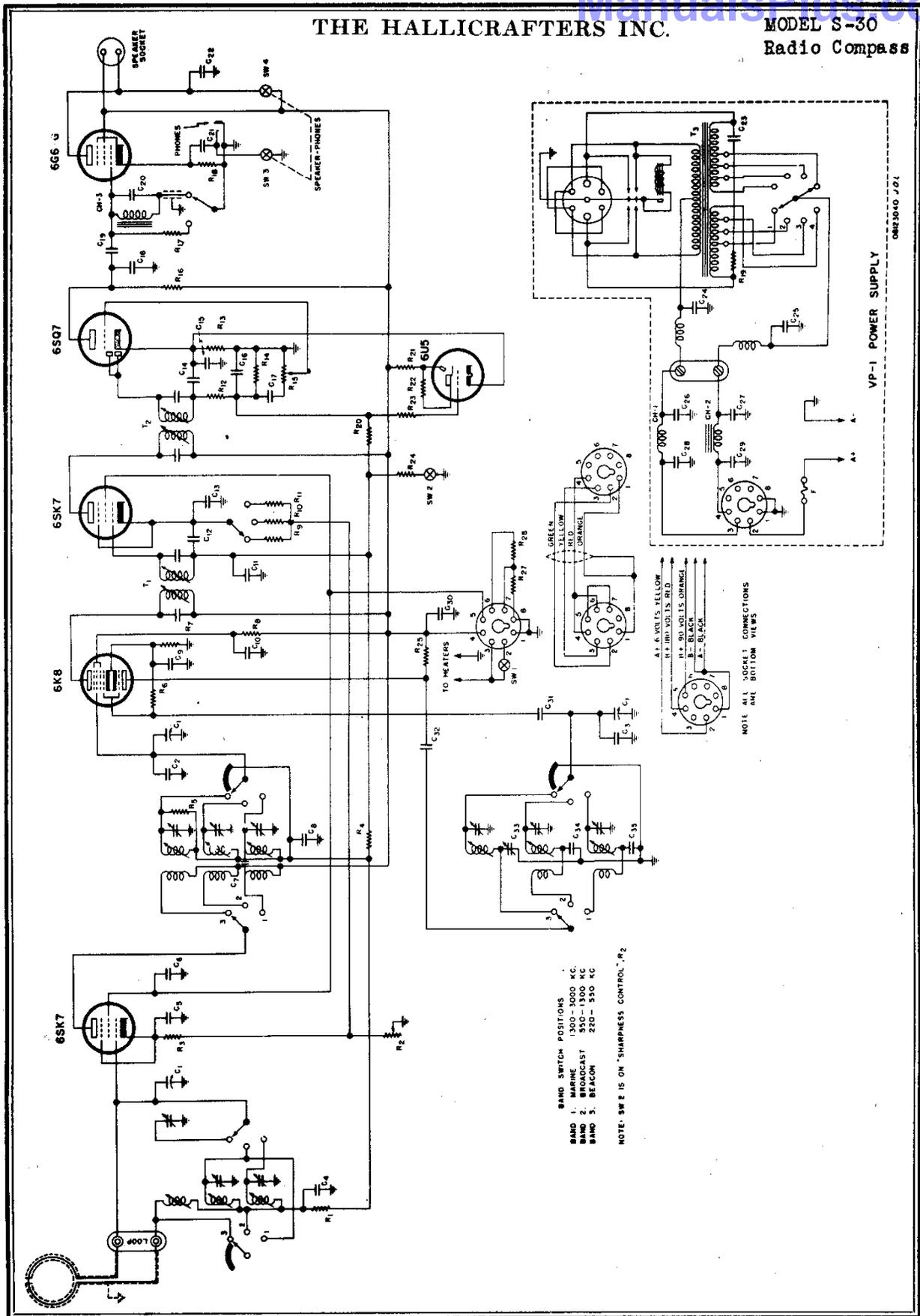


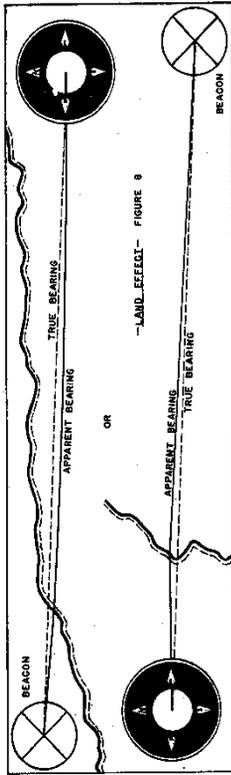
THE HALLICRAFTERS INC.

MODEL S-30  
Radio Compass



MODEL S-30  
Radio Compass

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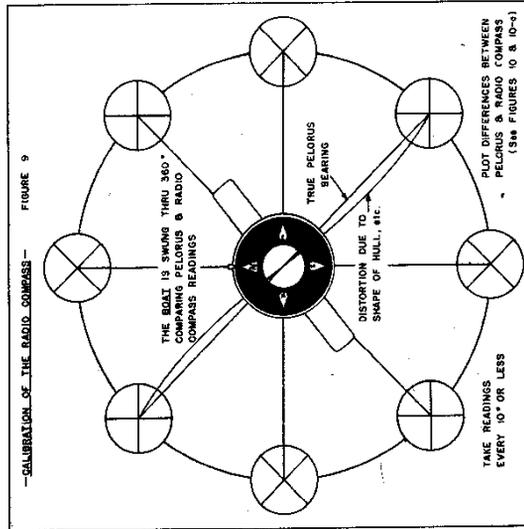
density. (Figure 9 illustrates the error).

CAUTION - Do not rely on readings taken over land or along a shoreline.

5 - NIGHT EFFECT - is most noticeable at sunrise and sunset. More radio waves are reflected back to earth at night than during daylight. It is evident by a broadening of the NULL and possible shifts in apparent bearings taken at distances greater than 250 miles. Over short ranges the effect is negligible.

6 - RADIO COMPASS DEVIATION - must be determined and accounted for as in the magnetic compass. A calibration curve (Figure 10) developed and indicated by the manufacturer, Figure 9, must be made with the aid of the PELORUS immediately after installation.

If the RADIO COMPASS is not in line with the LIBBER LINE, the CALIBRATION curve will be similar to that shown by the dotted line.



If the RADIO COMPASS is located too close to a metal object (see LOCATION) a curve similar to the other broken line will result. REWINDERS are immediately evident to the operator.

occasions, as shown by Figure 7, it will not be treated in detail.

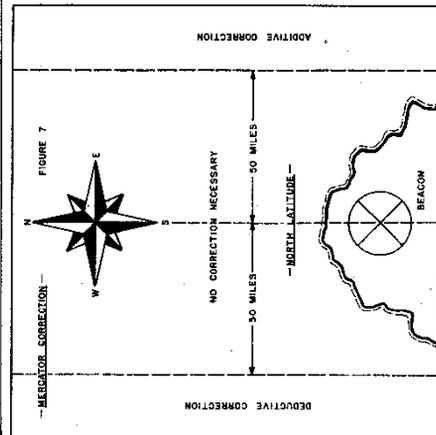
4 - LAND EFFECT - occurs when the signal passes over land before its course over water. In this respect, radio waves are comparable to light passing thru materials of various plane area. Since MERCATOR CORRECTION is necessary only on rare

PARTS LIST

RESISTORS			CONDENSERS		
NO.	OHMS	VOLTAGE	NO.	CAPACITY	VOLTAGE TYPE
1	200,000	1/2	1	580 mmf	Per Section Air
2	10,000		2	50 mmf	Ceramicon
3	400		3	50 mmf	Ceramicon
4	200,000	1/2	4	.05 mfd	Paper
5	250,000	1/2	5	.05 mfd	Paper
6	50,000	1/2	6	0.1 mfd	Paper
7	300	1/2	7	.05 mfd	Paper
8	30,000	1/2	8	.02 mfd	Paper
9	1,000	1/2	9	.05 mfd	Paper
10	400	1/2	10	.01 mfd	Paper
11	200	1/2	11	.0001 mfd	Mica
12	50,000	1/2	12	.0001 mfd	Mica
13	2,000	1/2	13	.0001 mfd	Mica
14	200,000	1/2	14	.0001 mfd	Mica
15	500,000	1/2	15	.00025 mfd	Mica
16	500,000	1/2	16	.0001 mfd	Mica
17	1 Meg.	1/2	17	.0075 mfd	Mica
18	500	1/2	18	.01 mfd	Paper
19	200	1/2	19	.01 mfd	Paper
20	1 Meg.	1/2	20	.02 mfd	Paper
21	1 Meg.	1/2	21	.3 mfd	Paper
22	1 Meg.	1/2	22	30 mfd	Elec.
23	2 Meg.	1/2	23	425 mfd	Elec.
24	200	1/2	24	30 mfd	Elec.
25	15,000	1	25	.0001 mfd	Paper
26	30,000	1/2	26	.001 mfd	Mica
27	15,000	1/2	27	No. 4066 800 mmf	Variable Pad
28			28	.0019 mfd	2 1/2 Mica
			29	.0037	5 Mica

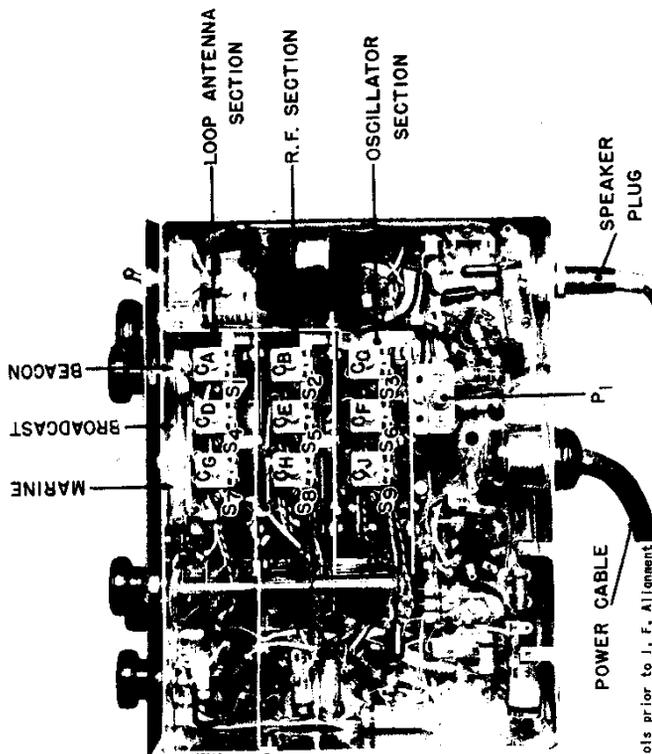
ERRORS TO BE CONSIDERED

- 1 - THE OPERATOR - Errors of the operator which depend entirely on his experience, may be difficult to predict. After he has familiarized himself with adjustment of the "SHARPNESS" control, he need only allow about 1/2 degree on strong static-free signals that produce a NULL of about 2 degrees width. If the NULL should cover some 10 degrees after complete adjustment, he cannot allow less than 1/2 degree.
- 2 - MOTION OF THE VESSEL - Yawing and pitching usually only affect the ship's course. The HELMSMAN must take the compass reading while the vessel is on a steady course. The operator must sometimes estimate possible error at the time readings are taken.
- 3 - MERCATOR ERROR - occurs in plotting the earth - a spherical volume, on the conventional MERCATOR CHART - a plane area. Since MERCATOR CORRECTION is necessary only on rare



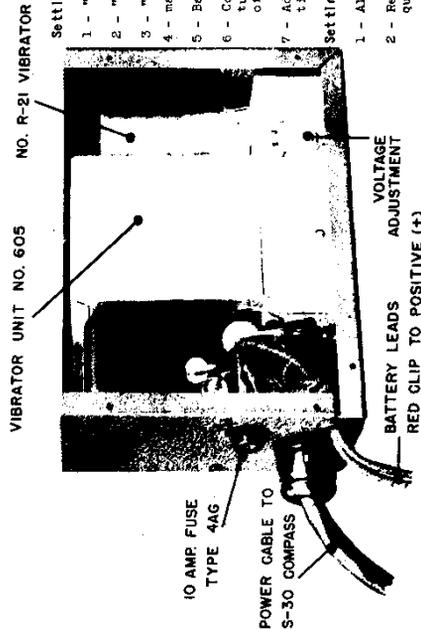
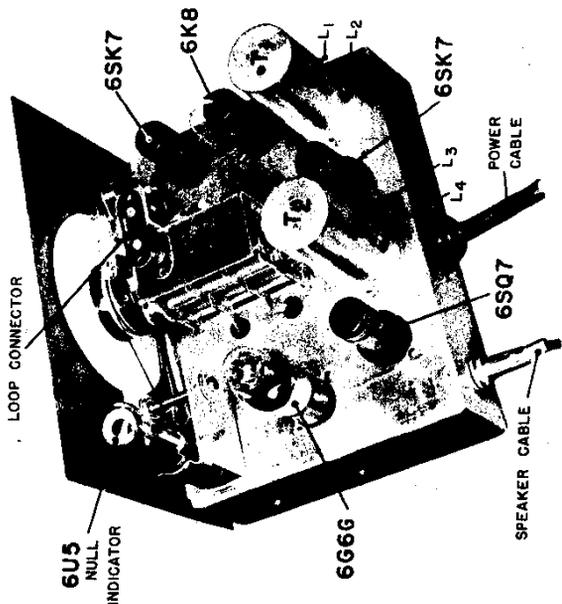
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NOTE: On the beacon band the slug  $S_9$  is used for calibrating the center of the band - the pad,  $P_1$ , for calibrating the low frequency end of the band.  
 Allow receiver and signal generator to reach operating temperature before making adjustments.

RANGE	SIG. GEN. & TUNING DIAL SETTING	DUMMY ANTENNA	PAD	TRIMMERS OR SLUGS	ADJUSTMENT
IF	175 kc 3 mc Marine	.1 mfd	None	$L_1, L_2, L_3, L_4$ I. F. cans $T_1$ & $T_2$	Adjust to maximum output
Beacon	250 kc	Inductive	$P_1$	$S_1, S_2, S_3$	"
	500 kc	Loop	None	$C_A, C_B, C_C$	"
Broadcast	600 kc	Loop	Fixed	$S_4, S_5, S_6$	"
	1200 kc	Loop	None	$C_D, C_E, C_F$	"
Marine	1300 kc	Loop	Fixed	$S_7, S_8, S_9$	"
	2800 kc	Loop	None	$C_G, C_H, C_I$	"



Setting of controls prior to I. F. Alignment

- 1 - "OPR" control to NORMAL
- 2 - "Volume" on full
- 3 - "Sharpness" on full
- 4 - main tuning dial set at 3 mc
- 5 - Bandswitch - Marine Band
- 6 - Connect signal generator to grid of 6K8 tube. Ground lead of generator to chassis of receiver
- 7 - Adjust indicated trimmers as per instructions.

Setting of controls for R. F. Alignment

- 1 - All controls similar to I. F. alignment
- 2 - Receiver dial adjusted to the aligning frequency
- 3 - NOTE: Generator connected to receiver inductively by forming a loop with a few turns of wire and placing it in the field of the loop on the receiver - leave end of wire free.