### 8.9.4 Priority Scanning (P-SCAN)

In the default setting, Channel 16 is set as the priority channel. You may change the priority channel to the desired channel from Channel 16 on the main menu screen, refer to section "**13.5 PRIORITY CHANNEL**".

1. Press the **SQL** key, then press the **CH▲**/**CH▼** key until background noise disappears.
2. Press the **◄**/**►** key repeatedly, then press the **[SCAN]** soft key. "P-SCAN" appears on the display. Scanning will proceed between the memorized channels and preset channel (described in next section) and the priority channel. The priority channel will be scanned after each programmed channel.
3. To stop scanning, press the **16/S**, **[SCAN]** or **CLR** key.
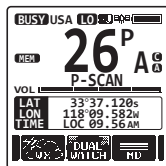
8.10 PRESET CHANNELS: INSTANT ACCESS

10 preset channels can be programmed for instant access. Press the **◄**/**►** key repeatedly, then press the **[PRESET]** soft key. Pressing the **[PRESET]** key activates the user assigned channel bank. If the **[PRESET]** soft key is pressed and no channels have been assigned, an alert beep will be emitted from the speaker.

Before beginning the Instant Access operation, assign the "PRESET" command into one of the programmable keys, refer to section "**12.7 SOFT KEYS**".

8.10.1 Programming

1. Press the **CH▲**/**CH▼** key to select the channel to be programmed.
2. Press the **◄**/**►** key repeatedly to indicate the function on the display, then press and hold the **[PRESET]** soft key until the "**P-SET**" icon and channel number are blinking.
3. Press the **[ADD]** soft key to program the channel into the preset channel. "**P-SET**" icon will blink.
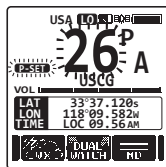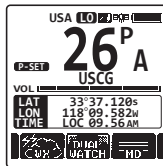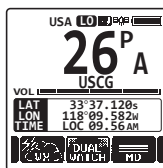
4. Repeat steps 1 through 4 to program the desired channels into the preset channels. Up to 10 channels can be registered. If you attempt to register the 11th channel, error beep will sound.

8.10.2 Operation

1. Press the ◄/► key repeatedly, then press the **[PRESET]** soft key to recall the preset channel. The "**P SET**" icon will appear on the display.
2. Press the **CH▲/CH▼** key to select the desired preset channel.
3. Press one of soft keys, then press the **[PRESET]** soft key to return to the last selected channel. The "**P SET**" icon will disappear from the display.

8.10.3 Deletion

1. Press the ◄/► key repeatedly, then press the **[PRESET]** soft key to recall the preset channel.
2. Press the **CH▲/CH▼** key to select the preset channel to be deleted.
3. Press one of soft keys, then press and hold the **[PRESET]** soft key until the "**P-SET**" icon and channel number are blinking.
4. Press the **[DELETE]** soft key to delete the channel from the preset channel.
5. Repeat steps 2 through 4 to delete the desired channels from preset channels.
6. To exit from deleting the preset channels, press the **[QUIT]** soft key.

9 GPS Operation

9.1 GPS Logger Operation

The HX870 includes a logger for position information that allows you to record your location at a regular interval.

1. Press the **[LOGGER]** soft key to switch the function on and off.
   The recording starts and the display returns to the previous screen with the "@" icon on the top of the display.
   • You may change the interval time of recording via the SETUP mode.
   Notes:
   • The power save operation of the GPS unit is disabled while the logger is activated.
   • To utilize the records, connect the HX870 to a PC and take the log data from the radio by using the PC Programming Software YCE02 (the YCE02 may be downloaded through the YAESU website).

Logger operation alert:

❐ When the memory for log data becomes full, three beeps will sound and a warning message will be displayed. Afterwards the logger does not operate until the log data in the memory are erased.

❐ When the logger cannot record for some reasons, three beeps will sound and a warning message will be displayed. Afterwards the logger does not operate anymore.

❐ An error message will be displayed when the radio cannot erase the log data in the memory during the operation following the alert of memory full (see above) or in the SETUP mode (page xx).
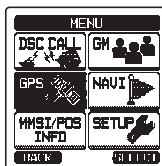
9.2 GPS Compass Display

1. Press the MENU key to display "MENU", then select "GPS" with the **CH▲/CH▼/◄/►** key.
2. Press the **[SELECT]** soft key, then select "COMPASS" with the **CH▲/CH▼** key.
3. Press the **[ENTER]** soft key to display the compass display.
4. Press the **CLR** key to return to radio operation.
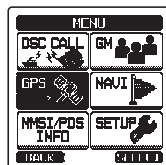
9.3   GPS Information Display

1. Press the MENU key to display "MENU", then select "GPS" with the **CH▲**/**CH▼**/**◄**/**►** key.
2. Press the **[SELECT]** soft key, then select "GPS INFO" with the **CH▲**/**CH▼** key.
3. Press the **[ENTER]** soft key to display the information display.
4. Press the **CLR** key to return to radio operation.

9.4   Numerical display with GPS status

1. Press the **MENU** key to display "MENU", then select "GPS" with the **CH▲**/**CH▼**/**◄**/**►** key.
2. Press the **[SELECT]** soft key, then select "GPS STATUS" with the **CH▲**/**CH▼** key.
3. Press the **[ENTER]** soft key to display the GPS status currently being received.
4. Press the **CLR** key to return to radio operation.
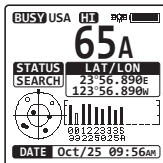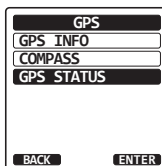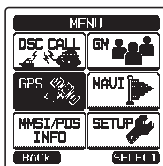
10 DIGITAL SELECTIVE CALLING (DSC)

10.1 GENERAL

WARNING

This **HX870** is designed to generate a digital maritime distress and safety call to facilitate search and rescue. To be effective as a safety device, this equipment must be used only within communication range of a shore-based VHF marine channel 70 distress and safety watch system. The range of signal may vary but under normal conditions should be approximately 5 nautical miles.

Digital Selective Calling (DSC) is a semi-automated method of establishing a radio call, it has been designated by the International Maritime Organization (IMO) as an international standard for establishing VHF, MF and HF radio calls. It has also been designated as part of the Global Maritime Distress and Safety System (GMDSS). It is planned that DSC will eventually replace aural watches on distress frequencies and will be used to announce routine and urgent maritime safety information broadcasts.

This system allows mariners to instantly send a distress call with GPS position (when connected to the transceiver) to the Coast Guard and other vessels within range of the transmission. DSC will also allow mariners to initiate or receive Distress, Urgency, Safety, Routine, Position Request, and Position Report, Automatic Position Polling, and Group calls to or from another vessel equipped with a DSC transceiver.

10.2 MARITIME MOBILE SERVICE IDENTITY (MMSI)

10.2.1 What is an MMSI?

An MMSI is a nine digit number used on marine transceivers capable of using Digital Selective Calling (DSC). This number is used like a telephone number to selectively call other vessels.

THIS NUMBER MUST BE PROGRAMMED INTO THE RADIO TO OPERATE DSC FUNCTIONS.

How can I obtain an MMSI assignment?
In the USA, visit the following websites to register:

http://www.boatus.com/mmsi/
http://seatow.com/boating_safety/mmsi.asp
http://www.usps.org/php/mmsi/rules.php

In Canada, visit

http://www.ic.gc.ca/epic/site/smt-gst.nsf/en/sf01032e.html

10.2.2 Programming the MMSI

WARNING

> **The MMSI can be inputted only once.** Therefore **please be careful not to input the incorrect MMSI number.** If you need to change the MMSI number after it has been entered, the radio will have to be returned to Factory Service. Refer to the section "**16.2 FACTORY SERVICE**".

1. Press the **MENU** key to display "MENU".
2. Press the **CH▲/CH▼/◄/►** key to select "MMSI/POS INFO".
3. Press the **[SELECT]** soft key. (To cancel, press the **[BACK]** soft key.)
4. Press the **CH▲/CH▼/◄/►** key to select the first number of your MMSI, then press the **[SELECT]** soft key to step to the next number.
5. Repeat step 4 to set your MMSI number (9 digits).
6. If a mistake was made entering in the MMSI number, press the **[BACK]** soft key until the wrong number is selected, then press the **CH▲/CH▼** key to correct the entry and press the **[SELECT]** soft key.
7. When finished programming the MMSI number, press the **[FINISH]** soft key. The radio will ask you to input the MMSI number again. Use steps 4 through 6 above.
8. After the second number has been input, press the **[FINISH]** soft key to store the MMSI.
9. Press the **[OK]** soft key to return to radio operation.
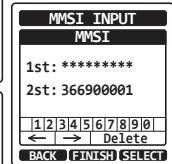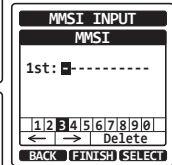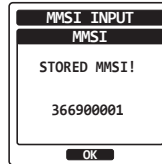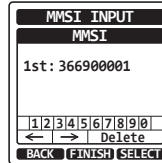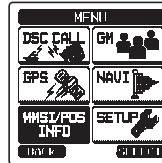
NOTE

> To view your MMSI after programming to ensure it is correct, perform steps 1 to 3. Look that the MMSI number shown on the display is correct.

10.3 DSC DISTRESS CALL

The **HX870** is capable of transmitting and receiving DSC distress messages to all DSC radios. The **HX870** may be connected to a GPS to also transmit the latitude and longitude of the vessel.

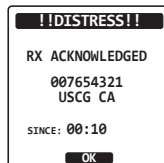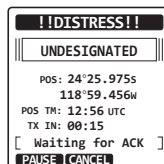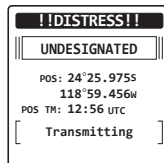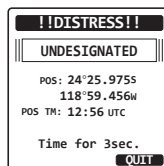### 10.3.1 Transmitting a DSC Distress Call

NOTE

To be able to transmit a DSC distress call an MMSI number must be programmed, refer to section "**10.2.2 Programming the MMSI**".

In order for your ships location to be transmitted, the internal GPS must be activated.

Basic Operation

1. Lift the red spring loaded DISTRESS cover on the right side of the transceiver, and press and hold the **DISTRESS** key. The radio display will count down (3-2-1) and then transmit the distress call. The backlight of the display and keypad flashes while the radios display is counting down.

```
!!DISTRESS!!
  UNDESIGNATED
POS: 24°25.975S
    118°59.456W
POS TM: 12:56 UTC

Time for 3sec.
         QUIT
```

2. When the distress signal is sent, the transceiver watches for a transmission between CH16 and CH70 until an acknowledgment signal is received.

```
!!DISTRESS!!
  UNDESIGNATED
POS: 24°25.975S
    118°59.456W
POS TM: 12:56 UTC
[  Transmitting  ]
```

3. If no acknowledgment is received, the distress call is repeated in 4 minute intervals until a DSC acknowledgment is received.

4. When a DSC distress acknowledgment is received, a distress alarm sounds and Channel 16 is automatically selected. The display shows the MMSI of the ship responding to your distress.

```
!!DISTRESS!!
  UNDESIGNATED
POS: 24°25.975S
    118°59.456W
POS TM: 12:56 UTC
TX IN: 00:15
[ Waiting for ACK ]
PAUSE  CANCEL
```

5. Press the **PTT** button and state your name, vessel name, number of persons on board and the distress situation, then say "over" and wait for a reply from the acknowledging ship.

```
!!DISTRESS!!
RX ACKNOWLEDGED
   007654321
    USCG CA

SINCE: 00:10
       OK
```

6. To turn off the distress alarm before the radio retransmits the distress call, press the **16/S** key.
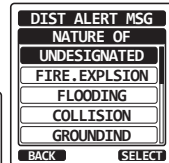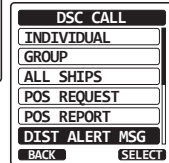
Transmitting a DSC Distress Alert with Nature of Distress

The **HX870** is capable of transmitting a DSC distress alert with the following "Nature of Distress" categories:

Undesignated, Fire, Flooding, Collision, Grounding, Capsizing, Sinking, Adrift, Abandoning, Piracy, MOB.

1. Press the **MENU** key to display "MENU", then select "DSC CALL" with the **CH▲/CH▼/◄/►** key.
2. Press the **CH▲/CH▼** key to select "DIST ALERT MSG".
3. Press the **[SELECT]** soft key. (To cancel, press the **[BACK]** soft key.) The "DIST ALERT MSG" menu will appear on the display.
4. Press the **[NATURE]** soft key, then press the **CH▲/CH▼** key to select the desired nature of distress category.
   Nature of distress categories: Fire, Flood, Collision, Grounding, Capsizing, Sinking, Adrift, Abandoning, Piracy, and MOB.
5. Press the **[SELECT]** soft key.
6. Press and hold the **DISTRESS** key until a distress alert is transmitted.
7. Perform the steps 1 through 6 of the basic operation described in the previous section.
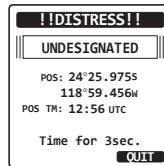
Pausing a DSC Distress Call

After a DSC distress call is transmitted, the DSC distress call is repeated every 4 minutes until the call is canceled by the user or until the radio is turned on and off again. The **HX870** has provision to suspend (pause) the retransmitting of the distress call by the procedure below.
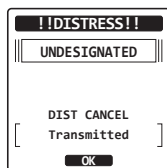
1. After the distress call is transmitted, the radio will show the top display to the right.
   Looking at this display you will notice "TX IN: 0:15", this is the time when the radio will re-transmit the DSC distress call.
2. To suspend re-transmitting the DSC call, press the **[PAUSE]** soft key.
3. To resume counting down to transmit the DSC Distress call, press the **[RESUME]** soft key.
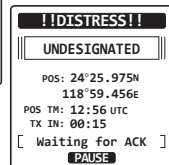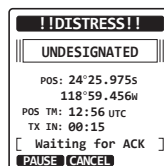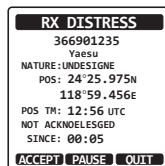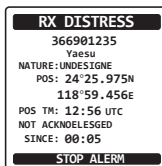
Canceling a DSC Distress Call

If a DSC distress call was sent by error the **HX870** allows you to send a message to other vessels to cancel the distress call that was made.

Press the **[CANCEL]** soft key, then press the **[OK]** soft key.

```
┌─────────────────┐      ┌─────────────────┐
│  !!DISTRESS!!   │      │  !!DISTRESS!!   │
│ ║ UNDESIGNATED ║│      │║ UNDESIGNATED  ║│
│                 │      │                 │
│     CANCEL      │      │                 │
│  Do you want to │      │   DIST CANCEL   │
│  cancel a DIST? │      │  [ Transmitted ]│
│ [OK]      [NO]  │      │     [OK]        │
└─────────────────┘      └─────────────────┘
```

10.3.2 Receiving a DSC Distress Call

1. When a DSC distress call is received, an emergency alarm sounds.
2. Press any key to stop the alarm.
3. Press the **CH▼** key several times to show information on the vessel in distress.

```
┌─────────────────┐
│  RX DISTRESS    │
│    366901235    │
│      Yaesu      │
│ NATURE:UNDESIGNE │
│  POS: 24°25.975N │
│      118°59.456E │
│ POS TM: 12:56 UTC│
│ NOT ACKNOELESGED │
│  SINCE: 00:05   │
│    [STOP ALERM] │
└─────────────────┘
```

```
┌─────────────────┐
│  RX DISTRESS    │
│    366901235    │
│      Yaesu      │
│ NATURE:UNDESIGNE │
│  POS: 24°25.975N │
│      118°59.456E │
│ POS TM: 12:56 UTC│
│ NOT ACKNOELESGED │
│  SINCE: 00:05   │
│[ACCEPT][PAUSE][QUIT]│
└─────────────────┘
```

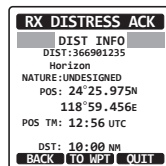On the display you will notice 3 soft key selections. These selections are described below:

[ACCEPT]: Press this key to accept the DSC distress call and to switch to Channel 16.

Note: If a key is not pressed for 15 seconds or longer the radio will automatically select Channel 16. (Timer setting time is set in "CH SWITCH TIME" from "DSC SETUP". The default setting is 15 sec.)

[PAUSE]: Press this key to temporarily disable automatic switching to Channel 16.

[QUIT]: Press this key to quit the automatic Channel 16 switching and revert to the last selected working channel.

4. Press the **[TO WPT]** soft key to enter the "Waypoint Input" menu, then enter the desired waypoint name (up to 11 characters), described previously (select the letter/number by pressing the **CH▲**/**CH▼** key and move the cursor by pressing the **[SELECT]**/**[BACK]** soft keys).

The ID is the MMSI from the vessel in distress.

```
┌─────────────────┐
│ RX DISTRESS ACK │
│ ▒▒DIST INFO▒▒  │
│  DIST:366901235 │
│    Horizon      │
│ NATURE:UNDESIGNED│
│  POS: 24°25.975N │
│      118°59.456E │
│ POS TM: 12:56 UTC│
│                 │
│  DST: 10:00 NM  │
│[BACK][TO WPT][QUIT]│
└─────────────────┘
```

5. When you finish entering the waypoint name, press the **[ENTER]** soft key to replace the display to the waypoint screen. The display indicates the distance and direction of the distressed vessel, and also the compass indicates the distressed vessel by dot (●).

6. To stop navigating to a waypoint, press one of the soft keys, then press the **[STOP]** soft key. The radio is switched to the normal mode.
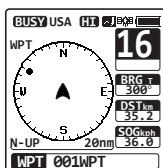
NOTE

You must continue monitoring Channel 16 as a coast station may require assistance in the rescue attempt.

NOTE

When there is an unread distress alert, "⊡" icon will appear on the display. You may review the unread distress alert from the DSC log, refer to the section "**10.13.2 Reviewing a Logged DSC Distress Call**".
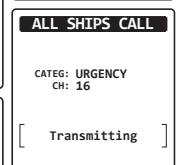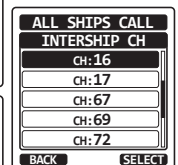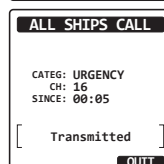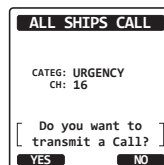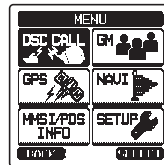
10.4 ALL SHIPS CALL

The all ships call function allows contact to be established with DSC equipped vessels without having their MMSI in the individual calling directory. Also, priority for the call can be designated as "Urgency" or "Safety".

URGENCY Call: This type of call is used when a vessel may not truly be in distress, but have a potential problem that may lead to a distress situation. This call is the same as saying "PAN PAN, PAN PAN, PAN PAN" on Channel 16.

SAFETY Call: This type of call is used to transmit boating safety information to other vessels. This message usually contains information about an overdue boat, debris in the water, loss of a navigation aid or an important meteorological message. This call is the same as saying "Securite, Securite, Securite".

10.4.1 Transmitting an All Ships Call

1. Press the **MENU** key to display "MENU", then select "DSC CALL" with the **CH▲**/**CH▼**/**◄**/**►** key.
2. Press the **CH▲**/**CH▼** key to select "All SHIPS".
3. Press the **[SELECT]** soft key. (To cancel, press the **[BACK]** soft key.)
4. Press the **CH▲**/**CH▼** key to select the nature of call ("SAFETY" or "URGENCY"), then press the **[SELECT]** soft key.
5. Press the **CH▲**/**CH▼** key to select the operating channel you want to communicate on, then press the **[SELECT]** soft key.
6. Press the **[YES]** soft key to transmit the selected type of all ships call.
7. After the all ships call is transmitted, the transceiver will switch to the selected channel.
8. Listen to the channel to make sure it is not busy, then key the microphone and say "PAN PAN, PAN PAN, PAN PAN" or "Securite, Securite, Securite" depending on the priority of the call.
9. Press the **[QUIT]** soft key to exit the all ships call menu.

10.4.2 Receiving an All Ships Call

1. When an all ships call is received, an emergency alarm will sound.
    The display shows the MMSI of the vessel transmitting the all ships call and the radio will change to the requested channel after 15 seconds (the default setting of "CH SWITCH TIMER").

```
┌──────────────────┐
│   RX ALL SHIPS   │
│    366901234     │
│      Yaesu       │
│ CATEG: SAFETY    │
│   CH: 16         │
│ SINCE: 00:15     │
│                  │
│    STOP ALARM    │
└──────────────────┘

┌──────────────────┐
│   RX ALL SHIPS   │
│    366901234     │
│      Yaesu       │
│ CATEG: SAFETY    │
│   CH: 16         │
│ SINCE: 00:15     │
│                  │
│            QUIT  │
└──────────────────┘

┌──────────────────┐
│   RX ALL SHIPS   │
│    366901234     │
│      Yaesu       │
│ CATEG: SAFETY    │
│   CH: 16         │
│ SINCE: 00:15     │
│                  │
│ ACCEPT PAUSE QUIT│
└──────────────────┘
```

2. Press any key to stop the alarm.
3. Monitor the requested channel until the all ships voice communication is completed.
    On the display you will notice 3 soft key selections. These selections are described below:

    [ACCEPT]: Press this key to accept the DSC all ships call and to switch to requested channel.
   ***Note***: If a key is not pressed for 15 seconds or longer the radio will automatically change to the requested channel (the default setting of "CH SWITCH TIMER").
    [PAUSE]: Press this key to temporarily disable automatic switching to the requested channel.
    Note: In some cases automatically switching to a requested channel might disrupt import ongoing communications. This feature allows commercial users to suspend channel switching and stay on the working channel selected before the all ships call was received.
    [QUIT]: Press this key to quit the automatic channel switching and revert to the last selected working channel.
4. Press the **[QUIT]** key to return to the channel display.
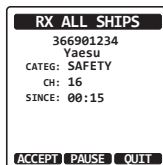
NOTE

When there is an unread all ships call, "✉" icon will appear on the display. You may review the unread all ships call from the DSC log, refer to the section "**10.13.3 Reviewing Other Logged Calls**".

10.5 INDIVIDUAL CALL

This feature allows the **HX870** to contact another vessel with a DSC VHF radio and automatically switch the receiving radio to a desired communications channel. This feature is similar to calling a vessel on CH16 and requesting to go to another channel (switching to the channel is private between the two stations). Up to 100 individual contacts may be programmed.
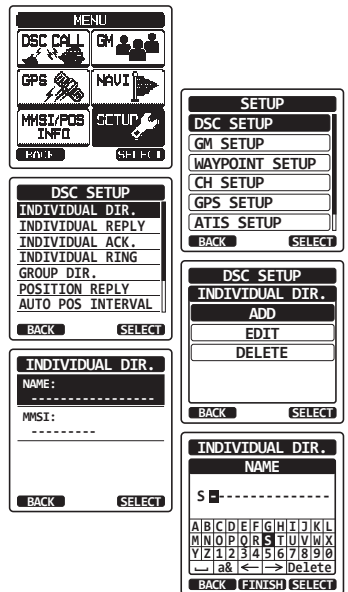
10.5.1 Setting up the Individual / Position Call Directory

The **HX870** has a DSC directory that allows you to store a vessel or person's name and the MMSI (Maritime Mobile Service Identity Number) number associated with vessels you wish to transmit individual calls, auto polling, position request, position report, and polling transmissions.

To transmit an individual call you must program this directory with information of the persons you wish to call, similar to a cellular phones telephone directory.

1. Press the **MENU** key to display "MENU".
2. Press the **CH▲/CH▼/◄/►** key to select "SETUP".
3. Select "DSC SETUP" menu with the **CH▲/CH▼** key.
4. Press the **[SELECT]** soft key, then select "INDIVIDUAL DIR." with the **CH▲/CH▼** key.
5. Press the **[SELECT]** soft key.
6. Select "ADD" with the **CH▲/CH▼** key, then press the **[SELECT]** soft key.
7. Press the **CH▲/CH▼** key to scroll through the first letter of the name of the vessel or person you want to reference in the directory.
8. Press the **[SELECT]** soft key to store the first letter in the name and step to the next letter to the right.
9. Repeat steps 7 and 8 until the name is complete. The name can consist of up to eleven characters, if you do not use all eleven characters, select "→" to move to the next space. This method can also be used to enter a blank space in the name.

   If a mistake was made entering in the name repeat pressing the **[BACK]** soft key until the wrong character is selected, then press the **CH▲/CH▼** key to correct the entry.

10. After the eleventh letter or space has been entered, press the **[FINISH]** soft key to advance to the MMSI number entry.

11. Press the **CH▲/CH▼** key to scroll through numbers, 0-9. To enter the desired number and move one space to the right by pressing the **[ENTER]** soft key. Repeat this procedure until all nine space of the MMSI number are entered.

```
┌─────────────────────────┐
│ INDIVIDUAL DIR.         │
│ NAME:                   │
│  STANDARD---------      │
│ MMSI:                   │
│  987654321              │
│                         │
│        Saved            │
│ BACK            ENTER   │
└─────────────────────────┘
```

If a mistake was made entering in the MMSI number repeat pressing the **[BACK]** soft key until the wrong number is selected, then press the **CH▲/CH▼** key to correct the entry.

12. To store the data entered, press the **[FINISH]** soft key.
13. To enter another individual address, repeat steps 6 through 12.
14. Press the **CLR** key to return to radio operation.
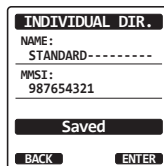
10.5.2 Setting up the Individual Call Reply

This menu item sets up the radio to automatically (default setting) or manually respond to a DSC individual call requesting you to switch to a working channel for voice communications. When "Manual" is selected the MMSI of the calling vessel is shown allowing you to see who is calling. This function is similar to caller id on a cellular phone.
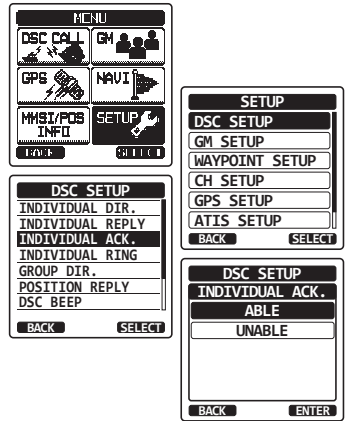
1. Press the **MENU** key to display "MENU".
2. Press the **CH▲/CH▼/◄/►** key to select "SETUP".
3. Select "DSC SETUP" menu with the **CH▲/CH▼** key.
4. Press the **[SELECT]** soft key, then select "INDIVIDUAL REPLY" with the **CH▲/CH▼** key.
5. Press the **[SELECT]** soft key.
6. Press the **CH▲/CH▼** key to select "AUTO" or "MANUAL".
7. Press the **[SELECT]** soft key to store the selected setting.
8. Press the **CLR** key to return to radio operation.
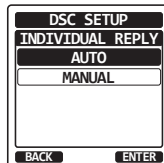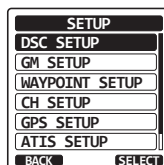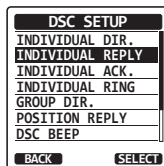
### 10.5.3 Enabling the Individual Call Acknowledgment

The radio can select either reply message "Able" (default) or "Unable" when the individual reply setting (described in the previous section) is set to "AUTO-MATIC".

1. Press the **MENU** key to display "MENU".
2. Press the **CH▲/CH▼/◄/►** key to select "SETUP".
3. Select "DSC SETUP" menu with the **CH▲/CH▼** key.
4. Press the **[SELECT]** soft key, then select "INDIVIDUAL ACK." with the **CH▲/CH▼** key.
5. Press the **[SELECT]** soft key.
6. Press the **CH▲/CH▼** key to select "ABLE" or "UNABLE".
7. Press the **[ENTER]** soft key to store the selected setting.
8. Press the **CLR** key to return to radio operation.

### 10.5.4 Transmitting an Individual Call

This feature allows the user to contact another vessel with a DSC radio. This feature is similar to calling a vessel on CH16 and requesting to go to another channel.

Individual Call using the Individual/Position Directory

1. Press the **MENU** key to display "MENU", then select "DSC CALL" with the **CH▲/CH▼/◄/►** key.
2. Press the **CH▲/CH▼** key to select "INDI-VIDUAL". (To cancel, press the **[BACK]** soft key.)
3. Press the **[SELECT]** soft key. The transceiver will beep, and the last individual calls will appear.
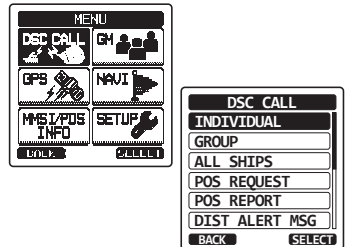
4. Press the **CH▲**/**CH▼** key to the category ("HISTORY" or "MEMORY"), then press the **[SELECT]** soft key.

5. Press the **CH▲**/**CH▼** key to select an individual you want to contact.

6. Press the **[SELECT]** soft key, then press the **CH▲**/**CH▼** key to select the operating channel you want to communicate on, then press the **[SELECT]** soft key.

7. Press the **[YES]** soft key to transmit the individual DSC signal.

8. When an individual call acknowledgment is received, the established channel is automatically changed to the channel which is selected on step 6 above and a ringing tone sounds.

9. Press the **[QUIT]** soft key to listen to the channel to make sure it is not busy, then press the **PTT** button and talk into the microphone to the other vessel.
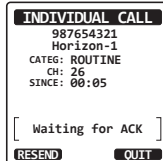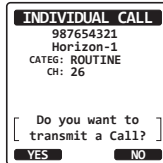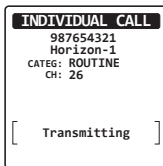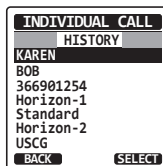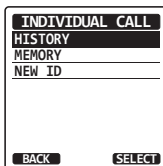
Individual Call by Manually Entering a MMSI

You may enter an MMSI number manually to contact without storing it in the individual directory.

1. Press the **MENU** key to display "MENU", then select "DSC CALL" with the **CH▲**/**CH▼**/**◄**/**►** key.

2. Press the **CH▲**/**CH▼** key to select "INDI-VIDUAL". (To cancel, press the **[BACK]** soft key.)

3. Press the **[SELECT]** soft key. The transceiver will beep, and the last individual calls will appear.

4. Press the **[NEW ID]** soft key, then press the **[SELECT]** soft key.

5. Press the **CH▲**/**CH▼** key to select the first number of the MMSI which you want to contact, then press the **[SELECT]** soft key to step to the next number.
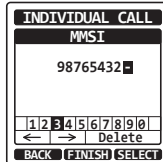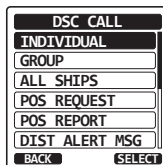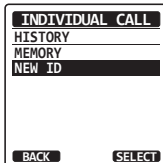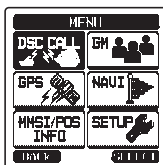
6. Repeat step 5 to set the MMSI number (nine digits).

   If a mistake was made entering in the MMSI number, repeat pressing the **[BACK]** key until the wrong number is selected, then press the **CH▲**/**CH▼** key to correct the entry.

7. When finished entering the MMSI number, press the **[FINISH]** soft key.

8. Select the category (from "ROUTINE", "SAFETY" or "URGENCY") to which you want to register the MMSI number, then press the **[SELECT]** soft key.

9. Press the **CH▲**/**CH▼** key to select the operating channel you want to communicate on, then press the **[SELECT]** soft key.

10. Press the **[YES]** soft key to transmit the individual DSC signal.

11. When an individual call acknowledgment is received, the established channel is automatically changed to the channel which is selected on step 9 above and a ringing tone sounds.

12. Press the **[QUIT]** soft key to listen to the channel to make sure it is not busy, then press the **PTT** button and talk into the microphone to the other vessel.
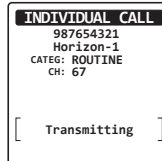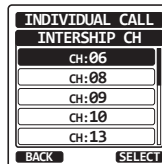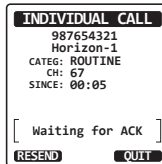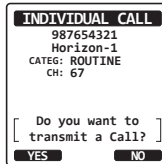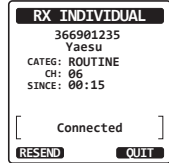
10.5.5 Receiving an Individual Call

When an individual DSC call is received, the radio will automatically respond (default setting) to the calling ship, and switch to the requested channel for voice communications. Refer to section "**10.5.2 Setting up the Individual Call Reply**" to change the reply to manual if you want to see who is calling before replying to the call.

Automatic reply:

1. When an individual call is received, an individual call ringing alarm sounds.
   The radio automatically switches to the requested channel.
   The display shows the MMSI of the vessel calling.
2. Press any key to stop the alarm.
3. Press the **PTT** button and talk into the microphone to the other vessel.
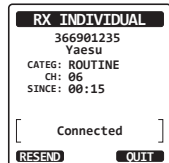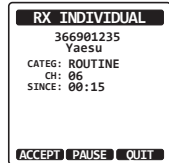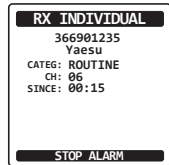4. Press the **[QUIT]** soft key to return to radio operation.

```
┌─────────────────┐
│  RX INDIVIDUAL  │
│    366901235    │
│      Yaesu      │
│ CATEG: ROUTINE  │
│    CH: 06       │
│ SINCE: 00:15    │
│                 │
│ [   Connected  ]│
│ RESEND     QUIT │
└─────────────────┘
```

Manual reply:

1. When an individual call is received, an individual call ringing alarm sounds.
   The display shows the MMSI of the vessel transmitting the individual call.
2. Press any key to stop the alarm.

```
┌─────────────────┐
│  RX INDIVIDUAL  │
│    366901235    │
│      Yaesu      │
│ CATEG: ROUTINE  │
│    CH: 06       │
│ SINCE: 00:15    │
│                 │
│    STOP ALARM   │
└─────────────────┘
```

3. Monitor the requested channel until the message is completed.
   On the display you will notice 3 soft key selections. These selections are described below:
   [ACCEPT]: Press this key to accept the DSC individual call and to switch to requested channel.

```
┌─────────────────┐
│  RX INDIVIDUAL  │
│    366901235    │
│      Yaesu      │
│ CATEG: ROUTINE  │
│    CH: 06       │
│ SINCE: 00:15    │
│                 │
│ACCEPT PAUSE QUIT│
└─────────────────┘
```

```
┌─────────────────┐
│  RX INDIVIDUAL  │
│    366901235    │
│      Yaesu      │
│ CATEG: ROUTINE  │
│    CH: 06       │
│ SINCE: 00:15    │
│                 │
│ [   Connected  ]│
│ RESEND     QUIT │
└─────────────────┘
```

[PAUSE]: Press this key to temporarily disable automatic switching to the requested channel.

Note: In some cases automatically switching to a requested channel might disrupt import ongoing communications. This feature allows commercial users to suspend channel switching and stay on the working channel selected before the all ships call was received.

[QUIT]: Press this key to quit the automatic channel switching and revert to the last selected working channel.

Note: If a key is not pressed for 30 seconds or longer the radio will automatically change to radio operation.

4. Press the **[QUIT]** soft key to return to the channel display.

NOTE

When there is an unread individual call, "✉" icon will appear on the display. You may review the unread individual call from the DSC log, refer to the section "**10.13.3 Reviewing Other Logged Calls**".

## 10.5.6 Setting up the Individual Call Ringer

When an individual call is received the radio will produce a ringing sound for 2 minutes. This selection allows the individual call ringer time to be changed.

1. Press the **MENU** key to display "MENU".
2. Press the **CH▲/CH▼/◄/►** key to select "SETUP".
3. Select "DSC SETUP" menu with the **CH▲/CH▼** key.
4. Press the **[SELECT]** soft key, then select "INDIVIDUAL RING" with the **CH▲/CH▼** key.
5. Press the **[SELECT]** soft key.
6. Press the **CH▲/CH▼** key to select ringing time of individual calls.
7. Press the **[SELECT]** soft key to store the selected setting.
8. Press the **CLR** key to return to radio operation.
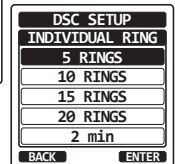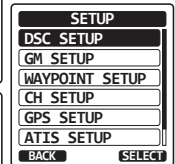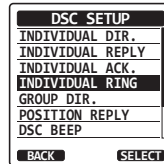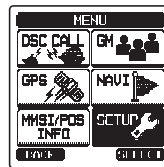
The **HX870** has the capability to turn off the individual call ringer.

1. Press the **MENU** key to display "MENU".
2. Press the **CH▲/CH▼/◄/►** key to select "SETUP".
3. Select "DSC SETUP" menu with the **CH▲/CH▼** key.
4. Press the **[SELECT]** soft key, then select "DSC BEEP" with the **CH▲/CH▼** key.
5. Press the **[SELECT]** soft key.
6. Press the **CH▲/CH▼** key to select "INDI-VIDUAL", then press the **[SELECT]** soft key.
7. Press the **CH▲/CH▼** key to select "OFF".
8. Press the **[SELECT]** soft key to store the selected setting.
9. Press the **CLR** key to return to radio opera-tion.
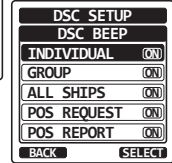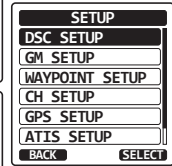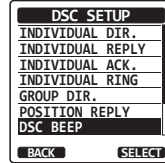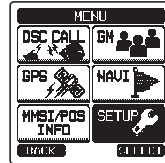
To re-enable the ringer tone, repeat the above procedure, pressing the **CH▲/CH▼** key to select "ON" in step 7 above.

10.6 GROUP CALL

This feature allows the user to contact a group of specific vessels (e.g. members of a yacht club) using DSC radios with group call function to automatically switch to a desired channel for voice communications. This function is very useful for yacht clubs and vessels traveling together that want to collectively make announcements on a predetermined channel. Up to 20 group MMSIs may be programmed.

10.6.1 Setting up a Group Call

For this function to operate, the same group MMSI (Maritime Mobile Service Identity Number) must be programmed into all the DSC VHF radios within the group of vessels that will be using this feature. To understand Group MMSI programming, first a ship MMSI has to be understood.

Ship MMSI: The first three digits called MID (Mobile Identity Group) of a ship MMSI denote the country the ship registered for an MMSI. The last 6 digits are specific to the ships ID.
Ship MMSI Example: If your MMSI is "366123456", "366" is MID which denote the country and "123456" is your ships MMSI.

Group MMSI:
❒ Group MMSI numbers are not assigned by the FCC or other organizations licensed to assign ship MMSI numbers.
❒ The first digit of a group MMSI is always set to "0" by International rules. All Standard Horizon radios are preset so when programming a group MMSI the first digit is set to "0".
❒ The USCG recommends programming the MID of a ship MMSI into the Second, Third and Fourth digits of the group MMSI as it denotes the area the ship is located in.
❒ The last 5 digits are decided upon by persons in the group. This is an important step as all radios in the group must contain the same group MMSI so they can be contacted by each other. There is a chance that another group of vessels may program in the same group MMSI. If this happens, simply change one or more of the last 5 digits of the group MMSI.

1. Press the **MENU** key to display "MENU".
2. Press the **CH▲/CH▼/◄/►** key to select "SETUP".
3. Select "DSC SETUP" menu with the **CH▲/CH▼** key.
4. Press the **[SELECT]** soft key, then select "GROUP DIR." with the **CH▲/CH▼** key.
5. Press the **[SELECT]** soft key, then select "ADD" with the **CH▲/CH▼** key.
6. Press the **[SELECT]** soft key.
7. Press the **CH▲/CH▼** key to scroll through the first letter of the name of the group you want to reference in the directory.
8. Press the **[SELECT]** soft key to store the first letter in the name and step to the next letter to the right.
9. Repeat steps 7 and 8 until the name is complete. The name can consist of up to eleven characters, if you do not use all eleven characters, select "→" to move to the next space. This method can also be used to enter a blank space in the name.
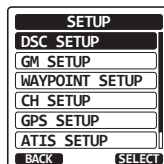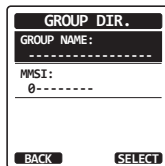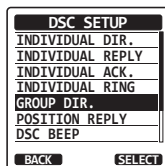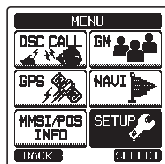
    If a mistake was made entering in the name repeat pressing the **[BACK]** soft key until the wrong character is selected, then press the **CH▲/CH▼** key to correct the entry.
10. After the eleventh letter or space has been entered, press the **[FINISH]** soft key to advance to the group MMSI number entry.
11. Press the **CH▲/CH▼** key to select the second number of the MMSI (nine digits: first digit permanently set to "0") which you want to contact, then press the **[SELECT]** soft key to step to the next number. Repeat this procedure until all eight spaces of the MMSI number are entered.

    If a mistake was made entering in the MMSI number repeat pressing the **[BACK]** soft key until the wrong number is selected, then press the **CH▲/CH▼** key to correct the entry. After entering the new ID, press the **[FINISH]** soft key to confirm.
12. To store the data, select "SAVE", then press the **[ENTER]** soft key.
13. To enter another group address, repeat steps 6 through 12.
14. Press the **CLR** key to return to radio operation.

10.6.2 Transmitting a Group Call

Group Call using the Group Directory

1. Press the **MENU** key to display "MENU", then select "DSC CALL" with the **CH▲/CH▼/◄/►** key.
2. Press the **CH▲/CH▼** key to select "GROUP". (To cancel, press the **[QUIT]** soft key.)
3. Press the **[SELECT]** soft key. The transceiver will beep, and the last group calls will appear.
4. Press the **CH▲/CH▼** key to select a group you want to contact ("HISTORY" or "MEMORY").
5. Press the **[SELECT]** soft key, press the **CH▲/CH▼** key to select the operating channel you want to communicate on, then press the **[SELECT]** soft key.
6. Press the **[YES]** soft key to transmit the group call signal.
7. When the group call signal is sent, the display will be as shown in the illustration at the right.
8. After the group call is transmitted, all the radios in the group will switch to the designated channel.
9. Listen to the channel to make sure it is not busy, then press the **PTT** button and call the other vessel you desire to communicate with.
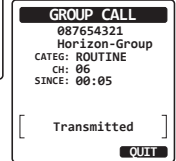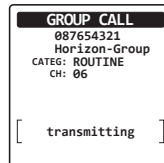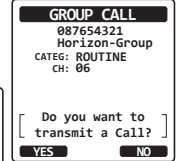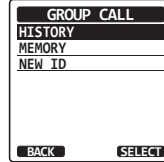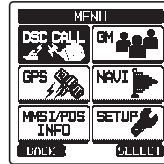
Group Call by Manually Entering an MMSI

This feature allows you to contact a group of vessels by entering in their group MMSI manually.

1. Press the **MENU** key to display "MENU", then select "DSC CALL" with the **CH▲/CH▼/◄/►** key.
2. Press the **CH▲/CH▼** key to select "GROUP". (To cancel, press the **[QUIT]** soft key.)
3. Press the **[SELECT]** soft key. The transceiver will beep, and the last group calls will appear.
4. Select "NEW ID" with the **CH▲/CH▼** key.
5. Press the **[SELECT]** soft key.
6. Press the **CH▲/CH▼** key to select the first number of the MMSI (nine digits: first digit permanently set to "0") which you want to contact, then press the **[SELECT]** soft key to step to the next number.
7. Repeat step 6 to set the MMSI number. If a mistake was made entering in the MMSI number, repeat pressing the **[BACK]** soft key until the wrong number is selected, then press the **CH▲/CH▼** key to correct the entry.
8. When finished entering the MMSI number, press the **[FINISH]** soft key.
9. Press the **CH▲/CH▼** key to select the operating channel you want to communicate on, then press the **[SELECT]** soft key.
10. Press the **[YES]** soft key to transmit the group call signal.
11. After the group call is transmitted, all the radios in the group will switch to the designated channel.
12. Listen to the channel to make sure it is not busy, then press the **PTT** button and talk into the microphone to the group of vessels.
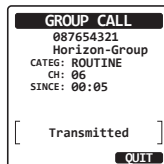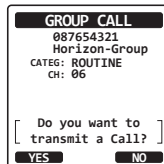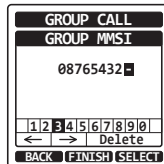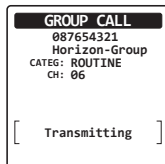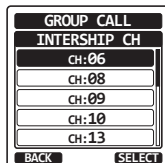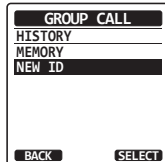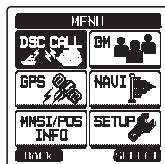
10.6.3 Receiving a Group Call

1. When a group call is received, the **HX870** will produce a ringing alarm sound.
2. The display shows the group MMSI number.
3. Press any key to stop the alarm.
4. Monitor the channel for the person calling the group for a message.

    On the display you will notice 3 soft key selections. These selections are described below:
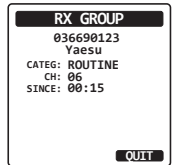
    [ACCEPT]: Press this key to accept the group call and to switch to requested channel.

    [PAUSE]: Press this key to temporarily disable automatic switching to the requested channel.

    [QUIT]: Press this key to quit the automatic channel switching and revert to the last selected working channel.
5. If you want to respond, monitor the channel to make sure it is clear, then press the **PTT** button and talk into the microphone to the group of vessels.
6. Press the **[QUIT]** soft key to return to radio operation.

    Note: If a key is not pressed for 30 seconds or longer the radio will automatically change to radio operation.

```
┌─────────────────────┐
│     RX GROUP        │
│     036690123       │
│       Yaesu         │
│  CATEG: ROUTINE     │
│    CH: 06           │
│  SINCE: 00:15       │
│                     │
│  MMSI: 366901234    │
│      Horizon        │
│    STOP ALARM       │
└─────────────────────┘
```

```
┌─────────────────────┐
│     RX GROUP        │
│     036690123       │
│       Yaesu         │
│  CATEG: ROUTINE     │
│    CH: 06           │
│  SINCE: 00:15       │
│                     │
│  MMSI: 366901234    │
│      Horizon        │
│ ACCEPT  PAUSE  QUIT │
└─────────────────────┘
```

```
┌─────────────────────┐
│     RX GROUP        │
│     036690123       │
│       Yaesu         │
│  CATEG: ROUTINE     │
│    CH: 06           │
│  SINCE: 00:15       │
│                     │
│                     │
│             QUIT    │
└─────────────────────┘
```

NOTE

When there is an unread group call, "✉" icon will appear on the display. You may review the unread group call from the DSC log, refer to the section "**10.13.3 Reviewing Other Logged Calls**".

10.6.4 Setting up the Group Call Ringer

The **HX870** has the capability to turn off the group call ringer.

1. Press the **MENU** key to display "MENU".
2. Press the **CH▲/CH▼/◄/►** key to select "SETUP".
3. Select "DSC SETUP" menu with the **CH▲/CH▼** key.
4. Press the **[SELECT]** soft key, then select "DSC BEEP" with the **CH▲/CH▼** key.
5. Press the **[SELECT]** soft key.
6. Press the **CH▲/CH▼** key to select "GROUP", then press the **[ENTER]** soft key.
7. Press the **CH▲/CH▼** key to select "OFF".
8. Press the **[SELECT]** soft key to store the selected setting.
9. Press the **CLR** key to return to radio operation.
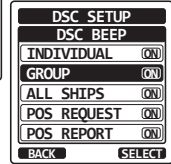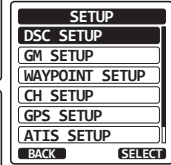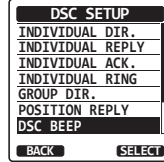
To re-enable the ringer tone, repeat the above procedure, pressing the **CH▲/CH▼** key to select "ON" in step 7 above.

10.7 POSITION REQUEST

Advancements in DSC have made it possible to poll the location of another vessel and show the position of that vessel on the display of the **HX870**. This is a great feature for anyone wanting to know the position of another vessel. For example your buddy that is catching fish, or finding the location of a person you are cruising with.

NOTE

The other vessel must have an operating GPS receiver connected to its DSC radio and must not have its radio set not to deny position requests. (Refer the section "**10.5 INDIVIDUAL CALL**" to enter information into the individual directory).

10.7.1 Setting up a Position Request Reply

The **HX870** can be set up to automatically (default setting) or manually send your position when requested by another vessel. This selection is important if you are concerned about someone polling the position of your vessel that you may not want to. In the manual mode you will see the MMSI (Maritime Mobile Service Identity Number) or persons name shown on the display allowing you to choose to send your position to the requesting vessel.
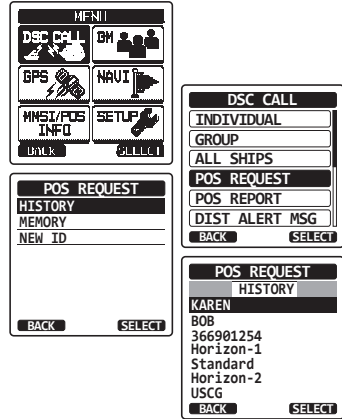
1. Press the **MENU** key to display "MENU".
2. Press the **CH▲/CH▼/◄/►** key to select "SETUP".
3. Select "DSC SETUP" menu with the **CH▲/CH▼** key.
4. Press the **[SELECT]** soft key, then select "POSITION REPLY" with the **CH▲/CH▼** key.
5. Press the **[SELECT]** soft key, then select "AUTO" or "MANUAL". In "AUTO" mode, after a DSC POS request is received, the radio will automatically transmit your vessel's position. In "MANUAL" mode, the display of the **HX870** will show who is requesting the position and the **[YES]** soft key on radio has to be pressed to send your position to the requesting vessel.
6. Press the **[SELECT]** soft key to store the selected setting.
7. Press the **CLR** key to return to radio operation.
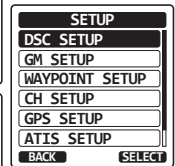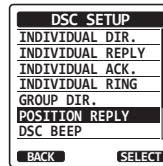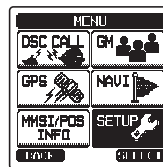
10.7.2 Transmitting a Position Request to Another Vessel

Position Request using the Individual/Position Directory

1. Press the **MENU** key to display "MENU", then select "DSC CALL" with the **CH▲/CH▼/◄/►** key.
2. Press the **CH▲/CH▼** key to select "POS REQUEST", then press the **[SELECT]** soft key.
3. Press the **CH▲/CH▼** key to select a name that was stored in the individual/position directory ("HISTORY" or "MEMORY").
4. Press the **[SELECT]** soft key, then press the **[YES]** soft key to transmit the position request DSC call.
5. When the **HX870** receives the position from the polled vessel it is shown on the radio display.
6. Press the **[QUIT]** soft key to return to radio operation.

NOTE

If the **HX870** does not receive a position data from the polled vessel, the display will show "NO POSITION DATA".

Position Request by Manually Entering an MMSI

This feature allows you to request the position of a vessel by manually entering the MMSI of the ship you want to ask the position.

1. Press the **MENU** key to display "MENU", then select "DSC CALL" with the **CH▲/CH▼/◄/►** key.
2. Press the **CH▲/CH▼** key to select "POS REQUEST", then press the **[SELECT]** soft key.
3. Press the **[NEW ID]** soft key.
4. Press the **CH▲/CH▼** key to select "MANU-AL", then press the **[SELECT]** soft key.
5. Press the **CH▲/CH▼** key to select the first number of the MMSI (nine digits) which you want to contact, then press the **[SELECT]** soft key to step to the next number.
6. Repeat step 5 to set the MMSI number. If a mistake was made entering in the MMSI number, repeatedly press the **[BACK]** soft key until the wrong number is selected, then press the **CH▲/CH▼** key to correct the entry.
7. When finished entering the MMSI number, press the **[FINISH]** soft key.
8. Press the **[YES]** soft key to transmit the position request DSC call.
9. When the **HX870** receives the position from the polled vessel it is shown on the radio display and also transferred to the GPS chart plotter with NMEA DSC and DSE sentences.
10. Press the **[QUIT]** soft key to return to radio operation.
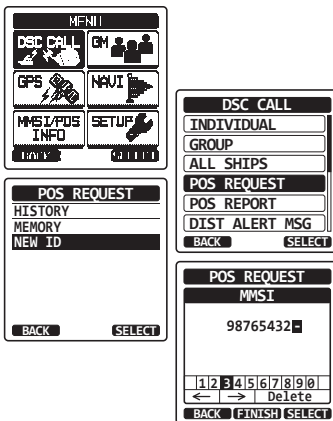
10.7.3 Receiving a Position Request

When a position request call is received from another vessel, a ringing alarm sounds and the requesting vessel's information will be shown in the display. Operation and transceiver function differs depending on "Position Reply" in the "DSC Setup" menu setting discussed below:

Automatic reply:

1. When a position request call is received, a calling alarm sounds 4 times. Then requested position coordinates are transmitted automatically to the vessel requesting your vessels position.
2. To exit from position request display, press the **[QUIT]** soft key.

Manual reply:

1. When a position request call is received from another vessel, the display will be as shown in the illustration at the right.
2. A ringing alarm sounds 4 times. To send your vessels position to the requesting vessel, press the **[REPLY]** soft key. Or to exit from position request display, press the **[QUIT]** soft key.