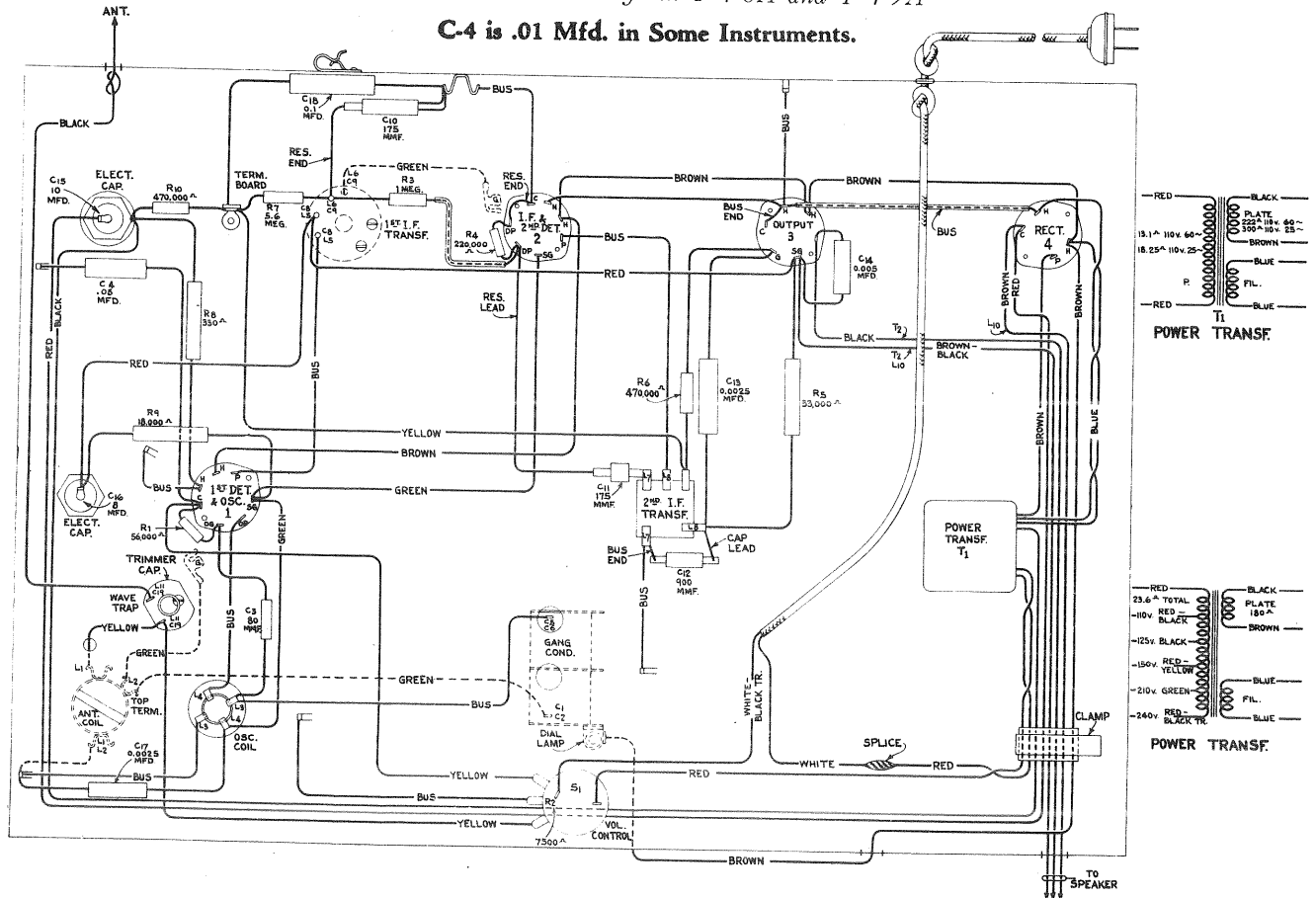


Schematic Circuit Diagram T 4-8A and T 4-9A

C-4 is .01 Mfd. in Some Instruments.



Chassis Wiring Diagram T 4-8A and T 4-9A

RCA VICTOR MODEL T 4-10

Four-Tube, Single Band, Tuned R.F., A-C, D-C Receiver

SERVICE NOTES

ELECTRICAL SPECIFICATIONS

Type of Circuit.....	Two Circuit, Tuned R.F.					
Radiotron Complement	<table border="0" style="display: inline-table; vertical-align: middle;"> <tr> <td rowspan="4" style="font-size: 3em; vertical-align: middle;">{</td> <td>(1) RCA-6D6, R-F Amplifier</td> </tr> <tr> <td>(2) RCA-6C6, Detector</td> </tr> <tr> <td>(3) RCA-38, Power Amplifier</td> </tr> <tr> <td>(4) RCA-76, Rectifier</td> </tr> </table>	{	(1) RCA-6D6, R-F Amplifier	(2) RCA-6C6, Detector	(3) RCA-38, Power Amplifier	(4) RCA-76, Rectifier
{	(1) RCA-6D6, R-F Amplifier					
	(2) RCA-6C6, Detector					
	(3) RCA-38, Power Amplifier					
	(4) RCA-76, Rectifier					
Tuning Range.....	540 kc. to 1712 kc.					
Alignment Frequency.....	1720 kc.					
Voltage Rating.....	100-125 volts					
Frequency Rating (a.c.).....	25-133 cycles					
Maximum Power Output.....	0.40 watts					
Loudspeaker.....	Magnetic (5 inch)					

PHYSICAL SPECIFICATIONS

Cabinet	Table Type
Height	7 ⁷ / ₈ inches
Width	10 inches
Depth.....	4 ¹ / ₂ inches
Tuning Controls.....	(1) Station Selector (2) Volume Control-Power Switch
Weight of Complete Instrument.....	5 ¹ / ₂ pounds
Weight Packed for Shipment.....	7 pounds

GENERAL DESCRIPTIVE DATA

This small, table type receiver embodies a compact, four-tube chassis housed in a box-type, closed-in, wood cabinet. The two operating controls appearing on the front panel, consist of a station selector at the right and a combined power switch-volume control at the left.

The range of tuning includes the standard broadcast band and extends to cover the 1712 kc. Police band at its upper limit. Scale graduations for the station selector are arbitrary, reading "0" at the left and increasing to "100" at right or high frequency end.

The power cord is of special design. It contains

three conductors, one of which is a distributed resistance element used for reducing the line voltage to the value required for filament supply. This arrangement is used to provide better heat radiation from the "dropping" resistor.

The loudspeaker is a rugged, magnetic type. It is connected directly to the output tube without use of transformers or other coupling elements.

An antenna of small dimensions will usually be found sufficient for this receiver. A ground connection is not provided since it will not be required. The ground path of the signal will normally be over the power supply circuit.

DESCRIPTION OF ELECTRICAL CIRCUIT

The specifications pertaining to compactness require that the electrical circuit be as simple and elementary as possible, consistent with attainment of good performance. Fundamentally, therefore, the circuit is designed to include a tuned r-f stage, a tuned detector stage, a resistance coupled audio system and a half-wave rectifier stage.

Following the signal from the antenna into the receiver, it may be seen that it is applied to the first stage through a blocking condenser (C-1) and a tuned secondary antenna transformer. The condenser isolates the antenna for d.c. and thus prevents presence of voltage on the antenna connection which would otherwise be caused by the internal circuit arrangement.

Volume control is accomplished with a variable

cathode biasing resistor (R-1). Its setting determines the gain of the RCA-6D6 stage and thereby controls the signal output to the desired level. A stop on this control at 300 ohms limits the minimum bias which will be applied to the control grid of this tube.

Filaments of the four tubes are wired in series as shown in the schematic diagram. They are supplied from the power line through the power cord "dropping resistor" indicated as R-8.

An RCA-76 heater type triode functions as a half-wave rectifier in the power supply system. The plate and grid elements of this tube are strapped together to act as the anode. A suitable filter, comprised of a single reactor and two capacitors is provided for smoothing the rectified current.

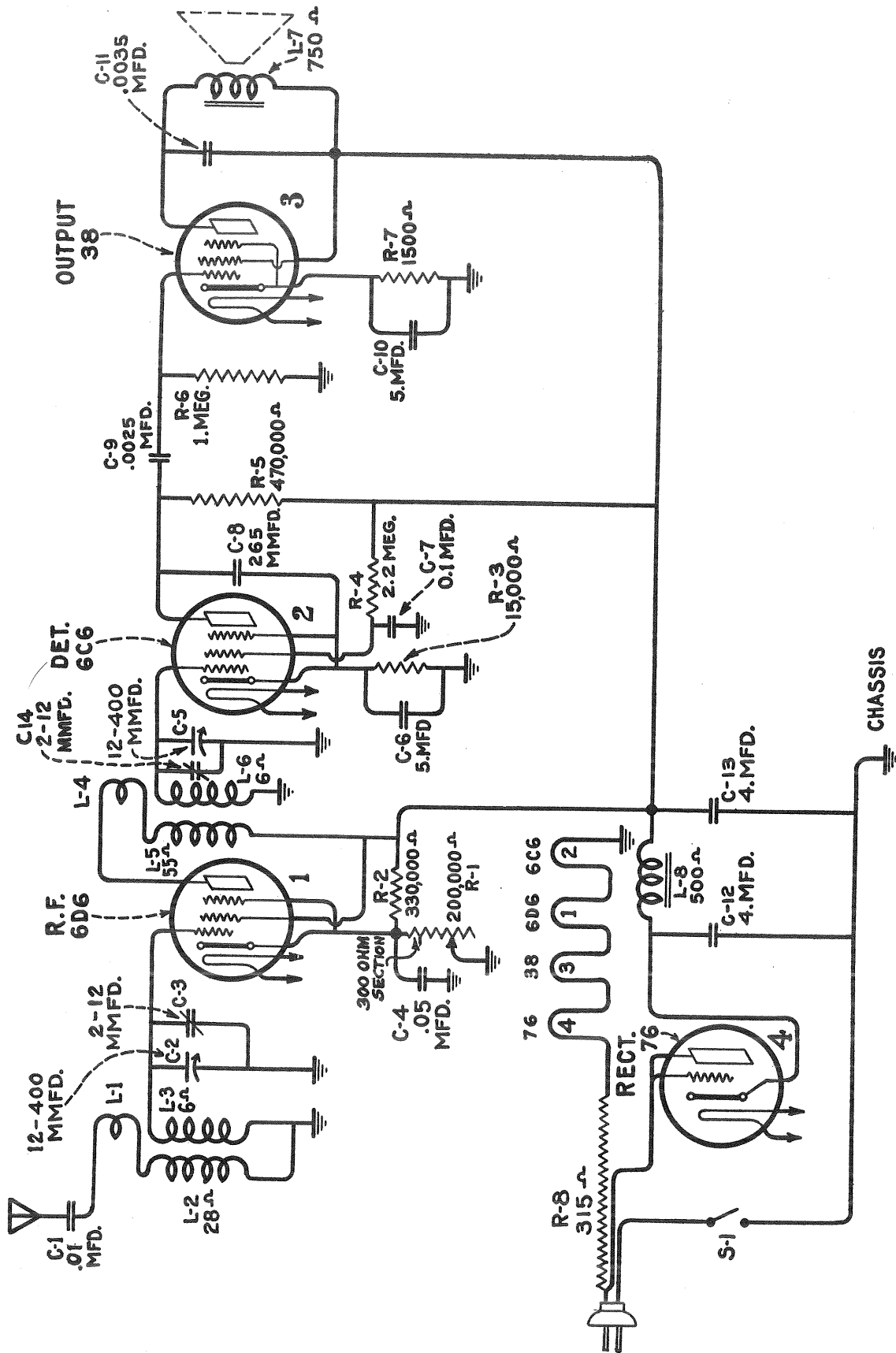


Figure 1—Schematic Circuit Diagram

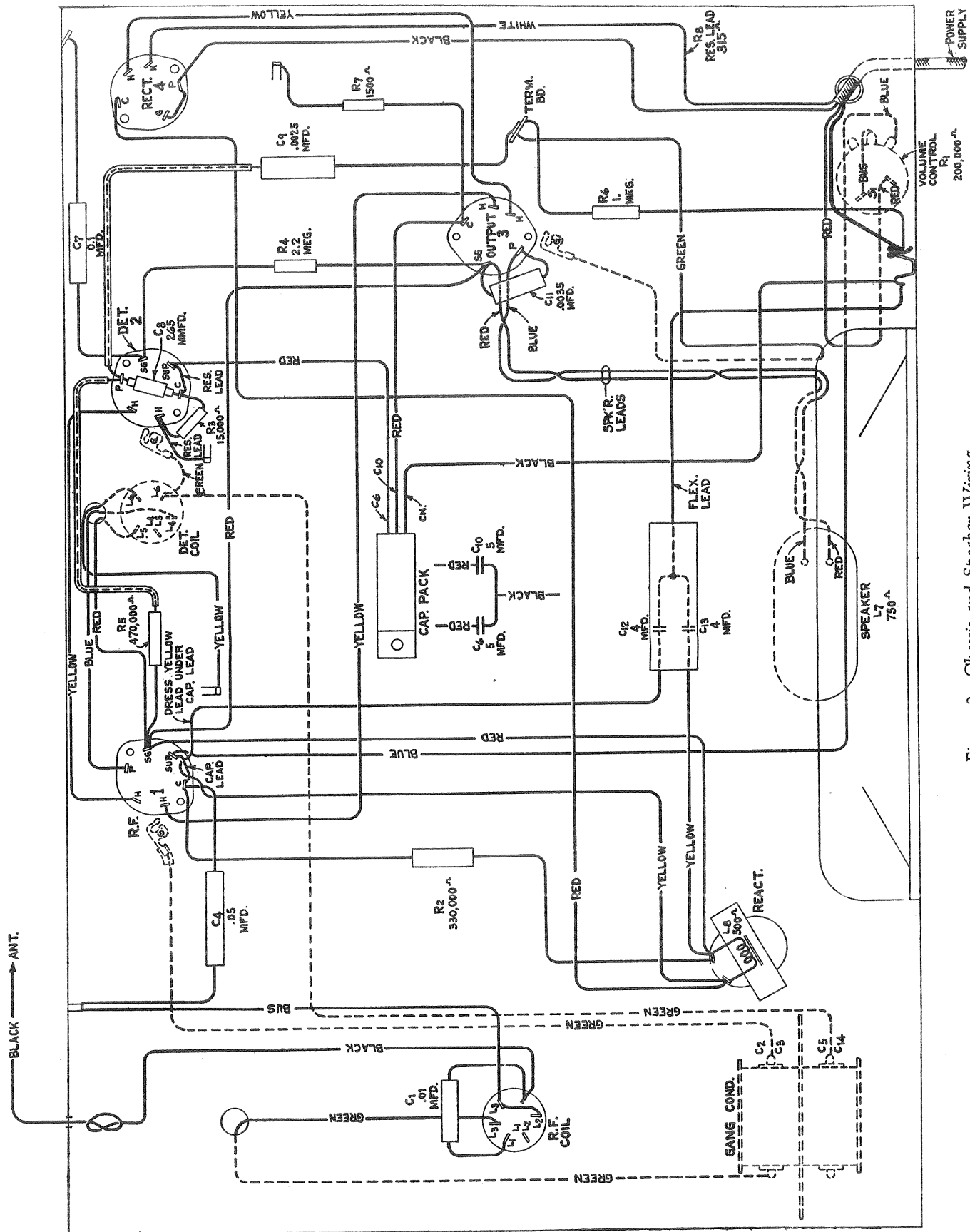


Figure 2—Chassis and Speaker Wiring

SERVICE DATA

Two trimmer capacitors are mounted on the variable tuning condenser for alignment purposes. Their exact locations and identifications are given by Figure 3. It will be necessary to re-adjust these capacitors only when they have become altered from their original alignment by reason of change of parts for service purposes, effects of extreme climate, or possibly because of tampering. Poor all-round performance is the general indication of improper alignment.

To re-align the receiver, proceed as follows:—

- (1) Place the receiver in operation with a standard signal generator (RCA Victor Stock No. 9595) connected to its antenna terminal. Correct the "zero" setting of the tuning knob so that it reads "0" when turned to its extreme left or full mesh of the variable condenser.
- (2) Set the trimmer screws so that they are approximately equal at their medium capacity. This may be done by turning each the same number of turns from their maximum positions.
- (3) Tune the external test oscillator to 1700 kc. and rotate the station selector until it is received. Adjust the output of the oscillator and volume control of the receiver to give the desired output level. It is advisable to use an output indicator attached to the speaker circuit. An RCA Stock No. 4317 Output Indicator is especially suitable.
- (4) Adjust the two trimmers C-3 and C-14, at the same time observing the output indicator, until the maximum (peak) receiver output is obtained.

Radiotron Socket Voltages

The voltages indicated from the socket contacts to the chassis on Figure 3 will serve to assist in analyzing defective circuit conditions when existent. Each value specified should hold within $\pm 20\%$ when the receiver is normally operative at the rated voltage. Variations in excess of this limit will usually be indicative of a faulty part. If all readings are incorrect, trouble should be investigated in the rectifier system. Defects occurring at other points in the circuits will affect a single or group of measurements related to that section.

Readings given are actual operating values and do not take into account measurement inaccuracies due to internal voltmeter resistance. A meter having a resistance of at least 1000 ohms per volt should be used. The amount of circuit resistance which shunts the meter will determine the accuracy obtained, the error increasing as the former becomes comparable to or less than the latter.

Antenna-Ground

The circuit of the receiver is arranged in such manner that the chassis is at negative high voltage. The usual ground connection is therefore omitted and the chassis mounted so that it is insulated. The r-f circuit to ground is by way of the negative d-c lead or neutral a-c lead.

Interference present on the power supply line may occasionally attain a bothersome level in the receiver. When being operated on a.c., some reduction of this

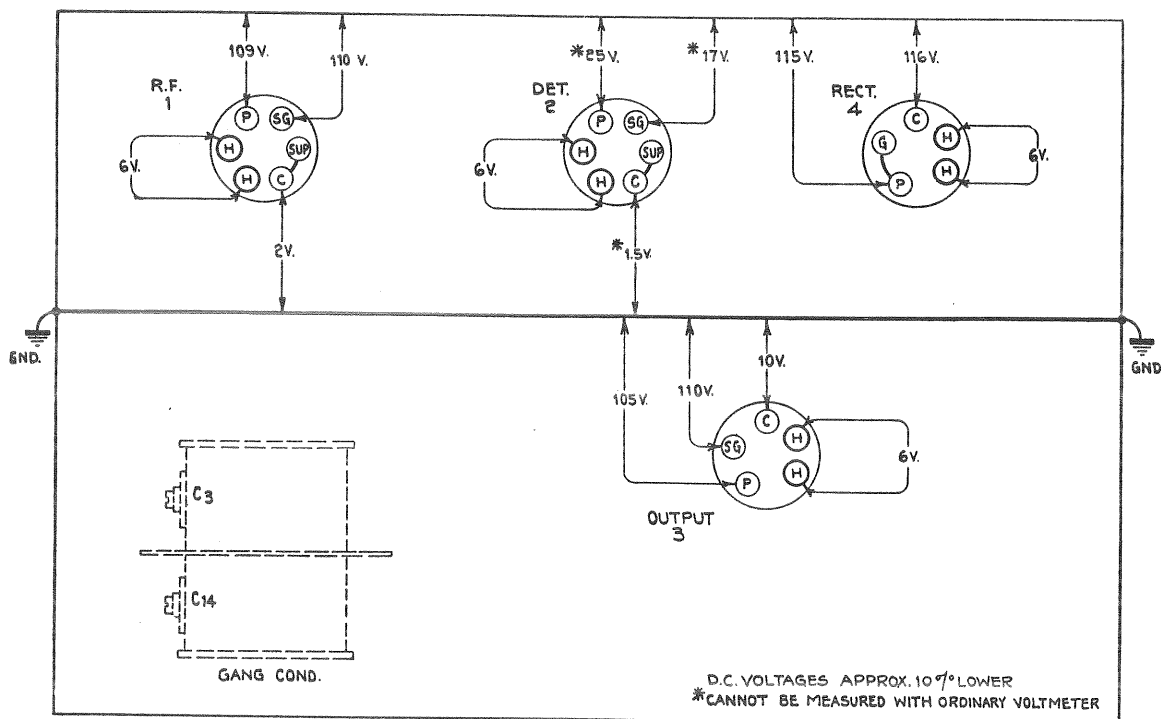


Figure 3—Trimmer Locations and Radiotron Socket Voltages Measured at 115 volts a.c.—No Signal—Volume Control Maximum

noise may be brought about by reversal of the power plug. For more serious interference, either from an a-c or d-c line, an external ground should be made to the receiver chassis through a small series condenser (.006 mfd, 200 volts). The length of the grounding lead should be kept to an absolute minimum.

Power Cord

The resistance element of the power lead will produce a noticeable amount of heat while the receiver is in operation. This heating should not be regarded as abnormal. No changes should be made in the length of the cord. In case of failure, it should be replaced in its entirety by a standard part.

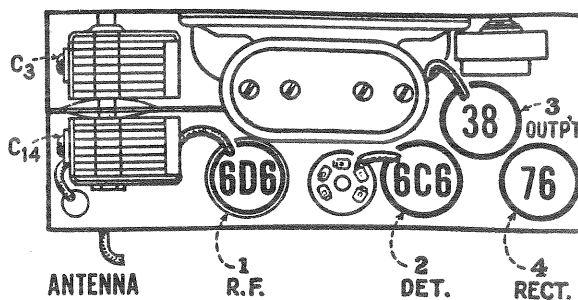


Figure 4—Tube Location Layout

REPLACEMENT PARTS

Insist on genuine factory tested parts, which are readily identified and may be purchased from authorized dealers

STOCK No.	DESCRIPTION	LIST PRICE	STOCK No.	DESCRIPTION	LIST PRICE
RECEIVER ASSEMBLIES					
4244	Cap—Grid contact cap—Package of 5....	\$0.20	3998	Resistor—15,000 ohm—Carbon type— $\frac{1}{4}$ watt (R3)—Package of 5.....	\$1.00
11135	Capacitor—265 mmfd. (C8).....	.15	5108	Resistor—330,000 ohm—Carbon type— $\frac{1}{4}$ watt (R2)—Package of 5.....	1.00
5107	Capacitor—.0025 mfd. (C9).....	.16	11172	Resistor—470,000 ohm—Carbon type— $\frac{1}{4}$ watt (R5)—Package of 5.....	1.00
5005	Capacitor—.0035 mfd. (C11).....	.16	3033	Resistor—1 megohm—Carbon type— $\frac{1}{4}$ watt (R6)—Package of 5.....	1.00
4858	Capacitor—.01 mfd. (C1).....	.25	11151	Resistor—2.2 megohm—Carbon type— $\frac{1}{4}$ watt (R4)—Package of 5.....	1.00
4836	Capacitor—.05 mfd. (C4).....	.30	5129	Ring—Radiotron shield ring—Package of 5	.10
4841	Capacitor—.1 mfd. (C7).....	.22	11267	Shield—Radiotron shield.....	.15
11268	Capacitor pack—Comprising two 4.0 mfd. capacitors (C12, C13).....	.80	REPRODUCER ASSEMBLIES		
7956	Capacitor pack—Comprising two 5.0 mfd. capacitors (C6, C10).....	.80	9471	Cone—Reproducer cone—Package of 5...	3.50
6821	Coil—Detector coil (L4, L5, L6).....	.96	7713	Mechanism—Reproducer mechanism—Complete	3.72
11261	Coil—RF coil (L1, L2, L3).....	1.00	9470	Reproducer—Complete (L7).....	4.62
11260	Condenser—Two-gang variable tuning condenser (C2, C3, C5, C14).....	1.75	7712	Support—Cone support.....	.50
11263	Volume control (R1, S1).....	.88			
11267	Cord—Power cord—315 ohms (R8).....	1.00			
3537	Reactor—Filter reactor (L8).....	1.10			
4408	Resistor—1500 ohm—Carbon type— $\frac{1}{4}$ watt (R7)—Package of 10.....	2.00			

