A60

Dual Function Display

Owner's Handbook

Contents

Important Information

Intended Use

The A60 is a GPS Chartplotter display unit that can be upgraded to include optional Fishfinder functionality.

This handbook contains important information on the operation of your A60. To get the best results in operation and performance, please take the time to read it thoroughly.

For full details of installation and system integration, please refer to the Installation Manual supplied with the display.

Safety Notices

WARNING: Navigation Aid
This device is intended to be used as an aid to navigation. Its accuracy can be affected by many factors, including equipment failure or defects, environmental conditions and incorrect handling or use. It is the user's responsibility to exercise common prudence and navigational judgement. This device should not be relied upon as a substitute for such prudence and judgement.

CAUTION: CompactFlash (CF) Cards
- **When installing CF cards ensure that the card is inserted in the correct orientation. Do not try to force the card into position as this may result in irreparable damage to the card and/or reader.**
- **Removing the CF card while information is being written to or read from it may cause damage to the card and loss of all data.**
- **Do not save data (waypoints, routes, tracks) to a Navionics card as the charts may be overwritten. When archiving use a separate SanDisk CompactFlash card.**
- **Do not use a metallic instrument such as a screwdriver or pliers to help you remove a card. This can cause irreparable damage.**

CAUTION: Global Positioning System Antenna
Do not connect or disconnect the GPS antenna from the display unit while power is switched on. Doing this may result in irreparable damage.

Electronic Chart Cards

To use your A60 display as a navigation aid, electronic charts with the appropriate level of detail for the geographic area you wish to navigate are required. The A60 is compatible with the following Navionics® CompactFlash® (CF) Chart cards: Navionics Gold, Silver, Hotmaps USA, and Hotmaps Premium.

To obtain Navionics Chart cards, contact your local dealer or visit www.navionics.com or www.navionics.it. Anywhere in North America call Navionics toll free at 1-800-848-5896. Outside of North America, contact your local dealer or Navionics SpA at (+39) 0584 961696.

When saving (archiving) data, we recommend that you only use SanDisk® CompactFlash cards. Other makes of cards may not work in your A60 display.

Technical Accuracy

The technical and graphical information contained in this handbook, to the best of our knowledge, was correct as it went to press. However, the Raymarine policy of continuous improvement and updating may change product specifications without prior notice. As a result, unavoidable differences between the product and handbook may occur from time to time.

For the latest version of this or any Raymarine document in PDF format, please click the Owner's Manuals link on the Customer Support page at *www.raymarine.com*.

Product Disposal

Waste Electrical and Electronic Equipment (WEEE) Directive
The WEEE Directive requires the recycling of waste electrical and electronic equipment. While the WEEE Directive does not apply to some of Raymarine's products, we support its requirements as part of our environmental policy and we ask you to be aware of how you should dispose of this product.

The wheelie bin symbol found on our products signifies that it should not be disposed of in general waste or landfill. Please contact your local dealer, national distributor or Raymarine Technical Services for information on product disposal.

Declaration of Conformity

Raymarine plc declare that the A60 Dual Function Displays are in compliance with the essential requirements of EMC directive 2004/108/EC. The original Declaration of Conformity certificate can be viewed on the relevant product page at www.raymarine.com.

Chapter 1: Using the Display

The A60 is a GPS Chartplotter display unit that can be upgraded to include fishfinder capabilities. The A60 comes equipped with a 5.7″ TFT Sunlight Viewable Color LCD and RS12 GPS Sensor.
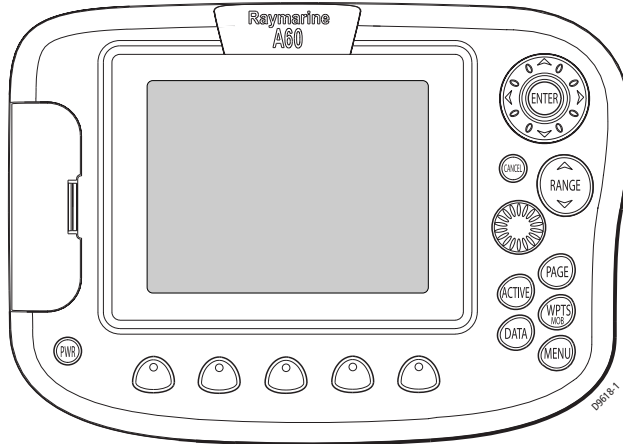
1.1 System Overview

The A60 features the following applications:

- **Chartplotter** for navigation information, waypoint entry and route planning. For full functionality, the display requires connection to the RS12 GPS sensor (included) for the acquisition of position data. This application also requires a relevant chart card to obtain detailed information for the area in which you are navigating. Optionally, you can connect a Fluxgate Compass (Raymarine part number M81190) via the NMEA port for heading data.

- **Fishfinder** to build a picture of what is below your vessel, display bottom structure and to help find and identify targets such as fish and wrecks. This application also requires an optional DSM25 Digital Sounder Module (Raymarine part number E63070) and a suitable transducer.

Also available are various data screens that are displayed in separate split screen windows alongside the Chart and Fishfinder applications:

- **Nav Data** for viewing position information as well as current time, date and depth information.

Note: *The A60 sets its internal clock from the GPS. Therefore, time of day is not available until a GPS fix is acquired. After this initial fix, the A60 continues to update its internally stored time of day, even if GPS fix is lost. Upon power down, however, time of day is lost.*

- **Temp Graph** for plotting water temperature readings from the transducer over the past 60 minutes, current water temperature, Speed Over Ground, battery voltage and a trip log.
- **CDI** for viewing the Course Deviation Indicator to help maintain your course using a 'rolling road' display.

A built-in simulator lets you practice using the display and its functions without connection to external devices (GPS antenna or a DSM).

Powering the Display ON/OFF

Power ON

PWR

Press the **PWR** key until the unit beeps. The unit starts up in the last used display configuration.

Power OFF

Press and hold the **PWR** key. The Power Down screen is displayed and the system counts down. When it reaches zero the display and key backlights are extinguished. If the **PWR** key is released within the countdown period, power off is cancelled.

Note: *All non-sounder setting changes (except Brightness and Relative Motion) are retained when the unit is powered off using the PWR key. However, there is a one-minute delay from the time you make the setting change to when the A60 places it in memory. If power is removed from the unit without using the PWR key less than one minute after making a change, the setting is lost.*

Adjusting the Display Lighting

You can manually adjust the backlight level:

PWR

1. Press and release the **PWR** key. The Brightness soft key appears.
2. Use the left/right trackpad keys or rotary knob to adjust the backlight level. Choose from 5 to 100%, in 5% increments. The level is adjusted immediately.
3. Press **CANCEL** to return to the normal display screen.

   Note: *The Brightness setting is returned to 100% at power-on.*

1.2 The Controls

Rotary Knob
Use to scroll through lists or to edit alpha-numeric characters. Rotate to scroll or to fine tune cursor position on chart left/right or up/down.
Press to accept displayed value or to toggle cursor direction on chart.

CANCEL
Press to quit the selected on-screen option when editing data.
Also used to return to the previous soft key or menu level.

Trackpad
Controls the on-screen cursor. Also used to scroll through menu. Press the corresponding edge of the trackpad to move the cursor horizontally, vertically or diagonally.

ENTER
Press to select an on-screen option or return to the previous soft key or menu level.

RANGE
Changes the display scale. Press ▽ to display a smaller area on the screen. Press △ to display a larger area.

PAGE
Displays soft keys for selecting available pages for Chart and Fishfinder functions. Pages can also be split into two-window combinations.

WPTS/MOB
Press and release to display the waypoint soft keys.
Press again to place waypoint at your boat's position.
Press and hold to place a Man Overboard (MOB) marker at your current position.

MENU
Press to access the Setup Menu.

DATA
Displays soft keys for importing / exporting waypoints, routes and tracks from / to a CompactFlash card or from / to another instrument via NMEA.

ACTIVE
Selects which of the two split-windows has control. The selected screen is outlined in red and associated soft key labels are displayed.
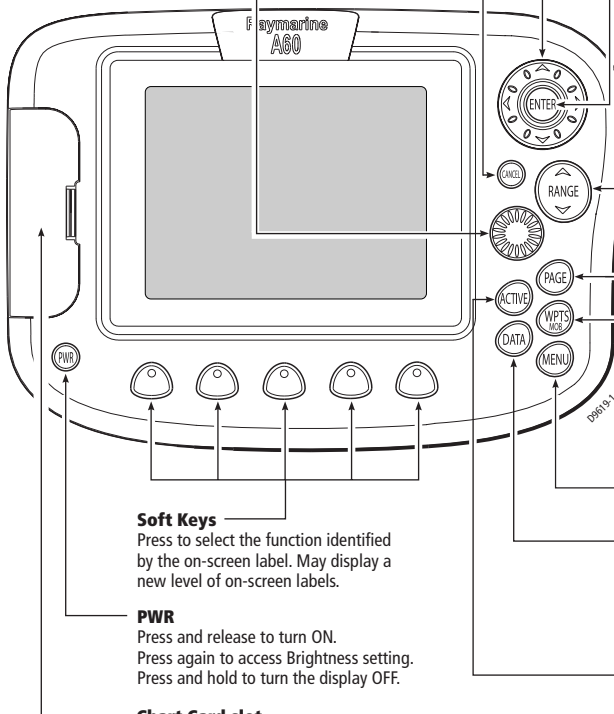
Soft Keys
Press to select the function identified by the on-screen label. May display a new level of on-screen labels.

PWR
Press and release to turn ON. Press again to access Brightness setting. Press and hold to turn the display OFF.

Chart Card slot
Open the cover to install CompactFlash cards.

Raymarine
A60

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1.3   Selecting How the Applications are Displayed

Each A60 application (Chart, Fishfinder) is displayed in a separate page. In turn, these pages can be split into 2 side-by-side windows. The settings you choose are saved so that each time you open an application it is presented in the same way.

Selecting a Page

(PAGE)

1. Press the **PAGE** key. The associated soft keys are displayed:

CHART…	FISHFINDER…			

D9784-1

2. Press the appropriate soft key to select the desired page set.
   After you have selected the page set, the available page layout configurations are represented in the next set of soft keys.

3. Press the soft key for the page layout you want to view. The following example displays the soft keys that appear when the Chart page is selected:

FULL SCREEN	CHART⁄ FISHFINDER	CHART⁄ NAV DATA	CHART⁄ TEMP GRAPH	CHART⁄ CDI

D9785-1

Chart Page

The chartplotter includes a small-scale world map enabling route plotting and tracking even when an electronic chart card is not installed. Detailed navigation information is displayed when a Navionics electronic chart card is installed. For more information and to obtain chart cards see "Electronic Chart Cards" at the front of this manual.

The full screen chartplotter page is displayed in the following figure:
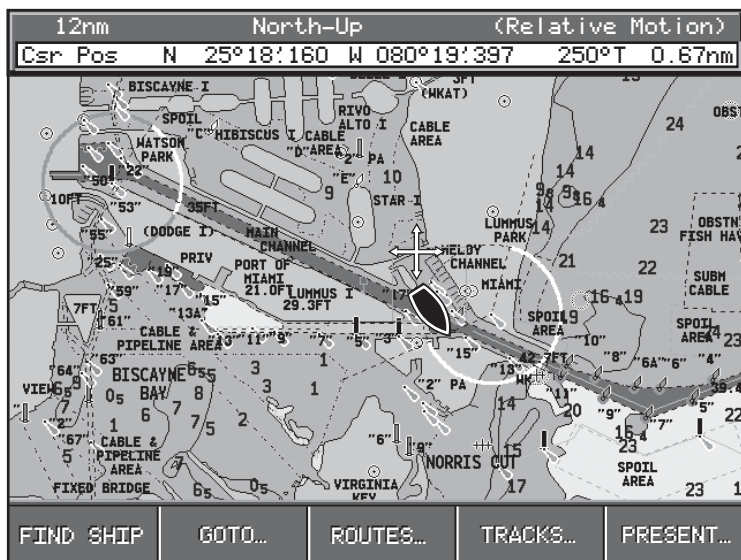
Using the chartplotter you can carry out such functions as:

- Monitor the course of your vessel on the chart as you travel to a destination
- View detailed cartographic information including ports and tides (if available)
- Place, display and edit waypoints
- Navigate to a position using cursor position, waypoints and routes, manually or using an autopilot (if installed)
- Set up a route that can be followed

Fishfinder Page

This function requires that you have installed the optional DSM25 Digital Sounder Module.

The fishfinder application gives you a detailed view of what is below your vessel. This includes the seabed and its texture, fish, and other underwater objects. The fishfinder function is fully described in the DSM25 Owner's Handbook. A typical fishfinder page is displayed full screen in the following figure:

D9788-1
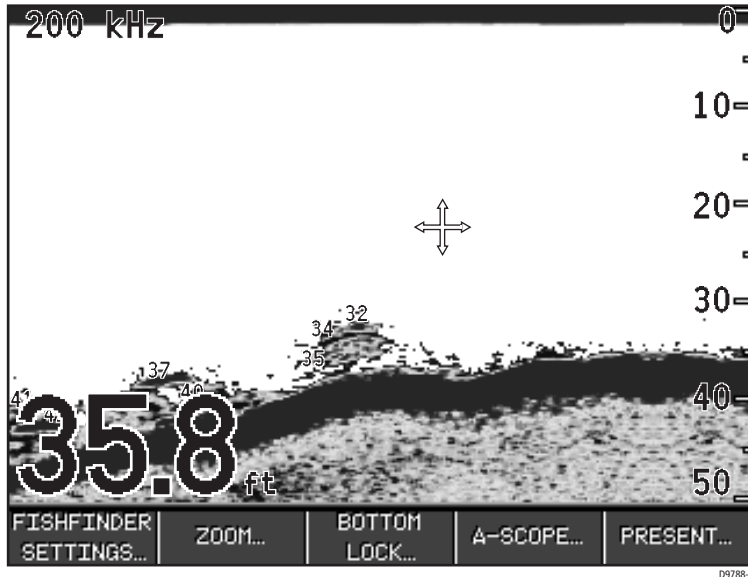
Using the fishfinder application you can:

• Locate and distinguish different types of underwater objects

• Obtain information about water depth and temperature and sea bed texture

• Place waypoints to indicate places, such as a favorite fishing spot or an under-water object of interest

Data Pages

The A60 can also display various Data pages as split windows alongside the chart and fishfinder applications. The following soft keys appear when the Chart and Fishfinder pages are selected, respectively:

FULL SCREEN	CHART/ FISHFINDER	CHART/ NAV DATA	CHART/ TEMP GRAPH	CHART/ CDI

D9785-1

FULL SCREEN	CHART/ FISHFINDER	FISHFINDER/ NAV DATA	FISHFINDER/ TEMP GRAPH	FISHFINDER/ CDI

D9786-1

Press the appropriate soft key to select the desired data split screen.

Nav Data

The Nav (Navigation) Data page displays position and active waypoint information as well as the current time, date and water depth. The Chart and Nav Data windows are shown in the following figure:
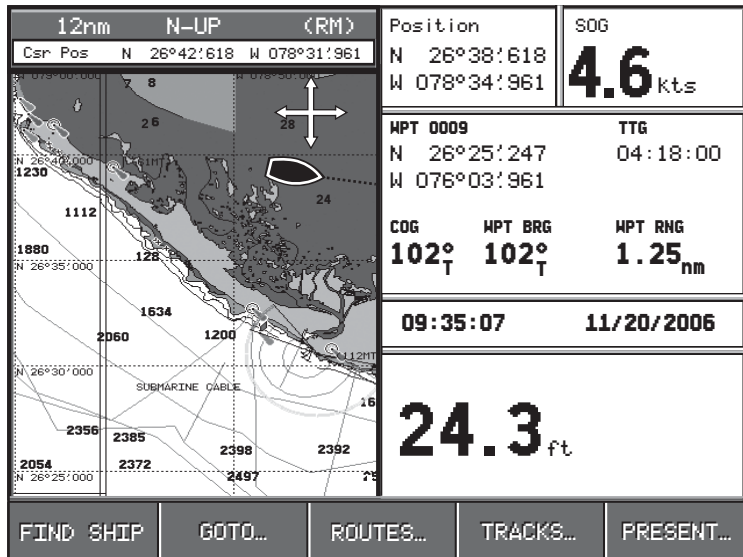
Note: *The A60 sets its internal clock from the GPS. Therefore, time of day is not available until a GPS fix is acquired. After this initial fix, the A60 continues to update its internally stored time of day, even if GPS fix is lost. Upon power down, however, time of day is lost.*

Temp Graph

The Temp Graph Page displays a graph plotting water temperature readings from the transducer over the past 60 minutes as well as current water temperature, boat (paddlewheel) speed, battery voltage and a trip log:
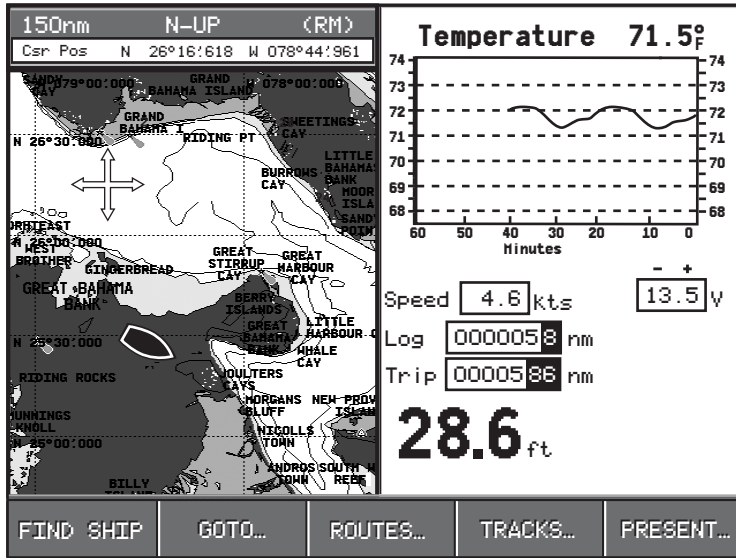
Course Deviation Indicator (CDI)

The Course Deviation Indicator (CDI) gives a graphical representation of your boat's course in a 'rolling road' format.

As you travel towards the target waypoint, the checkered pattern and the waypoint will move down the screen at a rate proportional to your boat's speed. The steering instructions below the rolling road tell you what correction is needed to maintain your course and arrive at the target waypoint.

Indication arrows are placed either side of the steering instruction, pointing towards the center line. The greater the error the more arrows that appear. Correct your course by steering in the direction indicated by the arrows. If your boat is off track to the degree that it would not be displayed within the rolling road, the boat icon flashes.

```
0.5nm        N-UP        (RM)
Csr Pos   N  25°18'160 N 080°19'397
```

CAUSEWAY
ISLAND
COAST
GUARD
BASE

WPT 0003

	XTE	COG	HEADING
	0.067 nm	220 °T	225 °T
	WPT BRG	WPT RNG	VMG-WPT
	250 °T	0.42 nm	3.1 kts

FIND SHIP	GOTO...	ROUTES...	TRACKS...	PRESENT...
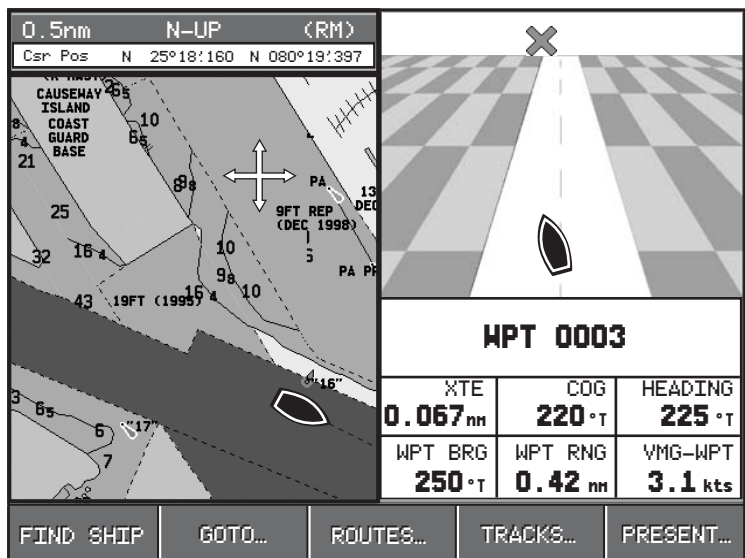
Selecting a Split Window

ACTIVE

When the selected page has a split window, the window that is currently active is bordered in red and the soft key options for that application are displayed. Pressing the **ACTIVE** key changes this active highlight to the other window on that page and its associated soft key labels.

Note: *When you switch from full chart screen to split screen chart, the split screen is centered at what was the center of the full screen, and the cursor is moved to the center of the split screen.*

In the following figure, the fishfinder page is active, so soft keys for that application appear.
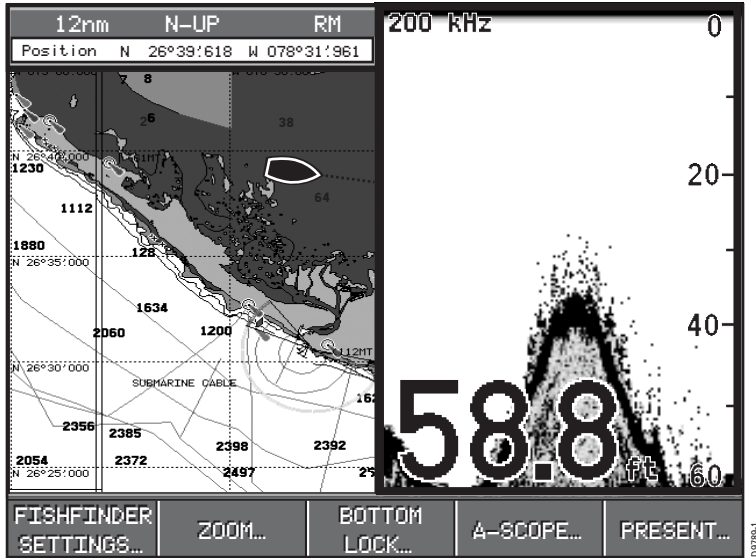
1.4 The Simulator

The A60 display includes a simulator mode, with which you can practice operating your display without data from a GPS antenna or a DSM. Before installation, connect the display to a 12VDC power supply, fused at 4 amps by attaching the red wire from the power lead to positive (+) and the black lead to negative (–).

The simulator mode is switched on/off in the System Setup Menu.

1. Press **MENU**. The main Setup window is displayed.
2. Use the trackpad (up/down) or rotary knob to highlight System Setup.
3. Press the trackpad (right) to select.
4. Use the trackpad (up/down) or rotary knob to highlight Simulator.
5. Press the trackpad (right) to select.
6. Press the trackpad (up/down) to highlight ON.
7. Press **ENTER** to accept.
8. Press **CANCEL** twice to return to the display screen.

The SIMULATOR message flashes at the top of the screen and simulated data is displayed.

Setup

Chart Setup…
Fishfinder Setup…

System Setup…   ▶
Alarms Setup…
GPS Status…
Display Setup…
Diagnostics Menu…
User Card Menu…

System Setup…

Simulator	OFF
Bearing Mode	TRUE
Variation Source	AUTO (05°E)
Manual Variation	00°E
Language	ENGLISH (US)

Settings Reset…
Settings and Data Reset…

Units…
NMEA-Out Setup…

OFF / ON → OFF / **ON**
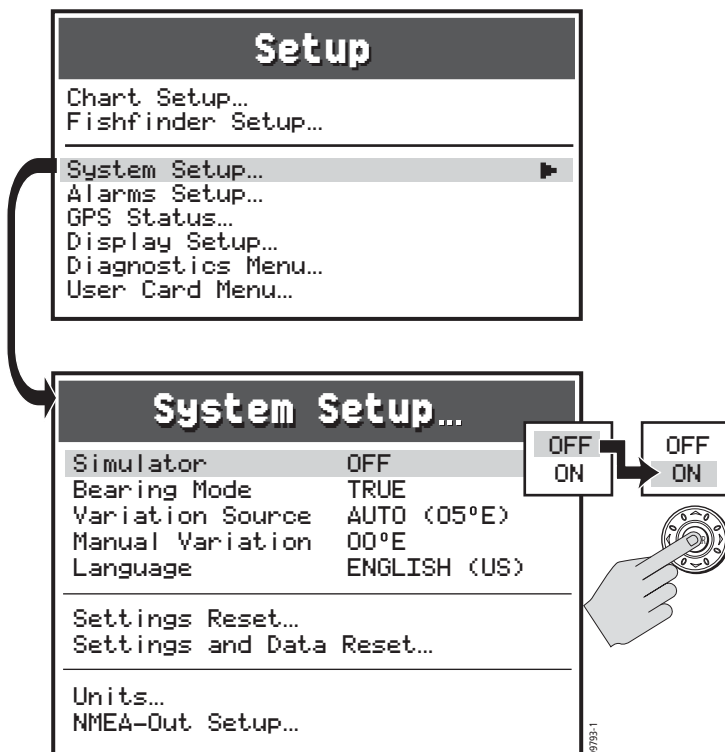
To place your simulated boat at a specific geographic location on the chart in Simulation mode:

1. Make sure Simulator mode is set OFF.
2. Place your cursor at the desired location.
3. Switch Simulator mode ON.

Chapter 2: General Operation and System Setup

2.1 Introduction

This chapter gives details of the general operation of the A60 display and covers the following subjects:

• Using the controls
• Setting up the display
• Presenting information
• Alarms
• Installing and removing CompactFlash (CF) cards
• Saving and retrieving information
• Sharing information using the NMEA protocol

2.2 Controls

The controls for the display can be separated into two types:

• Keys
• Soft keys

Keys

Keys enable you to access various system functions or change what you see on the screen:

PWR
PWR
Press and release to power ON the display.
After the unit is powered on, press and release as a shortcut to the Brightness setting.
Press and hold to turn the display OFF.

CANCEL
CANCEL
Press this key to quit the selected on-screen option when editing data and return to the previous level of soft key labels or menu items.

PAGE
PAGE
Press to bring up soft keys for selecting the available one- or two-window combinations for Chart and Fishfinder pages.

ACTIVE

When a split window page is displayed, press to select which window you wish to work from. The selected window is outlined in red and associated soft key labels are displayed.

WPTS/MOB

Press to display the Waypoints soft keys.
Press again to place a waypoint at the vessel position.
Press and hold to place a Man Overboard (MOB) marker at your current position.

DATA

Press to display soft keys for implementing the various data functions, such as importing/exporting waypoints, routes and tracks from/to a CompactFlash card. Also used for sending data to, or receiving data from another instrument or PC using NMEA.

MENU

Press to access the Setup Menu.

Trackpad (outer ring)

The trackpad controls the on-screen cursor and is used to scroll through menu items.
Press the corresponding edge to move the cursor horizontally, vertically or diagonally.

ENTER (middle key)

Press to select an on-screen option, or to return to the previous soft key label or menu level, similar to CANCEL.

RANGE

Press to change the area that is displayed on the screen.
Press ▽ to display a smaller area on the screen.
Press △ to display a larger area on the screen.
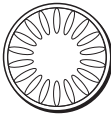
Rotary Knob

Rotate to scroll up/down lists, similar to the trackpad.
Push in to accept a displayed value, similar to the ENTER key.
When editing alphanumeric values, rotate clockwise to increase the value, rotate counter-clockwise to decrease the value, and then push in to accept and move the cursor to the next character.
When a chart is displayed, use to fine tune cursor location. Rotate clockwise to move cursor up and counter-clockwise to move it down. Push in to toggle direction control. Now rotate clockwise to move cursor to the right and counter-clockwise to move it to the left.

Soft Keys

There are five soft keys in the bar below the display screen. When a system function key is pressed, the primary soft keys for that function are shown. Pressing a soft key will carry out one of the following functions:

- Select one of the options shown on the soft key label
- Display on-screen information, dialog boxes or menus with new soft keys
- Display additional soft key options

Soft keys sometimes interact with other on-screen controls, such as to edit names, in dialog boxes or to select options in options lists. Soft keys are displayed to control certain items. For example, when you place the cursor over a waypoint, the waypoint soft keys are displayed.

Cursor

The cursor appears on the screen as a white cross. You can move the cursor using the trackpad or rotary knob.

Using the Trackpad

Press the corresponding edge to move the cursor horizontally, vertically or diagonally.

Using the Rotary Knob

Rotate clockwise to move the cursor up and counter-clockwise to move it down. Push in to toggle direction control. Now rotate clockwise to move the cursor to the right and counter-clockwise to move it to the left.

Cursor Info

Cursor Info is a feature that displays the cursor's position and other information in a floating data box. When you place the cursor over an object such as a chart feature, the cursor turns red and information associated with that object is displayed. The amount of detail displayed is determined by the Object Information setting in the Chart Setup Menu, which is described on page 31.

Note: *Cursor Info determines whether the pop-up box appears when the cursor is placed over an object. Object Info determines the level of detail appearing in that pop-up.*

To display or hide Cursor Info:

1. Press **DATA**. The Data soft keys appear.
2. Press CURSOR INFO. The options toggle between the following selections:
    - ON, object data and cursor position information is displayed

- TIMED, object data and cursor position information are displayed for three seconds and then disappear
- OFF, object data and cursor position information are not displayed

2.3   Status Bar

The Status Bar provides current information about the chart application.

Half Screen

Full Screen

Top Line

- **Chart Range**
  This represents the distance from the top to the bottom of screen at the current zoom level (refer to "Zoom in/out" on page 72). Range rings are drawn at intervals equal to 1/4 of this value.

- **Orientation**
  This reports the orientation mode currently displayed: Head Up, North Up, or Course Up. When in split screens, these appear as H-UP, N-UP, and C-UP, respectively (see page 96).

- **Relative Motion mode**
  This indicates that the chart is in Relative Motion mode, which is invoked at power-up or when you press FIND SHIP. When you move relocate the cursor, Relative Motion is broken and the indicator appears in amber text and enclosed in parentheses—(Relative Motion). When in split windows, these appear as RM and (RM), respectively. Relative Motion is described in more detail on page 97.

Bottom Line

- **Position / Csr Pos**
  When in Relative Motion mode, this field displays the boat's Position. When Relative Motion is suspended, the cursor position (Csr Pos) and bearing & range from the boat are shown.

Note: *Measurements in the Status Bar are displayed in the Distance Units set in the Units parameter of the System Setup menu. When zooming in and the value becomes less than 0.5 mile or 0.5 kilometer, the distance unit converts to feet or meters, respectively.*

2.4 Displaying Control Information on the Screen

Information connected with controls is shown on your screen in the following ways:

- Soft Keys
- Dialog boxes
- Pop-Up messages
- Database lists

Soft Keys

These are the primary means of control of the display. See "Soft Keys" on page 23 for a detailed explanation.

Dialog Boxes

Dialog boxes enable editing of objects stored on the display, such as a waypoint. Objects can be selected on-screen or from the appropriate list. Dialog box information can be edited using the soft keys, the rotary knob or the trackpad. For details, see "Editing a Waypoint" on page 57.

```
Edit Waypoint

Symbol...      ⚓
Name...        WPT  0005
Latitude...    N   26°16'496          N   26°16'496
Longitude...   W 080°03'907
Comment...
```

Pop-up Messages

Pop-up messages, can be of two types:

- Information. These messages appear for a set period of time and alert you to something that is happening, such as a function not being available. These messages cannot be edited, and some may be a prompt that require a response.
- Alarm messages. See "Alarm Setup Menu" on page 36 for more information.

Database Lists

Database lists contain information that have been added to the display memory, such as lists provided for waypoints, tracks and routes. You can scroll through a database list using the trackpad to highlight a particular entry. Entries within a database list can be selected for editing (for example, erase or edit the name of a waypoint).

2.5 Setting up the Display

You can set up the display so that the applications being used are presented in the way that suits how you work. This section shows you how to access and change these settings.

Note: *All non-sounder setting changes (except Brightness and Relative Motion) are retained when the unit is powered off using the PWR key. However, there is a one-minute delay from the time you make the setting change to when the A60 places it in memory. If power is removed from the unit without using the PWR key less than one minute after making a change, the setting is lost.*

To access and edit the Setup menu:

1. Press **MENU**. The Setup menu is displayed.
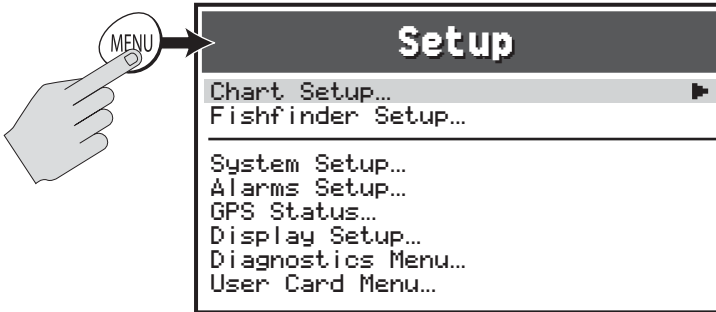
The Setup Menu is contains the following sub-menus:

- Chart Setup
- Fishfinder Setup. For details please refer to the DSM25 Handbook.
- System Setup
- Alarms Setup
- GPS Status
- Display Setup
- System Diagnostics

- User Card Setup

2. Use the trackpad or the rotary knob to highlight the menu items you wish to access.

When you first power on your display the default values are used. The tables in following sections show the sub-menus, default settings and options available.

2.6 Chart Setup Menu

The setup for your chartplotter and its cartography can be changed from the standard configuration to suit your particular needs. Although you will probably only do this when you first use the chartplotter, you may decide to make subsequent adjustments after you become more familiar with the system. Any settings that you change are retained even when you power off.

To select the Chartplotter Setup menus, press **MENU** and then select Chart Setup.

1. Press the trackpad (right). The menu changes to show you the available options or shows a sub-menu.

Chart Setup...	
Chart Display	DETAILED ►
Chart Grid	ON
Chart Text	ON
Chart Text Size	LARGE
Chart Boundaries	ON
Spot Soundings	ON
Safety Contour	7ft
Depth Contour	ALL
Nav. Marks	ON
Nav. Marks Symbols	INTERNATIONAL
Light Sectors	ON
Caution & Routing Data	OFF
Marine Features	ON
Land Features	ON
More...	
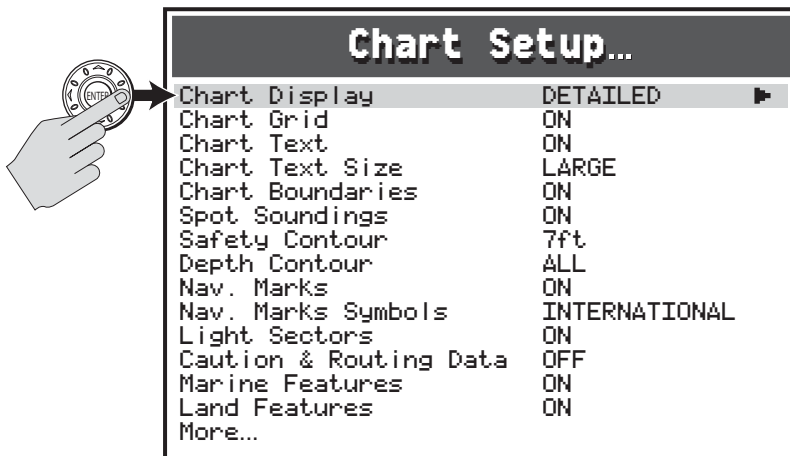
2. Press trackpad (down) or rotate the knob to highlight the desired option.

```
            Chart Setup...
Chart Display          DETAILED
Chart Grid             ON
Chart Text             ON
Chart Text Size        LARGE
Chart Boundaries       ON
Spot Soundings         ON
Safety Contour         7ft              ▶
Depth Contour          ALL
Nav. Marks             ON
Nav. Marks Symbols     INTERNATIONAL
Light Sectors          ON
Caution & Routing Data OFF
Marine Features        ON
Land Features          ON
More...
```

3. Press the trackpad (right) to select this item. The menu changes to show you the available options.

4. Use the trackpad or the rotary knob to change the value of the field.


```
            Chart Setup...
Chart Display          DETAILED
Chart Grid             ON
Chart Text             ON
Chart Text Size        LARGE                OFF        OFF
Chart Boundaries       ON                   7ft        7ft
Spot Soundings         ON                   16ft       16ft
Safety Contour         7ft                  33ft       33ft
Depth Contour          ALL                  66ft       66ft
Nav. Marks             ON
Nav. Marks Symbols     INTERNATIONA
Light Sectors          ON
Caution & Routing Data OFF
Marine Features        ON
Land Features          ON
More...
```

5. Use the trackpad or the rotary knob to change the value of the field.

6. Press **ENTER** to save your selection or **CANCEL** to retain the previous setting.

7. Repeat these steps until you have completed setting up the display with your preferences.

8. Press **CANCEL** to return to the default screen. This may require pressing the key more than once.

Depth Contour

Safety Contours (shaded areas)

Chart Boundary
Range Ring Distance
Light Sector
Spot Sounding
Range Ring
Chart Grid
Caution and Routing Data
Nav Mark
Chart Text

D8822-3
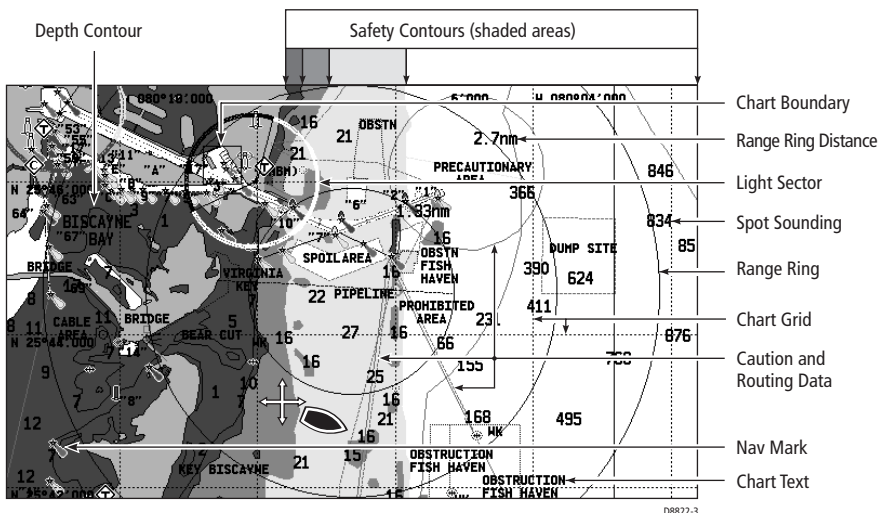
Chart Setup

The following describes the options found in the Chart Setup menu.

FUNCTION Description	OPTIONS (Default in **bold**)
Chart Display The level of detail shown on the chart.	SIMPLE **DETAILED** EXTRA DETAILED
Chart Grid Grid lines of latitude and longitude.	OFF **ON**
Chart Text Text appearing on the chart, such as place names.	OFF **ON**
Chart Text Size Size of text appearing on the chart.	SMALL **LARGE**
Chart Boundaries The line indicating the boundary of the chart.	OFF **ON**
Spot Soundings Number on the chart indicating depth.	OFF **ON**

FUNCTION Description	OPTIONS (Default in **bold**)
Safety Contour Areas with depths shallower than the specified value are shaded in a different color than those areas with depths greater than the specified value. The contour is always drawn at or deeper than the selected depth.	OFF **7ft** 16ft 33ft 66ft
Depth Contour Outlines an area that is located at the specified depth.	OFF 16ft 33ft 66ft **ALL**
Nav. Marks Navigation marks.	OFF **ON**
Nav. Marks Symbols The set of symbology used for navigation marks. Corresponds to paper charts.	**INTERNATIONAL** US
Light Sectors The sector of light cast by a fixed beacon.	OFF **ON**
Caution & Routing Data Magenta-colored lines indicating route for safe passage and outlining areas to avoid.	**OFF** ON
Marine Features The cartographic features that are displayed on the water.	OFF **ON**
Land Features The cartographic features that are displayed on the land.	OFF **ON**

Navigate to 'More' and right-press the trackpad to access additional selections.

```
            ┌──────────────────────────────────────────────┐
            │              Chart  Setup...                 │
            ├──────────────────────────────────────────────┤
            │ Chart Display            DETAILED            │
            │ Chart Grid               ON                  │
            │ Chart Text               ON                  │
            │ Chart Text Size          LARGE               │
            │ Chart Boundaries         ON                  │
            │ Spot Soundings           ON                  │
            │ Safety Contour           7ft                 │
            │ Depth Contour            ALL                 │
            │ Nav. Marks               ON                  │
            │ Nav. Marks Symbols       INTERNATIONAL       │
            │ Light Sectors            ON                  │
            │ Caution & Routing Data   OFF                 │
            │ Marine Features          ON                  │
            │ Land Features            ON                  │
            │ More...                                    ▶ │
            └──────────────────────────────────────────────┘

            ┌──────────────────────────────────────────────┐
            │              Chart  Setup...                 │
            ├──────────────────────────────────────────────┤
            │ Object Information       POINTS ON         ▶ │
            │ Vector Length            OFF                 │
            │ Track Interval           2 SECS             │
            │ Range Rings              ON                  │
            │ Background Color         BLUE                │
            └──────────────────────────────────────────────┘
```

D9799-1

FUNCTION Description	OPTIONS (Default in **bold**)
Object Information Defines how much information appears in the Object Information pop-up when the cursor is placed over a cartographic object (and the Cursor Info setting is active, as described on page 23). • When set to POINTS ON, the pop-up only displays details of individual cartographic objects. • When set to ALL ON, the pop-up gives details for these objects and the entire cartographic area (land area, depth area, etc.). • When set to OFF, no cartographic details are displayed; only the cursor's lat/lon position is shown in the pop-up. You can display information for any cursor location by pressing ENTER. NOTE: Cursor Info determines whether the pop-up box appears when the cursor is placed over an object. Object Info determines the level of detail appearing in that pop-up.	OFF **POINTS ON** ALL ON

FUNCTION Description	OPTIONS (Default in **bold**)
Vector Length The chart length specified for drawing COG and Heading vectors.	**OFF** 3 MINUTES 6 MINUTES INFINITE
Track Interval The frequency with which a track point is placed when creating a track. For more detailed tracks, use a smaller interval time. If laying a longer track, use a longer interval to conserve track points. The system can only maintain a maximum of 1000 track points before overwriting them.	**2 SECS** 5 SECS 10 SECS 1 MIN 3 MIN 5 MIN 10 MIN
Range Rings Concentric circles displayed on the screen at pre-set distances that are used to gauge the approximate distances between points. Range Rings are drawn at intervals equal to 1/4 of the Chart Range value displayed in the Status Bar (see page 24). Range Rings are centered on the chart (not the boat) and are labeled with the distance from the center, measured in the Distance Units set in the Units parameter of the System Setup menu. When zooming in and the value on the ring becomes less than 0.5 mile or 0.5 kilometer, the distance label converts to feet or meters, respectively.	OFF **ON**
Background Color The color in which the ocean is displayed.	**BLUE** WHITE

2.7 Fishfinder Setup

These setup items are for an optional a DSM25 Digital Sounder Module. The Fishfinder Setup menu is described in the DSM25 Handbook.

2.8 System Setup

These settings define parameters that are used by the A60 in all applications.

FUNCTION Description	OPTIONS (Default in **bold**)
Simulator Enables you to operate your display without data from the GPS antenna or a DSM, so that you can become familiar with the A60's features and functions.	**OFF** ON
Bearing Mode Determines how heading data are displayed.	MAGNETIC **TRUE**
Variation Source This allows you to compensate for the naturally occurring offset of the earth's magnetic field. When set to AUTO, the system will calculate this difference automatically. To enter your own variation value, set to MANUAL.	MANUAL **AUTO**
Manual Variation If Variation Source is set to MANUAL then use this setting to enter the variation value.	0–30° E or W **0°E**
Language Select the language in which information is displayed for screen text, labels, menus and options. Does not affect letters displayed by the cursor. Also affects the display format for lat/long position information.	English (UK) **English (US)** Dansk [Danish] Français [French] Deutsch [German] Nederlands [Dutch] Íslenska [Icelandic] Italiano [Italian] Norsk [Norwegian] Português [Portuguese] Español [Spanish] Svenska [Swedish] Suomi [Finnish]

FUNCTION Description	**OPTIONS** (Default in **bold**)
Settings Reset Returns all settings back to their original factory values. The Waypoint and Route List databases are not reset. After making this selection, press ENTER to accept the reset or CANCEL to quit without resetting. **CAUTION:** **Raymarine recommends that you backup your waypoints and routes to a separate CompactFlash card before performing this operation.**	ENTER to confirm CANCEL to quit
Settings and Data Reset Returns all settings to their original factory values. Deletes all Waypoints and Route Lists. Press ENTER to accept the reset or CANCEL to quit without resetting. **CAUTION:** **Raymarine recommends that you backup your waypoints and routes to a separate CompactFlash card before performing this operation.**	ENTER to confirm CANCEL to quit

FUNCTION Description	OPTIONS (Default in **bold**)

Units...
Set the units for speed, depth, and temperature that are used to display all data, including information received from other instruments on the system.
 	
Note: *The A60 sets its internal clock from the GPS. Therefore, time of day is not available until a GPS fix is acquired. After this initial fix, the A60 continues to update its internally stored time of day, even if GPS fix is lost. Upon power down, however, time of day is lost.*
	Distance:
	    NAUTICAL MILES
	    STATUTE MILES
	    KILOMETERS
	Speed:
	    KNOTS
	    MILES PER HOUR
	    KM PER HOUR
	Depth:
	    METERS
	    FEET
	    FATHOMS
	Temp:
	    CENTIGRADE
	    FAHRENHEIT
	Date Format:
	    DD/MM/YY
	    MM/DD/YY
	Time Format:
	    12 HOUR
	    24 HOUR
	Time Offset:
	    UTC
	    +13 to −13 hours of UTC

NMEA-Out Setup... Set or disable the transmission of specific NMEA sentences, which may be necessary if you have other instruments sending the same data. The factory default for all NMEA sentences is transmission ON. Disable the sentence by selecting OFF.	APB (**ON**, OFF) BWC (**ON**, OFF) BWR (**ON**, OFF) DBT (**ON**, OFF) DPT (**ON**, OFF) GLL (**ON**, OFF) MTW (**ON**, OFF) RMB (**ON**, OFF) RMC (**ON**, OFF) RTE (**ON**, OFF) VHW (**ON**, OFF) VLW (**ON**, OFF) VTG (**ON**, OFF) ZDA (**ON**, OFF)

2.9   Alarm Setup Menu

You receive warnings of hazards via built-in alarms that are generated for each
application. If an alarm is generated, it sounds an audible warning and displays a
message box on screen that explains the cause of the alarm. In some cases, the
appropriate action is taken. For example, following an arrival alarm, the next
route leg is activated (if Waypoint Advance is set to AUTO).

The Alarm Setup Menu is divided into these sub-menus:

• Navigation Alarms Setup
• Fishfinder Alarms Setup (described in the DSM25 Handbook)

Note: *To silence any alarm, press any key.*

Navigation Alarms Setup

Navigation alarms will sound in any application when you are navigating.

| FUNCTION Description	OPTIONS (Default in **bold**)
Arrival Alarm Radius The distance from the target waypoint or the closest point of approach to the target waypoint that triggers the Arrival Alarm to sound.	**0.10nm** 0.01–9.99 nm (or equivalent in the selected Distance Unit)
Waypoint Advance When within the arrival radius of the target waypoint, this setting determines whether you must manually press a key in order to continue to the next waypoint in the route. If set to AUTO, you are advanced to the next waypoint in the route as soon as the waypoint arrival alarm sounds. (You still must acknowledge the alarm.) If set to MANUAL, you must acknowledge the alarm and press WAYPOINT ADVANCE before continuing to the next waypoint. See "Advance to the Next Waypoint within a Route" on page 83.	**AUTO** MANUAL
Anchor Alarm Switches the anchor alarm on or off.	**OFF** ON
Anchor Alarm Radius If the Anchor Alarm is set to ON, an alarm is triggered when you drift from your anchor position by more than the specified distance.	**0.10nm** 0.01–9.99 nm (or equivalent in the selected Distance Unit)

FUNCTION Description	OPTIONS (Default in **bold**)
Off Track Alarm Switches the Off Track Alarm on or off.	**OFF** ON
Off Track Alarm XTE (Cross Track Error) If the Off Track Alarm is set to ON, an alarm is triggered when the XTE for any current navigation, exceeds the value that you have specified.	**0.30nm** 0.01–9.99nm (or equivalent in the selected Distance Unit)

Fishfinder Alarms Setup

These setup items are pertinent only if you have a DSM25 Digital Sounder Module installed and connected. Fishfinder Alarms Setup options are described in the DSM25 Handbook.

2.10 GPS Status

You can set up your Global Positioning System (GPS) and check its status using the GPS Status page of the Setup menu.
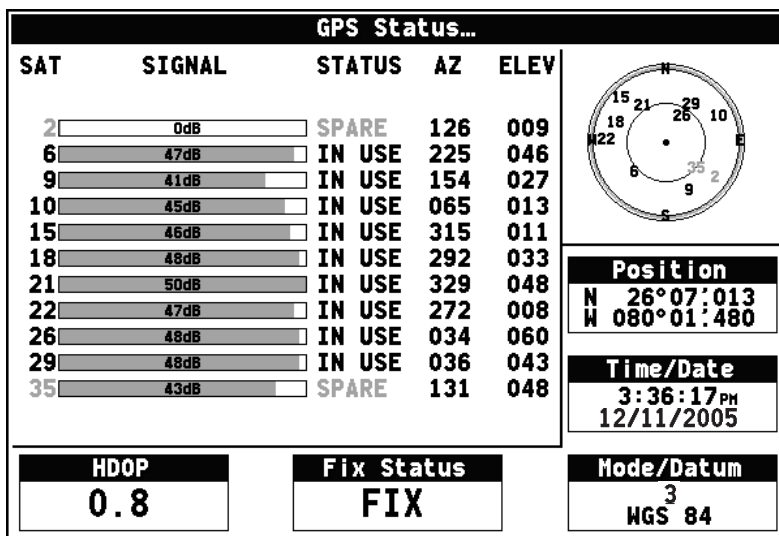
This screen provides, for each tracked satellite, the satellite number, a graphical signal strength bar, status, azimuth angle and its elevation angle from your vessel. The sky view graphic shows the position of these satellites. Positional accuracy is dependent upon these parameters. In particular, the azimuth and elevation angles are used in a triangulation process to calculate your position.

HDOP

Horizontal Dilution of Position (HDOP) more precisely estimates the accuracy of horizontal (latitude/longitude) position fixes by adjusting the error estimates according to the geometry of the satellites used. A higher figure signifies a greater positional error. In ideal circumstances, the figure should be in the region of 1.0.

Fix Status

The fix status displays one of four readings, from no fix at all to the best possible fix (SD-FIX). The fix status indicates one of the following:

- NO FIX: no satellite fix can be acquired
- FIX OK: a normal GPS fix has been acquired
- D-FIX: a differential fix has been acquired
- SD-FIX: a satellite differential fix has been acquired

Mode/Datum

The Mode parameter describes the type of fix obtained:

- 1: no satellite fix can be acquired
- 2: the receiver has acquired the signal of at least 3 satellites and has calculated a two dimensional (2-D) or horizontal position fix (latitude and longitude)
- 3: the receiver has acquired the signal of at least 4 satellites and has calculated a three dimensional (3-D) position fix (latitude, longitude and altitude)

The Datum field displays which mathematical model of the Earth's shape was used to determine your position. The datum used by the A60 is WGS 84 (World Geodetic System 1984).

2.11 Display Setup

These options control the appearance of your A60 Display.

Brightness

Use the trackpad (left/right) keys or rotary knob to select the brightness value from a low of 5% to a high of 100% in 5% increments. The default is 100%. This setting always resets to 100% at power-up.

Note: *You can quickly access this setting by pressing and releasing the POWER button.*

Data Items

Data Items provide regularly used data in a compact form so that most of the graphics can still be seen. Items are stacked on top of one another. Select ON or OFF for each item. The default is OFF for all.

Note: *Data is normally acquired from the DSM25. If a DSM25 is not connected, these values can be obtained from another instrument via NMEA.*

- **Depth**
  Measurement from bottom of transducer to the seabed.
- **Speed**
  Reading from transducer's paddlewheel. Note that this is not SOG, which accounts for current, wind or other sea conditions.
- **Temperature**
  Reading from transducer's temperature-sensing thermistor.
- **Battery**
  The boat's battery voltage.
- **Log**
  Total distance travelled by the boat.
- **Trip**
  Distance travelled since the counter was reset, using the Trip Reset option in the Fishfinder Setup menu.
- **WPT BRG**
  Bearing to the active waypoint.
- **WPT RNG**
  Range to the active waypoint.
- **TTG**
  Estimated time-to-go before reaching the active waypoint.
- **COG**
  Current course over ground.

- **SOG**
  Current speed over ground.

- **Time**
  Current time of day.

- **Date**
  Current date.

- **Auto Scroll**
  Scrolls each data item that has been turned ON one-at-a time in the upper left corner of the screen every three seconds.

Note: *As more data items are added to the screen, text font is automatically resized to accommodate them. When no more space is available, Auto Scroll is begun automatically.*

Key Beep

Controls whether or not the keys sound a tone when you press them. Select ON or OFF. The default is ON.

Digital Compass

This feature simulates a pedestal-style compass that displays your current course over ground (COG) or heading (HDG) and the bearing to the active waypoint. Select from the following options:

- **OFF**
  The compass is not displayed

- **COG**
  The compass is displayed, based on your course over ground

- **HDG**
  The compass is displayed, based on heading (if heading sensor is installed)

The centerline indicates either your course (amber) or heading (red) while the blue line represents the bearing to the waypoint. When on the right course, the two indicators line up and their combined color becomes green (using COG) or magenta (using HDG). Double arrows indicate the direction to steer to the target.

If you select HDG when no heading sensor is connected, the compass automatically displays the amber COG line instead.

Steering Arrows   Bearing to Waypoint   Centerline
                              (blue)   COG (amber)
                                                      or HDG (red)
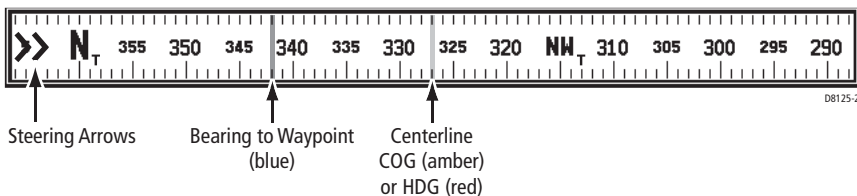
Compass directions (N, NE, NW, etc.) have a superscript character that represents the bearing mode you selected in System Set Up: M for Magnetic and T for True.

2.12 System Diagnostics

This sub-menu is for diagnostic use by authorized dealers. All menu items default to OFF. You should not make any adjustments to these settings.

2.13 User Card Menu

This menu contains options for using Compact Flash (CF) cards with the A60.

User Card Manager...

This utility is a file manager for the CF card, much like Windows® Explorer is used in Microsoft® Windows. User Card Manager provides you with details about the files on the card, such as Name, Type and file size. Use the trackpad or rotary knob to scroll through the list.

Save Image to User Card...

Use this selection save current data to the CF card for future reference. You are then prompted to press a SAVE soft key to confirm. This selection is also available by pressing and holding the **DATA** key. When you make this selection, the following is saved onto the card:

- bitmap screen shot of your A60 display
- text file listing the essential data at the time of the screen dump, such as lat & long, speed, etc.
- screen shot and essential data saved in an HTML file

When the HTML file is viewed in a web browser on your personal computer, clicking on the screen image links you to Google™ Local. This provides you with an overhead perspective of the area in the image viewed as a map, satellite photo or a hybrid of the two.

Remove User Card...

Make this selection to safely remove the Compact Flash card that is currently in use. When this item is selected, the following pop up message appears:
"Safe to remove card. Press ENTER to continue."

Remove the card from the card reader and press **ENTER** to return to the menu.

WARNING:
Improper use of this setting may cause loss of data or damage to the card. Ensure you have read the instructions on page 42 thoroughly before attempting to remove or insert a CF card.

2.14 Inserting and Removing the CompactFlash Card

CAUTION: Card Installation
When installing CF cards ensure that you are inserting the card with the proper orientation. DO NOT try to force the card into position, as this may result in irreparable damage to the card.

CAUTION: Saving Data to the Card
Do not save data (waypoints, routes, tracks) to a Navionics Chart Card as the charts may be overwritten. When archiving, use a separate SanDisk CompactFlash card.
If power is lost, or if you pull the chart card from the reader before the save has completed, the card may become corrupted.

CAUTION: Card Removal
DO NOT use a metallic instrument such as a screwdriver or pliers to help you remove a CF card, as doing this can cause irreparable damage.

CAUTION: Card Writing
CF cards can be damaged if they are removed from the unit during either a read or write operation. The unit is continually reading the card. It is therefore essential that before removing the card you follow the correct procedure for stopping read generation.
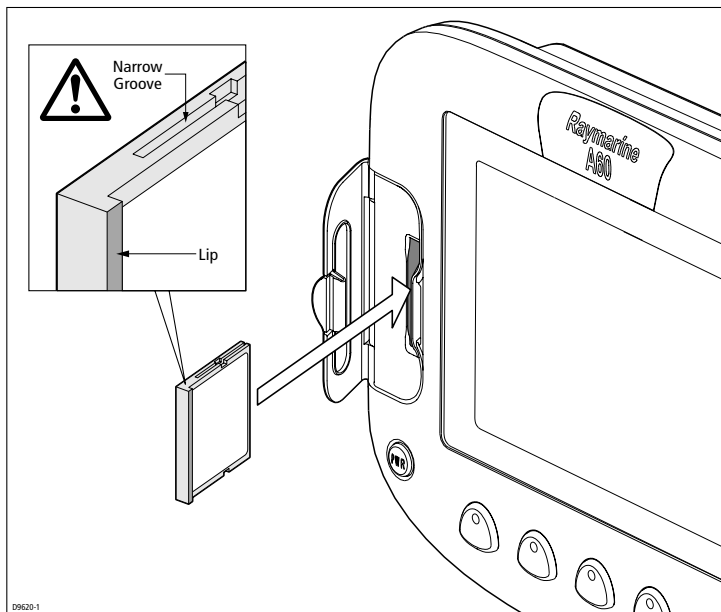
Inserting a CF Card

To insert a card, refer to the illustration, and:

1. Check that you are using the correct type of card. Refer to Important Information section of this handbook.

2. Open the chart card door, located on the front left of the display.

3. Insert the card as shown, with the lip of the card facing inwards, it should position easily. If it does not, DO NOT force it, check the direction in which the lip is facing.

4. Gently press the card home.

5. To prevent the ingress of water and consequent damage, close the chart card door and press firmly until an audible click is heard.

D9621-1
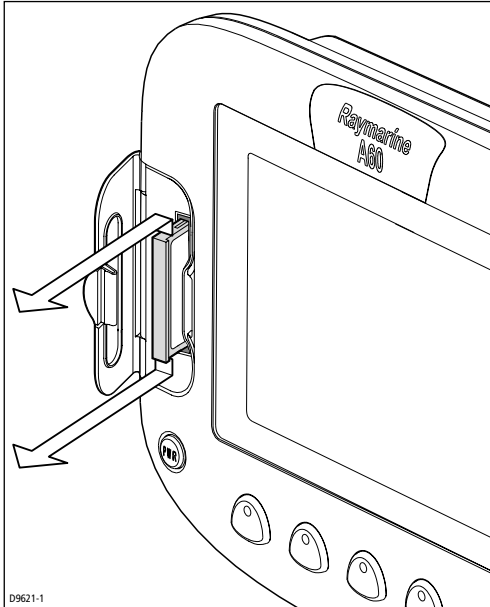
Removing a CF Card

1. Press **MENU**.

2. Navigate to User Card Menu and select "Remove User Card". A message appears that it is safe for you to remove the card.

3. Open the chart card door. Grip the card and pull to remove it from its slot.

4. To prevent the ingress of water and consequent damage, close the chart card door and press firmly until an audible click is heard.

2.15 Saving and Retrieving Data

Your A60 can store internally up to:

- 1000 Waypoints (not including MOB)
- 495 Routes (up to 50 waypoints each)
- 16 Tracks (up to 1000 track points each)

You may want to save more than this number or use the data on another instrument. This can be carried out in one of two ways, either by:

- Archiving them to a CompactFlash card, or
- Transferring to another instrument or PC by using NMEA

When navigation is active, you can also receive waypoints from other NMEA instruments if you want to save them on your unit.

Save Information to a CompactFlash Card

DATA

1. Insert a CF card into the card slot. See "Inserting and Removing the Compact-Flash Card" on page 42.

2. Press the **DATA** key. The Data soft keys are displayed.

SAVE WPTS TO CARD...	LOAD WPTS FROM CARD...	TRANSFER ON NMEA...		CRSR INFO ON TIME OFF

D9813-1

3. Select SAVE WPTS/RTES TO CARD. A new set of soft keys appear.

SEL LIST WPT RT TRK	SAVE ALL	SAVE WAYPOINT		

D9814-1

4. Press the SEL LIST soft key until the desired data item is highlighted: WPT, RT, or TRK. The associated list is displayed.

```
                  Waypoint List
            SYMBOL              NAME

              ✕              WPT 0001
              ⚓              WPT 0002
              ☇              WPT 0003
              ✕              WPT 0004
              ☠              WPT 0005

        Position            N  26°15'247
                            W 080°04'612

        Comment

        BRG 042°T           RNG  1.25nm

        Temp. 76.4°F        Depth 97.2ft

        Date 11/22/2006     Time 09:17:31
```

D9815-1

5. To save all items in the list (waypoints, routes, or tracks) to the card, press SAVE ALL.

6. To save a specific item to the card, use the trackpad to highlight that item in the list and press SAVE WAYPOINT, ROUTE, or TRACK.
A message box appears to show that the save is in progress.

Note: *The save can take as long as one minute to complete. This is because a 1MB file is always saved to the card, despite the number of waypoints, routes and tracks you are saving.*

When the save is complete, a new message box appears. You can view the contents of the CF card with the User Card Manager. You should see a 1MB file named 'ARCHIVE.FSH.'

Note: *To save the current image to a card, see "Save Image to User Card..." on page 41.*

Retrieve Information from a CompactFlash Card

DATA

1. Insert a CF card into the card slot. See "Inserting and Removing the Compact-Flash Card" on page 42.
2. Press the **DATA** key. The Data soft keys are displayed.

SAVE WPTS TO CARD...	LOAD WPTS FROM CARD...	TRANSFER ON NMEA...		CRSR INFO ON TIME OFF

D9813-1

3. Select LOAD WPTS/RTES FROM CARD. A new set of soft keys appear.

SEL LIST WPT RT TRK	LOAD ALL	LOAD WAYPOINT	DELETE ALL	DELETE WAYPOINT

D9816-1

4. Press the SEL LIST soft key until the desired data item is highlighted: WPT, RT, or TRK. The associated list is displayed.
5. To load or delete all items in the list (waypoints, routes, or tracks) from the card, press LOAD ALL or DELETE ALL, respectively.
6. To load or delete a specific item from the card, use the trackpad to highlight that item in the list and press LOAD or DELETE the appropriate WPT, RT, or TRK.
   A message box appears to show when the load is complete. The new items appear on your chart.

Sending and Receiving Information using NMEA

You can transfer and retrieve waypoints and tracks to and from another instrument or PC.

➤ To send or receive waypoints or tracks using NMEA:

1. Press the **DATA** key.
2. Press TRANSFER ON NMEA. The NMEA soft keys are displayed.

3. Press the appropriate soft key, SEND or RECEIVE ON NMEA. The transfer starts and the SEND/RECEIVE soft keys are grayed out.
If you wish to stop the transfer at any point, press STOP TRANSFER.

4. When the transfer is complete, STOP TRANSFER grays out and the SEND/RECEIVE soft keys reappear, if sending. When RECEIVE is active, you must press STOP TRANSFER to halt the transfer mode.

# Chapter 3: Working with Waypoints

3.1   Introduction

Waypoints are a core feature of the A60 display. They can be created in the Chart or Fishfinder application and used by each application. Waypoints can be stored in the system, archived to a CompactFlash card or sent to or received from another NMEA compatible instrument. To make full use of waypoint features, ensure your display is receiving heading and position data.

This chapter gives details of how to place, edit, manage and navigate to a waypoint using the dedicated **WPTS/MOB** key.

A waypoint is a position marked on a chart or fishfinder window to indicate a site (for fishing, diving etc.) or as a place to navigate to.

Waypoints are represented on chart screen by a symbol. If necessary, you can change this symbol from the default ('X') to a more appropriate one.
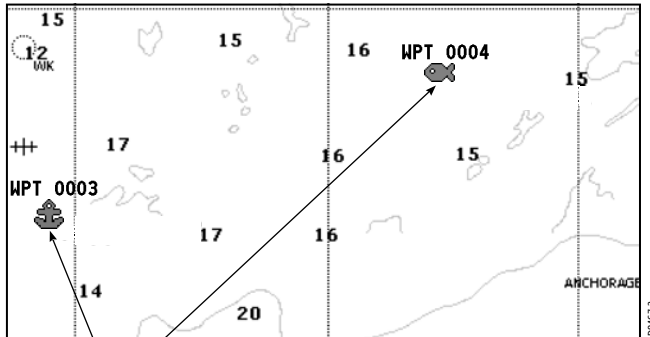
Example Waypoints shown with symbol and name

Available Waypoint Symbols

On the fishfinder screen, waypoints are represented by a vertical line labeled WPT:
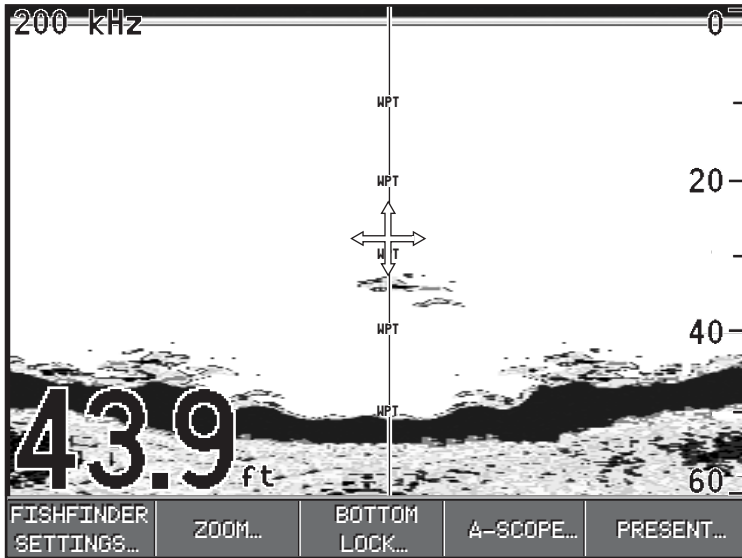
The details of all waypoints, irrespective of the application they were created in, are stored in a dedicated Waypoint List.

The A60 display is capable of storing up to 1,000 waypoints. If you reach this limit you can either delete those waypoints that you no longer use or archive those that are used infrequently to a CompactFlash card and then delete them from the system.

Man Overboard (MOB)

The Man Overboard (MOB) function is a special waypoint that enables you to mark and to return to a location if you were to lose a person or object overboard. MOB marks a waypoint at your current position and the bearing, range and vessel position are calculated. As your vessel moves away from the MOB position, a dotted line is displayed from your current position to the MOB position.

For details, refer to Section 4.2, Man Overboard (MOB) on page 66.

3.2 Placing a Waypoint

WPT AT CURSOR	WPT AT VESSEL	WPT AT POSITION...	GOTO WPT OPTIONS...	REV & EDIT WAYPOINTS...

D9808-1

A waypoint can be placed at the cursor position, the boat's position or at a position of your choosing (using lat/long coordinates). All waypoints can also be used in the creation of routes.

When waypoints are placed they are given a default symbol and name. You can change this default name or the symbol assigned to individual waypoints, if desired. See "Editing a Waypoint" on page 57.

... at the cursor

WPTS MOB ▪▪▶ | WPT AT CURSOR |

D9809-1

To place a waypoint at the cursor position:

1. Move the cursor to the desired position for the waypoint.
2. Press **WPTS/MOB**.
3. Press WPT AT CURSOR:
   - A waypoint is placed at the cursor position with a default name and symbol.
   - The Edit Waypoint box is displayed, enabling you to change waypoint details. For more information refer to "Editing a Waypoint" on page 57.
4. To accept the default details press **ENTER**. The Waypoint List appears, displaying your newly created waypoint.
5. Press **ENTER** or **CANCEL**. The Waypoint List is removed.

... at current position

WPTS MOB ▪▪▶ | WPT AT VESSEL |

D9810-1

To place a waypoint at the vessel's current position:

1. Press **WPTS/MOB**.
2. Press WPT AT VESSEL
   - A waypoint is placed at your boat's position.

- The Edit Waypoint box is displayed, enabling you to change waypoint details. For more information refer to "Editing a Waypoint" on page 57.

3. To accept the default details press **ENTER**. The Waypoint List appears, displaying your newly created waypoint.

4. Press **ENTER** or **CANCEL**. The Waypoint List is removed.

Shortcut
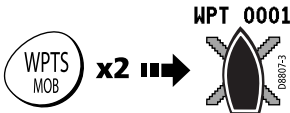
WPTS
MOB   **x2** ▪▪▪➡   **WPT 0001**

To quickly place a waypoint at your current position, accepting the default details: Press **WPTS/MOB** twice.

... at a known position

WPTS
MOB   ▪▪▪➡   WAYPOINT AT POSITION...   ▪▪▪➡   LATITUDE

```
Edit Waypoint
Symbol...      ⚓
Name...        WPT 0005
Latitude...    N  26°16.496        N  26°16.496
Longitude...   W 080°03.907
Comment...
```

1. Press **WPTS/MOB**.

2. Press WPT AT POSITION. The Edit Waypoint box is displayed with a default name and symbol for your new waypoint.

3. Press the LATITUDE soft key. The Latitude field is highlighted, indicating that you are in edit mode.

4. Use the rotary knob and trackpad keys to edit the Latitude field to reflect the desired location, as described in "Editing a Waypoint" on page 57.

5. Press LONGITUDE and edit the Longitude field to the desired value.

6. If desired, edit the waypoint name and symbol from the defaults or add a comment.

7. When complete, press **ENTER**. The Waypoint List appears, displaying your newly created waypoint.

8. Press **ENTER** or **CANCEL** to remove the Waypoint List from the screen.

3.3   Navigating to a Waypoint (GOTO)

You can navigate to an existing waypoint using the GOTO WPT OPTIONS soft key. This can either be accessed by selecting the desired waypoint on screen with the cursor or via the **WPTS/MOB** key.
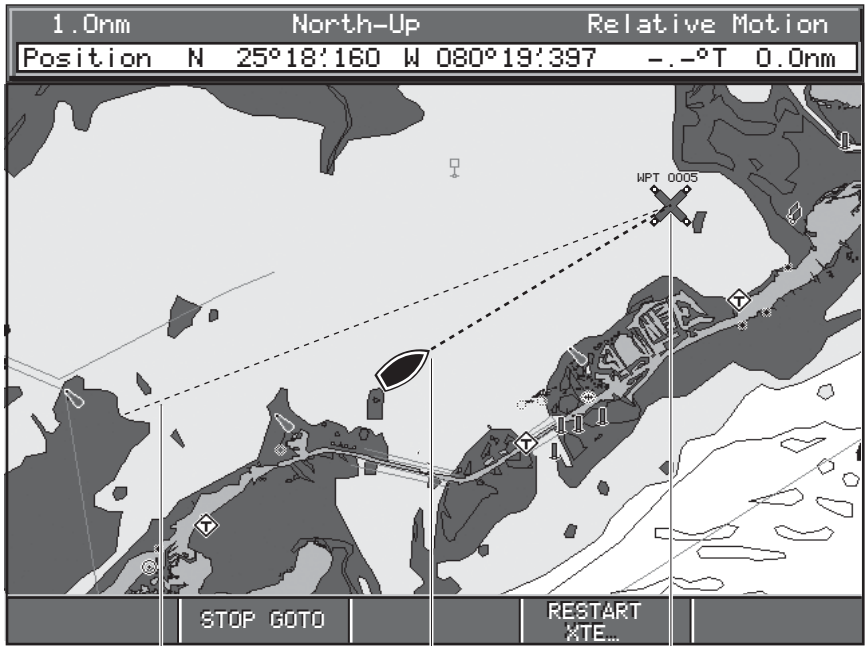
... using the cursor

```
    GOTO
  WAYPOINT
```
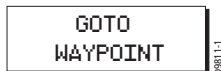
1. On the chart screen, move the cursor over the waypoint you wish to go to. The cursor changes color and the Waypoint soft keys appear.
2. Press GOTO WAYPOINT.

... via the WPTS/MOB key

WPTS / MOB
or
GOTO...
➡ GOTO WPT OPTIONS...
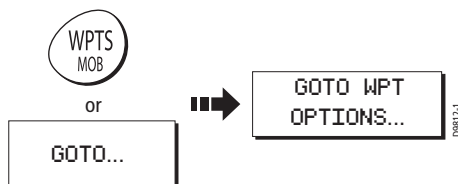
1. Press **WPTS/MOB.**
   —or—
   Press the GOTO soft key from the default chart screen.
2. Press GOTO WPT OPTIONS. The Waypoint List is displayed.
3. Using the trackpad (up/down) or rotary knob, highlight the waypoint you wish to navigate to.
4. Press the GOTO soft key.
   • A dashed Bearing from Origin to Destination (BOD) line is drawn between the vessel's original position and the waypoint. This line remains unchanged as the boat moves.
   • As the boat's actual course varies from the original, a blue Bearing from Vessel to Destination (BVD) line is drawn between your current position and the waypoint. This line is updated as the boat approaches the waypoint.

```
 1.0nm              North-Up            Relative Motion
Position   N   25°18.160  W 080°19.397    -.-°T   0.0nm
```

Bearing from Origin to Destination: Bearing from Vessel to Destination: Target Waypoint
    dashed line marking original   dashed (blue) line marking actual
    course of GOTO (unchanged)   current course of GOTO (updated)

5. When you arrive at the target waypoint an alarm sounds and a warning message is displayed. To de-activate this alarm, press any key.

6. To set the cross track error (XTE) to zero and move the origin to the actual vessel position press RESTART XTE. The BOD and BVD lines are now aligned.

7. To stop navigating to the waypoint, press STOP GOTO. The BOD and BVD lines are removed.

Note: *For more information on navigation, see Chapter 4: Using the Chartplotter.*

Navigating to a Waypoint Sent by NMEA

You can go to a waypoint that you have imported from another device (such as another Raymarine display) via NMEA. The waypoint appears on the A60 display just as if it were located in the A60's own waypoint database.

On the sending device:

1. Ensure the unit is powered on and connected to the A60's NMEA port via a suitable cable.
2. Select the desired waypoint and export it via the NMEA port.

On the A60:

3. Press GOTO. The GOTO NMEA soft key is grayed out until the waypoint is received.
4. When the GOTO NMEA key is no longer grayed out, press it.
   The waypoint appears, along with bearing lines to it.
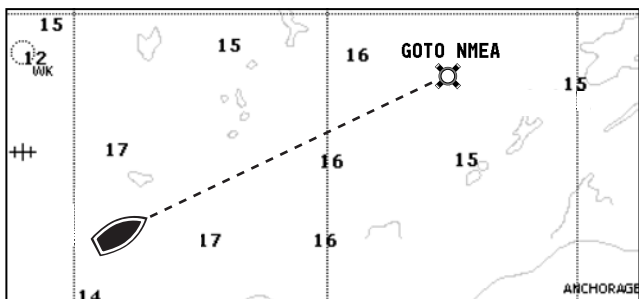
3.4 Viewing Waypoint Information

You can view the details of any waypoint that you have placed by either selecting it with the cursor or by selecting it on the waypoint list. Once you are viewing a waypoint's details, a variety of editing and managing options are available.

... using the cursor

You can select a waypoint with the cursor and view its details provided that the waypoint is not being navigated to:

1. Move the cursor over the waypoint you wish to view. The cursor changes color and the information for the selected waypoint is displayed in a data box. The soft keys change to show you are working with a waypoint.
2. Press EDIT WAYPOINT.
   This displays the waypoint information in a dialog box. You can edit the details if desired. See "Editing a Waypoint" on page 57.
3. Press **ENTER** or **CANCEL**. The Waypoint List is displayed.
4. Press **ENTER** or **CANCEL** again to return to normal operation.

... using the waypoint list

The Waypoint List shows all the waypoints that have been placed and displays details of the selected waypoint.

1.   Press **WPTS/MOB**.
2.   Press REV & EDIT WAYPOINTS. The Waypoint List is displayed.
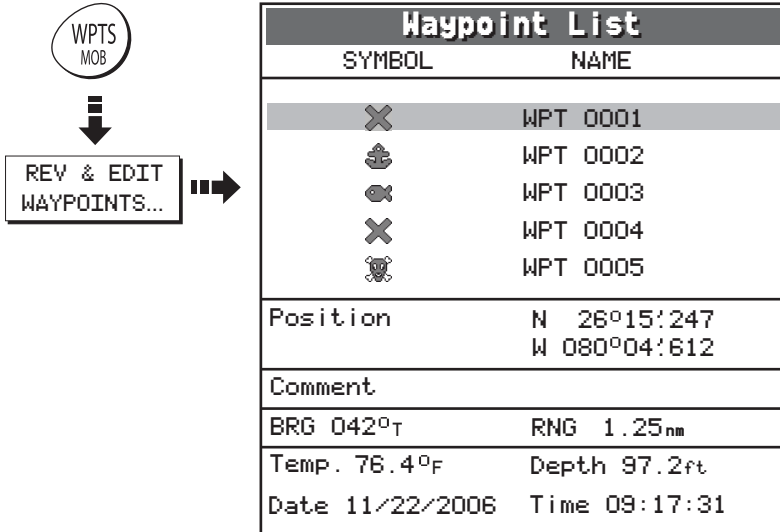
3.   Use the trackpad (up/down) or rotary knob to move to the desired waypoint. The information for the selected waypoint is displayed.
4.   Press **ENTER** or **CANCEL** to return to normal operation.

3.5   Editing a Waypoint

After a waypoint has been placed it can be edited in a variety of ways. You can:

- Change the default waypoint symbols
- Change the waypoint details, such as name or symbol
- Move the waypoint
- Erase the waypoint

Change the Default Symbol

When you add a waypoint to your system it is given the default symbol, the 'X'. If this is not suitable, you can select an alternative symbol as the default.

To change the default waypoint symbol for all waypoints:

1. Press **WPTS/MOB**. The waypoint soft keys appear.
2. Press REVIEW & EDIT WAYPOINTS. The Waypoint List appears.
3. Press SEL DEFAULT WPT SYMBOL. The available waypoint symbols appear in a box to the right of the Waypoint List.
4. Use the rotary knob or up/down trackpad keys to highlight your selection.
5. Press **ENTER** to accept or **CANCEL** to abandon.
6. Press **ENTER** or **CANCEL** to clear the Waypoint List.

Changing the Waypoint Symbol

You can change the symbol for individual waypoints. This is particularly useful when you are managing large numbers of waypoints.

To change an individual waypoint's symbol:

1. Select the waypoint by placing the cursor over it. The cursor turns red and the action soft keys appear. Proceed to step 4.
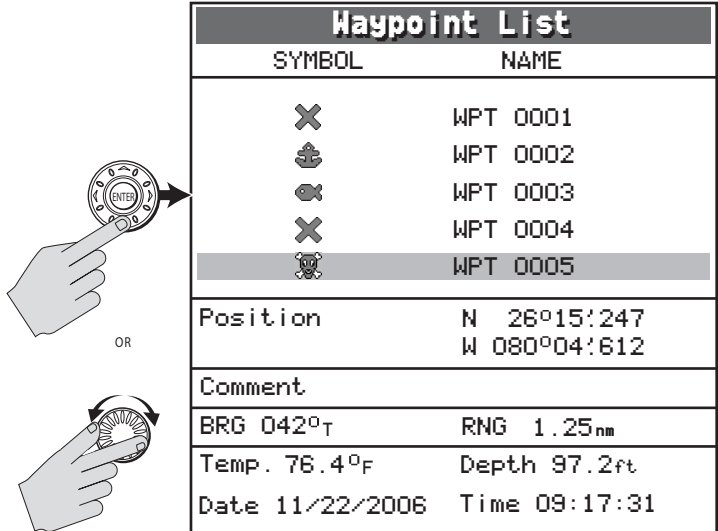
    —*or*—

    Press **WPTS/MOB**. The waypoint soft keys appear.
2. Press REV & EDIT WAYPOINTS. The Waypoint List is displayed.

WPTS
MOB

REV & EDIT
WAYPOINTS...

Waypoint List

SYMBOL	NAME
✖	WPT 0001
⚓	WPT 0002
✖	WPT 0003
✖	WPT 0004
☠	WPT 0005

Position	N 26º15'247
	W 080º04'612

Comment	

BRG 042ºT	RNG 1.25nm
Temp. 76.4ºF	Depth 97.2ft
Date 11/22/2006	Time 09:17:31

D9802-1

3. Use the trackpad or rotary knob to highlight the waypoint you wish to change.

ENTER

OR

Waypoint List

SYMBOL	NAME
✖	WPT 0001
⚓	WPT 0002
✖	WPT 0003
✖	WPT 0004
☠	WPT 0005

Position	N 26º15'247
	W 080º04'612

Comment	

BRG 042ºT	RNG 1.25nm
Temp. 76.4ºF	Depth 97.2ft
Date 11/22/2006	Time 09:17:31

D9803-1

Note: *Alternatively, you can select a waypoint by placing the cursor over it. The cursor turns red and the Waypoint soft keys appear.*

4. Press EDIT WAYPOINT. The Edit Waypoint box and associated soft keys appear.
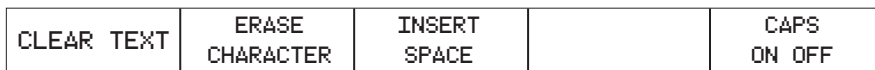
5. Press the SYMBOL soft key. The symbol field is highlighted and the available waypoint symbols appear.
6. Use the trackpad (up/down) or rotary knob to highlight the new symbol.

7. Press **ENTER** to select. The new symbol appears in the Edit Waypoint box.

8. Press **ENTER** or **CANCEL** to remove the Edit Waypoint box.

Changing the Waypoint Details

When a waypoint is created it is assigned a default name. You can change this detail and the lat/long or comment fields to suit your needs. This is particularly useful when you are managing large numbers of waypoints.

To change a waypoint's Name, Lat/Long info or Comment:

1. Navigate to the Edit Waypoint box for the desired waypoint, as described in the previous section. The associated soft keys appear.

CLEAR TEXT	ERASE CHARACTER	INSERT SPACE		CAPS ON OFF

2. Press NAME. An edit box appears with the first character highlighted in the field. The associated soft keys are displayed.

3. Use the trackpad up/down keys or the rotary knob to edit the first character as desired.

4. Use the trackpad left/right keys or the press in rotary knob to advance to the next character.

5. If needed, use the soft keys to select additional editing options.

CLEAR TEXT	ERASE CHARACTER	INSERT SPACE		CAPS ON OFF

6. Continue in this manner until the entire Name field is complete. You can use up to 16 characters, including spaces.

7. Press the **ENTER** key to save the change. The new name appears in the Edit Waypoint box.

8. Repeat these steps to edit the other details: Latitude, Longitude and Comment, pressing the soft key to select the associated field you wish to change.

9. When complete, press **CANCEL** to return to the Waypoint List and select another waypoint or else press **CANCEL** a second time to clear all boxes.

Notes: **(1)** *To exit a field without saving, press CANCEL.*

(2) *If you try to enter a waypoint name that is already in use, a pop-up appears, displaying the error message NAME EXISTS.*

(3) *The comment field contains up to 32 characters.*

Moving a Waypoint

You can move any waypoint to a new position. If, however, you are navigating to a waypoint and you wish it to be moved, you will need to stop navigation (press STOP GOTO or STOP FOLLOW). There are two methods of moving a waypoint:

... by entering new coordinates

If you know the new coordinates for the particular waypoint, you can enter this information by editing the waypoint's Latitude and Longitude, as described in the preceding section, "Changing the Waypoint Details".

```
   Edit Waypoint
Symbol...      ⚓
Name...        WPT 0005
Latitude...  N   26°16'496         N   26°16'496
Longitude... W 080°03'907
Comment...
```
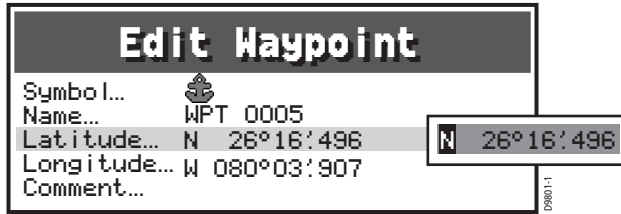
... by dragging the waypoint to a new position

You can drag a waypoint to a new position using the cursor and trackpad:

1. Place the cursor over the waypoint that you want to move. The Waypoint soft keys appear.

2. Press MOVE WAYPOINT.

    Note: *If you place the cursor over a waypoint to which you are currently navigating (the active waypoint), the STOP GOTO soft key (or STOP FOLLOW if the waypoint is part of a route) appears. You must stop the goto before moving the waypoint.*

3. Move the cursor to the new location.

4. Press PLACE WAYPOINT to move the waypoint to the new location or **CANCEL** to abandon the move.

**CAUTION: Moving a Waypoint used in a Route
It is possible to move waypoints that are used in routes. In such instances, the stored route will include the Waypoint in its new position. Ensure that this does not present a navigation hazard.**

Erasing a Waypoint

You can erase any waypoint on the system using the cursor or the waypoint list except for the waypoint that you are currently navigating to (see "Navigating to a Specific Point" on page 73).

If you attempt to delete any waypoint used in a route, a warning message is displayed that this is the case. You can override the warning and delete the waypoint anyway by pressing **ENTER** when prompted. After the waypoint is removed, the route will automatically join the two waypoints on either side of the waypoint you just deleted. This occurs in all routes that contained the newly deleted waypoint.

To erase a waypoint:

... using the cursor

1. Move the cursor over the waypoint that you want to erase. The Waypoint soft keys appear.
2. Press ERASE WAYPOINT.
3. You will then be asked to confirm this. If the waypoint is part of a route, a warning message also appears.
   Press **ENTER** to accept, or **CANCEL** to quit without saving.

   Note: *If you place the cursor over a waypoint to which you are currently navigating (the active waypoint), the STOP GOTO soft key (or STOP FOLLOW if the waypoint is part of a route) appears. You must stop the goto before removing the waypoint.*

... using the waypoint list

1. Press **WPTS/MOB**.
2. Press the REV & EDIT WAYPOINTS soft key. The Waypoint List appears.
3. Select the desired waypoint in the Waypoint List.
4. Press the ERASE WAYPOINT soft key.
5. You will then be asked to confirm the action. If the waypoint is part of a route, a warning message also appears.
   Press **ENTER** to accept, or **CANCEL** to quit without saving.

   Note: *If this is the waypoint to which you are currently navigating (the active waypoint), a warning message appears. You must stop the goto before erasing the waypoint.*

CAUTION: Erasing a Waypoint used in a Route
It is possible to erase waypoints that are used in routes. In such instances, the stored route will join the two waypoints on either side of the waypoint just erased. Ensure that this altered route does not present a navigation hazard.

3.6   Controlling How Waypoints are Displayed

When you have placed many waypoints on your system, it may become difficult to easily interpret chart information. This is particularly the case if you have many waypoints in a small area.

To designate whether all waypoints or their names are displayed:

1. Press PRESENT... from the main chart screen.
2. Press the SHOW/HIDE WAYPOINTS soft key.

```
┌─────────────────┐        ┌─────────────────┐
│                 │   ■■▶  │   SHOW/HIDE     │
│   PRESENT...    │        │   WAYPOINTS...  │
│                 │        │                 │
└─────────────────┘        └─────────────────┘
```
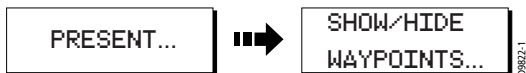
3. Toggle WAYPOINTS between SHOW or HIDE.
4. Toggle WAYPOINT NAME between ON or OFF.

Chapter 4: Using the Chartplotter

4.1   Introduction

This chapter describes how to use the Chartplotter application of the A60 display.

To access full functionality your chartplotter requires position data from your RS12 GPS Sensor. After position data is available you can:

•   Find out where you are
•   Navigate to a specific point
•   Build and follow a route
•   Monitor where you are going
•   Manage and edit routes
•   Record where you have been using Tracks

All of these functions are available in the chartplotter application, so you can plot routes at large scales even when a chart is not installed.

In addition the chartplotter provides functions to:

•   Control what you see in the chart window
•   Set up alarms

Using your Chartplotter Safely

Your chartplotter makes use of waypoints, which are easy to place and travel towards. However, you should always check that a route is safe.

If you have entered your route using a large scale chart, zoom in to a smaller area to check for hazards, such as small shoals, that may not be shown on a larger scale chart.

Until you are familiar with interpreting the chart display, you should take every opportunity to compare the displayed objects with visual targets, such as buoys and coastal structures. You should practice harbor and coastal navigation during daylight and in clear weather conditions. The simulator mode can also be used to help you gain experience.

It is strongly recommended that before you use your chartplotter application, that you read and understand Chapter 3: Working with Waypoints.

CAUTION: Navigation Aid
The equipment should not be used as a substitute for good
navigational practice nor for official government paper charts. Do
not use the chartplotter before you have read the Important
Information section at the beginning of this handbook.

4.2 Man Overboard (MOB)

If you lose a person or object overboard, and need to return to the location, you should use the Man Overboard (MOB) function immediately.

The MOB function can be used while any application is in use and is activated by pressing the **WPTS/MOB** key for three seconds.

When a MOB message is activated the following is initiated automatically:

- A MOB waypoint is placed at your current position on the chart screen.
- The page splits to display the CDI screen, also marked with the MOB position
- The MOB alarm is triggered and repeated every 30 seconds
- Navigation to any active waypoint is suspended and any existing navigation function is cancelled. No further GOTO or route functions are selectable.
- As your vessel moves away from the MOB position, a dotted line is displayed from your current position to the MOB position.

Note: *To obtain a MOB position, you need position data from the GPS.*

You can clear a MOB and its data by pressing and holding the **WPTS/MOB** key. Once cleared, the chart application returns to its state prior to the MOB alarm and the GOTO and route functions are again available.

4.3   What is Displayed

The chartplotter has a built in world map. Most areas are displayed at a scale of 72 nm from the top to the bottom of the screen and can be overzoomed as desired.

Electronic Charts

To use the chartplotter as a navigation aid, you need chart cards containing detailed information for the area you wish to navigate. These cards are available from Navionics. See Chapter 1: Using the Display. For full information on installing and removing chart cards refer to Chapter 2: General Operation and System Setup.

You can remove and insert cards while a chart is displayed. The chart information is retained on-screen until the chartplotter redraws the screen, such as when you pan outside the current area or use the **RANGE** key to change the chart scale.

The amount of detail shown varies for different areas and for different scales. The chart scale in use is indicated in the status bar; the number represents the distance in nautical miles from the top of the chart window to the bottom of the chart window.

Chart Orientation and Relative Motion

You can change the way the chart is drawn in relation to your boat's position by changing the orientation and Relative Motion mode.

The orientation of the chart refers to the relationship between the chart and the direction that you are travelling in. Your system is set to move the ship's heading marker as the heading changes (North-Up). This can be changed to Course-Up or Head-Up if so desired.

The Relative Motion mode controls the chart-to-boat movement. Relative Motion is set when your boat's position is fixed and the chart moves across the screen. This can be changed so that your boat moves and the chart is fixed. The latter mode is called true motion. See "Setting the Chart Orientation" on page 96 and "Relative Motion" on page 97 for more detailed information.

4.4 The Chartplotter Display
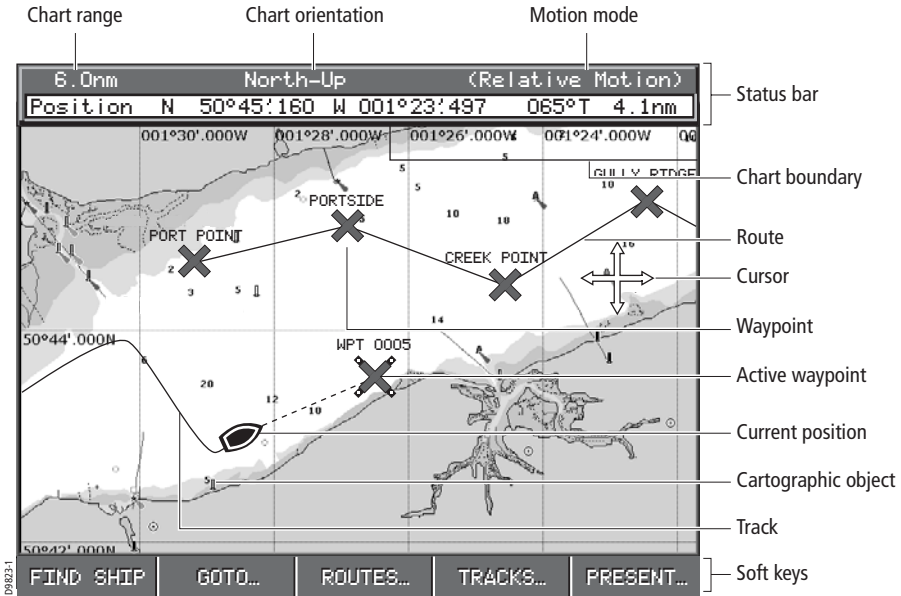
The chartplotter includes features that enable you to interpret your surroundings and make informed decisions based on your location. You can:

- View details of specific cartographic objects (see "Cursor Info" on page 23)
- Reduce the level of cartographic detail shown on the chart (see "Chart Setup Menu" on page 27) and "Simplifying the Information on the Chart (Declutter)" on page 71)
- Use the search function to find the nearest waypoints, ports, port services, wrecks, obstructions or tidal stations (see page 70)
- View details of available port services for a selected port (see "Port Services" on page 99)
- View tide data (see page 100)

Find Ship

Your boat is represented on screen by a ship symbol. If you cannot see your boat (it has travelled off-screen), press FIND SHIP. The chart is redrawn with your boat and the cursor in the center of the screen. Actually, the location of the boat on the screen depends on the current motion mode. (See "Relative Motion" on page 97.) Details of your boat's position are displayed in the Status Bar and the selected motion mode is reinstated. After five seconds of inactivity, the cursor disappears. As long as you do not press the trackpad or rotary knob, the position of your boat is fixed on the screen and the chart picture moves relative to your boat. When you again press the trackpad or rotary knob, the cursor reappears, the chart is fixed and the boat moves in perspective to fixed objects on the screen.

Notes: **(1)** *If neither heading nor COG data is available, the vessel is shown as a circle.*

(2) *To mark your current position with a waypoint, please refer to the Waypoints chapter.*

Chart Card

The chart card includes details of each cartographic object that is marked on the chart. They also contain source data for structures, lines, open sea areas, port services and tide information.

1. Make sure you have enabled the Cursor Info setting (see page 23).

2. Move the cursor over a cartographic object. The cursor turns red and basic information relating to that object is displayed. Over an area of water or land not containing a cartographic object, the chart source data is displayed.
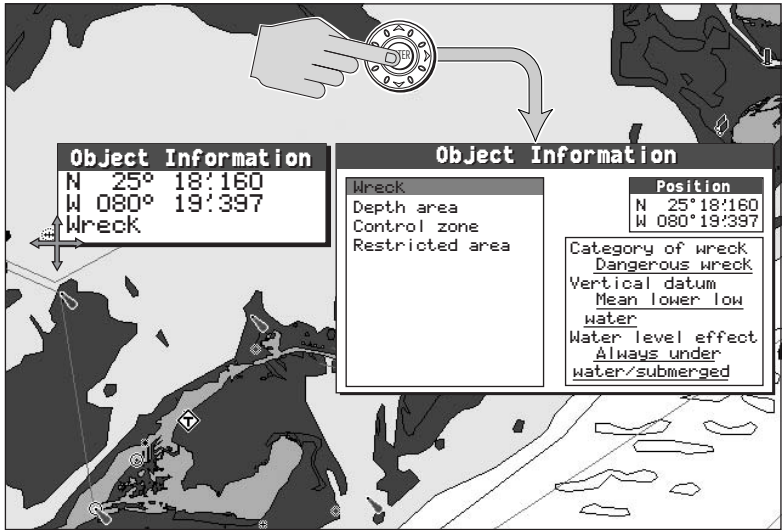
3. If you desire more detailed information, press **ENTER**. The Object Info box is re-displayed giving further details relating to the selected object.

4. In the left-hand box, highlight the desired subject area for the object you have selected. Details are displayed in the right-hand box.

Note: *To scroll through detailed information, use the trackpad to move control to the right-hand box.*

The soft keys provide controls to locate the nearest waypoint, port, port service, tidal station, wreck or obstruction to the selected position and obtain data for a named port.

Features and Services

You can use your A60 to identify and display the details of the port services, ports, tidal stations, wrecks or obstructions that are closest to the cursor position.

To obtain information for the nearest objects:

1. Move the cursor to the desired position on the chart.

2. Press **ENTER.** The Object Information box appears.

3. Press the FIND NEAREST soft key to display the list of categories available for this function:
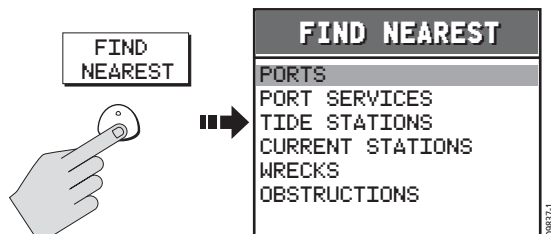
4. Use the trackpad to select the desired category.

5. Press FIND. The nearest objects to the cursor in the selected category are displayed.

6. You can now use the soft keys to:
   • Display detailed data for any of the listed objects. For ports, you can select a specific service and for a selected port service you can find the nearest ports.
   • Show the selected item on the chart.
   • View tidal data for the selected tide station.

Note: *A complete list of port services and tidal information can be found on page 99.*

Simplifying the Information on the Chart (Declutter)
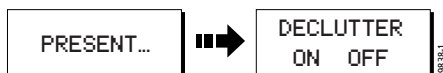
If there are a large number of cartographic objects in a particular area, you can reduce the amount of detail by decluttering the chart display. Turning on Declutter hides the following cartographic objects:

• Text
• Chart boundaries
• Spot soundings
• Depth contours
• Light sectors
• Caution & routing information
• Land and marine features

For more information on changing the appearance of the chart and cartographic data, see "Chart Setup" on page 29.

4.5   Moving around the Chart

To move around the chart and display the area at the appropriate scale, use a combination of zooming and panning.

Panning

Panning moves the chart that is displayed to a different area. To pan a chart, simply press the appropriate arrow (left/right, up/down) on the trackpad. When the cursor reaches the edge of the screen, the chart pans.

You can also use the rotary knob to fine tune cursor location. Rotate it clockwise to move the cursor up and counter-clockwise to move it down. Push in the knob to toggle direction control. Now rotate the knob clockwise to move the cursor to the right and rotate the knob counter-clockwise to move the cursor to the left.

Note: *By holding in the rotary knob while turning it and then continuing to hold it in, the cursor continues to move in the currently-selected direction until you release the knob.*

Zoom in/out

When you zoom in, the chart scale changes to show a smaller area in more detail. Conversely, if you zoom out the chart area displayed is increased but the detail is reduced.

The cartographic detail available on charts varies according to the chart and the chart scale. Some areas provide detail at smaller scales than others.

To zoom in/out around your boat:

1.   Use the trackpad to move the cursor to the desired position.
2.   To zoom in, press the lower part of the **RANGE** key.
     To zoom out, press the upper part of the **RANGE** key.

4.6   Navigating to a Specific Point

You can use your Chartplotter to navigate to a specific point marked by the cursor or to a waypoint. When you are steering manually, you can also use the chartplotter to determine the bearing or direction to steer.

Go to the cursor position

Navigating using the cursor is a quick and simple technique that involves travelling directly to a point selected by the cursor position:

1. Position the cursor at the desired destination.
2. Press GOTO. If you are currently navigating to a waypoint, following a route or already navigating to the cursor, you will need to press STOP GOTO, before the system will allow you to go to the position currently marked by the cursor.
3. Press GOTO CURSOR.
   - A temporary waypoint entitled GOTO CURSOR is placed at the cursor position.
   - A dashed Bearing from Origin to Destination (BOD) line is drawn between the vessel's original position and the temporary waypoint. This line remains unchanged as the boat moves.
   - As the boat's actual course varies from the original, a blue Bearing from Vessel to Destination (BVD) line is drawn between your current position and the waypoint. This line is redrawn as the boat approaches the way-point.
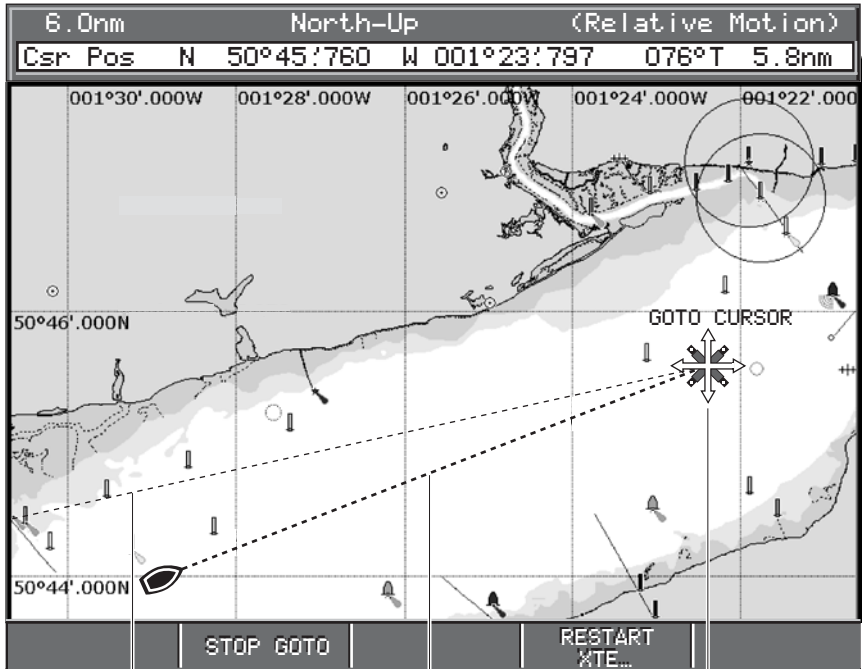
6.0nm	North-Up	(Relative Motion)

Csr Pos   N 50°45!760   W 001°23!797   076°T   5.8nm

Bearing from Origin to Destination: Bearing from Vessel to Destination: Temporary Waypoint
     dashed line marking original   dashed line marking actual   placed at cursor
     course of GOTO (unchanged)   current course of GOTO (updated)

4. When you arrive at the target waypoint an alarm sounds and a warning mes-
    sage is displayed. To de-activate this alarm, press any key.

5. To stop navigating to the cursor, press STOP GOTO. The GOTO CURSOR way-
    point is removed.

Go to a Waypoint

You can navigate to an existing waypoint by either selecting the appropriate waypoint on screen with the cursor or from the Waypoint List:

... selected with the cursor

This option navigates you to the waypoint that you select on screen.

```
    GOTO
  WAYPOINT
```
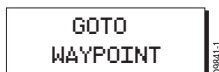
1. Move the cursor over the appropriate waypoint.
2. Press the GOTO WAYPOINT soft key.

... selected via the waypoint list

This option selects the waypoint that you wish to navigate to from the Waypoint List.

```
 WPTS
 MOB

  or

 GOTO...
```

```
 GOTO WPT
 OPTIONS...
```
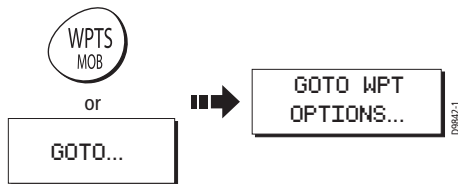
1. Press **WPTS/MOB** key or GOTO soft key.
2. Press GO TO WPT OPTIONS**.** The Waypoint List is displayed.
3. Highlight the desired waypoint in the list.
4. Press GOTO.
   • A dashed BOD line is drawn between the vessel's original position and the waypoint. This line remains unchanged as the boat moves.
   • As the boat's actual course varies from the original, a blue BVD line is drawn between your current position and the waypoint. This line is updated as the boat approaches the waypoint.

```
 1.0nm              North-Up          (Relative Motion)
 Csr Pos    N   25°18'160   W 080°19'397      076°T   5.8nm
```

WPT 0005

STOP GOTO   RESTART
                              XTE...

Bearing from Origin to Destination: Bearing from Vessel to Destination: Target Waypoint
  dashed line marking original   dashed (blue) line marking actual
  course of GOTO (unchanged)   current course of GOTO (updated)

5. When you arrive at the target waypoint an alarm sounds and a warning mes-
    sage is displayed. To de-activate this alarm, press any key.

6. To set the cross track error (XTE) to zero and move the origin to the actual ves-
    sel position press RESTART XTE. The BOD and BVD lines are now aligned.

7. To stop navigating to the waypoint, press STOP GOTO. The BOD and BVD lines
    are removed.

Note: *For more information on navigating with Waypoints, please refer Chapter 3: Work-
ing with Waypoints.*

4.7   Build and Follow a Route

This section describes how to use routes and includes the following:

• What is a Route?
• Building and Saving a Route
• Following a Route
• Displaying Routes on the Chart

Once created you have the option to view its details, amend its course, edit its name and color or erase it (see "Changing the Course of a Route" on page 88).

All route options can be accessed via the ROUTES soft key.

What is a Route?

SHOW/HIDE ROUTES	FOLLOW RTE OPTIONS...	NEW ROUTE		REV & EDIT ROUTES...

A route is a series of waypoints used to navigate a course. A route is displayed on screen as a series of waypoints linked by a line. You can build and save a route for later use, in which case the route is stored in the route list.

You can also:

• Build a temporary route that you follow immediately (Quick Route). If you do not rename a quick route, it will be overwritten and its waypoints deleted when a new quick route is built.
• Convert a track of your course into a route (see "Creating a Route from a Track" on page 86).

Building a Route

Routes can either be built on screen or via the waypoint list. A route consists of:

• New waypoints that you have specifically placed for that route.
  —or—
• Existing waypoints that are already stored in the system.
  —or—
• A combination of new and existing waypoints.

Up to 495 routes can be added to your system, each consisting of up to 50 waypoints. As each waypoint is added, it is drawn on the chart using the currently specified symbol. Once built a route can either be saved and immediately followed (Quick Route) or saved for later use.

The following should be noted:

- When a route is being built it is not active and does not affect any current navigation, until you select FOLLOW ROUTE.
- You can include a waypoint more than once in a route but the same waypoint cannot be placed consecutively.
- Waypoints used in routes count toward the 1000 waypoint maximum that can be supported by the system; they are not separate.
- You can create a new route when the route list is full but on saving this, you are prompted to choose an existing route to overwrite.

Building Routes using Waypoints on Screen

You can build a route on screen that consists of either new or existing waypoints.

... using new waypoints

You can build routes using a series of new waypoints.

1. Press ROUTES and then NEW ROUTE.
2. Press PLACE WAYPOINT.

    A new waypoint is placed at the cursor's position.

    - If you make an error when you are building your route and wish to remove the last waypoint, press UNDO WAYPOINT. The waypoint and its dotted line are removed from the screen and the cursor moves back to the previous waypoint. If you repeatedly press these keys, successive waypoints are removed.
    - If you wish to abandon the route that you are building, press **CANCEL**. You are asked to confirm your request to delete the route.

3. Move the cursor to the next position.

    The cursor is joined to the waypoint with a dashed line. As subsequent waypoints are added, the dashed line becomes a solid line.
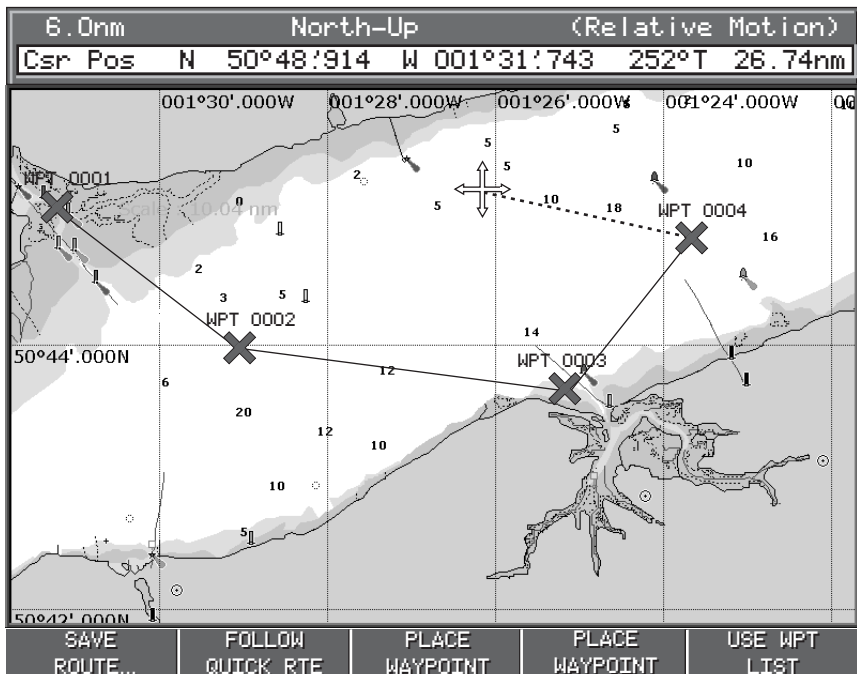
4. Continue entering new waypoints until your route is complete.

5. To save the route for later use (and rename it if desired):
Press SAVE ROUTE or **ENTER**. The Edit Route dialog box is displayed. Press **ENTER** to accept the defaults. You can edit the route (see page 87).

—*or*—

To save and immediately follow the built route:
Press FOLLOW QUICK RTE. The route is saved under the name 'Quick Route'. If a Quick Route already exists it is overwritten. The system then initiates a follow route.

Note: *If you want to keep the Quick Route, you will need to rename it. See "Changing the Name or Color of a Route or Track" on page 93.*

... using existing waypoints

You can use waypoints that already exist to build a new route.
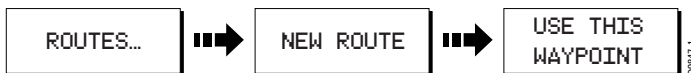
1. Move the cursor over the appropriate waypoint.
2. Press USE THIS WAYPOINT to include this waypoint in the current route.
   - If you make an error when you are building your route and wish to remove the last waypoint, press UNDO WAYPOINT. The dotted line joining it to the route is deleted (but not the waypoint itself). The cursor moves back to the previous waypoint. To remove successive waypoints, press this key repeatedly.
   - If you wish to abandon the route that you are building, press **CANCEL**. You are asked to confirm your request to delete the route.
3. Continue entering waypoints until your route is complete.
4. To save the route for later use (and rename it if desired):
   Press SAVE ROUTE or **ENTER**. The Edit Route dialog box is displayed. You can edit the route name or color or press **ENTER** to accept the defaults.
   —or—
   To save and immediately follow the route:
   Press FOLLOW QUICK RTE. The route is saved under the name 'Quick Route'. If a Quick Route already exists it is overwritten. The system then initiates a follow route.

Note: *If you want to keep the Quick Route, you will need to rename it (see "Changing the Name or Color of a Route or Track" on page 93).*

Building Routes Using the Waypoint List

NEW ROUTE	➠	USE WPT LIST	➠	INSERT WAYPOINT
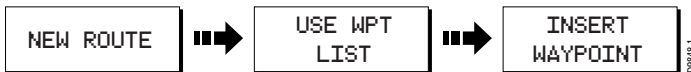
You may want to build routes using existing waypoints in the waypoint list:

1. From the NEW ROUTE option, press USE WPT LIST. The Make Route list is displayed.
2. Highlight the desired waypoint in the left hand (Waypoint) column, by using the trackpad (up/down) or the rotary knob.
3. Press INSERT WAYPOINT.
   - The waypoint highlighted in the waypoint column is added to the right hand (New Route) column.
   - If you insert a waypoint incorrectly into a route you are building, you can remove it by highlighting the waypoint in the New Route column and then pressing the REMOVE WAYPOINT key. The remaining waypoints close up to fill the gap.
4. Continue entering waypoints until your route is complete.

5. To save the built route for later use (and rename it if desired):
   Press SAVE ROUTE.

   To save and immediately follow the built route:
   Press FOLLOW QUICK RTE.

Following a Route

There are three different ways that you can follow a route:

- Using Quick Route
  —or—
- Using the Cursor
  —or—
- Via the Route List

In addition to these basic options you can also follow a route in reverse order or advance to the next waypoint in a route that you are currently following.

Note: *If you power off the A60 using the PWR key while following a route, you will automatically continue to follow the route when you power the unit on again.*
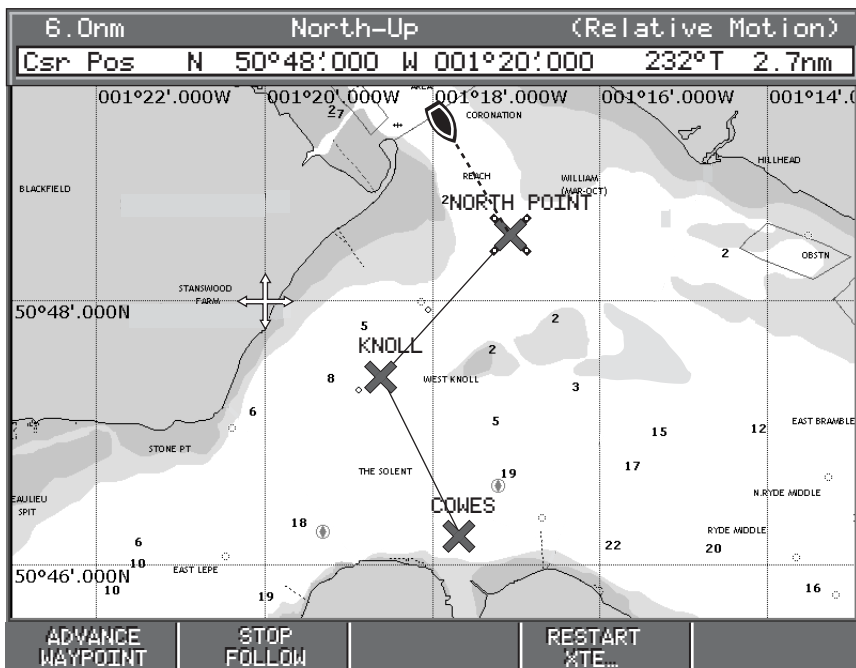
When you are navigating a route the chart displays the following:

- Your boat's heading indicated by a dashed line between your current position and the target waypoint.
- The target waypoint is highlighted.
- When the distance to the waypoint is less than that specified for the arrival alarm radius (see "Navigation Alarms Setup" on page 36), or your boat reaches the closest point to the target, a warning dialog is displayed and an alarm sounds.
- After the alarm has sounded or is acknowledged (depending upon how you have set Waypoint Advance—see page 36), the system updates the display to indicate the next leg of the route.
- You can stop following an active route at any time by pressing STOP FOLLOW.

Using Quick Route
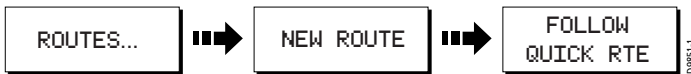
This option follows a route as soon as it is built.

To save and immediately follow a route while building it, press FOLLOW QUICK RTE. The route is saved under the name 'Quick Route'. The system then initiates a follow route.

If you do not rename a Quick Route or if another Quick Route already exists, it is overwritten and its waypoints deleted when a new Quick Route is built.

Using a Selected Waypoint within the Route

1. Move the cursor over the appropriate waypoint.
2. Press FOLLOW FROM HERE.

Note: *To stop following an active route at any time, press STOP FOLLOW.*

Using the Route List

This option directs you to the start of the route that you have selected on the route list and then follows it:

```
┌─────────────┐        ┌─────────────┐
│  ROUTES…    │  ▮▮➤   │ FOLLOW RTE  │
│             │        │  OPTIONS…   │
└─────────────┘        └─────────────┘ D983-1
```
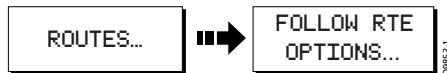
1. Press ROUTES.
2. Press FOLLOW RTE OPTIONS. The route list is displayed.
3. Select the appropriate route on the list.
4. Press FOLLOW ROUTE.
5. To stop following an active route at any time, press STOP FOLLOW.

Note: *This option can also be accessed via the GOTO soft key.*

Advance to the Next Waypoint within a Route

```
┌─────────────┐
│ FOLLOW RTE  │
│  OPTIONS…   │
└─────────────┘
```
-or-
```
┌─────────────┐        ┌─────────────┐
│   GOTO…     │  ▮▮➤   │  WAYPOINT   │
│             │        │   ADVANCE   │
└─────────────┘        └─────────────┘ D9854-1
```
-or-
```
┌─────────────┐
│  GOTO WPT   │
│  OPTIONS…   │
└─────────────┘
```
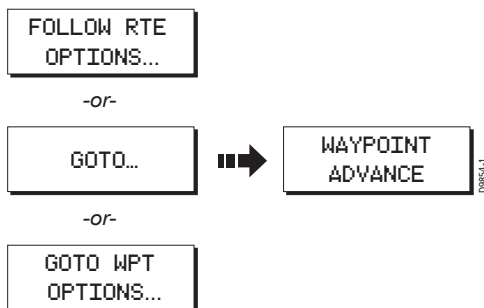
By default, you are advanced to the next waypoint in the route as soon as the Arrival Alarm sounds, signifying that you have travelled within the arrival radius of the target waypoint. If you require more precise route control, you can select the manual waypoint advance feature in the Alarm Setup menu (see page 36). When set to MANUAL, you must acknowledge the alarm and then press WAYPOINT ADVANCE before continuing to the next waypoint. When following a route, the WAYPOINT ADVANCE soft key is available:

- by pressing ROUTES and then FOLLOW RTE OPTIONS
- by pressing GOTO
- by pressing the **WPTS** key and then GOTO WPT OPTIONS soft key
- when the Temperature Graph page is active

Reverse Route

This option reverses the waypoint order in the selected route and then follows it.

ROUTES…	▮▮➡	FOLLOW RTE OPTIONS…	▮▮➡	REVERSE ROUTE

D9855-1

1. Press ROUTES.
2. Press FOLLOW RTE OPTIONS. The route list is displayed.
3. Select the desired route on the list.
4. Press REVERSE ROUTE. The route is reversed; the last waypoint of the original route is now the first, the waypoints renumber and the route name moves accordingly.

   The system then automatically activates the follow route function.

Note: *To stop following an active route at any time, press STOP FOLLOW.*

4.8 Using Tracks

A track is an on-screen trail that represents the course you have taken. This trail is made up of a series of track points that are created automatically. You can save the track to create a permanent record of where you have been. All track functions described in this section are accessed via the TRACKS soft key.
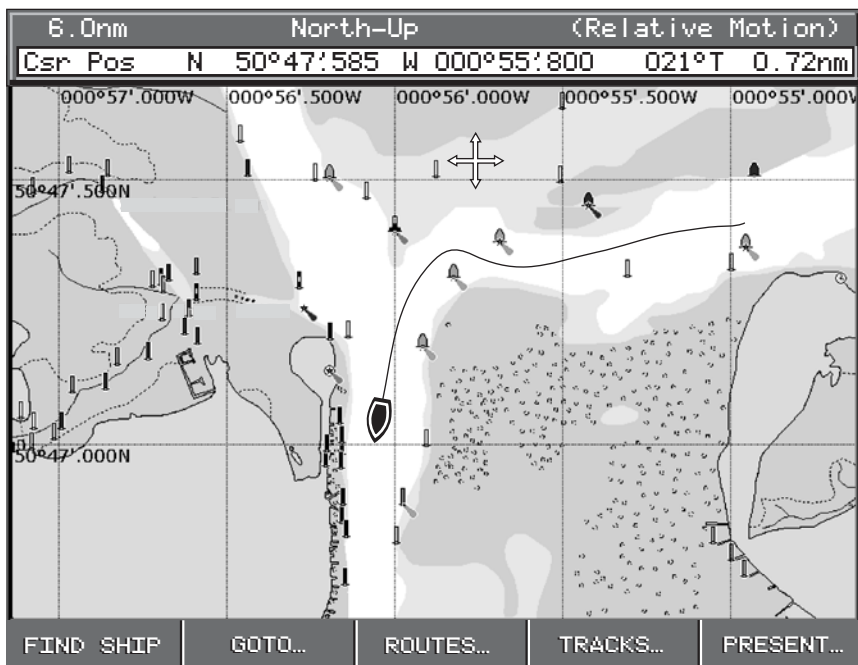
Tracks can be used to:

- Review where you have been
- Retrace your original journey by converting the track to a route and automatically reversing it

Your A60 can store up to 16 tracks, using up to 1000 track points each. If necessary, you can save tracks to a CF card (see "Saving and Retrieving Data" on page 44). You also have the option to personalize your tracks by renaming them or changing their color.

Creating a Track

To start tracking...

```
TRACKS…      ▶    START
                  TRACK
```
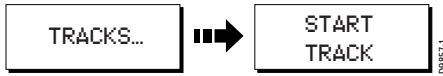
Press START TRACK.

A track starts to be laid from the stern of the boat using the minimum number of track points necessary. If the maximum number of 1000 track points is reached, you will be warned. The track will continue to be recorded with the earlier tracking points being overwritten.

Track points are separate from waypoints, and do not count against the total number of waypoints or routes that the system can support.

If the power fails while a track is being recorded or the position fix is lost, a break occurs in the track. In this case a dashed line fills in the gap from the point where the fix was lost to where it was reestablished. Only the last (non-dashed) segment will be converted into a route.

To stop tracking...

```
TRACKS…      ▶    STOP
                  TRACK
```
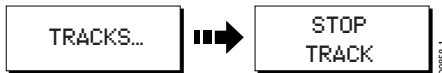
To stop laying a track, press STOP TRACK.

You are then asked what you want to do with your track:

- To save this track, press SAVE TRACK. The Edit Track box is displayed to enable you to change the track's name or color. See *"Changing the Name or Color of a Route or Track" on page 93*.
- To delete this track from the system, press DISCARD TRACK. A warning message is displayed.
- To resume tracking, press CANCEL STOP TRACK.

Creating a Route from a Track

Creating a route from a track enables you to retrace a saved track. When a track is converted the system creates the closest route through the recorded track, using up to 50 waypoints (or as many waypoints that are remaining in the 1000 waypoint maximum that the system can support, if less than 50).

On completion, the new route is added to the route list. It can now be displayed, edited and erased in the same way as other routes in the system.

CAUTION: The converted route only approximates the track from which it was created. Because it is comprised of a maximum of only 50 waypoints, the route may not be as detailed as the original track, which was constructed from as many as 1000 track points. Inspect your new route before using it to ensure that it does not encounter any navigational hazards, especially if the path approaches land.

To create a route from a track that you have already saved:

```
TRACKS…    ➠    CREATE RTE    ➠    MAKE INTO
                FROM TRACK          ROUTE
```

1. Press CREATE RTE FROM TRACK The track list is displayed.
2. Highlight the track from which you wish to create the route.
3. Press MAKE INTO ROUTE. The system generates the route with a default name.
4. If desired, change the route name or color. See *"Changing the Name or Color of a Route or Track"* on page 93.

4.9 Editing Routes and Tracks

After you have created a route or track, it can be edited in a variety of ways. You can:

•   Reverse a route (following section)
•   Amend the course of a route (see page 88)
•   Change the name of a route or track (see page 93)
•   Change the color of a route or track (see page 93)
•   Erase a route or track (see page 94)

For a route or track to be edited it must first be selected.

Note: *An active route can be edited, with the exception of the target waypoint. If a waypoint being edited becomes the target, the system cancels the edit and the waypoint remains in its original position.*

Reversing a Route

You can reverse the course of a route as follows:

1. Press ROUTES and then FOLLOW RTE OPTIONS. The route list and associated soft keys are shown.
2. Select the appropriate route.
3. Press REVERSE ROUTE. The route name moves to new starting point and the waypoints within the route renumber accordingly.

Changing the Course of a Route
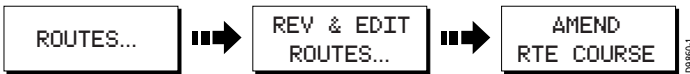
You can amend the course of a route by:

- Adding a waypoint to the route
- Moving a waypoint within a route
- Removing a waypoint

You can accomplish these changes in two different ways:

- Edit the route using the Make Route dialog box. This method modifies the route by identifying which existing waypoints are used in the route and in what order. It does not alter the waypoints themselves.
- Select the individual waypoint(s) on screen with the cursor and then use the appropriate soft keys to modify the route. This method actually adds, moves or erases waypoints.

Using the Make Route Box

... to add a waypoint

This option changes the course of a route by adding an existing waypoint to the route:

1. Select the appropriate route for editing via the REV & EDIT ROUTES soft key.
2. Press AMEND RTE COURSE.
3. Press USE WPT LIST. The Make Route screen is displayed.
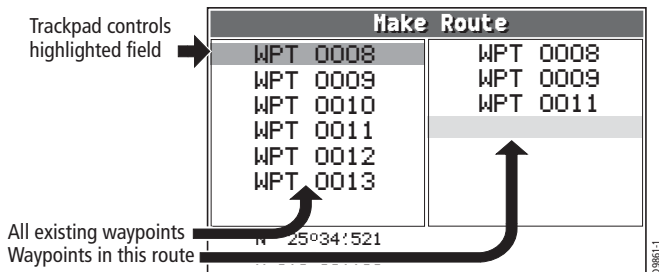
Trackpad controls highlighted field

Make Route

WPT 0008	WPT 0008
WPT 0009	WPT 0009
WPT 0010	WPT 0011
WPT 0011	
WPT 0012	
WPT 0013	

All existing waypoints
Waypoints in this route

N 25°34:521

D9861-1

4. Use the trackpad (right) to move control from the left (Waypoint) column to the right (New Route) column.

5. Use the trackpad (up) to move the highlight immediately below where you want the new waypoint inserted. The route follows the waypoints listed in this column in order, from top to bottom.

then

Make Route

WPT 0008	WPT 0008
WPT 0009	WPT 0009
WPT 0010	WPT 0011
WPT 0011	
WPT 0012	
WPT 0013	

N 25°34:521   N 25°33:055
W 079°01:755   W 079°56:151

D9862-1
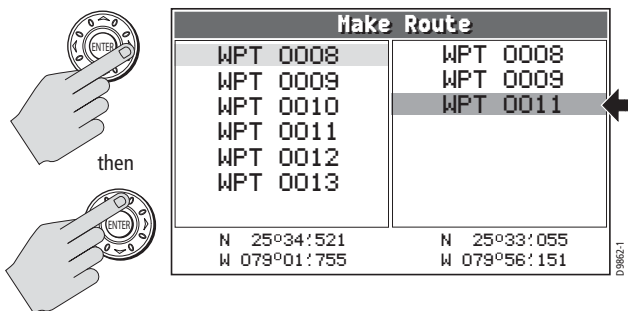
6. Move control back to the left column and select the waypoint that is to be added to your route.

then

Make Route

WPT 0008	WPT 0008
WPT 0009	WPT 0009
WPT 0010	WPT 0011
WPT 0011	
WPT 0012	
WPT 0013	

N 25°28:205   N 25°33:055
W 079°39:759   W 079°56:151

D9863-1

7. Press INSERT WAYPOINT. The waypoint is added.

```
                    ┌─────────────────────────────────┐
                    │          Make Route             │
┌──────────────┐    │  WPT  0008  │  WPT  0008         │
│   INSERT     │    │  WPT  0009  │  WPT  0009         │
│  WAYPOINT    │    │  WPT  0010  │  WPT  0010   ◄──── │
└──────────────┘    │  WPT  0011  │  WPT  0011         │
                    │  WPT  0012  │                    │
                    │  WPT  0013  │                    │
                    │                                  │
                    │  N  25°28.205  │  N  25°33.055   │
                    │  W 079°39.759  │  W 079°56.151   │
                    └─────────────────────────────────┘
```
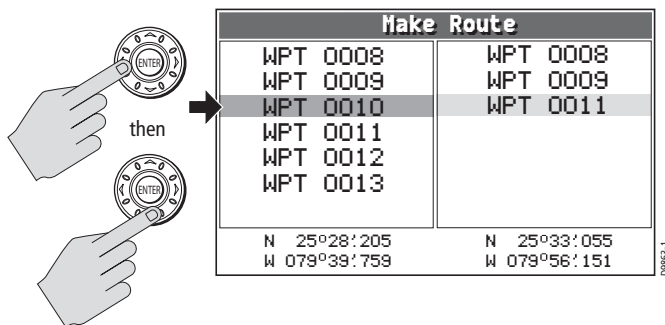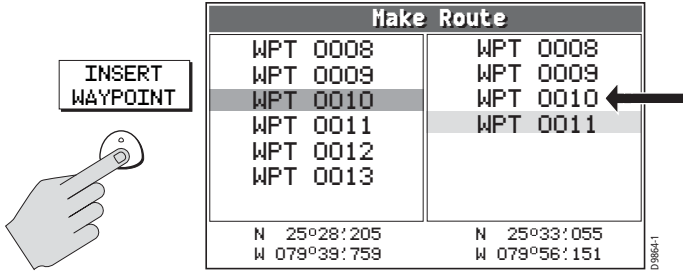
8. Press SAVE ROUTE. The new leg is incorporated into the route.

Note: *If you are adding a waypoint to an active route (a route that you are currently following), the change does not take effect until after you have halted the route by pressing STOP FOLLOW.*

... to remove a waypoint

This option changes the course of a route by removing a waypoint from the route:

1. Access the Make Route screen using the method described in the previous section "... to add a waypoint".

2. Use the trackpad (right) to move control from the left (Waypoint) column to the right (New Route) column.

3. Use the trackpad (up) to highlight the waypoint you want to delete.


```
              then        ┌─────────────────────────────────┐
                          │          Make Route             │
                          │  WPT  0008  │  WPT  0008         │
                          │  WPT  0009  │  WPT  0009         │
                          │  WPT  0010  │  WPT  0011   ◄──── │
                          │  WPT  0011  │                    │
                          │  WPT  0012  │                    │
                          │  WPT  0013  │                    │
                          │                                  │
                          │  N  25°34.521  │  N  25°33.055   │
                          │  W 079°01.755  │  W 079°56.151   │
                          └─────────────────────────────────┘
```
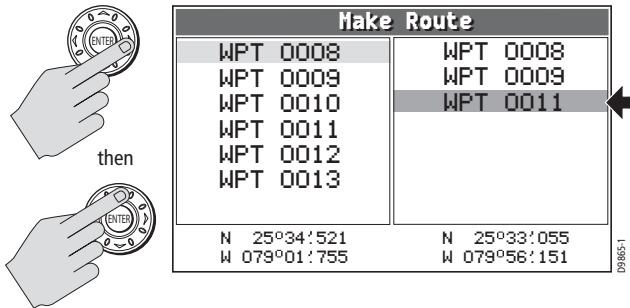
4. Press REMOVE WAYPOINT.

5. Press **ENTER**. The selected waypoint is removed from the right-hand (New Route) column but not from the left-hand (Waypoint) column, that is, it is removed from the route but not actually deleted from the chart. The route automatically joins the two waypoints on either side of the waypoint you just deleted. This occurs in all routes that contained the newly-removed waypoint.

Note: *If you are removing a waypoint from an active route (a route that you are currently following), the change does not take effect until after you have halted the route by pressing STOP FOLLOW.*

CAUTION:

When you remove waypoints from a route, the stored route joins the two waypoints on either side of the waypoint just eliminated. Ensure that this altered route does not present a navigation hazard.

... to relocate a waypoint within the route

This option alters the course of a route by changing the order in which you travel to the waypoints in the route:

1. Access the Make Route screen using the method described in the previous section "... to add a waypoint".
2. Use the trackpad (up) to highlight the new waypoint you want to move.
3. Press REMOVE WAYPOINT. The selected waypoint disappears from the list.
4. Use the trackpad to move the highlight immediately below the position where you want the waypoint to be relocated.
5. Move control back to the left column and re-select the waypoint that you just removed from your route.
6. Press INSERT WAYPOINT. The waypoint is returned to the route in the new position.
7. Press SAVE ROUTE.

Note: *If you are moving a waypoint in an active route (a route that you are currently following), the change does not take effect until after you have halted the route by pressing STOP FOLLOW.*

Using the Cursor On Screen

... to add a waypoint

This option changes the course of a route by adding a new waypoint or incorporating an existing waypoint to the end of the route:

1. Select the appropriate route for editing via the REV & EDIT ROUTES soft key.
2. Press AMEND RTE COURSE. The cursor is joined to the last waypoint in the route with a dashed line.

3. Move the cursor over an existing waypoint and select USE THIS WAYPOINT to add it to your route.

    —or—

    Move the cursor to the desired location and select PLACE WAYPOINT to create a new waypoint for your route.

    The dashed line changes to a solid line to indicate that the new leg has been added to the end of your route.

4. Add more waypoints to the end of the route by repeating the previous steps.

5. Press SAVE ROUTE when finished.

Note: *If you are adding a waypoint to the end of an active route (a route that you are currently following), the change does not take effect until after you have halted the route by pressing STOP FOLLOW.*

... to erase a waypoint

This option changes the course of a route by removing an existing waypoint from the chart and, therefore, from the route:

1. Move the cursor over the waypoint that is to be removed. The cursor turns red and the action soft keys appear.

    Note: *If you place the cursor over the waypoint to which you are currently navigating (the active waypoint), the STOP FOLLOW soft key appears in place of the action keys. You must stop the goto before erasing this waypoint.*

2. Press REMOVE WAYPOINT. A message is displayed warning you that this waypoint is used in a route.

3. Press **ENTER**. The selected waypoint is erased from the route and the chart. The route automatically joins the two waypoints on either side of the waypoint you just deleted. This occurs in all routes that contained the newly-deleted waypoint.

CAUTION:

When you erase waypoints that are used in routes, the stored route joins the two waypoints on either side of the waypoint just erased. Ensure that this altered route does not present a navigation hazard.

... to move a waypoint

This option changes the course of a route by repositioning an existing waypoint in the route:

1. Move the cursor over the waypoint that is to be moved. The cursor turns red and the action soft keys appear.

   Note: *If you place the cursor over the waypoint to which you are currently navigating (the active waypoint), the STOP FOLLOW soft key appears in place of the action keys. You must stop the goto before moving this waypoint.*

2. Press MOVE WAYPOINT.

3. Drag the cursor to select the position where you want the waypoint to be placed and press the PLACE WAYPOINT soft key.

   The waypoint moves and the solid line rejoins the route in the new location.

Changing the Name or Color of a Route or Track

ROUTES...	➡	REV & EDIT ROUTES...	➡	EDIT ROUTE NAME & COLOR...

TRACKS...	➡	REV & EDIT TRACKS...	➡	EDIT TRACK NAME & COLOR...
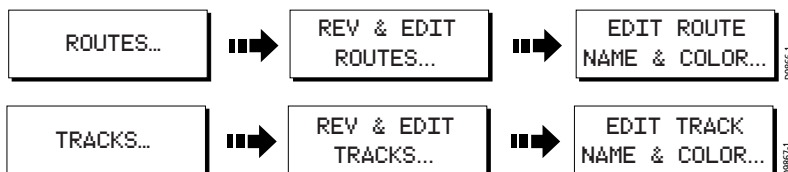
You can change the name for a more meaningful one and/or change the color if desired. This will make them easier to distinguish from one another, particularly if you have numerous routes or tracks in your system.

To change the route or track name/color proceed as follows:

1. Press REV & EDIT ROUTES or REV & EDIT TRACKS.
2. Select the appropriate route or track from the list.
3. Press EDIT ROUTE NAME & COLOR or EDIT TRACK NAME & COLOR.
   The edit screen is displayed.
4. Press NAME or COLOR to access the appropriate editing option.
5. Edit the desired setting using the trackpad or rotary knob.
6. Press **ENTER** to save your selection.
   The route or track list is updated accordingly.
7. Press **ENTER** again to return to the chart.

Note: *If the route has been saved by pressing FOLLOW QUICK RTE, the route is named 'Quick Route'.*

Erasing a Route or Track
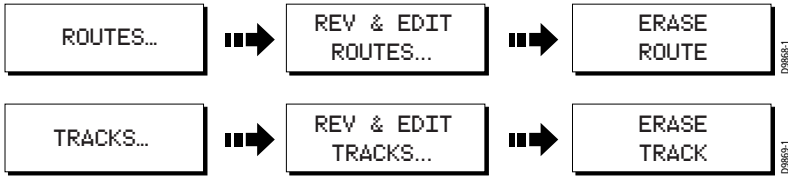
You can delete any route or track in your system except for the one that you are traveling to.

1. Select the appropriate route or track.
2. Press ERASE ROUTE or ERASE TRACK.
   A warning box is displayed asking you whether you want to proceed.
3. If you choose to proceed, the route or track is erased.

When you erase a route the system deletes only those waypoints created with this particular route, that is, dropped using the cursor when making a new route. Waypoints that have been created separately, are used in other routes, or have been modified using the EDIT WAYPOINT menu (symbol, name, lat/lon, comment) are not deleted.

Note: *If you attempt to edit an active route, the ERASE ROUTE soft key is grayed out.*

4.10 Monitoring Where You Are Going

... using Chart Vectors

You can display graphical indicators to help monitor where you are going.

Heading (HDG) and Course Over Ground (COG) Vectors
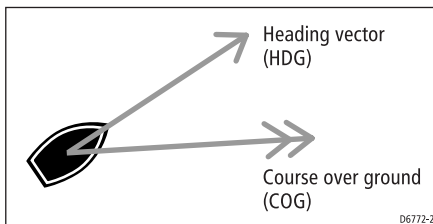
Heading (HDG) is displayed as a red line with an open arrowhead. It does not take account of winds or tides. Course Over Ground (COG) indicates the boat's actual course and is displayed as an amber line with two arrowheads. HDG and COG vectors correspond to the centerline displayed in the Digital Compass (page 40).

Vectors are set on and off using the Vector Length option in the Chart Setup menu, as described on page 32. The length of these lines is determined by the distance your boat will travel in the time you have specified (3 mins, 6 mins or infinite) at the current speed.

If INFINITE is selected the vector will extend to the edge of the chart window.

Note: *If the course over ground (COG), speed over ground (SOG), or heading (HDG) are not available, the corresponding vector cannot be displayed.*

... using Cross Track Error (XTE)
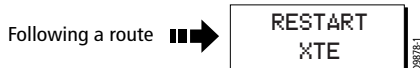
Following a route

When you are following a route or going to a waypoint, you can restart the XTE. This sets the XTE to zero and moves the origin to the actual vessel position.

Restarting XTE is useful if you find yourself off track and want to go straight to your target, rather than get back onto the original track.

... using the Course Deviation Indicator (CDI)
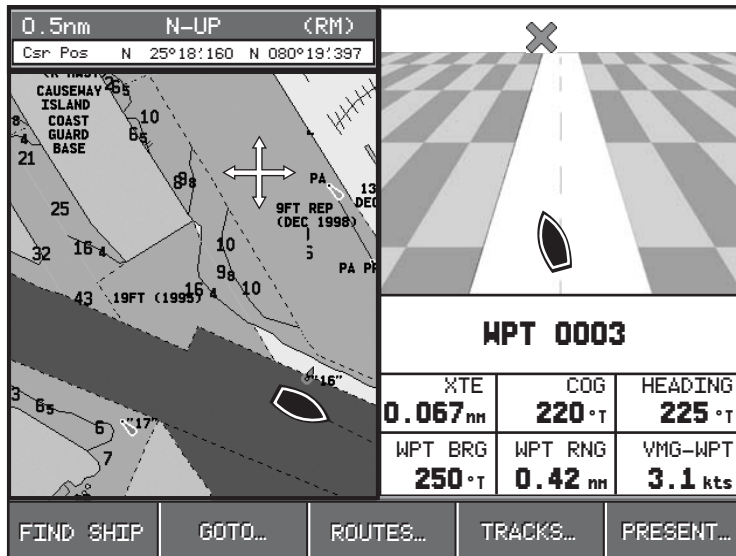
The CDI assists with accurately maintaining your course to your destination. A 'rolling road' in three dimensional perspective provides a real-time display of your boat's course.

4.11 Changing What is Displayed in the Chart Window

The chart screen can be tailored to your particular needs. You can:

- Change how the chart is oriented (see page 96)
- Change the boat position (motion mode) in relation to the chart (see page 97)
- Show or hide the chart grid (see page 98)
- Show or hide waypoints (see page 98)
- Choose which routes and tracks are displayed (see page 98)
- Switch the preset list of cartographic objects on or off (Declutter—page 71)
- Show or hide chart vectors for COG and heading (see page 94)

Setting the Chart Orientation
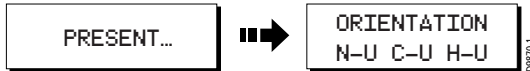
The orientation of a chart refers to the relationship between the chart and the direction that you are travelling in. It is used in conjunction with Relative Motion mode (see page 97) to control how your boat and chart relate to one another and how they are displayed on screen. The current chart orientation mode is indicated in the Status Bar (see page 24). The mode that you choose is restored at power up and consists of the following:

North Up (N-UP)

In North Up mode, the chart orientation is fixed with true north upwards. As your heading changes the boat symbol moves accordingly. This is the default mode for the chart application. When this setting is selected, the indicator 'North-Up' or 'N-UP' appears in the Status Bar in white text.

Head Up (H-UP)

Head Up mode displays the chart with your boat's current compass heading upwards. This setting requires heading data from an optional compass. As the heading changes the boat symbol remains fixed and the chart picture rotates accordingly. As long as heading data is received, the indicator 'Head-Up' or 'H-UP' appears in the Status Bar in white text. If heading data is lost, the indicator changes to '(Head-Up)' or '(H-UP)' in amber text.

Course Up (C-UP)

In Course Up mode, the chart picture is stabilized and shown with your current course over ground (COG) upwards. As your boat's COG changes, the ship symbol moves accordingly. If you select a new course, the picture will reset to display the new course upwards. As long as course data is received, the indicator 'Course-Up' or 'C-UP' appears in the Status Bar in white text. If course data is lost, the indicator changes to '(Course-Up)' or '(C-UP)' in amber text.

Relative Motion

Relative Motion refers to the relationship between the chart and your boat when moving. Relative Motion mode is set when you press FIND SHIP. The position of your boat is fixed on the screen and the chart picture moves relative to your boat. The RELATIVE MOTION indicator appears in the Status Bar at the top of the screen in white text and without parentheses.
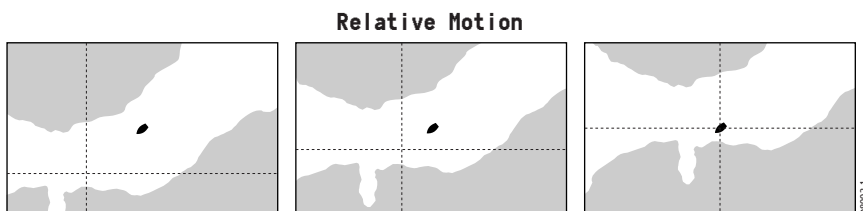
Relative Motion

When you pan the chart, the cursor is no longer placed over the boat and Relative Motion is suspended. This enables you to view another area of the chart while navigating. This mode is also referred to as true motion because the chart is fixed and the boat moves in true perspective to fixed landmasses on the screen.

In True mode, RELATIVE MOTION indicator in the Status Bar now appears in amber text and is encased in parentheses '( )'. To reset Relative Motion and return your boat to the center of the screen, press FIND SHIP.

Note: *This setting is returned to Relative Motion at power-on.*

(Relative Motion)
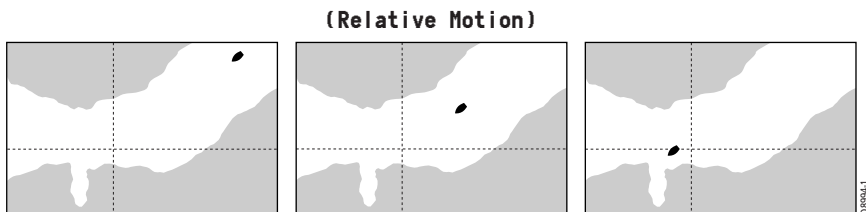
Hiding the Chart Grid

The display of grid lines on the chart is controlled via the Chart Setup Menu.

Hiding Waypoints/Waypoint Information

You can show or hide a waypoint's name or the entire waypoint. These options are particularly useful when you have placed a large number of waypoints in a small area and rendered your chart difficult to interpret. For more information please refer to Chapter 3: Working with Waypoints.
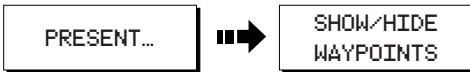
You can show or hide waypoint details:

1. Press PRESENT... from the main chart screen.
2. Press the SHOW/HIDE WAYPOINTS soft key.
3. Make selections as appropriate:
   - Toggle WAYPOINTS to SHOW or HIDE.
   - Toggle WAYPOINT NAME to ON or OFF.

Hiding a Route or a Track
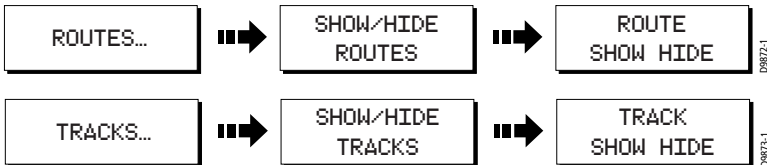
To show/hide a route or track:

1. Press SHOW/HIDE ROUTES or SHOW/HIDE TRACKS.
   The Route/Track list is displayed.
2. Select the desired route or track from the list.
3. Press ROUTE or TRACK to toggle between HIDE or SHOW as appropriate.

4.12 Port Services

You can display details of port services either by selecting the appropriate port symbol with the cursor or by using the port search option.

1. Place the cursor over the symbol for the desired port.
   If you have enabled CURSOR INFO, the cursor turns red and a pop-up appears.

2. Press **ENTER**. The Object Information box expands to display (in the left-hand field) the selected port and a list of other cartographic objects in the area, if available.

3. If multiple objects are displayed, use the trackpad or rotary knob to highlight the desired port. Details for the selected port are displayed in the lower right-hand field.

4. Use the trackpad to highlight a service that is offered at the selected port.

5. Press the INFORMATION soft key to display details about the selected port service.

6. Press the BACK soft key to return.
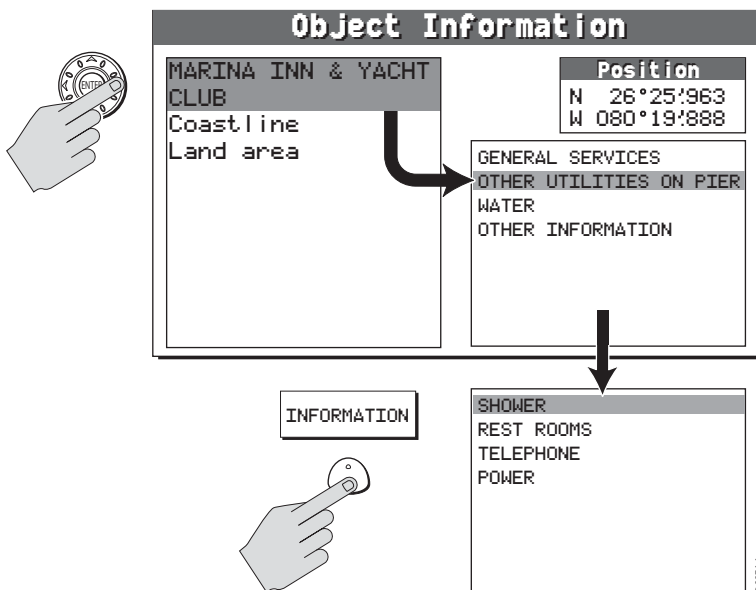
Search for a Port

The port search option enables you to locate the nearest port and display its available services.

1. Press **ENTER** anywhere on the screen. The Object Information box is displayed.

2. Press FIND NEAREST. The Find Nearest box is displayed.

3. Use the trackpad arrows to highlight PORTS.
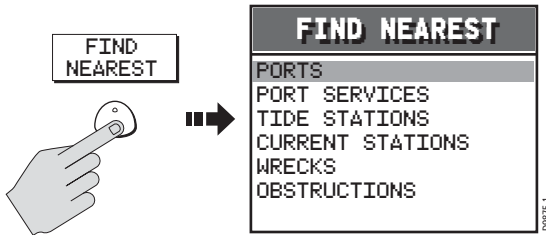
4. Press FIND. The ports within your vicinity are displayed in the Object Information box.

5. Use the trackpad to select the appropriate port. A list of the facilities and services available at that port are displayed in the right hand column.

6. Press the trackpad to highlight the particular service of interest in the right hand column.

7. You can now:

   • Press INFORMATION to display the available facilities and services in more detail.

   • Press SHOW ON CHART to center the screen on the selected port.

4.13 Tides

You can display details of tides by selecting the appropriate Tide diamond symbol with the cursor.

1. Place the cursor over the desired Tide diamond symbol.
   If you have enabled CURSOR INFO, the cursor turns red and a pop-up appears.

2. Press **ENTER**. The Object Information box expands to display (in the left-hand field) the selected tide station and a list of other cartographic objects in the area, if available.

3. If multiple objects are displayed, use the trackpad or rotary knob to highlight the desired tide station. Details for the selected tide station are displayed in the lower right-hand field.

4. Press the soft key to display tide information for the appropriate day: TODAY, PREV DAY or NEXT DAY. The date for which this information pertains is displayed to the left of the Position field.
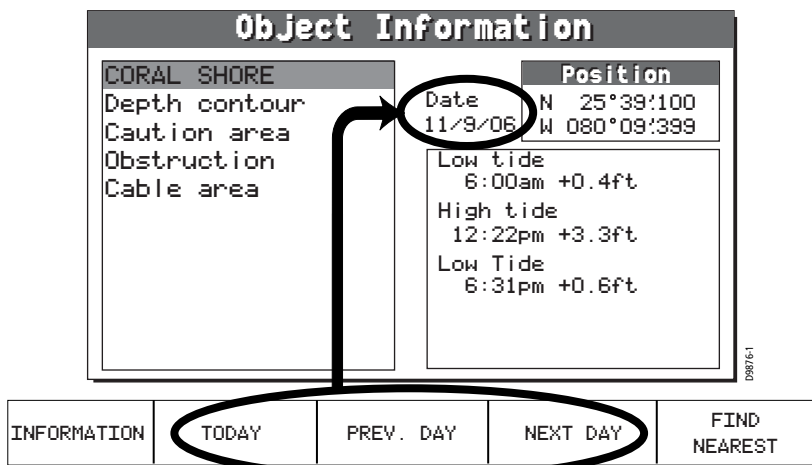
5. You can now:
    *   Press SHOW ON CHART to center the screen on the selected tidal station.
    *   Press INFORMATION to display the tidal curve:

CORAL SHOAL

CURSOR... 2:12pm +2.2ft

	Position
Date	N 25°39'.100
11/9/06	W 080°09'.399

High tide
  6:00am +4.3ft
Low tide
 11:31pm +1.1ft
High Tide
  18:22pm +4.4ft

D9877-1
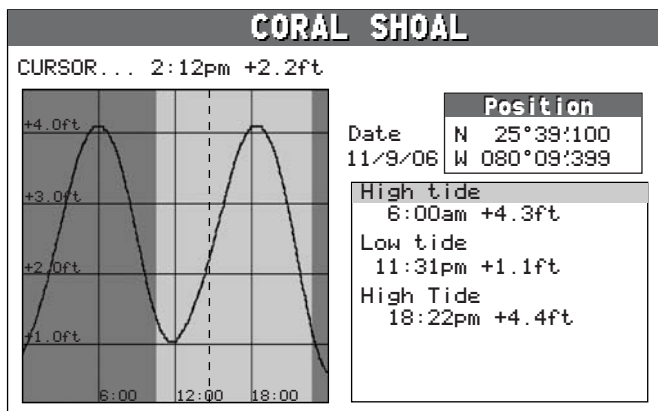
	TODAY	PREV. DAY	NEXT DAY	

Appendix: Glossary

Term	Meaning
°C	Degrees Centigrade
°F	Degrees Farenheit
Active Leg	In a route, the segment you are currently traveling.
amp	Amperes
Auto	Automatic
Bearing	The compass direction from your position to a waypoint, measured to the nearest degree. The bearing is expressed either as a true bearing as shown on the chart or as a bearing relative to the heading of the boat.
Bearing from Vessel to Destination (BVD)	When following a waypoint, this is a blue dashed line that is drawn between your current position and the waypoint as the boat's actual course varies from the original. Unlike the BOD, BVD line is updated as the boat approaches the waypoint.
Bearing from Origin to Destination (BOD)	When following a waypoint, this is a dashed line that is drawn between the vessel's original position and the waypoint. Unlike the BVD, the BOD line remains unchanged as the boat moves.
Boat Speed	Also known as paddlewheel speed, this represents the speed of your boat through the water as measured by a paddlewheel impeller, such as the one in a fishfinder transducer. This measurement differs from Speed over Ground (SOG), as it does not take into account current, wind or other sea conditions that may impede forward progress.
BOD	Bearing from Origin to Destination
BVD	Bearing from Vessel to Destination
CDI	Course Deviation Indicator
CMG	Course Made Good
COG	Course Over Ground

Coordinated Universal Time (UTC)	The world standard for time that takes into account the addition or omission of leap seconds by atomic clocks each year to compensate for changes in the rotation of the earth. Like Greenwich Mean Time (GMT), UTC is based on the mean solar time for Greenwich, England, which is located on the Prime Meridian (zero longitude). UTC time is expressed as plus or minus hours of UTC.
Course Deviation Indicator (CDI)	A graphical representation of your boat's course in a 'rolling road' format that displays the amount and direction of cross track error (XTE). Steering instructions on the screen tell you what correction is needed to maintain your course and arrive at the target waypoint.
Course Made Good (CMG)	The bearing from your starting point to the current position.
Course Over Ground (COG)	Indicates the boat's actual course relative to a ground position, as measured by the GPS. This differs from your Heading, which does not take into account current, wind or other sea conditions that may alter your course.
Course Up Orientation	Displays the chart with your current course upwards. As your boat's heading changes, the ship symbol moves accordingly. If you select a new course, the picture resets to display the new course upwards.
Cross Track Error (XTE)	The distance you are off the desired course in either direction.
DC	Direct Current
DSM	Digital Sounder Module
GPS	Global Positioning System
Head Up Orientation	Displays the chart with your boat's current heading upwards. As the heading changes the boat symbol remains fixed and the chart picture rotates accordingly.
Heading	The direction the boat is moving, as measured by a compass. This measurement differs from Course Over Ground (COG), which also takes into account factors that may alter your course due to winds, currents, etc.
KHz	Kilohertz
km	Kilometer
KPH	Kilometers per hour
ky	Kiloyards
Latitude	Position north or south of the equator, measured by degrees from 0 to 90.

Leg	One portion of a route, consisting of starting and destination waypoints.
Longitude	Position east or west of the prime meridian, measured in degrees.
Man	Manual
MPH	Miles per hour
National Marine Electronics Association (NMEA)	A US standards committee that defines electrical and data specifications for communications between marine electronics. NMEA standards provide protocols by which marine instruments and also most GPS receivers can communicate with each other.
nm	Nautical Mile
NMEA	National Marine Electronics Association
North Up Orientation	Displays the chart orientation with true north upwards. As your heading changes the boat symbol moves accordingly. This is the default mode for the chart application.
Paddlewheel Speed	See 'Boat Speed'
Range	Distance to the specified waypoint or the distance shown on the chart application from the top of the screen to the bottom of the screen.
Route	A sequential series of waypoints entered into the chartplotter that direct the boat to the desired destination.
RTE	Route
s	seconds
sm	Statute Miles
SOG	Speed Over Ground
Speed Over Ground (SOG)	The actual speed the boat is moving, as measured by the GPS. This measurement differs from paddlewheel speed, which does not take into account current, wind or other sea conditions.
Time To Go (TTG)	Estimated time that will elapse before reaching waypoint, at the current course and speed.
Time Variable Gain (TVG)	A DSM gain setting that reduces clutter by varying the gain throughout the water column. This function is useful for reducing the appearance of 'noise'.
Track	An on-screen trail that represents the course you have taken.

TTG	Time To Go
TVG	Time Variable Gain
UTC	Coordinated Universal Time
Variable Range Marker (VRM)	Markers used in Fishfinder Mode for determining the depth and distance-behind-boat of an object. VRMs consist of a horizontal (depth) line and a vertical (distance-behind-boat) line.
Velocity Made Good (VMG)	Your actual rate to a waypoint based upon your current speed and course after adjusting for such factors as current and leeway.
VMG	Velocity Made Good
Waypoints	Waypoints are locations or landmarks you save on the chart so that you can return to them at a later time or place in series to create a route. Waypoints can be stored in the system, archived to a Compact Flash card or transferred to another NMEA compatible instrument.
WPT	Waypoint
XTE	Cross Track Error

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