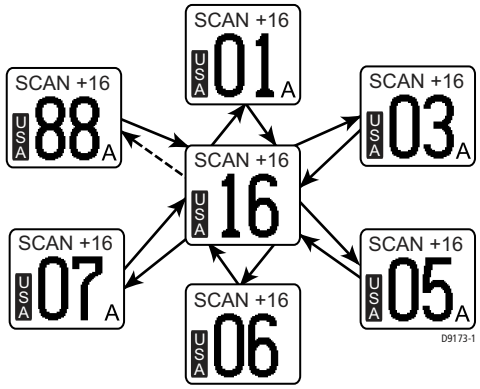
Priority All Scan

Priority All Scan searches for activity on all channels but alternates scanning the Priority Channel 16 after each channel.

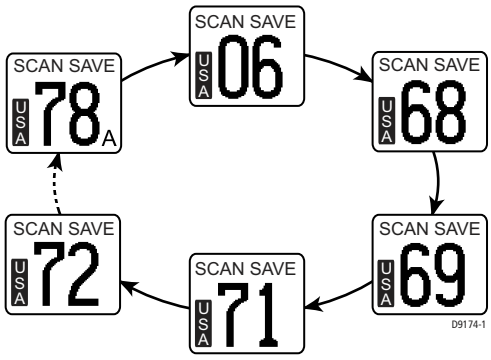
When active, SCAN ALL + 16 appears on the display.



Saved (Memory) Scan

In Saved Scan mode, only the channels that have been saved in memory are scanned in sequence. After the last saved channel number has been scanned, the cycle repeats.

When active, SCAN SAVE appears on the display. If no channels have been saved into memory when you select this feature, an error tone sounds.

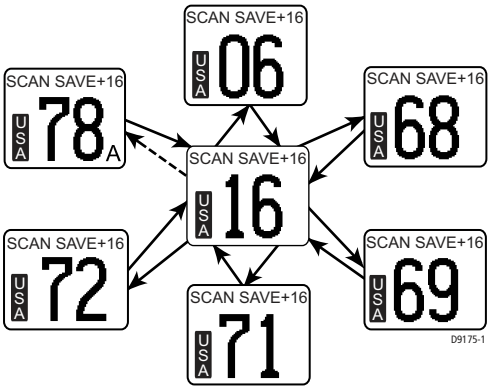


Priority Saved Scan

Priority Saved Scan is much like Priority Scan except that the radio alternates searching for activity on the Priority Channel 16 and the channels stored in memory.

When active, SCAN SAVE + 16 appears on the display.

Note: *If no channels have been saved into memory when you select this feature, an error tone sounds.*



Display Mode

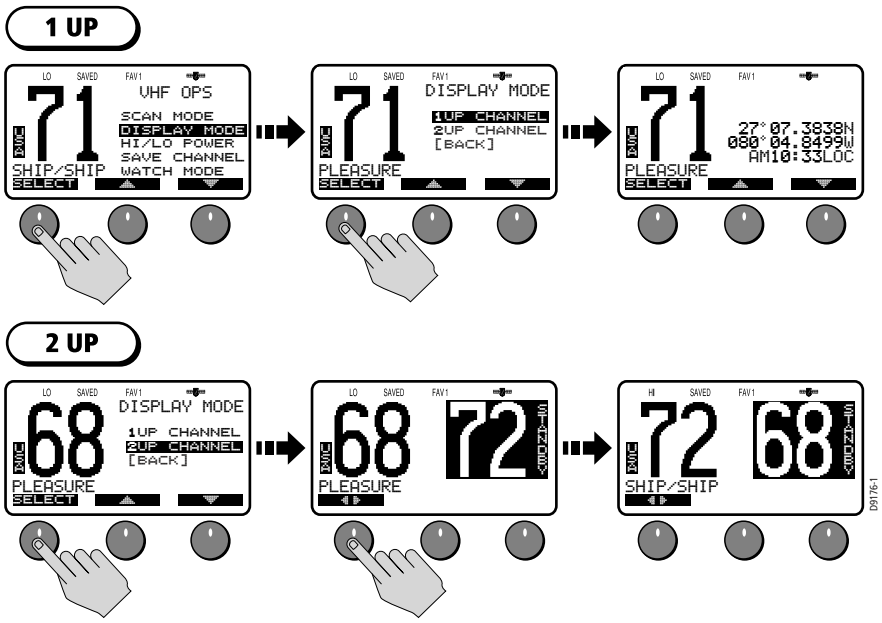
The Ray218/Ray55 has two methods for displaying the channel number: 1 UP and 2 UP.

1 UP mode is the normal mode; the channel is displayed on the left side of the display and text information on the right.

In 2 UP mode, you are presented with two channels: the currently-active channel on the left and the standby channel on the right. Pressing the double arrow soft key determines which of the two displayed channels is the active one.

While in 2 UP mode, pressing the channel up/down keys CHANGES THE STANDBY CHANNEL, NOT THE ACTIVE ONE.

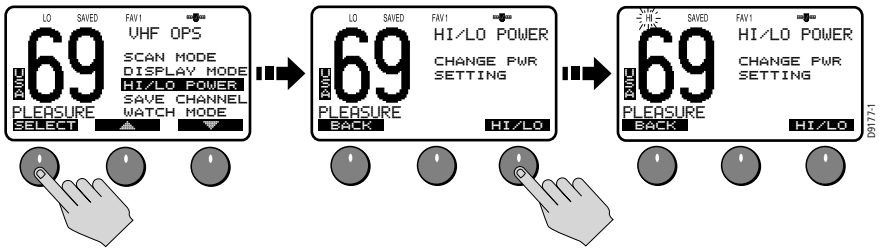
The radio exits 2 UP mode when you enter the menu or DSC call screens.



Setting the Power Output (HI/LO)

The choice of power output is dependent upon the distance of transmission and transmitting conditions. As a part of FCC procedures and marine communications courtesy, initial contact should always be attempted using low power. You should switch to high power only when contact can not be made on low power or in emergency situations. Press the HI/LO soft key to toggle the TX power from LOW (1 watt) to HIGH (25 watts). The corresponding LO or HI indicator appears.

You can also press and release the **HI/LO–LOC/DIS** key on the microphone to toggle the TX power.



Some channels are limited by regulation to be low power only. If the HILO operation request is denied, an error tone beeps.

Channels restricted to low transmit power are as follows:

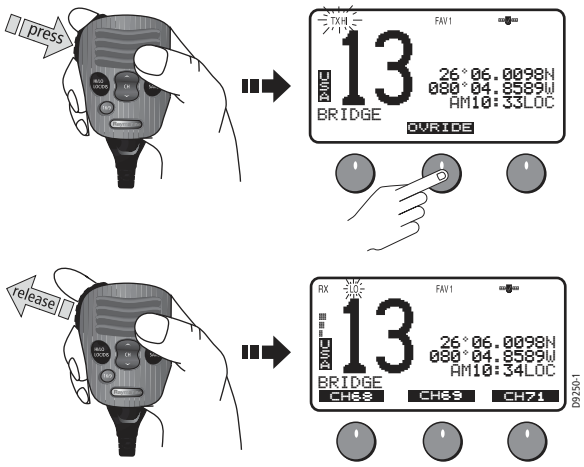
- Canadian channel set: 13, 15, 17, 77
- International channel set: 15, 17
- US channel set: 13, 15, 17, 67, 77

Overriding the Low Output Power Restriction

In the US, channels 13 and 67 are restricted to transmit at low power. However, you can temporarily override this low power restriction. When you press **PTT**, a new soft key appears in the middle position, labelled OVRIDE.

To override the LO power restriction on channels 13 or 67 and transmit at high power:

1. Press and hold **PTT**. The OVRIDE soft key appears.
2. Press and release OVRIDE. The TX power is set to HI power for as long as you hold down **PTT**.
   When you release **PTT**, power returns to LO.



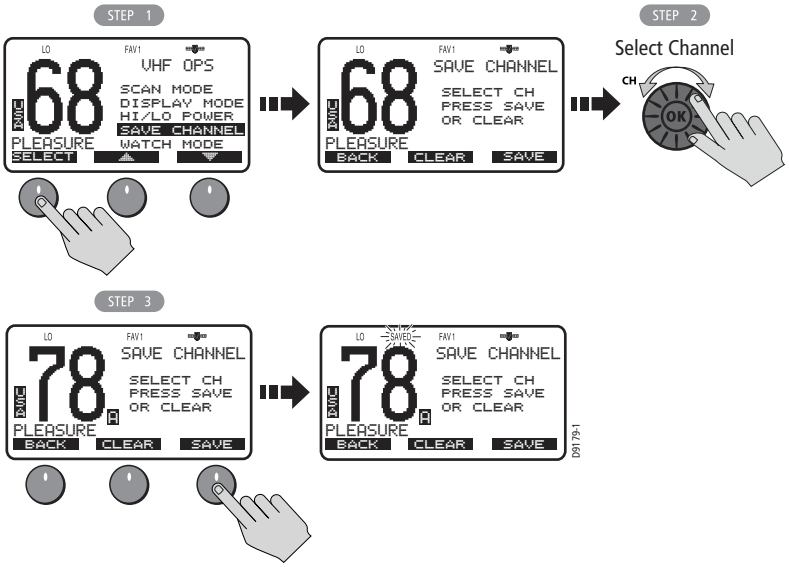
Saving Channels to Memory

The Ray218/Ray55 can store any channel (except WX channels) into memory. The stored channels are the ones scanned in the Saved (Memory) Scan mode (see page 44). Any number of channels can be saved as memory channels.

Separate memory channel groups exist for USA, International, and Canadian frequency sets.

To add or remove a channel to/from memory:

1. Select SAVE CHANNEL from the VHF OPS menu.
2. Rotate the CH knob to select the channel to be added/removed from memory.
3. To add the selected channel from memory, press SAVE. The SAVED icon appears to indicate the current channel has been saved in memory.
   To remove the channel from memory, press CLEAR. The SAVED icon disappears.



SCAN SAVE

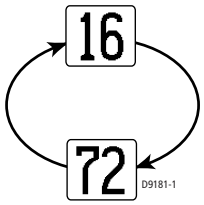
You can also add the current channel to memory by pressing and holding the **SCAN/SAVE** key on the microphone. If the channel is already saved, pressing and holding the key removes the channel from memory.

Using the Watch Modes

The Watch Modes monitor the programmed Priority Channel and other user-selected channel(s). The watch is halted when activity is detected on a monitored channel. The Ray218/Ray55 is equipped with 2 types of monitor operations: Dual Watch and Tri Watch.

Note: *Whenever Weather Alert is activated, the WX Alert channel is also monitored during Dual Watch and Tri Watch.*

Dual Watch

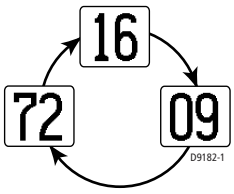


Dual Watch monitors the current working channel and Channel 16 in cycle.

DUAL 16 appears on the top line of the display.

Dual Watch is demonstrated in the figure to the left; the sample working channel is CH 72.

Tri Watch



Tri Watch monitors in cycle channel 16, the current working channel and the channel you have set as the Secondary Priority Channel.

TRI 16+09 appears on the top line of the display.

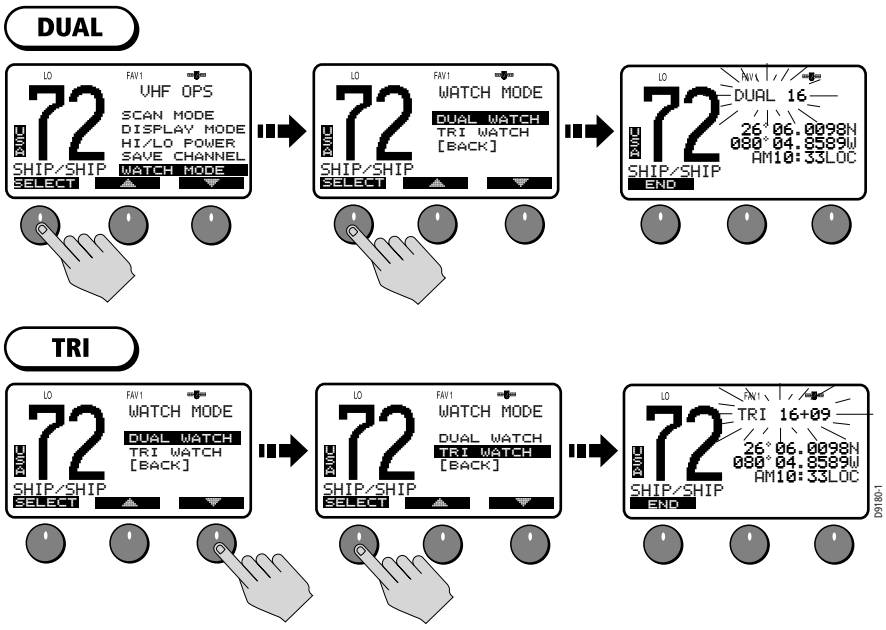
Tri Watch is demonstrated in the figure to the left; the sample working channel is channel 72.

Press the END soft key to terminate Watch mode and return to the previous working channel.

Press and release the **16/9** key to terminate Watch mode and switch to the Priority Channel.

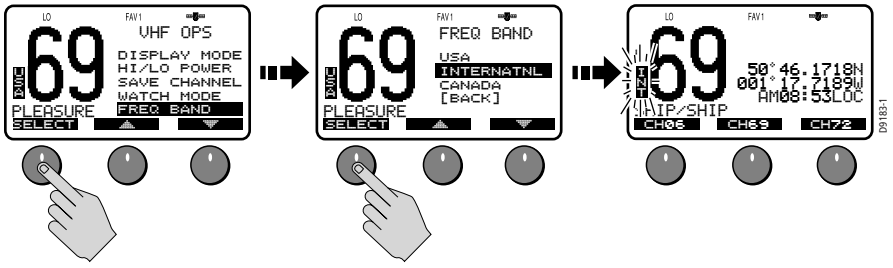
Press and release the **CLEAR/WX** key to terminate Watch mode and return to the last-used channel.

Note: *During Tri Watch Mode, the WX and CH keys are inactive and an error beep sounds if pressed.*



Frequency Band

The Ray218/Ray55 can transmit and receive all USA, International and Canadian frequencies. This setting determines which channel set is being used. The appropriate indicator is illuminated in the LCD: USA, INT for International, or CAN for Canadian channel sets.



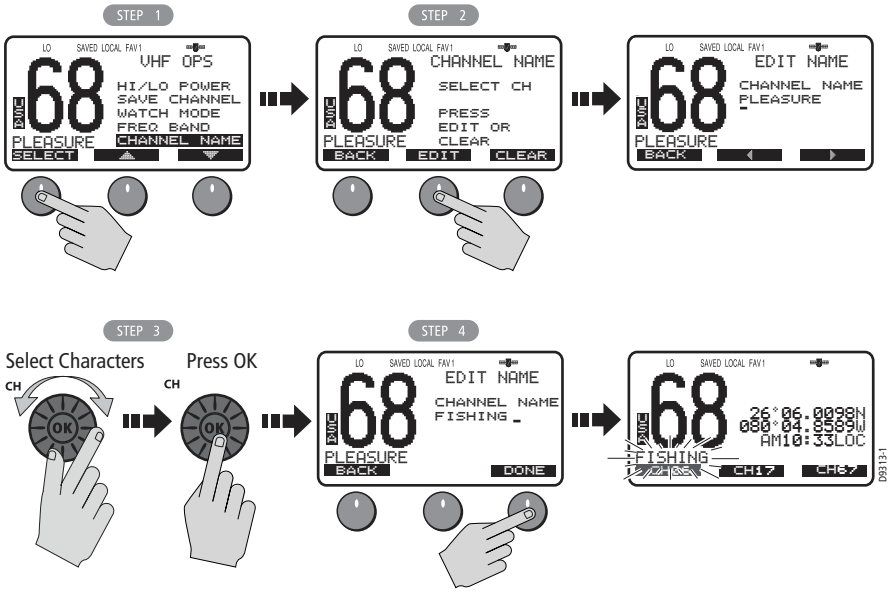
Channel Name

By default, the Ray218/Ray55 scrolls a descriptive name of up to 16 characters in the line directly below the channel number and then stops to display a fixed length of up to 9 characters. This option modifies the name for the currently-selected channel from its default.

To change the Channel Name from the default:

1. From the VHF OPS menu, select CHANNEL NAME.
2. Press EDIT. The name for the currently-selected channel appears.
3. Use the **CH** knob to modify the NAME field using the same technique described in "Adding a new Entry" on page 75.
4. Press DONE when completed.

To completely remove the Channel Name, press CLEAR in step 2 above. If the name is deleted, the space below the channel number is blank for that channel.



Favorite Channel

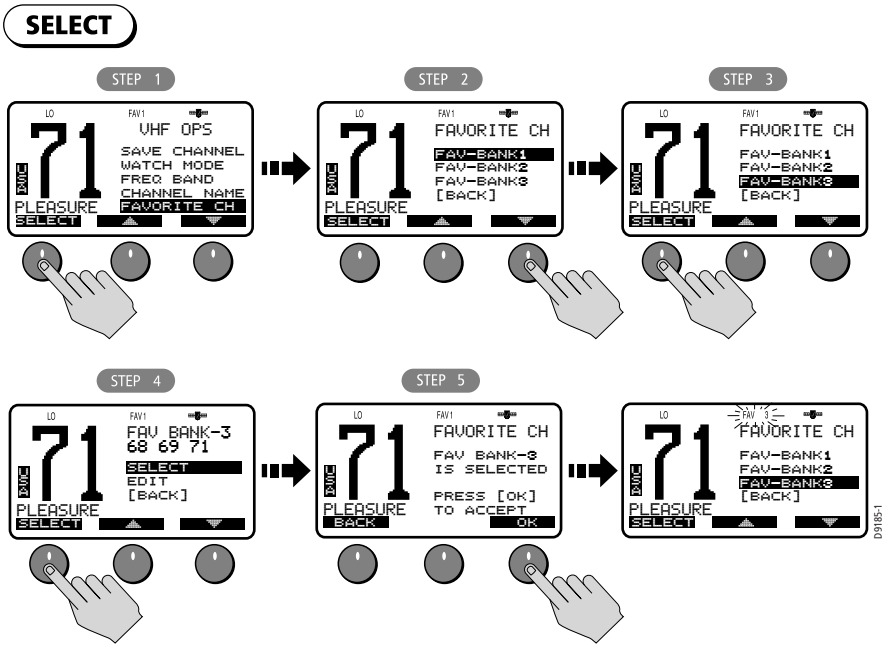
When in standby mode, the Ray218/Ray55 displays a channel number in each of the three soft key locations. By pressing the corresponding soft key, the radio instantly switches to that channel number. You can select from three separate Favorite Channel groups for a total of 9 channel options for each frequency set. You select which channel group is displayed and edit what channel numbers are assigned.

Default channels are as follows:

- FAV1: CH67 CH68 CH72
- FAV2: CH71 CH73 CH77
- FAV3: CH06 CH08 CH09

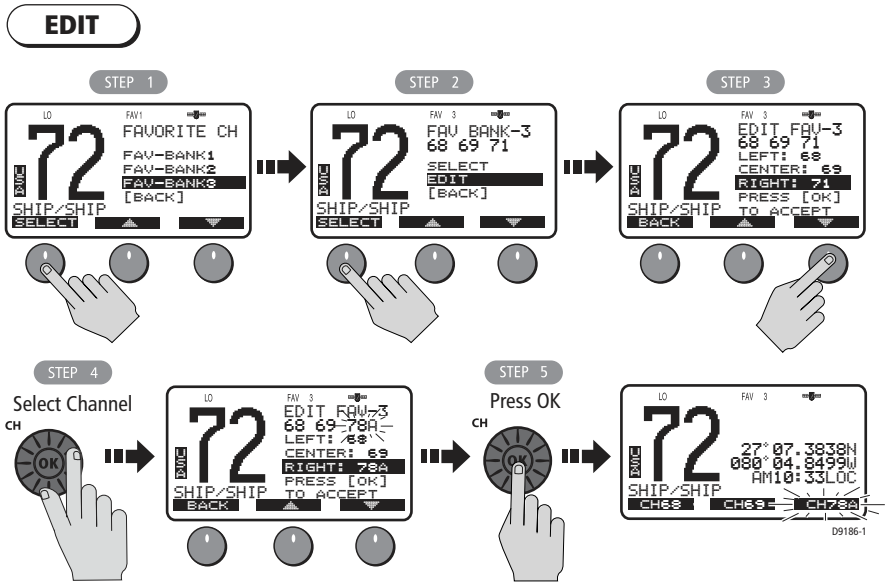
To SELECT which bank of Favorite Channels is displayed:

1. From the VHF OPS menu, select FAVORITE CH.
2. Highlight the Favorite Channel Bank you wish to be displayed.
3. Press the SELECT soft key. Two options appear: SELECT and EDIT.
4. Choose the SELECT option.
5. Press OK to confirm. Selected favorite channels appear in the soft key bank.



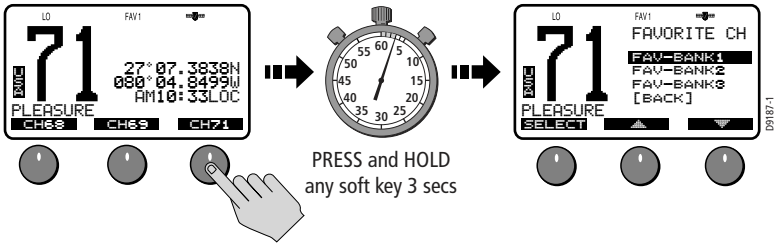
To EDIT Favorite Channels contained within a bank:

1. Repeat steps 1–3 above for the SELECT process and highlight the bank you wish to edit.
2. Select the EDIT option.
3. Use the up/down arrows to highlight which soft key label you wish to edit: LEFT, CENTER or RIGHT.
4. Rotate the **CH** knob to change the channel to the desired value.
5. Push in the **CH** knob to confirm. The new channel selection appears in the edited soft key position for that bank.



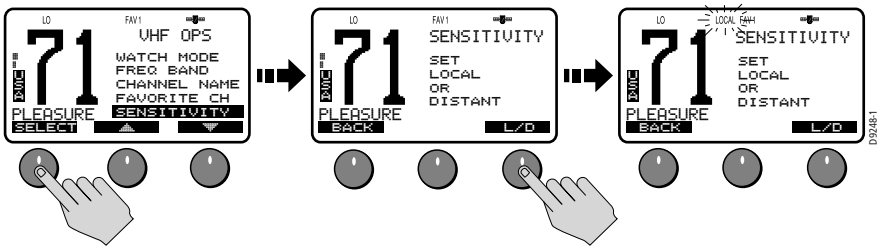
Shortcut

You can quickly access the Favorite Channel menu item by pressing and holding any of the three channel soft keys in standby mode.



Sensitivity

Use this setting to switch the transmit power from high to low. Press the L/D soft key t o toggle between full receiver sensitivity (Distant mode) and attenuated receiver sensitivity (Local mode). The LOCAL icon appears while in Local mode and then is removed in Distant mode.



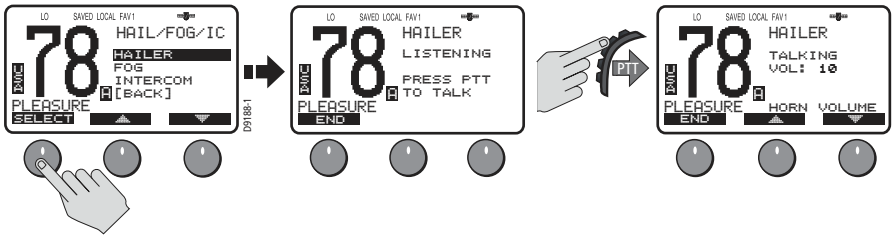
4.3 Hailer/Fog Horn/Intercom

This menu item provides access to three auxiliary functions. These operations require that you have purchased and installed an optional hailer horn.

HAIL/FOG/IC is an auxiliary mode. While Hailer, Fog Horn or Intercom operations are active, you cannot send or receive radio calls. The exception is in AUTO FOG mode, between soundings.

Hailer

The Hailer operation enables the unit to use a Hailer Horn as a loudspeaker. Press and hold **PTT** to place the unit in Hailer mode. Anything spoken into the handset is amplified and broadcast from the Hailer Horn (but not transmitted over the radio). To adjust the Hailer Horn broadcast volume, use the up/down arrow soft keys while pressing and holding **PTT**.



Release **PTT** to switch to Listen mode. The Hailer Horn then acts as a directional microphone. Sounds picked up by the Hailer Horn are heard on the radio speaker. To adjust the Hailer Horn broadcast volume, use the up/down arrow soft keys.

Fog Horn

This operation enables the radio to emit various fog horn tones over a hailer horn speaker. Select one of the following modes, and then press SELECT to enable the selection:

MANUAL FOG
Pressing the **PTT** switch sounds a continuous 400 Hz tone for as long as you hold the **PTT**.

AUTO FOG
Sounds a predetermined pattern. Press END soft key or any hard key (**CLEAR/WX**, **HAILER/INTCM**, etc.) to quit.

Note: *Between AUTO Fog Horn soundings, you can make and receive calls.*

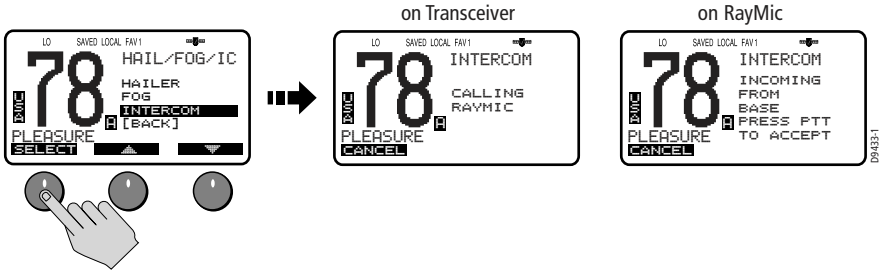
Select one of the following modes, and then press SELECT to enable the selection:

- PWR MAKE WY—Power vessel underway
- NOT MAKE WY—Power vessel not underway
- SAIL/FISHNG—Sailing vessel or any vessel fishing but not trolling
- RSTRICT/TOW—Restricted in ability to maneuver or towing another vessel
- UNDER TOW—This vessel being towed
- AGROUND—Vessel is aground
- AT ANCHOR—Vessel is at anchor

Volume is controlled by the up/down soft keys.

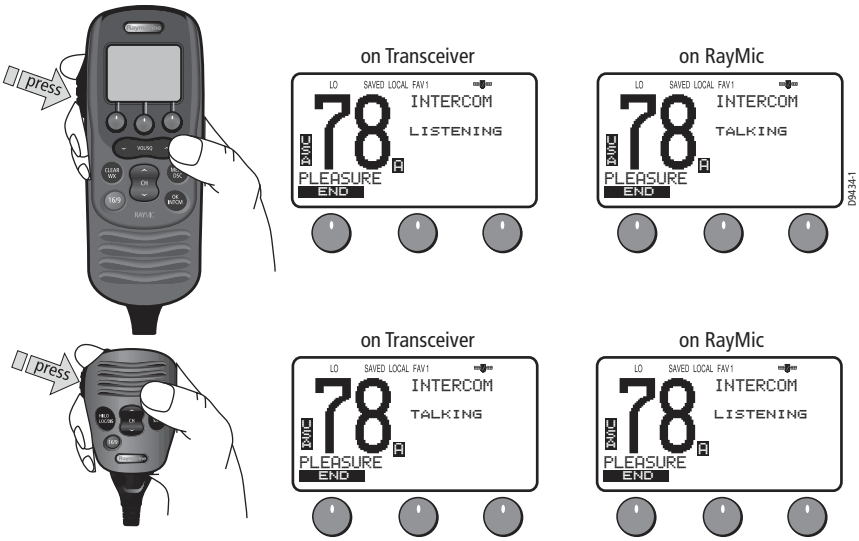
Intercom

When a RayMic secondary handset is installed on the Ray218/Ray55, Intercom operation enables voice communications between the RayMic and the transceiver. You can initiate the call from either the transceiver or second station. The following illustrates what is displayed when the transceiver initiates the call.



To initiate an Intercom call:

1. From the sending station (transceiver or RayMic) select INTERCOM from the IC/HAIL/FOG menu.
   —or—
   Press and hold the **HAILER / INTCM** key on the Ray218.
   —or—
   Press and hold the **OK / INTCM** key on the RayMic.
   The receiving station sounds an alert tone and displays a message that an intercom call is incoming.
2. On the receiving station, press **PTT** to accept the call and respond.
   While **PTT** is depressed, that station displays TALKING and the other station displays LISTENING. When neither station is pressing **PTT**, both LCD's display PRESS PTT TO TALK.
3. On the sending station, when the LCD no longer reads TALKING, press **PTT** to talk.
4. To terminate the call, press END from either station.



4.4 GPS/Time Setup

By default, the Ray218/Ray55 auto-detects NMEA 0183 strings and decodes appropriate latitude/longitude position and time or COG/SOG. When position data is available, the GPS satellite icon appears on the top line of the LCD. If the GPS navigation receiver is not connected or is not functional, a manual latitude/longitude position and UTC time can be entered and used in the DSC distress transmitted message.

Manual Position

If no GPS data is available and the MMSI number has been programmed, the GPS icon does not appear, and POS DATA REQ is displayed on the dot matrix display, followed by NO POS DATA. An alarm sounds for 5 seconds or until you acknowledge by pressing any key.

The alert repeats every four hours as long as no position information has been entered manually. If position data is entered manually but has not been updated during the previous 23.5 hours, all the position (lat/lon) fields are set to all 9's, time field is set to all 8's, and the display reverts to NO POS DATA.

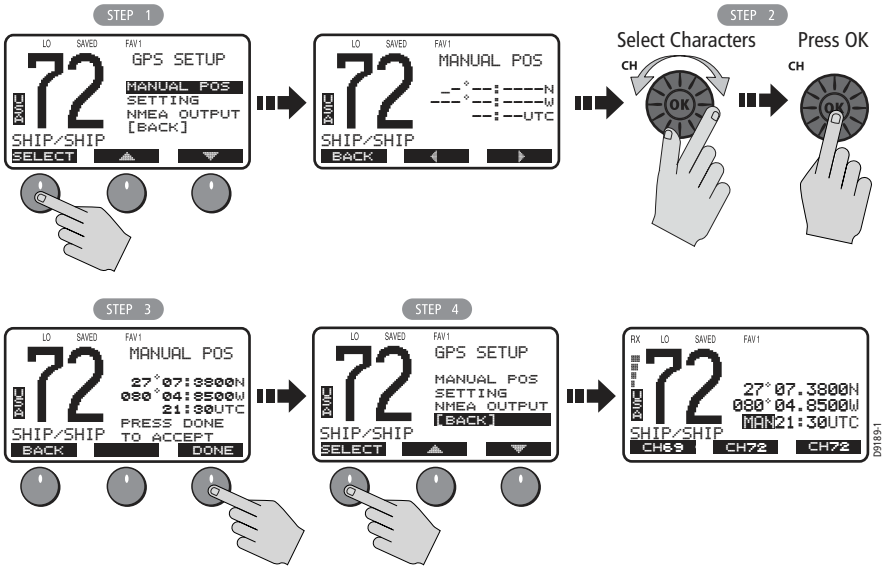
Note: *The Manual Lat/Lon function is valid only when your radio is not connected to a GPS receiver.*

To manually set the GPS position and time settings:

1. Under the GPS SETUP menu, select MANUAL POS. The Manual Position screen appears.
2. Using the **CH** knob, fill in the Lat/Lon and time information, one character at a time. The first character space is highlighted with a flashing underline.
   A more-detailed description of manual character entry can be found in "Adding a new Entry" on page 75.
   - Rotate the **CH** knob to scroll through the selections.
   - When the desired character appears, push in the **CH** knob to accept it. The next character to be filled in sequence is underlined (_).
   - Use the < and > soft keys to edit selected characters, if necessary.
   - Continue this process until all latitude data been selected.
   - When the direction character is underlined, rotate the **CH** knob to toggle between N and S, if necessary.
   - Press the **CH** knob when the desired direction character is displayed. The first character in the longitude field is now underlined.
   - Use the same process to complete longitude information.

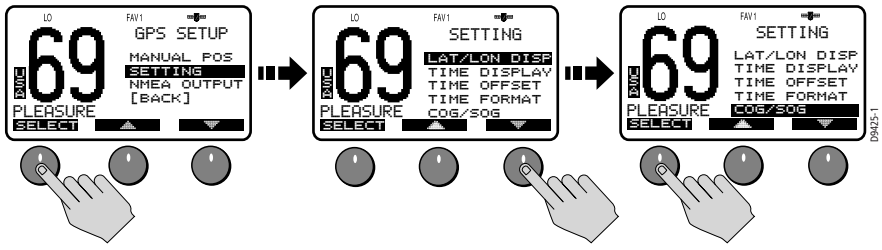
- Use the same process to complete time information.
  When time data is entered manually, the MAN indicator appears in front of the time, which is displayed in UTC.

3. Press DONE soft key when complete. The radio returns to the GPS Setup menu.
4. Select BACK to exit the menu.



Settings

You can also set how some time and position information is displayed on the screen. Make your selection from the options on the list.



Latitude/Longitude Display

The LAT/LON DISP setting indicates whether Latitude and Longitude position data are displayed on the screen in standby mode.

Time Display

The TIME DISPLAY setting indicates whether time information is displayed on the screen in standby mode. When manual time is used, it is always displayed as UTC time, even if you have entered an offset.

Note: *If TIME DISPLAY is set ON, COG/SOG is automatically set to OFF. Because they occupy the same line on the LCD, only one of these two settings can be displayed at a time.*

Time Offset

The TIME OFFSET setting indicates the amount of time to add or subtract from UTC time to equal your local time. Rotate the **CH** knob to select a value from between +13 to –13 hours of UTC and then press ACCEPT to confirm. After setting up Time Offset, "LOC" is displayed to the right of the Time field to indicate local time.

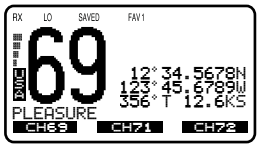
Note: *The Time Offset setting is valid only when GPS data is available. When manual time is used, it is always displayed as UTC time, even though you have entered an offset.*

Time Format

The TIME FORMAT setting indicates whether the time is displayed in 12 hour or 24 hour format.

COG/SOG Display

This setting determines whether Course Over Ground and Speed Over Ground (COG/SOG) data from the GPS is displayed on the bottom line of the dot matrix display instead of the time of day. The menu setting "Bearing Mode" on page 63 determines whether the True or Magnetic heading is displayed for COG. The setting "Speed Unit" on page 64 determines whether knots, MPH or KPH is used for SOG.



Note: *If COG/SOG is set ON, TIME DISPLAY is automatically set to OFF. Because they occupy the same line on the LCD, only one of these two settings can be displayed at a time.*

NMEA Output

When Distress Call and Position (lat/lon) information is received from other stations, your Ray218/Ray55 has the capability of forwarding this data to your display unit (C Series, E Series, etc.) over the NMEA port so that it can be displayed on the screen. You can specify which stations will have their position data and Distress Call information sent to the display unit.

SEL OUTPUT

Use this option to select the stations for which you want incoming position data and Distress Call information to be displayed.

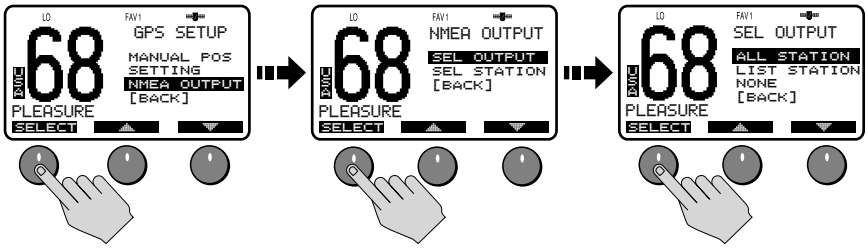
1. From the GPS SETUP menu, select NMEA OUTPUT.
2. From the NMEA OUTPUT menu, select SEL OUTPUT.
3. Select which vessel's position data will be forwarded to the display:
   - ALL STATION. Forward all received position data to the display.
   - LIST STATION. Send position data from stations that you have selected from a list. If you choose this option, specify the permitted vessels using the SEL STATION option described below.
   - NONE. Do not forward position data from any station.

SEL STATION

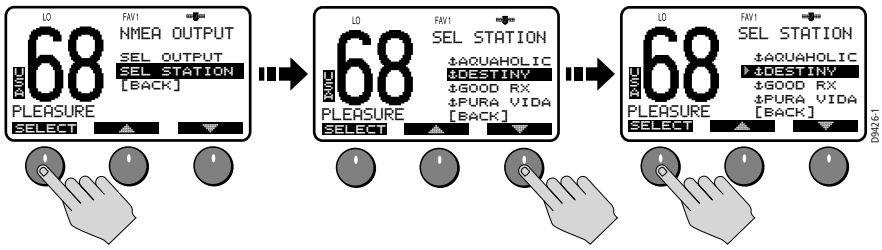
If you enabled LIST STATION in the SEL OUTPUT menu, this option presents a list from which you can select the stations whose data will be forwarded.

1. As outlined above in step 3, ensure you have selected LIST STATION from the SEL OUTPUT menu.
2. From the NMEA OUTPUT menu, select SEL STATION. The list of stations in your Phone book is displayed.
3. Using the up/down arrow soft keys, highlight the first station whose data you want to have forwarded to the display unit.
4. Press SELECT. An arrow appears to the left of the station name, indicating that it has been selected.
5. Continue until all stations for which you want to allow data to be forwarded have been selected (have an arrow next to the station name).
6. Select [BACK] to exit.

SEL OUTPUT



SEL STATION



4.5 System Configuration

Use these menu items for selecting general system-wide settings.

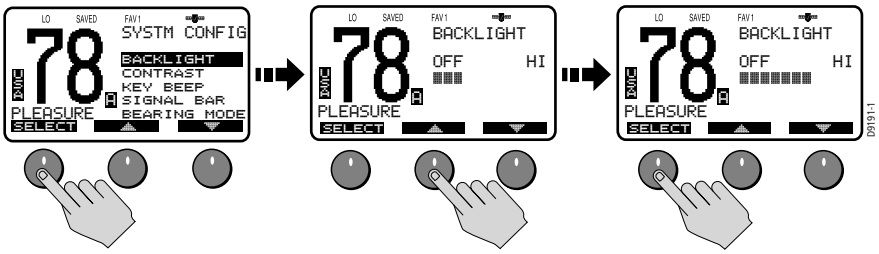
Backlight Adjustment

This setting adjusts the backlight brightness for the LCD, microphone keypad and transceiver keypad. Choose from 10 brightness settings or OFF.

Rotate the **CH** knob or use the up/down arrow soft keys to select the desired backlight level. The number of blocks illuminated in the bar indicates the level, one through ten. For HI all 10 are illuminated; for OFF none are illuminated.

Press SELECT or push the **CH** knob to accept.

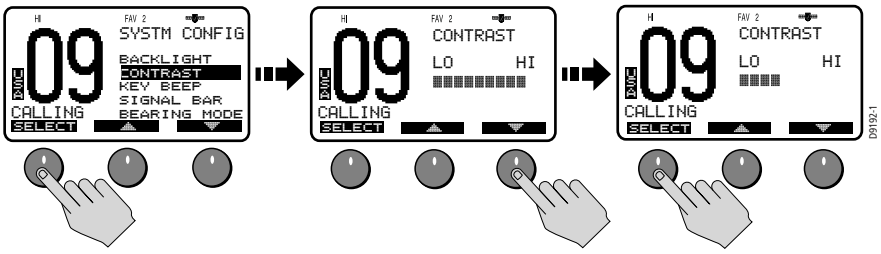
Separate backlight settings are maintained for the transceiver and the RayMic handset. When the backlight level is being adjusted in the transceiver, a message appears on the RayMic indicating that the base is busy. A similar message appears on the base LCD when adjusting the backlight on the RayMic.



Contrast Adjustment

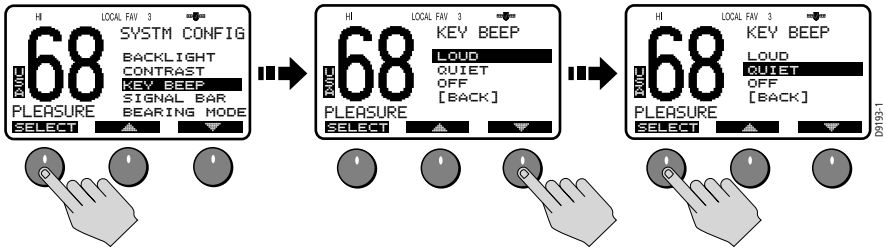
This setting adjusts the levels of LCD contrast. Choose from 10 settings.

Rotate the **CH** knob to select the desired contrast level. The number of blocks illuminated in the bar indicate the level. A larger number of blocks indicate a darker LCD. For HI, all 10 blocks are illuminated; for LO none are illuminated.



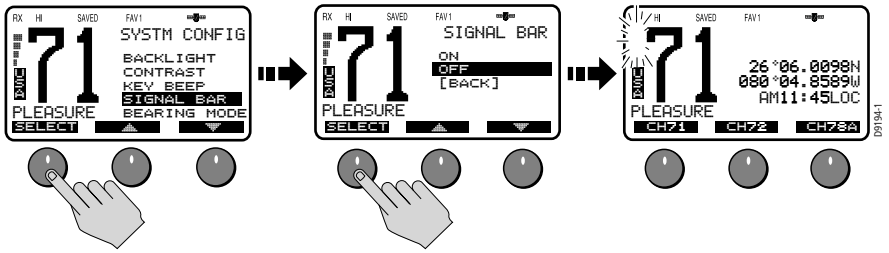
Key Beep

This setting is used to set the volume of the beep that sounds when a key is pressed. Select LOUD, QUIET or OFF.



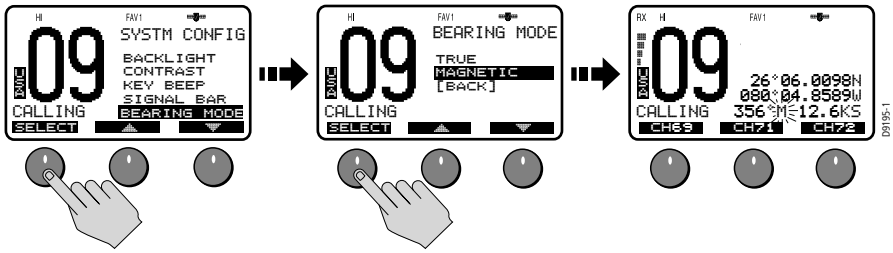
Signal Bar

Use this setting to determine whether the signal strength bar is displayed to the left of the channel number. Select from ON or OFF.



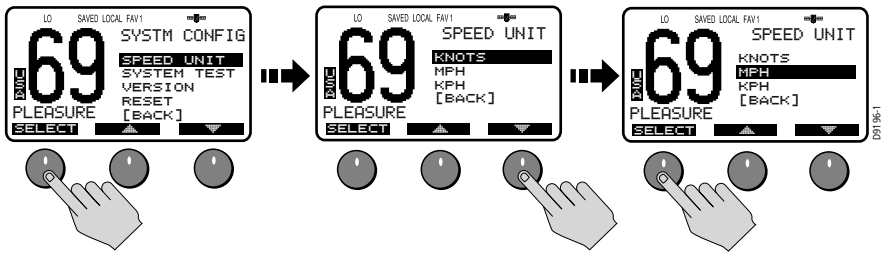
Bearing Mode

This setting is used to determine how heading data are displayed when COG/SOG is displayed (see page 59). Select MAGNETIC or TRUE. If you select MAGNETIC, an "M" appears. If TRUE is selected, a "T" appears.



Speed Unit

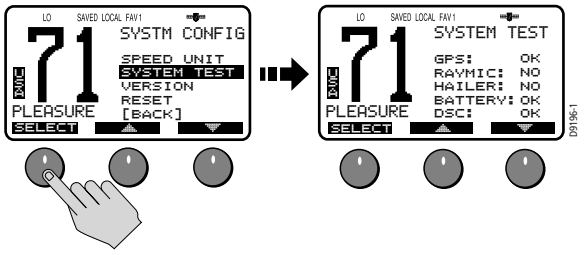
This parameter sets the unit for Speed that is used to display all data, including information received from other instruments on the system.



System Test

This menu item displays status of four separate conditions:

Item	Status	Meaning
GPS	OK	Valid NMEA signal received
	NO	NMEA signal not received
RAYMIC	OK	RayMic second station is connected
	NO	RayMic is not connected
HAILER	OK	Hailer horn speaker is connected
	NO	Hailer is not connected
BATTERY	OK	Battery voltage within nominal limits (10.5–15.8 VDC)
	NO	Battery is below 10.5 VDC or above 15.8VDC
DSC	OK	DSC processor is operating properly.
	NO	DSC processor is not operating properly.



Version Number

This menu item displays the hardware and software versions of your radio.

Reset

Use this menu item to return your radio to the default factory settings. The following items are reset. All other settings are unaffected.

VHF OPS

- **DISPLAY MODE**
  Set to 1 UP CHANNEL.
- **HI/LO POWER**
  Set to HI.
- **SAVE CHANNEL**
  The Saved Channel list is cleared.
- **CHANNEL NAME**
  The Long Channel Name list is displayed.
- **SENSITIVITY**
  Set to DISTANT.

GPS SETUP

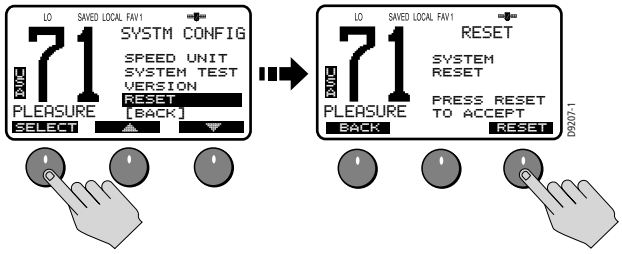
- **SETTING**
  LAT/LON DISP is set ON.
  TIME DISPLAY is set ON.
  TIME OFFSET is set to 0.
  TIME FORMAT is set to 24 HR.
  COG/SOG is set OFF.
- **NMEA OUTPUT**
  SEL OUTPUT is set to ALL STATION.

SYSTEM CONFIG

- **KEY BEEP**
  Set to QUIET.
- **SIGNAL BAR**
  Set to ON.
- **BEARING MODE**
  Set to TRUE.
- **SPEED UNIT**
  Set to KNOTS.

DSC MENU

- **RECV'D CALLS**
  All logs are cleared.
- **DSC SETUP**
  AUTO CH CHANGE is set ON.



Chapter 5: Digital Selective Calling (DSC)

The Ray218/Ray55 includes equipment for Class "D" Digital Selective Calling (DSC). DSC protocol is a globally applied system used to send and receive digital calls. DSC uses a unique Maritime Mobile Service Identity (MMSI) number to direct DSC calls directly to your radio, much like a telephone number.

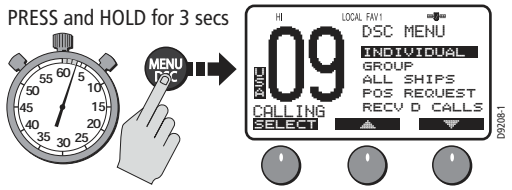
Note: *An MMSI number is required to operate the DSC equipment in this radio. You can obtain an MMSI from BoatUS (www.boatus.com). Once obtained, you can program the MMSI number yourself one time only using the operation described in "My MMSI ID" on page 92. Otherwise, your Raymarine dealer can program or change the number for you.*

The Ray218/Ray55 includes a separate dedicated receiver just for DSC communications on channel 70. When a DSC call is received, the radio automatically responds based on the type of call. When receiving a DSC call from another vessel or a coast station, an alert sounds and DSC data appears in the LCD–such as time of a call, the caller and the type and priority of a call.

5.1 DSC Call Menu

You access DSC functions via the DSC menu. Press and hold the **MENU/DSC** key for 3 seconds to enter DSC call mode.

Note: *Distress calls are made using the DISTRESS key.*



The Ray218/Ray55 can make the following type of DSC calls:

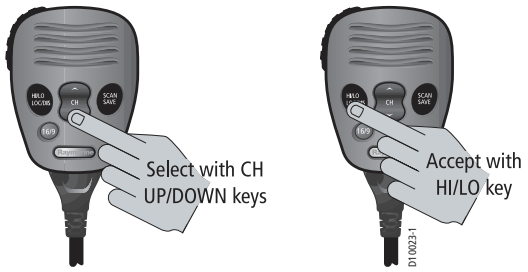
DSC Call Type	Description
DISTRESS	Sends out your MMSI number and nature of your Distress along with the position and time information from the input NMEA data. This digital information lets other ships and shore stations equipped with appropriate DSC equipment know where you are and that you are in a Distress situation. Distress Calls are made using the DISTRESS key. **To make Distress calls, the radio must be connected to a GPS.**
INDIVIDUAL	Makes a ROUTINE DSC call to a specific station identified by its MMSI number.

DSC Call Type	Description
GROUP	Sends transmissions that are only received by radios sharing a common Group MMSI number. Up to 5 Group MMSI numbers can be stored and called.
ALL SHIPS	Sends out a message to all vessels within range that you need assistance but the situation is not serious enough for a Distress Call. All Ships calls should only be used if hailing for assistance on channel 16 fails. There are two types of All Ships Calls: SAFETY for advisory alerts and URGENCY for assistance when life is not in immediate danger.
POSITION REQUEST	This option enables you to request GPS position information from any vessel for which an MMSI number is known. You can specify the target vessel either by selecting it from your MMSI phonebook or by manually entering its MMSI number. You can also be requested to send out your position to someone else.
RECEIVED CALLS	Three separate logs listing all received DSC Call types by number and time of call. Entries are separated into the following: Distress Log, Call Log for all other types of DSC Calls, and Position Log. NOTE: You can place a call directly from a log to the station that is currently displayed. You can also add the displayed station to the DSC Phonebook.

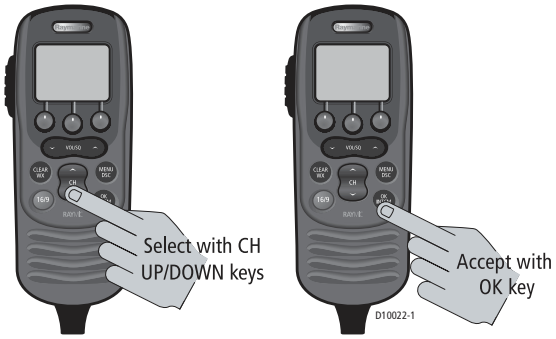
Making DSC Menu and Programming Selections

There are three ways to make DSC menu and character selections in your radio:

1. Most examples in this chapter describe making selections using the **CH** knob and soft keys on the transceiver.
2. However, you can also press the microphone up/down keys to make your selections and then press the microphone **HI/LO** key to accept.



3. Alternatively, if you have an optional RayMic, you can use its **CH** up/down keys to select and **OK** key to accept.



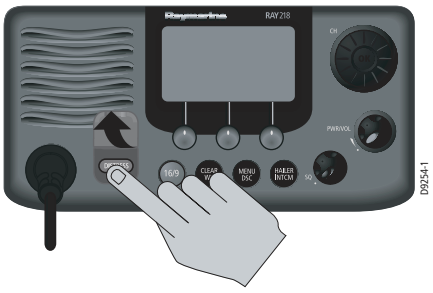
5.2 Distress Calls

For a Distress Call transmission, the Ray218/Ray55 takes the position and time information from the input NMEA data along with your MMSI and converts it into a digital "packet". When transmitted, this digital information lets other ships and shore stations equipped with appropriate DSC equipment know where you are and that you are in a Distress situation.

Your call can specify the nature of the Distress (designated call) or not (undesignated call).

Sending a Distress Call

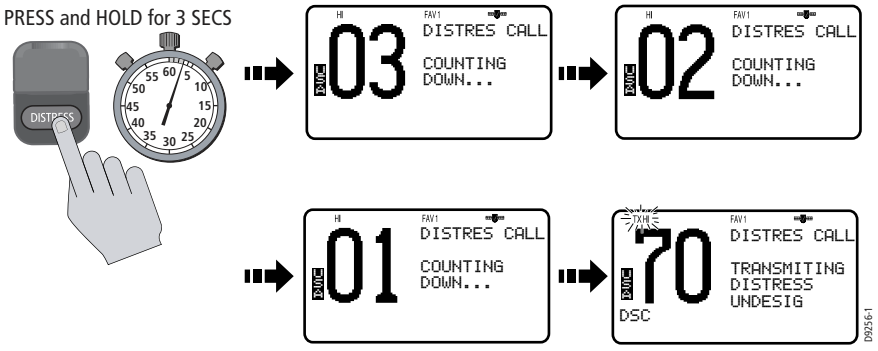
Lift the spring-loaded door on the front panel of the transceiver.



Undesignated (Quick) Distress Call

To send a distress call without specifying its nature:

- Press and hold the red **DISTRESS** key for 3 seconds to initiate the call. During this time, the radio beeps, the display flashes and a timer counts down 03...02...01.



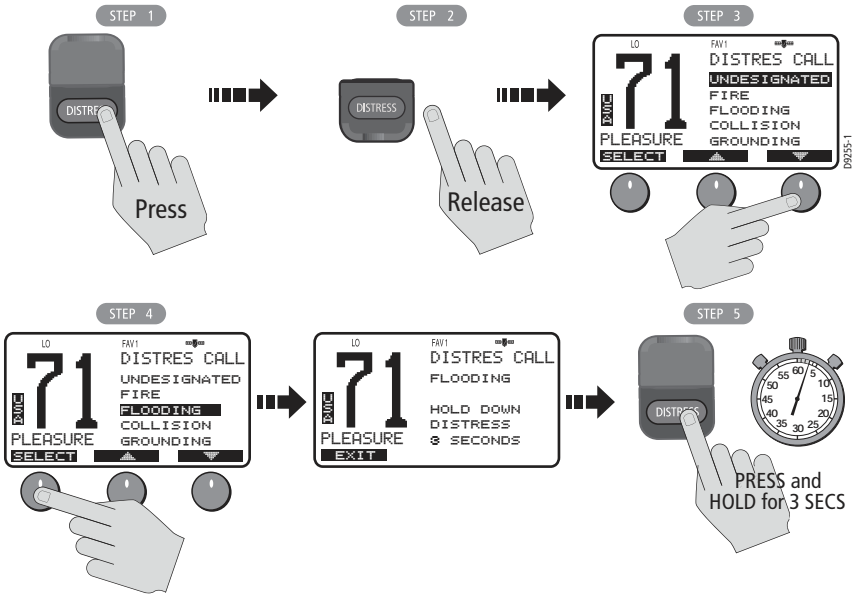
Designated Distress Call

To send a distress call and specify its nature:

1. Press the red **DISTRESS** key.
2. Release the **DISTRESS** key.
   The Distress Call screen appears.
3. Rotate the **CH** knob or press the up/down arrow soft keys until the type of Distress you wish to designate is highlighted:

   - UNDESIGNATED
   - FIRE
   - FLOODING
   - COLLISION
   - GROUNDING
   - CAPSIZING
   - SINKING
   - ADRIFT
   - ABANDONING
   - PIRACY
   - MANOVERBOARD
   - EXIT

4. Press SELECT to choose that type of Distress.
5. Press and hold the **DISTRESS** key for 3 seconds to initiate the call. During this time, the radio beeps, the display flashes and a timer counts down 03...02...01... , just as with the undesignated call illustrated above.



Transmitting

After the Distress transmission, the radio is automatically set to channel 16 at high power to listen for and respond to voice replies from Coast Guard or other vessels that may have received your Distress Call.

The Distress Call is resent randomly every 3.5 – 4.5 minutes until an acknowledgement is received or the call is manually cancelled.

To mute the alarm:

Press **CLEAR/WX**.

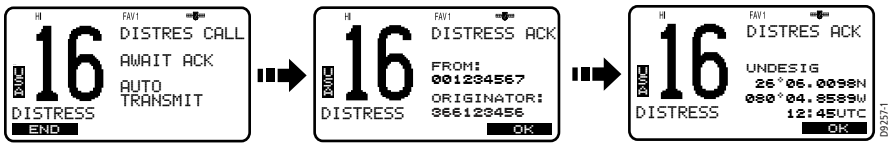
To manually cancel the automatic Distress resend:

Press **CLEAR/WX** a second time.

The Distress Call is resent randomly every 3.5 – 4.5 minutes until an acknowledgement is received or the call is manually cancelled.

Receiving Acknowledgement

After the call is sent, the radio waits for acknowledgement. The display stops flashing and the alarm sounds continuously until muted or an ACK is received.



Cancelling a Distress Call Made in Error

If the countdown has not been completed, release the **DISTRESS** key before the countdown has completed.

If the countdown has completed and the distress call has been sent in error, you should make an announcement as soon as possible that the distress situation does not exist.

1. Immediately press **CLEAR/WX two times** to cancel the Distress Call. The radio returns to the state before the Distress Call.
2. Press the **16/9** key. The radio switches to the Priority Channel.
3. Make a broadcast to all stations giving your ship's name, call sign and MMSI number and cancel the false distress alert. For example:

"All Stations, All Stations, All Stations. This is NAME, CALL SIGN, MMSI ID, POSITION. Cancel my distress alert of DATE, TIME, NAME, CALL SIGN."

Receiving a Distress Call

The Ray218/Ray55 receives distress messages sent by another vessel and/or acknowledgments (ACK) sent by a coast station to another vessel in distress. The radio also receives distress relays.

Note: *Class "D" DSC radios such as the Ray218/Ray55 are forbidden by law from automatically acknowledging or relaying DSC distress calls. Upon receiving a distress call, you may hail the vessel in distress on channel 16 and standby to lend assistance if requested.*

When a Distress Call is received, the Ray218/Ray55 automatically tunes to channel 16 and sounds the Distress Alarm Tone. (If you have disabled automatic channel changing, as described on page 95, you are first prompted whether to accept the call.)

Two alternating screens appear in the display. When position data and time is included within the signal, it is displayed on the first screen in the text area of the LCD. The second screen shows the nature of the distress and time it was sent.

The 2 alternating pages of data are recorded in the Distress Log. The envelope icon (✉) blinks until you accept the call, reject the call, or open the resulting unread message stored in the Log. See page "Received Calls (Logs)" on page 90.

Your radio has the capability of forwarding position data from a Distress Call to your display unit (C Series, E Series, etc.) over the NMEA port so that it can be displayed on the screen. You can specify which stations will have their position data information sent to the display unit using the option NMEA Output, which is described on page 60.

To mute the alert tone:

Press **CLEAR/WX**.

To ignore the Distress Call:

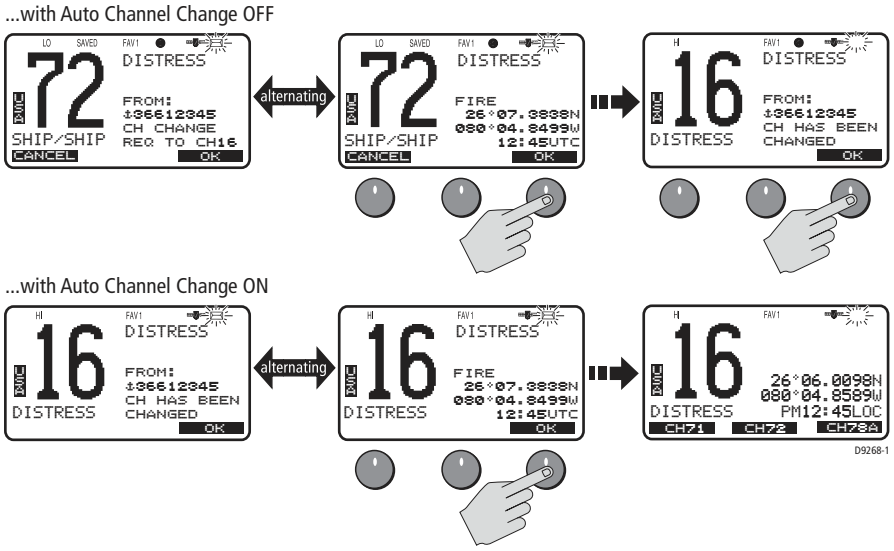
Press **CLEAR/WX** a second time or press the CANCEL soft key. The envelope icon disappears, the call is interrupted and the normal screen appears on the LCD.

To accept a Distress Call when Auto Channel Change is OFF

1. Press the OK soft key or the **CH** knob. The alert tone is muted, the envelope icon disappears and the radio switches to channel 16.
2. Press OK again to confirm the channel change. The radio returns to standby mode. Press **PTT** to communicate on channel 16.

To accept a Distress Call when Auto Channel Change is ON

Press the OK soft key or the **CH** knob. The alert tone is muted, the envelope icon disappears and the radio automatically switches to channel 16. Press **PTT** to communicate.



Note: *The AUTO CH CHG option determines whether you want your radio automatically switched to channel 16 to receive the call or instead to be prompted to manually receive or decline the channel change. See page 95.*

Receiving a Distress Relay Sent by Another Station

When a Distress Relay is received, an alarm sounds, the envelope icon blinks and the LCD displays two alternating screens. The first page displays the Name/MMSI ID of the station sending the message. Page 2 displays the Name/MMSI ID of the vessel in distress and its lat/lon position. Your radio does not re-send a distress relay message.

5.3 DSC Phonebook

The Phonebook stores up to 50 preprogrammed MMSI numbers that you can select for making an Individual Call. The numbers are stored by name and contain the station's MMSI number. You can add, edit and delete entries from the Phonebook, much as you would on a cellular telephone. Rotate the **CH** knob to make an item appear on the dot matrix display and then press in the **CH** knob to select that item.

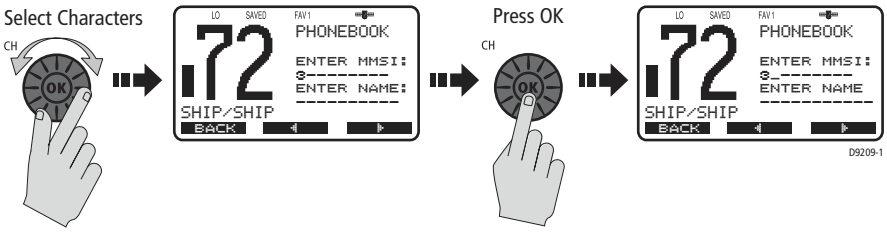
Adding a new Entry

1. Select PHONEBOOK from the DSC menu. The list of Phonebook entries appears. Highlight <NEW>. If no entries have yet been entered, this is your only choice.

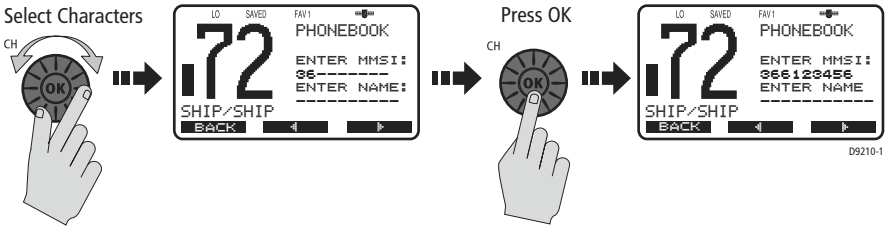
   Press SELECT. You are prompted to enter the MMSI number for the new entry. The first character space to be modified is highlighted with a flashing underline.

2. Rotate the **CH** knob. The flashing underline is replaced with a numeric character. Continue rotating the knob to scroll through the selections.

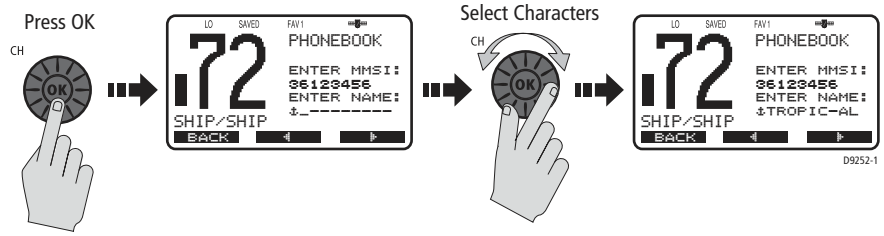
   When the appropriate number appears, press the **CH** knob to accept. The next character to be filled in sequence is then underlined.



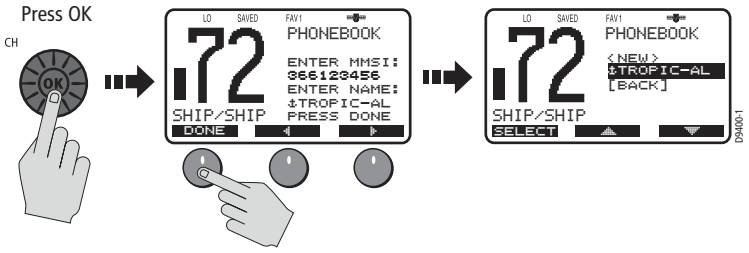
3. Continue this process until all MMSI digits have been entered. Use the < and > soft keys to edit selected characters, if necessary.



4. When you press the **CH** knob to accept the final MSSI ID digit, the cursor moves on to the NAME field. The first character in this line is a symbol assigned by the radio, based on the MMSI number you entered.
   Coast Stations are identified by "00" at the beginning of the station name. If you enter 00 as the leading digits of the MMSI ID, the radio recognizes this as a coast station and automatically enters a tower symbol ('Ψ'). If you enter a number other than 0 in the initial position of the MMSI ID, an anchor symbol ('⚓') is entered as a prefix to the name, identifying this as a Ship Station.
   The first character space to be modified is highlighted with a flashing underline. Using the same procedure as above, rotate the **CH** knob to select the NAME characters. All alpha and numeric characters are available, as well as 13 symbols: ! # % ' ( ) : ? / . , + -
   Press the **CH** knob to accept. Continue this process until all NAME characters have been entered.



5. When complete, press the DONE soft key to accept.
   The new entry appears in the list.



Editing an Existing Entry

1. From the Phonebook, rotate the **CH** knob or press the ▲ and ▼ soft keys until the entry you wish to edit is highlighted.
2. Press SELECT. The list of options appear.
3. Highlight EDIT and press SELECT.
4. Make your changes to the NAME and MMSI ID, using the **CH** knob.
5. When finished, DONE to save your changes. The revised name or MMSI number appears in the list.

Deleting an Existing Entry

1. From the Phonebook, rotate the **CH** knob or press the ▲ and ▼ soft keys until the entry you wish to delete is highlighted.
2. Press SELECT. The list of options appear.
3. Highlight DELETE and press SELECT again. You are prompted to confirm your selection.
4. Press DELETE. The entry is removed from the list.

5.4 Individual Calls

The Ray218/Ray55 can make Individual Routine calls.

Making DSC Calls to Coast Stations

The examples in this handbook illustrate making DSC calls to Ship Stations. However, the procedures for making Individual Calls to a Coast Station are different. Calls to a Ship Station require that you enter a subsequent working channel chosen from a pre-programmed list offered to you by the Ray218/Ray55. Calls to a Coast Station remove this step from the operating procedures. The Coast Station controls and indicates the subsequent working channel within its acknowledgement.

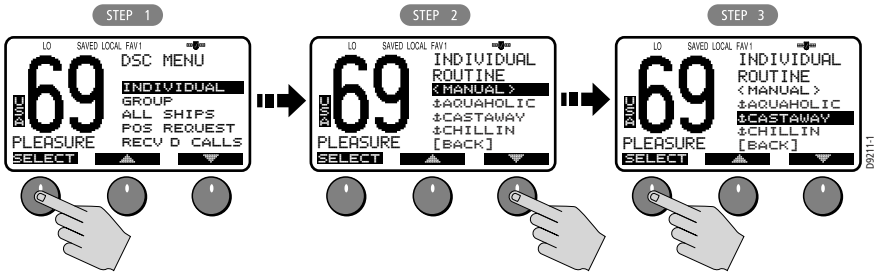
The Ray218/Ray55 automatically detects the correct procedures for you based on the type of MMSI number you enter manually or with or the phonebook. If "00" is detected as the first two characters of the MMSI, Coast Station procedures are implemented automatically.

Note: *When making a call to a coast station, you will not be asked to select a working channel because that will be provided by the coast station.*

Transmitting an Individual Call

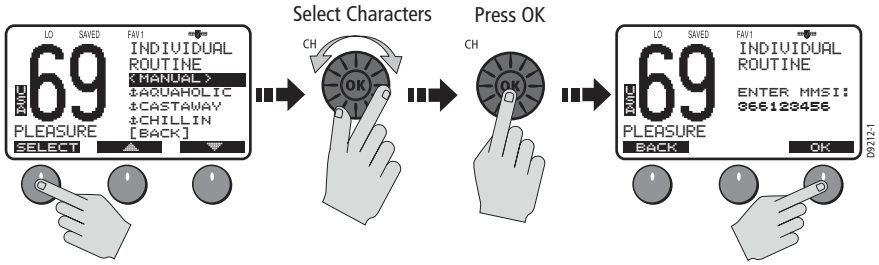
To make an Individual Call to a ship or coast station, you must select the specific MMSI number to contact and the working channel to be used for the call. The MMSI ID can be entered manually or selected from a Phonebook list of preprogrammed numbers specified using the MENU function, as follows:

1. From the DSC menu, rotate the **CH** knob or press the ▲ and ▼ soft keys until INDIVIDUAL is highlighted, and push the **CH** knob or press SELECT.
   The Individual Routine menu appears, which displays any Phonebook entries you have saved and <MANUAL> for manual number entry.
2. Rotate the **CH** knob or press the arrow soft keys until the desired individual name is highlighted.
3. When the desired name is highlighted, press SELECT.



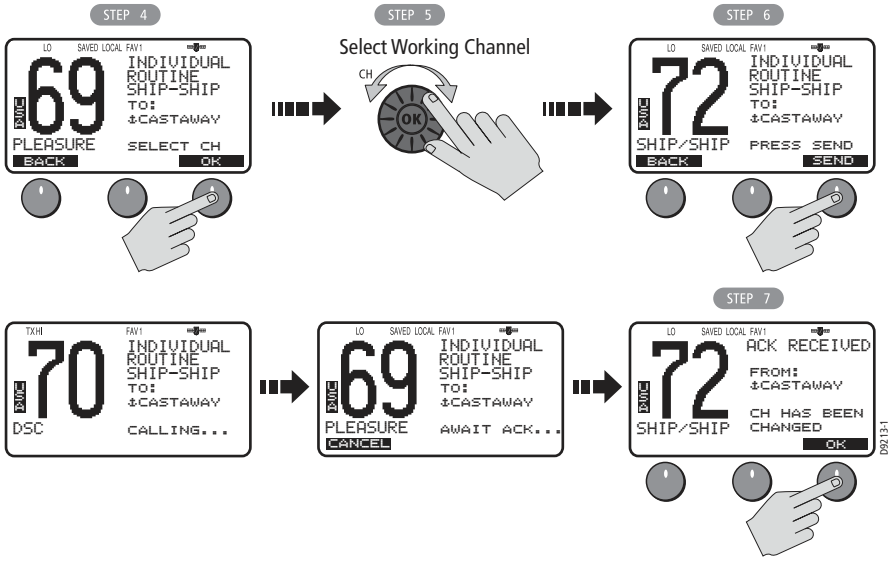
If using MANUAL MMSI ID entry:

Enter the MMSI number using the **CH** knob. Rotate the **CH** knob to select each character and then push in the **CH** knob to accept. The next position to be modified is indicated by a blinking underline. A more-detailed description of manual character entry can be found in "Adding a new Entry" on page 75.



4. Press OK to initiate the call.
5. Rotate the CH knob to select the working channel to be used for the Individual Call and press OK. Select from 06, 08, 09, 10, 13, 16, 17, 67, 68, 69, 71, 72, 73 or 77.

   Note: *Individual Calls to a Coast Station remove this step from the operating procedures. The Coast Station controls and indicates the working channel within its ACK.*
6. Press SEND to transmit the call. The Individual Call is transmitted on channel 70, the radio tunes to the original channel and waits for acknowledgement. During this period you are still able to receive calls.
7. When the acknowledgement is received, the radio automatically switches to the selected working channel and sounds a DSC Call alert ring. Press OK to confirm.



Press **PTT** to communicate on the specified channel. Pressing PTT at any time before an ACK is received cancels the Individual Call

Receiving Individual Calls

When an Individual Call is received, the envelope icon blinks and the LCD alternates between a screen displaying the name (or MMSI ID) of the station initiating the call and one indicating that a request for a change of working channels is being made. The channel does not change until you accept.

The 2 alternating pages of data are recorded in the Call Log. The envelope icon (✉) blinks until you accept the call, reject the call, or open the resulting unread message stored in the Log. See page "Received Calls (Logs)" on page 90.

To mute the alert tone:

Press **CLEAR/WX**. Automatic cancellation takes place after 2 minutes.

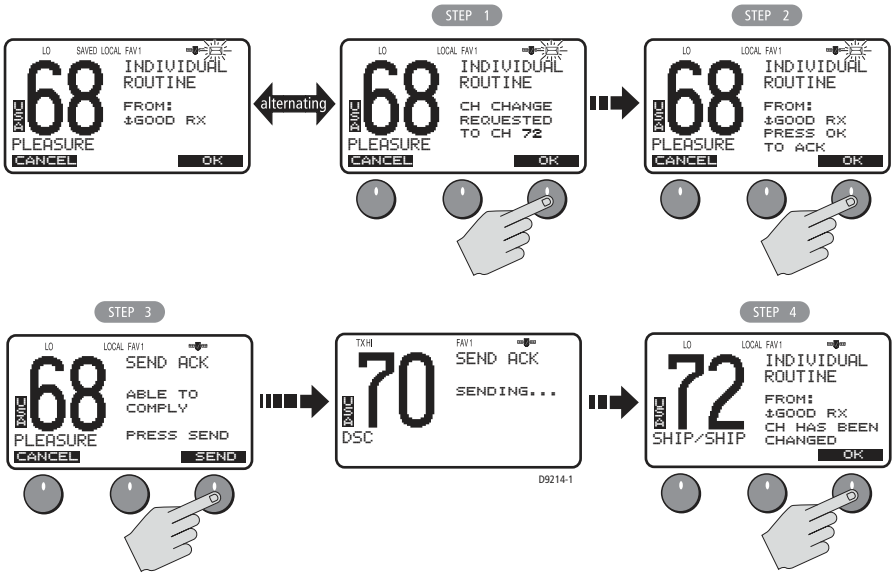
To ignore the Individual Call:

Press **CLEAR/WX** a second time or press the CANCEL soft key. The envelope icon disappears, the call is interrupted and the normal screen appears on the LCD.

To accept an Individual Call:

1. Press the OK soft key to change channels to the one designated by the caller. The alert tone is muted and the envelope icon disappears.
2. If the caller requests an acknowledgement, press OK to accept.
3. Press SEND to comply with the ACK.
4. When the caller responds to the ACK, press OK to return to standby mode. Establish voice communications on the designated channel by pressing **PTT**.

If the caller requests that you change to an unsupported working channel the message INVALID CHANNEL appears on the LCD. If an acknowledgement is sent, the originating station is sent the message UNABLE TO COMPLY, indicating that your radio could not make the requested channel change.



5.5 Group Calls

The Group Call feature sends transmissions that are only received by radios sharing a common Group MMSI number, such as a flotilla or racing fleet. The Ray218/Ray55 sends Group Routine calls.

Group MMSI Setup

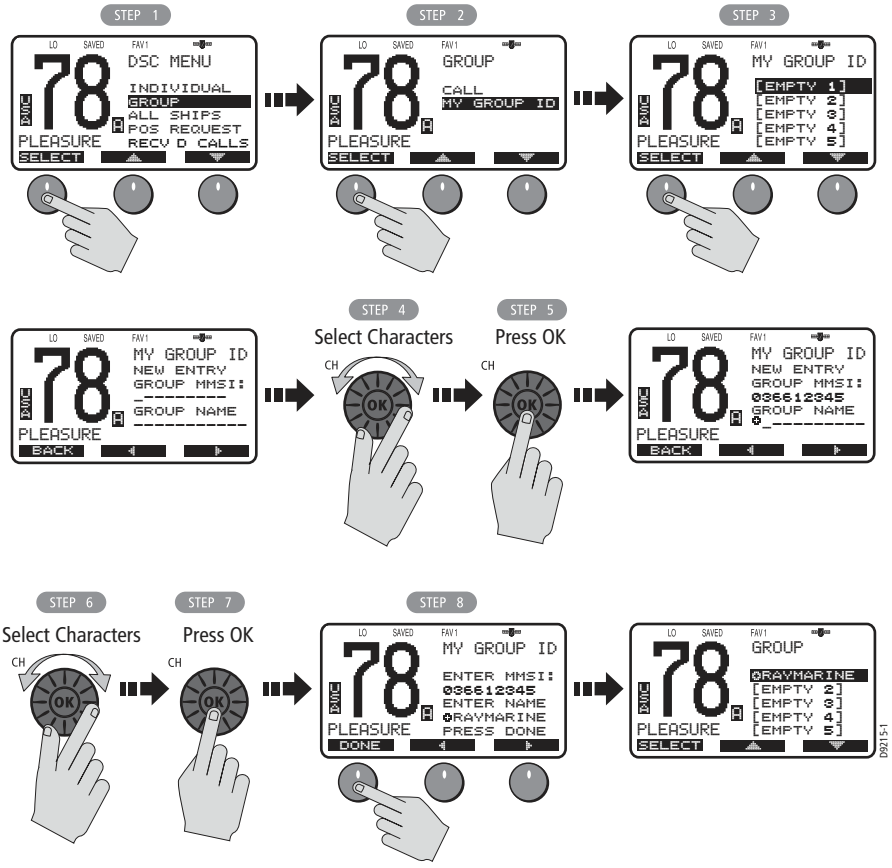
You can program up to five Group MMSI ID numbers and associated Group names, which can be up to 11 characters long. Group MMSI ID numbers always begin with a zero (0). You only enter the last 8 digits of the Group ID number; the initial "0" is automatically entered for you.

Adding a New Group

1. Select GROUP from the DSC Menu.
2. Select MY GROUP ID. If an existing Group name and MMSI ID number are already stored, those values appear. If blank, <EMPTY 1>, <EMPTY 2>, etc. are shown to indicate that the Group IDs have not yet been programmed.
   Select the first available empty group location. The first field for you to enter data is the GROUP MMSI number.
3. Fill in the GROUP MMSI field one number at a time. The first character space to be modified is highlighted with a flashing underline. A more-detailed description of manual character entry can be found in "Adding a new Entry" on page 75.
4. Rotate the **CH** knob. The flashing underline is replaced with a numeric character. Continue rotating the knob to scroll through the selections. Use the < and > soft keys to edit selected characters, if necessary.
5. When the appropriate number appears, press the **CH** knob to accept. The next character to be filled in sequence is then underlined. Continue this process until all GROUP MMSI characters have been entered.
   When you press the **CH** knob to accept the final MSSI ID digit, the cursor moves on to the GROUP NAME. Because the MMSI ID begins with a zero, the Name field is prefixed with a plus symbol (✪), which identifies this as a Group entry. The first character space to be modified is highlighted with a flashing underline.
6. Using the same procedure as above, rotate the **CH** knob to select the GROUP NAME characters. All alpha and numeric characters are available, as well as 13 symbols: ! # % ' ( ) : ? / . , + -
7. Press the **CH** knob to accept. Continue this process until all GROUP NAME characters have been entered.

8. When complete, press the DONE soft key to accept. The new entry appears in the list.

Use the same procedure to edit an existing entry in the list.

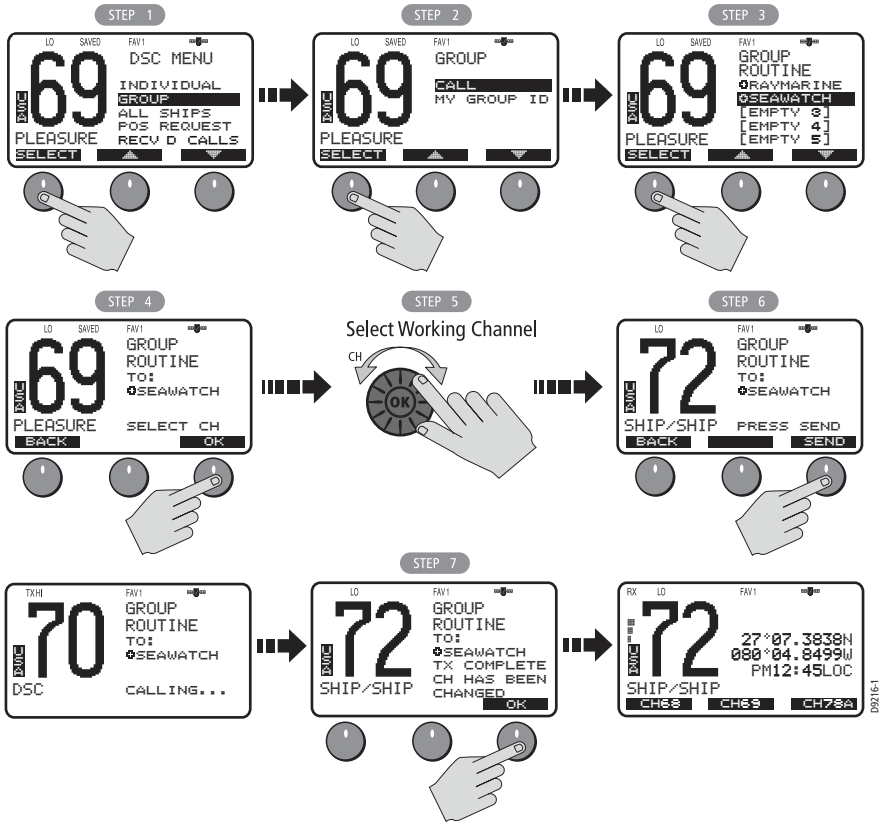


Transmitting a Group Call

To call another vessel in the group, select the Group Name to contact from the list of numbers described in the preceding section and the working channel to be used for the Group Call.

1. Select GROUP from the DSC menu.
2. Select CALL. The Group entries you have saved appear.
3. Highlight the group name you wish to call and press SELECT.
4. Press OK to initiate the call.

5. Rotate the **CH** knob to select the working channel to be used for the call.
6. Press SEND to transmit the Group Call.
   The Group Call is transmitted on channel 70, and the radio tunes to the designated working channel to be used for the Group Call.
7. Press OK to confirm that the working channel has been changed.



Receiving Group Calls

The Ray218/Ray55 can receive Group Routine Calls from anyone in your prearranged group.

When a Group Call is received, the LCD alternates between a screen displaying the name (or MMSI ID) of the station in the group initiating the call and one indicating that a request for a change of working channels is being made.

The 2 alternating pages of data are recorded in the Call Log. The envelope icon (✉) blinks until you accept the call, reject the call, or open the resulting unread message stored in the Log. See page "Received Calls (Logs)" on page 90.

To mute the alert tone:

Press **CLEAR/WX**. Automatic cancellation takes place after 2 minutes.

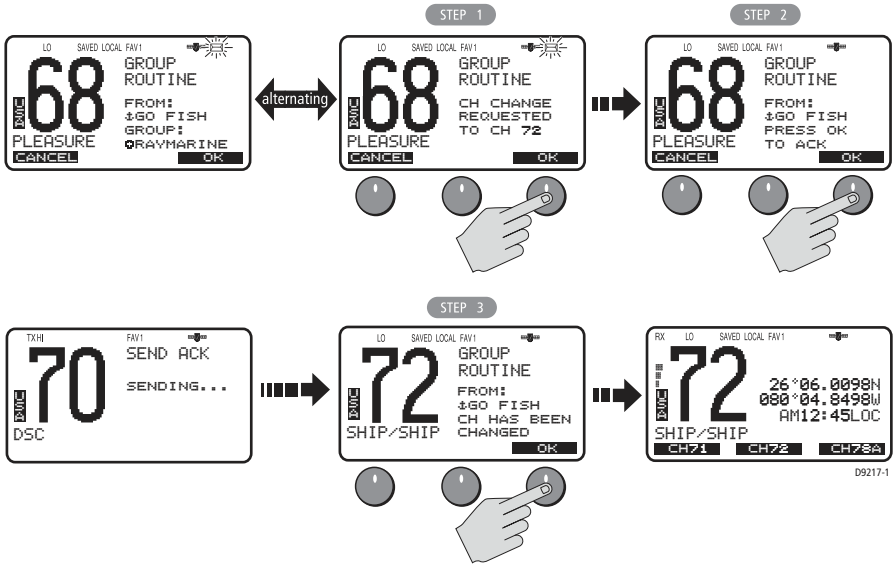
To ignore the Group Call:

Press **CLEAR/WX** a second time or press the CANCEL soft key. The envelope icon disappears, the call is interrupted and the normal screen appears on the LCD.

To accept the Group Call:

1. Press the OK soft key to change channels to the one designated by the caller. The alert tone is muted and the envelope icon disappears.
2. If the caller requests an acknowledgement, press SEND to comply.
3. When the caller responds to the ACK, press OK to return to the standby mode. Establish voice communications on the designated channel by pressing **PTT**.

If the caller requests that you change to an unsupported working channel the message INVALID CHANNEL appears on the LCD. If an acknowledgement is sent, the originating station is sent the message UNABLE TO COMPLY, indicating that your radio could not make the requested channel change.

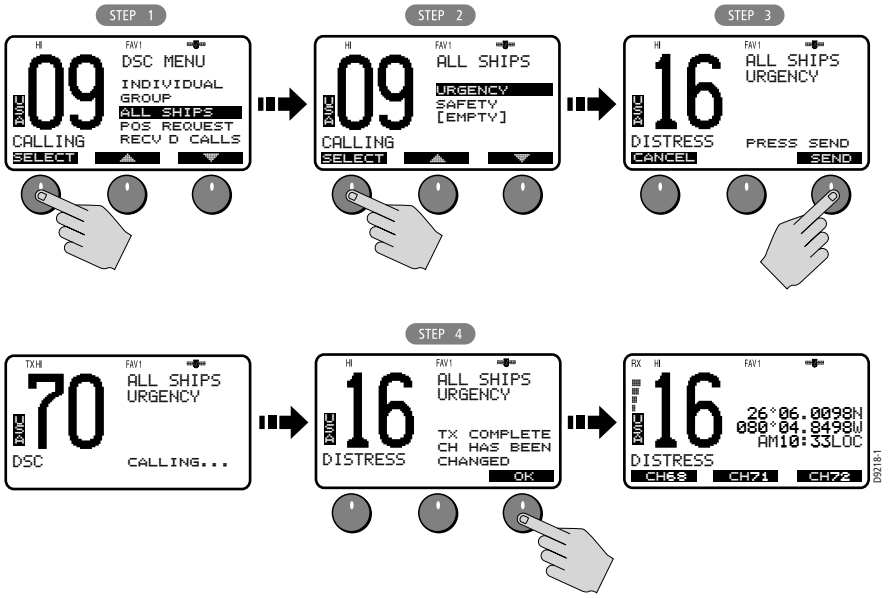


5.6 All Ships Calls

An All Ships Call sends out a message to all stations within range. The Ray218/ Ray55 can make All Ships Safety Calls for advisory alerts and Urgency Calls when assistance is required but life is not in danger. For example, you might send a Safety Call to warn others there is a large floating object that may be a hazard to navigation. A sample Urgency Call might be that you have an illness or an accident on board. The All Ships Call is made on channel 70, and then the radio automatically switches to channel 16 at high power for voice communications.

Transmitting an All Ships Call

1. Select ALL SHIPS from the DSC menu.
2. Select the type of call you wish to make: URGENCY or SAFETY.
3. Press SEND to transmit the call. The call is transmitted on channel 70, and then the radio tunes to channel 16 at high power.
4. Press OK to reconfirm the All Ships Call. The radio returns to standby mode. Press **PTT** to communicate on channel 16.



Receiving an All Ships Call

When an All Ships Safety or Routine Call is received, the LCD alternates between a screen displaying the name (or MMSI ID) of the station initiating the call and one requesting a change of working channels. The 2 alternating pages of data are recorded in the Call Log. The envelope icon ( ) blinks until you accept the call, reject the call, or open the resulting unread message stored in the log. See page "Received Calls (Logs)" on page 90.

For an Urgency or Distress Call, the Automatic Channel Change option (see page 95) determines how the call is handled. If set ON, the radio automatically switches to Priority Channel 16 for voice communications. If OFF, you are prompted to manually accept or decline the call and channel change by pressing OK or CANCEL, respectively. When set OFF, the icon appears.

To mute the alert tone:

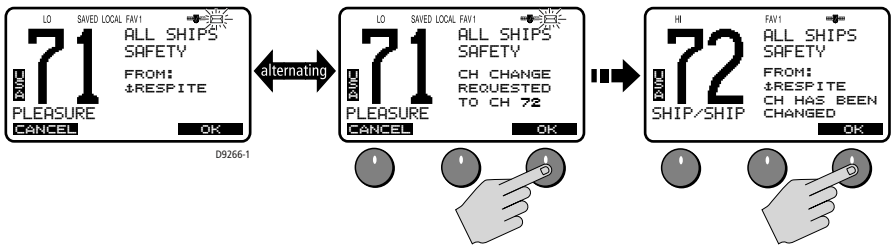
Press **CLEAR/WX**. Automatic cancellation takes place after 2 minutes.

To ignore the All Ships Call:

Press **CLEAR/WX** a second time or press the CANCEL soft key. The envelope icon disappears, the call is interrupted and the normal screen appears on the LCD.

To accept an All Ships Safety or Routine Call:

1. Press the OK soft key or the **CH** knob. The alert tone is muted, the envelope icon disappears and the radio switches to the requested channel.
2. Press OK again to confirm the channel change. The radio returns to standby mode. Press **PTT** to communicate on channel 16.



To accept an All Ships Urgency or Distress Call when Auto Channel Change is OFF

1. Press the OK soft key or the **CH** knob. The alert tone is muted, the envelope icon disappears and the radio switches to channel 16.
2. Press OK again to confirm the channel change. The radio returns to standby mode. Press **PTT** to communicate on channel 16.