

**OPERATING AND  
ALIGNMENT INSTRUCTIONS  
SKYRIDER MARINE  
MODEL S-22**



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OPERATING INSTRUCTIONS  
SKYRIDER MARINE MODEL S22

The SKYRIDER Marine is an 8 tube AC/DC Superheterodyne Receiver, covering the following frequencies:

Band	Coverage
1	140 to 465 KC (2150 to 645 meters)
2	465 to 1510 KC ( 645 to 199 " )
3	1.7 to 5.8 MC ( 177 to 53 " )
4	5.8 to 18.5 MC (54.5 to 16.2 " )

Each band has its separate coils. The band switch directly below the calibrated main dial enables the operator to easily place the proper coils in the circuit to cover the desired frequency.

**ANTENNA:** On the back of the chassis will be found the Antenna, Doublet and Ground terminal strip. A conventional single wire antenna should be connected to A1, and the jumper between A2 and G left connected. Because of the low frequency tuning range of the receiver it is advisable to use as long a piece of wire for the antenna as possible for most satisfactory pickup. The same antenna will perform satisfactorily on the higher frequencies. Should an all-wave doublet antenna be used the two wire transmission line from the flat top should be connected to A1 and A2 and the jumper removed between A2 and G. It is improbable that the commercially available all wave doublet will work well on the low frequency bands and your attention is drawn to this point in suggesting that a conventional long wire type be used especially on band #1. A good ground should be connected to the G terminal.

**NOTE:** Because this receiver can be operated on either 110 volt AC or DC current the chassis is electrically placed above ground. DO NOT ground the receiver at any other point than the G terminal on the rear of the receiver.

The lid has been screwed to the cabinet proper in two places. Inasmuch as the chassis is insulated from the cabinet, this has been done as a protective measure because if you were to touch the cabinet and the chassis you would get shocked. Disconnect the receiver from its power source before opening the lid.

**OPERATION:** After connecting an aerial to the receiver, plug the cord into the power socket. Now turn the control marked "Tone" to the right. Power will then be connected to the receiver and after waiting a few moments for the tubes to reach operating temperature, the receiver can be placed in service.

The gain of the receiver can be adjusted by the R. F. gain and Audio gain control. It is recommended that the R. F. gain control be advanced and control the volume of the receiver with the audio control. When the strength of the incoming signal is of such a value that the receiver is overloaded, backing off the R.F. gain control will eliminate this condition and keep the set from blocking. After you have familiarized yourself with the operation of the receiver you will find the optimum settings of both controls for best results.

The A.V.C. switch should be in the "on" position when receiving phone signals. It is advisable to have A.V.C. "off" when copying code signals. If the receiver is operated with AVC on, code signals will not be received so well because of the time lag developed through A.V.C. action. Additionally, the overall sensitivity of the receiver is increased with the A.V.C. off and the volume of the receiver controlled manually.

The BFO switch places the beat frequency oscillator in operation when snapped to the "on" position. The pitch control enables the operator to vary the pitch of the beat note and will be found to be of great help in the reception of unmodulated continuous-wave signals. Adjustment of the pitch control affords the choice of beat note most pleasing to the operator.

The send-receiver switch, in the send position, removes plate voltage from the tubes in the receiver and makes it inoperative during a stand-by period.

The headphone jack immediately below the "send-receive" switch is for head phone operation. When the headphone plug is inserted in this jack the output of the 5 inch permanent magnet dynamic speaker is shorted. Inasmuch as no direct current flows in the headphone circuit crystal type headphones may be used with the SKYRIDER Marine receiver.

The tube line-up of the S22 SKYRIDER Marine is as follows:

6K7	R. F. Amplifier
6L7	First Detector
6J5	High Frequency Oscillator
6K7	I. F. Amplifier
6Q7	Second Detector A.V.C. & 1st audio
25L6	Power Output tube
25Z5	Rectifier
6J5	B.F.O.

In keeping with underwriters recommendations the fuse block is mounted on the under side of the chassis. 250 volt 2 amp replacement fuses can be installed only after the bottom plate is removed from the receiver.

The SKYRIDER Marine receiver draws 47 watts at 117 volts 60 cycle A.C.

The Hallicrafters, Inc., reserve the right to make changes in design or to add improvements to instructions of their manufacture without incurring any obligation to install the same in any instrument previously purchased.

## ALIGNMENT PROCEDURE FOR SKYRIDER MARINE MODEL S22

### Intermediate Frequency Alignment

Have the controls set as follows:-

A.V.C.-B.F.O. switches in the "OFF" position.

Adjust A.F. and R.F. gain controls for maximum volume.

Set Band Switch on #1 Band.

Set main dial at 465 KC or minimum capacity position.

Remove 6L7 grid cap - connect the signal generator through a .1 MFD condenser to the grid of this tube. Connect the ground of the signal generator to the G terminal of the receiver.

The chassis is insulated from the cabinet so do not ground the cabinet.

After the above adjustments have been made, set the signal generator for 1600 KC signal output.

Now adjust the trimmers on T1 and T2 transformers for exact resonance which will be indicated by maximum signal output. If you prefer an output meter as an indicator it should be of the rectifier type and connected to the voice coil leads of the speaker, or to the plate of the 25L6 output tube through suitable coupling condenser.

### R.F. Alignment

Replace the .1 MFD condenser in series with the generator leads with a 400 ohm resistor. Connect the generator to the A1 terminal on the strip mounted on the rear of the chassis. Leave the jumper between A2 and G connected. All pad adjustments are for the low frequency ends of the bands and are reached from the top of the chassis. All trimmer adjustments are for the high frequency ends of the bands and are adjusted through the bottom plate. Remove the guarantee card on the bottom of the cabinet by placing a knife under the small snap fasteners which hold it in place.

#### Band #1

Place the band switch on Band 1. Set generator for 350 KC output and adjust main dial for that frequency. Adjust oscillator trimmer CA, mixer trimmer, CB and antenna CC for maximum signal. Reset generator and receiver to 150 KC and resonate pad C34 for maximum signal.

#### Band #2

Turn Band Switch to Band 2. Set generator and receiver to 1400 KC and adjust CD CE CF for maximum output. Reset generator and receiver to 600 KC - add adjust Pad C35 for maximum signal.

#### Band #3

Adjust Band Switch to Band 3. Set generator and receiver to 4 MC and adjust C9 CH CI for maximum signal. Reset generator and receiver to 1.8 MC and tune pad C36 for maximum output.

#### Band #4

Set Band Switch on Band 4. Tune generator and receiver to 14 MC and adjust CJ, CK, CL for maximum signal. Reset generator and receiver to 6MC and adjust pad C37 for maximum output.

BANDS 2 1 4 3

OSC.  $C_D$   $C_A$   $C_J$   $C_G$ MIXER  $C_E$   $C_B$   $C_K$   $C_H$ R.F.  $C_F$   $C_C$   $C_L$   $C_I$ G  $A_2$   $A_1$ 

A.C. CORD

 $C_{35}$   $C_{37}$  $C_1$   
ANT. $C_2$   
R.F. $C_3$   
OSC.

6K7

 $L_2$ 

6J5

6Q7

ELEC.

25Z5

6L7

 $T_1$   
1  $\emptyset$   
1600 K.C.  
2  $\emptyset$ 

6K7

 $T_2$   
3  $\emptyset$   
1600 K.C.  
4  $\emptyset$ 

ELEC.

BK29B

6J5

 $C_{34}$   $C_{36}$ 

25L6

 $T_3$ 

R.F. GAIN

BAND  
SWITCHAUDIO  
GAINMAIN  
TUNINGTONE  
CONTROLPITCH  
CONTROL

SEND REC.

## CONDENSER - Continued

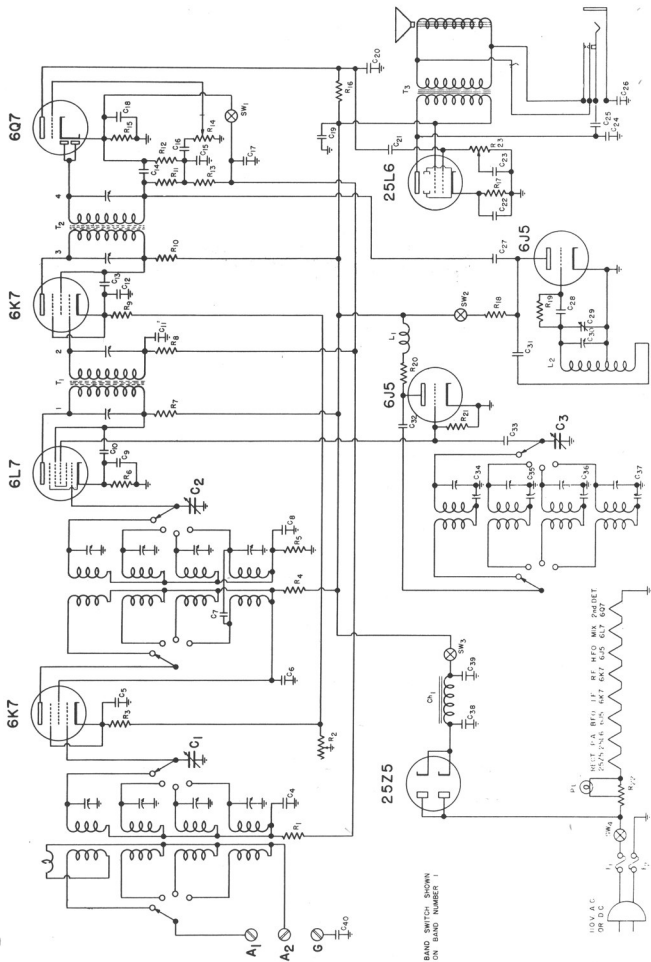
Q.No.	Ques	Wantage	Parts No.
1	100,000	1/3	20-093
2	25,000	R. F. Gain	25-039
3	600	1/3	22-125
4	1,000	1/3	20-033
5	100,000	1/3	20-093
6	200	1/3	20-015
7	1,000	1/3	20-033
8	100,000	1/3	20-093
9	600	1/3	22-125
10	1,000	1/3	20-033
11	100,000	1/3	20-093
12	1,000,000	1/3	20-108
13	1,000,000	1/3	20-108
14	500,000	Audio Gain	25-041
15	7,500	1/3	20-060
16	250,000	1/3	20-099
17	140	1/2	22-011
18	5,000	1/3	20-054
19	50,000	1/3	20-084
20	1,000	1/3	20-033
21	50,000	1/3	20-094
22	94	total - type BK 29B resistor tube	
23	500,000	Tone Control	25-040

<u>NO.</u>	<u>CAPACITY</u>	<u>TYPE</u>	<u>VOLTAGE</u>	<u>PARTS NO.</u>
1	408.	mmfd.		48-022
2		Main Gang		
3				
4	.05	mf.d.	400	41-005
5	.01	" "	400	41-001

## CONDENSER - Continued

NO.	CAPACITY	TYPE	VOLTAGE	PARTS NO.
C6	.01 mfd.		400	41-001
7	10 mmfd.	ceramic		40-021
8	.01 mfd.		"	41-001
9	.01	"	"	41-001
10	.01	"	"	41-001
11	.01	"	"	41-001
12	.02	"	"	41-003
13	.01	"	"	41-001
14	.0001	mica		40-007
15	.0001	"		40-007
16	.05	"	"	41-005
17	.01	"	"	41-001
18	20.	electrolytic	25	42-025
19	.1	"	400	41-007
20	.00025	mica		40-024
21	.05	"	"	41-005
22	20.	electrolytic	25	42-025
23	.005	"	600	40-020
24	.005	"	"	40-020
25	.01	"	400	41-001
26	.01	"	"	41-001
27	10. mmfd.	ceramic		40-021
28	.00025 mfd.	mica		40-024
29	.0003	in pitch control		43-021
30	.00025	pitch control	"	40-013
31	.01	"		40-007
32	.002	mica		44-027
33	.0001	"		44-026
34	50. mmfd.	Pad.		44-027
35	100.	"		44-026
36	375.	"		44-027
37	1,080.	"		44-026
38	40 mfd.	"	150	42-026
39	30	"		42-026
40	40	"	400	41-001

SCHEMATIC DIAGRAM — SKYRIDER MARINE — MODEL S-22



BAND SWITCH SHOWN  
ON BAND NUMBER 1

100V AC 0V 100V AC REF. HFO MIX Pnd DET  
CON. IN. 100V AC 100V AC 100V AC 100V AC



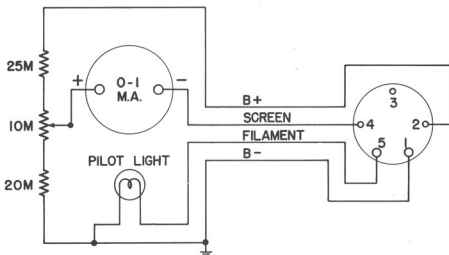


# THE HALLICRAFTERS

## TYPE SM "S" METER



The HALLICRAFTERS signal strength indicator is complete. This meter has been designed as an accessory to be used with the HALLICRAFTERS receivers equipped with a meter socket. All that is necessary to connect the meter is to plug it into its socket on the back of the receiver chassis. The indirectly illuminated scale is calibrated in "S" units and will provide a convenient means of checking the relative carrier strength of incoming signals. On the rear of the meter case is mounted the zero setting resistor. The three foot connecting cable will allow placing the meter at either end or on top of the receiver cabinet. The type SM meter is available through your HALLICRAFTERS distributor at a price of \$10.00.



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### GUARANTEE

This receiver is guaranteed to be free from any defect in workmanship and material that may develop within a period of ninety (90) days from date of purchase, under the terms of the standard guarantee, as designated by the Radio Manufacturers Association. Any part or parts that prove defective within this period will be replaced without charge when subjected to examination at our factory, providing such defect, in our opinion, is due to faulty material or workmanship, and not caused by tampering, abuse or normal wear. All such adjustments to be made FOB the factory.

Should this receiver require any adjustments, your dealer or distributor has complete technical service information, or the factory will be glad to assist you in any problem direct.

Should it be necessary to return any part or parts to the factory, a "Return Material Permit" must be obtained in advance by first writing the Adjustment Department, who will issue due authorization under the terms of the guarantee.

The Hallicrafters, Inc., reserve the right to make changes in design or add improvements to instruments manufactured by them, without incurring any obligation to install the same in any instrument previously purchased.

All Hallicrafters receivers are built under patents of Radio Corporation of America and Hazeltine Corporation.