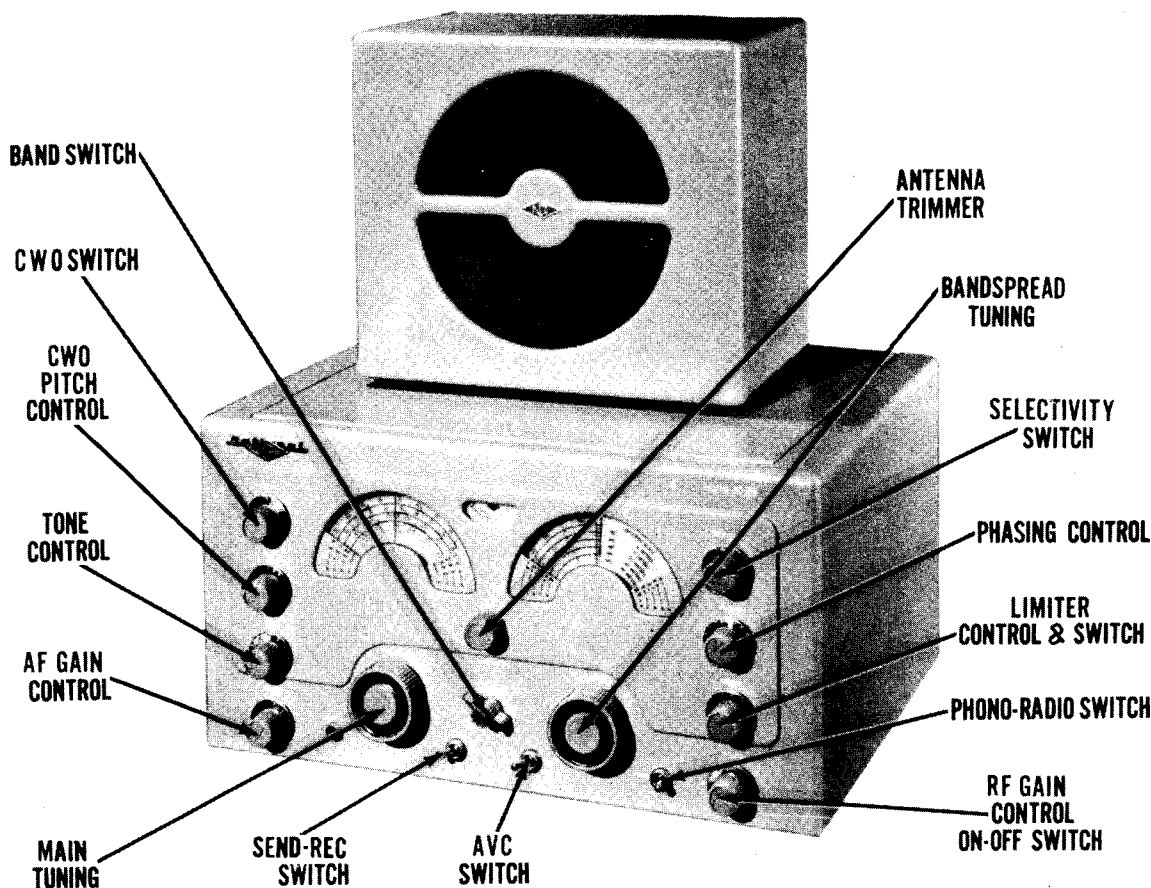


NATIONAL MODELS
NC-183R, NC-183T



NATIONAL MODELS
NC-183R, NC-183T

NATIONAL MODEL NC-183R

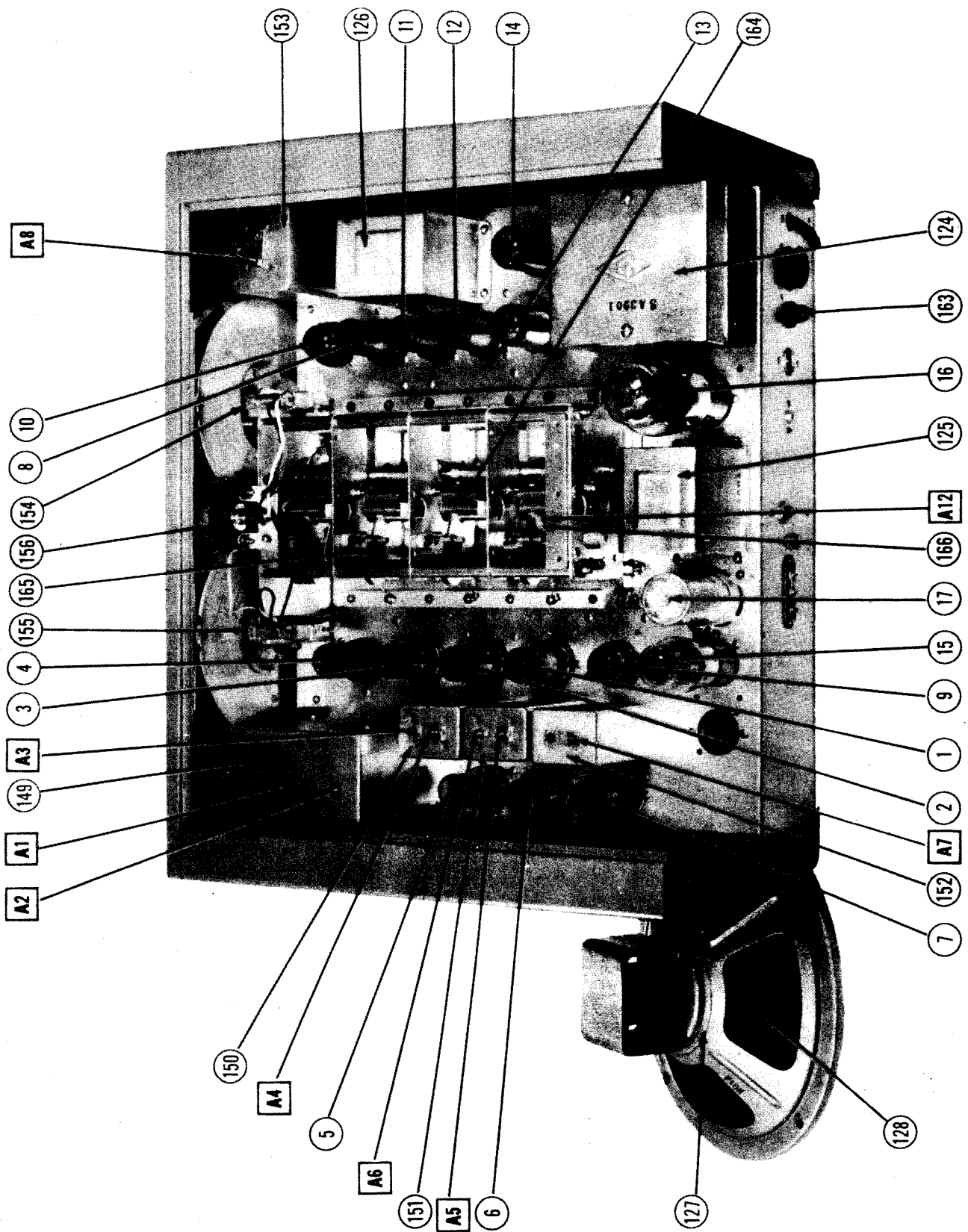
TRADE NAME	National, Models NC-183R, NC-183T		
MANUFACTURER	National Co., Inc., 61 Sherman St., Malden, Mass.		
TYPE SET	AC or Battery Operated Commercial Type Multi-Band Superheterodyne Receiver		
TUBES (SIXTEEN)	Types, 6SG7 1st RF Amp., 6SG7 2nd RF Amp., 6SA7 Mixer, 6J5 Oscillator, 6SG7 1st IF Amp., 6SG7 2nd IF Amp., 6AC7 AVC Amp., 6SJ7 CW Osc., 6H6 2nd Det.-AVC, 6H6 Limiter, 6SJ7 1st AF Amp., 6J5 Phase Inv., (2) 6V6GT Power Output, OD3/VR150 Voltage Regulator, 5U4G Rectifier.		
POWER SUPPLY	110-120 or 220-240 Volts AC or Batteries (6 Volt Storage Battery and 135-250 Volt "B" Battery)		
TUNING RANGE-BROADCAST	.54-1.6MC	SHORT WAVE	Band "A" 48-56MC, Band "B" 12-31MC, Band "C" 4.3-12MC, Band "D" 1.6-4.3MC

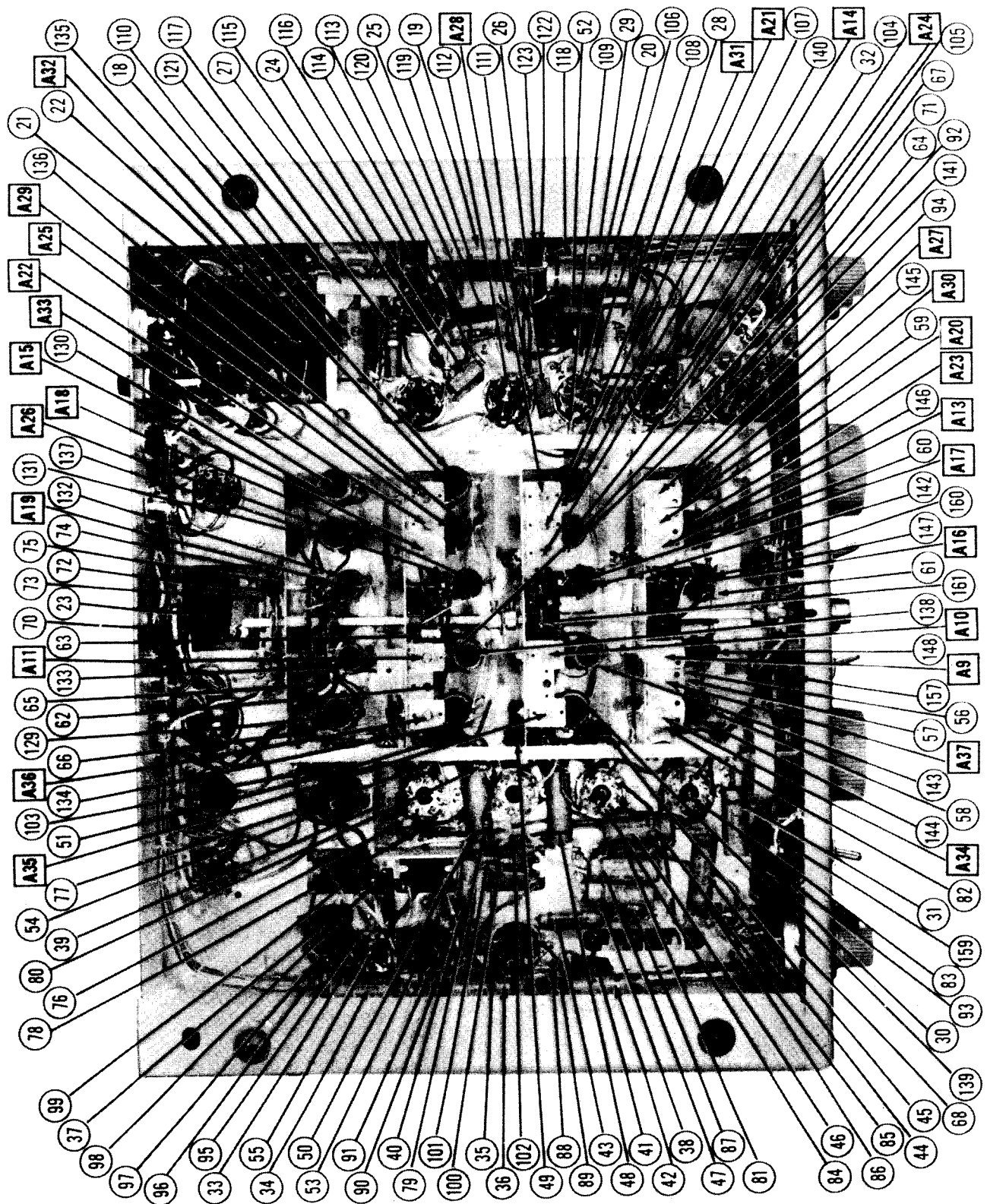
HOWARD W. SAMS & CO., INC. • 2924 East Washington Street • Indianapolis 7, Indiana

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DATE 11/48-#4819-15 SET #49-FOLDER #15





PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		INSTALLATION NOTES
		NATIONAL PART No.	STANDARD REPLACEMENT	
1	1st RF Amp.	6SG7	6SG7	8BK
2	2nd RF Amp.	6SG7	6SG7	8BK
3	Mixer	6SA7	6SA7	8R
4	Osc.	6J5	6J5	6Q
5	1st IF Amp.	6SG7	6SG7	8BK
6	2nd IF Amp.	6SG7	6SG7	8BK
7	AVC Amp.	6AC7	6AC7	8N
8	C.W. Osc.	6SJ7	6SJ7	8N
9	2nd Det. AVC	6H6	6H6	7Q
10	Limiter	6H6	6H6	7Q
11	1st Audio	6SJ7	6SJ7	8N
12	Phase Inverter	6J5	6J5	6Q
13	Power Output	6V6GT/G	6V6GT/G	7AC
14	"	6V6GT/G	6V6GT/G	7AC
15	Voltage Reg.	0D3/VRL50	0D3/VRL50	44J
16	Rectifier	5U4G	5U4G	5T

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING	REPLACEMENT DATA				IDENTIFICATION CODES AND INSTALLATION NOTES
		NATIONAL PART No.	AEROVOX PART No.	CORNEIL-DUBILIER PART No.	SOLAR PART No.	
17A	10				DR-2X8-45088	Filter
18	10					
19	25	PR550/25	BR255	BR255	M-25-50	Cathode Bypass
20	10	PR550/10	BR105	BR105	M-10-50	Grid Filter
21	.01	694-01	694-01	694-01	TC-11	Cathode Bypass
22	.01	694-01	694-01	694-01	TC-11	Life Filter
23	.01	424-1	424-1	424-1	TC-11	RF Bypass
24	.01	694-01	694-01	694-01	TC-11	RF Bypass
25	.01	694-01	694-01	694-01	TC-11	Audio Coupling
26	.01	694-01	694-01	694-01	TC-11	"
27	.01	424-1	424-1	424-1	TC-11	"
28	.25	424-25	424-25	424-25	TC-11	AF Plate Decoupling
29	.005	694-005	694-005	694-005	TC-2	AF Screen Bypass
30	.1	424-1	424-1	424-1	TC-1	Tone Comp.
31	.1	424-1	424-1	424-1	TC-1	Audio Coupling
32	.1	424-1	424-1	424-1	TC-1	Limiter Bypass
33	.01	694-01	694-01	694-01	TC-1	B.F.O. Screen Byp.
34	.05	694-05	694-05	694-05	TC-11	AVC Amp. Screen Byp.
35	.01	694-01	694-01	694-01	TC-11	AVC Amp. Decoup.
36	.05	694-05	694-05	694-05	TC-11	2nd IF Screen Byp.
37	.01	694-01	694-01	694-01	TC-11	2nd IF Decoupling
38	.1	424-1	424-1	424-1	TC-11	S Meter Bypass
39	.1	424-1	424-1	424-1	TC-11	AVC Filter
40	.01	694-01	694-01	694-01	TC-11	"
41	.01	694-01	694-01	694-01	TC-11	"
42	.05	694-05	694-05	694-05	TC-11	1st IF Screen Byp.
43	.01	694-01	694-01	694-01	TC-11	1st IF Decoupling
44	.05	694-05	694-05	694-05	TC-11	AVC Filter
45	.01	694-01	694-01	694-01	TC-11	Mixer Plate Decoup.
46	.1	424-1	424-1	424-1	TC-11	Mixer Screen Byp.
47	.05	694-05	694-05	694-05	TC-1	Mixer Cathode Bypass
48	.1	424-1	424-1	424-1	TC-1	RF Bypass Power Supply
49	.01	694-01	694-01	694-01	TC-15	2nd RF Plate Decoupling
50	.05	694-05	694-05	694-05	TC-11	2nd RF Screen Bypass
51	.01	694-01	694-01	694-01	TC-15	1st RF Plate Decoup.
52	.01	694-01	694-01	694-01	TC-11	1st RF Screen Byp.
53	1000	1467-001	1467-001	1467-001	IFM-21	Output Plate Bypass
54	500	1468-00025	1468-00025	1468-00025	IFM-325	Diode RF Filter
55	300	1468-00005	1468-00005	1468-00005	IFM-45	BFO Coupling-Cer.
56	47	1468-00005	1468-00005	1468-00005	IFM-45	IF Coupling-Cer.
57	100	1468-00001	1468-00001	1468-00001	IFM-31	Osc. Grid Cap.-Cer.
58	1000	1467-001	1467-001	1467-001	IFM-21	Osc. Coupling
59	420	500	500	500	IFM-21	Fixed Padder
60	1250	500	500	500	"	"
61	8500	500	500	500	"	"
62	62	1000	1000	1000	IFM-21	RF Coupling
63	5	300	300	300	MS-55	RF Coupling-Cer.
64	10	300	300	300	IFM-41	IFM-41
65	1000	1467-001	1467-001	1467-001	IFM-21	RF Coupling-Cer.
66	250	1468-00025	1468-00025	1468-00025	IFM-325	Antenna Coupling-Cer.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING			REPLACEMENT DATA		
	PRI	SEC. 1	SEC. 2	NATIONAL PART No.	STANCOR PART No.	THORDARSON PART No.
124	117V AC	660V CT	5.0V AC @ 6.6V AC @ 1.25A DC @ 3.0A @ 4.9A	SA3501	P-5059T	

Drill new mounting holes and mount vertically.

FILTER CHOKE

ITEM No.	RATINGS		REPLACEMENT DATA		
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (1000 L)	STANCOR PART No.	THORDARSON PART No.
125	.125A	283Ω	15 henries	SA1694	T20054#

Drill new mounting holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING			REPLACEMENT DATA		
	IMPEDANCE	DC RES.	SEC.	NATIONAL PART No.	STANCOR PART No.	THORDARSON PART No.
126	10KΩ CT	500Ω CT	513Ω CT	SA3501		

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA		
	FIELD PA	VC IMP.	NATIONAL PART No.	JENSEN PART No.	QUAM PART No.
127	6-30	6-30		ST-120	
128	9-5/4	1"		Mod. PLO-S	1046

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI	SEC.	NATIONAL PART No.	MEISSNER PART No.
129	Ant. Coil	3Ω	0Ω		
130	"	1.3Ω	0Ω		
131	"	.1Ω	0Ω		
132	"	.0Ω	0Ω		
133	"	.0Ω	0Ω		
134	1st RF	.1Ω	5Ω		
135	"	.1Ω	.8Ω		
136	"	.1Ω	.1Ω		
137	"	.1Ω	.0Ω		
138	"	.1Ω	.0Ω		
139	2nd RF	.1Ω	.0Ω		
140	"	.1Ω	.0Ω		
141	"	.1Ω	.0Ω		
142	"	.1Ω	.0Ω		
143	"	.1Ω	.0Ω		
144	Osc. Coil	.1Ω	2.5Ω		
145	"	.1Ω	.4Ω		
146	"	.2Ω	.0Ω		
147	"	.0Ω	.0Ω		
148	1st IF	.2Ω	.0Ω		
149	2nd IF	.2Ω	.0Ω		
150	3rd IF	.2Ω	.0Ω		
151	AVC Amp.	.2Ω	.0Ω		
152	Coil	.2Ω	.0Ω		
153	B.F. Osc.	.2Ω	.0Ω		

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	REPLACEMENT DATA			INSTALLATION NOTES
	RATING RESIST- ANCE	NATIONAL PART No.	CLAROSTAT PART No.	
67A 150K Ω	$\frac{1}{2}$	D13-133	M-60-2	AF Gain Control Attach to 67A per instructions
B Shaft		A	Not Req.	RF Gain Control Limiter Control
68 10K Ω	$\frac{1}{2}$	D11-128	M-49-S	Not Req.
69A 100K Ω	$\frac{1}{2}$	A	Not Req.	Attach to 69A per instructions
B Shaft		43	SW-A1	"S" Meter Control
C Switch			M-83-S	Tone Control
70 12 Meg.	$\frac{1}{2}$	D13-133	M-60-2	Attach to 71A per instructions
71A 500K Ω		A	Not Req.	
B Shaft				

RESISTORS

ITEM No.	REPLACEMENT DATA			IDENTIFICATION CODES
	RATING RESISTANCE WATTS	NATIONAL PART No.	IRC PART No.	
72 330 Ω	$\frac{1}{2}$		BM-1-350	Or.-Or.-Br. Bias Network
73 680 Ω	$\frac{1}{2}$		BM-1-680	Blue-Gray-Br. " " -See Note
74 270 Ω	$\frac{1}{2}$		BM-1-270	Red-VI.-Br. Series "S" Meter
75 220K Ω	$\frac{1}{2}$		BTS-220K	Br.-Blk.-Yl. 1st RF Grid
76 100K Ω	$\frac{1}{2}$		BTS-100K	Or.-Or.-Or. 1st RF Screen
77 33K Ω	$\frac{1}{2}$		BTS-33K	Red-Blk.-Red 1st RF Decoup.
78 200K Ω	$\frac{1}{2}$		BTS-200K	Or.-Or.-Or. 2nd RF Screen
79 100K Ω	$\frac{1}{2}$		BTS-100K	Br.-Blk.-Yl. 2nd RF Grid
80 33K Ω	$\frac{1}{2}$		BTS-33K	Or.-Or.-Or. 2nd RF Decoup.
81 220K Ω	$\frac{1}{2}$		BTS-220K	Red-Red-Red 2nd RF Plate Decoup.
82 22K Ω	$\frac{1}{2}$		BTS-22K	Yl.-Yl.-Or. Osc. Grid
83 47K Ω	$\frac{1}{2}$		BTS-47K	Red-Red-Br. Mixer Cathode
84 220 Ω	$\frac{1}{2}$		BTS-220	Or.-Or.-Or. Mixer Screen
85 33K Ω	$\frac{1}{2}$		BTS-33K	Red-Red-Red Mixer Plate Decoup.
86 220K Ω	$\frac{1}{2}$		BTS-220K	Yl.-Yl.-Yl. AVC Network
87 470K Ω	$\frac{1}{2}$		BTS-470K	Or.-Or.-Or. 1st IF Screen
88 33K Ω	$\frac{1}{2}$		BTS-33K	Red-Red-Red 1st IF Decoupling
89 220K Ω	$\frac{1}{2}$		BTS-220K	Or.-Or.-Or. 2nd IF Screen
90 33K Ω	$\frac{1}{2}$		BTS-33K	Red-Red-Red 2nd IF Decoupling
91 220K Ω	$\frac{1}{2}$		BTS-220K	Blue-Gray-Or. Diode Load
92 68K Ω	$\frac{1}{2}$		BTS-68K	Red-VI.-Yl. Limiter Bias Network
93 270K Ω	$\frac{1}{2}$		BTS-270K	Red-VI.-Yl. Limiter Load
94 270K Ω	$\frac{1}{2}$		BTS-270K	Yl.-Yl.-Yl. AVC Amp. Grid
95 470K Ω	$\frac{1}{2}$		BTS-470K	Br.-Blk.-Yl. AVC Amp. Screen
96 100K Ω	$\frac{1}{2}$		BTS-100K	Red-Red-Red AVC Amp. Decoup.
97 220K Ω	$\frac{1}{2}$		BTS-220K	Br.-Gm.-Yl. Series "S" Meter
98 150K Ω	$\frac{1}{2}$		BTS-150K	Yl.-Yl.-Yl. AVC Network
99 470K Ω	$\frac{1}{2}$		BTS-470K	Red-VI.-Yl. " " "
100 470K Ω	$\frac{1}{2}$		BTS-470K	Red-VI.-Yl. " " "
101 270K Ω	$\frac{1}{2}$		BTS-270K	Red-Red-Yl. BFO Plate
102 220K Ω	$\frac{1}{2}$		BTS-220K	Br.-Blk.-Yl. BFO Screen Dropping
103 100K Ω	$\frac{1}{2}$		BTS-100K	Br.-Blk.-Yl. BFO Screen Bleeder
104 100K Ω	$\frac{1}{2}$		BTS-100K	Red-Red-Red AF Cathode
105 100K Ω	$\frac{1}{2}$		BTS-100K	Br.-Blk.-Gm.-AF Screen Dropping
106 220K Ω	$\frac{1}{2}$		BTS-220K	Br.-Blk.-Yl. AF Screen Bleeder
107 1 Meg.	$\frac{1}{2}$		BTS-1 Meg.	Yl.-Yl.-Yl. AF Plate Decoup.
108 470K Ω	$\frac{1}{2}$		BTS-470K	Yl.-Yl.-Or. AF Plate Decoup.
109 100K Ω	$\frac{1}{2}$		BTS-100K	Yl.-Yl.-Yl. Phase Inv. Grid
110 47K Ω	$\frac{1}{2}$		BTS-47K	Yl.-Yl.-Red Phase Inv. Cathode
111 470K Ω	$\frac{1}{2}$		BTS-470K	Yl.-Yl.-Or. Phase Inv. Cathode
112 470K Ω	$\frac{1}{2}$		BTS-470K	Yl.-Yl.-Or. Phase Inv. Plate Load
113 47K Ω	$\frac{1}{2}$		BTS-47K	Red-VI.-Yl. Output Grid
114 47K Ω	$\frac{1}{2}$		BTS-47K	Or.-Or.-Br. Output Cathode
115 270K Ω	$\frac{1}{2}$		BTS-270K	Yl.-Yl.-Br. Output Transformer Sec. Loading
116 270K Ω	$\frac{1}{2}$		BTS-270K	Yl.-Yl.-Br. Output Transformer Sec. Loading
117 350K Ω	$\frac{1}{2}$		BM-2-350	Br.-Blk.-Br. Feedback
118 470 Ω	$\frac{1}{2}$		BTS-470	Yl.-Yl.-Red
119 100K Ω	$\frac{1}{2}$		BTS-100K	Br.-Blk.-Br. Feedback
120 100K Ω	$\frac{1}{2}$		BTS-100K	Yl.-Yl.-Red
121 500K Ω	$\frac{1}{2}$		BM-1-500	Br.-Blk.-Br. Feedback
122 100 Ω	$\frac{1}{2}$		BM-1-100	Yl.-Yl.-Red
123 470K Ω	$\frac{1}{2}$		BTS-470K	Br.-Blk.-Br. Feedback

Note-Some models may use a 470 Ω $\pm$ W. resistor in this application.

PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHT

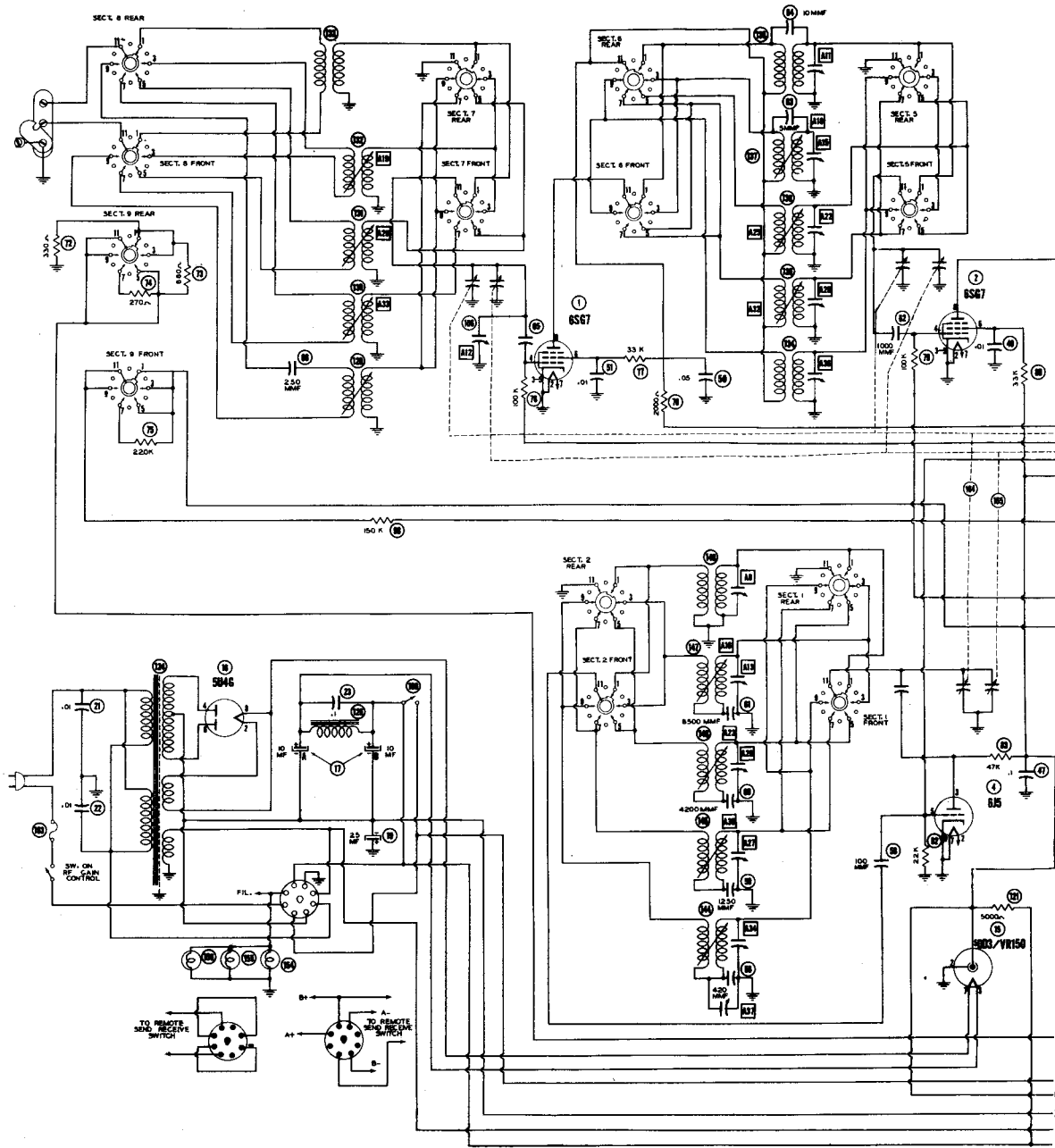
ITEM No.	BASE TYPE	VOLTS	AMPS.	REPLACEMENT DATA		INSTALLATION NOTES
				BEAD COLOR	NATIONAL PART No.	
154 Bayonet		6-8	0.15	Brown		Type 47
156						

MISCELLANEOUS

ITEM No.	PART NAME	NATIONAL PART No.	NOTES
157 Switch		AVC	
158 " "		CW Osc.	
159 " "		Radio-Phono	
160 " "		Send-Receive	
161 " "		Band	
162 " "		Selectivity	
163 Fuse		2 Amp. 250 Volts	
164 4 Gang Var. Cap.		(16-3580PF) each section	
165 4 Gang Var. Cap.		Bandspread	
166 Trimmer Cap.		AL2	
167 Crystal Resonat-		(455KC)	
167 Or			

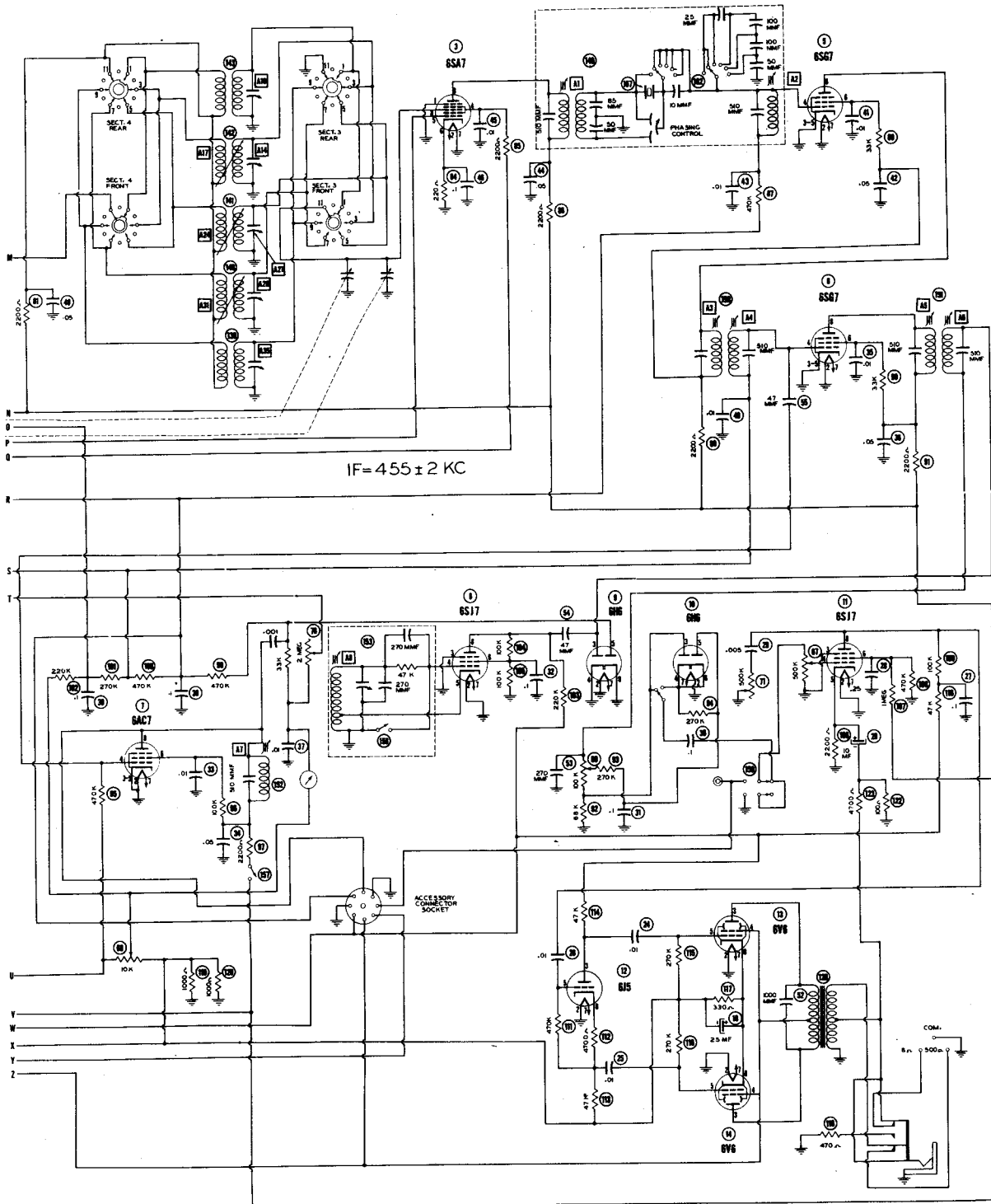
BATTERY OPERATION

The NC-183 may be operated in portable or emergency service by connecting batteries to the terminals of the power socket located at the rear of the Receiver. An octal plug, similar to the AC jumper plug, may be wired and used for interconnection between batteries and Receiver. The battery plug used must be wired in accordance with the drawing shown on the schematic diagram. A 6 volt heater supply (storage battery) should be connected to terminals 3 and 5 and 1.5 to 250 volt "B" supply connected to terminals 4 and 8. The recommended "B" voltage supply for battery economy is between 135 and 150 volts. At voltages between 135 and 150 the voltage regulator tube will not ignite affecting a further battery economy. For stand-by operation in all cases it is recommended that a switch be placed in the battery B+ lead for increased battery economy as the "B" switch on the Receiver does not open the B supply circuit to the H.F. oscillator, voltage regulator, and push-pull audio output tubes. A suggested refinement is to include a switch in the A+ lead so that the tube heaters may be turned off when the Receiver is not in use without the necessity of removing the battery plug from the battery socket.



VOLTAGE READINGS									
Pin	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
1	6X4	OV.	OV.	OV.	-2VDC	OV.	170VDC	5.6VAC	250VDC
2	6X4	OV.	OV.	OV.	-1.5VDC	OV.	100VDC	6.6VAC	25.0VDC
3	6BE6	OV.	6.6VAC	200VDC	50VDC	-10VDC	OV.	OV.	OV.
4	6BE6	OV.	6.6VAC	50VDC	OV.	-10VDC	100VDC	OV.	OV.
5	6BE6	OV.	OV.	OV.	OV.	OV.	170VDC	6.6VAC	250VDC
6	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
7	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
8	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
9	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
10	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
11	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
12	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
13	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
14	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
15	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
16	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
17	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
18	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
19	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
20	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
21	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
22	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
23	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
24	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
25	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
26	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
27	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
28	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
29	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
30	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
31	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
32	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
33	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
34	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
35	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
36	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
37	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
38	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
39	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
40	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
41	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
42	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
43	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
44	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
45	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
46	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
47	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
48	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
49	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
50	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
51	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
52	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
53	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
54	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
55	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
56	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
57	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
58	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
59	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
60	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
61	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
62	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
63	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
64	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
65	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
66	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
67	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
68	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
69	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
70	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
71	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
72	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
73	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
74	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
75	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
76	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
77	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
78	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
79	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
80	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
81	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
82	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
83	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
84	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
85	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
86	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
87	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
88	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
89	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
90	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
91	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
92	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
93	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
94	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
95	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
96	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
97	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
98	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
99	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC
100	6BE6	OV.	OV.	OV.	OV.	OV.	100VDC	6.6VAC	25.0VDC

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of $\pm 10\%$ in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.



STAGE GAIN MEASUREMENTS					
ANTENNA TO RF GRID	1X	600K	1ST IF TRANS.	1X	455K
1ST RF TO 2ND RF GRID	2X	600K	2ND IF TUBE	90X	455K
RF GRID TO CONV. GRID	2X	600K	OUTPUT IF TRANS.	1X	455K
CONVERSION GAIN	10X	IN 600K	AVC AMP.	1X	455K
INPUT IF TRANS.	1X	455K	AUDIO	25X	400
1ST IF TUBE	100X	455K	PHASE INVERTER	10X	400
			OUTPUT	25X	400

The stage gain measured values listed above are approximate values for an average operative stage, rather than an absolute value. It should be borne in mind that it is possible to introduce so many variables into the measurement operation, such as, type of equipment used for measuring, handling and placement of probes, the accuracy of alignment, etc., that an absolute reading is impractical. AVC is made inoperative and 3-volt battery bias substituted for measurement.

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT									
Controls should be set as follows: Bandspeed dial at "Set" mark, CWO switch at Off, CWO Control at Zero, Tone Control at 10, AF Gain at 10, Send-Rec. Switch at Rec., AVC Switch at Zero, Phono-Radio Switch at Radio, RF Gain at 10, Limiter at Off, Phasing Control at Zero, and Selectivity Switch at Off, except where noted otherwise. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.									
Tracking of coils may be checked by use of tuning wand. Correct tracking of coil is indicated when insertion of either end of tuning wand causes an equal decrease in output. If insertion of either end of wand causes an increase in output, correct tracking may be accomplished by adjustment of loops of wire (inside coil forms) designated by "A" Nos. in Steps 9, 10, 13, 14, 17 & 18.									
DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS		
1 Direct	High side to stator of 2nd section from front of tuning cap. Low side to chassis.	435KC (unmodulated)	Band "E"	Tuning cap. fully open.	Across voice coil	Sig. Gen.	Set "CWO" switch to "ON". Set selectivity control to "S". "CWO" control set to provide audible note. Tune sig. gen. for maximum output.		
2 Direct		Do not change (turn modulation off)				Al, A2, A3, A4, A5, A6	Set "CWO" switch to "OFF". Set selectivity control to "Off". Adjust Al thru A6 for maximum output.		
3 Direct						A7	Set AVC/MVC switch to AVC. Adjust A7 for minimum output.		
4 Direct		Do not change (turn modulation off)				A8	Return AVC/MVC switch to MVC. Set "CWO" switch to "ON". Set "CWO" control at zero. Adjust A8 for zero beat. Return "CWO" switch to "Off".		
5 400Ω carbon resistor	High side to ant. terminal "A". Low side to other ant. terminal with link connected.	56.0MC	Band "A"	Main dial at ⑥. Bandspeed dial at 56MC		A9	Adjust for maximum output. Tune sig. gen. to 56.9MC. If signal is not heard, retune sig. gen. to 56MC and open A9 to next peak. Adjust for maximum output and recheck for image.		
6 "				Tune for maximum output.		Al0, Al1, Al2	Rock tuning cap. and adjust for maximum output. Set bandspeed dial to "SET" mark.		
7 "		30MC	Band "B"	30MC		Al3	Adjust for maximum output. Tune sig. gen. to 30.9MC. If signal is not heard, retune sig. gen. to 30MC and open Al3 to next peak. Adjust for maximum output and recheck for image.		
8 "				Tune for maximum output.		Al4, Al5, Al2	Rock tuning cap. and adjust Al4 & Al5 for maximum output. Check tracking of 1st RF stage by rotating Al2 for one complete revolution. Two peaks should be obtained. Either one is correct for maximum output.		
9 "		14.0MC		14MC		Al6, Al7, Al8, Al9	Adjust for maximum output. Check tracking of coils associated with these adjustments per prealignment instructions. Repeat Steps 7 thru 10 until no further improvement can be made.		

DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
11 "	"	11.0MC	Band "C"	11MC	"	A20	Adjust for maximum output. Tune sig. gen. to 11.9MC. If signal is not heard, retune sig. gen. to 11.0 MC and open A20 to next peak. Adjust for maximum output and recheck for image.
12 "	"	"	"	Tune for maximum output.	"	A21, A22, Al2	Rock tuning cap. and adjust A21 & A22 for maximum output. Check tracking of 1st RF stage by rotating Al2 one complete revolution. Two peaks should be obtained. Either one is correct for maximum output.
13 "	"	5.0MC	"	5MC	"	A23	Adjust for maximum output.
14 "	"	"	"	"	"	A24, A25, A26	Check tracking of coils associated with these adjustments per prealignment instructions. Repeat Steps 11 thru 14 until no further improvement can be made.
15 "	"	4.0MC	Band "D"	4MC	"	A27	Adjust for maximum output. Tune sig. gen. to 4.9MC. If signal is not heard, retune sig. gen. to 4.0 MC and open A27 to next peak. Adjust for maximum output and recheck for image.
16 "	"	"	"	Tune for maximum output.	"	A28, A29, Al2	Rock tuning cap. and adjust A28 & A29 for maximum output. Check tracking of 1st RF stage by rotating Al2 one complete revolution. Two peaks should be obtained. Either one is correct for maximum output.
17 "	"	1.8MC	"	1.8MC	"	A30, A31, A32, A33	Adjust for maximum output. Check tracking of coils associated with these adjustments per prealignment instructions. Repeat Steps 15 thru 18 until no further improvement can be made.
18 "	"	"	"	"	"	"	
19 200MFD	"	1.5MC	Band "E"	1.5MC	"	A34	Adjust for maximum output. Tune sig. gen. to 2.4MC. If signal is not heard, retune sig. gen. to 1.8MC and open A34 to next peak. Adjust for maximum output and recheck for image.
20 200MFD	"	"	"	Tune for maximum output.	"	A35, A36, Al2	Rock tuning cap. and adjust for maximum output.
21 200MFD	"	.6MC	"	.6MC	"	A37	Adjust for maximum output. Repeat Steps 19, 20 & 21 until no further improvement can be made.