

VHF-MARINE RADIODIOTELEPHONE CHANNELS

Channel Designation	Frequency (MHz)		Channel Designation	Frequency (MHz)	
	Ship	Coast		Ship	Coast
01	156.050	160.650	60	156.025	160.625
02	156.100	160.700	61	156.075	160.675
03	156.150	160.750	62	156.125	160.725
04	156.200	160.800	63	156.175	160.775
05	156.250	160.850	64	156.225	160.825
06	156.300	--	65	156.275	160.875
07	156.350	160.950	66	156.325	160.925
08	156.400	--	67	156.375	156.375
09	156.450	156.450	68	156.425	156.425
10	156.500	156.500	69	156.475	156.475
11	156.550	156.550	70	156.525	--
12	156.600	156.600	71	156.575	156.575
13	156.650	156.650	72	156.625	--
14	156.700	156.700	73	156.675	156.675
15	156.750	156.750	74	156.725	156.725
16	156.800	156.800	77	156.875	--
17	156.850	156.850	78	156.925	161.525
18	156.900	161.500	79	156.975	161.575
19	156.950	161.550	80	157.025	161.625
20	157.000	161.600	81	157.075	161.675
21	157.050	161.650	82	157.125	161.725
22	157.100	161.700	83	157.175	161.775
23	157.150	161.750	84	157.225	161.825
24	157.200	161.800	85	157.275	161.875
25	157.250	161.850	86	157.325	161.925
26	157.300	161.900	87	157.375	161.975
27	157.350	161.950	88	157.425	162.025
28	157.400	162.000			
Fishing 1	155.625		Weather 1	162.550	
2	155.775		2	162.400	
3	155.825		3	162.475	
Distress Frequency	121.500		4	161.650	

### 3. OPERATION

#### 3.1 Microprocessor and memory

##### (1) Functions

The microprocessor has functionkeys and numeric keys on the keyboard.

[S] : To start scan.

To increase the number of memory address when "SQ" is open

[M] : To store or recall memory address

(to clear its function, press [DIM] or [DF/RCV])

[ENT] : To execute a command

[SHIP], [COAST], [WEATHER] : "TYPE" key to select type of station so as to designate a VHF channel with numeric keys

[NUMERICS]: To select channel number or address code number

To select pattern of scan hold/auto start

To define function ("97": To delete memory, "98": To release scan pass, "99": To skip an address)

##### (2) VHF Marine Radiotelephone channels and other channels

VHF channels as shown in the table on page OM6 have been memorized in the microprocessor. When one of channels from 01 to 88 is retrieved, its type and channel number are displayed on the type indicator, SHIP or COAST, and the channel display.

When one of WEATHER channels is selected, one of following characters appears on the channel display.

WEATHER : U1, U2, U3, U4    FISHING : F1, F2, F3    121.5 MHz : EP

Note that WEATHER or FISHING should be selected by specification.

##### (3) Memory

Up to 100 channels can be memorized in memory addresses from 00 to 99. A group of addresses consists of 10 addresses and is represented by a group number as shown below.

Group number	0	1	2	3	...	7	8	9
Address number	00-09	10-19	20-29	30-39	...	70-79	80-89	90-99

Note : Data in the memory is protected with a built-in Lithium battery.

### 3.2 Details of Operation

When power is turned on, DF operation is set automatically and previous selection of channel appears at the type indicator and on the channel display.

#### 3.2.1 Manual channel selection

- (a) Select a type by pressing one of type keys, [SHIP], [COAST] and [WEATHER].
- (b) Press numeric keys so that the channel number appears on the channel display.
- (c) Press [ENT] to execute.

Above procedure is rewritten as

[TYPE] → [CHANNEL NUMBER] → [ENT]

For weather or emergency channel (WEATHER or FISHING has been specified).

[WEATHER] → [1, 2, 3 or 4] → [ENT] (weather channel)

[WEATHER] → [1, 2 or 3] → [ENT] (fishing channel)

[SHIP] → [99] → [ENT] (ship station in distress)

Note : Procedure (a) and/or (b) may be omitted when the type or channel number need not to be changed.

A short beep sound tells you erroneous input. Try to enter correct data.

Example : Set Channel 12 - Ship

[SHIP] → [1] → [2] → [ENT]

Press	DEG	CH
	● COAST	0 4
[SHIP]	● SHIP	0 4
[1]	● SHIP	4 1
[2]	● SHIP	1 2
[ENT]	● SHIP	1 2

Previous data

Completed and reception starts

## OPERATION FOR OPTIONAL CHANNELS

### 3.2.1 Manual channel selection – ADDENDAM –

#### 1. Selection of 156MHz

- a) Turn on the power of main unit.
- b) Press  key to make the LED of SHIP blinks.
- c) Press  and  keys.
- d) Press  key to execute.

The LED of SHIP is turned OFF and “00” is shown in channel display.

#### 2. Selection of 121.875MHz

- a) Turn on the power of main unit.
- b) Press  key to make the LED of SHIP blinks.
- c) Press  and  keys.
- d) Press  key to execute.

The LED of SHIP is turned OFF and “EH” is shown in channel display.

### 3.2.2 Store a channel in the memory

(a) Set a channel by 4.2.1 as

[TYPE] → [CHANNEL NUMBER] → [ENT]

(b) Press [M] and former address number appears in "DEG" display

(c) Enter new address number

(d) Press [M] to execute command

Above procedure is rewritten as

[TYPE] → [CHANNEL NUMBER] → [ENT] → [M] → [ADDRESS NUMBER] → [M]

Example : Store Channel 12 - Ship in Address 80

[SHIP] → [1] → [2] → [ENT] → [M] → [8] → [0] → [M]

Press	DEG	CH	
[SHIP] → [12] → [ENT]		● SHIP 1 2	Channel 12 has been set
[M]	7 6	● SHIP 0 4	
[8]	6 8	● SHIP 4 1	
[0]	8 0	● SHIP 1 2	
[M]	8 0	● SHIP 1 2	Completed and reception starts

### 3.2.3 Spot reception

Spot reception is made by calling up a channel by address number

(a) Press [M]. Former data, the address and the channel appear on the displays.

(b) Enter address number with numeric keys.

(c) Press [ENT] to execute.

Above procedure is rewritten as

[M] → [ADDRESS NUMBER] → [ENT]

Note : A short beep tells you that address is vacant. Select other address or store data to that address.

Example : Call Address 80 up where Channel 12 - Ship has been entered

[M] → [8] → [0] → [ENT]

Press	DEG	CH
[M]	5 7	● COAST 0 4
[0]	7 8	● COAST 0 4
[0]	8 0	● COAST 0 4
[ENT]	8 0	● SHIP 1 2

Former data

Completed and reception starts

### 3.2.4 Delete memory

Memory can be deleted one by one or all. When whole memory is going to be annihilated by the latter procedure, written record on channels in addresses is recommended.

(1) Following procedure deletes one address.

[9] → [7] → [M] → [ADDRESS NUMBER] → [M]

Example : Delete memory in address 80.

[9] → [7] → [M] → [8] → [0] → [M]

Press	DEG	CH
		● COAST 0 4
[9]		● COAST 4 9
[7]		● COAST 9 7
[M]	5 7	● COAST 9 7
[9]	7 8	● COAST 9 7
[7]	8 0	● COAST 9 7
[ENT]	8 0	● SHIP 9 7

Former data

57 is previous value

Completed and reception starts

Note : 97, 98 and 99 are not channel numbers but are machine words in the computer program.

(2) To delete whole memory,

- (a) Turn off power by pressing upper and lower part of [OFF] key.
- (b) Press [3] and [ON] keys simultaneously. Then, 555 appears on the left and 55 appears on the right and they blink.
- (c) Press [ENT]. Then, whole memory is cleared.

Above procedure is rewritten as

[OFF] → [3] + [ON] → [ENT]

### 3.2.5 Scan reception

Channels which are going to be scanned should be memorized beforehand by the procedure given in 3.2.2. Iterate the procedure as many times as necessary.

[TYPE] → [CHANNEL NUMBER] → [ENT] → [M] → [ADDRESS NUMBER] → [M]

Then, go to the next procedure.

- (a) Press [SQ Δ] so as to close squelch and no sound can be heard.
- (b) Press [M] to call up address.
- (c) Press two group numbers.
- (d) Press [S] and scanning begins. Scan indicator is lit to indicate scanning.
- (e) When a signal is detected, scan stops automatically. (refer to 3.2.10) Press [S] to start scanning again.

Above procedure is rewritten as

[SQ Δ] → [M] → [FIRST GROUP NUMBER] → [LAST GROUP NUMBER] → [S]

Scan starts from the first group to the last group as shown in the following examples.

Example 1 [M] → [2] → [4] → [S] : Scanning from 20 to 49 and repeats.

Example 2 [M] → [0] → [8] → [S] : Scanning from 00 to 89 and repeats.

Example 3 [M] → [7] → [2] → [S] : Scanning from 70 to 99 and 00 to 29. Then repeats.

Note : Scan also stops when squelch opens. Then, press [S] and the address number increases by 1.

### 3.2.6 Scan stop

Scan is suspended when [S] is pressed while scanning.

### 3.2.7 Scan pass

To skip an address number while scanning, set "Scan pass". Then, that address is passed automatically from the next scan.

- (1) Confirm that scan stops. If not, stop scan.
- (2) Press [9] → [9], then 99 appears on the channel display.
- (3) Press [S] and scan pass is set. Scan starts again.

Above procedure is rewritten as

[9] → [9] → [S]

### 3.2.8 Release scan pass

- (1) Confirm that scan stops. If not, stop scan.
- (2) Press [9] → [8], then 98 appears on the channel display.
- (3) Press [S]. Then all scan pass is cleared and scan starts again.

Above procedure is rewritten as

[9] → [8] → [S]

### 3.2.9 Scan hold/auto start

Scan hold/auto start is available by pressing one of 5 numeric keys, 0, 1, 2, 3 and 4, while scanning (when scan indicator is lit).

- [0] : Scan is held while a signal is received. Scan indicator is put off.
- [1] : Scan is held for 1 sec after a signal is received and scanning starts again automatically. Scanning also starts when the signal stops.  
Scan indicator is always lit even when a signal is received.
- [2] : Same as the case of [1] except holding time, 2 sec.
- [3] : Same as the case of [1] except holding time, 4 sec.
- [4] : Same as the case of [1] except holding time, 8 sec.



# Chapter II INSTALLATION MANUAL

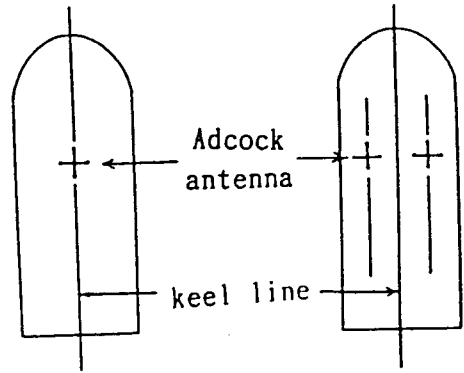
## 1. ANTENNA

### 1.1 Site Selection

Following conditions are recommended to install antenna for accurate measurement.

- 1) The best position is on the keel line.

The separation of Adcock antenna and the keel line should be minimized.

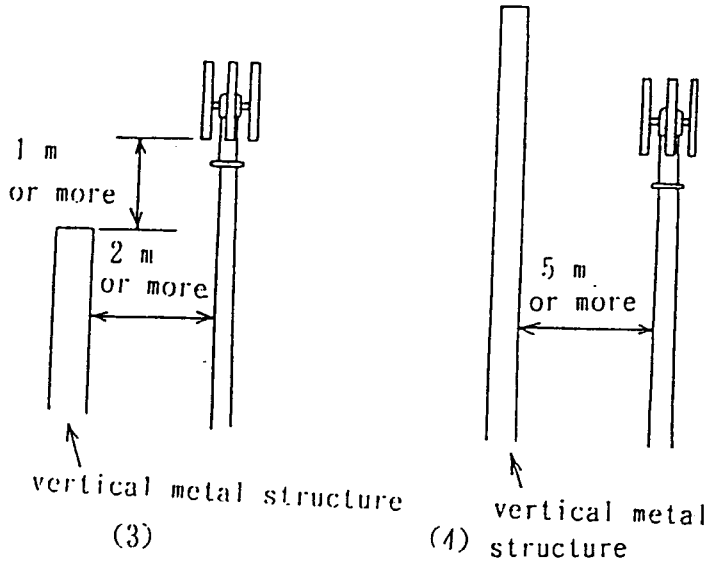


On the keel line      Off from keel line

- (2) Select the highest position whenever possible.

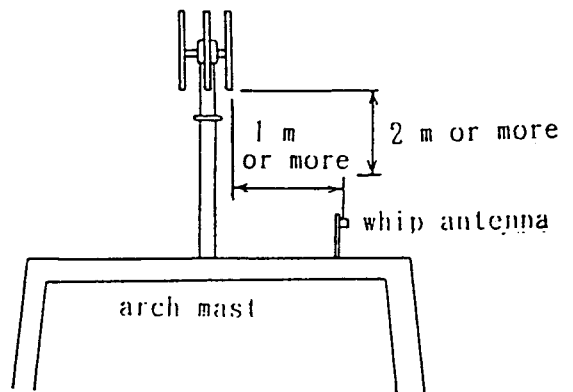
- (3) The antenna should be 1 m or higher from the top of vertical metal structure (e.g., mast, whip antenna, etc.)

Keep horizontal separation larger than 2 m from the structure.



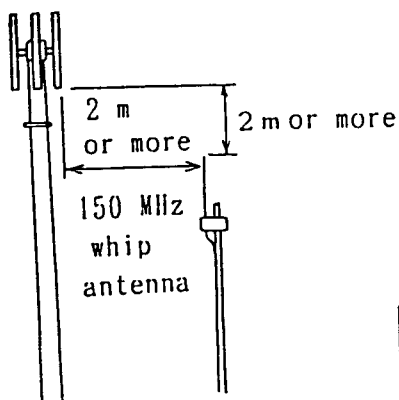
- (4) When vertical metal structure is high, keep a horizontal separation larger than 5 m.

- (5) When antenna is colocated on a arch mast with a whip antenna or like, keep separation of 2 m or more and a horizontal separation of 1 m or more.



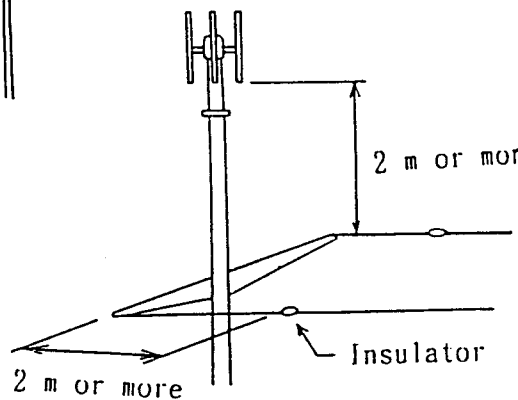
(5)

(6) The antenna should be 2 m or higher than an antenna for international VHF communication.



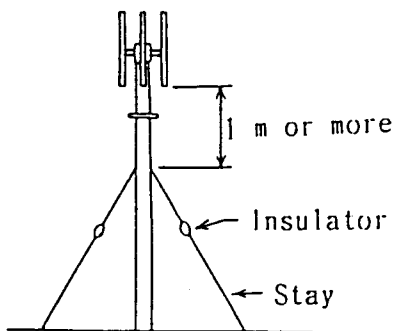
(6)

(7) The antenna should be 2 m or higher than main communication antenna and also keep a horizontal separation larger than 2 m.



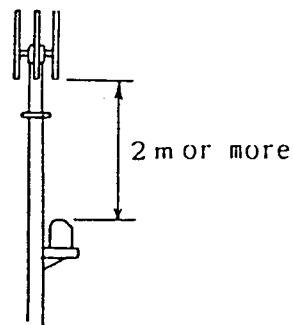
(7)

(8) When wire is used as stay for a mast or stanchion to which the antenna is installed, the separation of the wire from the antenna should be larger than 1 m.

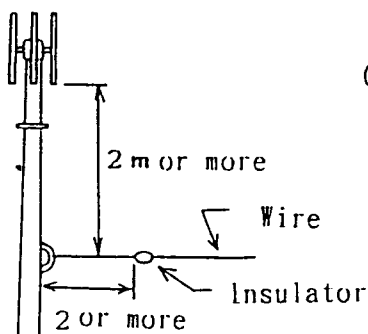


(8)

(9) When masts are connected with a wire, keep a vertical separation larger than 2 m. Also, insert an insulator to keep 2m or more from a mast to which the Adcock antenna is installed.



(9)



(10)

## 1.2 Examples of installation

When several antennas are installed on the same mast and 2 or more antenna may request the highest position.

The best position at the top of the mast may be given to a loop antenna for direction measurement in the HF range since it is vulnerable to resonance.

Figures on this page shows some examples. Dotted figures are alternatives.

