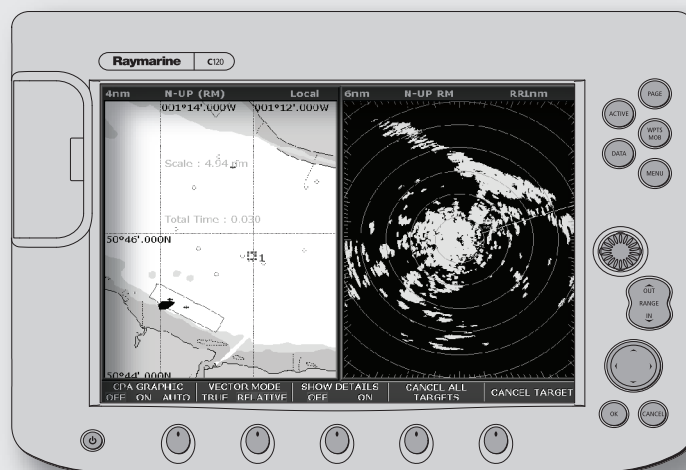


C-Series Display

Operating Guide

Raymarine®
www.raymarine.com



Getting started

The controls explained	Card 1
Using the controls	Card 2
Inserting CompactFlash cards	Card 3
Removing CompactFlash cards	Card 4
Setting up the display	Card 5

What can I see?

Understanding the chart . . .	Card 6
Using the chart . . .	Card 7

Basic Navigation

Working with waypoints	Card 8
How do I get to a point	Card 9

What is around me?

Understanding the radar . . .	Card 10
Using the radar . . .	Card 11
Using MARPA . . .	Card 12

Where am I?

Monitoring a course . . .	Card 13
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Whats under the boat?

Understanding the fishfinder	Card 14
Using the fishfinder	Card 15



WARNING: NAVIGATION AID

This unit is only an aid to navigation. Its accuracy can be affected by many factors, including equipment failure or defects, environmental conditions, and improper handling or use.

It is the User's responsibility to exercise common prudence and navigational judgement. This unit should not be relied upon as a substitute for such prudence and judgement. Always keep a proper look-out.

CAUTION

Your chartplotter is an aid to navigation and should not be used as a substitute for good navigational practice nor for official government paper charts. You should always check that a route is safe. Take every opportunity to compare the displayed objects with visual targets, such as buoys and coastal structures.

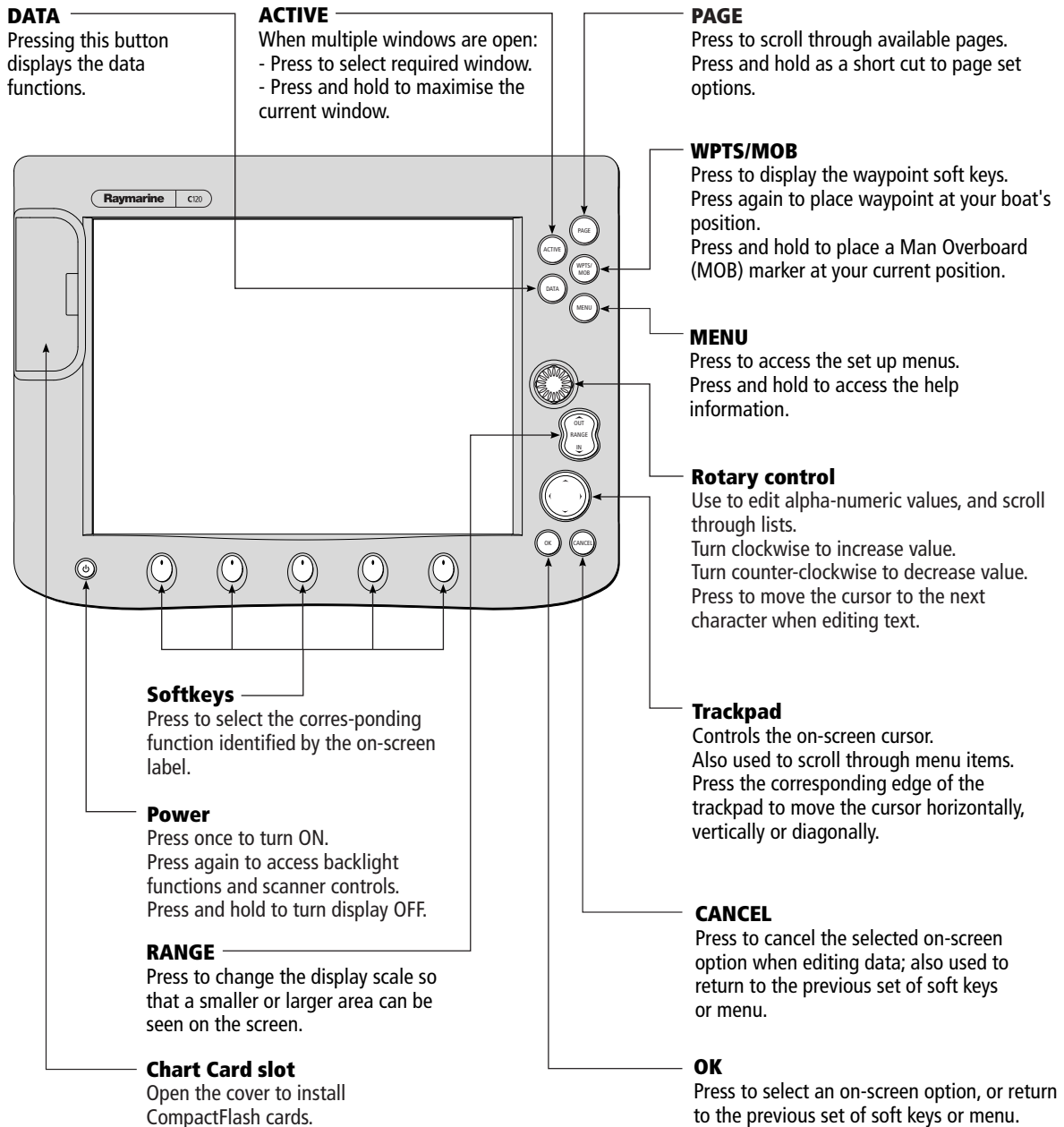
CAUTION

Always check that your route to a waypoint is safe before travelling towards it.

Getting Started

The controls explained

Card No. 1



Where can I find out more about the controls?

Press and hold **MENU** to display help information for the currently displayed soft keys.
For more information on the controls refer to
Chapter 2 - General Operation and System Set Up of the C-Series Display Reference Manual

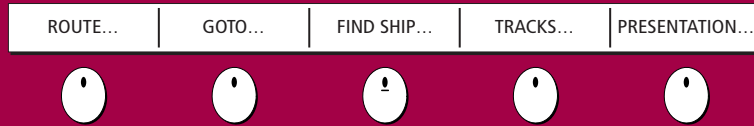


WARNING: NAVIGATION AID

This unit is only an aid to navigation. Its accuracy can be affected by many factors, including equipment failure or defects, environmental conditions, and improper handling or use. It is the User's responsibility to exercise common prudence and navigational judgements. This unit should not be relied upon as a substitute for such prudence and judgement. Always keep a proper look-out.

Getting Started Using the controls

Card No. 2



How do the controls work?

The controls for your C-Series Display can be separated into two types:

- Buttons
- Soft keys

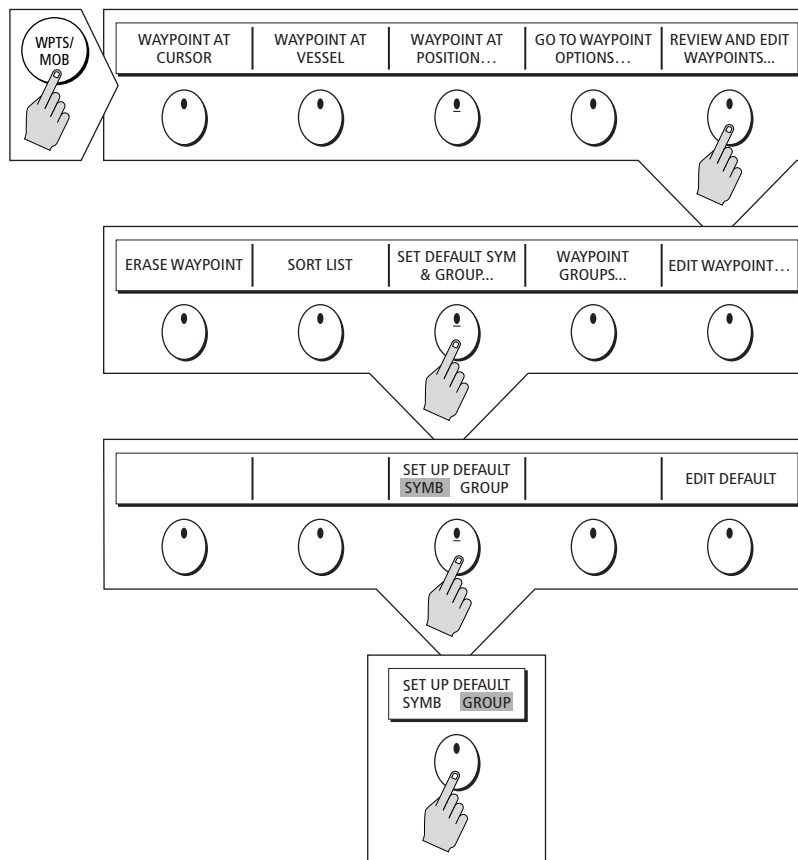
Buttons - allow you to access various functions of the display, or change what you see on the screen.

Soft keys - There are five soft keys below the screen. When a specific button is pressed the primary soft key options for the active application are shown at the bottom of the screen.

Pressing a soft key will carry out one of the following functions:

- take an action.
- select one of several options.
- display on-screen information, dialog boxes or menus with new soft keys.
- display further soft key options.

Soft keys sometimes interact with other on-screen controls, such as dialog boxes - to edit names etc, menus to select options.



? More information...

Press and hold **MENU** to display help information for the currently displayed soft keys.

For more information on the controls refer to

Chapter 2 - General Operation and System Set Up of the C-Series Display Reference Manual

Getting Started

Inserting CompactFlash cards

Card No. 3



CAUTION

CompactFlash Card Installation

When installing CompactFlash cards ensure that the card is being fitted the correct way around.

DO NOT try and force the card as this may result in irreparable damage to the card.

Water Ingress

To prevent the ingress of water and consequent damage to the display, ensure that the chart card door is firmly closed at all times during operation. This can be confirmed by an audible click.

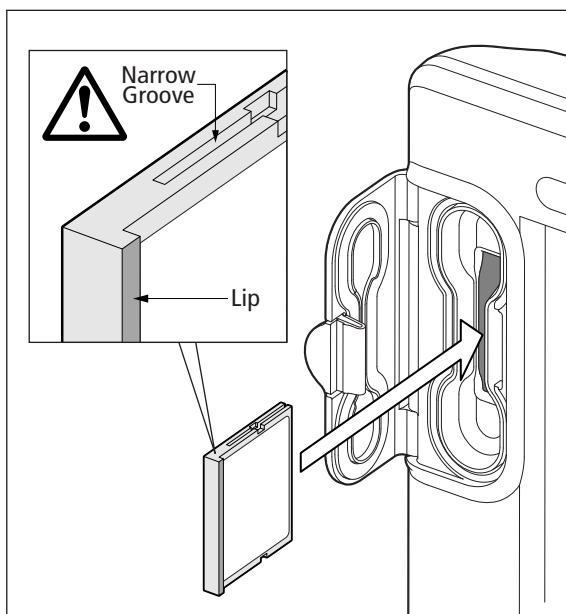
Card Removal

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

Card Writing

CompactFlash cards can be damaged if they are removed during either a read or write operation. A warning is displayed during write operations. The unit is continually reading the card. It is therefore essential that before removing the card you follow the correct procedure.

How do I insert a CompactFlash card?



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

1. Check that you are using the correct type of card. Raymarine recommend Navionics Chart cards or SAN DISK CompactFlash cards.
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 a click is heard.



More information.....

For more information on using CompactFlash cards refer to Chapter 2 - General Operation & System Set Up of the C-Series Reference Manual.

Getting Started

Removing CompactFlash cards

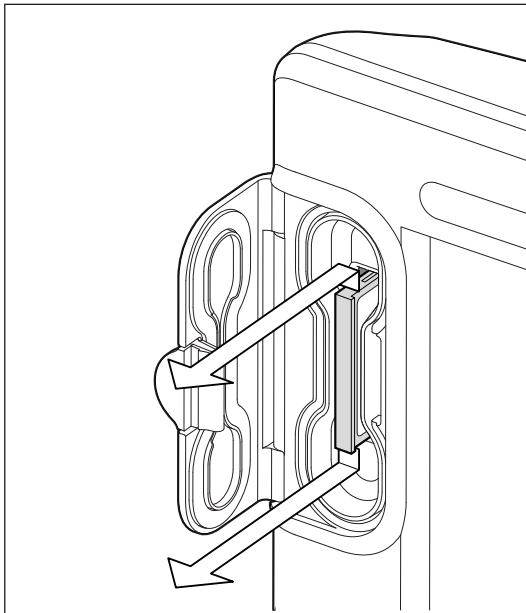
Card No. 4

How do I remove a CompactFlash card?

... with the unit powered down

To remove a card with the unit powered down, refer to the illustration and:

1. Open the chart card door.
2. Grip the card and pull to remove it from its slot.
3. To prevent the ingress of water and consequent damage, close the chart card door and press firmly until a click is heard.



... with the unit powered

To remove a card with the unit powered, refer to the illustration, and:

1. Press **MENU**. The Setup menu is displayed.
2. Use trackpad up/down to highlight CF CARD REMOVAL.
3. Use trackpad right to select. The following message appears:

System checking card access
Please wait until it is safe to remove card....

4. The system will now complete its checks, on completion the following message will appear:
5. Open the chart card door.
6. Grip the card and pull to remove it from its slot.
7. To prevent the ingress of water and consequent, damage close the chart card door and press firmly until a click is heard.

You may now safely remove your CompactFlash card.
Press OK or CANCEL when finished

Improper card removal

If you try to remove a card when the unit is powered, without accessing the SetUp menu, an error message appears. Follow the instructions given in the message, and refer to the above section of this card before proceeding.

Getting Started Setting up the display

Card No. 5

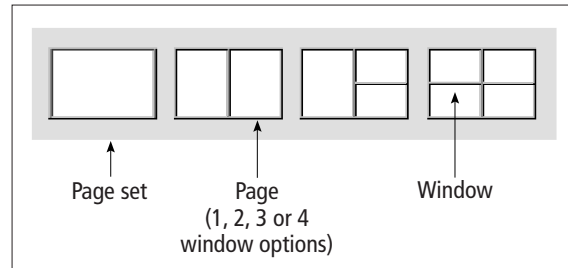
How do I select how the applications are displayed?

The applications are shown using a combination of page sets, pages and windows.

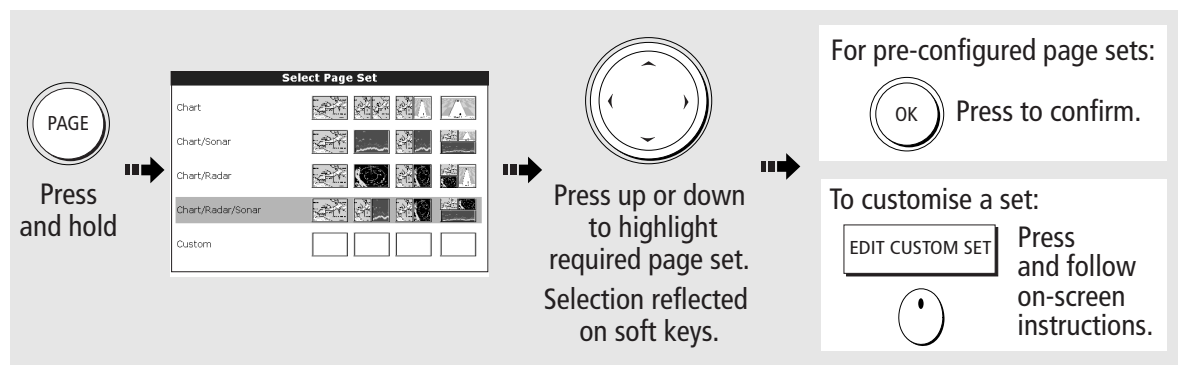
There are four pre-configured page sets each containing four pages with a combination of windows and applications in each.

If these sets are not appropriate, you can use the custom option to define the combination that suits your particular needs.

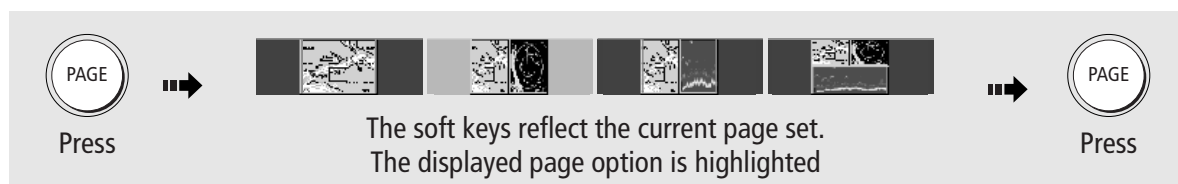
Once you have chosen the required configuration, the same pages, windows and applications will be opened each time. You can change these preferences as many times as you wish.



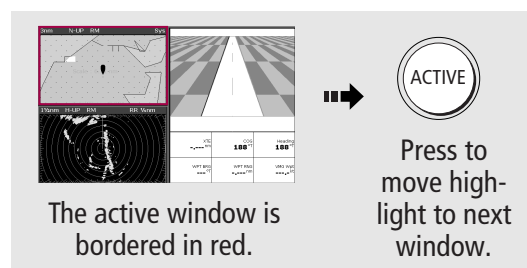
How do I select the Page Set?



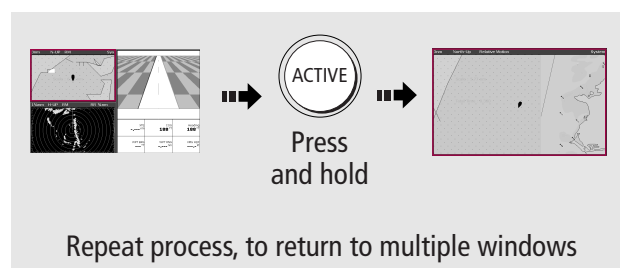
How do I select a Page?



How do I select a Window?



From multiple to single windows?



? More information- Refer to the C-Series Display Reference Manual:

Chapter 1 - Using the Display

Chapter 2 - General Operation and System Set Up

What can I see?

Understanding the chart

Card No. 6

FIND SHIP

GOTO

ROUTES

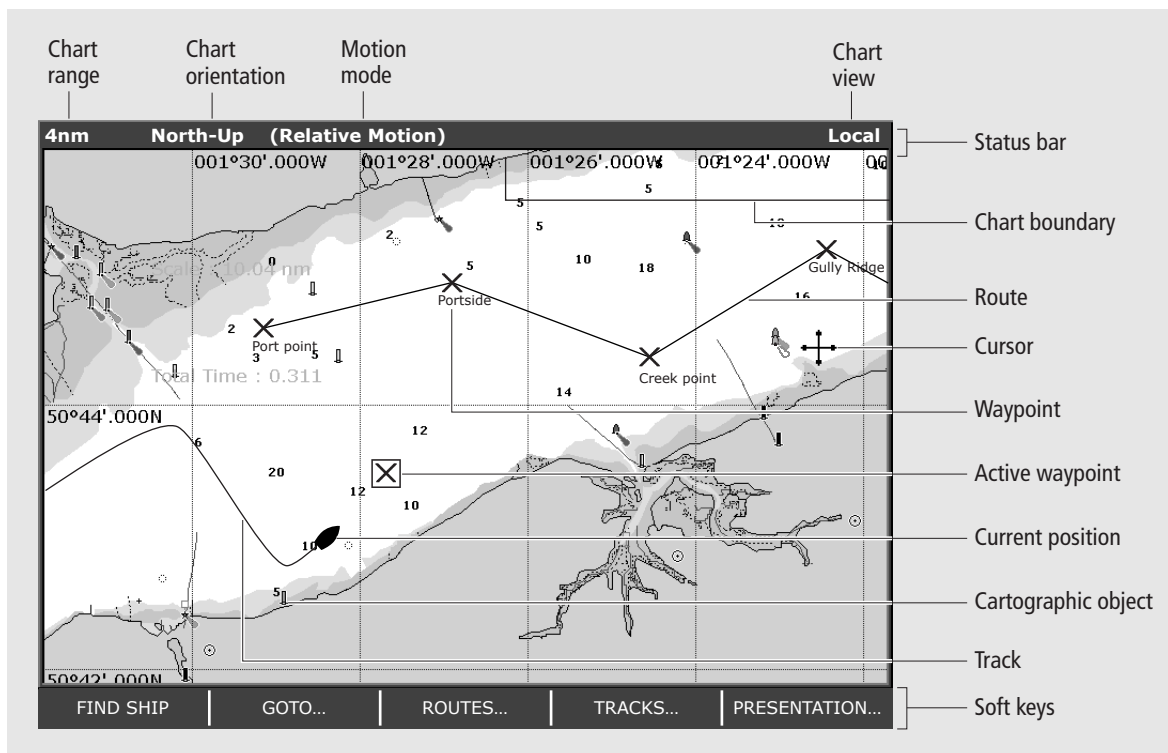
TRACKS

PRESENTATION

What does the chart show me?

The chart shows a high level of cartographic detail to help:

- Interpret your surroundings.
- Navigate to a specific point.
- Monitor where you are going.
- Record where you have been.
- Build and follow routes.



To change the scale and reveal more detail - use the **RANGE** button.
Press OUT to see a larger area of the chart and press IN to see a smaller area.



To display additional information on a cartographic feature - move the cursor over the object and press **OK**.



To change the level of cartographic detail displayed on your chart - press MENU, select Cartography Setup and then toggle the appropriate feature to ON or OFF.

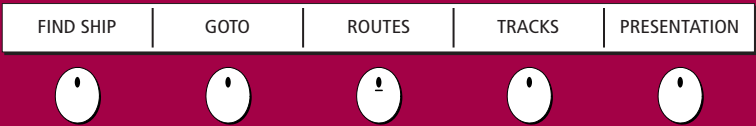
? More information ...

For more information on setting up your display refer to:
Chapter 4 - Using the Chartplotter of the C-Series Reference Manual

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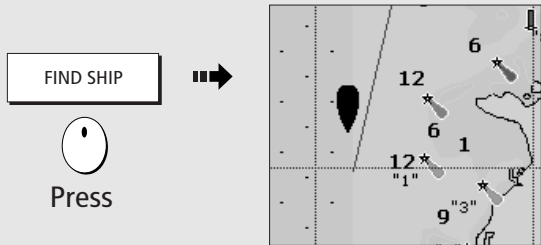
What can I see?
Using the chart ...

Card No. 7



How do I find where I am on the chart?

If you cannot find your boat's position on the screen:

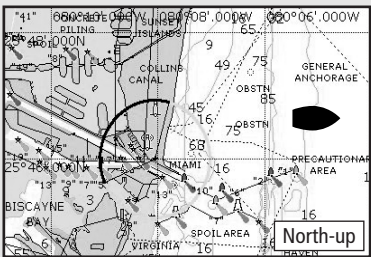


The screen automatically pans to your boat's position.

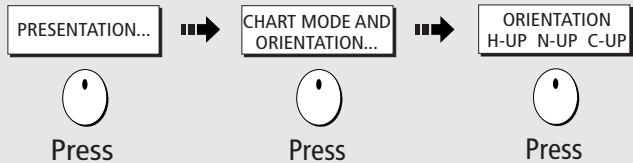
How do I change the chart orientation?

The orientation of the chart refers to the relationship between the chart and the direction that you are travelling in. It is used in conjunction with motion mode (see below) to control how your boat and chart relate to one another and how they are displayed on screen.


The default mode for chart orientation is North Up (N-up). This means that your chart is displayed with true north upwards. As your heading changes the boat symbol moves accordingly.

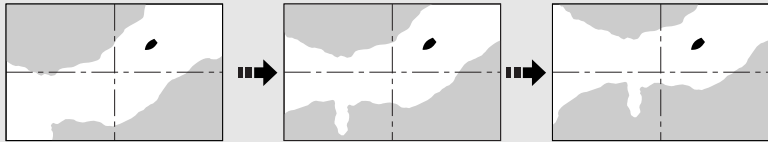


If necessary, you can change the orientation to Head Up (H-up) or Course Up (C-up), using the PRESENTATION soft keys.

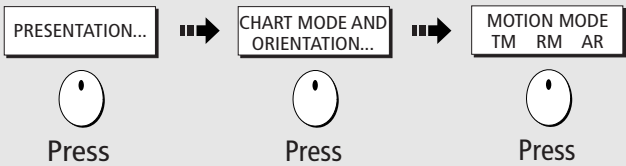


How do I change how my boat moves on the chart?

How your boat moves on the screen is referred to as the motion mode. The default setting for the chart is Relative Motion. This means that your boat, (shown as ) is fixed on the screen and the chart moves relative to your boat e.g.



If necessary, you can change the motion mode to True (TM) or Autorange (AR), using the PRESENTATION soft keys.



? More information

For more information on setting up your display refer to:
Chapter 4 - Using the Chartplotter of the C-Series Reference Manual

Basic Navigation

Working with Waypoints

Card No. 8

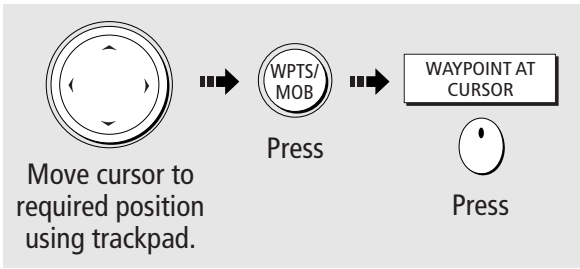
WAYPOINT AT CURSOR	WAYPOINT AT VESSEL	WAYPOINT AT POSITION ...	GO TO WAYPOINT OPTIONS ...	REVIEW AND EDIT WAYPOINTS

What is a waypoint?

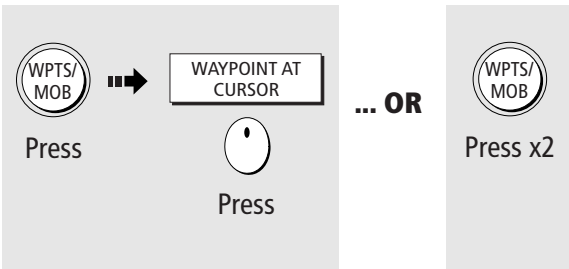
A waypoint is a position marked on a chart, radar or fishfinder screen to indicate a site (for fishing, diving etc), or as a position to go to. You can place a waypoint at the cursor position, your boat's position or at a specified position (using Lat/Long or Loran TD co-ordinates). Waypoints are represented in chart or radar applications as an 'X' - this can be changed if required and by a horizontal line labelled WPT in Fishfinder. The details of each waypoint is stored in a waypoint list which can hold up to 1000 waypoints. Infrequently used waypoints can be archived to a CompactFlash card or transferred to another NMEA compatible instrument. Waypoints can be renamed, edited, grouped, or erased, as necessary. To make full use of waypoint features, ensure your display is receiving heading and position data.

How do I place a waypoint ...

... at the cursor?

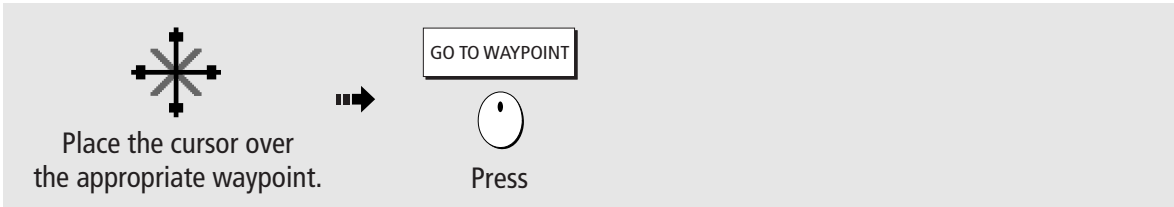


... at the vessel?

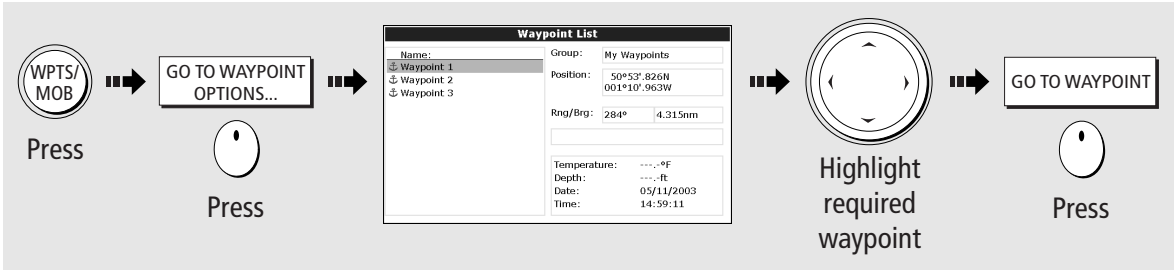


How do I navigate to a waypoint ...

... using the cursor?



... using the waypoint list?



? More information ...

For more information on waypoints refer to: Chapter 3 - Working with Waypoints of the C-Series Reference Manual



CAUTION
Always check that your route to a waypoint is safe before travelling towards it.

Basic Navigation

How do I get to a point?

Card No. 9

SHOW/HIDE
ROUTES

FOLLOW ROUTE
OPTIONS

BUILD NEW ROUTE

TRACKS

REVIEW AND EDIT
ROUTES



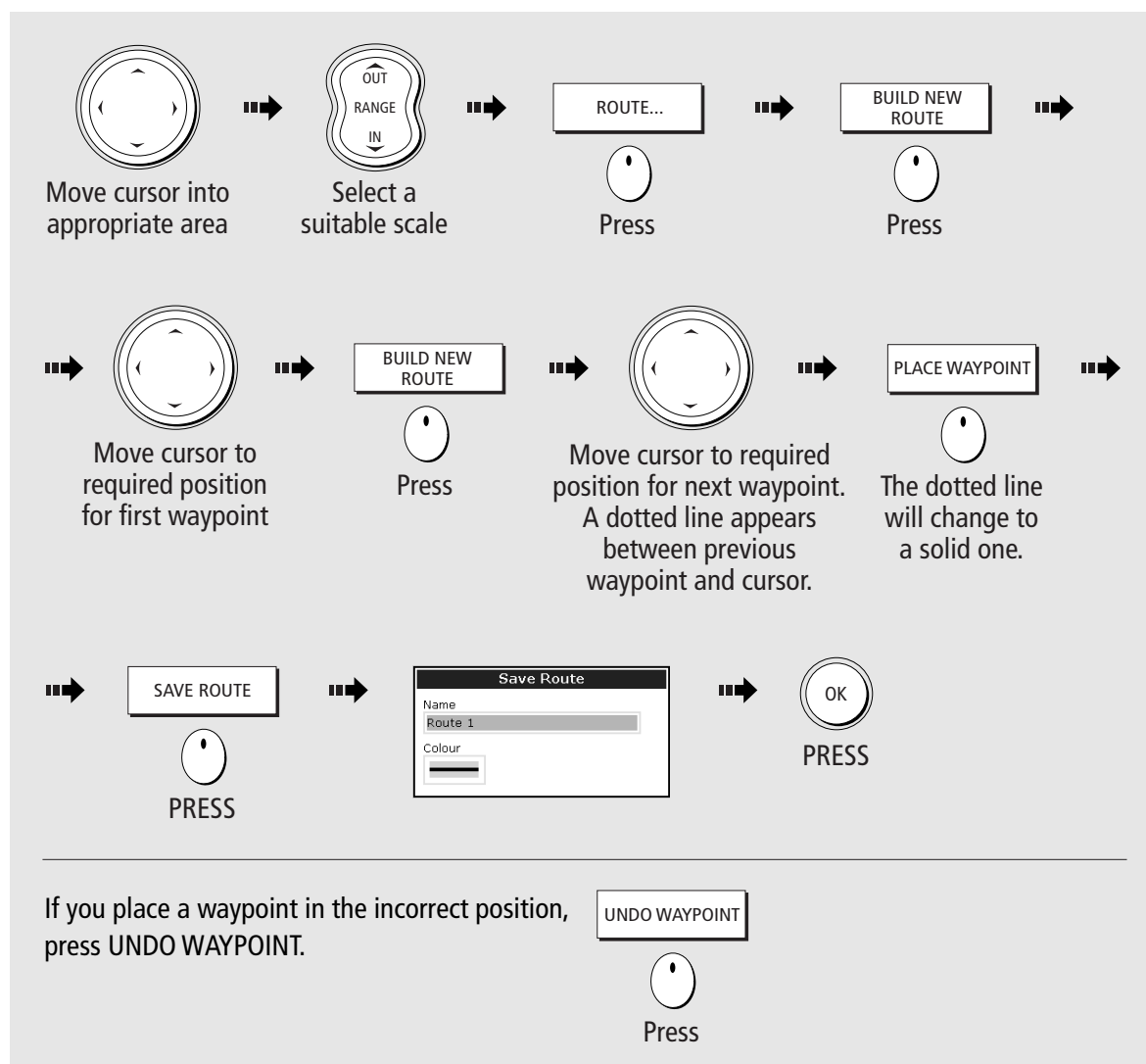
What is a route?

A route is made up of a series of waypoints. These waypoints can either be placed specifically for that route and/or you can use existing waypoints. You can save a route for future use or follow it immediately (Quick Route).

Routes can be named, edited, erased and archived. After routes have been created you can choose which ones are displayed on your chart.

If a route is being followed, i.e. the **active route**, the current leg is shown as a dotted line and any previous legs are removed from the screen, although any waypoints will remain displayed.

How do I build a route by placing waypoints on screen?



More information

For more information on routes refer to:
Chapter 4 - Using the Chartplotter of the C-Series Reference Manual

What is around me?
Understanding the radar

Card No. 10

VRM/EBL

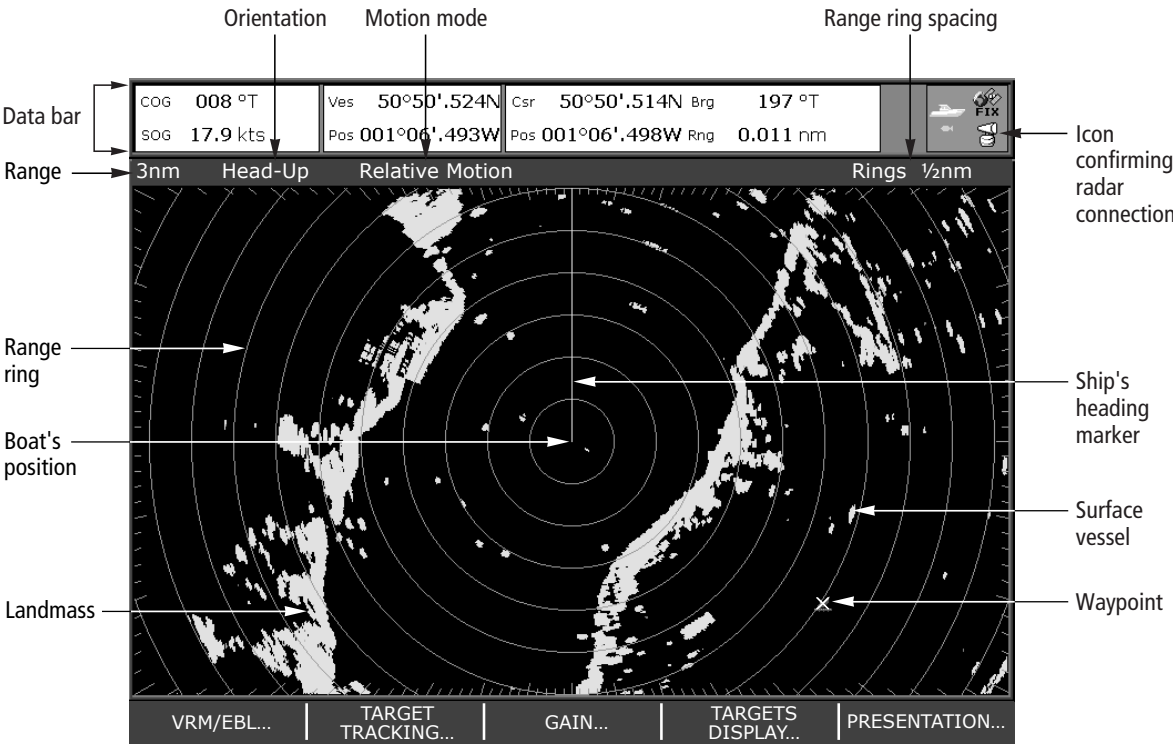
TARGET TRACKING

GAIN

TARGETS

PRESENTATION

What does the radar show me?....



Typically your boats position is at the centre of the display, and its dead ahead bearing is indicated by a vertical heading line, known as the Ship's Heading Marker (SHM).

Remember that the radar picture may vary from visual observations that you make; a nearby small object may appear the same size on the screen as a distant large object. However, with experience the approximate size of different objects can be determined by the relative size and brightness of the echoes.

?

More information

For more information on Radar and how to use it refer to:
Chapter 5 - Using the Radar of the C-Series Display Reference Manual

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What is around me? Using the radar....

Card No. 11

VRM/EBL

TARGET
TRACKING

GAIN

TARGETS

PRESENTATION



How can the radar help me avoid a collision?

You can set up your C-Series Display to sound an alarm when anything comes within a pre-set range of the boat. This will allow you to take any necessary action to avoid a collision.

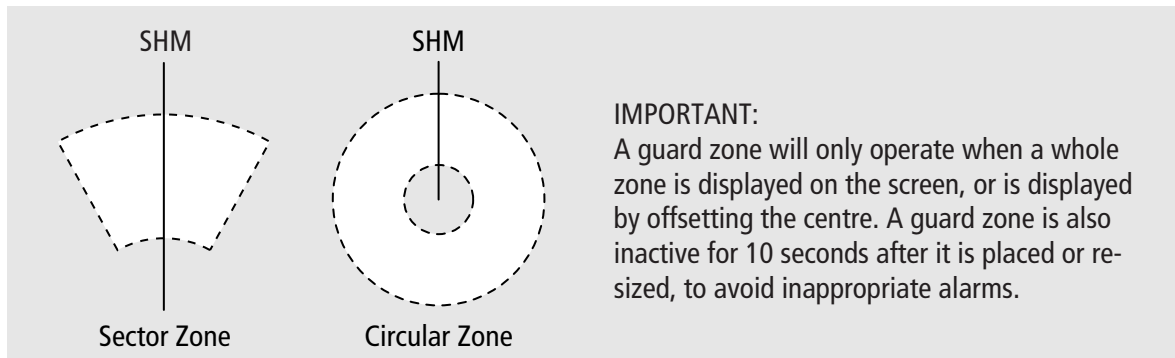
Guard zones

A sector or circular zone fixed with respect to the Ships Heading Marker (SHM). As the SHM moves or if the centre is offset, or the range scale changes the zone moves accordingly.

MARPA

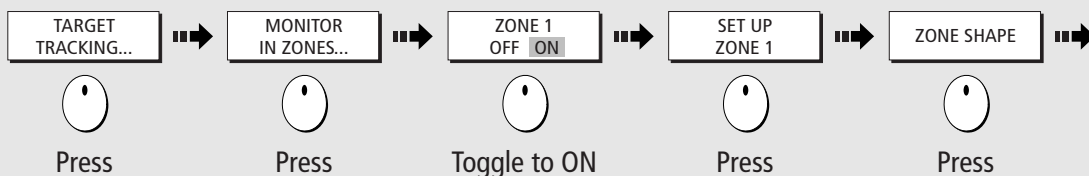
This function is used to track and analyse the risk of collision of up to ten individual targets.

What does a guard zone displayed?

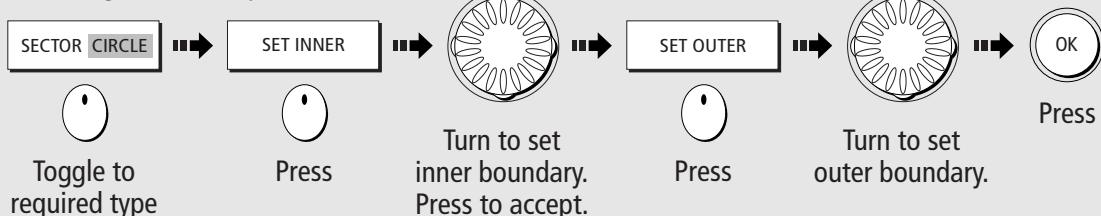


How do I set up a circular guard zone?

1. Select guard zone function:



2. Select guard zone option:



NOTE: You can also set up a sector guard zone.

? More information.... For more information on setting up and using guard zones refer to:
Chapter 5 - Using the radar of the C-Series Reference Manual

What is around me?
Using MARPA....

Card No. 12

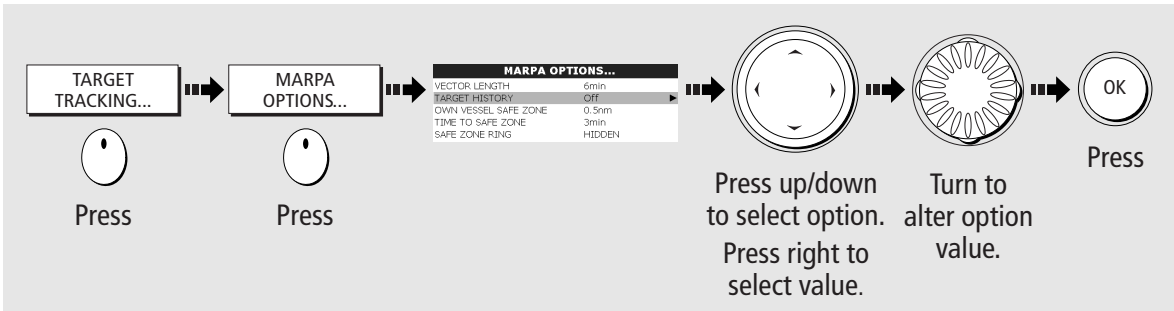


What is MARPA?

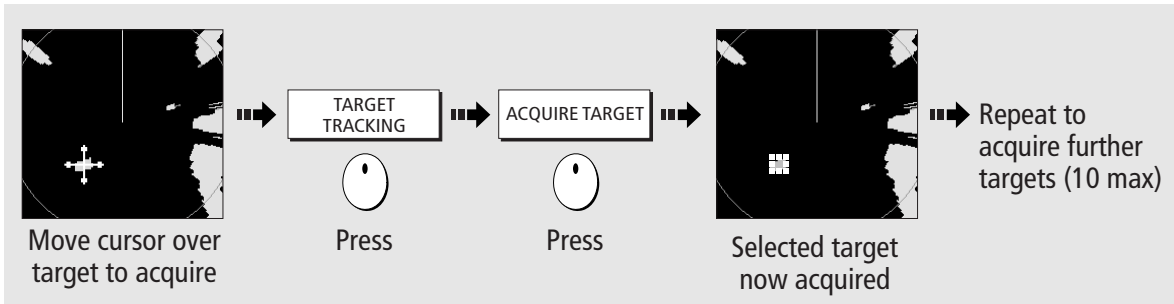
Mini Automatic Radar Plotting Aid (MARPA) functions are use for target tracking and risk analysis. MARPA improves your standards of collision avoidance by obtaining detailed information for up to 10 targets, and provides continuous and rapid situation evaluation.

MARPA tracks the selected targets and calculates target bearing, range, true speed, course, Closest Point of Approach (CPA), and Time to Closest Point of Approach (TCPA). Each tracked target can be displayed with a CPA graphic depicting the approximate target speed (vector length) and course (vector direction). The calculated target data can also be shown on the screen. Each target is continually assessed and an audible alarm is sounded if a target becomes dangerous or is lost.

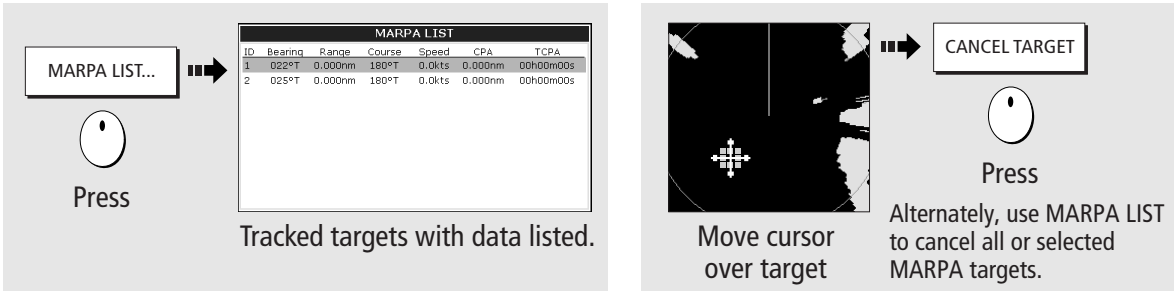
How do I set up the MARPA functions?



How do I acquire a MARPA target?



How do I view details of MARPA targets? How do I cancel MARPA target(s)?



? More information.... For more information on MARPA functions refer to:
Chapter 5 - Using the radar of the C-Series Reference Manual

Where am I? Monitoring a course....

Card No. 13

FIND SHIP

GOTO

ROUTES

TRACKS

PRESENTATION

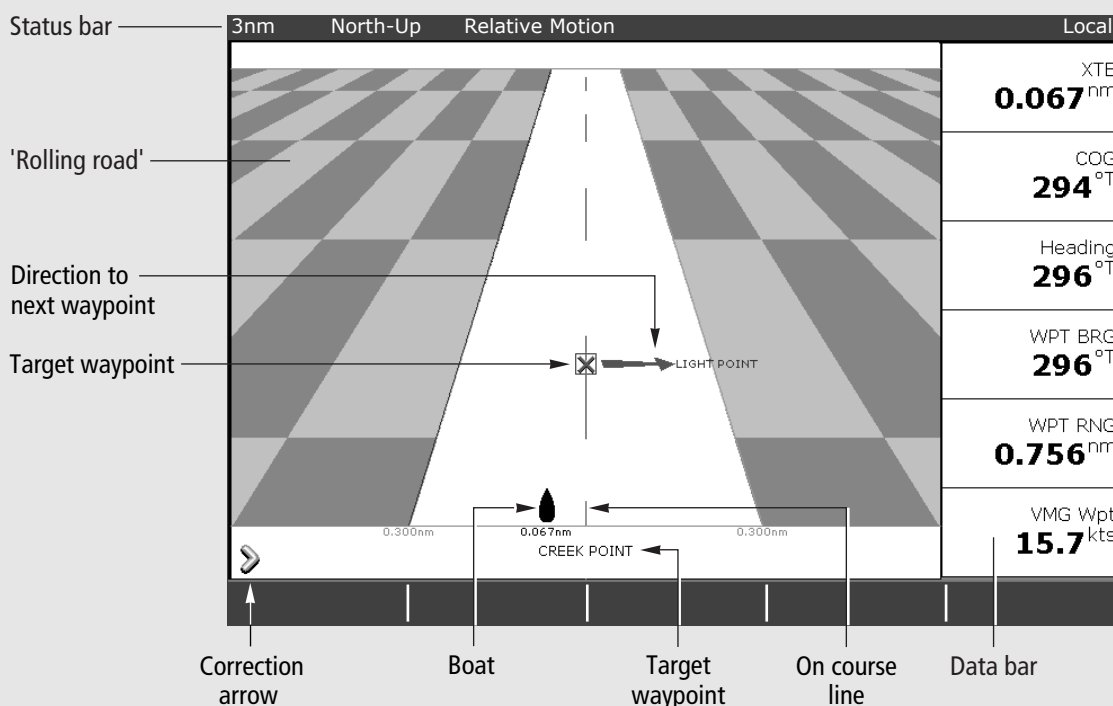


How do I monitor my course?....

With your display receiving accurate heading and position information, you can use the Course Deviation Indicator (CDI) to monitor your course and accurately steer to a target waypoint.

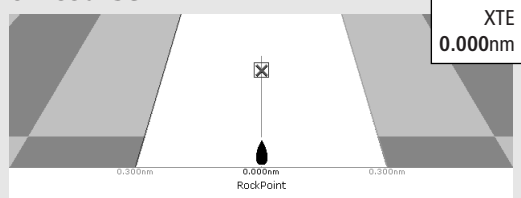
What does the CDI show me?....

The CDI gives a graphical representation of your boat's course. This 'rolling road' format represents a width of sea equal to the Cross Track Error (XTE) limits that you have specified in the Setup menu. As you travel towards the target waypoint, the checkered pattern moves down the screen to simulate movement at a rate proportional to your boat's speed.



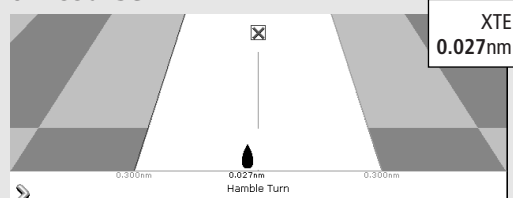
What do the steering instructions tell me?

On course



- Boat on center line.
- Zero XTE

Off course



- Boat off center line.
- Correction arrow(s) indicate direction to steer to maintain course to target waypoint.
- The greater the XTE, the more arrows.



More information....

For more information on monitoring a course, refer to:
Chapter 7 - Using the CDI of the C-Series Reference Manual

Whats under the boat?

Understanding the fishfinder

Card No. 14

TRANSDUCER
SETTINGS

ZOOM

BOTTOM LOCK

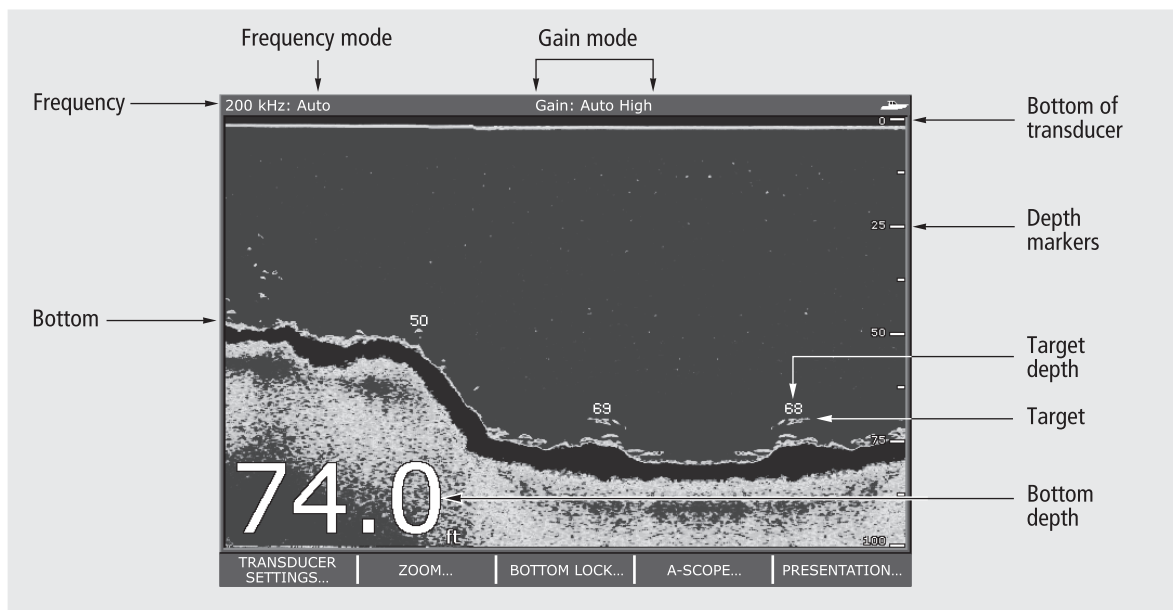
A-SCOPE

PRESENTATION

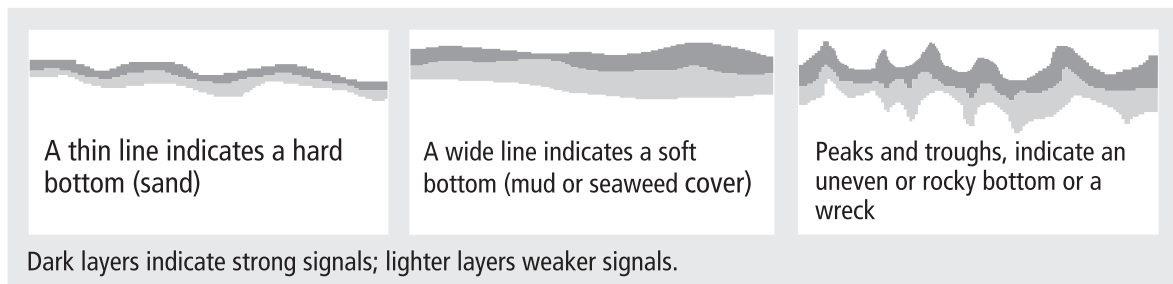
What's under the boat?

The fishfinder application, when connected to a suitable Digital Sounder Module (DSM) and transducer will help you to see fish, bottom structure and texture and underwater obstructions. The image scrolls from right to left at an automatically selected range and frequency to provide a record of the echoes seen. You can mark with a waypoint any positions of interest that you may wish to return to. These waypoints can be used by other applications in your C-Series display.

What can I see on the screen?



How do I interpret the bottom?



What influences target display?

The shape and size of echoes indicating targets, is influenced by a combination of:

- Boat speed - flatter at slower speeds
- Transducer frequency - broader at lower levels
- Target depth - larger near the surface
- Target size - larger targets return larger echoes



More information.....

For more information on using the fishfinder refer to:

Chapter 3 - Working with Waypoints

Chapter 6 - Using the Fishfinder of the C-Series Reference Manual

Whats under the boat? Using the fishfinder....

Card No. 15

TRANSDUCER
SETTINGS

ZOOM

BOTTOM LOCK

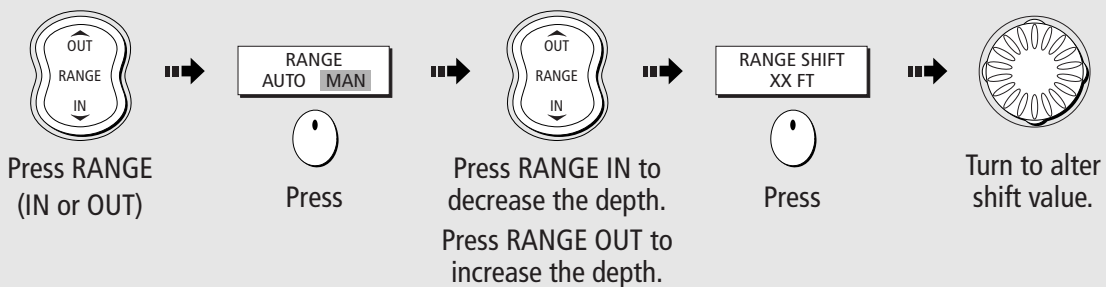
A - SCOPE

PRESENTATION



How do I change the range or shift the image?

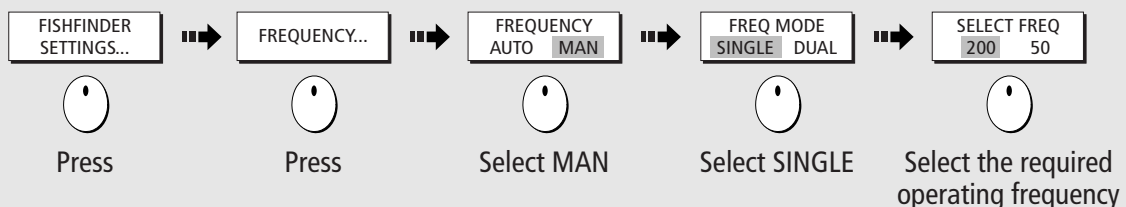
Your system automatically adjusts the display depth range, selecting the shallowest that keeps the bottom on the lower half of the window. You can however set this manually if required and move the image within the selected page up or down:



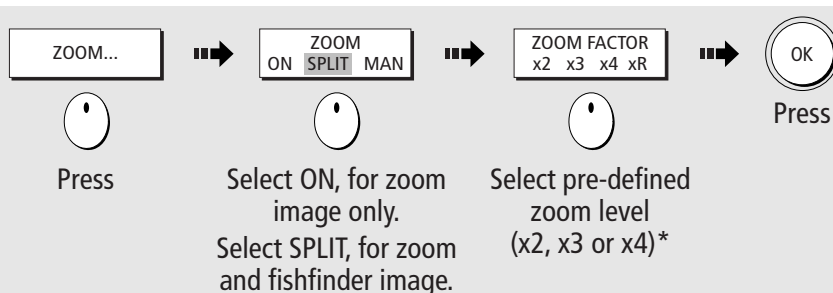
Note: Using the range controls will affect all fishfinder windows.

How do I select the operating frequency?

The fishfinder uses dual frequency sonar - 50 kHz and 200 kHz - and can be used in auto or manual modes. In auto mode it will automatically select the most appropriate frequency at which to operate. Alternatively you have the option of manually selecting either frequency.



How do I zoom in on an area of the screen?



*Selecting manual zoom range (xR) is described in the C-Series Reference Manual

? More information

For more information on using the fishfinder refer to:
Chapter 3 - Working with Waypoints
Chapter 6 - Using the Fishfinder of the C-Series Reference Manual

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