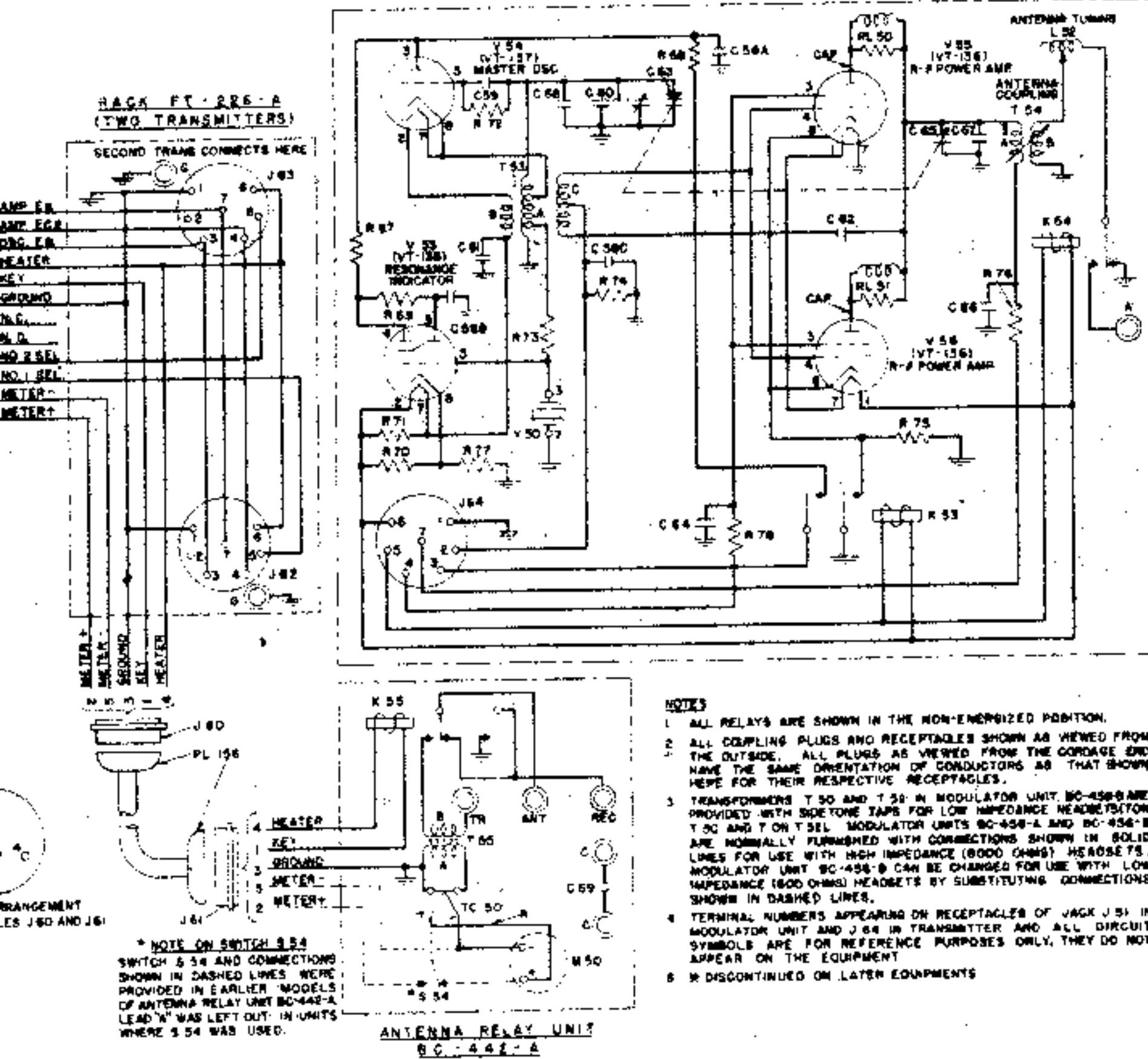


TYPICAL RADIO TRANSMITTER  
 BG-696-A(3-4 MC), BC-457-A(4-5.3 MC), BC-458-A(5.3-7 MC) OR BC-459-A(7-9 MC)



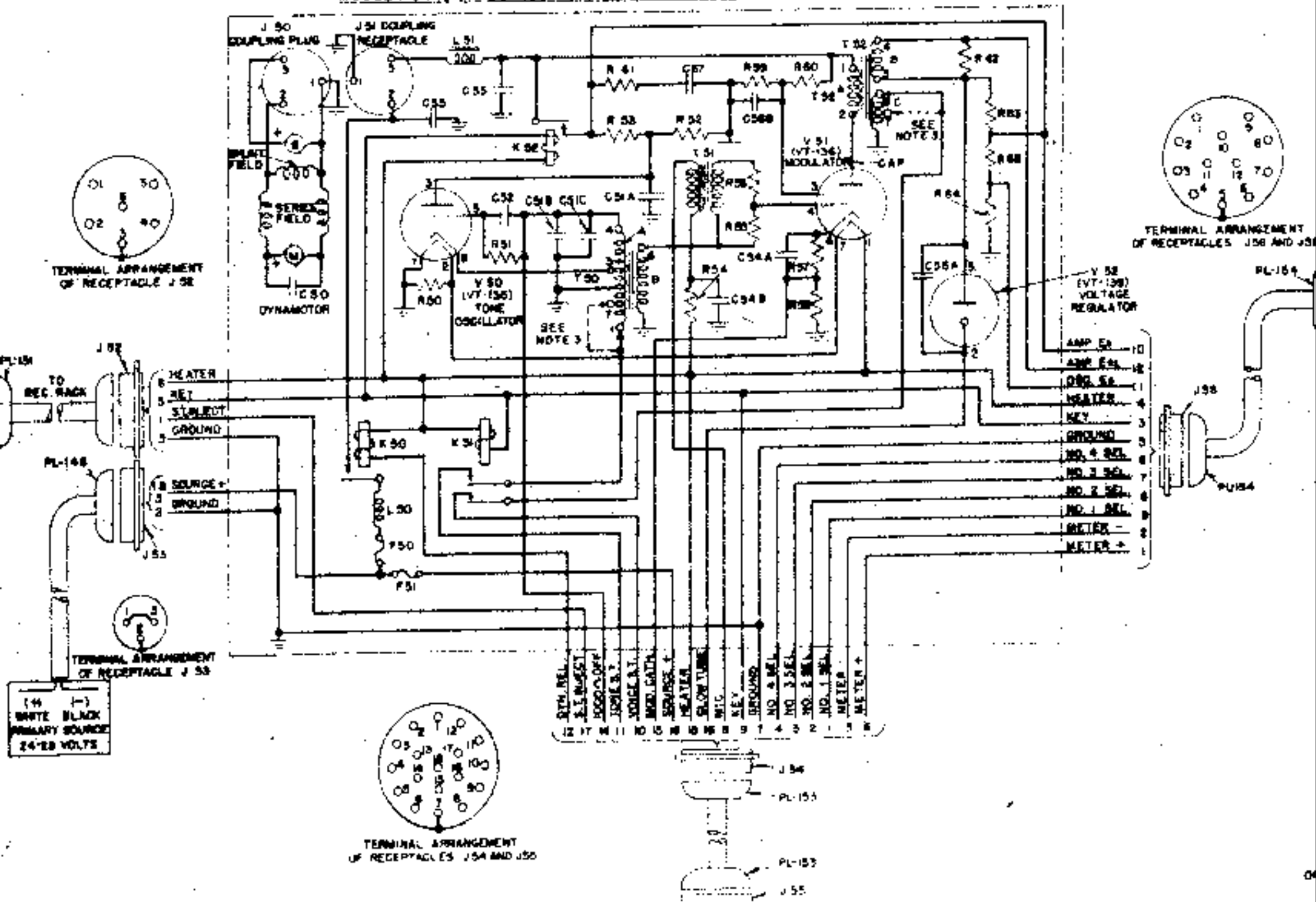
- NOTES**
- 1 ALL RELAYS ARE SHOWN IN THE NON-ENERGIZED POSITION.
  - 2 ALL COUPLING PLUGS AND RECEPTACLES SHOWN AS VIEWED FROM THE OUTSIDE. ALL PLUGS AS VIEWED FROM THE CORDAGE END HAVE THE SAME ORIENTATION OF CONDUCTORS AS THAT SHOWN HERE FOR THEIR RESPECTIVE RECEPTACLES.
  - 3 TRANSFORMERS T 50 AND T 52 IN MODULATOR UNIT BC-458-B ARE PROVIDED WITH SIDETONE TAPS FOR LOW IMPEDANCE HEADSET(TOR T 50 AND T 52 ON T 52). MODULATOR UNITS BC-458-A AND BC-458-B ARE NORMALLY FURNISHED WITH CONNECTIONS SHOWN IN SOLID LINES FOR USE WITH HIGH IMPEDANCE (8000 OHMS) HEADSET 75. MODULATOR UNIT BC-458-B CAN BE CHANGED FOR USE WITH LOW IMPEDANCE (800 OHMS) HEADSETS BY SUBSTITUTING CONNECTIONS SHOWN IN DASHED LINES.
  - 4 TERMINAL NUMBERS APPEARING ON RECEPTACLES OF JACK J 51 IN MODULATOR UNIT AND J 54 IN TRANSMITTER AND ALL CIRCUIT SYMBOLS ARE FOR REFERENCE PURPOSES ONLY, THEY DO NOT APPEAR ON THE EQUIPMENT.
  - 5 \* DISCONTINUED ON LATER EQUIPMENTS

FIGURE 27 -- RADIO SET SCR-271-N TRANSMITTING EQUIPMENT (INCLUDING MODULATOR), SCHEMATIC CIRCUIT DIAGRAM

DESCRIPTION	RELAYS & KEYS		RESISTORS		SWITCHES		TRANSFORMERS		MISCELLANEOUS		
	SYMBOL	DESCRIPTION	SYMBOL	OHMS	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	
CHOKE APPR	K 50	DYNAMOTOR INPUT	R 50	42	R 70	1000 FOR BC-457-A	S 50	CHOICE OF EMISSION	T 50	TC 50	THERMOCOUPLE
MICROPHONES	K 51	SIDETONE, VOICE AND TONE	R 51	100,000	R 70	1000 FOR BC-458-A	S 51	MAIN "ON-OFF"	T 51	M 50	ANT. CURRENT INDICATOR (LOCAL)
WINDINGS	K 52	DYNAMOTOR HIGH	R 52	300,000	R 70	1500 FOR BC-459-A	S 52	BATTERY LINE TRANSMITTER SELECTION	T 52		
TUNING	K 53	TRANSMITTER	R 53	91,000	R 70	1500 FOR BC-696-A	S 53	BATTERY LINE SELECTION	T 53		
INDICATOR	K 54	SELECTOR	R 54	360	R 71	125	S 54	SHUNTS MIC SERIES RESISTOR ANT. CURRENT METER SWITCHING	T 53		
	K 55	TRANSMITTER	R 55	2,000	R 72	51,000			T 54		
	K 56	ANTENNA SWITCHING REC TO TRANS. BUILT-IN KEY	R 56	1300	R 73	10,000 FOR BC-457-A			T 54		
			R 57	380	R 73	15,000 FOR BC-458-A			T 55		
			R 58	51,000	R 73	5100 FOR BC-459-A			T 55		
			R 59	30,000	R 73	5100 FOR BC-696-A					
			R 60	73,000	R 74	19,000					
			R 61	20	R 75	51,000					
			R 62	10,000	R 76	20					
			R 63	20,000	R 77	380					
			R 64	100,000	R 78	31					
			R 65	15,000							
			R 66	510							
			R 67	51,000							
			R 68	20							
			R 69	1,000,000							

\* NOTE ON SWITCH S 54  
 SWITCH S 54 AND CONNECTIONS SHOWN IN DASHED LINES WERE PROVIDED IN EARLIER MODELS OF ANTENNA RELAY UNIT BC-442-A. LEAD "W" WAS LEFT OUT IN UNITS WHERE S 54 WAS USED.

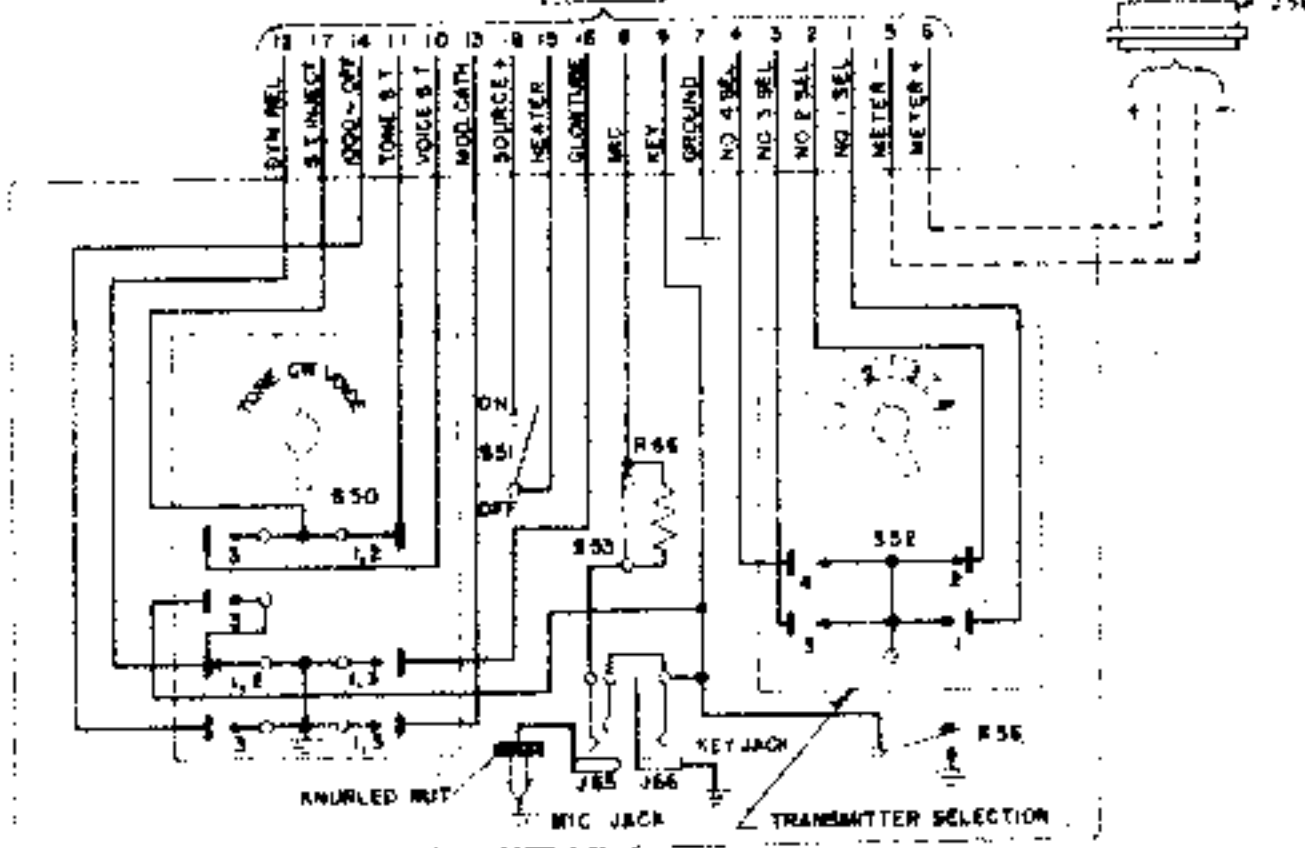
MODULATOR UNIT BC-456-A (QTH-3) WITH DYNAMOTOR CM-33-A



**NOTES ON SWITCHES S 50, S 52 AND S 53**  
 THE NUMBERS ON THE VARIOUS CONTACTS REFER TO THE POSITIONS OF THE SWITCH LEVERS AT WHICH THESE PARTICULAR CONTACTS ARE CLOSED BY THE ACTION OF THE SWITCH. ON S 50, "TONE" IS 1, "CW" IS 2, AND "VOICE" IS 3.  
 S 53 SHOULD ALWAYS BE KEPT IN "R OUT" POSITION AS INDICATED ON THE RED PLATE FOR SATISFACTORY OPERATION WITH MICROPHONE T 17, T 30 OR EQUAL.

**NOTE ON MICROPHONE JACK J 65**  
 THE KNUBBLED NUT IS USED TO GROUND THE SLEEVE OF JACK J 65 WHEN A MICROPHONE EQUIPPED WITH A PUSH-TO-TALK SWITCH SUCH AS MICROPHONE T 17 IS USED. WHEN THE JACK SLEEVE IS NOT GROUNDING, THE PUSH-TO-TALK FUNCTION MUST BE PERFORMED BY KEY K 56 OR AN EXTERNAL KEY OR SWITCH CONNECTED TO JACK J 66.

RADIO CONTROL BOX  
 BC-451-A

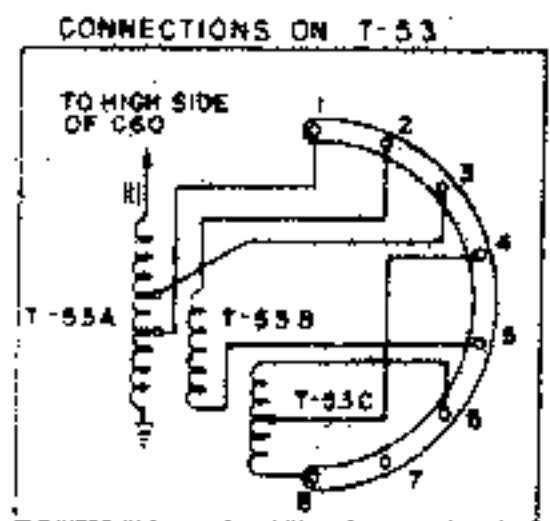
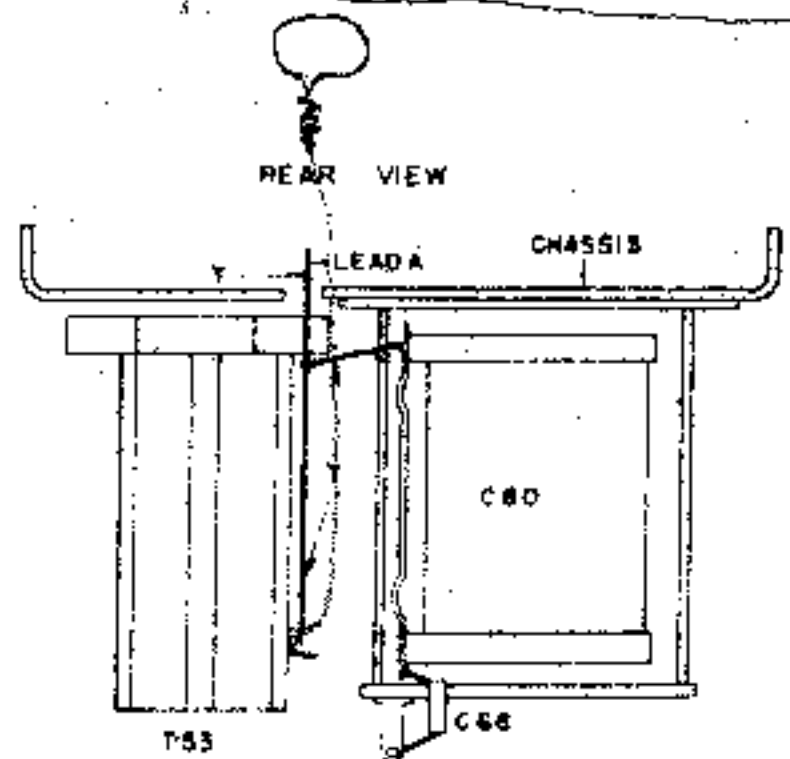
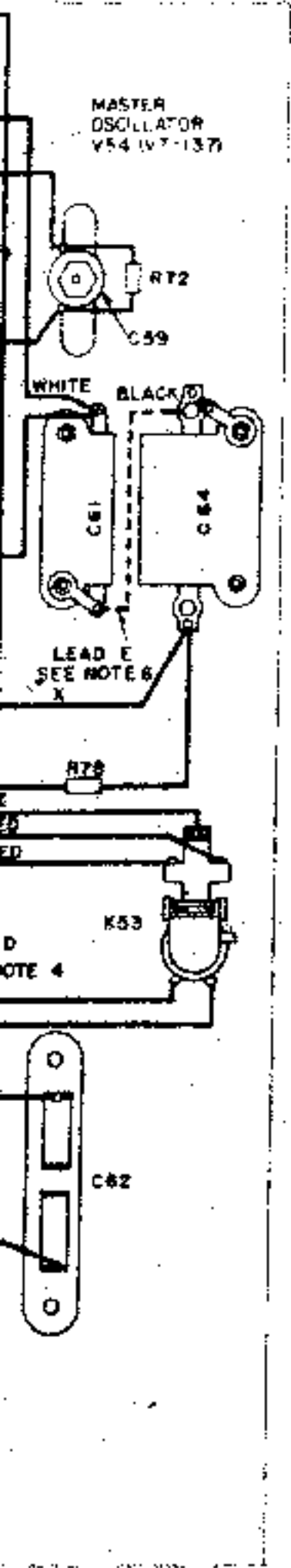


CAPACITORS	
SYMBOL	MICROFARADS
C 50	.006
C 51(A,B,C)	.05 / .05 / .05
C 52	.006
C 53	.2
C 54(A,B)	5/20
C 55	.2
C 56(A,B)	5/5
C 57	.05
C 58(A,B,C)	.05 / .05 / .05
C 59	.0018
C 60	NO PADDDG
C 61	.006
C 62	FIXED NEUTR
C 63	NO TUNING
C 64	.002
C 65	PA TUNING
C 66	01
C 67	PA PADDDG
C 68	.000003
C 69	.00008

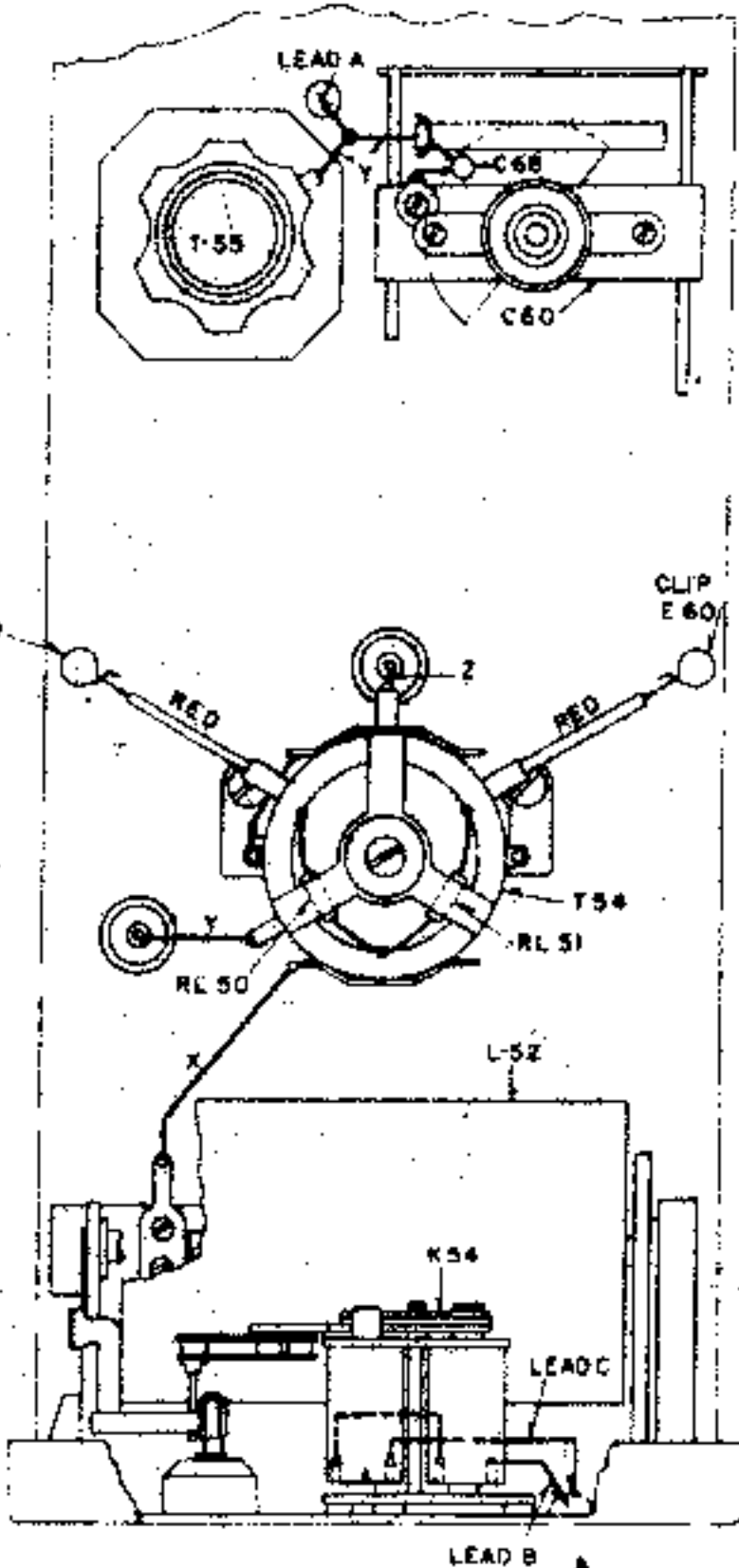
with 10A units  
Z MC.

TABLE B  
SEE NOTE 2

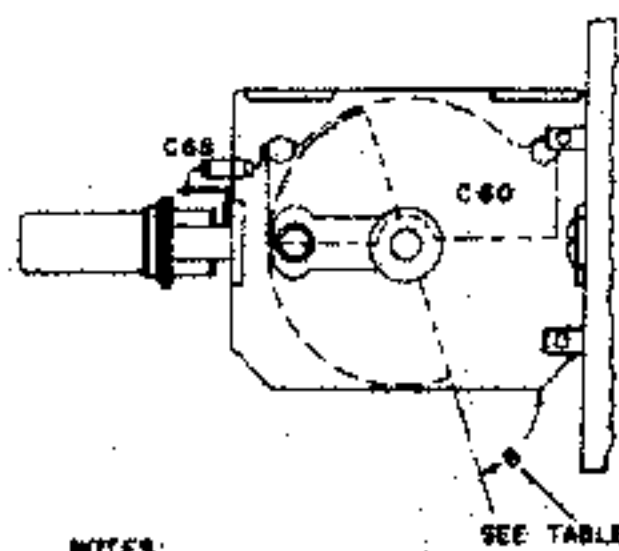
WIRES	ARE
W	NO. 16
X	NO. 18
Y	NO. 20
Z	NO. 22



TOP VIEW



SIDE VIEW OF OSCILLATOR  
PADDING CAPACITOR



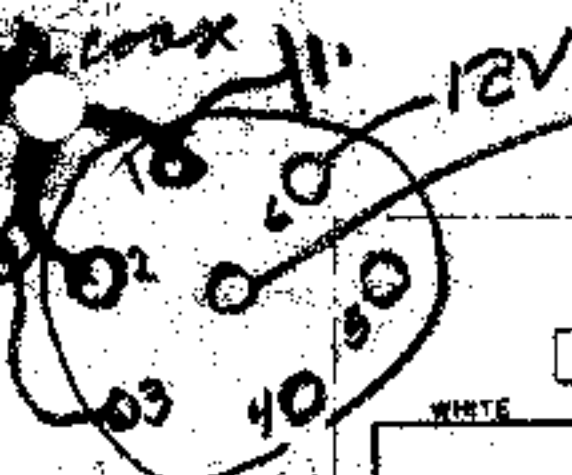
NOTES:

1. ALL WIRES MARKED WITH COLOR ARE NUMBER 22 SOLID COPPER. WIRES MARKED RED-WHITE HAVE HEAVY INSULATION.
2. WIRES MARKED W, X, Y AND Z ARE BARE TINNED SOLID COPPER WITH SIZES SHOWN IN TABLE B.
3. TERMINAL NUMBERS AND LETTERS ARE FOR REFERENCE PURPOSES AND DO NOT APPEAR ON APPARATUS.
4. PLACE LEAD "D" IN CORNER OF CHASSIS SO THAT IT WILL BE HELD SECURELY IN POSITION BY OTHER LEADS.
5. DRESS LEADS RUNNING NEAR THREADED INSERTS IN THE CHASSIS SO THAT SCREWS PROJECTING THROUGH INSERTS WILL CLEAN THE LEADS BY AT LEAST 1/16 INCH WHEN SCREWS ARE FULLY TIGHTENED.
6. GROUND TERMINAL ADDED TO C 61 AND LEAD "E" SHOWN IN DASHED LINES OMITTED IN LATER MODELS.
7. TERMINALS MARKED BLANK ARE TIE POINTS ONLY & HAVE NO CONNECTION TO TUBES OR CRYSTAL IN SOCKET.

TABLE A

RADIO TRANSMITTER	PADDING CONDENSER SETTINGS	
	C 67 ANGLE "A"	C 60 ANGLE "B"
BC-696-A (3-4 MC)	92°	77 1/2°
BC-457-A (4-5.3 MC)	53 1/2°	78°
BC-458-A (5.3-7 MC)	55°	81 1/2°
BC-459-A (7-9.1 MC)	73 1/2°	95 1/2°

FIGURE 47 — RADIO TRANSMITTERS BC-696-A, BC-457-A, BC-458-A and BC-459-A,  
PRACTICAL WIRING DIAGRAM



BC450 Unit used with 10A Enites  
 HV 300V at 5.0 to 5.2 Mc.

TABLE B  
 SEE NOTE 2

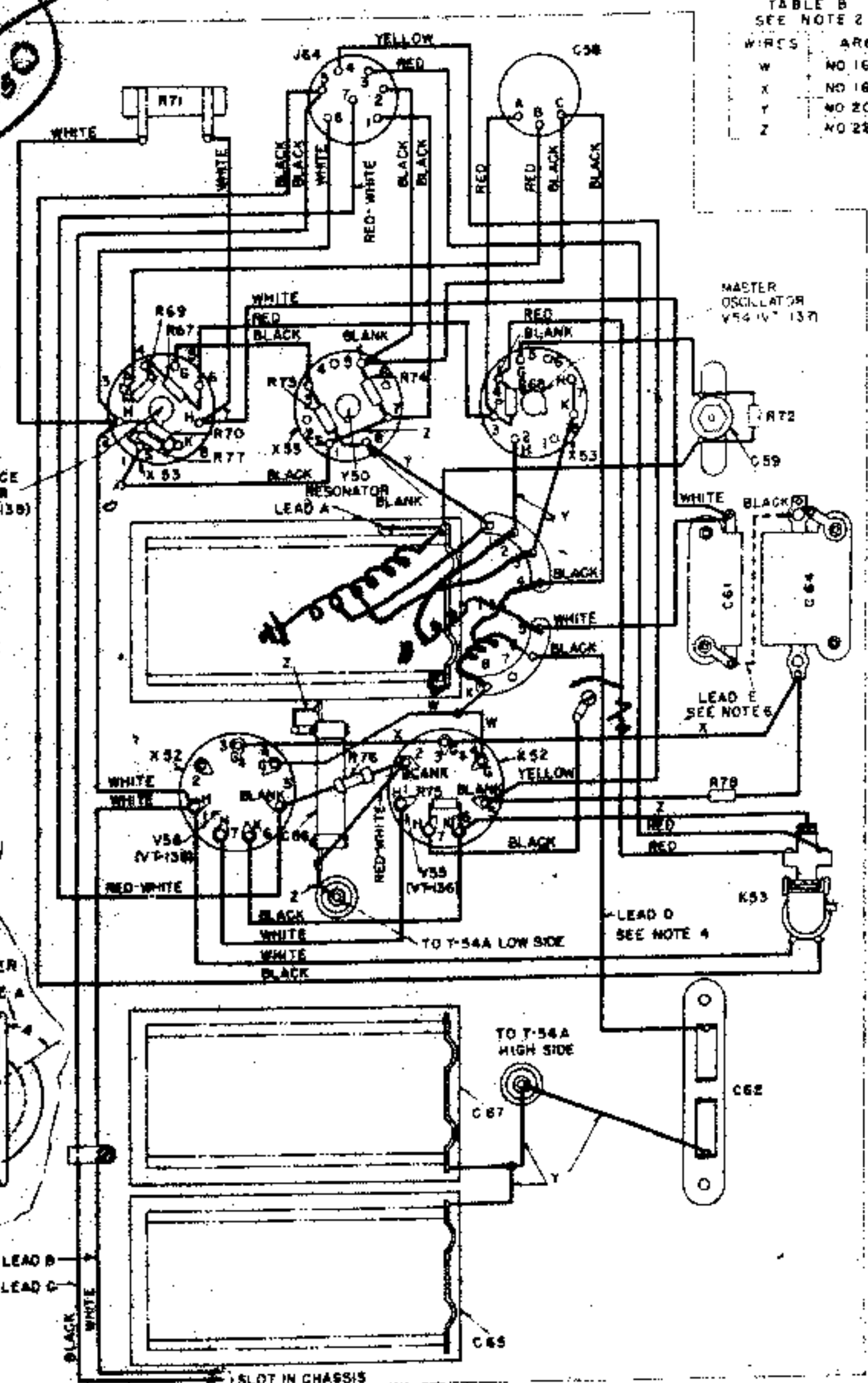
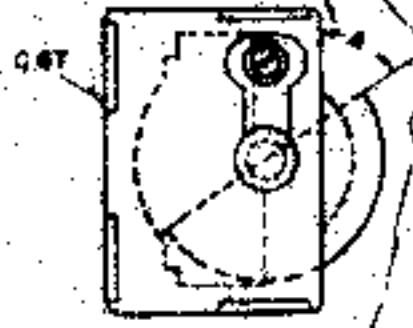
WIRCS	ARE
W	NO 16
X	NO 18
Y	NO 20
Z	NO 22

PLUG  
 1-1629  
 1-0A3

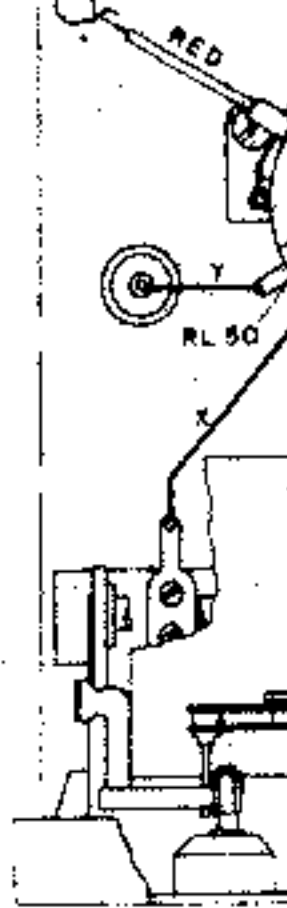
RESONANCE INDICATOR  
 V53 (VT-136)

MASTER OSCILLATOR  
 V54 (VT-137)

SIDE VIEW OF  
 POWER AMPLIFIER  
 PADDING CONDENSER  
 SEE TABLE A



CLIP  
 E60



BOTTOM VIEW