SUPPLEMENT A
FOR
INSTRUCTION BOOK ISSUE 4

MODEL SP-600-JX

AND

MODEL SP-600-J

APPLICABLE TO MODELS 21 TO 26

Manufactured by
THE HAMMARLUND MFG. CO. INC.
460 West 34th St. New York 1, New York, U.S.A.

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SUPPLEMENT A

FOR USE WITH MODELS SP-600- (21 TO 26)

The modifications covered by this supplement provide improved signal to noise ratios for input signals up to 100-500 microvolts. The improvement makes the receiver satisfactory for use with direction finding equipment.

Normally the white-black lead, grid return from V1 and V2, is connected to the rear of two screw terminals on E13 (see Fig. 15 herein). For receiver use in a direction finder system, re-connect this lead to the front screw terminal of E13.

The following changes are applicable to issue 4, Instruction Book for Models SP-600-(21 to 26)

Page 14 - TUBE SOCKET VOLTAGES - TABLE 1
Replace with page 14 herein.

Page 15 - TUBE SOCKET TERMINAL RESISTANCE - TABLE 2
Replace with page 15 herein.

Page 17 - APPROXIMATE SIGNAL INPUT AT IF & AF STAGES - TABLE 4
Under APPROX. INPUT, change 180 microvolts to read 100 microvolts.

Pages 21 to 24 - TABLE 5 - PARTS LIST
Replace with pages 21 to 24 herein.

Note: T2 - IF Transformer - 31116-G1, used in earlier models, contained R94, Resistor, 1100 ohms, 1/2 watt - 19309-208BF. This resistor is omitted in 31116-G2 and is re-located on E13. This should be checked when making replacement of T2.

Page 29 - FIG. 10 BOTTOM VIEW OF RECEIVER
Items C163, R48, R94, R115 and R116 are located on E13.
Items C165 and R53 are located on the front end of E17.
Note: Ignore items C163, R48 and R53, called out in Fig. 10.

Page 30 - FIG. 11 BOTTOM VIEW OF RF PLATFORM
Ignore item C165, called out in Fig. 11.

Page 33-34 - FIG. 13 CIRCUIT DIAGRAM OF RECEIVER
Replace with page 33-34 herein.

Page 35-36 - FIG. 14 CONNECTION DIAGRAM-RECEIVER CHASSIS
Replace with page 35-36 herein.

Page 37 - FIG. 15 CONNECTION DIAGRAM-TUNING UNIT
Replace with page 37 herein.

Page 39 - FIG. 16 CONNECTION DIAGRAM-FREQUENCY CONTROL UNIT
Replace with page 39 herein.

SUPPLEMENT
FOR USE WITH
MODEL SP-600-J(25 CYCLES)

This Receiver-Model SP-600-J25 (25 cycles) does not have the Frequency Control Unit. All indications in the text, photographs and diagrams, with reference to the Frequency Control Unit, should be ignored as they do not apply to Model SP-600-J.

The Power Transformer used in this model is specially designed for operation on a single phase 25 cycle power line and will operate satisfactorily on power line frequencies from 25 to 60 cycles. Eight screw terminal primary voltage taps are provided. These taps cover a power line source range of 90 to 270 volts. The 117 volt tap is connected when the receiver is shipped from the manufacturer. When the receiver is installed for operation make sure that the primary tap lead on the power transformer is connected to the transformer tap which most nearly agrees with the power source voltage.

The manufacturer's part number for the 25 cycle power transformer, T8, is 31029-3. With the above exceptions this receiver is the same as Model SP-600-JX in all respects.

SUPPLEMENT FOR USE WITH
MODELS SP-600-JL AND SP-600-JLX

Frequency Range — Models SP-600-JL and SP-600-JLX have a frequency range of .100 to .400 mc and 1.35 to 29.7 mc in six bands as follows:

.100 to .200 mc
.200 to .400 mc
1.35 to 3.45 mc
3.45 to 7.40 mc
7.40 to 14.8 mc
14.80 to 29.7 mc

Crystal Frequency Control — Model SP-600-JL does not have the Frequency Control Unit. All indications in the text, photographs and diagrams, with reference to the Frequency Control Unit, should be ignored as they do not apply to Model SP-600-JL.

Model SP 600-JLX includes the Crystal Frequency Control Unit as described in the text.

Alignment of the RF Amplifier and HF Oscillator — With reference to alignment of the RF Amplifier and HF Oscillator, see page 13, the alignment frequencies for the .100 to .200 mc and .200 to .400 mc bands are:

For the .100 to .200 mc band; Adjust L at .100 mc and adjust C at .200 mc.

For the .200 to .400 mc band; Adjust L at .200 mc and adjust C at .400 mc.

Parts List Errata and Addenda for SP-600-JL and SP-600-JLX — With reference to Table No. 5, pages 23 and 24.

Delete Items T10, 16, 22 and T28 (coil assemblies for 54 to 1.35 mc band).

Delete Items T15, 21, 27 and T33 (coil assemblies for 29.7 to 54.0 mc band).

Add to Parts List the following, for the .100 to .200 mc and .200 to .400 mc bands:

In Position of	DESCRIPTION	Hammarlund Part No.
T10	RF Input assembly, .100 to .200 mc, includes C2 trimmer, 43 mmf fixed shunt capacitor Pt. No. 23063-68C, coil and switch contacts for S1A	31381-G1
T16	1st RF Transformer assembly, .100 to .200 mc, includes C26 trimmer, 43 mmf fixed shunt capacitor Pt. No. 23063-68C, coil and switch contacts for S1B	31380-G2
T22	2nd RF Transformer assembly, .100 to .200 mc, includes C46 trimmer, 43 mmf fixed shunt capacitor Pt. No. 23063-68C, coil, 200,000 ohm ½ watt fixed shunt resistor Pt. No. 19309-182BF and switch contacts for S1C	31380-G1
T28	HF Osc. assembly, .100 to .200 mc, includes C76 trimmer, 75 mmf fixed shunt capacitor Pt. No. 23003-91C, 102 mmf fixed series padder capacitor Pt. No. 23071-65, coil and switch contacts for S1D	31379-G1
T15	RF Input assembly, .200 to .400 mc, includes C16 trimmer, 43 mmf fixed shunt capacitor Pt. No. 23063-68C, coil and switch contacts for S1A	31384-G1
T21	1st RF Transformer assembly, .200 to .400 mc, includes C38 trimmer, 43 mmf fixed shunt capacitor Pt. No. 23063-68C, coil and switch contacts for S1B	31383-G2
T27	2nd RF Transformer assembly, .200 to .400 mc, includes C58 trimmer, 43 mmf fixed shunt capacitor Pt. No. 23063-68C, coil, 200,000 ohm ½ watt fixed shunt resistor Pt. No. 19309-182BF and switch contacts for S1C	31383-G1
T33	HF Osc. assembly, .200 to .400 mc, includes C94 trimmer, 68 mmf fixed shunt capacitor Pt. No. 23003-90C, 204 mmf fixed series padder capacitor Pt. No. 23071-66, coil and switch contacts for S1D	31382-G1

TUBE SOCKET VOLTAGES—TABLE 1

Voltage to chassis. Measurements made with Weston Model 663 Volt-Ohmmeter, except those indicated by asterisk were made with Measurements Corp. Model 62 VTVM. The 500 volt scale was used for all voltages above 10 volts and the 10 volt scale for voltages below 10 volts. Line voltage 117, no signal input. Audio Gain control at minimum and CW-MOD switch on "CW" AVC tap normal.

	SOCKET PIN NUMBERS									
TUBE	1	2	3	4	5	6	7	8	9	MODE OF OPERATION
V-1	*–1	—	*6.3ac	—	200	95	—	—	—	RF Gain max.
V-1	*–41	—	*6.3ac	—	260	245	—	—	—	RF Gain min.
V-2	*–1	—	*6.3ac	—	210	95	—	—	—	RF Gain max.
V-2	*–41	—	*6.3ac	—	260	245		—	—	RF Gain min.
V-3	—	—	—	—	—	0	*6.3ac	265	—	RF Gain max.—VFO operation
V-3	—	—	—	—	—	150	*6.3ac	265	—	RF Gain max.—Crystal Freq. Control
V-3	—	—	—	—	—	0	*6.3ac	290	—	RF Gain min.—VFO operation
V-3	—	—	—	—	—	150	*6.3ac	290	—	RF Gain min.—Crystal Freq. Control
V-4	130	—	*6.3ac	—	130	—	—	—	—	RF Gain max. or min.
V-5	—	1.2	*6.3ac	—	140	110	—	—	—	RF Gain max. or min.
V-6	—	—	*6.3ac	—	225	—	*–1	—	—	RF Gain max.—Freqs. below 7.4mc
V-6	—	—	*6.3ac	—	260	—	*–55	—	—	RF Gain min.—Freqs. below 7.4mc
V-6	—	—	*6.3ac	—	225	80	*–1	—	—	RF Gain max.—Freqs. above 7.4mc
V-6	—	—	*6.3ac	—	260	75	*–55	—	—	RF Gain min.—Freqs. above 7.4mc
V-7	*–1	—	*6.3ac	—	215	125	3.4	—	—	RF Gain max.—Freqs. below 7.4mc
V-7	*–54	—	*6.3ac	—	265	245	.4	—	—	RF Gain min.—Freqs. below 7.4mc
V-7	*–1	—	*6.3ac	—	215	0	0	—	—	RF Gain max.—Freqs. above 7.4mc
V-7	*–54	—	*6.3ac	—	265	0	0	—	—	RF Gain min.—Freqs. above 7.4mc
V-8	0	—	*6.3ac	—	0	—	—	—	—	Frequencies below 7.4mc
V-8	30	—	*6.3ac	—	30	—	—	—	—	Frequencies above 7.4mc
V-9	*–1	—	*6.3ac	—	205	90	—	—	—	RF Gain max.
V-9	*–54	—	*6.3ac	—	260	150	—	—	—	RF Gain min.
V-10	*–1	—	*6.3ac	—	205	90	—	—	—	RF Gain max.
V-10	*–54	—	*6.3ac	—	260	150	—	—	—	RF Gain min.
V-11	*—7.8	—	*6.3ac	—	210	140	—	—	—	RF Gain max.
V-11	*—7.8	—	*6.3ac	—	235	140	—	—	—	RF Gain min.
V-12	—	—	*6.3ac	—	210	40	—	—	—	RF Gain max.—BFO Injection max.
V-12	—	—	*6.3ac	—	240	45	—	—	—	RF Gain min.—BFO Injection max.
V-13	25	—	*6.3ac	—	25	—	—	—	—	RF Gain max. or min.
V-14	—	—	*6.3ac	—	*22	—	—	—	—	RF Gain max. or min.
V-15	—	—	*6.3ac	—	—	—	—	—	—	RF Gain max. or min.
V-16	50	—	1.5	—	—	210	—	6.4	*6.3ac	RF Gain max.
V-16	57	—	1.6	—	—	240	—	7.4	*6.3ac	RF Gain min.
V-17	—	—	260	228	—	—	*6.3ac	12	—	RF Gain max.
V-17	—	—	280	265	—	—	*6.3ac	13	—	RF Gain min.
V-18	150	—	—	—	150	—	—	—	—	RF Gain max. or min.
V-19	—	300	—	—	—	—	—	300	—	RF Gain max.—*5 V ac Pin 2 to Pin 8
V-19	—	320	—	—	—	—	—	320	—	RF Gain min.—*5 V ac Pin 2 to Pin 8
V-20	—	*–96	*6.3ac	—	—	—	*–96	—	—	RF Gain max.
V-20	—	*–97	*6.3ac	—	—	—	*–97	—	—	RF Gain min.

TUBE SOCKET TERMINAL RESISTANCE—TABLE 2

Resistance to chassis. Measurements made with Weston Model 663 Volt-Ohmmeter.

Tube removed from socket under measurement. Audio Gain Control at maximum, RF Gain Control at minimum. Limiter Switch "OFF". CW-MOD Switch on "CW". AVC-MAN Switch on "AVC". AVC tap normal.

Socket Pin No.	1	2	3	4	5	6	7	8	9	MODE OF OPERATION
Tube Socket										
V-1	1.8M	0	—	0	16.7K	50K	0	—	—	
V-2	1.8M	0	—	0	16.7K	50K	0	—	—	
V-3	0	—	0	47K	0	17.5K	—	15.6K	—	Crystal Freq. control pos. 1–6
V-4	Inf.	Inf.	—	0	Inf.	47K	0	—	—	Crystal Freq. control pos. 1–6
V-4	19K	Inf.	—	0	Inf.	47K	0	—	—	VFO Operation
V-5	47K	150	—	0	19K	22K	26K	—	—	Freq. Band 1.35-3.45mc
V-6	22K	0	—	0	17.4K	Inf.	1.1M	—	—	Freq. Bands below 7.4mc
V-6	22K	0	—	0	17.4K	37.4K	1.1M	—	—	Freq. Bands above 7.4mc
V-7	980K	0	—	0	17.4K	Inf.	390	—	—	Freq. Bands above 7.4mc
V-7	980K	0	—	0	17.4K	48K	390	—	—	Freq. Bands below 7.4mc
V-8	—	—	—	0	Inf.	22K	0	—	—	Freq. Bands below 7.4mc
V-8	—	—	—	0	117K	22K	0	—	—	Freq. Bands above 7.4mc
V-9	1.1M	0	—	0	17.5K	9.5K	0	—	—	
V-10	1.1M	0	—	0	17.5K	9.5K	0	—	—	
V-11	93K	0	—	0	17.5K	19K	0	—	—	
V-12	1.5	0	—	0	17.5K	115K	*	—	—	*0 to 1K (BFO Injection control)
V-13	—	—	—	0	162K	100K	0	—	—	
V-14	0	816K	—	0	15.6K	0	196K	—	—	
V-15	69 K	Inf.	—	0	Inf.	0	196K	—	—	
V-16	125K	500K	1K	0	0	17.4K	470K	680	—	
V-17	0	0	15.6K	15.2K	470K	Inf.	—	360	—	
V-18	118K	—	—	—	20K	—	0	—	—	
V-19	—	15.8K	0	42	—	40	—	15.8K	—	
V-20	49K	65K	—	0	49K	0	65K	—	—	

TABLE No. 5
PARTS LIST

Symbol Designations	DESCRIPTION	Hammarlund Part No.
C1A to H	Capacitor, variable, 8 sections	34001-G1
C3	Capacitor, .01 mfd	23012-1
C5	Same as C3	
C6	Capacitor, 20 mmf	23003-41C
C8	Capacitor, 2400 mmf	23011-40C
C9	Capacitor, 33 mmf	23003-45C
C11	Capacitor, 1500 mmf	23011-62C
C12	Capacitor, 7 mmf	23061-168F
C14	Capacitor, 1000 mmf	23011-58C
C15	Capacitor, 15 mmf	23061-155J
C17	Same as C11	
C18	Capacitor, 100 mmf	23003-94C
C19 to 24	Same as C3	
C25	Same as C18	
C27	Same as C3	
C29	Same as C3	
C30	Same as C6	
C32	Same as C8	
C33	Same as C9	
C35	Same as C11	
C37	Same as C18	
C39	Capacitor, 51 mmf	23003-87C
C40 to 44	Same as C3	
C47	Same as C3	
C49	Same as C3	
C50	Same as C6	
C52	Same as C8	
C53	Same as C9	
C55	Same as C11	
C57	Same as C18	
C59	Same as C39	
C60	Capacitor, 12 mmf	23023-65UJ
C61	Same as C3	
C62	Capacitor, 2200 mmf	23011-17C
C63	Capacitor, 39 mmf	23003-47C
C64	Same as C3	
C65	Capacitor, variable	11726-G109
C66	Same as C3	
C67	Capacitor, 85 mmf	23071-59
C68	Same as C3	
C69	Capacitor, 220 mmf	23003-102C
C70 to 74	Same as C3	
C75	Same as C18	
C77	Capacitor, 3300 mmf	23011-69C
C78	Capacitor, 404 mmf	23071-67
C79	Capacitor, 5 mmf	23023-8UJ
C80	Same as C79	
C82	Capacitor, 810 mmf	23072-53
C83	Capacitor, 10 mmf	23003-2B
C85	Capacitor, 1200 mmf	23011-60C
C87	Capacitor, 120 mmf	23071-50
C88	Same as C60	
C89	Capacitor, 190 mmf	23071-64
C91	Same as C18	
C92	Capacitor, 51 mmf	23023-45UJ
C93	Capacitor, 379 mmf	23071-63
C95	Same as C39	
C96	Capacitor, 610 mmf	23072-52
C97	Capacitor, 65 mmf	23071-58
C98	Capacitor, .022 mfd	23013-1
C99	Same as C39	
C102 to 104	Same as C98	
C105	Same as C3	
C106	Same as C98	
C107	Same as C69	
C108-109	Same as C98	
C110	Same as C18	
C111	Capacitor, variable	11776-G1
C112-113	Same as C18	
C114	Capacitor, 270 mmf	23003-104C
C115-116	Same as C3	
C117	Same as C69	
C118	Same as C98	
C119	Capacitor, 300 mmf	23003-105C
C120	Capacitor, 1300 mmf	23011-61C
C121-122	Same as C3	
C123	Same as C98	
C124	Same as C69	
C125	Same as C119	
C126	Same as C120	
C127	Same as C3	
C128	Capacitor, 10 mfd, 100V HS Can, Electrolytic.	15462-1
C129A, B	Capacitor, 2 x .05 mfd, HS Can, Paper	15461-1
C130	Capacitor, 27 mmf	23023-71UJ
C131	Capacitor, 430 mmf	23003-109C
C132	Same as C8	
C133	Same as C131	
C134	Same as C39	
C135	Same as C3	
C136	Same as C98	
C137	Capacitor, .25 mfd, 200V	23911-79E
C138-139	Same as C92	
C140	Same as C131	
C141-142	Capacitor, 100 mmf	23024-24SL
C143	Capacitor, 5100 mmf	23015-16A
C144	Capacitor, .05 mfd	23911-77E
C145	Same as C15	
C146	Same as C98	
C147	Same as C143	
C148	Same as C98	
C149	Same as C143	
C150	Capacitor, 2500 mmf, 800V	23070-40
C151	Same as C128	
C152	Capacitor, .01 mfd 500V	23072-11
C153 to 155	Same as C3	
C156-157	Same as C98	
C158 to 160	Same as C128	
C161A, B, C	Capacitor, 3 x 20 mfd, 450V, HS Can, Electrolytic	15463-1
C162	Same as C98	
C163	Capacitor, .25 mfd, 600V	23915-1
C164	Same as C131	
C165-166	Same as C3	
C167	Same as C98	
C168-169	Same as C152	
E2	4 Screw Terminal, Audio Output	31141-1
E3	4 Screw Terminal, Diode and AVC	31480-1
E4-5	1 Solder Terminal strip (left)	16650-9
E6	1 Solder Terminal strip (right)	16650-11
E7	2 Solder Terminal strip.	16650-12
E8	Same as E4	
E9 to 12	Same as E6	
E13	10 Solder Terminal Board	33928-G1
E14	6 Solder Terminal strip.	16650-10
E15-16	8 Solder Terminal strip.	31163-G1
E17	15 Solder Terminal strip	31162-G1
E18	3 Solder Terminal strip (meter)	31454-G1
F1	Fuse, 1.6A Fusetron	15893-1
F2	Fuse, 3/8 Amp	15928-13
I1 to 4	Dial Lamp, No. 47 Mazda	16004-1
J1	Antenna input socket, UG-103/U	15959-1

PARTS LIST (Continued)

Symbol Designations	DESCRIPTION	Hammarlund Part No.
J2	IF Output Socket, SO-239	16111-1
J3	Phone Jack, JK-34-A	5066-1
J5	Power receptacle	35013-1
L7	RF Choke, 192 microhenries	15612-G1
L14	Same as L7	
L21	RF Choke, 1 millihenry.	15617-G1
L22	RF Choke, 10 millihenries	15618-1
L23	RF Choke, 25 millihenries	15619-1
L24	Same as L7	
L35	Same as L7	
L46	RF Choke, 12 microhenries	15615-2
L47	RF Choke, 3.0 millihenries	15616-G1
L48	RF Choke, 2 ohms dc	15611-1
L49-50	RF Choke, 2.7 ohms dc.	15613-1
L51	1st Filter Choke, 8.5 Hy, 170 ohms dc	31030-2
L52	2nd Filter Choke, 20 Hy, 440 ohms dc	31031-2
L53	IF Output transformer.	31488-1
M1	Tuning Meter	4903-2
P1	Power plug and cord	6143-1
P2	Antenna Input Plug, UG-102/U	16016-1
P3	Antenna Adapter Connector UG-104/U.	15987-1
P4	Cable Connector Plug PL-259 (for J2)	16071-1
R1	Resistor, 510K ohms 1/3 watt	19317-76BF
R2	Resistor, 10K ohms ½ watt	19309-278BF
R3	Resistor, 33K ohms ½ watt	19309-282BF
R4	Risistor, 1000 ohms ½ watt	19309-49BF
R5	Resistor, 510 ohms ½ watt	19309-170BF
R6	Same as R4	
R7-8	Resistor, 51 ohms ½ watt	19309-193BF
R9	Resistor, 24 ohms ½ watt	19309-189BF
R10-11	Resistor, 22 ohms ½ watt	19309-9BF
R12	Same as R2	
R13	Same as R1	
R14	Same as R3	
R15	Same as R5	
R16	Same as R4	
R17-18	Same as R7	
R19	Same as R9	
R20-21	Same as R10	
R22-23	Resistor, 47K ohms ½ watt	19309-89BF
R24-25	Resistor, 180 ohms ½ watt	19309-31BF
R26	Same as R1	
R27	Resistor, 150 ohms ½ watt	19309-259BF
R28	Resistor, 6800 ohms ½ watt	19309-69BF
R29-30	Same as R4	
R31	Resistor, 2200 ohms ½ watt	19309-57BF
R32	Same as R5	
R33	Resistor, 1500 ohms ½ watt	19309-53BF
R35	Resistor, 100K ohms ½ watt	19309-97BF
R36	Resistor, 22K ohms ½ watt	19309-178BF
R37	Same as R31	
R38	Same as R35	
R39	Same as R3	
R40	Resistor, 20K ohms 1 watt	19310-179BF
R41	Same as R31	
R42	Resistor, 10 ohms ½ watt	19309-1BF
R43	Same as R35	
R44	Same as R2	
R45	Resistor, 240 ohms ½ watt	19309-201BF
R46	Resistor, 1100 ohms ½ watt	19309-208BF
R47	Resistor, 18K ohms ½ watt	19309-79BF
R48	Resistor, 1 megohm ½ watt	19309-121BF
R49	Same as R31	
R50	Same as R42	
R51	Same as R35	
R52	Same as R2	
R53	Same as R2	
R54	Same as R31	
R55	Same as R42	
R56	Same as R35	
R57	Same as R2	
R58	Same as R31	
R59	Resistor, 2200 ohms 1 watt	19310-57BF
R60-61	Same as R48	
R62	Same as R35	
R63	Resistor, 27K ohms ½ watt	19309-83BF
R64	Same as R22	
R65	Same as R36	
R66	Same as R47	
R67-68	Same as R35	
R69	Resistor, variable 3300 ohms	15366-1
R70	Same as R2	
R72	Resistor, 7500 ohms 20 watt	19397-41
R73	Resistor, 10K ohms 20 watt	19397-43
R74	Resistor, variable 1000 ohms	15363-1
R75-76	Same as R35	
R77	Same as R22	
R78	Resistor, 470K ohms ½ watt	19309-113BF
R79	Resistor, 680 ohms ½ watt	19309-45BF
R80	Same as R31	
R81	Same as R35	
R82	Same as R2	
R83	Same as R4	
R84	Resistor, variable 500K ohms	15342-11
R85	Resistor, 2500 ohms 10 watts	19396-1
R86	Resistor, 82K ohms ½ watt	19309-287BF
R87-88	Resistor, 120K ohms ½ watt	19309-181BF
R89	Same as R86	

PARTS LIST (Continued)

Symbol Designations	DESCRIPTION	Hammarlund Part No.
R90 to 92	Same as R2	
R93	Resistor, variable 50K ohms, includes switch S10	15342-21
R94	Same as R46	
R95	Same as R86	
R96	Same as R36	
R97	Resistor, 3.3 megohms ½ watt	19309-133BF
R98	Same as R78	
R99	Resistor, 360 ohms 1 watt	19310-211BF
R100	Same as R35	
R101	Resistor, variable 25K ohms	15342-4
R103 to 110	Same as R63	
R111	Same as R35	
R112	Resistor, 390 ohms ½ watt	19309-162BF
R113	Resistor, 330K ohms ½ watt	19309-241BF
R114	Same as R4	
R115-116	Resistor. 1.5 megohms ½ watt	19309-125BF
S1A, B, C, D	Switch base and spring assembly	31234-G1
S2	Crytal selector switch.	15879-1
S3	Crystal switch	31469-1
S4	Switch, conversion	15862-1
S5A, B, C	Selectivity switch	15856-1
S6	Toggle switch SPST	15864-1
S7	Toggle switch DPST	15866-1
S8	Toggle switch DPDT	15867-1
S9	Same as S6	
S10	Switch "ON-OFF" part of R93	———
S11	Switch, DPDT, spring return	15880-1
T1	Mixer plate coil assembly, includes C67, 69, 70, L31, 32, R31	31183-G1
T2	IF Transformer assembly, includes C97, 98, 99, L33, 34 R35	31116-G2
T3	Crystal Filter assembly includes C107, 110, 111 112, 113, 114, L36, 37 R41, Y8	31114-G1
T4	IF Transformer assembly, includes C117, 118, 119, 120, L38, 39, 40, R49	31102-G2
T5	Same as T4, includes C 123, 124, 125, 126, L41, 42, 43, R54	31102-G2
T6	Beat Frequency Osc. assembly, includes C130, 131, 132, 133, 134 L44, 45, 46, R76, 77..	31106-G1
T7	Transformer, Audio Output	31086-2
T8	Transformer, power	31029-2
T9	3.5 mc Osc. assembly, includes C103, 104, L35, R38, 40, Y7	31131-G1
T10	RF Input assembly, includes C2, 3, L1 and switch contacts for S1A	31387-G1
T11	RF Input assembly, includes C4, 5, L2 and switch contacts for S1A	31390-G1
T12	RF Input assembly, includes C6, 7, 8, L3 and switch contacts for S1A	31393-G1
T13	RF Input assembly, includes C9, 10, 11, L4 and switch contacts for S1A	31396-G1
T14	RF Input assembly, includes C12, 13, 14, L5 and switch contacts for S1A	31399-G1
T15	RF Input assembly, includes C15, 16, 17, L6 and switch contacts for S1A	31405-G1
T16	RF Transformer assembly, includes C26, 27, L8, R7, 103 and switch contacts for S1B	31386-G1
T17	RF Transformer assembly, includes C28, 29, L9, R8, 105 and switch contacts for S1B	31389-G1
T18	RF Transformer assembly, includes C30, 31, 32, L10, R9, 107 and switch contacts for S1B	31392-G1
T19	RF Transformer assembly, includes C33, 34, 35, L11, R10, 109 and switch contacts for S1B	31395-G1
T20	RF Transformer assembly, includes C36, 37, L12 and switch contacts for S1B	31398-G1
T21	RF Transformer assembly, includes C38, 39, L13 and switch contacts for SIB	31404-G1
T22	Same as T16 includes C46, 47, L15, R17, 104 and switch contacts for S1C	31386-G1
T23	Same as T17, includes C48, 49, L16, R18, 106 and switch contacts for S1C	31389-G1
T24	Same as T18, includes C50, 51, 52, L17, R19, 108 and switch contacts for S1C	31392-G1
T25	Same as T19, includes C53, 54, 55, L18, R20, 110 and switch contacts for S1C	31395-G1
T26	Same as T20, includes C56, 57, L19 and switch contacts for S1C	31398-G1

PARTS LIST—Continued

Symbol Designations	DESCRIPTION	Hammarlund Part No.
T27	Same as T21, includes C58, 59, L20 and switch contacts for S1C	31404-G1
T28	HF Osc. assembly, includes C76, 77, 78, L25 and switch contacts for S1D	31385-G1
T29	HF Osc. assembly, includes C81, 82, L26 and switch contacts for S1D	31388-G1
T30	HF Osc. assembly, includes C83, 84, 85, L27 and switch contacts for S1D	31391-G1
T31	HF Osc. assembly, includes C86, 87, 88, 89, L28 and switch contacts for S1D	31394-G1
T32	HF Osc. assembly, includes C90, 91, 92, 93, L29 and switch contacts for S1D	31397-G1
T33	HF Osc. assembly, includes C94, 95, 96, L30 and switch contacts for S1D	31403-G1
T34	Crystal control assembly, includes C60, 61, 62, 63, 64, 65, E7, 8, 11, 12, L21, 22, 23, R23, 24, 25, X3, 21 to 26	31409-G1
X1-2	Tube socket, miniature	15989-4
X3	Tube socket, octal	16082-1
X4	Tube socket, miniature ceramic, less center shield	15989-5
X5	Tube socket, miniature ceramic, with center shield	15989-3
X6 to 15	Same as X1	
X16	Tube socket, noval	16100-1
X17	Same as X3	
X18	Same as X1	
X19	Same as X3	
X20	Same as X1	
X21 to 26	Crystal socket, ceramic, for crystals Y1 to Y6.	16092-5
Y1 to 6	Crystal, CR-18/U, see note below	31473-spec
Y7	Crystal, 3.5 mc	31130-1
Y8	Crystal, 455 kc	31471-1
Miscellaneous	Chart, frequency control	31463-1
	Dial, band indicator	31201-G1
	Dial, Lamp Socket assembly	31453-1
	Dial, main tuning	31438-1
	Dial, vernier tuning	31439-1
	Fuse Holder	15923-1
	Knob and Dial (Audio Gain)	31227-G2
	Knob and Dial (Beat Freq. Osc.)	31227-G4
	Knob and Dial (Crystal Phasing)	31227-G3
	Knob and Dial (RF Gain)	31227-G1
	Knob and Dial (Selectivity)	31227-G5
	Knob and Skirt (large)	31215-G1
	Knob, frequency control	31434-G1
	Knob, tuning lock	31462-G1
	Knurled thumb screw	31495-1
	Shaft Coupling, rigid	31275-G1
	Shaft Coupling, flexible soft	415-G3
	Shaft Coupling, flexible stiff	415-G2
	Snap Button Plug	29619-2
	Spare fuse cover	31494-1
	Spring, anti-blacklash	31239-1
	Spring, Band Change Detent	31205-1
	Spring, Conversion Switch	31125-1
	Spring, Crystal Retaining	31417-1
	Spring, IF adjuster grounding	31023-1
	Spring, Indicator Slide	31126-1
	Spring, Retainer for RF Coils	31004-1
	Spring, Retainer for RF Coil assemblies	31003-1
	Window, Band Indicator	31282-1
	Window, Tuning Dials	31281-1
	Wrench, Set Screw No. 6	11806-2
	Wrench, Set Screw No. 8	11806-3
	Wrench, Set Screw No. 10	11806-4

NOTE: Crystals supplied on special order, per Hammarlund Specification No. 31473, for use in the Crystal Frequency Control Unit, see page 8, shall be made in accordance with Signal Corps Specification CR-18/U. The frequency tolerance shall be within plus or minus .005%. The holder shall be in accordance with HC-6/U or CR-7.

The *Signal Frequency* for which the crystal is to be used shall be stamped on the top of the holder.

The oscillator or actual crystal frequency for a given signal frequency shall be determined from the following:

Signal Frequency MC	*Add IF Frequency MC*	*Mode of Operation*
00.75000 to 07.39999	0.455000	Fundamental
07.40000 on 3.45 to 7.40 band	0.455000 (see note below)	Fundamental
07.40000 on 7.40 to 14.8 band	3.955000 (see note below)	Fundamental
07.40001 to 12.04499	3.955000	Fundamental
12.0450 to 44.04499	3.955000 and divide sum by 3	3rd Harmonic
44.0450 to 54.00000	3.955000 and divide sum by 4	4th Harmonic

NOTE: Since 7.40 mc is the signal frequency at which the intermediate frequency is changed for double conversion and since this signal frequency occurs at the high frequency end of the 3.45 to 7.40 mc band and also at the low frequency end of the 7.40 to 14.8 mc band, it is necessary to specify frequency band as well as Signal Frequency when ordering crystals for exactly 7.40 mc signal operation.

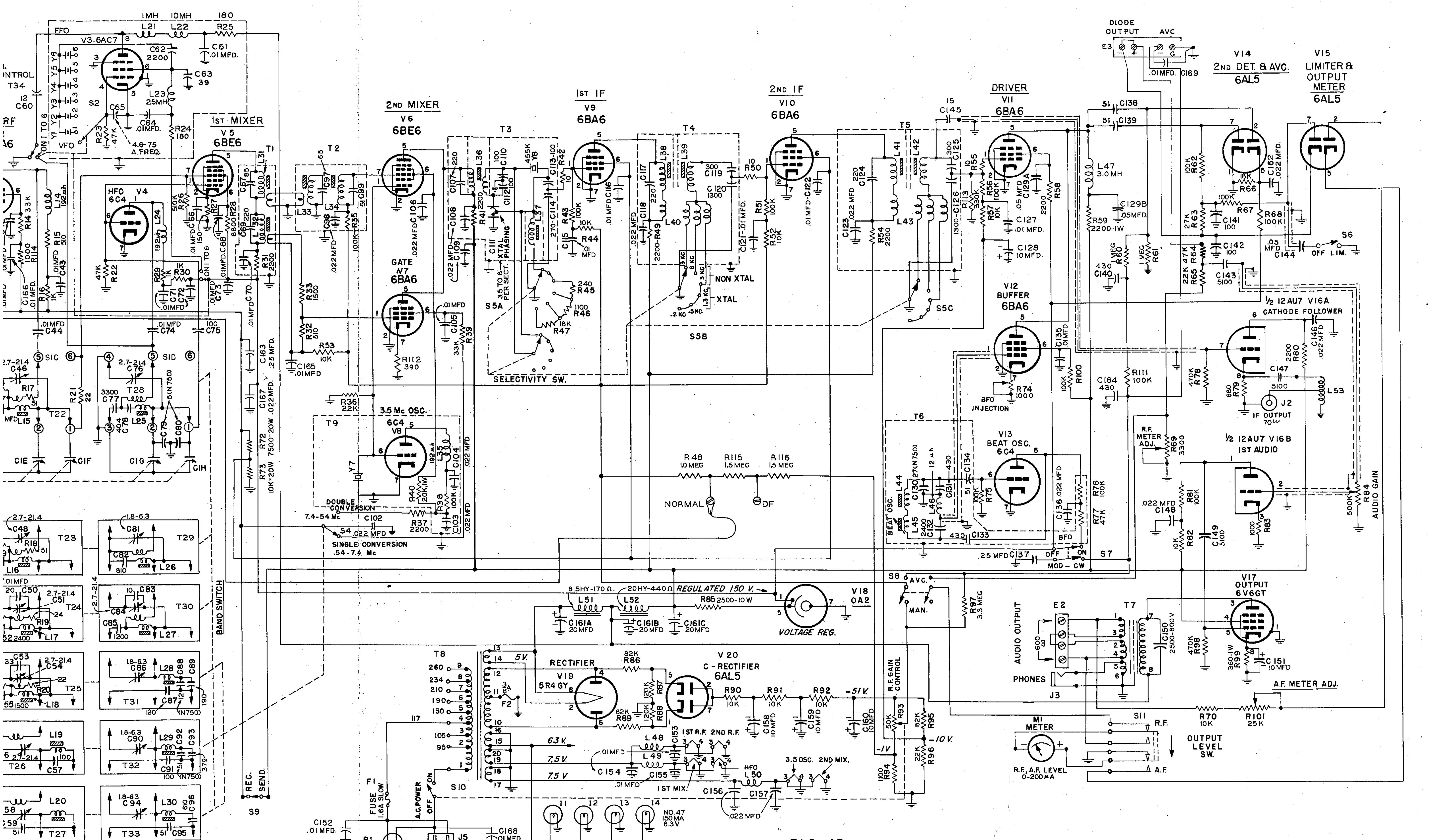

FIG. 13
CIRCUIT DIAGRAM OF RECEIVER

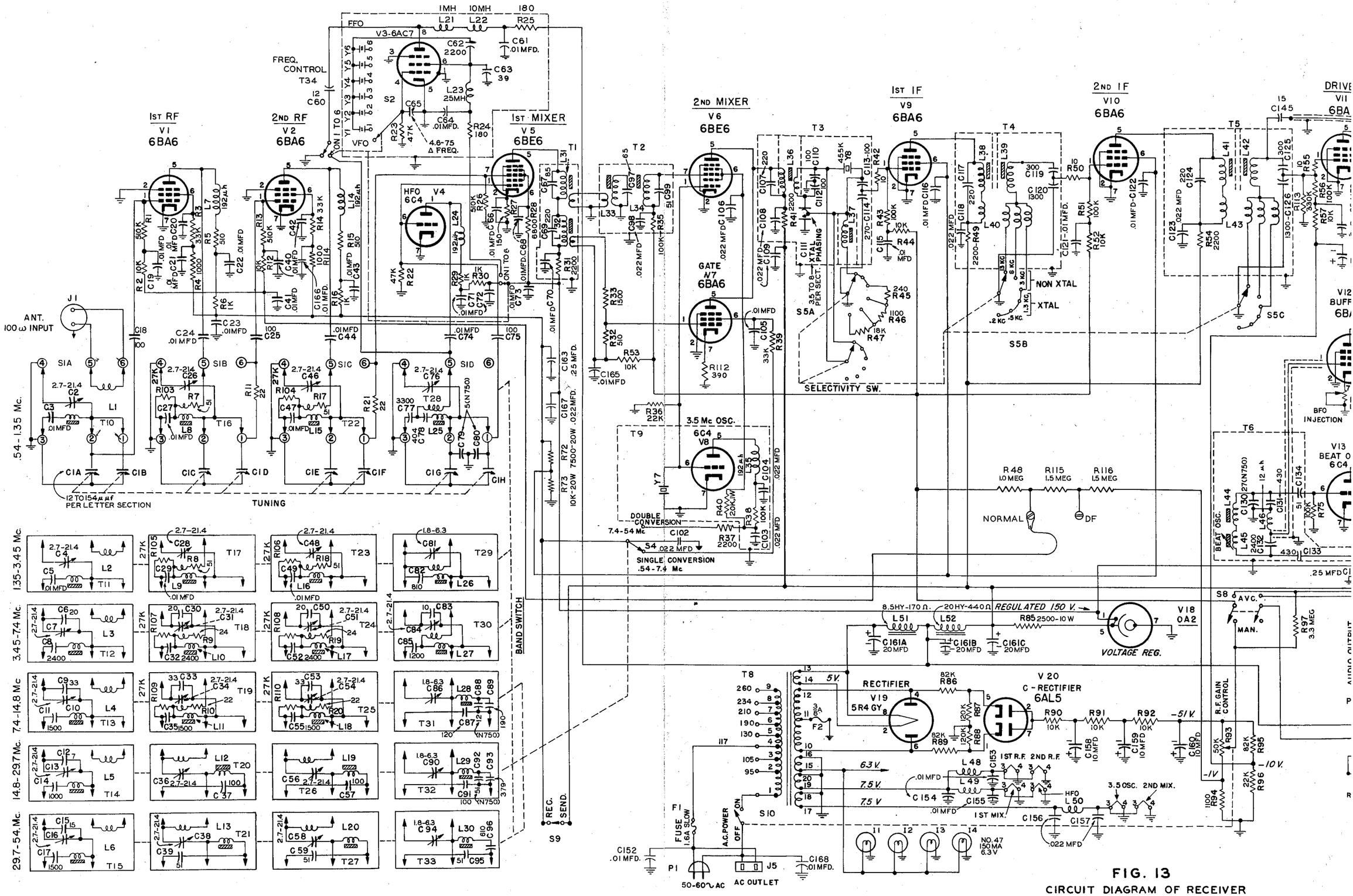

FIG. 13
CIRCUIT DIAGRAM OF RECEIVER

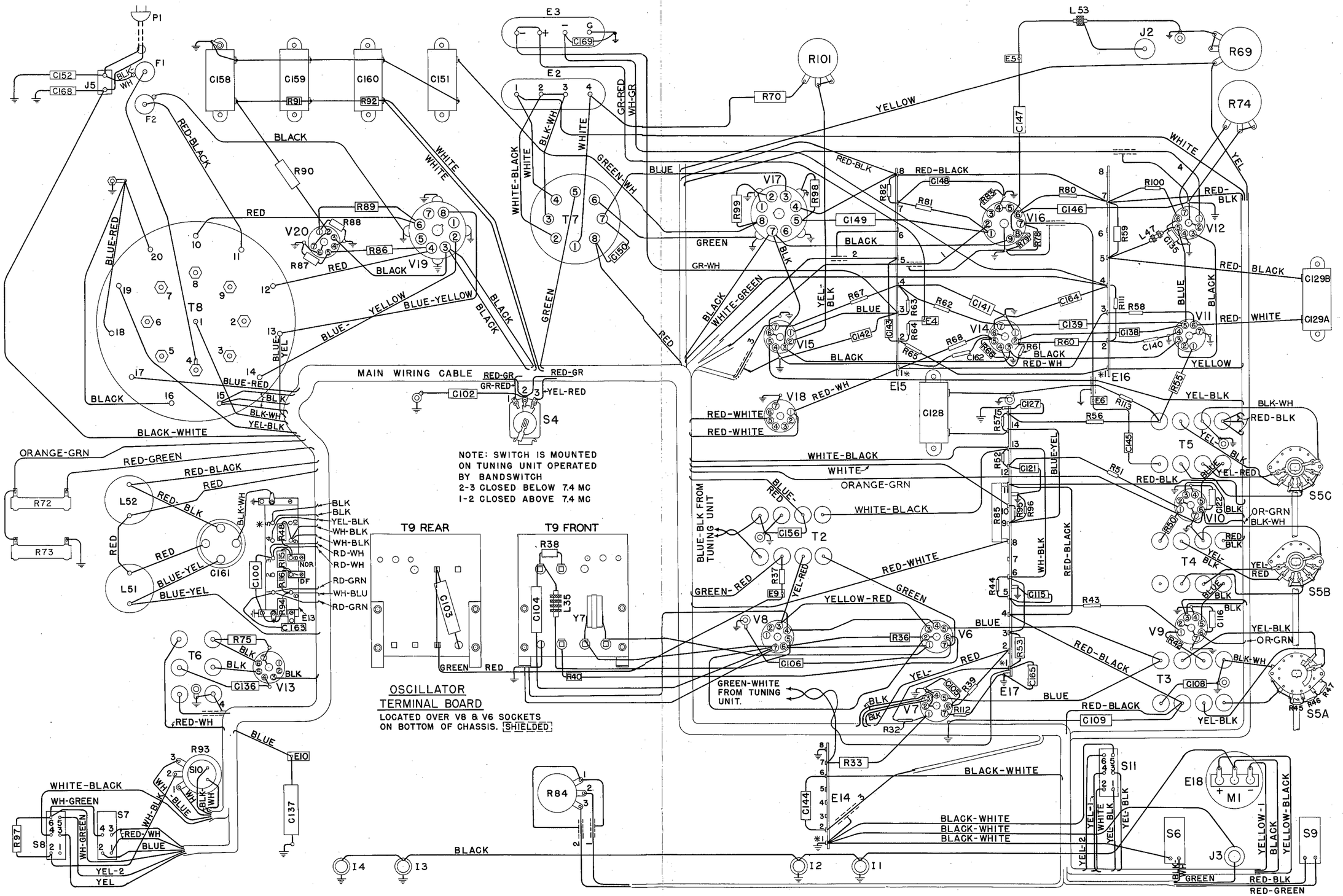

FIGURE NUMBER 14

CONNECTION DIAGRAM-RECEIVER CHASSIS

* THESE NUMBERS ARE FOR REFERENCE ONLY. THEY DO NOT APPEAR ON TERMINAL STRIP.

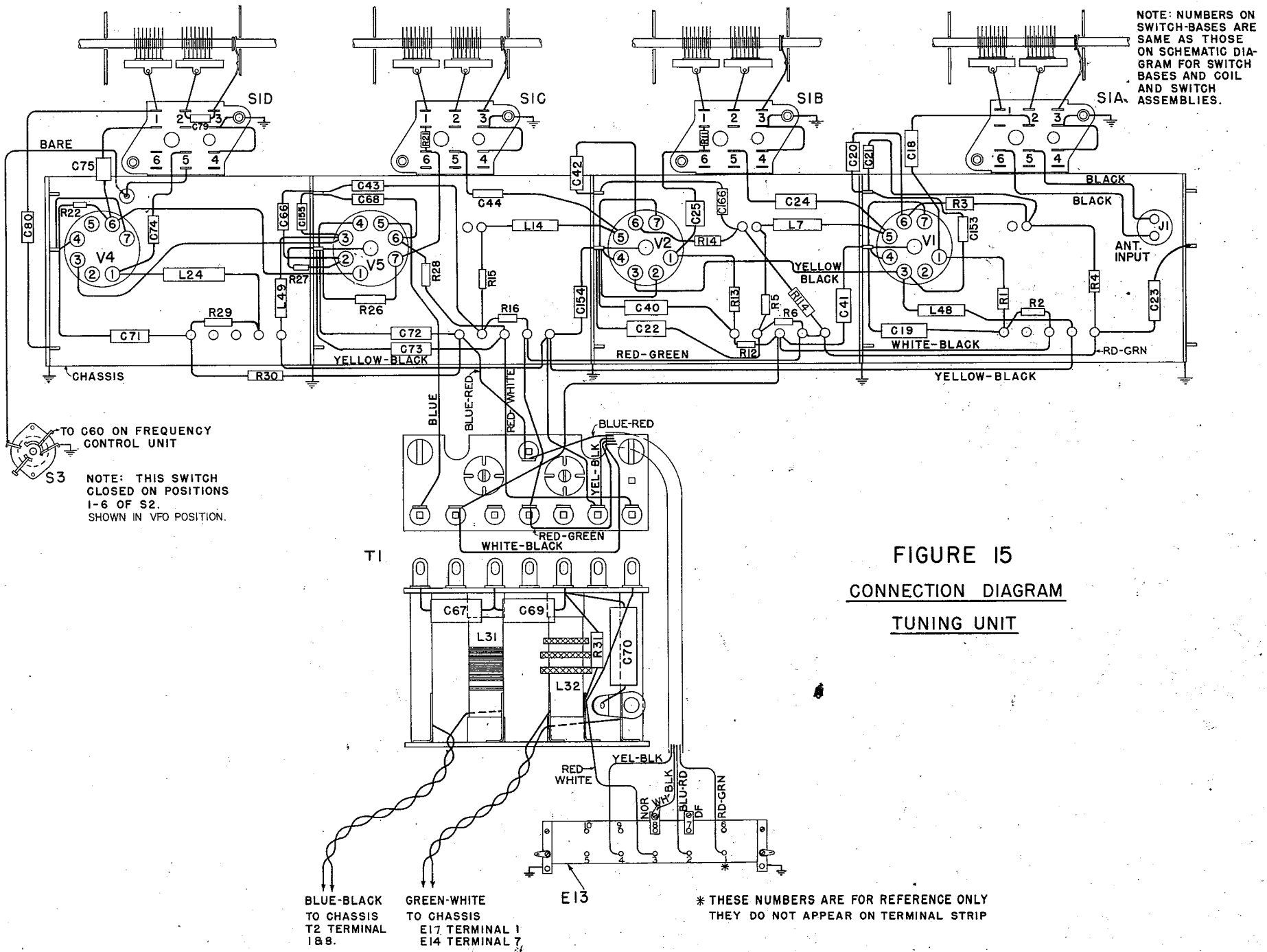

FIGURE 15

CONNECTION DIAGRAM

TUNING UNIT