

the hallicrafters co.

SERVICE BULLETIN FOR MODEL S-51

GENERAL

Tubes Nine glass rectifier
 Speaker 8-inch P.M.
 Speaker V.C. Impedance . . . 3.2 ohms
 Headset Output Low Impedance
 Antenna Provision for external antenna
 Tuning Manual
 Tuning Range

Range	Frequency	Reception
A	300 kc - 300 kc	Fixed Frequency
B	3.0 mc - 3.0 mc	" "
C	3.0 mc - 3.0 mc	" "
1	132 kc - 405 kc	General Coverage
2	485 kc - 1630 kc	" "
3	1450 kc - 4550 kc	" "
4	4.2 mc - 13.9 mc	" "

Intermediate Frequency . . . 445 kc
 Power Supply 105-125 V. DC or 60 cycles
 A.C. Provision for 6V., 12 V.,
 32 V. DC operation.
 Power Consumption 30 Watts

6 V., 12 V., AND 32 V. OPERATION

The Model S-51 Receiver may be operated from a 6 V., 12 V., or 32 V. source by inserting the correct power supply adapter unit. This adapter unit is plugged into the dual socket located on the top of the receiver chassis. Remove the jumper plug before inserting the low voltage adapter unit. One adapter unit is available for each of the above source voltages.

DC Source Voltage	Adapter Unit Part No.	Identification Stamp	Use Cable No.	Fuse Rating
6 Volts	1X329	6 VOLTS	87B1861	10 amperes
12 Volts	1X650	12 VOLTS	87B1861-1	5 amperes
32 Volts	1X651	32 VOLTS	87B1861-2	2 amperes

When operating the receiver with the adapter, the power cable normally used for 117 V. AC/DC operation is replaced with the power cable supplied with the adapter unit and plugged into the same receptacle on the receiver. Connect the fused power cable lead to the "hot" side of the DC source and the unfused lead to the ground or "cold" side of the supply. Disregard polarity of the DC supply as this is taken care of by a reversing switch located on the back side of the adapter unit.

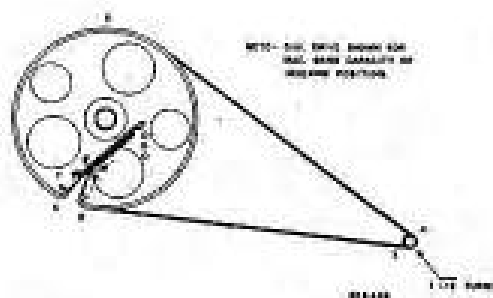
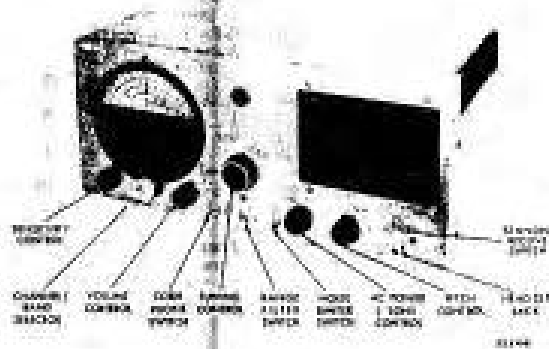


Fig. 1. Dual socket strapping procedure.



RESTRINGING DIAL CORD

To restring the general coverage tuning dial cord, cut a 24-inch length of 30 lb. test dial cord and tie one end to the tension spring of the main tuning capacitor drive pulley at position "1" on the diagram. Follow the numbers "1" through "7" and at position "7" stretch the tension spring and tie the cord securely.

REPLACING LAMPS

Refer to Fig. 2 for location of the two dial lamps used in the receiver. Defective lamps may be replaced through the cabinet cover. Replace defective lamps with 8-8 V. Mazda #47 (Brown bead) lamps or equivalent.

REPLACING FUSES

A line fuse protects the receiver when operating from a 105-125 V. AC/DC source. This fuse is accessible at the rear apertures of the receiver chassis. Replace defective fuses with type 1AG fuses with a one ampere rating.

Protective fuses for 6 V., 12 V., and 32 V. operation are located in the power cable. Refer to the paragraph on low voltage operation for fuse ratings. Replace defective fuses with the type 1AG body size.

CAUTION - Do not replace defective fuses with one of higher current rating than specified. Use the correct fuse and avoid costly repairs.

FIXED FREQUENCY CHANNEL ADJUSTMENTS

Adjustment of the fixed frequency channels for code and radio telephony reception in the 300 kc to 300 kc or 3000 kc to 3000 kc ranges is accomplished as described below. A total of three fixed frequency channels are available, one channel in the 300 kc to 300 kc range and two channels in the 3000 kc to 3000 kc range.

Set the band or range switch at "A" for a channel in the 300 kc to 300 kc band or either "B" or "C" for a channel in the 3000 kc to 3000 kc band.

Loosen the hinged cabinet cover and with a small screwdriver, adjust the screws identified as "Aa", "Ab", and "Ac" for the "A" band or "Ba", "Bb", and "Bc" for the "B" band, etc. Refer to Fig. 2. Make the adjustments in the order "O" "M" "A" (Oscillator, Mixer and Antenna),

adjusting the oscillator screw ("O") as you would normally have in a station and adjusting the "M" and "A" screws for maximum volume. When setting up a channel for code reception, set the PITCH CONTROL at mid position and tune the "O" adjustment for zero beat. The PITCH CONTROL may then be set for the desired pitch when copying code signals on the particular fixed frequency channel.

ALIGNMENT PROCEDURE

Set the following controls before alignment:

SENSITIVITY	Set at maximum
VOLUME	Set at maximum
CW/AM switch	Set at AM (see step 2)
RANGE FILTER	Set at OFF
NOISE LIMITER	Set at OFF

TONE	Set at HIGH
STANDBY-RECEIVE	Set at RECEIVE

For the settings of the remaining controls, refer to the alignment chart.

It will be necessary to remove the receiver chassis from the cabinet to make some of the alignment adjustments. The chassis is held in the cabinet by three screws along both the bottom edge of the front panel and the rear of the cabinet, and two screws on either side of the front panel.

The standard RMA dummy mentioned in the alignment chart consists of a 200 mmf. condenser in series with a 25 ohm $r-f$ choke which is shunted by a 400 mmf. condenser in series with a 400 ohm carbon resistor.

ALIGNMENT CHART

Step	Dummy Antenna	Signal Generator Coupling	Signal Generator Frequency	Band Switch Setting	Receiver-Dial Setting	Adjust	Remarks
1	.1 mfd. If an induction transformer is not used, change dummy ant. to .001 mfd. to reduce beam modulation.	High side to stator plates in center section of tuning gang; low side to chassis.	445 kc	"2"	Tuning cap. fully open	S1, J, J, 4, 5, 5	Adjust for maximum audio output at speaker voice coil. Use just enough signal generator output to obtain a 50 mv audio level.
2	See step 1.	See step 1	445 kc (No modulation)	"2"	See step 1	S7	With the CW/AM switch set at CW remove the pitch control knob and adjust S-7 for zero beat. Replace the knob with the dot in the center position.
3	Std. RMA dummy	High side to "A1" on antenna strip; low side to chassis. Jumper connected between "A2" and "O"	350 kc 150 kc	"1"	350 kc 150 kc	*A, B, C *D	Maximum output as in step 1.
4	Std. RMA dummy	See step 3	1400 kc	"2"	1400 kc	*E, F, G	Maximum output as in step 1.
5	Std. RMA dummy	See step 3	800 kc 4 mc	"3"	800 kc 4 mc	*H *I, J, K	Maximum output as in step 1.
6	Std. RMA dummy	See step 3	1800 kc 12 mc 5 mc	"4"	1800 kc 12 mc 5 mc	*M *N, O, P *Q	Maximum output as in step 1.

*Note - Calibration adjustments.

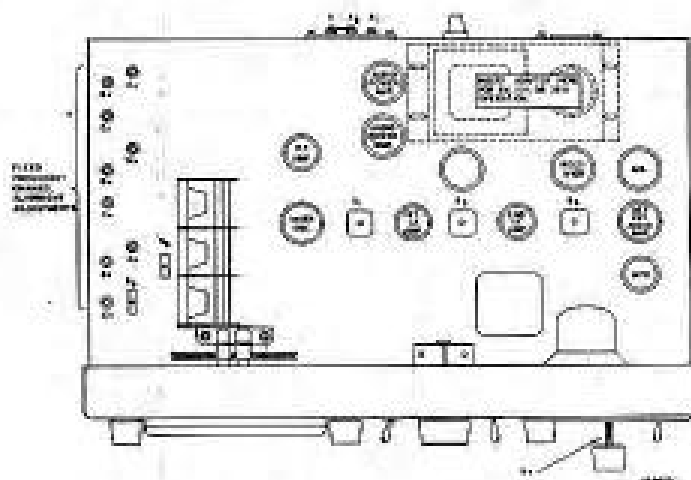


Fig. 2. Alignment adjustments, top view.

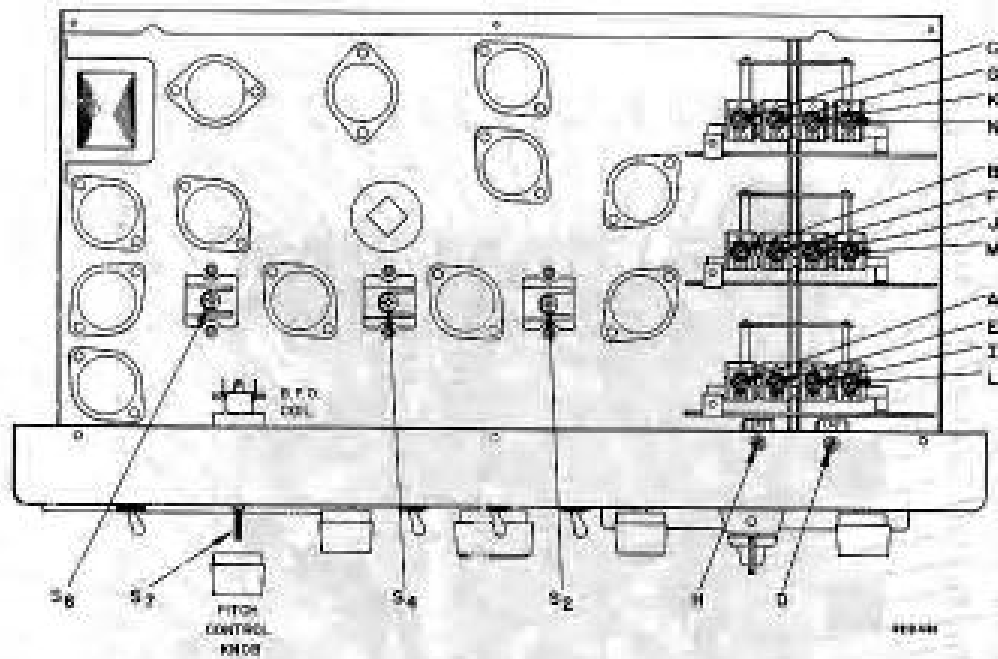


FIG. 3. Alignment adjustments, bottom view.

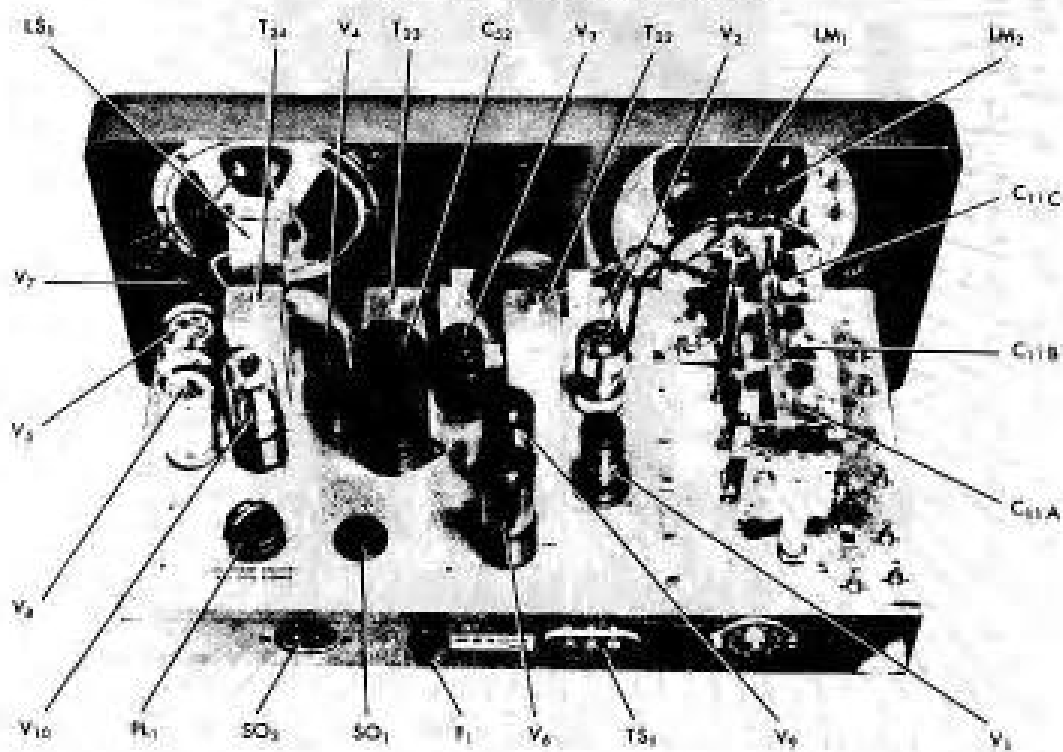


FIG. 4. Component assembly, top view.

82 X 484

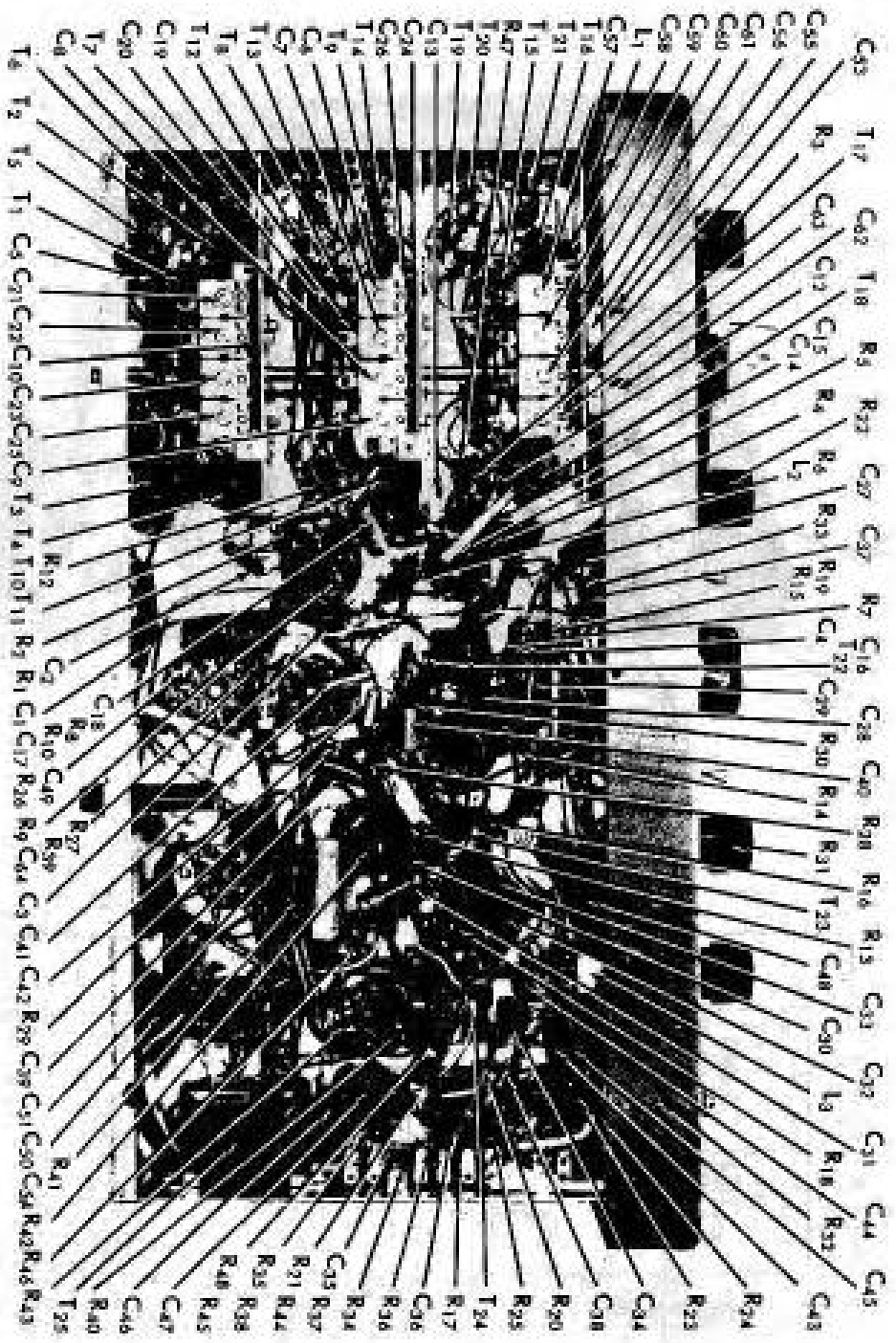


FIG. 1. Composite structure, bottom view.

92X485

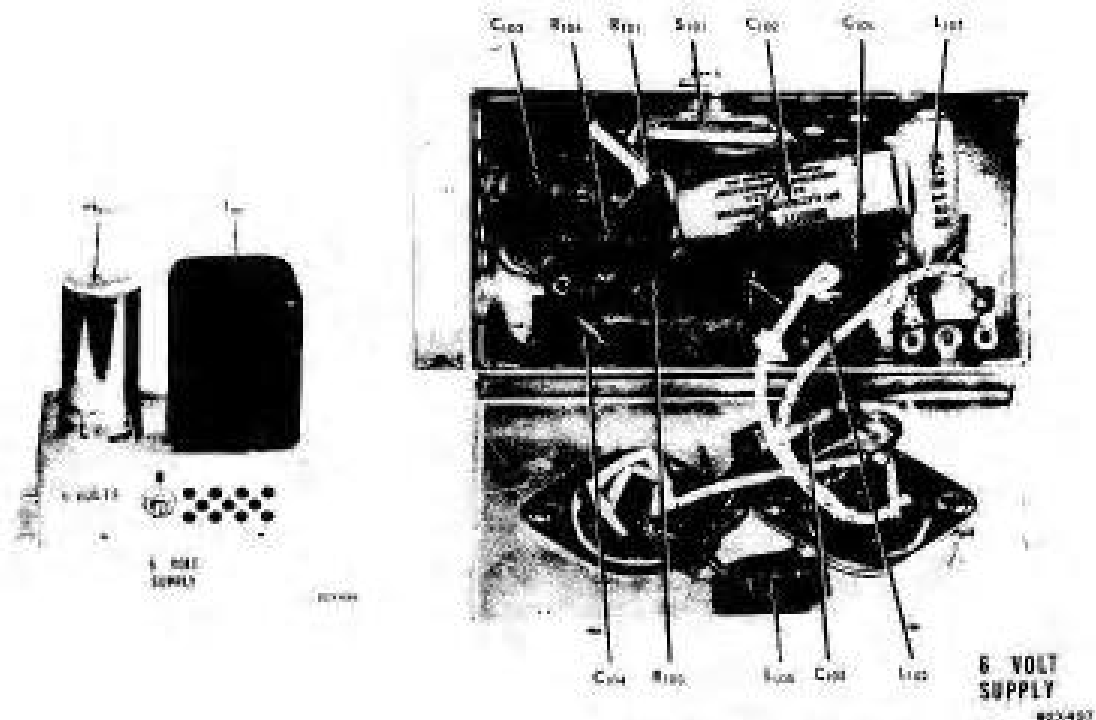


Fig. 6. Component location, 6-volt adapter unit. (92F486 - 011407)

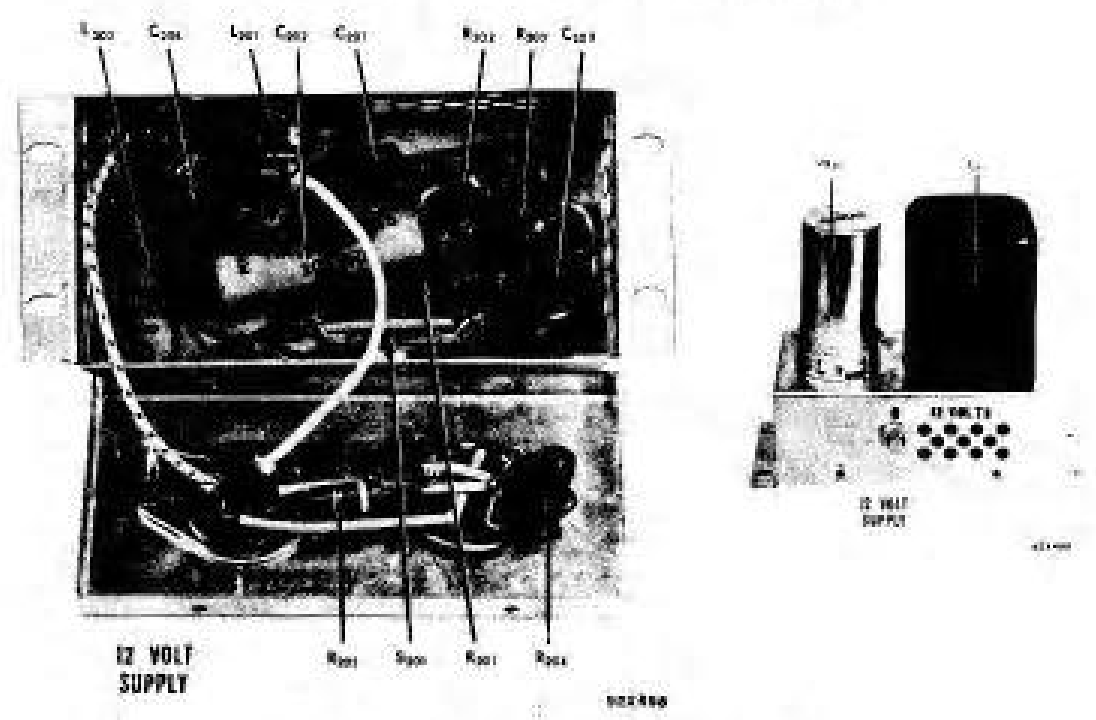


Fig. 7. Component location, 12-volt adapter unit.

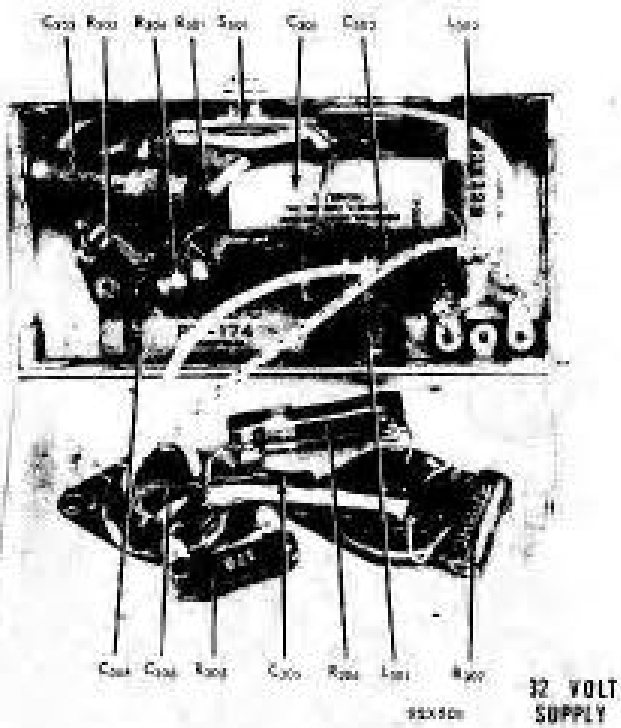


FIG. 3. Component locations, 32-volt adapter unit.

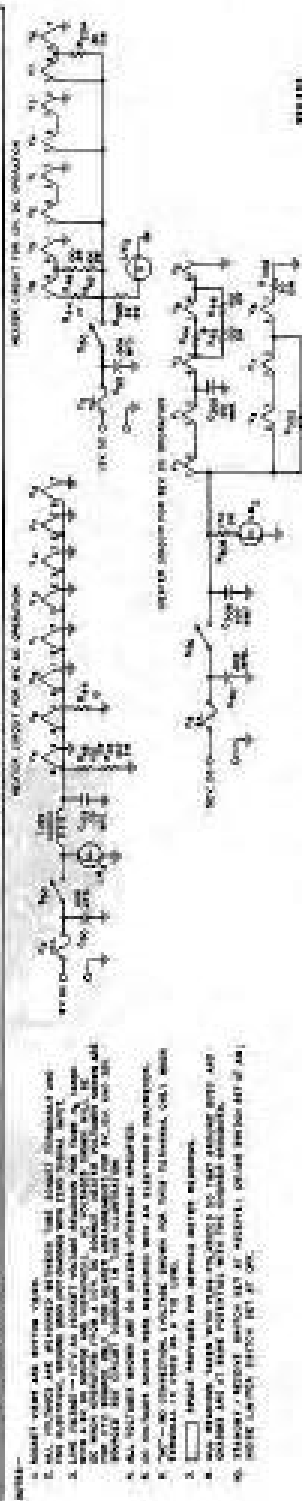
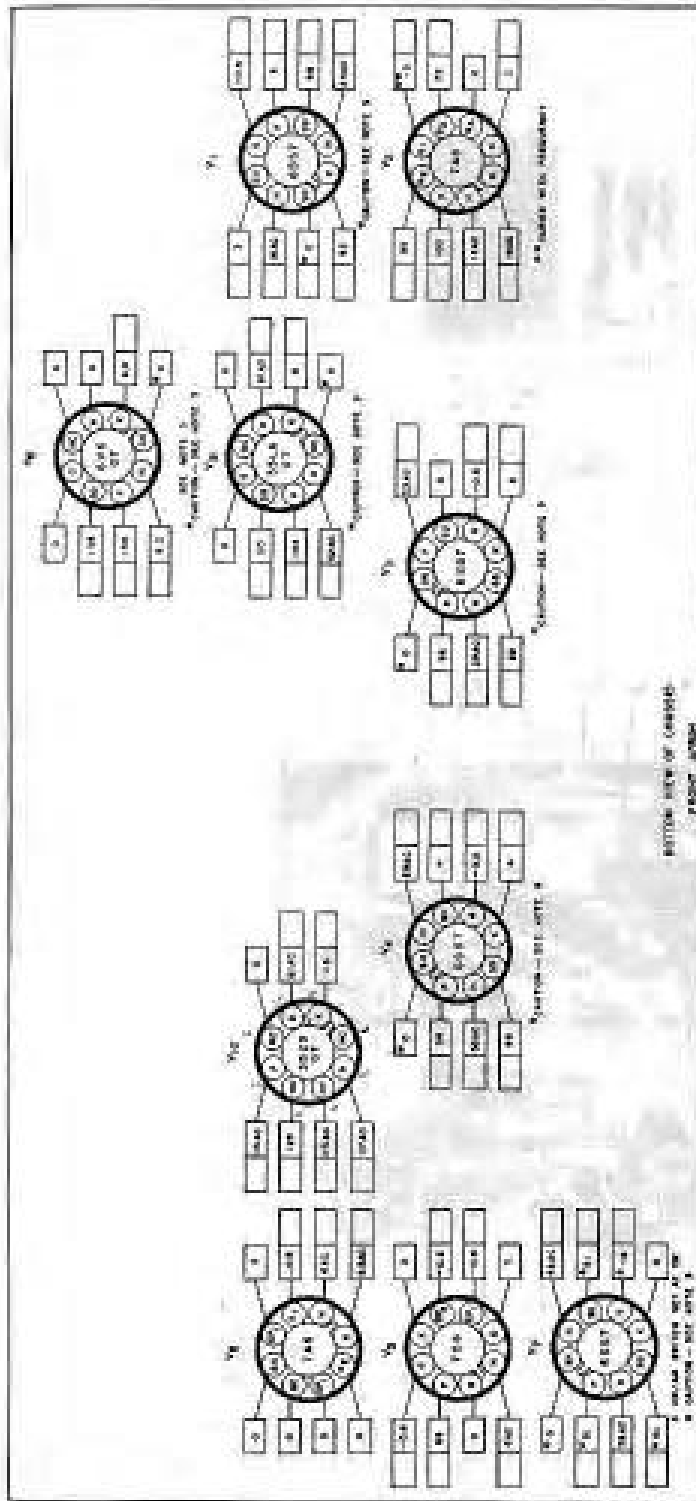


Fig. 5. Table control circuitry (obj.1).

Fig. 6. Table control circuitry (obj.1).

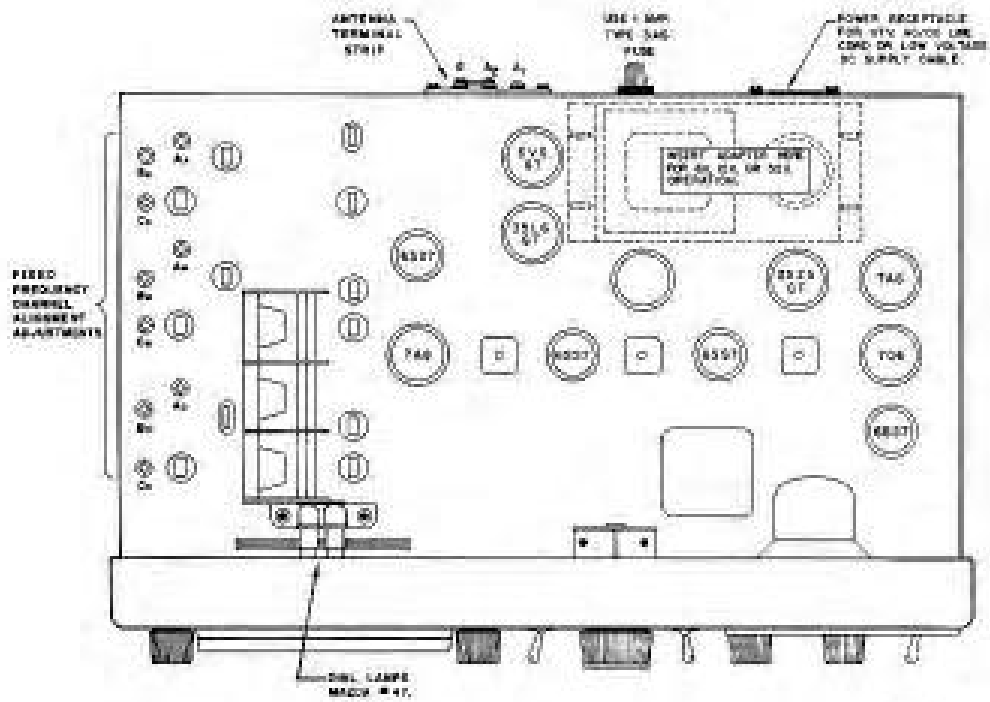
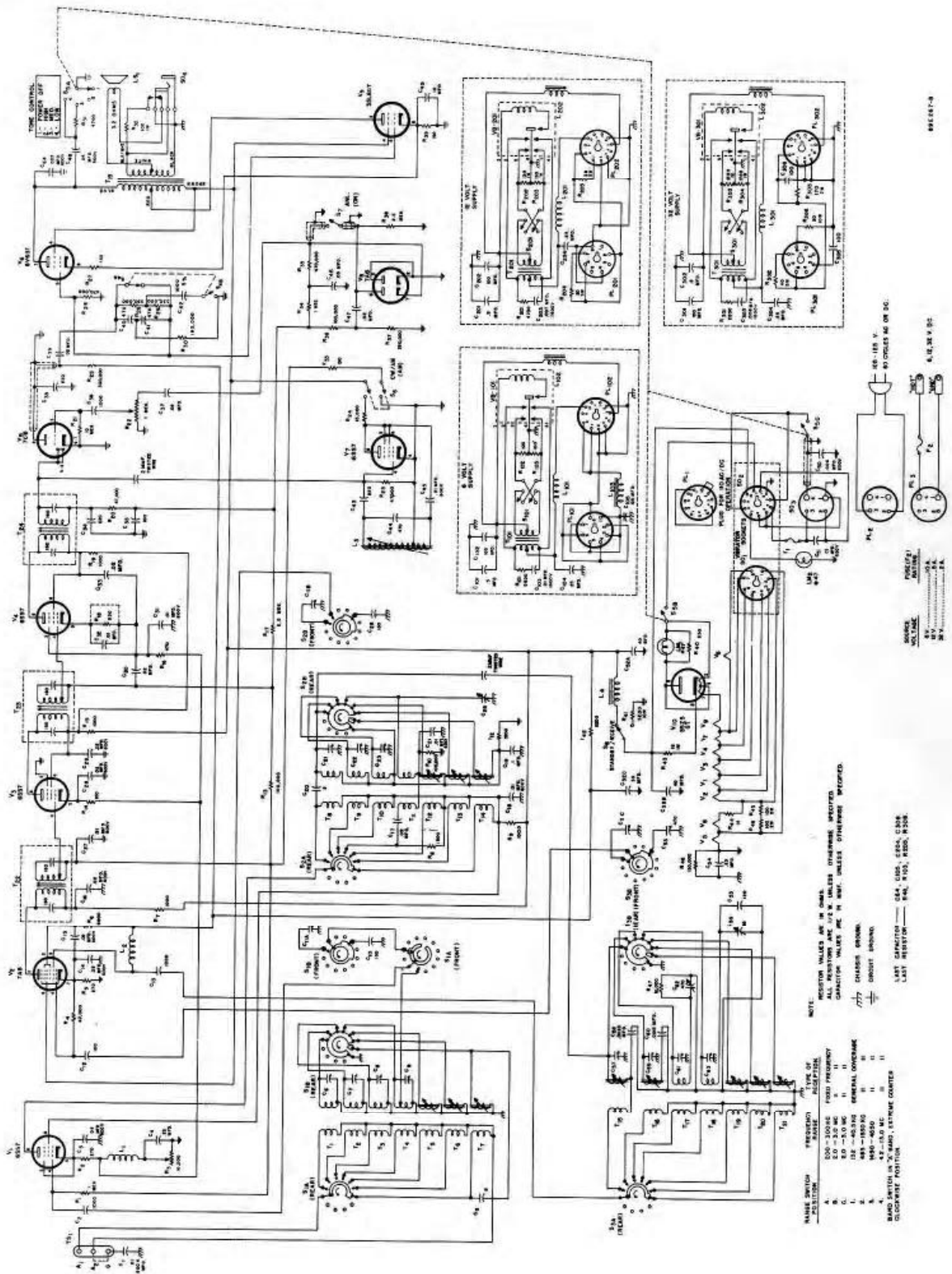


Fig. 10. Location of tubes, fuse and dial lamp.



NOTE:
 RESISTOR VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED.
 CAPACITOR VALUES ARE IN MICRO-UNITS UNLESS OTHERWISE SPECIFIED.
 //777 CHASSIS GROUND.

RESISTOR STANDARDS: 500-1000Ω, 100Ω FREQUENCY
 100-1000Ω, 1000-10000Ω
 100-1000Ω, 1000-10000Ω
 100-1000Ω, 1000-10000Ω
 100-1000Ω, 1000-10000Ω
 100-1000Ω, 1000-10000Ω

BAND SWITCH IS 7-MHO EXTREME QUARTZ
 CLOCKWISE POSITION

100-100 V. 60-100 HZ.
 6.3V, 250 MA. DC.