MODULAR GMDSS

COMMUNICATION SYSTEM

DSC2

USER   MANUAL

ICS Electronics Ltd

SHIP's IDENTIFICATION

SHIP's NAME : ....

CALL SIGN : ....

MARITIME MOBILE SERVICE IDENTITY   (MMSI)

MMSI   (INDIVIDUAL) : ....

MMSI   (GROUP) : ....

RADIO TELEX SELCALL : ....

ACCOUNTING AUTHORITY : ....

ON BOARD SPARES CARRIED :   *YES / NO*
                                   (Delete as appropriate)

SHORE-BASED MAINTENANCE CONTRACT WITH :

....

....

....

....

What you need to know before you use this Manual

To legally operate the equipment described in this manual, you should possess an appropriate GMDSS certificate or you should be under supervision of someone who holds this appropriate certificate. The appropriate certificate must be one of the following:

The First-Class Radio Electronic Certificate
The Second-Class Radio Electronic Certificate
The General Operator's Certificate

For ships sailing *only* within the range of VHF coast stations, a **Restricted Operator's Certificate** is sufficient.

However, we have designed this User Manual so that it can be used quickly and easily by anyone who needs to operate the system in an emergency.

The ITU Radio Regulations Mob-87, 3890 A and further determine the categories of certificates and their conditions for issue. A copy of these regulations can be found in the GMDSS Handbook, Annex 9-7.

EMERGENCY PROCEDURE

If you need to send or respond to a distress call quickly, turn immediately to Chapter 2: Distress Operation

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About this Manual

This User Manual has been designed to help you understand the DSC2 system as quickly as possible. We recommend that you read this User Manual through first and then sit down and operate the DSC2 system. This is the best way to learn.

> *About sending a false alarm:*
> *As long as you **never** touch the **DISTRESS** or **ENTER** buttons*
> *you will **not** send any calls or distress alerts.*

The DSC2 system is a series of compatible modules which together allow to transmit, receive and relay distress alerts and other messages when connected to approved radio-equipment. This User Manual assumes that the appropriate system combination for your vessel has already been installed.

This User Manual will take you step by step through the procedures you will need to operate the DSC2 system. You will learn how to:

- send, and respond to: - distress calls
                          - urgency calls
                          - safety calls
                          - routine calls
- check messages
- set up, check and test the system
- compile a useful directory of frequently contacted stations
- modify the default settings of the system

This User Manual also includes a 'Help!' chapter and a brief introduction to using other communication systems connected to the DSC2 system such as Radio Telex and Inmarsat C to summon help in an emergency.

A separate user manual is available, covering detailed operation of the Radio Telex system (NBDP) for routine communication.

If you are installing the DSC2 system, you should consult the 'DSC2 Technical Manual'.

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CONTENTS

1. INTRODUCTION & OVERVIEW

1.1 Why do we need the DSC2 system?

By February 1st 1999, the International Maritime Organisation (IMO) requires that all commercial ships over 300 grt carry distress alert equipment meeting the Global Maritime Distress and Safety System (GMDSS) standards. Ships commissioned after February 1995 and all existing passenger ships should already comply with these rules.

The rules make it compulsory for these ships to carry a combination of VHF & MF/HF DSC (Digital Selective Calling), MF/HF NBDP (Narrow Band Direct Printing) and/or Inmarsat Satellite equipment for transmitting and relaying distress alerts.

The combination of equipment to be fitted is depending on the 'Sea Area' a ship is going to be in.

1.2 Definitions of the different "Sea Areas"

Sea area	Description
A1	An area within the radiotelephone coverage of at least one VHF coast station in which continuous digital selective calling (DSC) alerting is available
A2	An area, excluding sea area A1, within the radiotelephone coverage of at least one MF coast station in which continuous digital selective calling (DSC) alerting is available
A3	An area, excluding sea areas A1 and A2, within the coverage of an INMARSAT geostationary satellite in which continuous alerting is available
A4	An area outside sea areas A1, A2 and A3

1.3 Where can the DSC2 system be used?

The DSC2 system can be used in all Sea Areas and when used in conjunction with the right combination of suitable type-approved equipment, the modular DSC2 system gives full compliance with the above mentioned IMO rules, combined with a level of ease of use which has not so far been achieved by comparable equipment.

1.4 Advantages of the DSC2 system

Under GMDSS rules, it is no longer mandatory for individual countries to require the vessels under their flag to carry a full-time ship's radio officer, but "every ship shall carry personnel qualified for distress and safety radiocommunication purposes to the satisfaction of the Administration". This "qualified personnel", normally navigation officers, must hold a GMDSS General Operator's Certificate (GOC).

Officers transferring between ships may face severe learning problems as they try to get to grips with new and unfamiliar consoles or equipment each time they transfer.

This is why ease of use has been stressed in the design of the DSC2:

- No need for retraining if already trained on other DSC systems.
- Reduced possibility of sending false alerts.
- Continuous on-line fault monitoring and detection.
- Network-based, enabling system control from any Control Panel.
- Modular system makes it easier to upgrade and maintain.
- Easy to use graphical user interface reduces the chance of operator error.
- Automatic switching to distress frequency or to response frequency when distress call is sent or received.
- Automatic scanning for Radio Telex messages.
- Easy transfer of Radio Telex messages by unskilled operators.
- Operator prompting if an incorrect operation is attempted.

1.5 The DSC2 system overview

The DSC2 system relies on a combination of modules, each with their own different functions, connected by a network.

The system installed on your vessel may vary in detail from the typical diagram shown below.

PRIMARY INSTALLATION   DUPLICATION INSTALLATION

VHF 1   MF/HF   VHF 2   SATCOM C

PRIMARY INSTALLATION		DUPLICATION INSTALLATION	
VHF Transceiver	**MF/HF Transceiver**	**VHF Transceiver**	**SATCOM C Transceiver**
Transceiver Interface DSC2-007.xx	Transceiver Interface DSC2-007.xx	Transceiver Interface DSC2-007.xx	GPS / Alarm Interface DSC2-008.00
ch70 Watch Receiver DSC2-004.00	MF/HF Scanning Watch Receiver DSC2-005.00		
VHF DSC Modem DSC2-002.00	MF/HF DSC Modem DSC2-003.00	VHF DSC Modem DSC2-002.00	
	MF/HF Telex Codec DSC2-006.00		
DSC Printer DSC2-012.00	DSC Printer DSC2-012.00	DSC Printer DSC2-012.00	

Control Panel DSC2-001.00

Control Panel DSC2-001.00

Network Router DSC2-009.00

Remote Alarm (Output)

Remote Alarm Pushbutton (Input)

GPS Input (NMEA 183)

Telex Printer

PC

Telex PC Interface DSC2-010.00

Satcom C Printer

PC

A typical complete radio communication system will include a DSC2
configuration, a number of transceivers and the necessary computers for
MF/HF and/or Inmarsat C. Access to the DCS2 system will be through a
Control Panel. When you want to send a distress alert or make a call, you use
the Control Panel to send data, which is then encoded for transmission and
transmitted.

Watch receivers scan DSC frequencies for distress, safety and urgency
messages and other routine calls. Any incoming calls in the form of data pass
through a decoder and are displayed on the Control Panel.

Telex messages from the MF/HF Telex or Inmarsat C can also be displayed
using a suitable approved computer and printed out on the respective printer.

The beauty of the DSC2 system is that the Control Panel is very quick to
learn and very easy to use - especially for sending a distress alert when the
last thing you want to do is consult a manual!

1.6 The DSC2 Control Panel
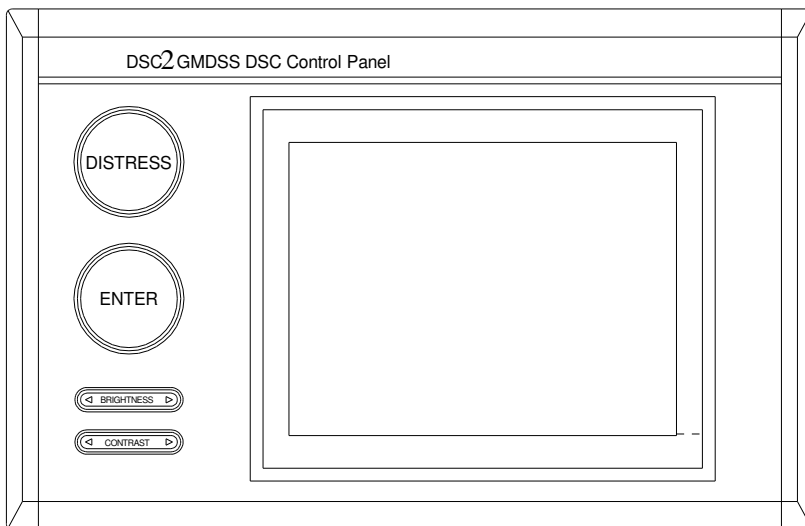
1.6.1 What are the 'hardware' buttons?

The Control Panel has four buttons to the left of the display:

DISTRESS	Used to make and send a distress call
ENTER	Used to send any non-distress call that has been set up and is currently displayed on the liquid crystal display (LCD) screen
BRIGHTNESS	Allows you to adjust the LCD's brightness for different lighting conditions
CONTRAST	Allows you to adjust the LCD contrast level

1.6.2 The Initial Display Screen

When the system is first switched on, the screen will not display any menu buttons. This is perfectly normal - the system is running a self-test and configuration process.

Each panel will then revert to its Initial Display Screen:
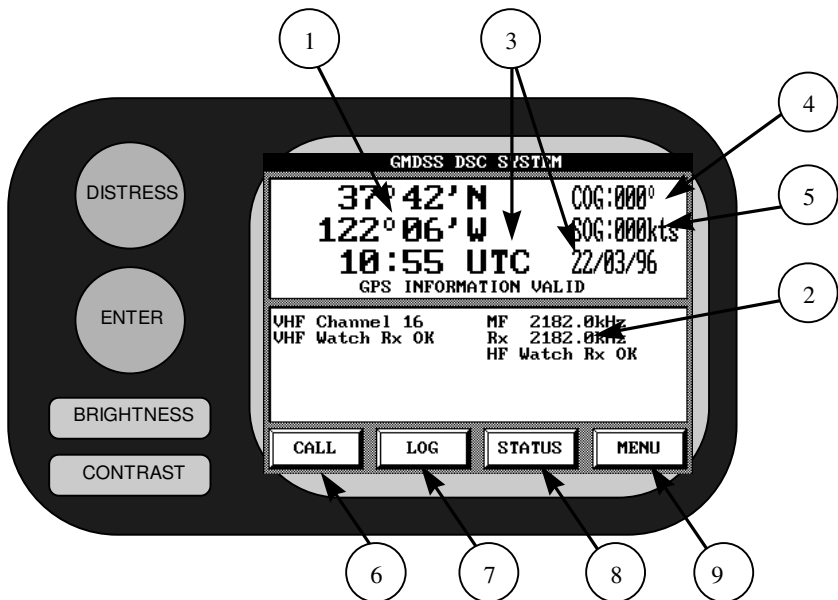
To get the best view of the LCD (liquid crystal display) you must directly face it so that your eyes are at a right angle with the screen. The Control Panel must be installed so that direct sunlight can not reach the screen. If this is unavoidable, and although the display can be read in direct sunlight, a sunshade or similar sun protection should be installed for optimum results.

1.6.3 Key to screen features

① Readout of the vessel's position based on the latest reading from the Global Positioning System (GPS) navigator, if connected to the DSC2 system. A GPS provides accurate position information, which can help to pinpoint your vessel's location in an emergency.

② These are the currently selected transceivers and transceiver types connected to the DSC2 system on your vessel.

③ Current date and time provided by an internal clock. When a GPS is connected, this internal clock is synchronised with the time and date provided by the GPS. UTC is Co-ordinated Universal Time and replaces the former Greenwich Mean Time (GMT).

④ COG (Course Over Ground): this is the true (not magnetic) course of the ship shown in degrees, when this information is supplied by the GPS system.

⑤ SOG (Speed Over Ground): this is the real speed of the ship through the water shown in knots, when this information is supplied by the GPS system.

The function keys along the bottom of the screen select a variety of sub-menus as follows:

⑥ CALL :   to set up any kind of transmission.

⑦ LOG :   to view incoming DSC messages which are held in the Message Log. We will deal with messages in more detail in Section 6.

⑧ STATUS :   to check the status of the system and to view the system event log. The system will create a new event log entry whenever it detects a problem. You can also start self-test procedures from this menu. We will deal with these procedures in more detail in Chapter 7.

⑨ MENU :   to access all the facilities available on the system. We will deal with Main Menu options in more detail in Chapter 7.

1.6.4 Are these menu buttons always displayed?

When transmitting a distress call or one of the Control Panels has tuned the VHF or MF/HF transceivers to the requested frequency, the "CALL", "LOG" and "STATUS" buttons will be replaced by "CANCEL DISTRESS" and "CANCEL TUNE" buttons respectively.

When a distress alert is being sent and a "RADIO TUNE" has taken place (i.e. either the system or the operator has re-tuned the appropriate transceivers to the required frequency), then the "CANCEL DISTRESS" button takes precedence.
We will explain all this in greater detail in Chapter 2 - Distress Operation.

1.7 Touch Screens and General Maintenance

1.7.1 A quick note about touch screens

Do not be intimidated by 'touch screen' technology. You might worry that you could press too lightly or too hard, or press two buttons by mistake. All you have to do when using a touch screen is simply tap the button lightly once with your finger. The button will 'depress' (it will appear highlighted) and the system will respond.

1.7.2 General maintenance

To clean the DSC2 Control Panel simply wipe with a damp cloth. This should be done on a weekly basis.

The Control Panel is water resistant but immersion is not recommended.

2. DISTRESS OPERATION

This section includes:

2.1 What is a distress alert transmission?

"The transmission of a distress alert indicates that a mobile unit or person is in distress and requires immediate assistance"

N3112

2.2 What if you transmitted a false alarm?

If you accidentally transmitted a false alarm, you must inform the nearest Maritime Rescue Co-ordination Centre (MRCC) as soon as you have pressed the "CANCEL DISTRESS" button.
Use any communication means possible.
By not informing the nearest MRCC, you could cause others to put their lives at risk unnecessarily.

2.3 Nature of Distress

For Distress Operations, the "Nature of Distress" is well defined, as is shown in the table below:

Category	Nature of Distress
DISTRESS	• fire or explosion • flooding • collision • grounding • listing and in danger of capsizing • sinking • disabled and adrift • undesignated distress • abandoning ship • man overboard

2.4 Sending a distress alert

CONTROL PANEL
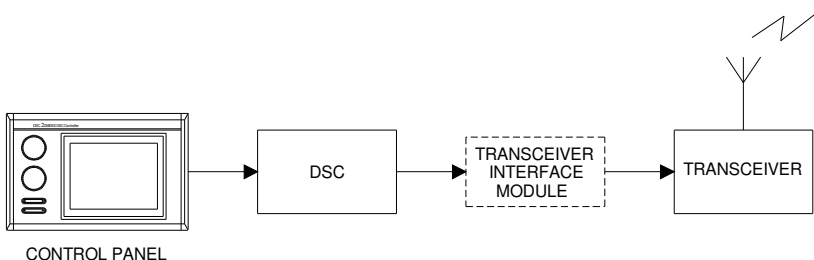
One of the main benefits of the ICS DSC2 system is that you can send a distress alert quickly and accurately even if your vessel is sinking rapidly and you do not have time to take any other action. The system will automatically transmit details of the emergency, ship's identity, ship's position (if this information is available) and your preferred response frequency to all vessels and coast stations within range which are monitoring DSC distress frequencies.

When sending any call on the DSC2 you always follow the same basic procedure:

1. Select type of call required
2. Compose the call
3. Confirm the information
4. Confirm that you want to send the call
5. Send the call
6. Await response

What follows is a step-by-step guide to the distress alert procedure, which we recommend that you read through several times so that you become familiar with the process.

You may also like to practice composing distress alerts. Always use the DISTRESS ALERT option in the CALL menu to practice composing distress alerts.

2.4.1 How to send a default distress alert

❶   *Lift the DISTRESS button cover*

❷   *Press and release the DISTRESS button*

This will activate the system's 'default' distress message which will be
displayed. You can now change the message if you want to and have the time
to do it.
See 'Changing the distress alert message' for details.

*You should now also hear a fast two-tone distress alarm and see the
COMPOSE DISTRESS ALERT screen:*

```
          COMPOSE DISTRESS ALERT
 ┌──────────────────────────────┐ ┌────────┐
 │ DSC frequency:               │ │ CHANGE │
 │  VHF Channel 70              │ └────────┘
 ├──────────────────────────────┤ ┌────────┐
 │ Nature:                      │ │ CHANGE │
 │  UNDESIGNATED                │ └────────┘
 ├──────────────────────────────┤ ┌────────┐
 │ Position:                    │ │ CHANGE │
 │  37°41'N  122°03'W 10:56 UTC │ └────────┘
 ├──────────────────────────────┤ ┌────────┐
 │ Subsequent communication:    │ │ CHANGE │
 │  SIMPLEX TELEPHONE           │ └────────┘
 └──────────────────────────────┘
   Press and hold DISTRESS button for
     5 seconds to send this alert
   ┌────────┐
   │ Cancel │
   └────────┘
```

❸ *Press the DISTRESS button again and this time hold it down for five seconds*

This step will start a system countdown which will be displayed on the screen. If you release the button before the countdown is complete, the system will then give you the option of aborting or continuing the call. It is difficult to send a false distress alert with the DSC2 but if you do, follow the 'Cancelling the distress alert' procedure detailed later in this section.

```
            SEND DISTRESS ALERT

     DISTRESS ALERT  [1]
     COUNTDOWN

       DSC frequency:
         VHF Channel 70
       Nature:
         UNDESIGNATED
       Position:
         37°41'N   122°04'W 10:57 UTC
       Subsequent communication:
         SIMPLEX TELEPHONE
```
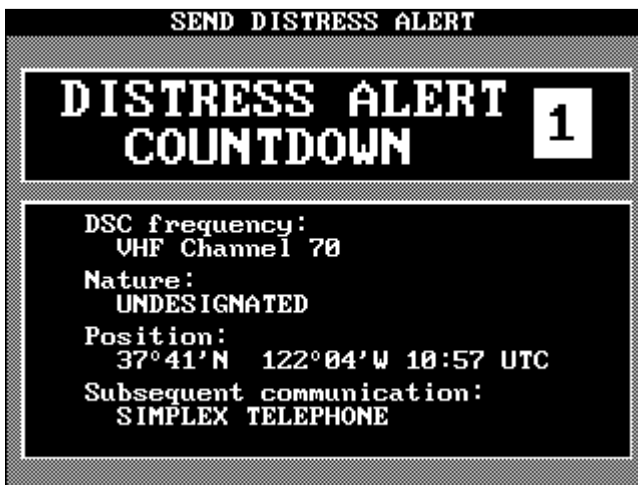
❹ *Once initiated, the distress message will repeat at roughly 3 to 4 minute intervals until either:*

• you press the "CANCEL DISTRESS" button, or,
• a coast radio station acknowledges your call.

If your system has manually tuned transceivers it will not automatically repeat distress alerts.
The operator must manually repeat the alert.

Between distress call attempts, the DSC system will automatically listen on the DSC frequency for an acknowledgement signal.

A coast station will normally respond to a distress alert by sending a DSC ACKNOWLEDGE signal on the relevant DSC frequency first:

```
       DISTRESS ACKNOWLEDGEMENT
 From Ship MMSI:
  123456789
 Distress MMSI: 110000000
 Nature: UNDESIGNATED
 Position:
  37°41'N  122°05'W 10:58 UTC
 Subsequent communication:
  SIMPLEX TELEPHONE


 Received: 22/03/96 11:09:36
  VHF Channel 70
     VHF1 tuned for call response
            1 Unread call

  OK
```
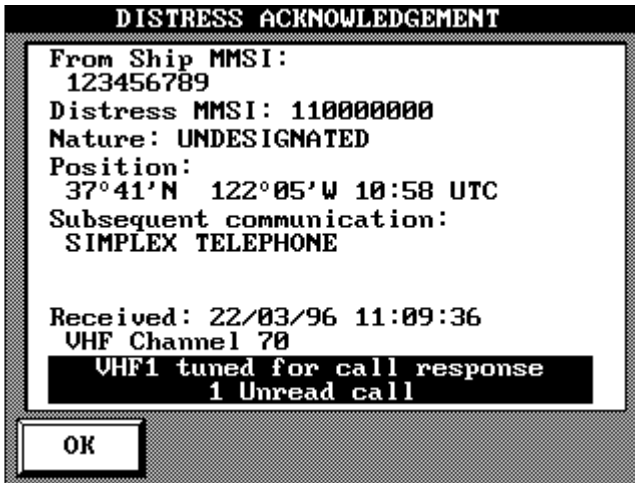
This procedure will automatically turn off distress call repeats from your system. Then it will respond on the radio channel and in the mode you have specified.

As soon as you receive an acknowledgement from a coast station you should then broadcast details of your situation using Radiotelephony or Radio Telex on the relevant distress frequency. Your RT message should take the following form:

- the distress signal 'MAYDAY'
- the words 'THIS IS' or 'DE' spoken as 'DELTA ECHO' in the case of language difficulties
- the nine-digit identity and the callsign or other identification of the ship, spoken three times
- the ship's position, if not included in the distress alert message
- the nature of distress and type of assistance wanted
- any other information which might help the rescue

Once you have alerted someone who can help you, stand by on the relevant rescue co-ordination channel and await further instructions.

GMDSS has been set up to ensure that it is the shore authorities who co-ordinate search and rescue (SAR) operations. In principle, only the shore authorities should be responding to a distress alert. They will then use a 'distress relay' to direct other vessels to your assistance, co-ordinating this on the nominated radiotelephone (RT) or NBDP (Telex) distress frequencies.

Ships responding to distress calls should not send a DSC distress acknowledgement as this automatically cancels the distress alert. This should be left to a coast station.

Only when one is convinced that the distress calling ship can not be heard by a coast station, it might be necessary to acknowledge and/or relay the distress.

2.4.2 What if no-one responds to your distress alert

If no-one has responded to your alert, you should immediately:

1. Make sure that your DSC2 system is working properly by checking 'system status' and that you are using the right equipment and frequency for your sea area and conditions (see page 18 for more information on frequencies)

2. Use any other means possible to send your message, for example INMARSAT satellite or an Emergency Position-Indicating Radio Beacon (EPIRB). See Chapter 7 for more information on sending satellite distress alerts.

Normally the DSC2 will keep repeating a distress alert until either it receives a DSC acknowledgement or you manually cancel the alert. This means that even if you have to abandon ship, the DSC will keep transmitting the alert for as long as the shipboard conditions permit.

IMPORTANT

A DSC2 system with manually tuned transceivers will not automatically repeat distress alerts. You must manually repeat each alert, as if you were sending a new distress alert, following the procedures as detailed in Chapter 8. The reason for installing a fully automatic system on board is therefore obvious.

2.4.3 Changing the distress alert message

When you press the "DISTRESS" button for the first time, the following screen will appear, showing the default message which will be sent out if you do not have time to change any of the entries:

```
┌───────────────────────────────────────────┐
│         COMPOSE DISTRESS ALERT            │
│ ┌─────────────────────────┐ ┌──────────┐  │
│ │ DSC frequency:          │ │ CHANGE   │  │
│ │  VHF Channel 70         │ └──────────┘  │
│ └─────────────────────────┘               │
│ ┌─────────────────────────┐ ┌──────────┐  │
│ │ Nature:                 │ │ CHANGE   │  │
│ │  UNDESIGNATED           │ └──────────┘  │
│ └─────────────────────────┘               │
│ ┌─────────────────────────┐ ┌──────────┐  │
│ │ Position:               │ │ CHANGE   │  │
│ │  NO POSITION SPECIFIED  │ └──────────┘  │
│ └─────────────────────────┘               │
│ ┌─────────────────────────┐ ┌──────────┐  │
│ │ Subsequent communication:│ │ CHANGE  │  │
│ │  SIMPLEX TELEPHONE      │ └──────────┘  │
│ └─────────────────────────┘               │
│   Press and hold DISTRESS button for      │
│     5 seconds to send this alert          │
│ ┌──────────┐                              │
│ │ Cancel   │                              │
│ └──────────┘                              │
└───────────────────────────────────────────┘
```

The screen gives you the option of changing:

• the frequency and the type of transceiver the message will be transmitted on
• details about the nature of the distress
• your position
• how you want coast stations and other vessels to respond to your distress alert (for example, by simplex telephone or radio telex).

If you want to change any of these, simply press the "CHANGE" button next to the relevant entry. This will take you to another screen where all the permitted choices are listed. For example, you might want to choose another frequency:

```
┌─────────────────────────────────────────────────────────┐
│              DSC  TRANSMIT  FREQUENCY                    │
│  ┌─────────────────────┐    ┌─────────────────────┐     │
│  │   VHF  CHANNEL  70   │    │   MF    2187.5kHz   │     │
│  └─────────────────────┘    └─────────────────────┘     │
│  ┌─────────────────────┐    ┌─────────────────────┐     │
│  │  INMARSAT  DISTRESS  │    │   HF    4207.5kHz   │     │
│  └─────────────────────┘    └─────────────────────┘     │
│                             ┌─────────────────────┐     │
│                             │   HF    6312.0kHz   │     │
│                             └─────────────────────┘     │
│  ┌─────────────────────┐    ┌─────────────────────┐     │
│  │ ALL HF MULTI FREQ    │    │   HF    8414.5kHz   │     │
│  └─────────────────────┘    └─────────────────────┘     │
│  ┌─────────────────────┐    ┌─────────────────────┐     │
│  │  USER MULTI FREQ     │    │   HF  12577.0kHz    │     │
│  └─────────────────────┘    └─────────────────────┘     │
│  ┌─────────────────────┐    ┌─────────────────────┐     │
│  │  Cancel             │    │   HF  16804.5kHz    │     │
│  └─────────────────────┘    └─────────────────────┘     │
└─────────────────────────────────────────────────────────┘
```

2.4.4 Choosing the right frequency

Within GMDSS a number of frequencies have been specifically allocated to be used by ships, aircraft or survival craft for distress communications. They should only be used for the distress, urgency or safety calls and distress traffic.

DSC/RT/Telex distress and safety frequencies			
Band	DSC distress/safety	RT distress/safety	Telex distress/safety
MF	2 187.5 kHz	2 182.0 kHz	2 174.5 kHz
HF 4 MHz	4 207.5 kHz	4 125.0 kHz	4 177.5 kHz
HF 6 MHz	6 312.0 kHz	6 215.0 kHz	6 268.0 kHz
HF 8 MHz	8 414.5 kHz	8 291.0 kHz	8 376.5 kHz
HF 12 MHz	12 577.0 kHz	12 290.0 kHz	12 520.0 kHz
HF 16 MHz	16 804.5 kHz	16 420.0 kHz	16 695.0 kHz
VHF	Channel 70	Channel 16	No facility

DSC distress calls or relayed distress calls are always repeated to increase the chance of the signal getting through. You can either send your call on a single frequency several times or as a single call over several frequencies:

1. Single frequency call attempt:

> Five consecutive DSC distress calls on ONE frequency in the MF, HF or VHF bands.

2. Multi-frequency call attempt:

> Up to six consecutive DSC distress calls sent on any of the six frequencies in the MF and HF bands only.

In MF and HF, there is no such thing as "The Right Frequency", but, generally, the greater the distance the signal will have to travel, the higher the frequency you will need in order to ensure that your message gets through. However you should also be aware that radio transmissions can also be affected by the following factors:

- the weather (storms - particularly electrical storms, rain etc.)
- the time of year
- sunspot activity
- local geography (on flat, open sea or surrounded by cliffs or mountains)
- time of day

In VHF, the most important factor is the "line of sight". As long as it is possible for your antenna to "see" the other antenna, you can be confident to have a base for reliable communications.

2.4.5 Manually cancelling the distress alert message

Normally your distress alert will be terminated by a coast station acknowledgement. However, if the only response to your alert is from another ship (by RT or Telex) or you did sent a false alarm, you should manually cancel your distress alert. To cancel the distress alert message:

❶ *Press the "CANCEL DISTRESS CALL" button:*

```
            GMDSS DSC SYSTEM
        37°41'N        COG:269°
       122°05'W        SOG:044kts
        11:19 UTC       22/03/96
        GPS INFORMATION VALID

VHF Channel 16 RT    MF   2182.0kHz
VHF Watch Rx OK      Rx   2182.0kHz
                     HF   Watch Rx OK

       SENDING VHF DISTRESS CALL


    CANCEL DISTRESS CALL        MENU
```
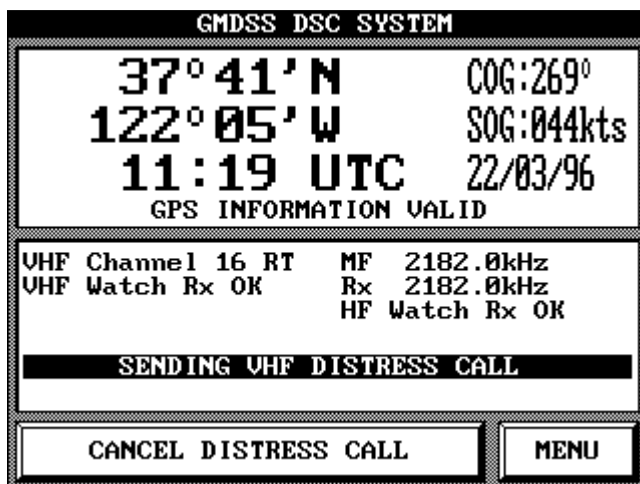
The system will ask you to confirm the distress cancellation for each radio currently transmitting a distress call.

❷ *Confirm the "CANCEL DISTRESS CALL"*

The system will ask you to confirm or cancel your action by pressing either the YES or NO button and will subsequently inform you about its actions:

```
┌──────────────────────────────┐
│          Confirm             │
├──────────────────────────────┤
│   Cancel VHF distress call?  │
│                              │
├──────────────────────────────┤
│      ┌─────┐    ┌─────┐       │
│      │ Yes │    │ No  │       │
│      └─────┘    └─────┘       │
└──────────────────────────────┘
```

```
┌──────────────────────────────┐
│         Information          │
├──────────────────────────────┤
│        Cancelling VHF        │
│        distress call         │
└──────────────────────────────┘
```
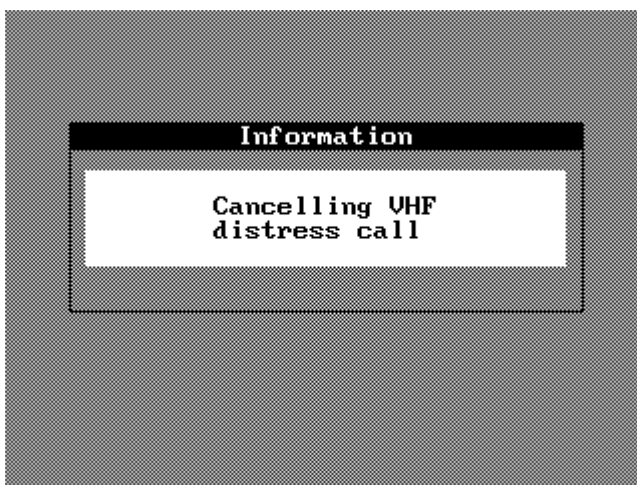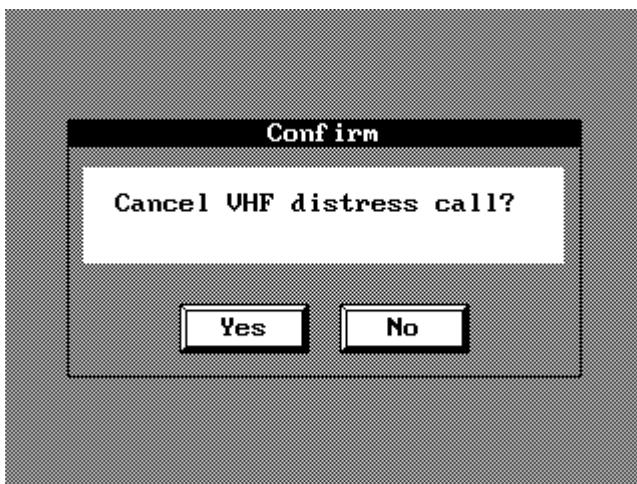
2.5 Receiving a distress alert

When you receive a distress alert, your first action should always be to establish the source of the alert. This will help you to decide how best to respond.

You could receive a distress alert directly from the vessel in distress, or a relayed distress alert from a coast station or, more rarely, a distress alert relayed from another vessel.

What follows is a step-by-step guide to the distress alert response procedure, which we recommend that you read through several times so that you become familiar with the process.

❶a *The DSC2 receives a distress alert*

When your system receives a distress alert you will hear a fast two-tone alarm and the Control Panel will display the following screen:

```
          DISTRESS ALERT
 From Ship MMSI:
  222320014
 Nature: SINKING
 Position:
  35°27'N   029°47'W 15:47 UTC
 Subsequent communication:
  J3E TELEPHONE



 Received: 22/03/96 11:22:23
  MF   2187.5kHz
     HF1 tuned for call response
          1 Unread call

   OK
```
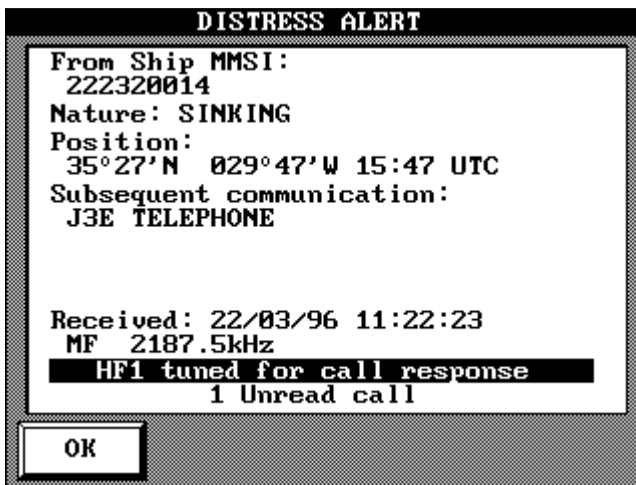
The display shows:

- MMSI of the ship in distress
- nature of distress (if details are available)
- position information (if details are available)
- what response method should be used for subsequent communication
- when the call was received and on which frequency
- how many unread calls are logged.

Subsequent communication will take place on the frequency associated with the band on which the call is received. The transceiver will automatically be tuned to this frequency.

If the system detected any errors in the call, it will display the CHECKSUM ERROR message. You would not normally act upon a message with a checksum error unless, by listening on the appropriate voice and/or Radio Telex frequencies, you could determine that you could usefully help.

Otherwise, read the message and then press the "OK" button to indicate that you have seen the DISTRESS ALERT RECEIVED warning screen. This will also cancel the alarms.

❶b *The DSC2 receives a relayed distress alert*

Occasionally a distress alert may be relayed to you. It could be that a coast station has identified you as the ship most able to help the ship in distress. You may not have received the original alert because it was sent on a non-standard frequency or without DSC. Rarely, you might also receive relays directly from other ships.

```
        DISTRESS RELAY
From: 222320014
Distress MMSI: 225600527
Call to:
 MMSI 233092000
Nature: FLOODING
Position:
 27°15'N  028°05'W 16:22 UTC
Subsequent communication:
 J3E TELEPHONE

Received: 31/10/95 13:40:30
 MF  2187.5kHz
    HF1 tuned for call response
         1 Unread call
   OK                  ACKNOWLEDGE
```

A distress relay will also contain the MMSI of the station that relayed the message to your ship.

If you receive a distress relay, you will hear the same fast two-tone alarm as for a distress alert. Again you can indicate to the system that you have read the relay by pressing the OK button. This will also turn off the alarm.

The DSC will automatically tune the correct transceiver to the required response frequency. You can then monitor the distress frequency and/or acknowledge the alert as described in Step 2.

❷ *Indicate that you have received the alert*

It is important that you do not try to acknowledge the distress alert via DSC as soon as you receive it. This is because a DSC distress acknowledgement call will automatically cancel the distress transmission. Where possible, only coast stations should acknowledge a distress alert and co-ordinate search and rescue operations. So, if you receive a distress alert, you must give the coast station time to acknowledge that alert.

The DSC2 has built-in safeguards to prevent you to acknowledge a distress alert until the call has met the necessary conditions.

While you are waiting for a coast station to respond, you should:

① Prepare for receiving the subsequent distress communication from the stricken vessel by tuning your RT receiver to the distress frequency in the band on which the distress alert message was received (normally the DSC system will automatically do this as soon as it receives a distress alert or will prompt you to re-tune manually if necessary).

② Signal that you have received the distress alert by transmitting an RT or Telex acknowledgement as specified by the alert message.

An RT distress acknowledgement message must follow IMO regulations. A typical RT distress alert response should contain:

- the distress signal MAYDAY
- the callsign or other identification of the station sending the distress message, spoken three times
- the words THIS IS (or DE spoken as DELTA ECHO in the case of language difficulties)
- the callsign or other identification of the station responding to the distress alert, spoken three times
- the word RECEIVED (or RRR spoken as ROMEO ROMEO ROMEO in the case of language difficulties)
- the distress signal MAYDAY again to end the call.

For example:

MAYDAY
FIREFOX FIREFOX FIREFOX
THIS IS
JAGUAR JAGUAR JAGUAR
RECEIVED
MAYDAY

Once you have signalled that you have received the distress alert, you should then monitor the distress frequency for further communications from the vessel or from the coast station. You may be directed by the coast station co-ordinating the SAR operations to help the vessel.

Remember:

You have a legal obligation to assist any vessel in distress.

If the distress alert is not acknowledged by a coast station you may then decide to send your own DSC relay or acknowledge message. First, we will take a closer look at relaying a distress alert. Then, we will find out how to acknowledge an alert using the DSC2.

❸ *Relay the alert to a coast station or all ships*

Use this relay option only if and when necessary!

```
                    DISTRESS ALERT
     From Ship MMSI:
      222320014
     Nature: SINKING
     Position:
      35°27'N  029°47'W 15:47 UTC
     Subsequent communication:
      J3E TELEPHONE



     Received: 31/10/95 13:12:17
      MF  2187.5kHz
        HF1 tuned for call response
              1 Unread call

     OK                        SEND RELAY
```

The relay option should not be used lightly as it can be very confusing for coast stations to receive the same distress alert both from the original ship and from other ships which have responded to the alert.

To try and avoid the explosion of information that would occur when more than one vessel tries to relay, the ICS DSC2 system will flash up a warning when you attempt a relay and ask you to confirm that you do wish to proceed. It will also only give you the relay option if it received the call less than five minutes ago.

To send a relay, you can either press the "SEND RELAY" button at the bottom of the DISTRESS ALERT screen (as shown above) or choose the "DISTRESS RELAY" option from the TYPE OF CALL screen. The DISTRESS ALERT screen will appear as soon as the DSC detects a distress alert.

If you have already pressed the "OK" button, you can still access this message screen via the Message Log. To get to the TYPE OF CALL screen press the "CALL" button on the Initial Display Screen. To get to the Message Log press the "LOG" button:

```
        GMDSS DSC SYSTEM

      37°42'N       COG:000°
     122°06'W       SOG:000kts
      10:55 UTC     22/03/96
        GPS INFORMATION VALID

  VHF Channel 16      MF   2182.0kHz
  VHF Watch Rx OK     Rx   2182.0kHz
                      HF Watch Rx OK



   CALL  |   LOG  |  STATUS  |   MENU
```

Pressing the "SEND RELAY" button (menu screen on the previous page) will take you into the COMPOSE DISTRESS RELAY screen:

```
       COMPOSE DISTRESS RELAY
  Call to:                       |CHANGE|
   MMSI 000000000
  DSC frequencies:               |CHANGE|
   MF  2187.5kHz  Rx  2187.5kHz
  Distress MMSI:                 |CHANGE|
   222320014
  Nature:                        |CHANGE|
   SINKING
  Distress position:             |CHANGE|
   35°27'N  029°48'W 15:47 UTC
  Subsequent communication:      |CHANGE|
   J3E TELEPHONE
   Cancel    |     Send Call
```

This screen gives you the option of changing:

- the type of call (e.g. to all ships or individual)
- the radio equipment and frequency the call will be transmitted on
- the MMSI of the vessel in distress *
- the nature of the distress *
- the position of the vessel in distress *
- the response method required *

* If this information was included in the original distress alert, the DSC2 will
  automatically copy it to this screen.

When you are satisfied that the message is ready for sending, simply press
the "SEND CALL" button (or the CANCEL button if you want to cancel the
distress relay or return to the previous screen).

As a safeguard to prevent unnecessary relays, the system will then flash up a
relay warning screen:
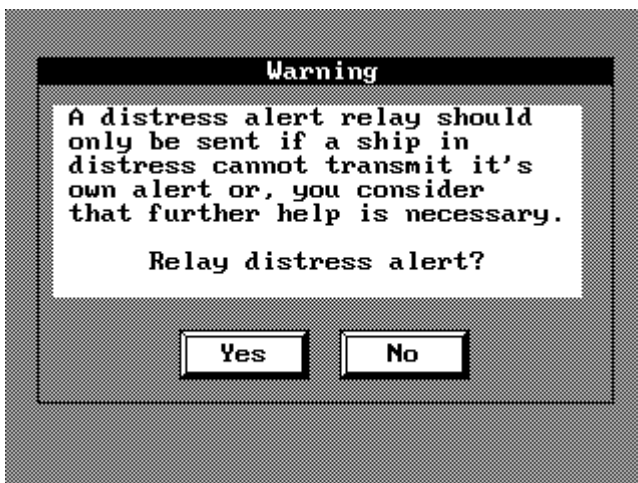
Pressing YES, will take you into the SEND CALL
CONFIRMATION/DISTRESS RELAY screen:

```
      SEND CALL CONFIRMATION
          DISTRESS RELAY
Distress MMSI: 232444444
Distress Nature: COLLISION
Distress position:
 48°55'N  019°55'W 08:57 UTC
Call to:
 MMSI 002320014 FALMOUTH RCC
Subsequent communication:
 J3E TELEPHONE
Transmit frequency:
 MF  2187.5kHz

  Press DISTRESS button to send

Cancel
```

To send this distress relay press the red DISTRESS button once. The next
screen simply confirms the details of the relay being send:

```
            Information

        Sending distress relay
             using HF1
```

❹ *Send a DSC acknowledge*

Warning! You should only use the acknowledge option as a last resort, as it will inhibit a distress alert from being sent to any other vessel or coast station. If you do acknowledge a distress alert, it is then your responsibility to ensure that the message gets through to an MRCC - by whatever means possible.

Normally, 'acknowledging' something means that you are simply confirming that you have received or noticed it. In the special case of distress alerts, 'acknowledge' has more serious implications - it means that you have accepted the responsibility to undertake all actions necessary as required by the Distress Alert message.

By sending an ACKNOWLEDGE from your DSC2 Control Panel you will automatically cancel any further transmissions from the vessel in distress of that distress alert.

IMO/GMDSS state that ships should not normally acknowledge a distress alert unless:

• no Coast Station/MRCC appears to have acknowledged the call, and,
• the distress alert continues to be repeated.

We have built safeguards into the ICS DSC2 system so that you will not be given the option to acknowledge a distress alert until all the following conditions have been met:

1. The call has not already been acknowledged.
2. The call is a repeat distress alert.
3. Less than five minutes have elapsed since the call was received.

To send a DSC acknowledge, press the "ACKNOWLEDGE" button at the bottom of the DISTRESS ALERT screen which you can view in the Message Log. To get to the Message Log press the "LOG" button on the Initial Display Screen.

```
            DISTRESS ALERT
 From Ship MMSI:
  222320014
 Nature: LISTING
 Position:
  12°54'N  014°42'W 12:55 UTC      Last>
 Subsequent communication:
  J3E TELEPHONE                    <First

                                   Next>>
 Received: 30/10/95 16:41:40
  MF  2187.5kHz                    <<Prev
  HF1 tuned for call response
            Entry 26 of 26

   Cancel            RELAY   ACKNOWLEDGE
```

Pressing the "ACKNOWLEDGE" button will take you into the COMPOSE
DISTRESS ACKNOWLEDGE screen:

```
┌─────────────────────────────────────────────────────┐
│          COMPOSE DISTRESS ACKNOWLEDGE                 │
├────────────────────────────────────────┬─────────────┤
│ DSC frequency:                         │             │
│   MF   2187.5kHz                       │   CHANGE    │
├────────────────────────────────────────┼─────────────┤
│ Distress MMSI:                         │             │
│   222320014                            │   CHANGE    │
├────────────────────────────────────────┼─────────────┤
│ Nature:                                │             │
│   SINKING                              │   CHANGE    │
├────────────────────────────────────────┼─────────────┤
│ Distress position:                     │             │
│   35°27'N  029°48'W 15:49 UTC          │   CHANGE    │
├────────────────────────────────────────┼─────────────┤
│ Subsequent communication:              │             │
│   J3E TELEPHONE                        │   CHANGE    │
├────────────────────────────────────────┴─────────────┤
│   ┌────────────┐    ┌──────────────────────┐          │
│   │  Cancel    │    │      Send Call       │          │
│   └────────────┘    └──────────────────────┘          │
└─────────────────────────────────────────────────────┘
```

This screen gives you the option of changing:

• the radio equipment and frequency the call will be transmitted on
   (normally the same frequency on which you received the alert)
• the MMSI of the vessel in distress *
• the nature of the distress *
• the position of the vessel in distress *
• the response method required *

* If this information was included in the original distress alert, the
DSC2 will automatically copy it to this screen.

When you are satisfied that the message is ready for sending, simply press
the "SEND CALL" button or the "CANCEL" button if you want to cancel
the distress relay or return to the previous screen.

The system will now flash up a warning when you attempt to acknowledge and ask you to confirm that you wish to proceed:

```
┌─────────────────────────────────────┐
│              Warning                 │
├─────────────────────────────────────┤
│ Distress alerts should normally      │
│ be acknowledged by a coast           │
│ station.                             │
│ You are responsible for              │
│ informing a coast station by         │
│ any practical means if you           │
│ acknowledge this distress alert      │
│                                      │
│    Acknowledge distress alert?       │
│                                      │
│      ┌───────┐   ┌───────┐           │
│      │  Yes  │   │  No   │           │
│      └───────┘   └───────┘           │
└─────────────────────────────────────┘
```

Pressing "YES", will take you into the SEND CALL CONFIRMATION/DISTRESS RELAY screen:

```
┌─────────────────────────────────────┐
│        SEND CALL CONFIRMATION        │
├─────────────────────────────────────┤
│        DISTRESS   ACKNOWLEDGEMENT    │
│ Distress MMSI: 222320014             │
│ Distress Nature: SINKING             │
│ Distress position:                   │
│  35°27'N  029°48'W 15:49 UTC         │
│ Call to:                             │
│  ALL SHIPS                           │
│ Subsequent communication:            │
│  J3E TELEPHONE                       │
│ DSC frequency:                       │
│  MF  2187.5kHz                       │
├─────────────────────────────────────┤
│   Press DISTRESS button to send      │
├─────────────────────────────────────┤
│ ┌────────┐                           │
│ │ Cancel │                           │
│ └────────┘                           │
└─────────────────────────────────────┘
```
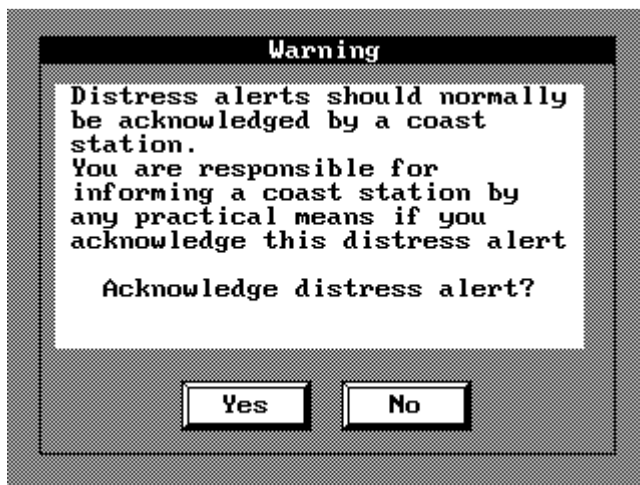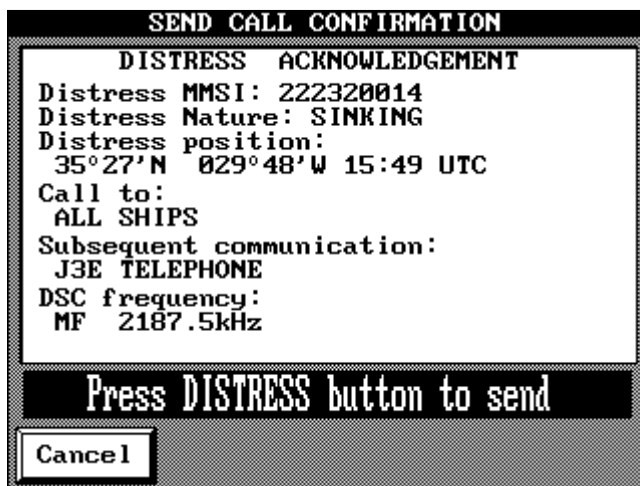
To send this DSC acknowledgement press the red DISTRESS button once.
The display confirms the details of the acknowledgement:
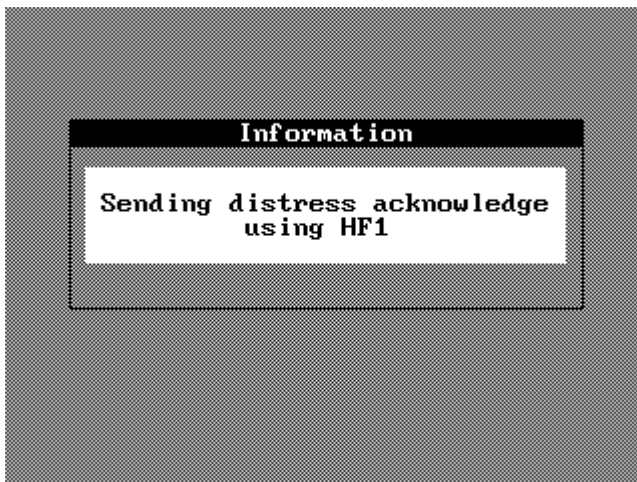
If you do acknowledge a distress alert, remember that you must then use
whatever means possible to ensure that the message is relayed to the nearest
available MRCC.
This may mean using radio telephone, telex or satellite transmission to get
your message across. We will look at other forms of distress communication
in the RadioTelex & Inmarsat C section.

*Remember that you can only acknowledge a repeated VHF or MF/HF
distress call.*

2.6 What if something goes wrong?

If the system does not respond in the way you expect when dealing with
distress alerts, you may need to consult the Help! chapter.

3.   URGENCY CALLS

This section includes:

3.1 When would you use an Urgency Call?

'The Urgency Call format and the Urgency Signal indicate that the calling station has a very urgent message to transmit concerning the safety of a mobile station or person'

N3115

3.2 Differences and Examples

For a Distress Call, the possible "Natures of Distress" are clearly defined. For Urgency and Safety Calls however, we can only rely on the basic definition and illustrate the differences between Urgency and Safety with relevant examples in the table below:

Category	Examples
URGENCY	• seriously injured crew member • engine failure but not yet in trouble • cargo shifted but not yet in trouble
SAFETY	• iceberg • storm • oil rig being towed through shipping lanes • failure of an important light buoy • new, unmarked wreck

3.3 How do you send an Urgency Call?

Following is a step-by-step guide to the urgency call procedure, which we recommend that you read through several times so that you become familiar with the process.

Urgency calls are divided into two parts:

3.3.1   Announcing the Urgency Call
3.3.2   **Error! Not a valid link.**

3.3.1 Announcing the Urgency Call

❶ Press either the "CALL" button at the bottom of the Initial Display Screen or the "COMPOSE CALL" button on the Main Menu screen. The TYPE OF CALL screen should appear:

```
              TYPE OF CALL
   ┌──────────────────┐  ┌──────────────────┐
   │  DISTRESS ALERT  │  │    INDIVIDUAL    │
   └──────────────────┘  └──────────────────┘
   ┌──────────────────┐  ┌──────────────────┐
   │ ALL SHIPS URGENCY│  │      GROUP       │
   └──────────────────┘  └──────────────────┘
   ┌──────────────────┐  ┌──────────────────┐
   │ ALL SHIPS SAFETY │  │ GEOGRAPHIC AREA  │
   └──────────────────┘  └──────────────────┘
   ┌──────────────────┐  ┌──────────────────┐
   │ DISTRESS RELAY   │  │    TELEPHONE     │
   └──────────────────┘  └──────────────────┘
   ┌──────────────────┐
   │ INMARSAT DISTRESS│
   └──────────────────┘
   ┌─────────┐          ┌──────────────────┐
   │ Cancel  │          │    TEST CALL     │
   └─────────┘          └──────────────────┘
```

❷ You now have the choice of pressing one of four buttons:

- the "ALL SHIPS URGENCY" call button, or

- the "INDIVIDUAL" call button, or

- the "GROUP" call button, or

- the "GEOGRAPHIC AREA" call button.

The button you choose to press depends on the nature of the urgency and the type of station that you want to contact. Procedures to send "INDIVIDUAL", "GROUP" or "GEOGRAPHIC AREA" calls are very similar to the procedure to send an "ALL SHIPS URGENCY" call, but you should read the comments at the end of this section.

If you press the "ALL SHIPS URGENCY" call button, the COMPOSE ALL SHIPS URGENCY CALL screen appears:

❸ You now have the option of changing:

- the radio equipment and frequency (the screen will show the default frequency)
- the response communications required (again the screen will show the default method). 'EOS' indicates 'End Of Signal'.

You may want to select an other radio transceiver and frequency for radio propagation reasons. Turn to page 18 for more information on different frequencies.

If you decide to change the response communications required - for example, if you wanted to change the position information - press the "CHANGE" button next to the relevant entry which takes you into the TELECOMMAND INFORMATION screen:

```
┌─────────────────────────────────────────────┐
│         TELECOMMAND  INFORMATION             │
│  ┌──────────────────────────┐                │
│  │ SIMPLEX  TELEPHONE       │                │
│  └──────────────────────────┘                │
│  ┌──────────────────────────┐                │
│  │ DUPLEX  TELEPHONE        │                │
│  └──────────────────────────┘                │
│  ┌──────────────────────────┐                │
│  │       POSITION           │                │
│  └──────────────────────────┘                │
│  ┌──────────────────────────┐                │
│  │    NO  INFORMATION       │                │
│  └──────────────────────────┘                │
│  ┌──────────────────────────┐                │
│  │ UNABLE  TO  COMPLY       │                │
│  └──────────────────────────┘                │
│  ┌──────────┐                                │
│  │ Cancel   │                                │
│  └──────────┘                                │
└─────────────────────────────────────────────┘
```

Press the "POSITION" button to enter the POSITION screen. Key in the new position information or you select the "NO INFORMATION" message:

```
            POSITION
  LATITUDE   LONGITUDE      UTC
  37°41' N   122°05' W      17:20
          Enter position

          N              1    2    3
   W             E
          S              4    5    6

   No Information        7    8    9

  Cancel    OK           ◄    0    ►
```

When you are happy with the position information shown, press "OK", and the new position information will automatically be added to your urgency call.

3.3.2 Transmitting the Urgency Call

❶ If the default information is correct, or you have already made any changes necessary, press the "SEND CALL" button at the bottom of the screen. The SEND CALL CONFIRMATION screen will now appear:

```
       SEND CALL CONFIRMATION
            ALL SHIPS CALL
 Category: URGENCY
 Call to:
  ALL SHIPS

 Telecommand: SIMPLEX TELEPHONE
  VHF Channel 16
  No acknowledge required(EOS)

 DSC frequency:
  VHF Channel 70


      Press ENTER button to send

  Cancel
```

❷ The SEND CALL CONFIRMATION screen confirms:

- category of the call (i.e. urgency)
- type (e.g. all ships)
- telecommand information (e.g. communications required, on which channel, whether acknowledge is required, position if available etc.)
- transmit frequency

If you don't want to send this call, or you want to get back to the previous screen - COMPOSE ALL SHIPS URGENCY CALL - then press the CANCEL button on the screen.

If you still want to send this call, press the ENTER hardware button. Your call will then be transmitted:
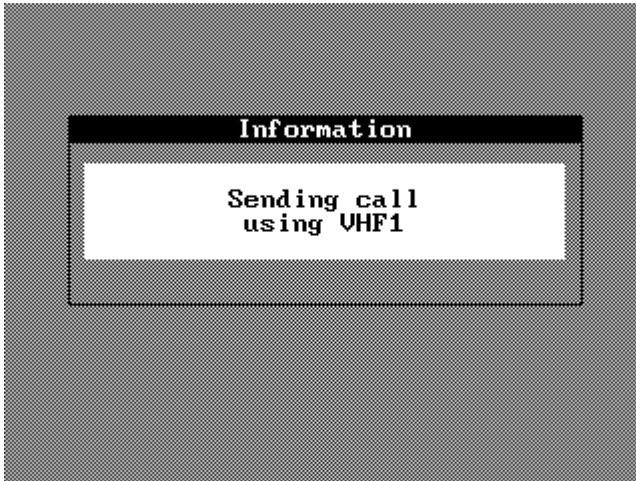
❸ Once the call has been transmitted, you can then deliver your urgency message using the communications method specified. For example, if you announced that the communications method was 'Simplex telephone: VHF Channel 16', you should broadcast the details of your urgency over that channel as soon as you have transmitted the DSC urgency call.

The DSC system will automatically set up the equipment for the communications required or prompt you to do so if your transceivers are manually tuned.

You should broadcast the details of your call according to the guidelines for urgency calls laid down by the IMO. A typical RT urgency message might take the following form:

> **PAN PAN   PAN PAN   PAN PAN**
> **ALL SHIPS   ALL SHIPS   ALL SHIPS**
> **THIS IS**
> **JALAGOPAL   JALAGOPAL   JALAGOPAL**
> **15 MILES SOUTHWEST OF CALF OF MAN LOST ENGINE**
> **CONTROL AND DRIFTING**
> **NORTH NORTH EAST ANCHORS NOT HOLDING REQUIRE TOW**
> **URGENTLY JALOGOPAL**
> **CALLSIGN ATRZ OVER**

'PAN PAN':   This is the term used to identify an urgency message. ("MAYDAY" is used exclusively for distress alerts and "SECURITE" is used for safety calls - see the next section for further details on safety calls.)

'ALL SHIPS':   This is the type of the call.

'JALAGOPAL': The name of the ship sending the call.

'15 MILES ...URGENTLY':   The nature of the urgency.

'CALLSIGN ATRZ':   The call sign of the ship making the urgency call.

'OVER':   Used to signify that the end of the message.

Once you have alerted someone who can help you, stand by on the relevant channel and await further instructions.

3.4 Sending Individual, Group or Geographic Area Urgency Calls

If you want to direct your DSC Urgency Call to a specific ship or group of ships (say, for example, a fishing fleet) or to ships in a specific geographic area, select the "INDIVIDUAL", "GROUP" or "GEOGRAPHIC AREA" options as appropriate on the TYPE OF CALL screen. You can access the TYPE OF CALL screen by pressing either the "CALL" button on the Initial Display Screen or the "COMPOSE CALL" button on the Main Menu.

The relevant COMPOSE CALL screen will then appear:

```
                    TYPE OF CALL
  ┌──────────────────────┐  ┌──────────────────────┐
  │   DISTRESS ALERT     │  │     INDIVIDUAL       │
  └──────────────────────┘  └──────────────────────┘
  ┌──────────────────────┐  ┌──────────────────────┐
  │  ALL SHIPS URGENCY   │  │       GROUP          │
  └──────────────────────┘  └──────────────────────┘
  ┌──────────────────────┐  ┌──────────────────────┐
  │  ALL SHIPS SAFETY    │  │   GEOGRAPHIC AREA    │
  └──────────────────────┘  └──────────────────────┘
  ┌──────────────────────┐  ┌──────────────────────┐
  │   DISTRESS RELAY     │  │     TELEPHONE        │
  └──────────────────────┘  └──────────────────────┘
  ┌──────────────────────┐
  │  INMARSAT DISTRESS   │
  └──────────────────────┘
  ┌──────────┐              ┌──────────────────────┐
  │ Cancel   │              │     TEST CALL        │
  └──────────┘              └──────────────────────┘
```

3.4.1 Sending a Geographic Area Urgency Call.

❶ Press the "GEOGRAPHIC AREA" button on the TYPE OF CALL screen. This takes you to the COMPOSE GEOGRAPHIC AREA CALL screen:

```
        COMPOSE  GEOGRAPHIC  AREA  CALL
┌──────────────────────────────────┐ ┌────────┐
│DSC frequency:                     │ │        │
│ MF   2187.5kHz                    │ │ CHANGE │
└──────────────────────────────────┘ └────────┘
┌──────────────────────────────────┐ ┌────────┐
│Call to:                           │ │        │
│ Lat  Long    N-S Size  W-E Size   │ │ CHANGE │
│ 00°N 000°E    01°        01°      │ │        │
└──────────────────────────────────┘ └────────┘
┌──────────────────────────────────┐ ┌────────┐
│Call category:                     │ │        │
│ URGENCY                           │ │ CHANGE │
└──────────────────────────────────┘ └────────┘
┌──────────────────────────────────┐ ┌────────┐
│Telecommand: J3E TELEPHONE         │ │        │
│ MF   2182.0kHz   Rx   2182.0kHz   │ │ CHANGE │
│ No acknowledge required(EOS)      │ │        │
└──────────────────────────────────┘ └────────┘

  ┌──────────┐   ┌────────────────────┐
  │ Cancel   │   │    Send Call       │
  └──────────┘   └────────────────────┘
```

❷ This screen helps you to compose your call. You need to check:

- the transceiver and the frequency the urgency call will be transmitted on.
- the geographic area you want to send the call out to. See next paragraph for more information.
- the call category - in this case, urgency.
- the response communications required.

This information is all co-dependent, so, for example, if you changed the category to urgency by pressing the change button next to the Call Category entry and selecting 'urgency', you would find that the telecommand and frequency information would also have changed automatically to the relevant default settings for an urgency call.

3.4.2 Selecting the geographic area for your call

To specify the geographic area for your call, press the "CHANGE" button next to the latitude and longitude information entry on the COMPOSE GEOGRAPHIC AREA CALL screen (see above).

To work out the geographic area, you need to think of it as a box:

Reference Point
(10ºN 20ºW)

(A)

20º

(B)

30º
(C)

First of all you must specify the co-ordinates of the point in the top left hand corner of the box by latitude and longitude (A).

Then, specify the north-south dimension B (which equates to the depth of the box) in degrees and the east-west dimension C (which equates to the width of the box) in degrees.

Taking the example above, the geographic area would be:


```
              GEOGRAPHIC AREA
  Lat      Long     N-S Size   W-E Size
  10° N    020° E    20°         30°
     Enter North-West reference point
     and vertical and horizontal size

         N              1    2    3
    W        E
         S              4    5    6

                       7    8    9

 Cancel    OK          ◄    0    ►
```

Input this information using the GEOGRAPHIC AREA screen keypad, then press the "OK" button to accept the data or the "CANCEL" button if you made a mistake. This will return you to the COMPOSE GEOGRAPHIC AREA CALL screen. To send the call, simply press the SEND CALL button at the bottom of the screen and follow the procedures for sending a call outlined in paragraph 4.3.

If a ship equipped with DSC receives a geographic area call, the DSC system will display the call. If the DSC system is connected to a position information source, for example a GPS, which is providing valid position information, than only the relevant calls are displayed. If there is no valid position information, - even if the ship's position has been entered manually - all geographic area calls will be displayed. If valid position information is available, only the relevant calls will be displayed.
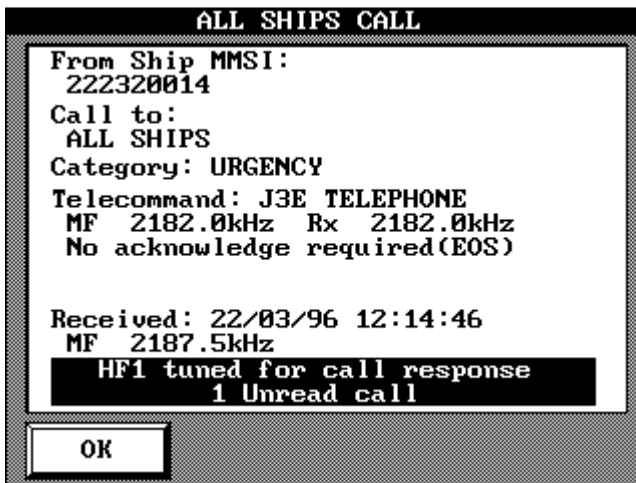
3.4.3 Individual and group calls

INDIVIDUAL or GROUP urgency calls follow exactly the same procedure as GEOGRAPHIC AREA calls.

The GROUP option enables you to send a call to all stations with the same group MMSI. The INDIVIDUAL option enables you to contact a specific vessel by entering its MMSI. You can either enter an MMSI manually or call up one from your MMSI directory.

3.5 How to respond to an urgency call

❶ If the DSC2 system has received an urgency call, you will hear a rapid two-tone alarm and the relevant screen will be displayed, depending on the type of call (ALL SHIPS, INDIVIDUAL, etc.):

```
          ALL SHIPS CALL
  From Ship MMSI:
   222320014
  Call to:
   ALL SHIPS
  Category: URGENCY
  Telecommand: J3E TELEPHONE
   MF  2182.0kHz  Rx  2182.0kHz
   No acknowledge required(EOS)


  Received: 22/03/96 12:14:46
   MF  2187.5kHz
      HF1 tuned for call response
            1 Unread call

   OK
```

A highlighted bar at the bottom of the screen will indicate which radio equipment is tuned for your response. Press the "OK" button and the system reverts to the Initial Display Screen which displays the "CANCEL RADIO TUNE" button at the bottom of the screen.

❷ The DSC2 will automatically tune the appropriate equipment to the correct channel. If your transceiver was in use when the call was received, the TUNE RADIO button will be displayed. You can then respond to the urgency call according to IMO regulations.

You would not normally acknowledge an urgency call, unless it was an INDIVIDUAL call and the ship making the call had requested acknowledgement:

```
          INDIVIDUAL CALL
 From Ship MMSI:
  222320014
 Call to:
  MMSI 110000000
 Category: URGENCY
 Telecommand: J3E TELEPHONE
  MF  2182.0kHz  Rx  2182.0kHz
  Acknowledge required(Ack.RQ)


 Received: 22/03/96 12:17:54
  MF  2187.5kHz
     HF1 tuned for call response
           1 Unread call

   OK                    ACKNOWLEDGE
```
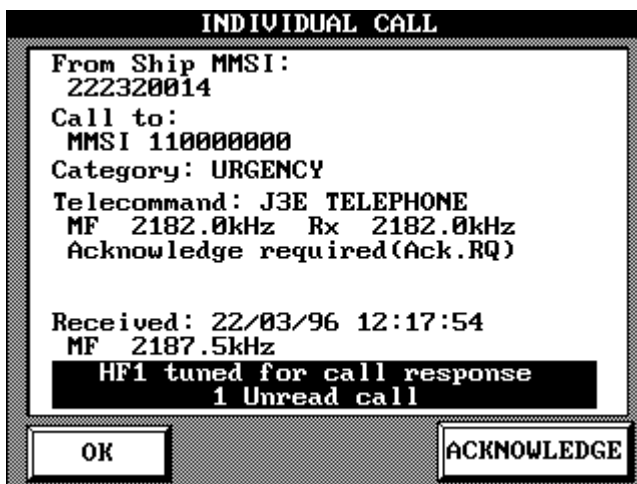
If you do need to acknowledge an INDIVIDUAL call, use the following procedure:

❸ Press the "ACKNOWLEDGE" button at the bottom of a received call screen or a Message Log screen.

You will then see the COMPOSE INDIVIDUAL CALL ACKNOWLEDGE screen, as shown on the next page:

```
COMPOSE INDIVIDUAL CALL ACKNOWLEDGE
Call to:                              ┌────────┐
 MMSI 222320014                       │ CHANGE │
                                      └────────┘
DSC frequency:                        ┌────────┐
 MF   2187.5kHz                       │ CHANGE │
                                      └────────┘
Call category:                        ┌────────┐
 URGENCY                              │ CHANGE │
                                      └────────┘
Telecommand: J3E TELEPHONE            ┌────────┐
 MF  2182.0kHz  Rx  2182.0kHz         │ CHANGE │
 Acknowledgement(Ack.BQ)             └────────┘

 ┌───────────┐   ┌───────────────────┐
 │  Cancel   │   │    Send Call      │
 └───────────┘   └───────────────────┘
```

Once you have made any required changes, press the "SEND CALL"
button. Press the "CANCEL" button, if you want to cancel the
acknowledgement or access the previous screen.

Pressing the "SEND CALL" button brings you into the SEND CALL
CONFIRMATION screen. If you still want to send the call, press the
"ENTER" button. Your call will then be transmitted:

```
        SEND CALL CONFIRMATION
    INDIVIDUAL CALL ACKNOWLEDGEMENT
 Category: URGENCY
 Call to:
  MMSI 222320014

 Telecommand: J3E TELEPHONE
  MF  2182.0kHz  Rx  2182.0kHz
  Acknowledgement(Ack.BQ)

 DSC frequency:
  MF  2187.5kHz

     Press ENTER button to send
 ┌───────────┐
 │  Cancel   │
 └───────────┘
```

3.6 Accessing urgency functions via other menus

Under normal circumstances, you view incoming Urgency Calls as the system automatically displays them, and then press the "OK" button to show that you have read the message. You can also press the "ACKNOWLEDGE" button if you are acknowledging an individual Urgency Call. But if you want to review an incoming Urgency Call at a later stage, you can do so by calling up the Message Log and pressing the "DISTRESS CALLS" button to view all distress or urgency calls, "OTHER CALLS" to view all other calls including safety calls or "ALL CALLS" to view all incoming calls.

3.7 What if something goes wrong?

If you make a mistake whilst choosing a type of call or composing a call, you still have the opportunity to cancel that call or change the information it contains at each stage of the procedure.

If the system does not respond in the way you expect, you may need to consult the Help! Section.

4.   SAFETY CALLS

This section includes:

4.1 When would you use a safety call?

'The Safety Call format or the Safety Signal indicates that the calling station has an important navigational or meteorological warning to transmit'

4.2 Differences and Examples

For a Distress Call, the possible "Natures of Distress" are clearly defined. For Urgency and Safety Calls however, we can only rely on the basic definition and illustrate the differences between Urgency and Safety with relevant examples in the table below:

Category	Examples
URGENCY	• seriously injured crew member • engine failure but not yet in trouble • cargo shifted but not yet in trouble
SAFETY	• iceberg • storm • oil rig being towed through shipping lanes • failure of an important light buoy • new, unmarked wreck

4.3 How do you send a Safety Call?

What follows is a step-by-step guide to the safety call procedure, which we recommend that you read through several times so that you become familiar with the process.

Safety calls are divided into two parts:

4.3.1 **Error! Not a valid link.**
4.3.2 **Error! Not a valid link.**

4.3.1 Announcing the Safety Call

❶ Press either the "CALL" button at the bottom of the Initial Display Screen or the "COMPOSE CALL" button on the Main Menu screen. The TYPE OF CALL screen should appear:

```
┌──────────────── TYPE OF CALL ────────────────┐
│  ┌─────────────────┐    ┌─────────────────┐  │
│  │ DISTRESS ALERT  │    │   INDIVIDUAL    │  │
│  └─────────────────┘    └─────────────────┘  │
│  ┌─────────────────┐    ┌─────────────────┐  │
│  │ALL SHIPS URGENCY│    │      GROUP      │  │
│  └─────────────────┘    └─────────────────┘  │
│  ┌─────────────────┐    ┌─────────────────┐  │
│  │ ALL SHIPS SAFETY│    │ GEOGRAPHIC AREA │  │
│  └─────────────────┘    └─────────────────┘  │
│  ┌─────────────────┐    ┌─────────────────┐  │
│  │ DISTRESS RELAY  │    │    TELEPHONE    │  │
│  └─────────────────┘    └─────────────────┘  │
│  ┌─────────────────┐                         │
│  │INMARSAT DISTRESS│                         │
│  └─────────────────┘                         │
│  ┌────────┐              ┌─────────────────┐  │
│  │ Cancel │              │    TEST CALL    │  │
│  └────────┘              └─────────────────┘  │
└───────────────────────────────────────────────┘
```

❷ You now have the choice of pressing one of four buttons:

- the "ALL SHIPS SAFETY" call button, or

- the "INDIVIDUAL" call button, or

- the "GROUP" call button, or

- the "GEOGRAPHIC AREA" call button.

The button you choose to press depends on the nature of the urgency and the type of station that you want to contact. Procedures to send INDIVIDUAL, GROUP or GEOGRAPHIC AREA calls are very similar to the procedure to send an ALL SHIPS SAFETY call, but you should read the comments at the end of this section.

If you press the ALL SHIPS Safety Call button, the COMPOSE ALL SHIPS SAFETY CALL screen appears:

```
     COMPOSE ALL SHIPS SAFETY CALL
┌─────────────────────────────────┐ ┌────────┐
│ DSC frequency:                  │ │ CHANGE │
│  MF   2187.5kHz                 │ │        │
└─────────────────────────────────┘ └────────┘
┌─────────────────────────────────┐ ┌────────┐
│ Telecommand: J3E TELEPHONE      │ │ CHANGE │
│  MF   2182.0kHz   Rx   2182.0kHz│ │        │
│  No acknowledge required(EOS)   │ │        │
└─────────────────────────────────┘ └────────┘



  ┌───────────┐   ┌──────────────────┐
  │  Cancel   │   │    Send Call     │
  └───────────┘   └──────────────────┘
```

❸ You now have the option of changing:

- the radio equipment and frequency (the screen will show the default frequency)
- the response communications required (again the screen will show the default method). 'EOS' indicates 'End Of Signal'.

You may want to select an other radio transceiver and frequency for radio propagation reasons. Turn to page 18 for more information on different frequencies.

If you decide to change the response communications required - for example, if you wanted to change the position information - press the "CHANGE" button next to the relevant entry which takes you into the TELECOMMAND INFORMATION screen:

```
┌─────────────────────────────────────────────┐
│         TELECOMMAND  INFORMATION             │
│  ┌─────────────────────────┐                 │
│  │   SIMPLEX  TELEPHONE     │                 │
│  └─────────────────────────┘                 │
│  ┌─────────────────────────┐                 │
│  │   DUPLEX  TELEPHONE      │                 │
│  └─────────────────────────┘                 │
│  ┌─────────────────────────┐                 │
│  │        POSITION          │                 │
│  └─────────────────────────┘                 │
│  ┌─────────────────────────┐                 │
│  │     NO  INFORMATION      │                 │
│  └─────────────────────────┘                 │
│  ┌─────────────────────────┐                 │
│  │   UNABLE  TO  COMPLY     │                 │
│  └─────────────────────────┘                 │
│  ┌──────────┐                                │
│  │  Cancel  │                                │
│  └──────────┘                                │
└─────────────────────────────────────────────┘
```

Press the "POSITION" button to enter the POSITION screen. Key in the new position information or select the "NO INFORMATION" message:

```
                    POSITION
      LATITUDE     LONGITUDE        UTC
      37°41' N     122°05' W      17:20
              Enter position

            N                1     2     3
     W              E
            S                4     5     6

      No Information         7     8     9

    Cancel      OK           ◀     0     ▶
```

When you are happy with the position information shown, press "OK", and the new position information will automatically be added to your Safety Call.
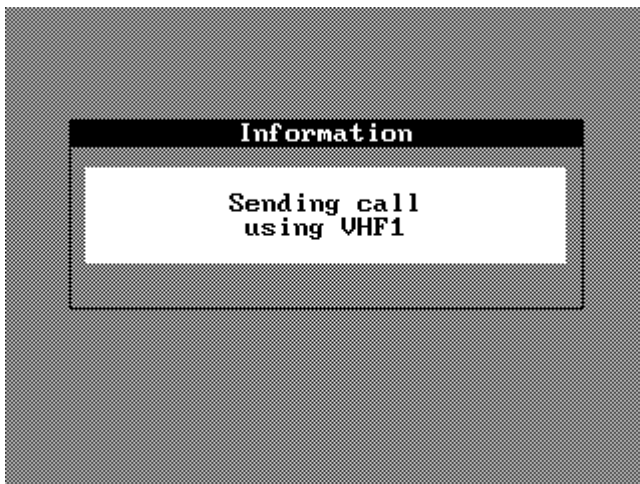
4.3.2 Transmitting the Safety Call

❶ If the default information is correct, or you have already made any changes necessary, press the "SEND CALL" button at the bottom of the screen. The SEND CALL CONFIRMATION screen will now appear:

```
         SEND CALL CONFIRMATION
            ALL SHIPS CALL
  Category: SAFETY
  Call to:
   ALL SHIPS

  Telecommand: J3E TELEPHONE
   MF  2182.0kHz  Rx  2182.0kHz
   No acknowledge required(EOS)

  DSC frequency:
   MF  2187.5kHz

      Press ENTER button to send

  Cancel
```

❷ The SEND CALL CONFIRMATION screen confirms:

- category of the call (i.e. safety)
- type (e.g. all ships)
- telecommand information (e.g. communications required, on which channel, whether acknowledge is required, position if available etc.)
- transmit frequency

If you don't want to send this call, or you want to get back to the previous screen - COMPOSE ALL SHIPS SAFETY CALL - then press the CANCEL button on the screen.

If you still want to send this call, press the ENTER hardware button. Your call will then be transmitted:

```
┌─────────────────────────────────┐
│          Information            │
├─────────────────────────────────┤
│                                 │
│          Sending call           │
│           using VHF1            │
│                                 │
└─────────────────────────────────┘
```

❸ Once the call has been transmitted, you can then deliver your safety message using the communications method specified. For example, if you announced that the communications method was 'Simplex telephone: VHF Channel 16', you should broadcast the details of your safety over that channel as soon as you have transmitted the DSC Safety Call.

The DSC system will automatically set up the equipment for the communications required or prompt you to do so if your transceivers are manually tuned.

You should broadcast the details of your call according to the guidelines for Safety Calls laid down by the IMO. A typical RT safety message might take the following form:

<div align="center">

SECURITE   SECURITE   SECURITE
ALL SHIPS   ALL SHIPS   ALL SHIPS
THIS IS
JALAGOPAL   JALAGOPAL   JALAGOPAL
130 MILES NORTHEAST OF SPURN POINT
NEW UNMARKED WRECK, AVOID AREA
JALOGOPAL
CALLSIGN ATRZ OVER

</div>

'SECURITE':   This is the term used to identify an safety message. ("MAYDAY" is used exclusively for distress alerts and "PAN PAN" is used for urgency calls)

'ALL SHIPS':   This is the type of the call.

'JALAGOPAL': The name of the ship sending the call.

'130 MILES ...AREA':   The nature of the safety situation.

'CALLSIGN ATRZ':   The call sign of the ship making the Safety Call.

'OVER':   Used to signify that the end of the message.

Once you have delivered your safety message, you should listen on that frequency for anyone wanting additional information.

4.4 Sending Individual, Group or Geographic Area Safety Calls

If you want to direct your DSC Safety Call to a specific ship or group of ships (say, for example, a fishing fleet) or to ships in a specific geographic area, select the "INDIVIDUAL", "GROUP" or "GEOGRAPHIC AREA" options as appropriate on the TYPE OF CALL screen. You can access the TYPE OF CALL screen by pressing either the "CALL" button on the Initial Display Screen or the "COMPOSE CALL" button on the Main Menu.

The relevant COMPOSE CALL screen will then appear:

```
                  TYPE OF CALL
 ┌─────────────────────┐  ┌─────────────────────┐
 │   DISTRESS ALERT    │  │     INDIVIDUAL      │
 └─────────────────────┘  └─────────────────────┘
 ┌─────────────────────┐  ┌─────────────────────┐
 │ ALL SHIPS URGENCY   │  │       GROUP         │
 └─────────────────────┘  └─────────────────────┘
 ┌─────────────────────┐  ┌─────────────────────┐
 │  ALL SHIPS SAFETY   │  │  GEOGRAPHIC AREA    │
 └─────────────────────┘  └─────────────────────┘
 ┌─────────────────────┐  ┌─────────────────────┐
 │   DISTRESS RELAY    │  │     TELEPHONE       │
 └─────────────────────┘  └─────────────────────┘
 ┌─────────────────────┐
 │  INMARSAT DISTRESS  │
 └─────────────────────┘
 ┌──────────┐             ┌─────────────────────┐
 │  Cancel  │             │     TEST CALL       │
 └──────────┘             └─────────────────────┘
```

4.4.1 Sending a Geographic Area Safety Call

❶ Press the "GEOGRAPHIC AREA" button on the TYPE OF CALL
screen. This takes you to the COMPOSE GEOGRAPHIC AREA CALL
screen:

```
        COMPOSE  GEOGRAPHIC  AREA  CALL
 ┌──────────────────────────────────┐ ┌────────┐
 │DSC frequency:                    │ │        │
 │ VHF Channel 70                   │ │ CHANGE │
 └──────────────────────────────────┘ └────────┘
 ┌──────────────────────────────────┐ ┌────────┐
 │Call to:                          │ │        │
 │ Lat   Long    N-S Size  W-E Size │ │ CHANGE │
 │ 00°N 000°E    01°       01°      │ │        │
 └──────────────────────────────────┘ └────────┘
 ┌──────────────────────────────────┐ ┌────────┐
 │Call category:                    │ │        │
 │ SAFETY                           │ │ CHANGE │
 └──────────────────────────────────┘ └────────┘
 ┌──────────────────────────────────┐ ┌────────┐
 │Telecommand: SIMPLEX TELEPHONE    │ │        │
 │ VHF Channel 16                   │ │ CHANGE │
 │ No acknowledge required(EOS)     │ │        │
 └──────────────────────────────────┘ └────────┘

 ┌───────────┐   ┌────────────────────┐
 │  Cancel   │   │     Send Call      │
 └───────────┘   └────────────────────┘
```

❷ This screen helps you to compose your call. You need to check:

- the transceiver and the frequency the Safety Call will be transmitted
  on.
- the geographic area you want to send the call out to. See next
  paragraph for more information.
- the call category - in this case, safety.
- the response communications required.

This information is all co-dependent, so, for example, if you changed the
category to safety by pressing the change button next to the Call Category
entry and selecting 'safety', you would find that the telecommand and
frequency information would also have changed automatically to the relevant
default settings for an Safety Call.

4.4.2 Selecting the geographic area for your call

To specify the geographic area for your call, press the "CHANGE" button next to the latitude and longitude information entry on the COMPOSE GEOGRAPHIC AREA CALL screen (see above).

To work out the geographic area, you need to think of it as a box:

First of all you must specify the co-ordinates of the point in the top left hand corner of the box by latitude and longitude (A).

Then, specify the north-south dimension B (which equates to the depth of the box) in degrees and the east-west dimension C (which equates to the width of the box) in degrees.

Taking the example above, the geographic area would be:


```
                    GEOGRAPHIC AREA
      Lat      Long    N-S Size   W-E Size
      10° N    020° W    20°         30°
      Enter rectangle reference point and
      vertical and horizontal size

              N              1     2     3

        W           E        4     5     6

              S                    7     8     9

      Cancel      OK         ◄     0     ►
```

Input this information using the GEOGRAPHIC AREA screen keypad, then press the "OK" button to accept the data or the "CANCEL" button if you made a mistake. This will return you to the COMPOSE GEOGRAPHIC AREA CALL screen. To send the call, simply press the SEND CALL button at the bottom of the screen and follow the procedures for sending a call outlined in paragraph 4.3.

If a ship equipped with DSC receives a geographic area call, the DSC system will display the call. If the DSC system is connected to a position information source, for example a GPS, which is providing valid position information, than only the relevant calls are displayed. If there is no valid position information, - even if the ship's position has been entered manually - all geographic area calls will be displayed. If valid position information is available, only the relevant calls will be displayed.
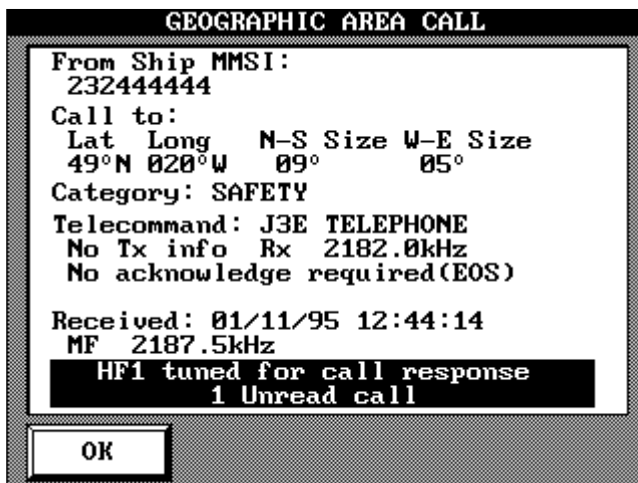
4.4.3 Individual and group calls

INDIVIDUAL or GROUP Safety Calls follow exactly the same procedure as GEOGRAPHIC AREA calls.

The GROUP option enables you to send a call to all stations with the same group MMSI.

The INDIVIDUAL option enables you to contact a specific vessel by entering its MMSI. You can either enter an MMSI manually or call up one from your MMSI directory.

4.5 How to respond to a Safety Call

❶ If the DSC2 system has received an Safety Call, you will hear a "beep-beep" alarm and the relevant screen will be displayed, depending on the type of call (ALL SHIPS, INDIVIDUAL, etc.):

```
            GEOGRAPHIC AREA CALL
   From Ship MMSI:
    232444444
   Call to:
    Lat   Long    N-S Size W-E Size
    49°N 020°W    09°      05°
   Category: SAFETY

   Telecommand: J3E TELEPHONE
    No Tx info  Rx  2182.0kHz
    No acknowledge required(EOS)

   Received: 01/11/95 12:44:14
    MF  2187.5kHz
      HF1 tuned for call response
              1 Unread call

    OK
```

A highlighted bar at the bottom of the screen will indicate which radio equipment is tuned for your response. Press the "OK" button and the system reverts to the Initial Display Screen which displays the "CANCEL RADIO TUNE" button at the bottom of the screen.

❷ The DSC2 will automatically tune the appropriate equipment to the correct channel. If your transceiver was in use when the call was received, the TUNE RADIO button will be displayed. You can then respond to the Safety Call according to IMO regulations.

You would not normally acknowledge an Safety Call, unless it was an INDIVIDUAL call and the ship making the call had requested acknowledgement:

```
┌──────────────────────────────────────────┐
│            INDIVIDUAL CALL                 │
│  ┌────────────────────────────────────┐   │
│  │ From Ship MMSI:                    │   │
│  │  123456789                         │   │
│  │ Call to:                           │   │
│  │  MMSI 110000000                    │   │
│  │ Category: SAFETY                   │   │
│  │ Telecommand: SIMPLEX TELEPHONE     │   │
│  │  VHF Channel 06                    │   │
│  │  Acknowledge required(Ack.RQ)      │   │
│  │                                    │   │
│  │ Received: 22/03/96 12:31:01        │   │
│  │  VHF Channel 70                    │   │
│  │    VHF1 tuned for call response    │   │
│  │         1 Unread call              │   │
│  └────────────────────────────────────┘   │
│  ┌────────┐              ┌─────────────┐   │
│  │   OK   │              │ ACKNOWLEDGE │   │
│  └────────┘              └─────────────┘   │
└──────────────────────────────────────────┘
```

If you do need to acknowledge an INDIVIDUAL Safety Call, use the following procedure.

❸ Press the "ACKNOWLEDGE" button at the bottom of a received call screen or a Message Log screen. You will then see the COMPOSE INDIVIDUAL CALL ACKNOWLEDGE screen:

```
┌──────────────────────────────────────────┐
│  COMPOSE INDIVIDUAL CALL ACKNOWLEDGE       │
│  ┌──────────────────────────┐ ┌────────┐  │
│  │ Call to:                 │ │ CHANGE │  │
│  │  MMSI 123456789          │ └────────┘  │
│  └──────────────────────────┘             │
│  ┌──────────────────────────┐ ┌────────┐  │
│  │ DSC frequency:           │ │ CHANGE │  │
│  │  VHF Channel 70          │ └────────┘  │
│  └──────────────────────────┘             │
│  ┌──────────────────────────┐ ┌────────┐  │
│  │ Call category:           │ │ CHANGE │  │
│  │  SAFETY                  │ └────────┘  │
│  └──────────────────────────┘             │
│  ┌──────────────────────────┐ ┌────────┐  │
│  │ Telecommand: SIMPLEX     │ │ CHANGE │  │
│  │  TELEPHONE               │ └────────┘  │
│  │  VHF Channel 06          │             │
│  │  Acknowledgement(Ack.BQ) │             │
│  └──────────────────────────┘             │
│  ┌──────────┐  ┌──────────────────┐       │
│  │  Cancel  │  │   Send Call      │       │
│  └──────────┘  └──────────────────┘       │
└──────────────────────────────────────────┘
```

Once you have made any required changes, press the "SEND CALL" button. Press the "CANCEL" button, if you want to cancel the acknowledgement or access the previous screen. If you still want to send this call, press the "ENTER" hardware button. The call will then be transmitted.

```
SEND CALL CONFIRMATION
   INDIVIDUAL CALL ACKNOWLEDGEMENT
Category: SAFETY
Call to:
 MMSI 123456789

Telecommand: SIMPLEX TELEPHONE
 VHF Channel 06
 Acknowledgement(Ack.BQ)

DSC frequency:
 VHF Channel 70
```

Press ENTER button to send

Cancel

4.6 Accessing safety functions via other menus

Under normal circumstances, you view incoming Safety Calls as the system automatically displays them, and then press the "OK" button to show that you have read the message. You can also press the "ACKNOWLEDGE" button if you are acknowledging an individual Safety Call. But if you want to review an incoming Safety Call at a later stage, you can do so by calling up the Message Log and pressing either the "OTHER CALLS" button or the "ALL CALLS" button to view all incoming calls.

4.7 What if something goes wrong?

If you make a mistake whilst choosing a type of call or composing a call, you still have the opportunity to cancel that call or change the information it contains at each stage of the procedure.

If the system does not respond in the way you expect, you may need to consult the Help! Section.

5. ROUTINE CALLS

This section includes:

5.1 Sending a ship to ship call

5.1.1 Individual calls

If you know the MMSI of the ship you wish to contact, you can send an INDIVIDUAL routine call from the TYPE OF CALL screen.

❶ Access the menu, either by pressing the "CALL" button on the Initial Display Screen or selecting "COMPOSE CALL" from the Main Menu brings you into the COMPOSE INDIVIDUAL CALL screen:

```
          COMPOSE INDIVIDUAL CALL
 ┌──────────────────────────────┐  ┌────────┐
 │ Call to:                     │  │ CHANGE │
 │  MMSI 000000000              │  └────────┘
 ├──────────────────────────────┤  ┌────────┐
 │ DSC frequencies:             │  │ CHANGE │
 │  MF  2177.0kHz  Rx  2177.0kHz│  └────────┘
 ├──────────────────────────────┤  ┌────────┐
 │ Call category:               │  │ CHANGE │
 │  ROUTINE                     │  └────────┘
 ├──────────────────────────────┤  ┌────────┐
 │ Telecommand: J3E TELEPHONE   │  │ CHANGE │
 │  No Information              │  └────────┘
 │  Acknowledge required(Ack.RQ)│
 └──────────────────────────────┘

    ┌──────────┐  ┌──────────────────┐
    │  Cancel  │  │    Send Call     │
    └──────────┘  └──────────────────┘
```

❷ Pressing the "CHANGE" button next to the MMSI field brings you into the MMSI menu as shown on the next page. This menu allows you to key in the correct MMSI or press the DIRECTORY button to access the MMSI directory. The ICS DSC2 system has the capacity to store up to 20 MMSI numbers in its directory. The next section has more details on how to set up or modify directory entries.

```
                         MMSI
                      000000000

                  Enter 9 digit MMSI

                                    1      2      3

                                    4      5      6

              Directory            7      8      9

         Cancel      OK            ◄      0      ►
```

❸ Check that the details of the call are correct (transmit frequency, call category and telecommand information).

```
             COMPOSE INDIVIDUAL CALL
       Call to:                        CHANGE
        MMSI 222320014

       DSC frequencies:                CHANGE
        MF   2177.0kHz   Rx   2177.0kHz

       Call category:                  CHANGE
        ROUTINE

       Telecommand: J3E TELEPHONE      CHANGE
        No Information
        Acknowledge required(Ack.RQ)

           Cancel          Send Call
```

❹ Press SEND CALL to send the call or CANCEL to cancel the call.

❺ Press the ENTER button to transmit the call.

❻ Broadcast your message (normally using Radio-Telephony).

5.1.2 Group and geographic area calls

GROUP or GEOGRAPHIC AREA calls follow exactly the same procedure.

The GROUP option enables you to send a GROUP SELCALL which is a call to all vessels with the same group MMSI.

The GEOGRAPHIC AREA option enables you to contact all the vessels within a defined geographic area. The system will prompt you to enter the relevant co-ordinates to make the call. See page 47 for further details on how to make a geographic call.

5.2 Responding to an incoming call

❶ Any calls coming into the DSC2 system will be automatically stored in the Message Log and also logged at the bottom of the Initial Display Screen. Incoming calls will activate an alarm. Routine Calls and Safety Calls have a beep-beep ringing alarm. Incoming Distress and Urgency Calls have a fast two-tone alarm. If the system detected any errors during the call, it will display a CHECKSUM ERROR message.

```
┌──────────────────────────────────────┐
│          INDIVIDUAL CALL             │
├──────────────────────────────────────┤
│ From Ship MMSI:                      │
│  222320014                           │
│ Call to:                             │
│  MMSI 110000000                      │
│ Category: ROUTINE                    │
│ Telecommand: J3E TELEPHONE           │
│  No Information                      │
│  Acknowledge required(Ack.RQ)        │
│                                      │
│                                      │
│ Received: 22/03/96 13:04:09          │
│  MF  2177.0kHz                       │
│                                      │
│         1 Unread call                │
├────────────┬─────────────────────────┤
│    OK      │            ACKNOWLEDGE  │
└────────────┴─────────────────────────┘
```
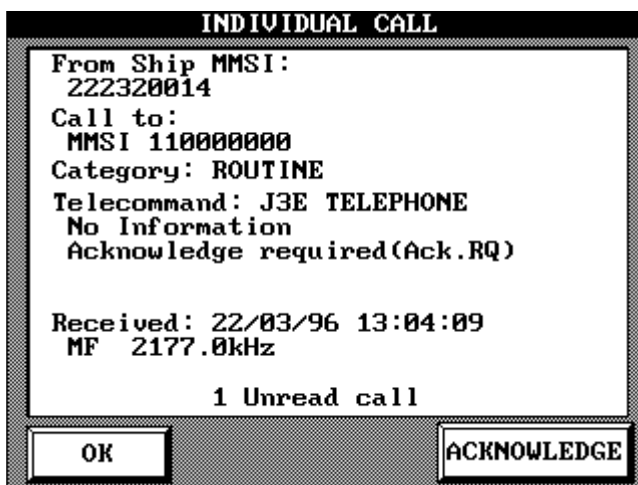
❷ The INDIVIDUAL CALL screen will show the:

- type of call
- identity of the sender
- which frequency it was received on
- how the sender wishes you to respond

❸ Only individual routine calls normally give you the option to send a reply via DSC. When you receive other routine calls you should simply press the OK button and then contact the vessel on the radio equipment and frequency specified in the call.

❹ If the sender wants you to acknowledge the call, then an ACKNOWLEDGE button will be displayed at the bottom right of the screen. (If you have already pressed the OK button and the screen has disappeared you can view it again by pressing the LOG button on the Initial Display Screen and choosing the OTHER CALLS or ALL CALLS option, or by pressing the MESSAGE LOG button on the Main Menu.)

❺ Pressing the "ACKNOWLEDGE" button will take you into the COMPOSE INDIVIDUAL CALL ACKNOWLEDGE screen, where you have the option of changing:

- the MMSI number
- the transmit frequency
- the call category
- the telecommand information

```
┌──────────────────────────────────────────────┐
│  COMPOSE INDIVIDUAL CALL ACKNOWLEDGE           │
│  ┌────────────────────────────┐  ┌─────────┐  │
│  │ Call to:                   │  │ CHANGE  │  │
│  │  MMSI 222320014            │  └─────────┘  │
│  └────────────────────────────┘               │
│  ┌────────────────────────────┐  ┌─────────┐  │
│  │ DSC frequency:             │  │ CHANGE  │  │
│  │  MF   2177.0kHz            │  └─────────┘  │
│  └────────────────────────────┘               │
│  ┌────────────────────────────┐  ┌─────────┐  │
│  │ Call category:             │  │ CHANGE  │  │
│  │  ROUTINE                   │  └─────────┘  │
│  └────────────────────────────┘               │
│  ┌────────────────────────────┐  ┌─────────┐  │
│  │ Telecommand: J3E TELEPHONE │  │ CHANGE  │  │
│  │  MF  2533.2kHz  Rx 2533.2kHz│ └─────────┘  │
│  │  Acknowledgement(Ack.BQ)   │               │
│  └────────────────────────────┘               │
│                                                │
│  ┌──────────┐   ┌──────────────┐              │
│  │ Cancel   │   │  Send Call   │              │
│  └──────────┘   └──────────────┘              │
└──────────────────────────────────────────────┘
```

However, normally you would just send the original information back to the caller when acknowledging this type of call.

❻ Press the "SEND CALL" button which will take you into the SEND CALL CONFIRMATION screen where you can double-check the message you will be sending back to the caller.

```
         SEND CALL CONFIRMATION
              INDIVIDUAL CALL
     Category: ROUTINE
     Call to:
      MMSI 222320014

     Telecommand: J3E TELEPHONE
      No Information
      Acknowledge required(Ack.RQ)

     DSC frequencies:
      MF  2177.0kHz  Rx  2177.0kHz

        Press ENTER button to send

     Cancel
```

❼ To transmit the call, press the "ENTER" hardware button. The DSC will automatically retune the appropriate equipment to the right frequency whenever this is necessary. If your transceivers are manually tuned the CALL CONFIRMATION screen will indicate which frequency you need to tune to.

5.3 Making a test call

All GMDSS equipment should be tested regularly. For more information on when to test each type of equipment see Appendix IV.

You can use the DSC2 to make a test call, the system will only allow you to send a test call to a coast station and on MF or HF. To make a test call on the DSC2, use the following procedure:

❶ Press the "CALL" button on the Initial Display Screen or choose "COMPOSE CALL" from the Main Menu. This will take you into the TYPE OF CALL screen:

```
┌─────────────────────────────────────────────┐
│                 TYPE OF CALL                 │
│  ┌───────────────────┐  ┌──────────────────┐ │
│  │  DISTRESS ALERT   │  │   INDIVIDUAL     │ │
│  └───────────────────┘  └──────────────────┘ │
│  ┌───────────────────┐  ┌──────────────────┐ │
│  │ ALL SHIPS URGENCY │  │     GROUP        │ │
│  └───────────────────┘  └──────────────────┘ │
│  ┌───────────────────┐  ┌──────────────────┐ │
│  │ ALL SHIPS SAFETY  │  │ GEOGRAPHIC AREA  │ │
│  └───────────────────┘  └──────────────────┘ │
│  ┌───────────────────┐  ┌──────────────────┐ │
│  │  DISTRESS RELAY   │  │   TELEPHONE      │ │
│  └───────────────────┘  └──────────────────┘ │
│  ┌───────────────────┐                        │
│  │ INMARSAT DISTRESS │                        │
│  └───────────────────┘                        │
│  ┌─────────┐            ┌──────────────────┐ │
│  │ Cancel  │            │    TEST CALL     │ │
│  └─────────┘            └──────────────────┘ │
└─────────────────────────────────────────────┘
```

❷ Press the "TEST CALL" button which will take you into the COMPOSE DSC TEST CALL screen as shown on the next page:

```
           COMPOSE DSC TEST CALL
 Call to:                              CHANGE
  MMSI 000000000

 DSC frequencies:                      CHANGE
  MF   2187.5kHz   Rx   2187.5kHz




     Cancel            Send Call
```

This menu will display:

- the MMSI number you want to send a test call to (usually the nearest coast station in range)

- equipment and frequency you want to transmit the test call on (you will be limited to HF frequencies only)

❸ When you have made the necessary amendments, press the "SEND CALL" button if you want to go ahead with the test call.

If you don't want to send the test call or want to return to the previous screen, press CANCEL.

❹ Pressing the "SEND CALL" button will take you into the SEND CALL CONFIRMATION screen:

```
SEND CALL CONFIRMATION
        DSC TEST CALL
Category: SAFETY
Call to:
 MMSI 002320014 FALMOUTH RCC

Telecommand: TEST CALL
 Acknowledge required(Ack.RQ)


DSC frequencies:
 MF  2187.5kHz  Rx  2187.5kHz

 Press ENTER button to send
Cancel
```

❺ This screen will confirm:

- the type of the test call
- the response method required
- an acknowledgement is required
- the equipment and frequency the call will be transmitted on

❻ If you still want to send the test call, press the "ENTER" button. Again, if
  you don't want to send the call or want to return to the previous screen,
  press the "CANCEL" button.

```
                    Information

                   Sending call
                    using HF1
```
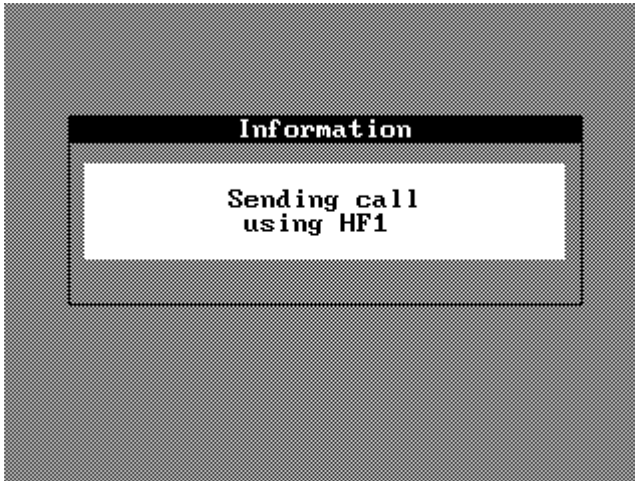
❼ When it receives the test call, the coast station will send DSC
  acknowledgement. This is usually the only communication you will have
  with the station when making this type of call.

5.4 Telephone calls

The DSC2 does have an option for you to make a telephone call via a coast station. However to make a telephone call, you need a DSC and coast station service which fully supports semi-automatic and automatic calls.

5.5 What if something goes wrong?

If you make a mistake whilst choosing a type of call or composing a call, you should still have the opportunity to cancel that call or change that information at each stage of the procedure.

If the system does not respond in the way you expect, you may need to consult the Help! Section.

6. OTHER DSC2 MAIN MENU FUNCTIONS

This section includes a step by step guide to the following Main Menu selections and their sub-menus:

The main Menu

You can access the DSC2 main Menu by pressing the "MENU" button on the Initial Display Screen:

```
                        MENU
   ┌──────────────────────┐  ┌──────────────────────┐
   │    COMPOSE CALL       │  │        SETUP          │
   └──────────────────────┘  └──────────────────────┘
   ┌──────────────────────┐  ┌──────────────────────┐
   │    MESSAGE LOG        │  │ SYSTEM INFORMATION    │
   └──────────────────────┘  └──────────────────────┘
   ┌──────────────────────┐
   │   SYSTEM STATUS       │
   └──────────────────────┘
   ┌──────────────────────┐
   │  REMOTE RADIO TUNE    │
   └──────────────────────┘

   ┌──────────┐              ┌──────────────────────┐
   │  Cancel  │              │    CONFIGURATION      │
   └──────────┘              └──────────────────────┘
```
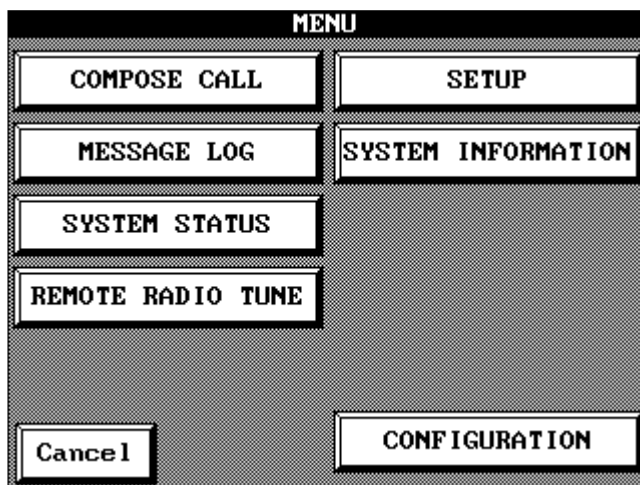
6.1 Compose Call

Pressing the "CALL" shortcut button on the Initial Display Screen or the "COMPOSE CALL" button on the main Menu brings you in the TYPE OF CALL screen. This menu enables you to make any type of call available on the system, including:

- distress alerts
- all ships urgency calls
- all ships safety calls
- distress relay calls
- individual calls (including individual urgency, safety, ship's business or routine calls)
- group calls (including group urgency, safety, ship's business or routine calls)
- geographic area calls (including urgency, safety, ship's business or routine calls)
- telephone calls
- test calls

```
                    TYPE OF CALL

     DISTRESS ALERT          INDIVIDUAL

   ALL SHIPS URGENCY           GROUP

   ALL SHIPS SAFETY       GEOGRAPHIC AREA

     DISTRESS RELAY          TELEPHONE

  INMARSAT DISTRESS

   Cancel                    TEST CALL
```

Press the button according the call you wish to make and follow the relevant procedures as detailed in the previous three sections.

6.2 Message Log

There are two routes into the Message Log. You can either press the "LOG" button on the Initial Display Screen, or you can press the "MESSAGE LOG" button on the Main Menu.

```
                    MESSAGE LOGS

    DISTRESS CALLS              ALL CALLS

        OTHER CALLS




 Cancel
```
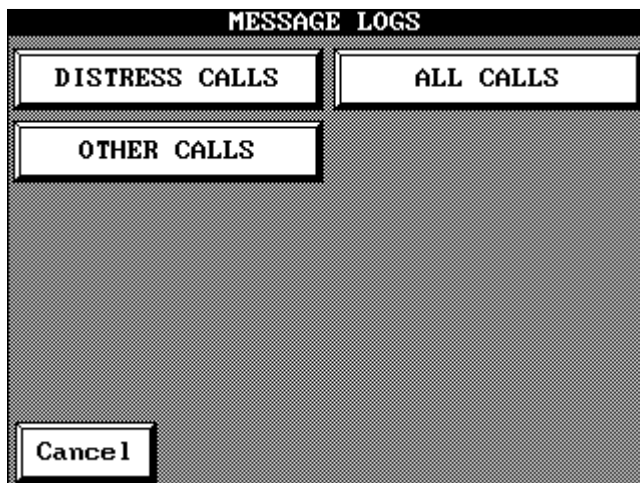
The MESSAGE LOG screen gives you the option of viewing:

- 'Distress Calls' (all distress or urgency calls)
- 'Other Calls' (all calls other than distress or urgency, e.g. safety and routine calls)
- 'All Calls' (all calls including distress and urgency calls)

6.2.1 General points about message screens

The Message Log will automatically display the most recent message first. When you are viewing any Log screen you can also move backwards and forwards through the log queue to view the last, first, next and previous messages. To do this you simply press the relevant button on the right hand side of the screen.

Each message screen provides a variety of information:

```
              ALL SHIPS CALL
 From Ship MMSI:
  222320014
 Call to:
  ALL SHIPS                        ┌────────┐
 Category: SAFETY                  │ Last>  │
 Telecommand: J3E TELEPHONE        └────────┘
  MF   2182.0kHz                   ┌────────┐
  No acknowledge required(EOS)     │ <First │
                                   └────────┘
                                   ┌────────┐
 Received: 30/10/95 15:30:33       │ Next>> │
  MF   2187.5kHz                   └────────┘
                                   ┌────────┐
               Entry 14 of 14      │ <<Prev │
 ┌──────────┐      ┌────────────┐  └────────┘
 │  Cancel  │      │ Tune radio │
 └──────────┘      └────────────┘
```
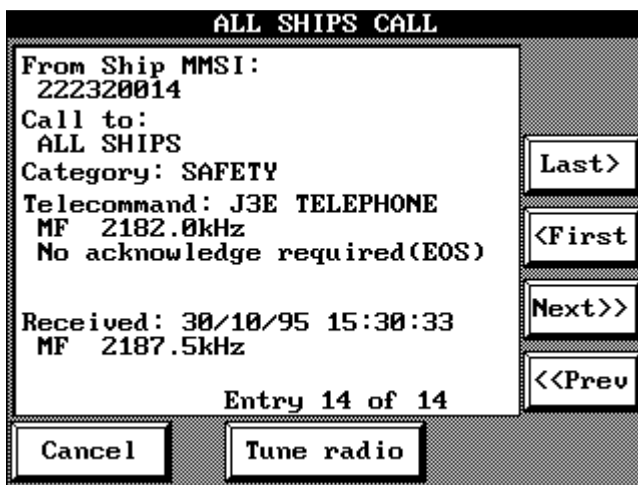
❶ The nature of the call, for example:

- the MMSI of the vessel or coast station sending the message
- the type of the call (e.g. 'All Ships')
- the category of call (e.g. distress, safety etc.)
- the communications methods required (e.g. type of equipment, channel or frequency, whether an acknowledgement is required)

❷ Details about the call, for example:

- the time and date the call was received
- the channel or frequency on which the call was received
- if the call requires a response, the screen will indicate that the relevant equipment and frequency are tuned for response (or prompt you to retune if you use manually tuned transceivers)
- whether the call contained any errors (the checksum status of the call)

❸ The total number of entries in that Message Log.

6.2.2 The different types of Message Log

❶ DISTRESS CALLS - This will enable you to view any distress or
urgency category messages the system has received:

```
              DISTRESS ALERT
From Ship MMSI:
 222320014
Nature: LISTING
Position:
 12°54'N  014°42'W 12:55 UTC         Last>
Subsequent communication:
 J3E TELEPHONE                       <First

                                     Next>>
Received: 30/10/95 16:29:46
 MF  2187.5kHz                       <<Prev
 HF1 tuned for call response
           Entry 25 of 25

  Cancel                        SEND RELAY
```

If you are viewing distress calls, you may also be given the option of relaying
or acknowledging the distress alert.

To relay the call you would press the "SEND RELAY" button at the bottom
of the screen. Remember - this option should not be used lightly as it can be
very confusing for coast stations to receive the same distress alert both from
the original ship and from other ships which have responded to the alert.

Always allow enough time for a coast station to respond first before relaying
a message. As an extra precaution, the ICS DSC2 system will flash up a
warning when you attempt a relay and ask you to confirm that you wish to
proceed:

```
                    ┌──────────────────────────────┐
                    │            Warning            │
                    ├──────────────────────────────┤
                    │ A distress alert relay should │
                    │ only be sent if a ship in     │
                    │ distress cannot transmit it's │
                    │ own alert or, you consider    │
                    │ that further help is necessary.│
                    │                                │
                    │     Relay distress alert?      │
                    │                                │
                    │     ┌───────┐   ┌───────┐      │
                    │     │  Yes  │   │  No   │      │
                    │     └───────┘   └───────┘      │
                    └──────────────────────────────┘
```
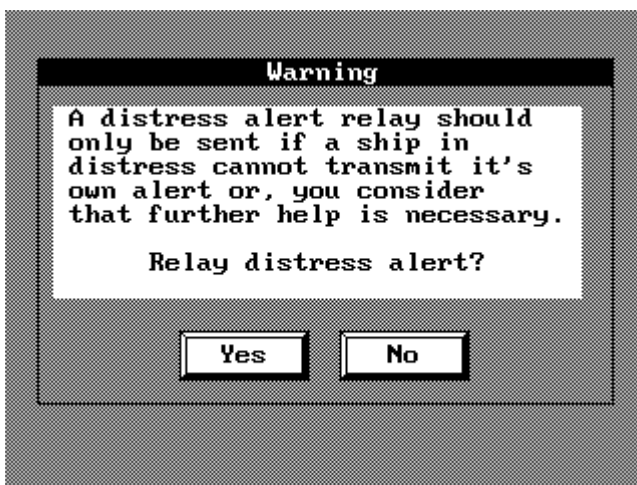
On rare occasions, you may need to *acknowledge* a distress alert call. The system will not give you this option until the call has already met the right conditions, which are:

1. The system has already received one distress alert (the first time, you will not get the ACKNOWLEDGE option)

2. The system has received a second distress alert within the last five minutes

If these conditions are met, the system will display the "ACKNOWLEDGE" button, which will take you into the DISTRESS ACKNOWLEDGE EDIT screen. This does give you the option to change any of the information but normally you would just repeat the same information back to the caller.

To send the call, you would simply press the "SEND CALL" button and then the hardware "ENTER" button.

You will find more information about distress relays and acknowledgements in the DISTRESS OPERATION chapter.

❷ "OTHER CALLS" - Pressing this button will enable you to view any
non-distress or urgency calls received by the system.

```
╔══════════════════════════════════════╗
║         ALL SHIPS CALL               ║
╟──────────────────────────────┬───────╢
║ From Ship MMSI:              │       ║
║  222320014                   │       ║
║ Call to:                     │       ║
║  ALL SHIPS                   │       ║
║ Category: SAFETY             │ Last> ║
║ Telecommand: J3E TELEPHONE   ├───────╢
║  MF   2182.0kHz              │<First ║
║  No acknowledge required(EOS)│       ║
║                              ├───────╢
║                              │Next>> ║
║ Received: 30/10/95 15:30:33  │       ║
║  MF   2187.5kHz              ├───────╢
║                              │<<Prev ║
║         Entry 14 of 14       │       ║
╟──────────┬───────────────────┴───────╢
║ Cancel   │   Tune radio             ║
╚══════════╧═══════════════════════════╝
```

❸ "ALL CALLS" - Pressing this button will enable you to view all the calls
received by the system.

The Message Log can store up to 100 calls. As soon as this limit is exceeded
the oldest call is discarded.

6.3 System Status

By pressing the "SYSTEM STATUS" button on the Main Menu, you can review and modify the current status of the system:
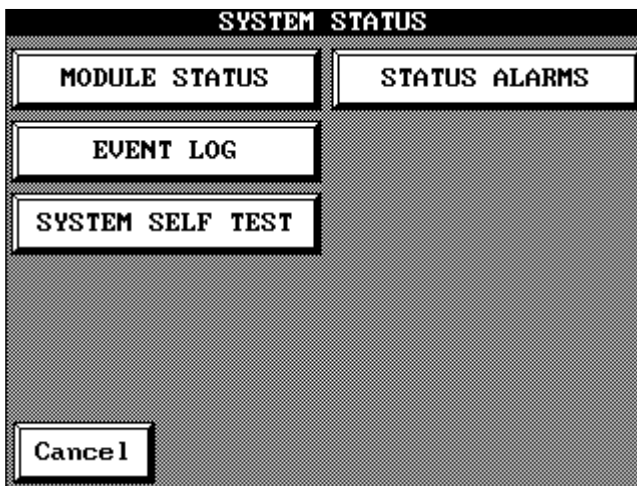
This screen gives you a number of options:

- Module Status
- Event Log
- System Self Test
- Status Alarms

❶ "MODULE STATUS" - This menu allows you to review which DSC modules are currently connected to your system and to find out which are currently active and which are faulty. There are four pages of information covering:

• Control Panels
• VHF systems
• HF systems
• Other equipment on the system

```
╔══════════════════════════════════════════╗
║        DSC MODULE STATUS                  ║
╠══════════════════════════════════════════╣
║              VHF MODULES                  ║
║                                           ║
║   DscVHF1   - Registered      OK          ║
║   DscVWRX1  - Fitted          OK          ║
║   DscVTRX1  - Registered      OK          ║
║                                           ║
║                                           ║
║                                           ║
║                                           ║
║ ┌────────┐           ┌──────┐ ┌──────┐   ║
║ │ Cancel │           │<<Prev│ │Next>>│   ║
║ └────────┘           └──────┘ └──────┘   ║
╚══════════════════════════════════════════╝
```

As you are reviewing each control module, the system will always give you the option to cancel and return to the main DSC menu by pressing the "CANCEL" button, or to move to the next item by pressing the "NEXT>>" button.

If the system has detected any faulty modules, it will highlight these in the DSC MODULE STATUS menu, as shown on the next page. If you do find a faulty module, you may want to switch to a duplicate. We will cover this procedure in more detail later in this section, when we take a closer look at the Set-up and Preferences menus entries.

```
                DSC MODULE STATUS
                   VHF MODULES

        DscVHF1    - Registered      OK
        DscVWRX1   - Fitted          OK
        DscVTRX1   - Registered      FAULT




         Cancel              <<Prev  Next>>
```

❷ "EVENT LOG" - Any system malfunctions are automatically recorded by the system and logged here. This screen will also tell you the time and date that a module was switched on and also the last time the system tested itself.

```
                     EVENT LOG
        30/10/95  16:42:56
         Alarm: NAVTEX alert received
        30/10/95  16:42:42
         Info: DscTLX1 - Restored
        30/10/95  16:42:29
         Alarm: Inmarsat Enhanced Group Call
        30/10/95  16:41:47
        √Fault: DscTLX1 - No status
        30/10/95  16:40:26
         Info: DSC Self Test Complete
        30/10/95  16:40:16
         Info: DSC Self Test Started
                                   Page 1 of 2
         Cancel              <<Prev  Next>>
```

❸ "SYSTEM SELF TEST" - This button allows you to prompt the system to carry out an automatic self-test procedure. This option does not have a special screen - instead the system reverts to the Initial Display Screen where any faults found will be displayed. You can then check the nature of the fault by returning to the Status screens.

❹ "STATUS ALARMS" - This screen gives you the option of turning off the system's status alarms. This will not affect the essential GMDSS alarms:

6.4 Remote Radio Tune

Transceivers connected to the DSC system are automatically tuned to the appropriate channel by the system. If you want to bypass this procedure you can manually tune transceivers using the REMOTE RADIO TUNE screen:

```
              REMOTE RADIO TUNE

   ┌───────────────────┐   ┌───────────────────┐
   │      VHF RT        │   │       HF RT        │
   └───────────────────┘   └───────────────────┘

                           ┌───────────────────┐
                           │  HF TELEX (FEC)    │
                           └───────────────────┘

   ┌───────────────────┐   ┌───────────────────┐
   │  VHF DSC WATCH     │   │   HF DSC WATCH     │
   └───────────────────┘   └───────────────────┘
   ┌───────────────────┐   ┌───────────────────┐
   │ CANCEL VHF TUNE    │   │  CANCEL HF TUNE    │
   └───────────────────┘   └───────────────────┘


   ┌─────────┐
   │ Cancel  │
   └─────────┘
```

The HF RT screen shows following:

```
                    HF RT

   ┌───────────────────┐   ┌───────────────────┐
   │ TX & RX FREQUENCY  │   │  MF    2182.0kHz   │
   └───────────────────┘   └───────────────────┘

                           ┌───────────────────┐
                           │  HF    4125.0kHz   │
                           └───────────────────┘

                           ┌───────────────────┐
                           │  HF    6215.0kHz   │
                           └───────────────────┘

                           ┌───────────────────┐
                           │  HF    8291.0kHz   │
                           └───────────────────┘

                           ┌───────────────────┐
                           │  HF   12290.0kHz   │
                           └───────────────────┘
   ┌─────────┐             ┌───────────────────┐
   │ Cancel  │             │  HF   16420.0kHz   │
   └─────────┘             └───────────────────┘
```

If a transceiver does not have remote control support, the DSC2 will prompt you to retune to the appropriate channel or frequency whenever this is necessary. For more information on tuning transceivers manually, turn to Chapter 8. For more information on choosing the best radio equipment and frequency to send your call, see page 18.

6.5 Set-up

Choosing this Main Menu button will take you into the Set-up directory, which includes the following options:

6.5.1 Preferences
6.5.2 **Error! Not a valid link.**
6.5.3 Manual Position
6.5.4 Date & Time
6.5.5 MF/HF Watch Rx

6.5.1 Preferences

This screen will enable you to change all the minor defaults of the system. It divides into five further options:

6.5.1.1 Select VHF
6.5.1.2 Select MF/HF
6.5.1.3 Telecommand 1
6.5.1.4 Telecommand 2
6.5.1.5 Reset to defaults

6.5.1.1 Select VHF

```
         SELECT VHF RADIO
┌──────────────────────────────┬────────┐
│VHF1 Status OK    - SELECTED   │ SELECT │
├──────────────────────────────┼────────┤
│VHF2 Status OK                 │ SELECT │
├──────────────────────────────┴────────┤
│                                        │
│                                        │
│                                        │
│                                        │
│                                        │
│ ┌────────┐ ┌────────┐                  │
│ │Cancel  │ │ Save   │                  │
│ └────────┘ └────────┘                  │
└────────────────────────────────────────┘
```

This screen enables you to select or de-select, the VHF transceivers connected to the system and then save your changes. For example, if one transceiver was not working, you could select your duplicate transceiver using this menu.

6.5.1.2 Select MF/HF

```
              SELECT HF RADIO
  HF1 Status OK      - SELECTED    SELECT




  Cancel    Save
```
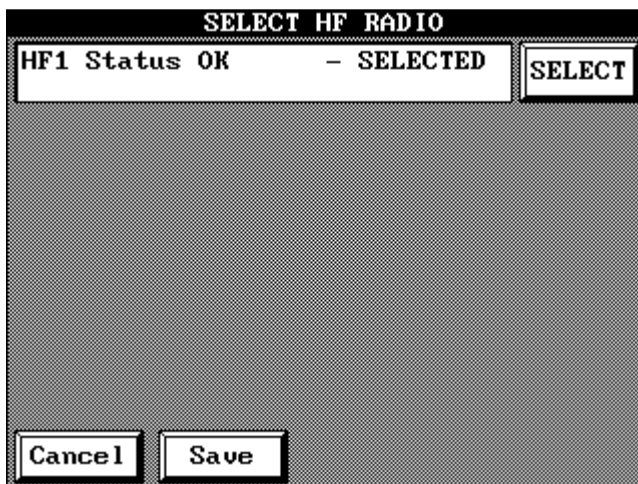
This screen enables you to select or de-select the MF/HF transceivers connected to the system and then save your changes. Again, if one transceiver was not working, you could select your duplicate transceiver using this menu.

6.5.1.3 Telecommand 1

```
TELECOMMAND 1 SETUP (Page 1 of 4)
SIMPLEX TELEPHONE    –   ON

DUPLEX TELEPHONE     –   ON

J3E  TELEPHONE       –   ON

H3E  TELEPHONE       –   OFF      CHANGE

TELEX (FEC)          –   ON       CHANGE


Cancel    Save     Defaults    Next>>
```

These four pages display the range of telecommunications information you could include in your DSC call. You would use this information to indicate the type of communication required for any responses to your DSC call. Each page will indicate which options are currently active. The DSC2 is designed to protect the essential equipment required by GMDSS rules. This means that you will only see the CHANGE button next to those options which the system will allow you to change.

In practice, you will rarely need to use these screens. However if you do change any settings, you should then press the "SAVE" button at the bottom of the screen and the system will then ask you to confirm your changes.

If you make a mistake, or want to revert to the default equipment settings for Telecommand 1, simply press the "DEFAULTS" button at the bottom of the screen.

6.5.1.4 Telecommand 2

```
TELECOMMAND 2 SETUP (Page 1 of 5)
NO REASON GIVEN    -   OFF        CHANGE

CONGESTION         -   OFF        CHANGE

BUSY               -   ON

QUEUE INDICATION   -   OFF        CHANGE

STATION BARRED     -   OFF        CHANGE


Cancel    Save     Defaults     Next>>
```

These five pages display the range of telecommunications messages you could include in your DSC call. Many of these options are specialised and you will rarely need to use them. In fact, it is better to keep DSC calls free of 'clutter' so that your message is as clear as possible.

Again each page will indicate which options are currently active. The DSC2 is designed to protect the essential equipment required by GMDSS rules. This means that you will only see the "CHANGE" button next to those options which the system will allow you to change.

You would not normally need to change any of these settings but if you do make a change, you should then press the "SAVE" button at the bottom of the screen and the system will then ask you to confirm your changes.

If you make a mistake, or want to revert to the default settings for Telecommand 2, simply press the "DEFAULTS" button at the bottom of the screen.

6.5.1.5 Reset to defaults

```
┌─────────────────────────────┐
│                             │
│   ┌─────────────────────┐   │
│   │      Warning        │   │
│   ├─────────────────────┤   │
│   │  All preference settings │
│   │ will be reset to defaults │
│   │                     │   │
│   │      Confirm?       │   │
│   │                     │   │
│   │  ┌──────┐  ┌──────┐ │   │
│   │  │ Yes  │  │  No  │ │   │
│   │  └──────┘  └──────┘ │   │
│   └─────────────────────┘   │
│                             │
└─────────────────────────────┘
```
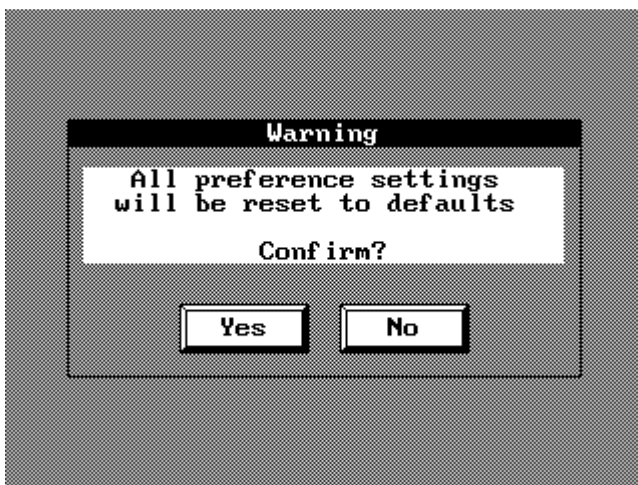
If you make a mistake when setting up preferences or you simply want to
return all of the preferences to the default settings of the system, choose the
RESET TO DEFAULTS option. A screen will appear to warn you that all
preference settings will then return to their defaults and ask you to confirm
that you want to go ahead.

6.5.2 Directory Editor

This is a useful option if you want to build up a directory of MMSI's which you contact on a regular basis. When you want to send a call, you will then have the directory of MMSI's to pick from by pressing the "DIRECTORY" button. This "DIRECTORY" button will only appear in the MMSI menu when you compose your call and if the directory contains any entries.

Pressing the "DIRECTORY" button in the SETUP menu brings you into the DIRECTORY EDITOR:

```
      DIRECTORY EDITOR (Page 1 of 1)
  ┌──────────────────────────────────┐  ┌────────┐
  │Name: FALMOUTH RCC                │  │CHANGE  │
  │Coast Station MMSI: 002320014     │  │        │
  │DSC freq: MF   2187.5kHz          │  └────────┘
  └──────────────────────────────────┘
  ┌──────────────────────────────────┐  ┌────────┐
  │Name: LYNBY                       │  │CHANGE  │
  │Coast Station MMSI: 002191000     │  │        │
  │DSC freq: HF   8414.5kHz          │  └────────┘
  └──────────────────────────────────┘
  ┌──────────────────────────────────┐  ┌────────┐
  │Name: OSTENDE                     │  │CHANGE  │
  │Coast Station MMSI: 002050480     │  │        │
  │DSC freq:                         │  └────────┘
  └──────────────────────────────────┘


  ┌────────┐  ┌───────────┐
  │Cancel  │  │New Entry  │
  └────────┘  └───────────┘
```

You can use this screen to:

- to search the current entries in the directory

- enter a new entry

- change or delete an existing entry.

6.5.2.1 Searching the directory

The title 'bar' of the Directory Editor screen indicates how many pages of entries the directory contains and you can use the "NEXT" button at the bottom of the screen to cycle through these pages until you find the correct entry.

6.5.2.2 Adding a new entry

You can add a new entry by pressing the "NEW ENTRY" button at the bottom of the screen. This will take you into the NEW DIRECTORY ENTRY screen:

```
            NEW DIRECTORY ENTRY
┌─────────────────────────────┬──────────┐
│ Name:                       │ CHANGE   │
├─────────────────────────────┼──────────┤
│ Invalid MMSI: 000000000     │ CHANGE   │
├─────────────────────────────┼──────────┤
│ DSC freq:                   │ CHANGE   │
└─────────────────────────────┴──────────┘


  ┌────────┐   ┌──────────┐
  │ Cancel │   │   Save   │
  └────────┘   └──────────┘
```

You can add the new entry by pressing the "CHANGE" button next to:

- name
- MMSI number
- call frequency

Entering the name and call frequency will help you identify the MMSI you want more easily. However you can leave the call frequency information blank if you prefer as this may change depending on the nature of the call.

Once you have entered the new information, press the "SAVE" button to save the new entry into the directory, or the "CANCEL" button to cancel the new entry or return to the previous screen.

6.5.2.3 Changing or deleting an entry

You can also alter any directory entry by pressing the CHANGE button next to that entry on the DIRECTORY EDITOR screen (see above). This will take you into the EDIT DIRECTORY ENTRY screen, where you will have the option of changing:

• the name of the entry
• the MMSI number
• the call frequency you would normally use to contact that MMSI

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For example if you wanted to change the name, you would press the "CHANGE" button and this would take you into the DIRECTORY NAME screen where you could then key in the new name and then press the "OK" button.

Once you have made any changes to the name, MMSI or call frequency, press the "SAVE" button to save that changed entry into the directory. You also have the option of removing any entry by pressing the 'DELETE ENTRY' button or by cancelling any changes or returning to the previous screen by pressing the "CANCEL" button.

6.5.3 Manual Position

```
              POSITION
   LATITUDE   LONGITUDE    UTC
   00°00'N    000°00'E    00:00
   Enter your present position

         N               1    2    3
   W           E
         S               4    5    6

                         7    8    9

   Cancel     OK         ◄    0    ►
```

If the GPS navigator is not working or not connected to the DSC system, you may need to input your vessel's position into the system. This screen will enable you to input the necessary information.

In fact, the DSC will prompt you to change your position manually if it is over four hours old. If you simply press OK when you get this prompt, the DSC will continue to remind you at ten minute intervals.

Normally the position will automatically be updated by the GPS receiver connected to your system.

If GPS is valid, the position, date and time information on the Initial Display Screen will be shown in black type with the indication 'GPS INFORMATION VALID'.

If you lose GPS, the Initial Display Screen will indicate 'NO GPS INFORMATION'.

If the position information is not updated for four hours or more, the position display will fade to Gary and 'NO POSITION INFORMATION' will be displayed.

If you do input the position manually it will be displayed in black with the indication 'Operator Entered Position' and will remain valid for another four hours.

Obviously it is important to keep your position information up to date as this could be vital if you have to send a distress alert!

6.5.4 Date and Time

The system Date and Time is automatically updated by the GPS receiver, if one is connected to your system. However this screen enables you to set the system's clock and calendar manually if you have to. The manual setting will automatically be updated when the GPS-data become valid again.

```
               DATE & TIME
         (DD/MM/YY)      (HH:MM)
          26/09/95        09:40
        Enter current date and time

                          1    2    3

                          4    5    6

                          7    8    9

        Cancel    OK      ◄    0    ►
```

Some GPS systems do not output DATE information. In that case, you will need to use this menu to set the system date.

6.5.5 HF Watch Receiver Set-up

```
        HF WATCH RECEIVER SETUP
  MF   2187.5kHz  - DISTRESS

  HF   8414.5kHz  - DISTRESS

  HF   4207.5kHz  - DISTRESS      CHANGE

  HF   6312.0kHz  - DISTRESS      CHANGE

  HF  12577.0kHz  - DISTRESS      CHANGE

  HF  16804.5kHz  - DISTRESS      CHANGE

     Cancel       OK          Defaults
```

The HF WATCH RECEIVER SETUP screen allows you to choose which channels the watchkeeping receiver will scan. If you change any of the entries, you can then either SAVE, or CANCEL those changes or revert to DEFAULTS.

Every ship at sea must, in order to comply with GMDSS, maintain a continuous watch on following Distress and Safety frequencies:

1. Ships fitted with VHF transceiver: DSC Channel 70 VHF

2. Ships fitted with MF transceiver: DSC frequency 2187.5 kHz .

3. Ships fitted with MF/HF transceiver: DSC frequencies 2187.5 kHz and 8414.5 kHz and at least one of the other HF DSC frequencies (4207.5, 6312, 12577 or 16804.5 kHz). The frequency is chosen according to the ship's position and the time of day.

4. Ships fitted with INMARSAT MES should maintain a watch for ship to shore distress alerts.

If you choose the minimum number of GMDSS required channels as shown
in item 3 above, you will leave some channels free which can be
programmed to scan for calls from national coast radio stations:

```
              HF WATCH RECEIVER SETUP
 MF   2187.5kHz  - DISTRESS

 HF   8414.5kHz  - DISTRESS

 HF   4207.5kHz  - DISTRESS        [CHANGE]

 HF   6312.0kHz  - DISTRESS        [CHANGE]

 HF  12577.0kHz  - DISTRESS        [CHANGE]

 MF   2177.0kHz  - PUBLIC          [CHANGE]

   [ Cancel ]      [   OK   ]      [ Defaults ]
```

6.6 System Information

This is a title screen for the system, which displays your MMSI and your group's MMSI numbers if appropriate. It will also show the   DSC2 Control Panel's software version number. This screen automatically cancels after a few seconds or you can press the OK button to return to the Main Menu:

6.7 Configuration

You cannot access this menu unless you have the correct password. This is because it should only be used by an installation engineer or someone qualified to carry out shipboard maintenance.

6.8 What if something goes wrong?

If you make a mistake, you should still have the opportunity to cancel that call or change that information at each stage of the procedure.

If the system does not respond in the way you expect, you may need to consult Chapter 9: Help!.

7.   Radio Telex & Inmarsat C

This section will look at two other forms of distress communications which can be connected to the DSC2 and give an introductory guide to procedures:

7.1   **Error! Not a valid link.**
7.2   **Error! Not a valid link.**

7.1 Using Radio Telex for distress messages

The ICS DSC2 can send or receive Radio Telex messages using the GMDSS Telex Codec (Coder-Decoder), the GMDSS Telex PC Interface and an approved, IBM-compatible PC running AUTOCOM software. The computer is connected to the Telex PC Interface. The GMDSS Telex Codec is connected to the DSC network and can therefore share the system's equipment (for example, transceivers) and respond to any DSC calls requiring Telex communications.

You would normally use Radio Telex:

1. To send a Telex message to a land-based subscriber via a coast station.
2. To receive a Telex message via a coast station.
3. To contact a ship which has sent you a distress, urgency or safety message asking you to respond using Radio Telex.
4. To send a Radio Telex distress, urgency or safety message.

For the purposes of this manual we will concentrate on the last two options. However, you may also wish to read the appropriate User Manual for your Radio Telex operating system.

Under GMDSS regulations, the DSC2 and transceiver should always be switched on. To send or receive a Radio Telex message you will also need to make sure that the computer running the AUTOCOM program is also switched on and operating.

The Radio Telex system uses the same network and MF/HF transceivers as the DSC system. If the Radio Telex system is being used for routine communication, the status bar on your DSC Control Panel will indicate this. If you send a DSC distress message or the system receives a distress message, this will over-ride any routine Radio Telex call and the AUTOCOM program will break off from any other activity.

If Radio Telex has been specified as the response method by an incoming distress message, then AUTOCOM will automatically switch to the correct response frequency and set to STANDBY mode so that it can begin exchanging information with the vessel in distress.

If there is an incoming distress message, the computer linked to the Radio Telex modem will display it. To respond to this message, or to send your own if you want to use FEC communication for a distress alert, key F5 and select FEC and then type your message from the computer keyboard.

```
COMMUNICATIONS                                        01 Nov 95 17:26:47




>
>
>
>
>FEC
MAYDAY
THIS IS
232444444 232444444 232444444
56.21 NORTH 08.34 WEST
ON FIRE AND DRIFTING REQUIRE
IMMEDIATE ASSISTSANCE
WIND NORTH-WESTERLY FORCE SIX.

DSC FEC Mode :          Transmit Idle          Rx:12520.0   Tx:12520.0  NBDP

F1:EDIT F2:COMMS F3:STATIONS F4:HELP F5:CALL F6:LOG F7:END F8:+? F9:MSG F10:QUIT
```

The AUTOCOM install disk includes six call template files for distress, distress acknowledgement, all ships urgency, individual urgency, all ships safety and individual safety.

A typical Radio Telex distress message might look as follows:

<div align="center">

MAYDAY
DE
232444444 232444444 232444444
56.21 NORTH 08.34 WEST
ON FIRE AND DRIFTING
REQUIRE IMMEDIATE ASSISTANCE
WIND NORTH-WESTERLY FORCE SIX.

</div>

At the end of the message, key F7 on the computer keyboard to switch off the transmitter.

It is very important to keep FEC transmissions short during distress working and not to leave an idling FEC transmission running as this could block a vital channel for other distress messages or traffic.

There is no automatic method for signalling the end of a distress working session, so if you want to return to scanning for incoming calls, you must do this manually by pressing the ALT F7 key on the computer keyboard.

7.2 Using Inmarsat-C for distress messages

DSC2 systems can send undesignated distress alerts via Inmarsat-C. If your system has been configured this way, the button "INMARSAT DISTRESS" appears on the TYPE OF CALL screen.

```
┌─────────────────────────────────────────┐
│              TYPE OF CALL                 │
├─────────────────────┬─────────────────────┤
│   DISTRESS ALERT    │     INDIVIDUAL      │
├─────────────────────┼─────────────────────┤
│  ALL SHIPS URGENCY  │       GROUP         │
├─────────────────────┼─────────────────────┤
│  ALL SHIPS SAFETY   │   GEOGRAPHIC AREA   │
├─────────────────────┼─────────────────────┤
│   DISTRESS RELAY    │     TELEPHONE       │
├─────────────────────┼─────────────────────┤
│  INMARSAT DISTRESS  │                     │
├─────────────┐       ├─────────────────────┤
│  Cancel     │       │     TEST CALL       │
└─────────────┴───────┴─────────────────────┘
```

To send a distress alert via INMARSAT-C, select this option and proceed as
described on page 11: SENDING A DISTRESS ALERT

```
┌─────────────────────────────────────────┐
│        DSC TRANSMIT FREQUENCY             │
├─────────────────────┬─────────────────────┤
│   VHF CHANNEL 70    │   MF   2187.5kHz    │
├─────────────────────┼─────────────────────┤
│  INMARSAT DISTRESS  │   HF   4207.5kHz    │
├─────────────────────┼─────────────────────┤
│                     │   HF   6312.0kHz    │
├─────────────────────┼─────────────────────┤
│  ALL HF MULTI FREQ  │   HF   8414.5kHz    │
├─────────────────────┼─────────────────────┤
│  USER MULTI FREQ    │   HF  12577.0kHz    │
├─────────────┐       ├─────────────────────┤
│  Cancel     │       │   HF  16804.5kHz    │
└─────────────┴───────┴─────────────────────┘
```

8. USING THE DSC2 SYSTEM WITH MANUALLY TUNED TRANSCEIVERS

This Guide has assumed that the DSC2 system you are operating will automatically re-tune the relevant transceivers on board your vessel whenever this is required. If your transceivers can only be tuned manually, you will need to read through this Chapter carefully.

There are two major implications for any ship with manually tuned transceivers:

1. Whenever you want to send or receive a call you need to change the transceiver and frequency yourself.

2. A DSC system with manually tuned transceivers will not automatically repeat a distress alert. You have to initiate any repeat calls yourself - if you can.

8.1 Retuning to send or receive calls

For example, when sending a distress call you would need to tune the relevant transceiver to the right frequency, send the call, then retune to the right transceiver and frequency to await a response.

The DSC2 makes retuning manually a straightforward process by prompting you to retune whenever necessary and then asking you to confirm that you have carried this out.

See also page 18 for more information on choosing the right transceiver and frequencies.

The DSC has no way of detecting whether you have retuned or not, so it is very important that you follow any instructions given as carefully as possible.

When sending a distress alert from the COMPOSE DISTRESS ALERT screen:

```
         COMPOSE DISTRESS ALERT
┌─────────────────────────────┐ ┌────────┐
│ DSC frequency:              │ │ CHANGE │
│  VHF Channel 70             │ └────────┘
├─────────────────────────────┤ ┌────────┐
│ Nature:                     │ │ CHANGE │
│  UNDESIGNATED               │ └────────┘
├─────────────────────────────┤ ┌────────┐
│ Position:                   │ │ CHANGE │
│  37°41'N  122°05'W 13:33 UTC│ └────────┘
├─────────────────────────────┤ ┌────────┐
│ Subsequent communication:   │ │ CHANGE │
│  SIMPLEX TELEPHONE          │ └────────┘
├─────────────────────────────┤
│   Tune VHF1 to DSC frequency then │
│ press and hold DISTRESS button for│
│    5 seconds to send this alert   │
└─────────────────────────────┘
┌────────┐
│ Cancel │
└────────┘
```

```
        Information
┌─────────────────────────┐
│      Tune radio VHF1 to │
│       VHF Channel 16    │
│  for distress alert response │
└─────────────────────────┘
        ┌────────┐
        │   OK   │
        └────────┘
```

When sending a call confirmation:

```
            SEND CALL CONFIRMATION
               ALL SHIPS CALL
    Category: SAFETY
    Call to:
     ALL SHIPS

    Telecommand: J3E TELEPHONE
     MF  2182.0kHz  Rx  2182.0kHz
     No acknowledge required(EOS)

    DSC frequency:
     MF  2187.5kHz

     Tune HF1 to DSC frequency details
      then press ENTER button to send
    ┌────────┐
    │ Cancel │
    └────────┘
```

```
                  Information
            Tune radio HF1 to
     MF  2182.0kHz  Rx  2182.0kHz
            for call response

               ┌──────────┐
               │    OK    │
               └──────────┘
```

8.2 Sending repeated distress alerts

A DSC2 system with manually tuned transceivers will not automatically repeat distress alerts.

You must manually repeat each alert, as if you were sending a new distress alert, following the procedures detailed in Chapter 2.

9. HELP!

This section aims to provide quick answers to some common questions about the DSC including what to do next if:

9.1   The vessel is sinking/ you need to abandon ship (go to page 124)

9.2   The DSC is displaying a fault/part or most of the system has failed (go to page 124)

9.3   The control panel screen is blank (go to page 124)

9.4   The ship has suffered a power loss (go to page 125)

9.5   The ship has lost contact with GPS (go to page 125)

9.6   You've sent a false alarm (go to page 126)

9.7   No-one has responded to your distress alert/another ship's distress alert (go to page 128)

9.1 The vessel is sinking/you need to abandon ship....

If time allows, immediately transmit a distress call using HF/MF/VHF DSC or INMARSAT.

Then embark in survival craft with portable VHF transceiver, SART (Search And Rescue Transponder) and, if possible, an EPIRB.

Switch on the EPIRB and SART immediately and leave these devices on!

If you did send a DSC distress alert using the usual procedure before you abandoned your ship, the distress alert will be repeated until the alert is acknowledged or the transceiver fails.

However, if the radio equipment is manually tuned make sure that you send a distress alert just before you abandon ship. This is vital as manually tuned transceivers will not repeat a DSC distress alert!

9.2 The DSC is displaying a system fault/ Part or most of the system has failed....

This means that one or more of the units that forms part of the DSC system is faulty. You can find out which units are faulty and the nature of the fault by looking at the MODULE STATUS option of the SYSTEM STATUS menu, which is listed in the Main Menu. You may then choose to activate one of the duplicate modules via the Set-up menu.

9.3 The control panel screen is blank....

First try adjusting the brightness and contrast controls on the left hand side of the DSC control panel. If this doesn't work then cycle the power to the control panel.

9.4 The ship has suffered a power loss....

GMDSS requires the radio-equipment used for Distress Alerts to be powered from an independent source of energy for at least one hour.

9.5 The ship has lost contact with GPS....

Normally the time, date and position information is displayed in black in the top half of the Initial Display Screen. If you lose GPS, a highlighted bar will appear showing 'NO GPS INFORMATION', the position display will fade to Gary and a message box will pop up asking you to enter your current position manually. If you choose not to do this and simply close down the message box by pressing the 'NO' button, the system will continue to remind you at ten minute intervals and will display a highlighted bar showing 'NO POSITION INFORMATION'. The system will prompt you for an update of a manually entered position every four hours.

If you want to update a manual position sooner, use the Manual Position screen (an option of the Set-up sub-menu) which will enable you to input the necessary information).

If you do input the position manually a highlighted bar will appear below the information on the Initial Display Screen indicating 'Operator Entered Position'.

Obviously it is important to keep your position information up to date as this could be vital if you have to send a distress alert!

This message bar will automatically clear and the position information will be updated as soon as GPS becomes valid again.

For more information on entering your position (or time or date) manually, see page 109.

9.6 You've sent a false alarm....

If you have sent a false alarm you need to cancel this distress alert as soon as possible, and then inform the nearest coast station.

To cancel the distress alert message:

1. Simply press the "CANCEL DISTRESS" button.

```
┌─────────────────────────────────────────┐
│         GMDSS DSC SYSTEM                  │
│ ┌───────────────────────────────────────┐│
│ │  37°41'N           COG:269°            ││
│ │ 122°05'W           SOG:044kts          ││
│ │  11:19 UTC         22/03/96            ││
│ │     GPS INFORMATION VALID              ││
│ └───────────────────────────────────────┘│
│ ┌───────────────────────────────────────┐│
│ │VHF Channel 16 RT    MF  2182.0kHz      ││
│ │VHF Watch Rx OK      Rx  2182.0kHz      ││
│ │                     HF Watch Rx OK     ││
│ │                                        ││
│ │     SENDING VHF DISTRESS CALL          ││
│ │                                        ││
│ └───────────────────────────────────────┘│
│ ┌───────────────────────────┐ ┌────────┐ │
│ │  CANCEL DISTRESS CALL      │ │ MENU   │ │
│ └───────────────────────────┘ └────────┘ │
└─────────────────────────────────────────┘
```
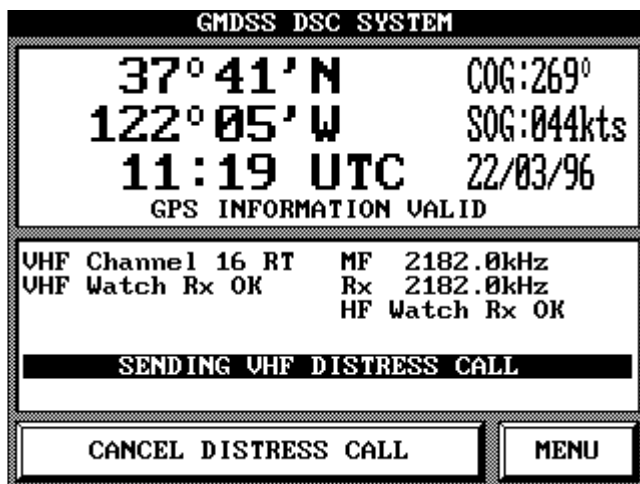
The DSC2 system will ask you to confirm the distress cancellation for the radio (s) currently transmitting the distress call.

2. Confirm the CANCEL DISTRESS CALL action.

```
┌──────────────────────────┐
│        Confirm           │
├──────────────────────────┤
│                          │
│  Cancel VHF distress call?│
│                          │
├──────────────────────────┤
│   ┌─────┐    ┌─────┐     │
│   │ Yes │    │ No  │     │
│   └─────┘    └─────┘     │
└──────────────────────────┘
```
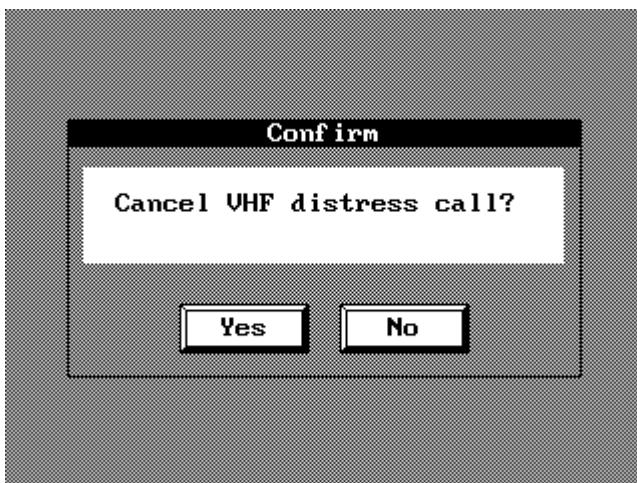
The system will simply ask you to confirm or cancel your action by pressing either the YES or NO button.

```
┌──────────────────────────┐
│      Information          │
├──────────────────────────┤
│                          │
│      Cancelling VHF       │
│      distress call        │
│                          │
└──────────────────────────┘
```
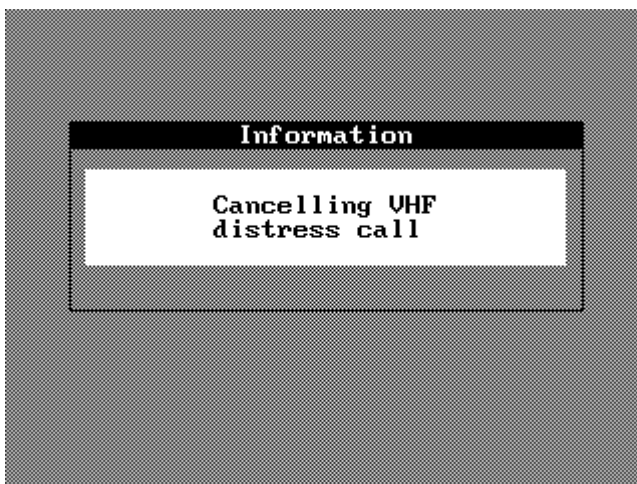
It is very important to inform the nearest Coastguard MRCC (Maritime Rescue Co-ordination Centre) that you have sent a false distress alert as soon as you have pressed the "CANCEL DISTRESS" button. Use any communication means possible. If you do not do this, you may cause others to put their lives at risk unnecessarily.

Remember:
Sending false alerts can cause many problems for rescue services and other vessels. Always use the system carefully - the last thing you want in an emergency is to be mistaken for a false alarm!

For information on sending and cancelling distress alerts, see Chapter 2.

9.7 No-one has responded to your distress alert/ another ship's distress alert....

If no-one has responded to your alert, you should immediately:

- make sure that your radio equipment is working properly (check system status) and that you are using the right equipment and frequency for your sea area and conditions
- use any other means possible to send your message, for example INMARSAT or EPIRB

If no-one has responded to another ship's alert and the distress alert has met the right conditions which are:

1. The DSC2 system has already received one distress alert
2. The DSC2 system has received a second distress alert within the last five minutes
3. The call alert was not received on HF

You may then need to acknowledge the alert yourself.

Warning!
You should only use the acknowledge option as a last resort, as it will stop
a distress alert from being sent to any other vessel or coast station. If you
do acknowledge a distress alert, it is then your responsibility to ensure that
the message gets through to an MRCC - by whatever means possible.

We have built safeguards into the DSC2 system so that you will not be given
the option to acknowledge a distress alert unless these IMO/GMDSS
conditions have been met. The DSC2 system will also flash up a warning
when you attempt to acknowledge and ask you to confirm that you wish to
proceed.

Remember that you can only acknowledge a repeated VHF or MF distress
call. HF calls can be sent all over the world, so you could have the situation
where a distress call could be acknowledged (and therefore cancelled) by a
vessel which is thousands of miles away from the distress vessel.

For more information on acknowledging a distress alert, see Chapter 2.

10. APPENDICES

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10.1   APPENDIX I   DISTRESS FREQUENCIES

Within GMDSS guidelines a number of frequencies have been specifically
allocated for ships, aircraft or survival craft to use for distress
communications. They should only be used for the distress call and distress
traffic and for urgency or safety calls. Distress frequencies are often paired,
each pair consisting of one transmission and one receiving frequency.

Allocated Frequencies for Distress and Safety

Band	DSC distress/safety	Radio Telephony distress/safety	Radio Telex distress/safety
MF	2 187.5	2 182	2 174.5
HF 4 MHz	4 207.5	4 125	4 177.5
HF 6 MHz	6 312	6 215	6 268
HF 8 MHz	8 414.5	8 291	8 376.5
HF 12 MHz	12 577	12 290	12 520
HF 16 MHz	16 804.5	16 420	16 695
VHF	Channel 70	Channel 16	No facility

For more information on how to choose the right frequency for different
environmental conditions, see page 18.

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10.2 APPENDIX II   MMSI NUMBERS

Any 'station' involved in the Mobile Maritime Service, from ship stations to groups of ships or coast stations, has its own 'identity code'. These nine-digit codes are vital to ensure that important communications get through to the right station. Four types of stations have an MMSI number:

11.2.1 **Error! Not a valid link.**

11.2.2 **Error! Not a valid link.**

11.2.3 **Error! Not a valid link.**

11.2.4 **Error! Not a valid link.**

10.2.1 Ship MMSI number

A ship has a nine-digit MMSI number which is expressed as:

MIDXXXXXX where MID is the country code. The MID represents only the country assigning the group identity and does not prevent calls to groups of ships containing more than one nationality.

Example of an individual ship MMSI: 232999999.

The UK country code is 232 or 233 and the six following numbers in the MMSI identify a particular ship. In the previous example of an individual ship MMSI, the ship has a UK MID and has '999999' as identifier.

Group of ships MMSI number

These have a very similar MMSI number to individual ship MMSI's except that the country code is preceded by a zero and only five numbers are used to identify each group.

Example of a 'group of ships' MMSI: 023288888.

10.2.2 Coast station MMSI number

These have a very similar MMSI number to group of ships MMSI's except that the country code is preceded by two zeroes and only four numbers are used to identify each group.

Example of a 'coast station' MMSI: 002328888.

10.2.3 Group of coast stations MMSI number

These have a very similar MMSI number to coast station MMSI's except that the four number identifier will be different.

Example of a 'group of coast stations' MMSI: 002328887.

10.2.4 MID CODES by country

Belgium	205	Ireland	250	Norway	257
Denmark	219	Israel	428	Norway	258
Estonia	276	Italy	247	Poland	261
Finland	230	Latvia	275	Portugal	263
France	227	Lithuania	277	Russian Fed	273
Germany	211	Luxembourg	253	Spain	224
Germany	218	Madeira	255	Sweden	265
Gibraltar	236	Malta	256	Switzerland	269
Greece	237	Monaco	254	Turkey	271
Greece	239	Netherlands	244	UK	232
Greenland	331	Netherlands	245	UK	233
Iceland	251	Netherlands	246	Yugoslavia	279

10.2.5 MID CODES by number

205	Belgium	244	Netherlands	261	Poland
211	Germany	245	Netherlands	263	Portugal
218	Germany	246	Netherlands	265	Sweden
219	Denmark	247	Italy	269	Switzerland
224	Spain	250	Ireland	271	Turkey
227	France	251	Iceland	273	Russian Fed
230	Finland	253	Luxembourg	275	Latvia
232	UK	254	Monaco	276	Estonia
233	UK	255	Madeira	277	Lithuania
236	Gibraltar	256	Malta	279	Yugoslavia
237	Greece	257	Norway	331	Greenland
239	Greece	258	Norway	428	Israel

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10.3 APPENDIX III   TESTING THE SYSTEM

All ships with DSC equipment should carry out daily, weekly and monthly tests.

10.3.1 Daily tests

- Check that the DSC equipment is operating properly at least once day, using the self-test procedure, without transmitting any signals.
- Check the Radio Batteries and the status of the Battery Charger. GMDSS regulations, Chapter IV, Regulation 13, Paragraph 6, requires the charger to be an automatic type, able to recharge the Radio Batteries within 10 h.
- Check any printers to make sure they have enough paper.

10.3.2 Weekly tests

- Check that the DSC equipment is operating properly at least once a week by transmitting a test call when you are within range of a coast station fitted with DSC equipment. If you have been out of range of a suitable coast station for more than a week, make a test call as soon as you get the opportunity.

10.3.3 Test calls

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10.4 APPENDIX IV   GLOSSARY

Term	Definition
BIH	*Bureau International de l'Heure* (the International Time Bureau, an organisation which maintains the time system world-wide)
CCIR	International Radio Consultative Committee
CES	Coast Earth Station
COG	Course over ground (of ship)
distress	The IMO/GMDSS definition of distress is: *'where immediate assistance is required by the mobile station in distress.'*
DSC	Digital Selective Calling, system used in GMDSS to transmit distress alerts from ships. May also be used by coast stations to acknowledge alerts and by other ships to relay distress alerts.
DTE	Data Terminal Equipment - part of the GMDSS satellite system (usually a personal computer)
EPIRB	Emergency Position Indicating Radio Beacon, a device which automatically transmits distress alert and position information in the event of an emergency
FEC	Forward Error Correction
GMDSS	Global Maritime Distress and Safety System
GPS	Global Positioning System
HF	High frequency (frequencies in the range 3-30 MHz)

Hz	Hertz, the unit for frequency
IMO	International Maritime Organisation
INMARSAT	INternational MARitime SATellite
kHz	Kilo Hertz (1 000 Hertz)
LCD	Liquid crystal display
LES	Land Earth Station
MF	Medium frequency (frequencies in the range 300-3000 kHz)
MHz	MegaHertz (1 000 000 Hertz)
MMS	Mobile Maritime Service, a mobile service between coast stations and ships, or between ships, survival craft and EPIRB's may also be part of the MMS (see also MMSI)
MMSI	Mobile Maritime Service Identity (see also MMS), a nine-digit identifier for each station

MRCC	Maritime Rescue Co-ordination Centre (also known as RCC)
NAVTEX	Narrow band direct printing telegraphy system used for transmitting navigational and meteorological warnings and urgent information to shipping. It is also FEC-based.
NCS	Network Co-ordination Station (allocates channels etc. in the INMARSAT system)
Radio Telex	Narrow band direct printing telegraphy system, a method of communication
RCC	Rescue Co-ordinating Centre (see also MRCC)
safety	The IMO/GMDSS definition of safety is *'when you have to transmit an important navigational message or meteorological warning'* .
SART	Search and Rescue Transponder
Simplex Telephone	One-way telephone (only one person can speak at a time)
SOG	Speed over ground (of ship)
telecommand	The message component of a DSC call which specifies the type of subsequent communications required
telecommunications	Any transmission, emission or reception of signals by wire, radio, optical or other electromagnetic systems
telegraphy	Telecommunication method which transmits, receives or reproduces documentary matter such as written or printed matter or fixed images

telephony	Telecommunication method set up for the transmission of speech or other sounds
transceiver	communications device that can transmit and receive signals
transmissive	an LCD screen which also appears to be backlit - which helps the contrast
urgency	The IMO/GMDSS definition of urgency is *'where the station making the call has a very urgent message to transmit concerning the safety of a unit or person'*.
UTC	Universal Co-ordinated Time, the standard time system used for maritime communications
VHF	Very High Frequency (30-300 MHz)
Watch receiver	Device that scans particular frequencies for distress alerts and other calls

10.5 APPENDIX V   BIBLIOGRAPHY

The following reference books (or their international equivalents) provide further details about GMDSS that you may find very helpful:

- Handbook for Marine Radio Communication by GD Lees and WG Williamson (Lloyd's of London Press, ISBN 1 85044 472 2)
- Admiralty List of Radio Signals Volume 5 1995/96 (Published by the Hydrographer of the Navy, Taunton, Somerset)
- GMDSS Handbook (Published by the International Maritime Organisation, London)

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11. INDEX

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