

# FURUNO

# OPERATOR'S MANUAL

VHF RADIOTELEPHONE

MODEL FM-8800D/8800S



**FURUNO ELECTRIC CO., LTD.**  
NISHINOMIYA, JAPAN

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Printed in Japan

Pub. No. OME-56420

( TATA ) FM-8800D/S

Your Local Agent/Dealer

FIRST EDITION : SEP. 2004

A3 : FEB. 9, 2005



\* 0 0 0 1 4 9 9 3 0 0 0 \*



\* O M E 5 6 4 2 0 A 3 0 \*

# CANCELING DISTRESS ALERT

If less than three seconds has elapsed since the [DISTRESS] key was pressed, the distress alert may be canceled by pressing the [CANCEL] key. Otherwise, do the following:

1. Switch off equipment immediately.
2. Switch equipment on and set to Channel 16.
3. Transmit message to "All Stations" giving your vessel's name, callsign and DSC number to cancel the distress alert.

**Example message:**

All Stations, All Stations, All Stations  
This is VESSEL'S NAME, CALLSIGN,  
DSC NUMBER, POSITION.

Cancel my distress alert of  
DATE, TIME, UTC.  
=Master, VESSEL'S NAME, CALLSIGN.  
DSC NUMBER, DATE, TIME UTC.



# SAFETY INSTRUCTIONS



## WARNING



### Do not open the equipment.

Hazardous voltage which can cause electrical shock, burn or serious injury exists inside the equipment. Only qualified personnel should work inside the equipment.



### Do not approach the antenna closer than 0.9 m (MPE by FCC) when it is transmitting.

The antenna emits radio waves which can be harmful to the human body.

	RF power density on antenna aperture	Distance	Description required by
FM-8800S	100 W/m <sup>2</sup>	0.11 m	IEC 60945
	10 W/m <sup>2</sup>	0.33 m	IEC 60945
	2 W/m <sup>2</sup>	0.9 m	MPE by FCC
FM-8800D	100 W/m <sup>2</sup>	0.11 m	IEC 60945
	10 W/m <sup>2</sup>	0.33 m	IEC 60945
	2 W/m <sup>2</sup>	0.9 m	MPE by FCC

(MPE: Minimum Permissible Exposure)

### Do not disassemble or modify the equipment.

Fire, electrical shock or serious injury can result.

### Turn off the power immediately if water leaks into the equipment or the equipment is emitting smoke or fire.

Continued use of the equipment can cause fire or electrical shock.

### Do not place liquid-filled containers on the top of the equipment.

Fire or electrical shock can result if a liquid spills into the equipment.



## WARNING

### Do not operate the equipment with wet hands.

Electrical shock can result.

### Keep heater away from equipment.

Heat can alter equipment shape and melt the power cord, which can cause fire or electrical shock.

### Any repair work must be done by a licensed radio technician.

Improper repair work can cause electrical shock or fire.



## CAUTION

### Do not touch any part of the antenna when the equipment is transmitting.

Electrical shock can result.

### Use the proper fuse.

Use of a wrong fuse can result in fire or cause permanent damage to the equipment.

### WARNING

To avoid electrical shock, do not remove cover. No user-serviceable parts inside.



Terminal, Communication Unit

Name: Warning Label (1)

Type: 86-003-1011

Code No.: 100-236-231

## Important Notices

- No part of this manual may be copied or reproduced without written permission.
- If this manual is lost or worn, contact your dealer about replacement.
- The contents of this manual and equipment specifications are subject to change without notice.
- The example screens (or illustrations) shown in this manual may not match the screens you see on your display. The screen you see depends on your system configuration and equipment settings.
- This manual is intended for use by native speakers of English.
- FURUNO will assume no responsibility for the damage caused by improper use or modification of the equipment or claims of loss of profit by a third party.

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### **Declaration of conformity**



# FOREWORD

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## **A Word to FM-8800D/FM-8800S Owners**

Congratulations on your choice of the FURUNO FM-8800D/FM-8800S VHF Radiotelephone. We are confident you will see why the FURUNO name has become synonymous with quality and reliability.

For over 50 years FURUNO Electric Company has enjoyed an enviable reputation for quality marine electronics equipment. This dedication to excellence is furthered by our extensive global network of agents and dealers.

This equipment is designed and constructed to meet the rigorous demands of the marine environment. However, no machine can perform its intended function unless operated and maintained properly. Please carefully read and follow the recommended procedures for operation and maintenance.

We would appreciate hearing from you, the end-user, about whether we are achieving our purposes.

Thank you for considering and purchasing FURUNO equipment.

## Features

The FURUNO FM-8800D/FM-8800S is a cost-effective all-in-one marine VHF radio system consisting of a 25 W VHF radiotelephone, a DSC modem, and a CH 70 watch receiver. It complies with GMDSS carriage requirements for safety and general communications.

The FM-8800D offers full-duplex voice communications and the FM-8800S offers simplex voice communication on ITU channels in the marine mobile VHF band. The features include Dual Watch which allows a continuous watch on CH16 and another selected frequency.

Full Class-A DSC functions are provided for distress alert transmission and reception, as well as the general call formats (Individual telephone, All Ships, Group and Area Call). Distress alert can be readily transmitted but an arrangement is provided to prevent accidental activation. The FM-8800D/FM-8800S maintains a continuous watch on CH70 even while another VHF channel is in use. Aural and visual alarms are given to incoming DSC messages.

The main features of the FM-8800D/FM-8800S are

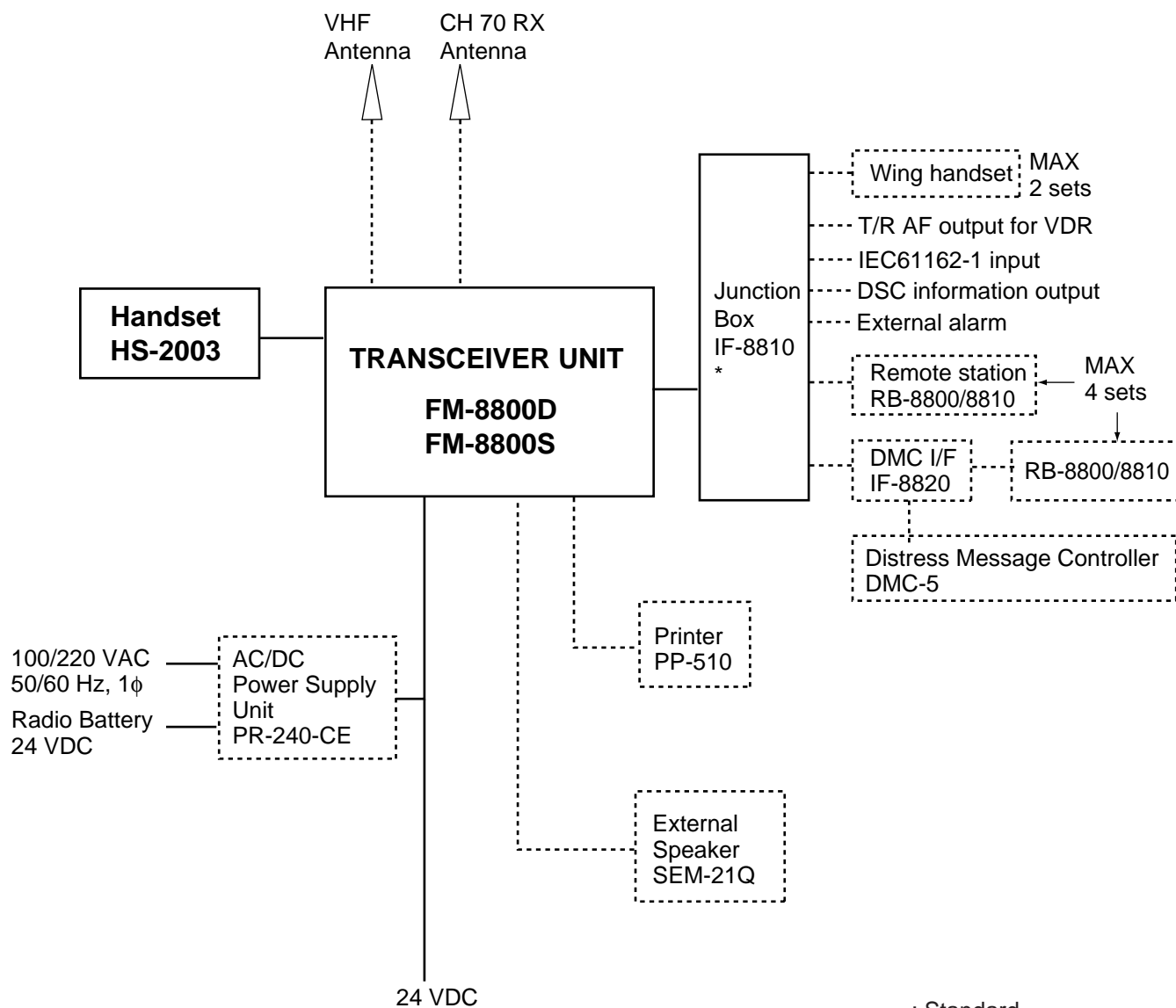
- Compact cabinet allows for flexible and space-saving installation on a navigation console or at the conning position
- Conforms to the following standards and regulations:
  - IMO A.385 (X), A.524 (13), A.694 (17), A.803 (19)
  - IMO MSC 68 (68) A1/A2/A3/A4, MSC/Cir.682
  - ITU-R M.489-2, M.493-10, M.541-8, M.689-2
  - IEC60945 (Ed.4), 61162-1 (July 2000)
  - EN300 338 (V1.2.1), 300 828 (V1.1.1), 300 698-1 (V1.3.1)
  - EN301 033 (V1.1.1), 301 925 (V1.1.1)
- Full-duplex communications: FM-8800D
- Precision PLL frequency synthesizer for high frequency stability as required for DSC operation
- Dual Watch and Multiple Watch
- Continuous DSC watch on CH70
- Prevention of accidental distress alert
- File editing for emergency readiness
- Automatic entry of own ship position with manual override

## Program number

FM-8800D/FM-8800S: 0550215-02

# SYSTEM CONFIGURATION

The FM-8800D/FM-8800S is a highly advanced 25 W VHF transceiver with DSC terminal. It is designed to satisfy the stringent requirements of marine communications, and complies with GMDSS carriage requirements for safety and general communications.



—— : Standard

-----: Option

## Category of units

Unit	Category
Antenna	Exposed to weather
All other units	Protected from weather

\*: Option for FM-8800S/D-N

*FM-8800D/FM-8800S system configuration*

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# SPECIFICATIONS OF MARINE VHF RADIOTELEPHONE FM-8800D/FM-8800S

## 1. GENERAL

- |                          |  |   |
|--------------------------|--|---|
| (1) Number of Channels   | INTL: 57<br>USA: 55 (57)*<br>Weather: 10<br>Canada: 55 (57)*<br>INLND-WA: 55 (57)*<br>Private: 20<br>MEMORY CH: 50 | *: CH75&76 can be included<br>for some countries. |
| (2) Frequency Stability  | Within $\pm 1.5$ kHz   |   |
| (3) Communication System | FM-8800S: Simplex/Semi-duplex<br>FM-8800D: Simplex/Full-duplex   |   |
| (4) Class of Emission    | 16K0G3E (Voice)<br>16K0G2B (DSC)   |   |
| (5) Antenna Impedance    | 50 ohms  |   |

## 2. TRANSMITTER

### (1) Frequency Range

FM-8800S	Simplex	155.000 to 161.475 MHz
	Semi-duplex	155.000 to 161.475 MHz
FM-8800D	Simplex	155.000 to 158.000 MHz
	Full-duplex	155.000 to 158.000 MHz

- |                         |                                   |
|-------------------------|-----------------------------------|
| (2) Output Power        | 25 W max., 1 W at power reduction |
| (3) Frequency Deviation | $\leq 5$ kHz                      |

## 3. RECEIVER

### (1) Frequency Range

FM-8800S	Simplex	155.000 to 159.600 MHz
	Semi-duplex	161.475 to 164.200 MHz
FM-8800D	Simplex	155.000 to 158.000 MHz
	Full-duplex	160.625 to 162.600 MHz

- |                                  |  |
|----------------------------------|--|
| (2) Receiving System             | Double Superheterodyne   |
| (3) Intermediate Frequency       | 1st: 51.2375 MHz, 2nd: 37.5 kHz                                    |
| (4) Sensitivity                  | +6 dB $\mu$ V (20 dB SINAD)  |
| (5) Adjacent Channel Selectivity | 70 dB or more  |
| (6) Spurious Response            | 70 dB or more  |
| (7) AF Output                    | Built-in Speaker: 3 W (4 ohms)<br>Handset earphone: 2mW (150 ohms) |

## 4. DSC

- |                     |  |
|---------------------|--|
| (1) Protocol        | ITU-R Rec. 541-8, 493-10 (class A)                 |
| (2) Baud Rate       | 1200 baud $\pm 30$ ppm max.                        |
| (3) Modulation      | AFSK   |
| (4) Frequency Shift | 1700 $\pm 400$ Hz<br>Mark: 1300 Hz, Space: 2100 Hz |

## 5. CH70 WATCH RECEIVER

- (1) Receiving Frequency 156.525 MHz
- (2) Sensitivity Symbol error rate: Less than 1% (at 0 dB $\mu$ V)
- (3) Conducted Spurious Emission Less than 2 nW

## 6. POWER REQUIREMENTS

- (1) Power Supply 24 VDC (-10%/+30%)
- (2) Power Consumption

FM-8800S	Waiting	0.5 A
	Receive	1.6 A at 4 W audio output
	Transmit	1.6 A at 1 W output, 4.7 A at 25 W output
FM-8800D	Waiting	0.5 A
	Receive	1.6 A at 4 W audio output
	Transmit	2 A at 1 W output, 6 A at 25 W output
	DUP Transmit	3.6 A at 1 W output, 7.6 A at 25 W output

## 7. DIGITAL INTERFACE

IEC 61162-1 (NMEA0183 Ver.3)

Sentence IN: ZDA>GGA>RMC>GNS>GLL

OUT: TLL

Talker: GP>LC>DE>II>IN>EC

## 8. AMBIENT CONDITIONS

- (1) Temperature -15°C to 55°C (IEC60945)
- (2) Relative Humidity 93% (at 40°C)
- (3) Waterproofing (IEC 60529)
  - Transceiver Unit Chassis: IPX0  
Panel: IPX4
  - Handset/Hanger HS-2003: IPX-4
  - Remote Box/Handset RB-8800: IPX-0  
HS-8800: IPX-2
  - Junction Box IF-8810: IPX-0
  - DMC Interface IF-8820: IPX-0

## 9. COATING COLOR

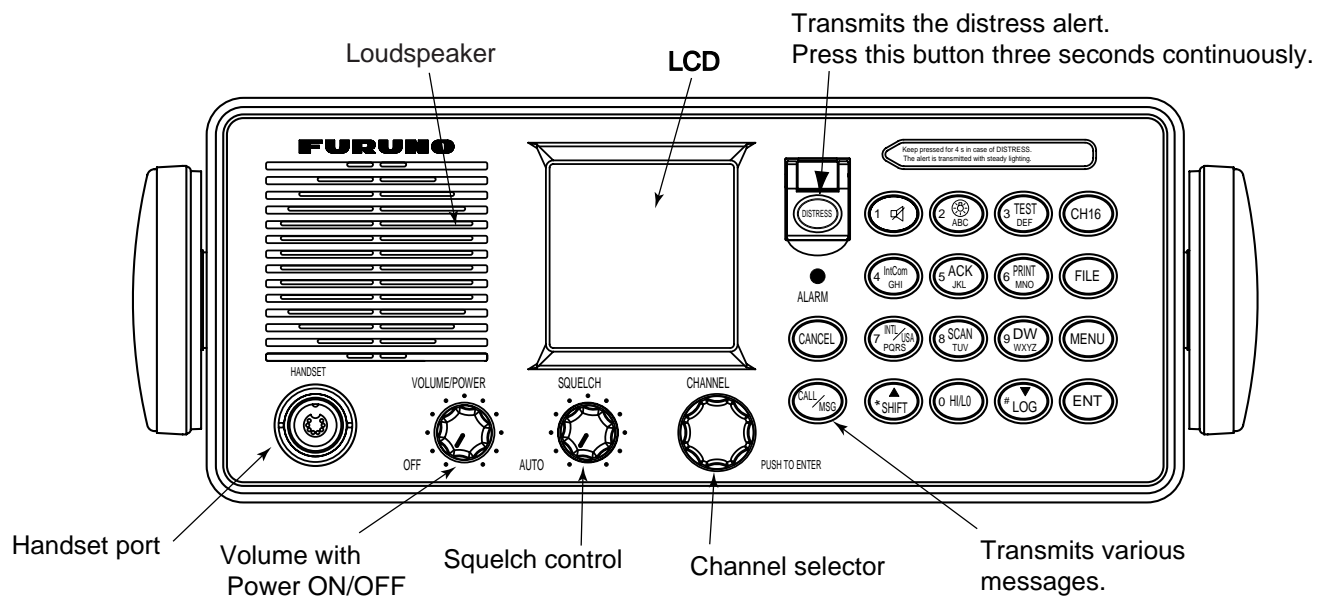
- (1) Transceiver Unit Chassis: Munsell 2.5GY5/1.5  
Panel: Munsell N3.0

# 1. OPERATIONAL OVERVIEW

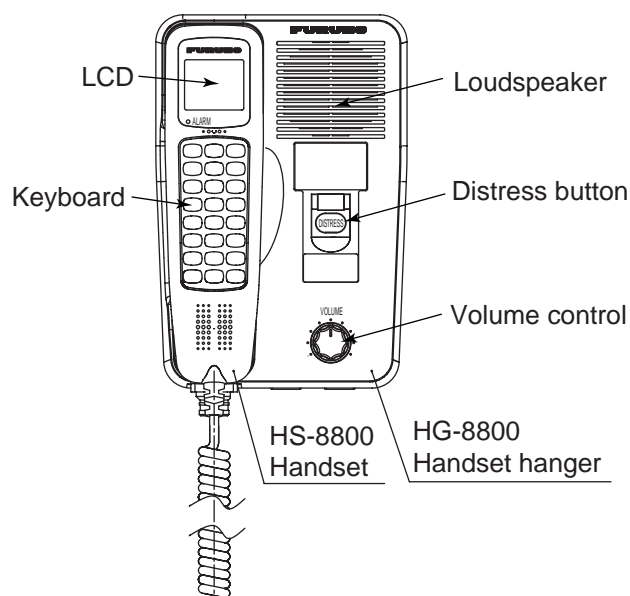
The FM-8800D/FM-8800S system consists of a transceiver block and two antennas. The transceiver block contains a VHF transmitter, receiver, and channel 70 watch receiver module. FM-8800D additionally provides a duplexer block. All operations are controlled on its front panel.

## 1.1 Controls Keys and LCD Indication

### 1.1.1 Front panel



*Transceiver unit*





*Remote station (option)*

### 1.1.2 Controls

The functions of keys of the transceiver unit and the remote station are almost the same. The table below shows the controls and keys for the transceiver unit.

Control	Function
CHANNEL (PUSH TO ENTER)	<ul style="list-style-type: none"> <li>• Selects a channel.</li> <li>• Moves the cursor in menu opened.</li> <li>• Registers selected item when pressed.</li> </ul>
SQUELCH	<ul style="list-style-type: none"> <li>• Mutes the receiver when no signal is present on the channel selected.</li> <li>• AUTO position automatically reduces white noise.</li> <li>• With the <b>SHIFT</b> key is pressed, adjust the contrast of the display.</li> </ul>
VOLUME/POWER	<ul style="list-style-type: none"> <li>• Turns the power on/off and adjusts the volume of the loudspeaker.</li> </ul>
Key	Function
DISTRESS	<ul style="list-style-type: none"> <li>• Transmits the distress alert after pressing three seconds.</li> </ul> <p>When the key is pressed, the LED in the key blinks and the buzzer sounds. Pressing the key three seconds continuously the distress alert is transmitted and the LED lights continuously and buzzer also sounds continuously.</p> <p>These conditions are continued until the distress acknowledge is received or you cancel the distress alert.</p>
ALARM (INDICATOR)	<ul style="list-style-type: none"> <li>• Blinks in red when a distress alert or urgent call is received. Also, the acoustic alarm sounds. To stop the blinking and silence the buzzer, press the <b>CANCEL</b> key.</li> <li>• Blinks in green when a safety call or routine call is received. The acoustic alarm sounds and stops automatically five seconds later.</li> </ul>
CANCEL	<ul style="list-style-type: none"> <li>• Stops audible and visual alarms.</li> <li>• Erases an error message.</li> <li>• Cancels numeric entry.</li> <li>• Returns to previous menu.</li> <li>• Cancels transmission or printing.</li> </ul>
CALL MSG	<ul style="list-style-type: none"> <li>• Transmits various DSC messages. To transmit a distress message, press this key more than three seconds.</li> </ul>



<p>1</p> 	<ul style="list-style-type: none"> <li>• Enters 1, ., ,, ", ;, ;, -, +, *, #, , (, ), !, \$, &amp;, / character at entry mode.</li> <li>• Turns the loudspeaker on or off. Pressing the <b>SHIFT</b> and then this key turns loudspeaker on or off.</li> </ul> <p>In the off state, the loudspeaker icon appears. However, the key click activates and the alarm sounds when a distress or urgent call is activated.</p>
<p>2</p>  <p>ABC</p>	<ul style="list-style-type: none"> <li>• Enters alphanumeric data (2, A, B, C, a, b, c).</li> <li>• Adjusts panel illumination when preceded by the <b>SHIFT</b> key.</li> </ul>
<p>3</p> <p>TEST</p> <p>DEF</p>	<ul style="list-style-type: none"> <li>• Enters alphanumeric data (3, D, E, F, d, e, f).</li> <li>• Performs the daily test when preceded by the <b>SHIFT</b> key.</li> </ul>
<p>4</p> <p>IntCom</p> <p>GHI</p>	<ul style="list-style-type: none"> <li>• Enters alphanumeric data (4, G, H, I, g, h, i).</li> <li>• Turns the interphone on or off when preceded by the <b>SHIFT</b> key and followed by <b>ENT</b> key. Available when a remote handset is connected.</li> </ul>
<p>5</p> <p>ACK</p> <p>JKL</p>	<ul style="list-style-type: none"> <li>• Enters alphanumeric data (5, J, K, L, j, k, l).</li> <li>• Turns auto acknowledge of routine calls on or off.</li> </ul>
<p>6</p> <p>PRINT</p> <p>MNO</p>	<ul style="list-style-type: none"> <li>• Enters alphanumeric data (6, M, N, O, m, n, o).</li> <li>• Prints communication files, current display and daily test result.</li> </ul>
<p>7</p> <p>INT/USA</p> <p>PQRS</p>	<ul style="list-style-type: none"> <li>• Enters alphanumeric data (7, P, Q, R, S, p, q, r, s).</li> <li>• Changes the channel mode among INTL, USA**, WX**, CANADA**, INLND-WA** and (MEMO)*.</li> </ul> <p>*: If registered.</p> <p>** : Required system setting by qualified serviceman only.</p>
<p>8</p> <p>SCAN</p> <p>TUV</p>	<ul style="list-style-type: none"> <li>• Enters alphanumeric data (8, T, U, V, t, u, v).</li> <li>• Turns the scan function on or off.</li> </ul>
<p>9</p> <p>DW</p> <p>WXYZ</p>	<ul style="list-style-type: none"> <li>• Enters alphanumeric data (9, W, X, Y, Z, w, x, y, z).</li> <li>• Turns the dual watch function on or off.</li> </ul>

## 1. OPERATIONAL OVERVIEW

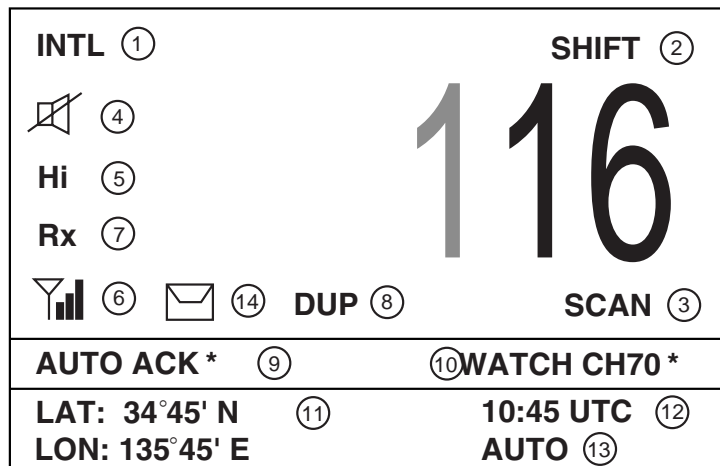
0 HI/LO	<ul style="list-style-type: none"> <li>• Enters "0".</li> <li>• Changes the output power high (25 W) or low (1 W). However, the following channels are always 1 W. INTL mode: CH15, CH17, CH75, CH76 USA mode: CH13, CH17, CH67</li> </ul>
▲ * SHIFT	<ul style="list-style-type: none"> <li>• Press to activate secondary function.</li> <li>• Moves the screen to previous item.</li> <li>• Moves cursor backward for editor field.</li> </ul>
▼ LOG #	<ul style="list-style-type: none"> <li>• Displays transmitting/receiving messages.</li> <li>• Moves the screen to next item.</li> <li>• Moves cursor forward for editor field.</li> </ul>
CH16	<ul style="list-style-type: none"> <li>• Selects CH16 by one-touch action.</li> </ul>
FILE	<ul style="list-style-type: none"> <li>• Opens the Message file list.</li> </ul>
MENU	<ul style="list-style-type: none"> <li>• Opens the SETUP menu.</li> </ul>
ENT	<ul style="list-style-type: none"> <li>• Registers data input. ( Same as pressing the CH selector. )</li> </ul>

### Additional keys of the handset HS-8800

Key	Function
⤴ (up arrow key)	<ul style="list-style-type: none"> <li>• With the <b>SHIFT</b> key pressed, this key increases volumes of internal loudspeaker of remote station.</li> <li>• Increments channel number or setting value.</li> </ul>
SQ ⤵	<ul style="list-style-type: none"> <li>• Adjusts squelch level.</li> <li>• With the <b>SHIFT</b> key pressed, turns off the auto squelch.</li> </ul>
⤴ (down arrow key)	<ul style="list-style-type: none"> <li>• With the <b>SHIFT</b> key pressed, this key decreases volumes for internal loudspeaker of remote station.</li> <li>• Decrements channel number or setting value.</li> </ul>
SQ auto ⤵	<ul style="list-style-type: none"> <li>• Adjusts squelch level.</li> <li>• With the <b>SHIFT</b> key pressed, this key adjusts auto squelch level.</li> </ul>

### 1.1.3 Indications on the LCD

Below are all the indications which appear on the standby display on the transceiver unit.



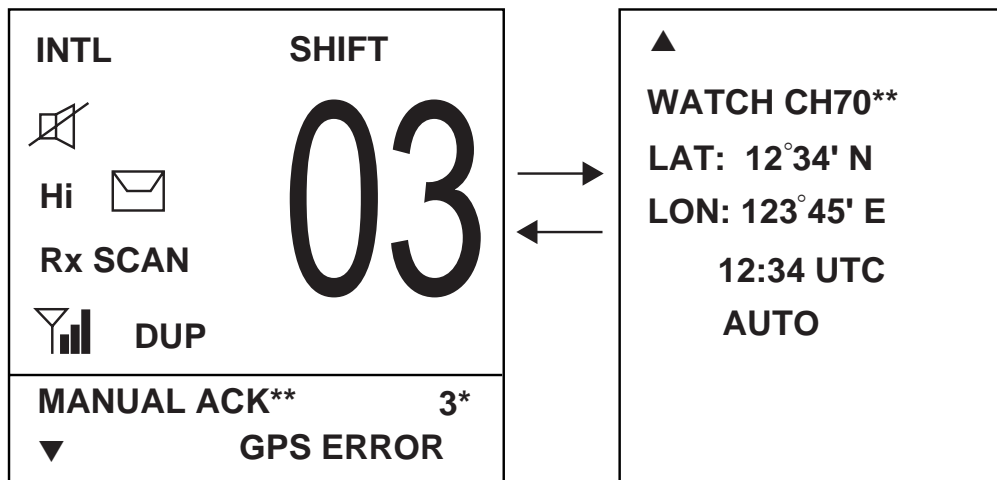
Standby display on the transceiver unit


Reference no.	Meaning
1	Displays the channel mode. (INTL / USA / WX / CANADA / INLND-WA / PRIV / (MEMO))
2	SHIFT is displayed if the shift function is active. Or channel mode (for example CANADA) is displayed at the MEMO mode.
3	Displays the scan mode: SCAN, DUAL or no display. During the scan mode, channel indications are changed alternatively. No display means that the unit receives continuously on the same channel.
4	Lights when the loudspeaker is off. Goes off when the loudspeaker is on.
5	Displays the transmission output. (Hi=25W / Lo=1W)
6	Displays reception signal strength by 4 steps. 1. No signal. Only antenna mark is displayed. 2. Less than 20 dB SINAD : antenna mark and short bar 3. 20 - 40 dB SINAD : antenna mark and two bars 4. 40 dB SINAD and more : antenna mark and three bars
7	RX is displayed during reception and TX is displayed when the RF signal detected at transmission state.
8	Displays the current channel. ( PRIV channel: max three digits )
9	Is displayed when the DSC routine call is received. AUTO ACK: Automatic acknowledge MANUAL ACK: Manual acknowledge
10	WATCH CH70 or WATCH VHF is selected at menu. If the CH70 board is defective, WATCH CH70 NG appears. If no MMSI is registered, the message "DSC NOT USABLE" appears.
11	Displays the longitude and latitude of own ship.
12	Displays UTC time.
13	Displays AUTO for automatic data input (L/L, time data) from a navigation device or MANUAL for manual data input.
14	Displays when un-read message(s) exist.


\*: "DISTRESS MODE" is displayed at distress calling.

## 1. OPERATIONAL OVERVIEW

Below are the indications which appear on the standby display on the remote handset.



If you press  at the left-hand screen, right-hand screen appears.

If you press  at the right-hand screen, the left-hand screen appears immediately.

The indications are the same as those on of the transceiver unit.

The \*- marked number is the terminal number of the remote station.

\*\* : If no MMSI is registered, the message “DSC UNAVAIL” appears instead of MANUAL ACK and WATCH CH70. “DISTRESS MODE” is displayed at distress calling.

**Note:** The screen of the remote handset is smaller than the one of the transceiver unit. In this manual, display examples are from the transceiver unit. In the remote handset, scrolling with up or down arrow key displays same information as the screen of the transceiver unit.

### 1.1.4 Audio alarms

When you receive a distress alert or other DSC call, the audible and visual alarms are released. For the distress or urgency call, the audio alarm sounds until the **CANCEL** key is pressed. For all other calls, the audible alarm sounds for two minutes and the automatically goes off. The tone of the alarm changes with the call received. By becoming accustomed to the tone, you can know which type of call you have received.

Alarm	Frequency (interval)
Safety call received	1300 Hz and 0 Hz (250 ms)
Routine, Ship's Business call received	880 Hz and 440 Hz (500 ms)
While DISTRESS key is pressed for three seconds	2200 Hz and 0 Hz (125 ms)
Distress alert sent	2200 Hz, continuous
Own ship position not updated	2200 Hz (50 ms), three beeps every two seconds
Distress alert, urgency message received	1300 Hz and 2200 Hz (250 ms)
Message received from terrestrial telephone line	750 Hz and 650 Hz (50 ms) 10 times Repeat OFF one second

## 1.2 VHF Basic Operation

### 1.2.1 Turning the power on and adjusting contrast

To turn the power on, turn the VOLUME control clockwise until you hear a click. To adjust the contrast of the display, press the **SHIFT** key, and then rotate the **CHANNEL** knob or press the ▼ or ▲ key. To turn the power off, turn the control fully counterclockwise until you hear the click.

### 1.2.2 Selecting channel modes, channels

#### Selecting channel modes

To change the channel mode, press the **SHIFT** key immediately followed by the **7 INT/USA** key several times until desired mode is displayed. The following modes are available.

INTL : International mode  
 USA : USA mode  
 WX : Weather channel mode  
 CANADA : CANADA mode  
 INLND-WA : Rhine river mode (USED ON INLAND Waterways)  
 PRIV : Private channel  
 MEMO : Memory channel mode if registered

**Note:** Private channels are available only where permitted by the authorities. The USA/WX, CANADA, INLND-WA, PRIV can also be set by a qualified serviceman.

#### Selecting channels

Rotate the CH selector clockwise (counterclockwise) to display desired channel.

### 1.2.3 Adjusting volume of loudspeaker

The VOLUME control adjusts the volume of the loudspeaker.

### 1.2.4 Adjusting squelch

The **SQUELCH** control adjusts the squelch threshold level. Adjust it so that white noise heard in the loudspeaker just fades out. Perform this operation when no traffic is being received. AUTO squelch automatically reduces white noise. Usually select the AUTO position. Avoid turning the squelch too far clockwise — you may miss a long distance communication.

**Note:** To obtain correct scan watch/dual watch response, adjust the **SQUELCH** control precisely.

### 1.2.5 Transmitting

Press the PTT (Push-to-talk) switch on the handset or microphone to talk, and release it to listen for the response. The VHF section keyboard accepts no key input when the PTT switch is operated.

#### Remarks on transmitting

- Before transmitting, think about the subjects which have to be communicated and, if necessary, prepare written notes to avoid unnecessary interruptions and ensure that no valuable time is wasted on a busy channel.
- Listen before commencing to transmit to make certain that the channel is not already in use.

### 1.2.6 Selecting output power

After pressing the **SHIFT** key, each press of the **0 HI/LO** key selects high or low output power. Also Hi or Lo appears on the screen depending on your selection.

The transmitter power is automatically set for low on the following channels:

International: CH15, CH17, CH75, CH76

USA: CH13, CH17, CH67, CH77; to operate USA channel 13 or 67 in high power, keep **HI/LOW** key pressed while talking into the handset.

### 1.2.7 Turning the loudspeaker on/off

To turn the loudspeaker on/off, press the **SHIFT** key, then the **1** key. The loudspeaker off mark appears when the speaker is off. The loudspeaker is automatically turned off when the handset is used.

### 1.2.8 Quick selection of CH16

Press the **CH16** key to select CH16, the International Calling and Safety Channel. The use is limited to distress, safety and calling. The transmission on CH16 (156.800 MHz) should be limited to within 1 minute except for distress calling.

Avoid calling on CH16 for purposes other than distress, urgency and very brief safety communications when another calling channel is available.

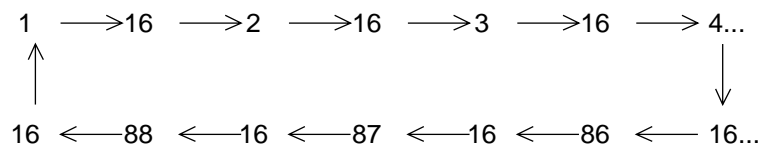
### 1.2.9 Dual watch

The dual watch function permits watch on CH16 and another selected channel. CH16 and another channel are watched at intervals of 0.15 seconds and one second, respectively.

To start dual watch, first select the other frequency to watch and then press the **SHIFT** key and **9 DW** key in that order. When the receiver finds a signal on CH16, it locks on it and restarts dual watching after the signal on CH16 has gone. If another channel has traffic, it still continues dual watch. The speech is heard intermittently. If you are annoyed with the intermittence, turn off the dual watch by pressing the PTT switch on the handset or pressing the **SHIFT** and **9 DW** key again.

### 1.2.10 Scanning

The receiver scans all channels at intervals of 0.15 seconds in the selected channel mode in ascending channel order, watching CH16 between channels as below:



To start scanning, press the **SHIFT** and **8 SCAN** in that order. When the receiver finds a signal, scanning is stopped on that channel and starts dual watch on it and CH16.

To turn off the scanning, press the PTT switch or press the **SHIFT** and **8 SCAN** key.

### 1.2.11 Remarks on voice communications

Automatic acknowledge (DSC operation) is automatically changed to manual acknowledge when voice communications begin. (The “auto” indication, however, remains on the screen.) This is done to prevent a break in communications. Automatic acknowledge is automatically restored once voice communications are terminated.

## 1.3 DSC Operational Overview

Digital Selective Calling (DSC) is the global calling system adopted by the ITU-R and IMO for selective calling of coast station and ship radio stations. The DSC system is used for both safety and routine calling. The GMDSS requires the use of DSC for distress alerting and safety calls.

### 1.3.1 LED warnings

The LED below the **DISTRESS** key lights continuously when the distress signal is transmitted.

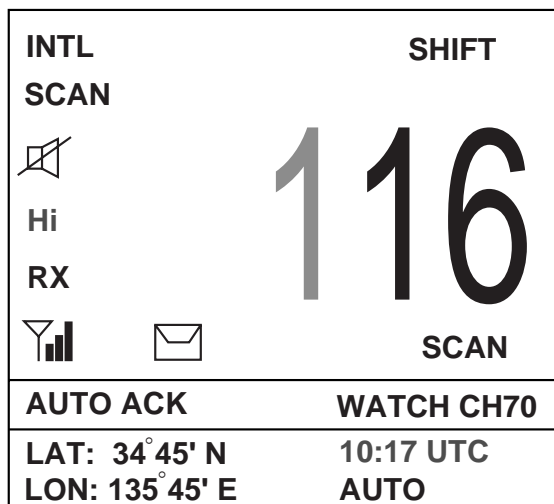
The ALARM LED blinks in red (and alarm sounds) when a distress or urgent message is received. The LED can be extinguished and alarm silenced by pressing the **CANCEL** key.

The ALARM LED blinks in green (and alarm sounds) when a message other than distress or urgent is received. Alarm is automatically silenced two minutes after message is received.

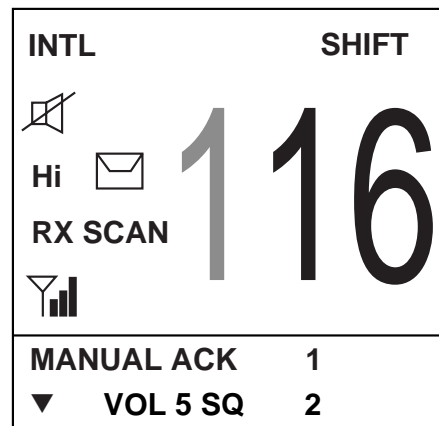
### 1.3.2 DSC operational overview

#### Standby display

When the FM-8800D/S is turned on, the following display appears. This display is known as the “standby display.” This is where you will begin most operations.



*Standby display (Transceiver unit)*



*Standby display (Remote handset)*

(Press the down arrow key of the remote handset to view rest of screen.)

If you get lost in operation you can return to the standby display by pressing the **CANCEL** key several times.

**Note:** In this manual, screen examples show the transceiver’s screens. To get the same information on the handset screen, press down or up arrow key.



**Preparing and transmitting DSC messages**

There are two methods by which you can prepare and transmit DSC messages, and they are shown below.

- Preparing message for immediate transmission

1. Press the **CALL** key at the standby display.
2. Select the call type.
3. Select other party (ID) if necessary.
4. Select the communications category.
5. Select the communications channel.
6. Press the **CALL** key more than three seconds.

- Transmitting a message stored in the memory

100 messages can be saved to the memory. You may open a memory-stored message and transmit it.

**Distress alert transmission and output power**

When the distress alert is transmitted (by pressing the **DISTRESS** key), the output power of the FM-8800D/S is automatically set to maximum (25 W).

**When keyboard input is prohibited**

DSC-related controls cannot be operated while a DSC message is being transmitted. (These controls are inoperative about 3 seconds during a DSC distress call; 0.5 seconds for other DSC calls.)

**1.3.3 Automatic acknowledge on/off**

The automatic acknowledge feature of the DSC/watch receiver automatically transmits the acknowledge back (ACK BQ) signal to the sending station when an individual, position or polling call is received. (For position and polling calls, respective item on the AUTO ACK menu must be turned on to enable automatic acknowledge.) Automatic acknowledge can be turned on or off at the standby display by pressing the **SHIFT** and **5** keys in this order.

The message AUTO ACK or MANUAL ACK appears at the bottom of the standby display with each press of the keys.

**Note 1:** To give priority to own ship's communications while own ship is communicating, show MANUAL ACK by the above procedure.

**Note 2:** Automatic acknowledge is not possible under the following conditions:

Priority:	Distress, Urgency or Safety
Com Type:	Fax, Data, No Info
Com Freq:	No Info
Off Hook	

## 1.4 Priority

If one or more remote stations are installed, the transceiver unit (main unit) has the highest priority. You can interrupt remote station operation at any time with the handset of the main unit. When you hook off the handset of the main unit, "OCCUPIED FM8800" (default. This may be change. See section 5.3) is indicated on all remote stations.

Each remote station has its own priority. The remote station ID (1-4) indicates its priority. The priority of the system is as follows.

DSC of main unit > Wing handset > Handset of main unit > 1 > 2 > 3 > 4

If you hook off No.4 remote station, for example, "Occupied Handset.4" is displayed on other remote stations. However, you can hook off and use No.1 handset.

### How to set priority of the remote station

1. Disconnect the plug of a remote station to turn off the remote station.
2. While pressing the **MENU** key of a remote station, connect the plug to turn on the power.

Version No. 0550216-01.00 Now ID=01 Input New ID (1-4)=
---

3. Press **1**, **2**, **3**, or **4** key on the remote handset as appropriate followed by the **ENT** key. Never enter same number among different remote stations.
4. Turn off and on the power of the transceiver unit.

# 2. DSC DISTRESS COMMUNICATION

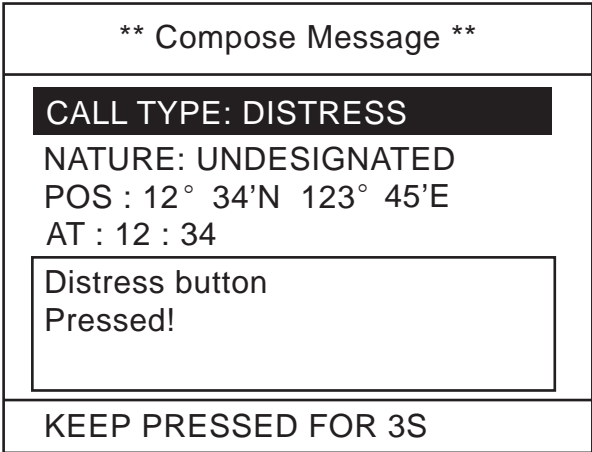
## 2.1 Distress Alert Transmission from the DISTRESS Key

If a distress situation occurs, do as follows:

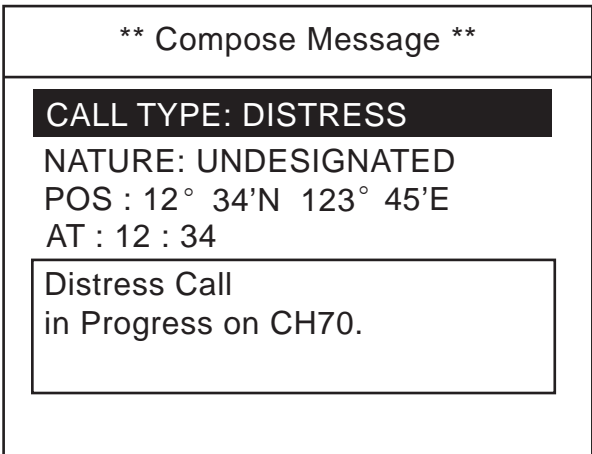
1. Open the **DISTRESS** key cover and press the **DISTRESS** key more than three seconds. The alarm sounds and the red lamp in the key blinks. The lamp will light steadily three seconds later and at the same time the distress alert is transmitted for three seconds.

The screen changes as follows.

- 1) When the **DISTRESS** key is pressed and held down,



- 2) After the timer counts down to zero, "distress call in progress" is announced.



- When the distress is transmitted (called Distress Mode), you can communicate with the handset of the remote station.
- In the distress mode, the CALL, FILE and MENU keys are inoperative.
- To return to normal mode from the distress mode, turn the power off and on again.

## 2. DSC DISTRESS COMMUNICATION

- 3) The screen changes to “distress acknowledge (DIST ACK) waiting” display. In this condition, distress communication with CH16 may be possible.

** Compose Message **
<b>CALL TYPE: DISTRESS</b> NATURE: UNDESIGNATED POS : 12° 34'N 123° 45'E AT : 12 : 34
Waiting for distress acknowledgement. CH16 Now available.
TIME TO GO : 4M 12S

- 4) When the DIST ACK is received,

Distress acknowledge received.
FROM : 003456789 ID IN DIST : 123456789 TCmd : DISTRESS ACK NATURE : UNDESIGNATED POS : 12° 34'N 123° 45'E AT : 12 : 34    SIMP TP
<b>CANCEL ALARM</b>

**Note:** If you do not receive the distress alert acknowledge call, during 3.5 to 4.5 minutes the equipment automatically re-transmits the distress alert and then awaits the distress alert acknowledge call. This is repeated until the distress alert is acknowledged.

2. Press the **CANCEL** or **ENT** key. The screen changes as follows.

** Received Message **
APR08/'04 18:30    ECC : OK DISTRESS ACK FROM : 003456789 ID IN DIST : 123456789 TCmd : DISTRESS ACK NATURE : UNDESIGNATED POS : 12° 34'N 123° 45'E AT : 12 : 34    SIMP TP
<b>PRESS ENT</b>

3. Press the **ENT** key. The standby display with CH16 and Hi appears.
4. Provide the following information to the coast station, using a handset on the transceiver unit or remote stations (if connected):

### Distress communication

- (1) Press the PTT switch and speak slowly and distinctly, "MAYDAY, MAYDAY, MAYDAY," pronounced as the French expression "m'aider."
- (2) This is; "the name of your vessel and call sign" three times.
- (3) "MAYDAY"
- (4) This is; "the name of your vessel and call sign."
- (5) Position in latitude and longitude;
- (6) The nature of the distress;
- (7) The kind of assistance desired;
- (8) Number of persons on board;
- (9) Any other information which might facilitate rescue, for example, length, color, and type of vessel.
- (10) Indicate the end of message by saying "Over."

Some countries do not have sea area "A1." In this case "ACK" from the coast station does not arrive over DSC. A ship nearby will contact the vessel in distress over CH16. After transmitting the distress alert, conduct voice distress communications as shown above.

## 2.2 Distress Alert Transmission with Nature of Distress

If you want to transmit the distress alert with nature of distress specified, do as follows:

1. Open the **DISTRESS** key cover and press the **DISTRESS** key momentarily. The alarm sounds and the red lamp in the key blinks and after releasing the key within three seconds the alarm stops and the red lamp goes off. The following screen appears.

** Compose Message **	
CALL TYPE : DISTRESS	
NATU	UNDESIGNATED
POS	Fire
AT : 1	Flooding
SIMP	Collision
	Grounding
	▼ Listing

## 2. DSC DISTRESS COMMUNICATION

2. Rotate the channel knob to choose the nature of distress. On the remote handset, press the up or down arrow key.

<b>UNDESIGNATED</b> Fire Flooding Collision Grounding ▼ Listing	▲ Sinking Disabled & ADR Abandoning Piracy Man over board
--	---

3. Press the **ENT** key. The screen changes as follows.

** Compose Message **
CALL TYPE : DISTRESS NATURE : Flooding <b>POS : 34° 41' N 134° 30' E</b> AT : 08 : 00 SIMP TP

The own ship's position and current time in UTC are displayed if your FM-8800D/S is connected to a navigation equipment, for example, GPS.

4. Press the **DISTRESS** key more than three seconds.

** Compose Message **	
<b>CALL TYPE: DISTRESS</b> NATURE: Flooding POS : 12° 34'N 123° 45'E AT : 12 : 34 <table border="1" style="width: 100%;"><tr><td>Distress button Pressed!</td></tr></table>	Distress button Pressed!
Distress button Pressed!	
KEEP PRESSED FOR 3S	

The distress alert with nature of distress, ship's position and time are transmitted. The sequence of display and procedures are the same as in paragraph 2.1.

## 2.3 Distress Alert Transmission from CALL Key

You can transmit the distress alert with nature of distress by using **CALL** key.

1. Press the **CALL** key.

** Compose Message **
<b>CALL TYPE : COAST CALL</b> TO : COAST AAA COAST ID : 003456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 12

*Transceiver unit screen*

* Compose message *
<b>CALL TYPE : COAST CALL</b>
▼

*Remote handset screen*

2. Press the **ENT** key to show the call type selection window.

COAST CALL SHIP CALL GROUP CALL PSTN CALL ALL SHIPS AREA CALL ▼ POSITION
--

▲ POLLING NEUTRAL MEDICAL RELAY ALL RELAY SEL <b>DISTRESS</b>
--

3. Rotate the CH knob (or press up / down arrow key) to choose DISTRESS.  
Press the **ENT** key.

** Compose Message **
CALL TYPE : DISTRESS <b>NATURE : UNDESIGNATED</b> POS : 12° 34'N 123° 45'E AT : 12 : 34 SIMP TP

4. Press the **ENT** key to display the distress nature list.

<b>UNDESIGNATED</b> Fire Flooding Collision Grounding ▼ Listing
--

▲ Sinking Dis Abandoning Piracy Man OVBD
--

## 2. DSC DISTRESS COMMUNICATION

5. Rotate the CH knob (or press up / down arrow key) to choose nature of distress and press the **ENT** key.

** Compose Message **
CALL TYPE : DISTRESS NATURE : Abandoning POS : 12° 34'N 123° 45'E AT : 12 : 34 SIMP TP

6. Press the **ENT** key to show the position setup window.

INPUT TYPE : AUTO LAT : 34° 41'N LON : 134° 30'E TIME : 08 : 00
--

If a position fixing device is not connected, press the **ENT** key, choose Manual and enter your position.

AUTO MANUAL* NO INFO
----------------------------

\*: MANUAL can not be chosen if position data is input.

7. After confirming the ship's position and time, press the **DISTRESS** key more than three seconds to transmit the distress alert.

## 2.4 Canceling a False Distress Alert

If you have transmitted a distress alert by mistake, do the following to cancel it .

1. Switch off equipment immediately.
2. Switch equipment on and set to Channel 16.
3. Transmit message to "All Stations" giving your vessel's name, call sign and DSC number.

### Example message

All Stations, All Stations, All Stations  
This is VESSEL'S NAME, CALLSIGN,  
DSC NUMBER, POSITION.

Cancel my distress alert of DATE, TIME, UTC.  
=Master, VESSEL'S NAME, CALLSIGN.  
DSC NUMBER, DATE, TIME UTC.



## 2.5 Receiving Distress Alert from Other Vessel, Transmitting DIST ACK Signal

In no case is a ship permitted to transmit a DSC distress relay call upon receipt of a DSC distress alert on VHF channel 70.

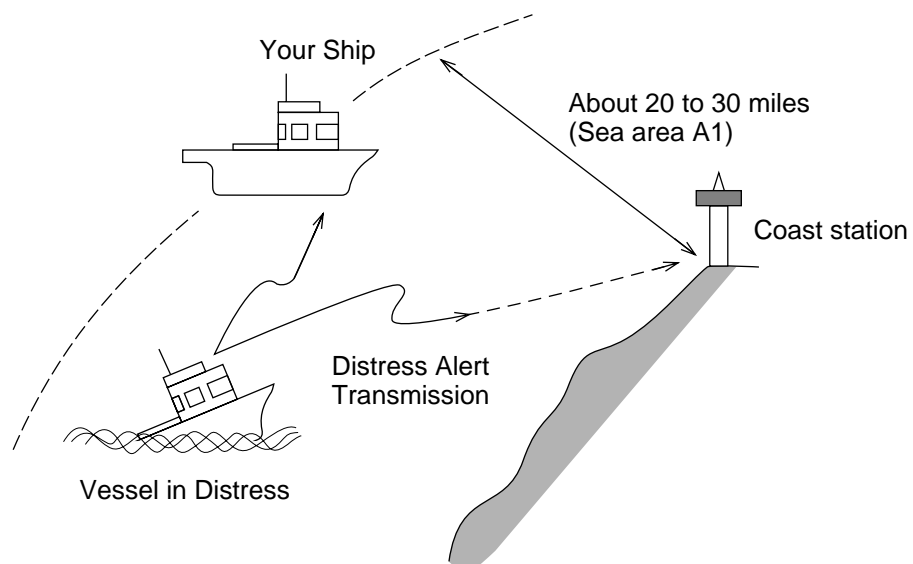
### Procedure when in area A1

1. When the FM-8800D/8800S receives a distress alert from another vessel, the ALARM LED (red) blinks and the FM-8800D/8800S sounds the distress alarm.
2. Silence the alarm by pressing the **CANCEL** key.
3. Wait up to five minutes until the DIST ACK signal from a coast station is received. Be prepared to follow the instructions of the coast station.
4. If you do not receive the DIST ACK signal, follow the flow chart shown on page 2-8 to determine if your vessel should acknowledge a distress alert.

If further DSC alerts are received from the same source and the ship in distress is beyond doubt in the vicinity, a DSC acknowledgement may, after consultation with an Rescue Co-ordination Center (RCC) or Coast Station, be sent to terminate the distress call.

**Note 1:** An asterisk (\*) in a received distress alert message indicates error or unknown at the location marked with the asterisk.

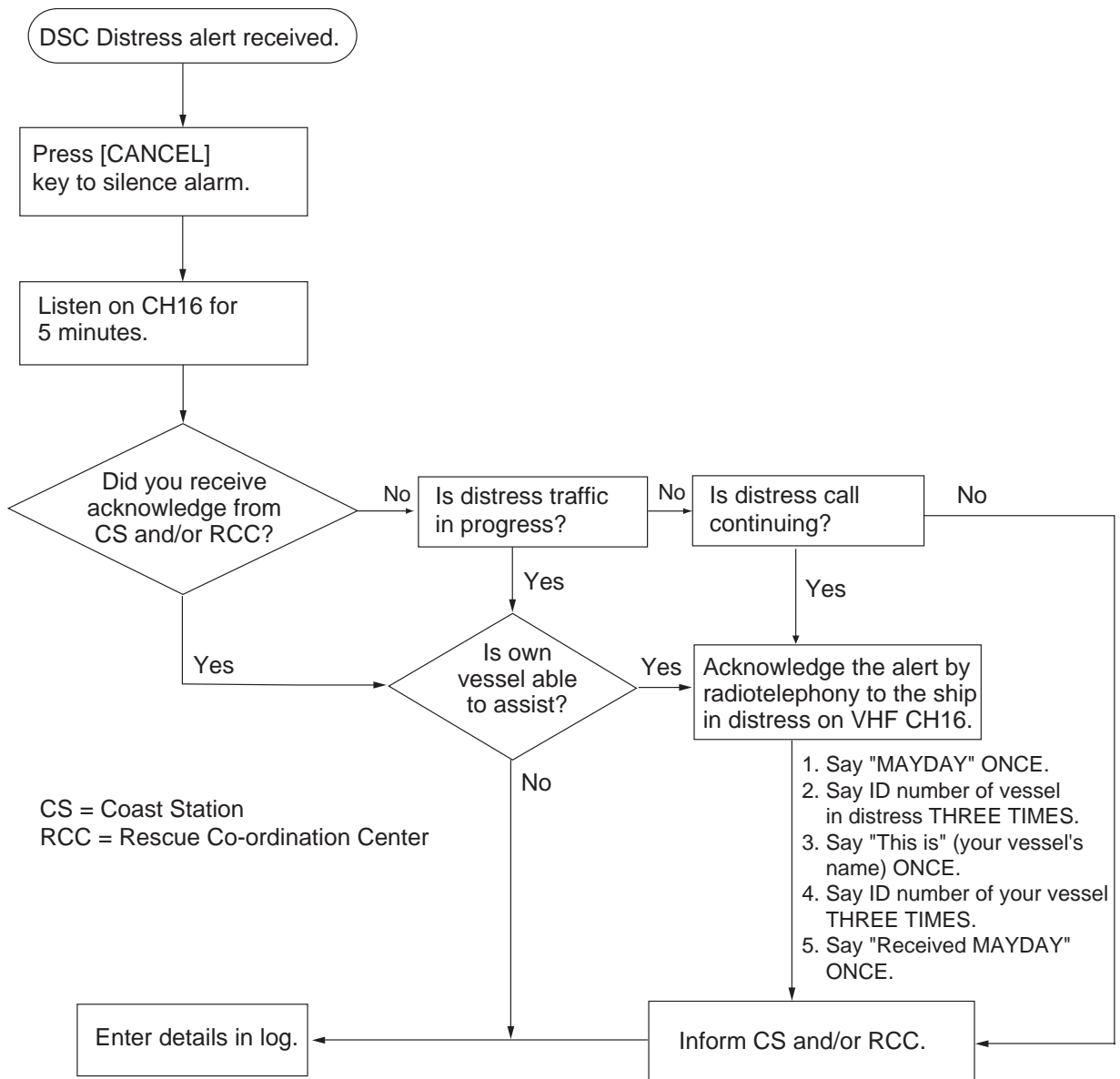
**Note 2:** Do not send DIST ACK in response to receipt of distress alert having the nature of distress as "EPIRB emission".



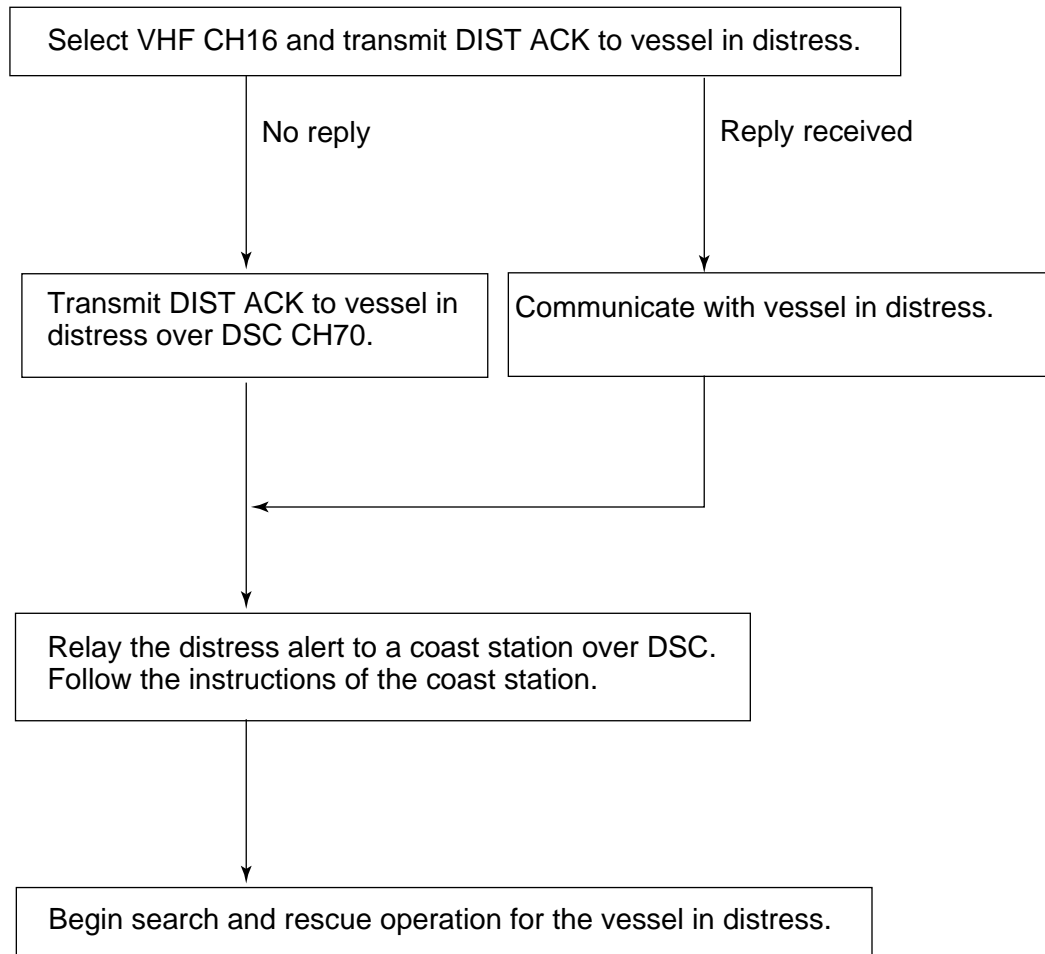
*Receiving distress alert from other vessel*

## 2. DSC DISTRESS COMMUNICATION

### **Flow chart for determining if you should/should not transmit DIST ACK signal**



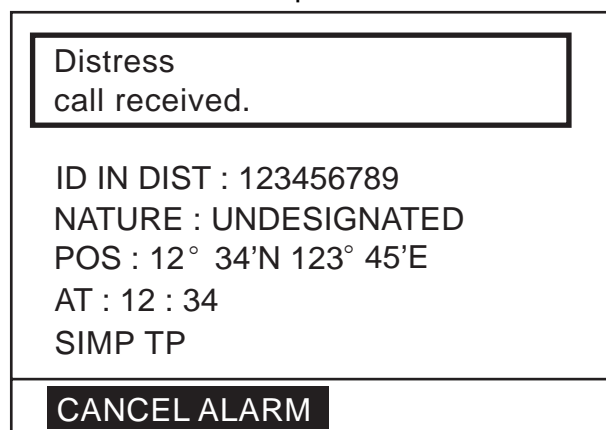
**Transmitting DIST ACK over CH16**



**Transmitting DIST ACK signal**

If your vessel meets the requirements necessary to transmit the DIST ACK signal, do the following:

When a distress alert from other ship is received, the following screen appears. The alarm sounds and the ALARM lamp blinks.



## 2. DSC DISTRESS COMMUNICATION

1. Press the **CANCEL** or **ENT** key to silence the alarm. The following message appears.

** Received Message **
MAY10/04 08:03 ECC : OK DISTRESS ID IN DIST : 123456789 NATURE : UNDESIGNATED POS : 12° 34'N 123° 45'E AT : 12 : 34 SIMP TP
<b>PRESS ENT TO ACK</b>

2. If you do not receive DIST ACK from coast station within five minutes and your vessel meets requirements (see previous page) for transmitting DIST ACK, press the **ENT** key, and then press the **CALL** key more than three seconds to transmit the DIST ACK.

** Send Message **
DISTRESS ACK TO : 123456789 TCmd : DISTRESS ACK NATURE : UNDESIGNATED POS : 12° 34'N 123° 45'E AT : 12 : 34 SIMP TP
PRESS CALL TO SEND

After transmitting the DIST ACK, the standby display appears.

### **After transmitting DIST ACK**

Begin search and rescue operations for the vessel in distress, communicating with the vessel over CH16 (automatically set). Relay distress alert to coast station by DSC following the instruction in the next paragraph. Finally, follow the instructions of the coast station.

## 2.6 Sending Distress Relay on Behalf of a Ship in Distress

### When you should relay a distress alert

You may relay a distress alert in the following conditions:

- 1) When the station in distress is not itself in a position to transmit the distress message, or
- 2) When the master or person responsible for the vessel not in distress, or the person responsible for the coast station, considers that further help is necessary.

***DO NOT press the DISTRESS key to relay a distress alert; it is for use when own vessel is in distress.***

### 2.6.1 Sending distress relay to coast station

1. Press the **CALL** key. The [Compose message] screen appears.

** Compose Message **
<div style="background-color: black; color: white; padding: 2px; margin-bottom: 5px;"><b>CALL TYPE : COAST CALL</b></div> COAST ID : 00 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CHANNEL : 10

2. Press the **ENT** key. The CALL TYPE selection window appears.
3. Rotate the CH knob (or press up / down arrow key) to choose RELAY SEL.

COAST CALL SHIP CALL GROUP CALL PSTN CALL ALL SHIPS AREA CALL ▼ POSITION	▲ POLLING NEUTRAL MEDICAL RELAY ALL <div style="background-color: black; color: white; padding: 2px; margin-bottom: 5px;"><b>RELAY SEL</b></div> DISTRESS
--	---

## 2. DSC DISTRESS COMMUNICATION

4. Press the **ENT** key.

** Compose Message **
CALL TYPE : RELAY SEL COAST ID : 00 ID IN DIST : NO INFO TCmd : DISTRESS RELAY NATURE : UNDESIGNATED POS : 12° 34'N 123° 45'E AT : 12 : 34 SIMP TP

5. Press the **ENT** key again. The COAST ID entry window appears.
6. Key in a coast station ID with numeric keys and press the **ENT** key.
7. Press the **ENT** key again. The ID IN DIST entry window appears.
8. Key in the ID number of ship in distress with numeric keys and press the **ENT** key. If you do not know the ID, simply press the **ENT** key without entering ID; NO INFO is displayed.
9. Press the **ENT** key and the list of distress nature appears.
10. Rotate the CH knob to choose a nature of distress (if known) and press the **ENT** key twice. If you do not know the nature of distress, choose UNDESIGNATED.

INPUT TYPE : AUTO LAT : 34° 41'N LON : 134° 30'E TIME : 08 : 00
--

11. Enter position of the ship in distress, following 1), 2) or 3) below.

AUTO MANUAL NO INFO
---------------------------

- 1) **For automatic input**, press the **ENT** key twice. Go to step 12.
- 2) **For manual input**, press the **ENT** key to open the INPUT TYPE menu, rotate the CH knob to choose MANUAL and then push the **ENT** key. Enter latitude and longitude of ship in distress and time as follows:
  - a) Enter latitude and then press the **ENT** key.
  - b) Enter longitude and then press the **ENT** key.
  - c) Enter UTC time and then press the **ENT** key. Go to step 12.
- 3) **If you cannot confirm position of ship in distress**, press the **ENT** key to open the INPUT TYPE menu, rotate the CH knob to choose NO INFO and then press the **ENT** key. Go to step 12.

12. Press the **CALL** key more than three seconds to transmit the distress relay.

** Compose Message **	
CALL TYPE : RELAY SEL	
COAST ID : 003456789	
ID IN DIST : NO INFO	
TCmd : DISTRESS RELAY	
NATURE : UNDESIGNATED	
POS : 12° 34'N 123° 45'E	
AT : 12 : 34	
SIMP TP	
KEEP PRESSED FOR 3S	←

When CALL key is pressed, this message appears and timer counts down.

The message will be transmitted and "Waiting for acknowledgement" will appear.

### 2.6.2 Sending distress relay to all ships

1. Press the **CALL** key. The [Compose message] screen appears.

** Compose Message **	
CALL TYPE : COAST CALL	
COAST ID : 003456789	
ROUTINE	
TCmd1 : SIMPLEX TP	
TCmd2 : NO INFO	
CHANNEL : 10	

2. Press the **ENT** key. The CALL TYPE selection window appears.

3. Rotate the CH knob (or press up / down arrow key) to choose RELAY ALL.

COAST CALL SHIP CALL GROUP CALL PSTN CALL ALL SHIPS AREA CALL ▼ POSITION	▲ POLLING NEUTRAL MEDICAL <b>RELAY ALL</b> RELAY SEL DISTRESS
--	--

4. Press the **ENT** key.

** Compose Message **
CALL TYPE : RELAY ALL <b>ID IN DIST : NO INFO</b> TCmd : DISTRESS RELAY NATURE : UNDESIGNATED POS : 12° 34'N 123° 45'E AT : 12 : 34 SIMP TP

5. Press the **ENT** key again. The ID IN DIST entry window appears.
6. Key in the ID number of ship in distress with numeric keys and press the **ENT** key. If you do not know the ID, simply press the **ENT** key without entering ID; NO INFO is displayed.
7. Press the **ENT** key and the list of distress nature appears.
8. Rotate the CH knob (or press up / down arrow key) to choose a nature of distress (if known) and press the **ENT** key twice. If you do not know the nature of distress, choose UNDESIGNATED.

<b>INPUT TYPE : AUTO</b> LAT : 34° 41'N LON : 134° 30'E TIME : 08 : 00
---

9. Enter position of the ship in distress, following 1), 2) or 3) below.

<b>AUTO</b> MANUAL NO INFO
----------------------------------

- 1) For automatic input**, press the **ENT** key twice. Go to step 10.
- 2) For manual input**, press the **ENT** key to open the INPUT TYPE menu, rotate the CH knob to choose MANUAL and then push the **ENT** key. Enter latitude and longitude of ship in distress and time as follows:
- a) Enter latitude and then press the **ENT** key.
  - b) Enter longitude and then press the **ENT** key.
  - c) Enter UTC time and then press the **ENT** key. Go to step 10.
- 3) If you cannot confirm position of ship in distress**, press the **ENT** key to open the INPUT TYPE menu, rotate the CH knob to choose NO INFO and then press the **ENT** key. Go to step 10.



10. Press the **CALL** key to transmit the call.

** Compose Message **	
CALL TYPE : RELAY ALL	
ID IN DIST : NO INFO	
TCmd : DISTRESS RELAY	
NATURE : UNDESIGNATED	
POS : 12° 34'N 123° 45'E	
AT : 12 : 34	
SIMP TP	
KEEP PRESSED FOR 3S	←

When CALL key is pressed, this message appears and timer counts down.

After the call is transmitted, the standby display appears.

## 2.7 Receiving Distress Relay

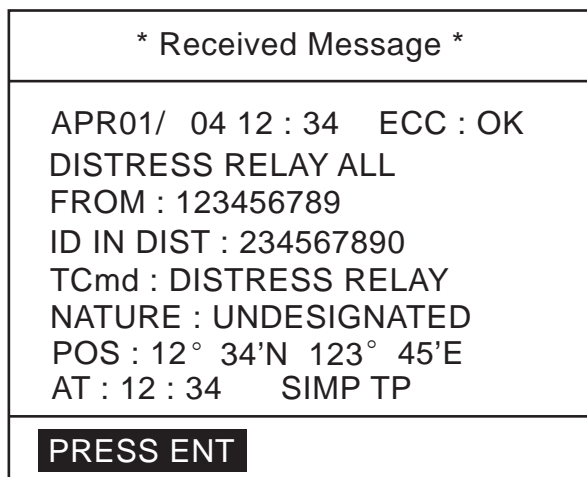
### 2.7.1 Receiving distress relay all call

If you receive a distress relay for all ships, continue monitoring CH16.

1. When a distress relay all ships call is received, the audio alarm sounds and the display looks like the one below.

Distress relay all call received.
FROM : 123456789
ID IN DIST : 234567890
TCmd : DISTRESS RELAY
NATURE : UNDESIGNATED
POS : 12° 34'N 123° 45'E
AT : 12 : 34   SIMP TP
CANCEL ALARM

2. Press the **CANCEL** key or **ENT** key to silence the alarm and the display changes as below.

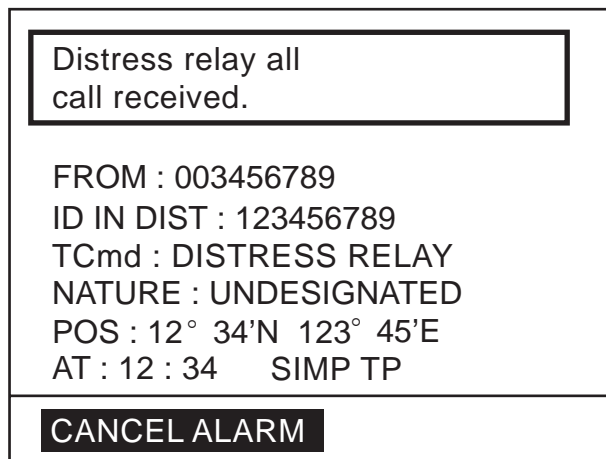


3. Press the **ENT** key to return to the standby display with CH16.
4. Watch CH16.

### 2.7.2 Receiving distress relay from coast station

If you receive a distress relay call from a coast station, continue monitoring CH16.

1. When a distress relay call from a coast station is received, the audio alarm sounds and the display looks like the one below.



2. Press the **CANCEL** key to silence the alarm and the display changes as below.

** Received Message **
APR01/ 04 12 : 34    ECC : OK DISTRESS RELAY ALL FROM : 003456789 ID IN DIST : 123456789 TCmd : DISTRESS RELAY NATURE : UNDESIGNATED POS : 12° 34'N 123° 45'E AT : 12 : 34    SIMP TP
<b>PRESS ENT</b>

3. Press the **ENT** key to return to the standby display with CH16.
4. Watch CH16.

## 2. DSC DISTRESS COMMUNICATION

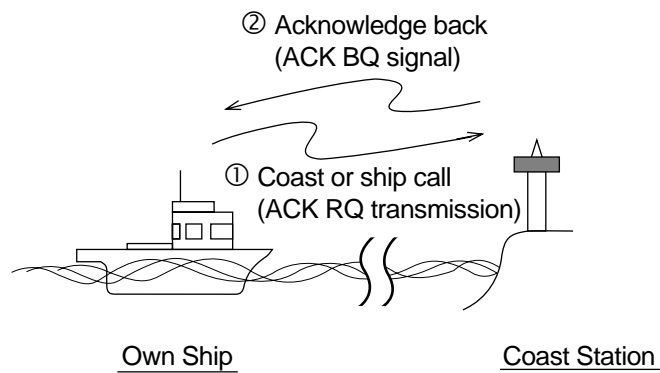
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# 3. DSC OPERATION FOR NON-DISTRESS CASES

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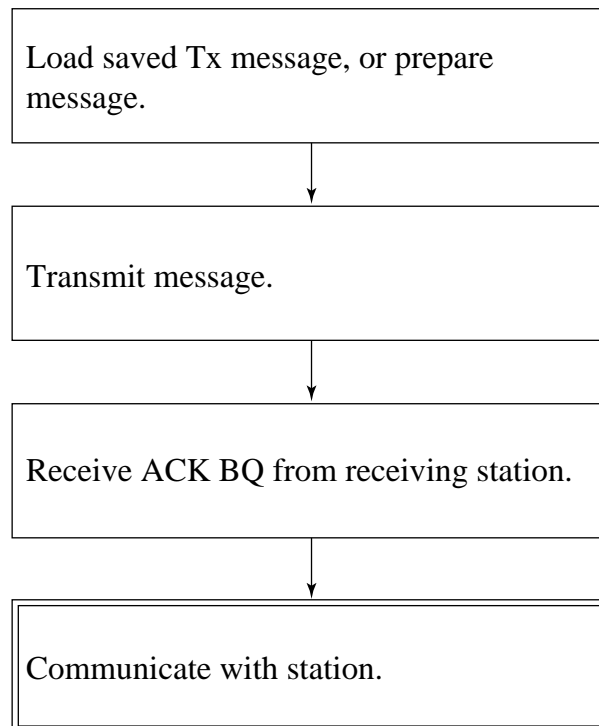
## 3.1 Coast or Ship Call

The coast or ship call is for sending message to a specific coast or ship station. After transmitting message (called ACK RQ transmission), wait to receive the acknowledge back (ACK BQ) signal from the receiving station. You should receive it within five minutes.



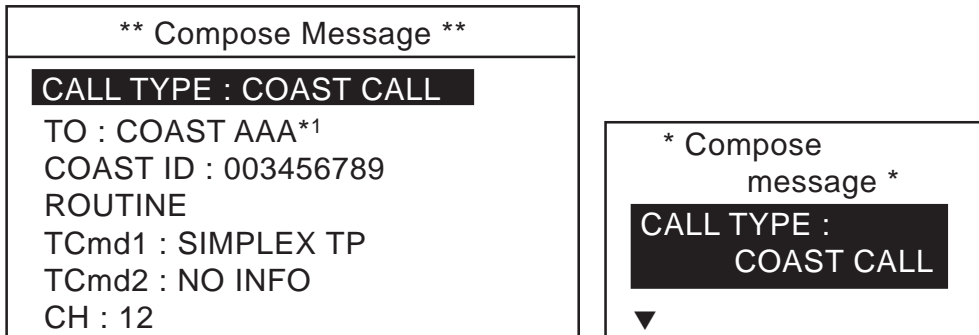
*How a coast or ship call is transmitted*

### General procedure for transmitting a coast or ship call



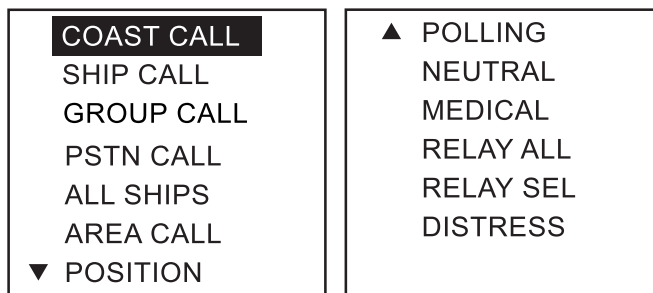
### 3.1.1 Sending a coast or ship call

1. Press the **CALL** key. The display changes from the standby display to the COMPOSE MESSAGE screen and the CALL TYPE is displayed in reverse video.

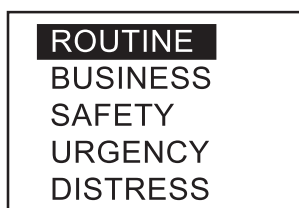


\*1: If the coast or ship ID is registered in FILE, the registered name is displayed. If no registered, blank.

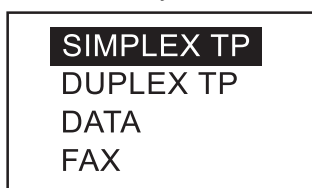
2. Press the **ENT** key to open the call type list.



3. Rotate the **CH** knob (or press up / down arrow key) to choose COAST CALL or SHIP CALL and press the **ENT** key.
4. ID is selected; press the **ENT** key.
5. Key in a coast ID or ship ID number as appropriate and press the **ENT** key.
6. ROUTINE is selected; press the **ENT** key.

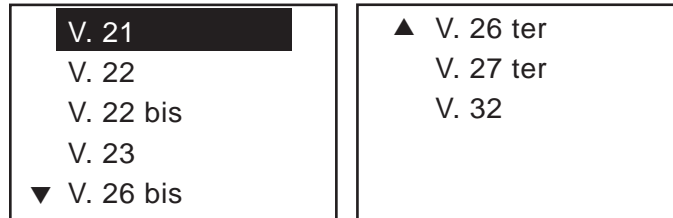


7. Choose ROUTINE, BUSINESS, SAFETY, or URGENCY as appropriate followed by pressing the **ENT** key.
8. TCmd1 is selected; press the **ENT** key.



9. Choose SIMPLEX TP, DUPLEX TP, DATA or FAX as appropriate followed by pressing the **ENT** key. If you chose SIMPLEX, DUPLEX or FAX, NO INFO appears in the Tcmd2 field. Go to step 12. If you chose DATA, go to the next step.

10. TCmd2 is selected; press the **ENT** key.



11. Choose the data type and press the **ENT** key.

12. Choose CH and press the **ENT** key. The following window appears.



13. Choose SELECT CH or NO INFO as appropriate followed by pressing the **ENT** key. If you chose SELECT CH, the following channel list appears. (The example shown is the international, duplex channel list.) Rotate the **CH** knob (or press up / down arrow key) to choose a channel you wish to communicate over and then press the **ENT** key.

DUP CHANNEL				
01	20	28	78	86
02	21	60	79	
03	22	61	80	
04	23	62	81	
05	24	63	82	
07	25	64	83	
18	26	65	84	
19	27	66	85	

14. Press the **CALL** key more than three seconds to transmit the message.

### 3.1.2 Receiving acknowledgement of coast or ship call

1. After a coast or ship call is sent, the equipment waits for acknowledgement of the call, showing the display below.

Waiting for acknowledgement.
COAST ID : 003456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 12
TIME TO GO : 3M30 S

The timer starts counting down the maximum time to wait for acknowledgement, five minutes.

2. One of the following three messages appears. "No response! Try calling again?" appears after the timer counts down to zero. It means the receiving station did not respond.

<table border="1" style="width: 100%;"> <tr> <td style="border: 1px solid black; padding: 5px;">Able acknowledge call received.</td> </tr> <tr> <td>FROM : 003456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 12</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;"><b>CANCEL ALARM</b></td> </tr> </table>	Able acknowledge call received.	FROM : 003456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 12	<b>CANCEL ALARM</b>	<table border="1" style="width: 100%;"> <tr> <td style="border: 1px solid black; padding: 5px;">Unable acknowledge call received.</td> </tr> <tr> <td>FROM : 003456789 ROUTINE TCmd1 : UNABLE TCmd2 : NO REASON CH : NO INFO</td> </tr> <tr> <td style="border: 1px solid black; padding: 5px;"><b>CANCEL ALARM</b></td> </tr> </table>	Unable acknowledge call received.	FROM : 003456789 ROUTINE TCmd1 : UNABLE TCmd2 : NO REASON CH : NO INFO	<b>CANCEL ALARM</b>
Able acknowledge call received.							
FROM : 003456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 12							
<b>CANCEL ALARM</b>							
Unable acknowledge call received.							
FROM : 003456789 ROUTINE TCmd1 : UNABLE TCmd2 : NO REASON CH : NO INFO							
<b>CANCEL ALARM</b>							

*Able acknowledge call received*

*Unable acknowledge call received*

No response! Try calling again?
COAST ID : 003456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 12
<b>PRESS ENT</b>

*No response from station*

A reason of Unable acknowledge is displayed. In case of QUEUE INDICATION, the channel will change to one that the coast station specifies.

3. Do one of the following depending on the message shown above.



**Able acknowledge call received**

- a) The audio alarm sounds; press the **CANCEL** key to silence it, and the display changes as below.

** Received Message **
APR01/ 04 12 : 34    ECC : OK COAST ACK FROM : 003456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 12
<b>PRESS ENT</b>

If a file is registered, its registered name is displayed instead of ID.

- b) Press the **ENT** key to go to the standby display. The working channel is automatically set; you may start voice communications.

**Unable acknowledge call received**

- a) The alarm sounds; press the **CANCEL** key to silence the alarm.
- b) Press the **ENT** key to return to the standby screen.

**No response! Try calling again?**

Re-send call: Push the **ENT** key followed by pressing the **CALL** key.

Cancel call: Press the **CANCEL** key to go to the standby display.

You can re-send the message from the TRANSMITTED log. See “3.10 Log File.”

**3.1.3 Receiving a coast or ship call**

When own ship receives a coast or ship call, acknowledgement is automatically or manually sent depending on the comply-type setting (see paragraph 4.2). The relationship between comply status and automatic/manual acknowledge is as shown in the table below.

Comply status Setting of <b>SHIFT</b> → <b>ACK</b> key	ABLE	UNABLE
AUTO ACK	Can send acknowledge automatically.	Can send UNABLE automatically.
MANUAL ACK	Can send acknowledge manually	Can send UNABLE manually.

**Note:** The handset must be on hook to enable automatic acknowledge.

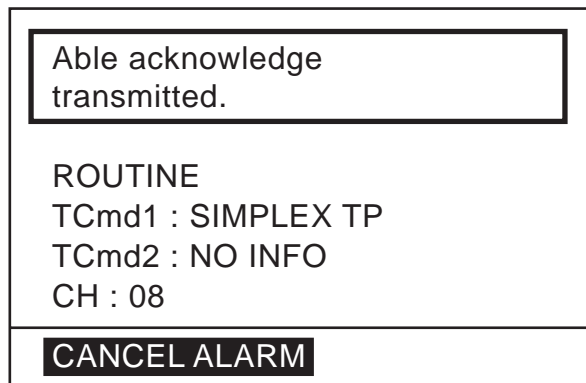
### 3. DSC OPERATION FOR NON-DISTRESS CASES

Acknowledging the call automatically or manually by doing one of the following:

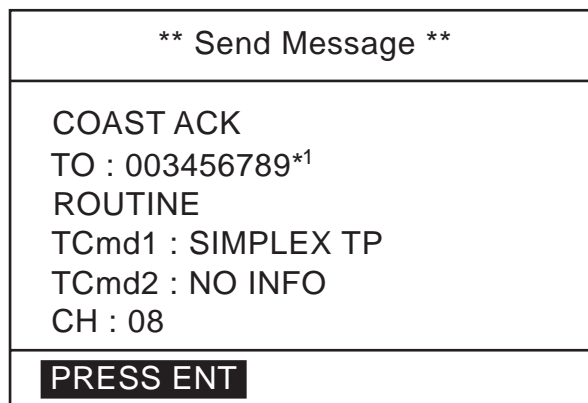
- 1) Send automatic acknowledge (ACK BQ) with comply status "ABLE." See the procedure below.
- 2) Sending automatic acknowledge (ACK BQ) with comply status "UNABLE." See the procedure on page 3-7.
- 3) Manually acknowledging individual call with "ABLE." See the procedure on page 3-8.
- 4) Manually acknowledging a coast or ship call with "UNABLE." See the procedure on page 3-9

#### 1) Sending automatic acknowledge (ACK BQ) with comply status "ABLE."

1. When the automatic acknowledge feature is active (AUTO ACK), the comply status is "ABLE" and a coast or ship call is received, the auto acknowledge (ACK BQ) call is sent immediately. The display shown below appears. The alarm sounds and the ALARM LED blinks two minutes.



2. Press the **CANCEL** key to silence the alarm. The following display appears.



\*1: If the coast or ship ID is registered in FILE, the registered name appears.

3. Press the **ENT** key. You can now communicate with the party, over the VHF channel specified.

## 2) Sending automatic acknowledge (ACK BQ) with comply status "UNABLE."

1. When the automatic acknowledge feature is active (AUTO ACK), the comply status is "UNABLE" and a coast or ship call is received, the display shown below appears, indicating that the auto acknowledge call with UNABLE (ACK BQ) has been sent. The alarm sounds and the ALARM LED blinks two minutes.

Unable acknowledge transmitted.
ROUTINE TCmd1 : UNABLE TCmd2 : BUSY CH : NO INFO
<b>CANCEL ALARM</b>

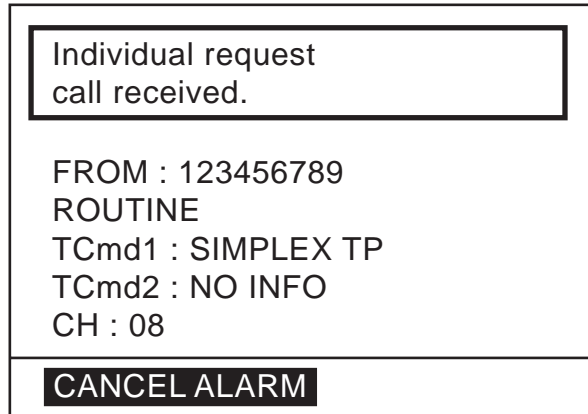
2. Press the **CANCEL** key to silence the alarm. The following display appears.

** Send Message **
COAST ACK TO : 003456789 ROUTINE TCmd1 : UNABLE TCmd2 : BUSY CH : NO INFO
<b>PRESS ENT</b>

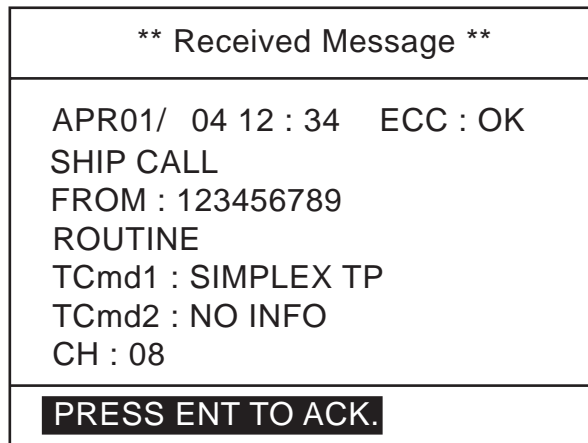
3. Press the **ENT** key.
4. If you want to send a proposal, prepare a message and sent it following the procedures shown on in paragraph 3.1.1.

**3) Manually acknowledging individual call with "ABLE."**

1. When the equipment is set up with manual acknowledge (MANUAL ACK), the comply status is "ABLE" and a coast or ship call is received, the alarm sounds and the display looks like the one below.



2. Press the **CANCEL** key to silence the alarm. The following display appears.



3. To send the ACK BQ manually, press the **ENT** key. The pop-up window shown below is displayed.



4. Choose **ABLE** and press the **ENT** key. The display changes as shown below.

** Send Message **
SHIP ACK TO : 123456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 08
PRESS CALL TO SEND

5. Press the **CALL** key more than three seconds to transmit the ACK BQ. The display changes to the standby display with a channel specified.

#### 4) Manually acknowledging a coast or ship call with "UNABLE."

1. When the equipment is set up with manual acknowledge and an individual call is received, the alarm sounds and the display shows the message "Individual request call received."

Individual request call received.
FROM : 123456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 08
<b>CANCEL ALARM</b>

2. Press the **CANCEL** key to silence the alarm. The following display appears.

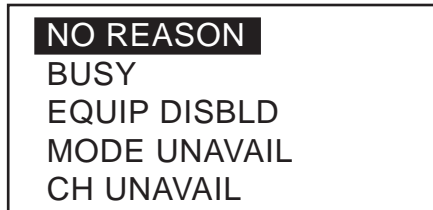
** Received Message **
APR01/ 04 12 : 34    ECC : OK SHIP CALL FROM : 123456789 ROUTINE TCmd1 : SIMPLEX TP TCmd2 : NO INFO CH : 08
<b>PRESS ENT TO ACK.</b>

### 3. DSC OPERATION FOR NON-DISTRESS CASES

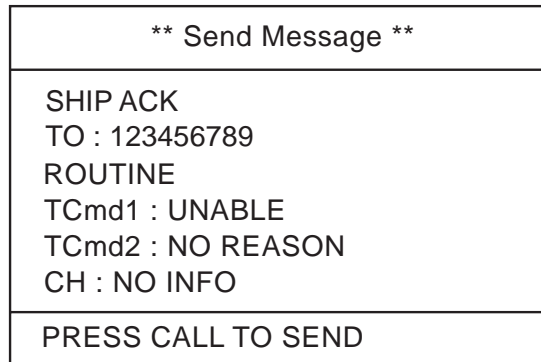
3. To send the ACK BQ manually, press the **ENT** key. The pop-up window shown below is displayed.



4. Choose UNABLE and press the **ENT** key. The following pop-up screen appears.



5. Press the **ENT** key.



6. Press the **CALL** key more than three seconds to transmit the ACK BQ. The display changes to the standby display.

## 3.2 Group Call

A group call is for calling a specific group by specifying its group ID. When you set the group call in a message file, its group ID is stored automatically for your ship's group ID (see paragraph 4.5). To confirm group IDs, open the SYSTEM menu.

### 3.2.1 Sending a group call

1. Press the **CALL** key. The display changes to the COMPOSE MESSAGE screen and the CALL TYPE is displayed in reverse video.

2. Press the **ENT** key to open the call type list.

<p><b>COAST CALL</b> SHIP CALL GROUP CALL PSTN CALL ALL SHIPS AREA CALL ▼ POSITION</p>	<p>▲ POLLING NEUTRAL MEDICAL RELAY ALL RELAY SEL DISTRESS</p>
--	---

3. Rotate the **CH** knob (or press up / down arrow key) to choose GROUP CALL and press the **ENT** key.

4. GROUP ID is selected; press the **ENT** key.

5. Key in a group ID and press the **ENT** key.

6. ROUTINE is selected; press the **ENT** key.

<p><b>ROUTINE</b> BUSINESS SAFETY URGENCY DISTRESS</p>
--

7. Choose ROUTINE, BUSINESS, SAFETY, or URGENCY as appropriate followed by pressing the **ENT** key.

8. TCmd1 is selected; press the **ENT** key.

<p><b>SIMPLEX TP</b> DUPLEX TP DATA FAX</p>
---

9. Choose SIMPLEX TP, DUPLEX TP, DATA or FAX followed by pressing the **ENT** key. If you chose SIMPLEX, DUPLEX, or FAX, NO INFO appears in the Tcmd2 field. Go to step 12. If you chose DATA, go to the next step.

10. TCmd2 is selected; press the **ENT** key.

<p><b>V. 21</b> V. 22 V. 22 bis V. 23 ▼ V. 26 bis</p>	<p>▲ V. 26 ter V. 27 ter V. 32</p>
---	--

11. Choose the data type and press the **ENT** key.

12. Choose CH and press the **ENT** key. The following window appears.

<p><b>SELECT CH</b> NO INFO</p>
-------------------------------------

### 3. DSC OPERATION FOR NON-DISTRESS CASES

13. Choose **SELECT CH** or **NO INFO** as appropriate followed by pressing the **ENT** key. If you chose **SELECT CH**, the following channel list appears. (The example shown is the international, duplex channel list.) Rotate the **CH** knob (or press up / down arrow key) to choose a channel you wish to communicate and press the **ENT** key.

DUP CHANNEL				
01	20	28	78	86
02	21	60	79	
03	22	61	80	
04	23	62	81	
05	24	63	82	
07	25	64	83	
18	26	65	84	
19	27	66	85	

14. Press the **CALL** key more than three seconds. A message will be transmitted.

#### 3.2.2 Receiving a group call

Group ID must be registered in order to receive a group call. See paragraph 4.5.

1. When a group call is received, the alarm sounds and the **ALARM LED** blinks two minutes.

Group call received.
FROM : 123456789
TO : 0234567
ROUTINE
TCmd1 : SIMPLEX TP
TCmd2 : NO INFO
CH : 08
<b>CANCEL ALARM</b>

2. Press the **CANCEL** or **ENT** key to silence the alarm. The following display appears.

** Received Message **
APR01/ 04 12 : 34 ECC : OK
GROUP CALL
FROM : 123456789
TO : 023456789
ROUTINE
TCmd1 : SIMPLEX TP
TCmd2 : NO INFO
CH : 08
<b>PRESS ENT</b>

3. Press the **ENT** key. You can now communicate with the party, over the VHF channel specified.

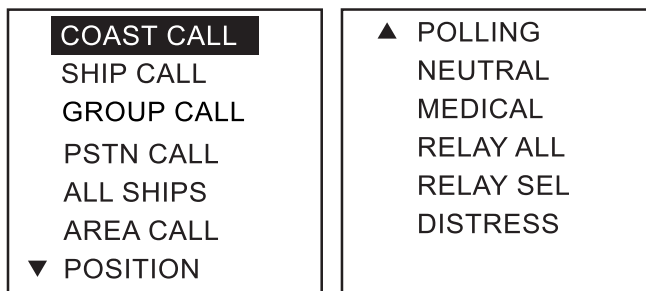


### 3.3 PSTN Call

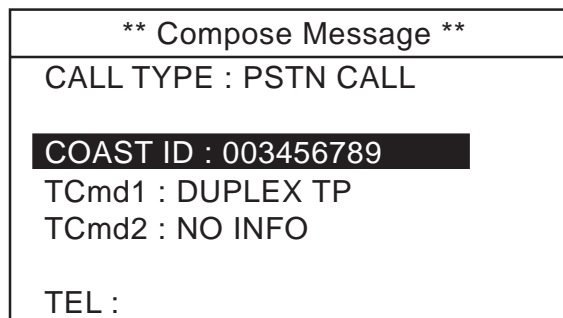
The PSTN call allows the making and receiving of telephone calls over public switched telephone networks. To use the PSTN call feature, use a handset which has a HOOK ON/OFF function. The standard supply handset has this feature.

#### 3.3.1 Sending a PSTN call

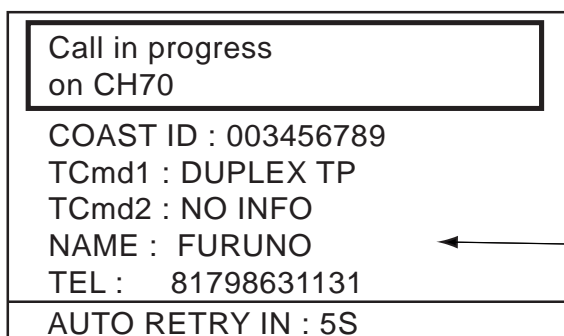
1. Press the **CALL** key. The display changes from standby display to the COMPOSE MESSAGE screen and the CALL TYPE is displayed in reverse video.
2. Press the **ENT** key to open the call type list.



3. Rotate the **CH** knob (or press up / down arrow key) to choose PSTN CALL and press the **ENT** key.



4. COAST ID is selected; press the **ENT** key.
5. Key in a coast ID and press the **ENT** key.
6. TCmd1 is selected; press the **ENT** key.
7. Choose SIMPLEX or DUPLEX as appropriate followed by pressing the **ENT** key.
8. TEL is selected; press the **ENT** key.
9. Key in a subscriber's telephone number (max. 16 digits).
10. Press the **CALL** key more than three seconds.



← When TEL no. is registered, the registered name is displayed.

### 3. DSC OPERATION FOR NON-DISTRESS CASES

If a response from the coast station is received within five seconds, transmit PSTN CALL (EOS) signal and then carrier frequency during two seconds. Then your phone rings. Press the **CANCEL** key to stop the calling sound and change to standby display. Hook off and communicate with other party.

**Note:** If using a hand-microphone, pressing the **CANCEL** key is equal to off-hook.

#### 3.3.2 PSTN call disconnection (ship disconnects line)

1. After hanging up the handset or pressing the **CANCEL** key to complete your call, the display shows the following message. The end of call signal is transmitted; and the system then waits for a response from the coast station.

Waiting for acknowledgement
FROM : 003456789 TCmd1 : DUPLEX TP TCmd2 : PAY-PHONE TEL : 1234567890123456 CH : 28

2. When the ACK from the coast station is received, the following display appears. The communication time (charge time) is informed.

Able acknowledge call received.
FROM : 003456789 TCmd1 : END CALL TCmd2 : NO INFO TEL : 1234567890123456 CHARGE TIME : 00h05m18s
<b>PRESS ENT</b>

### 3.3.3 PSTN call disconnection (coast station disconnects line)

1. The PSTN line is disconnected by the coast station when it finds no evidence of communications or the land subscriber hangs up. The coast station then sends charge information as below.

PSTN end of call received.
FROM : 003456789 TCmd1 : END CALL TCmd2 : NO INFO TEL : 1234567890123456 CHARGE TIME : 00h06m18s
<b>PRESS ENT</b>

### 3.3.4 Receiving a PSTN call

1. When a PSTN call is received, the following display appears. Your phone rings.

Able PSTN call Pick up the handset!
FROM : 003456789 TCmd1 : DUPLEX TP TCmd2 : PAY-PHONE TEL No : 1234567890123456 CH : 28

2. Hook off within 60 seconds. The channel changes automatically and you can communicate with other party.
3. When the communication is completed, hook on the handset or press the **CANCEL** key.

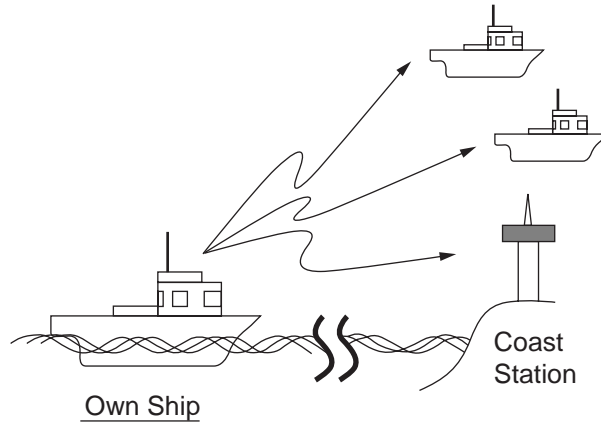
## 3.4 All Ships Call

When an urgent but not life-endangering situation arises on your ship, for example, engine trouble, send an all ships call to request assistance.

After sending the call, you can communicate by voice over the radiotelephone. Do the following before beginning actual communications:

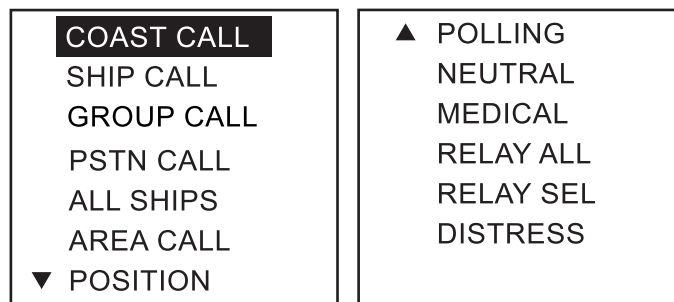
URGENCY priority: Say PAN three times followed by your call sign.

SAFETY priority: Say SECURITE three times followed by your call sign.

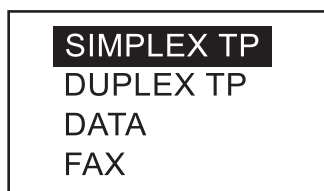


### 3.4.1 Sending an all ships call

1. Press the **CALL** key. The display changes from standby display to the COMPOSE MESSAGE screen and the CALL TYPE is displayed in reverse video.
2. Press the **ENT** key to open the call type list.



3. Rotate the **CH** knob (or press up / down arrow key) to choose ALL SHIPS and press the **ENT** key.
4. SAFETY is selected; press the **ENT** key.
5. Choose SAFETY, URGENCY, or DISTRESS as appropriate followed by pressing the **ENT** key.
6. TCmd1 is selected; press the **ENT** key.



7. Choose SIMPLEX TP, DUPLEX TP, DATA or FAX as appropriate followed by pressing the **ENT** key. If you chose SIMPLEX, DUPLEX, or FAX, the NO INFO appears in the Tcmd2 field. Go to the step 10. If you chose DATA, go to the next step.

8. TCmd2 is selected; press the **ENT** key.

<p><b>V. 21</b></p> <p>V. 22</p> <p>V. 22 bis</p> <p>V. 23</p> <p>▼ V. 26 bis</p>	<p>▲ V. 26 ter</p> <p>V. 27 ter</p> <p>V. 32</p>
---	--

9. Choose the data type and press the **ENT** key.

10. Choose CH and press the **ENT** key. The following window appears.

<p><b>SELECT CH</b></p> <p>NO INFO</p>
--

11. Choose SELECT CH or NO INFO as appropriate followed by pressing the **ENT** key. If you chose SELECT CH, the following channel list appears. (The example is the international, duplex channel list.) Rotate the **CH** knob (or press up / down arrow key) to choose a channel and press the **ENT** key.

DUP CHANNEL				
01	20	28	78	86
02	21	60	79	
03	22	61	80	
04	23	62	81	
05	24	63	82	
07	25	64	83	
18	26	65	84	
19	27	66	85	

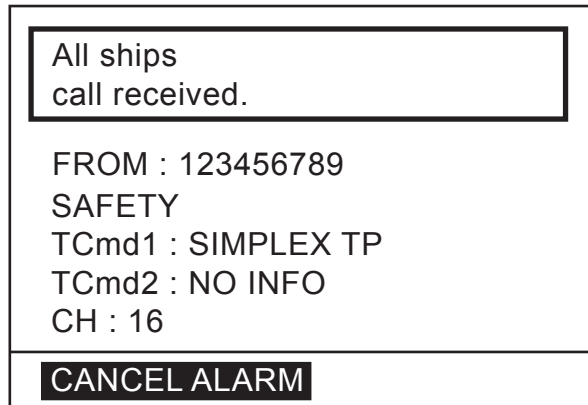
12. Press the **CALL** key more than three seconds to transmit the call.

After transmitting the message, the screen changes to standby display.

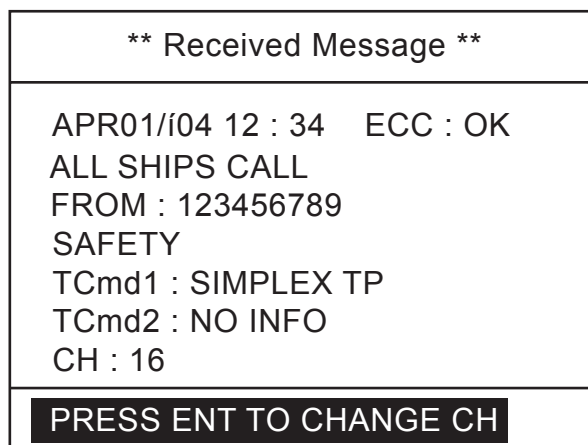
### 3.4.2 Receiving an all ships call

#### In case of ON HOOK

1. When an all ships call is received, the audio alarm sounds and the display looks something like the one shown below.



2. Press the **CANCEL** or **ENT** key to silence the alarm. The display changes as follows.



3. Press the **ENT** key. The display changes to the standby display, indicating channel specified, and you can watch the contents of the message.

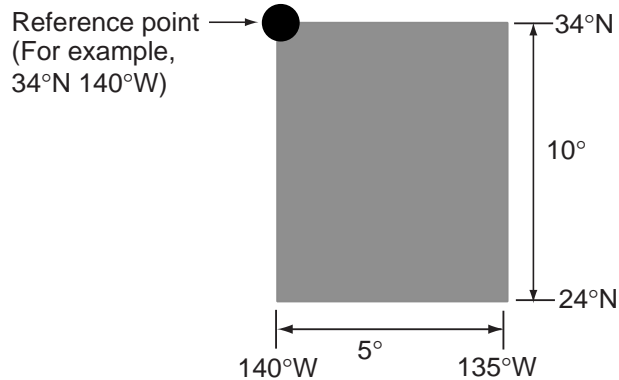
#### In case of OFF HOOK

1. When an all ships call is received, the audio alarm sounds and the ALARM LED blinks.
2. Press the **ACK** key. The display changes to the standby display, indicating channel specified.

**Note:** Before pressing the **ACK** key, if you press the **CANCEL** key, the alarm stops. Press the **CANCEL** key again to cancel the all ship call, or press the **ENT** key to accept the all ship call and the display changes to the standby display, indicating channel specified.

## 3.5 Geographical Area Call

The geographical area call is for sending a call to all ships within the area you designate in your geographical area call. In the figure below, for example, the call will be sent to all ships within 24-34°N, 135-140°W.



### 3.5.1 Sending a geographical area call

1. Press the **CALL** key. The display changes from standby display to the COMPOSE MESSAGE screen and the CALL TYPE is displayed in reverse video.
2. Press the **ENT** key to open the call type list.
3. Rotate the **CH** knob (or press up / down arrow key) to choose AREA CALL and press the **ENT** key.

** Compose Message **
CALL TYPE : AREA CALL
AREA : 34° N 123° E ↓10° →5°
ROUTINE
TCmd1 : SIMPLEX TP
TCmd2 : NO INFO
CH : 10

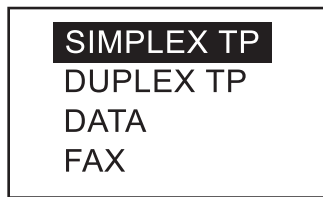
4. AREA is selected; press the **ENT** key.

1 : N / E	2 : S / W
__ ° N	__ ° E ↓ __ ° → __ °

5. Using the numeric keys, enter latitude and longitude of reference point and southerly degrees and easterly degrees of area. To change coordinate, choose it and press the **1** key for North or East; **2** key for South or West. After entering data, push the **ENT** key.
6. ROUTINE is selected; press the **ENT** key.
7. Choose ROUTINE, BUSINESS, SAFETY, URGENCY, or DISTRESS as appropriate followed by pressing the **ENT** key.

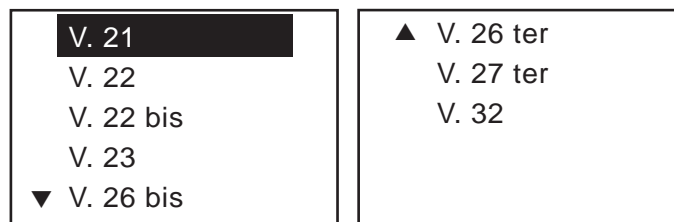
### 3. DSC OPERATION FOR NON-DISTRESS CASES

8. TCmd1 is selected; press the **ENT** key.



9. Choose SIMPLEX TP, DUPLEX TP, DATA or FAX as appropriate followed by pressing the **ENT** key. If you chose SIMPLEX, DUPLEX, or FAX, NO INFO appears in the Tcmd2 field. Go to step 12. If you chose DATA, go to the next step.

10. TCmd2 is selected; press the **ENT** key.



11. Choose the data type and press the **ENT** key.

12. Choose CH and press the **ENT** key. The following window appears.



13. Choose SELECT CH or NO INFO as appropriate followed by pressing the **ENT** key. If you chose SELECT CH, the following channel list appears. (The example is the international, duplex channel list.) Rotate the **CH** knob (or press up / down arrow key) to choose a channel and press the **ENT** key.

DUP CHANNEL				
01	20	28	78	86
02	21	60	79	
03	22	61	80	
04	23	62	81	
05	24	63	82	
07	25	64	83	
18	26	65	84	
19	27	66	85	

14. Press the **CALL** key more than three seconds to transmit the message. After the call is transmitted, the standby display appears with channel specified.



### 3.5.2 Receiving a geographical area call

1. When a geographical area call is received, the alarm sounds and the ALARM LED blinks two minutes.

<p>Geographical area call received.</p>
<p>FROM : 123456789          AREA : 12° N 123° E ↓01° →01°          ROUTINE          TCmd1 : SIMPLEX TP          TCmd2 : NO INFO          CH : 10</p>
<p><b>CANCEL ALARM</b></p>

2. Press the **CANCEL** key to silence the alarm. The following display appears.

<p>** Received Message **</p>
<p>APR01/i04 12 : 34 ECC : OK          AREA CALL          FROM : 123456789          AREA : 12° N 123° E ↓01° →01°          ROUTINE          TCmd1 : SIMPLEX TP          TCmd2 : NO INFO          CH : 10</p>
<p><b>PRESS ENT TO CHANGE CH</b></p>

3. Press the **ENT** key. You can now watch over the VHF channel specified.

#### In case of OFF HOOK

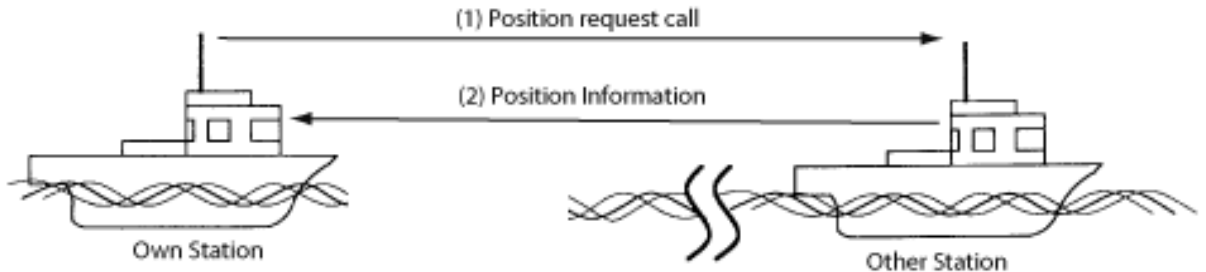
1. When a geographical area call is received, the audio alarm sounds and the ALARM LED blinks.
2. Press the **ACK** key. The display changes to the standby display, indicating channel specified.

**Note:** Before pressing the **ACK** key, if you press the **CANCEL** key, the alarm stops. Press the **CANCEL** key again to cancel the geographical area call, or press the **ENT** key to accept the geographical area call and the display changes to the standby display, indicating channel specified.

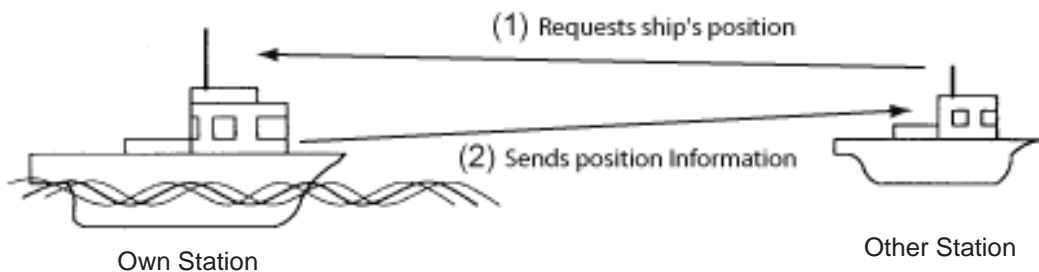
### 3.6 Position Call

There are two types of position calls: other station requires your ship's position and your ship requests position of another ship.

#### Finding position of other station



#### Sending own ship's position to other station



#### 3.6.1 Position call: requesting other ship's position

1. Press the **CALL** key. The display changes from standby display to the COMPOSE MESSAGE screen and the CALL TYPE is displayed in reverse video.
2. Press the **ENT** key to open the call type list.
3. Rotate the **CH** knob (or press up / down arrow key) to choose POSITION and press the **ENT** key.

** Compose Message **	
CALL TYPE : POSITION REQUEST	
TO :	
SHIP ID : 123456789	
ROUTINE	
TCmd1 : POSITION REQUEST	
TCmd2 : NO INFO	

If a file is registered, its registration name is displayed. If not, this field is blank.

4. SHIP ID is selected; press the **ENT** key.
5. Key in a ship ID for which you want to know its position.
6. ROUTINE is selected; press the **ENT** key.
7. Choose ROUTINE, BUSINESS, SAFETY, URGENCY, or DISTRESS as appropriate followed by pressing the **ENT** key.

8. Press the **CALL** key more than three seconds to transmit position request. The following display appears. The timer counts down until a response is received.

Waiting for acknowledgement.	If a file is registered, its registration name is displayed. If not, this field is blank.
SHIP ID : 123456789	
ROUTINE	
TCmd1 : POSITION REQUEST TCmd2 : NO INFO	
TIME TO GO : 3M30 S	

9. When an acknowledge call is received, the following display appears and the audio alarm sounds.

Position acknowledge received.
FROM : 123456789
ROUTINE
TCmd1 : POSITION
TCmd2 : NO INFO
POS : 12° 34'N 123° 45'E
AT 12 : 34
<b>CANCEL ALARM</b>

10. Press the **CANCEL** key to silence the alarm. The display looks as below. You can now confirm position of other ship.

** Received Message **
APR01/ 04 12 : 34 ECC : OK
POSITION ACK
FROM : 123456789
ROUTINE
TCmd1 : POSITION
TCmd2 : NO INFO
POS : 12° 34'N 123° 45'E
AT 12 : 34
<b>PRESS ENT</b>

11. When "No response! Try calling again?" is displayed;  
 Re-send call: Push the **ENT** key followed by the **CALL** key.  
 Cancel call: Press the **CANCEL** key.

### 3.6.2 Position call: other ship requests your position

You may turn automatic acknowledge of position request on or off with POSITION CALL in the system setup menu. For further details, see page 4-3.

#### Automatic reply

1. When another ship requests your position, the status of the **5 ACK** key is AUTO ACK and the setting of POSITION CALL on the system setup menu is ON, the FM-8800D/S transmits own position data, showing the display below.

Position auto ack transmitted.
TCmd1 : POSITION TCmd2 : NO INFO POS : 12° 34'N 123° 45'E AT 12 : 34
<b>CANCEL ALARM</b>

2. Press the **CANCEL** key to silence the alarm. The display then looks like the one below, indicating own ship's position.

** Send Message **
POSITION ACK TO : 123456789 TCmd1 : POSITION TCmd2 : NO INFO POS : 12° 34'N 123° 45'E AT 12 : 34
<b>PRESS ENT</b>

#### Manual reply

1. When a position request call is received and the setting of POSITION CALL on the system setup menu is OFF, the audio alarm sounds and the display changes as below.

Position request call received.
FROM : 123456789 ROUTINE TCmd1 : POSITION TCmd2 : NO INFO
<b>CANCEL ALARM</b>

2. Press the **CANCEL** key to silence the alarm.

** Received Message **
APR01/ 04 12 : 34    ECC : OK POSITION CALL FROM : 123456789 ROUTINE TCmd1 : POSITION TCmd2 : NO INFO
<b>PRESS ENT TO ACK.</b>

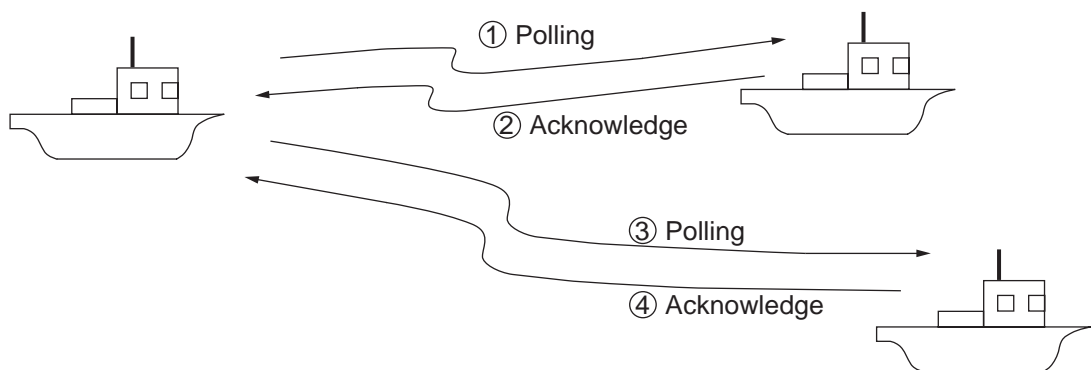
3. To send your position manually, press the **ENT** key. The following pop-up menu appears.

<b>ANSWER</b>
NO ANSWER

4. Choose **ANSWER** by the **CH** knob and press the **CALL** key to send your position data. Then, the standby display appears.  
To send no position data, choose **NO ANSWER** and press the **ENT** key twice to return to the standby display.

## 3.7 Polling Call

Polling means confirming if own station is within communicating range with other station. This function only provides affirmative or negative response; it does not provide position information. Note that simultaneous polling to more than one station is not possible.



### 3.7.1 Sending a polling call

1. Press the **CALL** key. The display changes from standby display to the **COMPOSE MESSAGE** screen and the **CALL TYPE** is displayed in reverse video.
2. Press the **ENT** key to open the call type list.

### 3. DSC OPERATION FOR NON-DISTRESS CASES

3. Rotate the **CH** knob (or press up / down arrow key) to choose POLLING and press the **ENT** key.

** Compose Message **
CALL TYPE : POLLING
<b>SHIP ID :</b>
ROUTINE
TCmd1 : POLLING
TCmd2 : NO INFO

4. SHIP ID is selected; press the **ENT** key.
5. Key in a station ID with the numeric keys and press the **ENT** key.
6. ROUTINE is selected; press the **ENT** key.

<b>ROUTINE</b>
BUSINESS
SAFETY
URGENCY
DISTRESS

7. Rotate the **CH** knob (or press up / down arrow key) to choose the appropriate communications category and press the **ENT** key.
8. Press the **CALL** key more than three seconds to transmit polling call. After the call is transmitted, the following display appears. The timer counts down until a response is received.

Waiting for acknowledgement.
SHIP ID : 123456789
ROUTINE
TCmd1 : POLLING
TCmd2 : NO INFO
TIME TO GO : 3M30 S

- 9-1. When a polling acknowledge call is received, the audio alarm sounds and the display looks something like the one below.

Polling acknowledge received.
FROM : 123456789
ROUTINE
TCmd1 : POLLING
TCmd2 : NO INFO
<b>CANCEL ALARM</b>

— If a file is registered, the registration name is displayed.

Press the **CANCEL** key to silence the alarm. Press the **ENT** key to show the standby display when you can confirm if called party is within communicating range.