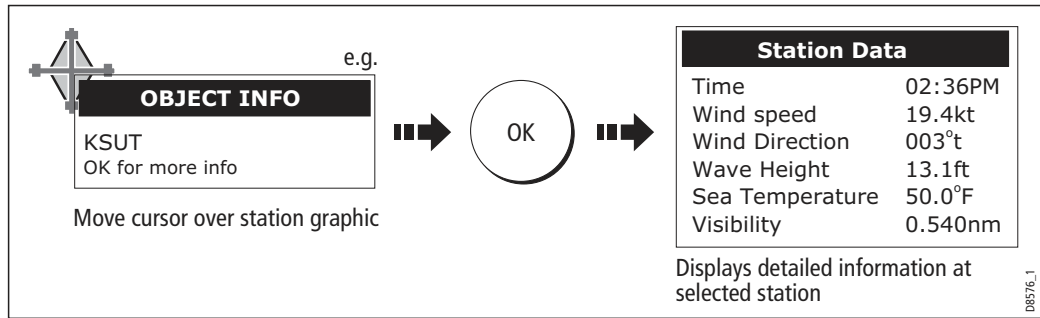
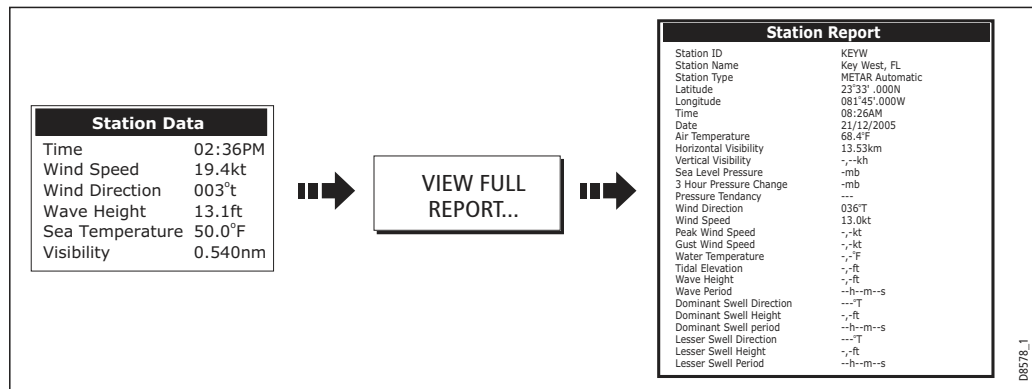


To identify the station and display more associated weather data:



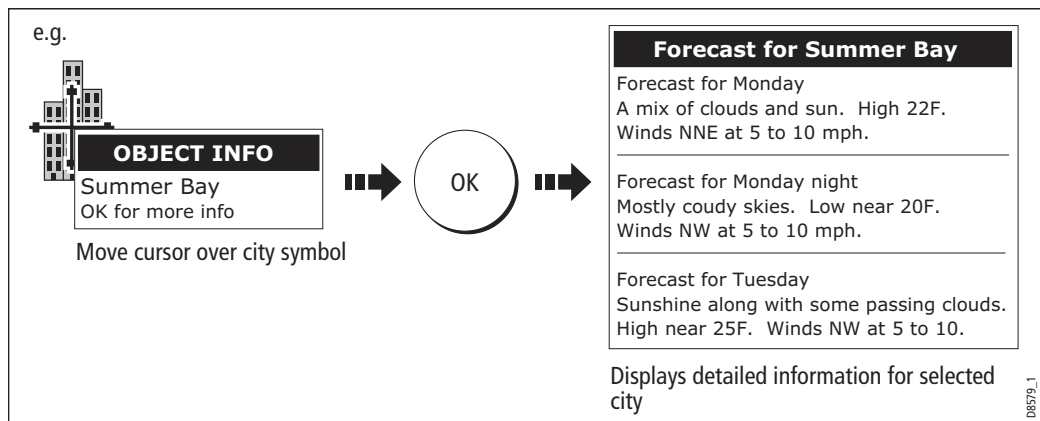
You can now select detailed live weather data for the selected observation station, if required:



**Note:** *Not all data is available for all stations.*

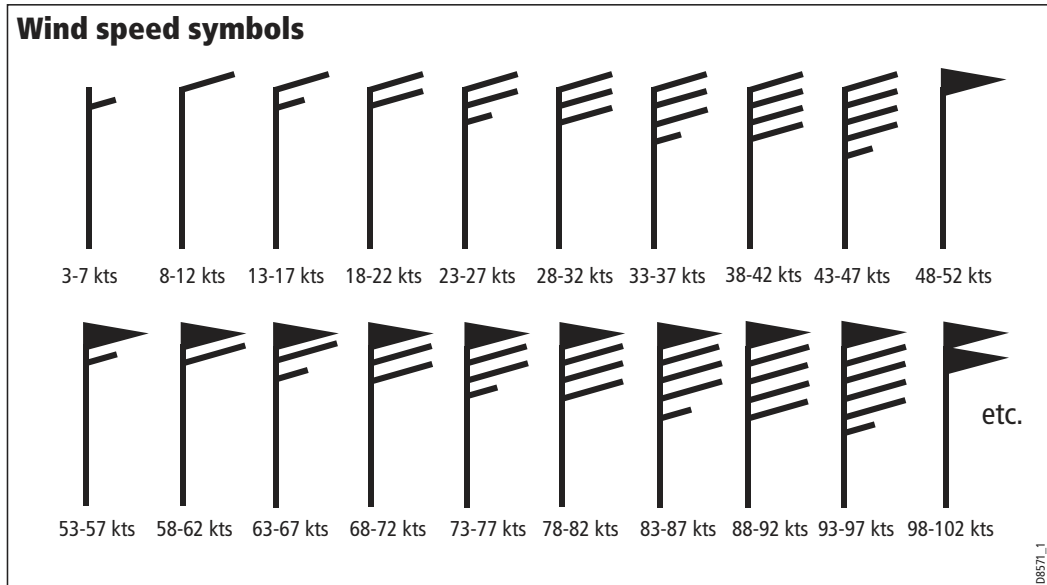
## City forecasts

The Cities option gives you access to details of city weather forecasts. Up to 3 forecasts can be displayed:



## Wind

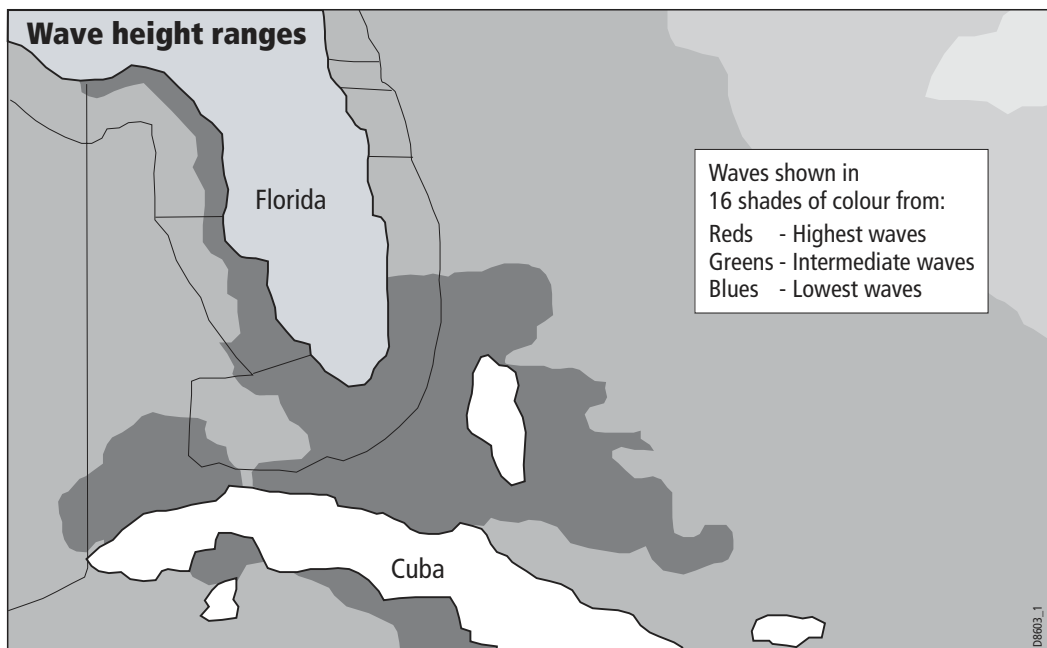
This option displays the current wind direction and magnitude. You can choose (via the Weather Setup Menu) to display the wind symbol as either an arrow or a wind barb. Wind arrows give an indication of wind speed - the larger the arrow the stronger the wind. Wind barbs give a more precise representation of wind speed:



- Notes:** (1) For details of how to view actual wind data at a specific point, see page 236.  
 (2) For details of how to change the wind symbol, please refer to page 241.

## Waves

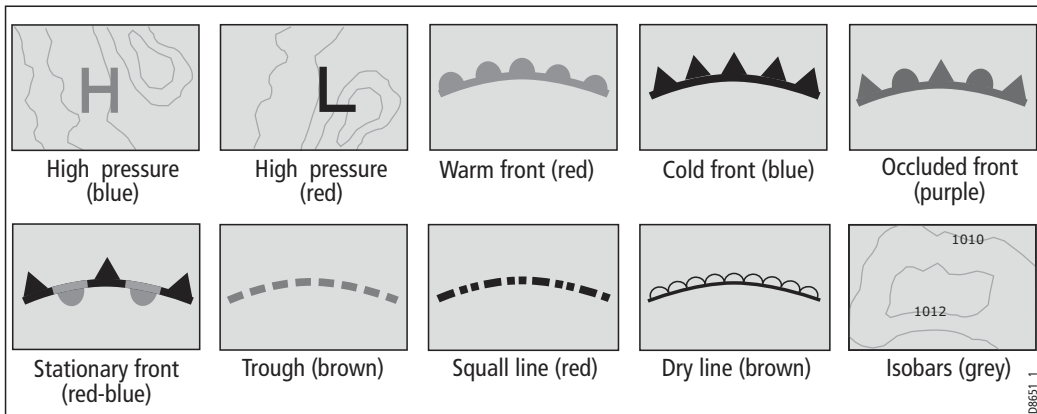
This option displays the current wave height in 16 levels e.g.



For details of how to view actual wave data at a specific point, see page 236.

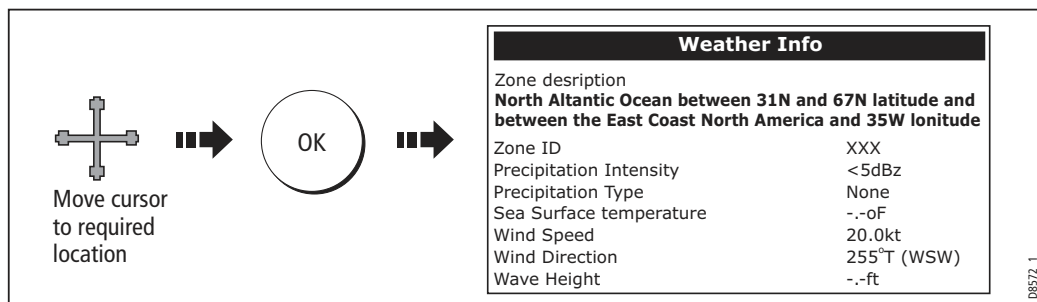
## Surface pressure

This option shows surface pressure data using standard meteorological symbols:



## Viewing data at a particular location

When required you can display the sea temperature, wind speed and direction, wave height, precipitation intensity and type for a particular location. This also shows the marine zone at the cursor position:



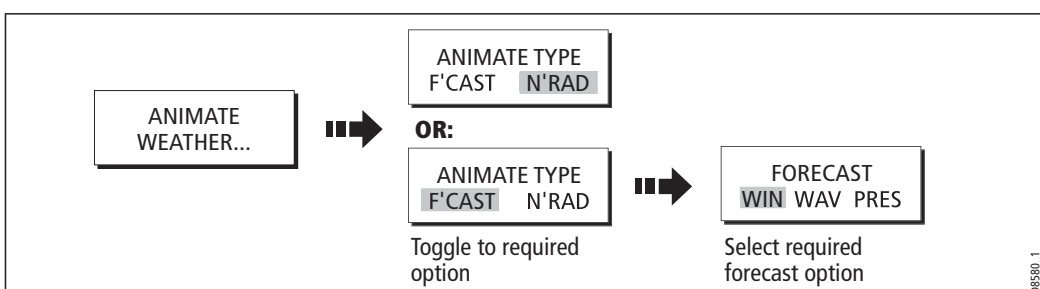
## 14.8 Animated weather graphics

The animated weather option allows you to view an animation from the current time for:

- The forecast for wind, wave or surface pressure.
- The weather radar history loop (NOWRad).

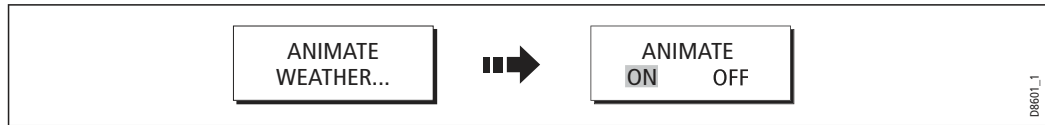
### Setting up animation

To setup the animated weather graphic for forecasting (wind, wave or surface pressure) or for the weather radar history loop:



## Running animation

Once you have set the animation type (see previous section) you can run the animation feature:



The status bar indicates the time-frame displayed. The weather radar history, provides up to 8 images of data covering the last 2 hours, at 15 minute intervals.

If at any time you need to pause the animation, for instance if you want to examine the displayed weather for a particular time frame, press PAUSE.

- Notes:** (1) *You cannot display information (by moving the cursor over a symbol) when animation is running. The range and trackpad controls do however remain operable provided the PAUSE option has not been selected. Ranging /panning will cause the animation to restart.*
- (2) *The animation will be switched to OFF, whenever the ACTIVE, PAGE, DATA, WPS/MOB, MENU are pressed or when the animation screen is closed and you return to the default weather screen.*

## 14.9 Viewing weather reports

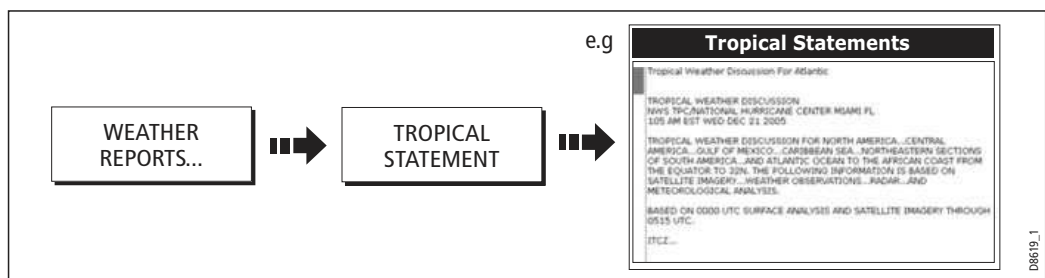
Your system will display reports for:

- Tropical statements.
- Marine warnings.
- Marine zone forecasts.
- Marine watchbox reports.

These weather reports are accessed via the WEATHER REPORTS soft key. Each report type may contain several bulletins; the window can be scrolled to view all the data.

### Tropical statements

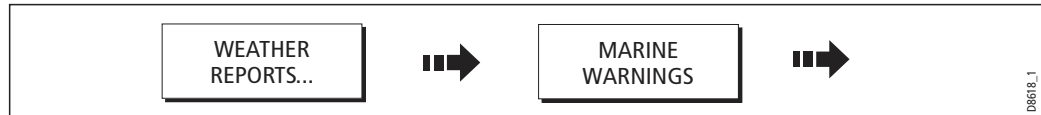
To display the reports for the latest tropical weather statements:



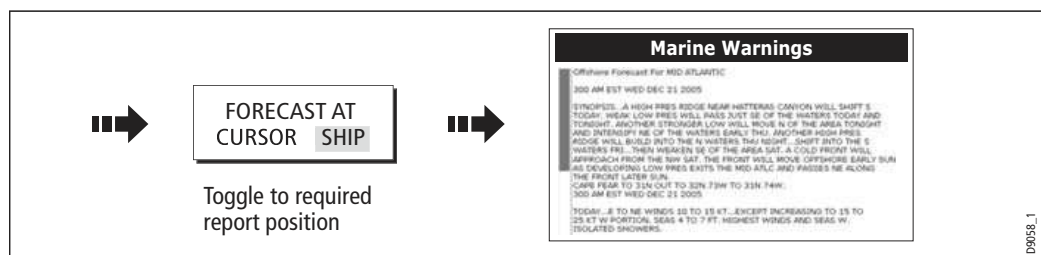
## Marine warnings

To display a report for the current warnings (US coastal or near shore):

1. Select the MARINE WARNINGS option:



2. Display the marine warnings for the zone around your cursor or boat:



## Marine zone forecasts

These forecasts cover:

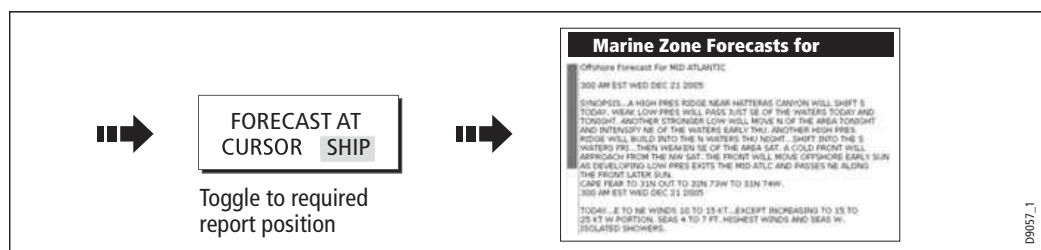
- US Coastal Weather Forecasts and Offshore Forecasts and High Seas Forecast, or
- Great Lakes Forecast and Near Shore Forecast, or
- Canadian Coastal Weather Forecast.

To display marine zone forecasts:

1. Select the MARINE ZONE FORECASTS option:

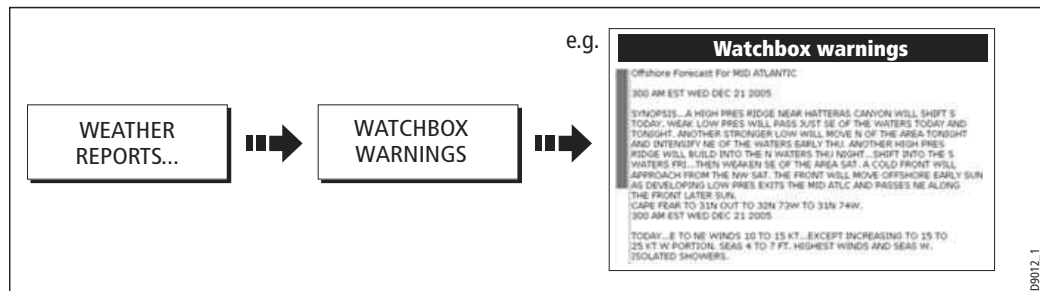


2. Display the marine zone forecasts for the area around your cursor or boat:



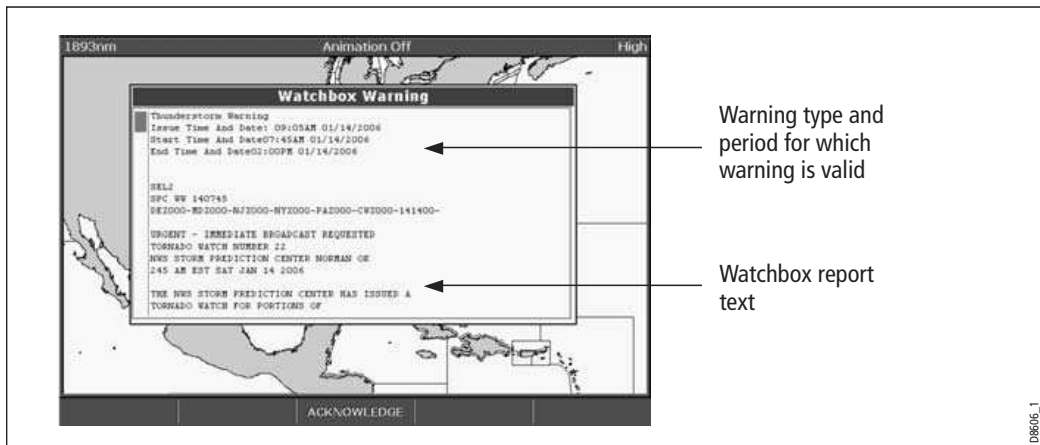
## 14.10 Watchbox warnings

To display available watchbox warnings:



## Watchbox warning alerts

When a tornado or thunderstorm warning is received, the system will generate a watchbox alert:



Use the trackpad or rotary control, to scroll through the report as necessary:

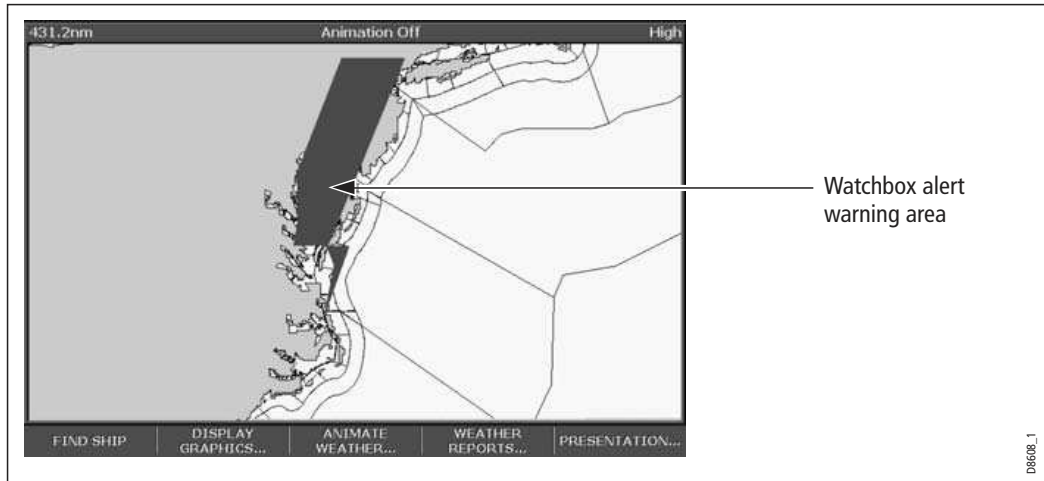
## Clearing the alert

To clear an alert, press ACKNOWLEDGE. The alert is removed from the display. The watchbox warning can still be viewed via the Weather Reports soft keys

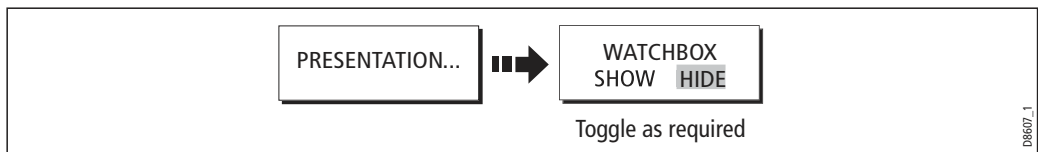
**Note:** *If required, you can switch off the marine watchbox alarm (via the Weather Setup Menu see page 241) or set the watchbox status to hide. Reports continue to be added to and/or updated in the database irrespective of the status that you have the alarm or show/hide feature set to.*

## Displaying marine watchboxes

When the marine watchboxes feature is set to ON (default), any regions for which an alert is valid are highlighted on the weather map as a red polygon.

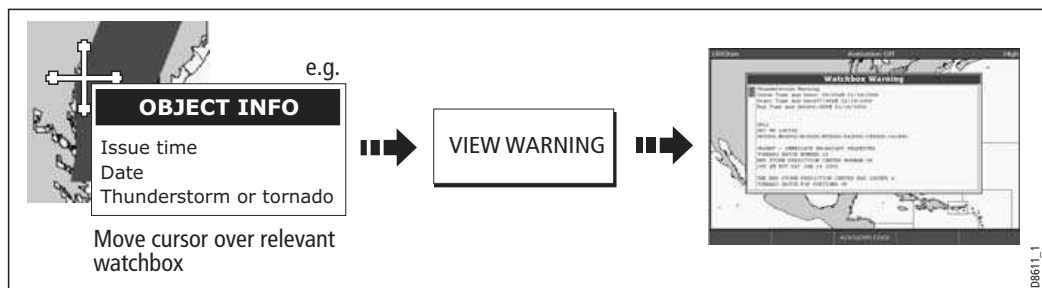


To show/hide watchboxes:



## Displaying watchbox data

To display the data relating to a particular watchbox:



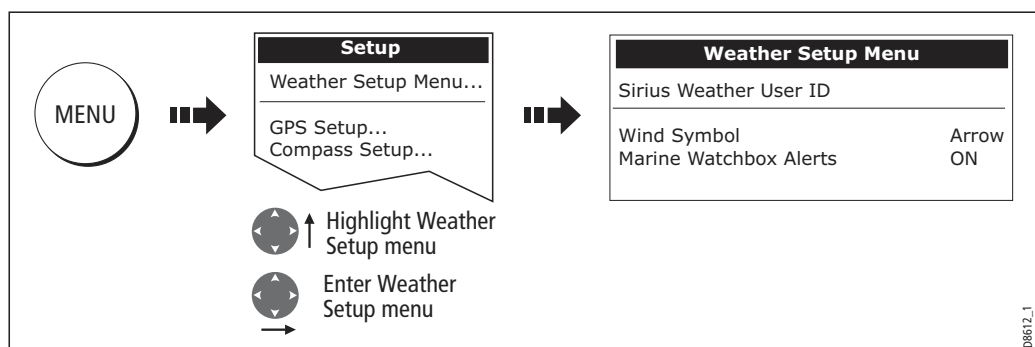
## 14.11 Weather application setup

When a weather application is the active window, the set up for your weather application can be changed from the standard configuration to suit your particular needs. Although you will probably only do this when you first use this application, you may decide to make subsequent adjustments once you become more familiar with the system. Any settings that you change are retained even when you power off.

The Weather Setup Menu also provides the User ID for your weather receiver.

### Selecting the Weather Setup Menu

To select the Weather Setup Menu:



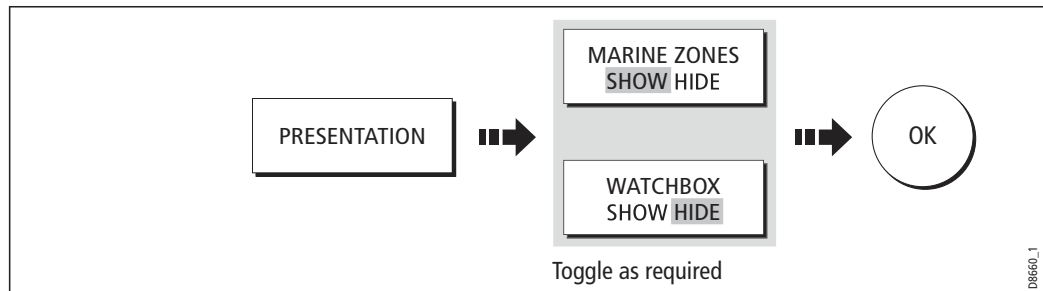
### Weather Setup options

| <b>FUNCTION</b><br>Description   | <b>OPTION</b><br>(Default in <b>bold</b> ) |
|--|--|
| <b>Sirius Weather User ID</b><br>Details the Weather ID obtained from Sirius and keyed in on your display. | (as advised)                               |
| <b>Wind Symbol</b><br>Graphic used for wind symbol   | <b>Arrow</b><br>Barb                       |
| <b>Marine Watchbox Alert</b><br>Enables alert when watchbox is issued.                                     | <b>ON</b><br>OFF                           |

### Showing/hiding marine watchboxes and zone boundaries

By default your weather application displays marine zone boundaries and marine watchboxes. If required, you can hide these options:





## 14.12 Troubleshooting

| Problem  | Reason   |
|--|--|
| Boat symbol not displayed  | No position fix  |
| On start up, weather map stays in last view and does not re-draw | No position fix  |
| During use, weather map stays in last view and does not re-draw  | <ul style="list-style-type: none"> <li>• FIND SHIP not pressed</li> <li>OR</li> <li>• Motion mode active.</li> </ul> |
| FIND SHIP soft key greyed-out                                    | No position fix  |
| Boat symbol drawn as a solid circle                              | No heading or COG available  |

**Note:** *If weather data is not being received, a warning is displayed. The soft keys, weather map and the ability to set the weather graphics status to show/hide continues to operate as normal.*

## Chapter 15: Sirius Audio (US only)

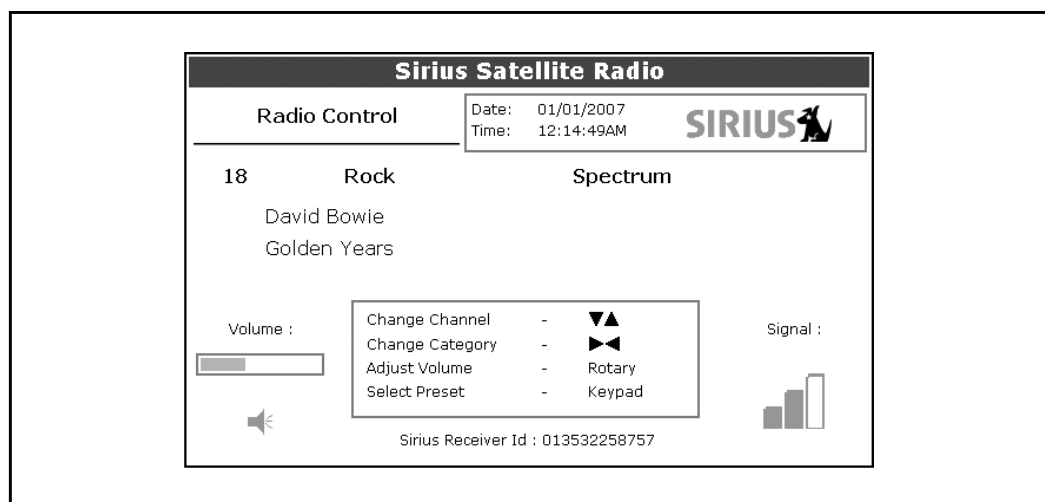
If you have a Sirius data receiver installed, you can use the E-Series display unit to control satellite radio broadcasts. Refer to the SR50 documentation for installation information.

The E-Series gives you access to basic and advanced audio functions. As well as listening to radio broadcasts and browsing or scanning channels, you can set up parental locks to limit access to selected channels and alerts to tell you when a favourite song is being played.

### 15.1 To start using Sirius Radio

1. Press **MENU**.
2. On the Setup Menu, select **Sirius Satellite Radio**.

The Sirius Radio Control screen opens:



Information contained on the Sirius Radio Control screen includes:

- Current channel name, number and category
- Play data for the current channel
- Date and time
- Receiver ID and signal strength

Use the softkeys and trackpad to control audio functions. Use the rotary controller to adjust volume.

The softkeys give you access to the functions outlined in *Table 15-1, Sirius Audio Toolbar*.

Table 15-1: Sirius Audio Toolbar

|                          |  |
|--------------------------|--|
| <b>MUTE ON/OFF</b>       | Controls the mute setting.   |
| <b>PRESETS...</b>        | Displays a list of preset channels and the full channel list with modify options. Use the trackpad or rotary controller to scroll through the list of presets. |
| <b>SETUP CHANNELS...</b> | Gives access to the Edit Presets, Edit Alerts, Edit Channel Access, Scan Channels softkeys.  |
| <b>ALERTS...</b>         | Lets you set up an alert to tell you when favourite songs or artists are played on any channel.  |
| <b>BROWSE...</b>         | Scroll to view play data and to select channels, presets, or categories.   |

## 15.2 Tuning to a channel

From the Sirius Control screen, you tune to channels using the trackpad on the E-Series Display (or you can enter preset numbers directly using the alphanumeric keypad if you have one).

|                       |   |
|-----------------------|---|
| <b>Trackpad up</b>    | Next channel.                           |
| <b>Trackpad down</b>  | Previous channel.                       |
| <b>Trackpad left</b>  | First channel in the previous category. |
| <b>Trackpad right</b> | First channel in the next category.     |

## 15.3 Browsing channels

The browse function allows you to view play data for channels without tuning to them.

### To browse channels

1. On the Sirius Audio Control screen, press the **BROWSE** softkey.  
Pressing this key displays the Channel List or Preset List for browsing. Toggle between the two lists with the **VIEW ALL/PRE** softkey.
2. Use the rotary controller or trackpad to scroll through the channels.
3. Press the **TUNE TO CHANNEL** softkey (or the rotary controller) to listen to the selected channel.

To go back to the Sirius Control screen, press **OK** or **CANCEL**.

## Filtering categories from the browse

This feature allows you to choose a category from which to browse channels; other categories are excluded from the browse.

### To filter categories

1. On the Browse screen, press the **FILTER BY** softkey.
2. Press the **SELECT CATEGORY** softkey.
3. Using the trackpad or rotary controller, select the category you want to browse.
4. Press **OK**.

## 15.4 Scanning channels

The Scan function automatically tunes to all channels in turn.

### To scan channels

On the Sirius Radio Control screen:

1. Press the **SETUP CHANNELS...** softkey.
2. Select **SCAN CHANNELS**.
3. Use the **SCAN ALL/PRE** softkey to choose to scan all channels or only preset channels.
4. Press **SELECT** to stop the scan and listen to the active channel.

## 15.5 Hiding or showing channels and categories

You can select particular channels and categories to be excluded (hidden) from the Browse and Scan sequences.

### To hide or show a channel or category

On the Sirius Radio Control screen:

1. Press the **SETUP CHANNELS...** softkey.
2. Select **EDIT CHANNEL ACCESS**.
3. In the channel list, select the channel you want to hide. If you want to hide a category, select any channel in that category.
4. Toggle between hidden and shown states with either the **CHANNEL SHOWN/HIDDEN** or **CATEGORY SHOWN/HIDDEN** softkeys.

## 15.6 Presets

You can assign up to 18 channels to presets to make tuning, scanning and browsing easier. To assign a channel to a preset, use the **PRESETS** softkey from the main control screen or the **EDIT PRESETS** softkey from any of the following screens:

- Setup channels
- Browse channels

At the Edit Preset Channels screen you can select a preset and assign a channel to it, move the assigned channel to a different preset, or delete the assigned channel.

Toggle between the Preset Channels list and the Channel List either by using the trackpad (left/right) or by pressing the appropriate softkey.

### To assign a channel to a preset

1. Select an unused preset number from the Preset List.
2. Press the **ASSIGN NEW CHANNEL** softkey.
3. Select the target channel from the Channel List.
4. Press the **ASSIGN TO PRESET** softkey.

**Note:** *If the preset you want to use already has a channel assigned to it, delete the preset first.*

### To delete a channel from a preset

1. In the Preset Channels list, select the preset you want to clear.
2. Press the **DELETE CHANNEL** softkey.

### To move a channel to a new preset

1. Use the rotary controller or trackpad to select the preset you want to move.
2. Press **MOVE TO NEW PRESET**.
3. Scroll to the preset you want to move the channel to.
4. Press **MOVE TO NEW PRESET**.

**Note:** *You can overwrite a channel that has already been assigned to a preset, but you will be prompted to confirm the action.*

## 15.7 Parental locking

You can set up blocks on certain channels so that they can only be played if a correct password is entered. Parental locking must be enabled for the blocks on your selected channels to be effective.

By default, blocking is not enabled.

## To enable blocking

On the Sirius Radio Control screen:

1. Press the **SETUP CHANNELS** softkey.
2. Press the **PARENTAL LOCK ON/OFF** softkey so that **ON** is highlighted.

## To set up a password

On the Sirius Radio Control screen:

1. Press the **SETUP CHANNELS** softkey.
2. Press the **PARENTAL LOCK** softkey to highlight **ON**.
3. At the Password Setup screen, enter and confirm your password and hint.  
Use the rotary controller (or trackpad) to select characters and press the rotary controller to accept them. Press **OK** to enter each field.

You can also access the password entry screen by pressing **EDIT CHANNEL ACCESS** then **CHANNEL ENABLED/LOCKED**.

## To change an existing password

1. Press the **EDIT CHANNEL ACCESS** softkey.
2. Press the **EDIT LOCKOUT PASSWORD** softkey.
3. Enter your old password, then the new password and hint.

## To block a channel

On the Sirius Radio Control screen:

1. Press the **SETUP CHANNELS** softkey.
2. Press the **EDIT CHANNEL ACCESS** softkey.
3. In the Channel List, select the channel you want to block.
4. Press the **CHANNEL ENABLED/LOCKED** to highlight **LOCKED**.
5. Repeat steps 3-4 for each additional channel you want to block.
6. When you blocked all the channels you want, press the **CLEAR** key.
7. Ensure the parental lock is on (**ON** is highlighted on the **PARENTAL LOCK ON/OFF** softkey).
8. At the prompt, enter your password.

Blocked channels remain visible in channel lists, but you cannot select them with the trackpad and they are ignored by the scan function. They are marked as locked by an icon next to the channel name.

## To enter a password

If you select a blocked channel from the channel list or want to block a channel when the parental lock is on, you will be asked to enter the password.

1. Use the rotary control or trackpad to enter the password in the entry field.
2. Press **OK** to enter password.

After three incorrect attempts, the system displays your password hint.

## 15.8 Favourite song alerts

The favourites feature lets you set the E-Series to alert you when a favourite song or artist is playing on any channel. You can define up to 10 favourites using the Alerts softkey.

### To enable favourite alerts

On the Sirius Radio Control screen:

1. Press the **ALERTS...** softkey to open the Edit Alerts screen.
2. Use the **ALERTS ON/OFF** softkey to toggle favourite alerts on and off.

### To set up a song or artist alert

Press the **ALERTS** softkey to open the Edit Alerts screen. This screen shows ten favourites and the song playing currently.

You can delete a favourite from the list, add the current song or artist to the list or switch the favourites alert off.

1. Use the trackpad or rotary controller to select a favourite from the list.
2. If necessary, press **DELETE** to remove a favourite from the list.
3. Press **ADD SONG** or **ADD ARTIST** to assign the song or artist playing to the selected favourite.

If a song or artist is already assigned to the Favourite selected, you will be prompted to overwrite the existing favourite or cancel.

You can also mark a channel or song as a favourite by pressing the **ASSIGN TO ALERT** softkey while scanning.

When alerts are on and the system detects one of your favourites being played on any channel, it will display an alert and sound the alarm.

- To tune to the channel playing the song, press **TUNE TO CHANNEL**. To ignore the alert, press **CLEAR ALERT**.

# Chapter 16: Navtex

## 16.1 Overview

The display can be used to view marine safety information including weather forecasts and marine warnings received from a Navtex receiver. You can select the type of warning message that will trigger this alert on your display. Once you have read the received message you can either erase or save it. Your system can store up to 100 messages. Once capacity is reached the oldest messages are automatically deleted to allow for new incoming messages.

Major areas of NAVTEX coverage include the Mediterranean Sea, The North Sea, coastal areas around Japan and areas around the North American continent.

## 16.2 Setting up Navtex weather

Before you are able to view Navtex messages you will need to:

1. Specify for the communicating NMEA port, the baud rate (4,800 or 9,600) applicable to your Navtex receiver (see *page 230*).
2. Enable the category of Navtex messages that you wish to receive alerts for (see *page 250*).

## 16.3 Incoming message alerts

Once correctly connected to the Navtex unit, your system will display an alert containing the message details for any incoming messages it receives from your chosen categories e.g:

| Navtex Alert  |            |              |
|---|------------|--------------|
| ID:   | Date:      | Time:        |
| KA53  | 02/02/2006 | 02:37:36PM   |
| Message:  |            |              |
| AVURNAV CHERBOURG 021                                 |            |              |
| PORTLAND  |            |              |
| WRECK CHEMICAL VESSEL "ECE"SUNK IN POSITION: 4943.7 N |            |              |
| 003 15.4 W  |            |              |
| AT 010230Z FEB.LENGHT: 126 METERS. NO FISHING AND     |            |              |
| ALL NAUTICAL  |            |              |
| ACTIVITIES PROHIBITED ONE NAUTICAL AROUND POSITION    |            |              |
| OF WRECK  |            |              |
| ERASE MESSAGE   |            | SAVE MESSAGE |

Proceed as follows:

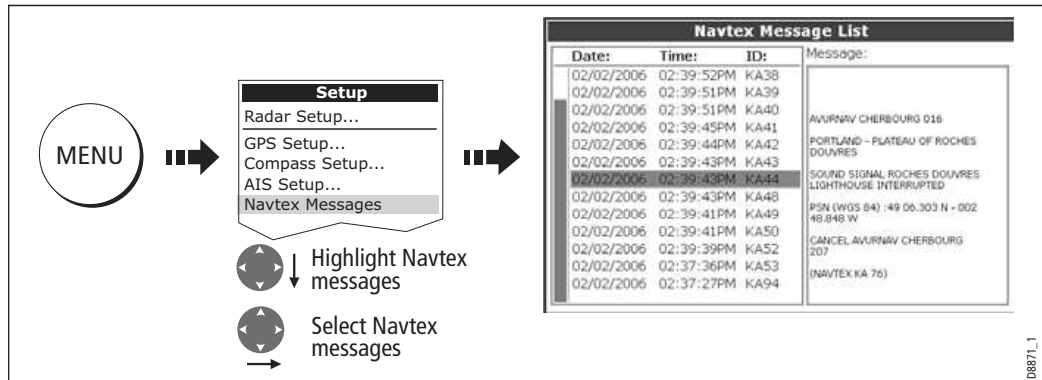
- To remove the alert from the screen, press ERASE, or
- To add the message to the stored list of messages and then remove the alert from the screen, press SAVE MESSAGE.



## 16.4 Viewing messages

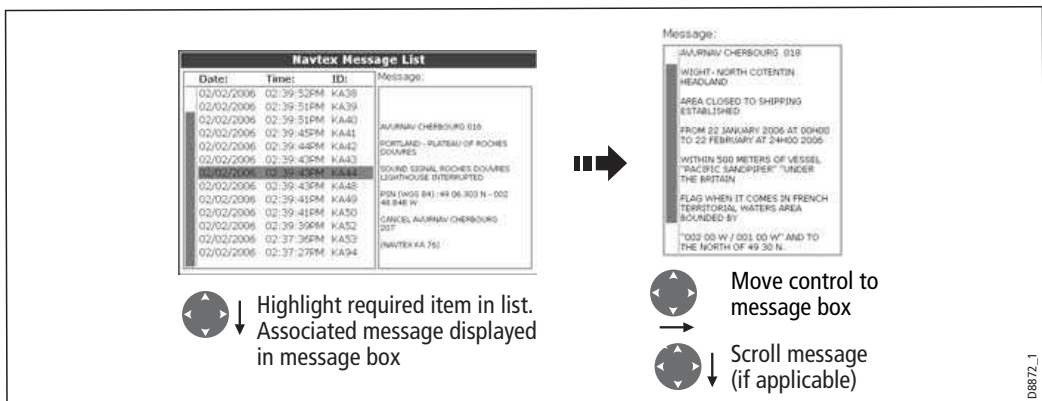
### Displaying the Navtex Message List

To view messages stored in your system:



You now have the option to SORT LIST (by date, station or category), erase a message or set up the message alerts

### Displaying and scrolling through a message



## 16.5 Managing Navtex messages

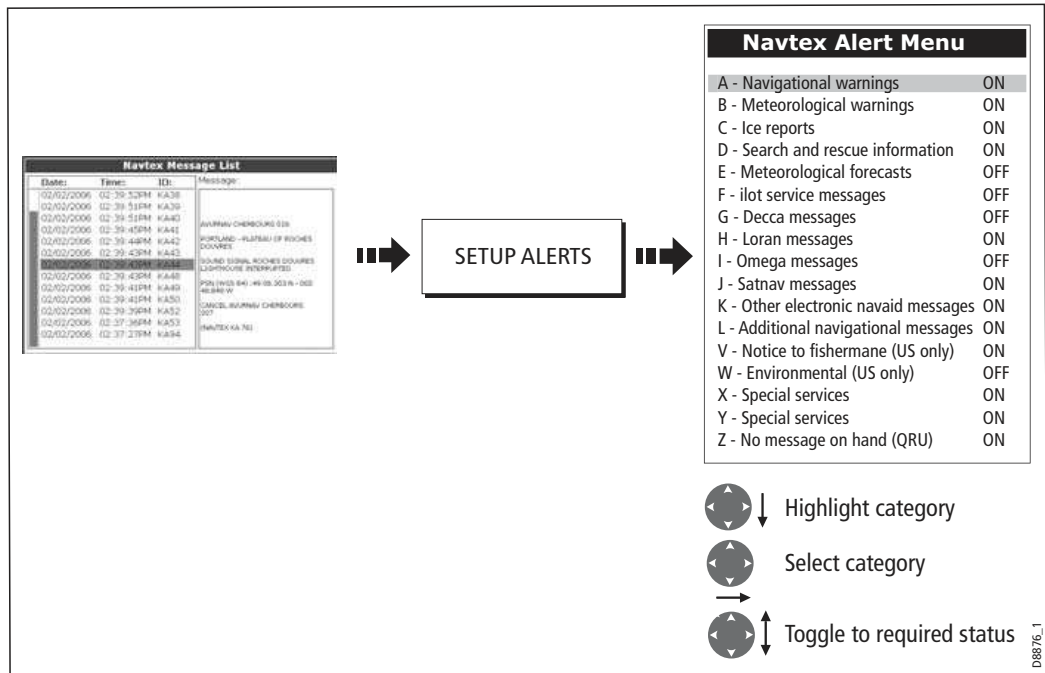
You can manage your messages by:

- Selecting the message categories for which the E-Series system will provide alerts.
- Erasing messages that you do not need.
- Sorting the message list.

### Selecting message alert categories

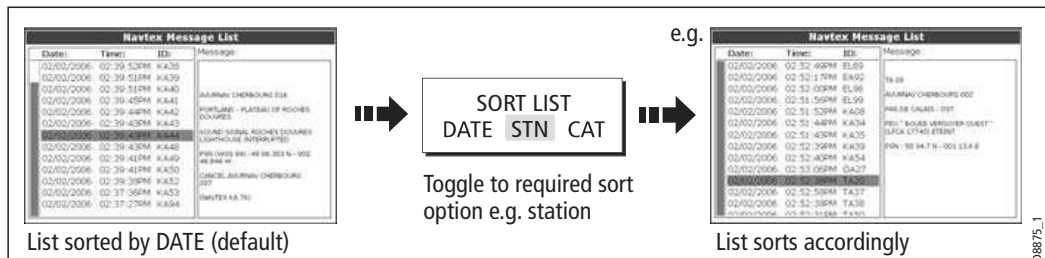
On initial power up, the system provides alerts for all message categories listed in the Navtex Alert Menu. If required you can switch off any categories that you do not need except Navigation Warnings (Category A), Meteorological Warnings (Category B) and Search and Rescue information (Category D).

To select the message alert categories:



## Sorting the message list

By default the message list sorts by the date and time the message was received (DATE) with the most recent message at the top. If required, you can sort the list by station identifier (STN) or by message category (CAT).





# Chapter 17: Automatic Identification System (AIS)

## 17.1 Introduction

This chapter details the AIS system and how it can be used as a safety aid. Once set up you can overlay the AIS on chart or radar windows and use it to:

- Display a target (with heading/speed vectors and rate of turn) for any other AIS equipped vessels.
- Display basic or detailed information for each target vessel including safety critical target data.
- Set up a safe zone around your boat.
- View alarm and safety related messages.

## 17.2 What is AIS?

AIS uses digital radio signals to broadcast 'real-time' information between vessels and shore based stations via dedicated VHF frequencies. This information is used to identify and track vessels in the surrounding area and to provide fast, automatic and accurate collision avoidance data. AIS will augment your radar application, as it can operate in radar blind spots and can detect smaller AIS fitted vessels.

### **WARNING:**

**Smaller vessels do not have to be fitted with AIS and whilst it is mandatory for larger commercial vessels to carry AIS, its use is not. You should not therefore assume that your AIS will display ALL vessels in your area. Due prudence and judgement should be exercised.**

**AIS should be used to complement not substitute radar.**

## Classes of AIS data

AIS data is defined as Class A or Class B. The sending and receiving of Class A data is compulsory for larger vessels. You will therefore be able to view all larger vessels on your AIS display. Class B data is applicable to smaller vessels and is not compulsory. You should not therefore assume that your AIS is displaying all smaller vessels in your area.

*Note: Not all AIS receivers will decode all information and not all of the Class A vessels input all of the required AIS data. For example, some inexpensive AIS Class B receivers do not decode and output the ship's name, IMO number and vessel draft/beam/length, destination etc.*

| <b>Data details</b>  | <b>Class A</b><br>(Sends and receives)  | <b>Class B</b><br>(receives only)  |
|--|---|--|
| <b>Static Data</b> <ul style="list-style-type: none"> <li>• Ship's name</li> <li>• Type</li> <li>• Call sign</li> <li>• IMO number</li> <li>• Length and beam</li> <li>• Antenna location</li> </ul>                 | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> </ul>            | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li></li> <li></li> <li>✓</li> <li>✓</li> </ul>             |
| <b>Voyage Related Data</b> <ul style="list-style-type: none"> <li>• Draft</li> <li>• Cargo information</li> <li>• Destination</li> <li>• ETA</li> <li>• Other relevant information</li> </ul>                        | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> </ul>                       | <ul style="list-style-type: none"> <li></li> <li>✓</li> <li></li> <li></li> <li>✓</li> </ul>                         |
| <b>Dynamic Data</b> <ul style="list-style-type: none"> <li>• Time</li> <li>• Ship's position</li> <li>• COG</li> <li>• SOG</li> <li>• Gyro heading</li> <li>• Rate of turn</li> <li>• Navigational status</li> </ul> | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> </ul> | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li>✓</li> <li></li> </ul> |
| <b>Dynamic Reports</b> <ul style="list-style-type: none"> <li>• Ship's speed</li> <li>• Ship's status</li> </ul>   | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>  | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>   |
| <b>Messages</b> <ul style="list-style-type: none"> <li>• Alarm</li> <li>• Safety</li> </ul>  | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>  | <ul style="list-style-type: none"> <li>✓</li> <li>✓</li> </ul>   |

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*Note: To change the specified AIS targets and range see page 259.*

## 17.3 What do I need to run AIS?

In order to run AIS, you will need:

- A receive only unit or a full transponder.

**Note:** A receiver will allow you to receive data about other vessels in your area but will not allow other vessels to 'see' you. A full transponder transmits and receives AIS data and therefore allows you to receive data about other vessels and for other AIS equipped vessels to see and receive information about your vessel. This could include position, course, speed and rate of turn data.

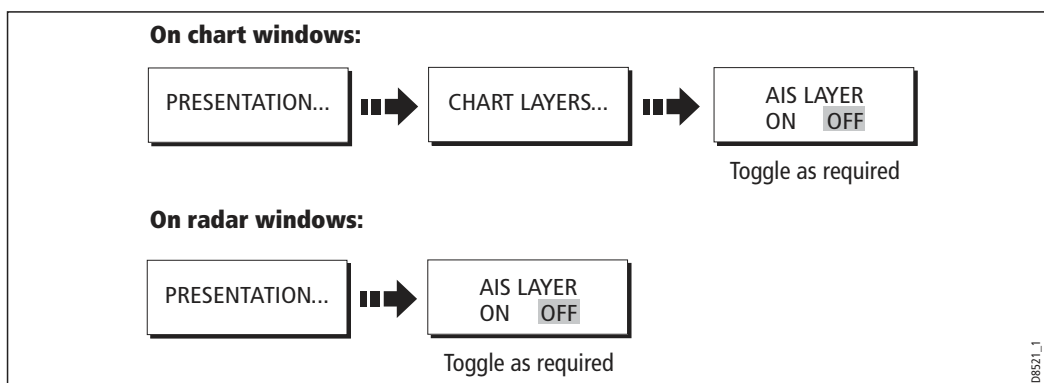
- A VHF antenna - this is usually supplied with the AIS system.
- A GPS - to provide position data.
- A Compass - although not essential, will improve speed calculations.

When the AIS unit is connected to the E-Series display, the status of the unit is indicated by an AIS icon in the transducer data box.


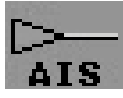


You will now need to specify the 38,400 baud for the NMEA port that communicates with the AIS transceiver or receiver (see *page 230*).

## 17.4 Selecting the AIS function

AIS is a selectable layer of the chart or radar application. To switch on AIS:



## AIS status

|   |  |
|---|--|
|  | AIS unit not available<br>i.e. not connected or off.                                 |
|  | AIS unit switched on and<br>operating.   |
|  | AIS unit on with active<br>alarm.  |
|  | AIS unit switched on and<br>operating but dangerous &<br>lost target alarm disabled. |

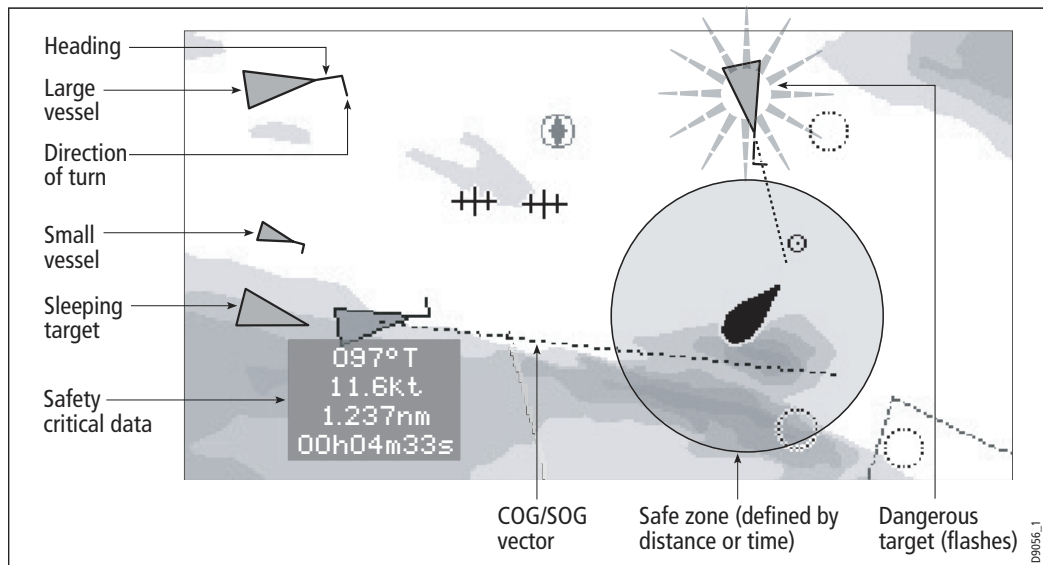
D9814\_1

The status of the AIS is displayed in the data bar on your display.

If your own boat's position is lost the display will disable the AIS functionality and will display the 'No AIS' icon.

Once your own boat's position returns and the AIS display is switched on, the display will re-enable the AIS function.

## 17.5 How is AIS data displayed?



The AIS system displays other AIS equipped vessels in the surrounding area as triangular targets overlaid on a chart or radar window. Up to 100 targets are displayed. As the vessel's status changes, the symbol for the target will change accordingly.

Vectors can be displayed for each target. These vectors indicate the direction of travel and rate of turn of the vessel and the distance it will travel over a specified period of time (COG/SOG vector). Targets displayed with their vectors are referred to as 'active targets' and are scaled according to the size of the vessel. The larger the vessel the larger the target. You can either display all targets or just dangerous targets (*page 262*).

### AIS Target symbols

|  |  |
|--|--|
| <p><b>Sleeping target</b></p> <ul style="list-style-type: none"> <li>Target not activated, dangerous or lost.</li> </ul>   |  |
| <p><b>Activated target</b></p> <ul style="list-style-type: none"> <li>Target activated i.e. AIS vector displayed.</li> <li>Vector line (optional) shows predicted distance travelled within given time.</li> </ul>                                 |  |
| <p><b>Selected target</b></p> <ul style="list-style-type: none"> <li>Target selected with cursor.</li> <li>Can activate the target and view detailed data.</li> </ul>  |  |
| <p><b>Dangerous target</b></p> <ul style="list-style-type: none"> <li>Targets within specified distance (CPA) or time (TCPA).</li> <li>Dangerous target alarm sounds if en-abled.</li> <li>Target flashes.</li> </ul>                              |  |
| <p><b>Uncertain target</b></p> <ul style="list-style-type: none"> <li>Calculated CPA/TCPA value uncertain.</li> </ul>  |  |
| <p><b>Lost target</b></p> <ul style="list-style-type: none"> <li>When signal of dangerous target not received for 20 seconds.</li> <li>Target in latest predicted position.</li> <li>Alarms sounds if enabled.</li> <li>Target flashes.</li> </ul> |  |

## Viewing target information

You can display information relating to individual AIS targets. When a target is highlighted with the cursor, the soft keys change to allow you to select the following options:

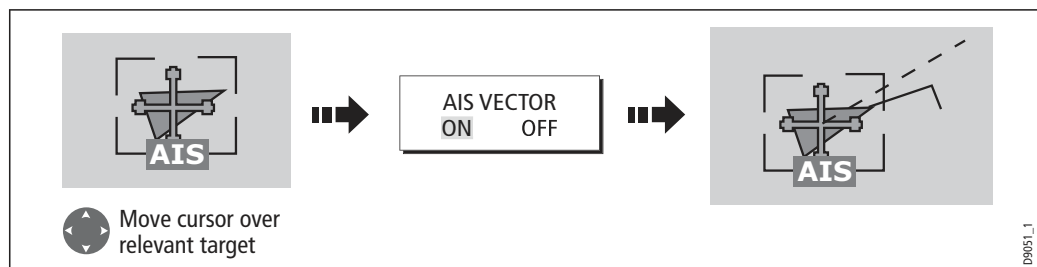
- AIS vectors.
- AIS safety critical data.
- AIS List.
- Full AIS data.

## Displaying AIS vectors

A target is defined as active when it has the following data displayed graphically:

- A COG/SOG vector indicating the predicted distance that a target will travel within a given period of time.
- A heading and direction of turn indicator.

To switch the AIS VECTOR option ON/OFF:



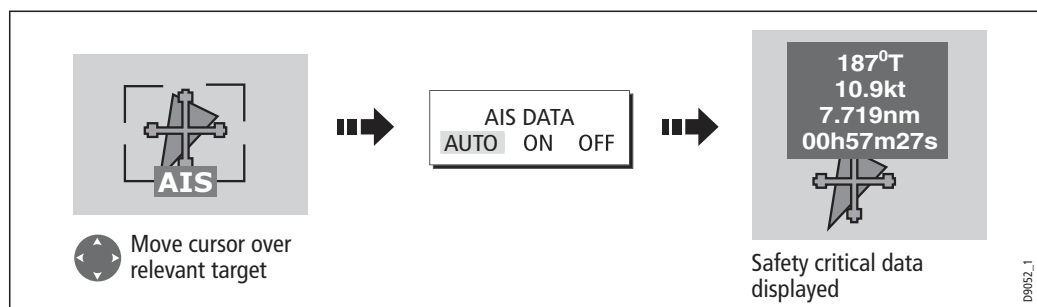
When a target is activated, its symbol is scaled according to the size of the vessel.

*Note: The same target vector and safe zone settings apply to both Radar MARPA and AIS targets.*

## Displaying safety critical AIS data

Safety critical target data i.e. COG, SOG, CPA and TCPA can be displayed in the tag alongside each target. You can switch this data ON, OFF or display it automatically (AUTO) when the cursor is over the target.

To switch the AIS DATA option to AUTO/ON/OFF:





## AIS List

You can also view a list of AIS targets. The list provides collision avoidance data for the highlighted target:

| AIS Target List |               |         |         |
|-----------------|---------------|---------|---------|
| No.             | Name/MMSI     | Rng     | Brg     |
| 1               | Sim Target 12 | 7.231nm | 1.9°S   |
| 2               | Sim Target 17 | 7.684nm | 78.1°P  |
| 3               | Sim Target 6  | 9.619nm | 24.8°P  |
| 4               | Sim Target 1  | 10.43nm | 125.7°P |
| 5               | Sim Target 18 | 11.59nm | 16.8°P  |
| 6               | Sim Target 9  | 12.27nm | 47.6°S  |

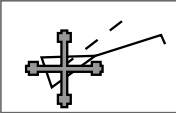
|           |            |          |              |
|-----------|------------|----------|--------------|
| MMSI      | 12         | Position | 50°35'.985N  |
| Last seen | 01/01/2004 |          | 001°11'.536W |
|           | 12:52:55AM | Heading  | 208°T        |
| Vessel    | -----      | ROT      | +000°/min S  |
|           |            | COG      | 221°T        |
|           |            | SOG      | 16.9kt       |

To display the AIS List:



## Viewing full AIS data

To display detailed AIS data for an individual target e.g. static and dynamic and voyage related data:



Move cursor over required target

Or

| No. | Name/MMSI     | Rng     | Brg     |
|-----|---------------|---------|---------|
| 1   | Sim Target 17 | 7.684nm | 78.1°P  |
| 2   | Sim Target 6  | 9.619nm | 24.8°P  |
| 4   | Sim Target 1  | 10.43nm | 125.7°P |
| 5   | Sim Target 18 | 11.59nm | 16.8°P  |
| 6   | Sim Target 9  | 12.27nm | 47.6°S  |

Select required target on AIS list

VIEW FULL AIS DATA...

| AIS Target Info: Sim Target 19 |                        |
|--------------------------------|------------------------|
| MMSI                           | 19                     |
| Name                           | Sim Target 19          |
| Call sign                      |                        |
| Last seen                      | 01/01/2004 01:30:48AM  |
| Lat                            | 35°25' 568N            |
| Lon                            | 115°29' 256W           |
| Wdg                            | 052°T                  |
| Length                         | 0.000nm                |
| Breadth                        | 0.000nm                |
| Draught                        | 0.000m                 |
| COG                            | 091°T                  |
| SOG                            | 17.3kt                 |
| CRG                            | 1.670nm                |
| TRM                            | 000nm±5s               |
| IMO no.                        |                        |
| Dist                           |                        |
| ETA                            | 01/01/2004 00:00:00AM  |
| Status                         | Under Way Using Engine |
| Type                           | Normal                 |

## 17.6 Using AIS for collision avoidance

You can use your AIS for collision avoidance by using the safe zone and safety message functions.

### Safe zones

#### What is a safe zone?

A safe zone is a ring centred on your boat within which a target is considered dangerous. It is displayed on radar or chart windows as a red ring.

This AIS safe zone uses the same criteria as MARPA and will deem a target dangerous if it comes within a specified distance of your vessel (closest point of approach or CPA) within a specified time (time to closest point of approach or TCPA). The CPA and TCPA are calculated using COG/SOG and position from the AIS target.

When your system recognizes a dangerous AIS target:

- The target symbol changes to red and flashes.
- An alarm pop-up is displayed.
- An alarm sounds.

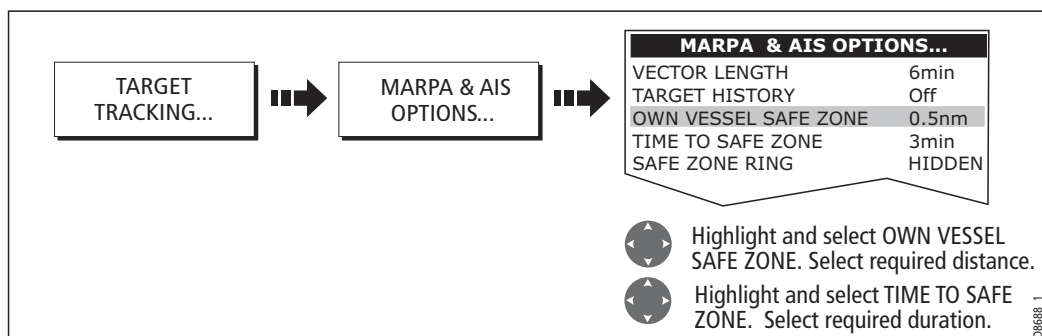
#### Disabling the dangerous target alarm



If required, the dangerous target alarm can be disabled. Once disabled any dangerous targets that are detected, will turn red and flash but the alarm **will not** sound and the pop-up **will not** be displayed. The AIS status icon reflects that the alarm is disabled.

#### Setting up an AIS safe zone

To set up a safe zone around your vessel and specify the time to safe zone:



*Note: If required you can also hide the safe zone ring via this menu.*

#### Important

When the AIS receiver is connected and functioning, the system will check for dangerous targets within the safe zone and if enabled issue an alarm whenever necessary. Dangerous target alarm operates irrespective of the ON or OFF status of the AIS target display (see *page 259*) or the VISIBLE/HIDDEN status of the safe zone ring

## MARPA and AIS options

| Parameter  | Options<br>(Default in bold)                              |
|--|---|
| <b>Vector Length</b><br>The time period specified for drawing length of vectors.   | 0.5min, 1 min, 3 min, <b>6min</b> , 12min, 30 min, 60 min |
| <b>Target History</b><br>Plots a MARPA target's previous position at specified intervals. The four most recent position points are displayed. If True target vectors are selected, the four most recent vessel position points are also displayed. | <b>OFF</b> , 0.5 min, 1 min, 3 min, 6 min                 |
| <b>Own vessel safe zone</b><br>The safe zone is a ring, centred on your boat, within which a target is considered dangerous if it comes within a specified distance (CPA).   | 0.1 nm, 0.2nm, <b>0.5nm</b> , 1.0 nm, 2.0nm               |
| <b>Time to safe zone</b><br>If a target enters your safe zone within this time period, it is considered dangerous.   | <b>3 mins</b> , 6 mins, 12 mins, 24 mins                  |
| <b>Safe zone ring</b><br>Controls whether the safe zone ring is displayed or hidden on screen  | Visible<br><b>Hidden</b>                                  |

## Safety messages

When the status of the AIS Safety Messages function is set to ON in the AIS Layer Setup Menu (see *page 262*), any incoming safety messages from surrounding vessels, shore stations and mobile stations, are displayed in a pop-up box. If known, the message will include the sending vessel's position in lat/lon.

You now have the option to:

- Remove the message (ACKNOWLEDGE)
- Place a waypoint on your chart/radar to mark the sending vessel's position.
- Select to GOTO the sending vessel's position.

*Note: When the simulator is operating you will not be able to receive any safety messages.*

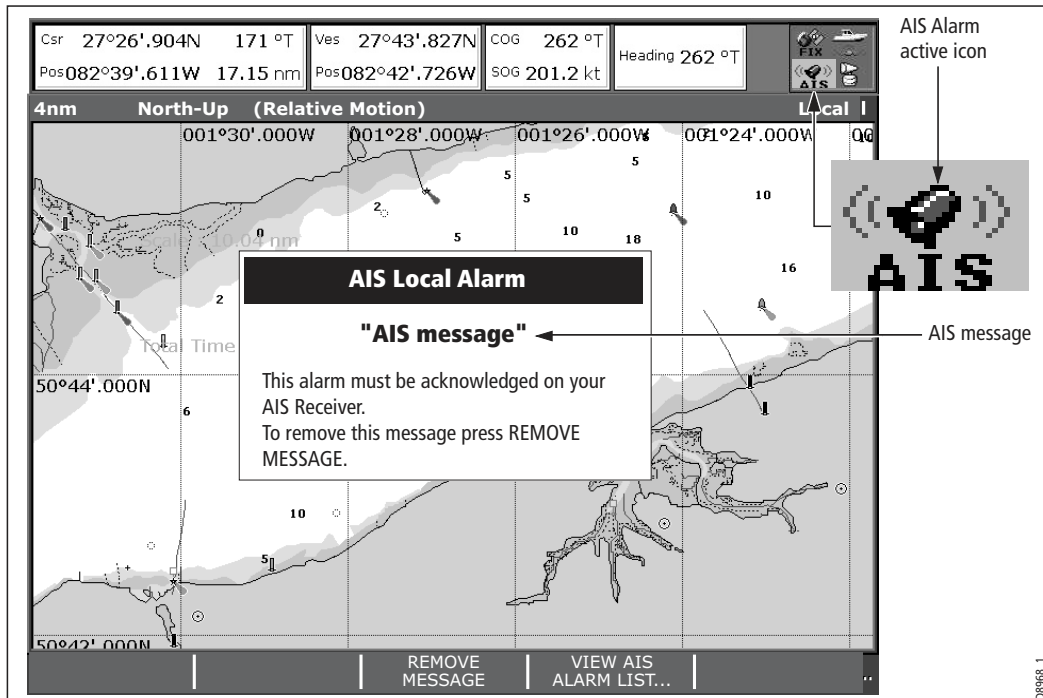
## 17.7 AIS Alarms

In addition to the dangerous target alarm previously described, the system generates an alarm when a dangerous target becomes a lost target i.e. its signal has not been received for 20 seconds.

Your AIS receiver generates local alarms which are displayed and sounded on your E-Series display whenever an alarm condition exists on the unit.

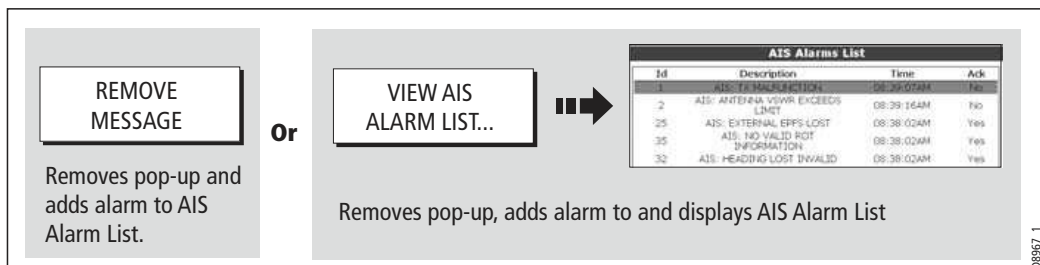
## Local AIS alarms

When the connected AIS unit generates an alarm, your E-Series displays a local alarm message and indicates the alarm status in the data bar icon:



To proceed:

1. Remove the message pop-up/display active alarm list:



2. Acknowledge the message at your AIS unit.

**Important:** An alarm remains active until it is acknowledged on the AIS unit.

## Active alarm list

The active alarm list shows the status of each local alarm. This list can either be accessed via the AIS Layer Setup Menu (see *page 262*) or from the Alarms Setup Menu (see *page 232*).

*Note: The local AIS alarms must be acknowledged at the AIS receiver. Removing the message or adding it to the Alarm list on your E-Series display does not cancel the alarm.*

## 17.8 Simulator

We recommend that you use the simulator to familiarize yourself with the AIS function.

When the system simulator is switched on (see *page 228*), it displays 20 AIS targets within a 25nm range. These targets are displayed using the appropriate AIS targets status symbol (see *page 256*) and move around the screen as if they were real targets.

**Important:** Incoming safety messages cannot be displayed while the simulator is switched on.

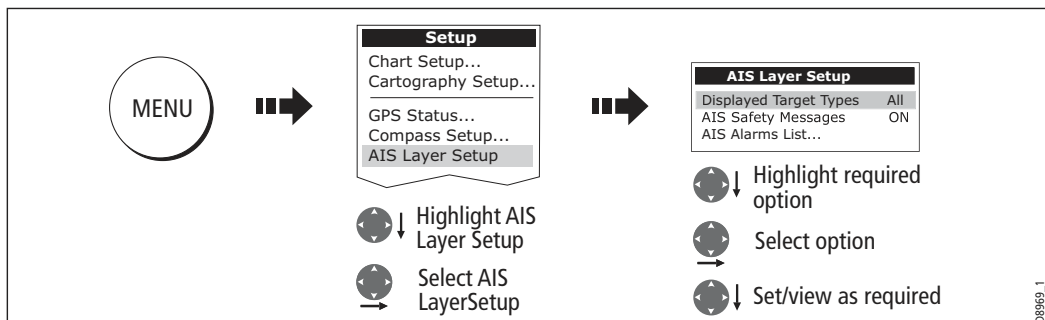
## 17.9 AIS Layer Setup Menu

The AIS Layer Setup Menu allows you to:

- Select the target types displayed (ALL or DANGEROUS).
- Switch the display of AIS safety messages ON/OFF.
- View the list of active AIS unit alarms.

To display the AIS Layer Setup Menu:

1. Set the AIS LAYER status to ON ((see *page 255*).
2. Select the AIS Layer Setup:



# Chapter 18: Maintenance & Troubleshooting

## 18.1 Introduction

This chapter provides information on maintaining and troubleshooting your E-Series Display, and also information on how to get assistance from Raymarine.

## 18.2 Maintenance procedures

At regular intervals, carry out the following servicing procedures:

- Routine checks.
- Cleaning the Display.

Do not attempt any other servicing procedures.

### Servicing and Safety

- Raymarine equipment should be serviced only by authorized Raymarine service technicians. They will ensure that service procedures and any replacement parts used will not affect performance. There are no user serviceable parts in any Raymarine product.
- Some products generate high voltages, so never handle the cables or connectors when power is being supplied to the equipment.
- When powered on, all electrical equipment produces electromagnetic fields. These can cause adjacent pieces of electrical equipment to interact with one another, with a consequent adverse effect on operation. In order to minimize these effects and enable you to get the best possible performance from your Raymarine equipment, guidelines are given in the installations manual, to enable you to ensure minimum interaction between different items of equipment, i.e. ensure optimum Electromagnetic Compatibility (EMC).
- Always report any EMC-related problem to your nearest Raymarine dealer. We use such information to improve our quality standards.
- In some installations, it may not be possible to prevent the equipment from being affected by external influences. Generally this will not damage the display, but it can lead to spurious re-setting action, or momentarily may result in faulty operation.
- At the end of the useful working life of this product, it should be disposed of in accordance with local regulations.

## Routine checks

Carry out the following tasks on a regular basis:

- Examine all cables for signs of damage, such as chafing, cuts or nicks.
- Check that all cables are securely connected.

## Cleaning the display

### **CAUTION: Cleaning the display**

**Please read these instructions carefully. Failure to follow the correct cleaning procedure may damage your display window and invalidate your warranty.**

### Window coating

A coating is applied to the plastic window of your display. This makes it water repellent and prevents glare. To avoid damaging this coating, the recommended cleaning procedure must be followed.

### Recommended cleaning procedure

1. Power off the Display.
2. Rinse the window with fresh water, to remove all dirty particles and salt deposits.
3. Allow the window to dry naturally.

- X** Do not use any abrasive materials including a dry cloth.
- X** Do not use any cleaning solutions, polishes or sprays.
- X** Do not use a jet wash.



4. If any smears remain, very gently wipe the window with a clean micro fibre cleaning cloth (provided with the Display or available from opticians).

## 18.3 Resetting the Display

You can reset the E-Series Display in several ways:

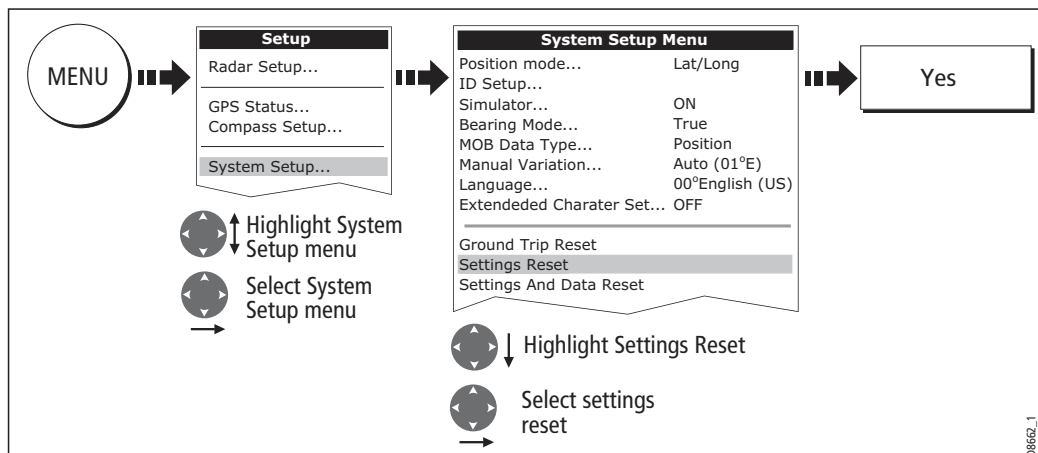
- Settings reset.
- Settings and data reset.

### Settings reset

All system set-up menus, including page sets and the data bar are reset to the factory default, when you apply a settings reset. Your waypoints, routes and tracks are NOT removed.

## Applying a settings reset

To apply a settings reset:



The system resets and returns you to the power on procedure.

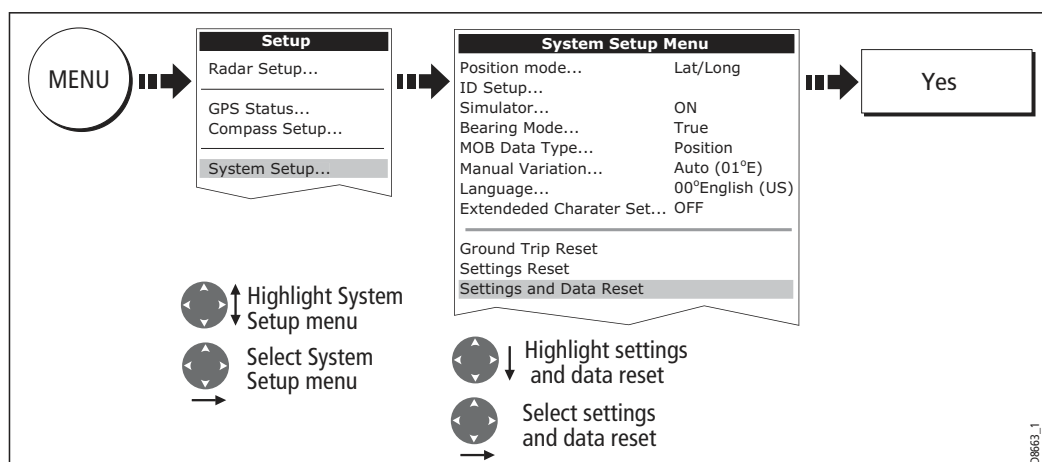
## Settings and data reset

All data set-up menus, including page sets and the data bar, are reset to the factory default when you apply a settings and data reset.

**Important:** Applying a settings and data reset will remove all waypoints, routes and tracks.

## Applying a settings and data reset

To carry out a settings and data reset:



The system resets and returns you to the power on procedure.



## 18.4 Troubleshooting your Display

All Raymarine products are, prior to packing and shipping, subjected to comprehensive test and quality assurance programs. However, if your E-Series Display unit should develop a fault, this section will help you to identify the most likely cause and show the corrective action required to restore normal operation.

If, after referring to this section, you are still having problems with your Display, contact your local dealer, national distributor or Raymarine Technical Services Department for further advice.

Always quote the product serial numbers which are printed on the back of the unit.

### Common problems and how to solve them

This section is divided into problems associated with:

- Installation/Display.
- Chart application.
- Weather receiver.
- Fishfinder application.
- Radar application.

### Installation/Display

| <b>Problem</b><br>Solution   |
|--|
| <p><b>Display does not power up</b></p> <ul style="list-style-type: none"> <li>• Check power supply cable is sound and that all connections are tight and free from corrosion.</li> <li>• Check relevant fuses.</li> <li>• Check power source is of the correct voltage and sufficient current.</li> </ul>   |
| <p><b>My display switches off</b></p> <ul style="list-style-type: none"> <li>• Check power input connection is secure at the rear of the Display(s).</li> <li>• Check power cable for damage or corrosion.</li> <li>• Check your boat's power supply for faulty connections or insufficient cable diameter.</li> </ul>   |
| <p><b>No link between E-Series Displays</b></p> <ul style="list-style-type: none"> <li>• Check all units are switched on.</li> <li>• Check SeaTalk High Speed cable is not of third party manufacture.</li> <li>• Check SeaTalk High Speed cable is connected to both displays and free from damage or corrosion.</li> <li>• Check SeaTalk High Speed switch or Crossover Coupler correctly connected (see Installation Guide).</li> </ul> |
| <p><b>How do I upgrade my Display software?</b></p> <p>Visit <a href="http://www.raymarine.com">www.raymarine.com</a> and click on Support to download the latest software. Follow the instructions included with these downloads.</p>   |

|   |
|---|
| <p><b>Problem</b></p> <p><b>Solution</b></p>  |
| <p><b>How do I reset my display?</b><br/>Via the system setup menu. For details see page <i>page 264</i>.</p>   |
| <p><b>Display very dull/hard to view</b></p> <ul style="list-style-type: none"> <li>• Check PALETTE set to DAY (see <i>page 18</i>).</li> <li>• Check backlight level (see <i>page 18</i>).</li> </ul>  |
| <p><b>No fix displayed against GPS status icon</b></p> <ul style="list-style-type: none"> <li>• Check GPS status (see <i>page 234</i>).</li> <li>• Check the GPS antenna has a clear view of the sky.</li> <li>• Check connections/operation of the GPS antenna.</li> </ul>   |
| <p><b>No instrument navigational or engine data displayed</b></p> <ul style="list-style-type: none"> <li>• Check instruments/engine interface are operating correctly.</li> <li>• Check SeaTalk/NMEA correctly connected to Display (see System Integration chapter of the Installation Guide).</li> <li>• Check all SeaTalk/NMEA cables are free from damage and corrosion.</li> </ul>   |
| <p><b>Display continuously resets/re-boots, or turns itself on/off</b></p> <ul style="list-style-type: none"> <li>• Check no buttons are stuck under the front bezel (fascia)</li> <li>• If possible save your data (waypoints, routes and tracks). A factory reset is required, this will erase all stored data and system settings</li> <li>• Factory reset       <ol style="list-style-type: none"> <li>1. Press and hold (5 seconds) the first soft key next to the power button until the 3 second count down is complete, once complete you will hear a long beep and the display will return to the 'limitation on use' screen as default.</li> </ol> </li> <li>• Perform a software upgrade as described above or re-install the current software level if not surpassed by a new version.</li> </ul> |
| <p><b>Display occasionally reboots itself, crashes or performs erratically</b></p> <ul style="list-style-type: none"> <li>• Check no buttons are stuck under the front bezel (fascia)</li> <li>• If possible save your data (waypoints, routes and tracks). A factory reset is required, this will erase all stored data and system settings</li> <li>• Perform a 'Settings and Data' reset (see <i>Resetting the Display on page 264</i>)</li> <li>• If the menu's are not available then follow the Factory reset a per point 1 above.</li> <li>• Perform a software upgrade as described above or re-install the current software level if not surpassed by a new version.</li> </ul>  |

## Chart

| <b>Problem</b>  |
|---|
| <b>Solution</b>   |
| <p><b>Vessel not shown in correct geographical position on Display</b></p> <ul style="list-style-type: none"> <li>• Check GPS status (<i>page 234</i>).</li> <li>• Check that the Display is not in Simulator mode (<i>see page 228</i>).</li> <li>• Check the SDGPS setting is switched OFF.</li> <li>• Perform the chart offset operation (<i>see page 99</i>).</li> </ul>  |
| <p><b>Display does not show enough chart detail</b></p> <ul style="list-style-type: none"> <li>• Check that the chart card for the appropriate area is installed.</li> <li>• Set the Declutter option to OFF (<i>see page 97</i>).</li> <li>• In the Cartography Setup Menu switch the appropriate feature(s) to ON.</li> </ul>   |
| <p><b>Display will not read chart correctly</b></p> <ul style="list-style-type: none"> <li>• Check the Chart Card has been inserted correctly with the display switched off.</li> <li>• Check this is the correct compact flash cartography for the unit. Software version 2.30 or later required for Platinum compatibility.</li> <li>• Ensure all Displays have the same software installed (<i>see page 270</i>).</li> </ul> |

## Weather receiver

|  |
|--|
| <p><b>“No connection”</b></p> <p>Check that the cable connecting to the weather receiver is securely connected and undamaged.</p>                    |
| <p><b>Display not showing weather data</b></p> <p>Check the weather graphics are switched on in the weather graphics menu (<i>see page 192</i>).</p> |

## Fishfinder

| <b>Problem</b>   |
|--|
| <b>Solution</b>  |
| <p><b>How do I upgrade my DSM software?</b></p> <p>Visit <a href="http://www.raymarine.com">www.raymarine.com</a> and click on Support to download the latest software. Follow the instructions included with these downloads.</p> |

|   |
|---|
| <b>Problem</b>  |
| Solution  |
| <p><b>'No data source' for my fishfinder</b></p> <ul style="list-style-type: none"> <li>• Check the DSM power cable is free from damage and corrosion.</li> <li>• Check DSM is receiving the correct voltage and current.</li> <li>• Check status LED of the DSM unit - refer to Maintenance and problem solving section of the DSM owner's handbook.</li> <li>• Check the DSM's SeaTalk High Speed connections are sound and connected correctly - refer to the System Integration chapter of your E-Series Installation Guide.</li> </ul> |
| <p><b>No depth readings available from the DSM</b></p> <ul style="list-style-type: none"> <li>• Check status LED of DSM unit - refer to the Maintenance and Problem solving section of your DSM Owner's manual</li> <li>• Check Gain setup and Transducer frequency - refer to the Fishfinder chapter in your Reference Manual.</li> <li>• Check the DSM power cable is free from damage and corrosion</li> </ul>   |

## Radar

|   |
|---|
| <b>Problem</b>  |
| Solution  |
| <p><b>'No data' message</b></p> <ul style="list-style-type: none"> <li>• Check that cable connecting the scanner to the Display is securely connected and undamaged.</li> </ul>                         |
| <p><b>'Scanner software incompatible' message</b></p> <ul style="list-style-type: none"> <li>• Check software revisions by contacting your local Raymarine dealer.</li> </ul>                           |
| <p><b>"Invalid scanner software: Version xx.x, Version xx.x required"</b><br/>Incorrect software version installed. Contact your local Raymarine dealer.</p>  |
| <p><b>"Scanner not responding" message</b><br/>Check that the cable connecting the scanner to the radar display unit is securely connected and undamaged.</p>   |
| <p><b>"Open array cannot be powered from the display"</b><br/>Scanner not compatible with E-Series Display - refer to 'Compatibility' in the System Integration chapter of your Installation Guide.</p> |
| <p><b>"Scanner hardware fault"</b><br/>Scanner not functioning - refer to the 'Commissioning the stem' chapter of the Installation Guide.</p>   |
| <p><b>The bearing displayed on the radar picture is not the same as the actual bearing</b><br/>Perform the bearing alignment procedures described in the Installation Guide.</p>                        |

## 18.5 Getting Technical Support

This section details how you can obtain technical support for your E-Series display or for your Navionics cartography.

Raymarine provides a comprehensive customer support service, on the world wide web, through our worldwide dealer network and by telephone help line. If you are unable to resolve a problem, please use any of these facilities to obtain additional help.

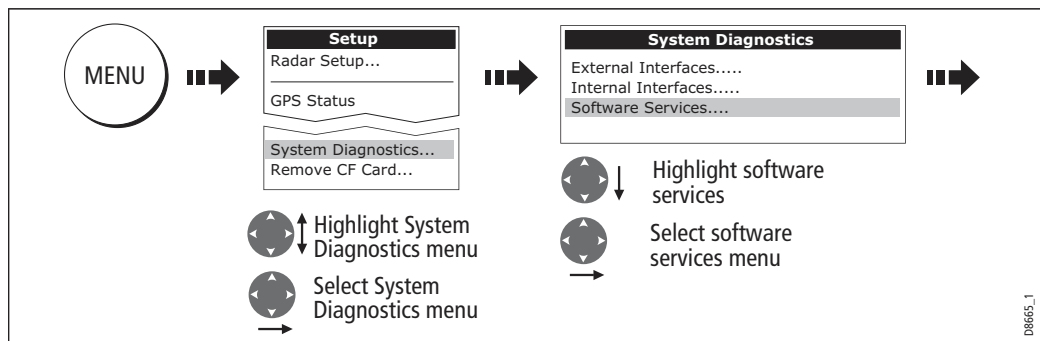
## Help us to help you

When requesting service, please quote the following product information:

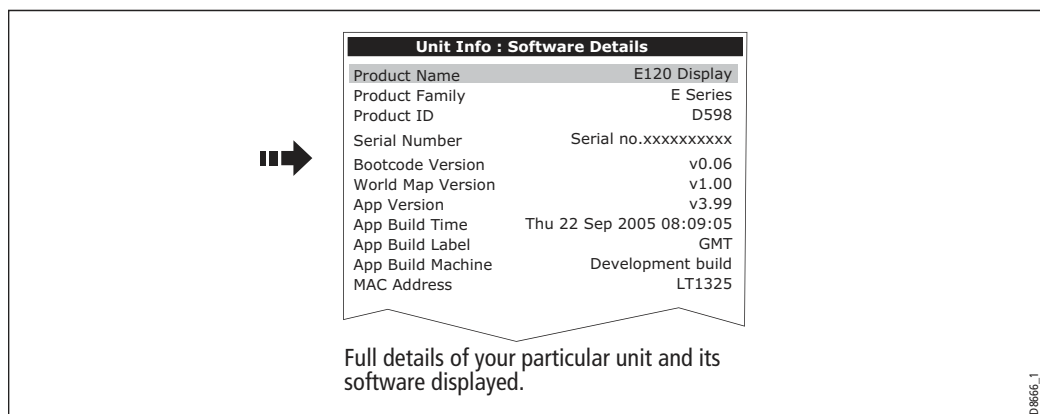
- Product name.
- Product identity.
- Serial number.
- Software application version.

To access this information:

1. Select the Software Services menu:



2. Note down the Product Name and ID, Serial Number and App Version from the menu:



## World wide web

Please visit the Customer Support area of our website at: [www.raymarine.com](http://www.raymarine.com)

Visit the Customer Support area of our website for Frequently Asked Questions, servicing information, e-mail access to the Raymarine Technical Support Department and details of Raymarine agents, worldwide.

If you don't have access to the world wide web, contact Technical Support where specialists are available to answer questions about installing, operating and troubleshooting all Raymarine products.

## Contacting Raymarine in the US

You can contact Raymarine in the US either using the Raymarine world wide web as detailed above or by calling one of the telephone numbers below.

### For accessories and parts

Contact your authorized Raymarine dealer or Raymarine Technical Services on:

1-800-539-5539 extension 2333 or (603)-881-5200

Opening hours: Monday through Friday 0815 - 1700, Eastern Standard or Eastern Daylight Savings Time.

### For product repair and service

In the unlikely event that your Raymarine unit should develop a problem, contact your authorized Raymarine dealer for assistance. The dealer is best equipped to handle your service requirements and can offer timesaving help in getting your equipment back into normal operation.

If repairs cannot be obtained conveniently, product service can be obtained by returning the unit to:

Raymarine Inc.  
21 Manchester Street  
Merrimack, NH,  
03054 - 4801  
US

The Product Repair Centre is open Monday to Friday 0815 to 1700 Eastern Standard Time or Eastern Daylight Savings Time.

All products returned to the Repair Centre are registered upon receipt and a confirmation letter is sent to acknowledge the repair status and the reference number of the product. We will make every effort to carry out the repair and return your unit as quickly as possible. If you wish to enquire about the repair status of your unit, contact the Repair Centre at:

1-800-539-5539

## Contacting Raymarine in Europe

You can contact Raymarine in Europe either using the Raymarine world wide web as detailed above or by calling the telephone number below

### For technical support, service and accessories:

Contact your authorized Raymarine dealer or Raymarine Technical Support at:

Anchorage Park  
 Portsmouth  
 P03 5TD  
 England  
 Tel: +44(0)23 92714713  
 Fax: +44(0)23 92661228

## For Navionics cartography

For questions about Navionics cartography, please contact Navionics directly through their web site, [www.navionics.com](http://www.navionics.com) or contact Navionics customer support:

| <b>Navionics customer support</b> |   |   |
|-----------------------------------|---|---|
| Navionics Italy                   | Via Fondacci, 269<br>Z.I. Montramito<br>55054 Massarosa Italy | Tel: +39-0584-329111<br>Fax: +39-0584-962696<br><a href="mailto:sales@navionics.it">sales@navionics.it</a>                        |
| Navionics USA                     | 6 Thatcher Lane<br>Wareham<br>MA 02571 USA                    | Toll Free: 800-848-5896<br>Tel: 508-291-6000<br>Fax: 508-291-6006<br><a href="mailto:sales@navionics.com">sales@navionics.com</a> |
| Navionics Australia               | 134/85 Reynolds Street<br>Balmain<br>NSW 2041 Australia       | Tel: +61-2-9555-2522<br>Fax: +61-2-9555-2900<br><a href="mailto:sales@navionics.com.au">sales@navionics.com.au</a>                |
| Navionics UK                      | PO Box 38<br>Plymouth, PL9 8YY<br>England                     | Tel: +44-1752-204735<br>Fax: +44-1752-204736<br><a href="mailto:sales@navionics.co.uk">sales@navionics.co.uk</a>                  |

If you wish to file a report of an error or omission on a Navionics chart, please provide the information to Navionics web site, Discrepancy Report section at [www.navionics.com/DiscrepancyReports.asp](http://www.navionics.com/DiscrepancyReports.asp)

## For Sirius weather

For questions about the Sirius weather service, please contact Sirius directly through their web site, [www.Sirius.com](http://www.Sirius.com) or call 1-800-869\_5480.

# Chapter 19: System setup and customizing

This chapter describes how to setup and customize your E-Series display. Any settings that you change will be stored by the display and shown each time you power on. You can, of course change these settings as many times as you wish.

## 19.1 Changing the data master

**For Networked E-Series systems only:** To change the data master from that already specified, please see *page 28*.

## 19.2 Customizing the page sets

Each page set provides access to 5 different pages. Each page can display up to four application windows. With the exception of Video, you can view multiple windows of the same application. For example you could have two chart application on one page - one to view a large scale chart, the other for a detailed view of your immediate surroundings.

If none of these meet your particular requirements you can edit the page sets to display the application and page layout that suits your particular needs. This process should also be used if you wish to run a video, engine monitor or weather application.

In addition, you can rename of any of the page sets to a title that is more meaningful. A control is also provided to reset the selected page set to the factory default configuration.

### Graphical engine data

You can now display engine tilt and trim data, and data for up to four engine-driven electricity generators (gensets). You may need to set up a new page (or modify an existing page set) for this data as an engine application window is not included in the preconfigured page sets.

#### To set up an engine data page

1. Press and hold the **PAGE** button.
2. Select the page set you want to edit by pressing its corresponding softkey.
3. Highlight your preferred page layout and press **OK**.
4. In the application list, highlight **engine** and press **OK**.

Refer to the E-Series Reference Manual for more details on setting up page sets.

#### Engine tilt and trim

To display engine tilt or trim data:

1. Press the **MENU** button to open the Setup screen.
2. Select Panel Setup Menu.



3. Select a configuration.
4. Press the **SELECT DATA...** softkey.
5. In the Data Groups window, select **Engine**.
6. Select **Engine Tilt** or **Trim Tabs**.

## Genset data

To display genset data:

1. Press the **SELECT DATA...** softkey.
2. In the Data Groups window, select **Genset**.

For a list of the data you can display for each genset, see *Table 19-1, Genset Data Options*.

Table 19-1: Genset Data Options

| Data                 | Data type                     | Data range                        |
|----------------------|-------------------------------|-----------------------------------|
| Speed                | Numeric or gauge              | —                                 |
| Total hours          | Numeric                       | —                                 |
| Coolant temperature  | Numeric or gauge with numbers | 0–150°C<br>0–300°F                |
| Fuel temperature     | Numeric or gauge              | 0–150°C<br>0–300°F                |
| Oil pressure         | Numeric or gauge with numbers | 0–100 PSI<br>0–7 bar<br>0–750 KPa |
| Fuel rate            | Numeric                       | —                                 |
| Battery voltage      | Numeric or gauge with numbers | 8–24V                             |
| Average line voltage | Numeric or gauge with numbers | 8–24V                             |
| Average AC frequency | Numeric                       | —                                 |
| Status               | Text                          | —                                 |
| Load                 | Numeric or gauge              | 0–100%                            |

## To change the number of gensets

The default number of gensets is one. You can configure the unit to display data for up to four gensets:

1. Press the **MENU** button.
2. Select **Panel Setup Menu...**