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THE SURPLUS HANDBOOK

VOLUME I Receivers and Transceivers

THE SURPLUS HANDBOOK

by

Charles Caringella, W6NJV & Richard Clark, W6NJE

and the Editors of "Western Radio Amateur"

VOLUME I Receivers and Transceivers

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First printing, June, 1959

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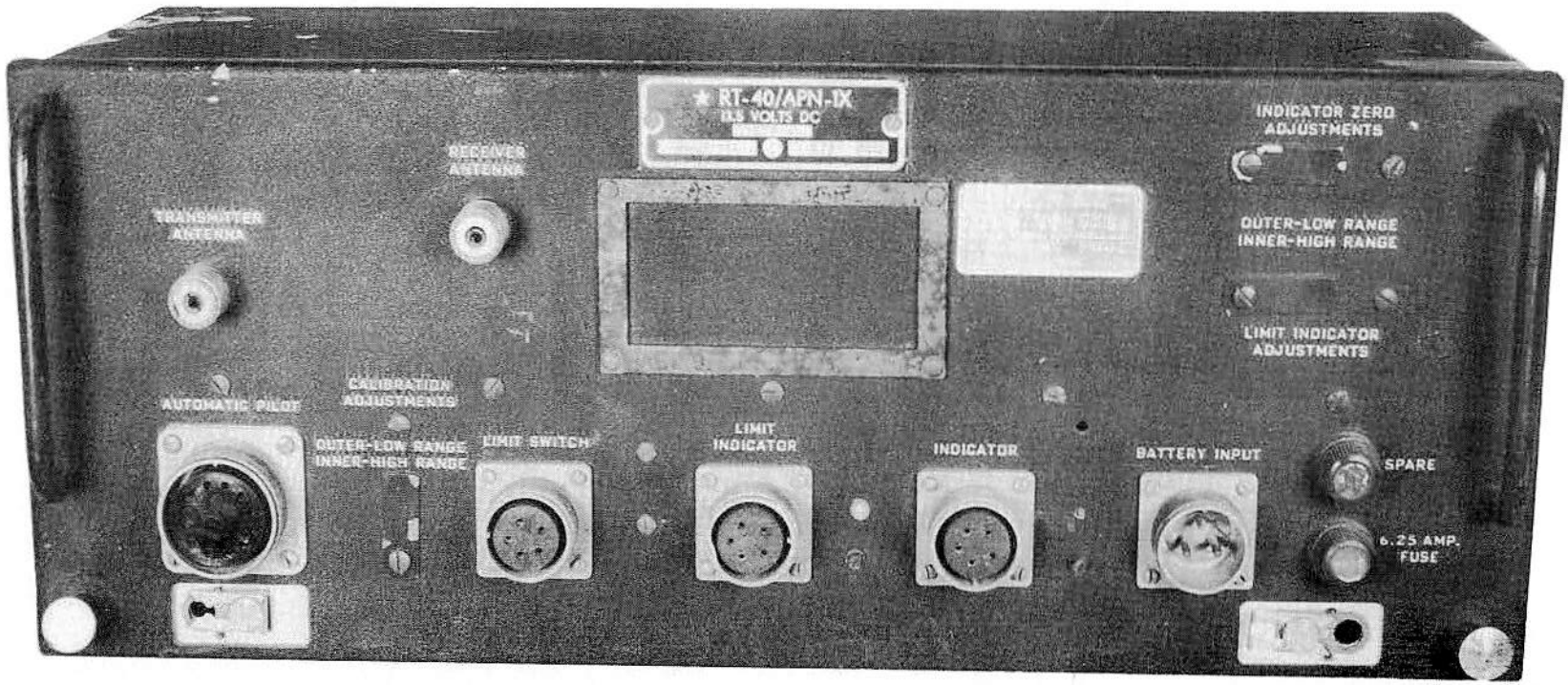
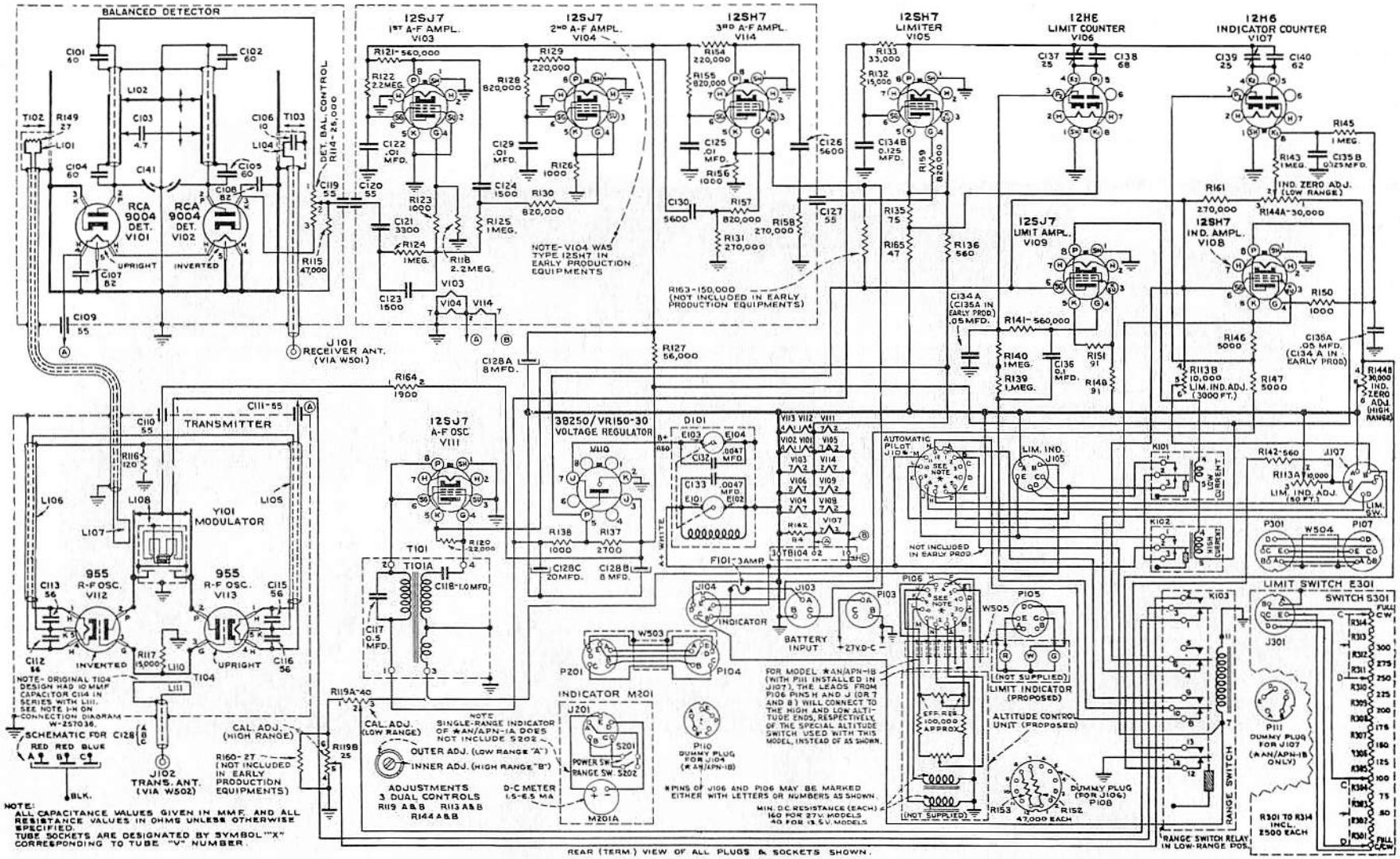
NOMENCLATURE

Equipment Indicator Letters

Installation	Type of Equipment	Purpose
A—Airborne (installed and operated in aircraft).	A—Invisible light, heat radiation.	A—Auxiliary assemblies (not complete operating sets).
B—Underwater mobile, submarine.	B—Pigeon.	B—Bombing.
C—Air transportable (inactivated, do not use).	C—Carrier (wire).	C—Communications (receiving and transmitting).
D—Pilotless carrier.	F—Photographic.	D—Direction finder.
F—Ground, fixed.	G—Telegraph or teletype (wire).	G—Gun directing.
G—Ground, general ground use (includes two or more ground installations).	I—Interphone and public address.	H—Recording (photographic, meteorological and sound).
K—Amphibious.	K—Telemetering.	J—Countermeasures (receiving and transmitting).
M—Ground, mobile (installed as operating unit in a vehicle which has no function other than transporting the equipment).	M—Meteorological.	L—Searchlight control.
P—Ground, pack or portable (horse or man).	N—Sound in air.	M—Maintenance and test assemblies (including tools).
S—Water surface craft.	P—Radar.	N—Navigational aids (including altimeters, beacons, compasses, instrument landing and depth sounding).
T—Ground, transportable.	Q—Underwater sound.	P—Reproducing (photographic and sound).
V—Ground, vehicular (installed in vehicle designed for functions other than carrying electronic equipment—such as tanks).	R—Radio.	Q—Special, or combination of types.
U—General utility (includes two or more general installation classes, airborne, shipboard and ground).	S—Special types, magnetic, etc., or combinations of types.	R—Receiving or listening.
W—Underwater, fixed.	T—Telephone (wire).	S—Detecting and/or range and bearing.
	V—Visual and visible light.	T—Transmitting.
	X—Facsimile or television.	W—Remote control.
		X—Identification and recognition.



RADIO ALTIMETER APN-1



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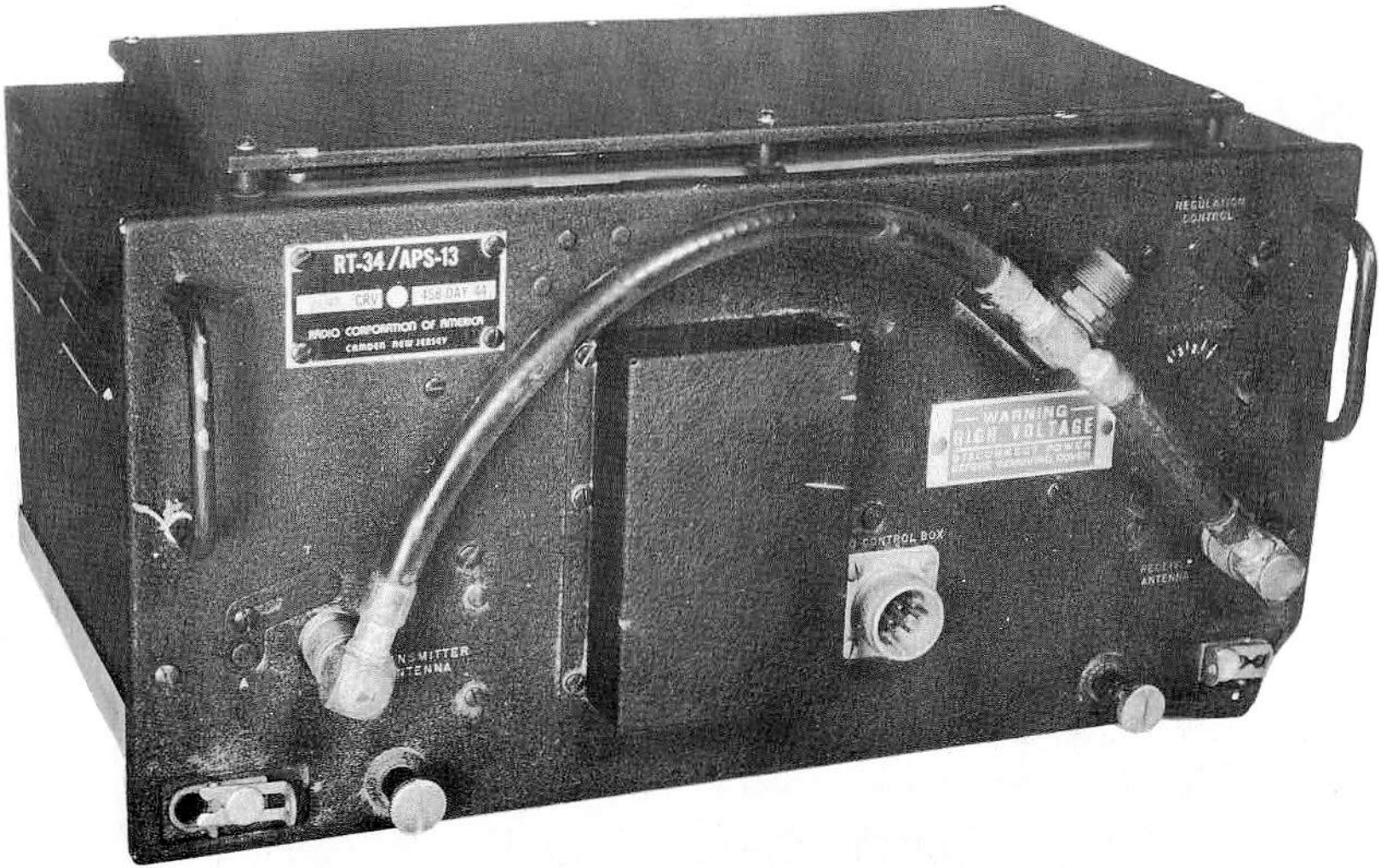
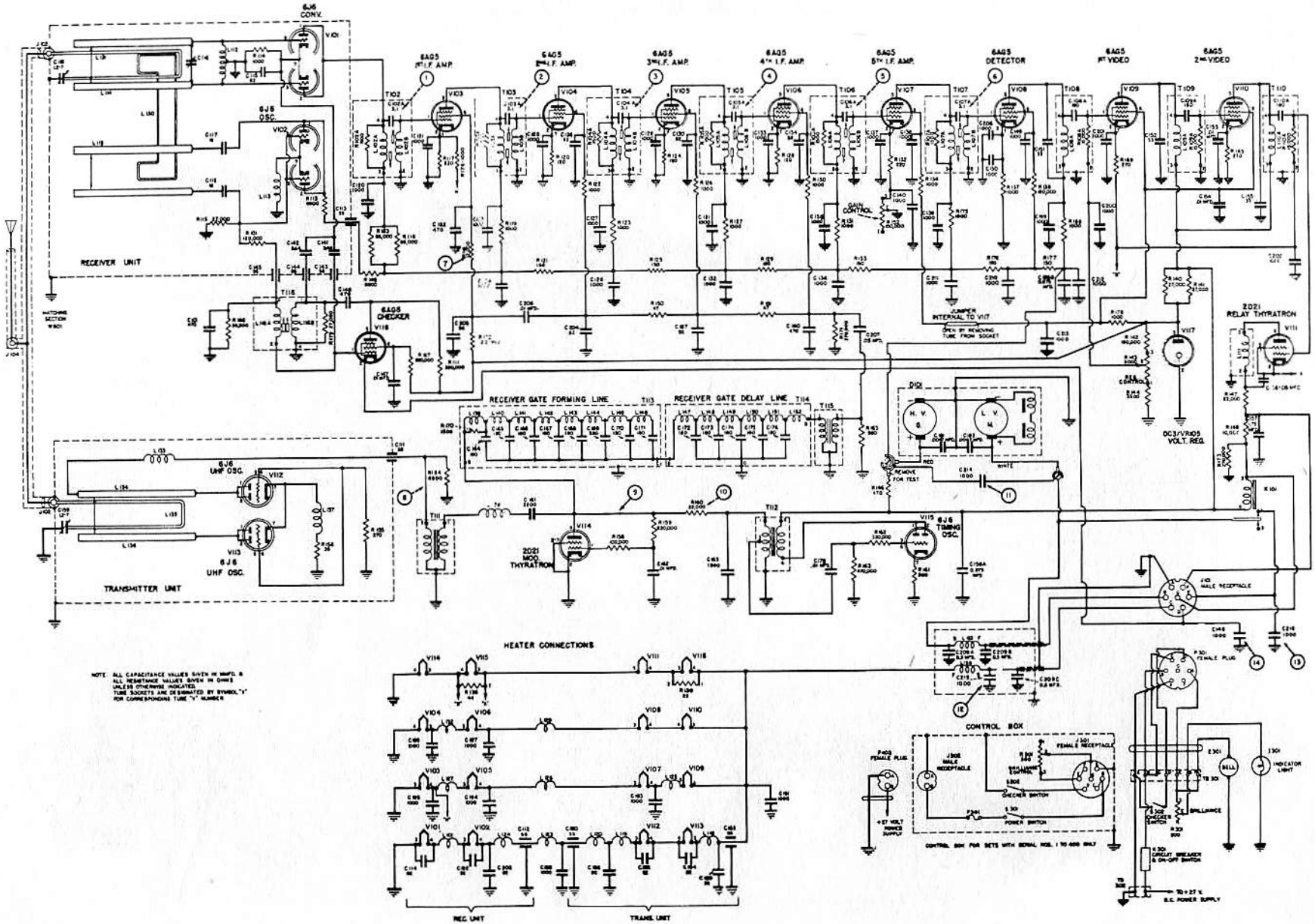
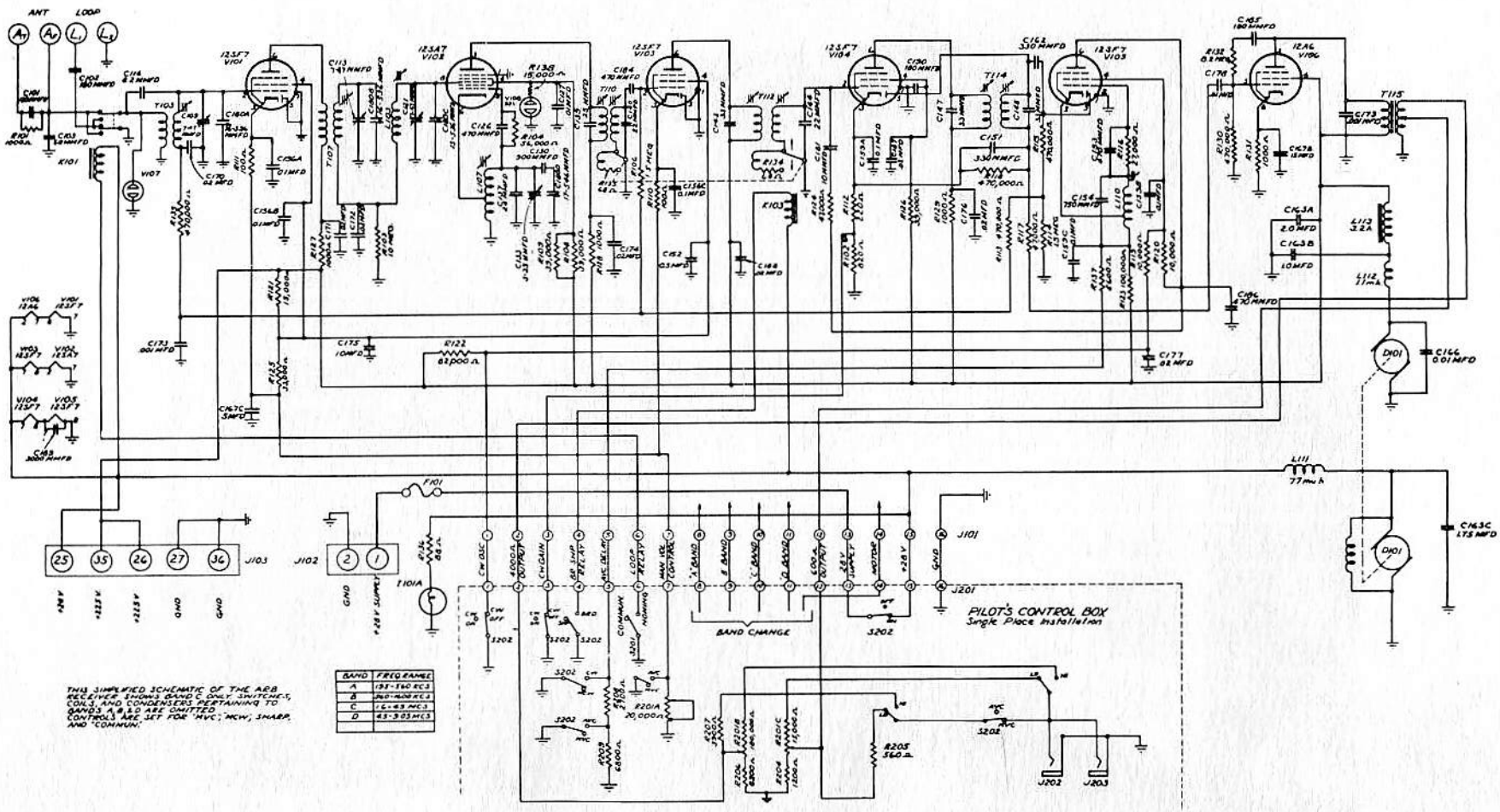


RADIO RECEIVER AND TRANSMITTER APS-13

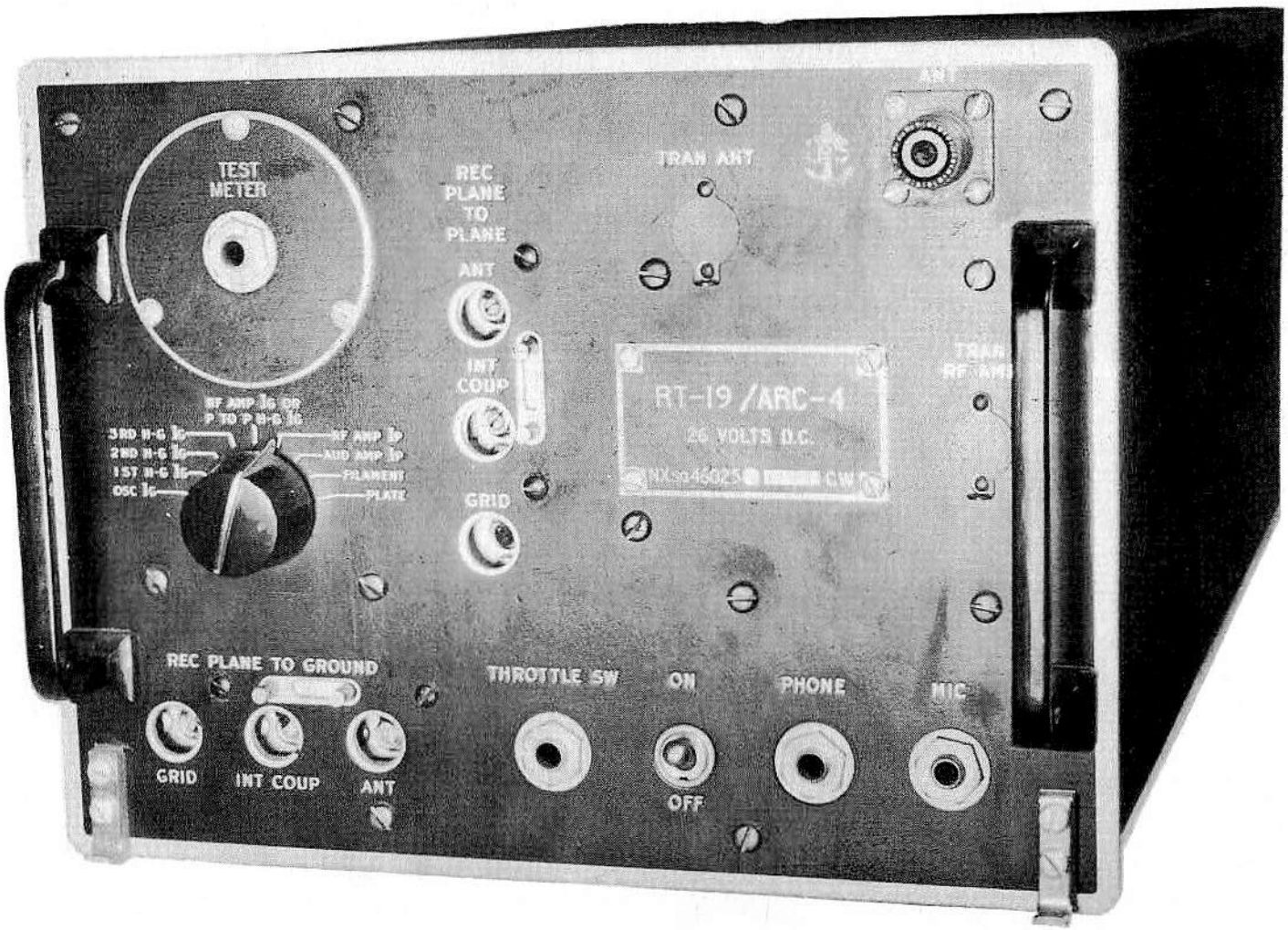


SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER APS-13

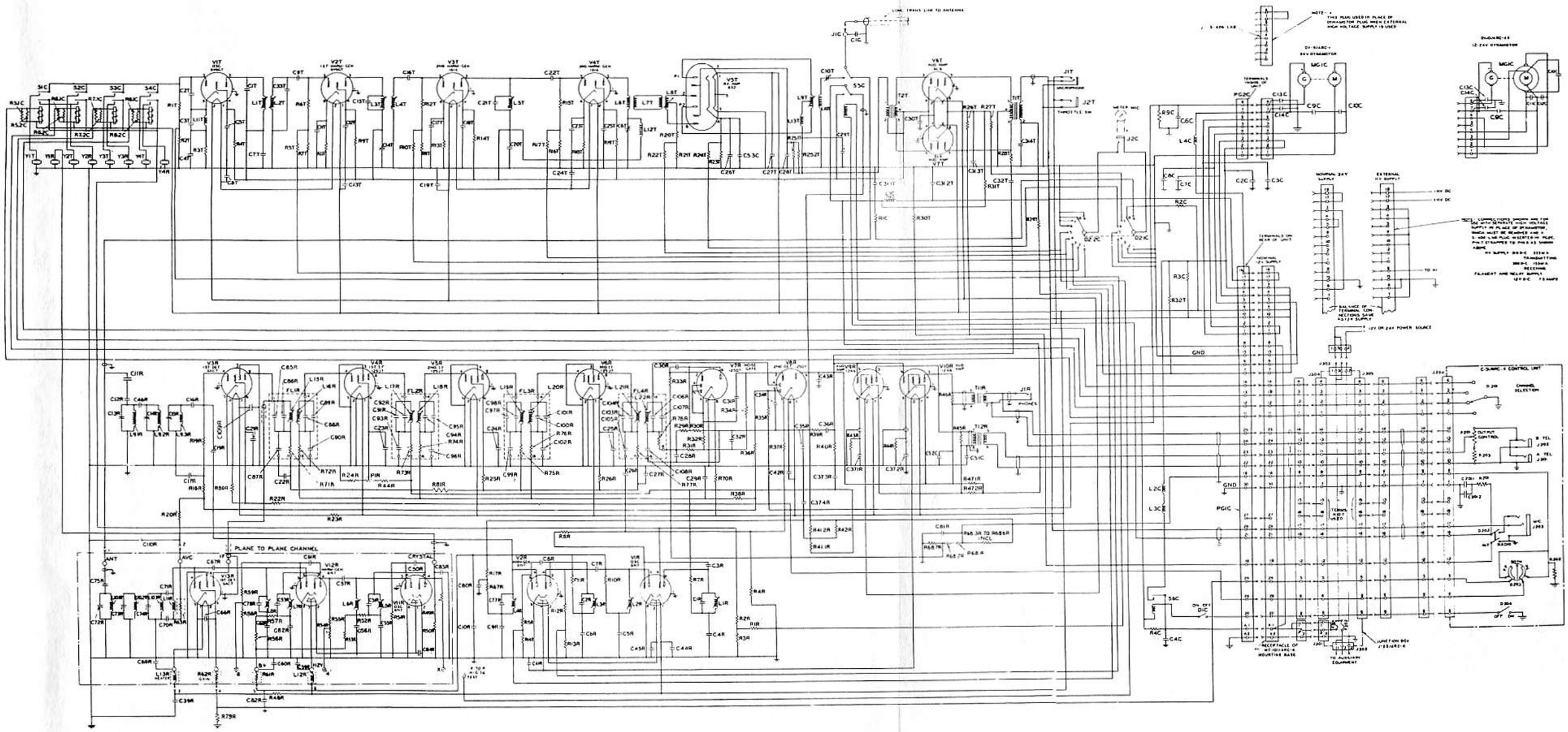
RADIO RECEIVER ARB



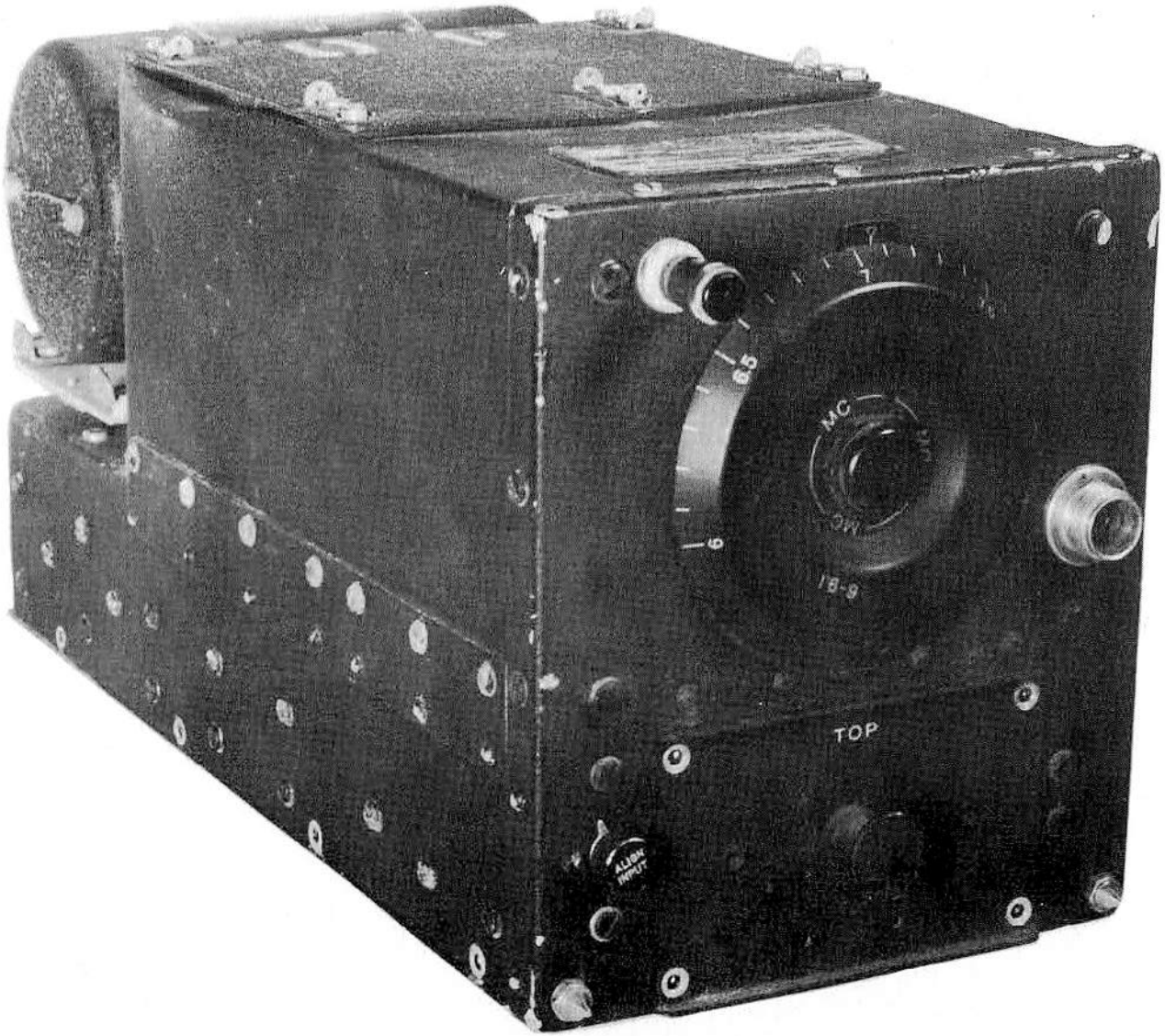
SCHEMATIC DIAGRAM RADIO RECEIVER ARB



RADIO RECEIVER AND TRANSMITTER ARC-4



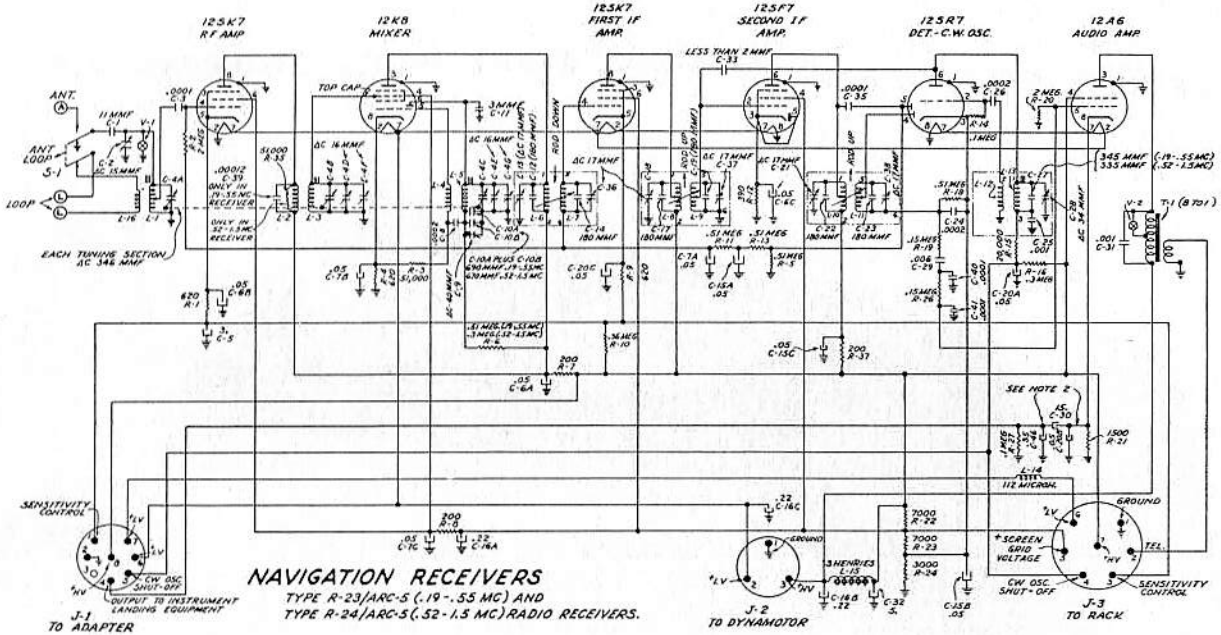
SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER ARC-4



RADIO RECEIVER ARC-5 (LOW FREQUENCY)

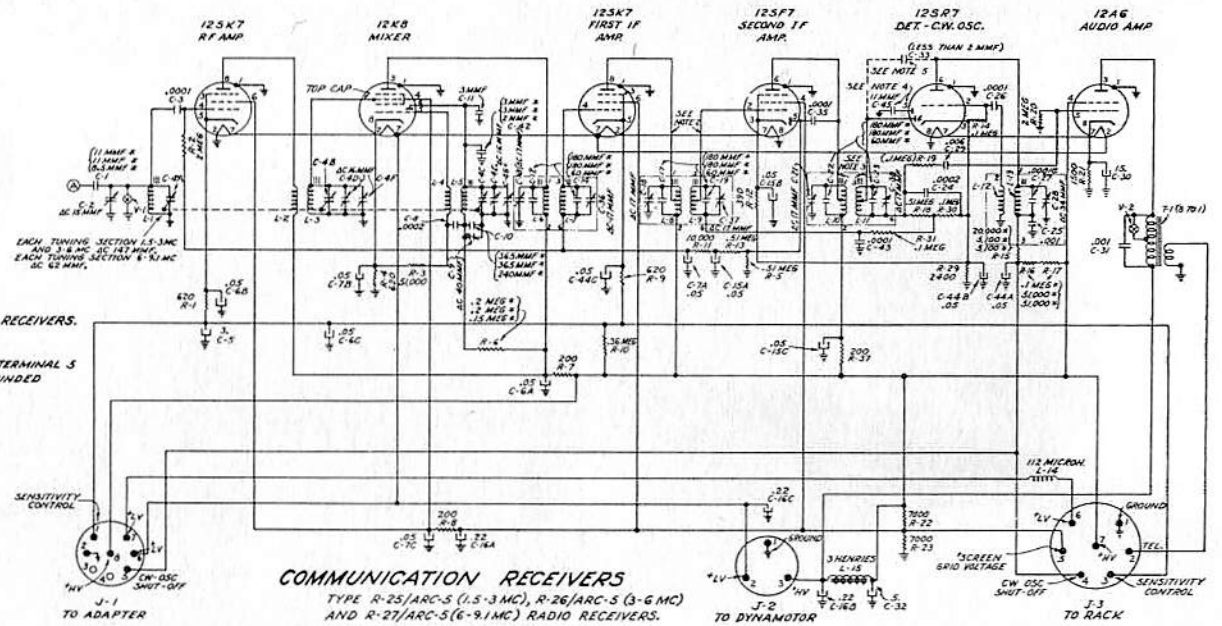
NOTES:

1. CAPACITANCE VALUES ARE IN MICROFARADS UNLESS INDICATED AS MICROMICROFARADS BY MMF.
   RESISTANCE VALUES ARE IN OHMS UNLESS INDICATED AS MEGOHMS BY MEG.
2. C-46 NOT IN EARLY PRODUCTION UNITS. A 1000 OHM RESISTOR R-28 WAS CONNECTED BETWEEN R-21 AND C-30 IN EARLY PRODUCTION UNITS. C-20B WAS .01 MFD. IN EARLY PRODUCTION UNITS.

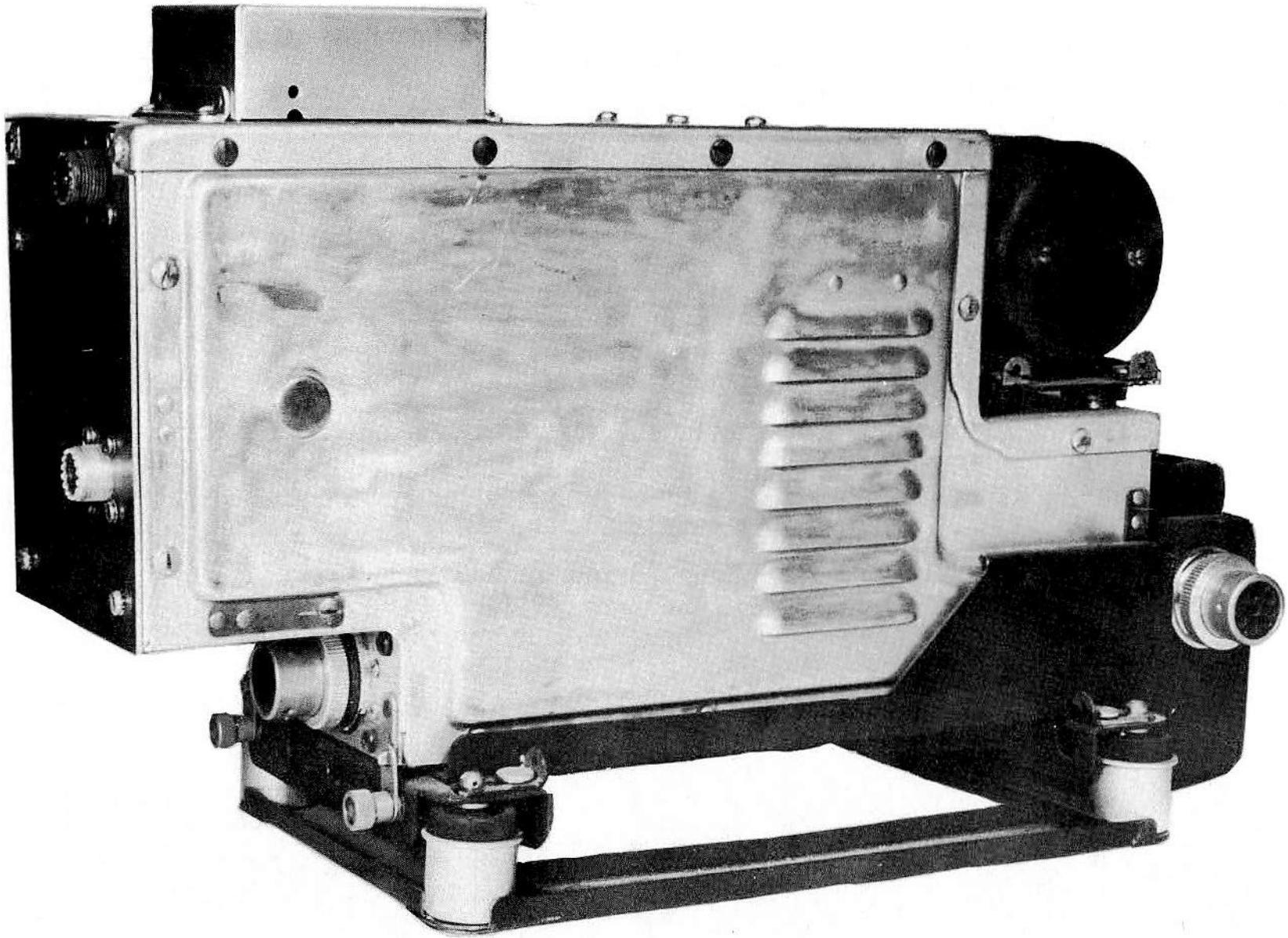


NOTES:

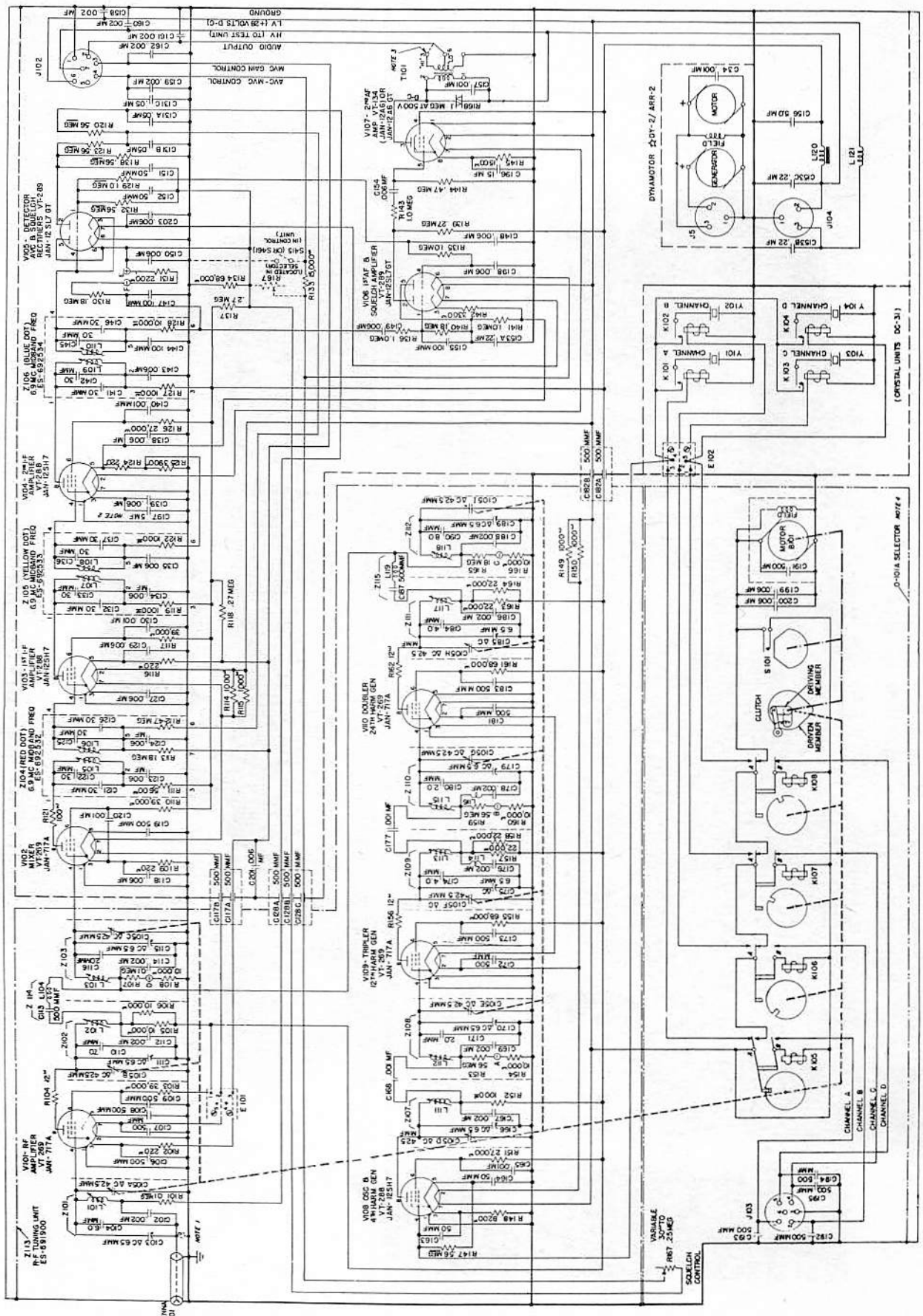
1. * VALUES FOR THE 1.5-3 MC, 3-6 MC AND 6-9.1 MC RECEIVERS IN ORDER SHOWN.
2. TAP IS AT TOP OF COIL FOR 3-6 MC AND 6-9.1 MC RECEIVERS.
3. TAP IS AT TOP OF COIL FOR 6-9.1 MC RECEIVERS
4. C-45 NOT IN 1.5-3 MC NOR 6-9.1 MC RECEIVERS. TERMINAL 5 IS UNCONNECTED IN 1.5-3 MC RECEIVER AND GROUNDED IN 6-9.1 MC RECEIVER.
5. C-33 REPRESENTS THE EFFECTIVE COUPLING CAPACITANCE TERMINAL 6 TO 4 AS MODIFIED BY CONNECTIONS DESCRIBED IN NOTE 4.
6. CAPACITANCE VALUES ARE IN MICROFARADS UNLESS INDICATED AS MICROMICROFARADS BY MMF.
   RESISTANCE VALUES ARE IN OHMS UNLESS INDICATED AS MEGOHMS BY MEG.



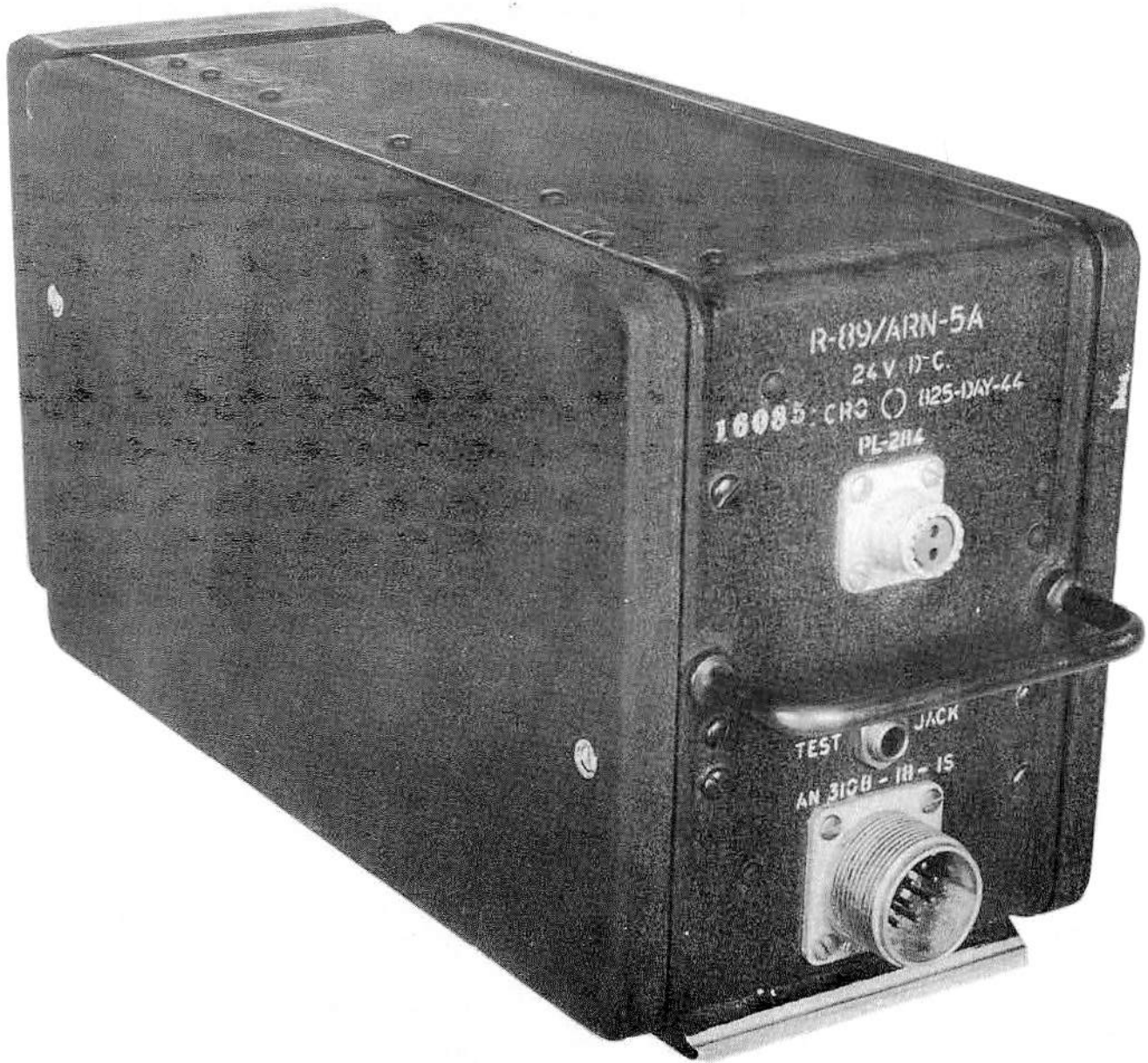
SCHEMATIC DIAGRAM RADIO RECEIVER ARC-5 (LOW FREQUENCY)



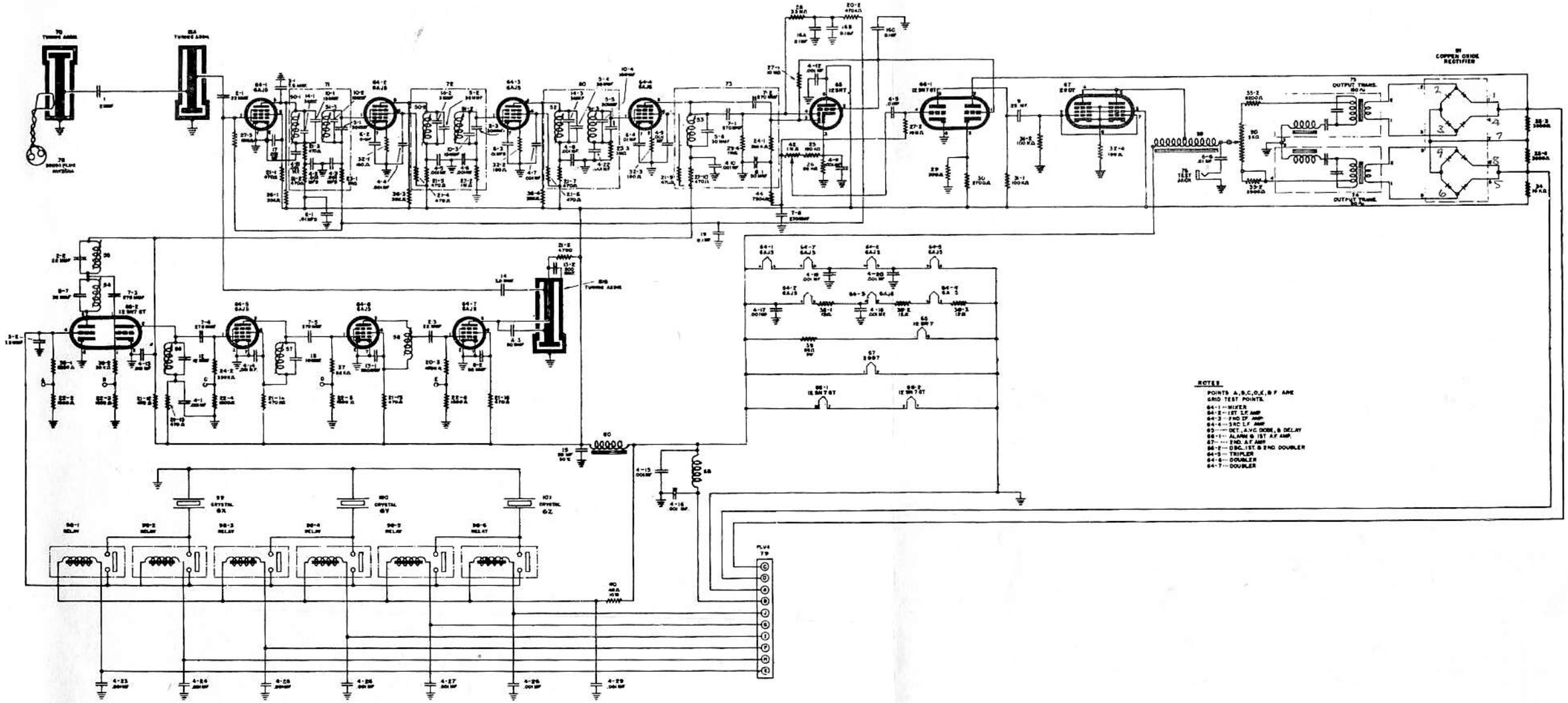
RADIO RECEIVER ARC-5 (VHF)



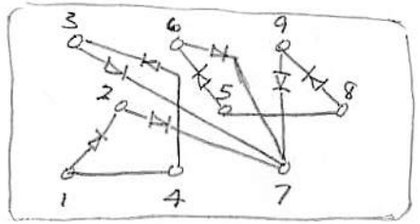
SCHEMATIC DIAGRAM RADIO RECEIVER ARC-5 (VHF)



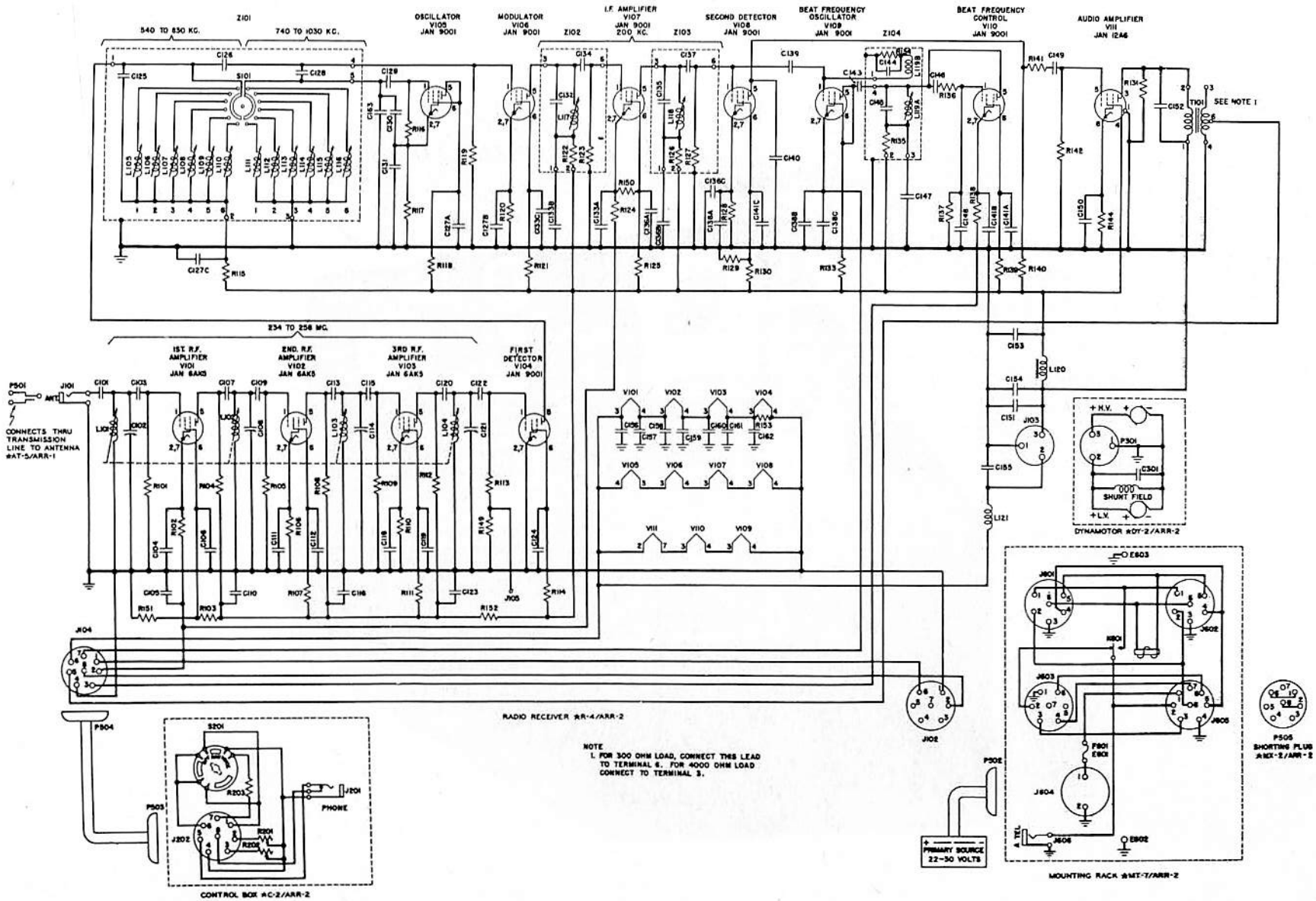
RADIO RECEIVER ARN-5



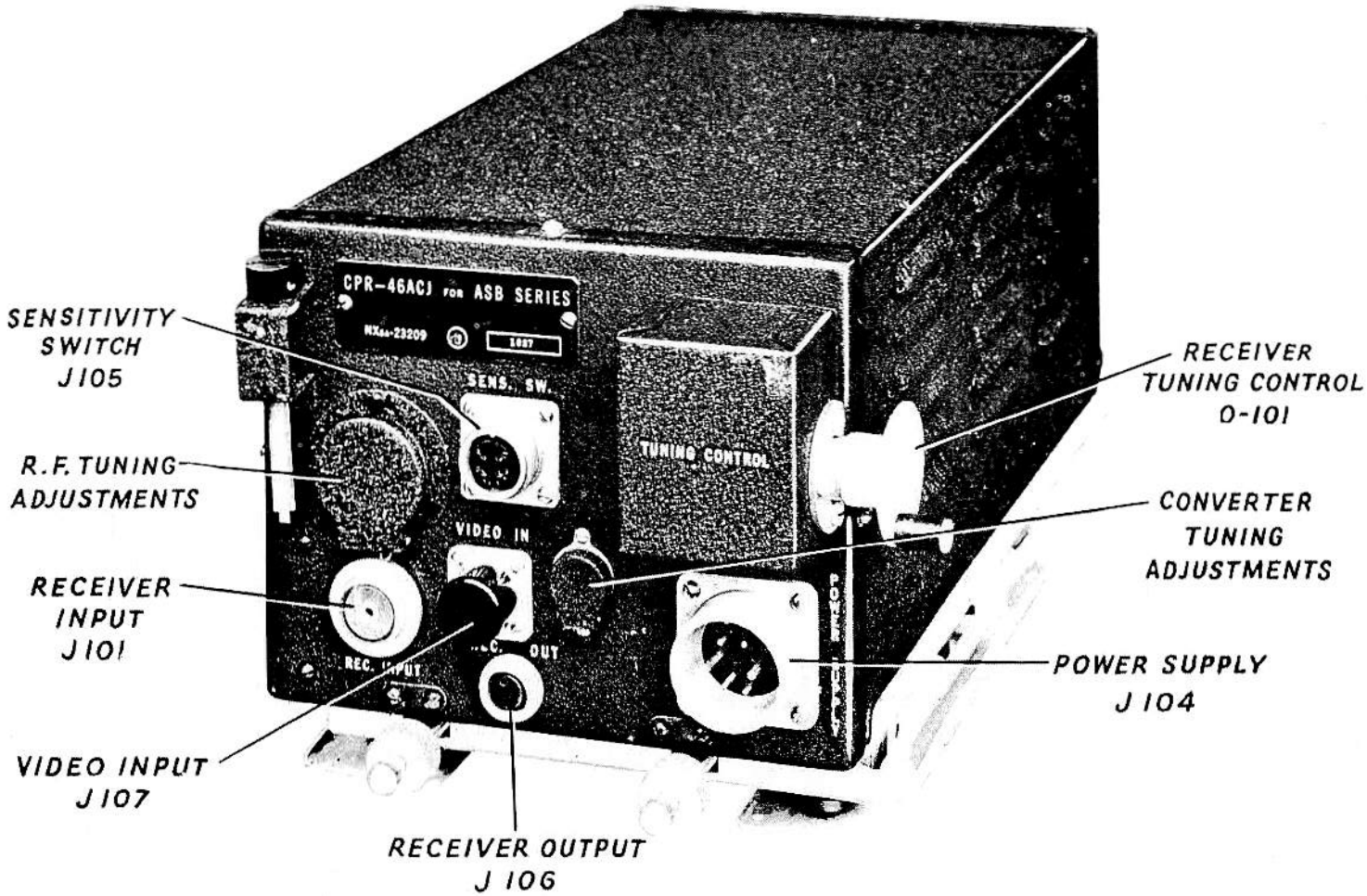
SCHEMATIC DIAGRAM RADIO RECEIVER ARN-5



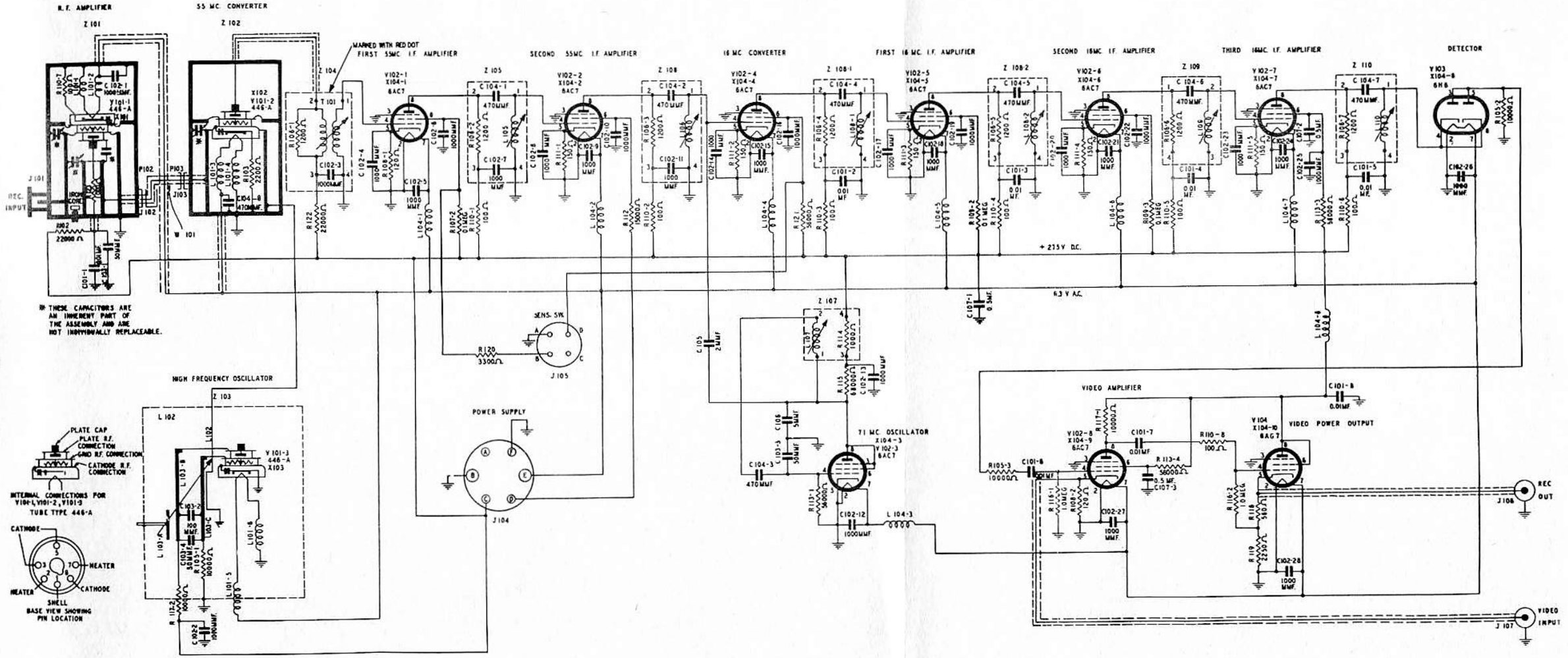
RADIO RECEIVER ARR-2



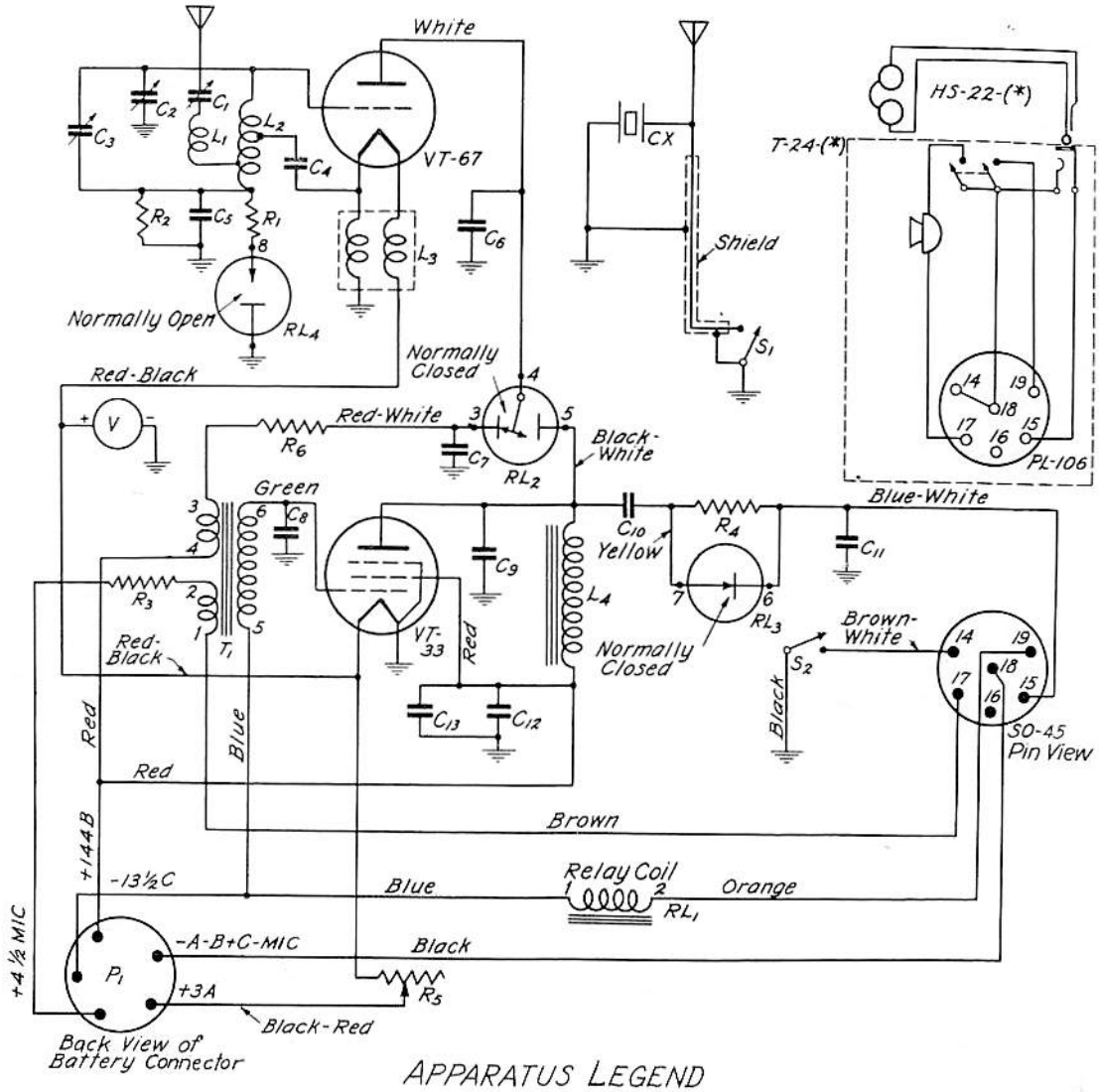
SCHEMATIC DIAGRAM RADIO RECEIVER ARR-2



RADIO RECEIVER ASB-7

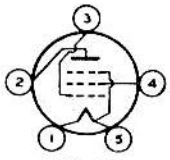


SCHEMATIC DIAGRAM RADIO RECEIVER ASB-7

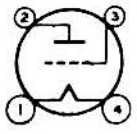


APPARATUS LEGEND

C_1 - Capacitor - 10 μμf
C_2 - Capacitor, Trimmer
C_3 - Capacitors 6-32 μμf
C_4 - Capacitor - 100 μμf
C_5 - Capacitor - 0.001 μf
C_6 - Capacitor - 0.003 μf
C_7 - Capacitor - 0.002 μf
C_8 - Capacitor - 250 μμf
C_9 - Capacitor - 0.001 μf
C_{10} - Capacitor - 0.003 μf
C_{11} - Capacitor - 0.01 μf
C_{12} - Capacitor - 0.5 μf
C_{13} - Capacitor - 0.5 μf
CX - Crystal
L_1, L_2 - Coil, Tuning
L_3 - Coil, Filament Choke
L_4 - Coil
P_1 - Plug, Battery
R_1 - Resistor - 5,000 ohms
R_2 - Resistor - 30,000 ohms
R_3 - Resistor - 40 ohms
R_4 - Resistor - 200,000 ohms
R_5 - Rheostat - 10 ohms
R_6 - Resistor - 20,000 ohms
RL_1 - RL_2 - RL_3 - RL_4 - Relay BK-10
S_1 - Switch
S_2 - Switch
SO - Socket
T_1 - Transformer
V - Voltmeter



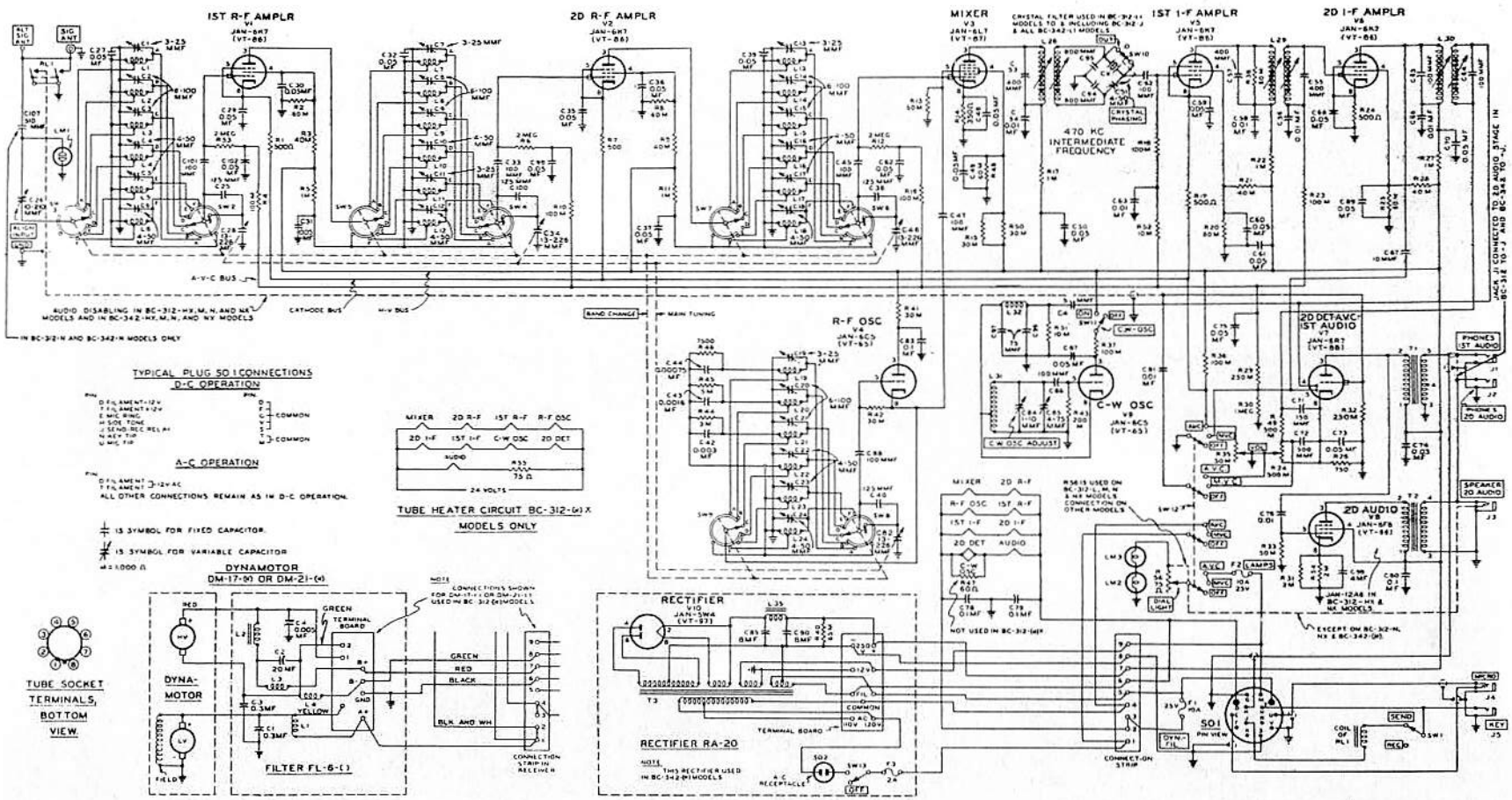
VT-33
RMA TYPE 33



VT-67
RMA TYPE 30

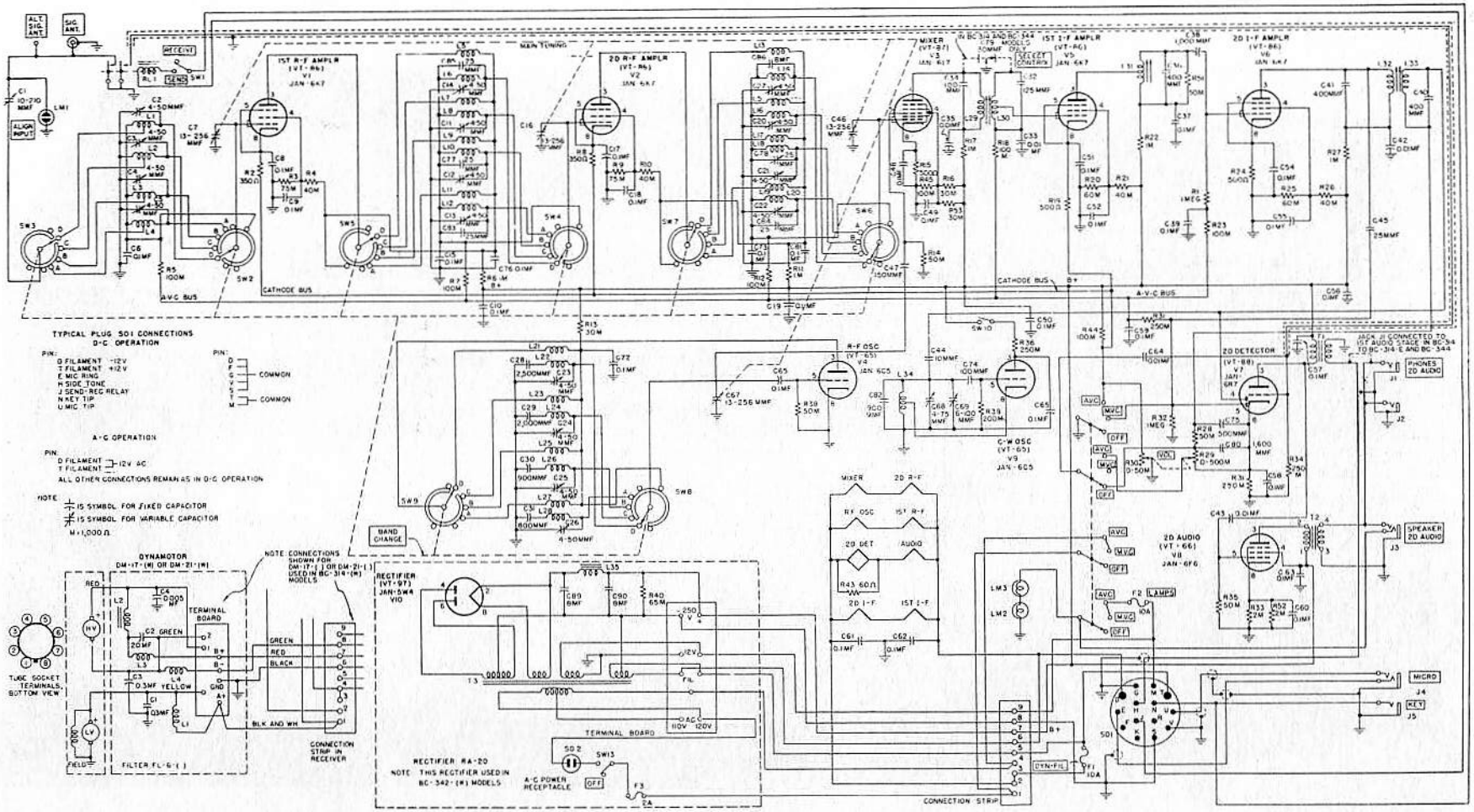
SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER BC-222

RADIO RECEIVER BC-312 AND BC-342

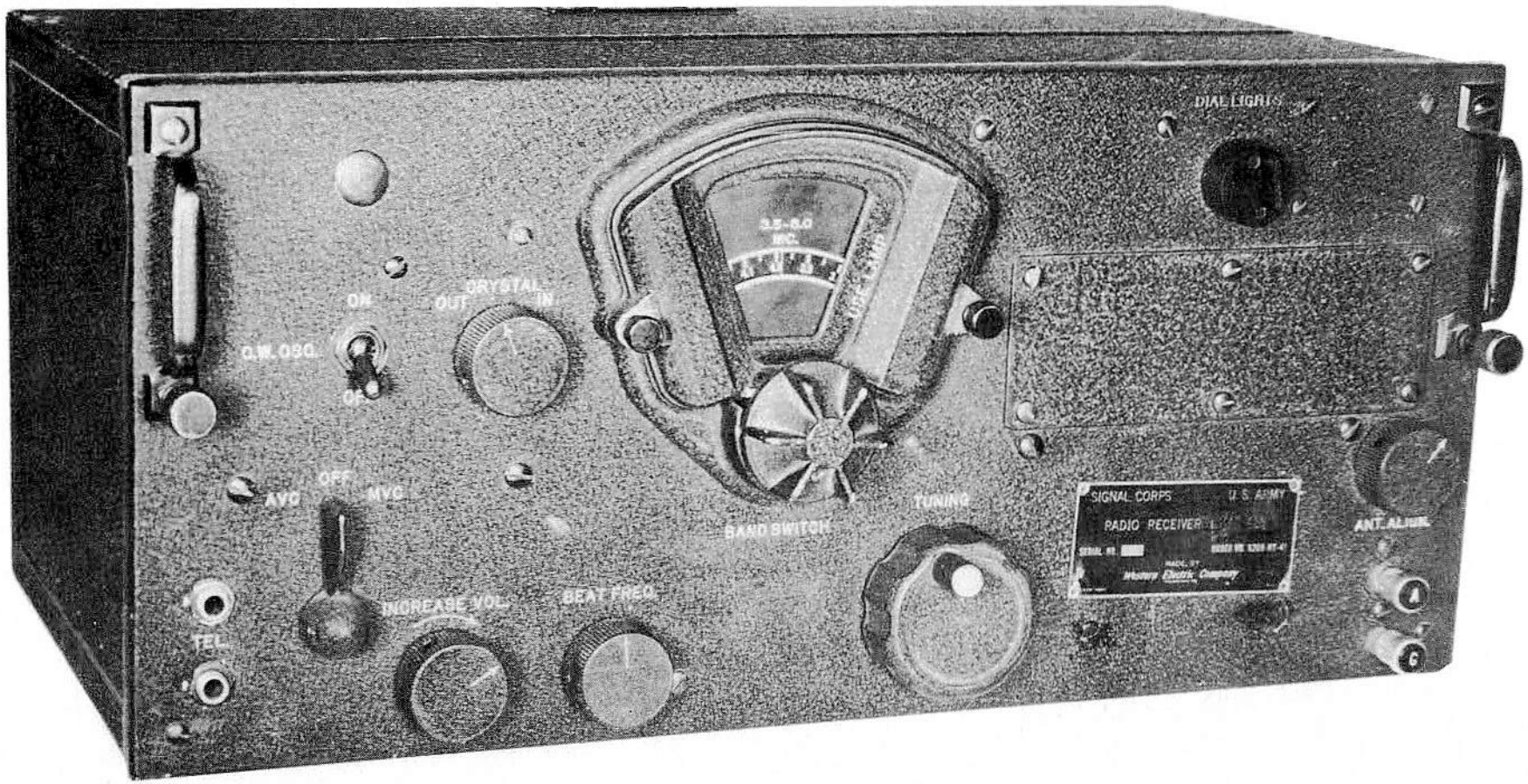


SCHEMATIC DIAGRAM RADIO RECEIVER BC-312 AND BC-342

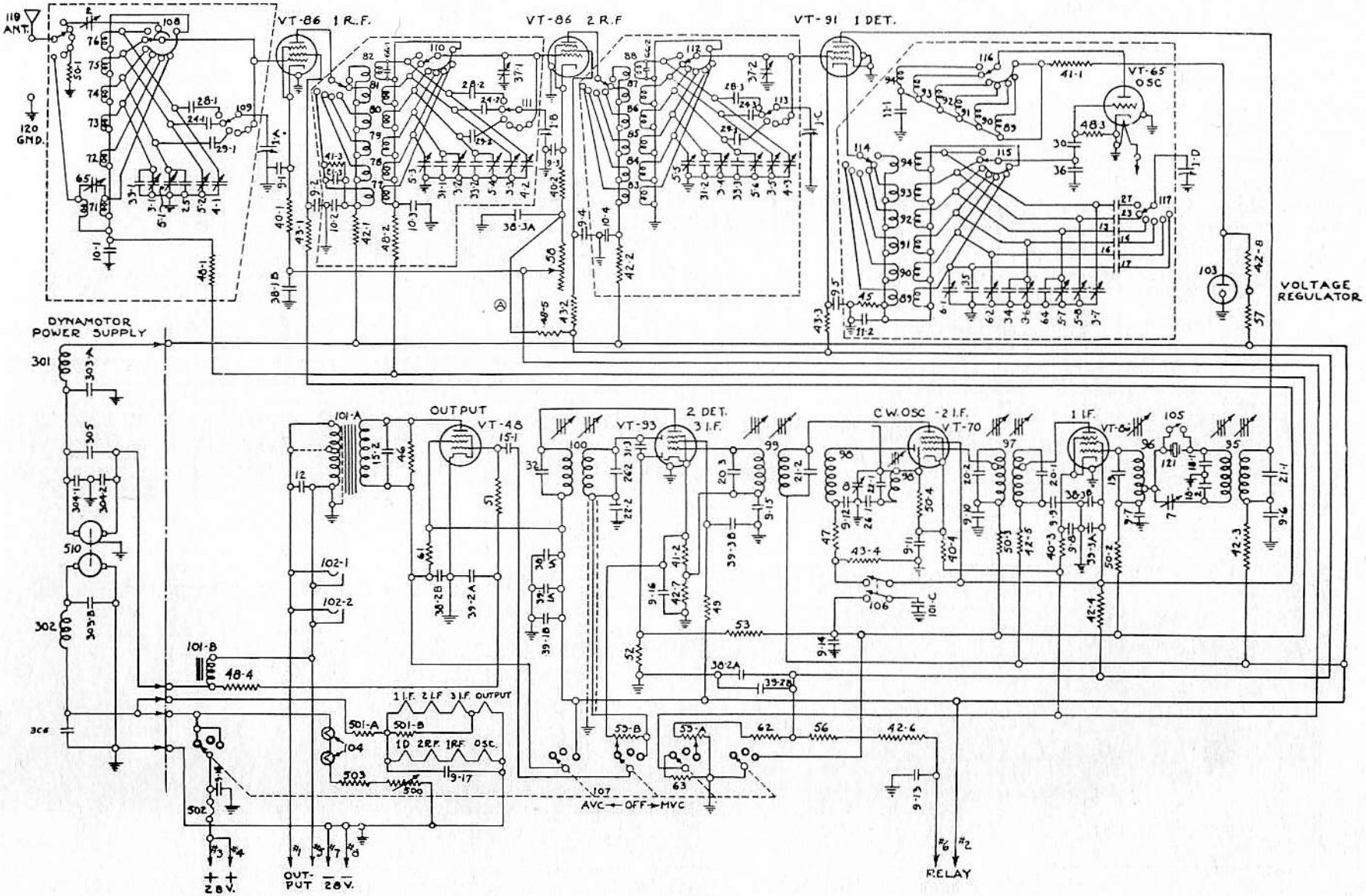
RADIO RECEIVER BC-314 AND BC-344



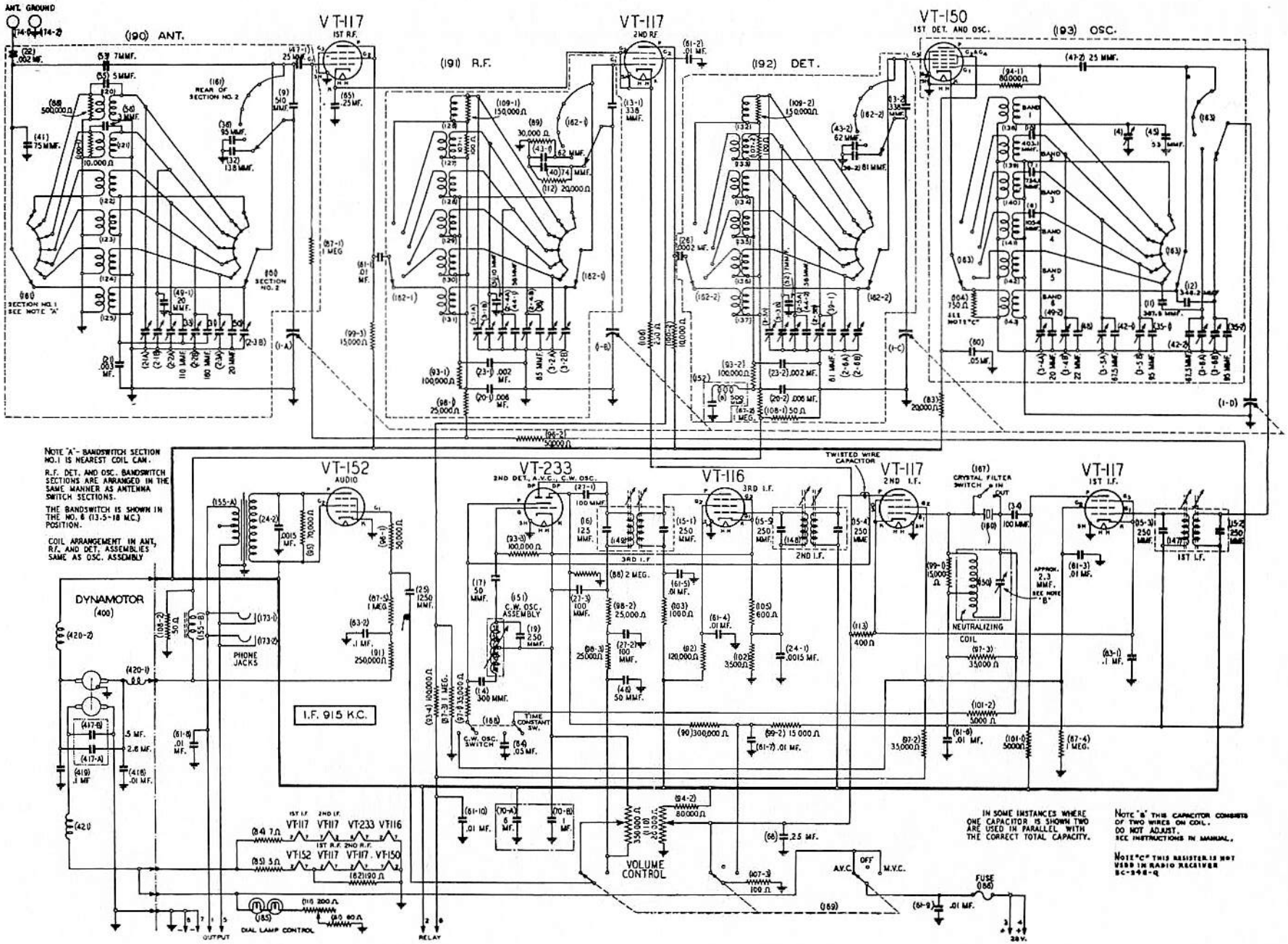
SCHEMATIC DIAGRAM RADIO RECEIVER BC-314 AND BC-344



RADIO RECEIVER BC-348

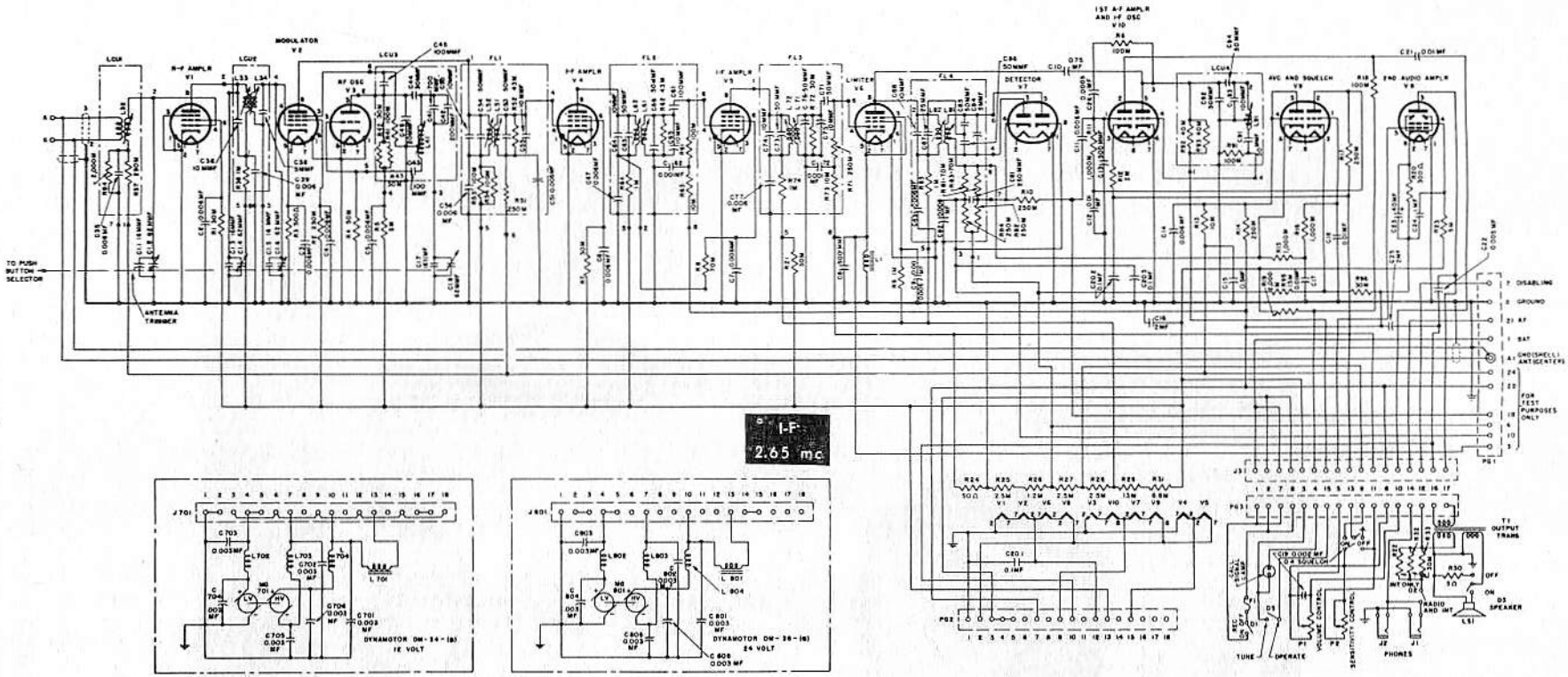


SCHEMATIC DIAGRAM RADIO RECEIVER BC-348 (E,M,P)

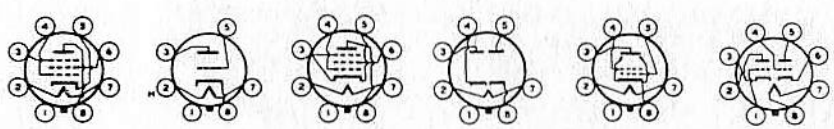


SCHEMATIC DIAGRAM RADIO RECEIVER BC-348 J

RADIO RECEIVER BC-603

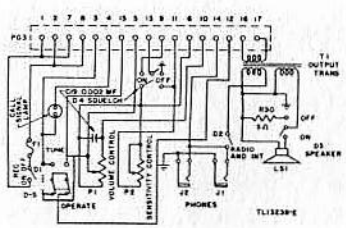


TUBE SOCKET TERMINALS, BOTTOM VIEW



JAN-6AC7 JAN-6J5 JAN-12SG7 JAN-6H6 JAN-6V6GT/G JAN-6SL7GT

BC-603-AM, BC-603-CM, AND BC-603-DM MODIFICATION



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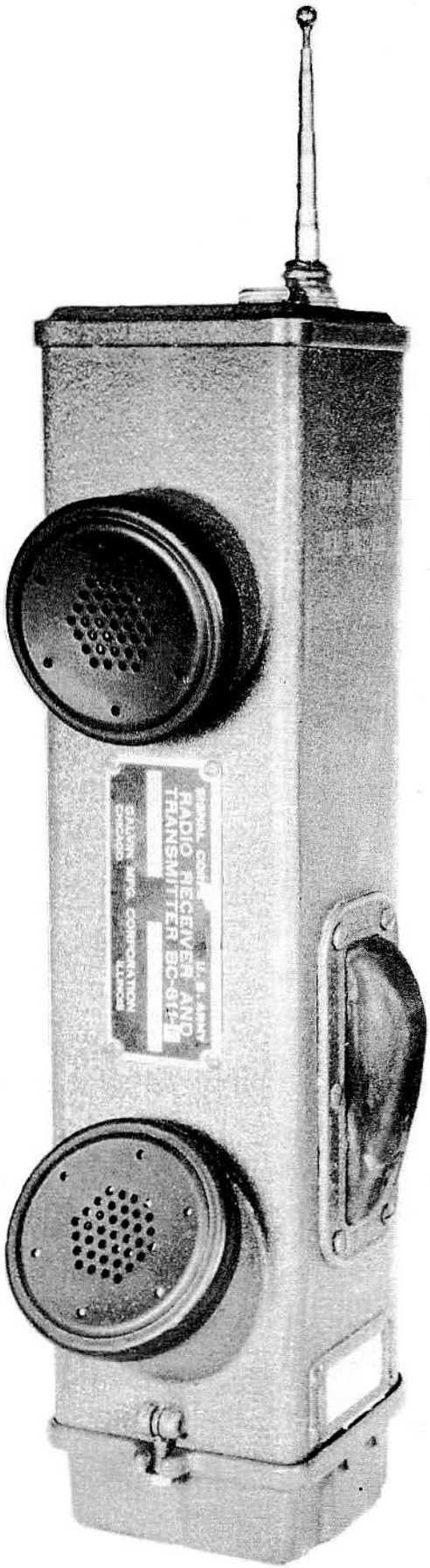
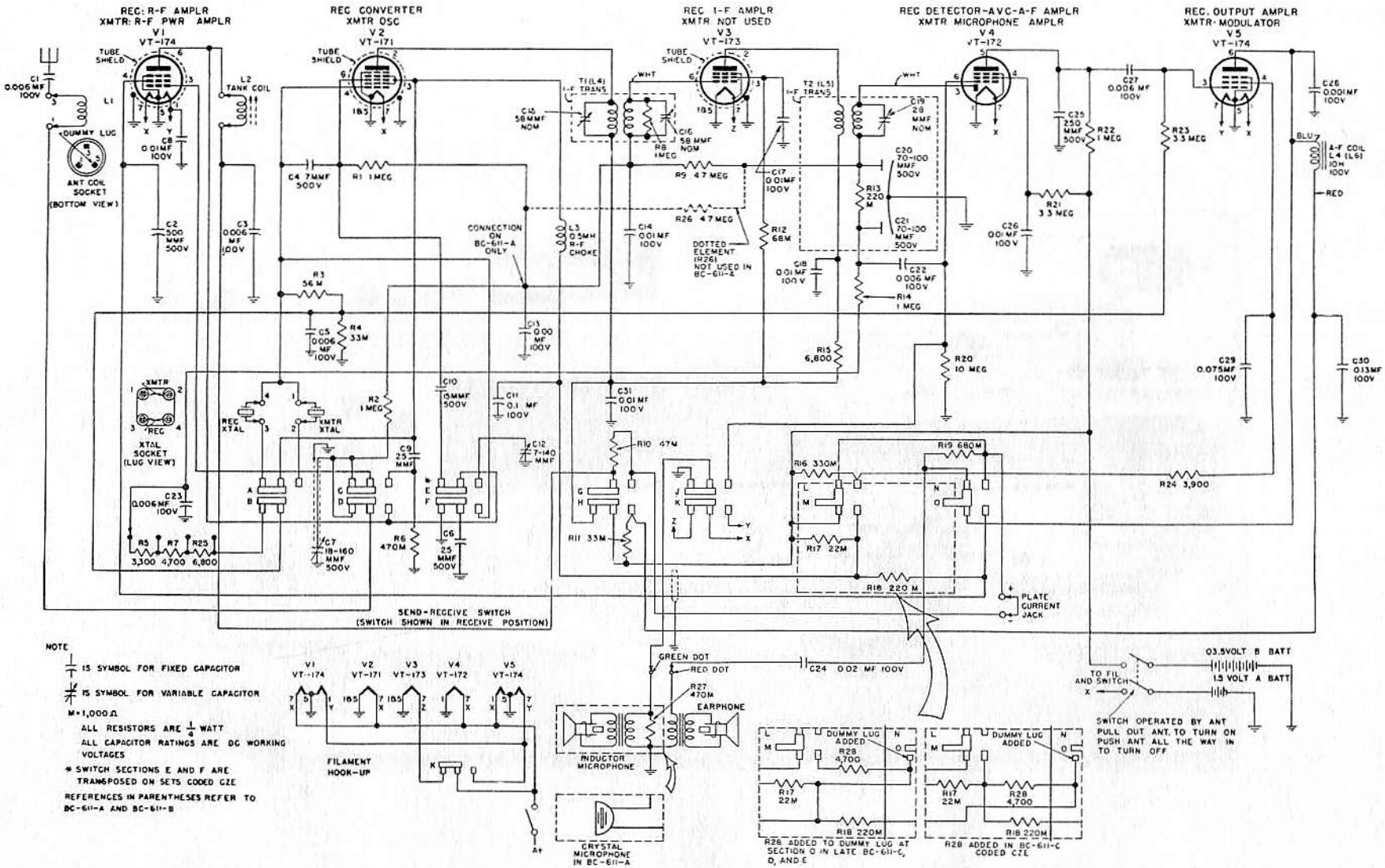


RADIO RECEIVER AND TRANSMITTER BC-611



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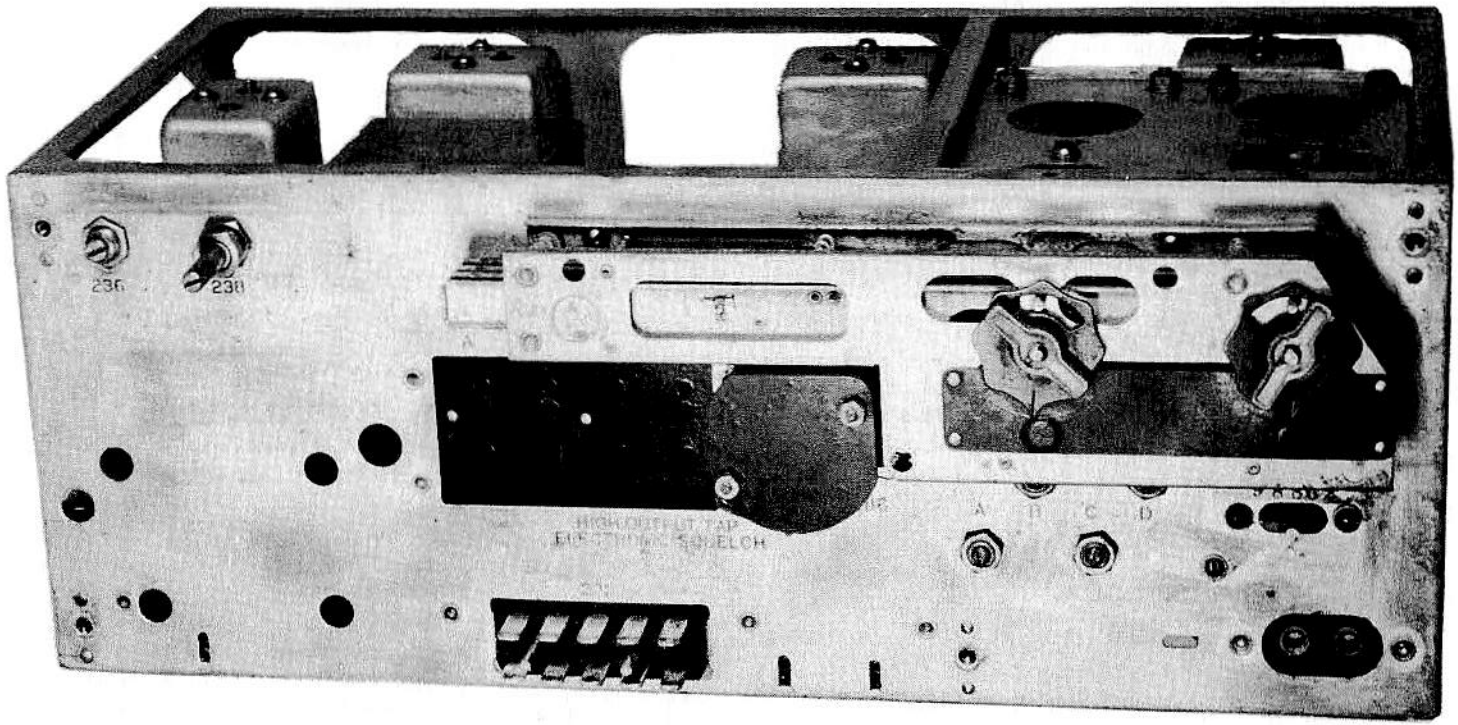
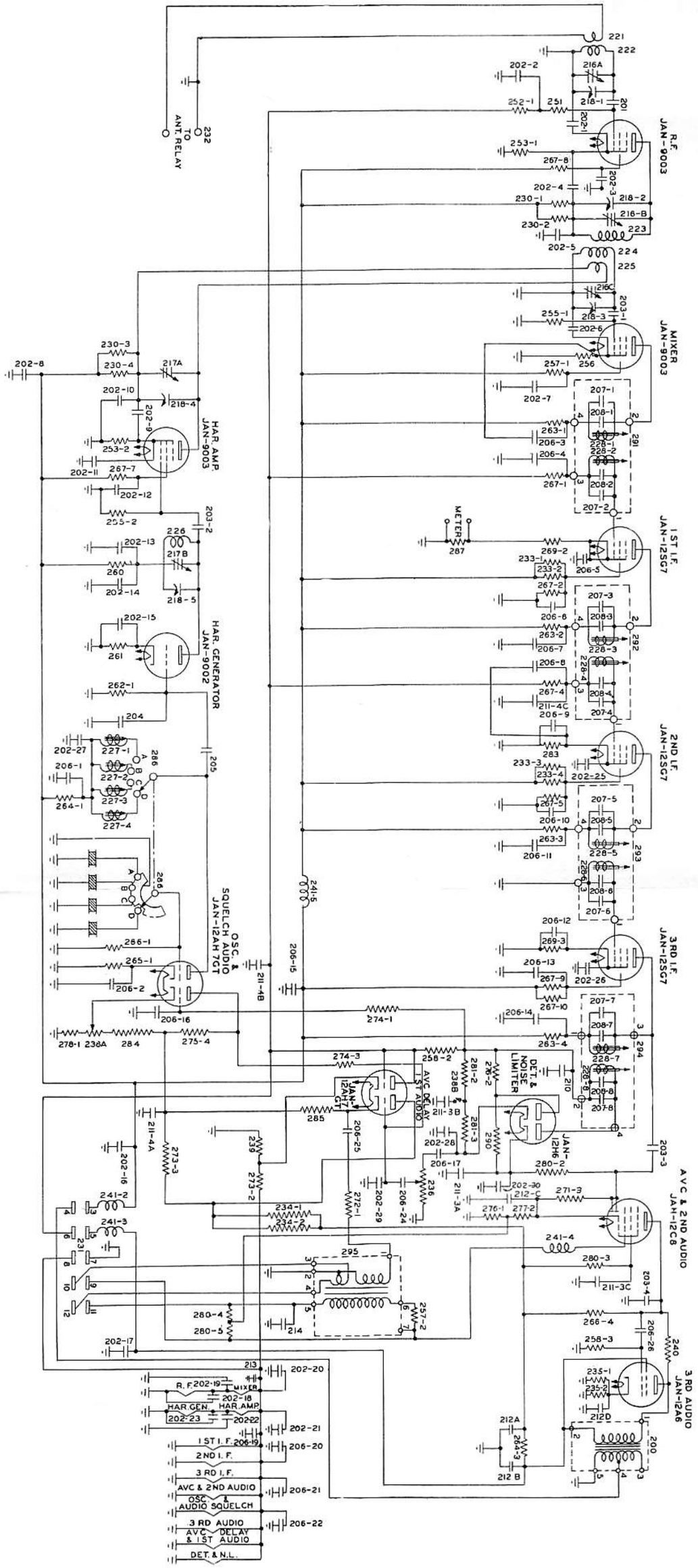


RADIO RECEIVER BC-624 (SCR-522)



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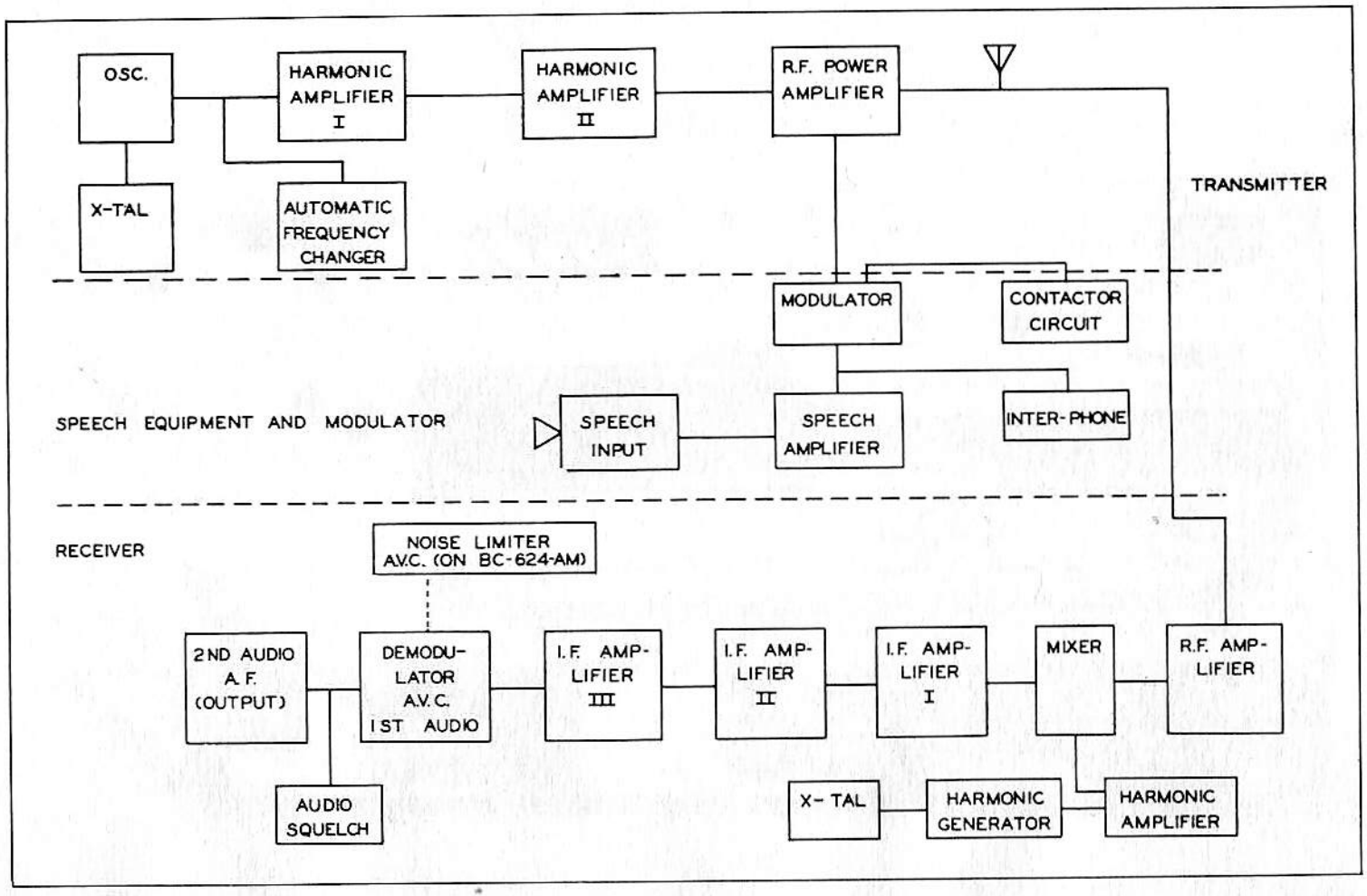
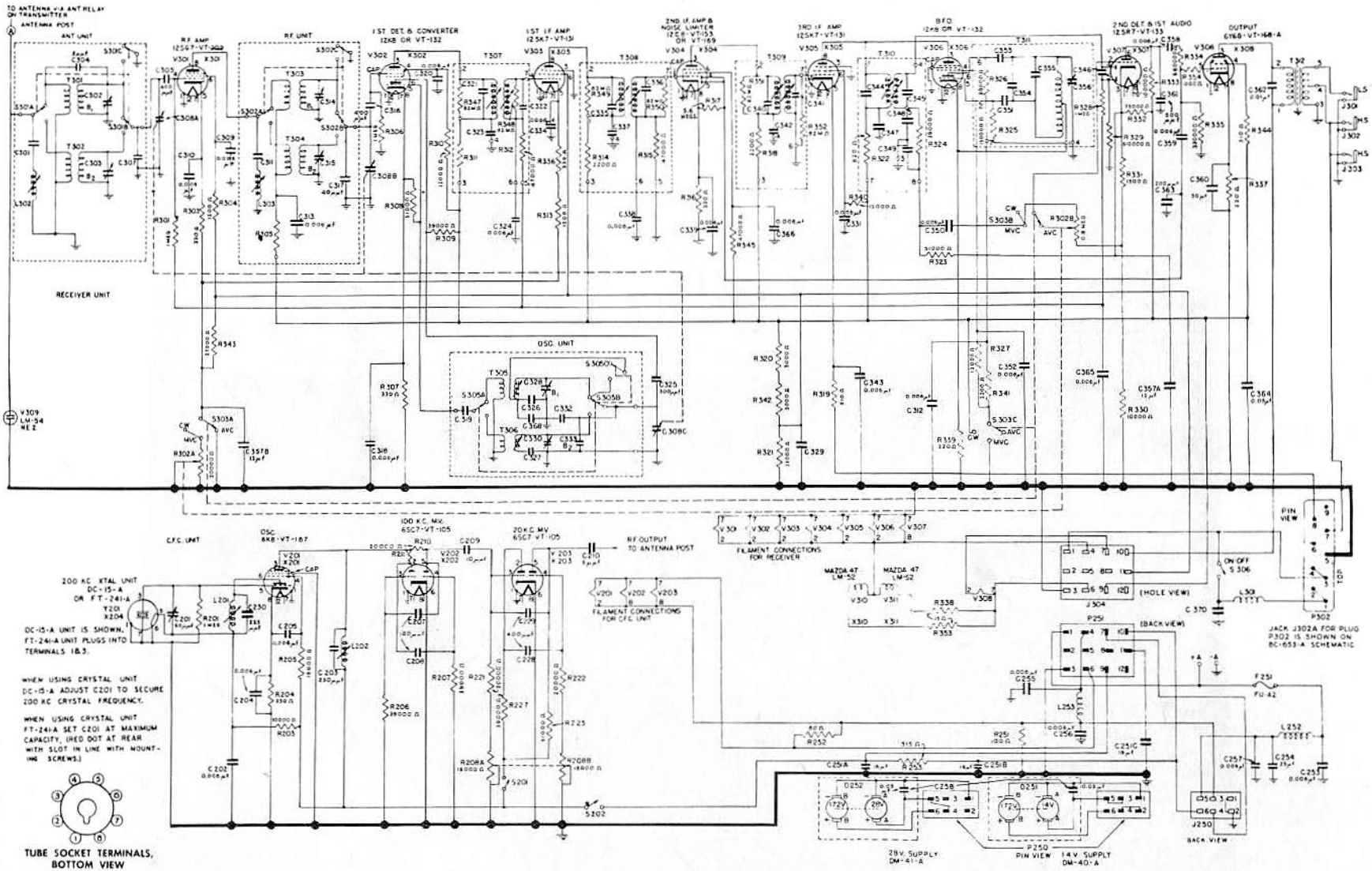
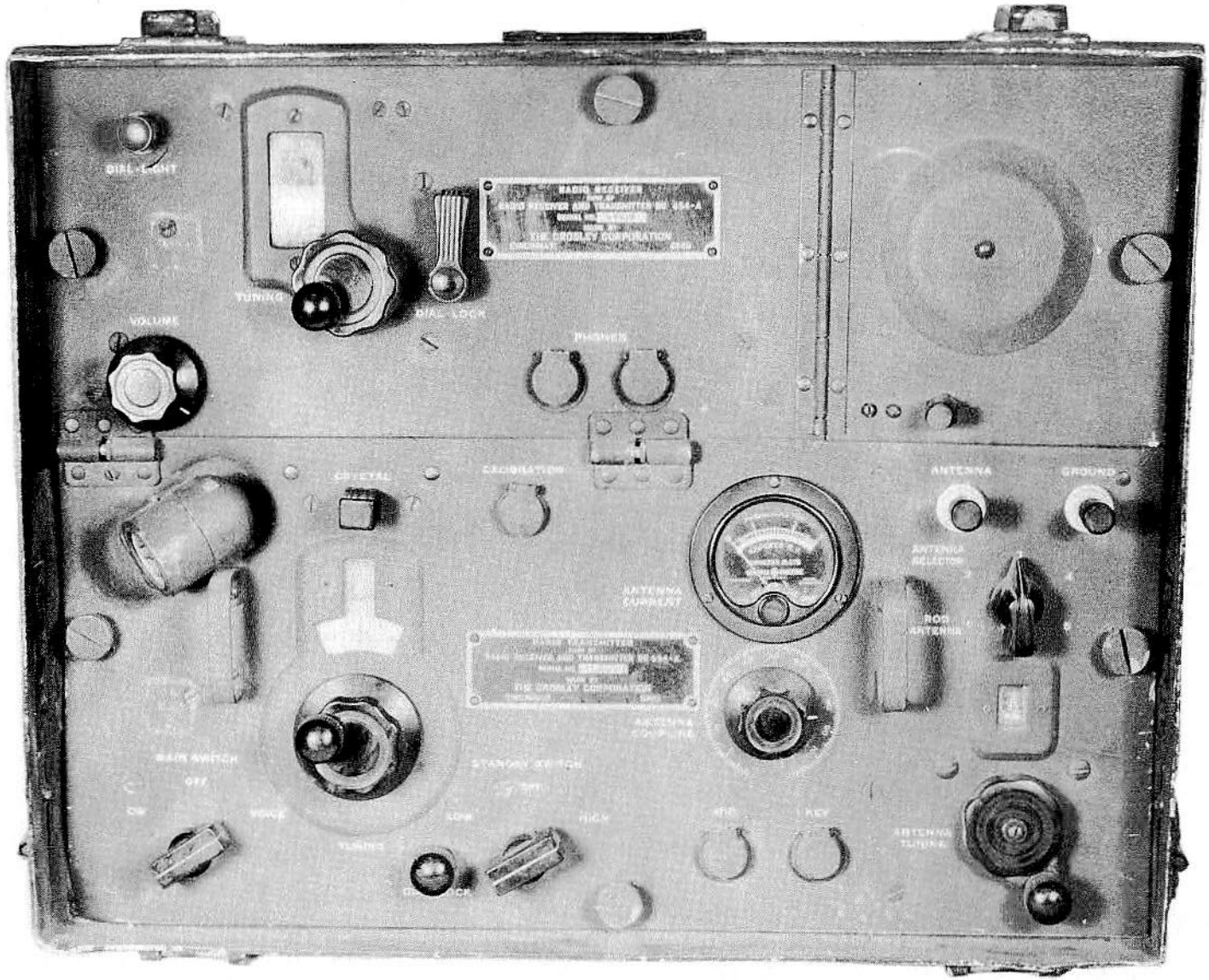


BLOCK DIAGRAM RADIO SET SCR-522

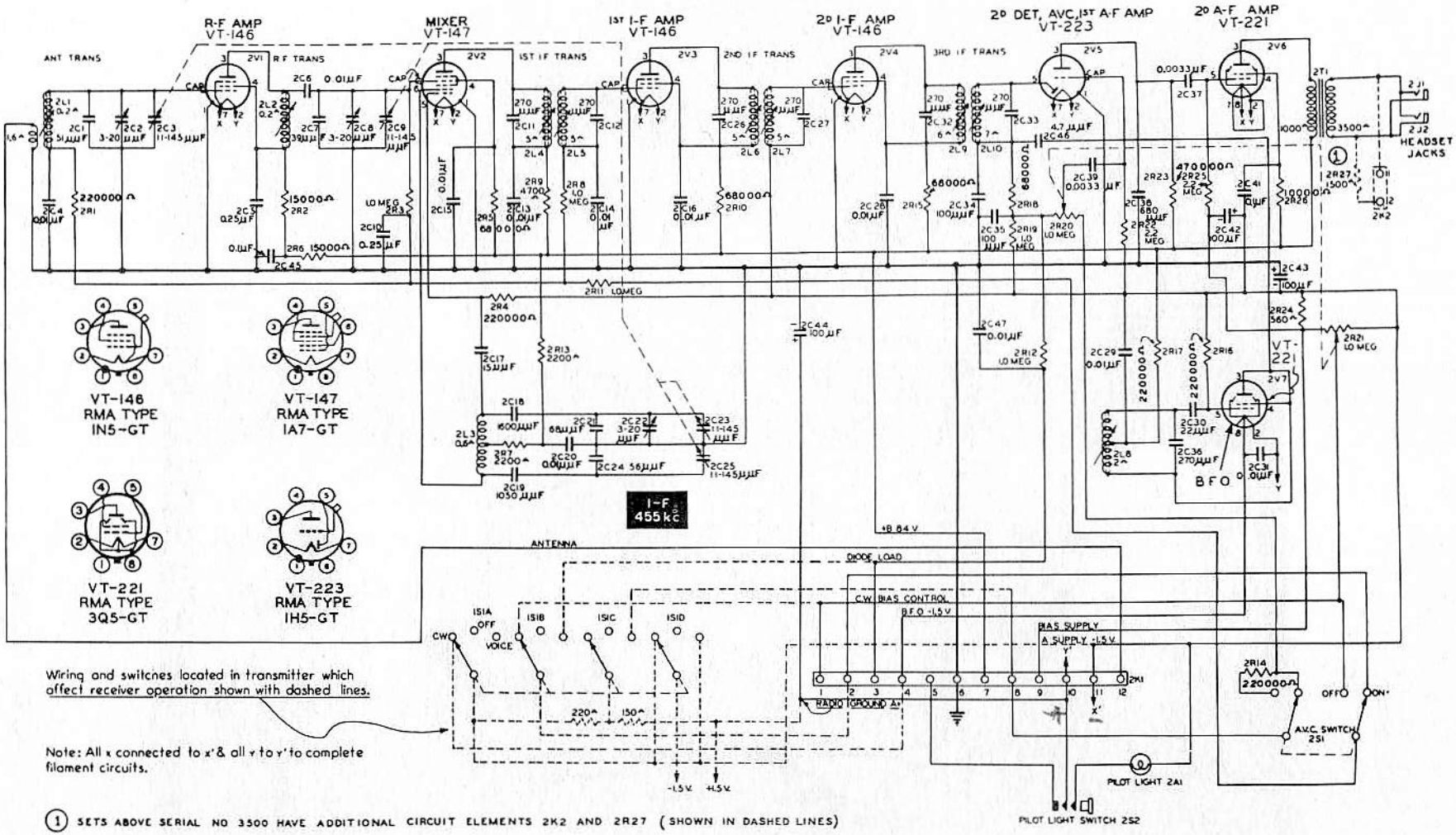
RADIO RECEIVER BC-652



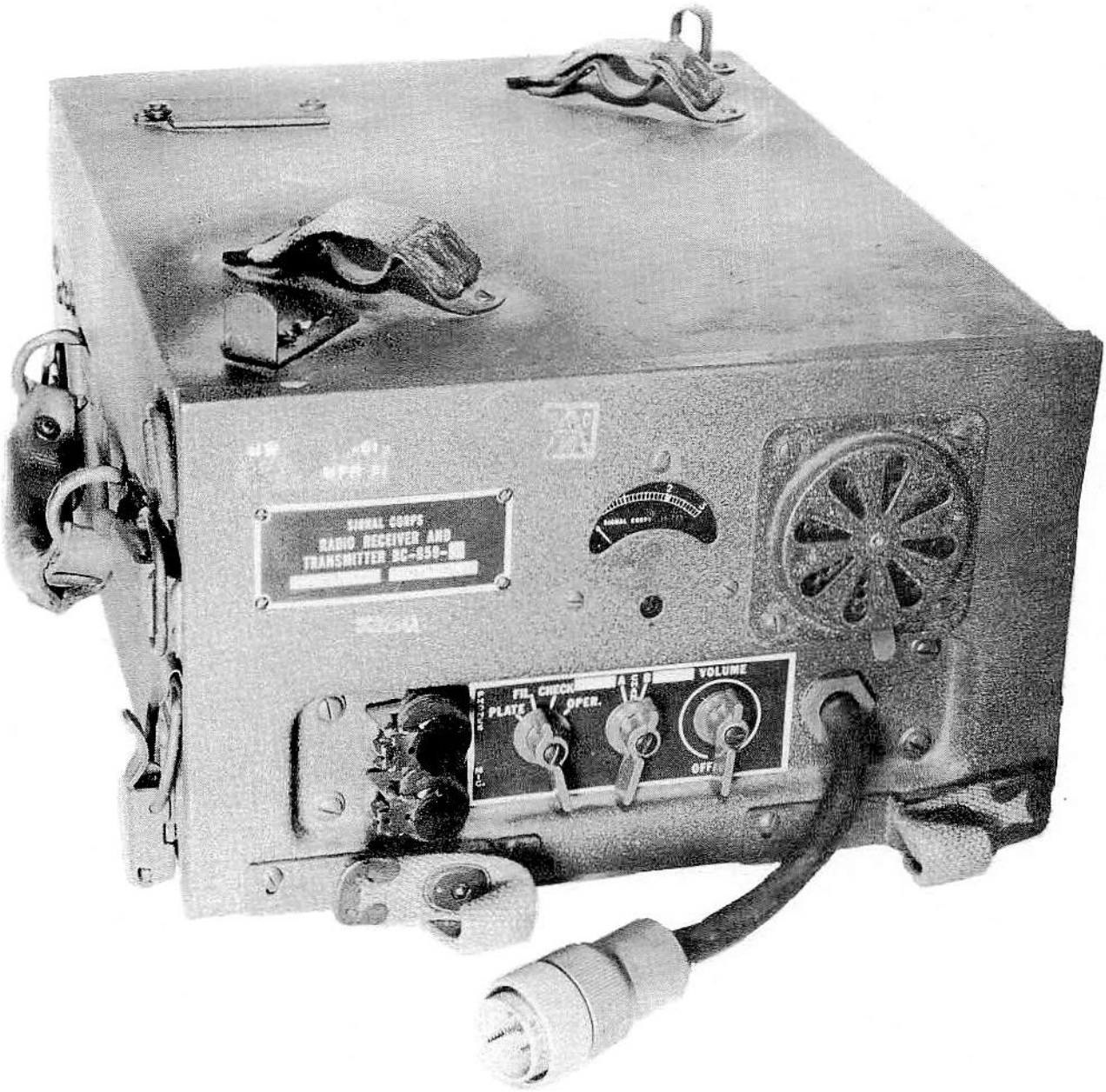
SCHEMATIC DIAGRAM RADIO RECEIVER BC-652



RADIO RECEIVER AND TRANSMITTER BC-654



SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER BC-654



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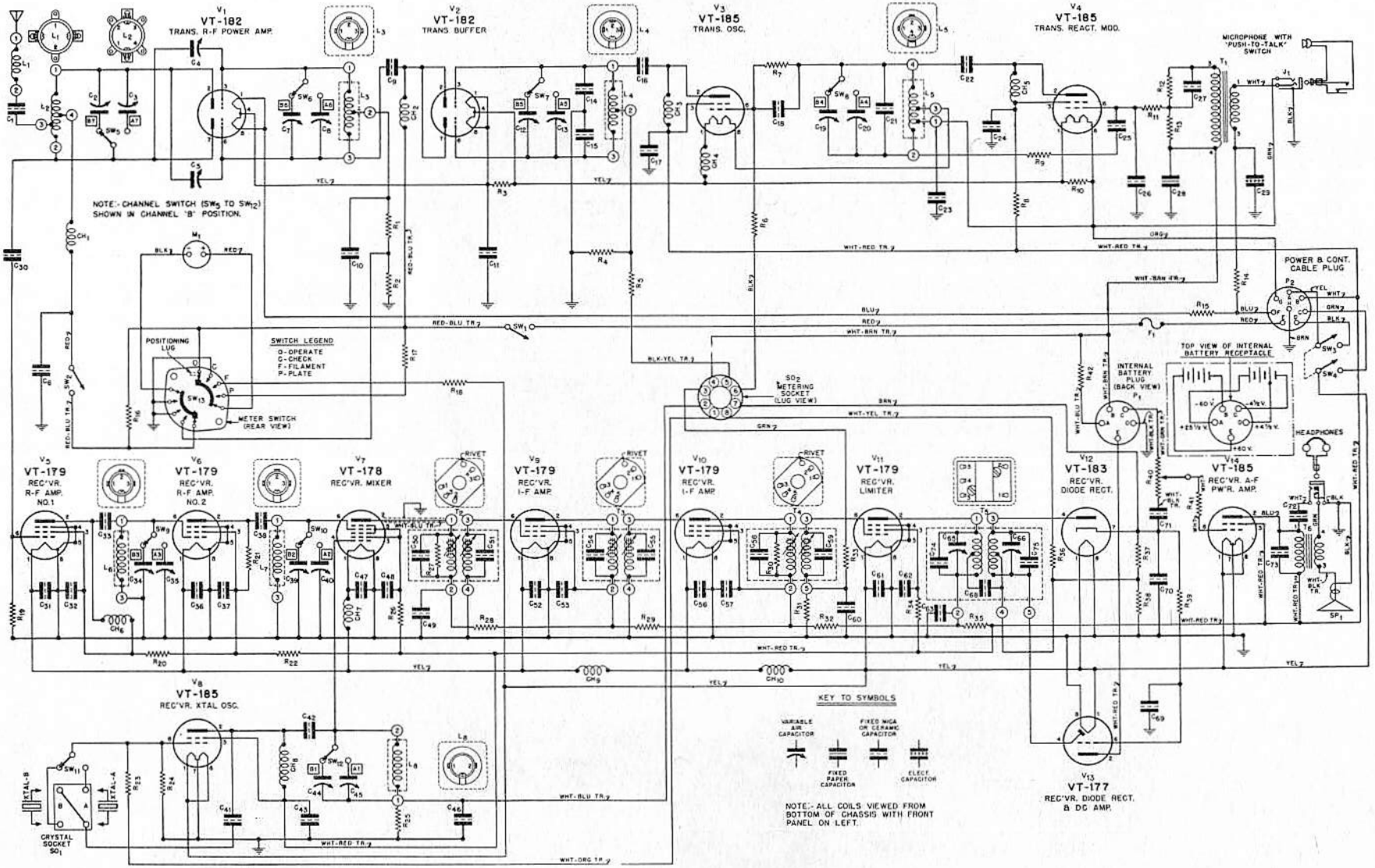
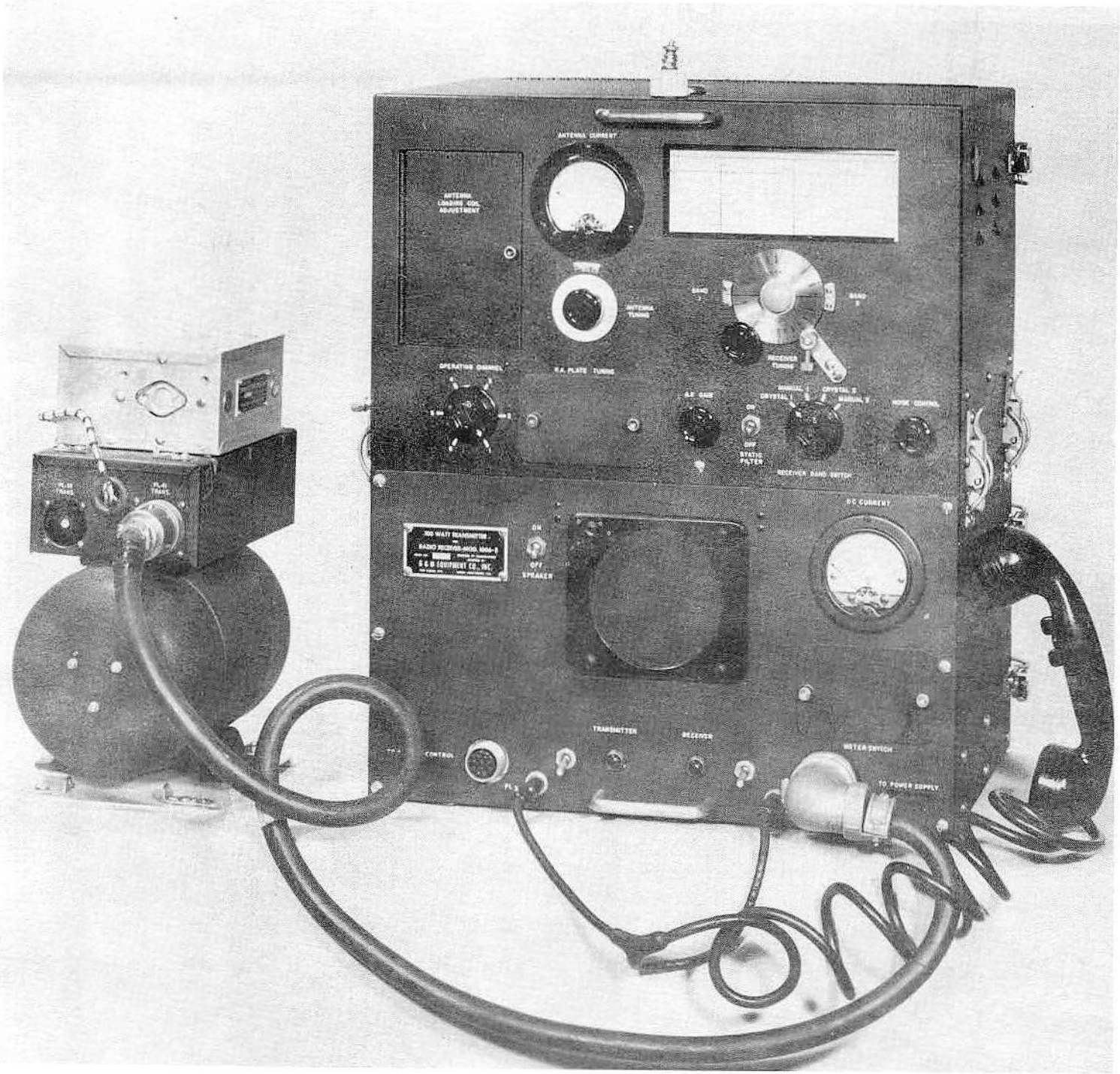


SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER BC-659



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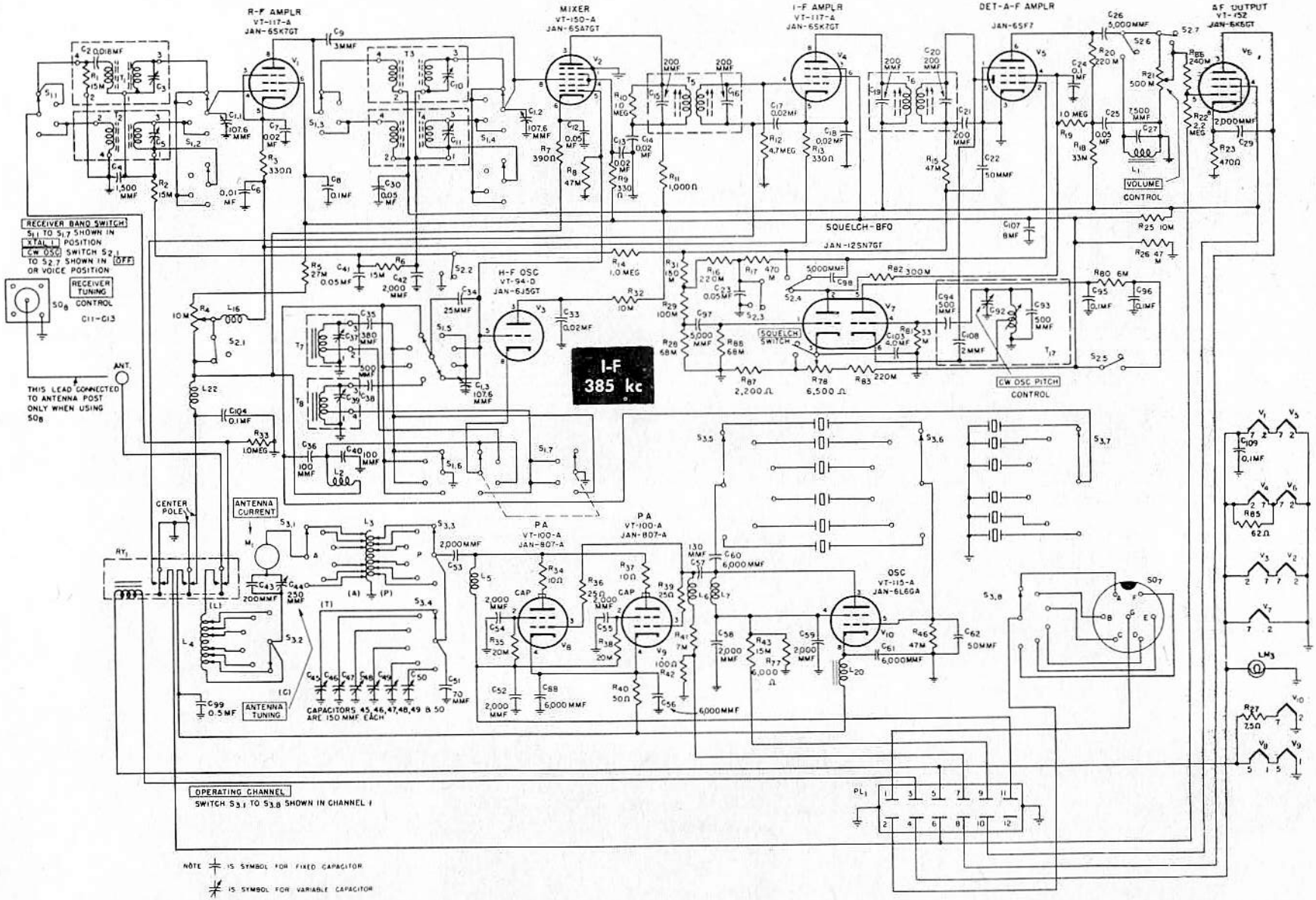
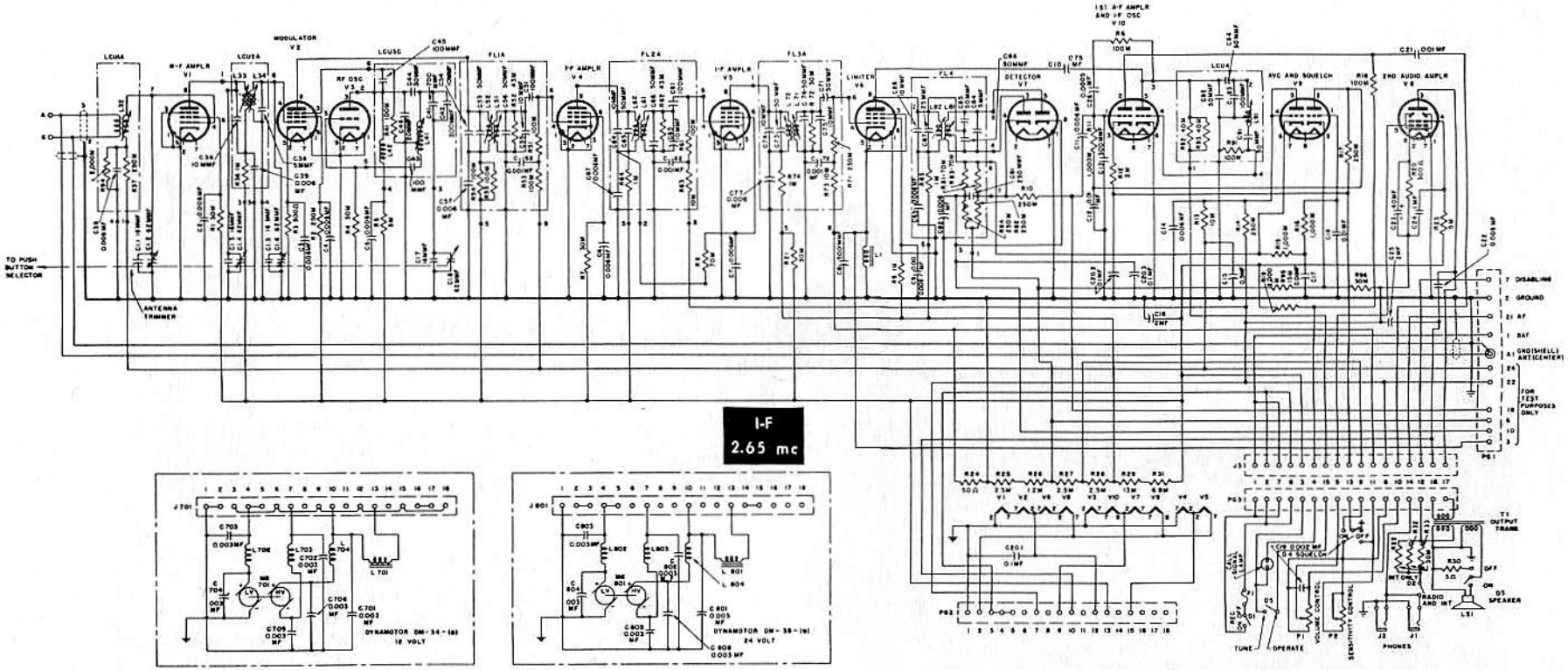


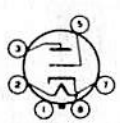
SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER BC-669

RADIO RECEIVER BC-683

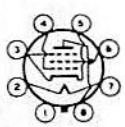


TUBE SOCKET TERMINALS, BOTTOM VIEW

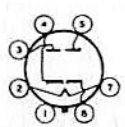
JAN-6AC7



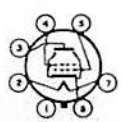
JAN-6J5



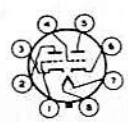
JAN-12SG7



JAN-6H6



JAN-6V6GT/G

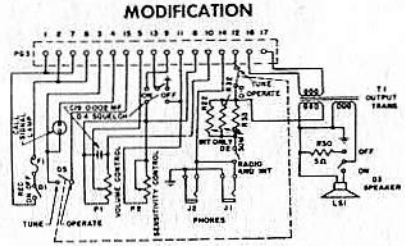


JAN-6SL7GT

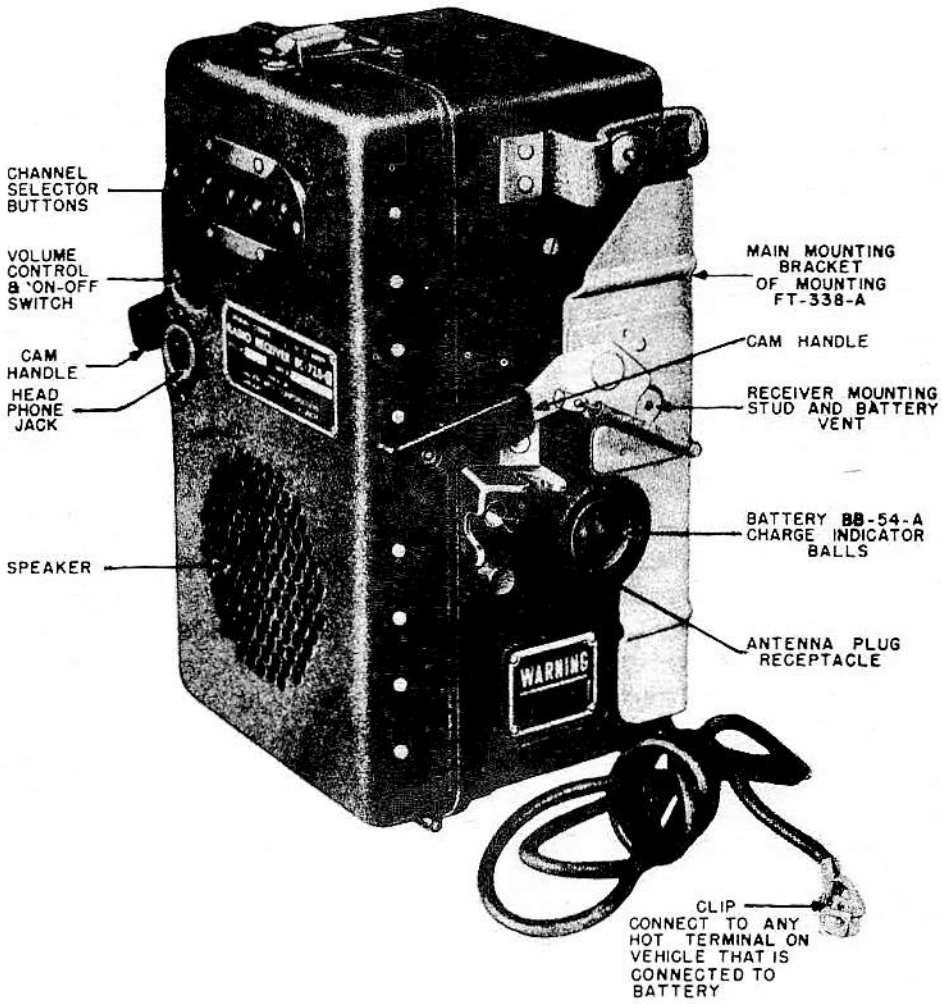
BC-683-A MODIFICATION

R94 NOT USED
R95-R96 NOT USED
V9 CATHODE CONNECTED TO JUNCTION OF R25-R26

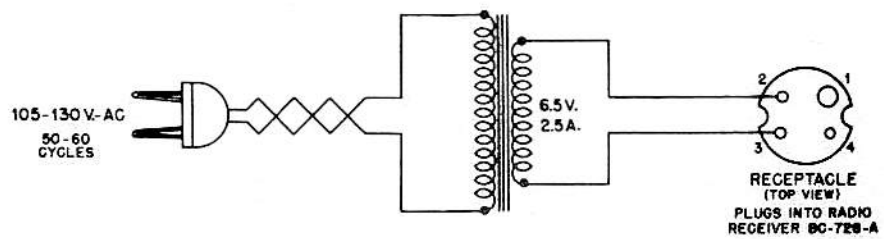
BC-683-BM MODIFICATION



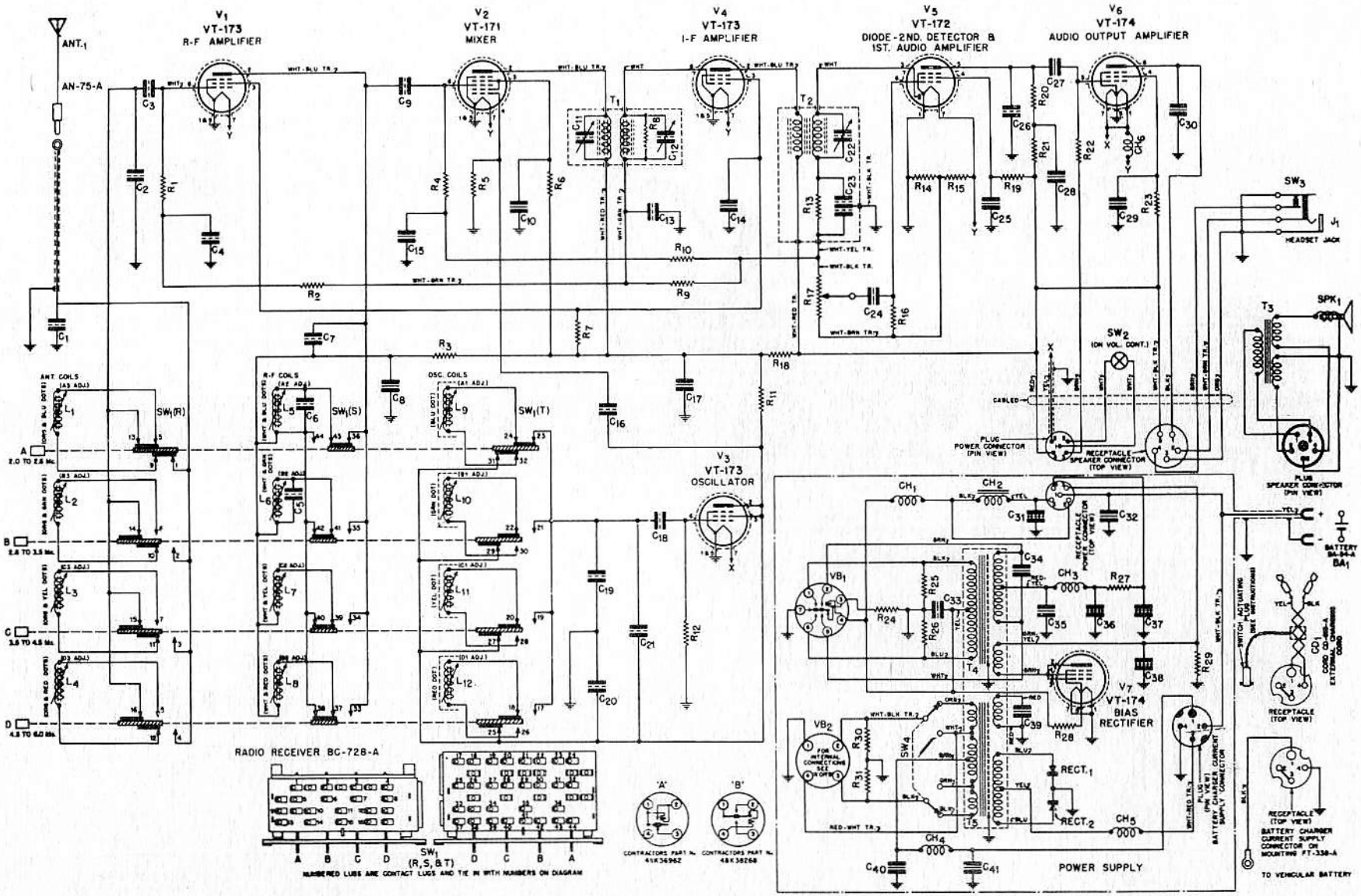
SCHEMATIC DIAGRAM RADIO RECEIVER BC-683



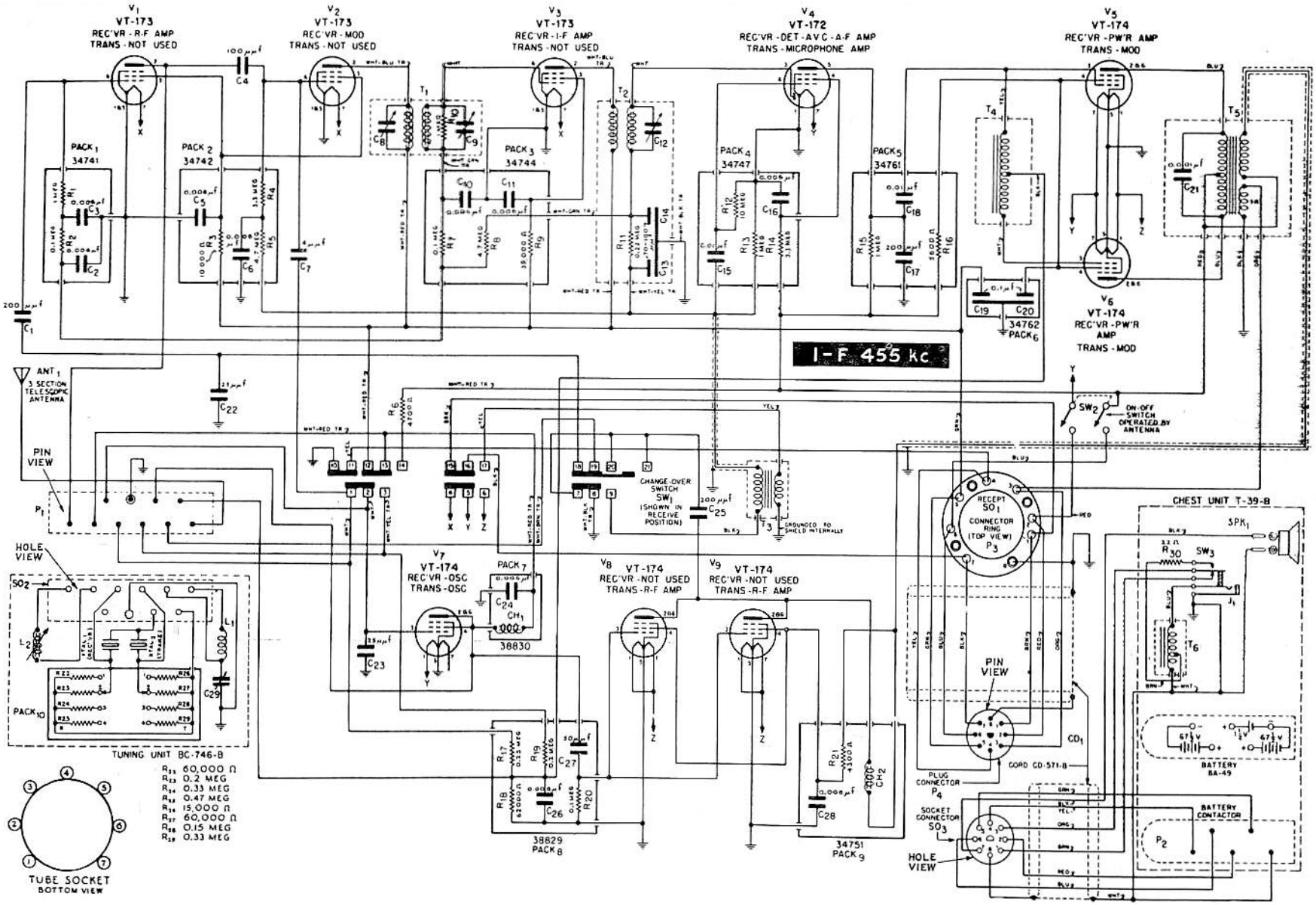
RADIO RECEIVER BC-728



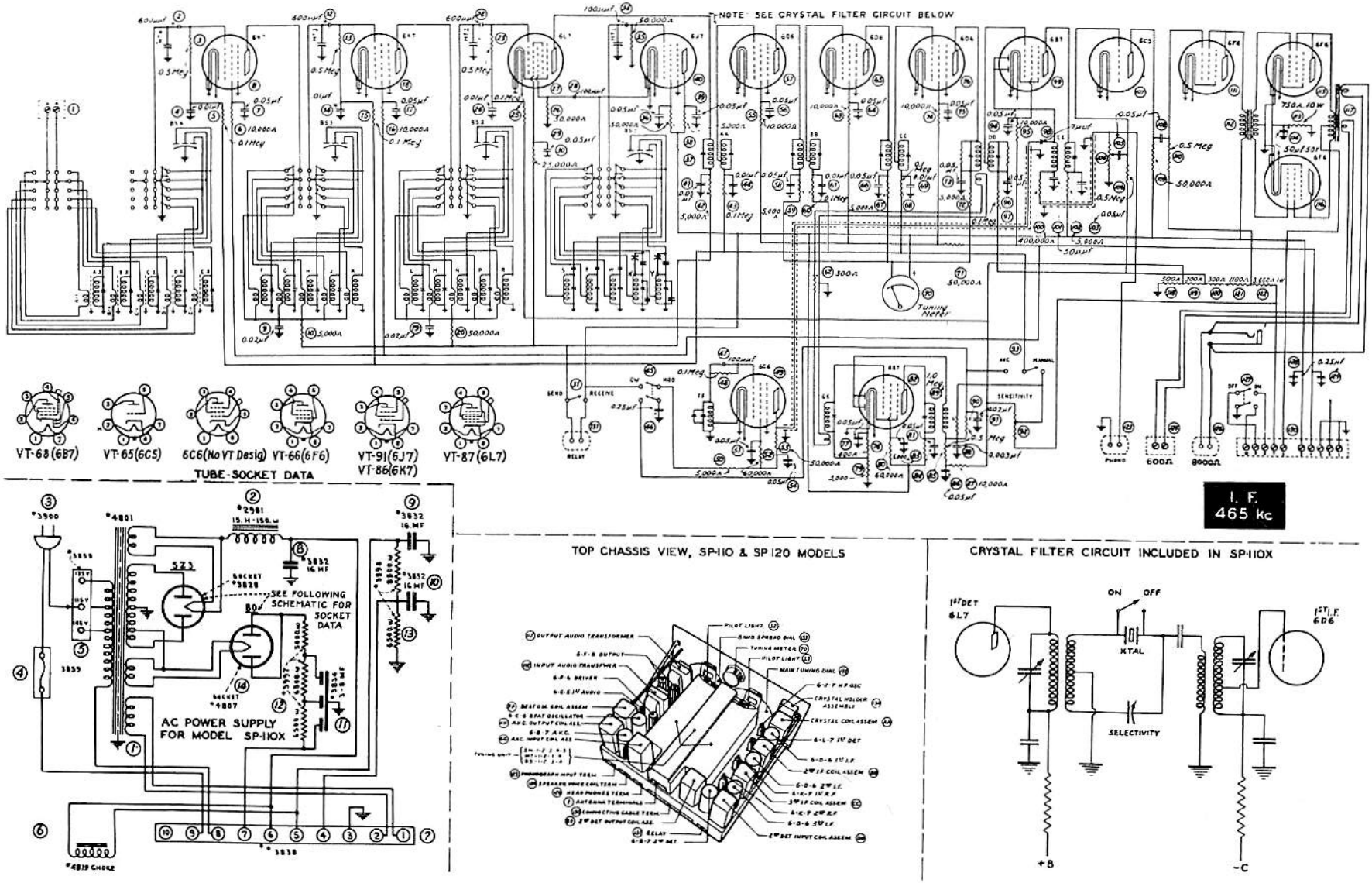
A.C. CHARGER FOR BC-728



SCHEMATIC DIAGRAM RADIO RECEIVER BC-728

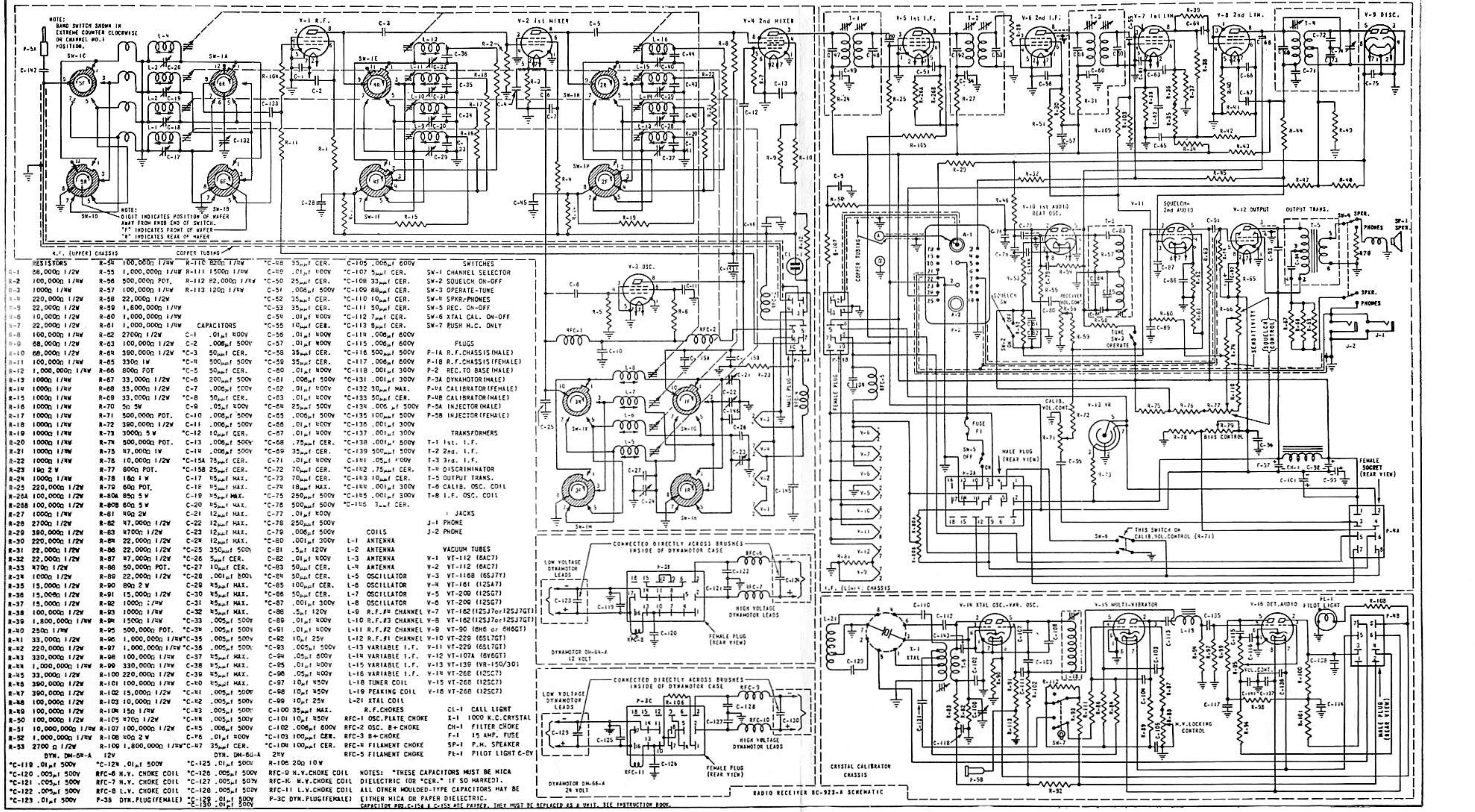


SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER BC-745



SCHEMATIC DIAGRAM RADIO RECEIVER BC-764, BC-779, BC-794 BC-1004 AND SUPER PRO

RADIO RECEIVER BC-923



RESISTORS

R-1 68,000Ω 1/2W
R-2 100,000Ω 1/4W
R-3 1000Ω 1/4W
R-4 220,000Ω 1/2W
R-5 22,000Ω 1/2W
R-6 10,000Ω 1/2W
R-7 22,000Ω 1/2W
R-8 100,000Ω 1/4W
R-9 68,000Ω 1/2W
R-10 68,000Ω 1/2W
R-11 100,000Ω 1/4W
R-12 1,000,000Ω 1/4W
R-13 1000Ω 1/4W
R-14 1000Ω 1/4W
R-15 1000Ω 1/4W
R-16 1000Ω 1/4W
R-17 1000Ω 1/4W
R-18 1000Ω 1/4W
R-19 1000Ω 1/4W
R-20 1000Ω 1/4W
R-21 1000Ω 1/4W
R-22 1000Ω 1/4W
R-23 19Ω 2W
R-24 1000Ω 1/4W
R-25 220,000Ω 1/2W
R-26A 100,000Ω 1/2W
R-26B 100,000Ω 1/2W
R-27 1000Ω 1/4W
R-28 2700Ω 1/2W
R-29 390,000Ω 1/2W
R-30 220,000Ω 1/2W
R-31 22,000Ω 1/2W
R-32 22,000Ω 1/2W
R-33 470Ω 1/2W
R-34 1000Ω 1/2W
R-35 15,000Ω 1/2W
R-36 15,000Ω 1/2W
R-37 15,000Ω 1/2W
R-38 100,000Ω 1/2W
R-39 1,800,000Ω 1/4W
R-40 250Ω 1/4W
R-41 33,000Ω 1/2W
R-42 220,000Ω 1/2W
R-43 330,000Ω 1/2W
R-44 1,000,000Ω 1/4W
R-45 33,000Ω 1/2W
R-46 390,000Ω 1/2W
R-47 390,000Ω 1/2W
R-48 100,000Ω 1/2W
R-49 100,000Ω 1/2W
R-50 100,000Ω 1/2W
R-51 10,000,000Ω 1/4W
R-52 1,000,000Ω 1/4W
R-53 2700Ω 1/2W
R-54 100,000Ω 1/4W
R-55 1,000,000Ω 1/4W
R-56 500,000Ω POT.
R-57 100,000Ω 1/4W
R-58 22,000Ω 1/2W
R-59 1,600,000Ω 1/4W
R-60 1,000,000Ω 1/4W
R-61 1,000,000Ω 1/4W
R-62 2700Ω 1/2W
R-63 100,000Ω 1/2W
R-64 390,000Ω 1/2W
R-65 330Ω 1W
R-66 800Ω POT
R-67 33,000Ω 1/2W
R-68 33,000Ω 1/2W
R-69 33,000Ω 1/2W
R-70 5Ω 5W
R-71 500,000Ω POT.
R-72 390,000Ω 1/2W
R-73 3000Ω 5W
R-74 500,000Ω POT.
R-75 47,000Ω 1W
R-76 10,000Ω 1/2W
R-77 800Ω POT.
R-78 18Ω 1W
R-79 60Ω POT.
R-80A 85Ω 5W
R-80B 60Ω 5W
R-81 40Ω 2W
R-82 47,000Ω 1/2W
R-83 4700Ω 1/2W
R-84 22,000Ω 1/2W
R-86 22,000Ω 1/2W
R-87 47,000Ω 1/2W
R-88 50,000Ω POT.
R-89 22,000Ω 1/2W
R-90 80Ω 2W
R-91 15,000Ω 1/2W
R-92 1000Ω 1/4W
R-93 1000Ω 1/4W
R-94 1500Ω 1/4W
R-95 500,000Ω POT.
R-96 1,000,000Ω 1/4W
R-97 1,000,000Ω 1/4W
R-98 100,000Ω 1/4W
R-99 330,000Ω 1/4W
R-100 220,000Ω 1/2W
R-101 100,000Ω 1/4W
R-102 15,000Ω 1/2W
R-103 10,000Ω 1/2W
R-104 15Ω 1/4W
R-105 470Ω 1/2W
R-107 100,000Ω 1/2W
R-108 40Ω 2W
R-109 1,800,000Ω 1/4W
R-110 820Ω 1/4W
R-111 1500Ω 1/4W
R-112 82,000Ω 1/4W
R-113 120Ω 1/4W

CAPACITORS

C-1 .01μf 400V
C-2 .006μf 500V
*C-3 50μμf CER.
*C-4 500μμf 500V
*C-5 50μμf CER.
*C-6 200μμf 500V
C-7 .006μf 500V
*C-8 50μμf CER.
C-9 .05μf 400V
C-10 .006μf 500V
C-11 .006μf 500V
*C-12 10μμf CER.
C-13 .006μf 500V
C-14 .006μf 500V
*C-15A 75μμf CER.
*C-15B 25μμf CER.
C-17 45μμf MAX.
C-18 45μμf MAX.
C-19 45μμf MAX.
C-20 45μμf MAX.
C-21 12μμf MAX.
C-22 12μμf MAX.
C-23 12μμf MAX.
C-24 12μμf MAX.
*C-25 350μμf 500V
*C-26 5μμf CER.
*C-27 10μμf CER.
*C-28 .001μf 800V
C-29 45μμf MAX.
C-30 45μμf MAX.
C-31 45μμf MAX.
C-32 45μμf MAX.
*C-33 .005μf 500V
*C-34 .005μf 500V
*C-35 .005μf 500V
*C-36 .005μf 500V
C-37 45μμf MAX.
C-38 45μμf MAX.
C-39 45μμf MAX.
C-40 45μμf MAX.
*C-41 .005μf 500V
*C-42 .005μf 500V
*C-43 .005μf 500V
*C-44 .005μf 500V
C-45 .006μf 500V
C-46 .01μf 400V
*C-47 35μμf CER.
*C-48 35μμf CER.
C-49 .01μf 400V
*C-50 25μμf CER.
C-51 .006μf 500V
*C-52 35μμf CER.
*C-53 35μμf CER.
C-54 .01μf 400V
*C-55 10μμf CER.
C-56 .01μf 400V
C-57 .01μf 400V
*C-58 35μμf CER.
*C-59 35μμf CER.
C-60 .01μf 400V
C-61 .006μf 500V
C-62 .01μf 400V
C-63 .01μf 400V
*C-64 25μμf 500V
C-65 .006μf 500V
C-66 .01μf 400V
C-67 .01μf 400V
*C-68 .75μμf CER.
*C-69 35μμf CER.
C-71 .01μf 400V
*C-72 70μμf CER.
*C-73 70μμf CER.
C-74 18μμf MAX.
*C-75 250μμf 500V
*C-76 500μμf 500V
C-77 .01μf 400V
*C-78 250μμf 500V
C-79 .006μf 500V
*C-80 .001μf 300V
C-81 .5μf 120V
C-82 .01μf 400V
*C-83 50μμf CER.
*C-84 50μμf CER.
*C-85 100μμf CER.
*C-86 50μμf CER.
*C-87 .001μf 300V
C-88 .5μf 120V
C-89 .01μf 400V
C-91 .01μf 400V
C-92 10μf 25V
*C-93 .005μf 500V
C-94 .05μf 600V
C-95 .01μf 400V
C-96 .05μf 400V
C-97 10μf 450V
C-98 10μf 450V
C-99 10μf 25V
C-100 35μμf MAX.
C-101 10μf 450V
C-102 .006μf 600V
*C-103 100μμf CER.
*C-104 100μμf CER.
C-105 .006μf 600V
*C-107 5μμf CER.
*C-108 33μμf CER.
*C-109 88μμf CER.
*C-110 10μμf CER.
*C-111 50μμf CER.
*C-112 7μμf CER.
*C-113 8μμf CER.
C-114 .006μf 600V
C-115 .006μf 600V
*C-116 500μμf 500V
C-117 .006μf 600V
*C-118 .001μf 300V
*C-131 .001μf 300V
C-132 30μμf MAX.
*C-133 50μμf CER.
C-134 .006μf 500V
*C-135 100μμf 500V
*C-136 .001μf 300V
*C-137 .001μf 300V
*C-138 .001μf 500V
*C-139 500μμf 500V
C-141 .05μf 400V
*C-142 .75μμf CER.
*C-143 10μμf CER.
*C-144 .001μf 300V
*C-145 .001μf 300V
*C-146 3μμf CER.

DYN. DM-64-A 12V

*C-119 .01μf 500V
*C-120 .005μf 500V
*C-121 .005μf 500V
*C-122 .005μf 500V
*C-123 .01μf 500V
*C-124 .01μf 500V
RFC-6 H.V. CHOKE COIL
RFC-7 H.V. CHOKE COIL
RFC-8 L.V. CHOKE COIL
P-3B DYN. PLUG (FEMALE)

DYN. DM-65-A 24V

*C-125 .01μf 500V
*C-126 .005μf 500V
*C-127 .005μf 500V
*C-128 .005μf 500V
*C-129 .01μf 500V
*C-130 .01μf 500V
R-106 20Ω 10W
RFC-9 H.V. CHOKE COIL
RFC-10 H.V. CHOKE COIL
RFC-11 L.V. CHOKE COIL
P-3C DYN. PLUG (FEMALE)

COILS

L-1 ANTENNA
L-2 ANTENNA
L-3 ANTENNA
L-4 ANTENNA
L-5 OSCILLATOR
L-6 OSCILLATOR
L-7 OSCILLATOR
L-8 OSCILLATOR
L-9 R.F. #4 CHANNEL
L-10 R.F. #3 CHANNEL
L-11 R.F. #2 CHANNEL
L-12 R.F. #1 CHANNEL
L-13 VARIABLE I.F.
L-14 VARIABLE I.F.
L-15 VARIABLE I.F.
L-16 VARIABLE I.F.
L-18 TUNER COIL
L-19 PEAKING COIL
L-21 XTAL COIL

R.F. CHOKES

RFC-1 OSC. PLATE CHOKE
RFC-2 OSC. B+ CHOKE
RFC-3 B+ CHOKE
RFC-4 FILAMENT CHOKE
RFC-5 FILAMENT CHOKE

SWITCHES

SW-1 CHANNEL SELECTOR
SW-2 SQUELCH ON-OFF
SW-3 OPERATE-TUNE
SW-4 SPKR.-PHONES
SW-5 REC. ON-OFF
SW-6 XTAL CAL. ON-OFF
SW-7 PUSH M.C. ONLY

PLUGS

P-1A R.F. CHASSIS (MALE)
P-1B R.F. CHASSIS (FEMALE)
P-2 REC. TO BASE (MALE)
P-3A DYNAMOTOR (MALE)
P-4A CALIBRATOR (FEMALE)
P-4B CALIBRATOR (MALE)
P-5A INJECTOR (MALE)
P-5B INJECTOR (FEMALE)

TRANSFORMERS

T-1 1st. I.F.
T-2 2nd. I.F.
T-3 3rd. I.F.
T-4 DISCRIMINATOR
T-5 OUTPUT TRANS.
T-6 CALIB. OSC. COIL
T-8 I.F. OSC. COIL

JACKS

J-1 PHONE
J-2 PHONE

VACUUM TUBES

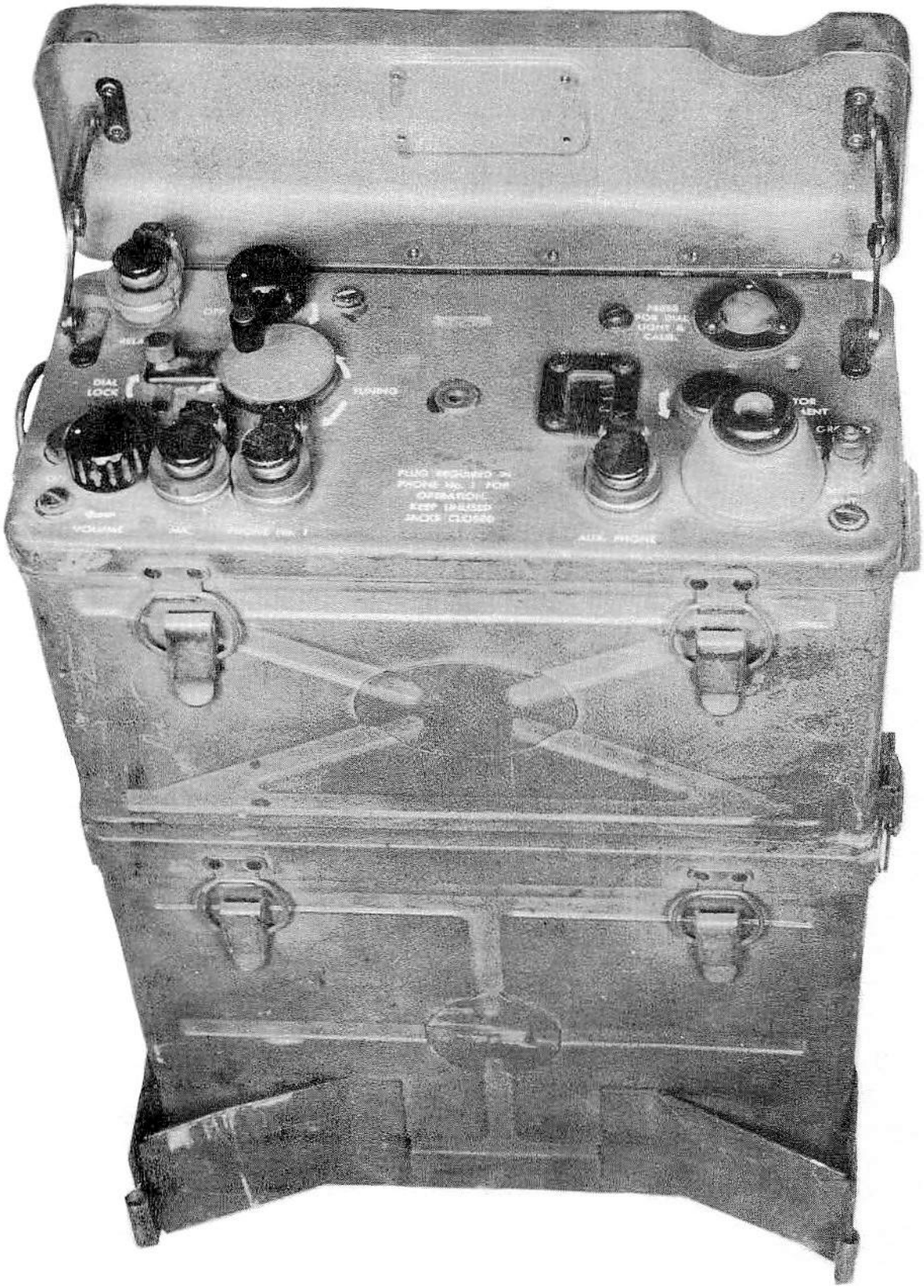
V-1 VT-112 (6AC7)
V-2 VT-112 (6AC7)
V-3 VT-116B (6SJ7Y)
V-4 VT-161 (12SA7)
V-5 VT-209 (12SG7)
V-6 VT-209 (12SG7)
V-7 VT-162 (12SJ7 or 12SJ7GT)
V-8 VT-162 (12SJ7 or 12SJ7GT)
V-9 VT-90 (6H6 or 6H6GT)
V-10 VT-229 (6SL7GT)
V-11 VT-229 (6SL7GT)
V-12 VT-107A (6V6GT)
V-13 VT-139 (VR-150/30)
V-14 VT-268 (12SC7)
V-15 VT-268 (12SC7)
V-16 VT-268 (12SC7)

CL-1 CALL LIGHT
X-1 1000 K.C. CRYSTAL
CH-1 FILTER CHOKE
F-1 15 AMP. FUSE
SP-1 P.M. SPEAKER
PL-1 PILOT LIGHT 6-8V

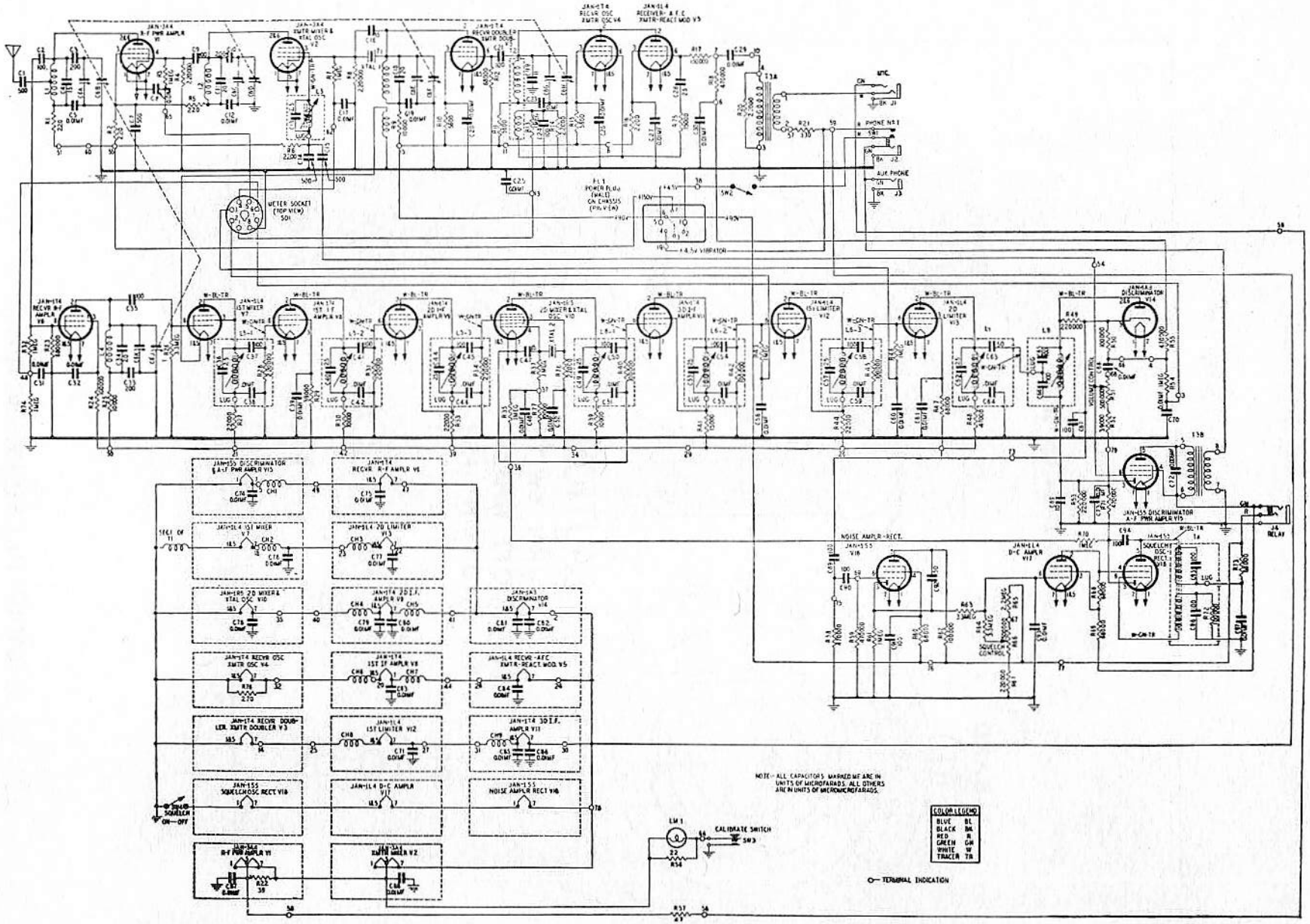
NOTES: *THESE CAPACITORS MUST BE MICA DIELECTRIC (OR "CER." IF SO MARKED). ALL OTHER MOULDED-TYPE CAPACITORS MAY BE EITHER MICA OR PAPER DIELECTRIC.

CAPACITOR NOS. C-15A & C-15B ARE PAIRED. THEY MUST BE REPLACED AS A UNIT. SEE INSTRUCTION BOOK.

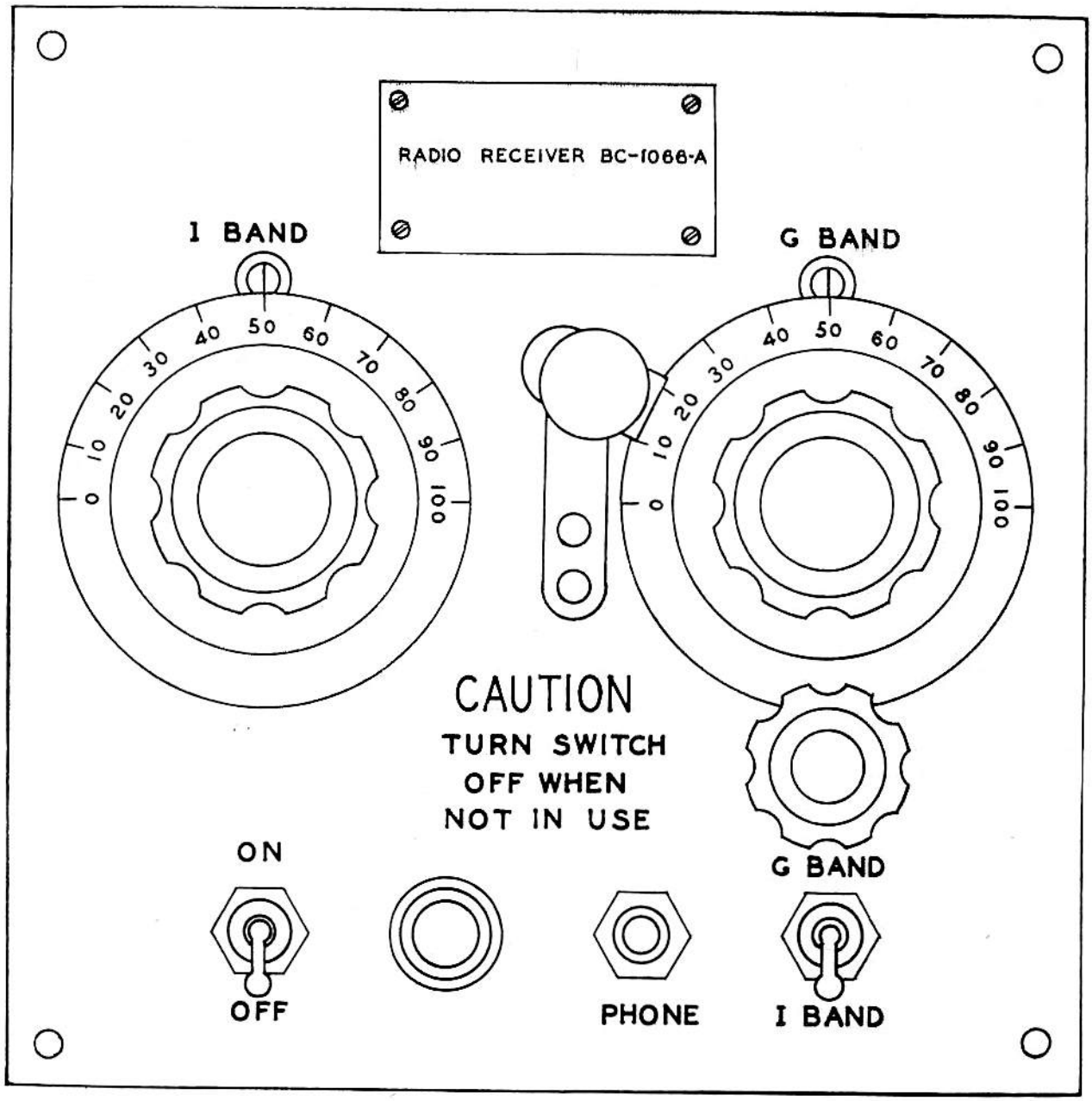
SCHEMATIC DIAGRAM RADIO RECEIVER BC-923



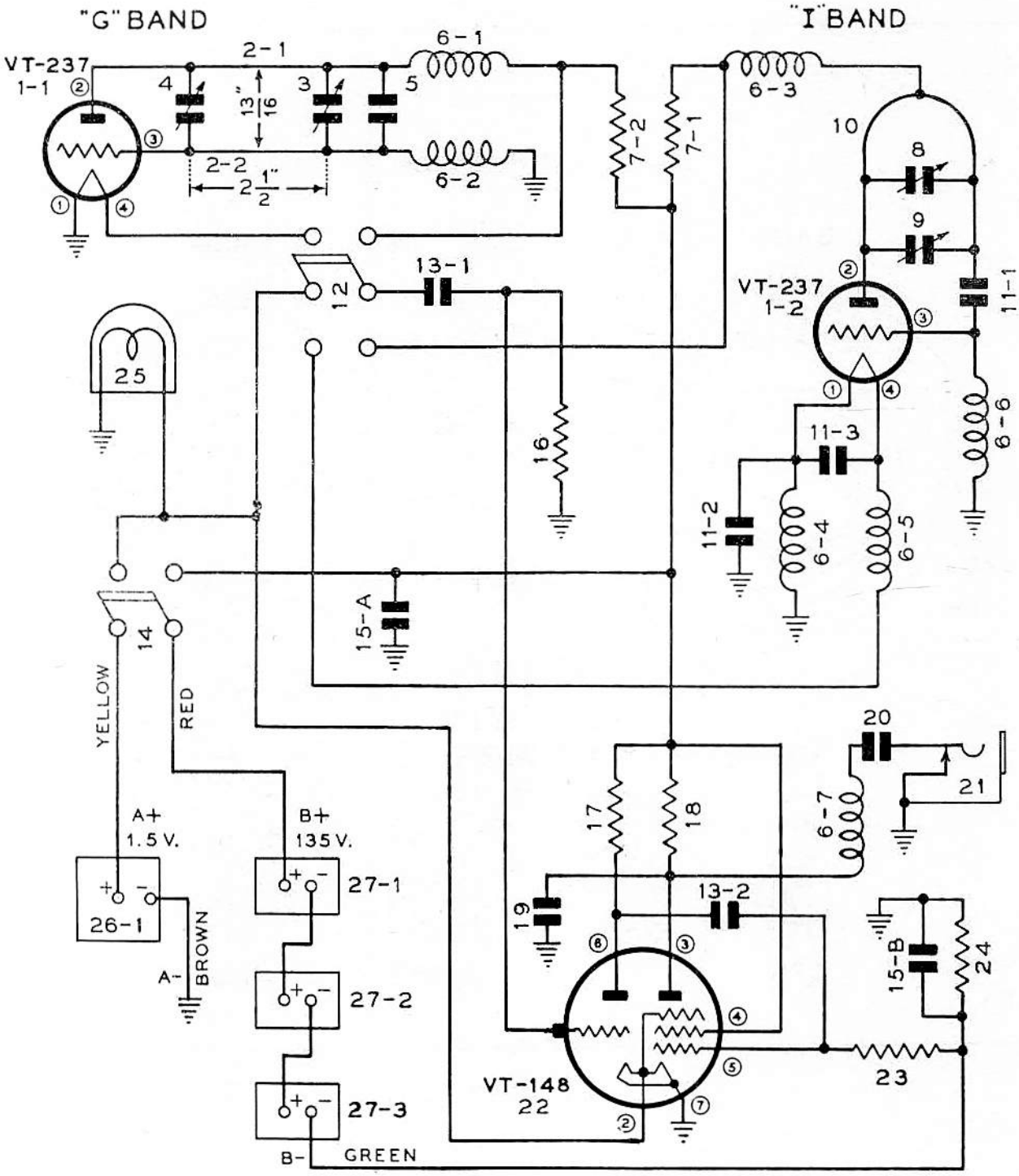
RADIO RECEIVER AND TRANSMITTER BC-1000



SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER BC-1000

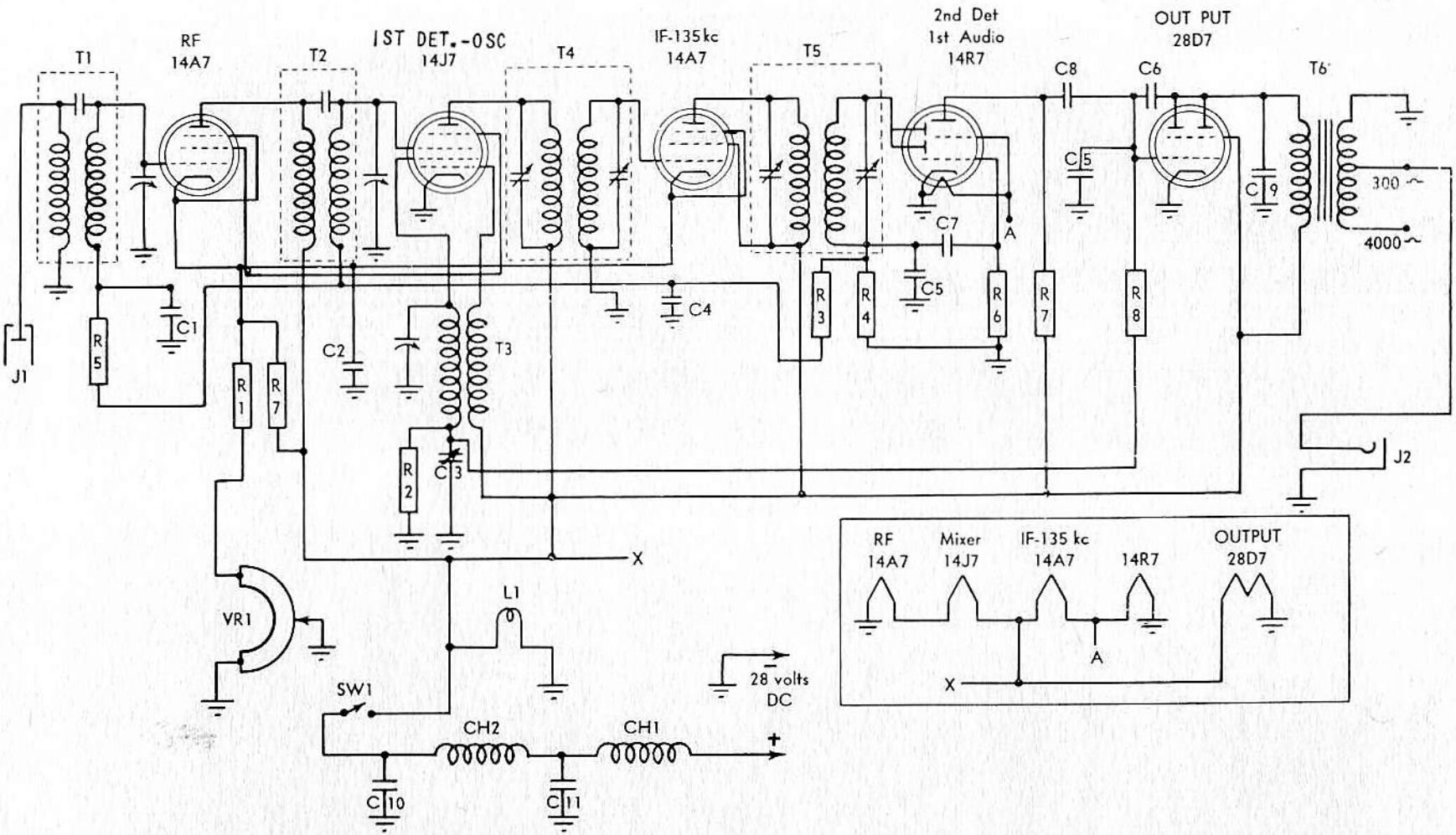


RADIO RECEIVER BC-1066

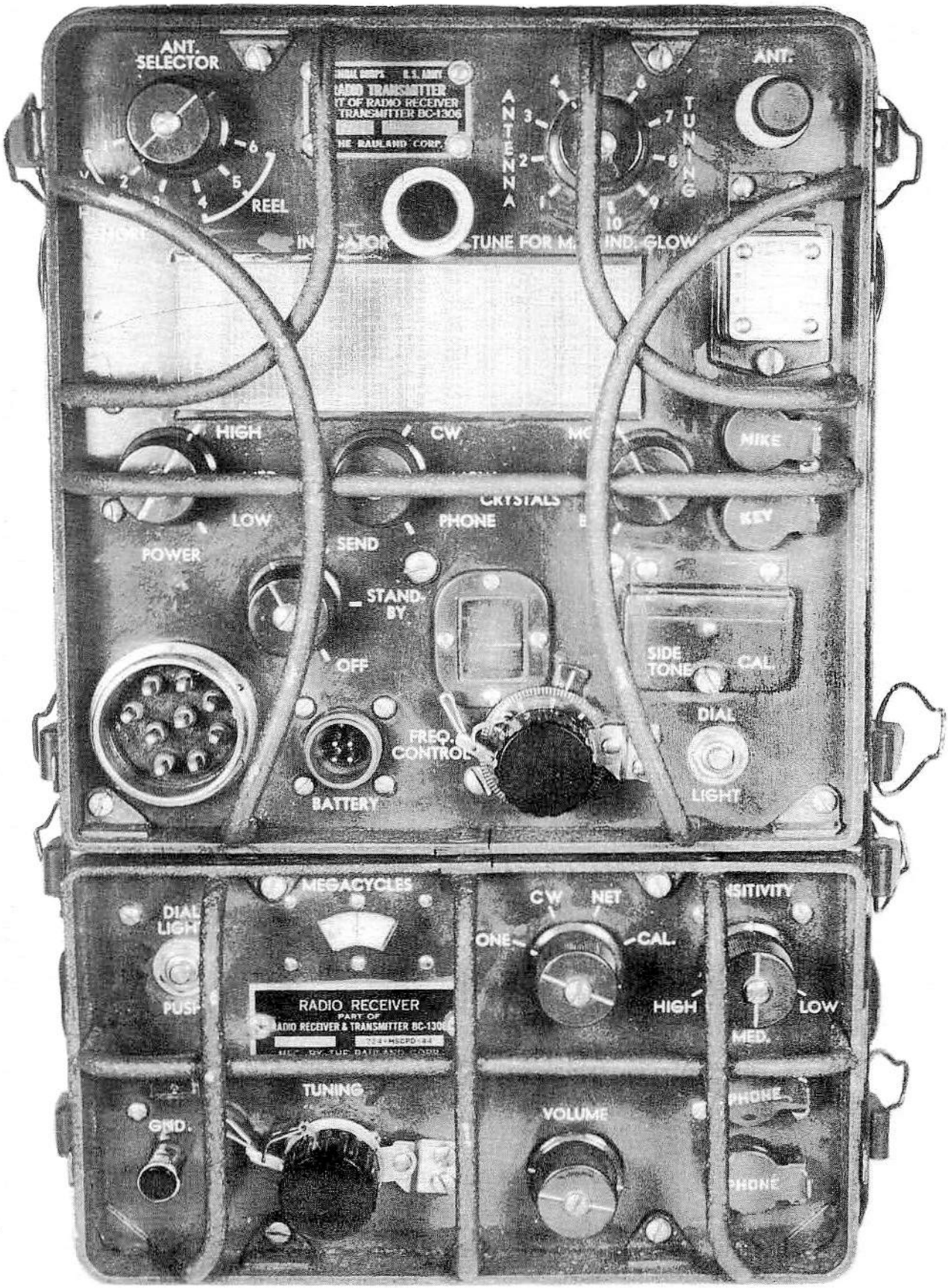


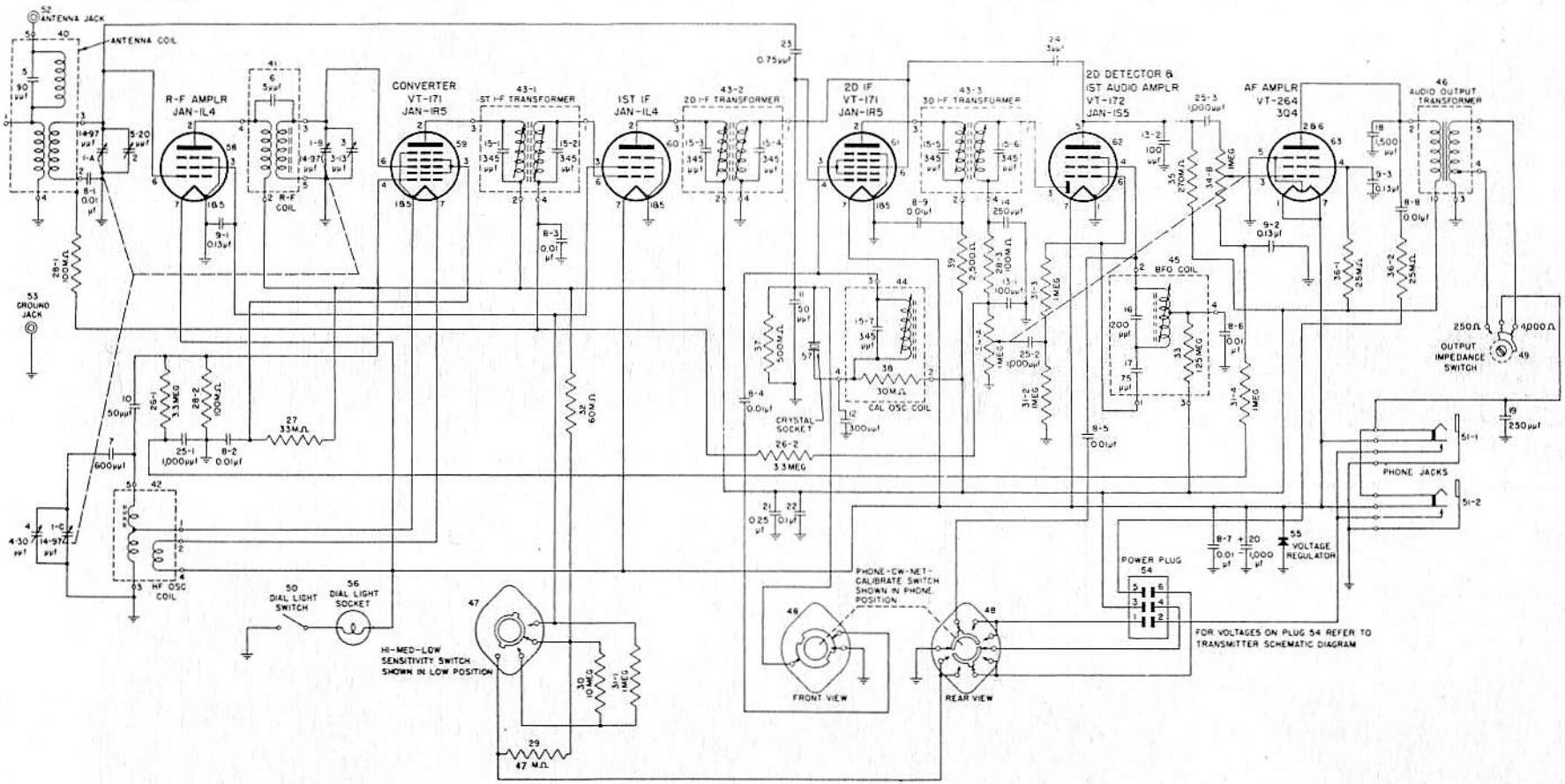
SCHEMATIC DIAGRAM RADIO RECEIVER BC-1066

RADIO RECEIVER BC-1206

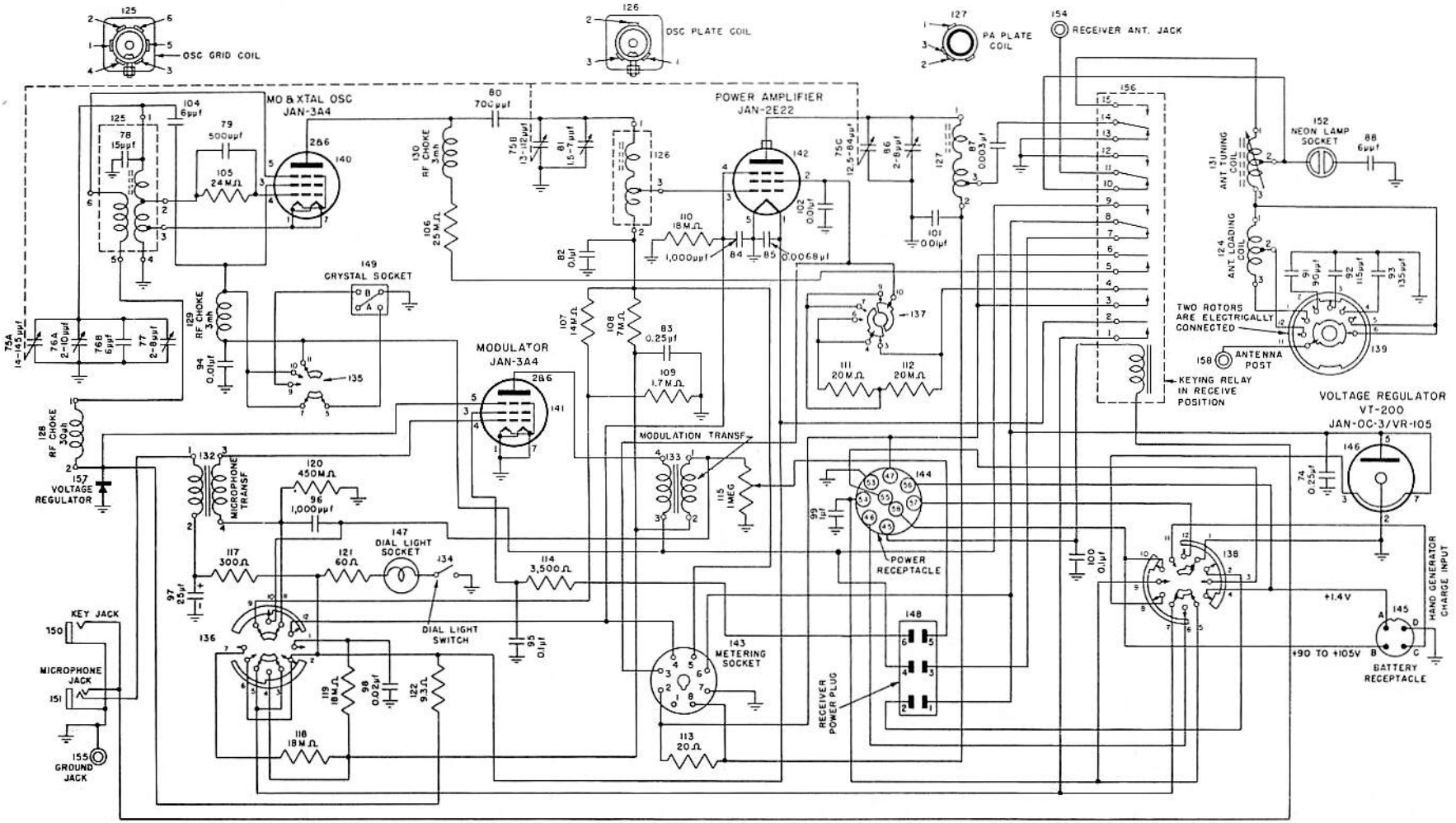


SCHEMATIC DIAGRAM RADIO RECEIVER BC-1206


ANT. SELECTOR
REEL
ANTENNA
TUNING
ANT.
TUNE FOR M
IND. GLOW
HIGH
CW
MIKE
LOW
POWER
CRYSTALS
PHONE
KEY
SEND
STAND-BY
OFF
SIDE TONE
CAL.
DIAL LIGHT
FREQ. CONTROL
BATTERY
MEGACYCLES
CW
NET
ONE
CAL.
HIGH
LOW
MED.
DIAL LIGHT
PUSH
RADIO RECEIVER
PART OF
RADIO RECEIVER & TRANSMITTER BC-1306
TUNING
VOLUME
GND.
PHONE
PHONE



SCHEMATIC DIAGRAM RECEIVER SECTION BC-1306



POWER RECEPTACLE 144

PIN	VOLTAGE
45	6.3 VOLTS
46	1.4 VOLTS
47	HIGH VOLTAGE (+425 TO 500 VOLTS)
54	6.3 VOLTS
56	+1.4 VOLTS
57	+105 VOLTS
58	+105 VOLTS

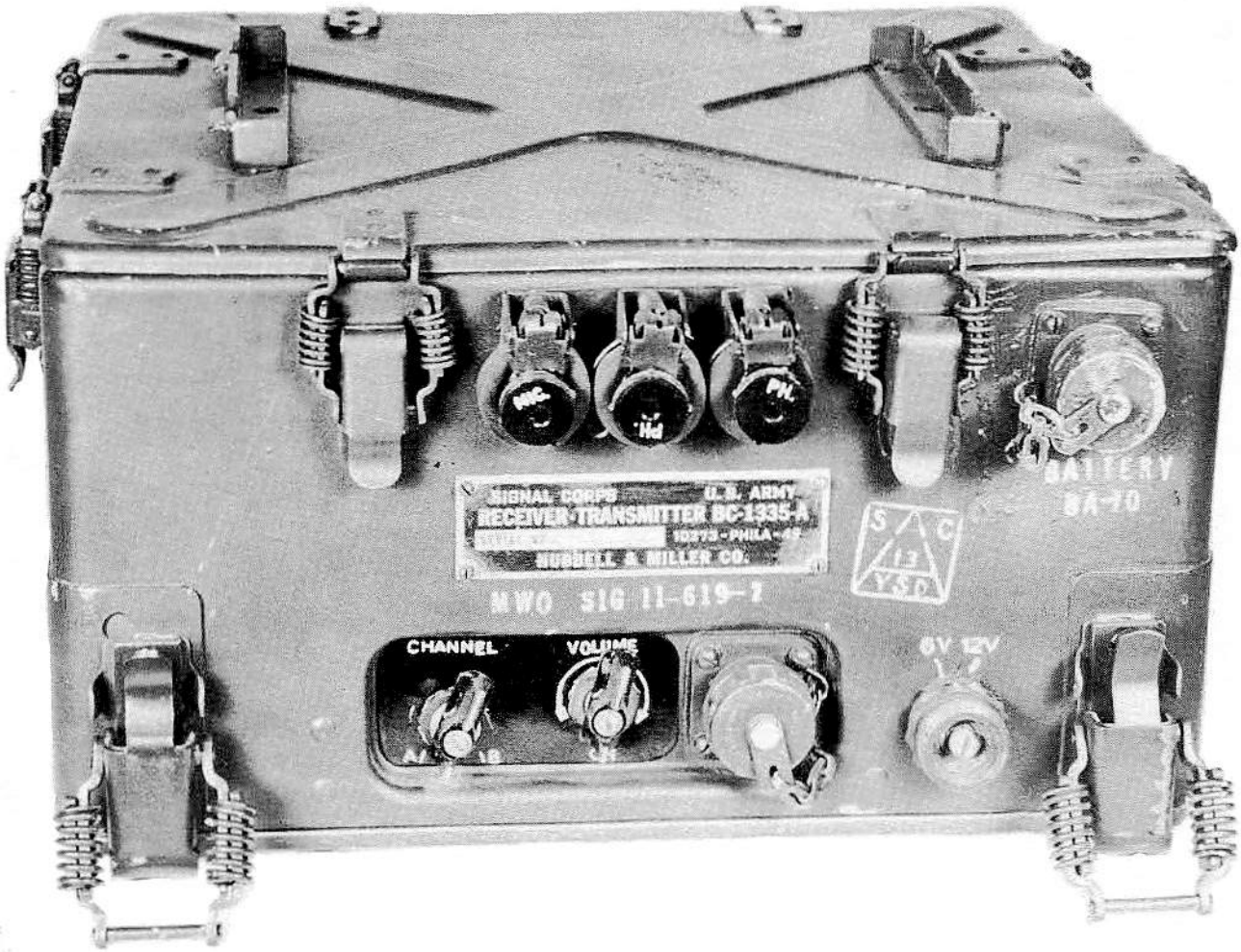
NOTE:

1- 135-CRYSTAL SWITCH IN POS "A"
2- 136-CW-MCW-PHONE IN POS "PHONE"
3- 137-HIGH-MED-LOW IN PCS "HIGH"
4- 138-SEND-STANDBY-OFF IN POS "STANDBY"
5- 139-ANTENNA SELECTOR SWITCH IN POS "5"
6- MΩ = 1,000 Ω
7- SWITCHES, SOCKETS, AND COILS VIEWED FROM REAR OF CHASSIS (BOTTOM)
8- ON SWITCHES 136, 138 & 139, TERMINAL NUMBERS ARE SHOWN ON LEADS TO RESPECTIVE TERMINALS

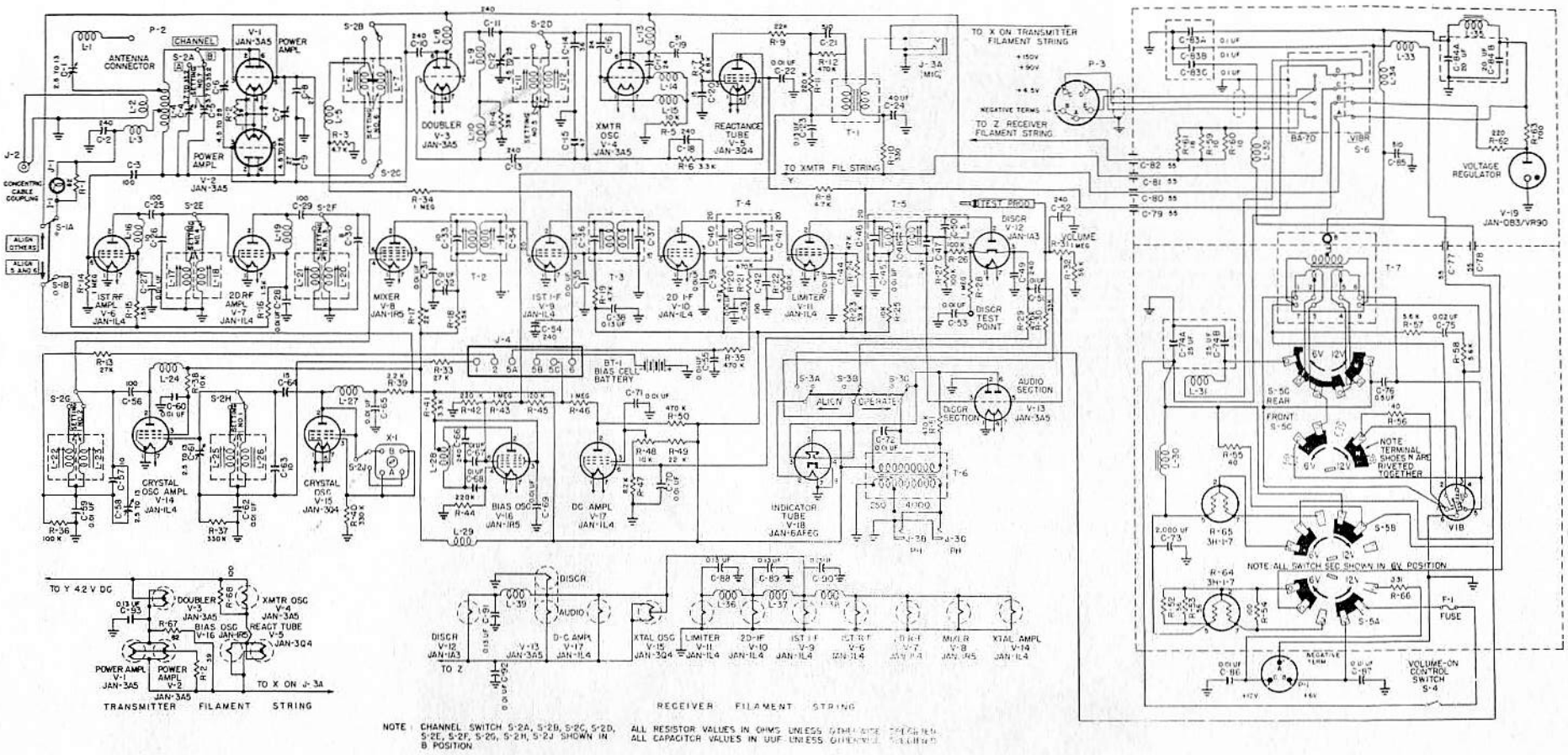
RECEIVER POWER PLUG 148

PIN	VOLTAGE
1	+105 VOLTS
2	+1.4 VOLTS
3	+105 VOLTS
4	+105 VOLTS WITH PHONE-CW-NET-CAL SWITCH IN NET OR CAL POSITION
5	SIDE TONE
6	+105 VOLTS WITH PHONE-CW-NET-CAL SWITCH IN PHONE OR CW POSITION AND SEND-STANDBY-OFF SWITCH IN SEND POSITION

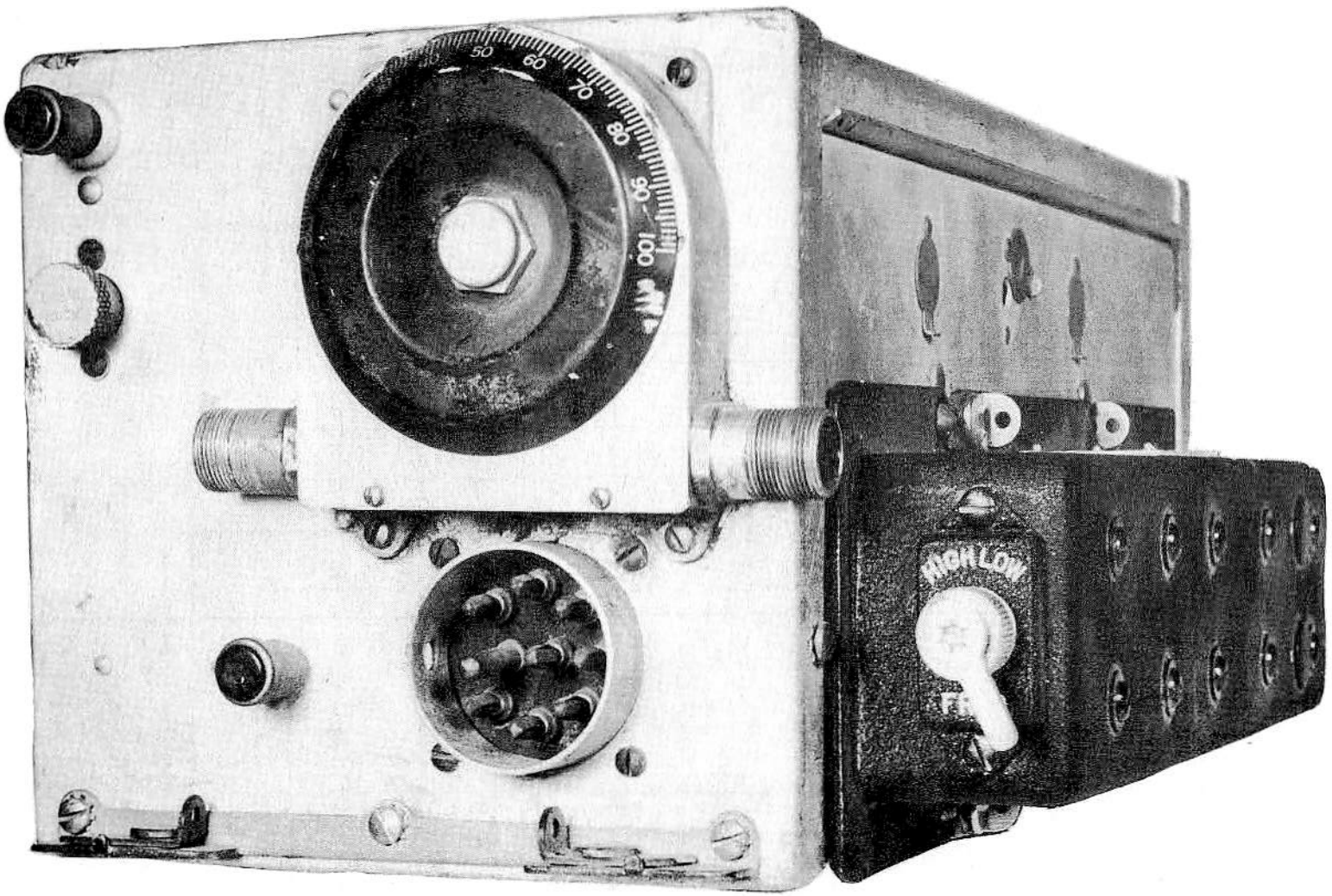
SCHEMATIC DIAGRAM TRANSMITTER SECTION BC-1306



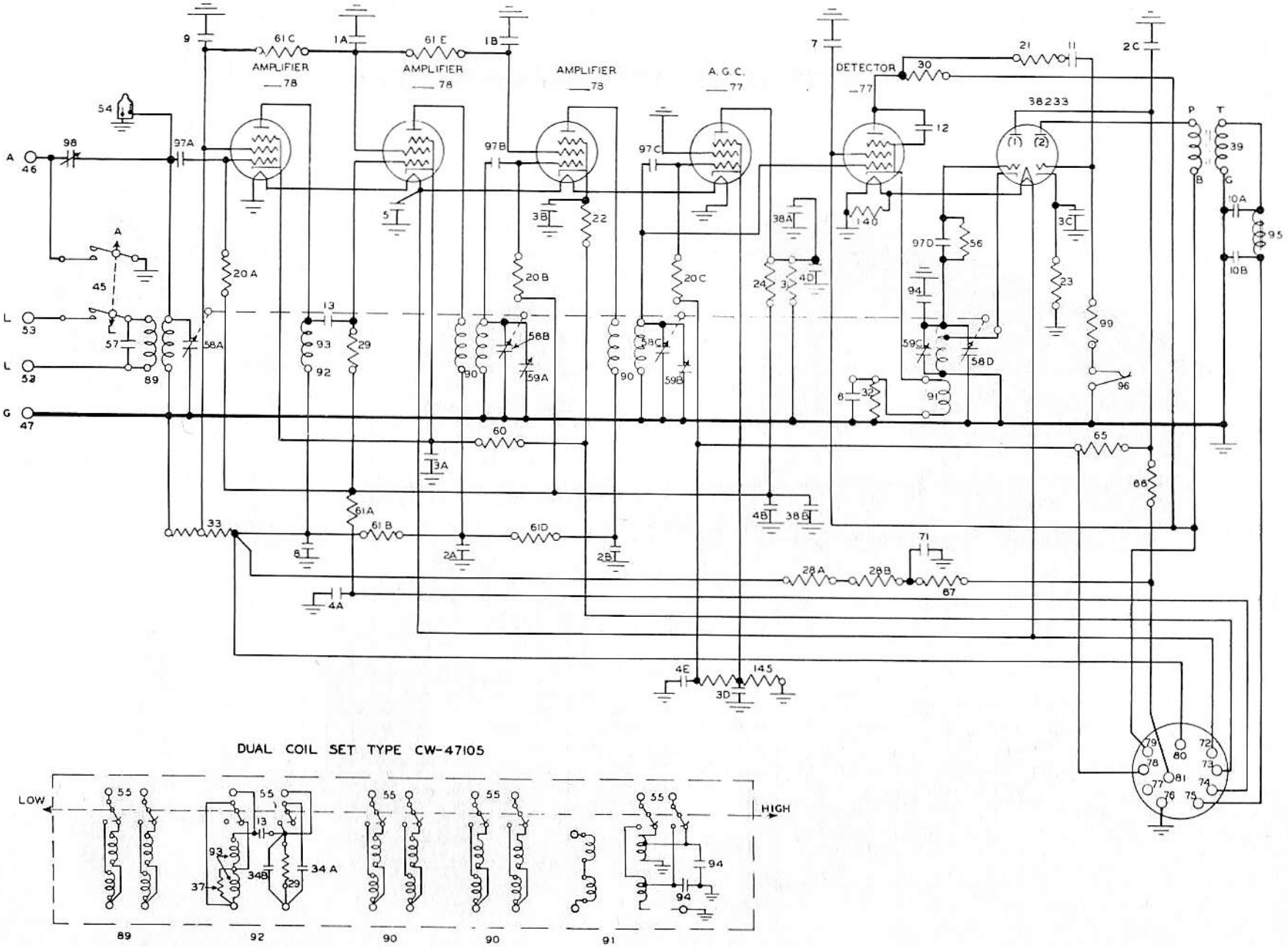
RADIO RECEIVER AND TRANSMITTER BC-1335



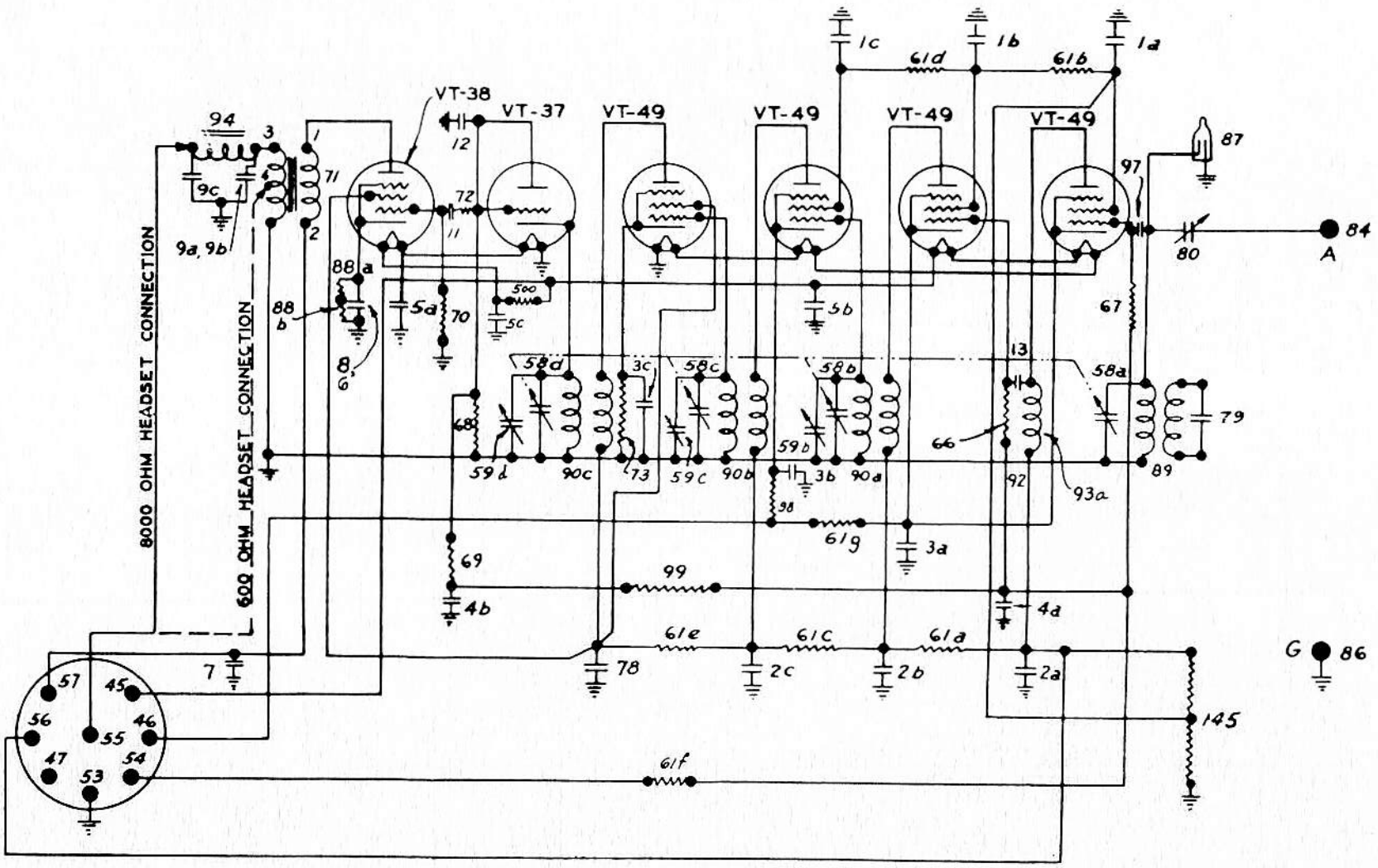
SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER BC-1335



RADIO RECEIVER BC-AR-231 AND GF-11

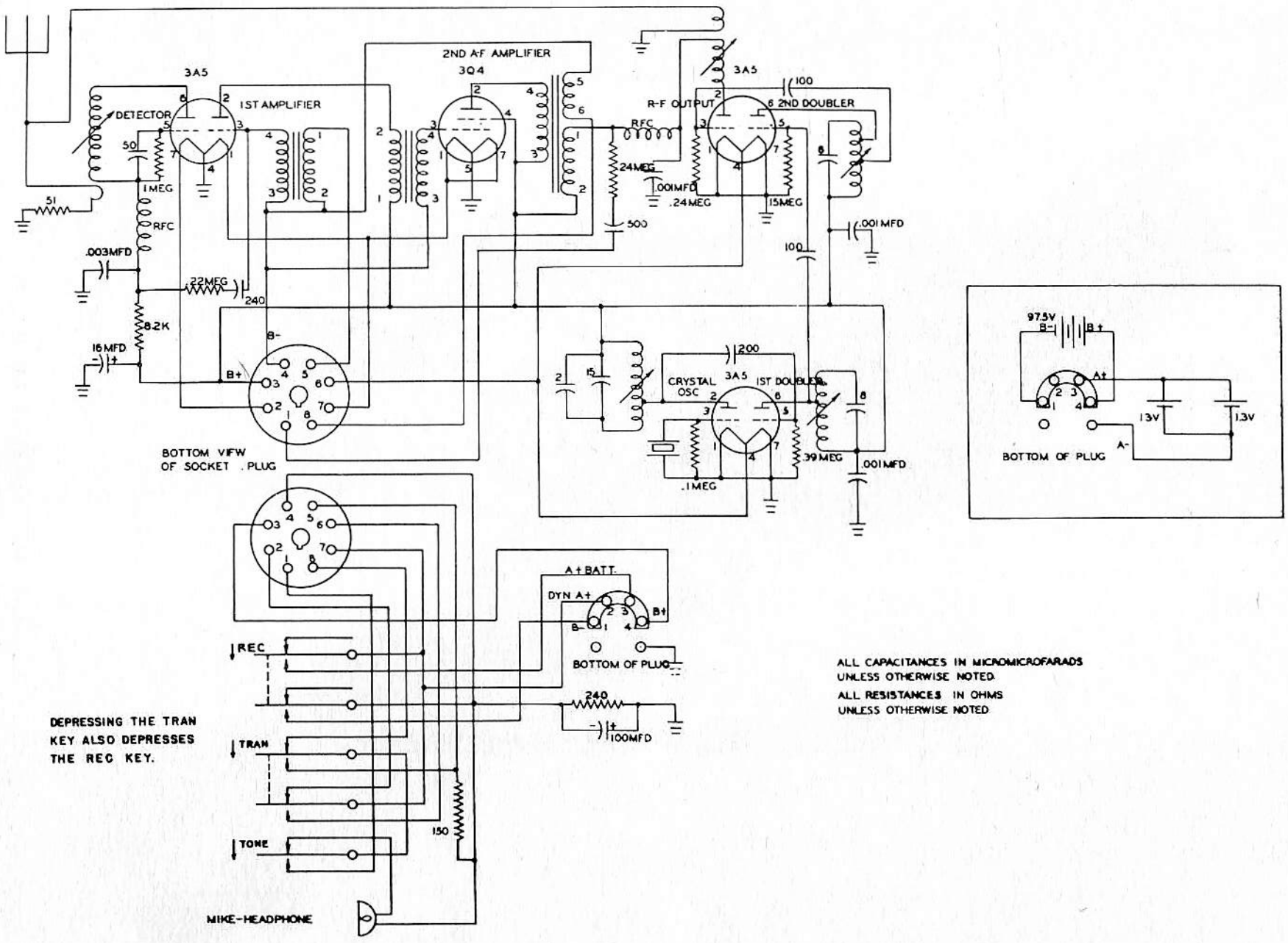


SCHEMATIC DIAGRAM RADIO RECEIVER GF-11

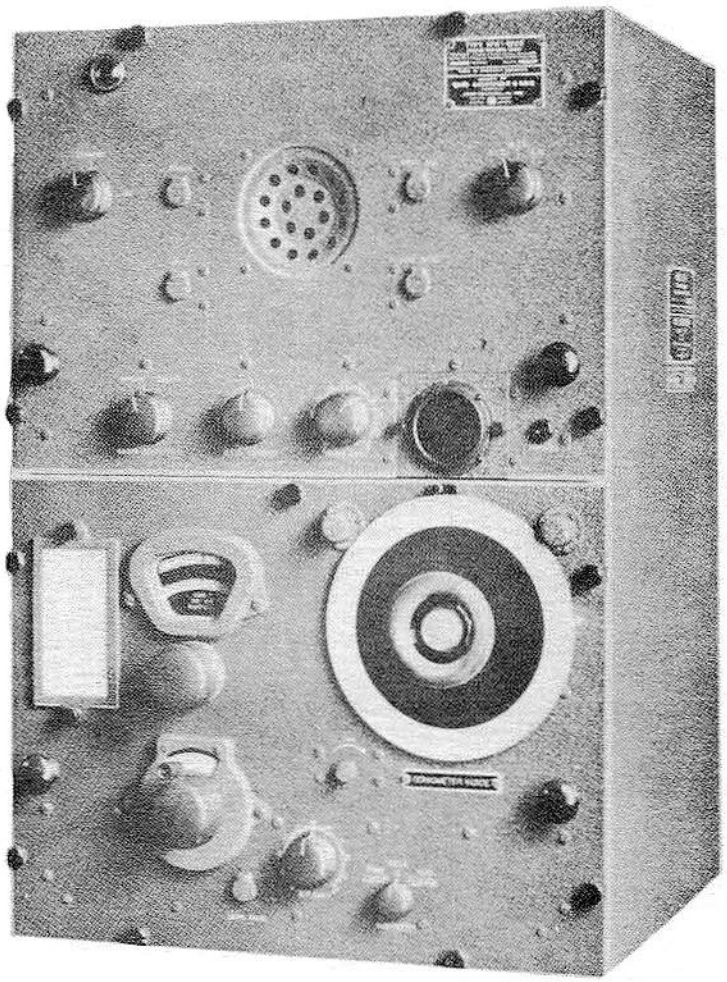


SCHEMATIC DIAGRAM RADIO RECEIVER BC-AR-231

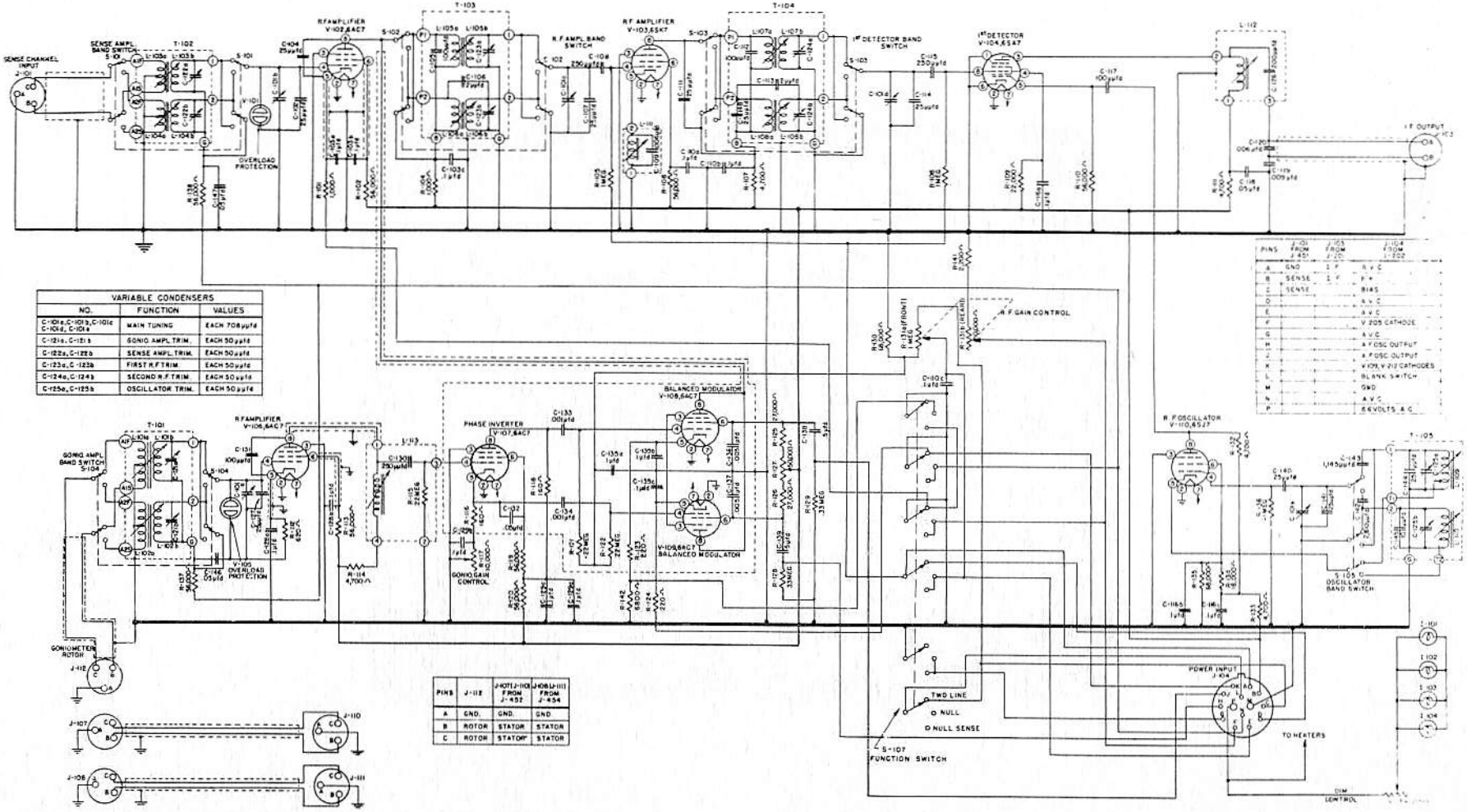
RADIO RECEIVER AND TRANSMITTER CRC-7



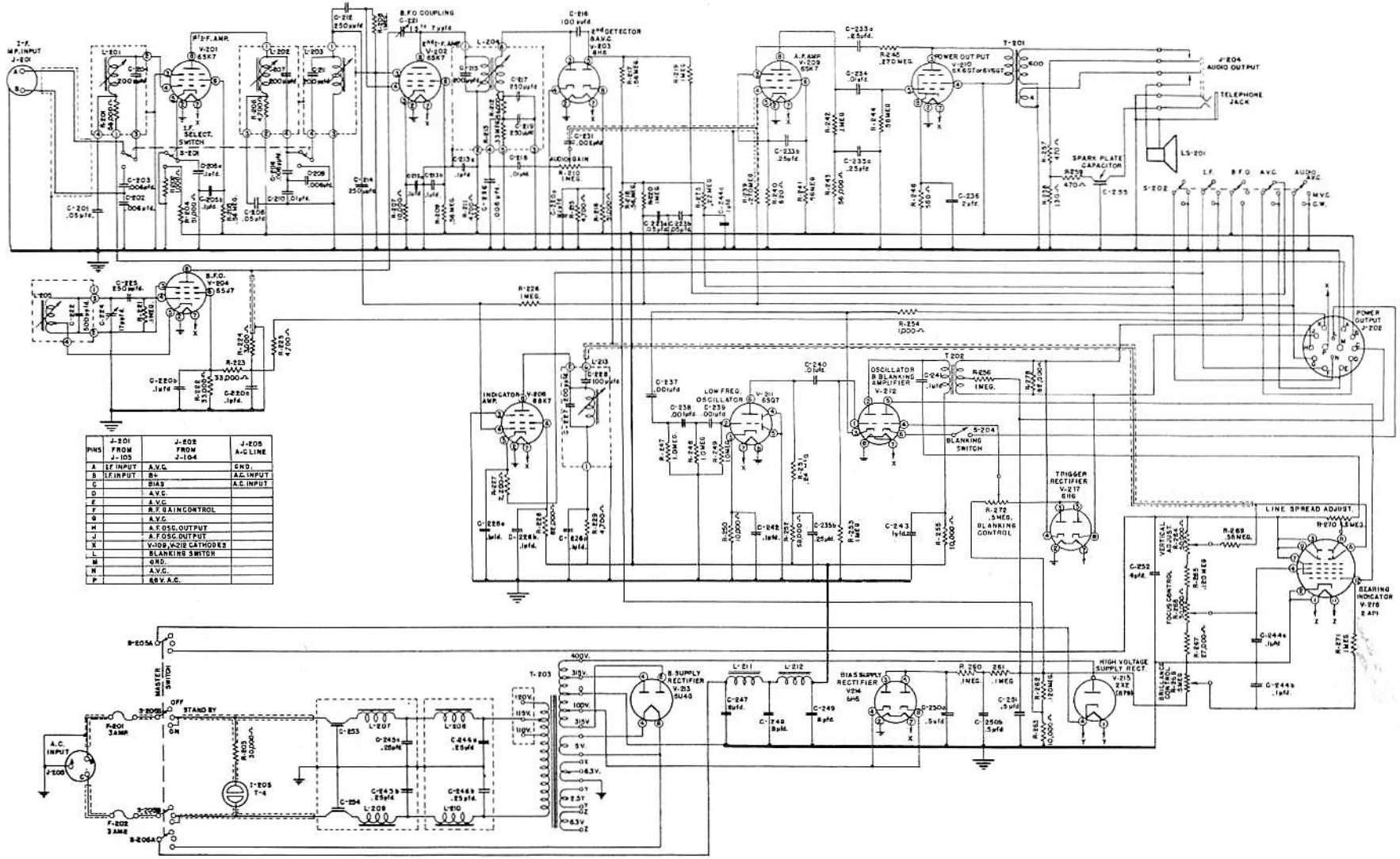
SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER CRC-7



RADIO RECEIVER DAK-3

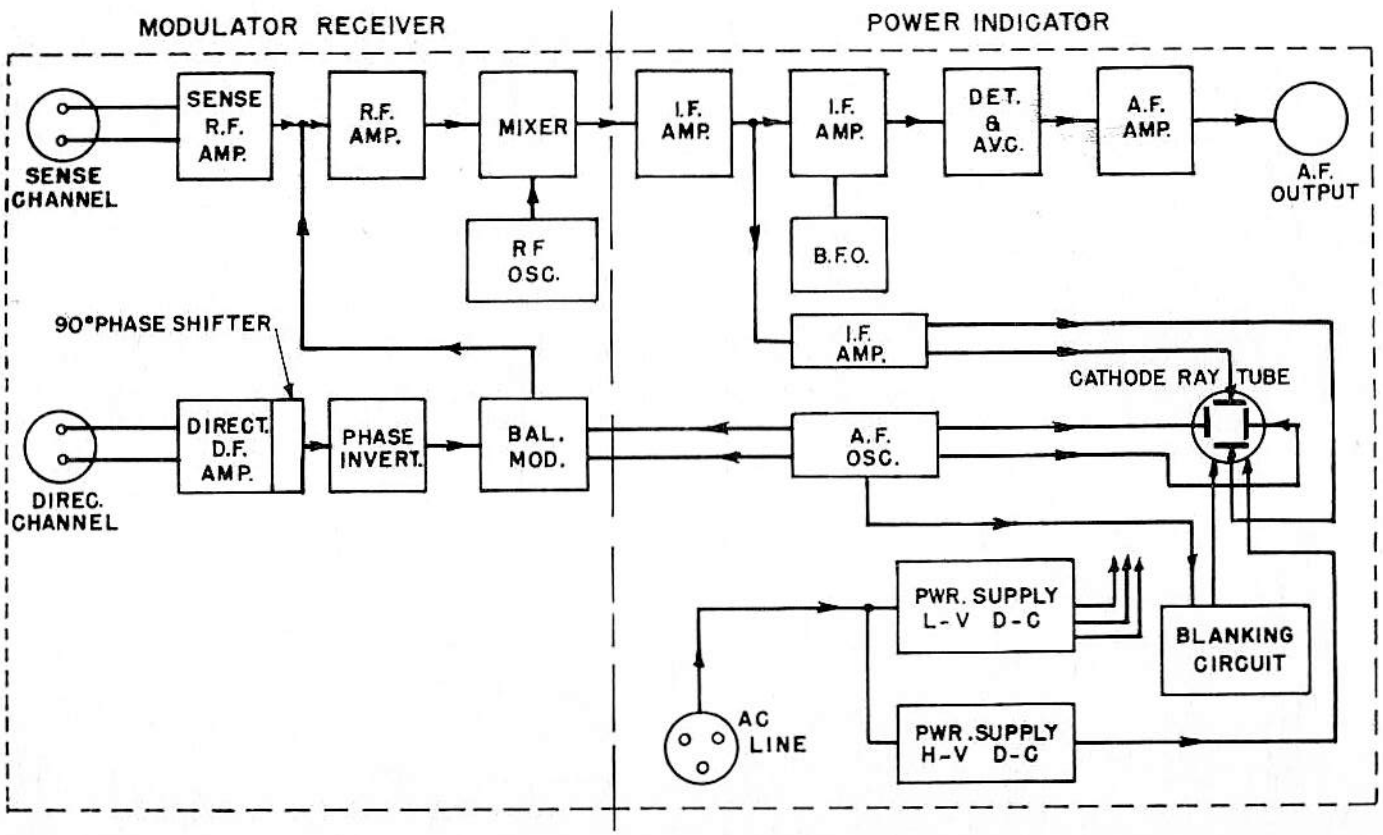


SCHEMATIC DIAGRAM DAK-3 MODULATOR SECTION

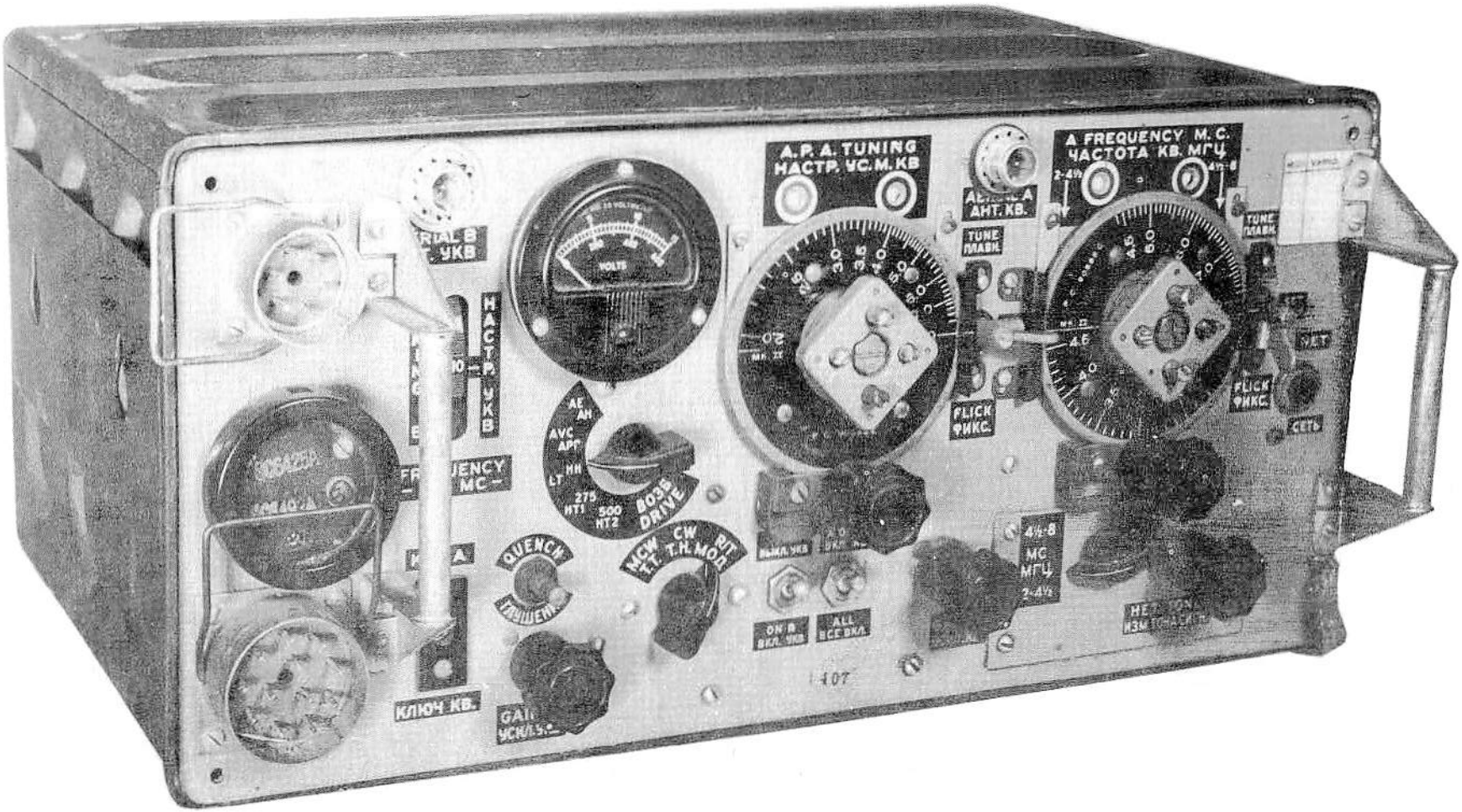


PINS	J-201 FROM J-103	J-202 FROM J-104	J-205 A-G LINE
A	I.F. INPUT	A.V.C.	GND.
B	I.F. INPUT	B+	A.C. INPUT
C		BIAS	A.C. INPUT
D		A.V.C.	
E		A.V.C.	
F		R.F. GAIN CONTROL	
G		A.V.C.	
H		A.F. OSC. OUTPUT	
J		A.F. OSC. OUTPUT	
K		V-109, V-210 CATHODES	
L		BLANKING SWITCH	
M		GND.	
N		A.V.C.	
P		80 V. A.C.	

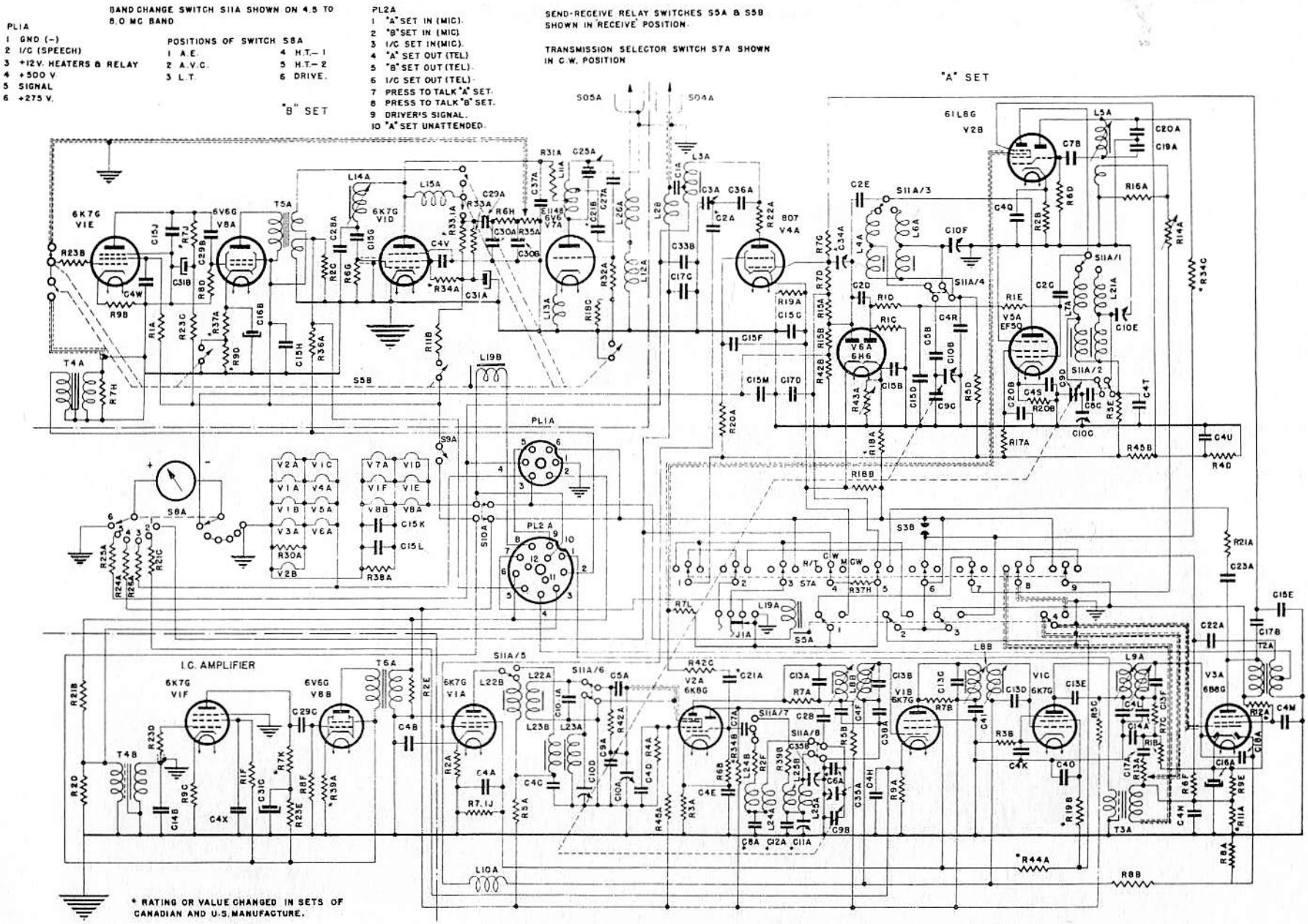
SCHEMATIC DIAGRAM DAK-3 POWER INDICATOR SECTION



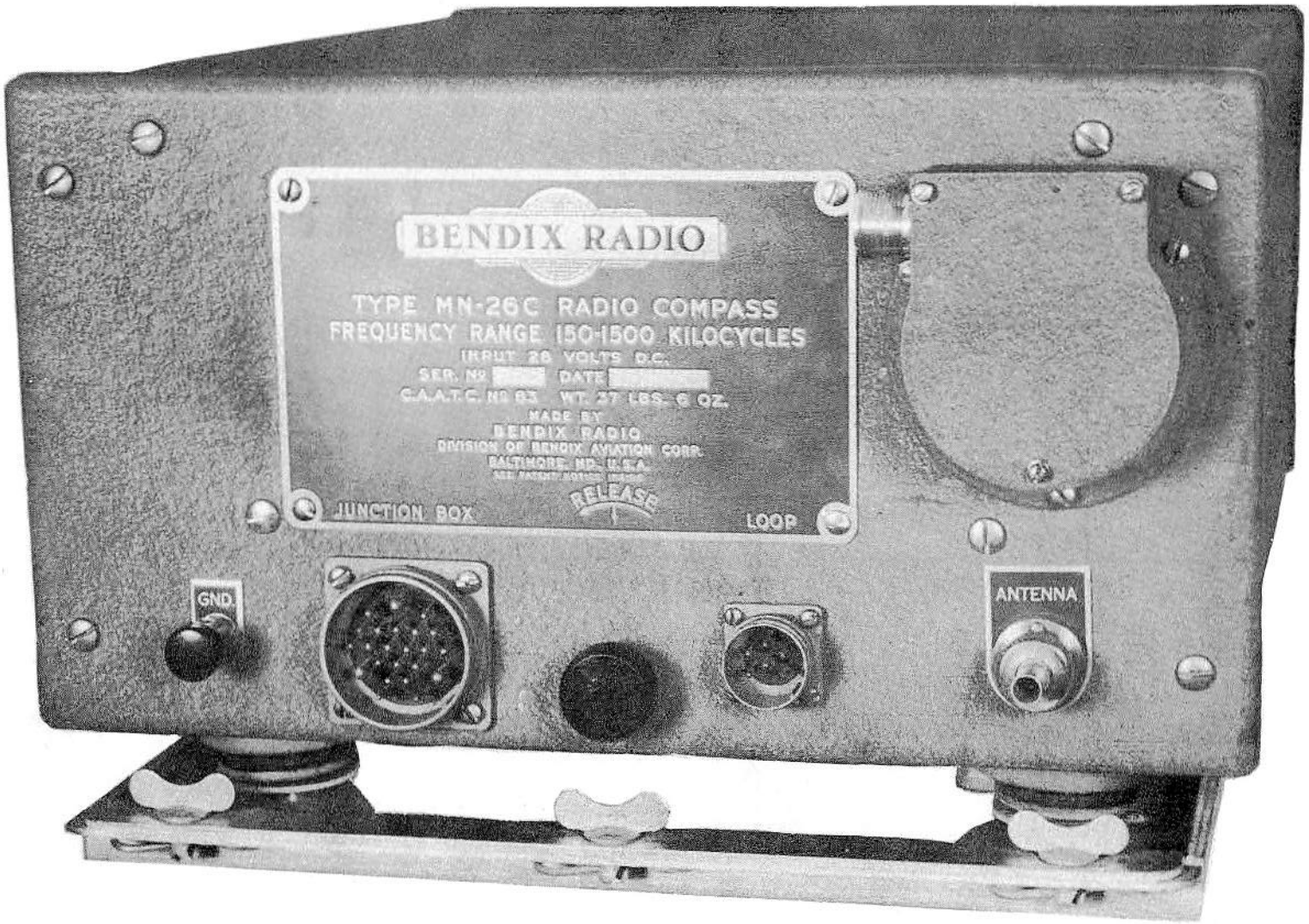
BLOCK DIAGRAM DAK-3 RADIO RECEIVER



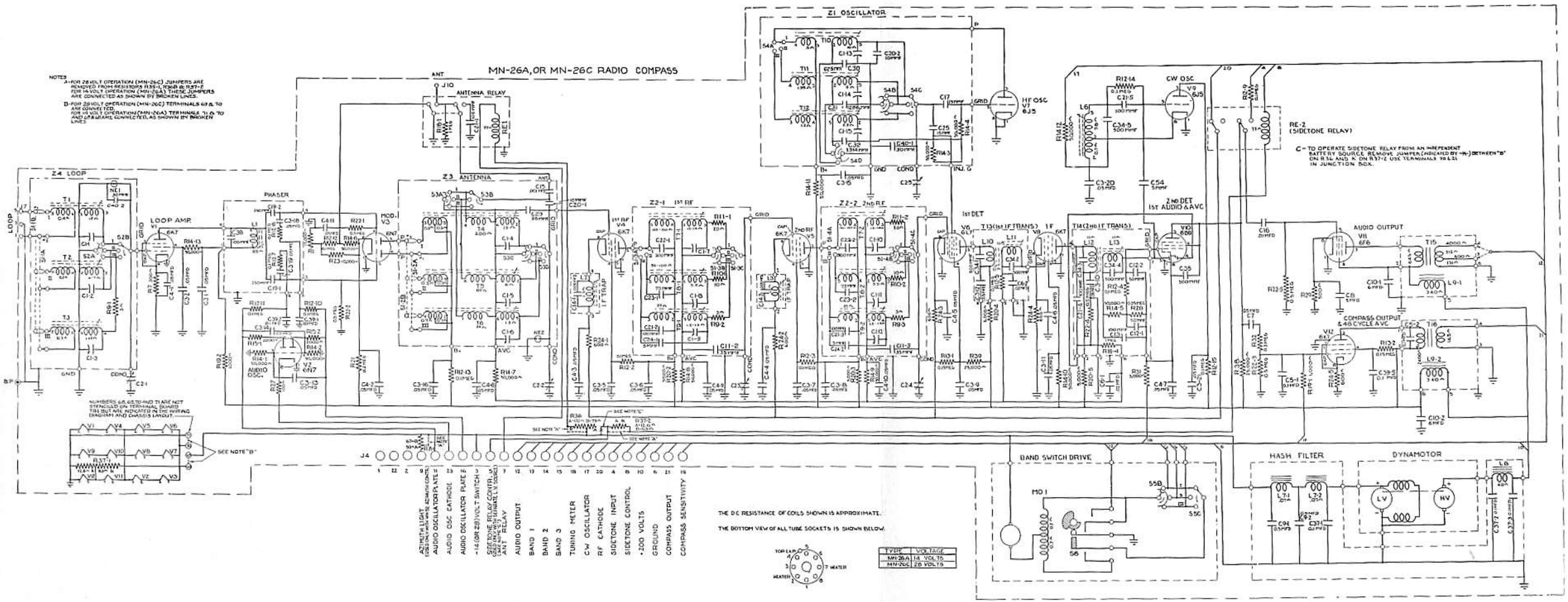
RADIO RECEIVER AND TRANSMITTER MARK II



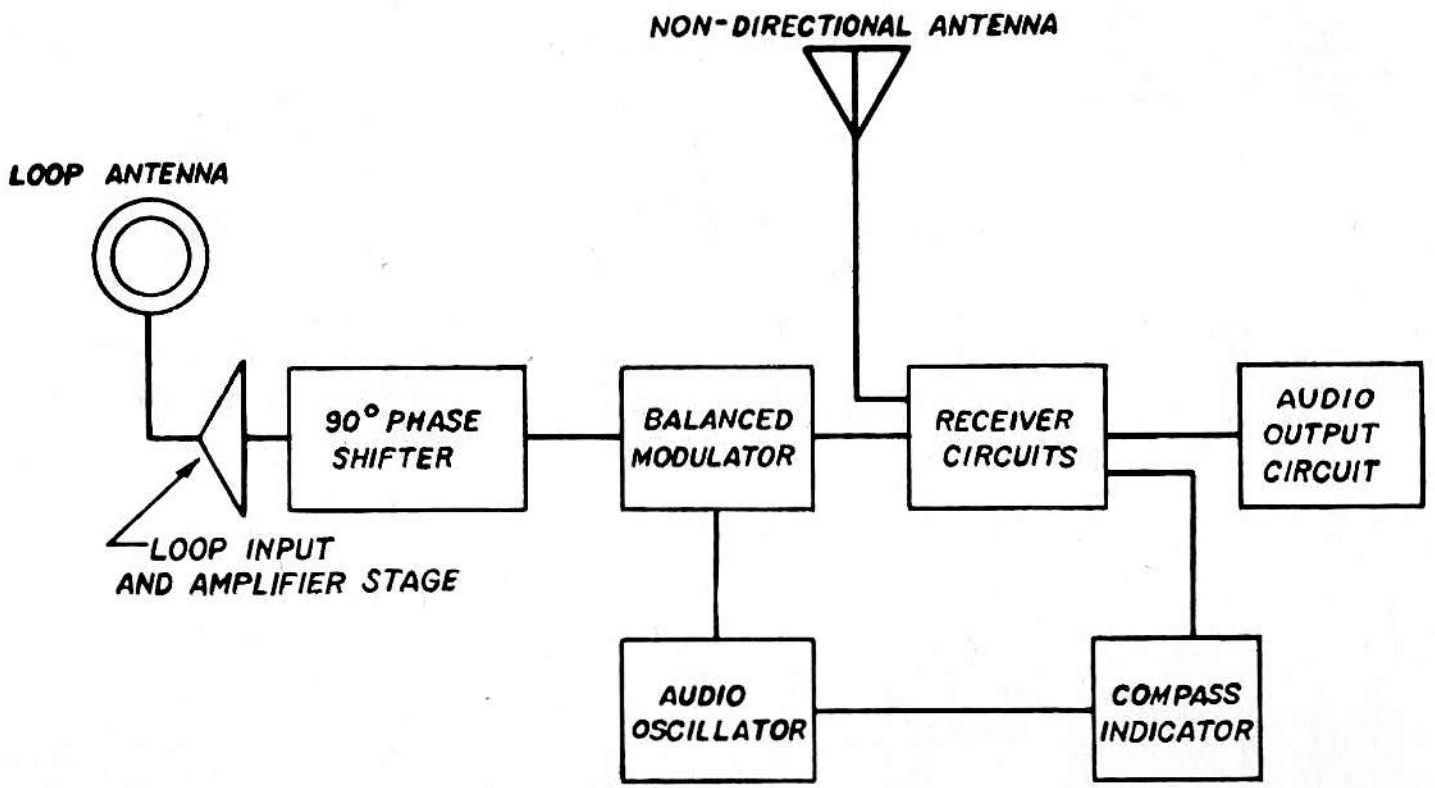
SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER MARK II



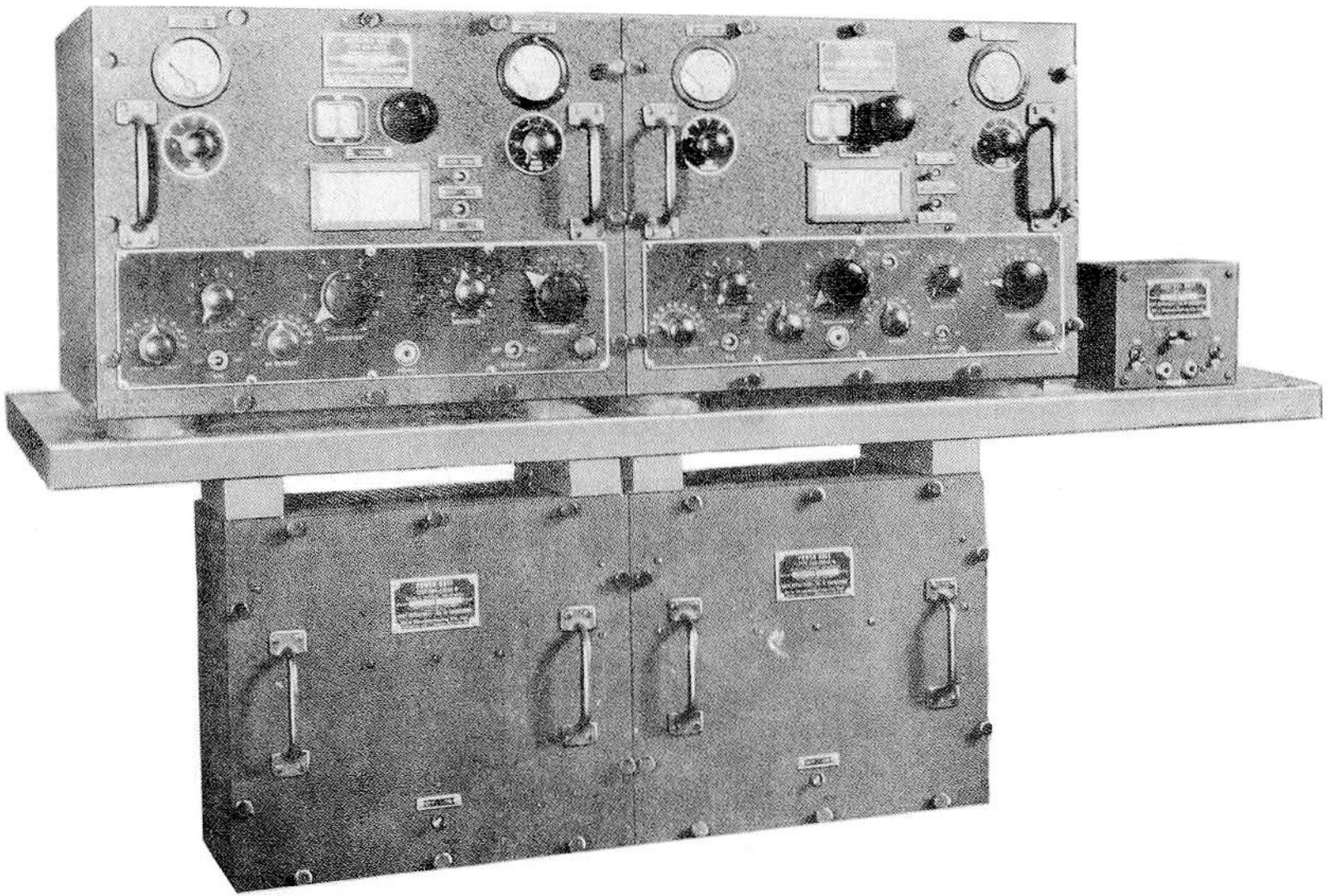
RADIO RECEIVER MN-26



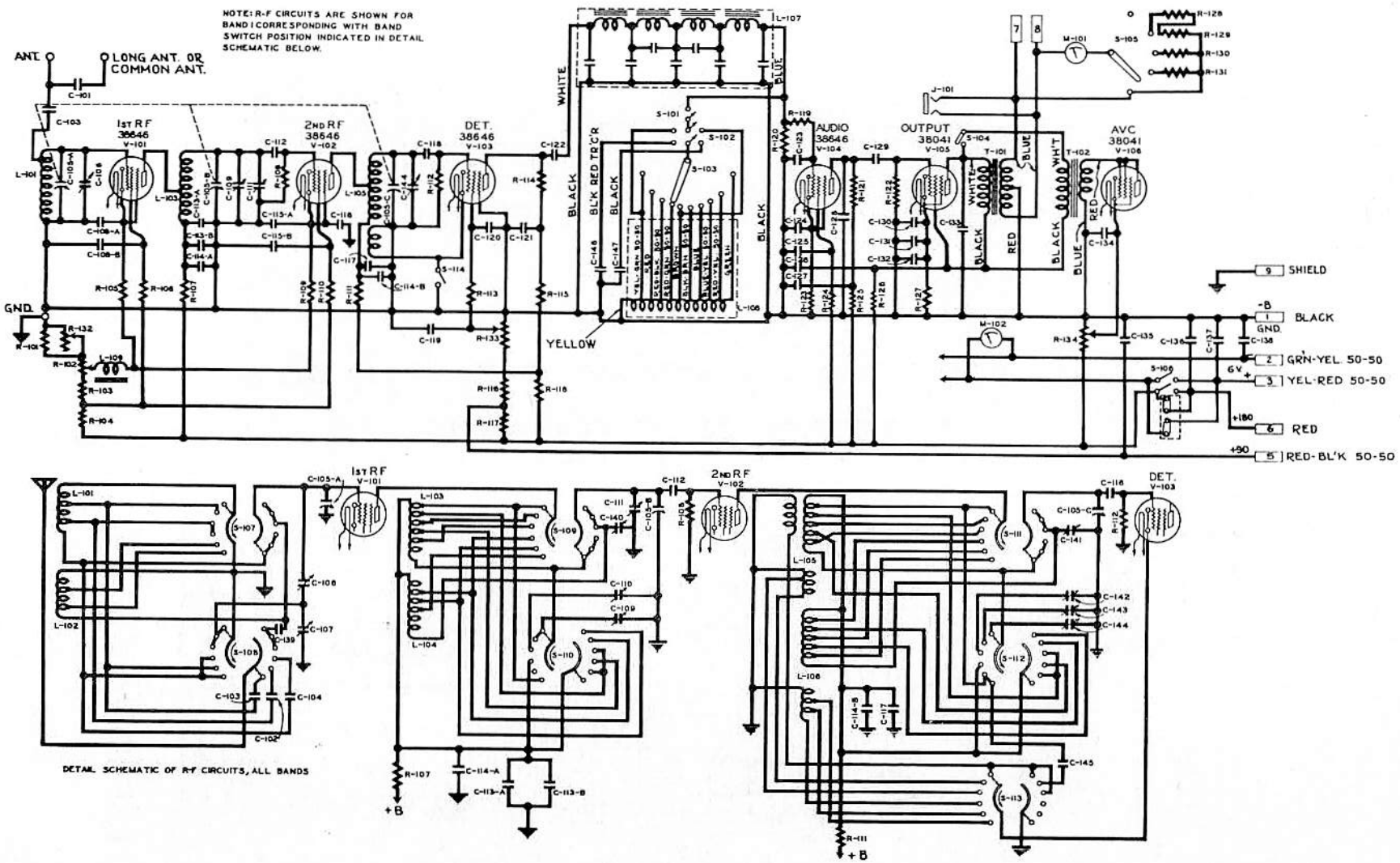
SCHEMATIC DIAGRAM RADIO RECEIVER MN-26



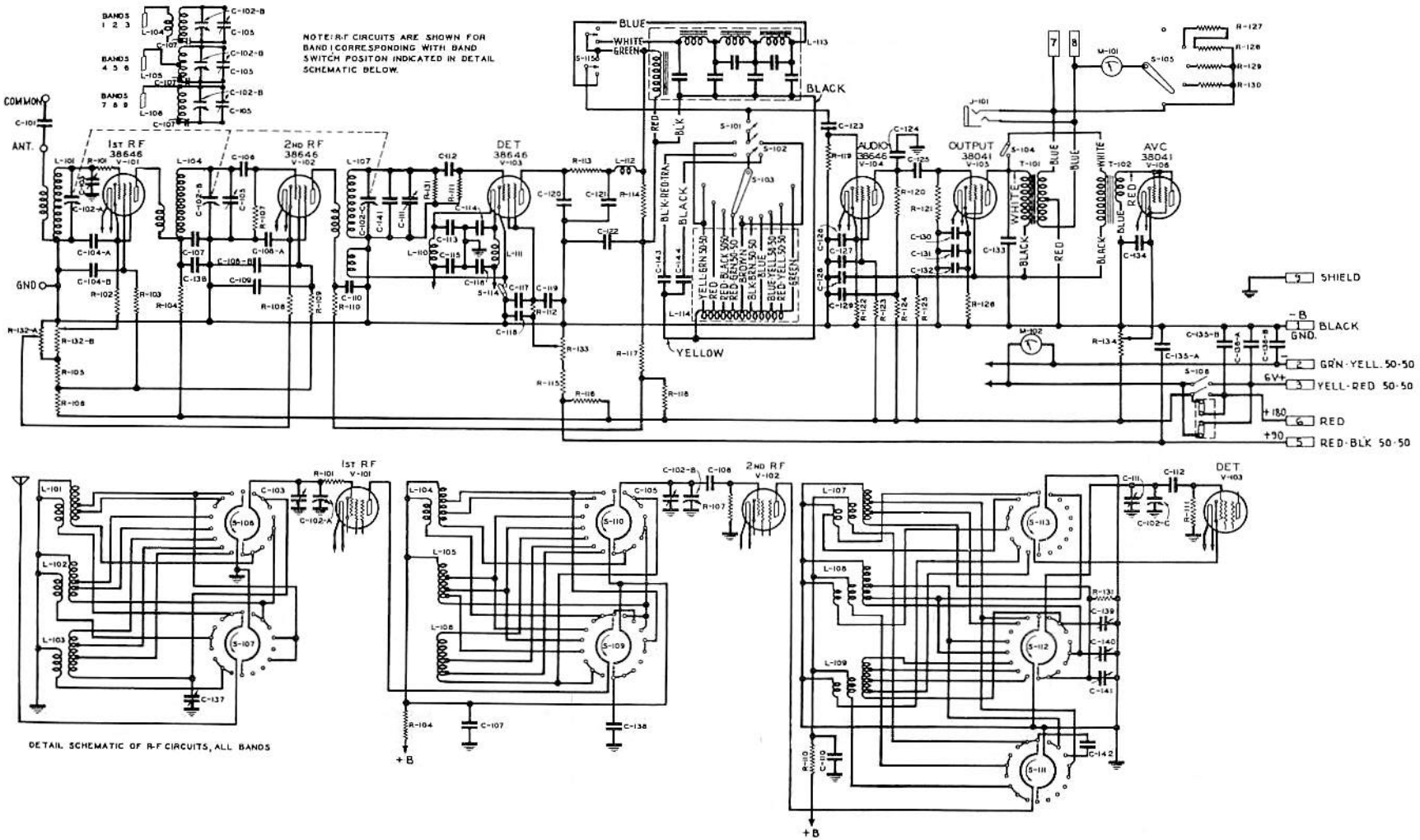
BLOCK DIAGRAM RADIO RECEIVER MN-26



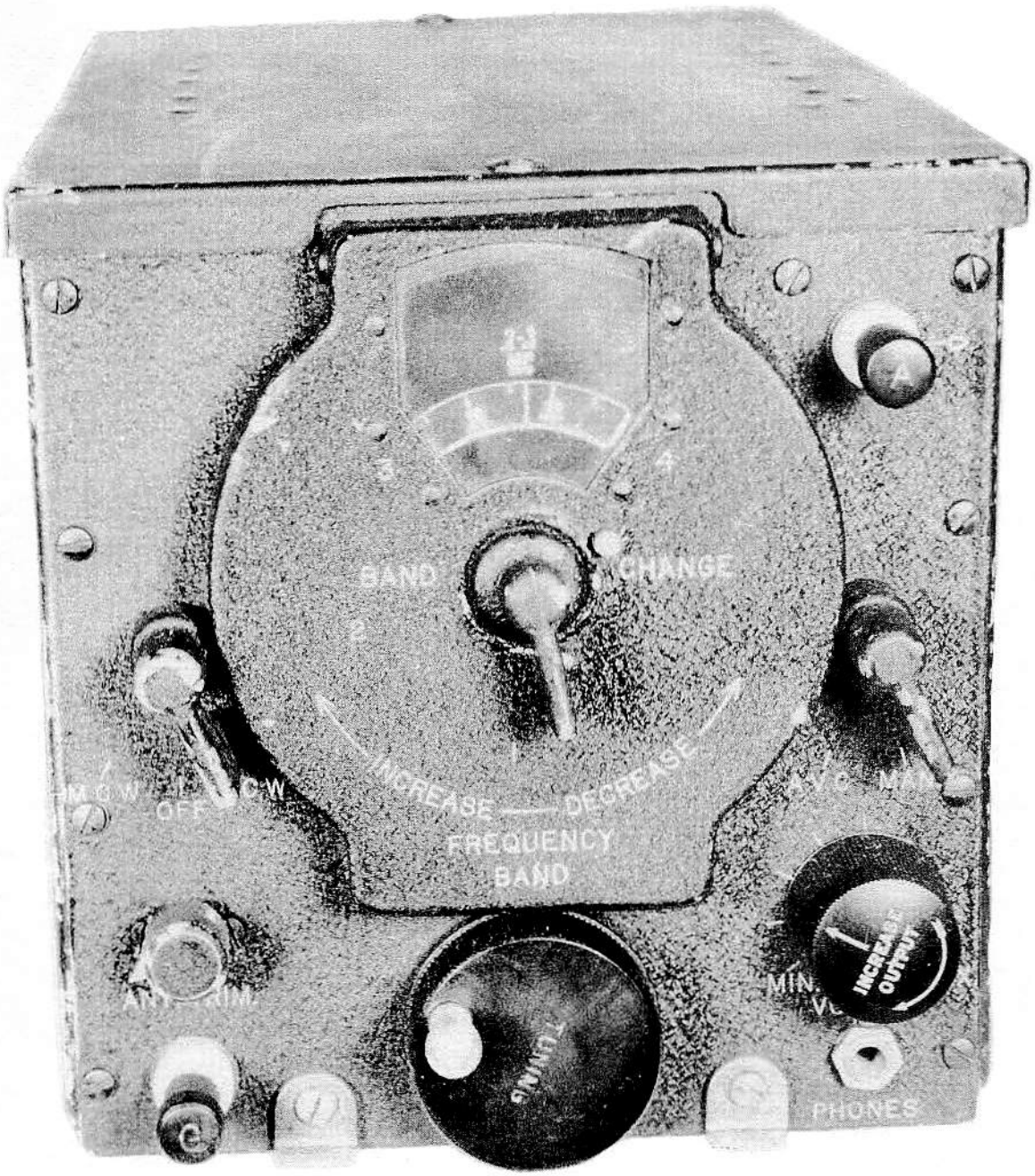
RADIO RECEIVER RAK-5 and RAL-5



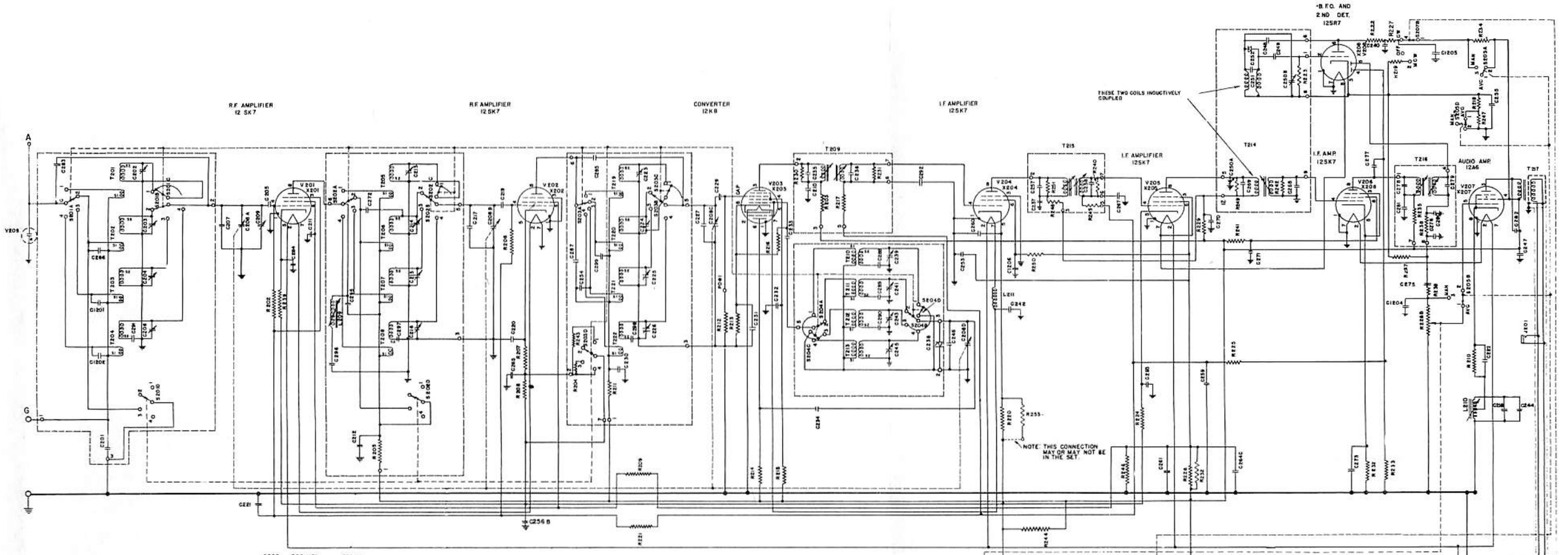
SCHEMATIC DIAGRAM RADIO RECEIVER RAK-5



SCHEMATIC DIAGRAM RADIO RECEIVER RAL-5



RADIO RECEIVER RAX-1



CAPACITORS

C201	50 MMFD	500 V	
C202	50 MMFD	TRIMMER	
C203	50 MMFD	TRIMMER	
C204	50 MMFD	TRIMMER	
C205	100 MMFD	500 V	
C206	50 MMFD	M 7464331 P9	
C207	25 MMFD	500 V	
C208A		W-7351283, G2 OR	
C208B		TT-7660270 G2	
C208C		TUNING CAP	
C208D △	209.9 MMFD		
C209	31 MMFD	TRIMMER	
C210	.006 MFD	300 V	
C211	.006 MFD	300 V	
C212	.006 MFD	300 V	
C213	50 MMFD	TRIMMER	
C214	50 MMFD	TRIMMER	
C215	50 MMFD	TRIMMER	
C216	50 MMFD	TRIMMER	
C217	50 MMFD	500 V	
C218	9500 MMFD	300 V	
C219	100 MMFD	500 V	
C220	.01 MFD	300 V	
C221	.01 MFD	300 V	
C222	50 MMFD	25 V	
C223	50 MMFD	TRIMMER	
C224	50 MMFD	TRIMMER	
C225	50 MMFD	TRIMMER	
C226	50 MMFD	TRIMMER	
C227	50 MMFD	500 V	
C228	.01 MFD	300 V	
C229	100 MMFD	500 V	
C230	.006 MFD	300 V	
C231	.01 MFD	300 V	
C232	.006 MFD	300 V	
C233	50 MMFD	250 V	
C234	500 MMFD	500 V	
C235	500 MMFD	250 V	
C236	500 MMFD	250 V	
C237	.006 MFD	300 V	
C238	25 MMFD	CERAMICON	
C239	50 MMFD	TRIMMER	
C240	.006 MFD	300 V	
C241	50 MMFD	TRIMMER	
C243	50 MMFD	TRIMMER	
C245	50 MMFD	TRIMMER	
C246	40 MMFD	250 V	
C247	.05 MFD	400 V	
C248	500 MMFD	500 V	
C249	50 MMFD	250 V	
C250A,B	40 MMFD	TRIMMER	
C251	230 MMFD	250 V	
C252	.15 MFD	CERAMICON	
C253	.006 MFD	300 V	
C254	20 MMFD	500 V	
C255	.01 MFD	300 V	
C256A	12 MFD	50 V	
C257	500 MMFD	250 V	
C258	500 MMFD	250 V	
C259	.01 MFD	600 V	
C260	.01 MFD	300 V	
C261	.05 MFD	400 V	
C262	.006 MFD	300 V	
C263	.006 MFD	300 V	
C264A	16 MFD	250 V	
C264B	16 MFD	250 V	
C264C	16 MFD	250 V	
C265	.01 MFD	300 V	
C242	.01 MFD	300 V	
C244	9500 MMFD	300 V	
C255	.006 MFD	300 V	
C267	.01 MFD	300 V	
C268	500 MMFD	250 V	
C269	560 MMFD	250 V	
C270	.006 MFD	300 V	
C271	.006 MFD	300 V	
C272	10 MMFD	500 V	
C273	.01 MFD	300 V	
C274	.006 MFD	300 V	
C275	.01 MFD	300 V	
C276	200 MMFD	500 V	
C277	100 MMFD	500 V	
C278	525 MMFD	250 V	
C279	215 MMFD	250 V	
C280	300 MMFD	500 V	
C281	.006 MFD	300 V	
C282	.025 MFD	400 V	
C283	10 MMFD	500 V	
C284	.01 MFD	300 V	
C285	10 MMFD	500 V	
C286	50 MMFD	500 V	
C287	100 MMFD	500 V	
C288	512 MMFD	250 V	
C289	730 MMFD	250 V	
C290	1197 MMFD	250 V	
C291	2390 MMFD	250 V	
C292	.006 MFD	300 V	
C293	.01 MFD	300 V	
C256B	12 MFD	50 V	
C295	100 MMFD	500 V	
C296	10 MMFD	500 V	
C297	2390 MMFD	250 V	
C298	2390 MMFD	250 V	
C299	20 MMFD	500 V	
C1201	50 MMFD	500 V	
C1202	.25 MFD	250 V	
C1203	.01 MFD	300 V	
C1204	100 MMFD	500 V	
C1205	.006 MFD	300 V	
C1206	.006 MFD	300V	

DYNAMOTOR

D 201 K-7876461 P1

FUSE

F 201 4 AMPS

JACK

J 201 M 7461865 G-1

CHOKES

L 205	K 7877090	
L 206	K 7877075	
L 207	K 7877089	
L 208	M 7464808 G-1	
L 209	M 7464921 G-1	
L 210	P 7763160 G-1	
L 211	M 7464808 G-1	

PLUG

P 201 K-7876934 P1

RESISTORS

R 202	1 MEGOHM	1/2 WATT
R 203	820 OHMS	
R 204	620 OHMS	
R 205	2200 OHMS	
R 206	1 MEGOHM	
R 207	300 OHMS	
R 208	3000	
R 209	1200	1/2 WATT
R 210	390	1 WATT
R 211	2200 OHMS	1/2 WATT
R 212	1 MEGOHM	
R 213	330 OHMS	
R 214	39,000	1/2 WATT
R 215	12,000	1/2 WATT
R 216	51,000	1/2 WATT
R 217	47,000	
R 218	15,000	1/2 WATT
R 219	120,000	1/2 WATT
R 220	1200	1/2 WATT
R 221	47,000	
R 222	39,000	
R 223	2100,000	
R 224	300 OHMS	
R 225	1 MEGOHM	1/2 WATT
R 226	11000 OHMS	1 WATT
R 251	82,000 OHMS	1/2 WATT
R 252	11000 OHMS	1 WATT
R 253	510 OHMS	1/2 WATT
R 227	2,200 OHMS	1/2 WATT
R 228A	6250	M 7464321 P2
R 228B	800,000	M 7464321 P2
R 229	2200	1/2 WATT
R 230	82,000	
R 231	82,000	
R 232	510	
R 233	470,000	
R 234	240,00	
R 235	650	
R 236	39,000	
R 237	300,000	
R 239	300	
R 240	82,000	
R 241	17,000	
R 242	51,000	
R 244	62,000	
R 245	470,000	
R 246	33,000	
R 247	24,000 OHMS	1/2 WATT
R 248	510 OHMS	1/2 WATT
R 243	2000 OHMS	1/2 WATT
R 238	12,000 OHMS	1/2 WATT
R 249	39,000 OHMS	1/2 WATT
R 250	5600 OHMS	1/2 WATT

SWITCHES

S201A,B,C,D	M7464376 P3
S202A,B,C,D	M7464376 P3
S203A,B,C,D	M7464376 P3
S204A,B,C,D	M7464376 P6
S205A,B,C,D	M7464292 P2
S207A-B	M7464292 P1

TRANSFORMERS

T201	K 7877362
T202	K 7877363
T203	K 7877364
T204	K 7877365
T205	K 7877366
T206	K 7877367
T207	K 7877368
T208	K 7877369
T209	P 7763103 G-1
T210	K 7877374
T212	K 7877376
T213	K 7877377
T214	P 7763105 G-1
T215	P 7763104 G-1
T216	P 7763106 G-1
* T217	K 7878235
T219	K 7877570
T220	K 7877371
T221	K 7877372
T222	K 7877373
T211	K 7877375

TUBES

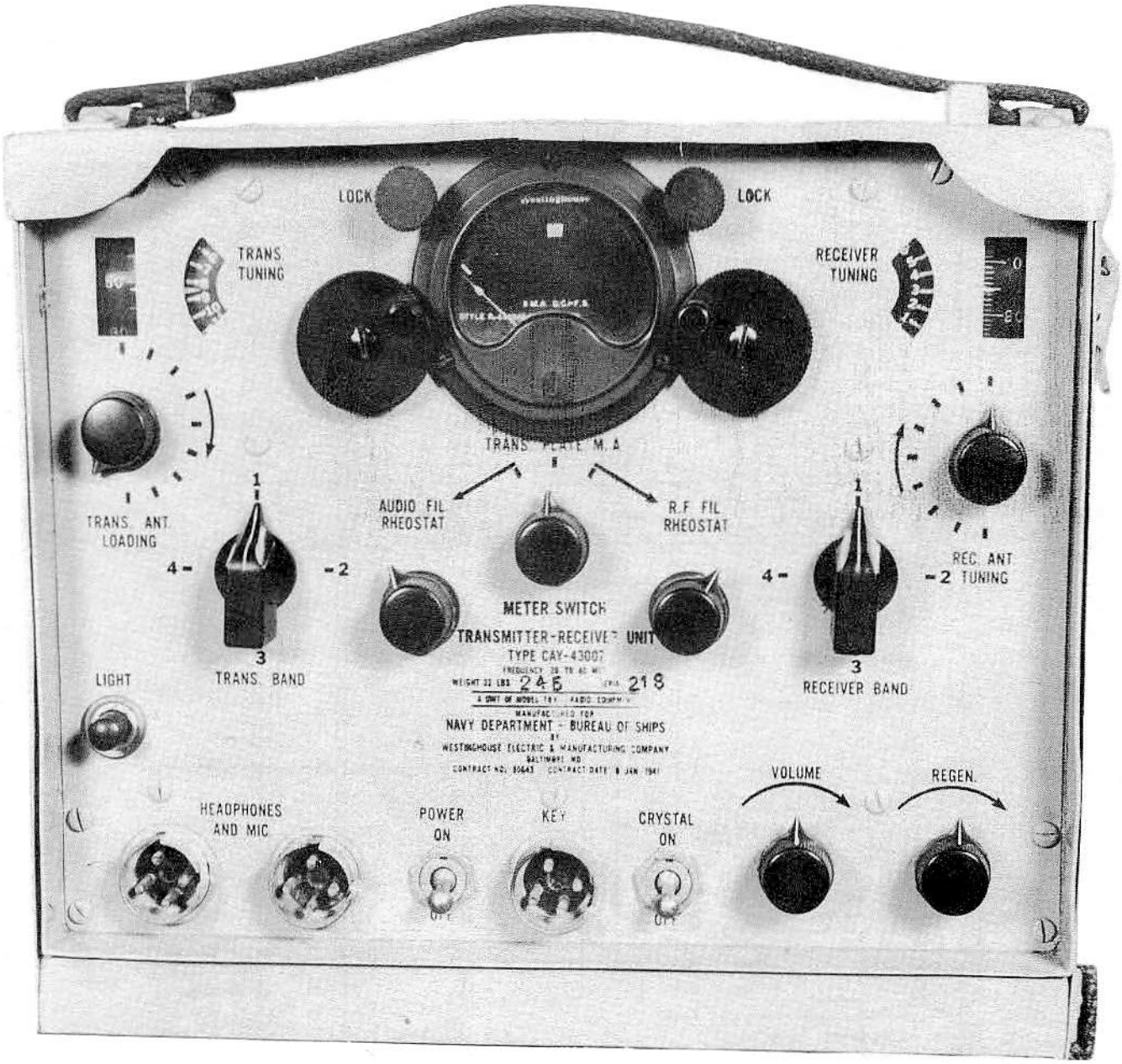
V201	12SK7
V202	12SK7
V203	12 K8
V204	12SK7
V205	12SK7
V206	12SK7
V207	12A6
V208	12SR7
V209	CD-1010-GL

TUBE SOCKETS

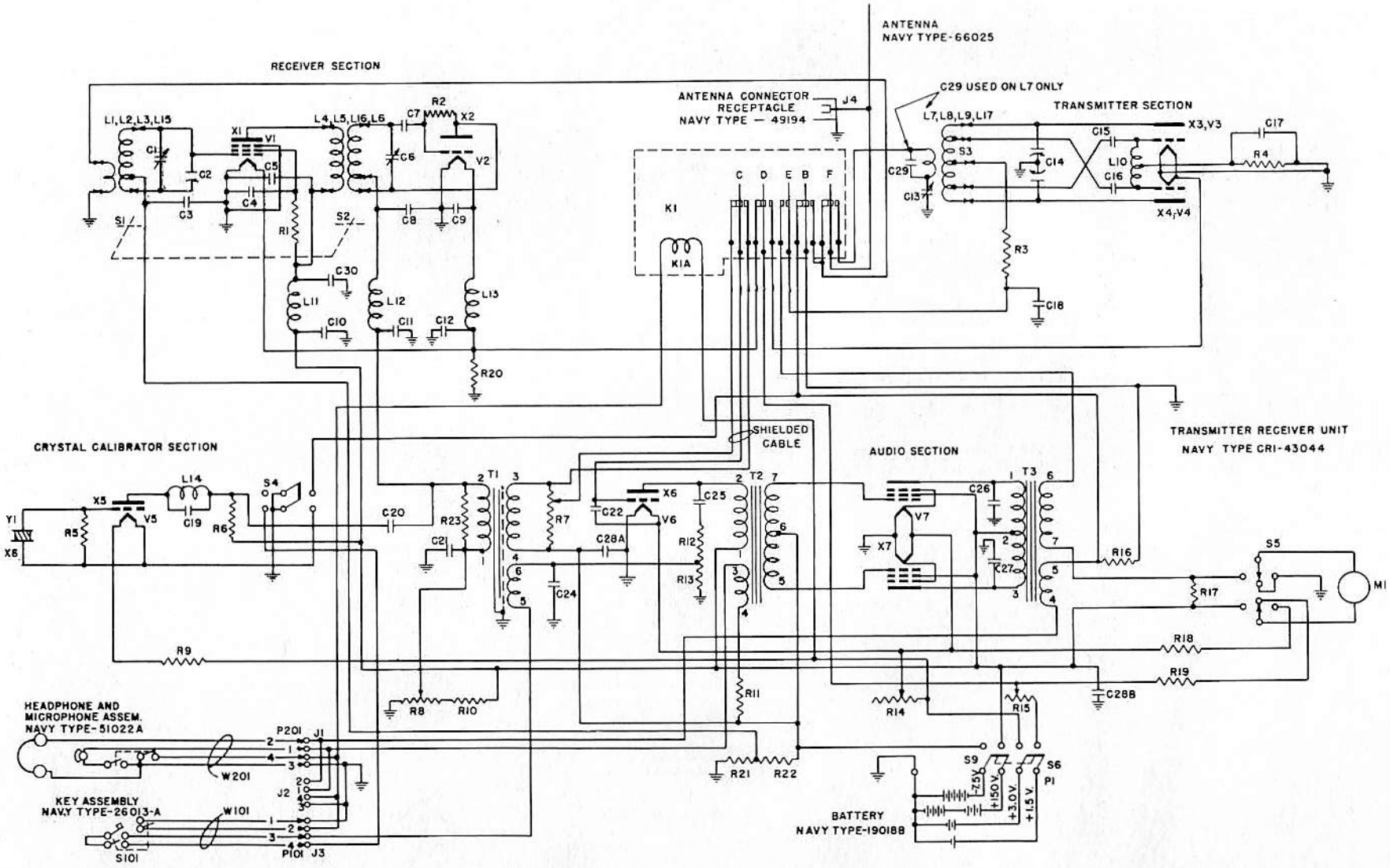
X201	K 7874006 OR K-7883803
X202	
X203	
X204	
X205	
X206	
X207	
X208	K 7874006 OR K-7883803

* T217 K-7877947 USED ON NAVY MODEL RAX-1.

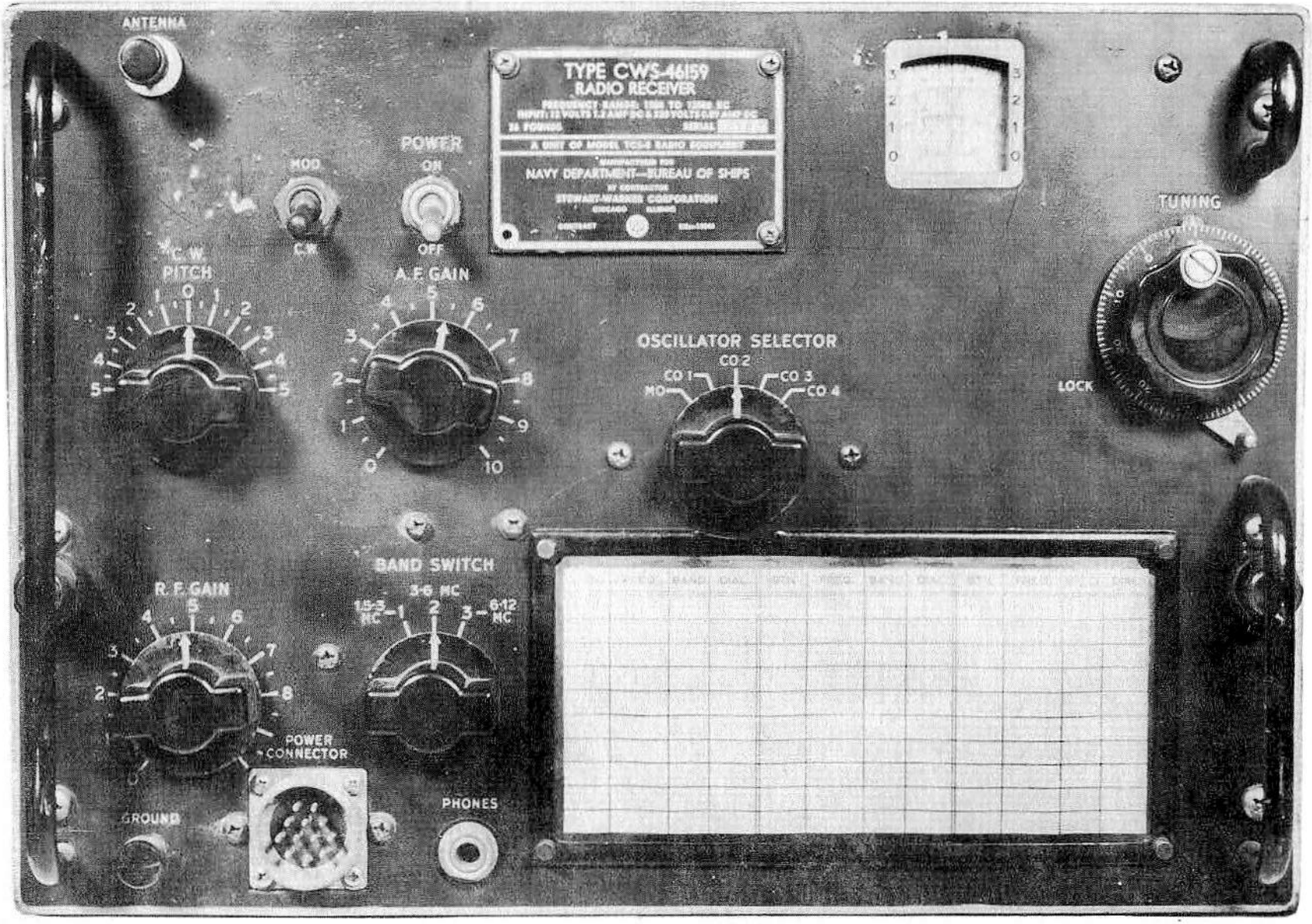
SCHEMATIC DIAGRAM RADIO RECEIVER RAX-1



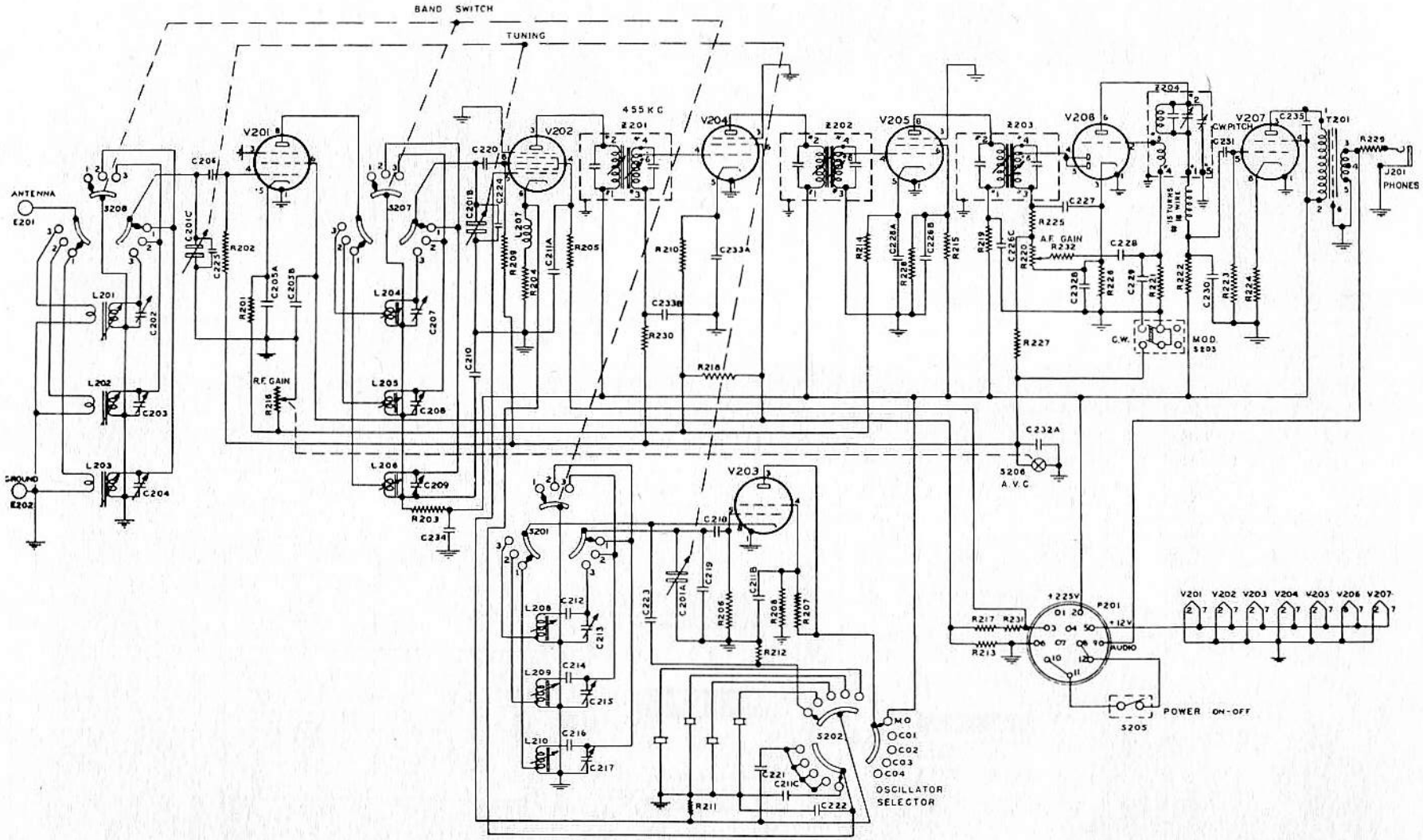
RADIO RECEIVER AND TRANSMITTER TBY



SCHEMATIC DIAGRAM RADIO RECEIVER AND TRANSMITTER TBY



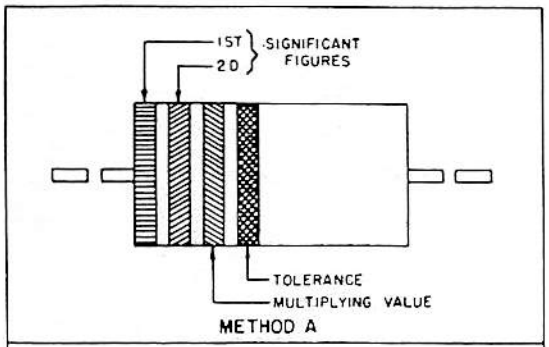
RADIO RECEIVER TCS



SCHEMATIC DIAGRAM RADIO RECEIVER TCS

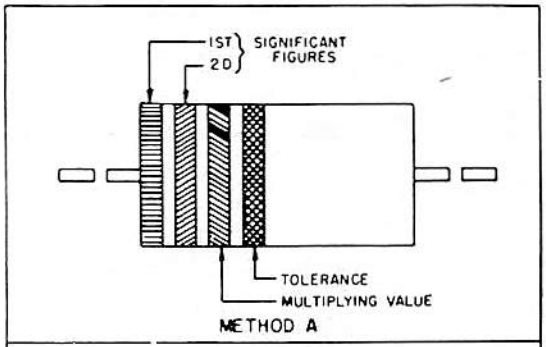
RESISTOR COLOR CODES

RMA COLOR CODE FOR FIXED COMPOSITION RESISTORS*



A

JAN COLOR CODE FOR FIXED COMPOSITION RESISTORS/



B

COLOR	SIGNIFICANT FIGURE	MULTIPLYING VALUE	TOLERANCE (%)
BLACK	0	1	± –
BROWN	1	10	± 1
RED	2	100	± 2
ORANGE	3	1,000	± 3
YELLOW	4	10,000	± 4
GREEN	5	100,000	± 5
BLUE	6	1,000,000	± 6
VIOLET	7	10,000,000	± 7
GRAY	8	100,000,000	± 8
WHITE	9	1,000,000,000	± 9
GOLD	–	0.1	± 5
SILVER	–	0.01	± 10
NO COLOR	–	–	± 20

NOTES

* INSULATED FIXED COMPOSITION RESISTORS WITH AXIAL LEADS ARE DESIGNATED BY A NATURAL TAN BACKGROUND COLOR NON-INSULATED FIXED COMPOSITION RESISTORS WITH AXIAL LEADS ARE DESIGNATED BY A BLACK BACKGROUND.

/ RESISTORS WITH AXIAL LEADS ARE INSULATED. RESISTORS WITH RADIAL LEADS ARE NON-INSULATED

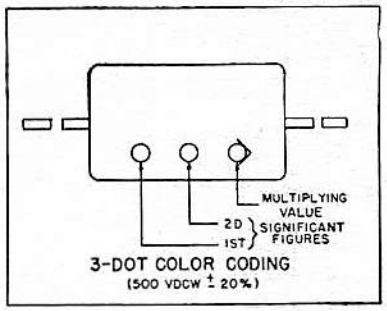
RMA RADIO MANUFACTURERS ASSOCIATION

JAN JOINT ARMY-NAVY

THESE COLOR CODES GIVE ALL RESISTANCE VALUES IN OHMS

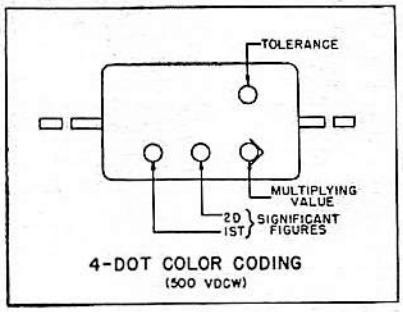
CAPACITOR COLOR CODES

RMA 3-4-5-&6-DOT COLOR CODES FOR MICA-DIELECTRIC CAPACITORS



3-DOT COLOR CODING
(500 VDCW ± 20%)

A

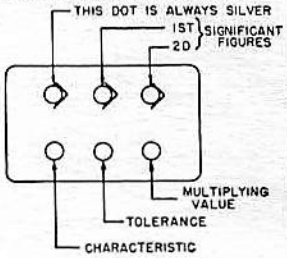


4-DOT COLOR CODING
(500 VDCW)

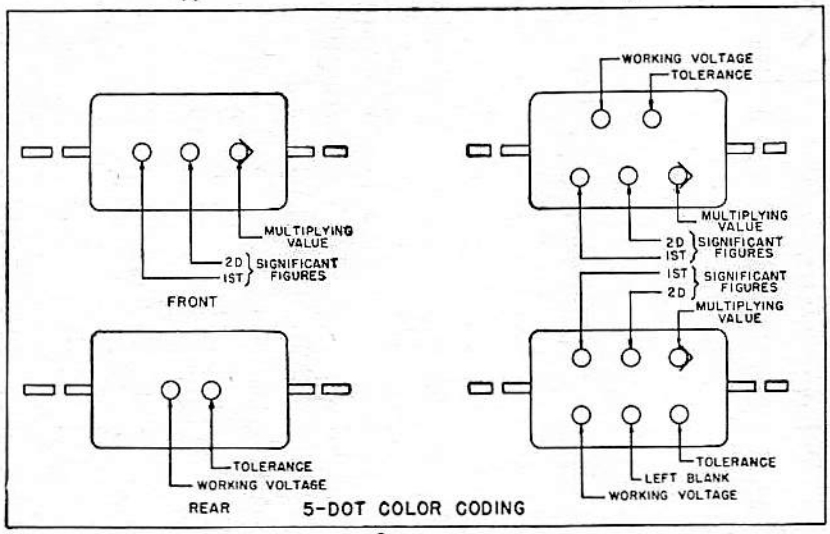
B

JAN 6-DOT COLOR CODES FOR:

PAPER-DIELECTRIC CAPACITORS *



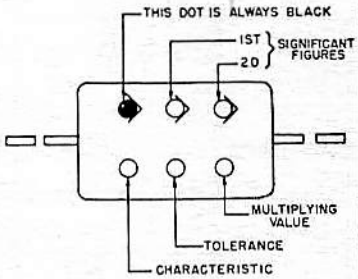
F



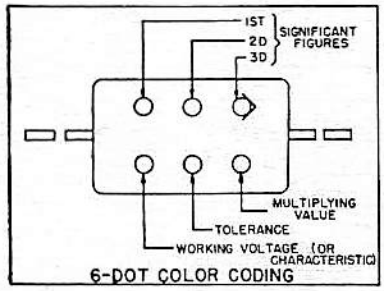
5-DOT COLOR CODING

C

MICA-DIELECTRIC CAPACITORS ≠



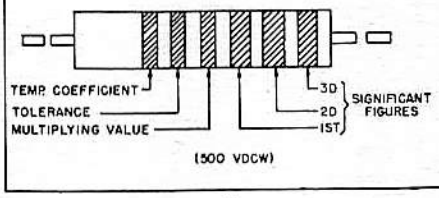
G



6-DOT COLOR CODING

D

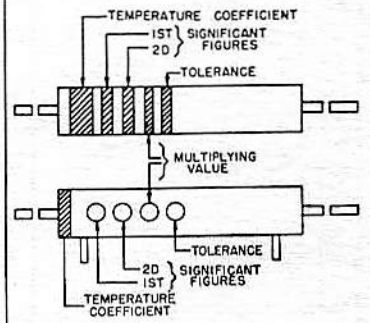
RMA COLOR CODE FOR TUBULAR CERAMIC-DIELECTRIC CAPACITORS



(500 VDCW)

E

CERAMIC-DIELECTRIC CAPACITORS **



H

COLOR	SIGNIFICANT FIGURE	MULTIPLYING VALUE			RMA VOLTAGE RATING
		RMA MICA- AND CERAMIC-DIELECTRIC	JAN MICA- AND PAPER-DIELECTRIC	JAN CERAMIC-DIELECTRIC	
BLACK	0	1	1	1	-
BROWN	1	10	10	10	100
RED	2	100	100	100	200
ORANGE	3	1,000	1,000	1,000	300
YELLOW	4	10,000	10,000		400
GREEN	5	100,000			500
BLUE	6	1,000,000			600
VIOLET	7	10,000,000			700
GRAY	8	100,000,000		0.01	800
WHITE	9	1,000,000,000		0.1	900
GOLD	-	0.1	0.1		1,000
SILVER	-	0.01	0.01		2,000
NO COLOR	=				500

NOTES

* THE SILVER DOT IDENTIFIES THIS MARKING FOR WORKING VOLTAGES SEE JAN TYPE DESIGNATION CODE.

≠ THE BLACK DOT IDENTIFIES THIS MARKING. FOR WORKING VOLTAGES SEE JAN TYPE DESIGNATION CODE.

** CAPACITORS MARKED WITH THIS CODE HAVE A VOLTAGE RATING OF 500 VDCW. EITHER THE BAND OR DOT CODE MAY BE USED FOR BOTH INSULATED (AXIAL-LEAD) OR UNINSULATED (RADIAL-LEAD) CAPACITORS.

RMA: RADIO MANUFACTURERS ASSOCIATION

JAN: JOINT ARMY-NAVY

THESE COLOR CODES GIVE CAPACITANCES IN MICROMICROFARADS.

VACUUM-TUBE CROSS-REFERENCE GUIDE

VT-1	203A	VT-65-A	6C5G	VT-107	6V6
VT-4-B	211	VT-66	6F6	VT-107-A	6V6GT
VT-4-C	211 spc	VT-66-A	6F6G	VT-107-B	6V6G
VT-5	WE-215	VT-67	30 spc	VT-108	540-TH
VT-6	212A	VT-68	6B7	VT-109	2051
VT-7	WX-12	VT-69	6D6	VT-111	5BP4
VT-17	860	VT-70	6F7	VT-112	6AC7/1852
VT-19	861	VT-72	842	VT-114	5T4
VT-22	204A	VT-73	843	VT-115	6L6
VT-24	864	VT-74	5Z4	VT-115-A	6LG7
VT-25	10	VT-75	75	VT-116	6SJ7
VT-25-A	10 spc	VT-76	76	VT-116-A	6SJ7GT
VT-26	22	VT-77	77	VT-116-B	6SJ7 spc
VT-27	30	VT-78	78	VT-117	6SK7
VT-28	24A	VT-80	80	VT-117-A	6SK7GT
VT-29	27	VT-83	83	VT-118	832
VT-30	01A	VT-84	84/6Z4	VT-119	2X2/879
VT-31	31	VT-86	6K7	VT-120	954
VT-33	33	VT-86-A	6K7G	VT-121	955
VT-34	207	VT-86-B	6K7GT	VT-124	1A5GT
VT-35	35/51	VT-87	6L7	VT-125	1C5GT
VT-36	36	VT-87-A	6L7G	VT-126	6X5
VT-37	37	VT-88	6R7	VT-126-A	6X5G
VT-38	38	VT-88-A	6R7G	VT-126-B	6X5GT
VT-39	UV-869	VT-88-B	6R7GT	VT-127	100-TS
VT-39-A	869A	VT-89	89	VT-128	1630
VT-40	40	VT-90	6H6	VT-129	304-TL
VT-41	851	VT-90-A	6H6GT	VT-130	250-TL
VT-42	872	VT-91	6J7	VT-131	12SK7
VT-42-A	872A	VT-91-A	6J7GT	VT-132	12K8
VT-43	845	VT-92	6Q7	VT-133	12SR7
VT-44	32	VT-92-A	6Q7G	VT-134	12A6
VT-45	45	VT-93	6B8	VT-135	12J5GT
VT-46	866	VT-93-A	6B8G	VT-135-A	12J5
VT-46-A	866A/866	VT-94	6J5	VT-136	1625
VT-47	47	VT-94-A	6J5G	VT-137	1626
VT-48	41	VT-94-B	6J5 spc	VT-138	1629
VT-49	39/44	VT-94-C	6J5G spc	VT-139	VR-150-30
VT-50	50, 585, 586	VT-94-D	6J5GT	VT-142	WE-39-DY1
VT-51	841	VT-95	2A3	VT-143	805
VT-52	45 spc	VT-96	6N7	VT-144	813
VT-53	VT-42-A	VT-97	5W4	VT-145	5Z3
VT-54	34	VT-98	6U5/6G5	VT-146	1N5GT
VT-55	865	VT-98-A	6G5G	VT-147	1A7GT
VT-56	56	VT-99	6F8G	VT-148	1D8GT
VT-57	57	VT-100	807	VT-149	3A8GT
VT-58	58	VT-100A	807 mod	VT-150	6SA7
VT-60	850	VT-101	837	VT-150-A	6SA7GT
VT-62	801A, 801	VT-103	6SQ7	VT-151	6A8G
VT-63	46	VT-104	12SQ7	VT-151-B	6A8GT
VT-64	800	VT-105	6SC7	VT-152	6K6GT
VT-65	6C5	VT-106	803	VT-152-A	6K6G

VT-153	12C8 spc
VT-154	814
VT-161	12SA7
VT-162	12SJ7
VT-163	6C8G
VT-164	1619
VT-165	1624
VT-166	WE-371-A
VT-167	6K8
VT-167-A	6K8G
VT-168-A	6Y6G
VT-170	1E5GP
VT-171	1R5
VT-171-A	1R5
VT-172	1S5
VT-173	1T4
VT-174	3S4
VT-175	1613
VT-176	6AB7/1853
VT-177	1LH4
VT-178	1LC6
VT-179	1LN5
VT-180	3LF4
VT-181	7Z4
VT-182	3B7/1291
VT-183	1R4/1294
VT-184	VR-90-30
VT-185	3D1/1299
VT-187	575-A
VT-188	7E6
VT-189	7F7
VT-190	7H7
VT-191	316-A
VT-192	7A4
VT-193	7C7
VT-194	7J7
VT-195	CK-1005
VT-196	6W5G
VT-197-A	5Y3GT/G
VT-198-A	6G6G
VT-199	6SS7
VT-200	VR-105-30
VT-201	25L6
VT-201-C	25L6GT
VT-202	9002
VT-203	9003
VT-204	HK-24-G
VT-205	6ST7
VT-206-A	5V4G
VT-207	12AH7GT
VT-208	7B8
VT-209	12SG7
VT-210	1S4
VT-211	6SG7
VT-212	958
VT-213-A	6L5G
VT-214	12H6
VT-215	6E5
VT-216	816
VT-217	811
VT-219	8007
VT-220	250-TH
VT-221	3Q5GT
VT-222	884
VT-223	1H5GT
VT-224	RK-34
VT-225	307A
VT-226	3EP1/1806-P1
VR-227	KR-7184
VT-228	8012
VT-229	6SL7GT
VT-230	WE-350A
VT-231	6SN7GT
VT-232	E-1148
VT-233	6SR7
VT-234	HY-114B
VT-235	HY-615
VT-236	836
VT-237	957
VT-238	956
VT-239	1LE3
VT-240	WE-710A
VT-241	7E5/1201
VT-243	7C4/1203A
VT-244	5U4G
VT-245	2050
VT-246	918
VT-247	6AG7
VT-248	1808
VT-249	CK-1006
VT-252	923
VT-254	304-TH
VT-255	705A
VT-259	829
VT-260	VR-75-30
VT-264	3Q4
VT-266	1616
VT-267	578
VT-268	12SC7
VT-269	WE-717A
VT-286	832A
VT-287	815
VT-288	12SH7
VT-289	12SL7GT

5517	CK-1013	6064	6AM6
5557	TT-17	6065	6BH6
5591	6AK5	6066	6AT6
5632	C3J	6067	12AU7
5642	SN956	6072	6AY7
5651	0A3/VR-75	6073	0A2/VR-150
5654	6AK5	6074	0B2
5664	3631	6080	6AS7
5670	2C51	6084	6SJ7
5679	7A5	6085	6SN7GT
5684	C3JA	6087	5Y3GT
5685	6CJ	6094	6AQ5
5691	6SL7GT	6095	6AQ5
5692	6SN7GT	6096	6AK5
5693	6SJ7	6097	6AL5
5720	FG33	6098	6AR6
5725	6AS6	6099	6J6
5726	6AL5	6100	6C4
5727	2D21	6101	6J6
5749	6BA6	6106	5Y3GT
5750	6BE6	6117	1B58
5751	12AX7G	6130	3C45
5755	6SU7GTY	6132	6CH6
5814	12AU7	6134	6AC7
5839	25Z6	6135	6C5
5844	6J6	6136	6AU6
5852	6X5	6137	6SK7
5871	6V6GT	6185	2C51
5881	6L6/1614	6186	6AQ5
5910	1U4	6187	6AS6
5930	2A3	6188	6SU7GT
5931	5U4	6189	12AU7
5932	6L6G	6201	12AT7
5933	807	6202	6X4
5948	1754	6265	6BH6
5949	1907	6277	3B28A
5957	E37	6278	C5F14
5959	E41	6288	816
5977	6K6	6322	BL25
5992	6V6	6333	892
5993	6X4	6336	6AS7
6002	OK221	6385	2C51
6005	6AQ5	6386	2C51
6021	6BF7	6402	QK303
6038	1B35A	6405	1640
6057	12AX7	6444	ESM-48
6058	6AL5	6485	6AH6
6059	6J7	6527	2J42
6060	12AT7	7000	6J7
6061	6V6GT	7700	6C6
6062	5763	8016	1B3
6063	6X4	4PR60	5D21/715C

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