion of the 75, where it is amplified.

The mechanical assembly of the globe is identical with that of the Models 700-701-702 AC-DC globes, described on pages 81 and 82.

TUBE VOLTAGE AND CURRENT CHART

TUBE	PLATE VOLTS	SCREEN VOLTS	GRID VOLTS	PLATE M. A.	SCREEN M. A.
78 - IF	185	65	*	4	1
75 - AVC-Det-AF	105		*	.75	
41 - Output	175	185	-10*	17	2.5
6A7 - Osc-Transl	Ep=185v; Eg #2=185v; Eg #3&5=60v; Eg #4=*; Ip=2.5ma; Ig #2=2.75mc;				
84 - Rect	Plate current = 15m.a. per plate; DC voltage = 275.				

* - 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.

MODEL 700 AC, 701 AC,
702 AC

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Schematic

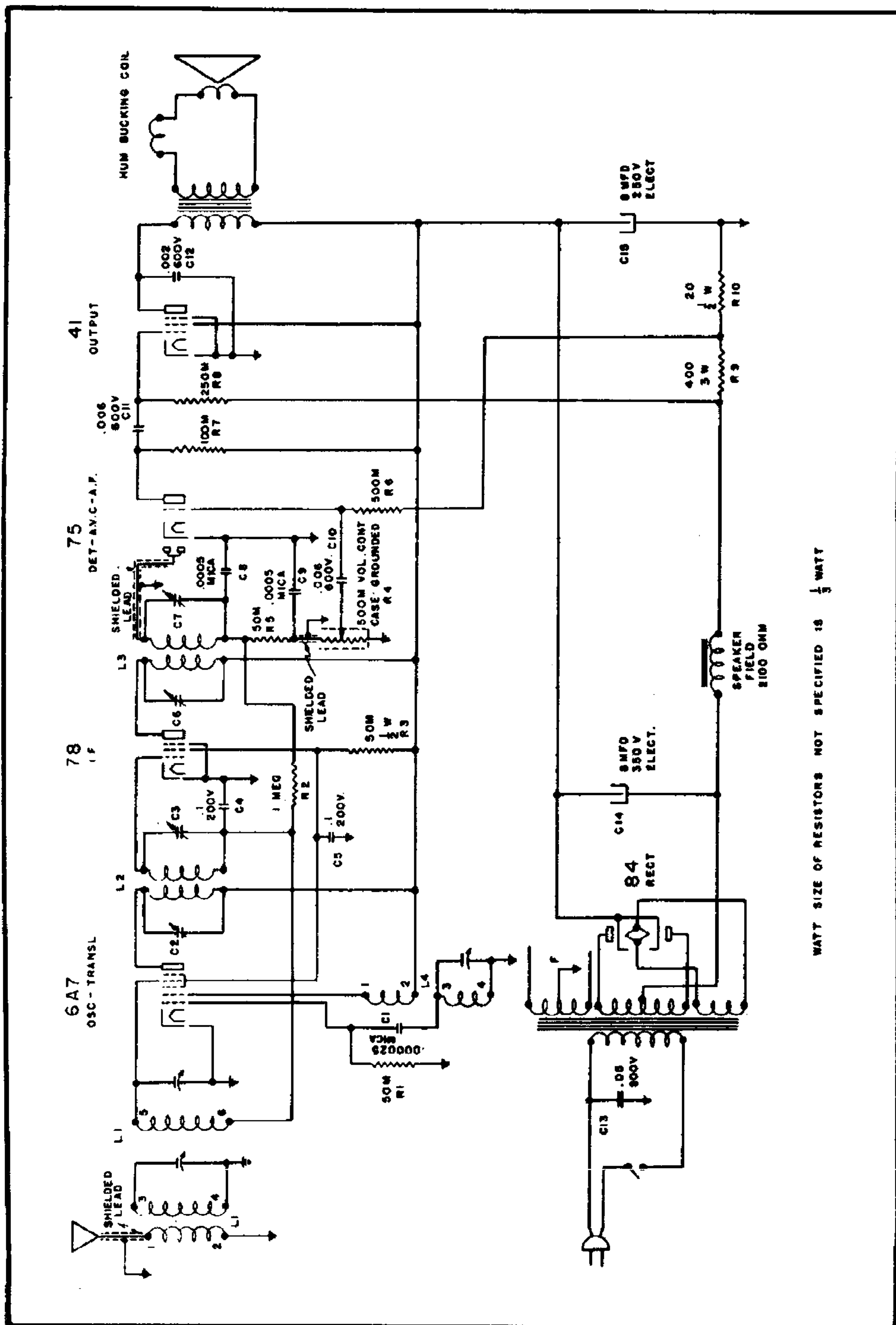


FIG. 55. THE SCHEMATIC DIAGRAM - MODELS 700AC - 701AC - 702AC

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MODEL 700 AC, 701 AC,
702 AC
Parts location
Speaker terminal data

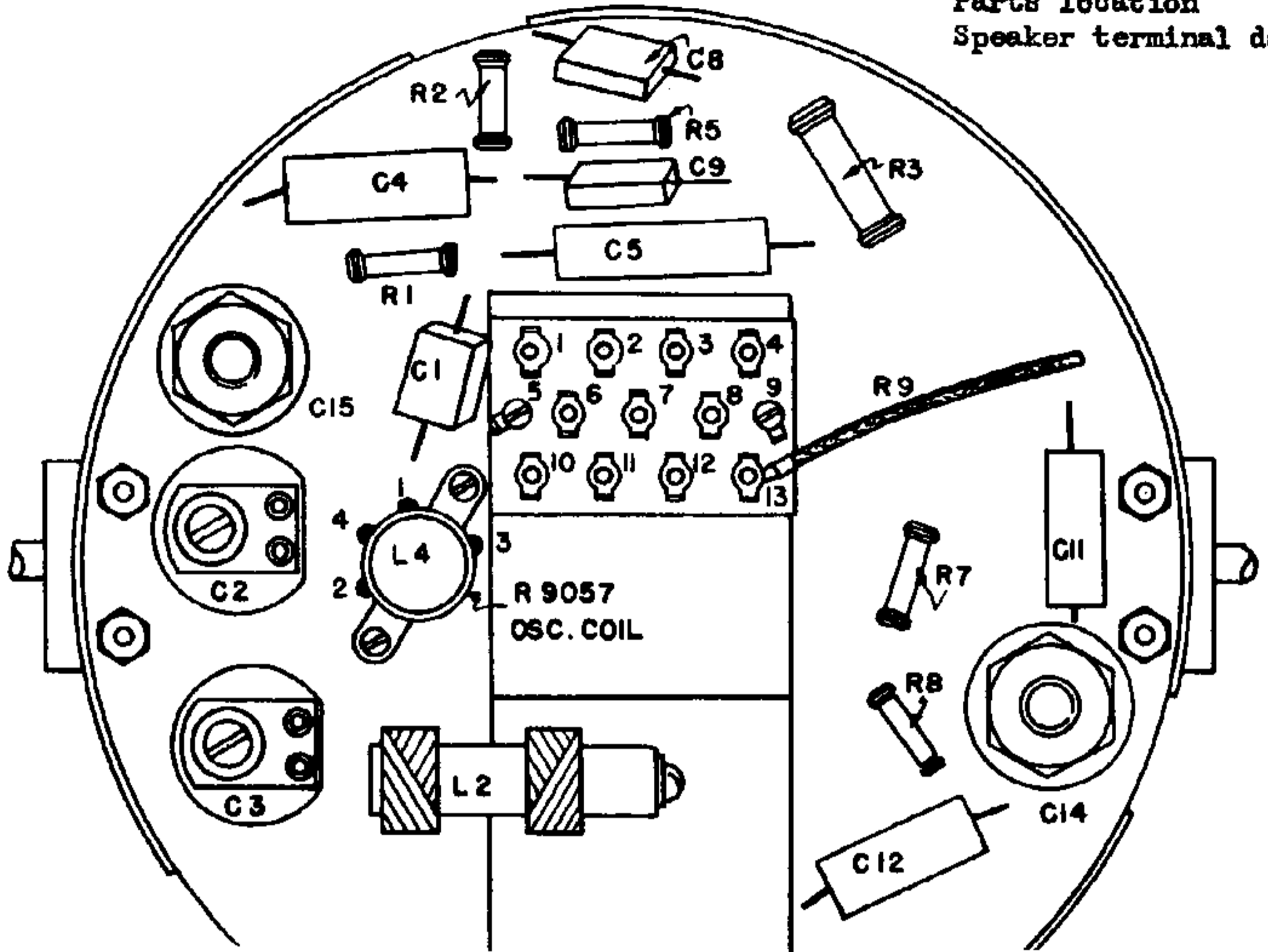


FIG. 57. UNDER VIEW OF CHASSIS - MODELS 700AC - 701AC - 702AC

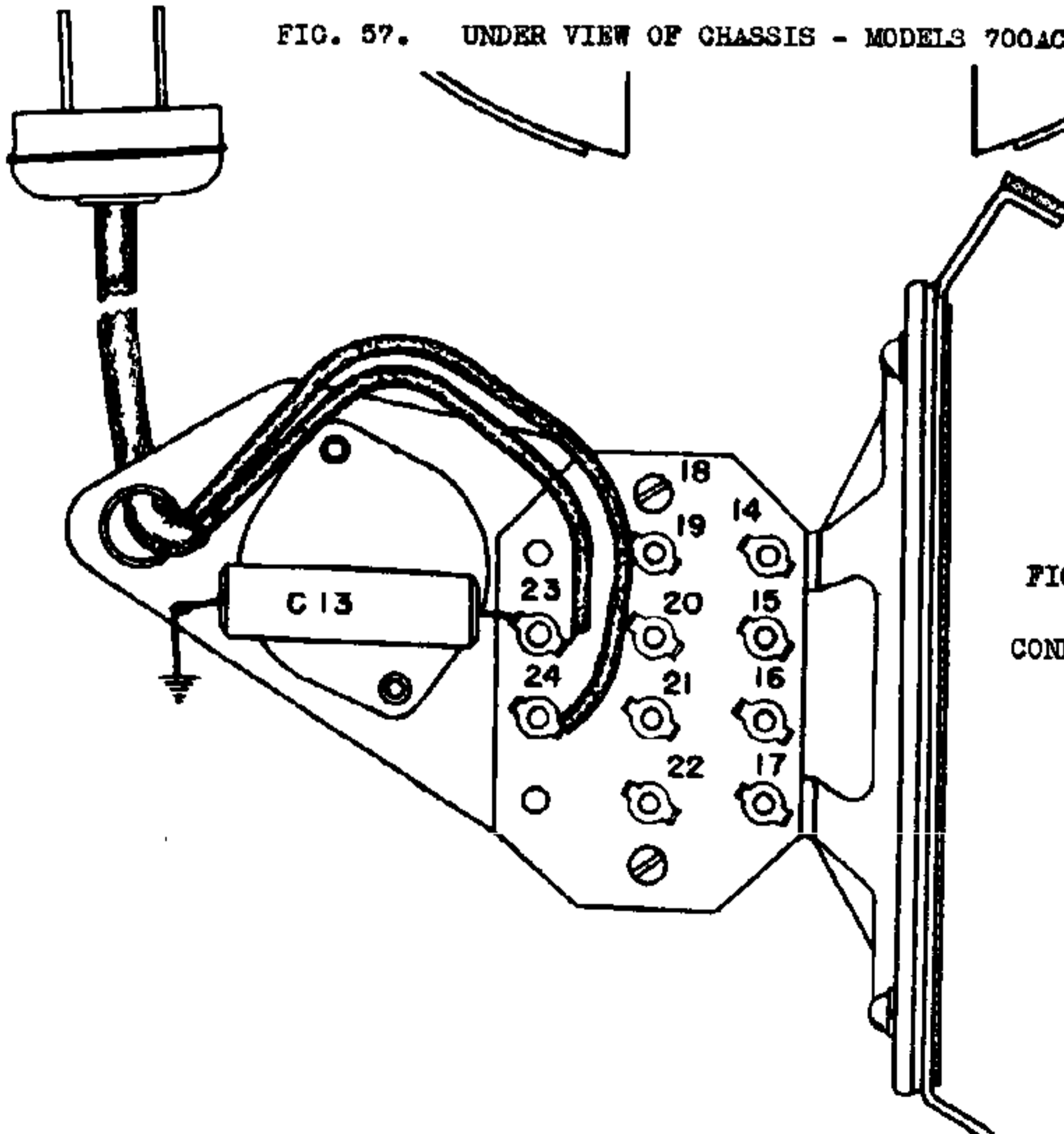


FIG. 58. SPEAKER TERMINAL BOARD
CONNECTIONS - MODELS 700AC - 701AC
- 702AC

MODEL 700 AC, 701 AC,
702 AC

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Socket layout

Parts List

R-7585	Resistor - 1 megohm, 1/3 watt carbon	R-8624	Condenser - 8 mfd. 300 volt electrolytic
R-7288	Resistor - 500 M ohms, 1/3 watt carbon	R-9204	Condenser - 8 mfd. 200 volt electrolytic
R-7584	Resistor - 250 M ohms, 1/3 watt carbon	R-8990	Condenser - Variable tuning
R-7586	Resistor - 100 M ohms, 1/3 watt carbon	R-8038	Condenser - IF tuning
R-8637	Resistor - 50 M ohms, 1/3 watt carbon	R-8288	Condenser - .1 mfd. 200 v.
R-6445	Resistor - 50 M ohms, 1/2 watt carbon	R-8445	Condenser - .05 mfd. 800 v.
R-8562	Resistor - 400 ohms, 3 watt flexible	R-8058	Condenser - .006 mfd. 600 v.
R-8491	Resistor - 20 ohms, 1/2 watt flexible	R-8055	Condenser - .002 mfd. 600 v.
		R-8750	Condenser - .0005 mfd. mica
		R-8711	Condenser - .000025 mfd. mica

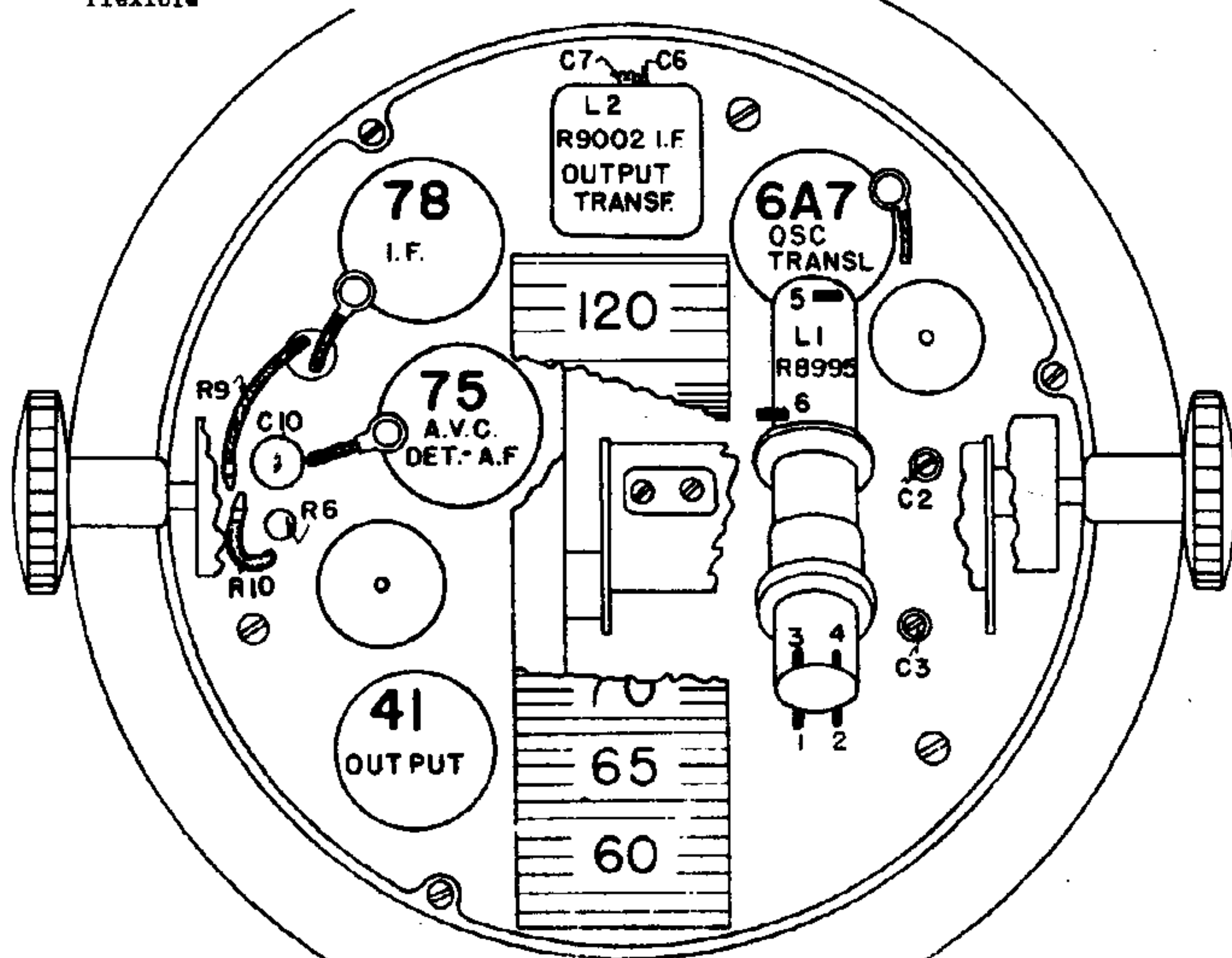


FIG 56. TOP VIEW OF CHASSIS - MODELS 700AC - 701AC - 702AC

R-9396	Control - Volume	R-8940	Ring - Equatorial
R-9382	Cord - Power (Maroon)	R-8625	Shield - Electrolytic cond.
R-9382	Cord - Power (Gold)	R-9360	Shield - Tube
R-9383	Cord - Power (Black)	R-8092	Socket - 6 prong
R-9005	Cover - Bottom	R-8072	Socket - 7 prong
R-9064	Dial - Time	S-9363-A	Speaker - complete
R-9281	Foot - Felt covered	S-9450-A	Speaker - Cone and Voice Coil
R-8987	Globe - Top (Maroon)	R-9368	Speaker - field coil
R-8923	Globe - Bottom (Maroon)	R-8674	Speaker - hum bucking coil
R-9373	Globe - Top (Ivory)	R-8640	Speaker - cardboard clamping ring
R-9375	Globe - Bottom (Ivory)	S-8641	Speaker - cardboard clamping ring
R-9374	Globe - Top (Black)	S-9386-A	Speaker - Terminal board
R-9376	Globe - Bottom (Black)	S-9454-A	Speaker - Transformer
R-8997	Indicator - Station Selector (Maroon)	R-8039	Transformer - IF input
R-9381	Indicator - Station Selector (Gold)	R-9002	Transformer - IF output
		R-9356-A	Transformer - Power, 60 cycle