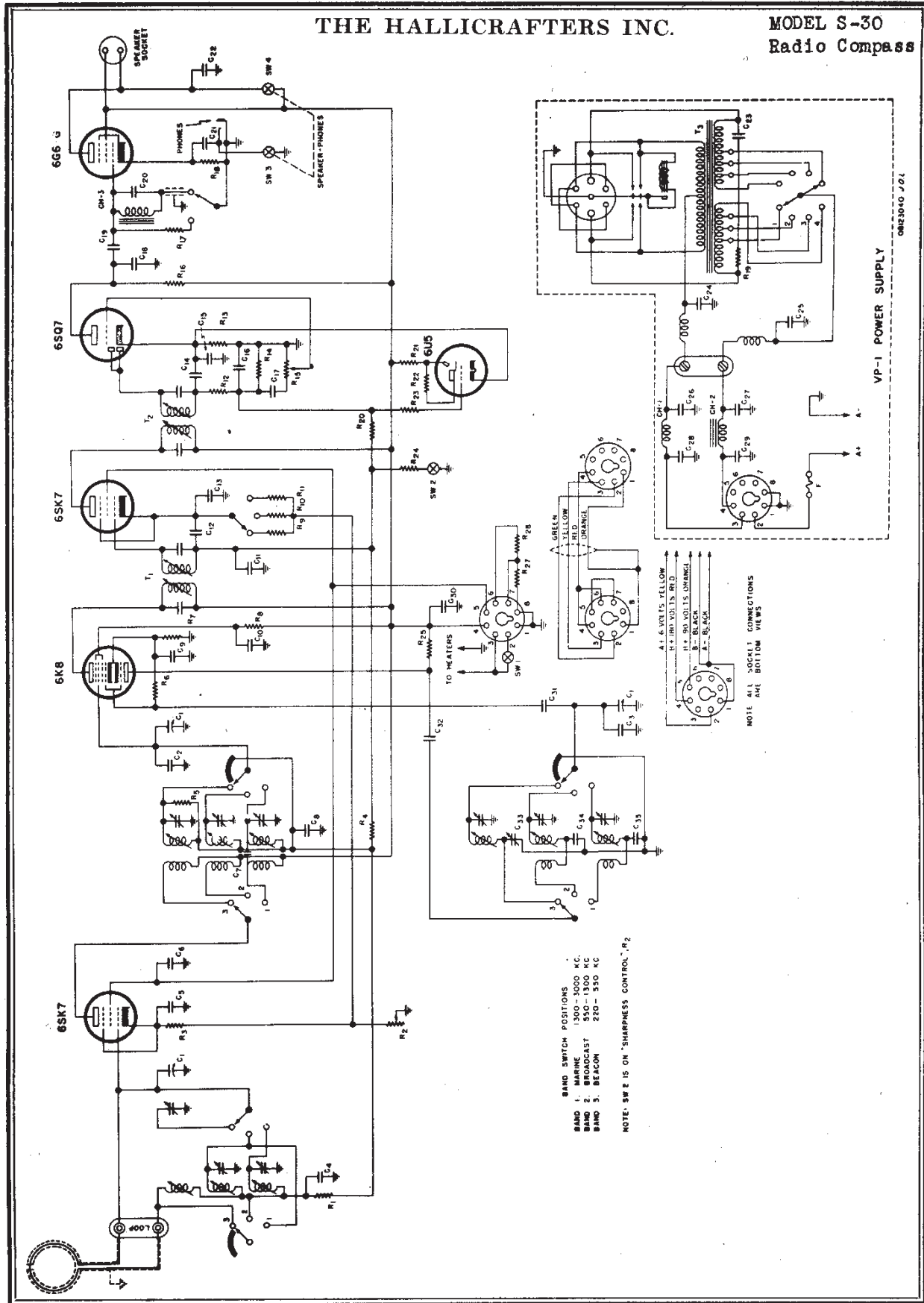


THE HALLICRAFTERS INC.

MODEL S-30
Radio Compass



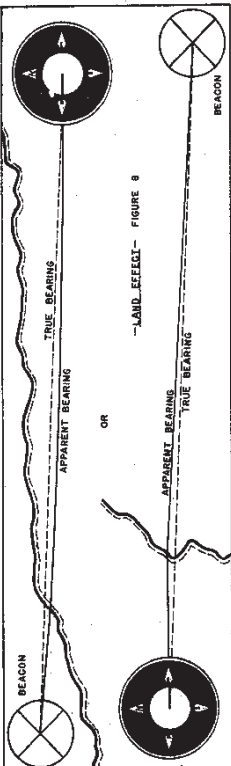
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MODEL S-30
Radio Compass

THE HALLICRAFTERS INC.

PARTS LIST

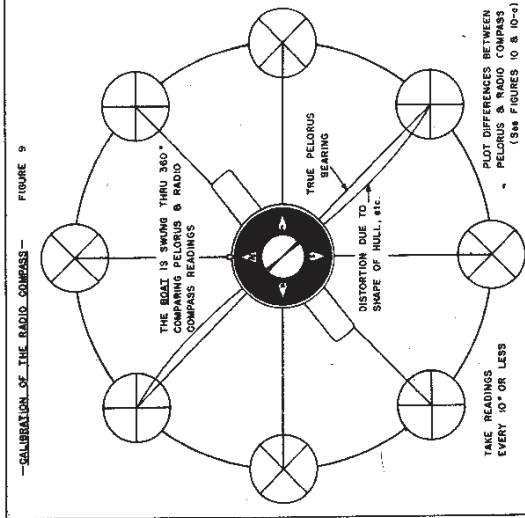
RESISTORS		CONDENSERS	
NO.	OHMS	NO.	VOLTAGE
1	200,000	1	Per Section
2	10,000	2	50 mfd
3	400	3	400
4	200,000	4	400
5	250,000	5	400
6	50,000	6	400
7	300	7	400
8	30,000	8	400
9	1,000	9	400
10	400	10	400
11	200	11	400
12	50,000	12	400
13	2,000	13	25
14	200,000	14	400
15	500,000	15	400
16	500,000	16	400
17	1 Meg.	17	400
18	500	18	400
19	200	19	50
20	1 Meg.	20	600
21	1 Meg.	21	600
22	1 Meg.	22	600
23	2 Meg.	23	600
24	200	24	200
25	15,000	25	450
26	30,000	26	450
27	15,000	27	450
28		28	450
		29	450
		30	450
		31	450
		32	450
		33	450
		34	450
		35	450



density. (Figure 8 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) determined as indicated by the self-explanatory figure is made with this aid of the PELORUS immediately after installation.

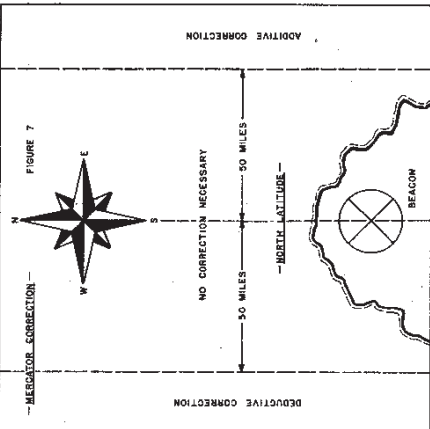
If the RADIO COMPASS is not in line with the LIBBER LINE, the CALIBRATION curve will be similar to that shown by the dotted line.

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

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

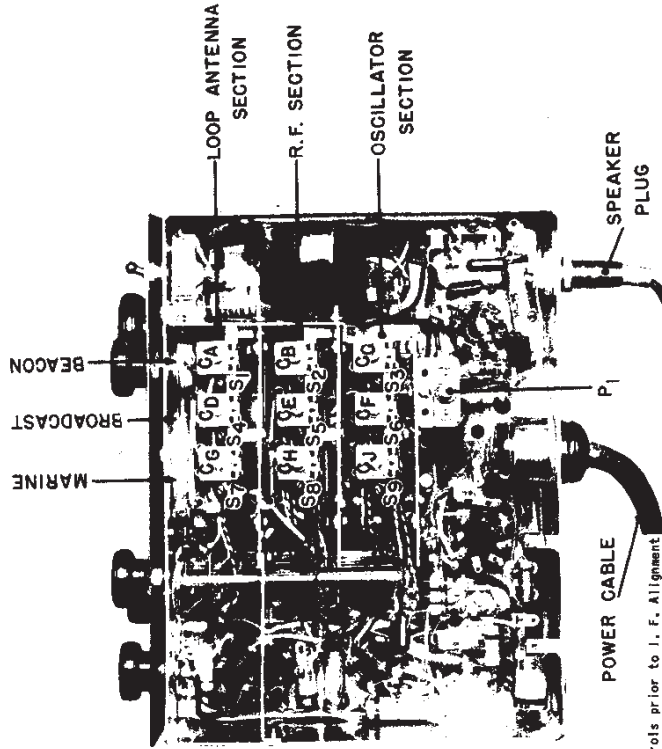
4 - **LAND EFFECT** - occurs when the signal passes over land before its course over water. In this respect, radio waves are comparable to light passing thru materials of various

- 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 apply the correct magnetic deviation to the compass indication and must sometimes estimate possible error at the time readings are taken.
 - 3 - **MERCATOR ERROR** - occurs in plotting the earth on a spherical globe, on the conventional MERCATOR CHART, a plane area. Since MERCATOR CORRECTION is necessary only on rare



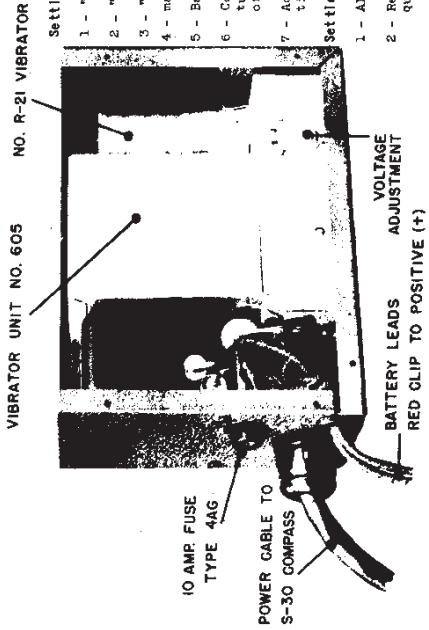
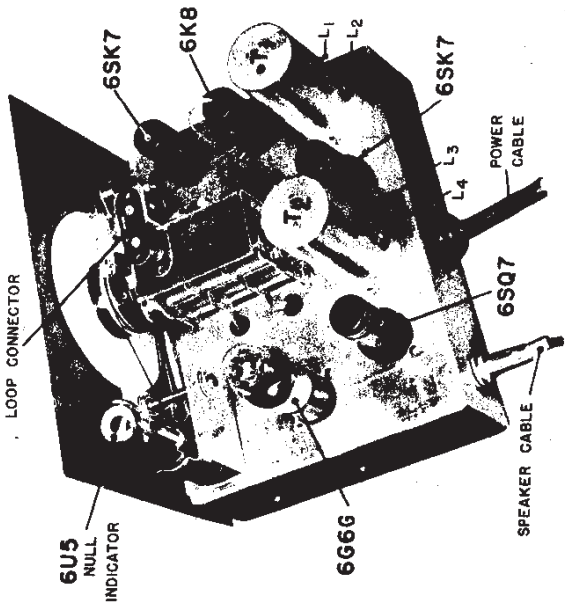
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NOTE: On the beacon band the slug S_5 is used for calibrating the center of the band - the pad, P_1 , for calibrating the low frequency end of the band.
Allow receiver and signal generator to reach operating temperature before making adjustments.

RANGE	SIG. GEN. 4 TUNING DIAL SETTING	LOOPY ANTENNA	PAD	TRIMMERS OR SLUGS	ADJUSTMENT
IF	175 to 3 mc Marine	.1 mfd	None	L_1, L_2, L_3, L_4 on sides of 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 6G6 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 the turns of wire and placing it in the field of the loop on the receiver - leave end of wire free.